VOLUME II OF II

FINAL
ENVIRONMENTAL ASSESSMENT

FOR

CAPITAL IMPROVEMENT PROJECTS

BUCKLEY AIR FORCE BASE, COLORADO

Prepared by

Headquarters Air Force Center for Environmental Excellence
Project Execution Division

March 2006

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VOLUME II OF II

LIST OF APPENDIXES

APPENDIX A: Original General Plan Figures

APPENDIX B: Construction Ground Disturbance Detail Table

APPENDIX C: Demolition Ground Disturbance Detail Table

APPENDIX D: Construction and Operation Air Emissions Calculations

APPENDIX E: Construction and Demolition Dust Suppression Water Use Table

APPENDIX F: Construction and Demolition Project Solid Waste Generation Table

APPENDIX G: Proposed Action Traffic Impacts

APPENDIX H: Cumulative Traffic Impacts

APPENDIX I: Cumulative Impervious Surface/Increased Runoff Calculations

APPENDIX J: Alternative Action 1 Traffic Impacts

APPENDIX K: No Action Traffic Impacts

APPENDIX L: Air Force Form 813's

APPENDIX M: Public Comments

APPENDIX N: Agency Coordination Letters

APPENDIX O: Notice of Availability

APPENDIX A

ORIGINAL GENERAL PLAN FIGURES

Map A1-2

Privatized Housing ADP

Note: The Basic Layout Of This Privatized Housing ADP Was Provided By Buckley AFB.

Legend

- Existing Buildings
- Proposed Buildings
- Existing Roads/ Parking
- Proposed Roads/ Parking
- Existing Walks
- Proposed Walks
- Improved Landscape Areas
- Natural Grassland Areas
- Trees And Shrubs
- Future Construction
- Demolition
- Constraints
- Streams/ Drainages
- Water

N

150 0 150 300

Scale in Feet

The actual footprint of each proposed future building will be determined later after user programming and architectural design. Trees and shrubs are shown to illustrate preliminary landscape character only - actual counts & locations will come later as part of specific area landscape design projects.

Map A2-2

Main Gate ADP

Fence
6th Avenue
Proposed Two Deceleration Lanes For Entry Traffic Stacking
Vacate Existing Segments Of Winterpark Avenue And Beaver Creek Street
Space Reserved For Possible Future Entry Control Gate Expansion
Base Sign
Base Sign
Space Reserved For Possible Future Entry Control Gate Expansion
Existing Trail
Proposed Space Operations Contingency Parking 431 Spaces (Shuttle Bus Service) Ground Surface To Be Determined
Proposed Softball Field
5520
Fence
Proposed Parking 110 Spaces
Proposed Visitor's Center
Proposed Visitor Parking 32 Spaces
5530
5540
Demolish Buildings 19 And 25
Demolish Existing Ballfield
41
40
Existing Main Gate
Existing Visitor's Center
Future Dormitory #4
Existing Ballfield To Remain/ Possible Future Building Site
Future Parking
5530
Copper Mountain Street
Steamboat Avenue
5520
Security Fence
Existing Gate At Fence
Proposed Walk
Existing Walk
Existing Space Operations Parking
5530
Security Fence
5530
Existing Space Operations Parking
5530
Aspen Avenue
Accident Potential Zone 1
Proposed Landscaped Corridor Along Both Sides Of Aspen Avenue
Existing Flood Basin
5540
Extend Walk East To Williams Lake And Base-Wide Trail System
Clear Zone
5550
Proposed Space Operations Contingency Parking 431 Spaces (Shuttle Bus Service) Ground Surface To Be Determined

Legend

- Existing Buildings
- Proposed Buildings
- Existing Roads/ Parking
- Proposed Roads/ Parking
- Existing Walks
- Proposed Walks
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- Natural Grassland Areas
- Trees And Shrubs
- Future Construction
- Demolition
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N

100 0 100 200

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Map A3-2

Dormitory ADP (North Section)

Existing Trail
Proposed Telluride Gate
Four Lanes At Telluride Street, Add Southbound Lanes At West Side Of Street
Proposed Car Wash 1,938 SF
AAFES Gas Station
Extend Winterpark Avenue To Connect With BX/Commissary Entry Drive
BX/ Commissary
Potential Future Round-About At Intersection Of Steamboat And Telluride
Proposed Pharmacy 4,000 SF
Proposed Drive-Up Service Window
201
Existing Space Operations Warehouse
Extend Walk South To Dormitory #2 And Base-Wide Trail System
Telluride Street
Proposed Parking - 140 Spaces
Proposed Toilets/ Concession/ Storage
Fence
Proposed Softball Field
Proposed Softball Field
Proposed Gas Meter House (u.g.) Relocate
Parking - 99 Spaces
Relocate Meter House
Existing Outdoor Recreation Equipment Rental
Proposed Football/ Soccer Field/ Track Facility
Proposed Basketball Courts
Winterpark Avenue
45 FT. Outside/ 33 FT. Inside Truck Radius, Typ.
Future Dining Facility 9,900 Sf
Winterpark Avenue
Winterpark Avenue
Opt.
Opt.
Opt.
26
28
Steamboat Avenue
Security Fence
Space Operations Area
Security Fence
Existing Picnic Pavilions (2)
Demolish Parking Along Winterpark Avenue
Fitness Center 28,000SF Plus Options Under Construction
Proposed Sidewalk Typ.
Existing Space Operations Administrative Facility
Demolish Street West Of Dormitory #1
Existing Dormitory #1
5500
5510
5520

Legend

- Existing Buildings
- Proposed Buildings
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- Proposed Roads/ Parking
- Existing Walks
- Proposed Walks
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N

100 0 100 200

Scale in Feet

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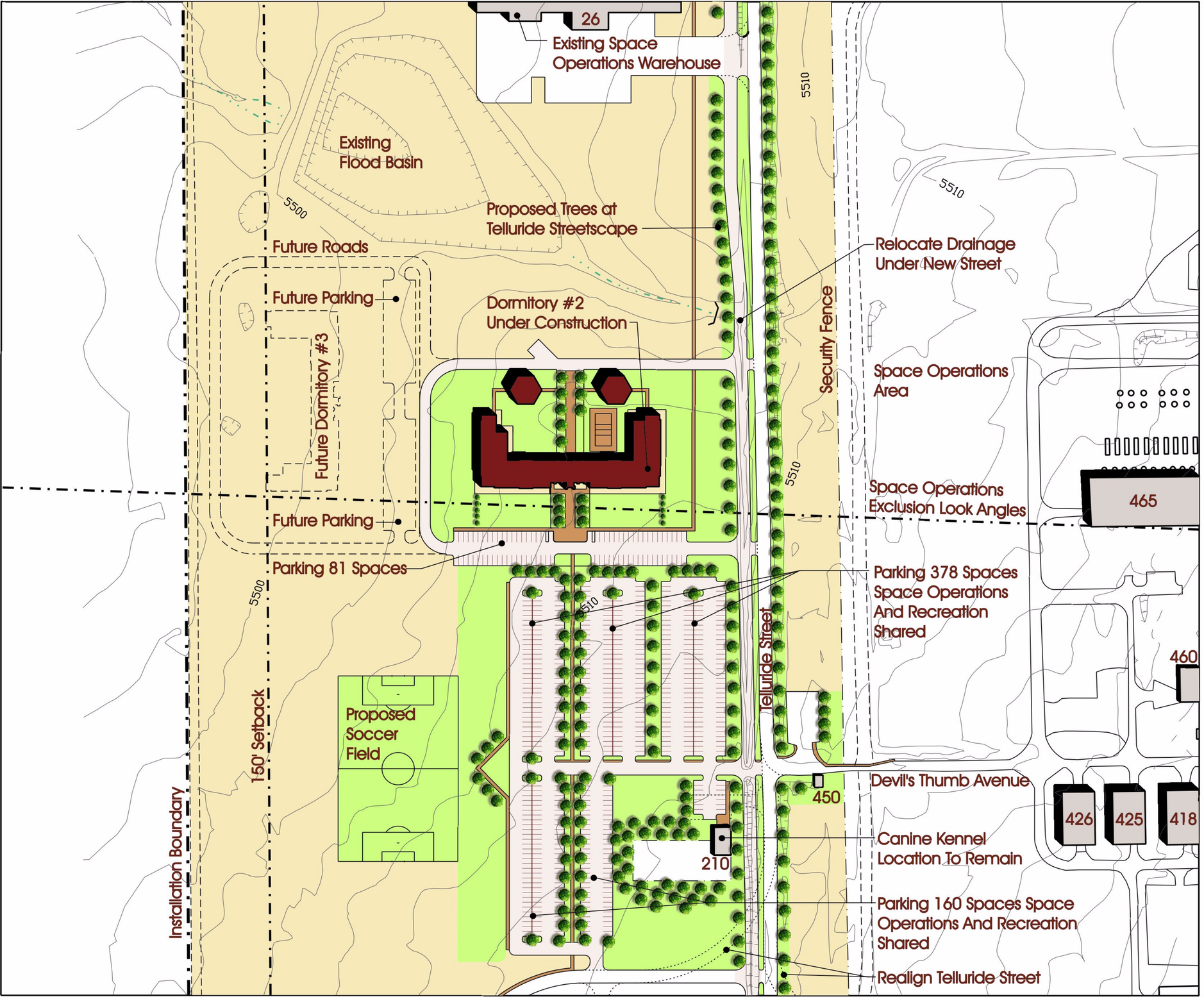
Map A3-4

Dormitory ADP (South Section)



Legend

- Existing Buildings
- Proposed Buildings
- Existing Roads/ Parking
- Proposed Roads/ Parking
- Existing Walks
- Proposed Walks
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- Natural Grassland Areas
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N

100 0 100 200

Scale in Feet

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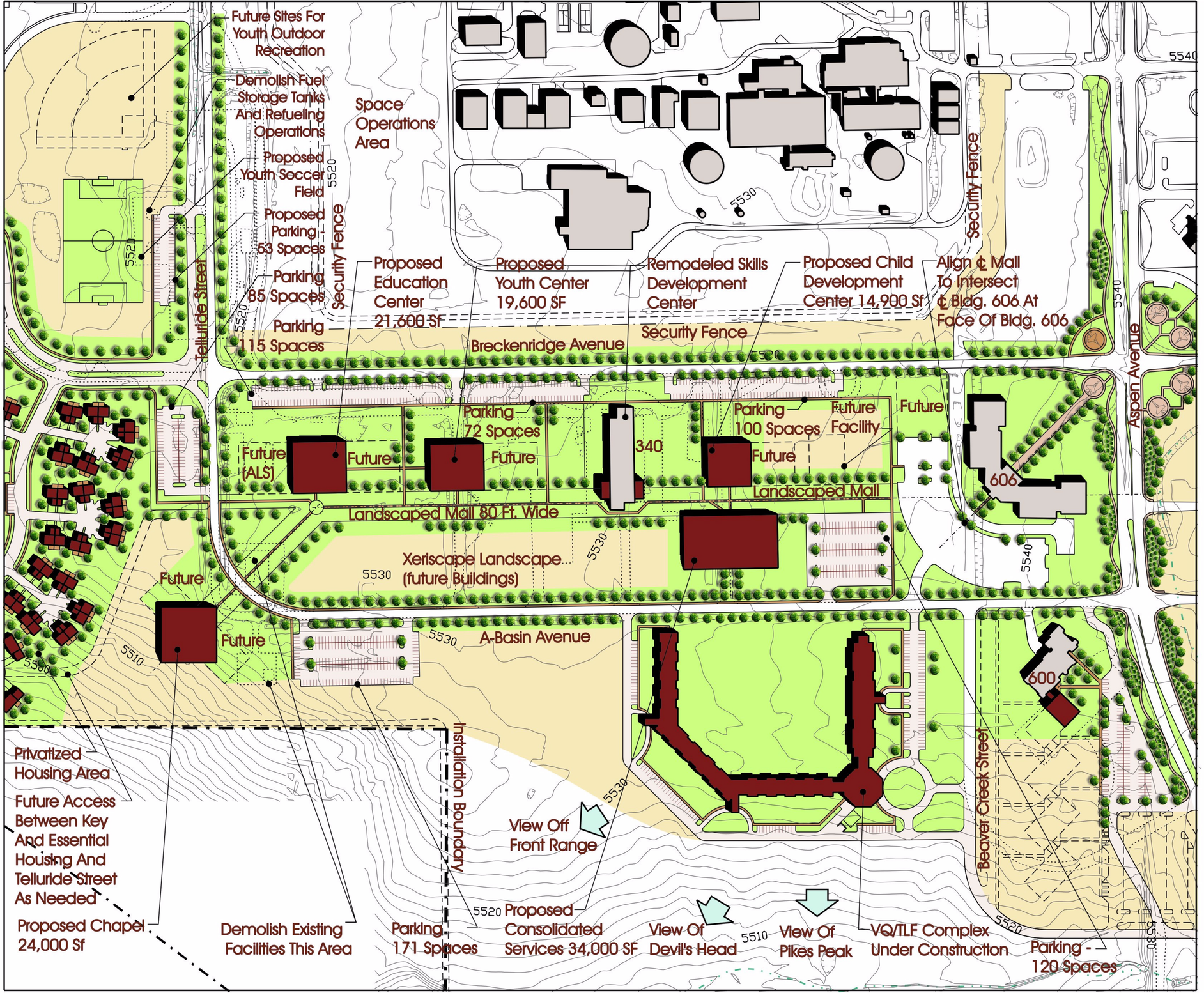
Map A5-2

Community Center ADP



Legend

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- Proposed Buildings
- Existing Roads/ Parking
- Proposed Roads/ Parking
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N

150 0 150 300

Scale in Feet

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Map A6-2

Installation Support ADP

806

1001

1000

1004

1005

1006

1007

1009

Primary Surface

Hush House

Proposed Fuel Truck Access Road

Future Taxiway

Proposed Consolidated Base Warehouse 38,000 Sf

Proposed Pumping Station 3,200 Sf

Proposed Fuel Tanks 2-210,000 Gal.

Proposed Ops. Bldg. 3,200 Sf

Proposed Fueling Station 2,000 Sf

Fuel Truck Parking 12 Trucks

Proposed Entomology Shop And Hazmat Pharmacy 6,000 Sf

Civil Engineering Warehouse18,000 Sf

Proposed Outdoor Rec. Supply 16,000 Sf

Proposed Auto Skills 6,500 Sf

Existing Fire Station

Potential Alert QD Arcs Southern Extent

Existing CE Complex

Proposed Logistics And Consol. Veh. Maint. 30,000 Sf

Proposed ANG Veh. Maint. 10,100 Sf

East Toll Gate Creek-Potential Flood Area

Aspen Avenue

Beaver Creek St.

5550 5560 5570 5540 5530 5580 5590 5520

Legend

- Existing Buildings
- Proposed Buildings
- Existing Roads/ Parking
- Proposed Roads/ Parking
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N

150 0 150 300

Scale in Feet

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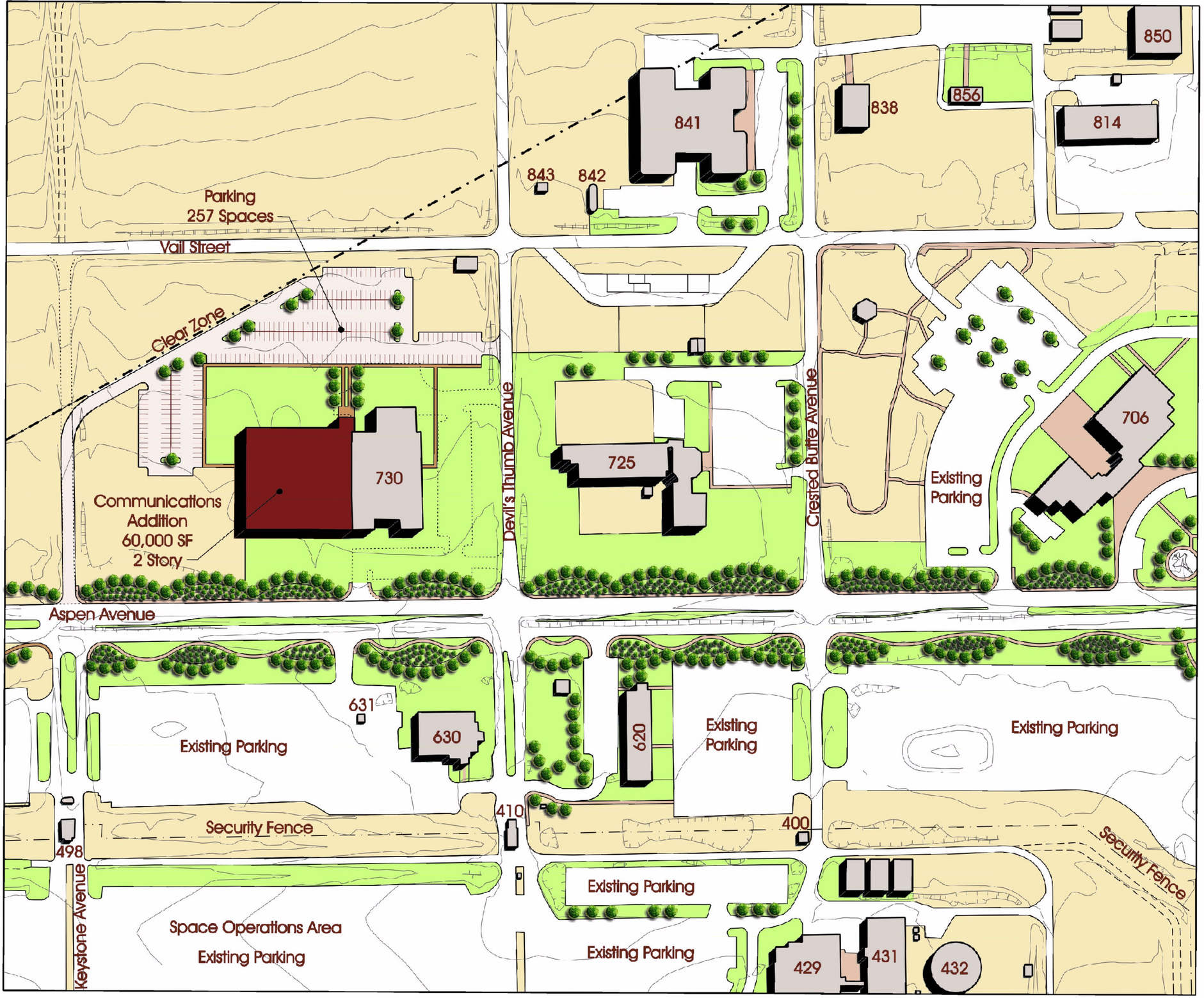
Map A4-2

Aspen Corridor ADP (North Section)



Legend

- Existing Buildings
- Proposed Buildings
- Existing Roads/ Parking
- Proposed Roads/ Parking
- Existing Walks
- Proposed Walks
- Improved Landscape Areas
- Natural Grassland Areas
- Trees And Shrubs
- Future Construction
- Demolition
- Constraints
- Streams/ Drainages

N

100 0 100 200

Scale in Feet

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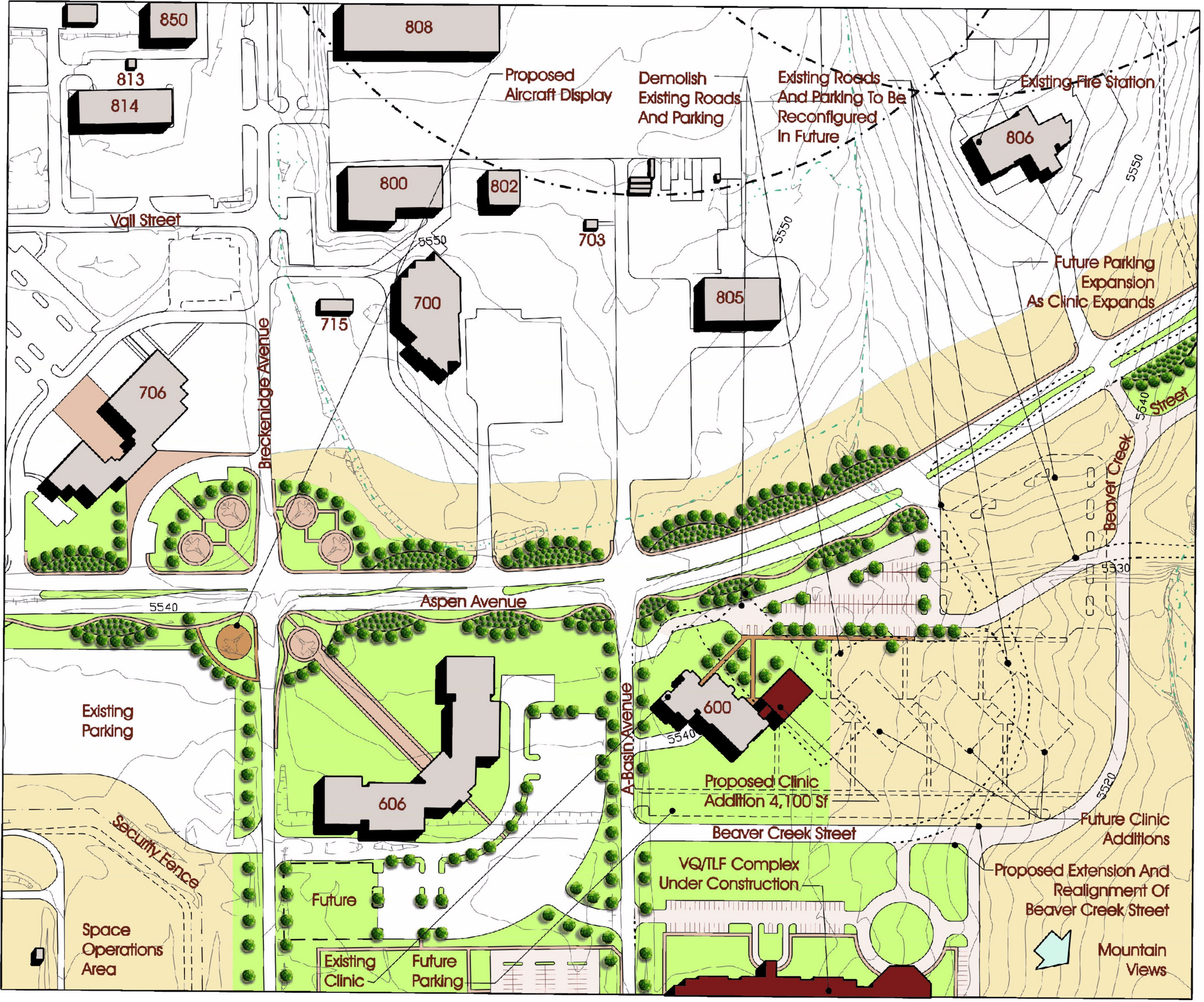
Map A4-4

Aspen Corridor ADP (South Section)



Legend

- Existing Buildings
- Proposed Buildings
- Existing Roads/ Parking
- Proposed Roads/ Parking
- Existing Walks
- Proposed Walks
- Improved Landscape Areas
- Natural Grassland Areas
- Trees And Shrubs
- Future Construction
- Demolition
- Constraints
- Streams/ Drainages

N

100 0 100 200

Scale in Feet

The actual footprint of each proposed future building will be determined later after user programming and architectural design. Trees and shrubs are shown to illustrate preliminary landscape character only - actual counts & locations will come later as part of specific area landscape design projects.

Map A8-2

Williams Lake ADP

Legend

- Existing Buildings
- Proposed Buildings
- Existing Roads/ Parking
- Proposed Roads/ Parking
- Existing Walks
- Proposed Walks
- Improved Landscape Areas
- Natural Grassland Areas
- Trees And Shrubs
- Future Construction
- Demolition
- Constraints
- Streams/ Drainages
- Water

N

150 0 150 300

Scale in Feet

The actual footprint of each proposed future building will be determined later after user programming and architectural design. Trees and shrubs are shown to illustrate preliminary landscape character only - actual counts & locations will come later as part of specific area landscape design projects.

APPENDIX B

CONSTRUCTION GROUND DISTURBANCE DETAIL TABLE

Construction Project Ground Disturbance Detail Table

ADP/ELUA	Project Ground Disturbance Duration (days)	Maximum Building Area (ft^2)	Total Building Land Disturbance[(1)] (ft^2)	Roadway/Parking Lot Land Disturbance[(2)] (ft^2)	Landscaping Land Disturbance[(3)] (ft^2)	Sidewalk/ Walkway Land Disturbance[(4)] (ft^2)	Utilities Trenching Land Disturbance[(5)] (ft^2)	Total Land Disturbance (ft^2)
ADP 1 - Military Family Housing Area	597	1,333,356	5,186,913	75,900	73,480	144,360	12,000	5,492,653
ADP 2 - Entry Gates Area	1,915	629,681	922,836	1,245,558	7,261	66,655	101,328	2,343,638
ADP 3 - Dormitory Area	2,072	954,067	1,729,402	1,077,066	62,228	152,400	12,900	3,033,996
ADP 4 - Aspen Corridor Area	1,004	72,825	436,950	777,186	75,598	94,800	519,600	1,904,133
ADP 5 - Community Center Area	1,870	167,905	1,007,430	486,400	193,581	109,560	7,800	1,804,771
ADP 6 - Industrial Support Area	2,442	161,375	934,008	563,737	32,275	73,800	22,800	1,626,620
ADP 7 - Headquarters Area	672	69,210	414,684	476,700	24,813	98,000	5,000	1,019,197
ADP 8 - Williams Lake Area	651	7,250	14,500	429,300	822,400	112,800	7,800	1,386,800
Total ADPs	**11,223**	**3,395,669**	**10,646,723**	**5,131,847**	**1,291,635**	**852,375**	**689,228**	**18,611,808**

Construction Project Ground Disturbance Detail Table								
ADP/ELUA	**Project Ground Disturbance Duration (days)**	**Maximum Building Area (ft^2)**	**Total Building Land Disturbance[(1)] (ft^2)**	**Roadway/Parking Lot Land Disturbance[(2)] (ft^2)**	**Landscaping Land Disturbance[(3)] (ft^2)**	**Sidewalk/ Walkway Land Disturbance[(4)] (ft^2)**	**Utilities Trenching Land Disturbance[(5)] (ft^2)**	**Total Land Disturbance (ft^2)**
Open Space ELUA	495	52,520	301,520	15,000	10,604	4,500	300	331,924
Aircraft Operations and Maintenance ELUA	1,170	171,449	852,444	0	34,290	96,000	7,800	990,534
Airfield/Aircraft Pavement ELUA	1,077	3,724,420	4,669,624	1,023,000	744,884	12,000	6,000	6,455,508
Mission Operations and Maintenance ELUA	1,360	442,376	2,324,256	69,233	75,275	36,000	1,800	2,506,564
Industrial ELUA	270	41,000	82,000	49,200	8,200	0	0	139,400
6th Avenue ELUA	106	528,000	633,600	0	52,800	0	0	686,400
Special Categories ELUA	0	0	0	0	0	0	0	0
Total ELUAs	**4,478**	**4,959,765**	**8,863,444**	**1,156,433**	**926,053**	**148,500**	**15,900**	**11,110,330**
Total ADP and ELUA	**15,701**	**8,355,434**	**19,510,167**	**6,288,280**	**2,217,688**	**1,000,875**	**705,128**	**29,722,138**

(1) Total Building Land Disturbance is estimated at six-times the Building Area, providing contingency for contractor lay-down and preparation areas.

(2) Parking Lot size is estimated on 300 ft^2 per parking space, including turning areas. Total Land Disturbance is estimated at 1.5-times the Parking Lot Areas, providing contingency for contractor lay-down and preparation areas. Contingency for roadway and airfield construction is 1.2-times finished areas.

(3) Total Land Disturbance for Landscaping Areas is estimated at 20 percent of the Building Area, and provides contingency for contractor lay-down and preparation areas.

(4) Walkway and Sidewalks lengths were measured from maps included in the Buckley Air Force Base General Plan (Preliminary Submittal; 460 Air Base Wing, Buckley AFB, Colorado; Prepared By HB&A; Colorado Springs, CO; June 2002). Land Disturbance for Walkways and Sidewalks is estimated assuming a width of 12-feet of disturbance to install 6-foot wide walkways and sidewalks, providing contingency for contractor lay-down and preparation areas.

(5) Utility connection lengths were measured from maps included in the Buckley Air Force Base General Plan (see above). Lengths were measured to closest major roadway, where utilities are assumed to exist. Land Disturbance for Utilities Trenching is estimated assuming a width of 6-feet of disturbance to install required utilities, providing contingency for contractor lay-down and preparation areas.

APPENDIX C

DEMOLITION GROUND DISTURBANCE DETAIL TABLE

Demolition Project Ground Disturbance Detail Table							
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Total Building Land Disturbance[1] (ft^2)**	**Bathroom, Kitchen and Other Integrated Components[2] (ft^3)**	**Other Demolition Components[3] (ft^3)**	**Total Demolition Debris/Waste Generated[2] (ft^3)**	**Total Demolition Debris/Waste Generated (tons)[4]**
ADP 1 - Military Family Housing Area	160	2,761	5,522	690	44,148	67,622	4,680
ADP 2 - Entry Gates Area	484	83,756	167,512	24,186	2,285,148	2,987,875	215,658
ADP 3 - Dormitory Area	165	878	1,756	125	348,751	353,002	29,451
ADP 4 - Aspen Corridor Area	80	0	0	0	116,000	116,000	9,821
ADP 5 - Community Center Area	410	5,988	11,976	1,497	95,748	146,658	10,295
ADP 6 - Industrial Support Area	0	0	0	0	0	0	611
ADP 7 - Headquarters Area	75	24,407	48,814	6,102	390,268	597,776	40,223
ADP 8 – Williams Lake Area	33	0	0	0	165,000	165,000	13,775
Open Space ELUA	85	6,675	13,350	310	185,970	221,660	16,809
Aircraft Operations and Maintenance ELUA	0	0	0	0	0	0	293
Airfield/Aircraft Pavement ELUA	0	0	0	0	0	0	269

Mission Operations and Maintenance ELUA	210	39,684	79,368	9,921	634,547	971,941	65,466
Industrial ELUA	207	49,267	98,534	11,723	702,227	1,105,477	73,270
6th Avenue ELUA	0	0	0	0	0	0	27
Special Categories ELUA	210	105,000	210,000	26,250	1,678,950	2,254,140	160,411
Totals	**2,119**	**318,416**	**636,832**	**1,335,919**	**6,646,758**	**8,987,151**	**641,058**

(1) Total Building Land Disturbance is estimated at two-times the Building Area, providing contingency for contractor lay-down and debris stockpile areas.

(2) If specific information was unknown, Bathroom, Kitchen and Other Integrated Components and Total Building Demolition Debris/Waste Generated was based on the following assumptions:

- Demolition of exterior walls generates 3.36 ft3 per ft2 of building space demolished.
- Demolition of interior walls generates 0.812 ft3 per ft2 of building space demolished.
- Demolition of roofs generates 2.04 ft3 per ft2 of building space demolished.
- Demolition of foundations generates 2.04 ft3 per ft2 of building space demolished.
- Demolition of bathroom, kitchen and other components generates 0.254 ft3 per ft2 of building space demolished.
- Demolition of other demolition components generates 15.99 ft3 per ft2 of building space demolished.
- Values for facilities scheduled for demolition and assessed in previous EAs were derrived from those EAs.

(3) Other Demolition Components may consist of paving materials, sidewalks, walkways and other general waste generated through demolition activities. Some buildings sites and surrounding areas were inspected and volumes of Demolition Components were estimated by review of as built drawings and/or visual observation.

(4) Bulk densities for calculations were assumed as follows:

- Building Demolition Bulk Density = 75 lbs/ft^3
- Bathroom etc Bulk Density = 100 lbs/ft^3
- Other Demolition Bulk Density =165 lbs/ft^3.

APPENDIX D

CONSTRUCTION AND OPERATION AIR EMISSIONS CALCULATIONS

I. Operation of Buildings

- Calculation Assumptions

II. Construction and Demolition

- Calculation Assumptions
- ACAM version 4.0 Input and Output
- Algorithms Used by ACAM to Calculate Emissions
- ACAM Emission Summary – includes emissions for emergency generators, which would be used after the construction phase.

I. Building Operations.

- The only stationary source of emissions from completed buildings and facilities would be from furnaces, hot water heaters and/or emergency generators and associated fuel tanks.
- AP-42 emission factors for 0.3 to 10.0 MMBtu/hr boilers were used. This is based on the 2004 Air Emissions Inventory, where these boilers account for approximately 90% of total fuel use.
- Emergency generators would account for a small amount of increased emissions resulting from the implementation of the proposed or alternative actions. ACAM was used to estimate potential emissions from emergency generators.
  - Generators use 730 gallons of fuel per year, which is the largest amount used in FY03.
  - Generators use diesel fuel
  - Generators are less than 600 horse power (447 kW)
- The increase in natural gas use can be estimated on the bases of new building areas and assuming a direct ratio of building areas to natural gas use. This method of calculation was used in lieu of ACAM because it resulted in a more refined estimate.

  The calculated natural gas (NG) use = FY2004 NG use x New square footage/Existing square footage.
  Emissions are the natural gas use in $mmft^3$/yr multiplied by the AP-42 emission factor.

Pollutant	Emission Factor (lbs/mmcf)
CO	84
VOC	5.5
NOx	100
SOx	0.6
PM_{10}	7.6

FY 2004 NG Use	152,038,900.00 ft^3/yr
	416,544.93 ft^3/day
Existing Total Building Area	2,700,000 ft^2
New Building Area to Result from Proposed Action	1,963,486.00 ft^2
Calculated NG Use Increase	302,918.57 ft^3/day
Calculated NG Use Increase	110.57 $mmft^3$/yr
Percent Increase	72.72%
Calculated Total NG Use	263 $mmft^3$/yr

CONSTRUCTION CALCULATION ASSUMPTIONS

- FY11 was used for the project years for those projects with unknown timelines and projects that were being constructed after 2010.
- The building footprint assumes a one-story structure, which results in a more conservative estimate.
- Total area graded = 6 times the square footage of the building.
- Parking lots size = 300 ft^2 per parking space, including turning areas. Total Land Disturbance is estimated at 1.5-times the Parking Lot Areas, providing contingency for contractor lay-down and preparation areas.
- Roadway and Playground construction is based on known values and 20% additional contingency to provide for contractor lay-down and preparation areas.
- Walkway and Sidewalks lengths were measured from maps included in the Buckley Air Force Base General Plan (Preliminary Submittal; 460 Air Base Wing, Buckley AFB, Colorado; Prepared By HB&A; Colorado Springs, CO; June 2002). Land Disturbance for Walkways and Sidewalks is estimated assuming a width of 12-feet of disturbance to install 6-foot wide walkways and sidewalks, providing contingency for contractor lay-down and preparation areas.
- Land Disturbance for Landscaping Areas is estimated at 20% of the Building Area, and provides contingency for contractor lay-down and preparation areas.
- Utility connection lengths were measured from maps included in the Buckley Air Force Base General Plan (see above). Lengths were measured to closest major roadway, where utilities are assumed to exist. Land Disturbance for Utilities Trenching is estimated assuming a width of 6-feet of disturbance to install required utilities, providing contingency for contractor lay-down and preparation areas.
- Land Disturbance for the Playgrounds and Youth Athletic Fields is calculated as the area of the projects plus 30% contingency for contractor lay-down and preparation areas.
- Project duration for the MFH units 18 months per the MFH EA. The maximum building area is based on two-story housing units (712,298/2 =356,149). Total Land Disturbance is based on the total 71 acres, based on the contractors Air Pollutant Emission Notice.

- Grading phase[1] = 30 days
- Construction phase[1] is based on size and complexity of the project

  Less than 5,000 ft^2 = less than 240 days

  5,000 to 10,000 ft^2= 305 days

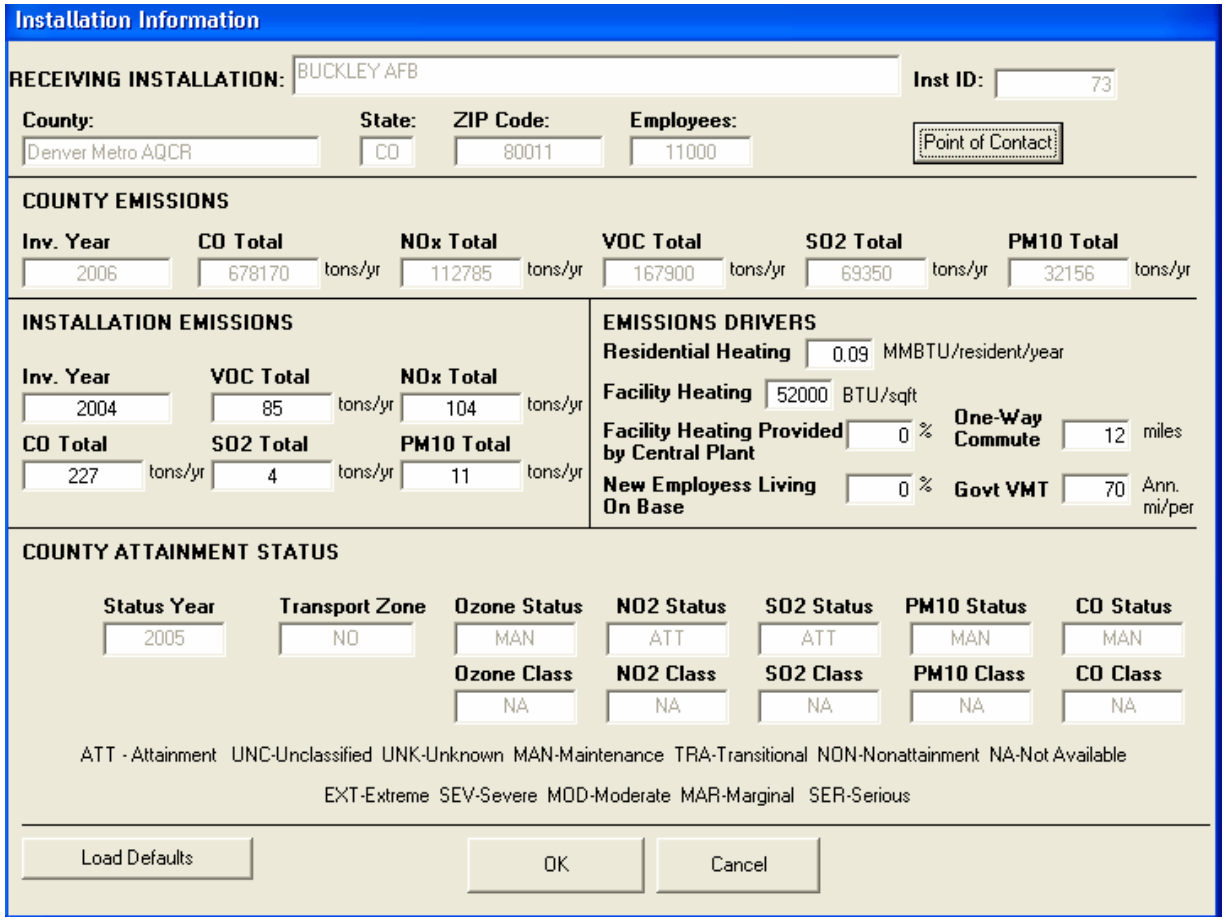
  20,000 5o 40,000 ft^2 = greater than 305 days

  40,000 to 50,000 ft^2 = 290 days

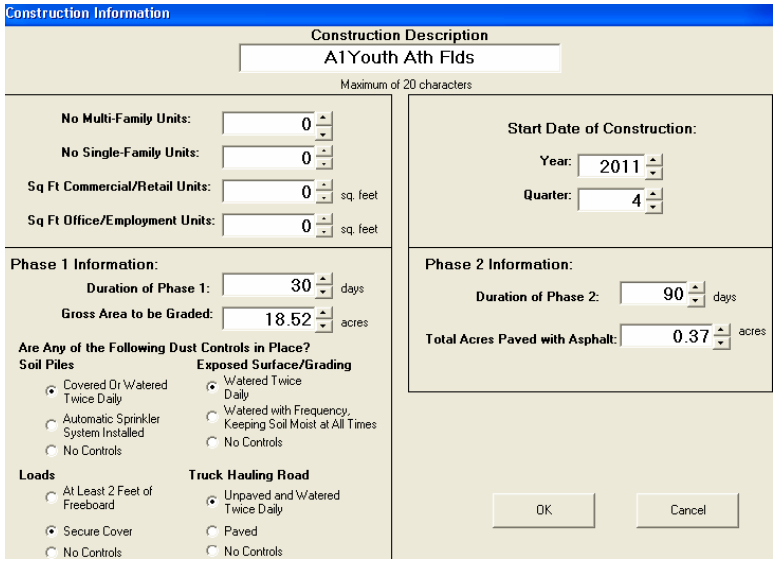
  Greater than 50,000 ft^2 = 340 days

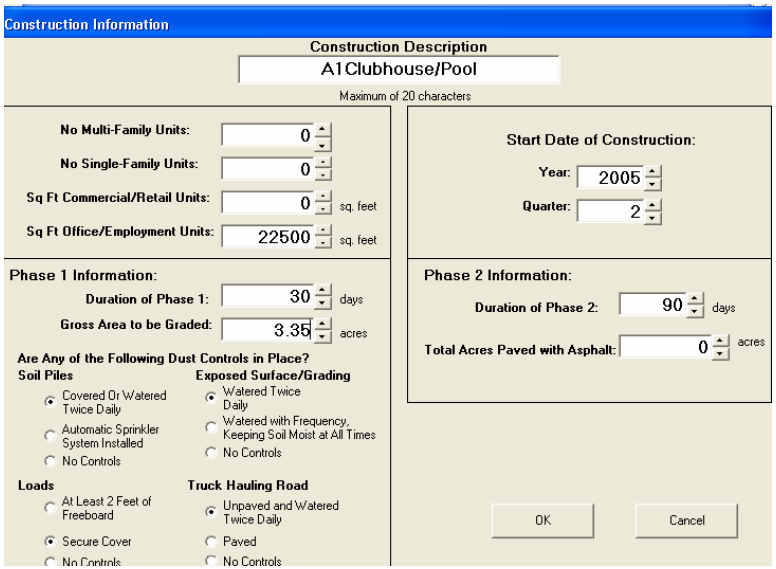
- Generators are only used to supply power for one month. After that, power is provided by temporary electrical service, and gasoline powered equipment is not used. The ACAM model assumes a generator operates for the duration of the construction phase.
- Typical Denver area vehicle mix is assumed for personal vehicles
- Emergency Generators
  - Annual fuel use for the emergency generators was conservatively estimated to be 730 gallons of diesel. This is the most diesel used by any Buckley AFB emergency generator in 2003, according to information in the Buckley AFB 2003 Air Emission Inventory, July 2004.
  - The generators are assumed to be diesel-fired and have a horsepower rating of less than 600 hp.
  - Emergency generators are not installed in every building per Air Force Instructions. Calculations included those buildings that could require emergency generators (e.g., Visitors center, Dormitory, Child Development Center, Chapel, Youth Center, Headquarters, ANG CE Complex, Control Tower); calculations did not include those buildings that were moving since the assumption is they already have an emergency generator that will be replace in kind (e.g., Communications Center, Permanent Crew Quarters, Consolidated Fuels).

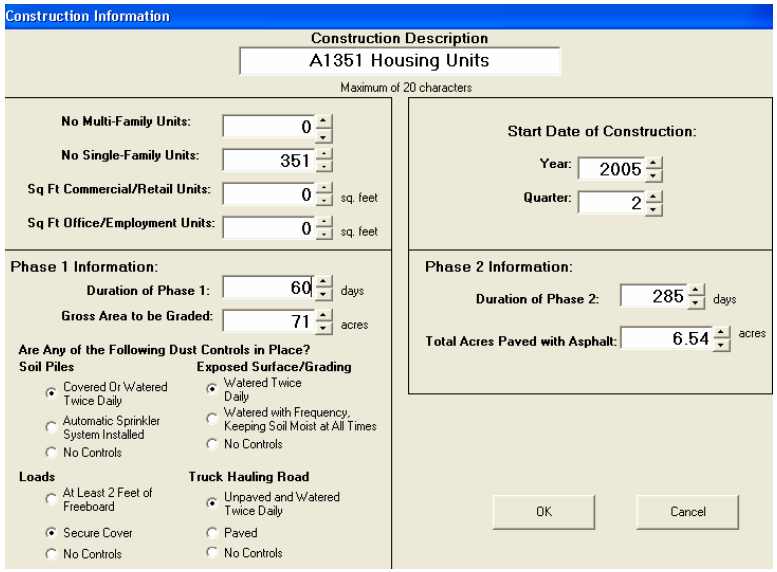
[1] These are the general default values. Values that differ in the ACAM inputs were based on information from EA's that resulted in a FONSI, the finished project size, estimated final project duration.

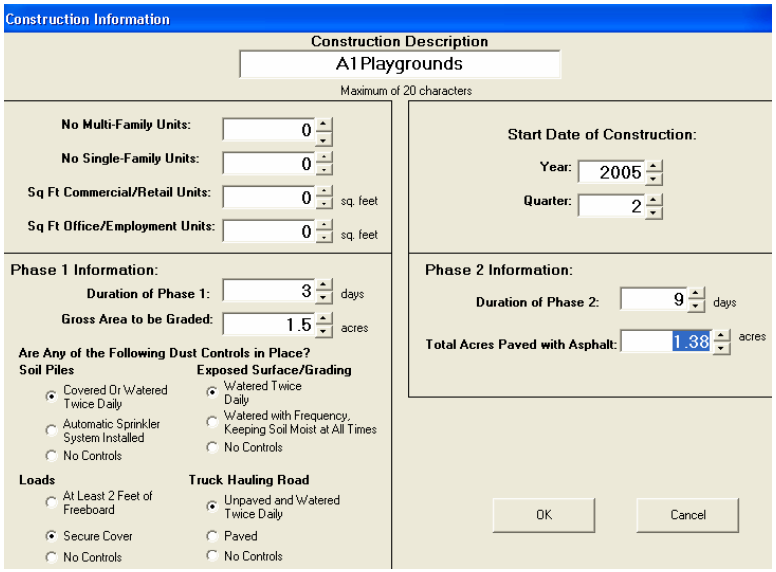

Installation Information
RECEIVING INSTALLATION: BUCKLEY AFB
Inst ID: 73
County: Denver Metro AQCR
State: CO
ZIP Code: 80011
Employees: 11000
Point of Contact
COUNTY EMISSIONS
Inv. Year 2006
CO Total 678170 tons/yr
NOx Total 112785 tons/yr
VOC Total 167900 tons/yr
SO2 Total 69350 tons/yr
PM10 Total 32156 tons/yr
INSTALLATION EMISSIONS
Inv. Year 2004
VOC Total 85 tons/yr
NOx Total 104 tons/yr
CO Total 227 tons/yr
SO2 Total 4 tons/yr
PM10 Total 11 tons/yr
EMISSIONS DRIVERS
Residential Heating 0.09 MMBTU/resident/year
Facility Heating 52000 BTU/sqft
Facility Heating Provided by Central Plant 0 %
One-Way Commute 12 miles
New Employess Living On Base 0 %
Govt VMT 70 Ann. mi/per
COUNTY ATTAINMENT STATUS
Status Year 2005
Transport Zone NO
Ozone Status MAN
NO2 Status ATT
SO2 Status ATT
PM10 Status MAN
CO Status MAN
Ozone Class NA
NO2 Class NA
SO2 Class NA
PM10 Class NA
CO Class NA
ATT - Attainment UNC-Unclassified UNK-Unknown MAN-Maintenance TRA-Transitional NON-Nonattainment NA-Not Available
EXT-Extreme SEV-Severe MOD-Moderate MAR-Marginal SER-Serious
Load Defaults
OK
Cancel

ADP 1

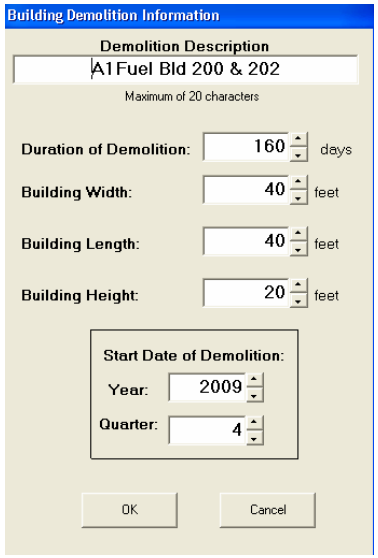

Construction Information
Construction Description
A1Youth Ath Flds
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 0 sq. feet
Start Date of Construction:
Year: 2011
Quarter: 4
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 18.52 acres
Phase 2 Information:
Duration of Phase 2: 90 days
Total Acres Paved with Asphalt: 0.37 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel


Construction Information
Construction Description
A1Clubhouse/Pool
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 22500 sq. feet
Start Date of Construction:
Year: 2005
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 3.35 acres
Phase 2 Information:
Duration of Phase 2: 90 days
Total Acres Paved with Asphalt: 0 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

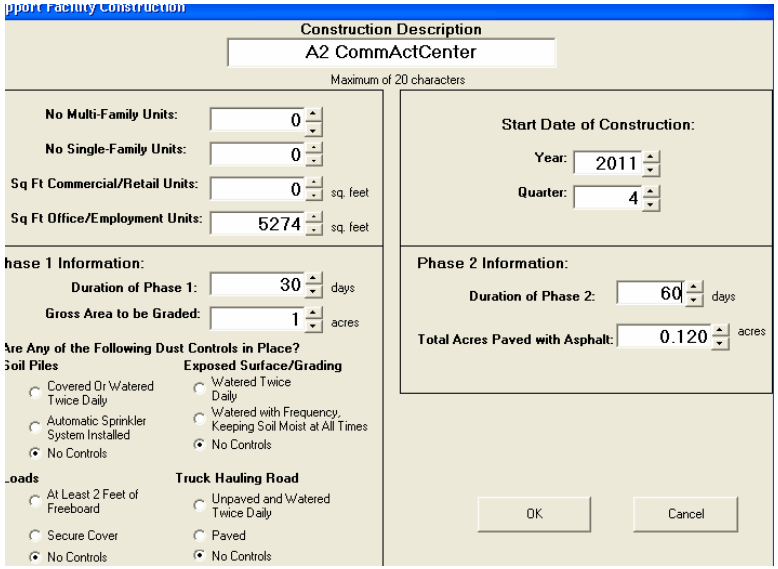

Construction Information
Construction Description
A1351 Housing Units
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 351
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 0 sq. feet
Start Date of Construction:
Year: 2005
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 60 days
Gross Area to be Graded: 71 acres
Phase 2 Information:
Duration of Phase 2: 285 days
Total Acres Paved with Asphalt: 6.54 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

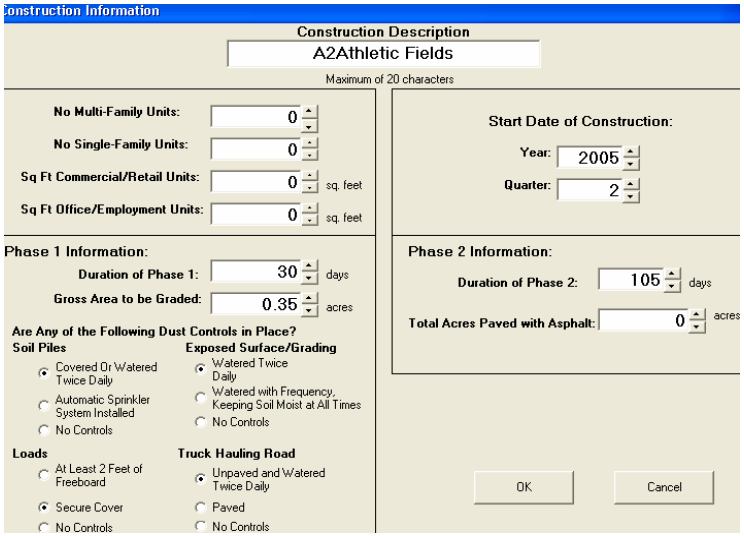

Construction Information
Construction Description
A1Playgrounds
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 0 sq. feet
Start Date of Construction:
Year: 2005
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 3 days
Gross Area to be Graded: 1.5 acres
Phase 2 Information:
Duration of Phase 2: 9 days
Total Acres Paved with Asphalt: 1.38 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

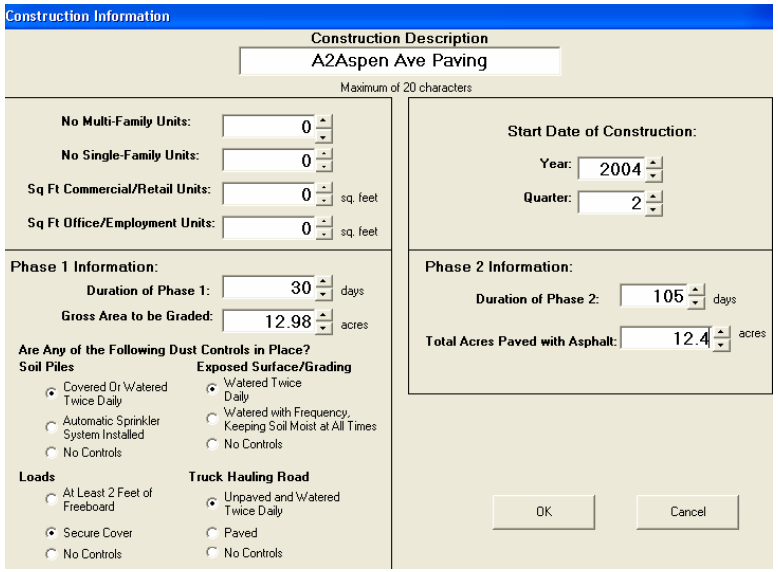
ADP 1

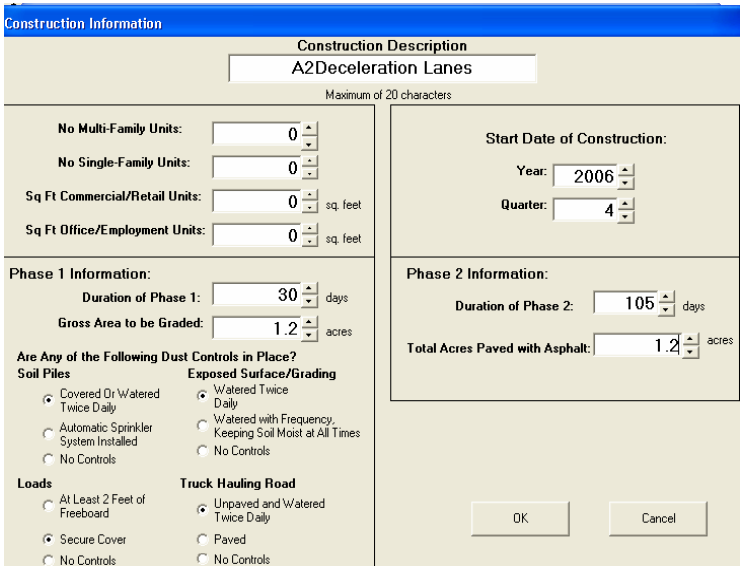

Building Demolition Information
Demolition Description
A1Fuel Bld 200 & 202
Maximum of 20 characters
Duration of Demolition: 160 days
Building Width: 40 feet
Building Length: 40 feet
Building Height: 20 feet
Start Date of Demolition:
Year: 2009
Quarter: 4
OK
Cancel

ADP 2

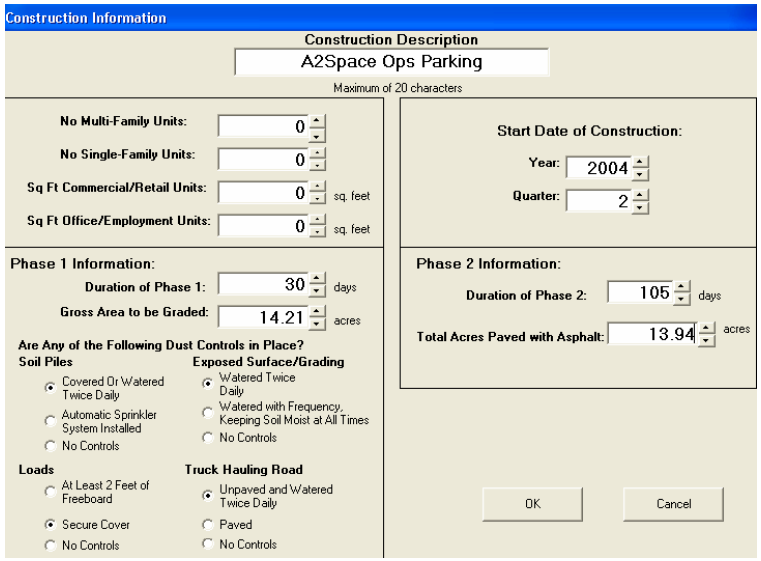

Construction Description
A2 CommActCenter
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 5274 sq. feet
Start Date of Construction:
Year: 2011
Quarter: 4
Duration of Phase 1: 30 days
Gross Area to be Graded: 1 acres
Phase 2 Information:
Duration of Phase 2: 60 days
Total Acres Paved with Asphalt: 0.120 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

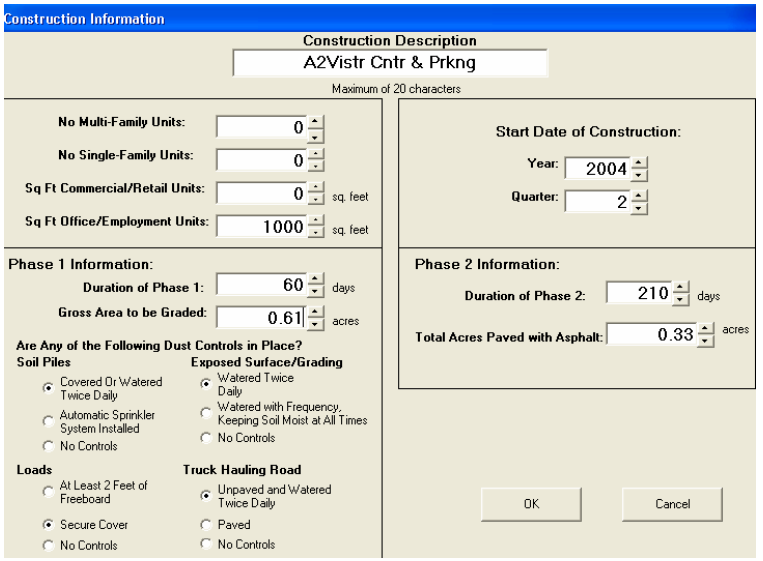

Construction Information
Construction Description
A2Athletic Fields
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 0 sq. feet
Start Date of Construction:
Year: 2005
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 0.35 acres
Phase 2 Information:
Duration of Phase 2: 105 days
Total Acres Paved with Asphalt: 0 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

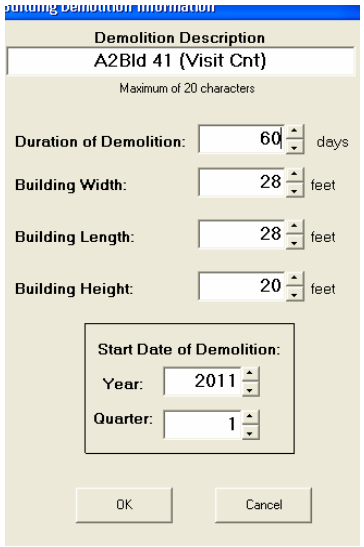

Construction Information
Construction Description
A2Aspen Ave Paving
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 0 sq. feet
Start Date of Construction:
Year: 2004
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 12.98 acres
Phase 2 Information:
Duration of Phase 2: 105 days
Total Acres Paved with Asphalt: 12.4 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

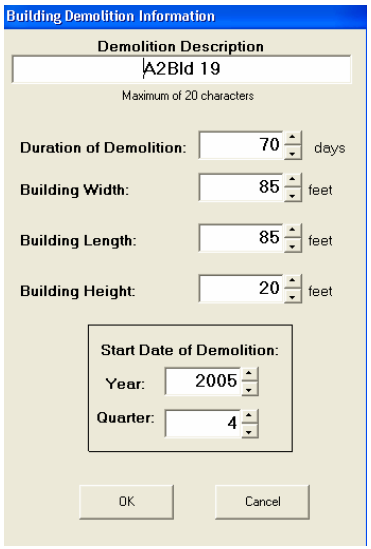

Construction Information
Construction Description
A2Deceleration Lanes
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 0 sq. feet
Start Date of Construction:
Year: 2006
Quarter: 4
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 1.2 acres
Phase 2 Information:
Duration of Phase 2: 105 days
Total Acres Paved with Asphalt: 1.2 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

ADP 2

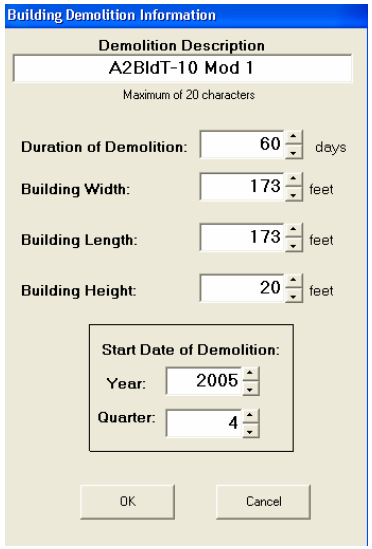

Construction Information
Construction Description
A2Space Ops Parking
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 0 sq. feet
Start Date of Construction:
Year: 2004
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 14.21 acres
Phase 2 Information:
Duration of Phase 2: 105 days
Total Acres Paved with Asphalt: 13.94 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

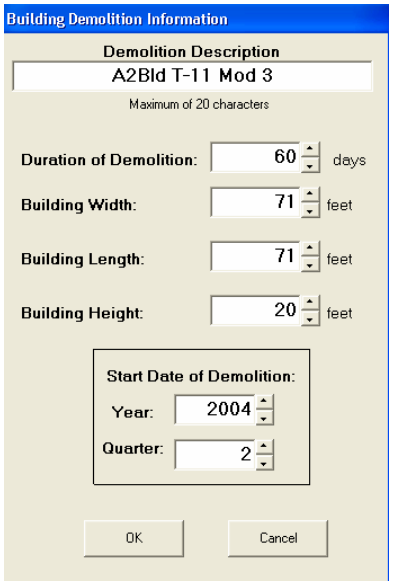

Construction Information
Construction Description
A2Vistr Cntr & Prkng
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 1000 sq. feet
Start Date of Construction:
Year: 2004
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 60 days
Gross Area to be Graded: 0.61 acres
Phase 2 Information:
Duration of Phase 2: 210 days
Total Acres Paved with Asphalt: 0.33 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

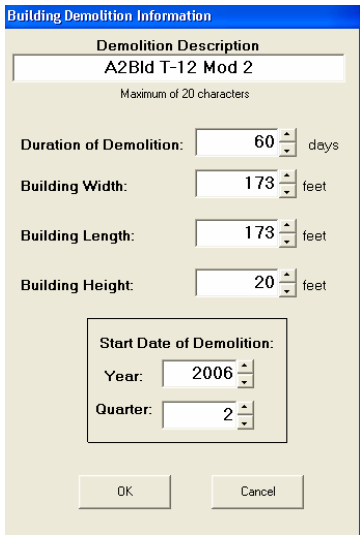

Demolition Description
A2Bld 41 (Visit Cnt)
Maximum of 20 characters
Duration of Demolition: 60 days
Building Width: 28 feet
Building Length: 28 feet
Building Height: 20 feet
Start Date of Demolition:
Year: 2011
Quarter: 1
OK
Cancel

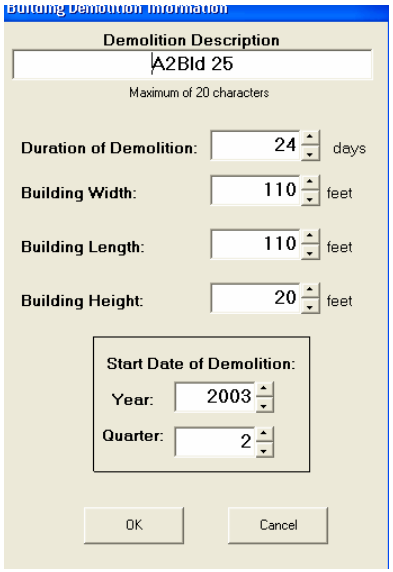

Building Demolition Information
Demolition Description
A2Bld 19
Maximum of 20 characters
Duration of Demolition: 70 days
Building Width: 85 feet
Building Length: 85 feet
Building Height: 20 feet
Start Date of Demolition:
Year: 2005
Quarter: 4
OK
Cancel

ADP 2

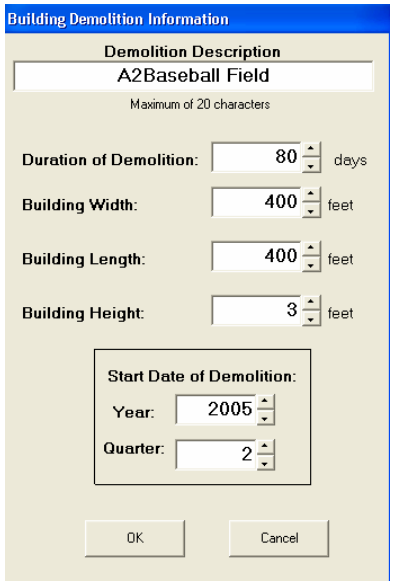

Building Demolition Information
Demolition Description
A2BldT-10 Mod 1
Maximum of 20 characters
Duration of Demolition: 60 days
Building Width: 173 feet
Building Length: 173 feet
Building Height: 20 feet
Start Date of Demolition:
Year: 2005
Quarter: 4
OK
Cancel


Building Demolition Information
Demolition Description
A2Bld T-11 Mod 3
Maximum of 20 characters
Duration of Demolition: 60 days
Building Width: 71 feet
Building Length: 71 feet
Building Height: 20 feet
Start Date of Demolition:
Year: 2004
Quarter: 2
OK
Cancel

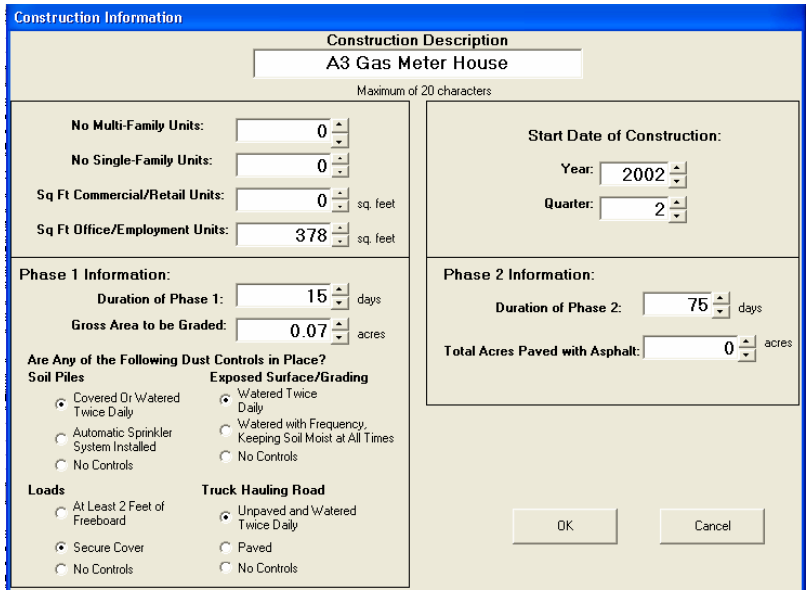

Building Demolition Information
Demolition Description
A2Bld T-12 Mod 2
Maximum of 20 characters
Duration of Demolition: 60 days
Building Width: 173 feet
Building Length: 173 feet
Building Height: 20 feet
Start Date of Demolition:
Year: 2006
Quarter: 2
OK
Cancel

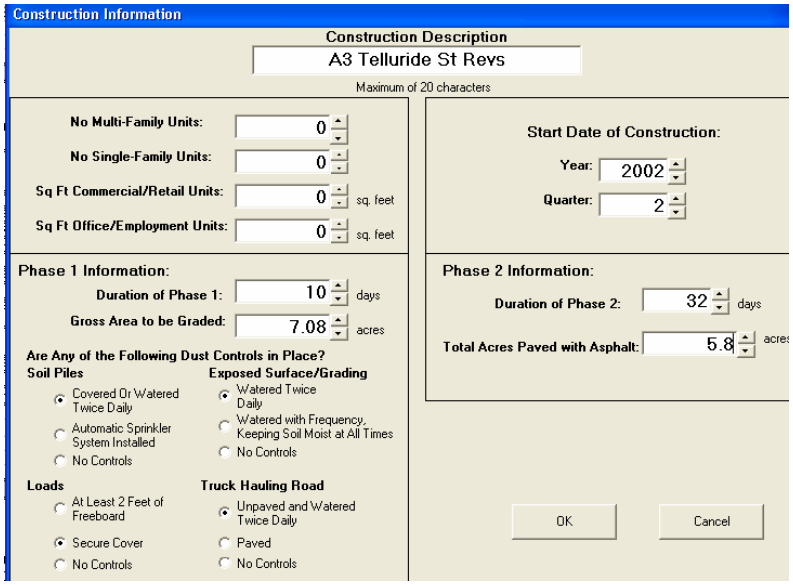

Demolition Description
A2Bld 25
Maximum of 20 characters
Duration of Demolition: 24 days
Building Width: 110 feet
Building Length: 110 feet
Building Height: 20 feet
Start Date of Demolition:
Year: 2003
Quarter: 2
OK
Cancel

ADP 2

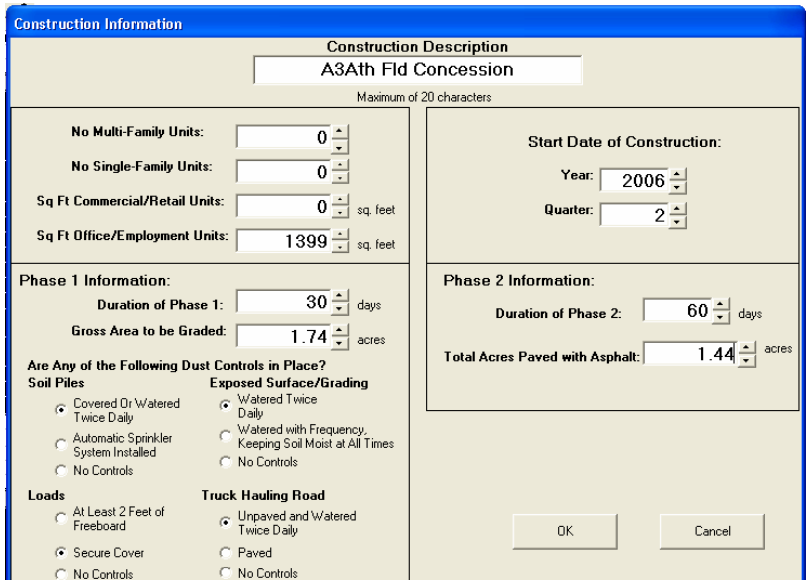

Building Demolition Information
Demolition Description
A2Baseball Field
Maximum of 20 characters
Duration of Demolition:
80
days
Building Width:
400
feet
Building Length:
400
feet
Building Height:
3
feet
Start Date of Demolition:
Year:
2005
Quarter:
2
OK
Cancel

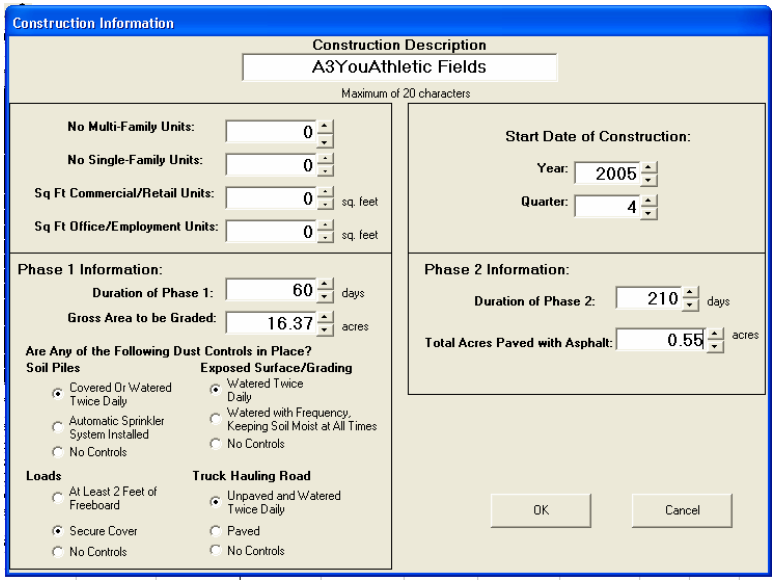
ADP 3

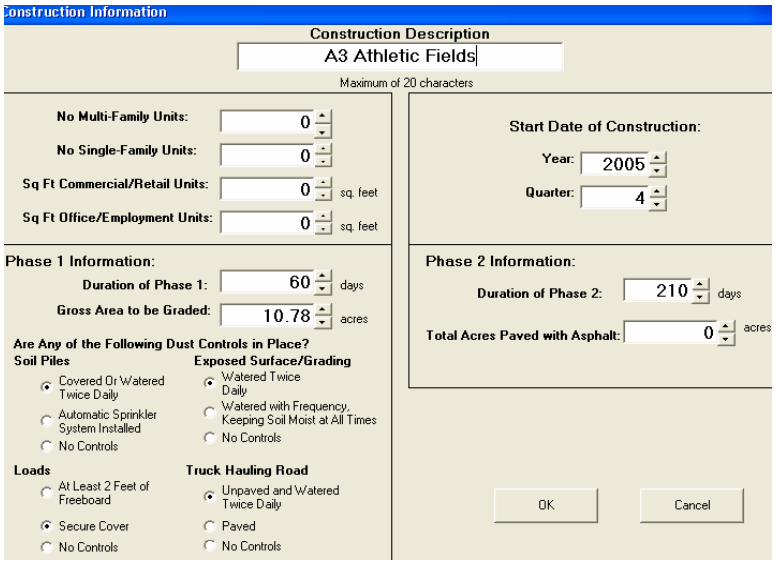

Construction Information
Construction Description
A3 Gas Meter House
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 378 sq. feet
Start Date of Construction:
Year: 2002
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 15 days
Gross Area to be Graded: 0.07 acres
Phase 2 Information:
Duration of Phase 2: 75 days
Total Acres Paved with Asphalt: 0 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel


Construction Information
Construction Description
A3 Telluride St Revs
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 0 sq. feet
Start Date of Construction:
Year: 2002
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 10 days
Gross Area to be Graded: 7.08 acres
Phase 2 Information:
Duration of Phase 2: 32 days
Total Acres Paved with Asphalt: 5.8 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

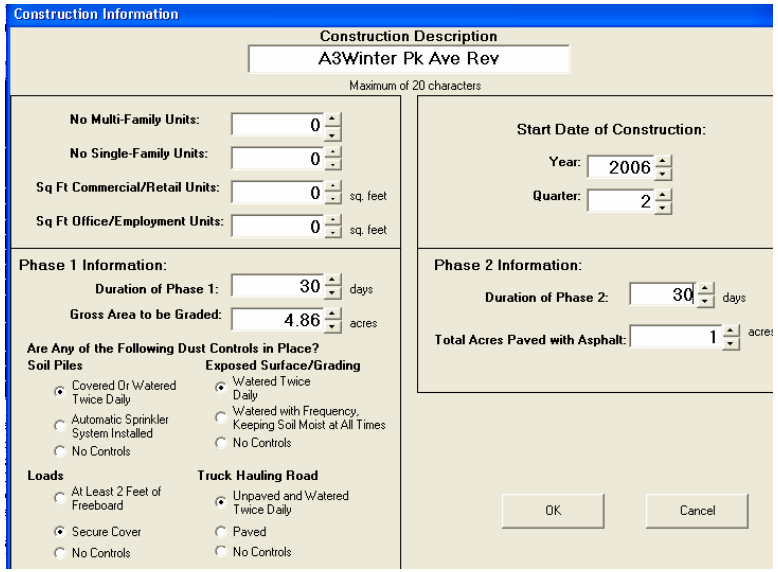
ADP 3

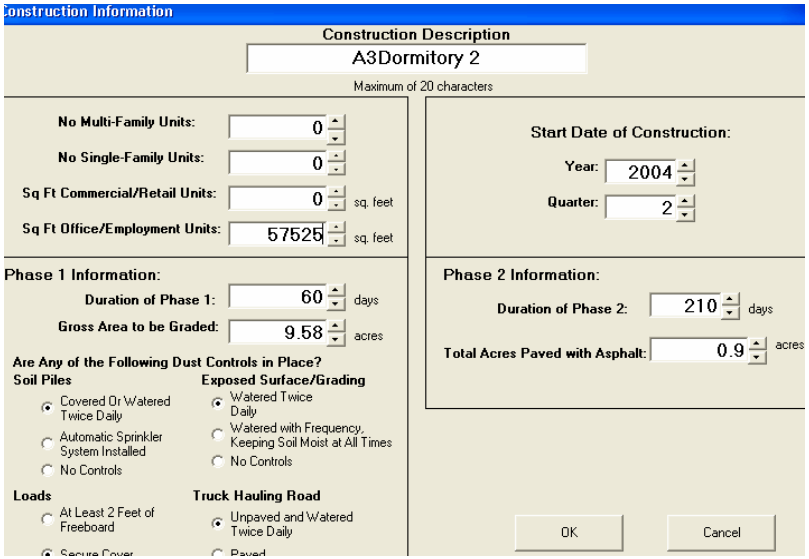

Construction Information
Construction Description
A3Ath Fld Concession
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 1399 sq. feet
Start Date of Construction:
Year: 2006
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 1.74 acres
Phase 2 Information:
Duration of Phase 2: 60 days
Total Acres Paved with Asphalt: 1.44 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

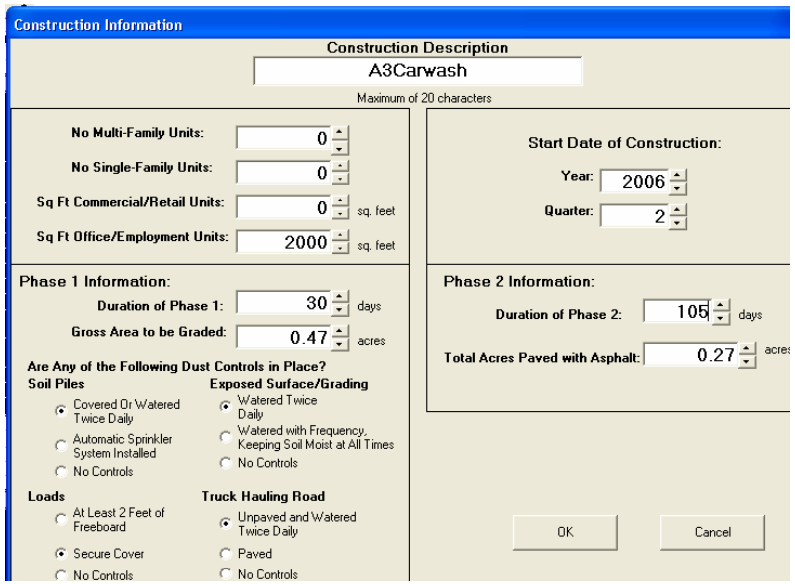

Construction Information
Construction Description
A3YouAthletic Fields
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 0 sq. feet
Start Date of Construction:
Year: 2005
Quarter: 4
Phase 1 Information:
Duration of Phase 1: 60 days
Gross Area to be Graded: 16.37 acres
Phase 2 Information:
Duration of Phase 2: 210 days
Total Acres Paved with Asphalt: 0.55 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

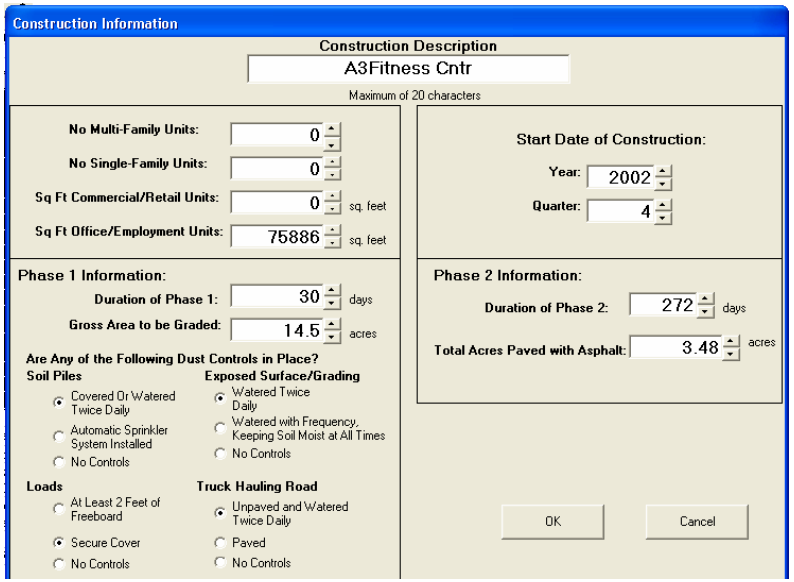

Construction Information
Construction Description
A3 Athletic Fields
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 0 sq. feet
Start Date of Construction:
Year: 2005
Quarter: 4
Phase 1 Information:
Duration of Phase 1: 60 days
Gross Area to be Graded: 10.78 acres
Phase 2 Information:
Duration of Phase 2: 210 days
Total Acres Paved with Asphalt: 0 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

ADP 3

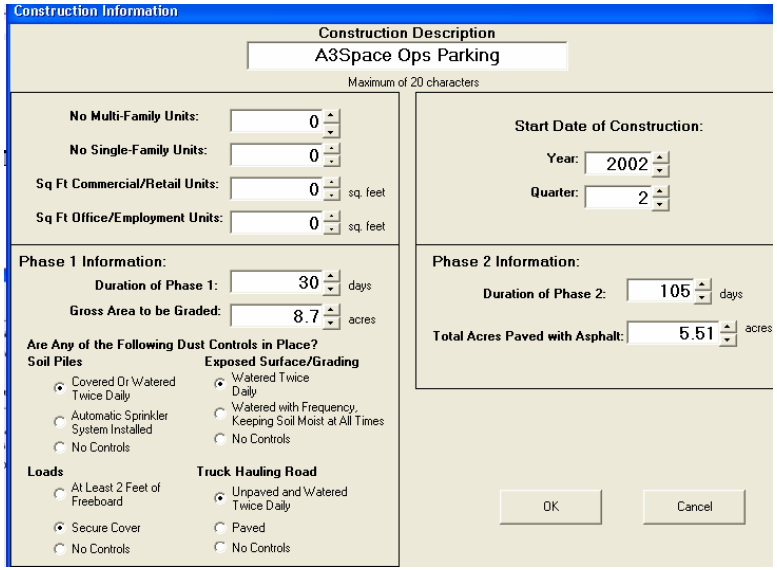

Construction Information
Construction Description
A3Winter Pk Ave Rev
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 0 sq. feet
Start Date of Construction:
Year: 2006
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 4.86 acres
Phase 2 Information:
Duration of Phase 2: 30 days
Total Acres Paved with Asphalt: 1 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

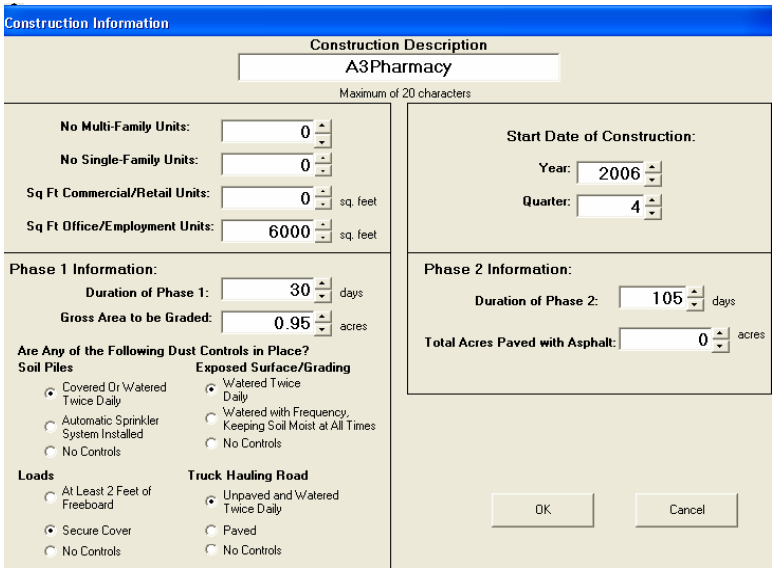

Construction Information
Construction Description
A3Dormitory 2
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 57525 sq. feet
Start Date of Construction:
Year: 2004
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 60 days
Gross Area to be Graded: 9.58 acres
Phase 2 Information:
Duration of Phase 2: 210 days
Total Acres Paved with Asphalt: 0.9 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Truck Hauling Road
Unpaved and Watered Twice Daily
OK
Cancel

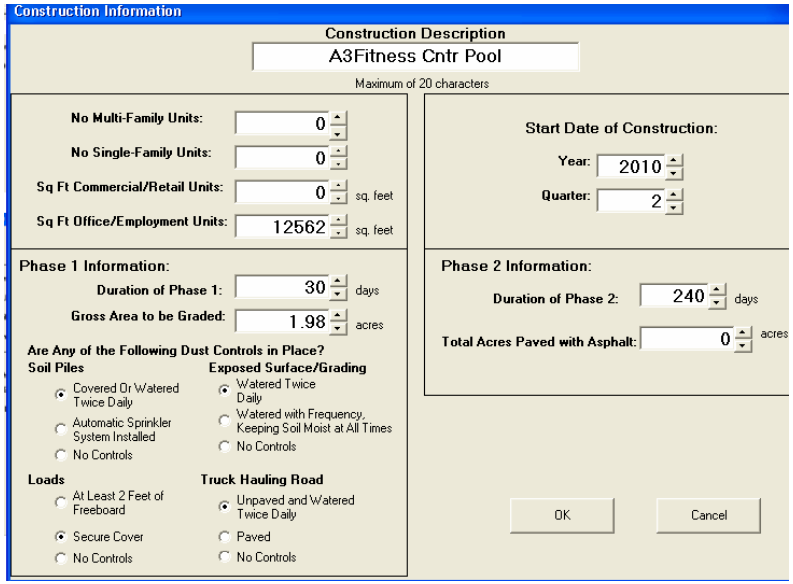

Construction Information
Construction Description
A3Carwash
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 2000 sq. feet
Start Date of Construction:
Year: 2006
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 0.47 acres
Phase 2 Information:
Duration of Phase 2: 105 days
Total Acres Paved with Asphalt: 0.27 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

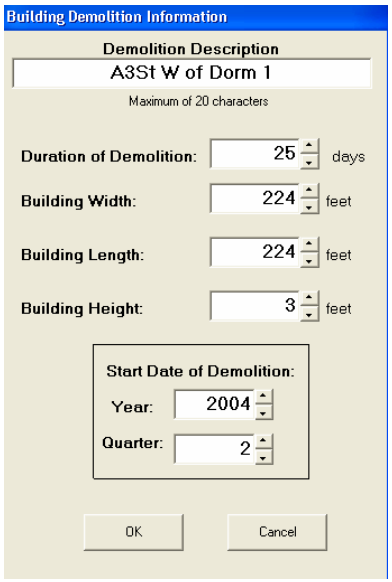

Construction Information
Construction Description
A3Fitness Cntr
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 75886 sq. feet
Start Date of Construction:
Year: 2002
Quarter: 4
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 14.5 acres
Phase 2 Information:
Duration of Phase 2: 272 days
Total Acres Paved with Asphalt: 3.48 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

ADP 3

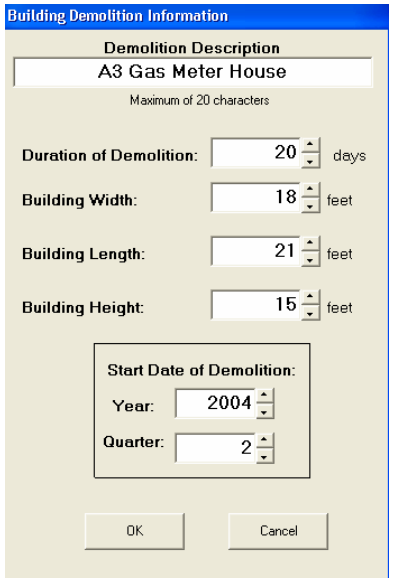

Construction Information
Construction Description
A3Space Ops Parking
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 0 sq. feet
Start Date of Construction:
Year: 2002
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 8.7 acres
Phase 2 Information:
Duration of Phase 2: 105 days
Total Acres Paved with Asphalt: 5.51 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

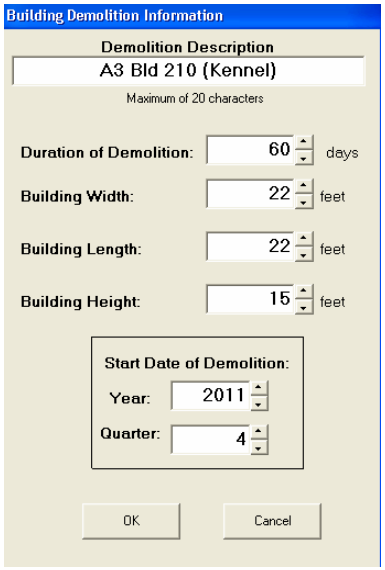

Construction Information
Construction Description
A3Pharmacy
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 6000 sq. feet
Start Date of Construction:
Year: 2006
Quarter: 4
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 0.95 acres
Phase 2 Information:
Duration of Phase 2: 105 days
Total Acres Paved with Asphalt: 0 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

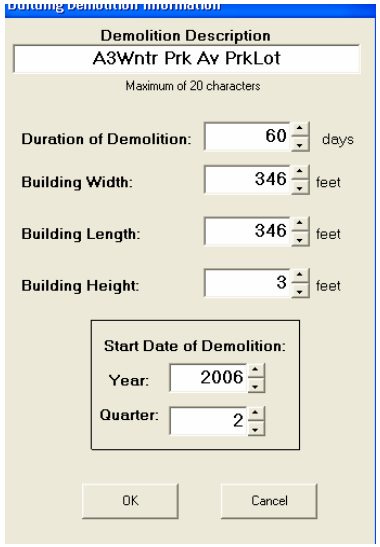

Construction Information
Construction Description
A3Fitness Cntr Pool
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 12562 sq. feet
Start Date of Construction:
Year: 2010
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 1.98 acres
Phase 2 Information:
Duration of Phase 2: 240 days
Total Acres Paved with Asphalt: 0 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel


Building Demolition Information
Demolition Description
A3St W of Dorm 1
Maximum of 20 characters
Duration of Demolition: 25 days
Building Width: 224 feet
Building Length: 224 feet
Building Height: 3 feet
Start Date of Demolition:
Year: 2004
Quarter: 2
OK
Cancel

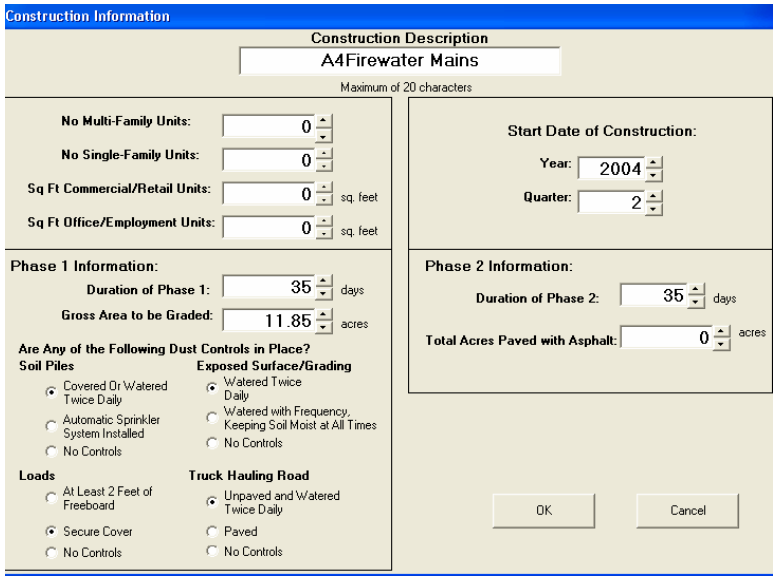
ADP 3

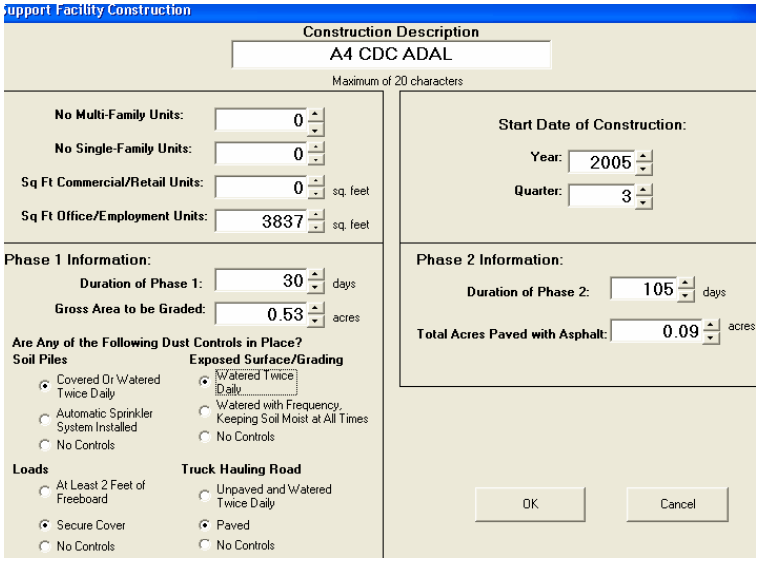

Building Demolition Information
Demolition Description
A3 Gas Meter House
Maximum of 20 characters
Duration of Demolition: 20 days
Building Width: 18 feet
Building Length: 21 feet
Building Height: 15 feet
Start Date of Demolition:
Year: 2004
Quarter: 2
OK
Cancel

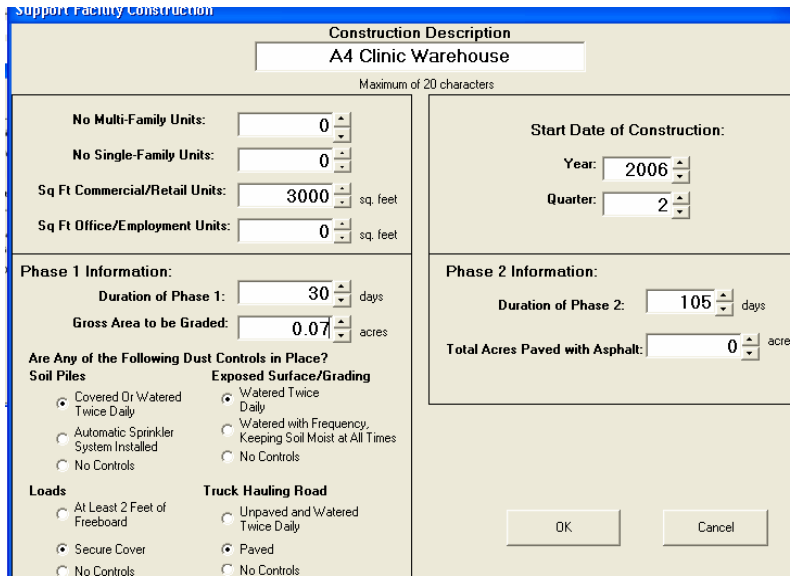

Building Demolition Information
Demolition Description
A3 Bld 210 (Kennel)
Maximum of 20 characters
Duration of Demolition: 60 days
Building Width: 22 feet
Building Length: 22 feet
Building Height: 15 feet
Start Date of Demolition:
Year: 2011
Quarter: 4
OK
Cancel

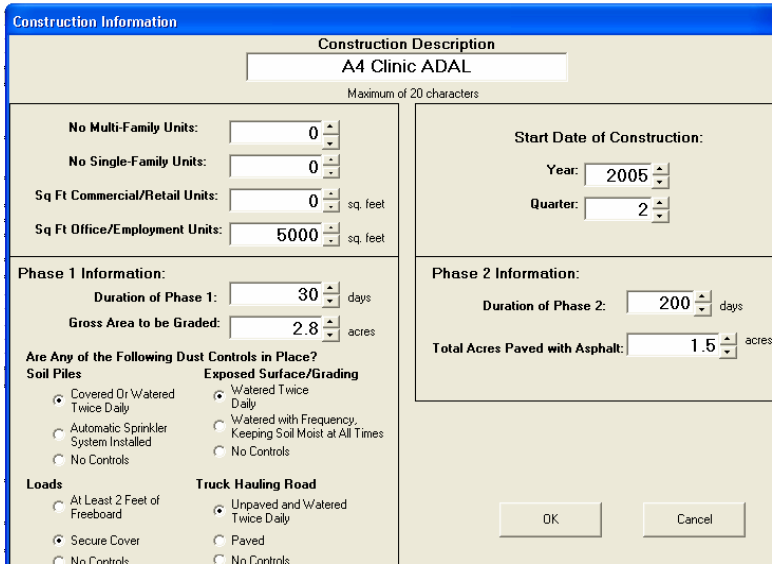

Demolition Description
A3Wntr Prk Av PrkLot
Maximum of 20 characters
Duration of Demolition: 60 days
Building Width: 346 feet
Building Length: 346 feet
Building Height: 3 feet
Start Date of Demolition:
Year: 2006
Quarter: 2
OK
Cancel

ADP 4

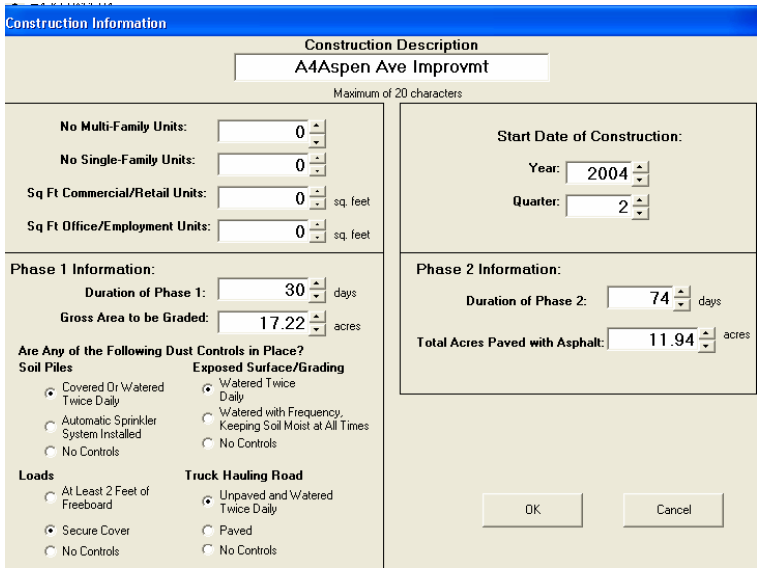

Construction Information
Construction Description
A4Firewater Mains
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 0 sq. feet
Start Date of Construction:
Year: 2004
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 35 days
Gross Area to be Graded: 11.85 acres
Phase 2 Information:
Duration of Phase 2: 35 days
Total Acres Paved with Asphalt: 0 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

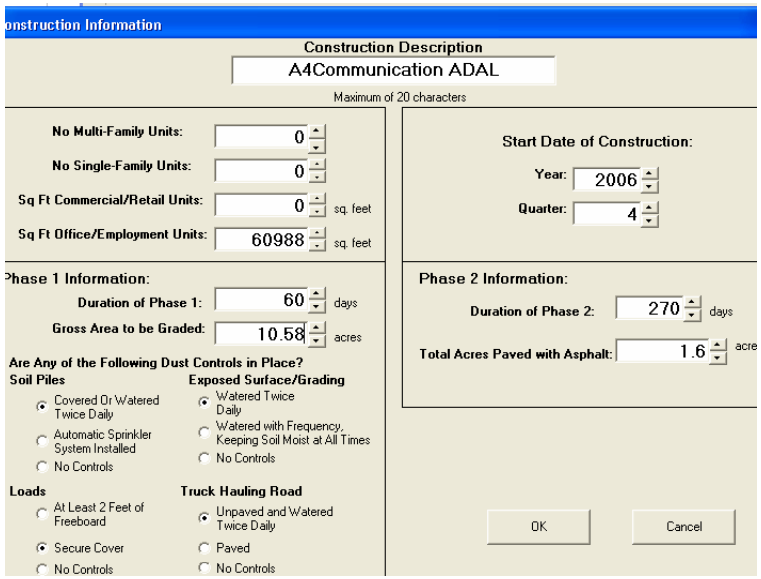

Support Facility Construction
Construction Description
A4 CDC ADAL
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 3837 sq. feet
Start Date of Construction:
Year: 2005
Quarter: 3
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 0.53 acres
Phase 2 Information:
Duration of Phase 2: 105 days
Total Acres Paved with Asphalt: 0.09 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

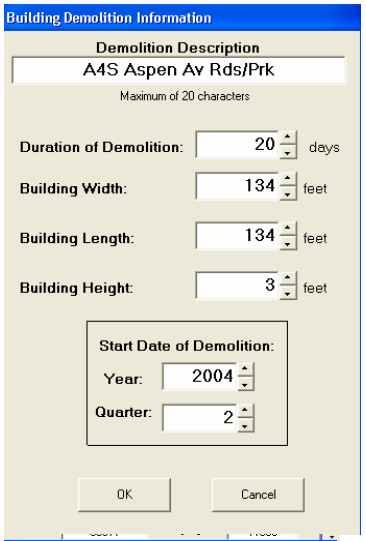

Support Facility Construction
Construction Description
A4 Clinic Warehouse
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 3000 sq. feet
Sq Ft Office/Employment Units: 0 sq. feet
Start Date of Construction:
Year: 2006
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 0.07 acres
Phase 2 Information:
Duration of Phase 2: 105 days
Total Acres Paved with Asphalt: 0 acre
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

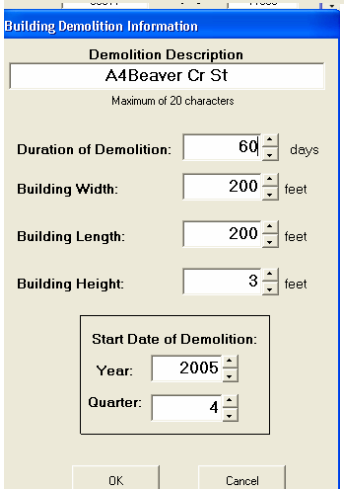

Construction Information
Construction Description
A4 Clinic ADAL
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 5000 sq. feet
Start Date of Construction:
Year: 2005
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 2.8 acres
Phase 2 Information:
Duration of Phase 2: 200 days
Total Acres Paved with Asphalt: 1.5 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
OK
Cancel

ADP 4

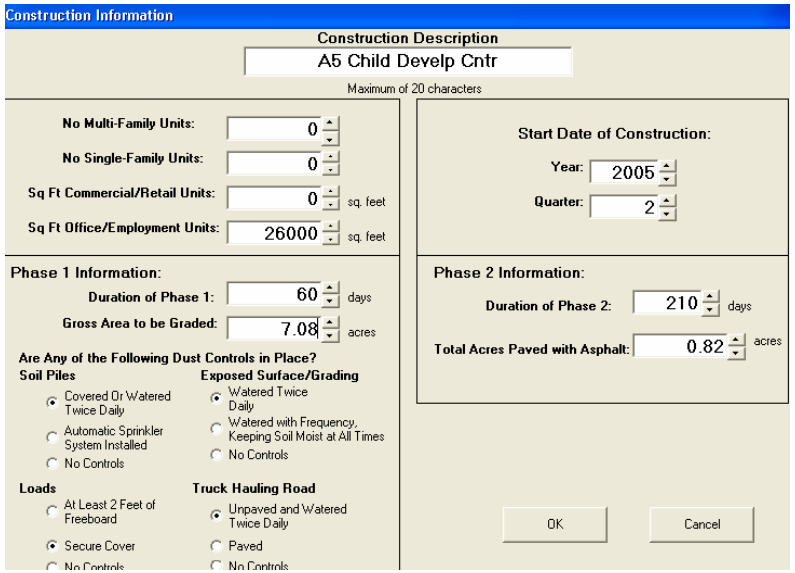

Construction Information
Construction Description
A4Aspen Ave Improvmt
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 0 sq. feet
Start Date of Construction:
Year: 2004
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 17.22 acres
Phase 2 Information:
Duration of Phase 2: 74 days
Total Acres Paved with Asphalt: 11.94 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

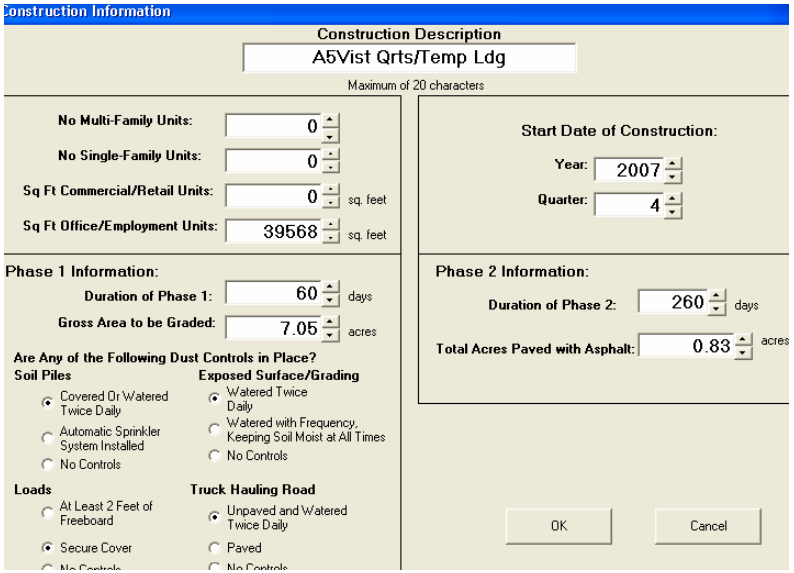

onstruction Information
Construction Description
A4Communication ADAL
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 60988 sq. feet
Start Date of Construction:
Year: 2006
Quarter: 4
hase 1 Information:
Duration of Phase 1: 60 days
Gross Area to be Graded: 10.58 acres
Phase 2 Information:
Duration of Phase 2: 270 days
Total Acres Paved with Asphalt: 1.6 acre
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

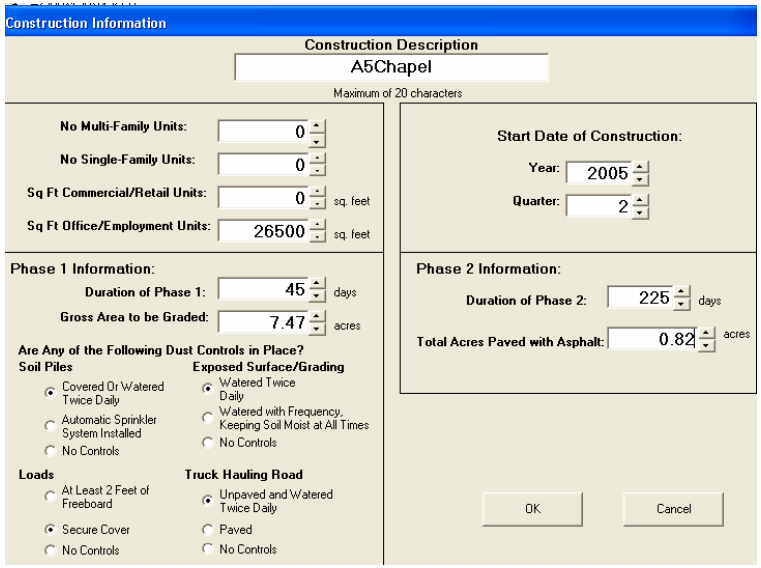

Building Demolition Information
Demolition Description
A4S Aspen Av Rds/Prk
Maximum of 20 characters
Duration of Demolition: 20 days
Building Width: 134 feet
Building Length: 134 feet
Building Height: 3 feet
Start Date of Demolition:
Year: 2004
Quarter: 2
OK
Cancel

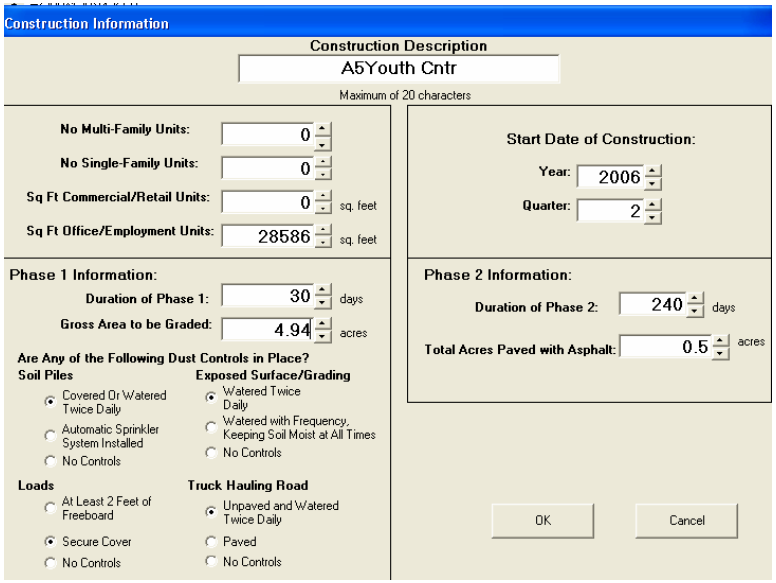

Building Demolition Information
Demolition Description
A4Beaver Cr St
Maximum of 20 characters
Duration of Demolition: 60 days
Building Width: 200 feet
Building Length: 200 feet
Building Height: 3 feet
Start Date of Demolition:
Year: 2005
Quarter: 4
OK
Cancel

ADP 5

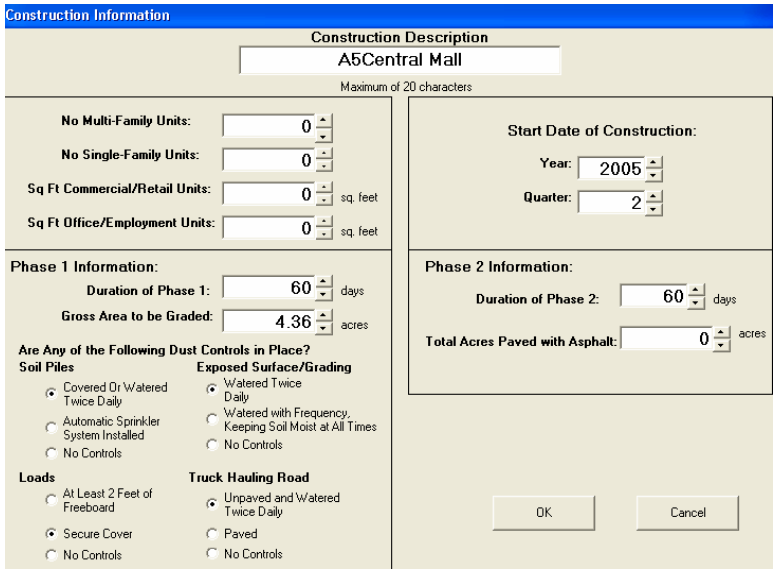

Construction Information
Construction Description
A5 Child Develp Cntr
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 26000 sq. feet
Start Date of Construction:
Year: 2005
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 60 days
Gross Area to be Graded: 7.08 acres
Phase 2 Information:
Duration of Phase 2: 210 days
Total Acres Paved with Asphalt: 0.82 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

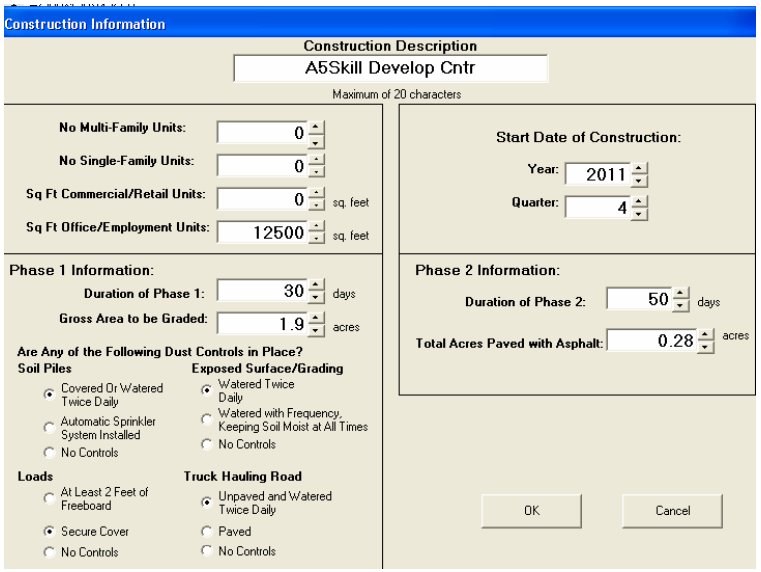

Construction Information
Construction Description
A5Vist Qrts/Temp Ldg
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 39568 sq. feet
Start Date of Construction:
Year: 2007
Quarter: 4
Phase 1 Information:
Duration of Phase 1: 60 days
Gross Area to be Graded: 7.05 acres
Phase 2 Information:
Duration of Phase 2: 260 days
Total Acres Paved with Asphalt: 0.83 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
OK
Cancel

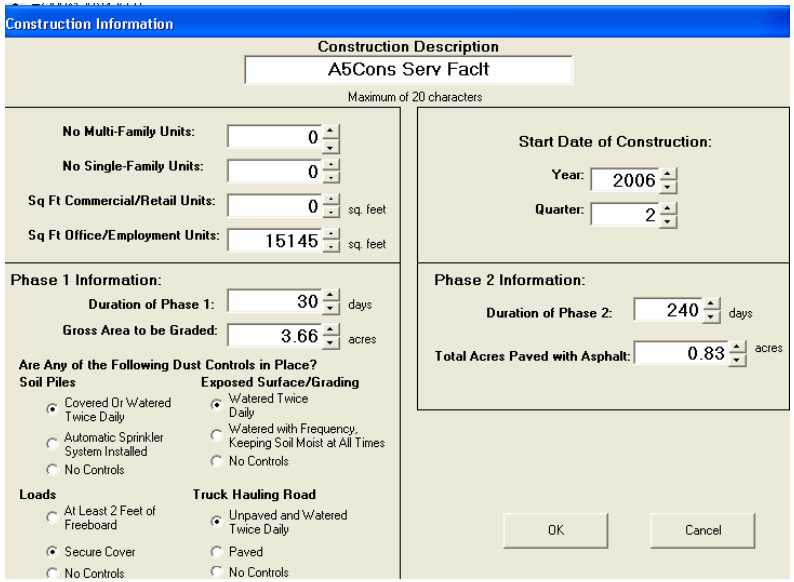

Construction Information
Construction Description
A5Chapel
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 26500 sq. feet
Start Date of Construction:
Year: 2005
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 45 days
Gross Area to be Graded: 7.47 acres
Phase 2 Information:
Duration of Phase 2: 225 days
Total Acres Paved with Asphalt: 0.82 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

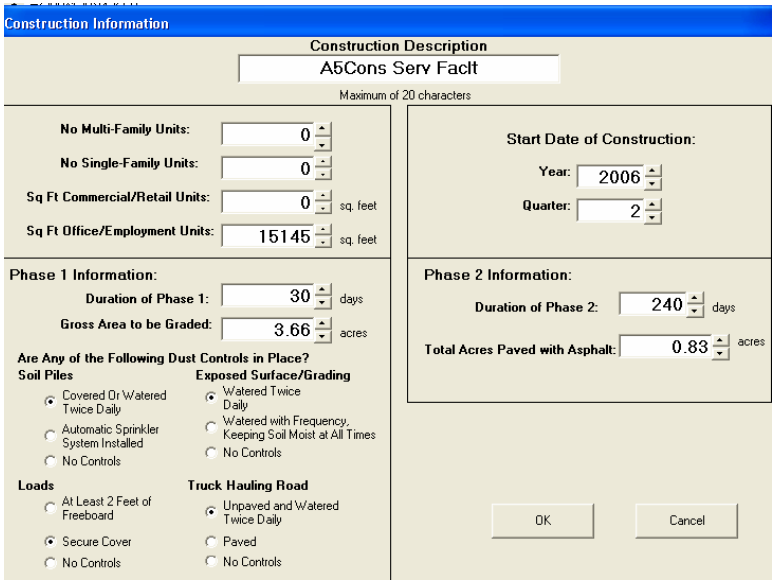

Construction Information
Construction Description
A5Youth Cntr
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 28586 sq. feet
Start Date of Construction:
Year: 2006
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 4.94 acres
Phase 2 Information:
Duration of Phase 2: 240 days
Total Acres Paved with Asphalt: 0.5 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

ADP 5

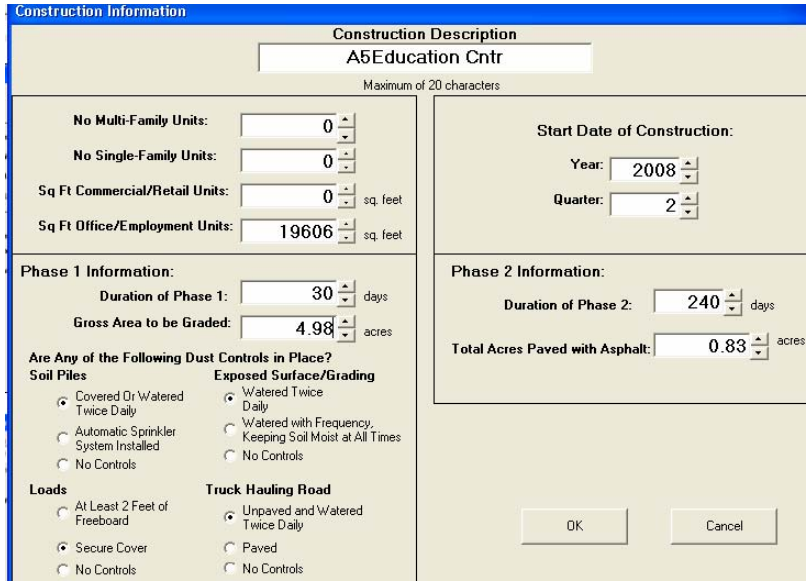

Construction Information
Construction Description
A5Central Mall
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 0 sq. feet
Start Date of Construction:
Year: 2005
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 60 days
Gross Area to be Graded: 4.36 acres
Phase 2 Information:
Duration of Phase 2: 60 days
Total Acres Paved with Asphalt: 0 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

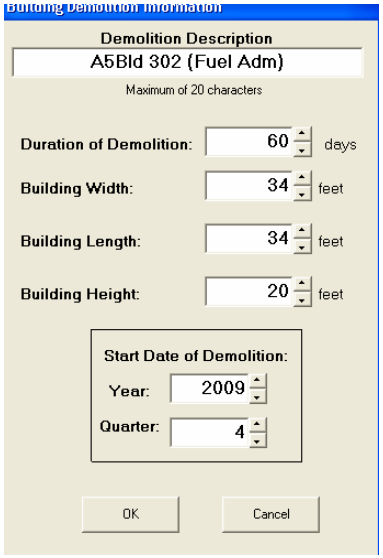

Construction Information
Construction Description
A5Skill Develop Cntr
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 12500 sq. feet
Start Date of Construction:
Year: 2011
Quarter: 4
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 1.9 acres
Phase 2 Information:
Duration of Phase 2: 50 days
Total Acres Paved with Asphalt: 0.28 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

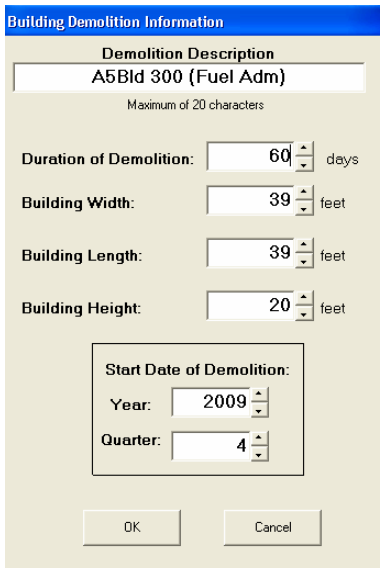

Construction Information
Construction Description
A5Cons Serv Facit
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 15145 sq. feet
Start Date of Construction:
Year: 2006
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 3.66 acres
Phase 2 Information:
Duration of Phase 2: 240 days
Total Acres Paved with Asphalt: 0.83 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

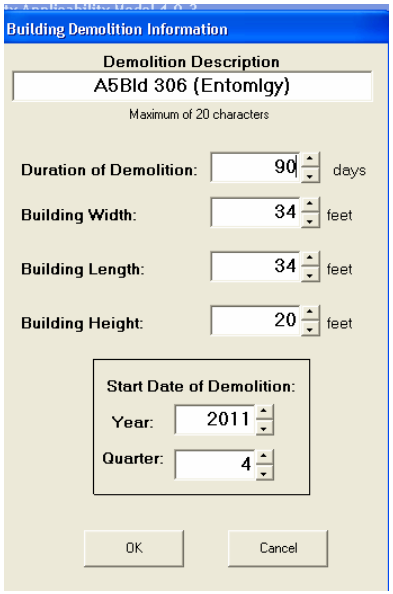

Construction Information
Construction Description
A5Cons Serv Facit
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 15145 sq. feet
Start Date of Construction:
Year: 2006
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 3.66 acres
Phase 2 Information:
Duration of Phase 2: 240 days
Total Acres Paved with Asphalt: 0.83 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

ADP 5

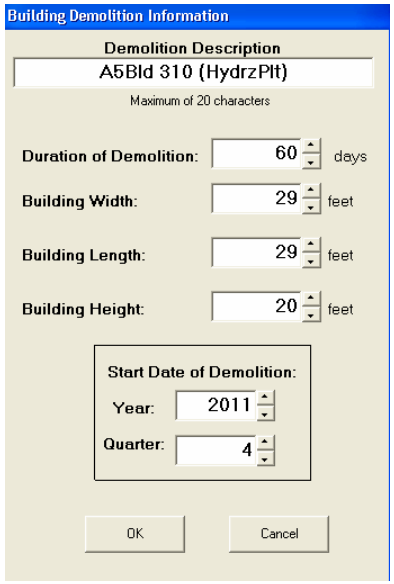

Construction Information
Construction Description
A5Education Cntr
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 19606 sq. feet
Start Date of Construction:
Year: 2008
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 4.98 acres
Phase 2 Information:
Duration of Phase 2: 240 days
Total Acres Paved with Asphalt: 0.83 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

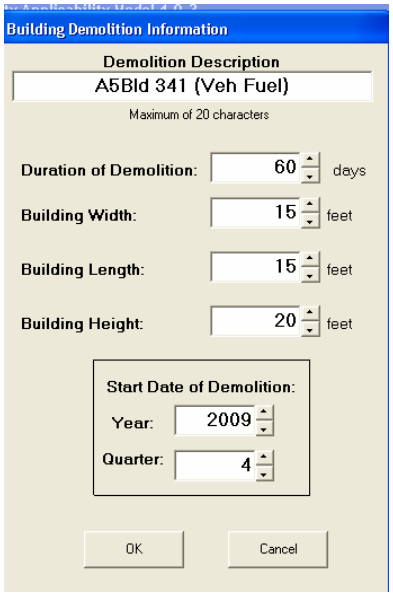

Building Demolition Information
Demolition Description
A5Bld 302 (Fuel Adm)
Maximum of 20 characters
Duration of Demolition: 60 days
Building Width: 34 feet
Building Length: 34 feet
Building Height: 20 feet
Start Date of Demolition:
Year: 2009
Quarter: 4
OK
Cancel


Building Demolition Information
Demolition Description
A5Bld 300 (Fuel Adm)
Maximum of 20 characters
Duration of Demolition: 60 days
Building Width: 39 feet
Building Length: 39 feet
Building Height: 20 feet
Start Date of Demolition:
Year: 2009
Quarter: 4
OK
Cancel

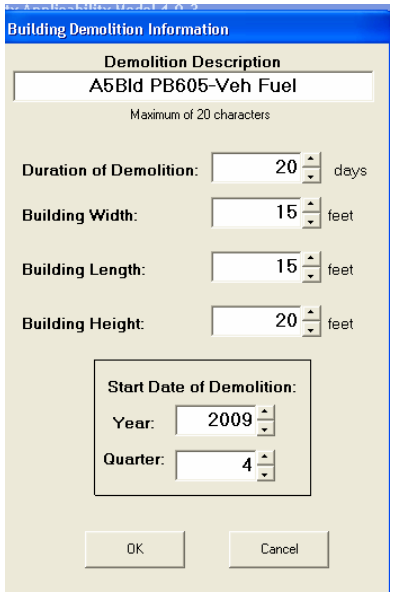

Building Demolition Information
Demolition Description
A5Bld 306 (Entomlgy)
Maximum of 20 characters
Duration of Demolition: 90 days
Building Width: 34 feet
Building Length: 34 feet
Building Height: 20 feet
Start Date of Demolition:
Year: 2011
Quarter: 4
OK
Cancel

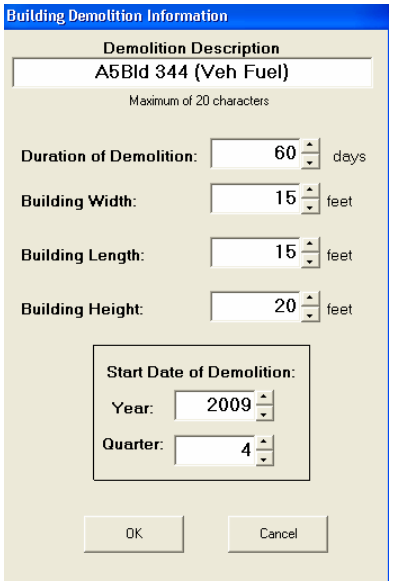
ADP 5


Building Demolition Information
Demolition Description
A5Bld 310 (HydrzPlt)
Maximum of 20 characters
Duration of Demolition: 60 days
Building Width: 29 feet
Building Length: 29 feet
Building Height: 20 feet
Start Date of Demolition:
Year: 2011
Quarter: 4
OK
Cancel

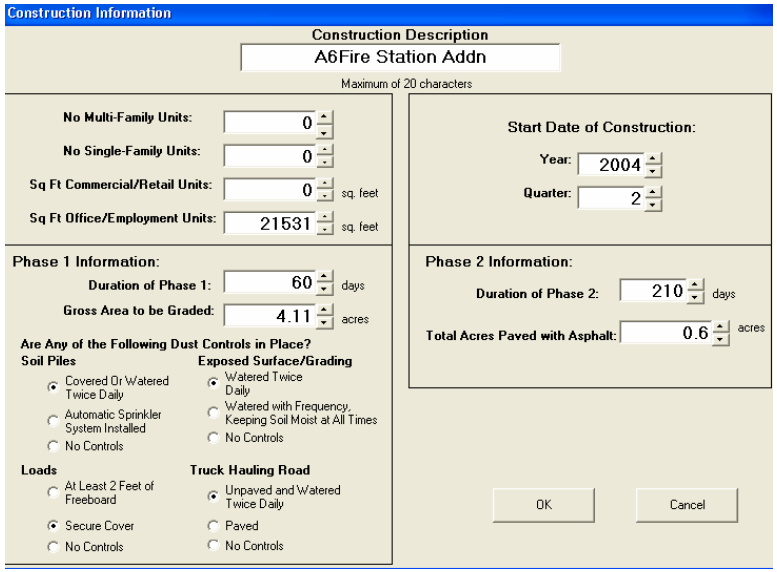

Building Demolition Information
Demolition Description
A5Bld 341 (Veh Fuel)
Maximum of 20 characters
Duration of Demolition: 60 days
Building Width: 15 feet
Building Length: 15 feet
Building Height: 20 feet
Start Date of Demolition:
Year: 2009
Quarter: 4
OK
Cancel

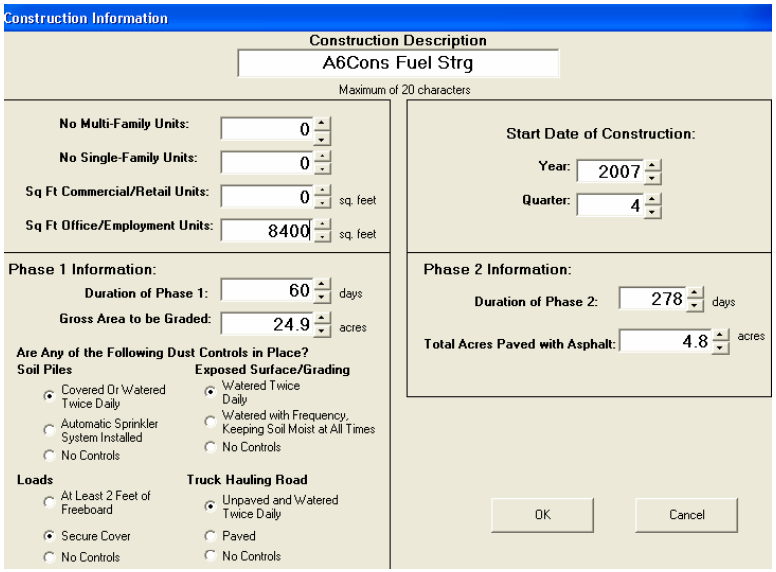
ADP 5

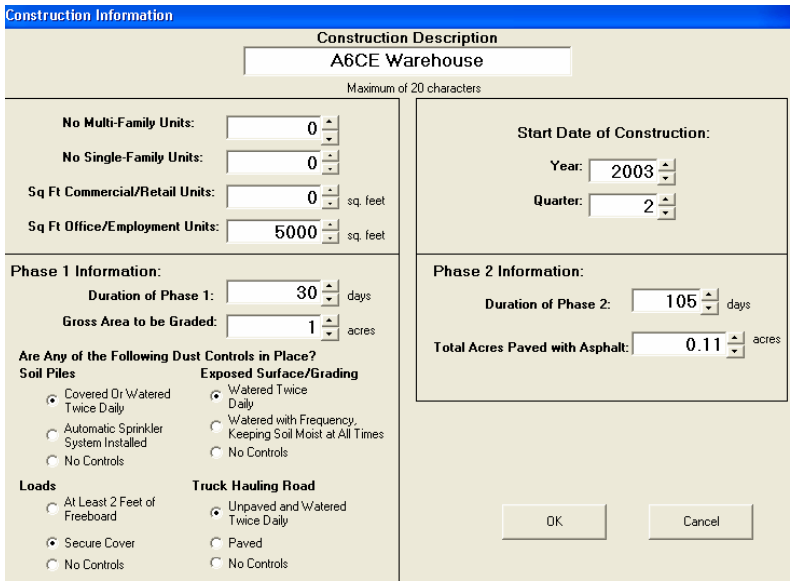

Building Demolition Information
Demolition Description
A5Bld PB605-Veh Fuel
Maximum of 20 characters
Duration of Demolition: 20 days
Building Width: 15 feet
Building Length: 15 feet
Building Height: 20 feet
Start Date of Demolition:
Year: 2009
Quarter: 4
OK
Cancel


Building Demolition Information
Demolition Description
A5Bld 344 (Veh Fuel)
Maximum of 20 characters
Duration of Demolition: 60 days
Building Width: 15 feet
Building Length: 15 feet
Building Height: 20 feet
Start Date of Demolition:
Year: 2009
Quarter: 4
OK
Cancel

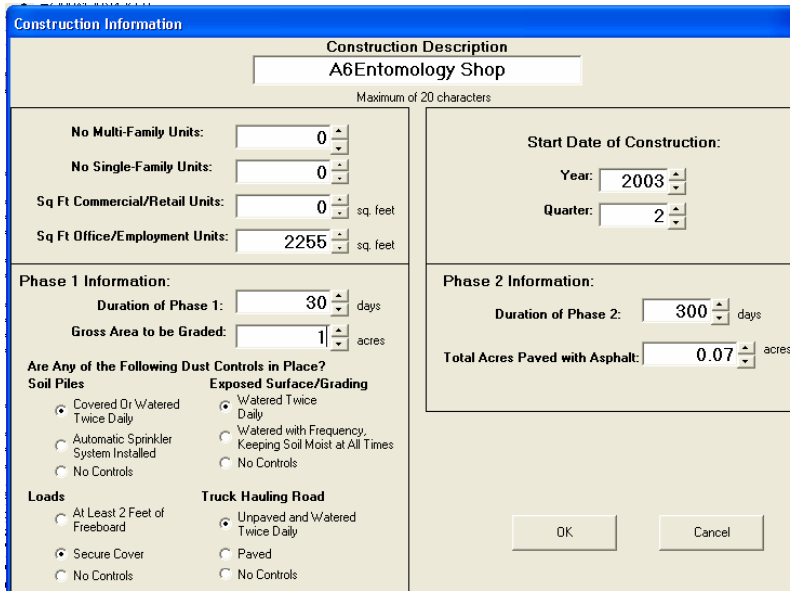
ADP 6

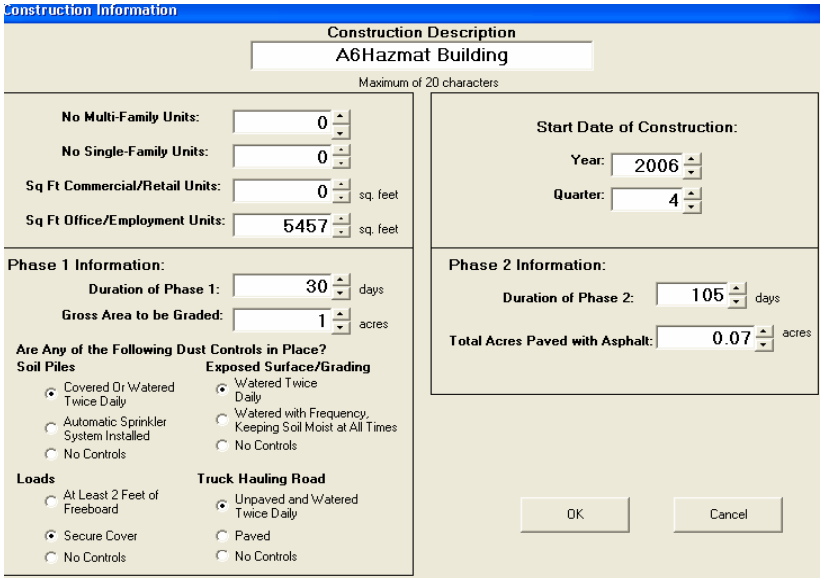

Construction Information
Construction Description
A6Fire Station Addn
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 21531 sq. feet
Start Date of Construction:
Year: 2004
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 60 days
Gross Area to be Graded: 4.11 acres
Phase 2 Information:
Duration of Phase 2: 210 days
Total Acres Paved with Asphalt: 0.6 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

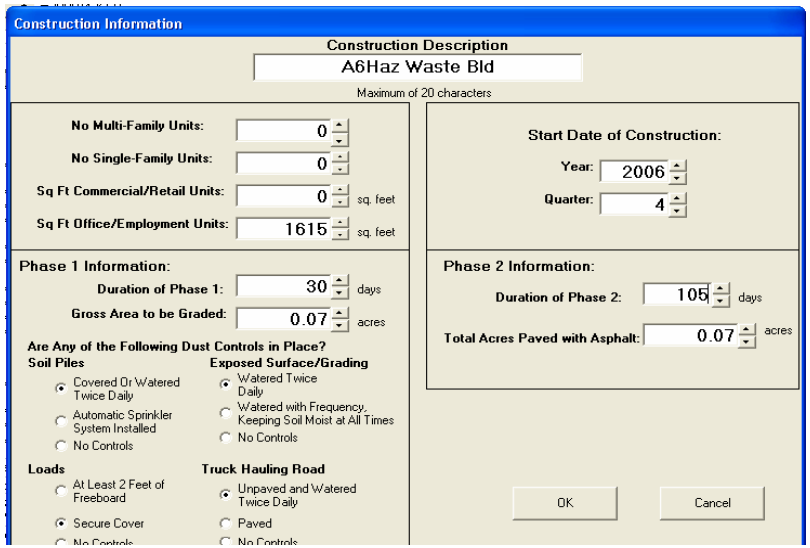

Construction Information
Construction Description
A6Cons Fuel Strg
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 8400 sq. feet
Start Date of Construction:
Year: 2007
Quarter: 4
Phase 1 Information:
Duration of Phase 1: 60 days
Gross Area to be Graded: 24.9 acres
Phase 2 Information:
Duration of Phase 2: 278 days
Total Acres Paved with Asphalt: 4.8 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

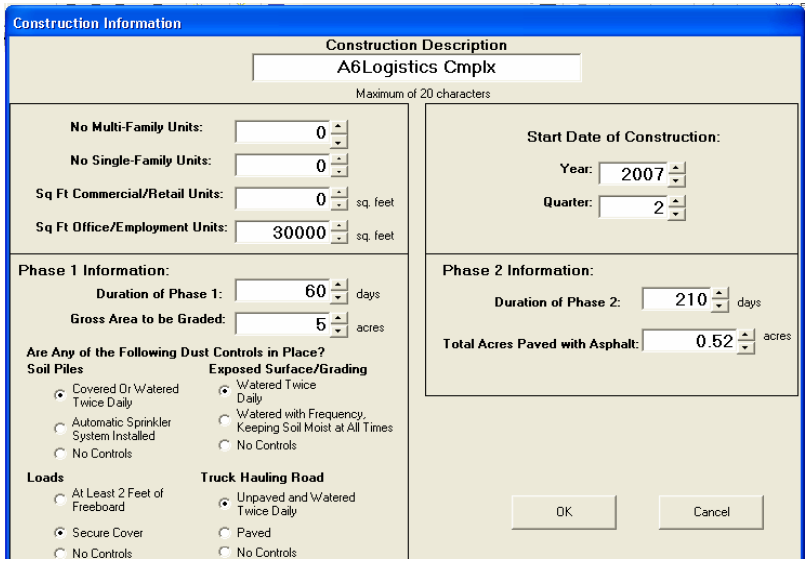

Construction Information
Construction Description
A6CE Warehouse
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 5000 sq. feet
Start Date of Construction:
Year: 2003
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 1 acres
Phase 2 Information:
Duration of Phase 2: 105 days
Total Acres Paved with Asphalt: 0.11 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

ADP 6

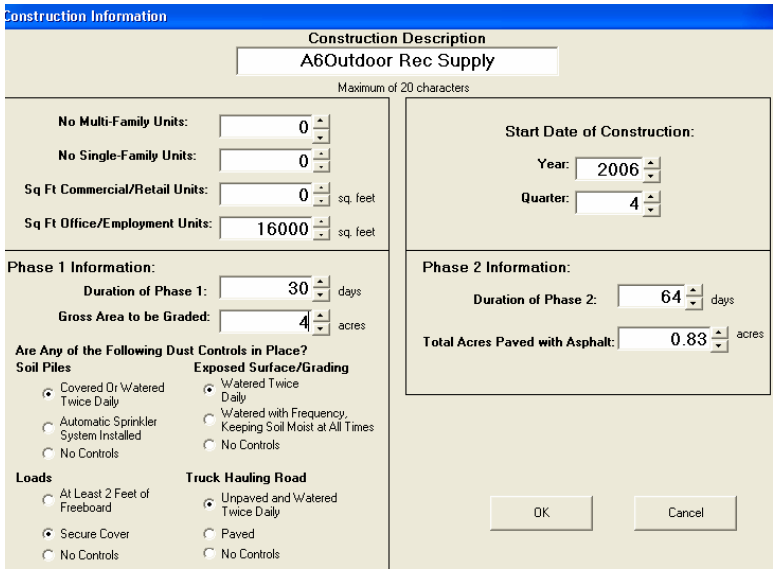

Construction Information
Construction Description
A6Entomology Shop
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 2255 sq. feet
Start Date of Construction:
Year: 2003
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 1 acres
Phase 2 Information:
Duration of Phase 2: 300 days
Total Acres Paved with Asphalt: 0.07 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

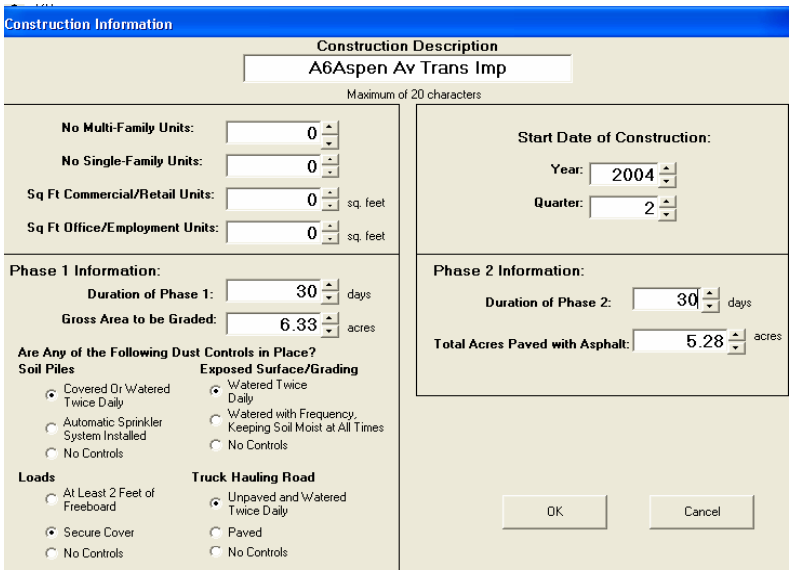

Construction Information
Construction Description
A6Hazmat Building
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 5457 sq. feet
Start Date of Construction:
Year: 2006
Quarter: 4
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 1 acres
Phase 2 Information:
Duration of Phase 2: 105 days
Total Acres Paved with Asphalt: 0.07 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

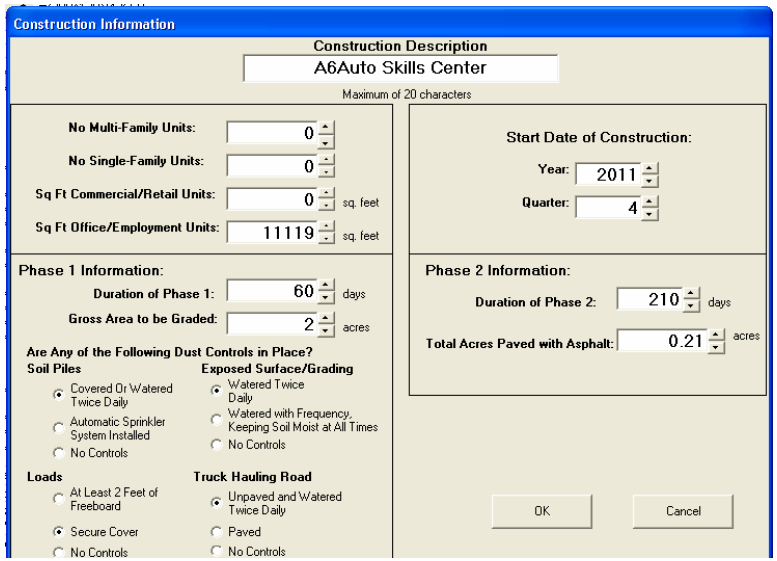

Construction Information
Construction Description
A6Haz Waste Bld
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 1615 sq. feet
Start Date of Construction:
Year: 2006
Quarter: 4
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 0.07 acres
Phase 2 Information:
Duration of Phase 2: 105 days
Total Acres Paved with Asphalt: 0.07 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
OK
Cancel

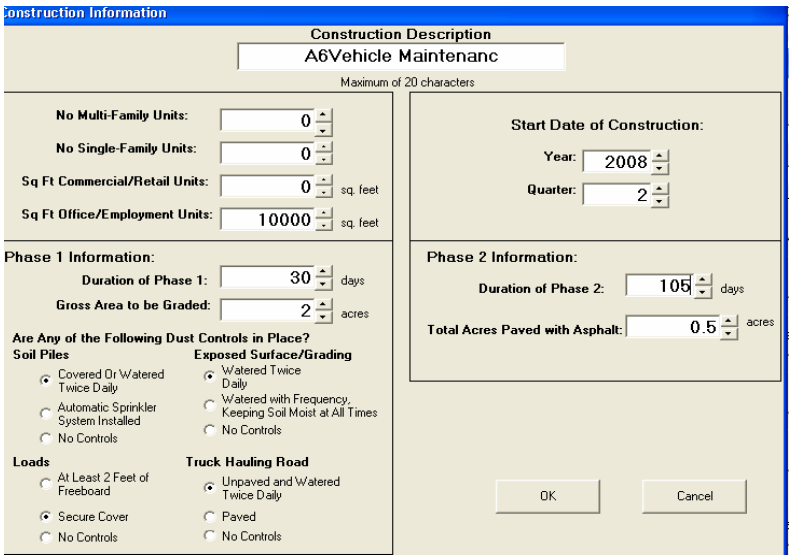

Construction Information
Construction Description
A6Logistics Cmplx
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 30000 sq. feet
Start Date of Construction:
Year: 2007
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 60 days
Gross Area to be Graded: 5 acres
Phase 2 Information:
Duration of Phase 2: 210 days
Total Acres Paved with Asphalt: 0.52 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

ADP 6

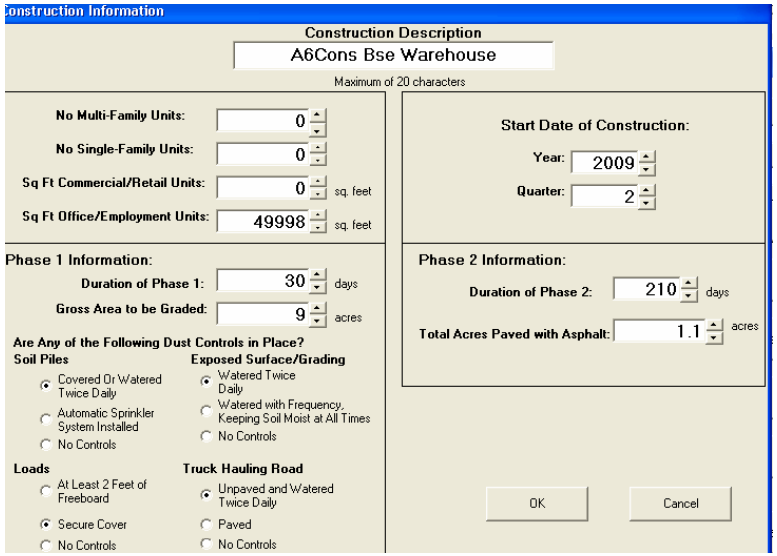

Construction Information
Construction Description
A6Outdoor Rec Supply
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 16000 sq. feet
Start Date of Construction:
Year: 2006
Quarter: 4
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 4 acres
Phase 2 Information:
Duration of Phase 2: 64 days
Total Acres Paved with Asphalt: 0.83 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel


Construction Information
Construction Description
A6Aspen Av Trans Imp
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 0 sq. feet
Start Date of Construction:
Year: 2004
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 6.33 acres
Phase 2 Information:
Duration of Phase 2: 30 days
Total Acres Paved with Asphalt: 5.28 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

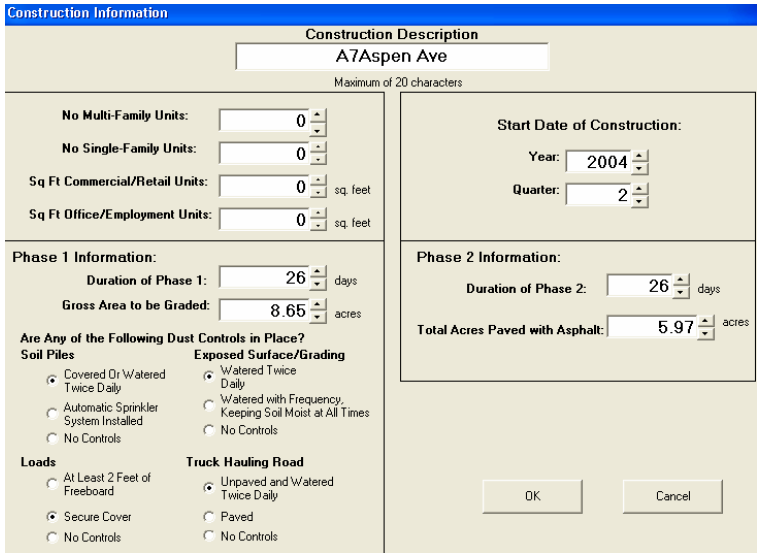

Construction Information
Construction Description
A6Auto Skills Center
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 11119 sq. feet
Start Date of Construction:
Year: 2011
Quarter: 4
Phase 1 Information:
Duration of Phase 1: 60 days
Gross Area to be Graded: 2 acres
Phase 2 Information:
Duration of Phase 2: 210 days
Total Acres Paved with Asphalt: 0.21 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

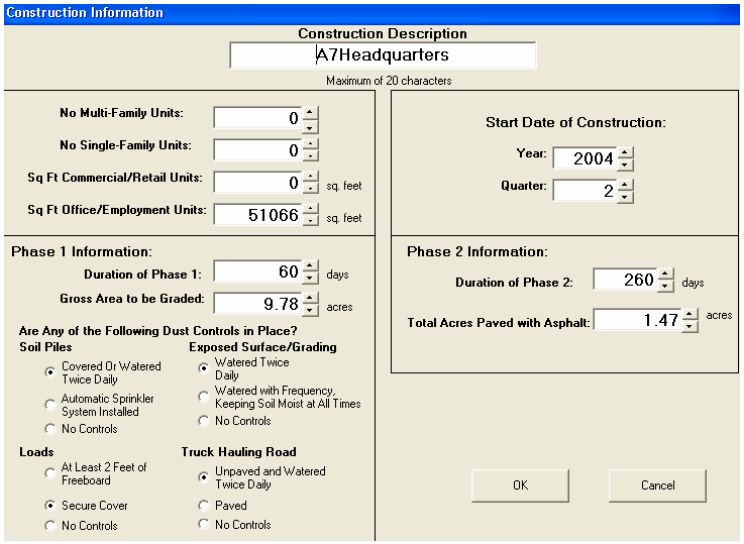

Construction Information
Construction Description
A6Vehicle Maintenanc
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 10000 sq. feet
Start Date of Construction:
Year: 2008
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 2 acres
Phase 2 Information:
Duration of Phase 2: 105 days
Total Acres Paved with Asphalt: 0.5 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

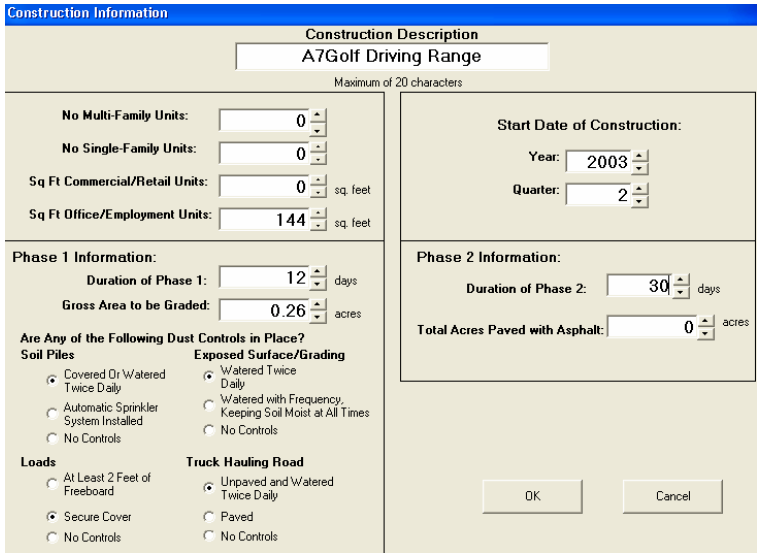
ADP 6

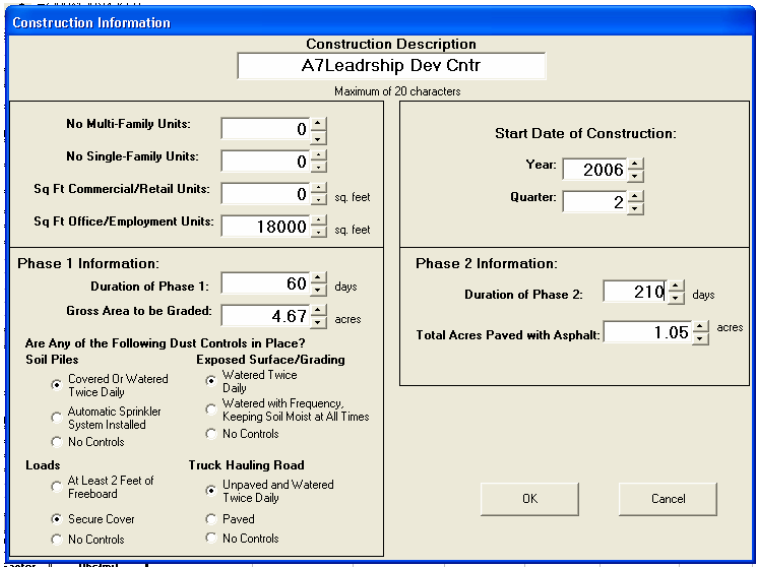

Construction Information
Construction Description
A6Cons Bse Warehouse
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 49998 sq. feet
Start Date of Construction:
Year: 2009
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 9 acres
Phase 2 Information:
Duration of Phase 2: 210 days
Total Acres Paved with Asphalt: 1.1 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

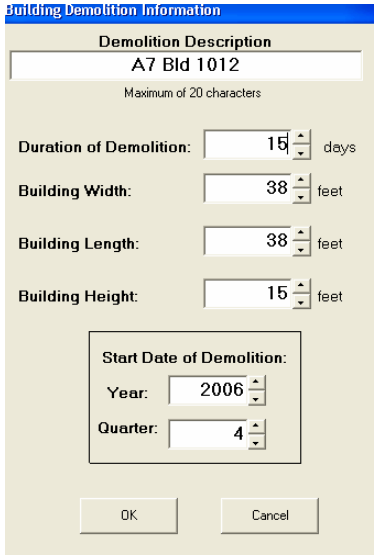
ADP 7

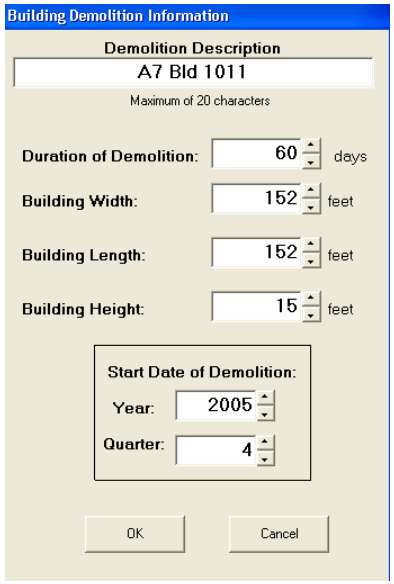

Construction Information
Construction Description
A7Aspen Ave
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 0 sq. feet
Start Date of Construction:
Year: 2004
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 26 days
Gross Area to be Graded: 8.65 acres
Phase 2 Information:
Duration of Phase 2: 26 days
Total Acres Paved with Asphalt: 5.97 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel


Construction Information
Construction Description
A7Headquarters
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 51066 sq. feet
Start Date of Construction:
Year: 2004
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 60 days
Gross Area to be Graded: 9.78 acres
Phase 2 Information:
Duration of Phase 2: 260 days
Total Acres Paved with Asphalt: 1.47 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

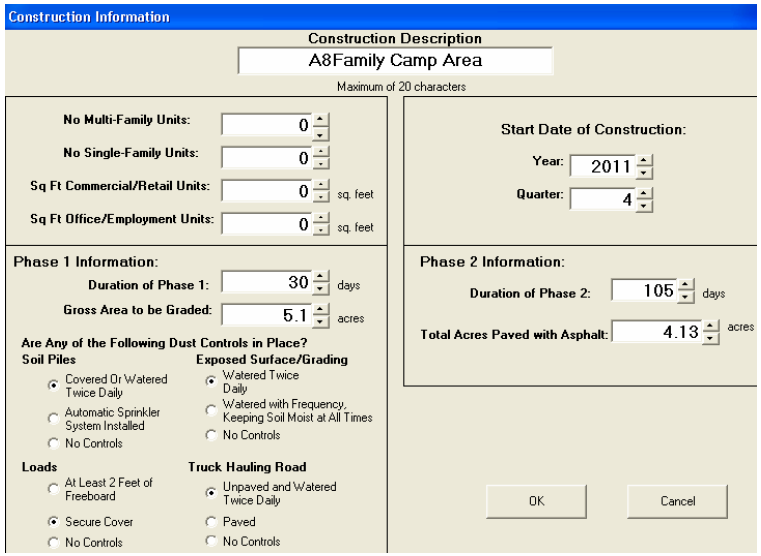

Construction Information
Construction Description
A7Golf Driving Range
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 144 sq. feet
Start Date of Construction:
Year: 2003
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 12 days
Gross Area to be Graded: 0.26 acres
Phase 2 Information:
Duration of Phase 2: 30 days
Total Acres Paved with Asphalt: 0 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

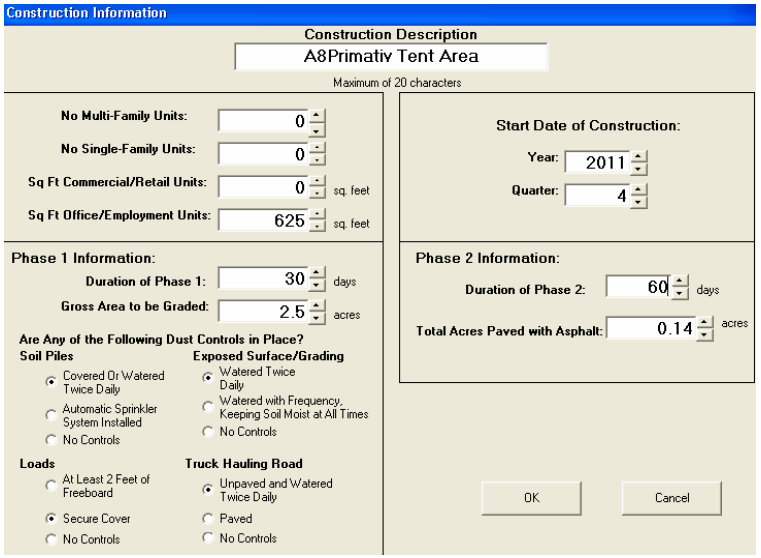

Construction Information
Construction Description
A7Leadrship Dev Cntr
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 18000 sq. feet
Start Date of Construction:
Year: 2006
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 60 days
Gross Area to be Graded: 4.67 acres
Phase 2 Information:
Duration of Phase 2: 210 days
Total Acres Paved with Asphalt: 1.05 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

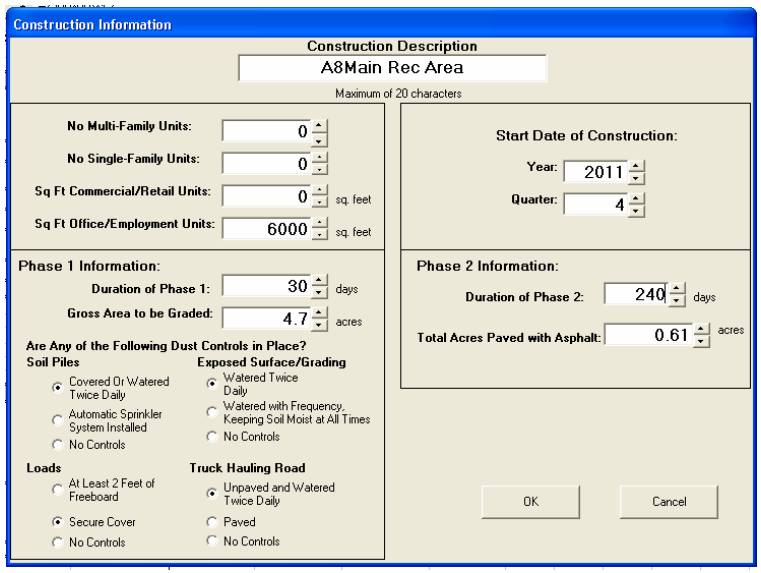

Building Demolition Information
Demolition Description
A7 Bld 1012
Maximum of 20 characters
Duration of Demolition: 15 days
Building Width: 38 feet
Building Length: 38 feet
Building Height: 15 feet
Start Date of Demolition:
Year: 2006
Quarter: 4
OK
Cancel

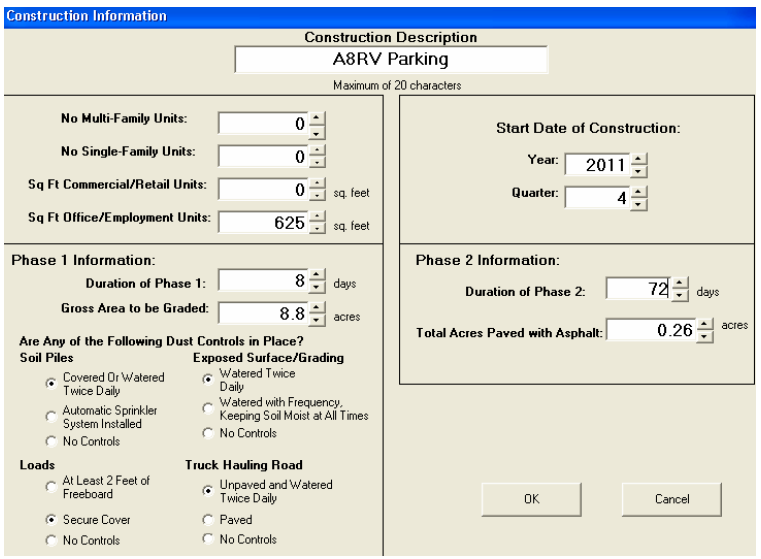

Building Demolition Information
Demolition Description
A7 Bld 1011
Maximum of 20 characters
Duration of Demolition: 60 days
Building Width: 152 feet
Building Length: 152 feet
Building Height: 15 feet
Start Date of Demolition:
Year: 2005
Quarter: 4
OK
Cancel

ADP 8

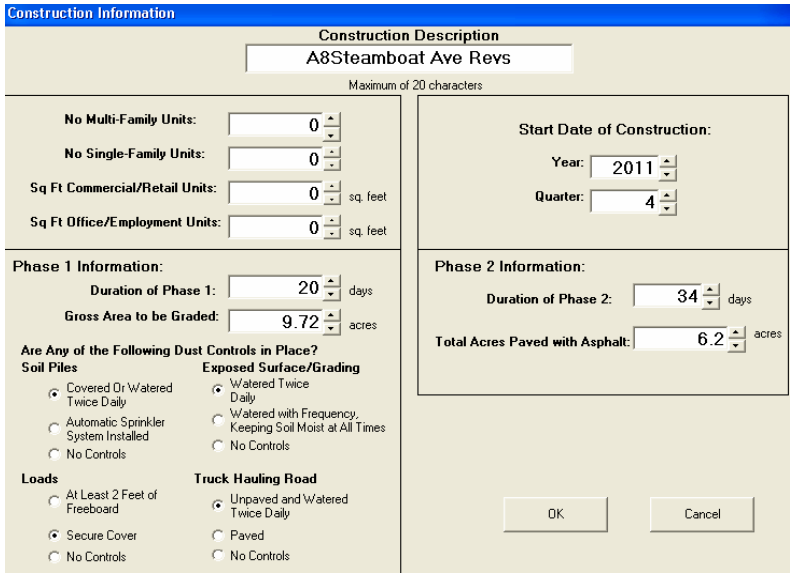

Construction Information
Construction Description
A8Family Camp Area
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 0 sq. feet
Start Date of Construction:
Year: 2011
Quarter: 4
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 5.1 acres
Phase 2 Information:
Duration of Phase 2: 105 days
Total Acres Paved with Asphalt: 4.13 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

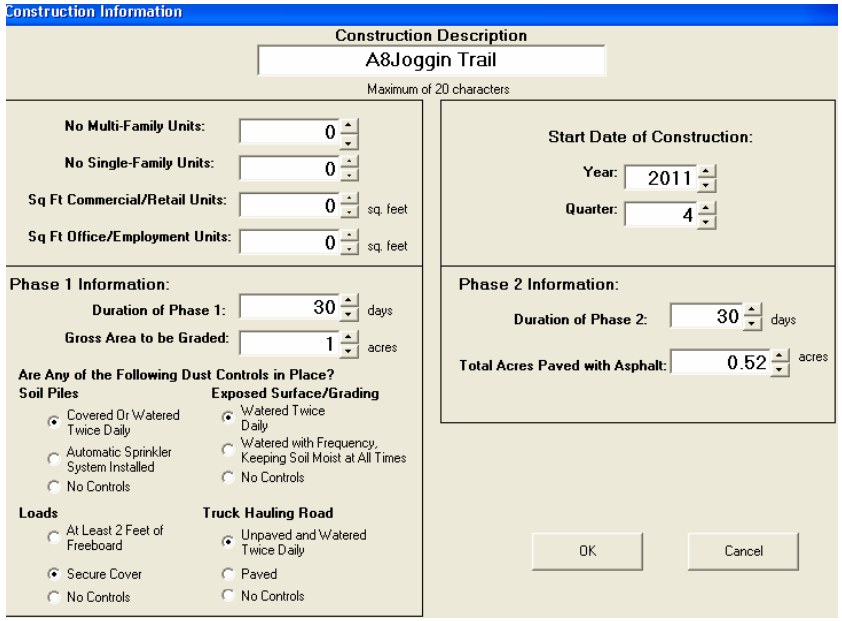

Construction Information
Construction Description
A8Primativ Tent Area
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 625 sq. feet
Start Date of Construction:
Year: 2011
Quarter: 4
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 2.5 acres
Phase 2 Information:
Duration of Phase 2: 60 days
Total Acres Paved with Asphalt: 0.14 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel


Construction Information
Construction Description
A8Main Rec Area
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 6000 sq. feet
Start Date of Construction:
Year: 2011
Quarter: 4
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 4.7 acres
Phase 2 Information:
Duration of Phase 2: 240 days
Total Acres Paved with Asphalt: 0.61 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

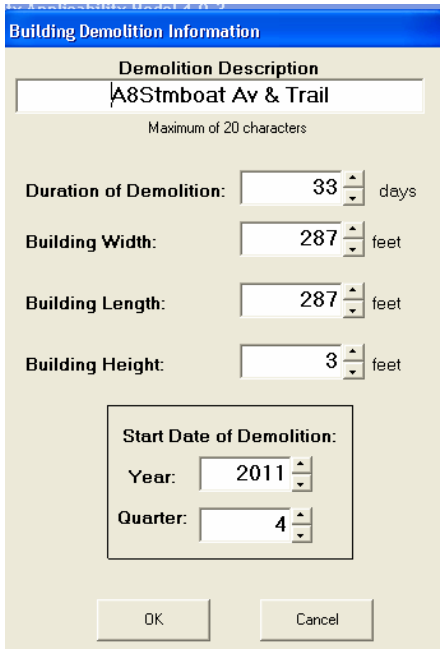

Construction Information
Construction Description
A8RV Parking
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 625 sq. feet
Start Date of Construction:
Year: 2011
Quarter: 4
Phase 1 Information:
Duration of Phase 1: 8 days
Gross Area to be Graded: 8.8 acres
Phase 2 Information:
Duration of Phase 2: 72 days
Total Acres Paved with Asphalt: 0.26 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

ADP 8


Construction Information
Construction Description
A8Steamboat Ave Revs
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 0 sq. feet
Start Date of Construction:
Year: 2011
Quarter: 4
Phase 1 Information:
Duration of Phase 1: 20 days
Gross Area to be Graded: 9.72 acres
Phase 2 Information:
Duration of Phase 2: 34 days
Total Acres Paved with Asphalt: 6.2 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel


Construction Information
Construction Description
A8Joggin Trail
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 0 sq. feet
Start Date of Construction:
Year: 2011
Quarter: 4
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 1 acres
Phase 2 Information:
Duration of Phase 2: 30 days
Total Acres Paved with Asphalt: 0.52 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

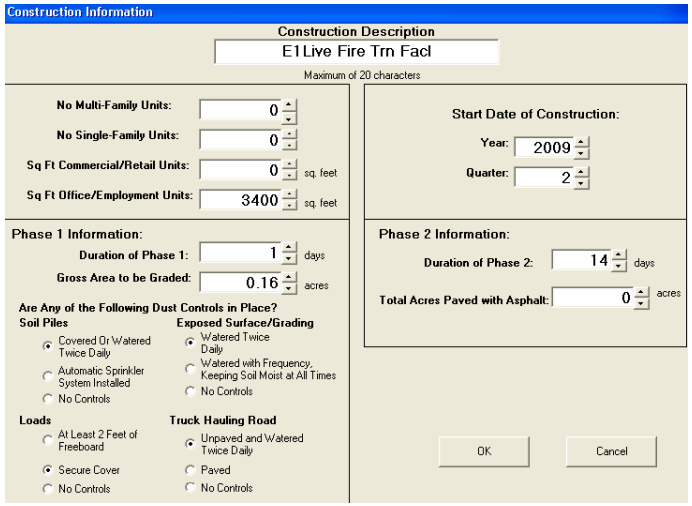
ADP 8

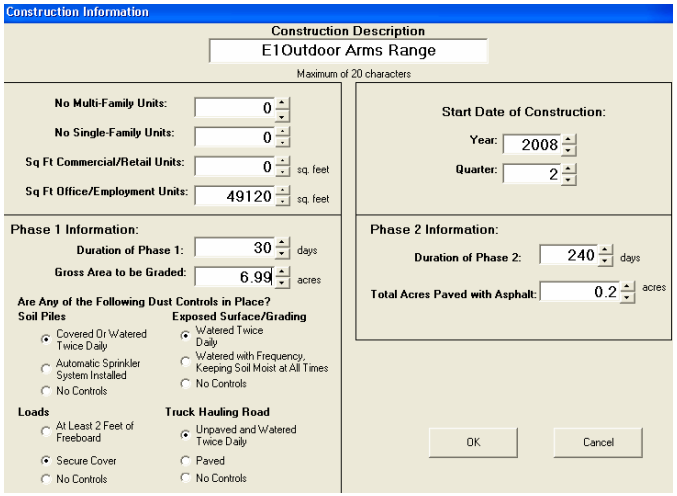

Building Demolition Information
Demolition Description
A8Stmboat Av & Trail
Maximum of 20 characters
Duration of Demolition:
33
days
Building Width:
287
feet
Building Length:
287
feet
Building Height:
3
feet
Start Date of Demolition:
Year:
2011
Quarter:
4
OK
Cancel

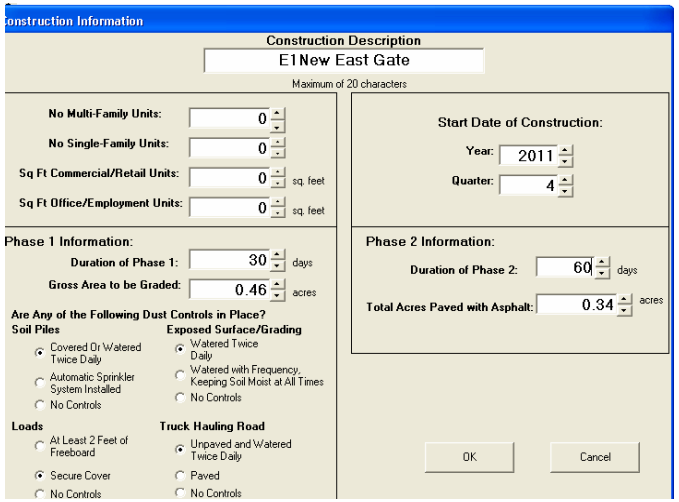
ACAM Emission Summary

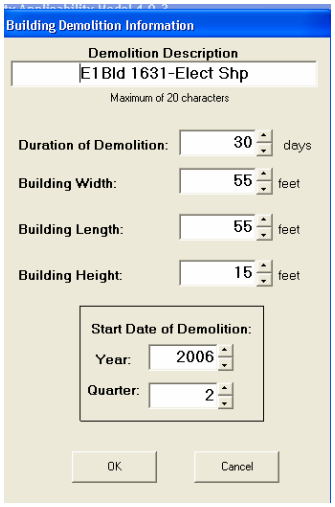
Appendix D: Construction/Demolition Air Emissions Calculations
ACAM Construction and Demolition Input/Output

ELUA 1

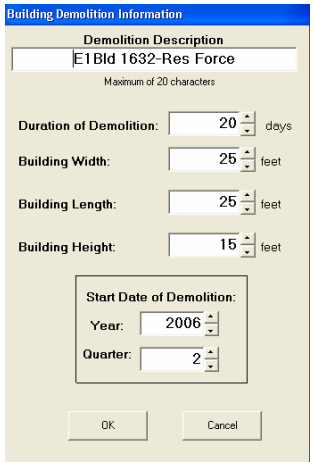


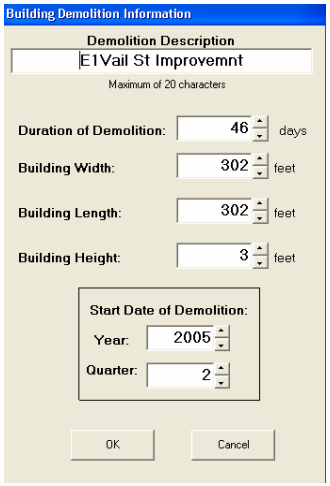


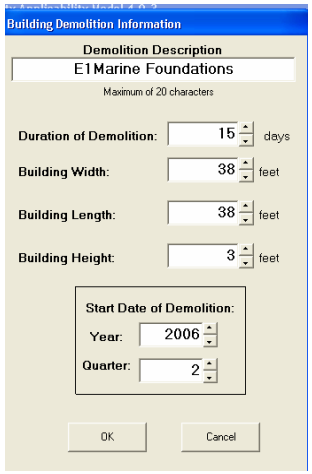


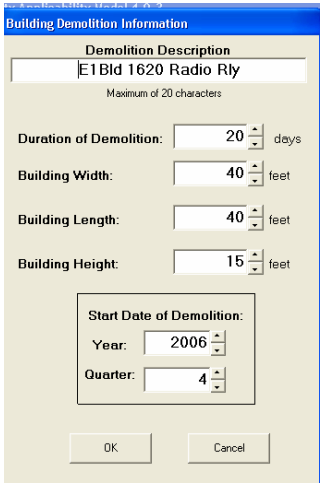


ELUA 1


Building Demolition Information
Demolition Description
E1Bld 1632-Res Force
Maximum of 20 characters
Duration of Demolition: 20 days
Building Width: 25 feet
Building Length: 25 feet
Building Height: 15 feet
Start Date of Demolition:
Year: 2006
Quarter: 2
OK
Cancel

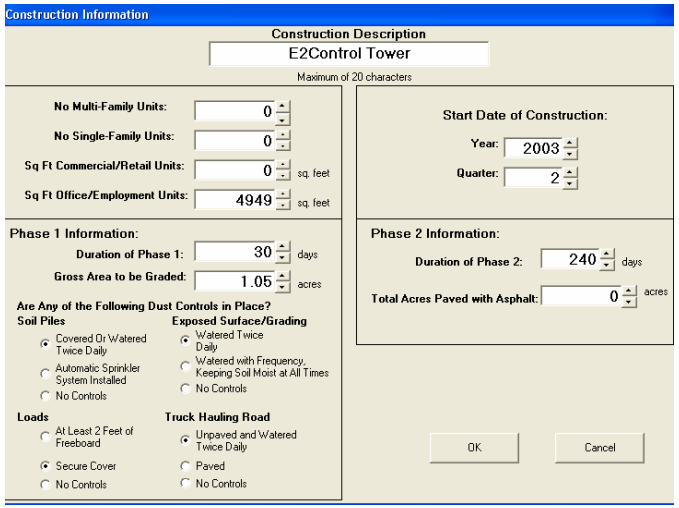

Building Demolition Information
Demolition Description
E1Vail St Improvemnt
Maximum of 20 characters
Duration of Demolition: 46 days
Building Width: 302 feet
Building Length: 302 feet
Building Height: 3 feet
Start Date of Demolition:
Year: 2005
Quarter: 2
OK
Cancel

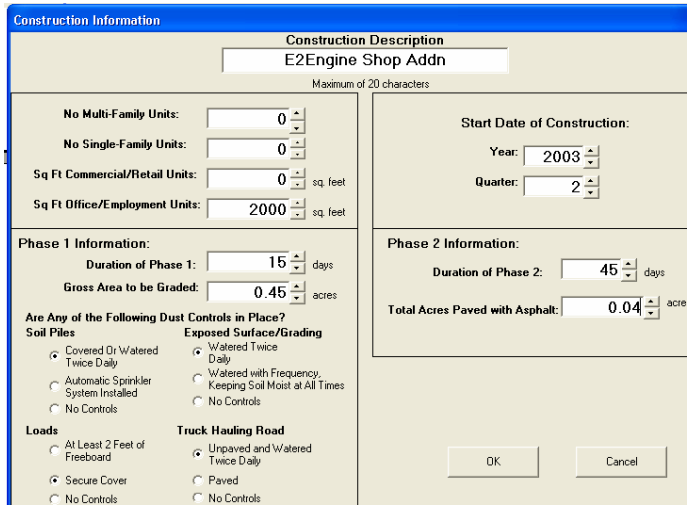

Building Demolition Information
Demolition Description
E1Marine Foundations
Maximum of 20 characters
Duration of Demolition: 15 days
Building Width: 38 feet
Building Length: 38 feet
Building Height: 3 feet
Start Date of Demolition:
Year: 2006
Quarter: 2
OK
Cancel

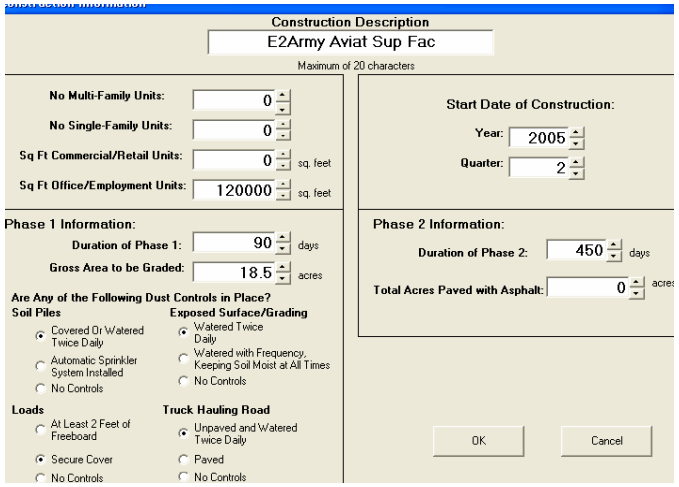

Building Demolition Information
Demolition Description
E1Bld 1620 Radio Rly
Maximum of 20 characters
Duration of Demolition: 20 days
Building Width: 40 feet
Building Length: 40 feet
Building Height: 15 feet
Start Date of Demolition:
Year: 2006
Quarter: 4
OK
Cancel

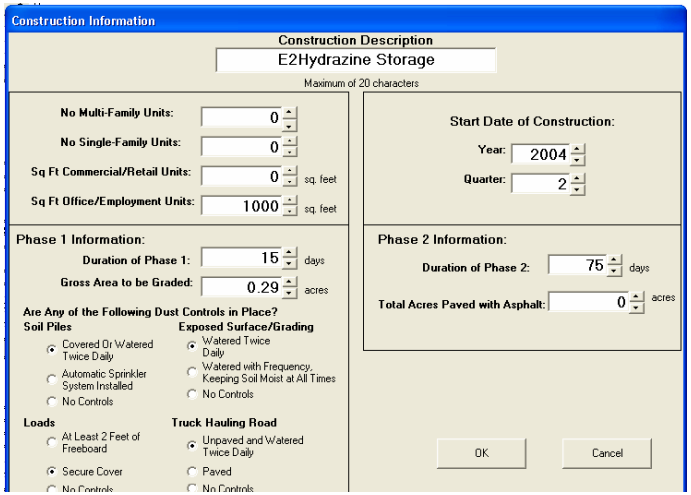
Appendix D: Construction/Demolition Air Emissions Calculations
ACAM Construction and Demolition Input/Output

ELUA 2



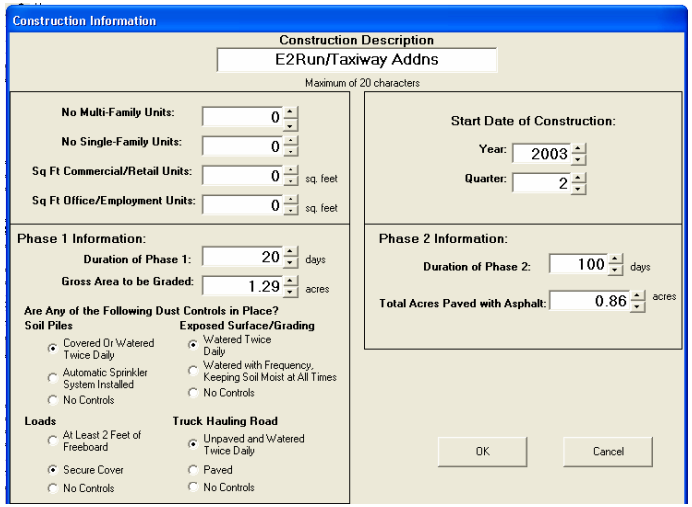


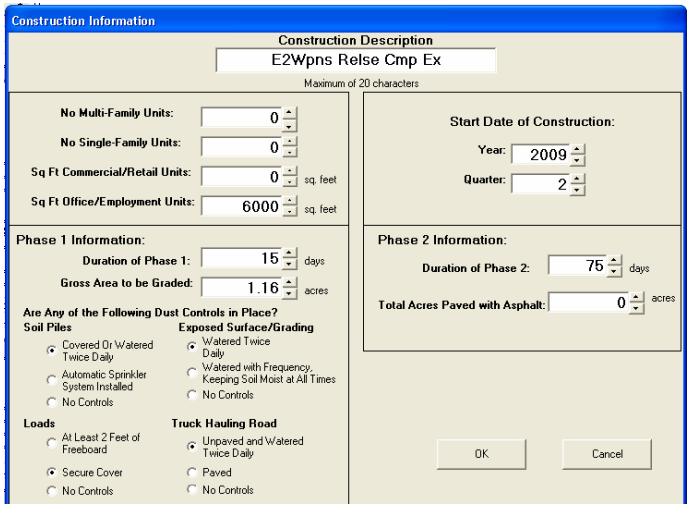




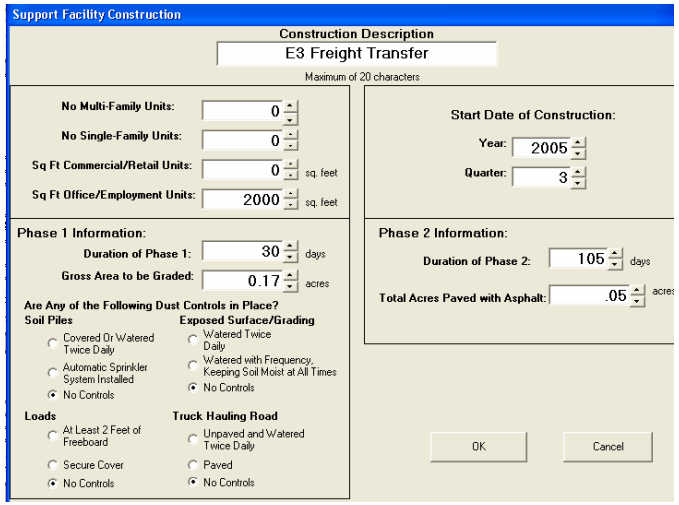
Appendix D: Construction/Demolition Air Emissions Calculations
ACAM Construction and Demolition Input/Output

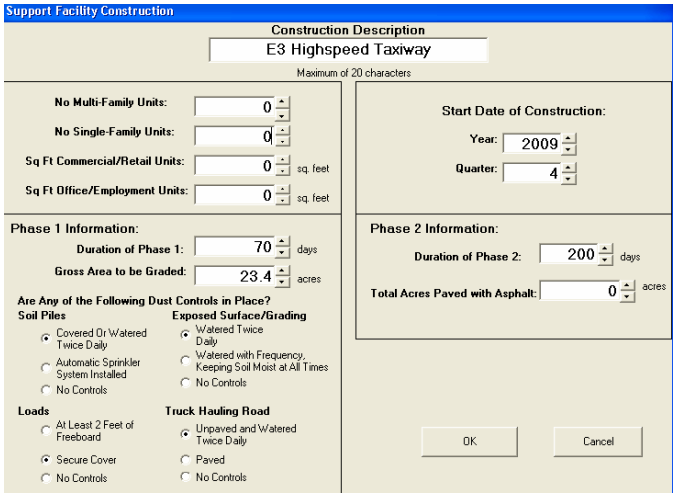
ELUA 2

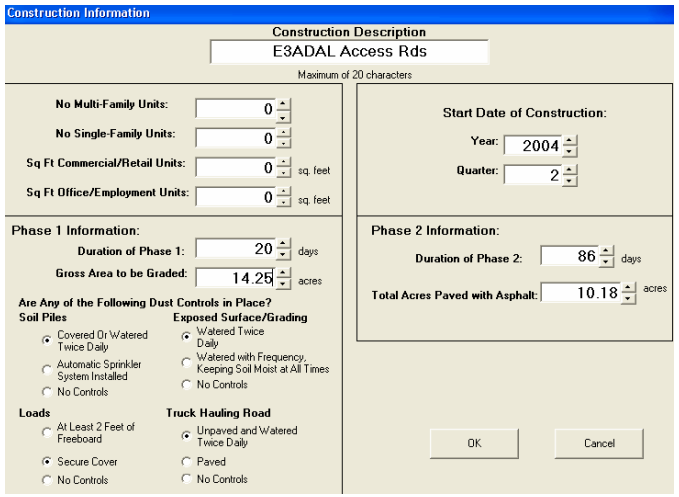


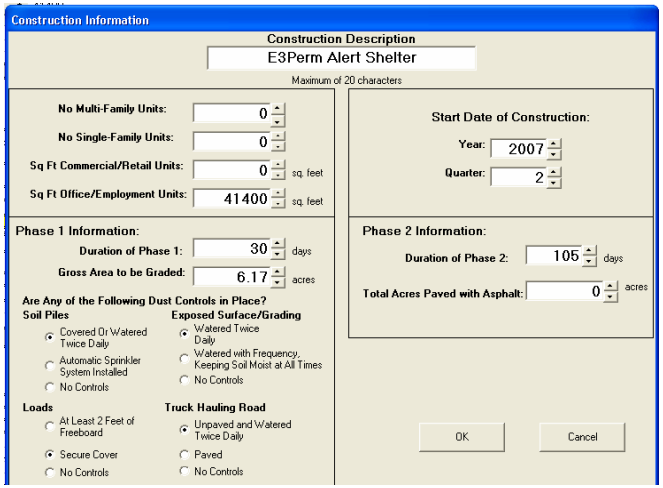


ELUA 3


Support Facility Construction
Construction Description
E3 Freight Transfer
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 2000 sq. feet
Start Date of Construction:
Year: 2005
Quarter: 3
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 0.17 acres
Phase 2 Information:
Duration of Phase 2: 105 days
Total Acres Paved with Asphalt: .05 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

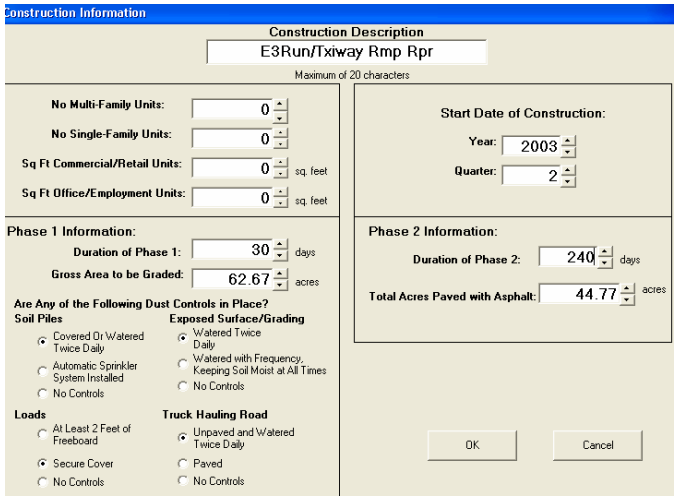

Support Facility Construction
Construction Description
E3 Highspeed Taxiway
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 0 sq. feet
Start Date of Construction:
Year: 2009
Quarter: 4
Phase 1 Information:
Duration of Phase 1: 70 days
Gross Area to be Graded: 23.4 acres
Phase 2 Information:
Duration of Phase 2: 200 days
Total Acres Paved with Asphalt: 0 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

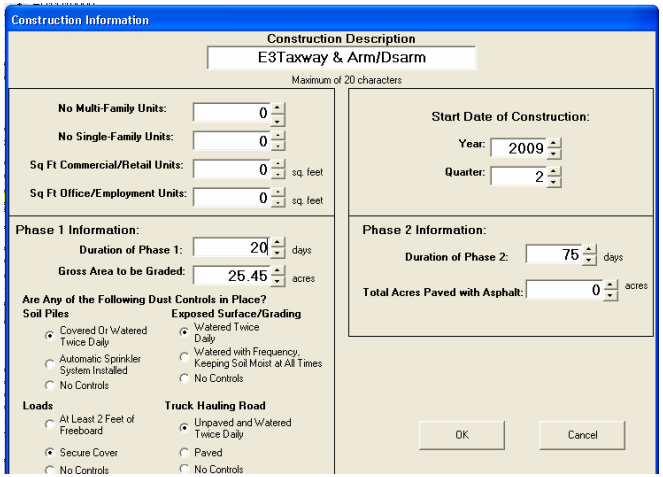

Construction Information
Construction Description
E3ADAL Access Rds
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 0 sq. feet
Start Date of Construction:
Year: 2004
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 20 days
Gross Area to be Graded: 14.25 acres
Phase 2 Information:
Duration of Phase 2: 86 days
Total Acres Paved with Asphalt: 10.18 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

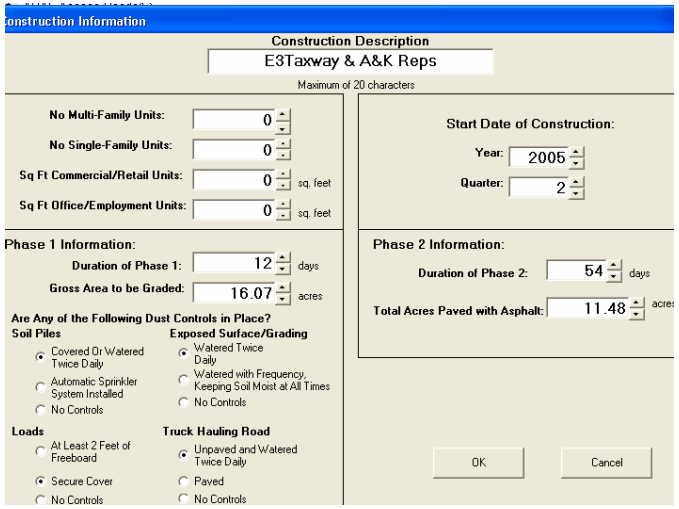

Construction Information
Construction Description
E3Perm Alert Shelter
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 41400 sq. feet
Start Date of Construction:
Year: 2007
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 30 days
Gross Area to be Graded: 6.17 acres
Phase 2 Information:
Duration of Phase 2: 105 days
Total Acres Paved with Asphalt: 0 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel

Appendix D: Construction/Demolition Air Emissions Calculations
ACAM Construction and Demolition Input/Output

ELUA 3

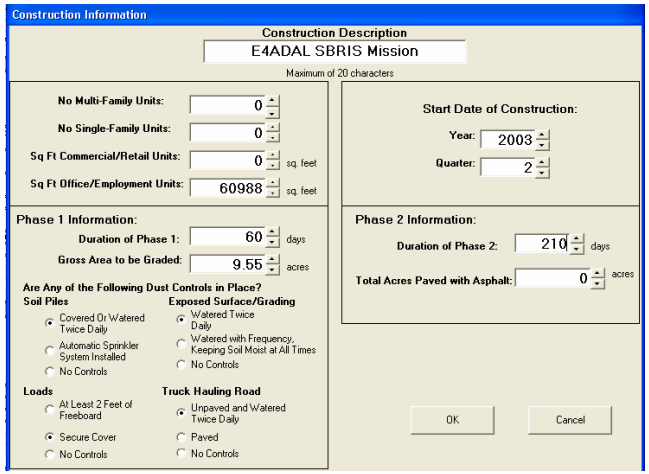


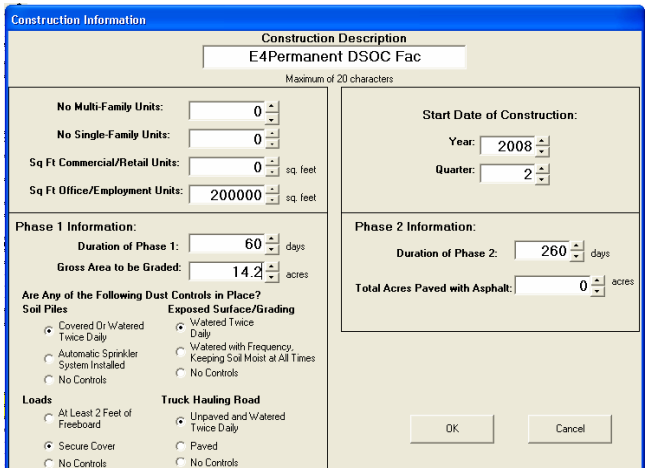


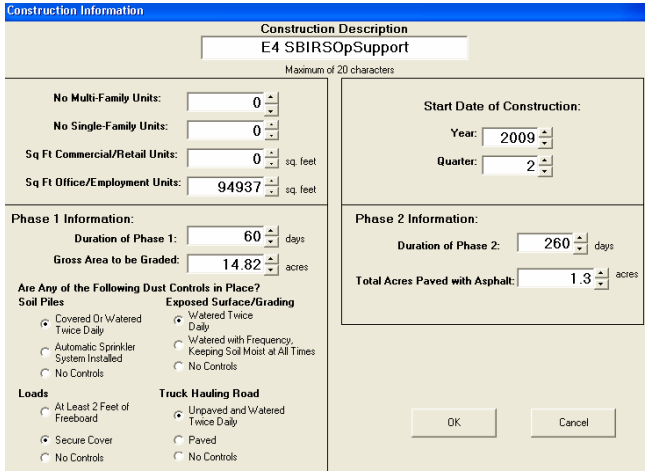


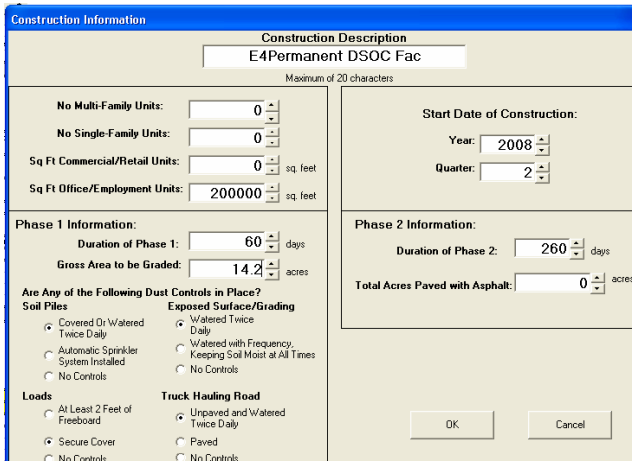
Appendix D: Construction/Demolition Air Emissions Calculations
ACAM Construction and Demolition Input/Output

ELUA 4



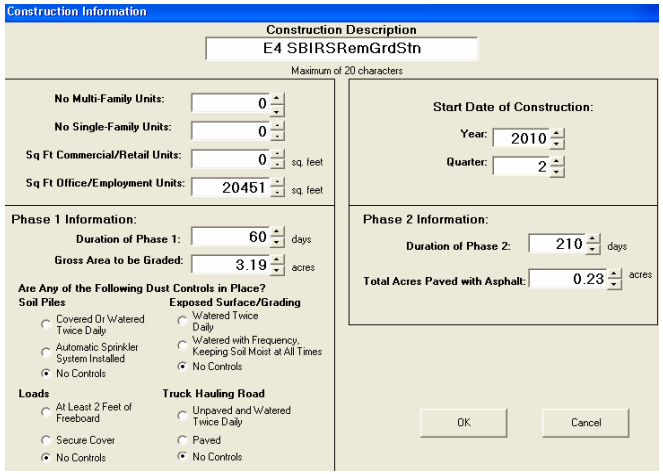


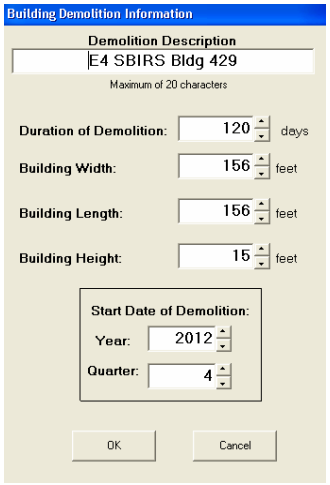


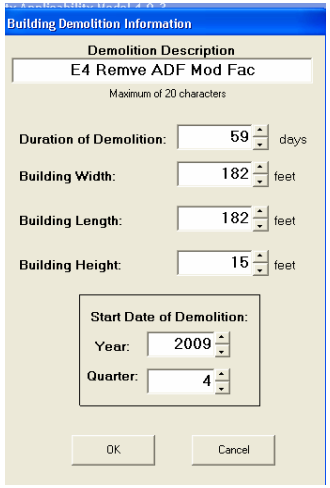


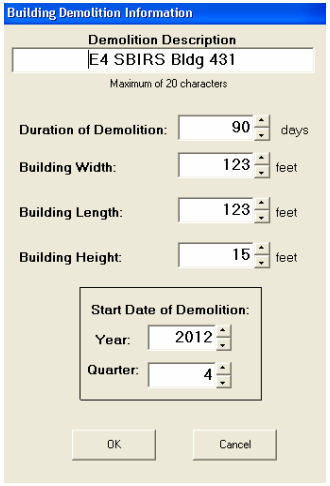
Appendix D: Construction/Demolition Air Emissions Calculations
ACAM Construction and Demolition Input/Output

ELUA 4



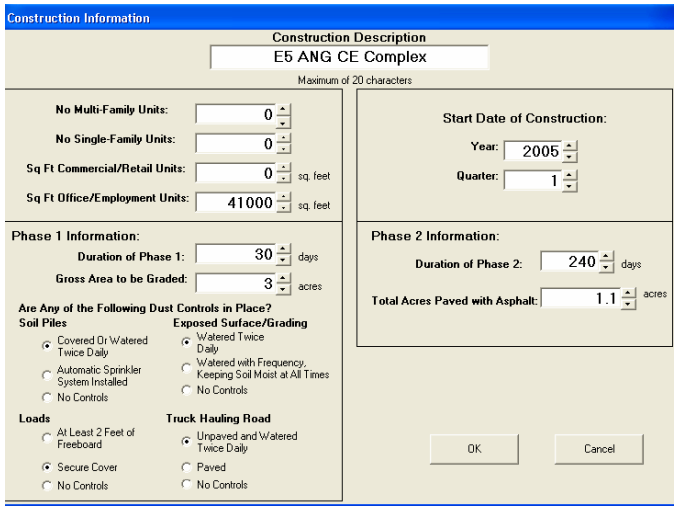


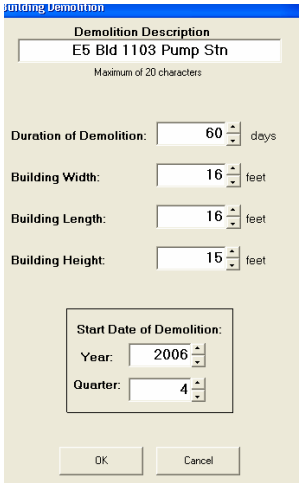


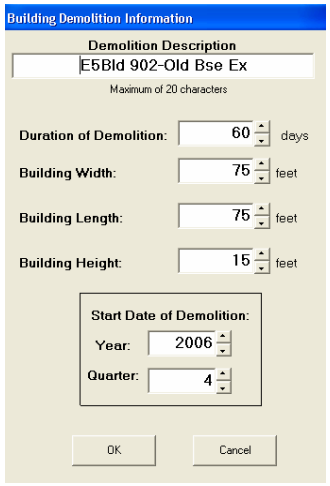


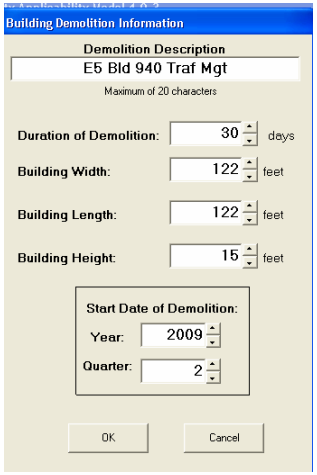
Appendix D: Construction/Demolition Air Emissions Calculations
ACAM Construction and Demolition Input/Output

ELUA 5

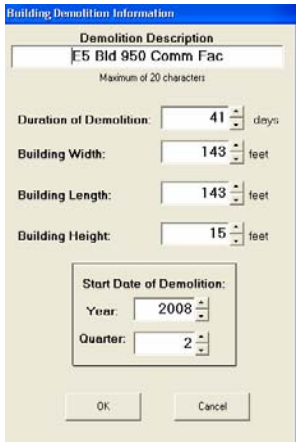


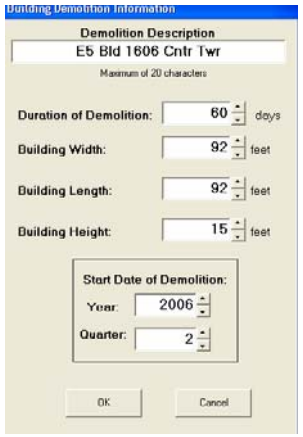




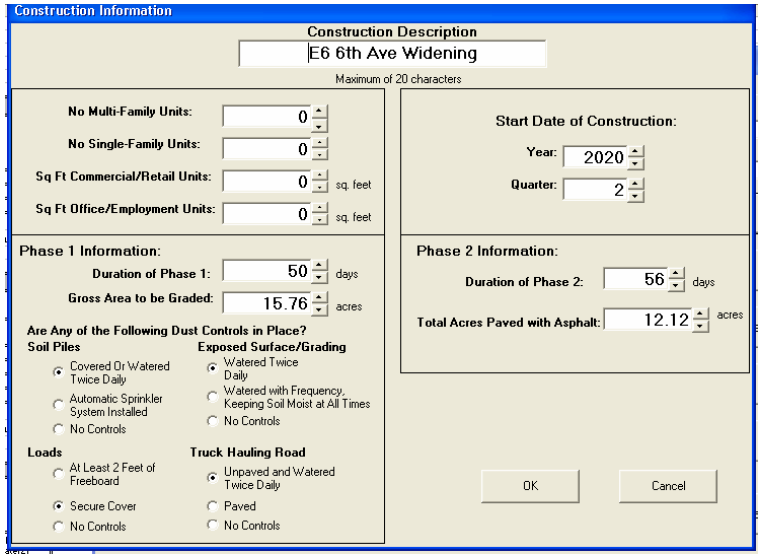


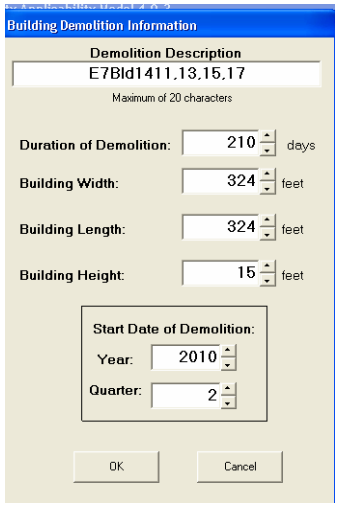
ELUA 5


Building Demolition Information
Demolition Description
E5 Bld 950 Comm Fac
Maximum of 20 characters
Duration of Demolition: 41 days
Building Width: 143 feet
Building Length: 143 feet
Building Height: 15 feet
Start Date of Demolition:
Year: 2008
Quarter: 2
OK
Cancel

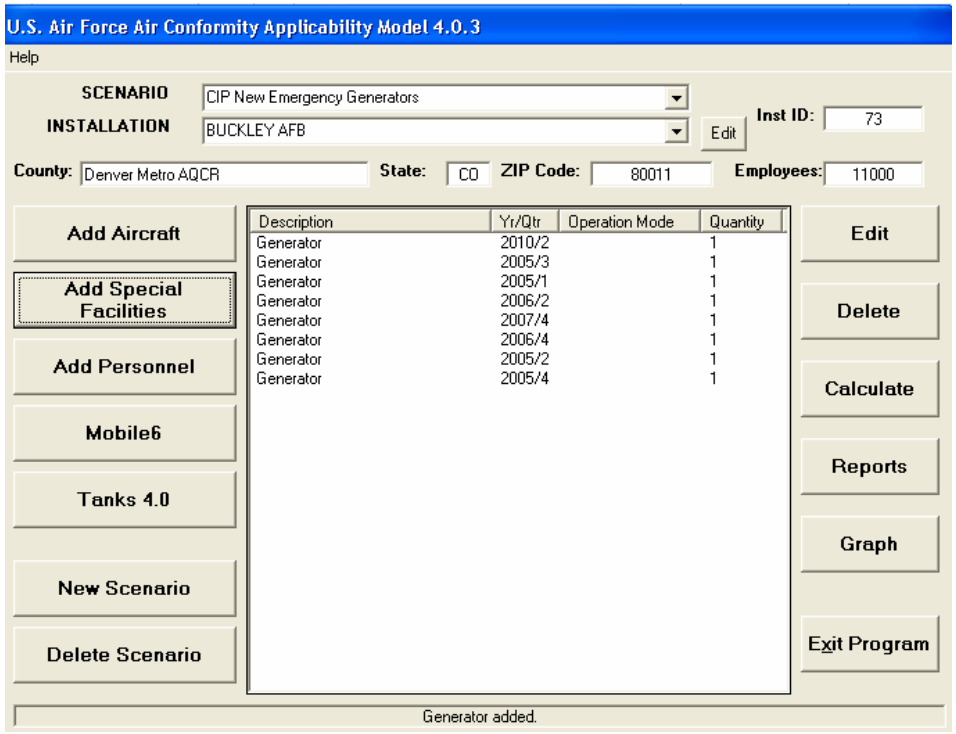

Building Demolition Information
Demolition Description
E5 Bld 1606 Cntr Twr
Maximum of 20 characters
Duration of Demolition: 60 days
Building Width: 92 feet
Building Length: 92 feet
Building Height: 15 feet
Start Date of Demolition:
Year: 2006
Quarter: 2
OK
Cancel

ELUA 6


Construction Information
Construction Description
E6 6th Ave Widening
Maximum of 20 characters
No Multi-Family Units: 0
No Single-Family Units: 0
Sq Ft Commercial/Retail Units: 0 sq. feet
Sq Ft Office/Employment Units: 0 sq. feet
Start Date of Construction:
Year: 2020
Quarter: 2
Phase 1 Information:
Duration of Phase 1: 50 days
Gross Area to be Graded: 15.76 acres
Phase 2 Information:
Duration of Phase 2: 56 days
Total Acres Paved with Asphalt: 12.12 acres
Are Any of the Following Dust Controls in Place?
Soil Piles
Covered Or Watered Twice Daily
Automatic Sprinkler System Installed
No Controls
Exposed Surface/Grading
Watered Twice Daily
Watered with Frequency, Keeping Soil Moist at All Times
No Controls
Loads
At Least 2 Feet of Freeboard
Secure Cover
No Controls
Truck Hauling Road
Unpaved and Watered Twice Daily
Paved
No Controls
OK
Cancel


Building Demolition Information
Demolition Description
E7Bld1411,13,15,17
Maximum of 20 characters
Duration of Demolition: 210 days
Building Width: 324 feet
Building Length: 324 feet
Building Height: 15 feet
Start Date of Demolition:
Year: 2010
Quarter: 2
OK
Cancel

Emergency Generators



New emergency generators: Visitors center, Dormitory, Child Development Center, Chapel, Youth Center, Headquarters, ANG CE Complex, Control Tower.

Grading Equipment Emissions (lbs/day)

Description: Emissions from combustion engine.

VOC (tons/yr.) = 0.22 (lbs./acre/day) x ACRES x DPYI / 2000

NOX (tons/yr.) = 2.07 (lbs./acre/day) x ACRES x DPYI / 2000

PM10 (tons/yr.) = 0.17 (lbs./acre/day) x ACRES x DPYI / 2000

CO (tons/yr.) = 0.55 (lbs./acre/day) x ACRES x DPYI / 2000

SO2 (tons/yr.) = 0.21 (lbs./acre/day) x ACRES x DPYI / 2000

*User-Input Variable*s:

ACRES = Number of gross acres to be graded during Phase I construction (but not more than 50 acres).

DPYI = Number of days per year during Phase I construction, which is the grading phase.

*Other Parameter*s:

2000 = Conversion factor from pounds to tons.

0.22, 2.07, 0.17, 0.55, 0.21 = Emission factors derived from Sacramento Metropolitan Air Quality Management District (SMAQMD) 1994 South Coast Air Quality Management District (SCAQMD) 1993.

*Assumption*s: Equipment consists of 1 Grader, 1 Wheeled and 1 Tracked Loader/Grader per 10 acres. All equipment is diesel powered; Equipment used 6 hours per day.

Emissions Due to Construction Worker Trips (POVs)

Description: The number of employee trips during construction is calculated, which is a function of the number square feet of non-residential construction:

Office/Employment (trips/day) = 0.42 (trips/1000 SF/day) x Area of Office/

Employment Units (1000 SF)

Once total daily trips are calculated, the following equations are applied to obtain emissions for VOC, NO_X, PM_{10}, and CO. Apply the equation corresponding to the year closest to the year of construction:

Year 2005 through 2009:

VOCE (lbs/day) = 0.016 x TRIPS

NOXE (lbs/day) = 0.015 x TRIPS

PM10E (lbs/day) = 0.0022 x TRIPS

COE (lbs/day) = 0.262 x TRIPS

*User-Input Variable*s:

Area of Office/Employment Units = Total square feet of office/employment units to be constructed in the given year of construction (1000 SF).

DPYII = Number of days per year during phase II construction, which is the phase where actual building construction occurs.

*Other Parameter*s:

2000 = Conversion factor from pounds to tons

All constants = Emission Factors obtained from SMAQMD 1994 and SCAQMD 1993.

Stationary Equipment Emissions During Construction

Description: Emissions from stationary equipment occurs when gasoline powered equipment (e.g. generators, saws, etc.) is used at the construction site.

VOC (tons/yr.) = (GRSQF) x 0.198 x DPYII / 2000

NOX (tons/yr.) = (GRSQF) x 0.137 x DPYII / 2000

PM10 (tons/yr.) = (GRSQF) x 0.004 x DPYII / 2000

C0 (tons/yr.) = (GRSQF) x 5.29 x DPYII / 2000

SO2 (tons/yr.) = (GRSQF) x 0.007 x DPYII / 2000

*User-Input Variable*s:

GRSQF = Gross square feet of non-residential units to be constructed (1000 SF) during Phase II (see note below)

DPYII = Number of days per year during Phase II construction, which is the phase where actual building construction occurs.

*Other Parameter*s:

2000 = Conversion factor from pounds to tons

0.198, 0.137, 0.004, 5.29, 0.007 = Emission factors derived from SMAQMD 1994 and SCAQMD 1993 (lbs/day/1000 SF) which use the following assumptions: 2 pieces of gasoline powered equipment per 10,000 square feet; equipment used 6 hours per day; and equipment average horsepower of 10 hp each.

Mobile Equipment Emissions During Construction

Description: Mobile equipment includes forklifts, dump trucks, etc., used during Phase II construction.

VOC (tons/yr.) = (GRSQF) x 0.17 x DPYII / 2000

NOX (tons/yr.) = (GRSQF) x 1.86 x DPYII / 2000

PM10 (tons/yr.) = (GRSQF) x 0.15 x DPYII / 2000

CO (tons/yr.) = (GRSQF) x 0.78 x DPYII / 2000

SO2 (tons/yr.) = (GRSQF) x 0.23 x DPYII / 2000

User and Other Parameters are identical to those for Stationary Emissions. The only exception is the emission factors:

0.17, 1.86, 0.15, 0.78, 0.23 = Emission factors derived from SMAQMD 1994 and SCAQMD 1993 (lbs/day/1000 SF) which use the following assumptions:

2 pieces of diesel powered equipment per 10,000 square feet; and equipment used 6 hours per day.

Grading Operations Emissions (lbs/day)

Description: Fugitive dust emissions from grading phase of construction, which includes both grading and truck hauling emissions.

PM10 (tons/yr.) = 60.7 (lbs./acre/day) x ACRES x DPYI / 2000

User-Input Variables:

ACRES = Number of gross acres to be graded during Phase I construction (but not more than 50 acres).

DPYI = Number of days per year during Phase I construction, which is the grading phase.

Other Parameters

2000 = Conversion factor from pounds to tons

60.7 = Emission factor obtained from SCAQMD 1993.

Assumptions: One Storage Pile on 1/5 of an acre per 10 acres graded, 3 pieces of Heavy Equipment used 6 hours per day per 10 acres graded.

Architectural Coatings Emissions

Description: VOC is released through the evaporation of solvents that are contained in paints, varnishes, primers and other surface coatings.

Non-Residential Architectural Coatings:

VOC (tons/yr.) = (SQR_GRSQF x 1.63) / 2000

User-Input Variables:

SQR_GRSQF = Square root of gross square feet of non-residential building space

Other Parameters:

2000 = Conversion factor from pounds to tons

1.63 = Emission factor obtained from SMAQMD 1994.

Daily VOC emissions from asphalt paving

VOC (tons/yr)= (2.62 lbs/acre x Acres Paved) / 2000

*User-Input Variable*s:

Acres Paved = Total number of acres to be paved at the site

*Other Parameter*s:

2000 = Conversion factor from pounds to tons

2.62 = Emission factor obtained from SMAQMD 1994.

Emergency Generator Operations

Description: Emissions will occur from the use of facility electrical generators used for emergency back-up power at the installation. The emission calculation requires prior knowledge of generator size and fuel throughput.

Emission Calculation:

Ep = EFp x FUELUSE/2000

*Other Parameter*s:

EFp = Emission factor for pollutant, p, lbs./1000 gal. The emission factors vary based on whether generator is gasoline or diesel and based on horsepower, and are as follows:

Type	SO_2	PM_{10}	NO_X	CO	VOC
Diesel, <600hp	39.7	42.5	604	130	49.3
Diesel, >600hp	6.9	7.85	425	111	13.7

Deleted: [1]

Deleted: *Description:* Emissions will occur from the use of facility and residential boilers at the installation. The boiler algorithm requires prior knowledge of boiler size and fuel throughput.¶
¶
Emission Calculation:¶
E = EFp x FUELUSE/2000¶
¶
User-Input Variables:¶
FUELUSE = Number of Gallons of Distillate/No. 6 Fuel used per year per boiler (gal/yr), or Number of Cubic Feet of Natural Gas Consumption per year per boiler (10 6 ft 3 /yr)¶
¶
Other Parameters:¶
EFp = Emission factor for pollutant, p, for natural gas or fuel oil heating boilers. Refer to Appendix I for the emission factors for all boiler types. Note that emission factors are dependent on the size of the boiler (MMBtu/hr heat input capacity).¶
2000 = Conversion factor from lbs. to tons ¶
¶
Reference: U.S. Environmental Protection Agency, 1998.¶

Gasoline, >250hp	10.9	13	212	8151	394

2000 = Conversion factor from lbs. to tons

*Referenc*e: U.S. Environmental Protection Agency, 1998.

Petroleum Fuel Evaporation – TANKS 4.0

*Descriptio*n: The TANKS 4.0 program is USEPA windows based software used for estimating VOC air emissions from fixed- and floating-roof liquid storage tanks. TANKS is accessed from within the ACAM platform. The output from TANKS is then saved to ACAM and used for the conformity analysis.

*Referenc*e: U.S. Environmental Protection Agency, 1999.

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ACAM Emission Summary

FY 02 Construction and Demolition Emissions						
		CO	**NOX**	**SO2**	**VOC**	**PM10**
All Projects - no emergency generator	Area Sources	9.81	3.89	0.45	0.76	13.45
	Construction Facility Heating	0.01	0.01	0	0	0
	Total	9.82	3.9	0.45	0.76	13.45
All Air Force Projects	Area Sources	9.74	3.62	0.42	0.72	8.96
	Construction Facility Heating	0.01	0.01	0	0	0
	Total	9.75	3.63	0.42	0.72	8.96
	Non-AF Projects - Total	0.07	0.27	0.03	0.04	4.49
New Emergency Generators		na	na	na	na	na
All projects PLUS Generators		**9.82**	**3.9**	**0.45**	**0.76**	**13.45**

FY 03 Construction and Demolition Emissions						
		CO	**NOX**	**SO2**	**VOC**	**PM10**
All Projects - no emergency generator	Area Sources	73.36	25.77	3	5.34	40.25
	Construction Facility Heating	0.12	0.15	0	0.01	0.01
	Total	9.82	73.48	25.92	3	5.35
All Air Force Projects	Area Sources	68.98	22.87	2.69	4.78	13.24
	Construction Facility Heating	0.12	0.15	0	0.01	0.01
	Total	9.75	69.1	23.02	2.69	4.79
	Non-AF Projects - Total	4.38	2.9	0.31	0.56	27.01
New Emergency Generators		na	na	na	na	na
All projects PLUS Generators		**73.48**	**25.92**	**3**	**5.35**	**40.26**

ACAM Emission Summary

FY 04 Construction and Demolition Emissions						
		CO	**NOX**	**SO2**	**VOC**	**PM10**
All Projects - no emergency generator	Area Sources	111.96	36.96	4.32	10.66	31.51
	Construction Facility Heating	1.17	1.43	0.01	0.07	0.1
	Total	9.82	113.13	38.39	4.33	10.73
All Air Force Projects	Area Sources	69.84	23.58	2.75	7.94	30.35
	Construction Facility Heating	1.06	1.3	0.01	0.07	0.09
	Total	9.75	70.9	24.88	2.76	8.01
	Non-AF Projects - Total	42.23	13.51	1.57	2.72	1.17
New Emergency Generators		0.97	1.07	0	0.12	0.07
All projects PLUS Generators		**111.96**	**36.96**	**4.32**	**10.66**	**31.51**

FY 05 Construction and Demolition Emissions						
		CO	**NOX**	**SO2**	**VOC**	**PM10**
All Projects - no emergency generator	Area Sources	154.9	55.68	6.4	19.64	139.34
	Construction Facility Heating	0.79	0.96	0.01	0.05	0.07
	Total	9.82	155.69	56.64	6.41	19.69
All Air Force Projects	Area Sources	124.6	44.29	5.09	17.46	106.49
	Construction Facility Heating	0.77	0.94	0.01	0.05	0.07
	Total	9.75	125.37	45.23	5.1	17.51
	Non-AF Projects - Total	30.32	11.41	1.31	2.18	32.85
New Emergency Generators		0.12	0.55	0	0.04	0.04
All projects PLUS Generators		**155.81**	**57.19**	**6.41**	**19.73**	**139.45**

ACAM Emission Summary

FY 06 Construction and Demolition Emissions						
		CO	**NOX**	**SO2**	**VOC**	**PM10**
All Projects - no emergency generator	Area Sources	111.96	36.96	4.32	10.66	31.51
	Construction Facility Heating	1.17	1.43	0.01	0.07	0.1
	Total	9.82	113.13	38.39	4.33	10.73
All Air Force Projects	Area Sources	69.84	23.58	2.75	7.94	30.35
	Construction Facility Heating	1.06	1.3	0.01	0.07	0.09
	Total	9.75	70.9	24.88	2.76	8.01
	Non-AF Projects - Total	42.23	13.51	1.57	2.72	1.17
New Emergency Generators		0.97	1.07	0	0.12	0.07
All projects PLUS Generators		**114.1**	**39.46**	**4.33**	**10.85**	**31.68**

FY 07 Construction and Demolition Emissions						
		CO	**NOX**	**SO2**	**VOC**	**PM10**
All Projects - no emergency generator	Area Sources	77.15	27.24	3.18	5.49	43.24
	Construction Facility Heating	1.76	2.16	0.01	0.11	0.15
	Total	9.82	78.91	29.4	3.19	5.6
All Air Force Projects	Area Sources	63.67	22.7	2.65	4.49	39.72
	Construction Facility Heating	1.34	1.65	0.01	0.08	0.12
	Total	9.75	65.01	24.35	2.66	4.57
	Non-AF Projects - Total	13.9	5.05	0.53	1.03	3.55
New Emergency Generators		3.22	1.23	0	0.24	0.09
All projects PLUS Generators		**82.13**	**30.63**	**3.19**	**5.84**	**43.48**

ACAM Emission Summary

FY 08 Construction and Demolition Emissions						
		CO	**NOX**	**SO2**	**VOC**	**PM10**
All Projects - no emergency generator	Area Sources	138.24	45.55	5.35	9.57	25.81
	Construction Facility Heating	2.12	2.6	0.02	0.13	0.19
	Total	9.82	140.36	48.15	5.37	9.7
All Air Force Projects	Area Sources	103.18	33.85	4	7.06	10.31
	Construction Facility Heating	1.68	2.06	0.01	0.1	0.15
	Total	9.75	104.86	35.91	4.01	7.16
	Non-AF Projects - Total	35.5	12.24	1.36	2.54	15.54
New Emergency Generators		3.26	1.4	0	0.25	0.1
All projects PLUS Generators		**143.62**	**49.55**	**5.37**	**9.95**	**26.1**

FY 09 Construction and Demolition Emissions						
		CO	**NOX**	**SO2**	**VOC**	**PM10**
All Projects - no emergency generator	Area Sources	75.97	25.53	3.19	5.48	59.66
	Construction Facility Heating	2.83	3.47	0.02	0.18	0.25
	Total	9.82	78.8	29	3.21	5.66
All Air Force Projects	Area Sources	66.5	22.51	2.64	4.58	22.05
	Construction Facility Heating	1.99	2.43	0.01	0.12	0.17
	Total	9.75	68.49	24.94	2.65	4.7
	Non-AF Projects - Total	10.31	4.06	0.56	0.96	37.69
New Emergency Generators		3.26	1.4	0	0.25	0.1
All projects PLUS Generators		**82.06**	**30.4**	**3.21**	**5.91**	**60.01**

ACAM Emission Summary

FY 10 Construction and Demolition Emissions						
		CO	**NOX**	**SO2**	**VOC**	**PM10**
All Projects - no emergency generator	Area Sources	29.88	9.89	1.17	2.08	8.03
	Construction Facility Heating	3.28	4.02	0.02	0.2	0.29
	Total	9.82	33.16	13.91	1.19	2.28
All Air Force Projects	Area Sources	29.88	9.89	1.17	2.08	8.03
	Construction Facility Heating	2.3	2.82	0.02	0.14	0.2
	Total	9.75	32.18	12.71	1.19	2.22
	Non-AF Projects - Total	0.98	1.2	0	0.06	0.09
New Emergency Generators		3.3	1.57	0	0.27	0.11
All projects PLUS Generators		**36.46**	**15.48**	**1.19**	**2.55**	**8.43**

TBD Construction and Demolition Emissions						
		CO	**NOX**	**SO2**	**VOC**	**PM10**
All Projects - no emergency generator	Area Sources	5.76	3.23	0.36	0.72	25.47
	Construction Facility Heating	3.43	4.2	0.03	0.21	0.3
	Total	9.82	9.19	7.43	0.39	0.93
All Air Force Projects	Area Sources	5.76	3.23	0.36	0.72	25.47
	Construction Facility Heating	2.45	3	0.02	0.15	0.21
	Total	9.75	8.21	6.23	0.38	0.87
	Non-AF Projects - Total	0.98	1.2	0.01	0.06	0.09
New Emergency Generators		3.31	1.62	0	0.27	0.11
All projects PLUS Generators		**12.5**	**9.05**	**0.39**	**1.2**	**25.88**

ACAM Emission Summary

APPENDIX E

CONSTRUCTION AND DEMOLITION DUST SUPPRESSION WATER USE TABLE

Construction and Demolition Dust Suppression Water Use Table				
Project (ADPs and ELUAs)	**Project Ground Disturbance Duration (days)**	**Total Building/Land Disturbance (ft^2)**	**Total Building/ Land Disturbance (acres)**	**Total Water Use (Gallons) (1)**
ADP 1: Military Family Housing	757	4,735,950	109	18,041,600
ADP 2: Entry Gates	2,399	2,511,150	58	4,137,886
ADP 3: Dormitory Area	2,237	3,035,752	70	7,497,149
ADP 4: Aspen Corridor	1,084	1,904,133	44	3,465,194
ADP 5: Community Center	2,280	1,780,747	41	5,159,322
ADP 6: Industrial Support	2,442	1,626,620	37	3,815,542
ADP 7: Headquarters Area	747	1,068,011	25	2,456,965
ADP 8: Williams Lake	684	1,384,300	32	1,660,337
ELUA 1: Open Space	580	345,274	8	979,576
ELUA 2: Aircraft Operations and Maintenance	1,170	990,534	23	5,292,477
ELUA 3: Airfield/Aircraft Pavement	1,077	6,535,610	150	14,426,788
ELUA 4: Mission Operations and Maintenance	1,570	2,585,932	59	8,812,994
ELUA 5: Industrial	477	237,934	5	472,232
ELUA 6: 6^{th} Avenue	106	792,000	18	963,636
ELUA 7: Special Categories	210	210,000	5	506,198
Total Water Use Increase				**77,687,896**

Based on an irrigation rate of 500 gallons/acre/day of construction.

APPENDIX F

CONSTRUCTION AND DEMOLITION PROJECT
SOLID WASTE GENERATOR TABLE

Construction and Demolition Project Solid Waste Generation Table

Project	Project Ground Disturbance Duration (days)	Building Area (ft^2)	Building Height (ft)	Interior Wall Length (ft)	Total Building Demolition Debris/Waste Generated[2] (ft^3)	Bathroom, Kitchen and Other Integrated Components[3] (ft^3)	Other Demolition Components[4] (ft^3)	Total Demolition Debris/Waste Generated (ft^3)	Total Demolition Debris/Waste Generated (tons)[5]
ADP 1: Military Family Housing	757	737,559	0	0	22,784	690	44,148	67,622	4,680
ADP 2: Entry Gates	2,399	105,937	0	0	678,541	24,186	2,285,148	2,962,803	215,658
ADP 3: Dormitory Area	2,237	104,945	0	0	4,126	125	348,751	348,876	29,451
ADP 4: Aspen Corridor	1,084	72,825	0	0	0	0	116,000	116,000	9,821
ADP 5: Community Center	2,280	173,893	0	0	49,413	1,497	95,748	146,658	10,295
ADP 6: Industrial Support	2,442	161,375	0	0	0	0	0	0	611

Construction and Demolition Project Solid Waste Generation Table									
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Building Height (ft)**	**Interior Wall Length (ft)**	**Total Building Demolition Debris/Waste Generated[(2)] (ft^3)**	**Bathroom, Kitchen and Other Integrated Components[(3)] (ft^3)**	**Other Demolition Components[(4)] (ft^3)**	**Total Demolition Debris/Waste Generated (ft^3)**	**Total Demolition Debris/Waste Generated (tons) [(5)]**
ADP 7: Headquarters Area	747	93,617	30	500	201,407	6,102	390,268	597,776	40,223
ADP 8: Williams Lake	684	6,000	0	0	0	0	165,000	165,000	13,775
ELUA 1: Open Space	580	59,195	0	0	37,968	434	1,025,765	1,063,673	16,809
ELUA 2: Aircraft Operations and Maintenance	1,170	133,949	0	0	0	0	0	0	293
ELUA 3: Airfield/Aircraft Pavement	1,077	43,400	0	0	0	0	0	0	269
ELUA 4: Mission Operations and Maintenance	1,570	482,060	30	500	327,472	9,921	634,547	971,941	65,466
ELUA 5: Industrial	477	90,267	15	220	393,754	11,791	1,357,817	1,763,362	73,270

Construction and Demolition Project Solid Waste Generation Table									
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Building Height (ft)**	**Interior Wall Length (ft)**	**Total Building Demolition Debris/Waste Generated[(2)] (ft^3)**	**Bathroom, Kitchen and Other Integrated Components[(3)] (ft^3)**	**Other Demolition Components[(4)] (ft^3)**	**Total Demolition Debris/Waste Generated (ft^3)**	**Total Demolition Debris/Waste Generated (tons) [(5)]**
ELUA 6: 6th Avenue	106	0	0	0	0	0	0	0	27
ELUA 7: Special Categories	210	105,000	0	0	548,940	26,250	1,678,950	2,254,140	160,411
Totals	17,820	2,370,022	75	1,220	2,264,405	80,995	8,142,143	10,457,852	641,058

(1) NA – Not Applicable (Solid waste generation for construction projects assume 500 lbs of solid waste generation per day of construction activity).
(2) Total Building Demolition Debris/Waste Generated is based on the following assumptions:
- Demolition of exterior walls generates 3.36 ft^3 per ft^2 of building space demolished.
- Demolition of interior walls generates 0.812 ft^3 per ft^2 of building space demolished.
- Demolition of roofs generates 2.04 ft^3 per ft^2 of building space demolished.
- Demolition of foundations generates 2.04 ft^3 per ft^2 of building space demolished.
- Demolition of bathroom, kitchen and other components generates 0.254 ft^3 per ft^2 of building space demolished.
  - Demolition of other demolition components generates 15.99 ft^3 per ft^2 of building space demolished.
  - Values for facilities scheduled for demolition and assessed in previous EAs were derived from those EAs.

(3) Other Demolition Components may consist of paving materials, sidewalks, walkways and other general waste generated through demolition activities.
(4) Bulk densities for demolition project calculations were assumed as follows:
- Building Demolition Bulk Density = 75 lbs/ft3
- Bathroom etc Bulk Density = 100 lbs/ft3
- Other Demolition Bulk Density = 165 lbs/ft3

APPENDIX G

PROPOSED ACTION TRAFFIC IMPACTS

Appendix G: Proposed Action Traffic Impacts								
			Daily Trips		AM peak Hour Trips		PM peak Hour Trips	
Land Use (net new residential sq ft)	Net New Units (sq ft)	Percent Reduction	ITE Rate	Net New Trips	ITE Rate	Net New Trips	ITE Rate	Net New Trips
ADP-1								
Multi-unit or family	0	0.00	5.86	0	0.44	0	0.54	0
Single Family	351	0.00	9.57	3359.07	0.75	263.25	1.01	354.51
Administrative	0	0.00	40.67	0.0	1.24	0.0	1.08	0.0
Community Commercial	0	0.00	40.7	0.0	1.03	0.0	2.59	0.0
Community Service	11,925	0.23	10	91.8	1.32	12.1	1.75	16.1
Military Ops(Gen Light Industrial)		0.00	6.97	0.0	0.92	0.0	0.98	0.0
Sub-Total			3,451		275		371	
ADP-2								
Multi-unit or family	0	0.00	5.86	0	0.44	0	0.54	0
Single Family	0	0.00	9.57	0	0.75	0	1.01	0
Administrative	18,267	0.00	40.67	742.9	1.24	23	1.08	20
Community Commercial	0	0.00	40.7	0.0	1.03	0	2.59	0
Community Service	106,624	0.23	10	821.0	1.32	108	1.75	144
Military Ops(Gen Light Industrial)	0	0.00	6.97	0.0	0.92	0	0.98	0
Sub-Total			1,564		131		163	
ADP-3								
Multi-unit or family	476	0.19	5.86	2259.382	0.44	169.6464	0.54	208.2024
Single Family	0	0.00	9.57	0	0.75	0	1.01	0
Administrative	0	0.00	40.67	0.0	1.24	0	1.08	0
Community Commercial	26,960	0.00	40.7	1,097.3	1.03	28	2.59	70
Community Service	121,059	0.23	10	932.2	1.32	123	1.75	163
Military Ops(Gen Light Industrial)	189	0.00	6.97	1.3	0.92	0	0.98	0
Sub-Total			4,290		321		441	
ADP-4								
Multi-unit or family	0	0.00	5.86	0	0.44	0	0.54	0
Single Family	0	0.00	9.57	0	0.75	0	1.01	0
Administrative	0	0.00	40.67	0	1.24	0	1.08	0
Community Commercial	0	0.00	40.7	0	1.03	0	2.59	0
Community Service	45,252	0.23	10	348	1.32	46	1.75	61
Military Ops(Gen Light Industrial)	62,788	0.00	6.97	438	0.92	58	0.98	62
Sub-Total			786		104		123	

Appendix G: Proposed Action Traffic Impacts								
			Daily Trips		AM peak Hour Trips		PM peak Hour Trips	
Land Use (net new residential sq ft)	Net New Units (sq ft)	Percent Reduction	ITE Rate	Net New Trips	ITE Rate	Net New Trips	ITE Rate	Net New Trips
ADP-5								
Multi-unit or family	0	0.00	5.86	0	0.44	0	0.54	0
Single Family	0	0.00	9.57	0	0.75	0	1.01	0
Administrative	0	0.00	40.67	0	1.24	0	1.08	0
Community Commercial	39,584	0.00	40.7	1,611	1.03	41	2.59	103
Community Service	198,480	0.23	10	1,528	1.32	202	1.75	267
Military Ops(Gen Light Industrial)	28,273	0.00	6.97	197	0.92	26	0.98	28
Sub-Total			3,336		269		398	
ADP-6								
Multi-unit or family	0	0.00	5.86	0	0.44	0	0.54	0
Single Family	0	0.00	9.57	0	0.75	0	1.01	0
Administrative	0	0.00	40.67	0	1.24	0	1.08	0
Community Commercial	0	0.00	40.7	0	1.03	0	2.59	0
Community Service	37,260	0.23	10	287	1.32	38	1.75	50
Military Ops(Gen Light Industrial)	133,463	0.00	6.97	930	0.92	123	0.98	131
Sub-Total			1,217		161		181	
ADP-7								
Multi-unit or family	0	0.00	5.86	0	0.44	0	0.54	0
Single Family	0	0.00	9.57	0	0.75	0	1.01	0
Administrative	97,533	0.00	40.67	3,967	1.24	121	1.08	105
Community Commercial	0	0.00	40.7	0	1.03	0	2.59	0
Community Service	0	0.23	10	0	1.32	0	1.75	0
Military Ops(Gen Light Industrial)	0	0.00	6.97	0	0.92	0	0.98	0
Sub-Total			3,967		121		105	
ADP-8								
Multi-unit or family	0	0.00	5.86	0	0.44	0	0.54	0
Single Family	0	0.00	9.57	0	0.75	0	1.01	0
Administrative	0	0.00	40.67	0	1.24	0	1.08	0
Community Commercial	0	0.00	40.7	0	1.03	0	2.59	0
Community Service	174,925	0.23	10	1,347	1.32	178	1.75	236
Military Ops(Gen Light Industrial)	0	0.00	6.97	0	0.92	0	0.98	0
Sub-Total			1,347		178		236	
ALL ELUAs								
Multi-unit or family	0	0.00	5.86	0	0.44	0	0.54	0
Single Family	0	0.00	9.57	0	0.75	0	1.01	0
Administrative	43,025	0.00	40.67	1,750	1.24	53	1.08	46
Community Commercial	23,700	0.00	40.7	965	1.03	24	2.59	61
Community Service	0	0.23	10	0	1.32	0	1.75	0
Military Ops(Gen Light Industrial)	259,131	0.00	6.97	1,806	0.92	238	0.98	254
Sub-Total			4,521		316		362	
TOTAL			**24,479**		**1,875**		**2,379**	

Assumes that 23 percent of the residences are within 800-feet of the community service area and therefore reduces the number of trips generated.

APPENDIX H

CUMULATIVE TRAFFIC IMPACTS

Appendix H: Cumulative Traffic Impacts - Projected Development City of Aurora (All of City) to 2010								
			Daily Trips		AM peak Hour Trips		PM peak Hour Trips	
Land Use (net new residential sq ft)	Net New Units (sq ft)	Reduction	ITE Rate	Net New Trips	ITE Rate	Net New Trips	ITE Rate	Net New Trips
Aurora								
Multi-unit or family	16,792,380	0	5.86	98,403	0.44	7,389	0.54	9,068
Single Family	5,597,460	0	9.57	53,568	0.75	4,198	1.01	5,653
Administrative	6,403,320	0	40.67	260,423	1.24	7,940	1.08	6,916
Community Commercial	435,600	0	40.7	17,729	1.03	449	2.59	1,128
Community Service	435,600	0.23	10	3,354	1.32	443	1.75	587
Gen Light Industrial	2,744,280	0	6.97	19,128	0.92	2,525	0.98	2,689
Sub-Total			**452,605**		**22,943**		**26,041**	

Note: Areas are based on city of Aurora projected growth rates (City of Aurora 1998). Residential growth = 514-acres/yr (assumes 25% single family); Office and Industrial 210-acres/yr (assumes 30% industrial); retail and commercial development = 20-acres/yr (assumes 50% retail).

Appendix H: Cumulative Traffic Impacts - Proportion of City of Aurora/County of Arapahoe Assigned to Cumulative Impact Analysis Area								
			Daily Trips		AM peak Hour Trips		PM peak Hour Trips	
Land Use (net new residential sq ft)	Net New Units (sq ft)	Reduction	ITE Rate	Net New Trips	ITE Rate	Net New Trips	ITE Rate	Net New Trips
Multi-unit or family	2,828		5.86	17	0.44	1	0.54	2
Single Family	2,223		9.57	21	0.75	2	1.01	2
Administrative	1,632		40.67	66	1.24	2	1.08	2
Community Commercial	388		40.7	16	1.03	0	2.59	1
Community Service	6,931	0.23	10	53	1.32	7	1.75	9
Gen Light Industrial	733		6.97	5	0.92	1	0.98	1
Sub-Total			**178**		**13**		**17**	

TOTAL 2010	**452,783**	**22,956**	**26,058**
Percent Contribution	0.0004	0.0006	0.0006

Appendix H: Cumulative Traffic Impacts			
ELU	65,493	6,244	7,401
Proposed Action Trips	24,479	1,875	2,379
Cumulative Traffic Volume Impact - Proposed Action			
Category [1,3]	**Daily Trips****	**AM peak Hour Trips**	**PM peak Hour**
BAFB 2010 Total	**89,972**	**8,119**	**9,780**
Aurora 2010 Total	**452,783**	**22,956**	**26,058**
2010 Total	**542,755**	**31,075**	**35,838**
Percent	**19.87%**	**35.37%**	**37.53%**

Appendix H: Cumulative Traffic Impacts			
ELU	65,493	6,244	7,401
Alternative 1 Trips	14,000	1,335	1,798
Cumulative Traffic Volume Impact - Alternative 1			
Category [1,3]	**Daily Trips****	**AM peak Hour**	**PM peak Hour**
BAFB 2010 Total	**79,493**	**7,579**	**9,199**
Aurora 2010 Total	**452,783**	**22,956**	**26,058**
2010 Total	**532,277**	**30,535**	**35,257**
Percent	**17.56%**	**33.02%**	**35.30%**

APPENDIX I

CUMULATIVE IMPERVIOUS SURFACE/INCREASED RUNOFF CALCULATIONS

Cumulative Impervious Surface/Increased Runoff Calculation Table					
Project (ADPs and ELUAs)	**Building Area Impervious Surfaces (ft^2)**	**Roadway/Parking Lot Impervious Surfaces (ft^2)**	**Sidewalk/Walkways Impervious Surfaces (ft^2)**	**Total Impervious Surfaces (ft^2)**	**Total Impervious Surfaces (acres)**
Construction Project Impervious Surface Losses					
ADP 1: Military Family Housing	734,798	71,200	72,180	878,178	20.16
ADP 2: Entry Gates	22,181	830,372	33,328	885,881	20.34
ADP 3: Dormitory Area	104,067	787,068	76,200	967,335	22.21
ADP 4: Aspen Corridor	72,825	647,655	47,400	767,880	17.63
ADP 5: Community Center	167,905	300,267	54,780	522,952	12.01
ADP 6: Industrial Support	161,375	380,131	36,900	578,406	13.28
ADP 7: Headquarters Area	69,210	317,800	49,000	436,010	10.01
ADP 8: Williams Lake	6,000	286,200	56,400	348,600	8.00
ELUA 1: Open Space	52,520	10,000	2,250	64,770	1.49
ELUA 2: Aircraft Operations and Maintenance	133,949	37,500	48,000	219,449	5.04
ELUA 3: Airfield/Aircraft Pavement	43,400	4,251,020	6,000	4,300,420	98.72
ELUA 4: Mission Operations and Maintenance	442,376	46,155	18,000	506,531	11.63
ELUA 5: Industrial	41,000	32,800	0	73,800	1.69
ELUA 6: 6th Avenue	0	528,000	0	528,000	12.12
ELUA 7: Special Categories	0	0	0	0	0.00

Cumulative Impervious Surface/Increased Runoff Calculation Table					
Project (ADPs and ELUAs)	**Building Area Impervious Surfaces (ft^2)**	**Roadway/Parking Lot Impervious Surfaces (ft^2)**	**Sidewalk/Walkways Impervious Surfaces (ft^2)**	**Total Impervious Surfaces (ft^2)**	**Total Impervious Surfaces (acres)**
Construction Sub-Total	**2,051,606**	**8,526,168**	**500,438**	**11,078,211**	**254**
Demolition Project Impervious Surface Gains					
ADP 1: Military Family Housing	2,761	0	0	2,761	0.06
ADP 2: Entry Gates	83,756	0	0	83,756	1.92
ADP 3: Dormitory Area	878	62,000	0	62,878	1.44
ADP 4: Aspen Corridor	0	58000	0	58000	1.33
ADP 5: Community Center	5,988	0	0	5,988	0.14
ADP 6: Industrial Support	0	0	0	0	0.00
ADP 7: Headquarters Area	24,407	0	0	24,407	0.56
ADP 8: Williams Lake	0	82,500	0	82,500	1.89
ELUA 1: Open Space	6,675	91,200	0	97,875	2.25
ELUA 2: Aircraft Operations and Maintenance	0	0	0	0	0.00
ELUA 3: Airfield/Aircraft Pavement	0	0	0	0	0.00
ELUA 4: Mission Operations and Maintenance	39,684	0	0	39,684	0.91
ELUA 5: Industrial	49,267	0	0	49,267	1.13
ELUA 6: 6^{th} Avenue	0	0	0	0	0.00

Cumulative Impervious Surface/Increased Runoff Calculation Table					
Project (ADPs and ELUAs)	**Building Area Impervious Surfaces (ft^2)**	**Roadway/Parking Lot Impervious Surfaces (ft^2)**	**Sidewalk/Walkways Impervious Surfaces (ft^2)**	**Total Impervious Surfaces (ft^2)**	**Total Impervious Surfaces (acres)**
ELUA 7: Special Categories	105,000	0	0	105,000	2.41
Demolition Sub-Total	**318,416**	**293,700**	**0**	**612,116**	**14**
Net Impervious Surface Loss	**1,733,190**	**8,232,468**	**500,438**	**10,466,095**	**240**

APPENDIX J

ALTERNATIVE ACTION 1 TRAFFIC IMPACTS

Appendix J: Alternative Action 1 Traffic Impacts								
			Daily Trips		AM peak Hour Trips		PM peak Hour Trips	
Land Use (net new residential sq ft)	Net New Units (sq ft)	Percent Reduction	ITE Rate	Net New Trips	ITE Rate	Net New Trips	ITE Rate	Net New Trips
ADP-1								
Multi-unit or family	0	0.00	5.86	0	0.44	0	0.54	0
Single Family	351	0.00	9.57	3359.07	0.75	263.25	1.01	354.51
Administrative	0	0.00	40.67	0.0	1.24	0.0	1.08	0.0
Community Commercial	0	0.00	40.7	0.0	1.03	0.0	2.59	0.0
Community Service	11,925	0.00	10	119.3	1.32	15.7	1.75	20.9
Military Ops(Gen Light Industrial)	0	0.00	6.97	0.0	0.92	0.0	0.98	0.0
Sub-Total			3,478		279		375	
ADP-2	0							
Multi-unit or family	0	0.00	5.86	0	0.44	0	0.54	0
Single Family	0	0.00	9.57	0	0.75	0	1.01	0
Administrative	18,267	0.00	40.67	742.9	1.24	23	1.08	20
Community Commercial	0	0.00	40.7	0.0	1.03	0	2.59	0
Community Service	106,624	0.00	10	1,066.2	1.32	141	1.75	187
Military Ops(Gen Light Industrial)	0	0.00	6.97	0.0	0.92	0	0.98	0
Sub-Total			1,809		163		206	
ADP-3	0							
Multi-unit or family	476	0.19	5.86	2259.38	0.44	169.6464	0.54	208.2024
Single Family	0	0.00	9.57	0	0.75	0	1.01	0
Administrative	0	0.00	40.67	0.0	1.24	0	1.08	0
Community Commercial	26,960	0.00	40.7	1,097.3	1.03	28	2.59	70
Community Service	121,059	0.00	10	1,210.6	1.32	160	1.75	212
Military Ops(Gen Light Industrial)	189	0.00	6.97	1.3	0.92	0	0.98	0
Sub-Total			4,569		357		490	
ADP-7								
Multi-unit or family	0	0.00	5.86	0	0.44	0	0.54	0
Single Family	0	0.00	9.57	0	0.75	0	1.01	0
Administrative	97,533	0.00	40.67	3,967	1.24	121	1.08	105
Community Commercial	0	0.00	40.7	0	1.03	0	2.59	0
Community Service	0	0.00	10	0	1.32	0	1.75	0
Military Ops(Gen Light Industrial)	0	0.00	6.97	0	0.92	0	0.98	0
Sub-Total			3,967		357		490	
ALL ELUAs	0							
Multi-unit or family	0	0.00	5.86	0	0.44	0	0.54	0
Single Family	0	0.00	9.57	0	0.75	0	1.01	0

Administrative	0	0.00	40.67	0	1.24	0	1.08	0
Community Commercial	0	0.00	40.7	0	1.03	0	2.59	0
Community Service	174,925	0.23	10	1,347	1.32	178	1.75	236
Military Ops(Gen Light Industrial)	0	0.00	6.97	0	0.92	0	0.98	0
Sub-Total			1,347		178		236	
TOTAL			**14,000**		**1,335**		**1,798**	
Assumes that No residences are within 800-feet of the community service area and therefore does not reduce the number of trips generated.								

Appendix J: Alternative Action 1 Traffic Impacts - Alternative Action 1 Compared to Existing Conditions			
ELU Trips	65,493	6,244	7,401
Alternative 1 Trips	14,000	1,335	1,798
Total New Trips	**79,493**	**7,579**	**9,199**
Percent Change	**21.38%**	**21.38%**	**24.29%**

Appendix J: Alternative Action 1 Traffic Impacts - Alternative Action 1 Compared to Proposed Action			
Alternative 1 Trips	14,000	1,335	1,798
Proposed Action Trips	24,479	1,875	2,379
Total New Trips	**-10,478**	**-540**	**-582**
Percent Change	**-42.805%**	**-28.797%**	**-24.453%**

APPENDIX K

NO ACTION ALTERNATIVE TRAFFIC IMPACTS

Appendix K: No Action Alternative Traffic Impacts								
			Daily Trips		AM peak Hour Trips		PM peak Hour Trips	
Land Use (net new residential sq ft)	Units (sq ft)	Reduction	ITE Rate	Trips	ITE Rate	Trips	ITE Rate	Trips
Multi-unit dorm or family	380	0.19	5.86	1,804	0.44	135	0.54	166
Single Family	351	0	9.57	3	0.75	0	1.01	0
Administrative	424,111	0.4	40.67	10,349	1.24	316	1.08	275
Community Commercial	184,224	0	40.7	7,498	1.03	190	2.59	477
Community Service	440,944	0	10	4,409	1.32	582	1.75	772
Gen Light Industrial	1,550,722	0.5	6.97	5,404	0.92	713	0.98	760
Sub-Total			**29,468**		**1,936**		**2,450**	

Note: Land use areas are based on net difference between BAFB existing land uses and constructed/proposed construction authorized under a FONSI with trips generated from build-out in 2010. The reduction in the multi-unit dorm provides for a lower per unit car ownership associated with single airmen. Administrative, community commercial/service, and light industrial is to allow for a reduction in the land area not developed as building/facilities but associated with concrete pads/runway/pavement. Assumptions are for the purposes of the calculations only.

Appendix K: No Action Alternative Traffic Impacts - No Action Alternative Compared to Existing			
ELU Trips	65,493	6,244	7,401
No Action Trips	29,468	1,936	2,450
Total New Trips	**94,961**	**8,180**	**9,851**
Percent Change	**44.99%**	**31.01%**	**33.10%**

Appendix K: No Action Alternative Traffic Impacts Compared to Proposed Action			
No Action Trips	29,468	1,936	2,450
Proposed Action Trips	24,479	1,875	2,379
Total New Trips	**4,989**	**62**	**71**
Percent Change	**20.38%**	**3.28%**	**2.97%**

Table 4.36: Traffic Volume Impact – No Action			
Category [1, 2]	**Daily Trips**[3]	**AM peak Hour Trips**	**PM peak Hour Trips**
ELU Baseline [4]	65,493	6,244	7,401
No Action Alternative Trips	29,468	1,936	2,450
Total 2010 Trips	94,961	8,180	9,851
Percent Impact	44.99%	31.01%	33.10%

APPENDIX L

AIR FORCE FORM 813's

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	ADD/ALTER MEDICAL CLINIC

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	510-411	CRWU058001	

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT	COST
AF CLINIC	SM	1		
SUPPORTING FACILITIES				
UTILITIES	LS			
PAVEMENTS	LS			
SITE IMPROVEMENTS	LS			
SUBTOTAL				
TOTAL CONTRACT COST				
SUPERVISION, INSPECTION AND OVERHEAD (6.5 %)				
TOTAL REQUEST				
TOTAL REQUEST (ROUNDED)				

10. Description of Proposed Construction: This project will expand the Buckley Clinic to accommodate a major staffing increase. The project will also provide space for four health care functions now located outside the clinic. Mental Health Services is located in two trailers and all Dental Services are currently contracted out. The TRICARE Service Center and Physical Therapy will also be consolidated with the rest of the clinic throughout t

11. REQUIREMENT: ADEQUATE: SUBSTANDARD:

PROJECT: This project will expand the Buckley Clinic to accommodate a major staffing increase. The project will also provide space for four health care functions now located outside the clinic. Mental Health Services is located in two trailers and all Dental

REQUIREMENT: This project will expand the Buckley Clinic to accommodate a major staffing increase. The project will also provide space for four health care functions now located outside the clinic. Mental Health Services is located in two trailers and all Dental Services are currently contracted out. The TRICARE Service Center and Physical Therapy will also be consolidated with the rest of the clinic throughout this project. The dental contract will be continued, until the project is completed. To handle the current space constraints, the interim solution is to lease space off base. The location being considered by the Buckley medical staff is the Aurora Medical Center (3 miles from base), which is available. HFO-WR personnel and Buckley?s medical staff toured the Aurora Medical Center and HFO-WR developed a plan to show how, with minor renovations, Buckley?s clinic could operate in Aurora?s 14,000 SF of available space.

CURRENT SITUATION: The clinic is severely short of space.

IMPACT IF NOT PROVIDED: Replace commerical leased space and mission expansion for the Buckley Transition to the 460th ABW.

Addition: 4,211 GSF
Alteration: 5,378 GSF
Estimated 2005 - 9+012 mo

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	ADD/ALTER MEDICAL CLINIC

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	510-411	CRWU058001	

12. SUPPLEMENTAL DATA:

a. Estimated Design Data:

(1) Status:

(a) Date Design Started	
(b) Parametric Cost Estimates used to develop costs	YES
* (c) Percent Complete as of 01 JAN 2004	
* (d) Date 35% Designed	
(e) Date Design Complete	
(f) Energy Study/Life-Cycle analysis was/will be performed	NO

(2) Basis:

(a) Standard or Definitive Design -	NO
(b) Where Design Was Most Recently Used -	

(3) Total Cost (c) = (a) + (b) or (d) + (e):	($000)
(a) Production of Plans and Specifications	0
(b) All Other Design Costs	0
(c) Total	0
(d) Contract	0
(e) In-house	0

(4) Construction Contract Award

(5) Construction Start

(6) Construction Completion

* Indicates completion of Project Definition with Parametric Cost Estimate which is comparable to traditional 35% design to ensure valid scope, cost and executability.

b. Equipment associated with this project provided from other appropriations:
N/A

1. Component DEF (TMA)	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. Date OCT 2002
3. Installation and Location/UIC: Buckley AFB, Colorado	4. Project Title: Aeromedical Clinic Addition/Alteration	

5. Program Element	6. Category Code	7. Project Number	8. Project Cost ($000)
87717D	510 10	53891	

IMPACT IF NOT PROVIDED (Continued) : will not all fit in the existing clinic and there are no buildings or opportunity on base for these functions. This means that either these functions cannot be provided, or they will have to be located off-base in leased space, seriously degrading performance and mission readiness.

JOINT USE CERTIFACTION: The Director, Defense Medical Facilities Office certifies that this project has been considered for joint use potential. Joint use construction is recommended.

ESTIMATED CONSTRUCTION START:	APR 2005
ESTIMATED MIDPOINT OF CONSTRUCTION:	JAN 2006
ESTIMATED CONSTRUCTION COMPLETION:	OCT 2006

Director, Defense Medical Facilities Office: Mr. Surinder K. Sharma, P.E.
Phone Number: 703-681-3970

parking = 99 spaces w/ 6% spaces (van) for exam | 4x1 | Optometry | Public Health | BEC | Remote radiology crawl space

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1. Component DEF (TMA)	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. Date OCT 2002

3. Installation and Location/UIC:	4. Project Title
Buckley AFB, Colorado	Aeromedical Clinic Addition/Alteration

5. Program Element	6. Category Code	7. Project Number	8. Project Cost ($000)
87717D	510 10	53891	

9. COST ESTIMATES

Item	U/M	Quantity	Unit Cost	Cost ($000)
PRIMARY FACILITIES				
Aeromedical Clinic Addition	SF	4,511		
Aeromedical Clinic Alteration	SF	5,388		
Antiterrorism/Force Protection	LS	--		
Building Information Systems	LS	--	--	
SUPPORTING FACILITIES				
Electric Service				
Water, Sewer, Gas				
Paving, Walks, Curbs And Gutters				
Storm Drainage				
Site Imp(47) Demo( )				
Information Systems				
Antiterrorism/Force Protection				
Other (O&M Manuals)				
ESTIMATED CONTRACT COST				
CONTINGENCY PERCENT (5.00 %)				
SUBTOTAL				
SUPERVISION, INSPECTION & OVERHEAD (6.00 %)				
CATEGORY E EQUIPMENT				
TOTAL REQUEST				
TOTAL REQUEST (ROUNDED)				
INSTALLED EQT-OTHER APPROPRIATIONS				

10. Description of Proposed Construction: Construct a building addition to expand the existing medical clinic for Flight Medicine, Bioenvironmental Engineering, Public Health and Demand Reduction. Addition will be reinforforced concrete pier foundation with structural floors, and match construction type roof and exterior materials of existing clinic. Alter the existing clinic to connect the building addition and provide a more functional floor plan. The project will be designed in accordance with criteria prescribed in MIL-HDBK-1191, UFAS, and Americans with Disabilities Act (ADA) guidelines. O&M Manuals and Comprehensive Interior Design (CID) will be provided. Air conditioning: 18 tons.

11. REQ: 10,879 SF ADQT: 980 SF SUBSTD: 5,388 SF

PROJECT: Medical Clinic Addition/Alteration (CURRENT MISSION)

REQUIREMENT: A functional Aeromedical Services Clinic to meet the needs of the Active Duty base population.

CURRENT SITUATION: The existing medical clinic on Buckley AFB was originally an Air National Guard facility. In 1997, as active AF operations at Buckley gradually increased and the clinic staff increased correspondingly, a building addition was constructed to provide more space to serve the active duty base population. In October 2000 Buckley became an active Air Force Base and clinic staff increased again from 35 authorizations to over 80 with a projected 120 personnel due in by FY04. To meet the vastly increased space requirements that this number of medical personnel require, leased space in the local Aurora area was procured for most clinic operations. This lease arrangement has been validated as cost effective by an Economic Analysis. Several functions, however, still need to remain on base due to the services they provide. These include: Flight Medicine, Bioenvironmental Engineering, Public Health, and Demand Reduction. These functions will be accommodated by an addition and alteration to the existing clinic.

IMPACT IF NOT PROVIDED: Vital medical services that must remain on base due to mission requirements

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Table of Contents

A. INTRODUCTION 1

PURPOSE 1
GOALS AND OBJECTIVES 1

B. PROJECT DESCRIPTION 4

PROJECT STATISTICS 4
PROJECT NARRATIVE 4
PROCESS NARRATIVE 6
A-E RULES OF ENGAGEMENT 6
SPECIAL DESIGN PROBLEMS 7
CONSTRUCTION SEQUENCE 7
BUILDING SYSTEMS 7
Utilities 7
Architectural/Structural 8
Heating, Ventilation, and Air Conditioning 10
Project Conditions 12
Components 12
Pipe Insulation 12
ENERGY MONITORING 13
Plumbing 14
Fire Protection 15
System Performance Requirements 15
Electrical 17
EXTERIOR ELECTRICAL EQUIPMENT 17
INTERIOR ELECTRICAL EQUIPMENT 17
LIGHTING 18
COMMUNICATIONS 19
FORCE PROTECTION 19
USER EQUIPMENT 20
SPECIAL REQUIREMENTS 21

C. FLOOR PLANS 24

D. AREA DEVELOPMENT PLAN 26

65% Requirements Document
Table of Contents

PROJECT RELATIONSHIP TO THE BASE COMPREHENSIVE PLAN 26
Site Selection *26*
Architectural Compatibility *26*
Landscaping *26*

E. SUSTAINABLE DESIGN REQUIREMENTS 27

INTRODUCTION 27
SUSTAINABLE SITES 27
WATER EFFICIENCY 28
ENERGY AND ATMOSPHERE 28
MATERIALS AND RESOURCES 29
INDOOR ENVIRONMENTAL QUALITY 29
CONCLUSION 30
REFERENCES 30

F. REQUIREMENTS DOCUMENT AGREEMENT 31

AGREEMENT STATEMENT 31
SIGNATURES 31

G. ATTACHMENTS 32

Attachment 1 – DD Form 1391 Package
DD Form 1391C Initial Buckley AFB Program
DD Form 1391 Estimate (Revised)
Certificate of Compliance for Critical Planning Actions
Attachment 2 – Parametric Cost Estimates (PACES)
Attachment 3 – Buckley Air Force Base Master Site Plan
Attachment 4 – Environmental Report
Attachment 5 – Existing Utility Plans
Attachment 6 – Photographs
Attachment 7 – Points of Contact
Attachment 8 – Buckley AFB Facilities Excellence Plan

Acronyms

°F	degrees Fahrenheit
%	percent
ABW	Air Base Wing
ADA	Americans with Disabilities Act
A-E	Architect Engineer
AFB	Air Force Base
AFCEE	Air Force Center for Environmental Excellence
AFI	Air Force Instruction
AFSPC	Air Force Space Command
ANG	Air National Guard
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers
ASSE	American Society of Safety Engineers
ASTM	American Society of Testing and Materials
AT/FP	Anti-Terrorism/Force Protection
CFR	Code of Federal Regulations
CoANG	Colorado Air National Guard
CZ	Climate Zone
DoD	Department of Defense
EO	Executive Order
ETL	Engineering Technical Letter
FEMP	Federal Energy Management Program
FEP	Facility Excellence Plan
FM	Factory Mutual
FY	fiscal year
HQ	Headquarters
HVAC	heating, ventilation, and air conditioning
IAQ	indoor air quality
IEEE	Institute of Electrical and Electronics Engineers
IESNA	Illuminating Engineering Society of North America
kV	kilovolt

Acronyms

LAN	local area network
LDC	Leadership Development Center
LDC	Leadership Development Center
LEED	Leadership in Energy and Environmental Design
LF	linear foot (feet)
MAJCOM	Major Command
NFPA	National Fire Protection Association
PD	Project Definition
psf	pounds per square foot
psi	pounds per square inch
PVC	polyvinyl chloride
RD	Requirements Document
RFP	Request for Proposal
SF	square foot
SG	Space Group
SM	square meter
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
UBC	Uniform Building Code
UFC	Unified Facilities Criteria
UL	Underwriters Laboratories
USAF	United States Air Force
VOC	volatile organic compound
VTC	video teleconferencing

A. Introduction

Purpose

The purpose of this Requirements Document (RD) is to provide the Architect Engineer (A-E) a basis for understanding the project requirements, formulating pertinent questions and preparing a fee proposal. The project is the construction of a new 1,638-square meter (SM) (17,630-square foot [SF]) Leadership Development Center (LDC) at Buckley Air Force Base (AFB), Colorado. The RD provides a framework for executing the project with the Air Force Space Command (AFSPC) and Buckley AFB end users. Active involvement with AFSPC and Buckley AFB end users during all phases of design and construction is essential to ensure that the facility meets all functional requirements. The A-E is responsible for verifying the accuracy of all information contained in this document.

Goals and Objectives

The project goal is to provide a quality facility that enhances mission effectiveness while protecting the environment. A focus on quality and accuracy throughout the project's development and subsequent construction is paramount. The objectives are to deliver a complete and usable facility on time, within budget, that satisfies the end user's needs in a manner that is safe for those in and around the facility.

Construction of this project will provide Buckley AFB a facility that will adequately support large numbers of personnel for leadership development, education, training, and other special purpose uses. The facility will provide joint military use for Quarters, Commander's Call, and video teleconferencing (VTC). Buckley AFB personnel envision the facility supporting catered meals for banquets, awards, retirements, and other functions. Without this facility, Buckley AFB would have to continue conducting large meetings and educational training at the Air National Guard (ANG) facility per their schedule or off base.

For this project, the A-E must address the Buckley AFB Facilities Excellence Plan (FEP). The project will also reference the following standards and codes:

- Air Force Instruction (AFI) Handbook 32-1084
- Headquarters (HQ) AFSPC Architectural, Interior Design, and Facility Excellence Standards
- Uniform Building Code (UBC)

- National Fire Protection Association (NFPA) Life Safety Code 101
- Leadership in Energy and Environmental Design (LEED) Sustainability Certification Rating System for sustainable design
- Unified Facilities Criteria (UFC) 4-010-01 Department of Defense (DoD) Minimum Anti-Terrorism Standards for Buildings
- Engineering Technical Letter (ETL) 02-12, dated June 2002, Communications and Information System Criteria for Air Force Facilities
- Uniform Mechanical Code
- American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standard 62 (Ventilation for Acceptable Indoor Air Quality)
- NFPA 90 A (Installation of Air Conditioning and Ventilation Systems)
- NFPA 90 B (Installation of Warm Air Heating and Air Conditioning Systems)
- Uniform Plumbing Code
- Uniform Fire Code (Colorado Edition)
- Military Handbook 10008C
- NFPA 13 (Installation of Sprinkler Systems)
- NFPA 14 (Installation of Standpipe and Hose Systems)
- NFPA 20 (Installation of Centrifugal Fire Pumps)
- National Electric Code
- NFPA 780 (Lighting Protection Code)
- Institute of Electrical and Electronics Engineers (IEEE) Climate Zone (CZ) (National Electric Safety Code)
- Uniform Federal Accessibility Standards
- Current ETLs
- Current design and construction guidance published by Air Force Center for Environmental Excellence (AFCEE)

The facility shall be architecturally compatible with other new facilities being constructed prior to this project. In addition, the A-E shall strive to provide a design that achieves the current United States Air Force (USAF) goal of a minimum LEED rating of 26.

B. Project Description

Project Statistics

Installation:	Buckley Air Force Base
Fiscal Year:	2004-2006
Project Name:	Leadership Development Center
PDC Number:	CRWU 06 3003
Host Command:	Buckley Air Force Base
Requiring Command:	Air Force Space Command
Category Code:	610-249
Scope:	1,638 SM
Programmed Construction Dollars:	See DD 1391
Operational Need Date:	As Soon As Possible
Facility Need Date:	As Soon As Possible
Demolition:	N/A
Remediation:	N/A

Project Narrative

In 1942 and 1943, the federal government purchased 5,740 acres of land outside of Denver, Colorado and designated it as Buckley Field. Buckley Field was used to train U.S. Army Air Corps B-17 and B-24 bombardiers, armorers, and to conduct basic and Arctic training. In 1946, the U.S. Army deactivated Buckley Field and transferred ownership to the State of Colorado, which assigned the land to the Colorado Air National Guard (CoANG) for personnel training. In 1947, the U.S. Navy assumed control of a portion of Buckley Field for use as a training area and renamed it Naval Air Station Denver, Colorado. The remainder of the field was left in CoANG's control. In 1959, the U.S. Navy again deactivated the station and transferred the property back to CoANG. The station was then renamed Buckley ANG Base.

Effective 1 October 2000, the base was reassigned from the ANG to AFSPC to host the 821st Space Group (SG) and eventually became Buckley AFB. In October 2001, the 460th Air Base Wing (ABW) was established at Buckley AFB and assumed control of the installation. The Wing supports the USAF mission by providing space-based missile warning data, space communication data, and data relay operations, as well as sustaining all related base support functions.

The 460 ABW requires an adequate LDC to provide Wing and other supported organizations space for conducting leadership development activities, large meetings, and VTCs. Adequate facilities capable of hosting large meetings and VTCs currently are not

available on base. Many of the supported organizations have missions that impact national security. Facilities in the Denver Metro Area are not equipped with the required secure telecommunications and do not provide the level of security required for hosting meetings concerning such missions.

Large leadership development sessions are held at on-base facilities that are not sized to accommodate all attendees in a single session. These inadequately sized facilities require that meetings be replicated to provide all attendees the opportunity to interact with the presenters. This repetition is inefficient and costly. Many Wing-hosted meetings are either held off base or are held at inadequate facilities borrowed from the ANG. Leadership Development facilities at bases outside the metro area have limited availability and involve unacceptable travel times.

Without an adequate Leadership Development Center, all Officers, Non-Commissioned Officers and civilian employees will continue to miss valuable leadership development opportunities. Personnel will expend additional time away from work in order to travel outside the metro area to attend functions, teleconferences and other large meetings. Visiting personnel attending on-base meetings will expend excessive time seeking lunch at limited on base or distant off base eateries. Wing hosted meetings, awards banquets, hail and farewells, and holiday events will continue to be held either off base or at on-base facilities with furnishings and kitchen capabilities that present formidable challenges.

The LDC building shall be slab-on-grade with spread footings and foundation walls. The exterior walls shall be constructed of split-faced concrete masonry units with possible brick veneer accents and tinted insulated glass. The roof shall be sloped standing seam metal over rigid insulation.

There is no criterion in AFI Handbook 32-1084 for this facility. Buckley AFB prepared an initial set of program requirements, which was used as a starting point to determine the overall size of the facility. While developing the plan at Buckley AFB during the design charrette, the end-users' main goal was to ensure that the large multipurpose meeting/training room could facilitate a minimum of 450 personnel during meetings. The end users also determined that the VTC would be tiered seating to hold a minimum of 36 people.

The facility shall have a large multipurpose meeting/training room that is dividable by a full-height automated movable partition with acoustical sound insulation. The room shall have a ceiling height of approximately 18 feet and accommodate 480 folding chairs. Adjacent to the meeting room will be elevated audio/visual control rooms for projection systems. The audio/visual room shall be no less than 12 feet deep. There shall be a kitchen capable of supporting the catering requirements of large meetings and official military functions and be designed so that it can be converted to a full-service kitchen in the future. There shall be a dining area adjacent to the kitchen that can serve a minimum of 30 people. There shall be a VTC room with fixed tiered seating that accommodates 40

people. Due to the nature of supported missions at Buckley AFB, secure telecommunications shall be required.

The kitchen shall be sized accordingly to accommodate a future full-service gas kitchen, including all ovens, ranges, range hoods, refrigeration, freezers, plumbing, and mechanical exhausts necessary to support a full-service kitchen. The facility will also incorporate a speakers' preparation area, two secure phone booths, administrative offices for two people, a large entry/foyer area with an adjacent coatroom, and restroom facilities to accommodate the large number of personnel in the facility during meetings. The building will also incorporate an outdoor open terrace that faces west toward the Rocky Mountains.

Process Narrative

The main large meeting/training room should be located centrally within the facility. The main entrance will be to the south of the facility. From the entrance, there will be direct access down a wide main corridor to get to the large meeting/training room. The Video Teleconferencing Center will also be in close proximity to the main entrance. Restrooms will be located conveniently between the Video Teleconferencing Center and the large meeting/training room. The dining facility will be at the end of the wide main corridor at the northwest end of the facility. A kitchen will be located at the north end of the facility. A delivery vehicle drive shall be provided to the north end of the facility to unload catered meals and other kitchen supplies to the kitchen.

The facility will staff no more than 10 people. The large meeting/training room will easily accommodate 480 to 520 loose chairs in auditorium seating arrangement. The dining room shall accommodate a minimum of 30 people, and the Video Teleconferencing Room shall seat 40 people. The facility must be laid out in a manner that reduces congestion. Space layout is vital so there is an orderly movement of personnel during functions.

Floor space must be calculated in accordance with AFI 32-1084 and applicable industrial standards. A single line drawing is supplied in Section C and should be used for reference purposes, however it is not meant for use as the final design. The A-E may have a better scheme and should coordinate the design with the end users and Project Manager.

A-E Rules of Engagement

Possible project delivery options include both Design-Bid-Build or Design-Build formats. The A-E contract requires a Request for Proposal (RFP). The RFP shall contain all requirements for the new LDC, plus it shall include the design provisions contained in the Buckley AFB FEP and other requirements and standards referenced in this RD.

This contract requires identifying all sites and facility requirements, including environmental, site utility, architectural, structural, mechanical, plumbing, fire protection, electrical, and telecommunications design. This contract requires all drawings and specifications necessary to communicate the requirements in the RFP. At the beginning of this contract, a design charrette shall be performed on site at Buckley AFB.

Special Design Problems

Buckley AFB personnel have predetermined the proposed site location for the new LDC, which is an open field west of Aspen Avenue.

Although Buckley AFB personnel have stated there are adequate utilities for the LDC, it is vital that Buckley AFB reevaluate the utility requirements for the new facilities, which include the Wing HQ, the Logistics Complex, as well as the new LDC. These new facilities are in close proximity to one another. Pressure tests are vital to ensure adequate water pressure for fire suppression sprinkler systems.

The site survey revealed no unusual soil conditions, utility lines, topography, clear zone, environmental, or infrastructure concerns that may adversely affect proposed construction of the proposed LDC.

An encroaching black-tailed prairie dog community and burrowing owls have been observed on the site. The prairie dogs will be relocated prior to construction under a separate USAF program. The burrowing owls will also be removed from the site by a separate USAF program prior to the start of construction activities; however, should nesting owls be discovered, the contractor shall protect, preserve, and isolate the nesting area.

Prior to site and structural design, it is vital that a geotechnical survey be conducted due to the weight of delivery and other vehicles on the site.

Construction Sequence

The new 460 ABW HQ will be built prior to constructing the new LDC. Demolition of existing facilities is not required under the scope of this project.

Building Systems

UTILITIES

There are existing utilities that run along the east side of Aspen Avenue. There is potable water service supplied by a 6-inch main. Flow tests shall be conducted prior to

construction of the new LDC to ensure adequate water and water pressure will meet water supply and facility sprinkler system requirements. Approximately 500 linear feet (LF) of new water line shall be provided to the new LDC.

A new 10-inch sanitary sewer main is being installed under the new Wing HQ Project. Approximately 500 LF of new sanitary sewer tie-ins shall be provided from the new LDC to the sanitary sewer main.

There is an existing 30-inch-diameter storm sewer that runs along the west side of Aspen Avenue. Approximately 500 LF of new underground storm lines shall be provided from the new LDC to the existing main, including underground drainage from the sloped loading dock area at the kitchen.

There is an existing 6-inch gas line that runs along the west side of Aspen Avenue. Approximately 500 LF of new underground gas line shall be provided to the new LDC from the gas main.

There is an existing underground 7.62/13.2 Y kilovolt (kV) copper electrical service. Approximately 500 LF of new underground electrical shall be provided to the new LDC. Conduits shall be concrete encased Schedule 40 polyvinyl chloride (PVC), with a minimum envelope dimension of 3 inches. The required conduit arrangement shall be neatly stacked in the trench utilizing plastic duct spacers to maintain conformity. The conduit shall be placed with a minimum of 3 feet of cover to the proposed surface grades.

ARCHITECTURAL/STRUCTURAL

All building construction design for the new LDC shall be based upon proven design techniques that utilize state-of-the-art design in readily available materials and hardware. The focus of all architectural and structural design shall be the safety, convenience, reliability, maintainability, and comfort of the end users, customers, and visitors.

The new LDC will be a mixed-use facility. The dining hall and VTC Room will be classified as Use A-2 Assembly, and the large multipurpose meeting/training room will be Use A-3 Assembly. Due to the overall square footage, the project can be classified as Type II Construction. The facility shall be fully sprinklered and open on all sides, allowing for area increases per code.

The new LDC design and construction, including components (roofing, wall cladding, windows, connections, etc.) shall resist wind load requirements of American Society of Civil Engineers (ASCE) 7-95, or latest edition, for a wind velocity of 70 miles per hour. The building shall have an Importance Factor of 1.15, Exposure Category C, and components and cladding shall be designed based on location, structure, internal pressures, etc. The seismic zone is 1, per UBC; the roof snow load or live load will be 30 pounds per square foot (psf); and maximum frost penetration will be 36 inches. Local codes shall be used if they are more stringent.

An economical structural system shall be selected based on facility size, projected load requirements, and local availability of materials and labor.

Access roads and entrances should accommodate the size and turning radius of Fire Department Services and delivery vehicles to the kitchen dock. New pavement shall be designed to accommodate the weight of delivery vehicles and fire trucks.

The building structural modules shall be designed to reflect space requirements, economy, and subsystem dimensions (e.g., ceiling grid, masonry units, framing members, etc.). Consideration shall be given for clear span versus multicolumn supported roof structures for the large multipurpose meeting/training room. The kitchen shall have walls of concrete masonry unit construction for durability.

All facility components shall be of noncombustible construction materials. All walls are required to run from floor to underside of structural floor above or roof deck. All exterior glass shall be insulated and tinted to reduce heating and cooling costs. All functional areas including parking spaces, entrances, corridors, restrooms, and door hardware must be barrier free and accessible to the physically handicapped in accordance with Americans with Disabilities Act (ADA) and Uniform Federal Accessibility Standards. Interior and exterior signage shall be provided in accordance with USAF and Major Command (MAJCOM) standards, as well as any graphic standards used at Buckley AFB.

The LDC dimensions are 116 feet east to west by 174 feet north to south. The exterior building materials shall be compatible with the new Wing HQ, to be located immediately north. Exterior doors at the main entrance shall be storefront glass type. The roof shall be sloped standing seam metal.

The large meeting/training room, VTC Room, dining area, foyer, main corridor, and the two offices shall have carpeted floors and 4-inch rubber base. Walls shall be painted gypsum board, and ceilings shall be 2-foot by 4-foot acoustical tiles in standard-width grids.

All restrooms shall have sheet rubber flooring with welded seams and slip-resistant surface with integral rubber base. Walls shall be full-height ceramic tiles, and ceilings shall be water-resistant gypsum board. Toilet room partitions shall be stainless steel. All toilet room accessories shall be provided.

The kitchen shall have ceramic tile floors, base, and walls. Ceilings shall be water resistant gypsum board.

All interior doors shall be solid wood or metal doors in painted hollow metal frames. All interior partitions shall receive acoustical insulation the full height of the wall.

HEATING, VENTILATION, AND AIR CONDITIONING

All mechanical systems, including heating, ventilation, and air conditioning (HVAC), for the new LDC shall be based upon proven design techniques that utilize state-of-the-art developments in readily available equipment, hardware, and systems. The focus of all HVAC system designs shall be the safety, convenience, reliability, maintainability, and comfort of the end users, customers, and visitors.

In addition to the above, all items in the HVAC systems shall be easily accessible for maintenance and adjustments. Suitable access to all components shall also include provisions for easy removal and replacement. All mechanical systems shall be reliable and stable in their operation. The systems shall be direct in their operation for easy control and adjustment.

Energy conservation shall be of prime importance in the design of all mechanical systems. The systems shall meet all local, state, and federal energy conservation codes, including applicable ASHRAE standards.

Indoor Design Conditions:

HVAC systems serving administrative spaces/special purpose spaces shall maintain the following indoor conditions:

Summer: 75 degrees Fahrenheit (°F) dry bulb at 50% (maximum) relative humidity

Winter: 72°F dry bulb

A ventilated exhaust system from the kitchen shall be provided. The multipurpose meeting room, kitchen, dining room, and VTC Room shall be zoned separately from the rest of the facility.

Outdoor Design Conditions:

Heating degree-days are 6,283

Cooling degree-days are 803

Outside design temperature area:

Heating (99% OCC) = 5°F

Cooling (1.0%): Dry Bulb = 90°F

Wet Bulb = 63°F

The ventilation standards shall be based upon ASHRAE Standard 62-1989. Where there is conflicting information between the ASHRAE and the code, the more stringent of the requirements shall be used.

In general, HVAC systems shall be designed to limit the sound transmitted to the surroundings. Sound levels from the HVAC system should not exceed the noise level specified for the different spaces. Lower duct velocities, duct silencers, and appropriate duct fittings shall be utilized in the design to limit the noise levels. Where necessary, vibration isolation shall be provided.

Maximum noise levels in the occupied spaces produced by the HVAC systems shall be the stricter of either the latest ASHRAE Fundamentals Handbook or as noted below:

Location	Recommended Noise Level RC (N)
Private Offices/VTC/Dining	25 – 35
Meeting Room	30 – 40

All equipment shall be provided with premium high-efficiency motors with a power factor of 0.90 or higher. Motors rated at 1/2 horsepower or lower shall operate at 120/1/60 volts. Motors 3/4 horsepower or higher shall operate at 480/3/60 volts.

HVAC piping shall be designed to minimize pressure losses and the use of pumping energy. For future expansion connections, tees, valves, and blind flanges shall be provided. Isolation valves shall be provided at all main branch connections, major junctions, and as necessary to repair and service equipment.

Water pipe sizing (except for fire suppression piping) shall be designed on the following parameters:

Pipe Size (inches)	Maximum Velocity (feet per second)	Maximum Pressure Drop (feet per 100 feet of pipe)
Up to 2	4.0	4.0
2.5 through 6	5.5	2.5
8 through 12	8.0	2.0
14 through 20	10.0	1.0

Automatic air vents shall be provided at all high points in piping systems, including coils. Drain connections and valves shall be provided at all low points in piping systems, including coils.

Hanger and support components shall be provided in accordance with industry standards, as will power-actuated drive-pin fasteners appropriate for supported loads; mechanical

anchor fasteners and heavy-duty steel trapezes; and structural steel stands to suspend equipment from structure above or support equipment above floor.

Mechanical vibration and seismic controls, including vibration isolators, vibration isolation bases, inertia bases, and seismic restraints and snubbers shall be provided as required on all moving equipment.

PROJECT CONDITIONS

Project Seismic Zone: 1

Building Importance Factor: 1.15

COMPONENTS

Isolator Pads: Oil- and water-resistant rubber

Rubber Isolator Mounts: Double-deflection type

Spring Isolators: Freestanding, laterally stable, open-spring type

Restrained Spring Isolators: Vertically restrained, freestanding, laterally stable, steel open-spring type

Rubber Hangers: Double-deflection type

Spring Hangers: Combination spring and elastomeric hangers with coil spring and elastomeric insert in compression

Vibration Isolation and Inertia Bases: Structural-steel bases and rails designed and fabricated by isolation equipment manufacturer, supporting equipment static loadings, power transmission, component misalignment, and cantilever loadings; inertia bases to be filled with concrete.

PIPE INSULATION

Fire Performance Characteristics: Flame spread of 25; smoke developed of 50; according to American Society for Testing and Materials (ASTM) E 84

Glass Fiber: Preformed; ASTM C 547, Class 1, rigid, jacketed and vapor-barrier coated

Cellular Glass: Preformed foamed or cellulated glass, jacketed pipe insulation

Flexible Elastomeric Cellular: Tubular, expanded, closed cell

Calcium Silicate: ASTM C 533, Type I, preformed

Jacket: PVC for exposed piping; aluminum for outdoor applications

Ductwork shall be constructed of galvanized steel sheet metal and shall be rectangular, round spiral, or oval as appropriate for the specific application. All duct design shall be in accordance with Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) Duct Construction Standards.

For design applications, velocity of air in the ducts shall not exceed the following:

Duct Application	Velocity (feet per minute)
VAV Mains	2,500
Constant Volume Mains (Unoccupied Spaces)	2,500
Constant Volume Mains (Occupied Spaces)	2,000
Branch With Diffuser Connection	1,000
Exhaust Systems	1,500

Dampers and actuators, duct silencers, turning vanes, duct-mounted access doors, flexible connectors, and flexible ducts shall be provided as required for a complete design.

Exhaust systems for the kitchen shall be provided as well as provisions for future kitchen exhaust hoods at the exterior wall.

Energy Monitoring

All systems shall incorporate energy efficient criteria consistent with the ENERGY STAR® program, Federal Energy Management Program (FEMP) initiatives, Energy Policy Act of 1992, Executive Order (EO) 13123 and 10 Code of Federal Regulations (CFR) 435:

> The facility design shall encourage sustainable design and shall provide for verification of building performance. Off-grid generation systems such as photovoltaic, fuel cells, and other alternatives shall be considered and employed where such systems are lifecycle cost-effective.

Energy for lighting and other uses shall comply with ASHRAE/IES 90.1-1999 or other applicable state or federal standards.

Microprocessor-based metering units shall be provided on utility services and feeders within the facility to monitor the quantity and quality of energy used.

Connection to the Buckley AFB central energy monitoring and control system shall be provided.

PLUMBING

All plumbing systems for the new LDC shall be based upon proven design techniques that utilize state-of-the-art developments in readily available equipment, hardware, and systems. The focus of all plumbing system designs shall be the safety, convenience, reliability, maintainability, and comfort of the end users customers and visitors.

In addition to the above, all items in the plumbing systems shall be easily accessible for maintenance and adjustments. Suitable access to all components shall also include provisions for easy removal and replacement.

All plumbing systems shall be reliable and stable in their operation. The systems shall be direct in their operation for easy control and adjustment.

Energy conservation shall be of prime importance in the design of all plumbing systems. The systems shall meet all applicable local, state, and federal energy conservation codes.

Cold and hot water domestic piping system shall be provided throughout the facility. Sanitary and storm drainage, plus natural gas systems, shall be provided. Floor drains shall be provided in rest rooms, janitor closets, and kitchen. Electric water coolers shall be provided outside of restrooms, and metering for gas and water service shall be provided. All plumbing services will come from the existing mains along Aspen Avenue.

Isolation valves shall be provided within the cold and hot water systems at all main branches and on mains and branches serving plumbing fixtures.

Plumbing fixtures for the facility shall follow low-flow conservation design, however, excellent flushing action must be provided in toilet rooms. The flush valves for the urinals and water closets should consider infrared types. Faucets at lavatories should also consider electronic actuation, and metering for gas and water service shall be provided. ADA and Uniform Federal Accessibility standards will be followed for providing accessible fixtures in all toilet rooms.

Sinks with garbage disposals shall be provided in the kitchen.

Hot and cold domestic water lines shall not exceed 8 feet per second velocity or 8 feet of pressure loss per 100 feet of pipe. Insulation thermal conductivity should be at least 0.29 Btu*in/hr*F with a flame/smoke developed rating less than 25/50. Lead-free potable

water delivery is mandatory, as required by code. Maximum water distribution working pressure shall be a minimum of 80 pounds per square inch (psi).

Waste and storm water piping shall have slopes not less than 1/8 inch per foot of fall. These pipes shall be insulated where horizontal and exposed to freezing temperatures. Insulation thermal conductivity shall be at least 0.29 Btu*in/hr*F. with a flame/smoke developed rating less than 25/50.

Sanitary and vent piping shall be cast iron soil pipe or PVC. All piping shall follow applicable codes for sizing and installation. Clean-outs shall be provided at all changes in direction. Trap primers shall be provided on all floor drains in toilet rooms and at other floor drains.

Pumps for the facility shall be sized for the service, flow, and pressure required. Strainers, valves, and vibration isolators shall be provided. Pumps shall be located where they will be accessible for service, and high-efficiency motors shall be specified.

Water heaters for the facility shall have 120°F domestic hot general-purpose water for the toilet rooms and kitchen. A grease interceptor shall be provided in the kitchen.

FIRE PROTECTION

The A-E shall provide a performance specification for a qualified Fire Protection Contractor. The Contractor will provide the appropriate hydrant flow tests. The areas, type of coverage, and the densities required in the various areas of the facility shall be provided.

All areas of the facility shall have complete sprinkler coverage for fire protection. The sprinkler systems shall be wet type. A fire detection/suppression panel shall be provided for the facility near the main entrance or where designated by the Fire Department. All sprinkler protection systems will be designed hydraulically per NFPA 13 standards, 2001 Uniform Fire Code (Colorado Edition), Buckley AFB Fire Code Standards, and Military Handbook 10008C 1997.

Connections for fire suppression will be made from the water main along Aspen Drive.

Sprinkler heads shall be coordinated with the ceiling systems selected by the A-E. Types of heads shall be coordinated with the A-E during final design.

SYSTEM PERFORMANCE REQUIREMENTS

The system shall be hydraulically designed according to the following:

Administrative Areas: Light Hazard

Large Meeting Room: Light Hazard

Dining Room: Light Hazard

Kitchen: Ordinary Hazard, Group I

Mechanical Rooms: Ordinary Hazard, Group I

Pressure: 175-psig minimum working-pressure ratings

Components:

Fire-Protection Service Valves: Underwriters Laboratories (UL)-listed and Factory Mutual (FM)-approved, with 175-psig non-shock minimum working-pressure rating

Backflow Preventers: American Society of Safety Engineers (ASSE) standard double-check assemblies

Sprinklers: Automatic, with heat-responsive element

Coated, painted, or plated sprinklers

Pendant sprinklers

Quick-response sprinklers

Recessed sprinklers, including escutcheon

Ductile-iron pipe and schedule 40 steel pipe

Fire Department Connections:

Alarm devices (addressable Class A, Style 6 plus)

Electric alarm bell

Water flow indicators

Pressure switches

Supervisory switches

Single-action key-resistible pull boxes

All electrical systems and wiring for the new LDC shall be based upon proven design techniques that utilize state-of-the-art developments in readily available equipment, hardware, and systems. The focus of all electrical system designs shall be the safety, convenience, and reliability of the end users, customers, and visitors.

In addition to the above, all items in the electrical systems and wiring shall be easily accessible for maintenance. Suitable access to all components shall also include provisions for easy removal and replacement.

All electrical systems and wiring shall be reliable and stable in their operation. The systems shall be direct in their operation for easy control and adjustment.

Exterior Electrical Equipment

The LDC shall have a single utility area where facility equipment such as transformers and chillers are located. This area shall be located out of sight of main facility entrances and courtyards, but accessible to service roads and equipment maintenance vehicles. Only the feeds from the primary utility line to the LDC are to be included in the cost estimate.

All exterior equipment shall be mounted on individual concrete pads, so that the distance between equipment items is no less than 10 feet, and the personal egress space around pad mounted equipment is no less than 40 inches.

The facility power requirements shall be 120/208 volts. Emergency power is not required.

A grounding ring shall be provided around the facility. Special grounding systems are not required. Lightning protection shall be provided for the entire facility.

Interior Electrical Equipment

There shall be one main electrical equipment room. The room must be accessible and as near to the pad-mounted exterior equipment area as possible. The room shall be sized to accommodate protection equipment, main electrical switchboards, electrical distribution panels, transfer switches, transformers and circuit breaker panels feeding receptacles, and devices in the immediate surrounding area. Isolated circuits for special equipment shall be provided.

The main electrical switchboard shall have a multifunction digital-metering package to monitor electrical parameters. The main electrical switchboard shall be equipped with transient voltage surge suppression.

Electrical rooms shall be provided to house electrical branch circuits to each 10,000 square feet of usable floor space. The rooms shall be located adjacent to each telecommunication room. Each room shall be sized to accommodate a minimum of three circuit breaker panels and any transformer necessary for 208/110V panels, if not included in the main electrical room.

Electrical service and distribution equipment, including metering, wiring, switchboards, panel boards and electrical devices shall be provided, as well as telecommunications and data wiring, fire alarms, and intrusion detection systems per Buckley AFB's most current standards.

Lighting

All lighting systems for the new LDC shall be based upon proven design techniques that utilize state-of-the-art developments in readily available fixtures, switches, and systems. The focus of all lighting designs shall be the convenience, reliability, maintainability, and comfort of lighting levels of the end users, customers, and visitors.

In addition to the above, all items in the lighting systems shall be easily accessible for maintenance and adjustments. Suitable access to all components shall also include provisions for easy removal and replacement.

All lighting systems shall be reliable and stable in their operation. The systems shall be direct in their operation for easy control and replacement.

Lighting levels shall be designed to meet the recommendations of the Illuminating Engineering Society of North America (IESNA) Lighting Handbook.

Site lighting shall be provided at parking areas, kitchen receiving area, and outdoor terrace.

General lighting should be fluorescent with electronic, energy-efficient ballasts and lamps. All fluorescent lamps shall be T8 or smaller. All general lighting circuits shall be 277 volts, as applicable, fed by 480/277-volt circuits. Night and emergency lighting shall be provided as required.

Interior and exterior lighting control systems shall be provided, including ambient light dimmers and multiple switching for low ambient light levels and energy conservation.

Incandescent lamps shall be used only where required and shall have an average rated life of 2,500 hours.

Red strobe lighting shall be provided on the interior and exterior of the facility to alert fire fighter of an emergency response.

The large meeting room and VTC Room shall have a "layered" lighting system with independent dimmer controls, including incandescent lighting and wash lighting on walls.

All private offices shall have lighting systems designed to control brightness and glare.

Communications

All communications systems for the new LDC shall be state-of-the-art developments in readily available equipment and systems. The focus of all communications system designs shall be the convenience and reliability for the end-users, customers, and visitors.

A communications duct bank shall be provided from the main telecommunications room to the base main communication duct.

The facility shall be pre-wired for data (local area network [LAN]), telephone (multiline), and with extra LAN ports provided in the large meeting room and VTC Room.

A paging system shall be provided throughout the facility.

A facility intrusion detection system shall be provided following the most current systems that Buckley AFB is using.

Force Protection

All parking areas existing or proposed shall be a minimum of 25 meters (82 feet) away from any exterior wall of the new LDC. The majority of parking will be to the south of the LDC.

There shall be a gated access to the kitchen delivery area.

The new LDC does not contain a mailroom.

All building components, site design, utility design, mechanical, and electrical design shall comply with Anti-Terrorism/Force Protection (AT/FP) Building Standards for new construction project.

User Equipment

Special support and equipment requirements that could impact useable space and design.

NEW EQUIPMENT
Coat Racks
480 Folding Chairs
Folding Tables
40 Fixed Auditorium-Style Cushioned Chairs
(3) Projection Screens (Electrically Operated)
Projection Systems (Per Base Multimedia Manager)
Dining Room Tables
Dining Room Chairs (30 Minimum)
Dishwashers
Freezers
Refrigerators
Microwave Ovens
Conventional Ovens to Heat Catered Food
Commercial Kitchen Pots/Pans
Commercial Kitchen Knives/Utensils
Plates/Cups/Glasses/Flatware/Silverware
Portable Parquet Dance Floor
Portable Stage
NOTE: The base Multimedia Manager has an existing VTC system that can be installed in the VTC room.

Special Requirements

Special Requirements	Required Y / N / NA	Remarks
Real estate acquisition	N	
Well permits	N	
Public utility easements	N	
Demolition	N	
Environmental concerns	Y	See Report
Recycle materials	Y	Recycle construction waste
Special soil conditions	Y	Perform Geotechnical study
Vehicle Parking	Y	
Roofing Systems	Y	Standing seam metal roof
Doors (Vault, Overhead)	N	
Industrial waste sewage connection	N	
Unusual Mechanical Systems		
Unusual Ventilation Requirements	Y	Kitchen
Vibration Isolation	Y	Kitchen
Special Heating/Cooling Loads	Y	Night setback system.
Temperature/Humidity Control	Y	Zone controls for different areas
Fire Protection Systems (i.e. AFFF)	Y	Detection throughout and sprinkler system
Special Piping (compressed air)	N	
Process Equipment/Systems	N	
Irrigation	Y	Water for landscaping
Landscaping and Exterior Signage	Y	Per Buckley AFB Facilities Excellence Plan, AF Environmentally Responsible Facilities Guide, AT/FP Standards
Electrical		
Emergency Generator	N	
UPS	N	
Power Conditioning/PCCIE	N	
Lighting Protection	Y	
Unique Lighting (exterior, interior)	Y	Outdoor terrace, Dining Room, VTC, & Large Meeting Room
Communications/Antennas	N	
Special Computer	Y	LAN System/SIPRNET
Public Address or Intercom	Y	Internal paging system
TEMPEST/HEMP/RF Shielding	N	
SCIF/Vaults (Class)	N	

Special Requirements	Required Y / N / NA	Remarks
Physical Security (fencing, IDS)	Y	For Delivery Vehicles to Kitchen
Anti-terrorism	Y	See AT/Force Protection Measures
Elevators	N	
Comprehensive Interior Design (CID)	Y	New Floor plan must accommodate new furniture.
Furniture: By This Contract	N	
By Another Contract	Y	New furniture required
Relocate Existing	N	
Pre-wired Workstations	Y	Provide electrical, data and phone for installation of new workstations.
Sound Attenuation	Y	Isolate noise from VCT & Large Meeting Room
Structural Interior Design (SID)	Y	Large Meeting Room
Unusual Clear Spans	Y	Large Meeting Room
Special Structural	N	
Unique Floor Loads or Needs	N	
Energy Compliance (10 CFR 435)	N	
EMCS	Y	Provide connections
Metering	Y	Meter all utilities
Life-Cycle Cost Studies	Y	The A-E will provide a separate Value Engineering Study
Lighting/Envelope Screening	Y	Exterior Building Lights
Blast (if screening fails)	N	
Special Safety Systems	Y	Safety Glass where applicable
Special OSHA requirements	N	
American with Disabilities Act Requirements (ADA	Y	All areas must be accessible to the physically handicapped
Visually-impaired vendors (GSA program)	N	
State Historical Preservation Office Review	N	
Recycling Considerations	Y	Recycle construction materials IAW AF Environmentally Responsible Facilities Guide
Security clearance	Y	Contractor access to Buckley AFB
Special construction escort requirements	N	
Drawings and plans (CADD) Design Drawings As-builts GIS	Y	At final submittal: Micro Station (version 5 or later) or AutoCAD (version 12 or later) format on CD-ROM with one backup copy. Provide 11"x17" laser prints of

Special Requirements	Required Y / N / NA	Remarks
		each drawing. Specifications: Three bound final copies, using Microsoft Word for Windows format, Version 6.0 or later, on CD-ROM. Cost Estimate: on CD-ROM Microsoft Excel format, version 5.0 or later.
Workaround Facilities	Y	Follow Buckley AFB Construction Plan
Overseas Travel	N	
Other (specify)	N	

The items listed above are to be used as a guide by the A-E in developing user requirements. The list is not be interpreted as an all-inclusive summary of project considerations. During the Project Definition (PD) phase of design, the A-E must verify the accuracy of the requirements noted above and any special requirements that may arise during the design process.

Note: The A-E is responsible for accomplishing all permitting applications and permitting fees. All permits will be in the Government's name and shall be coordinated through the government prior to sending them to the approval agency.

C. Floor Plans

1. Conceptual Single Line Floor Plans
2. Functional Layout Diagrams
3. Floor Space Calculations

Floor Space Calculations	
First Floor	
PROGRAM FUNCTION	**NSF**
Meeting Room	5,900
A/V Equipment Rooms	752
VTC Room	**1,080**
Table/Chair Storage	756
Foyer/Entryway	576
Catering Kitchen	1,120
Dining	912
Offices (2 PN)	260
Speaker Prep Area	144
Coat Room	216
Restrooms	985
Secure Phone Booths (2 ea)	66
Janitor's Closets	54
Mechanical Rooms	936
Electrical Rooms	468
Telecommunication Rooms	270
TOTAL NET AREAS	**14,495**
TOTAL GROSS BUILDING AREA	**17,630 GSF**

D. Area Development Plan

Project Relationship to the Base Comprehensive Plan

SITE SELECTION

The site location for the new LDC is part of the Buckley AFB General Plan. The plan includes a new Wing HQ, as well as a new Logistics Readiness Complex. These new facilities will incorporate extensive new site work.

The site is currently a rectangular-shaped open grassy field with frontage to the east on Aspen Avenue. Building 1011 is opposite the road frontage to the west and paralleling the site.

The site lies on the top of a small ridge with moderate elevation downslope to the southwest and gently rolling hills to the northeast. An open field that is the proposed site for the new 460 ABW HQ is directly adjacent to the northwest of the site. Across Aspen Avenue to the east lies an open field that is the proposed site of the new Logistics Readiness Complex. Southeast from the site is the Base Civil Engineering and Joint Military Use Building.

The site is improved with storm water lines and underground communications cables. The site survey revealed no unusual soil conditions, utility lines, topography, clear zone, environmental, or infrastructure concerns that may adversely affect proposed construction of the LDC.

ARCHITECTURAL COMPATIBILITY

The design of the new LDC shall meet the requirement of Buckley AFB FEP. The new LDC should have simple and clean but dynamic lines for building mass. The A-E shall review the materials chosen for the new 460 ABW HQ and incorporate them into the LDC.

LANDSCAPING

Landscaping shall be provided that is low maintenance using only approved plant material for the region, thus providing landscaping design standards for Zone 1 contained in the Buckley FEP. Landscaping shall comply with AT/FP Standards.

E. Sustainable Design Requirements

Introduction

There are many different conceptions of green or sustainable building design due to the large scope of sustainable issues and the novelty of sustainable principles. Definitions of sustainability range from broad concepts that incorporate all aspects of sustainability to narrow definitions focused on one specific sustainable design feature such as recycled-content materials or energy efficiency. Within this broad spectrum, green buildings embody a design intent on balancing environmental responsiveness, resource efficiency, and cultural and community sensitivity. The goal of this process is to create facilities that meet the needs of facility end users.

Green building design includes all players in the development process, from the design team (USAF, the A-E, and consultants), the construction team (material manufacturers, contractors, and waste haulers), maintenance staff, and building end users.

The LEED rating system is broken down in to five categories: sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality. Using the LEED rating system as a model, the A-E shall look always that "smart choices" can be made throughout the project to minimize negative environmental impact due to construction and maximize the quality of the indoor environment for building end users.

USAF's goal is to have new facilities achieve a minimum LEED rating of 26. The new LDC or almost any new constructed project can achieve a rating and certification of 26 by designing an environmentally friendly building utilizing modern methods and materials and using energy-efficient mechanical and electrical systems. At the earliest stages of the design process, USAF and the A-E must review all the possible LEED opportunities that are applicable for the LDC project. The LDC can reach a higher certification rating than 26.

Sustainable Sites

Reduction of "light pollution" or unnecessary site lighting is an area of LEED emphasis and could conceivably be an area of study for this project. The intent is to light only those areas that are in need of illumination and reduce excess light. This can be achieved through the use of cutoff luminaries and by avoiding towering light standards with large area lights.

A concern regarding sustainable sites has to do with "heat islands" generated in urban areas. Based on the amount of hard, dark surfaces present at Buckley AFB, temperatures

tend to be several degrees higher than surrounding areas with less density and more vegetation. This is especially true during summer months. By using roof surfaces that are lighter in color and more reflective, the "heat island" effect can be reduced, and savings will be in energy and dollars.

Water Efficiency

Water efficiency shall be an issue during the planning and design of the LDC. Areas like Colorado periodically deal with water shortages. Employing intelligent water conservation strategies for the LDC makes sense for reduced cost, potential reduced maintenance, and simply as the environmentally responsible approach.

Landscaping and associated irrigation offers the LDC project additional points. A storm water management program should be implemented for landscape irrigation for the LDC, the future Wing HQ, and the future Logistics Complex. If one-fourth of the water collected is utilized for irrigation for landscaping, an additional point can be granted. The LDC should utilize plants that require watering consistent with the amount of rain received in the area. Not only does this approach save in terms of water usage, but it also saves in terms of maintenance costs.

The new LDC shall attempt to utilize faucets that reduce water use 20 percent. Toilet rooms are candidates for water reduction through the installation of efficient fixtures in compliance with the Energy Policy Act of 1992. These fixtures use less water than a traditional fixture and are commonplace in new construction. Waterless urinals are another option to save even more water, as well as save on maintenance costs as they do not have the usual flush valves and associated piping for water supply as on a traditional urinal.

Energy and Atmosphere

The energy and atmosphere portion of the LEED rating system attempts to conserve resources through the implementation of efficient mechanical systems free of certain environmentally harmful refrigerants and energy efficient building envelopes. The project shall place an emphasis on making sure that HVAC systems are working properly once installed through building systems commissioning.

The project has the potential to implement several of the LEED energy and atmosphere program components. A facility systems commissioning plan can be developed to ensure that the mechanical systems are balanced and functioning properly once installed. Systems will also need meet the most stringent Colorado codes for energy use, taking steps whenever possible to increase efficiency. Energy management systems shall be installed and potentially add to energy savings by providing heating and cooling in areas where they are needed at the time of need.

Energy savings can also come in the form of efficient building envelope materials. Exterior insulation and energy efficient windows are key in energy conservation. Windows and exterior envelope should be as energy efficient as possible within budget constraints.

Materials and Resources

The materials and resources section of the LEED rating system looks at the individual components that comprise a facility and attempt to reduce consumption through the use of salvaged, recycled, or rapidly renewable resources. An emphasis shall be placed on locally harvested and manufactured materials in order to reduce embodied energy in the product by reducing the amount of energy needed to transport a product to the site. This may or not be a problem in the Denver area. Another component of this section involves recycling of construction waste (paper, cardboard, metals, etc.) from both demolition and new construction in order to reduce the amount of debris that will end up in a landfill at the end of the project. Recycling in the facility does not end with the conclusion of construction. LEED mandates that areas in the facility be set aside for storage and collection of recyclable as an ongoing part of daily operation.

The LDC project can easily implement several of these concepts. First, introduce a waste management plan for jobsite collection and sorting construction debris. Materials can be separated and taken to approved recycling centers, then a receipt is submitted to track the recycling progress. Typically, the contractor can make money from scrap metal and other demolition waste, and those benefits are realized in the form of lower demolition bids. Once the job is completed, it would be relatively easy to set up recycling centers at various points in the facility for continued recycling by the end-users.

Second, to reduce the impact of harvesting raw materials, building products with recycled-content materials shall be identified and specified by the A-E. Materials that would be most applicable to this project are all metals (steel, light gauge metal partition framing, etc.) and certain types of building materials and insulation. The key is to identify the major building components during design and look for suppliers who use recycled-content in the manufacture of their product. Recycled-content also has to be weighed against the embodied energy of a product. These situations have to be evaluated on a case-by-case basis.

Indoor Environmental Quality

The final component of the LEED rating system deals with indoor environmental quality for the end users. Factors contributing to less than ideal air quality in a facility include tobacco smoke, carbon dioxide, dust from construction, chemicals, and emissions from building finishes like carpets and wall coverings. In DoD buildings, tobacco smoke is not an issue due to government nonsmoking policies, but all other sources have the potential

to be present in this project. In any indoor situation, steps can be taken to reduce these indoor pollutants and give the end users a healthier working environment. The indoor environmental quality section of LEED also deals with issues of thermal comfort, access to daylight, and fresh air.

During construction, an indoor air quality (IAQ) plan should be implemented. Procedures include storing absorptive materials properly to avoid mold and mildew, keeping the jobsite clean and free of as much dust and debris as possible, and protecting HVAC ducts from dust to avoid distribution throughout the facility. An IAQ management plan shall be laid out in the project specifications in accordance with SMACNA IAQ Guidelines for Occupied Buildings Under Construction, 1995, Chapter 3.

Finishes such as paint, adhesives, vinyl wall coverings, sealants, carpet, and composite wood products manufactured with volatile organic compounds (VOCs) emit toxins for a period of time after installation. One might equate these emissions with the "new car smell" associated with an automobile. This smell is actually toxic to humans and can cause negative symptoms ranging from headaches to nausea. Avoiding vinyl wall coverings and certain types of carpets, specifying products with low or no VOCs, and specifying products that do not use urea formaldehyde in their manufacture is essential in maintaining acceptable indoor air quality. These types of products are readily available and, with the exception of carpet, add little or no cost to a project.

Operable windows, access to daylight, and access to fresh air are significant parts of the IAQ section of the LEED program. LEED encourages facilities to be planed in such as way as to distribute natural light and natural ventilation to all occupants. The LDC will be open on all sides of the building and shall incorporate operable windows where appropriate. LEED also encourages access to individual temperature controls for the VTC Room, large meeting room, dining room, kitchen, and offices.

Conclusion

The LDC is a candidate for implementation of several ideas set forth in the LEED rating system and can achieve a rating higher than 26. Implementing the concepts addressed above will contribute little or nothing to the construction cost to the project and are simply issues of proper planning. Given that the USAF owns the building, it makes sense from a political and social perspective to implement environmentally friendly practices for the LDC. These practices will lead to DoD facilities that contribute to the end users health, long-term financial savings, and offer benefits to both end-users and the environment on a large scale.

References

LEED Reference Guide: Version 2.0. June 2001.

F. Requirements Document Agreement

Agreement Statement

The undersigned agree to follow the provisions of this Requirements Document. Each activity will focus its efforts and influence to provide complete, comprehensive, up-front planning and to meet the objectives of designing and constructing this project to fulfill end user needs and to meet Air Force quality, safety, and reliability expectations, with minimum changes, within budget, and on schedule. Changes to this plan must be coordinated with and approved by the undersigned or their designated representatives.

Signatures

BASE CIVIL ENGINEER	**BASE ENVIRONMENTAL MANAGER**
FIRE CHIEF	**PROJECT MANAGER**
SECURITY FORCES	**COMMUNICATIONS**
SAFETY	

G. Attachments

Attachment 1

DD Form 1391 Package

DD Form 1391C Initial Buckley AFB Program

DD Form 1391 Estimate (Revised)

Certificate of Compliance for Critical Planning Actions

DD Form 1391C
INITIAL BUCKLEY AFB PROGRAM

1. Component AIR FORCE	FY 2004-2006 CONSTRUCTION PROJECT DATA	2. DATE
3. INSTALLATION AND LOCATION BUCKLEY AIR FORCE BASE, COLORADO		
4. PROJECT TITLE LEADERSHIP DEVELOPMENT CENTER		5. PROJECT NUMBER CRWU 063003

PROPOSED FACILITY'S DETAILED DATA SHEET

Floor Space Calculations

LEADERSHIP DEVELOPMENT CENTER

PROGRAM FUNCTION	CAT CODE	SQ METERS	SQ FEET
Meeting Space (9 SF/PN) (450 PN)	610-249	(376)	(4,047)
Audio/Visual Equipment Rooms		(44)	(474)
Video Teleconference Room (36 PN)		(88)	(947)
Table/Chair Storage		(98)	(1,055)
Foyer/Entryway		(140)	(1,507)
Catering Kitchen		(134)	(1,442)
Dining Area		(67)	(721)
Offices (2 PN)		(28)	(301)
Speaker Prep Area		(22)	(237)
Coat Room		(21)	(226)
Restrooms		(70)	(753)
Secure Phone Booths (2 ea)		(3)	(32)
Janitor's Closets		(5)	(54)
Circulation Factor		(274)	(2,949)
Mechanical/Electrical		(801)	(1,938)
Telecommunications Closet		(11)	(118)
Covered Entries (@ ½ space)		(40)	(430)
Communications Equipment Room		(37)	(398)
TOTAL NET AREA			
Net Gross Multiplier			
TOTAL GROSS AREA		**(1,638)**	**(17,630)**

DD Form 1391 Estimate (Revised)

1. Component AIR FORCE	FY 2004-2006 CONSTRUCTION PROJECT DATA	2. DATE
3. INSTALLATION AND LOCATION BUCKLEY AIR FORCE BASE, COLORADO		
4. PROJECT TITLE LEADERSHIP DEVELOPMENT CENTER		5. PROGRAM ELEMENT 35996
6. CATEGORY CODE 610-249	7. PROJECT NUMBER CRWU063003	8. PROJECT COST ($000)

9. COST ESTIMATES

ITEM	U / M	QUANTITY	UNIT	COST
LEADERSHIP DEVELOPMENT CENTER	LS			
LEADERSHIP DEVELOPMENT CTR	SM	1,638		
ANTITERRORISM FORCE DEVELOPMENT	SM	1,638		
INTERIOR COMMUNICATIONS SUPPORT	LS			
SUPPORTING FACILITIES				
UTILITIES	LS			
PAVEMENTS	LS			
SITE IMPROVEMENTS	LS			
EXTERIOR COMMUNICATIONS SUPPORT	LS			
SPECIAL FOUNDATIONS FOR EXPANSIVE SOILS	LS			
SUBTOTAL				
CONTIGENCY (5.0 %)				
TOTAL CONTRACT COST				
SUPERVISION, INSPECTION AND OVERHEAD (5.7%)				
TOTAL REQUEST				
TOTAL REQUEST (ROUNDED)				
EQUIPMENT FROM OTHER APPROPRIATIONS (NON-ADD)				

10. Description of Proposed Construction:

Attachment 2

Parametric Cost Estimate (PACES)

This version of the 65% RD does not contain a PACES. The costs presented in DD Form 1391 and in the RD are based on preliminary cost and square foot data that was acquired during the charrette process. A formal cost estimate using PACES is being prepared and will be included at the 95% RD submittal.

Attachment 3

Buckley Air Force Base Master Site Plan

Attachment 4

Environmental Report

Attachment 5

Existing Utility Plans

Attachment 6

Photographs

Attachment 7

Points of Contact

NAME	ORGANIZATION	EMAIL ADDRESS	OFFICE #	FAX #	MOBILE #
Paul Warbington	URS	paul_warbington@urscorp.com	303.740.3948	303.730.6080	720.436.6308
Jeff Klassen	URS	jeff_klassen@urscorp.com	719.268.7423		719.510.8008
Butch Belszek	URS				
Virginia Whelchel	460 SFS	virginia.whelchel@buckley.af.mil	303.677.9242		
Charley Nicely	460 CE	charles.nicely@buckley.af.mil	303.677.6819	303.677.6819	N/A
Ray VanHorn	HQ AFSPC/CEPC	ray.vanhorn@paterson.af.mil	719.554.5204		
Steve Lufkin	URS	steve_lufkin@urs.com	602.648.2365		
Jim Young		james.young@buckley.af.mil	303.677.6402		303.717.2818
Elisa Sherva	460 CES/CEVP	elise.sherva@buckley.af.mil	303.677.9077		303.807.3525
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Mark Lombardy	460 ABN/AT	mark.lombardy@buckley.af.mil			
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Capt Neal Bowen	460 CS/SCX	neal.bowen@buckley.af.mil	303.677.5841		
AB Michael Coon	460 CS/SCX	michael.coon@buckley.af.mil	303.677.5867		
Thomas Jefferson	460 CS/SCMT	thomas.jefferson@buckley.af.mil	303.677.5805		
Doug Smith	460CS/SCS	doug.smith@buckley.af.mil	303.677.9708		

Attachment 8

Buckley AFB Facilities Excellence Plan

This document shall be made available to the A-E for the RFP. The document is available from Buckley AFB. Due to the size of the document, it is not included in this report.

1. COMPONENT	FY 2006 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(Computer Generated)	**05-Sep-03**

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	**LEADERSHIP DEVELOPMENT CENTER**

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	PROJECT COST ($000)
35996	**610-249**	**CRWU063003**	

9. COST ESTIMATE

ITEM	U/M	QUANTITY	UNIT COST	COST ($000)
PRIMARY FACILITIES				
Leadership Development Center	SM	1638		
Anti-Terrorism/Force Protection	LS	---	---	
SUPPORTING FACILITIES				
Pavement	LS	---	---	
Site Improvements	LS	---	---	
Utilities – Civil/Electrical/Mechanical	LS	---	---	
Communications Support	LS	---	---	
ESTIMATED CONTRACT COST				
CONTINGENCY (5%)				
SUBTOTAL				
SUPERVISION, INSPECTION AND OVERHEAD (5.7%)				
TOTAL REQUEST				
TOTAL REQUEST ROUNDED				
EQUIPMENT FROM OTHER APPROPRIATIONS (NON-ADD)				Under Development

10. Description of Proposed Work: Construct a 1,638 SM, single-story steel frame structure with reinforced concrete foundation and slab for expansive soils, split face concrete masonry unit (CMU) exterior, and standing metal/single ply roof. Includes utilities, parking, road access, site improvements, pre-wiring for voice and local area networks, and minimum DoD Force Protection standards.

11. REQUIREMENT: 6,198 SM ADEQUATE: 4,560 SM SUBSTANDARD: 0 SM

PROJECT: Construct a Leadership Development Center (New Mission)

REQUIREMENT: The Secretary of the Air Force and the Chief of Staff of the Air Force designated Air Force Space Command as installation host for Buckley AFB effective 1 Oct 2000, recognizing the growing active duty posture at Buckley ANGB and with the intent to provide the mission support and quality-of-life available at other Air Force bases. The 460th Air Base Wing became operational 1 Oct 2001. An adequate Leadership Development Center is essential for providing the new Wing and supported organizations with an appropriate facility for conducting leadership development activities, hosting large meetings and providing adequate video teleconferencing capabilities. The structure will include a large, partitionable meeting area for up to 450 personnel with supporting video teleconferencing space. A kitchen capable of supporting catering requirements for large meetings and military functions is required. Due to the nature of supported missions at Buckley AFB, secure telecommunications and proper force protection/anti-terrorism features are required.

CURRENT SITUATION: Adequate facilities capable of hosting large meetings, training sessions, and video teleconferences are not available on base. Many supported organizations have priority missions vital to national security. Metro area facilities are not equipped with the secure telecommunications and force protection capabilities required for hosting meetings supporting these missions, nor do they have the level of security needed. Currently, large leadership development sessions are held on-base in facilities not sized to accommodate all attendees in single sessions, requiring to be replicated to provide all attendees with the opportunity to properly interact with presenters and facilitators. These repetitions are inefficient, costly, and reduce the effectiveness by breaking up attendees into groups. Other Wing hosted meetings are held either off-base or in inadequate facilities borrowed from the Air National Guard. Leadership Development facilities at other bases are undersized, have limited availability, and involve round trip travel exceeding eighty miles, adding travel time of at least two hours.

IMPACT IF NOT PROVIDED: Military and civilian personnel will continue to miss valuable leadership development opportunities afforded personnel at established Air Force bases. Alternatively, personnel will spend considerable additional time away from normal work duties commuting to local or other military facilities to attend leadership development functions,

1. COMPONENT	FY 2006 MILITARY CONSTRUCTION PROJECT DATA (Computer Generated)	2. DATE
AIR FORCE		**05-Sep-03**

3. INSTALLATION AND LOCATION

BUCKLEY AIR FORCE BASE COLORADO (AFSPC)

4. PROJECT TITLE	5. PROJECT NUMBER
LEADERSHIP DEVELOPMENT CENTER	**CRWU063003**

teleconferences, and other large meetings. Certain mission-based meetings will be impaired due to lack of adequate security and secure communications. Conferences and Wing functions and events will continue to be held at off-base facilities or borrowed on-base facilities without the requisite furnishings, equipment, and feeding capability to make them fully efficient and successful.
ADDITIONAL: There are no criteria in AF Handbook 32-1084 for this facility. Criteria and scope for the facility are based on building codes for planned occupancy loads. A preliminary analysis of reasonable options for accomplishing this project assessed status quo, renovation of existing facilities, new construction, and lease was completed. The analysis indicates new construction is the only alternative that will effectively meet the use, operational, statutory, and security criteria for the functions required. Because of this, a full economic analysis was not performed. A Certificate of Waiver has been performed.
Base Civil Engineer: Lt Col Christopher C. McLane, (303) 677-6501.
Leadership Development Center: 1,638 SM = 17,630 SF
JOINT USE CERTIFICATION: This facility is programmed for joint use with the Army, Navy, and Marine Corps; however, it is fully funded by the Air Force.

DD Form 1391c, DEC 76 Previous editions are obsolete

65% Requirements Document
Table of Contents

A. INTRODUCTION 1

PURPOSE 1
GOALS AND OBJECTIVES 1

B. PROJECT DESCRIPTION 3

PROJECT STATISTICS 3
PROJECT NARRATIVE 3
PROCESS NARRATIVE 4
A/E RULES OF ENGAGEMENT 4
SPECIAL DESIGN PROBLEMS 5
SPACE REQUIREMENTS 6
CONSTRUCTION SEQUENCE 6
BUILDING SYSTEMS 7
Utilities 7
Architectural/Structural 7
Heating, Ventilation, and Air Conditioning 9
Project Conditions 11
Components 12
Pipe Insulation 12
ENERGY MONITORING 13
Plumbing 13
Fire Protection 15
System Performance Requirements 15
ELECTRICAL 16
LIGHTING 16
COMMUNICATIONS 17
FORCE PROTECTION 18
USER EQUIPMENT 18
COMMUNICATIONS EQUIPMENT 18
SPECIAL REQUIREMENTS 19

C. FLOOR PLANS 22

D. AREA DEVELOPMENT PLAN 24

65% Requirements Document
Table of Contents

PROJECT RELATIONSHIP TO THE BASE COMPREHENSIVE PLAN 24
Site Selection *24*
Architectural Compatibility *24*
Landscaping *24*

E. SUSTAINABLE DESIGN REQUIREMENTS 25

INTRODUCTION 25
SUSTAINABLE SITES 25
WATER EFFICIENCY 26
ENERGY AND ATMOSPHERE 26
MATERIALS AND RESOURCES 27
INDOOR ENVIRONMENTAL QUALITY 27
CONCLUSION 28
REFERENCES 28

F. REQUIREMENTS DOCUMENT AGREEMENT 29

AGREEMENT STATEMENT 29
SIGNATURES 29

G. ATTACHMENTS 30

Attachment 1 – DD Form 1391 Package
Attachment 2 – Parametric Cost Estimates (PACES)
Attachment 3 – Buckley Air Force Base Site Plan
Attachment 4 – Environmental Report
Attachment 5 – Existing Utility Plans, Maps, Information
Attachment 6 – Photographs
Attachment 7 – Points of Contact
Attachment 8 – Buckley Air Force Base Facility Excellence Plan

Acronyms

°C	degrees Celsius
°F	degrees Fahrenheit
A/E	Architect Engineer
ABW	Air Base Wing
ADA	Americans with Disabilities Act
AFB	Air Force Base
AFCEE	Air Force Center for Environmental Excellence
AFI	Air Force Instruction
AFSPC	Air Force Space Command
ANG	Air National Guard
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers
ASSE	American Society of Safety Engineers
ASTM	American Society for Testing and Materials
AT/FP	Antiterrorism/Force Protection
B	building
Btu	British thermal units
CE	Civil Engineer(ing)
CFR	Code of Federal Regulations
CoANG	Colorado Air National Guard
CSF	Consolidated Services Facility
CZ	Climate Zone
DoD	Department of Defense
EO	Executive Order
ETL	Engineering Technical Letter
FEMP	Federal Energy Management Program
FEP	Facility Excellence Plan
FY	fiscal year
HQ	Headquarters
HVAC	heating, ventilation, and air conditioning
IAQ	indoor air quality

Acronyms

IEEE	Institute of Electrical and Electronics Engineers
IESNA	Illuminating Engineering Society of North America
ITT	Information Ticket Tours
LAN	local area network
LEED	Leadership in Energy and Environmental Design
LF	linear foot (feet)
LRS	Logistics Readiness Squadron
MAJCOM	Major Command
MILCON	Military Construction Project
MIL-HDBK	Military Handbook
N/A	not applicable
NFPA	National Fire Protection Association
PACES	Parametric Cost Estimate
PD	Project Definition
psf	pounds per square foot
psi	pounds per square inch
PVC	polyvinyl chloride
RD	Requirements Document
RF	response factor
RFP	Request for Proposal
SF	square foot
SG	Space Group
SM	square meter
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
UBC	Uniform Building Code
UFC	Unified Facilities Criteria
UL	Underwriters Laboratory
UPS	Uninterrupted Power Source
USAF	U.S. Air Force
VOC	volatile organic compound

A. Introduction

Purpose

The purpose of this Requirements Document (RD) is to provide the Architect Engineer (A/E) a basis for understanding the project requirements, formulating pertinent questions, and preparing a fee proposal. The project is the construction of a new 1,310-square meter (SM) (14,148-square foot [SF]) Consolidated Services Facility (CSF) at Buckley Air Force Base (AFB), Colorado. The RD provides a framework for executing the project with the Air Force Space Command (AFSPC) and Buckley AFB end users: the Services Director and staff, Community Support Flight, Combat Support Flight, Resources Flight, Human Resources, Marketing/sponsorship, Food Services staff, Mortuary/Search and Rescue, the Honor Guard, and Information Ticket Tours (ITT) offices and sales through the team members.

Active involvement with AFSPC and Buckley AFB end users during all phases of design and construction is essential to ensure that the facility meets all functional requirements. The A/E is responsible for verifying the accuracy of all information contained within this document.

Goals and Objectives

The project goal is to provide a quality facility that enhances mission effectiveness while protecting the environment. A focus on quality and accuracy throughout the project's development and subsequent construction is paramount. The objectives are to deliver a complete and usable facility on time, within budget, that satisfies the end user's needs in a manner that is safe for those in and around the facility.

Construction of this project is needed to house a number of Buckley AFB functions, including the Services Director and staff offices; the Marketing Director and staff; Resources and Readiness; Human Resources; ITT offices; Food Services offices; Combat Support; Honor Guard, and cashiers' cage. The new CSF will house combined functions to reduce overhead in operations. Currently, the limited-base Services functions at Buckley AFB are housed in temporary facilities. These modular structures are scheduled for removal in fiscal year (FY) 2007. These structures (functions) are scattered in different locations with little or no identity for either Services' employees or customers. A preliminary analysis of the reasonable options for this project was done. The findings of the study indicate that only one option – new construction – will meet operational requirements.

This project exceeds the scope/criteria specified in Part II of Military Handbook (MIL-HDBK) 1190, *Facility Planning and Design Guide*, and Air Force Instruction (AFI) Handbook 32-1084, *Standard Facility Requirements* (600 square meters based on permanent party occupants). This is due to a number of factors:

- Required special use areas for a 50-person conference room to be used by all organizations in the facility plus briefings to visitors.
- The Honor Guard requires a practice area inside the building.
- The Resources Flight needs a room for their computers and a room for equipment.

There will be approximately 15 transient occupants and 15 visitors using the facilities, especially the Resources Flight and ITT sales areas).

For this project, the A/E must address the Buckley AFB Facilities Excellence Plan (FEP). While there are no special requirements for the mechanical and electrical systems, this project will meet the following requirements:

- Buckley AFB General Plan
- Buckley AFB FEP
- AFI Handbook 32-1084, Standard Facility Requirements
- Department of Defense (DoD) Anti-Terrorism/Force Protection (AT/FP) Standards for Buildings

The facility shall be architecturally compatible with other new facilities being constructed prior to this project. In addition, the A/E shall strive to provide a design that achieves the current United States Air Force (USAF) goal of a minimum Leadership in Energy and Environmental Design (LEED) rating of 26.

B. Project Description

Project Statistics

Installation:	Buckley Air Force Base
Fiscal Year:	2007
Project Name:	Consolidated Services Facility
PDC Number:	CRWU 06 3006
Host Command:	Buckley Air Force Base
Requiring Command:	Air Force Space Command
Category Code:	610-243
Scope:	1,310 SM
Programmed Construction Dollars:	See DD Form 1391 ($5.9 million)
Operational Need Date:	As Soon As Possible
Facility Need Date:	As Soon As Possible
Demolition:	N/A
Remediation:	N/A

Project Narrative

In 1942 and 1943, the federal government purchased 5,740 acres of land outside of Denver, Colorado, and designated it as Buckley Field. Buckley Field was used to train U.S. Army Air Corps B-17 and B-24 bombardiers, armorers, and to conduct basic and Arctic training. In 1946, the U.S. Army deactivated Buckley Field and transferred ownership to the State of Colorado, which assigned the land to the Colorado Air National Guard (CoANG) for personnel training. In 1947, the U.S. Navy assumed control of a portion of Buckley Field for use as a training area and renamed it Naval Air Station Denver, Colorado. The remainder of the field was left in CoANG's control. In 1959, the U.S. Navy again deactivated the station and transferred the property back to the CoANG. The station was then renamed Buckley Air National Guard (ANG) Base.

Effective 1 October 2000, the base was reassigned from the ANG to AFSPC to host the 821st Space Group (SG) and eventually became Buckley AFB. In October 2001, the 460th Air Base Wing (ABW) was established at Buckley AFB and assumed control of the installation. The Wing supports the USAF mission by providing space-based missile warning data, space communication data, and data relay operations, as well as sustaining all related base support function.

The new CSF will provide a single location for Buckley AFB personnel to conduct business with the Services functions that are currently scattered on the base. These functions include the Services Director and staff, Community Support Flight, Combat Support Flight, Resources Flight, Human Resources, Marketing/sponsorship, Food Services staff, Mortuary/Search and Rescue, the Honor Guard, and ITT offices and sales. The new facility will relieve the overcrowded conditions in the leased temporary modular buildings.

This project will construct a 1,310-SM, single-story steel frame building on a structural slab supported by a pier foundation system, located south of Breckenridge Avenue and west of Building 606. The building exterior finish is to be synthetic stucco. The new CSF will provide administrative office spaces, a conference room, break room, locker area for the Honor Guard, storage spaces, sales area for ITT, a cashier's cage, computer room, equipment room, building support spaces, and a parking lot to accommodate 82 standard spaces and three handicapped spaces, in accordance with the Americans with Disabilities Act (ADA).

Process Narrative

The site for the new CSF will be south of Breckenridge Avenue and west of Building 606. Customers from the Buckley AFB population will park in the new parking lot and access the CSF through the main entrance. The ITT and Honor Guard offices will have provisions in place for after-hours public access with the remainder of the building secured. The Honor Guard will have an additional entrance capable of vehicle access to the door.

Currently, 40 people shall be assigned to this facility. Floor space must be calculated in accordance with AFI 32-1084 and applicable industrial standards. A single line drawing is supplied in Section C and should be used for reference purposes, however it is not meant for use as the final design. The A/E may have a better scheme and should coordinate the design with the end users and Project Manager.

A/E Rules of Engagement

Possible project delivery options include both Design-Bid-Build or Design-Build formats. The A/E contract requires a Request for Proposal (RFP). The RFP shall contain all requirements for the new CSF, possible required selective demolition, as well as the design provisions contained in the Buckley AFB FEP and other requirements and standards referenced in this RD.

This contract requires identifying all sites and facility requirements including environmental, site utility, architectural, structural, mechanical, plumbing, fire protection,

electrical, and telecommunications design. This contract requires all drawings and specifications necessary to communicate the requirements in the RFP. A design charrette shall be performed on site at Buckley AFB at the beginning of this contract.

Special Design Problems

Construction of the Child Development Center (FY05) may restrict site development. Existing site plans should be reviewed for possible effects on the CSF location and utilities routing. The final CSF design should include a concrete pedestrian pathway to Building 606.

The CSF will be located near a former fire training area (IRP #4). There are six monitoring wells located at the site, and final site selection for the CSF will avoid construction and operation interference with the IRP. The CSF footprint can be moved west if necessary to avoid conflict.

There may be a buried tank and piping left in place on the site, as well. If these are discovered after potholing to verify their presence, these will be removed. The measurement and payment section of the project specifications will include add/deduct line item pricing for excavation and stockpiling of potential contaminated soil away from the project area for characterization and disposal by appropriate resources.

Any construction and demolition debris encountered at the project site will be inspected for asbestos and removed from the site accordingly.

An encroaching black-tailed prairie dog community and burrowing owls have been observed on the site. The prairie dogs will be relocated prior to construction under a separate USAF program. The burrowing owls will also be removed from the site under a separate USAF program prior to the start of construction activities; however, should nesting owls be discovered, the contractor shall protect, preserve, and isolate the nesting area.

The new CSF facility must incorporate minimum AT/FP standards, as required per USAF guidance and Unified Facilities Criteria (UFC) 4-010-01. The new facility shall also incorporate environmentally sustainable construction standards, as identified in the *USAF Environmentally Responsible Facilities Guide*.

Space Requirements

Organization/Function	Square Meters	Remarks
Services Flight	241	Inc/67SM Conference Rm.(for 50 occupants) + Waiting Area + Breakroom
Resources Flight	196	Inc/37 SM Computer room & 14 SM cashier cage
Human Resources	81	Inc/67SM storage rm
Marketing/Sponsorship	101	Inc/Work room (37 SM)
Combat Support		Food Services, Mortuary/S&R
Honor Guard (w/lockers)	161	Inc/Locker room for 30 PN
Storage/Warehousing	41	
ITT	37	Inc/Sales and Office area
Circulation (20%)	215	
Restrooms	70	
Mech/Elec Rooms	50	
Telecom closet	21	
Comm Equipment Room	34	
Gross Total	**1,310**	**See Note Below**

Note: The areas for each function can change somewhat, but the gross total area of the facility cannot exceed 1,310 SM (14,148 SF), and it is preferred to be a single-story facility.

Construction Sequence

The CSF and parking lot must be completed and operational before beneficial occupation can occur.

The base communications contractor must have access to the completed facility to provide communications support before the move-in date. A joint occupancy agreement may be required in the RFP.

Building Systems

UTILITIES

For potable and fire protection water, the new facility will need to access the existing 12-inch direct connection pipe located both on the west side of Aspen Street and along the south side of Breckenridge Avenue, with typical pipe depths of 3 to 4 feet. The closest connection point is approximately 300 linear feet (LF).

The new CSF facility will access electrical power via the existing underground lines that parallel A-Basin Avenue and then run to the center of the site. From there, the electrical lines continue overhead. FY04 Military Construction Project (MILCON) Infrastructure III will remove the overhead portion of the lines. Approximately 500 LF will be required for the underground connection to the new facility.

An alarm circuit service shall be provided in the form of a digitized polling response factor (RF) transceiver.

The natural gas connection to the CSF facility will access the current 6-inch plastic pipe running along the east side of Aspen Street, parallel to A-Basin Avenue and north of Breckenridge Avenue. The connection to the new facility will be approximately 400 LF.

Currently, there is an 8-inch sanitary sewer line in the middle of the site flowing south to an east-west line near A-Basin Avenue. Tie-in and displacement of the existing line will be necessary for and determined by the location of the new facility. This will require approximately 500 LF of new polyvinyl chloride pipe (PVC).

The existing storm sewer is an open ditch with 18-inch RCP culverts along Breckenridge Avenue and A-Basin Avenue. In addition, there is a 30-inch RCP under the southbound lane of Aspen Avenue. Both of these lines flow south.

Should the final building location be situated farther than 150 feet from the access road, a fire hydrant must be included in the project. The fire department connection must be within 50 feet of the fire hydrant.

ARCHITECTURAL/STRUCTURAL

All building construction design for the new CSF shall be based upon proven design techniques that utilize state-of-the-art design in readily available materials and hardware. The focus of all architectural and structural design shall be the safety, convenience, reliability, maintainability, and comfort of the end users, customers, and visitors. The exterior building materials shall comply with the design guidelines as dictated by the Buckley AFB FEP for the proposed site.

The design and construction of the new CSF, including components (roofing, wall cladding, windows, connections, etc.), shall resist wind load requirements of American Society of Civil Engineers (ASCE) 7-95, or latest edition, for a wind velocity of 70 miles per hour. The building shall have an Importance Factor of 1.15 and Exposure Category C. Design for components and cladding shall be based on location, structure, internal pressures, etc. The seismic zone is 1, per Uniform Building Code (UBC); the roof snow load or live load will be 30 pounds per square foot (psf); and the maximum frost penetration will be 36 inches. Local codes will be used if they are more stringent.

The new CSF facility will be classified as Use (B) Business with Type II Construction. The facility shall be fully sprinklered and will be open on all sides, allowing for area increases, per code.

An economical structural steel frame system shall be selected based on facility size, projected load requirements, and local availability of materials and labor. All floor slabs will designed as structural slabs supported by drilled piers. The building structural modules shall be designed to reflect space requirements, economy, and subsystem dimensions (e.g., ceiling grid, masonry units, framing members, etc.).

All facility components shall be of noncombustible construction materials. All walls are required to run from floor to underside of structural floor above or roof deck. All exterior glass shall be insulated and tinted to reduce heating and cooling costs.

All functional areas including parking spaces, entrances, corridors, restrooms, and door hardware must be barrier free and accessible to the physically handicapped in accordance with the ADA and Uniform Federal Accessibility Standards. Interior and exterior signage shall be provided in accordance with USAF and Major Command (MAJCOM) standards as well as any graphic standards used at Buckley AFB.

The CSF dimensions are approximately 124 feet north to south by 114 feet east to west. The main entrance shall be at the east with secondary entrances located along the west, north, and south walls. Exterior doors at the main entrance shall be storefront glass type with restricted-entry control devices. All other exterior doors shall be steel doors with a small glass vision panel. The roof shall be sloped standing seam metal.

After-hour use of the ITT counter and restroom area shall be accommodated via corridor lock-off. The computer and equipment rooms shall have a raised floor system. Design shall also include a secured enclosure for the cashier's cage, which shall house a safe.

Walls shall be painted gypsum board, and ceilings shall be 2-foot by 4-foot acoustical tiles with straight edges in standard-width grids.

All restrooms shall have sheet-rubber flooring with welded seams, slip-resistant surface, and integral rubber base. Walls shall be full-height ceramic tiles, and ceilings shall be water-resistant gypsum board. Toilet room partitions shall be stainless steel. All toilet room accessories shall be provided.

All interior doors shall be solid wood or metal doors in painted hollow metal frames. All interior partitions shall receive acoustical insulation the full height of the wall.

Facility design shall provide drives and entrances that can accommodate the size and requirements for fire truck access.

The exterior building materials shall be compatible with the other new facilities at Buckley AFB.

HEATING, VENTILATION, AND AIR CONDITIONING

All mechanical systems, which include heating, ventilation, and air conditioning (HVAC) for the new CSF, shall be based upon proven design techniques that utilize state-of-the-art developments in readily available equipment, hardware, and systems. The focus of all HVAC system designs shall be the safety, convenience, reliability, maintainability, and comfort of the end users, customers, and visitors.

In addition to the above, all items in the HVAC systems shall be easily accessible for maintenance and adjustments. Suitable access to all components shall also include provisions for easy removal and replacement. All mechanical systems shall be reliable and stable in their operation. The systems shall be direct in their operation for easy control and adjustment.

Energy conservation shall be of prime importance in the design of all mechanical systems. The systems shall meet all local, state, and federal energy conservation codes, including applicable American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) standards.

Indoor Design Conditions:

HVAC systems serving the facility shall maintain the following indoor conditions:

Summer: 75 degrees Fahrenheit (°F) dry bulb at 50% (maximum) relative humidity

Winter: 72°F dry bulb

The HVAC system shall include a night setback system. Zone controls shall be provided for each functional area to maintain separate environments in each. All temperature sensors shall be tamper proof with remote adjustments for each.

An active solar space heating and/or a domestic hot water heating system should be considered when the MAJCOM solar assessment for the Buckley AFB results in a savings investment ratio of greater than one.

Outdoor Desing Conditions:

Heating degree-days are 6,283

Cooling degree-days are 803

Outside design temperature area:

Heating (99% OCC): 5° F

Cooling (1.0%): Dry Bulb = 90°F

Wet Bulb = 63°F

The ventilation standards shall be based upon ASHRAE Standard 62-1989. The more stringent requirements shall be used where there is conflicting information between the ASHRAE Standard and the code.

In general, HVAC systems shall be designed to limit the sound transmitted to the surroundings. Sound levels from the HVAC system should not exceed the noise level specified for the different spaces. Lower duct velocities, duct silencers, and appropriate duct fittings shall be utilized in the design to limit the noise levels. Where necessary, vibration isolation shall be provided.

Maximum noise levels in the occupied spaces produced by the HVAC systems shall be the stricter of either the latest *ASHRAE Fundamentals Handbook* or as noted below:

Location	Recommended Noise Level RC (N)
Private Offices	25 – 35
Open Office Space	30 – 40
General Purpose Storage	30 – 40

All equipment shall be provided with premium high-efficiency motors with a power factor of 0.90 or higher. Motors rated at 1/2 horsepower or lower shall operate at 120/1/60 volts. Motors 3/4 horsepower or higher shall operate at 480/3/60 volts.

HVAC piping shall be designed to minimize pressure losses and the use of pumping energy. For future expansion connections, tees, valves, and blind flanges shall be provided. Isolation valves shall be provided at all main branch connections, major junctions, and as necessary to repair and service equipment.

Water pipe sizing (except for fire suppression piping) shall be designed on the following parameters:

Pipe Size (inches)	Maximum Velocity (feet per second)	Maximum Pressure Drop (feet per 100 feet of pipe)
Up to 2	4.0	4.0
2.5 through 6	5.5	2.5
8 through 12	8.0	2.0
14 through 20	10.0	1.0

Automatic air vents shall be provided at all high points in piping systems, including coils. Drain connections and valves shall be provided at all low points in piping systems, including coils.

Hanger and support components should be provided in accordance with industry standards. Power-actuated drive-pin fasteners appropriate for supported loads should be provided, as well as mechanical anchor fasteners and heavy-duty steel trapezes, and structural steel stands to suspend equipment from the structure above or support equipment above the floor.

Mechanical vibration and seismic controls, including vibration isolators, vibration isolation bases, inertia bases, and seismic restraints and snubbers should be provided as required on all moving equipment.

PROJECT CONDITIONS

Project Seismic Zone: 1

Building Importance Factor: 1.15

COMPONENTS

Isolator Pads	Oil- and water-resistant rubber
Rubber Isolator Mounts	Double-deflection type
Spring Isolators	Freestanding, laterally stable, open-spring type
Restrained Spring Isolators	Vertically restrained, freestanding, laterally stable, steel open-spring type
Rubber Hangers	Double-deflection type
Spring Hangers	Combination spring and elastomeric hangers with coil spring and elastomeric insert in compression
Vibration Isolation and Inertia Bases	Structural-steel bases and rails designed and fabricated by isolation equipment manufacturer, supporting equipment static loadings, power transmission, component misalignment, and cantilever loadings; inertia bases to be filled with concrete

PIPE INSULATION

Fire Performance Characteristics	Flame spread of 25; smoke developed of 50; according to ASTM E 84
Glass Fiber	Preformed; ASTM C 547, Class 1, rigid, jacketed and vapor-barrier coated
Cellular Glass	Preformed foamed or cellulated glass, jacketed pipe insulation
Flexible Elastomeric Cellular	Tubular, expanded, closed cell
Calcium Silicate	ASTM C 533, Type I, preformed
Jacket	PVC for exposed piping; aluminum for outdoor applications

Ductwork shall be constructed of galvanized steel sheet metal, and shall be rectangular, round spiral, or oval as appropriate for the specific application. All duct design shall be in accordance with Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) Duct Construction Standards.

For design applications, velocity of air in the ducts shall not exceed the following:

Duct Application	Velocity (feet per minute)
VAV Mains	2,500
Constant Volume Mains (Unoccupied Spaces)	2,500
Constant Volume Mains (Occupied Spaces)	2,000
Branch With Diffuser Connection	1,000
Exhaust Systems	1,500

Dampers and actuators, duct silencers, turning vanes, duct-mounted access doors, flexible connectors, and flexible ducts shall be provided as required for a complete design.

Energy Monitoring

All systems shall incorporate energy-efficient criteria consistent with the USAF Energy Program Procedural Memorandum 96-31, the Energy Star® program, Federal Energy Management Program (FEMP) initiatives, Energy Policy Act of 1992, Executive Order (EO) 13123, EO 12902, and 10 Code of Federal Regulations (CFR) 435.

The facility design shall encourage sustainable design and shall provide for verification of building performance. Off-grid generation systems such as photovoltaic, fuel cells, and other alternatives shall be considered and employed where such systems are lifecycle cost-effective.

Energy for lighting and other uses shall comply with ASHRAE/Illuminating Engineering Society of North America (IESNA) 90.1-1999 or other applicable state or federal standards.

Microprocessor-based metering units shall be provided on utility services and feeders within the facility to monitor the quantity and quality of energy used.

Connection to the Buckley AFB central energy monitoring and control system shall be provided. Daylight controls shall be incorporated into the new facility design, using occupancy sensors in overhead lights where practical and other available devices.

PLUMBING

All plumbing systems for the new CSF shall be based upon proven design techniques that utilize state-of-the-art development in readily available equipment, hardware, and

systems. The focus of all plumbing system designs shall be the safety, convenience, reliability, maintainability, and comfort of the end users, customers, and visitors.

In addition to the above, all items in the plumbing systems shall be easily accessible for maintenance and adjustments. Suitable access to all components shall also include provisions for easy removal and replacement.

All plumbing systems shall be reliable and stable in their operation. The systems shall be direct in their operation for easy control and adjustment.

Energy conservation shall be of prime importance in the design of all plumbing systems. The systems shall meet all applicable local, state, and federal energy conservation codes.

Cold and hot water domestic piping system shall be provided throughout the facility. The general use hot water temperature shall be 41 degrees Celsius (ºC) (105 degrees Fahrenheit [ºF]) and 82ºC (180ºF). Sanitary and storm drainage, plus natural gas systems, shall be provided, as well as floor drains in restrooms and janitor closets. Electric water coolers shall be provided near the lobby entrance and in the break room.

Metering for gas and water service shall be provided. A water-conserving irrigation system may be provided, if a system is incorporated. Isolation valves shall be provided within the cold and hot water systems at all main branches and on mains and branches serving plumbing fixtures.

Plumbing fixtures for the facility shall follow low-flow conservation design; however, excellent flushing action must be provided in toilet rooms. The flush valves for the urinals and water closets should consider infrared types. Faucets at lavatories should also consider electronic actuation, and metering for gas and water service shall be provided. ADA and Uniform Federal Accessibility Standards shall be followed for providing accessible fixtures in all toilet rooms.

Hot and cold domestic water lines shall not exceed 8 feet per second velocity or 8 feet of pressure loss per 100 feet of pipe. Insulation thermal conductivity should be at least 0.29 Btu*in/hr*F with a flame/smoke developed rating less than 25/50. Lead-free potable water delivery is mandatory, as required by code. Maximum water distribution working pressure shall be a minimum of 80 pounds per square inch (psi).

Waste and storm water piping shall have slopes not less than 1/8-inch per foot of fall. These pipes shall be insulated where horizontal and exposed to freezing temperatures. Insulation thermal conductivity shall be at least 0.29 Btu*in/hr*F with a flame/smoke developed rating less than 25/50.

Sanitary and vent piping shall be cast iron soil pipe. All piping shall follow applicable codes for sizing and installation. Cleanouts shall be provided at all changes in direction, and trap primers shall be provided on all floor drains in toilet rooms and at other floor drains.

Pumps for the facility shall be sized for the service, flow, and pressure required. Strainers, valves, and vibration isolators shall be provided. Pumps shall be located where they will be accessible for service, and high-efficiency motors shall be specified.

Water heaters for the facility shall have 120°F domestic hot general-purpose water for the toilet rooms and showers.

FIRE PROTECTION

The A/E shall provide a performance specification for a qualified Fire Protection Contractor. The contractor will provide the appropriate hydrant flow tests. The areas, type of coverage, and densities required in the various areas of the facility shall be provided.

All areas of the facility shall have complete sprinkler coverage for fire protection with smoke detectors, and the sprinkler systems shall be wet type. A fire detection/suppression panel shall be provided for the facility near the main entrance or where designated by the fire department. All sprinkler protection systems will be designed hydraulically per National Fire Protection Association (NFPA) 13 standards, 2001 Uniform Fire Code (Colorado Edition), Buckley AFB Fire Code Standards, and MIL-HDBK 10008C 1997.

Hard-wire heat detectors to the fire alarm system shall active the alarm throughout the facility.

Sprinkler heads shall be coordinated with the ceiling systems selected by the A/E, and types of heads shall be coordinated with the A/E during final design.

SYSTEM PERFORMANCE REQUIREMENTS

The system shall be hydraulically designed be light hazard throughout the facility with a 175-psig minimum working pressure rating.

Components:

Fire-Protection Service Valves	UL-listed and FM-approved, with 175-psig non-shock minimum working-pressure rating
Backflow Preventers	ASSE standard double-check assemblies
Sprinklers	Automatic, with heat-responsive element
	Coated, painted, or plated sprinklers
	Pendant sprinklers
	Quick-response sprinklers
	Recessed sprinklers, including escutcheon
	Ductile-iron pipe and Schedule 40 steel pipe

Fire Department Connections:

- Alarm devices
- Electric alarm bell
- Water flow indicators
- Pressure switches
- Supervisory switches
- Single-action key-resistible pull boxes

Electrical

All electrical systems and wiring for the new CSF shall be based upon proven design techniques that utilize state-of-the-art development in readily available equipment, hardware, and systems. The focus of all electrical system designs shall be the safety, convenience, and reliability of the end users, customers, and visitors.

In addition to the above, all items in the electrical systems and wiring shall be easily accessible for maintenance. Suitable access to all components shall also include provisions for easy removal and replacement. All electrical systems and wiring shall be reliable and stable in their operation. The systems shall be direct in their operation for easy control and adjustment.

The facility power requirements shall be 208/120-volt electric service. Distribution equipment shall be provided, including metering, wiring, and electrical device, as well as provisions for the local area network (LAN), telecommunications and data wiring, fire alarms, and intrusion detection systems per Buckley AFB's most current standards.

An uninterrupted power source (UPC) shall be provided for the Resource Flight computer room, and special power outlets and circuits will be provided for user-furnished equipment, as required.

A grounding ring shall be provided around the facility, and special grounding systems are not required. Lightning protection shall be provided for the entire facility.

Lighting

All lighting systems for the new CSF shall be based upon proven design techniques that utilize stat-of-the-art developments in readily available fixtures, switches, and systems. The focus of all lighting designs shall be the convenience, reliability, maintainability, and comfort of lighting levels of the end users, customers, and visitors.

In addition to the above, all items in the lighting systems shall be easily accessible for maintenance and adjustments. Suitable access to all components shall also include provisions for easy removal and replacement. All lighting systems shall be reliable and stable in their operation. The systems shall be direct in their operation for easy control and replacement.

Lighting levels shall be designed to meet the recommendations of the Illuminating Engineering Society of North America (IESNA) Lighting Handbook. The lighting systems shall meet Buckley AFB FEP for lighting requirements.

General lighting should be fluorescent with electronic, energy-efficient ballasts and lamps. All fluorescent lamps shall be T8 or smaller. All general lighting circuits shall be 277 volts, as applicable, fed by 480/277-volt circuits. Night and emergency lighting shall be provided as required.

Interior and exterior lighting control systems shall be provided, including ambient light dimmers and multiple switching for low ambient light levels and energy conservation. Occupancy sensors are to be utilized where practical.

Incandescent lamps shall be used only where required and shall have an average rated life of 2,500 hours. Red strobe lighting shall be provided on facility interior and exterior to alert firefighters of an emergency response. All exit lights are to be green in color.

Conference rooms shall have a "layered" lighting system with independent dimmer controls, including incandescent lighting around the perimeter of conference tables and wash lighting on the walls.

For the parking areas and walkways, low-pressure sodium light sources controlled by combination time clock/photo cells shall be used. Exterior lighting must be incompliance with the 460 ABW "Exterior Lighting Policy."

Communications

All communications systems for the new CSF shall be state-of-the-art developments in readily available equipment and systems. The focus of all communications system designs shall be the convenience and reliability for the end-users, customers, and visitors.

The facility shall have a system of empty raceways with pull wire, outlets, and cabinets for future telephone installations. The facility shall be pre-wired for data (LAN), telephone (multiline), with extra LAN ports at the ITT customer service center and provisions for telephones in offices, private rooms, and the conference room.

A Communications Equipment Room shall be provided separate from the mechanical room inside the facility.

An intrusion detection system shall be provided for the facility following the most current systems that Buckley AFB is using.

Force Protection

All parking areas existing or proposed shall be a minimum of 25 meters (82 feet) away from any exterior wall of the new CSF. The roadway shall be to the south of the facility, and the employee parking lot shall be opposite the east exterior wall.

If the footprint of the CSF contained in this report is used for the final design, there will be no difficulty meeting minimum distance requirements for the facility on all sides.

All building components, site design, utility design, mechanical and electrical design shall comply with AT/FP Building Standards for new construction projects, as well as the Buckley AFB General Plan, Buckley AFB FEP, AFI Handbook 32-1084, and other standards referenced in this RD.

User Equipment

DESCRIPTION	AMOUNT	REMARKS
Modular Computer/Desk Work Stations	16	Various office areas (new)
Projection Equipment (overhead remote)	1	Conference Room (new)
Workable Countertop	1	Kitchen (new)
Triple Sink w/garbage disposal	1	Kitchen (new)
Dishwasher	1	Kitchen (new)
Refrigerator	1	Kitchen (new)
Televisions	4	Various locations (new)
Video cassette recorders	4	Various locations (new)
Vending Machines	2	Vending Area (Commercial Vendors)
Safe (SIZE, TYPE??)	2	Resources cashier and ITT sales
Free-standing desks	22	

Communications Equipment

DESCRIPTION	QUANTITY	REMARKS*
Copper Wiring	1	Other appropriations (3080)
Fiber Optic Cable	1	Other appropriations (3080)
LAN Equipment Rack	1	Other appropriations (3080)

* See 45th Space Wing Building Telecommunications Wiring Specification located in Attachment 7.

Special Requirements

Special Requirements	Required Y / N / NA	Remarks
Real estate acquisition	N	
Well permits	N	
Public utility easements	N	
Demolition	N	
Environmental concerns	Y	EA and FONSI to be updated
Recycle materials	Y	Recycle construction waste
Special soil conditions	Y	Foundation drain system / structural floor slab
Vehicle Parking	Y	70 (POV) for facility occupants and visitors, 12 (GOV) and ADA requirements
Roofing Systems	Y	Standing seam metal roof
Industrial waste sewage connection	N	
Unusual Mechanical Systems		
Unusual Ventilation Requirements	N	
Vibration Isolation	Y	
Special Heating/Cooling Loads	Y	Night setback system
Temperature/Humidity Control	Y	Zone controls for different areas
Fire Protection Systems	Y	Detection and sprinkler system
Special Piping (compressed air)	N	
Process Equipment/Systems	N	
Irrigation	Y	For plant maintenance and care
Landscaping and Exterior Signage	Y	IAW Buckley AFB FEP, AF Environmentally Responsible Facilities Guide, AT/FP Guide
Electrical		
Emergency Generator	N	
UPS	N	
Power Conditioning/PCCIE	N	
Lightning Protection	N	
Unique Lighting (exterior, interior)	N	
Communications/Antennas	N	No control room required
Special Computer Systems/Support	Y	LAN System
Public Address or Intercom	N	
TEMPEST/HEMP/RF Shielding	N	
SCIF/Vaults (Class)	N	
Physical Security (fencing, IDS)	N	

Special Requirements	Required Y / N / NA	Remarks
Anti-terrorism	Y	See AT/Force Protection Measures
Elevators	N	
Comprehensive Interior Design (CID)	Y	New floor plan must accommodate all new furniture
Furniture: - By This Contract	N	
- By Another Contract	Y	New furniture required
- Relocate Existing	Y	Furniture to be moved from other locations, coordinate with SGS Plans and Programs
Pre-wired Workstations	Y	Provide electrical, data and phone for installation of new workstations
Sound Attenuation	N	
Structural Interior Design (SID)	Y	
Unusual Clear Spans	N	
Special Structural (cranes, MHE)	N	
Unique Floor Loads or Needs	N	
Energy Compliance (10 CFR 435)		
ECMS	Y	Provide connections
Metering	Y	Meter all utilities
Life-Cycle Cost Studies	Y	The A/E will provide a separate Value Engineering Study
Lighting/Envelope Screening	Y	For accent lighting of the facility
Blast (if screening fails)	N	
Special Safety Systems		
Special OSHA requirements	N	
Americans with Disabilities Act Requirements (ADA)	Y	All areas must be accessible to the physically handicapped
Visually-impaired vendors (GSA program)	N	
State Historical Preservation Office Review	N	
Recycle Considerations	Y	Recycle construction materials IAW AF Environmentally Responsible Facilities Guide
Security clearances	Y	Contractor access to Buckley AFB
Special construction escort requirements	N	
Drawings and plans (CADD) Design Drawings As-builts GIS	Y Y Y N	At final submittal: MicroStation (version 5 or later) or AutoCad (version 12 or later) format on CD-ROM with one backup copy. Provide 11"x17" laser prints of each drawing. Specifications: Three bound final copies, using Microsoft Word for Windows format

Special Requirements	Required Y / N / NA	Remarks
		copies, using Microsoft Word for Windows format, Version 6.0 or later, on CD-ROM. Cost estimate: on CD-ROM Microsoft Excel format, version 5.0 or later.
Workaround Facilities	N	
Overseas travel	N	
Other (specify)	N	

The items listed above are to be used as a guide by the A/E in developing user requirements. The list is not be interpreted as an all-inclusive summary of project considerations. During the Project Definition (PD) phase of design, the A/E must verify the accuracy of the requirements noted above, and any special requirements that may arise during the design process.

Note: The A/E is responsible for accomplishing all permitting applications and permitting fees. All permits will be in the government's name and shall be coordinated through the government prior to sending them to the approval agency.

C. Floor Plans

1. Conceptual Single Line Floor Plans
2. Functional Layout Diagrams
3. Floor Space Calculations

Floor Space Calculations	
First Floor	
Area	NSF

D. Area Development Plan

Project Relationship to the Base Comprehensive Plan

SITE SELECTION

The site location for the new CSF is part of the Buckley AFB General Plan.

ARCHITECTURAL COMPAT IBILITY

The design of the new CSF shall meet the requirement of Buckley AFB FEP. The new CSF should have simple and clean but dynamic lines for building mass. The A/E shall review the materials chosen for the new Wing HQ and incorporate them into the CSF.

LANDSCAPING

Low maintenance landscaping shall be provided using only approved plant material for the region. Landscaping design shall follow standards for Zone 1 contained in the Buckley AFB FEP. Landscaping shall also comply with AT/FP Standards.

E. Sustainable Design Requirements

Introduction

There are many different conceptions of green or sustainable building design due to the large scope of sustainable issues and the novelty of sustainable principles. Definitions of sustainability range from broad concepts that incorporate all aspects of sustainability to narrow definitions focused on one specific sustainable design feature, such as recycled-content materials or energy efficiency. Within this broad spectrum, green buildings embody a design intent on balancing environmental responsiveness, resource efficiency, and cultural and community sensitivity. The goal of this process is to create facilities that meet the needs of facility end users.

Green building design includes all players in the development process, from the design team (USAF, the A/E, and consultants), the construction team (material manufacturers, contractors, and waste haulers), maintenance staff, and building end users.

The LEED rating system is broken down in to five categories: sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality. Using the LEED rating system as a model, the A/E shall look always that "smart choices" can be made throughout the project to minimize negative environmental impact due to construction and maximize the quality of the indoor environment for building end users.

USAF's goal is to have new facilities achieve a minimum LEED rating of 26. The new CSF (or almost any new constructed project) can achieve a rating and certification of 26 by designing an environmentally friendly building utilizing modern methods and materials and using energy-efficient mechanical and electrical systems. At the earliest stages of the design process, USAF and the A/E must review all possible LEED opportunities that are applicable for the CSF project. The CSF can reach a higher certification rating than 26.

Sustainable Sites

Reduction of "light pollution" or unnecessary site lighting is an area of LEED emphasis and could conceivably be an area of study for this project. The intent is to light only those areas that are in need of illumination and reduce excess light. This can be achieved through the use of cutoff luminaries and by avoiding towering light standards with large area lights.

A concern regarding sustainable sites has to do with "heat islands" generated in urban areas. Based on the amount of hard, dark surfaces present at Buckley AFB, temperatures tend to be several degrees higher than surrounding areas with less density and more

vegetation. This is especially true during summer months. By using roof surfaces that are lighter in color and more reflective, the "heat island" effect can be reduced, and savings will be in energy and dollars.

Water Efficiency

Water efficiency shall be an issue during the planning and design of the CSF, as areas like Colorado periodically deal with water shortages. Employing intelligent water conservation strategies for the CSF makes sense from the standpoint of reduced cost, potential reduced maintenance, and as the environmentally responsible approach.

Landscaping and associated irrigation offers the CSF project additional points. A storm water management program should be implemented for CSF landscaping irrigation. If one-fourth of the water collected is utilized for landscaping irrigation, an additional point can be granted. The CSF should utilize plants that require watering consistent with the amount of rain received in the area. Not only does this approach save in terms of water usage, but also in terms of maintenance costs.

The new CSF shall attempt to utilize faucets and showerheads that reduce water use by as much as 20 percent. Toilet rooms are candidates for water reduction by installing efficient fixtures in compliance with the Energy Policy Act of 1992. These fixtures use less water than a traditional fixture and are commonplace in new construction. Waterless urinals are another option to save even more water, as well as save on maintenance costs, as they do not have the usual flush valves and associated piping for water supply as traditional urinals.

Energy and Atmosphere

The energy and atmosphere portion of the LEED rating system attempts to conserve resources by implementing efficient mechanical systems free of certain environmentally harmful refrigerants and using energy-efficient building envelopes. The project shall place an emphasis on verifying that HVAC systems are working properly once installed through building systems commissioning.

The project has the potential to implement many of the energy and atmosphere components of the LEED program. A facility systems commissioning plan can be developed in order to insure that the mechanical systems are balanced and functioning properly once installed. Systems will also need meet the most stringent Colorado codes for energy use, taking steps whenever possible to increase efficiency. Energy management systems shall be installed and potentially add to energy savings by providing heating and cooling in areas where and when they are needed.

Energy savings can also come in the form of efficient building envelope materials. Exterior insulation and energy-efficient windows are key in energy conservation.

Windows and exterior envelope should be as energy efficient as possible within budget constraints.

Materials and Resources

The materials and resources section of the LEED rating system looks at the individual components that comprise a facility and attempt to reduce consumption through the use of salvaged, recycled, or rapidly renewable resources. An emphasis shall be placed on locally harvested and manufactured materials in order to reduce the amount of energy needed to transport a product to the site. This may or may not be a problem in the Denver area. Another component of this section involves recycling construction waste (paper, cardboard, metals, etc.) from both demolition and from new construction in order to reduce the amount of debris that will end up in a landfill. Recycling in the facility does not end construction is finished. LEED mandates that areas in the facility be set aside for storage and collection of recyclable as an ongoing part of daily operations.

The CSF project can easily implement several of these concepts. First, introduce a waste management plan for job-site collection and sorting construction debris. Materials are separated and taken to approved recycling centers, then a receipt is submitted to track the recycling progress. Typically, the contractor can make money from scrap metal and other demolition waste, and those benefits are realized in the form of lower demolition bids. Once the job is completed, it would be relatively easy to set up recycling centers at various points in the facility for continued recycling by the end users.

Second, to reduce the impact of harvesting raw materials, building products with recycled-content shall be identified and specified by the A/E. Materials that would be most applicable to this project are all metals (steel, light gauge metal partition framing, etc) and certain types of building materials and insulation. The key is to identify the major building components during design and look for suppliers who use recycled content in the manufacture of their product. Recycled-content also has to be weighed against the embodied energy of a product. These situations have to be evaluated on a case-by-case basis.

Indoor Environmental Quality

The final component of the LEED rating system deals with indoor environmental quality for the end users. Factors contributing to less than ideal air quality in a facility include tobacco smoke, carbon dioxide, dust from construction, chemicals, and emissions from building finishes like carpets and wall coverings. In DoD buildings, tobacco smoke is not an issue due to government nonsmoking policies, but all other sources have the potential to be present in this project. In any indoor situation, steps can be taken to reduce these indoor pollutants and give the end users a healthier working environment. The indoor environmental quality section of LEED also deals with issues of thermal comfort, access to daylight, and fresh air.

During construction, an indoor air quality (IAQ) plan should be implemented. Procedures include storing absorptive materials properly to avoid mold and mildew, keeping the job site clean and free of as much dust and debris as possible, and protecting HVAC ducts from dust to avoid distribution throughout the facility. The project should also monitor carbon dioxide levels during construction, especially due to the high-bay area and the temptation to park construction vehicles there overnight because of the overhead garage doors. An IAQ management plan shall be laid out in the project specifications in accordance with SMACNA IAQ Guidelines for Occupied Buildings Under Construction, 1995, Chapter 3.

Finishes such as paint, adhesives, vinyl wall coverings, sealants, carpet, and composite wood products manufactured with volatile organic compounds (VOCs) emit toxins for a period of time after installation. One might equate these emissions with the "new car smell" associated with an automobile. This smell is actually toxic to humans and can cause negative symptoms ranging from headaches to nausea. Avoiding vinyl wall coverings and certain types of carpets, specifying products with low or no VOCs, and specifying products that do not use urea formaldehyde in their manufacture is essential in maintaining acceptable indoor air quality. These types of products are readily available and, with the exception of carpet, add little or no cost to a project.

Operable windows, access to daylight, and access to fresh air are significant parts of the IAQ section of the LEED program. LEED encourages facilities to be planed in such as way as to distribute natural light and natural ventilation to all occupants. The LORC will be open on all sides of the building and shall incorporate operable windows where appropriate. LEED also encourages access to individual temperature controls for as many end users as possible, which could be implemented in this project; however, these types of individual controls tend to be an issue regarding the budget.

Conclusion

The CSF is a candidate for implementation of several ideas set forth in the LEED rating system and can achieve a rating higher than 26. Implementing the concepts addressed above will contribute little or nothing to the construction cost to the project and are issues of proper planning. Given that USAF owns the building, it makes sense from a political and social perspective to implement environmentally friendly practices for the CSF. These practices will lead to DoD facilities that contribute to the end users health, long-term financial savings, and offer benefits to both end-users and the environment on a large scale.

References

LEED Reference Guide: Version 2.0. June 2001.

F. Requirements Document Agreement

Agreement Statement

The undersigned agree to follow the provisions of this RD. Each activity will focus its efforts and influence to provide complete, comprehensive, up-front planning, and to meet the objectives of designing and constructing this project to fulfill end user needs and to meet USAF quality, safety, and reliability expectations, with minimum changes, within budget, and on schedule. Changes to this plan must be coordinated with and approved by the undersigned or their designated representatives.

Signatures

Wing Commander	**Agency Commander**
Base Civil Engineer	**Communications Squadron Commander**
Engineering Flight Chief	**Base Community Planner**
Base Project Manager	**Base Environmental Engineer**
Services	

G. Attachments

Attachment 1

DD Form 1391 Package

Attachment 2

Parametric Cost Estimate (PACES)

This version of the 65% RD does not contain a PACES Cost estimate. The costs presented in the DD Form 1391 and in the RD are based on preliminary cost and square foot data that was acquired during the charrette process. A formal cost estimate using PACES is being prepared and will be included at the 95% RD submittal.

Attachment 3

Buckley Air Force Base Site Plan

Attachment 4

Environmental Report

Attachment 5

Existing Utility Plans, Maps, Information

Attachment 6

Photographs

Attachment 7

Points of Contact

NAME	ORGANIZATION	EMAIL DDRESS	OFFICE #	FAX #	MOBILE #
Paul Warbington	URS	Paul_warbington@urscorp.com	303.740.3948	303.730.6080	720.436.6308
Jeff Klassen	URS	Jeff_klassen@urscorp.com	719.268.7423		719.510.8008
Chip Scharff	Buckley BCE	chip.scharff@buckley.af.mil	303.677.6501		
Mike Schmidt	URS	mike_schmidt@urscorp.com	719.533.7843		
Tom Slattery	Buckley Chief Engineer	thomas.slattery@buckley.af.mil	303.677.9902		
Charles Nicely	460 CE	Charles.nicely@buckley.af.mil	677.6819	303.677.6819	N/A
Susan Harris	Buckley Facilities Planner	susan.harris@buckley.af.mil	303.677.9156		
Ralph Olson	Fire Marshal	ralph.olson@buckley.af.com	303.677.9948		
David Morrison	Fire Department	david.morrison@buckley.af.mil	303.677.9924		
TSgt Mark Lombardy	460 SFS	mark.lombardy@buckley.af.mil	303.677.9712		
Elise Sherva	Buckley Environmental	elise.sherva@buckley.af.mil	303.677.9077		
Ray VanHorn	HQ AFSC/CEPC	Ray.vanhorn@peterson.af.mil	719.554.5204		
Juanito Canon	Buckley GIS	juanito.canon@buckley.af.mil	303.677.9276		

Attachment 8

Buckley Air Force Base Facility Excellence Plan

This document shall be made available to the A/E for the RFP. The document is available from Buckley AFB. Due to the size of the document, it is not included in this report.

REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS

Report Control Symbol
RCS:

INSTRUCTIONS: *Section I to be completed by Proponent; Sections II and III to be completed by Environmental Planning Function. Continue on separate sheets as necessary. Reference appropriate item number(s).*

SECTION I - PROPONENT INFORMATION

1. TO *(Environmental Planning Function)*	2. FROM *(Proponent organization and functional address symbol)*	2a. TELEPHONE NO.
460 CES/CEVP	460 MDS/SGA	(303) 677-6136

3. TITLE OF PROPOSED ACTION
Addition/Alteration to BAFB Clinic (Bldg 600)

4. PURPOSE AND NEED FOR ACTION *(Identify decision to be made and need date)*

To meet space shortfalls at the current clinic.

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES *(DOPAA) (Provide sufficient details for evaluation of the total action.)*

Addition to (4,511 sq ft) and alteration of (5,388 sq ft) the existing clinic (Bldg 600). Alternatives: No action.

6. PROPONENT APPROVAL *(Name and Grade)*	6a. SIGNATURE	6b. DATE
Richard J. Reiser, Major		

SECTION II - PRELIMINARY ENVIRONMENTAL SURVEY.

(Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = unknown effect)

	+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE *(Noise, accident potential, encroachment, etc.)* not anticipated		✓		
8. AIR QUALITY *(Emissions, attainment status, state implementation plan, etc.)*			✓	
9. WATER RESOURCES *(Quality, quantity, source, etc.)*			✓	
10. SAFETY AND OCCUPATIONAL HEALTH *(Asbestos/radiation/chemical exposure, explosives safety quantity-distance, bird/wildlife aircraft hazard, etc.)*		✓		
11. HAZARDOUS MATERIALS/WASTE *(Use/storage/generation, solid waste, etc.)*		✓		
12. BIOLOGICAL RESOURCES *(Wetlands/floodplains, threatened or endangered species, etc.)*			✓	
13. CULTURAL RESOURCES *(Native American burial sites, archaeological, historical, etc.)*		✓		
14. GEOLOGY AND SOILS *(Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)*		✓		
15. SOCIOECONOMIC *(Employment/population projections, school and local fiscal impacts, etc.)*		✓		
16. OTHER *(Potential impacts not addressed above.)* Cumulative to be addressed in EA				

SECTION III - ENVIRONMENTAL ANALYSIS DETERMINATION

17. ☐ PROPOSED ACTION QUALIFIES FOR CATEGORICAL EXCLUSION (CATEX) # _____ ; OR
☑ PROPOSED ACTION DOES NOT QUALIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALYSIS IS REQUIRED.

18. REMARKS

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION *(Name and Grade)*	19a. SIGNATURE	19b. DATE
Reese Sturm GS-12		9/16/03

DRAFT REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS	Report Control Symbol RCS

INSTRUCTIONS*: Section I to be completed by Proponent; Sections II and II to be completed by Environmental Planning Function. Continue on Separate Sheets as necessary. Reference appropriate item number(s).*

SECTION I - PROPONENT INFORMATION

1. TO (Environmental Planning Function)	2. FROM (Proponent organization and functional address symbol)	2a. TELEPHONE NO.
460 CES/CEVP		

3. TITLE OF PROPOSED ACTION
Construct a New Youth Center

4. PURPOSE AND NEED FOR ACTION (*Identify decision to be made and need date).*
Construct a youth center that is located on Buckley AFB so that it is convenient to base personnel and their children.

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPPA) (Provide sufficient details for evaluation of the total action)
See attached

6. PROPONENT APPROVAL (*Name and Grade)*	6a. SIGNATURE	6b. DATE

SECTIONII - PRELIMINARY ENVIRONMENTAL SURVEY. (*Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = Unknown effect.*	+	*0*	-	*U*
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (*Noise, accident potential, encroachment, etc.*)		X		
8. AIR QUALITY (*emissions, attainment status, state implementation plan, etc.)* Fugitive dust during construction			X	
9. WATER RESOURCES (Quality, quantity, source, etc.*)* Stormwater runoff during and after construction			X	
10. SAFETY AND OCCUPATIONAL HEALTH (*Asbestos/radiation/chemical exposure, explosives safety quantity-distance, etc.)*	X			
11. HAZARDOUS MATERIALS/WASTE (*Use/storage/generation, solid waste, etc*) Potential Asbestos – dependent upon location				X
12. BIOLOGICAL RESOURCES (*Wetlands/floodplains, flora, fauna, etc)* Potential prairie dogs and burrowing owls			X	
13.CULTURAL RESOURCES (*Native American burial sites, archeological, historical, etc.)*		X		
14.GEOLOGY AND SOILS (*Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)*		X		
15.SOCIOECONOMIC (*Employment/population projections, school and local fiscal impacts, etc.)*		X		
16.OTHER (*Potential impacts not addressed above.)*Cumulative Impacts will be addressed in the Environmental Assessment				

SECTION III - ENVIRONMENTAL ANALSIS DETERMINATION

17.		
		PROPOSED ACTION CUALIFIES FOR A CATEGORICAL EXCLUSION (CATEX #) _____: OR
	X	PROPOSED ACTION DOES NOT QULIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALSIS IS REQUIRED.

18. REMARKS
An environmental assessment is required.

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (*Name and Grade*)	19a. SIGNATURE	19b. DATE
Elise Sherva, GS-12		

AF FORM 813 – CONTINUATION – PROPOSED YOUTH CENTER

PROPOSED ACTION – Construct a 2,062 Square Meter Youth Center Facility, to be located off Breckenridge Road on the south side of the base. The Center would include the following: Administrative offices, isolation room, break room, resource/training room, kitchen, game room, television area, gymnasium, multipurpose/instruction room, outdoor courts, outdoor open space and playground, School Age Program room, computer lab/homework room, snack bar counter, teen room, music room, front desk/control/equipment issue. A parking lot with approximately 50 spaces and a landscaped area consisting of a playground minimal sod are planned.

It is assumed that the youth center would be used by:

Program	Average No of Users
School Age Program – Summer Camp	75
School Age Program – Before and After School	84
Sports Programs	294
General Membership	100
Teen Programs	50
Youth Special Events	75

Source: PK Consulting, Draft Needs Assessment Study for the Youth Center at Buckley AFB CO, 5 May 2003.

ALTERNATIVE ACTION A: Use an existing facility at Buckley AFB. This was eliminated from consideration since Buckley AFB does not have any excess or sufficient space for this action.

ALTERNATIVE ACTION B: Partnership with commercial agencies, such as the YMCA, for after school programs. This was eliminated from consideration because “it did not present a potential benefit to the installation. Due to lower than average price points of military youth center operation and a low return on investment this option would likely not be attractive to a private sector partnership.

NO ACTION ALTERNATIVE. Continue leasing off-base space at the former Lowery Air Force Base location from the Lowry Redevelopment Authority. The current facility is located approximately 6 miles to the west of Buckley AFB. This will result in continues lack of awareness, poor visibility and accessibility, inability to meet demand, and the dependence on available space on Buckley AFB. The military population, which is expected to increase with the addition of new military family housing units, will be forced to leave the Base in order to find adequate before and after school childcare and/or youth programming. This would result in lower utilization, further affecting the viability of the operation.

05-0631

REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS

Report Control Symbol
CRWU053001

INSTRUCTIONS: *Section I to be completed by Proponent; Sections II and II to be completed by Environmental Planning Function. Continue on Separate Sheets as necessary. Reference appropriate item number(s).*

SECTION I - PROPONENT INFORMATION

1. TO (Environmental Planning Function)	2. FROM (Proponent organization and functional address symbol)	2a. TELEPHONE NO.
460 CES/CEV	460 CES/CEC	7-6819

3. TITLE OF PROPOSED ACTION
Athletic Fields

4. PURPOSE AND NEED FOR ACTION (*Identify decision to be made and need date).*
Provide an area on base for playing organized athletics. The current areas are too small for the number of personnel who seeking athletic opportunities on the base.

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPPA) (Provide sufficient details for evaluation of the total action.
See Attached

6. PROPONENT APPROVAL (*Name and Grade*)	6a. SIGNATURE	6b. DATE
Charles G. Nicely, GS-11	C Nicely	26 Apr 02

SECTIONII - PRELIMINARY ENVIRONMENTAL SURVEY. (*Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = Unknown effect.*	+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (*Noise, accident potential, encroachment, etc.*)		X		
8. AIR QUALITY (*emissions, attainment status, state implementation plan, etc.*) Fugitive dust from construction.			X	
9. WATER RESOURCES (Quality, quantity, source, etc.) Potential Stormwater impact			X	
10. SAFETY AND OCCUPATIONAL HEALTH (*Asbestos/radiation/chemical exposure, explosives safety quantity-distance, etc.*)		X		
11. HAZARDOUS MATERIALS/WASTE (*Use/storage/generation, solid waste, etc)*)		X		
12. BIOLOGICAL RESOURCES (*Wetlands/floodplains, flora, fauna, etc*) Prairie Dog/Burrowing Owl habitat			X	
13.CULTURAL RESOURCES (*Native American burial sites, archeological, historical, etc.*)		X		
14.GEOLOGY AND SOILS (*Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.*)		X		
15.SOCIOECONOMIC (*Employment/population projections, school and local fiscal impacts, etc.*)		X		
16.OTHER (*Potential impacts not addressed above.*)		X		

SECTION III - ENVIRONMENTAL ANALSIS DETERMINATION

17.		
		PROPOSED ACTION CUALIFIES FOR A CATEGORICAL EXCLUSION (CATEX #) _See remarks_____: OR
	X	PROPOSED ACTION DOES NOT QULIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALSIS IS REQUIRED. See Remarks

18. REMARKS

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (*Name and Grade*)	19a. SIGNATURE	19b. DATE
Elise L. Sherva, GS-12	Elise Sherva	30 Apr 02

AF FORM 813 – CONTINUATION

PROPOSED ACTION: Construct athletic fields. This project is currently programmed for in FY 05. This action will require an environmental assessment.

NO ACTION ALTERNATIVE: No construction of additional athletic fields would take place and there would be inadequate facilities for outdoor athletics for base residents and assigned personnel. personnel would likely drive their cars off base to pursue outdoor athletic opportunities.

ENVIRONMENTAL CONSEQUENCES:

This action will require the removal and relocation of prairie dogs. This requires the approval and consultation with the Natural Resources Manager: 7-69337
This action cannot occur when burrowing owls are in residence in the prairie dog burrows.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	ATHLETIC FIELDS

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	750-172	CRWU053001	

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT	COST
ATHLETIC FIELDS	LS			
CONSTRUCT NEW BALL FIELDS	EA	2		
FOOTBALL/SOCCER ATHLETIC FIELD	EA	1		
TRACK ATHLETIC FIELD	EA	1		
SUPPORTING FACILITIES				
PUBLIC TOILETS	SM	92		
PAVEMENTS AND PARKING	SP	160		
UTILITIES	LS			
LIGHTING	LS			
FENCING	M	3,600		
SUBTOTAL				
CONTINGENCY (5.0 %)				
TOTAL CONTRACT COST				
SUPERVISION, INSPECTION AND OVERHEAD (5.7 %)				
TOTAL REQUEST				
TOTAL REQUEST (ROUNDED)				

10. Description of Proposed Construction: Outdoor baseball, football, and track fields with bleachers, lighting, fencing and public toilets. Include utilities, lighting, parking, access, and site preparation.

11. REQUIREMENT: 4 LS ADEQUATE: LS SUBSTANDARD: 2 LS

PROJECT: Construct two new baseball fields, one new football/soccer field, and one new running track. (New Mission)

REQUIREMENT: Properly sized and configured athletic fields are required to provide space for voluntary participation in HQ Air Force Services Agency recognized fitness and sports programs. The September 2000 Services' Needs Validation Study recommended additional fields be constructed. Additional fields are needed for the increasing on-base population. The SECAF and CSAF established Air Force Space Command (AFSPC) as the installation host effective 1 October 2000.

CURRENT SITUATION: Buckley AFB presently has two unlighted softball fields which do not match the dimensions required for regulation baseball play. Additionally these fields are in very poor condition and are riddled with prairie dog holes. With the addition of over 385 new military personnel, there will be very limited opportunities for on-base league play.

IMPACT IF NOT PROVIDED: Military personnel and their families will be required to continue to use off-base facilities for baseball, football/soccer and track, paying rent for the use of off-base fields. On-base play using existing substandard fields also occasions the risk of injury to players. The lack of lighting and adequate toilet facilities will continue to result in very limited utilization and lost opportunities to improve morale, fitness and mission performance.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	ATHLETIC FIELDS

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	750-172	CRWU053001	

ADDITIONAL: A preliminary analysis of reasonable options for accomplishing this project (status quo, renovation, upgrade/removal, new construction, and/or leasing) was done. It indicates that only one option, new construction, that will meet operational requirements. Because of this, a full economic analysis was not performed. A Certificate of Exception has been prepared. This project meets the criteria/scope specified in Part II of Military Handbook 1190, "Facility Planning and Design" and Air Force Handbook 32-1084, "Facility Requirements". Base Civil Engineer: Lt Col William D. Valenti, 719-556-7633.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	ATHLETIC FIELDS

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT [illegible]
35996	750-172	CRWU053001	

12. SUPPLEMENTAL DATA:

a. Estimated Design Data:

(1) Status:

(a) Date Design Started	01-NOV-03
(b) Parametric Cost Estimates used to develop costs	YES
* (c) Percent Complete as of 01 JAN 2004	
* (d) Date 35% Designed	01-MAY-04
(e) Date Design Complete	01-SEP-04
(f) Energy Study/Life-Cycle analysis was/will be performed	NO

(2) Basis:

(a) Standard or Definitive Design -	NO
(b) Where Design Was Most Recently Used -	BUCKLEY

(3) Total Cost (c) = (a) + (b) or (d) + (e):

(a) Production of Plans and Specifications	[redacted]
(b) All Other Design Costs	[redacted]
(c) Total	[redacted]
(d) Contract	[redacted]
(e) In-house	

(4) Construction Start 05 MAR

(5) Construction Completion

* Indicates completion of Project Definition with Parametric Cost Estimate which is comparable to traditional 35% design to ensure valid scope, cost and executability.

b. Equipment associated with this project that will be provided from other N/A

1. COMPONENT	FY 2006 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE		**05-Sep-03**

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	**CONSOLIDATED SERVICES FACILITY**

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	PROJECT COST ($000)
35996	**610-243**	**CRWU063006**	

9. COST ESTIMATE

ITEM	U/M	QUANTITY	UNIT COST	COST ($000)
PRIMARY FACILITIES				
Consolidated Services Building	SM	1310		
SUPPORTING FACILITIES				
Site Work	LS	---	---	
Pavements	LS	---	---	
Utilities – Civil/Electric/Mechanical	LS	---	---	
Foundation Demolition	m	183		
UST Removal (500 to 800 Gallon)	EA	1		
Underground Steamline Removal	m	61		
Communications Support	m	61		
ESTIMATED CONTRACT COST				
CONTINGENCY (5%)				
SUBTOTAL				
SIOH (5.7%)				
TOTAL REQUEST				
TOTAL REQUEST ROUNDED				
EQUIPMENT FROM OTHER APPROPRIATIONS (NON-ADD)				Under Development

10. Description of Proposed Work: Construct a single story frame structure with reinforced concrete foundation and structural concrete slab, split faced CMU with exterior insulation, finish system accents, and standing seam metal roof. Includes utilities, parking, access, site preparation, pre-wiring for telecommunications and low-level Antiterrorism/Force Protection measures.

11. REQUIREMENT: 1,310 SM ADEQUATE: 0 SM SUBSTANDARD: 1,542 SM

PROJECT: Construct a Consolidated Base Services Facility (New Mission)

REQUIREMENT: The Secretary of the Air Force and the Chief of Staff of the Air Force designated Air Force Space Command as installation host for Buckley AFB effective 1 Oct 2000, recognizing the growing active duty posture at Buckley ANGB and with the intent to provide the mission support and quality-of-life available at other Air Force bases. The 460th Air Base Wing became operational 1 Oct 2001. A Consolidated Base Services Facility is needed to house a number of Base Services functions. These services include: the offices of the Services Director and his staff; Marketing Director and Staff; Resources and Readiness; Human Resources; Information Ticket Tours; Food Services offices; Combat Support; Honor Guard; and cashiers cage. Assigned personnel and those using these facilities increased 385 with the transfer of Buckley AFB to active-AF control. Total Active Duty and Extended Active Duty Guard and Reserve equals 2,894 with ten percent dependents equaling 286. Total use equals 3,150. The new Consolidated Services Facility will house combined functions to reduce overhead in operations.

CURRENT SITUATION: At the present time limited base services functions at Buckley AFB are housed in temporary facilities scheduled for removal in FY07. The functions are scattered in different locations with little or no identity for either services employees or their customers. Managing the Services functions with inadequate space and dispersed staff introduces inefficiencies in operations. The effect burdens Services with additional overhead costs while discouraging customer support.

IMPACT IF NOT PROVIDED: Various services functions will be increasingly fragmented by satelliting individual functions into small areas of "found" space in other buildings on base which are ill-suited for these functions and inconveniently located for customers. Without a conveniently sited consolidated services facility, management of this function will become increasingly fragmented and inefficient resulting in a loss of customer care and attention at a time when it is needed most. This will, in turn, result in an under-utilization of assets at Buckley AFB, which represents significant Air Force investments. Morale-building opportunities for newly assigned personnel will diminish.

ADDITIONAL: This project exceeds the scope / criteria specified in Part II of Military Handbook 1190, Facility Planning and Design Guide, and Air Force Handbook 32-1084 "Facility Requirements" (600 SM based on permanent party occupants). This is due to a number of factors. Special Use Areas are required for a 50-person conference room to be used by all the organizations in the facility plus briefings to visitors. The Honor Guard requires a practice area inside the building. The

Resources Flight needs a room for their computers and equipment. There will be approximately 15 transient occupants and 15 visitors using the facilities, especially the Resources Flight and ITT sales areas.
A preliminary analysis of the reasonable options for accomplishing this project (status quo, renovation, upgrade/removal, new construction and / or leasing) was done. It indicates that the only option , new construction, will meet operational requirements. Because of this, a full economic analysis was not performed. This project meets the scope /criteria specified in part II of Military Handbook 1190, "Facility Planning and Design Guide, and Air Force Handbook 32-1084, "Facility Requirements".
Base Civil Engineer: Lt Col Christopher C. McLane. (303) 677-6501.
Consolidated Services Facility: 1,310 Sq. Meters = 14,148 sq.ft.
JOINT USE CERTIFICATION: This facility is programmed for joint use by the Army, Navy, and Marine Corps; however, it is fully funded by the Air Force.

1. COMPONENT	FY 2006 MILITARY CONSTRUCTION PROJECT DATA (Computer Generated)	2. DATE
AIR FORCE		**05-Sep-03**

3. INSTALLATION AND LOCATION	
BUCKLEY AIR FORCE BASE	
4. PROJECT TITLE	5. PROJECT NUMBER
CONSOLIDATED SERVICES FACILITY	**CRWUO63006**

ADDITIONAL:

DETAILED DEFICIENCY DATA SHEET

a. Requirements and Assets:

(1) SCOPE OF THIS REQUEST: 1310 SM

(2) Mission: The new Consolidated Services Facility (CSP) will provide a single location for Buckley Air Force Base (BAFB) personnel to conduct business with the Services functions that are currently scatter on the base. These functions include the Services Director and staff, Community Support Flight, Combat Support Flight, Resources Flight, Human Resources, Marketing/sponsorship, Food Services staff, Mortuary/Search and Rescue, the Honor Guard, and ITT Offices and Sales. The new facility will relieve the overcrowded conditions in the leased temporary modular buildings.

(3) Requirements: this project exceeds the requirements provided by Air Force Handbook 32-1084, Chapter 12 for Administrative Facilities based only on permanent party occupants. It meets the requirements in the Buckley AFB Facilities Excellence Plan and the Buckley AFB Area Development Plan.

The additional building space is due to a number of factors. Special Use Areas are required for a 50-person conference room to be used by all the organizations in the facility plus briefings to visitors. The Honor Guard requires a practice area inside the building. The Resources Flight needs a room for their computers and equipment. There will be approximately 15 transient occupants and 15 visitors using the facilities, especially the Resources Flight and ITT sales areas.

FUNCTIONAL BREAKOUT OF PROPOSED FACILITY

Private Offices	332 SM
General Office Areas	218 SM
Conference Room	67 SM
Honor Guard Practice Room	115 SM
Training/Locker Area	42 SM
Waiting Areas (2)	23 SM
Computer Room	37 SM
Work Room	51 SM
Building Support	425 SM

(5) REQUIREMENTS AND ASSETS:

a. Total Requirements:	1310 SM
b. Existing Substandard:	SM
c. Existing Adequate:	0 SM
d. Funded, Not in Inventory	0 SM
e. Adequate Assets (c+d)	0 SM
f. Included in FY94 thru FY96 Program	0 SM
g. Deficiency	1310 SM

1. Total Requirement: CSF 1310 SM (Proposed this project)

2. Existing Substandard:

CAT CODE	NOMENCLATURE	BLDG NO	SCOPE USED SM	SCOPE TOTAL SM	YEAR	COND CODE	TYPE
610-243	Support Building	T-10	1680	1680	2000	1	Trailer
610-243	Health/Wellness Ctr.	T-11	535	535	2000	1	Trailer
610-243	Community Support	T-12	1680	1680	2000	1	Trailer

3. Existing Adequate: None

4. Deficiency:

CAT CODE	NOMENCLATURE	BLDG NO	SCOPE USED SM	SCOPE TOTAL SM	YEAR	COND CODE	TYPE
610-243	CSF	TBD	1310	1310	2007	1	Steel

DD Form 1391c, DEC 76 Previous editions are obsolete

1. COMPONENT	FY 2006 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(Computer Generated)	**06-Sep-03**

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	**LOGISTICS READINESS COMPLEX**

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	PROJECT COST ($000)
35966	**422-758**	**CRWU063002**	

9. COST ESTIMATE

ITEM	U/M	QUANTITY	UNIT COST	COST ($000)
PRIMARY FACILITES				
Logistics Readiness Complex	SM	2,290		
Anti-Terrorism/Force Protection	LS	---	---	
SUPPORTING FACILITES				
Site Preparation	LS	---	---	
Pavement	LS	---	---	
Site Improvements	LS	---	---	
Utilities	LS	---	---	
Communications Support	LS	---	---	
ESTIMATED CONTRACT COST				
CONTINGENCY (5%)				
SUBTOTAL				
SUPERVISION, INSPECTION AND OVERHEAD (5.7%)				
TOTAL REQUEST				
TOTAL REQUEST ROUNDED				
EQUIPMENT FROM OTHER APPROPRIATIONS (NON-ADD)				Under Development

10. Description of Proposed Work: Construct a single-story, high bay, slab-on-grade structure with spread footings and foundation walls. The exterior walls shall be constructed of split-faced concrete masonry units and tinted insulated glass. The roof shall be sloped standing seam metal over rigid insulation. Includes utilities, parking, access, site preparation, pre-wiring for telecommunications and low-level Antiterrorism/Force Protection measures.

11. REQUIREMENT: 2,290 SM ADEQUATE: SUBSTANDARD:

PROJECT: Construct a Logistics Readiness Complex (New Mission)

REQUIREMENT: The Secretary of the Air Force and the Chief of Staff of the Air Force designated Air Force Space Command as installation host for Buckley AFB effective 1 Oct 2000, recognizing the growing active duty posture at Buckley ANGB and with the intent to provide the mission support and quality-of-life available at other Air Force bases. The 460th Air Base Wing (ABW) became operational 1 Oct 2001. A properly sized and configured logistics complex containing space for the Traffic Management Office (TMO) cargo movements (inbound and outbound), supply warehouse, a Sensitive Compartmented Information Facility (SCIF), deployment operations, and mobility bag and weapons storage is essential to support the 0perations of the new Wing including new deployment missions..

CURRENT SITUATION: There are currently no facilities at Buckley AFB available for logistics support to active duty Air Force components. No facilities exist for traffic management, mobility plans, mobility storage, and supply operations. At present, the functions are temporarily housed in Building 940 which was constructed in 1971 and is beyond its life expectancy. It is located south of the runway and east of Aspen Avenue, some distance away from the current center of operations. The existing facility is within the clear zone and operates under airfield safety waivers. An annual Airfield Waiver must be obtained for this obstruction hazard. The existing facility is undersized and does not meet modern building seismic, model energy, or fire protection codes. The existing facility is also in violation of the latest Department of Defense (DoD) Antiterrorism/Force Protection (AT/FP) Construction Standards. The new LRC will ensure that the end users have adequate space to meet their mission requirements in a safe and timely manner.

IMPACT IF NOT PROVIDED: Without a properly configured Logistics Readiness Center, the new 460th ABW will not receive adequate transportation, mobility, and supply support, continuing to seriously hamper mobility operations and exposing personnel to danger from airfield operations and life/health/safety deficiencies. Attempting to conduct logistics operations from a deteriorated, overcrowded, improperly configured facility is causing lost efficiencies. Construction of this project will allow the

1. COMPONENT	FY 2006 MILITARY CONSTRUCTION PROJECT DATA (Computer Generated)	2. DATE
AIR FORCE		**06-Sep-03**

3. INSTALLATION AND LOCATION

BUCKLEY AIR FORCE BASE COLORADO (AFSPC)

4. PROJECT TITLE	5. PROJECT NUMBER
LOGISTICS READINESS COMPLEX	**CRWU063002**

base to provide mobility processing, including equipping and training personnel along with receiving, storing, and issuing materiel to meet the deployment mission requirements of the 460th Air Base Wing (460 ABW). The project will also house administrative and special purpose functions for the Logistics Readiness Operations Flight and the Traffic Management Office.
ADDITIONAL: A preliminary analysis of the reasonable options for accomplishing this project (status quo, renovation, upgrade/removal, new construction, or leasing) was done. It indicates that only one option , new construction, will meet operational and safety requirements. Because of this, a full economic analysis was not performed. This project meets the scope /criteria specified in part II of Military Handbook 1190, "Facility Planning and Design Guide, and Air Force Handbook 32-1084, "Facility Requirements".
Base Civil Engineer: Lt Col Christopher C. McLane. (303) 677-6501.
Logistics Readiness Complex: 2,290 Sq. Meters = 24,650 sq.ft.
JOINT USE CERTIFICATION: This facility is programmed for joint use by the Army, Navy, and Marine Corps; however, it is fully funded by the Air Force.

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65% Requirements Document
Table of Contents

A. INTRODUCTION 1

PURPOSE 1
GOALS AND OBJECTIVES 1

B. PROJECT DESCRIPTION 4

PROJECT STATISTICS 4
PROJECT NARRATIVE 4
PROCESS NARRATIVE 6
A/E RULES OF ENGAGEMENT 7
SPECIAL DESIGN PROBLEMS 7
CONSTRUCTION SEQUENCE 8
BUILDING SYSTEMS 8
Utilities 8
Architectural/Structural 9
Heating, Ventilation, and Air Conditioning 10
Project Conditions 13
Components 13
Pipe Insulation 13
ENERGY MONITORING 14
Plumbing 15
Fire Protection 16
System Performance Requirements 16
ELECTRICAL 17
EXTERIOR ELECTRICAL EQUIPMENT 18
INTERIOR ELECTRICAL EQUIPMENT 18
LIGHTING 19
COMMUNICATIONS 20
FORCE PROTECTION 20
USER EQUIPMENT 21
USER EQUIPMENT 22
SPECIAL REQUIREMENTS 22

C. FLOOR PLANS 25

D. AREA DEVELOPMENT PLAN 28

65% Requirements Document
Table of Contents

PROJECT RELATIONSHIP TO THE BASE COMPREHENSIVE PLAN 28
Site Selection *28*
Architectural Compatibility *28*
Landscaping *28*

E. SUSTAINABLE DESIGN REQUIREMENTS 29

INTRODUCTION 29
SUSTAINABLE SITES 29
WATER EFFICIENCY 30
ENERGY AND ATMOSPHERE 30
MATERIALS AND RESOURCES 31
INDOOR ENVIRONMENTAL QUALITY 31
CONCLUSION 32
REFERENCES 32

F. REQUIREMENTS DOCUMENT AGREEMENT 33

AGREEMENT STATEMENT 33
SIGNATURES 33

G. ATTACHMENTS 34

Attachment 1

DD Form 1391C Initial Buckley AFB Program
DD Form 1391 Estimate (Revised)
Certificate of Compliance for Critical Planning Actions

Attachment 2 – Parametric Cost Estimates (PACES)

Attachment 3 – Buckley Air Force Base Site Plan

Attachment 4 – Environmental Report

Attachment 5 – Existing Utility Plans

Attachment 6 – Photographs

Attachment 7 – Points of Contact

Attachment 8 – Buckley Air Force Base Facility Excellence Plan

Acronyms

°F	degrees Fahrenheit
A/E	Architect Engineer
ABW	Air Base Wing
ADA	Americans with Disabilities Act
AFB	Air Force Base
AFCEE	Air Force Center for Environmental Excellence
AFI	Air Force Instruction
AFSPC	Air Force Space Command
ANG	Air National Guard
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers
ASSE	American Society of Safety Engineers
ASTM	American Society for Testing and Materials
AT/FP	Antiterrorism/Force Protection
B	building
Btu	British thermal units
CE	Civil Engineer(ing)
CFR	Code of Federal Regulations
CoANG	Colorado Air National Guard
CZ	Climate Zone
DoD	Department of Defense
EO	Executive Order
ETL	Engineering Technical Letter
FEMP	Federal Energy Management Program
FEP	Facility Excellence Plan
FY	fiscal year
HQ	Headquarters
HVAC	heating, ventilation, and air conditioning
IAQ	indoor air quality
IEEE	Institute of Electrical and Electronics Engineers
IESNA	Illuminating Engineering Society of North America

Acronyms

kV	kilovolt
LAN	local area network
LEED	Leadership in Energy and Environmental Design
LF	linear foot (feet)
LRC	Logistics Readiness Center
LRS	Logistics Readiness Squadron
MAJCOM	Major Command
MIL-HDBK	Military Handbook
N/A	not applicable
NFPA	National Fire Protection Association
OPSEC	Operational Security
PACES	Parametric Cost Estimate
PD	Project Definition
psf	pounds per square foot
psi	pounds per square inch
PVC	polyvinyl chloride
RD	Requirements Document
RFP	Request for Proposal
S	storage
SCIF	Sensitive Compartmented Information Facility
SF	square foot
SIPRNET	Secure Internet Protocol Router Network
SM	square meter
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association
TMO	Traffic Management Office
UBC	Uniform Building Code
UFC	Unified Facilities Criteria
UL	Underwriters Laboratory
UPS	Uninterrupted Power Soursce
USAF	U.S. Air Force
VOC	volatile organic compound

A. Introduction

Purpose

The purpose of this Requirements Document (RD) is to provide the Architect Engineer (A/E) a basis for understanding the project requirements, formulating pertinent questions, and preparing a fee proposal. The project is the construction of a new 2,290-square meter (SM) (24,650-square foot [SF]) Logistics Readiness Complex (LRC) at Buckley Air Force Base (AFB), Colorado. The RD provides a framework for executing the project with the Air Force Space Command (AFSPC) and Buckley AFB end users, the 460th Logistics Readiness Squadron (LRS).

Active involvement with AFSPC and Buckley AFB end users during all phases of design and construction is essential to ensure that the facility meets all functional requirements. The A/E is responsible for verifying the accuracy of all information contained within this document.

Goals and Objectives

The project goal is to provide a quality facility that enhances mission effectiveness while protecting the environment. A focus on quality and accuracy throughout the project's development and subsequent construction is paramount. The objectives are to deliver a complete and usable facility on time, within budget, that satisfies the end user's needs in a manner that is safe for those in and around the facility.

Construction of this project will allow the base to provide mobility processing, including equipping and training personnel along with receiving, storing, and issuing materiel to meet deployment mission requirements for the 460th Air Base Wing (460 ABW). The project will also house administrative and special purpose functions for the Logistics Readiness Operations Flight and the Traffic Management Office (TMO).

The existing Logistics Complex, Building 940, was constructed in 1971 and is beyond its life expectancy. It is situated some distance away from the current center of operations located south of the runway and east of Aspen Avenue. The existing facility is within the clear zone and operates under airfield safety waivers.

The existing facility is undersized and does not meet modern building seismic, model energy, or fire protection codes. The existing facility is also in violation of the latest Department of Defense (DoD) Antiterrorism/Force Protection (AT/FP) Construction Standards. The new LRC will ensure that the end users have adequate space to meet their mission requirements in a safe and timely manner.

For this project, the A/E must address the Buckley AFB Facilities Excellence Plan (FEP). The project will also reference the following standards and codes:

- Air Force Instruction (AFI) Handbook 32-1084
- Headquarters (HQ) AFSPC Architectural, Interior Design, and Facility Excellence Standards
- Uniform Building Code (UBC)
- National Fire Protection Association (NFPA) Life Safety Code 101
- Leadership in Energy and Environmental Design (LEED) Sustainability Certification Rating System for sustainable design
- Unified Facilities Code (UFC) 4-010-01 DoD Minimum Anti-Terrorism Standards for Buildings
- Engineering Technical Letter (ETL) 02-12, dated June 2002, Communications and Information System Criteria for Air Force Facilities
- Uniform Mechanical Code
- American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standard 62 (Ventilation for Acceptable Indoor Air Quality)
- NFPA 90A (Installation of Air Conditioning and Ventilation Systems)
- NFPA 90B (Installation of Warm Air Heating and Air Conditioning Systems)
- Uniform Plumbing Code
- Uniform Fire Code (Colorado Edition)
- Military Handbook 10008C
- NFPA 13 (Installation of Sprinkler Systems)
- NFPA 14 (Installation of Standpipe and Hose Systems)
- NFPA 20 (Installation of Centrifugal Fire Pumps)
- National Electric Code
- NFPA 780 (Lighting Protection Code)
- Institute of Electrical and Electronics Engineers (IEEE) Climate Zone (CZ) (National Electric Safety Code)
- Uniform Federal Accessibility Standards
- Current ETLs

- Current design and construction guidance published by Air Force Center for Environmental Excellence (AFCEE)

The facility shall be architecturally compatible with other new facilities being constructed prior to this project. In addition, the A/E shall strive to provide a design that achieves the current United States Air Force (USAF) goal of a minimum LEED rating of 26.

B. Project Description

Project Statistics

Installation:	Buckley Air Force Base
Fiscal Year:	2006
Project Name:	Logistics Readiness Complex
PDC Number:	CRWU 06 3002
Host Command:	Buckley Air Force Base
Requiring Command:	Air Force Space Command
Category Code:	442-758
Scope:	2,290 SM
Programmed Construction Dollars:	See DD Form 1391
Operational Need Date:	As Soon As Possible
Facility Need Date:	As Soon As Possible
Demolition:	N/A
Remediation:	N/A

Project Narrative

In 1942 and 1943, the federal government purchased 5,740 acres of land outside of Denver, Colorado, and designated it as Buckley Field. Buckley Field was used to train U.S. Army Air Corps B-17 and B-24 bombardiers, armorers, and to conduct basic and Arctic training. In 1946, the U.S. Army deactivated Buckley Field and transferred ownership to the State of Colorado, which assigned the land to the Colorado Air National Guard (CoANG) for personnel training. In 1947, the U.S. Navy assumed control of a portion of Buckley Field for use as a training area and renamed it Naval Air Station Denver, Colorado. The remainder of the field was left in CoANG's control. In 1959, the U.S. Navy again deactivated the station and transferred the property back to the CoANG. The station was then renamed Buckley Air National Guard (ANG) Base.

Effective 1 October 2000, the base was reassigned from the ANG to AFSPC to host the 821st Space Group (SG) and eventually became Buckley AFB. In October 2001, the 460 ABW was established at Buckley AFB and assumed control of the installation. The Wing supports the USAF mission by providing space-based missile warning data, space communication data, and data relay operations, as well as sustaining all related base support function.

Logistics Operations are essential at Buckley AFB to support the 460 ABW, but there is no adequate facility to meet current mission requirements. Logistics Operations are currently scattered in different locations at Buckley AFB. This results in continued inefficient operations. The Readiness Flight, TMO, and Supply Operations occupy a building that is in the airfield clear zone. LRS and staff occupy an overcrowded, leased, modular building.

The new LRC will provide support to the 460 ABW in the following areas: TMO cargo movements (inbound and outbound), deployment operations, and mobility bag and weapons storage.

This project will construct a 2,290-SM, approximate 25-foot floor-to-ceiling (high-bay) warehouse with adjacent single-story administrative functions. The initial Buckley AFB DD Form 1391C provided for an adjacent two-story administrative area for the facility. While developing the concept space plan during the design charrette, it became evident that the administrative and special purpose space requirements to support deployment processing on the ground floor will assume most of the overall program requirements. The remaining administrative functions for the facility are much less, thus it is not prudent to build a two-story facility. All building administrative and special purpose functions should fit adequately in the adjacent two sides of the high-bay warehouse area. This planning process reduces building cost and square footage by eliminating a minimum of two staircases and an elevator. Refer to the concept floor plan in Section C of this report for further detail.

The facility shall be slab-on-grade with spread footings and foundation walls. The exterior walls shall be constructed of split-faced concrete masonry units and tinted insulated glass. The roof shall be sloped standing seam metal over rigid insulation. The facility will have a focal main entrance for staff and personnel being deployed. One wing of the administrative areas will be dedicated for deployment. The other administrative wing will be for the Commander's office, secretary, staff, and other administrative functions. The deployment area will be arranged so that there is a logical flow for processing personnel.

The facility will have a large high-bay warehouse area for processing and storage. The facility will provide administrative office space, conference rooms, deployment control center, mobility processing, mobility bag storage, weapons storage, hazardous materials storage, shop area, and a temporary vehicle dispatch office.

In July 2003, the 460th LRS purchased and installed an automated movable storage system for mobility bag storage. This system eliminates wasted aisle space, is expandable, and will be required to be taken down and relocated to the new LRC once constructed.

Weapons storage will be contained in a Class 4 10-foot-wide by 10-foot-deep by 10-foot-high independent manufactured vault. There will not be any ammunition storage. The

vault will require a 12-foot-wide demountable wall between the high-bay area and the processing area for vault installation or removal. There shall be a silent alarm at the door to the weapons issue area that will go off at a designated desk to be determined by the end user. No alarm is required inside the vault.

The Conference/Training Room will require secure access and all walls will require sound suppression. The security level will be no higher than "Secret." A two-workstation Sensitive Compartmented Information Facility (SCIF) area is required for the Logistics Plans Office and will require security access and sound suppression. A classified storage cage is required for surface freight.

There will be a temporary vehicle dispatch office within the facility until a new vehicle maintenance shop is completed. Buckley AFB may also explore a temporary trailer outside the facility for dispatch, versus dedicating space inside the LRC.

The warehouse area will include space to park and charge forklifts. The shop area will require dust collection ports and compressed air. The warehouse area will incorporate a loading dock for loading and unloading equipment and materials.

Process Narrative

The site for the new LRC will be to the east off of the main north-south access road (Aspen Avenue). The site selected is to the northwest of Building 1005, Civil Engineering (CE). This area is currently an open field and should be an ideal, convenient location for operations.

Delivery vehicles shall access the LRC east off Aspen Avenue and proceed north of the new facility before driving to the rear of the facility where the loading docks will be placed. Barriers approved by AT/FP Standards and a gate will restrict delivery vehicle access to the facility. Delivery access to the loading dock shall incorporate sloped pavement wide enough to accommodate two trucks. Delivery vehicles will back into the loading dock for loading or unloading. Overhead automatic coiling doors will be located adjacent to the loading dock for forklifts and other miscellaneous vehicles to get in and out of the facility.

Parking will be to the south-southeast of the facility. There shall be a main entrance that will face southwest towards the Rocky Mountains. There shall be a parking area designated for Logistics vehicle fleet that includes sedans, vans, buses, and trucks. This parking area is part of the project and shall be located a minimum of 82 feet from the facility.

Cargo receiving and processing must be laid out to reduce congestion. Space layout for deployment processing is vital so that there is an orderly movement of personnel. During deployment exercises, there may be more than 70 people in the building at one time. The

weapons storage must be located such that it will allow for quick access out of the facility after the weapon has been issued.

There will be approximately six people staffed for the Logistics Office, and approximately six people staffed for Logistics Readiness. There will be two people staffed for the SCIF. The remaining staff will be for the Commander and support personnel. The entire facility will staff approximately 37 to 42 people.

Floor space must be calculated in accordance with AFI 32-1084 and applicable industrial standards. A single line drawing is supplied in Section C and should be used for reference purposes, however it is not meant for use as the final design. The A/E may have a better scheme and should coordinate the design with the end users and Project Manager.

A/E Rules of Engagement

Possible project delivery options include both Design-Bid-Build or Design-Build formats. The A/E contract requires a Request for Proposal (RFP). The RFP shall contain all requirements for the new LRC as well as the design provisions contained in the Buckley AFB FEP and other requirements and standards referenced in this RD.

This contract requires identifying all sites and facility requirements including environmental, site utility, architectural, structural, mechanical, plumbing, fire protection, electrical, and telecommunications design. This contract requires all drawings and specifications necessary to communicate the requirements in the RFP. A design charrette shall be performed on site at Buckley AFB at the beginning of this contract.

Special Design Problems

Buckley AFB personnel have predetermined the proposed site location for the new LRC, which is an open field east of Aspen Avenue.

Although Buckley AFB has stated there are adequate utilities for the LRC, it is vital that Buckley AFB reevaluate the utility requirements for the slated new facilities, which include the Wing HQ, the Leadership Development Center, as well as the new LRC. These new facilities are in close proximity to one another. Pressure tests are vital to ensure adequate water pressure for fire suppression sprinkler systems.

The site survey revealed no unusual soil conditions, utility lines, topography, clear zone, environmental, or infrastructure concerns that may adversely affect proposed construction of the proposed LRC.

An encroaching black-tailed prairie dog community and burrowing owls have been observed on the site. The prairie dogs will be relocated prior to construction under a

separate USAF program. The burrowing owls will also be removed from the site under a separate USAF program prior to the start of construction activities; however, should nesting owls be discovered, the contractor shall protect, preserve, and isolate the nesting area.

It is vital that a geotechnical survey be conducted prior to the site and structural design due to the weights of 18-wheel vehicles on the site, forklifts, and other miscellaneous vehicles inside the facility.

Construction Sequence

Demolition of existing facilities is not required under the scope of this project.

There is an Outdoor Recreation Equipment Rental Facility to be constructed in fiscal year (FY) 2005 that will be near the new LRC.

The new LRC must be completely finished and equipped with new equipment, furnishings, and systems prior to relocating the end users.

The existing movable storage system for mobility bag storage must be emptied of all mobility bags prior to relocating the system to the new facility. The contractors shall coordinate the teardown and relocation of this system with the construction schedule and the end users so that the relocation does not occur during deployment times.

The project shall include relocating to the new facility warehouse shelving, shop equipment, and other miscellaneous items and equipment designated by the end user.

Building Systems

UTILITIES

There are existing utilities that run along the east side of Aspen Avenue. There is potable water service supplied by a 6-inch main. Flow tests shall be conducted prior to constructing the new LRC to ensure adequate water and water pressure will meet water supply and facility sprinkler system requirements. Approximately 500 linear feet (LF) of new water line shall be provided to the main.

A new 10-inch sanitary sewer main is being installed for the new Wing HQ Project. Approximately 500 LF of sanitary sewer tie-ins shall be provided from the new LRC to the main.

There is an existing 30-inch-diameter storm sewer that runs along the east side of Aspen Avenue. Approximately 500 LF of new underground storm lines shall be provided from

the new LRC to the existing main, as well as underground drainage from the sloped loading dock area.

There is an existing 6-inch gas line that runs along the east side of Aspen Avenue. Approximately 500 LF of new underground gas lines shall be provided to the new LRC from the main.

There is an existing underground 7.62/13.2 Y kilovolt (kV) copper electrical service. Approximately 500 LF of new underground electrical service shall be provided to the new LRC, utilizing Schedule 40 polyvinyl chloride (PVC) concrete-encased conduits with a minimum envelope dimension of 3 inches. The required conduit arrangement shall be neatly stacked in the trench utilizing plastic duct spacers to maintain conformity. The conduit shall be placed with a minimum of 3 feet of cover to the proposed surface grades.

ARCHITECTURAL/STRUCTURAL

All building construction design for the new LRC shall be based upon proven design techniques that utilize state-of-the-art design in readily available materials and hardware. The focus of all architectural and structural design shall be the safety, convenience, reliability, maintainability, and comfort of the end users, customers, and visitors.

The new LRC will be a mixed-use facility. The high-bay area will be classified as Use (S) Storage, and the remainder of the facility will be Use (B) Business. Due to the overall square footage, the project can fall under Type II Construction. The facility shall be fully sprinklered and will be open on all sides, allowing for area increases, per code.

The design and construction of the new LRC, including components (roofing, wall cladding, windows, connections, etc.), shall resist wind load requirements of American Society of Civil Engineers (ASCE) 7-95, or latest edition, for a wind velocity of 70 miles per hour. The building shall have an Importance Factor of 1.15 and Exposure Category C. Design for components and cladding shall be based on location, structure, internal pressures, etc. The seismic zone is 1, per UBC; the roof snow load or live load will be 30 pounds per square foot (psf); and the maximum frost penetration will be 36 inches. Local codes will be used if they are more stringent.

An economical structural system shall be selected based on facility size, projected load requirements, and local availability of materials and labor.

Access roads and entrances should accommodate the size and turning radius of Fire Department Services and 18-wheel vehicles. New pavement shall be designed to accommodate the weights of 18-wheel vehicles and fire trucks.

The building structural modules shall be designed to reflect space requirements, economy, and subsystem dimensions (e.g., ceiling grid, masonry units, framing members, etc.). Clear span versus multicolumn supported roof structures shall be considered for the

high-bay storage area. The high-bay storage areas and shop area walls shall have concrete masonry unit construction for durability. The high-bay storage area floor slab shall be designed to support the weight of forklifts and other vehicles.

All facility components shall be of noncombustible construction materials. All walls are required to run from floor to underside of structural floor above or roof deck. All exterior glass shall be insulated and tinted to reduce heating and cooling costs. All functional areas including parking spaces, entrances, corridors, restrooms, and door hardware must be barrier free and accessible to the physically handicapped in accordance with the Americans with Disabilities Act (ADA) and Uniform Federal Accessibility Standards. Interior and exterior signage shall be provided in accordance with USAF and Major Command (MAJCOM) standards as well as any graphic standards used at Buckley AFB.

The LRC dimensions are 175 feet east to west by 148 feet north to south. The exterior building materials shall be compatible with the other new facilities at Buckley AFB. There shall be four overhead coiling doors, 14 feet wide by 16 feet high for the high-bay area. Exterior doors at the main entrance shall be storefront glass type with restricted-entry control devices. All other exterior doors shall be steel doors with a small glass vision panel. The roof shall be sloped standing seam metal.

The high-bay area shall have exposed structure ceiling. The underside of the structure shall have a self-adhering spray-on acoustical cellulose material to suppress noise. The high-bay area floor, along with electrical and mechanical rooms, shall be sealed concrete.

All corridors and deployment areas, including administrative processing areas, break room and the Conference/Training Room, shall have sheet-rubber flooring with welded seams, slip-resistant surface, and 4-inch rubber base. Walls shall be painted gypsum board, and ceilings shall be 2-foot by 4-foot acoustical tiles with straight edges in standard-width grids.

The administrative south wing area shall have carpeted floors and 4-inch rubber base. Walls shall be painted gypsum board, and ceilings shall be 2-foot by 4-foot acoustical tiles with standard-width grids.

All restrooms shall have sheet-rubber flooring with welded seams, slip-resistant surface, and integral rubber base. Walls shall be full-height ceramic tiles, and ceilings shall be water-resistant gypsum board. Toilet room partitions shall be stainless steel. All toilet room accessories shall be provided.

All interior doors shall be solid wood or metal doors in painted hollow metal frames. All interior partitions shall receive acoustical insulation the full height of the wall.

HEATING, VENTILATION, AND AIR CONDITIONING

All mechanical systems, which include heating, ventilation, and air conditioning (HVAC) for the new LRC, shall be based upon proven design techniques that utilize state-of-the-

art developments in readily available equipment, hardware, and systems. The focus of all HVAC system designs shall be the safety, convenience, reliability, maintainability, and comfort of the end users, customers, and visitors.

In addition to the above, all items in the HVAC systems shall be easily accessible for maintenance and adjustments. Suitable access to all components shall also include provisions for easy removal and replacement. All mechanical systems shall be reliable and stable in their operation. The systems shall be direct in their operation for easy control and adjustment.

Energy conservation shall be of prime importance in the design of all mechanical systems. The systems shall meet all local, state, and federal energy conservation codes, including applicable ASHRAE standards.

Indoor Design Conditions:

HVAC systems serving administrative spaces/special purpose spaces shall maintain the following indoor conditions:

Summer: 75 degrees Fahrenheit (°F) dry bulb at 50% (maximum) relative humidity

Winter: 72°F dry bulb

A dust collection system shall be provided for the various tools located in the shop area. The high-bay and shop areas shall be zoned separately from the administrative and deployment areas. Unit heaters shall be provided in the high-bay area.

Outdoor Desing Conditions:

Heating degree-days are 6,283

Cooling degree-days are 803

Outside design temperature area:

Heating (99% OCC): 5° F

Cooling (1.0%): Dry Bulb = 90°F

Wet Bulb = 63°F

The ventilation standards shall be based upon ASHRAE Standard 62-1989. The more stringent requirements shall be used where there is conflicting information between the ASHRAE Standard and the code.

In general, HVAC systems shall be designed to limit the sound transmitted to the surroundings. Sound levels from the HVAC system should not exceed the noise level specified for the different spaces. Lower duct velocities, duct silencers, and appropriate duct fittings shall be utilized in the design to limit the noise levels. Where necessary, vibration isolation shall be provided.

Maximum noise levels in the occupied spaces produced by the HVAC systems shall be the stricter of either the latest *ASHRAE Fundamentals Handbook* or as noted below:

Location	Recommended Noise Level RC (N)
Private Offices	25 – 35
Open Office Space	30 – 40
General Purpose Storage	30 – 40

All equipment shall be provided with premium high-efficiency motors with a power factor of 0.90 or higher. Motors rated at 1/2 horsepower or lower shall operate at 120/1/60 volts. Motors 3/4 horsepower or higher shall operate at 480/3/60 volts.

HVAC piping shall be designed to minimize pressure losses and the use of pumping energy. For future expansion connections, tees, valves, and blind flanges shall be provided. Isolation valves shall be provided at all main branch connections, major junctions, and as necessary to repair and service equipment.

Water pipe sizing (except for fire suppression piping) shall be designed on the following parameters:

Pipe Size (inches)	Maximum Velocity (feet per second)	Maximum Pressure Drop (feet per 100 feet of pipe)
Up to 2	4.0	4.0
2.5 through 6	5.5	2.5
8 through 12	8.0	2.0
14 through 20	10.0	1.0

Automatic air vents shall be provided at all high points in piping systems, including coils. Drain connections and valves shall be provided at all low points in piping systems, including coils.

Hanger and support components should be provided in accordance with industry standards. Power-actuated drive-pin fasteners appropriate for supported loads should be provided, as well as mechanical anchor fasteners and heavy-duty steel trapezes, and structural steel stands to suspend equipment from the structure above or support equipment above the floor.

Mechanical vibration and seismic controls, including vibration isolators, vibration isolation bases, inertia bases, and seismic restraints and snubbers should be provided as required on all moving equipment.

PROJECT CONDITIONS

Project Seismic Zone: 1

Building Importance Factor: 1.15

COMPONENTS

Isolator Pads	Oil- and water-resistant rubber
Rubber Isolator Mounts	Double-deflection type
Spring Isolators	Freestanding, laterally stable, open-spring type
Restrained Spring Isolators	Vertically restrained, freestanding, laterally stable, steel open-spring type
Rubber Hangers	Double-deflection type
Spring Hangers	Combination spring and elastomeric hangers with coil spring and elastomeric insert in compression
Vibration Isolation and Inertia Bases	Structural-steel bases and rails designed and fabricated by isolation equipment manufacturer, supporting equipment static loadings, power transmission, component misalignment, and cantilever loadings. Inertia bases to be filled with concrete

PIPE INSULATION

Fire Performance Characteristics	Flame spread of 25; smoke developed of 50; according to ASTM E 84
Glass Fiber	Preformed; ASTM C 547, Class 1, rigid, jacketed and vapor-barrier coated
Cellular Glass	Preformed foamed or cellulated glass, jacketed pipe insulation
Flexible Elastomeric Cellular	Tubular, expanded, closed cell
Calcium Silicate	ASTM C 533, Type I, preformed
Jacket	PVC for exposed piping; aluminum for outdoor applications

Ductwork shall be constructed of galvanized steel sheet metal, and shall be rectangular, round spiral, or oval as appropriate for the specific application. All duct design shall be in accordance with Sheet Metal and Air Conditioning Contractors' National Association (SMACNA) Duct Construction Standards.

For design applications, velocity of air in the ducts shall not exceed the following:

Duct Application	Velocity (feet per minute)
VAV Mains	2,500
Constant Volume Mains (Unoccupied Spaces)	2,500
Constant Volume Mains (Occupied Spaces)	2,000
Branch With Diffuser Connection	1,000
Exhaust Systems	1,500

Dampers and actuators, duct silencers, turning vanes, duct-mounted access doors, flexible connectors, and flexible ducts shall be provided as required for a complete design.

Energy Monitoring

All systems shall incorporate energy-efficient criteria consistent with the Energy Star® program, Federal Energy Management Program (FEMP) initiatives, Energy Policy Act of 1992, Executive Order (EO) 13123, and 10 Code of Federal Regulations (CFR) 435.

The facility design shall encourage sustainable design and shall provide for verification of building performance. Off-grid generation systems such as photovoltaic, fuel cells, and other alternatives shall be considered and employed where such systems are lifecycle cost-effective.

Energy for lighting and other uses shall comply with ASHRAE/Illuminating Engineering Society of North America (IESNA) 90.1-1999 or other applicable state or federal standards.

Microprocessor-based metering units shall be provided on utility services and feeders within the facility to monitor the quantity and quality of energy used.

Connection to the Buckley AFB central energy monitoring and control system shall be provided.

PLUMBING

All plumbing systems for the new LORC shall be based upon proven design techniques that utilize state-of-the-art development in readily available equipment, hardware, and systems. The focus of all plumbing system designs shall be the safety, convenience, reliability, maintainability, and comfort of the end users, customers, and visitors.

In addition to the above, all items in the plumbing systems shall be easily accessible for maintenance and adjustments. Suitable access to all components shall also include provisions for easy removal and replacement.

All plumbing systems shall be reliable and stable in their operation. The systems shall be direct in their operation for easy control and adjustment.

Energy conservation shall be of prime importance in the design of all plumbing systems. The systems shall meet all applicable local, state, and federal energy conservation codes.

Cold and hot water domestic piping system shall be provided throughout the facility. Sanitary and storm drainage, plus natural gas systems, shall be provided, as well as floor drains in restrooms, shower areas, janitor closets, shop area, and the general-purpose high-bay area. Electric water coolers shall be provided in the administrative area, break room, and high-bay storage area. Metering for gas and water service shall be provided, and all plumbing services will come from existing mains along Aspen Avenue.

Isolation valves shall be provided within the cold and hot water systems at all main branches and on mains and branches serving plumbing fixtures.

Plumbing fixtures for the facility shall follow low-flow conservation design; however, excellent flushing action must be provided in toilet rooms. The flush valves for the urinals and water closets should consider infrared types. Faucets at lavatories should also consider electronic actuation, and metering for gas and water service shall be provided. ADA and Uniform Federal Accessibility Standards shall be followed for providing accessible fixtures in all toilet rooms.

Emergency eyewash will be provided in the shop area, and compressed air for the shop equipment will be provided.

Hot and cold domestic water lines shall not exceed 8 feet per second velocity or 8 feet of pressure loss per 100 feet of pipe. Insulation thermal conductivity should be at least 0.29 Btu*in/hr*F with a flame/smoke developed rating less than 25/50. Lead-free potable water delivery is mandatory, as required by code. Maximum water distribution working pressure shall be a minimum of 80 pounds per square inch (psi).

Waste and storm water piping shall have slopes not less than 1/8-inch per foot of fall. These pipes shall be insulated where horizontal and exposed to freezing temperatures. Insulation thermal conductivity shall be at least 0.29 Btu*in/hr*F with a flame/smoke developed rating less than 25/50.

Sanitary and vent piping shall be cast iron soil pipe or PVC. All piping shall follow applicable codes for sizing and installation. Cleanouts shall be provided at all changes in direction, and trap primers shall be provided on all floor drains in toilet rooms and at other floor drains.

Pumps for the facility shall be sized for the service, flow, and pressure required. Strainers, valves, and vibration isolators shall be provided. Pumps shall be located where they will be accessible for service, and high-efficiency motors shall be specified.

Water heaters for the facility shall have 120°F domestic hot general-purpose water for the toilet rooms and showers.

FIRE PROTECTION

The A/E shall provide a performance specification for a qualified Fire Protection Contractor. The contractor will provide the appropriate hydrant flow tests. The areas, type of coverage, and densities required in the various areas of the facility shall be provided.

All areas of the facility shall have complete sprinkler coverage for fire protection, and the sprinkler systems shall be wet type. A fire detection/suppression panel shall be provided for the facility near the main entrance or where designated by the fire department. All sprinkler protection systems will be designed hydraulically per NFPA 13 standards, 2001 Uniform Fire Code (Colorado Edition), Buckley AFB Fire Code Standards, and Military Handbook (MIL-HDBK) 10008C 1997.

Connections for fire suppression will be made from the water main along Aspen Avenue.

Sprinkler heads shall be coordinated with the ceiling systems selected by the A/E, and types of heads shall be coordinated with the A/E during final design.

SYSTEM PERFORMANCE REQUIREMENTS

Hydraulically design the system according to the following:

Administrative Areas: Light Hazard
Mobility Processing Areas: Light Hazard
High-Bay Area and Shop: Ordinary Hazard, Group I
Mechanical Rooms: Ordinary Hazard, Group I
Pressure: 175-psig minimum working pressure ratings

Components:

Fire-Protection Service Valves	UL-listed and FM-approved, with 175-psig non-shock minimum working-pressure rating
Backflow Preventers	ASSE standard double-check assemblies
Sprinklers	Automatic, with heat-responsive element
	Coated, painted, or plated sprinklers
	Pendant sprinklers
	Quick-response sprinklers
	Recessed sprinklers, including escutcheon
	Ductile-iron pipe and Schedule 40 steel pipe

Fire Department Connections:

- Alarm devices (addressable Class A, Style 6 plus)
- Electric alarm bell
- Water flow indicators
- Pressure switches
- Supervisory switches
- Single-action key-resistible pull boxes

Electrical

All electrical systems and wiring for the new LRC shall be based upon proven design techniques that utilize state-of-the-art development in readily available equipment, hardware, and systems. The focus of all electrical system designs shall be the safety, convenience, and reliability of the end users, customers, and visitors.

In addition to the above, all items in the electrical systems and wiring shall be easily accessible for maintenance. Suitable access to all components shall also include provisions for easy removal and replacement.

All electrical systems and wiring shall be reliable and stable in their operation. The systems shall be direct in their operation for easy control and adjustment.

Exterior Electrical Equipment

The LRC shall have a single utility area where facility equipment such as transformers and chillers are located. This area shall be located out of sight of main facility entrances and courtyards, but accessible to service roads and equipment maintenance vehicles. Only feeds from the primary utility line to the LRC are to be included in the cost estimate.

All exterior equipment shall be mounted on individual concrete pads, so that the distance between equipment items is no less than 10 feet, and the personal egress space around pad mounted equipment is no less than 40 inches.

The facility power requirements shall be 120/208 volts. Emergency power is not required.

A grounding ring shall be provided around the facility, and special grounding systems are not required. Lightning protection shall be provided for the entire facility.

Interior Electrical Equipment

There shall be one main electrical equipment room. The room must be accessible and as near to the pad-mounted exterior equipment area as possible. Size the room to accommodate protection equipment, main electrical switchboards, electrical distribution panels, transfer switches, transformers, and circuit breaker panels feeding receptacles and devices in the immediate surrounding area. Isolated circuits shall be provided for special equipment.

The main electrical switchboard shall have a multifunction digital-metering package to monitor electrical parameters. The main electrical switchboard shall be equipped with transient voltage surge suppression.

Electrical rooms shall be provided to house electrical branch circuits to each 10,000 square feet of usable floor space. The rooms shall be located adjacent to each telecommunication room. Size each room to accommodate a minimum of three circuit breaker panels and any transformer necessary for 208/110-volt panels, if not included in the main electrical room.

Electrical service and distribution equipment, including metering, wiring, switchboards, panel boards, and electrical devices shall be provided, as well as telecommunications and data wiring, fire alarms, and intrusion detection systems per Buckley AFB's most current standards.

Lighting

All lighting systems for the new LRC shall be based upon proven design techniques that utilize stat-of-the-art developments in readily available fixtures, switches, and systems. The focus of all lighting designs shall be the convenience, reliability, maintainability, and comfort of lighting levels of the end users, customers, and visitors.

In addition to the above, all items in the lighting systems shall be easily accessible for maintenance and adjustments. Suitable access to all components shall also include provisions for easy removal and replacement.

All lighting systems shall be reliable and stable in their operation. The systems shall be direct in their operation for easy control and replacement.

Lighting levels shall be designed to meet the recommendations of the IESNA Lighting Handbook.

Site lighting shall be provided at parking and loading dock areas.

General lighting should be fluorescent with electronic, energy-efficient ballasts and lamps. All fluorescent lamps shall be T8 or smaller. All general lighting circuits shall be 277 volts, as applicable, fed by 480/277-volt circuits. Night and emergency lighting shall be provided as required.

Interior and exterior lighting control systems shall be provided, including ambient light dimmers and multiple switching for low ambient light levels and energy conservation.

Incandescent lamps shall be used only where required and shall have an average rated life of 2,500 hours.

Red strobe lighting shall be provided on facility interior and exterior to alert firefighters of an emergency response.

Conference rooms shall have a "layered" lighting system with independent dimmer controls, including incandescent lighting around the perimeter of conference tables and wash lighting on the walls.

All private office and open office administrative areas shall have lighting systems designed to control brightness and glare.

The general purpose high-bay storage area shall have metal-halide with auxiliary restrike lamps.

Communications

All communications systems for the new LRC shall be state-of-the-art developments in readily available equipment and systems. The focus of all communications system designs shall be the convenience and reliability for the end-users, customers, and visitors.

A communications duct bank from the main telecommunications room to the base main communication duct shall be provided.

The facility will be pre-wired for data (local area network [LAN]), telephone (multiline), and extra LAN ports shall be provided throughout the facility.

Communications and Operational Security (OPSEC) requirements shall be provided for the Logistics Plans Office (i.e., Secure Internet Protocol Router Network [SIPRNET]). A separate secured telecommunication closet shall be provided for SIPRNET.

A paging system shall be provided throughout the facility.

The facility does not require a closed circuit television system.

An intrusion detection system shall be provided for the facility following the most current systems that Buckley AFB is using.

A silent alarm shall be provided at the weapons storage and issue room.

A temporary vehicle dispatch office with base station shall also be provided.

Force Protection

All parking areas existing or proposed shall be a minimum of 25m (82 feet) away from any exterior wall of the new LRC. The majority of parking will be to the south of the LRC.

There shall be a gated access to the loading dock.

The new LRC does not contain a mailroom.

All building components, site design, utility design, mechanical and electrical design shall comply with AT/FP Building Standards for new construction projects.

User Equipment

Special support and equipment requirements that could impact useable space and design.

Existing Shop Equipment	Dimensions (Width x Depth x Height)	Notes
Dayton Band Saw	3'-0" x 2'-6" x 6'-0"	Requires 4" dia. Dust collection port
Dayton Table Saw	6'-0" x 3'-0" x 3'-0"	Requires 4" dia. Dust collection port
Dayton Drill Press	2'-6" x 2'-6" x 6'-0"	Requires 4" dia. Dust collection port
Cutting Table	8'-0" x 3'-4" x 3'-0"	For wrapping
Table Saw	9"-0" x 10'-8" x 2'-6"	Requires 4" dia. dust collection port
Wood Plane	2'-8" x 2'-5" x 3'-0"	Requires 6" dia. dust collection port
Pallet shelving		
Storage cabinets		
Hand Lifts		
Moveable Storage System		
Flatbed Cart	12'-0" x 4'-0" x 5'-6"	
New Equipment	**Dimensions (Width x Depth x Height)**	**Notes**
42 pre wired workstations		
42 PCs		
42 telephones		
Records files storage cabinets		
Weapons storage cabinets		
Pallat Shelving		
42 lockers		
Movable storage system (add-on)		
2 microwaves		
2 full size refrigerators		
2 office safes		

User Equipment

AMOUNT	DESCRIPTION	LENGTH/WIDTH
6	Standard Vehicles	
4	Mid-size Vehicles	16' length
3	Large Vans	18' length
1	Suburban	19' length
1	Forklift	18'6"x8'
1	Stakebed	22' length
1	33 pax Bus	33' length
1	Surrey	22' length
1	MHE 1-6K	Forklift

Special Requirements

Special Requirements	Required Y / N / NA	Remarks
Real estate acquisition	N	
Well permits	N	
Public utility easements	N	
Demolition	N	
Environmental concerns	Y	See Report
Recycle materials	Y	Recycle construction waste
Special soil conditions	Y	Perform Geotechnical study
Vehicle Parking	Y	Slots for sedans, vans, buses and trucks
Roofing Systems	Y	Standing seam metal roof
Doors (Vault, Overhead)	Y	4 Large vehicle overhead doors
Industrial waste sewage connection	N	
Unusual Mechanical Systems		
Unusual Ventilation Requirements	Y	High Bay Area
Vibration Isolation	Y	High Bay Area
Special Heating/Cooling Loads	Y	Night setback system.
Temperature/Humidity Control	Y	Zone controls for different areas
Fire Protection Systems (i.e. AFFF)	Y	Detection throughout and sprinkler system
Special Piping (compressed air)	Y	Throughout Shop Area
Process Equipment/Systems	Y	Armory/Mobility Bag Mobile Storage System
Irrigation	Y	Water for landscaping

Special Requirements	Required Y / N / NA	Remarks
Landscaping and Exterior Signage	Y	Per Buckley AFB Facilities Excellence Plan, AF Environmentally Responsible Facilities Guide, AT/FP Standards
Electrical		
Emergency Generator	N	
UPS	N	
Power Conditioning/PCCIE	N	
Lighting Protection	Y	
Unique Lighting (exterior, interior)	Y	Metal Halide in High Bay Area
Communications/Antennas	N	
Special Computer	Y	LAN System/SIPRNET
Public Address or Intercom	Y	Internal paging system
TEMPEST/HEMP/RF Shielding	N	
SCIF/Vaults (Class)	Y	2 Workstations
Physical Security (fencing, IDS)	Y	For Delivery Vehicles
Anti-terrorism	Y	See AT/Force Protection Measures
Elevators	N	
Comprehensive Interior Design (CID)	Y	New Floor plan must accommodate all (old and new) furniture.
Furniture: By This Contract	N	
By Another Contract	Y	New furniture required
Relocate Existing	Y	Furniture to be moved from other locations, coordinate with end users
Pre-wired Workstations	Y	Provide electrical, data and phone for installation of new workstations.
Sound Attenuation	Y	Isolate noise from High Bay Area; Sound insulate Conference Rooms
Structural Interior Design (SID)	Y	High Bay Floor and Roof Systems
Unusual Clear Spans	Y	High Bay Area ((optional)
Special Structural	N	
Unique Floor Loads or Needs	Y	Fork Lifts and other vehicles in High Bay Area
Energy Compliance (10 CFR 435)	N	
EMCS	Y	Provide connections
Metering	Y	Meter all utilities
Life-Cycle Cost Studies	Y	The A/E will provide a separate Value Engineering Study
Lighting/Envelope Screening	Y	Exterior Building Lights

Special Requirements	Required Y / N / NA	Remarks
Blast (if screening fails)	N	
Special Safety Systems	Y	Safety Glass where applicable
Special OSHA requirements	Y	Vehicle Exhaust
American with Disabilities Act Requirements (ADA)	Y	All areas must be accessible to the physically handicapped
Visually-impaired vendors (GSA program)	N	
State Historical Preservation Office Review	N	
Recycling Considerations	Y	Recycle construction materials IAW AF Environmentally Responsible Facilities Guide
Security clearance	Y	Contractor access to Buckley AFB
Special construction escort requirements	N	
Drawings and plans (CADD) Design Drawings As-builts GIS	Y	At final submittal: Micro Station (version 5 or later) or AutoCAD (version 12 or later) format on CD-ROM with one backup copy. Provide 11"x17" laser prints of each drawing. Specifications: Three bound final copies, using Microsoft Word for Windows format, Version 6.0 or later, on CD-ROM. Cost Estimate: on CD-ROM Microsoft Excel format, version 5.0 or later.
Workaround Facilities	Y	Follow Buckley AFB Construction Plan
Overseas Travel	N	
Other (specify)	N	

The items listed above are to be used as a guide by the A/E in developing user requirements. The list is not be interpreted as an all-inclusive summary of project considerations. During the Project Definition (PD) phase of design, the A/E must verify the accuracy of the requirements noted above, and any special requirements that may arise during the design process.

Note: The A/E is responsible for accomplishing all permitting applications and permitting fees. All permits will be in the government's name and shall be coordinated through the government prior to sending them to the approval agency.

C. Floor Plans

1. Conceptual Single Line Floor Plans
2. Functional Layout Diagrams
3. Floor Space Calculations

Floor Space Calculations	
First Floor	
High-Bay Area	**NSF**
TMO Inbound/Outbound	5,352
DRMO	1,008
Shop Area	624
Fork Lift Charge	728
Hazmat	120
Traffic Mgr. Off.	120
Veh. Disp. Off.	120
TMO Office	120
Mobility Bag Receive	2,476
Mobility Bag Storage	1,500
Mobility Bag Maintenance	456
Mobility Bag Work Stations	432
SUB TOTAL	**13,056**
Foyer	300
Conf/Training Room	560
Private Offices (6)	780
Open Office Admin w/Workstations	3,750
Storage Room w/Lockers	144
Build Stor./copy Room	170
Small conference Room	204
Weapon Issue w/Vault	450
Break Room	500
Restrooms	910
Mechanical Rooms (2)	632
Electrical Rooms (2)	346
Telecommunications Rooms (2)	216
SUB TOTAL	**8,962**
TOTAL NET AREAS	**22,018**
TOTAL GROSS FLOOR AREA	**24,650**

D. Area Development Plan

Project Relationship to the Base Comprehensive Plan

SITE SELECTION

The site location for the new LRC is part of the Buckley AFB General Plan. The plan includes a new Wing HQ, as well as a new Leadership Development Center across Aspen Avenue and from the new LRC.

The new Wing HQ and Leadership Development Center buildings will incorporate extensive site work.

ARCHITECTURAL COMPAT IBILITY

The design of the new LRC shall meet the requirement of Buckley AFB FEP. The new LRC should have simple and clean but dynamic lines for building mass. The A/E shall review the materials chosen for the new Wing HQ and incorporate them into the LRC.

LANDSCAPING

Low maintenance landscaping shall be provided using only approved plant material for the region. Landscaping design shall follow standards for Zone 1 contained in the Buckley AFB FEP. Landscaping shall also comply with AT/FP Standards.

E. Sustainable Design Requirements

Introduction

There are many different conceptions of green or sustainable building design due to the large scope of sustainable issues and the novelty of sustainable principles. Definitions of sustainability range from broad concepts that incorporate all aspects of sustainability to narrow definitions focused on one specific sustainable design feature, such as recycled-content materials or energy efficiency. Within this broad spectrum, green buildings embody a design intent on balancing environmental responsiveness, resource efficiency, and cultural and community sensitivity. The goal of this process is to create facilities that meet the needs of facility end users.

Green building design includes all players in the development process, from the design team (USAF, the A/E, and consultants), the construction team (material manufacturers, contractors, and waste haulers), maintenance staff, and building end users.

The LEED rating system is broken down in to five categories: sustainable sites, water efficiency, energy and atmosphere, materials and resources, and indoor environmental quality. Using the LEED rating system as a model, the A/E shall look always that "smart choices" can be made throughout the project to minimize negative environmental impact due to construction and maximize the quality of the indoor environment for building end users.

USAF's goal is to have new facilities achieve a minimum LEED rating of 26. The new LRC (or almost any new constructed project) can achieve a rating and certification of 26 by designing an environmentally friendly building utilizing modern methods and materials and using energy-efficient mechanical and electrical systems. At the earliest stages of the design process, USAF and the A/E must review all possible LEED opportunities that are applicable for the LRC project. The LRC can reach a higher certification rating than 26.

Sustainable Sites

Reduction of "light pollution" or unnecessary site lighting is an area of LEED emphasis and could conceivably be an area of study for this project. The intent is to light only those areas that are in need of illumination and reduce excess light. This can be achieved through the use of cutoff luminaries and by avoiding towering light standards with large area lights.

A concern regarding sustainable sites has to do with "heat islands" generated in urban areas. Based on the amount of hard, dark surfaces present at Buckley AFB, temperatures tend to be several degrees higher than surrounding areas with less density and more

vegetation. This is especially true during summer months. By using roof surfaces that are lighter in color and more reflective, the "heat island" effect can be reduced, and savings will be in energy and dollars.

Water Efficiency

Water efficiency shall be an issue during the planning and design of the LRC, as areas like Colorado periodically deal with water shortages. Employing intelligent water conservation strategies for the LRC makes sense from the standpoint of reduced cost, potential reduced maintenance, and as the environmentally responsible approach.

Landscaping and associated irrigation offers the LRC project additional points. A storm water management program should be implemented for LRC landscaping irrigation, the future Wing HQ, and the future Leadership Development Center. If one-fourth of the water collected is utilized for landscaping irrigation, an additional point can be granted. The LRC should utilize plants that require watering consistent with the amount of rain received in the area. Not only does this approach save in terms of water usage, but also in terms of maintenance costs.

The new LRC shall attempt to utilize faucets and showerheads that reduce water use by as much as 20 percent. Toilet rooms are candidates for water reduction by installing efficient fixtures in compliance with the Energy Policy Act of 1992. These fixtures use less water than a traditional fixture and are commonplace in new construction. Waterless urinals are another option to save even more water, as well as save on maintenance costs, as they do not have the usual flush valves and associated piping for water supply as traditional urinals.

Energy and Atmosphere

The energy and atmosphere portion of the LEED rating system attempts to conserve resources by implementing efficient mechanical systems free of certain environmentally harmful refrigerants and using energy-efficient building envelopes. The project shall place an emphasis on verifying that HVAC systems are working properly once installed through building systems commissioning.

The project has the potential to implement many of the energy and atmosphere components of the LEED program. A facility systems commissioning plan can be developed in order to insure that the mechanical systems are balanced and functioning properly once installed. Systems will also need meet the most stringent Colorado codes for energy use, taking steps whenever possible to increase efficiency. Energy management systems shall be installed and potentially add to energy savings by providing heating and cooling in areas where and when they are needed.

Energy savings can also come in the form of efficient building envelope materials. Exterior insulation and energy-efficient windows are key in energy conservation.

Windows and exterior envelope should be as energy efficient as possible within budget constraints.

Materials and Resources

The materials and resources section of the LEED rating system looks at the individual components that comprise a facility and attempt to reduce consumption through the use of salvaged, recycled, or rapidly renewable resources. An emphasis shall be placed on locally harvested and manufactured materials in order to reduce the amount of energy needed to transport a product to the site. This may or may not be a problem in the Denver area. Another component of this section involves recycling construction waste (paper, cardboard, metals, etc.) from both demolition and from new construction in order to reduce the amount of debris that will end up in a landfill. Recycling in the facility does not end construction is finished. LEED mandates that areas in the facility be set aside for storage and collection of recyclable as an ongoing part of daily operations.

The LRC project can easily implement several of these concepts. First, introduce a waste management plan for job-site collection and sorting construction debris. Materials are separated and taken to approved recycling centers, then a receipt is submitted to track the recycling progress. Typically, the contractor can make money from scrap metal and other demolition waste, and those benefits are realized in the form of lower demolition bids. Once the job is completed, it would be relatively easy to set up recycling centers at various points in the facility for continued recycling by the end users.

Second, to reduce the impact of harvesting raw materials, building products with recycled-content shall be identified and specified by the A/E. Materials that would be most applicable to this project are all metals (steel, light gauge metal partition framing, etc) and certain types of building materials and insulation. The key is to identify the major building components during design and look for suppliers who use recycled content in the manufacture of their product. Recycled-content also has to be weighed against the embodied energy of a product. These situations have to be evaluated on a case-by-case basis.

Indoor Environmental Quality

The final component of the LEED rating system deals with indoor environmental quality for the end users. Factors contributing to less than ideal air quality in a facility include tobacco smoke, carbon dioxide, dust from construction, chemicals, and emissions from building finishes like carpets and wall coverings. In DoD buildings, tobacco smoke is not an issue due to government nonsmoking policies, but all other sources have the potential to be present in this project. In any indoor situation, steps can be taken to reduce these indoor pollutants and give the end users a healthier working environment. The indoor environmental quality section of LEED also deals with issues of thermal comfort, access to daylight, and fresh air.

During construction, an indoor air quality (IAQ) plan should be implemented. Procedures include storing absorptive materials properly to avoid mold and mildew, keeping the job site clean and free of as much dust and debris as possible, and protecting HVAC ducts from dust to avoid distribution throughout the facility. The project should also monitor carbon dioxide levels during construction, especially due to the high-bay area and the temptation to park construction vehicles there overnight because of the overhead garage doors. An IAQ management plan shall be laid out in the project specifications in accordance with SMACNA IAQ Guidelines for Occupied Buildings Under Construction, 1995, Chapter 3.

Finishes such as paint, adhesives, vinyl wall coverings, sealants, carpet, and composite wood products manufactured with volatile organic compounds (VOCs) emit toxins for a period of time after installation. One might equate these emissions with the "new car smell" associated with an automobile. This smell is actually toxic to humans and can cause negative symptoms ranging from headaches to nausea. Avoiding vinyl wall coverings and certain types of carpets, specifying products with low or no VOCs, and specifying products that do not use urea formaldehyde in their manufacture is essential in maintaining acceptable indoor air quality. These types of products are readily available and, with the exception of carpet, add little or no cost to a project.

Operable windows, access to daylight, and access to fresh air are significant parts of the IAQ section of the LEED program. LEED encourages facilities to be planed in such as way as to distribute natural light and natural ventilation to all occupants. The LORC will be open on all sides of the building and shall incorporate operable windows where appropriate. LEED also encourages access to individual temperature controls for as many end users as possible, which could be implemented in this project; however, these types of individual controls tend to be an issue regarding the budget.

Conclusion

The LRC is a candidate for implementation of several ideas set forth in the LEED rating system and can achieve a rating higher than 26. Implementing the concepts addressed above will contribute little or nothing to the construction cost to the project and are issues of proper planning. Given that USAF owns the building, it makes sense from a political and social perspective to implement environmentally friendly practices for the LRC. These practices will lead to DoD facilities that contribute to the end users health, long-term financial savings, and offer benefits to both end-users and the environment on a large scale.

References

LEED Reference Guide: Version 2.0. June 2001.

F. Requirements Document Agreement

Agreement Statement

The undersigned agree to follow the provisions of this RD. Each activity will focus its efforts and influence to provide complete, comprehensive, up-front planning, and to meet the objectives of designing and constructing this project to fulfill end user needs and to meet USAF quality, safety, and reliability expectations, with minimum changes, within budget, and on schedule. Changes to this plan must be coordinated with and approved by the undersigned or their designated representatives.

Signatures

_____	_____
BASE CIVIL ENGINEER	**BASE ENVIRONMENTAL MANAGER**
_____	_____
FIRE CHIEF	**PROJECT MANAGER**
_____	_____
SECURITY FORCES	**COMMUNICATIONS**
_____	
SAFETY	

G. Attachments

Attachment 1

DD Form 1391 Package

DD Form 1391C Initial Buckley AFB Program

DD Form 1391 Estimate (Revised)

Certificate of Compliance For Critical Planning Actions

DD Form 1391C
Initial Buckley AFB Program

1. Component AIR FORCE	FY 2004-2006 CONSTRUCTION PROJECT DATA	2. DATE
3. INSTALLATION AND LOCATION BUCKLEY AIR FORCE BASE, COLORADO		
4. PROJECT TITLE LOGISTICS READINESS COMPLEX		**5. PROJECT NUMBER** CRWU 063002
PROPOSED FACILITY'S DETAILED DATA SHEET Floor Space Calculations		

PROGRAM FUNCTION	CAT CODE	SQ METERS	SQ FEET
Logistics Readiness Squadron (CC/CSS)	442-758	(269)	(2,895.52)
Commander		(19)	(204.52)
Secretary		(11)	(118.4)
Financial Manager		(11)	(118.4)
First Sergeant		(11)	(118.4)
Combat Readiness (5 people)		(55)	(592)
Orderly Room (2 people)		(22)	(237)
Rest Rooms		(45)	(484.4)
Break Room		(19)	(204.52)
Conference Room/Training Room (30 PN)		(49)	(527.4)
Building Management Storage		(9)	(96.9)
Squadron Storage		(9)	(96.9)
Copy Machine Room		(9)	(96.9)
Logistics Readiness Operations Flight		(117)	(1,259.4)
Flight Chief		(14)	(150.7)
Traffic Mgmt Office Project Manager (Contr)		(11)	(118.4)
Small Conference Room		(15)	(161.5)
Transportation Analyst (Contr)		(11)	(118.4)
Cargo Specialists (4 Contr)		(44)	(473.6)
LGR QAE's (2 people)		(22)	(237)
CMOS Work Station		(11)	(118.4)
TMO Warehouse Space		(647)	(6964.3)
DRMO Warehouse Space		(86)	(925.7)
Mobility Bag Storage (1053 bags) .85 CM/bag		(367)	(3950)
Weapons Vault (319 M-16's, 15 ea M-9's)		(111)	(1,195)
Supply Techs (3 Contr)		(33)	(355.2)
Logistics Plans		(69)	(743)
Flight Chief		(14)	(150.7)
Plans Staff (5 People)		(55)	(592)
Total Net		(1710)	(18,406)
Walls and Circulation (20%)		(342)	(3,681.3)
Mech./Electric Room		(185)	(1,991.3)
Communications Equipment Room		(37)	(398)
Telecommunications Closet		(16)	(172)
TOTAL GROSS AREA		**(2290)**	**(24,650)**

DD Form 1391 Estimate (Revised)

1. Component AIR FORCE	FY 2004-2006 CONSTRUCTION PROJECT DATA	2. DATE
3. INSTALLATION AND LOCATION BUCKLEY AIR FORCE BASE, COLORADO		
4. PROJECT TITLE LOGISTICS READINESS COMPLEX		5. PROGRAM ELEMENT
6. CATEGORY CODE 442-758	7. PROJECT NUMBER CRWU 063002	8. PROJECT COST ($000)
9. COST ESTIMATES		

ITEM	U / M	QUANTITY	UNIT	COST
LOGISTICS READINESS COMPLEX	SM	2,290		
ADMINISTRATIVE SUPPORT	SM			
HIGH BAY STORAGE	SM			
SHOP AREA	SM			
HAZMAT STORAGE	SM			
ANTI-TERRORISM FORCE PROTECTION	LS			
SUPPORTING FACILITIES				
UTILITIES	LS			
PAVEMENTS	LS			
SITE IMPROVEMENTS	LS			
ENVIRONMENTAL RESTORATION	LS			
COMMUNICATION SUPPORT	LS			
SUBTOTAL				
CONTIGENCY (5.0 %)				
TOTAL CONTRACT COST				
SUPERVISION, INSPECTION AND OVERHEAD (6.0%)				
TOTAL REQUEST				
TOTAL REQUEST (ROUNDED)				
EQUIPMENT FROM OTHER APPROPRIATIONS (NON-ADD)				

Attachment 2

Parametric Cost Estimate (PACES)

This version of the 65% RD does not contain a PACES Cost estimate. The costs presented in the DD Form 1391 and in the RD are based on preliminary cost and square foot data that was acquired during the charrette process. A formal cost estimate using PACES is being prepared and will be included at the 95% RD submittal.

Attachment 3

Buckley Air Force Base Site Plan

Attachment 4

Environmental Report

Attachment 5

Existing Utility Plans

Attachment 6

Photographs

Attachment 7

Points of Contact

NAME	ORGANIZATION	EMAIL DDRESS	OFFICE #	FAX #	MOBILE #
Paul Warbington	URS	Paul_warbington@urscorp.com	303.740.3948	303.730.6080	720.436.6308
Jeff Kassen	URS	Jeff_klassen@urscorp.com	719.268.7423		719.510.8008
Virginia Whelchel	460 SFS	Virginia.whelchel@buckley.af.mil	303.677.9242		
Steven Payton	URS	steven.payton@buckley.af.mil	302.667.6920	302.607.6799	720.936.6308
Georgina Kurtz	460 CS	Georgina.kurtz@buckley.af.mil	303.677.5917	303.677.6809	
Charles Nicely	460 CE	Charles.nicely@buckley.af.mil	677.6819	303.677.6819	N/A
Skip Oliver	460 CEC	Charles.oliver@buckley.af.mil	303.677.9127	303.677.9101	N/A
Ralph Olson	Fire Prevention	ralph.olson@buckley.af.com	303.677.9998		
Jollie Britt	Fire Department	Jollie.britt@buckley.af.mil	303.677.9926		
Scott Howell	460 LRS	Scott.howell@buckley.af.mil	303.677.9373	303.677.5976	
Geary Graham	460 LRS	Geary.graham@buckley.af.mil	303.677.6509	303.677.6331	303.472.3440
Ray VanHorn	HQ AFSC/CEPC	Ray.vanhorn@paterson.af.mil	719.554.5204		

Attachment 8

Buckley Air Force Base Facility Excellence Plan

This document shall be made available to the A/E for the RFP. The document is available from Buckley AFB. Due to the size of the document, it is not included in this report.

REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS

Report Control Symbol
CRWU043006

INSTRUCTIONS: *Section I to be completed by Proponent; Sections II and II to be completed by Environmental Planning Function. Continue on Separate Sheets as necessary. Reference appropriate item number(s).*

SECTION I - PROPONENT INFORMATION

1. TO (Environmental Planning Function)	2. FROM (Proponent organization and functional address symbol)	2a. TELEPHONE NO.
460 CES/CEV	460 CES/CEC	7-6819

3. TITLE OF PROPOSED ACTION
Chapel Center

4. PURPOSE AND NEED FOR ACTION (*Identify decision to be made and need date).*
Provide an area on base for religious services and education to base personnel. The current space is too small for the number of personnel who attend Sunday services.

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPPA) (Provide sufficient details for evaluation of the total action.
See Attached

6. PROPONENT APPROVAL (*Name and Grade*)	6a. SIGNATURE	6b. DATE
Charles G. Nicely, GS-11	Charles G. Nicely	26 Apr 02

SECTIONII - PRELIMINARY ENVIRONMENTAL SURVEY. (*Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = Unknown effect.*	+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (*Noise, accident potential, encroachment, etc.*)		X		
8. AIR QUALITY (*emissions, attainment status, state implementation plan, etc.*) Fugitive dust from construction.			X	
9. WATER RESOURCES (Quality, quantity, source, etc.) Potential Stormwater impact			X	
10. SAFETY AND OCCUPATIONAL HEALTH (*Asbestos/radiation/chemical exposure, explosives safety quantity-distance, etc.)*		X		
11. HAZARDOUS MATERIALS/WASTE (*Use/storage/generation, solid waste, etc))*		X		
12. BIOLOGICAL RESOURCES (*Wetlands/floodplains, flora, fauna, etc)* Prairie Dog/Burrowing Owl habitat			X	
13.CULTURAL RESOURCES (*Native American burial sites, archeological, historical, etc.)*		X		
14.GEOLOGY AND SOILS (*Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)*		X		
15.SOCIOECONOMIC (*Employment/population projections, school and local fiscal impacts, etc.)*		X		
16.OTHER (*Potential impacts not addressed above.)*		X		

SECTION III - ENVIRONMENTAL ANALSIS DETERMINATION

17.
- [ ] PROPOSED ACTION CUALIFIES FOR A CATEGORICAL EXCLUSION (CATEX #) _See remarks_____: OR
- [X] PROPOSED ACTION DOES NOT QULIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALSIS IS REQUIRED. See Remarks

18. REMARKS

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (*Name and Grade*)	19a. SIGNATURE	19b. DATE
Elise L. Sherva, GS-12	Elise Sherva	30 Apr 02

AF FORM 813 – CONTINUATION

PROPOSED ACTION: Construct a 20,716 square foot Chapel Center. This project is currently programmed for FY 05. This action will require an environmental assessment.

ALTERNATIVE ACTION 1:

Install an approximately 7,000 square foot temporary modular unit pending the construction of the Chapel has been implemented.

NO ACTION ALTERNATIVE: No construction, additions, or alterations would take place and there would be inadequate space to provide religious services to Air Force personnel. Also, the prairie dog and burrowing habitat would remain unchanged.

ENVIRONMENTAL CONSEQUENCES:

This action will require the removal and relocation of any prairie dogs. This requires the approval and consultation with the Natural Resources Manager: 7-69337
This action cannot occur when burrowing owls are in residence in the prairie dog burrows.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	CHAPEL CENTER

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	730-773	CRWU043006	

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT
CHAPEL CENTER FACILITY	LS		
CHAPEL CENTER	SM	2,423	1,696
ANTITERRORISM/FORCE PROTECTION	SM	2,423	10
SUPPORTING FACILITIES			
SITE IMPROVEMENTS	LS		
PAVEMENTS	LS		
UTILITIES	LS		
COMMUNICATIONS SUPPORT	LS		
MOBILIZATION AND PERMITS	LS		
SUBTOTAL			
CONTINGENCY (5.0 %)			
TOTAL CONTRACT COST			
SUPERVISION, INSPECTION AND OVERHEAD (5.7 %)			
TOTAL REQUEST			
TOTAL REQUEST (ROUNDED)			
EQUIPMENT FROM OTHER APPROPRIATIONS (NON-ADD)			

10. Description of Proposed Construction: Single-story steel frame structure with reinforced concrete foundation and slab for expansive soils, slit-face CMU exterior with finish system accents and standing seam metal roof. Space for worship, administration and religious education. Includes utilities, access, parking, site preparation, telecommunications prewiring and low-level Antiterrorism/Force Protection.

Air Conditioning: 400 KW.

11. REQUIREMENT: 2,423 SM ADEQUATE: 0 SM SUBSTANDARD: 546 SM

PROJECT: Construct a Chapel Center (New Mission).

REQUIREMENT: A 300 seat chapel center is required to provide ministry, counseling services, and religious education to meet the needs of permanent party personnel and their dependents assigned to Buckley AFB. The chapel center will be multi-functional in design to accomodate use by other base organizations. Air Force Space Command became the base host on 1 Oct 00 per direction from the SECAF and the CSAF. The transition plan has authorized the standup of an Air Base Wing to support the active duty military and their dependents. An on-base chapel center is required to meet the moral and spiritual, counseling, and religious education needs of active duty military personnel and their families. The facility is sized for 2482 active duty members. Estimated dependent population is 3,413. Total population served is 5,895. Installation is authorized a 300 seat Chapel Center per the USAF "Religious Facility Design Guide", Feburary 2000.

CURRENT SITUATION: Buckley Air Force Base has a temporary installation chapel with no religious education facilities. Active duty personnel and their families attend services off base. Limited on base counseling and religious education is available.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	CHAPEL CENTER

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	730-773	CRWU043006	[redacted]

There are no permanent facilities suitable for alteration. Space for funeral arangements is made in off base religious facilities since the sanctuary is limited in seating capacity. The modular space used does not lend itself to the atmosphere normally found in facilities designed to the construction and interior design standards prescribed by Air Force policy.

IMPACT IF NOT PROVIDED: Many personnel will seek ministry, religious education and counseling from various congregations in the Denver area. The single airmen assigned to this installation, many of whom lack a car of their own, will still need to use the substandard modular facilities. The cost of the modular space is not economical over the years. The military chaplains will still need to provide ministry and counseling services in facilities severely undersized for the requirement. Funeral services will need to be conducted off base in facilities sized for the services. The temporary, modular space will produce an unneccessary hardship on the Chaplain Service while impacting the Buckley community.

ADDITIONAL: This project meets the scope/criteria specified in Air Force Handbook 32-1084, "Facility Requirements" and the Air Force "Religious Facilities Design Guide". A preliminary analysis of reasonable options for accommodating this project (status quo, renovation, upgrade/removal, new construction, and/or leasing) was done. It indicates there is only one option, new construction, that will meet operational requirements. Because of this a full economic analysis was not performed. A Certificate of Exemption has been prepared. Base Civil Engineer: Lt Col Alfred C. Scharff, 303.677.6501. Chapel Center: 2,423 SM = 26,081 SF.

JOINT USE CERTIFICATION: This facility is programmed for joint use with the Army, Navy and Marine Corps; however, it is fully funded by the Air Force.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	CHAPEL CENTER

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	730-773	CRWU043006	[redacted]

12. SUPPLEMENTAL DATA:

a. Estimated Design Data:

(1) Status:

(a) Date Design Started	01-NOV-03
(b) Parametric Cost Estimates used to develop costs	YES
* (c) Percent Complete as of 01 JAN 2004	
* (d) Date 35% Designed	01-MAY-04
(e) Date Design Complete	01-SEP-04
(f) Energy Study/Life-Cycle analysis was/will be performed	NO

(2) Basis:

(a) Standard or Definitive Design -	NO
(b) Where Design Was Most Recently Used -	BUCKLEY

(3) Total Cost (c) = (a) + (b) or (d) + (e):

(a) Production of Plans and Specifications	[redacted]
(b) All Other Design Costs	[redacted]
(c) Total	[redacted]
(d) Contract	[redacted]
(e) In-house	

(4) Construction Contract Award

(5) Construction Start 05 FEB

(6) Construction Completion

* Indicates completion of Project Definition with Parametric Cost Estimate which is comparable to traditional 35% design to ensure valid scope, cost and executability.

b. Equipment associated with this project provided from other appropriations:

EQUIPMENT NOMENCLATURE	PROCURING APPROPRIATION	FISCAL YEAR APPROPRIATED OR REQUESTED	COST ($000)
COMMUNICATIONS	3080	5	[redacted]
FURNISHINGS	3400	5	[redacted]

1. COMPONENT AIR FORCE	FY 2005 CONSTRUCTION PROJECT DATA	2. DATE
3. INSTALLATION AND LOCATION	BUCKLEY AIR FORCE BASE, COLORADO	
4. PROJECT TITLE	CHAPEL CENTER	7. PROJECT NUMBER CRWU 04-3006

EXISTING FACILITIES/DETAILED DEFICIENCY DATA SHEET
Requirements and assets summary.

1. **SCOPE OF FY 2005 REQUEST:** 2,423 SM Chapel Center (Cat Code 730-773)

2. **MISSION:** Establish a new Air Force Space Command (AFSPC) Air Base Wing at Buckley AFB in accordance with SECAF and CSAF guidance (Ref PAD 00-01 and PBD 727).

3. **REQUIREMENT (SM):** 2,243 Square Meters authorized per Air Force handbook 32-1084, Facilities Requirements", Chapter 14 and HQ AFCEE's AF Religious Facilities Design Guide.

4. **FUNCTIONAL BREAKOUT OF REQUIREMENTS:**

Type of Space		SM	CAT CODE
Worship Center		786	730-773
Narthex	(137)		
Chancel	(94)		
Nave	(362)		
Multi Faith worship center	(42)		
Blessed Sacrament	(23)		
Sacristy	(28)		
Baptistery	(9)		
Choir Changing Room	(21)		
Bride's Room	(11)		
Cry Room	(11)		
Multimedia Control Center	(11)		
Storage	(23)		
Coat Room	(14)		
Administrative Spaces		235	730-773
Reception Area	(19)		
Receptionist	(3)		
Chaplain Waiting Room	(19)		
Wing Chaplain Office	(17)		
Secretary	(3)		
Chaplain Offices (3)	(52)		
Reserve/Auxiliary Chaplain	(17)		
Parish Coordinator	(11)		
NCOIC	(11)		
Administrative Support	(11)		
Staff Office	(11)		
Conference room	(23)		
Copy/File Room	(19)		
Break Room	(19)		

1. COMPONENT	FY 2003 CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE		

3. INSTALLATION AND LOCATION

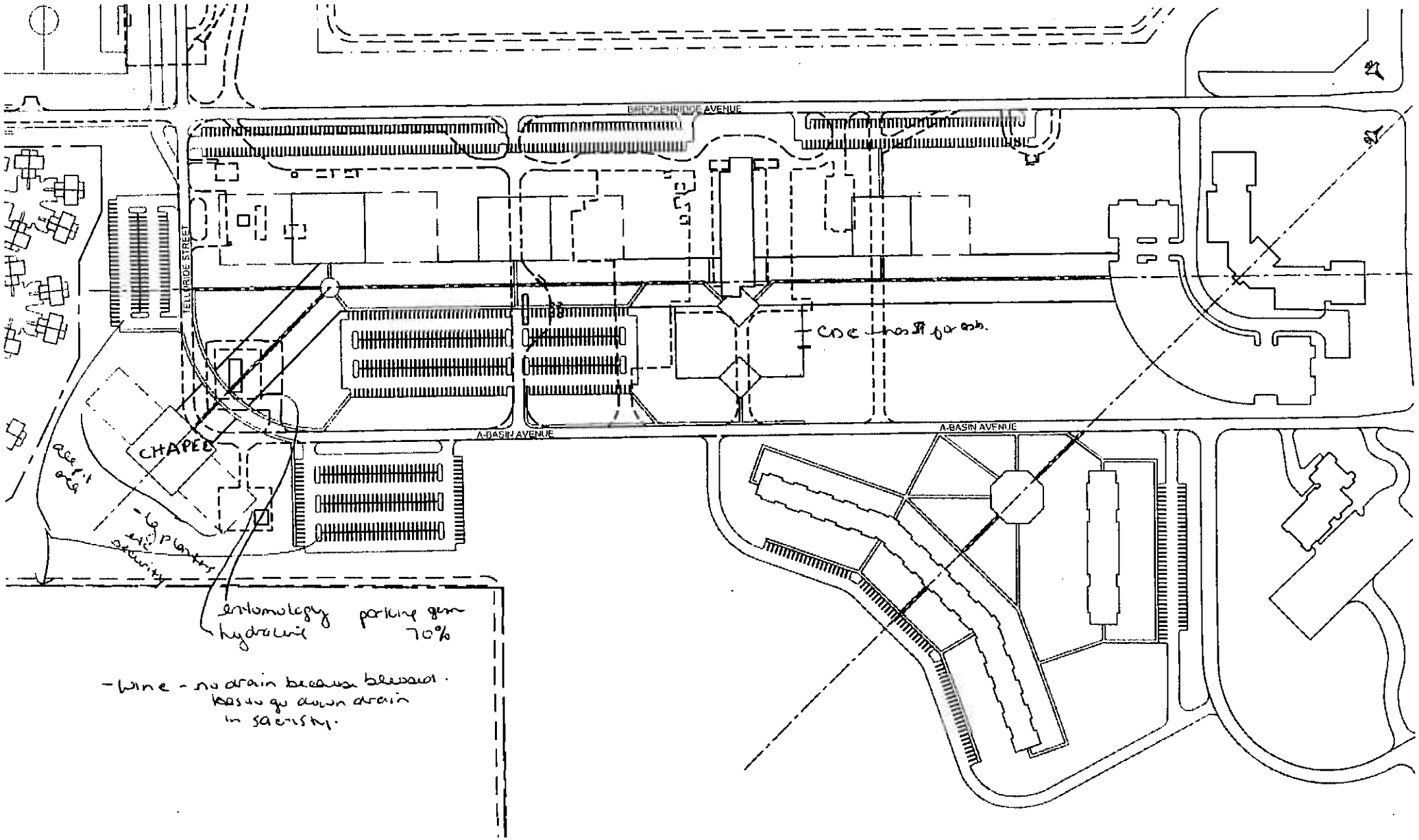
BUCKLEY AIR FORCE BASE, COLORADO

4. PROJECT TITLE	7. PROJECT NUMBER
CHAPEL CENTER	CRWU 04-3006

EXISTING FACILITIES/DETAILED DEFICIENCY DATA SHEET
Requirements and assets summary.

4. FUNCTIONAL BREAKOUT OF REQUIREMEMTS, Continued:

Type of Space		SM	CAT CODE
Education Spaces		802	730-773
Religious education Coordinator	(11)		
Music Coordinator	(11)		
Library	(19)		
Multipurpose Room	(372)		
Large Classroom Space	(77)		
Small Classroom Space	(158)		
Pre-School Classroom	(62)		
Kitchen	(77)		
Storage	(15)		
Net Total Space		1822	
33% for Circulation, Mech. & Restrooms		601	
Gross Total Space		2423	


TELLURIDE STREET
A-BASIN AVENUE
A-BASIN AVENUE
CHAPEL
entomology
hydraulic
parking gen
70%
- wine - no drain because blizzard.
has to go down drain
in security.

05-0626

REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS

Report Control Symbol CRWU43007

INSTRUCTIONS: *Section I to be completed by Proponent; Sections II and II to be completed by Environmental Planning Function. Continue on Separate Sheets as necessary. Reference appropriate item number(s).*

SECTION I - PROPONENT INFORMATION

1. TO (Environmental Planning Function)	2. FROM (Proponent organization and functional address symbol)	2a. TELEPHONE NO.
460 CES/CEV	460 CES/CEC	7-6819

3. TITLE OF PROPOSED ACTION
Child Development Center

4. PURPOSE AND NEED FOR ACTION (*Identify decision to be made and need date).*
Construct an additional Child Development Center. The existing facility is too small to meet the needs of dependent children of military personnel projected to be assigned to live and work at the base.

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPPA) (Provide sufficient details for evaluation of the total action.
See Attached

6. PROPONENT APPROVAL (*Name and Grade*)	6a. SIGNATURE	6b. DATE
Charles G. Nicely, GS-11	Charles G. Nicely	26 Apr 02

SECTIONII - PRELIMINARY ENVIRONMENTAL SURVEY. (*Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = Unknown effect.*	+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (*Noise, accident potential, encroachment, etc.*)		X		
8. AIR QUALITY (*emissions, attainment status, state implementation plan, etc.*) Fugitive dust from construction.			X	
9. WATER RESOURCES (Quality, quantity, source, etc.) Potential Stormwater impact			X	
10. SAFETY AND OCCUPATIONAL HEALTH (*Asbestos/radiation/chemical exposure, explosives safety quantity-distance, etc.*)		X		
11. HAZARDOUS MATERIALS/WASTE (*Use/storage/generation, solid waste, etc)*)		X		
12. BIOLOGICAL RESOURCES (*Wetlands/floodplains, flora, fauna, etc*) Prairie Dog/Burrowing Owl habitat			X	
13.CULTURAL RESOURCES (*Native American burial sites, archeological, historical, etc.*)		X		
14.GEOLOGY AND SOILS (*Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.*)		X		
15.SOCIOECONOMIC (*Employment/population projections, school and local fiscal impacts, etc.*)		X		
16.OTHER (*Potential impacts not addressed above.*)		X		

SECTION III - ENVIRONMENTAL ANALSIS DETERMINATION

17.		
		PROPOSED ACTION CUALIFIES FOR A CATEGORICAL EXCLUSION (CATEX #) _See remarks_____: OR
	X	PROPOSED ACTION DOES NOT QULIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALSIS IS REQUIRED. See Remarks

18. REMARKS

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (*Name and Grade*)	19a. SIGNATURE	19b. DATE
Elise L. Sherva, GS-12	Elise L. Sherva	30 Apr 02

AF FORM 813 – CONTINUATION

PROPOSED ACTION: Construct a Child Development Center to support 198 children.. This project is currently programmed for in FY 05. This action will require an environmental assessment.

Alternate Action 1. Construct an addition to the existing Child Development Center. This alternate was no pursued because of insufficient land availability at the existing site. The existing center is also not located in close proximity to 332 new housing units that are planned for the base. Many of the children that are projected to use the new facility are expected to live in the new housing area.

NO ACTION ALTERNATIVE: No construction of additional Child Development Center space would result in children of assigned personnel being denied an opportunity to attend a Child Development Center.

ENVIRONMENTAL CONSEQUENCES:

This action will require the removal and relocation of prairie dogs. This requires the approval and consultation with the Natural Resources Manager: 7-69337
This action cannot occur when burrowing owls are in residence in the prairie dog burrows.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	CHILD DEVELOPMENT CENTER 198 PN

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT
35996	740-884	CRWU043007	

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT
CHILD DEVELOPMENT CENTER, 198 PN	LS		
CHILD DEVELOPMENT CENTER	SM	1,386	
ANTITERRORISM/FORCE PROTECTION	SM	1,386	
SUPPORTING FACILITIES			
SITE IMPROVEMENTS	LS		
PAVEMENTS	LS		
UTILITIES	LS		
COMMUNICATIONS SUPPORT	LS		
SUBTOTAL			
CONTINGENCY (5.0 %)			
TOTAL CONTRACT COST			
SUPERVISION, INSPECTION AND OVERHEAD (5.7 %)			
TOTAL REQUEST			
TOTAL REQUEST (ROUNDED)			

10. Description of Proposed Construction: Single-story structural steel frame with reinforced concrete foundation and floor slab for expansive soils. Brick exterior, finish system accents, and standing seam metal roof. Includes pick-up/drop-off area, outdoor play area, utility spaces, utilities, parking, access, site preparation, pre-wiring for communications and low-level Antiterrorism/Force Protection measures.

Air Conditioning: 220 KW.

11. REQUIREMENT: 214 LS ADEQUATE: 214 LS SUBSTANDARD: LS

PROJECT: Construct a Child Development Center (New Mission)

REQUIREMENT: Adequate child care facilities are required to accommodate the dependent children of increased numbers of USAF personnel to be assigned to Buckley Air Force Base concurrent with the establishment of a new active duty Air Base Wing. The SECAF and CSAF established Air Force Space Command as the installation host effective 1 October 2000 (ref Program Action Directive 00-01).

CURRENT SITUATION: The existing Child Development Center at Buckley AFB was constructed for a capacity of 214 children. This Center is utilized to its maximum capacity at the present time with an active waiting list of approximately 130 children. The addition of another 385-plus active duty personnel will generate an estimated demand for an additional 125 spaces. This will create a deficit of approximately 255 spaces. Many service members are currently unable to enroll their children in the existing Child Development Center due to the lack of capacity. Numerous child care centers exist in the metropolitan area; however, only one of these is accredited to Air Force standards. Fees charged by this facility are two to three times the amount charged by the present Child Development Center and are unaffordable for most base personnel. It is Air Force and Department of Defense policy to limit individual facilities to serve no more than 305 children.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	CHILD DEVELOPMENT CENTER 198 PN

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	740-884	CRWU043007	

IMPACT IF NOT PROVIDED: If a new Child Development Center is not provided, families must continue to use expensive off-base programs or leave their children with unlicensed baby-sitters. Families continue to expend up to $2,500 per child per year plus travel expenses to use off-base facilities. Since off-base center schedules do not typically accommodate the shifts or long working hours of military personnel, they impose hardships on the military personnel forced to use them. With service members on call for duty continuously, it is imperative that they have reliable, convenient, well-run, safe, healthy & affordable child care facilities. The existing facility on base is too small for the needs.

ADDITIONAL: A preliminary analysis of reasonable options for accomplishingthis project (status quo, renovation, upgrade/removal, new construction, and/or leasing) was done. It indicates that only one option, new construction, will meet operational requirements. Because of this, a full economic analysis was not performed. A Certificate of Exception has been prepared. This project meets the criteria/scope specified in Part II of Military Handbook 1190, "Facility Planning and Design" and Air Force Handbook 32-1084, "Facility Requirements". Base Civil Engineer: Lt Col William D. Valenti, 719.556.7633. Child Development Center: 1,386 SM = 14,913 SF. Size Supports 198 Children.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	CHILD DEVELOPMENT CENTER 198 PN

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	740-884	CRWU043007	

12. SUPPLEMENTAL DATA:

a. Estimated Design Data:

(1) Status:

(a) Date Design Started	01-NOV-03
(b) Parametric Cost Estimates used to develop costs	YES
* (c) Percent Complete as of 01 JAN 2004	
* (d) Date 35% Designed	01-MAY-04
(e) Date Design Complete	01-SEP-04
(f) Energy Study/Life-Cycle analysis was/will be performed	NO

(2) Basis:

(a) Standard or Definitive Design -	NO
(b) Where Design Was Most Recently Used -	BUCKLEY

(3) Total Cost (c) = (a) + (b) or (d) + (e):

(a) Production of Plans and Specifications	[redacted]
(b) All Other Design Costs	[redacted]
(c) Total	[redacted]
(d) Contract	[redacted]
(e) In-house	

(4) Construction Start 04 SEP

(5) Construction Completion

* Indicates completion of Project Definition with Parametric Cost Estimate which is comparable to traditional 35% design to ensure valid scope, cost and executability.

b. Equipment associated with this project that will be provided from other
N/A

V. INTEGRATED BUILDING SYSTEMS (IBS)

A. IBS concepts are considered in the design of the clinic and are as follows:

1. Conventional construction materials
2. Zoning of mechanical, plumbing, electrical and communication utilities, both vertically and horizontally.
3. Use of standard catalog items
4. Standard building trade practices
5. Flexibility
6. Economics of construction, operation and maintenance

B. Examples of IBS

1. Mechanical units are situated on the roof to minimize duct runs.
2. Space is provided for maintenance and operation of equipment.
3. Achieve quality acoustical design.
4. Avoid large flat rectangular ducts.

C. The clinic has a new electrical room and a new communications room to maximize space and shorten communication runs.

VI. ECONOMIC SUMMARY

A. A value engineering study of the Concept Design Submittal (Submittal S4) will be part of the design process and will be included in the project design documents after completion and acceptance of the value engineering proposals.

B. Economic studies of mechanical, electrical, and structural systems will be incorporated into the design and are described in their appropriate discipline section.

VII. OUTSTANDING ISSUES

A. Geotechnical Report by AE?

B. ANG Volleyball Court

C. List of Existing and New Equipment for the CID Package

c) Immunization (1)

(1) 1 Technician

d) Bioenvironmental Health (10)

(1) 2 Bio Engineers

(2) 1 NCOIC

(3) 7 Technicians

(4) 1 ANG Technician

e) Public Health (6)

(1) 1 Officer

(2) 1 NCOIC

(3) 4 Technicians

f) Demand Reduction (1)

(1) 1 Civilian

g) Support (3)

(1) 1 Rad Technician (part time)

(2) 1 Lab Technician (part time)

(3) 1 Log Support

2. Existing and new equipment have not been identified at this time. A list of new and existing equipment, along with pertinent guide plates, will be furnished by the Government.

D. Constructibility

1. The Aeromedical Clinic will be of permanent construction utilizing readily available and commonly used materials. The foundation will be designed based on the geotechnical report which will probably dictate using a reinforced concrete pier foundation with structural concrete slab floors to match the existing building construction. All exterior materials, windows and roof will match existing construction and materials. Exterior walls to be fluted concrete block veneer construction.

h) Zone 8 – Space Mission

These zones reflect the architectural and functional character that the buildings take on within each respective zone. This character is then used when developing any new facilities within each zone. The Aeromedical Clinic is currently located in Zone 5 – Entry / Headquarters.

5. The architectural style prevalent within the Base boundaries of existing facilities, along with some of the newer buildings, consists of an exterior palette of CMU masonry as the primary wall material. Also included are secondary materials of metal standing seam roofing at sloped roofs along with stucco walls. Glass block is also another material that is beginning to be used on Base. The use of these materials is beginning to give the Base a character of its own. Similar materials will be incorporated on the addition for this project. These materials will match the existing facility, which already reflects this character with the exception of a flat roof.

B. Functional Objective

1. An addition and renovation of the existing Aeromedical Clinic to provide adjacent operating space for the increasing number of active duty staff and to physically and operationally separate the Active Duty functions from the National Guard functions. To meet the increasing clinic demands, space is currently being leased at locations off Base in the local Aurora area. The clinic and its expansion will house Flight Medicine, Bioenvironmental Engineering, Public Health, and Demand Reduction. The National Guard will operate out of the original building with only exam and treatment spaces being shared between the two functions.

C. Personnel and Equipment

1. Aeromedical Services Clinic is currently staffed with over 80 personnel with a projected staff of 120 personnel by FY-04. The expansion and alteration is currently designed for the following staff (28).

a) Physical Exams (4)

(1) 1 NCOIC

(2) 3 PE Technicians

b) Flight Medicine (3)

(1) 1 MC

(2) 2 FM Technicians

a) Northwest: currently contains most of the development.

b) Southwest: currently being developed over the past several years.

c) Northeast: very little development at this time.

d) Southeast: this area is remote from the other three areas.

3. Buckley Aeromedical Clinic, Building 600 is located on the southern edge of the Northwest District. It is located at the intersection of Aspen Drive and A-Basin Avenue.

a) The existing site has enough land area set aside to the southwest of the existing clinic to allow for the expansion of the clinic; the only constraint being AT/FT setback from the existing Loop Road to the southwest.

b) The number of spaces in the existing parking lot is adequate for the addition.

c) Existing utilities are available for power, fire protection, water, sewer and gas connections.

d) The site is open and unobstructed and slopes to the southwest.

e) Upon visual inspection, the site currently (or has in the past) had prairie dogs and probably burrowing owls, which will need to be relocated to construct the new addition if they are found at the time construction begins. Beginning construction prior to the month of March will allow the contractor to proceed without having to relocate the later of the two species.

4. Further, Buckley AFB is divided into eight Architectural Character Zones as follows:

a) Zone 1 – Administration / Industrial

b) Zone 2 – Privatized Housing

c) Zone 3 – Community Center

d) Zone 4 – Dormitory

e) Zone 5 – Entry / Headquarters

f) Zone 6 – Recreation

g) Zone 7 – Buckley East

14. AFCEE Interior Design Presentation Format (Interior Design Presentation Format) November, 1996 (This is Chapter 12 of Interior Design Guides.)

15. Air Force Interior Design Guides, http://www.afcee.brooks.af.mil/dc/dcd/interior/intdespu.asp

16. HQ Air Force Medical Support Agency Design and Implementation Guidelines Medical Systems Modernization Program (MSIM), Version 2.0, 16 May 2001

17. Any applicable Air Force Engineer Technical Letter (ETL) and Construction Technical Letter (CTL)

18. Any applicable Corps of Engineers Engineer Technical Letter (ETL), Technical Manual ™, Technical Instruction (TI) and Engineer Regulation (ER)

19. Any applicable Buckley AFB Installation Design Guide(s) (IDG)

20. Appropriate industry standard

21. Any other criteria that may be referenced in the Design Instructions or otherwise provided or required for the project.

22. Pre-Negotiation Meeting Minutes dated 17 Jan 2003

23. Confirmation Notice 001, Fact Finding and Design Charrette dated 18 March 2003

24. Confirmation Notice 002, Charrette Report Review Teleconference (incorrectly dated 18 March 2003) – *meeting report dated April 3, 2003*

IV. PROJECT DESCRIPTION

A. Project Site

1. Buckley Air Force Base is located on the eastern edge of Denver metropolitan area and is surrounded by the City of Aurora. Developed residential subdivisions of Aurora have been built west and south of the Base. The areas north and east of the Base are either grasslands or farming properties.

2. Buckley Air Force Base has several major constraints that divide the Base into four major development districts. One of the major dividers is the airfield runway and primary surface. This active runway bisects the Base in a northwest to southeast axis. This creates an imaginary surface axis 2,000 feet wide through the center of the Base. Therefore, the Base is divided into four potentially developable areas as follows:

PART ONE – GENERAL DESCRIPTION

I. PURPOSE

A. The scope of this project is to provide an addition to the existing Aeromedical Clinic (for Flight Medicine, Bioenvironmental Engineering, Public Health, and Demand Reduction) and an alteration of the existing clinic space to meet the needs of active duty Base population.

II. AUTHORIZATION

A. Directives

1. Pre-Negotiation Meeting Minutes dated 17 Jan 2003, with attachments (Draft Design Instructions)

2. Indefinite Delivery Indefinite Quantity (IDIQ) Contract No. DACA21-02-D-0011 for development of design/build request proposal for Aeromedical Clinic Addition/Alteration at Buckley AFB, Colorado.

B. Scope of Work

1. Pre-Negotiation Meeting Minutes dated 17 Jan 2003

a) Draft Design Instructions, dated 06 Jan 2003, pages D1-1 through D1-31

b) DD Form 1391, dated Oct 2002

(1) Category Code 510 10

(2) Project No. 53891

(3) Directive Scope 4,511 SF Addition
5,388 SF Alteration

(4) Programmed Amount $2,100,000

c) Program for Design, dated 15 Oct 2002

(1) Total Gross Area 9,899 SF

d) S2 and S4 Check Lists

e) Submittal Distribution Requirements, dated Jan 2003

17 March 2003

MEETING REPORT:	Fact Finding and Design Charrette Conference held 03-06 March 2003 in the JAAB Facility, Building 1005, Conference Room No. 174
PROJECT:	Aeromedical Clinic Addition/Alteration Building 600, Buckley AFB, CO A/E project No. 2002-155
REASON FOR REPORT:	Documentation of Charrette Conference

Session I – Monday 03 March 2003

A. The conference was opened at 1400 hours with opening remarks from CEHNN-PM-M (Mike Armstrong) stating the purpose of the conference was a 3 ½ day design charrette and fact finding session for the Aeromedical Clinic, Building 600 addition and alteration. The charrette conference would end with an executive out-briefing at 1330 hours on Thursday, 06 March 2003. HFO (Lt. Rodney Buffington) and HQ AFCEE/DCM (Tom Cochran) had no opening comments. The team participants then introduced themselves stating their roles, positions and the agencies they represent. A copy of the sign-in sheet is attached at the end of the sessions minutes.

B. Mr. Armstrong began a general discussion of the 1391 stating the following:

1. The programmed amount is $2,100,000 for this project, and that the CWE should be 95% of this amount.

2. The addition will be 4,511 GSF and the alteration 5,388 GSF, for a total project square footage of 9,899 GSF.

C. A pre-design conference introducing all the parties to the project was held on 10 January 2003 at JAAB Facility, Building 1005.

D. The charrette agenda was then reviewed. A copy of the agenda is attached at the end of the sessions minutes.

E. As-built documents of the existing facility had been requested by the AE and received prior to the charrette. These documents came in two sets as follows:

1. Project #004108, Medical Training and Administration for Buckley ANG Base, dated 4-26-90.

2. Project #010596-01 Buckley ANG Base, Health/Dental Clinic Addition dated 9-19-98.

F. Lt. Cory Baker of the 460 MDS stated that Dr. William Miller will be available to the team on Tuesday, 04 March 2003, to answer specific questions pertaining to the operation of the existing clinic and to review the preliminary schemes provided by the AE.

G. The existing clinic is shared by both Active Duty Personnel and the Air National Guard. The proposed addition and alteration will separate these functions with the exception of shared exam functions.

H. AE Questions:

1. The existing exam rooms need to meet 1191 guide plate dimensions has been waived by HFO (Buffington). The exam rooms can remain in the existing location and function properly.

I. The AE (Cockmon) then presented the pre-charrette schemes for discussion and review. These schemes included two preliminary site plans, along with three proposed floor plans. Copies of these proposal documents are attached at the end of this section, along with comments compiled from participants' review.

J. Tuesday's agenda was reviewed and the following schedule to meet with the various groups of Base Civil Engineering personnel was proposed:

1. Site Utilities – 0815 – 0845
2. Mechanical, Plumbing, Fire Protection, Fire Chief – 0845 – 1000
3. Communications – 1000 – 1030
4. Electrical – 1040 – 1110
5. Environmental – 1110 – 1140
6. Safety / Force Protection – 1140 – 1210

K. Session I adjourned at 1600 hours with all of the participants going to tour the existing facility and site.

L. Site Plan 1 and 2 Comments

1. Leave the existing entry; will have to add ADA ramp for handicap accessibility. Existing entry currently does not meet handicap accessibility requirements.
2. Existing parking lot to remain.

3. Number of parking spaces adequate.

4. Only one handicap space is defined. Two other spaces are labeled for staff.

5. The white shape through the first row of parking spaces is a drainage path for storm water.

M. Site Plan 3 Comments

1. Relocate entry to allow for ramp construction.

2. Existing parking lot to remain.

3. Parking lot lighting needs to be reviewed by A-E.

N. Scheme 1 Comments

1. Slight variation of the preliminary scheme provided by Health Facilities Officer.

2. No demand reduction toilet shown. PFD has toilet programmed.

3. No electrical closet shown.

4. Tech work areas meet PFD size. Circulation not included.

5. No PH storage space.

O. Scheme 2 Comments

1. Larger Tech work areas to allow for circulation.

2. Added PH storage space per PFD.

3. Existing entry to remain. Change out single doors for double doors. Check depth of vestibule for ADA accessibility.

4. No Demand Reduction toilet per PFD.

5. Added electrical closet.

6. Additional exit door – good design. Not required by Code.

P. Scheme 3 Comments

1. General consensus of the group to develop this scheme as follows:

   a. Add demand reduction toilet in close proximity to demand space.

b. Electrical closet needs to be larger and more centrally located. Provide one service meter for entire facility.

c. Prefer digital electric meter.

d. Drug Dispense needs more investigation. Dr. Miller will provide direction. Relationship of BEE equipment storage to front entry is okay.

e. Communication closet needs to be 100 SF per Base standards and centrally located.

f. Waiting area is very good; out of main circulation paths.

g. An additional exist door to the rear. Not required by code, but a good practice.

h. Relationship between entry, reception and waiting well thought out.

i. Swap janitor's closet and electrical space.

j. FM Tech requires proximity to Admin. Area.

k. Screening Room does not require sink.

l. Records area needs to be secure.

m. The programmed amount of 60 SF for Techs includes circulation per HFO.

n. Provide one large Demand Reduction space in lieu of two separate areas with one entry door and one exit door.

c. A new service on existing paddles of the existing transformer, capacity allowing, would be the most economical and required for anticipated construction phasing. This will be discussed further with Mr. Skip Oliver.

2. Communications

a. No new copper wire pairs, or fibers are required onto the site or into the building. Existing is adequate for this project and a telephone switch already existing in communication closet in the original building.

E. Mechanical

1. Existing roof-top units are currently being tied into a DDC control system.

2. Fire lines require 48" bury depth.

3. As-builts or submittals on existing sprinkler system are not available. Existing drawings will be included in submittals (For Information Only).

4. Fire alarm is monitored on Base.

5. Fire Chief is unhappy with existing alarm in Building 600. Would not provide details.

6. Alarm Tech on Base is Art Gibson, 303-677-9916 or 9917. the number that reaches Art Gibson is the electrical shop. The other number is the plumbing shop, who can be asked for flow test data.

7. Building 600 is in process of conversion to Base EMCS system.

8. System is by Delta Controls, Surrey, B.C. and provided by Setpoint Systems Corp., Denver, CO. It is a proprietary system. A letter approving the proprietary controls for the new units will be sent to the A-E for inclusion in the project.

9. Mr. White provided extensive data relating to components, system, points, etc. as applied to Building 600.

10. The addition must be controlled by this system.

F. Environmental

1. An environmental assessment has not been performed, but is currently planned.

2. No environmental issues have been identified at this stage that should affect the alteration or addition.

3. Prairie Dogs, if found at the time of construction, will need to be relocated by the government. COE will coordinate this with Base CE.

4. Start of construction should be prior to the month of March, which is the time of arrival of Burrowing Owls that live in the Prairie Dog holes through August of each year.

5. Floyd Hatch (303-677-6937) is the point of contact for animal relocation.

6. COE specifications should meet Base storm water runoff criteria and will be used by the AE.

7. Dale Carson is the point of contact for demolition material disposal. Joel Martol is the point of contact for hazardous waste disposal.

8. Affirmative procurement criteria has been provided to the AE.

G. Scheme 4 Comments (See attached plan)

1. Existing toilet adjacent to Radiology to remain due to pass-thru window. Proposed toilet will act as clean linen room.

2. Demand Reduction will be one large space with doors at each end (remove center wall).

H. Scheme 5 was developed based on the day's discussions and is attached at the end of this session's minutes.

FACILITY WALK-THRU OBSERVATIONS

A. Toilets

1. Toilets used paper towel dispensers; no hand dryers.

2. Toilet vanity had one 4' fluorescent light over mirror with pull chain only and one can light centrally located, not switched.

3. Single ADA stall had one 4' fluorescent light, high on wall with pull chain only.

4. One GFI was on wall by sink and one GFI convenience outlet was below sink.

PART TWO – DESIGN REQUIREMENTS AND PROVISIONS

I. CIVIL

A. General Parameters

1. Boundaries: The project is contained entirely within the boundary of Buckley Air Force Base, Colorado.

2. Topography: The existing clinic has space set aside for the addition. This space is gently sloping away from the existing building. Soil drainage is poor, being expansive clay. No significant grading and changes are planned.

3. Geotechnical Explorations: A geotechnical report is currently being produced and will be incorporated at the next submittal phase.

4. Expansive Soils: the native expansive soils will require special treatment of the foundation and utility access. A crawl space is planned, along with a deep foundation for this purpose. Other than handling of the prairie dog and burrowing owl population, no other special considerations are evident.

5. Prevailing Climatic Conditions: The new addition is mandated by previous design. Conditions are as they exist for the clinic.

6. Existing structures: The site amenities are existing with space already planned for the addition. Existing parking, utilities, and landscaping are entirely appropriate for this new addition with little or no modification.

7. Utilities and Future Improvements: The site is currently served by full utility and transportation infrastructure. No new improvements are planned.

8. Proposed Facilities: Other than the building addition, no new improvements are planned.

9. Former Use: Not applicable.

10. Local Construction Compatibility: Materials and labor for this project are readily available. Construction will match the existing building.

11. Installation Compatibility: This addition is entirely compatible with the existing building.

12. Permits: Land disturbing activity in excess of one acre will require an NPDES (NOI) for erosion and sedimentation control. Installation permits for hauling, trenching and contractor staging will be observed.

13. Treatment: Not applicable.

14. Treatment Startup: Not applicable.

15. Other Parameters: Not applicable.

B. Functional and Technical Requirements

1. Orientation of Addition Elements: The addition is mandated by the scope of work.

2. Exterior Relationships: Unchanged.

3. Handicap Accessibility: The existing building is handicap accessible. Force protection changes to the parking lot and grade considerations at the new addition entry will necessitate design solutions to maintain accessibility.

4. Grading, Storm Drainage and Irrigation: Little or no grade work or changes to drainage is anticipated. There is no irrigation system in the area of the addition.

5. Landscape: Natural arid xeroscape will be maintained.

6. Exterior Furnishings: Not applicable.

7. Area Lighting: Not applicable.

8. Sidewalks, Fencing, etc.: Handicap ramping to the addition entry will be provided.

9. Parking, Service and Access: No changes.

10. Service Area: No change.

11. Building Set Backs: Force protection changes to the existing parking lot will be incorporated to effect a 25 meter standoff distance.

12. Exterior Utilities: No changes are anticipated. Existing building services will extend within the addition footprint.

13. Heliport and Airfield Clearance: Not applicable.

14. Treatment: Not applicable.

15. Wells: Not applicable.

C. Design Objectives and Provisions:

1. Vehicle and Pedestrian Circulation: Existing parking and grade access will remain unchanged with the exception of compliance with Force Protection measures.

2. Landscape Preservation: The continued use of xeroscape will be maintained for this site.

3. Functional Relationships of Facilities: No change.

4. Handicap Access: Maintained and modified as required for Force Protection.

5. Utility Support: Unchanged.

6. Economy of Construction: This addition is prescribed by the scope of work to match existing construction.

7. Expansion: Not applicable.

8. Treatment: Not applicable.

9. Construction Materials: See Paragraph B above.

D. Calculations

1. Geotechnical: Issued at the next submittal phase.

2. Paving and Storm Drainage: Not applicable.

3. Landscape Irrigation: Not applicable.

4. Parking Allowances: Outside the scope of this project.

5. Utilities: No change to exterior systems.

6. Water and Fire: No changes to exterior systems.

7. Wastewater: No change to exterior systems.

8. Railroad: Not applicable.

9. Cost Comparisons: Not applicable.

10. Cost Estimate: See Part Two, Section XII.

11. Treatment: Not applicable.

12. Wells: Not applicable.

E. Coordination with Installation or Outside Agencies

1. MACOM Siting: The addition is compatible.

2. Utility Support: No appreciable change.

3. Water and Sanitary: No appreciable change.

4. Demolition and Debris: All wasting will be off government controlled lands.

5. Fire Fighting Support: No appreciable change.

6. Bulk Trash: No appreciable change.

7. Signage: Not applicable.

8. Permits: Installation construction permits for hauling, access, staging, etc. will be obtained.

9. Safety for Explosives: Not applicable.

10. Waste Manifesting: Not applicable.

II. ENVIRONMENTAL

A. General Parameters

1. Environmental Impact Assessment (EIA): Beyond the scope of this project.

2. Endangered Species: Relocation of the on-site prairie dog and burrowing owl population off-site in advance of construction to be completed by the government.

3. Wetlands: Not applicable

4. Archeological: Not applicable.

5. Ground Water: Not applicable.

6. Pollution Measures: NPDES requires an erosion and sedimentation permit for land disturbing activity extending over one acre.

7. Permits: NPDES (see 6. above). No other environmental permits are known to be required.

8. Health and Safety Design Analysis (HSDA): Not applicable.

9. Air Pathways Analysis (APA): Not applicable.

10. Data Quality Objectives (DQOs): Not applicable

11. Cleanup Levels on ARARs: Not applicable.

12. Contaminant Ambient Air Levels: Not applicable.

13. QA/QC of Chemical Data: Not applicable

B. Functional and Technical Requirements

1. Orientation to Sensitive Areas: Not applicable.

2. Groundwater, Storm Water Effect: Not applicable.

3. Discharges to the Environs: Not applicable.

4. Sound Control: Not applicable

C. Design Objectives and Provisions

1. Functional Relationship to Environments: Not applicable.

2. Paving Areas Effect on Storm Water: No change.

3. Utilities Placement to Sensitive Areas: Not applicable

4. Economy of Protection Measures: Corps standard details for siltation and erosion control are used.

5. Expansion: Not applicable.

6. Economic Aspects: Not applicable.

7. HTRW Remediation: Not applicable.

D. Calculations

1. Erosion Control: If required, at next submittal

2. Ratio of Impervious Areas to Site: If required, at next submittal.

3. Storm Runoff: Issued at the next submittal phase.

4. Air, Water, HTRW and Sanitary Discharge: If required, at next submittal.

5. Pollution Abatement: Not applicable.

6. Cost Comparison of Competitive Designs: Not applicable.

7. Construction Cost Estimate: See Part Two, Section XII.

E. Coordination with Installation or Outside Agencies

1. Validation of Siting: Not required.

2. Wetlands: Not applicable.

3. Storm Discharge: Not applicable.

4. Air, Water, HTRW, and Sanitary Discharge: Not required.

5. Sedimentation and Erosion Control: NPDES will be complied with.

05-0633

REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS

Report Control Symbol
CRWU53006

INSTRUCTIONS: *Section I to be completed by Proponent; Sections II and II to be completed by Environmental Planning Function. Continue on Separate Sheets as necessary. Reference appropriate item number(s).*

SECTION I - PROPONENT INFORMATION

1. TO (Environmental Planning Function)	2. FROM (Proponent organization and functional address symbol)	2a. TELEPHONE NO.
460 CES/CEV	460 CES/CEC	303-677-6819

3. TITLE OF PROPOSED ACTION
Communications Center

4. PURPOSE AND NEED FOR ACTION (*Identify decision to be made and need date*).
Provide a communications center capable of receiving and transmitting fast, secure voice and data signals throughout DoD. Provide electronic equipment, information management and visual information services for the base.

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPPA) (Provide sufficient details for evaluation of the total action.
See attached

6. PROPONENT APPROVAL (*Name and Grade*)	6a. SIGNATURE	6b. DATE
Charles Nicely, GS-11	Charles Nicely	26 Apr 02

SECTIONII - PRELIMINARY ENVIRONMENTAL SURVEY. (*Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = Unknown effect.*	+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (*Noise, accident potential, encroachment, etc.*)		X		
8. AIR QUALITY (*emissions, attainment status, state implementation plan, etc.*) Fugitive dust during construction			X	
9. WATER RESOURCES (Quality, quantity, source, etc.) Stormwater during and after construction			X	
10. SAFETY AND OCCUPATIONAL HEALTH (*Asbestos/radiation/chemical exposure, explosives safety quantity-distance, etc.*)		X		
11. HAZARDOUS MATERIALS/WASTE (*Use/storage/generation, solid waste, etc)*)		X		
12. BIOLOGICAL RESOURCES (*Wetlands/floodplains, flora, fauna, etc*)			x	
13.CULTURAL RESOURCES (*Native American burial sites, archeological, historical, etc.*)		X		
14.GEOLOGY AND SOILS (*Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.*)		X		
15.SOCIOECONOMIC (*Employment/population projections, school and local fiscal impacts, etc.*)		X		
16.OTHER (*Potential impacts not addressed above.*)		X		

SECTION III - ENVIRONMENTAL ANALSIS DETERMINATION

17.
- [ ] PROPOSED ACTION CUALIFIES FOR A CATEGORICAL EXCLUSION (CATEX #) _____: OR
- [X] PROPOSED ACTION DOES NOT QULIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALSIS IS REQUIRED.

18. REMARKS

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (*Name and Grade*)	19a. SIGNATURE	19b. DATE
Elise L. Sherva, GS-12	Elise Sherva	30 Apr 02

AF Form 813 Continuation

Project Title: Communications Center

Proposed Action: Construct a 37,738 sf addition to bldg Communications Center bldg 730. Alter Bldg 730

Alternative Action 1: Construct totally new Communications Center

No Action Alternative: A Communications Center would not be constructed and telephone and data communication would continue to be slow and unreliable.

ENVIRONMENTAL CONSEQUENCES:

This action will require the removal and relocation of prairie dogs. This requires the approval and consultation with the Natural Resources Manager: 7-69337
This action cannot occur when burrowing owls are in residence in the prairie dog burrows.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	ADD/ALTER COMMUNICATIONS CENTER

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	131-111	CRWU053006	

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT	
ADD/ALTER COMMUNICATIONS CENTER	LS			
COMMUNICATIONS FACILITY (ADD)	SM	2,444		
COMMUNICATIONS FACILITY (ALTER)	SM	2,007		
ANTITERRORISM/FORCE PROTECTION	SM	4,451		
SUPPORTING FACILITIES				
SITE IMPROVEMENTS	LS			
PAVEMENTS	LS			
UTILITIES	LS			
GENERATOR, EMERGENCY, 100 KW	LS			
COMMUNICATIONS SUPPORT	LS			
SUBTOTAL				
CONTINGENCY (5.0 %)				
TOTAL CONTRACT COST				
SUPERVISION, INSPECTION AND OVERHEAD (5.7 %)				
TOTAL REQUEST				
TOTAL REQUEST (ROUNDED)				

10. Description of Proposed Construction: Single-story structural steel frame with reinforced concrete foundation for expansive soils. Exterior materials will be CMU veneer and precast concrete with finish system accents and membrane roof. Includes utilities, parking, access, site preparation, back-up generator, pre-wiring for voice and local area networks and low-level Antiterrorism/Force Protection measures.

Air Conditioning: 703 KW.

11. REQUIREMENT: 36,024 LS ADEQUATE: 33,580 LS SUBSTANDARD: 1,907 LS

PROJECT: Add/Alter a Communications Center. (New Mission)

REQUIREMENT: Buckley Air Force Base became an AFSPC installation on 1 Oct 00 per direction from the SECAF and CSAF (ref Program Action Directive 00-01). An adequate and function communications center is required to provide support to installation operations and facilities being added at Buckley AFB. The facility must provide information management spaces and offices, expanded base telephone operations, additional telephone maintenance, telecommunications equipment control, the base network control center and an information assurance center. The best "Concept of Operations" for joint utilization of existing Colorado Air National Guard facilites was documented 5 Dec 00 in a Memorandum of Understanding for the license with the State of Colorado.
Addition/alteration of this facility will ensure suitability for this mission. To meet installation facilities excellence standards and resource protection criteria, the rear of the compound yard will be fenced. The telecommunications rack and switch will be upgraded.

CURRENT SITUATION: The existing Communications Center at Buckley AFB was constructed in 1975 for a very limited telephone operations. The telecommunications capacity is

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	ADD/ALTER COMMUNICATIONS CENTER

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJE
35996	131-111	CRWU053006	

12. SUPPLEMENTAL DATA:

a. Estimated Design Data:

(1) Status:

(a) Date Design Started	01-NOV-03
(b) Parametric Cost Estimates used to develop costs	YES
* (c) Percent Complete as of 01 JAN 2004	
* (d) Date 35% Designed	01-MAY-04
(e) Date Design Complete	01-SEP-04
(f) Energy Study/Life-Cycle analysis was/will be performed	NO

(2) Basis:

(a) Standard or Definitive Design -	NO
(b) Where Design Was Most Recently Used -	

(3) Total Cost (c) = (a) + (b) or (d) + (e):	($000)
(a) Production of Plans and Specifications	384
(b) All Other Design Costs	256
(c) Total	640
(d) Contract	640
(e) In-house	

(4) Construction Start 05 FEB

(5) Construction Completion

* Indicates completion of Project Definition with Parametric Cost Estimate which is comparable to traditional 35% design to ensure valid scope, cost and executability.

b. Equipment associated with this project that will be provided from other
N/A

REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS

Report Control Symbol
CRWU073008

INSTRUCTIONS: *Section I to be completed by Proponent; Sections II and II to be completed by Environmental Planning Function. Continue on Separate Sheets as necessary. Reference appropriate item number(s).*

SECTION I - PROPONENT INFORMATION

1. TO (Environmental Planning Function)	2. FROM (Proponent organization and functional address symbol)	2a. TELEPHONE NO.
460 CES/CEV	460 CES/CEC	303-677-6819

3. TITLE OF PROPOSED ACTION
Consolidated Fuels Facility

4. PURPOSE AND NEED FOR ACTION (*Identify decision to be made and need date).*
Construct a new consolidated fuels facility to be located closer to the airfield. The purpose of the project is to relocate the existing facility from an area planned for development of 332 family housing units and a community area. Demolition of the existing facility is included in the project. Construction start is required by 1 November 2004.

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPPA) (Provide sufficient details for evaluation of the total action.
See attached

6. PROPONENT APPROVAL (*Name and Grade*)	6a. SIGNATURE	6b. DATE
Charles Nicely, GS-11	Charles Nicely	7 Jan 2003

SECTIONII - PRELIMINARY ENVIRONMENTAL SURVEY. (*Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = Unknown effect.*	+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (*Noise, accident potential, encroachment, etc.*)		X		
8. AIR QUALITY (*emissions, attainment status, state implementation plan, etc.)* Fugitive dust during construction;			X	
9. WATER RESOURCES (Quality, quantity, source, etc.) Stormwater during and after construction			X	
10. SAFETY AND OCCUPATIONAL HEALTH (*Asbestos/radiation/chemical exposure, explosives safety quantity-distance, etc.)* Safety During construction			X	
11. HAZARDOUS MATERIALS/WASTE (*Use/storage/generation, solid waste, etc*). Use of hazardous materials during construction.			X	
12. BIOLOGICAL RESOURCES (*Wetlands/floodplains, flora, fauna, etc)* Potential adverse effects to prairie dogs and/or burrowing owls.			X	
13.CULTURAL RESOURCES (*Native American burial sites, archeological, historical, etc.)*		X		
14.GEOLOGY AND SOILS (*Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)*		X		
15.SOCIOECONOMIC (*Employment/population projections, school and local fiscal impacts, etc.)* Assuming the additional employees currently reside in the local commuting area.		X		
16.OTHER (*Potential impacts not addressed above.)*		X		

SECTION III - ENVIRONMENTAL ANALSIS DETERMINATION

17.
- [ ] PROPOSED ACTION CUALIFIES FOR A CATEGORICAL EXCLUSION (CATEX #) _____: OR
- [X] PROPOSED ACTION DOES NOT QULIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALSIS IS REQUIRED.

18. REMARKS

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (*Name and Grade*)	19a. SIGNATURE	19b. DATE
Elise L. Sherva, GS-12	Elise Sherva	1/8/03

AF Form 813 Continuation

Project Title: Consolidated Fuels Facility

Proposed Action: Construct a new Consolidated Fuels Facility to replace the current facility that is currently out of compliance with the Military Handbook (MIL-HDBK)-1022), is need of upgrades and is located in an incompatible land use area. The facility is planned for the Installation Support Area as depicted in the Base General Plan. The bulk storage facility would consist of 2 each 5,000 barrel, or approximately 210,000 gallon) aboveground bulk storage tanks. The project would include spill containment for the jet fuel that would be stored in the tanks. A refuel truck dispensing station and a fuel transporter fill station and associated pumping would be provided. A 1,000 SF POL Pump House and a 452 SF Bulk Storage Operations Building are planned at the Bulk Fuel Storage area. A planned 2,745 SF POL Operations building would house administrative space, a refuel truck driver ready area, and a POL laboratory. Less than 20 personnel would work at this POL operations building. A parking pad would be provided for 12 refuel trucks. A Base Government Vehicle fuel station would be constructed. The fuel station would consist of 3 dispensing pumps and 3 ea 10,000-gallon fuel tanks. The hours of operation for the facility would fluctuate to match supported tactical missions.

No Action Alternative: Do not construct a new Consolidated Fuels Facility. The fuels storage would continue to be in a non-compatible land-use area. Secondary containment would be required for fuel loading area and repairs would be required for the secondary containment, which is deteriorating. The current PL facilities (e.g., pumps, piping, spill containment, security access road, fire protection, and cathodic protection systems, etc) would not be upgraded and proper function could not be assured. The current fuels laboratory is undersized, poorly configured, and does not meet the requirements identified in Military Handbook (MIL-HDBD)-1022. The ready room, which is a trailer, is in poor condition.

1. COMPONENT AIR FORCE	**FY 2005 CONSTRUCTION PROJECT DATA**	2. DATE 04 MAR 02
3. INSTALLATION AND LOCATION BUCKLEY AIR FORCE BASE, COLORADO		
4. PROJECT TITLE CONSOLIDATED FUELS STORAGE		7. PROJECT NUMBER CRWU 07-3008

CERTIFICATE OF COMPLIANCE
FOR CRITICAL PLANNING ACTIONS

I. INSTRUCTIONS:
Place one X in the most appropriate response for each topic area to show current status of compliance. When responding to a statement requiring additional data, fill in the blank with appropriate information. If none of the printed statements are appropriate, add or attach an appropriate comment. For MILCON projects, the Civil Engineering Squadron Commander and the Installation Commander must sign the certificate and submit it to the MAJCOM staff where it will be updated, retained and be readily available if required by HQ USAF.

II. PLANNING:

1. Environmental Impact Analysis Process (AFI 32-7061)
   - ___ Categorical exclusion number ____ applies.
   - _X_ Environmental Assessment under preparation. Expected completion date is: ~~10/04~~
   - ___ Finding of No Significant Environmental Impact signed on:_____(date).
   - ___ Draft Environmental Impact Statement (EIS) under preparation. Expected completion date is: 9/30/03
   - ___ Draft EIS filed on _____(date).
   - ___ Final EIS filed on _____(date).
   - ___ Record of Decision signed on _____(date).
   - ___ Foreign nation or protected global resource exemption number _____applies.
   - ___ Environmental study (or review underway) under preparation. Expected completion date is _____.
   - ___ Environmental study (or review) completed on _____.
2. Wetlands (AFI 32-7064):
   - _X_ Project is not sited in a wetland.
   - ___ Requirements of EO 11990 in progress. Estimated completion date is _____.
   - ___ Requirements of EO 11990 completed on _____(date).). Finding of No Practicable Alternative (FONPA) signed _____(date).
3. Flood plains (AFI 32-7064):
   - _X_ Project is not sited in a 100-year flood plain.
   - ___ Requirements of EO 11988 in progress. Estimated completion date is _____.
   - ___ Project is sited in a 100-year flood plain. Requirements of EO 11988 completed on _____ (date). Finding of No Practicable Alternative (FONPA) signed _____(date).
4. Coastal Zone Management (AFI 32-7064):
   - _X_ Project does not directly affect a state coastal zone.
   - ___ Consistency determination being developed. Estimated completion date is _____.
   - ___ Consistency determination completed on _____(date).
5. Coastal Barrier Resources (AFI 32-7064):
   - _X_ Project is not sited within the Coastal Barrier Resources System.
   - ___ Project excepted from the Coastal Barrier Resources Act (CBRA).
   - ___ Consultation with the Regional Director, United States Fish and Wildlife Service (USFWS), in progress. Estimated completion date is _____.

   Consultation with Regional Director, USFWS, concluded _____ (date).
6. Threatened and Endangered Species (AFI 32-7064):
   - ___ Project has no potential for affecting threatened or endangered species or critical habitats.
   - ___ Based upon advice from USFWS or host nation liaison on _____(date), threatened or endangered species in the vicinity of the project will not be affected.
   - ___ Consultation with USFWS underway in accordance with the Endangered Species Act.
   - ___ Formal consultation with the Regional Director, USFWS completed on _____(date).
   - ___ Biological Assessment is required. Estimated completion date is _____(date).
   - ___ Biological opinion issued by USFWS on _____(date).
   - _X_ State threatened species: burrowing owl candidate species: prairie dog.

1. COMPONENT AIR FORCE	FY 2005 CONSTRUCTION PROJECT DATA	2. DATE 04 MAR 02

3. INSTALLATION AND LOCATION

BUCKLEY AIR FORCE BASE, COLORADO

4. PROJECT TITLE	7. PROJECT NUMBER
CONSOLIDATED FUELS STORAGE	CRWU 07-3008

7. Cultural Resource Management (AFI 32-7065):
- ___ Properties affected by project are addressed in a Programmatic Agreement that was fully executed with the State Historic Preservation Officer and the ACHP on _____(date).
- ___ Project area has not been surveyed for historic properties. Survey requirements are identified in the A-106 system and the estimated completion date is _____:
- _X_ Project area has been surveyed and no historic properties were identified.
- ___ Survey identified historic properties but the project will have no effect on them; written concurrence by the State Historic Preservation Officer is dated _____.
- ___ After consultation, State Historic Preservation Officer concurred that the project will have no adverse effect on historic properties. The Advisory Council on Historic Preservation concurred in writing with this determination on _____(date).
- ___ Project will have an adverse effect on historic properties. A memorandum of agreement (MOA) mitigating the adverse effect was executed on _____(date).
- ___ Estimated date to execute the MOA is _____or No MOA was developed and the formal comments of the Council are being sought.
- ___ Project will affect a site or property of interest to Native Americans.

Appropriate Native American Tribe or Group contacted on _____(date).

8. Interagency and Intergovernmental Coordination for Environmental Planning (AFI 32-7060):
- _X_ Coordination of proposed project with the state Single Point of Contact or other agencies is not required.
- ___ Coordination with the state Single Point of Contract is in progress. Expected date of completion is _____(date).
- ___ Proposed project was coordinated with the state Single Point of Contact or other agencies on _____(date). (Specify any other agencies).

9. Environmental Permits (AFIs 32-7040, 7041, 7042, 7044):
- ___ No permits are required.
- ___ No permits required, but regulatory agency notification required prior to construction (e.g. underground storage tank removals)
- _X_ The following permits are required prior to construction: (list the construction and operating permits).
  1. Stormwater (runoff control) during construction
  2. Air Quality for fugitive dust during construction

Note: Actual acres may drainage area

10. Potentially Regulated Substances (AFIs 32-1052, 7042)

a. Asbestos:
_X_ not present; ___ survey underway;
___ present (Describe mitigation, or state why mitigation is not necessary)

b. Lead-Based Paint:
_X_ not present; ___ survey underway
___ present (Describe mitigation, or state why mitigation is not necessary)

c. Ozone depleting substance:
_X_ not present; ___ survey underway;
___ present (Describe mitigation, or state why mitigation is not necessary)

d. Polychlorinated biphenyls (PCBs):
_X_ not present; ___ survey underway;
___ present (Describe mitigation, or state why mitigation is not necessary)

e. Radon:
_X_ not present; ___ survey underway;
___ present (Describe mitigation, or state why mitigation is not necessary)

f. Other known hazardous or toxic substances and pollutants: (e.g. contaminated soils)
_X_ not present; ___ survey underway;
___ present (Describe mitigation, or state why mitigation is not necessary)

③ AST permit required
④ Air Pollutant Emission Notice for use prior to construction

1. COMPONENT AIR FORCE	FY 2005 CONSTRUCTION PROJECT DATA	2. DATE 04 MAR 02

3. INSTALLATION AND LOCATION

BUCKLEY AIR FORCE BASE, COLORADO

4. PROJECT TITLE	7. PROJECT NUMBER
CONSOLIDATED FUELS STORAGE	CRWU 07-3008

11. Radon at New Construction Sites:
    - X Not Present
    - ___ Present Co high radon
12. Installation Restoration Program (IRP):
    - X Facility is not sited on or near an IRP site.
    - ___ Facility is sited near an IRP site. Approximately ___ feet away.
    - ___ Facility is on an IRP site.
        - ___ A Request for Waiver was submitted to MAJCOM on _____(date).
        - ___ The site is projected to be remediated and/or closed out on _____(date), prior to commencement of construction activities.
        - ___ The nature of the site contamination does not preclude the type of construction activity proposed.
        - ___ There is a Compliance Agreement associated with this site.
        - ___ A Remedial Investigation Feasibility Study was completed on _____(date) to accurately delineate the aerial extent of the contamination.
13. Air Pollutants (AFI 32-7040):
    - ___ Will not be generated by the operation or construction of this facility.
    - X Will be generated by the operation or construction of this facility. Describe type and amount of substance expected to be generated, existing control systems, and the need for additional controls: Fugitive Dust
    - ___ Conformity determination not required.
    - ___ Conformity determination required.
14. Solid and Hazardous Wastes (AFI 32-7042, 32-7080):
    - X Facility will not be used for managing solid or hazardous wastes.
    - ___ Facility will be for managing solid or hazardous wastes.
15. Underground Storage Tanks (AFI 32-7044) (Check all that apply):
    - X No underground storage tanks are involved.
    - ___ New underground storage tanks will be installed.
    - X Existing tanks on the project site will be removed. Ensure regulatory agency has been notified. Tank status:
        - ___ Contamination exists. — or exact ASTs? Or yrs than n/a.
        - ___ Contamination does not exist.
        - ___ Contamination unknown.
    - ___ Existing tanks on the project site will be retained. Tank status:
        - ___ Contamination exists.
        - ___ Contamination does not exist.
        - ___ Contamination unknown
16. Air Installation Compatible Use Zone (AFI 32-7063):
    - ___ Facility is sited in compliance with Air Installation Compatible Use Zone Study. No noise level reduction is required.
    - X Facility is sited in compliance with Air Installation Compatible Use Zone Study. Noise level reduction of 5dBA will be provided in design and construction.
    - ___ Noise waiver request is being processed.
    - ___ Noise waiver has been granted.
17. Base Comprehensive Plan (AFI 32-7062).
    - X Facility is sited in a compatible land use category.
    - ___ Facility is not sited in a compatible land use category for the following reason:
18. Airfield Clearance Criteria (AFI 32-1026):
    - X Facility is in compliance with airfield clearance criteria, including clear zone, accident potential zones and airfield airspace (height obstruction) criteria.
    - ___ A request for waiver to airfield/airspace clearance criteria is being prepared. Expected completion date is _____.
    - ___ A temporary waiver for construction activity in the airfield vicinity was approved on _____ (date).
    - ___ A permanent waiver of airfield/airspace clearance criteria was obtained on _____(date).
19. Air Space Use:
    - X Project does not affect air space use and does not require submittal to Regional Administrator, FAA.
    - ___ Project sent to Regional FAA on _____(date).

1. COMPONENT AIR FORCE	FY 2005 CONSTRUCTION PROJECT DATA	2. DATE 04 MAR 02

3. INSTALLATION AND LOCATION

BUCKLEY AIR FORCE BASE, COLORADO

4. PROJECT TITLE	7. PROJECT NUMBER
CONSOLIDATED FUELS STORAGE	CRWU 07-3008

20. Explosives Quantity/Distance Siting and Safety Clearance Criteria:
    a. Projects involving munitions storage and explosives related facilities.
    _X_ Project is not affected by Q/D criteria.
    ___ A request for waiver is under preparation. Expected completion date is _____.
    ___ Request to waiver safety criteria sent to MAJCOM on _____ (date).
    ___ Explosive siting and safety approval obtained on _____(date).
    b. Projects not involving explosives:
    _X_ Project is not within the Q/D Clear Zone of any existing or proposed explosive relative facility.
    ___ A request for waiver is under preparation. Expectation completion date is _____.
    ___ Exemption required and granted on _____ (date).
21. Air Base Survivability, Conventional Hardening, Chemical Protection Levels and Priorities, Camouflage, Concealment and Deception:
    _X_ Project does not affect airbase operability
    ___ Facility is sited or constructed in compliance with criteria contained in WMP-1
    ___ Waiver or exemption required; request submitted to MAJCOM Civil Engineer, in accordance with WMP-1.
    ___ Waiver or exemption granted on _____.
22. Allowance for Physically Handicapped:
    _X_ Project provides all design features for handicapped.
    ___ Project provides access and limited features.
    ___ Project provides access but no other features.
    ___ Design features for handicapped are not required.
    ___ Design features will not be provided for the following reason:_____
23. Real Estate Requirement (AFI 32-9001).
    _X_ Project does not require acquisition of real estate interest.
    ___ Project requires acquisition of a real estate interest over $200,000.
    ___ Land interest is to be acquired through minor land authority.
    ___ Other (explain):_____.
24. Facility Security (Antiterrorism/Force Protection and Resource Protection):
    ___ Threat assessment will be performed by the Office of Special Investigations. ECD:_____
    ___ Vulnerability assessment will be preformed by the Installation Security Council. ECD:_____
    _X_ Project includes programmed cost for Antiterrorism/Force Protection per the Interim DOD Antiterrorism/Force Protection Construction Standards, 19 Dec 99. Estimated cost was included in Block 9 of the DD Form 1391.
25. Excess Space:
    _X_ Excess space is not available to satisfy the requirement.
26. Temporary Facilities:
    ___ Temporary facilities are required for this project and will be demolished upon completion.
27. Communications:
    _X_ Project includes pre-wiring to include LAN, secure data, intercom, security systems and an external port to the base cable plant. Estimated equipment costs, to include routers, hubs, cable, switches, computers and telephone hand sets, were included in Block 12 of the DD Form 1391.

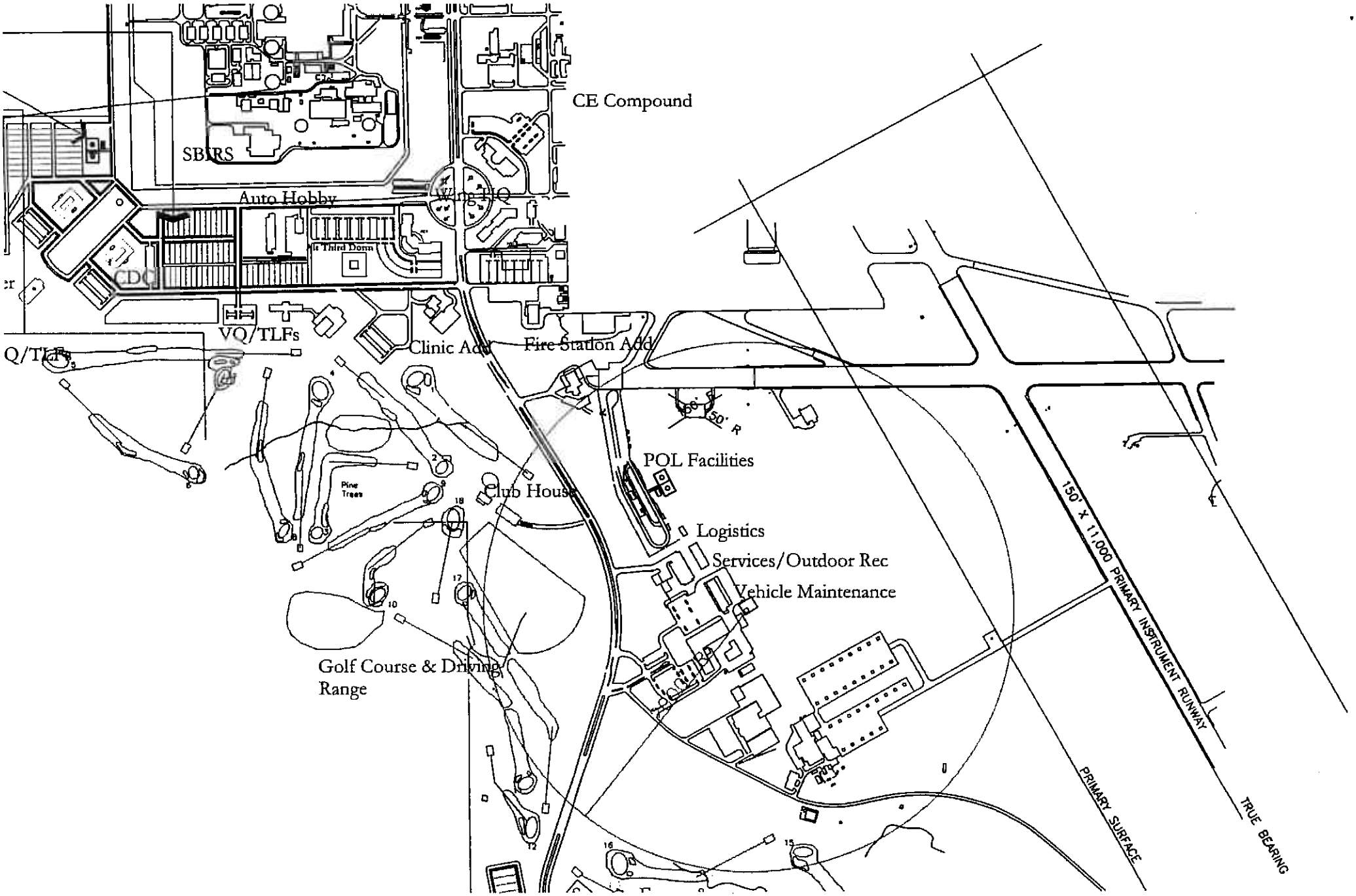
I concur with the above statements:

_____

Base Civil Engineer (date)

_____

Installation Commander (date)


CE Compound
SBIRS
Auto Hobby
Wing HQ
CDC
VQ/TLFs
Clinic Add
Fire Station Add
POL Facilities
Club House
Logistics
Services/Outdoor Rec
Vehicle Maintenance
Golf Course & Driving Range
150' x 11,000 PRIMARY INSTRUMENT RUNWAY
PRIMARY SURFACE
TRUE BEARING

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	CONSOLIDATED FUELS STORAGE

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT C
35996	124-135	CRWU073008	

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT
CONSOLIDATED FUELS FACILITY	LS		
POL FUEL TANKS	GA	420,000	3
PETROLEUM OPS BUILDING	SM	300	2,524
GOV FUELING STATION	SM	102	5,513
POL PUMPING STATION	SM	300	3,854
SUPPORTING FACILITIES			
UTILITIES	LS		
PAVEMENTS	LS		
SITE IMPROVEMENTS	LS		
SUBTOTAL			
TOTAL CONTRACT COST			
SUPERVISION, INSPECTION AND OVERHEAD (5.7 %)			
TOTAL REQUEST			
TOTAL REQUEST (ROUNDED)			

10. Description of Proposed Construction: Single-story structural steel frame with reinforced concrete foundation and floor slab for expansive soils. Brick exterior, finish system accents, and standing seam metal roof. Includes tanks, pumping stations, truck loading/unloading area, utility spaces, utilities, parking, access, site preparation, pre-wiring for communications and low-level Antiterrorism/Force Protection measures.

Air Conditioning: 125 KW.

11. REQUIREMENT: 700 SM ADEQUATE: 0 SM SUBSTANDARD: 425 SM

PROJECT: Construct a Consolidated Fuels Facility.

REQUIREMENT: Adequate fuel storage and distribution are required to accommodate the new development on Buckley Air Force Base concurrent with the establishment of a new active duty Air Base Wing. The SECAF and CSAF established Air Force Space Command as the installation host effective 1 October 2000 (ref Program Action Directive 00-01).

CURRENT SITUATION: The existing Fuels Storage Facility at Buckley AFB is rapidly deteriorated and in need of significant repair. This facility is also located in an incompatible land use area and needs to be relocated for safety concerns. Fuel trucks are currently required to travel clear across base from the fueling facility to the aircraft apron and back. This creates several traffic safety issues along with unnecessary additional environmental risks.

IMPACT IF NOT PROVIDED: If a new Fuels Storage Facility is not provided, the fueling trucks will need to continue driving around base creating traffic safety issues along with unnecessary environmental risks. The current facility will need to be repaired at a significant cost to the government. The incompatible land-use area will continue to plaque base development for years to come. It is imperative that a new Fuels Storage Facility be constructed to alleviate all these safety and environmental risks and allow

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	CONSOLIDATED FUELS STORAGE

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	124-135	CRWU073008	[redacted]

Buckley AFB to most efficiently use their limited land resources to stand up a new Air Base Wing.

ADDITIONAL: A preliminary analysis of reasonable options for accomplishingthis project (status quo, renovation, upgrade/removal, new construction, and/or leasing) was done. It indicates that only one option, new construction, will meet operational requirements. Because of this, a full economic analysis was not performed. A Certificate of Exception has been prepared. This project meets the criteria/scope specified in Part II of Military Handbook 1190, "Facility Planning and Design" and Air Force Handbook 32-1084, "Facility Requirements". Base Civil Engineer: Lt Col Alfred C. Scharff, 303.677.6501. Consolidated Fuels Facility: 700 SM = 7,535 SF. Size Supports 420,000 gallons.

JOINT USE CERTIFICATION: This facility is programmed for joint use with the Air National Guard; however, it is fully funded by the Air Force.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	CONSOLIDATED FUELS STORAGE

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	124-135	CRWU073008	[redacted]

12. SUPPLEMENTAL DATA:

a. Estimated Design Data:

(1) Status:

(a) Date Design Started	01-NOV-03
(b) Parametric Cost Estimates used to develop costs	YES
* (c) Percent Complete as of 01 JAN 2004	
* (d) Date 35% Designed	01-MAY-04
(e) Date Design Complete	01-SEP-04
(f) Energy Study/Life-Cycle analysis was/will be performed	NO

(2) Basis:

(a) Standard or Definitive Design -	NO
(b) Where Design Was Most Recently Used -	BUCKLEY

(3) Total Cost (c) = (a) + (b) or (d) + (e):	($000)
(a) Production of Plans and Specifications	[redacted]
(b) All Other Design Costs	[redacted]
(c) Total	[redacted]
(d) Contract	[redacted]
(e) In-house	0

(4) Construction Contract Award

(5) Construction Start 05 FEB

(6) Construction Completion

* Indicates completion of Project Definition with Parametric Cost Estimate which is comparable to traditional 35% design to ensure valid scope, cost and executability.

b. Equipment associated with this project provided from other appropriations:
N/A

REQUIREMENTS DOCUMENTS
FOR
HEADQUARTERS, AIR FORCE SPACE COMMAND

Environmental Report

Location: Buckley Air Force Base, Colorado
Site: Consolidated Services Facility
Date: April 2003

Table of Contents

1.0 INTRODUCTION 1

1.1 Purpose 1
1.2 Scope of Services 1

2.0 DOCUMENTS REVIEWED 1

3.0 INTERVIEWS CONDUCTED 2

4.0 SITE RECONNAISANCE OBSERVATIONS 3

5.0 FINDINGS 4

5.1 Areas of No Environmental Concern
5.2 Exceptions (Areas of Potential Environmental Concern)
5.3 Environmental Permits Required

List of Appendices

Appendix A Environmental Documentation Checklist

Appendix B Site Reconnaissance Checklist

Appendix C Site Reconnaissance Photographs

Appendix D Supporting Documentation

Tab 1 – ANG/CEVR. 2000. *Summary Document for IRP Sites 1 through 10 at Buckley ANGB,* Colorado. June.

Tab 2 – URS Corporation (URS). 2003b. *Preliminary Assessment Records Search and Asbestos Survey for Future Construction Sites*. Portions of Sections 2.1, 4, and 5. Figures 5.4 and 5.5. April.

Tab 3 – Merrick and Company (Merrick). 2002. Aerial Photograph.

Tab 4 – Colorado Aerial Photo Service. 1969. Aerial Photograph.

Tab 5 – National Archives and Records Administration Cartographic and Architectural Branch (NWCS). 1945. Aerial Photograph.

Tab 6 – Parsons, E.S. (Parsons). 2001. *Final Environmental Assessment for Buckley Air Force Base Military Construction*. Section 3.3.4 Sensitive Species. November.

Tab 7 – Colorado Division of Wildlife (CDOW). 2000. Web site containing information about the burrowing owl. http://wildlife.state.co.us/T&E/burrowingowl.htm. Cited 27 October 2000.

Tab 8 – Earth Tech, Inc. (Earth Tech). 2000. *Draft, Base-wide Environmental Baseline Survey, Buckley Air National Guard Base*. Section 3.5.2.2 Threatened and Endangered Species. March.

Tab 9 – U.S. Environmental Protection Agency (EPA). 2003. Web site containing EPA Map of Radon Zones in Colorado. www.epa.gov/iaq/radon/zonemap/colorado.htm. Cited 25 April 2003.

1.0 INTRODUCTION

1.1 Purpose

The purpose of this report is to identify areas of environmental concern that may influence the planned construction of the Consolidated Services Facility at Buckley Air Force Base (AFB). The exceptions presented in the findings may indicate that changes in construction methods, design, costs, or location should be considered due to the presence of site contamination or because of natural or cultural resource considerations.

1.2 Scope of Services

The scope of services for this review is provided in the Statement of Work to Develop Requirements Documents for Headquarters, Air Force Space Command, dated 4 March 2003, under Section 3, Required Services, Subsection 43.4.4.6.1. Included are a comprehensive records search, interviews with base environmental personnel, visual site inspection, and this report.

2.0 DOCUMENTS REVIEWED

The following documents were reviewed as part of this effort for the Consolidated Services Facility site at Buckley AFB:

- 460 CES/CEVP. 2003. *Supplemental Environmental Assessment Military Construction.* April.
- 460 CEC/CEC. 2002. *Buckley Air Force Base Vision 2020 Brochure*. September.
- Buckley AFB. 2003. Tank Inventory. April.
- ANG/CEVR. 2000. *Summary Document for IRP Sites 1 through 10 at Buckley ANGB, Colorado.* June.
- Colorado Aerial Photo Service. 1969. Aerial Photograph.
- Colorado Division of Wildlife (CDOW). 2000. Web site containing information about the burrowing owl. http://wildlife.state.co.us/T&E/burrowingowl.htm. Cited 27 October 2000.
- Colorado Historical Society. 2001. Base correspondence with the society. November.
- Earth Tech, Inc. (Earth Tech). 2000. *Draft, Base-wide Environmental Baseline Survey, Buckley Air National Guard Base.* March.
- Environmental Management Information System (EMIS). 2003. Chemical Inventory. April.
- Foothill Engineering Consultants, Inc. 2002. *Archeology Survey Review for Buckley Air Force Base, Aurora, Colorado*. January.
- Geo-Marine Inc. 2002a. *Burrowing Owl Nesting Locations, 2002 Season.*
- Geo-Marine Inc. 2002b. *Integrated Natural Resources Management Plan.* November.

- Lancaster, Ron. 2003. Personal communication via electronic mail, concerning the historical radon levels for Buckley AFB. April.
- Merrick and Company (Merrick). 2002. Aerial Photograph.
- National Archives and Records Administration Cartographic and Architectural Branch (NWCS). 1945. Aerial Photograph.
- Parsons, E.S. (Parsons). 2001. *Final Environmental Assessment for Buckley Air Force Base Military Construction.* November.
- Science Applications International Corporation (SAIC). 1995. *Installation Restoration Program, Remedial Investigation Report.* Vol. I. August.
- Stone and Webster Environmental Technology and Services. 1998. *Installation Restoration Program Draft Final Engineering Evaluation/Cost Analysis IRP Site 4*. July.
- URS Corporation (URS). 2003a. *Buckley Air Force Base Draft Hazardous Waste Management Plan.* April.
- URS. 2003b. *Preliminary Assessment Records Search and Asbestos Survey for Future Construction Sites*. April.
- U.S. Air Force (USAF). 2003. *Buckley Air Force Base Wetlands and Approximate 100-Year Flood Plain Map.*
- USAF. 2002. ECAMP Management Action Plans – Open Status Finding Report. August 8. Updated October 30, 2002.
- U.S. Environmental Protection Agency (EPA). 2003. Web site containing EPA Map of Radon Zones in Colorado. www.epa.gov/iaq/radon/zonemap/colorado.htm. Cited 25 April 2003.
- U.S Geologic Survey (USGS). 1965; Revised 1980. 7.5-Minute Topographic Map, Fitzsimmons, Colorado – Fitzsimmons Quadrangle.
- Wings Over the Rockies Air and Space Museum. 1942. Aerial Photograph.

Appendix A provides the completed Environmental Documentation Checklist for this site, which summarizes the information collected as part of the documents review.

3.0 INTERVIEWS CONDUCTED

The following interviews were conducted during the weeks of 14 and 21 April 2003, as part of this effort for the Consolidated Services Facility site at Buckley AFB:

- Bonola, Sue — Environmental Scientist, URS
- Cox, Dave — Project Engineer, URS
- Hatch, Floyd — Natural/Cultural Resources Manager, Buckley AFB
- Huber, Diana — Colorado Department of Public Health and Environment (CDPHE)
- Killberg, Glen — GIS, URS
- Lancaster, Ron — Environmental Compliance Manager, Buckley AFB

- Lobe, Melissa Project Engineer, URS
- Marusin, Wayne Deputy Base Civil Engineer, Buckley AFB
- Nicely, Charley Civil Engineer, Buckley AFB
- Olson, John Entomologist, Buckley AFB
- Sherva, Elise Planning Chief, Buckley AFB
- Spangler, Mark Environmental Restoration Manager, Buckley AFB

Information from interviews is cited as personal communication in this report and included where appropriate on the Environmental Documentation Checklist (Appendix A). This information has also been documented in Contact Records maintained in the project files.

4.0 SITE RECONNAISANCE

A visual reconnaissance was conducted at the site for the proposed Consolidated Services Facility at Buckley AFB on 22 April 2003. Copies of photographs taken during the reconnaissance are included in Appendix C. The site was observed by walking the site perimeter and transecting the internal areas of the property.

The proposed site is located in the northwestern portion of the base. There are no structures currently located on the site (Photo 5); however, foundations from World War II (WWII) era buildings were observed at the surface (Photo 2). Vegetation on the site consists of sparse, bunched grasses, which showed no visible signs of stress. Growth of vegetation was limited due to previous demolition and fill activities that took place on the site. An old fill and vent pipe was seen coming from the ground (Photo 4) and two concrete manhole covers were also observed on the site (Photo 6).

To the north of the site is a non-potable dump station (Photo 7). This should not present an environmental concern as it is up- or cross-gradient of the site. An aboveground power line was observed on site, but no transformers were found (Photo 8). Neighboring uses include a high security area and Breckenridge Avenue to the north, undeveloped land and A-Basin Avenue to the south (Photo 1), the Vehicle Maintenance Building to the west (Photo 8), and Building 606 to the east (Photo 5). A Disaster Preparedness shed is located to the northeast (Photo 3). Also to the east are six monitoring wells that are part of the IRP Site 4 investigation (Photo 1).

Appendix B contains the Site Reconnaissance Checklist, which provides documentation of observations made at the time of the visit. The following list summarizes potential areas of environmental concern noted during the reconnaissance, which are discussed in detail in the FINDINGS section below.

- Potential restriction due to IRP Site 4 monitoring wells, soil contamination, and proposed remediation activity (Photo 1).
- Possible asbestos containing soil from WWII building debris and associated underground piping (Photo 2).
- Buried utilities and former tank removal sites within the property boundary.
- Possible presence of black-tailed prairie dog and burrowing owl and possible seasonal presence of migratory birds (one nest observed in tree on site). Active burrows observed (Photo 8).

5.0 FINDINGS

The following presents URS' findings, based on the documents review, interviews, and site reconnaissance described above. The report first lists those areas where no environmental concerns or issues were identified. Additional information on these areas can be found in the checklists provided in Appendices A and B.

Next, the report discusses in more detail those findings that are considered exceptions, or areas of potential environmental concern. Supporting documentation for these is provided in the checklists and in Appendix D. Any photographs referenced in this discussion can be found in Appendix C.

Section 5.3 provides a list of environmental permits that may be required for the proposed construction and/or operation of the facility.

5.1 Areas of No Environmental Concern

- Hazardous Waste Generation/Storage/Disposal (RCRA)
- Hazardous Materials Storage/Use
- Solid Waste Disposal
- Wastewater Discharge
- Stormwater Discharge
- Drains/Sumps
- Pits, Ponds, Lagoons
- ASTs
- Spills or Releases (to soil, surface water, or groundwater)
- Illegal or Unauthorized Fill or Dumping
- PCBs
- Lead-Based Paint
- Range, UXO, Ordnance Activities
- Wetlands/Floodplains
- Cultural Resources
- Noise

5.2 Exceptions (Areas of Potential Environmental Concern)

EXCEPTION NO. 1 – Proximity to IRP Site 4

IRP Site 4, former Fire Training Area No. 3, is located to the east of the proposed Consolidated Services Facility (Photo 1). Six monitoring wells are in place and a long-term monitoring program is in effect for the IRP site. Groundwater contamination is presently within state drinking water standards (Lobe, personal communication). The presence of volatile organic compounds (VOCs) and total extractable petroleum hydrocarbons (TEPH) in the top 6 feet of soil has been identified (ANG/CEVR 2000, Tab 1).

A previous remedial investigation (RI) report recommended a non-time-critical source removal action for the soil within the Fire Training Area burn pit (ANG/CEVR 2000, Tab 1). A work plan is currently in place to further delineate the extent of soil contamination (URS 2003b, Tab 2). This plan involves the excavation of 12 test pits to perform headspace analysis and soil sampling. Construction activities at the proposed Consolidated Services Facility site must take into consideration the remediation activities scheduled to occur at IRP Site 4.

EXCEPTION NO. 2 – Potential Asbestos-Containing Debris and Piping

Based on site reconnaissance and review of historic aerial photographs, post-WWII buildings that had been constructed for troop housing and training on the proposed building area were demolished (Merrick 2002, Tab 3; Colorado Aerial Photo Service 1969, Tab 4; NWCS 1945, Tab 5). The location of the debris is generally unknown. During the site reconnaissance, building foundations and construction and demolition (C&D) debris were observed on the site (Photo 2). Review of a recent geophysical survey identified buried piping and storage tank remains in the subsurface, which will need to be addressed during the design phase of this project (Photo 4) (URS 2003b, Tab 2, Figure 5-5).

The wide use of asbestos before 1980 contributes to a concern that the demolition debris that was buried or spread may have contained asbestos. A work plan has been proposed by URS to conduct asbestos soil sampling on the site (URS 2003b, Tab 2). The sampling timeframe is currently unknown.

EXCEPTION NO. 3 – Potential Black-Tailed Prairie Dog and Burrowing Owl Habitat; Nesting Birds

There are no endangered species currently on the site; however, the site is potential habitat for black-tailed prairie dog and burrowing owl. The burrowing owl is protected by the Migratory Bird Treaty Act of 1912 and is currently listed as a state-threatened species (Parsons 2001, Tab 6). Construction phases may be interrupted if they are scheduled to occur during the owls' breeding season. Evidence of prairie dog activity was observed during site reconnaissance indicating the potential for owl nesting sites (CDOW 2000, Tab 7; Earth Tech 2000, Tab 8) (Photod 2 and 9). Also, a bird nest was observed in a tree on the site. Surveys should be taken prior to the start of construction.

EXCEPTION NO. 4 – Elevated Radon Levels

Radon levels at Buckley AFB are considered to be in the medium range. Depending on the construction type of the facility, radon levels may need to be considered. Historically, radon levels at Buckley AFB have been between 1 and 4 pCi/L (Lancaster, personal communication), which is considered in the "medium" range. EPA lists Buckley AFB in an area of highest potential for radon decay (greater than 4 pCi/L) (EPA 2003, Tab 9).

5.3 Environmental Permits Required

Based on URS' current understanding of the proposed facility construction and operation, the following environmental permit is expected to be required:

- Stormwater – Small Construction Permit

Appendix A

ENVIRONMENTAL DOCUMENTATION CHECKLIST

ENVIRONMENTAL DOCUMENTATION CHECKLIST

Location: Buckley Air Force Base
Site: Consolidated Services Facility
Project No.: 36291163.30001

Date: 4/23/03
URS Staff: Wesley Toland
Phone No.: 303-740-3807

1. UST and AST histories, closures, uses, testing.

   All USTs removed with the exception of Bldg. 601, which is currently inactive. An unknown quantity of diesel was released from an AST at Bldg. 850 (Earth Tech, 2000). AST locations: Bldg. 340 – 2000L used oil; Bldg. 341 – 4000gal diesel, 4000gal gasoline, 6000gal diesel, 6000gal gasoline (Buckley Air Force Base, 2003). These tanks are downgradient from proposed construction and will not create an environmental concern on the site (U.S. Geologic Survey, 1965). Two USTs have been removed from the site. No contamination from these tanks has been identified. Underground piping was left in the soil at the time of this removal (URS, 2003b). There may be residual contamination associated with the underground piping.

2. Landfill data

   No landfills present on site. Potential for asbestos containing material (ACM) exists in soil due to demolition of World War II (WWII) vintage buildings (Sherva, personal communication). (See *Asbestos Records*)

3. Spill history data / Incident reports

   In 1997, 30-50gal of hydraulic fluid was spilled west of Bldg. 600 on Aspen Drive. Absorbent material was applied to the spill area and it should not affect the proposed construction site (Earth Tech, 2000). No current spills database exists for Buckley AFB. There are no known spills or releases that would affect the construction site, with the exception of IRP Site 4. Chronic spills have occurred north of site (Lancaster, personal communication). These will not affect the proposed construction location.

4. SPCC Plans

   Wash racks located in Bldg. 340 & 806. No releases documented. An oil water separator is located in Bldg. 340, 806. No releases documented (Earth Tech, 2000).

5. RCRA Records

   (See *Hazardous Waste Management Plan*)

6. Asbestos Records

   Asbestos-coated piping associated with structures that formerly occupied the northwestern portion of Buckley AFB has been identified. No removal activities have taken place. Asbestos survey conducted in 1999. No ACM identified in Bldg. 340, 600, & 344 (Earth Tech, 2000). World War II (WWII) vintage buildings were on site in 1945 (National Archives and Records Administration Cartographic and Architectural Branch (NWCS), 1945). These buildings were demolished during the late 1940s and early 1950s (URS, 2003b). The building materials were removed from the site, leaving the foundations behind (Sherva, personal communication). There exists a potential for asbestos containing materials (ACM) in the soil. Sampling is currently scheduled for the

site and an asbestos survey draft work plan has been submitted (URS, 2003b)(Spangler, personal communication).

7. PCB Records

   Buckley is considered a PCB-free facility (Earth Tech, 2000). No PCBs are located on the proposed construction site (Lancaster, personal communication).

8. CERCLA activities

   (See *Environmental Restoration Activities)*

9. Monitoring and water well data records from site and ½ mile radius

   Six monitoring wells are located at IRP Site 4 east of the proposed construction site and groundwater is identified as flowing to the northwest. Depth to groundwater is approximately 40 feet (Stone and Webster Environmental Technology and Services, 1998). See *Environmental Restoration Activities* below for more details.

10. Environmental Restoration activities within ¼ mile of site

    The proposed construction site is located adjacent to IRP Site 4, which was used as a fire training area from 1972 to 1989. Groundwater monitoring results show all contaminant levels within state drinking water standards (Stone and Webster Environmental Technology and Services, 1998; Lobe, personal communication) and should not pose a concern for the proposed construction. However, VOCs and TEPH have been identified in the soil at IRP Site 4 at depths of up to 6 feet. The Colorado Department of Public Health and Environment (CDPHE) recommended a non-time critical source removal action for the soil and recommends a Feasibility Study (FS) and remedial action plan (ANG/CEVR, 2000). Further soil samples are planned to delineate the extent of soil contamination. The proposed construction site is also identified as containing potential ACM. An asbestos survey draft work plan has currently been submitted for approval to the 460th Air Base Wing (URS, 2003b).

11. Environmental Baseline Surveys

    Draft Basewide Environmental Baseline Survey, March 2000 (Reviewed – April 23, 2003)

12. Pesticide Applications

    Pesticides are stored in Bldg. 306, which is kept locked. Access is available only by Civil Engineering personnel (Earth Tech, 2000). Bldg. 306 is most likely downgradient from the proposed construction site. There have not been any persistent pesticides/herbicides used on or around the proposed building area (Olson, personal communication).

13. Threatened and Endangered Species

    There are no endangered species; however, this potential construction site is located in an area that may be potential black-tailed prairie dog habitat. Burrowing owls are common wherever there are prairie dogs and are known to occur on base. Burrowing owls are a State threatened species and are also protected by the Migratory Bird Treaty Act of 1912. Owl habitats are not to be disturbed during breeding season, which is believed to be in August (Parsons, E.S., 2001). Migratory birds may occasionally be found in area. Bald eagles, golden eagles, and raptors also have been seen on Buckley AFB. No sightings have been recorded of the Prebles meadow jumping mouse at Buckley AFB and no

potential Prebles habitat exists on the proposed construction site. No endangered plant species have been identified on site (Hatch, personal communication)(Geomarine Inc., 2002a).

14. Environmental Permits

There are no current applicable environmental permits for this site.

15. Chemical Inventory/MSDS for materials used at the site or at adjacent facilities

Chemical inventory from AF-EMIS reviewed for Bldg. 340, which is adjacent to proposed site. Based on the location of the site and review of the chemicals used, the site is determined to pose no environmental concern on the proposed construction site (Environmental Management Information System, 2003). No hazardous materials are currently being used on the site (Site Reconnaissance, April 22, 2003).

16. Hazardous Waste Management Plan

A hazardous waste initial accumulation point (IAP) exists in Building 340 and universal waste accumulation points (UAP) exist in Bldg. 340 and 620. No satellite accumulation points or hazardous waste generators are found on the proposed site (URS, 2003a)(Site Reconnaissance, April 22, 2003).

17. Lead Based Paint Surveys and records

No buildings are on the property or nearby that potentially could contain LBP. Adjacent Bldg. 340 was constructed after 1978 and does not contain LBP (Earth Tech, 2000)(Lancaster, personal communication).

18. Transformer Inventory

Power for the base is from Public Service. Transformers are pad mounted and installed adjacent to buildings. Some are unit substation dry in vaults (Earth Tech, 2000). No transformers on site (Site Reconnaissance, April 22, 2003)(Lancaster, personal communication).

19. Wetlands assessments (floodplains)

The site is not located within a wetland or 100-year floodplain (USAF, 2003).

20. Historical/Archeological Surveys and requirements

No issues or concerns have been identified for prehistoric sites or traditional cultural resources on the proposed site (Earth Tech, 2000)(Hatch, personal communication).

21. Applicable EAs/EISs

Supplemental Environmental Assessment Military Construction. April. 2003.
Integrated Natural Resources Management Plan. November, 2002.
Final Environmental Assessment for Buckley Air Force Base Military Construction. November, 2001. (Reviewed – April 24, 2003)

22. ECAMPs

There were no indications in the recent ECAMP that would indicate problems or releases concerning the proposed construction area (USAF, 2002)

23. Radon Surveys and Records
    Radon sampling results were not available for review (Earth Tech, 2000). Radon levels at the base are in an area of highest potential for radon gas decay (levels that are above 4 pCi/L) (US EPA, 2003). Past site building surveys for radon indicated that levels were at and slightly below 4 pCi/L (Lancaster, 2003).

24. Migratory Birds
    The burrowing owl is known to occur on base nesting in abandoned black-tailed prairie dog holes. The owl is covered under the Migratory Bird Treaty Act of 1912. Owl habitats are not to be disturbed during breeding season, which is believed to be in August (Parsons, E.S., 2001)(Hatch, personal communication).

25. Range, UXO, ordnance activities or proximity
    No range or ordinance activities on site or proximity (Site Reconnaissance, April 22, 2003).

26. Fueling Station history
    No fueling stations located on site (Site Reconnaissance, April 22, 2003).

27. **Building Plans

28. **Site Map
    Please see attachment for site map

29. **Master Plan

30. **Historic Aerial Photos and Plans
    Provided by Glen Killberg (URS) for 1945, 1969, and 2002. No other aerials are available (Sherva, personal communication).

31. **Geotechnical Studies
    See engineering section

32. **Pipeline data and maps
    See engineering section

33. **Underground utility data
    See engineering section

34. **Real Property Records
    See engineering section

35. **Easement Data and Maps
See engineering section

Sources:

Draft Basewide Environmental Baseline Survey, March 2000
Buckley AFB Wetlands and Approximate 100 Year Flood Plain Map. April, 2003
AF-EMIS Chemical Inventory, April 2003
Glen Killberg, URS Corporation, April 14, 2003
Elise Sherva, Buckley AFB, April 21, 2003
Mark Spangler, Buckley AFB, April 21, 2003
Floyd Hatch, Buckley AFB, April 21, 2003
Burrowing Owl Nesting Locations 2002 Season, Final Draft
Buckley AFB Tank Inventory, April 2003
Draft Final Engineering Evaluation/Cost Analysis IRP Site 4. July 1998
Summary Document for IRP Sites 1-10, at Buckley ANGB, Colorado. June 15, 2000.
Fitzsimmons Quadrangle, 1965
Melissa Lobe, URS Corporation, April 24, 2003
Ron Lancaster, Buckley AFB, April 23, 2003
Buckley Air Force Base Draft Hazardous Waste Management Plan. April, 2003
Site Reconnaissance, April 22, 2003
John Olson, Pest Management, Buckley AFB, April 23, 2003
Final Environmental Assessment for Buckley Air Force Base Military Construction. November, 2001.
Supplemental Environmental Assessment Military Construction. April. 2003.
Integrated Natural Resources Management Plan. November, 2002.
Preliminary Assessment Records Search and Asbestos Survey for Future Construction Sites Draft 2003
Ron Lancaster email concerning the historical radon levels for the base. April, 2003
ECAMP Management Action Plans - Open Status Finding Report, 2002
Merrick and Company. 2002. Aerial Photograph.
Colorado Aerial Photo Service. 1969. Aerial Photograph.
National Archives and Records Administration Cartographic and Architectural Branch (NWCS). 1945. Aerial Photograph.
Wings Over the Rockies Air and Space Museum. 1942. Aerial Photograph.

** Duplicated on Engineering Documentation Checklist

Appendix B

SITE RECONNAISSANCE

SITE RECONNAISANCE CHECKLIST

Location: Buckley Air Force Base
Site: Consolidated Services Facility

Date: 4/22/03
URS Staff: Jessica Myklebust
Phone No.: 303-740-3972

Method(s) Used to Observe Property: grid survey method, walked area by transects

Access/Observation Limitations: were not able to take photos directly north due to restrictions on photographing radomes

1. Land uses North
   Radomes secure area, 2nd swiss, disaster preparedness shed (Photo 3)

2. Land uses East
   Building 606; IRP Site 4 (Photo 5)

3. Land uses South
   Unused open space (Photo 1)

4. Land uses West
   Vehicle Maintenance Building, road, ditch with water flowing on north end and west side (Photo 8)

5. Current Condition of Project Site (site topography, surface hydrology, vegetation, improvements, abandonments)
   Dirt, various sporadic weeds, flat trees (few), brick structures on the ground, old building foundations (Photo 2). Cactus. Prairie dog holes, bird nest in tree (old). Utility line above ground.

6. Asbestos, PCBs, mercury, lead based paint issues with any structures needing to be demolished (observation only, no sampling)
   None

7. Proximity to range, ordnance storage, fuel storage, runways, engine blast areas, etc
   West – maintenance shed
   Old fill/vent pipe remains coming out of ground (Photo 4).

8. Noise generators or receptors
   None

9. Refuse, trash, or evidence of dumping or waste disposal activities
   Various concrete chunks, blocks, building imprints (Photo 2)
   Old rusty pipes coming out of ground (Photo 4)

10. Evidence of imported fill
    Wood chips to west, fill in and around building imprints

11. Soil staining, vegetation abnormalities, evidence of spills
    None

12. Environmental remedial actions within 200 feet of project boundary
    IRP 4 – present monitoring (Photo 1)

13. Verify drains, sumps, inlets, manholes
    Two concrete covered circle manholes (Photo 6). Possibly a sewer.
    Non-potable dump station pump to north, drain by pump (Photo 7)

14. Verify evidence of tanks (UST & AST)
    See Photo 4 – vent, pipe, and fill pipe

15. Verify location of vaults, utility access points
    None

16. Verify presence/absence of drums and containers
    None

17. Verify and document pits, ponds, lagoons, wetlands
    None

18. Verify storm water flow origins and flow paths
    Gently to northwest

19. Verify and document wells
    6 MW – to east bordering proposed area

20. Verify pipeline indicators
    None

Appendix C

SITE RECONNAISSANCE PHOTOGRAPHS

Photo 1 – Looking south across site toward monitoring wells

Photo 2 – C & D debris from WWII vintage buildings looking west across site

Photo 3 – Disaster Preparedness shed northwest of site

Photo 4 – Vent pipe and concrete C & D debris

Photo 5 – Looking east across the site toward Building 606

Photo 6 – Concrete manhole cover on site

Photo 7 – Non-potable dump station located north of the site

Photo 8 – Looking west across site toward Vehicle Maintenance Building

Appendix D

SUPPORTING DOCUMENTATION

Tab 1 – ANG/CEVR. 2000. *Summary Document for IRP Sites 1 through 10 at Buckley ANGB*, Colorado. June.

Tab 2 – URS Corporation (URS). 2003b. *Preliminary Assessment Records Search and Asbestos Survey for Future Construction Sites*. Portions of Sections 2.1, 4, and 5. Figures 5.4 and 5.5. April.

Tab 3 – Merrick and Company (Merrick). 2002. Aerial Photograph.

Tab 4 – Colorado Aerial Photo Service. 1969. Aerial Photograph.

Tab 5 – National Archives and Records Administration Cartographic and Architectural Branch (NWCS). 1945. Aerial Photograph.

Tab 6 – Parsons, E.S. (Parsons). 2001. *Final Environmental Assessment for Buckley Air Force Base Military Construction*. Section 3.3.4 Sensitive Species. November.

Tab 7 – Colorado Division of Wildlife (CDOW). 2000. Web site containing information about the burrowing owl. http://wildlife.state.co.us/T&E/burrowingowl.htm. Cited 27 October 2000.

Tab 8 – Earth Tech, Inc. (Earth Tech). 2000. *Draft, Base-wide Environmental Baseline Survey, Buckley Air National Guard Base*. Section 3.5.2.2 Threatened and Endangered Species. March.

Tab 9 – U.S. Environmental Protection Agency (EPA). 2003. Web site containing EPA Map of Radon Zones in Colorado. www.epa.gov/iaq/radon/zonemap/colorado.htm. Cited 25 April 2003.

REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS

Report Control Symbol
CRWU063003

INSTRUCTIONS: *Section I to be completed by Proponent; Sections II and II to be completed by Environmental Planning Function. Continue on Separate Sheets as necessary. Reference appropriate item number(s).*

SECTION I - PROPONENT INFORMATION

1. TO (Environmental Planning Function)	2. FROM (Proponent organization and functional address symbol)	2a. TELEPHONE NO.
460 CES/CEV	460 CES/CEC	303-677-6819

3. TITLE OF PROPOSED ACTION
Leadership Development Center

4. PURPOSE AND NEED FOR ACTION (*Identify decision to be made and need date).*
Construct a 17,631 SF Leadership Development Center. The facility is required to provide space for large meetings with video teleconferencing and the capability to serve catered meals in support of large meetings. The project is required to reduce the number of meetings that are repeated or held off base. Construction start required by Nov 2004.

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPPA) (Provide sufficient details for evaluation of the total action.
See attached

6. PROPONENT APPROVAL (*Name and Grade*)	6a. SIGNATURE	6b. DATE
Charles Nicely, GS-11	C Nicely	7 Jan 2003

SECTIONII - PRELIMINARY ENVIRONMENTAL SURVEY. (*Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = Unknown effect.*	+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (*Noise, accident potential, encroachment, etc.*)		X		
8. AIR QUALITY (*emissions, attainment status, state implementation plan, etc.)* Fugitive dust during construction;			X	
9. WATER RESOURCES (Quality, quantity, source, etc.) Stormwater during and after construction			X	
10. SAFETY AND OCCUPATIONAL HEALTH (*Asbestos/radiation/chemical exposure, explosives safety quantity-distance, etc.)* Safety During construction			X	
11. HAZARDOUS MATERIALS/WASTE (*Use/storage/generation, solid waste, etc*). Use of hazardous materials during construction.			X	
12. BIOLOGICAL RESOURCES (*Wetlands/floodplains, flora, fauna, etc)* Potential adverse effects to prairie dogs and/or burrowing owls.			X	
13.CULTURAL RESOURCES (*Native American burial sites, archeological, historical, etc.)*		X		
14.GEOLOGY AND SOILS (*Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)*		X		
15.SOCIOECONOMIC (*Employment/population projections, school and local fiscal impacts, etc.)* Assuming the additional employees currently reside in the local commuting area.		X		
16.OTHER (*Potential impacts not addressed above.)*		X		

SECTION III - ENVIRONMENTAL ANALSIS DETERMINATION

17.
- [ ] PROPOSED ACTION CUALIFIES FOR A CATEGORICAL EXCLUSION (CATEX #) _____: OR
- [X] PROPOSED ACTION DOES NOT QULIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALSIS IS REQUIRED.

18. REMARKS

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (*Name and Grade*)	19a. SIGNATURE	19b. DATE
Elise L. Sherva, GS-12	E Sherva	1/8/03

AF Form 813 Continuation

Project Title: Leadership Development Center

Proposed Action: Construct a 17,361 SF Leadership Development Center. Less than 10 new employees would be employed at this facility. Additional paved parking area would be required to support facility users. The facility is expected to accommodate up to 600 meeting attendees. It would have a food preparation area to support catering. The proposed location is south of the planned Wing Headquarters as depicted on the Base General Plan.

No Action Alternative: Do not construct a new Leadership Development Center. Meetings would continue to be held at the Air National Guard Facility per their scheduled activities.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	LEADERSHIP DEVELOPMENT CENTER

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	610-249	CRWU063003	

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT
LEADERSHIP DEVELOPMENT CENTER	LS		
LEADERSHIP DEVELOPMENT CTR	SM	1,638	2,152
ANTITERRORISM FORCE DEVELOPMENT	SM	1,638	25
INTERIOR COMMUNICATIONS SUPPORT	LS		
SUPPORTING FACILITIES			
UTILITIES	LS		
PAVEMENTS	LS		
SITE IMPROVEMENTS	LS		
EXTERIOR COMMUNICATIONS SUPPORT	LS		
SPECIAL FOUNDATIONS FOR EXPANSIVE SOILS	LS		
SUBTOTAL			
TOTAL CONTRACT COST			
SUPERVISION, INSPECTION AND OVERHEAD (6.5 %)			
TOTAL REQUEST			
TOTAL REQUEST (ROUNDED)			
EQUIPMENT FROM OTHER APPROPRIATIONS (NON-ADD)			

10. Description of Proposed Construction: Single-story steel frame structure with reinforced concrete foundation and slab for expansive soils, split face concrete masonry unit (CMU) exterior and standing seam metal/single ply roof. Includes utilities, parking, road access, site improvements, pre-wiring for voice and local area networks, and minimum DoD force protection standards.

Air Conditioning: 289 KW.

11. REQUIREMENT: 6,198 SM ADEQUATE: 4,560 SM SUBSTANDARD: 0 SM

PROJECT: Construct a Leadership Development Center. (New Mission)

REQUIREMENT: The Secretary of the Air Force and the Chief of Staff of the Air Force designated Air Force Space Command as installation host at Buckley AFB effective October 2000. The 460th Air Base Wing stood up effective October 2001. An adequate Leadership Development Center is essential for providing Wing and supported organizations with space for conducting leadership development activities, similar large meetings, and video teleconferences. The structure will include dividable meeting and video teleconferencing space for up to 450 personnel. A kitchen capable of supporting the catering requirements of large meetings and official military functions is required. Due to the nature of supported missions at Buckley AFB, secure telecommunications and a facility having antiterrorist/force protection features are required.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	LEADERSHIP DEVELOPMENT CENTER

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	610-249	CRWU063003	[redacted]

CURRENT SITUATION: Adequate facilities capable of hosting large meetings and video teleconferences are not available on base. Many of the supported organizations have missions that impact national security. Metro area facilities are not equipped with required secure telecommunications and do not provide the level of security required for hosting meetings concerning such missions. Large leadership development sessions are held in on-base facilities that are not sized to accommodate all attendees in a single session. Inadequately sized facilities require that meetings be replicated to provide all attendees an opportunity to interact with presenters. Such repetition is inefficient and costly. Many Wing hosted meetings are either held off post or are held at inadequate facilities borrowed from the ANG. Leadership Development facilities at bases outside the Metro area have limited availability and involve unacceptable travel times. Due to inadequate facilities, Officers, Non-Commissioned Officers, and civilian employees are missing valuable leadership development opportunities that are afforded personnel at more established bases.

IMPACT IF NOT PROVIDED: Officers, Non-Commissioned Officers, and civilian employees will continue to miss valuable leadership development opportunities. Personnel will expend additional time away from work in order to travel outside the metro area to attend leadership development functions, teleconferences, and other large meetings. Visiting personnel attending on-base meetings will expend excessive time seeking lunch at limited on base or at distant off base eateries. Wing hosted meetings, awards banquets, hail and farewells, and holiday events will continue to be held either off-base or at borrowed on-base facilities with décor, furnishings and kitchen capabilities that present formidable challenges.

ADDITIONAL: There are no criteria in AF Handbook 32-1084 for this facility. Criteria/Scope for the facility are based upon building codes for planned occupancy loads. A preliminary analysis of reasonable options for accomplishing this project to include status quo, renovation, upgrade/removal, new construction, and lease was completed. It indicates there is only one option that will satisfy statutory requirements and meet operational constraints. Because of this a full economic analysis was not performed. A Certificate of waiver has been prepared. Base Civil Engineer: Lt Col Alfred C. Scharff, (303) 677-6501. Leadership Development Center: 1,638 SM = 17,631 SF

JOINT USE CERTIFICATION: This facility is programmed for joint use with the Army, Navy and Marine Corps; however, it is fully funded by the Air Force.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	LEADERSHIP DEVELOPMENT CENTER

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	610-249	CRWU063003	5,300

12. SUPPLEMENTAL DATA:

a. Estimated Design Data:

(1) Status:

(a) Date Design Started	01-NOV-03
(b) Parametric Cost Estimates used to develop costs	YES
* (c) Percent Complete as of 01 JAN 2004	
* (d) Date 35% Designed	01-MAY-04
(e) Date Design Complete	01-AUG-04
(f) Energy Study/Life-Cycle analysis was/will be performed	NO

(2) Basis:

(a) Standard or Definitive Design -	NO
(b) Where Design Was Most Recently Used -	

(3) Total Cost (c) = (a) + (b) or (d) + (e):

(a) Production of Plans and Specifications	[redacted]
(b) All Other Design Costs	[redacted]
(c) Total	[redacted]
(d) Contract	[redacted]
(e) In-house	[redacted]

(4) Construction Contract Award

(5) Construction Start

(6) Construction Completion

* Indicates completion of Project Definition with Parametric Cost Estimate which is comparable to traditional 35% design to ensure valid scope, cost and executability.

b. Equipment associated with this project provided from other appropriations:

EQUIPMENT NOMENCLATURE	PROCURING APPROPRIATION	FISCAL YEAR APPROPRIATED OR REQUESTED	COST ($000)
SYSTEMS FURNITURE	3400	2005	[redacted]
CHAIRS/TABLES	3400	2005	[redacted]
COMMUNICATIONS EQUIPMENT	3080	2005	[redacted]
KITCHEN EQUIPMENT	3400	2005	[redacted]

REQUIREMENTS DOCUMENTS
FOR
HEADQUARTERS, AIR FORCE SPACE COMMAND

Environmental Report

Location: Buckley Air Force Base, Colorado
Site: Leadership Development Center
Date: April 2003

Table of Contents

1.0 INTRODUCTION 1

1.1 Purpose 1
1.2 Scope of Services 1

2.0 DOCUMENTS REVIEWED 1

3.0 INTERVIEWS CONDUCTED 1

4.0 SITE RECONNAISANCE OBSERVATIONS 1

5.0 FINDINGS 1

5.1 Areas of No Environmental Concern
5.2 Exceptions (Areas of Potential Environmental Concern)
5.3 Environmental Permits Required

List of Appendices

Appendix A Environmental Documentation Checklist

Appendix B Site Reconnaissance Checklist

Appendix C Site Reconnaissance Photographs

Appendix D Supporting Documentation

Tab 1 – 460 CES/CEVP. 2003. *Draft Addendum to Supplemental Environmental Assessment Military Construction.* April.

Tab 2 – Geo-Marine Inc. (Geo-Marine). 2003. *Proposed 460th Wing Headquarters/Former Skeet Range Features.* April.

Tab 3 – Buckley Air Force Base (AFB). Aerial Photographs from 1942, 1969, and 2002.

Tab 4 – URS Corporation (URS). 2003b. *Preliminary Assessment Records Search and Asbestos Survey for Future Construction Sites*. Portions of Sections 2.1 and 5.5.10. April.

Tab 5 – Parsons, E.S. (Parsons). 2001. *Final Environmental Assessment for Buckley Air Force Base Military Construction.* Section 3.3.4 Sensitive Species. November.

Tab 6 – Colorado Division of Wildlife (CDOW). 2000. Web site containing information about the burrowing owl. http://wildlife.state.co.us/T&E/burrowingowl.htm. Cited 27 October 2000.

Tab 7 – Earth Tech, Inc. (Earth Tech). 2000. *Draft, Base-wide Environmental Baseline Survey, Buckley Air National Guard Base.* Section 3.5.2.2 Threatened and Endangered Species. March.

Tab 8 – U.S. Environmental Protection Agency (EPA). 2003. Web site containing EPA Map of Radon Zones in Colorado. www.epa.gov/iaq/radon/zonemap/colorado.htm. Cited 25 April 2003.

1.0 INTRODUCTION

1.1 Purpose

The purpose of this report is to identify areas of environmental concern that may influence the planned construction of the Leadership Development Center at Buckley Air Force Base (AFB). The exceptions presented in the findings may indicate that changes in construction methods, design, costs, or location should be considered due to the presence of site contamination or because of natural or cultural resource considerations.

1.2 Scope of Services

The scope of services for this review is provided in the Statement of Work to Develop Requirements Documents for Headquarters, Air Force Space Command, dated 4 March 2003, under Section 3, Required Services, Subsection 43.4.4.6.1. Included are a comprehensive records search, interviews with base environmental personnel, visual site inspection, and this report.

2.0 DOCUMENTS REVIEWED

The following documents were reviewed as part of this effort for the Leadership Development Center site at Buckley AFB:

- 460 CES/CEVP. 2003. *Supplemental Environmental Assessment Military Construction.* April.
- 460 CEC/CEC. 2002. *Buckley Air Force Base Vision 2020 Brochure*. September.
- Buckley AFB. 2003. Tank Inventory. April.
- ANG/CEVR. 2000. *Summary Document for IRP Sites 1 through 10 at Buckley ANGB, Colorado.* June.
- Colorado Aerial Photo Service. 1969. Aerial Photograph.
- Colorado Division of Wildlife (CDOW). 2000. Web site containing information about the burrowing owl. http://wildlife.state.co.us/T&E/burrowingowl.htm. Cited 27 October 2000.
- Colorado Historical Society. 2001. Base correspondence with the society. November.
- Earth Tech, Inc. (Earth Tech). 2000. *Draft, Base-wide Environmental Baseline Survey, Buckley Air National Guard Base.* March.
- Environmental Management Information System (EMIS). 2003. Chemical Inventory. April.
- Foothill Engineering Consultants, Inc. 2002. *Archeology Survey Review for Buckley Air Force Base, Aurora, Colorado*. January.
- Geo-Marine Inc. (Geo-Marine) 2002a. *Burrowing Owl Nesting Locations, 2002 Season*.
- Geo-Marine. 2002b. *Integrated Natural Resources Management Plan.* November.

- Geo-Marine. 2003. *Proposed 460th Wing Headquarters/Former Skeet Range Features.* April.
- Lancaster, Ron. 2003. Personal communication via electronic mail; concerning the historical radon levels for Buckley AFB. April.
- Merrick and Company (Merrick). 2002. Aerial Photograph.
- National Archives and Records Administration Cartographic and Architectural Branch (NWCS). 1945. Aerial Photograph.
- Parsons, E.S. (Parsons). 2001. *Final Environmental Assessment for Buckley Air Force Base Military Construction.* November.
- Science Applications International Corporation (SAIC). 1995. *Installation Restoration Program, Remedial Investigation Report.* Vol. I. August.
- URS Corporation (URS). 2003a. *Buckley Air Force Base Hazardous Waste Management Plan.* April.
- URS. 2003b. *Preliminary Assessment Records Search and Asbestos Survey for Future Construction Sites*. April.
- U.S. Air Force (USAF). 2003. *Buckley Air Force Base Wetlands and Approximate 100-Year Flood Plain Map.*
- USAF. 2002. ECAMP Management Action Plans – Open Status Finding Report. August 8. Updated October 30, 2002.
- U.S. Environmental Protection Agency (EPA). 2003. Web site containing EPA Map of Radon Zones in Colorado. www.epa.gov/iaq/radon/zonemap/colorado.htm. Cited 25 April 2003.
- U.S Geologic Survey (USGS). 1965; Revised 1980. 7.5-Minute Topographic Map, Fitzsimons, Colorado – Fitzsimons Quadrangle.
- USGS. 1966; Revised 1978. 7.5-Minute Topographic Map, Coal Creek, Colorado – Coal Creek Quadrangle.
- Wings Over the Rockies Air and Space Museum. 1942. Aerial Photograph.

Appendix A provides the completed Environmental Documentation Checklist for this site, which summarizes the information collected as part of the documents review.

3.0 INTERVIEWS CONDUCTED

The following interviews were conducted during the week of 21-25 April 2003 as part of this effort for the Leadership Development Center site at Buckley AFB:

- Bonola, Sue — Senior Environmental Scientist, URS
- Cox, Dave — Project Engineer, URS
- Hatch, Floyd — Natural/Cultural Resources Manager, Buckley AFB
- Huber, Diana — Colorado Department of Public Health and Environment (CDPHE)
- Killberg, Glen — GIS, URS

- Lancaster, Ron Environmental Compliance Manager, Buckley AFB
- Lobe, Melissa Project Engineer, URS
- Marusin, Wayne Deputy Base Civil Engineer, Buckley AFB
- Nicely, Charley Civil Engineer, Buckley AFB
- Olson, John Entomologist, Buckley AFB
- Sherva, Elise Planning Chief, Buckley AFB
- Spangler, Mark Environmental Restoration Manager, Buckley AFB

Information from interviews is cited as personal communication in the report and included, where appropriate, on the Environmental Documentation Checklist (Appendix A) and has been documented in Contact Records maintained in the project files.

4.0 SITE RECONNAISANCE

A visual reconnaissance was conducted at the site for the proposed Leadership Development Center at Buckley AFB on 22 April 2003, with a follow-up site visit on 25 April 2003. Copies of photographs taken during the reconnaissance are included in Appendix C. The site was observed by walking the site perimeter and transecting the internal areas of the property.

The proposed site is located in the southwest area of the base just west of Aspen Road. The proposed site location, per the Master Plan, is partially on top of Building 1011, which will be demolished prior to construction of the site as part of a separate program (Photo 1). There are no structures currently located on the site. Vegetation located on the site consists of sparse, bunched grasses, which appeared healthy and showed no visible signs of stress (Photo 3). A dirt road runs through the area with a dirt parking lot and an undeveloped field (Photo 7). Neighboring uses include open field space and Aspen Road to the north (Photo 2), Building 1011 to the west (Photo 1), open field and Aspen Road to the east (Photo 9), and a dirt road and open field to the south.

Appendix B contains the site reconnaissance checklist, which provides documentation of observations made at the time of the visit. The following list summarizes potential areas of environmental concern noted during the reconnaissance, which are discussed in detail in the FINDINGS section below.

- Potential concern with previous skeet range - Fragments of target pigeons and potential lead contamination noted extending south toward the area of proposed parking (Photo 5).
- Possible presence of black-tailed prairie dog and burrowing owl - No burrows seen, but potential habitat in area and burrows on adjacent property (Photo 3).

5.0 FINDINGS

The following presents URS' findings, based on the documents review, interviews, and site reconnaissance described above. The report first lists those areas where no environmental concerns or issues were identified. Additional information on these areas can be found in the checklists provided in Appendices A and B.

Next, the report discusses in more detail those findings that are considered exceptions, or areas of potential environmental concern. Supporting documentation for these is provided in the

checklists and in Appendix D. Any photographs referenced in this discussion can be found in Appendix C.

Section 5.3 provides a list of environmental permits that may be required for the proposed construction in/or operation of the facility.

5.1 Areas of No Environmental Concern

- Hazardous Waste Generation/Storage/Disposal (RCRA)
- Hazardous Materials Storage/Use
- IRP/CERCLA Activities
- Solid Waste Disposal
- Wastewater Discharge
- Stormwater Discharge
- Drains/Sumps
- Pits, Ponds, Lagoons
- USTs
- ASTs
- Landfills
- Pipelines (potential leaks or releases)
- Spills or Releases (to surface water or groundwater)
- Illegal or Unauthorized Fill or Dumping
- PCBs
- Lead-Based Paint
- Range, UXO, Ordnance Activities
- Wetlands/Floodplains
- Cultural Resources
- Noise

5.2 Exceptions (Areas of Potential Environmental Concern)

EXCEPTION NO. 1 – Proximity to Previous Skeet Range

An abandoned skeet range is located to the north of the proposed parking lot for the Leadership Development Center (Photo 4) in an area that will be developed as the Headquarters Building. Lead shot from shotgun discharge and debris from shattered targets (pigeons) remains in surface soils (Photo 5). Debris may have fallen anywhere within a 180-degree arc from 0 to 680 feet down range of the center of each V-shaped firing area. Remnants from the range may cause contamination of the area from both lead contained in the shot and polycyclic aromatic hydrocarbons (PAHs) present in the pigeons (460 CES/CEVP 2003, Tab 1).

Skeet remains are not believed to be present in the area of construction for the Leadership Development Center based on the area survey map (Geo-Marine 2003, Tab 2); however, remains

were located during the field survey of the project area. The area of the skeet range that impacts the Headquarters Building is currently being remediated by the Headquarters project. It is anticipated that project will not provide for remediation of the Leadership Development Center. The Leadership Development Center project should anticipate lead remediation in the project area.

EXCEPTION NO. 2 – Potential Asbestos-Containing Debris

Based on review of aerial photographs (NWCS 1945, Tab 4; Wings Over the Rockies Air and Space Museum 1942, Tab 3), post-World War II (WWII) buildings that had been constructed for troop housing and training were located in the area that will be occupied by the parking area for the Leadership Development Center. These buildings were demolished and the location of the debris is unknown. The wide use of asbestos before 1980 contributes to a concern that the demolition debris that was buried or scattered during demolition may have contained asbestos.

An asbestos sampling plan, that includes this area, has been proposed by URS to Buckley AFB. The sampling timeframe is currently unknown (URS 2003b, Tab 4).

EXCEPTION NO. 3 – Potential Black-Tailed Prairie Dog and Burrowing Owl Habitat

There are no endangered species currently on the site; however, the site is potential habitat for the black-tailed prairie dog and the burrowing owl (Photo 3). The burrowing owl is protected by the Migratory Bird Treaty Act of 1912 and is currently listed as a state threatened species (Parsons 2001, Tab 5). Construction phases may be interrupted if they are scheduled to occur during the owls' breeding season. Although evidence of either species is not present on the site currently, surveys should be taken prior to the start of construction (CDOW 2000, Tab 6; Earth Tech 2000, Tab 7).

EXCEPTION NO. 4 – Elevated Radon Levels

Depending on the construction type of the facility, radon levels might need to be considered (EPA 2003, Tab 8). Historically, radon levels at Buckley AFB have been between 1 and 4 pCi/L (Lancaster, personal communication), which is considered the "medium" range. EPA lists Buckley AFB in an area of highest potential for radon decay (greater than 4 pCi/L).

5.3 Environmental Permits Required

Based on URS' current understanding of the proposed facility construction and operation, the following environmental permit is expected to be required:

- Stormwater – Small Construction Permit

Appendix A

ENVIRONMENTAL DOCUMENTATION CHECKLIST

ENVIRONMENTAL DOCUMENTATION CHECKLIST

Location: Buckley Air Force Base
Site: Leadership Development Center
Project No.: 36291163.30001

Date: 4/17/03
URS Staff: Jessica Myklebust
Phone No.: 303-740-3972

1. UST and AST histories, closures, uses, testing.
   All USTs have been closed but 601 facility. There are two mobile tanks near building 1011, which will be demolished prior to the construction of the leadership development center (460 CEC/CEC 2002). There are no tanks that will be of concern in the proposed construction area. (Earth Tech, Inc., 2000)

2. Landfill data
   IRP site- A landfill, IRP site 3, is located approximately 1000 ft. south/southeast in a low area that drains to the northwest. Due to the distance from the landfill and the direction of groundwater flow, the proposed building site should not be in an area of concern. (SAIC, 1995)

3. Spill history data / Incident reports
   There are no known spills that would affect the building area. (Ron Lancaster, personal communication)

4. SPCC Plans
   N/A- there are no tanks in the area of proposed construction. (Ron Lancaster, personal communication)

5. RCRA Records
   N/A

6. Asbestos Records
   Asbestos containing debris may be present as remnants of demolished buildings from WWII building structures occurring on the proposed building site. (URS, 2003b) Building 1011, which is scheduled to be demolished prior to the construction of the leadership development center, has tested positive for asbestos containing materials in recent surveys (Earth Tech, Inc., 2000).

7. PCB Records
   Buckley is believed to be PCB free (1998) except building 1606 which is not in or around the proposed construction area. (Earth Tech, Inc., 2000).

8. CERCLA activities
   N/A

9. Monitoring and water well data records from site and ½ mile radius
   To the southeast of the area is IRP Site 3, the old landfill; sampling data and results can be found in the RI report Vol. I, 1995. Solvents were detected in groundwater at levels just above state standards. Due to the distance from the site and the direction of groundwater flow this should not be a concern for the proposed building site. Wells located within a ½ mile radius are MW-3, LFW-6, LFW-13, LFW-19, MW-4. (SAIC, 1995)

10. Environmental Restoration activities within ¼ mile of site
    IRP Site 2 (oil pit) is to the south of the proposed building area. Site 2 is approximately 500 ft. from the proposed structure. IRP Site 3, the former landfill, lies to the southeast of the area. Site 3 has been closed and is in long term monitoring (Lobe, personal communication). Due to the distance from the site and the direction of groundwater flow, neither IRP site should be of concern for the proposed building site (USGS, 1965).

11. Environmental Baseline Surveys
    Draft Basewide Environmental Baseline Survey, Buckley Air National Guard Base, March 2000. This document provided information about wetlands, groundwater flow, hazardous waste, asbestos, lead based paint, floodplains, and Installation Restoration Projects.

12. Pesticide Applications
    There has not been any persistent pesticide/herbicides used on or around the proposed building area. (Olson, personal communication)

13. Threatened and Endangered Species
    There are no endangered species currently on the site; however, this potential construction site is located in an area that may be potential black-tailed prairie dog habitat. Burrowing owls are common wherever there are prairie dogs and are known to occur on base. Burrowing owls are a state threatened species and are also protected by the Migratory Bird Treaty Act of 1912. Owl habitats are not to be disturbed during breeding season, which is believed to be in August. (Parsons ES., 2001; Colorado Division of Wildlife, 2000, Geo-Marine Inc. 2002a)
    There are no noxious weeds of concern in the area (Buckley Air Force Base, 2002)

14. Environmental Permits
    N/A for current conditions; may require stormwater and construction permits.

15. Chemical Inventory/MSDS for materials used at the site or at adjacent facilities
    There were no chemicals stored on or near the site that would affect the construction of the Leadership Development Center. (EMIS, 2003)

16. Hazardous Waste Management Plan
    No satellite accumulation sites or hazardous waste generators are in or near the proposed area. (URS, 2003a)

17. Lead Based Paint Surveys and records
    Facilities built prior to 1978 may have contained LBP (Earth Tech, Inc., 2000). The WWII buildings that were demolished may have had LBP in the aboveground structure, but these were typically removed off-site during demolition (Lancaster, personal communication). Building 1011, which is scheduled to be demolished prior to construction of the leadership center, may contain lead based paint (Earth Tech, Inc., 2000)

18. Transformer Inventory
    Power for the base is from Public Service. Transformers are typically pad mounted and installed adjacent (Earth Tech, Inc., 2000). No PCBs or transformers have been documented on this site.

19. Wetlands assessments (floodplains)
    There are no wetlands in the proposed construction area. (Earth Tech, Inc., 2000; USAF 2003)

20. Historical/Archeological Surveys and requirements
    There are no historical or archeological significant areas where the proposed leadership development center is to be built (Foothill Engineering Consultants, 2002; Colorado Historical Society, 2001)

21. Applicable EAs/EISs
    Draft Finding of No Significant Impact, Supplemental EA Military Construction; Integrated Natural Resources Management Plan 2002, Final EA for Buckley Air Force Base Military Construction (2001).- Provided general information, and information on abandoned firing range.

22. ECAMPs
    The 2002 ECAMP included one open finding concerning potential contamination from active and abandoned skeet ranges (USAF, 2002).

23. Radon Surveys and Records
    Radon levels at the base are in an area of highest potential for radon gas decay (levels that are above 4 pCi/L) (EPA Region 8 website). Past site building surveys for radon indicated that levels were at and slightly below 4 pCi/L (Lancaster, 2003).

24. Migratory Birds
    The burrowing owl is known to occur on base nesting in abandoned black-tailed prairie dog holes. The owl is covered under the Migratory Bird Treaty Act of 1912. Owl habitats are not to be disturbed during breeding season, which is believed to be in August. (Colorado Division of Wildlife, 2000; Geo-Marine Inc. 2002a; Parsons ES., 2001)

25. Range, UXO, ordnance activities or proximity
    This site falls in proximity to the previous skeet range area (Geo-Marine Inc., 2003). Skeet remains are not believed to be present in this area; however, based on field surveys, some remains were documented in the area of construction for the Leadership Development Center.

26. Fueling Station history
    No fueling stations present in the area.

27. **Building Plans

28. **Site Map
    Please see attachment for site map

29. **Master Plan
    Location of proposed facility shown

30. **Historic Aerial Photos and Plans
    Aerial photos were collected for the years 2002, 1969, and 1942. These photos covered the proposed construction area and displayed the following changes:
    1942- WWII buildings on the proposed building site
    1969-WWII structures located on the building site
    2002-WWII structures have been demolished and open area is shown

31. **Geotechnical Studies
    See engineering section

32. **Pipeline data and maps
    See engineering section

33. **Underground utility data
    See engineering section

34. **Real Property Records
    See engineering section

35. **Easement Data and Maps
    See engineering section

** Duplicated on Engineering Documentation Checklist

Appendix B

SITE RECONNAISSANCE CHECKLIST

SITE RECONNAISANCE CHECKLIST

Location: Buckley Air Force Base
Site: Leadership Development Center

Date: 4/22/03
URS Staff: Jessica Myklebust
Phone No.: 303-740-3972

Method(s) Used to Observe Property: walked the area by transects

Access/Observation Limitations: no limits to observing site

1. Land uses North
   Open field, Aspen Road, parts of the former skeet range

2. Land uses East
   Aspen Road, open field

3. Land uses South
   Open field and dirt road

4. Land uses West
   Open field, dirt road, Building 1011

5. Current Condition of Project Site (site topography, surface hydrology, vegetation, improvements, abandonments)
   Grass, small shrub, birds, animal holes,
   Site slopes to the south and a little to the west
   The former skeet range has been abandoned

6. Asbestos, PCBs, mercury, lead based paint issues with any structures needing to be demolished (observation only, no sampling)
   Building 1011, depending on year constructed may contain lead-based paint or asbestos

7. Proximity to range, ordnance storage, fuel storage, runways, engine blast areas, etc
   Old skeet range was located here, evidence of small black "pigeons" are located around/on site

8. Noise generators or receptors
   None

9. Refuse, trash, or evidence of dumping or waste disposal activities
   Concrete slab, black chunks, skeet range all over, various concrete pads/blocks
   Pigeon scatter heavy in west, lighter to east, fades as moving east

10. Evidence of imported fill
    Many "grave size" dirt mounds possibly in northern part of property within abandoned skeet range? They are 4' x 3' covered/disturbed soil

Areas from old skeet range? Test pits?

11. Soil staining, vegetation abnormalities, evidence of spills
    None

12. Environmental remedial actions within 200 feet of project boundary
    IRP Site 2 is near to the south, but >200 feet away from area

13. Verify drains, sumps, inlets, manholes
    None

14. Verify evidence of tanks (UST & AST)
    None

15. Verify location of vaults, utility access points
    Underground cable signs, phone cable signs

16. Verify presence/absence of drums and containers
    None

17. Verify and document pits, ponds, lagoons, wetlands
    None

18. Verify storm water flow origins and flow paths
    Storm water appears to flow to the southeast

19. Verify and document wells
    2" pipe casing white, water level well?

20. Verify pipeline indicators
    Corrugated metal buried on site with edges, is not a pipeline just metal remains

Appendix C

SITE RECONNAISSANCE PHOTOGRAPHS

Photo 1– Facing west on area of proposed building site and Building 1011

Photo 2 – Facing north

Photo 3 – Facing south on the site to dirt road and representative vegetation of area

Photo 4 – Area to the northwest of site representing the abandoned skeet range

Photo 5 – Skeet remains found while on site visit in proposed building area

Photo 6 – Proposed building area

Photo 7 – Dirt road to the east of the proposed building area

Photo 8 – Facing south on the proposed building site

Photo 9 – Photograph to the southeast of the proposed building site.

Appendix D

SUPPORTING DOCUMENTATION

Tab 1 – 460 CES/CEVP. 2003. *Draft Addendum to Supplemental Environmental Assessment Military Construction.* April.

Tab 2 – Geo-Marine Inc. (Geo-Marine). 2003. *Proposed 460th Wing Headquarters/Former Skeet Range Features.* April.

Tab 3 – Buckley Air Force Base (AFB). Aerial Photographs from 1942, 1969, and 2002.

Tab 4 – URS Corporation (URS). 2003b. *Preliminary Assessment Records Search and Asbestos Survey for Future Construction Sites*. Portions of Sections 2.1 and 5.5.10. April.

Tab 5 – Parsons, E.S. (Parsons). 2001. *Final Environmental Assessment for Buckley Air Force Base Military Construction.* Section 3.3.4 Sensitive Species. November.

Tab 6 – Colorado Division of Wildlife (CDOW). 2000. Web site containing information about the burrowing owl. http://wildlife.state.co.us/T&E/burrowingowl.htm. Cited 27 October 2000.

Tab 7 – Earth Tech, Inc. (Earth Tech). 2000. *Draft, Base-wide Environmental Baseline Survey, Buckley Air National Guard Base.* Section 3.5.2.2 Threatened and Endangered Species. March.

Tab 8 – U.S. Environmental Protection Agency (EPA). 2003. Web site containing EPA Map of Radon Zones in Colorado. www.epa.gov/iaq/radon/zonemap/colorado.htm. Cited 25 April 2003.

REQUIREMENTS DOCUMENTS
FOR
HEADQUARTERS, AIR FORCE SPACE COMMAND

Environmental Report

Location: Buckley Air Force Base, Colorado
Site: Logistics Complex
Date: April 2003

Table of Contents

1.0 INTRODUCTION 1

1.1 Purpose 1
1.2 Scope of Services 1

2.0 DOCUMENTS REVIEWED 1

3.0 INTERVIEWS CONDUCTED 2

4.0 SITE RECONNAISANCE OBSERVATIONS 3

5.0 FINDINGS 3

5.1 Areas of No Environmental Concern
5.2 Exceptions (Areas of Potential Environmental Concern)
5.3 Environmental Permits Required

List of Appendices

Appendix A Environmental Documentation Checklist

Appendix B Site Reconnaissance Checklist

Appendix C Site Reconnaissance Photographs

Appendix D Supporting Documentation

Tab 1 Parsons, E.S. (Parsons). 2001. *Final Environmental Assessment for Buckley Air Force Base Military Construction.* Section 3.3.4 Sensitive Species. November.

Tab 2 Colorado Division of Wildlife (CDOW). 2000. Web site containing information about the burrowing owl. http://wildlife.state.co.us/T&E/burrowingowl.htm. Cited 27 October 2000.

Tab 3 Earth Tech, Inc. (Earth Tech). 2000. *Draft, Base-wide Environmental Baseline Survey, Buckley Air National Guard Base.* Section 3.5.2.2 Threatened and Endangered Species. March.

Tab 4 U.S. Environmental Protection Agency (EPA). 2003. Web site containing EPA Map of Radon Zones in Colorado. www.epa.gov/iaq/radon/zonemap/colorado.htm. Cited 25 April 2003.

Tab 5 Merrick and Company (Merrick). 2002. Aerial Photographs. National Archives and Records Administration Cartographic and Architectural Branch (NWCS). 1945..

1.0 INTRODUCTION

1.1 Purpose

The purpose of this report is to identify areas of environmental concern that may influence the planned construction of the Logistics Complex at Buckley Air Force Base (AFB). The exceptions presented in the findings may indicate that changes in construction methods, design, costs, or location should be considered due to the presence of site contamination or because of natural or cultural resource considerations.

1.2 Scope of Services

The scope of services for this review is provided in the Statement of Work to Develop Requirements Documents for Headquarters, Air Force Space Command, dated 4 March 2003, under Section 3, Required Services, Subsection 43.4.4.6.1. Included are a comprehensive records search, interviews with base environmental personnel, visual site inspection, and this report.

2.0 DOCUMENTS REVIEWED

The following documents were reviewed as part of this effort for the Logistics Complex site at Buckley AFB:

- 460 CES/CEVP. 2003. *Supplemental Environmental Assessment Military Construction.* April.
- 460 CEC/CEC. 2002. *Buckley Air Force Base Vision 2020 Brochure*. September.
- Buckley AFB. 2003. Tank Inventory. April.
- ANG/CEVR. 2000. *Summary Document for IRP Sites 1 through 10 at Buckley ANGB, Colorado.* June.
- Colorado Division of Wildlife (CDOW). 2000. Web site containing information about the burrowing owl. http://wildlife.state.co.us/T&E/burrowingowl.htm. Cited 27 October 2000.
- Colorado Historical Society. 2001. Base correspondence with the society. November.
- Earth Tech, Inc. (Earth Tech). 2000. *Draft, Base-wide Environmental Baseline Survey, Buckley Air National Guard Base.* March.
- Environmental Management Information System (EMIS). 2003. Chemical Inventory. April.
- Foothill Engineering Consultants, Inc. 2002. *Archeology Survey Review for Buckley Air Force Base, Aurora, Colorado*. January.
- Geo-Marine Inc. 2002a. *Burrowing Owl Nesting Locations, 2002 Season*.
- Geo-Marine Inc. 2002b. *Integrated Natural Resources Management Plan.* November.

- Geo-Marine Inc. 2003. *Proposed 460th Wing Headquarters/Former Skeet Range Features.* April.
- Lancaster, Ron. 2003. Personal communication via electronic mail; concerning the historical radon levels for Buckley AFB. April.
- Merrick and Company (Merrick). 2002. Aerial Photograph.
- Parsons, E.S. (Parsons). 2001. *Final Environmental Assessment for Buckley Air Force Base Military Construction.* November.
- Science Applications International Corporation (SAIC). 1995. *Installation Restoration Program, Remedial Investigation Report.* Vol. I. August.
- URS Corporation (URS). 2003a. *Buckley Air Force Base Hazardous Waste Management Plan.* April.
- URS. 2003b. *Preliminary Assessment Records Search and Asbestos Survey for Future Construction Sites*. April.
- U.S. Air Force (USAF). 2003. *Buckley Air Force Base Wetlands and Approximate 100-Year Flood Plain Map.*
- USAF. 2002. ECAMP Management Action Plans – Open Status Finding Report. August 8. Updated October 30, 2002.
- U.S. Environmental Protection Agency (EPA). 2003. Web site containing EPA Map of Radon Zones in Colorado. www.epa.gov/iaq/radon/zonemap/colorado.htm. Cited 25 April 2003.
- U.S Geologic Survey (USGS). 1965; Revised 1980. 7.5-Minute Topographic Map, Fitzsimons, Colorado – Fitzsimons Quadrangle.
- USGS. 1966; Revised 1978. 7.5-Minute Topographic Map, Coal Creek, Colorado – Coal Creek Quadrangle.

Appendix A provides the completed Environmental Documentation Checklist for this site, which summarizes the information collected as part of the documents review.

3.0 INTERVIEWS CONDUCTED

The following interviews were conducted during the week of 21-25 April 2003 as part of this effort for the Logistics Complex site at Buckley AFB:

- Bonola, Sue — Senior Environmental Scientist, URS
- Cox, Dave — Project Engineer, URS
- Hatch, Floyd — Natural/Cultural Resources Manager, Buckley AFB
- Huber, Diana — Colorado Department of Public Health and Environment (CDPHE)
- Killberg, Glen — GIS, URS
- Lancaster, Ron — Environmental Compliance Manager, Buckley AFB
- Lobe, Melissa — Project Engineer, URS

- Marusin, Wayne Deputy Base Civil Engineer, Buckley AFB
- Nicely, Charley Civil Engineer, Buckley AFB
- Olson, John Entomologist, Buckley AFB
- Sherva, Elise Planning Chief, Buckley AFB
- Spangler, Mark Environmental Restoration Manager, Buckley AFB

Information from interviews is cited as personal communication is included in the report and where appropriate on the Environmental Documentation Checklist (Appendix A) and has been documented in Contact Records maintained in the project files.

4.0 SITE RECONNAISANCE

A visual reconnaissance was conducted at the site for the proposed Logistics Complex at Buckley AFB on 22 April 2003. Copies of photographs taken during the reconnaissance are included in Appendix C. The site was observed by walking the site perimeter and transecting the internal areas of the property.

The proposed site is located in the southwest area of the base just east of Aspen Road. The proposed site location is located adjacent to the Civil Engineering Storage Yard that houses vehicles, generators, forklifts, and other equipment (Photo 9). There are no structures currently located on the site. Vegetation located on the site consists of sparse, bunched grasses, which appeared healthy and showed no visible signs of stress (Photos 2 and 8). Animal burrows, including prairie dog burrows, were relatively common across the site (Photo 5). Neighboring uses includes a low-lying open field and a hangar for planes to the north (Photo 4), Aspen Road to the west (Photo 3), a helicopter pad to the east, and the Civil Engineering Storage Yard and Joint Air Army Building (JAAB) to the south (Photo 1)

There were no signs of dumping or contamination on the site. A debris pile was located in the east area of the site, but it contained sand bags, concrete block remains, and some metal scraps, and no drums, hazardous materials, or stained soils were apparent (Photo 6). In addition, the site was examined for possible skeet target remains (pigeon shards) from the abandoned skeet range west of Aspen Road; none were seen on the site, and only a few (two) pieces were noted in traversing the field to the north.

Appendix B contains the site reconnaissance checklist, which provides documentation of observations made at the time of the visit. The following list summarizes potential areas of environmental concern noted during the reconnaissance, which are discussed in detail in the FINDINGS section below.

- Presence of black-tailed prairie dog and potential presence of burrowing owl (Photo 5).

5.0 FINDINGS

The following presents URS' findings, based on the documents review, interviews, and site reconnaissance described above. The report first lists those areas where no environmental concerns or issues were identified. Additional information on these areas can be found in the checklists provided in Appendices A and B.

Next, the report discusses in more detail those findings that are considered exceptions, or areas of potential environmental concern. Supporting documentation for these is provided in the checklists and in Appendix D. Any photographs referenced in this discussion can be found in Appendix C.

Section 5.3 provides a list of environmental permits that may be required for the proposed construction in/or operation of the facility.

5.1 Areas of No Environmental Concern

- Hazardous Waste Generation/Storage/Disposal (RCRA)
- Hazardous Materials Storage/Use
- IRP/CERCLA Activities
- Solid Waste Disposal
- Wastewater Discharge
- Stormwater Discharge
- Drains/Sumps
- Pits, Ponds, Lagoons
- USTs
- ASTs
- Landfills
- Pipelines (potential leaks or releases)
- Spills or Releases (to soils, surface water or groundwater)
- Illegal or Unauthorized Fill or Dumping
- PCBs
- Asbestos
- Lead-Based Paint
- Range, UXO, Ordnance Activities
- Wetlands/Floodplains
- Cultural Resources
- Noise

5.2 Exceptions (Areas of Potential Environmental Concern)

EXCEPTION NO. 1 – Potential Black-Tailed Prairie Dog and Burrowing Owl Habitat

Black-tailed prairie dog burrows were seen on the site, which indicates that the area is also suitable habitat for burrowing owls (Merrick 2002, Tab 5). The burrowing owl is protected by the Migratory Bird Treaty Act of 1912 and is currently listed as a state threatened species (Parsons 2001, Tab 1). Construction phases may be interrupted if they are scheduled to occur

during the owl's breeding season. Surveys should be taken prior to the start of construction (CDOW 2000, Tab 2; Earth Tech, Inc. 2000, Tab 3).

EXCEPTION NO. 2 – Elevated Radon Levels

Depending on the construction type of the facility, radon levels may need to be considered (EPA 2003, Tab 4). Historically, radon levels at Buckley AFB have been between 1 and 4 pCi/L (Lancaster; personal communication), which is considered the "medium" range. EPA lists Buckley AFB in an area of highest potential for radon decay (greater than 4 pCi/L).

5.3 Environmental Permits Required

Based on URS' current understanding of the proposed facility construction and operation, the following environmental permit is expected to be required:

- Stormwater – Small Construction Permit

Appendix A

ENVIRONMENTAL DOCUMENTATION CHECKLIST

ENVIRONMENTAL DOCUMENTATION CHECKLIST

Location: Buckley Air Force Base
Site: Logistics Development Center
Project No.: 36291163.30001

Date: 4/17/03
URS Staff: Jessica Myklebust
Phone No.: 303-740-3972

1. UST and AST histories, closures, uses, testing.
   All USTs have been closed but 601 facility. There are no tanks of concern in the proposed construction area. (Earth Tech, Inc., 2000)

2. Landfill data
   IRP site- Landfill located to south in low area that drains to the northwest. Due to the distance from the site and the direction of groundwater flow, the proposed building site should not be in an area of concern. (ANG/CEVR., 2000)

3. Spill history data / Incident reports
   There are no known spills that would affect the building area. (Lancaster, personal communication)

4. SPCC Plans
   N/A- there are no tanks in the area of proposed construction. (Lancaster, personal communication)

5. RCRA Records
   N/A

6. Asbestos Records
   There are no asbestos concerns in the project area.

7. PCB Records
   Buckley is believed to be PCB free (1998) except Building 1606 which is not in or around the proposed construction area. (Earth Tech Inc., 2000)

8. CERCLA activities
   N/A for this site

9. Monitoring and water well data records from site and ½ mile radius
   To the south of the area is IRP Site 3, the old landfill, sampling data and results can be found in the RI report Vol. I, 1995. Solvents were detected in GW at levels just above state standards. Due to the distance and the direction of groundwater flow this should not be a concern for the proposed building site. Well LFW-6 is within a ½ mile from the proposed site. (ANG/CEVR, 2000)

10. Environmental Restoration activities within ¼ mile of site

    IRP Site 2 (oil pit) is to the South of the area. IRP Site 3, the former landfill, lies to the Southeast of the area. It is approximately 100 yards from the proposed structure. Site 3 has been closed and is in long term monitoring (Lobe, personal communication). Due to the distance and the direction of groundwater flow neither IRP site should be of concern for the proposed building site. (USGS, 1965)

11. Environmental Baseline Surveys

    Draft Basewide Environmental Baseline Survey, March 2000
    This document provided information about wetlands, groundwater flow, hazardous waste, asbestos, lead based paint, floodplains, and Installation Restoration Projects.

12. Pesticide Applications

    There has not been any persistent pesticide/herbicides used on or around the proposed building area. (Olson, personal communication)

13. Threatened and Endangered Species

    There are no endangered species; however, black-tailed prairie dog burrows were seen on site. Burrowing owls are common wherever there are prairie dogs and are known to occur on base. Burrowing owls are a State threatened species and are also protected by the Migratory Bird Treaty Act of 1912. Owl habitats are not to be disturbed during breeding season, which is believed to be in August. (Colorado Division of Wildlife, 2000; Geo-Marine Inc. 2002a; Parsons ES., 2001)

14. Environmental Permits

    None for current conditions; may require stormwater and construction permits.

15. Chemical Inventory/MSDS for materials used at the site or at adjacent facilities

    There were no chemicals stored on or near the site that would affect the construction of the leadership building. (EMIS, 2003)

16. Hazardous Waste Management Plan

    No satellite accumulation sites or hazardous waste generators in or near the proposed area. (URS Corp., 2003a)

17. Lead Based Paint Surveys and records

    There is not a concern for lead based paint on this site.

18. Transformer Inventory

    Power for the base is from Public Service. Transformers are pad mounted and installed adjacent to buildings some are unit substation dry in vaults (Earth Tech, Inc., 2000). No PCBs or transformers have been documented on this site.

19. Wetlands assessments (floodplains)

    There are no wetlands in the proposed construction area. (Earth Tech, Inc., 2000; USAF 2003)

20. Historical/Archeological Surveys and requirements
    There are no historical or archeological significant areas where the proposed leadership development center is to be built (Foothill Engineering Consultants, 2002; Colorado Historical Society, 2001).

21. Applicable EAs/EISs
    Draft Finding of No Significant Impact, Supplemental EA military Construction; Integrated Natural Resources Management Plan 2002, Final EA for Buckley Air Force Base Military Construction (2001).
    These documents provided general environmental information for the site.

22. ECAMPs
    There were no indications in the recent ECAMP that would indicate problems or releases concerning the proposed construction area.

23. Radon Surveys and Records
    Radon levels at the base are in an area of highest potential for radon gas decay (levels that are above 4 pCi/L) (EPA Region 8 website). Past site building surveys for radon indicated that levels were at and slightly below 4 pCi/L (Lancaster, personal communication).

24. Migratory Birds
    The burrowing owl is known to occur on base nesting in abandoned black-tailed prairie dog holes. The owl is covered under the Migratory Bird Treaty Act of 1912. Owl habitats are not to be disturbed during breeding season, which is believed to be in August. (Colorado Division of Wildlife, 2000; Geo-Marine Inc. 2002a; Parsons ES., 2001)

25. Range, UXO, ordnance activities or proximity
    This site falls across the street from the previous skeet range area (Geo-Marine Inc., 2003). Maps of the area likely to contain remnants of skeet targets provided by M. Spangler indicate that the area of construction falls to the south of any potentially affects area.

26. Fueling Station history
    No fueling stations present in the area.

27. **Building Plans

28. **Site Map
    Please see attachment for site map

29. **Master Plan

30. **Historic Aerial Photos and Plans
    Aerial photos were collected for the years 1945 and 2002. These photos covered the proposed construction area and displayed the following changes:
    1945- Aerial display open field with no structures
    2002- Area is open field with no current structures shown

31. **Geotechnical Studies
    See engineering section

32. **Pipeline data and maps
    See engineering section

33. **Underground utility data
    See engineering section

34. **Real Property Records
    See engineering section

35. **Easement Data and Maps
    See engineering section

** Duplicated on Engineering Documentation Checklist

Appendix B

SITE RECONNAISSANCE CHECKLIST

SITE RECONNAISANCE CHECKLIST

Location: Buckley Air Force Base
Site: Logistics Complex

Date: 4/22/03
URS Staff: Jessica Myklebust
Phone No.: 303-740-3972

Method(s) Used to Observe Property: grid survey method, walked area entirely by transects

Access/Observation Limitations: none, walked into maintenance area all over area

1. Land uses North
   Hangars for planes, fire building, plane hangar for single plane, low lying area

2. Land uses East
   Helicopter pad

3. Land uses South
   SE – JAAB building, civil engineering storage yard (vehicles, mechanical items, forklifts), fenced area

4. Land uses West
   Road/Building 1011 on other side of road

5. Current Condition of Project Site (site topography, surface hydrology, vegetation, improvements, abandonments)
   Gently sloping, uneven, terrain, intermittent vegetation (sparse, bunched, dry, clumpy) NE to SW slope, cactus. Dry Steppe Province. Wildlife – birds, rabbits, prairie dogs, various animal holes

6. Asbestos, PCBs, mercury, lead based paint issues with any structures needing to be demolished (observation only, no sampling)
   Nearest Building 1011 and not an issue for this site

7. Proximity to range, ordnance storage, fuel storage, runways, engine blast areas, etc
   ~2000 feet plane hangar, ~1500 feet to helicopter pad, runway ~1000 feet (taxiway) Looked for shards of black skeet pigeons – found none on proposed area of construction, saw 2 in fields north of this area

8. Noise generators or receptors
   None

9. Refuse, trash, or evidence of dumping or waste disposal activities
   Dirt mounds with bags of sand, concrete, metal near CE maintenance yard – no leakage, hazardous materials, drums, or stained soils seen

10. Evidence of imported fill
    None, other than the mounds of dirt described above

11. Soil staining, vegetation abnormalities, evidence of spills
    Stressed vegetation lies to the SE of the site; not an issue for the proposed facility

12. Environmental remedial actions within 200 feet of project boundary
    None

13. Verify drains, sumps, inlets, manholes
    None

14. Verify evidence of tanks (UST & AST)
    None

15. Verify location of vaults, utility access points
    None

16. Verify presence/absence of drums and containers
    None

17. Verify and document pits, ponds, lagoons, wetlands
    None

18. Verify storm water flow origins and flow paths
    Surface to the southwest over most of site; but slopes to the northeast toward low area/drainage on the northeast side
    None

19. Verify pipeline indicators
    Ditch dug long ~6" deep; does not appear to be a pipeline, just a small trench

Appendix C

SITE RECONNAISSANCE PHOTOGRAPHS

Photo 1– Southeast area of site with nearby JAAB building.

Photo 2 – Northeast area of site.

Photo 3 – Southwest area of site adjacent to Aspen Road.

Photo 4 – Facing north towards airplane hanger

Photo 5 – Black-tailed prairie dog hole located on site with droppings.

Photo 6 – Debris pile located on site

Photo 7 – Representative vegetation in area

Photo 8 – Adjacent Civil Engineering Storage Yard

Appendix D

SUPPORTING DOCUMENTATION

Tab 1 Parsons, E.S. (Parsons). 2001. *Final Environmental Assessment for Buckley Air Force Base Military Construction.* Section 3.3.4 Sensitive Species. November.

Tab 2 Colorado Division of Wildlife (CDOW). 2000. Web site containing information about the burrowing owl. http://wildlife.state.co.us/T&E/burrowingowl.htm. Cited 27 October 2000.

Tab 3 Earth Tech, Inc. (Earth Tech). 2000. *Draft, Base-wide Environmental Baseline Survey, Buckley Air National Guard Base.* Section 3.5.2.2 Threatened and Endangered Species. March.

Tab 4 U.S. Environmental Protection Agency (EPA). 2003. Web site containing EPA Map of Radon Zones in Colorado. www.epa.gov/iaq/radon/zonemap/colorado.htm. Cited 25 April 2003.

Tab 5 Merrick and Company (Merrick). 2002. Aerial Photographs. National Archives and Records Administration Cartographic and Architectural Branch (NWCS). 1945

1. COMPONENT	FY 2004 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	OUTDOOR REC/EQUIPMENT RENTAL

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
NAFPV	740-672	CRWU033009	

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT
OUTDOOR REC/EQUIPMENT RENTAL	LS		
OUTDOOR RECREATION SERVICES FACILITY	M2	1,022	
ANTITERRORISM/FORCE PROTECTION	M2	1,022	
SUPPORTING FACILITIES			
UTILITIES	LS		
PAVEMENTS	LS		
SITE IMPROVEMENTS	LS		
COMMUNICATIONS	LS		
SUBTOTAL			
CONTINGENCY (5.0 %)			
TOTAL CONTRACT COST			
SUPERVISION, INSPECTION AND OVERHEAD (5.7%)			
TOTAL REQUEST			
TOTAL REQUEST (ROUNDED)			
NAF Variable			

10. Description of Proposed Work: Single-story building of light-weight commercial standard construction with reinforced concrete slab and foundation. Sloped standing seam metal roof. Facility will provide administrative office space and storage space for leasing of outdoor recreation equipment. Minimun Antiterrorism/Force Protection. Air Conditioning: 60 KW.

Air Conditioning: 60 KW.

11. REQUIREMENT: 144 M2 ADEQUATE: 0 M2 SUBSTANDARD: 0 M2

PROJECT: Construct Outdoor Recreation Equipment Rental Facility and MWR Central Storage.

REQUIREMENT: A properly sized and functioning Outdoor Recreation Equipment Rental and NAF Central Storage facility is needed at Buckley AFB to allow for assigned personnel to take advantage of many outdoor recreation opportunities available in Colorado. Outdoor recreational activities such as biking, hiking, trail running, backpacking, skiing, and others are rapidly becoming the most popular way for service members and their families to maintain a high level of fitness and cardiovascular health.

CURRENT SITUATION: All base services at Bucklet AFB are presently located in disconnected temporary facilities with no central point of customer making it difficult for service members to find the item of equipment they would like to be able to loan or rent. the lack of storage space for rental recreation equipment places severe limits on the types of equipment that can be made available.

IMPACT IF NOT PROVIDED: Assigned personnel will continue to be severely limited in the type and availability of outdoor sports equipment which can be economically rented at

1. COMPONENT	FY 2004 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	OUTDOOR REC/EQUIPMENT RENTAL

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
NAFPV	740-672	CRWU033009	

Buckley AFB. For on-base personnel, it will provide a means of renting equipment at a central location.

REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS

Report Control Symbol
CRWU04~~43006~~ 3047

INSTRUCTIONS: *Section I to be completed by Proponent; Sections II and II to be completed by Environmental Planning Function. Continue on Separate Sheets as necessary. Reference appropriate item number(s).*

SECTION I - PROPONENT INFORMATION

1. TO (Environmental Planning Function)	2. FROM (Proponent organization and functional address symbol)	2a. TELEPHONE NO.
460 CES/CEV	460 CES/CEC	303-677-6819

3. TITLE OF PROPOSED ACTION
Vehicle Maintenance Facility

4. PURPOSE AND NEED FOR ACTION (*Identify decision to be made and need date).*
Construct a new 460 ABW vehicle maintenance facility. The 460 ABW wing shares vehicle maintenance space with the 140 Wing in bldg 340. Building 340 is inadequately designed and sized to house both functions. Vehicle administrative and vehicle washing are performed in building 940 that is in the airfield clear zone. The purpose of this project is to alleviate overcrowded maintenance conditions at building 340 and to relocate activities from within the airfield clear zone. Construction is required by 1 November 2004.

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPPA) (Provide sufficient details for evaluation of the total action.
See attached

6. PROPONENT APPROVAL (*Name and Grade*)	6a. SIGNATURE	6b. DATE
Charles Nicely, GS-11		7 Jan 2003

SECTIONII - PRELIMINARY ENVIRONMENTAL SURVEY. (*Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = Unknown effect.*	+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (*Noise, accident potential, encroachment, etc.*)		X		
8. AIR QUALITY (*emissions, attainment status, state implementation plan, etc.)* Fugitive dust during construction;			X	
9. WATER RESOURCES (Quality, quantity, source, etc.) Stormwater during and after construction			X	
10. SAFETY AND OCCUPATIONAL HEALTH (*Asbestos/radiation/chemical exposure, explosives safety quantity-distance, etc.)* Safety During construction			X	
11. HAZARDOUS MATERIALS/WASTE (*Use/storage/generation, solid waste, etc*). Use of hazardous materials during construction.			X	
12. BIOLOGICAL RESOURCES (*Wetlands/floodplains, flora, fauna, etc)* Potential adverse effects to prairie dogs and/or burrowing owls.			X	
13.CULTURAL RESOURCES (*Native American burial sites, archeological, historical, etc.)*		X		
14.GEOLOGY AND SOILS (*Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)*		X		
15.SOCIOECONOMIC (*Employment/population projections, school and local fiscal impacts, etc.)* Assuming the additional employees currently reside in the local commuting area.		X		
16.OTHER (*Potential impacts not addressed above.)*		X		

SECTION III - ENVIRONMENTAL ANALSIS DETERMINATION

17.		
		PROPOSED ACTION CUALIFIES FOR A CATEGORICAL EXCLUSION (CATEX #) _____: OR
	X	PROPOSED ACTION DOES NOT QULIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALSIS IS REQUIRED.

18. REMARKS

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (*Name and Grade*)	19a. SIGNATURE	19b. DATE
Elise L. Sherva, GS-12		1-8-03

AF Form 813 Continuation

Project Title: Vehicle Maintenance Facility

Proposed Action: Construct a new vehicle maintenance facility. The proposed project consists of 2 buildings and would be located in the Installation Support Area as depicted in the base's General Plan. A 16,533 SF building would house government vehicle maintenance and washing activities. A water recovery system would be provided at the vehicle wash area. A 3,627 SF building would house administrative, dispatch and training functions. Less than 20 personnel would work in the maintenance building. Less than 10 personnel would work in the administrative building. The facility would normally be operational 5 days per week approximately 10 hours per day.

1st Alternative Action: As above but with vehicle washing activities in a separate building. This alternative would include 3 buildings.

No Action Alternative: Do not construct a new Vehicle Maintenance Facility. The Vehicle maintenance facility would continue to be located in an incompatible land use area (building 340) and in the clear zone (building 940). The wash rack in building 940 would require upgrading to meet current regulations.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	VEHICLE MAINTENANCE, [redacted]

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	214-425	CRWU053007	[redacted]

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT
VEH MAINTENANCE FACILITY	LS		
VEHICLE MAINTENANCE SHOP	SM	1,536	1,796
VEHICLE OPS ADMIN FACILITY	SM	337	1,745
INTERIOR COMMUNICATIONS SUPPORT	LS		
ANTITERRORISM/FORCE PROTECTION	SM	1,873	10
SUPPORTING FACILITIES			
UTILITIES	LS		
PAVEMENTS	LS		
SITE IMPROVEMENTS	LS		
SPECIAL FOUNDATIONS	LS		
EXTERIOR COMMUNICATIONS SUPPORT	LS		
SUBTOTAL			
CONTINGENCY (5.0 %)			
TOTAL CONTRACT COST			
SUPERVISION, INSPECTION AND OVERHEAD (5.7 %)			
TOTAL REQUEST			
TOTAL REQUEST (ROUNDED)			

10. Description of Proposed Construction: Two single story steel frame structures with reinforced concrete foundation and slab. Foundations designed to local soil conditions. CMU veneer-cavity wall exterior with stucco accents and standing seam metal roofs. Includes utilities, parking, access, site preparation, pre-wiring for telecommunication and minimum DoD interim force protection standards.

Air Conditioning: 72 KW.

11. REQUIREMENT: 1,960 SM ADEQUATE: 0 SM SUBSTANDARD: 0 SM

PROJECT: Construct a Vehicle Maintenance Facility (New Mission)

REQUIREMENT: A properly sized and configured vehicle maintenance facility containing specialized large vehicle maintenance is essential to the activation and operation of the new 460 ABW at Buckley AFB. A co-located vehicle operations administative facility is essential for controlling both operational and preventive maintenance functions for the vehicle fleet. The facility wil provide space for administrative offices, drivers' ready room, vehicle dispatch, conference/training room for drivers' training and testing, lockers, and rest rooms. The SECAF/CSAF established Air Force Space Command as the installation host on 1 October 2000.

CURRENT SITUATION: The 460 ABW is currently sharing vehicle maintenance space in the 140 Wing, COANG vehicle maintenance facility. The building is inadequately designed and sized to house vehicle maintenance activities of both organizations. The 140 Wing¿s maintenance of refuel trucks within the building exposes 460 personnel to fire risks. The 460 ABW requires separate facilities to maintain 31 you drive it vehicles as well as

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	VEHICLE MAINTENANCE, [redacted]

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	214-425	CRWU053007	[redacted]

large special purpose vehicles such as snow-plows, fire engines and fuel trucks. There are no existing adequate and designed facilities to house this function. The 460 ABW vehicle operations administrative functions are housed in a warehouse building that is remote from its vehicle maintenance functions. The warehouse building is located within the airfield clear zone and is programmed for demolition in conjunction with construction of a Consolidated Logistics Complex programmed for FY06.

IMPACT IF NOT PROVIDED: Air Force Commands on Buckley Air Force Base will not receive adequate vehicle maintenance support and their ability to accomplish the mission will be significantly curtailed. Attempting to conduct vehicle maintenance functions from an overcrowded facility will result in lost efficiency and poor mission performance. The inability to maintain large vehicles such as fire engines and snowplows will result in potential safety degradation and periods of time when personnel cannot reach their duty stations. Personnel performing vehicle operations administrative functions in the warehouse building within the airfield clear zone will continue to incur avoidable safety risks.

ADDITIONAL: A preliminary analysis of reasonable options for accomplishing this project (status quo, renovation, upgrade/removal, new construction and/or leasing) was done. It indicates that only new construction will meet operational requirments. Because of this a full economic analysis was not performed. A certificate of exemption has been prepared. This project meets the criteria/scope specified in Part II of Military Handbook 1190, "Facility Planning and Design" and Air Force Handbook 32-1084, "Facility Requirements". Base Civil Engineer: Lt Col Alfred C. Scharff, 303.677.6501. Vehicle Maintenance Facility: 1950 SM = 20,982 SF

JOINT USE CERTIFICATION: Mission requirements, operationsl considerations and location are incompatible with use by other components.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	VEHICLE MAINTENANCE, [redacted]

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	214-425	CRWU053007	[redacted]

12. SUPPLEMENTAL DATA:

a. Estimated Design Data:

(1) Status:

(a) Date Design Started	01-NOV-03
(b) Parametric Cost Estimates used to develop costs	YES
* (c) Percent Complete as of 01 JAN 2004	10%
* (d) Date 35% Designed	01-APR-04
(e) Date Design Complete	01-SEP-04
(f) Energy Study/Life-Cycle analysis was/will be performed	NO

(2) Basis:

(a) Standard or Definitive Design -	NO
(b) Where Design Was Most Recently Used -	

(3) Total Cost (c) = (a) + (b) or (d) + (e):	($000)
(a) Production of Plans and Specifications	0
(b) All Other Design Costs	0
(c) Total	0
(d) Contract	0
(e) In-house	0

(4) Construction Contract Award

(5) Construction Start

(6) Construction Completion

* Indicates completion of Project Definition with Parametric Cost Estimate which is comparable to traditional 35% design to ensure valid scope, cost and executability.

b. Equipment associated with this project provided from other appropriations:
N/A

APPENDIX M

PUBLIC COMMENTS

DEPARTMENT OF THE AIR FORCE
460TH SPACE WING (AFSPC)

MAR 2 1 2006

Mr. Bruce James
460th Civil Engineer Squadron
Environmental Flight
660 South Aspen Street, Stop 86
Buckley AFB CO 80011-9551

Mr. Ed LaRock, P.G.
Hazardous Materials and Waste Management Division
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive, South
Denver, CO 80246-1530

Dear Mr. LaRock

Thank you for your letter, dated 14 Dec 05, on the Draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for the Capital Improvement Projects at Buckley Air Force Base (AFB). Responses to your comments follow, numbered in accordance with your letter:

1) The scope of this EA is Capital Improvements and does not cover specific compliance and/or remedial activities. The EA does state that all local, state, and federal regulations would be followed for proper remediation and disposal of asbestos. Removal of the soil stockpiles is being accomplished under a Compliance Order and a Removal Plan approved by CDPHE in Nov 2005. The soil stockpiles should be removed prior to implementation of the proposed actions of this EA. Therefore, the actions in this EA would not affect the soil stockpiles.

2) In response to your comment, we have added the following text in section 2.1.7.

"A former skeet range discovered on the north side of Building 1011 was cleaned up in 2004. A small portion of the skeet range not addressed by that custodial action remains just west of ADP 7 as a Military Munitions Response Program site."

The site of the former skeet range was assessed early in 2003 to determine health risks associated with lead from shot and muzzle exhaust and with polynuclear aromatic hydrocarbons from clay target debris. The results were briefed to Technical Working Group members from CDPHE and USEPA on 31 Mar 03. It was agreed that the risks did not justify further action under the ERP, but that a voluntary, non-regulated custodial action would be conducted prior to construction of the new 460 SW Headquarters building. That custodial action was accomplished by the Wing Headquarters construction contractor, overseen by 460 CES/CEV, and documented in the document Final Report Prepared For: The Weitz Company. Former Skeet Range

Custodial Action, April 15, 2004. The site assessment and custodial action will be further documented in the ongoing Military Munitions Response Program Comprehensive Site Evaluation, Phase I.

3a) Please refer to Figure 2.11, titled "Demolition Projects." The small arms range discussed here is the currently active range, not the adjacent former range that makes up the MMRP site immediately to the west. Buildings 1411, 1413 and 1415 are the buildings at the currently active range that require demolition and are listed in Table 2.19.

3b) In response to your comment, we have appended the following text to the first bullet in section 2.1.11.1.

"Furthermore, an ongoing Site Inspection at this ERP Area of Concern is exploring other potential contamination sources, including petroleum storage tanks, oil/water separators, vehicle maintenance, and civil engineering shops."

3c) In response to your comment, we have changed the text for the first bullet on page 2-41.

"Demolition of the fuel storage and dispensing facilities in the community center ADP will involve testing of soil and groundwater for petroleum- or hydrazine contamination."

4) In response to your comment we have revised the text in section 3.1.4 to the following.

"The USAF established the ERP to identify, characterize, and evaluate past disposal sites and remediate contamination on its installations as needed to control the migration of contaminants and potential hazards to human health and the environment in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requirements. A base-wide expanded Preliminary Assessment is currently being conducted, which may discover other environmental concerns not previously identified at the base. This assessment may potentially identify concerns within areas proposed for construction.

Related to previously identified ERP sites, Space Operations parking lots would be constructed over ERP site 10 at the northern boundary of the base as part of the Entry Gates ADP. ERP site 10 is a former warehouse area, where an interim remedial action is ongoing and for which a final remedy will be selected in the future. The grade of this area is relatively flat and since parking lot construction would require limited excavation, the project would not be expected to have any impact on ERP site 10. In addition, a parking lot is proposed within the Community Center ADP that would be constructed in the vicinity of ERP site 4, a former FTA-3 site. A soil removal action will be conducted at site 4 prior to construction of the parking lot.

The Headquarters Area ADP includes projects to construct the Leadership Development Center near ERP site 3, the former base dump, and the building 1011 Area of Concern, and an associated parking lot near ERP site 2, a former oil pit. Site 2 will receive a No Further Action designation once the Air Force signs the No Further Response Action Planned decision document and receives the anticipated regulatory concurrence. Caution may be required while excavating for foundations and footers and when digging utilities trenches for the Leadership

Development Center, as these ground disturbance activities could potentially impact ERP site 3 or the building 1011 Area of Concern. If ERP sites are encountered during construction, all activities should cease, and 460th CES/CEV would be contacted. Also, damage to the new facilities could occur if remediation activities are not conducted prior to construction. For these reasons it would be desirable to remediate the ERP sites prior to proceeding with construction in this area.

Demolition of Building 902 (Old Base Exchange) (within the Industrial ELUA) would be on the fringe of ERP site 9, which is a former underground storage tank (UST) burial site. Site 9 is currently being evaluated with a Site Inspection of both soil and groundwater. Although this demolition project would take place near ERP site 9, Building 902 consists of a slab-grade concrete foundation, without a basement, and therefore, the project would not be expected to have any impact on the ERP.

The degree of affect on or by ERP sites would depend on the relative dates of ERP remedial projects and Proposed Action projects. For example, it would be ill-advised to construct a parking lot in the community center ADP prior to remediation of the underlying contaminated soils, as required by federal law. A parking lot is scheduled to be built directly over ERP site 4, a former fire training area used in the early 1990's, which is contaminated with chlorinated solvents. The parking lot will be close to a proposed new child development center. ERP site 4 would be remediated prior to constructing this parking lot.

A review of the locations of ERP sites currently listed on Buckley AFB revealed that they would not affect or be affected by the remaining Proposed Action construction and demolition projects. Therefore, effects from the ERP will not be analyzed further in this document."

5) Comment is noted. The EA has not been changed since discussions of new regulations that are in process of being promulgated are outside of the scope evaluating impacts of an Environmental Assessment.

If you have any further questions, please contact Mr. Bruce James, Environmental Planning Chief at 720-847-7245, email bruce.james@buckley.af.mil.

Sincerely,

BRUCE R JAMES, GS-12
Chief, Environmental Planning

STATE OF COLORADO

Bill Owens, Governor
Douglas H. Benevento, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.
Denver, Colorado 80246-1530
Phone (303) 692-2000
TDD Line (303) 691-7700
Located in Glendale, Colorado

http://www.cdphe.state.co.us

Laboratory Services Division
8100 Lowry Blvd.
Denver, Colorado 80230-6928
(303) 692-3090

Colorado Department
of Public Health
and Environment

December 14, 2005

Mr. Bruce James
460 CES/CEVR
660 South Aspen St, Stop 86
Buckley AFB, CO 80011-9551

Dear Mr. James

Re Draft Environmental Assessment (EA) for Capital Improvement Projects, Buckley AFB, Colorado dated November 2005

The Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division (Division) has reviewed the above referenced document received November 23, 2005. The Division has the following comments:

1) Section 2.1.3, Area Development Plan (ADP) 3, Dormitory North Section and Map A3-2 – This area has soil stockpiles containing asbestos materials. Plans and procedures to properly remove and dispose of these stockpiles need to be discussed.

2) Section 2.1.7, ADP 7, Headquarters Area – The custodial cleanup of the former skeet range in this area needs to be discussed, including how the custodial action will be documented. The remainder of the skeet range will be addressed under the Military Munitions Response Program (MMRP). Please discuss.

3) Section 2.1.11.1, Demolitions – a) Clarify where the small arms range is located. Is this the abandoned outdoor range being evaluated under the MMRP? b) The Building 1011 Area of Concern (AOC) will be evaluated with a Site Inspection of both soil and groundwater. Other contamination sources include, but are not limited to, weapons testing, petroleum storage tanks, oil/water separators, motor pool and civil engineering shops. Please expand the discussion. c) Page 2-41, point one, should note the potential for both petroleum and hydrazine related contamination. For Example, the Division commented (13 March 2003) on the H-70 EA and the Air Force responded that soil and groundwater would be tested for hydrazine related contamination. The Division supports proper assessment during the demolition of fuel storage and dispensing facilities.

4) Section 3.1.4, Environmental Restoration Projects – a) Paragraph one – Change "preliminary ERP assessment" to "expanded Preliminary Assessment". b) Paragraph two – Note that an interim remedial action is ongoing at Site 10 and a final remedy for this site will be selected in the future. Clarify that a soil removal action will need to be conducted at Site 4 prior to parking lot

construction. c) Paragraph three – Please note that Site 2 will receive a No Further Action designation once the Air Force signs the NFRAP document and requests regulatory concurrence. The Leadership Development Center is more closely associated with portions of ERP Site 3 (base landfill) and the ongoing Site Inspection of the Building 1011 AOC.
d) Paragraph 4 – ERP Site 9 is currently being evaluated with a Site Inspection of both soil and groundwater.

5) Section 3.17, Asbestos and Section 4.3.15, Asbestos – The Division appreciates that this EA acknowledges the potential for asbestos to be encountered at construction/demolition sites and notes a general notification process for the CDPHE. In Section 3.17 please note that the Division is in the process of promulgating new asbestos regulations under the Solid Waste regulations. A public hearing is scheduled for January 17, 2006. The Division understands that a representative from Buckley Air Force base has been involved in this process.

Thank you for the opportunity to comment. If you have any questions, please contact me at (303) 692-3324 or ed.larock@state.co.us.

Sincerely,

Ed LaRock, P.G.
Environmental Protection Specialist
Hazardous Materials and Waste
Management Division

cc: Jeff Edson, CDPHE
Monica Sheets, CDPHE
Dan Miller, AGO
Mark Spangler, Buckley AFB
David Rathke, EPA Region 8
File D003-1.1

COLORADO
HISTORICAL
SOCIETY

The Colorado History Museum 1300 Broadway Denver, Colorado 80203-2137

December 5, 2005

Janet L. Wade
Chief, Environmental Flight
460th Civil Engineer Squadron
660 South Aspen Street, Stop 86
Buckley AFB, CO. 80011-9551

Re: Proposed Capital Improvement Projects at Buckley Air Force Base. (CHS #46862)

Dear Ms. Wade:

Thank you for your correspondences received by our office on November 28, 2005 and November 29, 2005 regarding the above-mentioned project.

After review of the submitted information, we concur with the finding of *no adverse effect* under Section 106 of the National Historic Preservation Act [36 CFR 800.5(b)] in regards to the proposed project. If unidentified archaeological resources are discovered during construction, work must be interrupted until the resources have been evaluated in terms of the National Register criteria, 36 CRF 60.4, in consultation with this office.

If we may be of further assistance, please contact Amy Pallante, our Section 106 Compliance Coordinator, at (303) 866-4678.

Sincerely,

Mark Wolfe

for Georgianna Contiguglia
State Historic Preservation Officer

cc: Floyd Hatch/Buckley AFB

APPENDIX N

AGENCY COORDINATION LETTERS

DEPARTMENT OF THE AIR FORCE
460TH SPACE WING (AFSPC)

NOV 23 2005

Mr. Ronald Lancaster
Environmental Flight
460th Civil Engineer Squadron
660 South Aspen Street
Buckley AFB CO 80011-9551

John Fernandez
Planning, Environmental Division
City of Aurora
15151 E. Alameda
Aurora CO 80012

Dear Mr. Fernandez

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) to implement a Capital Improvement Program (CIP) in support of the General Plan for Buckley Air Force Base (AFB), CO. The proposed action involves a 5-year construction and demolition program that includes numerous projects that would help the United States Air Force achieve the overall goal of turning the former Buckley Air National Guard base into a fully functioning, active-duty AFB. The proposed action is needed to accommodate growth of the current and planned military missions and community support requirements at Buckley AFB. The Draft EA and Draft FONSI are attached for your information, review, and comment.

The public comment period for this EA is 30 days. Please provide any written comments to:

Mr. Bruce James
460 CES/CEVP
660 South Aspen Street, Stop 86
Buckley AFB CO 80011-9551

If you have any questions please feel free to contact me at 720-847-9218, or via e-mail:Ronald.Lancaster@buckley.af.mil.

RONALD LANCASTER
Chief, Environmental Quality

ATTACHMENTS:
Draft EA
Draft FONSI

DEPARTMENT OF THE AIR FORCE
460TH SPACE WING (AFSPC)

NOV 2 3 2005

Mr. Ronald Lancaster
Environmental Flight
460th Civil Engineer Squadron
660 South Aspen Street
Buckley AFB CO 80011-9551

Bruce Rosenlund
Colorado Field Supervisor
U.S. Fish and Wildlife Service
755 Parfet Street, Suite 496
Lakewood CO 80215

Dear Mr. Rosenlund

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) to implement a Capital Improvement Program (CIP) in support of the General Plan for Buckley Air Force Base (AFB), CO. The proposed action involves a 5-year construction and demolition program that includes numerous projects that would help the United States Air Force achieve the overall goal of turning the former Buckley Air National Guard base into a fully functioning, active-duty AFB. The proposed action is needed to accommodate growth of the current and planned military missions and community support requirements at Buckley AFB. The Draft EA and Draft FONSI are attached for your information, review, and comment. We have assessed the potential environmental effects of the Capital Improvement program (CIP) and determined that the proposed actions are not likely to adversely affect federally listed and candidate species. We are requesting initiation of Section 7 consultation per the Endangered Species Act.

The public comment period for this EA is 30 days. Please provide any written comments to:

Mr. Bruce James
460 CES/CEVP
660 South Aspen Street, Stop 86
Buckley AFB CO 80011-9551

If you have any questions please feel free to contact me at 720-847-9218, or via e-mail:Ronald.Lancaster@buckley.af.mil.

RONALD LANCASTER
Chief, Environmental Quality

ATTACHMENTS:
Draft EA
Draft FONSI

NOV 2 3 2005

DEPARTMENT OF THE AIR FORCE
460TH SPACE WING (AFSPC)

Mr. Ronald Lancaster
Environmental Flight
460th Civil Engineer Squadron
660 South Aspen Street
Buckley AFB CO 80011-9551

Eugene Jansak
Industrial Waste Specialist
Metro Wastewater Reclamation District
6450 York Street
Denver CO 80229-7499

Dear Mr. Jansak

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) to implement a Capital Improvement Program (CIP) in support of the General Plan for Buckley Air Force Base (AFB), CO. The proposed action involves a 5-year construction and demolition program that includes numerous projects that would help the United States Air Force achieve the overall goal of turning the former Buckley Air National Guard base into a fully functioning, active-duty AFB. The proposed action is needed to accommodate growth of the current and planned military missions and community support requirements at Buckley AFB. The Draft EA and Draft FONSI are attached for your information, review, and comment.

The public comment period for this EA is 30 days. Please provide any written comments to:

Mr. Bruce James
460 CES/CEVP
660 South Aspen Street, Stop 86
Buckley AFB CO 80011-9551

If you have any questions please feel free to contact me at 720-847-9218, or via e-mail:Ronald.Lancaster@buckley.af.mil.

RONALD LANCASTER
Chief, Environmental Quality

ATTACHMENTS:
Draft EA
Draft FONSI

DEPARTMENT OF THE AIR FORCE
460TH SPACE WING (AFSPC)

NOV 2 3 2005

NOV 2 3 2005

Mr. Ronald Lancaster
Environmental Flight
460th Civil Engineer Squadron
660 South Aspen Street
Buckley AFB CO 80011-9551

Eliza Moore
Wildlife Manager
Colorado Division of Wildlife
6060 South Broadway
Denver CO 80216

Dear Ms. Moore

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) to implement a Capital Improvement Program (CIP) in support of the General Plan for Buckley Air Force Base (AFB), CO. The proposed action involves a 5-year construction and demolition program that includes numerous projects that would help the United States Air Force achieve the overall goal of turning the former Buckley Air National Guard base into a fully functioning, active-duty AFB. The proposed action is needed to accommodate growth of the current and planned military missions and community support requirements at Buckley AFB. The Draft EA and Draft FONSI are attached for your information, review, and comment.

The public comment period for this EA is 30 days. Please provide any written comments to:

Mr. Bruce James
460 CES/CEVP
660 South Aspen Street, Stop 86
Buckley AFB CO 80011-9551

If you have any questions please feel free to contact me at 720-847-9218, or via e-mail:Ronald.Lancaster@buckley.af.mil.

RONALD LANCASTER
Chief, Environmental Quality

ATTACHMENTS:
Draft EA
Draft FONSI

NOV 2 3 2005

DEPARTMENT OF THE AIR FORCE
460TH SPACE WING (AFSPC)

Mr. Ronald Lancaster
Environmental Flight
460th Civil Engineer Squadron
660 South Aspen Street
Buckley AFB CO 80011-9551

Patricia Mehlhop
U.S. Fish and Wildlife Service
PO Box 25486
Denver CO 80225-0486

Dear Ms. Mehlhop

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) to implement a Capital Improvement Program (CIP) in support of the General Plan for Buckley Air Force Base (AFB), CO. The proposed action involves a 5-year construction and demolition program that includes numerous projects that would help the United States Air Force achieve the overall goal of turning the former Buckley Air National Guard base into a fully functioning, active-duty AFB. The proposed action is needed to accommodate growth of the current and planned military missions and community support requirements at Buckley AFB. The Draft EA and Draft FONSI are attached for your information, review, and comment.

The public comment period for this EA is 30 days. Please provide any written comments to:

Mr. Bruce James
460 CES/CEVP
660 South Aspen Street, Stop 86
Buckley AFB CO 80011-9551

If you have any questions please feel free to contact me at 720-847-9218, or via e-mail:Ronald.Lancaster@buckley.af.mil.

RONALD LANCASTER
Chief, Environmental Quality

ATTACHMENTS:
Draft EA
Draft FONSI

DEPARTMENT OF THE AIR FORCE
460TH SPACE WING (AFSPC)

NOV 2 3 2005

Mr. Ronald Lancaster
Environmental Flight
460th Civil Engineer Squadron
660 South Aspen Street
Buckley AFB CO 80011-9551

Jerry Craig
Wildlife Researcher
Colorado Division of Wildlife
Wildlife Research Center
317 W. Prospect Road
Fort Collins CO 80526

Dear Mr. Craig

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) to implement a Capital Improvement Program (CIP) in support of the General Plan for Buckley Air Force Base (AFB), CO. The proposed action involves a 5-year construction and demolition program that includes numerous projects that would help the United States Air Force achieve the overall goal of turning the former Buckley Air National Guard base into a fully functioning, active-duty AFB. The proposed action is needed to accommodate growth of the current and planned military missions and community support requirements at Buckley AFB. The Draft EA and Draft FONSI are attached for your information, review, and comment.

The public comment period for this EA is 30 days. Please provide any written comments to:

Mr. Bruce James
460 CES/CEVP
660 South Aspen Street, Stop 86
Buckley AFB CO 80011-9551

If you have any questions please feel free to contact me at 720-847-9218, or via e-mail:Ronald.Lancaster@buckley.af.mil.

RONALD LANCASTER
Chief, Environmental Quality

ATTACHMENTS:
Draft EA
Draft FONSI

DEPARTMENT OF THE AIR FORCE
460TH SPACE WING (AFSPC)

NOV 2 3 2009

Mr. Ronald Lancaster
Environmental Flight
460th Civil Engineer Squadron
660 South Aspen Street
Buckley AFB CO 80011-9551

Larry Svoboda
NEPA Unit Chief
U.S. Environmental Protection Agency, Region 8
999 18th Street, Suite 500
Denver CO 80202

Dear Mr. Svoboda

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) to implement a Capital Improvement Program (CIP) in support of the General Plan for Buckley Air Force Base (AFB), CO. The proposed action involves a 5-year construction and demolition program that includes numerous projects that would help the United States Air Force achieve the overall goal of turning the former Buckley Air National Guard base into a fully functioning, active-duty AFB. The proposed action is needed to accommodate growth of the current and planned military missions and community support requirements at Buckley AFB. The Draft EA and Draft FONSI are attached for your information, review, and comment.

The public comment period for this EA is 30 days. Please provide any written comments to:

Mr. Bruce James
460 CES/CEVP
660 South Aspen Street, Stop 86
Buckley AFB CO 80011-9551

If you have any questions please feel free to contact me at 720-847-9218, or via e-mail:Ronald.Lancaster@buckley.af.mil.

RONALD LANCASTER
Chief, Environmental Quality

ATTACHMENTS:
Draft EA
Draft FONSI

DEPARTMENT OF THE AIR FORCE
460TH SPACE WING (AFSPC)

NOV 2 3 2005

Mr. Ronald Lancaster
Environmental Flight
460th Civil Engineer Squadron
660 South Aspen Street
Buckley AFB CO 80011-9551

David Rathke
U.S. Environmental Protection Agency, Region 8
999 18th Street, Suite 500
Denver CO 80202

Dear Mr Rathke

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) to implement a Capital Improvement Program (CIP) in support of the General Plan for Buckley Air Force Base (AFB), CO. The proposed action involves a 5-year construction and demolition program that includes numerous projects that would help the United States Air Force achieve the overall goal of turning the former Buckley Air National Guard base into a fully functioning, active-duty AFB. The proposed action is needed to accommodate growth of the current and planned military missions and community support requirements at Buckley AFB. The Draft EA and Draft FONSI are attached for your information, review, and comment.

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460TH SPACE WING (AFSPC)

NOV 2 3 2005

Mr. Ronald Lancaster
Environmental Flight
460th Civil Engineer Squadron
660 South Aspen Street
Buckley AFB CO 80011-9551

Robert Watkins
Director of Planning
City of Aurora
15151 E. Alameda
Aurora CO 80012

Dear Mr. Watkins

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) to implement a Capital Improvement Program (CIP) in support of the General Plan for Buckley Air Force Base (AFB), CO. The proposed action involves a 5-year construction and demolition program that includes numerous projects that would help the United States Air Force achieve the overall goal of turning the former Buckley Air National Guard base into a fully functioning, active-duty AFB. The proposed action is needed to accommodate growth of the current and planned military missions and community support requirements at Buckley AFB. The Draft EA and Draft FONSI are attached for your information, review, and comment.

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RONALD LANCASTER
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ATTACHMENTS:
Draft EA
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DEPARTMENT OF THE AIR FORCE
460TH SPACE WING (AFSPC)

NOV 2 3 2005

Mr. Ronald Lancaster
Environmental Flight
460th Civil Engineer Squadron
660 South Aspen Street
Buckley AFB CO 80011-9551

Ed LaRock
Federal Facilities HMWM 2800
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive, South
Denver CO 80246-1530

Dear Mr. LaRock

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) to implement a Capital Improvement Program (CIP) in support of the General Plan for Buckley Air Force Base (AFB), CO. The proposed action involves a 5-year construction and demolition program that includes numerous projects that would help the United States Air Force achieve the overall goal of turning the former Buckley Air National Guard base into a fully functioning, active-duty AFB. The proposed action is needed to accommodate growth of the current and planned military missions and community support requirements at Buckley AFB. The Draft EA and Draft FONSI are attached for your information, review, and comment.

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RONALD LANCASTER
Chief, Environmental Quality

ATTACHMENTS:
Draft EA
Draft FONSI

NOV 2 3 2005

DEPARTMENT OF THE AIR FORCE
460TH SPACE WING (AFSPC)

Mr. Ronald Lancaster
Environmental Flight
460th Civil Engineer Squadron
660 South Aspen Street
Buckley AFB CO 80011-9551

Nancy Chick
Air Pollution Control Division
Colorado Department of Public Health and Environment
APCD-TS-B24300
Cherry Creek Drive, South
Denver CO 80246-1530

Dear Ms. Chick

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) to implement a Capital Improvement Program (CIP) in support of the General Plan for Buckley Air Force Base (AFB), CO. The proposed action involves a 5-year construction and demolition program that includes numerous projects that would help the United States Air Force achieve the overall goal of turning the former Buckley Air National Guard base into a fully functioning, active-duty AFB. The proposed action is needed to accommodate growth of the current and planned military missions and community support requirements at Buckley AFB. The Draft EA and Draft FONSI are attached for your information, review, and comment.

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460 CES/CEVP
660 South Aspen Street, Stop 86
Buckley AFB CO 80011-9551

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RONALD LANCASTER
Chief, Environmental Quality

ATTACHMENTS:
Draft EA
Draft FONSI

DEPARTMENT OF THE AIR FORCE
460TH SPACE WING (AFSPC)

NOV 23 2005

Mr. Ronald Lancaster
Environmental Flight
460th Civil Engineer Squadron
660 South Aspen Street
Buckley AFB CO 80011-9551

Jim Paulmeno
Manager Environmental Planning
Colorado Department of Transportation
4201 East Arkansas Ave.
Denver CO 80222

Dear Mr. Paulmeno

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Buckley AFB CO 80011-9551

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RONALD LANCASTER
Chief, Environmental Quality

ATTACHMENTS:
Draft EA
Draft FONSI

DEPARTMENT OF THE AIR FORCE
460TH SPACE WING (AFSPC)

NOV 23 2005

Mr. Ronald Lancaster
Environmental Flight
460th Civil Engineer Squadron
660 South Aspen Street
Buckley AFB CO 80011-9551

Jane Hann
Environmental Project Manager
Colorado Department of Transportation
4201 East Arkansas Ave.
Denver CO 80222

Dear Ms. Hann

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) to implement a Capital Improvement Program (CIP) in support of the General Plan for Buckley Air Force Base (AFB), CO. The proposed action involves a 5-year construction and demolition program that includes numerous projects that would help the United States Air Force achieve the overall goal of turning the former Buckley Air National Guard base into a fully functioning, active-duty AFB. The proposed action is needed to accommodate growth of the current and planned military missions and community support requirements at Buckley AFB. The Draft EA and Draft FONSI are attached for your information, review, and comment.

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Chief, Environmental Quality

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460TH SPACE WING (AFSPC)

NOV 2 3 2005

Mr. Ronald Lancaster
Environmental Flight
460th Civil Engineer Squadron
660 South Aspen Street
Buckley AFB CO 80011-9551

Mac Callison
Planning, Traffic Division
City of Aurora
15151 E. Alameda
Aurora CO 80012

Dear Mr. Callison

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) to implement a Capital Improvement Program (CIP) in support of the General Plan for Buckley Air Force Base (AFB), CO. The proposed action involves a 5-year construction and demolition program that includes numerous projects that would help the United States Air Force achieve the overall goal of turning the former Buckley Air National Guard base into a fully functioning, active-duty AFB. The proposed action is needed to accommodate growth of the current and planned military missions and community support requirements at Buckley AFB. The Draft EA and Draft FONSI are attached for your information, review, and comment.

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RONALD LANCASTER
Chief, Environmental Quality

ATTACHMENTS:
Draft EA
Draft FONSI

NOV 2 3 2005

DEPARTMENT OF THE AIR FORCE
460TH SPACE WING (AFSPC)

Mr. Ronald Lancaster
Environmental Flight
460th Civil Engineer Squadron
660 South Aspen Street
Buckley AFB CO 80011-9551

Dan Beley
Colorado Department of Public Health and Environment
Water Quality Control Division
4300 Cherry Creek Drive, South
WQCD-OA-B2
Denver CO 80246-1530

Dear Mr. Beley

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) to implement a Capital Improvement Program (CIP) in support of the General Plan for Buckley Air Force Base (AFB), CO. The proposed action involves a 5-year construction and demolition program that includes numerous projects that would help the United States Air Force achieve the overall goal of turning the former Buckley Air National Guard base into a fully functioning, active-duty AFB. The proposed action is needed to accommodate growth of the current and planned military missions and community support requirements at Buckley AFB. The Draft EA and Draft FONSI are attached for your information, review, and comment.

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Buckley AFB CO 80011-9551

If you have any questions please feel free to contact me at 720-847-9218, or via e-mail:Ronald.Lancaster@buckley.af.mil.

RONALD LANCASTER
Chief, Environmental Quality

ATTACHMENTS:
Draft EA
Draft FONSI

McWharter Pamela C CTR USAF 460 CES

From: Hatch, Floyd W CIV USAF 460 CES
Sent: Friday, December 09, 2005 2:21 PM
To: McWharter Pamela C CTR USAF 460 CES
Subject: FW: Capital Improvements Environmental Assessment
Attachments: Table 2 19.doc; fig1-2.pdf; SHPO 106 Ltr 11-21-05.doc

Pam,

Here is the email I sent to the SHPO containing the draft request for Section 106 consultation. They reviewed this draft and also received the EA about the same time and called me that this email was sufficient and went ahead and prepared the letter concurring with "no adverse affect".

Floyd W. Hatch
Natural & Cultural Resources Manager
Phone 720-847-6937
FAX 720-847-6159
floyd.hatch@buckley.af.mil

From: Hatch Floyd W Civ 460 CES/CEV
Sent: Monday, November 28, 2005 11:46 AM
To: amy.pallante@chs.state.co.us
Subject: Capital Improvemnets Environmental Assessment

Amy,

As I discussed with you on the phone the other day we have prepared an Environmental Assessment of approximately 110 capital improvement projects (large and small) planned or in a few cases already constructed here at Buckley. This EA is intended to look at the comprehensive impacts of multiple projects planned here. You will be receiving the EA to review in the near future but I have tried to boil the whole thing down in one Section 106 consultation letter. Please review the attached letter and figures and let me know if I have provided sufficient information for you to properly review these actions. If this is sufficient then I will provide a signed official letter. If you need additional information please let me know and I will try to provide that also.

Floyd W. Hatch
Natural & Cultural Resources Manager
Phone 720-847-6937
FAX 720-847-6159
floyd.hatch@buckley.af.mil

ms. Janet Wade
~~Lt Col James P. Page~~
460th Civil Engineer Squadron
660 South Aspen Street, Stop 86
Buckley AFB CO 80011-9551

Georgianna Contiguglia
State Historic Preservation Officer
Colorado History Museum
1300 Broadway
Denver CO 80203-2137

Dear Ms. Contiguglia

Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, Council on Environmental Quality NEPA implementing regulations (40 Code of Federal Regulations [CFR] Parts 1500-1508), and Air Force NEPA implementing regulations (32 CFR 989), the USAF conducted an assessment of the potential consequences of proposed infrastructure Capital Improvement Projects (CIPs) at Buckley AFB (Proposed Action), Alternative Action 1, and the No Action Alternative. The Proposed Action would improve upon current infrastructure and accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley Air Force Base.

The USAF proposes numerous infrastructure CIPs at Buckley AFB. Within the CIPs, eight (8) Area Development Plans (ADPs) and seven (7) Existing Land Use Areas (ELUAs) would encompass approximately 823 acres of land at various locations within the AFB boundaries. The ADPs and ELUAs would include construction of various buildings and facilities, including new housing, dormitories, an entrance gate, roadway modifications and landscaping, a community center, installation support facilities, new headquarters and recreation areas. The proposed action also includes the demolition of approximately 30 structures. A figure that shows the existing facilities and the proposed action location is attached along with a table which provides specific information on the structures to be demolished.

In compliance with Section 106 of the National Historic Preservation Act, Buckley Air Force Base has determined that the proposed action, and alternatives, would not have an adverse affect on historic properties. Cultural resources on Buckley AFB have been inventoried and analyzed for historic significance (Historic Building Inventory and Evaluation dated June 2004). There are no known archaeological or historic structure resources in the area of potential effect. Building information for the demolition of 30 facilities is contained in the attached table.

Please provide written comments and/or concurrence to:

Floyd W. Hatch
460 CES/CEVP
660 S. Aspen Street, Mail Stop 86
Buckley AFB CO 80011-9551

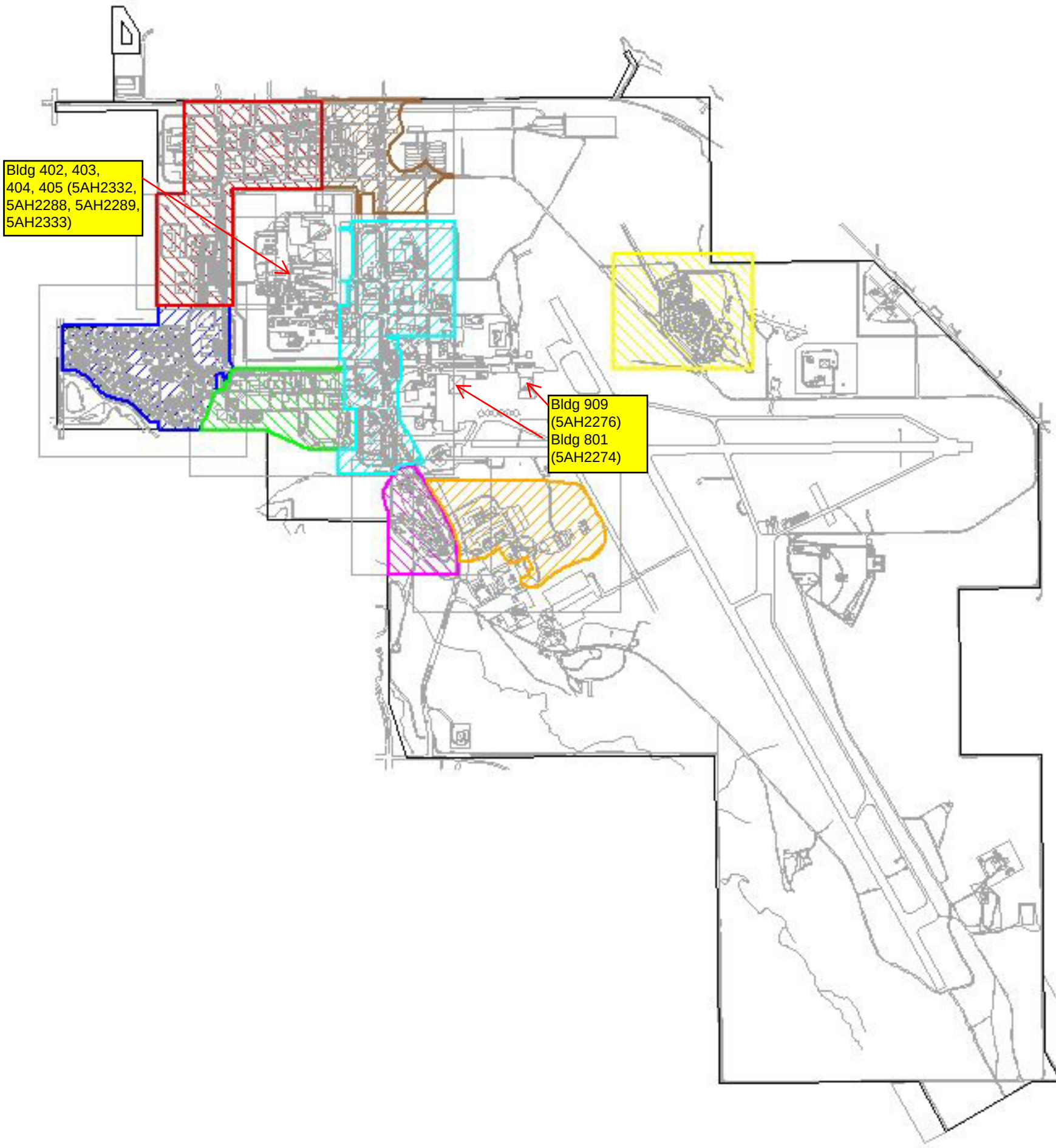
If you have any questions please feel free to contact Mr. Floyd Hatch, Cultural Resources Manager 720-847-6937, email floyd.hatch@buckley.af.mil or Ms. Janet Wade, Environmental Flight Chief at 720-847-9977, email janet.wade@buckley.af.mil.

Sincerely

JANET L.WADE, GS-13
Chief, Environmental Flight

Attachment
Location figure
Demolition table

P:\Group\AITA\ARCVIEW\Projects\Buckley\Report_0404\Apr\ADP_Basemaps.apr



N

2500 0 2500 Feet

Scale: 1:30,000
1 inch = 2,600 feet

Legend

- ADP 1 - Military Family Housing
- ADP 2 - North Gate
- ADP 3 - Dormitory
- ADP 4 - Aspen Corridor
- ADP 5 - Community Center
- ADP 6 - Installation Support
- ADP 7 - Headquarters
- ADP 8 - Williams Lake

DRAFT

CIP Project Location Map

FIGURE

1.2

Buckley Air Force Base
Aurora, Colorado

DATE
04/04

REVISED DATE

Table 2.19: CIP Demolition Projects

Planned Demolition Projects

Building Number	ADP/ ELUA	Fiscal Year	Building Name or Function/Category
19[1] (5AH1494)	ADP 2	FY05	Camana Club/Other Structure
25[1] (5AH1497)	ADP 2	FY03	Reserve Component Medical/Other Structure
39 (5AH1502)	ADP 3	FY04	Gas Meter House/Other Structure
41[5]	ADP 2	FY11	Visitors' Center/Other Structure
200 (5AH2284)	ADP 1	FY09	Jet Fuel Tanks/Refueling Area/Potential Hazardous Materials
210[5]	ADP 2	TBD	Security Forces Kennel/Other Structure
300 (5AH2285)	ADP 5	FY09	Petroleum Operations Building/Potential Hazardous Materials
302 (5AH2286)	ADP 5	FY09	Petroleum Operations Building/Potential Hazardous Materials
306[2] [5]	ADP5	TBD[3]	Entomology Shop Building/Potential Hazardous Materials
310[2] [5]	ADP 5	TBD[3]	H-70 (Hydrazine) Fuel Storage Building/Potential Hazardous Materials
341[5]	ADP 5	FY09	Vehicle Fuel Station/Potential Hazardous Materials
344[5]	ADP 5	FY09	Hazardous Storage/Potential Hazardous Materials
Portable Building 605	ADP 5	FY09	Gas Mask Training Building/Potential Hazardous Materials
429[4] (5AH2340)	ELUA4	FY12	Space Operations Facility
431[4] (5AH2296)	ELUA	FY12	Space Operations Facility
902 (5AH2275)	ELUA 5	FY06	Old Base Exchange/Other Structure
940 (5AH2313)	ADP 7	FY09	Vehicle Operations/Other Structure
950 (5AH2314)	ELUA 5	FY087	Communications Facility/Other Structure
1011[1] (5AH1528)	ADP 7	FY056	Base Civil Engineer (BCE) Storage/Other Structure
1012[1] (5AH2317)	ADP 7	FY06	Sanitary Latrine/Other Structure
1103 (5AH2318)	ELUA 5	FY06	Pump Station/Other Structure
1411 (5AH1547)	ELUA 7	FY10	Range Supply and Equipment Storage/Arms Range
1413 (5AH1549)	ELUA 7	FY10	Range Target Storage and Repair/Arms Range
1415 (5AH2323)	ELUA 7	FY10	Small Arms Range/Arms Range
1606 (5AH2279)	ELUA 5	FY06	Control Tower and Crash House Station/Potential Hazardous Materials
1620 (5AH2331)	ELUA 1	FY06	Radio Relay Building/Other Structure
1631[5]	ELUA 1	FY06	Electrical Shop/Other Structure
1632 (5AH2281)	ELUA 1	FY06	Reserve Forces/Other Structure
Marine Area Foundations	ELUA 1	FY06	Marine Area Foundations/Other Structure
Temporary Modular Building T-10 (Mod 1)	ADP 2	FY04	Miscellaneous Administrative Functions/Other Structure
Temporary Modular Building (T-11 (Mod 3))	ADP 2	FY04	Miscellaneous Administrative Functions/Other Structure
Temporary Modular Building (T-12 (Mod 2))	ADP 2	FY04	Miscellaneous Administrative Functions/Other Structure
East Ramp (5AH2354)	ELUA 3	TBD	Large Aircraft Parking/Pavement and Athletic Fields
Ball fields	ADP 2	FY02	Baseball Fields

Table 2.19: CIP Demolition Projects			
Planned Demolition Projects			
Winter Park Avenue	ADP 3	FY02	Winterpark Avenue Parking Lot and Street West Of Dormitory #1/Pavement and Athletic Fields
Street and Park adjacent to Building 28	ADP 3	FY04	Street and Parking Lot in the Vicinity of Building 28 and Portions of Beaver Creek Street/Pavement and Athletic Fields

(1) Buildings have been recently demolished.
(2) Buildings may be adapted and used in a land-use compatible way (e.g., former H-70 (Hydrazine) Fuel Storage building is currently being used as the Airman's Attic and the Entomology Building may be used for temporary outdoor recreation equipment rental.
(3) TBD To Be Determined for projects scheduled beyond 2010 (year of demolition currently unknown/unspecified).
(4) Buildings 429 and 431 recently identified; therefore, they do appear on Figure 2.11
(5) Built in or after 1990

MACTEC

engineering and constructing a better tomorrow

November 23, 2005

The Honorable Kathy Green
Aurora City Council Ward II
15151 East Alameda Parkway
Aurora CO 80012

Dear Ms. Green:

The United States Air Force (USAF) and the 460th Space Wing (SW) has prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from the proposed construction and operation of numerous infrastructure Capital Improvement Projects (CIPs) at Buckley AFB, Colorado (Proposed Action). The EA has been prepared per the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. The proposed infrastructure Capital Improvement Projects (CIPs) are required to improve upon current infrastructure and accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley Air Force Base.

Copies of the EA may be found at the following public libraries: Aurora Public Library, Government Document section, 14949 East Alameda Drive, Aurora, CO 80012, 303-739-6600; the Denver Public Library, Government Document section, 10 West Fourteenth Ave., Denver, CO 80204, 303-640-6200; or the CU-Boulder University Government Public Library, 1720 Pleasant Street, Boulder, CO 80309, 303-492-8834.

Interested parties should address their comments, questions, or concerns to: Ms. Janet Wade, Environmental Flight Chief, 460 CES/CEV, 660 South Aspen Street, Stop 86, Buckley AFB, CO, 80011-9951, (720) 847-9187.

Comments must be received by Wednesday, December 28, 2005.

Sincerely,

Eric J. Barndt
Project Manager (under contract to 460 CDS/CEVP)

MACTEC Engineering and Consulting, Inc.
14062 Denver West Parkway, Suite 300 • Golden, CO 80401 • Phone: 303.292.5365 • Fax: 303.292.5411
www.mactec.com

MACTEC

engineering and constructing a better tomorrow

November 23, 2005

R. Linda Appelbaum
908 South Yampa Street, Unit 106
Aurora, CO 80017

Dear Ms. Appelbaum:

The United States Air Force (USAF) and the 460th Space Wing (SW) has prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from the proposed construction and operation of numerous infrastructure Capital Improvement Projects (CIPs) at Buckley AFB, Colorado (Proposed Action). The EA has been prepared per the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. The proposed infrastructure Capital Improvement Projects (CIPs) are required to improve upon current infrastructure and accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley Air Force Base.

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www.mactec.com

MACTEC

engineering and constructing a better tomorrow

November 23, 2005

Laura Bishard
CDPH&E
6552 W. 81st Avenue
Arvada CO 80003

Dear Ms. Bishard:

The United States Air Force (USAF) and the 460th Space Wing (SW) has prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from the proposed construction and operation of numerous infrastructure Capital Improvement Projects (CIPs) at Buckley AFB, Colorado (Proposed Action). The EA has been prepared per the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. The proposed infrastructure Capital Improvement Projects (CIPs) are required to improve upon current infrastructure and accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley Air Force Base.

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Project Manager (under contract to 460 CDS/CEVP)

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www.mactec.com

MACTEC

engineering and constructing a better tomorrow

November 23, 2005

Monique Brunecz
23841 East Archer Place
Aurora, CO 80018

Dear Ms. Brunecz:

The United States Air Force (USAF) and the 460th Space Wing (SW) has prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from the proposed construction and operation of numerous infrastructure Capital Improvement Projects (CIPs) at Buckley AFB, Colorado (Proposed Action). The EA has been prepared per the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. The proposed infrastructure Capital Improvement Projects (CIPs) are required to improve upon current infrastructure and accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley Air Force Base.

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Comments must be received by Wednesday, December 28, 2005.

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Eric J. Barndt
Project Manager (under contract to 460 CDS/CEVP)

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www.mactec.com

MACTEC

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November 23, 2005

Curtis Burns
CDPHE
4300 Cherry Creek Dr. South
Denver CO 80246

Dear Mr. Burns:

The United States Air Force (USAF) and the 460th Space Wing (SW) has prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from the proposed construction and operation of numerous infrastructure Capital Improvement Projects (CIPs) at Buckley AFB, Colorado (Proposed Action). The EA has been prepared per the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. The proposed infrastructure Capital Improvement Projects (CIPs) are required to improve upon current infrastructure and accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley Air Force Base.

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Interested parties should address their comments, questions, or concerns to: Ms. Janet Wade, Environmental Flight Chief, 460 CES/CEV, 660 South Aspen Street, Stop 86, Buckley AFB, CO, 80011-9951, (720) 847-9187.

Comments must be received by Wednesday, December 28, 2005.

Sincerely,

Eric J. Barndt
Project Manager (under contract to 460 CDS/CEVP)

MACTEC Engineering and Consulting, Inc.
14062 Denver West Parkway, Suite 300 • Golden, CO 80401 • Phone: 303.292.5365 • Fax: 303.292.5411
www.mactec.com

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engineering and constructing a better tomorrow

November 23, 2005

Margee Cannon
City of Aurora Neighborhood Services
15151 E. Alameda Pkwy.
Aurora CO 80012

Dear Ms. Cannon:

The United States Air Force (USAF) and the 460th Space Wing (SW) has prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from the proposed construction and operation of numerous infrastructure Capital Improvement Projects (CIPs) at Buckley AFB, Colorado (Proposed Action). The EA has been prepared per the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. The proposed infrastructure Capital Improvement Projects (CIPs) are required to improve upon current infrastructure and accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley Air Force Base.

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November 23, 2005

Paul Carlberg
970 South Telluride Street
Aurora, CO 80017

Dear Mr. Carlberg:

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November 23, 2005

Russell Clayshulte
1529 South Telluride Street
Aurora, CO 80017

Dear Mr. Clayshulte:

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November 23, 2005

Elizabeth Cline
1311 South Cathay Court
Apartment 103
Aurora, CO 80017

Dear Ms. Cline:

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November 23, 2005

Eilene F. Cottingham
1156 South Biscay Court
Aurora, CO 80017

Dear Ms. Cottingham:

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November 23, 2005

David Cox
URS Group
8181 E. Tufts Ave
Denver CO 80237

Dear Mr. Cox:

The United States Air Force (USAF) and the 460th Space Wing (SW) has prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from the proposed construction and operation of numerous infrastructure Capital Improvement Projects (CIPs) at Buckley AFB, Colorado (Proposed Action). The EA has been prepared per the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. The proposed infrastructure Capital Improvement Projects (CIPs) are required to improve upon current infrastructure and accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley Air Force Base.

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November 23, 2005

John Dalton
EPA – Region VIII
999 18th Street, Suite 300
Denver CO 80202-2466

Dear Mr. Dalton:

The United States Air Force (USAF) and the 460th Space Wing (SW) has prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from the proposed construction and operation of numerous infrastructure Capital Improvement Projects (CIPs) at Buckley AFB, Colorado (Proposed Action). The EA has been prepared per the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. The proposed infrastructure Capital Improvement Projects (CIPs) are required to improve upon current infrastructure and accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley Air Force Base.

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November 23, 2005

Christopher DeLaRosa
7561 East Harvard Avenue
Apartment 103
Denver, CO 80231

Dear Mr. DeLaRosa:

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November 23, 2005

Jackie Emmons
477 Salem Street
Aurora CO 80011

Dear Jackie Emmons:

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November 23, 2005

Judy Enderle
Prairie Preservation Alliance
PO Box 12485
Denver, CO 80212

Dear Ms. Enderle:

The United States Air Force (USAF) and the 460th Space Wing (SW) has prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from the proposed construction and operation of numerous infrastructure Capital Improvement Projects (CIPs) at Buckley AFB, Colorado (Proposed Action). The EA has been prepared per the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. The proposed infrastructure Capital Improvement Projects (CIPs) are required to improve upon current infrastructure and accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley Air Force Base.

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November 23, 2005

William A. Gallant, R.G.
Principal
Gallant & Associates
17531 West 59th Avenue
Golden, Colorado 80403

Dear Ms. Gallant:

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Project Manager (under contract to 460 CDS/CEVP)

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November 23, 2005

Francisco J. Garza
3028 S. Mobile Way
Aurora CO 8013

Dear Francisco Garza:

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November 23, 2005

Ivor Alexander
1385 S. Uravan Street
Aurora, CO 80018

Dear Mr. Alexander:

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November 23, 2005

Janell Hetrick
1760 Andes
Aurora, CO 80017

Dear Ms. Hetrick:

The United States Air Force (USAF) and the 460th Space Wing (SW) has prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from the proposed construction and operation of numerous infrastructure Capital Improvement Projects (CIPs) at Buckley AFB, Colorado (Proposed Action). The EA has been prepared per the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. The proposed infrastructure Capital Improvement Projects (CIPs) are required to improve upon current infrastructure and accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley Air Force Base.

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November 23, 2005

Ron Hinds
1311 South Cathay Court
Apartment 103
Aurora, CO 80017

Dear Mr. Hinds:

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November 23, 2005

Cuatro Hundley
5575 DTC Blvd #200
Denver CO 80111

Dear Cuatro Hundley:

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November 23, 2005

Marilyn Kay Johnson
14751 East Tennessee Drive
Apartment 227
Aurora, CO 80012

Dear Ms. Johnson:

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November 23, 2005

Carolyn J. Lawrence
906 Sough Walden Street
Apartment 106
Aurora, CO 80017

Dear Ms. Lawrence:

The United States Air Force (USAF) and the 460th Space Wing (SW) has prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from the proposed construction and operation of numerous infrastructure Capital Improvement Projects (CIPs) at Buckley AFB, Colorado (Proposed Action). The EA has been prepared per the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. The proposed infrastructure Capital Improvement Projects (CIPs) are required to improve upon current infrastructure and accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley Air Force Base.

Copies of the EA may be found at the following public libraries: Aurora Public Library, Government Document section, 14949 East Alameda Drive, Aurora, CO 80012, 303-739-6600; the Denver Public Library, Government Document section, 10 West Fourteenth Ave., Denver, CO 80204, 303-640-6200; or the CU-Boulder University Government Public Library, 1720 Pleasant Street, Boulder, CO 80309, 303-492-8834.

Interested parties should address their comments, questions, or concerns to: Ms. Janet Wade, Environmental Flight Chief, 460 CES/CEV, 660 South Aspen Street, Stop 86, Buckley AFB, CO, 80011-9951, (720) 847-9187.

Comments must be received by Wednesday, December 28, 2005.

Sincerely,

Eric J. Barndt
Project Manager (under contract to 460 CDS/CEVP)

MACTEC Engineering and Consulting, Inc.
14062 Denver West Parkway, Suite 300 • Golden, CO 80401 • Phone: 303.292.5365 • Fax: 303.292.5411
www.mactec.com

MACTEC

engineering and constructing a better tomorrow

November 23, 2005

Carol Maclennan
Tri-County Health Department
7000 E. Belleview Avenue, Suite 301
Greenwood Village, CO 80111

Dear Ms. Maclennan:

The United States Air Force (USAF) and the 460th Space Wing (SW) has prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from the proposed construction and operation of numerous infrastructure Capital Improvement Projects (CIPs) at Buckley AFB, Colorado (Proposed Action). The EA has been prepared per the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. The proposed infrastructure Capital Improvement Projects (CIPs) are required to improve upon current infrastructure and accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley Air Force Base.

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Sincerely,

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November 23, 2005

Ken Melcher
11499 E. Dakota Ave
Aurora CO 80012

Dear Mr. Melcher:

The United States Air Force (USAF) and the 460th Space Wing (SW) has prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from the proposed construction and operation of numerous infrastructure Capital Improvement Projects (CIPs) at Buckley AFB, Colorado (Proposed Action). The EA has been prepared per the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. The proposed infrastructure Capital Improvement Projects (CIPs) are required to improve upon current infrastructure and accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley Air Force Base.

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Comments must be received by Wednesday, December 28, 2005.

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Eric J. Barndt
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www.mactec.com

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November 23, 2005

Fred B. Mould
980 South Gun Club Road
Aurora, CO 80018

Dear Mr. Mould:

The United States Air Force (USAF) and the 460th Space Wing (SW) has prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from the proposed construction and operation of numerous infrastructure Capital Improvement Projects (CIPs) at Buckley AFB, Colorado (Proposed Action). The EA has been prepared per the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. The proposed infrastructure Capital Improvement Projects (CIPs) are required to improve upon current infrastructure and accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley Air Force Base.

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Interested parties should address their comments, questions, or concerns to: Ms. Janet Wade, Environmental Flight Chief, 460 CES/CEV, 660 South Aspen Street, Stop 86, Buckley AFB, CO, 80011-9951, (720) 847-9187.

Comments must be received by Wednesday, December 28, 2005.

Sincerely,

Eric J. Barndt
Project Manager (under contract to 460 CDS/CEVP)

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www.mactec.com

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November 23, 2005

William and June Murray
18011 East 14th Drive
Aurora, CO 80011

Dear Mr. and Ms. Murray:

The United States Air Force (USAF) and the 460th Space Wing (SW) has prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from the proposed construction and operation of numerous infrastructure Capital Improvement Projects (CIPs) at Buckley AFB, Colorado (Proposed Action). The EA has been prepared per the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. The proposed infrastructure Capital Improvement Projects (CIPs) are required to improve upon current infrastructure and accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley Air Force Base.

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Comments must be received by Wednesday, December 28, 2005.

Sincerely,

Eric J. Barndt
Project Manager (under contract to 460 CDS/CEVP)

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www.mactec.com

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November 23, 2005

Rich Muza
EPA – Region VIII
999 18th Street
Denver CO 80202

Dear Mr. Muza:

The United States Air Force (USAF) and the 460th Space Wing (SW) has prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from the proposed construction and operation of numerous infrastructure Capital Improvement Projects (CIPs) at Buckley AFB, Colorado (Proposed Action). The EA has been prepared per the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. The proposed infrastructure Capital Improvement Projects (CIPs) are required to improve upon current infrastructure and accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley Air Force Base.

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Comments must be received by Wednesday, December 28, 2005.

Sincerely,

Eric J. Barndt
Project Manager (under contract to 460 CDS/CEVP)

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www.mactec.com

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November 23, 2005

Richard and Bonnie Rader
71 Alqonquian Street
Aurora, CO 80018

Dear Mr. and Ms. Rader:

The United States Air Force (USAF) and the 460th Space Wing (SW) has prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from the proposed construction and operation of numerous infrastructure Capital Improvement Projects (CIPs) at Buckley AFB, Colorado (Proposed Action). The EA has been prepared per the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. The proposed infrastructure Capital Improvement Projects (CIPs) are required to improve upon current infrastructure and accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley Air Force Base.

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Comments must be received by Wednesday, December 28, 2005.

Sincerely,

Eric J. Barndt
Project Manager (under contract to 460 CDS/CEVP)

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www.mactec.com

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November 23, 2005

Bob and Leslie Reichardt
23852 East Archer Place
Aurora, CO 80018

Dear Mr. and Ms. Reichardt:

The United States Air Force (USAF) and the 460th Space Wing (SW) has prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from the proposed construction and operation of numerous infrastructure Capital Improvement Projects (CIPs) at Buckley AFB, Colorado (Proposed Action). The EA has been prepared per the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. The proposed infrastructure Capital Improvement Projects (CIPs) are required to improve upon current infrastructure and accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley Air Force Base.

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Interested parties should address their comments, questions, or concerns to: Ms. Janet Wade, Environmental Flight Chief, 460 CES/CEV, 660 South Aspen Street, Stop 86, Buckley AFB, CO, 80011-9951, (720) 847-9187.

Comments must be received by Wednesday, December 28, 2005.

Sincerely,

Eric J. Barndt
Project Manager (under contract to 460 CDS/CEVP)

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www.mactec.com

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November 23, 2005

Monica Sheets
CDPHE- HMWMD-FF-B2
4300 Cherry Creek Dr. South
Denver CO 80246

Dear Ms. Sheets:

The United States Air Force (USAF) and the 460th Space Wing (SW) has prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from the proposed construction and operation of numerous infrastructure Capital Improvement Projects (CIPs) at Buckley AFB, Colorado (Proposed Action). The EA has been prepared per the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. The proposed infrastructure Capital Improvement Projects (CIPs) are required to improve upon current infrastructure and accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley Air Force Base.

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Interested parties should address their comments, questions, or concerns to: Ms. Janet Wade, Environmental Flight Chief, 460 CES/CEV, 660 South Aspen Street, Stop 86, Buckley AFB, CO, 80011-9951, (720) 847-9187.

Comments must be received by Wednesday, December 28, 2005.

Sincerely,

Eric J. Barndt
Project Manager (under contract to 460 CDS/CEVP)

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www.mactec.com

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November 23, 2005

Dominic A. Verizzi
1162 Nucha Street
Aurora, CO 80011

Dear Mr. Verizzi:

The United States Air Force (USAF) and the 460th Space Wing (SW) has prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from the proposed construction and operation of numerous infrastructure Capital Improvement Projects (CIPs) at Buckley AFB, Colorado (Proposed Action). The EA has been prepared per the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. The proposed infrastructure Capital Improvement Projects (CIPs) are required to improve upon current infrastructure and accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley Air Force Base.

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Interested parties should address their comments, questions, or concerns to: Ms. Janet Wade, Environmental Flight Chief, 460 CES/CEV, 660 South Aspen Street, Stop 86, Buckley AFB, CO, 80011-9951, (720) 847-9187.

Comments must be received by Wednesday, December 28, 2005.

Sincerely,

Eric J. Barndt
Project Manager (under contract to 460 CDS/CEVP)

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www.mactec.com

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November 23, 2005

Frank Weddig
15818 E. 8th Circle
Aurora CO 80011

Dear Mr. Weddig:

The United States Air Force (USAF) and the 460th Space Wing (SW) has prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from the proposed construction and operation of numerous infrastructure Capital Improvement Projects (CIPs) at Buckley AFB, Colorado (Proposed Action). The EA has been prepared per the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. The proposed infrastructure Capital Improvement Projects (CIPs) are required to improve upon current infrastructure and accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley Air Force Base.

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Sincerely,

Eric J. Barndt
Project Manager (under contract to 460 CDS/CEVP)

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November 23, 2005

Linda S. Young
1104 South Biscay Street
Aurora, CO 80017

Dear Ms. Young:

The United States Air Force (USAF) and the 460th Space Wing (SW) has prepared an Environmental Assessment (EA) to evaluate the potential environmental impacts from the proposed construction and operation of numerous infrastructure Capital Improvement Projects (CIPs) at Buckley AFB, Colorado (Proposed Action). The EA has been prepared per the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. The proposed infrastructure Capital Improvement Projects (CIPs) are required to improve upon current infrastructure and accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley Air Force Base.

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November 23, 2005

Denver Public Library
Government Document Section
10 West Fourteenth Ave
Denver, CO 80204

Attention: Mr. Wayne Coffey

The Air Force has prepared a Draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for proposed infrastructure Capital Improvement Projects (CIPs) at Buckley Air Force Base (AFB). The proposed action is required to support the 460th Air Base Wing mission and improve quality of life for on-site, off-site, and retired personnel.

A copy of the Draft EA and FONSI for the CIP Projects is enclosed for public review. Written comments can be directed to:

Ms. Janet Wade, Environmental Flight Chief
460 CES/CEV, 660 South Aspen Street, Stop 86
Buckley AFB, CO.

Questions can be directed to Ms. Wade at (720)-847-9187.

Sincerely,

Eric J. Barndt
Project Manager (under contract to 460 CDS/CEVP)

MACTEC Engineering and Consulting, Inc.
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November 23, 2005

CU-Boulder
University Government Publications Library
1720 Pleasant Street
Boulder, CO 80309

Attention: Ms. Leanne Walther

The Air Force has prepared a Draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for proposed infrastructure Capital Improvement Projects (CIPs) at Buckley Air Force Base (AFB). The proposed action is required to support the 460th Air Base Wing mission and improve quality of life for on-site, off-site, and retired personnel.

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Ms. Janet Wade, Environmental Flight Chief
460 CES/CEV, 660 South Aspen Street, Stop 86
Buckley AFB, CO.

Questions can be directed to Ms. Wade at (720)-847-9187.

Sincerely,

Eric J. Barndt
Project Manager (under contract to 460 CDS/CEVP)

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November 23, 2005

Aurora Public Library
Government Document Section
14949 East Alameda Street
Aurora, CO 80012

Attention: Ms. Susan Yoneda

The Air Force has prepared a Draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for proposed infrastructure Capital Improvement Projects (CIPs) at Buckley Air Force Base (AFB). The proposed action is required to support the 460th Air Base Wing mission and improve quality of life for on-site, off-site, and retired personnel.

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Ms. Janet Wade, Environmental Flight Chief
460 CES/CEV, 660 South Aspen Street, Stop 86
Buckley AFB, CO.

Questions can be directed to Ms. Wade at (720)-847-9187.

Sincerely,

Eric J. Barndt
Project Manager (under contract to 460 CDS/CEVP)

MACTEC Engineering and Consulting, Inc.
14062 Denver West Parkway, Suite 300 • Golden, CO 80401 • Phone: 303.292.5365 • Fax: 303.292.5411
www.mactec.com

APPENDIX O

NOTICE OF AVAILABILITY

THE Denver Newspaper Agency
DENVER, CO

PUBLISHER'S AFFIDAVIT

City and County of Denver,
STATE OF COLORADO, SS.

Cheryl Schmid

..... being of lawful age and being first duly sworn upon oath, deposes and says:

Legal Advertising Reviewer

That he/she is the .....
Of The Denver Newspaper Agency, publisher of the Denver Post and Rocky Mountain News, daily newspapers of general Circulation published and printed in whole or in part in Denver, in the County of Denver and State of Colorado, and that said newspaper was Prior to and during all the time hereinafter mentioned duly qualified For the publication of legal notices and advertisements within the Meaning of an Act of the General Assembly of the State of Colorado,
Approved April 7, 1921, as amended and approved March 30, 1923;
And as amended and approved March 5, 1935, entitled "An Act Concerning Legal Notices, Advertisements and Publications and the Fees of printers and publishers thereof, and to repeal all acts and parts Of acts in conflict with the provision of this Act" and amendments Thereto:

That the notice, of which the annexed is a true copy, was published in The said newspaper to wit: (dates of publication)

November 27, 2005

Cheryl Schmid
Signature

Subscribed and sworn to before me this 28 day

Of ... November ... A.D. 2005.

Susan Sloan
Notary Public.

My commission expires 8/15/06

SUSAN SLOAN NOTARY PUBLIC STATE OF COLORADO

Public Notice
U.S. Air Force Notice of Availability

Interested parties are hereby notified that Buckley Air Force Base (AFB) has prepared a Draft Environmental Assessment (EA) and a Draft Finding of No Significant Impact (FONSI) to evaluate the potential environmental impacts from the proposed construction and operation of numerous infrastructure Capital Improvement Projects (CIPs) at Buckley Air Force Base, Colorado (Proposed Action).

Statutory Authority. This notice is being issued to interested parties in accordance with the National Environmental Policy Act (Public Law [PL] 91-190, 42 United States Code 4321 et seq.) as amended in 1975 by PL 94-52 and PL 94-83.

Purpose. The purpose and need for the Proposed Action is to: improve upon current infrastructure; accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley AFB; and accommodate growth of current and planned military missions, and community support requirements at Buckley AFB. The proposed action fulfills the purpose and need through the proposed completion of the CIP projects that would result in increasing facility building square footage from approximately 2.7 million gross square feet (ft2) to approximately 4.8 million ft2. Approximately 75 CIP construction and 35 demolition projects, which include dormitories, a new entrance gate, modifications to an existing entrance gate, roadway modifications and landscaping, a community center, installation support facilities, and recreation areas are planned to meet these objectives. The majority of the projects would be concentrated within eight proposed Area Development Plans (ADP) located predominantly in the northwest half of the installation. The ADP planning areas consolidate and co-locate facilities with like or compatible land uses. The goal of the ADP concept is to minimize health, safety, and security risks by segregating incompatible facilities and activities and by placing similar facilities in close proximity to one another. This approach also optimizes organizational efficiencies, minimizes travel distances and times, and reduces associated potential exposure to hazards. The remaining CIP projects would occur within seven Existing Land Use Areas (ELUAs), including open space; aircraft operations and maintenance; airfield/aircraft pavement; mission operations and maintenance; industrial; 6th avenue; and special categories ELUAs.

Comments: Written comments and inquiries regarding this document should be directed to Ms. Janet Wade, Environmental Flight Chief, 460 CES/CEV, 660 South Aspen Street, Stop 86, Buckley AFB, CO, 80011-9951, (720) 847-9187. The comment period is open for 30 days from November 27, 2005 following the publication of this notice in a general circulation newspaper. Copies of the Draft EA are available for review by the public at the Aurora Central Library, 14949 E. Alameda Drive, Aurora, Colorado 80012, the Denver Public Library, Government Documents Section, 10 West 14th Avenue, Denver, Colorado, 80204, and at the University of Colorado-Boulder Government Public Library, 1720 Pleasant Street, Boulder, Colorado, 80309. Copies may also be obtained by writing to Buckley AFB at the address listed above.

AURORA SENTINEL
PROOF OF PUBLICATION

STATE OF COLORADO
COUNTY OF ARAPAHOE }ss.

I HARRISON COCHRAN, do solemnly swear that I am the PUBLISHER of the AURORA SENTINEL; that the same is a weekly newspaper published in the County of Arapahoe, State of Colorado and has a general circulation therein; that said newspaper has been published continuously and uninterruptedly in said County of Arapahoe for a period of more than fifty-two consecutive weeks prior to the first publication of the annexed legal notice or advertisement; that said newspaper has been admitted to the United States mails as second-class matter under the provisions of the Act of March 30, 1923, entitled "Legal Notices and Advertisements", or any amendments thereof, and that said newspaper is a weekly newspaper duly qualified for publishing legal notices and advertisements within the meaning of the laws of the State of Colorado.

That the annexed legal notice or advertisement was published in the regular and entire issue of every number of said weekly newspaper for the period of 1 consecutive insertions; and that the first publication of said notice was in the issue of said newspaper dated November 24 A.D. 2005 and that the last publication of said notice was in the issue of said newspaper dated November 24 A.D. 2005.

In witness whereof I have hereunto set my hand this 24 day of November.

H. Harrison Cochran

Subscribed and sworn to before me, a notary public in the County of Arapahoe, State of Colorado, this 24 day of November A.D. 2005.

NANCY A. MURRAY NOTARY PUBLIC STATE OF COLORADO

Notary Public
My Commission expires November 26, 2005

Public Notice
U.S. Air Force Notice of Availability

Interested parties are hereby notified that Buckley Air Force Base (AFB) has prepared a Draft Environmental Assessment (EA) and a Draft Finding of No Significant Impact (FONSI) to evaluate the potential environmental impacts from the proposed construction and operation of numerous infrastructure Capital Improvement Projects (CIPs) at Buckley Air Force Base, Colorado (Proposed Action).

Statutory Authority. This notice is being issued to interested parties in accordance with the National Environmental Policy Act (Public Law [PL] 91-190, 42 United States Code 4321 et seq.) as amended in 1975 by PL 94-52 and PL 94-83.

Purpose. The purpose and need for the Proposed Action is to: improve upon current infrastructure; accommodate the increased numbers of on-site personnel that has resulted from the realignment of Buckley Air National Guard Base to Buckley AFB; and accommodate growth of current and planned military missions, and community support requirements at Buckley AFB. The proposed action fulfills the purpose and need through the proposed completion of the CIP projects that would result in increasing facility building square footage from approximately 2.7 million gross square feet (ft2) to approximately 4.8 million ft2. Approximately 75 CIP construction and 35 demolition projects, which include dormitories, a new entrance gate, modifications to an existing entrance gate, roadway modifications and landscaping, a community center, installation support facilities, and recreation areas are planned to meet these objectives. The majority of the projects would be concentrated within eight proposed Area Development Plans (ADP) located predominantly in the northwest half of the installation. The ADP planning areas consolidate and co-locate facilities with like or compatible land uses. The goal of the ADP concept is to minimize health, safety, and security risks by segregating incompatible facilities and activities, and by placing similar facilities in close proximity to one another. This approach also optimizes organizational efficiencies, minimizes travel distances and times, and reduces associated potential exposure to hazards. The remaining CIP projects would occur within seven Existing Land Use Areas (ELUAs), including open space; aircraft operations and maintenance; airfield/aircraft pavement; mission operations and maintenance; industrial; 6th avenue; and special categories ELUAs.

Comments: Written comments and inquiries regarding this document should be directed to Ms. Janet Wade, Environmental Flight Chief, 460 CES/CEV, 660 South Aspen Street, Stop 86, Buckley AFB, CO, 80011-9951, (720) 847-9187. The comment period is open for 30 days from November 27, 2005 following the publication of this notice in a general circulation newspaper. Copies of the Draft EA are available for review by the public at the Aurora Central Library, 14949 E. Alameda Drive, Aurora, Colorado 80012, the Denver Public Library, Government Documents Section, 10 West 14th Avenue, Denver, Colorado, 80204, and at the University of Colorado-Boulder Government Public Library, 1720 Pleasant Street, Boulder, Colorado, 80309. Copies may also be obtained by writing to Buckley AFB at the address listed above.

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