The Sioux Ranger District:

- Camp Crook, SD (pop. 60+/-), the location of the Sioux Ranger District, is a very small, rural community located on the western edge of South Dakota in Harding County.

- The Forest Service has been a part of this community for over 100 years, dating back to the days of the Sioux National Forest.

- Harding County is 2,500 square miles and has an estimated population of 1,145.

- The 163,000-acre Sioux Ranger District is part of the Custer National Forest, headquartered in Billings, MT. and lies within the Northern Region of the Forest Service.

- The Forest Service manages five land units in South Dakota and three in eastern Montana (in Carter County) as part of the District.
The Project:

• The current office was built in 1934 and despite additions and renovations, showed signs of deterioration and did not meet current health and safety standards or energy requirements.

• Additionally most of the other facilities had a lot of deferred maintenance and due to grading issues around the site and a high water table, basements in two of the residences and the office would have standing water on an occasional basis.

• Since there were already shelf ready designs for some of the work and the timing was right it made sense to submit this as an ARRA project and combine with Capital investment dollars to try to upgrade all of the facilities and infrastructure at the site.
The Project (cont):

- With continued forecasts of dwindling operation and maintenance dollars, the following decisions were made.
  - Require energy retrofits and upgrades to as many of the facilities as possible.
  - Provide a new energy efficient office, that included daylighting, superinsulation, efficient HVAC systems.
  - Provide a comfortable office with minimal private offices and small footprint, but functional layout.
  - Re-grade the entire site as necessary to get proper drainage and reduce or minimize future flooding and water issues.
  - Remove basements for residences and office. Add appropriate ground level space to make up for the lost space.
  - Update and install new utilities throughout the compound and install generator backup to residences and office, due to unreliable power in the area.
  - Meet the requirements for the Forest Service Built Environment Image Guide for designs in the Great Plains Province
The Site:
Timeline:

- Summer 2009 – submitted for ARRA project
- September 2009 – Started task order with A&E through an existing IDIQ and started fast track to complete contract documents and incorporate other completed design work into the package.
- September 2009 – December 2010 numerous scoping trips to the District and completion of all contract documents.
- January 2010 solicit project
- April 2010 award construction project to Ainsworth Benning Construction Co from Spearfish South Dakota for $2,532,780.
- May 2010 – Construction begins
Challenges:

- Tight design time
- Clay soils throughout the site
- Weather conditions – During construction had the most rainfall recorded in years
- Remoteness of site and housing opportunities for workers
- Sight Drainage
- Coordination to move out of old office and into new office during construction.
- Multitude of different tasks to be accomplished
- Steel supplier wanting to change plans and then not delivering product on time.
Solar Studies - Sun Shading and Diffusion
Solar Shading at Various times of the year

Sun Angles - Shading, Diffusion and Reflection

Summer - Morning

Winter - Morning

Summer - Mid-Morning

Winter - Mid-Morning

Summer - Early Afternoon

Winter - Early Afternoon

Summer - Late Afternoon

Winter - Late Afternoon
Groundbreaking - May 2010
Water Issues – Who ordered this – we did not have swimming pools in the contract.
New Record Streamflow for Little Missouri River at Camp Crook

• Streamflow of the Little Missouri River at Camp Crook, S.D., set a new record high when the water level peaked on Tuesday, May 24, according to real-time U.S. Geological Survey streamgage data.

• The new streamflow record of approximately 20,200 cubic feet per second (cfs) was recorded by the USGS streamgage at Little Missouri River at Camp Crook, breaking the previous April 17, 2009 record of 12,400 cfs at this location. The water level peaked at 19.42 feet on Tuesday, about seven feet above the National Weather Service designated flood stage of 12 feet.
Day after the rains. Am I still in SD or did I get transported to Africa?
Office Foundation
Office

Previous Office

New
Office

Interior open office

Front Entrance
Office Utility Cost Reductions

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>$3,692</td>
<td>$4,370</td>
<td>$4,083</td>
<td>$4,197</td>
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<td>$2,719</td>
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<tr>
<td>Natural Gas</td>
<td>$717</td>
<td>$955</td>
<td>$1,579</td>
<td>$1,609</td>
<td>$902</td>
<td>$627</td>
<td>$197</td>
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<tr>
<td>Water, Trash, or Sewer</td>
<td>$8,746</td>
<td>$3,264</td>
<td>$3,283</td>
<td>$4,117</td>
<td>$3,030</td>
<td>$4,055</td>
<td>$3,063</td>
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<tr>
<td>Total</td>
<td>$13,155</td>
<td>$8,590</td>
<td>$8,945</td>
<td>$9,924</td>
<td>$8,198</td>
<td>$7,401</td>
<td>$4,048</td>
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</table>

Reduction in Utility Usage

<table>
<thead>
<tr>
<th>Year</th>
<th>Electricity</th>
<th>Natural Gas</th>
<th>Water, Trash, or Sewer</th>
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<tbody>
<tr>
<td>2006</td>
<td></td>
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<td>2011</td>
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<td></td>
</tr>
<tr>
<td>2012</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Other work Completed

• Eliminate basements in two of the residences and build addition to main floor to make up space.
• Remodel one residence to be fully accessible for persons with disabilities.
• Remodel the 4-plex install new energy efficient windows, new siding, additional insulation and better sewage ejection systems.
• Remodel bunkhouse and bathrooms
• Remodel the shop, warehouse and barn buildings
• Upgrade the water, sanitary and storm water systems and electrical systems
North Residence

Prior to Construction
North Residence

Before  After
North Residence

During Construction
North Residence

After Construction
Middle Residence

Prior To Construction
Middle Residence

After Construction

Meets all ADA/ABA requirements
South Residence

Prior to Construction
South Residence

During Construction
South Residence

After Construction

Foundation Work

Page 33
4-Plex

Prior to Construction

Foundation Work
4-Plex

After Construction
Shop

Prior to Construction
Shop

After Construction
Barn

Prior to Construction  After
Bunkhouse

Before

After
Garage/Warehouse

Before

After
Other Facilities

Carport

Pumphouse
Other Facilities

South Garage

Middle Garage
Other Facilities

North Garage

Retrofit of Hazmat bldg
Other Facilities

North Garage

Retrofit of Hazmat bldg
## BRIEF FINANCIAL SUMMARY OF THE CONTRACT

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>Final Construction Cost</td>
<td>$2,906,505 – over $300,000 of change orders were FS requested add-ons to the contract.</td>
</tr>
<tr>
<td>Original Construction Award</td>
<td>$2,532,780</td>
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<tr>
<td>Total estimated Deferred Maintenance Reduction</td>
<td>$2,000,000 + estimated</td>
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<tr>
<td>Total annual estimated O&amp;M Reduction</td>
<td>$25,000 + estimated</td>
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</tbody>
</table>
Questions/Comments?

Thank You