Private Fuel Storage, L.L.C.

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February 15, 2000

EIS COMMITMENT RESOLUTION LETTER #5
DOCKET NO. 72-22 / TAC NO. L22462
PRIVATE FUEL STORAGE FACILITY
PRIVATE FUEL STORAGE L.L.C.

References:
1. January 26, 2000 phone call between the NRC and S&W
2. February 1, 2000 phone call between the NRC and S&W
3. February 3, 2000 phone call between the NRC and S&W
4. February 4, 2000 phone call between the NRC and S&W

During the above referenced phone calls, between the NRC and Stone and Webster (S&W), the NRC requested clarification/additional information regarding several topics discussed in the PFS Environmental Report (ER). The NRC requests/questions are documented below along with the PFS response.

NRC Requests/Questions

1. Has the PFS flooding analysis considered impacts on the existing drainage patterns downstream of the PFSF site? What flooding criteria (100-year, PMF, etc.) were used to size the culverts under the access road and the rail line?

RESPONSE – As currently stated in ER Section 2.5.2, "Downstream of the access road and the rail road, the PMF returns to the natural flow conditions". A review of the updated flood analyses (Calculations No. 0599602-G(B)-12, Rev.1," PFSF Flood Analysis with Larger Drainage Basin, 0599602 -G(B)-016, Rev. 1, "PFSF Flood Analysis at 3-mile-long Portion of Rail Spur", and 0599602-G(B)-17, Rev. 1, "PFSF Flood Analysis Proposed Access Road and Rail Road") indicates that after the 100-year flood, or PMF flow passes the Access Road, or the east-west rail line, the flow will follow the existing natural slope, which is sloping down toward the Great Salt Lake. This conclusion is based on the fact that in the analysis, downstream of the PFSF site, the cross section input data to the HEC-RAS model were derived from the USGS topographic map. The construction of the PFSF will not alter the existing natural topographic features of the

area beyond the Owner Controlled Area (OCA) boundary and corridor right of ways (access road/rail line). Therefore, it will not impact the downstream drainage patterns.

As currently stated in ER Section 2.5.2, a 100-year flood flow was used to size the culverts under the access road and the rail line in the preliminary design calculation.

No ER update is required.

2. Has PFS implemented a geotechnical program along the Low Corridor rail line to determine subsurface soil conditions? If not, what basis does PFS have for assuming that the cut generated along the route is suitable for fill material?

RESPONSE - PFS has not yet implemented a geotechnical program along the Low Corridor. PFS expects to implement a program in the Spring of 2000.
PFS is confident that the cut generated along the route is suitable for fill because, as indicated in Section 2.5.5 of the ER, the valley-fill deposits in Skull Valley consist of inter-stratified colluvium, alluvium, lacustrine, and fluvial deposits with minor basalt and ash, and some eolian material. In general, these deposits are coarser near the perimeter of the valley, grading into well-sorted sand and gravel, and they are interlayered with lacustrine silt and clay towards the center of the valley. The major cuts are located near the northern end of the proposed route, where it skirts the northeastern flank of the Cedar Mountains. It is anticipated that the deposits in this area will be colluvial and alluvial deposits, which are expected to be coarser sands and gravels near the base of the mountains. Such soils will be suitable for use as fill wherever needed. Even finer grained soils, such as the silts and clays that are expected to be encountered along portions of the route, can be used to construct the interior portions of the embankments that are required. Techniques may be required to compact these and protect them from erosion should it be economical to use them as fills, rather than spoiling them and importing better quality fills.

The ER will be updated to include the above information.

3. PFS needs to provide further clarification in Chapter 8 of the ER regarding the site selection process. The selection criteria used for each phase needs to be clearly identified as well as the number of sites eliminated during each phase of the process. PFS also needs to provide additional information to explain how the additional 12 potential host sites (those in addition to the original list of 26 applicants to the Nuclear Waste Negotiator's office) were determined.

RESPONSE – The additional 12 potential host sites, those in addition to the original list of 26 applicants to the Nuclear Waste Negotiator's office, were self-nominated.

They all contacted PFS and requested consideration of their site(s) during negotiations with the Mescalero Apache Tribe for siting the PFSF on their reservation, prior to relocation of the facility to Utah. PFS did not advertise or conduct solicitation for potential host sites. One of the criteria for a site was that there had to be a voluntary host community associated with the possible location, which was the case with each of the 12 parties that contacted PFS expressing an interest in hosting the private spent fuel storage facility.

The ER will be updated to include the above information.

PFS will provide clarification on the selection criteria used for each phase as well as the number of sites eliminated during each phase of the process in a separate letter to be issued by February 18, 2000.

4. The phrase "best management practices" is used in ER Chapter 9 in the discussion on Surface Water Protection and Preservation of Air Quality. PFS needs to explain this term and identify what best management practices PFS will implement.

RESPONSE – Best Management is defined in both federal and state regulations. EPA's definition is found in 40 CFR Part 122.2 and reads as follows:

> Best Management Practices (BMPs) means schedules of activities, prohibition of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of "waters of the United States." BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

The definition is also used as defined above by the State of Utah in the Department of Environmental Quality's (DEQ) Stormwater General Permit for Construction Activity, Part VII, Definitions. An example of BMPs is shown in a list of BMPs for Salt Lake County, Department of Public Works, Guidance Document for Storm Water Management During Construction Activities, May 1995, Appendix A.

The ER will be updated to include the above information.

PFS will identify specific best management practices that will be implemented in a separate letter to be issued by February 18, 2000.

5. PFS needs to provide additional details on the construction of the Detention Basin. Include a discussion of what provisions will be taken to avoid wind and water erosion

of side slopes and provide any drawings that PFS has that shows the design of the basin.

RESPONSE - The detention basin is shown on drawings 0599601-EY-3 and 0500601-EY-4 (see attached copy). The 800' x 200' detention basin located immediately north of the storage area is designed to contain the 100-yr flood. The basin is designed with a concrete inlet from the storage site that precludes erosion from site drainage. The basin is constructed of compacted soil with 10 to 1 side slopes. Side slopes this gradual will reduce the velocity of rainwater flowing into the basin and minimize wind pressure thereby reducing the potential for wind or water erosion. In addition, the basin is located within the 300 wide wildfire barrier that will be planted with crested wheat grass. The presence of the crested wheat grass on the side slopes and bottom of the basin will stabilize the soil and help prevent erosion due to wind or water.

The detention basin is not expected to have standing water except possibly following a severe rainstorm. Water drainage from the storage site from a typical rainstorm is estimated to soak into the ground before it reaches the detention basin. The detention basin was sized for a 100-year flood event in which the depth of water in the basin was calculated to be 4.77 ft. (S&W Calculation No. 0599601-SY-2, Revision 0). In the unlikely event of a 100-yr flood, the time for the water that has collected in the basin to be removed via evaporation and ground percolation is approximately 140 days assuming an evaporation rate of 0.32 in/day (Houghton, Handbook of Applied Meteorology, 1985) and percolation rate of 0.09 in/day (Lambe & Whitman, Soil Mechanics, 1969). If this unlikely event occurred, temporary pumps would be used to drain the detention basin and eliminate long term standing water.

The ER will be updated to include the above information.

6. PFS should provide a qualitative assessment of the impacts of the premature shut down of an operating nuclear plant due to the inability to construct sufficient on-site spent fuel storage.

RESPONSE – The following is a qualitative assessment of potential effects of premature nuclear plant shutdowns due to insufficient on-site spent fuel storage capacity:

- Utilities would need to provide electrical power that was being produced by the nuclear plant by some other means to meet demands.
    a. Build replacement generation
    b. Purchase power

Both the above options would likely result in increased air emissions as fossil fuel use in the State increases.

- Following permanent shutdown, complete decommissioning of the fuel pool could not be undertaken until all the spent fuel has been removed. Since insufficient spent fuel storage capacity forced the nuclear plant to shutdown, it may not be possible to remove spent fuel from the fuel pool and transfer the fuel to an on-site dry storage facility, with the following resulting impacts:
  a. The utility would incur significant maintenance and administrative costs of keeping its fuel pool and associated systems operational, such as maintenance, surveillance, and inspections.
  b. Since decommissioning would be delayed until spent fuel could be removed from the nuclear power plant, including the fuel pool, the utility may be unable to terminate its 10 CFR 50 license, and may be required to continue to implement relatively expensive programs required by this license, such as the Physical Protection Plan.
  c. The cost of Low Level Waste (LLW) disposal has increased dramatically in recent years as disposal sites are closed and regional compact efforts to evaluate, select and license disposal sites are being delayed. The decommissioning delays incurred by inability to remove spent fuel from fuel pools would likely result in higher costs of LLW disposal when the spent fuel is transferred and decommissioning of the fuel pool is eventually undertaken. In some cases, LLW disposal may become unavailable to the utility at the time when the fuel is eventually removed and decommissioning is scheduled to begin.
  d. Delays in decommissioning will result in delays in restoring the site, or reusing the site for other potential economic development.

- In order to enable decommissioning and termination of the 10 CFR 50 license, the utilities would need to construct an on-site dry storage facility so that the spent fuel could be transferred out of the fuel pool (assuming a centralized spent fuel storage facility, such as the PFSF, is not in existence).

  The construction of additional onsite ISFSIs at plant sites will result in more sites disturbed and greater environmental impact than constructing one site in a remote, desert environment, such as the PFSF. In addition, lack of standardization will increase the complexity and cost of eventually preparing and shipping spent fuel to a federal facility, and increase the decommissioning burden for utilities with onsite ISFSIs.

- The availability of the PFSF may enable utilities that have limited spent fuel storage space to consider life extension of their operating units and possibly operate beyond their license term. Life extension may be the least-cost alternative for additional capacity, and may result in lower emissions of greenhouse gases.

- Development of the PFSF will result in new industry standards for the storage and transportation of large amounts of spent fuel.

7. PFS needs to provide a discussion that addresses the potential for flooding at the Intemodal Transfer Point and any necessary design features to prevent flooding.

RESPONSE - The intermodal transfer point is not expected to be affected by flooding. The existing elevation of the intermodal transfer point (ITP) area is from 4220 ft. to 4225 ft. as determined from the Poverty Point, Utah and Timpie, Utah 7 1/2 minute USGS quadrangle topography map 5 ft. contours. The actual ITP will be designed nearer the elevation of 4225 ft. In 1986, the Great Salt Lake flooded to an historic elevation of 4211.85 ft., which is well below the ITP area elevation of 4220 ft. to 4225 ft.

In addition, the Great Salt Lake Planning Project Draft Analysis of Proposed Management Alternatives, issued by the State of Utah Department of Natural Resources in January 1999, has designated the flood plain of the lake at 4212 ft. for planning purposes and 4217 ft. as the extent of the lake's flood plain. Neither elevation is above the ITP elevation of 4220 ft. to 4225 ft. Therefore, there are no design provisions necessary at the ITP to prevent flooding.

The ER will be updated to include the above discussion.

8. PFS should provide a map that shows the location of the aggregate sites in Skull Valley presented in ER Table 4.1-7. Additional information should be provided as to the operational status of each site and the permitting requirements/status of each site.

RESPONSE - A map showing the location of the nearby privately owned aggregate sites as listed in ER Table 4.1-7 is attached and will be incorporated into the next ER revision. For sand and gravel material, currently only the Willow Creek pit is in operation. However, the Stansbury West pit and Hickman Knolls pit can be reopened to provide necessary materials. For the railroad line ballast, only the Corral Canyon Quarry is in operation but the Marble Head Quarry can be reopened to provide ballast materials.

PFS will provide the permitting requirements/status of each site in a separate letter to be issued by February 18, 2000.

9. PFS should provide a discussion of the construction plan for additional cask storage pads (SW quadrant and northern half of the facility) and the loading sequence for spent fuel storage casks in the SE quadrant that will be used to minimize occupational radiation exposure to the construction work force.

RESPONSE – As discussed in Sections 3.2 and 4.1.7 of the PFSF Environmental Report, construction of the PFSF will be performed in three phases to meet the anticipated long-term schedule for receipt of spent fuel. This approach will allow

the PFSF to begin operations in a timely manner and to levelize construction activities and costs over time. It will also provide long term employment for people living in the area from the construction of concrete storage pads and casks.

Phase 2 pad construction (SW quadrant) will be performed while the Phase 1 (SE quadrant) pads are being loaded with casks, and will be completed before all of the Phase 1 casks are in-place. Phase 2 earthwork, soil stabilization, and pad construction will utilize the same technique and sequence as was used for the Phase 1 pads; i.e., row-by-row (running north-south), working from east to west across the SW quadrant. During Phase 2 construction, storage casks will be loaded on the SE quadrant of storage pads beginning on the eastern side and advancing toward the west. This sequence maximizes the distance between the personnel constructing the Phase 2 pads and the casks being placed in the SE quadrant (from east to west) to minimize potential radiation exposure to workers. Stone & Webster Calculation No. 05996.02-UR(D)-11 Rev. 0 estimates an annual dose of 20 mrem/yr for Phase 2 pad construction activities to an individual construction worker. This dose was calculated with the assumption that one-half of the storage casks are HI-STORM casks, and one-half are TranStor storage casks.

Phase 3 pad construction (northern half of the Storage Facility) will be performed while the Phase 2 (SW quadrant) pads are being loaded with casks, and will be completed before all of the Phase 2 casks are in-place. Phase 3 pad construction will utilize a different sequence than that used for Phases 1 and 2 in order to assure dose rates to storage pad construction workers are as low as is reasonably achievable (ALARA). Phase 3 storage pad construction will begin in the NW quadrant, with pad construction beginning at the south end and moving north. During Phase 3 construction, storage casks will be loaded on the SW quadrant of storage pads (which were constructed during Phase 2) beginning on the south side and advancing toward the north, maximizing the distance of pad construction workers in the NW quadrant from loaded storage casks in the SW quadrant. Following completion of the storage pad construction in the NW quadrant, workers will construct storage pads in the NE quadrant, again starting at the south end and moving north.

Phase 3 pad construction is scheduled for 5 years. It is assumed that construction of the NW quadrant pads will take place during the first 2.5 years, and construction of the NE quadrant pads during the next 2.5 years. Stone & Webster Calculation No. 05996.02-UR(D)-11 Rev. 0 estimates an annual dose of 39 mrem/yr for Phase 3 NW quadrant pad construction activities to an individual construction worker. As for the NE quadrant pad construction, the referenced calculation estimates a worker dose of 315 mrem/yr. This dose is higher than those associated with pad construction in the previous quadrants since the SE quadrant would be fully loaded with casks throughout the period of pad construction in the NE quadrant, and construction of

pads at the south end of this quadrant places construction workers relatively close to casks in the SE quadrant. ALARA measures would be taken to reduce this dose rate, such as placement of cooler storage casks along the north side of the SE quadrant array of storage casks.

10. PFS should discuss the potential dose to wildlife that might perch on the facility light poles in the cask storage area.

RESPONSE – ER Section 4.2.9.2.2 evaluates doses to birds that could perch on top of both HI-STORM and TranStor storage casks located in the Storage Area. The annual doses presented in ER Section 4.2.9.2.2 represent maximum expected dose rates, since the birds are assumed to be perched on storage casks containing relatively hot spent fuel (e.g., PWR fuel having 40,000 MWd/MTU burnup and 10 years cooling time). Dose rates would tend to decrease with distance above the tops of storage casks. Although a higher receptor point is in view of more casks (radiation sources), dose rates will not increase above those resulting from contact with a relatively hot cask. While dose rates at distances out from an infinite, uniform, planar radiation source decrease only incrementally with distance, increasing distance does not result in higher dose rates than those on contact with the plane source. The light poles at the PFSF are 130 ft high (ER Section 4.2.8.2). Dose rates at this distance, which is approximately 112 ft above the tops of storage casks, would be significantly less than those on contact with the top of a cask.

11. Section 2.10 of the ER indicates that PFS collected background radiological data using thermoluminescent dosimeters during a 4 month period of December 1996 to April 1997. Has PFS collected any additional data to date? If so, this additional data should be incorporated into the ER.

RESPONSE – PFS has continued to post and have analyzed two TLDs at the meteorological tower and one outside the Pony Express convenience store, both located by the Skull Valley Road approximately 3 miles southeast of the PFSF site. The average exposure rate of these three TLDs over the period from 12/1/96 to 5/31/99 was 0.22 mrem/day, or 81 mrem/year.

The ER will be updated to include the above information.

12. The cost-benefit analysis for the PFSF assumed that spent fuel would be stored in pools following reactor shutdown for decommissioning. What is the basis for assuming pool storage only?

RESPONSE – The November 1999 ERI Report assumed that spent fuel pools would remain operational until all spent fuel has been removed from individual reactor sites. This assumption was made because at the present time, no reactors have yet unloaded spent fuel from storage pools to dry storage although a number of recently shutdown reactors plan to do so. The annual operating and maintenance costs to store spent fuel at shutdown reactors have been conservatively projected to be $4 million per year per site if dry storage were utilized instead of pool storage. However, this has not yet been achieved and it would be speculative to assume these costs for a system-wide analysis at this time. It is possible that the costs for post-shutdown dry storage could be significantly higher than projected. Like the costs for pool operation which vary widely, the operating and maintenance cost for post-shutdown dry storage are also expected to vary widely depending on individual reactor situations. For example, operating and maintenance costs would be significantly higher if the shutdown reactor site had to maintain a corporate infrastructure as well as maintaining the dry storage facility.

It should also be noted that while the annual operating and maintenance costs may be lower if spent fuel were transferred to dry storage, there would be a subsequent large increase in the capital costs associated with the purchase and loading of dry storage systems to house the entire inventory of the spent fuel storage pool. Most of the reactors that are currently shutdown have done so prior to reaching the end of their 40-year operating licenses and many were small reactors; thus, spent fuel inventories are relatively small and require a smaller capital investment than a reactor that operates for its entire licensed lifetime. A typical 1,000 MW reactor is expected to produce 1,000 MTU of spent fuel over its 40 year license. This would require a significant capital expenditure to transfer all spent fuel to dry storage. As presented in Table 1 of the January 26, 2000, *EIS Commitment Resolution Letter #4,* to the NRC from PFS, the summary of Storage System and Loading costs from *Supko 1999* show capital and loading costs of $70 to $130 million for a hypothetical 1,000 MTU dry storage facility. In addition to these capital and loading costs, there would also be additional upfront costs associated with building a dry storage facility capable of storing 1,000 MTU. In addition to the capital costs, there would also be a significant carrying cost associated with the large capital investment required to offload spent fuel to dry storage.

While the minimum cooling time for transferring spent fuel to dry storage following reactor shutdown for decommissioning is approximately 5 years, this will be dependent upon the spent fuel burnup, initial enrichment, the age of the spent fuel in inventory, and the characteristics of the dry storage system. Many dry storage systems may require that spent fuel be cooled for periods longer than 5 years depending upon the spent fuel burnup. The November 1999 ERI Report assumed that PFS would not accept spent fuel from reactors until the fuel had cooled for at least ten years. This ten year pool-cooling time might also apply to dry storage at reactor sites, depending upon the fuel burnup.

Thus, given the increased capital costs that accompany transfer of spent fuel from the pool to dry storage, it may not be possible to offload the spent fuel pool to dry storage in a timely manner that might take advantage of possible lower dry storage operating and maintenance costs.

Due to the large capital investment required to offload the spent fuel storage pools to dry storage, one of the primary considerations regarding whether this would be cost-effective would be the projected time period required for post-shutdown storage. The November 1999 ERI report, assumes a limited time period based on a projected PFSF operation date of 2002 or a DOE repository operation date of 2015. If post-shutdown spent fuel storage were required for a 50 or 100 year period, there may be a system-wide benefit to unload spent fuel pools to dry storage despite the large upfront capital costs projected.

It should also be noted that *TRW 1993* did not provide a complete analysis of the possible post-shutdown spent fuel storage costs. While TRW 1993 did provide an estimate of post-shutdown dry storage costs, ERI considers its estimate to be unrealistically low as was the *TRW 1993* estimate for pool storage operating costs.

Other analyses that show benefits for dry storage of spent fuel at currently shutdown reactors must consider the fact that those reactors that are currently shutdown did so prior to the end of their licensed lifetimes. Most of these shutdown reactors have small inventories of spent fuel requiring dry storage and spent fuel inventories with burnups that require shorter cooling prior to loading into dry storage. This will not be the case for currently operating reactors that are expected to generate spent fuel for 40 years of reactor operation with burnups in excess of 52 GWD/MTU for PWRs and 45 GWD/MTU for BWRs. Currently operating reactors will require a large capital expenditure to offload all spent fuel into dry storage and will require spent fuel to be cooled for longer than 5 years prior to dry storage.

Based on the above discussion, it would be reasonable to conclude that the combined capital and operating costs associated with removing spent fuel from pool storage to dry storage following reactor shutdown for decommissioning would be greater than or equal to the cost of continued pool storage. This is due to several factors including the large capital expenditures required to construct a dry storage facility and to purchase casks for the entire spent fuel inventory, the carrying cost associated with this capital expenditure, and the added costs associated with loading storage casks. It must also be recognized that spent fuel storage pools may have to remain operational for longer than 5 years due to the fact that spent fuel with higher burnup will require longer cooling times prior to being transferred to dry storage. Longer pool storage requirements along with the added capital costs associated with dry storage would offset possible operating and maintenance cost savings associated with dry storage. In addition, while annual operating and maintenance costs for dry

storage have been estimated to be $4 million annually per site, the operating and maintenance cost for post-shutdown dry storage could be much higher depending on individual reactor situations.

The ER will be updated to include the above information.

If you have any questions regarding this response, please contact me at 303-741-7009.

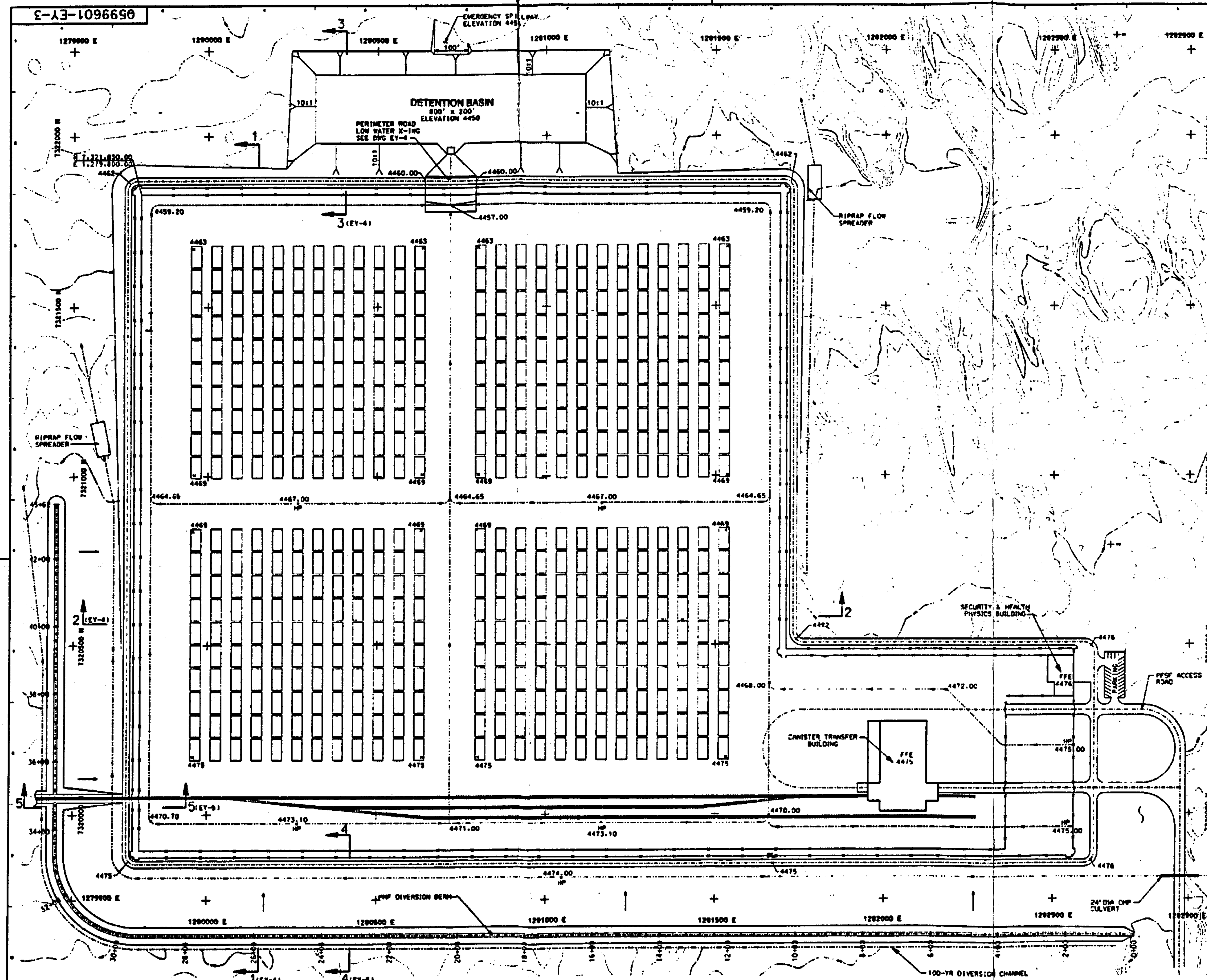
Sincerely

John L. Donnell
Project Director
Private Fuel Storage L.L.C.

Enclosure

Copy to (with enclosure):

Mark Delligatti
Scott Flanders (8 copies)
John Parkyn
Jay Silberg
Sherwin Turk
Greg Zimmerman
Scott Northard
Denise Chancellor
Richard E. Condit
John Paul Kennedy
Joro Walker



PLAN

NOTES:

1. TOPOGRAPHIC INFORMATION IS BASED ON DATA PROVIDED BY AERO-METRIC PHOTOGRAMMETRIC & GIS SERVICES, FT COLLINS, CO.
2. FFE DENOTES FINISHED FLOOR ELEVATION.

REFERENCE DRAWINGS:

EY-4 SITE GRADING & DRAINAGE SECTIONS & DETAILS, SHEET 1

EY-5 SITE GRADING & DRAINAGE SECTIONS & DETAILS, SHEET 2

QA CATEGORY III

•ADJ139•
ADJ139

SCALE: 1" = 100'-0" (0, 100, 200, 300)

Revision	Description
D	ISSUED FOR PRELIMINARY DESIGN/ LICENSING SUBMITTAL. REVISED RAILROAD, CANISTER TRANSFER BUILDING LOCATION AND DRAINAGE.
C	ISSUED FOR PRELIMINARY DESIGN/ LICENSING SUBMITTAL. REVISED OUTLINE OF SECURITY & HEALTH PHYSICS BUILDING. ADDED RAILROAD.
B	ISSUED FOR PRELIMINARY DESIGN/ LICENSING SUBMITTAL. ADDED PMF BERM. GENERAL REVISION OF DRAINAGE SYSTEM.
A	ISSUED FOR PRELIMINARY DESIGN/ LICENSING SUBMITTAL.

SITE GRADING & DRAINAGE PLAN GENERAL ARRANGEMENT

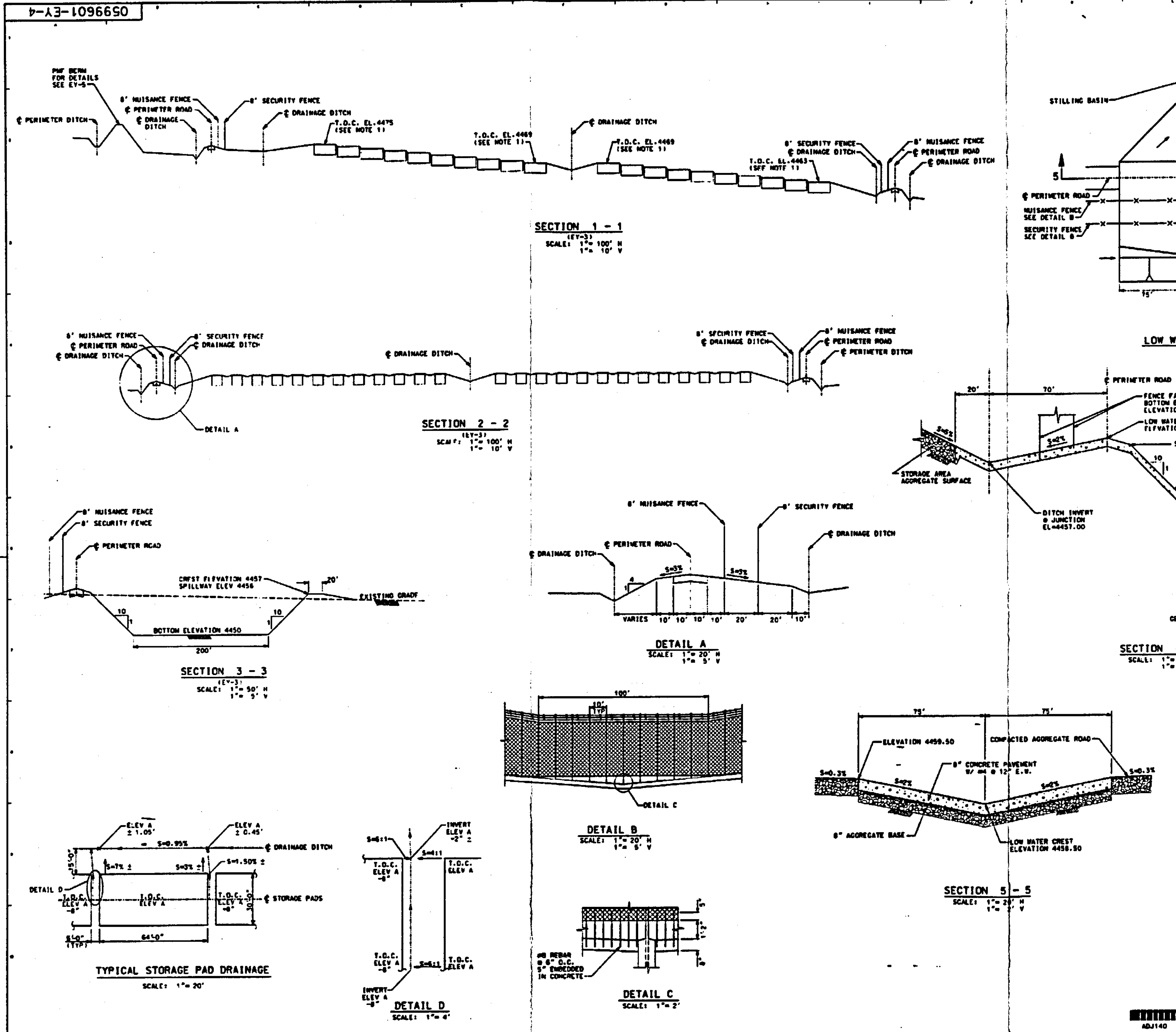
PRIVATE FUEL STORAGE FACILITY
PRIVATE FUEL STORAGE, LLC

STONE & WEBSTER ENGINEERING CORPORATION
DENVER, COLORADO

DRAWING NUMBER 0599601-EY-3-D

DESIGNED BY C. FRENCH | DRAWN BY C. FRENCH | 0599601 | PFSY003.DGN
CHECKED BY D. HAYES | CHECKED BY D. HAYES

THIS DRAWING CREATED ON INTERGRAPH



QA CATEGORY III

NOTES:

1. STORAGE PADS SHALL BE CONSTRUCTED AT +3 ½" ABOVE THE GRADE ELEVATIONS SHOWN TO ACCOMMODATE ANTICIPATED PAD SETTLEMENT.
2. THIS DRAWING SHALL BE WORKED WITH SECTIONS AND DETAILS SHOWN ON EY-5.

REFERENCE DRAWINGS:

EY-3 SITE GRADING & DRAINAGE PLAN GENERAL ARRANGEMENT

ISSUED FOR PRELIMINARY DESIGN/ LICENSING SUBMITTAL. REVISED NOTE 1.

ISSUED FOR PRELIMINARY DESIGN/ LICENSING SUBMITTAL. GENERAL REVISION OF DRAINAGE SYSTEM. ADDED TITLE SUFFIX."SHEET 1".

ISSUED FOR PRELIMINARY DESIGN/ LICENSING SUBMITTAL

ADJ140

SITE GRADING & DRAINAGE SECTIONS & DETAILS SHEET 1

PRIVATE FUEL STORAGE FACILITY
PRIVATE FUEL STORAGE, LLC

STONE & WEBSTER ENGINEERING CORPORATION
DENVER, COLORADO

DRAWING NUMBER 0599601-EY-4-C

0599601 PFSY004.DGN

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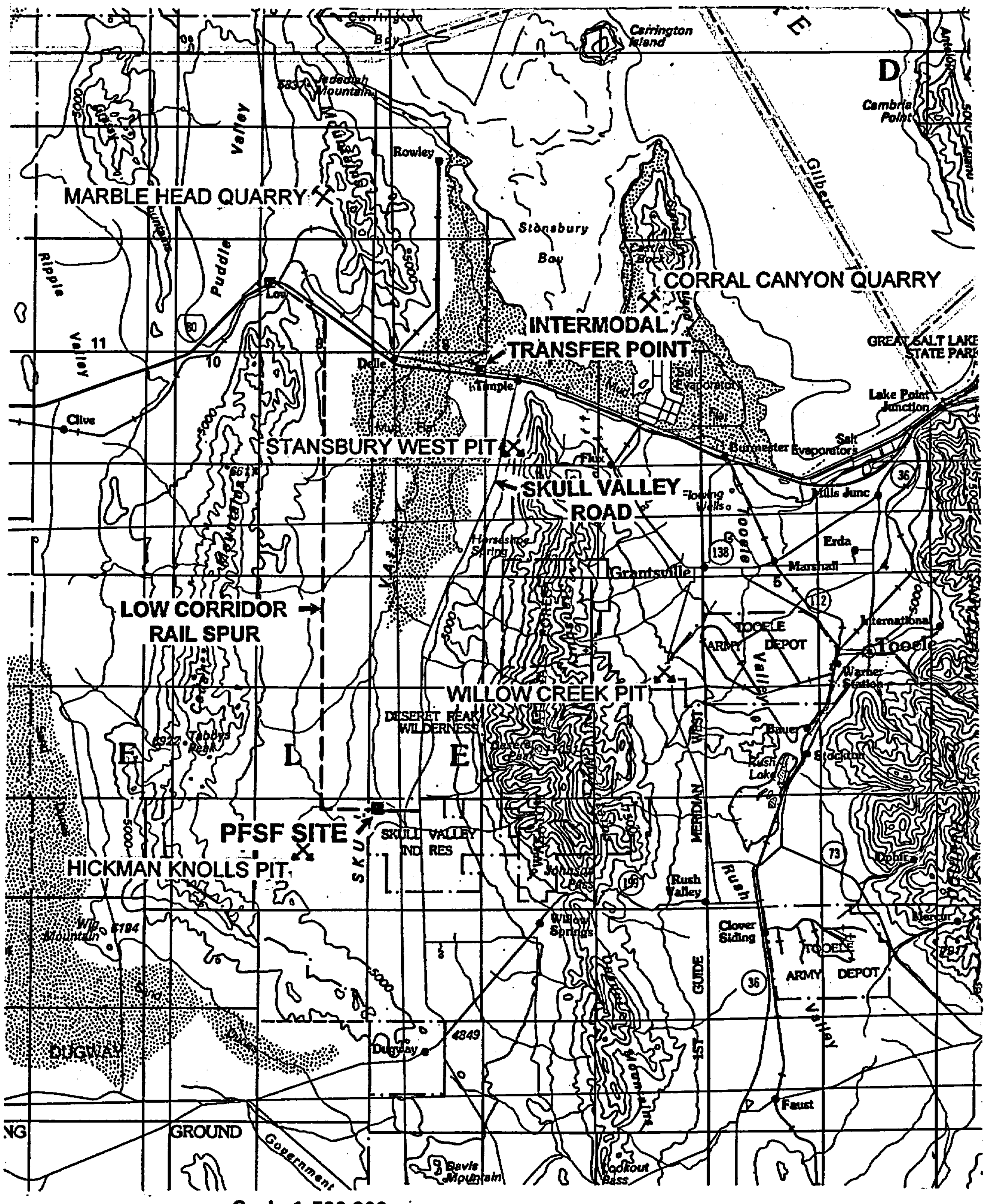

Scale 1:500 000

1 inch equals approximately 8 miles

Figure 4.1-1

AGGREGATE SOURCES

PRIVATE FUEL STORAGE FACILITY
ENVIRONMENTAL REPORT