



number ten tantalum place muskogee, oklahoma 74401

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U.S. NUCLEAR REG.
COMMISSION
RHSB MAIL SECTION

United States
Nuclear Regulatory Commission
Washington, D. C. 20555

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INSPECTION AND ENFORCEMENT

Attention: Mr. Earl G. Wright
Radioisotopes Licensing Branch
Division of Fuel Cycle and
Material Safety

Re: License No. SMB-911
Control No. 09170

Gentlemen:

This letter transmits in part the revised report concerning the construction of new waste Residue Retention Pond No. 3 at Fansteel, Inc., Muskogee, Oklahoma. Answers to Geotechnical Engineering questions are given. Answers to Hydrologic Engineering questions should be sent on by Tuesday.

I have enclosed:

- 3 copies of Drawing No. 6413-2A1-R - Revised 8-21-78,
- 3 copies of Drawing DC-3-102-1 - Revised 9-11-78,
- 3 copies of Drawing DC-3-102-2 - Revised 9-8-78,
- 3 copies of Standard Specifications for Disposal Pond - Fansteel Metals, and
- 3 copies of Pier detail.

Our weather continues dry and the French drain construction has proceeded very successfully. Much water is being removed from the construction area. The elevation of shale has proven to be very uniform as indicated from the core samples, test holes and wells. There has been no sand problem along the East and South drainage excavation. I enclose a copy of Pier detail of footings for the Annex building which were discussed with Mr. O. Thompson.

Very truly yours,

James A. Pierret
JAMES A. PIERRET
Plant Manager

JAP:nj
Enclosures



Handwritten initials

A-9

STANDARD SPECIFICATIONS
FOR
WASTE DISPOSAL POND
FANSTEEL METALS

Muskogee Engineering Co.

Consulting Engineers

MUSKOGEE, OKLAHOMA 74401

WASTE DISPOSAL POND

SCOPE OF WORK:

The work included under this section of the specifications shall consist of furnishing all material, equipment, tools, labor, work, supplies and incidentals necessary for the complete construction of the waste disposal pond in accordance with these specifications and as shown on the plans. This work shall include all excavation, grading, fill embankment, hauling, placing, and compacting the materials. It shall also include the specified topsoiling and seeding and final clean-up of the area.

CLEARING:

The area inside of the grading limits shall be cleared of trees, stumps, brush, and other woody growths. Stumps and roots shall be removed to a depth of 18 inches below the existing grade in areas upon which levees are to be placed. In areas outside the limits of the fill for the levees, trees may be cut off and the stumps left in place. The stumps in these areas shall not project more than 6 inches above the finished grade and they shall be treated to prevent sprouting.

All vegetation shall be cleaned from the entire area to be occupied by the pond and its dikes.

The clearing operation shall also include all fences, log dumps, sawdust piles and other objectionable materials within the limits of the grading operations.

Any blasting necessary in the clearing operation shall be done at the Contractor's responsibility, and the utmost care shall be taken not to endanger life or property. The Contractor is specifically referred to Section 903, "Explosives" of these specifications.

STRIPPING

All areas which are to be occupied by levee embankments and areas from which the embankment material is to be excavated shall be stripped of topsoil to a minimum depth of four (4) inches. This stripping operation shall remove all organic material and objectionable items that would be detrimental to the compacted fill of the levee. Strippings shall be wasted in evenly graded fills in the lower areas of the stabilization pond, and outside the limits of the pond, after sufficient material has been stockpiled to be used as the top dressing on the levees.

EXCAVATION AND EMBANKMENT:

Compacted fill embankments for the stabilization pond, levees shall be constructed to the height and cross section as shown on the plans. The construction of these embankments shall not be started until the prepared subgrade has been approved by the Engineer. Prior to the commencement of the embankment construction, the subgrade shall be cleared, grubbed, and stripped in accordance with the previous sections of this specification. The surface of the ground under the proposed embankment shall then be thoroughly scarified to a depth of four (4) inches and recompacted to facilitate the proper bonding of the compacted embankment with the ground surface.

The embankment material shall be placed in lifts of not more than eight (8) inches of loose thickness. The material shall be brought to the proper moisture content to insure adequate and satisfactory compaction. When the material is dry, it shall be moistened by sprinkling, before and during manipulation, to properly condition this soil until the desired moisture content is attained. When wet, the soil shall be disced or otherwise manipulated to provide aeration until the moisture content has been lowered to that necessary for proper compaction. Where a variation of material is encountered, the more permeable soil shall be placed on the outside of the levee and the impermeable material shall be placed in the core or inside of the levee.

In the construction of the embankments, all soil shall be compacted to not less than ninety-five (95) percent of the maximum dry density of the soil. The maximum dry density for the material shall be obtained in the laboratory by the standard method of test for the compaction and densities of soils as determined by AASHTO Designation T-99 (Standard Proctor).

The material for the embankments may be excavated from the area that is to become the bottom of the pond. All topsoil shall be stripped from any area that is to be used for the acquisition of embankment materials prior to the excavation of the soil that is to be placed within the embankments.

The Contractor shall inform and satisfy himself as to the character, quantity, and distribution of all material to be excavated. The material included herein shall be defined as Unclassified Excavation and shall include all excavation performed under this section of the work regardless of the type or character of the material encountered. No separate or additional payment will be made for rock.

If it is necessary to interrupt existing surface drainage, the Contractor shall be responsible for and shall take all necessary precautions to protect and preserve the property of the Owner and the property of others affected by these drainage systems. The Contractor shall, at his own expense, satisfactorily repair all damage which results from any of his operations during the period of contract.

TOPSOILING:

The outer (top) four (4) inches of the stabilization pond levees, except that portion of the levee that will be below the water's normal surface on the inner face of the levee, shall consist of a dressing of compacted topsoil. This topsoil shall be obtained from the stockpiled material resulting from the stripping operation.

The topsoil shall be evenly spread on the prepared areas to the depth specified. Spreading shall not be done when the ground or topsoil is frozen, excessively wet, or otherwise in a condition detrimental to the work. Spreading shall be carried on in such a manner that seeding operations can proceed with a minimum of soil preparation or tilling.

After spreading, any large, stiff clods and hard lumps shall be broken with a pulverizer or by other effective means, and all stones or rocks two inches or more in diameter, roots, litter, or any foreign matter shall be picked up and disposed of by the Contractor.

Any topsoil remaining in the stockpile after completion of the topsoiling operation shall be graded and smoothed to drain and shall have a pleasing appearance.

SEEDING: (Optional if specified by Owner)

The entire ditch backslope and cut areas, the outside slope, the top and the inside slope to the water line of all levees shall be seeded as specified herein. Following the completion of the topsoiling operations, the areas to be seeded shall be dressed to the shape and section shown on the plans and thoroughly pulverized by disc harrows or other approved means to a depth of not less than two (2) inches. All sticks, debris and other foreign matter must be removed and the soil left in a suitable condition to receive the seed.

If the seed is planted in dry weather, and the ground is not moist, the area to be seeded shall be watered before and/or after planting the seeds as conditions may require. These operations shall be as directed by the Engineer.

The entire area to be seeded shall be fertilized with 10-20-10 or 12-12-12 fertilizer as directed by the Engineer. The fertilizer shall be a commercial grade, uniform in composition, free flowing and suitable for application with mechanical equipment, delivered to the site in labeled containers, conforming to Oklahoma fertilizer laws and bearing name, trademark and warranty of the producer. The particular type of fertilizer shall have the minimum percentage of total nitrogen, available phosphoric acid, and water soluble pottash as directed by the Engineer. The fertilizer shall be drilled into the soil or broadcast over the area and incorporated during the pulverization, but distribution must be uniform.

SEEDING: (Continued)

All seed shall be labeled in accordance with U. S. Department of Agriculture rules and regulations under the Federal Seed Act in effect on the date of invitation for bids. All seed shall be furnished in sealed, standard containers unless exception is granted by the Engineer in writing. Seed which has become wet, moldy or otherwise damaged in transit or in storage will not be acceptable. The minimum percentage by weight of pure live seed shall not be less than 85 percent when tested according to current regulations under the Federal Seed Act. Seeding shall be in accordance with the following schedule:

<u>KIND OF SEED</u>	<u>PLANTING SEASON</u>	<u>RATE</u>
Bermuda Grass (Cynodon Dactylon) Unhulled	April 1 to June 15	20 lb./acre
Common Ryegrass (Lolium Multiflorum)	Sept. 1 to Oct. 15	100 lb./acre

Sowing of seed may be by mechanical hand seeders or by approved power equipment. Either method must give uniform distribution, and no seeding will be permitted during a high wind. After the seeding is completed, water shall be applied in sufficient quantity to thoroughly moisten the soil to the depth of the pulverization. Watering devices shall be equipped to apply water without causing erosion. In hot weather, watering shall preferably be done in the late afternoon to prevent excessive loss by evaporation. Immediately after being planted, the areas shall be rolled with a corrugated roller of the cultapacker type. All drilling and rolling shall be carried out on contour lines.

Seed and fertilizer may be drilled together, but the rows shall not exceed 16 inches in width, and must be parallel to the slope of the levees. The seed and fertilizer may be drilled from separate containers or from one container if properly mixed. Seed and fertilizer shall not be mixed for more than 12 hours prior to seeding.

If the levees are not finished at such time to allow immediate seeding, the Contractor shall mulch the levees and return during the next planting season and seed the levees in accordance with this section of the specifications. The Contractor shall be responsible for watering and maintaining the seed until the grass has sufficient root structure to withstand dry weather. Any area larger than two (2) square yards not showing evidence of a growth of grass shall be reseeded at the Contractor's expense.

BASIS OF PAYMENT:

The basis of measurement and payment of the work included in this section of the specifications shall be made at the unit prices listed in the proposal

BASIS OF PAYMENT: (Continued)

for each item. Payment at the price listed in the proposal for each of these items shall be considered full compensation for all equipment, tools, material, labor and supplies necessary for the completed sewage stabilization ponds complete in place including all clearing, grubbing, stripping, earthwork, topsoiling, seeding and related accessories.

A. Clearing, Grubbing and Stripping

The clearing, grubbing and stripping necessary for the completed stabilization pond will be paid for at the lump sum price listed in the proposal.

B. Excavation and Embankment

No separate payment will be made for excavation work and it shall be considered incidental to the embankment. The embankment material shall be measured in its compacted position in the finished levee by taking cross sections of the ground under the planned levees after stripping and then following the completion of the levees. The "average end area" method will be used to compute the cubic yardage in the fill. This material will be paid for at the contract unit price per cubic yard listed in the proposal for "compacted levee embankment". Payment at this unit price shall be considered full compensation for the subgrade preparation, the placing of the compacted embankment, all excavation, and the topsoiling of the finished embankment. All watering, the placement of uncompacted fill within the limits of the pond, and all other items shall be considered incidental.

C. Seeding and Fertilizing

Seeding and fertilizing completed and accepted under this item shall be measured and paid for at the contract unit price listed in the proposal per acre for "Seeding and Fertilizing". Payment at this unit price shall be considered full compensation for furnishing and applying seed, water, fertilizer, for preparation of the area, and all incidentals necessary to complete the work.

D. All items as specified in this section will be paid for at the lump sum price as agreed between Contractor and Owner.

MUSKOGEE TESTING LABORATORY, INC.

108 PEAK BLVD.
PHONE 918/682-7853
MUSKOGEE, OKLAHOMA 74401

2635 E. 36th ST. NORTH
PHONE / 918/428-1986
TULSA, OKLAHOMA 74010

Soils & Concrete Testing - Concrete Coring - Foundation Investigation Drilling

REPORT OF FIELD DENSITY TESTS

DATE RECEIVED: _____ AUTHORIZED BY: _____ LABORATORY NO.: _____

REPORT TO: _____

PROJECT: _____

CONTRACTOR: _____

SOURCE: _____

PROCTOR SPECIFICATIONS: _____ TESTS BY: _____

TEST NO.	DESCRIPTION OF LOCATIONS

TEST RESULTS

TEST NO.							
WET DENSITY IN LBS./CU. FT.							
DRY DENSITY IN LBS./CU. FT.							
IN-PLACE MOISTURE CONTENT %							
OPTIMUM MOISTURE %							
MAXIMUM DRY DENSITY IN LBS./CU. FT.							
PERCENT OF MAXIMUM DRY DENSITY							
MATERIAL DESCRIPTION							

REMARKS: _____

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