

Addendum No. 5

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To

**IMPACTED MATERIALS PLACEMENT PLAN
ON-SITE DISPOSAL FACILITY**

**Alternate Placement Requirements Category 3
(Transite Panels)**

20100-PL-007

Revision C

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DRAFT

United States Department of Energy

**Fernald Environmental Management Project
Hamilton, Ohio**

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Under

**Fluor Daniel Fernald
Subcontract 95PS005028**

Addendum No. 5
to
Impacted Material Placement Plan
On-Site Disposal Facility
Alternate Placement Requirements for Category 3 Material
(Transite Panels)

Section 8, Article 8.4 of the Impacted Materials Placement (IMP) Plan, Revision 1, dated October 1999 for the On-Site Disposal Facility (OSDF) describes the placement and compaction procedures for Category 3 impacted material. As described in Section 5, Article 5.2 of the IMP Plan, Category 3 impacted materials are materials that can be individually handled and placed in the OSDF and that are suitable for having Category 1 material placed around and against them. Examples of Category 3 impacted material include: bundles of transite panels and broken concrete foundation pieces meeting the physical criteria defined in the IMPP.

This specialized placement plan provides alternative placement requirements for bundles of transite panels because they are of a regular geometry according to the IMP Plan and are generated in a sufficient quantity based on operational experience to justify alternate procedures.

GENERAL REQUIREMENTS

Placement of bundles of packaged transite panels using the alternate method shall be performed in accordance with Fernald Environmental Management

Plan (FEMP)) radiological safety procedures, the IMP Plan, including fugitive dust control and storm water runoff control, and the Contractor's approved Safe Work Plan. In addition to the requirements described in the above said documents, transite panels shall be placed in a manner protective of the health and safety of OSDF personnel and the public, utilizing the As Low As Reasonably Achievable (ALARA) approach and shall meet the OSDF performance criteria stated in the Design Criteria Package for the OSDF.

The Contractor shall notify the Construction Manager (CM) a minimum of two (2) working days prior to commencement of placing bundles of transite panels by the alternate method.

Transite panels using alternative methods specified herein shall be placed over a horizon of Category 1 material intervening layer or the 3-ft thick select impacted layer. The Category 3 transite panel bundles shall be placed toward the center of the cell, 50 ft (15.2 m) horizontally from the bottom of select impacted material layer in the final cover system, and not in the same horizontal elevation within 100 ft (30.5 m) laterally of Category 4, sludge, or double-bagged asbestos of Category 5 materials. The alternate requirements shall not be used in grids where compressible material (i.e., Category 4 materials, sludges, and double-bagged asbestos of Category 5 material) has been placed in a lower horizon.

The bundles of packaged transite panels shall be placed on the surface of a previously placed horizon of Category 1 intervening layer or select impacted material layer. This surface shall be prepared by rolling with a smooth-drum roller in the area of transite panel placement. The groups of bundles shall be

placed on the surface in the prescribed pattern illustrated in Figure 1. Minimum spacing between groups of bundles shown on Figure 2 and 3 shall be 8 ft (2.4 m) to allow Category 1 material placement and compaction with suitable equipment. The space between groups of bundles shall be filled with Category 1 material placed in maximum 12 in (300 mm) thick compacted lifts. Lifts shall be brought up uniformly around the group of transite bundles. A final 12 in (300 mm) thick compacted lift of Category 1 material shall be placed over each grouping of bundles. Placement of Category 1 material is illustrated in Figures 2 and 3.

Whenever possible, place similar size bundles within a group. When more than one size bundle is to be placed in a group, the bundles shall be placed in a manner which does not hamper the placement of Category 1 material. Examples for placing bundles of varying sizes in a group are shown in Figure 4. Lifts of Category 1 material shall be brought up uniformly around the group of transite bundles. In the event the bundles are of varying heights, Category 1 material shall be first placed over the shorter bundles to bring the common surface of the bundles up to the same elevation before the placement of the final overlying lift

Specific requirements for placing the bundles by alternate methods shall be as described below:

REQUIREMENTS FOR ALTERNATE 1 (SIDE-BY-SIDE) PLACEMENT METHOD

The alternate requirements for this method allow for placement of three bundles of packaged transite panels in a side by side configuration. The side by side

configuration is shown in Figure 2. The transite bundles shall be oriented relative to north and south as shown in Figure 2. Bundles of the same size shall be grouped together whenever possible. Bundles can be stacked, such that their combined height is 4 ft (1.2 m) or less. When bundles of various dimensions are placed in a single group, their orientation shall be such that zones are not created which hamper the placement of Category 1 material. Examples of preferred groupings of different size bundles are shown in Figure 4.

Place bundles in contact with minimum space between each other. However, it is recognized that a space between bundles may occur. Space between the bundles shall not be more than 2 in (50 mm). If space between the bundles is wider than 2 in (50 mm), spaces shall be filled with a quickset grout or flowable cohesionless material. Filling of the space can be performed after Category 1 material is placed around the bundles. If grout is used, it shall be allowed to set for a minimum of four hours prior to the placement of Category 1 material over the transite bundles.

REQUIREMENTS FOR ALTERNATE 2 (END-BY-END) PLACEMENT METHOD

The alternate requirements for this method allow for placement of three bundles of packaged transite panels in an end-to-end configuration. The end-to-end placement configuration is shown in Figure 3. Transite bundles shall be oriented relative to north and south as shown in Figure 3. Bundles of the same height shall be grouped together whenever possible. Bundles can be stacked, such that their combined height is 4 ft (1.2 m) or less. When bundles of various

heights are placed in a single group, their orientation shall be such that zones are not created which hamper the placement of Category 1 material.

Place bundles in contact with minimum space between each other. However, it is recognized that a space between bundles may occur. Space between the bundles shall not be more than 2 in (50 mm). If space between the bundles is wider than 2 in (50 mm), spaces shall be filled with a quickset grout or flowable cohesionless material. Filling of the space can be performed after Category 1 material is placed around the bundles. If grout is used it shall be allowed to set for a minimum of four hours prior to the placement of Category 1 material over the transite bundles.

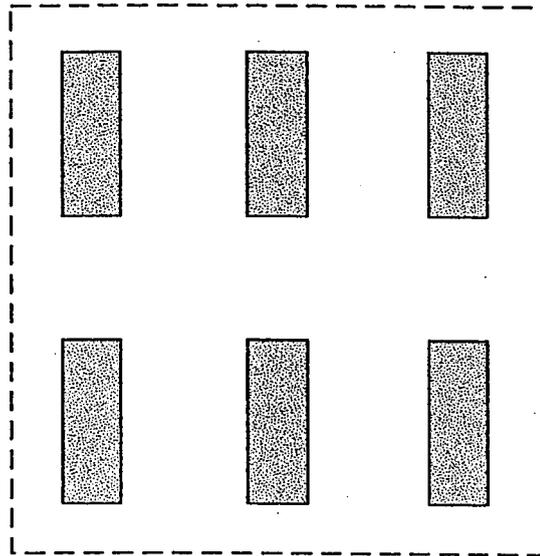
COMPACTION REQUIREMENT

Each lift of Category 1 material between and above the bundles of transite panels shall be compacted to meet the compaction requirements as described in Section 7.4.2 of the IMP Plan. The final compacted lift shall be proof rolled using equipment with a minimum gross vehicle weight of 20 tons (180 kN) and exert a ground pressure of at least 65 psi (450 kPa). Soft spots indicated by tire ruts more than 3 in (76 mm) in depth or visible deflection under the moving proof rolling equipment shall be stabilized through additional passes of the compactor. Any soft spot that cannot be stabilized with further compactive effort shall be cause for additional treatment to the satisfaction of the CM. This treatment shall consist of removal, replacement, and recompaction of the Category 1 material, and, if needed, infilling soft spots/areas around the Category 3 material with grout or other material approved by the CM.

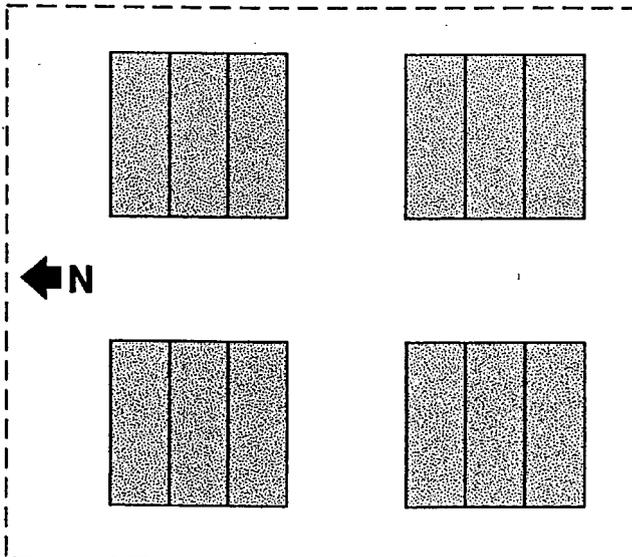
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VARIOUS GROUPINGS OF BUNDLES OF PACKAGED TRANSITE PANELS

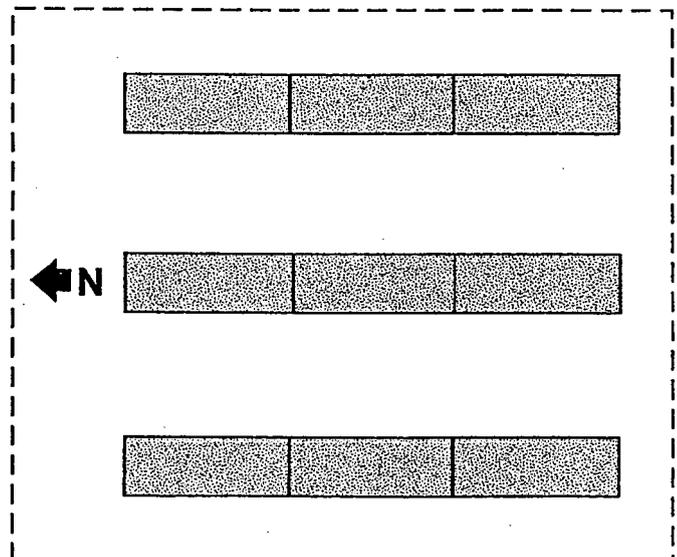
A. CURRENT REQUIREMENT



B. ALTERNATIVE REQUIREMENT



ALTERNATIVE 1
SIDE BY SIDE PLACEMENT



ALTERNATIVE 2
END TO END PLACEMENT

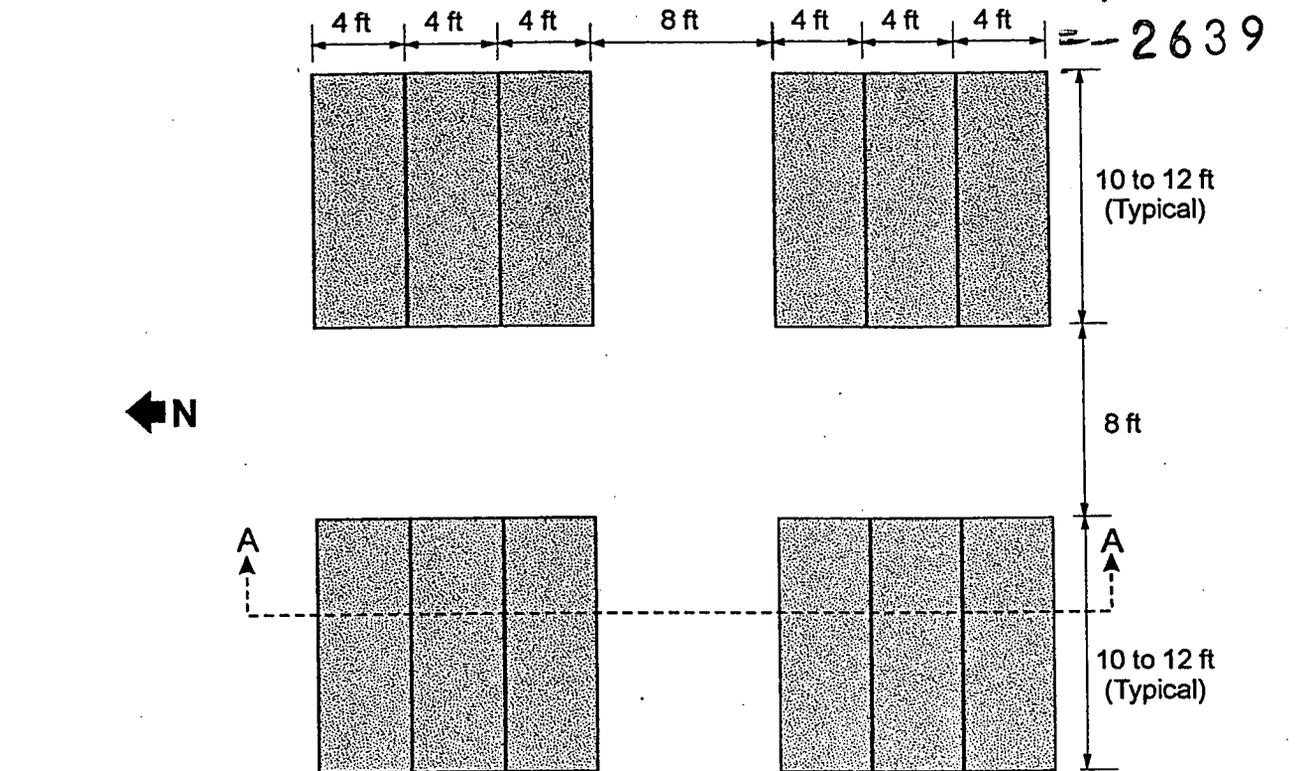
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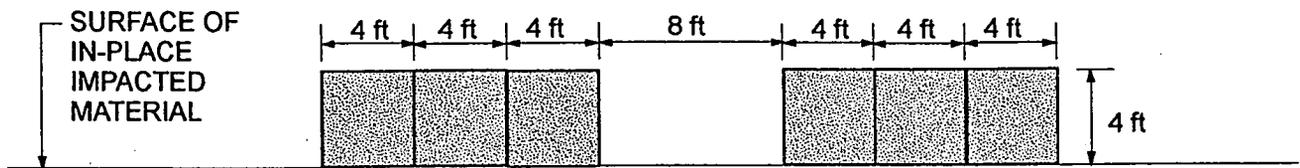
GEOSYNTEC CONSULTANTS
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FIGURE NO.	1
PROJECT NO.	GQ0573-11
DOCUMENT NO.	F9930116
FILE NO.	FIGS1.cdr

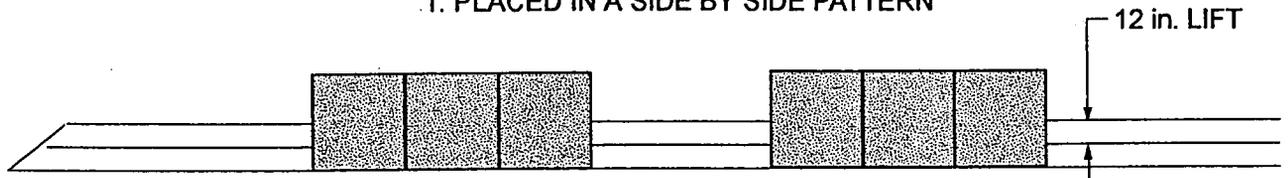
CATEGORY 3 MATERIAL - ALTERNATIVE 1 - PLACEMENT SEQUENCE



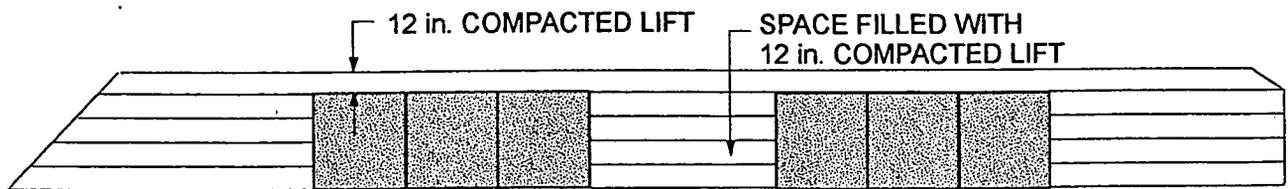
PLAN VIEW



1. PLACED IN A SIDE BY SIDE PATTERN



2. SPACE FILLED WITH 12 in. LIFTS



3. FINAL 12 in. COMPACTED LIFT PLACED ABOVE GROUPS

SECTION A - A



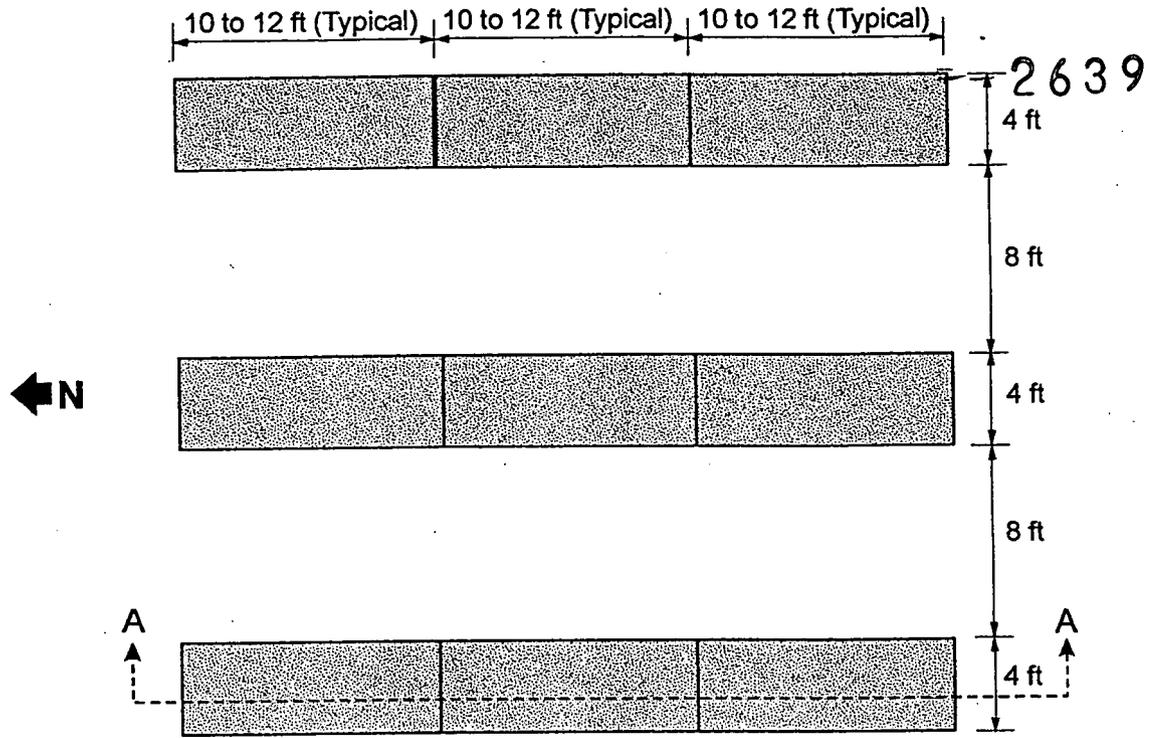
GEOSYNTEC CONSULTANTS

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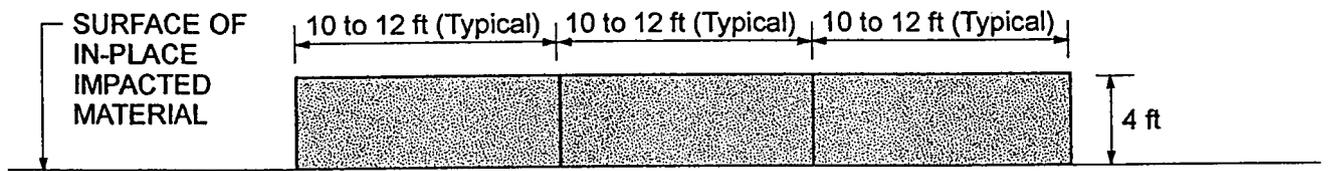
FIGURE NO.	2
PROJECT NO.	GQ0573-11
DOCUMENT NO.	F9930116
FILE NO.	FIGS1.cdr

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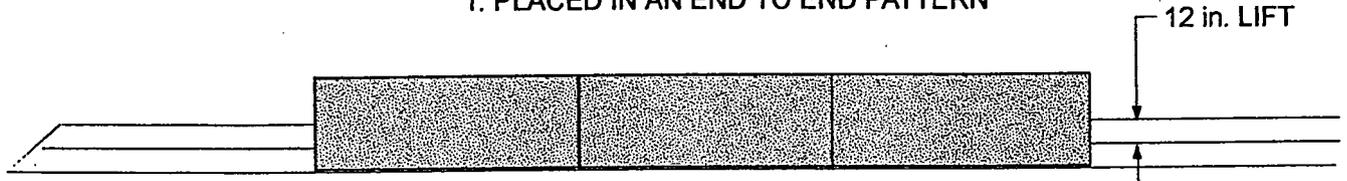
CATEGORY 3 MATERIAL - ALTERNATIVE 2 - PLACEMENT SEQUENCE



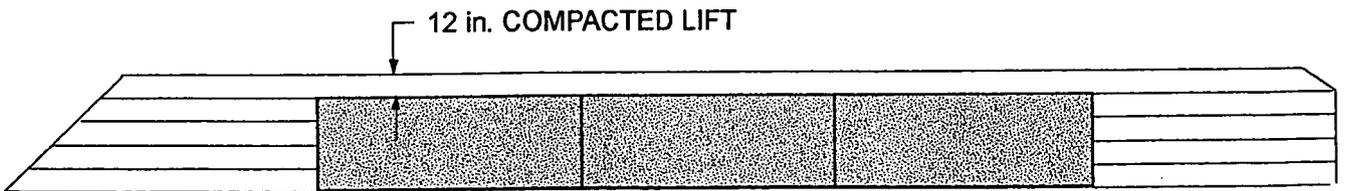
PLAN VIEW



1. PLACED IN AN END TO END PATTERN



2. SPACE FILLED WITH 12 in. LIFTS



3. FINAL 12 in. COMPACTED LIFT PLACED ABOVE GROUPS

SECTION A - A

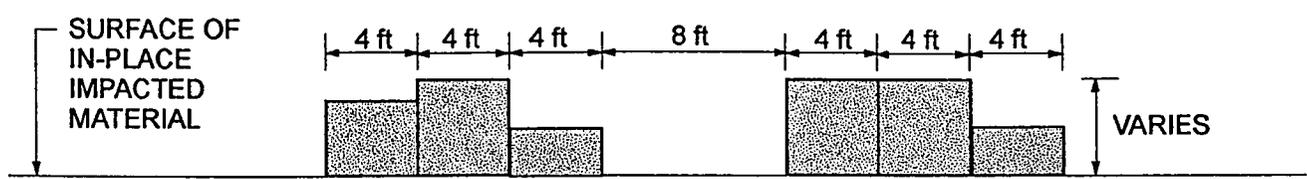
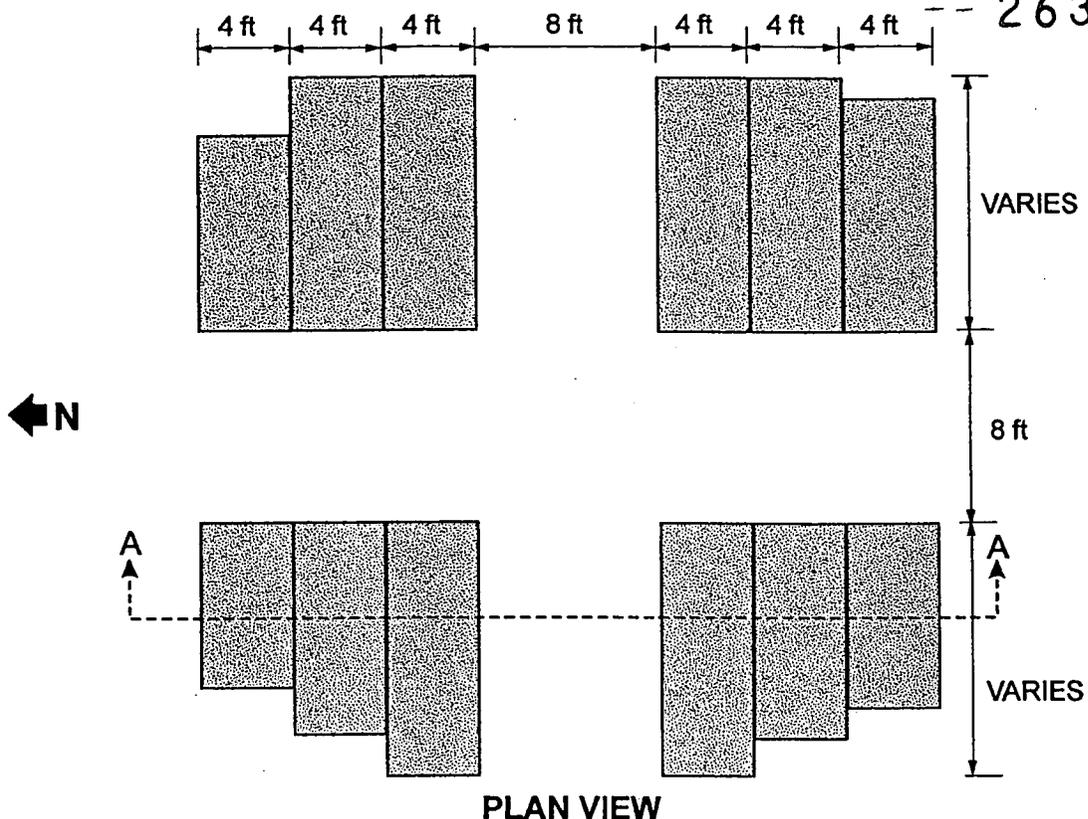


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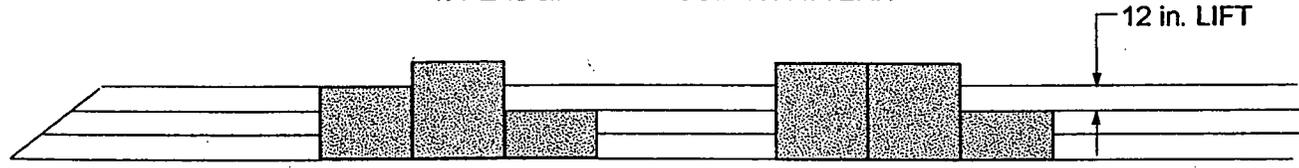
FIGURE NO.	3
PROJECT NO.	GQ0573-11
DOCUMENT NO.	F9930116
FILE NO.	FIGS1.cdr

GROUPING OF BUNDLES OF VARYING DIMENSIONS

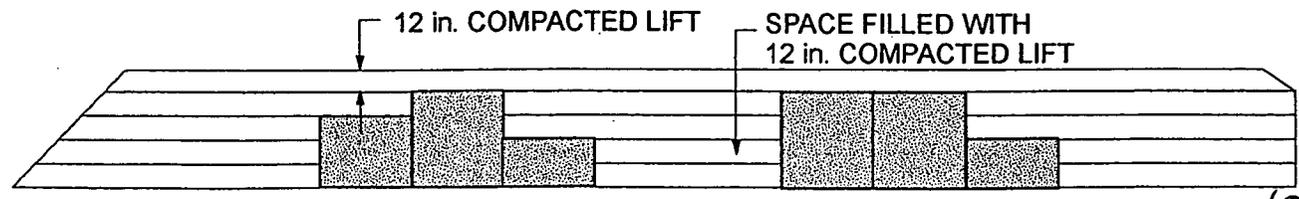
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1. PLACED IN A REGULAR PATTERN



2. SPACE FILLED WITH 12 in. LIFTS



3. FINAL 12 in. COMPACTED LIFT PLACED ABOVE GROUPS

SECTION A - A



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FIGURE NO.	4
PROJECT NO.	GQ0573-11
DOCUMENT NO.	F9930116
FILE NO.	FIGS1.cdr

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