

SECTION 641 - HYDRO-MULCH SEEDING

641.01 Description. This work includes furnishing and applying hydro-mulching, hulled bermuda seed, fertilizer and mulch areas according to the contract or ordered by the Engineer. This work shall also include continuous care and maintenance according to the contract.

641.02 Materials.

(A) Seed. Seed shall be hulled bermuda (*Cynodon Dactylon*) except giant varieties, certified, according to following:

Pure Seed	95% minimum
Crop Seed	1% maximum
Weed	0.5% maximum
Inert Material	5% maximum
Germination	85% minimum

The Contractor shall apply the seeds at the rate of one hundred (100) pounds per acre (minimum) and within twelve (12) months of the date of the certified germination test.

(B) Fertilizer. The Contractor shall be responsible in determining the proper fertilizer required in the hydro-mulch mix for the existing soil condition. The Contractor shall decide the quantity, analysis and ratio to insure sufficient nutrients for the sustained growth of the grass.

(C) Mulch. Mulch shall be specially processed fiber containing no growth or germination inhibiting factors. After addition and agitation in the hydraulic equipment with seed, fertilizer, water and other additives not detrimental to plant growth, the fibers will form a homogeneous slurry. When hydraulically sprayed on the soil, the fibers shall form a blotter-like ground cover that readily absorbs water and allows infiltration to the underlying soil. In every application, the Contractor shall attain complete coverage of the soil. The Contractor shall apply mulch at minimum rate of one thousand five hundred (1,500) pounds per acre.

641.03 Construction Requirements.

(A) Seeding. The Contractor shall apply the seeded mulch within two (2) days after completion of slopes or portions of slopes when the exposed face becomes fifteen (15) feet in height. The Contractor shall notify the Engineer not less than twenty-four (24) hours ahead of hydro-mulch seeding operation. The Contractor shall not hydro-mulch until the

Engineer accepts the area(s). Acceptance includes inspection of slopes *|
 to provide for the collection and disposal of surface and subsurface *|
 water and to protect planting areas against unnecessary erosion. *|
 Acceptance shall not relieve the Contractor of responsibility to restore *|
 damages to the slope until the Engineer accepts the planted areas. *|
 Following the Engineer's acceptance of the area(s), the Contractor shall *|
 begin hydro-mulch seeding the accepted slopes promptly. *|

The hydro-mulch equipment shall mix the necessary ingredients to a *|
 uniform mixture and apply the slurry to provide uniform coverage. The *|
 Contractor shall apply the seed, mulch, and fertilizer mix in one (1) *|
 operation by an accepted hydraulic equipment. The equipment shall have a *|
 built-in agitation system with an operating capacity sufficient to keep *|
 the mix in uniform distribution until pumped from the tank. Distribution *|
 and discharge lines shall be large enough to prevent stoppage. The *|
 Contractor shall equip the distribution and discharge lines with *|
 hydraulic discharge spray nozzles that provide a uniform distribution of *|
 the slurry. *|

The Contractor seed, fertilize, and mulch areas inaccessible to *|
 hydro-mulching application by an accepted hand methods. *|

The Contractor shall apply water immediately following mulching to *|
 moisten the soil and mulch. Watering shall continue to insure proper *|
 germination and growth. The Contractor shall water in a way that will *|
 prevent erosion. Watering equipment shall be of a type that will not *|
 cause damage to the planted areas. The Contractor shall correct the water *|
 systems that cause erosion or runoff. *|

If the slope erodes or silt moves, the Contractor shall remove the *|
 eroded material immediately. The Contractor shall restore areas eroded *|
 to a depth greater than two (2) inches or to a width greater than three *|
 (3) inches to the original grade. *|

(B) Planting Period. A planting period shall begin immediately after *|
 the Contractor seeds an area. During the planting period, the Contractor *|
 shall provide ninety-five (95) percent coverage with five (5) inch tall *|
 healthy grass within ninety (90) days. The Contractor shall re-seed areas *|
 that do not show a thorough "catch" according to Subsection 641.03(A) - *|
 Seeding until the area meets satisfactory growth according to the *|
 contract. *|

(C) Plant Establishment. The Contractor requires plant establishment *|
 for planted areas until final acceptance of nine (9) months from the *|
 accepted completion date of the planting period. During this plant *|
 establishment period, the Contractor shall water, fertilize, weed, and *|
 mow the grassed areas with an accepted equipment if the average grass *|
 height becomes three (3) inches. *|

The Engineer will credit the Contractor plant establishment days *
when the Contractor does the planted area according to the contract even *
if the Contractor do not work daily. *

The Engineer will not credit the Contractor plant establishment *
days when the Contractor fails to adequately do plant establishment work *
according to the contract. Work includes watering, fertilizing, weeding, *
mowing, replacing unsuitable grass, removing and disposing of trash and *
debris or insect and disease control and protection. *

Besides the fertilizer applied during the initial hydro-mulching, *
the Contractor shall apply fertilizer to each planted area at least *
three (3) times during the plant establishment period. The Contractor *
shall fertilize at intervals not closer than two and a half (2-1/2) *
months at a rate of not less than three hundred (300) pounds per acres *
per application.

(D) **Acceptance.** The Engineer will base acceptance of the planted areas *
providing ninety-eight (98) percent coverage of healthy, well *
established grass at the end of the plant establishment period. No one *
hundred (100) square feet area shall have more than two (2) square feet *
of bare spot. The Contractor shall mow the grass before acceptance *
except in non-mowing areas. The grass shall be at least five (5) inches *
tall.

641.04 Method of Measurement. The Engineer will measure hydro-mulch seeding *
by the square foot of actual ground surface planted. |

641.05 Basis of Payment. The Engineer will pay for the accepted quantities *
of hydro-mulch seeding at the contract unit price per square foot complete in *
place.

The price shall be full compensation for watering, fertilizing, seeding, *
hydro-mulching, plant establishment, and furnishing equipment, tools, *
materials, labors and incidentals necessary to complete the work. *

The Engineer will make payment under: *

Pay Item	Pay Unit
Hydro-Mulch Seeding	Square Foot

The Engineer will allow partial payment for hydro-mulching at: *

(1) Forty-five (45) percent of the contract bid price upon completion *
of hydro-mulching seeding; |

(2) Fifteen (15) percent of the contract bid price in three (3) monthly *| payments of five (5) percent for satisfactory progress during the *| planting period;

(3) Thirty-two (32) percent of the contract bid price in eight (8) *| monthly payments of four (4) percent for satisfactory progress during *| the plant establishment period; and

(4) Eight (8) percent at final acceptance of the plant establishment *| period. *|

Section 642 - (Reserved)