

SECTION 02100

SITE PREPARATION

PART 1.00 – GENERAL

1.00 DESCRIPTION OF WORK

- A. This work shall consist of clearing and grubbing, clean-up, cutting and removing trees and stumps, stripping and stockpiling topsoil, removing and disposing of all vegetation and any other obstructions and undesirable materials within the project site which are not designated or permitted to remain.

1.02 PROTECTION

- A. Prior to commencing the work, all areas shown on the plans as existing tree save areas, and new tree line shall be identified, clearly marked and protected until accepted. Storage of building construction items, vehicle parking or access shall be allowed only in areas designated and approved by CITY. Any damaged plant materials resulting from neglect by the CONTRACTOR or their SUBCONTRACTORS shall result in replacement of the damaged material by the CONTRACTOR
- B. All other non-tree areas indicated to remain in its natural state shall also be protected by the CONTRACTOR. Any resulting damage due to the CONTRACTOR's neglect shall be restored to the satisfaction of the CITY. If restoration is not satisfactory, then sufficient monies to cover damage shall be withheld from the CONTRACTOR. Felled trees shall be compensated at \$150.00 per caliper inch, shrubs shall be at \$75 per shrub.
- C. CONTRACTOR shall protect treed and environmentally sensitive areas by installing snow fence or any such barriers necessary to protect these areas. Trees to be saved within the work area shall be protected by snow fence installed at the drip line. Snow fence shall be whitewashed for visibility.

1.03 RESTRICTIONS

- A. Prior to clearing operation, CONTRACTOR shall clearly and plainly mark on the ground, by use of colored tape, limits of clearing and grubbing, as indicated on plans. No clearing or cutting shall be done prior to such field determination. CONTRACTOR shall relate the tree lines from the horizontal control geometry and other control points as plan referenced. Field staking shall clearly define these limits.

- B. When limits of clearing have been physically and clearly marked together with building and roadway centerline stakes, CONTRACTOR shall then notify the CITY for an on-site review of the clearing limits. Failure of the CONTRACTOR to notify the CITY prior to commencing this work shall result in forfeiture of payment for this work.
- C. It is the declared and acknowledged intention that other than those areas required for existing and new building and physical structures, roads, walks, parking areas, athletic fields and site grading, the remainder of site shall remain in its natural state.
- D. Erosion control devices as herein described shall be located at the limits of the work as plan referenced. Installation shall be complete prior to commencing site clearing, grubbing, or earthwork activities.

1.04 SAFETY

- A. All operations required under this Section shall be conducted in a safe manner employing whatever means are necessary to provide safety to all persons on the project site.

PART 2 – PRODUCTS

2.01 JUTE MESH

- A. Jute mesh shall be uniform, open plain weave or undyed and unbleached single jute yarn, a minimum of four (4) feet in width plus or minus one (1) inch. There shall be 78 warp ends per width and 41 weft ends per yard. Weight shall average 1.22 pounds per linear yard, plus or minus 5%.
- B. Staples shall be made from twelve (12) inch lengths of No. 9 gauge steel wire bent to form a “U” of 1 1/2 to 2 inches in width. Longer staples may be required for loose soils.

2.02 EXCELSIOR BLANKET

- A. The excelsior blanket shall consist of a machine produced mat of curled wood excelsior of 80% six (6) inch or longer fiber length, with consistent thickness and the fiber evenly distributed over the entire area of the blanket.
- B. The top side of each blanket shall be covered with a photodegradable extruded plastic mesh. The blanket shall be made smolder resistant without the use of chemical additives.

- C. Excelsior blanket shall be furnished in rolls of 48 inches by 180 feet, with a weight of 78 lbs. plus or minus 10%, covering an area of 80 sq. yards per roll.
- D. Excelsior blanket to be “Erosion Control Blankets” by American Excelsior Company.
- E. Staples shall be made of wire, 0.091 inches in diameter or greater, “U” shaped with legs 6 inches in length and a 1 inch crown. Longer staples may be required for loose soils.

2.03 HAY AND STRAW MULCH

- A. Hay and straw for mulch shall be mowings of acceptable herbaceous growth reasonably free from noxious weeds or woody stems and shall be reasonably dry. No salt hay shall be used.
- B. This mulch shall be used to stabilize slopes and assist in maintaining soil temperature during seed germination.
- C. Straw or hay mulch must be anchored immediately after spreading to prevent wind blowing. The following methods of anchoring straw or hay may be used.
 - 1. Snow Fence: Standard snow fence, 48-inches in height, channel steel posts, with whitewashed sections (40 square feet in area) at least every ten (10) feet. Set snow fence around trees to be saved at the limit of the branches. Fencing shall be maintained throughout the duration of the construction activities.
 - a. Liquid mulch binders: Application of liquid mulch binders and tackifiers should be heaviest at edges of areas and at crests of ridges and banks to prevent wind blowing. The remainder of the area should have binder applied uniformly. Binders may be applied after mulch is spread or may be sprayed into the mulch as it is being blown onto the soil. Applying straw and binder together is the most effective method.
 - b. Chemical binders such as petroset, terratack, hydro mulch and aerospray may be used as recommended by the manufacturer to anchor mulch.

2. NETTING

- a. Plastic erosion control type netting to hold mulch in place as manufactured by Conwed. Netting shall be a polypropylene, extruded, oriented, plastic net. Netting shall have a square mesh opening of approximately ¾ inch x ¾ inch and have a strand count of approximately 1.375 x 1.3 strands per inch. It shall have a weight of 2.875 (plus or minus 3/8 lb.) per 1000 square feet.

2.04 BALED HAY

- A. Hay shall be mowings of acceptable herbaceous growth reasonably free from noxious weeds or woody stems and shall be reasonably dry. No salt hay shall be used.
- B. Hay bales shall be approximately 36-inches long X 18-inches wide X 24-inches high.
- C. Hay bales shall be anchored with 2-inch x 2-inch x 3-foot long wooden stakes.

2.05 SILT FENCE

- A. Silt fence shall be Propex Silt Stop manufactured by Amoco Fabrics Company, Mirafi Envirofence or approved equal.

2.06 TEMPORARY SLOPE SEED MIX FOR STABILIZATION OVER WINTER

A.	<u>Common Name</u>	<u>Proportion By Weight</u>	<u>% Purity</u>	<u>% Germination</u>
	1.Red Fescue, Creeping or Pennlawn	70	98	90
	2. Perennial Ryegrass	15	95	90
	3. Colonial Bentgrass Or Astoria	15	98	85

PART 3 – EXECUTION

3.01 CLEARING

- A. Clearing shall consist of felling and cutting up or trimming of trees, and satisfactory disposal of trees together with downed timber, snags, brush,

shrubs, fences, logs, rubbish, rock walls or other debris occurring within areas indicated on the plans as new construction.

- B. Trunks of trees at the top of slopes, where rounding of slopes occur to meet existing ground and tree line, shall be cut off flush with or below the final slope line.

3.02 GRUBBING

- A. Grubbing shall consist of removal and satisfactory disposal of stumps and buried roots larger than 1 ½ -inch diameter, to a depth of 18-inches below surface of original ground, except stumps within proposed structural foundation areas shall be entirely removed.
- B. Areas to be grubbed shall be as follows:
 - 1. New paved areas where depth of fill is less than 3-feet, measured from the subgrade to original ground surface.
 - 2. In cut areas for the entire width of cut.
 - 3. In non-paved areas required to be filled, if depth of fill is less than 2-feet.
 - 4. No grubbing shall be required in areas where the height between subgrade and original ground surface exceeds 3 feet. The remaining stumps may be left, provided they do not extend more than 6-inches above the ground surface.

3.03 DISPOSAL OF CLEARED AND GRUBBED MATERIALS

- A. The CONTRACTOR shall be responsible for the removal and disposal of trees, brush, stumps, shrubs and other perishable material removed under this section.
- B. No burning of trees, brush, shrubs or perishable material will be allowed on project site. The CONTRACTOR will not be allowed to haul trees, brush, shrubs or perishable material from the project for the purpose of burning.
- C. Stumps, roots and perishable materials shall be removed by the CONTRACTOR from the project site prior to Earthwork operations.

3.04 STRIPPING

- A. The CONTRACTOR shall remove to the extent necessary to complete all work satisfactorily, transport and store all suitable topsoil for use as loam.
- B. Stored area may be on site or off site. If no storage areas are indicated on plans, then CONTRACTOR shall make provisions to store topsoil elsewhere for use on the project.
- C. All stripped topsoil shall remain the property of the City (unless otherwise stipulated in writing) and no material shall be hauled off-site until CITY is notified. Failure of the CONTRACTOR to notify the CITY prior to hauling any topsoil off site shall result in forfeiture of payment for this work.
- D. Stripped topsoil shall be obtained from open fields or grassed areas containing organic material suitable for loaming operations. The depth of stripping shall vary based on subsurface information provided elsewhere in these specifications and actual site conditions. In any event, soils shall be removed to the minimum depth of topsoil. Mixing of subsoils shall be accepted. The depth of soil removal shall be verified in the field, All stripped topsoil shall be screened and tested for suitability for use under lawns and adjusted as required.
- E. Any stripped topsoil not required for this project shall remain the property of the CITY unless the CONTRACTOR is directed to remove surplus topsoil from site, which they shall do at no additional expense to the CITY.

3.05 HAY BALES/STRAW WATTLE

- A. CONTRACTOR shall furnish, place, secure (with stakes) and maintain hay bales at locations indicated on the plans or directed by the CITY.
- B. Unless directed otherwise, hay bales shall be placed at the following locations.
 - 1. Around catch basins in future paved areas.
 - 2. At the down slope side of any earthwork.
- C. Hay bales will remain around catch basins until paving occurs. At all other locations, hay bales shall remain and be maintained until directed to do otherwise by the CITY.

3.06 SILT FENCE

- A. Unless directed otherwise, silt fences shall be placed at the following locations:
1. Around drainage structures.
 2. At culvert and/or headwall ends of drainage pipe inlets and outfalls where concentration of flow will cross raw earth.
 3. Along top and toe of slopes.
 4. As required to control siltation and erosion during the course of the work.

END OF SECTION