

**SECTION 201 - CLEARING AND GRUBBING**

**201.01 Description.** This section describes clearing, grubbing, protecting trees, vegetation, and objects designated to remain, removing and disposing of vegetation, debris, and unwanted material from right-of-way, easements, road approaches, project and borrow pit sites, and other areas designated in the contract documents or by the Engineer. Perform clearing and grubbing in advance of grading operations.

Clearing is defined as removing and disposing of all unwanted surface material, such as trees, brush, grass, weeds, downed trees, and other material.

Grubbing is defined as removing and disposing of all unwanted vegetative matter from underground, such as stumps, roots, buried logs, and other debris.

Debris is defined as unusable or unwanted material produced by clearing and grubbing.

**201.02 Materials.** None

**201.03 Construction.**

**(A) Vector Control.** Prior to starting site clearing or structure removal, comply with rodent control requirements of Title 11, Chapter 26, Section 11-26-35, HAR.

**(B) Best Management Practices (BMP).** Ensure that all BMP measures are in place before clearing and grubbing starts. If BMP measure is removed temporarily to accommodate construction operations, reinstall before end of workday.

**(C) Limits.** Clear and grub entire length of project within limits specified below, unless otherwise indicated in the contract documents.

**(1)** A width of 5 feet outside of excavation and embankment slope lines for highway construction areas that include structures, frontage and access roads, streets, ramps, approaches, and ditches and channels with a bottom width of 12 feet. When slopes require rounding, extend clearing and grubbing limits to outside limits of slope rounding.

**2)** A width of 2 feet outside of excavation and embankment slope lines for highway construction areas that include ditches and channels with a bottom width of less than 12 feet.

**201.03**

47 (3) Material sites within right-of-way.

48

49 (4) Areas enclosed by interchange loops and ramps.

50

51 **(D) Clearing.** Clear all surface objects, including trees, logs, roots of  
52 downed trees, brush, residue of agricultural crops, grass, weeds, asphalt,  
53 concrete, masonry, and other unwanted material, such as. lumber, trash, and  
54 loose debris.

55

56 Preserve trees, shrubs, plants, and other objects to remain within the  
57 established limits.

58

59 Protect remaining trees and shrubbery from injury or damage. No  
60 trees shall be removed until all tree protection zones are established and  
61 approved by the Engineer. Cut trees to be removed without injuring trees and  
62 shrubbery that are to remain.

63

64 Cut tree branches that are less than 20 feet above finished grade  
65 where they extend over the roadway, close to the trunks, in accordance with  
66 recognized standards of good arboricultural practices. Remove additional  
67 branches, as required, to give trees a balanced appearance. Perform tree  
68 work in accordance with ANSI A300 and ANSI Z133. Contract tree work to  
69 ISA Certified Arborist. with a minimum of 10 years of continuous licensure  
70 and experience. Practices such as topping, flush cuts, stub cuts, lion-tailing,  
71 over-thinning, climbing with spikes or any other unacceptable arboricultural  
72 practices will not be allowed.

73

74 For the duration of construction within drip lines of trees to remain, the  
75 following will not be allowed:

76

77 (1) Changes, alteration, or disturbance to grade by filling,  
78 excavating, or scraping, except as indicated in the contract  
79 documents.

80

81 (2) Storage of construction materials and equipment.

82

83 (3) Stockpiling of construction materials and excavated materials.

84

85 (4) Disposal of liquids, including concrete slush, gas, oil, and  
86 paint.

87

88 (5) Vehicular traffic, equipment, or pedestrian traffic.

89

90 (6) Attachment of wires, ropes, lights, or other such attachments  
91 other than those of a protective nature to trees to be preserved.

92

93 (7) Cleaning of equipment or material under canopy of tree or  
94 group of trees to be preserved.

95  
96 Drip line shall be defined as the circle which would exist if you drew a  
97 line below the tips of the outer most branches of a tree or shrub.  
98

99 Establish Tree Protection Zones [TPZ] by erecting protective fences  
100 around trees identified in the contract documents or trees with trunk diameter  
101 greater than 8 inches, measured at height of 4.5 feet. Protective fence shall  
102 be 4-foot-high, orange, plastic mesh or equivalent accepted by the Engineer,  
103 supported on minimum 6-foot-long steel T-post. Surround tree with  
104 protective fence at minimum 10 feet from tree trunk, with steel T-post spaced  
105 at minimum 5 feet on center. Fences shall be erected prior to the  
106 commencement of any work and shall not be removed until all work is  
107 completed.  
108

109 If trees or shrubs other than those designated for removal on the  
110 contract documents are damaged in any way as determined by the Engineer,  
111 the contractor shall immediately install a Tree Protection Zone fence as  
112 detailed above and have an ISA Certified Arborist perform a 360 degree  
113 inspection of each damaged tree and shrub. Trees or shrubs not shown on  
114 contract documents shall be protected and shall not be removed without  
115 written consent from Engineer. Damaged trees or shrubs shall receive a  
116 unique serialized self-locking tree tag for identification and reporting  
117 purposes. The ISA Certified Arborist shall provide a written report with  
118 photographs documenting damages and required mitigating measures within  
119 one week of receiving notification from the Engineer. All materials and labor  
120 shall be performed at the contractor's expense. Mitigating measures shall be  
121 completed within 7 days of the report completion. The ISA Certified Arborist  
122 shall continue to monitor the health of the damaged trees or shrubs until  
123 restored to full health by performing minimum monthly site inspections and a  
124 monthly report to be provided to the Engineer.  
125

126 If trees other than those designated for removal are damaged beyond  
127 survival condition as determined by the Engineer, remove such trees and  
128 replace with trees of same species, spread, height and and size; and  
129 maintain for duration of construction or 12 months, whichever is greater, at  
130 no increase in contract price or contact time.  
131

132 Do not exceed total erosion control exposure area limits described in  
133 Subsection 209.03(B) – Construction Requirements.  
134

135 Protect land monuments, property markers, or official datum points  
136 until the Engineer authorizes their removal.  
137

138 **(E) Grubbing.** Grub areas below natural ground surface of vegetative  
139 and unwanted material interfering with proposed work, within limits specified.  
140

141 Leave in place, all undisturbed and sound stumps and nonperishable  
142 solid objects that will be more than 3 feet below subgrade and embankment

**201.04**

143 slopes. Leave in place, stumps and nonperishable solid objects that extend  
144 less than 3 inches above the ground line or low water level when they are  
145 outside the excavation and embankment areas. Cut stumps flush or below  
146 the final slope line.

147  
148 Backfill stump holes and other holes with embankment material and  
149 compact in accordance with Subsection 203.03(C) - Embankment  
150 Construction, except in areas to be excavated.

151  
152 **(F) Removal and Disposal of Material.** Remove material and debris,  
153 and dispose of at an authorized disposal site. Obtain written authorization  
154 from property owners and governmental authorities for disposal locations  
155 outside highway right-of-way limits.

156  
157 When accepted by the Engineer, reduce degradable materials to  
158 mulch or chips of a maximum size of 1/4 inch and dispose of in areas  
159 enclosed by interchange loops and ramps or between slope lines and  
160 right-of-way lines. Spread mulch and chips uniformly on ground surface, and  
161 mix one to one with underlying earth.

162  
163 Leave roadway and adjacent areas with neat and finished  
164 appearance. Dispose of slashings, flammable material, and other debris  
165 within or adjacent to highway right-of-way. Do not burn material and debris.

166  
167 **201.04 Measurement.** Clearing and grubbing will be paid on a lump sum basis.  
168 Measurement for payment will not apply.

169  
170 **201.05 Payment.** The Engineer will pay for the accepted clearing and grubbing  
171 on a contract lump sum basis. Payment will be full compensation for the work  
172 prescribed in the section and the contract documents.

173  
174 The Engineer will pay for the following pay item when included in the proposal  
175 schedule:

<b>Pay Item</b>	<b>Pay Unit</b>
Clearing and Grubbing	Lump Sum

176  
177  
178  
179  
180  
181  
182 **END OF SECTION 201**