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- g. **Removal of Nuisance Species:** Eradicate or control certain exotic plant species which have become nuisances because of their tendency to damage public and private works or to disrupt or destroy native ecosystems.
 - h. **Improve Design:** Promote innovative and cost-conscious approaches to the design, installation, and maintenance of landscaping, and encouraging water and energy conservation.
2. **Applicability of Vegetation Protection Regulations:** These Standards shall apply to any new property development or to the expansion of existing development. Single family detached homes or duplexes proposed to be built on their own individual lots shall be exempt as noted. No department or agency of the Territorial Government shall issue a permit provided for herein in violation of these Standards.
3. **Land Clearing/Vegetation Protection and Preservation**
- a. **General**
 - (1) **Objectives of these Standards:** The objectives of these Standards in limiting land clearing are:
 - (a) To control the use of irrigation water in open space areas by promoting the preservation of existing native plant communities.
 - (b) To control the removal of existing vegetation in advance of the approval of land development plans.
 - (c) To limit the removal of existing vegetation when no comparable vegetation plan to that required under this Section has been prepared for the site.
 - (2) **Preservation of Existing Native Vegetation:** Existing native vegetation and plant communities shall be protected and incorporated into the site plan wherever feasible. Certain natural plant communities shall be given special protection as determined by the Department of Agriculture, Office of the Chief of Forestry and the Division of Aquatic and Wildlife Resources and shall be protected and preserved as total entities, including understories.
 - (3) **Vegetation Removal Permits and Fees:** Permits for the removal, relocation, or replacement of vegetation covered herein shall be obtained by submitting an application on a form prescribed by the Department of Agriculture, Office of the Chief of Forestry. Bona fide agricultural production consistent with the Land Use Plan for Guam shall be exempt from fees. This fee exemption, however, shall take effect only upon the applicant's submitting to the Government a signed agreement indicating

that the land noted therein shall not be utilized for any purpose other than a bona fide agricultural purpose.

b. Application Procedure for a Vegetation Removal Permit within Proposed Development for which a Separate Building Permit or Preliminary Plan Approval is Requested.

- (1) Preliminary Review: As a precondition to the filing or receiving of any application for a building permit, (except for a single family detached dwelling unit on its own lot and not part of an overall subdivision for which approval is being sought), the applicant shall make application for a vegetation removal permit on a form provided by the Department of Agriculture, Office of the Chief of Forestry and obtain a preliminary approval from the Zoning Official.
- (2) Required Generalized Vegetation Inventory: Each application for a vegetation removal permit shall be accompanied by a generalized vegetation inventory which shall consist of:
 - (a) Generalized Vegetation Inventory: A generalized vegetation inventory showing the approximate location and extent of vegetation on the site. The inventory shall be based on the most current available information. For non-residential and multiple-family development (i.e., attached housing, apartments, condominiums, planned unit developments, etc.), the inventory may be in the form of a field survey and shall include photographs illustrating typical areas of existing vegetation. The generalized vegetation inventory shall be prepared at the same scale as the proposed site development plans to clearly illustrate the relationships between the areas of existing vegetation and proposed site improvements.
 - (b) Generalized Written Assessment and Evaluation: The generalized vegetation inventory shall be accompanied by a brief written assessment of the plant communities that have been identified on the site. For all non-residential and multiple-family projects, the assessment and evaluation shall be prepared by a person knowledgeable in the identification and evaluation of vegetative resources, such as a biologist, ecologist, horticulturist, landscape architect, landscape contractor, certified nurseryman, or other person having similar recognized skills and/or experience.
 - (c) Reasonable Additional Information: The Department of Agriculture, Office of the Chief of Forestry, may require that the application include such additional information as is reasonable and necessary for adequate administration of these vegetation requirements.

(3) Preliminary Approval

- (a) Issuance for Lots with Minimal Vegetation Disruption: Where the Zoning Official has verified that significant vegetative removal activity is not involved in a proposed development, a preliminary approval certificate shall be issued forthwith.
- (b) Issuance for Lots with Significant Vegetation Disruption: A decision to grant or deny a preliminary approval certificate shall be made by the Zoning Official within thirty (30) working days of the applicant's submission. Preliminary approval for an applicant involving significant vegetation removal activity shall be granted only if the Zoning Official finds that all reasonable efforts have been undertaken in the layout and design of the proposed development to preserve existing vegetation and to otherwise enhance the aesthetic appearance of the development by the incorporation of existing vegetation in the design process. Relocation or replacement of existing vegetation may be required as a condition of the issuance of a preliminary approval certificate and shall be carried out under guidelines provided by the Department of Agriculture.

(4) Certification of Substantial Compliance: Prior to the issuance of any development permit upon property which has received a preliminary approval certificate, the Zoning Official shall certify that the final construction plans substantially comply with the preliminary plan as it affects existing vegetation. Any proposed substantial deviation from the preliminary site plan as it affects existing vegetation shall be subject to a new review according to the same criteria and procedures as the original preliminary review.

(5) Time Limitation: A vegetation removal permit shall be subject to the same time limitation rules as are applicable to its accompanying development permit.

(6) Final Inspection: No final occupancy permit shall be issued until the relocation or replacement of vegetation, as required by the vegetation removal permit, has been completed and final approval has been given by the Zoning Official.

c. Application Procedure for Vegetation Removal Unrelated to Development Permit Applications.

(1) Applicability: Vegetation removal permits, not sought in conjunction with building permits, shall be obtained by making application on a form prescribed by the Zoning Official prior to the removal, replacement, or relocation of vegetation from or on the following types of property:

- (a) All vacant or undeveloped sites;

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- (b) All lands located in Zoning District 2, or proposed for bona fide agricultural purposes as defined in the Zoning Code; and
 - (c) Existing residential development in which landscape plant materials are to be planted or rearranged on the same lot shall be exempt from these provisions.
- (2) Required Generalized Vegetation Inventory: Each application for a vegetation removal permit shall be accompanied by a generalized vegetation inventory which shall consist of:
- (a) Generalized Vegetation Inventory: A generalized vegetation inventory (including a map of the property) showing the approximate location and extent of vegetation on the site shall be prepared. For existing non-residential and multiple-family development, the inventory may be in the form of a field survey, and shall be accompanied by photographs illustrating typical areas of vegetation. This inventory shall be prepared at a scale that clearly illustrates the relationships between the areas of vegetation and the existing site improvements.
 - (b) Generalized Written Assessment and Evaluation: The generalized vegetation inventory shall be accompanied by a brief written assessment of the plant communities that have been identified on the site. The assessment shall include an evaluation of the character and quality of the plant communities identified, including their rarity, viability, and such other physical characteristics and factors which may affect their preservation. For projects other than single family detached residences, on individual lots and not part of an overall subdivision for which approval is being sought, the assessment and evaluation shall be prepared by an individual knowledgeable in the identification and evaluation of vegetative resources, including but not limited to biologist, ecologist, horticulturist, landscape architect, nurseryman or landscape contractor.
 - (c) Reasonable Additional Information: The Zoning Official may require that the application include such additional information as is reasonable and necessary for adequate administration of these vegetation protection requirements.
- (3) Application Review: Upon receipt of a proper application, the Zoning Official shall perform a review, which may include a site inspection. The Department of Agriculture, Office of the Chief of Forestry shall render a decision on the application within thirty (30) working days of its receipt.

(4) Circumstances Justifying Issuance: Vegetation removal permits shall be issued in the following circumstances:

- (a) Where a tree, due to natural circumstances, is no longer viable, is in danger of falling, is so close to existing structures as to endanger said structures, creates unsafe vision clearances, or constitutes a health hazard; or
- (b) Where the affected vegetation will be relocated, replaced with an acceptable substitute planting, or otherwise preserved.

(5) Relocation and Replacement: As a condition to the granting of a vegetation removal permit under Subsection (4) of this Section, the applicant may be required to:

- (a) Relocate vegetation, which would otherwise be destroyed, to another location on the site; or
- (b) Replace vegetation, which would be destroyed, with acceptable substitutes elsewhere on the site. In determining the most suitable location, or replacement of vegetation, the Zoning Official shall consider the needs of the intended use of the property (if no immediate use is planned by the applicant, the Zoning District's permitted uses shall be used), together with an evaluation of the following:
 - i. Existing vegetation cover on the site and on adjacent properties;
 - ii. Quantity of vegetation to be removed from the entire site;
 - iii. The type, size, and condition of the vegetation proposed to be removed;
 - iv. The feasibility of relocating the particular vegetation in question; and
 - v. Topography and stormwater drainage patterns on the site.

(6) Time Limitation: Permits shall expire and become null and void if work authorized by such permits is not commenced within ninety (90) calendar days from the date of issuance of the permit, or if such work, when commenced, is suspended or abandoned at any time for a period of ninety (90) calendar days. If work has commenced and the permit becomes null and void or expires, a new permit covering the proposed vegetation removal shall be required prior to the initiation of any vegetation removal activity.

d. Vegetation Protection

- (1) General: During construction, all reasonable steps necessary to prevent the destruction or damage of vegetation shall be taken. Damaged or destroyed vegetation must be replaced by vegetation having similar landscape architectural benefits (i.e, shade cover, height, coverage, watering requirements, etc.), as specified by the Department of Agriculture, Office of the Chief of Forestry, prior to occupancy or use, unless approval for their removal has been granted under permit.
- (2) Endangered or Threatened Species or Native Vegetation in Erosion Control Areas: Under no circumstances, including single family homes on their own lot, shall there be any removal of any endangered or threatened species, nor shall any native vegetation be removed from any erosion control areas.
- (3) Filling, Construction Debris, and Construction Equipment: During construction, unless otherwise authorized by the vegetation removal permit, no excess soil, additional fill, equipment, or construction debris shall be placed within the drip line (root zone protection area) of any vegetation that is required to be preserved in its present state. Additionally, no construction equipment shall be allowed within any root zone protection area.
- (4) Attachments: No attachments or wires, other than those of a protective or non-damaging nature, shall be attached to any vegetation during construction.

4. Site Design Standards

- a. Creative Site Development Concepts for Water Conservation: Creative site development concepts shall be used to promote water conservation. Water needs may be reduced by providing for:
 - (1) The preservation of existing plant communities;
 - (2) The re-establishment of native plant communities;
 - (3) Limited amounts of lawn grass areas;
 - (4) The use of native plant materials;
 - (5) The use of shade trees to reduce transpiration rates of lower story plant materials;
 - (6) Site development that retains stormwater runoff on the site;
 - (7) The use of pervious paving materials; and
 - (8) Other environmentally sensitive site development concepts.
- b. Minimum Open Space Requirements: Minimum open space requirements for any proposed use shall meet the standards set forth for that particular use in the Zoning Code for the Zoning District in which the use is to be located.

c. Preservation of Existing Plant Communities

- (1) General: All existing plant communities shall be preserved to the extent that they can be incorporated into the required open space. Existing plant communities that are specified on the approved Landscape Plans to remain shall be preserved in their entirety. In most cases, the preservation of existing plant communities will decrease the cost of initial site development, decrease future water and maintenance needs, and benefit the aesthetic appearance of the property.
- (2) Existing Native Plant Communities Required to Remain: Where existing viable, healthy native plant communities exist on a site proposed for development, at least twenty-five (25) percent of the required open space shall be in the form of preserved natural plant communities.
- (3) Open Space Credit for the Preservation of Existing Natural Plant Communities: Portions of existing, viable, healthy native plant communities (the determination to be made by the Department of Agriculture, Office of the Chief of Forestry), over and above the minimum required to be preserved, that are preserved in a natural state, and are capable of sustaining life with adjoining site development, or the proposed installation of native plant species, shall be credited as open space at one and one-half (1.5) times the actual area of the protected plant community. The minimum size of a preserved plant community eligible for the open space credit shall be four thousand (4,000) square feet.
- (4) Required Management Plan
 - (a) General: For all areas of preserved plant communities greater than ten thousand (10,000) square feet in area, the owner shall submit for the approval of the Department of Agriculture, Office of the Chief of Forestry, a narrative management plan, indicating the manner in which the owner will preserve these native plant communities. The narrative shall include:
 - i. Whether or not the existing vegetation is to be preserved in the existing species composition;
 - ii. If applicable, the manner in which the composition of existing plant material is to be preserved (hand removal of invasion species, prescribed burning, etc.);
 - iii. The schedule for the removal of exotic nuisance species;
 - iv. The schedule for the removal of debris; and
 - v. Any other information that may be required by the Zoning Official that is reasonable and necessary to determine that the management plan meets the requirements of these Standards.

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- (b) Requirement for Owner's Covenant with the Territorial Government for the Maintenance of Preserved Plant Communities Receiving Open Space Credit: To receive open space credit for areas of preserved vegetation, the owner shall covenant with the Territorial Government of Guam that the preserved plant community will be maintained as per the accepted management plan.

J. Historic and Cultural Conservation

1. **Purpose:** It is the general intent of these regulations to assure that reasonable efforts are made to identify the presence and significance of historic properties which may be affected by proposed developments, and that if historic properties will be affected by a proposed development, reasonable measures are implemented to avoid or mitigate effects which may diminish the significance of these properties.
2. **Definitions:** For the purposes of this section, the following terms shall be defined as follows.

Adverse Effect: Any change in the character or use of a historic property which may diminish the qualities which qualify it for inclusion in the Guam Register of Historic Places.

Area of Potential Effect: The geographic area or areas within which the development may cause changes in the character or use of historic properties, if any such properties exist.

Certificate of Approval: The certification from the Guam Historic Preservation Officer (required by Title XIV, Chapter XIII, section 13985.70 of the Government Code of Guam) issued prior to the granting of certain permits, licenses, or other approvals by other Government of Guam agencies or departments.

Effect: Any alteration in the character or use of a historic property, particularly those characters which qualify the property for inclusion in the Guam Register of Historic Places.

3. **General Planning and Administrative Actions by the Zoning Official and the Department of Parks and Recreation (DPR)**

In order to assure that development permit reviews adequately and effectively address historic preservation concerns, the Zoning Official and DPR shall jointly assure that:

- a. Application forms used for organizing information about proposed developments solicit information generally adequate for determining an area of potential effects and the range and nature of effects to historic sites foreseeably posed by the proposed development.
- b. To the extent practical, findings and measures to resolve concerns are consistent with the findings and measures for historic preservation which may apply to any proposed development project through other authorities than the zoning code.

4. Historic Preservation Review Process

a. Pre-application meeting procedures

- (1) The Zoning Official shall provide a copy of the conceptual plan for development to DPR's Historic Preservation Officer no less than three days prior to a pre-application meeting at which a new minor development permit proposal shall be discussed, and no less than ten working days in the case of a new major or super-major development permit application.
- (2) The Historic Preservation Officer (HPO), at the pre-application meeting, shall indicate whether there is additional information needed to determine:
 - (a) the appropriate area of potential effects for the proposed development.
 - (b) the presence or likelihood of historic properties in the area of potential effects.
 - (c) the nature and extent of foreseeable effects to historic properties.
 - (d) alternative project configurations or measures to incorporate which might avoid or adequately mitigate adverse effects to historic properties.

Application forms shall solicit an applicant's response to the notices of need for additional information made at the time of the pre-application meeting.

If adequate information is already available for a preservation finding, the HPO shall indicate the finding he determines as appropriate based on the information available at the time of the pre-application meeting.

b. Application Review Procedures

- (1) The Zoning Official shall review the application form to assure that a response has been provided for each category of information requested by the HPO at the pre-application meeting. An application lacking such items will be deemed incomplete.
- (2) On receipt of a complete application, the HPO shall review the application for adequacy of information to issue a certificate of approval to the Zoning Official. Certificates of Approval when issued, will include one of the following findings, as appropriate, based on adequate information for each:

- (a) "No Historic Properties"
- (b) "No Effect"
- (c) "No Adverse Effect"
- (d) "Adverse Effect with Mitigation"
- (e) "Adverse Effect without Mitigation"

If the application does not contain sufficient information for one of the certificate of approval findings, the HPO shall request the additional information in writing as soon as possible in the review period, and communicate the request immediately to the Zoning Official and to the applicant. The written notice shall describe as specifically as possible the additional information needed.

When a project will apparently have an adverse effect on one or more historic properties, the applicant must consult with the HPO and interested parties to consider alternatives and measures for avoiding adverse effects or to mitigate adverse effects. This consultation is also an opportunity to coordinate the development permit review with other historic preservation reviews in an orderly manner. When such a consultation is needed, the HPO shall notify the Zoning Official of the need for additional information in the form of documentation of a completed consultation process.

Completion is demonstrated by a signed agreement stating measures for avoiding or mitigating adverse effects which will be incorporated into the project, or by a document declaring a failure to reach agreement and containing the HPO's action with respect to a certificate of approval.

- (3) Before the end of the review period established by the zoning code, the HPO shall advise the Zoning Official in writing of the status of the historic preservation review of the application as:
 - (a) Certificate of Approval issued, with appropriately documented finding.
 - (b) Certificate of Approval denied, with notation of reason for denial.

Pursuant to P.L. 20-151, the Zoning Official shall not issue a development permit without a certificate of approval.

- (4) Certificates of Approval shall be denied when the HPO finds that:
 - (a) The application does not contain sufficient information to determine an area of potential effect, or to assess the foreseeable effects of the development on historic properties.

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- (b) When the applicant has not completed a reasonable and good faith effort to identify historic properties which may be affected by a proposed development.
 - (c) When a proposed development will have adverse effects and there are feasible and prudent alternatives which would avoid or substantially minimize the adverse effects, and which also allow reasonable use of the property.

5. Information requirements

- a. Findings of "No Historic Property" shall be documented by a description of the project sufficiently detailed to determine the area of potential effect, a description of the area of potential effect, and a statement of how the presence or probability of historic properties in the area of potential effects was determined.
- b. Findings of "No Effect" shall contain the same documentation as in section 5.a. In addition, the documentation shall include a description of the historic properties in the area of potential effect, with adequate detail to assess the effects of the proposed development, and an appraisal of the project's foreseeable effects on historic properties and how these have been determined not to meet the Criteria of Effect.
- c. Findings of "No Adverse Effect" shall contain the same documentation as section 5.a. In addition, the documentation shall include a description of the historic properties in the area of potential effect, with adequate detail to assess the effects of the proposed development, and an appraisal of the project's foreseeable effects and how these have been determined to meet the criteria of effect but not the Criteria of Adverse Effect. Documentation included with a finding of "No Adverse Effect" shall also describe in detail any measures or restrictions incorporated into the project to assure that adverse effect is avoided.
- d. Findings of Adverse Effect shall contain the same documentation as section 5.a. In addition, the documentation shall include a description of the historic properties in the area of potential effect, with adequate detail to assess the effects of the proposed development, and an appraisal of how the project's foreseeable effects on historic properties meet the criteria of adverse effect. Documentation included with a finding of "Adverse Effect" shall also include any agreements entered into to avoid or mitigate the adverse effects of the project.
- e. Documentation of consultation shall include at a minimum, signed agreements in which measures or conditions are incorporated into the project design and implementation for the purpose of avoiding or mitigating adverse

effects to historic properties. Such agreements shall, where appropriate, include parties such as the Advisory Council on Historic Preservation if the project also includes a federal license, permit, or funding and will apparently include an adverse effect on one or more historic properties.

6. Criteria of Effect

- a. A development project has an effect on a historic property when the development may alter characteristics of the property that may qualify the property for inclusion in the Guam Register of Historic Places. For the purpose of determining effect, alteration to features of the property's location, design, setting, or use may be relevant depending on the characteristics which qualify the property for the Guam Register of Historic Place.
- b. A development has an adverse effect when the effect on a historic property may diminish the integrity of the characteristics of the property which may qualify it for inclusion in the Guam Register of Historic Places. Adverse Effects on historic properties include, but are not limited to:
 - (1) physical destruction of all or part of the historic property.
 - (2) isolation of the property from or alteration of the character of the property's setting when that character contributes to the property's qualification for the Guam Register.
 - (3) introduction of visual, audible, or atmospheric elements that are out of character with the property or alter its setting.
 - (4) neglect of a property resulting in its deterioration or destruction.
- c. Effects of an undertaking that would otherwise be found to be adverse may be considered as being not adverse for the purpose of these regulation when:
 - (1) the property is of value solely for its potential contribution of knowledge of the past through systematic research, and this value can be preserved through the conduct of appropriate research in accordance with applicable professional standards and guidelines.
 - (2) the effect is due to a rehabilitation of historic structures and is conducted in a manner that preserves the historic and architectural value of the property.

7. Consultation

- a. Consultation includes the process of resolving potential adverse effects through consideration of alternative measures for avoiding or mitigating otherwise adverse effects which the development would foreseeably entail.

The applicant shall make a reasonable and good faith effort to avoid adverse effects, and to adequately mitigate unavoidable adverse effects to historic properties resulting from the proposed development. When the applicant reaches agreement with the HPO, the agreement document will serve as part of the documentation supporting a certificate of approval with its appropriate finding.

- b. When the applicant in consultation with the HPO cannot reach agreement regarding potential certificate of approval findings or mitigation measures, the issues in dispute may be appealed for hearing to the Guam Historic Preservation Review Board.

Issues subject to appeal by a development permit applicant are limited to:

The significance of potentially historic properties found within the area of potential effect.

The determination of effects of the proposed development on historic properties in the area of potential effect.

The adequacy of measures to avoid or mitigate adverse effects.

- c. To appeal to the Guam Historic Preservation Review Board on any of the issues, an applicant must transmit a request for hearing to the Chairman of the Guam Historic Preservation Review Board, through the HPO. The Guam Historic Preservation Review Board will consider the appeal within two weeks of receiving it.
- d. An appeal by an applicant should include an explanation of the matters on which the applicant and the HPO cannot agree. It should state the finding, determination, or mitigation measures required by the HPO, and one or more alternative(s) favored by the applicant.
- e. In considering the appeal, the GHPRB shall consider the appeal at a public meeting of the GHPRB, and reach a decision on the appeal within two weeks of receiving the appeal.
- f. In considering an appeal regarding the significance of historic properties the GHPRB shall decide whether the properties at issue shall be treated as eligible or ineligible for inclusion in the Guam Register of Historic Places for purposes of the development review.

A decision to consider a property as eligible does not result in listing the property in the Guam Register of Historic Places. Such a decision means that the HPO and the applicant will treat the property as significant for purposes of the historic preservation review.

- g. In considering an appeal regarding a finding of "No Historic Property", "No Effect", "No Adverse Effect" or of "Adverse Effect", the Guam Historic Preservation Review Board may accept the applicant's proposed finding, the HPO's finding, or impose one of the above findings as it determines appropriate to the information available. If the GHPRB finds that the information available is not adequate to support any of the findings, the GHPRB shall instruct the HPO to request the additional information needed for an appropriate determination of effect. The GHPRB may table the appeal until the additional information is made available to the Board.
 - h. In considering measures to avoid adverse effect or for mitigation of adverse effect, the GHPRB may accept measures as proposed by the applicant, as proposed by the HPO, or may substitute measures which it finds appropriate to the circumstances.
 - i. If, based on the GHPRB decision on appeal the applicant does not agree with proposed measures for avoiding or mitigating adverse effects to historic properties, the HPO shall report this circumstance to the Zoning Official as "Certificate of Approval Denied, Adverse Effect without mitigation".
8. Implementation
- a. Failure of the applicant to implement historic preservation measures as agreed in writing in order to secure a certificate of approval shall constitute grounds for suspension or revocation of the development permit.
 - b. Certificates of Occupancy shall not be granted for any development in which historic preservation measures were imposed until the HPO has certified that the historic preservation measures have either been fully satisfied, or that enforceable provisions for full completion have been made.

K. Agricultural Land Protection Performance Standards

1. **Purpose and Objectives:** These standards are intended and designed to preserve the availability of agricultural land; to protect the soil from water erosion; to encourage efficient urban development patterns; to lessen congestion on the streets and highways; to secure safety from floods, typhoons, and other hazards; to protect the health and welfare of residents and visitors of the Territory; to prevent the overcrowding of land; to avoid any undue concentrations of population; and to facilitate the adequate provision of transportation, water, sewerage, schools, parks, and other public improvements.

Furthermore, these standards are also intended to provide local citizens and the Territorial Government with the means by which agricultural land may be protected from nonagricultural development pressures. This is accomplished by the creation and adoption of the Land Use Plan of Guam and the adoption of these Agricultural Land Protection Performance Standards, so that the land inside these areas may be conserved for the production of plants, food, and livestock. It is further the intent of these standards to provide for the orderly use and development of land and related natural resources for residential, commercial, office, resort, industrial, and recreational purposes, protect private property rights, protect significant natural and historic resources and fragile ecosystems of the Territory, including forests, wetlands, shorelines, coral reefs, aquifers, mangrove mudflats, ponds, and recreational areas, and to promote the efficient use and conservation of energy resources.

2. Prime Agriculture Areas

a. "PA" Prime Agriculture Overlay Districts Maps

- (1) The boundaries of the "PA" Prime Agriculture Overlay Districts shall be the same as shown and listed in the *Soil Survey of the Territory of Guam* and the specific areas from said Survey hereinafter described, published by the United States Department of Agriculture: Soil Conservation Service, or from a soil map superimposed upon an aerial photograph compiled and attested to by a Certified Soil Scientist. The soil characteristics, notations, and explanatory material contained in the *Soil Survey* are declared to be a part of these standards. Subsequent amendments and supplements to the *Soil Survey* shall be adopted automatically.
- (2) The "PA" Prime Agriculture Overlay Districts shall include the corresponding designated areas as identified in the *Soil Survey* as indicated below:
 - (a) 27 Guam-Saipan complex, zero to seven percent slopes (Saipan soil).

- (b) 39 Pulantat-Kagman clays, zero to seven percent slopes (Kagman soil).
- (c) 48 Togcha-Akina silty clays, three to seven percent slopes (Togcha soil).
- (d) 50 Togcha-Ylig complex, three to seven percent slopes (Togcha soil).

b. Prime Aquaculture Overlay District Maps, as designated by the Guam Department of Commerce.

3. Agricultural Land Preservation Area Overlay

a. Intent: It is the intent of this Section to provide for the establishment of voluntary agricultural land preservation areas in accordance with the provisions of these standards. The Government of Guam recognizes the importance of preserving the finite supply of agricultural land. Conversion of farm land to urban development and other non-farm uses reduces future food production capabilities and may ultimately undermine the efforts to establish a diversified economic base in the Territory.

b. Creation of Agricultural Land Preservation Area

- (1) An owner or owners of farmland may submit a proposal to the Zoning Official for the creation of an agricultural land preservation area. Said area, at its creation, shall contain at least twenty (20) acres of land if the primary activity is livestock production, or five (5) acres if the primary activity is crop production, or one-half (0.5) acre if the primary activity is aquaculture, and provided that it is located in Zoning District 2. However, a smaller area may be created if the farmland proposed is adjacent to an established agricultural land preservation area.
- (2) The proposal shall include a description of the proposed area, including its boundaries.
- (3) Land shall not be included in an agricultural land preservation area without the written consent of the owner of the property.

c. Principal Permitted Uses: The following uses shall be permitted in an agricultural land preservation area:

- (1) Agricultural and aquacultural operations as defined in the "Definitions" section of the Zoning Code.
- (2) Residences constructed for occupation by a person engaged in farming or in a family farming operation.
- (3) Property of any electric or telephone utility company, or any public water or sewer utility facility.

4. Procedures

- a. Within thirty (30) calendar days of receipt of a proposal for an agricultural land preservation area which meets the requirements of these standards, the Zoning Official shall provide notice of the proposal by publishing notice in a newspaper of general circulation. Within forty-five (45) calendar days after receipt of the proposal, the Department of Land Management shall hold a public hearing.
- b. Within sixty (60) calendar days after receipt, and after the Department of Agriculture has made its recommendation, the Zoning Official shall adopt the proposal or any modification thereof that it deems appropriate.
- c. Certification
 - (1) The legal description of any agricultural land preservation area shall be duly recorded with the appropriate agency of the Territorial Government.
 - (2) Upon creation, the description of the area shall be overlaid upon the Official Zoning Maps of the Territory of Guam.
- d. Withdrawal
 - (1) At any time after three (3) years from the date of creation of an agricultural land preservation area, an owner may withdraw from said area by filing with the Zoning Official a request for withdrawal containing a legal description of the land to be withdrawn and a statement of the reasons for the withdrawal request. The Zoning Official shall, within sixty (60) working days of the receipt of the request, approve or deny the request for withdrawal.
 - (2) At any time after six (6) years from the date of creation of an agricultural land preservation area, an owner may withdraw from said area by filing with the Zoning Official a notice of withdrawal containing a legal description of the land to be withdrawn.
 - (3) The Zoning Official shall cause the description of that agricultural preservation area filed with the Territorial Government to be modified to reflect any withdrawal.
 - (4) Said modification shall also be made by the withdrawal of the described boundaries from the Official Zoning Maps by the Zoning Official.

L. Stormwater Management Performance Standards

1. Purpose and Intent

- a. The purpose of this Section is to protect, maintain and enhance both the immediate and the long-term health, safety, and general welfare of the citizens of Guam, while allowing landowners reasonable use of their property.
- b. The intent of this Section is:
 - (1) To protect the chemical, physical and biological quality of ground and surface waters.
 - (2) To encourage the protection of natural systems and the use of them in ways which do not impair their beneficial functioning.
 - (3) To perpetuate ground water recharge.
 - (4) To prevent saltwater intrusion into the ground water system.
 - (5) To reduce erosion loss of valuable topsoils and subsequent sedimentation of surface water bodies.
 - (6) To protect the habitat of fish and wildlife.
 - (7) To prevent significant loss of life and property due to flooding.
 - (8) To reduce the capital expenditures associated with floodproofing and the installation and maintenance of storm drainage systems.
 - (9) To minimize the adverse impact of development on the water resources of the Territory.
- c. The Territory acknowledges that under certain circumstances it will not be possible or practical to meet all of the objectives of this Section. In these cases, developments will be evaluated to determine the methods and approaches by which the developer proposes to mitigate any adverse effects which may otherwise result from the practical inability to meet all of the objectives of these Performance Standards.

2. Exemptions

- a. General: For the purpose of these Performance Standards, the following activities shall be exempt from the formal permitting procedure of this Section:
 - (1) Maintenance work on utility or transportation systems, provided such maintenance work does not alter the purpose and intent of the system as constructed.
 - (2) Maintenance work performed on existing stormwater detention/retention structures and drainage channels for the purpose of maintaining public health and welfare.

(3) Maintenance or renewal of existing pavement, or maintenance of existing buildings, or for small properties having an impervious surface area of three thousand (3,000) square feet or less.

b. **Emergency Exemption:** This Section shall not be construed to prevent the accomplishing of any act necessary to prevent material harm to or destruction of real or personal property as a result of a present emergency, including but not limited to fire and hazards resulting from violent storms or typhoons, or when the property is in imminent peril and obtaining a permit is impractical. For purposes of this Code, action must be taken within thirty (30) days of an emergency to qualify as an Emergency Exemption. A report of any emergency action shall be made to the Guam Environmental Protection Agency by the owner or person in control of the property on which the emergency action was taken as soon as practicable, but no more than ten (10) days following such action. Remedial action may be required by the Agency.

3. Permit Requirements

a. **Permit Waivers:** The permit requirements of this Section may be waived by the Agency for certain small projects as enumerated herein which, by their nature, do not substantially change the total rate, volume, or quality of stormwater runoff within a drainage basin.

(1) **Applicability:** The permit requirements of this Section may be waived by the Agency for the following site development activities:

- (a) A single-family detached residence and accessory structures on a parcel of record, and not part of a residential subdivision development.
- (b) The one time construction or addition of any structure or pavement not exceeding three thousand (3,000) square feet of impervious area on or parallel to the ground.

(2) **Stormwater Certifications:** The permit requirements of this Section may be waived by the Agency for those development activities meeting the criteria given in Section 3.a(1) above, provided the owner/developer files a notice of intent with the building permit application and files a letter of certification with the Agency which contains the following:

- (a) The name, address and telephone number of the developer and owner(s)
- (b) A description of the improvement.
- (c) The address and legal description of the development.

(d) A statement signed by the owner/developer which certifies that the development activity will:

- i. Not obstruct the natural flow of stormwater runoff.
- ii. Not drain stormwater runoff onto adjacent lands or wetlands not now receiving runoff from the project area.
- iii. Not concentrate the discharge of runoff onto adjacent lands in such a manner as to present a flooding hazard or cause soil erosion.
- iv. Not adversely affect adjacent lands and structures.
- v. Provide a positive drainage outlet from the site.
- vi. Not adversely impact adjacent wetlands and/or water courses.
- vii. Employ measures to control soil erosion on the site.

(e) Such other information as may be required by the Agency. A certificate of occupancy for any development activity may be withheld by the Agency in cases where the owner/developer fails to provide the stormwater certifications given above or where it can be shown that the owner/developer has not completed the construction consistent with the statements contained in the certifications.

b. Stormwater Management Permits: A stormwater management permit shall be applied for and obtained from the Agency prior to commencement of development or redevelopment activity on land for which a permit waiver has not been issued and is described in Section 3.a.(1) above.

(1) Applicability: A stormwater management permit is required for the development or redevelopment on land with more than three thousand (3,000) square feet of impervious area (roof, parking, etc.).

(2) Application for Stormwater Management Permit: Anyone desiring to develop land shall apply for a stormwater management permit. In addition, the applicant shall submit copies of the following items which shall be prepared by a registered professional engineer. In preparing the following items, the applicant shall be guided by the "Guam Erosion and Sedimentation Control Manual" of the Guam Environmental Protection Agency.

- (a) A location map showing the location of the site with reference to such landmarks as major waterbodies, adjoining roads, estates, or subdivision boundaries.
- (b) A detailed site plan showing the location of all existing and proposed pavement and structures.
- (c) Topographic maps of the site before and after the proposed alterations.

- (d) Information regarding the types of soils and groundwater conditions existing on the site.
 - (e) General vegetation maps, as required by Chapter XVII, Section G., 3., 6. (2), of the site before development and a plan showing the landscaping to be performed as part of the project.
 - (f) Construction plans and specifications necessary to indicate compliance with the requirements of these Standards.
 - (g) Runoff computations based on the most critical situation (rainfall duration, distribution, and antecedent soil moisture condition) and conforming to the "Guam Erosion and Sedimentation Control Manual" using rainfall data and other local information applicable to the affected area.
 - (h) Storage calculations showing conformance with the requirements of these Standards.
 - (i) Sufficient information for the Agency to evaluate the environmental qualities of the affected waters, and the effectiveness and acceptability of those measures proposed by the applicant for reducing adverse impacts.
 - (j) Such other supporting documentation as may be appropriate, including maps, charts, graphs, tables, specifications, computations, photographs, narrative descriptions, explanations, and citations to supporting references.
 - (k) Additional information necessary for determining compliance with the intent of these Standards as the Agency may require.
- (3) Performance Standards: The Performance Standards for the development or redevelopment on parcels for which a stormwater management permit is required shall be as follows:
- (a) As a minimum, the runoff from the first one (1) inch of rainfall from each storm over the developed or redeveloped portion of the site shall be retained on site and provide capacity for the given volume within seventy-two (72) hours following the storm event. In cases where the Agency concurs that soil and/or groundwater table conditions are not conducive to such practices, said first inch shall be detained and released over a period of twenty-four (24) to seventy-two (72) hours in a manner acceptable to the Agency.
 - (b) The cumulative impact of the discharge from the site on downstream flow shall be considered in analyzing discharge from the site. Detention structures shall be designed to release runoff to the downstream drainage system over a period of time so as not to exceed the capacity of the existing downstream drainage system. The peak rate of discharge from a site after development or redevelopment shall not exceed the peak rate of discharge from the site prior to development or redevelopment as computed for the

- twenty-five (25) year and/or one hundred (100) year, twenty-four (24) hour storms.
- (c) The volume of runoff from a site after development or redevelopment shall not exceed the volume of runoff from the site prior to development or redevelopment for a twenty-five (25) year, twenty four (24) hour storm, unless the intent of this recharge provision will be met through detention of the difference between said volumes, in which case said volume difference may be released over not less than a twenty-four (24) hour nor greater than a seventy-two (72) hour period of time. This requirement may be waived by the Agency for sites consisting predominantly of poorly drained soils having a permanently and naturally impaired recharge potential. However, if applicant requests such a waiver, said applicant shall provide maps at a scale that is adequate for the Agency to determine the sites for which the waiver is being sought. Additionally, if appropriate, the waiver request shall include, in writing, a list of the specific lots for which the waiver is being sought.
 - (d) Where possible, natural vegetation shall be used as a component of drainage design. The manipulation of the water table should not be so drastic as to endanger the existing natural vegetation that is beneficial to water quality.
 - (e) Runoff from higher adjacent land shall be considered and provisions for conveyance of such runoff shall be included in the drainage plan.
 - (f) No site alteration shall allow water to become a health hazard or contribute to the breeding of mosquitoes.
 - (g) No site alteration shall cause siltation of wetlands, pollution of downstream wetlands, or reduce the natural retention or filtering capabilities of wetlands. *This shall be deemed to include the requirement that no herbicides, pesticides, or fertilizers may be used within one-hundred fifty (150) feet of any stream or aquifer recharge area.*
 - (h) Stormwater runoff shall be subjected to best management practice prior to discharge into natural or artificial drainage systems. Best management practice shall mean a practice or combination of practices determined by the Agency to be the most effective, practical means of preventing or reducing the amount of siltation and pollution generated by the project.
 - (i) All site alteration activities shall provide for such water retention and settling structures and flow attenuation devices as may be necessary to insure that the foregoing standards and requirements are met.
 - (j) Design of water retention structures and flow attenuation devices shall be subject to the approval of the Agency pursuant to the standards hereof.
 - (k) Runoff shall be treated to remove oil and floatable solids before discharge from the site in a manner approved by the Agency.

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- (l) Erosion by wind or water shall be prevented throughout the construction process.
 - (m) For the purpose of this Section, it is presumed that the lowering of the water table to construct detention/retention basins and to permanently protect road construction does not conflict with the stated objectives of these Standards, if all of the following are met:
 - i. The development site is not in an area known to the Government, based on data collected and interpreted by the U.S. Geological Survey, or other professional investigators, as important to recharge or to the prevention of discharge of any aquifer.
 - ii. If ditches, underdrains or similar devices used to lower the water table, the lateral volumetric effect will be calculated, and the volume will be deducted from that allowed for retention areas.
 - iii. The high water table may be lowered to two (2) feet below the undisturbed ground in the vicinity of roads for the purpose of protecting the sub-base and base of the roadway and/or for the purpose of preventing mosquito breeding.
 - iv. The lowering of the water table has no adverse effect on wetlands as defined in this Section.
 - v. The lowering of the water table does not increase flows to the detriment of neighboring lands.
- (4) Review Procedure: The Agency will ascertain the completeness of the stormwater management permit application within ten (10) working days of receipt. Completeness shall only be insofar as all required exhibits have been submitted and shall not be an indication of the adequacy of these exhibits. Within thirty (30) working days after the determination has been made that a completed permit application package has been submitted, the Agency shall approve, with specified conditions or modifications if necessary, or reject the proposed plan and shall notify the applicant accordingly. If the Agency has not rendered a decision within sixty (60) working days after plan submission, the plan shall be deemed to be approved.

The Agency, in approving or denying a stormwater management permit application, shall consider as a minimum the following factors:

- (a) The characteristics and limitation of the soil at the proposed site with respect to percolation and infiltration.
- (b) The existing topography of the site and the extent of topographical change after development.
- (c) The existing vegetation of the site and the extent of vegetational changes after development.

- (d) The plans and specifications of structures or devices the applicant intends to employ for on-site stormwater retention or detention with filtration, erosion control and flow attenuation.
 - (e) The impact the proposed project will have on the natural recharge capabilities of the site.
 - (f) The impact the proposed project will have on downstream water quantity and, specifically, the potential for downstream flooding conditions.
 - (g) The continuity of phased projects. (Projects that are to be developed in phases will require the submission of an overall plan for the applicant's total land holdings.)
 - (h) The effectiveness of erosion control measures during construction.
 - (i) Permits required by any governmental jurisdiction to be obtained prior to the issuance of a permit under this Section.
 - (j) The effect the proposed water management will have upon mosquito breeding habitats.
 - (k) The adequacy of easements for drainage systems in terms of both runoff conveyance and maintenance.
 - (l) The method of handling upland flow which presently discharges through the site.
 - (m) The maintenance entity responsibility for upkeep of the system upon its completion.
- c. Automatic Rejection of Permit: Should sixty (60) working days elapse from the date of mailing by the Agency a request for additional information or plan amendment without response by the applicant, or his engineer, the Agency may immediately deny the permit applicant based on the inadequacy of the information presented. A request by the applicant to hold the application in abeyance shall be considered for a period not to exceed one (1) year from the date of the original application. If no additional information is received within that one (1) year period, the Agency may deny the application based upon the information presented.

In the event that the plan is approved with specified conditions or modifications, the applicant shall then have the opportunity to amend the plan in accordance with the requirements of the Agency within sixty (60) working days following the mailing date of the request. In the event that the applicant does not comply with the Agency's requirements within sixty (60) working days, the Agency may deny the application based upon the inadequacy of the plan and information previously presented.

4. Application for Preliminary Review for Modification to Existing Development

a. General: Any persons proposing to make any change in the size of any existing structure may submit an application for preliminary review to the Guam Environmental Protection Agency to determine the requirement for a stormwater management permit. Those applications that shall be considered by the Agency must be within the following parameters:

- (1) There shall be no change in the volume of stormwater nor shall the rate of stormwater runoff be affected;
- (2) The construction of any structure not otherwise exempt shall not exceed one thousand (1000) square feet of impervious surface on or parallel to the ground.
- (3) The development shall not consist of the construction of new paved area;
- (4) The development shall not consist of the construction of any drainage improvements; and
- (5) The development shall not involve the alteration of the shape of land.

b. Application Requirements: The application for preliminary review shall contain sufficient information regarding the proposed improvements to adequately define the features of the project which impact the location, rate and the volume of stormwater runoff. Such information shall include, but may not be limited to:

- (1) Name, address and telephone number of the applicant.
- (2) Location map, address, legal description of the proposed improvement.
- (3) Statement expressing the scope of the proposed project.
- (4) Schedule of proposed improvements.
- (5) Sketch showing existing and proposed structures, paving, and drainage patterns.

c. Review Procedure: The application for preliminary review shall be reviewed by the Agency to determine whether a project is exempt, whether a permit waiver is possible or whether a water quality permit or stormwater management permit shall be required. Within thirty (30) working days after receipt of the application for preliminary review, the Agency will notify the applicant whether the project is exempt or what further application procedures are to be followed.

5. Appeals

a. Request for Appeal: If the applicant feels aggrieved due to rejection or modification, or any other action of the Zoning Official he may petition the Territorial Land Use Commission for a hearing before them. Such petition

shall be filed within forty-five (45) working days from the date of the mailing of the notice.

6. **Permit Duration:** Any development activity for which a permit is issued under this Section that is not commenced within one (1) year from the date of permit issuance and/or which is not complete within two (2) years from the date of permit issuance shall automatically be null and void, unless otherwise extended by the Agency.
7. **Plan Adherence:** The applicant shall be required to adhere strictly to the plan as approved. Any changes or amendments to the plan must be approved in writing by the Agency, in accordance with the procedures set forth in Subsection 3. of this Section. After the completion of the project, the Agency may require from the owner/applicant that the professional engineer in charge certify compliance with terms of the permit or submit as-built plans, if the completed project appears to deviate from the approved plan. The filing of an application for a permit shall constitute a grant and consent by the owner for enforcement officials to enter and inspect the project to insure compliance with the requirements of this Section.
8. **Maintenance**
 - a. **General:** The installed on-site retention/detention systems and drainage facilities required by these Standards shall be maintained by the owner. The owner shall be required to execute a written system maintenance agreement that shall permit the Territorial Government:
 - (1) To have adequate ingress and egress to inspect the premises at reasonable times; and
 - (2) If necessary, take corrective action should the owner fail to properly maintain the system(s)
 - b. **Failure to Maintain:** Should the owner fail to properly maintain the stormwater management system(s), the Guam Environmental Protection Agency shall give written notice to the owner of record as appears on the latest property tax rolls by certified mail of the nature of the violation and order the corrective action necessary. Should the owner fail, within thirty (30) working days from the date of the notice, to take corrective action to the satisfaction of the Agency or appeal the notice and order, the Territorial Government may enter upon the lands, take such corrective action as the Agency may deem necessary, and place a lien on the property of the owner for the cost thereof.
 - c. **Government Maintenance:** Certain off-site systems as may be identified by the Territory's stormwater management plan, which are to provide general

public benefits, may be accepted by the Government for maintenance. The selection of such systems to be maintained shall be made by the Public Works Commissioner. All areas and/or structures to be maintained by the Government must be dedicated by plat or separate instrument and accepted by resolution of the Legislature.

M. Floodplain Protection Standards

1. Findings of Fact

- a. The flood hazard areas of the Territory of Guam are subject to periodic inundation that results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare.
- b. These flood losses are caused by the cumulative effect of obstructions in floodplains resulting in increases in flood heights and velocities, and by the occupancy in flood hazard lands of structures that are inadequately elevated, floodproofed, or otherwise unprotected from flood damage.

2. Purpose: It is the purpose of this Section to promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

- a. Restrict or prohibit uses that are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities;
- b. Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- c. Control the alteration of natural floodplains, stream channels, and natural protective barriers that are involved in the accommodation of flood waters;
- d. Control filling, grading, dredging and other development that may increase erosion or flood damage; and
- e. Prevent or regulate the construction of flood barriers that will unnaturally divert flood waters or which may increase flood hazards to other lands.

3. The objectives of this Section are:

- a. To protect human life and health;
- b. To minimize expenditure of public money for costly flood control projects;
- c. To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;
- d. To minimize prolonged business interruptions;

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- e. To help maintain a stable tax base by providing for the sound use and development of flood prone areas in such a manner as to minimize the number of blighted areas that could be created by floods; and
 - f. To insure that potential home buyers are notified that property is in a flood area.
 - g. To prevent the loss of federal assistance to Guam due to a violation of National Flood Control requirements.

4. General Provisions

- a. **Lands to which these Performance Standards Apply:** These Performance Standards shall apply to all areas of special flood hazards within the jurisdiction of the Territory of Guam.
- b. **Basis for Establishing the Areas of Special Flood Hazard:** The area of special flood hazard identified by the Federal Emergency Management Agency in its Flood Insurance Rate Maps (FIRM) are adopted by reference and declared to be a part of these Performance Standards.
- c. **Establishment of Permit:** A permit shall be required in conformance with the provisions of these Standards prior to the commencement of any development activities.
- d. **Compliance:** No structure or land shall hereafter be located, extended, constructed or structurally altered without full compliance with the terms of these Standards and other applicable laws.
- e. **Abrogation and Greater Restrictions:** These Performance Standards are not intended to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where these Standards and any other conflict or overlap, whichever imposes the more stringent restrictions shall prevail.
- f. **Interpretation:** In the interpretation and application of these Standards, all provisions shall be (1) considered as minimum requirements; (2) liberally constructed in favor of the governing body, and; (3) deemed neither to limit nor repeal any other powers granted under Territorial or federal laws.
- g. **Warning and Disclaimer of Liability:** The degree of flood protection required by these Performance Standards is considered reasonable for regulatory purposes and is based on scientific and engineering consideration. Larger floods can and will occur on rare occasions. Flood heights may be increased by man-made or natural causes. These Standards do not imply that land outside the areas of special flood hazard or uses permitted within such areas

will be free from flooding or flood damages. These Standards shall not create liability on the part of the Territory of Guam or by any officer or employee thereof for any flood damages that result from reliance on these Standards or any administrative decision lawfully made thereunder.

5. Administration

- a. Designation of the Department of Public Works: The Department of Public Works is hereby designated to administer and implement the provisions of these Performance Standards.
- b. Permit Procedure: Application for a permit shall be made to the Zoning Official prior to any development activities, and shall include, but not be necessarily limited to plans drawn to scale showing the nature, location, dimensions, and elevations of the area in question; existing facilities; the location of the proposed development activity; proposed cuts and filling of any land area; existing and/or proposed storage of materials; existing and/or proposed stormwater drainage facilities; and the locations of all of the foregoing. Specifically, the following information is required:

(1) Application Stage

- (a) Elevation in relation to mean sea level of the proposed lowest floor (including basement) of all structures;
- (b) Elevation in relation to mean sea level to which any nonresidential structure will be floodproofed;
- (c) Certificate from a registered professional engineer or architect registered in the Territory of Guam that the nonresidential floodproofed structure will meet the floodproofing criteria contained in these Performance Standards; and
- (d) Description of the extent to which any watercourse will be altered or relocated as a result of proposed development.

- (2) Construction Stage: Provide a floor elevation or floodproofing certification after the lowest floor is completed, or in instances where the structure is subject to the Standards applicable to coastal high hazard areas, after placement of the horizontal structural members of the lowest floor. Upon placement of the lowest floor, or floodproofing by whatever construction means, or upon placement of the horizontal structural members of the lowest floor, whichever is applicable, it shall be the duty of the permit holder to submit to the Building Official's Office a certification of the elevation of the lowest portion of the horizontal structural members of the lowest floor, as built, in relation to mean sea level. Said certification shall

be prepared by or under the direct supervision of a registered land surveyor or professional engineer and certified by same.

When floodproofing is utilized for a particular building, said certification shall be prepared by or under the direct supervision of a professional engineer or architect and certified by same. Any work undertaken prior to submission of the certification shall be at the permit holder's risk. The Department of Public Works shall review the floor elevation survey data submitted. Deficiencies detected by such review shall be corrected by the permit holder immediately and prior to further progressive work being permitted to proceed. Failure to submit the survey or failure to make said corrections required hereby, shall be cause to issue a stop-work order for the project.

- c. Duties and Responsibilities of the Department of Public Works: The duties of the Department of Public Works shall include, but not be limited to:
- (1) Review all permits to assure that the permit requirements of these Standards have been satisfied;
 - (2) Advise the permittee that additional federal or Territorial permits may be required, and if specific federal or Territorial permit requirements are known, require that copies of such permits be provided and maintained on file with the permit.
 - (3) Assure that maintenance is provided within the altered or relocated portion of said watercourse so that the flood carrying capacity is not diminished.
 - (4) Verify and record the actual elevation (in relation to mean sea level) of the lowest floor (including basement) of all new or substantially improved structures.
 - (5) Verify and record the actual elevation (in relation to mean sea level) to which the new or substantially improved structures have been floodproofed.
 - (6) In coastal hazard areas, certification shall be obtained from a professional engineer or architect registered in the Territory of Guam that the structure is designed to be securely anchored to adequately anchor pilings or columns to withstand velocity waters and typhoon wave wash.
 - (7) In coastal high hazard areas, the Department of Public Works shall review plans for adequacy of breakaway walls.
 - (8) When floodproofing is utilized for a particular structure, the Department of Public Works shall obtain certification from a professional engineer or architect registered in the Territory of Guam.
 - (9) Where interpretation is needed to the exact location of boundaries of the areas of special flood hazard (for example, where there appears to be conflict between a mapped boundary and actual field

conditions), the Department of Public Works shall make the necessary interpretation. The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation as provided in this Section.

- (10) When base flood elevation data or floodway data have not been provided, then the Zoning Official shall obtain, review, and reasonably utilize any base flood elevation and floodway data available from a federal, Territorial or other source to administer the provisions of these Standards.
- (11) All records pertaining to the provisions of these Performance Standards shall be maintained in the Department of Public Works and shall be open for public inspection.

d. Variance Procedures

- (1) Variances may be issued for new construction and substantial improvements to be erected on a lot one-half (1/2) acre (2,000 square meters) or less in size if it is contiguous to and surround by lots with existing structures constructed below the base flood level, provided that all items contained in Subsection (3), (a) through (j) below, have been fully considered.
- (2) Variances may be issued for the reconstruction, rehabilitation or restoration of structures listed on the National Register of Historic Places without regard to the procedures set forth in the remainder of this Section, and provided the proposed reconstruction, rehabilitation, or restoration will not result in the structure losing its historical designation.
- (3) In passing upon such applications, all technical evaluations, all relevant factors, and all standards specified in other sections of these Performance Standards shall be considered, as well as:
 - (a) The danger that materials may be swept onto other lands to the injury of others;
 - (b) The danger to life and property due to flooding or erosion damage;
 - (c) The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner;
 - (d) The importance of the services provided by the proposed facility to the community;
 - (e) The necessity of the facility's relationship to a waterfront location, in the case of a functionally dependent facility;
 - (f) The availability of alternative locations, not subject to flooding or erosion damage, for the proposed use;

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- (g) The relationship of the proposed use to the Land Use Plan to that area;
 - (h) The safety of access to the property in times of flood for ordinary and emergency vehicles;
 - (i) The expected heights, velocity, duration, rate of rise, and sediment transport of the flood waters and the effects of wave action, if applicable, expected at the site; and
 - (j) The costs of providing Governmental services during and after flood conditions, including maintenance and repair of public utilities and facilities such as sewer, electrical, water systems, streets, and bridges.
- (4) Upon consideration of the factors listed above, conditions may be attached to the granting of variances as is deemed necessary to further the purposes of these Standards.
 - (5) Variances shall not be issued within any designated floodway, if any increase in flood levels during the base flood discharge would result.
 - (6) Conditions for Variances:
 - (a) Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief. In the case of an historic building, a determination must be made that the variance is the minimum necessary so as not to destroy the historic character, design, and designation of the building.
 - (b) Variances shall only be issued upon (i) a showing of good and sufficient cause, (ii) a determination that failure to grant the variance would result in exceptional hardship, and (iii) a determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create a nuisance, cause fraud on or victimization of the public, or conflict with existing laws.
 - (c) Any applicant to whom a variance is granted shall be given written notice specifying the difference between the base flood elevation and the elevation to which the structure is to be built and stating that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation.
 - (d) The Department of Public Works shall maintain the records of all appeal actions and report any variances to the Federal Emergency Management Agency upon request.

6. Provisions for Flood Hazard Reduction

a. **General Standards:** In all areas of special flood hazard the following provisions are required:

- (1) New construction and substantial improvements shall be anchored to prevent flotation, collapse or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy;
- (2) All manufactured homes shall meet the anchoring standards of Subsection 6.d.(1) and (2) of this Section;
- (3) New construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage;
- (4) New construction or substantial improvements shall be erected by methods and practices that minimize flood damage;
- (5) Electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding;
- (6) New and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;
- (7) New and replacement sanitary sewage lines shall be designed to minimize or eliminate infiltration of flood waters into them and discharges from them into flood waters;
- (8) On-site waste disposal systems (septic tanks) shall be located and constructed to avoid impairment to them or contamination from them during flooding; and
- (9) Any alteration, repair, reconstruction, or improvements to a structure that is in compliance with the provisions of this Section, shall meet the requirements of "new construction" as contained in this Section.

b. **Specific Standards:** In all areas of special flood hazard where base flood elevation data have been provided, the following provisions are required:

- (1) **Residential Construction:** New construction or substantial improvement of any residential structure shall have the lowest floor, including basement, elevated no lower than the base flood elevation. Should solid foundation perimeter walls be used to elevate a structure, openings sufficient to facilitate the unimpeded movements of flood waters shall be provided.
- (2) **Nonresidential Construction:** New construction or substantial improvement of any commercial, industrial, or nonresidential structure shall have the lowest floor, including basement, elevated no lower than the level of the base flood elevation. Structures

located in all areas designated a zone "A" (i.e., areas of special flood hazard) may be floodproof in lieu of being elevated, provided that all areas of the structure, together with attendant utility and sanitary facilities, below the required elevation are water-tight with walls substantially impermeable to the passage of water, and use structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effect of buoyancy. A professional engineer or architect registered in the Territory of Guam shall certify that these standards are satisfied. Such certification shall be provided to the Department of Public Works.

- (3) **Elevated Buildings:** New construction or substantial improvements of elevated buildings that include fully enclosed areas formed by foundation and other exterior walls below the base flood elevation shall be designed to preclude finished living space and designed to allow for the entry and exit of floodwaters to automatically equalize hydrostatic flood forces on exterior walls.
- (a) Designs for complying with this requirement must either be certified by a professional engineer or architect registered in the Territory of Guam or meet the following minimum criteria:
 - i. Provide a minimum of two (2) openings having a total net area of not less than one (1) square inch for every square foot of enclosed area subject to flooding
 - ii. The bottom of all openings shall be no higher than one (1) foot above grade; and
 - iii. Openings may be equipped with screens, louvers, valves or other coverings or devices, provided they permit the automatic flow of floodwaters in both direction.
 - (b) Electrical, plumbing, and other utility connections are prohibited below the base flood elevation;
 - (c) Access to the enclosed area shall be the minimum necessary to allow for parking of vehicles (garage door) or limited storage of maintenance equipment used in connection with the premises (standard exterior door) or entry to the living area (stairway or elevator); and
 - (d) The interior portion of such enclosed area shall not be partitioned or finished into separate rooms.
- (4) **Floodways:** Located within areas of special flood hazard are areas designated as floodways. Since the floodway is an extremely hazardous area due to the velocity of flood waters which carry debris

and potential projectiles and has erosion potential, the following provisions shall apply:

- (a) Encroachments, including fill, new construction, substantial improvements, and other development shall be prohibited, unless certification (with supporting technical data) by a professional engineer registered in the Territory of Guam is provided, demonstrating that such encroachments shall not result in any increase in flood levels during occurrence of the base flood discharge;
 - (b) If no floodway is designated, then a setback of ten (10) meters from the banks of the watercourse, river, stream, ocean, bay or pond which is reserved to discharge the base flood shall be established, wherein encroachment shall be prohibited.
- (5) Coastal High Hazard Areas (V Zones): Located within the areas of special flood hazard are areas designated as coastal high hazard areas. These areas have special flood hazards associated with wave wash and, therefore, the following provisions shall apply:
- (a) ***Except in downtown Agana, where the majority of the land is currently occupied with building or paving,*** all buildings or structures shall be elevated so that the bottom of the lowest supporting horizontal member (excluding pilings or columns) is located no lower than one (1) foot above the base flood elevation level, with all space below the lowest supporting member open so as not to impede the flow of water. Open lattice work or decorative screening may be permitted for aesthetic purposes only and must be designed to wash away in the event of abnormal wave action;
 - (b) All buildings or structures shall be securely anchored on pilings or columns;
 - (c) All pilings and columns and the attached structures shall be anchored to resist flotation, collapse, and lateral movement due to the effect of wind and water loads acting simultaneously on all building components. The anchoring and support system shall be designed with wind and water loading values which equal or exceed the one hundred (100) year mean recurrence interval (one (1) percent annual chance of a flood).

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- (d) A professional engineer or architect registered in the Territory of Guam shall certify that the design, specifications and plans for construction are in compliance with the provisions contained in these Standards.
 - (e) No unrestrained fill material shall be used as structural support. Non-compacted fill may be used around the perimeter of a building for landscaping/aesthetic purposes, provided the fill will wash out from a storm surge (thereby rendering the building free of obstruction) prior to generating excessive loading forces, ramping effects, or wave deflection. The Department of Public Works shall approve design plans for landscaping/aesthetic fill only after the applicant has provided an analysis by an engineer, architect, and/or soil scientist, which demonstrates that the following factors have been fully considered.
 - i. Particle composition of fill material does not have a tendency for excessive natural compaction;
 - ii. Volume and distribution of fill will not cause wave deflection to adjacent properties; and
 - iii. Slope of fill will not cause wave run-up or ramping.
 - (f) There shall be no alteration of mangrove mudflats that would increase potential flood damage;
 - (g) Lattice work or decorative screening shall be allowed below the base flood elevation, provided they are not part of the structural support of the building and are designed to break away under abnormally high tides or wave action without damage to the structural integrity of the building on which they are to be used, and provided the following design specifications are met:
 - i. No solid walls shall be allowed, and;
 - ii. Material shall consist of lattice or mesh screening only.
 - (h) If aesthetic lattice work or screening is utilized, such enclosed space shall not be designed to be used for human habitation, but shall be designed to be used only for parking of vehicles, building access, or limited storage of maintenance equipment used in connection with the premises.
 - (i) Prior to construction, plans for any structures that will have lattice work or decorative screening must be submitted to the Building Official for approval;
 - (j) Any alteration, repair, reconstruction, or improvement to a structure shall not enclose the space below the lowest floor except with lattice work or decorative screening.

c. Standards for Subdivision Proposals.

- (1) All subdivision proposals shall be consistent with the need to minimize flood damage;
- (2) All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical, and water systems located and constructed to minimize flood damage;
- (3) All subdivision proposals shall have adequate drainage provided to reduce exposure to flood hazards; and
- (4) Base flood elevation data shall be provided for subdivision proposals and other proposed development which is no less than three (3) acres in size.

d. Standards for Manufactured Homes and Manufactured Home Parks and Subdivisions

(1) Anchoring

- (a) All manufactured homes to be placed or substantially improved within any designated flood hazard zone shall be elevated on a permanent foundation such that the lowest floor of the manufactured home is at least two (2) feet above the base flood elevation and shall be securely anchored to an adequately anchored foundation system in accordance with the provisions found in Subsection (b) below.
- (b) All manufactured homes and additions to manufactured homes shall be anchored to resist flotation, collapse or lateral movement by one or more of the following methods:
 - i. By providing an anchoring system designed to withstand horizontal forces of fifteen (15) pounds per square foot and up-lift forces of nine (9) pounds per square foot; or
 - ii. By anchoring the unit with a system which is in compliance to the Department of Housing and Urban Development (HUD) Mobile Home Construction and Safety Standards; or
 - iii. By providing over-the-top and frame ties to ground anchors as follows:
 - (A) Over-the-top ties shall be attached at each of the four (4) corners of the manufactured home, with two (2) additional ties per side at intermediate locations, provided that manufactured homes less than fifty (50) feet long require only one (1) additional tie per side; and

(B) Frame ties shall be attached at each corner of the manufactured home with five (5) additional ties per side at intermediate points, with manufactured homes less than fifty (50) feet long requiring only four (4) additional ties per side; and all components of the anchoring system be capable of carrying four thousand, eight hundred (4,800) pounds.

iv. Certification meeting the standards above is required of the installer or government entity responsible for regulating the placement, installment and anchoring of individual manufactured home units.

(2) **Manufactured Home Parks and Manufactured Homes:** The following standards are required for manufactured homes not placed in manufactured home parks or subdivisions; new manufactured home parks or subdivision; expansions to existing manufactured home parks or subdivisions; and repair, reconstruction, or improvements to existing manufactured home parks or subdivisions that equals or exceeds fifty (50) percent of the value of the streets, utilities and pads before the repair, reconstruction, or improvement commenced.

(a) Adequate surface drainage and access for a hauler shall be provided.

(b) All manufactured homes shall be placed on pads or lots elevated on compacted fill or on pilings so that the lowest floor of the manufactured home is at least two (2) feet above the base flood levels. If elevated on pilings:

i. The lots shall be large enough to permit steps.

ii. The pilings shall be placed in stable soil no more than ten (10) feet apart; and

iii. Reinforcement shall be provided for more than six (6) feet above the ground level.

(c) No manufactured home shall be placed in a floodway, except in an existing manufactured home park or existing manufactured home park subdivision, unless the manufactured home meets the same standards as conventional housing and other development. For example, placement of such manufactured homes would be prohibited unless it could be demonstrated that there would be no increase in base flood elevations in the community.

(d) No manufactured home shall be placed in a coastal high hazard area, except in an existing manufactured home park or an existing manufactured home subdivision, unless such manufactured homes meet the same building code standards as conventional housing.

(e) Certification of compliance with these Standards is required of the developer responsible for the plan to the Department of Public Works.

e. Standards for Areas of Shallow Flooding (AO Zones): Located within the areas of special flood hazard are areas designated as shallow flooding areas. These areas have special flood hazards associated with base flood depths of one (1) to three (3) feet, where a clearly defined channel does not exist and where the path of flooding is unpredictable and indeterminate and, therefore, the following provisions apply:

(1) All new construction of residential structures shall have the lowest floor, including basement, elevated to the depth number specified on the Flood Insurance Rate Map, in feet, above the highest adjacent grade. If no depth number is specified, the lowest floor, including basement, shall be elevated at least two (2) feet above the highest adjacent grade.

(2) All new construction of nonresidential structures shall:

(a) Have the lowest floor, including basement, elevated to the depth number specified on the Flood Insurance Rate Map, in feet, above the highest adjacent grade. If no depth number is specified, the lowest floor, including basement shall be elevated at least two (2) feet above the highest adjacent grade; or

(b) Together with attendant utility and sanitary facilities, be completely floodproofed to or above the level so that any space below that level is watertight with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.

N. Wellfield/Groundwater Protection Standards

1. **Purpose:** The primary purpose of these Standards is to protect the public health, safety, and welfare from the contamination of existing and potential public and private water supplies. Further, to properly protect existing and future potable water supply sources, the Government of Guam declares that the storage, handling, use disposal, or production of hazardous or toxic substances in close proximity to any sites that have been identified by the Government as having potential as future potable water supply wells is potentially harmful to the drinking water, and that certain land uses and activities involving regulated or generic substances are hereby prohibited or regulated within the defined areas as delineated on the "Guam Water Classification Master Map," contained within the "Revised Guam Water Quality Standards" document, dated January 22, 1992.

It is essential to protect the environmentally sensitive areas adjacent to potential wells and wellfields from disruption and encroachment to preserve vital natural functions relating to water quality, water quantity, and other elements of aquatic ecosystems.

2. **Groundwater:** This designation encompasses all subsurface water and includes basal and parabasal water, perched water, all water below the groundwater table, water percolating through the unsaturated zone (vadose water), all saline waters below and along the perimeter of the basal fresh water body (freshwater lens), and water on the surface that has been collected with the specific intent of recharging or disposing of that water to the subsurface by means of injection, infiltration, percolation or other means. The Northern Guam Water Lens, which is the principal aquifer source, and any other groundwater resources as they are identified shall continue to receive protection under Guam's groundwater regulations, as well as the Zoning Code.

a. CATEGORY G-1 RESOURCE ZONE

- (1) The primary use of groundwater within this zone is for drinking (human consumption) and this use must be protected. Virtually all water of the saturated zone of Guam is included. Specifically, it includes all water occurring in the saturated zone below the groundwater table, all vadose water occurring in an unsaturated zone extending one-hundred (100) feet (30.5 m) above any water table, or within twenty (20) feet of the ground surface above all fresh groundwater bodies, all water of the basal and parabasal freshwater bodies, and all water of and below the freshwater/salt-water transition zone beneath the basal water body.
- (2) Because any water discharges within this zone will (by definition) be tributary to groundwater bodies which are actual or potential sources of

fresh potable water, no pollutant discharges to the ground-water within this zone will be allowed.

b. CATEGORY G-2 RECHARGE ZONE

- (1) Water within this zone is tributary to replenishes, and recharges the Category G-1 groundwater and must be of drinking water quality before it enters the Resource Zone. All water discharges within the Recharge Zone must receive treatment to the degree necessary to protect the underlying Category G-1 groundwater from any contamination.
- (2) Category G-2 is divided into two distinct sub-categories based upon the boundaries of the Groundwater Management Protection Zone (GWMPZ).
 - (a) Category G-2a exists within the GWMPZ and extends from the ground surface to the top of the G-1 Zone.
 - (b) Category G-2b exists only outside the GWMPZ and includes all waters which are collected and recharged or disposed of within a zone which is bounded above by G-3 and below by G-1. Vertically, this zone extends twenty (20) feet below the ground surface to the upper surface of the Category G-1 waters. Input to ground water within this zone occurs primarily through storm water injection wells. Water within this zone will percolate through soil/rock media before reaching the Resource Zone. In this way, it may undergo some degree of natural treatment consisting of filtration and subsequent purification. However, the degree of treatment is not easily demonstrated. Thus, due to the need to protect G-1 waters and considering the difficulty in tracing pollutants reaching the G-1 zone to a particular source, discharge limitations have been established to regulate discharges to the G-2a and G-2b zone. All discharges must meet the discharge limitations established in Table 12.
 - (c) All discharges within this zone may be required by the Guam Environmental Protection Agency to obtain discharge permits under these standards.

c. CATEGORY G-3 BUFFER ZONE

- (1) Category G-3 exists only outside the GWMPZ and includes all waters which are collected and disposed of or recharged at or near the existing groundwater supply. Vertically, the zone for this category extends from the surface to twenty (20) feet (6m) below the surface. Disposal methods which may result in discharges to groundwater within this zone include, but are not limited to, ponding basins, rapid infiltration, slow rate land treatment, surface or spray irrigation and all subsurface discharges, such as seepage or leaching.

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- (2) For reasons similar to those discussed for Category G-2a and Category G-2b, discharge limitations for G-3 are also established in Table 3. Discharges equal to or less than three-thousand (3,000) gallons per day (gpd) within the G-3 zone are designated as G-3a. Water quality criteria for all discharges within Zone G-3 which are greater than three-thousand (3,000) gpd are designated G-3b. This differentiation in criteria addresses the fact that minor discharges typified by small scattered individual dwelling units probably have less adverse impact on underlying groundwater than major point source discharges and thus are allowed less restrictive water quality limits (i.e., equivalent to primary treatment).
 - (3) All discharges within this zone may be required by the Guam Environmental Protection Agency to obtain discharge permits under these standards.

Table 12
Limitations for Discharges to Categories G-2 and G-3

<i>Groundwater Category</i>	<i>Fecal Coliform</i>	<i>COD (mg/1)</i>	<i>pH</i>	<i>Chlorides (mg/1)</i>	<i>Ortho-Phosphate (PO4-P) (mg/1)</i>	<i>Nitrate-Nitrogen (NO3-N) (mg/1)</i>	<i>Oil and Grease (mg/1)</i>
G-2a	10/100 m/1	20	6-10	250	10	5	0.005
G-2b	200/100 m/1	20	6-10	250	10	5	5
G-3a (< 3,000 gpd)	⁽²⁾	300	6-10	500 ⁽¹⁾	25	30 ⁽³⁾	5
G-3b (> 3,000 gpd)	400 ⁽⁴⁾ /100 ml	50	6-10	500 ⁽¹⁾	10	5 ⁽³⁾	5

- ⁽¹⁾ Outside of the Groundwater Protection so this limit is increased to 2000 mg/1.
⁽²⁾ Concentrations to be established on a case-by-case basis by the Guam Environmental Protection Agency.
⁽³⁾ For animal feedlot operations higher discharge limitations may be permitted on a case-by-case basis.
⁽⁴⁾ Daily average is based on a minimum of 15 samples per month.

3. **Surface Waters:** This Category classifies all surface fresh-water and includes, (1) waters that flow continuously over land surfaces in a defined channel or bed, such as streams and rivers; (2) standing water in basins such as lakes, wetlands, marshes, swamps, ponds, sinkholes, impoundments, and reservoirs either natural or man-made; and (3) all waters flowing over the land as runoff, or as runoff confined to channels with intermittent flow. The Water Classification Map contained within the "Revised Guam Water Quality Standards" document, dated January 22, 1992, identifies the surface water classifications in the Territory. Waters under this category within these Wellfield/Groundwater Protection Standards are those which are collected with the specific intent of disposal by recharging them into the ground.
- a. **Category S-1 HIGH:** Surface waters in this category are used for drinking water resources, conservation of wilderness areas, propagation and preservation of aquatic life, and aesthetic enjoyment. It is the objective of these Standards that these waters shall be kept free of substances (*including herbicides, pesticides, or fertilizers*) or pollutants from domestic, commercial, and industrial discharges or agricultural activities, construction, or other land-use practices that may impact water quality. No pollutant discharges will be permitted into S-1 waters via discharge or as a result of land uses adjacent to S-1 water. Mixing zones will not be allowed within the boundaries of Category S-1.
 - b. **Category S-2 MEDIUM:** Surface water in this category is used for recreational purposes, including water contact recreation, potable water supply after adequate treatment is provided, and propagation and preservation of aquatic wildlife, and aesthetic enjoyment.
 - c. **Category S-3 LOW:** Surface water in this category is primarily used for commercial, agricultural and industrial activities. Aesthetic enjoyment and compatible recreation are

acceptable in this zone, as well as maintenance of aquatic life. All discharges within this zone which are not required to have construction and/or discharge permits under existing regulations may be required by the Guam Environmental Protection Agency to obtain such permits under the Zoning Code.

4. Affected parties desiring to challenge the Territory's determination of the groundwater or surface water classification and/or the mapping of these zones may do so during the Territorial Land Use Commission's hearing on the application for development by generating more precise site specific data concerning potentiometric levels that would include more accurate calculations of the zone designation. Such data must be prepared by a professional engineer registered in Guam who is qualified in the field.
5. The Commission may change the delineation of a zone based on the reconfiguration of a wellhead or wellfield, changes in the open interval of a well, or permitted increase in the approved average daily pumping rate. Such changes in the zone shall follow the requirements as contained in these Performance Standards.
6. When determining the location of properties and facilities within any given zone, the following rules shall apply:
 - a. Properties located wholly within any given zone reflected on the Guam Water Classification Master Map shall be governed by the restrictions applicable to that zone.
 - b. Where a zone boundary line passes through a facility or use, the entire facility or use shall be considered to be in the more restrictive zone.
7. Conditions of Permitting, Planning, and Zoning
 - a. General Water Criteria Applicable To All Territorial Waters: All waters shall meet generally accepted aesthetic qualifications, shall be capable of supporting desirable aquatic life, and shall be free from substances, conditions or combinations thereof attributable to domestic, commercial and industrial discharges or agricultural, construction and land-use practices or other human activities that:
 - (1) Cause visible floating materials, debris, oils, grease, scum, foam, or other floating matter which degrades water quality or use;
 - (2) Produce visible turbidity, settle to form deposits, or otherwise adversely affect aquatic life;
 - (3) Produce objectionable color, odor, or taste, directly or by chemical or biological action;
 - (4) Injure or are toxic or harmful to humans, animals, plants, or aquatic life; and
 - (5) Induce the growth of undesirable aquatic life: Analytical testing methods for these criteria shall be in accordance with the most recent editions of *Standard Methods for the Examination of Water and Wastewater* (APHA, AWWA, WPCF), *Methods for Chemical Analysis of Water and Wastes* (U.S. Environmental Protection Agency), and other methods acceptable to GEPA and possessing adequate procedural precision and accuracy.

b. Specific Numerical Water Quality Criteria

(1)	<u>Microbiological Requirements</u>	<u>Applicable to</u>
	Concentrations of total coliform bacteria at any point shall not be increased from natural conditions at any time.	S-1
	The fecal coliform bacteria count shall not exceed an arithmetic mean of 70 per 100ml during any 30-day period nor shall any sample exceed 400 per 100ml at any time.	S-2
	The fecal coliform bacteria count shall not exceed an arithmetic mean of 200 per 100ml during any 30-day period nor shall any sample exceed 400 per 100ml at any time.	S-3
	To determine compliance with the above microbiological requirements where a "30-day period" is specified, a minimum of four (4) samples shall be collected at approximately equal intervals.	
(2)	pH	
	The ambient pH of waters and wetlands ranges from 6.5-8.5. Variations of more than 0.5 pH units from ambient shall not be allowed except due to natural causes.	S-1 S-2 S-3
(3)	<u>Nutrients</u>	
	<u>Phosphorus:</u>	<u>Applicable to</u>
	Orthophosphate (PO ₄ -P) shall not exceed 0.025 mg/l	S-1
	Orthophosphate (PO ₄ -P) shall not exceed 0.05 mg/l	S-2
	Orthophosphate (PO ₄ -P) shall not exceed 0.10 mg/l	S-3
	<u>Nitrogen:</u>	<u>Applicable to</u>
	Nitrate-nitrogen (NO ₃ -N) shall not exceed 0.10 mg/l	S-1
	Nitrate-nitrogen (NO ₃ -N) shall not exceed 0.20 mg/l	S-2
	Nitrate-nitrogen (NO ₃ -N) shall not exceed 0.50 mg/l	S-3

Guam's groundwater has nitrate-nitrogen concentrations up to 5 mg/l. It is the intent of these standards to require secondary wastewater treatment. Treatment in excess of secondary treatment may be required and reviewed on a case by case basis. Levels of nutrients in receiving waters will be used as a guide in determining if treatment in excess of secondary treatment is required. Point source discharges will be regulated by permits specifying effluent standards and operational requirements.

Activities which may result in non-point discharges of nutrients shall be conducted in accordance with the best management practices reasonably determined by the Guam Environmental Protection Agency to be necessary to preclude or minimize such discharges of nutrients, nor to allow levels beyond those explicitly stated above.

In all cases, discharges containing nutrients, primarily nitrogen and/or phosphorous shall be treated to the extent necessary to prevent damage to coral reefs or growth of aquatic species which create a public nuisance or interfere with beneficial uses.

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| (4) | <u>Dissolved Oxygen</u> | Applicable to
All Waters
of the
Territory |
| | Concentrations of dissolved oxygen shall not be decreased below seventy-five (75) percent saturation at any time, as influenced by salinity or naturally occurring temperature variations. Where natural conditions cause lower dissolved oxygen levels, controllable water quality factors shall not cause further reductions. | |

Table 13
Saturation Dissolved Oxygen

Sat.	75% Sat.	Temp.
mg/l	mg/l	C
7.6	5.6	30
8.2	6.2	26

- (5) Salinity Applicable to
- The maximum allowable amount of chlorides and sulfates shall be 250 mg/l, and the total dissolved solids shall not exceed 500 mg/l or 133 percent of the ambient condition. The salinity of freshwater sources and wetlands shall not be increased more than twenty (20) percent above ambient by discharges of saline water.
- S-1
S-2
S-3
- (6) Total Filterable Suspended Solids Applicable to
- Concentration of suspended matter at any point shall not be increased from ambient conditions at any time and should not exceed 5mg/l except when due to natural conditions.
- S-1
- Concentrations of suspended matter at any point shall not be increased more than 10 percent from ambient at any time, and should not exceed 20mg/l except when due to natural conditions.
- S-2
- Concentrations of suspended matter at any point shall not be increased more than 25 percent from ambient at any time and should not exceed 40 mg/l except when due to natural conditions.
- S-3
- (7) Turbidity Applicable to
- Turbidity at any point, as measured by nephelometric turbidity units (NTU), shall not exceed 0.5 NTU over ambient conditions except when due to natural conditions
- S-1
- Turbidity values (NTU) at any point shall not exceed 1.0 NTU over ambient conditions except when due to natural conditions.
- S-2
and
S-3

- (8) Radioactive Materials Applicable to
 Discharge of radioactive materials All waters
 at any level into any waters of the of the
 Territory is strictly prohibited Territory
- (9) Temperature Applicable to
 Water temperature shall not be All waters
 changed more than 1.0 degree of the
 centigrade (1.8 degree Fahrenheit) Territory
 from ambient conditions.
- (10) Concentrations of Oil or Petroleum S-1
 Products. Those that exceed the limits S-2
 described below are unacceptable. S-3
- (a) Detectable as a visible film, or sheen, or results in visible discoloration of the surface with a corresponding oil or petroleum product odor;
- (b) Causes damage to fish, invertebrates or objectionable degradation of drinking water quality; or
- (c) Forms an oil deposit on the shores or bottom of the receiving body of water.

- (11) Pesticides: Concentrations of pesticides shall not exceed one percent of the 24-hour Lethal Concentration - 50 percent (LC50) value determined using the receiving water in question and the most sensitive species of aquatic organisms affected.

Where the concentration based on the LC50 data exceeds the recommended maximum concentrations, the maximum concentrations shall constitute the criteria.

For the listing of all pesticides (Organochlorides, Organophosphates, Carbamates, Herbicides, Fungicides, Defoliants, and Botanicals), please refer to the U.S. Water Quality Criteria "Blue Book".

- (12) Toxic Substances: To provide maximum protection for the propagation of fish and wildlife, concentrations of toxic substances (persistent or non-persistent, cumulative or non-Cumulative); (a) shall not exceed five percent (0.05) of the 96-hour LC50 or, (b) shall not exceed levels calculated by multiplying the appropriate application factor by the 96-hour LC50 values determined by using the most sensitive species of aquatic organism affected. Whichever value (a or b) is less shall be the maximum allowable concentration, unless this value exceeds the Maximum Numerical Limit, then the numerical limit shall constitute the maximum allowable concentration.
- c. General Effluent Limitations: The Zoning Official, acting on the advice of the Guam Environmental Protection Agency (GEPA) reserves the right to amend or extend the following criteria as improved standard methods are developed or revisions consistent with the enhancement of water quality are justified:
- (1) All sewage shall be treated to the degree required by GEPA to achieve standards of water quality prior to being discharged to the water of the Territory. Industrial waters and other wastes shall also be treated to the degree required by GEPA.
- (2) Dilution of the effluent from any source as a sole means of treatment is not acceptable as a method of treatment of wastes to meet the standards set forth in this Section. Rather, it shall be the obligation of any person discharging pollutants of any kind to the water of the Territory to provide the best pollutant removal or

control consistent with technological feasibility, economic reasonableness, and sound engineering judgment. In making a determination as to what degree of treatment is the best pollutant removal or control within the meaning of this paragraph, any person shall consider the following:

- (a) The degree of waste reduction that can be achieved by process change, improved housekeeping and recovery of individual waste components for reuse; and
 - (b) Whether individual process wastewater streams should be segregated or combined.
- (3) Measurement of pollutant concentrations to determine compliance with the effluent limitations shall be made by the discharge at the point immediately following the final treatment process and before mixing with other waters. Points of measurement shall be designated by GEPA in an individual permit, after consideration of the element contained in this Section.
- (4) Every person discharging effluent to the waters of the Territory shall submit operating reports to GEPA at a frequency to be determined by GEPA. Such reports shall contain information of those physical, chemical and bacteriological parameters which shall be specified by GEPA; and any additional information GEPA may reasonably require.
- (5) In addition to other requirements, no effluent shall, alone, or in combination with other sources, cause a violation of any applicable water quality standard. If the Agency finds that a discharge which complies with treatment requirements of the Guam Water Quality Standards would cause or is causing a violation of water quality standards, the Administrator shall take appropriate action under Section 47109 of the Water Pollution Control Act to require the discharge to meet whatever effluent limits are necessary to ensure compliance with water quality standards. When such a violation is caused by the cumulative effect of more than one source, several sources may be joined in a schedule of compliance. Measures necessary for effluent reductions will be determined on the basis of technical feasibility, economic reasonableness, and fairness to all dischargers.

d. Prohibited Discharges

- (1) No person shall cause or permit:
 - (a) The discharge of any wastes or wastewaters regardless of volume, unless authorized by the GEPA Administrator under Section 47016 of the Water Pollution Control Act or unless subject to control or modification required by a schedule of compliance established by the GEPA Board of Directors;
 - (b) The discharge of any pollutant in toxic amounts, including the substances which may accumulate to toxic amounts, during the expected life of organisms in the receiving water, which are lethal to, or which produce deleterious genetic, physiological, or behavioral effects in the organisms;
 - (c) The discharge of any radiological, chemical, biological warfare agents, or radioactive wastes and contaminated radioactive materials from research and medical facilities.
 - (d) Any discharge that the Administrator of the United States Environmental Protection Agency has objected to in writing pursuant to any right to object provided by the Federal Water Pollution Control Act, as amended;
 - (e) Any discharge which is in conflict with any approved Territorial plan;
 - (f) Any pollutant discharge into S-1 or G-1 waters as defined in these Standards;

- (g) Any discharge of visible floating materials including scum and foam.
- e. Land Disposal of Treated Wastewaters
- (1) Approval of land disposal of treated liquid wastewater (e.g., septic tanks) requires that;
 - (a) Wastewaters shall be restricted to the premises of the disposal site;
 - (b) Provision shall be made by the discharger for monitoring the quality of the effluent with the exception of single family dwelling units unless there are more than five (5) units connected to a single system, or GEPA requires it after identifying a potential hazard;
 - (c) All monitoring data and reports required under a discharge permit shall be submitted to GEPA;
 - (d) Land disposal shall not create a public health hazard, a nuisance condition or an air pollution problem;
 - (e) These standards do not solely govern water/wastewater to be reused to produce products which may end up in the human food chain, such as crops, animal feed or animal products. GEPA will consider such reuse on a case-by-case basis using available guidelines on best available technology.
 - (2) The evaluation for a permit for land treatment and/or disposal of wastewater(s) should include, but not necessarily be limited to, consideration of the following items:
 - (a) The type of wastewater(s) proposed for disposal. (The wastewater(s) should be biologically degradable but other wastewater(s) will be considered, provided it can be shown that disposal of the wastewater(s) will not adversely affect the designated use of the waters underlying or adjacent to the disposal site).
 - (b) The nature of the earth material(s) underlying the disposal site. (The applicant must provide positive assurance that the earth material(s) underlying the proposed disposal site will not allow movement of pollutants in to underlying groundwaters so as to exceed groundwater standards.)
 - (c) The vegetative cover of the disposal site. (The selection of a vegetative cover should reflect the disposal season(s), the duration and frequency of disposal and the response of the vegetative cover to the wastewater. If the wastewater proves to be deleterious to vegetative cover, a higher degree to treatment or another means of disposal will be required.)
 - (3) Improperly and/or inadequately treated sewage shall not be allowed to accumulate on the ground surface in such a manner that it may create a health hazard and/or a nuisance condition.
 - (4) It shall be a violation of these Standards to store, dispose of, or allow to accumulate any solid waste or other deleterious material adjacent to or in the immediate vicinity of any streams, rivers, wetlands, or marine waters in a manner that such material will directly or indirectly enter such waters or wetlands. Such material shall include, but not be limited to sewage, sludge, trash, rubbish, garbage, oil, gasoline, chemicals, sawdust, accumulations of manure, and stockpiles of soil.
 - (5) In case of accidental spills of deleterious materials, responsible persons in charge shall immediately notify the GEPA Administrator of any such spills and make every reasonable effort to contain spilled material in such a manner that it will not pollute waters of the Territory.

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- (6) Wastewater discharge to disposal wells for underground disposal shall receive, prior to discharge, treatment necessary to protect potable water resources and any adjacent marine waters or fresh surface waters.
- f. Effluent Discharge Limitations for Groundwater Categories G-2a, G-2b, and G-3
- (1) Any water percolating to the groundwater table is in the state of transition from being a discharge to becoming part of a usable body of water. Because of the difficulty involved in tracing the source and eliminating pollutants after they have reached the groundwater table, limitations for discharges to G-2a, G-2b, and G-3 waters are established in Table 12. This Table provides criteria for some common water quality parameters. GEPA will set limits for other parameters as necessary on a case-by-case basis.
- (2) GEPA will allow the application of G-3a discharge limitations to flows greater than 10,000 gallons per day if it can be shown by an engineering feasibility study that there will be no significant adverse effect on the water of the Territory.
- (3) GEPA also reserves the right to set some more stringent standards than those shown in Table 12 if there is reason to believe that significant environmental damage will result from any discharge. Effluent limitations have not been set for G-1 waters because GEPA prohibits such discharges.
- g. Petroleum Storage Facilities: Any storage facility containing petroleum products or hazardous substances not directly adjacent to navigable waters and not below capacity requirements of six hundred (600) gallons shall be provided with secondary containment to protect Guam's groundwater resources from potential threat to oil or hazardous substances discharges. In case of spills, the Federal Spill Prevention Control counter measure requirements shall be observed.

O. Landscape Performance Standards

1. **Objectives:** The objectives of this Section are to improve the appearance of certain set-back and yard areas, including off-street vehicular parking and open-lot sales and service areas; and to protect and preserve the appearance, character, and value of the surrounding neighborhoods; and to thereby promote the general welfare by providing for installation and maintenance of landscaping for screening and aesthetic qualities, since the Government of Guam finds that the characteristics and qualities of Guam justify such requirements to perpetuate its aesthetic appeal.
2. **Enforcement:** These standards shall be considered as minimum requirements and shall apply to all new development (except for single family detached dwelling units or duplexes to be built on their own lot and not part of a subdivision application) in the Territory.
3. **Landscaping Requirements for Certain Yard Areas and Off-Street Parking and Other Vehicular Use Areas:** These standards apply to all areas used for the display or parking of any and all types of vehicles, boats, or heavy construction equipment, whether such vehicles, boats, or equipment are self-propelled or not; and all land upon which vehicles traverse the property as a function of the primary use (drive-thrus), including but not limited to activities of a drive-in nature, such as gasoline filling and/or service stations, grocery stores, banks, restaurants, and the like. The development of these activities shall conform to the minimum landscaping requirements hereinafter provided, save and except parking garages and parking structures.
 - a. **Installation:** All landscaping shall be installed in a sound, professional manner with the quality of plant materials as hereinafter described. All elements of landscaping shall be installed so as to meet all other applicable code requirements. Landscaped areas shall require protection from vehicular encroachment as hereinafter provided in Sections 3.i. and 3.j. A representative of the Department of Agriculture, Office of the Chief of Forestry shall inspect all landscaping and no certificates of occupancy shall be issued until the landscaping meets the requirements provided herein.
 - b. **Maintenance:** The owner, tenant and/or manager or agent of any property that is required to be developed in accordance with these standards shall be jointly and severally responsible for the maintenance of all landscaping which shall be maintained in good condition so as to present a healthy, neat, and orderly appearance, and shall be kept free from refuse and debris.
 - c. **Plant Material**
 - (1) **Quality:** Plant materials used in conformance with the provisions of these standards shall be free of any disease at the time of planting. All plant materials may be examined one (1) year from the date of their installation by the Department of Agriculture, Office of the Chief of Forestry and any ground cover, shrubs, or trees found to be in a less than acceptable condition shall be replaced by the owner, developer, or their agent.

- (2) **Trees:** All plant material designated as "trees" on an approved site plan shall be species that are rated as having an average mature spread of crown of greater than ten (10) feet in the Territory of Guam. Tree species shall be a minimum of seven (7) feet measured from the top of the root collar, overall height at the time of planting. Trees of species whose roots are known to cause damage to roadways or other public works shall not be planted closer than twelve (12) feet to any roadway, water line or sewer line, unless the tree root system is completely contained within a barrier form, of which the interior containing dimensions shall be five (5) feet square and five (5) feet deep, and for which the construction requirements shall be either geotextiles approved by the Department of Agriculture or four (4) inch thick concrete reinforced with #6 road mesh (6x6x6) or equivalent. A list of such tree species shall be maintained by the Department of Agriculture, Office of the Chief of Forestry for the guidance of the public.
- (3) **Shrubs and Hedges:** Shrubs shall be a minimum of two (2) feet in height when measured at the time of planting. Hedges, where required, shall be planted and maintained so as to establish a continuous, unbroken, solid visual screen within a maximum of one (1) year from the date of installation.
- (4) **Vines:** Vines shall be a minimum of thirty (30) inches in length at the time of installation and may be used in conjunction with fences, screens, or walls.
- (5) **Ground Covers:** Ground covers used in lieu of grass shall be planted in such a manner as to present a finished appearance and reasonably complete coverage within three (3) months after installation.
- (6) **Lawn Grass:** Grass areas shall be planted in species normally grown as permanent lawns in the Territory of Guam. Grass areas may be sodded, plugged, sprigged, or seeded, except that solid sod shall be used in areas subject to erosion.

d. **Landscape Design Standards**

The following standards shall be considered the minimum requirements for the installation of all plant materials in the Territory of Guam.

(1) **Minimum Tree and Shrub Planting or Preservation Requirements**

- (a) **General:** Trees shall not be placed so as to interfere with site drainage, or where they shall require frequent pruning to avoid interference with overhead power and utility lines. Additionally, coconut palms shall not be permitted within off-street parking lot areas. Unless otherwise provided in these Standards, a minimum number of trees shall be planted or preserved on each site, as follows:
 - i. **Single Family Residential Lots:** One (1) tree shall be planted or preserved for every five thousand (5,000) square feet of area of a single family residential lot or fraction thereof. Trees larger than the minimum size may be credited as indicated in Table 2 contained in these Standards. A minimum of fifty (50) percent of all required trees shall be shade trees. If only one (1) tree is required, it shall be a shade tree. In the Territory of Guam, a shade tree is defined as being a woody plant that grows to a minimum height at maturity of fifteen (15) feet, and is not in the palm family.
 - ii. **Multiple-Family Residential or Non-Residential Lots:** One (1) tree shall be planted or preserved for every two thousand (2,000) square feet of lot area of either a multiple-family residential or non-residential lot, or fraction thereof. Trees larger than the minimum size may be credited as

indicated on Table 2 contained within these Standards. A minimum of fifty (50) percent of all required trees shall be shade trees.

(b) Allocation of Trees to Satisfy Minimum Planting Requirements

- i. Where Trees May be Credited: Trees required to be planted or preserved by these Standards may be used to satisfy the following requirements of other Sections of the Zoning Code, including:
 1. Interior of parking or other vehicular use areas;
 2. Perimeter of parking or other vehicular use areas; and
 3. Perimeter buffers in multiple-family residential or non-residential areas.
- ii. Where Trees May Not Be Credited: Trees required to be planted or preserved by these Standards that lie outside the property lines of the subject site may not be credited in the tabulation of the required number of trees to be provided.
- iii. Allocation of Trees to Sub-Areas Within a Site Development
 1. General: In enacting this minimum tree planting requirement, it is the intent to require that a canopy of trees be developed throughout any given site development. This Subsection establishes a formula for allocating a certain number of trees to each sub-area in a site development. Preservation areas are excluded from the total area in calculating the tree planting requirements as an incentive to preserve significant vegetation. Site development plans must indicate the minimum number of trees to be planted in any given sub-area. This figure is intended to be suggestive of the total number of trees to be planted in a sub-area. The actual number of trees to be planted or preserved will be established on the individual site development plan(s).
 2. Allocation Formula: The minimum number of trees required to be planted or preserved within a site shall be determined by applying the formula established in these Standards in Subsection d.(1)(a) above. The minimum number of trees required to be planted in a sub-area or phase shall be in proportion to the total number of trees required to be planted in the overall site development. This proportion shall be determined by calculating the percent of the sub-area or phase relative to the total site proposed for development. Only areas of vegetation required to be preserved by law shall be excluded from the calculation of the area of a sub-area or phase of the site development.
 3. Standards for Landscape Materials
 - a. Tree Planting Standards: Immediately upon planting, trees shall be a minimum of seven (7) feet in trunk height and shall have a minimum caliper of one and one-half (1-1/2) inches measured from a height of six (6) feet above the ground after installation.
 - b. Tree Species Mix: When more than ten (10) trees are required to be planted, a mix of species shall be provided. The number of species to be planted shall vary according to the total number of trees required. The minimum number of

species to be planted are indicated in the following Table. Species shall be planted in proportion to the required mix. This species mix shall not apply to areas of vegetation required to be preserved by law.

Table 14
Required Species Mix for New Site Development

<i>Required Number of Trees</i>	<i>Minimum of Species</i>
11-20	2
21-30	3
31-40	4
41 or more	5

- c. **Shrub Planting Standards:** Shrubs required to be planted in accordance with these Standards shall be a minimum of twenty-four (24) inches in height from the top of the root collar at the time of planting, and spaced eighteen (18) to thirty-six (36) inches on center. Spacing of individual plants shall depend on the types of shrubs that are to be installed. Exceptions and/or substitutions from this requirement may be approved by the Department of Agriculture, Office of the Chief of Forestry to promote the use of slow growing or native plant material.
- d. **Use of Larger Tree Sizes:** Credits for the use of larger trees than the minimum required size will be as indicated in the following Table. Fractional measurements shall be attributed to the next lowest category.

Table 15
Calculation of Tree-Size Credits in New Site Development

<i>Crown Spread of Proposed Trees</i>	<i>and</i>	<i>Height of Proposed Trees</i>	<i>=</i>	<i>Number of Tree Credits</i>
14 or more feet	and	25 feet or more	=	4
10 -13 feet	and	17 - 24 feet	=	3
6 - 9 feet	and	11 - 16 feet	=	2
less than 6 feet	and	10 feet or less	=	1

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- (2) **Use of Native Plant Materials:** Trees and other vegetation shall be planted in soil and climatic conditions which are appropriate for their growth habits and characteristics. Plants used in landscape design pursuant to this Section shall, to the greatest extent possible be:
 - (a) Appropriate to the conditions in which they are to be planted;
 - (b) Have non-invasive growth habits;
 - (c) Encourage low maintenance, high quality design; and
 - (d) Be otherwise consistent with the intent of these Standards.
 - (3) **Use of Adapted Plant Materials:** The use of plant materials adapted to the vicinity of the development is encouraged to reduce water consumption, general maintenance, and the dependence on fertilizers and insecticides.
 - (4) **Replacement Requirements:** Vegetation that is required to be planted or preserved by these Standards shall be replaced with equivalent vegetation if it is not living within one (1) year of the issuance of an Occupancy Permit. Preserved trees for which credit was awarded that die within one (1) year from the date of issuance of an Occupancy Permit shall be replaced by the required number of living trees as established in these Standards.
- e. **Maintenance Standards for Cultivated Landscape Areas**
- (1) **General:** The owner or agent of land subject to these Standards shall be responsible for the maintenance of said land in good condition so as to present a healthy and neat appearance, and said land shall be kept free from refuse and debris.
- f. **Required Landscape Plan**
- (1) **General:** Prior to the issuance of any building permit for any development other than a single or two family dwelling on its own lot, a landscape plan shall be submitted to the Department of Agriculture, Office of the Chief of Forestry for review and approval.
 - (2) **Contents of Landscape Plans:** Landscape plans shall:
 - (a) Be drawn to scale and include dimensions and distances;
 - (b) Delineate existing and proposed parking spaces and/or other vehicular use areas;
 - (c) Designate by name and location all plant material to be installed or preserved in accordance with these or any other applicable Standards;
 - (d) Identify and describe all other landscape material and elements proposed to be used;
 - (e) Show all landscape features, including areas of vegetation to be preserved in relationship to all existing or proposed building and/or any other improvements to the site;
 - (f) Include a tabular summary clearly indicating the relevant statistical information necessary for the Zoning Official to determine compliance with the provisions of these Standards. This information shall include gross acreage, square footage of vegetation preservation areas, the number of trees to be planted or preserved, square footage of paved areas, and such other information as the Department of Agriculture, Office of the Chief of Forestry may require.

g. **Required Landscaping Adjacent to Public Rights of Way:** On the site of a building providing an off-street parking area or other vehicular use area, where such area will not be entirely screened visually by an intervening building or structure from any abutting right of way, there shall be provided landscaping between such area and such right of way, as follows:

- (1) A strip of land at least five (5) feet in width, located between the abutting right of way and the off-street parking areas or other vehicular use area, which is exposed to an abutting right of way, shall be landscaped. Such landscaping shall include one (1) tree for each fifty (50) lineal feet or fraction thereof. Such trees shall be located between the abutting right of way and off-street parking or other vehicular use area and shall be installed in a planting area of at least twenty-five (25) square feet, with one dimension being at least five (5) feet. In addition, a hedge at least two (2) feet in height shall be placed along the perimeter of such landscaped strip. The remainder of the required landscaped areas shall be planted with grass, ground cover, or other landscape treatment, excluding paving.
- (2) All property abutting a right of way, other than the required landscaped strip lying between the right of way and off-street parking or other vehicular use areas, shall be landscaped with, at a minimum, grass or other ground cover.
- (3) Necessary accessways from the public right of way through all such landscaping shall be permitted to service the parking or other vehicular use area. Such accessways, however, may not be subtracted from the lineal dimension used to determine the number of trees required.

h. **Perimeter Landscaping Relating to Abutting Properties:** On the site of a building or structure providing an off-street parking or other vehicular use area, where such areas will not be entirely visually screened by an intervening building or structure from any abutting property, that portion of such area not so screened shall be provided with a hedge that is determined to attain, at maturity, not greater than eight (8) feet, nor less than three and one-half (3 1/2) feet in height, to form a continuous screen between the off-street parking or other vehicular use areas and such abutting property. This landscaped barrier shall be located between the common lot line and the off-street parking or other vehicular use area exposed to the abutting property. All plant materials shall be installed in a planting strip not less than two and one-half (2 1/2) feet in width.

Additionally, one (1) tree shall be provided for each seventy-five (75) lineal feet of landscape barrier, or fractional part thereof. Such trees shall be located between the common lot line and the off-street parking or vehicular use area. Each tree shall be installed within a twenty five (25) square foot planting area, and no dimension of this area shall be less than five (5) feet. Each such planting area shall be landscaped with grass, ground cover or other landscape material, excluding paving, in addition to the required tree.

The provisions of this Subsection shall not be required to be met in the following situations:

- (1) Where a proposed parking or other vehicular use area abuts an existing hedge, wall, or other durable landscaping barrier on an abutting property, said existing barrier may be used to satisfy the landscape barrier requirements of this Subsection, provided that said barrier meets all applicable standards of this Law, and protection against vehicular encroachment is provided for by hedges.
- (2) Where the abutting property is zoned or used for non-residential activities, only the tree provision with its planting areas as prescribed in this Subsection shall be required.

- i. **Parking Area Interior Landscaping:** Off-street parking areas shall have at least ten (10) square feet of interior landscaping for each parking space, excluding those spaces abutting a perimeter for which landscaping is required by any other section of the Zoning Code, and excluding all parking spaces that are directly served by an aisle abutting and running parallel to such a perimeter. Additionally, other vehicular use areas shall have one (1) square foot of landscaped area for each one hundred (100) square feet of paved area or fraction thereof for the first ten thousand (10,000) square feet of paved surface, plus one (1) square foot of landscaped area for each two hundred (200) square feet or fraction thereof of paved area for all pavement surfaces over ten thousand (10,000) square feet. Where the property contains both parking and other vehicular use areas (off-street loading space, for example), the two types of areas may be separated for the purpose of determining the landscape requirements of the other vehicular use area. Each separate landscaped area shall contain a minimum of fifty (50) square feet and shall have a minimum dimension along any one side of five (5) feet. Each separate landscaped area shall include at least one (1) tree having a clear trunk of at least five (5) feet, with the remaining area landscaped with shrubs, ground cover, or other vegetative material not to exceed three (3) feet in height.

The total number of trees shall be not less than one (1) for each one hundred (100) square feet or fraction thereof of required interior landscaped area. Such landscaped areas shall be located in such a manner as to visually divide and break up the expanse of parking.

In vehicular use areas where the strict application of this Subsection would seriously limit their function, the required landscaping may be located near the perimeter of the paved area. Such required interior landscaping which is so relocated, shall be in addition to the perimeter landscaping requirements enumerated in Subsections 3.g. and 3.h. of these Standards.

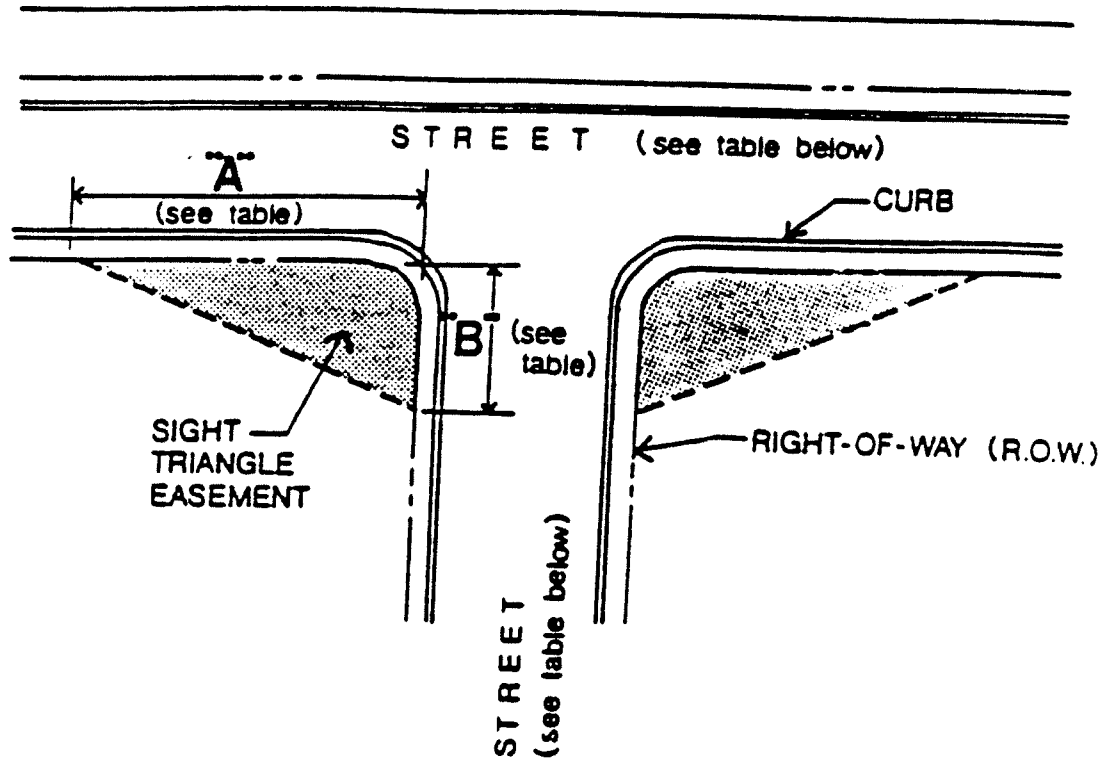
The front of a vehicle may encroach upon any interior landscaped area when said area is at least three and one-half (3-1/2) feet in depth per abutting parking space and protected by wheel stops or curbing. Two (2) feet of said landscaped area may be part of the required depth of each abutting parking space.

- j. **Sight Distance for Landscaping Adjacent to Public Rights of Way and Points of Access:** When an accessway intersects a public right of way, or when a subject property abuts the intersection of at least two (2) public rights of way, all landscaping within the triangular areas described herein shall provide unobstructed cross-visibility at a level between three (3) and six (6) feet, provided however, that trees or palms shall have their limbs and/or foliage trimmed in such a manner that no visual impediment exists within the cross-visibility area, and further provided that any trees or palms are located in such a manner as to create no traffic hazard. Landscaping, except required grass or ground cover, shall not be located closer than three (3) feet from the edge of any accessway pavement. The triangular areas referred to above are shown on the diagram entitled "Sight Triangle Requirements" which indicate the clearances required for the different street types.

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- k. Existing Plant Material: In instances where healthy plant material exists on a site prior to its development, in part or in whole, for the purpose of providing off-street parking or other vehicular use areas, the Department of Agriculture, Office of the Chief of Forestry may adjust the application of these standards to allow credit for such plant material if, in its written opinion, such an adjustment is in keeping with and will preserve the intent of these standards.
4. Adjustments of Standards: The Department of Agriculture, Office of the Chief of Forestry, upon receipt of an application for adjustment of the landscaping requirements provided herein, which is filed on forms provided by the Zoning Official, and executed and sworn to by the owner of the property concerned or his authorized agent, and accompanied by a fee that has been established by the Zoning Official, shall have the authority and duty to consider and act upon such application. The applicant shall clearly and in detail state what adjustment of requirements are being requested and the reasons that such adjustments are warranted. The application shall be accompanied by supplemental data, such as sketches, surveys, and statistical information, as is deemed necessary to support the adjustment. The Zoning Official may approve, modify, or deny the requested adjustment, but shall approve or modify only if it determines that any adjustment would not be contrary to the public interest, would be in keeping with and preserve the intent of this Section, and literal enforcement of the above Standards would be impracticable and would result in an unreasonable and unnecessary hardship. The Zoning Official shall act upon any such application within thirty (30) calendar days of its official submission by the applicant. If the Zoning Official does not take any official action within the aforesaid thirty (30) day period, or if there is no mutually agreed upon extension of the time beyond the thirty (30) days, in writing, between the applicant and the Zoning Official, then the application shall be considered to be approved.
5. Other Applicable Requirements
- a. The provisions of these Standards shall apply only to new off-street parking or other vehicular use areas.
- b. The provisions of these Standards shall be subject to other applicable codes and regulations where such regulations are more restrictive and are not otherwise inconsistent with the provisions of these Standards.

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6. **Plan Approval:** Except for individual single-family and two-family detached dwellings on their own lot, prior to the issuance of any permit for paving that is included under the provisions of these Standards, a site plan shall be submitted to the Zoning Official for approval. The site plan shall be drawn to scale, include dimensions and distances, and clearly delineate the existing and proposed parking spaces or other vehicular use areas; access aisles and driveways; the location and size of buildings to be served; the location, size, and description of all landscape materials; and shall designate by name and location the plant material to be installed or, if existing, to be used in accordance with the requirements herein contained. No permit shall be issued for any building or paving unless said site plan complies with the provisions herein contained, and no certificate of occupancy shall be issued until the landscaping is complete in accordance with the approved site plan. It shall be unlawful to occupy the premises unless and until the landscaping is installed in accordance with the approved site plan and the requirements of these Standards.

Sight Triangle Requirements



Requirements by Street Type

(Measured Along R.O.W. Lines)

		B (DISTANCE IN FEET)			
		LOCAL RESIDENTIAL	LOCAL NON-RESIDENTIAL	COLLECTOR	ARTERIAL
A (DISTANCE IN FEET)					
30	LOCAL RESIDENTIAL	30	80	120	150
80	LOCAL NONRESIDENTIAL	30	80	120	150
120	COLLECTOR	30	80	120	150
150	ARTERIAL	30	80	120	150