

APPENDIX 5: ROAD, DRAINAGE, AND GENERAL UTILITY CONSTRUCTION SPECIFICATIONS

1. GENERAL

1.1 Except as provided herein, no Plat or improvements thereon shall be approved or accepted by the County unless it conforms to the Minimum Standards and Specifications contained herein, and in the Hidalgo County Model Subdivision Rules and Tex. Loc. Govt. Code Ch. 232, if applicable.

1.2 If a tract is Subdivided into parcels larger than ordinary building Lots, such parcels shall be arranged to allow the opening of future Streets.

1.3 There shall be no reserve strips controlling access to land dedicated or intended to be dedicated to public use.

1.4 Irrigation Canals: No open irrigation canals, except main canals, shall be permitted within a Subdivision. The Subdivider shall place said canal underground if its continued use is required by the Irrigation or Water District. The conversion of the canal system to a pipe system shall conform to Irrigation or Water District and County Standards and Specifications and shall be installed at the expense of the Subdivider

1.5 Electric and Gas Utilities: The Subdivider shall make reasonable efforts to have electric and gas utilities installed in the Subdivision by an entity authorized under Texas law to provide such services prior to the approval of the Final Plat.

2. Streets: All streets, whether public or private, shall be paved to the required width and to the minimum sections established herein. The Commissioners Court has the final discretion in determining the nature of a street's surface.

2.1 Private Streets: Private streets serving four (4) or fewer lots shall be surfaced to a minimum pavement width of eighteen feet (18'). Private streets serving more than four (4) lots shall be paved to the minimum standards for public streets as established herein. Notwithstanding the minimum pavement widths above, a minimum private easement or right of way of fifty (50') feet must be provided on the plat.

- a) *Developments proposing private streets shall include within parenthesis under the proposed subdivision plat's name ("PRIVATE SUBDIVISION").*
- b) *No collector, arterial, or other street providing "through traffic" shall be considered for privatization.*
- c) *The owner(s)/developer(s) shall sign and record an indemnification agreement holding harmless the County of Hidalgo and Hidalgo County Drainage District No. 1 and indemnifying them from all obligations to maintain said streets and detention areas and from any liability arising out of or incident to such streets and detention areas.*
- d) *Permits and inspections that are required for construction of private roads shall be processed in the same manner as those for public streets.*
- e) *Street lighting standards shall be the same as public streets.*
- f) *Police, fire, sanitation, and other public vehicles shall be provided access. Access control devices shall meet regulations adopted by the County of Hidalgo and Hidalgo County Drainage District No. 1, including redundancy requirements. The description and specifications for the access control devices shall be submitted for approval with the final plat. The developer shall provide the County of Hidalgo and Hidalgo County Drainage District No. 1 with all the equipment necessary to operate the access control devices, as determined by the County of*

- Hidalgo and Hidalgo County Drainage District No. 1, at no cost to the County of Hidalgo and Hidalgo County Drainage District No. 1. The HOA will maintain proper maintenance for the equipment.**
- g) Gates shall be of breakaway construction to allow for emergency passage of first- responder vehicles without damage to the vehicles.**
 - h) The entry way shall provide pedestrian access separate from the vehicular access and meet ADA requirements.**
 - i) Common or detention areas, any private streets/alleys or drives and/or gates must be maintained by the property owners' HOA and not the County of Hidalgo or Hidalgo County Drainage District No. 1.**
 - j) Developer/Homeowners Association (HOA)/Owner, their successors, and assignees and neither the County of Hidalgo nor Hidalgo County Drainage District No. 1 shall be responsible for compliance of installation and maintenance and other requirements per Hidalgo County Subdivision Rules including but not limited to common areas and its private streets.**
 - k) Homeowners Association Covenants for Subdivision Name as recorded under Document No. _____ Hidalgo County Official Records.**
 - l) As per Declaration of Covenants and Conditions and Restrictions for Subdivision Name recorded under Document Number _____, Hidalgo County Official Records, developer/homeowners association/owner, their successors and/or assigns, and not the County of Hidalgo or Hidalgo County Drainage District No.1 shall be responsible of installation maintenance and other requirements as per Appendix 5 of the Hidalgo County Subdivision Rules including but not limited to common areas and detention ponds. Any amendment to declaration that conflict with the requirements of Subdivision Rules Appendix 5 shall be null & void.**
 - m) Common Lot xx identified as detention pond and any private streets/service drives etc. shall be maintained by the developer who may transfer such maintenance obligation to the subdivision Homeowners Association Subdivision Name Homeowners Association upon conveyance of title to the same, their successors and assignees and not by the County of Hidalgo or Hidalgo County Drainage District No. 1. No buildings or other structures shall be erected in Common Lot xx which shall be used exclusively as detention area. After Common Lot xx transfer of title to the Subdivision Name Homeowners Association, the subdivision lot owner's pro rata shares of the cost of maintenance shall be determined by Subdivision Name Homeowners Association. Failing in such maintenance obligations, the County may but shall not be required to maintain the same at the owner's cost, which cost may become a lien against their properties prior to the imposition of any lien the County shall serve a lien with written notice requirements similar to those under existing Subdivision Rules Appendix 5 as the same may be amended. The specific and exclusive use of Common Lot xx then owner's maintenance obligation and the consequences of a deed restriction shall be incorporated into any deed or instrument of conveyance as a deed restriction recorded in Instrument No. xxxxxx Official Records Hidalgo County, Texas**
 - n) Common Area Lot xx for detention purposes only will be private and maintained by the HOA/property owners and not the County of Hidalgo or Hidalgo County Drainage District No. 1.**

The developer's dedicatory language on the plat shall read as follows:

"I, the undersigned, owner of the land shown on this plat, and designated as (the name of the subdivision), do hereby grant an easement to the County of Hidalgo and those who may now or hereafter hold franchise under said County, the use of the streets, alleys, and easements thereon shown, surface use of the streets and alleys is restricted to the employees or agents of the County of Hidalgo, employees of utilities operating under franchise to the County of Hidalgo, residents of the

subdivision, and their guests. The streets have not been dedicated to the public for public access nor been accepted by the County or Hidalgo County Drainage District No.1 as public improvements, and the streets shall be maintained by the property or homeowners' association within the subdivision. The street shall always be open to emergency vehicles, public and private utility service personnel, the U.S. Postal Service and governmental employees in pursuit of their official duties."

- 2.2 Streets in Special Flood Hazard Areas: All streets within a Flood Zone (A, AH, AE) as identified on the Hidalgo County National Flood Insurance Program Flood Insurance Rate Maps for Hidalgo County and all streets within the areas of flooding where the base flood elevation exceeds the natural ground elevation by more than two feet (2') shall utilize Class A paving as per Appendix 9 of these rules.
- 2.3 Cul-de-sacs: Cul-de-sacs in residential subdivisions shall have a turn-around pavement radius of not less than forty (40) feet. In Subdivisions other than residential subdivisions, the turn-around pavement radius shall be no less than ninety (90) feet.
- 2.4 Pavement Widths and rights-of-way: See A.2.4.B or B.2.4.B, as applicable for right-of-way standards. Pavement Widths shall be as follows:
- a) Arterial Streets: shall have a Pavement Width of not more than fifty-six (56) feet, but not less than forty-eight (48) feet.
 - b) Collector Streets: shall have a Pavement Width of not more than forty-eight (48) feet, but not less than thirty-six (36) feet.
 - c) Minor Streets: shall have a Pavement Width of not more than thirty-three (33) feet, but not less than twenty-nine (29) feet.
- 2.5 Specifications to be followed in the construction of any such Streets within or bounding a Subdivision must consider the amount and kind of travel over the road. Streets within a Subdivision must have a minimum base of eight (8) inches of compacted caliche which is at least four (4) feet wider than the Pavement Width and shall be paved to the Pavement Width with two inches (2") of hot mix asphalt concrete Type "D" (*). Street and traffic control signs along with 24" thermoplastic stop bars shall conform to County standards and shall be installed at the expense of the Subdivider at intersections bounding the subdivision.
- (a) A minimum pavement thickness of one and one-half inch (1.5") will be considered if the following is provided: a Geotechnical Engineering Report signed by a Professional Engineer with pavement thickness recommendations that are based on a traffic and soils analysis.
- 2.6 Testing Requirements. Construction Material Testing shall be completed by a reputable testing laboratory at the following stages:
- (a) Subgrade Preparation: A minimum of one test per each 1,000 square yards or fraction thereof of Street area for subgrade compaction, moisture, and depth.
 - (b) Compacted Caliche: A minimum of one test per 1,000 square yards or fraction of Street area for caliche compaction, moisture and depth.
 - (c) Hot Mix Asphalt Concrete (HMAC): A minimum of one test per each 1,500 square yards of Street area for thickness and density to meet with State Specification Type "D" Certification. Submittal of Certified Type "D" from Supplier.
 - (d) Bedding & Backfill: Testing will be required within the road right of way.

- (e) The longitudinal slope of the road shall be inspected to ensure proper grade by releasing water onto the road and observing the flow.

Construction Material Testing Reports shall be signed and sealed by a Professional Engineer, licensed to practice in the State of Texas. The Developer or his Contractor shall notify the County 24 hours in advance of any test in the event that County personnel wish to monitor any test. If notice is not given, the area is subject to removal and replacement at the expense of the Subdivider.

(*) May be reduced to 1 ½” with an approved Geo- Technical report.

2.7 Curb and gutter and/or driveway culverts are required in the following instances:

(a) This subsection 2.7 (a) applies to any Subdivision in which any Lot contains an area of one acre or less (net of all easements and rights-of-way). The Subdivider shall, prior to obtaining final approval of a Plat, install rollover curb and gutter eighteen inches (18") in width in connection with all Streets installed or improved in the Subdivision, pursuant to the most current Hidalgo County Specifications.

(b) This subsection 2.7 (b) applies to any Subdivisions in which all lots have an area of greater than one acre (net of all easements and rights of way). The Subdivider shall comply with the requirements of this subsection in one of the following manners:

(i) The Subdivider shall, prior to obtaining final approval of a Plat, install rollover curb and gutter eighteen inches (18") in width in connection with all Streets installed or improved within the Subdivision, pursuant to the most current Hidalgo County Specifications. Streets that are constructed with curb & gutter shall meet the minimum pavement width set forth in Section 2.4; or

(ii) The Purchaser of each Lot shall install or cause to be installed driveway culvert pipes which, at a minimum, are of reinforced concrete construction or High Performance Polypropylene, or as approved by Hidalgo County or Hidalgo County Drainage District, and being of no less than fifteen inches (15") in diameter and twenty four feet (24') in length, and shall otherwise conform in construction and content to the most current Hidalgo County Specifications. The Subdivider shall not be personally liable for the installation of driveway culverts under this section (2.7.2). The Subdivider shall note on the Drainage Plan and on the Plat that the purchaser of the lot will be required to provide for and install the culvert. In the event of a shared driveway; Section 2.10 shall apply.

2.8 Obstruction Prohibited. No wall, fence, shrubbery or other obstruction shall be permitted higher than eighteen (18) inches within the Restricted Area of a Corner Lot adjacent to an intersection with Minor Streets or Collector Streets, and there shall be no obstruction of any nature permitted within the Restricted Area of a Corner Lot adjacent to an intersection with a State Farm to Market Road, State Highway or a US Highway.

2.9 Frontage on existing County roads. Where the proposed Subdivision abuts an existing county road that does not conform to Section 2.4, the Subdivider shall dedicate a right-of-way width sufficient to make the full right-of-way width to conform to such Section 2.4 and the anticipated future use of the road according to the then-current version of the Hidalgo County Thoroughfare Plan. In addition, where the abutting county road is either not paved in accordance with Sections 2.4 through 2.7 or has a Pavement Width insufficient to conform to the requirements of Section 2.4, the Subdivider shall, at the time of Final Plat Approval, escrow with County a sum of money sufficient to

provide for one-third of the cost of paving of the abutting portion of the road in compliance with the then-current County road construction specifications and/or requirements for the type of road in question. In determining the money amount sufficient to provide for such future work, the Engineer employed by Subdivider shall present to the County Planning Department their reasonable cost estimates for all materials and labor necessary to pave the to the normal Pavement Width required for such a road under then-current County road construction specifications and/or requirements. The County Planning Department and the County Engineer shall review the calculations and notify the Subdivider of any changes or adjustments prior to final plat approval. A copy of the current Hidalgo County Thoroughfare Plan, approved by the Hidalgo County Metropolitan Planning Organization, may be obtained from the Hidalgo County Planning Department. In instances where the abutting county road is unopened and/or completely lacks an all-weather surface or drainage facilities the developer shall fully construct the road without county participation in order to meet the needs of the proposed development as per above mentioned specifications.

2.10 Details Regarding Various Driveways: Included in Appendix 9, Plate No. 9-C, of these rules are details for driveways on Roads with an existing or proposed road right of way of 100 feet or greater. Shared driveways shall be constructed in accordance with specifications for driveways in Appendix 9 prior to the approval of a final plat by the Hidalgo County Subdivision Advisory Board and the Hidalgo County Commissioner's Court.

2.11 Filling Stations (Fire Hydrants)
Subdivisions that are proposing multi-family use, commercial use, institutional use or more than 4 single-family residential lots that are located beyond 600 feet of a filling station or fire hydrant shall install a filling station(s) so that no lot is located more than 600 feet from a filling station/fire hydrant.

2.12 Recycled or used storm drain pipe will NOT be allowed in new subdivision construction.

3. DRAINAGE POLICIES

3.1 A detailed drainage plan shall be designed, prepared and executed by a Licensed Professional Engineer, holding a valid license to practice in the State of Texas, which shall be submitted in addition to, and along with, any Final Plat. This shall contain, but not be limited to, the following:

(a) All proposed development within the Hidalgo County Drainage District No. 1 Boundary limits shall require a storm sewer outfall in accordance with the District's Drainage Master Plan. For ***For Private Street Subdivisions, common detention areas may be considered by Hidalgo County Drainage District No. 1 if proposed outside the corporate limits of a municipality and shall comply with Appendix 5, section 2.1 of these rules.***

(b) Stormwater runoff generated from the developed property, including runoff from upstream drainage areas, shall be detained for a 50-year frequency storm event and released into the receiving downstream system at the pre-developed (before any development), peak discharge rate for a 10-year frequency storm event. Off-site peak discharge for 2-, 10-, 25- and 50-year storm events for post-development conditions shall not exceed the pre-development peak discharges for corresponding rain events.

(c) All drainage systems within the subdivision shall be designed to convey the 10-year storm runoff from the contributing areas to and through the subject property with no increase in the extent or depth of flooded areas. The proposed drainage system for the subdivision shall be analyzed for a 50-yr storm where the water surface elevation shall be a maximum of 12" above the lowest top of curb elevation.

(d) Storm drainage designs shall include provisions to account for off-site drainage patterns affected by any proposed improvements.

(e) A topographical map showing existing contours within the proposed Subdivision and five hundred (500) feet outside its boundaries shall depict: the existing elevations at one foot contours and one hundred (100) foot intervals, spot elevations at one-tenth (1/10) of a foot, and all existing drainage facilities within each area covered by the Plat.

(f) A drainage plan for the proposed Subdivision which must be illustrated on the same map depicting:

- (i) Proposed finished elevations of the center line, edge of pavement, roadside ditch flow lines and the edge of right-of-way of each Street.
- (ii) Proposed drainage facilities to be constructed by the Subdivider, with a drawing of how those facilities tie into the County Master Drainage Plan.
- (iii) The one hundred (100) year storm contour elevation as illustrated on FEMA maps.

(g) All areas which will be subject to inundation due to pre-existing conditions or to the construction of streets and drainage facilities or to the re-grading of the land, as a result of a 10- year storm, by more than three inches (3") of water. Such areas would include, for example, the gutters and nearby portions of streets, constructed drainage swales, ditches parallel to streets, etc.

Subdivision consistent with the overall County Master Drainage Plan, and in accordance with the calculation method for determining runoff as approved by the Hidalgo County Drainage District No. 1.

(i) Provisions for drainage in the Subdivision to:

- (i) avoid concentration of storm drainage water from each Lot to adjacent Lots;
- (ii) provide positive drainage away from all buildings; and
- (iii) coordinate individual lot drainage with the general storm drainage pattern for the area, including a description of the drainage improvements or modifications necessary to meet these criteria.

(ii) Detailed plans and specifications for all on-site and/or off-site improvements necessary to connect the drainage facilities shown on the drainage plan to the nearest existing drainage facility or public outfall, which must be completed prior to final plat approval under the Rules. Off-site improvements must consist of drainage facilities approved in advance by County and designed in accordance with proper engineering practices and considerations. Alternate methods may be utilized in accordance with Appendix 5 3.6.1 and 3.6.2.

(iii) Drainage Report Submittal: The following information shall be required as part of the drainage report which shall be submitted for approval. These items are noted for reference purposes only and are subject to change;

- (i) Cover Sheet
(Firms Name, Title, Prepared by, Date, & Engineering Seal)

- (ii) Index

- (iii) Drainage Report Narrative Write-up
(Engineering Seal, Project Location description (City/ETJ), Flood Plain (FEMA info), Soil Conditions: Map symbol, Soil Name, Group and Unified Class, Existing Conditions, Pre Development 10-Yr CFS, Flow Direction & Outfall Location, Proposed Conditions, Proposed Use, After Development 50-Yr CFS or as required by municipality, Increase Q (CFS) rate, Detention volume (cf and Ac-ft), & Outfall location and owner

- (iv) Project Location map
 - (v) USGS Topographical Map w/ runoff pattern
 - (vi) Hydraulic Calculations
(Title, Hydraulic Calculation & Engineering Seal)
 - (vii) “C” Values for Method
 - (viii) Rainfall Intensity for Hidalgo County
 - (ix) Flood Plain
(Community Panel, Site Location on FIRM Map, Flood Zone & Zone Description)
 - (x) Soil Survey
(Properties of Soil & Site location on Soil Survey)

 - (xi) Drainage Area Map
(All contributing areas delineated, contours, spot elevations, direction of flow, right-of- way, property lines, existing/proposed storm sewer systems, outfalls, design assumptions, Runoff, detention and hydraulic calculation summary: time of concentration estimates, runoff coefficient assumptions, storage volume calculations, pipe and inlet capacities, ponded widths and depths, inlet capacities and bypass, hydraulic grade line (HGL), Storm sewer plan and profile plan: right of way/property line, storm sewer alignment, direction of flow, high points, identification of existing and proposed storm sewer, identification of existing and proposed storm sewer inlets, manholes and junctions, applicable details, profile, pipe length, size, class and slope, identification and type of inlets, manholes, junctions boxes, flow lines at structures, outfalls; 100 foot intervals along storm sewer length, finished grade/natural ground, utility crossings, conflicts, hydraulic grade line (10 year), top of curb elevations, manhole rim elevations, trench protection limits, applicable details
 - (xii) Set of Plans (Half & Full size folded)
(Proposed Plat (Half (11x17) & Full size folded), Drainage Design (Half (11x17) & Full size folded), & Extending 500’ from site, with 1’ contours)
- 3.2 Specifications to be followed in the design of storm drainage in accordance with standard engineering practices shall be approved by the Hidalgo County Planning Department and if the subdivision is located within its boundaries or utilizes its facilities, Hidalgo County Drainage District No. 1.
- 3.3 Every Subdivision shall comply with the provisions of the County Flood Plain Regulations. The County Flood Plain Regulations are incorporated herein and made a part hereof as though fully set forth herein. The term “County Flood Plain Regulations” means the Regulations for Flood Plain Management adopted by County in accordance with authorizing statutes, on February 17, 2015, as amended, replaced or ratified.
- 3.4 Sites located in Special Flood Hazard Areas and Low-Lying areas
- (a) In the event all or any portion of the Subdivision is situated in a Special Flood Hazard Areas, the Subdivider shall supply and submit to the Federal Emergency Management Agency all documents, information, reports and recommendations that are required under the rules of the Federal Flood Insurance Program, and shall be responsible for obtaining a Letter of Map Amendment or Letter of Map Revision from the Federal Emergency Management Agency, as it applies to the entire Subdivision,

prior to the approval of any Plat by County.

i. When developing in Special Flood Hazard Areas, Zone A, where no depths or base flood elevations are shown, the Engineer of Record for the development shall be responsible for determining a Base Flood Elevation, obtaining a Letter of Map Amendment or Letter of Map Revision, and converting the entire Special Flood Hazard Areas, Zone A, to a Zone AE, through the Federal Emergency Management Agency.

(b) In the event all or any portion of the Subdivision is situated in low-lying areas as determined by Hidalgo County, the Subdivider shall supply and submit to Hidalgo County all documents, information, reports and recommendations that are required under the rules of the Federal Flood Insurance Program, and shall be responsible for obtaining a Base Flood Elevation (BFE) and an Engineering Impact study, as it applies to the entire Subdivision, prior to the approval of any Plat by County.

3.5 Compliance with NPDES Program and Clean Water Act Permitting Requirements

(a) New development and redevelopment that will result in disturbance of five or more acres of land must comply with the United States Environmental Protection Agency ("USEPA") National Pollution Discharge Elimination System ("NPDES") General Permits for Storm Water Discharges from Construction Activities in Region 6. Rules covering the requirements of the General Permit are published at 63 Federal Register 36489, July 6, 1998, and are available at the USEPA Region 6 website (www.epa.gov/earthlr6/gen/w/formsw.htm.)

Individuals who intend to obtain coverage under the General Permit for Construction Activities must submit a Notice of Intent ("NOI") to the USEPA Region VI office in Dallas, Texas in accordance with the General Permit. Certification of this submittal shall also be made to the Hidalgo County Drainage District No. 1 office at least two (2) days prior to initiating construction.

The content of the NOI shall comply with the requirements of the NPDES General Permit for Storm Water Discharges from Construction Sites in Region 6, as published at 63 Federal Register 36489.

(b) In addition to compliance with the NPDES program, it may be necessary to obtain a permit from the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act. (33 U.S.C. §1344). Certain activities are covered by the Nationwide Permit Program ("NWP"). NWP's, which may be applicable in the development of subdivisions, include NWP 39, 41 and 43, among others. Applicability of NWP 39 and 43 is limited in areas within the 100-year Floodplain by General Condition 26. See, 65 Fed. Reg. 12818, March 9, 2000. (New NWP provisions were effective June 7, 2000.) Copies of all materials submitted to the District Engineer under an NWP or an application for an individual permit must be simultaneously provided to Hidalgo County Drainage District No. 1.

3.6 Surface drainage from private property within a proposed subdivision shall be taken to the roads, streets, or drainage courses as directly as possible. Drainage water from the roads and streets shall be taken to defined drainage courses as directly as possible.

(a) Subdivisions with internal streets will be required to provide facilities for the post-development runoff for the subdivision at full build-out for a 10-year storm as approved by County and District at Subdivider's sole cost in addition to the design of the storm drain facilities that will discharge into a drainage ditch. A facility as used herein whether one or more shall be defined as drainage improvements dedicated to County or District, as applicable, such as, but not limited to: drainage pipe, culvert pipe, manholes, inlets and any other drainage appurtenances required by County or District.

Existing subdivisions within the surrounding drainage area basin shall be considered so that the

proposed development does not adversely affect its drainage capabilities. In the event that the proposed drainage system discharges into an existing drainage system, the Engineer must submit the calculations showing that there is sufficient capacity in the existing system to accommodate for the additional Stormwater volume generated from the developed property, for a 50-year frequency storm and the surrounding contributing drainage area basin.

If the Subdivision is located adjacent to an existing drainage ditch, the ditch shall be widened at Subdivider's sole expense to accept peak discharge from a 50-year storm event from the post-developed subdivision. If the Subdivision is not adjacent to the existing drainage ditch, then the ditch that the subdivision is discharging into may be widened to County and/or Drainage District specifications to detain the peak discharge from a 50-year storm event from the post-developed Subdivision. If the Subdivision is located where a proposed drainage ditch will be located as per the District's Master Plan then the Subdivider shall be responsible for excavating the ditch at the Subdivider's sole cost and expense. The Subdivider may use the excavated ditch as detention for the Subdivision provided that the Subdivider dedicates, in fee, such excavated ditch along with such dedicated access, in fee, as County and/or District may require. The ditch facility shall be connected via a minimum discharge pipe of 24" Rubber Gasket RCP CL III to another storm sewer system to provide positive flow. The County or District, as applicable, shall review all proposed ditch excavation. Written approval must be obtained from County or District, as applicable, before any work is to be performed. In the instance where an irrigation canal lies between a subdivision and a drainage ditch, the Subdivider shall contact the pertaining Irrigation District and provide a letter from said office stating the size of pipe required to convert the canal from an above ground canal to an underground facility. If the required pipe is 36 inches or under; it is the responsibility of the Subdivider to convert the irrigation canal to an underground facility with the piping and construction methods required by the Irrigation District. The location of the new underground facility is subject to final approval by the Irrigation District and County. The Subdivider shall also dedicate additional right-of-way to complete 75 feet from the centerline of a drainage ditch. If the future ditch Right of Way dedication is not possible, a 150-foot total right- of-way shall be dedicated. Additionally, a 15-foot irrigation easement along the rear of all lots containing irrigation line shall be provided.

The District, Subdivider's Engineer and the Hidalgo County Planning Department will evaluate the future development of the surrounding area to determine the upsize of off-site pipe needed for the area. Any Subdivider that connects to the off-site system shall pay pro-rata share of the cost to install the oversized off-site drainage line to the County or District, as applicable.

- 3.7 Streets shall not be used as major drainage courses. The Subdivider shall be responsible for constructing all necessary drainage features required to transport water from the development to an acceptable outfall, including acquisition of all necessary rights-of-ways and easements.
- 3.8 The rational method shall be used at a minimum for calculations. Other methods may be utilized for the calculation of the stormwater design discharge if sufficient supporting data is submitted to and approved by Hidalgo County Drainage District No. 1. Without supporting data other methods shall not be accepted. The engineer responsible for the preparation of the design calculations shall sign, seal, and date all work done under his authority.
- 3.9 Minor streets shall:
 - (a) be designed to contain a ten (10) year rainfall event within the gutter flow if curb and guttered or within the roadside ditches if not curb and gutter.
 - (b) have culverts designed to carry a ten (10) year rainfall event with a headwater depth not to exceed the diameter of the pipe

- 3.10 Collector streets shall:
- (a) be designed so that a ten (10) year rainfall event is contained within the gutter flow if curb and guttered or within the roadside ditches if not curb and gutter.
 - (b) be designed so that a ten (10) year rainfall event will be contained within roadside ditches if curb and gutter are not used and have culverts designed so that the ten (10) year rainfall event will be carried with a head water depth not exceeding the diameter of the pipe.
- 3.11 Arterial streets shall:
- (a) be designed so that a ten (10) year rainfall event is contained within the gutter flow if curb and guttered or within the roadside ditches if not curb and gutter.
 - (b) be designed so that the roadside ditches, if utilized, will contain a twenty-five (25) year rainfall event within the ditches and all culverts shall be designed to carry the twenty-five (25) year rainfall event with head water depth not exceeding 1.2 times the diameter of the pipe.
- 3.12 Open drainage ditches or channels other than those contained within the right-of-way of a street or road shall comply with the Hidalgo County Master Drainage Plan, as amended.
- 3.13 Drainage structures at a crossing of a drainage courses with roads and streets shall be designed as follows:
- (a) Drainage structures under Minor streets shall be designed to carry a twenty-five (25) year rainfall event without overtopping the roadway and provide a minimum of fifteen feet (15') of clear roadway surface.
 - (b) Drainage structures under Collector streets shall be designed to carry a twenty-five (25) year rainfall event without overtopping the roadway and provide a minimum of twenty feet (20') of clear roadway surface.
 - (c) Drainage structures under Main Arterial streets shall be designed to carry a twenty-five (25) year rainfall event without overtopping any of the driving surface and shall provide a clear roadway equal to the width of the pavement plus five feet (5') on either side.
- 3.14 Easements. Where conditions require, a drainage easement adequate for the purpose (including future needs and maintenance) shall be provided, as determined by the County Planning Department and, if the subdivision is within its boundaries, Hidalgo County Drainage District No.
- 1. Where such easement is adjacent to lots, tracts, or reserves, restrictions regarding the use of the surface area of the easement shall be noted on the face of the final plat as follows:

“This easement shall be kept clear of fences, buildings, plantings, and other obstructions to the operation and maintenance of the drainage facility. Abutting property shall not be permitted to drain into the easement except by approved means.”