

## **APPENDIX A:**

### **DESIGN AND CONSTRUCTION SPECIFICATIONS OF LA SALLE COUNTY**

#### **SECTION 1**

##### **DATE OF EFFECT AND APPLICABILITY**

- 1.1** These standards and specifications, having been adopted by the LaSalle Commissioners Courts Court by an Order of the Court on the 8th day of April, 2013, are declared to be in and of effect for all subdivision road and drainage work commenced on or after this date. These standards and specifications replace and supersede any and all guidelines, standards or specifications heretofore in effect in LaSalle County, and shall be the sole basis of determining standards and specifications for Subdivisions commenced after this date, unless a specific variance is granted by Order of the LaSalle Commissioners Courts Court, or these standards and specifications are amended or replaced by the Court.

#### **SECTION 2**

##### **GENERAL GUIDELINES**

###### **2.1 General Engineering Standards:**

In order to ensure the safe and proper construction design of new streets, driveways, storm sewer, and drainage ways; construction drawings and specifications, prepared and certified by a Registered Professional Engineer licensed to practice in the State of Texas, shall be submitted for review and approval prior to land clearing and construction. Construction Plans should be submitted along with the Final Plat. A copy of the proposed plat shall be included in the construction plans.

All roads shall consist of drainage facilities, subgrade, compacted flexible base material, and surface treatment of what is generally known as a “two course chip seal,” unless otherwise specified by the County.

~~Drainage facilities shall be designed to convey a 10-year storm event with not more than 6” of water over the road in a 25-year storm event. All roads and streets shall be designed and constructed to withstand the impact of storm water being impounded adjacent to and flowing over the road or Street. Streets that cross areas of 100-year floodplain shall not increase the water surface level or change the floodplain limits.~~

*The preceding paragraph is replaced with the following paragraph.*

Drainage facilities shall be designed in accordance with the Texas Department of Transportation’s ‘Hydraulic Design Manual’, dated October 01, 2011, or the most current published edition. Culvert and bridge facilities shall not increase the upstream water surface more than one foot, nor damage upstream and downstream property owners. All roads and streets shall be designed and constructed to withstand the impact of storm water being impounded adjacent to and flowing over the road or street. Streets that cross areas of 100-year floodplain shall not increase the water surface beyond the guidelines and requirements of the Federal Emergency Management Agency and/or the governing local Floodplain Administrator’s guidelines and requirements, nor damage upstream and downstream property owners.

## 2.2 General Review Requirements:

The Applicant must submit the following for review and approval:

- 2.2.1 A set of construction drawings for streets, site development, drainage, utilities, and roadway signage plan;
- 2.2.2 An engineer's drainage report providing the technical data related to drainage issues required for the review of the proposed project. The report must be signed and sealed by the same engineer who prepared the construction plans.
- 2.2.3 A copy of a geotechnical report, signed and sealed by a registered professional engineer, establishing the engineer's recommended pavement section design based on American Association of State Highway and Transportation Officials (AASHTO) pavement section thickness design for a proposed 20-year life;
- 2.2.4 Temporary and permanent erosion and sedimentation control methods for all areas disturbed by the construction; and
- 2.2.5 An engineer's construction cost estimate signed and sealed by the same engineer who prepared the construction plans.

In addition, an engineer's summary letter shall be submitted outlining the nature of the project and any requests for the use of design standards other than those outlined herein.

## **2.3 Engineer's Construction Plan Requirements:**

2.3.1 Cover Sheet. Show the following:

- (a) Subdivision Name
- (b) Legal description of property.
- (c) Name, address, and phone number of Owner, surveyor and engineering firm that prepared the plans.
- (d) North arrow.
- (e) Name of watershed.
- (f) Project location map, clearly identifying the precise construction location.
- (g) Tabulation sheet index.
- (h) Legible Professional Engineer's seal and signature.
- (j) The following note: 44The Engineer who prepared these plans is responsible for their adequacy. In approving these plans, LaSalle County has relied on the professional representations and design judgments made by the registered professional engineer who sealed these plans.”
- (j) The following note: “I, \_\_\_\_\_, a Texas Registered Professional Engineer, certify that these plans are prepared in accordance with the Road and Drainage Standards of LaSalle County.”

2.3.2 Notes Sheet. Show the following:

- (a) Applicable general construction notes.
- (b) Any applicable special notes.
- (c) Construction sequencing.
- (d) Standard Details.

2.3.3 Erosion and Sedimentation Control Sheets. Show the following:

- (a) Scale, north arrow, and legend.
- (b) Proposed temporary erosion and sedimentation control and tree protection measures for street, drainage, and utility construction.
- (c) Stabilized construction entrance detail for location where construction vehicles will enter or exit directly onto public streets.
- (d) Survey of all trees six inches in diameter or greater which are proposed to remain within the limits of a clear zone or sight distance area, showing locations, diameters, and species. (Show methods to be used to preserve trees; i.e., boring, tree wells, guard rail, etc.) LaSalle County reserves the right to require all obstructions, including trees, be removed from the right of way.
- (e) Permanent erosion control measures including revegetation, matting, and any erosion control methods not included on other plan sheets, such as riprap, gabions, retards, etc.
- (f) Proposed construction waste disposal must be approved by the Commissioner(s)/Designated Agent(s) in whose precinct(s) the proposed construction and disposal sites are located.
- (g) Legible Professional Engineer's seal and signature.

2.3.4 Drainage Layout Sheets. Show the following:

- (a) Scale, north arrow, and legend.
- (b) Drainage layout of the subdivision or area of construction, distinguishable line delineating the limits of construction.
- (c) Existing adjoining street layout or other property adjacent to the project, including adjacent subdivision names.
- (d) Location of all existing drainage structures on or adjacent to the project.
- (e) Street names, lot, and block numbers and right-of-way lines.
- (f) Existing contours at two-foot minimal intervals.
- (g) Show entire upstream drainage areas, existing drainage areas, and proposed drainage areas based on improvements and final grading.
- (h) Size in acres. Runoff coefficient (C), and Time of Concentration (ToC) for each drainage area based on pre- and post-development conditions.
- (i) Arrows indicating drainage flow direction for streets and lots.
- (j) All high and low points.
- (k) Proposed drainage facilities.
- (l) All existing and proposed drainage easements as per Final Plat or by separate instrument, including volume and page information.
- (m) Existing and proposed 100-year flood plains for all waterways.
- (n) Clearly show limits of construction.
- (o) Location of applicable city limits, governmental entity, County lines, or any boundary of a utility district with either taxing or regulatory authority within the subject area.
- (p) Legible Professional Engineer's seal and signature.

2.3.5 Street Plan and Profile Sheets.

- (a) Plan. Show the following.
  - (1) The street name.
  - (2) Scale, north arrow, and legend.
  - (3) Stationing south to north or west to east with street layout directly over the profile stationing.
  - (4) Right-of-way and paving dimensions.

- (5) Lot numbers, block numbers, and frontage dimensions.
  - (6) Street names within respective right-of-way.
  - (7) Existing or proposed casements and intersecting right-of-way.
  - (8) Centerline "TIC" marks every 50 feet.
  - (9) Drainage facilities within or intersecting right-of-way and indicate stationing on both sides of structure.
  - (10) Match lines on street plan sheets for continuation of streets on other sheets.
  - (11) Show proposed tie-in to existing streets.
  - (12) Sheet numbers for intersecting streets, and show full intersection, provide dimensions, and give street names.
  - (13) Plan view must transpose directly above profiles stationing when possible. (Station limits shown on the plan view must be the same as the station limits shown on the profile.)
  - (14) Clearly show the beginning and ending of the project.
  - (15) Clearly show all points of curvature (PC), points of tangency (PT), points of intersection (PI), and all relevant curve data with their corresponding station.
  - (16) Location of applicable city Limits, governmental entity, County lines, or any boundary of a utility district with either taxing or regulatory authority within the subject area.
  - (17) Legible Professional Engineer's seal and signature.
- (b) Profile. Show the following.
    - (1) Scale and legend.
    - (2) Even stations on vertical division lines.
    - (3) Even elevations on horizontal division lines (in right and left margins).
    - (4) Natural ground profiles at left and right right-of-way and street centerline.
    - (5) Proposed bar ditch flow Lines.
    - (6) Identify and give elevations at all points of curvature (PC), points of tangency (PT), points of intersection (PI), vertical curve beginning points (PVC), vertical curve ending points (PVT), and vertical curve points of intersection (PVI).
    - (7) Label all vertical curves with the following information: curve length, PVI station and elevation, tangent intercept, tangents and tangent grades, and design "K" values.

#### 2.3.6 Construction Detail Sheets. Show the following:

- (a) Typical pavement design cross-section.
- (b) Safety end treatment details for culvert pipe ends within the roadway clear zone and riprap or headwall details.
- (c) Guard rail details if required.
- (d) Legible Professional Engineer's seal and signature.

#### 2.3.7 Traffic Control Plan Sheet.

A traffic control plan is required for any construction conducted in public right- of-way which may impede or has the potential to interrupt normal traffic flow. Show the following:

- (a) Street plan showing all traffic control devices, taper distances, and traffic flow diagram.
- (b) The traffic control plan must be consistent with the Texas Manual on Uniform Traffic Control Devices (TxMUTCD).

(c) Legible Professional Engineer's seal and signature.

#### 2.3.8 Roadway Signing and Striping Plan Sheet.

A roadway signing and striping plan shall be submitted along with the street plans. Show the following:

(a) Street plan showing the locations of all traffic control devices including signs, striping, and pavement markers.

(b) All traffic control devices shall be fabricated and installed in accordance with the requirements of the Texas Manual on Uniform Traffic Control Devices.

(c) Legible Professional Engineer's seal and signature.

#### 2.3.9 Utility Plans.

Plans for water and wastewater utilities proposed by the developer to be located within the County right-of-way shall be designed by a Registered Professional Engineer, licensed to practice within the State of Texas, and shall conform to the standards and specifications established for that particular utility. The County review of Utility Plans will be for the purpose of verifying that appropriate details are used for street cuts, and traffic control, and utility placement within roadway rights-of way. The Engineer of Record shall be solely responsible for the design of utility improvements. The County will not review Utility Plans for the purpose of verifying that the design is done according to relevant utility design standards. Legible Professional Engineer's seal and signature is required on each sheet.

### **2.4 Engineer's Drainage Report Requirements**

2.4.1 The name of the subdivision or project.

2.4.2 The name and address and phone number of the engineering firm which prepared the report and the name of the design engineer.

2.4.3 A brief description of the scope of the project, including the name and classification of the relevant watershed.

2.4.4 A brief description of the Hydrologic Model (Rational Method, SCS, HEC 1, etc.) used and an explanation on why that model was chosen.

2.4.5 Provide the following for each drainage area:

(a) Area in acres (A)

(b) Time of Concentration (ToC) in minutes based on pre- and post-development conditions.

(c) Rainfall Intensity (I) for the 2-year, 10-year, 25-year, and 100-year events. ( $I_2$ ,  $I_{10}$ ,  $I_{25}$ , and  $I_{100}$ )

(d) Runoff Coefficient (C) for the 2-year, 10-year, 25-year, and 100-year events. ( $C_2$ ,  $C_{10}$ ,  $C_{25}$ , and  $C_{100}$ ) based on pre- and post-development conditions. Or SCS curve number depending on hydrologic model used.

(e) Runoff flow volumes (Q) for the 2-year, 10-year, 25-year, and 100-year events. ( $Q_2$ ,  $Q_{10}$ ,  $Q_{25}$ , and  $Q_{100}$ )

2.4.6 If a computerized model is used provide printouts of the model's input and output. Otherwise clearly show all pertinent calculations.

2.4.7 All relevant culvert design calculations.

2.4.8 All relevant detention pond design calculations.

2.4.9 Legible Professional Engineer's seal and signature.

**2.5 Street and Drainage Design Criteria:**

The basic construction standards for Subdivision streets in LaSalle County are laid out in this Appendix. However, LaSalle County reserves the right to impose higher, reasonable standards based on good engineering principles when the size, layout, or topography of the Subdivision indicate that the basic design and construction standards of the County would not adequately protect the public health, welfare, and safety. In such cases, LaSalle County may consult with the Applicant, and/or an independent professional engineer licensed in the state of Texas, and may require the Applicant to meet a higher standard. If a higher standard is to be required, the Commissioners Court shall vote on that standard and shall provide the Applicant with written notice of what is to be required.

## **SECTION 3 SPECIFICATIONS FOR PAVING AND DRAINAGE IMPROVEMENTS**

### **3.1 Excavation and Subgrade Preparation**

3.1.1 Description: The work to be performed under this specification will consist of excavation and grading necessary for the preparation of the road-bed subgrade, roadside and drainage ditches, and shall include the removal and satisfactory disposal of all trees, shrubs, brush, rock and other debris being cleared within the right-of-way.

3.1.2 Construction Methods: The site should be cleared and stripped of vegetation. Only the footprint of the road must be stripped of the vegetation. After this is done, the excavation and grading may proceed in conformity with the plans and specifications, and as directed by the Commissioners Court or Designated Agent

All subgrade and excavation work shall be in conformance with the spirit of these plans and in the directions of the design engineer, Builders are expected to use good construction practices as commonly understood in Central and South Texas. If questions arise about the interpretation of these specifications — in this section or others — the Commissioners Court shall decide the issue. The decision of the Commissioners Court may be appealed to Commissioners Court. The Contractor shall at all times make ample provisions for completely and readily draining the subgrades and excavation.

3.1.3 Maintenance of the Finished Subgrade: The finished subgrade shall be maintained to the proper grade, cross section and density by the Contractor until subbase or base material is placed on it. All such maintenance, including recompacting necessary as a result of precipitation or excessive drying, shall be the responsibility of the Contractor. All construction traffic shall be uniformly distributed over the subgrade.

3.1.4 Inspection: Prior to the installation of the base material, the compacted subgrade shall be inspected by the Precinct Commissioner or Designated Agent. The owner or agent shall notify the Precinct Commissioner or Designated Agent forty-eight (48) hours prior to the time when the inspection is needed.

### **3.2 Embankment**

3.2.1 Description: Embankments or fills shall be constructed at the locations and to the lines and grades indicated on the drawings, or as established. Materials placed in fill shall be free from all vegetable matter, trash, and stone having a maximum dimension greater than six inches.

3.2.2 Construction Methods: Embankments shall be formed of excavated materials placed in successive layers of such widths and lengths as are suited to the sprinkling and compaction method utilized. Embankments shall be constructed in layers not exceeding six inches in thickness after compaction.

The Contractor shall add moisture to or shall dry by aeration, each layer as may be necessary to meet the requirements of this specification for compaction. The addition of moisture to or drying by aeration of; each layer, shall be accompanied with thorough mixing so as to bring all material in each layer to a uniform moisture content.

Compaction shall be accomplished with tamping rollers, discs, and pneumatic rollers. Soft areas that develop under construction operations shall be scarified, aerated or moistened as required, and compacted to the full depth required to obtain the specified density for each layer. Portions of embankments which

are too near adjacent walls, pavements or other fixed objects to permit use of the above specified rolling equipment for compacting, and other portions which the roller cannot reach for any reason, shall be thoroughly compacted by tamping in two-inch layers with mechanical tampers or other equipment as approved by the Precinct Commissioner or Designated Agent.

Any damage to adjacent walls, pavements or other fixed objects, shall be replaced or repaired at the expense of the Contractor.

All road subgrade and embankments shall be compacted to a minimum density of ninety-five percent (95%), according to test method TEX-1 14-E.

### **3.3 Flexible Base**

3.3.1 Description: This item shall consist of a base course for the asphaltic concrete or other paving, and shall be composed of crushed material constructed as specified below.

3.3.2 Materials: The flexible base shall be constructed of material from an approved source. Stabilization shall be provided as necessary. The material shall consist of durable stone particles mixed with an approved binding material, meeting the following requirements:

- Type A, Grade 1 or 2, as described in “TxDOT Standard Specification for Construction of Highways, Streets, and Bridges,” latest edition.

3.3.3 Construction Methods: The base material shall be placed in lifts on the prepared subgrade in uniform courses with the compacted thickness to be no more than 6 inches nor less than 4 inches per lift. Material deposited on the subgrade shall be spread and shaped the same day unless otherwise directed by the Precinct Commissioner or Designated Agent. The course shall then be sprinkled as required and rolled as directed until a uniform compaction is secured. Through this entire operation, the shape of the course shall be maintained by blading and the surface, upon completion, shall be smooth and in conformance with the typical sections shown on the plans and to the established lines and grades. All irregularities, depressions or weak spots which develop shall be corrected immediately by scarifying the area affected, adding suitable material as required, and reshaping and recompacting by sprinkling and rolling. Material excavated in preparation of the subgrade may be utilized in the construction of adjacent shoulders and slopes or otherwise disposed of as directed. Any additional material required for the completion of the shoulders and slopes shall be secured from approved sources designated by the Precinct Commissioner or Designated Agent. Each course of base shall be compacted to a minimum density of 100 percent (100%), according to TxDOT Test Method Tex-113-E. After final compaction, a field density test shall be required at intervals no less than 300 feet, at locations representative of the entire road base. Intermediate points will be tested if required by the Precinct Commissioner or Designated Agent. The cost of these tests shall be borne by the Subdivider.

3.3.4 Thickness Control: The thickness of the compacted flexible base may vary from a maximum of 1/2 inch less than specified to a maximum of 1 inch more than specified. Deviations not within this tolerance shall be corrected.

3.3.5 Inspection: Prior to the installation of the paving, the compacted base material shall be inspected by the Precinct Commissioner or Designated Agent. The Owner or agent shall notify the Precinct Commissioner or Designated Agent forty-eight (48) hours prior to the time when the inspection is needed.

### **3.4 Two Course Surface Treatment**

3.4.1 Description: This item shall consist of a wearing surface composed of two applications of asphaltic material, each covered with aggregate constructed on the prepared base course as herein specified and in accordance with the details shown on the plans. All specifications in this item shall be in conformance with the TxDOT Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges, items 300, 302, and 316.

3.42 Air temperature: Two course surface treatment shall not be applied when the air temperature is below 60 degrees F, or when it is anticipated that the air temperature will fall below 50 degrees F within the (20) days following application. Air temperature shall be taken in the shade and away from artificial heat. Asphaltic material shall not be placed when general weather conditions, in the opinion of the Precinct Commissioner or Designated Agent, are not suitable.

### 3.4.3 Materials:

Aggregates are to be composed of sound and durable particles of crushed gravel, crushed stone, crushed slag, or natural rock. These materials shall meet the requirements as shown in Table 3 of TxDOT Standard Specifications item 302.

Aggregate to be used shall meet requirements of Item 302 and when tested by Test Method TEX-200-F, Part 1, shall be to the gradation requirements of:

For the first course:

- Type B, Grade 3 (non-lightweight for the first course. Approximate Application Rate: Minimum - one cubic yard covers 80 square yards (1:80). Maximum — one cubic yard covers 100 square yards (1:100).

For the second or final course:

- Type B or PB, Grade 4. Approximate Application Rate: Minimum — one cubic yard covers 90 square yard (1:90). Maximum — one cubic yard covers 110 square yards (1:110).

Asphaltic materials shall be AC-S Asphaltic Cement or HFRS-2 High Float Anionic Emulsion as specified by Item 300 of TxDOT 1993 Standard Specifications. Application temperature for AC-S shall be between 275 degrees F and 350 degrees F and for HFRS-2 shall be between 120 degrees F and 160 degrees F. Rate of application shall be 0.35 -0.45 gallons per square yard for the first course and 0.25-0.35 gallons per square yard for the second course. HFRS-2, if used, shall be applied at the upper end of these application rates.

3.5 Construction Methods: The area to be treated shall be cleaned of dirt, dust, or other deleterious matter by sweeping or other approved methods. If it is found necessary by the Precinct Commissioner or Designated Agent, the surface shall be lightly sprinkled with water just prior to the first application of asphaltic material. An optional primecoat can be applied prior to the first application.

Asphaltic material of the type and grade shown on the plans and/or those requirements for the first course shall be applied on the clean surface by an approved type of self-propelled pressure distributor so operated as to distribute the material in the quantity specified, evenly and smoothly, under a pressure necessary for proper distribution. The Contractor shall provide all necessary facilities for determining the temperature of the asphaltic material in all of the heating equipment and in the distributor, for determining the rate at which it is applied, and for securing uniformity at the junction of two distributor loads. The distributor shall have been recently calibrated and the Precinct Commissioner or Designated Agent shall be furnished an accurate and satisfactory record of such calibration. After beginning work, should the yield of the asphalt material appear to be in error, the distributor shall be recalibrated and/or application rate adjusted in a manner satisfactory to the Precinct Commissioner or Designated Agent before

proceeding with the work.

Asphaltic material placement shall also meet requirements of TxDOT Item 316. No traffic or hauling will be permitted over the freshly applied asphaltic material until immediate covering is assured.

Aggregate placement shall also meet the requirements of TxDOT Item 316. The type and grade shown on the plans and/or these requirements for the first course, shall be immediately and uniformly applied and spread by an approved self-propelled continuous feed aggregate spreader, unless otherwise shown on the plans or authorized by the Precinct Commissioner or Designated Agent in writing. The aggregate shall be applied at the approximate rates indicated on the plans and/or these requirements and shall be rolled and as directed by the Precinct Commissioner or Designated Agent Rollers shall be maintained in good repair and operating condition and shall be approved by the Precinct Commissioner or Designated Agent.

The Contractor shall be responsible for the maintenance of the surface of the first course until the second course is applied.

The entire surface shall be broomed or raked as required by the Precinct Commissioner or Designated Agent and shall be thoroughly rolled with power rollers, self-propelled type, weighing not less than 6 tons nor more than 12 tons. All wheels shall be flat.

The second course shall consist of asphaltic material and aggregate of the type and grade indicated on the plans and/or these requirements for the second course. The asphaltic material and aggregate for this second course shall be applied and covered in the same manner specified for the first course. The surface shall thoroughly rolled as specified for the first course. Asphaltic materials and aggregates for both courses shall be applied at the approximate rates indicated on the plans and as directed by the Precinct Commissioner or Designated Agent. After both courses have been installed, lightly broom off any remaining loose aggregate from final surface.

The Contractor shall be responsible for the maintenance of the surface until the work is accepted by the Precinct Commissioner or Designated Agent.

The Contractor shall be responsible for the proper preparation of all stockpile areas before aggregates are placed thereon, including leveling and cleaning of debris necessary for the protection of the aggregate to prevent any contamination thereof. All storage tanks, piping, retorts, booster tanks and distributors used in storing or handling asphaltic materials shall be kept clean and in good operating condition at all times and they shall be operated in such manner that there will be no contamination of the asphaltic material with foreign material. It shall be the responsibility of the Contractor to provide and maintain in good working order a recording thermometer at the storage heating utility at all times.

### **3.6 Drainage Facilities**

3.6.1 **Description:** This item shall govern the furnishing of all drainage culvert pipe, concrete headwalls, and reflector posts as shown on the Plans and herein specified, and installing the same as designated on the Plans or by the Precinct Commissioner or Designated Agent in conformity with the lines and grades given.

3.6.2 **Materials:** The culvert pipe shall be of size, length, and gauge as shown on the engineered plans. Corrugated aluminized steel pipe shall be as specified by item 460 of the TxDOT Standard Specifications. Reinforced concrete pipe shall be as specified by Item 464 of the same. All pipe shall be new and unused and shall not have been damaged by handling or shipping.

Reflector posts shall be 6 ft 1 in, 12 lbs per foot, galvanized steel posts equipped with 6 inch by 12 inch or 3 inch by 3 inch amber reflectors. The length of the post shall be adequate to place the reflector assembly 48 inches above the centerline elevation of the street and anchor the post approximately 48 inches into the ground.

Concrete headwalls and/or rip-rap shall be constructed of 3000 psi, five sack, concrete meeting the requirements of Item 421 of TxDOT Standard reinforced with deformed bars or wire mesh meeting the requirements of Item 440 of same. All headwalls and/or tip-rap shall be of the dimensions and in the locations shown on the plans.

3.6.3 Construction Methods: Culvert pipe shall be installed to the lines and grades shown on the Plan or as specified by the Commissioners Court or Designated Agent. The pipe shall be bedded along its complete length and the backfill around the pipe shall be compacted. The installation of all culvert pipes shall be in general conformance with the appropriate sections of the TxDOT Standard Specifications. All culvert pipes located in streets or roads shall be provided with reflector posts. The reflector post shall be equipped with one reflector facing in each direction of traffic flow.

Reflector posts shall be provided on the ends of the concrete headwalls or rip-rap as shown on the Plans. The concrete headwalls or rip-rap shall be of the dimensions and at the locations shown on the plans. The headwalls shall be formed on their exposed surfaces, which shall be grouted and broom finished upon removal of the forms.

3.6.4 Culverts: Culvert pipe shall be clean and free of debris.

### **3.7 Channel Excavation**

3.7.1 Description: Channel Excavation shall consist of required excavation for all channels, the removal and proper utilization or disposal of all excavated materials, and constructing, shaping and finishing of all earthwork involved in conformity with the required Lines, grades and typical cross sections and in accordance with the specifications and requirements herein outlined. Excavated topsoil can be used in accordance with County standards. It is the responsibility of the contractor to dispose of excavated trash in accordance with County standards and at an approved landfill.

3.7.2 Construction Methods: All suitable materials removed from the excavation shall be used, insofar as practicable, in the formation of embankments as required, or shall be otherwise utilized or satisfactorily disposed of as indicated on plans, or as directed, and completed work shall conform to the established alignment, grades and cross sections. During construction, the channel shall be kept drained, insofar as practicable, and the work shall be prosecuted in a neat and workmanlike manner.

Unsuitable channel excavation or excavation in excess of that needed for construction, shall be known as "Waste" and shall become the property of the Contractor to be disposed of by him.

Channel Excavation shall include the removal and replacement of all fence lines crossing the channels and the installation of gales and water gaps as shown on the plans.

All channels and that area adjacent to the area which has been disturbed by construction equipment shall be seeded with Bermuda grass or other grass as approved by the Commissioners Court or Designated Agent at the rate of eight pounds per acre (8 lbs/ac). Seeding shall conform to item 164 of the TxDOT Standard Specifications.

### **3.8 Miscellaneous**

3.8.1 Signage: Street name signs, traffic control signs, speed limit signs, etc., shall all conform to the requirements of the TxDOT Standard Specifications when applicable and/or the "Uniform Manual of

Traffic Control Devices.”

For all developments proposing new street construction, the developer’s engineer shall provide- as part of the construction plans - a narrative statement in recordable format, to be recorded with the Final Plat, listing the type and location of all proposed signs for directing and controlling traffic.

The Developer or Subdivider shall put all traffic signs in place, or, at the sole discretion of the Commissioners Court, the County may elect to install the signs, in which case the Developer or Subdivider shall pay the County the estimated actual cost of the signs plus a reasonable amount for the estimated actual cost of county labor.

3.8.2 Completion Certificate: At the time a final inspection and release of construction security is requested, the design engineer shall provide a complete set of “as-built” construction drawings and shall certify that all road and drainage construction has been completed in substantial accordance with previously approved plans and specifications, except as noted; and the design engineer shall also certify that the approved signage plan has been put into place. No performance security will be released without this exhibit.

3.8.3 Equivalency: All provisions of these regulations are intended to allow for the use of equal or better materials and methods. It is the responsibility of the design engineer and engineer certifying the geotechnical report to demonstrate that all provisions in these standards are met or exceeded by the alternate materials and methods to the satisfaction of the Commissioners Court or Designated Agent of the Commissioners Court.