ORDINANCE 22-

AN ORDINANCE OF THE CITY OF HARLINGEN AMENDING THE CODE OF ORDINANCES, CHAPTER 109, "SUBDIVISIONS" ARTICLE IX, UPDATING THE "SUBDIVISION DEVELOPMENT GUIDE", SECTION 109-250, ADOPTION OF INFRASTRUCTURE STANDARDS, BY AMENDING THE STORM WATER DESIGN REQUIREMENTS, ADJUSTING THE REQUIREMENTS FOR TESTING, AND UPDATING THE STANDARDS FOR CURB AND GUTTERS, AND PROVIDING A REPEALER CLAUSE.

WHEREAS, the City of Harlingen, a home-rule city of the State of Texas, may adopt and enforce ordinances necessary to protect health, life, property and the general welfare of the City and its residents and visitors; and

WHEREAS, the City Commission of the City of Harlingen finds it in the City's best interest to amend the infrastructure standards for all new residential, commercial and industrial development proposed for development within the city limits or extraterritorial jurisdiction of the City of Harlingen; and

WHEREAS, having updated infrastructure standards will help ensure the City only accepts quality and effective water, sanitary sewer, storm drainage and street infrastructure; and

WHEREAS, amending these standards will further promote the aims of the City in protecting and maintaining a safe, healthy quality of life for its residents and visitors;

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COMMISSION OF THE CITY OF HARLINGEN, THAT:

SECTION I

All of the above premises are hereby found to be true and correct legislative and factual findings of the City of Harlingen, Texas and they are hereby approved and incorporated into the body of this Ordinance.

SECTION II

Chapter 109, Subdivisions, of the Code of Ordinances of the City of Harlingen, Texas is hereby amended by amending Article IX, entitled "City of Harlingen Subdivision Development Guide".

ARTICLE IX – SUBDIVISION DEVELOPMENT GUIDE

Sec. 109-250 – Adoption of Infrastructure Standards

The City of Harlingen Subdivision Development Guide, attached hereto as Exhibit "A," is hereby adopted as the official infrastructure standards of the City of Harlingen, Texas and all new subdivision plats filed for processing after the adoption of the ordinance must abide by the standards herein.

Sec. 109-251 – Copy Available at City Secretary's Office

A copy of the standards shall be kept on file in the office of the City Secretary and shall be posted in the official City website under the Planning and Development Department.

Sec. 109-252 – Failure to Comply with Standards

The failure to comply with the standards shall result in the subdivision plat not being signed by the City Engineer and not being approved for recording with the Cameron County Clerk.

SECTION III: CUMULATIVE/REPEALER CLAUSE

This ordinance shall be cumulative of all provisions of state or federal law and other ordinances of the City of Harlingen, Texas, except where the provisions of this Ordinance are in direct conflict with the provisions of such ordinances, in which event the conflicting provisions of such ordinances are hereby repealed.

SECTION IV: SEVERABILITY CLAUSE

It is hereby declared to be the intention of the City Commission that the phrases, clauses, sentences, paragraphs and sections of this Ordinance are severable, and if any phrase, clause, sentence, paragraph or section of this Ordinance shall be declared unconstitutional by a valid judgement or decree of any court of competent jurisdiction, such unconstitutionality shall not affect any of the remaining phrases, clauses, sentences, paragraphs and sections of this Ordinance, since the same would have been enacted by the City Commission without the incorporation of this Ordinance of any such unconstitutionality phrase, clause, sentence, paragraph or section.

SECTION V: That the City Secretary of the City of Harlingen, Texas is hereby authorized and directed to cause a true copy of the caption of this ordinance to be published in a newspaper having general circulations in the City of Harlingen, Cameron County, Texas.

The provisions of this ordinance shall become effective from and after the final and lawful passage hereof and publication of the caption hereof as provided for and required in the Code of Ordinances and applicable state statutes.

FINALLY ENACTED this 2nd day of November, 2022, at a regular meeting of the Elective Commission of the City of Harlingen, Texas at which a quorum was present and which was held in accordance with TEXAS GOVERNMENT CODE, CHAPTER 551.

CITY OF HARLINGEN, TEXAS

_____

Norma Sepulveda, Mayor

_____

Amanda C. Elizondo, City Secretary

EXHIBIT A

SUBDIVISION

DEVELOPMENT GUIDE

Sec. 109 – 251 PREFACE

The City of Harlingen Engineering Department is committed to providing a high quality of life by ensuring properly designed and constructed infrastructure for those who reside, work and vacation in Harlingen. The condition of streets, sidewalks, driveways, storm drainage, water, and sanitary sewer facilities all play an integral part in the everyday life of inhabitants and those who utilize public corridors.

By responsibly designing, constructing and maintaining quality infrastructure, the City of Harlingen reduces the financial burden to its tax base from repair, personal injuries, and damage to property caused by premature failure of facilities.

NOTE: This document will be reviewed and revised as necessary in order to adapt to the dynamic nature of infrastructure improvements as well as reflect advances and innovations in standard design practices. It is the responsibility of the user to obtain the most recent revision.

This document is available at the City of Harlingen Website at www.myharlingen.us, under Departments -> Planning & Development -> Subdivision Development Guide

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Link to – TxDOT Pavement Manual

Link to – TxDOT Roadway Design Manual

Link to – TxDOT Access Management Manual

Link to – TxDOT Hydraulic Design Manual

Link to – TxDOT Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges (November 2014)

Note: Developer is responsible for using the latest, most recent version of the manuals above.

Sec. 109 – 252 ABBREVIATIONS

ADA	Americans with Disabilities Act
AEP (Utility)	American Electric Power
AEP (Drainage)	Annual Exceedance Probability
ARI	Annual Recurrence Interval
AT&T	American Telephone & Telegraph Company
C&G	Curb and Gutter
CCDD3	Cameron County Drainage District Number 3
CCDD5	Cameron County Drainage District Number 5
CD	Compact Disc
cfs	Cubic Feet per Second
EPA	Environmental Protection Agency
ETJ	Extra Territorial Jurisdiction
HGL	Hydraulic Grade Line
HID1	Harlingen Irrigation District Number 1
HMAC	Hot Mix Asphaltic Concrete
HWWS	Harlingen Water Works System
IBWC or USIBWC	United States International Boundary Water Commission
LID	Low Impact Development
MS4	Municipal Separate Storm Sewer System
NAWSC	North Alamo Water Supply Company
NOAA	National Oceanic and Atmospheric Administration
O.C.E.W.	On Center Each Way
P&D	Planning and Development
RAS	Registered Accessibility Specialist
ROW	Right-Of-Way
SFHA	Special Flood Hazard Area
SUE	Subsurface Utility Engineering
SWPPP or SWP3	Storm Water Pollution Prevention Plan
TAS	Texas Accessibility Standards
TCEQ	Texas Commission on Environmental Quality
TDLR	Texas Department of Licensing and Regulation
TIA	Traffic Impact Analysis
TxDOT	Texas Department of Transportation
USACOE	United States Army Corp of Engineers

Sec. 109 – 253 INTRODUCTION

This document has been prepared to standardize design requirements for streets, storm drainage, water, and wastewater facilities that are primarily constructed as part of residential and commercial subdivisions. In instances where this manual conflicts with other criteria such as TX DOT Manuals or Specifications, contact the City Engineer or HWWS engineer for clarity.

This document is intended to serve as a design guide for planners, designers, engineers and architects involved in the preparation of plans and specifications, which will be submitted for construction within the City of Harlingen and its corresponding ETJ. References to the "developer" are intended to be construed as the developer and/or agents including architects, engineers, surveyors, contractors, or other project representatives.

The ultimate goals of this design guide are to:

- Protect the public health, safety, and welfare;
- Maintain a high standard for improvements within public rights of way;
- Maximize the integrity of public facilities;
- Maximize the protection of motorists and pedestrians in navigating public facilities;
- Provide developers a guide to aid in the decision-making process;
- To standardize minimum design requirements;
- Minimize inconvenience to pedestrians, motoring traffic and landowners adjacent to public rights of way and future development; and
- Minimize the future maintenance cost to the City.

Special note regarding Harlingen Water Works System (HWWS):

HWWS provides oversight and review for all water and wastewater components of the development process. A link to the HWWS website has been included in the table of contents. It is the responsibility of the developer to coordinate with HWWS to ensure the latest HWWS design standards are used in throughout the development process.

Sec. 109 – 254 City Points of Contact for Development

Table 1: Development Contacts

Department	Title	Phone Number
Planning and Development Dept.	Director of P&D	(956) 216-5101
Engineering Dept.	City Engineer	(956) 216-5280
Harlingen Fire Dept.	Fire Marshall	(956) 230-8011
Public Works Dept.	Director of Public Works	(956) 216-5301
Harlingen Waterworks System	HWWS System Engineer	(956) 430-6100

Sec. 109 – 260 SUBDIVISION PROCESS

The following steps apply to both major and minor plats, except as noted.

Sec. 109 – 261 Preliminary Conference

Prior to the official filing of a plat, the developer shall request a mandatory preliminary conference to consult with and present a conceptual plan of the subdivision to the departments of Planning and Development, Fire, Engineering, and to the HWWS for comments on the procedures, specifications, and standards required by the city for the subdivision of the land. The goal of the preliminary conference is to aid the developer by explaining the subdivision process, discussing the conceptual design for the subdivision, providing a plat processing checklist, determining the requirements for the Construction Documents, providing guidance on city standards, the identification of required reports and studies to be performed in connection with the Engineering Letter Report, identifying additional stakeholders (for example HWWS, TxDOT, HID, CCDD No. 3 and No. 5, TCEQ, among others), identifying proper zoning and land use and communicating preliminary estimated costs including impact and development fees.

Sec. 109 – 262 Preliminary Subdivision Submittals

The developer shall then prepare and submit a plat of the proposed subdivision with preliminary Construction Documents for associated public improvements and any other required documentation. Such submittals shall be made to the Department of Planning and Development, HWWS, and all other entities of the Subdivision Review Committee without limitation TxDOT, Cameron County irrigation districts (e.g. Harlingen Irrigation District), drainage districts (e.g. Cameron County Drainage District No. 5), other governmental jurisdictions and utility providers. The documents submitted will be evaluated against the standard plat processing checklist posted on the city website under the Department of Planning and Development.

Sec. 109 – 263 Progress Meeting (Optional)

The developer may then request a progress meeting with the Subdivision Review Committee to identify any deficiencies of the proposed subdivision.

Sec. 109 – 264 Plat Filing

Once the developer has submitted all items required on the standard plat processing checklist with no deficiencies remaining the application for subdivision will be considered administratively-complete and the payment of the required city fees can be accepted. If the appropriate zoning is not in place for the proposed subdivision, a re-zoning application must be filed before the subdivision application can be accepted for processing. The plat will be considered as administratively “filed” upon receipt of acceptable payment.

Sec. 109 – 265 Consideration of Filed Plat

If not qualifying as a minor subdivision under the provisions of Sec. 109-88, the proposed subdivision plat will be placed on the agenda of the next available Planning and Zoning Commission meeting. The Planning and Zoning Commission will receive a report and a recommendation by the Department of Planning and Development for plat approval, with approval conditions, or for disapproval. If the recommendation is for disapproval, the sections of this ordinance with which the proposed subdivision does not comply will be noted. The conditions for which a minor plat may be considered for action directly by the Department of Planning and Development are set forth under Sec. 109-88. The Planning

and Zoning Commission shall approve, approve with conditions, or disapprove the plat within 30 days after the plat is filed. A municipal authority that conditionally approves or disapproves a plat under this subchapter shall provide the applicant a written statement of the conditions for the conditional approval or reasons for disapproval that clearly articulates each specific condition for the conditional approval or reason for disapproval with reference to the statutes or municipal ordinances forming the basis for the conditional approval or disapproval, as may be applicable.

Sec. 109 – 266 Review of Subdivision Construction Plans and Final Plat

Once the plat is approved by the Planning and Zoning Commission with conditions, the developer shall coordinate through the Planning and Development Department submission of one (1) hard copy and one (1) digital copy of the Construction Documents for each department for review. Review comments will be issued by the respective departments, sent to the Planning and Development Department, and forwarded to the developer to be addressed. This may be an iterative process until all comments have been addressed to the satisfaction of the respective departments. Construction may not commence until both the City Engineer and HWWS have released in writing the Construction Documents, nor shall the plat be recorded in advance of construction unless a financial guarantee of performance has been filed with the Department of Planning and Development. Acceptable forms of financial guarantee of performance are defined in Article VI of this chapter. The Subdivision Construction Plans will not be considered “filed” until all of the pending comments are addressed and the plans have been stamped “APPROVED FOR CONSTRUCTION” by the City Engineer and HWWS.

Sec. 109 – 267 Preconstruction Conference

Once Construction Documents are approved by all applicable city departments, a preconstruction meeting will be scheduled by the City with the developer’s engineer of record and contractor(s) for the purpose of coordinating all construction activities. The engineer of record shall bring four (4) 11x17 and one (1) 24x36 hard copies of the approved plans to the pre-construction meeting.

Sec. 109 – 268 Acceptance of Construction

The engineer of record shall submit the “as-built” plans in a digital format as specified by the City Engineer to the City Engineer and HWWS for review. After approval from the applicable city departments, submittal of a one-year warranty for all public improvements and submittal of the “as-built” drawings, letters of acceptance by the City Engineer and HWWS will then be issued to the developer.

Sec. 109 – 269 Plat Recordation

After all conditions are met for plat approval, the plat will then be recorded with the Cameron County Clerk by staff from the Planning and Development Department. For plats in the ETJ for which the developer has not requested annexation to the City of Harlingen the plat recording is done by personnel from the Cameron County Engineering Division.

Sec. 109 – 270 Responsibility of the Developer

It is the developer’s responsibility to satisfy all outside agency requirements, including those of the subdivision review committee member’s entities and of the Environmental Protection Agency, TCEQ, and the International Boundary Water Commission. The developer shall adhere to all Federal, State and Local laws and regulations throughout the platting and construction process. Approval of the proposed

plat by the Planning and Zoning Commission does not represent that the developer has met the requirements of any other agency.

Sec. 109 – 271 Series of Permits

Approval of a subdivision plat is not tied to nor guarantees issuance of a specific building permit or a certain zoning change to the property being subdivided. The subdivision process constitutes the process for the proper infrastructure improvements for the resulting subdivision lots, and recordation of a subdivision plat does not vest a building permit or any other type of action.

Sec. 109 – 272 Coordination Responsibilities of the Developer

It shall be the responsibility of the engineer of record to make note of and communicate all topics of discussion, discrepancies between the parties, and outstanding questions that may arise during the subdivision process. The engineer of record shall take notes during all meetings and shall subsequently electronically prepare and submit the meeting notes to all parties in attendance within five (5) business days of the meeting. A meeting between the engineer of record, the City and/or HWWS may be requested by email through the Department of Planning and Development. The engineer of record shall provide a meeting agenda and coordinate the meeting time a minimum 48 hours in advance.

Sec. 109 – 280 CONSTRUCTION DOCUMENTS

Sec. 109 – 281 Preliminary Construction Documents

Preliminary construction documents shall be submitted with the submittal packet checklist, and include the following items:

- ¶ Engineering Letter Report
- ¶ Preliminary Construction Plans to include:
  - Conceptual Utility Plan
  - Conceptual Paving and Drainage Plan
- ¶ List of Specifications to be used in the project

Preliminary construction plans shall indicate "Preliminary" on each sheet. Preliminary construction documents shall be considered conceptual in nature, actual placement of improvements may be altered throughout the design process.

Sec. 109 – 282 Final Construction Documents

Final construction documents shall be submitted with the submittal packet checklist and include the following items:

- ¶ Construction Plans, when applicable
- ¶ Project Manual including bid tab and specifications, when applicable
- ¶ Response letter addressing all previous comments

Sec. 109 – 283 Subdivision Construction Document Content

Generally, the following information shall be required for subdivision construction documents:

  - Cover Sheet.
  - Latest version of the Subdivision Plat, or dimensional plan.
  - Testing Schedule, see Appendix B.
  - Estimated Quantities, if applicable.
  - General Notes.
  - Existing Conditions Plan.
  - Site Plan.
  - Alignment(s) and Control Plan, if not already included in Site Plan or other plan sheets
  - Drainage Area Map with Runoff Calculations.
  - Overall Drainage and Paving Plan.
  - Overall Utilities Plan.
  - Corridor Plan and Profile Sheets.
  - Recommend Soil Erosion Control Plan.
  - Standard Detail Sheets as applicable.
  - Additional Detail Sheets as applicable.
- ¶ Additional plans
  - Third party utility plans such as gas, electric, and telecommunications for the subdivision shall be submitted to the Planning and Development department prior to construction.

These plans are not necessarily included in the subdivision construction plans and may be submitted as they become available.

The corridor plan and profile sheets shall be applicable to all streets, drainage appurtenances, water lines, and wastewater lines.

- Engineering Letter Report may include the following:
  - Drainage Study.
  - Geotechnical Report.
  - Subsurface Utility Engineering Report (SUE).
  - Developer's Report.
  - Traffic Impact Analysis.
  - Environmental Studies.
  - Water Distribution Analysis & Fire Flow Calculations.
  - Wastewater Collection System and Lift Station Calculations.
- A bound project manual conveying the contract, specifications, and geotechnical data shall be provided. The Project Manual shall at a minimum include the following items:
  - Front-end contract documents.
  - Standard TX DOT specifications.
  - HWWS specifications.
  - Geotechnical report.

Sec. 109 – 284 Recommended Subdivision Construction Plan Form

- North arrow and scale - A north arrow shall be provided in a uniform location on all plan sheets and vicinity maps, typically in the upper right-hand corner. North arrows should be directed up or to the left side of the sheet where practical. Scales shall be provided for all plans and profiles and shall include a bar scale.
- Legend - A legend shall be provided clearly indicating all existing and proposed symbols and line types.
- Dimensions - Show only the dimensions necessary to complete the work portrayed. If possible, show all dimensions outside the figure.
- Layout - All drawings shall be laid out with ample space between drawing items and the borders to ensure sufficient space for dimensions, labels, notes, etc.
- Symbols - Symbols shall be used to indicate existing or proposed points of interest such as water valves, manholes, benchmarks, signs, power poles, telephone pedestals, gas meters, and other similar data. Symbols shall be consistent and legible throughout the drawing set.
- Details - Details should be numbered in consecutive order on each drawing. Reference mark text shall include the page number that the section is drawn on and shall be placed so that it can be read from the bottom of the drawing.
- Matchlines - Matchlines shall be drafted where information from one sheet continues onto another, or is discontinuous within the drawing sheet. Matchlines should typically indicate station where the line is cut and the applicable sheet number where it continues.
- Titles - Titles shall be used on all drawings to name plans, sections, elevations, details, or the like. When a detail or figure is not to scale, indicate this with "NTS" under the figure's title.

Sec. 109 – 285 Additional Subdivision Construction Documents

Additional documents may be required for the subdivision as directed by the City Engineer and HWWS and may include but are not limited to:

- Coordination Documents - Documents from agencies that are external to the City or HWWS confirming approval or review of construction documents as required. Entities may include but are not limited to TxDOT, HID, CCDD #5, CCDD #3, TCEQ, or third-party utility companies.
- Project Submittals - Copies of approved submittals on materials or items needed to complete the project shall be provided to the City or HWWS as applicable by the engineer of record or engineer's representative.
- Stormwater Facility Maintenance Agreement - This document represents an agreement between the City and the landowner to maintain on-site stormwater management facilities and submit an annual report to the City verifying compliance.
- RAS Inspection Report for commercial development – Where TDLR inspection is required; a copy of the final RAS inspection report or approval letter indicating compliance with ADA specifications shall be submitted to the City.

Sec. 109 – 286 Subdivision Construction Document Submission Process

Four (4) hard copies and one (1) digital copy shall be provided to the Planning and Development Department on the same day, this day shall be the submittal receipt date.

Sec. 109 – 290 PAVEMENT DESIGN

Sec. 109 – 291 Flexible Pavement Design

The following City minimum design sections shall be applicable to the noted street classifications:

Table 2: City of Harlingen Minimum Street Sections

Street Classification				
Characteristic	**Local**	**Collector**	**Minor Arterial**	**Major Arterial**
Street Width[1]	32' – 37'	42' – 48'	≥ 60'	≥ 80'
Target Right - of - Way	50' – 60'	80'	100'	120'
Minimum Structural Section				
Subgrade[2]	6"	6"	12"	12"
Flexible Base[3]	8"	10"	12"	12"
HMAC Ty D / Ty B[4]	2"	2" / 2.5"	2" / 5"	3" / 5"
Min. Trans. Slope	2.0%	2.0%	2.5%	2.5%
Min. Long. Slope	0.30%	0.30%	0.30%	0.30%
Min. Width C&G[5]	24"	24"	24"	24"

Notes:

1. Street width is measured from back of curb to back of curb.
2. Subgrade shall be constructed per TxDOT Specification 110 and compacted to 95% standard proctor density (ASTM D698) to within 0 to +3.0% of the optimum moisture content. Subgrade

shall be lime treated where the soil's Plasticity Index (PI) is greater than 20. Soil shall be tested and lime treatment shall be prescribed by a licensed Geotechnical Engineering Firm.

3. Flexible Base shall be constructed per TxDOT Specification 247. Compaction is required to a minimum of 98% maximum dry density as determined by the Standard Proctor (ASTM D698) and to within ± 2.0% of the optimum moisture content. Flexible base shall be treated with lime at an applicable rate as determined by geotechnical testing if the plasticity index of the soils is greater than 12. Placement for collectors and arterials as prescribed above shall consist of two lifts. All compacted flexible base shall extend a minimum of 12-inches behind the back of curb, a minimum of 4" depth
4. Hot Mix Asphaltic Concrete (HMAC) shall be constructed per TxDOT specification 340. All surface courses shall consist of Type "D" HMAC, SAC-B PG 64-22 and all binder courses shall consist of Type "B". In-place density control is required for all mixtures except for thin, irregular level-up courses. Material shall be compacted to between 96% and 92% of maximum theoretical density or between 4% and 8% air voids. Average density shall be greater than 92% and no individual determination shall be lower than 90%. Testing shall be in accordance with TxDOT Test Methods TEX-207-F and TEX-227-F.
5. Curb and Gutter shall be based on City of Harlingen Standard Details Sheets (CONC-101).

Additional Notes:

- For all subdivisions which require new collector and arterial streets, a 30-year pavement design provided by a geotechnical engineer will be required.
- For widening of existing streets, the more stringent of the existing section or the City minimum section shall apply.
- For new local streets the City minimum section or a 30-year pavement design section as prescribed by a geotechnical engineer shall apply.
- For all streets to be constructed on top of fill dirt, a geotechnical report recommending a suitable foundation and select fill specifications for a 30-year design life will be required.
- Alternate design sections may be requested on a case-by-case basis and shall require a geotechnical field investigation and final report prescribing a 30-year design life.

Sec. 109 – 292 Concrete Pavement Design

Concrete pavements sections for all widths shall be designed utilizing the following criteria:

- A minimum 30-year pavement design provided by a geotechnical engineer will be required. Design shall conform to the latest version of the TxDOT Pavement Manual.

Sec. 109 – 293 Curb and Gutter Design

The following design criteria shall apply to curb, gutter, and/or combined C&G design:

- Curb, gutter, and/or combined C&G shall be constructed in conformance with TxDOT specification 529.
- All concrete shall be Class A 3,000 p.s.i.
- All steel shall be Grade 60 fy = 60,000 p.s.i., minimum.
- Transverse grooves 1/8'' wide by 1/2'' deep shall be made in all C&G at 10' o.c. (maximum).

- 3/4”” expansion joint material shall be provided where curb or curb and gutter is adjacent to sidewalk, riprap, at curve beginnings, curve endings, grade breaks, at adjacent stationary objects and at adjacent existing expansion joints. Expansion joint material shall be bituminous expansive fiber material board or approved equal. Reinforcement shall consist of 3-#4 dowels x 15'' long spaced as indicated in the City of Harlingen Standard Details (CONC-101). #4 dowels shall be extended across the joint 9-inches and this end shall be sleeved with ends capped.
- Where new C&G joins existing C&G, transition the last 10' of the new to match the old in shape.
- Base and subgrade thickness under curb, gutter, and/or combined C&G to be as specified in the project details or per loading design conditions. Both the treated subgrade (6" minimum) and the flexible base (4" minimum) shall extend a minimum of 1' beyond the back of curb.
- At least 1' of the area behind the curb shall be backfilled and compacted (minimum 95% standard proctor density) in accordance with the specifications as soon as possible and no later than 48 hours of removal of forms (or sooner in the event of inclement weather) in order to protect the moisture of the pavement structure.

Sec. 109 – 294 Alley Design

Alleys in new subdivisions are highly discouraged and shall only be proposed and constructed with the approval of the Director of Planning & Development, Director of Public Works, City Engineer, or their authorized designees. In residential subdivisions in which new alleys are permitted, they shall be maintained by the subdivision homeowner’s association (HOA) and there shall be a note in the plat to that effect. The following design criteria shall apply:

- RIGHT - OF - WAY shall be 20-feet in width.
- Pavement width shall be 18-feet from edge of pavement to edge of pavement.
- The Minimum section shall be as prescribed for a local street in Table 2: City of Harlingen Minimum Street Sections.
- Ten-foot corner clips shall be provided.
- Dead-end or half alleys shall not be permitted.

If an alternate pavement section is requested, a minimum 30-year pavement design provided by a geotechnical engineer will be required.

Sec. 109 – 295 Sidewalk and Curb Ramp Design

The following design criteria shall apply to sidewalk design:

- Flatwork shall be constructed in conformance with TxDOT specification 531.
- Flatwork shall conform to the most recent version of the Texas Accessibility Standards (TAS).
- Sidewalk expansion joints shall be placed as described in Section 109 – 293, Curb and Gutter Design. All expansion joints shall be 3/4" bituminous expansive fiber material board or approved equivalent with cap seal, unless otherwise noted.
- All concrete shall be Class A 3,000 p.s.i.
- All steel shall be Grade 60 fy = 60,000 p.s.i., minimum.
- Reinforcing steel shall be 4x4 W2.9xW2.9 welded wire fabric supported by mesh chairs prior to pouring.
- Minimum 4" sand bedding under all sidewalks.

- Subgrade shall be compacted to 95% standard proctor density.
- Concrete to receive transverse broom finish.
- Transverse contraction joints 1/8": wide by 1/2" deep shall be cut in all sidewalks at 5'-0" intervals (typical) or the intervals shall be spaced to match the width of the sidewalk.
- Standard sidewalk width is 5-feet unless previously approved by the city.
- Truncated domes which meet current TAS standards shall be provided at all curb ramps.
- Curb ramp types shall conform as close as practical to TxDOT Pedestrian Facilities Curb Ramp Sheets (PED-18) or as directed by the City Engineer.
- Mix designs that contain admixtures such as fiber-mesh or plasticizers shall require approval from the City Engineer or his designee prior to placement.
- Decorative concrete finishes shall require approval from the City Engineer or his designee prior to placement.
- New sidewalks shall meet ADA requirements.

Sec. 109 – 296 Residential Concrete Driveways

The following design criteria shall apply to residential concrete driveway design with the RIGHT - OF - WAY:

- Driveways shall be constructed in conformance with TxDOT specification 530.
- Driveways shall be constructed of a minimum 6-inch thickness of concrete.
- Fiber-reinforced concrete shall not be used unless previously approved by the City Engineer.
- All concrete shall be Class A 3,000 p.s.i..
- All steel shall be Grade 60 fy = 60,000 p.s.i., minimum.
- All steel reinforcement shall be #4 bars, supported on chairs prior to pouring. Bars shall be placed at 12” O.C.E.W.
- Subgrade shall be compacted to 95% standard proctor density.
- Concrete shall have a broom finish. Exposed aggregate, pavers, tile and stained or painted concrete are not permitted without prior approval from the City Engineer.
- Cure concrete in accordance with TxDOT specification 420.
- A minimum 3-foot walkway shall be required across driveways to connect sidewalks. Grades for walkway area within the driveways shall not exceed 20:1 along the longitudinal slope nor shall the transverse slope exceed 50:1.
- Driveway slopes shall not exceed 10:1 unless previously authorized by the engineer.
- Curb cuts where tying into existing curb must terminate a maximum of 6-feet within the subject property as projected into the Right – of – Way.
- Driveway widths shall be a minimum of 10-feet and a maximum of 24-feet.
- Expansion joints shall be 3/4" bituminous expansive fiber material board or approved equivalent with greased 12-inch long smooth #4 bars with one end being felt wrapped. Continuous bars shall not extend through the expansion joint and shall terminate 3-inches clear of the joint.
    - An expansion joint is required at the Right – of – Way line and where intersecting with sidewalks.
    - A middle expansion joint shall be used if the driveway width is 16-feet or wider.
- Tie-ins to existing C&G shall conform to the City of Harlingen Standard Details (CONC-101). Flow line of new gutter shall match existing gutter line.

Sec. 109 – 297 Residential Rural Driveways

The following design criteria shall apply to residential rural driveway design with the Right – of – Way :

- Driveways shall be constructed in conformance with TxDOT specification 530.
- All ditch sections shall be drained with a minimum 18" RCP or as directed by the City Engineer. For new subdivisions, drainage calculations must be provided with a flow (Q) in cfs at the inlet and outlet of all pipe sections in the system prior to construction.
- Pipe shall be set atop a minimum 4-inches of sand bedding. Pipe shall be sand encased up to the top of pipe.
- In existing subdivisions, pipe shall be placed to maintain the flow line of the ditch.
- Safety end treatments shall be required on both ends of the pipe. A typical 6:1 slope is required.
- Driveways shall be constructed of one of the following minimum sections:
    - For concrete driveways, a minimum of 3-inches of sand between the RCP and the driveway and a minimum of 6-inches of reinforced concrete. Standards shall be as prescribed above in Sec. 109 – 296 Residential Concrete Driveways Section.
    - For HMAC driveways, a minimum of 4-inches of base material and 2-inches of hot-mix in accordance with the provisions of local streets provided in Table shall apply.

Sec. 109 – 300 Commercial Driveways

The following design criteria shall apply to commercial driveway design with the Right – of – Way:

- Driveways shall be constructed in conformance with TxDOT specification 530.
- Driveways exceeding HS-20 loading shall be designed by a licensed engineer and provided to the City for review.
- Driveways shall be constructed of a minimum 6-inch thickness of concrete.
- Fiber-reinforced concrete shall not be used unless previously approved by the City Engineer.
- All concrete shall be Class S 4,000 p.s.i..
- All steel shall be Grade 60 fy = 60,000 p.s.i., minimum.
- All steel reinforcement shall be #4 bars, supported on chairs prior to pouring. Bars shall be placed at 12" O.C.E.W.
- Subgrade shall be compacted to 95% standard proctor density.
- Concrete shall have a broom finish. Exposed aggregate, pavers, tile and stained or painted concrete are not permitted without prior approval from the City Engineer.
- Cure concrete in accordance with TxDOT specification 420.
- A minimum 3-foot walkway shall be required across driveways to connect sidewalks. Grades for walkway area within the driveways shall not exceed 20:1 along the longitudinal slope nor shall the transverse slope exceed 50:1.
- Driveway slopes shall not exceed 12:1 unless previously authorized by the engineer.
- Curb cuts where tying into existing curb must terminate a maximum of 6-feet within the subject property as projected into the Right – of – Way.
- Driveway widths shall be a minimum of 24-feet and a maximum of 45-feet.

- Expansion joints shall be 3/4" bituminous expansive fiber material board or approved equivalent with greased 12-inch long smooth #4 bars with one end being felt wrapped. Continuous bars shall not extend through the expansion joint and shall terminate 3-inches clear of the joint.
    - An expansion joint is required at the Right – of – Way line and where intersecting with sidewalks.
    - A middle expansion joint shall be required.
- Tie-ins to existing C&G shall conform to the City of Harlingen Standard Details (CONC-101). Flow line of new gutter shall match existing gutter line.

Sec. 109 – 310 PUBLIC CORRIDOR DESIGN

Sec. 109 – 311 Right – of - Way Dedication

Generally, the developer shall meet the Right – of – Way dedication requirements based on City Ordinance and the City's Long-Range Thoroughfare Map through the subdivision process.

Sec. 109 – 312 Roadway Design

Roadways shall be designed based on the criteria set forth by the City of Harlingen Code of Ordinances, in the PAVEMENT DESIGN section above, and in accordance with the latest version of the TxDOT Roadway Design Manual.

Sec. 109 – 313 Traffic Impact Analysis

The City may require a Traffic Impact Analysis (TIA) if it is determined that the proposed development will have a significant impact on the street system. In general, a TIA is required for proposed developments where:

- The development is > 5 Acres.
- For all new school developments or where a new development is near in proximity to a school.
- Where access is requested on an arterial street.
- Generates 100 trips within any peak hour.
- Generates 1,000 trips per day.
- Planned Development Districts.

These criteria serve as a guideline. The City Engineer reserves the right to request a TIA for developments that may pose a significant change or problem to the existing traffic patterns.

This study shall be performed by a licensed professional engineer and be signed and sealed upon finalization. The TIA shall at a minimum include the following sections:

- Introduction and executive summary.
- Proposed development:
    - Development descriptions and site plan.
    - Proposed development land use and surrounding future land uses.
    - Development phasing (if applicable).
    - Estimated trip generation with map supporting the data.
    - Discussion on development access locations and roadway characteristics.
    - Level of service analysis for post development and 10-year traffic projections.
    - Proposed vehicle queuing analysis with a summarized table of projected delay times.
    - Impacts of development on pedestrian and bicycle traffic.
    - Discussion on proposed development impacts to traffic.
    - Description of design considerations and assumptions.
- Existing traffic conditions:
    - Existing site conditions, narrative
    - Existing land uses for surrounding area
    - Significant developments in proximity
    - Existing roadway classifications, capacity, and level of service

- Existing traffic patterns and data including traffic volumes and peak hours
- Discussion of data sources
- Site map
- Photographs

¶ Recommendations & Conclusion

- Signage, markings, and signalization
- Potential mitigation measures

Sec. 109 – 314 Access Management

Access management standards shall be in accordance with the latest version of the TxDOT Access Management Manual. Access management standards for arterial and collector City streets shall adhere to Table 2-2, Other State Highways Connection Spacing Criteria.

Sec. 109 – 315 Additional Stakeholders

The City will work with developers to develop a list of possible additional stakeholders within the project site. These are entities that may be impacted by the development due to increases in drainage runoff off, utility conflicts. The following list is a general list of external stakeholders located within the City of Harlingen and may not include all entities:

Table 3: Stakeholder Contact List

Name	Description	Contact #
City of Harlingen	Public Works	(956) 216-5301
City of Harlingen	Engineering	(956) 216-5280
City of Harlingen	Police Department	(956) 216-5940
City of Harlingen	Fire Department	(956) 230-8011
AEP	Power and Street Lights	(800) 344-8377
AT&T	Telecommunication Lines	(800) 288-2020
CCDD3	Drainage Canals and Appurtenances	(956) 399-7637
CCDD5	Drainage Canals and Appurtenances	(956) 423-6411
EPA Region 6	Federal Environmental Quality	(800) 887-6063
HID1	Irrigation Lines and Canals	(956) 423-7015
HWWS	Water and Wastewater Management	(956) 430-6100
IBWC	Oversight for the Arroyo Colorado	(956) 565-3150
Magic Valley Electric Cooperative	Power and Street Lights	(866) 225-5683
NAWSC	Water Utilities	(956) 383-1618
Southwestern Bell Telephone	Telecommunication Lines	(800) 286-8313
TCEQ	State Environmental Quality	(956) 425-6010
TxDOT Area Office (San Benito)	State Right – of - Way	(956) 399-5102
TxDOT District Office (Pharr)	State Right – of - Way	(956) 702-6100
Texas Gas Service	Gas lines	(956) 959-5325
USACOE (Corpus Christi Office)	Federal Waterways/Dredging Permits	(361) 884-3385

Sec. 109 – 316 Utility Coordination

The developer shall coordinate with all utility companies within the Right – of – Way. This may include water, wastewater, telecommunications, gas, power, and any other utility provider. At a minimum the following provisions shall be applicable to work within an existing City Right – of – Way:

- The developer shall work around existing utilities to the greatest extent possible. Where design requires relocation of existing utilities, the developer shall coordinate the relocation with the respective utility company at no cost to the City.
- The developer shall submit a "Survey/Design" ticket with Texas 811 for utility location and owner information for all registered utilities prior to the site survey. Utilities located shall be shown on the subdivision plans.
- The developer shall coordinate with the respective utility companies to minimize all possible conflicts prior to construction. Coordination with utility companies shall consist of:
  - Requests for utility maps in the project area.
  - Determination of specific line types, sizes, classes etc.
  - Depth of cover for each utility.
  - Utility contact information to provide on the plans including name, phone number, and email.
- Private lines of any type shall not be placed within the Right – of - Way without prior approval and permitting through the City.

Sec. 109 – 317 Streetlights

Streetlights shall be installed at the cost of the developer to city standards at all street intersections within the subdivision, at cul-de-sac ends and the spacing between them shall be no greater than 300 feet. This applies to all subdivisions inside the city limits or in subdivisions in which the developer has requested in writing a voluntary annexation. In addition, this applies to perimeter streets for residential and non-residential subdivisions. For private subdivisions, compliance with this section is required, but, the expense of the maintenance and the electricity shall be paid by the subdivision's developer or the homeowner's association. The following specifications shall apply:

- The street lighting plan shall include the height, style and composition of the street lights and shall be approved by the City Engineer prior to submission to the appropriate electric utility company.
- All bulbs shall be 219 Watt LED, or as specified by the City Engineer.

Sec. 109 – 318 Work in the Right – of – Way

Prior to work commencing in the Right – of – Way, the following must be submitted to the Engineering Department:

- The contractor or developer's engineer shall prepare a Traffic Control Plan for the signing, barricading and pavement marking for the safe maintenance of traffic during construction within existing streets and public right-of-way. The plan must be submitted to and approved by the City of Harlingen, City Engineer at least five (5) business days prior to any construction within the public street right-of-way. Barricades, temporary pavement markings, and signs shall be maintained in good condition and meet the legibility, retro-reflectivity, and other

requirements of the current edition of the Texas Manual on Uniform Traffic Control Devices until the completion and acceptance of all work within the public Right – of – Way or until contractor is directed otherwise.

- ¶ Prior to any work being performed in a City Right – of – Way, an entity must first complete a City of Harlingen excavation permit.

The following shall apply for construction within the City Right – of – Way:

- ¶ All temporary facilities necessary to complete the job are the responsibility of the contractor. The limits of any temporary facility proposed in the Right – of – Way shall be indicated on the Traffic Control Plan.
- ¶ Any traffic control as required shall follow the most current version of the Texas Manual of Uniform Traffic Control Devices.
- ¶ Protection of existing facilities:
    - All existing facilities and improvements located in City Right – of – Way or private property shall be protected from the work of the contractor at all times. Any damage to such facilities or improvements by the contractor, either by means and methods or accidental in nature, shall be repaired to equal or better conditions at the contractor's expense.
    - Existing utility lines (either overhead or underground), pavement, and sidewalks designated on the drawings, shown to contractor or mentioned in the specifications, shall be kept free of damage from contractor's operations. If damaged, any utilities or pavement shall be restored at the contractor's expense. Any utility not known in time to prevent damage, and if inadvertently damaged during operations, the contractor shall notify the engineer and owner of said utility immediately so that emergency repair may be made. Some valve boxes and manhole lids will require adjustment to ensure proper grades.
    - The contractor shall conduct his/her work with a minimum disturbance of existing utilities and it shall be his/her responsibility to coordinate all work in or near the utilities with the utility owners. The contractor shall inform utility owners sufficiently in advance of his/her operations to enable them to identify and locate, reroute, provide temporary detours, or to make other adjustments to the utility lines in order that work may proceed with a minimum of delay. The contractor shall cooperate with all utility owners concerned for any utility adjustments necessary.
    - Particular care shall be exercised to avoid the cutting or damaging of underground utility lines that are to remain in place. Such lines, if damaged, shall be restored promptly. When active sanitary sewer lines are cut during excavation operations, temporary flumes shall be provided across the excavation while open, and the lines shall be restored when the backfilling has progressed to the original bedding lines of the cut sewer.

Sec. 109 – 320 STORM WATER DESIGN

Drainage design shall generally be performed in accordance with this manual and the latest version of the TxDOT Hydraulic Design Manual. Design engineers shall use best available data associated with the floodplain. Best available data can be found online on FEMA's Base Level Engineering Viewer, which can be also used as a tool to determine a Base Flood Elevation, when needed. The following subheadings are intended to provide general guidance to the developer in the storm water design process. Under certain circumstances such as in areas of historic flooding or where existing drainage facilities may require a unique design, the Director of Public Works and the City Engineer reserve the right to specify drainage facilities.

Sec. 109 – 321 Probability of Exceedance

The probability of exceedance describes the likelihood of a specified flow rate (or volume of water with specified duration) being exceeded in a given year. The probability of capacity exceedance describes the likelihood of the design flow rate (or volume of water with specified duration) of a hydraulic structure being exceeded in a given year.

Sec. 109 – 322 Annual Exceedance Probability

There are several ways to express Annual Exceedance Probability (AEP). The preferred unit for expressing AEP is percent. An event having a 1 in 100 chance of occurring in any single year will be described in this manual as the 1% AEP event. Annual recurrence interval (ARI), or return period, is also used by designers to express probability of exceedance. A 5-year return interval is the average number of years between years containing one or more events exceeding the specified AEP. Lastly, AEP can also be expressed as probability (a number between 0 and 1), such as p = 0.01. Examples of equivalent expressions for exceedance probability for a range of common AEP's are provided in Table below:

Table 4: Three Ways to Describe Probability of Exceedance

AEP (as percent)	AEP (as probability)	Annual Recurrence Interval (ARI)
50%	0.50	2-year
20%	0.20	5-year
10%	0.10	10-year
4%	0.04	25-year
2%	0.02	50-year
1%	0.01	100-year

Sec. 109 – 323 Design AEP

The designer will determine the required level of protection to be provided by a hydraulic structure. The level of protection is expressed as the design AEP. The designer will apply principles of hydrology to determine flows and volumes corresponding to the design AEP. The purpose of most structures will be to provide protection against, or prevent, high stages; resulting from the design AEP event.

The City of Harlingen has developed minimum AEP values for many common design components. The values are listed below in Table. The City of Harlingen minimum design AEP values are as follows:

Table 5: Minimum design AEP Matrix

AEP %	AEP (Prob.)	ARI	Design Component
10%	0.10	10-Year	Rural Roads with Ditch Systems located in the ETJ
10%	0.10	10-Year	Subdivision Detention Requirements ≤ 1.0 Acre
4%	0.04	25-Year	Storm Sewer Systems for Residential Subdivisions
4%	0.04	25-Year	Rural Roads with Ditch Systems located in the City Limits
4%	0.04	25-Year	Culverts, Bridges, Channels & Creeks ≤ 100 Acres Contributing
4%	0.04	25-Year	Minor River or Channel Crossings
4%	0.04	25-Year	Storm sewer systems for Collector Streets
2%	0.02	50-Year	Culverts, Bridges, Channels & Creeks ≥ 100 Acres and ≤ 640 Acres Contributing
2%	0.02	50-Year	Storm sewer systems for Arterial Streets
2%	0.02	50-Year	Subdivision Detention Requirements > 1 Acres to 100 Acres
1%	0.01	100-Year	Culverts, Bridges, Channels & Creeks ≥ 640 Acres Contributing
1%	0.01	100-Year	RIGHT - OF - WAY Capacity / All Habitable Structures
1%	0.01	100-Year	Subdivision Detention Requirements > 100 Acres
1%	0.01	100-Year	Storm Water Pumping Stations
1%	0.01	100-Year	Major River or Channel Crossings

Sec. 109 – 323 Mitigation

Stormwater mitigation is the action of reducing stormwater runoff. Detention and retention are the most common stormwater facilities used to accomplish this. Detention is the storage of storm runoff for a controlled release during or immediately following the design storm. A detention pond will temporarily store excess stormwater then will drain slowly via a discharge point, whereas a retention pond will remain wet until the basin has evaporated or the runoff has completely infiltrated the soil. There are several types of detention:

- Off-site detention – a detention facility located outside of the subject property's boundary.
- On-site detention – a detention facility located within the subject property's boundary.
- On-line detention – a detention facility located directly behind an embankment within a drainage channel.
- Regional detention – a detention facility serving multiple subdivisions.

One additional option is available, if the property to subdivide or develop is adjacent to a drainage channel or ditch, excluding roadside ditches: widening of the adjacent channel or ditch is possible. After a positive recommendation from the City Engineer, the Planning and Zoning Commission will review the submission and recommend approval or disapproval to the City Commission. Subsequently, the City Commission shall approve or disapprove the use of a widened, adjacent channel or ditch for stormwater mitigation.

Storm sewer pipes directly discharging to a detention pond may have 25% of their volume account as detention. The Design engineer must show calculated pipe capacity, hydraulic grade lines and energy grade lines, and ensure all other stormwater mitigation requirements are met.

Stormwater discharge from new subdivisions shall be limited to the current (existing conditions) release rate for a 10% AEP storm event.

The developer can, and is encouraged, to utilize various stormwater mitigation designs such as:

- Low Impact Developments
- Underground Storage
- Rooftop Gardens
- Pool Storage or Fountain Storage
- Porous Pavements and Permeable Pavers
- Cistern Storage or Rain Barrels
- Contoured Landscapes or Bioretention Areas

Written permission or acquisition of drainage easements may be required from adjacent owners and/or downstream owners to construct needed offsite downstream drainage improvements.
All development must comply with Chapter 105 of the Harlingen Code of Ordinances – Flood Damage Prevention.

Sec. 109 – 324 Drainage Study

The following components shall generally be required in submission of a drainage report. Include headings or breaks between sections. The recommended information to be included is listed below:

- Cover sheet:
  - Subdivision/project name.
  - Name, address, and telephone number of the developer/owner.
  - Name, address, and telephone number of the developer's engineer.
  - Engineering firm name and number.
  - Final version to be signed and sealed by engineer.
  - Date of Preparation.
  - Cameron County Parcel ID(s).
- Project Narrative:
  - Describe the existing site location, size, conditions, and drainage patterns.
  - Describe the soil conditions including soil name and hydrologic soil group.
  - Describe the existing FEMA information and include flood zone(s) designation, description, and community panel number(s).
  - Describe the existing land use and zoning, proposed land use, and future land use based on the City of Harlingen Future Land Use Map.
  - Description of the project scope and proposed drainage appurtenances.
    - Proposed elevations of system (flowlines, inverts, etc.) shall be included in the design phase of the project
  - Methodologies used to prepare the report and analysis and discussion of data sources.
  - Explanation and justification of all assumptions pertinent to drainage design.
  - Impacts of proposed drainage design on existing (receiving) system.
- Hydrology & Hydraulic Calculations:

- Pre and post development analysis using the appropriate AEP.
  - Use the TX DOT Hydraulic Design Manual in determination of Intensity values.
- Hydrology calculations for all pertinent drainage areas.
- Hydraulic calculations for proposed drainage improvements such as inlets, swales, culverts, pipes, curbs and gutters.
  - Provide calculations for flow time in pipes.
  - Indicate design runoff, "Q", at all inlets, dead-end streets, and alleys or to adjacent subdivisions or undeveloped tracts.
- Hydraulic calculations for existing drainage improvements affected by proposed development.
- Hydraulic grade line (HGL) calculations for storm drain pipe network shall be done at the design phase of the project.

¶ Supporting Documentation:

- In general, the following information shall be appended to the report. Cite the source of the information and include author or entity publishing the information, name of publication or website, and date of access for digital sources. Include all supporting documentation.
  - Topographic Map of the existing site.
    - ¶ Existing structures labeled with FF.
  - Site Map to include proposed improvements.
  - Soils Map based on the NRCS Web Soils Survey.
  - FEMA Firmette.
  - Selected values from TX DOT resources including "C" values and intensity values.

Sec. 109 – 325 Drainage Area Map

In conjunction with the drainage study, a drainage area map shall be developed for all new subdivisions. The drainage area map shall be included in the subdivision construction plans. The following requirement shall apply to the drainage area map:

¶ Proposed drainage improvements are in accordance with existing City Master Plans or drainage studies for the area. If conflicts arise between these documents, the engineering department shall determine the appropriate governing document.
¶ Show existing and proposed storm drainage lines and inlets.
¶ Indicate sub areas for each inlet or set of inlets and off-site areas draining into the site.
¶ Indicate proposed land use and zoning for all drainage areas.
¶ Indicate design runoff, "Q", at all inlets, dead-end streets, and alleys or to adjacent subdivisions or undeveloped tracts.
¶ Points of concentration shall be clearly labeled.
¶ Indicate the design AEP of all the pertinent drainage facilities.
¶ Indicate flood zone type and boundaries.
¶ For cumulative runoff, show tabular hydraulic calculations.
¶ TX DOT Hydraulic Design Manual shall be used for all hydrology and hydraulic calculations.
¶ Indicate all crest, sags, and street intersections with flow arrows.

- Provide the calculations for inlet time and flow time in pipe.
- Provide legend.
- Include a hydrology summary table.
- Grate inlets are allowable in ditch sections and shall not be placed on pavements.
- Tabulate street and R-O-W capacities.
- Show all existing fences.
- Show areas of dense tree coverage.
- Show flow arrows for surface drainage.
- Show delineation of drainage areas sufficient for review.
- Provide cross sections of open channels and show limits of grading.
- Show limits of any proposed detention or retention area.

Sec. 109 – 326 Rainwater Harvesting (RWH)

Rainwater harvesting is allowed and encouraged as an alternate source of storm water mitigation. Design of rainwater harvesting systems shall conform to the Texas Manual on Rainwater Harvesting.

Sec. 109 – 327 Water Quality

The City of Harlingen is committed to protecting the health, life, property, and general welfare of its citizens and visitors. Ordinance 2019-37 established policies for reducing pollution that enters the surface water in the state of Texas and the United States through regulation of illicit connection and discharge to the City's Municipal Separate Storm Sewer System (MS4).

The following are allowable discharges into the City's MS4:

- Water line flushing (excluding discharges of hyper chlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life);
- Runoff or return flow from landscape irrigation, lawn irrigation, and other irrigation utilizing potable water, groundwater, or surface water sources;
- Discharges from potable water sources that do not violate Texas Surface Water Quality Standards;
- Diverted stream flows;
- Rising ground waters and springs;
- Uncontaminated ground water infiltration;
- Uncontaminated pumped ground water;
- Foundation and footing drains;
- Air conditioning condensation;
- Water from crawl space pumps;
- Individual residential vehicle washing;
- Flows from wetlands and riparian habitats;
- Dechlorinated swimming pool discharges that do not violate Texas Surface Water Quality Standards;
- Street wash water excluding street sweeper waste water;

- Discharges or flows from emergency firefighting activities (firefighting activities do not include washing of trucks, run-off water from training activities, test water from fire suppression systems, and similar activities);
- Other allowable non-stormwater discharges listed in 40 CFR § 122.26(d)(2)(iv)(B)(1);
- Non-stormwater discharges that are specifically listed in the TPDES Multi Sector General Permit (MSGP) TXR050000 or the TPDES Construction General Permit (CGP) TXR150000;
- Discharges that are authorized by a TPDES or NPDES permit or that are not required to be permitted; and
- Other similar occasional incidental non-stormwater discharges such as spray park water, unless the TCEQ develops permits or regulations addressing these discharges.

The following are explicitly prohibited discharges into the City's MS4:

- No person shall deposit, release, throw, drain, cause or allow to be deposited, released thrown, drained or discharged, or otherwise cause to enter the MS4, or any other drainage device which connects with the MS4, any of the following described materials or substances:
  - Any acidic waste materials (having a pH value lower than 6);
  - Any alkaline waste materials (having a pH value higher than 10.5);
  - Any water or waste containing free-floating, or insoluble oil; gasoline, naphtha, fuel oil, mineral oil or other flammable or explosive liquid, solid or gas;
  - Any noxious, malodorous, poisonous, or reactive substance which, either singularly or by interaction with other substances, or by its accumulation in the MS4 becomes injurious or potentially injurious to human, plant or animal life, or property; or
  - Any domestic wastewater or industrial wastewater.
- It shall be a defense to prosecution under this section that such person was authorized to commit any act, under a valid permit from the TCEQ or the US EPA, which would otherwise constitute a violation at the time of commission.
- No person shall place or drop or cause or allow to be placed or dropped, brush cuttings, clippings, or rubbish within the MS4 or on any street in the City in such a manner that the same maybe washed by the flow of water into the MS4.
- No person shall connect a line conveying sanitary sewage, domestic waste, or industrial effluent to the MS4 or allow such a connection to continue.
- No person shall remove or modify any sanitary sewer cleanouts, sanitary sewer manhole covers or other components of a wastewater collection or transmission system in such a manner as to allow wastewater to overflow from the wastewater collection system, resulting in any unauthorized discharge or sanitary sewer overflow.
- No person shall discharge or release, or allow or permit the discharge or release of any of the following substances in a manner or location by which such substance may enter the City's MS4:
  - any wash water or wastewater from the washing or cleaning of pavement, including but not limited to parking lots, driveways or carports, that contains soap, detergent, solvent, degreaser, emulsifier, dispersant, or any other cleaning substance other than water;
  - any wash water or wastewater from cleaning of any pavement where a spill, leak, or other release of oil, motor fuel, or other petroleum or hazardous substance has

occurred, unless all harmful quantities of such released material have been previously removed or pretreated;

- any wash water from a commercial mobile power washer or from the washing or other cleaning of a building exterior that contains any soap, detergent, degreaser, solvent, or any other harmful cleaning substance;
- gasoline, motor oil, used oil filters, wax, grease, antifreeze or any other motor vehicle fluids;
- any contaminated water or waste from a commercial car wash facility, from any vehicle washing, cleaning, or maintenance area at any new or used automobile or other vehicle dealership, rental agency, body shop, repair shop, maintenance facility, or from any washing, cleaning, or maintenance area of any commercial or public service vehicle, including any truck, bus, or piece of heavy equipment, by any business or public entity;
- any contaminated water or waste from commercial establishments including but not limited to gas stations, service stations, and auto repair shops with areas exposed to weather conditions;
- material from an oil/water separator or an oil/water interceptor, grit trap or grease trap. Any oil/water separator or interceptor users who are discharging to the MS4 shall notify the city of the existence of such connections to the MS4 within sixty (60) days of the effective date of this ordinance. If such notification is not made during the allocated sixty (60) days, then the detected connections to MS4 of an oil/water separator or interceptor shall be considered an illicit connection and the city reserves the right to terminate such connection immediately, without prior notice;
- any release from a petroleum underground storage tank (PUST), or any leachate or runoff from soil contaminated by a leaking PUST, or any discharge of pumped, confirmed, or partially treated wastewater from the remediation of any such PUST unless release satisfies all of the following criteria: (a) is in compliance with all municipal, state, and federal laws; (b) no discharge contains any harmful quantity of any pollutant; and (c) the discharge shall not have a pH value lower than 6.0 or higher than 10.5;
- any public or private underground utility manhole, including but not limited to electric power, gas pipeline, cable companies, telephone companies, the collected water, due to rain, surface runoff, cross connection, or illegal discharge;
- any effluent from a cooling tower, condenser, compressor, emissions scrubber, emissions filter, or the blowdown from a boiler;
- any type of wastewater from residential, commercial or industrial sources, any domestic sewage or septic tank waste;
- any runoff or wash down water from any animal pen, kennel, or fowl or livestock containment area;
- any swimming pool water or filter backwash from a swimming pool or fountain, discharge from a water line if it has been disinfected by super- chlorination or other means and the total residual chlorine exists in any harmful quantity or any other chemical has been used in line disinfection.

- discharges of stormwater mixed with non-stormwater unless the non-stormwater is described in part B of this section or authorized under a separate TPDES or NPDES permit,
- hazardous materials; or
- pollutants

¶ No person shall apply used oil or other vehicle fluid to a road or land for dust suppression, weed abatement, or other similar use that introduces used oil contamination into the environment.

¶ No person shall introduce any type of hazardous waste generated in and around a household including, but not limited to batteries, used paints, solvents, used pesticide, and used toiletries into the MS4.

¶ No person shall use, dispose of, discard, store, or transport an insecticide, herbicide, or fertilizer, in a manner inconsistent with the proper usage, storage, transport and disposal set out in the labeling in accordance with the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), such that a harmful quantity of the pesticide, herbicide, or fertilizer may enter the MS4.

¶ No person shall wash a commercial dumpster, or residual ready-mix concrete from concrete mixing trucks, in an area where it discharges into the MS4.

¶ Other discharges as prohibited in the general permit.

The City of Harlingen has the authority to require installation, implementation, and maintenance of control measures in accordance with TPDES Phase II MS4 Permit TXR040000 Part III Section A.3.(a)(2)d.

¶ Maintenance Easements - Prior to the issuance of any permit that has a stormwater management facility the applicant of the site must implement a maintenance easement agreement that binds all subsequent owners of land served by the stormwater management facility. The agreement allows the City of Harlingen or their contractor/agent access to the facility to periodically inspect if the facility is maintained in proper working condition and meets design standards and other provisions established by this Ordinance. The easement agreement shall be recorded by plat or separate instrument through the official records for Cameron County.

¶ Maintenance Covenants - The applicant of an industrial site, commercial site, or residential site with a Home Owners Association must develop a maintenance covenant articulating a schedule of maintenance activities and plans for periodic inspections to assess the proper functioning of the stormwater management facility. The maintenance covenant shall be approved by the City of Harlingen prior to final plan approval. Maintenance covenants shall not be required for any site covered under the Multi-Sector General Permit TXR 050000.

¶ Requirements for Annual Self-Inspections - All stormwater management facilities must undergo, at minimum, an annual self-inspection to document maintenance and repair needs and to verify compliance with the requirements of this Ordinance. Maintenance and repair may include: removal of silt, litter, and other debris from all catch basins, inlets and drainage pipes; cutting grass and vegetation removal; and replacement of landscape vegetation. Maintenance needs must be addressed in a timely manner as determined by the City of Harlingen. The local jurisdiction may implement more stringent inspection and maintenance requirements. If the stormwater management facility becomes a danger to public safety or public health, the City of Harlingen shall notify the party responsible for maintenance of the stormwater management

facility in writing. Upon receipt of that notice, the responsible person shall have 30 days to meet maintenance and repair requirements. If the owner of the facility fails to comply with the requirements of the maintenance covenant, the City of Harlingen, after reasonable notice, may perform all necessary work to bring the facility into compliance.

Sec. 109 – 328 Development in Special Flood Hazard Areas

All developments in a SFHA will require a Floodplain Development Permit Application in accordance with the City of Harlingen Code of Ordinances Chapter 105. Once the requirements have been met, the Floodplain Development Permit must be prominently displayed at the development site during construction.

Sec. 109 – 329 Lot Grading

Lots shall be graded in such a manner as to provide positive drainage but shall not adversely affect adjacent drainage patterns.

- New subdivisions shall be graded so that drainage shall not discharge on adjoining properties.
- The rear of residential lots shall slope with a minimum 1% slope towards the front. The overall drainage and paving plan shall indicate grading on all lots by use of contours.
- In the case were grades along the perimeter of the proposed subdivision are above or significantly below the adjacent property elevation, the developer shall install a retaining wall, curb or other such improvements.

Sec. 109 – 340 PROJECT SPECIFICATIONS

Specifications for construction and materials to be supplied for public infrastructure shall be determined by the Engineer of record and approved by the City Engineer and HWWS. For a list of HWWS specifications and approved products regarding water and wastewater delivery and collection systems, visit the HWWS engineering website at: https://www.hwws.com/department/engineering.

The City of Harlingen utilizes the most recent version of the "Texas Department of Transportation Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges" (TX DOT Specification Manual) for constructions specifications relating to public improvements for transportation and drainage design elements. It shall be generally construed that where these specifications refer to "TX DOT", "the Department", or other such state references it is referring to the City of Harlingen.

Specifications listed in this section are generally what are required to complete the transportation and drainage aspects of subdivision construction. If a specification is not listed below, the applicable TX DOT specification shall govern. For project specific items that are not listed in the TX DOT Specification Manual, a technical specification may be submitted to the City Engineer for review.

Sec. 109 – 341 Alternative Specifications

The project engineer of record may add additional clauses or prescriptions to specifications that govern the work. These alternative specifications may be used where they generally conform to all aspects of the applicable TX DOT specification.

Sec. 109 – 342 Earthwork and Landscape

During construction, embankment, excavation, and other grading on site shall keep shaped and require positive drainage at all times. The contractor is required to maintain pumping equipment to remove all standing water after a rainfall event. No water shall remain standing longer than 12 hours after it has stopped raining. Ditches and drains shall be maintained in such manner as to drain effectively at all times. Graded areas shall be protected against action of elements prior to acceptance of the work. Settlement or washing that may have occurred shall be repaired and grades shall be re-established to the required elevations and slopes.

Specifications shall be in accordance with TX DOT specification items 100 and include but are limited to:

- Preparing Right - of - Way, item 100;
- Removing Concrete, item 104;
- Removing Treated and Untreated Base and Asphalt Pavement, item 105;
- Excavation, item 110;
- Subgrade Widening, item 112;
- Embankment, item 132
- Backfilling Pavement Edges, item 134
- Topsoil, item 160
- Sodding for Erosion Control, item 162; and
- Seeding for Erosion Control, item 164.

Sec. 109 – 343 Subgrade Treatments and Base

Specifications shall be in accordance with TxDOT specification items 200 and include but are not limited to:

- Sprinkling, item 204;
- Rolling, item 210;
- Proof Rolling, item 216
- Flexible Base, item 247;
- Lime Treatment (Road-Mixed), item 260; and
- Lime Treatment (Plant-Mixed), item 263.

Sec. 109 – 344 Surface Courses and Pavements

Materials for the construction of streets shall be from a City-approved source. Material thicknesses shall be based on geotechnical recommendations or City minimum thicknesses whichever is more stringent. A minimum longitudinal slope of 0.3 percent is required for proposed streets. The minimum cross slope for streets shall be 2 percent, where this is the typical cross slope for all streets.

Specifications shall be in accordance with TxDOT specification items 300 and include but are not limited to:

- Asphalts, Oils, and Emulsions, item 300;
- Prime Coat, item 310;
- Dense-Graded Hot-Mix Asphalt (Small Quantity), item 340; and
- Concrete Pavement, item 360.

Sec. 109 – 345 Structures

Specifications shall be in accordance with TxDOT specification items 400 and include but are not limited to:

- Excavation and Backfill for Structures, item 400;
- Trench Excavation Protection, item 402;
- Hydraulic Cement Concrete, item 421;
- Retaining Walls, item 423;
- Precast Concrete Structural Members (Fabrication), item 424;
- Riprap, item 432;
- Reinforcement for Concrete, item 440;
- Concrete Box Culverts and Drains, item 462;
- Reinforced Concrete Pipe, item 464;
- Junction Boxes, Manholes, and Inlets, item 465;
- Headwalls and Wingwalls, item 466;
- Safety End Treatment, item 467;
- Frames, Grates, Rings, and Covers, item 471
- Jacking, Boring, or Tunneling Pipe or Box, item 476; and
- Adjusting Manholes and Inlets, item 479.

Sec. 109 – 346 Miscellaneous Construction

Specifications shall be in accordance with TxDOT specification items 500 and include but are not limited to:

- Barricades, Signs and Traffic Handling. Item 502;.
- Weighing and Measuring Equipment, item 520;
- Concrete Curb, Gutter, and Combined Curb and Gutter, item 529;
- Intersections, Driveways, and Turnouts, item 530;
- Sidewalks, item 531;
- Concrete Medians and Directional Islands, item 536; and
- Metal Beam Guard Fence, item 540.

Sec. 109 – 347 Project Manual Bid Items

Names of the bid items listed in the project manual must match the names of the specifications provided to ensure contractor will construct the work within the scope of work provided in the specifications.

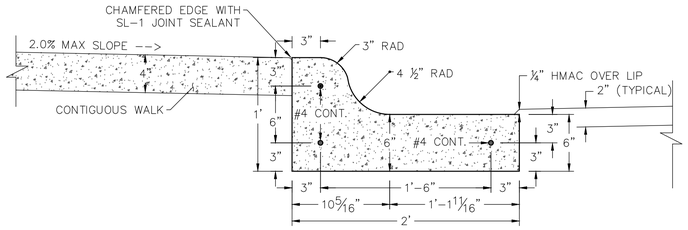
STANDARD DETAILS

City of Harlingen Standard Details

The City of Harlingen has provided several standard details for the construction of paving and drainage improvements. A copy of the latest version of the City's standard details is provided in Appendix A of this Manual.

Appendix A

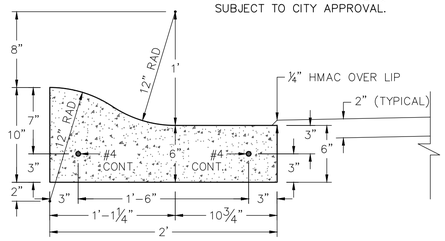
City of Harlingen Standard Details



STANDARD 6" CURB & GUTTER DETAIL

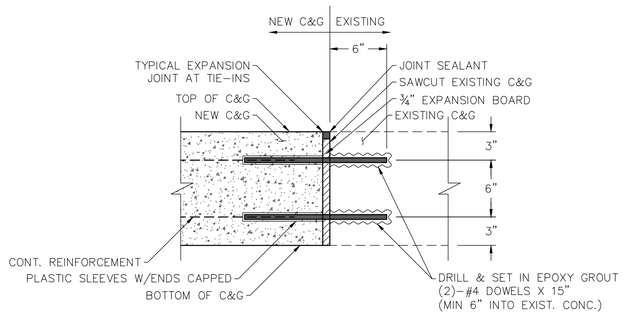
NOT TO SCALE

NOTE:
4" CURB & GUTTER (ROLLBACK CURB) IS A SPECIALTY ITEM. THIS DETAIL IS PROVIDED FOR USE AS NEEDED TO ADDRESS PROJECT SPECIFIC CONDITIONS. USE IS SUBJECT TO CITY APPROVAL.



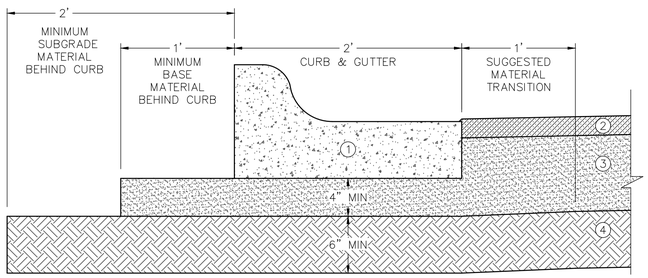
4" CURB & GUTTER DETAIL

NOT TO SCALE



CURB & GUTTER TIE-IN DETAIL

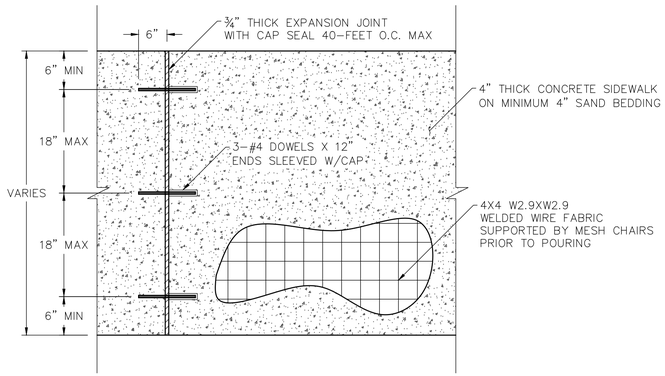
NOT TO SCALE



① CURB & GUTTER (APPLICABLE TO ALL TYPES)
② 2" HMAC (TYPICAL) OR AS NOTED ON THE PLANS
③ 8" BASE MATERIAL (TYPICAL) OR AS NOTED ON THE PLANS
④ 6" LIME TREATED SUBGRADE (TYPICAL) OR AS NOTED ON THE PLANS

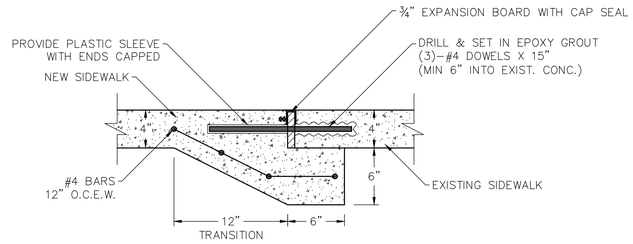
CURB & GUTTER FOUNDATION DETAIL

NOT TO SCALE



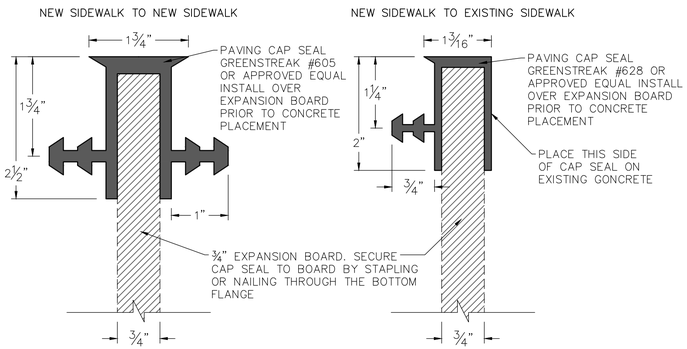
SIDEWALK PLAN

NOT TO SCALE



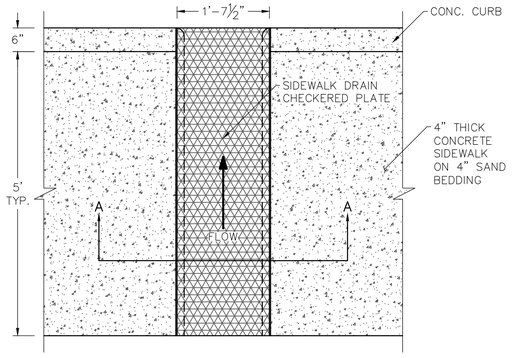
SIDEWALK TIE-IN DETAIL

NOT TO SCALE



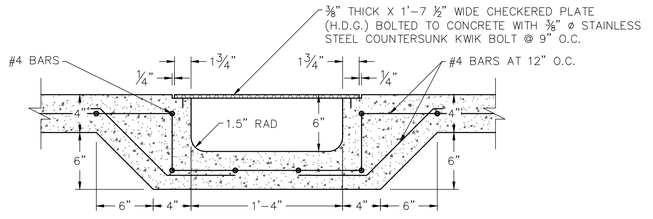
SIDEWALK CAP SEAL DETAILS

NOT TO SCALE



SIDEWALK DRAIN PLAN

NOT TO SCALE



SIDEWALK DRAIN SECTION A-A

NOT TO SCALE

SIDEWALK NOTES

1. SIDEWALKS SHALL BE CONSTRUCTED IN CONFORMANCE WITH TXDOT SPECIFICATION 531.
2. ALL EXPANSION JOINTS TO BE ¾" BITUMINOUS EXPANSIVE FIBER MATERIAL BOARD OR APPROVED EQUIVALENT WITH CAP SEAL, UNLESS OTHERWISE NOTED.
3. ALL CONCRETE SHALL BE CLASS A 3,000 P.S.I.
4. ALL STEEL SHALL BE GRADE 60 fy = 60,000 P.S.I., MIN.
5. CONCRETE TO RECEIVE TRANSVERSE BROOM FINISH.
6. SUBGRADE SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
7. STANDARD SIDEWALK WIDTH IS 5-FEET UNLESS PREVIOUSLY APPROVED BY THE CITY.
8. MINIMUM 4" SAND BEDDING UNDER ALL SIDEWALKS.
9. TRANSVERSE CONTRACTION JOINTS ⅛": WIDE BY ½" DEEP SHALL BE CUT IN ALL SIDEWALKS AT 5'-0" INTERVALS (TYPICAL) OR THE INTERVALS SHALL BE SPACED TO MATCH THE WIDTH OF THE SIDEWALK.
10. WHEN RAS INSPECTION IS REQUIRED, FINAL ACCEPTANCE OF THE PROJECT SHALL BE CONTINGENT UPON THE CITY RECEIVING A CERTIFICATION LETTER FROM THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR), POLICY AND STANDARDS DIVISION, ARCHITECTURAL BARRIERS SECTION, THAT ALL ADA (AMERICANS WITH DISABILITIES ACT) IMPROVEMENTS, AS CONSTRUCTED, COMPLY WITH THE TEXAS ACCESSIBILITY STANDARDS (TAS) OF THE ARCHITECTURAL BARRIERS ACT ARTICLE 9102, TEXAS CIVIL STATUTES.

CITY OF HARLINGEN
TEXAS

CITY OF HARLINGEN
ENGINEERING DEPARTMENT

LON C. HILL BUILDING
502 E. TYLER
HARLINGEN, TEXAS 78550

CITY OF HARLINGEN STANDARD DETAILS

MARK	DATE	DESCRIPTION
DD	15-DEC-19	DESIGN DEVELOPMENT
IR	20-DEC-19	INTERNAL REVIEW
ER	28-JAN-20	EXTERNAL REVIEW
PUB	18-FEB-20	PUBLISHED
REV	09-SEPT-22	REVISED

PROJECT NO.:	2019-1401
DATE:	9-Sep-22
DRAWN BY:	BGS
CHECKED BY:	LV

CURB & GUTTER NOTES

1. CURB & GUTTER SHALL BE CONSTRUCTED IN CONFORMANCE WITH TXDOT SPECIFICATION 529.
2. ALL CONCRETE SHALL BE CLASS A 3,000 P.S.I.
3. ALL STEEL SHALL BE GRADE 60 fy = 60,000 P.S.I., MIN.
4. FIBER-REINFORCED CONCRETE SHALL NOT BE USED UNLESS PREVIOUSLY APPROVED BY THE CITY.
5. TRANSVERSE GROOVES ⅛" WIDE BY ½" DEEP SHALL BE MADE IN ALL CURB & GUTTER AT 10' O.C. (MAXIMUM).
6. ¾" THICK EXPANSION JOINTS SHALL BE PROVIDED AT 40'-0" CENTERS MAXIMUM WITH BITUMINOUS EXPANSIVE FIBER MATERIAL BOARD OR APPROVED EQUAL. REINFORCEMENT SHALL CONSIST OF 3-#4 DOWELS X 15" LONG SPACED AS INDICATED. #4 DOWELS SHALL BE EXTENDED ACROSS THE JOINT 9-INCHES AND THIS END SHALL BE SLEEVED WITH ENDS CAPPED.
7. WHERE NEW CURB & GUTTER JOINS EXISTING CURB & GUTTER, TRANSITION THE LAST 10' OF THE NEW TO MATCH THE OLD IN SHAPE.
8. BASE AND SUBGRADE THICKNESS UNDER CONCRETE CURB & GUTTER TO BE AS SPECIFIED IN THE PROJECT DETAILS, OR PER LOADING DESIGN CONDITIONS. BOTH THE TREATED SUBGRADE (6" MINIMUM) AND THE FLEXIBLE BASE (4" MINIMUM) SHALL EXTEND A MINIMUM OF 1' BEYOND THE BACK OF CURB.
9. AT LEAST 1' OF THE AREA BEHIND THE CURB SHALL BE BACKFILLED AND COMPACTED (MINIMUM 95% STANDARD PROCTOR DENSITY) IN ACCORDANCE WITH THE SPECIFICATIONS AS SOON AS POSSIBLE AND NO LATER THAN 48 HOURS OF REMOVAL OF FORMS (OR SOONER IN THE EVENT OF INCLEMENT WEATHER) IN ORDER TO PROTECT THE MOISTURE OF THE PAVEMENT STRUCTURE.

SHEET TITLE

CURB & GUTTER AND SIDEWALK

CONC-101

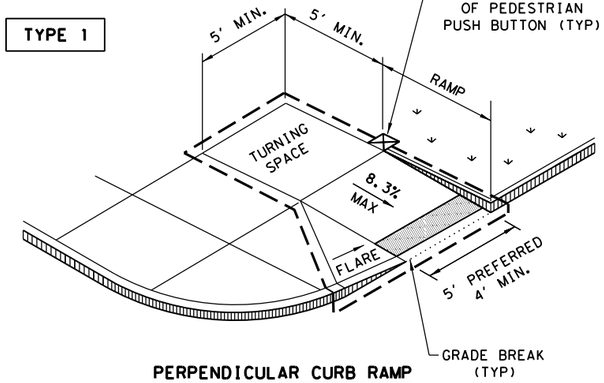
SHEET 1 OF

\\LCH5\ENG\COH_CAD_STANDARDS\CONC-101.DWG

SCALED FOR FULL-SIZE ANSI D SHEETS (22"X34")

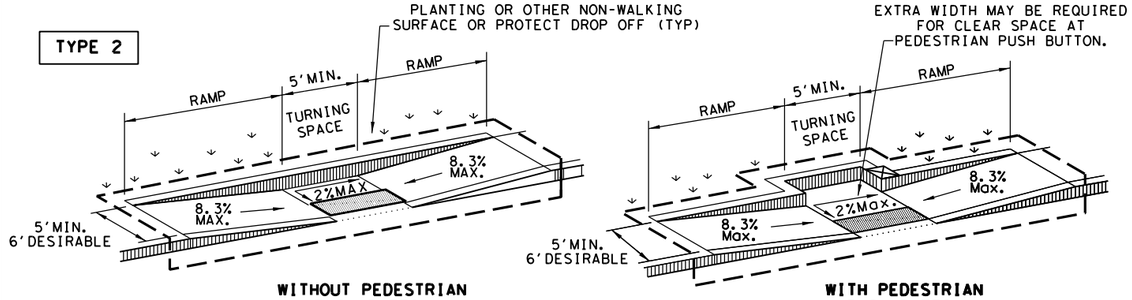
DATE:
FILE:

TYPE 1



PERPENDICULAR CURB RAMP

TYPE 2

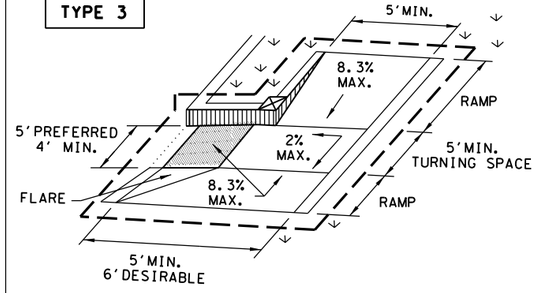


WITHOUT PEDESTRIAN PUSH BUTTON

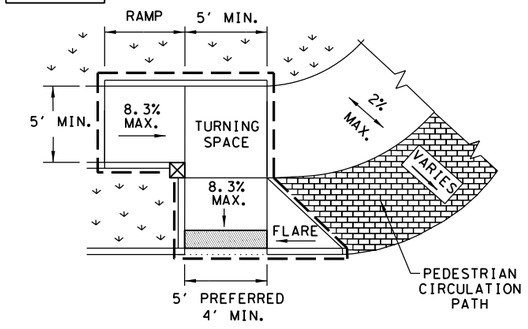
WITH PEDESTRIAN PUSH BUTTON

PARALLEL CURB RAMP

TYPE 3

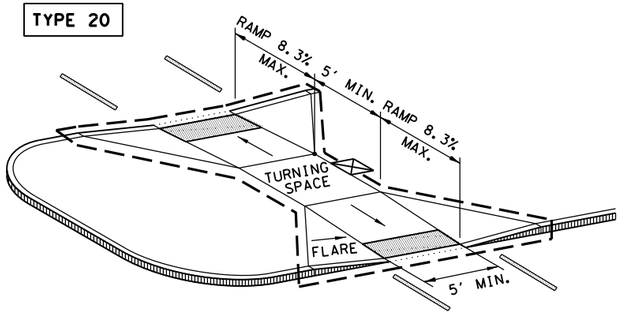


TYPE 6



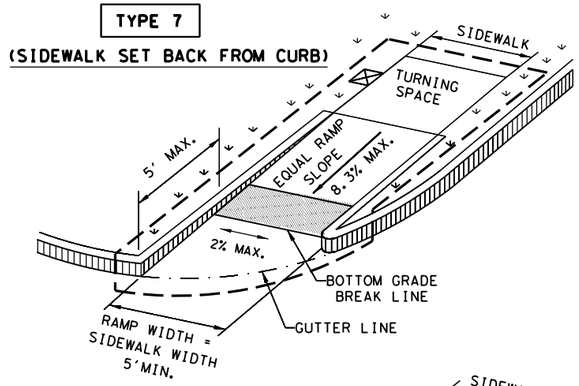
COMBINATION CURB RAMPS

TYPE 20

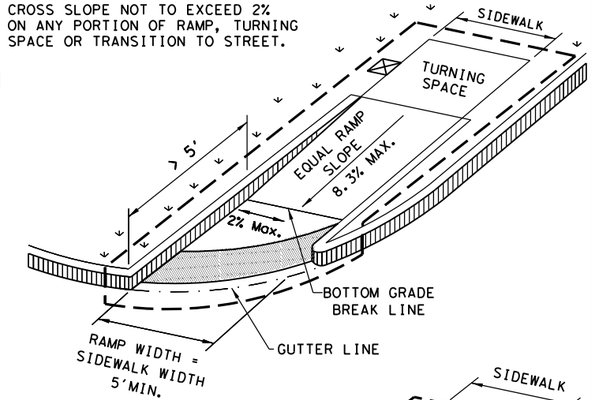


CURB RAMPS AT MEDIAN ISLANDS

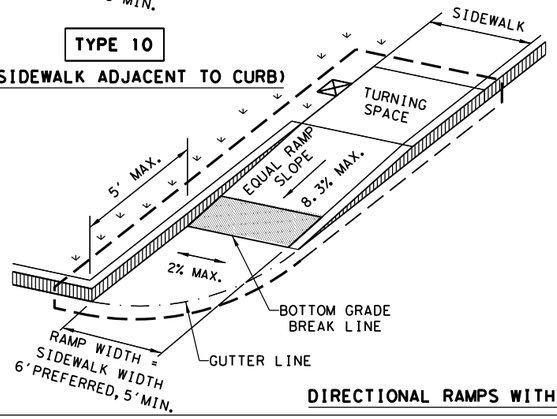
TYPE 7
(SIDEWALK SET BACK FROM CURB)



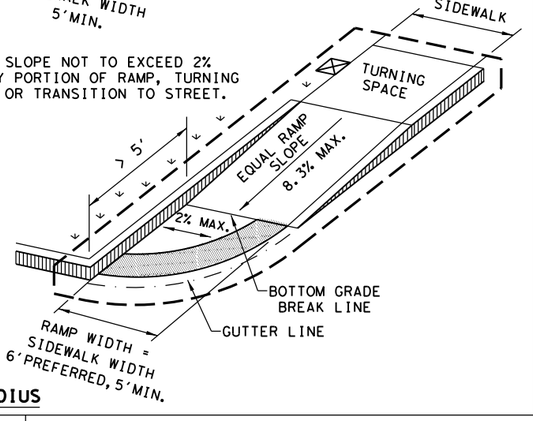
CROSS SLOPE NOT TO EXCEED 2% ON ANY PORTION OF RAMP, TURNING SPACE OR TRANSITION TO STREET.



TYPE 10
(SIDEWALK ADJACENT TO CURB)

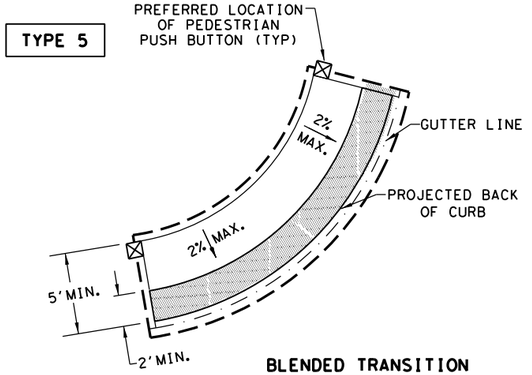


CROSS SLOPE NOT TO EXCEED 2% ON ANY PORTION OF RAMP, TURNING SPACE OR TRANSITION TO STREET.



DIRECTIONAL RAMPS WITHIN RADIUS

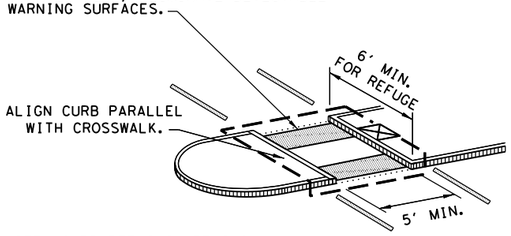
TYPE 5



BLENDED TRANSITION
(FLUSH LANDING)

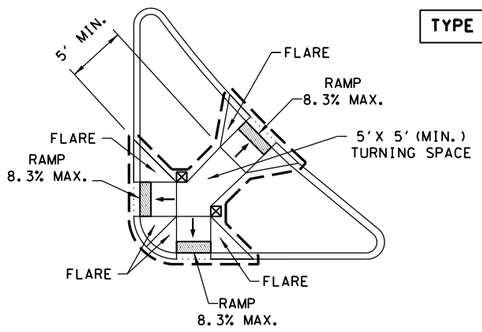
TYPE 21

INSTALL DETECTABLE WARNING SURFACE AT EACH END OF THE CUT-THROUGH RAMP WITH A MINIMUM 2' USUAL SIDEWALK SURFACE BETWEEN. IF MEDIAN IS LESS THAN 6' WIDE, ELIMINATE DETECTABLE WARNING SURFACES.



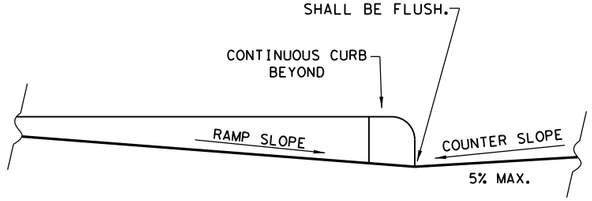
NOTE: CURB DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.

TYPE 22



COMBINATION ISLAND RAMPS

BOTTOM GRADE BREAK OF CURB RAMP WILL NORMALLY BE AT GUTTER LINE. SURFACE SLOPES AT GRADE BREAKS SHALL BE FLUSH.



TYPICAL SECTION OF PERPENDICULAR CURB RAMP AT CONNECTION TO ROADWAY

NOTES / LEGEND:

SEE GENERAL NOTES ON SHEET 2 OF 4 FOR MORE INFORMATION.

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.

DETECTABLE WARNING SURFACE

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.

GUTTER LINE

GRADE BREAK

RAMP LIMITS OF PAYMENT

SHEET 1 OF 4

Texas Department of Transportation

Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
REVISED 08,2005	DIST	COUNTY		SHEET NO.
REVISED 06,2012				
REVISED 01,2018				

DATE:
FILE:

GENERAL NOTES

CURB RAMPS

1. Install a curb ramp or blended transition at each pedestrian street crossing.
2. All slopes shown are maximum allowable. Cross slopes of 1.5% and lesser running should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
3. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
4. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 6' sidewalk width is desirable. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances. 5'x 5' passing areas at intervals not to exceed 200' are required.
5. Turning Spaces shall be 5'x 5' minimum. Cross slope shall be maximum 2%.
6. Clear space at the bottom of curb ramps shall be a minimum of 4'x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
7. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
8. Additional information on curb ramp location, design, light reflective value and texture may be found in the latest draft of the Proposed Guidelines for Pedestrian Facilities in the Public Right of Way (PROWAG) as published by the U.S. Architectural and Transportation Barriers Compliance Board (Access Board).
9. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.
10. Small channelization islands, which do not provide a minimum 5'x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
11. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall align with theoretical crosswalks unless otherwise directed.
12. Provide curb ramps to connect the pedestrian access route at each pedestrian street crossing. Handrails are not required on curb ramps.
13. Curb ramps and landings shall be constructed and paid for in accordance with Item 531 "Sidewalks".
14. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
15. Furnish and install No. 3 reinforcing steel bars at 18" o.c. both ways, unless otherwise directed.
16. Provide a smooth transition where the curb ramps connect to the street.
17. Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
18. Existing features that comply with applicalble standards may remain in place unless otherwise shown on the plans.

DETECTABLE WARNING MATERIAL

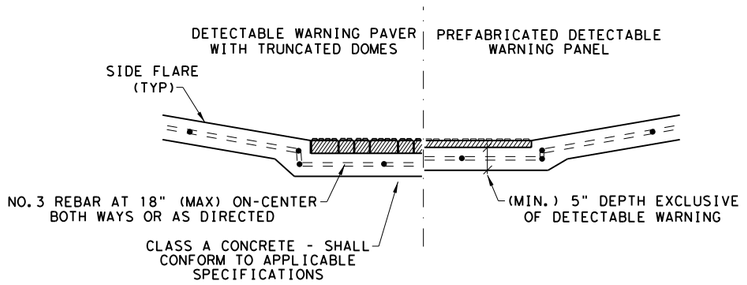
19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
20. Detectable Warning Materials must meet TxDOT Departmental Materials Specification DMS 4350 and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
21. Detectable warning surfaces must be firm, stable and slip resistant.
22. Detectable warning surfaces shall be a minimum of 24 inches in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
23. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb and neither end of that edge is greater than 5 feet from the back of curb. Detectable warning surfaces may be curved along the corner radius.
24. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.

DETECTABLE WARNING PAVERS (IF USED)

25. Furnish detectable warning paver units meeting all requirements of ASTM C-936, C-33. Lay in a two by two unit basket weave pattern or as directed.
26. Lay full-size units first followed by closure units consisting of at least 25 percent (25%) of a full unit. Cut detectable warning paver units using a power saw.

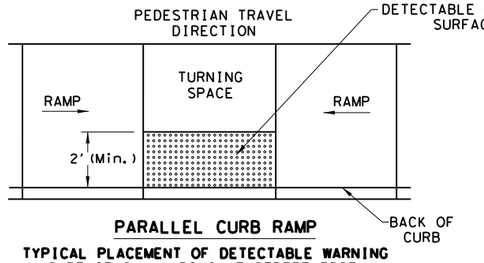
SIDEWALKS

27. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within unobstructed reach range specified in PROWAG section R406.
28. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
29. Street grades and cross slopes shall be as shown elsewhere in the plans.
30. Changes in level greater than 1/4 inch are not permitted.
31. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than five percent (5%) must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with PROWAG R409.
32. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.
33. Driveways and turnouts shall be constructed and paid for in accordance with Item "Intersections, Driveways and Turnouts". Sidewalks shall be constructed and paid for in accordance with Item, "Sidewalks".
34. Sidewalk details are shown elsewhere in the plans.

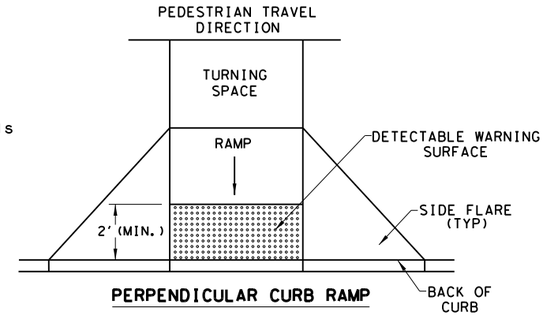


SECTION VIEW DETAIL
CURB RAMP AT DETECTIBLE WARNINGS

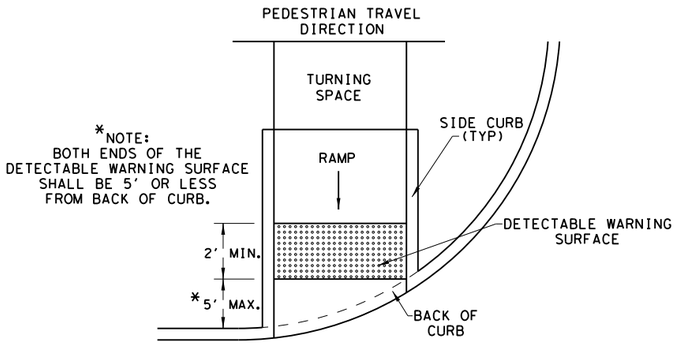
DETECTABLE WARNING SURFACE DETAILS



PARALLEL CURB RAMP
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING AT STREET EDGE.



PERPENDICULAR CURB RAMP
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.



DIRECTIONAL CURB RAMP
TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.

Texas Department of Transportation

Design Division Standard

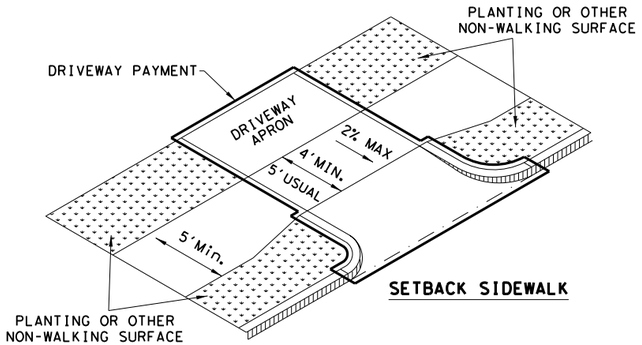
PEDESTRIAN FACILITIES CURB RAMPS

PED-18

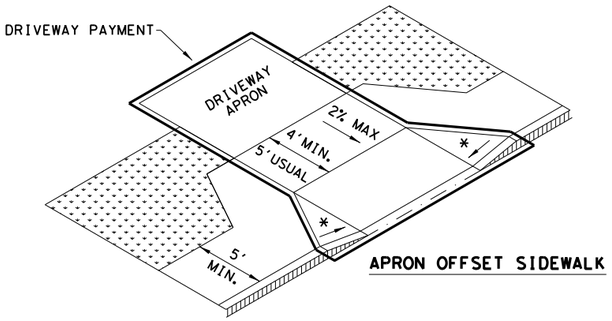
FILE: ped18	DN: TxDOT		DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB		HIGHWAY
REVISIONS					
REVISED 08,2005	DIST	COUNTY			SHEET NO.
REVISED 06,2012					
REVISED 01,2018					

DATE:
FILE:

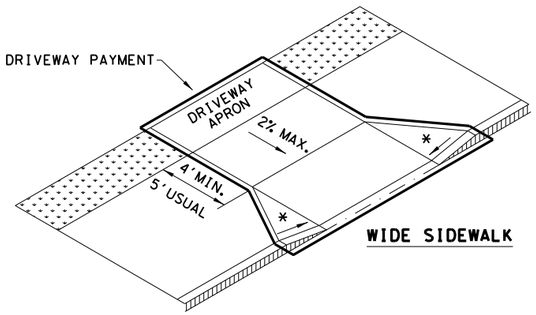
SIDEWALK TREATMENT AT DRIVEWAYS



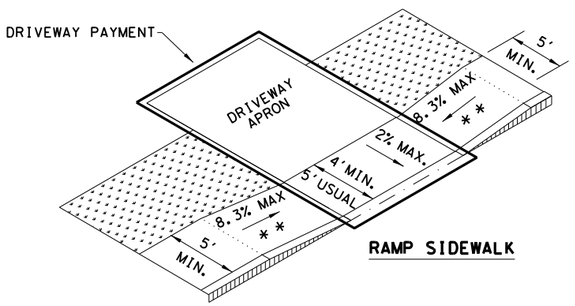
SETBACK SIDEWALK



APRON OFFSET SIDEWALK



WIDE SIDEWALK

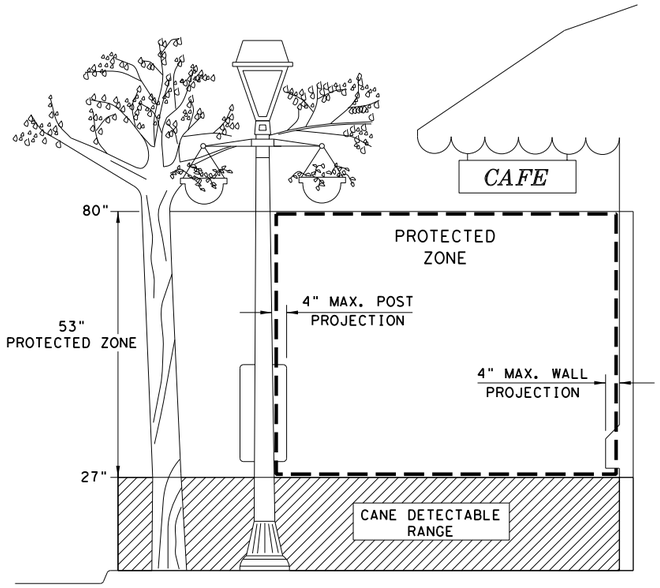


RAMP SIDEWALK

NOTES:

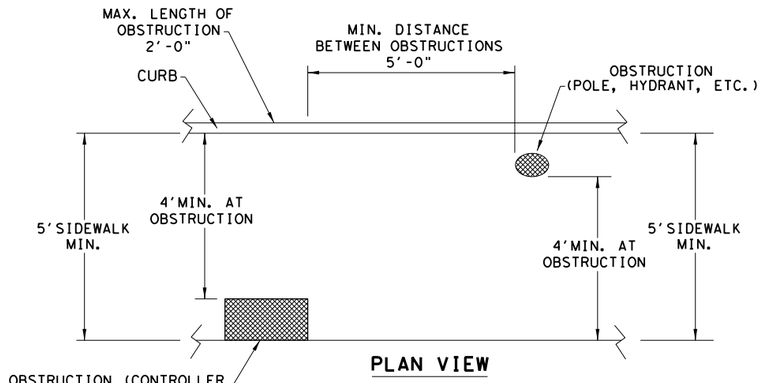
* WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.

* * IF CURB HEIGHT IS GREATER THAN 6 INCHES, USE GRADE LESS THAN OR EQUAL TO 5%. HANDRAIL AND DETECTABLE WARNING ARE NOT REQUIRED.



PROTECTED ZONE

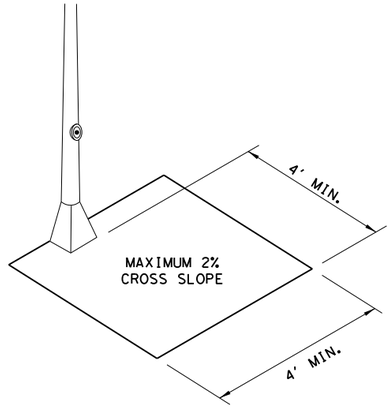
NOTE: IN PEDESTRIAN CIRCULATION AREA, MAXIMUM 4" PROJECTION FOR POST OR WALL MOUNTED OBJECTS BETWEEN 27" AND 80" ABOVE THE SURFACE.



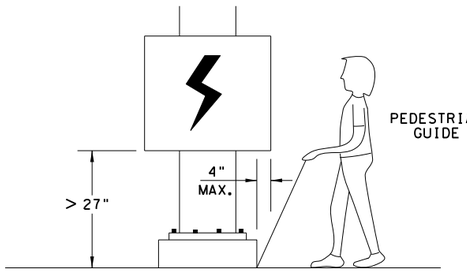
PLAN VIEW

PLACEMENT OF STREET FIXTURES

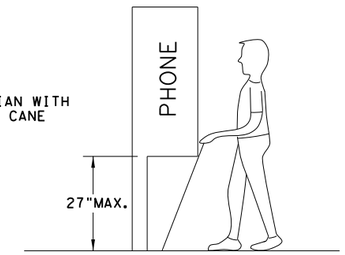
NOTE: ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' X 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.



CLEAR SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON



WHEN AN OBSTRUCTION OF A HEIGHT GREATER THAN 27" FROM THE SURFACE WOULD CREATE A PROTRUSION OF MORE THAN 4" INTO THE PEDESTRIAN CIRCULATION AREA, CONSTRUCT ADDITIONAL CURB OR FOUNDATION AT THE BOTTOM TO PROVIDE A MAXIMUM 4" OVERHANG.



PROTRUDING OBJECTS OF A HEIGHT ≤ 27" ARE DETECTABLE BY CANE AND DO NOT REQUIRE ADDITIONAL TREATMENT.

DETECTION BARRIER FOR VERTICAL CLEARANCE < 80"

Texas Department of Transportation

Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

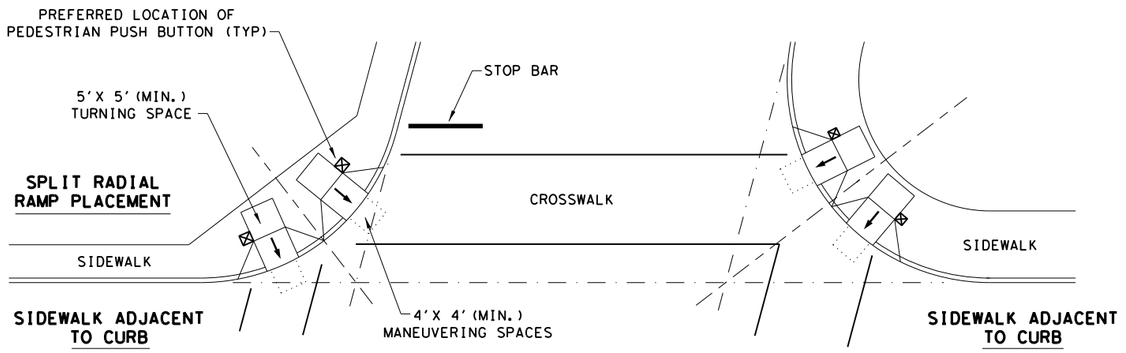
PED-18

FILE: ped18	DN: TxDOT	DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS REVISED 08,2005 REVISED 06,2012 REVISED 01,2018	DIST	COUNTY		SHEET NO.

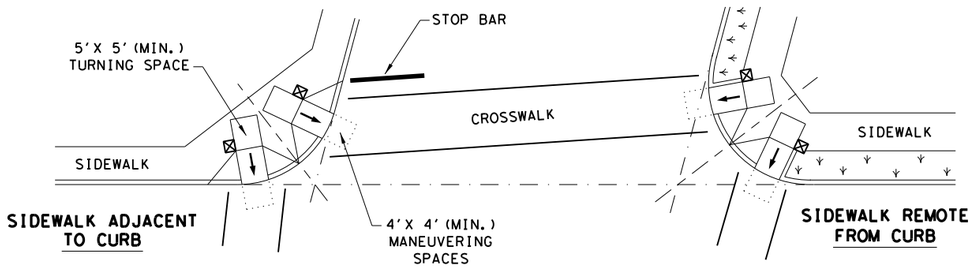
DATE:
FILE:

TYPICAL CROSSING LAYOUTS

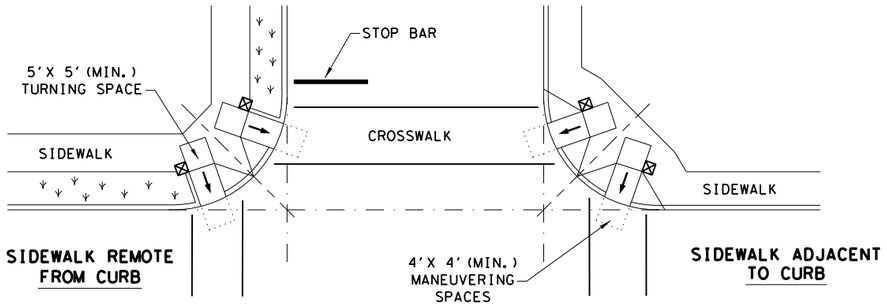
SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS



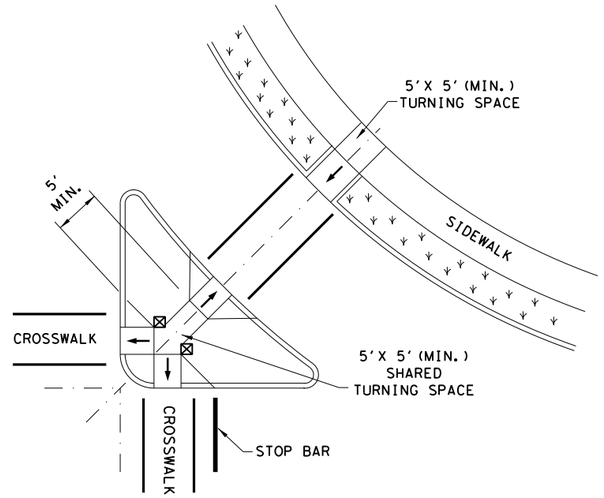
SKEWED INTERSECTION WITH "LARGE" RADIUS



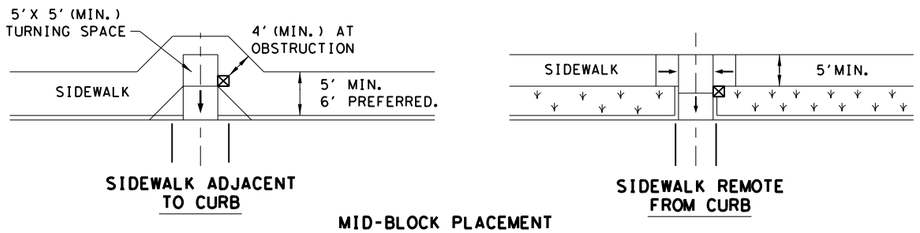
SKEWED INTERSECTION WITH "SMALL" RADIUS



NORMAL INTERSECTION WITH "SMALL" RADIUS



AT INTERSECTION
W/FREE RIGHT TURN & ISLAND



MID-BLOCK PLACEMENT
PERPENDICULAR RAMPS

LEGEND:

SHOWS DOWNWARD SLOPE. →

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON (IF APPLICABLE). ☒

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.

Texas Department of Transportation

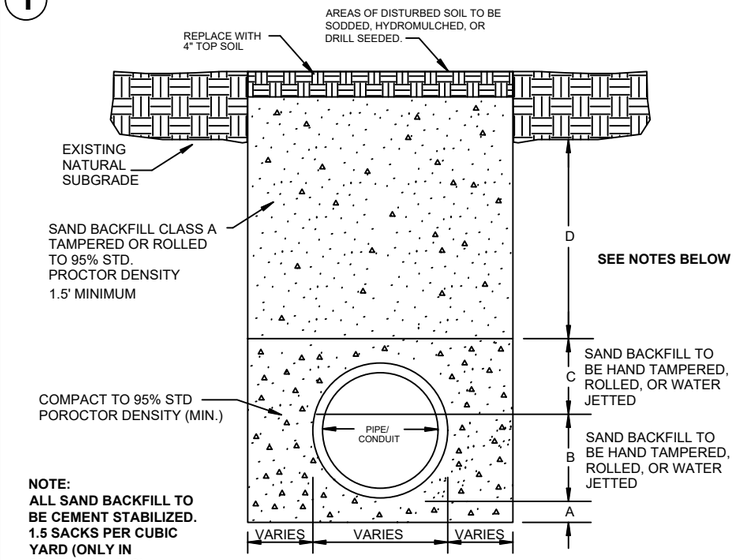
Design Division Standard

PEDESTRIAN FACILITIES CURB RAMPS

PED-18

FILE: ped18	DN: TxDOT		DW: VP	CK: KM	CK: PK & JG
© TxDOT: MARCH, 2002	CONT	SECT	JOB		HIGHWAY
REVISIONS					
REVISED 08, 2005	DIST	COUNTY			SHEET NO.
REVISED 06, 2012					
REVISED 01, 2018					

1

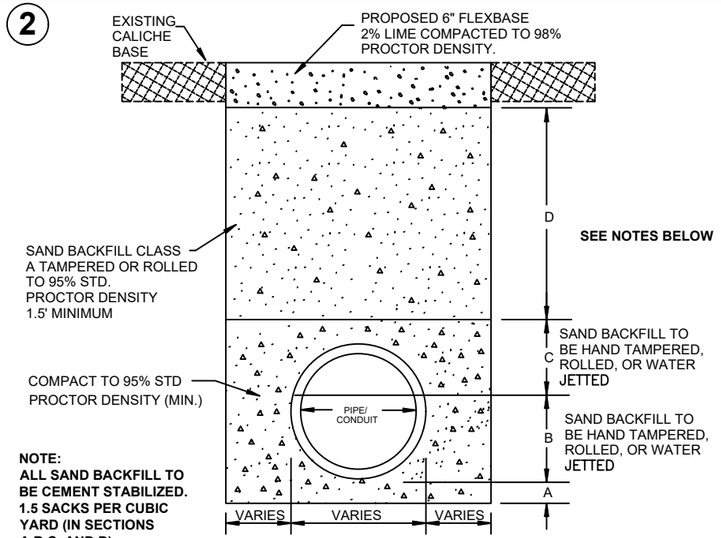


NOTE:
ALL SAND BACKFILL TO BE CEMENT STABILIZED. 1.5 SACKS PER CUBIC YARD (ONLY IN SECTIONS A,B,C).

NATURAL GROUND SURFACE

STANDARD ALLEY PIPE BEDDING

2

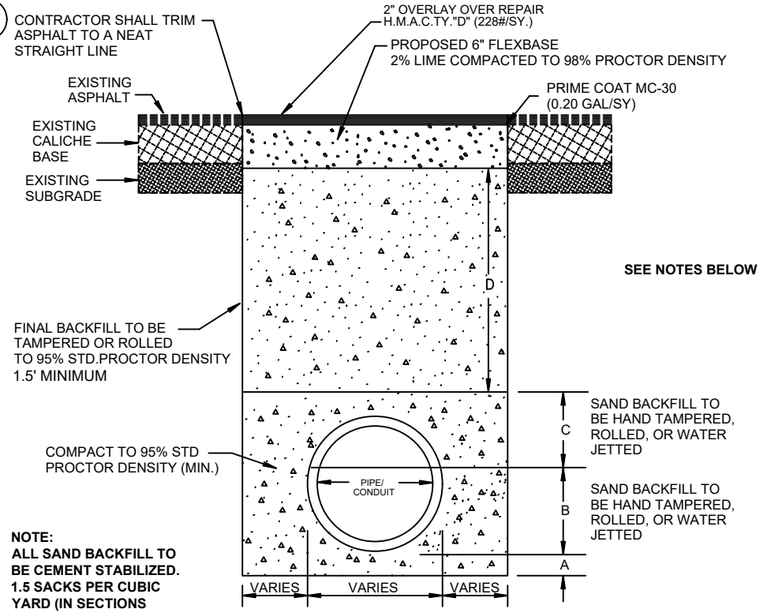


NOTE:
ALL SAND BACKFILL TO BE CEMENT STABILIZED. 1.5 SACKS PER CUBIC YARD (IN SECTIONS A,B,C, AND D).

CALICHE SURFACE

STANDARD ALLEY PIPE BEDDING

3



NOTE:
ALL SAND BACKFILL TO BE CEMENT STABILIZED. 1.5 SACKS PER CUBIC YARD (IN SECTIONS A,B,C, AND D).

ASPHALT SURFACE

STANDARD ALLEY PIPE BEDDING

NOTES:

A. SAND BEDDING PLACED BEFORE PIPE IS LAID UP TO FLOW LINE OF PIPE. (MIN. THICKNESS = 3")

B. SAND BACKFILL PLACED AFTER PIPE IS LAID FROM BOTTOM OF PIPE TO SPRING LINE OF PIPE. (4" LIFTS, HAND TAMPED)

C. SAND BACKFILL PLACED FROM SPRING LINE OF PIPE TO 3" ABOVE TOP OF PIPE (6" LIFTS, HAND TAMPED)

D. SAND BACKFILL (6" LIFTS, MECHANICAL COMPACTION)

NOTE REGARDING CEMENT STABILIZED SAND BACKFILL: CEMENT STABILIZED SAND IS TO BE USED FOR TRENCHES WITHIN EXISTING ROADWAY SECTIONS OR AS SPECIFIED BY THE ENGINEER OR PLANS.

NOTE:
THE THICKNESS OF EXISTING ASPHALT,FLEXBASE, AND SUBGRADE VARIES.

GENERAL NOTES:

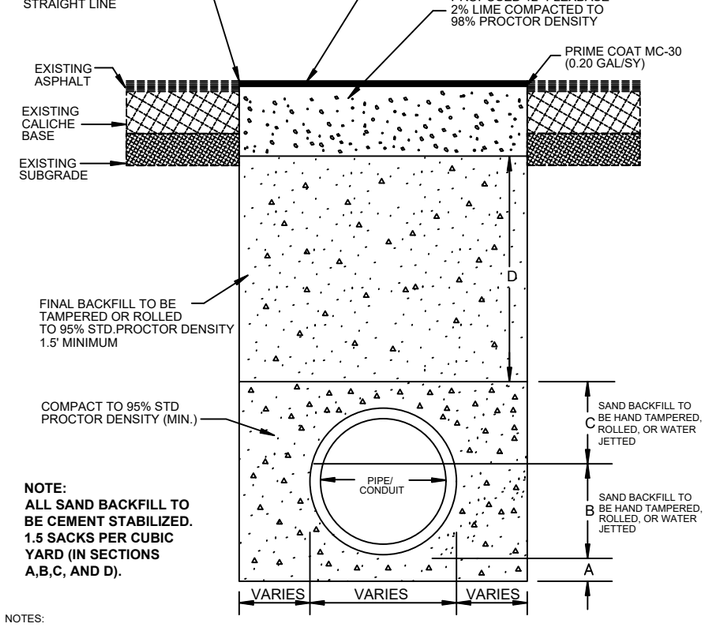
ANY TREANCHING OR EXCAVATING DONE ON CITY STREETS OR R.O.W. NEEDS TO CONTACT THE ENGINEERING DEPARTMENT

* HOT MIX ASPHALTIC CONCRETE SHALL BE UTILIZED FOR REPAIR OF AREAS 300 S.F. OR GREATER.

ALL SAND TO BE ARROYO SAND (200 WASH 100% PASSING)

AREAS OF DISTURBED SOIL NOT WITH IN THE STREET OR ALLEY WAY TO BE SODDED, HYDROMULCHED, OR DRILL SEEDED.

4



NOTE:
ALL SAND BACKFILL TO BE CEMENT STABILIZED. 1.5 SACKS PER CUBIC YARD (IN SECTIONS A,B,C, AND D).

NOTES:

A. SAND BEDDING PLACED BEFORE PIPE IS LAID UP TO FLOW LINE OF PIPE. (MIN. THICKNESS = 3")

B. SAND BACKFILL PLACED AFTER PIPE IS LAID FROM BOTTOM OF PIPE TO SPRING LINE OF PIPE. (4" LIFTS, HAND TAMPED)

C. SAND BACKFILL PLACED FROM SPRING LINE OF PIPE TO 3" ABOVE TOP OF PIPE (6" LIFTS, HAND TAMPED)

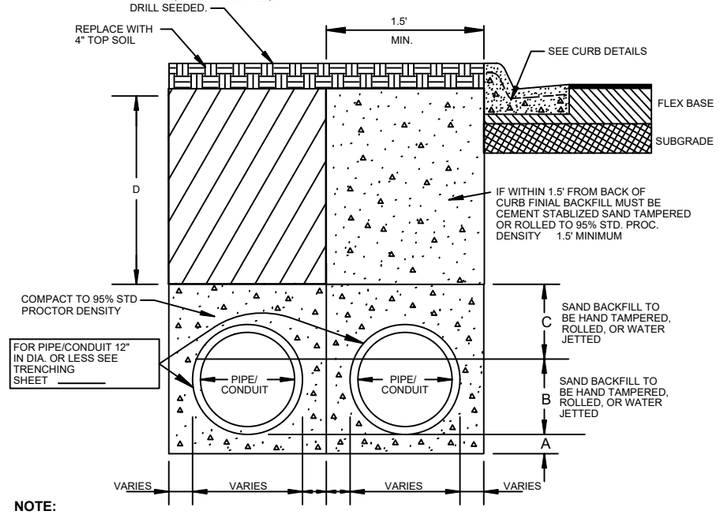
D. SAND BACKFILL (6" LIFTS, MECHANICAL COMPACTION)

GENERAL NOTE:
ANY TREANCHING OR EXCAVATING DONE ON CITY STREETS OR R.O.W. NEEDS TO CONTACT THE ENGINEERING DEPARTMENT

* HOT MIX ASPHALTIC CONCRETE SHALL BE UTILIZED FOR REPAIR OF AREAS 300 S.F.OR GREATER.

STANDARD STREET PIPE BEDDING

5



NOTE:
ALL SAND BACKFILL TO BE CEMENT STABILIZED. 1.5 SACKS PER CUBIC YARD (IN SECTIONS A,B,C, AND D).

NOTES:

A. SAND BEDDING PLACED BEFORE PIPE IS LAID UP TO FLOW LINE OF PIPE. (MIN. THICKNESS = 3")

B. SAND BACKFILL PLACED AFTER PIPE IS LAID FROM BOTTOM OF PIPE TO SPRING LINE OF PIPE. (4" LIFTS, HAND TAMPED)

C. SAND BACKFILL PLACED FROM SPRING LINE OF PIPE TO 3" ABOVE TOP OF PIPE (6" LIFTS, HAND TAMPED)

D. EARTH BACKFILL (12" LIFTS, MECHANICAL COMPACTION)

GENERAL NOTE:

ANY TREANCHING OR EXCAVATING DONE ON CITY STREETS OR R.O.W. NEEDS TO CONTACT THE ENGINEERING DEPARTMENT

STANDARD PIPE BEDDING BEHIND CURB

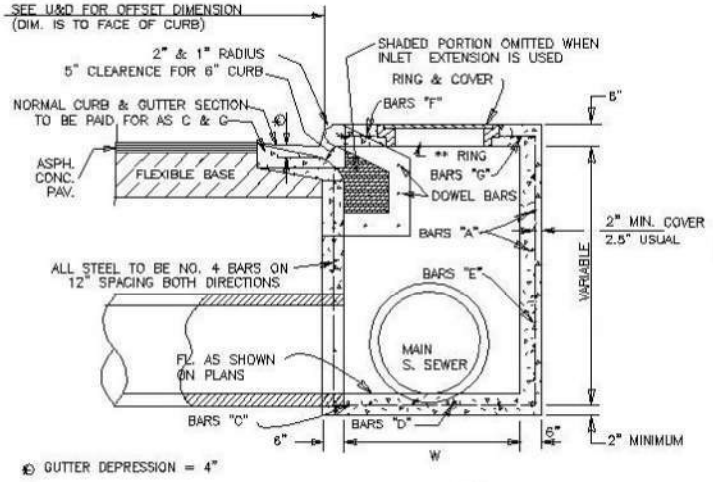
CITY OF HARLINGEN TEXAS

ENGINEERING DEPARTMENT

STANDARD BACKFILL REQUIREMENTS

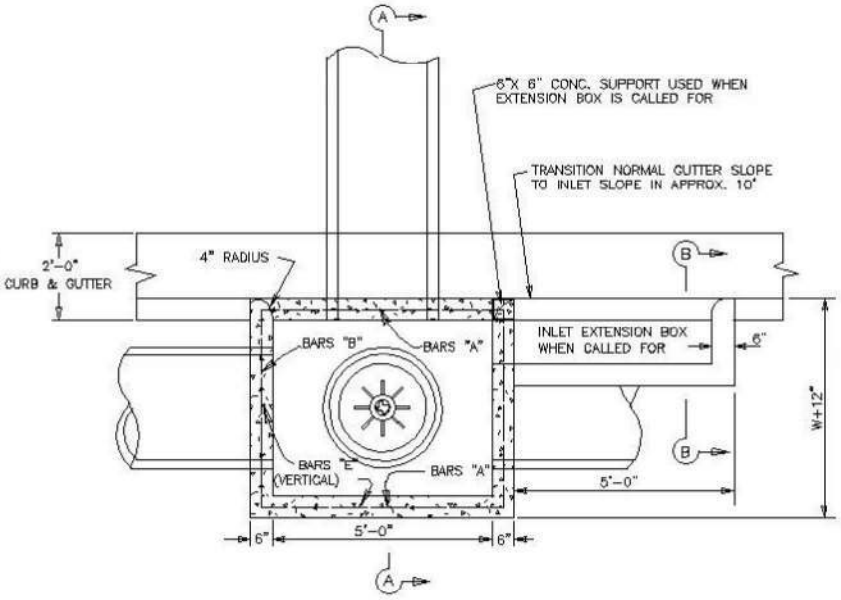
NOT TO SCALE

PROJECT NO.		FILE NO.	SHEET NO.
		city_backfill.dwg	1
STATE	COUNTY	MONTH	YEAR
TEXAS	CAMERON	AUGUST	2016



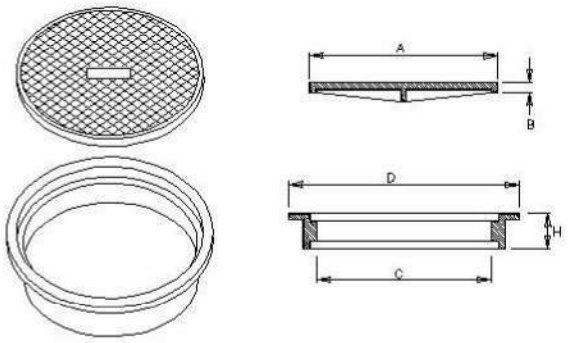
INLET TY "A"
To be used with Curb & Gutter

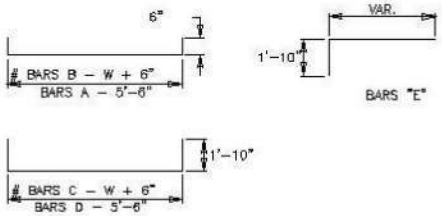
SECTION A–A



PLAN

INLET TYPE	W	MAX PIPE SIZE ALLOW (DIA.)
A	3'–0"	24"
A–1	4'–0"	36"
A–2	5'–0"	48"
A–3	6'–0"	60"



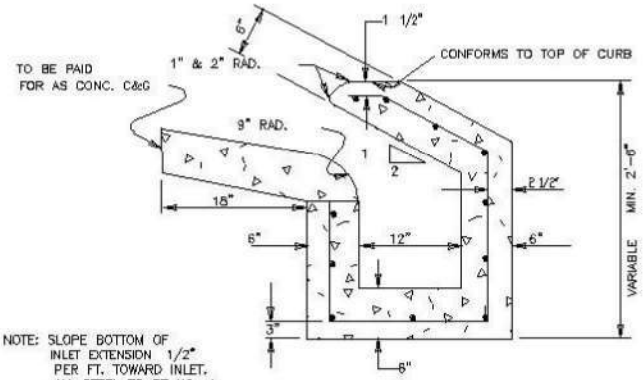


REINFORCING STEEL DETAILS

LID			RING				TOTAL WT.
"A"	"B"	WEIGHT	"C"	"D"	"H"	WEIGHT	
25 5/8"	1"	125 lbs. (min)	24	32	5	185 lbs.	310 lbs.

RING & COVER DETAILS

NOTE: RINGS AND COVERS OF SLIGHTLY DIFFERENT DIMENSIONS BUT APPROXIMATELY THE SAME WEIGHT MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER. RING AND COVER TO BE SUBSIDIARY.

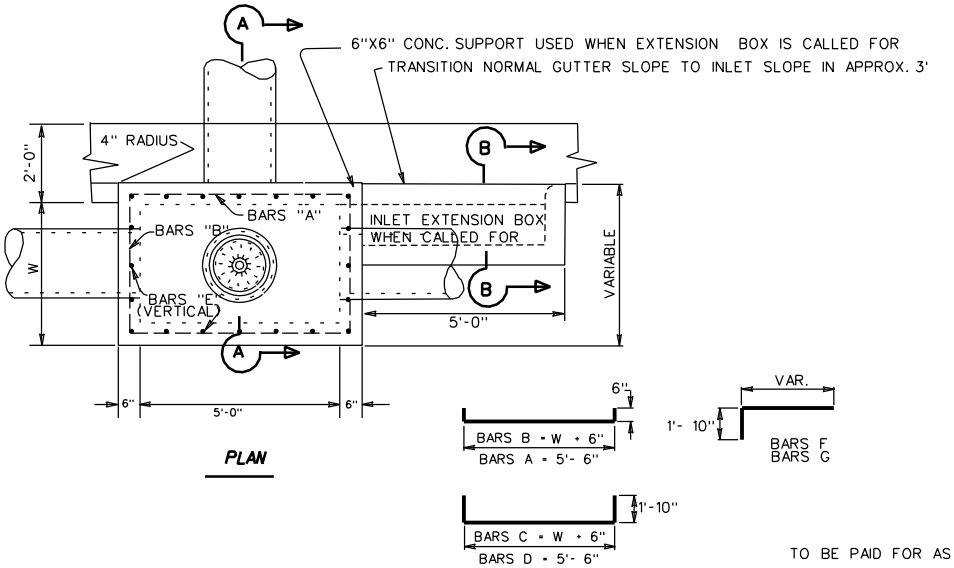


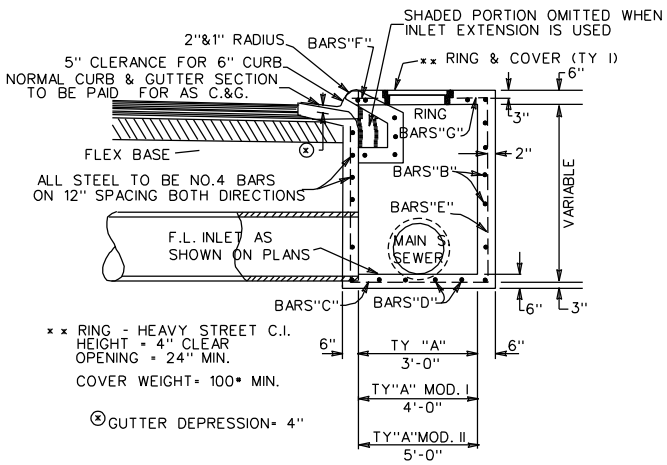
NOTE: SLOPE BOTTOM OF INLET EXTENSION 1/2" PER FT. TOWARD INLET. ALL STEEL TO BE NO. 4 BARS ON 12" SPACING IN BOTH DIRECTIONS.

SECTION B–B
INLET EXTENSION

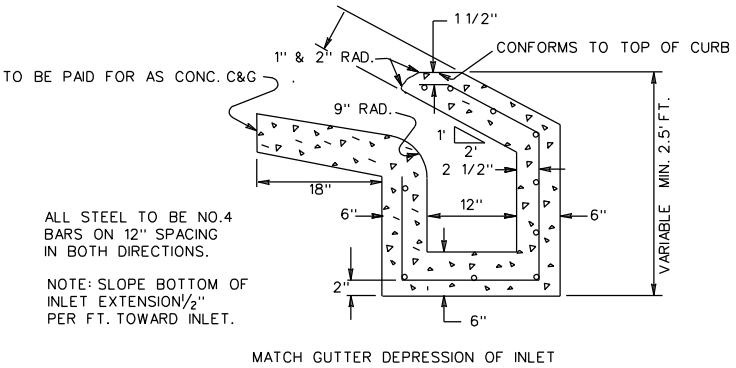
CITY OF HARLINGEN TEXAS

TY "A" INLET DETAILS



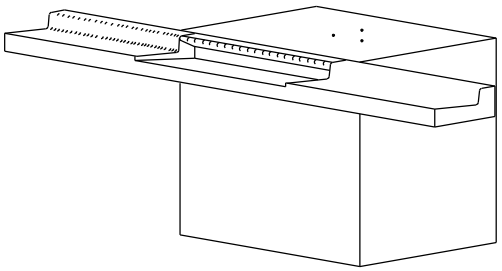


SECTION A-A
INLET TYPE "A"
TO BE USED WITH CURB & GUTTER



SECTION B-B
INLET EXTENSION

NOTE: STEPS WILL BE REQUIRED AS PER STEP DETAILS.



INLETS TY"A"
INLET AND RING & COVER DETAIL
INCLUDES RING & COVER (NON-PAY)

CITY OF HARLINGEN TEXAS

TYPE "A" INLET

SCALE: N.T.S.

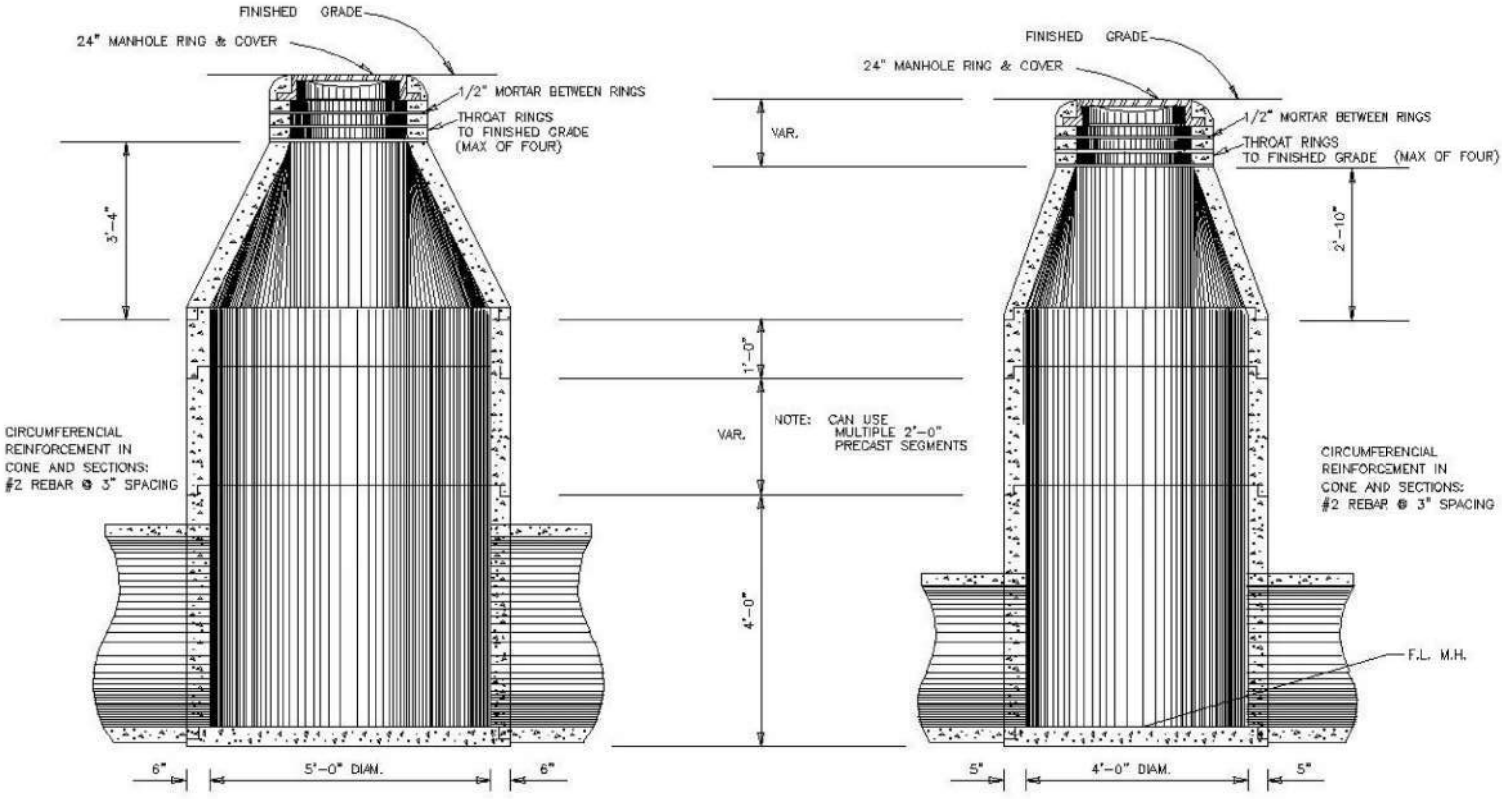
DRAWN: B.G.S.

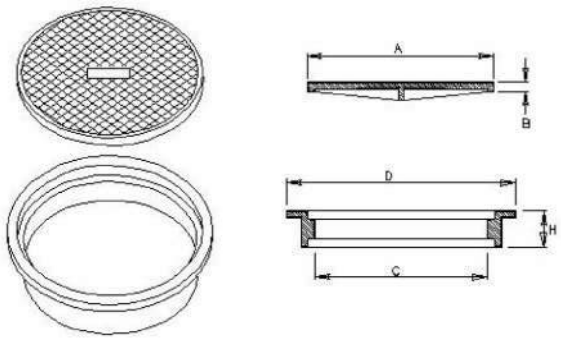
DATE: SEPT. 2000

CITY OF HARLINGEN
HARLINGEN, TEXAS
ENGINEERING DEPARTMENT

SHEET _____

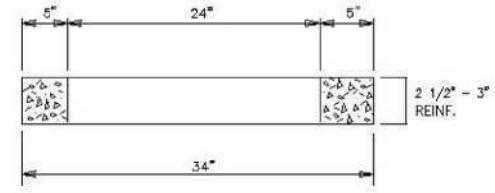
...\rm\con-standards2d.dgn Mar. 08, 2007 09:03:16

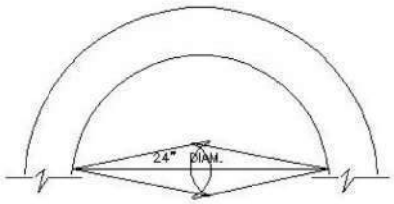




LID			RING		
"A"	"B"	WEIGHT	"C"	"D"	"H"
2'-2"	1"	174 lbs. (min)	2'-0"	2'-7 1/2"	5"

RING & COVER DETAILS
(FOR MANHOLE TY "A" AND "A1")
(SUBSIDIARY)





REINF. CONC. THROAT RING

GENERAL NOTES:

FOR MANHOLES LOCATED WITHIN PAVED PORTIONS OF THE ROADWAY, THE COVER SHALL BE OF A TYPE THAT CAN BE BOLTED TO THE RING.

RINGS AND COVERS OF SLIGHTLY DIFFERENT DIMENSIONS BUT APPROXIMATELY THE SAME WEIGHT MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.

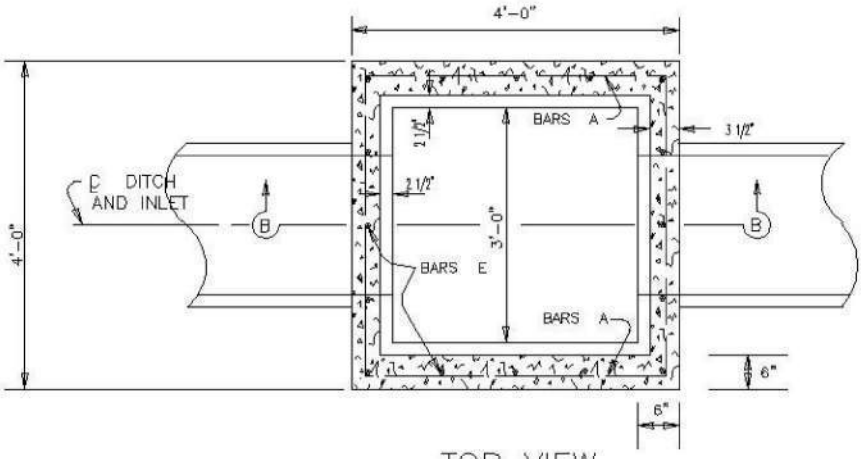
CONCRETE STRENGTH: 4,000 P.S.I. MIN.

THE CONTRACTOR MAY WITH THE APPROVAL OF THE ENGINEER FURNISH MANHOLES OF EQUIVALENT STRUCTURAL DESIGN.

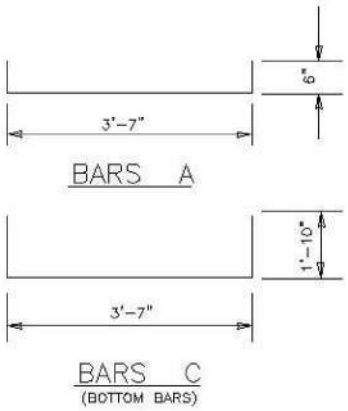
ALTERNATE DESIGN DRAWINGS BEARING THE SEAL OF A REGISTERED ENGINEER WILL BE ACCEPTABLE FOR PRECAST CONSTRUCTION OF MANHOLES.

CITY OF HARLINGEN
TEXAS

TY "A" & "A-1"
MANHOLE (COMPLETE)

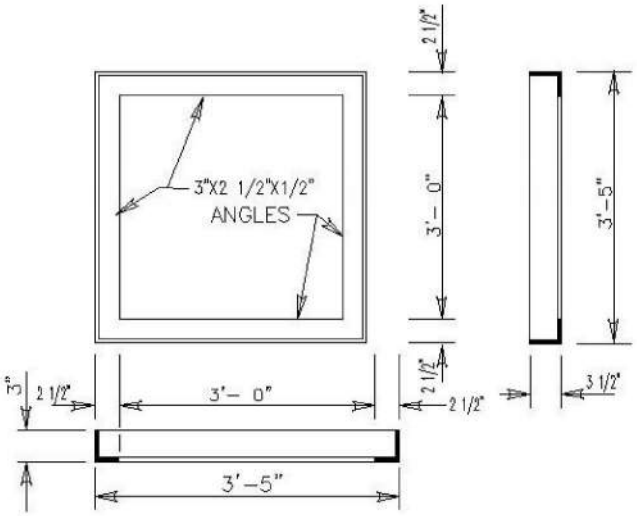


TOP VIEW



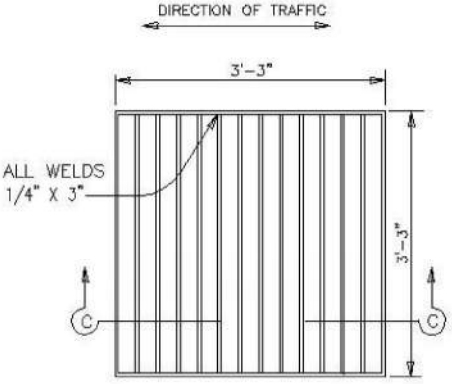
REINFORCING STEEL DETAILS

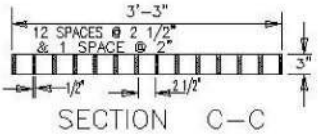
NOTE: ALL STEEL TO BE NO. 4 BARS ON 12" SPACING IN BOTH DIRECTIONS



FRAME DETAIL

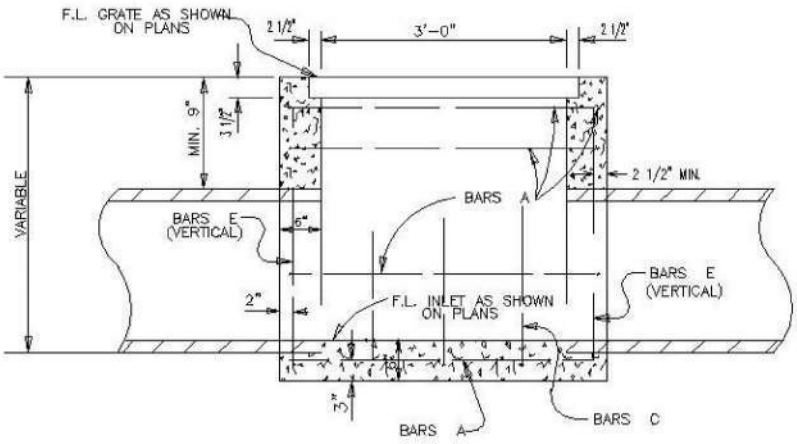
FRAME INLET GRATE TO BE SUBSIDIARY





SECTION C–C

WELDED STEEL INLET GRATE



SECTION B–B
INLET TY "C"

GENERAL NOTES:
TY "C" INLET TO BE USED FOR PIPES LESS OR EQUAL TO 24"

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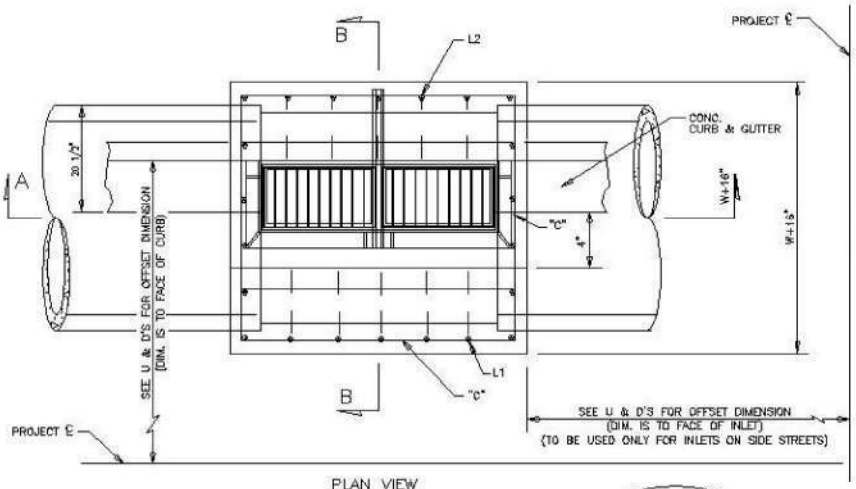
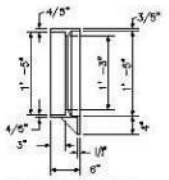
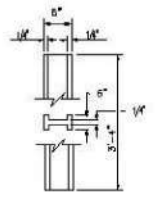
TY "C" INLET DETAILS



PLAN VIEW

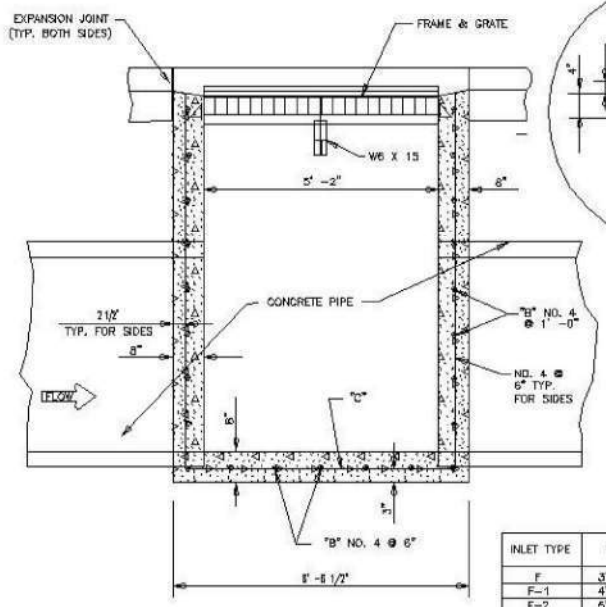


FRAME SECTION

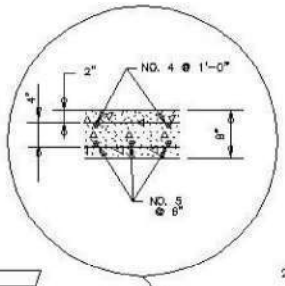


I-BEAM DETAILS
W 6 X 15

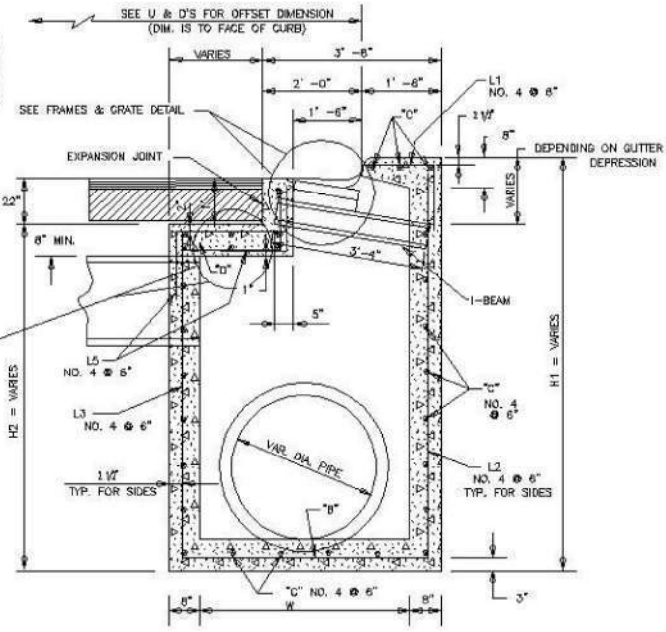
NOTE: ALL REINFORCEMENT BARS SHALL BE GRADE 60.



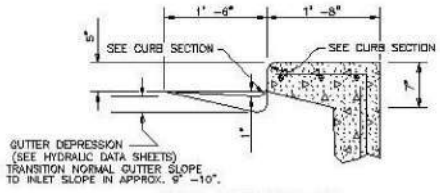
SECTION A-A



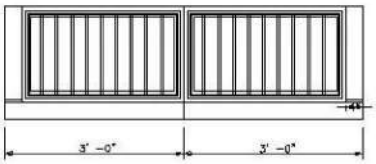
INLET TYPE	W	MAX PIPE SIZE ALLOW (DIA.)
F	3'-0"	24"
F-1	4'-0"	36"
F-2	5'-0"	48"
F-3	6'-0"	60"



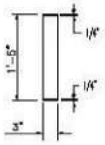
SECTION B-B



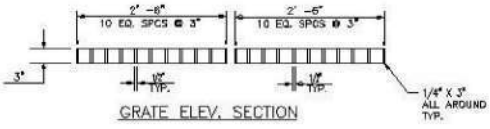
CURB SECTION DETAIL



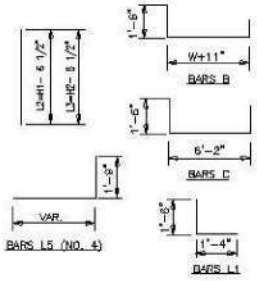
FRAMES AND GRATE TOP VIEW
TO BE SUBSIDIARY TO INLET ITEM



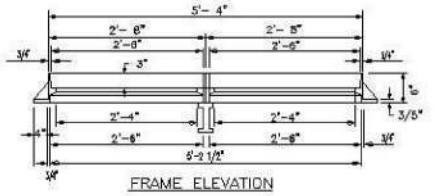
GRATE SECTION



GRATE ELEV. SECTION



REINFORCING STEEL DETAILS



FRAME ELEVATION

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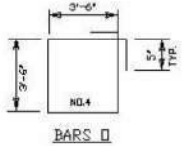
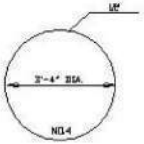
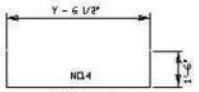
TY "F" INLET DETAILS



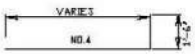
BARS D



CONCENTRIC BAR

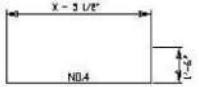


BARS C

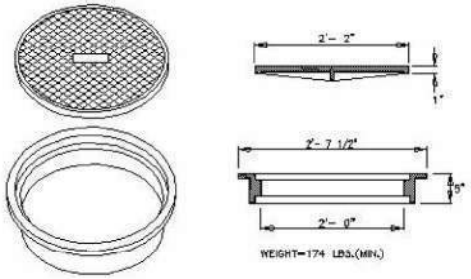


BARS L_1

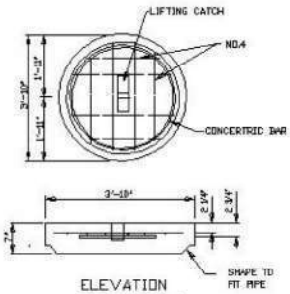
BARS L_2



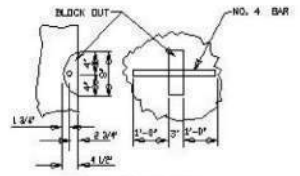
BARS B



RING & COVER DETAILS (STEEL)
(SUBSIDIARY)

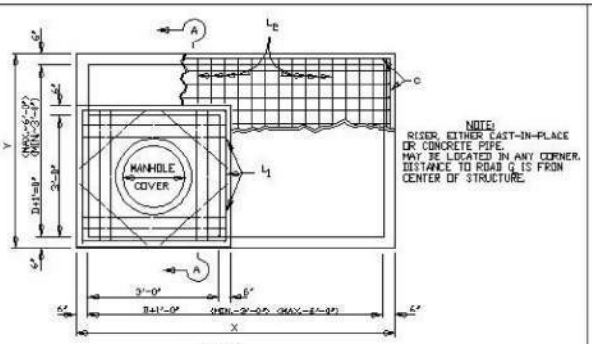


ELEVATION

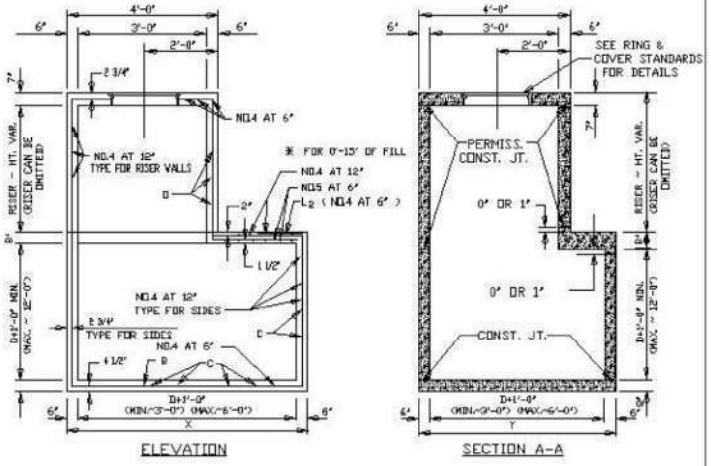


LIFTING CATCH

CONCRETE PIPE RISER COVER
OPTIONAL PRECAST CONCRETE LIFT-OFF COVER
(SUBSIDIARY)



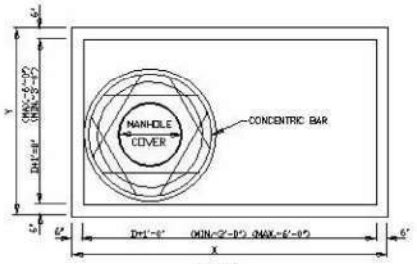
PLAN



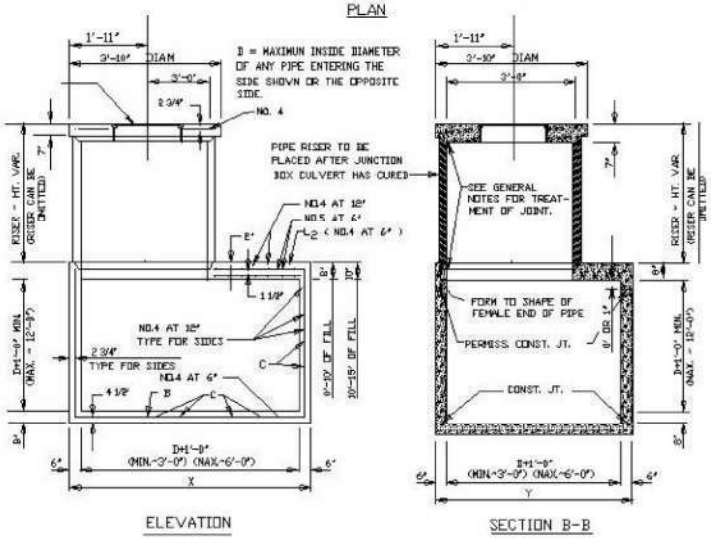
ELEVATION

SECTION A-A

MANHOLE WITH CAST-IN-PLACE RISER



PLAN



ELEVATION

SECTION B-B

OPTIONAL MANHOLE WITH PIPE RISER

GENERAL NOTES

UNLESS OTHERWISE SHOWN IF THE PLANS. PAYMENT WILL BE MADE FOR EACH MANHOLE OF THE TYPE M.

EXPOSED EDGES SHALL BE CHAMFERED 3/4".

ALTERNATE DESIGN DRAWINGS BEARING THE SEAL OF A REGISTERED PROFESSIONAL ENGINEER WILL BE ACCEPTABLE FOR PRECAST CONSTRUCTION OF MANHOLES

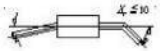
SHOP DRAWINGS WILL NOT BE REQUIRED.

THE CONTRACTOR MAY WITH THE APPROVAL OF THE ENGINEER FURNISH MANHOLES OF EQUIVALENT STRUCTURAL DESIGN.

IN AREAS OF CONFLICT BETWEEN REINFORCING STEEL. BLOCK-OUTS PIPES, ANCHOR BOLTS OR OTHER REINFORCING STEEL. THE REINFORCEMENT SHALL BE BENT OR ADJUSTED TO CLEAR AS DIRECTED BY THE ENGINEER.

THE RISER MAY BE CONSTRUCTED OF REINFORCED CONCRETE AS SHOWN OR OF REINFORCED CONCRETE PIPE, CLASS III IN ACCORDANCE WITH ASTM DESIGNATION C-76. IF PIPEIS USED, JOINTS SHALL CONFORM TO THE ITEN "REINFORCED CONCRETE PIPE CULVERTS". PRECAST CONCRETE LIFT OFF COVER MAY BE SUBSTITUTED FOR "RING AND COVER".

CONNETING PIPES SHOULD WITHIN 10 OF NORMAL TO INLET GRATE IF NECESSARY. PIPE ELBOW OR CURBED APPROACH ALIGNMENT SHOULD BE USED TO STAY WITHIN THIS LIMIT.



PIPES MAY ENTER OR ALL VALLS. THE MAXIMUM LOGTH OF PIPE THAT CAN BE ACCOMODATED IS 60". MORE THAN ONE PIPE MAY ENTER A SIDE SUBJECT TO THE MAXIMUM BOX DIMENSIONS SHOWN. THE CLEAR DISTANCE BETWEEN ADJACENT PIPES SHOULD BE 9" MINIMUM.

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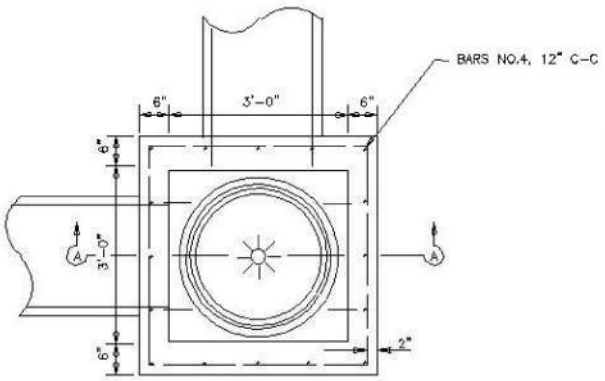
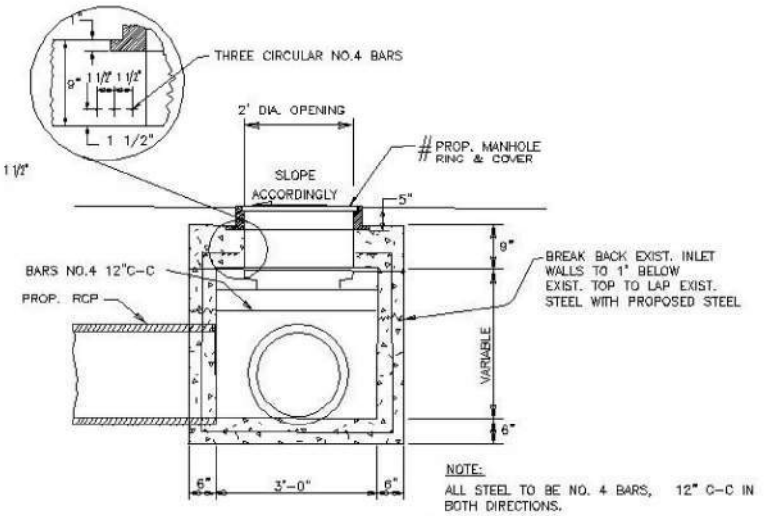
TY "M" MANHOLE (JUNCTION BOX WITH ACCESS)



PLAN VIEW

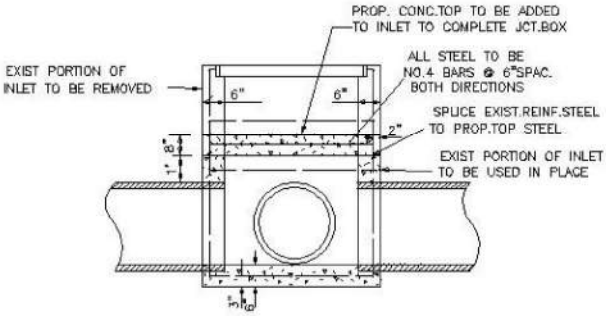
(TO BE PAID UNDER ITEM 479 "ADJUST INLET (JCT BOX)"



NOTE:
ALL STEEL TO BE NO. 4 BARS, 12" C-C IN BOTH DIRECTIONS.

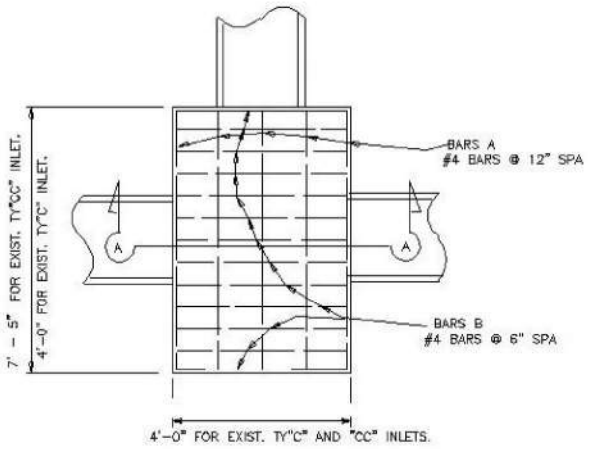
FOR MANHOLES LOCATED WITHIN PAVED PORTIONS OF THE ROADWAY, THE COVER SHALL BE OF A TYPE THAT CAN BE BOLTED TO THE RING.

SECTION A-A
ADJUST INLET (JUNCT. BOX)

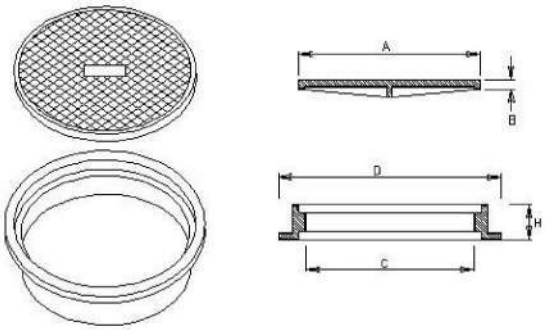


EXIST TY "C" OR TY "CC" INLET TO BE CONVERTED TO JCT. BOX

SECTION A-A
ADJ. INLET (CAP)



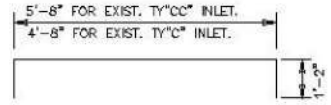
PLAN



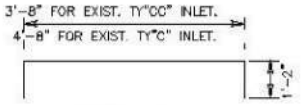
LID			RING		
"A"	"B"	WEIGHT	"C"	"D"	"H"
2'-2"	1"	174 lbs. (min)	2'-0"	2'-7 1/2"	5"

RING & COVER DETAILS
(FOR MANHOLE TY "A" AND "A1")
(NON-PAY)

NOTES: RINGS AND COVERS OF SLIGHTLY DIFFERENT DIMENSIONS BUT APPROXIMATELY THE SAME WEIGHT MAY BE SUBSTITUTED IF APPROVED BY THE ENGINEER.



BARS A



BARS B

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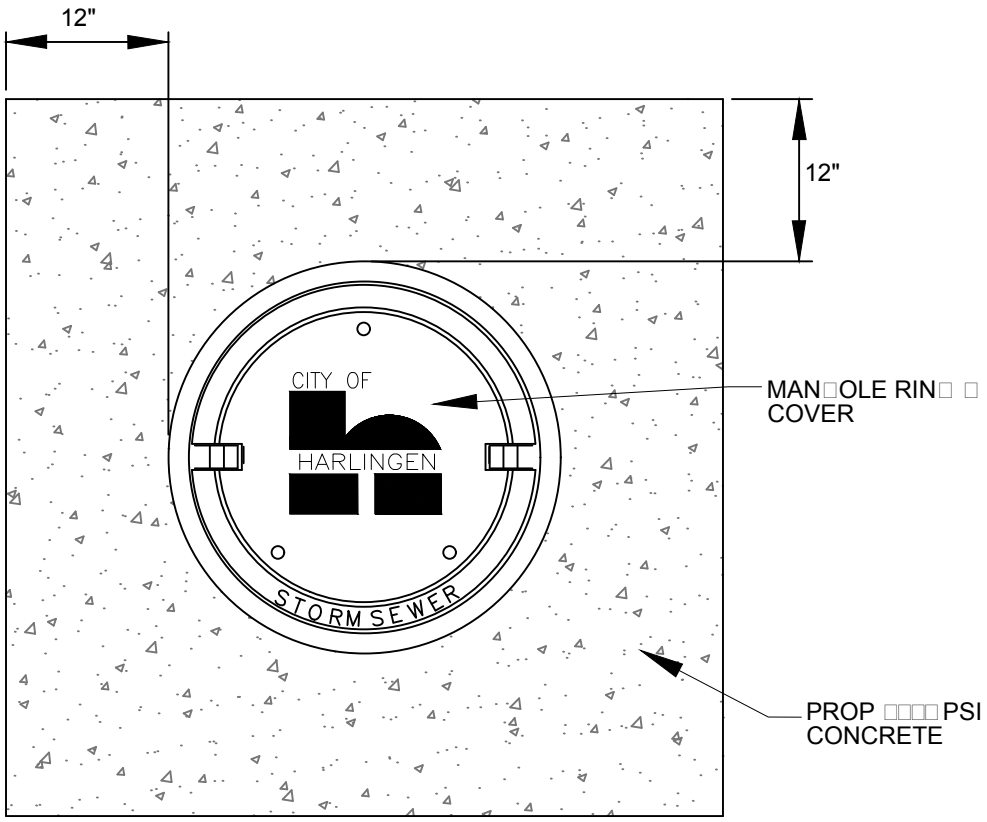
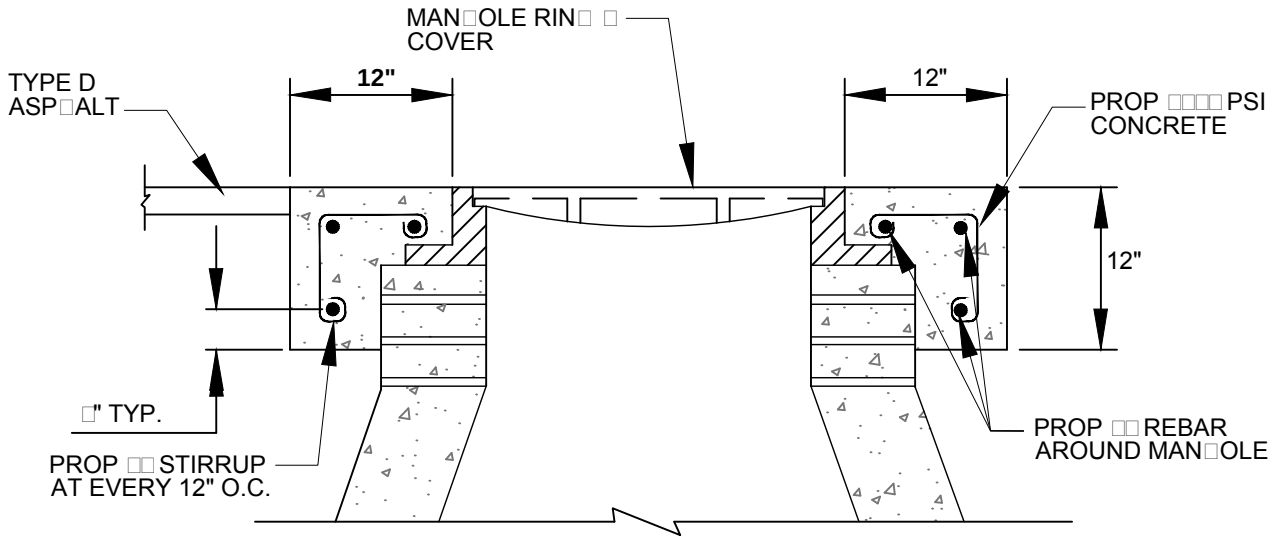
TEXAS

INLET AND MANHOLE CAPPING DETAILS

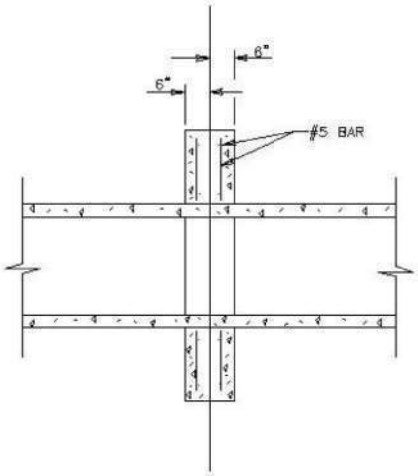




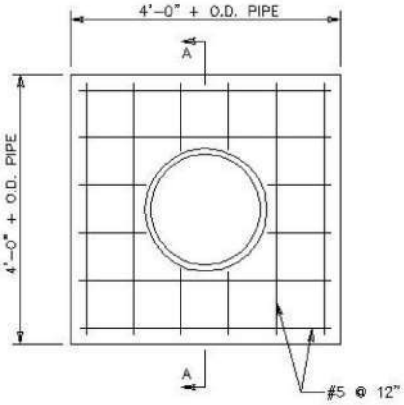
CONCRETE COLLAR DETAIL FOR MANHOLES

SCALE: N.T.S.	CITY OF HARLINGEN HARLINGEN, TEXAS ENGINEERING DEPARTMENT
DRAWN: B.G.S.	
DATE: 1/04/2018	SHEET _____

CITY OF HARLINGEN TEXAS

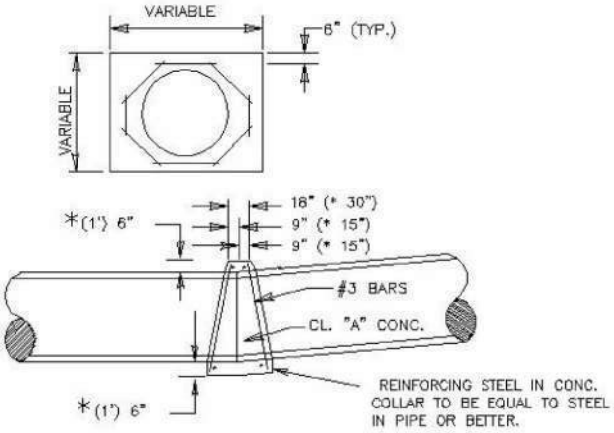


SECTION A–A



FRONT ELEVATION

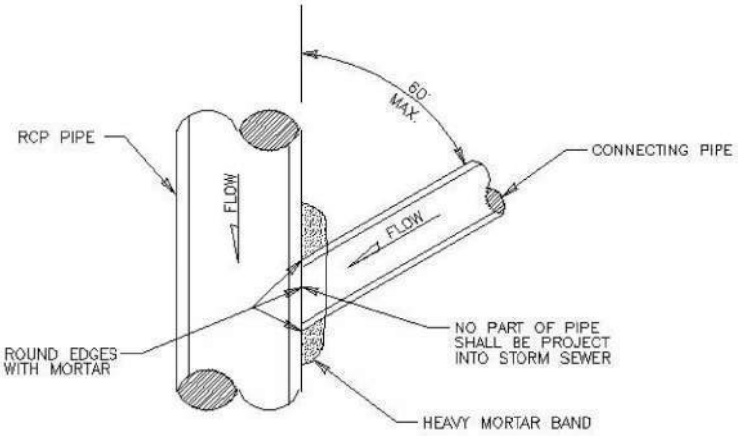
CONCRETE PIPE COLLAR

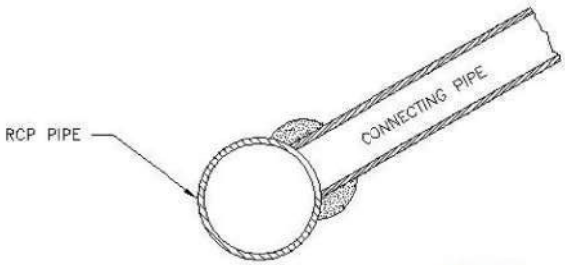


DETAIL FOR CONC. COLLARS DRAINAGE STRUCTURES AND PIPE SIPHONS (HORIZ. & VERT. BENDS)

NOTE: PROP. CONC. COLLAR WILL NOT BE PAID FOR DIRECTLY BUT WILL BE SUBSIDIARY TO THE BIDS ITEMS INVOLVED.

* FOR 42" AND LARGER PIPE



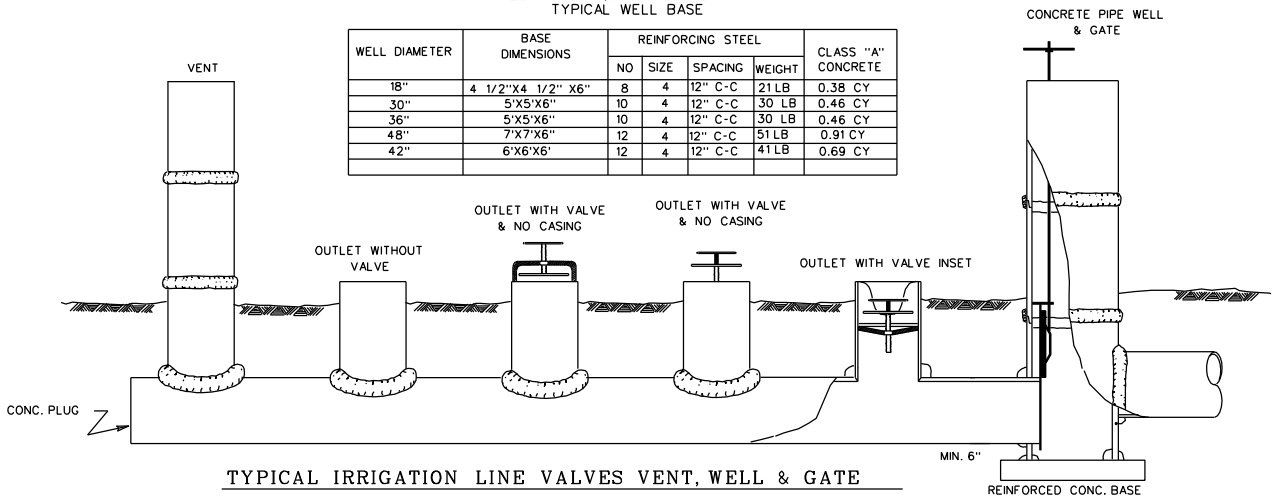


TYPICAL REINFORCED CONC. PIPE CONNECTION WITHOUT MANHOLE

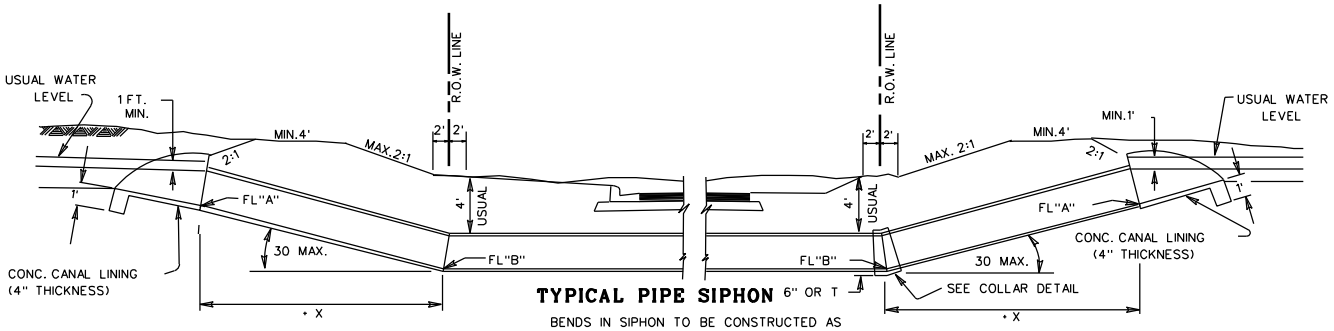
CONCRETE PIPE COLLAR AND CONNECTION DETAILS

ESTIMATED QUANTITIES FOR
TYPICAL WELL BASE

WELL DIAMETER	BASE DIMENSIONS	REINFORCING STEEL				CLASS "A" CONCRETE
		NO	SIZE	SPACING	WEIGHT	
18"	4 1/2"X4 1/2" X6"	8	4	12" C-C	21 LB	0.38 CY
30"	5'X5'X6"	10	4	12" C-C	30 LB	0.46 CY
36"	5'X5'X6"	10	4	12" C-C	30 LB	0.46 CY
48"	7'X7'X6"	12	4	12" C-C	51 LB	0.91 CY
42"	6'X6'X6'	12	4	12" C-C	41 LB	0.69 CY



TYPICAL IRRIGATION LINE VALVES VENT, WELL & GATE



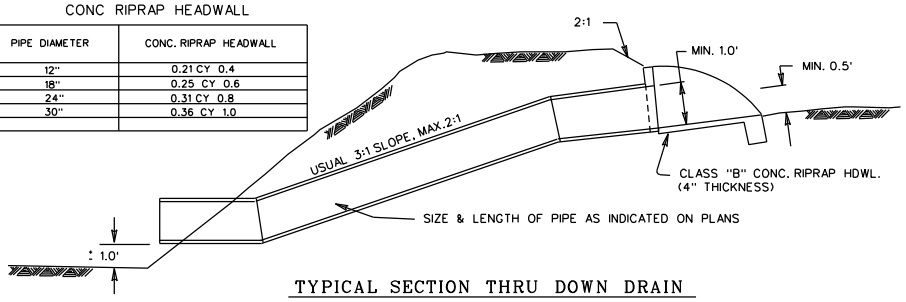
TYPICAL PIPE SIPHON 6" OR T

BENDS IN SIPHON TO BE CONSTRUCTED AS PROVIDED IN SPECIFICATIONS

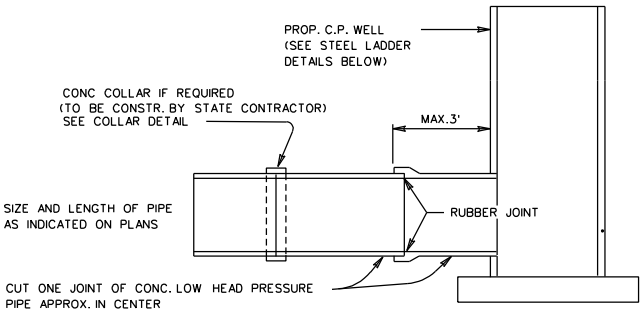
• X AND FL "A" AS SHOWN ON PLANS ARE NOMINAL DESIGN DIMENSIONS AND MAY BE VARIED IN FIELD TO FIT EXISTING CONDITIONS

ESTIMATED QUANTITIES FOR ONE
CONC RIPRAP HEADWALL

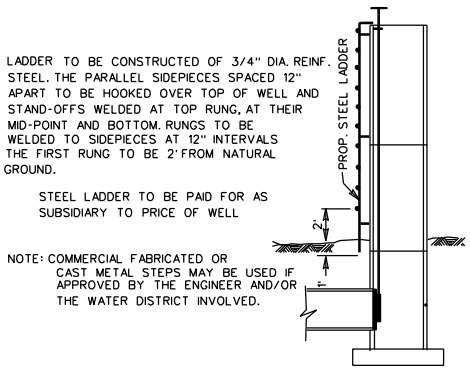
PIPE DIAMETER	CONC. RIPRAP HEADWALL
12"	0.21 CY 0.4
18"	0.25 CY 0.6
24"	0.31 CY 0.8
30"	0.36 CY 1.0



TYPICAL SECTION THRU DOWN DRAIN



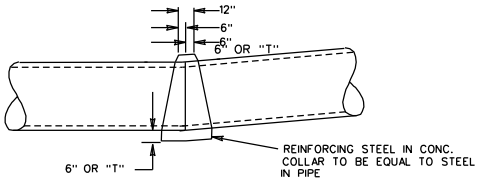
TYPICAL CONC. PIPE WELL DETAILS FOR
CONNECTING CONC. LOW HEAD PRESSURE PIPE



LADDER TO BE CONSTRUCTED OF 3/4" DIA. REINF. STEEL. THE PARALLEL SIDEPIECES SPACED 12" APART TO BE HOOKED OVER TOP OF WELL AND STAND-OFFS WELDED AT TOP RUNG, AT THEIR MID-POINT AND BOTTOM. RUNGS TO BE WELDED TO SIDEPIECES AT 12" INTERVALS THE FIRST RUNG TO BE 2' FROM NATURAL GROUND.

STEEL LADDER TO BE PAID FOR AS SUBSIDIARY TO PRICE OF WELL

NOTE: COMMERCIAL FABRICATED OR CAST METAL STEPS MAY BE USED IF APPROVED BY THE ENGINEER AND/OR THE WATER DISTRICT INVOLVED.



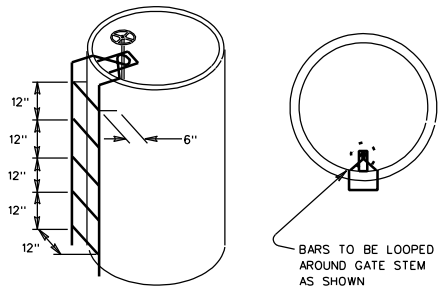
DETAIL FOR CONC. COLLARS ON PIPE SIPHONS

GENERAL NOTES

HEIGHT OF RELOCATED WELLS AND VENTS TO BE EQUIVALENT TO THAT OF EXISTING STRUCTURES OR AS REQUIRED FOR PROPER OPERATION

CONCRETE REQUIRED FOR PLUGS OR CAPS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED AS SUB-SIDIARY TO THE VARIOUS BID ITEMS OF THIS CONTRACT.

IN GENERAL THE PARTICULAR TYPE OR DESIGN OF THE EXISTING FACILITY TO BE EXTENDED OR RELOCATED SHALL BE DUPLICATED.



STEEL LADDER DETAILS

TO BE USED ON ALL WELLS WITH GATES WHEN THE DISTANCE FROM NATURAL GROUND TO TOP OF WELL IS 6 FT. OR MORE.

CITY OF HARLINGEN TEXAS

IRRIGATION STRUCTURE DETAILS

SCALE: N.T.S.

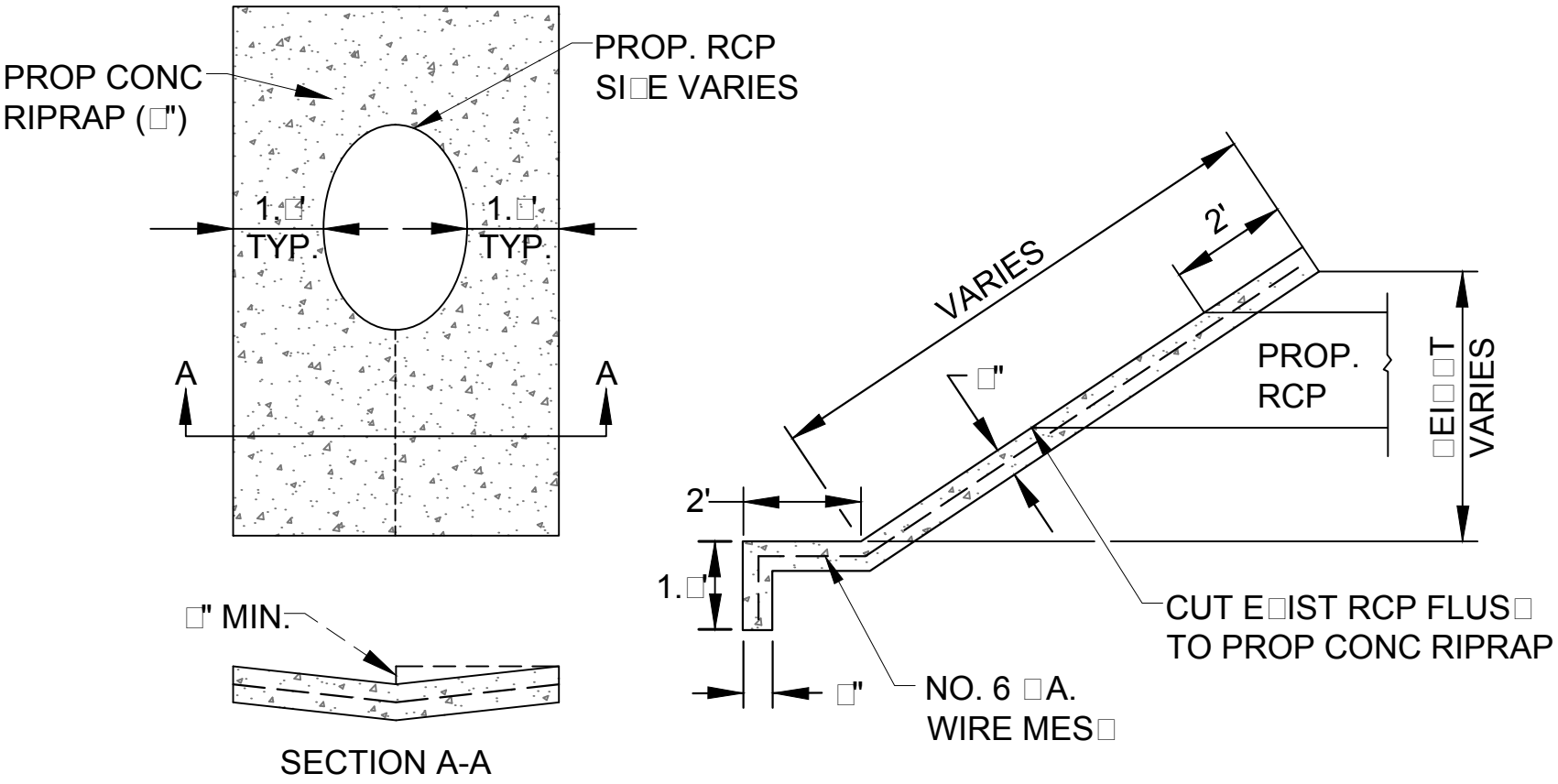
DRAWN: B.G.S.

DATE: SEPT. 2000

CITY OF HARLINGEN
HARLINGEN, TEXAS
ENGINEERING DEPARTMENT

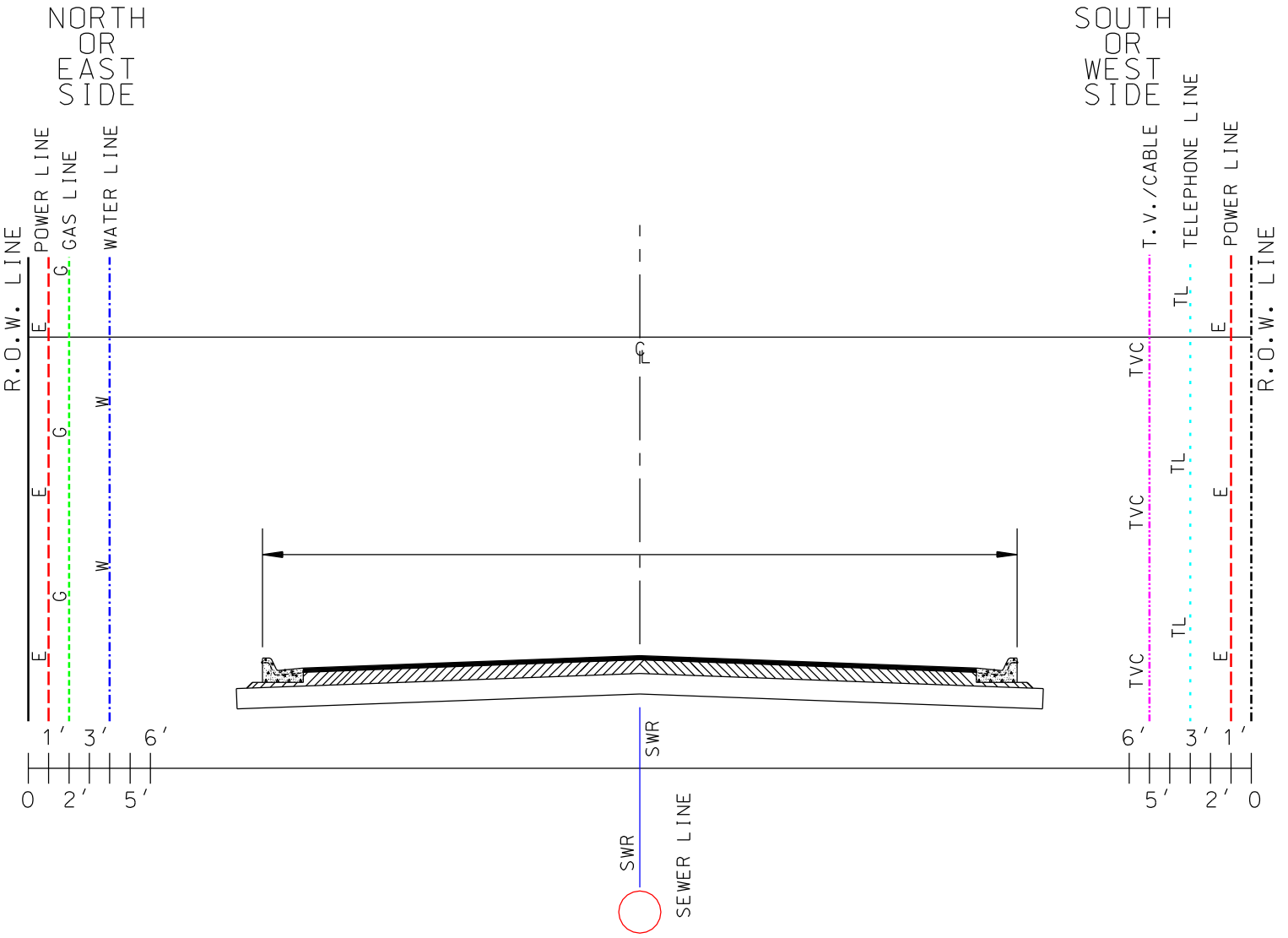
SHEET _____

...\rm\con-standards2d.dgn Mar. 08, 2007 09:08:49



CONCRETE RIPRAP
DETAIL AT PIPE OUTFALLS

CITY OF HARLINGEN TEXAS
ENGINEERING DEPARTMENT



Depth of top of utility line below street grade.

Order of utility installation

Variable	San. Sewer
36"	Water
36"	Gas
48"	Electrical
24"	Telephone
19"-24"	T-V-C

NOTES

1) SANITARY SEWER AND WATER LINES MUST BE LOCATED MINUMUM 9' APART FROM EACH OTHER.

2) WATER LINES AND GAS LINES MUST BE LOCATED ON OPPOSITE SIDES OF THE STREET FROM STORM SEWER AND OTHER UTILITIES EXCEPT POWERLINES. UNLESS THERE IS A UTILITY EASMENT ON SAME SIDE, THEN OTHER UTILITIES COULD BE IN THE EASEMENT.

3) SANITARY SEWER SHALL NOT CONFLICT WITH EXISTING OR PROPOSED STORM SEWER.

CITY OF HARLINGEN TEXAS

TYPICAL UTILITY ALIMENTS FOR STREETS

SCALE: N.S.

DRAWN: B.G.S.

DATE: SEPT. 2000

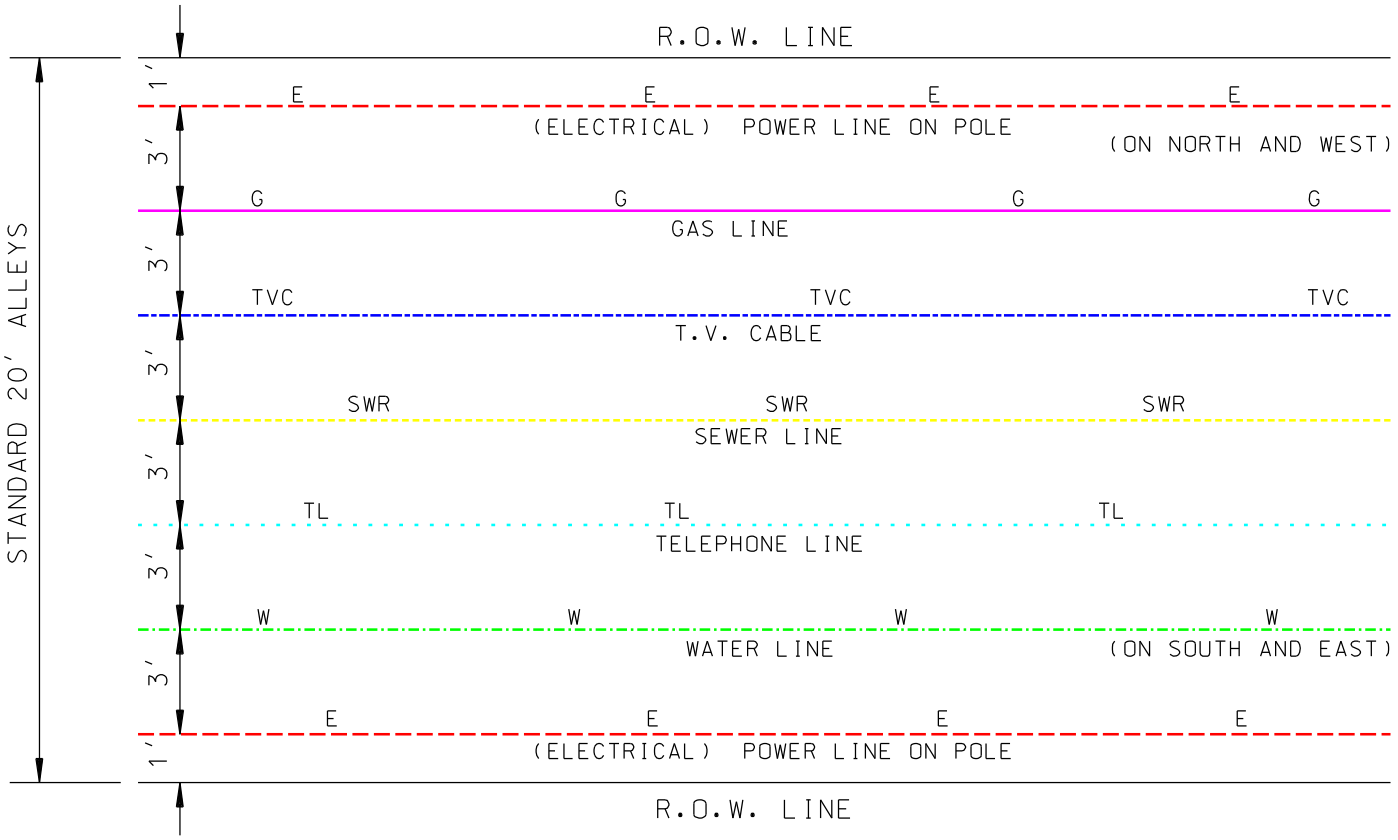
CITY OF HARLINGEN

HARLINGEN, TEXAS

ENGINEERING DEPARTMENT

SHEET ____

...\rm\con-standards2d.dgn Mar. 07, 2007 13:28:24



Depth of top of utility line below street grade.	Order of utility installation
Variable	San. Sewer
36"	Water
36"	Gas
48"	Electrical
24"	Telephone
19"-24"	T-V-C

TYPICAL UTILITY ALIMENTS FOR ALLEYS

SCALE: N.T.S.

DRAWN: B.G.S.

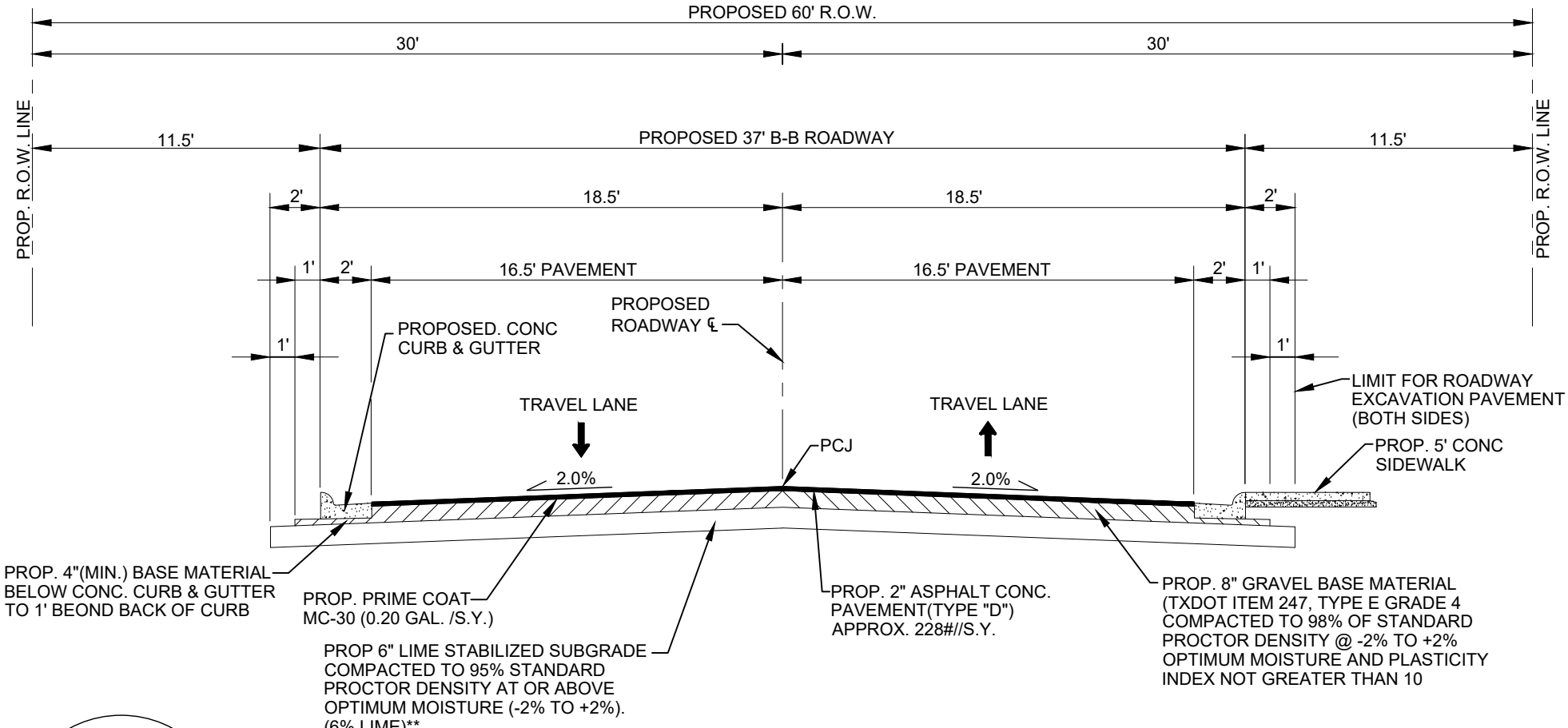
DATE: SEPT. 2000

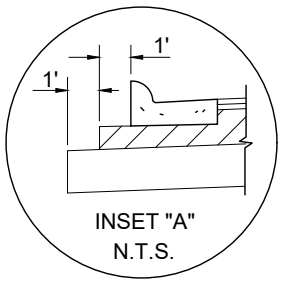
CITY OF HARLINGEN
HARLINGEN, TEXAS
ENGINEERING DEPARTMENT

SHEET ____

CITY OF HARLINGEN TEXAS

...\rm\con-standards2d.dgn Mar. 07, 2007 13:29:56





INSET "A"
N.T.S.

STREET TYPICAL SECTION

** QUANTITY USED FOR ESTIMATING/PLANNING.THE APPROPRIATE AMOUNT OF MODIFIER (LIME) SHOULD BE DETERMINED BY CONDUCTING LABORATORY TEST JUST PRIOR TO CONSTRUCTION.

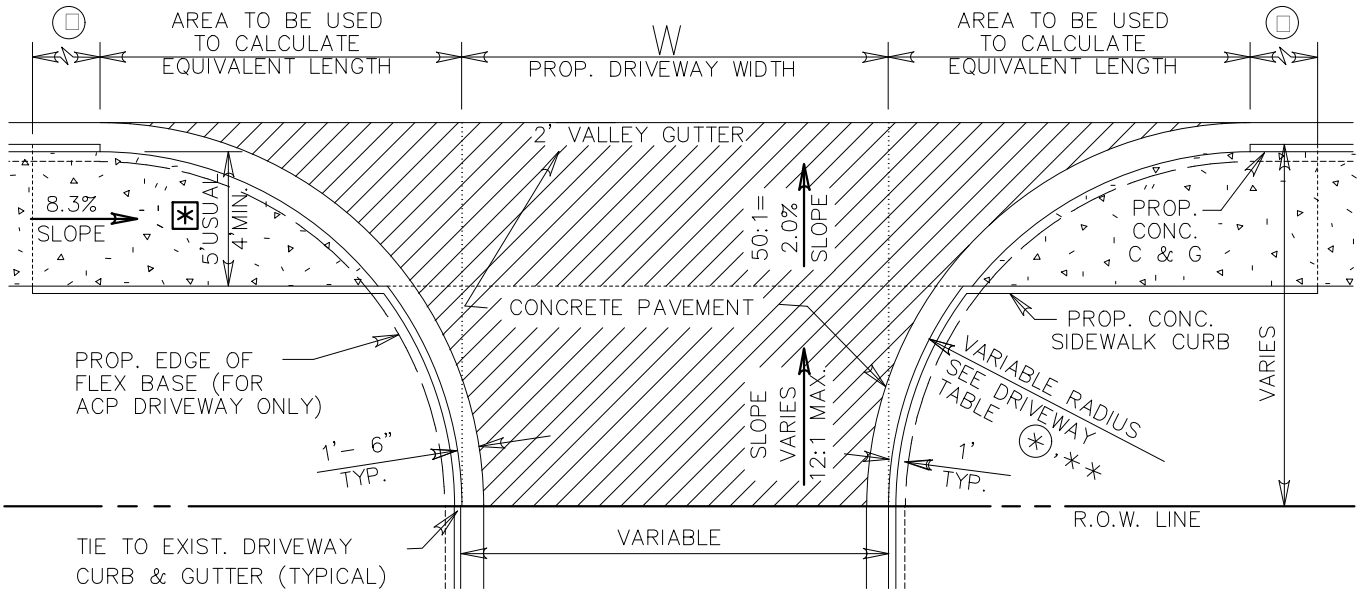
CITY OF HARLINGEN TEXAS

STREET TYPICAL SECTION

SCALE: N.T.S.

CITY OF HARLINGEN
ENGINEERING DEPARTMENT

DATE: SEPTEMBER 2022



CONCRETE APRON FOR STREETS

N.T.S.

* PROP./FUTURE CONC. SIDEWALK LOCATION UNLESS SHOWN ELSEWHERE ON P&P SHEETS. REFER TO STATE STANDARDS – PEDESTRIAN FACILITIES – FOR ADDITIONAL REQUIREMENTS.

LIMITS OF SLOPE FOR PROP. CONC. CURB BASED ON 8.3% SLOPE FOR SIDEWALK

LF EQUIVALENT TABLE FOR PAYMENT LIMITS OF 2' VALLEY GUTTER

LF OF VALLEY GUTTER= W + X1 + X2	
WHERE X1 AND X2 MAY VARY DEPENDING ON RADIUS	
Prop. Driveway Radius	X1 or X2 (Sq Ft Area / 2') Equivalent LF Length
5'	1
8'	2
10'	4
12'	6
15'	9
18'	12
20'	15
22'	18
25'	24
28'	30
30'	34

CITY OF HARLINGEN TEXAS

CONCRETE APRON FOR STREETS

SCALE□ N.T.S.

DRAWN□ O.□.

DATE□ □□2□2□1□

CITY OF □ARLIN□EN
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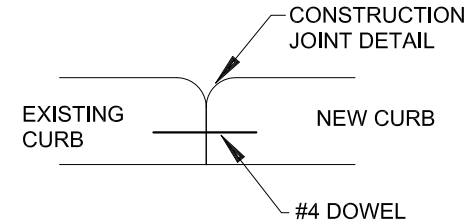
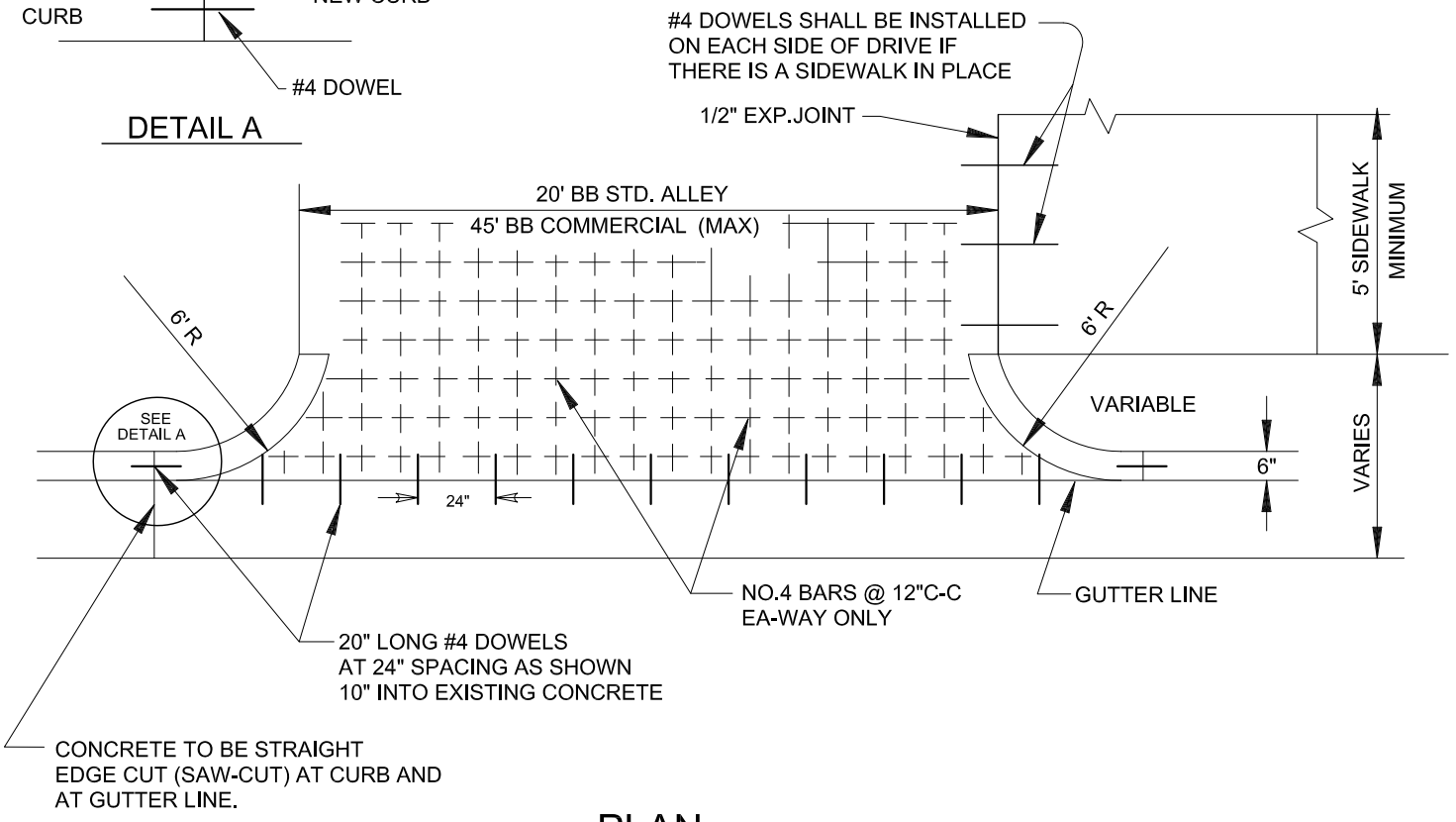
EN□INEERIN□ DEPARTMENT

S□EET _____

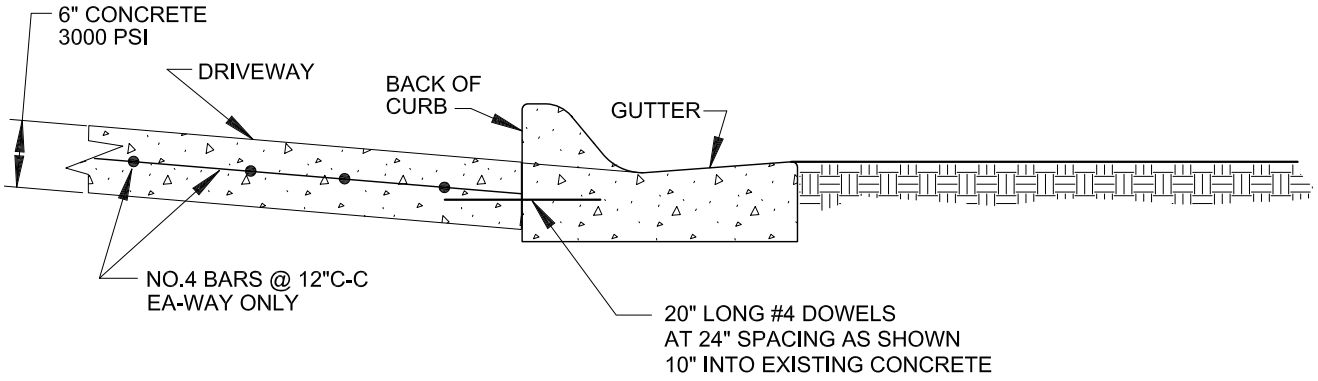


DETAIL A



PLAN
STANDARD ALLEY OR COMMERCIAL TURNOUT

NOT TO SCALE



SECTION

NOT TO SCALE

NOTE:
ALL DRIVEWAYS SHALL CONFORM
TO THE AMERICANS WITH DISABILITIES ACT
(ADA) GUIDELINES.

CITY OF HARLINGEN TEXAS

TYPICAL DETAIL FOR REINFORCING ALLEY AND COMMERCIAL TURNOUTS

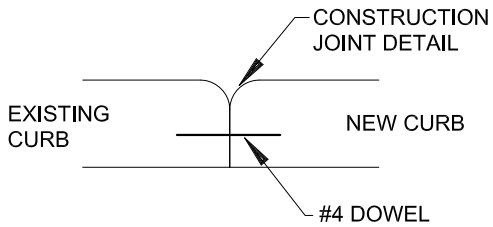
SCALE: N.T.S.

DRAWN: B.G.S.

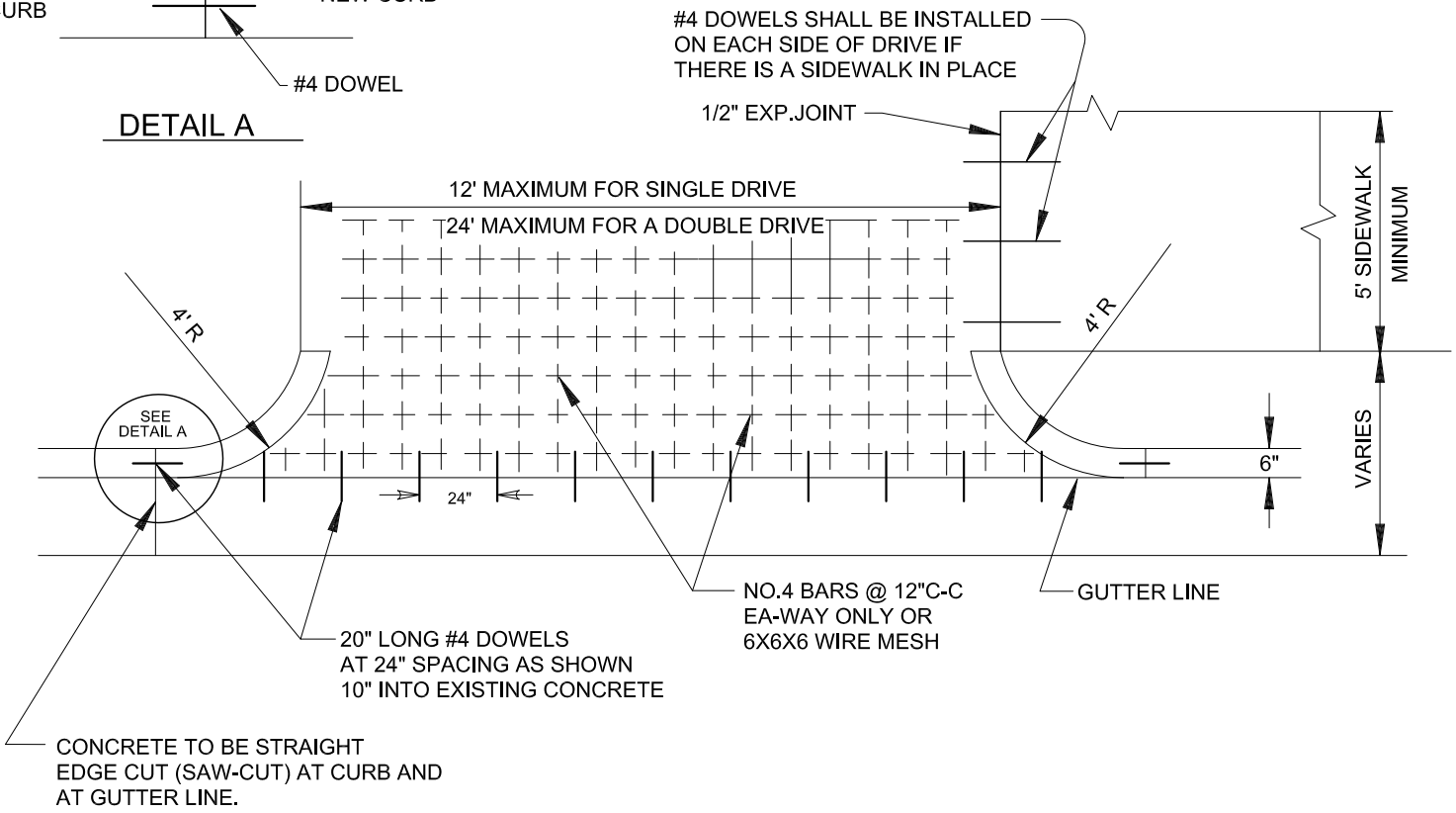
DATE: 02/09/2015

CITY OF HARLINGEN
HARLINGEN, TEXAS
ENGINEERING DEPARTMENT

SHEET _____

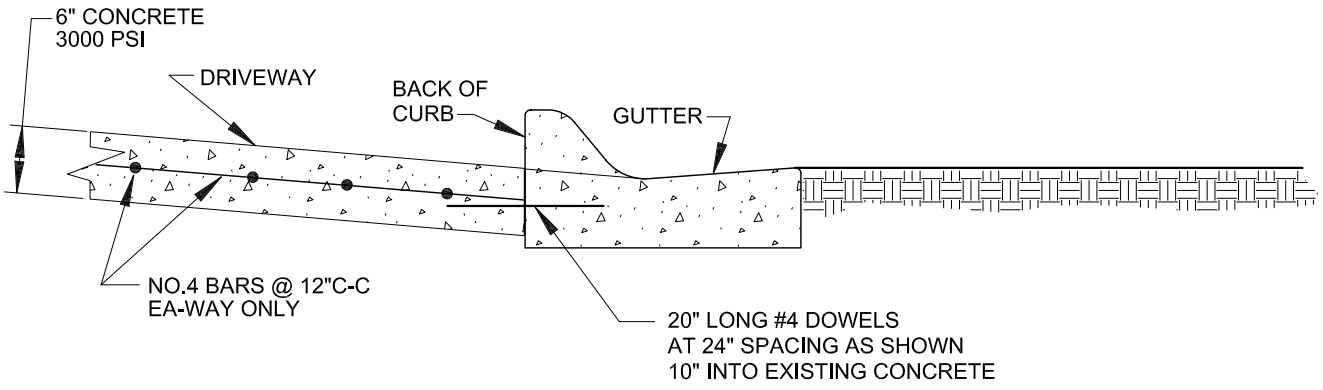


DETAIL A



PLAN
STANDARD RESIDENTIAL DRIVEWAY

NOT TO SCALE



SECTION

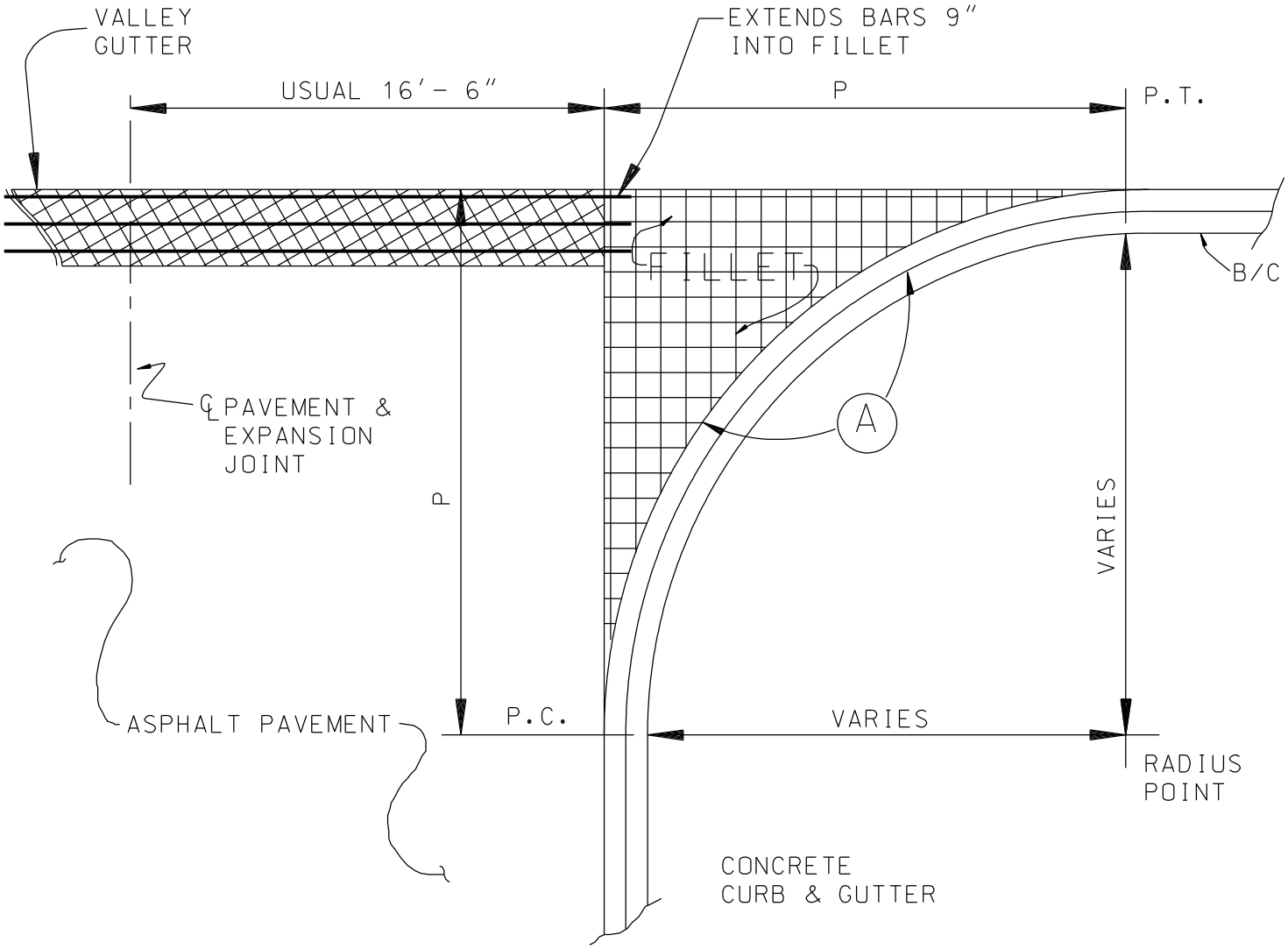
NOT TO SCALE

NOTE:
ALL DRIVEWAYS SHALL CONFORM
TO THE AMERICANS WITH
DISABILITIES ACT (ADA) GUIDELINES.

CITY OF HARLINGEN
TEXAS

TYPICAL DETAIL FOR REINFORCING RESIDENTIAL DRIVEWAYS

SCALE: N.T.S.	**CITY OF HARLINGEN** **HARLINGEN, TEXAS** **ENGINEERING DEPARTMENT**
DRAWN: B.G.S.	
DATE: 2/09/2015	**SHEET** _____



TURNOUT DETAIL

(A) INDICATED CONCRETE FILLET IS TO BE INCLUDED IN THE UNIT PRICE BID FOR CONCRETE CURB AND GUTTER AND SHALL BE MEASURED ALONG THE FILLET PERIMETER. (2P)

CITY OF HARLINGEN TEXAS

TURNOUT DETAIL

SCALE: N.T.S.

DRAWN: B.G.S.

DATE: SEPT. 21, 2000

CITY OF HARLINGEN
HARLINGEN, TEXAS
ENGINEERING DEPARTMENT

SHEET _____

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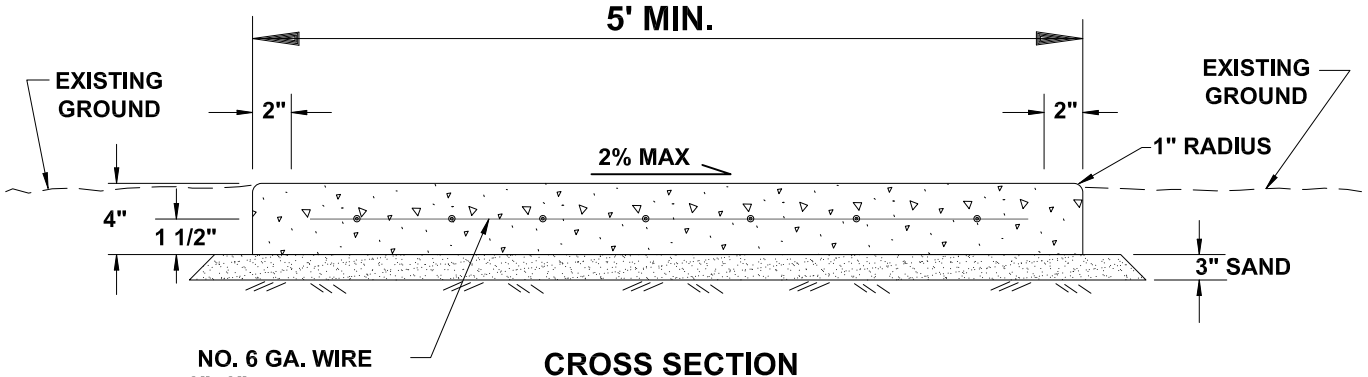
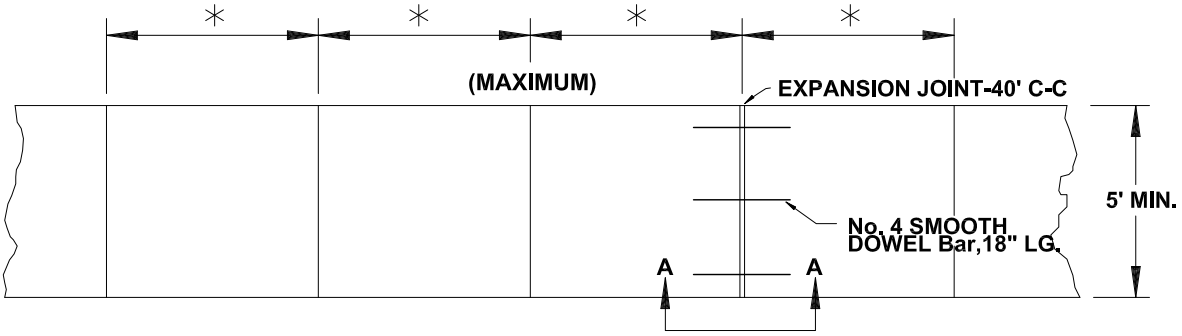


CROSS SECTION

not to scale

1) SAND COMPACTED TO 90% OF STD. ASTM D698 PROCTOR

2) HEIGHT TO MATCH EXISTING CURB OR AS DIRECTED BY CITY REPRESENTATIVE.

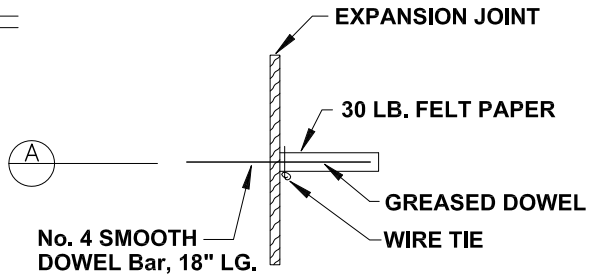


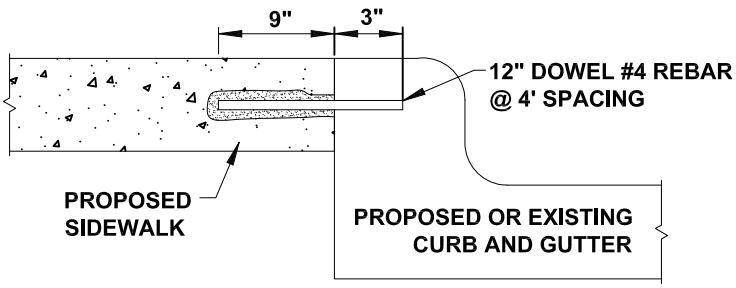
PLAN VIEW

not to scale

* CONTROL JOINTS SHALL BE EQUAL TO THE WIDTH OF PROPOSED THE SIDEWALK EXPANSION JOINTS SHALL BE AT EVERY 40'

ALL CONCRETE SHALL BE 3000 PSI





CURB AND SIDEWALK ABUTTMENT

NOTE:
ALL SIDEWALKS AND WHEELCHAIR RAMPS SHALL CONFORM TO THE AMERICANS WITH DISABILITIES ACT (ADA) GUIDELINES.

CITY OF HARLINGEN TEXAS

TYPICAL SIDEWALK DETAIL

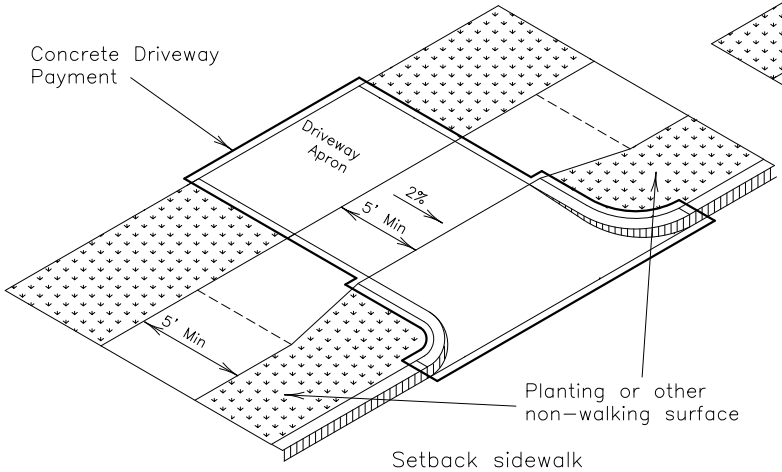
SCALE: N.S.

DRAWN: B.G.S.

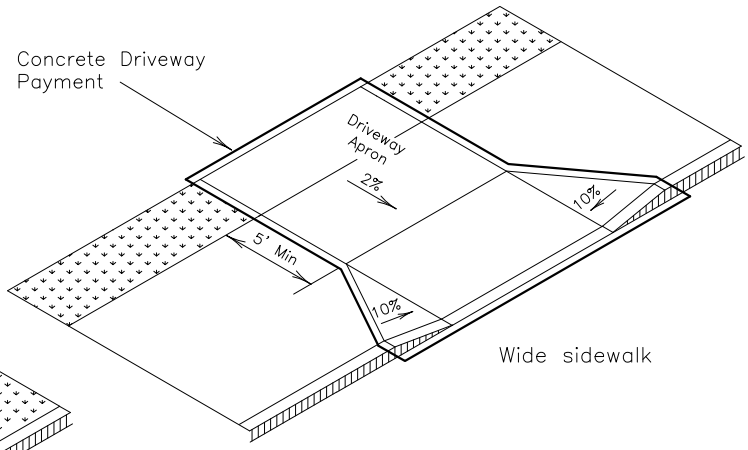
DATE: 6/20/2014

CITY OF HARLINGEN
HARLINGEN, TEXAS
ENGINEERING DEPARTMENT

SHEET _____

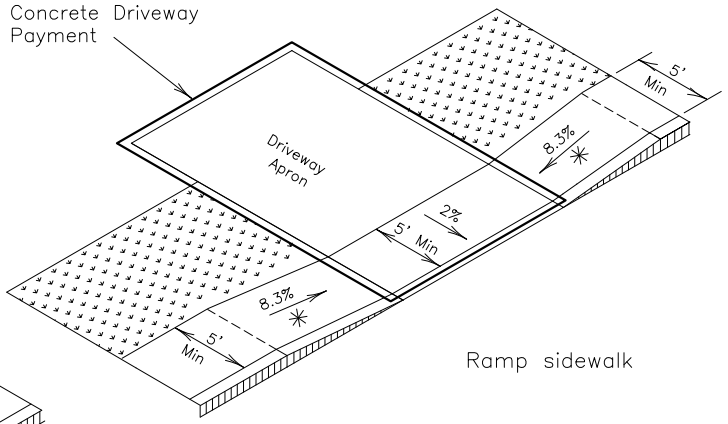


Setback sidewalk

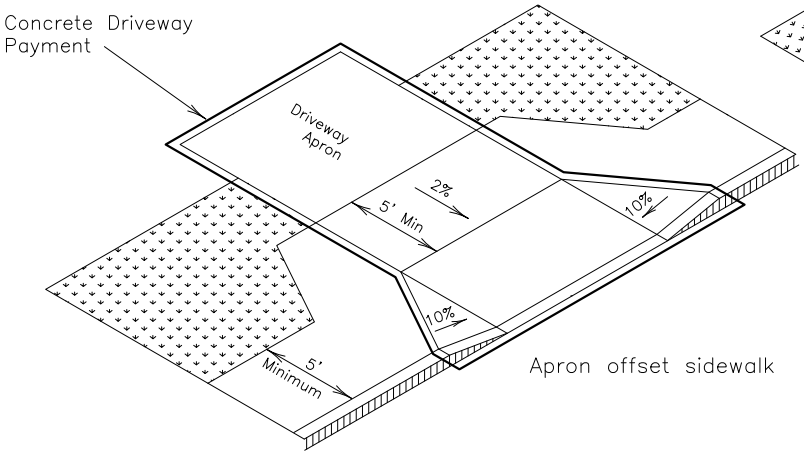


Wide sidewalk

✳ If curb height is greater than 6 inches, use grade less than or equal to 5%. Handrail and detectable warning not required.



Ramp sidewalk

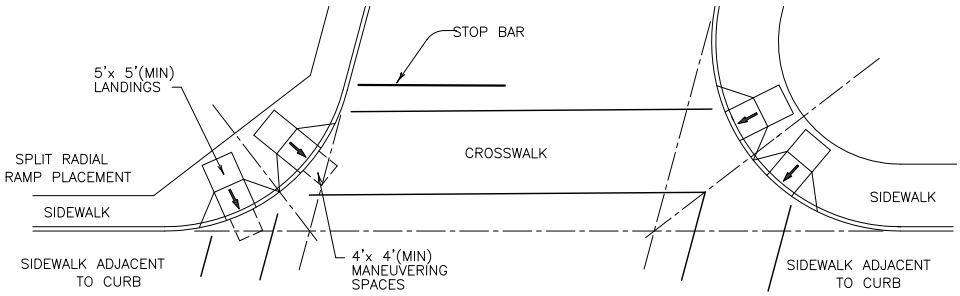


Apron offset sidewalk

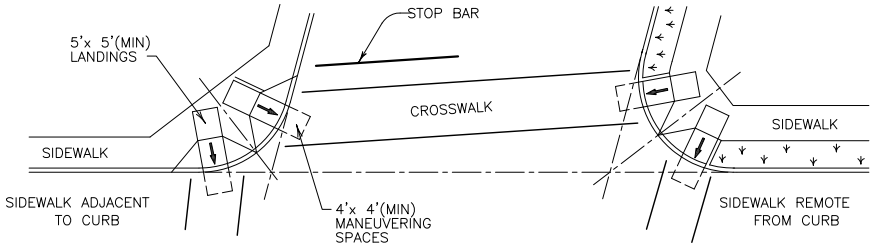
CITY OF HARLINGEN TEXAS

SIDEWALK TREATMENT AT DRIVEWAYS

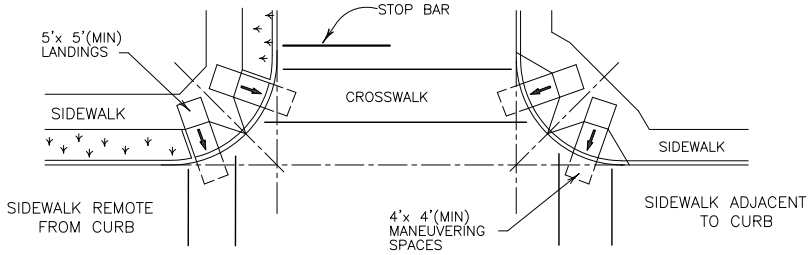
SCALE: N.T.S.	CITY OF HARLINGEN ENGINEERING DEPARTMENT
DRAWN: B.G.S.	
DATE: 02/13/2017	SHEET _____



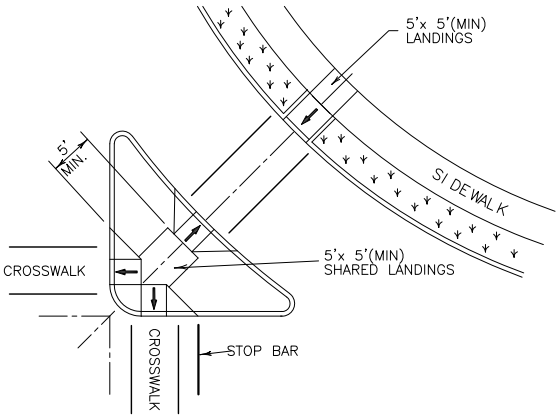
SKEWED INTERSECTION WITH "LARGE" RADIUS



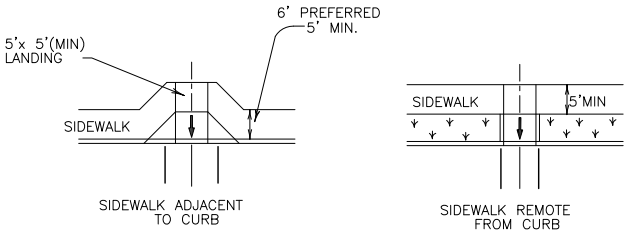
SKEWED INTERSECTION WITH "SMALL" RADIUS



NORMAL INTERSECTION WITH "SMALL" RADIUS



AT INTERSECTION
W/FREE RIGHT TURN & ISLAND



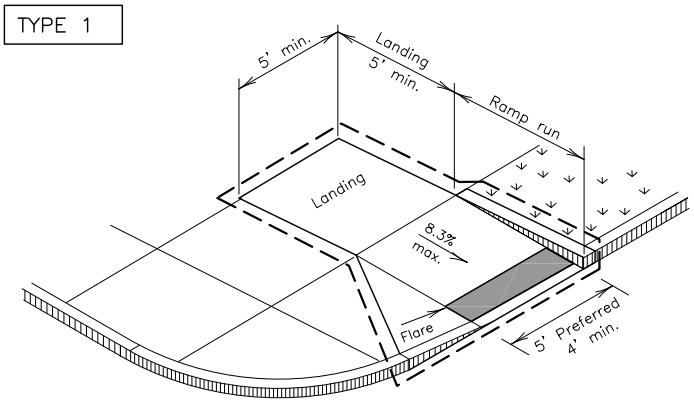
MID-BLOCK PLACEMENT
PERPENDICULAR RAMPS

CITY OF HARLINGEN TEXAS

TYPICAL CROSSING LAYOUTS

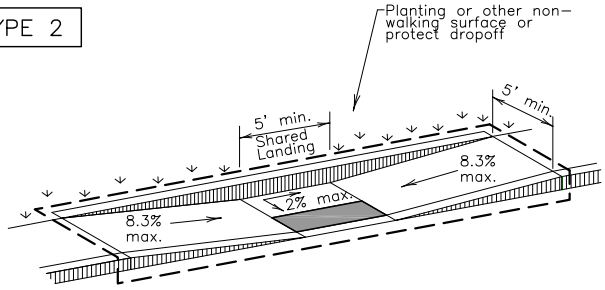
SCALE: N.T.S.	CITY OF HARLINGEN ENGINEERING DEPARTMENT
DRAWN: B.G.S.	
DATE: 11/11/2014	SHEET _____

TYPE 1



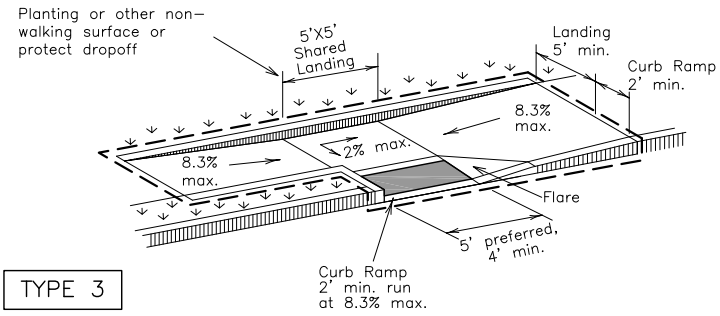
PERPENDICULAR CURB RAMP

TYPE 2

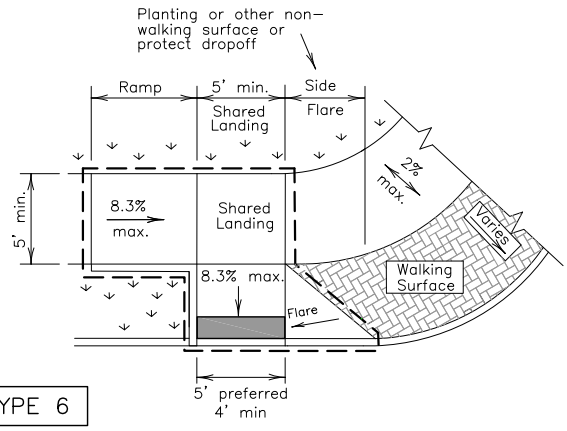


PARALLEL CURB RAMP
(Use only where water will not pond in the landing.)

TYPE 3

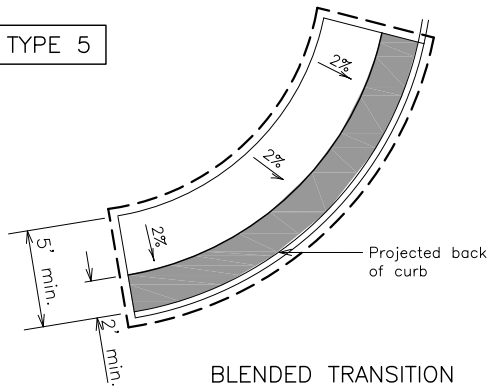


TYPE 6



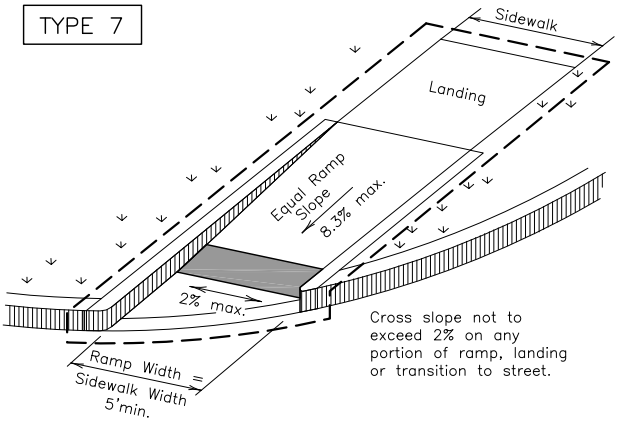
COMBINATION CURB RAMPS

TYPE 5



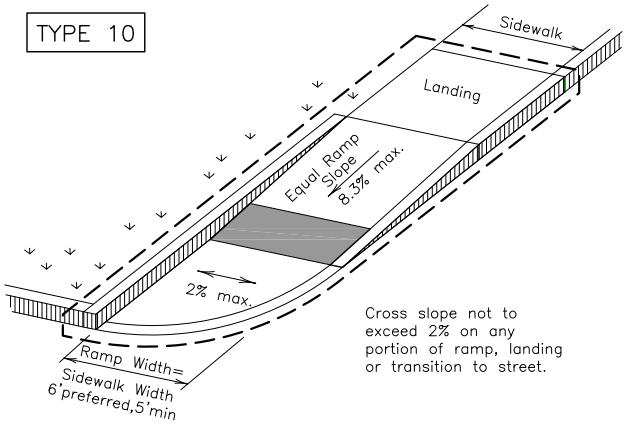
BLENDED TRANSITION

TYPE 7



(Sidewalk set back from curb)

TYPE 10



(Sidewalk adjacent to curb)

DIRECTIONAL RAMPS WITHIN RADIUS

NOTES / LEGEND:

See General Notes on sheet 2 of 3 for more information.

Denotes planting or non-walking surface not part of pedestrian circulation path.

Ramp Limits of Payment

Detectable Warning Surface

CITY OF HARLINGEN TEXAS

CURB RAMP DETAILS

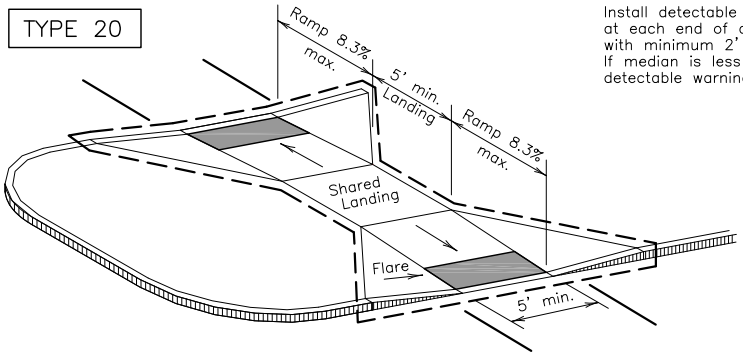
SCALE: N.T.S.

DRAWN: B.G.S.

DATE: 11/11/2014

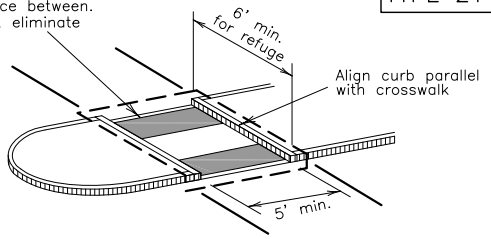
CITY OF HARLINGEN
ENGINEERING DEPARTMENT

TYPE 20



Install detectable warning surface at each end of cut-through ramp with minimum 2' smooth surface between. If median is less than 6' wide, eliminate detectable warning surfaces.

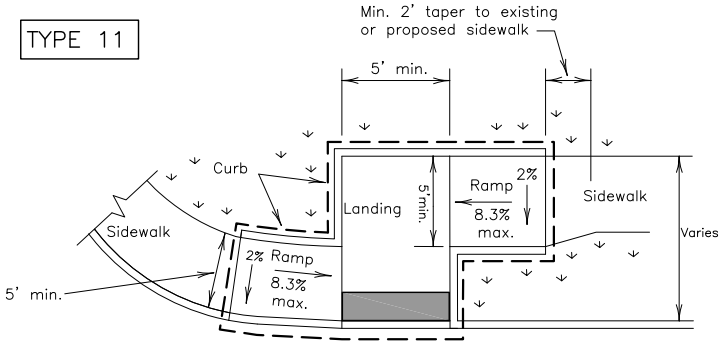
TYPE 21



Curb details are shown elsewhere in the plans.

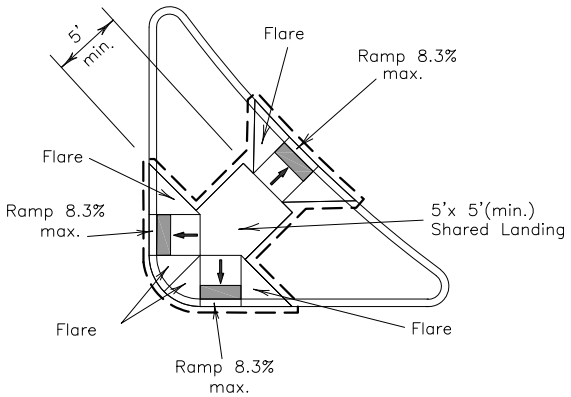
CURB RAMPS AT MEDIAN ISLANDS

TYPE 11



OFFSET PARALLEL CURB RAMP

TYPE 22



COMBINATION ISLAND RAMPS

NOTES / LEGEND:

- Denotes planting or non-walking surface not part of pedestrian circulation path.
- Ramp Limits of Payment
- Detectable Warning Surface

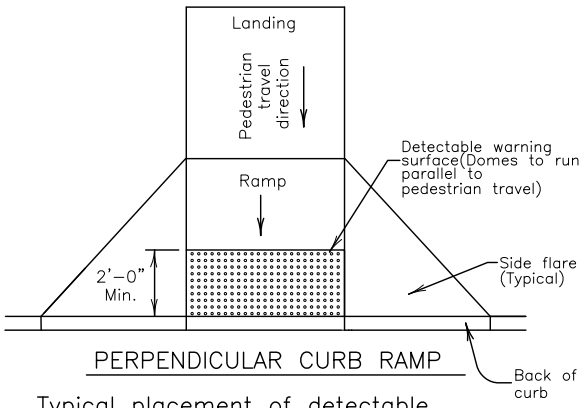
General Notes
Curb Ramps

1. Install a curb ramp or blended transition at each pedestrian street crossing.
2. All slopes shown are maximum allowable. Lesser slopes that will still drain properly should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
3. The minimum sidewalk width is 5'. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances. 5'x 5' passing areas at intervals not to exceed 200' are required.
4. Landings shall be 5'x 5' minimum with a maximum 2% slope in any direction.
5. Maneuvering space at the bottom of curb ramps shall be a minimum of 4'x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
6. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
7. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
8. Additional information on curb ramp location, design, light reflective value and texture may be found in the current edition of the Texas Accessibility Standards (TAS) and 16 TAC 68.102.
9. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.
10. Small channelization islands, which do not provide a minimum 5'x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
11. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall align with theoretical crosswalks unless otherwise directed.
12. Handrails are not required on curb ramps. Provide curb ramps wherever on accessible route crosses (penetrates) a curb.
13. Curb ramps and landings shall be constructed and paid for in accordance with TxDot Item 531 "Sidewalks".
14. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
15. Provide a smooth transition where the curb ramps connect to the street.
16. Curbs shown on sheets 1 and 2 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
15. Existing features that comply with TAS may remain in place unless otherwise shown on the plans.

CITY OF HARLINGEN TEXAS

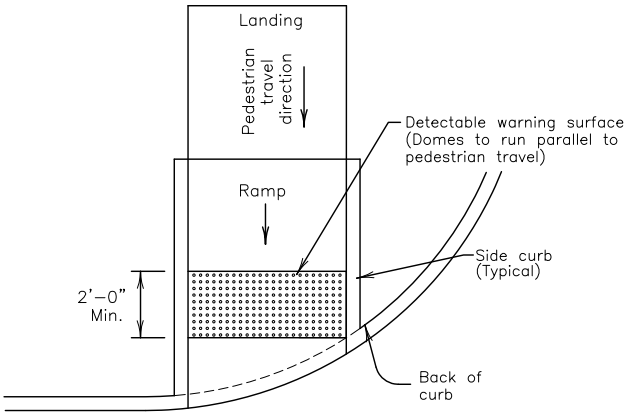
CURB RAMP DETAILS

SCALE: N.T.S.	CITY OF HARLINGEN ENGINEERING DEPARTMENT
DRAWN: B.G.S.	
DATE: 11/11/2014	SHEET 2 OF 3



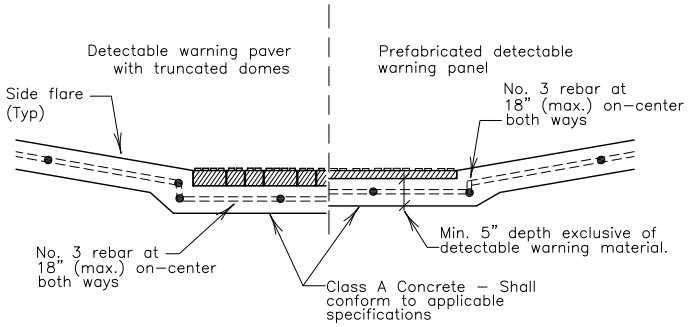
PERPENDICULAR CURB RAMP

Typical placement of detectable warning surface on sloping ramp run.

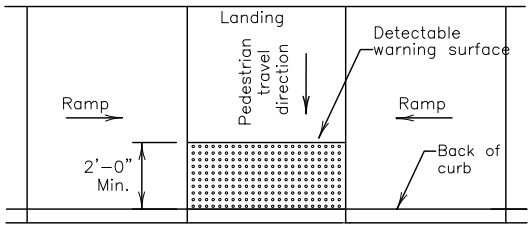


DIRECTIONAL CURB RAMP

Typical placement of detectable warning surface on sloping ramp run.



SECTION: CURB RAMP AT DETECTABLE WARNING



PARALLEL CURB RAMP

Typical placement of detectable warning surface on landing at street edge.

DETECTABLE WARNINGS

Detectable Warning Material

1. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with Section 705 of the TAS. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast–in–place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.

2. Detectable Warning Materials must meet TxDOT Departmental Materials Specification DMS 4350 and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.

3. Detectable warning surfaces must be slip resistant and not allow water to accumulate.

4. Detectable warning surfaces shall be a minimum of 24" in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.

5. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb. Align the rows of domes to be perpendicular to the grade break between the ramp run and the street. Detectable warning surfaces may be curved along the corner radius.

6. Shaded areas on sheets 1 and 2 indicate the approximate location for the detectable warning surface for each curb ramp type.

Detectable Warning Pavers

7. Furnish detectable warning paver units meeting all requirements of ASTM C–936, C–33. Lay in a two by two unit basket weave pattern or as directed.

8. Lay full–size units first followed by closure units consisting of at least 25 percent of a full unit. Cut detectable warning paver units using a power saw.

Sidewalks

1. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within one or more reach ranges specified in TAS 308.

2. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.

3. Street grades and cross slopes shall be as shown elsewhere in the plans.

4. Changes in level greater than 1/4 inch are not permitted.

5. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than 5% must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with TAS 505.

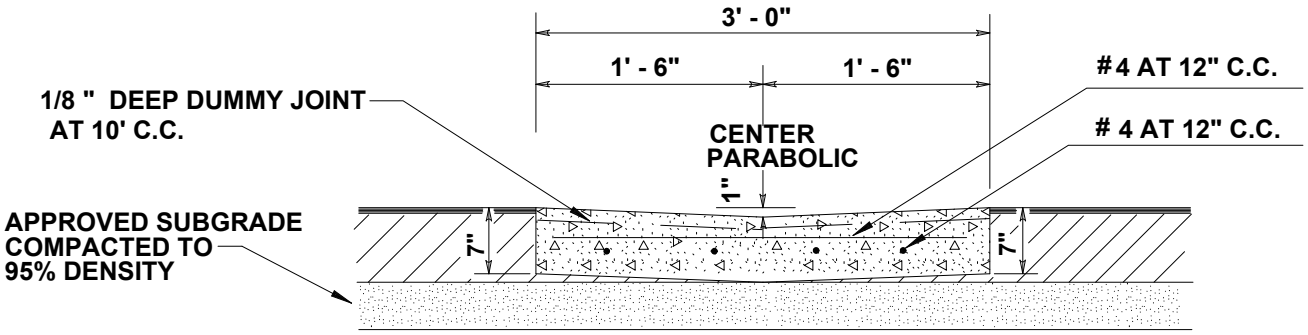
6. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.

7. Driveways and turnouts shall be constructed and paid for in accordance with Item "Intersections, Driveways and Turnouts". Sidewalks shall be constructed and paid for in accordance with Item, "Sidewalks".

CITY OF HARLINGEN TEXAS

CURB RAMP DETAILS

SCALE: N.T.S.	CITY OF HARLINGEN ENGINEERING DEPARTMENT
DRAWN: B.G.S.	
DATE: 11/11/2014	SHEET 3 OF 3



1/2" EXPANSION JOINTS REQUIRED AT 70' C.C AND BEGINNING AND END OF ALL RADII. CONTRACTION JOINTS NOT TO EXCEED 10' C.C.

CONCRETE VALLEY GUTTER

not to scale

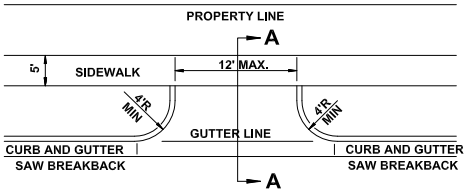
CITY OF HARLINGEN TEXAS

STANDARD CONCRETE VALLEY GUTTER SECTION

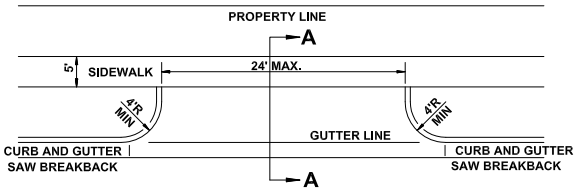
SCALE: N.T.S.

CITY OF HARLINGEN
ENGINEERING DEPARTMENT

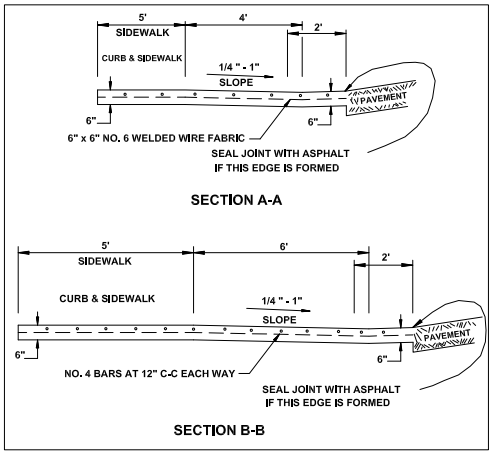
DATE: SEPTEMBER 2022



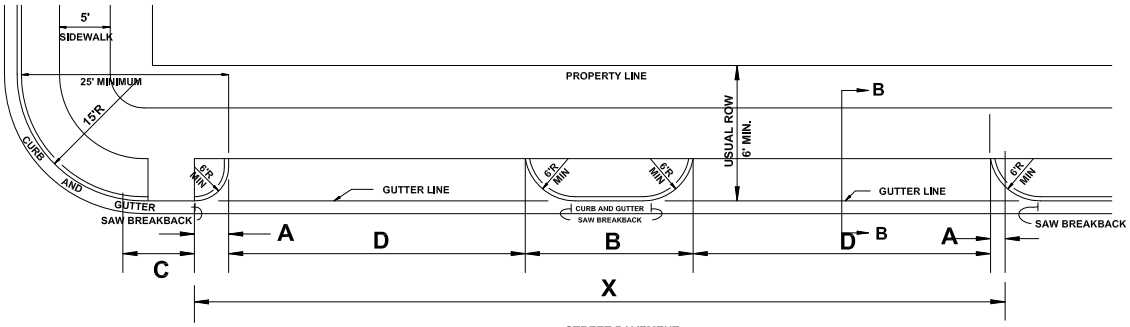
SINGLE RESIDENTIAL DRIVEWAYS



DOUBLE RESIDENTIAL DRIVEWAYS



NOTE: REMOVE COMPLETELY THE EXISTING CURB AND GUTTER BACK TO END OF THE RADII POUR NEW DRIVE APPROACH AND GUTTER MONOLITHICALLY.
FULL RADIUS REQUIRE ON COMMERIAL AND RESIDENTIAL DRIVEWAYS.



COMMERICAL DRIVEWAY

X FRONTAGE	A CURB RETURN RADII		B ISLAND WIDTH MIN.	C CORNER CLEARANCE		NO. OF DRIVEWAYS MAXIMUM	DRIVEWAY WIDTH	
	MIN.	MAX.		DESIRABLE	MIN.		DESIRABLE	MAX.
UP TO 58'	6'	30'	NONE	5'	NONE	1	24'	45'
58' TO 95'	6'	30'	NONE	25'	5'	1	24'	45'
96' TO 135'	6'	30'	20	25'	5'	2 *	30'	45'
136' TO 320'	6'	30'	20	25'	15'	2 *	35'	45'
321' TO 600'	10'	30'	20	25'	20'	3 *	40'	45'
601' AND UP	SPECIAL DESIGN - CONTACT CITY ENGINEER							

* IF ALL MINIMUM REQUIREMENTS ARE MET

NOTES:
1. ALL DRIVEWAYS ON STATE RIGHT-OF-WAY WILL NEED A TEXAS DEPT. OF TRANSPORTATION DRIVEWAY PERMIT.
2. ALL ACCESS DRIVEWAYS FROM TWO-WAY ROADWAY SHALL BE AT AN ANGLE OF 60 TO 90 DEGREES.
3. 30 DEGREE TO 60 DEGREE INGRESS DRIVEWAYS WILL BE PERMITTED ON FRONTAGE ABUTTING A ONE-WAY ROADWAY.
4. MAXIMUM DRIVEWAY WIDTHS SHALL BE USED ONLY WHERE FRONTAGE IS SUFFICIENT TO ASSURE MAXIMUM CORNER CLEARANCE, CURB RETURN RADII AND ISLAND WIDTH.

TYPICAL DRIVEWAY AND CURB CUT

CITY OF HARLINGEN TEXAS

TYPICAL DETAIL FOR DRIVEWAY SPACING AND CURB CUTS

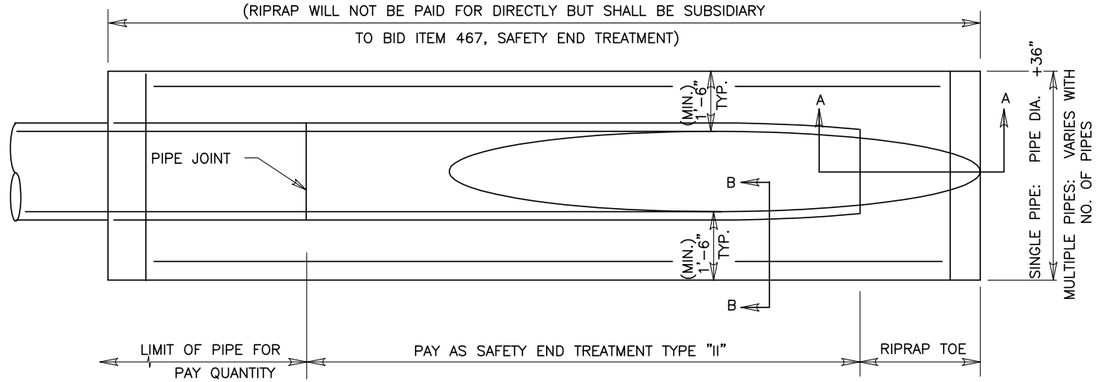
SCALE: N.T.S.

DRAWN: B.G.S.

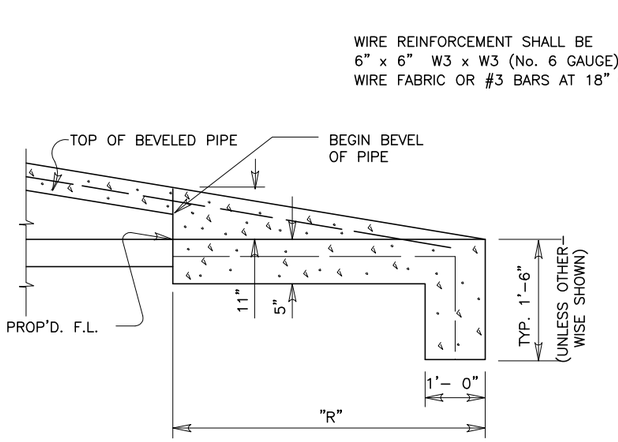
DATE: 2/09/2015

CITY OF HARLINGEN
HARLINGEN, TEXAS
ENGINEERING DEPARTMENT

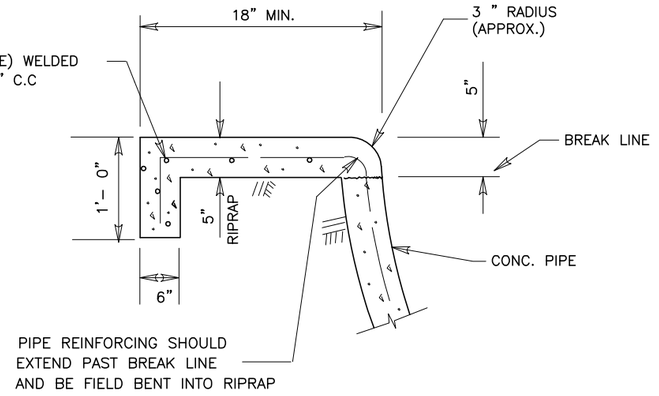
SHEET _____



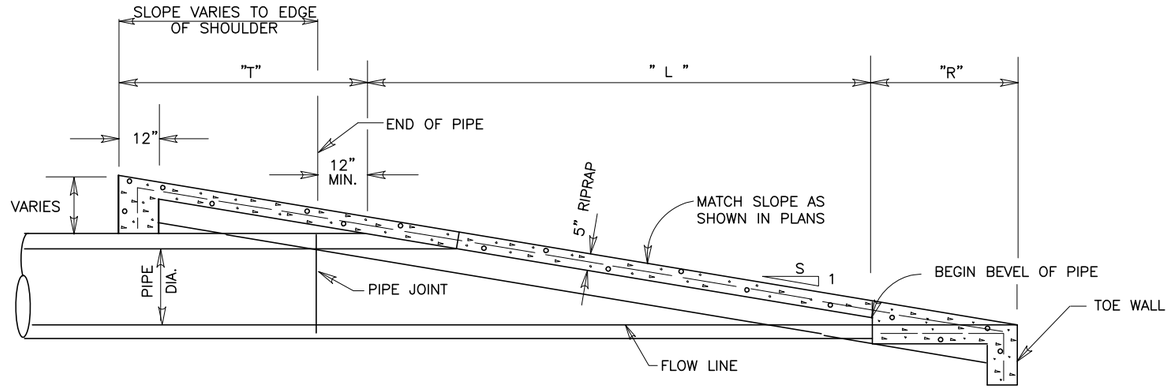
PLAN VIEW



SEC. A–A



SEC. B–B



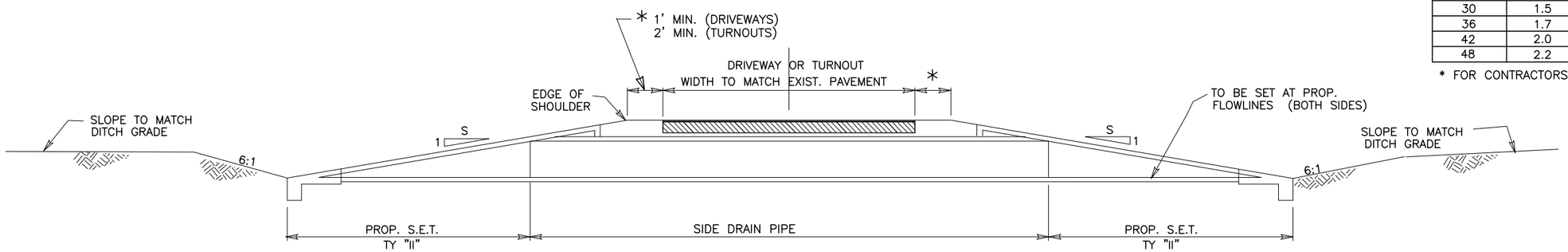
ELEVATION
SAFETY END TREATMENT

SAFETY END TREATMENT PIPE LENGTHS

PIPE DIA. (IN.)	"L"			
	3:1	4:1	5:1	6:1
12	2'–0"	2'–8"	3'–4"	4'–0"
15	2'–9"	3'–8"	4'–7"	5'–6"
18	3'–6"	4'–8"	5'–10"	7'–0"
24	5'-1 1/2"	6'–10"	8'-6 1/2"	10'–3"
30	6'–9"	9–0"	11'–3"	13'–6"
36	8'–6"	11'–4"	14'–2"	17'–0"
42	10'-1 1/2"	13'–6"	16'-10 1/2"	20'–3"
48	11'–9"	15'–8"	19'–7"	23'–6"

RIPRAP TOE LENGTHS

SLOPE	" R "	"T"
3:1	2'–9"	1'–9"
4:1	3'–8"	2'–4"
5:1	4'–7"	2'–11"
6:1	5'–6"	3'–6"



TYPICAL SIDEDRAIN SECTION

ESTIMATED RIPRAP VOLUME (CY)

PIPE DIA. (IN.)	3:1	4:1	5:1	6:1
12	.9	1.1	1.3	1.6
15	1.0	1.2	1.5	1.8
18	1.1	1.4	1.6	1.9
24	1.3	1.6	2.0	2.3
30	1.5	1.9	2.3	2.7
36	1.7	2.2	2.7	3.2
42	2.0	2.5	3.1	3.6
48	2.2	2.8	3.4	4.1

* FOR CONTRACTORS INFORMATION ONLY (SINGLE PIPE)

NOTE:

ALL EXCAVATION AND BACKFILL REQUIRED AT ALL PIPE SIDE DRAIN CONNECTIONS, ADJUSTMENTS AND/OR EXTENSIONS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE SUBSIDIARY TO THE BID ITEMS INVOLVED AND IN ACCORDANCE WITH ITEM 400 "STRUCTURAL EXCAVATION".

CITY OF HARLINGEN TEXAS

ENGINEERING DEPARTMENT

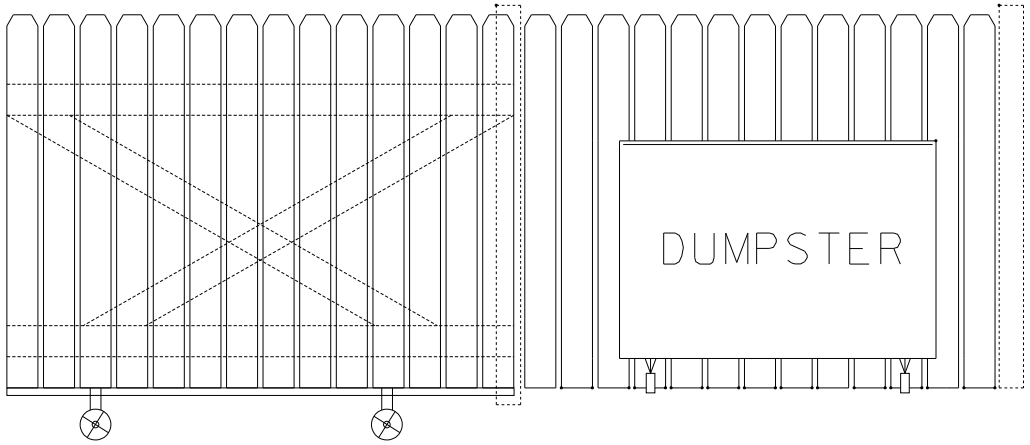
SAFETY END TREATMENT DETAIL

SHEET 1 OF 1 NOT TO SCALE

FILE NAME	SHEET NO.
SET.dwg	1

DEPARTMENT	MONTH	YEAR
Engineering	March	2011

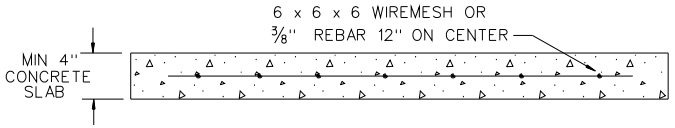
SINGLE SIDE LOAD 3 YARD CONTAINER



SLIDING GATE

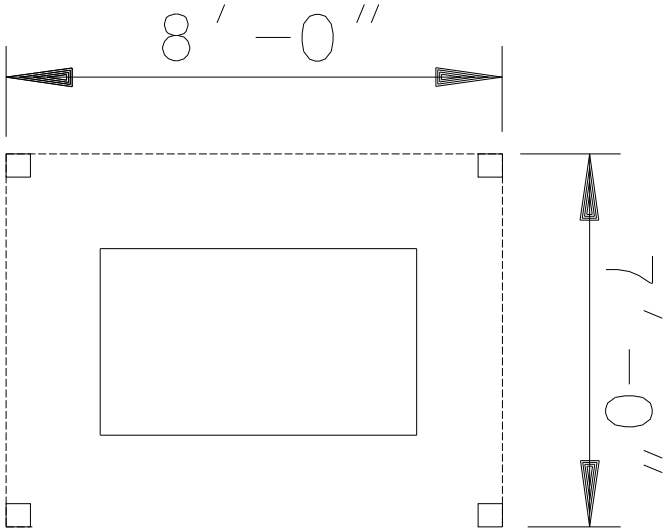
FRONT VIEW

4 yarder	6 yarder
72" wide	72" wide
48" length	54" length
54" height	70" height



CROSS SECTION

not to scale



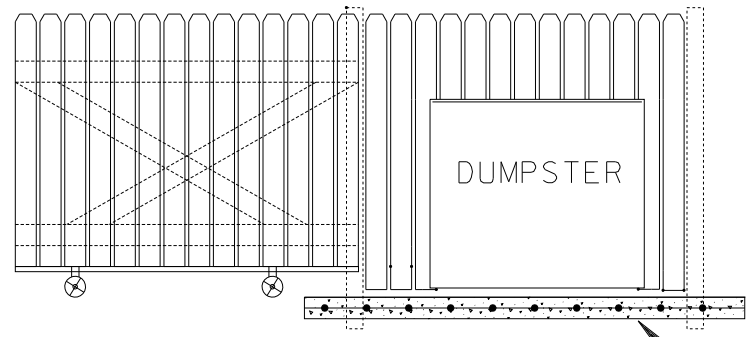
SLIDING GATE

OVERHEAD VIEW

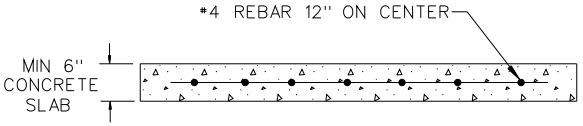
NTS

\rm\container enclosures.dgn, May. 08, 2007, 15:43:59

ENCLOSURE FOR ONE FOUR YARD
OR SIX YARD CONTAINER FRONT LOAD ONLY.

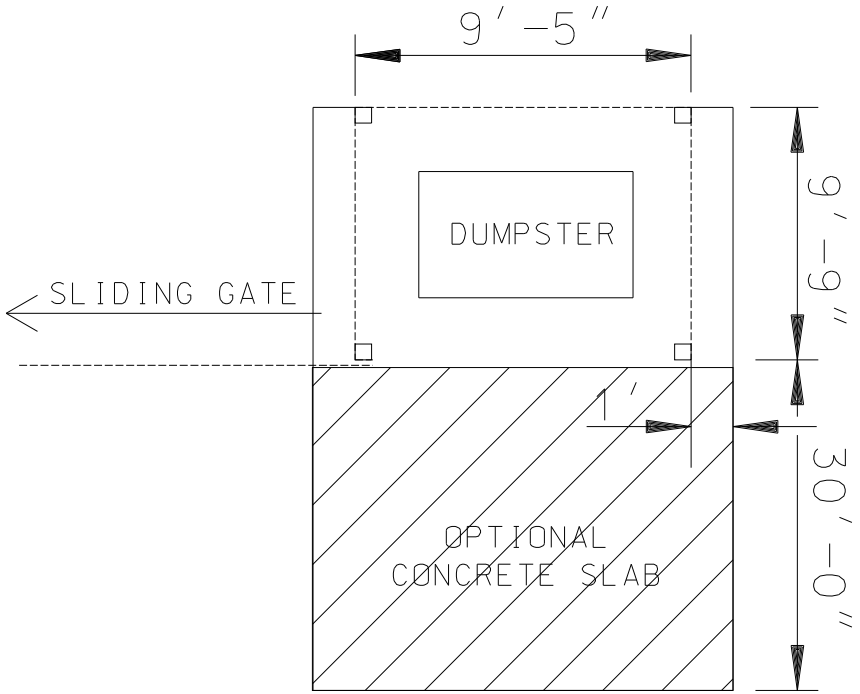


FRONT VIEW



CONCRETE SLAB
CROSS SECTION

not to scale



OVERHEAD VIEW

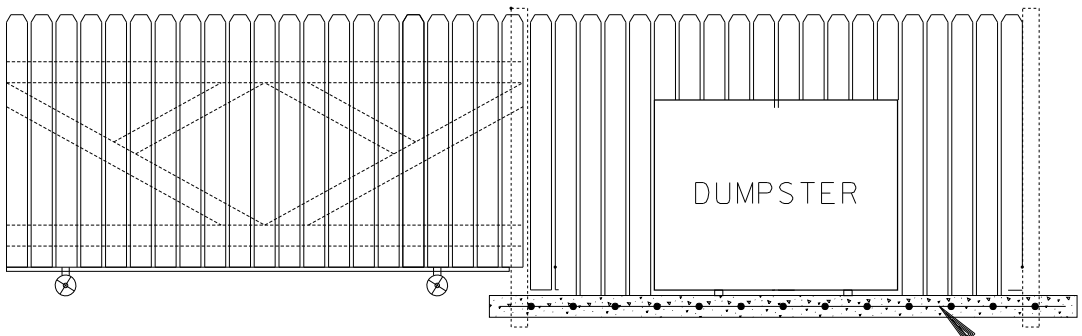
NOTE:
THE ADDITIONAL 30 FOOT CONCRETE SLAB IN FRONT OF THE DUMPSTER ENCLOSURE IS AN OPTIONAL ITEM SUGGESTED BY THE CITY DUE TO THE WEIGHT OF THE GARBAGE TRUCKS.

NOT TO SCALE

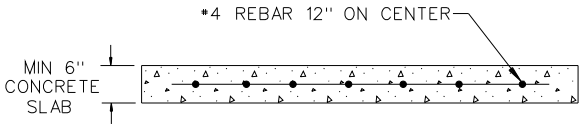
CITY OF HARLINGEN TEXAS

\rm\container enclosures.dgn May 08, 2007 15:45:38

ENCLOSURE FOR ONE EIGHT YARD CONTAINER.

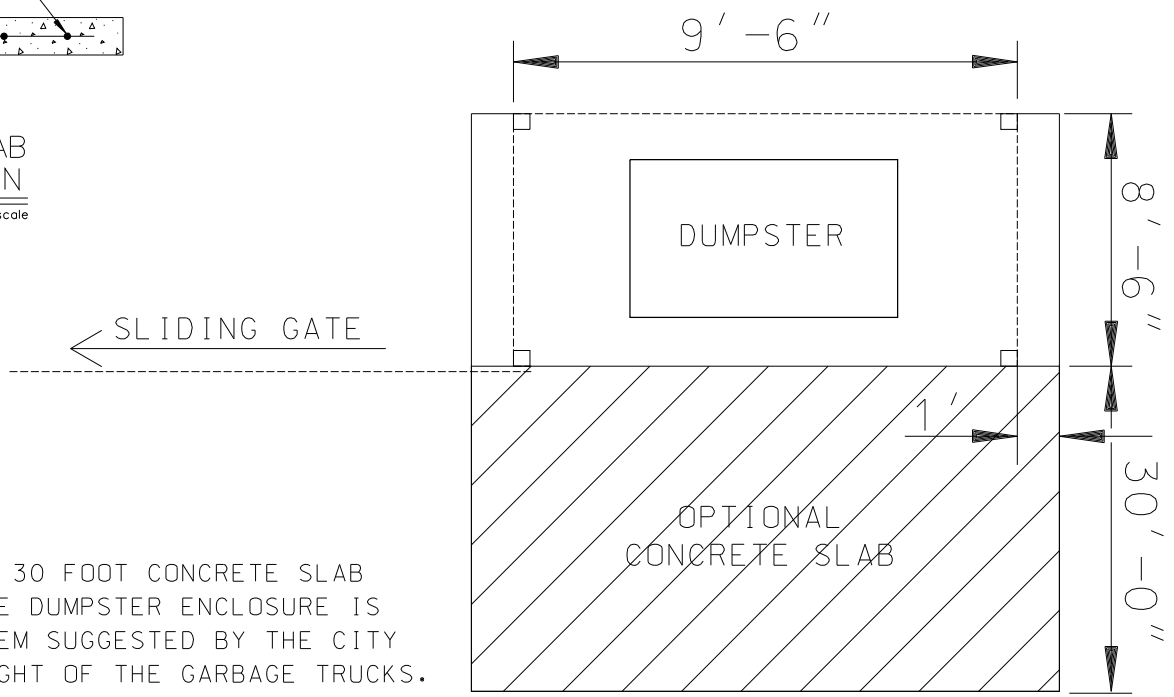


FRONT VIEW



CONCRETE SLAB
CROSS SECTION

not to scale



OVERHEAD VIEW

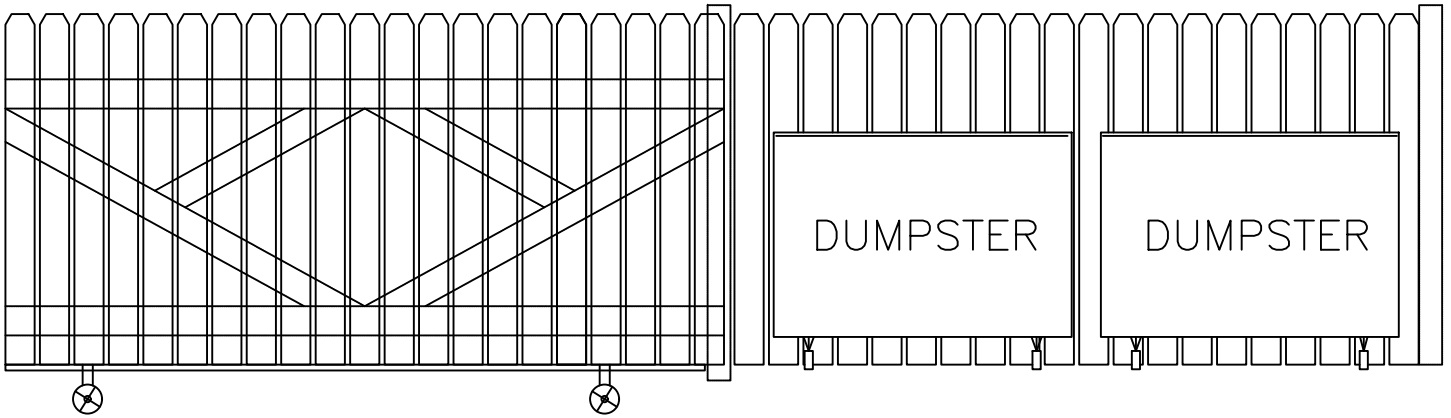
NOTE:
THE ADDITIONAL 30 FOOT CONCRETE SLAB IN FRONT OF THE DUMPSTER ENCLOSURE IS AN OPTIONAL ITEM SUGGESTED BY THE CITY DUE TO THE WEIGHT OF THE GARBAGE TRUCKS.

NOT TO SCALE

CITY OF HARLINGEN TEXAS

\rm\container enclosures.dgn May 08, 2007 15:47:05

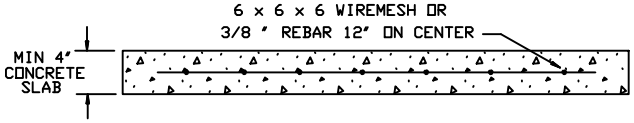
DOUBLE SIDE LOAD 3 YARD CONTAINER



SLIDING GATE

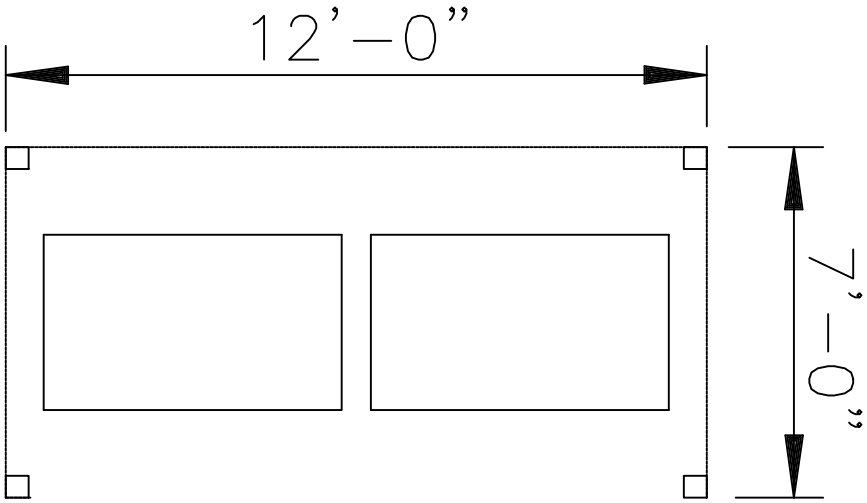
FRONT VIEW

4 yarder	6 yarder
72" wide	72" wide
48" length	54" length
54" height	70" height



CROSS SECTION

not to scale



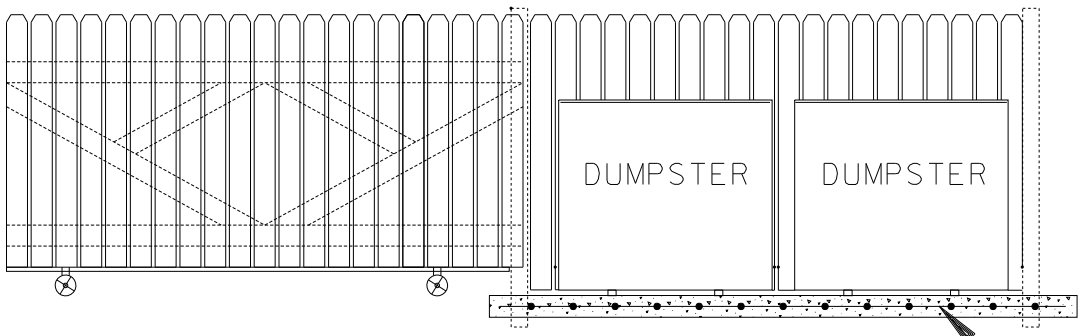
SLIDING GATE

OVERHEAD VIEW

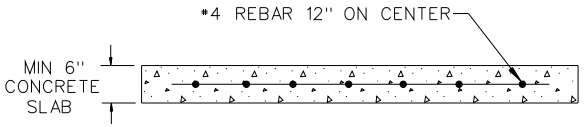
NTS

CITY OF HARLINGEN TEXAS

ENCLOSURE FOR TWO FOUR YARD OR SIX YARD CONTAINERS FRONT LOAD ONLY.

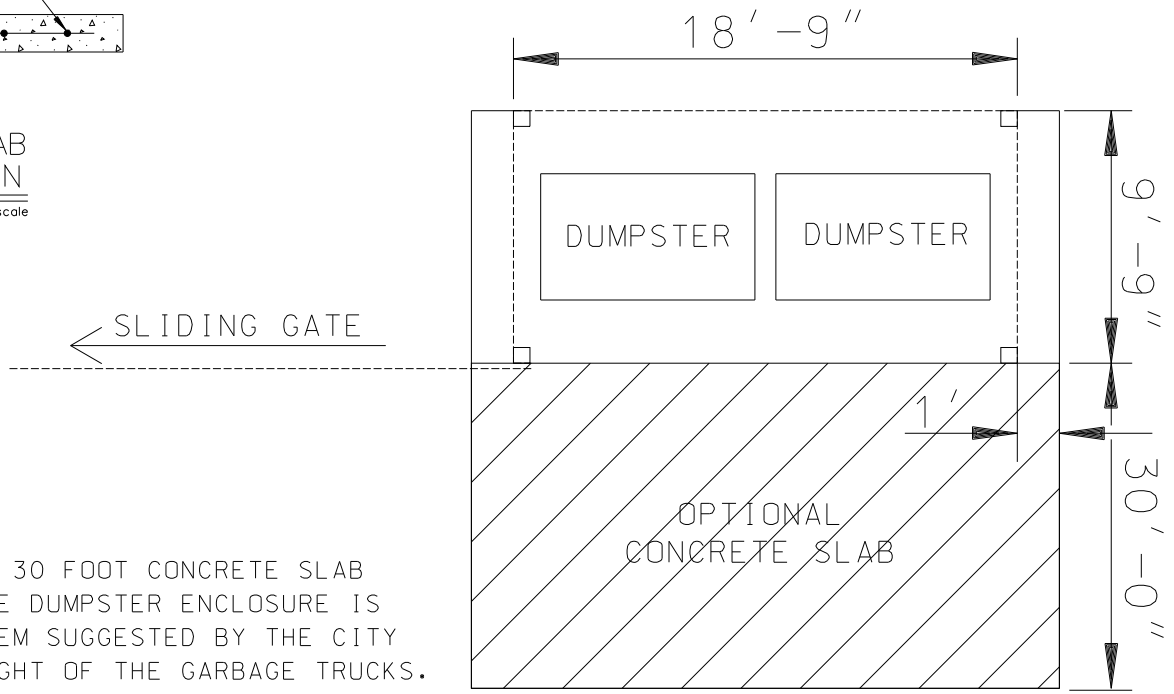


FRONT VIEW



CONCRETE SLAB CROSS SECTION

not to scale



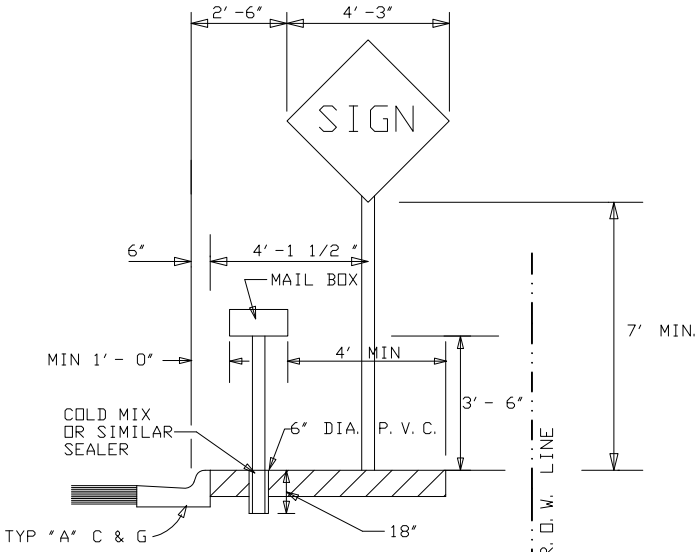
OVERHEAD VIEW

NOTE:
THE ADDITIONAL 30 FOOT CONCRETE SLAB IN FRONT OF THE DUMPSTER ENCLOSURE IS AN OPTIONAL ITEM SUGGESTED BY THE CITY DUE TO THE WEIGHT OF THE GARBAGE TRUCKS.

NOT TO SCALE

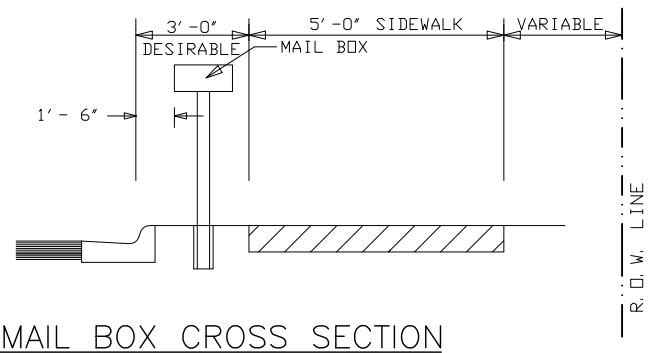
CITY OF HARLINGEN TEXAS

\rm\container enclosures.dgn May 08, 2007 15:46:16



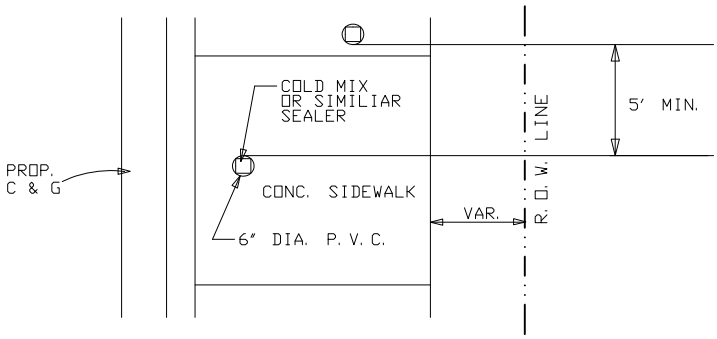
MAIL BOX CROSS SECTION

(MINIMUM BORDER DISTANCE)

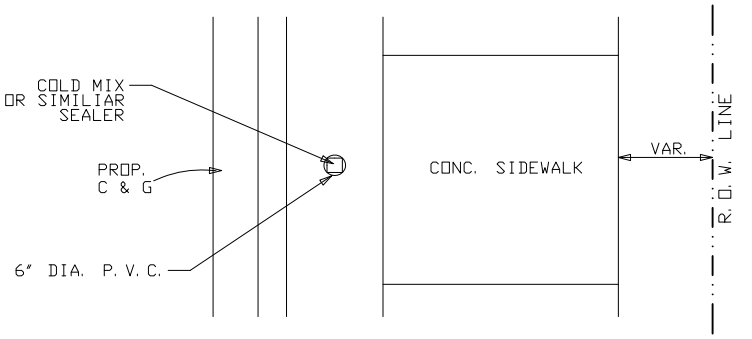


MAIL BOX CROSS SECTION

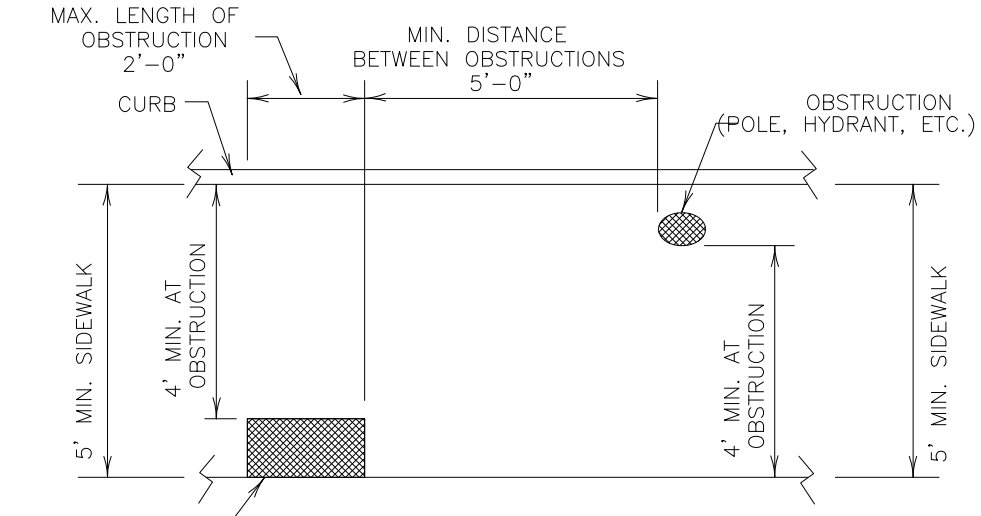
(DESIRABLE BORDER DISTANCE)



PLAN VIEW



PLAN VIEW



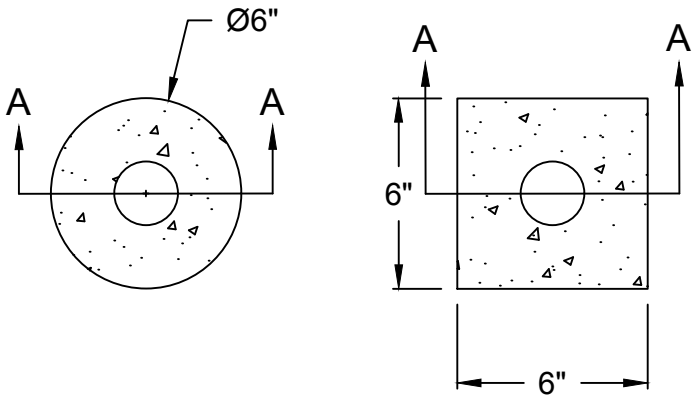
PLACEMENT OF STREET FIXTURES

(ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' x 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.)

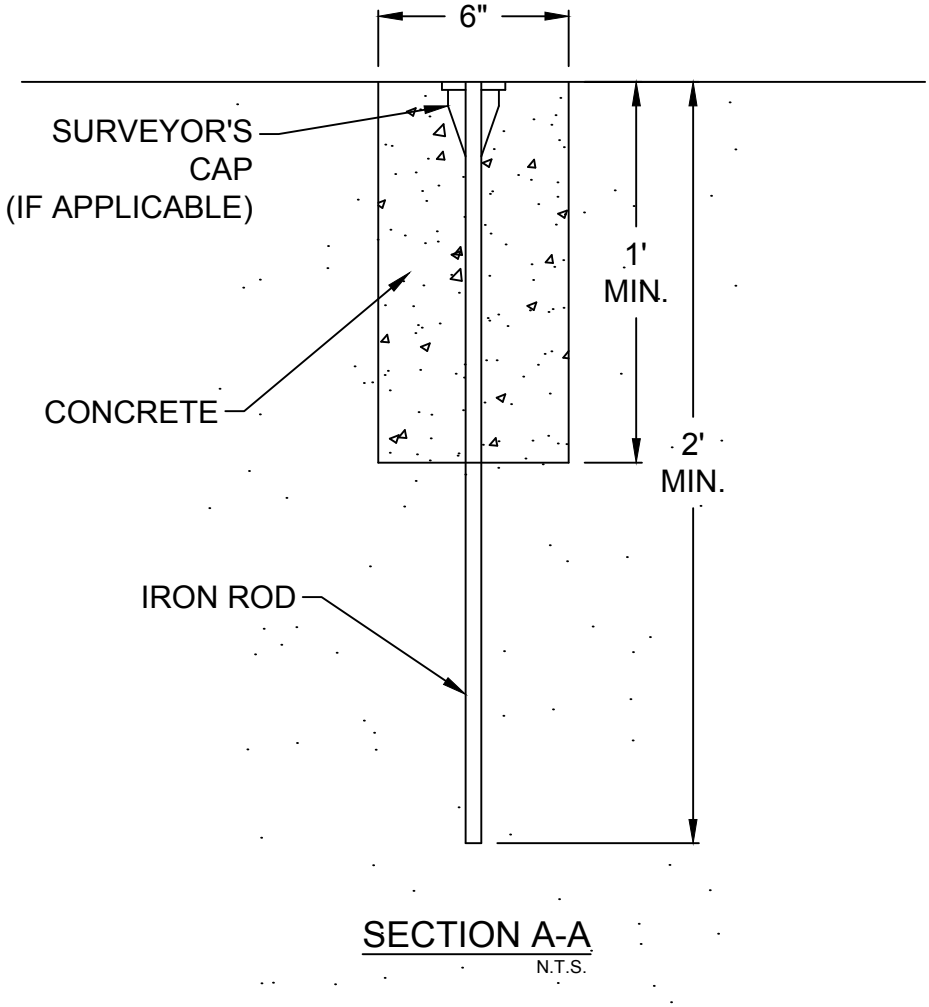
CITY OF HARLINGEN TEXAS

MAILBOX DETAILS

SCALE: N.T.S.	CITY OF HARLINGEN ENGINEERING DEPARTMENT
DRAWN: B.G.S.	
DATE: 11/11/2014	SHEET _____

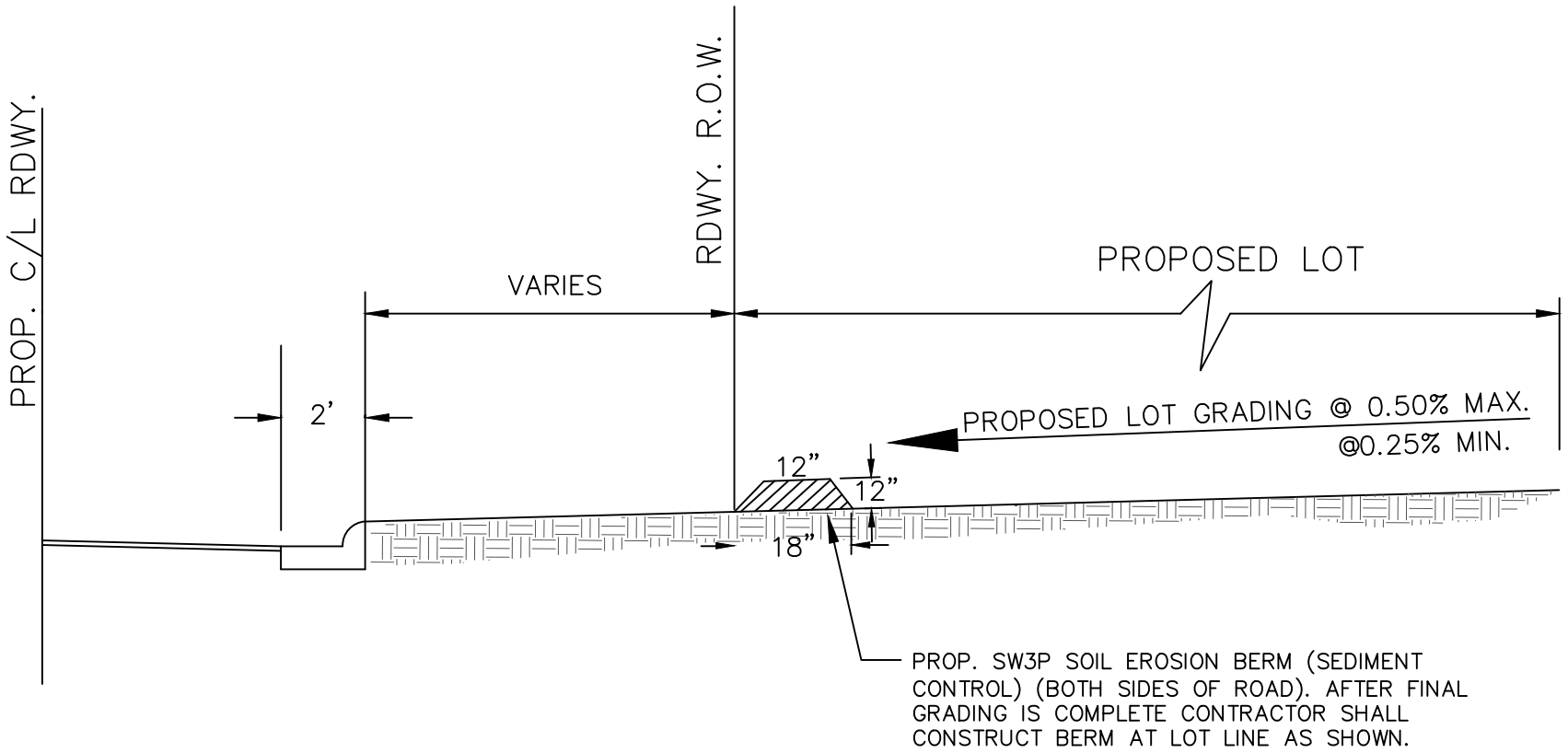


TOP VIEW
N.T.S.



SECTION A-A
N.T.S.

TYPICAL
CONCRETE MONUMENT
DETAIL



TYPICAL EROSION CONTROL BERM

CITY OF HARLINGEN TEXAS

Appendix B

General Notes and Testing Schedule

Engineering Department | 502 E. Tyler Ave. 78550 | (956) 216-5223

CITY OF HARLINGEN GENERAL NOTES FOR PUBLIC IMPROVEMENT PROJECTS

- GENERAL:
  1. CITY PERSONNEL CONTACT INFORMATION:
     - CITY INSPECTOR:
       - OSCAR OVALLE
       - OOVALLE@MYHARLINGEN.US
       - (956) 873-3494
     - CITY ENGINEER:
       - LUIS VARGAS, PE
       - LVARGAS@MYHARLINGEN.US
       - OFFICE: (956) 216-5223
       - MOBILE: (956) 266-4311
     - ASSISTANT CITY ENGINEER:
       - TO BE DETERMINED
     - EXCAVATION PERMIT REQUEST:
       - EXCAVATION.PERMITS@MYHARLINGEN.US
  2. THE CONTRACTOR SHALL VERIFY ALL LOCATION DIEMENSIONS, VERTICAL CONTOL ELEVATIONS, AND PROPERTY LINE LOCATIONS PRIOR TO CONSTRUCTION WITHIN THE EXISTING CITY ROW.
  3. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER, PROJECT ENGINEER OR HIS REPRESENTATIVE, AND CITY ENGINEER OR HIS REPRESENTATIVE REGARDING ANY DEVIATIONS FROM THE PLANS.
  4. THE CONTRACTOR SHALL OBTAIN AN EXCAVATION PERMIT FROM THE CITY OF HARLINGEN BEFORE PERFORMING WORK WITHIN THE ROW.
  5. THE CONTRACTOR SHALL NOTIFY TEXAS ONE CALL (811) OF HIS INTENDED OPERATIONS AT LEAST 48 HOURS PRIOR TO ANY AND ALL EXCAVATIONS.
  6. PER THE TEXAS ONE CALL STATUTE, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT ALL UTILITY COMPANIES WITH JURISDICTION IN THE AREA OF CONSTRUCTION TO DETERMINE WHETHER ANY ADDITIONAL FACILITIES OTHER THAN THOSE SHOWN ON THE PLANS MAY BE PRESENT AND TO REQUEST LOCATION AND IDENTIFICATION OF ALL UTILITIES NO LESS THAN TWO BUSINESS DAYS PRIOR TO CONSTRUCTION. A TEXAS ONE CALL NOTIFICATION CENTER MUST BE CONTACTED FOR LOCATE REQUESTS OF CLASS A UNDERGROUND FACILITIES BY CALLING 811 OR 1-800-545-6005. PHONE NUMBERS FOR CLASS B UNDERGROUND FACILITIES COMMONLY FOUND IN THE CITY OF HARLINGEN ARE LISTED BELOW BUT IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT ALL OWNERS OF CLASS B UNDERGROUND FACILITIES IN THE AREA OF CONSTRUCTION ARE NOTIFIED. THE CONTRACTOR SHALL OBTAIN WRITTEN ACKNOWLEDGEMENT AND APPROVAL FROM SUCH UTILITY COMPANIES AUTHORIZING THE CONTRACTOR TO PROCEED WITH THE PROPOSED CONSTRUCTION WORK. THE CONTRACTOR SHALL MAKE ALL NECESSARY PROVISIONS FOR THE SUPPORT, PROTECTION, AND/OR TEMPORARY RELOCATION OF ALL UTILITIES AND/OR STRUCTURES

(BOTH ABOVE AND BELOW GROUND) DURING CONSTRUCTION. THE CONTRACTOR SHALL PRESERVE AND PROTECT ALL UNDERGROUND FACILITIES FOUND.

CITY OF HARLINGEN	(956) 216-5300
HWWS	(956) 430-6107
TEXAS ONE CALL	(800) 245-4545
DIG TESS	(800) DIG-TESS
TEXAS GAS SERVICE	(956) 959-5325
SOUTHWESTERN BELL TELEPHONE	(800) 286-8313
SPECTRUM CABLE	(800) 222-5355
AT&T TEXAS	(800) 288-2020
AEP TEXAS	(800) 344-8377

7. WHEN WORKING IN EXISTING CITY ROW, TRENCH EXCAVATION SHALL NOT PRECEDE BACKFILL BY MORE THAN 300 FEET NOR SHALL ANY TRENCH BE LEFT OPEN AFTER NORMAL WORKING HOURS.
8. THE CONTRACTOR SHALL EMPLOY GOOD HOUSEKEEPING MEASURES WITHIN THE PUBLIC ROW AT ALL TIMES. ALL MUD OR OTHER OBSTRUCTIONS SHALL BE IMMEDIATELY REMOVED FROM PUBLIC ROADWAYS OR SIDEWALKS. NO WASTE SHALL BE STORED IN THE ROW. PORTABLE RESTROOMS SHALL APPEAR CLEAN AND BE PLACED IN SUCH A MANNER TO ELIMINATE NUISANCE ODORS FROM AFFECTING ADJACENT PROPERTY OWNERS.
9. THE CONTRACTOR SHALL NOT UNLOAD OR STORE ANY MATERIAL, PERMIT WORKERS TO PARK, PARK EQUIPMENT, NOR PLACE REFUSE CONTAINTERS WITHIN CITY RIGHT OF WAY OR ON A PUBLIC STREET WITHOUT FIRST OBTAINING PERMISSION FROM THE CITY ENGINEER.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROCURING ALL LEGALLY REQUIRED PERMITS AND LICENSES, GIVE ALL NOTICES NECESSARY AND INCIDENTAL TO THE DUE AND LAWFUL PROSECUTION OF THE WORK, AND POST ALL NOTICES REQUIRED BY LAW PROMINENTLY AT THE JOBSITE AT ALL TIMES.
11. ANY DAMAGE TO EXISTING PUBLIC IMPROVEMENTS CAUSED BY THE CONTRACTOR EITHER ACCIDENTAL IN NATURE OR THROUGH HIS MEANS AND METHODS SHALL BE REPAIRED TO PRE-CONSTRUCTION CONDITIONS OR BETTER AT NO COST TO THE CITY.
12. THE CONTRACTOR SHALL IMPLEMENT A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IN ACCORDANCE WITH TPDES GENERAL PERMIT NUMBER TXR150000 AND SHALL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING ANY SWPPP MEASURES REQUIRED BY THE PLAN. A COPY OF THE SWPPP AND NOI (AS APPLICABLE) MUST BE PROVIDED TO THE CITY PRIOR TO CONSTRUCTION.

- INSPECTIONS AND TESTING:
  1. THE CITY SHALL BE GRANTED THE RIGHT OF ENTRY FOR THE PURPOSES OF INSPECTION OF THE PERTINENT ITEMS.
  2. THE CONTRACTOR SHALL COORDINATE ALL PAVING AND DRAINAGE IMPROVEMENT ACTIVITIES THAT REQUIRE CITY INSPECTION OR TESTING WITH THE CITY INSPECTOR. WORK REQUIRED TO BE INSPECTED OR TESTED BY THE CITY SHALL OCCUR BETWEEN REGULAR WORKING HOURS 8:00 AM TO 5:00 PM, MONDAY THROUGH FRIDAY.
  3. THE CONTRACTOR SHALL PROVIDE 100-FOOT STATIONING THROUGHOUT ALL AREAS THAT REQUIRE TESTING. MATERIAL TESTING REPORTS SHALL INDICATE STATION AND OFFSET LOCATION OF TEST.
  4. THE CITY SHALL SCHEDULE ALL TESTING AND PROCTOR SAMPLE PICK-UPS FOR PAVING AND DRAINAGE IMPROVEMENTS TO BE DEDICATED FOR PUBLIC USE ON THE PROJECT. THE CONTRACTOR SHALL PROVIDE THE CITY INSPECTOR A MINIMUM OF 24-HOURS ADVANCE NOTICE FOR TESTING AND INSPECTIONS.
  5. THE CONTRACTOR SHALL PROVIDE THE CITY OF HARLINGEN WITH COPIES OF ALL MATERIAL TICKETS AND MATERIAL TESTING REPORTS FOR ALL PAVEMENT

AND DRAINAGE RELATED ITEMS. TICKETS SHALL INDICATE THE MATERIAL TYPE, QUANTITY DELIVERED, PROJECT NAME, AND LOCATION OF DELIVERY. HARD COPIES OF TICKETS SHALL BE PROVIDED TO THE CITY INSPECTOR DAILY. ELECTRONIC COPIES SHALL BE EMAILED TO THE ASSISTANT CITY ENGINEER ON A WEEKLY BASIS.

6. COPIES OF ALL MATERIAL TESTING REPORTS FOR ALL PAVEMENT AND DRAINAGE RELATED ITEMS SHALL BE EMAILED TO THE CITY INSPECTOR AND ASSITANT CITY ENGINEER WITHIN 72-HOURS OF RECEIPT.

- TRAFFIC:
  1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST PUBLISHED VERSION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
  2. THE CONTRACTOR OR DEVELOPER'S ENGINEER SHALL PREPARE A TRAFFIC CONTROL PLAN FOR THE SIGNING, BARRICADING AND PAVEMENT MARKING FOR THE SAFE MAINTENANCE OF TRAFFIC DURING CONSTRUCTION WITHIN EXISTING STREETS AND PUBLIC RIGHT-OF-WAY. PLAN SHALL BE STAMPED BY A PROFESSIONAL ENGINEER. PLAN MUST BE SUBMITTED TO AND APPROVED BY THE CITY OF HARLINGEN, CITY ENGINEER AT LEAST TWO BUSINESS DAYS PRIOR TO ANY CONSTRUCTION WITHIN THE PUBLIC STREET RIGHT-OF-WAY. BARRICADES, TEMPORARY PAVEMENT MARKINGS, AND SIGNS SHALL BE MAINTAINED IN GOOD CONDITION AND MEET THE LEGIBILITY, RETRO-REFLECTIVITY, AND OTHER REQUIREMENTS OF THE CURRENT EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES UNTIL THE COMPLETION AND ACCEPTANCE OF ALL WORK WITHIN THE PUBLIC ROW OR UNTIL CONTRACTOR IS DIRECTED OTHERWISE.
  3. THE CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL PLAN IN ACCORDANCE WITH THE LATEST VERSION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. THIS PLAN SHALL BE SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER AND SUBMITTED TO THE CITY ENGINEER FOR APPROVAL PRIOR TO THE COMMENCEMENT OF THE WORK.
  4. THE CONTRACTOR SHALL PROVIDE THE CITY A MINIMUM OF 72-HOURS ADVANCE NOTICE OF ANY PROPOSED ROAD, INTERSECTION, OR TURNOUT CLOSURES. IF THE PROPOSED CLOSURE IS ON OR ADJOINS A STATE-OWNED STREET, THE CONTRACTOR SHALL, IN ADDITION, COORDINATE THE REQUEST WITH THE SAN BENITO AREA TXDOT OFFICE (399-5102).
  5. THE CONTRACTOR SHALL NOT ADVERSELY AFFECT OR POSE A SIGNIFICANT SAFETY RISK TO THE TRAVELING PUBLIC. THE CONTRACTOR SHALL MINIMIZE WORK ACTIVITIES OUTSIDE OF THE WORK ZONE ON PUBLIC STREETS AND SIDEWALKS.
  6. A 3:1 SAFETY SLOPE AND 4.0' BUFFER ZONE SHALL BE REQUIRED DURING NON-WORKING HOURS WHEN CONSTRUCTION OPERATIONS RESULT IN AN ELEVATION DIFFERENCE OF MORE THAN 2-INCHES NEXT TO AN OPEN TRAVEL WAY.
  7. THE CONTRACTOR SHALL PROVIDE A SUFFICIENT NUMBER OF CERTIFIED FLAGGERS AND APPROPRIATE TRAFFIC CONTROL DEVICES TO SAFELY GUIDE THE TRAVELING PUBLIC THROUGH THE WORK AREA AT ALL TIMES WHEN WORKING WITHIN THE ROW. THE ENGINEER MAY REQUIRE ADDITIONAL FLAGGERS OR TRAFFIC CONTROL DEVICES.
  8. ALL TRAFFIC CONTROL DEVICES SHALL BE PROPERLY MAINTAINED AT ALL TIMES. THE CONTRACTOR SHALL ASSURE THAT ALL TRAFFIC CONTROL DEVICES ARE CLEAN AND FUNCTIONAL AT ALL TIMES.
  9. THE CONTRACTOR SHALL PLAN AND PERFORM HIS WORK IN A MANNER THAT WILL PERMIT SAFE PUBLIC TRAFFIC MOVEMENT ON ALL STREETS.

CITY OF HARLINGEN TESTING SCHEDULE

DESCRIPTION	RATE	EST. QUANTITY
SOILS:		
STANDARD PROCTOR – TRENCH BACKFILL	PER MATERIAL SOURCE	–
STANDARD PROCTOR – SUBGRADE	PER STREET/MATERIAL	–
DENSITIES – TRENCH BACKFILL	PER 300 LF TRENCH/LIFT	–
DENSITIES – SUBGRADE (ASPHALT STREET)	ONE PER 300 LF IN ZIG ZAG	–
DENSITIES – TRENCH BACKFILL SAND (ASPHALT STREET)	PER 200 LF TRENCH/LIFT	
DENSITIES – SUBGRADE (CONCRETE STREET)	ONE PER 300 LF IN ZIG ZAG	
DENSITIES – SUBGRADE (DRIVEWAYS)	PER DRIVEWAY	–
DENSITIES – SUBGRADE (SIDEWALKS)	PER 5000 SF	–
DENSITIES – BEHIND CURB AND GUTTER	PER 300 LF	–
FLEXIBLE BASE:		
SIEVE ANALYSIS	PER MATERIAL SOURCE	–
ATTERBURG LIMITS	PER MATERIAL SOURCE	–
STANDARD PROCTOR	PER MATERIAL SOURCE	–
L.A. ABRASION	PER MATERIAL SOURCE	–
CBR (STANDARD)	PER MATERIAL SOURCE	–
WET BALL MILL TEST	PER MATERIAL SOURCE	–
TRIAXIAL TEST	PER MATERIAL SOURCE	–
DENSITIES OF COMPACTED BASE (ASPHALT STREET)	ONE PER 300 LF IN ZIG ZAG	–
DENSITIES OF COMPACTED BASE (CONCRETE STREET)	ONE PER 300 LF IN ZIG ZAG	
DENSITIES OF COMPACTED BASE (C&G)	PER 200 LF C&G	–
HOT–MIX ASPHALT (HMA:)		
EXTRACTION, SIEVE ANALYSIS	PER 500 TONS OR DAY	–
LAB DENSITY & STABILITY	PER 500 TONS OR DAY	–
THEORETICAL DENSITY (RICE METHOD)	PER 500 TONS OR DAY	–
TEMPERATURE – DURING LAY–DOWN	CONTINUOUS AS NEEDED	–
THICKNESS – IN PLACE (CORE)	PER 1000 LF STREET	–
% AIR VOIDS – IN PLACE (CORE)	PER 1000 LF STREET	–
% THEORETICAL DENSITY – IN PLACE (CORE)	PER 1000 LF STREET	–
CONCRETE:		
(UNCONFINED COMPRESSION, 7, 14, & 28 DAY)		
CURB & GUTTER / CURB	ONE SET PER 50 CY/DAY	–
SIDEWALKS AND CURB RAMPS	ONE SET PER 50 CY/DAY	–
DRIVEWAYS	ONE SET PER 50 CY/DAY	–
CURB, POST & GRATE INLETS	ONE SET PER 50 CY/DAY	–
BOX CULVERTS (CAST–IN–PLACE)	ONE SET PER 50 CY/DAY	–
WINGWALLS	ONE SET PER 50 CY/DAY	–
STORM MANHOLES (CAST–IN–PLACE)	ONE SET PER 50 CY/DAY	–
RIPRAP, APRONS & S.E.T.s	ONE SET PER 50 CY/DAY	–
MANHOLE BASE/FOOTING	ONE SET PER 50 CY/DAY	–
RIGID CONCRETE PAVEMENT:		
COMPRESSION STRENGTH (7 & 28 DAY)	ONE SET PER 50 CY/DAY	–
FLEXURAL (BEAM) STRENGTH (7 & 28 DAY)	ONE SET PER 50 CY/DAY	–
AIR CONTENT	ONE SET PER 50 CY/DAY	–
SLUMP	ONE SET PER 50 CY/DAY	–

1. THE ABOVE TESTING RATES ARE ONLY ANTICIPATED GUIDELINES, THE ENGINEER OF RECORD RESERVES THE RIGHT TO CONDUCT ADDITIONAL TESTING AT THE ENGINEER'S DISCRETION. RE–TEST FOR FAILURES ARE NOT INCLUDED.
2. MOISTURE CONTENTS TO BE INCLUDED WITH DENSITY TEST.
3. IN THE EVENT OF FAILURES, ADDITIONAL TESTS WILL BE REQUIRED. IF EXCESSIVE RAIN OR DRY PERIOD OCCURS ON A PREVIOUSLY TESTED SECTION, THE CITY ENGINEER OR CITY ENGINEER'S REPRESENTATIVE MAY ORDER RE–TESTS AS NECESSARY.

Appendix C

Floodplain Development Permit Application

CITY OF HARLINGEN
ENGINEERING DEPARTMENT
502 E. TYLER AVENUE, HARLINGEN TX 78550

FLOODPLAIN DEVELOPMENT PERMIT APPLICATION

SECTION 1: General Provisions (APPLICANT to read and sign):

1. No work of any kind may begin until a floodplain development permit is issued.
2. The permit may be revoked if any false statements are made herein.
3. If revoked, all work must cease until permit is re-issued.
4. Development shall not be used or occupied until Certificate of Compliance (CO) is issued.
5. Permit will become null and void if no work is commenced within six months of issuance.
6. The floodway development permit will be in effect for 12 months following the start of construction unless otherwise approved on the permit by the floodplain administrator.
7. Applicant is hereby informed that other permits may be required to fulfill local, state and federal regulatory requirements.
8. Applicant hereby gives consent to the Local Administrator or his/her representative to make reasonable inspections required to verify compliance.
9. BY SIGNING AND SUBMITTING THE APPLICATION, THE APPLICANT CERTIFIES THAT ALL STATEMENTS HEREIN AND IN ATTACHMENTS INCLUDED IN THIS APPLICATION ARE, TO THE BEST OF THE APPLICANT'S KNOWLEDGE, TRUE AND ACCURATE.

APPLICANT'S SIGNATURE _____ DATE _____

SECTION 2: Proposed Development (To be completed by APPLICANT)

NAME ADDRESS TELEPHONE

_____
APPLICANT

_____
BUILDER

_____
ENGINEER

PROJECT LOCATION:

To avoid delay in processing the application, please provide enough information to easily identify the project location. Provide the street address, lot number or legal description and, outside urban areas, the distance to the nearest intersection road or well-known landmark. A sketch attached to this application showing the project location would be helpful.

_____

_____

DESCRIPTION OF WORK (Check all applicable boxes):

A. STRUCTURAL DEVELOPMENT

TYPE OF ACTIVITY:

- ☐ New Structure
- ☐ Addition
- ☐ Alteration
- ☐ Relocation
- ☐ Demolition
- ☐ Replacement

STRUCTURE TYPE:

- ☐ Residential (1-4 Family)
- ☐ Residential (More than 4 Family)
- ☐ Non-residential (Floodproofing ☐ Yes)
- ☐ Combined Use (Residential and Commercial)
- ☐ Manufactured (Mobile) Home
  (In Manufactured Home Park? ☐ Yes)

ESTIMATED COST OF PROJECT $_____

B. OTHER DEVELOPMENT ACTIVITIES

☐ Clearing ☐ Fill ☐ Mining ☐ Drilling ☐ Grading
☐ Excavation (Except for Structural Development Checked Above)
☐ Watercourse Alteration (Including Dredging and Channel Modifications)
☐ Drainage Improvements (Including Culvert Work)
☐ Road, Street, or Bridge Construction
☐ Subdivision (New or Expansion)
☐ Individual Water or Sewer System
☐ Other (Please specify) _____

SECTION 3: Floodway Determination (To be completed by APPLICANT)

The proposed development is location on FIRM Panel No. _____, Dated _____.
The Proposed Development:

- ☐ Is NOT located in Special Flood Hazard Area** (If so, Review is Complete and No Floodplain Development Permit is Required)
- ☐ Is partially located in the SFHA, but building/development is not.
- ☐ Is located in a Special Flood Hazard Area
  FIRM zone designation is _____
  "100-Year" flood elevation at the site is: _____ft. NGVD (MSL) ☐ Unavailable
- ☐ Is located in the floodway.
  FBFM Panel No. _____ Dated _____
  (if different from the FIRM panel and date)

**Special Flood Hazard Area Zones: A, AO, AH, A1-30, AE, A99, AR, AR/AE, AR/AO, AR/A1-A30, AR/A, V, VE, Regulatory Floodway

See Section 4 for additional instructions.

AUTHORIZED SIGNATURE _____ DATE _____

Section 4: Additional Information Required

The applicant must submit the documents checked below before the application can be processed. Additional state permits may be required subject to development activities.

- ☐ A site plan showing the property lines and lot dimensions, required set back lines and easements, topographic information such as contour lines or spot elevations, streets, watercourses, existing and proposed structures, proposed building elevations of all new construction and the existing lowest floor for substantially improved or substantially damaged structures, elevations of all clearing filling and other proposed changes to the ground, lowest and highest existing curb/centerline elevations adjacent to the front of the property, floodway and floodplain boundaries, and base flood elevation.
- ☐ Development plans, drawn to scale, and specifications, including where applicable: details for anchoring structures, proposed elevation of lowest floor (including basement), types of water-resistant materials used below the first floor, details of floodproofing of utilities located below the first floor, and details of enclosures below the first floor.
- ☐ Subdivision or other development plans. (If the subdivision or other development exceeds 50 lots or 5 acres, whichever is the lesser, the applicant must provide "100-year" flood elevations if they are not otherwise available).
- ☐ Plans showing the extent of any watercourse or natural drainage relocation and/or landform alterations.
- ☐ Change in water elevation (in feet) _____ ☐ Meets ordinance limits on elevation increases ☐ YES ☐ NO
- ☐ Top of new compacted fill elevation _____ft. NGVD (MSL).
- ☐ Floodproofing protection level (non-residential only) _____ft. NGVD (MSL). For floodproofed structures, applicant must attach certification from registered engineer or architect.
- ☐ An elevation certificate for buildings on property located in or abutting the floodway.
- ☐ Certification from a registered engineer that the proposed activity in a regulatory floodway will not result in <u>any</u> increase in the height of the "100-year" flood. A copy of all data and hydraulic/hydrologic calculation supporting this finding must also be submitted.

SECTION 5: Permit Determination (To be completed by LOCAL ADMINISTRATOR)

I have reviewed the information provided and the proposed activity DOES / DOES NOT comply with all applicable codes of the City of Harlingen. The permit is issued subject to the condition attached hereto and made part of this permit.

SIGNED: _____ DATE: _____

PERMIT #_____

SECTION 6: AS-BUILT ELEVATIONS (To be submitted by APPLICANT prior to Certificate of Compliance issuance)

The following information must be provided for structures that are part of this application. This section must be completed by a registered professional engineer or licensed land surveyor (or attach a certification to this application). Complete the following:

- Actual (as-built) elevation on the top of the lowest floor, including basement, is: _____ft. NAVD88 (MSL).
- Actual (as-built) elevation of floodproofing protection is: _____ft. NAVD88 (MSL).

SECTION 7: COMPLIANCE ACTION (TO be completed by LOCAL ADMINISTRATOR)

The LOCAL ADMINISTRATOR will complete this section as applicable based on inspection of the project to ensure compliance with the community's local law for flood damage prevention.

INSPECTIONS:

DATE: _____ BY: _____ DEFICIENCES? ☐ YES ☐ NO

DATE: _____ BY: _____ DEFICIENCES? ☐ YES ☐ NO

DATE: _____ BY: _____ DEFICIENCES? ☐ YES ☐ NO

SECTION 8: CERTIFICATE OF COMPLIANCE (TO be completed by LOCAL ADMINSTRATOR)

Certificate of Compliance issued:

DATE: _____ BY: _____

Appendix D

City of Harlingen Ordinance No. 2019-37 Requiring Maintenance Agreements and Easements

ORDINANCE NO. 2019-37

AN ORDINANCE OF THE CITY OF HARLINGEN TO REGULATE AND REDUCE POLLUTION THAT ENTERS THE SURFACE WATER IN THE STATE OF TEXAS AND WATERS OF THE UNITED STATES FROM DISCHARGES INTO THE CITY'S MUNICIPAL SEPARATE STORM SEWER SYSTEM, BY PROVIDING FOR THE DETECTION AND ELIMINATION OF ILLICIT CONNECTIONS TO THE STORM SEWER SYSTEM AND REQUIRING EROSION CONTROL AND POLLUTION PREVENTION AT CONSTRUCTION SITES, AND TO ESTABLISH PENALTIES AND AN EFFECTIVE DATE

WHEREAS, the City of Harlingen, a home-rule city of the State of Texas, may adopt and enforce ordinances necessary to protect health, life, property and the general welfare of the City and its residents and visitors; and

WHEREAS, pursuant to the Clean Water Act and Texas Pollution Discharge Elimination System General Permit TXR040000, as it may be amended, the City of Harlingen is required to develop, implement, and enforce a stormwater management program designed to reduce the discharge of pollutants into the City's streets, gutters, ditches, and storm drains, and to the Surface Water in the State, and the Waters of the United States, to the maximum extent practicable; and,

WHEREAS, the City's stormwater management program must include six minimum control measures: (1) public education and outreach on stormwater impacts; (2) public involvement and participation; (3) illicit discharge detection and elimination; (4) construction site stormwater runoff control; (5) post-construction stormwater management in new development and redevelopment; and (6) pollution prevention and good housekeeping for municipal operations; and,

WHEREAS, implementation of best management practices consistent with the provisions of the City's storm water management program constitutes compliance with the standard of reducing pollutants to the "maximum extent practicable;" and,

WHEREAS, the City of Harlingen and its planning area are located within the watershed of the Arroyo Colorado and all the stormwater run-off from the City of Harlingen and its planning area flows into the Arroyo Colorado; and the Arroyo Colorado flows into the Laguna Madre; and,

WHEREAS, the Texas Commission on Environmental Quality (TCEQ) has determined that the Arroyo Colorado is an impaired water body that does not meet its aquatic life use primarily due to low-dissolved oxygen, but also due to high levels of nutrients and sedimentation and suspended solids; and,

WHEREAS, TCEQ in 2003 estimated that a ninety percent (90%) reduction in nitrogen, phosphorous, biological oxygen demanding substances and sediment will be necessary for the Arroyo Colorado to meet aquatic life water quality standards; and

WHEREAS, other sources of pollution that may contaminate stormwater include erosion of disturbed land at construction sites, the deliberate or inadvertent discharge of material or substances other than stormwater directly or indirectly into storm drains, and stormwater run-off from roof tops, parking lots, and yards and lawns treated with excess fertilizer and pesticides; and,

WHEREAS, natural materials such as leaves and grass clippings are beneficial to gardens and soil as mulch and a soil amenity but constitute pollution when they enter waterways because the decomposition of these materials consumes oxygen in the water that is needed by fish; and,

WHEREAS, improper management of stormwater and control of erosion reduces capacity of the City's drainage infrastructure and causes additional maintenance needs and expenses, and,

WHEREAS, the City of Harlingen recognizes that protecting and improving water quality in the Arroyo Colorado will contribute to an improved quality of life and the general welfare of the residents of Harlingen;

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COMMISSION OF THE CITY OF HARLINGEN, THAT:

SECTION I: The City of Harlingen Code of Ordinances is amended to add Chapter 16, Article III which shall be titled:

POLLUTION PREVENTION IN STORMWATER.

Sec. 16.40 – Intent and Purpose

This Ordinance establishes methods for controlling the introduction of pollutants into the municipal separate storm sewer system (MS4) of the City of Harlingen in order to comply with requirements of the Texas Pollutant Discharge Elimination System (TPDES) permit process. The objectives of this ordinance are:

- To regulate pollutants from stormwater discharges into and from the MS4;
- To prohibit illicit connections and discharges to the MS4;
- To control the discharge of spills and prohibit dumping or disposal of materials other than stormwater into the small MS4;
- To enforce compliance with the permittee's ordinances, permits, contracts, or orders;
- To require installation, implementation, and maintenance of control measures;
- To receive and collect information, such as stormwater plans, inspection reports, and other information deemed necessary to assess compliance with this permit, from operators of construction sites, new or redeveloped land, and industrial and commercial facilities;
- To establish legal authority to implement inspection and enforcement procedures to ensure compliance with this Ordinance;
- To respond to non-compliance with Best Management Practices (BMPs) required by the small MS4 consistent with its ordinances or other regulatory mechanism(s);
- To assess penalties, including monetary, civil, or criminal penalties; and
- To enter into interagency or interlocal agreements or other maintenance agreements, as necessary.

Sec. 16.41 – Definitions

Applicant - Property owner or agent of a property owner who filed an application for a stormwater authorization under a TPDES general permit or an individual TPDES permit.

Authorized Enforcement Agency - Employees or designees of the City Manager of the City of Harlingen or the Texas Commission on Environmental Quality (TCEQ) have authority to enforce this Ordinance and/or the TPDES regulations.

Best Management Practices (BMPs) – Schedules of activities, prohibitions of practices, maintenance procedures, structural controls, local ordinances, and other management practices to prevent or reduce the discharge of pollutants. BMPs also include treatment requirements, operating procedures, and practices to control runoff, spills or leaks, waste disposal, or drainage from raw material storage areas.

Building - Any structure, either temporary or permanent, with walls and a roof, designed to shelter a person, animal, or property, and occupying more than 100 square feet of area.

City or the City – The City of Harlingen, Texas including all departments and Harlingen WaterWorks System (HWWS).

Clean Water Act – The Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972, Pub.L. 92-500, as amended Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483 and Pub. L. 97-117, 33 U.S.C. 1251 et. seq.

Common Plan of Development or Sale – A construction activity that is completed in separate stages, separate phases, or in combination with other construction activities. A common plan of development or sale is identified by the documentation for the construction project that identifies the scope of the project, and may include plats, blueprints, marketing plans, contracts, building permits, a public notice or hearing, zoning requests, or other similar documentation and activities.

Construction Activity – Soil disturbance, including clearing, grading, excavating, and other construction related activities (e.g., stockpiling of fill material and demolition); and not including routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the site (e.g., the routine grading of existing dirt roads, asphalt overlays of existing roads, the routine clearing of existing right-of-ways, and similar maintenance activities). Regulated construction activity is defined in terms of small and large construction activity.

Small Construction Activity is construction activity that results in land disturbance of equal to or greater than one (1) acre and less than five (5) acres of land. Small construction activity also includes the disturbance of less than one (1) acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one (1) and less than five (5) acres of land.

Large Construction Activity is construction activity that results in land disturbance of equal to or greater than five (5) acres of land. Large construction activity also includes the disturbance of less than five (5) acres of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than five (5) acres of land.

Construction Site Operator – The entity or entities associated with a small or large construction project that meet(s) either of the following two criteria:

(a) The entity or entities that have operational control over construction plans and specifications (including approval of revisions) to the extent necessary to meet the requirements and conditions of the general permit; or

(b) The entity or entities that have day-to-day operational control of those activities at a construction site that are necessary to ensure compliance with a stormwater pollution prevention plan (SWP3) for the site or other permit conditions (for example they are authorized to direct workers at a site to carry out activities required by the SWP3 or comply with other permit conditions).

Contaminated Water – Any water that contains levels of introduced pollutants which render it unsuitable for or unable to support a human use, such as being used for drinking water, or pollutants that alter its ability to support the biological life within it. Sources of contamination may include point source water pollution (contamination that enters the water system via one certain, identifiable source such as a pipe or ditch, municipal sewage systems or industrial and construction sites) or non-point sources referring to contamination that is spread over a large area (runoff from agricultural lands that are not piped or channelized or general stormwater runoff).

Control Measure – Any BMP or other method used to prevent or reduce the discharge of pollutants to water in the state.

Conveyance – Curbs, gutters, man-made channels and ditches, drains, pipes, and other constructed features designed or used for flood control or to otherwise transport stormwater runoff.

Discharge – When used without a qualifier, refers to the discharge of stormwater runoff or certain non-stormwater discharges as allowed under the authorization of the general permit.

Final Stabilization – A construction site where any of the following conditions are met:

(a) All soil disturbing activities at the site have been completed and a uniform (for example, evenly distributed, without large bare areas) perennial vegetative cover with a density of 70 percent of the native background vegetative cover for the area has been established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

(b) For individual lots in a residential construction site by either:

(1) The homebuilder completing final stabilization as specified in condition (a) above; or

(2) The homebuilder establishing temporary stabilization for an individual lot prior to the time of transfer of the ownership of the home to the buyer and after informing the homeowner of the need for, and benefits of, final stabilization.

(c) For construction activities on land used for agricultural purposes (for example pipelines across crop or range land), final stabilization may be accomplished by returning the disturbed land to its preconstruction agricultural use. Areas disturbed that were not previously used for agricultural activities, such as buffer strips immediately adjacent to a surface water and areas which are not being returned to their preconstruction agricultural use must meet the final stabilization conditions of condition (a) above.

(d) In arid, semi-arid, and drought-stricken areas only, all soil disturbing activities at the site have been completed and both of the following criteria have been met:

(1) Temporary erosion control measures (e.g., degradable rolled erosion control product) are selected, designed, and installed along with an appropriate seed base to provide erosion control for at least three years without active maintenance by the operator, and

(2) The temporary erosion control measures are selected, designed, and installed to achieve 70 percent vegetative coverage within three years.

General Permit – A permit issued to authorize the discharge of waste into or adjacent to water in the state for one or more categories of waste discharge within a geographical area of the state or the entire state as provided by Texas Water Code (TWC) §26.040. For the purposes of this ordinance general permit refers to the Small MS4 General Permit, TPDES General Permit TXR040000.

Ground Water Infiltration - groundwater that enters the MS4 (including storm sewer service connections and foundation drains) through such means as defective pipes, pipe joints, connections, or manholes.

Hazardous Materials - Any item or agent (biological, chemical, physical) that has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors.

Hazardous Waste - a hazardous waste is a waste with properties that make it dangerous or capable of having a harmful effect on human health or the environment. Hazardous waste is generated from many sources, ranging from industrial manufacturing process wastes to batteries and may come in many forms, including liquids, solids gases, and sludges (www.epa.gov).

Hyperchlorinated Water – Water resulting from hyperchlorination of waterlines or vessels, with a chlorine concentration greater than 10 milligrams per liter (mg/L).

Illicit Connection - any man-made conveyance connecting an illicit discharge directly to the

MS4.

Illicit Discharge – any discharge to the MS4 that is not entirely composed of stormwater, except discharges allowed pursuant to state and federal law, including TPDES or NPDES permits allowing stormwater discharge or a separate authorization and discharges resulting from emergency fire fighting activities.

Indicator Pollutant – An easily measured pollutant, that may or may not impact water quality that indicates the presence of other stormwater pollutants.

Industrial Activities – Any of the ten (10) categories of industrial activities included in the definition of "stormwater discharges associated with industrial activity" as defined in 40 Code of Federal Regulations (CFR) §122.26(b)(14)(i)-(ix) and (xi).

Land Disturbance (or Soil Disturbance) – any activity which involves the physical movement or disturbance of earth material by mechanized means. This includes excavating, filling, stockpiling, clearance of vegetation, grading, compaction of soil, creation of borrow pits, or combination thereof Land disturbance does not include plowing, seeding, planting, cultivating, or harvesting on a farm, including lands that have been lying fallow as part of a conventional rotational cycle. Land disturbance does not include routine maintenance performed to maintain the original line and grade, hydraulic capacity and purpose of a ditch, channel or other similar stormwater conveyance. Land disturbance does not include routine grading of existing dirt roads, asphalt overlays of existing roads, routine clearing of existing right-of-ways or other similar maintenance activities.

Maintenance Agreement - A formal contract between a local government and a property owner to guarantee long-term maintenance of stormwater management practices.

Maintenance Easement – A portion of the maintenance agreement that binds all current and subsequent owners of the land served by the stormwater management facility to allow the City of Harlingen or their agent access to the facility to periodically inspect the facility, verify it is in proper working condition and meets the design standards and other provision established by the ordinance. For the purposes of this ordinance, maintenance easement is synonymous with drainage easement.

Maximum Extent Practicable – The technology-based discharge standard for municipal separate storm sewer systems (MS4s) to reduce pollutants in stormwater discharges that was established by the CWA § 402(p). A discussion of MEP as it applies to small MS4s is found in 40 CFR § 122.34.

Municipal Separate Storm Sewer System (MS4) – the conveyance or system of conveyances including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains that are owned or operated by the City of Harlingen, the Cameron County Irrigation Districts, Cameron County or the Texas Department of Transportation and that are designed or used for collecting or conveying stormwater; but which are not a combined sewer (sanitary sewer or stormwater) and are not part of the City's sanitary sewer collection system.

MS4 Operator- for the purpose of this ordinance, the City of Harlingen.

Non-Stormwater Discharge - Any discharge to the storm drain system that is not composed entirely of stormwater.

NPDES - National Pollution Discharge Elimination System

Outfall – A point source at the point where a small MS4 discharges to waters of the U.S. and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels, or other conveyances that connect segments of the same stream or other waters of the U.S. and are used to convey waters of the U.S. For the purpose of this ordinance, sheet flow leaving a linear transportation system without channelization is not considered an outfall. Point sources such as curb cuts; traffic or right-or-way barriers with drainage slots that drain into open culverts, open swales or an adjacent property, or otherwise not actually discharging into waters

of the U.S. are not considered an outfall.

Overflow – An unauthorized flow of untreated or partially treated wastewater from a collection system or from a treatment unit at a wastewater treatment facility.

Person - Any individual, association, organization, partnership, firm, corporation, or other entity recognized by law and acting as either the owner or as the owner's agent.

Point Source – (from 40 CFR § 122.22) any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

Pollutant – In accordance with the Texas Water Code, §26.001(13) a pollutant includes the following: dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, filter backwash, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into any water in the state.

Pollutants of Concern – For the purpose of this ordinance, includes biochemical oxygen demand (BOD), sediment or a parameter that addresses sediment (such as total suspended solids (TSS), turbidity or siltation), pathogens, oil and grease, and any pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from an MS4. (Definition from 40 CFR § 122.32(e)(3)).

Premises - Any building, lot, parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.

Release - any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into ground-water, subsurface soils, surface soils into the MS4, the Surface Water of the State, or the Waters of the United States.

Sanitary Sewer Overflow (SSO) - a type of unauthorized discharge of untreated or partially treated wastewater from a collection system or its components (e.g., a manhole, lift station, or cleanout) before reaching a treatment facility. [See also Texas Water Code Paragraph 26.049(e)(4).]

Site Development Permit – a permit issued by the City of Harlingen for the alteration of the ground for the construction or installation of utilities, streets, sidewalks, structures designed to control erosion and run-off and other grading activities that are not a part of a project that requires a building permit.

Stormwater and Stormwater Runoff - rainfall runoff, snow melt runoff, and surface runoff and drainage.

Stormwater Associated with Construction Activity - Stormwater runoff from an area where there is either a large construction or a small construction activity.

Stormwater Management - The use of structural or non-structural control practices/BMPs designed to reduce stormwater pollutant runoff, discharge volumes, peak flow discharge rates, and detrimental changes in stream temperature that affect water quality.

Stormwater Management Facility – A dedicated portion of a parcel or multiple parcels of land used to manage stormwater which ultimately discharges into the City of Harlingen's MS4.
Stormwater Management Program (SWMP) - A comprehensive program to manage the quality of discharges into and from the City of Harlingen's MS4.

Stormwater Pollution Prevention Plan (SWP3) - A document that describes the Best Management Practices and activities to be implemented by the permit holder to identify sources of pollution or contamination at a site and actions to eliminate or reduce pollutant discharges.

Stormwater Control Practices - Structural or nonstructural measures to minimize stormwater runoff to surface water in the state.

Structural Control (or Practice) – A pollution prevention practice that requires the construction of a device, or the use of a device, to capture or prevent pollution in stormwater runoff. Structural controls and practices may include but are not limited to: wet ponds, bioretention, infiltration basins, stormwater wetlands, silt fences, earthen dikes, drainage swales, vegetative lined ditches, vegetative filter strips, sediment traps, check dams, subsurface drains, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins.

Surface Water in the State - lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, wetlands, marshes, inlets, canals, the Gulf of Mexico from the mean high water level out 10.36 miles into the Gulf, and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, navigable or non-navigable, and including the beds and banks of all water-courses and bodies of surface water, that are wholly or partially inside or bordering the state or subject to the jurisdiction of the state; except that waters in treatment systems which are authorized by state or federal law or permit, and which are created for the purpose of waste treatment are not considered to be water in the state.

Total Maximum Daily Load (TMDL) - The total amount of a substance that a water body can assimilate and still meet the Texas Surface Water Quality Standards.

TPDES - Texas Pollution Discharge Elimination System

Traditional Small MS4 - A small MS4 that can pass ordinances and have the enforcement authority to enforce the stormwater management program. An example of traditional MS4s includes cities.

Unauthorized Discharge (UD) - Any direct or indirect non-stormwater discharge to the storm drain system except as exempted in Section 16.44 Prohibition of Illicit Connections of this Ordinance

Urbanized Area (UA) - An area of high population density that may include multiple small MS4s as defined and used by the U.S. Census Bureau in the 2000 and the 2010 Decennial Census.

Waters of the United States -

a) all waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

b) all interstate waters, including interstate wetlands;

c) all other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds that the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

   (i) which are or could be used by interstate or foreign travelers for recreational or other purposes;

   (ii) from which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

   (iii) which are used or could be used for industrial purposes by industries m interstate commerce;

d) all impoundments of waters otherwise defined as waters of the U.S.;

e) tributaries of waters identified in paragraphs (a) through (d) of this definition;

f) the territorial sea; and

g) wetlands adjacent to waters (other than waters that are themselves wetlands)
identified in paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA are not waters of the U.S. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the U.S. (such as disposal area in wetlands) nor resulted from the impoundment of waters of the U.S. Waters of the U.S. do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding the CWA jurisdiction remains with the EPA.

Wetland - an area that is inundated or saturated by surface or ground-water at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Sec. 16.42 – Applicability

Unless exempted, this Ordinance applies to discharges entering the storm drain system within the jurisdictional limits of the authorized enforcement agency.

Sec. 16.43 – Responsibility for Administration

The City of Harlingen shall administer, implement, and enforce the provisions of this Ordinance. Any powers granted or duties imposed upon the City Manager of the City of Harlingen may be delegated in writing by the City Secretary of the City of Harlingen to persons or entities acting in the beneficial interest of the City of Harlingen.

Authorized individual(s) under this Section shall have the authority to enforce this Ordinance in its entirety and shall be designated as a TPDES Stormwater Manager and/or Inspector. Any person subject to an industrial or construction TPDES stormwater discharge permit or authorization shall comply with all provisions of the permit and may be required by the City of Harlingen to have authorization to discharge stormwater into the MS4.

Sec. 16.44 – Prohibition of Illicit Connections and Discharges

A. —Authority to Prohibit

The City of Harlingen has the authority to prohibit illicit discharges and illicit connections in accordance with TPDES Phase II MS4 Permit TXR040000 Part III Section A.3.(a)(2)a. This Ordinance prohibits unauthorized discharges into the storm drain system. No person shall release discharges into the municipal storm drain containing any pollutants that cause or contribute to a violation of water quality standards, other than stormwater or authorized non-stormwater discharges.

B – Allowable Non-Stormwater Discharges

The following non-stormwater sources may be discharged from the City of Harlingen's MS4 and are not required to be addressed in the City of Harlingen's MS4's Illicit Discharge and Detection or other minimum control measures, unless they are determined by the City of Harlingen or the TCEQ to be significant contributors of pollutants to the small MS4, or they are otherwise prohibited by the City of Harlingen:

1. Water line flushing (excluding discharges of hyperchlorinated water, unless the water is first dechlorinated and discharges are not expected to adversely affect aquatic life);
2. Runoff or return flow from landscape irrigation, lawn irrigation, and other irrigation

utilizing potable water, groundwater, or surface water sources;

3. Discharges from potable water sources that do not violate Texas Surface Water Quality Standards;
4. Diverted stream flows;
5. Rising ground waters and springs;
6. Uncontaminated ground water infiltration;
7. Uncontaminated pumped ground water;
8. Foundation and footing drains;
9. Air conditioning condensation;
10. Water from crawl space pumps;
11. Individual residential vehicle washing;
12. Flows from wetlands and riparian habitats;
13. Dechlorinated swimming pool discharges that do not violate Texas Surface Water Quality Standards;
14. Street wash water excluding street sweeper waste water;
15. Discharges or flows from emergency fire fighting activities (fire fighting activities do not include washing of trucks, run-off water from training activities, test water from fire suppression systems, and similar activities);
16. Other allowable non-stormwater discharges listed in 40 CFR § 122.26(d)(2)(iv)(B)(1);
17. Non-stormwater discharges that are specifically listed in the TPDES Multi Sector General Permit (MSGP) TXR050000 or the TPDES Construction General Permit (CGP) TXR150000;
18. Discharges that are authorized by a TPDES or NPDES permit or that are not required to be permitted; and
19. Other similar occasional incidental non-stormwater discharges such as spray park water, unless the TCEQ develops permits or regulations addressing these discharges.

C - Prohibited Discharges

(1) No person shall deposit, release, throw, drain, cause or allow to be deposited, released thrown, drained or discharged, or otherwise cause to enter the MS4, or any other drainage device which connects with the MS4, any of the following described materials or substances:

a) Any acidic waste materials (having a pH value lower than 6);
b) Any alkaline waste materials (having a pH value higher than 10.5);
c) Any water or waste containing free-floating, or insoluble oil; gasoline, naphtha, fuel oil, mineral oil or other flammable or explosive liquid, solid or gas;
d) Any noxious, malodorous, poisonous, or reactive substance which, either singularly or by interaction with other substances, or by its accumulation in the MS4 becomes injurious or potentially injurious to human, plant or animal life, or property; or
e) Any domestic wastewater or industrial wastewater.

(2) It shall be a defense to prosecution under this section that such person was authorized to commit any act, under a valid permit from the TCEQ or the US EPA, which would otherwise constitute a violation at the time of commission.

(3) No person shall place or drop or cause or allow to be placed or dropped, brush cuttings, clippings, or rubbish within the MS4 or on any street in the City in such a manner that the same maybe washed by the flow of water into the MS4.

(4) No person shall connect a line conveying sanitary sewage, domestic waste, or industrial effluent to the MS4 or allow such a connection to continue.

(5) No person shall remove or modify any sanitary sewer cleanouts, sanitary sewer manhole covers or other components of a wastewater collection or transmission system in such a manner as to allow wastewater to overflow from the wastewater collection system, resulting in any unauthorized discharge or sanitary sewer overflow.

(6) No person shall discharge or release, or allow or permit the discharge or release of any of the following substances in a manner or location by which such substance may enter the

City's MS4:

a) any wash water or wastewater from the washing or cleaning of pavement, including but not limited to parking lots, driveways or carports, that contains soap, detergent, solvent, degreaser, emulsifier, dispersant, or any other cleaning substance other than water;
b) any wash water or wastewater from cleaning of any pavement where a spill, leak, or other release of oil, motor fuel, or other petroleum or hazardous substance has occurred, unless all harmful quantities of such released material have been previously removed or pretreated;
c) any wash water from a commercial mobile power washer or from the washing or other cleaning of a building exterior that contains any soap, detergent, degreaser, solvent, or any other harmful cleaning substance;
d) gasoline, motor oil, used oil filters, wax, grease, antifreeze or any other motor vehicle fluids;
e) any contaminated water or waste from a commercial car wash facility, from any vehicle washing, cleaning, or maintenance area at any new or used automobile or other vehicle dealership, rental agency, body shop, repair shop, maintenance facility, or from any washing, cleaning, or maintenance area of any commercial or public service vehicle, including any truck, bus, or piece of heavy equipment, by any business or public entity;
f) any contaminated water or waste from commercial establishments including but not limited to gas stations, service stations, and auto repair shops with areas exposed to weather conditions;
g) material from an oil/water separator or an oil/water interceptor, grit trap or grease trap. Any oil/water separator or interceptor users who are discharging to the MS4 shall notify the city of the existence of such connections to the MS4 within sixty (60) days of the effective date of this ordinance. If such notification is not made during the allocated sixty (60) days, then the detected connections to MS4 of an oil/water separator or interceptor shall be considered an illicit connection and the city reserves the right to terminate such connection immediately, without prior notice;
h) any release from a petroleum underground storage tank (PUST), or any leachate or runoff from soil contaminated by a leaking PUST, or any discharge of pumped, confirmed, or partially treated wastewater from the remediation of any such PUST unless release satisfies all of the following criteria: (a) is in compliance with all municipal, state, and federal laws; (b) no discharge contains any harmful quantity of any pollutant; and (c) the discharge shall not have a pH value lower than 6.0 or higher than 10.5;
i) any public or private underground utility manhole, including but not limited to electric power, gas pipeline, cable companies, telephone companies, the collected water, due to rain, surface runoff, cross connection, or illegal discharge;
j) any effluent from a cooling tower, condenser, compressor, emissions scrubber, emissions filter, or the blowdown from a boiler;
k) any type of wastewater from residential, commercial or industrial sources, any domestic sewage or septic tank waste;
l) any runoff or wash down water from any animal pen, kennel, or fowl or livestock containment area;
m) any swimming pool water or filter backwash from a swimming pool or fountain, discharge from a water line if it has been disinfected by super- chlorination or other means and the total residual chlorine exists in any harmful quantity or any other chemical has been used in line disinfection.
n) discharges of stormwater mixed with non-stormwater unless the non-stormwater is described in part B of this section or authorized under a separate TPDES or NPDES permit,
o) hazardous materials; or
p) pollutants

(7) No person shall apply used oil or other vehicle fluid to a road or land for dust suppression, weed abatement, or other similar use that introduces used oil contamination

into the environment.

(8) No person shall introduce any type of hazardous waste generated in and around a household including, but not limited to batteries, used paints, solvents, used pesticide, and used toiletries into the MS4.

(9) No person shall use, dispose of, discard, store, or transport an insecticide, herbicide, or fertilizer, in a manner inconsistent with the proper usage, storage, transport and disposal set out in the labeling in accordance with the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), such that a harmful quantity of the pesticide, herbicide, or fertilizer may enter the MS4.

(10) No person shall wash a commercial dumpster, or residual ready mix concrete from concrete mixing trucks, in an area where it discharges into the MS4.

(11) Other discharges as prohibited in the general permit.

Sec. 16.45 – Response to Releases

A - City Response

The City of Harlingen has the authority to respond to and contain other releases. The local jurisdiction must control the discharge of a spill and prohibit dumping or disposal of material other than stormwater and authorized non-stormwater discharges into the small MS4 in accordance with TPDES Phase II MS4 Permit TXR040000 Part III Section A.3.(a)(2)b. Any person in violation of this Ordinance may risk having their discharge authorization to the MS4 terminated. The authorized enforcement agency will notify the violator of the proposed termination of its authorization. The violator may petition the City of Harlingen to reconsider and schedule a hearing.

When the person responsible has knowledge of any known or suspected release of materials resulting in or potentially resulting in unauthorized discharges into a storm sewer system or surface water in the state, the person must contain and clean up the release. If hazardous materials are released, the person must immediately notify emergency response agencies. If non-hazardous materials are released, the person must notify the authorized enforcement agency no later than the next business day. Notifications in person or by telephone must be confirmed by written notice addressed and mailed to the City of Harlingen within fifteen (15) days of the incident.

During emergency situations involving unauthorized discharges from illicit connections, the City of Harlingen may suspend a person's MS4 authorization to stop an actual or threatened discharge which may present danger to the MS4 or surface water in the state. If the violator fails to comply, the authorized enforcement agency may take necessary steps to prevent or minimize damage to the MS4 or surface water in the state.

B - Mandatory Reporting and Clean-up of Any Discharge or Release

(1) The person in charge of any facility, vehicle, or other source of any spilling, leaking, pumping, pouring, emitting, emptying, discharging, escaping, leaching, disposing, or any other release of any of the following quantities of any of the following substances that may enter the MS4, Surface Water of the State or Waters of the U.S., shall immediately notify by telephone the Harlingen police department concerning the incident:

(a) An amount equal to or in excess of a reportable quantity of any hazardous or extremely hazardous substance, as established under 40 CFR Parts 302 and 355, respectively;

(b) An amount of oil that either (a) violates applicable water quality standards, or (b) causes a film or sheen upon or discoloration of the surface of the water or an adjoining shoreline or causes a sludge or emulsion to be deposited beneath the

surface of the water or upon an adjoining shoreline; or

(c) Any harmful quantity of any pollutant.

(2) The immediate notification required shall include the following information:

(a) The identity or chemical name of the substance released, and whether the substance is an extremely hazardous substance;

(b) The exact location of the release, including any known name of the waters involved or threatened and any other environmental media affected;

(c) The time and duration (thus far) of the release;

(d) An estimate of the quantity and concentration (if known) of the substance released;

(e) The source of the release;

(f) Any known or anticipated health risks associated with the release and, where appropriate, advice regarding medical attention that may be necessary for exposed individuals;

(g) Any precautions that should be taken as a result of the release;

(h) Any steps that have been taken to contain and/or clean up the released material and minimize its impacts; and

(i) The names and telephone numbers of the person or persons to be contacted for further information.

(3) Within fifteen (15) days following such reportable release, the responsible person in charge of the facility, vehicle, or other source of the release shall submit, unless waived by the city, a written report containing the information specified above in (2)(a) through (i) as well as the following additional information:

(a) The ultimate duration, concentrations, and quantity of the release;

(b) All actions taken to respond to, contain, and clean up the released substances, and all precautions taken to minimize the impacts;

(c) Any known or anticipated acute or chronic health risks associated with the release;

(d) The identity of any governmental or private sector representatives responding to the release; and

(e) The measures taken or to be taken by the responsible persons to prevent similar future occurrences.

(4) The person in charge of any facility that experiences an unauthorized discharge (UD) or sanitary sewer overflow (SSO) is responsible for reporting unauthorized discharges from the collection system in accordance with Title 30, Texas Administrative Code (30 TAC), Section 327.32. In addition, notify the public may be required under certain criteria. All such discharges must be reported to the TCEQ regardless of volume, as federal and state regulations do not have a specified minimum reporting volume. Notification to TCEQ shall include the date, location, volume, and contents of the UD or SSO to the TCEQ Region 15 office, 956-425-6010, as soon as possible but no later than 24 hours after becoming aware of the event.

(5) The notifications required by subsections (2) and (3) shall not relieve the responsible person of any expense, loss, damage, or other liability which may be incurred as a result of the release, including any liability for damage to the City, to natural resources, or to any other person or property; nor shall such notification relieve the responsible person of any fine, penalty, or other liability which may be imposed pursuant to city ordinance, or state or federal law.

(6) Any person responsible for any release as described in this subsection shall comply with all state, federal, and local law requiring reporting, cleanup, containment, and any other appropriate remedial action in response to the release.

(7) Any person responsible for a release described in this subsection shall reimburse the city for any cost incurred by the city in responding to the release.

C. – Abatement of Illicit Conditions and Assessment and Collection of Expenses

The City may abate illicit discharges in the same manner and according to the same procedures provided for by Chapter 48, Article IV of the City Code of Ordinances and assess and collect any expenses incurred in the manner and procedure provided by TYPDES Phase II MS4 Permit.

Sec. 16.46 – Permit Procedures and Requirements

A. – Authority to Require Compliance

The City of Harlingen can enforce compliance with the permittee's ordinances, permits, contracts, or orders in accordance with TPDES Phase II MS4 Permit TXR040000 Part III Section A.3.(a)(2)c.

B. – Permit Required

Unless specifically excluded by this Ordinance, the land owner or operator seeking a permit for land disturbance activity shall submit to the local jurisdiction a permit application on a form provided for that purpose. The permit application must be accompanied by the following: a stormwater management plan (as referenced in Section IX "Requirements for Stormwater Management Plan Approval" in this Ordinance); a stormwater maintenance agreement and a non-refundable permit review fee. Note that TPDES Construction General Permit TXR150000 requires regulated construction activities (those disturbing one acre or more) to provide a signed and certified construction site notice to the operator of any MS4 receiving the construction site stormwater discharge prior to commencement of land disturbing activities. See TXR150000 Part II Sections E. 1.(f), 2.(c), and 3.(d) and (f).

C. – Application Review Fee

The land development application fee shall be based on the amount of land to be disturbed, and the fee structure shall be established by the City of Harlingen as listed in Chapter 18 of the Code of Ordinances.

D. – Application Procedure

- Applications for land disturbance activity permits must be filed with the City of Harlingen Environmental Department on any regular business day.
- Permit applications shall include the following: two hard copies and one digital copy of the stormwater management plan, two hard copies and one digital copy of the maintenance agreement, and any required review fees.
- Within Thirty (30) business days of receipt of a complete permit application, the City of Harlingen shall inform the applicant whether the application, stormwater management plan, and maintenance agreement are approved or disapproved.
- If the permit application, final stormwater management plan, and maintenance agreement are approved by the City of Harlingen, all appropriate land disturbance activity permits may be issued.

Sec. 16.47 – Maintenance and Repair of Stormwater Facilities

A – Authority to Require Installation, Implementation, and Maintenance

The City of Harlingen has the authority to require installation, implementation, and maintenance of control measures in accordance with TPDES Phase II MS4 Permit TXR040000 Part III Section A.3.(a)(2)d.

B – Maintenance Easement

Prior to the issuance of any permit that has a stormwater management facility the applicant of the site must implement a maintenance easement agreement that binds all subsequent owners of land served by the stormwater management facility. The agreement allows the City of Harlingen or their contractor/agent access to the facility to periodically inspect if the facility is maintained in proper working condition and meets design standards and other provisions established by this Ordinance. The easement agreement shall be recorded by plat or separate instrument through the official records for Cameron County.

C – Maintenance Covenants

The applicant of an industrial site, commercial site, or residential site with a Home Owners Association must develop a maintenance covenant articulating a schedule of maintenance activities and plans for periodic inspections to assess the proper functioning of the stormwater management facility. The maintenance covenant shall be approved by the City of Harlingen prior to final plan approval. Maintenance covenants shall not be required for any site covered under the Multi-Sector General Permit TXR 050000.

D – Requirements for Annual Self-Inspections

All stormwater management facilities must undergo, at minimum, an annual self-inspection to document maintenance and repair needs and to verify compliance with the requirements of this Ordinance. Maintenance and repair may include: removal of silt, litter, and other debris from all catch basins, inlets and drainage pipes; cutting grass and vegetation removal; and replacement of landscape vegetation. Maintenance needs must be addressed in a timely manner as determined by the City of Harlingen. The local jurisdiction may implement more stringent inspection and maintenance requirements.

E – Requirements for Annual Self-Inspections

If the stormwater management facility becomes a danger to public safety or public health, the City of Harlingen shall notify the party responsible for maintenance of the stormwater management facility in writing. Upon receipt of that notice, the responsible person shall have 30 days to meet maintenance and repair requirements. If the owner of the facility fails to comply with the requirements of the maintenance covenant, the City of Harlingen, after reasonable notice, may perform all necessary work to bring the facility into compliance.

Sec. 16.48 – Requirements for Stormwater Management Plan Approval

The City of Harlingen has the authority to receive and collect information (i.e. stormwater pollution prevention plans, inspection reports, etc.) from any person (i.e. operators of regulated construction sites, new or redeveloped land, and industrial and commercial facilities) in accordance with TPDES Phase II MS4 Permit TXR040000 Part III Section A.3.(a)(2).e to assess compliance with this permit.

A. – General provisions

The intent of this section is to implement and enforce a program to reduce pollutants in stormwater runoff from construction activities. To that end, all construction site operators, at a minimum, must:

1. As a pre-condition to receiving a building permit for a small construction site, prepare and submit a stormwater pollution prevention plan (SWP3);

2. For projects that do not require a building permit, but will require excavation, fill or grading or more than one acre of land, such as the construction or installation of utilities, new drainage ways, streets, or sidewalks, apply for a site development permit and prepare and submit a SWP3;

3. Except, no SWP3 is required to perform emergency work needed to protect life or property;

4. For construction sites that will disturb less than one acre of land, the following provisions apply:

   a) No SWP3 need be prepared or submitted.
   b) Construction site operators are responsible for retaining all soil and sediment on-site and off of adjacent properties and the public right-of-way. This includes dust control and control of vehicle tracking of dirt off-site.
   c) Soil and sediment that leaves the construction site must be cleaned-up daily.
   d) Proper provision for solid waste, construction debris and sanitary waste must be made and maintained.

5. The operator of a construction site, required to have a TPDES permit to discharge stormwater shall submit a copy of the Notice of Intent (NOI) to the City at the same time the operator submits the original NOI to the TCEQ. The copy of the NOI may be delivered to the City either in person or by mailing it to: Planning and Development Director, City of Harlingen, 502 East Tyler Avenue, Harlingen, TX 78550.

B. - Stormwater Pollution Prevention Plan (SWP3)

1. Prior to commencing any construction activity and prior to receiving a building or site development permit from the City, construction site operators that are required by the NPDES or the TPDES to obtain a permit to discharge stormwater must:

   a) develop and submit for review and approval a SWP3 that covers the entire site;
   b) post a signed copy of the notice at the construction site where it can be readily viewed;
   c) ensure the project specifications allow or provide that adequate BMPs will be developed and modified as necessary to meet the requirements of the SWP3; and
   d) ensure all contractors and sub-contractors are aware of the requirements of the SWP3, that on-site personnel are responsible for the day-to-day implementation of and adherence to the SWP3, and who to contact concerning SWP3 compliance.

2. The SWP3 must:

   a) be completed and initially implemented prior to commencing activities that result in land disturbance;
   b) provide for compliance with the terms and conditions of this ordinance and the NPDES and TPDES for stormwater;
   c) be available at the construction site or readily available at the time of an on-site inspection to TCEQ, the EPA, or City personnel;
   d) be amended whenever there is a change in design, construction, operation, or maintenance that may have a significant effect on the discharge of pollutants or that was not been previously addressed in the SWP3; or because inspections by the site operator, TCEQ, EPA or City indicate the SWP3 is ineffective in eliminating or minimizing pollutants in discharges.
   e) identify the person or persons responsible for the implementation of the plan.

C. - Issuance of a Building Permit or Site Development Permit

Before authorizing the issuance of a building permit or a site development permit, the City will review the proposed site plan and SWP3, as well as construction documents, for compliance with this ordinance and the NPDES and TPDES for stormwater;

D. - City Inspection of Construction Sites

City building inspection, code compliance and public works staff and the city engineer are hereby authorized to inspect construction sites for the purpose of ensuring compliance and enforcement of control measures contained in the SWP3s and this ordinance.

E. - Contents of the Stormwater Pollution Prevention Plan

The Stormwater Pollution Prevention Plan (SWP3) required pursuant to this ordinance, the Clean Water Act, NPDES, and TPDES must include the following information.

(1) The SWPS must include a project description which includes the following: (a) the nature of the construction activity, potential pollutants and sources;
(b) the intended schedule or sequence of major activities that will disturb soils;

(c) the number of acres of the entire construction site property and the total number of acres of the site where construction activities will occur, including off-site material storage areas, overburden and stockpiles of dirt, and borrow areas;

(d) the soil type and the quality of any existing discharge from the site;

(e) a map showing the general location of the site (e.g. a portion of a city or county map);

(f) a detailed site map indicating the following:

i. drainage patterns and approximate slopes anticipated after major grading activities;
ii. areas where soil disturbance will occur;
iii. areas which will not be disturbed;
iv. locations of all major structural controls either planned or in place;
v. locations where stabilization practices are expected to be used;
vi. locations of off-site material, waste, borrow or equipment storage areas;
vii. surface waters (including wetlands) either adjacent or in close proximity; and
viii. locations where stormwater discharges from the site directly to a surface water body.

(g) the location and description of asphalt plants and concrete plants (if any) providing support to the construction site and that are also authorized under the General Permit TXR 150000, as it may be amended, and

(h) the name of receiving waters at or near the site that will be disturbed or that will receive discharges from disturbed areas of the project.

(2) The following records must be either attached to or referenced in the SWP3 and made readily available upon request to the City of Harlingen, TCEQ or the EPA:

a) the dates when major grading activities occur;
b) the dates when construction activities temporarily or permanently cease on a portion of the site; and,
c) the dates when stabilization measures are initiated.

(3) The SWP3s must identify and describe the best management practices (BMPs) that will be used, the general timing or sequence for implementation of such BMPs, and the party responsible for implementation. At a minimum, the description must include erosion and sediment controls designed to retain sediment on-site to the maximum extent practicable with due consideration for local topography and rainfall.

a) Control measures must be selected, installed, and maintained according to the manufacturer's or designer's specifications.
b) Sediment must be removed from sediment traps and sedimentation ponds no later than the time that design capacity has been reduced by 50%.
c) If sediment escapes the site, accumulations must be removed at a frequency to minimize further negative effects and, whenever feasible, prior to the next rain event.
d) Controls must be specified that limit offsite transport of litter, construction debris and

construction materials.

(4) The SWP3 must describe interim and permanent stabilization practices and a schedule of when the stabilization practices will be implemented. Site plans should ensure that existing vegetation is preserved where it is possible.

a) Stabilization practices may include but are not limited to: establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, and protection of existing trees and vegetation.

b) Stabilization measures must be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and except as provided in (i) and (ii) below, must be initiated no more than fourteen (14) days after the construction activity in that portion of the site has temporarily or permanently ceased.

i. Where the initiation of stabilization measures is precluded by seasonably arid conditions, drought, excessive rainfall, or other weather or climatic conditions, stabilization measures must be initiated as soon as practicable.
ii. Where construction activity on a portion of the site is temporarily ceased but earth disturbing activities will be resumed within twenty-one (21) days, temporary stabilization measures do not have to be initiated on that portion of site.

(5) The SWP3 must include a description of any structural controls that will be used to divert flows away from exposed soils, to limit the contact of runoff with disturbed areas, or to lessen the off-site transport of eroded soils.

a) Sediment basins are required, where feasible, for common drainage locations that serve an area with ten or more acres that are disturbed at any one time. Sediment basins may be either temporary or permanent, but must be designed to store either the calculated volume of runoff from a 2-year, 24-hour storm, or designed to provide 3,600 cubic feet of storage per acre drained. When calculating the volume of runoff from a 2-year, 24-hour storm event, it is not required to include the flows from offsite areas and flow from onsite areas that are either undisturbed or have already undergone formal stabilization, if these flows are diverted around both the disturbed areas of the site and the sediment basin. In determining whether installing a sediment basin is feasible, the permittee may consider factors such as site soils, slope, available area on-site, and public safety. Where sediment basins are not feasible, equivalent control measures, which may include a series of smaller sediment basins, must be used. At a minimum, silt fences, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries and for those side slope boundaries as dictated by individual site conditions of the construction area.

(b) Sediment traps and sediment basins may be used to control solids in stormwater runoff for drainage locations serving less than ten (10) acres. At a minimum, silt fences, hay bales, vegetative buffer strips, or equivalent sediment controls are required for all down slope boundaries (and for those side slope boundaries deemed appropriate as dictated by individual site conditions) of the construction. Alternatively, a sediment basin providing storage for a calculated volume of runoff from these areas for a 2-year, 24- hour storm or 3,600 cubic feet of storage per acre drained may be provided.

(6) Other Controls

(a) The SWP3 must describe how off-site vehicle tracking of sediment and the generation of dust will be minimized.
(b) The SWP3 must include a description of construction and waste materials expected to be stored on-site and a description of controls to reduce pollutants from these materials.
(c) The SWP3 must include a description of pollutant sources from areas other than construction (including stormwater discharges from dedicated asphalt plants and

dedicated concrete plants), and a description of controls and measures that will be implemented at those sites to minimize pollutant discharges.

(d) The SWP3 must commit to ongoing maintenance to keep all erosion and sediment control and other protective measures identified in the SWP3 in effective operating condition.

(7) Site Inspections

(a) The construction site operator shall provide for regular inspections by persons familiar with the SWP3 of the disturbed areas that have not been formally stabilized, areas used for storage of materials that are exposed to precipitation, all structural control measures, and locations where vehicles enter or exit the site for evidence of effectiveness and necessary maintenance. Inspections must occur at least once every fourteen (14) calendar days and within twenty-four (24) hours of the end of a storm event of 0.5 inches or greater.

(b) As an alternative, the SWP3 may require that inspections will occur at least once every seven calendar days; in which case additional inspections are not required following each qualifying storm event. If this alternative schedule is developed, the inspection must occur on a specifically defined day, regardless of whether or not there has been a rainfall event since the previous inspection.

(c) The construction site operator must inspect all accessible discharge locations to determine if erosion control measures are effective in preventing visually noticeable changes to receiving waters, including persistent cloudy appearance in water color and noticeable accumulation of sediments. Where discharge locations are inaccessible, nearby downstream locations must be inspected to the extent that such inspections are practicable. The frequency for these inspections must be established in the SWP3 with consideration for local rainfall and soil, but must occur at least once during the construction activity if a discharge occurs.

(d) The SWP3 must be modified based on the results of inspections, as necessary, to better control pollutants in runoff Revisions to the SWP3 must be completed within seven calendar days following the inspection. If existing BMPs are modified or if additional BMPs are necessary, an implementation schedule must be described in an amendment to the SWP3 and wherever possible those changes implemented before the next storm event. If implementation before the next anticipated storm event is impracticable, these changes must be implemented as soon as practicable.

(e) A report summarizing the scope of the inspection, names and qualifications of personnel making the inspection, the dates of the inspection, and major observations relating to the implementation of the SWP3 must be made and retained as part of the SWP3. Major observations should include:

i. locations of discharges of sediment or other pollutants from the site;
ii. locations of BMPs that need to be maintained;
iii. locations of BMPs that failed to operate as designed or proved inadequate for a particular location;
iv. locations where additional BMPs are needed; and
v. identification and location of the BMPs that are working effectively.

(f) Actions taken as a result of inspections must be described within, and retained as an amendment to the SWP3. Reports must identify any incidents of non-compliance. Where a report does not identify any incidents of non-compliance, the report must contain a certification that the facility or site is in compliance with the SWP3 and this permit.

(8) The SWP3 must identify and ensure the implementation of pollution prevention measures for all eligible non-stormwater components of the discharge. This ordinance prohibits, and all SWP3s will be presumed to prohibit:

(a) The discharge from a construction site of any water or other liquid having a pH value lower than 6.0 or higher than 10.5;
(b) The discharge of any type of industrial waste from construction sites;
(c) The deposit of any garbage, rubbish, or yard waste other than at a facility licensed to receive such debris;
(d) The discharge of paint or paint brush cleaning water or solvents, thinners or turpentine or any combination thereof;
(e) Unused construction materials or used construction materials or debris remaining on the site after construction is completed. All on-site debris shall be properly disposed of in the landfill within thirty (30) days from the occupancy of the structures; and
(f) The washing of any type of trucks, including, but not limited to, ready mix trucks or material supply trucks on or around the construction site.

F - Effective Date of Coverage

Operators of construction activities eligible for coverage under TXR150000, as it may be amended, are authorized to discharge storm water associated with construction activity upon issuance by the City of the building permit or site development permit.

G - Retention of Records

The construction site operator must retain a copy of the SWP3 and all reports and actions required by this ordinance and state and federal law, including NPDES, TPDES and General Permit No.150000, for a minimum period of three years from the date that final stabilization has been achieved on all portions of the site.

Sec. 16.48 – Authority to Enter and Inspect

The City of Harlingen has the authority to enter and inspect private property including facilities, equipment, practices, or operations related to stormwater discharges to the small MS4 in accordance with TPDES Phase II MS4 Permit TXR040000 Part III Section A.3.(a)(2)f.

- The City of Harlingen may enter and inspect facilities, equipment, practices and operations subject to regulation under this Ordinance as often as necessary to determine compliance with this Ordinance. If a discharger's security measures require proper identification and clearance before entry into the premises, the discharger shall make necessary arrangements to allow access to representatives of the authorized enforcement agency.

- Facility operators shall allow the City of Harlingen access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records.

- The City of Harlingen shall have the right to monitor and/or sample the facility's stormwater discharge.

- The City of Harlingen may require the discharger to install and maintain necessary sampling and monitoring equipment.

- The operator must remove temporary or permanent obstruction(s) at the written or oral request of the City of Harlingen to allow safe and easy access to the facility for inspection and/or sampling purposes. The costs of clearing access will be borne by the operator and the obstructions may not be replaced.

- Unreasonable delays in allowing the City of Harlingen access to a permitted facility is a violation of a TPDES stormwater discharge permit and of this Ordinance. A person commits an offense if the authorized enforcement agency is denied reasonable access to the permitted facility for the purpose of conducting any activity authorized or required by this Ordinance.

Sec. 16.49 Best Management Practices (BMPs) to Reduce Stormwater Pollutants

The City of Harlingen has the authority to respond to non-compliance with BMPs required by the small MS4 in accordance with TPDES Phase II MS4 Permit TXR040000 Part III Section A.3.(a)(2)g. The City of Harlingen shall adopt measures to identify BMPs for any activity, operation, or facility which may facilitate pollution of stormwater, the storm drain system, or surface water in the state. The owner or operator of a commercial or industrial establishment shall implement, at their own expense, appropriate pollution control measures through the use of structural and non-structural BMPs to prevent and reduce discharge of pollutants into the municipal storm drain system or watercourses. The BMPs must be identified in the Stormwater Pollution Prevention Plan (SWP3) to satisfy requirements of the TPDES permit.

Sec. 16.50 Enforcement and Penalties

The City of Harlingen has the authority to assess penalties, including monetary, civil, or criminal penalties in accordance with TPDES Phase II MS4 Permit TXR040000 Part III Section A.3.(a)(2)h.

If the City of Harlingen finds a person in violation with this Ordinance, the authorized enforcement agency may order compliance by written notice of violation to the responsible person. Such notice may require:

- Monitoring, analysis, and reporting
- Elimination of illicit connections or discharges
- Termination of existing discharges or practices and/or operations in violation of this Ordinance
- Abatement and/or remediation of stormwater pollution or contamination hazards
- Payment of fines to cover administrative and remediation costs
- Implementation of pollution control measures or treatment BMPs

If the property must be remediated, the notice must establish a deadline to restore the site. The notice must further advise that, if the violator fails to remediate the site by the deadline, a designated governmental agency or contractor will restore the site at the expense of the violator.

A - Penalty for Violation

(1) Any person, firm, corporation or business entity that violates any provision of this chapter shall be guilty of a misdemeanor and, upon conviction, fined as provided in Section 1-7 of the City of Harlingen Code of Ordinances. Each day that the violation continues shall constitute a separate offense. A culpable mental state is not required to prove an offense under this chapter

(2) The penal provisions imposed by this chapter shall not preclude the City from filing a suit to enjoin the violation. The City retains all legal rights and remedies available to it pursuant to local, state and federal law. The city may, at its discretion, report alleged noncompliance to the EPA, TCEQ, US Fish and Wildlife Service, Texas Parks and Wildlife, the US Army Corps of Engineers, or any other state or federal agency.

B - Violations

(1) It is a violation of this chapter to engage in construction activity without complying with this Chapter.

(2) It is a violation of this Chapter to discharge any substance, other than stormwater or the discharges listed in §15.01.004B, to the City's MS4 in violation of any provision in this Chapter.

(3) The operator of a facility or site with a TPDES permit to discharge stormwater associated with industrial or construction activity commits an offense if the person denies city staff reasonable access to the permitted facility for the purpose of conducting any activity authorized or required by this chapter. Unreasonable delays in allowing the city access to a permitted facility or site is a violation of this ordinance.

(4) A person commits an offense if the person operates a facility or site that is discharging stormwater associated with industrial or construction activity without having submitted a copy of the notice of intent to do so to the City.

(5) A facility shall be operated in strict compliance with the requirements of its TPDES permit to discharge stormwater associated with industrial or construction activity. A person commits an offense if the person operates a facility or construction activity in violation of a requirement of the facility's TPDES permit to discharge stormwater.

(6) The City may require any operator of a facility to modify the facility's or the site's SWP3 if in the best professional judgment of the City staff, the SWP3 does not comply with the requirements of the facility's or the site's TPDES permit to discharge stormwater.

C - Notices of Violations and Stop Work Orders

(1) Notice of the deficiencies in a facility's or a site's SWP3 will be made in writing, and the City will give the facility or construction site operator a reasonable amount of time, not to exceed thirty (30) days, to make the necessary changes in the SWP3.

(2) Noncompliance flag and stop work orders. If the city staff determines that activities are being carried out in violation of this chapter, a notification of noncompliance shall be issued. In addition to the notification, if the violation continues beyond five days, a "noncompliance flag" will be posted at the site. Finally, if the violation continues after three days after the "noncompliance flag" is posted, the city may stop all work until corrective measures have been completed. The site shall be posted with a "stop work order." No other permits may be issued or inspections conducted by the city until corrections have been made to the satisfaction of the city. To move or interfere with a "noncompliance flag" or a stop work order shall constitute a violation of this article.

(3) Any person alleged to be in violation of the provisions of this chapter shall be required to correct the problem upon written notification from the city. Such written notification may require that certain conditions be adhered to in the correction of the problem. These may include, but are not limited to the following:

a. Use of specific pollution prevention measures and techniques;
b. Use of pretreatment procedures;
c. Modification of existing SWP3;
d. Completion of work within a specified time period; and
e. Submission of SWP3.

(4) Appeals. Any person denied permission to discharge to MS4 shall have the right to appeal such to the board of adjustment or other board established by the city within forty-five (45) days of the date of such denial.

D – Appeal of Notice of Violation

Any person receiving a Notice of Violation may appeal the determination to the City of Harlingen. The Notice of Appeal must be received within 15 days from the date of the Notice of Violation. Hearing on the appeal before the appropriate authority or designee shall take place within 60 days from the date of receipt of the Notice of Appeal. The decision of the City of Harlingen or their designee shall be final.

E – Enforcement Measures after Appeal

If the violation remains uncorrected after 10 pursuant to the requirements set forth in the Notice of Violation, or, in the event of an appeal, then representatives of the authorized enforcement agency shall enter the regulated property to take the necessary actions to abate the violation and/or restore the property. It shall be unlawful for any person to refuse the City of Harlingen to enter upon the premises for the purposes set forth above.

F – Cost of Abatement of the Violation

Within 15 days after abatement of the violation, the owner of the property will be notified of the cost of abatement, including administrative costs. The property owner may file a written protest objecting to the amount of the assessment within 15 days. If the amount due is not paid within a timely manner as determined by the decision of the local jurisdiction or by the expiration of the time in which to file an appeal, the charges shall become a special assessment against the property and shall constitute a lien on the property for the amount of the assessment. Any person violating any of the provisions of this article shall become liable to the City of Harlingen by reason of such violation.

G – Injunctive Relief

It is unlawful for any person to violate any provision or fail to comply with any of the requirements of this Ordinance. If a person has violated or continues to violate the provisions of this Ordinance, the City of Harlingen may petition for a preliminary or permanent injunction restraining the person entity from activities prompting further violations or compel the person to perform abatement or remediation of the violation(s).

H – Compensatory Action

In lieu of enforcement proceedings, penalties, and remedies authorized by this Ordinance, the City of Harlingen may impose upon a violator alternative compensatory actions, such as storm drain stenciling, attendance at compliance workshops, drainage cleanup, etc.

I – Criminal Prosecution

Any person that violated or continues to violate this Ordinance shall be liable to criminal prosecution to the fullest extent of the law, and shall be subject to a criminal penalty of not more than ($500.00) dollars per violation.

Sec. 16.51 Maintenance Agreements

The City of Harlingen has the authority to enter into interagency or interlocal agreements or other maintenance agreements, as necessary in accordance with TPDES Phase II MS4 Permit TXR040000 Part III Section A.3.(a)(2)i. This agreement will include maintenance easements to access and inspect stormwater control practices, and perform routine maintenance to ensure proper stormwater control. A legally binding covenant will identify the responsible parties to maintain stormwater control practices.

Sec. 16.52 Ultimate Responsibility

The standards set forth herein and promulgated pursuant to this Ordinance are minimum standards; therefore, this Ordinance does not intend nor imply that compliance by any person will ensure prevention of contamination, pollution, and unauthorized discharge of pollutants.

Sec. 16.53 Severability

If any provision of this article or the application thereof to any person or circumstance shall be held to be invalid, the remainder of this article and the application of such provision to other persons and circumstances shall nevertheless be valid, and the city commission hereby declares that this chapter would have been enacted without such invalid provision.

Sec. 16.54 Separability

The provisions and sections of this Ordinance shall be deemed to be independent, and the invalidity of any portion of this Ordinance shall not affect the validity of the remainder.

SECTION II: That the City Secretary of the City of Harlingen, Texas is hereby authorized and directed to cause a true copy of the caption of this ordinance to be published in a newspaper having general circulations in the City of Harlingen, Cameron County, Texas.

The provisions of this ordinance shall become effective from and after the final and lawful passage hereof and publication of the caption hereof as provided for and required in the Code of Ordinances and applicable state statutes.

FINALLY ENACTED this 6th day of November, 2019, at a regular meeting of the Elective Commission of the City of Harlingen, Texas at which a quorum was present and which was held in accordance with TEXAS GOVERNMENT CODE, CHAPTER 551.

CITY OF HARLINGEN

Chris Boswell, Mayor

ATTEST:

Amanda C. Elizondo, City Secretary

CONSTRUCTION SITE NOTICE
TCEQ Stormwater Program
TPDES GENERAL PERMIT TXR040000

This information is posted in compliance with TCEQ TPDES General Permit #TXR040000 for discharges of stormwater runoff from construction sites into small municipal separate storm sewer system. Additional information regarding the TCEQ storm water permit program may be found at: **www.tceg.state.tx.us**

Permit Number:	**TXR04**
Contact Name and Phone Number:	
Project Description: (Including start date and end date or date that disturbed soils will be finally stabilized)	
Location of Stormwater Pollution Prevention Plan (SWP3):	

I, *(Printed Name)*, certify under penalty of law that I have read and understand the eligibility requirements for claiming authorization under Part II of TPDES General Permit TXR040000. A stormwater pollution prevention plan has been developed and will be implemented according to permit requirements. I am aware there are significant penalties for providing false information or for conducting unauthorized discharges, including the possibility of fine and imprisonment for knowing violations.

Signature Date