

CITY OF LAKE JACKSON DEVELOPMENT MANUAL



Respectfully Submitted to the
Honorable Mayor and City Council
October, 1998

Sal Aguirre, City Engineer
CITY OF LAKE JACKSON,
TEXAS



CITY OF LAKE JACKSON

25 OAK DRIVE • LAKE JACKSON, TEXAS 77566-5289 • 409-297-2481 • FAX 409-297-9804

March 16, 1999

RE: Development Manual Guidelines – Revision and Update No. 1

Dear Participant,

The following revisions and updates to the city's manual are being distributed to you as a record manual holder. Simply match the section and title, page number and reference number to insure the new version is inserted into the correct sequence. Please remove the obsolete version and discard.

Section 910.14. Approved Products List has been updated to include additional tapping valve and sleeve products to alleviate the procurement time associated with Mueller products.

Section 720. Page 1 of 2 reverse side has been revised to correct a misprint and omission of the Continuing Page 2 of 2.

Effective Date: March 15, 1999

Authorization by:


City Manager

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CITY OF LAKE JACKSON

25 OAK DRIVE • LAKE JACKSON, TEXAS 77566-5289 • 409-297-2481 • FAX 409-297-9804

October 16, 1998

RE: City of Lake Jackson Development Manual - Final Edition

Dear Participant,

The City of Lake Jackson is pleased to provide you with the completed Development Manual of the City. This final document has been adopted by the City Council as the official comprehensive guideline for future development in the City and its extraterritorial jurisdiction. This document is long overdue, as a result of a deliberate step by step process that scrutinized and considered every participants' concerns to arrive at a fair and practical set of rules.

Please be assured that your participation in the review process and public forums were critical to the successful completion of the manual and that all your comments have been positively addressed and incorporated to everyones satisfaction.

This final product is one that we feel will become a model for communities like ours and one that should give you the satisfaction for having had a personal involvement and effective influence in its outcome.

Please receive our thanks for being a part of this lengthy but successful assignment.

Truly,

A handwritten signature in cursive script that reads "Sal Aguirre".

Sal Aguirre
City Engineer

**THE CITY OF LAKE JACKSON
DEVELOPMENT MANUAL**

REFERENCE SECTION	RESPONDENT	REMARKS / COMMENTS	DISPOSITION ACTION
240	Mercer Const.	National Electrical Code missing from adopted codes.	Included as requested
280	"	Requirements of Performance Bond to City on private contracts would require the City to be an obligee to the Bond and responsible for all costs involved. In order to remedy the general intent of the City to have a job completion when imperative, there may need to be another mechanism (ie. escrow accounts, letters of credit).	Revised to define requirement for City contracted work and not on private contracted work on public property.
280	V.D.D.	Add requirement for detention ponds by developer where full development channel is not available.	Not included in 280 but 615.1
300	"	Add detention pond requirement.	Included in 300.5.
305.9	Mercer Const.	Differentiate who is to provide "Mylar" record drawings (ie. Design Engineer, Contractor, etc.).	Revised by citing Engineer as responsible to provide Mylar set.
315.4	"	Recheck for possible conflicts / overlaps with other related sec.'s(ie. 315 A,C,D).	Revised widths to avoid contradictions and conflicts with other sections.
325.3	J. Atkins	Make a more defined rule that is uniformly applied to all cases in regard to private facilities (ie. improvements, landscape) to be placed on public utility easements.	Revised as requested . Sets a uniform rule for use with conditions in all cases when approved.
325.3	Bruce Walters	Believes easements and right-of-ways should not be removed from landscape count.	Refused as to R.O.W.'s, but easements are being taken in count.
330.1.B	Mercer Const.	Casing length limits not in synch with TxDOT policy.	Revised to conform with TxDOT Policy.
330.3	"	Casing length limits not in synch with RR Co.	Revised
330.4.A	"	Consider requiring a concrete pad protective cover over pipe @ ditch crossing flowlines.	Refused
335	Mercer Const.	Redefine trench safety as personnel safety and limit its detail to OSHA Regulation adherence by contractors and not the Engineers specifications.	Included redefinition and limited requirements for Engineer Specification Detail to those of guidelines.
350.2	Bruce Walters	As this relates to individual lot grading requirement, would like to delete it from requirements.	Revised to include it as an available option for special variance for developer and builder assistance.
405.1	Mercer Const.	Consider requirement that Sprinkler Systems & Backflow Preventer be done by a licensed installer.	Not included due to an already existing requirement in the City's Bldg. Permit Regulations.
405.1.B	Herb Smith	Ask whether 6" dead end mains are allowed as the wording conveys.	Revised to clarify that only temporary dead end will be allowed.
405.1.B	David Lawson	Questions 6" dead end mains and fire hydrants associated with them.	Revised to clarify that only temporary dead end mains are allowed with termination at F.H.

REFERENCE SECTION	RESPONDENT	REMARKS / COMMENTS	DISPOSITION ACTION
405.1.C 405.2.A	David Lawson	Questions ability of 8" mains properly looped to be able to serve more than two F.H. with adequate volume and pressure.	Revised and limited to max. three F.H.
405.2	C. Ballast WPS Supt.	Why not just terminate 8" > watermain temp / dead end line with hydrant instead of blow off option as this takes too much time to clear line.	Include as request
405.4.A	Mercer Const.	Consider CL 200 in lieu of CL 160 for 2" pipe. Small cost differential for a better pipe.	Included 200 as an approved alternate.
415.4.D	Doug Roesler	Suggest to include additional encasement requirement that it be an 18' or 20' joint centered to provide 9' horizontal separation.	Revised as suggested.
420.3	Mercer Const.	Fittings would still be required for rigid pipe even at full mfr. deflection. Restriction to 1/2 would only add to fitting use. Also joint deflection to flexible pipe (ie. PVC) is invalid criteria as flexure of pipe accounts for most of deflection in pipe and little or none at the joint.	Revised
425.1	"	Consider approving a recent 16" size gate valve (C-500) addition to Mueller for use.	Refused.
425.2 C	Doug Roesler	Considers the one valve per main excessive and recommends the 1 less rule as adequate.	Revised as recommended with conditions.
430.1	Mercer Const.	Revise the fire hydrant specifications to the correct ones (ie. nozzle size - 4 1/2" - 4 thread/in.)	Revisions made as noted.
435.1	"	Contradicts the previous section disallowance of 3" & 4" pipe size use.	Revised to delete reference to these sizes
435.4	"	Consider allowing general use of mechanical joint fittings with use of Cor-ten Bolts as a better corrosion alternate.	Refused due to past results with materials and lack of substantiated data or upgrade improvements to material.
450.1.B	"	Revise the 3/4" size designation of water meter to actual standard meter size ie. 5/8"x3/4".	Revised to (5/8"x3/4") as noted.
455	"	Is there any interest to meter fire hydrant or sprinkler system as other communities have undertaken?	Not considered - no interest.
500.7	Herb Smith	Notes that this requirement is moot since TNRCC does not review sanitary sewer plans. Suggest that an Engineering Report be considered in lieu.	Revised to delete TNRCC submittal requirements and replacing it with detailed Engineering Report.
505.1 A & B	"	Questions the omission of inflow as a parameter in flow design determination requirement..	Revised to include as suggested.
505.3	Mercer Const.	Including cement stabilized sand backfill in the section only, may confuse as it being the only option. Should others also be included?	Revised to include all backfill material specs.
505.3	Bruce Walters	Omission of backfill alternates implies c.s.sand as only option.	See above.
505.3 D	Herb Smith	Include time period for material placement.	See above & revised to include placement time parameters.
510.1	Bruce Walters	Has concern about additional easement required for sanitary sewer greater >10'.	Will retain requirement in those cases where deemed as a safeguard for potential owner conflicts (exception not the rule).

REFERENCE SECTION	RESPONDENT	REMARKS / COMMENTS	DISPOSITION ACTION
515.3	Herb Smith	Is dewatering required as part of procedures in water bearing condition?	Revised to include.
515.4	Mercer Const.	Section seems to call for two deflection tests for approval.	Revised to clarify that one test towards the end of the construction period would be required for approval.
520.1	Herb Smith	Are cleanouts being disallowed in favor of manholes as conveyed?	Revised to allow for cleanouts.
		Include M.H. testing requirement.	Revised as requested.
520.3	"	Recommends that an "Engineering Report" and preliminary O & M Manual be made a requirement for Lift Station Design Submittal.	Revised to include it as a requirement as support for sanitary system design in lieu of TNRCC submittal.
520.3.A	Mercer Const.	Pump efficiency set (ie. 60%) not realistic. Consider setting efficiency relative to actual rated efficiencies of approved pumps.	Revised efficiency to comparable efficiency of Gorman Rupp & Flygt Pumps.
525.4 A	David Lawson	Questions the requirement of neat holes in fiberglass M.H. by citing contractors inability to effectively cut with available tools.	No action - term intended to invoke a careful and workman like procedure to make connection.
525.5	Doug Roesler	Suggests to add "Metallic" to the marking requirement.	Refused as the property iron rod already are primary reference marking along with city locators.
600.1	"	Suggest that we refer and provide additional drainage direction with a LJ-VDD outfall ditch/channel maintenance jurisdiction map.	Included as Appendix 1050.
600.4	Bruce Walters	Wants a full discussion on accepting the Brazoria County Drainage Manual	Will retain it as the General Reference for Uniform Hydrologic Parameters and Methods but with default to specific City Criteria Regulations.
605.1	Mercer Const.	Reconsider requirement that 36" > RCP be rubber gasket type as it has a potential increase of 15% in material cost and does not allow the joint deflection potential of RamNek Gasket.	Requirement will remain.
605.2	V.D.D.	V.D.D. does not allow CGM pipes.	Revised as an approved material for conditional use but not in V.D.D. outfalls unless specifically permitted.
615.1	"	Requirements E & F seem to be of no merit due to very few channels are of 100yr. design (IE. P.V.. &CLUTE -L.J.)	Revised to qualify when requirements are to be applied.
615.1	Doug Roesler	Questions the requirement validity since only 100 year channels are few if any.	See above.
615.1 E	Herb Smith	Questions worth of this requirement on what are few if any 100 year channels.	See comment above.
615.1 F	"	Questions the logic of requiring 25 year elev. when the design storms are 10 - 100 year.	Revised to delete 25 year & include 10 year.
615.3	Doug Roesler	Requirement demands a determination of backwater/tailwater outfall downstream system.	Revised to include guide to Tailwater Criteria for Backwater/ Gradient Determination. Requirements to remain.
620.3.B	V.D.D.	Refers back to 605.2 comment.	See previous action 605.2.
620.3 B	Doug Roesler	Is ADS Poly Pipe not specified for use?	Revised to include other alternate pipes on the approved list.
620.5	David Lawson	Concerns that drainage criteria manual being touted has many City of Houstons requirements not entirely compatible with our area.	Revised. See 600.4

REFERENCE SECTION	RESPONDENT	REMARKS / COMMENTS	DISPOSITION ACTION
620.6.D	J.G.Dickson	Revise the term "minimum " to the intended "maximum".	Revised as requested.
620.6.E	"	Define what component of the bridge structure to be above the 100yr. flood.	Revised to set a 1 ft. freeboard to span beam.
625.2	Bruce Walters	Believes that 300' maximum street gutter drain maximum collections lengths need to be extended to cut drainage costs.	Kept as is, due to lack of consensus on practice by design groups.
625.2	Herb Smith	Believes 600' allowable for inlet gutter runs for residential is too long and should be reduced to 300' as for commercial.	See above.
625.2	Doug Roesler	Suggest that maximum distances be defined by direction of travel from inlet.	Same as above.
625.2	D. Lawson	Generally agrees with the 600' gutter drain travel per inlet on residential but sees deviation made necessary by topography.	Same as above.
625.2.F	Mercer Const.	Manhole cover type described in section for curb inlets differs from current standard use of sidewalk type ring and cover.	Revised to current type sidewalk frame & ring.
700.2	Herb Smith	Objects to too any additional reviews with possible conflicting requirement. Would like County to defer to L.J. ETJ.	Deleted requirements. ETJ development will require only City Review.
700.3	David Lawson	Seeks clarification of concrete curb & gutter requirements for inside City and ETJ.	Rev. to clarify requirements for both inside the City & ETJ.
710.4	Doug Roesler	Consider using TxDOT allowable of 4% vs 3.5%.	Revised as requested.
710.6.E	David Lawson	Seeks redefinition of intersection and radius for clarity.	Revised as requested.
710.9	"	Notes that measurement reference for curb radius is incorrect and that 50' curb radius min. for streets in commercial and industrial area is more than exist. in Plant. Village area.	Revised as noted. Revised to 45' desirable with 40' minimum.
710.9 A	Doug Roesler	Consider requiring 35' vs 30' radius on major residential thoroughfares to accommodate school buses.	Kept at 30' min. due to increased conflicts of utility congestion and placement problems associated with larger radius.
710.9 E	"	Notes of a conflict between 240' and chart 1040.2	Revised to match.
710.12	Doug Roesler	Sees problems with spacing requirement as it relates to commercial drives that would be better served by case by case condition.	Kept in its present state but as a guide that could be modified if warranted by P&Z under current review and variance powers.
710.12	Herb Smith	Objects to hard & fast rule of median opening space as posed by appendix. 1040.2 as being unreasonable and better left on case by case by case basis.	Same as above.
710.12	David Lawson	Considers Appendix 1040.2 unnecessary and arbitrary and should be a function of safety and convenience and even subject to omission in commercial situations.	Same as before.
710.13.A & B	"	Notes that measurement reference for curb radius is incorrect. Suggest to include normal pavement width.	Revised as noted. Refused as they are already provided in const. pavt. dwg's 1-3.

REFERENCE SECTION	RESPONDENT	REMARKS / COMMENTS	DISPOSITION ACTION
710.13.F	"	Questions max. length restriction of 1000 for cul d'sacs and suggests that p&z have flexibility on this.	Revise as suggested.
715.3	"	Suggests that 8" pavements be considered in high volume commercial areas	Dismissed as a voluntary Engr./Dev. decision will keep 7" as is.
715.6	"	Questions the 6" subgrade general rule as not effective in all situations but is concerned about cost increases in specific design cases.	Dismissed due to lack of support. Will maintain current practice.
715.12	"	Suggests to consider 5 sk w/flyash (25-30%) as alternative to 5 1/2 sk requirement Suggests individual mix design for high early concrete for varying opening schedules.	Revised as suggested. Revised to allow as suggested.
720.3	David Lawson	Question - 1 3/4" per foot maximum driveway slopes as potential bumper dragging condition.	Refused - No action. Field proven to be the limiting condition in street reconstruction
720.4	Doug Roesler	Confused as to which grade rules.	Revised to clear confusion.
720.6	David Lawson	Questions 0.6% minimum slope of cul-d-sac gutters as excessive and suggest 0.35%.	Revised minimum to 0.40%.
720.7	"	Suggest that cross slope @ left turn lane be increased to 3/16"/ft.	Revised as suggested to allow 1/8"-3/16".
720.9	David Lawson	Sees no value of vertical curve requirement on R.R.Track Crossing as track maintenance regrading renders this a useless effort	No action - Track regrade would impact a small section of vertical curve which would still provide a smoother transition.
730.2	Herb Smith	Consider requiring ADA sidewalk from street sidewalk to facility entrance.	Refused as City Policy relinquishes ADA compliance responsibility in private property.
735.2	Doug Roesler	Recommends that crosslopes of alleys be changed to minimum 1/4" vs 3/8" with max. of 1/2".	Refused as not having any significant difference and is only a recommendation for design.
810	J. Newsom R. Aplin D. Sills D. Peltier	Strongly object to proposed substitution to slab elevation policy as adding to costs and red tape to an existing tolerable and simpler one.	Revised section to apply to commercial development only. Maintain the present 24" rule for residential and with optional variance procedure.
810	Bruce Walters	Feels that requirements as presented were not given final determination by committee and feels builders should have a say.	See above.
810	D. Lawson	Questions the Flood Insurance Rate Map 100 yr. elevation as the reference bench mark for slab elevation since it does not relate to calculated 100 year flood level but to Insurance Flood purposes.	See above.
810.B	Doug Roesler	Would like clarification sketch of "Highest Proposed Grade Adjacent to Structure".	See 810 before.
810.C	"	Suggests a 12" above 100 yr. pond elev. as a better alternative to street elevation.	See 810 before.
810 C	Herb Smith	Requires clarification of "highest proposed grade adjacent to the structure.	See 810 before.

REFERENCE SECTION	RESPONDENT	REMARKS / COMMENTS	DISPOSITION ACTION
810 D	"	Inquires whether 24" rule for "infill sites" be considered optional to 810.B.	See 810 before.
825.5	Doug Roesler	Suggests that a VDD/LJ outfall channel / ditch maintenance map be produced, provided & referenced in section.	Revised as suggested. See 600.1, action and included as Appendix 1050.
830.2 830.3	J. Atkins "	Disagrees with the various minimum requirement concerning driveway widths and spacing specifically along major thoroughfares citing TxDOT policy and cases.	Revised Section to default to TxDOT Permits/Regulations along highways and included TxDOT Standard Details as Exhibit 1060. On non-highway facilities requirements have been revised to agree with TxDOT detail minimums.
830.2&3	Bruce Walters	Objects to commercial drive widths and location requirements.	See above.
830.2&3	Doug Roesler	Objects to driveway spacing and location restriction from intersection along major thoroughfare citing TxDOT allowances.	See above.
830.3	David Lawson	Considers driveway spacing requirement excessive and recommends TxDOT driveway regulations be adopted.	See above.
830.4	"	Suggests that number of driveway limitation should be as TxDOT requirement.	No action needed. Section agrees with TxDOT Policy.
830.4	Herb Smith	Objects to the number of driveways based on frontage as proposed.	See above.
910.1	Mercer Const.	Incorrect pumper nozzle size.	Revised to correct 4 1/2" size.
910.3	"	Update approved mfrs. and expand list to one's with a 5 year production history.	Revised as requested.
910.9	"	Differentiate tap types by sizes as available in industry (ie. < 1" - c.c. x comp, > 1" - c.c. x iron pipe thread).	Revised as requested.
910.1	"	Same as above	"
910.14	"	Mueller 13400 valve incorrectly grouped in category	Revised to delete 13400 but approved as a s.s. sleeve & valve combo.
910.17	"	Is the air release valve requirement for all applications limited to the specified size and model and connection type?	Revised to indicate all applicable products from approved mfr. and deleted connection type requirements
910.18	"	Broaden list to include others.	Revised to open approval to other manufacturers and added cast iron as optional materials.
920.1	"	List specifies PVC pressure rated pipe for gravity sewer pipes.	Revised pressure type to gravity PVC type applications.
920.7	"	Broaden list to include current supplier (Western Works).	Revised as requested.
920.12	"	Are cast in place M.H. bottoms approved for use?	Revised to include.
930.2	"	Same as 920.7	Revised as requested.

REFERENCE SECTION	RESPONDENT	REMARKS / COMMENTS	DISPOSITION ACTION
930.4	Mercer Const.	Is the City's intent not to use direct traffic ASTM C850 box culverts?	Revised to include C850.
Appendix 1030	Doug Roesler	Questions if gas is always in public R.O.W.	Revise to add gas note.
1040.2	Jim Atkins	Recommends that there be flexibility left to the discretion of the Engineer for exceptions to those requirements that don't fit a particular situation.	See 710.12 before.
1040.2	Bruce Walters	Disagrees with median opening guideline without flexibility.	See above.
Const. Dwgs. Water Dist. Const. Notes	Herb Smith	Questions on who will maintain the model and what design flows are for commercial and residential lines.	Revised to include existing model and design flow criteria and updating process. Added exhibit with Model Schematics.
Const. Notes	Doug Roesler	Queries about a network model.	See above.
Water Detail 2	Herb Smith	Would like to see a 1" meter detail.	Refused due to meter vault only being a req. for >3" sizes
Const. Dwgs. San Sewer Criteria (2)	Herb Smith	Notes that the requirement is moot since TNRCC does not review san. sewer. plans Suggests that an Engineering report be considered in lieu.	See 520.3 before. Revised to include Engineering Report as Design Criteria.
Criteria (4)	Jim Atkins	Maintains City's maximum depth of gravity sewers of 12' is arbitrary and with no justification.	Refused, as worded this does not prohibit 12' depth but requires special approval from dept.
Criteria (4)	Bruce Walters	Maintains 12 max. depth as too shallow and should be defined where to apply this restriction.	See above.
Criteria (6)	Herb Smith	Questions the omission of inflow allowance and amount.	Revised as suggested.
Criteria (7)	Bruce Walters	Would like clarification of what extenuating circumstance would permit the use of Submersible Pump lifts & package units.	Kept as is. Discretionary decision to be handled on case by case by Public Works based on service and location.
Dwg 2	Mercer Const.	Sand backfill requirement for trenches under paved and open areas not prudent as they spell trouble for pavement surfaces and pipe gradients as water logged sands creates weak supports for surfaces and bedding for pipes.	Kept as presented but revised to include backfill trench stops control.
Const. Dwgs. Storm Drain. Criteria (5)	Doug Roesler	Questions City's policy of having drainage R.O.W. in lieu of easements as being a maintenance burden of costlier than that associated with fence removal of an easement.	Refused, as this does not assist the City in resolving maintenance problems and related regulation & costs.
Criteria (5)	V.D.D.	There are deviations in R.O.W. requirements of the V.D.D. adopted Brazoria Co. Drainage Manual and the City's that requires conformance.	Revised to qualify BCDM R.O.W. criteria to VDD maintenance drainage ways.
Dwg. 1	David Lawson	Interprets plan detail of Spl. Inlet of top stiffeners as walls.	No Action - Failed to see confusion.
Dwg. 3	Doug Roesler	Suggests detailing M.H. Box Storm Sewers.	Refused as note references to detail location.

REFERENCE SECTION	RESPONDENT	REMARKS / COMMENTS	DISPOSITION ACTION
Dwg. 4	Doug Roesler	Suggests detailing concrete stab, backfill.	Refused as construction note covers suggested detail.
Dwg. 8	David Lawson	Disagrees with pipe outfall end treatments for large bottom channels and high flow line outfalls. Proposes alternatives.	Revised to included modifications as per V.D.D. Note below. Added other V.D.D. option alternatives.
Dwg. 8	Doug Roesler	Suggests that slope paving should extend across ditch bottom up to opposite slope 1' above pipe but not in ditch bottoms >10' +/-	See note above.
Dwg. 8	Doug Roesler	Suggests specifying use of dissipator option only on >10' channel bottom.	Refused as this could assist in narrower bottom channel with wider tops with high flow line pipe outfalls.
Dwg. 8	V.D.D.	Require that storm drain pipe connections to V.D.D. outfall be @ or one foot (1') above channel flowline or water surface and discharge velocities < 3.5 FPS.	Revised construction detail. See above.
Dwg. 9	David Lawson	Suggests a better detail for drive over curb inlet is needed.	Revise as suggested.
Dwg. Section Pavt. Design Criteria (4)	Bruce Walters	Need more explanation on traffic impact study.	Retained as a potential requirement when determined by P & Z or as Procedure to Justify Variance to Traffic Related Requirements.
Ordinance 78 Sec. 78-92a, 2b & 78-9.1a	"	Sign area should be enlarged to 64 s.f.	Considered out of manual scope to be left to usual Code Review and revision channels.
Ordinance 90 Sec. 90.3 & 90.5	"	Question 5 mile jurisdiction as being too large & requires explanation of such.	Same as before.
Sec. 90-58.1a, 1b, 1c, & 2c 90-61	Bruce Walters	Wants detail discussion of street width requirements and classification as it impacts developers seriously.	Considered out of meeting scope and left to future Traffic and Commission Review and Thoroughfare Plan Updates.
General	J.C.Dickson	Is there a policy set out in the manual concerning infrastructure oversize for future development and responsibilities.	Addressed in Sec. 280. Will expand if necessary.
General	V.D.D.	There needs to be regulation on altering or encroaching on natural bank slope of Oy. Creek	Addressed is Sec. 90.7 of subdivision ordinance also contained in manual. May need to reference it in body of manual but may be too specific and out of general guidelines.
General	Jim Atkins Bruce Walters	Urges that the final manual document be adopted as a guideline and not as an ordinance.	Revised Adoption and Authority of Document to those of Guidelines.
431.5	Uticon	Ask to clarify whether fitting statement includes 12" size.	Revised to remove confusion. 12" included.
520	Uticon	3 of 3 not included in replacement handout.	Original 3 of 3 not revised, so no replacement was needed.
715.8	Uticon	Questions "full sawcut" as required due to costs associated with this.	Revised to indicate only "sawcut" and left to plans to specify the extent on a case by case basis.

- Guidelines for Growth -

CITY OF LAKE JACKSON DEVELOPMENT MANUAL



CITY OF LAKE JACKSON

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- City of Enchantment -

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(COMPREHENSIVE GUIDELINES
OF THE
DEVELOPMENT CODES)**

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APPENDIX 1050 - NON-RESIDENTIAL DRIVEWAY REGULATION - HIGHWAY
ACCESS

APPENDIX 1060 - THOROUGHFARE PLAN 1997 FUNCTIONAL
CLASSIFICATION SYSTEM

APPENDIX 1070 - MASTER PLAN DEVELOPMENT POLICY DIAGRAMS

*1. General & Procedure
Guidelines*



**CITY OF LAKE JACKSON
DEVELOPMENT MANUAL**

SECTION: USER'S GUIDE

NO.: 010

TITLE: INTENT OF MANUAL

PAGE: 1 OF 1

EFFECTIVE DATE:

Since its incorporation in March of 1944, the City of Lake Jackson has built a worthy reputation as a master planned community best known for its exemplary infrastructure, fiscal conservatism, high quality of life, and beauty. Now a City with approximately 25,000 residents, Lake Jackson reaffirms its reputation and long standing development policies by providing this documented and comprehensive source for development policy and practice.

It is the purpose of this Manual to protect the public health, safety, and general welfare while allowing for cost saving efficiencies by reaffirming the City's development, design and construction requirements and specifications. In serving this end, the Manual is intended to be a convenient resource guide for subdividers, developers, engineers, contractors, builders, surveyors, realtors, and other interested persons for development of property within the corporate limits and extraterritorial jurisdiction of the City of Lake Jackson. It is further intended that this Manual serve to create functional and attractive development, minimize adverse impacts, and insure that project shall be an asset to the community. Standards contained herein are designed to result in a well-planned community without adding unnecessarily to development costs.

While this Manual provides general guidelines, it is not intended to represent criteria to be used in each and every circumstance.

**CITY OF LAKE JACKSON
DEVELOPMENT MANUAL**

SECTION: USER'S GUIDE

NO.: 020

TITLE: AUTHORITY TO SET GUIDELINES PAGE: 1 OF 1

EFFECTIVE DATE:

This Manual has been adopted by minute order of the City Council of Lake Jackson as a guideline detail of the various development codes in the Code of Ordinances of the City. The authority to adopt this Development Standard is granted pursuant to Chapter 212 of the Texas Local Government Code (which pertains to municipal regulation of subdivisions and property development). This Chapter of the Code provides that "the governing body of a municipality may adopt rules governing plats and subdivisions of land within the municipalities jurisdiction to promote the health, safety, morals, or general welfare of the municipality and the safe, orderly, and healthful development of the municipality" (Section 212.002).

Chapter 212 (Section 212.010) of the Texas Local Government Code further provides that "the municipal authority responsible for approving plats shall approve a plat if:

- (1) it conforms to the general plan of the municipality and its current and future streets, alleys, parks, playgrounds, and public utility facilities;
- (2) it conforms to the general plan for the extension of the municipality and its roads, streets, and public highways within the municipality and in its extraterritorial jurisdiction, taking into account access to and extension of sewer and water mains and instrumentalities of public utilities;
- (3) . . . (not applicable); and
- (4) it conforms to any rules adopted (by the municipality) under Section 212.002, "or the City's Subdivision Code as adopted".

Approval of subdivision plats by the City's Planning Commission is required as a condition of recording/filing of such plats with the Brazoria County Tax Office, and approval of non-residential site plans by the City's Planning Commission is also required as a condition for the issuance of a building permit for any development (except that individual lot developments of less than two (2) acres may alternatively be reviewed and approved by appropriate City staff).

It should also be noted that all residential replats typically require a public hearing pursuant to State Law as well.

**CITY OF LAKE JACKSON
DEVELOPMENT MANUAL**

SECTION: USER'S GUIDE

NO.: 030

TITLE: APPLICATION OF MANUAL

PAGE: 1 OF 1

EFFECTIVE DATE:

The provisions of this Manual shall apply to all subdivisions and related improvements required within the corporate limits of the City of Lake Jackson, as well as within the City's extraterritorial jurisdiction (or one mile beyond the corporate city limits, except in those areas or circumstances where related agreements have been executed with neighboring cities).

As defined within the context of this manual, "Subdivision" shall mean the division of a tract or parcel of land into two (2) or more parts or lots for the purpose, whether immediate or future, of sale or building development or transfer of ownership, and shall include "resubdivision". "Resubdivision" shall mean the division of an existing subdivision, together with any change of lot size therein, or with the relocation of any street lines.

Interpretation of guidelines shall rest with the City's Engineer, although any appeal of interpretation may be made to the City Manager and/or the Planning Commission. Final interpretation shall rest with the City's Planning Commission after consultation with the City Engineer.

**CITY OF LAKE JACKSON
DEVELOPMENT MANUAL**

SECTION: USER'S GUIDE

NO.: 040

TITLE: DISTRIBUTION OF MANUAL

PAGE: 1 OF 1

EFFECTIVE DATE:

The Engineer's Office of the City of Lake Jackson shall be responsible for distribution of this Manual upon request. The City may charge a reasonable fee to recover the cost of reproduction. Persons or agencies who request and obtain this Manual shall be recorded, including name and permanent address, and each Manual shall be numbered for the purpose of issuing any revisions, updates or addendums.

REVISIONS

From time to time as may be required, the City may revise any or all guidelines contained herein. Such action may require review and approval of the City Council in cases where a change in policy or intent is desired. Changes to the Manual which are administrative in nature may be authorized by the City Manager. All revisions or updates to the Manual shall be distributed under signature of the City Manager at least once annually as necessary. Manual holders may contact the City Engineer's Office to insure possession of any current guidelines in questions.

UPDATES

Upon receipt of an updated guideline, the Manual holder should remove the obsolete version and discard. Simply match the section and title, page number, and reference number to insure the new version of the guideline is inserted into the correct sequence. All new or updated guidelines shall have an effective date.

CITY OF LAKE JACKSON DEVELOPMENT MANUAL

SECTION: DEVELOPMENT PROCESS

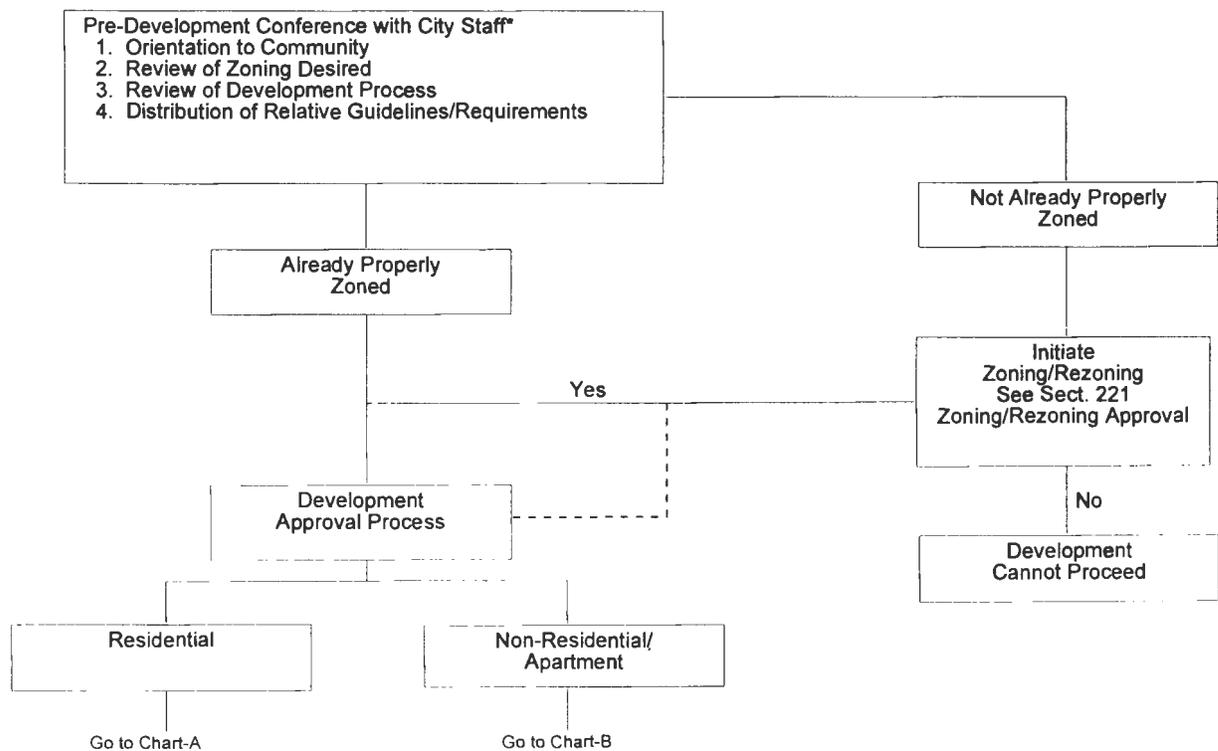
NO: 100

TITLE: DEVELOPMENT FLOW CHART

PAGE: 1 OF 1

EFFECTIVE DATE: _____

DEVELOPMENT FLOW CHART



* Strongly recommend but not required (this is an opportunity to meet and expedite issue resolution of the process).

----- Process may take place simultaneously at developers or applicants option.

CITY OF LAKE JACKSON DEVELOPMENT MANUAL

SECTION: DEVELOPMENT PROCESS

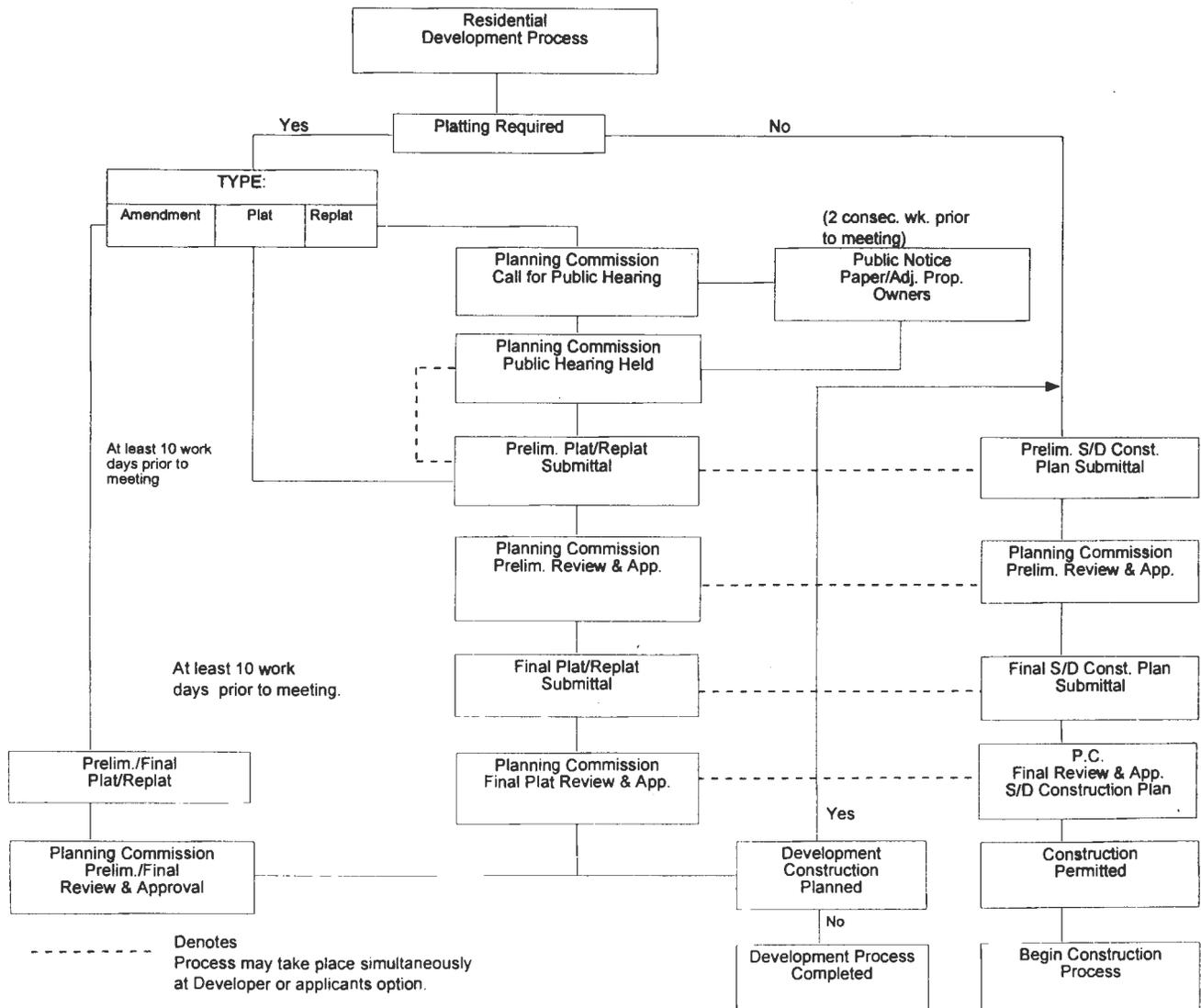
NO: 110

TITLE: FLOW CHART A - RESIDENTIAL
DEVELOPMENT

PAGE: 1 OF 1

EFFECTIVE DATE: _____

DEVELOPMENT FLOW CHART - A



CITY OF LAKE JACKSON DEVELOPMENT MANUAL

SECTION: DEVELOPMENT PROCESS

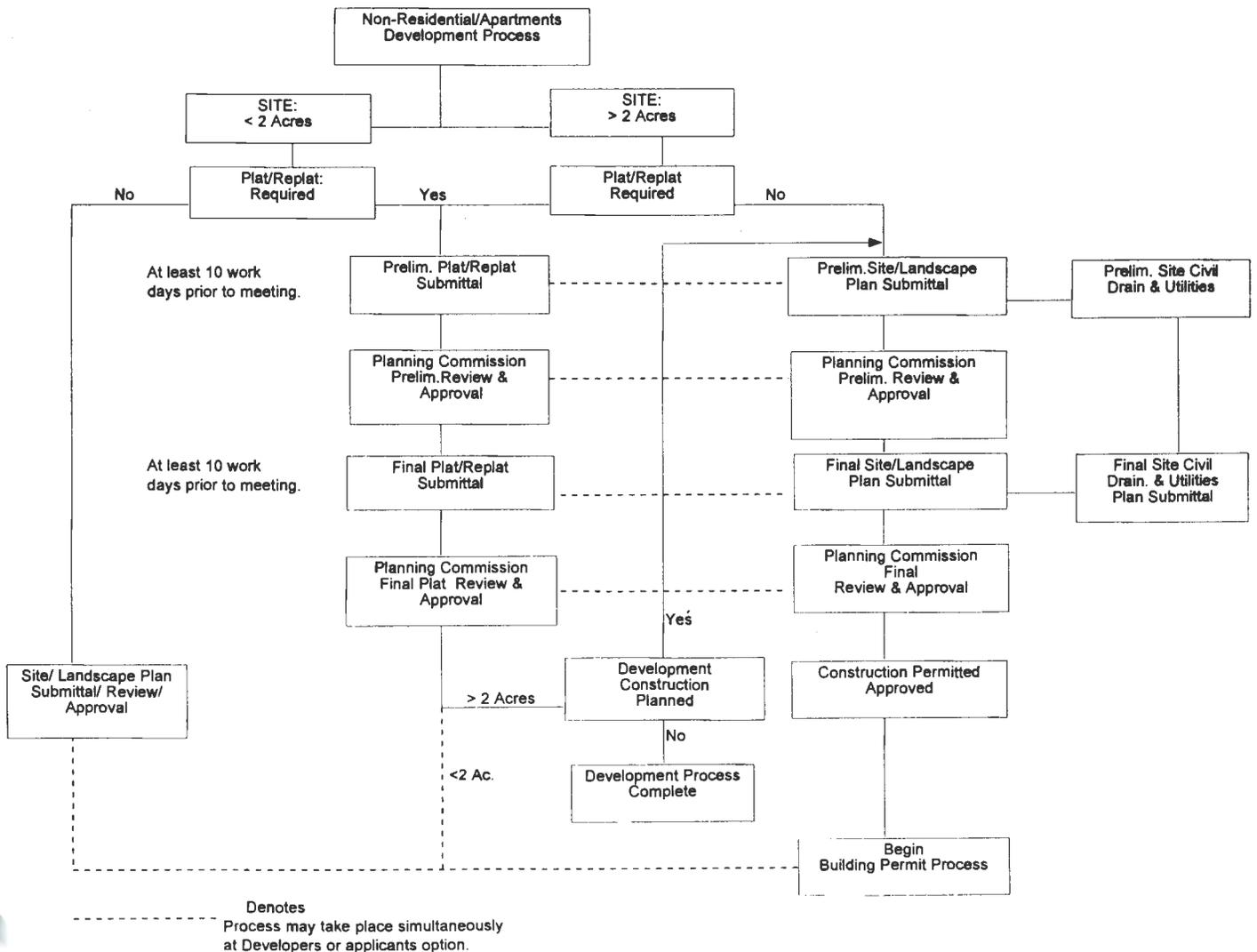
NO: 120

TITLE: FLOW CHART B -
NON-RESIDENTIAL/APARTMENTS

PAGE: 1 OF 1

EFFECTIVE DATE: _____

DEVELOPMENT FLOW CHART - B



**CITY OF LAKE JACKSON
DEVELOPMENT MANUAL**

SECTION: SUBDIVISION APPROVAL

NO.: 200

TITLE: PRE-DEVELOPMENT REVIEW

PAGE: 1 OF 1

EFFECTIVE DATE:

For the purpose of expediting development and reducing subdivision and site plan design and development costs, the developer may request a pre-development conference in the formative stage of design through the City Manager. This conference is strongly recommended, but not required. Pre-development review is provided at no cost, and additional pre-development conferences may be requested. During the pre-development conference, the developer will receive a brief orientation, a review of zoning status, an informal review of the preliminary plat and/or concept site plan, an explanation of the development process, and copy of relative guidelines. (Please see Sec. 100 development flow chart.)

The pre-development conference shall allow the developer to meet with appropriate City representatives. These representatives may include the City Manager, Assistant City Manager, City Engineer, Public Works Director and Fire Marshall (as well as members of the City's Planning Commission or other individuals invited by the City Manager).

The value of the pre-development conference is greatly enhanced if a concept site plan is provided. The concept site plan should include as much data as possible to describe the nature of the development, location, the owners or optionees and consultants involved in the project.

In addition, the developer may request to present a concept plan to the Planning Commission at a regularly scheduled meeting for the purpose of informal review and exchange of concerns. This forum with the City's Planning Commission is a mechanism designed to permit the developer of a large scale project to go before the Commission with a description, but no full engineering details of the project, and secure approval of basic development parameters. Once having secured such approval, the developer proceeds with preliminary plat and site plan processes. The Planning Commission meets once monthly for a regularly scheduled meeting. The developer may request to be placed on a Planning Commission agenda through the City Manager. Pursuant to Sec. 90-12 of the City's Subdivision Code, the Planning Commission will assist the subdivider through preliminary discussion of proposed plats at all possible times, and will, through the City Engineer, make all possible assistance. In summary, the Planning Commission and City staff will accommodate any opportunity to provide developer assistance when possible, including use of special meetings at the developer's request.

CITY OF LAKE JACKSON DEVELOPMENT MANUAL

SECTION: SUBDIVISION APPROVAL

NO.: 220

TITLE: ZONING

PAGE: 1 OF 1

EFFECTIVE DATE:

Pursuant to Chapter 110 of the Code of Ordinances of the City of Lake Jackson (with latest amendment), the City is divided into eighteen (18) zones known as:

E-1	Single Family Residences, Estate (Most restrictive residential zone, largest lots.)
R-1	Single Family Residence (Highly restrictive zone composed of individual homes)
R-2	Single Family Residence (Medium density zone composed of individual homes)
R-2a	Single Family Residence (Individual Homes in Pre 1961 R-2 Zones).
R-3	Two Family Residences (Duplexes, with characteristics attributed to R-2)
R-4	Multi-Family Residence (Medium density zone for apartments, etc.)
B-1	Neighborhood Business (A neighborhood shopping zone)
B-1a	Professional Offices
B-2	Central Business District (General commercial enterprise zone, except industrial)
B-3	Institutional Zone (Zone for cultural, educational and other institutions)
C-1	Commercial (Warehousing and distribution activity zone)
C-2	Commercial (High rise building zone)
M-1	Light Industrial
M-2	Heavy Industry
T-1	Single Family Residence, Townhouse (Highly restrictive, high density residential)
PURZ	Planned Unit Residential Zone
PUD	Planned Unit Development
MH-1	Mobile Home Park

Please see the City's Zoning Code and attached chart for a complete outline of provisions for each zone.

Prior to issuance of any building permit, any development must have been properly zoned. The development and zoning process may take place simultaneously at the option of the developer. Final approval of a plat or site plan is also contingent upon the proper zoning being obtained. (Please see the attached chart which illustrates the zoning process.)

CITY OF LAKE JACKSON DEVELOPMENT MANUAL

SECTION: SUBDIVISION APPROVAL

NO: 221

TITLE: ZONING PROCESS

PAGE: 1 OF 1

EFFECTIVE DATE: _____

FLOWCHART OWNER INITIATED ZONING / REZONING

Time Line

10 Days Prior to
Planning Commission Meeting
1st Tuesday of the Month

1st Tuesday of the Month

Not Less Than
10 Days Before
Hearing

No Earlier Than 15 Days
After Date of First
Publication -
1st Tuesday of the Month (Usual)

Regular City Council Meeting -
1st and 3rd Monday of the Month

Zoning / Rezoning
Application Made
(By Owner - Optionees - Lessees of Property)

Planning Commission Considers Request
to Call a Public Hearing -
Call for Public Hearing

Written Notice
of Public Hearing Sent
to Owners of Real Property
Within 200 Feet

Notice of Hearing
Published 3
Consecutive Weeks in
Official Papers

Joint Public Hearing of City Council /
Planning Commission -
Hearing Conducted and Closed -
Zoning Recommendation Made by
Planning Commission to City Council

Zoning Change Ordinance Adopted
by City Council
(Two Readings at Two Separate Council Meetings)

Return to Development Process
(See Separate Development Flow Chart)

2 - 3 Weeks

4 - 5 Weeks

3 - 4 Weeks

***CITY OF LAKE JACKSON
DEVELOPMENT MANUAL***

SECTION: SUBDIVISION APPROVAL

NO.: 230

TITLE: ANNEXATION

PAGE: 1 OF 1

EFFECTIVE DATE:

The City of Lake Jackson's annexation authority is derived from Section 43 of the Texas Local Government Code. A home-rule city, such as Lake Jackson, "may take the following actions according to the rules as may be provided by the charter of the municipality."

- 1) fix the boundaries of the municipality;
- 2) extend the boundaries of the municipality and annex area adjacent to the municipality; and
- 3) exchange area with other municipalities.

These actions are provided for in detail in Section 1.03 of the City of Lake Jackson Charter.

In addition, pursuant to Section 110-4 of the Lake Jackson Code of Ordinances, the following shall apply regarding interim zoning for newly annexed territory.

"No permit for the construction of a building shall be issued by the building inspector in a territory where an ordinance has passed on the first reading, annexing same to the City of Lake Jackson, other than a permit which will allow the construction of a building permitted to be constructed in what is defined as R-1 single family residence."

Permanent zoning of newly annexed territory shall be handled in the same manner as amendments to the zoning ordinance provided under Section 110-6, and subsections thereunder, of the City of Lake Jackson Code of Ordinances. (See Sec. 221 annexation flow chart.)

CITY OF LAKE JACKSON DEVELOPMENT MANUAL

SECTION: SUBDIVISION APPROVAL

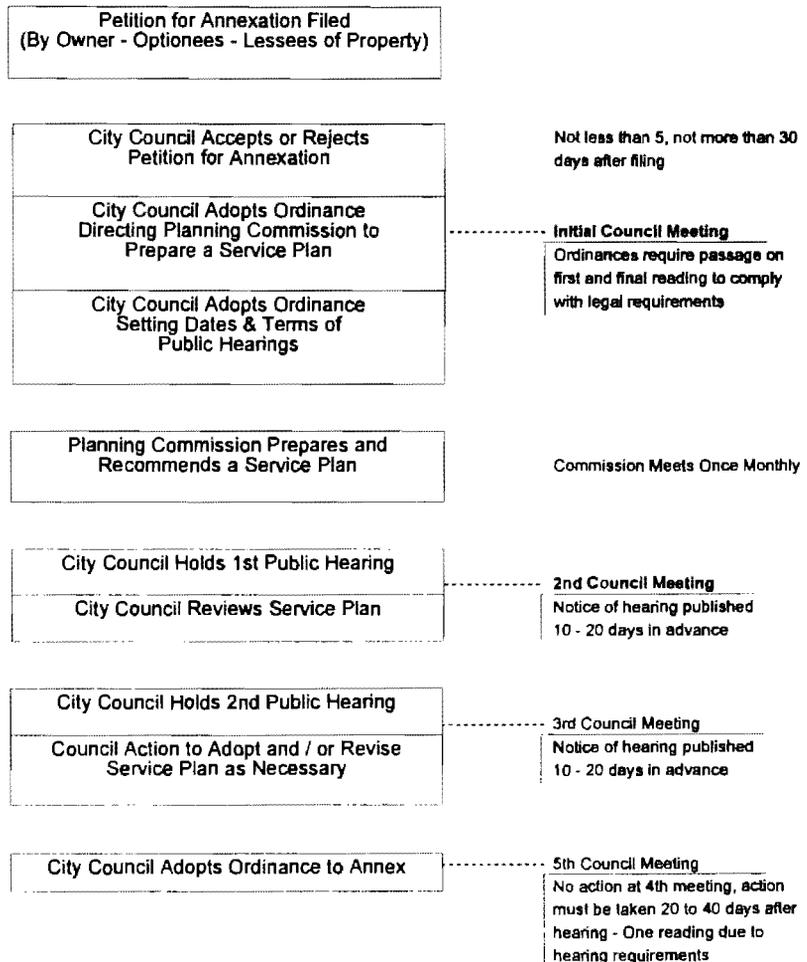
NO: 231

TITLE: ANNEXATION PROCESS

PAGE: 1 OF 1

EFFECTIVE DATE: _____

ANNEXATION FLOW CHART (Sparsely Occupied Area on Petition of Area Landowners)



NOTE: The annexation of an area must be completed within 90 days after the date the governing body institutes the annexation proceedings or those proceedings are void.

Annexation requirements may vary depending upon type of annexation, number of inhabitants, etc. pursuant to Chapter 43 of the Texas Local Government Code.

CITY OF LAKE JACKSON DEVELOPMENT MANUAL

SECTION: SUBDIVISION APPROVAL

NO.: 240

TITLE: APPLICABLE CODES

PAGE: 1 OF 1

EFFECTIVE DATE:

BUILDING CODES

The City of Lake Jackson operates under the Southern Standard Building Code of 1991 and amendments. Other codes adopted by the City of Lake Jackson include:

The Standard Fire Code, 1991 edition and amendments.

The National Fire Code of 1993.

The Southern Standard Mechanical Code of 1991 and amendments.

The Standard Plumbing Code of 1991 with revisions.

The Standard Fire Prevention Code with 1991 and revisions.

The 1992 Council of American Builders Association Energy Conservation Code with revisions.

National Electric Code of 1993.

CITY CODES

In addition to the above building codes, the City of Lake Jackson also operates under the following Chapters of the City of Lake Jackson Code of Ordinances which pertain to development. (These Codes have been reproduced in their entirety as a convenient reference in Division IV.)

Chapter 14 Building Regulations

Chapter 46 Floods

Chapter 78 Sign Standards

Chapter 86 Street, Sidewalks and Other Public Places.

Chapter 90 Subdivision Regulations (Including Park and Landscape Requirements)

Chapter 110 Zoning (Including Parking Requirements)

***CITY OF LAKE JACKSON
DEVELOPMENT MANUAL***

SECTION: SUBDIVISION APPROVAL NO.: 250

TITLE: PRELIMINARY PLAT/SITE PLAN PAGE: 2 OF 2

EFFECTIVE DATE:

official newspaper at least fifteen (15) days prior to the scheduling hearing. (Section 212.014-015 of the Texas Local Government Code.)

***CITY OF LAKE JACKSON
DEVELOPMENT MANUAL***

SECTION: SUBDIVISION APPROVAL

NO.: 260

TITLE: FINAL PLAT/SITE PLAN

PAGE: 1 OF 1

EFFECTIVE DATE:

FINAL PLAT/SITE PLAN APPROVAL

Following a public hearing if required, and review of the final plat, or site/landscape plan and when, to the satisfaction of the Planning Commission, all conditions and requirements have been met, the Planning Commission shall approve such plat, or site/landscape plan. Should the final plat fail to meet the requirements of the Planning Commission, then the Planning Commission shall note its disapproval and attach a statement or reasons for disapproval thereto. Approval or disapproval shall be voted by the Planning Commission within thirty days (30) after submission of such plat. (Section 90-35. City of Lake Jackson Code of Ordinances)

Submission or filing of the final (or record) plat shall be done on two (2) white print copies of the final or record plat with a minimum of two (2) reproducible Mylar tracings of final plat to the City Planning Commission after the preliminary plat has been approved and all changes and alterations have been made. No final plat shall be considered unless a preliminary plat has first been submitted. Such plats shall be filed with the City Manager at least ten (10) working days prior to the meeting at which approval is requested. The final plat shall contain the required information indicated in the attached FINAL PLAT/SITE PLAN CHECKLIST pursuant to Section 1000 - Appendix 1001).

Final site plans and landscape plans may be submitted concurrently with plats for approval or independently but shall be subject to the same terms and conditions indicated above except that a minimum of one (1) reproducible mylar tracing of final plans shall be necessary.

**CITY OF LAKE JACKSON
DEVELOPMENT MANUAL**

SECTION: SUBDIVISION APPROVAL

NO.: 270

TITLE: PLAT AMENDMENTS

PAGE: 1 OF 2

EFFECTIVE DATE:

The Planning Commission may approve an amended plat on preliminary and final submittal without vacating the preceding plat if the plat amendment is signed by all affected applicants and contains the required information indicated in the attached final plat/site plan checklist (Section 1000 - Appendix 1001) and only if the sole purpose of the amendment is to:

- correct an error in a course or distance shown on the preceding plat;
- add a course or distance that was omitted on the preceding plat;
- correct an error in a real property description shown on the preceding plat;
- indicate monuments set after death, disability, or retirement from practice of the surveyor responsible for setting monuments;
- show the location or character of a monument that has been changed or shown incorrectly on the preceding plat;
- correct any kind of clerical error or omission that was approved by the commission to include lot numbers, acreage, street names, and identification of recorded adjacent plats;
- correct an error in courses and distances of lot lines between two adjacent lots if both lot owners join in the application for the amending plat, neither lot is abolished, the amendment does not attempt to remove recorded covenants or restrictions, and the amendment does not have a material adverse effect on the property owners in the plat;
- relocate a lot line to eliminate an inadvertent encroachment of a building or other improvement on a lot line or easement;
- or relocate one or more lot lines between one or more adjacent lots if the owners of all those lots join in the application for amending the plat, the amendment does not attempt to remove recorded covenants or restrictions, the amendment does not increase the number of lots.

Make necessary changes to the preceding plat to create six (6) or fewer lots in the subdivision or

***CITY OF LAKE JACKSON
DEVELOPMENT MANUAL***

SECTION: SUBDIVISION APPROVAL

NO.: 270

TITLE: PLAT AMENDMENTS

PAGE: 2 OF 2

EFFECTIVE DATE:

a part of the subdivision covered by the preceding plat if:

- the changes do not affect applicable zoning and other regulations of the municipality;
- the changes do not attempt to amend or remove any covenants or restrictions;
- the area covered by the changes is located in an area that the municipal planning commission or other appropriate governing body of the municipality has approved, after a public hearing, as a residential improvement area.

Notice, a hearing and the approval of other lot owners are not required for the approval and issuance of an amending plat.

**CITY OF LAKE JACKSON
DEVELOPMENT MANUAL**

SECTION: SUBDIVISION APPROVAL

NO.: 280

TITLE: IMPROVEMENTS

PAGE: 1 OF 1

EFFECTIVE DATE:

Improvements shall be installed to a permanent line and grade and to the satisfaction of the City Engineer. All public construction work shall be performed by a bonded contractor who has filed a faithful performance bond with the City. All private construction work in public property shall be performed by a contractor in compliance with private bonding requirements stipulated by the effective Federal and State regulations. Approval of the plat shall not impose any duty upon the City concerning maintenance of such improvements until the City shall have made actual acceptance of same. The minimum improvements which the subdivider shall make or agree to make, prior to acceptance and approval of final plat by the City Planning Commission are contained under separate heading herein. (Section 90-58 City of Lake Jackson Subdivision Code)

The subdivider shall award the contract for any improvements after the plans and specifications have been approved by the City Engineer and City council for all grading, paving, drainage structures, utilities and sidewalks in the subdivision. (Section 90-59, City of Lake Jackson Subdivision Code)

The subdivider shall pay for the total cost of all improvements, except that the City may pay a share of the improvement for the cost of oversizing of infrastructure as determined appropriate by City Council. (Section 90-58 and Section 90-60 of the City of Lake Jackson Subdivision Code)

In addition to infrastructure improvements, the developer shall also provide all necessary easements and right-of-way required and in residential subdivisions dedication or payment for park and recreation sites and facilities. (Section 90-60 and 90-62).

**CITY OF LAKE JACKSON
DEVELOPMENT MANUAL**

**SECTION: CONSTRUCTION PLAN & NO.: 300
MISCELLANEOUS REQUIREMENTS**

TITLE: REQUIRED PLAN SHEETS PAGE: 1 OF 1

EFFECTIVE DATE:

- 300.1 Cover sheet.
- 300.2 Final plat. (Recorded plat shall be included in the record drawings)
- 300.3 Construction notes and legend.
- 300.4 Overall plans for proposed improvements. With key drawing index (ie. water/sewer layout, paving/drainage layout)
- 300.5 Drainage area map and hydraulic calculation summary to include detention/retention basin system of 100 year flow where channel is unavailable and required.. (Detail in Sec. 615)
- 300.6 Lot grading plan. (Details in Sec. 350)
- 300.7 Plan and profiles.
- 300.8 Specific construction details.
- 300.9 Standard Public Works construction details, or approved project engineer construction details (variance). (Details in Sec. 360)
- 300.10 Storm Water Pollution Prevention Plan.

CITY OF LAKE JACKSON DEVELOPMENT MANUAL

**SECTION: CONSTRUCTION PLAN & NO.: 305
MISCELLANEOUS REQUIREMENTS**

TITLE: DRAWING REQUIREMENTS PAGE: 1 OF 4

EFFECTIVE DATE:

- 305.1 The seal, date, and original signature of the engineer responsible for preparation of the plans is required on each sheet. The engineer may use a stamped or embossed imprint for his/her seal; however, the embossed imprint must be shaded such that it will reproduce on prints.
- 305.2 A primary bench mark referenced to a N.G.V.D. benchmark with elevation and description is required on the title or general note sheet. Temporary benchmarks are required on each sheet for construction purposes.
- 305.3 Label each plan sheet as to street right-of-way widths, pavement widths and thickness, type of roadway materials, curbs, intersection radii, curve data, stationing, existing utilities type and location, etc.
- 305.4 Stationing must run from left to right except for short streets or lines originating from a major intersection where the full length can be shown on one sheet.
- 305.5 A north arrow is required on all sheets and should be oriented either upward or to the right. This requirement may be waived under the following conditions: a storm or sanitary sewer whose flow is from west to east or from south to north and a primary outflow ditch whose flow is from west to east or from south to north.
- 305.6 Show all lot lines, property lines, rights-of-way lines, and easement lines.
- 305.7 A cover sheet shall be required for all projects involving three or more plan and profile sheets. All plan sheet numbers should be included on the cover sheet. A vicinity map should always be included to show the project location. A City of Lake Jackson approval block shall be provided for signatures by the City of Lake Jackson as follows:

Plans and Specifications comply with the City of Lake Jackson
Construction Standards and subject to all Record Reviews

City Engineer

**CITY OF LAKE JACKSON
DEVELOPMENT MANUAL**

**SECTION: CONSTRUCTION PLAN & NO.: 305
MISCELLANEOUS REQUIREMENTS**

TITLE: DRAWING REQUIREMENTS PAGE: 2 OF 4

EFFECTIVE DATE:

- 305.8 If a roadway exists where plans are being prepared to improve or construct new pavement or to construct a utility, this roadway should be labeled as to its existing width, type of surfacing, and base thickness, if available.
- 305.9 Record drawing plans prepared by the design and/or Project Engineer shall be prepared using permanent ink, photographic or other approved process on Mylar and submitted to the City. Contractor record drawings may be submitted in field markup prints.
- 305.10 Do not place match lines in intersections.
- 305.11 Service areas shall be delineated on the cover sheet or area map.
- 305.12 All utility lines four inches (4") in diameter or larger within the right-of-way or construction easement should be shown in the profile view. All utility lines, regardless of size, should be shown in the plan view.
- 305.13 Show flow line elevations and direction of flow of all existing ditches.
- 305.14 Show natural ground profiles along the centerline of each right-of-way or easement line except as required below. When there is a difference of 0.50 feet or more from one right-of-way or easement line to the other, show dual right-of-way profiles.
- 305.15 Resolve all known conflicts of proposed utilities with existing utilities or with each other.
- 305.16 Plans shall be standard twenty-three inch by thirty-six inch (23" x 36") Federal Aid Sheets or twenty-four inch by thirty-six inch (24" x 36") overall dimensions.
- 305.17 Details of special structures not covered by approved standard drawings, such as stream and gully crossing, special manholes, etc., should be drawn with the horizontal

**CITY OF LAKE JACKSON
DEVELOPMENT MANUAL**

**SECTION: CONSTRUCTION PLAN & NO.: 305
MISCELLANEOUS REQUIREMENTS**

TITLE: DRAWING REQUIREMENTS PAGE: 3 OF 4

EFFECTIVE DATE:

and vertical scales equal to each other or nearest unit ratio for closer proportion and detail.

- 305.18 Plans shall be drawn to accurate scale, showing proposed pavement typical cross-sections and details, lines and grades, and all existing topography within the street rights-of-way; and at intersections, the cross street shall be shown at sufficient distance in each direction along the cross street for designing adequate street crossings.
- 305.19 Grades should be labeled for the top of curb except at railroad crossings. Centerline grades are acceptable only for paving without curbs and gutters. Grades for gutter lines are acceptable where critical to the project scope and at connections to existing pavements.
- 305.20 Curb return elevations and grades for turnouts shall show in the profile and the gutter grade included where a railroad track is being crossed.
- 305.22 The surface elevation at the property line of all existing driveways should be shown in the profile.
- 305.23 Station all esplanade noses affected by proposed construction, both existing and proposed.
- 305.24 Station all points of curvature, points of tangency, radius returns and grade change, points of intersection in the plan view. Station all radius returns and grade change points or intersection in the profile with their respective elevations.

CITY OF LAKE JACKSON DEVELOPMENT MANUAL

**SECTION: CONSTRUCTION PLAN & NO.: 305
MISCELLANEOUS REQUIREMENTS**

TITLE: DRAWING REQUIREMENTS PAGE: 4 OF 4

EFFECTIVE DATE:

305.25 The standard scales permitted for plans and profiles of paving and utility plans are as follows:

A. Preferred:

1" = 2' Vertical; 1" = 20' Horizontal

B. Minimum:

1" = 4' Vertical;

1" = 40' Horizontal

C. The scales described above are the minimum allowable. Larger scales may be required to show details of construction.

D. Deviations to these scales can only be allowed with the specific approval of the Department of Engineering/Public Works.

305.26 In addition to the plan and profile sheets described above, each set of construction drawings shall contain paving and utility key drawings indexing specific plan and profile sheets. Key overall layouts may be drawn at a scale of one inch equals one hundred feet (1" = 100') or one inch equals two hundred feet (1" = 200').

305.27 Standard City details, where applicable, shall be included.

305.28 Construction plans shall include a legend describing standard symbols that may not be described in the plans.

***CITY OF LAKE JACKSON
DEVELOPMENT MANUAL***

**SECTION: CONSTRUCTION PLAN & NO.: 310
MISCELLANEOUS REQUIREMENTS**

TITLE: GRAPHIC STANDARDS PAGE: 1 OF 1

EFFECTIVE DATE: _____

The graphic standards for the City of Lake Jackson are taken directly from the City of Houston's "General Design Requirements for Sanitary Sewers, Storm Sewers, Water Lines, and Paving". These graphics standards are provided in Section 1000, Appendix 1020.

**CITY OF LAKE JACKSON
DEVELOPMENT MANUAL**

**SECTION: CONSTRUCTION PLAN & NO.: 315
MISCELLANEOUS REQUIREMENTS**

**TITLE: UTILITY EASEMENTS AND PAGE: 1 OF 4
RIGHTS-OF-WAY**

EFFECTIVE DATE:

315.1 (This Left Blank)

315.2 Wet utility easement shall be dedicated for the intended use of storm sewer, sanitary sewer and water lines single or multi use, and shall be exclusive and shall not overlap other easements, except to cross the easements.

315.3 Public utility easement requirements for a sixteen foot (16') easement are as outlined in the "Typical Utility Location in 10-Foot Wide and 16-Foot Wide Easement Back-to-Back Lots and Perimeter Lots" drawing prepared by the Utility Coordinating Committee for Metropolitan Area, effective June 1, 1971. The public utility easement width for dry distribution lines may be ten feet (10'). Perimeter easement may be eight feet (8'), provided that the easement is dedicated by separate instrument or special notes on the plat.

315.4 Wet Utility Easement (water line) - the following minimum width easements are required when facilities are not located within public street rights-of-way.

A. Under special circumstances and when specifically approved by the Department of Engineering/Public Works, water mains may be located in easements not adjacent to public street rights-of-way. These water mains shall be centered in a ten (10') foot wide wet utility easement lying within a single lot for water only or within a twenty (20') foot easement split between lot lines when in combination with sanitary sewer or twenty-five (25') foot when in combination with storm sewer line with the proper separation distances.

B. For new construction, any water main, except at a fire hydrant, located less than five feet (5') from and within the right-of-way line shall have a wet utility easement adjoining the right-of-way.

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**TITLE: UTILITY EASEMENTS AND PAGE: 2 OF 4
RIGHTS-OF-WAY**

EFFECTIVE DATE:

Easements adjoining a right-of-way for mains smaller than twelve inches (12") shall have a minimum width of five feet (5'). For mains greater than twelve inches (12") in diameter, the easement adjoining the right-of-way shall have a minimum width of ten (10') feet.

- C. Water mains may be located at the center of or not closer than five (5') feet from an easement line.

315.5 Wet Utility Easement (Sanitary Sewer) - the following minimum easement widths are required for the type of service:

- A. The width of wet utility sanitary sewer easements shall be the minimum width of twenty feet (20') when split along a lot line, and fifteen feet (15') wide for easements located within a single lot. The sewer shall be located not less than seven and one half (7.5') feet from the edge of the easement and a ten (10') feet minimum separation from building lines which may require building setback adjustments to accomplish this. Combination use with storm sewer or water line is permissible with proper separation, as defined in 315.5 D & 315.6.
- B. Wet Utility Easement (Sanitary Sewer) adjoining a public right-of-way may be five (5') feet wide provided the sewer is at least five (5') feet from the edge of the easement and the sewer is no deeper than ten (10') feet. Sewers at greater depth than ten (10') feet shall be within a ten (10') feet easement parallel and adjoining the right-of-way and located not closer than five (5') feet from the easement line.
- C. Wet Utility Easements for force mains of all sizes shall have a minimum width easement of fifteen feet (15') for a single force main where the force main is not located adjacent to a public right-of-way. Where the force main is located in an easement adjacent to public right-of-way, the force main may be located at the center of a ten foot (10') easement. Where the force main is located less than five feet (5') from the right-of-way line within the public right-of-way, the minimum easement

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width shall be five feet (5') adjacent to the right-of-way.

- D. Combined storm right-of-ways and sanitary sewer easement shall have minimum widths and clearances as required in Section 315.6 for storm sewer right-of-ways with an additional five feet (5') wet easement. The sanitary sewer main, trunk or force main shall be located such that the centerline of the pipe shall be not less than seven and one-half feet (7.5') from the edge of the easement and a ten foot (10') separation from designated buildings.
 - E. For combined storm right-of-way and sanitary sewer easements located adjacent to public rights-of-way where the sanitary sewer is located along the outside of the easement, the center line of the sanitary sewer pipe shall be at least half the width of the easement defined in Section 315.5 B, but not less than seven and one-half feet (7.5') from the outside edge of the easement.
 - F. Where sanitary sewers or force mains are installed in easements separated from public rights-of-way by other private or utility company easements, the sanitary sewer easement should be extended along or across the private utility company easement to provide access for maintenance of the sewer or force main.
- 315.6 Storm Sewer Pipe Right-of-Way - the following minimum right-of-way widths are required:
- A. For storm sewer pipe up to eight foot (8') in diameter or width, the minimum width shall be twenty feet (20') with the storm sewer typically centered in an exclusive right-of-way, except as specifically approved by the Department of Engineering/Public Works.
 - B. For storm sewers greater than eight feet (8') in diameter or width, the minimum width of an exclusive right-of-way shall be twenty-five feet (25').

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- C. For all rights-of-way specified in Section 315.6, a minimum of five feet (5') must be maintained from the right-of-way line to the outside edge of the storm sewer.
- D. Where approvals are granted for a special use or combination right-of-way/easement located along side lot, the minimum width shall be twenty-five feet (25'). The total width shall meet or exceed all other easement/right-of-way requirements.
- E. For specifically approved storm sewers located adjacent to public rights-of-way, the minimum wet utility easement width shall be ten feet (10'). The right-of-way width shall meet or exceed all other easement requirements.

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TITLE: UTILITY LOCATIONS PAGE: 1 OF 2

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320.1 The utility locations for back lot easements are outlined in the "Typical Utility Location in 10-Foot Wide and 16-Foot Wide Easement Back-to back Lots and Perimeter Lots" drawing prepared by the Utility Coordination Committee for Metropolitan Area effective June 1, 1971. A portion of the Utility Coordination Committee drawings are provided in Appendix 1030.

320.2 Water Main Locations:

- A. All water mains shall be located within a public right-of-way or within dedicated water main easements. The location of water mains within a public street right-of-way is described in Section 410.
- B. Water mains shall not be located in combination easements without the specific approval of the Department of Engineering/Public Works.

320.3 Sanitary Sewer Location:

- A. (This Left Blank)
- B. Sanitary sewers are usually located within a public right-of-way or under special approved conditions in easement adjoining the right-of-way. Sanitary sewers shall be located within the public street right-of-way in accordance with Section 510.1. Sanitary sewers may be located in wet utility easement or combination easements provided the easement widths comply with Section 315.
- C. Sanitary sewers shall not be located in side lot easements without the specific approval of the Department of Public Works.
- D. Sanitary sewers should be located within the right-of-way between the property line and the back of curb on the opposite side of the right-of-way from the water main and in accordance with Section 510.1.

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MISCELLANEOUS REQUIREMENTS**

TITLE: UTILITY LOCATIONS PAGE: 2 OF 2

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320.4

Storm Sewers

- A. Storm sewer shall be located in the public right-of-way in accordance with Section 610.2.
- B. All storm sewer lines shall be located within public street rights-of-way or approved drainage right-of-way.

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**SECTION: CONSTRUCTION PLAN & NO.: 325
MISCELLANEOUS REQUIREMENTS**

TITLE: PRIVATE FACILITY LOCATIONS PAGE: 1 OF 1

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325.1 Installation of private facilities, including utilities, in public road rights-of-way and their adjoining easements shall be approved by the City of Lake Jackson. Private facilities shall be defined but not limited to the following:

- Driveways
- Sidewalks
- Mail Boxes
- Irrigation System
- Private Storm Drain Piping
- Landscape Features (trees, plantings, berms, walls, fences, borders, etc.)

325.2 Private facilities shall not conflict with other facilities in the right-of-way and as defined in these Standards. All structures within the public right-of-way shall be approved by the Department of Engineering/Public Works and shall be located so as to not interfere with existing or proposed public facilities to the extent possible.

325.3 Landscaping features within the public right-of-way or in adjoining utility easement, when approved by the city shall not affect traffic visibility. (Reference - visibility criteria Appendix 1040.) Any removal and replacement cost of these due to any maintenance of utility lines or visibility remedies shall be made at the owners expense.

325.4 Paved Parking Facilities within public utility easement when approved by the City shall be designed and constructed with breakout joints to allow for controlled removal and replacement due to any future maintenance work of utility lines. Any costs to remove and replace improvements shall be made at the owners expense.

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**SECTION: CONSTRUCTION PLAN & NO.: 330
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across an existing street, the Department of Engineering/Public Works shall specifically approve the crossing.

- D. All open cut installations under existing or proposed streets shall be backfilled as shown in the City of Lake Jackson Construction Details. Cement stabilized sand backfill shall meet the requirements of Section 505.3.
- E. All street crossings shall be constructed in accordance with construction plans approved by the City. All street crossings shall be inspected by the Department of Engineering/Public Works.

330.3 Railroad and Pipeline Crossings

- A. All construction within the railroad or pipeline right-of-way shall conform to minimum requirements set out in the agreement with the owner of the right-of-way.

330.4 Ditch and Stream Crossings

- A. Crossing under a stream or ditch is preferred by the City. The top of the carrier pipe shall be designed to provide a minimum clearance of at least four feet (4') below the ultimate flow line and sides of the ditch and with sufficient bottom length to exceed the ultimate future ditch sections.
- B. Where existing or proposed bridges have sufficient space and structural capacity for installing water mains or conduits, such installation will be permitted upon specific approval of the engineered design and construction plans. In all cases, the water main or conduit shall be above the bottom chord of the bridge and above the 100-year water surface elevation. All conduits attached to a bridge shall be constructed using designed pipe type and materials and shall extend a minimum of ten feet (10') beyond the bridge abutment bent or to the right-of-way line, whichever is greater. All conduit

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attached to a bridge shall be maintained by the owner of the conduit or will be subject to removal.

- C. All stream or ditch crossings shall be constructed of Ductile Iron Pipe or PVC Pipe from right-of-way to right-of-way, with approval from the Department of Engineering/Public Works.

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**SECTION: CONSTRUCTION PLAN & NO.: 335
MISCELLANEOUS REQUIREMENTS**

**TITLE: TRENCH PERSONNEL PAGE: 1 OF 1
PROTECTION**

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All construction within the City of Lake Jackson and its extraterritorial jurisdiction shall conform to OSHA 19-26 subchapter P and Vernon Civil Statutes as adopted in the City of Lake Jackson, Ordinance No. 87-1049, for trench personnel protection. Trench safety is required for all excavations greater than five feet (5') in depth. Adequate guidelines for construction in accordance with applicable OSHA regulations will be required in all construction plans or in their construction specifications that are approved by the City of Lake Jackson.

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SECTION: CONSTRUCTION PLAN & MISCELLANEOUS REQUIREMENTS **NO.: 340**

TITLE: STREET LIGHTING **PAGE: 1 OF 2**

EFFECTIVE DATE:

340.1 The installation of street lighting shall be mandatory along all public streets in the City of Lake Jackson. In addition, the installation of street lighting is strongly encouraged along existing or repaved streets. For areas in the extraterritorial jurisdiction of the City of Lake Jackson, street lighting shall be required and reviewed by the City of Lake Jackson in accordance with these Standards:

- A. The developer or owner of a subdivision or a commercial or industrial development shall pay the cost of street lighting facilities to Houston Lighting & Power Company and the payment shall be made at the time that electric service is provided.
- B. All street lighting facilities shall be maintained in good operating condition by the power company or its agents.
- C. Street lighting facilities provided by the developer or owner shall meet the following requirements:

(1) Residential:

- a. A light of at least five thousand eight hundred (5,800) lumen brightness on an ornamental steel pole served underground.
- b. Lights shall be provided at all corners, intersections and directional changes, and in addition at six hundred-foot intervals along straight-of-ways.
- c. Additional lights may be required at the option of the City Manager.

(2) Highways (2004 and 332 and other major highways):

- a. A light of at least sixteen thousand (16,000) lumen brightness on an ornamental steel pole served underground.
- b. Lights shall be provided at all intersecting streets and shall be placed to back light turning traffic.
- c. Additional lights may be required at the option of the City Manager.

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TITLE: STREET LIGHTING PAGE: 2 OF 2

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(3) Downtown:

- a. A light of at least sixteen thousand (16,000) lumen brightness on an ornamental steel pole served underground.
- b. Lights of at least double sixteen thousand (16,000) lumen brightness shall be provided in the center of streets when such locations are available.
- c. Additional lights may be required at the option of the City Manager.

340.2 The installation location of street lights will be determined and designed by Houston Lighting and Power Company (HL&P) and approved by the City of Lake Jackson.

340.3 Private lighting systems may supplement or replace all or a portion of public street lighting as long as the net result provides equivalent lighting to the standard set herein. A perpetual entity, such as an incorporated homeowners association and/or an appropriate private entity, shall notify the City of Lake Jackson of its agreement to pay for the operation, maintenance, and insurance of a private lighting system prior to installation of the system. The system shall be approved by the City Manager.

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**SECTION: CONSTRUCTION PLAN & NO.: 345
MISCELLANEOUS REQUIREMENTS**

TITLE: BENCH MARKS PAGE: 1 OF 1

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- 345.1 A permanent bench mark shall be set in each subdivision section or at a spacing of one mile, whichever is greater. The bench mark shall have an elevation based on the National Geodetic Vertical Datum of 1929, current adjustment.
- 345.2 The bench mark elevation and location shall be certified by a registered public surveyor as a Texas Surveyors Association Standard and Specifications for Category 8, TSA Third Order Vertical Control Survey.
- 345.3 (This left blank intentionally)
- 345.4 All bench mark locations shall be provided with ties to existing monuments including coordinates using Texas Plane Coordinate System, Central Zone.
- 345.5 Bench marks shall be constructed of a brass disc set in concrete as approved by the City of Lake Jackson. The concrete footing for the bench mark shall be eight inches (8") in diameter and three feet (3') deep. Concrete shall be reinforced with two number four (2 - #4) rebars.
- 345.6 The construction plans shall clearly identify the location of the bench mark and shall include a complete description, coordinates and elevation, with adjustment date, of the bench mark.

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**SECTION: CONSTRUCTION PLAN & NO.: 350
MISCELLANEOUS REQUIREMENTS**

**TITLE: RESIDENTIAL LOTS & PAGE: 1 OF 1
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- 350.1 All residential lots shall drain to a public right-of-way directly adjoining the lot. Drainage from a residential lot to a public right-of-way at the rear or side of a lot may be permitted provided the drainage system has been properly designed to accept the flow. Drainage from a residential lot to an adjoining private property shall require a public right-of-way for drainage purposes. Drainage to a private or public easement shall be allowed under pre-existing conditions and shall require specific approval by the Engineering/Public Works Department. Drainage to a private or public easement shall be noted on the recorded subdivision plat. Drainage to a District drainage easement shall be approved by the Drainage District having jurisdiction (Velasco or Angleton).
- 350.2 A lot grading master plan showing proposed finished grades, flow pattern and contour will be included in the construction plans. A site specific lot grading plan may be prepared in conformance with Section 810.2.B, prior to building development of lot in those cases where a variance to the building slab elevation or lot grading pattern is sought.

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**SECTION: CONSTRUCTION PLAN &
MISC. REQUIREMENTS**

NO.: 355

TITLE: FLOOD PLAIN MANAGEMENT

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EFFECTIVE DATE:

- 355.1 All development shall conform with the requirements of the National Flood Insurance Program, as required by the regulations of the local governing authority having jurisdiction.
- 355.2 Amendments to the published flood maps, map revisions and all requests for changes to the base flood elevation within the Lake Jackson city limits shall be submitted to the City of Lake Jackson for approval. Technical data required by the Federal Emergency Management Agency and justification for the proposed change must be included with all requests. All requests for changes to the base flood elevation within the City of Lake Jackson extraterritorial jurisdiction shall be submitted to the City of Lake Jackson for comments.
- 355.3 All data submitted shall be prepared under the supervision of a registered professional engineer and shall comply with all requirements of the Federal Emergency Management Agency.

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**SECTION: CONSTRUCTION PLAN &
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NO.: 360

TITLE: VARIANCES

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Construction plans that do not conform to these Standards, not including items that allow for specific approval by staff, shall be submitted for approval of the variance. Variances to these Standards shall be submitted to the City Council of Lake Jackson. All variances shall be submitted to the Department of Engineering/Public Works in writing at least fifteen (15) working days prior to action by the City Council. Variance requests should be submitted with pertinent construction plans, right-of-way use permit or other pertinent information. Incomplete variance requests will be rejected until all items are adequately addressed by the Project Engineer and the Developer. Staff will prepare recommendations to the Council regarding the variance. Construction work related to the variance should not begin prior to approval of a variance. Any work related to the variance that proceeds without approval of a variance shall be subject to removal and replacement in accordance with these Standards.

2. Standard Design Requirements



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**SECTION: WATER SYSTEM DESIGN NO.: 400
REQUIREMENTS**

TITLE: GENERAL PAGE: 1 OF 1

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Water system design requirements are established based on land uses as established in this section.

- 400.1 Type A Development shall include all properties within E-1 through R-3 zoning districts, or T-1 through PURZ development within the City limits and extraterritorial jurisdiction.
- 400.2 Type B Development shall include all properties and rights-of-way within and adjoining R-4, business and office zoning districts, or commercial and industrial development within the City limits and extraterritorial jurisdiction.
- 400.3 Construction and sizing of all water mains and appurtenances shall meet or exceed the requirements of the TNRCC Water Utility Rules and the State Board of Insurance.
- 400.4 The Public Water System shall not extend beyond the water meter. All construction to the meter shall conform to the Standards. All private construction beyond the meter shall conform to the requirements of the adopted Lake Jackson Plumbing Code. (See Section 240)
- 400.5 Design shall conform to the City of Lake Jackson Construction Details.

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**SECTION: WATER SYSTEM DESIGN
REQUIREMENTS**

NO.: 405

**TITLE: WATER MAIN SIZING &
MATERIALS**

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- 405.1 Water mains in Type A Developments shall have a minimum size as follows:
- A. Two-inch (2") mains may serve a maximum of five (5) domestic, residential service connections. Two-inch (2") mains shall be looped at cul-de-sac. All two-inch (2") mains shall be specifically approved by the Department of Engineering/Public Works.
 - B. Six-inch (6") mains shall be a maximum of one thousand five hundred feet (1,500') long when supported on both ends by eight-inch (8") mains or larger and shall have no more than two (2) intermediate fire hydrants. Temporary dead end six-inch (6") mains shall not be more than six hundred feet (600') in length and shall terminate at a fire hydrant.
 - C. Eight-inch (8") mains are required for mains over one thousand five hundred feet (1,500') long, or when a maximum three (3) fire hydrants are required. Eight-inch (8") mains shall not be dead end, except as provided in Section 405.2.
 - D. Twelve-inch (12") and larger mains will be required at locations established by the Department of Engineering/Public Works, in conformance with infrastructure Master Plan.
- 405.2 Water mains in Type B Developments shall have a minimum sizing as follows:
- A. Minimum size of mains shall be eight-inch (8"). Maximum length of an eight inch main (8") or hydrant lead shall be three hundred fifty feet (350'). A temporary dead-end main shall be terminated with a fire hydrant.

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**SECTION: WATER SYSTEM DESIGN
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NO.: 405

**TITLE: WATER MAIN SIZING &
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- B. Twelve inch (12") and larger mains will be required at locations established by the Department of Engineering/Public Works, in conformance to the City's Master Plan.
- C. Six-inch (6") fire hydrant leads shall not exceed two hundred feet (200') in length.
- D. Fire loops will be required where more than two (2) fire hydrants will be installed in lead or main.

405.3 The length of a dead-end water main shall be measured from the intersection with a multiple feed (looped) main to the end of the main.

405.4 Water mains shall be constructed using the following materials:

- A. Poly Vinyl Chloride (PVC) Pressure Pipe, six-inch (6") through twelve-inch (12"), shall conform to the requirements of ANSI/AWWA C900, current revision, Class 150 DR 18. Pipe shall be designed and constructed in conformance with the minimum requirements of the "Manual of Water Supply Practices", AWWA Manual No. M23. Two-inch (2") shall conform to the requirement of Class 160 or 200 or be Polyethylene tubing.
- B. Ductile-Iron Pipe (D.I.P.)," shall conform to the requirements of " Ductile-Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water and Other Liquids", AWWA C151, (ANSI A21.51), current revision. Pipe thickness shall be the minimum specified in C151. Under special conditions, the Department of Public Works may require thickness design in Appurtenances".

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- C. Steel Water Pipe, six-inch (6") and larger shall conform to the requirements of "Standard for Steel Water Pipe Six Inches and Larger", AWWA C200. Steel pipe, minimum wall thickness shall conform to the thickness shown on the City of Lake Jackson Construction Details. All steel pipe shall have coal tar coating in accordance with "Standard for Coal-Tar Protective Coatings and Linings for Steel Water Pipelines - Enamel and Tape-Hot Applied", AWWA C203.
- D. Other pipe materials may be used for construction of water mains, when specifically approved by the Department of Engineering/Public Works.
- E. Bedding and backfill shall conform to the City of Lake Jackson Construction Details.
- F. Alternate materials which are identified in the Approved Products List may be used with specific approval from the Department of Engineering/Public Works.

405.5 Water mains and appurtenances are not allowed in the following sizes: three inch (3"), four inch (4"), ten inch (10"), and fourteen inch (14").

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**SECTION: WATER SYSTEM DESIGN NO.: 410
REQUIREMENTS**

TITLE: LOCATION OF WATER MAINS PAGE: 1 OF 1

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- 410.1 The recommended location for water mains within the right-of-way is six feet (6') inside right-of-way.
- 410.2 Water mains shall be placed along a uniform alignment with the right-of-way. When necessary, the water main may be deflected at a fire hydrant location to accommodate proper installation of the fire hydrant. At all locations where a water main changes alignment, the location of the water main shall be clearly shown on the construction plans. A minimum distance of five feet (5') shall be maintained from the right-of-way line to the outside edge of the water line.
- 410.3 For new construction, any water main, except at a fire hydrant, located less than five feet (5') from the road right-of-way line and within the right-of-way shall have a water line easement adjoining the right-of-way. Water line easements adjoining a right-of-way for mains smaller than twelve inches (12") shall have a minimum width of five feet (5'). For mains greater than twelve inches (12") in diameter, the easement adjoining the right-of-way shall have a minimum width of ten feet (10').
- 410.4 Along streets with open ditch drainage, all twelve inch (12") and smaller water mains may be located six feet (6') from the right-of-way line, and larger water mains shall be located subject to Department of Engineering/Public Works approval.
- 410.5 Water mains may be located at the center of a ten foot (10') water line easement, provided the easement adjoins a public right-of-way.

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**SECTION: WATER SYSTEM DESIGN NO.: 415
REQUIREMENTS**

**TITLE: CLEARANCE OF WATER LINES PAGE: 1 OF 3
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Water mains shall be designed and located to conform with the regulations of the T.N.R.C.C. Rules and Regulations for Public Water Systems.

415.1 When a water main is placed parallel to another utility line at or near the same grade, it shall have a minimum of four feet (4') of horizontal separation. When the other utility is a sanitary sewer, a minimum of nine feet (9') of separation must be provided. In the event that a minimum of nine feet (9') cannot be maintained, the sanitary sewer must be constructed of pressure type pipe with water-tight joints as used in water main construction and the clearances must be as defined in the following sections or as specifically approved by the Department of Engineering/Public Works. When a water main crosses a utility other than sanitary sewer, a minimum of six inches (6") of clearance must be maintained, and the water main shall have one joint of pipe centered on the other utility.

415.2 For water mains crossing an existing or proposed sanitary sewer or force main, the following clearances shall be provided for protection from contamination. The minimum clearances will be approved only when justified and field conditions so dictate. The latest edition of Rules and Regulations for Public Water Systems, TNRCC, shall be followed for minimum criteria and instructions for water line crossings.

415.3 When water mains and sanitary sewers are installed, they shall be installed no closer to each other than nine feet (9') in all directions and parallel lines must be installed in separate trenches. Where the nine-foot (9') separation distance cannot be achieved, the following procedures shall be used:

- A. Where a sanitary sewer parallels the water main, the sanitary sewer shall be constructed of ductile iron, or PVC pipe meeting AWWA specifications, having a minimum working pressure rating of one hundred fifty pounds per square inch (150 psi) or greater, and equipped with pressure type joints. The water main and sanitary sewer shall be separated by a minimum vertical

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**TITLE: CLEARANCE OF WATER LINES
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distance of two feet (2'), and a minimum horizontal distance of four feet (4'), measured between the nearest outside diameters of the pipes, and the water main shall be located above the sewer.

- B. Where a sanitary sewer crosses the water main, and that portion of the sewer within nine feet (9') of the water is constructed as described in Section 415.3 A, the water line may be placed no closer than six inches (6") from the sewer. The separation distance must be measured between the nearest outside pipe diameters. The water line shall be located at a higher elevation than the sewer, wherever possible, and the joints of the new pipe must be no closer than nine (9') feet from the existing line.

415.4 Where water lines are installed in areas which have existing sanitary sewers, every effort should be made to maintain nine feet (9') of separation between the outside pipe diameters of the two lines. Where this separation cannot be achieved because of local conditions, which must be fully documented in any planning material submitted, the following spaces shall be observed.

- A. Where a new water line is to cross or be installed in parallel with an existing sanitary sewer, and the sewer is constructed as described in Section 415.3 A, the separation distances specified in those rules shall apply as though the sewer were new.
- B. Where a new water line is to be installed in parallel with an existing clay, truss, or concrete gravity sewer showing no evidence of leakage and the water line is installed above the sewer a minimum of two feet (2') vertically and four feet (4') horizontally, the sanitary sewer need not be disturbed. Should excavation for the water line produce evidence that the sewer is leaking, then the sewer must be repaired.
- C. Where a new water main is to cross an existing clay, truss, or concrete gravity

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sewer showing no evidence of leakage, the sewer need not be disturbed if the water line is to be installed at least twenty-four inches (24") above the existing sewer. The joints of the water line should not be closer than nine (9') feet centered over the sewer crossing, so as to provide maximum protection against contamination.

- D. Existing clay, truss, or concrete sewer pipe which shows no evidence of leakage and because of physical limitations must remain at a higher elevation than a proposed intersecting water line or closer than two feet (2') may remain undisturbed if the water line is inserted in a joint of pressure type encasement pipe at least two (2) nominal sizes larger than the water line. The encasement pipe should be a minimum of eighteen feet (18') length and centered on the sewer crossing and both ends sealed with cement grout. In lieu of this procedure, that portion of the sewer within nine feet (9') of the water line may be replaced with ductile iron pipe with watertight joints as described in Section 415.3 A, above.
- E. Unless sanitary sewer manholes and the connecting sewer can be made completely watertight and tested for no leakage, they must be installed so as to provide a minimum of nine feet (9') of horizontal clearance from an existing or proposed water line. Encasement of the water line in a carrier pipe as described in Section 415.4 D may be approved in special cases if the plans have the approval of the T.N.R.C.C.

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**SECTION: WATER SYSTEM DESIGN
REQUIREMENTS**

NO.: 420

TITLE: DEPTH OF COVER

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EFFECTIVE DATE:

Minimum depth of cover for water mains shall be as follows:

- 420.1 Twelve-inch (12") and smaller mains shall have a minimum cover of four feet (4') from the top of curb. For open ditch roadway sections, twelve inch (12") and smaller mains shall be installed at least three feet (3') below the ultimate flowline of ditch or four feet (4') below natural ground at the pipe line. Bury depths greater than six feet (6') from any surface shall be approved by the Engineering/Public Works Department only under special conditions and circumstances.
- 420.2 Sixteen inch (16") and larger mains shall have a minimum cover of five feet (5'). For open ditch roadway sections, sixteen inch (16") and larger mains shall be installed at least three feet (3') below the flowline of ditch or five feet (5') below natural ground at the pipe line. Bury depths greater than six feet (6') from any surface shall be approved by the Engineering/Public Works Department only under special conditions and circumstances.
- 420.3 Changes in grade to clear other utilities or underground features may be made by deflecting pipe joints, the maximum manufacturers allowable deflection. The standard depth of cover maintained on the water main and the grade change shall be made by gradual deflection, bending (flex pipes) and the installation of fittings in descending order of preference.

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**SECTION: WATER SYSTEM DESIGN
REQUIREMENTS**

NO.: 425

TITLE: VALVES

PAGE: 1 OF 2

EFFECTIVE DATE:

425.1 All water system valves shall conform with AWWA standards and shall be designed as follows:

- A. Two inch (2") through twelve inch (12") valves shall be resilient seated gate valves, AWWA C509, counter-clockwise opening with push-on joints. Valves shall have a complete coating on all iron parts in the valve interior to eliminate corrosion.
- B. Sixteen inch (16") and larger valves may be butterfly valves, AWWA C504, with complete interior coating to avoid corrosion of all iron parts, as approved by the Department of Engineering/Public Works. All butterfly valves shall be installed in a vault of adequate size and construction, as approved by the Department of Engineering/Public Works.
- C. Cast iron valve boxes are required on all gate valves less than or equal to sixteen inch (16") as noted below. Valve vaults are required on all valves larger than sixteen inch (16").
- D. All valves shall be sized equal to the size of the main on which it is located.
- E. Valves shall be approved by the City and shall be listed on the Approved Products List provided by the Department of Engineering/Public Works.

425.2 Spacing - valves shall be set at maximum distances along the main as follows:

- A. Six inch (6") through and including twelve inch (12") mains - one thousand five hundred feet (1,500').
- B. Sixteen inch (16") and larger mains - two thousand two hundred feet (2,200').

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REQUIREMENTS**

NO.: 425

TITLE: VALVES

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- C. All main intersections shall have a minimum of one (1) valve less than the number of mains at the intersection if all mains can be individually isolated for servicing without interruption to the remaining ones.

425.3

Location - valves shall be located as follows:

- A. All mains shall be valved within the street right-of-way. Valves shall not be placed under the ultimate street pavement, except as specifically approved by the Department of Engineering/Public Works.
- B. Valves are normally located on the projection of intersecting street right-of-way lines or at the curb return adjoining a paved street across the main. Tapping sleeves and valves are excluded from this requirement.
- C. All fire hydrants shall be isolated from the service main with a valve located in the fire hydrant lead.
- D. Intermediate valves not located on the projection of intersecting street right-of-way lines may be located at side lot line projections or five feet (5') from fire hydrants and comply with 425.3A.
- E. Valves shall be placed at the end of all mains that are to be extended in the future, and the main extended a minimum of ten feet (10') past valve.

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**SECTION: WATER SYSTEM DESIGN NO.: 430
REQUIREMENTS**

TITLE: FIRE HYDRANTS PAGE: 1 OF 2

EFFECTIVE DATE:

- 430.1 Fire hydrants shall have three-way nozzle arrangement, five and one-quarter-inch (5 1/4") compression type main valve, push on shoe with stainless steel bolts in bottom flange, and conform to the requirements of AWWA C502. The pumper nozzle shall be the National Standard or four and one-half inch (4 1/2") four threads per inch and the hose nozzles shall be two and one-half-inch (2 1/2") threads. Fire hydrants shall be listed on the Approved Products List provided by the Department of Engineering/Public Works.
- 430.2 Spacing - fire hydrants shall be spaced along all mains six inches (6") and larger to provide as follows:
- A. Type A Development - Five hundred foot (500'), and radial coverage to all points.
 - B. Type B Development - Three hundred foot (300'), and radial coverage to all points.
 - C. Fire hydrants should usually be set at street intersections and at return of cul-de-sac where spacing requirements are met.
- 430.3 Location - fire hydrants shall be located as follows:
- A. Fire hydrants shall be located two to three feet (2'-3') behind the back of curb or projected future curb and be set at the point of curvature (PC) of the intersection curb radius.
 - B. On all State Highways, set the fire hydrants or flushing valves within three feet (3') of the right-of-way. On other open ditch roadways hydrant locations shall be set by the Department of Engineering/Public Works.

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REQUIREMENTS**

NO.: 430

TITLE: FIRE HYDRANTS

PAGE: 2 OF 2

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- C. Fire hydrants to be located between intersections should be set at the nearest side lot line, however, this location may be adjusted either way to miss driveways or other obstructions.
- D. All fire hydrants shall be located in protected, but easily accessible, areas behind the pavement. Within Type B Development, hydrants shall be located within accessible fire lanes around structures.

- 430.4 Depth of Bury - the depth of bury for all fire hydrants shall be established such that the bury line on the fire hydrant is installed at the ground line at each location or at the finished ground after pavement construction is completed. The depth of bury for fire hydrants shall be shown on the construction plans. Minimum cover for fire hydrant leads shall be four feet (4').
- 430.5 Fire hydrants shall not be installed within nine feet (9') of a sanitary sewer system under any conditions.
- 430.6 The body of fire hydrants will be painted by the City Utilities Department with paint and color conforming to the City of Lake Jackson practices.

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**SECTION: WATER SYSTEM DESIGN NO.: 435
REQUIREMENTS**

TITLE: FITTINGS AND APPURTENANCES PAGE: 1 OF 1

EFFECTIVE DATE:

- 435.1 Fittings up to and including twelve inch (12") shall be Ductile-Iron Compact Fittings, AWWA C153/A21.53.84, conforming to the minimum requirements of "Grey-Iron and Ductile-Iron Fittings, Twelve Inch (12") through Forty-Eight Inch (48"), for Water and Other Liquids", AWWA C110 (ANSI 21.10), current revision.
- 435.2 All fittings shall be identified and described on the construction plans.
- 435.3 Fittings are not permitted in fire hydrant leads.
- 435.4 Normally, all water main fittings shall have push-on joints. Mechanical joints may be used at special locations if specifically approved by the Department of Engineering/Public Works and with the use of S.S. connectors and other corrosion protection measures.
- 435.5 Concrete thrust blocking shall be required on all bends, tees, plugs and combinations thereof. Refer to City of Lake Jackson Construction Details for specifications. The use of restrained joint systems for ductile iron pipe application (boltless type) may be used in lieu of full thrust blocking where field conditions disallows the complete block to be installed but should not be interpreted as eliminating the need of some concrete blocking.

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**SECTION: WATER SYSTEM DESIGN
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NO.: 440

TITLE: STEEL WATER PIPE

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- Guidelines for Growth -

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- City of Enchantment -

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**SECTION: WATER SYSTEM DESIGN NO.: 450
REQUIREMENTS**

TITLE: WATER SERVICES PAGE: 1 OF 1

EFFECTIVE DATE:

450.1 Water service in Type A Development:

- A. Water service fittings and appurtenances from the main to the curb stop shall be installed using approved materials from the Approved Products List supplied by the Department of Engineering/Public Works.
- B. Water meters shall be five-eighth inch by three-quarter-inch (5/8" x 3/4") to two-inch (2") displacement type, magnetic drive, cold water meters. Meters will be installed by the City at the time of building construction on the lot.
- C. Meter boxes shall be located just within the public right-of-way typically along the projection of a lot line. Location of meters on open ditch streets and highways shall be specifically approved by the Department of Engineering/Public Works.
- D. City maintenance shall end at the water meter. The water meter box shall be installed and maintained by the City.

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**SECTION: WATER SYSTEM DESIGN
REQUIREMENTS**

NO.: 455

TITLE: WATER SERVICES

PAGE: 1 OF 1

EFFECTIVE DATE:

455.1 Water Service in Type B Developments:

- A. All apartments proposed in a private street development shall have one or two master meters sized adequately to serve the entire development. Exceptions to this policy may be specifically approved by the Department of Engineering/Public Works based on an unusual situation. Meters shall be installed in compliance with the City of Lake Jackson Construction Details if larger than two inch (2") size.
- B. All meters up to six inch (6") within the City of Lake Jackson will be installed and maintained by the City of Lake Jackson, unless as specifically excepted by the Department of Public Works for installation by others.
- C. City maintenance shall end at the customers side of the meter.
- D. Meters three inch (3") or larger shall be installed in vaults to be constructed to meet the City standard.

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**SECTION: WATER SYSTEM DESIGN NO.: 460
REQUIREMENTS**

TITLE: OVERALL SYSTEM LAYOUT PAGE: 1 OF 1

EFFECTIVE DATE:

- 460.1 Layout and size of all water mains shall be consistent with the overall layout and phasing plan of the City's water system. Layout of the overall system and of all water mains within the City's extraterritorial jurisdiction shall be approved by the Department of Engineering/Public Works. The overall water system shall be designed to maintain adequate pressure throughout the system.
- 460.2 The layout of the water mains should provide maximum circulation of water to prevent future problems or odor, taste, or color due to stagnant water.
- A. Provide a source of fresh water at each end or at multiple points in a subdivision. Provide adequate circulation and place valves and fire hydrants, so that flushing of all mains will be simplified.
 - B. Dead-ends should be avoided. Temporary dead-ends should be isolated with a line valve, be as short as possible, and be equipped with a fire hydrant or blow off at the end of the main as required in Section 405.
 - C. In unavoidable permanent dead-end situation, reduce the sizes of pipe successively. Carry a six-inch (6") pipe to the last fire hydrant, then use two-inch (2") PVC to the end of the line. Provide a standard two-inch (2") blow off at the end of the main or a looped circle at cul de sacs.
 - D. Where a water main is stubbed out for future extensions, place a valve to isolate the dead-end and provide no customer services from the dead-end until it is extended. Provide a standard two-inch (2") blow off at the end of the main.

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**SECTION: WATER SYSTEM DESIGN NO.: 465
REQUIREMENTS**

TITLE: ADDITIONAL STANDARDS PAGE: 1 OF 2

EFFECTIVE DATE:

- 465.1 Construction Features - In conjunction with the design, the engineer shall determine the extent of, and fully detail the plant, all special construction features required to complete the project in a manner of safety, convenience, and economics.
- 465.2 Bore and Jack - Bore and jack sections shall be clearly shown on plans by location and footage. The following criteria is generally used as a basis for setting bore and jack sections:
- A. Public Streets - All public streets are to be bored and jacked regardless of surface, unless specifically directed otherwise by the Department of Engineering/Public Works, and jack length shall be computed as roadway width at proposed bore plus up to one foot (1') to either side of sidewalk if included or plus one (1') feet to either side if not.
 - B. Driveways - Whenever it is cost effective, concrete driveways in good condition shall be bored and jacked. Bore and jack length shall be computed as driveway width at bore plus one foot (1') to either side. Where driveways cross culvert pipe sections along open ditch streets and the proposed water main is in close proximity and parallel to the culvert pipe, the length of bore shall be the same as the length of culvert pipe.
 - C. Sidewalks - When the water line crosses under a sidewalk four feet (4') or more in width and in good condition, the sidewalk shall either be bored and jacked or the sidewalk shall be removed and replaced to the City of Lake Jackson criteria, whichever is cost effective. Bore and jack length shall be at least the width of the sidewalk.
 - D. Trees - When saving trees and shrubs in a previously developed area is a consideration, all trees six inches (6") and larger in diameter within three feet (3') of the center line of the water main must be noted on the plans. The water main should be bored and jacked a total of ten feet (10') centered from the trunk of any tree larger than six inches (6") in diameter.

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**SECTION: WATER SYSTEM DESIGN
REQUIREMENTS**

NO.: 465

TITLE: ADDITIONAL STANDARDS

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- 465.3 Open Cuts - Where open cuts are required in street paving, plans shall call for steel plate covers to be installed and maintained over the cut during periods when contractor is not actively engaged in work at the site. Streets that are open cut shall be full "saw cut" or removed to the nearest joint or existing crack at the designer option.
- 465.4 Work sites in existing developed areas shall be restored to approximate original condition after construction to include removal and replacement of all sidewalks, driveway within the right-of-way as required, along with a 16" strip sodding along the nearest paved edge.
- 465.5 Proper barricading and signage, conforming to the Texas Manual of Uniform Traffic Control Devices, must be required on all projects. Adequate signage for vehicular and pedestrian traffic will be installed.

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**SECTION: SANITARY SEWER DESIGN NO.: 500
REQUIREMENTS**

TITLE: GENERAL PAGE: 1 OF 1

EFFECTIVE DATE:

- 500.1 Sanitary sewers within the City of Lake Jackson's jurisdiction shall allow for orderly expansion of the system and shall conform with the comprehensive master plan and sewer plan for the City of Lake Jackson.
- 500.2 Sewers shall be sized based on the minimum requirements set out in Section 505.1 and sewer system design criteria construction detail notes.
- 500.3 All sewers shall conform to the minimum requirements of the T.N.R.C.C., "Design Criteria for Sewerage Systems".
- 500.4 Sewers shall be separated from water lines by a minimum of nine feet (9'). Where the minimum separation is not maintained, refer to Section 415 for allowable clearances. Sewers crossing utilities other than water, a minimum of six inches (6") of clearance must be maintained.
- 500.5 The public sanitary sewer, as maintained by the City of Lake Jackson, shall be defined as sewer pipe main only, that serve more than one sewer connection, that are located in public easements or street rights-of-way, and that are installed in accordance with these Standards.
- 500.6 Design shall conform to the City of Lake Jackson Construction Details.
- 500.7 All sanitary sewer system designs except privately owned systems shall be accompanied by a detailed Engineering Report prior to approval by the Engineering/Public Works Department.

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**SECTION: SANITARY SEWER DESIGN NO.: 505
REQUIREMENTS**

TITLE: SEWER DESIGN AND MATERIALS PAGE: 1 OF 2

EFFECTIVE DATE:

505.1 Minimum design criteria for determining the size of sewer shall be as follows:

- A. Wastewater flows shall be based on the current, approved utility master plan for the area. The average day flow for the design of sanitary sewers shall be based on a minimum set by the plan in gallons per day per single family connection for residential areas. Commercial, industrial, and office areas shall be designed for an average day flow that can be anticipated from the contributing area. Allowance of 4% of average dry weather flow for inflow and 30% for infiltration shall be included in the total design flow determination.
- B. The peak design flow for sewers shall be four (4) times the average day flow of the fully developed service area. Existing sewer line systems or sewers larger than eighteen-inch (18") may be sized using a peaking factor of less than four (4) with approval of the Department of Engineering/Public Works. Inflow/infiltration allowance without peak factor consideration shall be added to total peak factored design flow.
- C. Minimum size public sewer shall be six inch (6").
- D. Minimum size sewer service lead shall be six inch (6") and shall not serve more than two (2) residential services.
- E. Commercial sewer service lead shall be six inch (6") pipe or larger and shall not serve more than one (1) commercial connection.

505.2 Sewers will be constructed of materials specified in the City of Lake Jackson Approved Product List.

505.3 Bedding and backfill materials shall conform to the City of Lake Jackson Construction Details:

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**SECTION: SANITARY SEWER DESIGN NO.: 515
REQUIREMENTS**

TITLE: DESIGN REQUIREMENTS PAGE: 1 OF 2

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515.1 Allowable Depths

Sewers shall be designed to meet or exceed the pipe manufacturer's recommendations for depth and included contained in the Approved Products List of specific material and guidelines for sewers.

515.2 Minimum depth of cover of a sewer shall be three feet (3') below finished grade or top of curb, whichever is lower.

515.3 Sewer bedding will be required with approved granular material. Bedding shall be compacted to ninety-five percent (95%) Standard Proctor Density to six inches (6") over pipe for sewer, prior to backfilling the trench. In water bearing sand, washed gravel or other approved granular material will be required. Trevira wrap will be required for water bearing soil as shown in the Construction Details. When water bearing sands are encountered, the City of Lake Jackson shall be notified immediately. Dewatering operations may become necessary to allow for the placement and procedure as outlined.

515.4 A mandrel test shall be performed prior to acceptance of all installed P.V.C. pipe. The mandrel must move freely inside the pipe and will be pulled by hand from the upstream end of the pipe to the downstream end. Test equipment shall conform to the requirements set out in pipe specification. A final acceptance mandrel test prior to final inspection shall be required by the Department of Engineering/Public Works to determine long term deflections. Testing means and methods and deflections in P.V.C. pipe shall be performed according to T.N.R.C.C. Reg. Ch. 317 (4) (c).

515.5 Hydraulic Requirements

- A. Design velocity in a new gravity sewer flowing full shall be a minimum of two feet (2') per second. Where sewers are anticipated to flow less than one-half full, consideration should be given to increasing the slope of sewer to provide two feet (2') per second velocity in the pipe for the anticipated

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**SECTION: SANITARY SEWER DESIGN
REQUIREMENTS**

NO.: 515

TITLE: DESIGN REQUIREMENTS

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flowrate.

- B. Minimum acceptable slopes in new sewer main and leads shall be:

<u>Size of Pipe (Inches)</u>	<u>Fall in Feet Per 100 Feet of Sewer</u>
4	0.7
6	0.5
8	0.33
10	0.25
12	0.20
15	0.15
18	0.11
21	0.09
24	0.08

- C. Sewers are to be designed so that the crowns of the pipes are matched at manholes. The upstream sewer may be designed so that the flowline of the upstream sewer is higher than the flowline of the downstream sewer.

515.6 Alignment

- A. Sewers should be laid in a straight alignment, and in close agreement to designated locations as required in Section 510.1 and 315.5D with the use of additional manholes as needed.

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**SECTION: SANITARY SEWER DESIGN
REQUIREMENTS**

NO.: 520

TITLE: APPURTENANCES

PAGE: 1 OF 3

EFFECTIVE DATE:

520.1 Manholes

- A. Manholes shall be placed at points of changes in alignment, grade, or size of sewers, at the intersection of sewers and recommended at the end of all sewers in lieu of cleanouts.
- B. Manholes should be spaced at a maximum distance of four hundred feet (400') apart.
- C. Sewers laid in easements shall have a manhole in each street crossing.
- D. Manholes should be located to eliminate the inflow of storm water into the sanitary sewer. The top of manhole rim shall be six inches (6") above finished grade with a maximum throat length of twelve inches (12"). Sealed manholes may be permitted, within the 100 year flood plain, or a paved area when specifically approved by the Department of Engineering/Public Works.
- E. Manholes shall be constructed in accordance with the City of Lake Jackson Construction Details.
- F. Steps in manholes will not be permitted.
- G. Manhole covers shall be cast iron, traffic bearing type ring and cover with the words "Sanitary Sewer" cast into the cover.
- H. All manhole adjustments shall be made with precast concrete rings or kiln fired red brick.
- I. All manholes shall be tested in accordance with the regulations of the TNRCC, "Design Criteria for Sewerage Systems".

520.2 Stacks

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**SECTION: SANITARY SEWER DESIGN NO.: 520
REQUIREMENTS**

TITLE: APPURTENANCES PAGE: 2 OF 3

EFFECTIVE DATE:

Stacks shall be constructed for connections to sewers that are more than eight feet (8') below finished grade. Stacks shall be provided during the initial construction of the sewer.

520.3 Lift Stations

Lift stations shall be designed in conformance with the "T.N.R.C.C. Design Criteria for Sewerage Systems". Lift stations should be considered only when a gravity system cannot be achieved. All lift stations shall be specifically approved by the Department of Engineering/Public Works. The Design Engineer shall provide design requirements and pertinent data along with preliminary O & M Manual as part of the engineering report, with construction plans for review. A preliminary design meeting with the Department of Engineering/Public Works is recommended. Lift stations shall be designed as follows:

- A. Pumps shall be sized to operate at optimum efficiency. Minimum acceptable efficiency at the operating point will be comparable to the level of efficiency of the Gorman-Rump T Series Centrifugal or the Flygt 3000 for submersible series, unless specifically approved by the Department of Engineering/Public Works.
- B. Operation and maintenance should be considered in the design of the station and the location of the station.
- C. Wet well working volume should be sized to allow for the recommended minimum pump on cycle time of six (6) minutes for each pump and a fifteen to twenty (15 to 20) minute storage capacity.
- D. Controls and equipment shall be approved by the Department of Engineering/Public Works. Pumps shall be in the approved product list of the City of Lake Jackson. Pump controls shall be manufactured by E. G. Controls or Mercer Control, or equal.

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**SECTION: SANITARY SEWER DESIGN NO.: 520
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TITLE: APPURTENANCES PAGE: 3 OF 3

EFFECTIVE DATE:

- E. Emergency operations should be considered. Provide fittings and a blind flange that will be readily accessible for emergency bypass pumping.
- F. No collection line system will be considered for storage capacity in the wet well design and pump level operations.

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**SECTION: SANITARY SEWER DESIGN NO.: 525
REQUIREMENTS**

TITLE: SERVICE CONNECTIONS PAGE: 1 OF 2

EFFECTIVE DATE:

525.1 Sewer service leads shall be located within a public right-of-way and extend to within three feet (3') of the property line in new installations and up to the property line in reconstruction installation..

525.2 Single-Family Residential Lots

- A. All service connections shall be installed at the time of construction of the sewer. All sewer service leads shall be located within a public right-of-way.
- B. Service connections should be installed at a manhole, when possible, and made with a flexible connector approved by the Department of Engineering/Public Works.

525.3 Multi-Family Residential, Commercial, and Office Development

- A. Service connections six inches (6") and larger shall be made at a manhole. All service connections should be installed at the time of construction of the sewer.
- B. Service connections at manholes shall be made with approved flexible connectors.

525.4 Service Connections at Manholes

- A. Service connections at manhole should be made when possible. When a service connection stub-out is not provided, an opening shall be neatly cut out of the manhole at the required elevation. A prefabricated "insertate" connection shall be inserted in the wall and the service connection made to it..

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**SECTION: SANITARY SEWER DESIGN NO.: 525
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TITLE: SERVICE CONNECTIONS PAGE: 2 OF 2

EFFECTIVE DATE:

- B. Service connection at existing brick shall be grouted in place using non-shrink grout, Fosroc Preco-Patch, or equal. For equals, refer to the City of Lake Jackson Approved Products List. When a hole for a service connection in a brick manhole exceeds eighteen inches (18"), the manhole shall be rebuilt above the disturbed area.
- C. Service connections at existing fiberglass manholes shall be as indicated by Sec. 525.4.4A.

525.5 Provide adequate markings on site and accurate as-built locations, so that the service connection stub-out can be recovered at the time that the connection to the service is made. Magnetic locators provided by the City shall be installed according to the City of Lake Jackson Construction Details.

525.6 All connections to the public sewer system shall be approved by the Department of Engineering/Public Works prior to construction. Actual connections to the public sewer system shall be inspected by a representative of the Department of Engineering/Public Works within the City Limits or extraterritorial jurisdiction.

525.7 Service connections that are installed after initial construction of a sewer shall be constructed using a P.V.C. saddle with gasket and stainless steel straps and screws as approved by the Department of Engineering/Public Works.

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**SECTION: DRAINAGE DESIGN
REQUIREMENTS**

NO.: 600

TITLE: GENERAL

PAGE: 1 OF 1

EFFECTIVE DATE:

- 600.1 All drainage plans and construction shall meet or exceed the requirements of the City of Lake Jackson, Velasco or Angleton Drainage District, and all other entities having jurisdiction. Refer to Outfall Channel/Ditch Maintenance Jurisdiction Map, Exhibit Insert A.
- 600.2 Public storm sewers are defined as sewers and appurtenances that provide drainage for a public right-of-way, or more than one private tract, and are located in public right-of-way. Private storm sewers provide internal drainage for a reserve or other tract. Private storm sewer connections to public storm sewers shall occur at a manhole or at the back of an inlet as approved by the Department of Engineering/Public Works. All private storm sewers shall be constructed in conformance with these Standards.
- 600.3 All construction shall conform with the City of Lake Jackson Construction Details.
- 600.4 All drainage design shall meet or exceed the requirements of the adopted Drainage Criteria Manual for Brazoria County, Texas and the requirements of the City of Lake Jackson. Where a conflict arises between the same, the effective requirements will default to City criteria and regulations.

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**SECTION: DRAINAGE DESIGN
REQUIREMENTS**

NO.: 605

TITLE: STORM SEWER MATERIALS

PAGE: 1 OF 2

EFFECTIVE DATE:

- 605.1 **Reinforced Concrete Pipe:** Concrete pipe shall be manufactured in conformance with the requirements of ASTM C 76, Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe, current revision. Reinforced concrete pipe shall be Class III or stronger. The design engineer shall provide for increased pipe strength when conditions of the proposed installation exceed the allowable load for Class III pipe. All concrete pipe constructed in water bearing soil or thirty-six inches (36") in diameter or larger, shall have rubber gasket joints meeting the requirements of ANSI/ASTM C443, "Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets", current revision. Concrete pipe with a diameter of less than thirty-six inches (36") may be installed using pipe with tongue and groove type joint and Ram-nek, or approved equal, as a joint filler. When specifically approved by the Department of Public Works, reinforced concrete arch and elliptical pipe conforming to ASTM C506 and C507, respectively, current revision, may be installed in lieu of circular pipe. Reinforced concrete box culverts shall meet the minimum requirements of ASTM C789, Precast Reinforced Concrete Box Sections for Culverts, Storm Drains, and Sewers, current revision. Pipe joints for arch and elliptical pipe and box culverts shall be sealed using Ram-nek or approved equal. For equals, refer to the City of Lake Jackson Approved Products List.
- 605.2 **Corrugated Steel Pipe:** (Not for use in V.D.D. Outfalls) Corrugated steel pipe shall be manufactured in conformance with the requirements of AASHTO Designation M-36-82, current revision. Pipe material shall be Aluminized Steel Type 2, meeting the requirements of AASHTO Designation M-274-79I, current revision, or Precoated Galvanized Steel, AASHTO M-246, 10 mil coating on both sides. All pipe shall have a full double coating, Type A, in accordance with AASHTO Designation M-190, current revision. Pipe joints and fittings shall meet the minimum requirements of these specifications and shall have an O-ring gasket seal meeting the requirements of AASHTO C-361, current revision.

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**SECTION: DRAINAGE DESIGN
REQUIREMENTS**

NO.: 605

TITLE: STORM SEWER MATERIALS

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605.3 Storm sewer outfalls shall have slope protection to prevent erosion. Slope protection may be constructed of slope paving or other approved method in the construction details. Standard slope paving shall be four-inch (4") four and one half (4.5) sack concrete with three-eights-inch (3/8") steel rebar on twenty-four inch (24") centers, each way.

Refer to the Construction Details for alternate slope protection measures.

605.4 Alternate Pipe (Polyethylene, PVC, other). Alternate materials and methods are identified in the Construction Details and may be used with specific approval from the Department of Engineering/Public Works.

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**SECTION: DRAINAGE DESIGN NO.: 610
REQUIREMENTS**

TITLE: LOCATION OF STORM SEWER PAGE: 1 OF 1

EFFECTIVE DATE:

610.1 Public storm sewers shall be located within a public street right-of-way or a storm sewer right-of-way, dedicated to the public.

610.2 Recommended alignment within a public street right-of-way.

A. For all storm sewers located in a public street right-of-way, a minimum distance of two feet (2') shall be maintained inside the curb line to the outside edge of the storm sewer.

B. Alternate locations for a storm sewer will be permitted by the Department of Engineering/Public Works under special circumstances and conditions.

610.3 Recommended alignment within an exclusive storm sewer right-of-way:

A. Storm sewers shall be placed in a right-of-way that conforms to the requirements of Section 315.6.

B. Storm sewers within right-of-way shall be placed no closer than five feet (5') measured from the outside edge of the pipe to the edge of a right-of-way, except when adjoining another easement or public right-of-way where the distance may be reduced to two feet (2'). The storm sewer shall be placed in the center of the right-of-way. When the storm sewer right-of-way may be reduced to a minimum of ten feet (10') and the storm sewer may be aligned closer to the right-of-way line, as long as required clearances are met, with specific approval of the Department of Engineering/Public Works.

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**SECTION: DRAINAGE DESIGN
REQUIREMENTS**

NO.: 615

**TITLE: CONSTRUCTION PLAN
REQUIREMENTS**

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EFFECTIVE DATE:

- 615.1 A drainage area map shall be included in the construction plans. The drainage area map shall include:
- A. Drainage areas, including areas draining from off-site onto or adjoining the project.
 - B. Design storm runoff - 10 year frequency.
 - C. Flow per inlet.
 - D. 100-year storm runoff.
 - E. Route of overland flow including the overflow to a drainage way sized to accommodate the 100-year flow, when available.
 - F. Elevations for the 10 - year and 100-year storms in the outfall channel.
 - G. Maximum 100-year ponding elevation.
 - H. Detention/Retention Basin System for 100-year flow control where required, where no 100-year outfall available.
- 615.2 A detailed summary drainage tabulation shall be submitted with the construction plans.
- 615.3 The hydraulic gradient for the design storm shall be shown on the construction drawings based on the tail water elevation of the larger of a 100-year or capacity flow in the outfall channel. Calculations for the elevation of the hydraulic gradient shall be provided with the design storm drainage calculations.

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**SECTION: DRAINAGE DESIGN
REQUIREMENTS**

NO.: 620

TITLE: DESIGN REQUIREMENTS

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620.1 Minimum size storm sewer for main and inlet lead shall be fifteen inch (15") diameter.

620.2 Storm sewers shall be bedded as shown in the City of Lake Jackson Construction Details.

620.3 Pipe Requirements

- A. Reinforced concrete pipe, as described in 605.1 shall meet or exceed the following minimum requirements:

<u>Pipe Class</u>	<u>Maximum Cover (Ft.)</u>
III	15'

- B. Corrugated steel pipe shall have a minimum thickness as follows:
(not approved for use in VDD outfalls unless specifically permitted by V.D.D.)

<u>Pipe Size (Inches)</u>	<u>Corrugations</u>	<u>Minimum Thickness (Inches)</u>
24	2-2/3" x 1/2"	0.052
30-48	2-2/3" x 1/2"	0.064
54-72	3" x 1" or 5" x 1"	0.064
78-102	3" x 1" or 5" x 1"	0.079

- C. Corrugated polyethylene pipe approved for non traffic conditions or when specifically approved by the Public Works/Engineering Department shall be as identified in the Approved Products List.

620.4 Storm sewers shall have a minimum clearance of six inches (6") from all other utilities. The clearance shall be measured from the outside wall of the pipe.

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**SECTION: DRAINAGE DESIGN
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NO.: 620

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620.5 Design storm runoff shall be calculated in accordance with the "Drainage Criteria Manual for Brazoria County, Texas". Where a conflict arises with the City's requirements, the City's criteria and regulation shall govern.

620.6 Hydraulic Requirements:

- A. Storm sewers shall be designed to have a minimum velocity of two feet per second (2 fps) or a maximum six feet (6'), when flowing full.
- B. Inlet capacity for the design storm shall be computed using a six inch (6") maximum water surface elevation inlet. Design capacity for a Type "C" inlet with a six inch (6") standard curb shall be a minimum four (4) cubic feet per second. Type "E" and area inlet shall be also computed using a max. six inches (6") max. hydraulic head and the number of inlet opening or grate opening sized for the design flow.
- C. Design storm flow in a street shall not exceed the capacity of the street, for the water surface equal to the top of inlet, and shall not exceed the inlet capacity.
- D. The maximum allowable ponding level for a minor or collector street is the lowest of the following:
 - 1. One foot (1') above natural ground;
 - 2. One foot (1') above top of curb;
 - 3. One foot (1') below the lowest slab elevation for a 100-year storm event.

The storm sewer system must convey flows from a 100-year storm event without ponding water in the street at levels that exceed the maximum allowable level. In addition, for a major thoroughfare the minimum top of curb elevation shall be at or above the 100-year flood plain elevation. Drainage calculations, along with water surface or hydraulic grade line

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profiles shall be submitted to the Department of Engineering/Public Works for approval.

- E. All bridges must be a minimum of twelve inches (12") above the 100-year water surface elevation with a minimum free board of twelve inches (12") to the span beam.

620.7

Storm sewers less than forty-two inches (42") in diameter shall be constructed on a straight horizontal and vertical alignment between manholes. Storm sewers greater than or equal to forty-two inches (42") in diameter may be laid along a curve using manufactured bends of less than or equal to 11-14 degrees. Camera inspection may be required on storm sewers constructed along a curve.

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**SECTION: DRAINAGE DESIGN
REQUIREMENTS**

NO.: 625

TITLE: APPURTENANCES

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625.1 Manhole/Junction Box

- A. Manhole/Junction Box shall be placed at all changes in alignment (except sewers laid along a curve), grade and size of storm sewers; and at the intersection of two or more storm sewers.
- B. Maximum spacing between manholes shall be six hundred feet (600').
- C. Manhole covers shall be cast iron, traffic bearing, type ring and cover.

625.2 Inlets

- A. Curb inlets shall be spaced and sized to intercept the calculated runoff for the design storm. The water surface elevation at the inlet shall be less than or equal to the top of curb for the design storm flow.
- B. Maximum travel distance of water in the street to a curb inlet shall be three hundred feet (300') on a major thoroughfare and in a commercial area. The maximum travel distance of water in the street permitted in a single-family residential area shall be six hundred feet (600').
- C. Curb inlets should be located on the intersecting side street at an intersection with major thoroughfare. Locations on the major thoroughfare at intersections shall be specifically approved by the Department of Engineering/Public Works.
- D. Grated inlets will be permitted in an open ditch with the approval of the Department of Engineering/Public Works.

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- E. Backslope swale interceptors may be placed only in drainage district maintained drainage ways when approved by the Drainage District in accordance with their requirements.
- F. Curb inlets shall have covers as per construction standard details.
- G. Backfill around inlets with 1.5 sacks per cubic yard of cement stabilized sand.

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SECTION: PAVING DESIGN REQUIREMENTS NO.: 700

TITLE: GENERAL

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- 700.1 All paving plans and construction shall be approved by the City of Lake Jackson for all streets within the City of Lake Jackson and its extraterritorial jurisdiction.
- 700.2 This section left blank intentionally.
- 700.3 All new public street pavement within the City Limits and ETJ shall be concrete with curb and gutter. Existing asphalt surface pavements may be resurfaced and reconstructed as approved by the City of Lake Jackson.
- 700.4 Street type and classification should conform to all applicable planning tools, such as the City of Lake Jackson Subdivision Ordinance, thoroughfare plans, master plans, etc. Other considerations for design should include street function, street capacity, service levels, traffic safety, pedestrian safety, and utility location. These additional considerations may affect the minimum requirements set forth herein. Refer to the City of Lake Jackson Thoroughfare Plan and the comprehensive Master Plan with Revisions, Appendices 1060 and 1070 respectively.
- 700.5 Design shall conform to Appendix 1040 and the City of Lake Jackson Construction Details.

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SECTION: PAVING DESIGN REQUIREMENTS NO.: 705

TITLE: ROADWAY TYPES PAGE: 1 OF 1

EFFECTIVE DATE:

- 705.1 P6D - Principal Arterial, six (6) lanes, divided may be used for major thoroughfare streets.
- 705.2 P4D - Principal Arterial, four (4) lanes, divided shall be used for major thoroughfare streets.
- 705.3 P4DWP - Major Parkway, four (4) lanes, divided shall be used for major thoroughfare streets.
- 705.4 P4DIC - Major Industrial/Commercial, four (4) lanes divided shall be used for major thoroughfare/industrial/commercial.
- 705.5 M4U - Minor Arterial, four (4) lanes, undivided shall be used for minor thoroughfare commercial or industrial streets.
- 705.6 C2UWP - Minor Parkway, two (2) lanes, undivided with parkway shall be used for minor collectors single family residential streets or local multi-family residential.
- 705.7 C4U - Major Collector, four (4) lanes, undivided shall be used for major collector multi-family, commercial, or industrial streets and secondary streets.
- 705.8 C2U - Minor Collector, two (2) lanes, undivided shall be used for minor collector single family residential streets or local multi-family residential, commercial, or industrial streets and secondary streets.
- 705.9 L2U - Residential, two (2) lanes, undivided shall be used for local single family residential streets.

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SECTION: PAVING DESIGN REQUIREMENTS NO.: 710

**TITLE: GEOMETRIC STREET DESIGN PAGE: 1 OF 5
STANDARDS**

EFFECTIVE DATE:

- 710.1 Minimum geometric street design standards for number of lanes, lane widths, right-of-way widths, median widths, and parkway widths shall conform to Appendix 1040.5 of the Design Standards.
- 710.2 The design speeds shall conform to Appendix 1040.5 of the Design Standards. The design speed does not necessarily indicate the posted speed.
- 710.3 The maximum grade refers to the vertical slope of the street and shall conform to Appendix 1040.5 of the Design Standards.
- 710.4 Vertical curves shall be designed when algebraic difference in grades exceeds one percent (1%). Elevation shall be shown on the construction plans at ten foot (10') intervals through vertical curves. The gradient for tangents to vertical curves at railroad crossings shall be a maximum of four percent (4%). All crest vertical curves shall be determined by sign distance requirements for the design speed. The minimum design speed on any vertical curve shall be based on the street classification.
- 710.5 Intersections and curves shall be evaluated for adequate sight distances.
- A. Minimum sight distances shall conform to Appendix 1040.5 of the Design Standards.
- 710.6 Horizontal curvature is defined as the centerline radius of the street right-of-way.
- A. Horizontal curvature shall conform to Appendix 1040.5 of the Design Standards.

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SECTION: PAVING DESIGN REQUIREMENTS NO.: 710

**TITLE: GEOMETRIC STREET DESIGN PAGE: 2 OF 5
STANDARDS**

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B. All roadway types defined as thoroughfares in Section 705 shall be designed to the speed criteria set by the Planning and Zoning Commission as recommended by the Traffic Commission and regulated by the City Council. All other roadway shall be designed to thirty mile (30 mi.) MPH speed unless otherwise granted variance by the same bodies above.

C. The centerline curvature of all roadways shall be dictated by the speed design requirements as set in 710.6.B and shall meet the minimum radius set forth in Appendix 1040.5 unless granted site specific speed variance and regulation compatible with the curvature.

D. The superelevation of curvature in the roadways shall be as follows:

Roadway Type	Radius	Superelevation
Thoroughfare	<2000 ft.	Per AASHTD Guidelines <0.04
Collector/Local	All	None

E. Right angle centerline deflection may be used on local streets. The minimum centerline curvature shall be fifty feet (50') and the angle of deflection shall be ninety degrees (90°) plus or minus ten degrees (10°).

710.7 Each street shall be evaluated for adequate clearances from obstructions. Such obstructions could include retaining walls, abutments or bridge columns, sign posts, large trees, or head walls. Refer to Appendix 1040.5 for minimum vertical and horizontal clearance requirements.

710.8 (This left blank intentionally)

710.9 Intersections:

A. Curb radii, measured from the back of curb, shall be fifteen feet (15')

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NO.: 710

**TITLE: GEOMETRIC STREET DESIGN
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minimum on local residential streets and thirty feet (30') desirable to twenty five (25') absolute minimum on residential major thoroughfares. The desirable curb radi shall be forty five feet (45') to forty feet (40') absolute minimum, depending on an evaluation of vehicular types and volumes in commercial or industrial areas. Minimums should be increased at skewed intersections.

- B. Streets and traffic lanes shall be properly aligned across an intersection. Proposed streets shall be aligned with existing streets.
- C. When turnouts are provided at an existing street, the ultimate cross section is required to the end of curb return. Pavement transition is required to adjust the pavement width to the existing cross section.
- D. Intersections should be designed as a high point in the drainage system, when possible.
- E. Streets intersecting major thoroughfares shall maintain a minimum of three hundred feet (300') of separation. Separation is defined as the distance from pavement face of curb to face of curb. Streets intersecting collector streets shall maintain a minimum of two hundred and fifty feet (250') of clearance. Local streets shall maintain a minimum separation of two hundred and forty feet (250'). Collector and local street separation may be reduced with specific approval from the Department of Engineering/Public Works.
- F. Offset intersections are not permitted on any arterial if the offset distance (or clearance between streets) is less than three hundred feet (300'). The minimal allowable offset shall be two hundred and fifty feet (250') on collector streets and eighty feet (80') on local streets.
- G. Lane drop tapers shall extend a minimum of one hundred feet (100') beyond the intersection or more according to the speed of the roadway and in conformance to Appendix 1040.4.

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**TITLE: GEOMETRIC STREET DESIGN PAGE: 4 OF 5
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H. Except where existing conditions will not permit, all streets, major and minor shall intersect at a ninety-degree (90deg) angle. Variations of plus or minus ten degrees (10°) on secondary and local streets and five degrees (5°) on arterials may be allowed with specific approval from the Department of Engineering/Public Works.

710.10 Pavement width transitions shall consider Appendix 1040.4 of the Design Standards as desired minimums. Minimum transition lengths shall meet or exceed requirements of the Texas Manual of Uniform Traffic Control Devices.

710.11 Left turn lanes shall consider Appendices 1040.2,.3, and .4 of the Design Standards as desired minimums. Variance to these bay storage lengths may be justified by a traffic analysis. Left turn addition to existing roadways may be permitted when specifically approved by the Department of Engineering/Public Works.

710.12 Median openings shall consider Appendices 1040.2 of the Design Standards as desired minimum. On major thoroughfares, when areas adjoining the right-of-way are not planned for immediate development, esplanade openings may be spaced one thousand feet (1000') apart when specifically approved by the Department of Engineering/Public Works.

710.13 Cul-de-Sac-Pavement:

A. Single Family Residential - pavement radius measured to the back of curb shall be forty feet (40').

B. Multi-Family Residential, Commercial, and Industrial - pavement radius measured to the back of curb shall be fifty feet (50').

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- C. Right-of-way radius shall be clear of permanent obstructions. Unpaved medians on modified cul-de-sacs may be considered with specific approval from the Department of Engineering/Public Works when the request is accompanied by verification that the modification can accommodate an SU-30 turning path.
- D. The distance from the back of curb of a cul-de-sac to the right-of-way line shall be a minimum of ten feet (10').
- E. Curb radii at the transition to the cul-de-sac shall have a minimum radius of twenty-five feet (25') in single family residential areas and thirty-five feet (35') in other areas, measured at the back of curb.
- F. The length of a cul-de-sac is defined as the distance from the centerline of the intersecting pavement to the center of the cul-de-sac bulb measured along the centerline of the street right-of-way. Maximum length of cul-de-sac streets for residential subdivision shall be one thousand feet (1,000') or serve a maximum of twenty-four (24) residential lots, whichever is less. Maximum length of cul-de-sac streets for commercial or industrial developments shall be six hundred feet (600'). A traffic analysis may be required in commercial or industrial areas to determine high traffic volumes that may be generated from the development, thereby reducing the maximum length of cul-de-sac allowed.

710.14

Guidelines for permitting on-street parking are given in Appendix 1040.5.

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TITLE: PAVEMENT STRUCTURE PAGE: 1 OF 3

EFFECTIVE DATE:

- 715.1 Local residential streets shall have a minimum thickness of **eight** inches (**8"**) with number four (#4) rebar spaced at twenty-four inches (24") measured center to center of the rebar.
- 715.2 Residential collector streets and all streets in multi-family residential, commercial, or industrial areas shall have a minimum thickness of **eight** inches (**8"**) with number four (#4) rebar spaced at twenty-four inches (**24"**) measured center to center of the rebar.
- 715.3 Major thoroughfares shall have a minimum thickness of **eight** inches (**8"**) with number four (#4) rebar spaced at eighteen inches (18") measured center to center of the rebar.
- 715.4 Any variances to the pavement structure minimum for each roadway type shall be designed based on soil data from the site and based on the anticipated traffic volume, loading and service life of the proposed pavement structure. The design engineer is responsible to insure that the pavement structure is designed to withstand the anticipated loads that are expected on the roadway. The design shall be submitted to the Engineering/Public Works Department for approval.
- 715.5 Hot-mix asphaltic concrete pavement for existing roadway only shall be designed for each individual project based on a geotechnical analysis prepared by a registered engineer. Minimum requirements shall include two inches (2") of surface course, six inches (6") of base, and six inches (6") of lime stabilized subgrade.
- 715.6 Subgrade shall be stabilized with a minimum seven percent (7%) lime by weight, six inches (6") thick and compacted to ninety-five percent (95%) Standard Proctor Density. Alternative subgrade stabilization may be substituted when specific recommendations are made by the geotechnical engineer for the project and when specifically approved by the Department of Engineering/Public Works.

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SECTION: PAVING DESIGN REQUIREMENTS NO.: 715

TITLE: PAVEMENT STRUCTURE PAGE: 2 OF 3

EFFECTIVE DATE:

- 715.7 Concrete pavement thickness design is required for all pavement not meeting minimum requirements within industrial areas and on major thoroughfares. Concrete pavement thickness design shall be based on American Association of State Highway and Transportation Officials design procedures for rigid pavements.
- 715.8 Exposed horizontal dowels on existing construction joint or drilled/epoxied bars in saw cut joints are required to create a minimum twelve inch (12") overlap of reinforcing steel when making a connection of a proposed street to an existing concrete street or drive. When the existing concrete street has no exposed steel the following shall apply:
- A. Dowels should be number five (#5) bars, eighteen inches (18") long, embedded six inches (6") and epoxied, and spaced in accordance with this section.
- 715.9 Dead-end streets or ends of concrete slabs designed to be extended in the future shall have paving headers and fifteen inches (15") or reinforcing steel exposed beyond the pavement, and protectively wrapped with moisture-proof materials or paving headers and Dowell type expansion joint for future pavement tie.
- 715.10 Pavement extensions shall connect to the existing pavement with a pavement undercut and a minimum steel overlap of twelve inches (12") . Refer to Construction Details.
- 715.11 All concrete to be removed shall be removed either to an existing joint or a sawed joint. Sawed joints shall be full cut, extending through the pavement structure allowing for a complete disassociation.

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715.12 Materials:

- A. Concrete - five and a half (5-1/2) sacks cement per cubic yard concrete; 550 psi, modulus of rupture strength at twenty-eight (28) days. High early strength concrete when approved shall consist of a six and one half (6-1/2 sack mix design with plasticizer or a custom mix batch design specially formulated to the planned field operations.
- B. Reinforcing steel - Grade 40, ASTM A615, current.
- C. All materials and workmanship shall conform to the Texas Department of Transportation Standard Specifications, 1993, and any revisions thereto.
- D. All special, non-standard materials, such as stamped concrete or concrete pavers, and special signage, that are installed by the developer, shall be specifically approved by the Department of Engineering/Public Works and shall be maintained by the developer or his assigns. Any maintenance of non-standard items by the City of Lake Jackson will be done using standard materials and methods.
- E. A concrete mix design of cement plus fly-ash may be substituted in lieu of the Standard concrete batch design in a case by case basis as specifically approved by the Department of Engineering/Public Works. The fly-ash shall conform to the requirements of TxDOT Material Specification D-9-8900 and shall not exceed 25% by absolute volume of the specified cement content. The modulus of rupture strengths and development periods minimums of the standard concrete mix batch shall remain in effect and be verified by a mix design prepared and tested by a Geotechnical Lab and submitted for review and approval by the City's Engineering/Public Works Department prior to paving operations.

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SECTION: PAVING DESIGN REQUIREMENTS NO.: 720

**TITLE: GRADING AND LAYOUT PAGE: 1 OF 2
REQUIREMENTS**

EFFECTIVE DATE:

- 720.1 Minimum gradient on gutter shall be 0.25 percent. For special conditions where the gutter must be placed at a flatter grade, the minimum grade may be as approved by the Department of Engineering/Public Works.
- 720.2 Inlet spacing as defined in Section 625.2.
- 720.3 Maximum cut measured from finished grade at the right-of-way line to top of curb shall be 1.75 feet, unless otherwise approved by the Engineering/Public Works Department. The recommended maximum slope for driveways shall be one and three-quarters of an inch (1-3/4") per foot. Driveway slope at sidewalk continuation shall conform to ADA cross slope requirements of one-quarter inch (1/4") per foot.
- 720.4 Minimum grade around intersection turnouts of fifteen foot (15') minimum radius shall be one half percent (.5%) for new and one-quarter percent (0.25 %) for reconstruction unless otherwise approved by the Engineering/Public Works Department. Grade for larger radius shall be determined on an individual basis.
- 720.5 All residential streets shall have a four inch (4") laydown concrete curb and commercial, business and multi-family shall have six inch (6") high concrete curb as shown in the Construction Details. Other curb types as contained in the standard details may be designed based on the application used.
- 720.6 Minimum slope for the gutter of a cul-de-sac or of the long radius shall be four tenths percent (.4%) unless otherwise approved by the Engineering/Public Works Department.
- 720.7 The amount of cross slope over the standard street pavement section should be shown on the plans. The usual cross slope is three-eighths inch (3/8") per foot from the curb line to quarter point, and one-fourth inch (1/4") per foot from quarter point to centerline, and one-eighth inch (1/8") to three sixteenths inch (3/16") per foot for left turn lanes. Cross slope elevation may be calculated using the elliptical crown

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formula for a four inch (4") crown.

- 720.8 Top of curb elevations and top of curb/inlet shall be shown on the construction plans. Gutter elevations shall be indicated where connecting to existing surfaces are proposed. Profile grade should indicate reference line used, usually the top of curb or other if clearly indicated.
- 720.9 Gutter elevations are required for vertical curves where a railroad track is being crossed.
- 720.10 Where railroad crossings are not at right angles to the pavement slab, vertical curves should be calculated for each curb line and should be posted at ten feet (10') intervals in the profile.

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SECTION: PAVING DESIGN REQUIREMENTS NO.: 725

TITLE: TRAFFIC CONTROL DEVICES PAGE: 1 OF 1

EFFECTIVE DATE:

725.1 Standard barricades shall be permanently installed at the end of all dead-end streets not terminating in a cul-de-sac and at all temporary turnouts. Barricades shall meet requirements of the Texas Manual of Uniform Traffic Control Devices for Type III barricades.

725.2 Developer shall install traffic control devices as warranted by a traffic study.

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SECTION: PAVING DESIGN REQUIREMENTS NO.: 730

TITLE: SIDEWALKS PAGE: 1 OF 1

EFFECTIVE DATE:

- 730.1 Sidewalks of four feet (4') in width are required on each side of all public residential streets. Sidewalks of **six** feet (6') in width are required on each side of a commercial street. Construction of a sidewalk along a single family residential local street may be deferred until a lot is improved. Where the sidewalk is part of a designated bike path plan, the width shall be as set by the plan.
- 730.2 Sidewalk wheelchair ramps meeting the latest ADA criteria, shall be required at all intersections and driveways and median crossovers.
- 730.3 All sidewalks are to be constructed in accordance with the City of Lake Jackson Construction Details.
- 730.4 Sidewalks shall be typically located four feet (4') offset from the street curb in new development. Variations to this offset may be allowed in existing street reconstruction or in commercial business districts with specific approval from the Department of Engineering/Public Works.
- 730.5 Hike and bike paths shall consist of a minimum ten feet (10') in width in corridors designated by the bike and hike commission and contained in the latest official Bike and Hike Master Plan. All hike and bike pavement shall be constructed in accordance with the City of Lake Jackson sidewalk and wheelchair ramp construction details.

CITY OF LAKE JACKSON DEVELOPMENT MANUAL

SECTION: PAVING DESIGN REQUIREMENTS NO.: 735

TITLE: ALLEYS PAGE: 1 OF 1

EFFECTIVE DATE:

- 735.1 Public alleys for ownership and maintenance are not approved. Service alleys in commercial and industrial districts and driveway alleys in residential areas shall be considered private alleys and lie entirely within private property.
- 735.2 Pavement design requirements for private alley shall be the responsibility of the private ownership but consideration to the following recommended good practice should be given due to fire lane and waste haul lane operations on alleys.
- A. Alleys for commercial and industrial districts shall have a minimum thickness of seven inches (7") with number four (#4) rebar spaced at eighteen inches (18") measured center to center of the rebar. Residential alleys shall have a minimum thickness of **eight** inches (**8**") with number four (#4) rebar spaced at twenty-four inches (24") measured center to center of the rebar.
 - B. Alleys shall have a minimum gradient on gutter line of 0.30 percent.
 - C. Alleys without curb shall be constructed as a "V" section with cross slopes of three-eighths inch (3/8") per foot. Alleys with curb shall be crowned with cross slope of three-eighths inch (3/8") per foot.

CITY OF LAKE JACKSON DEVELOPMENT MANUAL

**SECTION: SITE DEVELOPMENT NO.: 800
REQUIREMENTS**

TITLE: GENERAL PAGE: 1 OF 1

EFFECTIVE DATE:

- 800.1 Site development plans for all site developments within the City of Lake Jackson and its extraterritorial jurisdiction shall be reviewed by the Department of Engineering/Public Works prior to approval.
- 800.2 Site developments, not including single family residential, shall include any project that affects public water, wastewater, storm drainage, or paving facilities. Site developments over two (2) acres shall be approved by the Planning and Zoning Commission and those under two (2) acres shall be approved by the Department of Engineering/Public Works.
- 800.3 All site developments shall conform to the requirements of these Standards, the Southern Standard Building Code, and applicable rules and regulations of the City of Lake Jackson.
- 800.4 All wastewater, drainage and paving site development improvements shall be privately owned, operated and maintained up to and including the connection to the public system main trunk line. All water site development improvements shall be privately owned, operated and maintained up to the meter vault but not including the meter vault.
- 800.5 Site development improvements which serve more than one private party, are located within public rights-of-way, are located within the City of Lake Jackson city limits, and meet the design standards set forth herein may be accepted by the City of Lake Jackson for operation and maintenance.

**CITY OF LAKE JACKSON
DEVELOPMENT MANUAL**

**SECTION: SITE DEVELOPMENT NO.: 805
REQUIREMENTS**

**TITLE: DESIGN REVIEW REQUIREMENTS PAGE: 1 OF 1
FOR SITE DEVELOPMENT PLANS**

EFFECTIVE DATE:

- 805.1 All site development plans for proposed developments shall be submitted to the department of Engineering/Public Works for approval prior to construction. Site development plans shall show all proposed water, wastewater, paving, parking, drainage, flood protection facilities, and landscaping. For development sites of two (2) acres and larger, separate site plan and landscaping plans shall be reviewed and approved by the Planning and Zoning Commission prior to submission to the department for approval prior to construction.
- 805.2 A traffic impact study may be required for any development proposal expected to generate traffic volumes that will significantly impact the capacity and/or safety of the street system in accordance with Section 700 of the Standards.
- 805.3 Two (2) copies of the preliminary site development plans shall be submitted to the Department of Engineering/Public Works for review. The Department of Engineering/Public Works will respond within ten (10) working days with plan markups showing the request for information or revision.
- 805.4 When plan revisions are made, two (2) copies of the revised site/landscape development plans with the markup set shall be resubmitted to the Department of Engineering/Public Works for final review and approval of development within ten (10) work days of their submittal. For development sites of two (2) acres or larger, one (1) reproducible Mylar copy of both the site and landscaping plan with Planning and Zoning Commission signature block shall accompany final review for official approval.
- 805.5 Site development plans for projects of less than two (2) acres may be submitted to the Building Permits Department, with the construction plans, for issuance of a building permit prior to construction. The landscape plan shall accompany the submittal as a separate document or may be included in the site development plan if all pertinent landscape information is included.
- 805.6 Refer to Section 120 , Development Flow Chart Diagram and Appendix 1001 for site development procedures and requirements.

**CITY OF LAKE JACKSON
DEVELOPMENT MANUAL**

**SECTION: SITE DEVELOPMENT NO.: 810
REQUIREMENTS**

TITLE: BUILDING SLAB ELEVATIONS PAGE: 1 OF 1

EFFECTIVE DATE:

Building slab elevations shall conform to the following Requirements and Procedures.

1. Non-Residential and Apartment:

Each application for a building permit for any building constructed after the date of the Adoption shall be accompanied by a Lot/Site Grading Plan prepared by and certified to by a Registered Professional Engineer, and showing the following:

- A. The proposed finished grading of the building site to properly convey rainfall runoff away from the structure and adjoining area via overland flow to the appropriate storm sewer inlet or outfall channel.
- B. A minimum ground floor elevation 12 inches above the highest grade adjacent to the structure, or at least 12 inches above the 100 year flood elevation (if any) shown on the appropriate Flood Insurance Rate Map, whichever requirement is the higher elevation.
- C. Each building permit issued shall undergo slab elevation certification prepared by a registered professional engineer or land surveyor in the form prescribed and at the following stages.
 - a. Prior to foundation inspection a form elevation certification will be required.
 - b. Prior to application for certificate of building occupancy an "As Built" lot/site grading plan with slab elevation certifying compliance with the plan on file will be required.

2. Residential:

- A. For all residential lots developed after the date of Adoption, the minimum ground floor elevation shall be 24 inches above the center of the street at the mid-point of the lot frontage and with typical and usual rear to front lot grading or as otherwise indicated in Master Lot Grading Plan.
- B. Variance to paragraph 2A above may be obtained by providing the required documentation as prescribed on Section 1. A-C for Non-Residential and Apartment Site.

***CITY OF LAKE JACKSON
DEVELOPMENT MANUAL***

**SECTION: SITE DEVELOPMENT
REQUIREMENTS**

NO.: 815

TITLE: WATER SERVICE

PAGE: 1 OF 1

EFFECTIVE DATE: _____

Water service lines and meters shall be sized by owner in accordance with requirements set out in Section 455 of these Standards.

***CITY OF LAKE JACKSON
DEVELOPMENT MANUAL***

**SECTION: SITE DEVELOPMENT
REQUIREMENTS**

NO.: 820

TITLE: SANITARY SEWER SERVICE

PAGE: 1 OF 1

EFFECTIVE DATE:

Sanitary sewer service leads are normally installed during construction of the public sanitary sewer. When a sanitary sewer service lead is to be installed for a site development, refer to requirements set out in Section 500 of these Standards. All lots, tracts, or reserves shall be connected directly to a public sanitary sewer by a single lead, except as specifically approved by the Department of Engineering/Public Works. The Department of Engineering/Public Works shall be contacted for all sanitary sewer connections for commercial projects within the City and its extraterritorial jurisdiction.

CITY OF LAKE JACKSON DEVELOPMENT MANUAL

**SECTION: SITE DEVELOPMENT
REQUIREMENTS**

NO.: 825

TITLE: SITE DRAINAGE REQUIREMENTS

PAGE: 1 OF 1

EFFECTIVE DATE:

All commercial, industrial, office, recreational, and multi-family tracts deeper than one hundred feet (100') measured from the right-of-way line shall have an internal drainage system. The internal drainage system shall collect all site runoff beyond *one hundred feet (100')* from the right-of-way line into a storm sewer system that shall connect to the public drainage facilities in the area, except with specific approval. The one hundred foot (100') area adjacent to the right-of-way may sheet flow to the roadway drainage system if the roadway system is designed to accommodate the additional sheet flow from development as included in the drainage analysis plan of the site area in effect or as certified by a revised engineering hydraulic analysis.

- 825.1 The internal site storm sewer shall be connected to a public storm sewer at a storm manhole/junction box or at an inlet adjoining the site. The site drainage outfall shall be connected to the nearest existing drainage system with adequate capacity to serve the drainage area. Where extension of the existing drainage system is required, all costs for extension shall be the responsibility of the development.
- 825.2 All internal site storm sewer extended into a public right-of-way or easement shall be with properly designed diameter pipe with a minimum of fifteen inches (15") in diameter. Only one connection will be allowed into the back of a curb inlet. Storm sewer pipe material shall be in accordance with requirements set out in Section 605.
- 825.3 All internal facilities shall be designed by a registered professional engineer and shall be sized to drain the site in accordance with these Standards.
- 825.4 Drainage calculations shall be submitted with all site development plans. Other supporting data may be required by the Department of Engineering/Public Works.
- 825.5 When the site drains directly or indirectly into a Velasco/Angleton District drainage facility and/or into a highway right-of-way, the appropriate governmental entity (entities) shall approve the site development connection to public facilities.

**CITY OF LAKE JACKSON
DEVELOPMENT MANUAL**

**SECTION: SITE DEVELOPMENT
REQUIREMENTS**

NO.: 830

TITLE: DRIVEWAYS

PAGE: 1 OF 2

EFFECTIVE DATE:

- 830.1 Single family residential driveways shall be a minimum of ten feet (10') wide at the right-of-way line.
- 830.2 Non-residential driveways shall have a minimum of twenty-four feet (24') travelway width and be spaced with a minimum of twenty feet (20') separation. On major thoroughfares (highways), driveways shall be placed to the width and spacing determined and permitted by the controlling Jurisdictional Agency. (See Appendix 1050 for TxDOT driveway access regulation guidelines)
- 830.3 Non-residential driveways on major thoroughfares (highways) shall be separated from intersecting streets a distance as determined and permitted by the controlling Jurisdictional Agency. Non-residential driveways on major thoroughfares (non-highway), collector or local street are to be placed no closer than seventy and one half (7 ½') feet from the curb (radius point) of any intersecting street. Distances shall be measured from the edge of driveway.
- 830.4 Commercial tracts with ninety-five feet (95') or less of frontage on a public street shall have no more than one (1) driveway. Commercial tracts with between three hundred twenty feet (320') and ninety-six feet (96') of frontage on a public street shall have no more than two (2) driveways. Commercial tracts with between six hundred feet (600') and three hundred twenty-one feet (321') of frontage on a public street shall have no more than three (3) driveways. Commercial tracts with over six hundred feet (600') of frontage on a public street shall have driveways specially designed and specifically approved by the Department of Engineering/Public Works.
- 830.5 Non-residential driveway connections to the public street shall be approved and inspected by the City of Lake Jackson.

***CITY OF LAKE JACKSON
DEVELOPMENT MANUAL***

**SECTION: SITE DEVELOPMENT
REQUIREMENTS**

NO.: 830

TITLE: DRIVEWAYS

PAGE: 2 OF 2

EFFECTIVE DATE:

830.6 Driveways within right-of-ways or parkways shall be installed according to the City of Lake Jackson Construction Details.

830.7 Driveways shall be evaluated with respect to, landscaping and structures for adequate sight distances.

**CITY OF LAKE JACKSON
DEVELOPMENT MANUAL**

**SECTION: SITE DEVELOPMENT
REQUIREMENTS**

NO.: 835

TITLE: FIRE LANES

PAGE: 1 OF 1

EFFECTIVE DATE:

- 835.1 Fire lanes shall be created on all multi-family and non-residential tracts. All fire lanes must have access to public roadways and shall be located so that no building is greater than one hundred and fifty feet (150') from either a fire lane or a public street right-of-way.
- 835.2 Fire lanes shall be either twenty feet (20') wide with twenty-five foot (25') radii or twenty-four feet (24') wide with twenty foot (20') radii.
- 835.3 Fire lane pavement design requirement shall be the responsibility of the private ownership but it is recommended that consideration to using the same structural requirement for public pavement be given due to potential fire waste and collection equipment operations within the lane.
- 835.4 Fire lanes shall be designed to drain in compliance with the site development requirements.

**CITY OF LAKE JACKSON
DEVELOPMENT MANUAL**

**SECTION: SITE DEVELOPMENT
REQUIREMENTS**

NO.: 840

TITLE: LANDSCAPING

PAGE: 1 OF 1

EFFECTIVE DATE:

- 840.1 All site landscaping plans for proposed development shall be prepared in compliance with City of Lake Jackson Ordinance No. 92-1202 or latest edition on landscaping. Site landscape plan shall contain the following: (See Appendix 1001, Development Checklist)
- A. Tabulation summary of required and proposed area square footage comparison to include total site area proposed, enclosed building areas and other pertinent area detail.
 - B. Landscape area layout with dimensioned outline.
 - C. Tree, shrub, and planting location and type layout.
 - D. Proposed schedule list of proposed specimen material by name, quantity and size.
 - E. Tabulation summary of required and proposed tree schedule to include credits and diameter size.
- 840.2 Site landscaping plans for developments two (2) acres or larger shall be prepared in a separate plan and include a Planning and Zoning signature block. Submittal and approval procedure shall be in accordance with requirements set out in Section 805 of these Standards.
- 840.3 Site landscaping plans for developments less than two (2) acres may be incorporated with the site plan and does not require a signature block. Submittal and approval procedure shall be in accordance with requirements set out in Section 805 of these Standards.



Approved Product List

***CITY OF LAKE JACKSON
DEVELOPMENT MANUAL***

SECTION: APPROVED PRODUCT LIST

NO.: 900

TITLE: INDEX

PAGE: 1 OF 1

EFFECTIVE DATE: _____

910. WATER PRODUCTS

920 SANITARY SEWER PRODUCTS

930 STORM SEWER PRODUCTS

940 STREET PRODUCTS

CITY OF LAKE JACKSON

APPROVED PRODUCT LIST

APPROVED WATER PRODUCTS LIST

910

1. **Fire Hydrants (Flushing Valves)**
(Pumper Nozzle 4.5", Hose Nozzle 2.5", valve body 5.25") N.S.T.
 - A. Mueller - Model: Centurion

2. **Valves (AWWA Approved Resilient Wedge Type) (Push On) (Open Left)**
 - A. Mueller

Brass Gate Valves (3/4" to 2")
C.I. Gate Valve with Epoxy (2")
 - A. Hammond
 - B. Watts
 - C. Crane
 - D. Stockham
 - E. Eagle
 - F. C and K

3. **P.V.C. Pipe (AWWA C-900)**
 - A. J-M Pipe
 - B. Certainteed
 - C. Napco
 - D. ETI
 - E. Various manufacturers with C-900 5 yr. Production History.

4. **Ductile Iron Pipe (AWWA C151, C150 and C600)**
 - A. U.S. Pipe
 - B. American
 - C. Clow

5. **Ductile Iron Pipe Coatings [AWWA C104 (ANSI A21.4)]**
 - A. Various Manufacturers.

6. **Fittings [D.I.P., AWWA C153/A21.53.84, AWWA C110 (ANSI 21.10)] (PUSH ON)**
 - A. U.S. Pipe
 - B. American
 - C. Tyler Pipe/Fittings

7. **Steel Pipe Casing (AWWA C200)**
 - A. Various mfrs.
8. **Curb Stop - Bronze, Ball Valve, 360° Rotation, Locking Wing (CCx Comp)**
 - A. Ford
 - B. Hays
9. **Corporation Stop - Bronze (CCx Comp) ($\leq 1''$) or FIPT Tap ($\geq 1''$)**
 - A. Ford - Model: F100
 - B. Hays
10. **Service Saddle - Double Strap, Bronze or Brass, with CC Tap ($\leq 1''$) or FIPT Tap ($\geq 1''$)**
 - A. Ford
 - B. Mueller
 - C. James Jones
 - D. MacDonald
 - E. JCM
11. **Service Saddle - Single Strap, Stainless Steel, Epoxy Coated Saddle**
 - A. Romac
 - B. Smith Blair
12. **Water Meters (AWWA Approved) (City Furnished)**
 - A. Sensus (old Rockwell)
13. **Service Tubing (CTS Heavy Wall)**
 - A. Driscopipe (Phillips)
14. **Tapping Sleeve (stainless steel) & Tapping Valve**
 - A. Mueller - (Sleeve & Valve)
 - B. Smith Blajr (Sleeve)
 - C. Romac (Sleeve)
 - D. U. S. Metroseal 250 (# 5940) Valve
 - E. JCM (Sleeve)
15. **Repair Clamps (Stainless Steel)**
 - A. Smith Blair
 - B. Romac

16. **Cast Iron Body Couplings (Stainless Steel Bolts)**
 - A. Smith Blair
17. **Air Release Valve**
 - A. APCO
18. **Meter Boxes**
 - A. Concrete - Brooks Products or Approved Equal.
 - B. Cast Iron - Various Manufacturers.
19. **Polyethylene Encasement Tubing, 8 mil min (ANSI/AWWA C105)**
 - A. Various mfrs.
20. **Ductile Iron Body Coupling M.J. (Stainless Steel Bolts)**
 - A. U.S.
 - B. American
 - C. Smith-Blair
 - D. Tyler

1. Gravity Flow Pipes

- A. P.V.C. \leq 12 inch - SDR 26, ASTM 3034, flow line \leq 12 feet depth
- B. P.V.C. $>$ 12 inch - DR 25, C905, flowline \leq 12 feet depth
- C. P.V.C., flow line \geq 12 feet, DR 18, C905
- D. P.V.C., SDR 21, flow line \leq 12 feet ASTM D2241 with gasketed joints
- E. PVC Service Leads \leq 6 inch - Sch. 40
- F. Ductile Iron Pipe, Class 51 cement lined, C600
- G. PVC Profile Wall $>$ 21" - PSO46
- H. Polyethylene $>$ 21" - Profile Wall
- I. C C Fiberglass $>$ 18" - SN46

2. Force Main

- A. Ductile Iron Pipe, Class 51 cement lined w/40 mil polyliner
- B. P.V.C., DR 18, C900

3. Coating for Manholes (40 Mils. Minimum Thickness)

- A. Fosrok
- B. Sauereisen Inc.

4. Lift Station Submersible Pumps (By Special Approval)

- A. Flygt 3" or less

5. Lift Station Control Panels

- A. E.G. Controls
- B. Mercer Controls

6. Non-Shrink Grout

- A. Fosrok Preco Patch
- B. Master Builders Embecco

7. Manhole Covers and Rings

- A. Vulcan
- B. Neenah
- C. Western Works

8. Engineering Fabrics

- A. Various Mfrs.

9. Manhole Inserts (No Flow/In Flow Protectors)

A. Contractor Specialities and Supply Co.

10. Sewer Fittings

A. J-M Pipe / Fittings

11. Pipe Connectors / Flexible Couplings

A. Fernco

B. Insertatee

12. Manholes - Concrete Prefab (Bottoms Only)

A. Moore-Tex

13. Manholes - Fiberglass (Risers Only) (Heavy Wall - 1/2" thick)

A. Owings-Corning

B. Various mfrs.

14. Sewer Pipe - Trenchless Liners

A. CIPP - Insituform

B. Polyethylene Liner - Driscopipe

C. PVC Fold & Form - NU Pipe

D. CC Fiberglass - Hobas

- 1. Engineering Fabrics**
 - A. Various Mfrs.

- 2. Manhole Covers, Rings and Inlet Grates**
 - A. Vulcan
 - B. Neenah
 - C. Western Works

- 3. Reinforced Concrete Pipe (ASTM C76, ANSI/ASTM C443, ASTM C506, ASTM C507)**
 - A. Various Mfrs. (CL III)

- 4. Concrete Box Culverts (ASTM C789) (ASTM C850)**
 - A. Various Mfrs.

- 5. Corrugated Polyethylene and Fittings (AASHTOSPAM 294, TY S ASTM D3350)**
 - A. ADS N-12 D <12"> 24"
 - B. Hancor HI-Q D <12"> 24"
 - C. ADS "ProLink" D >12"-24"
 - D. Hancor "SurLoc" D >12" - 24"

- 6. Slope Erosion Liners**
 - A. Gabions - Baekert, Maccaferri
 - B. Grout Fabric Blankets - Fabriform, Armor Form
 - C. Confinement Mat - Geoweb
 - D. Vegetation Blanket - Excelsior, Curley - Enka Prods.
 - E. Drainage Blanket - ENKA Products

- 7. Corregated Metal Pipe (Not Approved in V.D.D. Outfall)**

- 1. Raised Pavement Markers (Class A,B,C & D)**
 - A. Apex Universal
- 2. Type Y and Type W Traffic Buttons (Ceramic only)**
 - A. Apex Universal
- 3. Raised Pavement Marker Adhesive (Two Part Epoxy)**
 - A. Various Mfrs.
- 4. Thermoplastic Pavement Markings (125 mils thick)**
 - A. Flint Trading Inc. - Premark LKF Roadmarking Material
- 5. Prefabricated Pavement Markings (125 mils thick)**
 - A. Flint Trading Inc. - Premark LKF Roadmarking Material
- 6. Thermoplastic Adhesive**
 - A. Ashland Chemicals - Pliobond 10
- 7. Crack and Joint Sealant**
 - A. Elastometric-type, Hot-pour Joint Sealant conforming to TxDOT Item 433 and TxDOT Departmental Material Specification D-9-6310.
 - B. W.R. Meadows
 - C. Sika - 2 part polymeric self leveling.
- 8. Paints**
 - A. Only Water Based conforming to TxDOT Specifications are approved for use in the City of Lake Jackson (various mfrs.)
- 9. Road Marker Posts**
 - A. Carsonite # CRM-375
- 10. Replaceable Delineator Post w/Base (Epoxy or 8" Bundy Adhesive)**
 - A. Repo Tm Model

11. Concrete Curing Membranes

- A. Liquid membrane-forming Curing Compound conforming to TxDOT Item 526 and TxDOT Departmental Material Specification D-9-8120 (various mfrs.)

12. Geotextile Fabric

- A. Paving - "Petromat" (Phillips 66)
"RoadGlas" (Owings-Corning)
- B. Stabilization - Trevira (Hoescht)
 - Mirafi (Celanese)
 - Supac (Phillips 66)

NOTE: Materials and manufactured items used in construction of a Public Works project or improvement project to be accepted for maintenance by the City shall be approved by the Department of Engineering/Public Works prior to installation. Water, sanitary, storm and street system appurtenances shall be subject to the approved items as listed in the above Approved Products List. Items not appearing on this list or designated as various manufacturers shall not be used for construction in the City of Lake Jackson and the extraterritorial jurisdiction without prior approval.

Date



**CITY OF LAKE JACKSON
DEVELOPMENT MANUAL**

SECTION: APPENDIXES

NO.: 1000

TITLE: INDEX

PAGE: 1 OF 2

EFFECTIVE DATE:

- 1001. APPENDIX 1001 – DEVELOPMENT CHECKLIST
 - 1001.1 SPECIFIC DEVELOPMENT INFORMATION
 - 1001.2 DEVELOPMENT CHECKLIST SUMMARY
 - 1001.3 STAFF PROCEDURE REVIEW & SCHEDULE
 - 1001.4 GENERAL INFRASTRUCTURE AVAILABILITY & FEE SCHEDULE
 - 1001.5-7 PRELIMINARY DETAIL CHECKLIST
 - 1001.8-10 FINAL DETAIL CHECKLIST
- 1010. APPENDIX 1010 – DESIGN REVIEW REQUIREMENT FLOW CHART
- 1020. APPENDIX 1020 – GRAPHIC STANDARDS
- 1030. APPENDIX 1030 – UTILITY LOCATIONS
 - 1030.1 TEN FEET (10') WIDE UTILITY EASEMENT
 - 1030.2 SIXTEEN FEET (16') WIDE UTILITY EASEMENT
- 1040. APPENDIX 1040 – PAVEMENT GEOMETRIC DESIGN GUIDELINES
 - 1040.1 PUBLICATION SOURCES
 - 1040.2 MEDIAN LENGTH AND MEDIAN OPENING
 - 1040.3 LEFT TURN LANE AND MEDIAN LENGTH
 - 1040.4 ROADWAY TAPERS AND TRANSITIONS

**CITY OF LAKE JACKSON
DEVELOPMENT MANUAL**

SECTION: APPENDIXES

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EFFECTIVE DATE:

- 1040.5 GEOMETRIC STREET DESIGN STANDARDS
- 1040.6 ACCELERATION AND DECELERATION LANES

- 1050. APPENDIX 1050 – NON-RESIDENTIAL DRIVEWAY – HIGHWAY ACCESS
 - 1050.1 TYPICAL ACCESS LAYOUT
 - 1050.2 RURAL AREA ILLUSTRATION
 - 1050.3 URBAN AREA ILLUSTRATION

- 1060. APPENDIX 1060 – THOROUGHFARE PLAN - 1997
 - 1060.1 FUNCTIONAL CLASSIFICATION SYSTEM

- 1070. APPENDIX 1070 – MASTER PLAN DEVELOPMENT POLICY DIAGRAM
 - 1070.1 NORTHEAST LAKE JACKSON
 - 1070.2 NORTHWEST LAKE JACKSON
 - 1070.3 SOUTHWEST LAKE JACKSON

APPENDIX 1001

CITY OF LAKE JACKSON
ADMINISTRATIVE REVIEW & COMPLETENESS CHECKLIST
PLANNING & ZONING COMMISSION

PLATTING
ZONING
SITE PLAN DEVELOPMENT
SUBDIVISION DEVELOPMENT

NAME OF SUBDIVISION OR TRACT DESCRIPTION:

TYPE OF REQUEST: AMENDMENT PLAT REPLAT VACATE
 SITE/LANDSCAPE PLAN DEVELOPMENT
 SUBDIVISION DEVELOPMENT ZONING

CLASS OF DEVELOPMENT: NON-RESIDENTIAL RESIDENTIAL

TYPE OF DEVELOPMENT: COMMERCIAL/BUSINESS INDUSTRIAL
 INSTITUTIONAL MULTI FAMILY
 SINGLE FAMILY PURZ PUD

SIZE OF DEVELOPMENT (ACRES): _____

NUMBER OF LOTS, TRACTS, UNITS, ETC: _____

OWNER OR OPTIONEE: _____

DEVELOPER'S ENGINEER: _____

DEVELOPER'S CONTACT NAME, ADDRESS, TELEPHONE & EMAIL:

ADMINISTRATIVE REVIEW DEVELOPMENT CHECKLIST SUMMARY

Development of any property lying within the City or the extraterritorial jurisdiction of the City requires steps that may include all or part of the following procedures: (re) zoning, platting, subdivision development and site plan development.

The following is a checklist of items necessary to be included in a request for any of the above steps to be considered for approval by the Planning and Zoning Commission. In some cases, some of the list items may not apply, but that decision must be made by the City Staff with guidance from the Planning and Zoning commission and not by the developer.

Request for the specific development procedure should be made when the following actions to property are being considered:

- (1) Zoning: to establish or change the land use character of the property to conform to the developers intended use and compatibility.
- (2) Platting: to divide any land into two (2) or more pieces or changing its area or boundaries in any form.
- (3) Subdivision Development: to improve subdivided land to allow for further development and ultimate intended use.
- (4) Site Development: to improve single tract land two (2) acres or more to ultimate intended use.

Some procedures may require a public hearing(s) as required by State Law.

Plats, subdivision plans and site plans (preliminary and/or final) will be submitted to the City Engineering / Planning Staff prior to the official meeting with the Planning and Zoning Commission. Plats and plans to be submitted typically shall follow the following format:

	<u>Plat</u>	<u>Site Development Plan</u>	<u>Site / Landscape Plan</u>
Scale:	1:100 or larger	1:100 or larger	1:100 or larger
Size:	24-inch x 36-inch	24-inch x 36-inch	24-inch x 36-inch
Print:	PDF / Bond / Mylar (PDF 300 dpi)	PDF / Bond / Mylar (PDF 300 dpi)	PDF / Bond / Mylar (PDF 300 dpi)
Copies:	1 / 2 / 1 Min.	1 / 2 / 1 Min.	1 / 2 / 1 Min.

STAFF PROCEDURE REVIEW

Predevelopment Meeting Required: Yes No Opt
Existing Zoning: E1 R1 R2 R3 R4 B1 B1A B2
 B3 C1 C2 T1 M1 M2 PURZ PUD
 MH1

Zoning Request: _____

Platting Request: Amendment Not Required Plat Replat

Public Hearing Required: Yes No

Public Hearing Request: Replat (Re) Zoning Not Required

Planning & Zoning Action Required:

Zoning Complete Not Required Administrative Review
Platting Complete Not Required Administrative Review
Site Development Complete Not Required Administrative Review
Landscape Development Complete Not Required Administrative Review
Subdivision Plan Complete Not Required Administrative Review

Development Procedure Timeline (Tentative)

Call for Public Hearing Date: _____
Public Hearing Date: _____
(Re) Zoning 1st Meeting Date: _____
(Re) Zoning 2nd Meeting Date: _____
(Re) Zoning Council Approval Date: _____
Plat/Replat File Date: _____
Plat Amendment File Date: _____
Site Development Plan File Date: _____
Site / Landscape Plan File Date: _____
Site / Landscape Amendment File Date: _____
Subdivision Plan Date: _____

Pre-Development Meeting

Prospectus Provided: Yes No Not Required / Previous
Development Manual Provided: Yes No Not Required / Previous

Discussion Items:

Utilities:

Water Availability: _____

Special Encumbrances Remarks

(Master Plan Required): _____

(Oversize): _____

(Fire Loop): _____

(Other): _____

Sewer Availability: _____

Special Encumbrances Remarks

(Master Plan Required): _____

(Oversize): _____

(Lift Station): _____

(Other): _____

Utilities (continued):

Storm Drainage Availability: _____

Special Encumbrances Remarks

(Master Plan Required): _____

(100-Year Detaining Required): _____

(Drainage System): _____

(Other): _____

Traffic: _____

Street & Facility Access: _____

Special Encumbrances Remarks

(Master Plan Required): _____

(Arterial Street): _____

(Left Turn Lanes): _____

(Median Crossovers): _____

(Access Drives): _____

Parks/Schools: _____

Special Encumbrances Remarks

(Park Land Required): _____

(Park Land Area Required): _____

(Fee Option in Lieu): _____

(School Land Required): _____

Miscellaneous: _____

Special Encumbrances Remarks

(Sidewalks & ADA Ramps): _____

(Bridge / Culvert Crossing): _____

(Flood Berms): _____

(Other): _____

Landscape: _____

Special Encumbrances Remarks

(Ordinance Required): _____

(Other): _____

Development Procedure Fees

Schedule

Public Hearing (Zoning)	\$ _____	\$ _____	\$300 + Cost of Advertising Advertisement Dates
Public Hearing (Replat)	\$ _____	\$ _____	\$300 + Cost of Advertising Advertisement Dates

Admin Review (Plat)	\$ _____	\$100
Admin Review (Replat)	\$ _____	\$100
Admin Review (Amendment)	\$ _____	\$100

Final Approval (Plat)	\$ _____	\$150
Final Approval (Replat)	\$ _____	\$150
Final Approval (Amendment)	\$ _____	\$150

Admin Review (Site / Landscape)	\$ _____	\$100
Final Approval (Site / Landscape)	\$ _____	\$150

Cash In Lieu of Park Land	\$ _____	\$18,000 per acre (Residential only)
Special / Conditional Fee	\$ _____	\$750 / \$2,500 (Telecom)
Recording Fees (Tax Certificate)	\$ _____	\$26 x (Number of Certificates)
Total Fees:	\$ _____	

Project Name: _____

Date: _____

Action Taken:

Billing Contact Name & Address:

ADMINISTRATIVE REVIEW CHECKLIST

	REQUIRED		COMPLETED		ACTION NEEDED
	Y	N	Y	N	
PRE-PRELIMINARY PROCESS					
Pre-Development Meeting					
Public Hearing (Zoning)					
Public Hearing (Replat)					
Zoning					
PLATTING DEVELOPMENT					
Submittal within Timeline	X				
Bond Paper Prints Provided (2 sets / 24 x 36) and PDF (300 dpi)	X				
Contents					
Name of Subdivision on Plat Title	X				
Location & Vicinity Map	X				
Name of Developer or Optionee	X				
Boundary Lines (lengths)	X				
Lot / Tract Dimensions (width & depth)	X				
Building Lines & Dimensions	X				
Block & Lot Numbers	X				
Physical Features	X				
Park Area & Acreage	X				
Utility Easements (widths)	X				
Drainage R-O-W (widths)	X				
Street R-O-W (widths)	X				
Adjacent Property Land Use / Legal Description	X				
Street Names	X				
North Arrow & Scale	X				
Coordinate System (Tx State Plane Coordinate System in US Feet / Ref NAD83)	X				
Benchmarks (Vertical Datum Ref NAVD88)	X				
Owners Certificate of Dedication	X				
Surveyors Certification	X				
Notary Signature Certification(s)	X				
Planning & Zoning Commission Signature Block	X				
Drainage District Certification & Signature Block	X				
SUBDIVISION DEVELOPMENT					
Submittal within Timeline	X				
Bond Paper Prints Review (2 sets / 24 x 36) and PDF (300 dpi)	X				
Content – Construction Plans					
Plat	X				
Drainage Area Map & Hydraulic Data Analysis	X				
Detention Analysis & Plan	X				
Overall Paving & Drainage Layout	X				
Overall Water & Sewer Layout	X				

ADMINISTRATIVE REVIEW CHECKLIST

	REQUIRED		COMPLETED		ACTION NEEDED
	Y	N	Y	N	
Content – Construction Plans (continued)					
Overall Final Grading Plan	X				
Overall Staging Plan	X				
Plans & Profiles	X				
Pollution Prevention Plan	X				
Special Construction Details	X				
Standard Construction Details	X				
Construction Specifications	X				
Staff Review	X				
SITE DEVELOPMENT					
Submittal within Timeline	X				
Bond Paper Print Review (2 sets / 24 x 36) and PDF (300 dpi)	X				
Content – Site Plan					
Plat	X				
Building / Improvement Footprint	X				
Parking & Pavement Layout	X				
Parking Spaces Tabulation Summary	X				
Site & Building Space Area Tabulation Summary	X				
Planning & Zoning Commission Signature Block	X				
Special Notes	X				
Name of Site or Site Title	X				
Name of Owner or Developer	X				
Drainage & Utility Layout	X				
Drainage Area & Hydraulic Data Analysis	X				
Civil Construction Plans & Details	X				
Exterior Lighting Iso-Candle Plot Plan	X				
Landscape Plan					
Submittal within Timeline	X				
Landscape Area Layout	X				
Landscape Area Dimensions	X				
Landscape Area Square Footage	X				
Planting Type & Location Plan	X				
Tree Type & Location Plan	X				
Berm Location Plan	X				
Landscape Area Tab Summary	X				
Tree Count Tab Summary	X				
Tree Protection Survey	X				
Tree Credit Summary	X				
Detail Landscape Bill of Material	X				
Special Notes	X				
Planning & Zoning Commission Signature Block	X				
Name of Site or Site Title	X				

ADMINISTRATIVE REVIEW CHECKLIST

REQUIRED		COMPLETED		ACTION NEEDED
Y	N	Y	N	

Content – Landscape Plan (continued)				
Name of Site Owner or Developer	X			
Special Landscape Details	X			
Staff Review	X			

RECOMMEND FOR COMPLETENESS REVIEW CHECKLIST: FILE YES NO

Date

Staff Signature

CITY STAFF REVIEW COMMENTS & RECOMMENDATIONS:

Recommend for Preliminary Approval

Date

Chairman's Signature

COMPLETENESS CHECKLIST

	REQUIRED		COMPLETED		ACTION NEEDED
	Y	N	Y	N	
STAFF / DEVELOPER FINAL REVIEW					
Platting Development					
Submittal within Time Line	X				
Bond Paper Prints Provided (2 sets / 24 x 36)	X				
Contents					
Name of Subdivision or Plat Title	X				
Location & Vicinity Map	X				
Name of Developer or Optionee	X				
Boundary Lines (lengths)	X				
Lot / Tract Dimensions (width & depth)	X				
Building Lines & Dimensions	X				
Block & Lot Numbers	X				
Physical Features	X				
Park Area & Acreage	X				
Utility Easements (widths)	X				
Drainage R-O-W (widths)	X				
Street R-O-W (widths)	X				
Adjacent Property Land Use / Legal Description	X				
Street Names	X				
North Arrow & Scale	X				
Coordinate System (Tx State Plane Coordinate System in US Feet / Reference NAD83)	X				
Benchmarks (Vertical Datum Reference NAVD88)	X				
Owners Certificate of Dedication	X				
Surveyors Certification	X				
Notary Signature Certification(s)	X				
Planning & Zoning Commission Signature Block	X				
Drainage District Certification & Signature Block	X				
SUBDIVISION DEVELOPMENT					
Submittal within Timeline	X				
Bond Paper Print Review (2 sets / 24 x 36) and PDF (300 dpi)	X				
Content - Construction Plans					
Plat	X				
Drainage Area Map & Hydraulic Data Analysis	X				
Detention Analysis & Plan	X				
Overall Paving & Drainage Layout	X				
Overall Water & Sewer Layout	X				
Overall Final Grading Plan	X				
Overall Staging Plan	X				

COMPLETENESS CHECKLIST

	REQUIRED		COMPLETED		ACTION NEEDED
	Y	N	Y	N	
Content – Construction Plans (continued)					
Plans & Profiles	X				
Pollution Prevention Plan	X				
Special Construction Details	X				
Standard Construction Details	X				
Construction Specifications	X				
Staff Review	X				
SITE DEVELOPMENT					
Submittal within Timeline	X				
Bond Paper Print Review (2 sets / 24 x 36) and PDF (300 dpi)	X				
Content – Site Plan					
Plat	X				
Building / Improvement Footprint	X				
Parking & Pavement Layout	X				
Parking Space Tabulation Summary	X				
Site & Building Space Area Tabulation Summary	X				
Planning & Zoning Commission Signature Block	X				
Special Notes	X				
Name of Site or Site Title	X				
Name of Owner or Developer	X				
Drainage & Utility Layout	X				
Drainage Area & Hydraulic Data Analysis	X				
Civil Construction Plans & Details	X				
Exterior Lighting Iso-Candle Plot Plan	X				
Content – Landscape Plan					
Submittal within Timeline	X				
Landscape Area Layout	X				
Landscape Area Dimensions	X				
Landscape Area Square Footage	X				
Planting Type & Location Plan	X				
Tree Type & Location Plan	X				
Berm Location Plan	X				
Landscape Area Tab Summary	X				
Tree Count Tab Summary	X				
Tree Protection Survey	X				
Tree Credit Summary	X				
Detail Landscape Bill of Material	X				
Special Notes	X				
Planning & Zoning Commission Signature Block	X				
Name of Site or Site Title	X				
Name of Site Owner or Developer	X				
Special Landscaping Details	X				
Staff Review	X				

COMPLETENESS CHECKLIST

REQUIRED		COMPLETED		ACTION NEEDED
Y	N	Y	N	

DOCUMENTATION SUBMITTAL				
Completed, Approved Plans & Specifications (2 each)				
Letter of Land Need – School District Board				
Letter of Service Availability (CenterPoint Gas, CenterPoint Electric, AT&T and Cable)				
Letter of Compliance Sewer Design Review - TNRCC				
Copy of Deed Restrictions (2 each)				
Tax Certificates (originals)				
Filing Plat(s) with Signatures (1 - minimum)				
Filing Site Plan(s) with Signatures (1 - minimum)				
Total Fees Paid				

CITY STAFF REVIEW COMMENTS & RECOMMENDATIONS:

FILE

RECOMMENDED AS ADMINISTRATIVELY COMPLETE:

YES NO

Date

Staff Signature

RECOMMENDED FOR FINAL APPROVAL:

Date

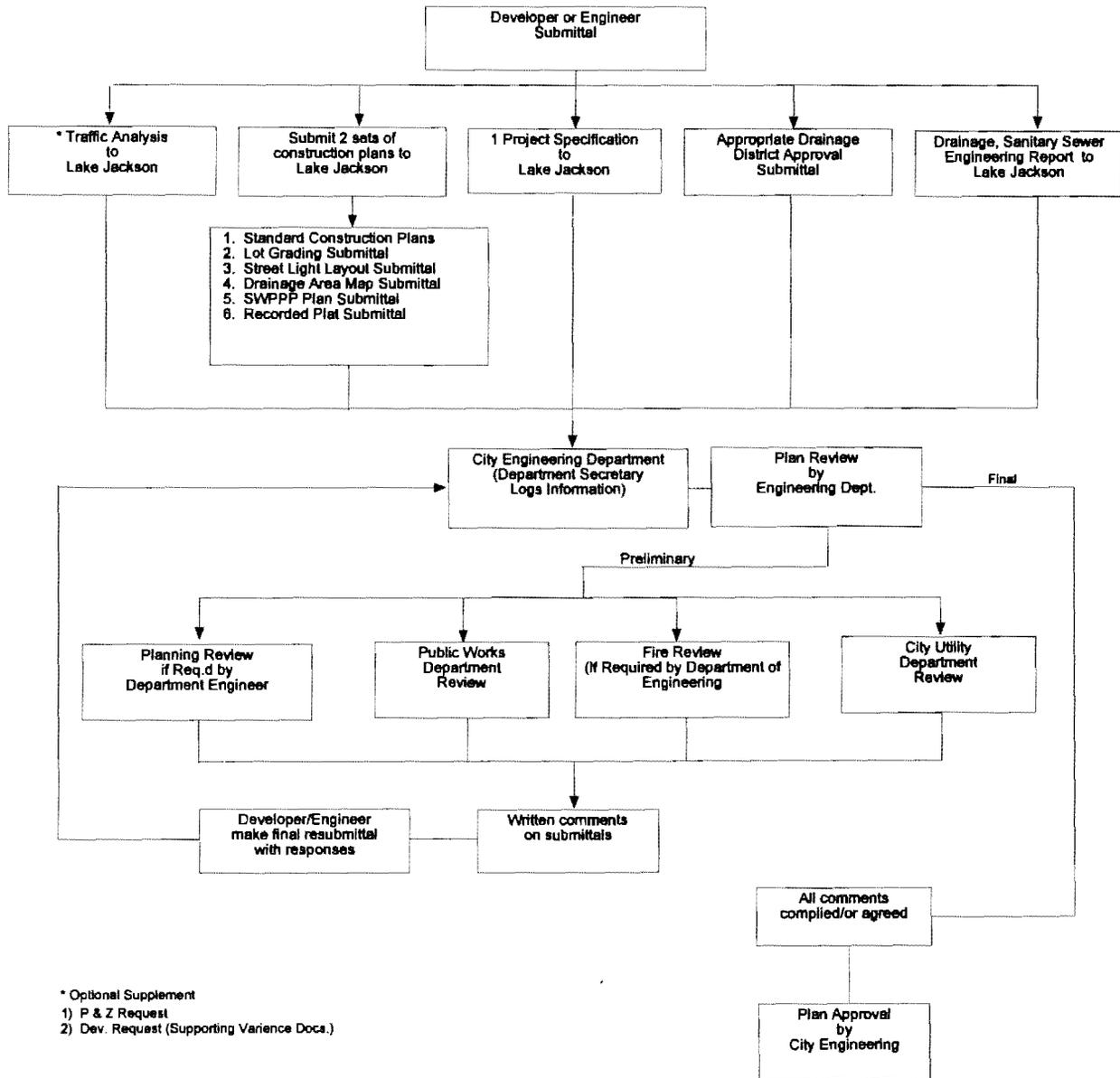
Chairman's Signature

RECOMMENDATION BY PLANNERS TO COUNCIL FOR REZONING:

Date

Chairman's Signature

APPENDIX 1010



* Optional Supplement
 1) P & Z Request
 2) Dev. Request (Supporting Variance Docs.)

APPENDIX 1020
GRAPHIC STANDARDS

SOURCE:

CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS,
"GENERAL DESIGN REQUIREMENTS FOR SANITARY SEWERS,
STORM SEWERS, WATER LINES, AND PAVING"

SECTION IIIB - GRAPHIC STANDARDS

The following graphic standards for plan and profile shall apply to all drawings of 1" = 20' scale. For smaller scale drawings, use proportionally smaller pen sizes.

1. Standards common to all departments for existing improvements on base drawings. Line weight shall be No. 0 K&E Rapidograph, Leroy or equal pen unless otherwise shown. Smaller pen sizes for lettering may be used for clarity.

1.1 Plan View

Property Line (No. 3 Pen)



Ditches, Left and Right (Freehand)



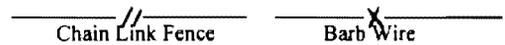
Center Line of Right-of-Way



Transit Line



Fence Line



Edge Concrete



Curb Line



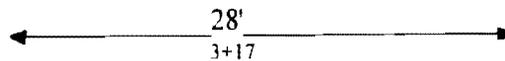
Edge Asphalt (Freehand)



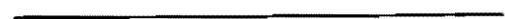
Edge Shell or Gravel (Freehand)



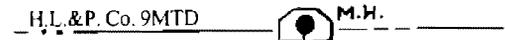
Dimension Line



Theoretical Property Line (No. 2 Pen)



H.L. & P. Co. Conduit



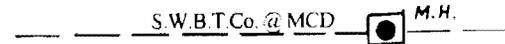
Gas Line



Western Union Conduit



S.W.B.T. Conduit



Railroad



Lot Lines



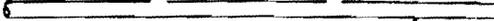
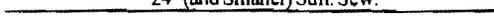
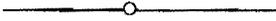
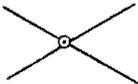
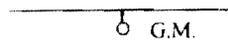
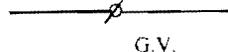
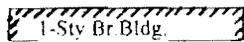
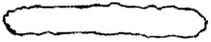
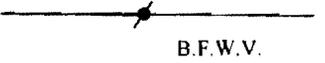
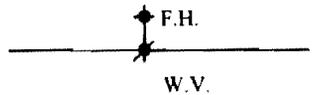
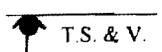
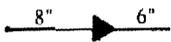
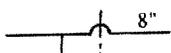
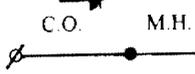
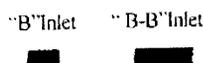
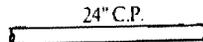
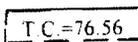
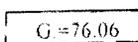
Match Line (No. 3 Pen)



Cable TV



SECTION IIIB - GRAPHIC STANDARDS (Continued)

Fill Easement (No. 2 Pen)	
Drainage Easement (No. 2 Pen)	
Water Line	<p>24" (and Smaller) Water </p> <p>30" (and Larger) Water </p>
Sanitary Sewer Line	<p>24" (and Smaller) San. Sew. </p> <p>30" (and Larger) San. Sew. </p>
Storm Sewer Line	<p>24" (and Smaller) Strm. Sew. </p> <p>30" (and Larger) Strm. Sew. </p>
Iron Pipe or Iron Rod Monuments (Red Ink for Property Corner)	 1/4" I.P.
Point of Intersection (P.I.)	
Point of Curve (P.C.) Or Point of Tangency (P.T.)	
Power Pole	
Power Pole Down Guy	
Gas Meter	 G.M.
Gas Valve	 G.V.
Header	
Building	 1-Story Br. Bldg.
Tree	
Hedge	
Water Meter	
Water Valve (Gate)	 W.V.
Water Valve (Butterfly)	 B.F.W.V.
Fire Hydrant	 F.H. W.V.
Tapping Sleeve & Valve	 T.S. & V.
Reducer	 8" 6"
Round Connections	 8"
Sanitary Sewer Manhole and Cleanout	 C.O. M.H.
Storm Sewer Manhole	 M.H.
Storm Sewer Inlets	 "B" Inlet "B" Inlet
Culvert Pipe	 24" C.P.
Top of Curb or Gutter Line Elev.	<p> T.C.=76.56</p> <p> G.=76.06</p>

SECTION IIIB - GRAPHIC STANDARDS (Continued)

1.2 Profile View

North or East Property Line



South or West Property Line



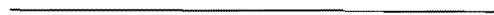
North or East Ditch or Curb



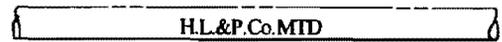
South or West Ditch or Curb



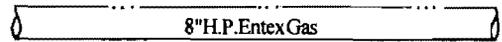
Center Line of Right-of-Way



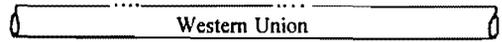
H.L.&P. Co. Conduit



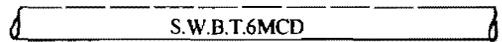
Gas Line



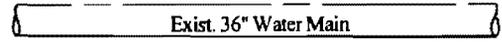
Western Union



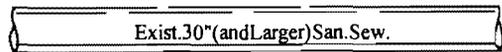
S.W.B. Telephone Conduit



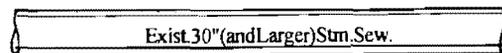
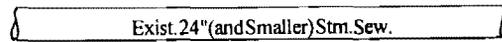
Water Line



Sanitary Sewer Line



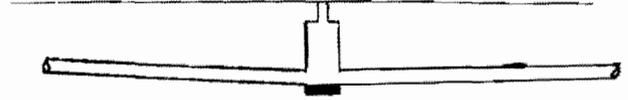
Storm Sewer Line



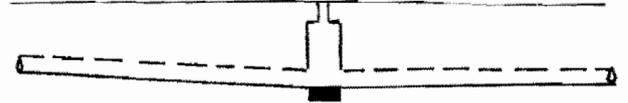
NOTE: Pipe less than four inches (4") in diameter need not be shown in profile.

SECTION IIIB - GRAPHIC STANDARDS (Continued).

H.L.&P. Co. Manhole



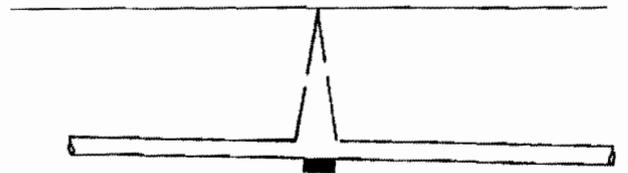
S.W.B. Telephone Manhole



Sanitary Sewer Manhole and Cleanout



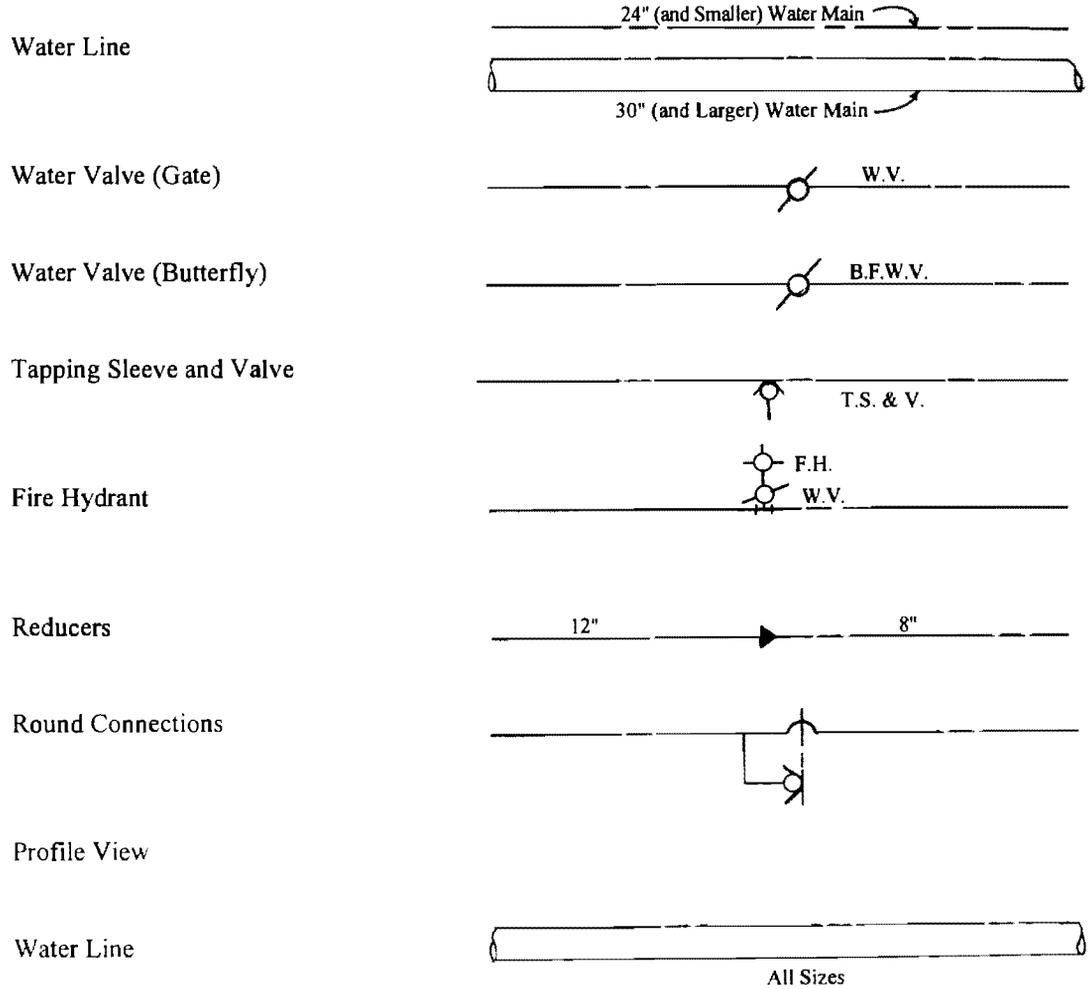
Storm Sewer Manhole



SECTION IIIB - GRAPHIC STANDARDS (Continued)

2. The following standards are to be used for all proposed water line improvements. Use a No. 3 pen for all proposed improvements. All fitting descriptions shall be shown in a box with arrow to the fitting or group of fittings. Smaller pen sizes for lettering may be used for clarity.

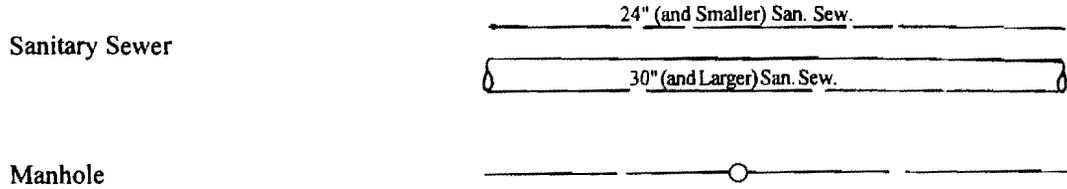
2.1 Plan View



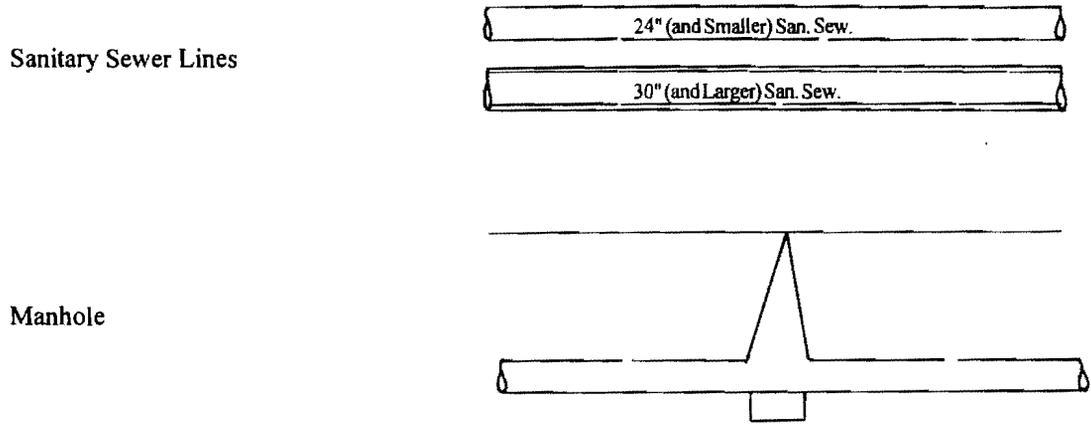
SECTION IIIB - GRAPHIC STANDARDS (Continued)

3. The following standards are to be used for all proposed sanitary sewer improvements. Use a No. 3 pen for all proposed improvements. Smaller pen sizes for lettering may be used for clarity.

3.1 Plan View



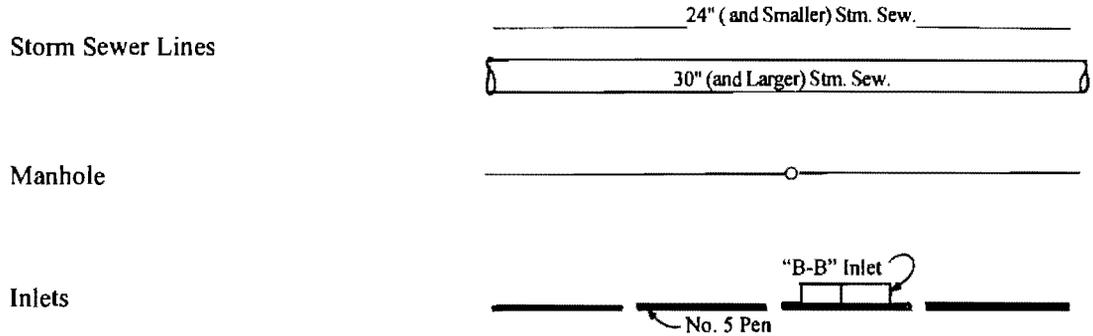
3.2 Profile View



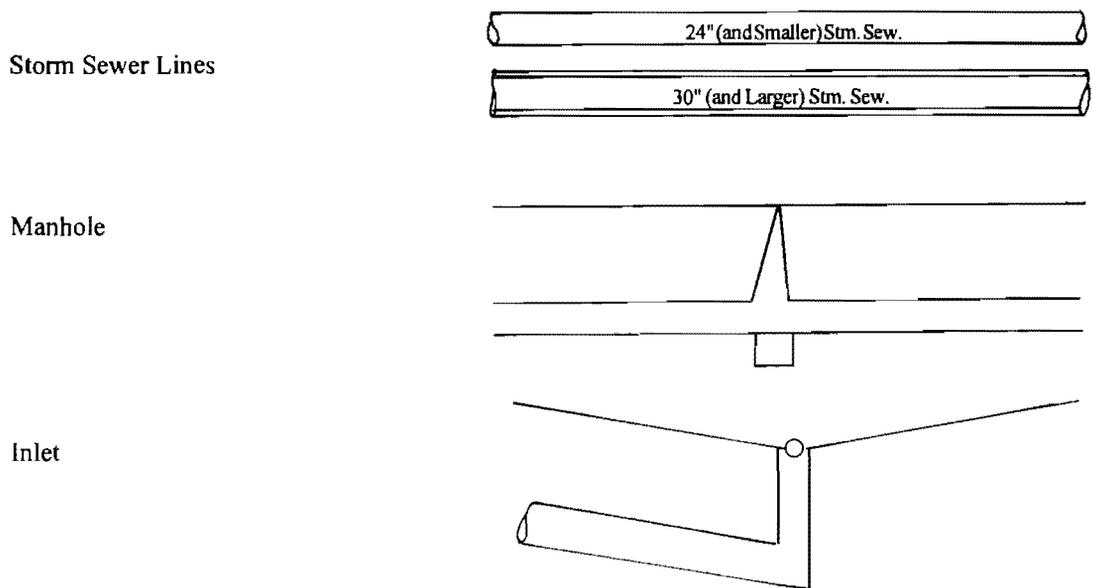
SECTION IIIB - GRAPHIC STANDARDS (Continued)

4. The following standards are to be used for all proposed storm sewer improvements. Use a No. 3 pen for all proposed improvements. Smaller pen sizes for lettering may be used for clarity.

4.1 Plan View



4.2 Profile View

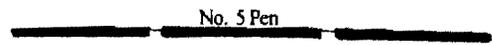


SECTION IIIB - GRAPHIC STANDARDS (Continued)

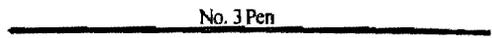
5. The following standards are to be used for all proposed paving improvements. Use pen size as noted. Smaller pen sizes for lettering may be used for clarity.

5.1 Plan View

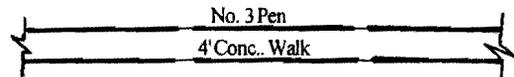
Face of Curb



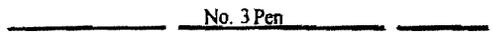
Edge of Pavement



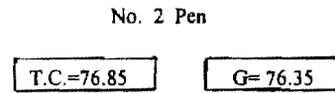
Concrete Walk



Concrete Header

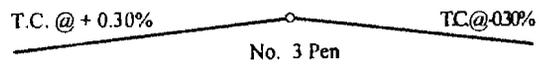


Top of Curb or
Gutter Elevation



5.2 Profile View

Top of Curb or Center Line
of Open Ditch Paving



APPENDIX 1030

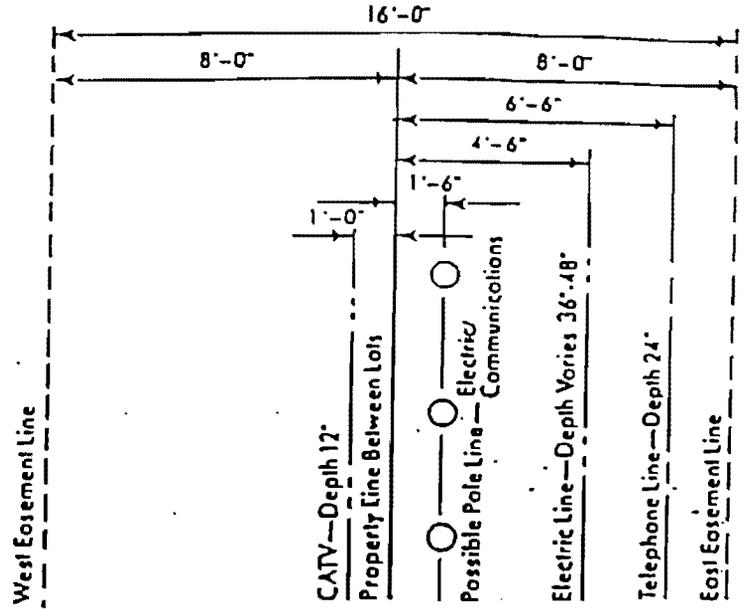
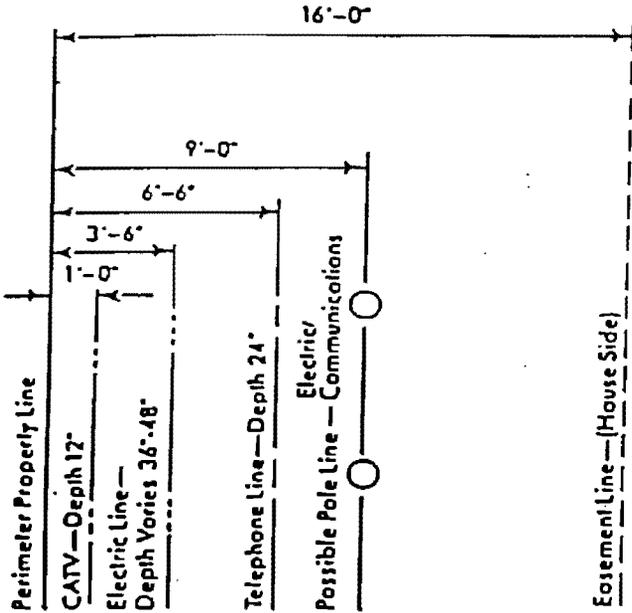
UTILITY LOCATIONS

SOURCE :

CITY OF HOUSTON, DEPARTMENT OF PUBLIC WORKS,
"GENERAL DESIGN REQUIREMENTS FOR SANITARY SEWERS,
STORM SEWERS, WATER LINES, AND PAVING"
WITH REVISIONS BY CITY OF LAKE JACKSON ENGINEERING/PUBLIC WORKS

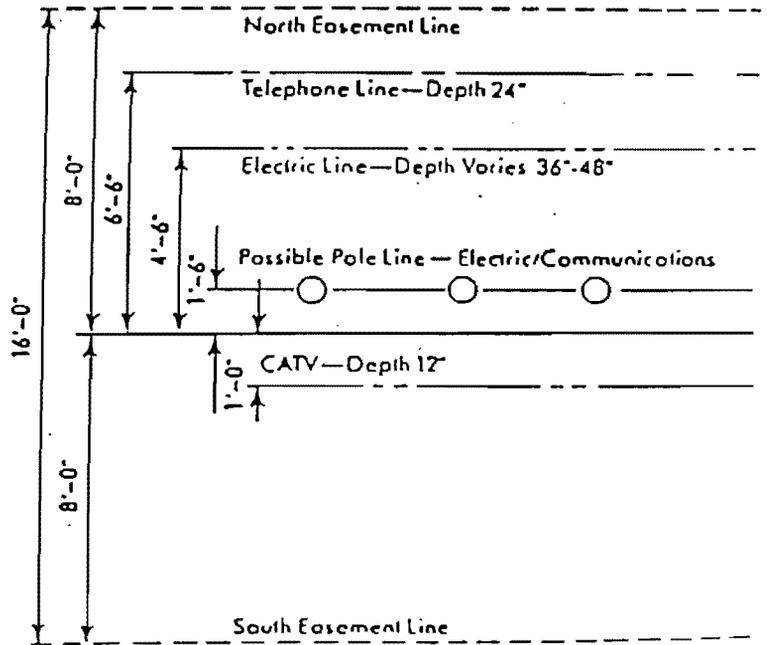
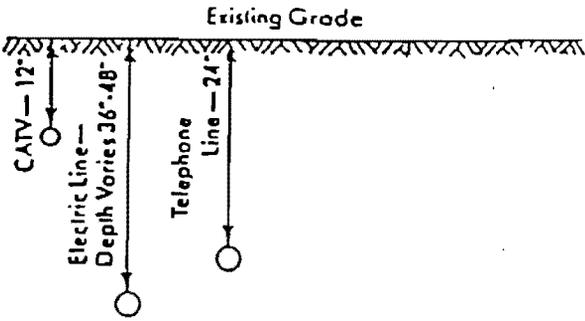
SECTION VIA - BACK LOT UTILITY LOCATIONS (Continued)

1.1. SIXTEEN - FOOT (16') WIDE EASEMENT



PERIMETER EASEMENT

BACK to BACK EASEMENT



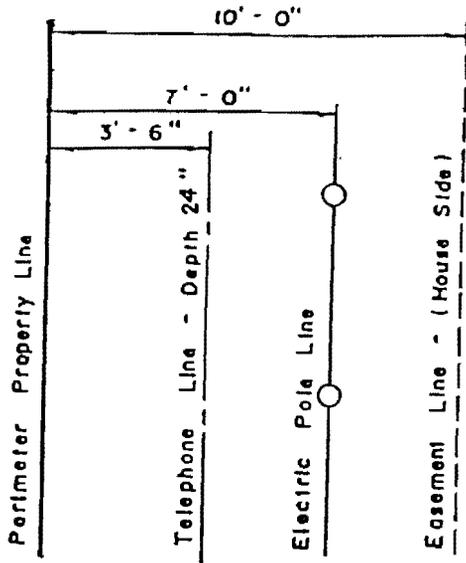
TYPICAL INSTALLATION DEPTHS

BACK to BACK EASEMENT

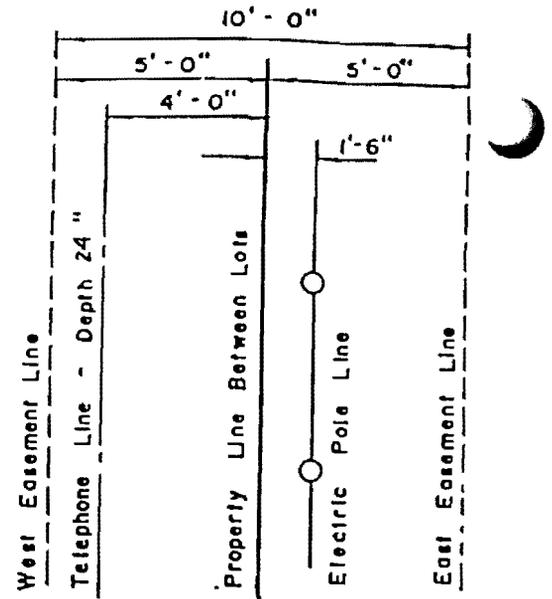
Utilities are normally installed as shown but depth may vary due to fill or cut by others. Maintain minimum 4" clearance between all utility lines extending from easement to house/building.

All wet distribution lines have been omitted. The City of Lake Jackson do not permit water, sanitary sewer or storm drain line within utility easements.

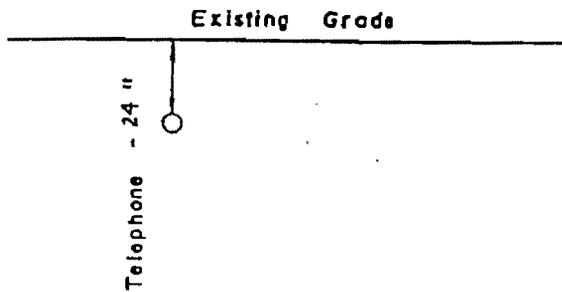
Usually and typically gas lines are located within the public street right-of-way.



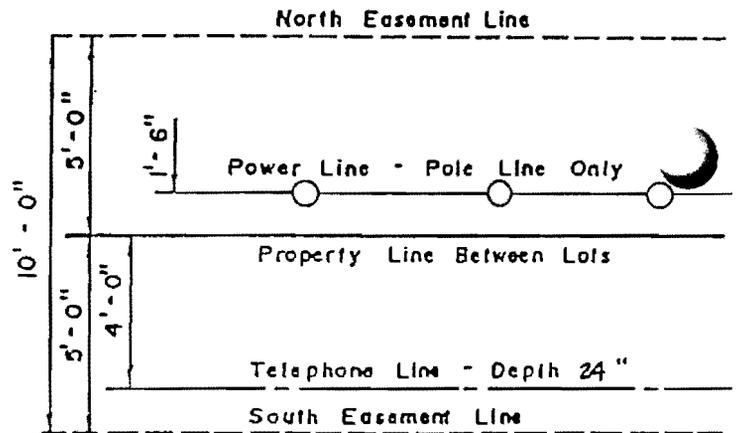
PERIMETER EASEMENT



BACK to BACK EASEMENT



TYPICAL INSTALLATION DEPTHS



BACK to BACK EASEMENT

UTILITIES ARE NORMALLY INSTALLED AS SHOWN BUT DEPTH MAY VARY DUE TO FILL OR CUT BY OTHERS.

Maintain minimum 4" clearance between all utility lines extending from easement to house/building.

All wet distribution lines have been omitted. The City of Lake Jackson do not permit water, sanitary sewer or storm drain line within utility easements.

Usually and typically gas lines are located within the public street right-of-way.

10' UTILITY EASEMENT

APPENDIX 1040

PAVEMENT GEOMETRIC DESIGN GUIDELINES

SOURCE :

CITY OF HOUSTON AND HARRIS COUNTY,
"GEOMETRIC DESIGN GUIDELINES FOR SUBDIVISION STREETS"
WITH REVISIONS BY THE CITY OF LAKE JACKSON ENGINEERING/PUBLIC WORKS

CITY OF LAKE JACKSON
"THOROUGHFARE DEVELOPMENT PLAN - LATEST UPDATE
"COMPREHENSIVE MASTER PLAN - 1997 & REVISIONS

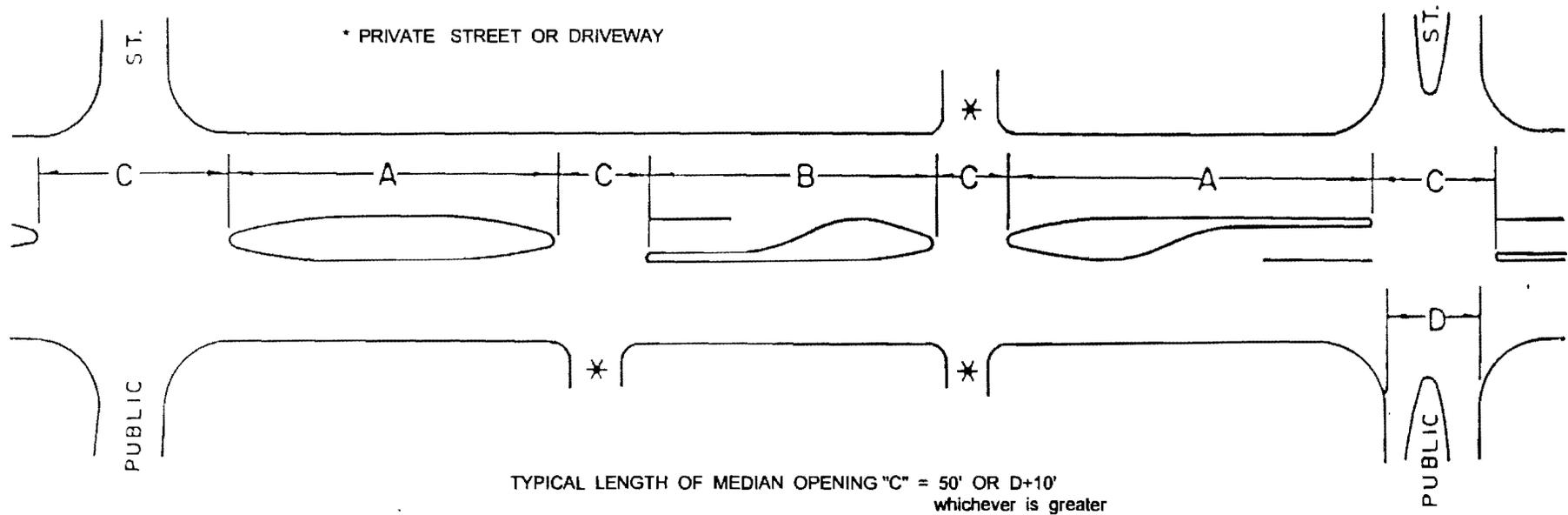
THE GUIDELINES PRESENTED IN THIS DOCUMENT INCLUDE THE MOST OFTEN REQUESTED INFORMATION REGARDING GEOMETRIC DESIGN OF SUBDIVISION STREETS. DESIGNATED MAJOR THOROUGHFARES (1) AND STREETS (1) WITHIN SUBDIVISIONS AND EXISTING ACCESS STREETS SHALL BE CONSIDERED FOR SPECIAL DESIGN FEATURES AND MAY REQUIRE HIGHER DESIGN CRITERIA THAN SHOWN HEREIN. ALSO DESIGN FEATURES NOT SHOWN IN THESE GUIDELINES SHOULD BE CONSIDERED SPECIAL DESIGN FEATURES.

IT IS ADVISABLE TO CONSULT WITH THE APPROPRIATE AGENCIES AND REVIEW THE FOLLOWING PUBLICATIONS TO DETERMINE ADEQUATE THOROUGHFARE REQUIREMENTS AND SPECIAL DESIGN FEATURES.

- * RECOMMENDED GUIDELINES FOR SUBDIVISION STREETS, INSTITUTE OF TRANSPORTATION ENGINEERS, 1984.
- * GUIDELINES FOR URBAN MAJOR STREETS DESIGN, INSTITUTE OF TRANSPORTATION ENGINEERS, 1984.
- * A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, AASHTO, 1984.
- * TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) STATE DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION, 1980.

(1) DESIGNATED ROADWAY APPEARING ON THE THOROUGHFARE PLAN, CITY OF LAKE JACKSON PLANNING COMMISSION.

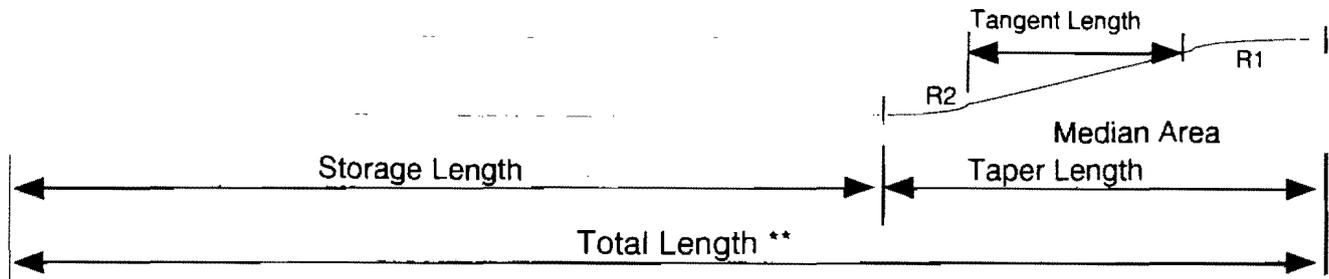
TYPICAL LENGTH OF MEDIAN AND MEDIAN OPENING



MINIMUM ACCEPTABLE MEDIAN LENGTH FOR TYPE OF STREET

IF PLANNED DIVIDED STREET IS:	PURPOSE OF MEDIAN INTERRUPTION			
	MAJOR STREET / THOROUGHFARE (A)	COLLECTOR STREET (A)	LOCAL STREET (A)	PRIVATE STREET OR DRIVEWAY (B)
MAJOR STREET / THOROUGHFARE	350'	300'	300'	300'
COLLECTOR STREET	300'	250'	250'	250'

Lengths of Left Turn Lanes and Medians ¹



$R1 = 2 R2$ (approx)
 Tangent Length = (1/3 to 1/2) (taper length)
 Taper length and storage length from table.

Lengths of Left Turn Lanes - Urban Streets ***

Design Speed (mph)	Taper Length (ft) minimum	Storage Length (ft) ****			
		Signalized		Non-Signalized	
		min.	des.	min.	des.
30	80	*See	170	50	170
40	125	Note	245	75	245
50	180	Below	320	100	320

- * Based on design hour volume, Storage Length = 0.63 to 0.83 multiplied by left turn peak hour volume.
- ** Total length of left turn lane = Storage Length + Taper Length
- *** Applicable to speed change lanes to accommodate left or U-turns at median openings or intersections; applies also to speed change lanes for right turns where desired.
- **** Block spacing may dictate lesser values.

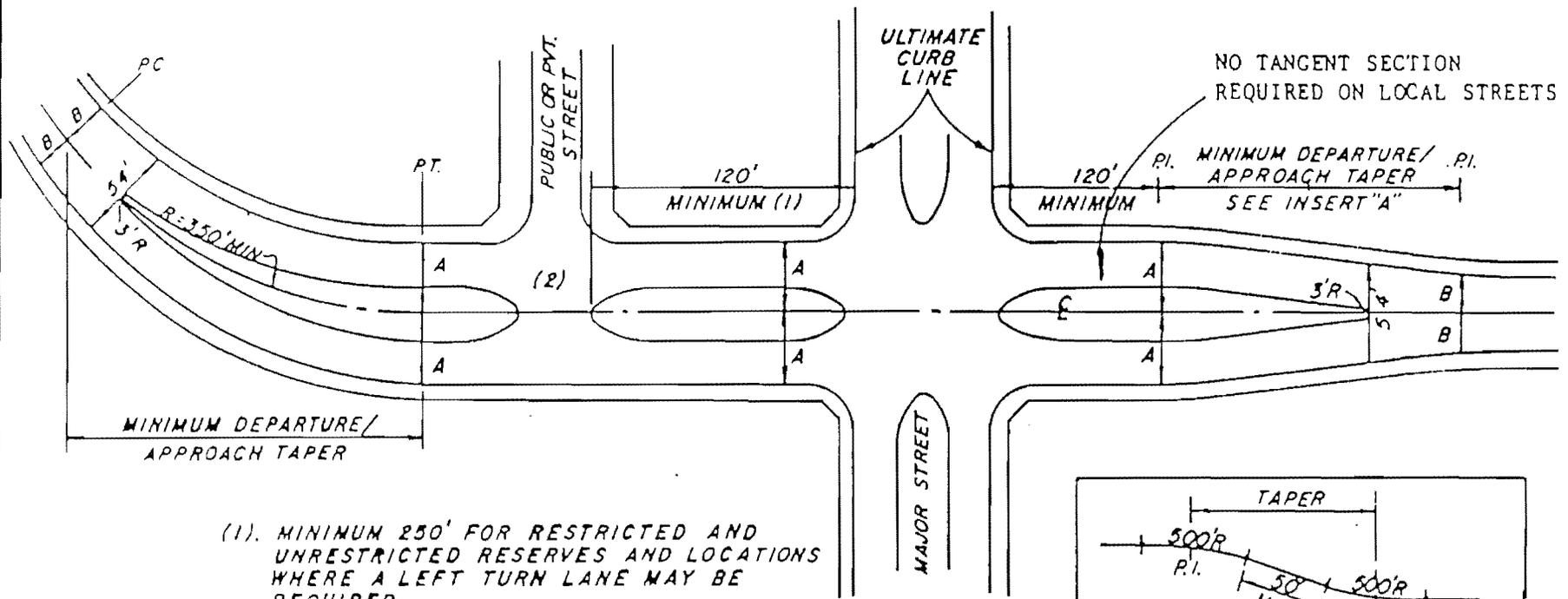
Lengths of Median Speed Change Lanes Multi-lane Rural Highways

Turning ADT, vpd	150	300	500	750
Minimum Storage length, feet	50	100	175	250
Design Speed	50	60	70	
Taper length, feet	180	245	320	

Note: For low volume median openings, such as those serving private drives or U-turns, taper length of 180' may be used regardless of main lane design speed.

1 Taken from "Highway Design Division Operations and Procedures Manual".

ROADWAY TAPERS FOR SUBDIVISION STREETS



- (1). MINIMUM 250' FOR RESTRICTED AND UNRESTRICTED RESERVES AND LOCATIONS WHERE A LEFT TURN LANE MAY BE REQUIRED.
- (2). MEDIAN OPENING MAY NOT BE ALLOWED IF MEDIAN IS LESS THAN 250' IN LENGTH.

NOTE:

a. APPROACH AND DEPARTURE TAPER REQUIREMENT:

$$L = \frac{WS^2}{60}$$

WHERE L = LENGTH IN FEET
S = SPEED IN M.P.H.

For S < 40 W = LATERAL OFFSET IN FEET
S = 30 M.P.H. MINIMUM DESIGN SPEED FOR SUBDIVISION STREETS

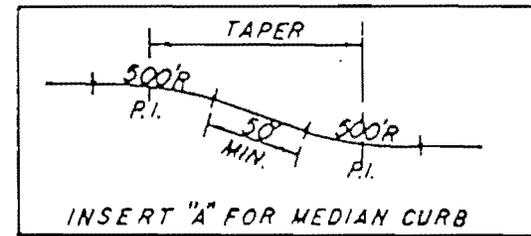
$$W = A - B$$

b. 350' MINIMUM CENTERLINE RADIUS FOR HORIZONTAL CURVE WITH APPROACH OR DEPARTURE TAPERS

c. Approach and departure taper requirement

$$S \geq 45$$

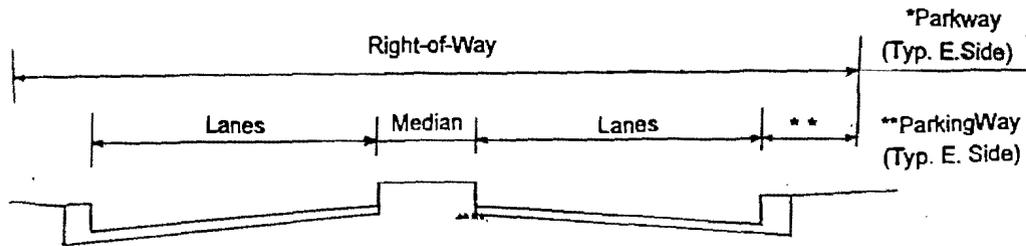
$$L = SW$$



QUICK REFERENCE GUIDE (30 MPH)

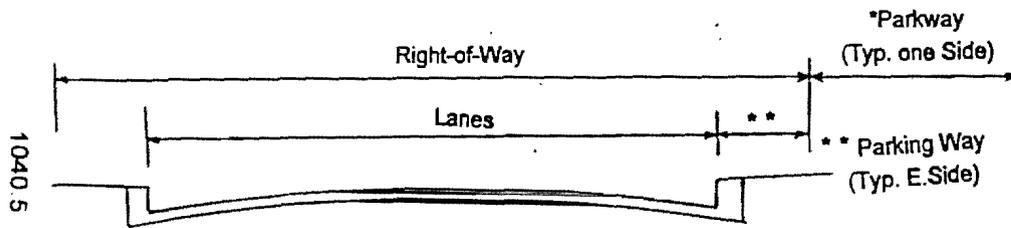
ROADWAY CROSS SECTION (FEET)		TAPER $L = \frac{WS^2}{60}$ (FEET)
A + A	B + B	
80	60	150
80	40	300
80	27	400
70	40	225
70	27	325
60	40	150
60	27	250
40	27	100

GEOMETRIC STREET SIGN STANDARDS (Minimum Standards)



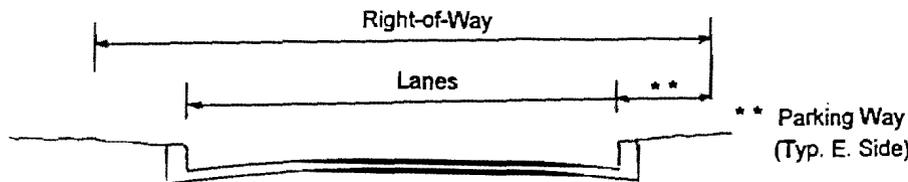
DIVIDED ROADWAYS Arterials

- P6D - Principal Arterial, 6 Lanes, Divided
- P4D - Principal Arterial, 4 Lanes, Divided
- P4DWP - Principal Arterial, 4 Lanes, Divided with Parkway
- P4DIC - Principal Arterial, 4 Lanes, Divided / Commercial



UNDIVIDED ROADWAYS Arterials - Collectors

- M4U - Minor Arterial, 4 Lanes, Undivided
- C4U - Major Collector, 4 Lanes, Undivided
- C2U - Minor Collector, 2 Lanes, Undivided
- C2UWP - Minor Collector, 2 Lanes, Undivided with Parkway



LOCAL STREET

- L2U - Residential, 2 Lanes, Undivided
- * Parkway - Greenway Area

Design Element	Roadway Type							
	P6D	P4D	M4U	C2UWP	C2U	L2U	P4DWP	P4DIC
Number Traffic Lanes	6	4	4	2	2	2	4	4
Left Turn Lane Width	12	12	-	-			12	12
Lane Width	12	12	12	29	34	26	12	12
(Ft.)				F-F	F-F	F-F		
R.O.W. Width (Ft.)	120	100	100	50	70	60	130	90
Design Speed (MPH)	40-	40-	35-	30-	30-	20-	40-	40-
Max. Grade (%)	6	6	6	8	8	10	6	6
Stopping Sight Distance (Ft.)	325-	325-	250-	200-	200-	125-	325-	325-
Horizontal Curvature Min.	2000	2000	1050	850	850	450	2000	2000
Radius (Ft.)						or 300(*)		
Vertical Clearance (Ft.)	15.5	15.5	15.5	15.5	16	15.5	15.5	15.5
Lateral Clearance (Ft.)	6	6	6	6	6	-	6	6
Min. Median Width (Ft.)	12	12	-	-	-	-	12	14
Parking Way Emergency Zone Width (Ft.)	10	14	26	10	18	16.5	14	14
Parkway Width (Ft.)	-	-	-	50	-	-	50	-

(*) For local streets less than 2,000' long.'

* Variance to these shall be applied and approved by the Traffic Commission with adjustment of design speed and council regulation.

Acceleration and Deceleration Lanes*

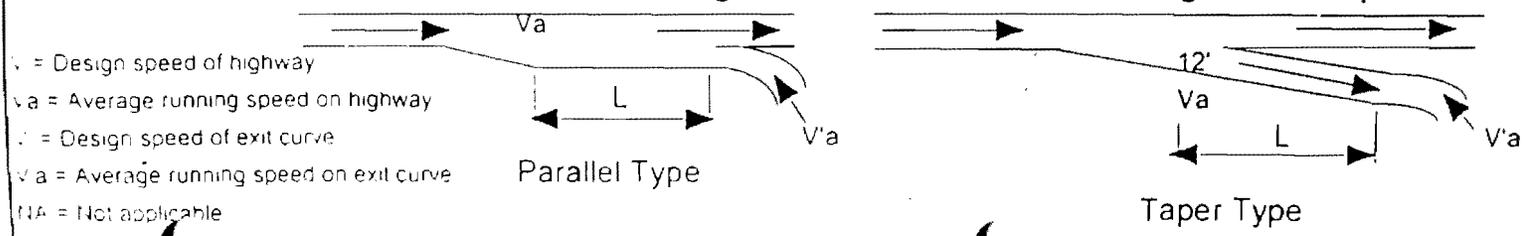
Design Speed of Highway (mph)	Deceleration Lanes		Design Speed of Highway (mph)	Acceleration Lanes				
	Ratio of Length on Grade to Length on Level for Design Speed of Turning Roadway Curve (mph)**			Ratio of Length on Grade to Length on Level for Design Speed of Turning Roadway Curve (mph)**				
	20	30		40	50	All Speeds		
All Speeds	3 to 4 percent upgrade 0.9	3 to 4 percent downgrade 1.2		3 to 4 percent upgrade				5 to 6 percent downgrade
40			40	1.3	1.3	NA	NA	0.7
50			50	1.3	1.4	1.4	NA	0.65
60			60	1.4	1.5	1.5	1.6	0.6
70			70	1.5	1.6	1.7	1.8	0.6
All Speeds	5 to 6 percent upgrade 0.8	5 to 6 percent downgrade 1.35		5 to 6 percent upgrade				5 to 6 percent downgrade
40			40	1.5	1.5	NA	NA	0.6
50			50	1.5	1.7	1.9	NA	0.55
60			60	1.7	1.9	2.2	2.5	0.5
70			70	2.0	2.2	2.6	3.0	0.5

**Ratios from Table 6.1 and 6.2 multiplied by the length in Table 6.3 gives length of speed change lane on grade.

Table 6.1 & 6.2 Speed change lane adjustment factors as a function of grade

Highway Design Speed, V (mph)	Average Running Speed, V _a (mph)	Deceleration Length, L (ft)									
		Stop Condition	For Design Speed of Exit Curve, V' (mph)								
			15	20	25	30	35	40	45	50	
			For Average Running Speed on Exit Curve, V' _a (mph)								
		0	14	18	22	26	30	36	40	44	
30	28	235	185	160	140	NA	NA	NA	NA	NA	
40	36	315	295	265	235	185	155	NA	NA	NA	
50	44	435	405	385	355	315	285	225	175	NA	
60	52	530	500	490	460	430	410	340	300	240	
65	55	570	540	530	490	480	430	380	330	280	
70	58	615	590	570	550	510	490	430	390	340	

Table 6.3 Minimum deceleration lengths for exit terminals with flat grades of 2 percent or less.



*Taken from American Association of State Highway and Transportation Officials, "A Policy on Geometric Design of Highways and Streets"

10402

APPENDIX 1050

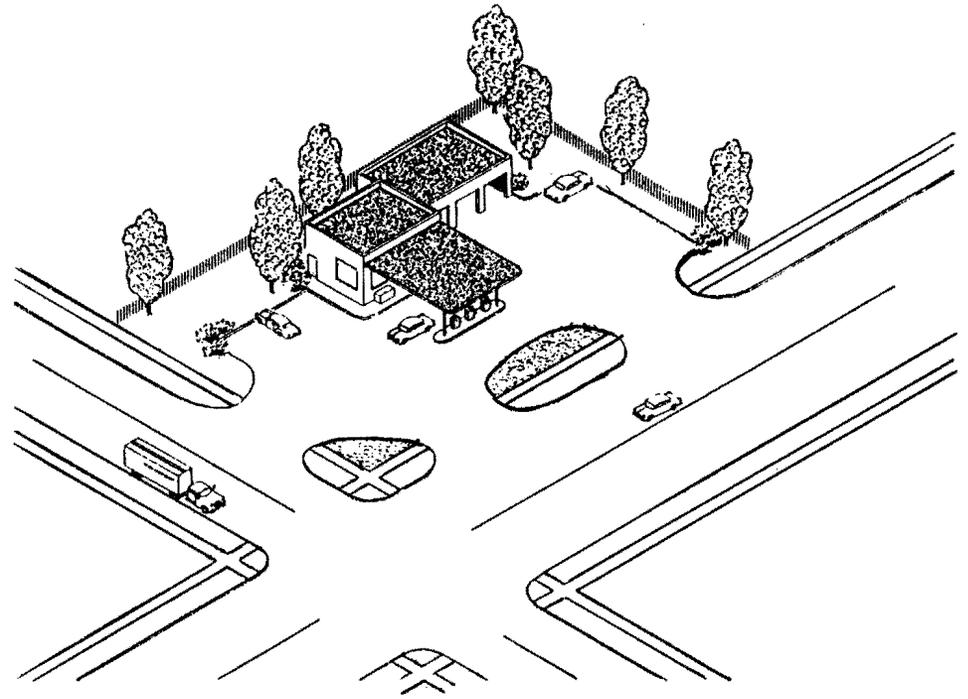
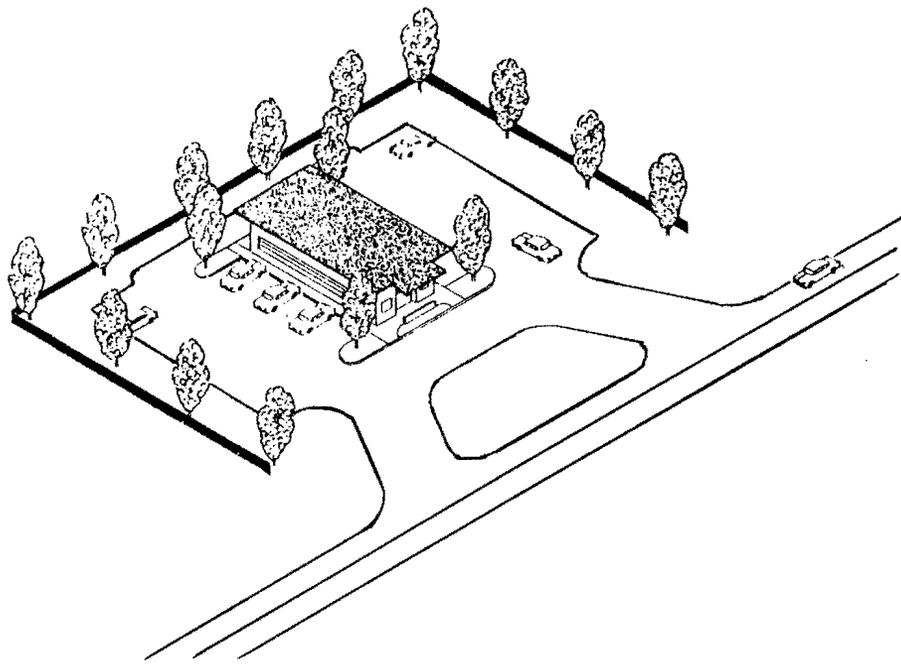
NON-RESIDENTIAL DRIVEWAY

HIGHWAY ACCESS

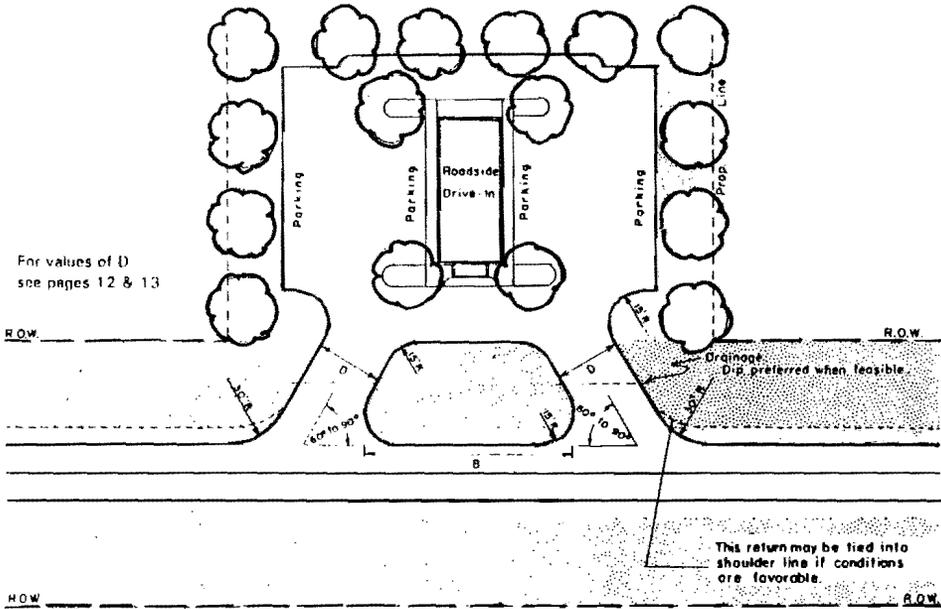
SOURCE:

TEXAS DEPARTMENT of TRANSPORTATION

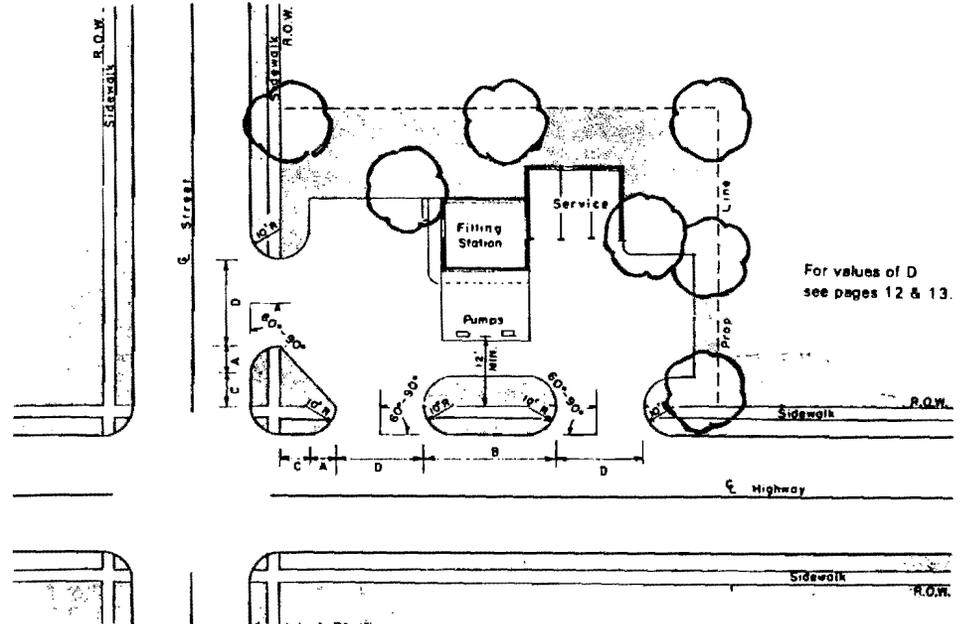
1050



1050.2



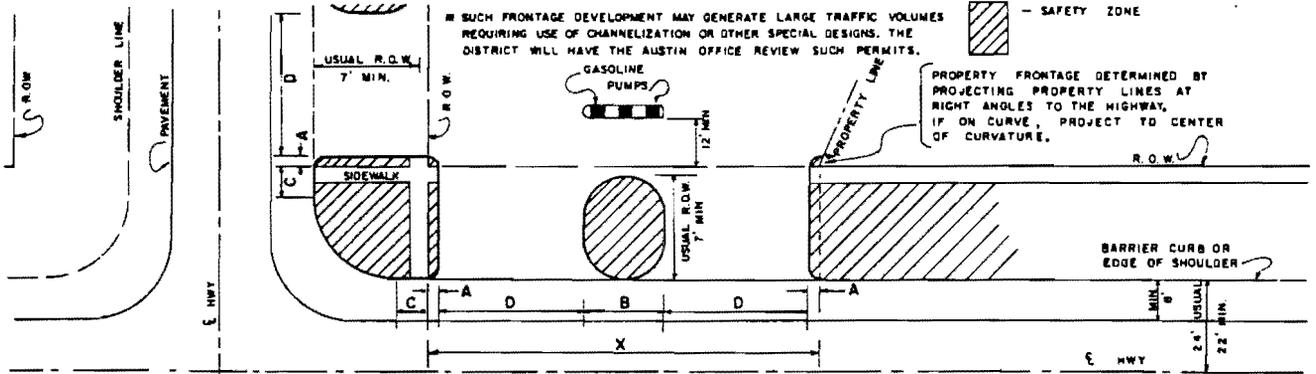
COMMERCIAL ESTABLISHMENT IN RURAL AREA



SERVICE STATION IN URBAN AREA

X FRONTAGE	A CURB RETURN RADI		B ISLAND WIDTH MIN.	C CORNER CLEARANCE DESIRABLE		NO. OF DRIVEWAYS MAXIMUM	D DRIVEWAY WIDTH DESIRABLE	
	MIN.	MAX.		MIN.	MAX.		MIN.	MAX.
UP TO 58'	2 1/2'	30'	NONE	5'	NONE	1	30'	45'
58' TO 95'	2 1/2'	30'	NONE	20'	5'	1	30'	45'
58' TO 95'	2 1/2'	30'	X/8	5'	NONE	2	30'	45'
96' TO 135'	2 1/2'	30'	X/8	10'	5'	2	30'	45'
136' TO 320'	5'	30'	X/8	20'	15'	2	35'	45'
321' TO 600'	10'	30'	X/3	20'	20'	3	40'	45'
601' & UP	*SPECIAL DESIGN							

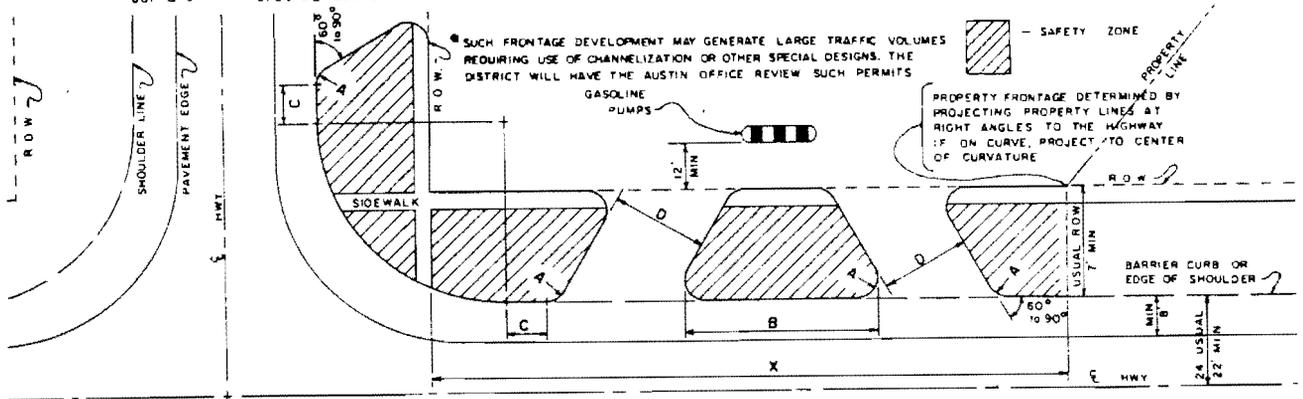
- NOTES**
- All access driveways from two-way roadways shall be at an angle of from 60° to 90°.
 - 30° to 60° ingress driveways will be permitted on frontage abutting a one-way roadway.
 - Maximum driveway widths shall be used only where frontage is sufficient to assure minimum corner clearance, curb return radii, and island widths.
 - It is recommended that the desirable curb return radii and corner clearance be used whenever possible. The minimum should only be used in those cases where the desirable measurements will impose an unnecessary hardship. This will normally apply to property with narrow frontage.



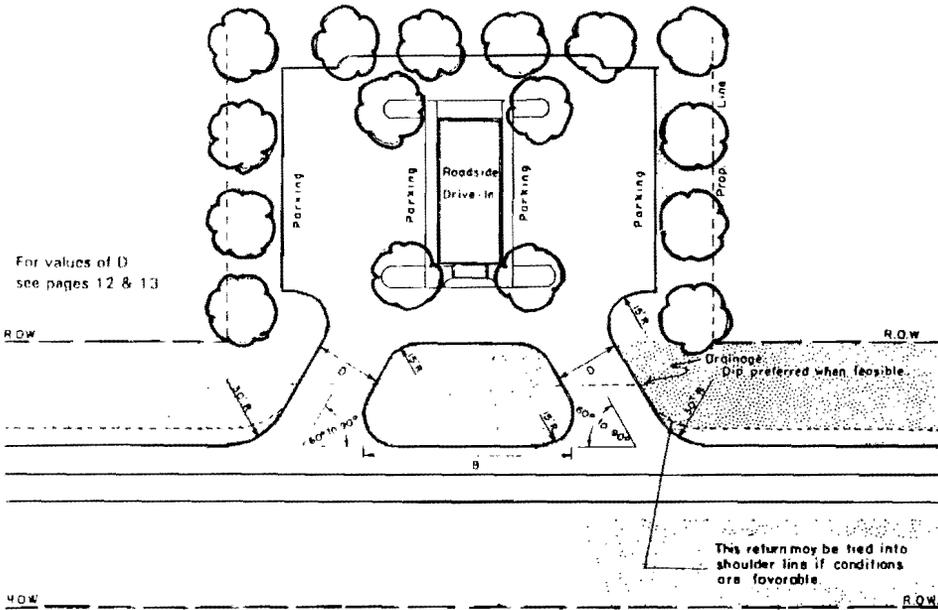
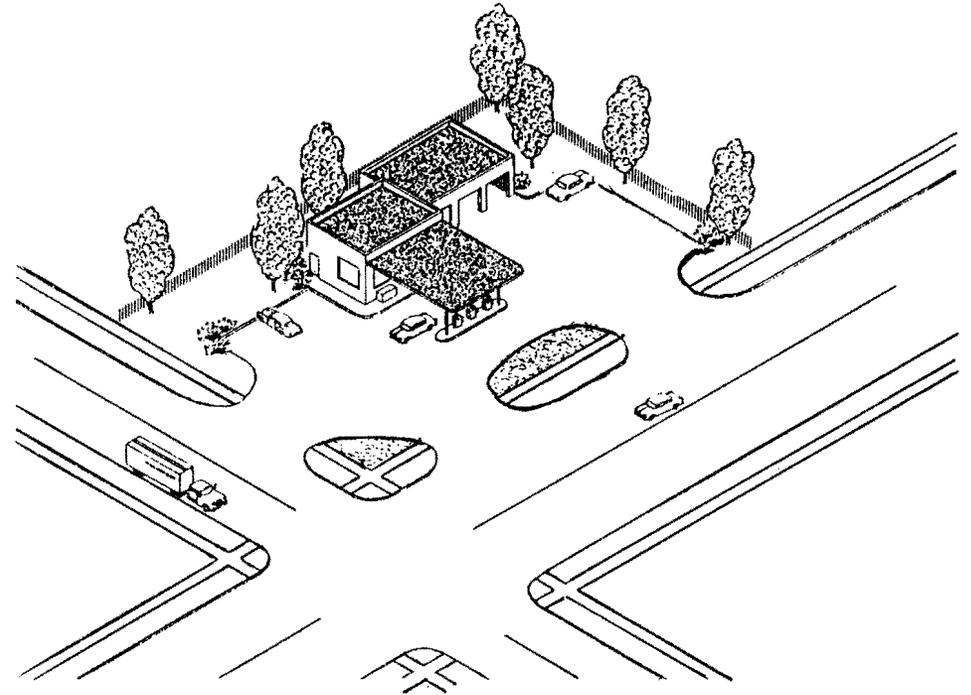
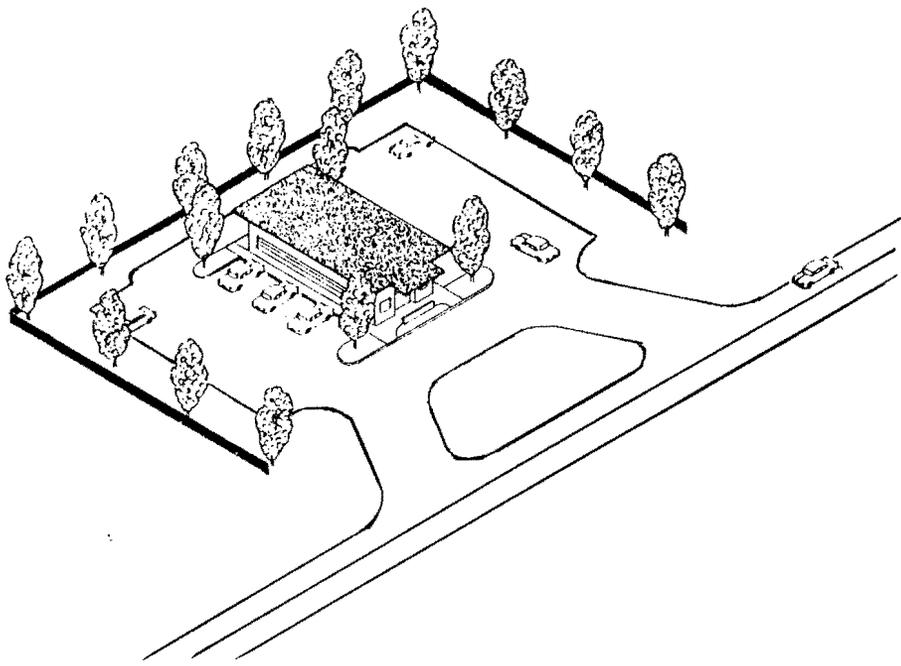
TYPICAL ACCESS LAYOUT
ILLUSTRATING APPLICATION OF REGULATIONS
COMMERCIAL & PUBLIC ACCESS FRONTAGE

X FRONTAGE	A CURB RETURN RADI		B ISLAND WIDTH MIN.	C CORNER CLEARANCE DESIRABLE		NO. OF DRIVEWAYS MAXIMUM	D DRIVEWAY WIDTH DESIRABLE	
	MIN.	MAX.		MIN.	MAX.		MIN.	MAX.
UP TO 58'	2 1/2'	30'	NONE	5'	NONE	1	30'	45'
58' TO 95'	2 1/2'	30'	NONE	20'	5'	1	30'	45'
58' TO 95'	2 1/2'	30'	X/8	5'	NONE	2	30'	45'
96' TO 135'	2 1/2'	30'	X/8	10'	5'	2	30'	45'
136' TO 320'	5'	30'	X/8	20'	15'	2	35'	45'
321' TO 600'	10'	30'	X/3	20'	20'	3	40'	45'
601' & UP	*SPECIAL DESIGN							

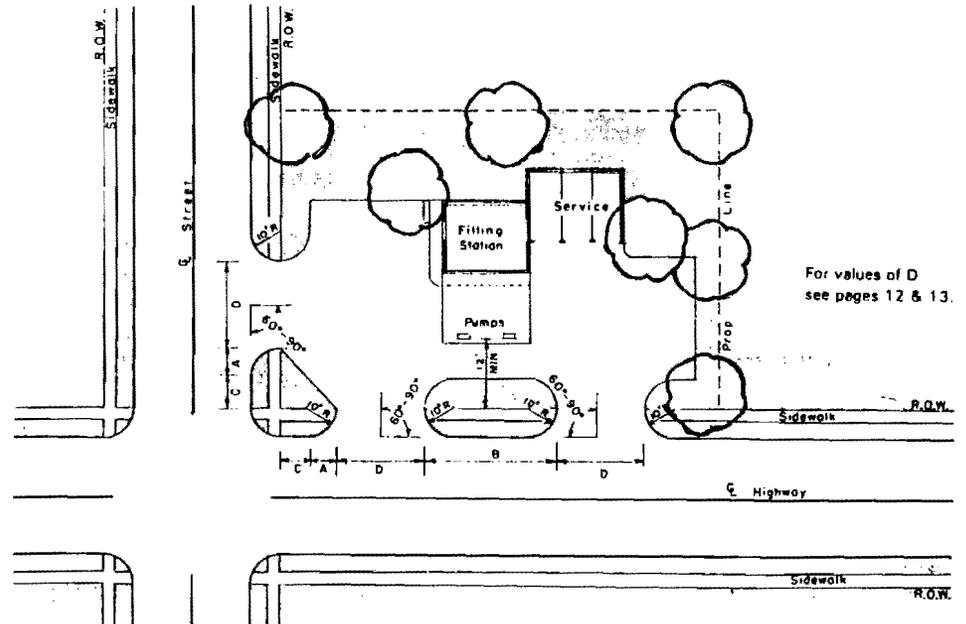
- NOTES**
- All access driveways from two-way roadways shall be at an angle of from 60° to 90°.
 - 30° to 60° ingress driveways will be permitted on frontage abutting a one-way roadway.
 - Maximum driveway widths shall be used only where frontage is sufficient to assure minimum corner clearance, curb return radii, and island widths.
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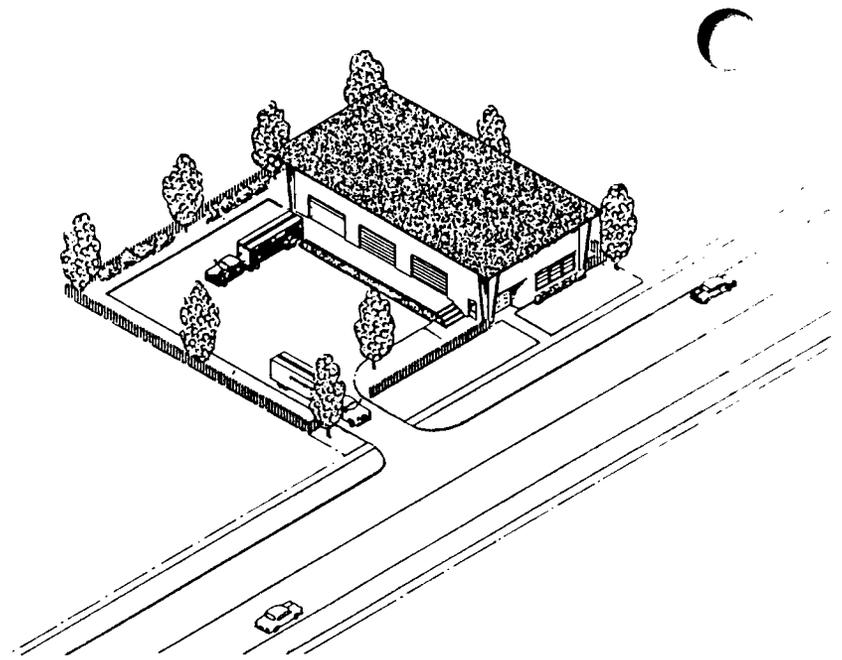
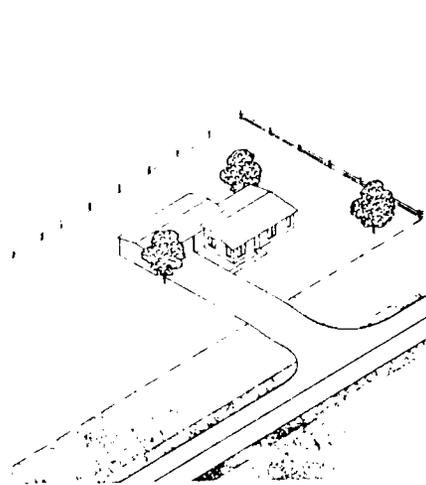
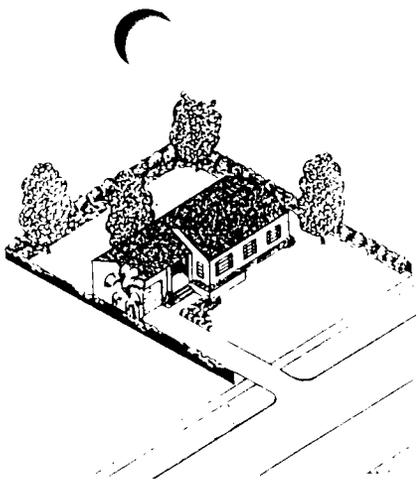
TYPICAL ACCESS LAYOUT
ILLUSTRATING APPLICATION OF REGULATIONS
COMMERCIAL & PUBLIC ACCESS FRONTAGE



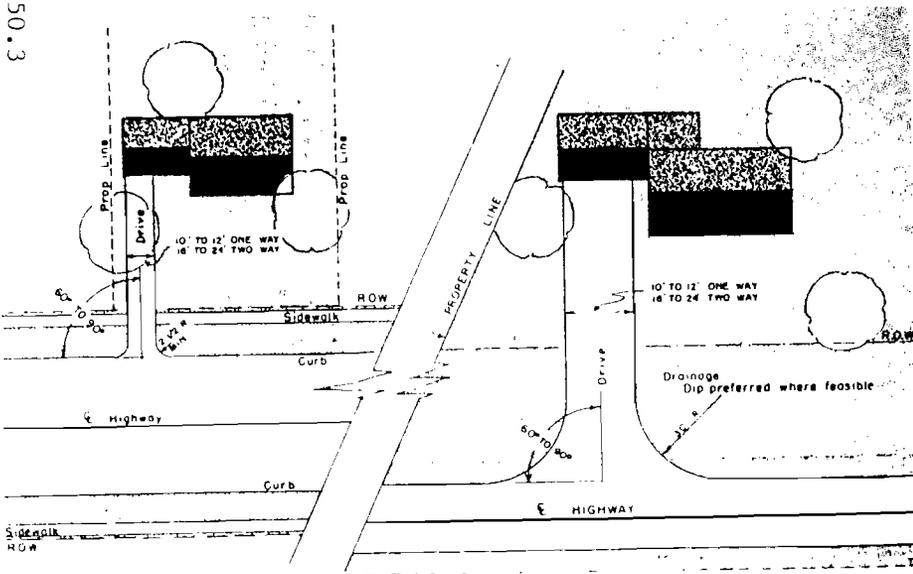
COMMERCIAL ESTABLISHMENT IN RURAL AREA



SERVICE STATION IN URBAN AREA

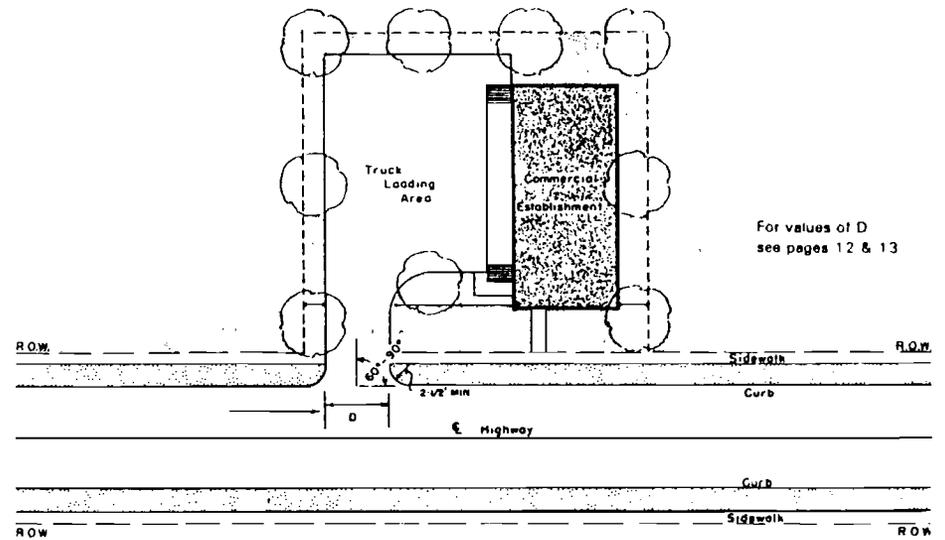


1050.3



RESIDENCE IN
URBAN AREA

RESIDENCE IN RURAL AREA

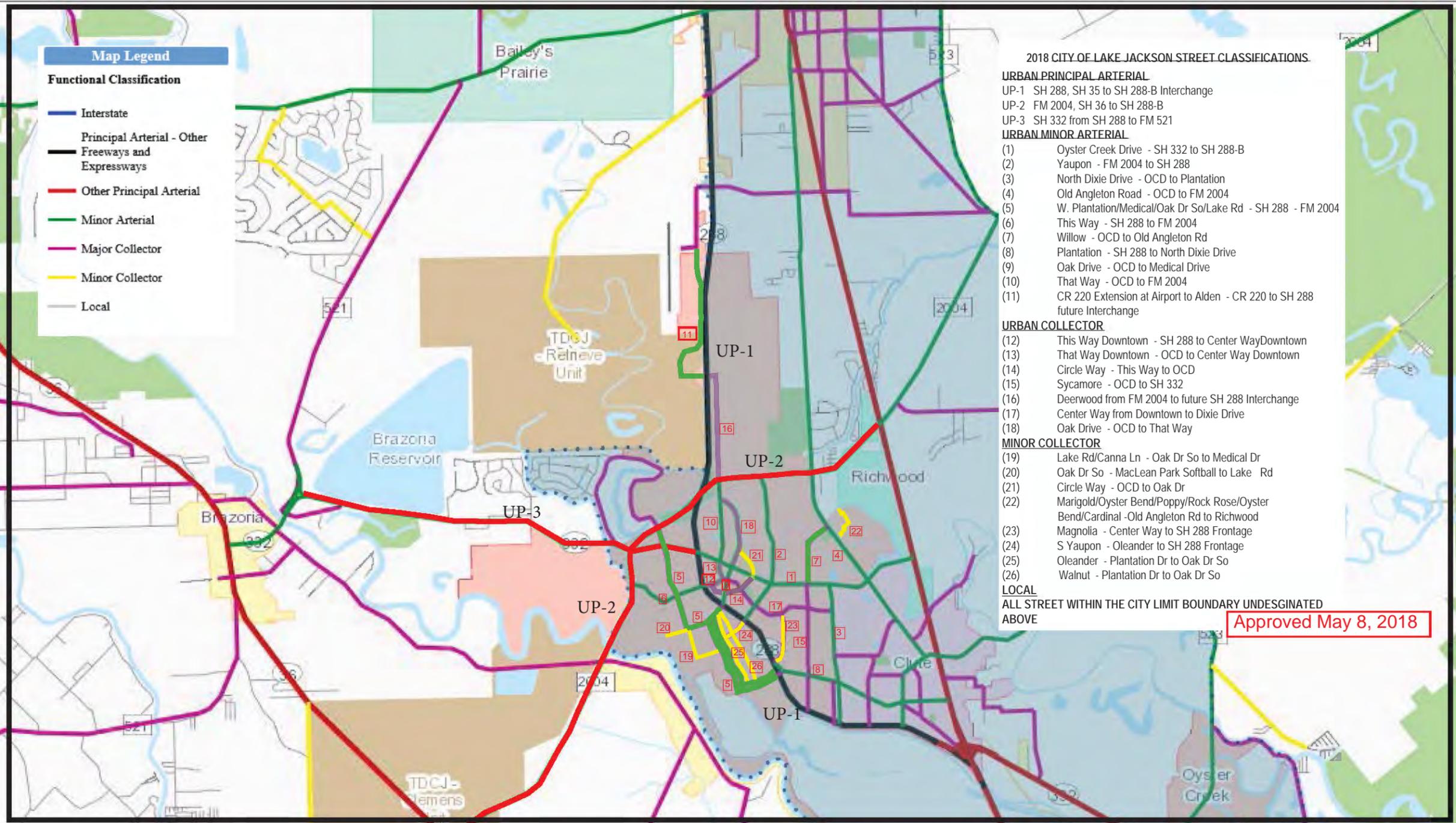


For values of D
see pages 12 & 13

COMMERCIAL ESTABLISHMENT IN URBAN AREA

APPENDIX 1060
THOROUGHFARE PLAN 1997 FUNCTIONAL
CLASSIFICATION SYSTEM

SOURCE:
CITY OF LAKE JACKSON
THOROUGHFARE DEVELOPMENT PLAN - LATEST UPDATE
COMPREHENSIVE MASTER PLAN - 1997 & REVISIONS



2018 CITY OF LAKE JACKSON STREET CLASSIFICATIONS.

- URBAN PRINCIPAL ARTERIAL**
 UP-1 SH 288, SH 35 to SH 288-B Interchange
 UP-2 FM 2004, SH 36 to SH 288-B
 UP-3 SH 332 from SH 288 to FM 521

- URBAN MINOR ARTERIAL**
 (1) Oyster Creek Drive - SH 332 to SH 288-B
 (2) Yaupon - FM 2004 to SH 288
 (3) North Dixie Drive - OCD to Plantation
 (4) Old Angleton Road - OCD to FM 2004
 (5) W. Plantation/Medical/Oak Dr So/Lake Rd - SH 288 - FM 2004
 (6) This Way - SH 288 to FM 2004
 (7) Willow - OCD to Old Angleton Rd
 (8) Plantation - SH 288 to North Dixie Drive
 (9) Oak Drive - OCD to Medical Drive
 (10) That Way - OCD to FM 2004
 (11) CR 220 Extension at Airport to Alden - CR 220 to SH 288 future Interchange

- URBAN COLLECTOR**
 (12) This Way Downtown - SH 288 to Center Way Downtown
 (13) That Way Downtown - OCD to Center Way Downtown
 (14) Circle Way - This Way to OCD
 (15) Sycamore - OCD to SH 332
 (16) Deerwood from FM 2004 to future SH 288 Interchange
 (17) Center Way from Downtown to Dixie Drive
 (18) Oak Drive - OCD to That Way

- MINOR COLLECTOR**
 (19) Lake Rd/Canna Ln - Oak Dr So to Medical Dr
 (20) Oak Dr So - MacLean Park Softball to Lake Rd
 (21) Circle Way - OCD to Oak Dr
 (22) Marigold/Oyster Bend/Poppy/Rock Rose/Oyster Bend/Cardinal - Old Angleton Rd to Richwood
 (23) Magnolia - Center Way to SH 288 Frontage
 (24) S Yaupon - Oleander to SH 288 Frontage
 (25) Oleander - Plantation Dr to Oak Dr So
 (26) Walnut - Plantation Dr to Oak Dr So

LOCAL
 ALL STREET WITHIN THE CITY LIMIT BOUNDARY UNDESIGNATED ABOVE

Approved May 8, 2018

URBAN COLLECTOR			
Item No. / Description	ROW	Pavement	Divided Median
(12) This Way Downtown - SH 288 to Center Way / Downtown	94	32	Yes
(13) That Way Downtown - OCD to Center Way / Downtown	90	32	Yes
(14) Circle Way - This Way to OCD	100 / 60	70 / 27	Yes / No
(15) Sycamore - OCD to SH 332	60	27	
(16) Deerwood from FM 2004 to future SH 288 Interchange	80	30	
(17a) Center Way from Oak Drive to Circle Way	80 / 50	50 / 28	
(17b) Center Way from Circle Way to Dixie Drive	60	27	
(18) Oak Drive - OCD to That Way	60	27	

MINOR COLLECTOR			
Item No. / Description	ROW	Pavement	Divided Median
(19) Lake Road/Canna Lane - Oak Dr So to Medical Drive	100	Lake 48 Canna 26	Yes
(20) Oak Dr So - MacLean Park Softball to Medical Drive	100	48	Yes
(21) Circle Way - OCD to Oak Dr	60	27	
(22) Marigold/Oyster Bend/Poppy/Rock Rose/Cardinal - Old Angleton Rd to Angleton	60	27	
(23) Magnolia - Center Way to SH 288 Frontage	60	27	
(24) S Yaupon - Oleander to SH 288 Frontage	60	27	
(25) Oleander - Plantation Drive to Oak Dr So	60	27	
(26) Walnut - Plantation Drive to Oak Dr So	60	27	

APPENDIX 1070
DEVELOPMENT POLICY DIAGRAMS

SOURCE:
CITY OF LAKE JACKSON
COMPREHENSIVE MASTER PLAN - 1996

Figure 4
**Northeast Lake Jackson
 Development Policy Diagram**

-  Bastrop Bayou Greenway
-  Major Parkway
-  Minor Parkway
-  Residential
-  Business/Research Park
-  Development Reserve
-  Retail
-  Elementary School Site
-  Neighborhood Park

1070.1

**CITY OF LAKE JACKSON
 COMPREHENSIVE PLAN**

SEDWAY COOKE ASSOCIATES
 Urban and Environmental Planners and Designers
RUST LICHLITER/JAMESON
 Consulting Engineers, Scientists and Planners

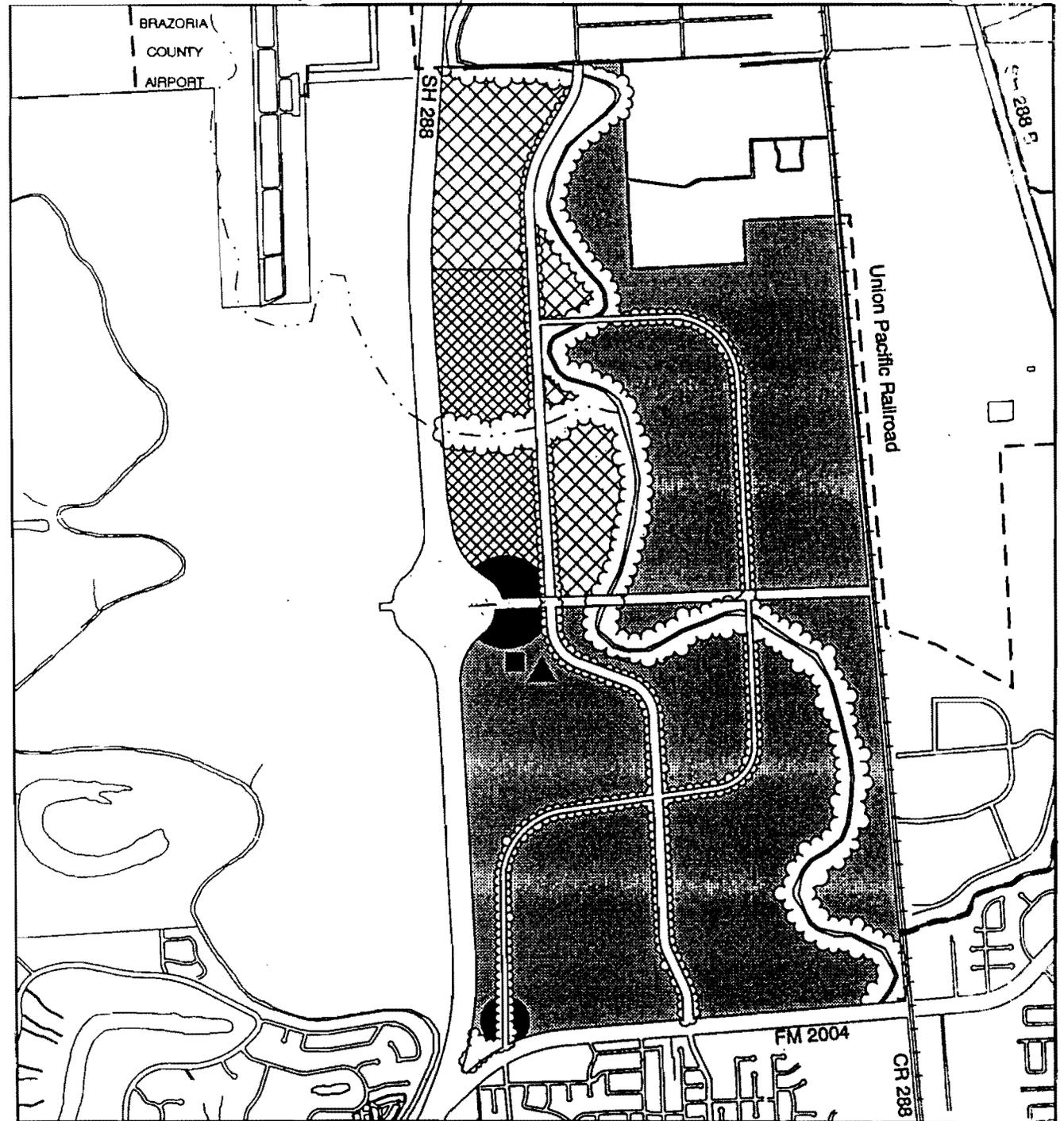
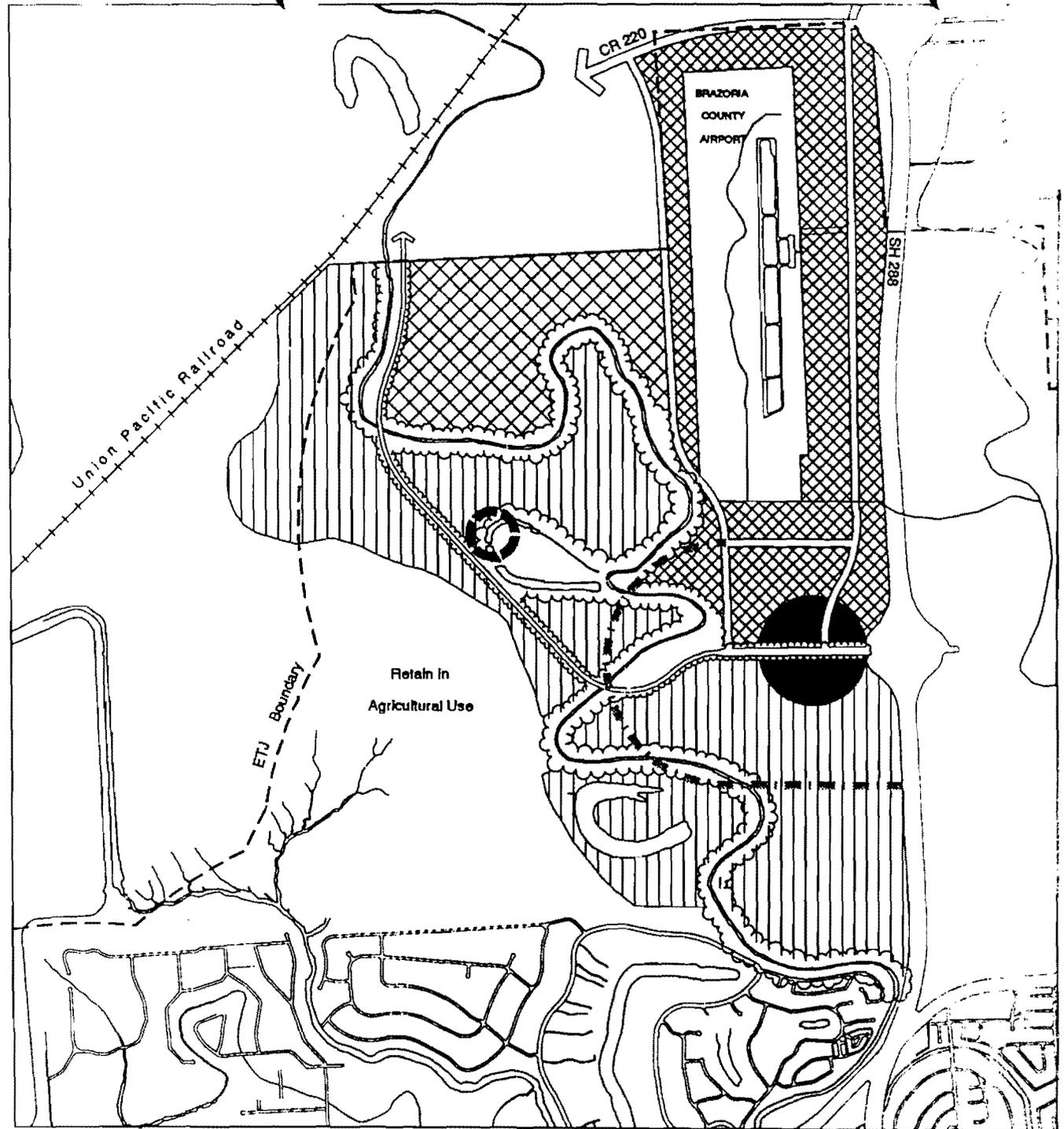


Figure 4-4:

Northwest Lake Jackson Development Policy Diagram

-  Long-Term Housing Reserve
-  Industrial / Commercial
-  Development Reserve
-  Retail / Service Center
-  Neighborhood Center
-  Oyster Creek Parkway
-  Major Parkway
-  Minor Parkway
-  Major Arterial
-  Extension of CR 220
-  Major Outdoor Recreation Area (General Location)

1070.2



CITY OF LAKE JACKSON COMPREHENSIVE PLAN

SEDWAY COOKE ASSOCIATES
Urban and Environmental Planners and Designers

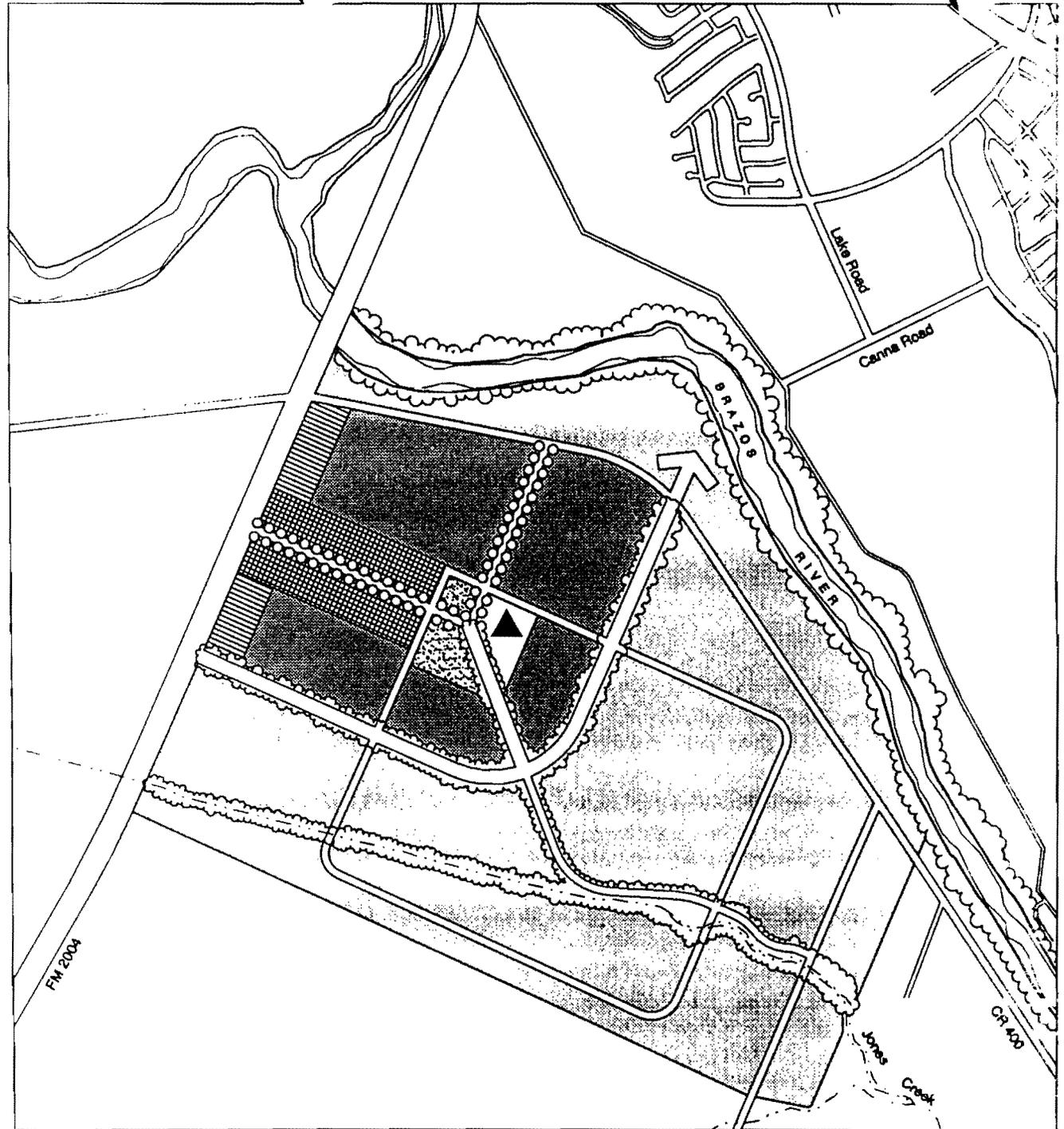
RUST UCHLITER/JAMESON
Consulting Engineers, Scientists and Planners



Figure 4.1

South Lake Jackson Development Policy Diagram

-  Residential
(5.7 Du/Gross Acre)
-  Residential
(1.5 Du/Gross Acre)
-  Mixed-Use
-  Retail / Service
-  Park and Recreation
-  School Site
-  Greenway
-  Major Parkway
-  Minor Parkway
-  Formal City Street
-  Neighborhood Collector



CITY OF LAKE JACKSON COMPREHENSIVE PLAN

SEDWAY COOKE ASSOCIATES
Urban and Environmental Planners and Designers

RUST LICHLITER/JAMESON
Consulting Engineers, Scientists and Planners



1070.3



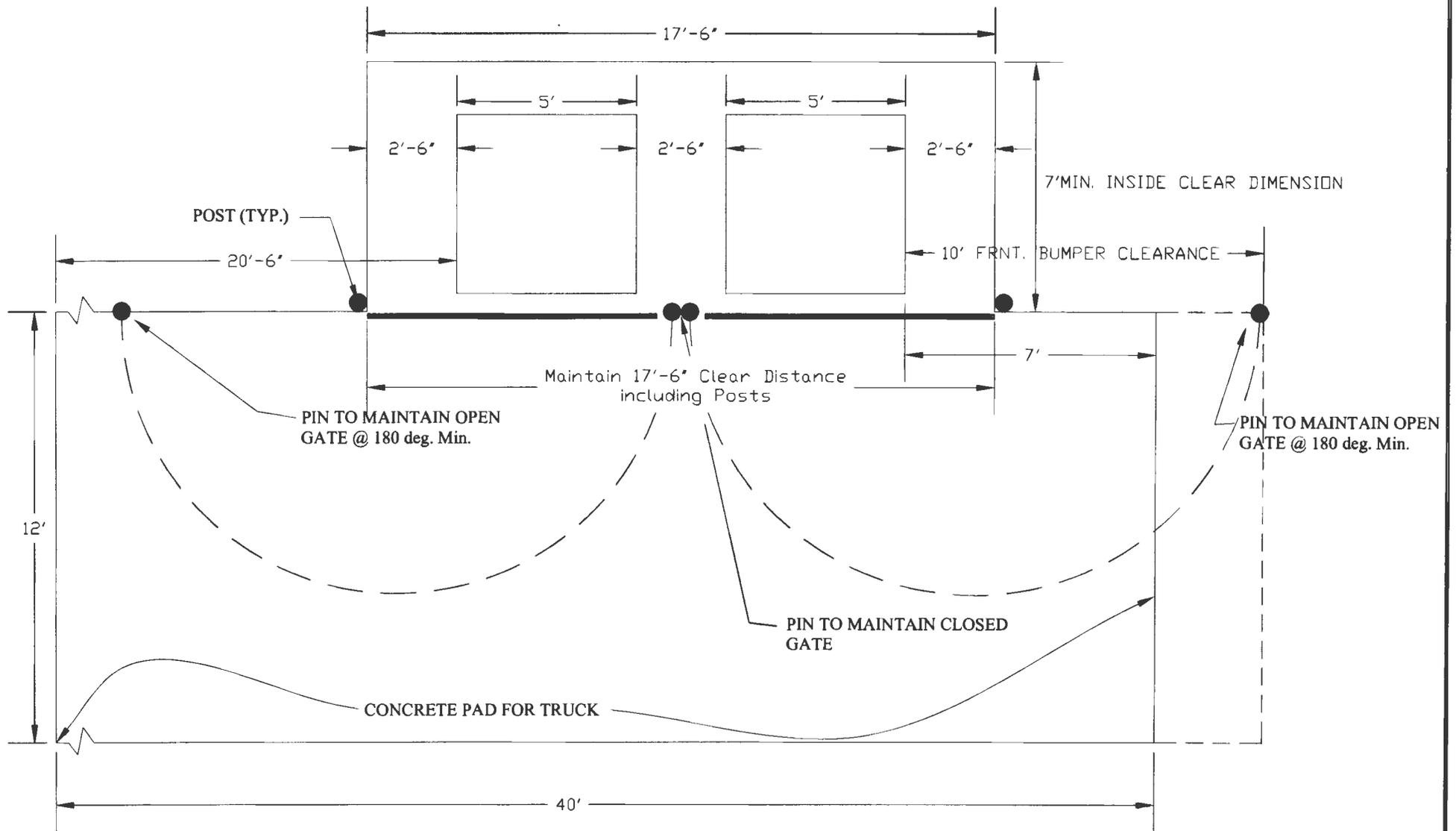
STANDARD CONSTRUCTION DETAILS



CITY ORDINANCE

CITY OF LAKE JACKSON

25 OAK DRIVE • LAKE JACKSON, TEXAS 77566-5289 • 409-297-2481 • FAX 409-297-9804



CITY OF
 LAKE JACKSON

DUMPSTER PAD

Revised July, 2014

DATE: JUL 19, 2014

SCALE: 1/4"=1'

BY: AIS

FILE NAME: public_wrk_sanitation_dumpsterRev_2014



WATER DISTRIBUTION CONSTRUCTION DETAIL NOTE

1. The development Engineer's proprietary design and construction detail, varying from the standards provided, may be considered in cases where experience indicates an equal or better product. These differences shall be submitted to the Engineer/Public Works Department for approval or denial.
2. Any reference to specific manufacturers products shall refer also to other alternate products in the approved list
3. All concrete for thrust blocking shall be a minimum of Type "Class B" with 2500 PSI compressive strength. All cement stabilized sand referred in the detail shall be a minimum 1 1/2 Sk/CY of cement content.
4. Water Main Pipe Material:

Size	Type	Class
2"	PVC	160 or 200
6"	PVC C-900	150
8"	PVC C-900	150
	or	
	DIP	50

5. All gate and hydrant valving shall be counter clockwise (open left) opening.
6. All fittings shall be the push on type. Only in special circumstances will all mechanical joints be considered by the Engineer/Public Works Department and approved with the use of stainless steel bolts and wrapped with 8 mil polyethylene.
7. Roadway casing crossing detail shall only be applicable on state highway road crossing or on special circumstances that may arise at the Engineer/Public Works directions. All City roadway crossing shall be done without encasement and no casing will be required through junction box or structure crossings but these shall be made with D.I.P. materials.
8. Pipe offset crossings may be eliminated by allowable pipe deflection installation procedures where practical and if laying depths do not exceed 7 feet.
9. Water lines under new and existing concrete pavement surfaces (streets and driveways) shall backfilled with cement stabilized sand beginning from the sand bedding envelope to the pavement subgrade.
10. No connection shall be made to the meter until all water lines have been thoroughly cleaned, tested, disinfected and approved by the Engineer/Public Works Department. The tap connection and piping may be made to the main prior to testing of disinfection at contractors option.

WATER DISTRIBUTION SYSTEM DESIGN CRITERIA

1. All water distribution system shall be designed according to the State Water Utility Rules promulgated by the T.N.R.C.C. and those rules of the City of Lake Jackson Development Standards (Latest Revision) not in conflict with the same. (See Criteria 8)
2. Typically new water main location shall be within 5'-6' inside the street right-of-way or centered in the easement and maintained in close relation to the alignment through the use of fittings and or allowable pipe deflection practices. Reconstruction and replacement of existing alignment to the extent necessary to remain clear from existing field obstructions and minimize reconnection.
3. All water mains shall have a minimum of four (4) feet of cover from finished grade. Water main bury depths greater than six (6) feet shall be allowed only with the approval of the Engineer/Public Works Department. They shall have a minimum clearance of six (6) inches at storm drain pipe crossings and twelve (12) inches at sanitary sewer crossings. Horizontal clearance from sanitary sewer lines and manholes shall be a minimum of nine (9) feet.
4. All supply mains except in cul-d-sacs shall be looped and valved so that isolation of any section length due to a break will not interrupt the supply to any service or fire suppression system.

Development Type	Valving Length (Max)	Preferred Location
SGL/Two Family	800	Street intersection mid section run.
Multi family	500	Main @ Drives & Drive access points
Commercial/Institutional	500	" " "

5. Hydrant distribution shall be such that all points of any structure in a development shall meet the coverage and spacing requirements as follows:

Development Type	Hydrant Distance		Preferred Location
	Radial Coverage	(Max) Spacing	
SGL/ Two Family	500	500-600	Street intersection mid block & lot line Drive Access Fire Lane/Dr.Access
Multi Family	300	300-375	
Commercial/Institutional	300	300-375	

6. All new service connections shall be typically installed by the City Utility Department during build out. New service connections (site specific) shall be included in the design when directed by Engineering/Public Works Department where site conditions impose future installation constrictions. These service connection end locations shall be marked with a magnetic locator to be city furnished.
7. All single and double service leads shall be a minimum one inch (1") and extend to the common lot line unless otherwise directed by the Engineer/Public Works and or field adjusted by the Utility Department in the future.
8. All additions or extensions to the Water Distribution System shall be analyzed using the latest computerized model available from the City. Refer to insert "B" for the Model Water Distribution System Schematics. The Model shall be maintained by the City of Lake Jackson with the updated data to be furnished with design review. All developments shall evaluate the proposed system based on the following criteria:

Main Type	Headloss	Velocity	Working Pressure	
			(No Fire Flow)	(Fire Flow)
Transmission Distribution (<10')	5-7 Ft. per 1000 ---	4-5 FPS <6 FPS	>40 PSI	20 PSI Min.
Dev. Type (Non-Sprinklered)	Rate (gpm)	Fire Flow Rates Duration (hr)	Req. Volume (mg)	
Residential	750	2	0.09	
Commercial	1500	3	0.27	

WATER CONSTRUCTION

DRAWING DETAIL

NOTES & CRITERIA



DEPARTMENT OF ENGINEERING
AND PUBLIC WORKS

SEAL



DESIGN ENGINEER:

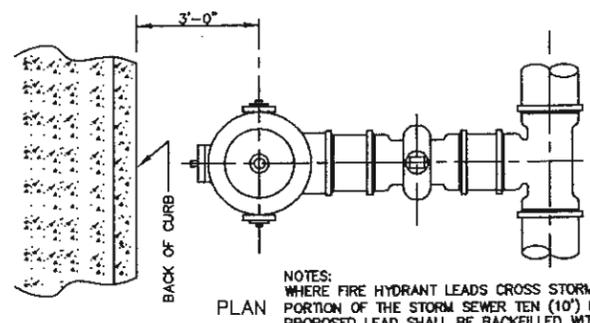
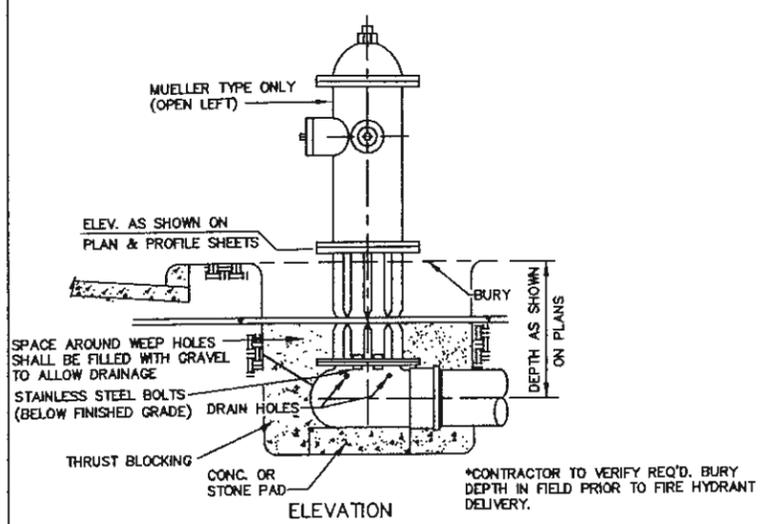
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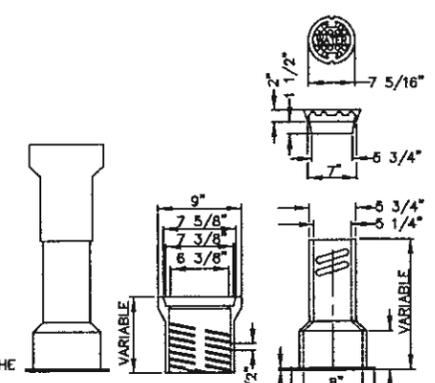
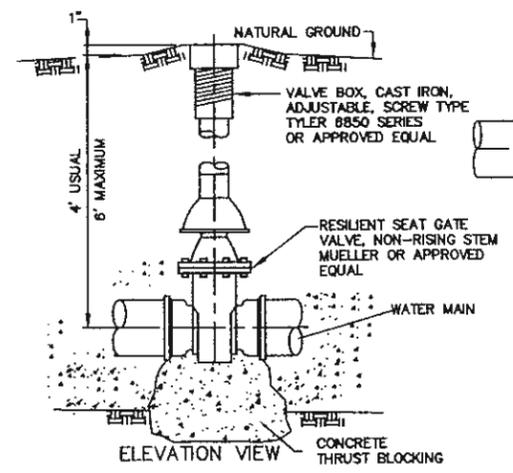
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SHEET 1 OF 1

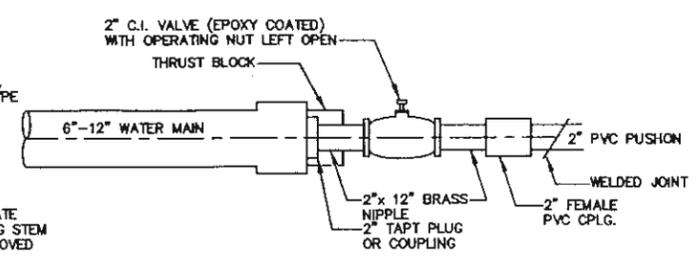


NOTES:
WHERE FIRE HYDRANT LEADS CROSS STORM SEWERS, THAT PORTION OF THE STORM SEWER TEN (10') FEET EACH SIDE OF THE PROPOSED LEAD SHALL BE BACKFILLED WITH CEMENT STABILIZED SAND TO THE BOTTOM OF THE FIRE HYDRANT LEAD. THE SAME SHALL ALSO APPLY WHERE THRUST BLOCKING FOR WATER LINE TEES WILL FALL SO CLOSE TO STORM SEWERS WHERE DISTURBED NATURAL GROUND IS PRESENT TO SUPPORT THE THRUST BLOCKING.

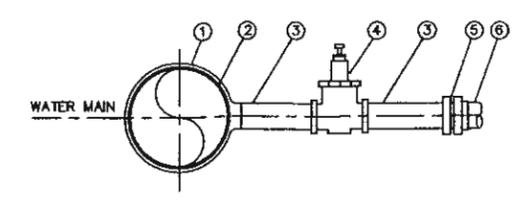
FIRE HYDRANT INSTALLATION
NTS



TWO PIECE SCREW TYPE TYLER 8850 SERIES OR EQUAL GATE VALVE & BOX
NTS

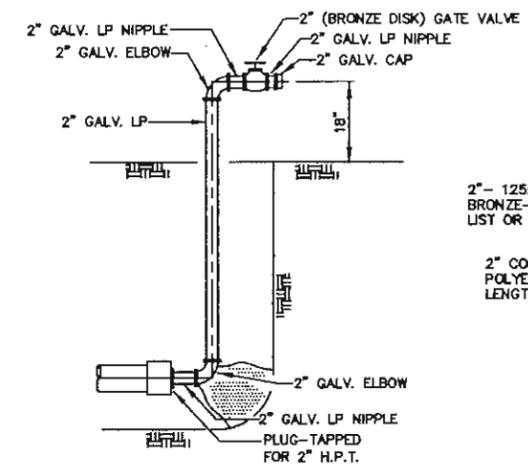


2" WATER MAIN TRANSITION
NTS



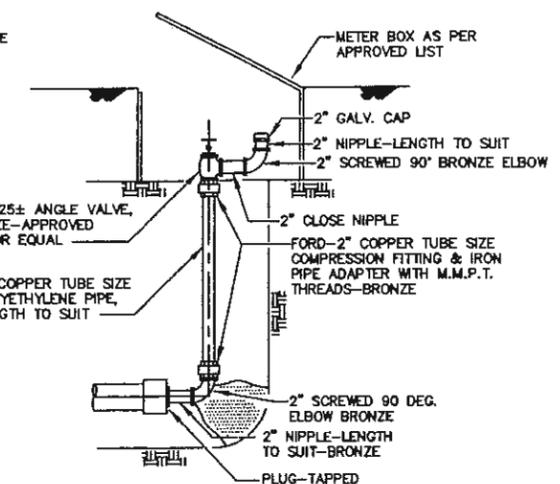
2" BRANCH TAP ASSEMBLY
NTS

- (1) DOUBLE STRAP BRONZE SADDLE W/P. THREAD OUTLET
- (2) 2" TAP (1 7/8" BIT HOLE)
- (3) 2" x 6" BRASS NIPPLE
- (4) 2" C.I. BODY GATE VALVE EPOXY COATED W/N.R. STEM & 2" SQ. NUT
- (5) FEMALE COMPRESS ADAPTER
- (6) 2" POLYETHYLENE TUBING

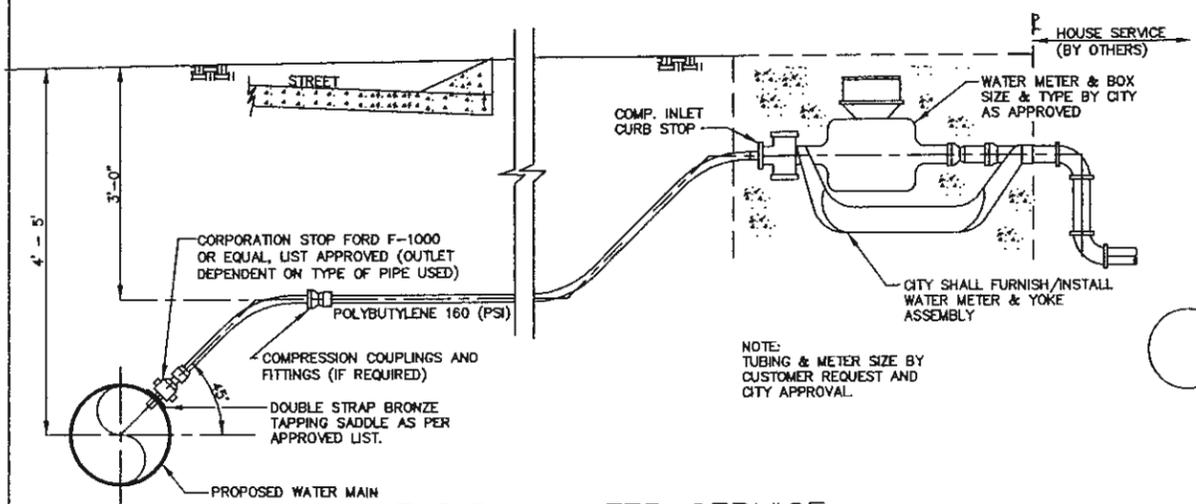


TEMPORARY ASSEMBLY

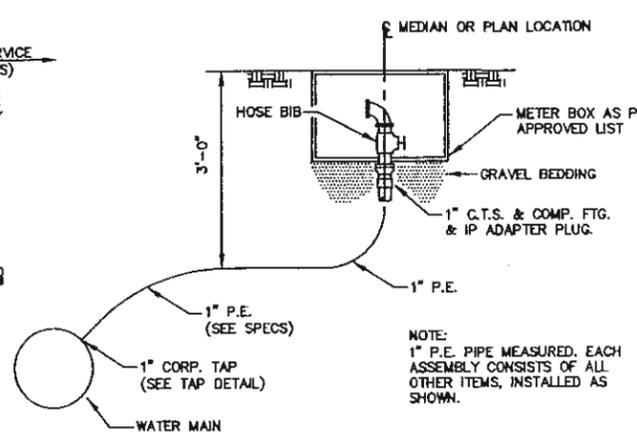
TYPICAL BLOWOFF VALVE
NTS



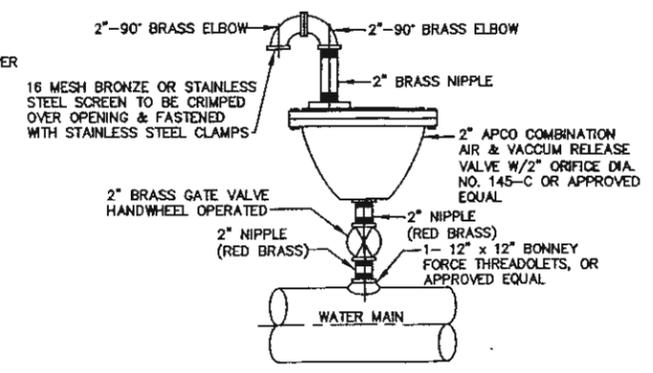
PERMANENT ASSEMBLY



TYPICAL WATER SERVICE CONNECTED TO NEW WATER MAIN
NTS

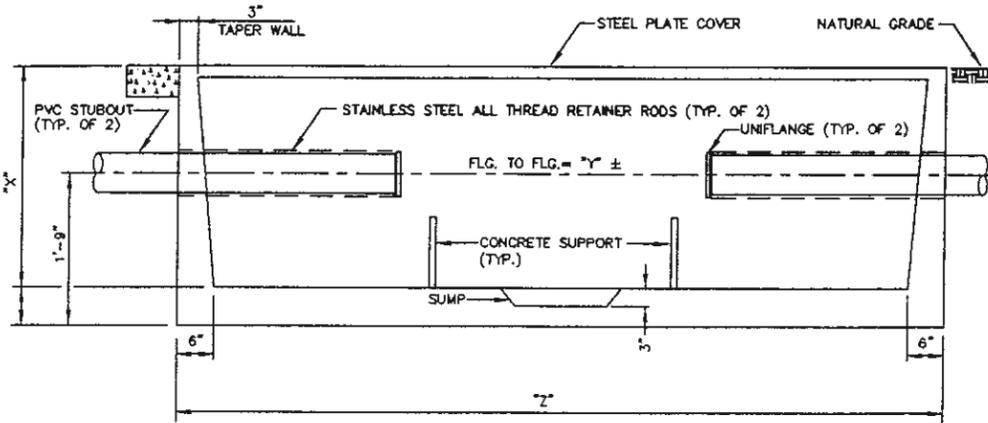
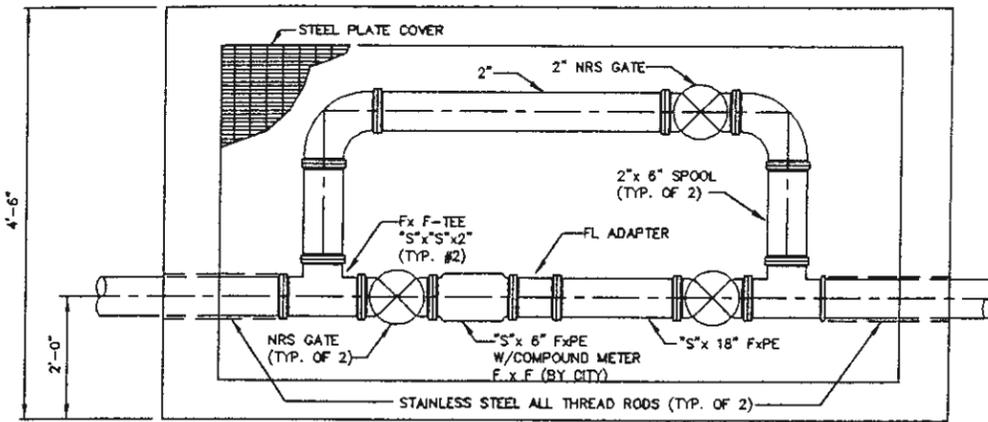


HOSE BIB ASSEMBLY
NTS



AIR RELEASE VALVE ASSEMBLY
NTS

WATER CONSTRUCTION	
DRAWING DETAIL	
LJW-1	
DEPARTMENT OF ENGINEERING AND PUBLIC WORKS	
SEAL	
DESIGN ENGINEER:	DATE:
SUBMITTED:	
SCALE:	SHEET 1 OF 2
DATE:	

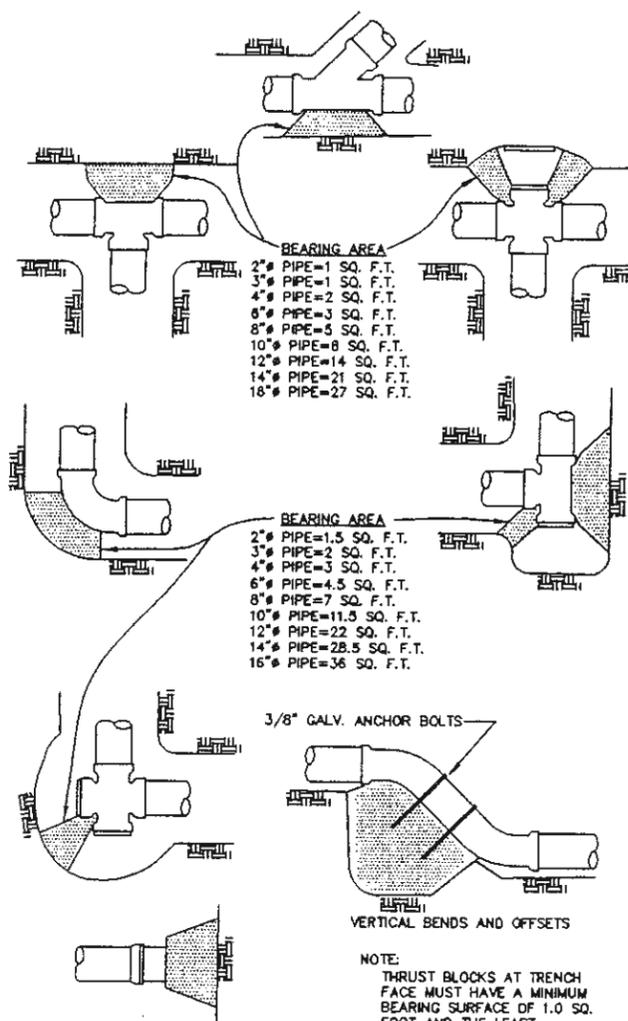


WATER METER ASSEMBLY

NTS

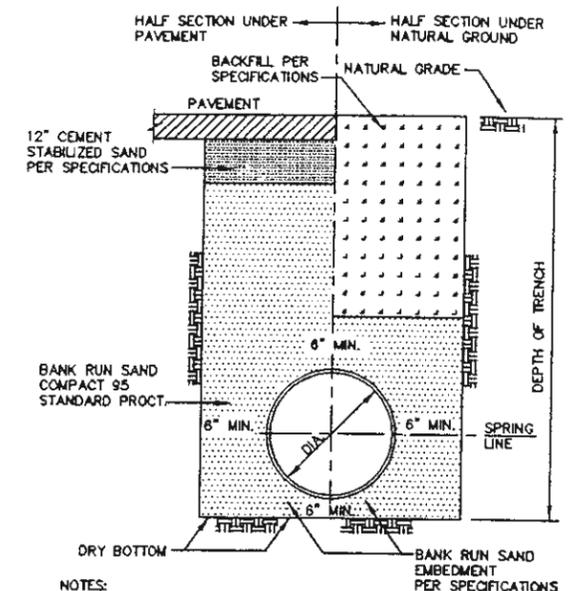
1. NOTIFY THE PUBLIC WORKS DEPARTMENT PRIOR TO CONSTRUCTION OF VAULT OR BY-PASS ASSEMBLY.
2. THE METER VAULT CAN BE EITHER POURED IN PLACE OR PREFABRICATED. CONCRETE SHALL BE SIX INCHES (6") THICK AND BE 3000 P.S.I. WITH #4 REINFORCEMENT STEEL ON TWELVE INCH (12") CENTERS EACH WAY IF THE VAULT IS POURED IN PLACE. PREFABRICATED VAULTS SHALL BE FOUR INCHES (4") THICK AND BE 4,500 P.S.I. CONCRETE WITH #4 REINFORCEMENT STEEL ON EIGHT INCH (8") CENTERS EACH WAY. THESE ARE MINIMAL SPECIFICATIONS.
3. THE VAULT WILL NOT BE PUT IN ANY DRIVE OR PARKING AREAS AND MUST BE LOCATED WITH ACCESS FROM PUBLIC RIGHT-OF-WAY.
4. THE VAULT UD SHALL BE OF A DESIGN THAT WILL FACILITATE METER READOUT AND PROVIDE ACCESS FOR METER MAINTENANCE.
5. THE METER WILL BE PROVIDED AND INSTALLED BY THE CITY PUBLIC WORKS DEPARTMENT.
6. THE METER WILL NOT BE SET UNTIL THE METER VAULT AND TAPS ARE ACCEPTED BY THE CITY PUBLIC WORKS DEPARTMENT. ALL UTILITIES MUST HAVE BEEN ACCEPTED AND RELEASED BY PUBLIC WORKS PRIOR TO METER INSTALLATION.
7. THE VALVES SHALL BE ANY RESILIENT WEDGE DESIGN GATE VALVE WHICH HAS RECEIVED FORMAL APPROVAL FROM THE CITY. ALL VALVES SHALL BE FLANGED BOTH ENDS AND HAVE HANDWHEELS.
8. THE BOTTOM OF THE METER VAULT SHALL HAVE FOUR-INCH (4") FILL SAND CUSHION UNDERNEATH. A SUMP FOUR INCHES (4") DEEP AND TWELVE INCHES (12") IN DIAMETER SHALL BE INSTALLED TO ONE SIDE IN THE CENTER OF THE BOTTOM SLAB. IF PRECAST VAULT IS USED, RAM-NEK SHALL BE USED TO SEAL ALL COLD JOINTS.
9. ALL WALL PENETRATIONS SHALL BE MADE WITH A CAST IN PLACE WALL SLEEVE AS APPROVED BY THE CITY DEPARTMENT OF PUBLIC WORKS. BREAKING OUT THE WALL USING A JACKHAMMER OR USING A JACKHAMMER TO KNOCKOUT PANELS WILL NOT BE ALLOWED.
10. A CONCRETE SUPPORT WILL BE INSTALLED UNDER EACH VALVE.
11. DEPTH OF VAULT SHALL BE A MINIMUM OF FOUR AND ONE HALF FEET (4 1/2').
12. ALL PIPING INSIDE THE VAULT SHALL BE DUCTILE IRON WITH FLANGED FITTINGS. ALL PIPING SHALL CONFORM TO THE REQUIREMENTS OF THE CITY.

METER VAULT			
DOMESTIC/IRRIGATION			
SIZE	"X"	"Y"	"Z"
3	4'-6"	62"	6'-10"
4	4'-6"	69"	7'-7"
6	5'-2"	79"	8'-2"



THRUST BLOCKING DIAGRAM

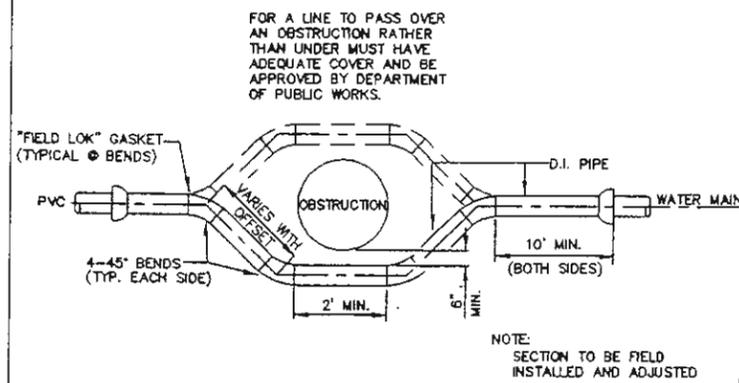
NTS



- NOTES:
1. BACKFILL SHALL BE NATIVE SOIL FREE OF DEBRIS, PLACED LIFTS, 8" THICK OR LESS, COMPACTED TO 95% STANDARD PROCTOR DENSITY, EXCEPT AS REQUIRED BELOW.
 2. BACKFILL UNDER DRIVEWAY AND PUBLIC STREETS SHALL BE CEMENT STABILIZED SAND (1.5 SACKS OF CEMENT PER CUBIC YARD OF SAND), COMPACTED TO 95% STANDARD PROCTOR DENSITY.
 3. TRENCH SHORING, IN ACCORDANCE WITH OSHA, SHALL BE INSTALLED AS REQUIRED.

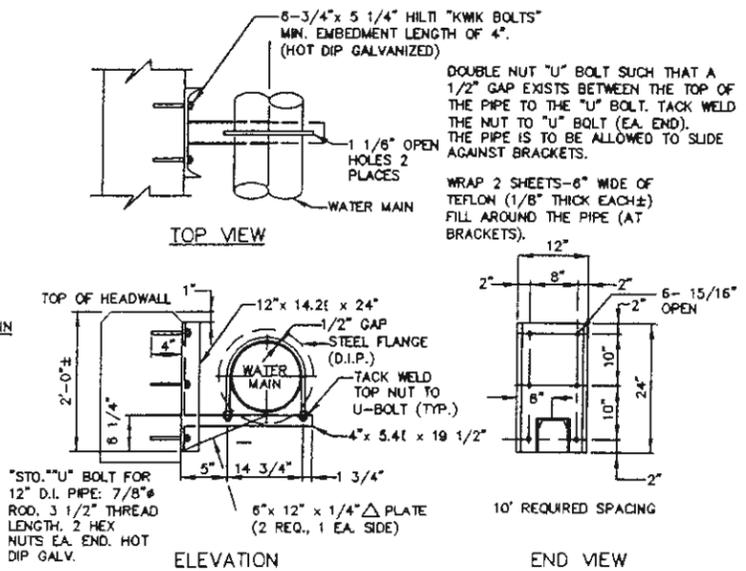
WATER MAIN BEDDING & BACKFILL

NTS



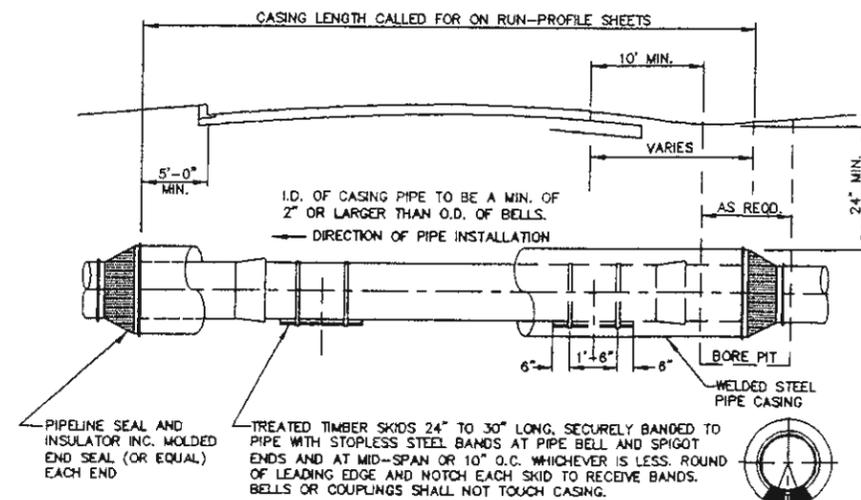
DUCTILE IRON PIPE OFFSET CROSSING ASSEMBLY

NTS



STRUCTURE CROSSING DETAIL

NTS



ROADWAY CASING DETAIL

NTS

WATER CONSTRUCTION

DRAWING DETAIL

LJW-2



DESIGN ENGINEER: _____ DATE: _____

SUBMITTED: _____

SCALE: _____ SHEET 2 OF 2

DATE: _____



Storm Sewer

STORM SEWER CONSTRUCTION DETAIL NOTES

1. The Development Engineer proprietary designs and construction detail varying from the provided standards may be considered in cases where experience clearly indicates an equal or better product than the standard. These differences shall be submitted to the Engineer/Public Works Director for approval or denial.
2. Any reference in details to ("D", "L", "W", "H", "S", or "Varies") shall refer to specific dimensions in the construction plan sheet and/or schedules.
3. All concrete referred in details shall be Class "A" structural concrete with 3,000 psi strength and 5 sk/cy cement content minimums. All cement stabilized sand referred in details shall be a minimum 1 1/2 sk/cy of cement contents.
4. All indications to frames, rings, and covers shall refer to the standard types in the miscellaneous detail. Grated covers, numbers and type, shall be selected on safety compatibility with location along with open area capacity based on the design inlet flow.

STORM DRAINAGE SYSTEM DESIGN CRITERIA

1. All storm drainage system shall be designed according to the procedures of the Brazoria County Drainage Criteria and latest revisions as adopted by the City of Lake Jackson and the jurisdictional drainage district.
2. Hydraulic drainage area maps and design tabulation summary shall accompany and support all drainage system design.
3. Minimum storm design runoff parameters to apply:

System Type	Frequency	Duration	Intensity
Storm Drain (Closed conduit)	10 yr.	15 min.	TxDOT Table
Detention/Retention Basin	100 yr.	15 min.	TxDOT Table
Open Channel Local Ditches	25 yr.	15 min.	TxDOT Table
Primary Channel	50 yr.	15 min.	TxDOT Table

4. All new areas of development within the limits and extraterritorial jurisdiction of the City shall be required to incorporate storm runoff detention or retention storage in the drainage system design, with the exception of those areas designated as "in fill sites" in the official Comprehensive Master Plan of the City and served by a 100 yr. designed outfall channel.
5. Public drainage systems shall be installed only within street or exclusive use right-of-ways. Easements for this purpose shall only be considered under special conditions and approved or denied by special City action. The following rights-of-way requirements shall apply:

Drainage System	City Maintained Minimum Width	Drainage District Maintained Minimum Width
Storm Drain (Closed conduit)	Larger of 20' or O.D. + 16'	As per Districts Policy
Open Channel <30' top width	Top width + 20' (16'+4')	
Open Channel >30' top width	Top width + 32' (20'+12')	

STORM DRAINAGE
CONSTRUCTION

DRAWING DETAIL

NOTES & CRITERIA



DEPARTMENT OF ENGINEERING
AND PUBLIC WORKS

SEAL



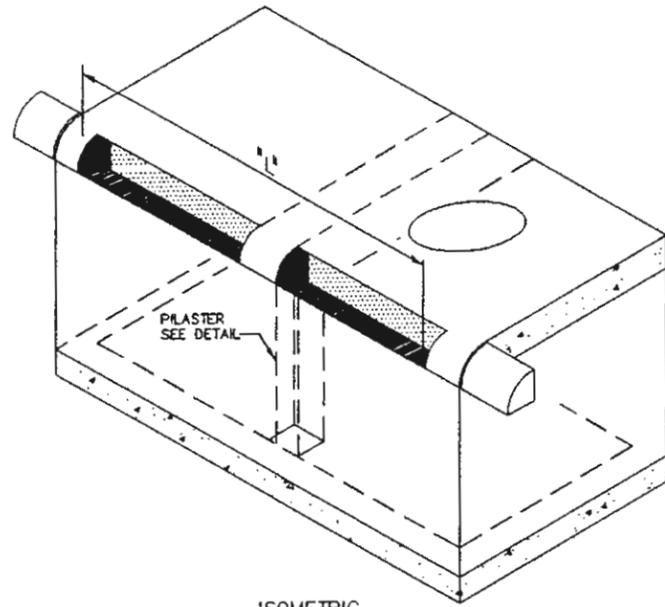
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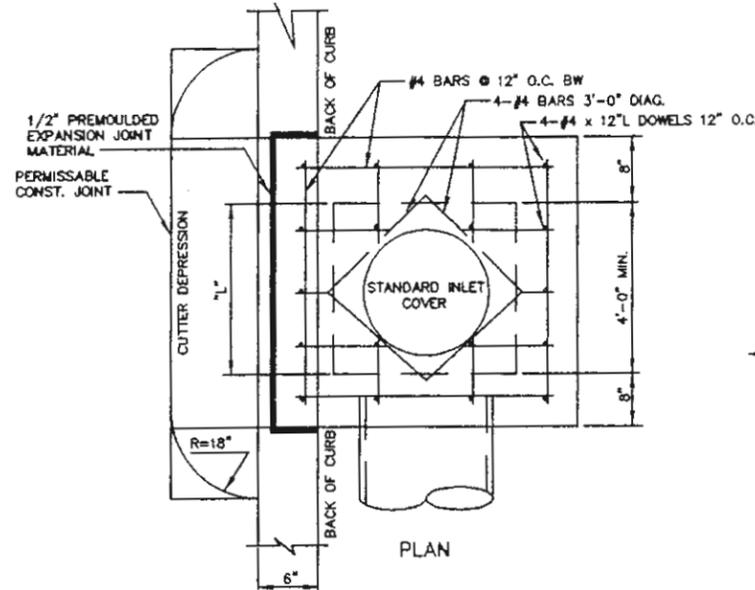
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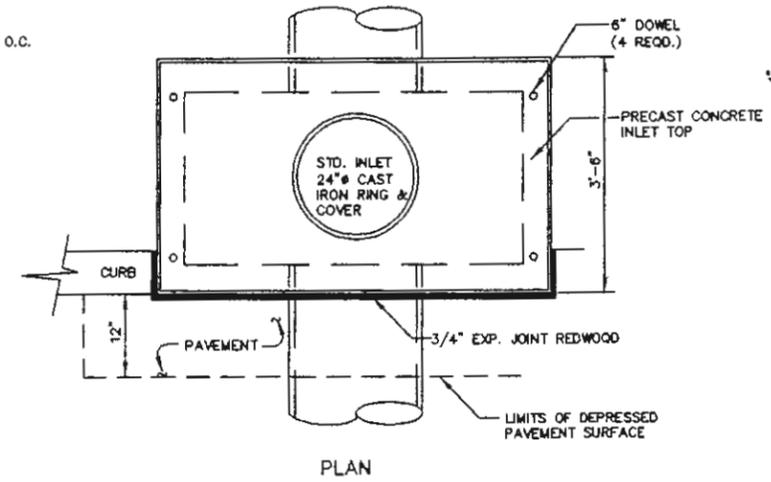
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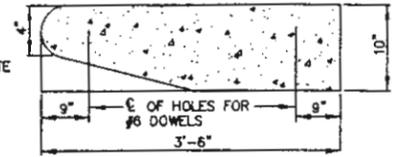
ISOMETRIC



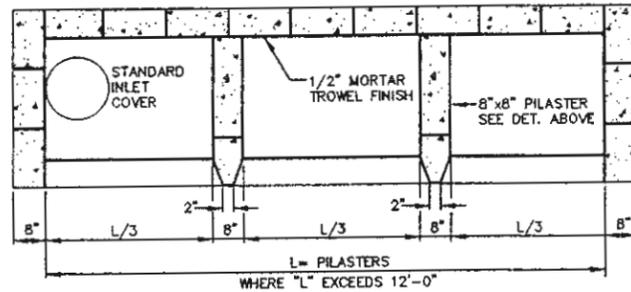
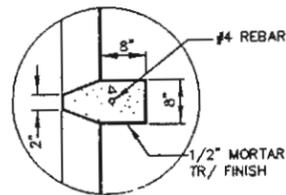
PLAN



PLAN

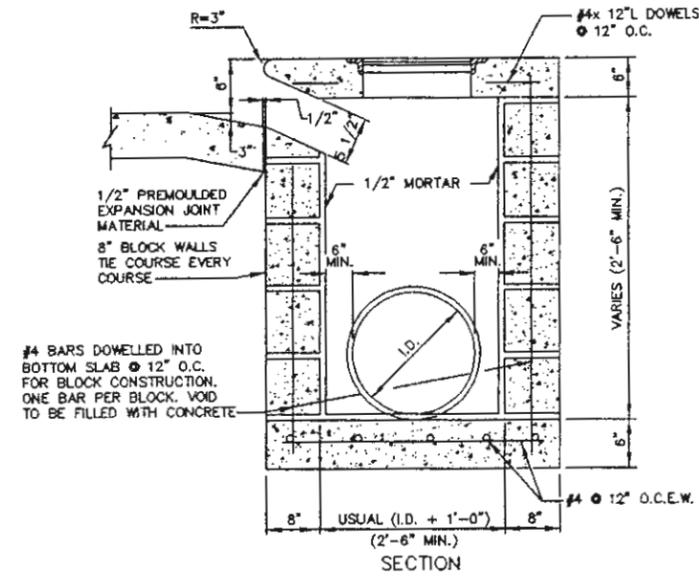


INLET TOP



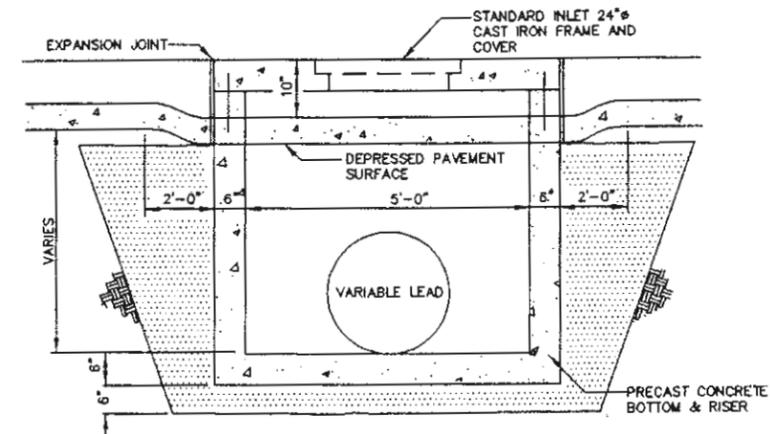
PLAN

SPECIAL INLET WHEN "L" EXCEEDS 12'-0" N.T.S.



SECTION

REINFORCED MASONRY CONSTRUCTION TYPE N.T.S.



ELEVATION

PRECAST CONCRETE CONSTRUCTION TYPE N.T.S.

NOTES:

1. WHEN "L" EXCEEDS 6'-0" AN 8" x 8" PILASTER WILL BE BUILT TO SUPPORT CONCRETE TOP OR BEAM IF REQUIRED.
2. DETAILS OF CONSTRUCTION NOT NOTED SHALL CONFORM TO TYPICAL CURB INLET DETAILS.

NOTES:

1. ALL INTERIOR AND EXPOSED EXTERIOR SURFACES OF MASONRY WALLS SHALL RECEIVE A ONE HALF INCH (1/2") TROWELED MORTAR FINISH.
2. REINFORCING BAR SHALL BE GRADE 40. WELDED WIRE MESH SHALL BE GRADE 50.
3. STANDARD INLET COVER SHALL BE CAST IRON.
4. BACKFILL AROUND INLET TO LIMITS OF EXCAVATION WITH CEMENT STABILIZED SAND.

NOTES:

1. INLET WALLS MAY BE EXTENDED USING PRECAST RISER SECTION.
2. INLET TOPS MUST BE SECURED TO THE INLET WALL USING #6 DOWELS DRILLED AND GROUTED A MINIMUM DEPTH OF 5" INTO THE INLET WALL.
3. INLET BACKFILL SHALL BE CEMENT STABILIZED SAND TO THE TOP OF INLET.

TYPE "C" TYPICAL CURB INLET

STORM DRAINAGE CONSTRUCTION

DRAWING DETAIL

LJD-1



DEPARTMENT OF ENGINEERING AND PUBLIC WORKS

SEAL



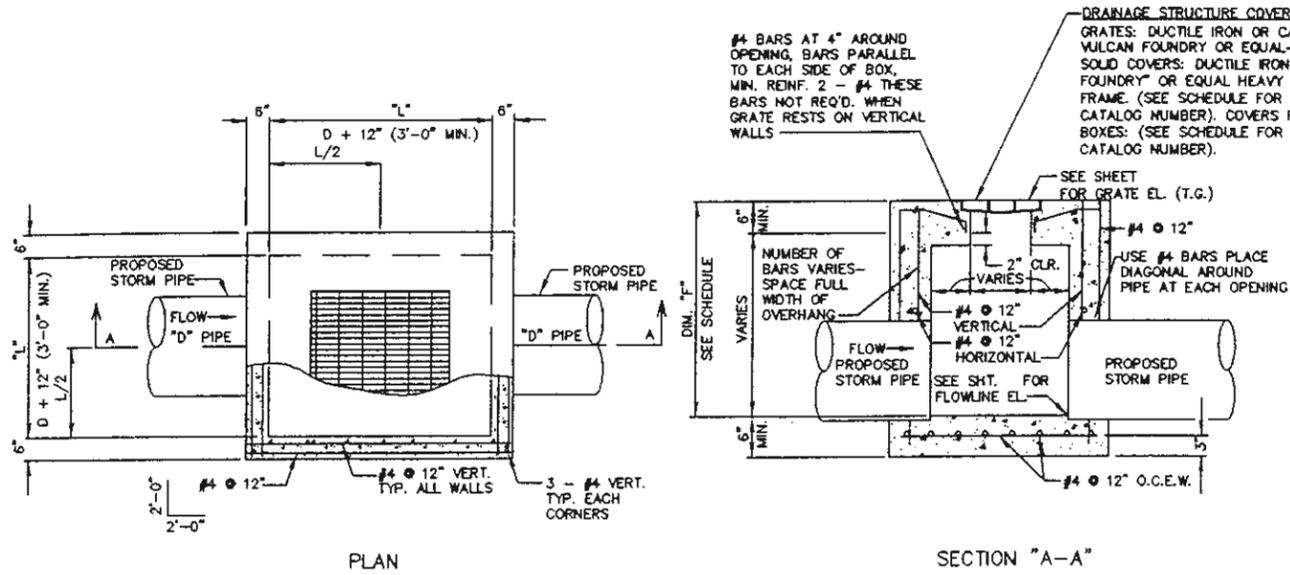
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SUBMITTED:

SCALE:

DATE:

SHEET 1 OF 10

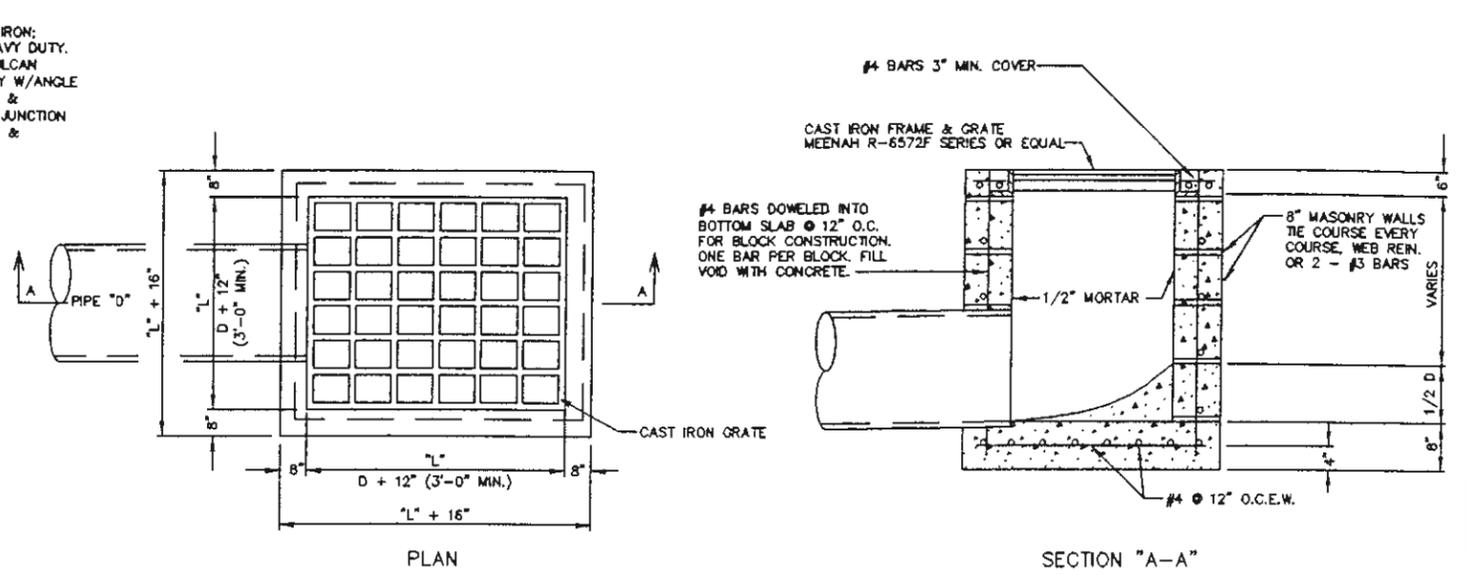


PLAN

SECTION "A-A"

REINFORCED CONCRETE (CAST/PRECAST)
CONSTRUCTION TYPE

TYPE "A" INLET
N.T.S.

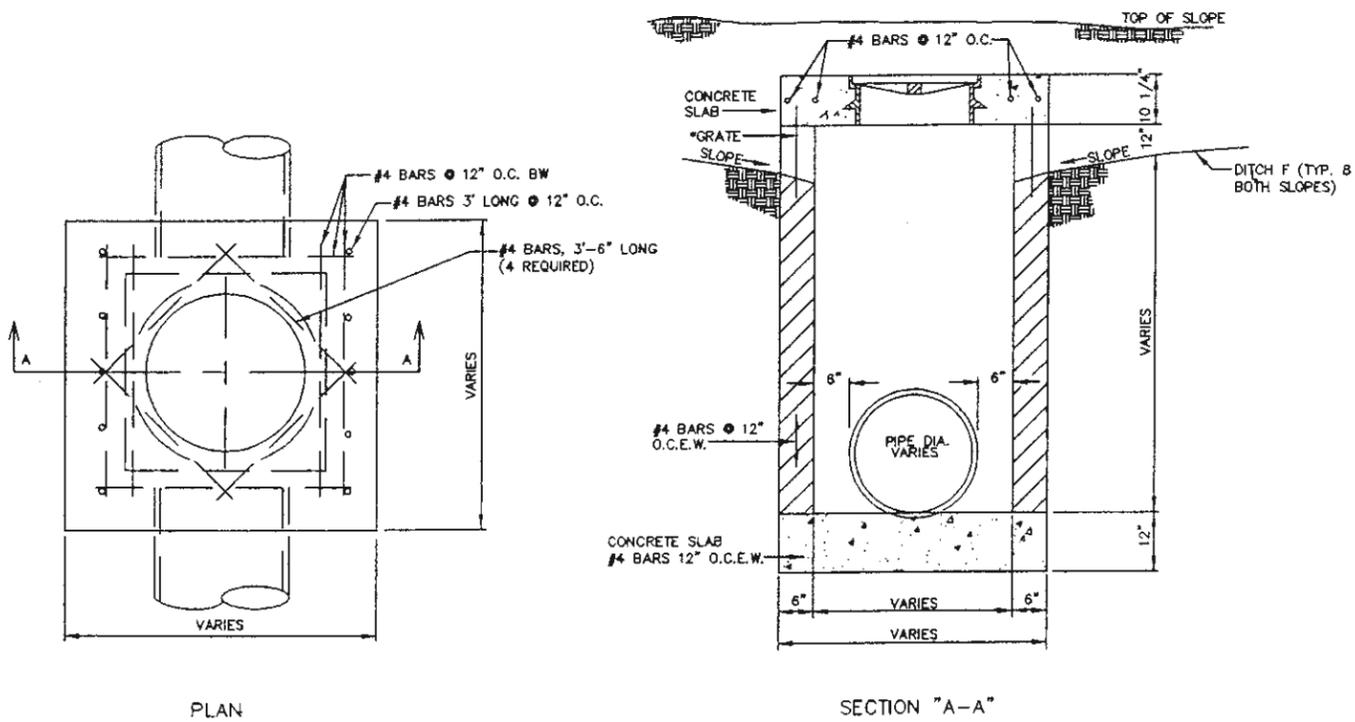


PLAN

SECTION "A-A"

REINFORCED MASONRY
CONSTRUCTION TYPE

- NOTES:
1. ALL INTERIOR AND EXPOSED EXTERIOR SURFACES OF MASONRY WALLS SHALL RECEIVE A ONE HALF INCH (1/2") TROWELLED MORTAR FINISH.
 2. REINFORCING BAR SHALL BE GRADE 60.

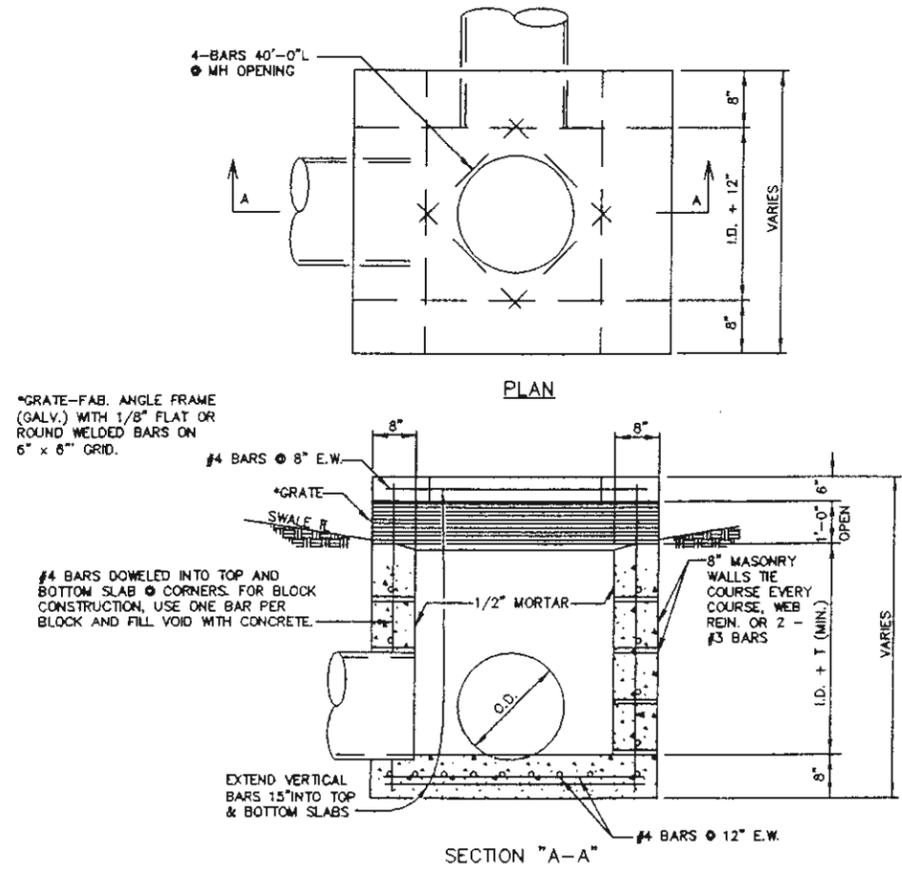


PLAN

SECTION "A-A"

REINFORCED CONCRETE (CAST/PRECAST)
CONSTRUCTION TYPE

TYPE "E" INLET
N.T.S.

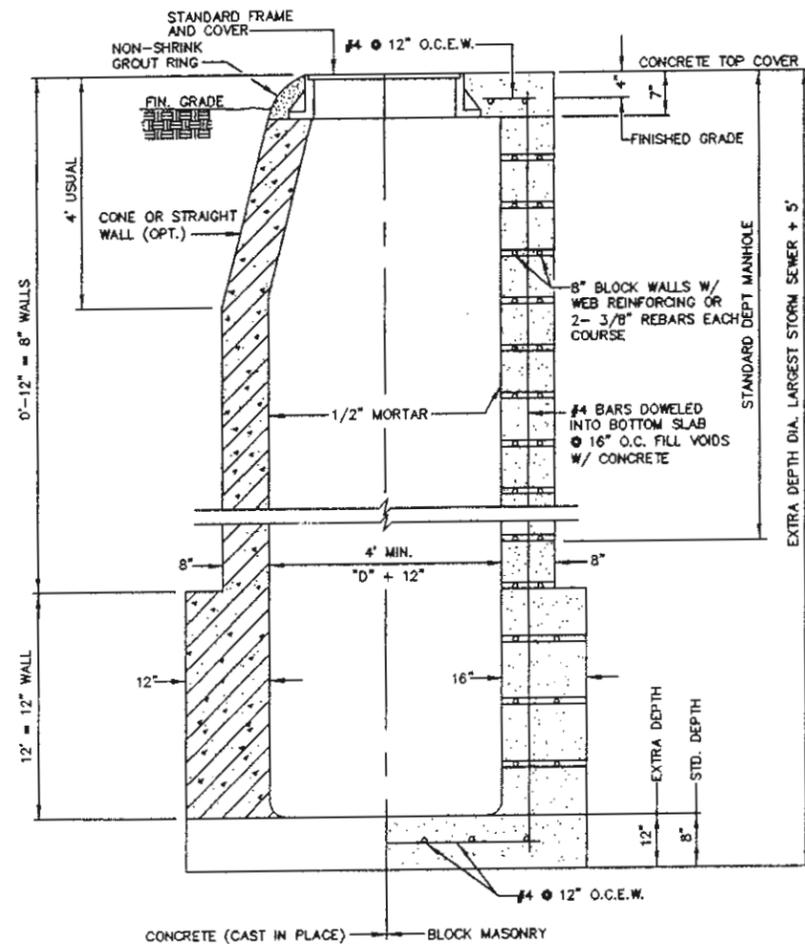


PLAN

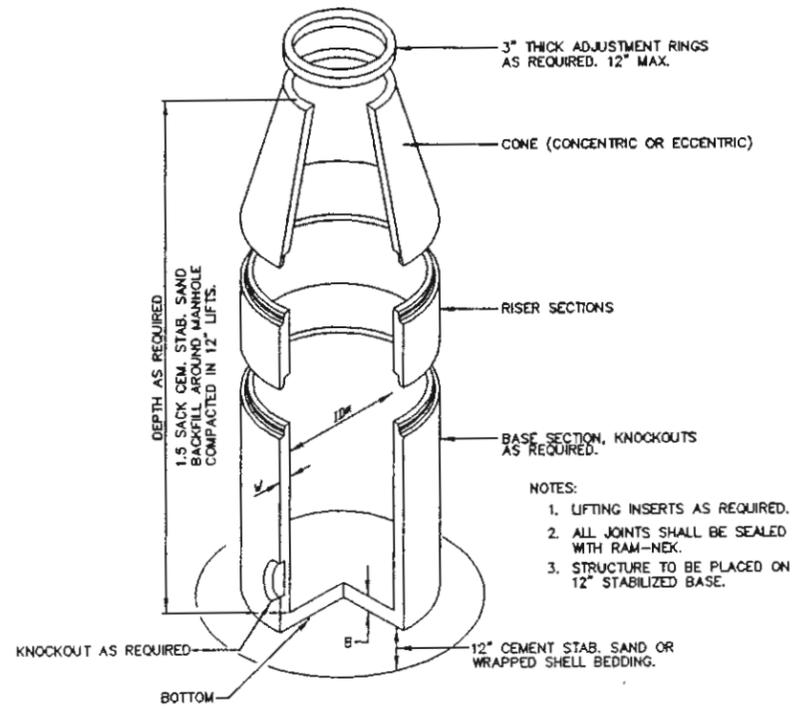
SECTION "A-A"

REINFORCED MASONRY
CONSTRUCTION TYPE

STORM DRAINAGE CONSTRUCTION	
DRAWING DETAIL	
LJD-2	
 DEPARTMENT OF ENGINEERING AND PUBLIC WORKS	
SEAL	
	
DESIGN ENGINEER:	DATE:
SUBMITTED:	
SCALE:	SHEET 2 OF 10
DATE:	



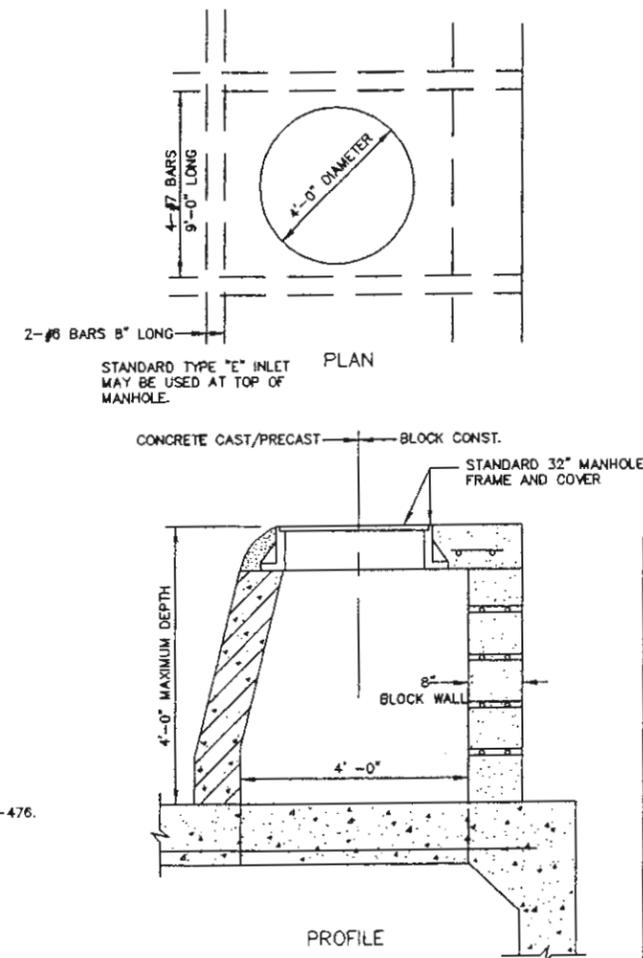
TYPICAL STORM MANHOLE
N.T.S.



NOTES:
1. STANDARD COVER MAY BE SUBSTITUTED WITH COMPATIBLE GRATED COVER WHEN UTILIZED AS AN AREA INLET.

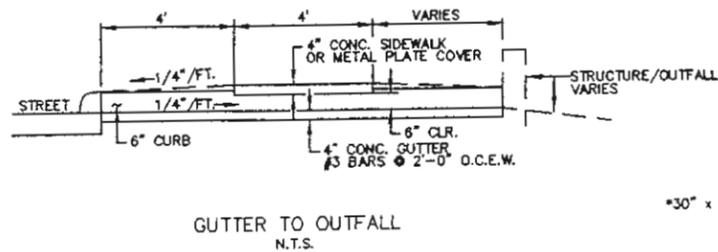
SPECIFICATIONS
CONCRETE: CLASS 1 CONCRETE WITH A DESIGN STRENGTH OF 4500 PSI AT 28 DAYS. RATES FOR H-20 LOADING.
REINFORCEMENT: STRUCTURAL REINFORCEMENT CONFORMING TO ASTM-C-476.
C.I. CASTINGS: CAST IRON FRAMES AND GRATES ARE MANUFACTURED OF GREY CAST IRON CONFORMING TO ASTM A48-76 CLASS 35.

PRECAST CONCRETE STORM MANHOLE
N.T.S.

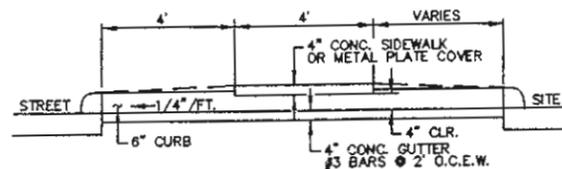


SEE TYPICAL MANHOLE FOR CONST. DETAIL
MANHOLE FOR STORM BOX SEWER
N.T.S.

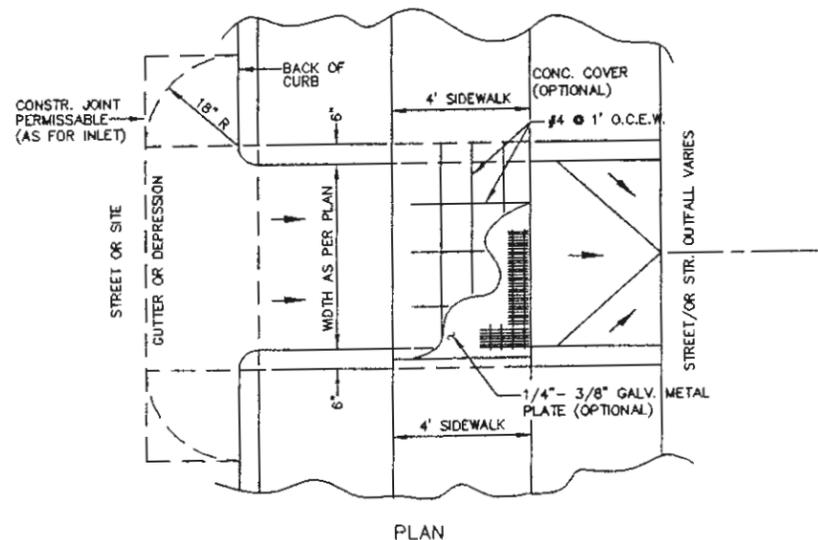
STORM DRAINAGE CONSTRUCTION	
DRAWING DETAIL	
LJD-3	
	
DEPARTMENT OF ENGINEERING AND PUBLIC WORKS	
SEAL	
DESIGN ENGINEER:	DATE:
SUBMITTED:	SHEET 3 of 10
SCALE:	
DATE:	



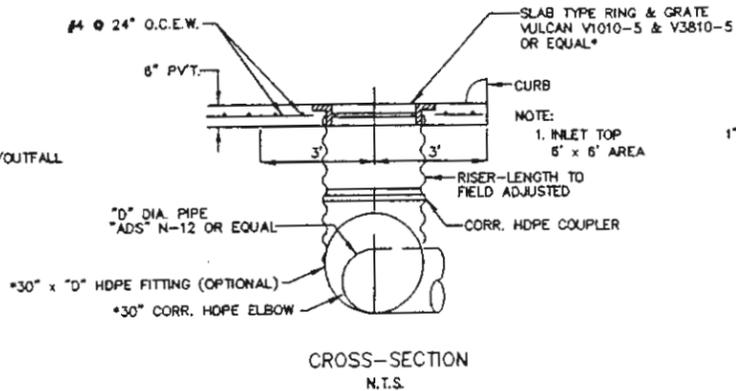
GUTTER TO OUTFALL
N.T.S.



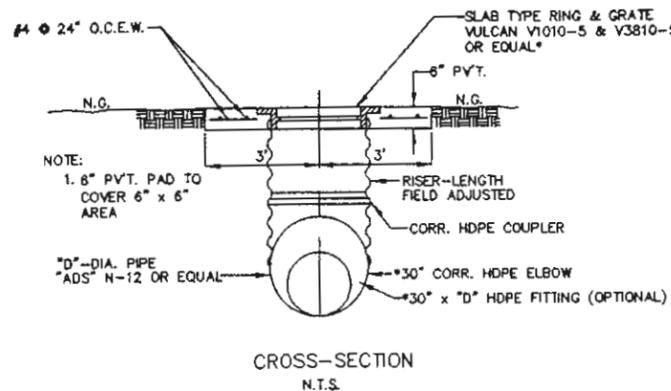
GUTTER TO STREET
N.T.S.



GUTTER TRENCH SPILLWAY
N.T.S.



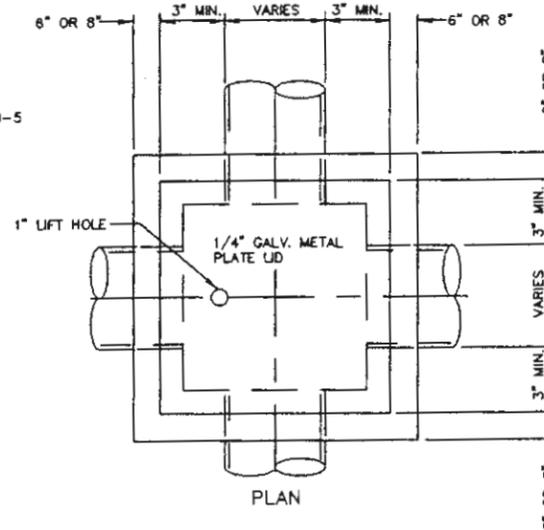
CROSS-SECTION
N.T.S.
C.P.E. IN-LINE DRAIN INLET
(30" STANDARD)



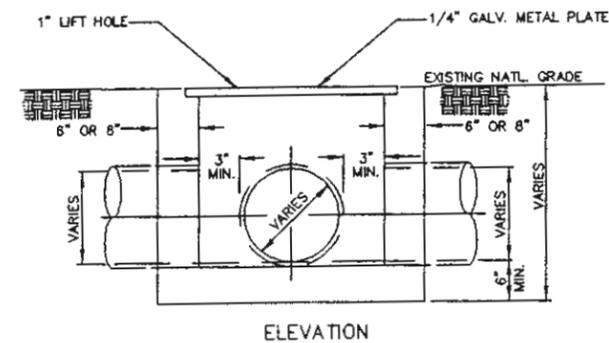
CROSS-SECTION
N.T.S.
C.P.E. IN-LINE/BRANCH DRAIN INLET
(30" STANDARD)

NOTES:
1. "D" VARIES PER PLAN
2. * STANDARD SIZE MAY VARY WITH PROPERLY SIZED AND FITTED FRAME RING AND GRATE TYPE

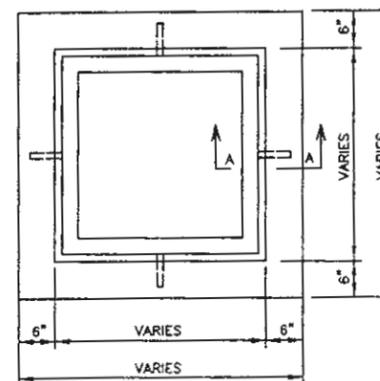
IN-LINE DRAIN INLET
LIGHT TRAFFIC / SITE
N.T.S.



PLAN

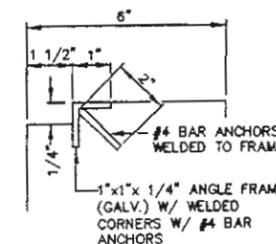


ELEVATION



PLAN

LID FRAME DETAIL



SECTION "A-A"

CONSTRUCTION NOTES:
WALLS TO BE 6" CONC. PRECAST/CAST IN PLACE (WALLS TO BE 8" THICK OF CONST. OF CMU RE. STL AS PER STD BOX, LID TO BE 1/4" GALV. METAL PLATE) BACKFILL SHALL BE C.S. SAND (WHERE TRAFFIC CONDITIONS WARRANT LID SHALL BE 3/8" GALV. METAL PLATE) PIPE TYPE MAY VARY (I.E. RCP, CORR. P.E., PVE SCH. 40 OR GREATER)

NOTES:
1. NOT TO BE USED IN STREET OR AREA BETWEEN CURB AND P.L.

JUNCTION BOX DETAIL
LIGHT TRAFFIC / SITE
N.T.S.

STORM DRAINAGE
CONSTRUCTION

DRAWING DETAIL

LJD-4



DEPARTMENT OF ENGINEERING
AND PUBLIC WORKS

SEAL



DESIGN ENGINEER:

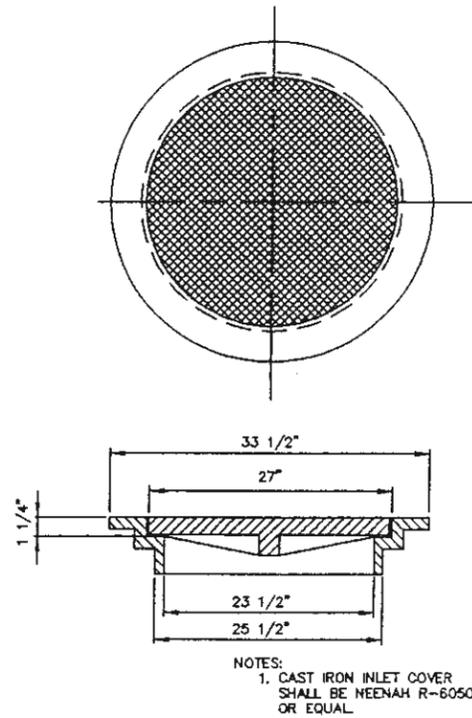
DATE:

SUBMITTED:

SCALE:

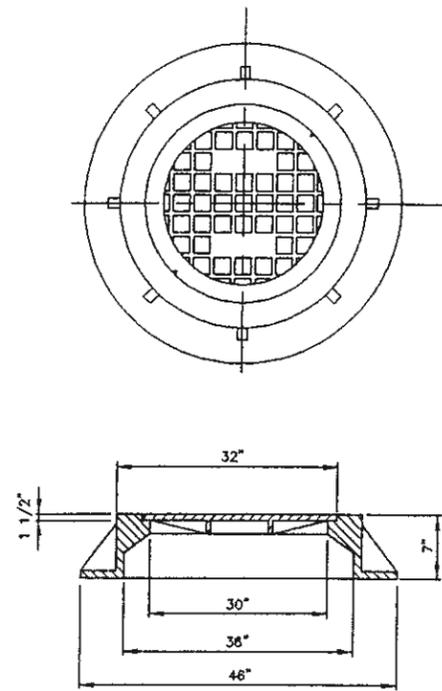
DATE:

SHEET 4 OF 10



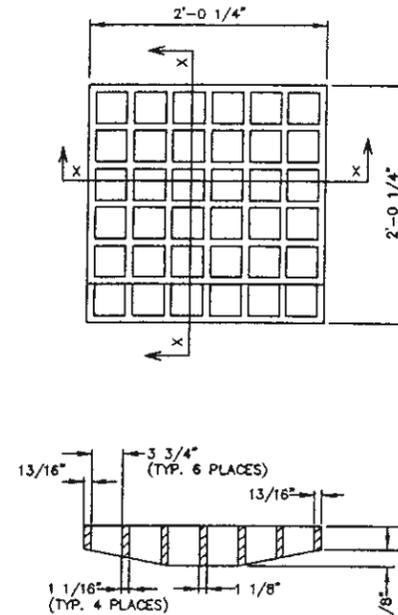
**MANHOLE COVER AND FRAME
FOR CURB INLET**
N.T.S.

NOTES:
1. CAST IRON INLET COVER SHALL BE NEENAH R-6050 OR EQUAL



MANHOLE COVER AND FRAME
N.T.S.

NOTES:
1. MANHOLE COVER SHALL BE NEENAH R-1740-B VULCAN V-7045-1 OR EQUAL.



INLET FRAME AND GRATE
N.T.S.

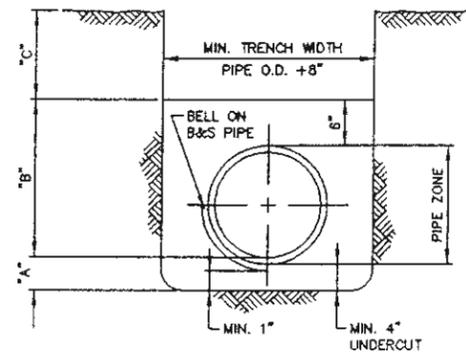
SECTION "X-X"
(VULCAN OR APPROVED EQUAL)

NOTES:
1. NUMBER, TYPE AND SIZE TO BE DETERMINED BY DESIGN INFLOW CAPACITY.

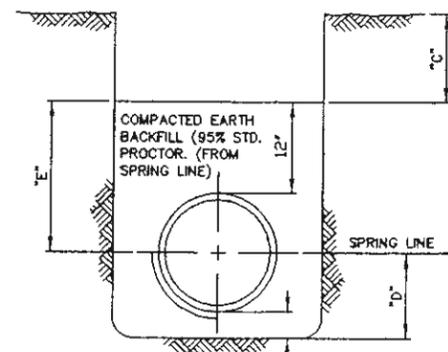
- CLASS "A" BEDDING**
- "A" - WASHED GRAVEL SCREENINGS PLACED BEFORE PIPE IS LAID UP TO FLOW LINE OF PIPE OR ABOVE. (ASTM D2321, CLASS 1A)
 - "B" - WASHED GRAVEL SCREENINGS THOROUGHLY ROODED, PLACED AFTER PIPE IS LAID.
 - "C" - EARTH FILL TO BE PLACED SAME DAY AS PIPE IS LAID.
 - "D" - (FOR PIPES LAID UNDER OR ADJACENT TO ROADWAYS, USE CEMENT STABILIZED SAND) 1 1/2 SK COMPACTED.

CLASS "A" BEDDING SHALL BE USED IN CUTS IN EXCESS OF 10 FEET (10') OR WHEN WET SAND IS PRESENT. WHEN WET SAND IS ENCOUNTERED, THE TRENCH SHALL BE DE-WATERED TO A STABLE CONDITION AND LINED WITH GEOTECHNICAL FABRIC PRIOR TO PLACING THE GRAVEL SCREENINGS FOR BEDDING AND BACKFILL ZONES A & B.

*CEMENT STABILIZED SAND MAY BE USED WHERE STABLE CLAY BOTTOM EXISTS.



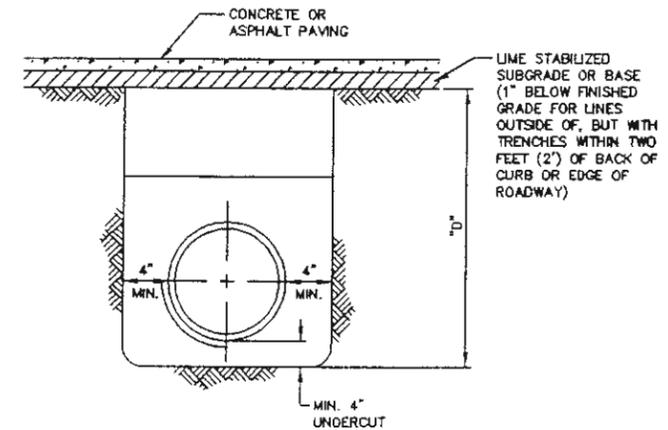
CLASS "A"



ORDINARY

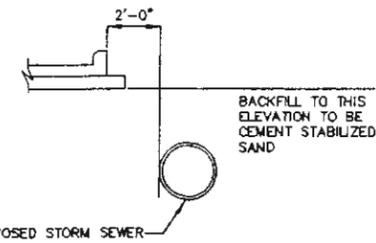
"D" ZONE - BEDDING AND BACKFILL TO SPRING LINE WITH *CEMENT STABILIZED SAND.(COMPACTED)

"E" ZONE - WHERE THE LIQUID LIMIT OF THE SOIL IN TRENCH WALLS IN THE "D-E" ZONES EXCEEDS 50, CEMENT STABILIZED SAND SHALL BE UTILIZED. (COMPACTED)



**CLASS "A"
UNDER AND ADJACENT TO ROADWAYS**

WHERE PIPE IS PLACED ALONG PROPOSED STREET, IT SHALL BE LOCATED SUCH THAT THE OUTSIDE DIAMETER CLOSEST TO THE STREET IS TWO FEET FROM BACK OF CURB. SEE DETAIL BELOW.



TYPICAL BEDDING FOR STORM SEWERS
N.T.S.

STORM DRAINAGE
CONSTRUCTION

DRAWING DETAIL

LJD-5



DEPARTMENT OF ENGINEERING
AND PUBLIC WORKS

SEAL



DESIGN ENGINEER: DATE:

SUBMITTED: DATE:

SCALE: SHEET 5 of 10

DATE:

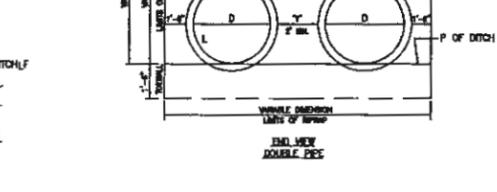
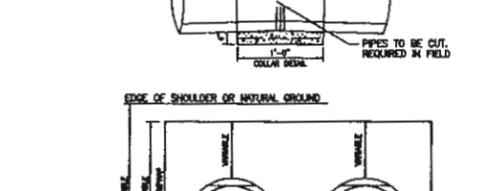
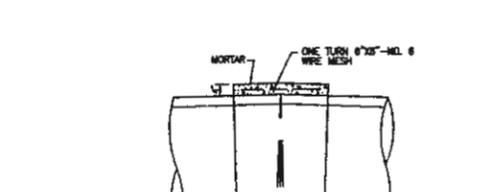
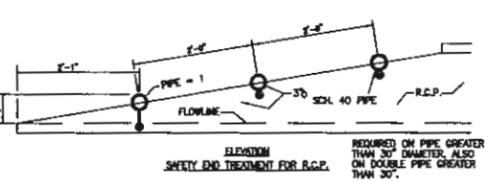
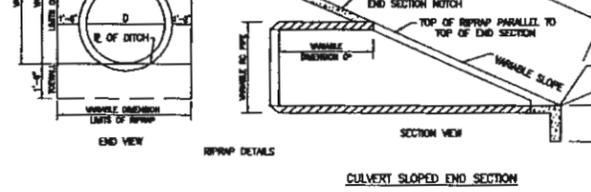
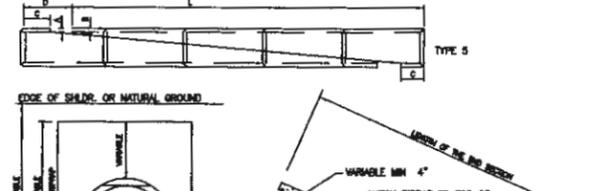
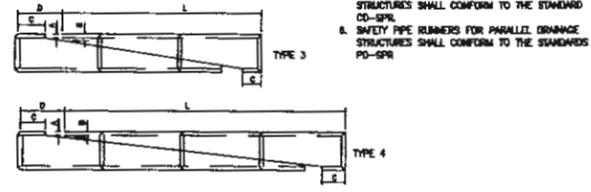
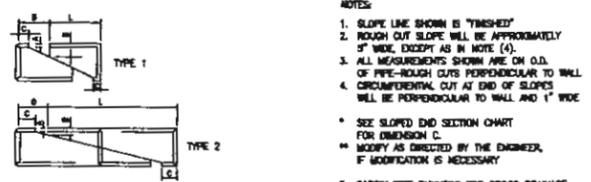
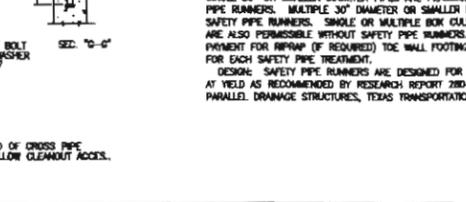
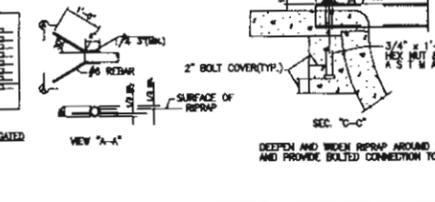
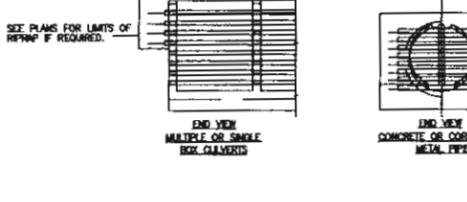
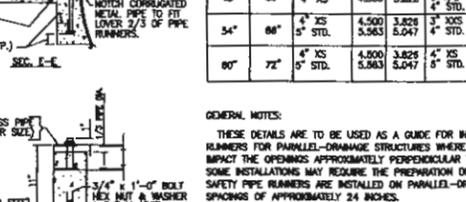
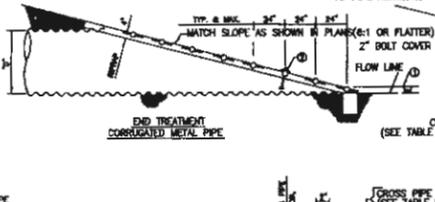
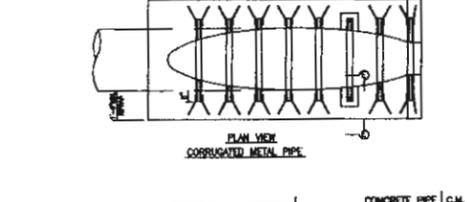
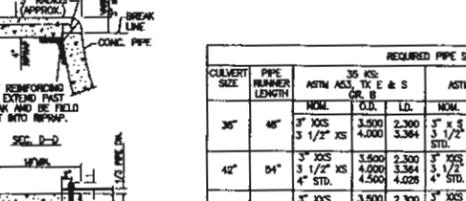
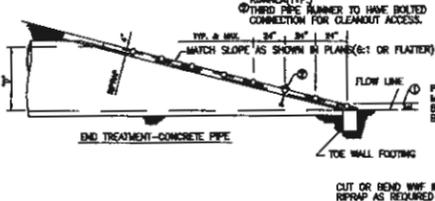
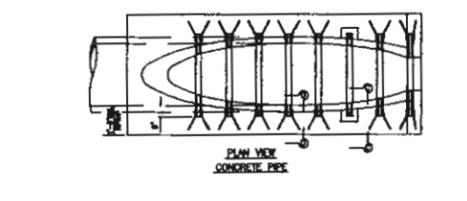
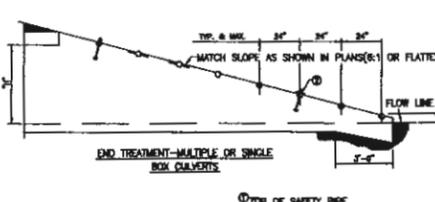
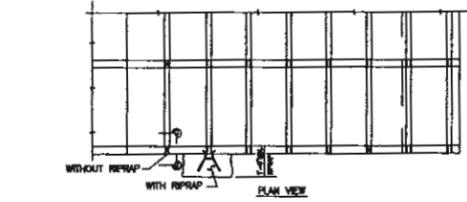
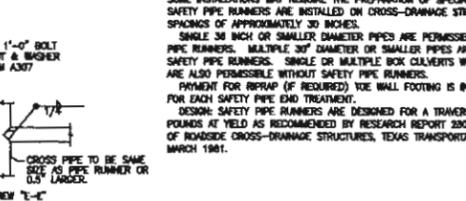
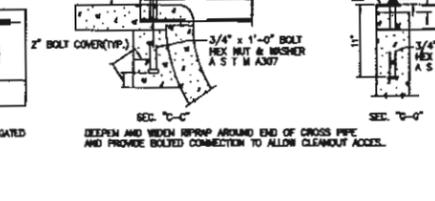
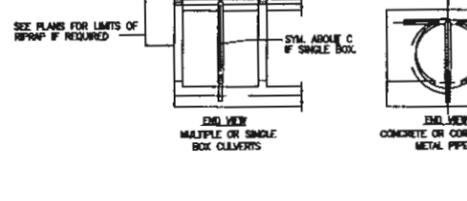
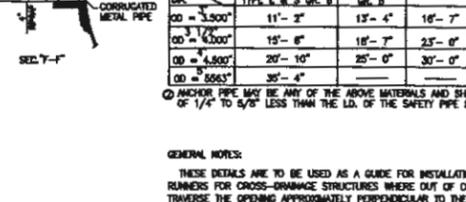
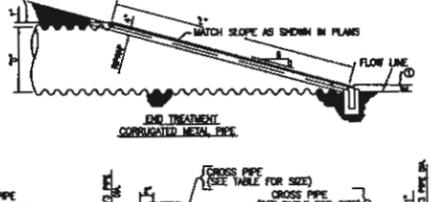
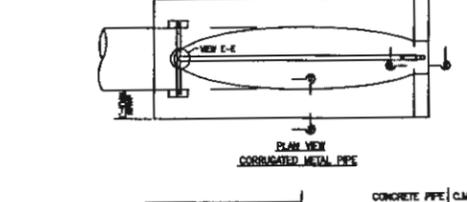
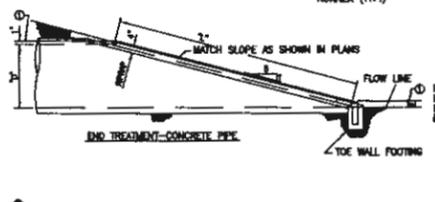
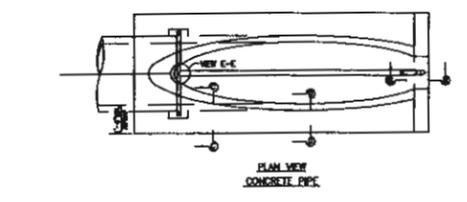
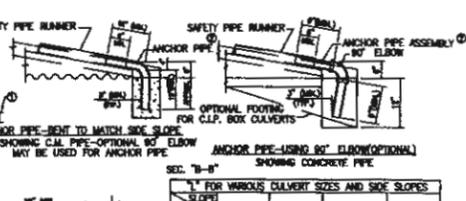
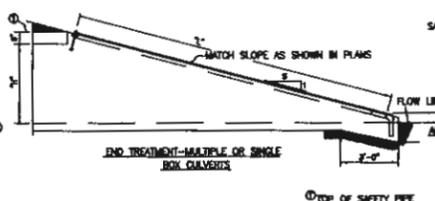
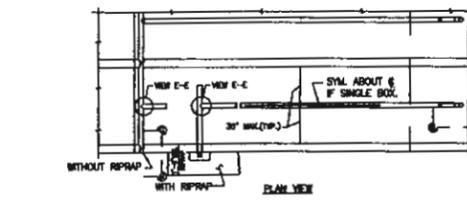


TABLE 1: REQUIRED PIPE SIZES AND SLOPES

SLOPE	3:1	4:1	5:1	6:1
D = 36"	8'-2"	10'-8"	13'-2"	15'-0"
H = 36"	9'-8"	12'-4"	15'-4"	18'-3"
D = 42"	9'-8"	12'-8"	15'-8"	18'-9"
H = 42"	11'-1"	14'-0"	17'-10"	21'-3"
D = 48"	11'-4"	14'-5"	18'-3"	21'-10"
H = 48"	12'-8"	16'-2"	20'-5"	23'-4"
D = 54"	12'-11"	16'-10"	20'-10"	24'-10"
H = 54"	14'-3"	18'-7"	22'-11"	27'-4"
D = 60"	14'-8"	18'-11"	23'-4"	27'-11"
H = 60"	15'-10"	20'-7"	25'-4"	30'-4"

TABLE 2: MAXIMUM PIPE LENGTH FOR A GIVEN PIPE SIZE AND YIELD

PIPE SIZE	35 KSI	42 KSI	52 KSI
11" - 2"	11' - 2"	13' - 4"	16' - 7"
15" - 8"	15" - 8"	18" - 7"	23" - 0"
20" - 10"	20" - 10"	25" - 0"	30" - 0"
30" - 4"	30" - 4"	35" - 4"	42" - 0"

GENERAL NOTES:
 THESE DETAILS ARE TO BE USED AS A GUIDE FOR INSTALLATION OF SAFETY PIPE RUNNERS FOR CROSS-DRAINAGE STRUCTURES WHERE OUT OF CONTROL VEHICLES MAY TRANSVERSE THE OPENING APPROXIMATELY PERPENDICULAR TO THE SAFETY PIPE RUNNER. SOME INSTALLATIONS MAY REQUIRE THE PREPARATION OF SPECIAL DETAILS. IN GENERAL SAFETY PIPE RUNNERS ARE INSTALLED ON CROSS-DRAINAGE STRUCTURES AT MAXIMUM SPACINGS OF APPROXIMATELY 30 INCHES.
 SINGLE 36 INCH OR SMALLER DIAMETER PIPES ARE PERMISSIBLE WITHOUT SAFETY PIPE RUNNERS. MULTIPLE 30" DIAMETER OR SMALLER PIPES ARE PERMISSIBLE WITHOUT SAFETY PIPE RUNNERS. SINGLE OR MULTIPLE BOX CULVERTS WITH SPANS OF 30' OR LESS ARE ALSO PERMISSIBLE WITHOUT SAFETY PIPE RUNNERS.
 PAYMENT FOR REWRAP (IF REQUIRED) TOE WALL FOOTING IS INCLUDED IN THE PRICE BID FOR EACH SAFETY PIPE END TREATMENT.
 DESIGN: SAFETY PIPE RUNNERS ARE DESIGNED FOR A TRAVERSING LOAD OF 1,000 POUNDS AT YIELD AS RECOMMENDED BY RESEARCH REPORT 280-1, SAFETY TREATMENT OF ROADSIDE CROSS-DRAINAGE STRUCTURES, TEXAS TRANSPORTATION INSTITUTE, MARCH 1981.

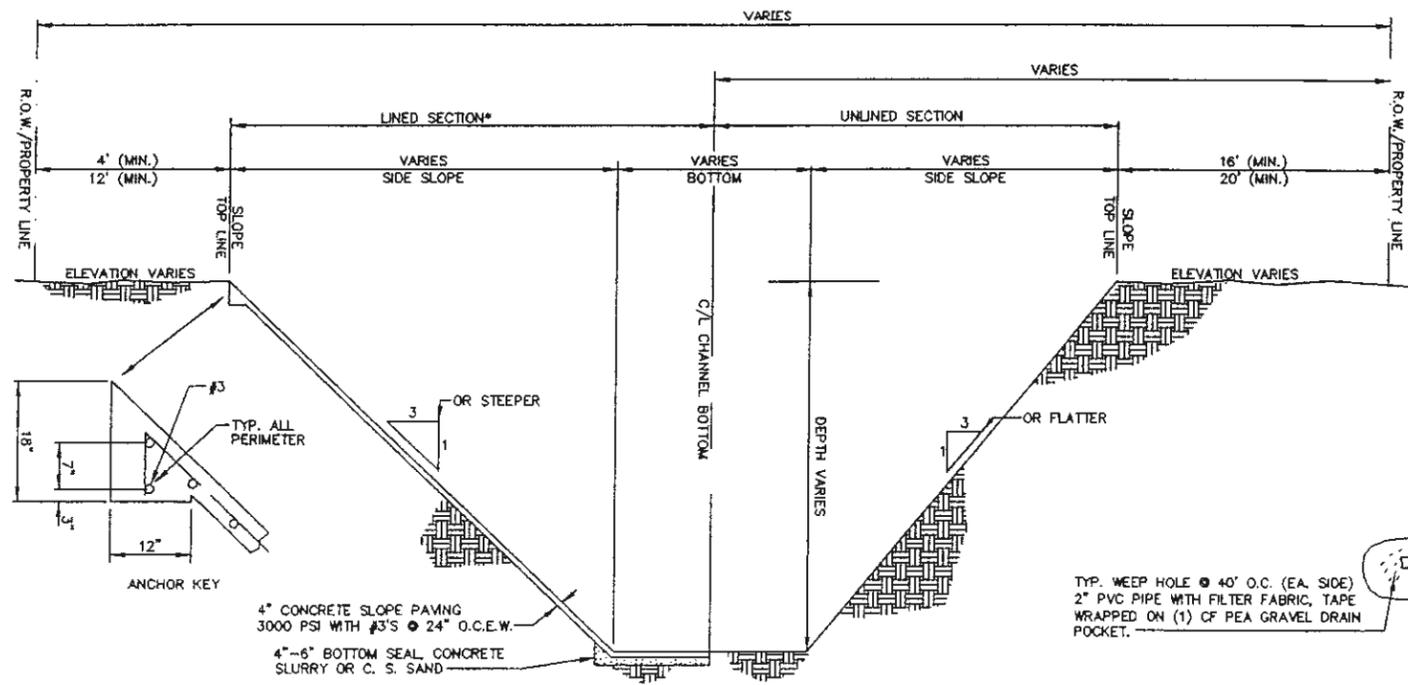
REQUIRED PIPE SIZES FOR GIVEN PIPE YIELD

CULVERT SIZE	PIPE RUNNER LENGTH	35 KSI			42 KSI			52 KSI		
		NOM.	O.D.	L.D.	NOM.	O.D.	L.D.	NOM.	O.D.	L.D.
36"	48"	3" XOS	3,500	2,300	3" X S	3,500	2,800	3" STD.	3,500	3,088
		3 1/2" XOS	4,000	3,384	3 1/2" X S	4,000	3,548	3 1/2" STD.	4,000	3,548
		4" STD.	4,500	4,028	4" STD.	4,500	4,028	4" STD.	4,500	4,028
42"	64"	3" XOS	3,500	2,300	3" XOS	3,500	2,300	3" XOS	3,500	2,800
		3 1/2" XOS	4,000	3,384	3 1/2" X S	4,000	3,384	3 1/2" STD.	4,000	3,548
		4" STD.	4,500	4,028	4" STD.	4,500	4,028	4" STD.	4,500	4,028
48"	80"	3" XOS	3,500	2,300	3" XOS	3,500	2,300	3" XOS	3,500	2,800
		3 1/2" XOS	4,000	3,384	3 1/2" X S	4,000	3,384	3 1/2" STD.	4,000	3,548
		4" STD.	4,500	4,028	4" STD.	4,500	4,028	4" STD.	4,500	4,028
54"	86"	4" XOS	4,500	3,828	4" XOS	4,500	2,300	4" XOS	4,500	2,300
		5" STD.	5,583	5,047	5" STD.	4,500	4,028	5" STD.	4,500	3,384
		6" STD.	5,583	5,047	6" STD.	4,500	5,047	6" STD.	4,500	4,028
60"	72"	4" XOS	4,000	3,828	4" XOS	4,500	3,828	4" XOS	4,000	2,300
		5" STD.	5,583	5,047	5" STD.	4,500	5,047	5" STD.	4,000	3,384
		6" STD.	5,583	5,047	6" STD.	4,500	5,047	6" STD.	4,000	4,028

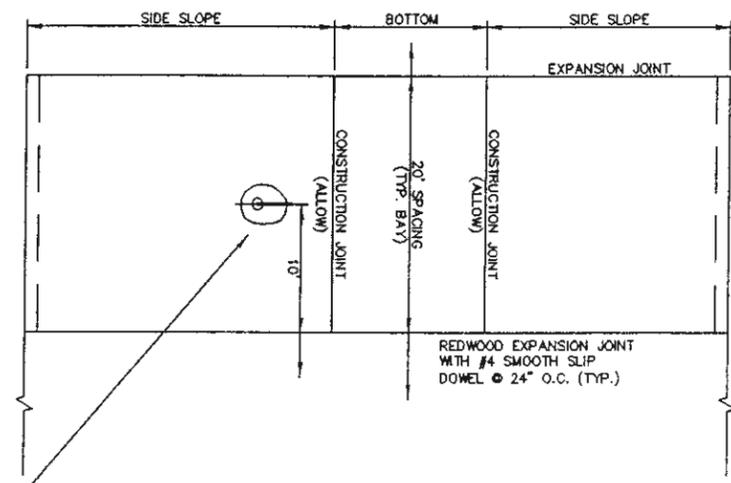
GENERAL NOTES:
 THESE DETAILS ARE TO BE USED AS A GUIDE FOR INSTALLATION OF SAFETY PIPE RUNNERS FOR PARALLEL-DRAINAGE STRUCTURES WHERE OUT OF CONTROL VEHICLES MAY IMPACT THE OPENING APPROXIMATELY PERPENDICULAR TO THE SAFETY PIPE RUNNERS. SOME INSTALLATIONS MAY REQUIRE THE PREPARATION OF SPECIAL DETAILS. IN GENERAL SAFETY PIPE RUNNERS ARE INSTALLED ON PARALLEL-DRAINAGE STRUCTURES AT MAXIMUM SPACINGS OF APPROXIMATELY 24 INCHES.
 SINGLE 36" OR SMALLER DIAMETER PIPES ARE PERMISSIBLE WITHOUT SAFETY PIPE RUNNERS. MULTIPLE 30" DIAMETER OR SMALLER PIPES ARE PERMISSIBLE WITHOUT SAFETY PIPE RUNNERS. SINGLE OR MULTIPLE BOX CULVERTS WITH SPANS OF 30' OR LESS ARE ALSO PERMISSIBLE WITHOUT SAFETY PIPE RUNNERS.
 PAYMENT FOR REWRAP (IF REQUIRED) TOE WALL FOOTING IS INCLUDED IN THE PRICE BID FOR EACH SAFETY PIPE END TREATMENT.
 DESIGN: SAFETY PIPE RUNNERS ARE DESIGNED FOR A TRAVERSING LOAD OF 10,000 POUNDS AT YIELD AS RECOMMENDED BY RESEARCH REPORT 280-2, SAFETY TREATMENT OF ROADSIDE PARALLEL-DRAINAGE STRUCTURES, TEXAS TRANSPORTATION INSTITUTE, JUNE 1981.

TABLE 3: RWRAP QUANTITY FOR ONE END SECTION

DIA.	WALL	O.D.	SLOPE	PIPE LATH	TYPE	A	B	C	D	L	LENGTH	RWRAP
15"	2"	18"	3:1	1-8"	1	2	8	13	36	25'-10"	0.42	0.34
			4:1	2-4"	2	2	8	18	34	5'-2"	0.07	0.4
			5:1	2-6"	2	2	8	27	51	7'-8"	11.91	0.5
			3:1	2-4"	2	2	8	21	32	5'-3"	7.77	0.41
			4:1	2-6"	2	2	8	36	51	7'-8"	10.83	0.52
			5:1	2-7"	2	2	8	35	58	10'-1"	14.59	0.87
18"	2"	22"	3:1	2-4"	2	2	8	16	27	5'-0"	8.03	0.43
			4:1	2-6"	2	2	8	30	44	8'-4"	11.82	0.58
			5:1	2-7"	2	2	8	27	48	11'-3"	15.46	0.68
			3:1	2-6"	2	3	8	36	54	7'-6"	11.27	0.57
			4:1	2-6"	2	3	8	24	48	5'-3"	12.33	0.58
			5:1	3-6"	3	3	8	36	72	12'-2"	18.23	0.74
21"	2"	25"	3:1	2-6"	2	2	8	30	44	8'-4"	11.8	0.6
			4:1	2-7"	2	2	8	31	48	7'-10"	11.8	0.6
			5:1	2-7"	2	2	8	38	80	10'-0"	14.6	0.80
			3:1	2-6"	2	3	8	36	54	7'-6"	21.54	0.81
			4:1	2-6"	2	3	8	27	48	5'-3"	12.12	0.83
			5:1	2-7"	2	3	8	30	54	10'-0"	15.20	0.72
24"	2"	30"	3:1	2-6"	2	3	9	31	48	7'-10"	11.8	0.6
			4:1	2-7"	2	3	9	31	48	7'-10"	11.8	0.6
			5:1	2-7"	2	3	9	38	80	10'-0"	14.6	0.80
			3:1	2-6"	2	3	9	24	48	5'-3"	12.33	0.58
			4:1	2-6"	2	3	9	36	72	12'-2"	18.23	0.74
			5:1	3-6"	3	3	9	31	48	7'-10"	11.8	0.6
27"	2"	33"	3:1	2-6"	2	3	9	31	48	7'-10"	11.8	0.6
			4:1	2-7"	2	3	9	38	80	10'-0"	14.6	0.80
			5:1	2-7"	2	3	9	54	90	15'-0"	21.54	0.81
			3:1	2-6"	2	3	9	27	48	5'-3"	12.12	0.83
			4:1	2-6"	2	3	9	36	72	12'-2"	18.23	0.74
			5:1	2-7"	2	3	9	30	54	10'-0"	15.20	0.72
30"	2"	37"	3:1	2-6"	2	3	9	31	48	7'-10"	11.8	0.6
			4:1	2-7"	2	3	9	31	48	7'-10"	11.8	0.6
			5:1	2-7"	2	3	9	38	80	10'-0"	14.6	0.80
			3:1	2-6"	2	3	9	24	48	5'-3"	12.33	0.58
			4:1	2-6"	2	3	9	36	72	12'-2"	18.23	0.74
			5:1	3-6"	3	3	9	31	48	7'-10"	11.8	0.6
36"	2"	44"	3:1	2-6"	2	3	9	31	48	7'-10"	11.8	0.6
			4:1	2-7"	2	3	9	24	48	5'-3"	12.33	0.58
			5:1	2-7"	2	3	9	36	72	12'-2"	18.23	0.74
			3:1	2-6"	2	4	10	36	54	10'-0"	14.75	0.8
			4:1	2-6"	2	4	10	36	72	12'-2"	25.30	1.03
			5:1	2-7"	2	4	10	27	45	11'-3"	15.81	0.98
42"	2"	51"	3:1	2-6"	2	3	9	31	48	7'-10"	11.8	0.6
			4:1	2-7"	2	3	9	31	48	7'-10"	11.8	0.6
			5:1	2-7"	2	3	9	38	80	10'-0"	14.6	0.80
			3:1	2-6"	2	4	10	27	45	11'-3"	15.81	0.98
			4:1	2-6"	2	4	10	36	72	12'-2"	25.30	1.03
			5:1	2-7"	2	4	10	27	45	11'-3"	15.81	0.98
48"	2"	59"	3:1	2-6"	2	3	9	31	48	7'-10"	11.8	0.6
			4:1	2-7"	2	3	9	31	48	7'-10"	11.8	0.6
			5:1	2-7"	2	3	9	38	80	10'-0"	14.6	0.80
			3:1	2-6"	2	4	10	27	45	11'-3"	15.81	0.98
			4:1	2-6"	2	4	10	36	72	12'-2"	25.30	

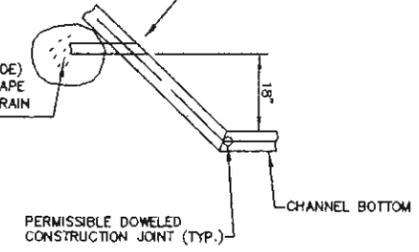


TYPICAL SECTION (LINED/UNLINED)



PLAN (LINED)

TYP. WEEP HOLE ϕ 40" O.C. (EA. SIDE)
 2" PVC PIPE WITH FILTER FABRIC, TAPE
 WRAPPED ON (1) CF PEA GRAVEL DRAIN
 POCKET.



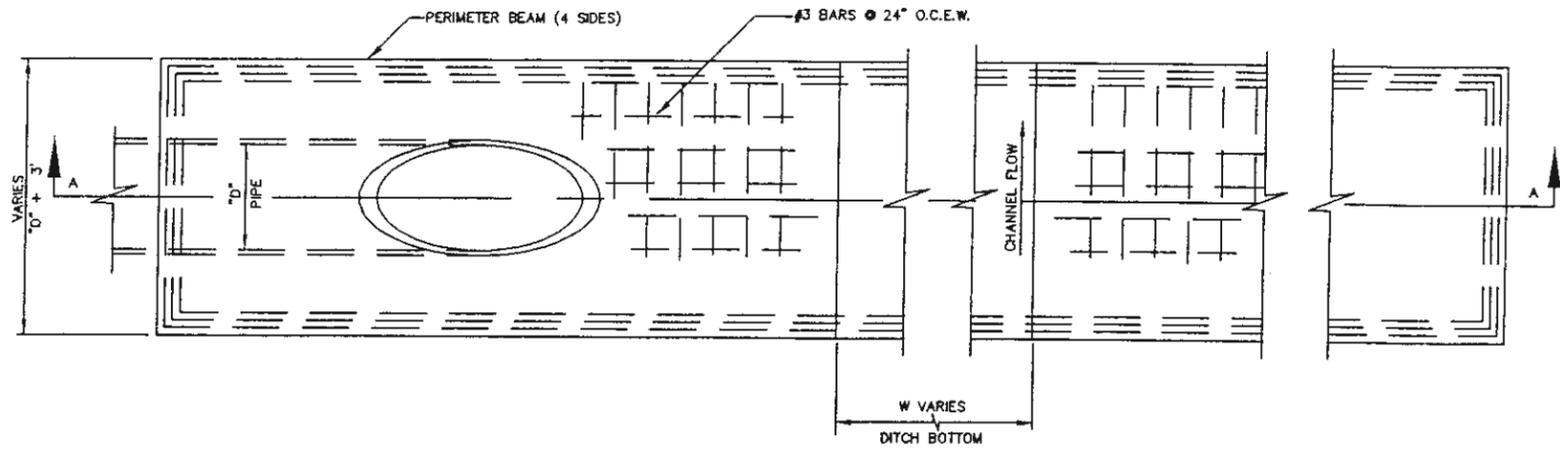
- NOTES: CHANNEL LINING ALTERNATES*
1. REINFORCED CONCRETE "SHOTCRETE" OR "GUNITE"
 2. GABION MATS
 3. GROUTED FABRIC MAT
 4. GEOWEB (CELL)
 5. ARTICULATED CONCRETE

OPEN CHANNEL SLOPE TREATMENT DETAIL

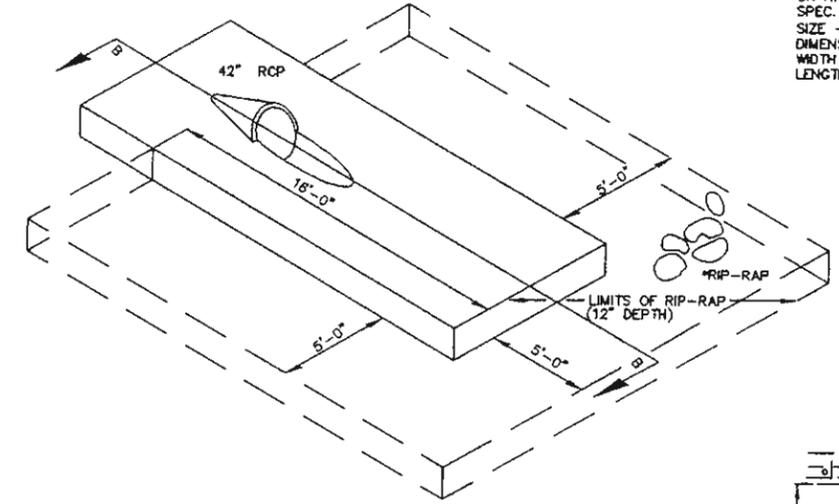
N.T.S.

STORM DRAINAGE CONSTRUCTION	
DRAWING DETAIL	
LJD-7	
 DEPARTMENT OF ENGINEERING AND PUBLIC WORKS	
SEAL	
	
DESIGN ENGINEER:	DATE:
SUBMITTED:	
SCALE:	SHEET 7 OF 10
DATE:	

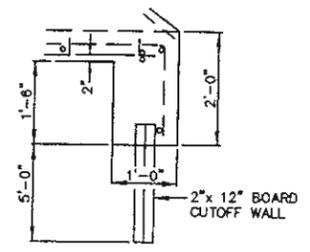
NOTES:
 1. *RIP-RAP SHALL BE BROKEN CONCRETE OR NATURAL STONE:
 SPEC. GRAVITY - 2.4
 SIZE - 0.25 TO 1.25 CF (40-190#)
 DIMENSION - >3 IN.
 WIDTH - <2.5 x THICKNESS
 LENGTH - <3 x THICKNESS



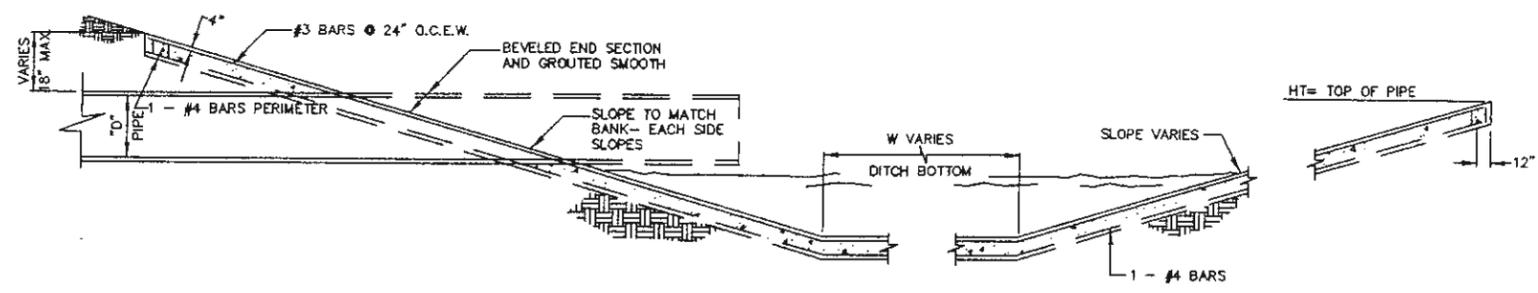
PLAN VIEW



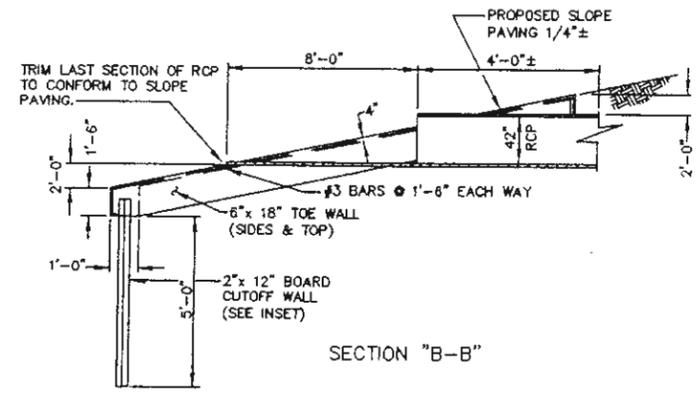
ISOMETRIC VIEW



INSET



SECTION "A-A"



SECTION "B-B"

W= WIDTH PER PLAN
 D= PIPE DIAMETER PER PLAN
 S= SLOPE PER PLAN/FIELD

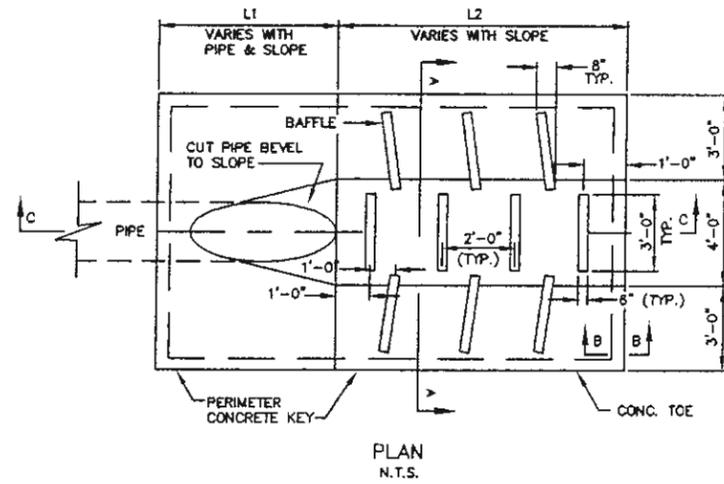
TYPICAL DRAINAGE OUTFALL CHANNEL

VELASCO DRAINAGE OUTFALL CHANNEL

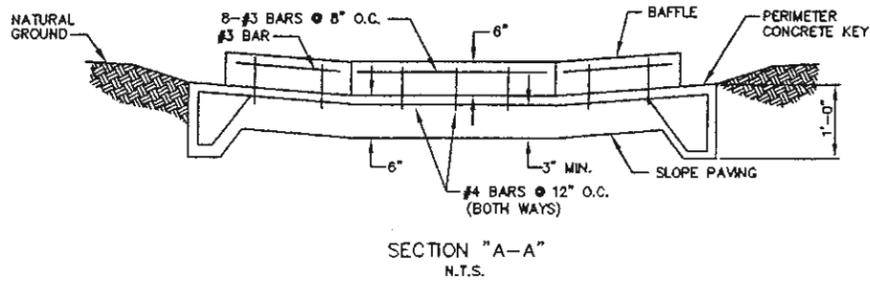
STANDARD CONCRETE SLOPE PAVING PIPE OUTFALL

N.T.S.

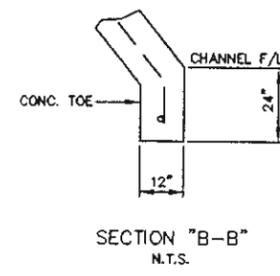
STORM DRAINAGE CONSTRUCTION	
DRAWING DETAIL	
LJD-8	
 CITY OF ENCHANTMENT LAKE JACKSON, TEXAS	
DEPARTMENT OF ENGINEERING AND PUBLIC WORKS	
SEAL	
 S. J. AGUIRRE 37751 REGISTERED PROFESSIONAL ENGINEER	
DESIGN ENGINEER:	DATE:
SUBMITTED:	
SCALE:	SHEET 8 OF 10
DATE:	



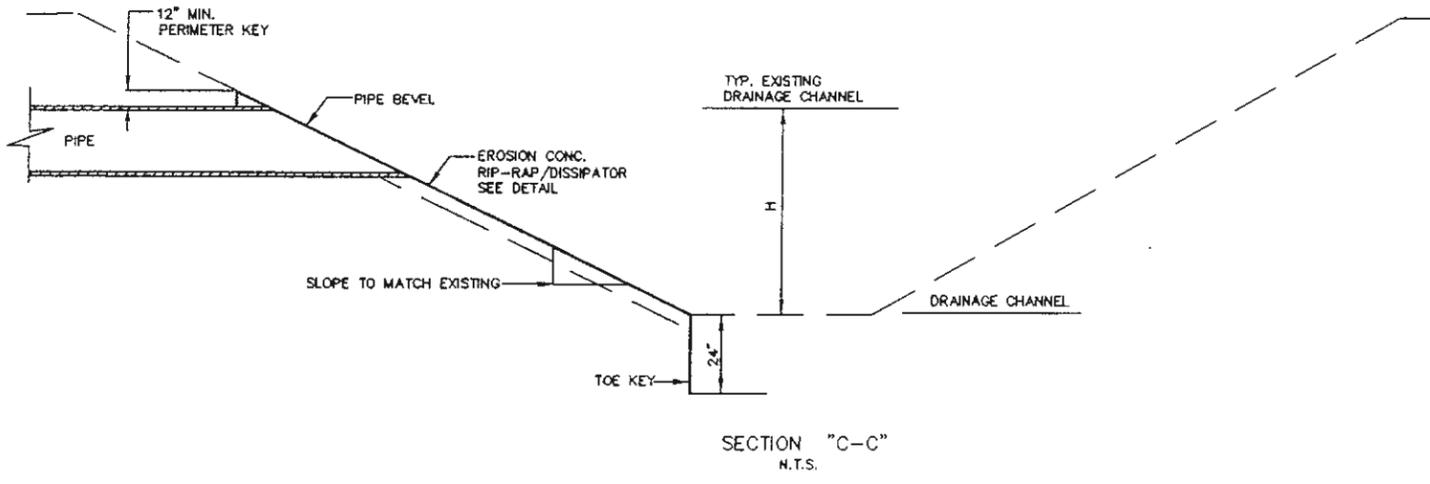
PLAN
N.T.S.



SECTION "A-A"
N.T.S.

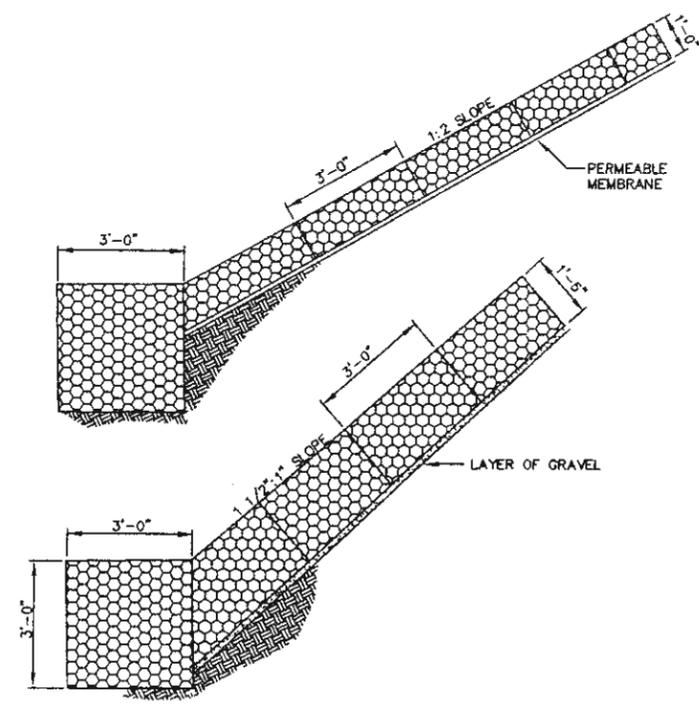


SECTION "B-B"
N.T.S.



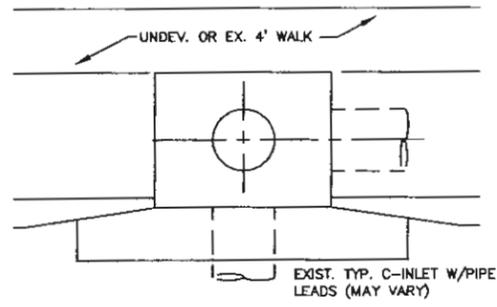
SECTION "C-C"
N.T.S.

PIPE OUTFALL SLOPE PROTECTION WITH ENERGY
DISSIPATORS TREATMENT (OPTION)

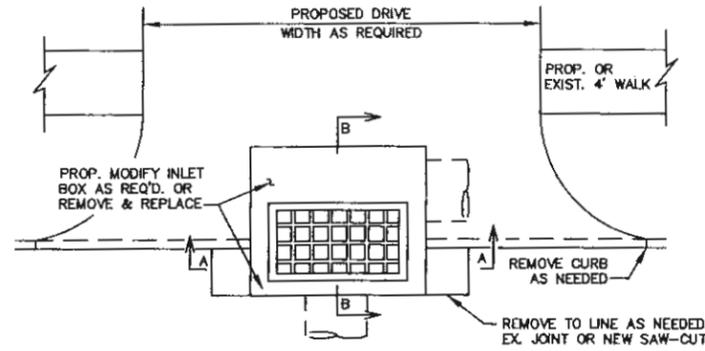


GABION LINING PIPE OUTFALL (OPTION)
N.T.S.

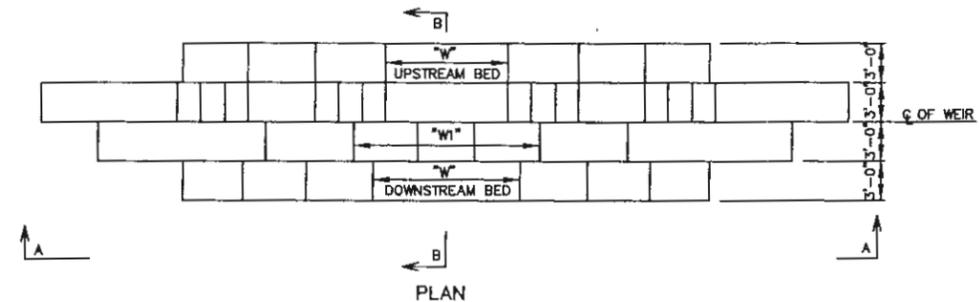
STORM DRAINAGE CONSTRUCTION	
DRAWING DETAIL	
LJD-9	
 DEPARTMENT OF ENGINEERING AND PUBLIC WORKS	
SEAL	
	
DESIGN ENGINEER:	DATE:
SUBMITTED:	SHEET 9 OF 10
SCALE:	
DATE:	



TYPICAL CONDITION LAYOUT

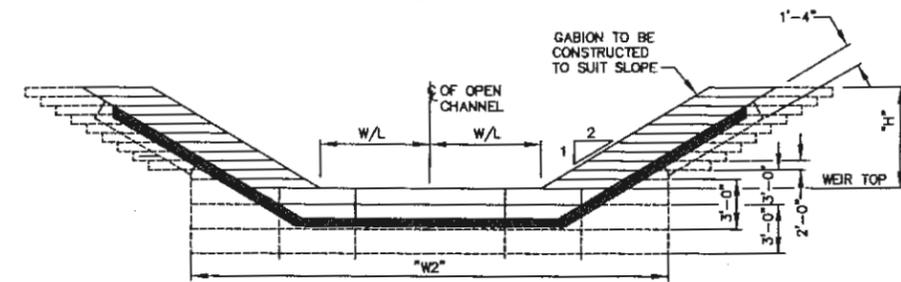


PROPOSED LAYOUT



PLAN

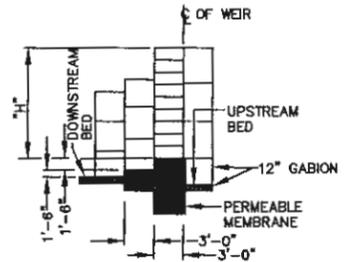
W - WIDTH PER PLAN
 W1 - WIDTH PER PLAN
 W2 - 2 WIDTH PER PLAN
 H - HEIGHT PER PLAN



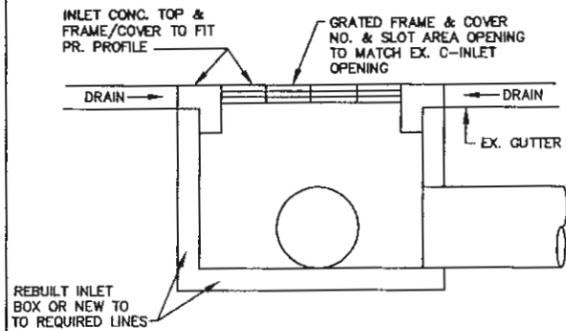
SECTION "A-A"

GABION CHECKDAM RETARD

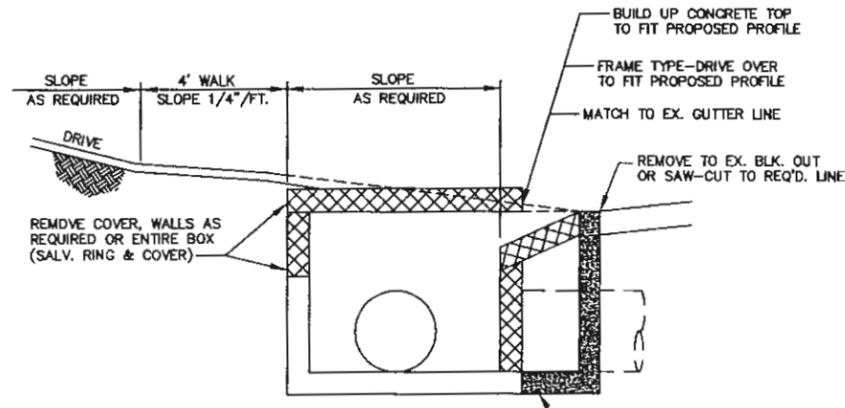
N.T.S.



SECTION "B-B"



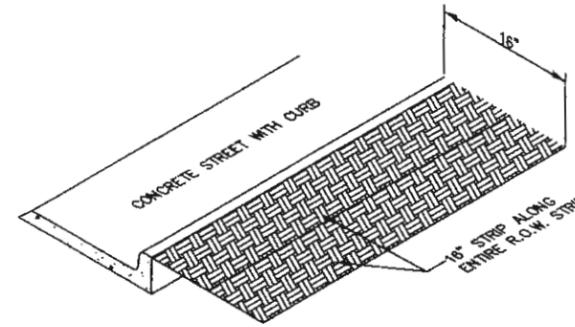
SECTION "A-A"



SECTION "B-B"

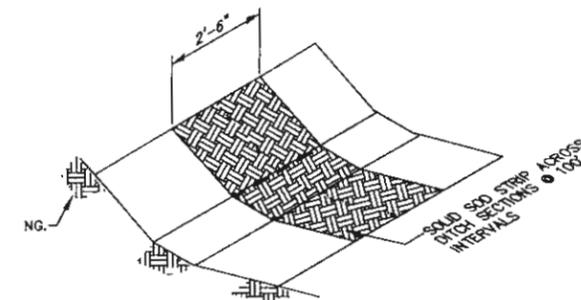
DRIVE OVER CURB INLET INSTALLATION

N.T.S.



SOLID SOD / BACK OF CURB / BACK OF SIDEWALK RIGHT OF WAY RETARD

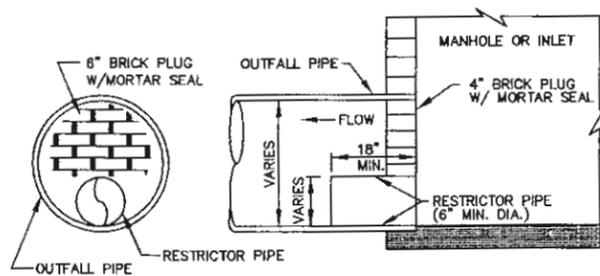
N.T.S.



DITCH CHANNEL RETARD

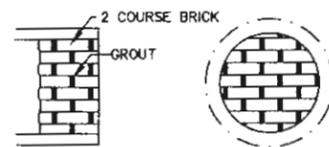
N.T.S.

- NOTES:
1. INSTALLATION MAY BE RETROFIT OF EXISTING CONDITIONS OR NEW CONSTRUCTION.
 2. INLET DIMENSIONS SHALL BE DETERMINED AS REQ'D. BY FRAME COVER OR PIPING SIZES WHICH EVER GOVERNS.
 3. BOX INLET CONSTRUCTION DETAIL SHALL CONFORM TO THOSE OF THE STANDARD INLET CONSTRUCTION REQUIREMENTS.



STORM SEWER CHOKO OUTFALL RESTRICTOR

N.T.S.



STORM SEWER PLUG DETAIL

N.T.S.

STORM DRAINAGE CONSTRUCTION

DRAWING DETAIL

LJD-10



DEPARTMENT OF ENGINEERING AND PUBLIC WORKS

SEAL



DESIGN ENGINEER: DATE:

SUBMITTED: SCALE: DATE: SHEET 10 OF 10



SANITARY SEWER COLLECTION DETAIL NOTE

1. The development Engineer's proprietary design and construction detail, varying from the standards provided, may be considered in cases where experience indicates an equal or better product. These differences shall be submitted to the Engineer/Public Works Department for approval or denial.
2. Any reference to specific manufacturers products shall refer also to other alternate products in the approved list
3. All concrete for precast or cast-in-place manhole bases shall be a minimum of ty CL"A" with 3000 psi compressive strength. All cement stabilized sand referred in the detail shall be a minimum 1 ½ sk/cy of cement content.
4. A. Sewer Pipe Material: New and Replacement

Pipe Size	Depth	Type	Wall Thickness	System
4"-12"	<12'	PVC	SDR-26 (min)	Gravity
>12"	<12'	PVC	DR-25, C905	"
>12"	>12'	PVC	DR-18, C905	"
4"-12"	All	DIP	CL15 - Bit Coat	Gravity
4"-12"	"	PVC	DR-18, C905	Force Main
4"-12"	All	DIP	CL51-w/40 Mil.Polymer	"

Gravity lines greater than 18" diameter shall be submitted for approval by the Engineer/Public Works Department and comply with the approved list of materials.

B. Sewer Pipe Material: Reconstruction (trenchless)

Pipe Size	System
>8"	Cured in place - Polyurethane
>6"	Slipliner - Polyethylene
>12"	Slipliner - Centrifugal Cast Fiberglass
>6"	Fold & Form - PVC

Material stiffness, strengths and means & methods shall be approved by the Engineer/Public Works Department and comply with the approved list.

5. Sewer Lead Connections to the main shall be made with SDR 35 fittings and schedule 40 adapters. Sewer pipe lead shall be schedule 40 PVC typically extending to within 2-3 feet of the R.O.W. line at a common lot corner and each sewer lead shall be plugged and marked with a magnetic locator furnished by the city at the time of installation. Deep lead connections shall be made according to the detail of the standard.
6. All concrete or brick manhole will not be allowed. Final elevation of manhole ring and frame shall be a maximum of 6" above the finished grade and the total throat length shall not exceed 12". Manhole cover must include the words "Sanitary Sewer". Manholes shall be backfilled with cement stabilized sand.
7. Roadway casing crossing detail shall only be applicable to State Highway road crossing or to special circumstances that may arise at the Engineer/Public Works directives. All City roadway crossing shall be done by direct pipe auger and crossing through junction box or structure shall be made with D.I.P. materials.
8. Sanitary sewer lines crossing under proposed and existing concrete pavement surfaces (Streets and driveway) and open cut shall be backfilled with cement stabilized sand from the washed gravel envelope to the pavement subgrade.

SANITARY SEWER COLLECTION SYSTEM DESIGN CRITERIA

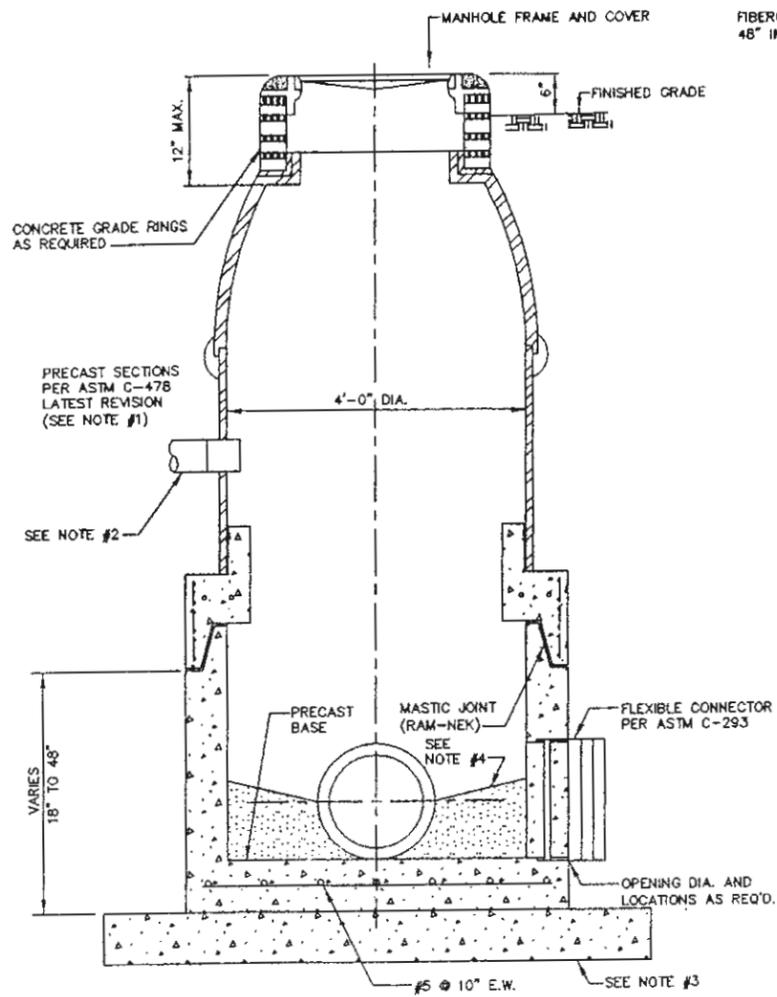
1. All sanitary sewer systems shall be designed according to the TNRCC Design Criteria for Sewerage Systems latest revision and those rules of the City of Lake Jackson Development Standards (latest revision) not in conflict with the same.
2. All sanitary sewer system designs except privately owned systems shall be accompanied by a detailed engineering report prior to approval by the Engineering/Public Works Department. This shall include the projects potential impact on downstream Lift Station Systems and proposed Lift Station design with preliminary O & M Manual.
3. Typically sanitary sewer mains shall be within 5'-6' inside the street right-of-way or centered in the easement and maintained in straight close relation to the alignment through the use of any necessary manholes to accomplish this. Replacement of existing lines may parallel or approximate the existing alignment to the extent necessary to remain clear from existing field obstructions and minimize reconections.
4. Sanitary sewer pipe laying depths greater than twelve feet (12') shall be allowed only with the approval of the Engineer/Public Works Department. Sewer lines crossing of storm drain pipes shall clearance minimum of 12" and crossings of water lines shall have 6" clearance minimum. The sanitary sewer shall be joint centered on the crossings and laid under water lines where possible.
5. All single and double service lead shall be a minimum six inch (6") unless otherwise directed by the Engineer/Public Works and or field adjusted by the Utility Department in the future.
6. All gravity sewers will be designed to accommodate the peak flow from the contributing drainage area. The peak flow will be computed using the appropriate peaking factor, F, multiplied by the average day flow for the contributing area. For non-residential areas, the peak flow should include consideration of flow characteristics from the anticipated development. In all cases, the design peaking factor, F, shall meet or exceed the values as follows:

$$F=4$$

Allowance for inflow/infiltration of 4% and 30% of dry average flow shall be unfactored but considered in the total design flow. Additional consideration of peak flow shall be given for design of pumping stations. The impact of pumping stations on the upstream and downstream sanitary sewer system shall be evaluated and submitted for design review by the Engineer/Public Works Department. The peak flow for design of a pumping station shall be based on the actual flow into the station. A reduced peak flow, from the peaking factor presented above, may be used for design of larger pumping stations provided a detailed hydraulic analysis is performed on the sanitary sewer system. Specific approval by the Department of Engineering/Public Works Department shall be required prior to use of a reduced peak flow for the design of a pumping station and relation and related sanitary sewer system.

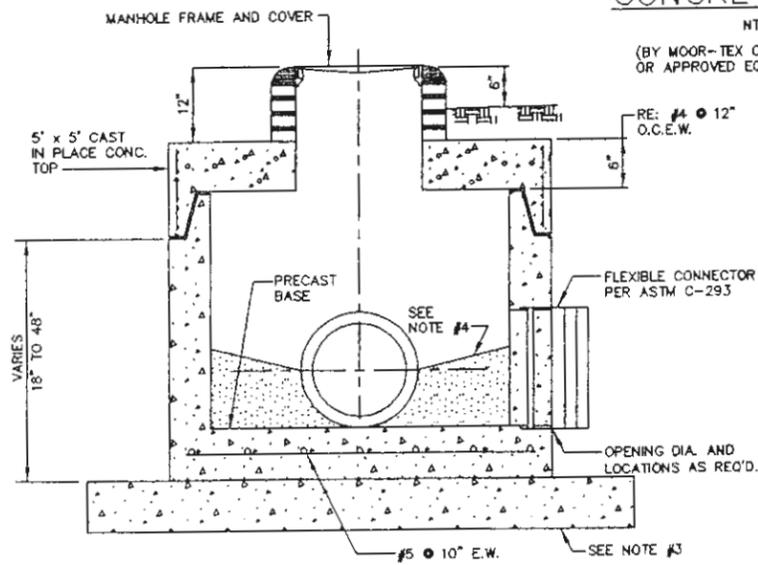
7. Design of Wetwell/Dry Pit, Submersible Pump Lift Station and Package Units: Arrangement will require specific approval by the Department of Engineering/Public Works Department provided extenuating conditions and circumstances preclude the use of the standard overground housed centrifugal pump primed lift stations.

SANITARY SEWER CONSTRUCTION	
DRAWING DETAIL	
NOTES & CRITERIA	
 DEPARTMENT OF ENGINEERING AND PUBLIC WORKS	
SEAL	
	
DESIGN ENGINEER:	DATE:
SUBMITTED:	SHEET 1 OF 1
SCALE:	
DATE:	



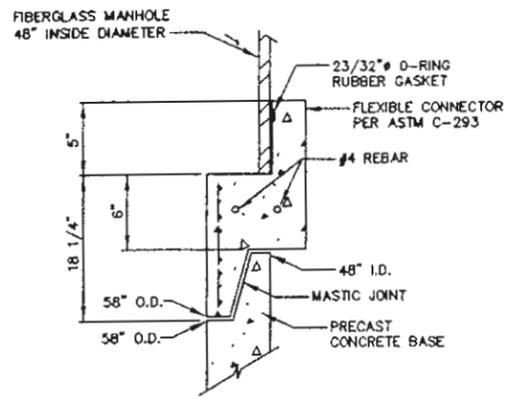
OPTION 1
FRP MANHOLE WITH PRECAST
CONCRETE BASE

NTS
(BY MOOR-TEX CONCRETE PRODUCTS, INC.)
OR APPROVED EQUAL

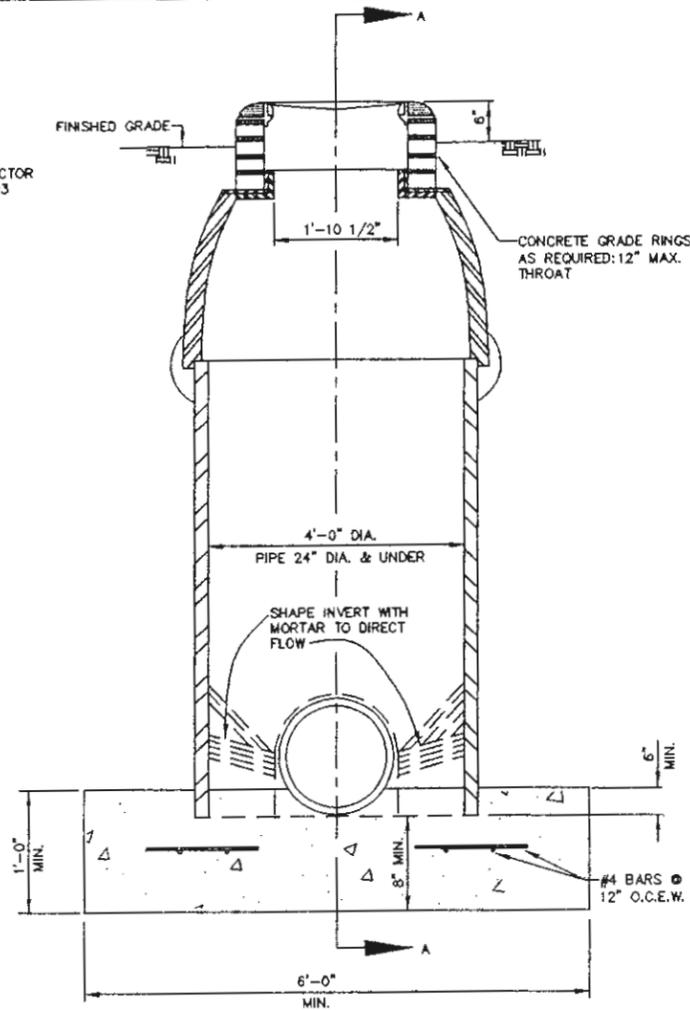
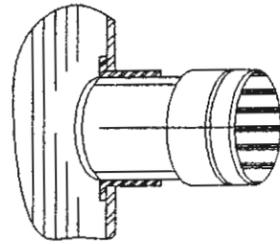


PC MANHOLE SHALLOW INSTALLATION

NTS

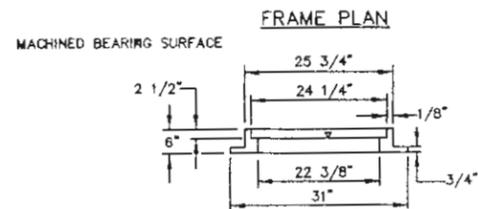
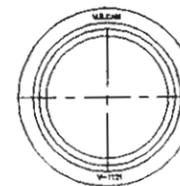


FIBERGLASS MANHOLE TO CONCRETE ADAPTER
NTS



OPTION 2
FRP MANHOLE WITH CAST IN PLACE
CONCRETE BASE

NTS

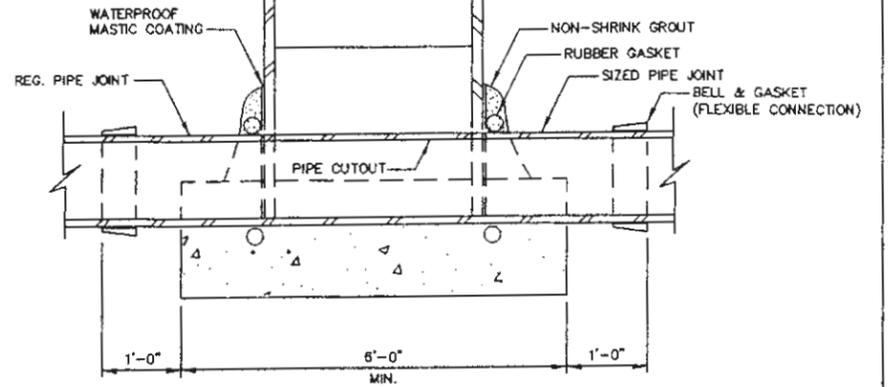


FRAME SECTION

MANHOLE COVER AND FRAME

BY VULCAN FOUNDRY INC./ V-1121 STANDARD)

NTS



SECTION A-A
NTS

NOTE:

1. CONCRETE BASE TO BE CLASS "A" CONCRETE.
2. MANHOLE CUT TO BE MADE IN FIELD BY CONTRACTOR.
3. MANHOLE TO BE INSTALLED BY INSERTING INTO WET CONCRETE.
4. BACKFILL UNIFORMLY AROUND MANHOLE CEMENT STABILIZED SAND.

SANITARY SEWER
CONSTRUCTION

DRAWING DETAIL

LJS-1



DEPARTMENT OF ENGINEERING
AND PUBLIC WORKS

SEAL



DESIGN ENGINEER:

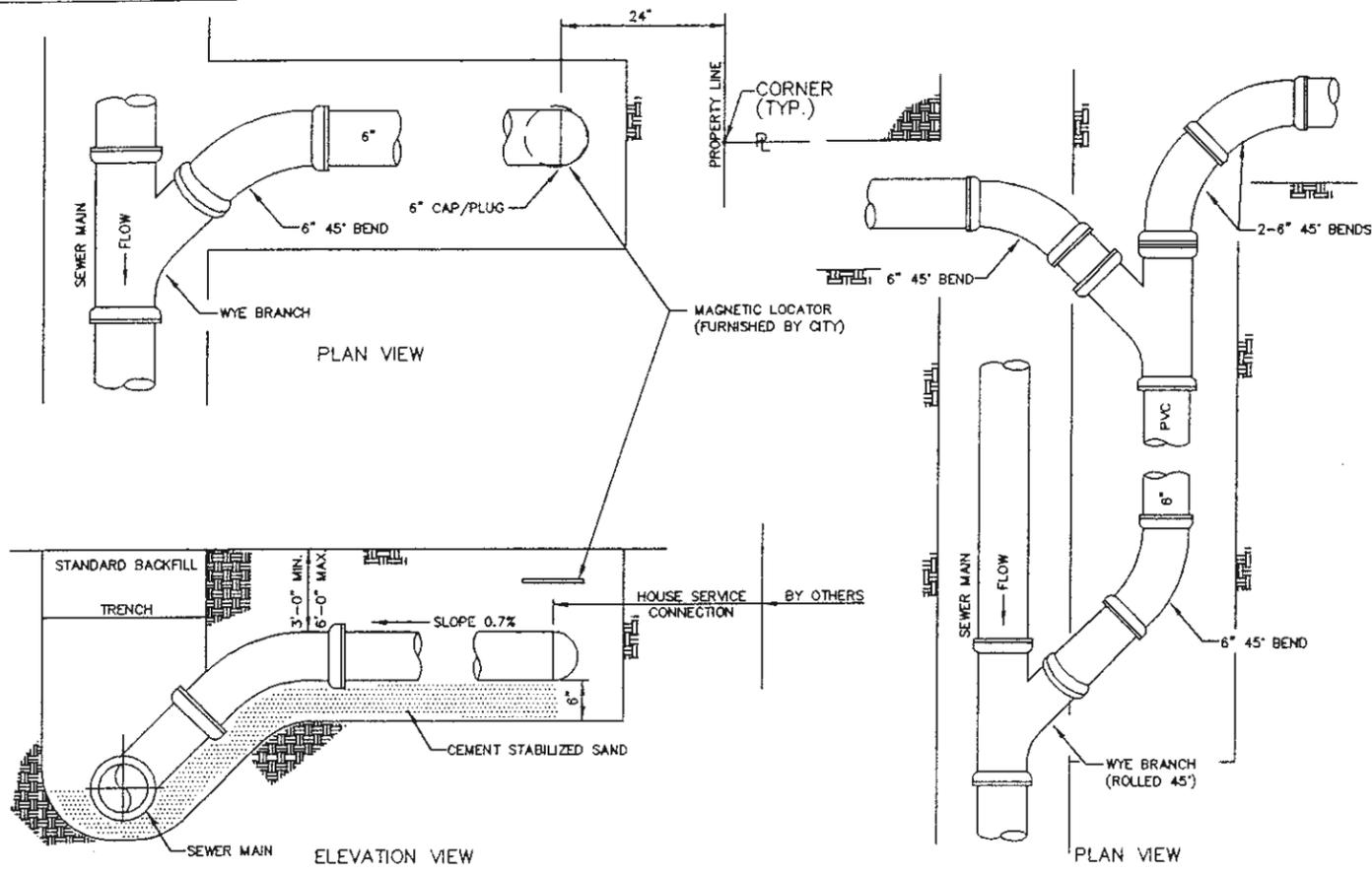
DATE:

SUBMITTED:

SCALE:

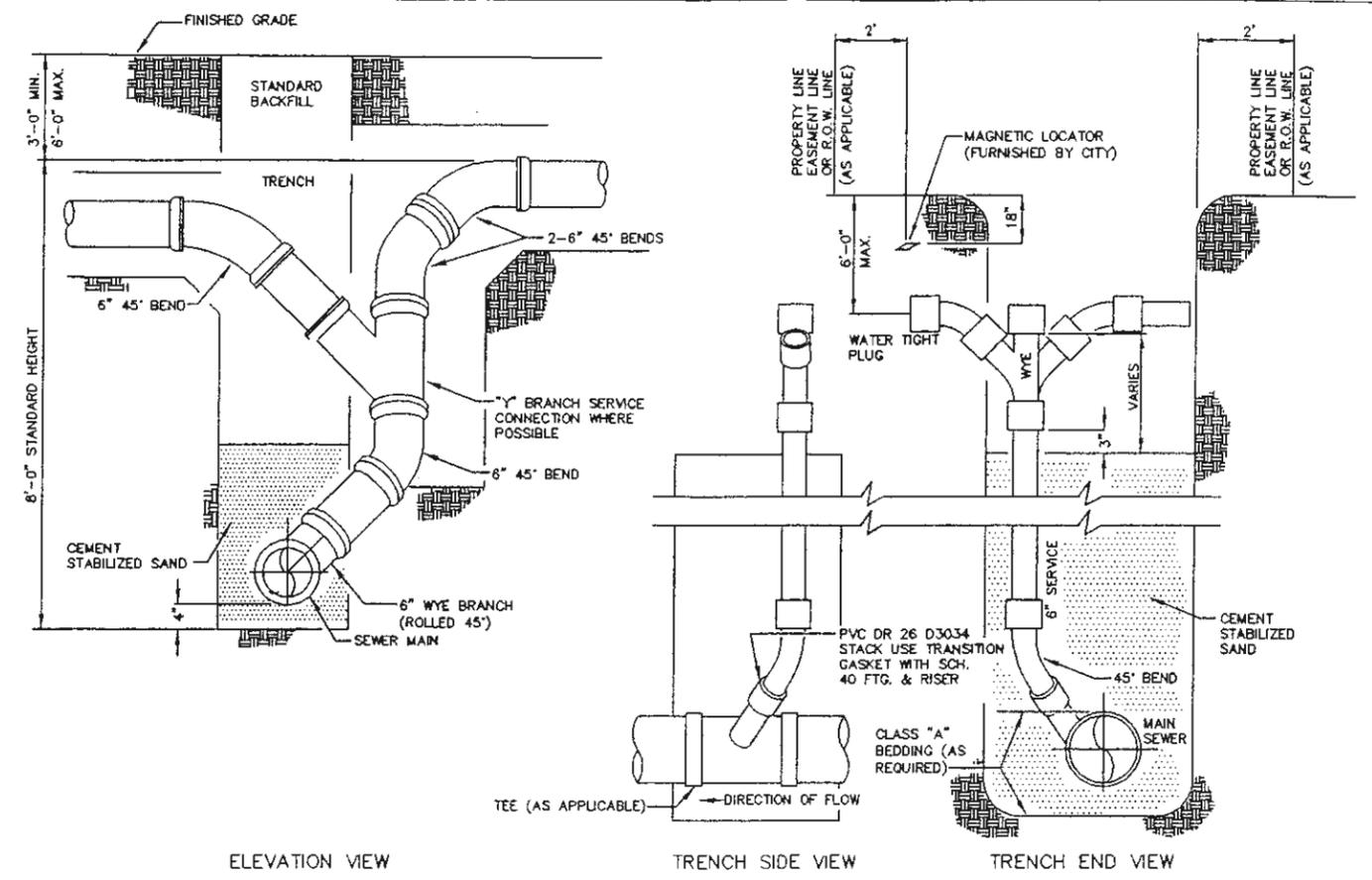
DATE:

SHEET 1 OF 3



STANDARD SERVICE LATERAL CONNECTION DETAIL

N.T.S.

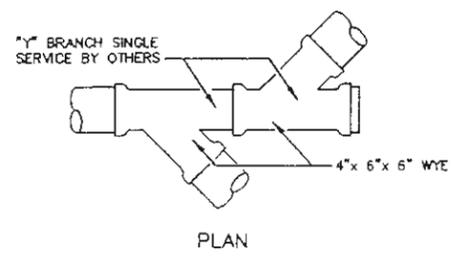


DEEP SERVICE CONNECTION STACKLESS OPTION

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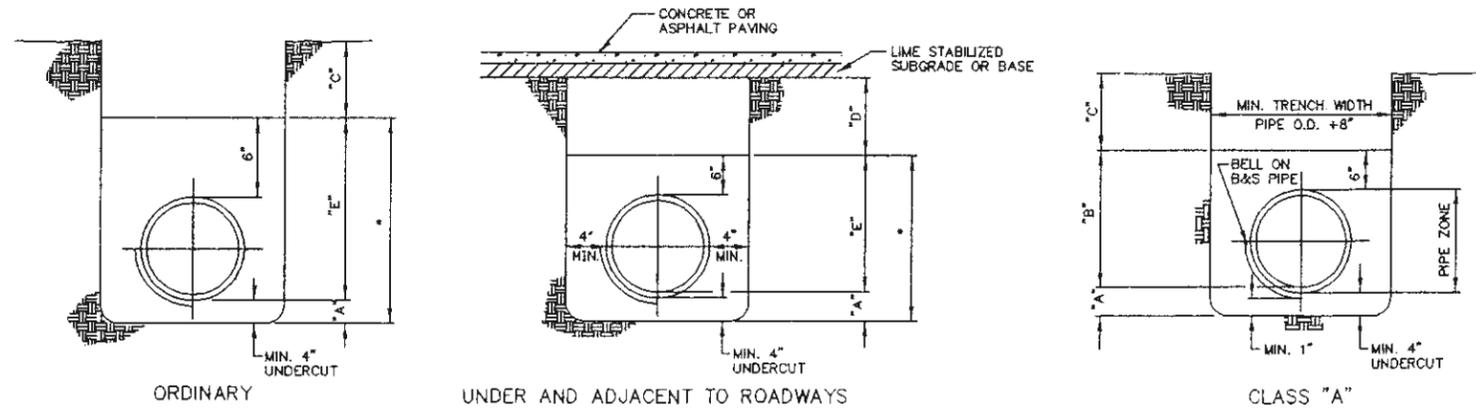
STACK DETAIL

N.T.S.



TYPICAL HOUSE SERVICE CONNECTION

N.T.S.



TYPICAL BEDDING FOR SANITARY SEWERS

N.T.S.

BEDDING AND BACKFILL

- *A* WASHED GRAVEL SCREENINGS PLACED BEFORE PIPE IS LAID UP TO FLOW LINE OF PIPE ABOVE. (ASTM D2321, CLASS 1A)
- *B* WASHED GRAVEL SCREENINGS THOROUGHLY ROODED, PLACED AFTER PIPE IS LAID.
- *C* EARTH FILL TO BE PLACED 8" LIFTS SAME DAY AS PIPE IS LAID. COMPACTED TO 90% STD. P. DENSITY.
- *D* CEMENT STABILIZED SAND (1 1/2 SK.) COMPACTED.
- *E* BANK-RUN SAND

* BACKFILL "TRENCH STOP" CONSISTING OF EXISTING EXCAVATION OR CLAYEY MATERIALS SHALL BE USED AS BACKFILL FROM TRENCH BOTTOM TO 6" ABOVE PIPE 3 FOOT THICK AND AT 100 FOOT TRENCH INTERVALS.

CLASS "A" BEDDING SHALL BE USED IN CUTS IN EXCESS OF 10' (10') OR WHEN WET SAND IS PRESENT. WHEN WET SAND IS ENCOUNTERED, THE TRENCH SHALL BE DEDICATED WITH A STABLE CONDITION AND LINED WITH A GEO-TECHNICAL FABRIC "TREVIRA" OR EQUAL PRIOR TO PLACING THE GRAVEL SCREENINGS FOR BEDDING AND BACKFILL OF THE PIPE ZONE.

SANITARY SEWER CONSTRUCTION

DRAWING DETAIL

LJS-2

DEPARTMENT OF ENGINEERING AND PUBLIC WORKS

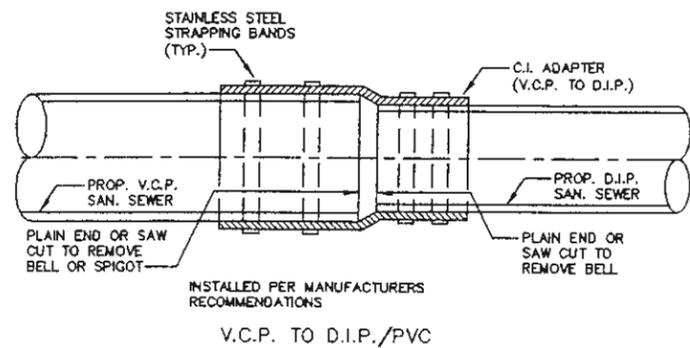
SEAL

DESIGN ENGINEER: _____ DATE: _____

SUBMITTED: _____

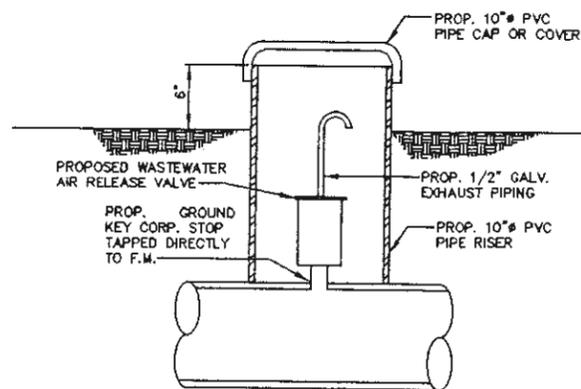
SCALE: _____ SHEET 2 OF 3

DATE: _____



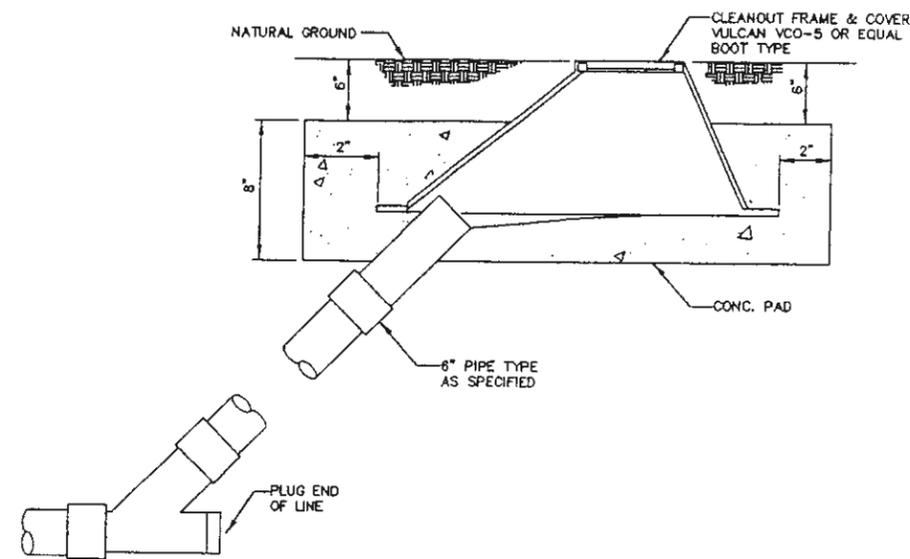
SEWER PIPE ADAPTER DETAIL

N.T.S.



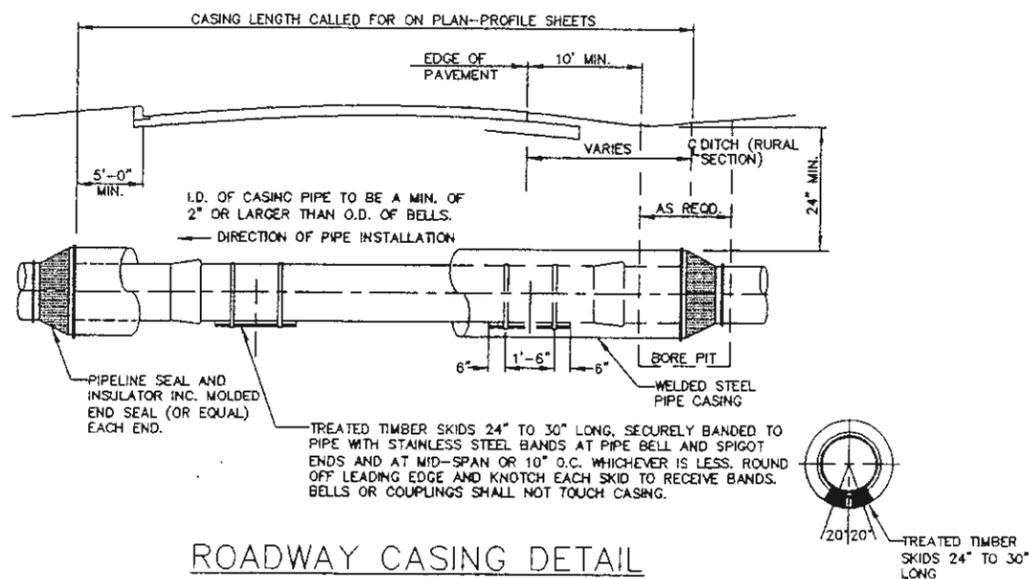
F.M. PIPE AIR RELIEF VALVE DETAIL

N.T.S.



SANITARY SEWER CLEANOUT DETAIL

N.T.S.



ROADWAY CASING DETAIL

N.T.S.

SANITARY SEWER CONSTRUCTION

DRAWING DETAIL

LJS-3



DEPARTMENT OF ENGINEERING AND PUBLIC WORKS

SEAL



DESIGN ENGINEER:

DATE:

SUBMITTED:

SCALE:

DATE:

SHEET 3 OF 3



PAVEMENT CONSTRUCTION DETAIL NOTE

1. The Development Engineers' proprietary design and construction details varying from the standard provided may be considered where experience indicates an equal or better product. These differences shall be submitted to the Engineer/Public Works Department for approval or denial.
2. All additional notes in construction details shall supplement the following but shall be superseded where a conflict exists.
3. The subgrade shall be brought to the required line and grade by the use of grade stakes (blue tops) and approved by Engineer before lime is applied.
4. Rate of application for lime shall be seven percent (7%) of the dry weight of soil or thirty (30) pounds per square yard for six (6) inch stabilized subgrade. Lime stabilized subgrade shall not be mixed more than one inch in excess of the required depth. Lime stabilized subgrade shall be brought to the optimum moisture content during the first mixing operations then left to cure for two curing days before final mixing can begin. After final mixing is completed and before soil density tests are taken, lime stabilized subgrade shall be brought to the required grade by the use of grade stakes (blue tops) and approved by the Engineer. Density shall be ninety-five percent (95%) of the standard proctor density at optimum moisture. Tested and completed sections shall be kept moist cured on a daily basis with water trucks or substantial supply for the entire period the surface remains uncovered with additional courses. After final testing and approval is completed, track equipment, scrapers or other heavy equipment will not be permitted on the completed lime stabilized area. Light motor graders, rubber tired tractors, water trucks and rollers used in finishing operations will be permitted with approval of the Engineer. Concrete and loaded haul trucks are strictly prohibited on completed area unless the traveled area regardless of condition is remixed compacted and tested for approval a second time.
5. Forms shall be either wood or steel, of good quality, free of warp and sufficiently staked to avoid shifting when load is applied. All redwood expansion boards shall be staked with 1x2 redwood stakes and allowed to remain within the pour. Metal stakes are approved for use to stake metal keyways.
6. Reinforcing shall be securely tied at all intersections and splices. All dowels shall be securely tied. Reinforcement shall be clean and free of rust at time of use. Plastic chair of the correct height shall be used, spacing shall be sufficient to support reinforcement.
7. Prior to concrete placement, contractor shall present a certified copy of top of form grades to the Engineer for review and approval. Elevations of forms shall be recorded at 10' intervals. Adjustments to forms shall be completed 4 hrs. min. prior to concrete placement.
8. Concrete for street pavements shall be "class A" concrete and shall have not less than five and one half (5 1/2) sacks of cement, slump shall not exceed four (4) inches and shall develop a modulus of rupture strength of five hundred and fifty (550) p.s.i. at twenty eight (28) days. Concrete shall be placed in such a manner as to require as little handling as possible. Use of an approved vibrating screed will be required. At intersections and small areas where vibratory screed can not be used, a hand vibrator or "jitterbug" shall be used. Use of a ten foot (10') concrete pavement straight edge will also be required. All exposed joints

shall be edged as noted on details. Surface shall be typically a belt finish or broom finish (course, medium or light) as required by the application and directed by the Engineer.

9. An approved eighteen (18) gauge) painted or galvanized metal parting strip with metal stakes shall be required as noted on the details.
10. Curing compound shall be type II with white pigment, applied at the rate of one gallon per two hundred (200) square feet.
11. Expansion joints shall be cleaned, wire brushed, blown or flame dried and sealed with an approved list rubberized hot laid asphalt joint and crack sealant or a two (2) component polymeric self leveling cold applied sealant.
12. All radii for standard intersections shall be fifteen (15) feet. All others as noted.
13. At end of streets where pavement will be extended at a later date, a construction joint with keyway and dowels will be used and form shall remain in place.
14. Contractor will not permit traffic on new concrete pavement until both a minimum of seven (7) curing days and a modulus of rupture strength of five hundred & fifty (550) p.s.i. takes place or as approved by the Engineer/Public Works Department.
15. Concrete for driveways and curb shall be a 3000 p.s.i. performance strength concrete with a minimum four and a half (4 1/2) sack cement per cubic yard content. Curb concrete mix may be a small aggregate batch design.
16. A concrete mix design of concrete plus fly ash may be substituted in lieu of the standard concrete batch design. The fly ash shall conform to the requirements of TxDOT Material Specification D-9-8900, and shall not exceed 25% by absolute volume of the specified cement content. The modulus of rupture strengths minimums and development period of the standard concrete mix design shall remain in effect and shall be verified by a concrete batch mix design prepared and tested by a Geotechnical Lab and submitted for review and approval by the City Engineering/Public Works Department prior to paving operations.

PAVEMENT
CONSTRUCTION

DRAWING DETAIL

NOTES & CRITERIA



DEPARTMENT OF ENGINEERING
AND PUBLIC WORKS

SEAL



DESIGN ENGINEER: _____ DATE: _____

SUBMITTED:

SCALE:

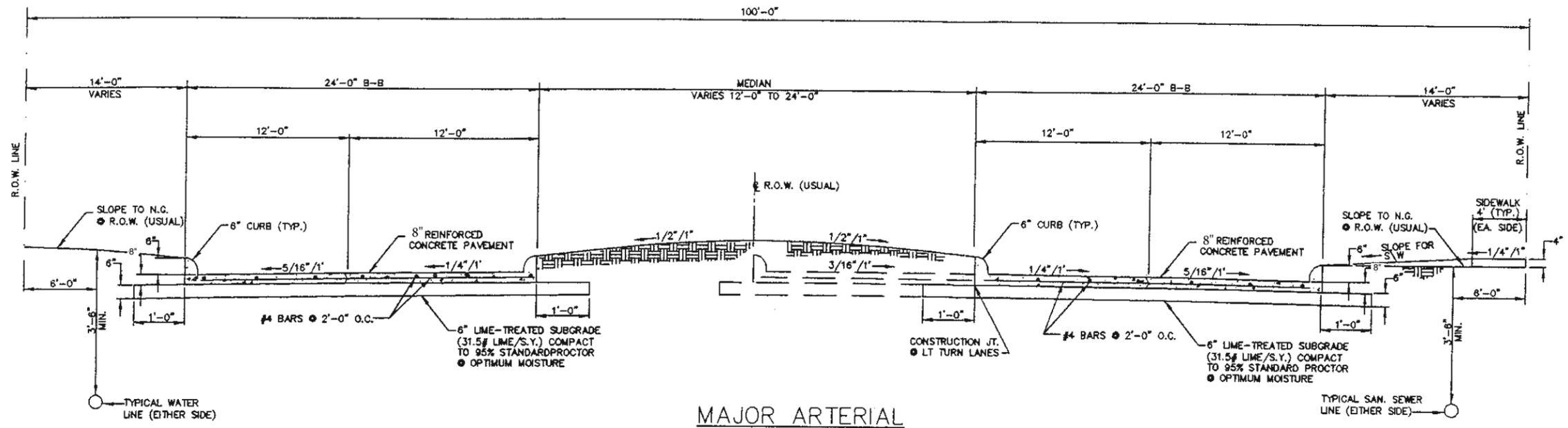
DATE:

SHEET 1 OF 2

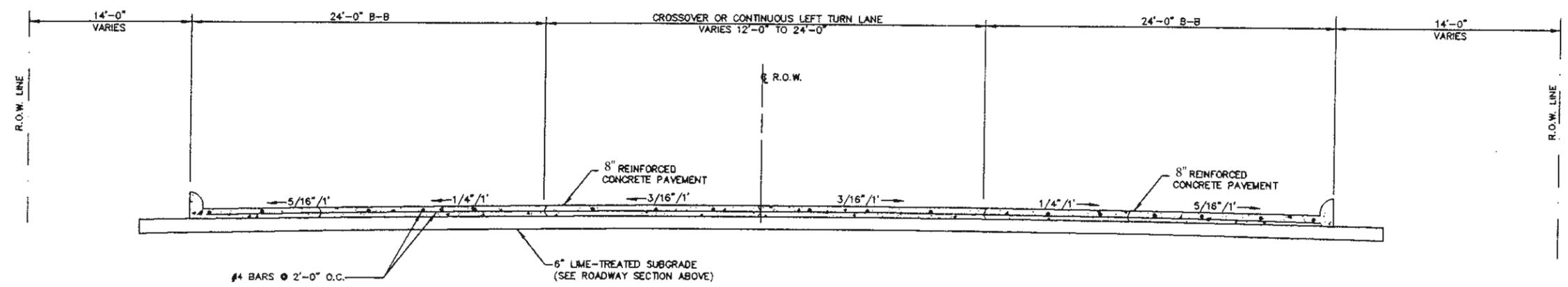
PAVEMENT SYSTEM DESIGN CRITERIA

1. All pavement design geometric shall be according to the guidelines included for information in appendix 1040 and those rules of the City of Lake Development Standards (latest revision) which supersede them.
2. The roadway design shall conform to the type and classification according to the designation as recommended by the Planning & Zoning Commission latest Revision of the Thoroughfare Plan and Master Plan as adopted by the City Council of the City of Lake Jackson. (Appendix 1060)
3. Handicap access ramps shall be in accordance with the ADA Accessment Guidelines for Building and Facilities (Latest Revisions).
4. A Traffic Impact Study may be required for any development proposal expected to generate traffic volumes that will significantly impact the capacity and/or safety of the street system or may be used to warrant revisions or variances to the requirements established in the city's Master Plan or other traffic plans enacted by the various boards in the City.
5. Concrete sidewalks and ramps shall be designed and installed at the time of development for all intersection and public drainage R.O.W.'s abutting the street. Privately owned property abutting the street shall construct sidewalks at the time of buildout.
6. The pavement reconstruction design of existing streets shall be accompanied by a detailed Traffic Control Plan that will provide the Construction Sequence/Phasing and traffic flow and signage that will allow for the construction of the facility while providing access and safe travel to the public. The Engineer/Public Works Department shall review the plan for approval.

PAVEMENT CONSTRUCTION	
DRAWING DETAIL	
NOTES & CRITERIA	
 DEPARTMENT OF ENGINEERING AND PUBLIC WORKS	
SEAL	
	
DESIGN ENGINEER:	DATE:
SUBMITTED:	SHEET 2 OF 2
SCALE:	
DATE:	

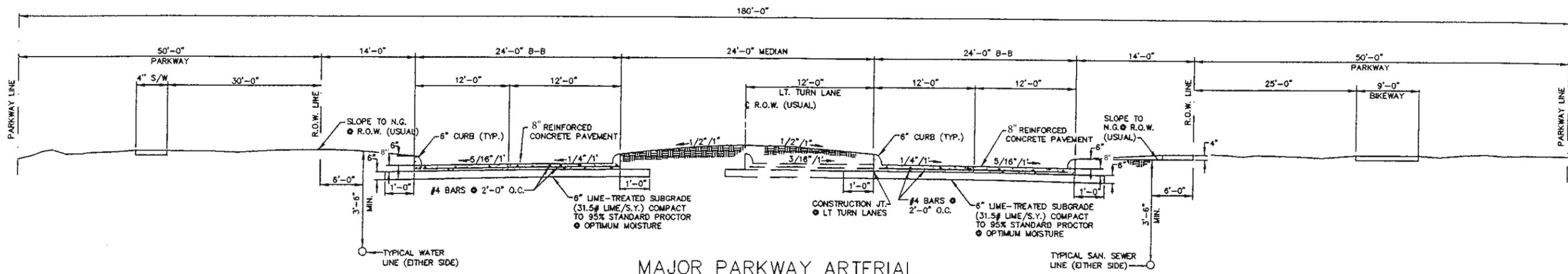


MAJOR ARTERIAL
 2-24' B-B DIVIDED ROADWAYS
 4 LANE DIVIDED
 W/LEFT TURN REFUGE LANE
 N.T.S.

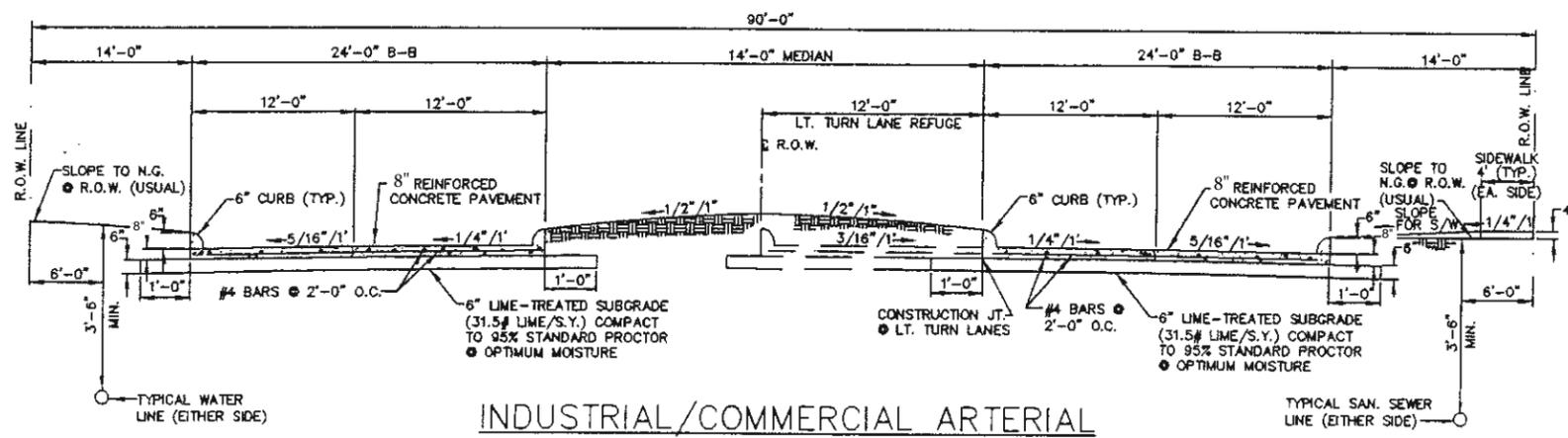


MAJOR ARTERIAL
 2-24' B-B DIVIDED ROADWAYS
 4 LANE DIVIDED
 W/ CONTINUOUS LEFT TURN LANE
 N.T.S.

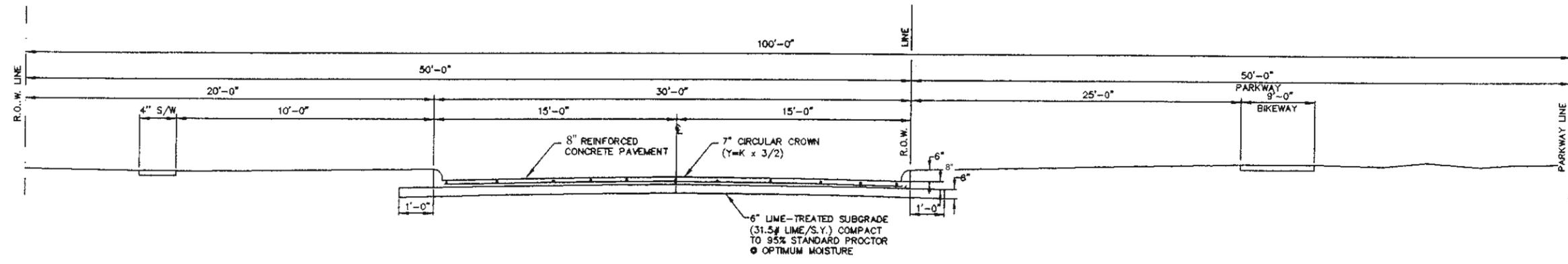
PAVEMENT CONSTRUCTION	
DRAWING DETAIL	
LJP-1	
 DEPARTMENT OF ENGINEERING AND PUBLIC WORKS	
SEAL 	
DESIGN ENGINEER:	DATE:
SUBMITTED:	SHEET 1 OF 9
SCALE:	
DATE:	



MAJOR PARKWAY ARTERIAL
 2-24' B-B DIVIDED ROADWAYS
 4 LANE DIVIDED
 W/LEFT TURN REFUGE LANE
 N.T.S.

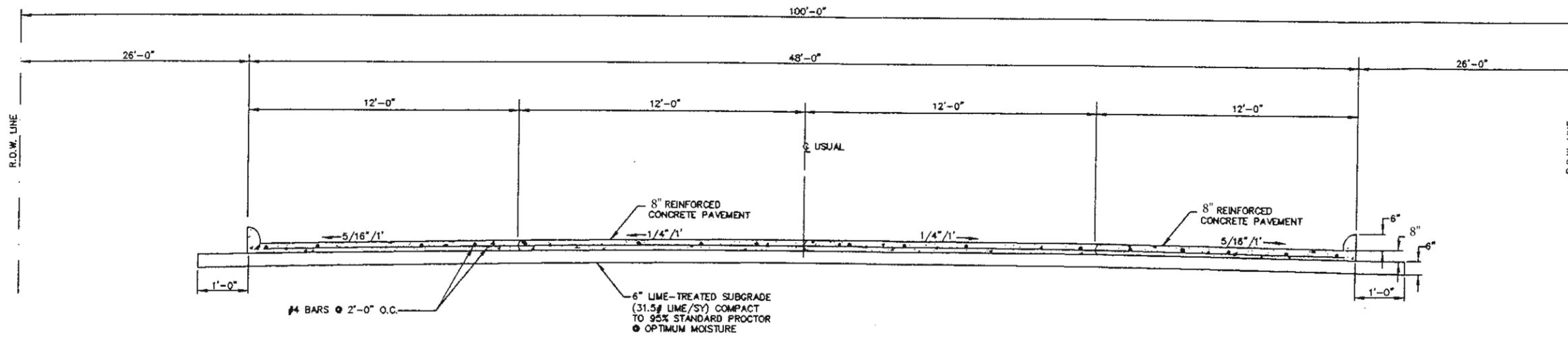


INDUSTRIAL/COMMERCIAL ARTERIAL
 2-24' B-B DIVIDED ROADWAYS
 4 LANE DIVIDED
 W/LEFT TURN REFUGE LANE
 N.T.S.

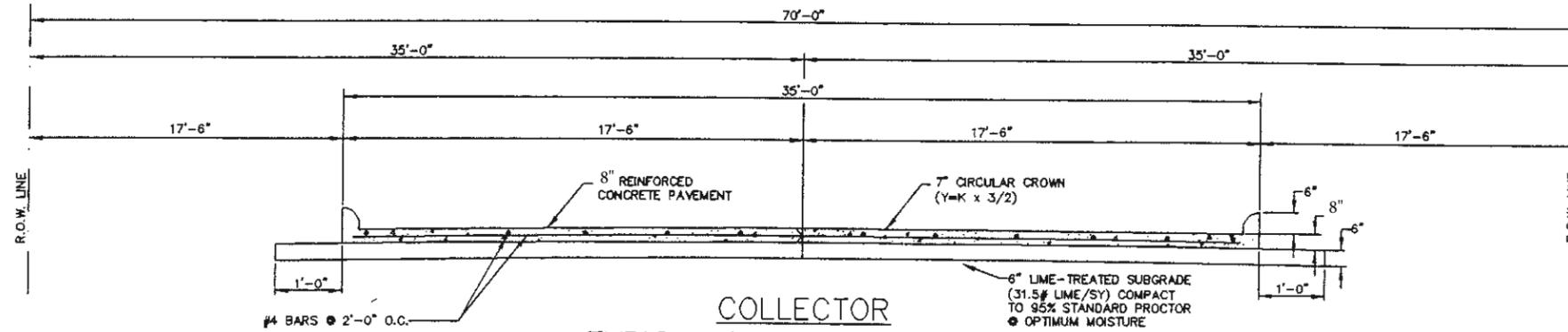


MINOR PARKWAY ARTERIAL
 30' B-B (2 LANE)
 N.T.S.

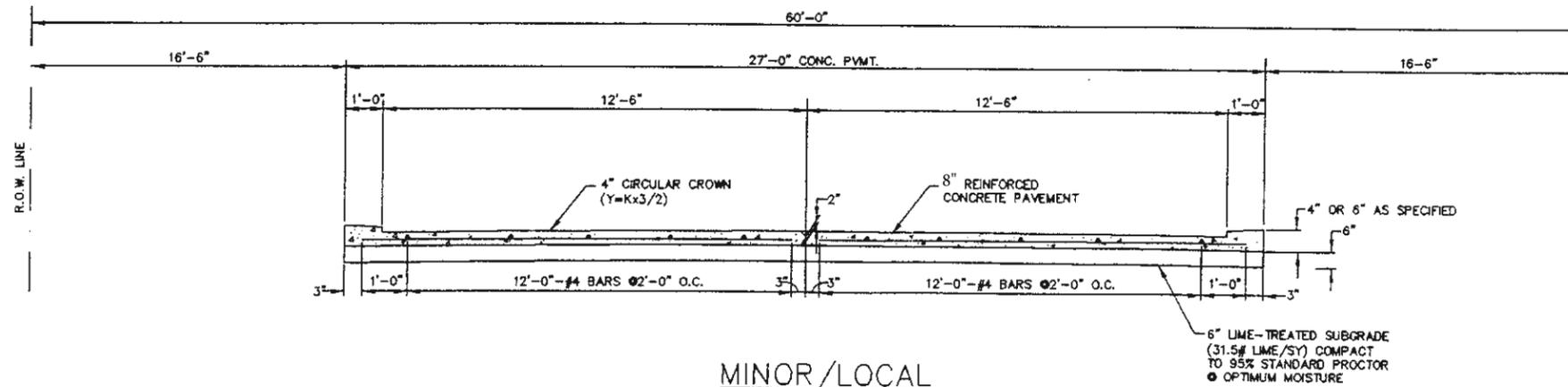
PAVEMENT CONSTRUCTION	
DRAWING DETAIL	
LJP-2	
 CITY OF ENCHANTMENT LAKE JACKSON, TEXAS	
DEPARTMENT OF ENGINEERING AND PUBLIC WORKS	
 STATE OF TEXAS S. J. GUILLE 37751 REGISTERED PROFESSIONAL ENGINEER	
DESIGN ENGINEER:	DATE:
SUBMITTED:	
SCALE:	SHEET 2 OF 9
DATE:	



MINOR ARTERIAL
TYPICAL ROADWAY SECTION
48 B-B (4 LANE)
N.T.S.



COLLECTOR
TYPICAL ROADWAY SECTION
35 B-B (2 LANE)
N.T.S.



MINOR/LOCAL
TYPICAL ROADWAY SECTION
27 B-B
N.T.S.

PAVEMENT CONSTRUCTION

DRAWING DETAIL

LJP-3



DEPARTMENT OF ENGINEERING
AND PUBLIC WORKS

SEAL



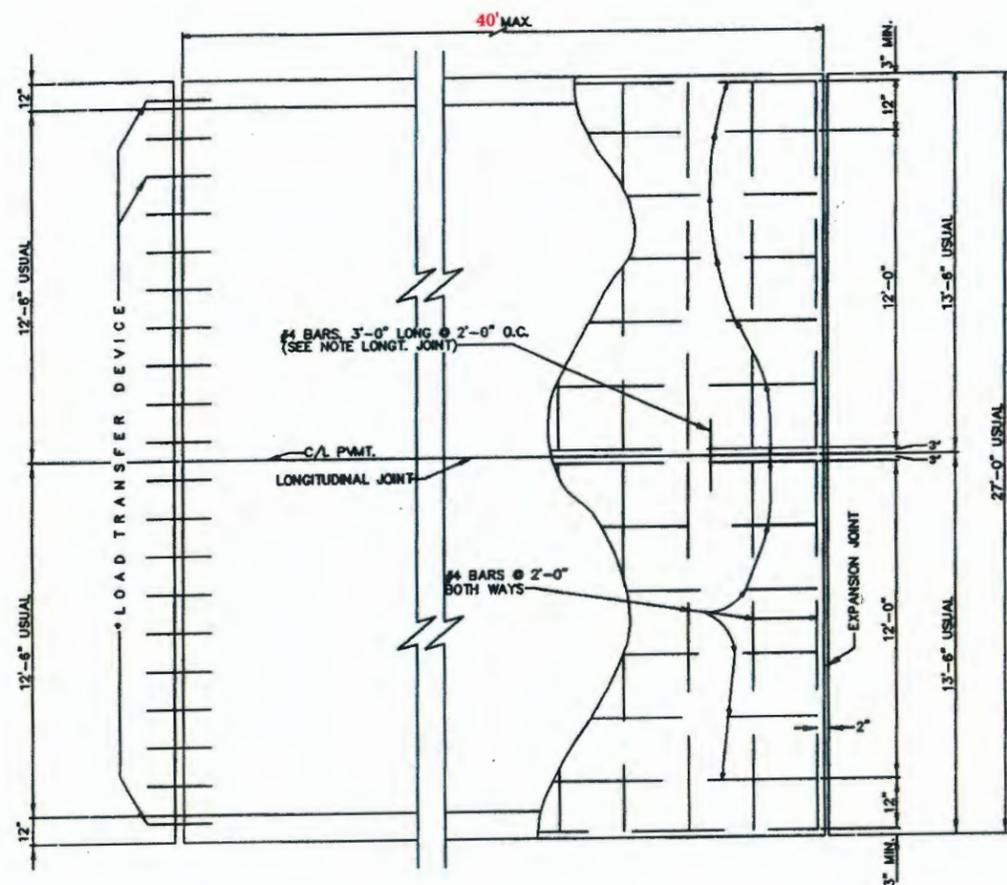
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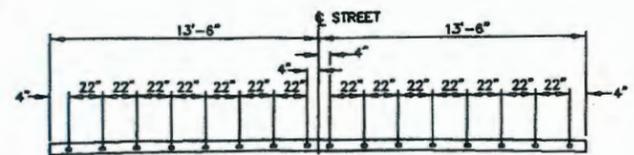
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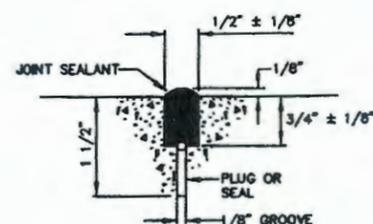
SHEET 3 OF 9



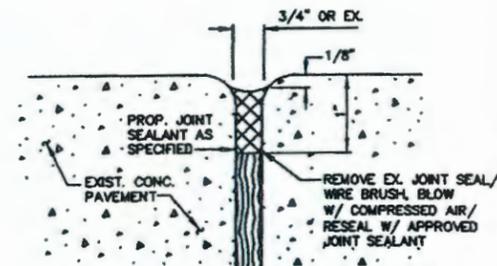
PLAN



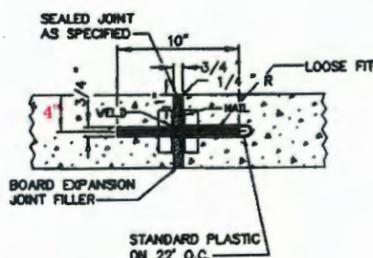
TYPICAL EXPANSION JOINT
27'-0" x 8" x 3/4" REDWOOD BOARD
N.T.S.



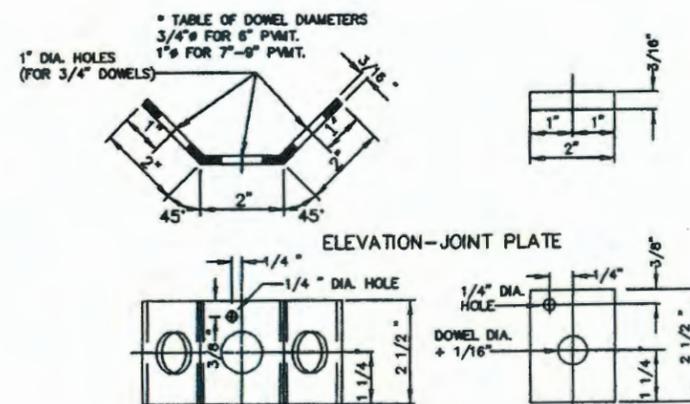
SAWED CONTRACTION JOINT DETAIL
N.T.S.



EXPANSION JOINT SEAL DETAIL
N.T.S.

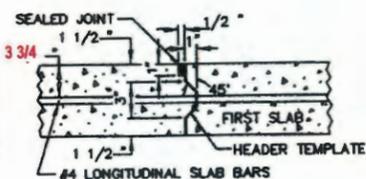


EXPANSION/CONTRACTION JOINT
N.T.S.



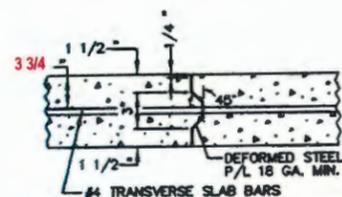
ELEVATION-JOINT PLATE
PLAN-JOINT PLATE
WING TYPE OPTION TAB TYPE OPTION
LOAD TRANSFER DEVICE
N.T.S.

- NOTES:
1. ALL REINFORCING STEEL LAPS SHALL BE 30 BAR DIAMETERS. BAR LENGTHS SHALL BE SUCH TO PROVIDE A CLEARANCE OF 3" ALONG PAVEMENT EDGES AND AT JOINTS WHERE THE REINFORCING STEEL IS NOT TO BE CONTINUOUS.
 2. BOARD JOINT FILLER TO BE REDWOOD. JOINT SEAL COMPOUND TO BE RUBBERIZED ASPHALT HOT Poured (TxDOT 360.27b, CL1) OR TWO PARTS POLYMERIC SELF LEVELING SYSTEM. PAVEMENT ENDS WITH KEY WAY AS SHOWN FOR CONSTRUCTION JOINT. LEAVE 2" HEADER BOARD IN PLACE.
 3. EXPANSION JOINT PLACEMENT TO BE AS INDICATED IN PLANS AND IN TYPICAL INTERSECTION AND JOINT LAYOUT.



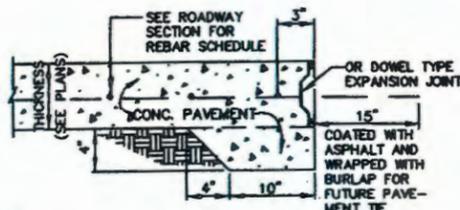
CONSTRUCTION JOINT MAY BE USED IN LIEU OF EXPANSION JOINT WHEN WORK IS SUSPENDED PROVIDED THE JOINT IS AT LEAST 10' FROM NEAREST EXPANSION JOINT.

CONSTRUCTION JOINT
N.T.S.

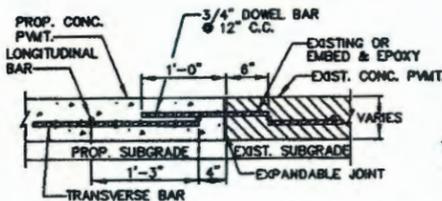


THE SHAPE OF THE METAL PARTING STRIP MAY BE VARIED FROM THAT SHOWN UPON APPROVAL OF THE ENGINEER. A LONGITUDINAL JOINT SHALL BE INSTALLED AS SHOWN IN THE PLAN OR WHERE PAVEMENT WIDTH EXCEEDS 15', WHEN PAVEMENT IS PLACED IN HALF WIDTHS, CUT TRANSVERSE BARS TO PROVIDE 1" CLEARANCE ON FORM WIDTH AND CONNECT SLABS WITH #4 DEF. BARS, 3'-0" LONG ON 2'-6" CENTERS.

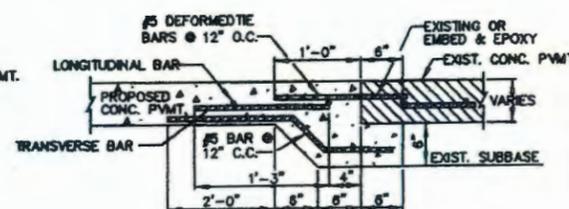
LONGITUDINAL JOINT
N.T.S.



PAVEMENT HEADER
N.T.S.



OPTION 1
PAVEMENT JUNCTURE
N.T.S.

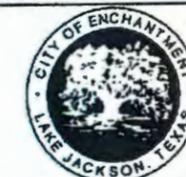


OPTION 2
PAVEMENT JUNCTURE
N.T.S.

PAVEMENT CONSTRUCTION

DRAWING DETAIL

LJP-4



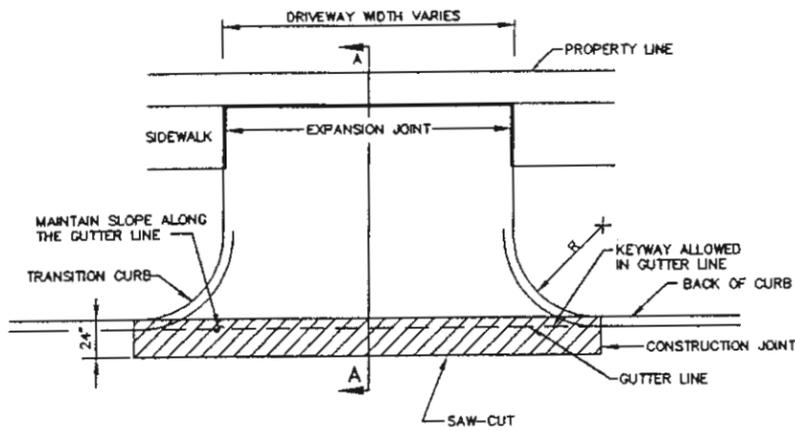
DEPARTMENT OF ENGINEERING AND PUBLIC WORKS

SEAL

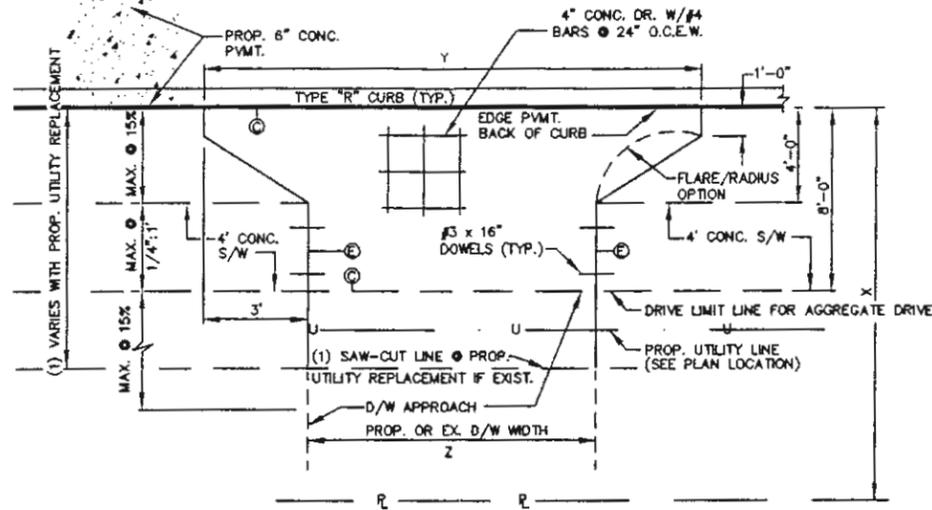


DESIGN ENGINEER: _____ DATE: _____

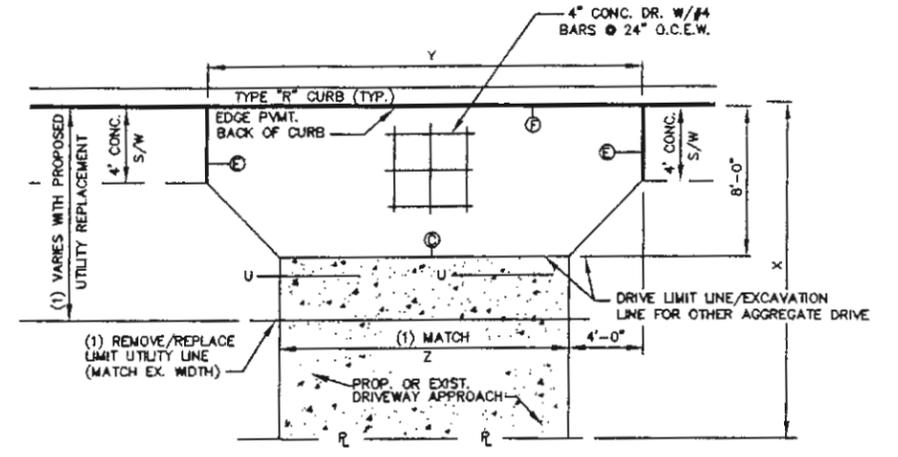
SUBMITTED: _____
SCALE: _____ SHEET 4 OF 9
DATE: _____



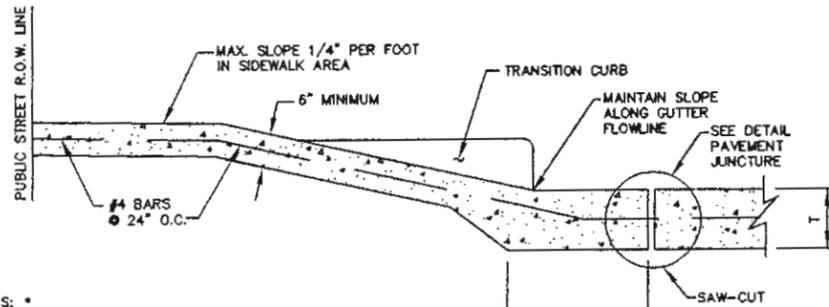
PLAN



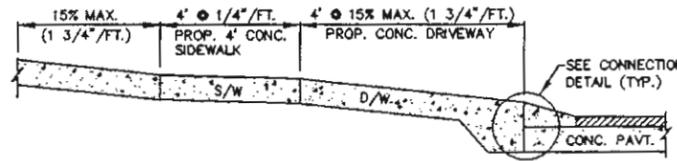
TYPICAL PROPOSED DRIVE CURB OFFSET SIDEWALK CONDITION



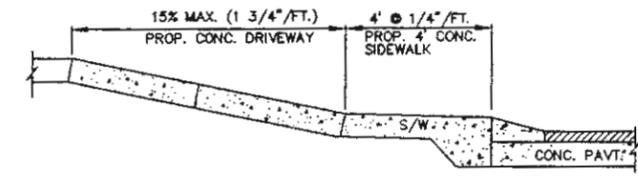
TYPICAL PROPOSED DRIVE BACK OF CURB SIDEWALK CONDITION



SEC. A-A

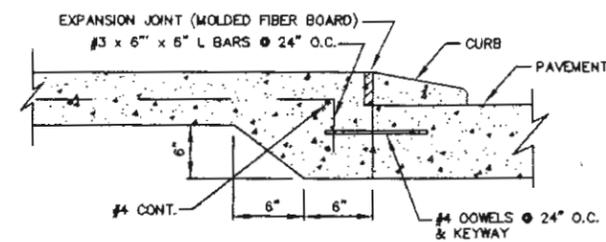


SECTION THROUGH OFFSET SIDEWALK CONDITION



SECTION THROUGH BACK OF CURB SIDEWALK CONDITION

- NOTES:
- ⊙ CONSTRUCTION JOINT
 - ⊕ REDWOOD EXPANSION JOINT
 - ⊖ PREMOLD EXPANSION JOINT
1. REFERENCE TO "X", "Y" & "Z" SHALL REFER TO SPECIFIC DIMENSIONS IN CONSTRUCTION PLANS OR BUILDING DRAWINGS AND/OR SCHEDULES.
2. (1) (FOR RECONSTRUCTION ONLY) PLAN QUANTITY FOR SURFACE REMOVAL & DRIVEWAY REPLACEMENT SHALL BE USED AS MINIMUM AMOUNT FOR PAY PURPOSES. THE CONTRACTOR MAY AT HIS OPTION AND COST REMOVE TO LINES BEYOND PAY LIMIT LINE FOR HIS CONVENIENCE.

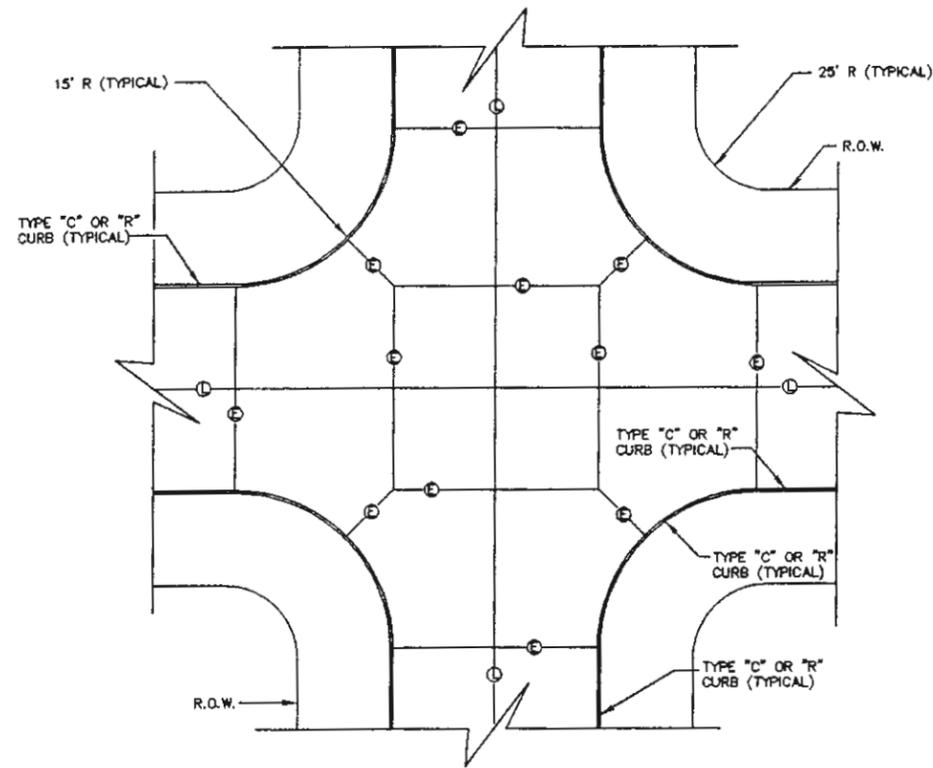


CONNECTION DETAIL

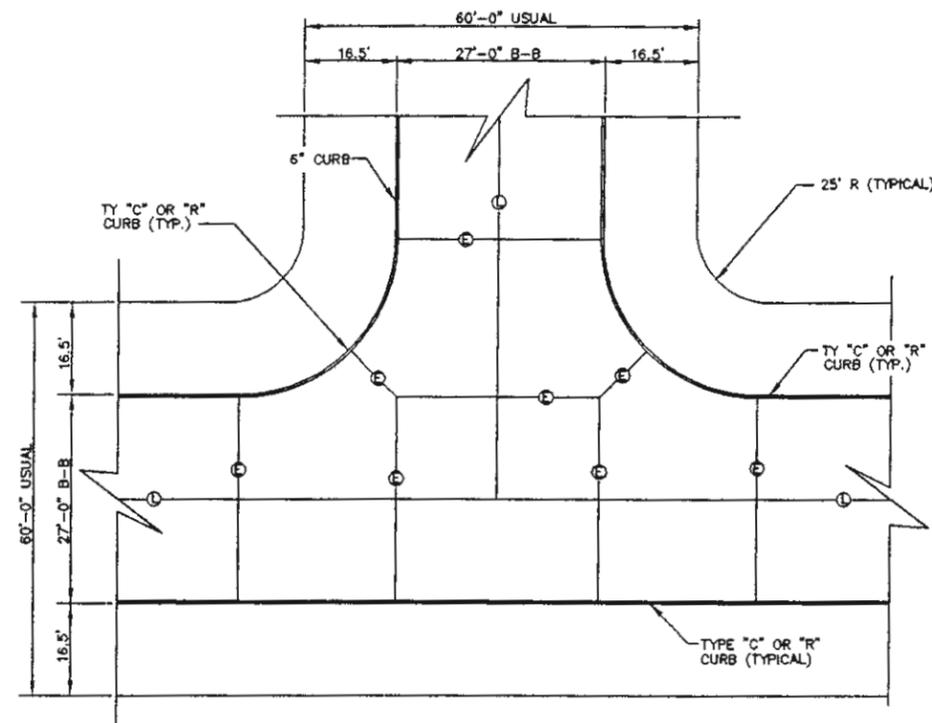
COMMERCIAL / INSTITUTIONAL / APARTMENT DRIVEWAY & CONNECTION DETAIL
N.T.S.

RESIDENTIAL DRIVEWAY & CONNECTION DETAIL NEW & RECONSTRUCTION
N.T.S.

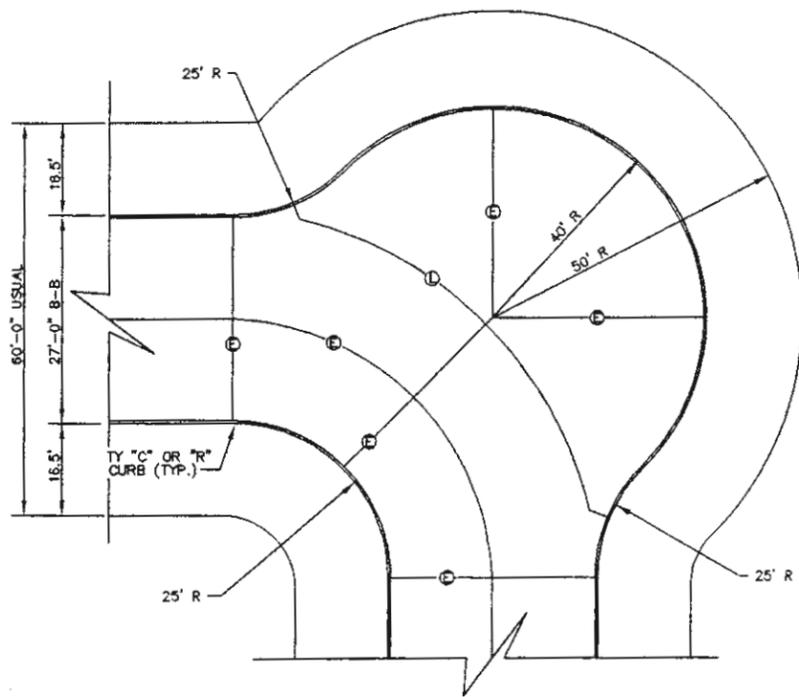
PAVEMENT CONSTRUCTION	
DRAWING DETAIL	
LJP-5	
 DEPARTMENT OF ENGINEERING AND PUBLIC WORKS	
SEAL	
	
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SUBMITTED:	
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DATE:	



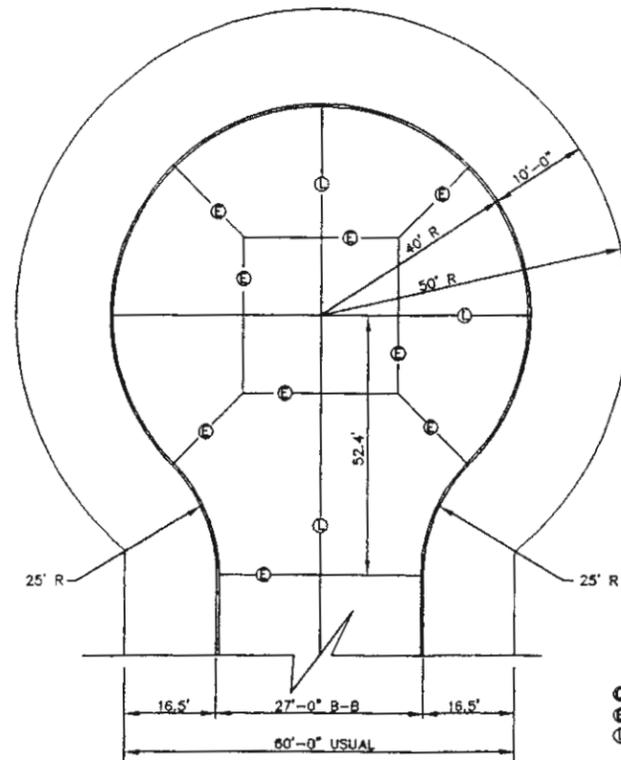
FOUR WAY INTERSECTION



TEE INTERSECTION

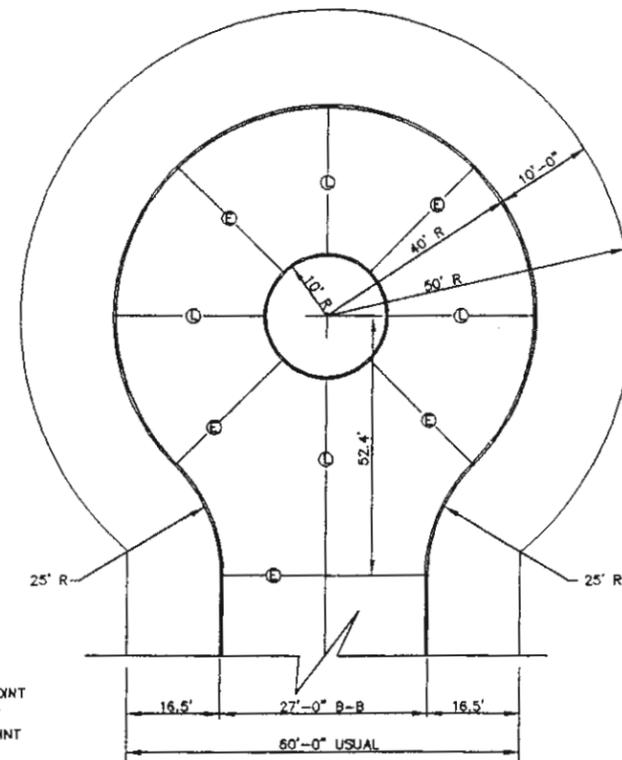


TYPICAL EYEBROW LAYOUT



CUL-DE-SAC OPTION

- LEGEND:
- ⊙ CONSTRUCTION JOINT
 - ⊕ EXPANSION JOINT
 - ⊖ LONGITUDINAL JOINT

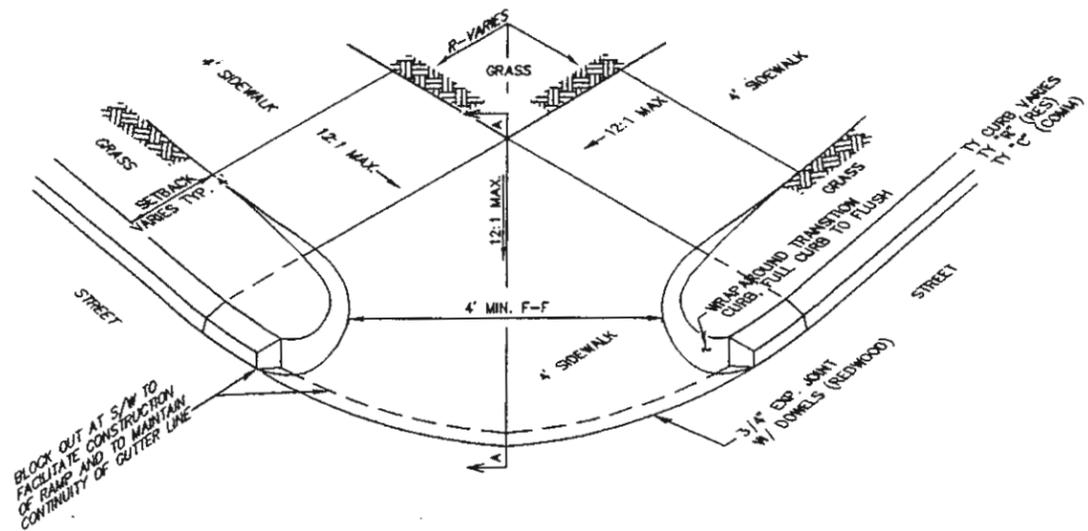


CUL-DE-SAC OPTION

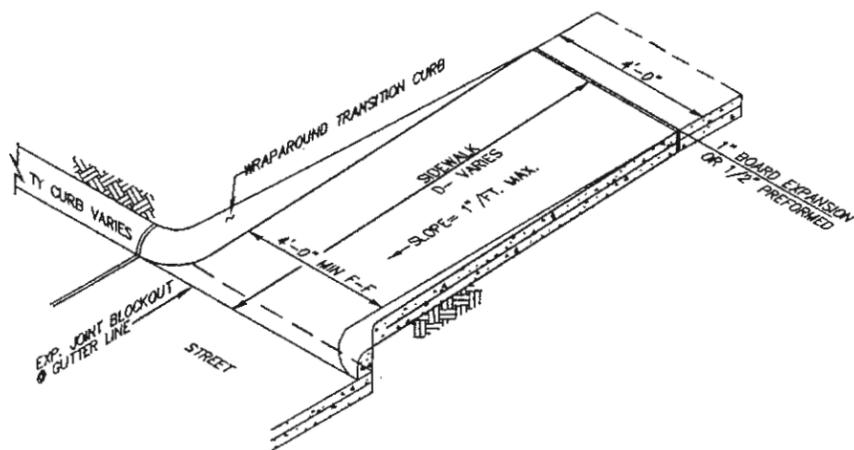
TYPICAL PAVEMENT JOINT DETAILS & LAYOUT

N.T.S.

PAVEMENT CONSTRUCTION	
DRAWING DETAIL	
LJP-6	
	
DEPARTMENT OF ENGINEERING AND PUBLIC WORKS	
SEAL	
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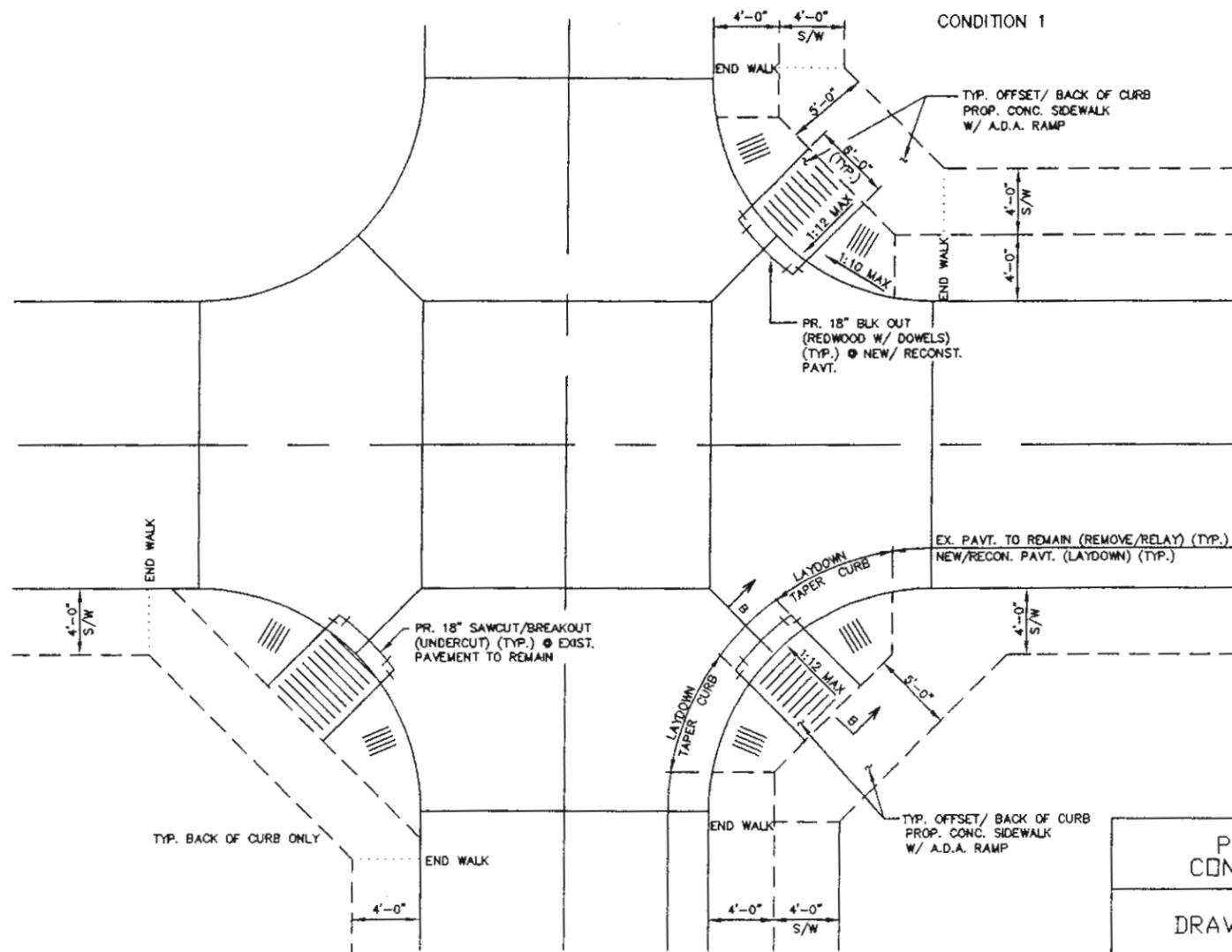
CURB RAMP AT INTERSECTION
W/ 4' (VARIES) SETBACK
TWO-DIRECTIONAL APPROACH



CURB RAMP AT INTERSECTION
ONE-DIRECTIONAL APPROACH

**STANDARD SIDEWALK RAMP DETAIL
NEW INSTALLATION CONDITION**

N.T.S.

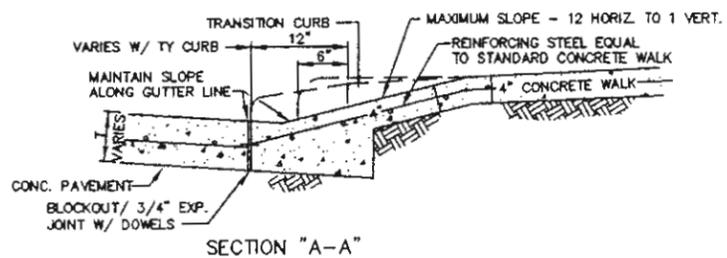


CONDITION 3

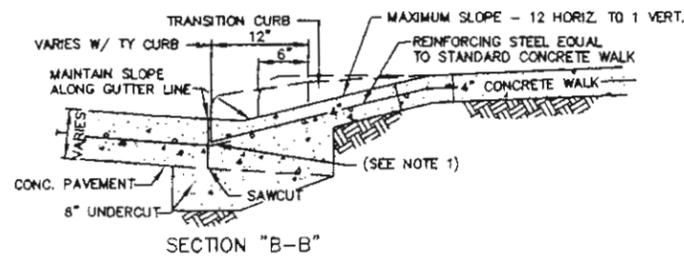
TYPICAL DETAILS PERTAIN
TO ALL CONDITIONS

**STANDARD SIDEWALK RAMP
RETROFIT EXISTING CONDITION**

N.T.S.



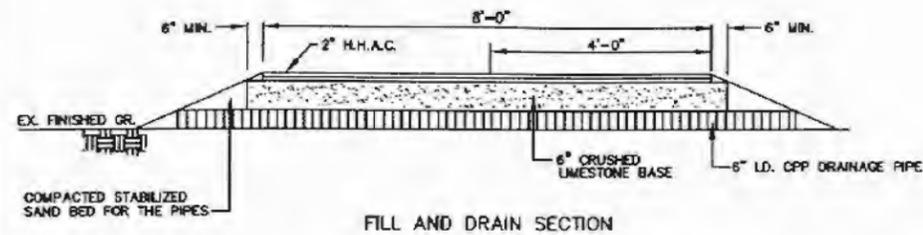
SECTION "A-A"



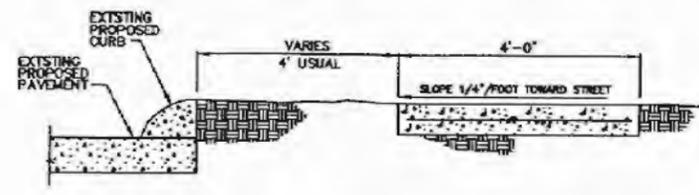
SECTION "B-B"

NOTES:
1. EXISTING CURB AND GUTTER TO BE SAW CUT,
REMOVED, AND REPLACED. DOWEL STEEL OR SAW
CUT TO EXPOSE EXISTING STEEL FOR MINIMUM
REINFORCING OVERLAP OF SIX INCHES (6").

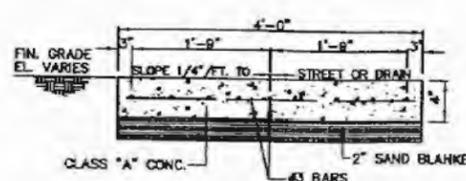
PAVEMENT CONSTRUCTION	
DRAWING DETAIL	
LJP-7	
 DEPARTMENT OF ENGINEERING AND PUBLIC WORKS	
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SUBMITTED:	
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DATE:	



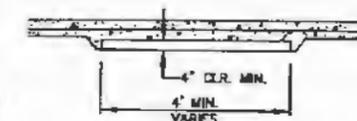
FILL AND DRAIN SECTION



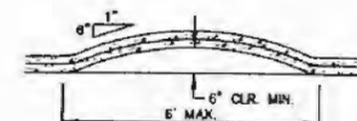
TYPICAL SECTION CURB OFFSET N.T.S.



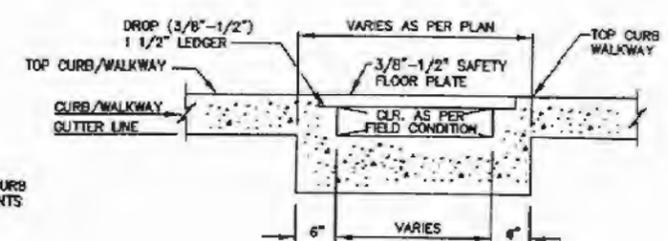
TYPICAL SIDEWALK SECTION N.T.S.



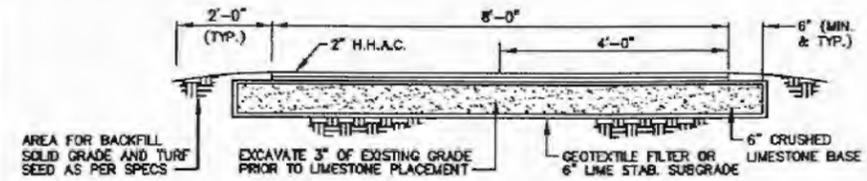
STRAIGHT SPAN SECTION



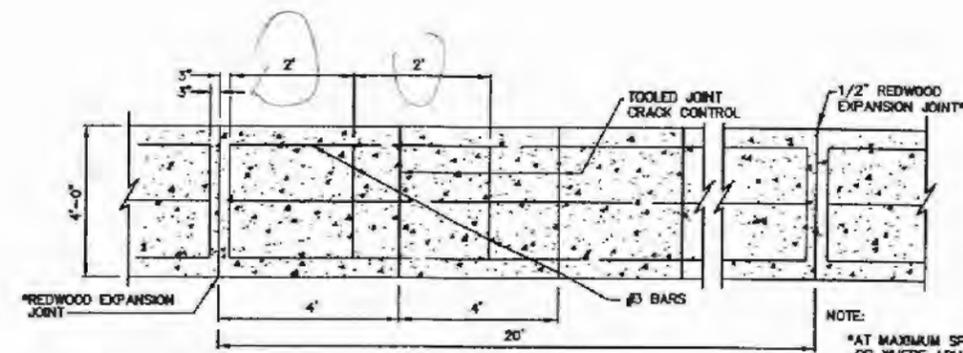
RAMP SPAN SECTION



WALKWAY TRENCH SECTION BRIDGING DETAIL N.T.S.

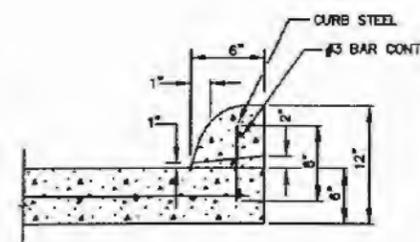


TYPICAL AND USUAL SECTION

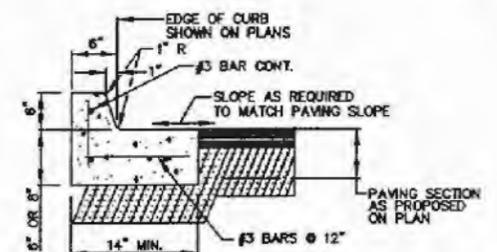


TYPICAL SIDEWALK JOINTING & REINFORCEMENT N.T.S.

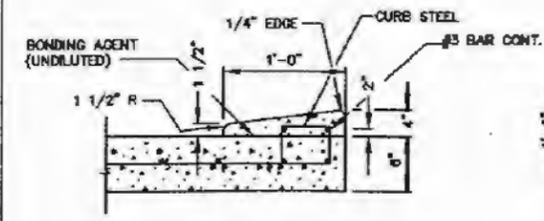
HIKE AND BIKE TRAIL DETAIL ASPHALT PAVEMENT N.T.S.



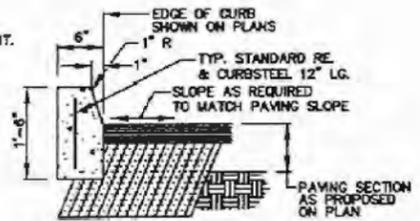
6" CONCRETE CURB TYPE "C" (COMMERCIAL)



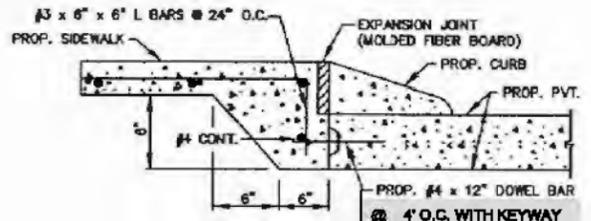
CURB & GUTTER TYPE "A" (ASPHALT)



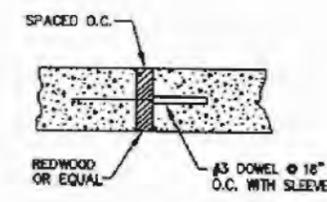
6" CONCRETE CURB TYPE "R" (RESIDENTIAL)



CURB EDGE TYPE "E" (AGGREGATE)

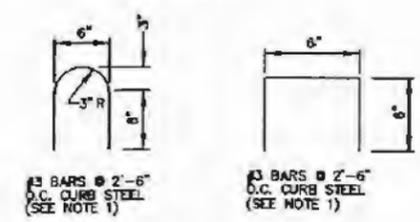


NO CURB OFFSET SIDEWALK / PAVEMENT DOWELED CONNECTION N.T.S.

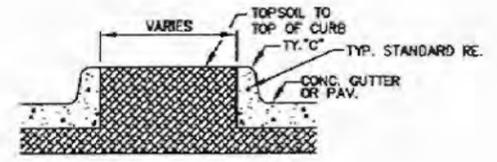


EXPANSION JOINT N.T.S.

NOTE:
 1. CONCRETE SIDEWALK: CONCRETE SHALL CONTAIN NOT LESS THAN FOUR AND ONE-HALF (4 1/2) SACKS OF CEMENT PER CUBIC YARD. SHALL CONTAIN NOT MORE THAN 6 1/2 GALLONS OF WATER PER SACK OF CEMENT. SHALL HAVE A MAXIMUM SLUMP OF "5" AND SHALL HAVE A MODULUS OF RUPTURE NOT LESS THAN 500 P.S.I. AT 28 DAYS (CITY OF LAKE JACKSON WILL PROVIDE INSPECTION SERVICE). REINFORCING SHALL BE A #15 GRADE 40 STEEL, #3 BARS SPACED AS INDICATED IN THE PLAN DETAILS, AND POSITIONED BY THE USE OF PLASTIC CHAIRS. CURING COMPOUND AS SPECIFIED WILL BE REQUIRED AND APPLIED AT THE RATE OF 200 S.F./GAL. SUBGRADE PREPARATION WILL REQUIRE A LEVEL UP OF SAND MAT OF 2" MAXIMUM THICKNESS WHICH SHALL BE COMPACTED BY A SAND PLATE OR AN APPROVED HAND TAMPER. PROPOSED OR NATURALLY OCCURRING WATER TAMPING SHALL BE AN ALLOWABLE METHOD WHEN DETERMINED IN THE FIELD TO YIELD APPROVED RESULTS. THE SAND, EQUIPMENT AND LABOR SHALL BE CONSIDERED SUBSIDIARY TO THE MATERIALS REQUIRED FOR THE COMPLETED SIDEWALK.
 2. DRAINAGE BRIDGING SHALL BE PROVIDED BY THE CONTRACTOR AT LOCATIONS SPECIFIED BY THE ENGINEER OR AS INDICATED ON THE PLANS. FORMWORK WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE INCLUDED IN THE UNIT BID PRICE FOR CONCRETE SIDEWALKS.



STANDARD CURBS



CURBED MEDIAN

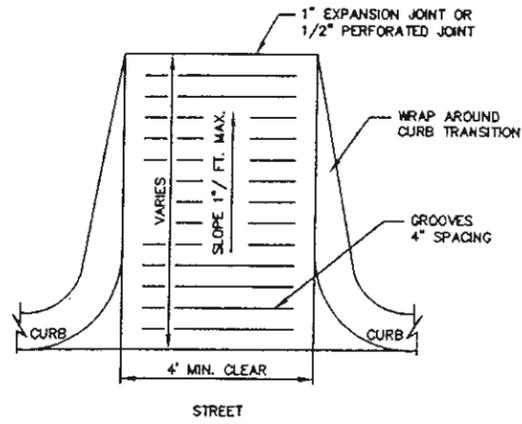
SPECIAL CURBS

NOTE:
 1. WHEN CONCRETE CURB IS TO BE PLACED ON EXISTING CONCRETE BASE #4 DEFORMED BARS, 7" LONG, 24" O.C. DOWELLED 4" MIN. AND SET IN EPOXY.
 2. REDWOOD EXPANSION JOINTS SHALL BE INSTALLED AT ALL PAVEMENT EXPANSION JOINTS.

PAVEMENT CURB DETAILS N.T.S.

SIDEWALK PAVEMENT DETAILS N.T.S.

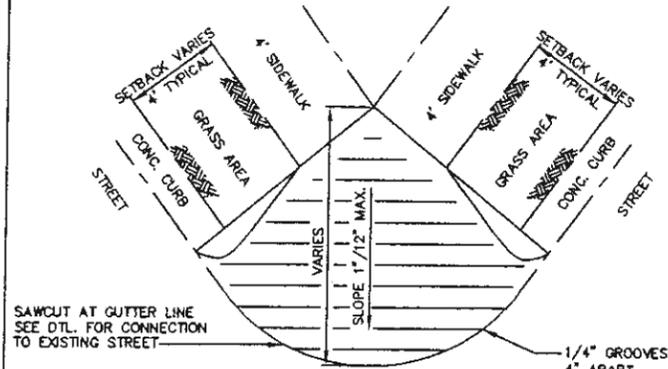
PAVEMENT CONSTRUCTION	
DRAWING DETAIL	
LJP-8	
DEPARTMENT OF ENGINEERING AND PUBLIC WORKS	
SEAL	
DESIGN ENGINEER:	DATE:
SUBMITTED:	SHEET 8 OF 9
SCALE:	
DATE:	



TYPE 1

CURB RAMP AT INTERSECTION
RAMPING TO ONE STREET

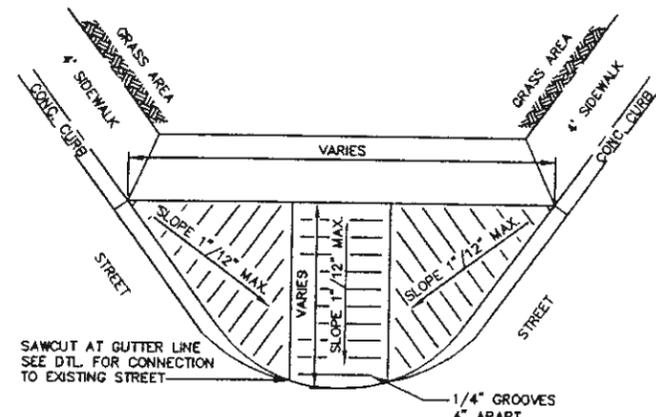
NTS



TYPE 2

CURB RAMP AT INTERSECTION
W/4' (VARIES) SETBACK

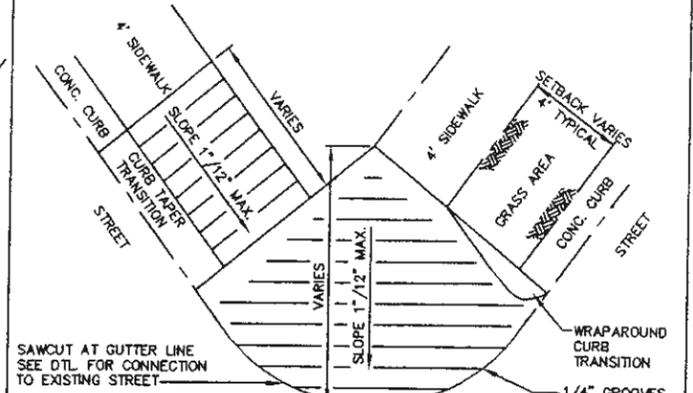
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TYPE 3

CURB RAMP AT INTERSECTION
NO S/W/ SETBACK

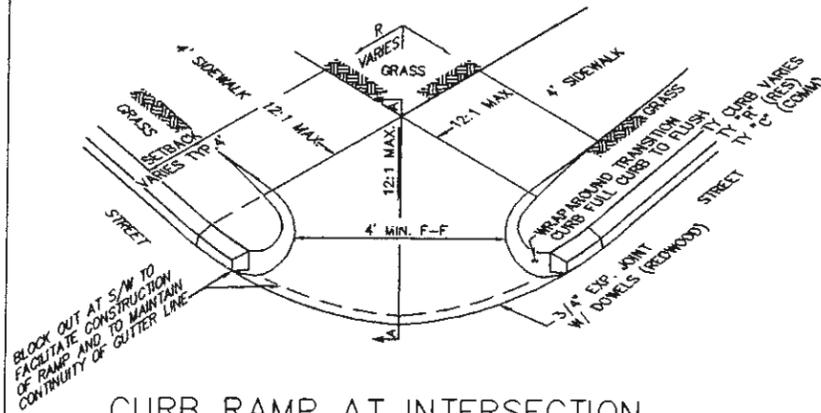
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TYPE 4

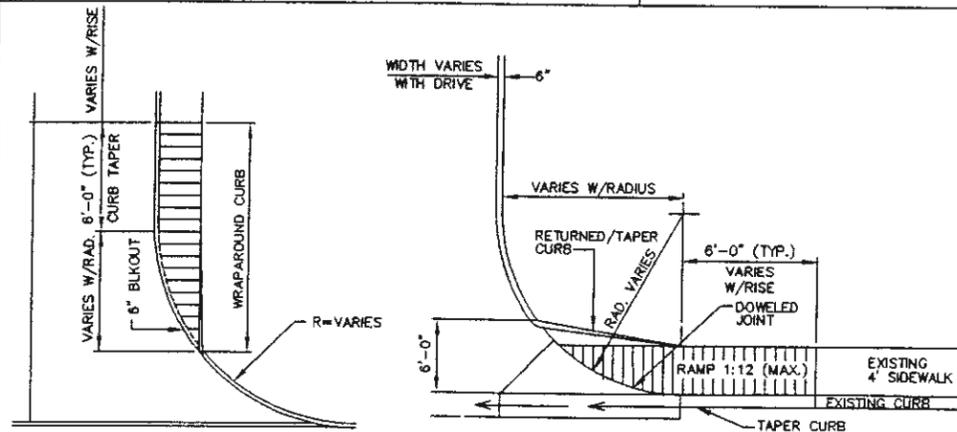
CURB RAMP AT INTERSECTION
WITH AND WITHOUT SETBACK

NTS



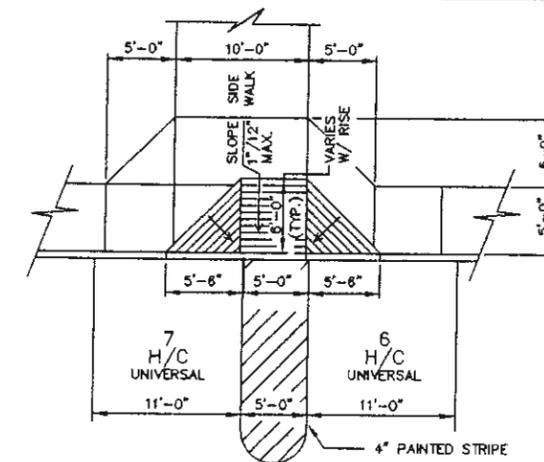
CURB RAMP AT INTERSECTION
W/4' (VARIES) SETBACK
TWO-DIRECTIONAL APPROACH

NTS



TYPICAL RAMP & DRIVES

NTS



INSET RAMP FOR
MID BLOCK / PKG. LOT

NTS

PAVEMENT
CONSTRUCTION

DRAWING DETAIL

LJP-9



DEPARTMENT OF ENGINEERING
AND PUBLIC WORKS

SEAL



DESIGN ENGINEER:

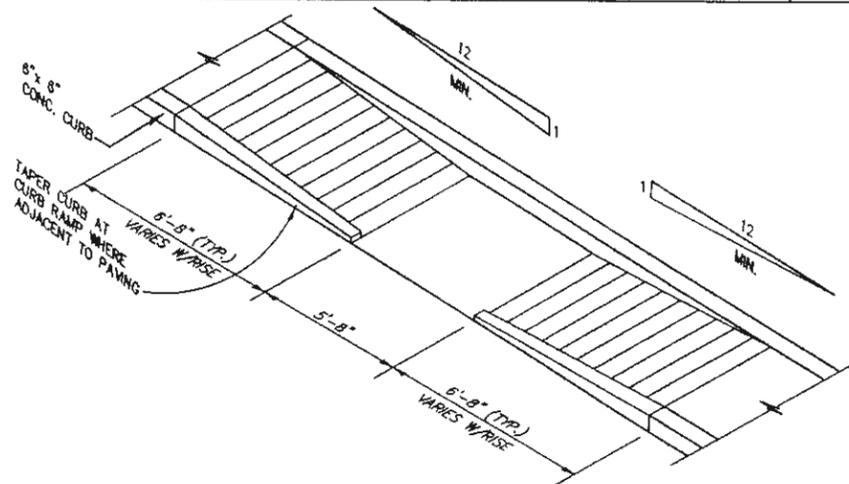
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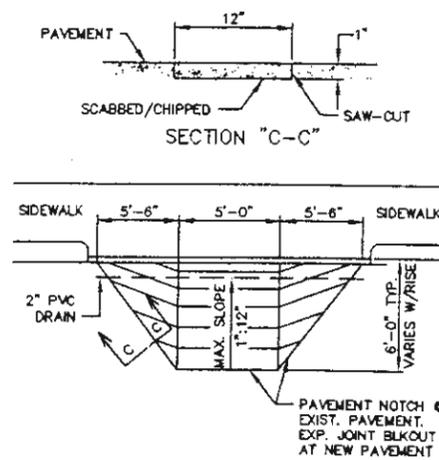
DATE:

SHEET 9 OF 9



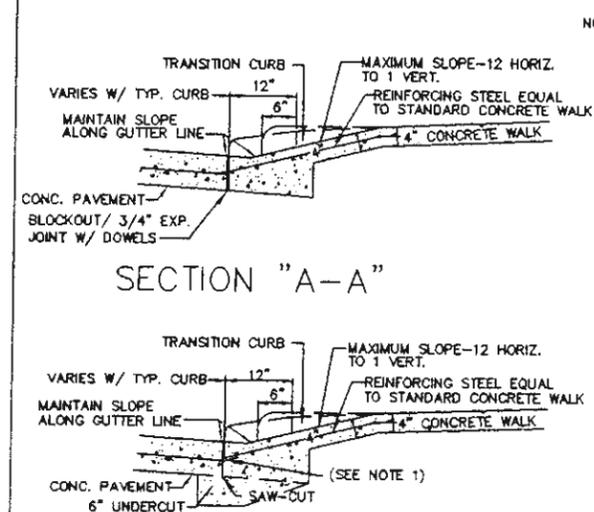
DOUBLE INSET RAMP FOR
MID BLOCK / PKG. LOT

NTS

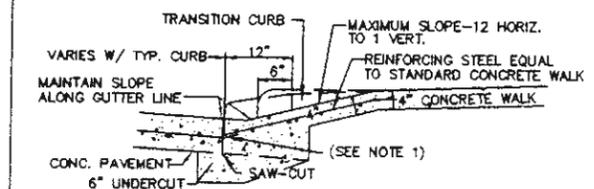


OUTSET RAMP FOR
MIDBLOCK / PKG. LOT

NTS



SECTION "A-A"



SECTION "B-B"

NOTES:

- EXISTING CURB AND GUTTER TO BE SAW-CUT, REMOVED AND REPLACED. DOWEL STEEL OR SAW-CUT TO EXPOSE EXISTING STEEL FOR MINIMUM REINFORCING OVER-LAP OF SIX INCHES (6").
- CONNECTIONS TO NEW PAVEMENT SHALL BE MADE ACCORDING TO SEC. "B-B". CONNECTIONS MADE TO EXISTING PAVEMENTS SHALL BE MADE ACCORDING TO SEC. "A-A".
- CONNECTIONS TO LOCATIONS THAT ARE ASCERTAINED NOT TO POND WATER MAY DELETE THE SAW-CUT REQUIREMENT WITH APPROVAL OF THE OWNERS ENGINEER.
- EXISTING WALKS SHALL BE SAW-CUT, REMOVED AND ADJUSTED TO THE LIMITS INDICATED OR NECESSARY TO ACCOMMODATE THE PARTICULAR RAMP TYPE CONDITION PROPOSED.



CITY OF LAKE JACKSON STANDARD STREET REPAIR DETAILS

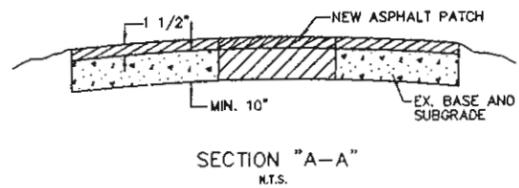
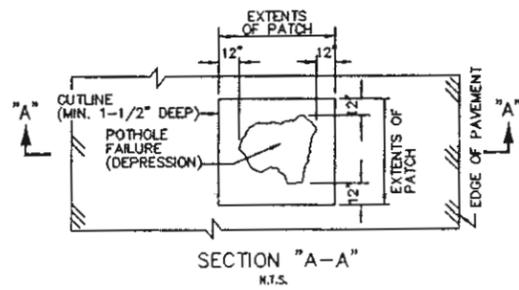
SHEET INDEX

<u>DESCRIPTION</u>	<u>SHEET #</u>
1. POTHOLE REPAIR	1
2. REPAIR OF ASPHALT SHOULDER	1
3. RANDOM CRACK REPAIR AND SEALING FOR CONCRETE	1
4. REPAIR OF PAVEMENT HEADERS ON CONCRETE STREETS	1
5. REPAIR OF SMALL TO LARGE AREA FAILURES ON CONCRETE STREETS	2
6. REPAIR OF CONCRETE CURBS	2
7. REPAIR OF SPALLED JOINT	2
8. REPAIR OF BIRDBATHS (MUD JACKING)	3
9. REPAIR OF BIRDBATH (SCARIFIER)	3
10. DETOUR LAYOUT FOR 2-WAY ROADWAY	4
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12. DRIVEWAY & STREET OPEN CUT DETAILS	5
13. PAVEMENT MARKING DETAILS	6

CITY OF LAKE JACKSON

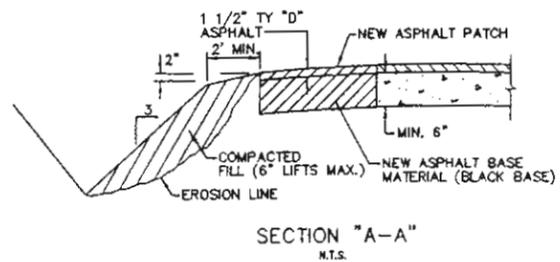
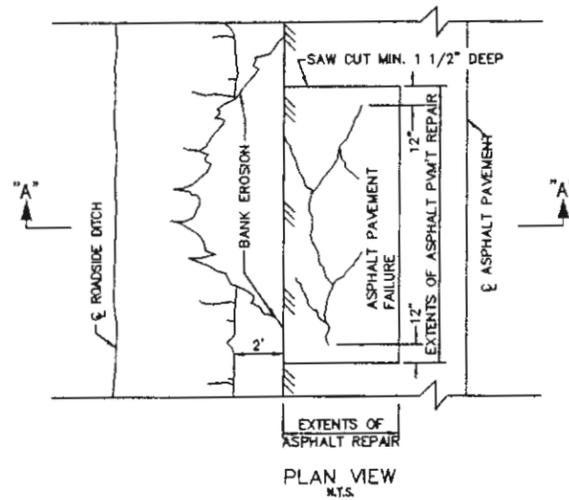
POTHOLE REPAIR ON ASPHALT STREET

1. SET UP WORK ZONE IN ACCORDANCE WITH TEXAS MUTCD, LATEST EDITION.
2. MARK AREA OF EXCAVATION. THE REPAIR SHALL EXTEND TWELVE (12) INCHES PAST EDGES OF FAILURE. ALL CORNERS OF PATCH SHOULD BE AT RIGHT ANGLES TO EACH OTHER.
3. USE A CHISEL BLADE JACKHAMMER, WALK-BEHIND CONCRETE SAW WITH AN ASPHALT BLADE. DO NOT USE A CONCRETE BLADE TO CUT ASPHALT.
4. EXCAVATE TO A MINIMUM DEPTH OF TEN (10) INCHES INTO BASE AND SUBGRADE.
5. REPAIR SHOULD BE DRY AND FREE OF LOOSE MATERIAL. IF NECESSARY, USE FLAME TOOL TO EVAPORATE MOISTURE. APPLY TACKCOAT (RC250) TO BOTTOM AND SIDES OF POT HOLE.
6. REPLACE EXCAVATED SUBGRADE WITH ASPHALTIC MATERIAL UP TO AND FLUSH WITH RIDING SURFACE. A STRING LINE OR METAL STRAIGHT EDGE SHOULD BE USED TO CHECK GRADE FOR MEDIUM TO LARGE AREAS. ASPHALTIC MATERIAL SHOULD BE PLACED IN TWO (2) INCH TO THREE (3) INCH LIFTS. EACH LIFT SHOULD BE THOROUGHLY COMPACTED WITH A VIBRATORY PLATE BEFORE PLACING NEXT LIFT. AMPLE TACK COAT SHOULD APPLIED BETWEEN LIFTS OF ASPHALTIC MATERIAL. UNLESS THE REPAIR IS MADE WITH COLD MIX, IN WHICH CASE NO TACKCOAT IS APPLIED.
7. REMOVE WORK ZONE.



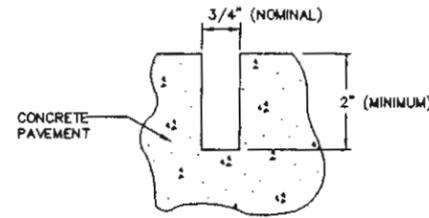
ASPHALT SHOULDER MAINTENANCE

1. SET UP WORK ZONE IN ACCORDANCE WITH TEXAS MUTCD, LATEST EDITION.
2. BASE MATERIAL SHOULDER REPAIR
 - A) THE DESIRABLE TOP OF SLOPE FOR THE ROADSIDE DITCH SHOULD BE NO CLOSER TO THE PAVEMENT THAN TWO (2) FEET. THE SLOPE OF THE DITCH SHOULD BE WORKED WITH THE HYDRAULIC EXCAVATOR OR MOTORGRADER. A DESIRED MINIMUM SIDE SLOPE FOR THE DITCH IS THREE (3) TO ONE (1).
 - B) USING A MOTOR GRADER, BLADE OVER ERODED BASE TO LOOSEN EXISTING MATERIAL AND TO FILL THOSE AREAS WHERE VOIDS HAVE OCCURRED. ADDITIONAL BASE MATERIAL SHOULD BE PLACED TO LEVEL OFF ROAD BASE.
 - C) THE FIRST TWO (2) FEET FROM EDGE OF PAVEMENT SHOULD BE RELATIVELY LEVEL WITH A SLIGHT GRADE AWAY FROM THE PAVEMENT. A DROP OF PLUS OR MINUS (+/-) TWO (2) INCHES SHOULD BE ACHIEVED IN THOSE TWO (2) FEET.
 - D) ALL BASE SHOULD BE PLACED IN MAXIMUM LIFTS OF THREE (3) INCHES, SATURATED WITH WATER AND COMPACTED WITH A VIBRATORY PLATE OR PNEUMATIC ROLLER.
3. ASPHALT SHOULDER REPAIR
 - A) MARK AREA OF EXCAVATION. REPAIR SHALL EXTEND TWELVE (12) INCHES PAST EDGES OF FAILURE. ALL CORNERS OF PATCH SHALL BE AT RIGHT ANGLES TO EACH OTHER.
 - B) REPAIR SHOULD BE DRY. EXCAVATE TO A MINIMUM DEPTH OF SIX (6) INCHES INTO BASE AND SUBGRADE.
 - C) SATURATE BOTTOM OF EXCAVATED REPAIR AREA WITH HOT TACK. (UNLESS COLD MIX IS BEING USED).
 - D) REPLACE EXCAVATED SUBGRADE WITH ASPHALTIC MATERIAL UP TO AND FLUSH WITH RIDING SURFACE. CARE SHOULD BE TAKEN TO ENSURE THAT A BIRD BATH IS NOT CREATED IN REPAIRED AREA.
 - E) ASPHALTIC MATERIAL SHOULD BE PLACED IN MAXIMUM LIFTS OF TWO (2) OR THREE (3) INCHES.
 - F) EACH LIFT SHOULD BE THOROUGHLY COMPACTED WITH A VIBRATORY PLATE OR PNEUMATIC ROLLER BEFORE PLACING NEXT LIFT. TACK COAT SHOULD BE APPLIED BETWEEN LIFTS. (UNLESS COLD MIX IS BEING USED).
 - G) INSTALL ONE AND ONE-HALF (1 1/2) INCH THICK TYPE O ASPHALT RIDING SURFACE.
4. REMOVE WORK ZONE.

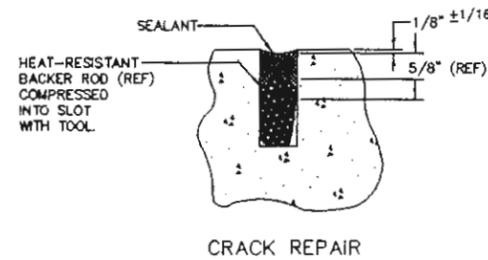


RANDOM CRACK REPAIR AND SEALING FOR CONCRETE

1. SET UP WORK ZONE IN ACCORDANCE WITH TEXAS MUTCD, LATEST EDITION.
2. USING CRACK-ROUTER SAW, CUT ALONG CRACK AT A MINIMUM DEPTH OF TWO (2) INCHES. THE WIDTH OF THE CUT SHALL BE THREE-FOURTHS (3/4) OF AN INCH.
3. DIRT, DUST, SAND OR ANY OTHER DEBRIS SHALL BE BLOWN OUT OF THE ROUTED CRACK WITH AN AIR COMPRESSOR OR FLAME TOOL.
4. INSERT BACKER ROD INTO ROUTED CRACK LEAVING A ONE-HALF (1/2) INCH DEEP SLOT. FILL THIS ONE-HALF (1/2) INCH DEEP BY THREE-FOURTHS (3/4) INCH WIDE SLOT WITH AN ELASTOMERIC-TYPE, HOT-POURED JOINT SEALANT.
5. CRACKS SHOULD BE FILLED TO JUST BELOW THE CONCRETE PAVEMENT SURFACE (SEE DETAIL).
6. REMOVE WORK ZONE.



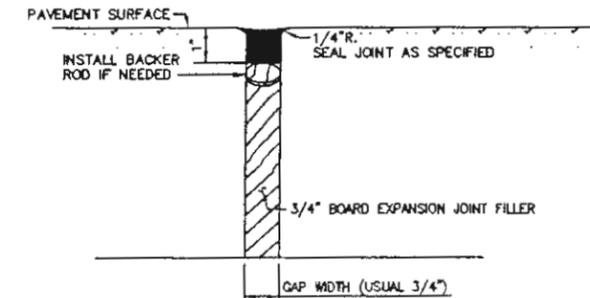
SAW CUT ALONG EXISTING CRACK



CRACK REPAIR

CLEANING & SEALING PAVEMENT HEADERS ON CONCRETE STREETS

1. SET UP WORK ZONE IN ACCORDANCE WITH TEXAS MUTCD, LATEST EDITION.
2. REMOVE EXISTING JOINT SEALANT AND REDWOOD STRIP, WITH JOINT PLOW.
3. DIRT, DUST, SAND AND ANY OTHER DEBRIS SHALL BE BLOWN OUT OF JOINT WITH AIR COMPRESSOR AND/OR FLAME TOOL.
4. USE BACKER ROD TO FILL VOID TO WITHIN ONE (1) INCH OF FINISHED SURFACE.
5. THE ONE (1) INCH DEEP SLOT SHOULD BE FILLED WITH AN ELASTOMERIC-TYPE, HOT-POUR JOINT SEALANT (RUBBERIZED) OR A TWO (2) PART POLYMERIC SELF LEVELING COLD APPLIED SEALANT.
6. THE TOP OF THE SEALANT SHOULD BE JUST BELOW THE CONCRETE PAVEMENT SURFACE. TO AVOID EXCESS MATERIAL BUILD UP POUR FROM THE CENTER OF THE STREET TOWARD THE EDGES.
7. REMOVE WORK ZONE.



PAVEMENT REPAIR

DRAWING DETAIL

LJSR-1



DEPARTMENT OF ENGINEERING AND PUBLIC WORKS

SEAL



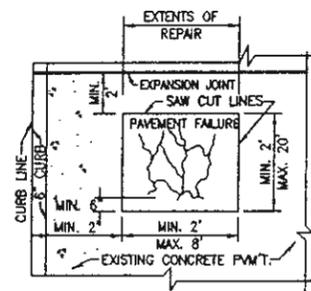
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SUBMITTED:

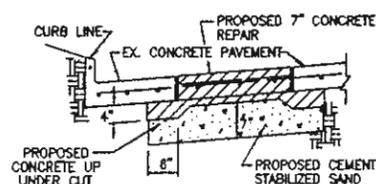
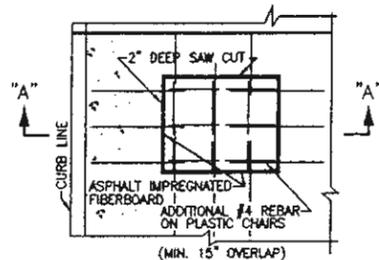
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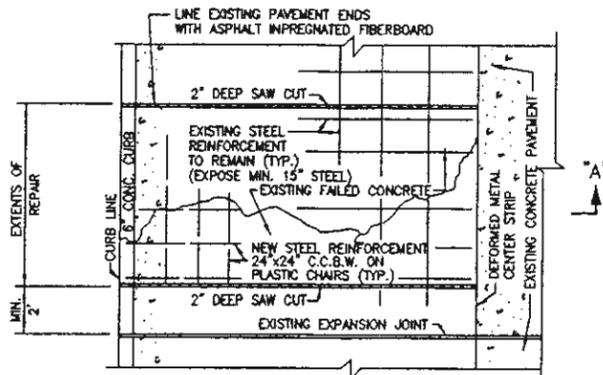
SHEET 1 OF 6



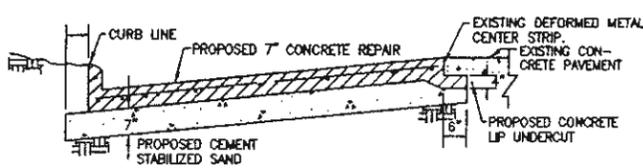
PLAN VIEW
N.T.S.



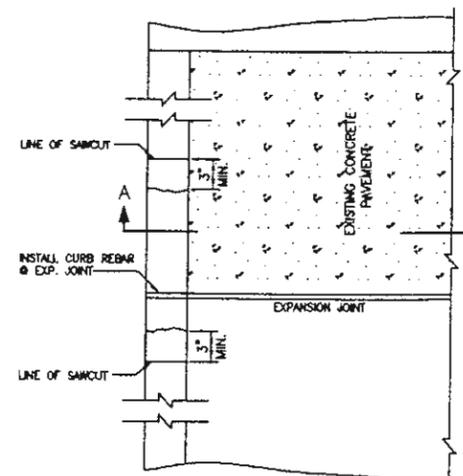
SECTION "A-A"
N.T.S.



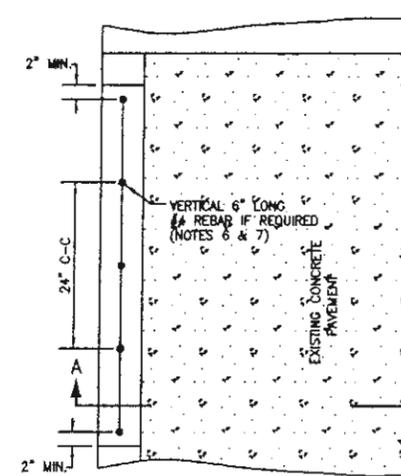
PLAN VIEW
N.T.S.



SECTION "A-A"
N.T.S.

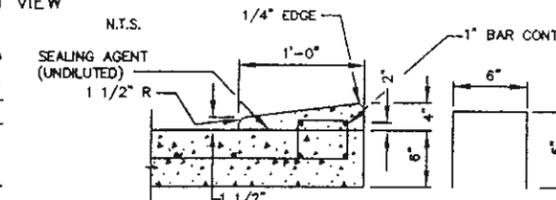


6" CONCRETE CURB
TYPE "C"
(COMMERCIAL)



6" CONCRETE CURB
TYPE "R"
(RESIDENTIAL)

PLAN VIEW
N.T.S.



#3 BARS @ 2'-6"
O.C. CURB STEEL
(SEE NOTES 6 & 7)

#3 BARS @ 2'-6"
O.C. CURB STEEL
(SEE NOTES 6 & 7)

STANDARD CURBS

REPAIR OF CONCRETE CURB

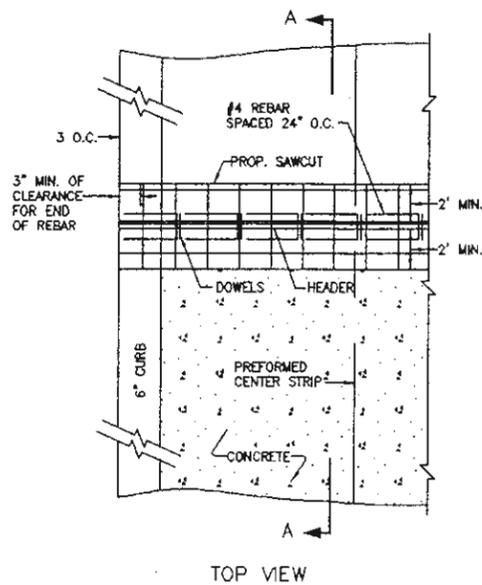
REPAIR OF SMALL TO LARGE AREA
CONCRETE PAVEMENT FAILURE

REPAIR OF SMALL TO LARGE AREA
FAILURE ON CONCRETE PAVEMENTS

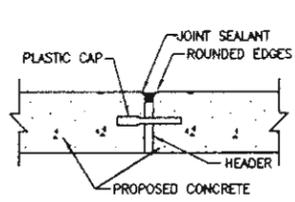
- 1) NOTIFY THE CITY ENGINEERING/PUBLIC WORKS 72 HOURS PRIOR TO SCHEDULED START DATE.
- 2) SET UP WORK ZONE IN ACCORDANCE WITH TEXAS MUTCD, LATEST EDITION.
- 3) SURVEY THE WORK ZONE AND DETERMINE THE PLAN OF ACTION. DOES IT REMOVED AND REPLACED OR CAN IT BE MUDJACKED? CONSULT STREET SUPERINTENDENT IF IT NEEDS TO BE REPLACED. MARK SAW-CUT LINES AROUND THE PAVEMENT FAILURE WITH A CHALK LINE-SET WITH CLEAR PAINT. GROOVE LINE WITH A HAND HELD CONCRETE SAW. LINES SHOULD BE PERPENDICULAR WITH EACH OTHER. THE SAW-CUT LINES SHOULD BE LOCATED A MINIMUM OF SIX (6) INCHES OUTSIDE OF THE PAVEMENT FAILURE. THE SAW-CUT LINES SHOULD BE PARALLEL TO THE PAVEMENT EDGES AND NOT CROSS ANY CRACKING IN THE PAVEMENT.
- 4) SAW-CUT ALONG GROOVED LINES WITH A WALK BEHIND SAW AT A MINIMUM DEPTH OF ONE AND ONE-HALF (1 1/2) INCHES OR FULL DEPTH AS DETERMINED BY THE ENGINEERING /PUBLIC WORKS DEPARTMENT.
- 5) BREAK OUT CONCRETE FAILURE USING A JACK-HAMMER OR BACKHOE MOUNTED PAVEMENT BREAKER. REMOVE CONCRETE AND EXPOSE EXISTING REINFORCEMENT OR DOWEL AND EPOXY REBARS OF EQUAL SIZE. EXPOSED REINFORCEMENT SHOULD BE AT LEAST FIFTEEN (15) INCHES IN LENGTH. OVER-EXCAVATE SUBGRADE TO ADEPTH AS INDICATED BY THE ENGINEERING /PUBLIC WORKS DEPARTMENT, BELOW THE BOTTOM OF THE PROPOSED PAVEMENT. REMOVE ALL SOFT MATERIAL DEEPER THAN SEVEN (7) INCHES.
- 6) USE CEMENT STABILIZED LESTONE (1. SACKS OF CEMENT PER TON) TO BRING SUBGRADE UP TO BOTTOM OF PROPOSED PAVEMENT. PAVEMENT (MINIMUM THICKNESS) OF NEW PAVEMENT IS SIX (6) INCHES OR THICKER IF EXISTING.
- 7) UNDERCUT A SIX (6) INCH DEEP BY SIX (6) INCH WIDE TRENCH UNDER ALL EXISTING PAVEMENT ADJACENT TO THE REPAIR IN ORDER TO PROVIDE A LIP UNDER EXISTING CONCRETE PAVEMENT.
- 8) SET FORMS AS NECESSARY AND INSTALL EXPANSION HEADERS OR C.J. METAL KEYWAYS WITH STANDARD DOWEL TYPE AND SPACING IF REQUIRED FOR REPLACEMENT.
- 9) STRAIGHTEN EXISTING REBAR AND THE #4 REBAR AS NEEDED ON TWENTY-FOUR (24) INCHES ON CENTER.
- 10) BUILD STEEL MAT USING #4 BARS ON TWENTY-FOUR (24) INCH CENTERS. PLACE MAT ON PLASTIC CHAIRS.
- 11) WET SUBGRADE AND PLACE CONCRETE, 4" MAXIMUM SLUMP. USE STRAIGHTEDGE TO BRING CONCRETE TO GRADE. USE AN ELECTRONIC VIBRATOR TO CONSOLIDATE CONCRETE. USE JITTERBUG TO BRING GROUT TO TOP OF CONCRETE.
- 12) FINISH CONCRETE AND TOOL ROUND EDGES ON ALL JOINTS. A ROUGH BROOM FINISH SHALL BE APPLIED.
- 13) APPLY CURING COMPOUND WHEN CONCRETE HAS SUFFICIENTLY SET.
- 14) BARRICADES WITH LIGHTS SHOULD BE ERECTED TO DETOUR TRAFFIC OVERNIGHT.
- 15) THE FORMS MAY BE CAREFULLY REMOVED A MINIMUM OF TWENTY-FOUR (24) HOURS AFTER CONCRETE PLACEMENT.
- 16) REBUILD CONCRETE CURB AS NECESSARY.
- 17) ALLOW THREE (3) DAYS CURING, IF 550 PSI FIVE AND ONE-HALF (5 1/2) SK/CY MIX WAS USED. IF HIGH EARLY STRENGTH CONCRETE WAS USED, THE CURING PERIOD MAY BE REDUCED TO TWENTY-FOUR (24) HOURS. HIGH EARLY STRENGTH SHALL BE A SIX AND ONE-HALF (6 1/2) CEMENT SK/CY CONCRETE MIX.
- 18) USE AN ELASTOMERIC-TYPE, HOT-POURED JOINT SEALANT TO SEAL ALL JOINTS OR A TWO (2) PART POLYMERIC COMPOUND SELF LEVEL COLD APPLIED SEALANT.
- 19) REMOVE WORK ZONE AND CLEAN THE SURROUNDING SITE AFTER REPAIR AND BEFORE OPENING TO TRAFFIC.

CONCRETE CURB REPAIR

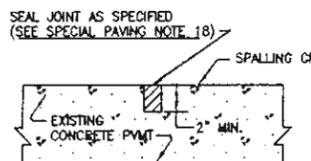
- 1) SET UP WORK ZONE IN ACCORDANCE WITH TEXAS MUTCD, LATEST EDITION.
- 2) MARK SAW-CUT LINE PERPENDICULAR TO CURB AND ON BOTH SIDES OF FAILURE. THIS SHOULD BE LOCATED A MINIMUM OF THREE (3) INCHES OUTSIDE OF CURB FAILURE.
- 3) SAW-CUT ALONG MARKED LINES WITH EITHER A WALK-BEHIND SAW OR A HAND HELD SAW. CONTINUOUS REINFORCEMENT SHOULD ALSO BE CUT, REMOVED AND REPLACED.
- 4) USING A SLEDGE HAMMER REMOVE CURB TO THE SAW CUT POINTS.
- 5) REMOVE SOIL AND SOIL FROM BACK OF CURB. SET FORM FOR BACK O CURB. IN RESIDENTIAL AREA SOIL MAY NEED TO BE REMOVED IN TWELVE (12) INCH STRIPS, SAVED THEN RESOODED AFTER WORK IS COMPLETE.
- 6) REUSE EXISTING REMAINING DOWEL AND WHERE MISSING IF REQUIRED, USE A ROCK DRILL TO DRILL THREE-QUARTER (3/4) INCH DIAMETER HOLES INTO CONCRETE PAVEMENT TO A DEPTH OF FOUR (4) INCHES AND SPACED TWENTY-FOUR (24) INCHES ON CENTER FOR A DOWEL REPLACEMENT.
- 7) EPOXY GROUT #4 BARS THAT ARE SEVEN (7) INCHES LONG VERTICALLY INTO THE DRILLED OVERSIZED DIAMETER HOLES. THEN TIE A LATERAL PIECE OF #4 REBAR (OR USE CURB HOOPS). ENDS OF THE LATERAL REBAR SHALL BE MAXIMUM DISTANCE OF TWO (2) INCHES FROM THE EXISTING CURB. INSTALL CURB BARS AT PAVING HEADERS AND PAINT EXISTING CURB ENDS WITH BONDOR OR SIMILAR PRODUCT.
- 8) USE A LOW SLUMP, SMALL GRAVEL, FOUR AND ONE-HALF (4 1/2) SK/MIX FOR CURB CURE WITH CURING COMPOUND.
- 9) ALLOW ONE (1) DAY FOR CURB TO SET UP, THEN CAREFULLY REMOVE FORMS AND BACKFILL BEHIND CURB. RESOD, IF NECESSARY.
- 10) REMOVE WORK ZONE AFTER CURB HAS BEEN FORMED.



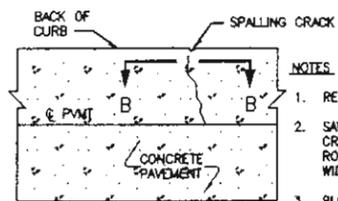
TOP VIEW



TYPICAL HEADER
JOINT DETAIL
(SIDE VIEW)
SECTION "A-A"



SECTION "B-B"



SPALL REPAIR DETAIL
N.T.S.

NOTES

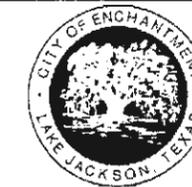
1. REMOVE ALL LOOSE MAT'L
2. SAW-CUT WITH A RANDOM CRACK SAW OR CRACK ROUTER 1/8" TO 3/16" WIDE (MIN. 2" DEEP).
3. BLOW OUT WITH AIR COMPRESSOR
4. SEAL JOINT AS SPECIFIED

REPAIR OF SPALL JOINT

PAVEMENT REPAIR

DRAWING DETAIL

LJSR-2



DEPARTMENT OF ENGINEERING
AND PUBLIC WORKS

SEAL



DESIGN ENGINEER:

DATE:

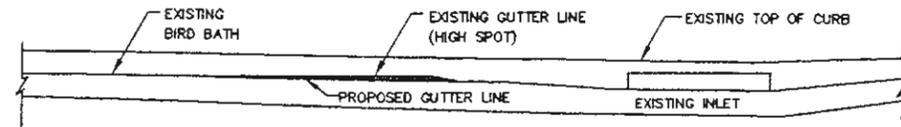
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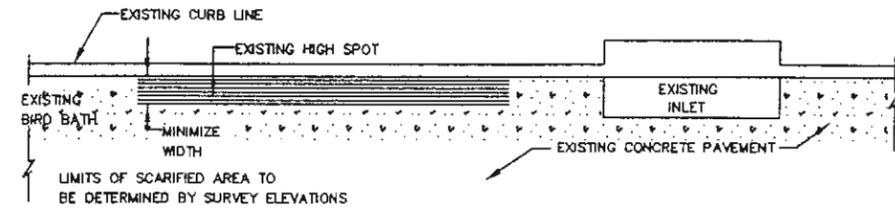
DATE:

SHEET 2 OF 6

REPAIR OF BIRD BATH
(MUD JACKING)



PROFILE
N.T.S.



PLAN VIEW
N.T.S.

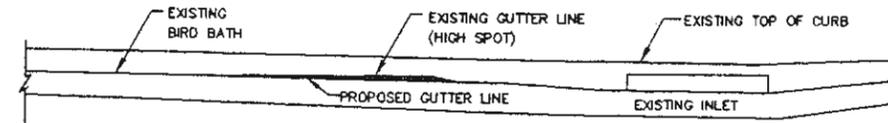
BIRDBATH REPAIR
(MUD JACKING)

- 1.) SET UP WORK ZONE IN ACCORDANCE WITH TEXAS MUTCD, LATEST EDITION.
- 2.) SURVEY SLAB. DETERMINE ELEVATIONS OF THE LOWEST POINT IN THE BIRDBATH AND OF THE HIGHEST POINTS ON EACH END OF THE BIRDBATH. DETERMINE THE DIFFERENCE IN ELEVATIONS OF THE HIGHEST AND LOWEST POINTS. THIS WILL BE THE AMOUNT THE SLAB MUST BE RAISED.
- 3.) MARK HOLE LOCATIONS AS SPECIFIED IN DRAWING DETAIL. A LINE OF HOLES, SPACED AT FIVE (5) FEET, ON CENTER, SHOULD BE LOCATED LONGITUDINALLY ALONG GUTTER LINE. THIS LINE OF HOLES SHOULD EXTEND AT LEAST FIVE (5) FEET BEYOND ENDS OF FULL BIRDBATH.
- 4.) DRILL HOLES COMPLETELY THROUGH PAVEMENT WITH CONCRETE DRILL. IF A CEMENT STABILIZED SUBGRADE EXISTS BELOW PAVEMENT, THE HOLES SHOULD ALSO BE DRILLED THROUGH THIS SUBGRADE. THE HOLES SHOULD BE DRILLED A MINIMUM OF THREE (3) INCHES BELOW EXISTING CONCRETE OF CEMENT STABILIZED SUBGRADE. HOLES MAY BE DRILLED PRIOR TO MUDJACKING OR AS MUDJACKING PROGRESSES.
- 5.) PREPARE "MUD MIX". THICKNESS OF MIX WILL DEPEND UPON THE PURPOSE FOR MUD JACKING. A THIN MIX SHOULD BE USED FOR FILLING VOIDS AND FOR GRADUALLY RAISING SLABS. THICKER MIXES SHOULD BE USED FOR PRONOUNCED LIFTS ON ONE END OF THE SLAB. THICKER MIXES MAY ALSO BE USED IN CONJUNCTION WITH THINNER MIXES. THE THICKER MIX ACHIEVES THE DESIRED LIFT AND THE THINNER MIX FILLS VOIDS THAT HAVE BEEN CREATED.
- 6.) POSITION MUD JACK NOZZLE IN HOLE. THE HOLE IN THE SLAB SHOULD NOT BE LARGER THAN THE NOZZLE; IF THIS OCCURS, "MUD" WILL SQUIRT OUT OF THE HOLE.
- 7.) PUMP MUD UNDER PAVEMENT SLAB. DURING THE PUMPING PROCESS SEVERAL PROBLEMS MAY BE ENCOUNTERED. THE FOLLOWING IS A LIST OF PROBLEMS AND POSSIBLE SOLUTIONS:
 - I. A HOLE WILL NOT TAKE THE "MUD"?
BLOW OUT THE HOLE WITH AIR AND CREATE A SMALL POCKET BENEATH THE SLAB WITH A BAR TO ENABLE THE MIXTURE TO GET STARTED. OFTEN, A SMALL AMOUNT OF WATER (ABOUT ONE GALLON) PLACED IN THE HOLE BEFORE THE NOZZLE IS INSERTED WILL FACILITATE STARTING OF THE "MUD".
 - II. MIXTURE LEAKS OUT THE SIDE OF SLAB?
THIS COULD HAPPEN IF THE MIX WERE TOO THIN. UNDER NORMAL CONDITIONS, SOME OF THE MOISTURE CONTENT OF THE MIX WOULD SOAK INTO SURROUNDING SOIL AND THE INTERNAL RESISTANCE OF THE "MUD" WOULD KEEP IT BENEATH THE SLAB.

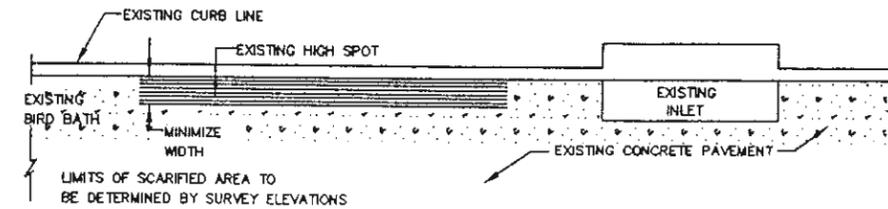
POSSIBLE SOLUTIONS:

1. IF LEAK IS SMALL, THE MUD CAN OFTEN BE HELD UNDER THE SLAB WITH A BLOCK OF WOOD.
2. USE A THICKER MIX.
3. LET MIX STAND LONG ENOUGH TO ALLOW CEMENT TO SET UP THEN RESUME PUMPING.
4. IF MATERIAL AT SIDE OF SLAB (OR SHOULDER OF ROAD) IS NOT STRONG ENOUGH TO CONTAIN THE MIX, DIG A SMALL TRENCH ALONG SIDE THE SLAB AND PACK IT WITH THE SAME DRY SOIL/CEMENT USED IN THE "MUD" MIXTURE.
- III. A LARGE COLUMN OF MATERIAL IS BEING PUMPED WITH NO APPARENT RESULTS?
STOP IMMEDIATELY. REMEMBER THAT THE "MUD" IS FLUID AND WILL FOLLOW THE PATH OF LEAST RESISTANCE. CHECK THE AREA TO SEE WHERE THE MATERIAL MIGHT BE GOING. IF THERE IS A SEWER, GAS OR WATER SERVICE LINE IN THE AREA, THE "MUD" MIGHT BE FOLLOWING THESE LINES—OR FILLING THEM.
DO NOT START PUMPING AGAIN UNTIL YOU ARE ABSOLUTELY SURE THAT THE "MUD" IS GOING WHERE IT IS INTENDED.
- IV. IF, WHEN USING A SANDY SOIL, THE SOIL SETTLES IN THE HOSE, ADD MORE CEMENT.
- 8.) DO NOT PUMP TOO MUCH MATERIAL INTO ANY ONE HOLE AT ONE TIME—CRACKING WILL DEVELOP. MAXIMUM CHANGE IN ELEVATION PER LIFT SHOULD NOT EXCEED 1/4 INCH AT ONE TIME/ REPEAT PATTERN FOR ADDITIONAL LIFT. CHECK ELEVATIONS FREQUENTLY WITH SURVEY INSTRUMENT.
- 9.) PUMP MUD UNDER SLAB, ALTERNATING HOLES FREQUENTLY, UNTIL DESIRED ELEVATION IS OBTAINED.
- 10.) SURVEY FINAL GUTTER ELEVATIONS AT FIVE (5) FEET INTERVALS TO ENSURE BIRDBATH HAS BEEN ELIMINATED. TAKE NOTES FOR ENGINEERING RECORDKEEPING.
- 11.) CLEAR HOLES OF ANY EXCESS MUD AND PLUG WITH A DRY CEMENT MIX.
- 12.) CLEAN AND FLUSH MUD JACK MACHINE THOROUGHLY.
- 13.) BARRICADES WITH LIGHTS SHOULD BE ERECTED TO DETOUR TRAFFIC OVERNIGHT.

REPAIR OF BIRD BATH
(SCARIFIER)



PROFILE
N.T.S.



PLAN VIEW
N.T.S.

BIRDBATH REPAIR
(SCARIFIER)

- 1.) SET UP WORK ZONE IN ACCORDANCE WITH TEXAS MUTCD, LATEST EDITION.
- 2.) SURVEY GUTTER LINE TO DETERMINE EXTENT OF REPAIR. CONSULT WITH STREET SUPERINTENDENT, IF NECESSARY. DETERMINE THE ELEVATIONS OF THE HIGHEST POINTS ON EACH END OF THE BIRDBATH AND THE LOWEST POINT IN THE BIRDBATH. AN ELEVATION SHOULD ALSO BE TAKEN AT THE NEAREST INLET. THE DIFFERENCE IN ELEVATION BETWEEN THE TWO (2) LOW POINTS AND THE HIGH POINT NEAREST THE INLET DETERMINES HOW DEEP THE SCARIFIER SHOULD CUT AT THE HIGH POINT.
- 3.) MARK AREA TO BE SCARIFIED. WIDTH OF AREA SHOULD BE MINIMIZED.
- 4.) LEVELING EQUIPMENT SHOULD BE USED TO MONITOR PROGRESS OF WORK.
- 5.) SCARIFIED AREA SHOULD BE LOCATED AS CLOSE TO THE FACE OF THE CURB AS POSSIBLE.
- 6.) CLEAN AREA AND USE WATER TO TEST SCARIFIED GUTTER, ENSURING THAT THE BIRDBATH IS ELIMINATED.
- 7.) REMOVE WORK ZONE.

PAVEMENT REPAIR

DRAWING DETAIL

LJSR-3



DEPARTMENT OF ENGINEERING
AND PUBLIC WORKS

SEAL



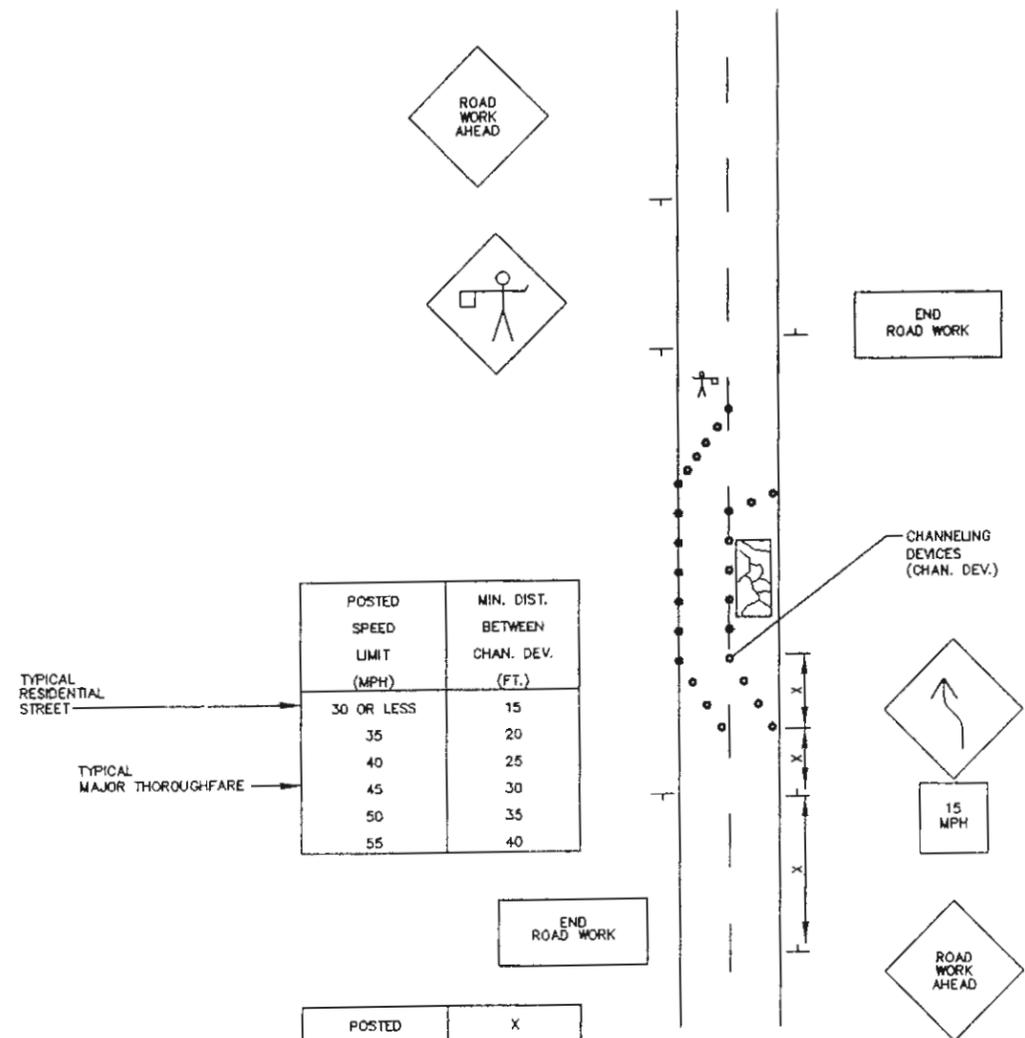
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SUBMITTED:

SCALE:

DATE:

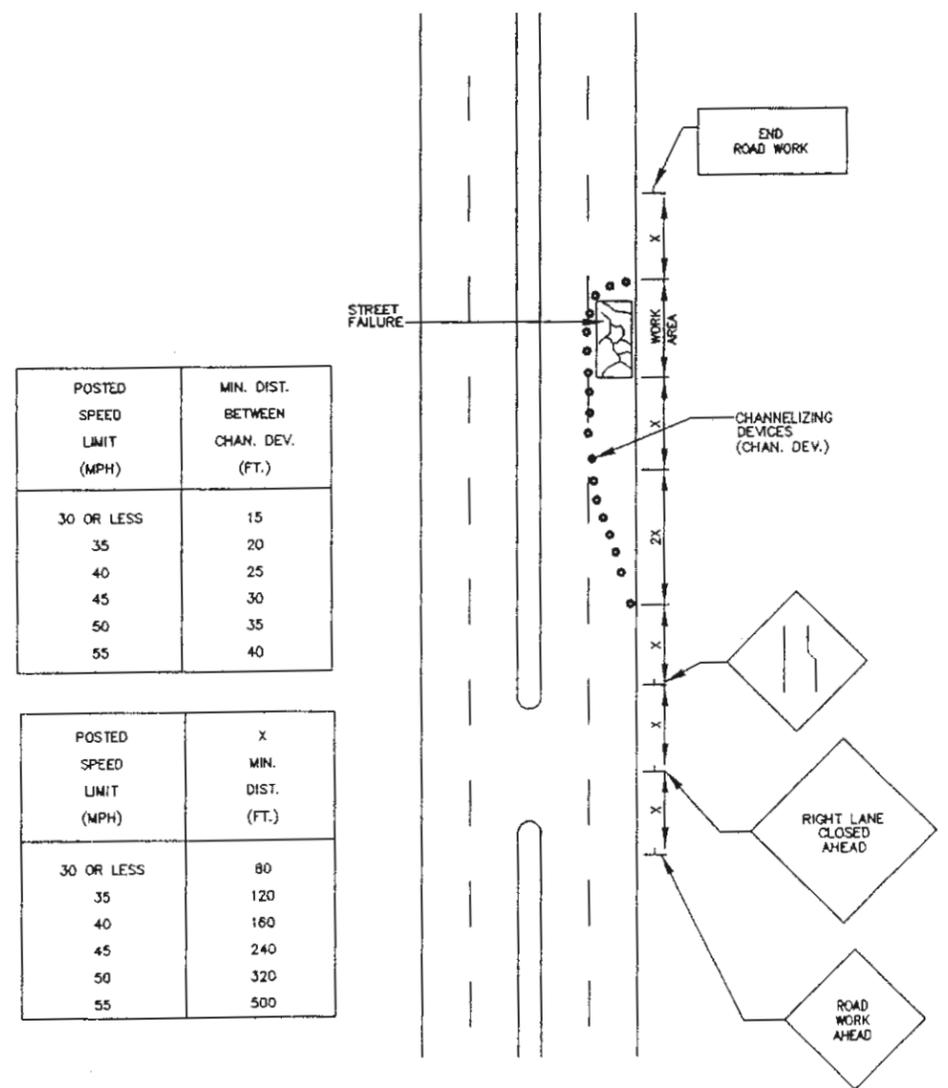
SHEET 3 OF 6



	POSTED SPEED LIMIT (MPH)	MIN. DIST. BETWEEN CHAN. DEV. (FT.)
TYPICAL RESIDENTIAL STREET	30 OR LESS	15
	35	20
TYPICAL MAJOR THOROUGHFARE	40	25
	50	35
	55	40

	POSTED SPEED LIMIT (MPH)	X MIN. DIST. (FT.)
TYPICAL RESIDENTIAL STREET	30 OR LESS	80
	35	120
	40	160
TYPICAL MAJOR THOROUGHFARE	45	240
	50	320
	55	500

DETOUR LAYOUT FOR 2-WAY ROADWAY

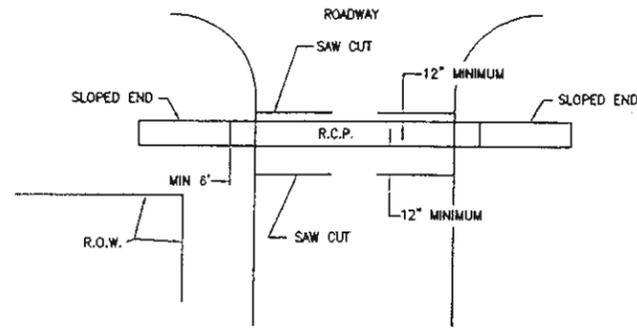


POSTED SPEED LIMIT (MPH)	MIN. DIST. BETWEEN CHAN. DEV. (FT.)
30 OR LESS	15
35	20
40	25
45	30
50	35
55	40

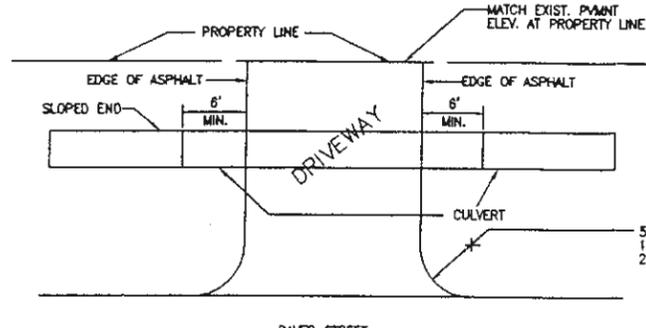
POSTED SPEED LIMIT (MPH)	X MIN. DIST. (FT.)
30 OR LESS	80
35	120
40	160
45	240
50	320
55	500

DETOUR LAYOUT FOR BOULEVARD ROADWAY

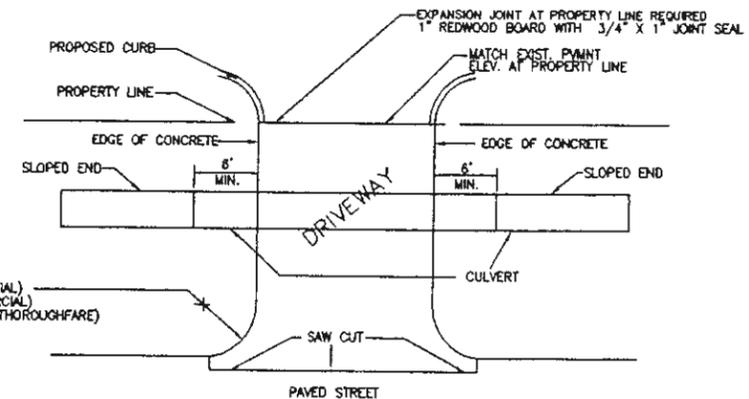
PAVEMENT REPAIR	
DRAWING DETAIL	
LJSR-4	
 DEPARTMENT OF ENGINEERING AND PUBLIC WORKS	
	
DESIGN ENGINEER:	DATE:
SUBMITTED:	
SCALE:	SHEET 4 OF 6
DATE:	



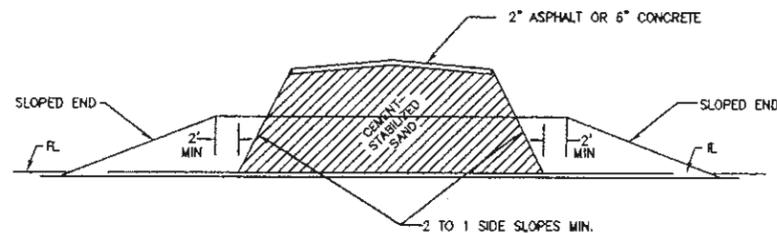
STREET OPEN CUT PLAN
N.T.S.



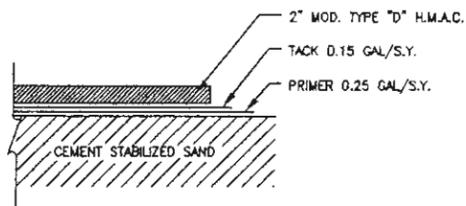
ASPHALT DRIVEWAY PLAN
(USED ONLY WHEN CONNECTING TO A ASPHALT ROADWAY)
N.T.S.



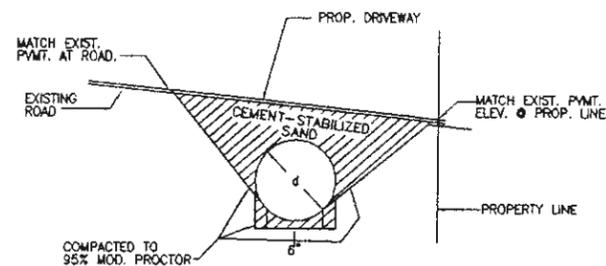
CONCRETE DRIVEWAY PLAN
(USED ONLY WHEN CONNECTING TO A CONCRETE ROADWAY)
N.T.S.



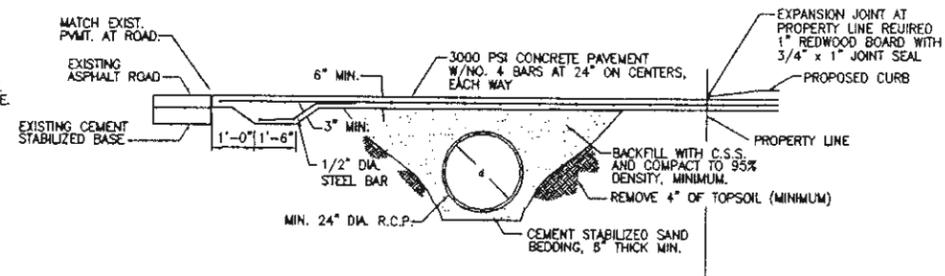
DRIVEWAY & STREET OPEN CUT PLAN
N.T.S.



DRIVEWAY & STREET OPEN CUT PLAN
SECTION DETAIL
N.T.S.



ASPHALT APRON DETAIL - DRIVEWAY PROFILE
FOR CULVERT DRAINAGE
N.T.S.



CONCRETE APRON DETAIL - DRIVEWAY PROFILE
FOR CULVERT DRAINAGE
N.T.S.

- NOTES:
1. SLOPE ENDS <3:1 SHALL BE SLOPED, PAVED OR HEADWALLED (SEE CULVERT END TREATMENT).
 2. CULVERT DIAMETER TO BE DETERMINED BY DESIGN ENGINEER OR PUBLIC WORKS DEPT. (MIN. DIA-18").
 3. CULVERT FLOWLINE TO BE DETERMINED BY DESIGN ENGINEER OR PUBLIC WORKS DEPT.
 4. MAINTAIN A MINIMUM 6" CLEARANCE BETWEEN DRIVEWAY PAVEMENT AND PIPE.

PAVEMENT REPAIR

DRAWING DETAIL

LJSR-5



DEPARTMENT OF ENGINEERING
AND PUBLIC WORKS

SEAL



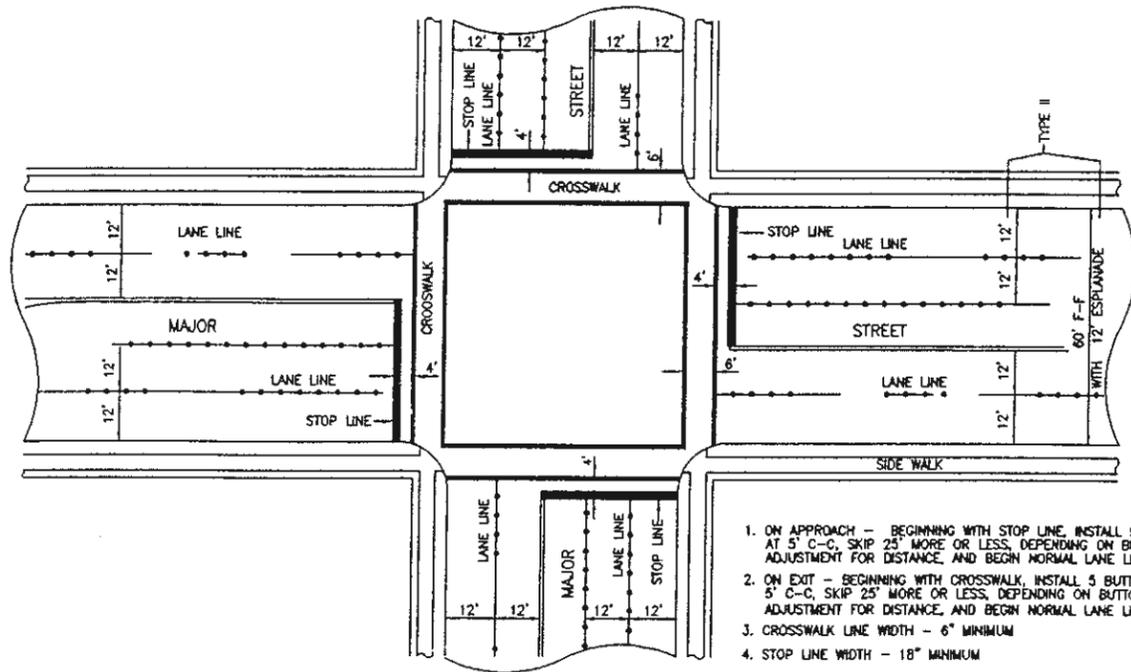
DESIGN ENGINEER: _____ DATE: _____

SUBMITTED:

SCALE:

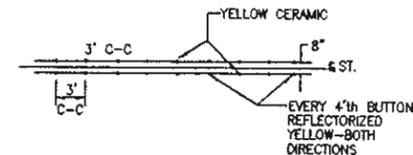
DATE:

SHEET 5 OF 6

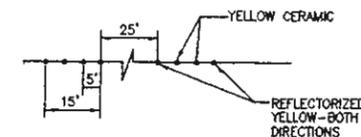


**BUTTON DETAIL
SIGNALIZED INTERSECTION**
N.T.S.

1. ON APPROACH - BEGINNING WITH STOP LINE, INSTALL 9 BUTTONS AT 5' C-C. SKIP 25' MORE OR LESS, DEPENDING ON BUTTON ADJUSTMENT FOR DISTANCE, AND BEGIN NORMAL LANE LINES
2. ON EXIT - BEGINNING WITH CROSSWALK, INSTALL 5 BUTTONS 5' C-C. SKIP 25' MORE OR LESS, DEPENDING ON BUTTON ADJUSTMENT FOR DISTANCE, AND BEGIN NORMAL LANE LINES
3. CROSSWALK LINE WIDTH - 6" MINIMUM
4. STOP LINE WIDTH - 18" MINIMUM

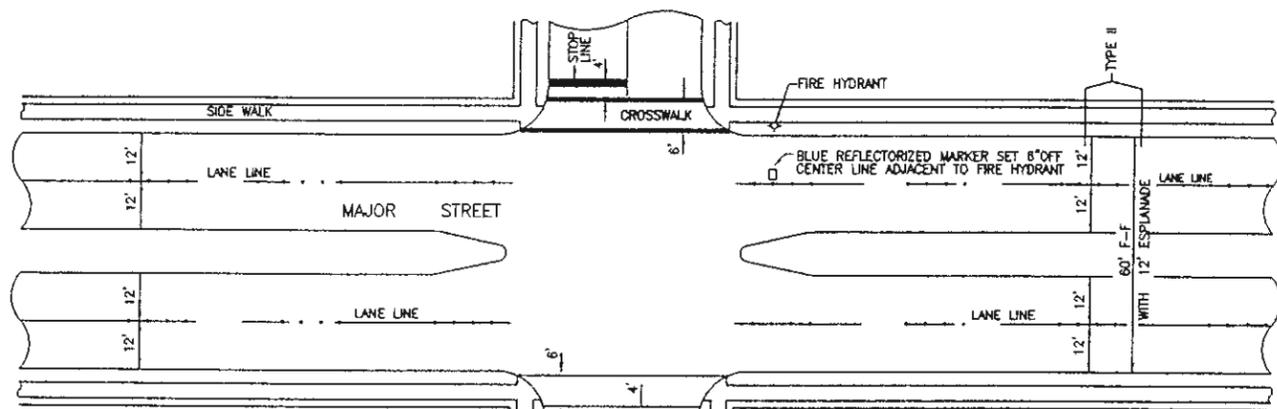


**TWO-WAY NO PASSING SECTION
BUTTON DETAIL
(YELLOW BUTTONS)**
N.T.S.



**TWO-WAY PASSING SECTION
BUTTON DETAIL
(YELLOW BUTTONS)**
N.T.S.

- GENERAL NOTES**
1. MINIMUM CROSSWALK WIDTH 6' C-C
 2. FOR SKEW INTERSECTIONS AND STREET WIDTHS NOT SHOWN SEE DEPT. OF PUBLIC WORKS.
 3. ROADWAY WIDTHS OF 27' OR LESS SHALL HAVE NO BUTTONS.
 4. ALL CENTER LINE BUTTONS SHALL BE YELLOW ALL LANE LINE BUTTONS SHALL BE WHITE.
 5. BUTTON LAYOUTS ARE REQUIRED FOR UNCURBED PAVEMENT SECTIONS AND WILL BE INDIVIDUALLY APPROVED.
 6. BLUE REFLECTORIZED MARKER SET 8" OFF CENTER LINE ADJACENT TO FIRE HYDRANTS.
 7. ALL BUTTONS SHOULD BE INSTALLED WITH FLINT TRADING, INC. BUNDY RAISED PAVEMENT MARKER ADHESIVE OR APPROVED EQUAL. REFER TO MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION. COLOR IS TO BE WHITE OR MATCH MARKER BODY COLOR.
 8. THERMOPLASTIC TYPE PAVEMENT MARKINGS ARE TO BE FLINT TRADING, INC. PREMARK LKF ROADMARKING MATERIAL, OR APPROVED EQUAL.
 9. WHITE THERMOPLASTIC PAVEMENT MARKINGS ARE TO BE USED FOR STOP BARS AND CROSSWALKS. STOP BARS ARE TO BE A MINIMUM OF 18" WIDE AND CROSSWALKS ARE TO BE A MINIMUM OF 6" WIDE. SEE NOTE 9.
 10. ADHESIVE TO APPLY FLINT LKF ON ROAD SURFACE IS PUGBOND 10 BY ASHLAND CHEMICAL.

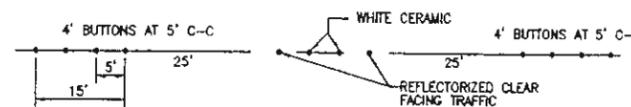


**BUTTON DETAIL
NON SIGNALIZED INTERSECTION**
N.T.S.

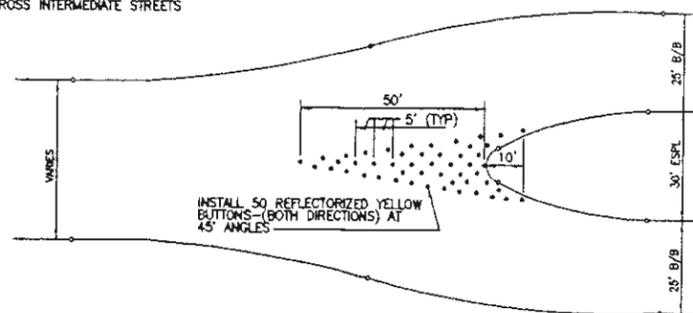
1. INSTALL NORMAL LANE LINE BUTTONS BEGINNINGS AT THE END OF CURB RETURN ADJUST FOR DISTANCE WITHIN 25' SPACING.
2. INSTALL STOP LINE AND CROSSWALKS ACROSS INTERMEDIATE STREETS ONLY IF STOP SIGN REQ'D.



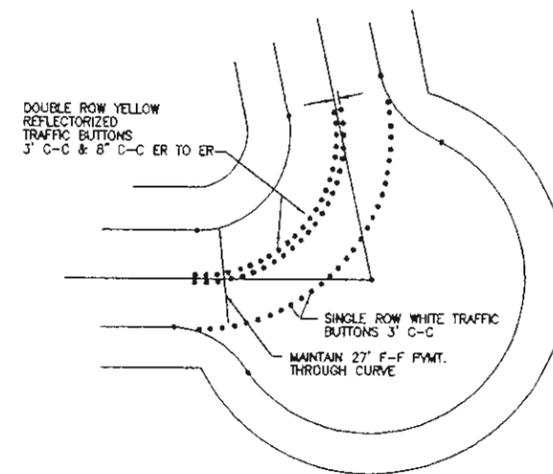
BUTTON DETAIL-LEFT TURN LANE
N.T.S.



**ONE-WAY LANE LINE
BUTTON DETAIL
(WHITE BUTTONS)**
N.T.S.



**BUTTON DETAIL FOR
UNDIVIDED STREET TO ESPLANADE
TRANSITION SECTION**
N.T.S.



TYPICAL BUTTON DETAIL FOR CUL-DE-SAC
N.T.S.

PAVEMENT REPAIR	
DRAWING DETAIL	
LJSR-6	
	
DEPARTMENT OF ENGINEERING AND PUBLIC WORKS	
SEAL	
	
DESIGN ENGINEER:	DATE:
SUBMITTED:	DATE:
SCALE:	SHEET 6 OF 6

**IV. RELATED
ORDINANCES & CODES**



RELATED ORDINANCES
AND CODES



CITY ORDINANCE

CITY OF LAKE JACKSON

25 OAK DRIVE • LAKE JACKSON, TEXAS 77566-5289 • 409-297-2481 • FAX 409-297-9804

Sign Standards



Chapter 78

SIGNS*

- Sec. 78-1. Definitions.
- Sec. 78-2. Objective.
- Sec. 78-3. Violation and penalties.
- Sec. 78-4. Enforcement.
- Sec. 78-5. Appeals.
- Sec. 78-5.1. Variance procedure.
- Sec. 78-6. Permit requirements.
- Sec. 78-7. Reserved.
- Sec. 78-8. Display regulations—Generally.
- Sec. 78-9. Same—Residential areas.
- Sec. 78-9.1. Same—Construction signs in commercial and development areas.
- Sec. 78-9.2. Same—Multi-family areas.
- Sec. 78-10. Same—Business areas.
- Sec. 78-10.5. Banners—Business areas and multifamily entities.
- Sec. 78-11. Street graphics—Permitted.
- Sec. 78-12. Same—Compliance required.
- Sec. 78-13. Same—Prohibitions.
- Sec. 78-14. Maintenance.

***Editor's note**—Ord. No. 07-1846, § 1, adopted May 21, 2007, amended chapter 78 in its entirety to read as herein set out. Formerly, chapter 78 pertained to similar subject matter, and derived from the Code of 1958, §§ 17B-1, 17B-2, 17B-10—17B-12; Ord. No. 80-758, § 1, adopted October 20, 1980; Ord. No. 81-828, § 1, adopted December 21, 1981; Ord. No. 93-1261, § 1(17B-6(A)), adopted November 1, 1993; Ord. No. 96-1384, §§ 1, 2, adopted July 1, 1996; Ord. No. 02-1693, § 1, adopted June 3, 2002; Ord. No. 03-1735, § 1, adopted October 6, 2003; Ord. No. 04-1771, § 1, adopted February 7, 2005 and Ord. No. 07-1846, § 1, January 2, 2007.

Cross references—Powers and duties of the beautification commission, § 2-209; buildings and building regulations, ch. 14; electrical code generally, § 14-56 et seq.; businesses, ch. 18; manufactured homes and trailers, ch. 58; streets, sidewalks and other public places, ch. 86; subdivisions, ch. 90; traffic signs and signals, § 98-56 et seq.; vehicles for hire, ch. 106; zoning, ch. 110.

State law references—Highway beautification, Vernon's Ann. Civ. St. art. 4477-9a, § 4.01 et seq.; municipal regulation of signs, V.T.C.A., Local Government Code § 216.001 et seq.; regulation of outdoor signs, Vernon's Ann. Civ. St. art. 6674v-3 et seq.; prohibited signs near intersections, Vernon's Ann. Civ. St. art. 6701d, § 36(c).

Sec. 78-1. Definitions.

The following words, terms and phrases, when used in this chapter, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Animation means the movement or the optical illusion of movement of any part of the street graphic structure, design, or pictorial segment, including the movement of any illumination or the flashing or varying of light intensity; the automatic changing of all or an part of the facing of a street graphic.

Area means the total area of the face that is used to display a street graphic, not including its supporting poles or structures. If a street graphic has two (2) faces that are parallel and supported by the same poles or structures, only one face is counted. If a street graphic has two (2) or more faces that are supported by the same poles or structures but are not parallel, the area of the street graphic is the total area of all faces.

Awning means a cloth, plastic, or other nonstructural covering that either is permanently attached to a building or can be raised or retracted to a position against the building when not in use.

Balloons. See "Spinners and pennants."

Banner means a street graphic, composed primarily of cloth, paper, fabric or other similar non-rigid material, other than a flag, spinner or pennant, which is attached or mounted to a building, pole, pylon, or other device or fixture for the purpose of advertising a business, product, or service. Banners include, but are not limited to, teardrop, blade, pole and feather banners.

Bare-bulb means any exposed light source other than neon tube illumination.

Business site means any church, school, or business located in B, C, or M zoning districts.

Canopy means a roofed structure projecting from and supported by a building when such covered structure extends beyond the building structure or property lines as, for example, in the downtown portion of the city.

Canopy sign means any street graphic attached to or hung from a canopy or awning.

Election means the election date set forth in V.T.C.A., Election Code Ch. 41. Election does not mean the early voting period set forth in V.T.C.A., Election Code Ch. 85.

Electronic message center means a sign or portion of a sign which uses illumination to form messages, words, letters, symbols or figures.

External illumination means illumination of a street graphic that is affected by an artificial source of light not contained within the sign itself.

Flag (governmental) means a piece of cloth, plastic, vinyl, canvas, leather, or other similar material that typically has the shape of a square or an oblong rectangle, is attached on one (1) edge to a halyard, and is used as a symbol of a nation, state, political subdivision, or other governmental entity.

Flag (private) means a piece of cloth, plastic, vinyl, canvas, leather, or other similar material that is secured or attached on one (1) edge to a halyard, and attracts attention to a business, product, service, or non-governmental activity.

Flashing illumination means illumination in which the artificial source of light is not maintained stationary or constant in intensity and color at all times.

Freestanding or ground-mounted sign means any permanent or temporary sign or standard which is not attached to a building and on which messages, advertising names, etc., are displayed.

Indirect illumination means a light source not visible to persons viewing the sign.

Internal illumination means a light source that is concealed or contained within the street graphic and becomes visible in darkness through a translucent surface.

Monument sign means a ground graphic permanently affixed to the ground at its base, supported entirely by a base structure.

Marquee or change-panel sign means a sign specifically designed for periodic changes in its advertising message, for example, a theatre marquee.

Multiple business site means a development in a B, C, or M zoning district consisting of a building or group of contiguous buildings containing two (2) or more businesses or offices, such as a strip center, shopping center or office building.

Neon tube illumination means a source of light for externally lit street graphics supplied by a neon tube that is bent to form letters, symbols, or other shapes.

Nonconforming street graphic means a street graphic that was lawfully constructed or installed prior to the adoption or amendment of this chapter and was in compliance with all of the provisions of this chapter then in effect, but which does not presently comply with this chapter.

Off-premises sign means a sign displaying advertising or information that refers to a business, person, organization, activity, event, place, service or product not principally located or primarily manufactured or sold on the premises on which the sign is located.

Pennants. See "Spinners and pennants."

Pole banner means a street graphic that is painted or otherwise permanently affixed upon cloth or other flexible material and which is vertically mounted on or hung from a single light pole.

Pole sign means a freestanding sign that is permanently attached to the ground and is supported by a pole or structure of poles, uprights, or braces.

Portable graphic means a street graphic not permanently attached to the ground or a building or designed to be permanently attached to the ground or a building.

Projecting sign means any permanent or temporary sign or graphic that is attached to a building and extends or projects in some direction more than twelve (12) inches horizontally from the plane of the building wall.

Roof sign means any sign or graphic which is painted, drawn, written or mounted on the roof of a building and extends above or outside the front orthographic projection of the roof line.

Snipe sign means any sized sign, generally of a temporary nature, placed in a public or utility right-of-way.

Spinners and pennants means any display or attention-seeking device that spins, flutters or waves and is not a flag or banner. This definition includes, but is not limited to, balloons, inflatables, sign waving machines, and robot sign wavers.

Street graphic or sign means any letter, number, symbol, figure, character, mark, plane, design pictorial, stroke, stripe, trademark or combination of these which shall be so constructed, placed, attached, painted, erected, fastened or manufactured in any manner whatsoever, which can be seen from the right-of-way of a public street or highway, intended to attract the attention of people in the public right-of-way.

Temporary events means events that last for a specified period of time, such as religious or cultural celebrations, elections, Independence Day, births, etc.

Vehicle means a device that can be used to transport or draw persons or property.

Vehicle sign means a sign attached, painted, or placed on or in a vehicle, trailer, skid, or similar mobile structure, excluding bumper stickers and state required registration or inspection stickers.

Wall sign means any permanent sign that is placed on the front, side or rear wall of a building whether such sign is separate and mounted on the wall or is painted, drawn or written on the wall.

Works of art means a sculpture, painting, or similar object presenting artistic, historic or nostalgic images or themes.

(Ord. No. 07-1846, § 1, 5-21-2007; Ord. No. 12-1980, § 1, 1-17-2012; Ord. No. 13-2005, § 1, 2-4-2031; Ord. No. 14-2031, § 1, 2-3-2014; Ord. No. 17-2133, § 1, 4-17-2017; Ord. No. 17-2137, § 1, 7-17-2017; Ord. No. 18-2156, § 1, 3-5-2018)

Sec. 78-2. Objective.

(a) The objective of this chapter is to establish requirements for the placement, installation and maintenance of commercial and personal signs, in order to preserve and protect the health, safety, welfare and general well-being of the community's citizens. As the regulation of the placement, construction and maintenance of buildings and structures

through zoning is a valid use of the police power, so too is the regulation of the placement, installation and maintenance of signs since such signs in the literal sense must ordinarily be considered structures, and in a practical sense are capable of producing many of the same nuisances as are produced by buildings.

(b) The regulation of the placement, installation and maintenance of signs is further justified by the sign's innate scheme and primary purpose to draw mental attention to its content, potentially to the detriment of sound driving practices and the safety of the motoring public to whom a majority of signs are oriented. Therefore, it is the intent of this chapter to regulate the size and location of commercial and personal street signs such that their purpose can be served without unduly interfering with motorists and causing unsafe conditions.

(c) Finally, it is the objective of this chapter to protect and preserve the aesthetic qualities of the community by regulating the placement, installation and maintenance of street signs. The fact that such graphics are intended to command visual contact recognizes that the signs are important in determining the overall aesthetic quality of the community.

(d) The aesthetic impact of commercial and personal signs is an economic fact which may bear heavily upon the enjoyment and value of property; therefore the regulation of the signs is validly justified on the basis of conserving the value of property and encouraging the most appropriate use of land throughout the city. It is contended that it is not irrational for a community's citizens to plan their physical surroundings in such a way that unsightliness is minimized.

(e) With this purpose in mind, it is the intention of this section to authorize the use of graphics which are:

- (1) Compatible with their surroundings.
- (2) Appropriate to the type of activity to which they pertain.
- (3) Expressive of the identity of the individual proprietors or of the community as a whole.
- (4) Legible in the circumstances in which they are seen.

(Ord. No. 07-1846, § 1, 5-21-2007)

Sec. 78-3. Violation and penalties.

It shall be unlawful for any person to violate any of the provisions of this chapter. Each day a violation occurs or continues shall constitute a separate offense. Any person convicted of violating any provision of this chapter shall be punished as provided in section 1-5 of this Code.

(Ord. No. 07-1846, § 1, 5-21-2007)

Sec. 78-4. Enforcement.

(a) The city manager or an official designated by the city manager shall be the enforcing official. The enforcing official is charged with the duty of administering the provisions of this chapter and securing compliance therewith.

(b) Whenever the enforcing official determines that a violation of this chapter exists, and the violation occurs on private property, he shall give written notice of the violation to the occupant and the owner shown on the most recent tax roll of the city indicating the nature of the violation, and a statement showing the amount of time required to bring the sign into compliance, said time not to exceed ninety (90) days.

- (1) Service of the written notice required by this chapter shall be deemed complete if personally delivered to the person required to be served or if upon sending same by certified mail, return receipt requested to the last known address of such person and by posting a copy of such notice in a conspicuous place on the premises.
- (2) If written notice is not complied with within the time specified in the notice, the enforcing official shall use all available means of enforcement including injunctive relief in order to secure compliance with the provisions of this chapter as well as to secure punishment for its violation.
- (3) The notice period prescribed in this procedure is for the purpose of allowing the owner a reasonable period of time to correct a violation. The notice period prescribed does not limit the city's ability to seek penalties from the first day the violation exists as prescribed in section 78-3.

(c) Notwithstanding anything contained herein to the contrary, the building official may cause any sign which is dangerous to persons or property to be removed summarily and without notice.

(d) Whenever it is necessary to make an inspection to enforce the provisions of this Code, or whenever the enforcing official has reasonable cause to believe that there exists in a building or upon any premises any condition or violation of this Code which make the building, sign or sign structure or premises unsafe, dangerous, or hazardous, the enforcing official shall have the authority to enter the building or premises at all reasonable times to inspect the same or to perform the duties imposed upon the enforcing official by this Code.

- (1) If entry is refused, the enforcing official shall have recourse to every remedy provided by law to secure entry.
- (2) An application for a permit shall be considered as permission from the enforcing official to inspect the premises.

(e) It shall be unlawful for any person to hinder or interfere with the enforcing official in the discharge of their duties under this Code.

(f) Upon notice from the enforcing, work on any sign or sign structure that is being done contrary to the provisions of this Code or in a dangerous or unsafe manner shall immediately cease. Such notice shall be in writing and shall be given to the owner of the property, or to

the owner's agent, or to the person doing the work or causing such work to be done. Where an emergency exists, the enforcing official shall not be required to give a written notice prior to stopping the work. Such work shall not resume until authorized by the enforcing official to proceed.

(Ord. No. 07-1846, § 1, 5-21-2007)

Sec. 78-5. Appeals.

The city council has the following powers and duties under this chapter:

- (1) To hear and decide appeals where it is alleged that there is an error in any order, requirement, decision or determination made by an administrative official of the city in enforcement of this chapter.
- (2) To authorize variances from the terms of this chapter when such variance is not contrary to the purposes of this chapter.

(Ord. No. 07-1846, § 1, 5-21-2007)

Sec. 78-5.1. Variance procedure.

(a) *Application.* Application for a variance shall be submitted to the city manager.

- (1) The application must:
 - a. State the reason the variance is needed;
 - b. Contain a site plan that includes the location of the sign, the placement of structures on the property and on adjacent property, and all setbacks; and
 - c. Contain a diagram of the sign that includes the proposed shape, size, height and placement of the sign.
- (2) A nonrefundable fee of one hundred dollars (\$100.00) will be charged for the application.

(b) *Public hearing.* Within thirty (30) days after the application is filed, the city council shall hold a public hearing on the application. At least ten (10) days before the public hearing, all property owners within two hundred (200) feet of the property on which the sign shall be located shall be notified in writing of the public hearing.

(c) *Action on application.* After the public hearing, the city council can approve the application as submitted, approve the application subject to modification, or deny the application. If city council does not act on the application within thirty (30) days of the public hearing, the application is automatically denied.

(d) *Variances allowed.* The city council may only grant a variance to the

- (1) Height of the sign;
- (2) Size of the sign;
- (3) Shape of the sign; and/or

(4) Placement of the sign.

(e) *Criteria for approval for new sign.* In order for the city council to grant a variance, the applicant must show that:

- (1) There are unique circumstances or conditions on the lot or on adjacent lots that would cause the sign without the variance to be hidden or obscured from a person's field of vision when in a motor vehicle approaching and/or passing the street frontage where the sign will be located;
- (2) The unique circumstances were not created by the applicant;
- (3) The granting of the variance will comport with the purpose of this chapter and will not be materially detrimental to the adjacent property, surrounding area, or to the public in general; and
- (4) The variance requested is the minimum variance necessary to afford relief.

(f) *Criteria for approval for damaged sign.* In order for the city council to grant a variance for a damaged sign, the applicant must show that:

- (1) The sign was damaged due to an event that caused the mayor to proclaim a local state of disaster.

(g) Variances for damaged signs automatically expire within one (1) year from the date the city council terminates the applicable local state of disaster. If a sign is not repaired within that one-year time frame, the sign must meet the requirements in this chapter.

(h) *Prior installation.* The applicant cannot install the sign prior to obtaining the variance. If the sign is installed prior to the public hearing, the applicant must remove the sign before city council may hold the public hearing and act on the application.

(Ord. No. 07-1846, § 1, 5-21-2007; Ord. No. 09-1905, § 1, 5-4-2009)

Sec. 78-6. Permit requirements.

(a) A permit shall be required for all signs to be erected within the city with the following exceptions:

- (1) Residential signs, other than temporary or permanent subdivision signs.
- (2) Contractor signs.
- (3) Memorial signs.
- (4) Signs inside buildings.
- (5) Signs listed in section 78-11(1)—(8) and (10).
- (6) For sale or lease signs complying with [section] 78-10(7).
- (7) Pole banners.

(b) All signs having illumination shall require an electrical permit in addition to a sign permit.

(Ord. No. 07-1846, § 1, 5-21-2007; Ord. No. 09-1911, § 1, 9-21-2009; Ord. No. 13-2005, § 2, 2-4-2013)

Sec. 78-7. Reserved.

Editor's note—Ord. No. 2172, § 1, adopted Dec. 3, 2018, repealed § 78-7, which pertained to fees and derived from Ord. No. 07-1846, § 1, adopted May 21, 2007.

Sec. 78-8. Display regulations—Generally.

(a) All signs, including vehicle signs where the primary use of the vehicle is to provide a base for the sign or constitute the sign itself, must relate to the present use of the premises upon which they are located.

(b) All signs, where applicable, shall meet the standards of the city building codes.

(c) Signs shall be prohibited on the staff end of flag shaped lots unless the staff is a driveway that is at least thirty (30) feet wide and allows vehicular access to the principle portion of the lot.

(Ord. No. 07-1846, § 1, 5-21-2007; Ord. No. 12-1980, § 2, 1-17-2012; Ord. No. 17-2136, § 2, 7-17-2017)

Sec. 78-9. Same—Residential areas.

(a) *In general.*

- (1) All signs prohibited in section 78-13 are also prohibited in residential areas, with the exception of spinners and pennants.
- (2) Signs shall not exceed twenty-four (24) inches by forty-eight (48) inches. For properties with duplexes or four-plexes, each residential unit may have a sign that does not exceed twenty-four (24) inches by forty-eight (48) inches. The signs may not be located in a side yard and shall not be located farther from the house than the approximate center of the front yard.
- (3) Signs cannot be placed on a utility pole, street light, traffic sign, or similar object.
- (4) Off-premise (commercial) signs are prohibited. All signs must pertain to the property or to the persons residing in the house that is located on the property. A contractor that is performing work on the property may place one (1) sign on the property if the contractor obtains permission from the building official.
- (5) The house occupant or owner cannot accept a fee for posting or maintaining a sign.
- (6) Signs may not be illuminated or emit sounds.
- (7) A business that is being advertised on an off-premise sign will receive one (1) phone call or other notice to remove the sign or to contact the building official for permission

to temporarily place a sign in a residential area. After this initial notice, any inappropriately placed signs will be removed and held for fourteen (14) days. If the signs are not claimed within the fourteen (14) days, the signs will be disposed of.

(b) *Signs for temporary events.* Signs displayed for temporary events, such as holidays and elections, are subject to subsection (a) with the following exceptions:

- (1) Temporary signs, including related display items, may be larger than twenty-four (24) inches by forty-eight (48) inches.
- (2) Temporary signs, and related display items, may be placed up to sixty (60) days prior to the event and remain up to seven (7) days after the event for which the signs are posted except for events such as garage sales and open houses. Signs for events such as garage sales and open houses may only be placed on the property on the days of the event.
- (3) One (1) real estate sign may be located on a property that is being offered for sale or lease. The real estate sign does not need to be placed in the center of front yard, but it must be placed behind the sidewalk.
- (4) Illumination and sound are allowed if the light and sound is not emitted into the interior of neighboring homes.

(c) *Flagpoles.*

- (1) One (1) ground installed flagpole no more than twenty-five (25) feet in height per premises is allowed. The flagpole may not be located in a side yard and shall not be located farther from the house than the approximate center of the front yard.
- (2) Temporary flags displayed for holidays or historical events, such as Flag Day or Independence Day may be placed at the edge of the property.

(Ord. No. 07-1846, § 1, 5-21-2007; Ord. No. 16-2121, § 2, 11-21-2016; Ord. No. 17-2137, § 2, 7-17-2017; Ord. No. 18-2172, § 2, 12-2-2018)

Sec. 78-9.1. Same—Construction signs in commercial and development areas.

(a) During the construction and selling phase of a commercial development only one (1) temporary sign shall be permitted every two hundred (200) feet of frontage road to identify the commercial development and proposed owner, tenant, financing, etc. Spacing of signs cannot be closer than two hundred (200) feet to any other sign in the development. Such graphics shall be non-illuminated wall- or ground-mounted signs and shall be permitted on a temporary permit basis only for a maximum legal period of two (2) years. Such graphics shall be removed upon expiration of the two-year period or when development is complete, whichever is sooner. Six-month extensions can be requested by the developer/owner when satisfactory progress of the project will exceed the time allotted. Such signs shall not exceed thirty-two (32) square feet in area nor ten (10) feet in height above the adjacent street's centerline, including structural material, for sites three (3) acres or less; and sixty-four (64) square feet nor ten (10) feet in height above the adjacent street's centerline, including structural materials for sites in excess of three (3) acres.

(b) When a commercial development is large and developed in phases, the permit may be renewed for each new phase.

(Ord. No. 07-1846, § 1, 5-21-2007)

Sec. 78-9.2. Same—Multi-family areas.

(a) *Signs.*

(1) Signs shall only be in the form of monument or wall signs.

(2) The combined size of all signs may not be greater than one hundred (100) square feet. Each sign may not exceed a 4:1 height to width or width to height ratio. A maximum of twenty-four (24) inches in height of the base structural support shall not be counted toward the total area of a monument sign or the 4:1 ratio.

(b) *Flags (private).* No more than six (6) private flags may be displayed.

(Ord. No. 17-2133, § 2, 4-17-2017)

Sec. 78-10. Same—Business areas.

(a) *Wall signs.* Wall signs may not exceed a total of twenty (20) percent of the area of any building wall and may not project above the roof line. They may not interrupt major architectural features. Signs must be tastefully done so that they do not detract from abutting owners.

(b) *Projecting signs.* Projecting signs must be rigidly attached to the building, must be within the owner's property and must not constitute a hazard to the walking public. Such signs may not exceed thirty-two (32) square feet in area nor exceed sixteen (16) feet in height or the height of the building, whichever is less.

(c) *Roof signs.* Roof signs shall be prohibited everywhere in the city. Roof signs on buildings that existed prior to June 1, 2007, shall be permitted to exist until the cost of repairing the sign is more than sixty (60) percent of the cost of erecting a new sign of the same type. Except, a sign shall be removed not sooner than the first anniversary of the date that the business that the sign identifies or advertises ceases to operate on the premises on which the sign is located. Once a roof sign is removed from a premises, no new roof sign shall be permitted.

(d) *Marquee or change-panel signs.* The maximum area and height of marquee signs shall be consistent with other signs described in this chapter.

(e) *Canopy signs.* Signs on top of a canopy must be rigidly attached so as to remain in place under wind loads of one hundred twenty-five (125) miles per hour. Such signs may not exceed thirty-two (32) square feet in area nor four (4) feet in height.

- (1) Signs under a canopy may not exceed three (3) square feet (one (1) foot by three (3) feet) and must be at least seven and one-half ($7\frac{1}{2}$) feet above the walkway.
- (2) Because of the peculiar circumstances in downtown Lake Jackson where canopies are on city property, this group of signs will be allowed to be outside the owner's property after the owner executes an encroachment agreement with the city and after the owner receives a permit.

(f) *Area.* The total area of all signs in subsections (b) through (e) of this section which are attached to a building shall be included in the total area allowed for wall signs in subsection (a) of this section.

(g) *Freestanding and monument signs:*

- (1) Each sign shall meet the area requirements as stated in the Table of Basic Design Elements for Freestanding and Monument Signs (see below). A maximum of twenty-four (24) inches in height of the base structural support shall not be counted toward the total area of a monument sign.
 - a. Business sites that have lot lines within sixty (60) feet of single-family residential lot lines (affected lot) and that desire to install freestanding or ground-mounted signs, shall be limited to monument type signs.
 - b. The monument sign requirements of this section are not required when the sign is not visible from any affected lot and the sign and any affected lot are not visible simultaneously from any point along the public roadways.
- (2) Business sites, except as noted below, shall be limited to one (1) freestanding sign.
- (3) Multiple business sites (not located in B-1 Zones) of three (3) acres or more that have frontage of three hundred (300) feet or more on SH332/288 shall be allowed a maximum of three (3) freestanding signs. The total area of all signs shall not exceed the maximum area for a single freestanding sign as stated in the Table of Basic Design Elements for Freestanding and Monument Signs. Only one (1) of the freestanding signs may exceed a height of ten (10) feet.
- (4) Multiple business sites (not located in B-1 zones) of eight (8) acres or more shall be allowed a maximum of two (2) freestanding signs. Each sign shall meet the area and height requirements as stated above.

Multiple business site signs are intended to display the name of the center. Such signs may use two-thirds ($\frac{2}{3}$) of the allowed area for a marquee or change panel. Signs may be internally or indirectly lighted. The allowable area may be subdivided to form a "directory" of stores within the center. Multiple business site signs must have a minimum of twenty-four (24) square feet landscaped base and be in good proportions.

- (5) Developers or owners of business sites (not located in B-1 zones) of twenty (20) acres or more shall be allowed to present an alternate signage plan to the planning commission. The planning commission shall then send a recommendation to city council on the number of signs in the alternate signage plan and the design, location, size, height and material composition of each of the proposed signs in the plan. Council may approve or disapprove the alternate signage plan or it may approve the alternate signage plan with modifications.
- (6) Wrapping of structural supports is required for all freestanding signs.
- a. All structural supports shall have coverings that collectively total at least fifty (50) percent of the width of the sign at its widest point.
 - b. The width of the covering shall be symmetrical for all supports (see Figure 1).
 - c. In all circumstances, the covering shall extend from four (4) inches above the ground to the base of the sign face.
 - d. The following material shall not be used for covering structural supports:
 1. Wood skirting, plywood, or fiberboard.
 2. Sheet metal of less than twenty-four (24) gauge.
 3. Aluminum of less than .063 inches.
 - e. Council may grant a variance to the wrapping requirement if the structural supports show a unique, exceptional, and innovative design and if there is visual harmony between the supports and the building site.
 1. The application for a structural support variance must contain:
 - i. A site plan that shows where the sign will be placed; and
 - ii. A color graphic of the sign that shows how the supports comply with the above listed requirements.
 2. The variance procedure listed in section 78-5.1 will be followed.
- (7) *Sale or lease of commercial property.*
- a. A sign indicating the property or part of the property is for sale or lease may be displayed on the property.
 - b. Signs under this subsection shall not be in banner form unless they comply with section 78-10.5.
 - c. Signs under this subsection cannot exceed sixteen (16) square feet.
- (8) All signs must be on private property and not overhang the property line of the owners.

Figure 1



Coverings applied equally complies with subsection 78-10 (g) (6) (c) above.



Coverings applied to one pole or unequally does not comply.

City of Lake Jackson

Table of Basic Design Elements for Freestanding and Monument Signs

B-1, B-1A, B-2, B-3, C-1, C-2, M-1 and M-2				
SH 332/SH 288				
	SMALL < 9,999 S.F.		LARGE 10,000 + S.F.	
MPH	Max Size (SF)	Max Height (FT)	Max Size (SF)	Max Height (FT)
35	65	18	98	18
40	85	20	128	20
45	108	22	162	22
50	133	22	200	22
55	161	24	242	24
60	192	35	289	35
All Other Roadways				
MPH	Max Size (SF)	Max Height (FT)	Multi Tenant	
			Max Size (SF)	Max Height (FT)
20	21	14	100	16
30	64	16	100	16
35	64	16	100	16
40	64	16	100	16
45	81	16	100	16
50+	100	18	100	18

(h) *Pole banners.*

(1) Specifications (See Figure 2). Pole banners shall:

- a. Not exceed eight (8) square feet in size;
- b. Not project more than three (3) feet from the edge of the pole, including brackets and ornamentation;
- c. Have a minimum of eight (8) feet of clearance from the base of the pole and four (4) inches of clearance from the pole; and
- d. Not overhang or encroach on any portion of the right-of-way.

(2) Appearance.

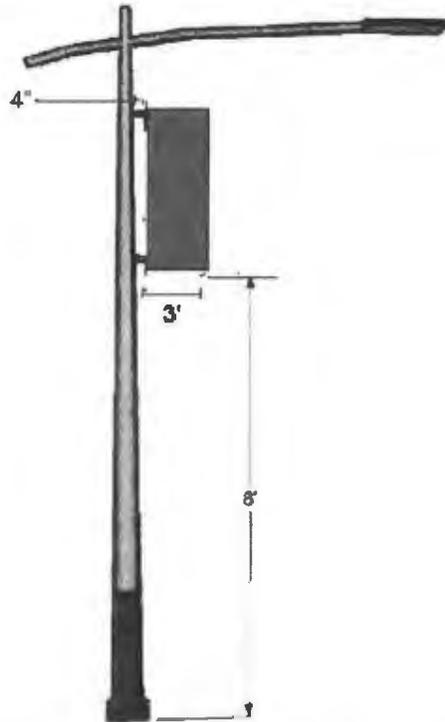
- a. No more than one (1) banner shall be allowed per pole.
- b. The pole banners may only be attached to privately owned poles located on private property.
- c. The pole banner must be supported by a top and bottom bracket.
- d. The pole banners shall be made of fabric or other flexible material that is durable in common weather conditions such as summer sun and high winds.
- e. Pole banners shall be uniform in color, height, and size and the poles and sign supports shall be uniform in design and appearance.
- f. Pole banners shall not be lit.

(3) Maintenance. Pole banners shall be maintained in good condition. The following circumstances violate this subsection:

- a. Perimeter frayed;
- b. Fabric ripped or torn;
- c. Stitching loose;
- d. Fabric faded to the degree that the content of the sign cannot be easily recognized by passing motorists or pedestrians;
- e. Banner partially disconnected from its support; or
- f. Frame or supports rusted.

(4) Pole banners shall not be included when computing any size or time limitations otherwise regulated in this chapter.

(5) Pole banners shall not obstruct or shield the light produced by the light standard.



(i) *Flags (private)*. One (1) private flag may be flown at the main entrance of a business site.

(Ord. No. 07-1846, § 1, 5-21-2007; Ord. No. 08-1894, § 1, 12-1-2008; Ord. No. 09-1911, § 2, 9-21-2009; Ord. No. 12-1986, § 1, 5-21-2012; Ord. No. 12-1995, § 1 9-17-2012; Ord. No. 13-2005, § 3, 2-4-2013; Ord. No. 14-2059, § 1, 11-3-2014; Ord. No. 17-2133, §§ 3, 8, 4-17-2017)

Sec. 78-10.5. Banners—Business areas and multifamily entities.

(a) The city council may erect banners for the general benefit of the city as a whole.

(b) Businesses and multi-family entities may erect banners for a period not to exceed a cumulative total of sixty (60) days per calendar year. Banners may not be larger than fifty (50) square feet.

(1) This period of time may be extended with permission of city council for significant events that exceed the given time period.

(c) (1) Business operators of single occupancy structures may display more than one (1) banner at a time.

(2) Business operators of multi-occupancy structures may only display one (1) banner per individual business at any one (1) time and the banners may only be attached to that business' storefront or to lease space area.

(3) Business operators of multi-occupancy structures may allow a tenant of the multi-occupancy structure to display a banner in front of the structure, rather than in front of the tenant's storefront or lease space area. However, the tenant's banner will be counted towards the business operator's sixty-day limit.

(4) Multi-family entities may only attach banners to buildings or fences.

(d) Each separate banner shall require a separate permit and shall count separately toward the cumulative time period allowed per year. Therefore, if a business opens at the beginning of July, that business operator will have thirty (30) days left in the year to display a banner. If the operator displays two (2) banners at one (1) time, that operator will have fifteen (15) days per banner available for display.

(e) For buildings where a real estate sign must be in banner form due to the environment surrounding the building, a real estate banner may remain until ten (10) days after the building is leased or sold.

(f) If an extended event occurs in the city, such as road construction, and this event affects businesses in a particular area of town, the city council may give the city manager authority to issue thirty-day renewable banner permits to affected businesses. These banners shall not affect the sixty-day banner limit.

(g) If an unforeseen event occurs, such as a sinkhole, the city manager has the authority to issue thirty-day renewable banner permits to affected businesses. City council will review the city manager's decision at the next scheduled council meeting. These banners shall not affect the sixty-day banner limit.

(h) Affected businesses shall mean businesses whose store fronts are visually or physically obstructed due to the event or whose entrances are changed or diminished due to the event.

(i) All banners must be erected on the business' property.

(j) Banners must remain in good condition (not tattered, unanchored, faded, frayed, or unsightly).

(k) A permit is required.

(Ord. No. 17-2133, § 4, 4-17-2017)

Sec. 78-11. Street graphics—Permitted.

The following types of graphics are allowed on business sites, but are subject to all other non-conflicting prohibitions provided by this chapter:

- (1) Street graphics bearing only property numbers, street addresses, postal box numbers or names of occupants of the premises, with characters not exceeding ten (10) inches in height.
- (2) Governmental flags, except when displayed in connection with commercial promotion.

- (3) Private flags, not more than six (6) in number, to draw attention to the main entrance of an apartment complex, hotel, church, nursing home, or home for the aged. Corporations may fly one (1) private flag at their main entrance.
- (4) Legal notices and other signs or graphics of six (6) square feet or less, either publicly or privately owned, directing and guiding traffic and parking, but bearing no advertising matter.
- (5) Christmas trees, other holiday displays and window displays of merchandise, except as specifically prohibited herein.
- (6) Coin-operated vending machines, gasoline pumps, telephone booths and ice vending equipment.
- (7) Election signs up to sixty (60) days prior to a primary, runoff or general election and up to seven (7) days after the primary, runoff or general election for which posted. Such signs like all other signs herein cannot have spinners or other prohibited attention-getting devices.
- (8) Street graphics on athletic fields that are owned or maintained by the city with the city council approval.
- (9) In B-3 zoning districts, temporary street graphics showing or displaying special activities, or events for a period of not more than thirty (30) days.
 - a. A no-fee permit from the city is required for such street graphics to be installed.
 - b. All street graphics must be made of safe materials and displayed in a safe manner.
 - c. No more than two (2) special event permits shall be issued for any one church, school, or other institution during any calendar year. Special event permits cannot be issued in a consecutive nature. A minimum 30-day interval must pass from the expiration of one special event permit to the issuance of another.
 - d. The street graphics shall not be illuminated or lit. There shall also be no lighting either on the street graphics or directed at the street graphics other than the lighting that is normally on the institution's grounds.
- (10) [Reserved.]
- (11) Works of art that do not contain a reference or image of products, goods or services of an existing business. Works of art must meet the standards of the building code. If the work of art uses illumination to form messages, words, letters, symbols or figures, it must meet the electronic message center standards in this chapter.
(Ord. No. 07-1846, § 1, 5-21-2007; Ord. No. 12-1984, § 1, 4-2-2012; Ord. No. 14-2031, § 2, 2-3-2014; Ord. No. 17-2133, §§ 5, 9, 4-17-2017)

Sec. 78-12. Same—Compliance required.

(a) Street graphics or signs existing on January 1, 1981, except for those graphics and signs identified in subsections 78-13(2)—(13) shall not be required to conform with this chapter until the need for the street graphics or signs to be repaired meets the requirements of subsection (b).

(b) Any sign or street graphic installed prior to January 1, 1981, may not be repaired to such an extent that the repair cost exceeds sixty (60) percent of the replacement cost, unless such sign is brought into conformity with the terms of this chapter. The city manager or enforcing official shall, after issuing notice, have the power to abate signs that are not repairable.

(c) Any street graphic lying within a public right-of-way shall be removed immediately, unless its position in the right-of-way is permitted by a provision elsewhere within this chapter.

(Ord. No. 07-1846, § 1, 5-21-2007)

Sec. 78-13. Same—Prohibitions.

It shall be unlawful to erect or maintain any of the following:

- (1) Strip lighting used to outline a sign or street graphic or any part therein except during the Christmas season when they may be used for a maximum of forty (40) days.
- (2) A street graphic that is a traffic or pedestrian hazard. No street graphic shall obstruct vision at any street intersection as provided in section 110-171. No sign or street graphic shall constitute a hazard to traffic by glare or method of illumination. No sign or other street graphic may use the words, "Stop," "Look," "Drive-in," "Danger," or any other word, phrase, symbol or character which would be a hazard within twenty-five (25) feet of public right-of-way or two hundred (200) feet of traffic-control devices, whichever is greater.
- (3) Portable street graphics.
- (4) Animated graphics.
- (5) Bare bulb or unsteady illumination. Any illuminated sign which is not shielded and whose source of light is not steady, with the exception of time-temperature signs and electronic message centers.
 - a. Electronic message centers shall not utilize animation, chasing, flashing, or scintillation messages. Each message display shall remain lit a minimum of five (5) seconds.
- (6) Spinners and pennants.
- (7) Any privately owned street graphic that is placed on or extends over public property.
- (8) Snipe signs.

- (9) Off-premises signs, including vehicle signs where the primary use of the vehicle is to provide a base for the sign or constitute the sign itself.
 - (10) Lighted signs in residential zones or within sixty (60) feet of a residence.
 - (11) [Reserved.]
 - (12) Signs on any structure, tree, pole, curb or elsewhere within the right-of-way of any public street or upon any public property without the permission of the city council, with the exception of traffic, directional, and warning signs installed by a government agency.
 - (13) Signs that encroach into a public right-of-way unless an encroachment agreement has been executed with the city.
- (Ord. No. 07-1846, § 1, 5-21-2007; Ord. No. 07-1862, § 1, 8-20-2007; Ord. No. 09-1906, § 1, 5-4-2009; Ord. No. 10-1947, § 1, 9-20-2010; Ord. No. 12-1980, § 3, 1-17-2012; Ord. No. 12-1999, § 1, 10-1-2012; Ord. No. 14-2050, § 1, 9-2-2014; Ord. No. 17-2133, §§ 6, 7, 4-17-2017)

Sec. 78-14. Maintenance.

(a) Weeds shall be kept cut in front of, underneath and around the base of ground signs and other street graphics and no rubbish or debris shall be permitted so near thereto that the same shall constitute a fire hazard.

(b) Signs and other street graphics shall be kept clean, neatly painted and free from all hazards, such as, but not limited to, faulty wiring and loose fastenings, and must be maintained at all times in such safe condition so as not to be detrimental to the public health and safety.

(Ord. No. 07-1846, § 1, 5-21-2007)

Chapters 79–81

RESERVED

Streets & Sidewalks



Chapter 86

STREETS, SIDEWALKS AND OTHER PUBLIC PLACES*

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- Sec. 86-2. General responsibilities, specifications.
- Sec. 86-3. Undeveloped or new areas, residential and commercial.
- Sec. 86-4. Developed areas, residential and commercial.
- Sec. 86-4.5. Sidewalk waiver.
- Sec. 86-5. Commercial areas.
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- Sec. 86-33. Construction, curb cuts.
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- Sec. 86-38. Leading onto That Way Street between the Oyster Creek bridge and F.M. 2004 prohibited.
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***Charter references**—Authority of city to regulate the use of streets and other public places, § 2.01; powers of city council as to official map, streets, § 3.07(h), (p).

Cross references—Administration, ch. 2; buildings and building regulations, ch. 14; broken sidewalks, § 38-33; manufactured homes and trailers, ch. 58; parks and recreation, ch. 66; signs, ch. 78; subdivisions, ch. 90; traffic and vehicles, ch. 98; utilities, ch. 102.

State law references—Street improvements, Vernon's Ann. Civ. St. art. 1086 et seq.; enumerated powers of home rule municipalities, Vernon's Ann. Civ. St. art. 1175; condemnation for highways, Vernon's Ann. Civ. St. art. 1201 et seq.; municipal charges for use of streets, etc., V.T.C.A., Tax Code § 182.024 et seq.; street lighting system, Vernon's Ann. Civ. St. art. 1221 et seq.; improvement districts in home rule municipalities, V.T.C.A., Local Government Code § 372.041.

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- Sec. 86-64. Park use fees.
- Sec. 86-65. Park admission fees.
- Sec. 86-66. Parade permits.
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ARTICLE I. IN GENERAL**Sec. 86-1. Failure to comply.**

Should any person, being the owner, builder, broker or developer of property within the city limits, fail to comply with sections 86-2 through 86-5, the city shall have the right, after notice to the owner in accordance with Vernon's Ann. Civ. St. art. 1105b, to install the required sidewalks and assess the cost of building the sidewalk against either the owner personally or against the property.

(Ord. No. 77-611, § 2, 2-21-77; Code 1958, § 18-5)

Sec. 86-2. General responsibilities, specifications.

(a) It shall be the responsibility of any person, being the owner, builder or developer of residences, businesses, subdivisions or other buildings or developments, to construct all required streets and sidewalks in accordance with the specifications and provisions of this chapter.

(b) All streets within the city shall have eight (8) inch pavement thickness and a reinforcement schedule as set out as follows:

Concrete Thickness	Reinforcement Bar Size	Longitudinal Steel		Transverse Steel	
		60' Exp. Joint	40' Exp. Joint	Free Span Joint Width	
				24'-44'	44'-60'
8"	#4 (1/2")	18" O.C.	24" O.C.	24" O.C.	18" O.C.

(c) Concrete used in constructing streets shall be a 5.5 sack/C.Y. cement batch mix design and reach a flexural modulus strength of five hundred fifty (550) psi in twenty-eight (28) days or as otherwise specified in the development of the city construction standards.

(d) All new streets within the city shall be curbed streets and shall have the required sized sidewalk on both sides of the street. The sidewalks shall be set typically back four (4) feet as is possible, or as otherwise directed by the council through the city engineer and parallel the street, and shall be constructed at the time specified by the planning commission.

(e) It shall be unlawful for any person, being the owner, builder or developer of residences within the city limits, to build or construct a residence, residential complex or other structure within the city limits unless at the time of such construction such owner, builder or developer constructs or causes to be constructed a concrete sidewalk four (4) feet wide and four (4) inches thick and placed along the street, street stub out, parkway or connecting street upon which such residence fronts or abuts.

(f) Concrete used in constructing sidewalks shall be 4.5 sack/C.Y. cement mix design and reach a flexural modulus rupture strength of four hundred fifty (450) psi in twenty-eight (28) days and shall be reinforced at a minimum with #3 (3/8) inch bars at twenty-four (24) inch on center each way.

(Ord. No. 77-611, § 2, 2-21-77; Ord. No. 79-712, § 1, 9-17-79; Code 1958, § 18-1(a), (b), (d), (e); Ord. No. 03-1722, § 1, 7-1-2003; Ord. No. 03-1735, § 1, 10-6-2003)

Sec. 86-3. Undeveloped or new areas, residential and commercial.

(a) The builder or developer of new subdivisions, housing developments or other new developments causing the street or streets to be developed shall provide the required sized sidewalk on both sides of the street or streets along the entire length of said street or streets at the time specified by the planning commission, and such sidewalk shall be set back four (4) feet from the curb and parallel the street. The term "entire length" shall include, but not be limited to, street corners, street stubouts, through parkways, connecting streets and the front, side and rear of properties.

- (1) The builder of a house shall provide a sidewalk on the front and side of any property that parallels a street, including street corners, street stubouts and connecting streets.
- (2) The developer of a subdivision or business development shall provide sidewalks on easements, parkways, street stubouts and the rear of any properties that parallel a street.

(b) In areas developed by individual lot owners, sidewalks shall be built by the individual owners along their entire property paralleling the street (including street corners, street stubouts or connecting streets, and the front and side of properties, but not the rear and not parkways) upon which such residence or business fronts or abuts at the time the building occurs, except in cases that may require continuity of sidewalks to assure safety, in which case blanks, skips or vacancies may be required to be filled by the owner before building takes place if the need is so determined by the city council.

(Ord. No. 77-611, § 2, 2-21-77; Ord. No. 79-712, § 1, 9-17-79; Code 1958, §§ 18-1(c), 18-2)

Sec. 86-4. Developed areas, residential and commercial.

(a) *Curbed streets.* Where no sidewalks exist in developed areas that have curbed streets, the property owner may construct them himself, or the city may assess him for the cost of the sidewalk construction along the entire property paralleling or abutting any street, street corner, street stubout, through parkway or connecting street upon which his residence or business fronts or abuts at the following rates:

- (1) Those who complied with Ordinances No. 182 and 77-611, fifty (50) percent front, twenty-five (25) percent side;
- (2) Those who did not comply with Ordinance No. 182 or 77-611, one hundred (100) percent front and side.

(b) *Uncurbed streets.* No sidewalk is required for uncurbed streets. If the street becomes curbed, the property owner may be assessed for sidewalk construction at the rate of fifty (50) percent front, twenty-five (25) percent side.

(Ord. No. 77-611, § 2, 2-21-77; Code 1958, § 18-3)

Sec. 86-4.5. Sidewalk waiver.

The city council may waive the sidewalk requirements of subsections 86-2(e) and 86-3. In order to waive the requirements, council shall consider whether:

- (1) The new building will be a single-family or two-family home;

- (2) The building is being built on a vacant lot in an already developed subdivision;
 - (3) There are no sidewalks that are contiguous to the lot; and
 - (4) The street on which the building shall be built is scheduled to be rebuilt.
- (Ord. No. 14-2055, § 1, 10-6-2014)

Sec. 86-5. Commercial areas.

(a) It shall be unlawful for any person within the city limits to have engaged in construction or to construct a business or other structure in a business, commercial or industrial zone without at the same time providing a concrete sidewalk along the entire property paralleling or abutting the street, street corner, street stubout, through parkway or connecting street upon which such business fronts or abuts.

(b) Sidewalks shall be six (6) feet in width, four (4) inches thick.
(Ord. No. 77-611, § 2, 2-21-77; Code 1958, § 18-4; Ord. No. 07-1859, § 1, 8-20-2007)

Sec. 86-6. Prohibiting the scattering of litter items.

(a) It shall be unlawful for any person to scatter any litter including, but not limited to, paper (whether circulars, handbills, paper bags, wastepaper or wrapping paper), garbage, refuse, waste materials, tree or shrubbery trimmings, plastic, or any other discarded, used or consumed substance on any public street right-of-way or parkway in the city.

(b) Any person who shall violate the provisions of this section shall be guilty of a misdemeanor and shall be punished as provided in section 1-5 of this Code. Each and every day's violation shall constitute a separate and distinct offense. In case this section is violated by a business which is a corporation, the president, vice-president, secretary-treasurer of such corporation, or any manager, agent or employee of such corporation, shall be also severally liable for such penalties.

(Ord. No. 275, § 1, 3-19-62; Ord. No. 81-807, § 1, 7-20-81; Code 1958, §§ 18-10, 18-11)

State law reference—Litter, V.T.C.A., Health and Safety Code § 365.001 et seq.

Secs. 86-7—86-30. Reserved.

ARTICLE II. DRIVEWAYS

Sec. 86-31. Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Driveway means a private way or private entrance/exit, and shall not be construed to include a public street authorized by the planning commission.

Driveway approach means the portion of the driveway in the road right-of-way designed for and intended for vehicular access from the roadway to private property.

Width means a linear measurement made parallel to the roadway at a point within the road right-of-way at least six (6) feet from the roadway.

(Ord. No. 63-293, § 1, 7-1-63; Ord. No. 85-958, § 1, 1-21-85; Code 1958, § 18-6.1; Ord. No. 03-1710, § 1, 4-7-2003)

Cross reference—Definitions generally, § 1-2.

Sec. 86-32. Penalty for violations of article.

Any person who shall violate the provisions of this article shall be guilty of a misdemeanor and shall be punished as provided in section 1-5 of this Code. Each and every day's violation shall constitute a separate and distinct offense; in case this article is violated by a business

which is a corporation, association, firm, partnership or other entity, the president, vice-president, secretary-treasurer of such business, or any manager, agent or employee of such business shall be also severally liable for such penalties.

(Ord. No. 77-613, § 1, 1-17-77; Ord. No. 77-625, § 1, 6-20-77; Ord. No. 79-679, § 1, 1-15-79; Code 1958, § 18-6.4)

Sec. 86-33. Construction, curb cuts.

It shall be unlawful for any person, being the owner, builder or developer of residences within the city limits, to build or construct a driveway without first breaking out or constructing the curb connecting such driveway with the street in such a manner as to form an even ramp-like approach from the street level to the garage entrance. Such curb shall not be broken or constructed for a distance in excess of four (4) feet or less than two (2) feet outside of each side of such driveway at the curb.

(Ord. No. 128, § 1, 5-12-52; Code 1958, § 18-6)

Sec. 86-34. Driveway approach standards.

(a) The maximum width of a driveway approach serving a single-family residential lot shall be not more than twenty-seven (27) feet.

(b) A single-family residential lot may be served by multiple driveway approaches provided that the driveway approaches are separated by at least twenty-four (24) feet measured along the property line and the total width of the driveway approaches is thirty-six (36) feet or less.
(Ord. No. 03-1710, § 1, 4-7-2003)

Sec. 86-35. Driveway approach permits.

A building permit shall be required for all driveway approaches. If the permit is for driveway approaches only, the fee for such permit shall be twenty (\$20.00) dollars. An approved inspection is required prior to the pouring of all driveway approaches.

(Ord. No. 04-1766, § 1, 10-18-2004)

Sec. 86-36. Into Highway 332 prohibited.

No permit shall be issued for the construction of any residential driveway leading onto Highway 332 within the city. It shall be unlawful for any person, being the owner, builder or developer of property within the city limits and abutting Highway 332 to build or construct a residential driveway onto Highway 332. Construction of business driveways onto Highway 332 shall be granted by the planning commission with the approval of the city council.

(Ord. No. 63-293, § 1, 7-1-63; Ord. No. 85-958, § 1, 1-21-85; Code 1958, § 18-6.1; Ord. No. 03-1710, § 1, 4-7-2003; Ord. No. 04-1766, § 1, 10-18-2004)

Sec. 86-37. Leading onto Yaupon Street between Oyster Creek Drive and F.M. 2004 prohibited.

No permit shall be issued for the construction of any residential driveway leading onto Yaupon Street between Oyster Creek Drive and F.M. 2004 within the city. It shall be unlawful for any person, being the owner, builder or developer of property within the city limits and abutting Yaupon Street between Oyster Creek Drive and F.M. 2004, to build, channel, create by use, or construct a residential driveway leading onto Yaupon Street between Oyster Creek Drive and F.M. 2004. Construction of business driveways onto Yaupon Street shall be granted by the planning commission with the approval of the city council.

(Ord. No. 77-613, § 1, 1-17-77; Ord. No. 85-958, § 2, 1-21-85; Code 1958, § 18-6.2; Ord. No. 03-1710, § 1, 4-7-2003; Ord. No. 04-1766, § 1, 10-18-2004)

Sec. 86-38. Leading onto That Way Street between the Oyster Creek bridge and F.M. 2004 prohibited.

No permit shall be issued for the construction of any driveway leading onto That Way Street between the Oyster Creek bridge and F.M. 2004 within the city. It shall be unlawful for any person, being the owner, builder or developer of property within the city limits and abutting That Way Street between the Oyster Creek bridge and F.M. 2004 to build, channel, create by use or construct a driveway leading onto That Way Street between the Oyster Creek bridge and F.M. 2004.

(Ord. No. 77-625, § 1, 6-20-77; Code 1958, § 18-6.2.1; Ord. No. 03-1710, § 1, 4-7-2003; Ord. No. 04-1766, § 1, 10-18-2004)

Sec. 86-39. Residential driveways leading onto Plantation Drive south of Highway 332 prohibited.

No permit shall be issued for the construction of any residential driveway leading onto Plantation Drive south of Highway 332 within the city. It shall be unlawful for any person, being the owner, builder or developer of property within the city limits and abutting Plantation Drive south of Highway 332 to build, channel, create by use or construct a residential driveway leading onto Plantation Drive south of Highway 332.

(Ord. No. 79-679, § 1, 1-15-79; Code 1958, § 18-6.2.2; Ord. No. 03-1710, § 1, 4-7-2003; Ord. No. 04-1766, § 1, 10-18-2004)

Sec. 86-40. Leading onto Oak Drive between Highway 332 and Oyster Creek Drive prohibited.

(a) No permit shall be issued for the construction of any driveway leading onto Oak Drive between Highway 332 and Oyster Creek Drive within the city. It shall be unlawful for any person, being the owner, builder or developer of property within the city limits and abutting Oak Drive between Highway 332 and Oyster Creek Drive, to build or construct a driveway leading onto Oak Drive between Highway 332 and Oyster Creek Drive.

(b) Exception: City council may allow a driveway leading onto Oak Drive between Highway 332 and Oyster Creek Drive if:

- (1) The driveway does not require or will not cause any damage or destruction of city parkway, park land, or green space.
- (2) The driveway only allows traffic to enter from one (1) direction and leave from one (1) direction;
- (3) The driveway does not require any changes to the medians on Oak Drive; and
- (4) The owner, builder or developer shall pay for any cost of adjustments to existing utilities made necessary by the driveway installation.

(Ord. No. 66-335, § 1, 6-6-66; Code 1958, § 18-6.3; Ord. No. 03-1710, § 1, 4-7-2003; Ord. No. 04-1766, § 1, 10-18-2004; Ord. No. 14-2058, § 1, 11-3-2014)

Secs. 86-41—86-60. Reserved.

ARTICLE III. PUBLIC PARK AND STREET USE PERMITS*

Sec. 86-61. Statement of intent.

It is the intent of the city that traditional public fora such as outdoor public parks and portions of certain streets be available to all persons, groups and the public generally on an equal access basis subject to such reasonable regulations as are necessary to assure the maximum lawful enjoyment and safe use of the facilities. All individuals, groups and entities are welcome to use city parks and portions of streets for peaceful assembly.

(Ord. No. 93-1252, § 1(13B-1), 8-2-93)

Sec. 86-62. Purpose of article.

(a) All persons, groups and entities are welcome to use city parks and streets for any and all peaceful assembly that is not in conflict with the opinions of the U.S. Supreme Court.

(b) Because of the popularity of the use of city parks and streets, it is necessary for general enjoyment and safety to regulate and schedule their use for the maximum benefit of all concerned so as to eliminate conflict and maintain harmony of use.

(Ord. No. 93-1252, § 1(13B-5), 8-2-93)

Sec. 86-63. Park use permits.

(a) *Required.* Groups, organizations, corporations, associations or other entities desiring to use the city parks for meetings, rallies or other purposes shall apply for a use permit to the director of the city parks and recreation department. It shall be unlawful to hold any group meetings, rallies or other group activity on city park property unless a permit for such event has been issued by the city parks and recreation department.

***Cross reference**—Parks and recreation, ch. 66.

(b) *Application.* Application for use of a park for group meetings, rallies or other activities shall be made to the parks and recreation department at least seven (7) days prior to the event, and shall contain the following information:

- (1) A description of the event.
 - (2) The day and hour of the event.
 - (3) Location of the event.
 - (4) A reasonable and good-faith approximation of the number of persons expected to attend the event.
 - (5) The names and addresses of the persons sponsoring the event.
- (Ord. No. 93-1252, § 1(13B-6), 8-2-93)

Sec. 86-64. Park use fees.

(a) Rental use fees for the pavilions, facilities and other areas of the parks shall be formulated by the parks board and approved by city council to include rules on the leasing of the pavilions, facilities or other portions of the parks for more than one (1) day and the rates to be charged for the pavilions, facilities or portions of the parks.

(b) Rental use fees for the pavilions, facilities and other areas shall be posted by and available at the office of the director of parks and recreation.

(c) Any nonprofit event cosponsored by the city may have the use fee waived by the parks board.

(Ord. No. 93-1252, § 1(13B-7), 8-2-93)

Sec. 86-65. Park admission fees.

Charitable, political or nonprofit organizations may use city park facilities and charge a fee for an event such as a Rotary shrimp boil. However, it shall be unlawful for any person, group or entity to charge a public admission fee or event fee for entrance to a public park.

(Ord. No. 93-1252, § 1(13B-4), 8-2-93)

Sec. 86-66. Parade permits.

(a) *Required; application.* The city welcomes the use of its streets for parades and rallies conducted in a peaceful and lawful manner after proper application for a parade permit has been made. However, it shall be unlawful to conduct a parade or rally on a city street unless the proper parade permit has been received. The application for a parade permit shall be submitted to the chief of police at least five (5) working days prior to the event and shall set forth the following information:

- (1) The name, address and telephone number of the person seeking to conduct such parade.

- (2) If the parade is proposed to be conducted for, on behalf of, or by an organization, the name, address and telephone number of the headquarters of the organization, and of the authorized and responsible heads of such organization.
- (3) The name, address and telephone number of the person who will be the parade chairman and who will be responsible for its conduct.
- (4) The date when the parade is to be conducted.
- (5) The route to be traveled, the starting point and the termination point.
- (6) The approximate number of persons who, and animals and vehicles which, will constitute such parade, the types of animals and a description of the vehicles.
- (7) The hours when such parade will start and terminate.
- (8) A statement as to whether the parade will occupy all or only a portion of the width of the streets proposed to be traversed.
- (9) The location by streets of any assembly areas for such parade.
- (10) The time at which units of the parade will begin to assemble at any such assembly area or areas.
- (11) The interval of space to be maintained between units of such parade.
- (12) Any additional information which the chief of police shall find reasonably necessary to a fair determination as to whether a permit should issue.

(b) *Compliance with parade regulations; alternatives.* If the proposed rally or parade does not comply with rules and regulations for city parades, the chief of police may present alternative locations, times, routes or other conditions that will comply. The applicant can either accept the chief of police's changes or submit a new application at least forty-eight (48) hours prior to the event that does not comply with the issues raised by the chief of police.

(c) *Issuance.* Upon compliance with this section, a permit shall be issued by the chief of police.

(Ord. No. 93-1252, § 1(13B-8), 8-2-93)

Sec. 86-67. Sound amplification.

(a) It shall be unlawful for any person, group or entity, while in a public park or on a public street or sidewalk, to amplify noise, music or speech to such a volume that it would disturb the sensibilities of a reasonable person residing in a surrounding neighborhood.

(b) Nothing in this subsection shall apply to officers and employees of the city, the county, the state, or the federal government when the amplified sound is being used in the officer's official duty.

(Ord. No. 93-1252, § 1(13B-1), 8-2-93; Ord. No. 15-2062, § 2, 2-3-2015)

Sec. 86-68. Attachment of symbols to city property.

It shall be unlawful for any person, group or entity to install, erect, affix or to attach (by whatever means) any religious symbols, on or to city property. Such forbidden symbols shall include those symbols of the Church of Satan and the satanic cult religions and atheism as well as each and every recognized world religion. Such symbols would include crosses, creches, Stars of David, the crescent and any similar symbol of a religion or cult. However, this does not prohibit persons, groups or entities from possessing or displaying these symbols while the persons, groups or entities are on city property as long as the symbols are not affixed or attached to city property. The city, in the spirit of neutrality, hereby expresses its intent never to endorse, advance, sponsor, inhibit or engage in the prohibition, promotion or establishment of religion or any religion in specific.

(Ord. No. 93-1252, § 1(13B-3), 8-2-93)

Sec. 86-69. Penalty for article violations.

Any person who violates this article shall be subject to a fine of not more than five hundred dollars (\$500.00) for each violation.

(Ord. No. 93-1253, § 2, 8-2-93)

Secs. 86-70—86-74. Reserved.**ARTICLE IV. GRAFFITI****Sec. 86-75. Purpose and intent.**

The city council of the City of Lake Jackson is enacting this article to help prevent the spread of graffiti vandalism and to establish a program for the removal of graffiti from public and private property. The council is authorized to enact this article pursuant to its police powers, as specified in section 2.02 of the City Home Rule Charter and state law, to provide for the removal of graffiti from private and public property.

The council finds that graffiti is a public nuisance and destructive of the rights and values of property owners as well as the entire community. Unless the city acts to remove graffiti from public and private property, the graffiti tends to remain. Other properties then become the target of graffiti, and entire neighborhoods are affected and become less desirable places in which to be, all to the detriment of the city.

The city council intends, through the adoption of this article, to provide additional enforcement tools to protect public and private property from acts of graffiti vandalism and defacement. The council does not intend for this article to conflict with any existing anti-graffiti state laws.

(Ord. No. 99-1587, § 1, 1-18-99)

Sec. 86-76. Definitions.

For the purposes of this article, the following words shall have the meanings respectively ascribed to them in this section, except where the context clearly indicates a different meaning:

Aerosol paint container means any aerosol container that is adapted or made for the purpose of applying spray paint or other substances capable of defacing property.

Broad-tipped marker means any felt tip indelible marker or similar implement with a flat or angled writing surface that, at its broadest width, is greater than one-fourth ($\frac{1}{4}$) of an inch, containing ink or other pigmented liquid that is not water soluble.

Etching equipment means any tool, device, or substance that can be used to make permanent marks on any natural or manmade surface.

Graffiti means any unauthorized inscription, word, signature, symbol, design, figure, painting or other defacement that is written, marked, etched, scratched, sprayed, drawn, painted, engraved on, or applied to or otherwise affixed to any surface of public or private property or real property improvement by any graffiti implement.

Graffiti implement means a broad-tipped marker, gum label, paint stick or graffiti stick, etching equipment, brush or any other device capable of scarring or leaving a visible mark on any natural or manmade surface.

Guardian means a person who, under court order, is the guardian of the person of a minor, or a public or private agency with whom a minor has been placed by a court.

Minor means any person under eighteen (18) years of age.

Owner means any person with the legal right of possession to tangible property which includes, but is not limited to, the actual owner or his lessee.

Paint stick or graffiti stick means any device containing a solid form of paint, chalk, wax, epoxy, or other similar substance capable of being applied to a surface by pressure and leaving a mark of at least one-eighth ($\frac{1}{8}$) of an inch in width.

Parent means a person who is a natural parent, adoptive parent or stepparent of another person.

Person means any individual, partnership, cooperative association, private corporation, personal representative, receiver, trustee, assignee, or any other legal entity.

Unauthorized means without the permission of the owner or person in control of property, whether public or private.

(Ord. No. 99-1587, § 1, 1-18-99)

Sec. 86-77. Prohibited acts.

(a) *Defacement.* V.T.C.A., Penal Code § 28.08 makes it an offense under state law to knowingly make markings with aerosol paint or an indelible marker. Accordingly, it shall be unlawful for any person to intentionally or knowingly apply graffiti by any other method to any manmade surface, on any publicly owned or privately owned property within the City of Lake Jackson without the permission of the owner or occupant.

(b) *Possession of graffiti implements.*

(1) *In designated public places.* It shall be unlawful for any person to possess any graffiti implement or aerosol paint container while in or upon any park, playground,

swimming pool, recreational facility, or other public building or structure owned or operated by the city unless otherwise authorized by the city, or while on private commercial property after business hours, unless authorized by the business.

- (2) *In designated specific places.* It shall be unlawful for any person to possess any graffiti implement or aerosol paint container while in or upon any private property that has been condemned or been abandoned, without the prior written consent of the owner of such private property.
- (3) *By minors at or near school facilities.* It shall be unlawful for any person under the age of eighteen (18) years to possess any graffiti implement or aerosol paint container while on any school property, grounds, facilities, buildings, or structures, or in areas immediately adjacent to those specific locations upon public property, without the consent of school officials. The provisions of this section shall not apply to the possession of graffiti implements by a minor attending or traveling to or from a school at which the minor is enrolled if the minor is participating in a class at the school that formally requires the possession of graffiti implements. It shall be a complete defense in any prosecution for violation of this section that the minor student was required by the school to possess a graffiti implement.

(Ord. No. 99-1587, § 1, 1-18-99)

Sec. 86-78. Responsibility of parent or guardian for graffiti created by minor.

(a) *Permitting or allowing minor to create graffiti.* A parent or guardian of a minor commits an offense if he or she intentionally, knowingly, recklessly or with criminal negligence permits the minor to create graffiti on tangible property in the city without the property owner's consent.

(b) *[Reserved.]*

(Ord. No. 99-1587, § 1, 1-18-99)

Sec. 86-79. Penalties.

(a) *Fines.* Any person violating this article shall be punished by a fine of two hundred fifty dollars (\$250.00) for the first offense, five hundred dollars (\$500.00) for the second offense and each subsequent offense.

- (1) In the case of a minor, the parents or legal guardian shall be jointly and severally liable with the minor for payment of all fines.
- (2) Failure of the parents or legal guardian to make payment will result in the filing of a lien on the parents' or legal guardian's property that includes the fine and administrative costs.
- (3) Upon any application and finding of indigence, the court may decline to order fines against the minor, parents or guardian.

(b) *Restitution.* In addition to any punishment specified in this section, the court may order any violator to make restitution to the victim for damages or loss caused directly or indirectly by the violator's offense in the amount or manner determined by the court. In the case of a minor, the parents or legal guardian shall be ordered jointly and severally liable with the minor to make the restitution.

(c) *Community service.* In lieu of, or as part of, the penalties specified in this section, a minor or adult may be required to perform community service as described by the court based on the following minimum requirements:

- (1) The minor or adult shall perform at least thirty (30) hours of community service.
- (2) At least one (1) parent or guardian of the minor shall be in attendance at a minimum of ten (10) percent of the period of the assigned community service.
- (3) The entire period of community service shall be performed under the supervision of a community service provider approved by the chief of police.
- (4) Reasonable effort shall be made to assign the minor or adult to a type of community service that is reasonably expected to have the most rehabilitative effect on the minor or adult, including community service that involves graffiti removal.
- (5) Any minor determined to be a ward of the court under Texas law as a result of committing an offense in the city shall be required, at the city's option, to perform community service, including graffiti removal service of not less than thirty (30) hours nor more than forty (40) hours.

(Ord. No. 99-1587, § 1, 1-18-99)

Sec. 86-80. Rewards and reimbursements for information.

(a) The city manager is hereby authorized to offer a reward up to one thousand dollars (\$1,000.00) for information leading to the identification and apprehension of any person who willfully damages or destroys any public or private property by the use of graffiti. In the event of damage to public property, the offender or the parents or legal guardian of any unemancipated minor must reimburse the city for any reward paid. In the event of multiple contributors of information, the reward amount shall be divided by the city in the manner it shall deem appropriate.

(b) Claims for rewards under this section shall be filed with the city manager.

(c) No claim for a reward shall be allowed unless the city investigates and verifies the accuracy of the claim and determines that the requirements of this section have been satisfied.

(Ord. No. 99-1587, § 1, 1-18-99)

Sec. 86-81. Graffiti as nuisance.

(a) The existence of graffiti on public or private property in violation of this article is expressly declared to be a public nuisance and, therefore, is subject to the removal and abatement provisions specified in this article.

(b) It is the duty of both the owner of the property to which the graffiti has been applied and any person who may be in possession or who has the right to possess such property to at all times keep the property clear of graffiti.

(Ord. No. 99-1587, § 1, 1-18-99)

Sec. 86-82. Removal of graffiti by perpetrator.

Any person applying graffiti on public or private property shall have the duty to remove the graffiti within twenty-four (24) hours after notice by the city or private owner of the property involved. Such removal shall be done in a manner prescribed by the chief of police, the director of the department of public works, or any additional city department head, as authorized by the city council. Any person applying graffiti shall be responsible for the removal or for the payment of the removal. Failure of any person to remove graffiti or pay for the removal shall constitute an additional violation of this article. Where graffiti is applied by an unemancipated minor, the parents or legal guardian shall also be responsible for such removal or for the payment for the removal.

(Ord. No. 99-1587, § 1, 1-18-99)

Sec. 86-83. Removal of graffiti by property owner or city.

If graffiti is not removed by the perpetrator according to section 86-82, graffiti shall be removed pursuant to the following provisions:

(1) *Property owner's responsibility.*

- a. It shall be the responsibility of any person who is the owner of property or who has primary responsibility for control or for repair or maintenance of property in the city to remove graffiti from any public property or right-of-way or from any private property under his control that becomes defaced with graffiti visible from the right-of-way or visible from any private property, other than the property that is defaced with graffiti, and remains defaced with graffiti for a period of forty-eight (48) hours after receipt of notification from the city that graffiti is present and must be removed.
- b. Unless findings are adduced in court under subsection (2) below that the alleged graffiti is not a nuisance or violation of this section, it shall be unlawful for any person who is the owner of property or who has primary responsibility for control or for repair and maintenance on the property to permit property that is visible from any public property or right-of-way or from any private property, other than the property that is defaced with graffiti, to remain defaced with graffiti for a period of forty-eight (48) hours after receipt of notification from the city that graffiti is present and must be removed.

(2) *Right of city to remove.*

- a. *Use of public funds.* Whenever the city becomes aware or is notified and determines that graffiti is located on publicly or privately owned property

viewable from a public or quasipublic place, the city shall be authorized to use public funds for the removal of the graffiti, or for the painting or repairing of the graffiti after obtaining consent from the property owner, but shall not authorize or undertake to provide for the painting or repair of any more extensive an area than that where the graffiti is located, unless the city manager, or the designee of the city manager, determines in writing that a more extensive area is required to be repainted or repaired in order to avoid an aesthetic disfigurement to the neighborhood or community, or unless the property owner or responsible party agrees to pay for the costs of repainting or repairing the more extensive area.

- b. *Right of entry on private property.* Prior to entering upon private property or property owned by a public entity other than the city for the purpose of graffiti removal the city shall secure the consent of the property owner or responsible party and a release of the city from liability for property damage or personal injury. If the property owner or responsible party fails to remove the offending graffiti within the forty-eight (48) hours specified by this subsection (a) above, and if the city has requested consent to remove or paint over the offending graffiti and the property owner or responsible party has provided consent for entry on terms acceptable to the city and consistent with the terms of this section, the city shall be authorized to remove the graffiti and institute cost recovery proceedings for the graffiti removal against the property owner as well as the perpetrator.
 - c. If, within forty-eight (48) hours after receipt of notification from the city that graffiti is present and must be removed, under subsection (a) above, the property owner does not remove or consent to the removal of the graffiti, then the city may file an action in municipal court to declare the graffiti to be a public nuisance and at a hearing in the court on the matter, ask that the court order an abatement of the graffiti, and that the court grant the authority for the city to remove the graffiti and institute cost recovery proceedings for the graffiti removal against the property owner as well as the perpetrator. The property owner shall not be required to pay for the removal if the property owner or person responsible for the property can demonstrate that the property owner or responsible party lacks the financial ability to remove the graffiti.
- (3) *City liability.* The city or its employees shall not be liable for any aspect of the work performed by the city, its employees or by volunteers, pursuant to this section, nor shall the city or its employees be liable for the conduct of any person performing work, pursuant to this section or for any accident, mishap or misfortune that occurs to any person(s) participating in the graffiti eradication program.

(Ord. No. 99-1587, § 1, 1-18-99)

Sec. 86-84. Prevention provisions.

Excessive graffiti public nuisances. The city manager may, with regard to an excessive number of public nuisances involving graffiti at the same site, treat the nuisances as follows:

- (1) *At offender or trust fund expense.* Any surface of a structure on a parcel of land used for nonresidential purposes that has been defaced with graffiti more than five (5) times in

twelve (12) months may be declared a public nuisance and may be required to be retrofitted, at the cost of the offender or the trust fund, with features or qualities as may be established by the city after receipted notice to the property owner and a public hearing as necessary to reduce the attractiveness of the surface for graffiti, or as necessary to permit more convenient or efficient removal of graffiti.

- (2) *At city's cost.* Property used for nonresidential purposes on which is located a surface of a structure that has been defaced with graffiti more than five (5) times in twelve (12) months may be declared a public nuisance and after receipted notice to the property owner and a public hearing, the city may enter the property and, the city shall be authorized to remove the graffiti and institute cost recovery proceedings for the graffiti removal against the property owner as well as the perpetrator.

(Ord. No. 99-1587, § 1, 1-18-99)

Sec. 86-85. Trust fund.

The city council hereby creates the City of Lake Jackson Anti-Graffiti Trust Fund Penalties assessed against violators of this article shall be placed in the fund, along with any monetary donations received from persons wishing to contribute to the fund. The city manager shall direct the expenditures of monies in the fund. Such expenditures shall be limited to the payment of the cost of graffiti removal, the payment, at the discretion of the city manager, of rewards for information leading to the conviction of violation of the ordinance, the costs of administering the ordinance, and such other public purposes associated with removing or prohibiting graffiti.

(Ord. No. 99-1587, § 1, 1-18-99)

Chapters 87–89

RESERVED



Subdivisions

Chapter 90

SUBDIVISIONS*

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***Charter reference**—Municipal planning and zoning, art. 8.

Cross references—Electrical code generally, § 14-56 et seq.; floods, ch. 46; manufactured homes and trailers, ch. 58; parks and recreation, ch. 66; signs, ch. 78; solid waste, condition and use of premises, ch. 82; streets, sidewalks and other public places, ch. 86; utilities, ch. 102; zoning, ch. 110.

State law references—Interlocal Cooperation Act, V.T.C.A., Government Code § 791.001 et seq.; extraterritorial jurisdiction of municipalities, V.T.C.A., Local Government Code § 42.001 et seq.; municipal annexation, V.T.C.A., Local Government Code § 43.001 et seq.; municipal regulation of subdivisions, V.T.C.A., Local Government Code § 212.001 et seq.; extension of subdivision rules to extraterritorial jurisdiction, V.T.C.A., Local Government Code § 212.003; extraterritorial jurisdiction of municipalities in counties that regulate subdivisions, V.T.C.A., Local Government Code § 242.001; public records generally, V.T.C.A., Property Code § 11.001 et seq.; instruments concerning property, V.T.C.A., Property Code § 12.001; recording of plats, V.T.C.A., Property Code § 12.002.

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- Sec. 90-58.1. Same—Plantation Village.
- Sec. 90-59. Same—Payments.
- Sec. 90-60. Drainage easement, requirements.
- Sec. 90-61. Streets.
- Sec. 90-62. Park and recreation sites or facilities.
- Sec. 90-63. Trees and landscaping.

ARTICLE I. IN GENERAL**Sec. 90-1. Definitions.**

The following words, terms and phrases, when used in this chapter, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Arterial street means a principal traffic artery, more or less continuous across the city, which connects remote parts of the city, and constitutes a through traffic facility that services to channel traffic through or out of the city.

Collector street means a street that collects traffic or that will carry traffic from minor streets to arterial streets by serving as a gathering traffic facility providing the residents on minor streets a means of reaching arterial streets or other areas in the city.

Minor street means a street that is intended primarily to serve traffic within a neighborhood or limited residential district and which is not necessarily continuous through several residential districts and due to location, limited traffic and a limited paved width of twenty-seven (27) feet, is the smallest type of street in the city.

Paving width means the width of that portion of the street required to be paved.

Plat means a map or chart of the subdivision. It shall include plan, plat or replat and include both singular and plural.

Resubdivision means the division of an existing subdivision, together with any change of lot size therein, or with the relocation of any street lines.

Street means the entire right-of-way or width between property lines of a way for vehicular traffic, whether designated as a street, highway, thoroughfare, parkway, thoroughway, road, avenue, boulevard, drive, lane, place or however otherwise designated, but shall not be deemed to include an alley.

Street width means the shortest horizontal distance between the lines which delineate the right-of-way of a street.

Subdivider means an owner of land, an agent of any owner of land, or a person or entity with a legal right to change or add physical improvements on a tract of land.

Subdivision means the division of a tract or parcel of land into two (2) or more parts or lots for the purpose, whether immediate or future, of sale or building development or transfer of ownership, and shall include the word "resubdivision."

(Ord. No. 191, § 2, 11-1-55; Ord. No. 79-705, § 1, 8-20-79; Code 1958, § 19-1(b); Ord. No. 11-1973, § 1, 10-17-2011)

Cross reference—Definitions generally, § 1-2.

State law reference—Definitions pertaining to subdivisions, V.T.C.A., Local Government Code § 212.001.

Sec. 90-2. Purpose.

The general objectives of this chapter are to promote the health, safety, welfare and general well-being of the community's citizens. It is the intent of this chapter to regulate the subdivision, resubdivision, the laying out of suburban lots or building lots, or any lots, sites, streets, alleys or parks or other portions intended for public use, or for the use of purchasers or owners of lots fronting thereon or adjacent thereto and in part to achieve the following:

- (1) *Safety.* To promote subdivision development and building within the city by ensuring that:
 - a. Adequate planning is undertaken to assure proper boundary lines, widths of lots and streets, proper location of drainage ditches, culverts, bridges, etc., as well as proper off-street parking, school sites and parking placements.
 - b. Streets are constructed so as to eliminate hazards to motorists or to the public generally by ensuring:
 1. Adequate width or adequate paving.
 2. Adequate grading, curb, gutter and sidewalk.
 3. Good construction using suitable material.
 4. Fire response capability and police surveillance.
 5. Proper drainage.
- (2) *Landscape quality and preservation.* To protect the public welfare and to enhance the appearance and economic value of the landscape by providing lots and streets that:
 - a. Are of a standard size or width, with the specific standard to be based upon location and use.
 - b. Are platted with appropriate regard for all topographical features lending themselves to attractive treatment and layout of utilities.
 - c. Provide continuity with existing utility and street systems.
- (3) *General well-being.* To promote the efficient transportation of people by providing streets that:
 - a. Are connecting to other streets.
 - b. Are sufficient in paving and width to serve the needs of the location.
 - c. Are in conformance with the city traffic plan.

(Ord. No. 191, § 2, 11-1-55; Ord. No. 79-705, § 1, 8-20-79; Code 1958, § 19-1(a))

Sec. 90-3. Applicability of chapter.

This chapter shall govern every subdivider of any tract of land within the city limits or within five (5) miles thereof, who may divide the same into two (2) or more parts for the purpose of laying out any subdivision of any tract of land or any addition to the city, or for

laying out suburban lots or building lots, or any lots, and streets, alleys or parks or other portions intended for public use, or the use of purchasers or owners of lots fronting thereon or adjacent thereto.

(Ord. No. 191, § 1, 11-1-55; Code 1958, § 19-2; Ord. No. 11-1973, § 1, 10-17-2011)

State law reference—Extent of extraterritorial jurisdiction of municipalities, V.T.C.A., Local Government Code § 42.021.

Sec. 90-4. Applicability of chapter provisions to include area within extraterritorial jurisdiction of city.

(a) Ordinance Number 191 (chapter 90), passed and approved on November 1, 1955, establishing rules and regulations governing plats and the subdivision of land is hereby extended in its application to include all of the area within the extraterritorial jurisdiction of the city. The provisions of such chapter shall have the same force and effect within such area of extraterritorial jurisdiction as within the corporate limits of the city, except as provided in subsections (b) and (c) of this section.

(b) No violation of any provision of such Ordinance Number 191 (chapter 90) outside the corporate limits of the city, but within such city's area of extraterritorial jurisdiction, shall constitute a misdemeanor under such ordinance (chapter), nor shall any fine provided for in such ordinance (chapter) be applicable to a violation within such area of extraterritorial jurisdiction.

(c) If any provision of Ordinance Number 191 (chapter 90) is violated within the area of extraterritorial jurisdiction of the city and outside its corporate limits, the city may institute any appropriate action or proceedings in the district court to enjoin the violation of such ordinance (chapter).

(Ord. No. 71-435, §§ 1—3, 6-7-71; Code 1958, § 19-2.1)

State law reference—Authority for above section, V.T.C.A., Local Government Code § 212.003.

Sec. 90-5. Policy.

(a) It shall be unlawful for any subdivider to lay out, subdivide, plat or replat any land into lots, blocks and streets within the city, or within a maximum distance of five (5) miles of the corporate limits of the city without the approval of the city planning commission. It shall also be unlawful for any such subdivider to offer for sale or sell property therein or thereby, which has not been laid out, subdivided, platted or replatted with the approval of the city planning commission.

(b) The city hereby defines its policy to be that the city will withhold all city improvements of whatsoever nature, including the maintenance of streets and the furnishing of sewage, facilities and water service from all additions and subdivisions, the platting of which has not been approved by the city planning commission.

(c) No street number and no building permit shall be issued for the erection of any building in the city on any piece of property other than an original or a resubdivided lot in a duly approved and recorded subdivision without the written approval of the planning commission.

(d) The attention of each subdivider is directed to V.T.C.A., Property Code § 12.002, which states in part:

The county clerk or a deputy of the clerk with whom a plat or replat of a subdivision of real property is filed for recording shall determine whether the plat or replat is required by law to be approved by a county or municipal authority or both. The clerk or deputy may not record a plat or replat requiring approval unless it is approved as provided by law by the appropriate authority and unless the plat or replat has attached to it the documents required by V.T.C.A., Local Government Code § 212.0105 or 232.0035, if applicable. If a plat or replat does not indicate whether land covered by the plat or replat is in the extraterritorial jurisdiction of the municipality, the county clerk may require the person filing the plat or replat for recording to file with the clerk an affidavit stating that information.

(Ord. No. 191, § 3, 11-1-55; Code 1958, § 19-3; Ord. No. 11-1973, § 1, 10-17-2011)

State law reference—Extent of extraterritorial jurisdiction of municipalities, V.T.C.A., Local Government Code § 42.021.

Sec. 90-6. Planning commission authority.

(a) Where extraordinary hardship may result from strict compliance with the regulations in this chapter, the planning commission may vary such regulations so that substantial justice may be done and the public interest secured; provided, however, that such variation shall not have the effect of nullifying the intent and purpose of this chapter.

(b) The planning commission may refuse to approve a plat or site plan unless it is evident that proper water and sewer facilities can be supplied within a reasonable length of time.

(c) The planning commission will assist the subdivider through preliminary discussion of proposed plats at all possible times, and will, through the city engineer, make available all possible assistance.

(Ord. No. 191, § 9, 11-1-55; Ord. No. 79-717, § 1, 10-15-79; Code 1958, § 19-12)

Sec. 90-7. Preservation of high bank.

(a) It is the policy of the city council that the safety, health and well-being of the residents of the city be served by guarding against flood hazards. In furtherance of that policy, the natural high and low banks of Oyster Creek shall be preserved at their present heights and formations.

(b) An excavation, ditch, street development or other alteration of the bank (high or low) of Oyster Creek which is within the jurisdiction of the city shall be a violation of this Code and shall be prohibited unless permission is obtained from the city planning commission and a permit is issued by the city manager.

(c) The city shall have the authority to enjoin any activity that is in violation of this section or take any other action in a court of law it may deem proper.
(Ord. No. 78-644, § 1, 1-16-78; Code 1958, § 19-8.2)

Sec. 90-8. Payment for street lighting costs.

(a) The developer or subdivider of a subdivision or a commercial or industrial development shall pay the cost of street lighting facilities to Houston Lighting and Power Company and the payment shall be made at the time that electric service is provided.

(b) All street lighting facilities shall be maintained in good operating condition by the power company or its agents.

(c) Street lighting facilities provided by the developer or subdivider shall meet the following requirements:

(1) *Residential:*

- a. A light of at least five thousand eight hundred (5,800) lumen brightness on an ornamental steel pole served underground.
- b. Lights shall be provided at all corners, intersections and directional changes, and in addition at six-hundred-foot intervals along straight-of-ways.
- c. Additional lights may be required at the option of the city manager.

(2) *Highways (2004 and 332 and other major highways):*

- a. A light of at least sixteen thousand (16,000) lumen brightness on an ornamental steel pole served underground.
- b. Lights shall be provided at all intersecting streets and shall be placed to backlight turning traffic.
- c. Additional lights may be required at the option of the city manager.

(3) *Downtown:*

- a. A light of at least sixteen thousand (16,000) lumen brightness on an ornamental steel pole served underground.
- b. Lights of at least double sixteen thousand (16,000) lumen brightness shall be provided in the center of streets when such locations are available.
- c. Additional lights may be required at the option of the city manager.

(Ord. No. 81-806, § 1, 7-6-81; Ord. No. 85-989, § 1, 10-21-85; Code 1958, § 19-9.3; Ord. No. 11-1973, § 1, 10-17-2011)

Sec. 90-9. Placement of sprinklers and plantings on city easements.

Developers and others who extend or place sprinklers, landscaping or plantings in city easements or city owned areas shall:

- (1) Be required to secure a permit from the city manager's office prior to any extension or placement;

- (2) Maintain the sprinkler system, landscaping or plantings to the satisfaction of the city or be responsible for the cost of removal;
 - (3) Place sprinklers, landscaping or plantings only in the areas and locations that are specified in the permit;
 - (4) Follow the tree or landscaping program of the city when there is an overall tree or landscaping plan for the area; and
 - (5) Have no recourse against the city if either sprinkler or landscaping systems on city property or easement is disturbed by the city or any utility crew, and will bear any and all repair or replacement costs.
- (Ord. No. 87-1041, § 1, 7-20-87; Code 1958, § 19-9.4)

Secs. 90-10—90-30. Reserved.

ARTICLE II. PLATS

Sec. 90-31. Approval procedure—Preliminary plat requirements.

Three (3) copies of a preliminary plat shall be submitted to the city manager for presentation to the city planning commission five (5) days prior to the meeting at which approval is asked. The plat shall be drawn to a scale of two hundred (200) feet to one (1) inch or larger, and shall show or be accompanied by the following information:

- (1) Name of subdivision.
- (2) Names of the owner, subdivider if not the owner, and engineer or surveyor responsible for the survey and design.
- (3) Boundary lines, existing building lines, and width and location of platted streets and alleys within and adjacent to the property.
- (4) Width and depth and/or area of proposed lots.
- (5) Physical features of the property, including location of water courses, culverts, bridges, proposed drainage ditches and present structures, streets and alleys, highway, etc., including widths and names.
- (6) A designation of the proposed uses of land within the subdivision.
- (7) Adequate off-street parking must be provided for lots set aside or planned for business, public or institution use.
- (8) A map on a smaller scale must be presented to show the nearest subdivisions, and how the streets, alleys or highways in the subdivision submitted may connect with those nearby.
- (9) Profiles of streets and ditches may be called for.
- (10) In subdividing property, due consideration shall be given to suitable sites for schools, and to the dedication of parks and playgrounds. Such provision should be indicated on

the preliminary plan in order that it may be determined when and in what manner such areas will be dedicated to the public use. Such property shall not be of a less desirable nature than other property in the subdivision.

- (11) A letter from the appropriate independent school district stating that provisions for the use of future schools, if such be required, are adequate or if not required, then such letter shall so state.
 - (12) If the subdivider is not the property owner or agent of the property owner, proof of notice by certified mail or hand delivery of the plat filing to the property owner. If the notice is by certified mail, it must be postmarked at least fourteen (14) days before the meeting at which the planning commission shall consider the plat. If the notice is by hand delivery, proof must be presented that notice was delivered at least seven (7) days before the meeting at which the planning commission shall consider the plat.
- (Code 1958, § 19-8; Ord. No. 11-1973, § 1, 10-17-2011)

State law reference—Subdivision plats, V.T.C.A., Local Government Code § 212.004 et seq.

Sec. 90-31.1. Flag lots.

Flag lots are prohibited except where unique property features prevent direct access to a public street. The staff portion of the lot shall be at least thirty (30) feet in width and shall be used for vehicular ingress and egress.

(Ord. No. 17-2136, § 1, 7-17-2017)

Sec. 90-32. Same—Special flood hazard zone; review by planning commission.

In those areas of the city that are identified as special flood hazard zones based upon the one hundred-year flood level, the planning commission shall review all proposed subdivisions to assure that:

- (1) New construction or substantial improvements of residential structures within the area of special flood hazards shall have the lowest floor, including the basement, elevated to or above the level of the one hundred-year flood;
- (2) New construction or substantial improvements of nonresidential structures within the zone of special flood hazards meets the standards established in sections 46-26—46-30 and 46-41—46-45.

(Ord. No. 191, § 8.01, 11-1-55; Code 1958, § 19-8.1)

Sec. 90-33. Action on preliminary plats.

(a) Following a review of the preliminary plat and negotiations with the subdivider on changes deemed advisable and the kind and extent of improvements to be made by him, the planning commission shall, within thirty (30) days, act thereon as submitted, or modified, and if approved shall express its approval as conditional approval and state the conditions of such approval, if any, or if disapproved shall express its disapproval and the reasons therefor.

(b) The action of the planning commission shall be noted on three (3) copies of the preliminary plat, referenced and attached to any conditions determined. One (1) copy shall be returned to the subdivider, one (1) copy presented to the city council and the third retained by the planning commission.

(c) Approval of the preliminary plat does not constitute acceptance of the subdivision, but is merely authority to proceed with the preparation of the final or record plat. No work shall be done on the subdivision before the final plat is accepted and recorded. Approval of a preliminary plat expires at the end of ninety (90) days, unless the final or record plat has been submitted to the planning commission. Any changes by the planning commission, the city engineer or others may require submission of another preliminary plat.
(Ord. No. 191, § 8.02, 11-1-55; Code 1958, § 19-9)

Sec. 90-34. Filing of final or record plat, or site plan.

(a) Two (2) white print copies of the final or record plat with reproducible tracing of final plat shall be submitted to the city planning commission after the preliminary plat has been approved and all changes and alterations made. No final plat will be considered unless a preliminary plat has first been submitted. Such plats shall be filed with the city manager at least five (5) days prior to the meeting at which approval is requested. The final plat shall show or be accompanied by the following data:

- (1) Plats shall be drawn upon sheets twenty-four (24) inches by thirty-six (36) inches and to the scale of one hundred (100) feet to the inch.
- (2) A title including name of subdivision, owner or owners, subdivider if not the owner, and licensed land surveyor or registered engineer or registered public surveyor responsible for the plat, and the scale and location of the subdivision with reference to original land grants or surveys, the date and north point.
- (3) The certificate of the registered engineer or licensed surveyor who surveyed, mapped and monumented the land should be placed on the face of the plat.
- (4) A certificate of ownership and dedication of all streets, alleys, parks and playgrounds to public use forever, signed and acknowledged before a notary public by the owner and lien holder of the land. A complete and accurate description of the land subdivided and the streets dedicated.
- (5) An accurate on-the-ground boundary survey of the property with bearings and distances and showing the lines of all adjacent land, streets and alleys with their names and width. Streets, alleys and lot lines in adjacent subdivisions shall be shown dotted. All necessary data to reproduce the plat on the ground must be shown on the plat.
- (6) Certificate of approval to be signed by the city planning commission shall be placed on the face of the plat.

- (7) Two (2) sets of plans and specifications for water, sewer, paving and drainage prepared by a registered engineer, which must be approved by the city council prior to the beginning of any construction in the subdivision.
- (8) A letter from the appropriate drainage commission addressed to the city planning commission stating that plans for drainage of the subdivision are approved by the drainage commission.
- (9) A letter from the servicing utility companies stating that the plat includes the easements required by them in the furnishing of utilities to this and future subdivisions.
- (10) Two (2) copies of deed restrictions.
- (11) An overall plan that incorporates a tree planting or saving plan for the development.
- (12) An overall plan that incorporates the design and placement of street lighting as set out in section 90-8.
- (13) A statement that the subdivider, if the subdivider is not the property owner or the agent of the property owner, will indemnify the city against any claims that may be brought due to approval of the plat.
- (14) If the subdivider is not the property owner or agent of the property owner, proof of notice by certified mail or hand delivery of the plat filing to the property owner. If the notice is by certified mail, it must be postmarked at least fourteen (14) days before the meeting at which the planning commission shall consider the plat. If the notice is by hand delivery, proof must be presented that notice was delivered at least seven (7) days before the meeting at which the planning commission shall consider the plat.

(b) In the case of all site developments such as apartments, church buildings, schools, or any other nonresidential development on two (2) acres and over, the developer shall submit to the city planning commission a final site or record plan. Such plans shall be filed with the city manager at least five (5) days prior to the meeting at which approval is requested. The site plan shall show or be accompanied by the following:

- (1) Plans shall be drawn upon sheets twenty-four (24) inches by thirty-six (36) inches and to the scale of one hundred (100) feet to the inch.
- (2) A title including name of site, owner, subdivider if not the owner, registered surveyor, registered engineer and registered architect responsible for the plan should be placed on the face and the plan should also include the scale and location of the site with reference to the original land grant surveys or subdivision, the date and north point.
- (3) Certificate of approval to be signed by the city planning commission shall be placed on the face of the plat.
- (4) Two (2) sets of plans and specifications for water, sewer, paving and drainage prepared by a registered engineer, which must be approved by the city council prior to the beginning of any construction of the site.

- (5) A letter from the appropriate drainage commission addressed to the city planning commission stating that plans for drainage of the site are approved by the drainage commission.
- (6) An overall plan that incorporates a tree planting or saving plan for the development.
- (7) An overall plan that incorporates the design and placement of street lighting as set out in section 90-8.
- (8) A statement that the subdivider, if the subdivider is not the property owner or the agent of the property owner, will indemnify the city against any claims that may be brought due to approval of the site plan.
- (9) If the subdivider is not the property owner or agent of the property owner, proof of notice by certified mail or hand delivery of the site plan filing to the property owner. If the notice is by certified mail, it must be postmarked at least fourteen (14) days before the meeting at which the planning commission shall consider the site plan. If the notice is by hand delivery, proof must be presented that notice was delivered at least seven (7) days before the meeting at which the planning commission shall consider the site plan.
- (c) (1) In the case of all site developments such as businesses, schools, office buildings, apartments, church buildings or any other nonsingle-residential development of two (2) acres or less, the developer shall submit to the city manager:
 - a. A plan drawn upon sheets twenty-four (24) inches by thirty-six (36) inches and to the scale of one hundred (100) feet to the inch.
 - b. Specifications for water, sewer, paving and drainage prepared by a registered engineer.
- (2) Additionally, in the case of all site developments such as businesses, schools, office buildings, apartments, church buildings or any other nonsingle-family residential development of two (2) acres or less that have lot lines within sixty (60) feet of single-family residential area lot lines, the city manager shall send a certified letter to all residents within two hundred (200) feet of the proposed project informing them of the site plan or record plan for the proposed site.
- (3) A statement that the subdivider, if the subdivider is not the property owner or the agent of the property owner, will indemnify the city against any claims that may be brought due to approval of the site plan.
- (4) If the subdivider is not the property owner or agent of the property owner, proof of notice by certified mail or hand delivery of the site plan filing to the property owner. If the notice is by certified mail, it must be postmarked at least fourteen (14) days before the meeting at which the planning commission shall consider the site plan. If

the notice is by hand delivery, proof must be presented that notice was delivered at least seven (7) days before the meeting at which the planning commission shall consider the site plan.

(Ord. No. 191, § 8.03, 11-1-55; Ord. No. 79-717, § 1, 10-15-79; Ord. No. 81-824, §§ 2, 3, 11-2-81; Ord. No. 81-806, §§ 2, 3, 7-6-81; Ord. No. 82-836, § 1, 1-18-82; Ord. No. 00-1626, § 4, 3-20-2000; Code 1958, § 19-10; Ord. No. 11-1973, § 1, 10-17-2011)

State law reference—Subdivision plats, V.T.C.A., Local Government Code § 212.004 et seq.

Sec. 90-35. Action on final plat and site plan.

(a) Following a review of the final plat or site plan and when, to the satisfaction of the planning commission, all conditions and requirements have been met, the planning commission shall approve such plat, or site plan and shall submit all copies of such plat or plan to the city council for inspection.

(b) Should the final plat or site plan, as submitted, fail to meet the conditions and requirements of the planning commission, then the planning commission shall disapprove such plat or site plan and note its disapproval thereon, and attach thereto a statement of the reasons for disapproval.

(c) Approval or disapproval of the final plat or site plan shall be voted by the planning commission within thirty (30) days after submission of such final plat or site plan.

(Ord. No. 191, § 8.04, 11-1-55; Ord. No. 79-717, § 1, 10-15-79; Code 1958, § 19-11)

State law reference—Approval of plat, V.T.C.A., Local Government Code § 212.005 et seq.

Sec. 90-36. Fees for filing subdivision plats, etc.

The following schedule of fees and charges will be paid into the general fund of the city when any map or plat is tendered to the city planning commission, and each of such fees and charges shall be paid in advance and no action of the city planning commission shall be valid until the fee shall have been paid. The city manager or his deputies or assistants shall calculate the fees and charges in accordance with the following schedule:

- (1) Preliminary plats, site plans, or preliminary plat amendments: one hundred dollars (\$100.00).
- (2) Final plats, site plans, or final plat amendments: one hundred and fifty dollars (\$150.00) per plat.
- (3) Replats or the subdividing of a lot: three hundred dollars (\$300.00) plus cost of advertising.

(Ord. No. 191, § 11, 11-1-55; Ord. No. 79-717, § 1, 10-15-79; Ord. No. 81-820, § 3, 9-21-81; Code 1958, § 2-41; Ord. No. 03-1721, § 1, 7-1-2003; Ord. No. 03-1735, § 1, 10-6-2003; Ord. No. 18-2166, § 1, 10-15-2018; Ord. No. 19-2176, § 1, 2-4-2019)

Sec. 90-37. Amending plat.

(a) The municipal authority responsible for approving plats may approve and issue an amending plat, which may be recorded and is controlling over the preceding plat without vacation of the plat, if the amending plat is signed by the applicants only and is solely for one (1) or more of the following purposes:

- (1) To correct an error in a course or distance shown on the preceding plat.
- (2) To add a course or distance that was omitted on the preceding plat.
- (3) To correct an error in a real property description shown on the preceding plat.
- (4) To indicate monuments set after the death, disability or retirement from practice of the engineer or surveyor responsible for setting monuments.
- (5) To show the location or character of a monument that has been changed in location or character or that is shown incorrectly as to location or character on the preceding plat.
- (6) To correct any other type of scrivener or clerical error or omission previously approved by the municipal authority responsible for approving plats, including lot numbers, acreage, street names and identification of adjacent recorded plats.
- (7) To correct an error in courses and distances of lot lines between two (2) adjacent lots if:
 - a. Both lot owners join in the application for amending the plat;
 - b. Neither lot is abolished;

- c. The amendment does not attempt to remove recorded covenants or restrictions; and
 - d. The amendment does not have a material adverse effect on the property rights of the other owners in the plat.
- (8) To relocate a lot line to eliminate an inadvertent encroachment of a building or other improvement on a lot line or easement.
- (9) To relocate one (1) or more lot lines between one (1) or more adjacent lots if:
- a. The owners of all those lots join in the application for amending the plat;
 - b. The amendment does not attempt to remove recorded covenants or restrictions; and
 - c. The amendment does not increase the number of lots.
- (10) To make necessary changes to the preceding plat to create six (6) or fewer lots in the subdivision or a part of the subdivision covered by the preceding plat if:
- a. The changes do not affect applicable zoning and other regulations of the municipality;
 - b. The changes do not attempt to amend or remove any covenants or restrictions; and
 - c. The area covered by the changes is located in an area that the municipal planning commission or other appropriate governing body of the municipality has approved, after a public hearing, as a residential improvement area.

(b) Notice, a hearing and the approval of other lot owners are not required for the approval and issuance of an amending plat.

Secs. 90-38–90-55. Reserved.

ARTICLE III. IMPROVEMENTS

Sec. 90-56. Survey requirements.

(a) Monuments consisting of one-inch iron pipe, twenty-six (26) inches in length, shall be placed at all corners of the block lines, the point of intersection of curves and tangents of the subdivision.

(b) One (1) bench mark for each five (5) acres of property or fraction thereof shall be permanently installed in an approved manner, with their location and the elevation shown on the plat.

(c) Lot markers shall be metal or concrete stakes placed at each corner of all lots, flush with the average ground elevation, or they may be countersunk, if necessary, to avoid being disturbed.

(Ord. No. 191, § 5, 11-1-55; Code 1958, § 19-5)

Sec. 90-57. As-built plans.

The engineer representing the subdivider must present to the city, reproducible, complete as-built plans for all paving, drainage structures, water lines and sewer lines within thirty (30) days after completion of each contract.

(Ord. No. 191, § 10, 11-1-55; Ord. No. 79-717, § 1, 10-15-79; Code 1958, § 19-13)

Sec. 90-58. Improvements—Requirements.

(a) *Paving.* Improvements shall be installed to a permanent line and grade and to the satisfaction of the city engineer. All street construction work shall be performed by a bonded contractor who has filed a faithful performance bond with the city. Approval of the plat shall not impose any duty upon the city concerning maintenance of such improvements until the city shall have made actual acceptance of the same.

(1) The minimum improvements which the subdivider shall make or agree to make, prior to acceptance and approval of the final plat by the city planning commission, shall be:

- a. Grading, drainage and drainage structures necessary to properly drain the area.
- b. Pavement of a width which the council has determined under its city traffic plan, is suitable for traffic on the street.
- c. Curb and gutter of three thousand (3,000) psi concrete.
- d. Four-foot wide sidewalk set back four (4) feet from the curb line.

(2) Payment for streets shall be as follows:

- a. The subdivider shall pay for the total cost of all minor streets.
- b. The subdivider shall pay for the total cost of collector and arterial streets in all subdivisions except single-family residential subdivisions in which the lot width and the lot area are equal to, or greater than that required for R-2A zoning.
- c. In single-family subdivisions in which the lot width and the lot area are equal to or greater than that required for R-2A zoning, the subdivider shall pay for the total cost of grading, drainage, drainage structures, curbs, gutters and sidewalks for all collector streets. The subdivider shall pay for the total cost of paving and subbase up to thirty-six (36) feet of a paving width. The city will pay for the cost of paving and subbase in excess of thirty-six (36) feet for collector streets.
- d. In single-family subdivisions in which the lot width and lot area are equal to or greater than that required for R-2A zoning, the subdivider shall pay for the total cost of grading, drainage, drainage structures, curbs, gutters, sidewalks for all arterial streets. The subdivider shall pay for the total cost of paving and subbase up to thirty-two (32) feet of a paving width. The city will pay for the cost of paving and subbase in excess of thirty-two (32) feet for all arterial streets.
- e. In subdivisions where less than ninety (90) percent of the residential units are on lots with the width and lot area equal to or greater than that required for R-2A zoning, or where more than ten (10) percent of the land area of the subdivision is zoned other than residential, the subdivider shall pay for the total cost of collector

and arterial streets. If neither of the conditions of this paragraph apply, the subdivider shall pay for collector and arterial streets in accordance with subsections c. and d. of this subsection.

- f. In the case where one-half ($\frac{1}{2}$) the paving width of an arterial is in one (1) subdivision and the remaining paving width is in another subdivision, the subdividers shall pay the total cost of the arterial street.
- g. When the city is required to pay for paving under the terms of this subsection, the schedules for the work and payment will be set by the city council.
- h. The city may assume a greater portion of the payment for paving of any street under this subsection after a public hearing on the matter.
- i. This subsection shall apply to any plan, plat or replat submitted to the planning commission after August 1, 1983. However, this subsection shall not apply to any replat where the city has already accepted curbed streets nor shall it apply when the city planning commission is authorized to approve and issue an amending plat for one (1) or more of the purposes set forth in V.T.C.A., Local Government Code ch. 212.

(b) *Utilities.* The minimum improvements which the subdivider shall make, or agree to make, prior to acceptance and approval of the final plat by the city planning commission shall be:

- (1) Water systems with mains of sufficient size and having a sufficient number of outlets to furnish adequate domestic water supply, furnish fire protection to all lots and meet the requirements of the city.
- (2) Sanitary sewer facilities to service the subdivision and meet the requirements of the city.
- (3) All services for utilities shall be made available for each lot in such a manner as will obviate the necessity for disturbing the street pavement, gutter, curb and drainage structures when connections are made.

(Ord. No. 191, § 6, 11-1-55; Code 1958, § 19-6(b))

Sec. 90-58.1. Same—Plantation Village.

Utilities. All utility service facilities installed for the purpose of the distribution of electricity, telephone, telecommunications, gas, cable services or any other such service in the Plantation Village subdivision shall be placed underground or in dedicated utility easements, drainage rights-of-way, or on existing utility structures. The Plantation Subdivision is bounded by State Highway 332, State Highway 288, FM 2004 and the adjoining right-of-way lines of Oak Drive South, Medical Drive, Canna Lane, and the Dow Fresh water canal.

(Ord. No. 18-2154, § 1, 2-5-2018)

Sec. 90-59. Same—Payments.

(a) *Basic.* The subdivider may award the contract and make payments directly to the contractor, after the plans and specifications have been approved by the city engineer and city council for all grading, paving, drainage structures, utilities and sidewalks in the subdivision.

(b) *Alternate method.* The engineer representing the subdivider may present the plans and specifications for the water and sewer lines and paving to the city council for approval, after which the city will advertise for bids and award the contract after the cost for such contract has been paid to the city by the subdivider.

(Ord. No. 191, § 7, 11-1-55; Code 1958, § 19-7)

Sec. 90-60. Drainage easement, requirements.

(a) *Storm drainage easements.* In subdivisions, the developer shall provide all necessary easements and rights-of-way required for drainage facilities, including storm sewers, open and lined channels.

- (1) Easement width for storm sewer pipe shall not be less than twenty (20) feet or the maximum outside diameter of pipes plus sixteen (16) feet, whichever is more.
- (2) Easement width for open and lined channels, up to thirty (30) feet wide shall be at least twenty (20) feet wider than the top of the channel, comprised of at least sixteen (16) feet of easement on one (1) side and four (4) feet on the other side.
- (3) Easement width for open and lined channels over thirty (30) feet wide shall be at least thirty-two (32) feet wider than the top of the channel comprised of a minimum of twelve (12) feet of easement on one (1) side and the balance of the easement width to be on the other side.

(b) *Side slopes:*

- (1) Side slopes of lined channels shall not be steeper than one-foot vertical rise to one and one-half-foot horizontal distance.
- (2) Side slopes of unlined channels shall not be steeper than one-foot vertical rise to three-foot horizontal distance.

(Ord. No. 80-728, § 1, 3-3-80; Code 1958, § 19-7.1)

Sec. 90-61. Streets.

(a) City streets shall be classified as minor, collector or arterial.

(b) A city traffic plan shall be prepared by the traffic commission and approved by the planning commission and by the city council that designates present arterial and collector streets and shows future arterial streets.

- (1) Minor streets shall have a minimum right-of-way of sixty (60) feet and twenty-seven (27) feet of paving.

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- (2) Collector streets shall have a minimum right-of-way width of seventy (70) feet and a minimum paving width of thirty-six (36) feet.
 - (3) Arterial streets shall have a minimum right-of-way width of one hundred (100) feet and a minimum paving width of forty-eight (48) feet.
 - (4) Greater width right-of-way and paving may be required by the city council upon the recommendation of the traffic commission and planning commission or the city staff.
- (c) Future arterial streets will be designated on the traffic plan in their approximate location. The exact location of future arterials will be set when the area is platted.
- (d) Future collector and minor streets shall be designated by the planning commission and approved by the city council on a case by case basis.

(e) Streets shall be platted with appropriate regard for all topographical features lending themselves to attractive treatment and layout of utilities.

(f) Streets shall be named to provide continuity with existing streets.
(Ord. No. 191, § 4, 11-1-55; Ord. No. 79-705, § 2, 8-20-79; Code 1958, § 19-4)

Sec. 90-62. Park and recreation sites or facilities.

(a) A subdivision developer and the city have the dual responsibility to provide leisure-time facilities for the residents of a subdivision or condominium or apartment development. Therefore, the developer of each subdivision, condominium or apartment complex and the city planning commission shall assure that adequate and suitable areas for park and recreation sites are planned for the use of the citizens of the city.

(b) The method for assuring that adequate and suitable areas for park and recreation sites are set aside for public use shall be guided by the comprehensive master plan and shall be governed by the following standards and regulations:

- (1) The subdivider or developer shall dedicate a site or sites to the public for public use for park purposes at the time the plat is submitted, at a location recommended by the parks and recreation board, at a ratio of one-half ($\frac{1}{2}$) acre of park for every one hundred (100) persons in the subdivision or development. This ratio is the city standard number of acres of park to be available in ratio to the increment of population added and to be served by the completely developed subdivision or development complex, said added population being computed at the rate of three and three-tenths (3.3) persons per single-family residence or two and eight-tenths (2.8) persons per multifamily living unit. The planning commission shall approve the site selected. The following definitions and conditions shall apply if there is a site dedication for park purposes:
 - a. The area of the park to be dedicated shall be clearly defined. Where streets, ditches or easements infringe on or are part of the area to be dedicated, the planning commission must agree to the acceptance of those areas. The park dedication acreage must be in addition to the above infringements.
 - b. When a subdivision or complex is to be developed in stages or by units, the actual platting of the park area to be dedicated by the subdivider or developer shall be completed and delivered to the planning commission and the parks and recreation board with the final plat of the first unit of such subdivision.
 - c. The foregoing subsections shall not apply in the case of a replat of a plat, subdivision or addition that has previously met park requirements or the resubdividing of existing single lots, unless the replatting results in a change in park requirements or modification of park location.
 - d. Each park shall have ready access to a public street.
 - e. Final acceptance and approval of park lands shall be by the city council.

- (2) The city council may elect to accept money as an alternative to the dedication of land for subdivision or development complexes where there is no park designated by the comprehensive master plan or no park or recreation facility is recommended in the area by the parks and recreation board.
- (3) The subdivider or developer may make application for this alternative by submitting to the city council a final plat approved by the planning commission and a written statement of intent to deposit money in the city's park and recreation development fund at the initial rate of two hundred ninety-five dollars (\$295.00) per lot in the subdivision or two hundred fifty-two dollars (\$252.00) per living unit in a duplex, townhouse, apartment or other multifamily units, computed on the average base market value of eighteen thousand dollars (\$18,000.00) for one (1) acre of land served by a street, sewer and city utilities. The amount of money in lieu of park acres shall be set by the city council and shall be reviewed each year in January and may be changed if the market value warrants.
- (4) After approval of the application of the city council, the subdivider or developer shall make payment of the approved amount of money to the city secretary at the time of city acceptance of streets, water and sewer for deposit in the park and recreation development fund for the purchase of park land or the development of existing parks or recreation facilities.

(Ord. No. 77-620, § 1, 3-21-77; Ord. No. 79-683, § 1, 1-15-79; Ord. No. 84-916, § 1, 2-6-84; Ord. No. 86-998, § 1, 2-3-86; Code 1958, § 19-9.1; Ord. No. 07-1836, § 2, 2-19-2007)

State law reference—Effect of approval of plat on dedication, V.T.C.A., Local Government Code § 212.011.

Sec. 90-63. Trees and landscaping.

(a) *Purpose.* This section establishes the rules for preservation and enhancement of the natural beauty of the hardwood forest and prairie that led the founders of the city to pick this spot for a city. A major feature of the original town layout was large areas reserved for trees and green space, both as parkland and in commercial zones. Succeeding city leaders and developers have continued in this tradition by the setting aside of natural areas, the planting of trees and shrubs, and with other beautification efforts. The forest of the city should be preserved and enhanced, to the maximum extent reasonably feasible, for future generations. Mature trees, if destroyed, can be replaced only after generations of time. Any landscaping plan developed to meet the requirements of this section should strive to preserve and utilize the existing trees as much as possible. One of the purposes of this section is to encourage and provide incentives for the preservation of existing trees on developmental tracts. The vital role of trees and other plants in the earth's ecology is well known. This section does provide that an alternative plan can be approved by the planning commission where strict compliance with a subsection of the ordinance is not achieved.

(b) *Definitions.* The following words, terms and phrases, when used in this section, shall have the meanings ascribed to them in this subsection, except where the context indicates a different meaning:

- (1) *Alternate landscaping plan* means an approved landscaping plan that deviates from the minimum standards set forth in this section.

- (2) *Arborist, qualified* means an individual trained in the care of trees and shrubs that is a certified member of the International Society of Arboriculture or a member of the American Society of Consulting Arborists.
- (3) *Building site* means the tract, parcel or lot of land area being developed.
- (4) *Clear-cutting* means the indiscriminate removal of protected trees from a site or tract.
- (5) *Critical root zone* means the area of native soil around a tree defined by a concentric circle with a radius equal to the distance from the trunk to the outermost portion of the drip line (See city development manual).
- (6) *Damage or damaged* means to "damage" a tree means to take any action which could result in a tree's death, either immediately or after a reasonable period of time. Some examples of such action, which are not intended to limit this definition, are as follows: severing the main trunk or large branches or large roots, girdling, poisoning, carving, mutilating, touching with live wires, piercing with nails or spikes, crushing or exposing the roots, digging or drilling any hole larger than three (3) cubic feet (or a trench) within the critical root zone, covering a substantial part of the critical root zone or compacting a substantial part of the soil in the critical root zone.
- (7) *DBH* means diameter at breast height (DBH), is the tree trunk diameter measured in inches at height of fifty-four (54) inches above ground level.
- (8) *Development manual* means the reference manual containing standards, specifications, requirements, and other information required by the city for conformance to the city code. A copy is maintained in the office of the city secretary and the engineering department.
- (9) *Diameter* means the measurement of a tree at one (1) foot above ground level.
- (10) *Drip line* means the periphery of an area underneath a tree which would be encompassed by the perpendicular lines dropped from the outermost edges of the crown of the tree.
- (11) *Ground cover plants* means no minimum size is required but the planting is to be done so as to develop full coverage within eighteen (18) months.
- (12) *Interior of the parking lot* means and will be considered to be all areas within the perimeter of the parking area, including areas bounded by the perimeter line when extended to their intersecting points, provided the area does not exceed an eighteen-foot by eighteen-foot square. Any area within the perimeter, which could be used as a parking space, may be considered for use as interior for the use of landscaping.
- (13) *Landscape development* means trees, shrubs, ground cover vines or grass installed in planting areas, having a minimum of ten (10) square feet of actual plantable area and a minimum inside dimension on any side of eighteen (18) inches.
- (14) *Large tree* means a tree of a species which normally reaches a height of at least thirty (30) feet or more upon maturity.

- (15) *Permeable area* means an area that is not covered with asphalt or concrete, or other impervious material.
- (16) *Private property* means any industrial, commercial, business, multifamily or town home site development.
- (17) *Public property* means any land owned by the city, including street rights-of-way and yards around public buildings.
- (18) *Screening* means any method of visually shielding or obscuring one (1) land use from another, and shall meet minimum requirements that provide a year round visual obstruction.
- (19) *Shrubs* means self-supporting, woody, evergreen species as normally will grow in the county.
- (20) *Small tree* means a tree of a species which normally reaches a height of not less than fifteen (15) feet upon maturity.
- (21) *Tree* means any self-supporting, woody perennial plant which will attain a trunk diameter of two (2) inches or more when measured at a point six (6) inches above ground level.
- (22) *Tree, protected.*
 - a. Any tree that has been shown as an existing tree to be retained on an approved landscaping plan that is listed in the approved plant list in the development manual that has a diameter of six (6) inches or greater measured at fifty-four (54) inches above ground. For a multi-trunk tree, the diameter shall be the total diameter of the largest trunk plus one-half (1/2) of the diameter of each additional trunk; or
 - b. Any tree that is on undeveloped property that is listed in the approved plant list in the development manual that has a diameter of twelve (12) inches or greater measured at fifty-four (54) inches above ground. For a multi-trunk tree, the diameter shall be the total diameter of the largest trunk plus one-half (1/2) of the diameter of each additional trunk.

(c) *Landscaping requirements.* This section shall be a minimum standard and shall apply in full to all property zones except E-1, R-1, R-2 and R-3 residential. For property zones E-1, R-1, R-2, and R-3 residential; only the "tree removal permit" requirements of subsections (c)(5)a, (c)(5)c, (c)(5)c.2, and (c)(5)c.3, shall apply, and then only for properties that are not platted.

- (1) *Minimum area.* No building permit shall be issued unless a minimum area, as shown below, of the building site not covered by a building or structure is devoted to landscape developed with landscaping which shall include greenery, shrubbery and trees, unless an alternate landscaping plan is approved.

<i>Total Area of Site</i>	<i>Required Landscape Development</i>
Up to 20,000 sq. ft.	7.5% of area not covered by building or structure

<i>Total Area of Site</i>	<i>Required Landscape Development</i>
20,000 to 200,000 sq. ft.	10% of area not covered by building or structure
Above 200,000 sq. ft.	12.5% of area not covered by building or structure

(2) *Number of trees.* The required number of trees on the building site based on the area of the site not covered by a building or structure shall be as follows, unless fewer trees are approved in an alternate landscaping plan under subsection (c)(8):

a. Less than 3,000 square feet	0
b. 3,000—7,000	1
c. 7,001—10,000	2
d. 10,001—20,000	3
e. 20,001—30,000	4
f. 30,001—40,000	6
g. 40,001 or greater, per 20,000 sq. ft., rounded to the next highest whole tree.....	3

(3) *Approved plants.*

- a. Trees and shrubbery shall be limited to those published on the approved list in the development manual and reviewed annually by the city's beautification commission and planning commission.
- b. If a subdivider wishes to plant a tree that is not on the approved list and have it count towards the number of trees required under this section or in an approved alternate landscaping plan, the subdivider shall give specific reasons as to why the subdivider's business cannot use the trees on the approved list. When deciding whether to allow a subdivider to deviate from the approved tree list, the planning commission shall take into account such factors as the substitute plants' wind resistance, roots, height, and suitability for the local climate, and the type of business enterprise—such as a business that regularly displays its products outdoors.

(4) *Minimum diameter.*

- a. Large trees planted to meet the requirements set forth herein shall be a minimum of thirty-gallon size with a minimum diameter of three (3) inches as measured one (1) foot above the ground level.
- b. Small trees planted to meet the requirements set forth herein shall be a minimum of fifteen-gallon size with a minimum diameter of two (2) inches as measured one (1) foot above the ground level.
- c. Trees planted to meet the requirements of this subsection shall be a minimum of fifty (50) percent large trees, unless a smaller size is approved in an alternate landscaping plan.

(5) *Tree preservation guidelines.*

- a. No clear-cutting of land is allowed. Prior to construction or development on a site that contains one (1) or more protected trees, a landscaping plan or alternate landscaping plan must be approved by the city or in the case of E-1, R-1, R-2, and R-3 zoned property a plat must be approved by the city.
- b. All reasonable efforts shall be made by subdividers and developers to preserve protected trees. When a tree is to be preserved there it shall be protected under the following conditions:
 1. No materials intended for the use in construction or waste materials accumulated due to excavations or demolition shall be placed within the limits of the critical root zone.
 2. No equipment shall be cleaned or other foreign materials deposited or allowed to flow overland within the critical root zone of a protected tree. This includes without limitation, paint, oil, solvents, asphalt, concrete, mortar or similar materials.
 3. No signs, wires or other objects, other than those of a protective nature shall be attached to any protected tree. However, lighting of a decorative nature may be attached to a protected tree. The lighting shall be attached in a manner as not to damage the protected tree.
 4. No vehicular and/or construction traffic or parking shall take place within the limits of the critical root zone of any protected tree other than on an existing paved surface. This restriction does not apply to access within the critical root zone for purposes of clearing underbrush, establishing the building pad and associated lot grading, vehicular traffic necessary for routine utility maintenance or emergency restoration of utility service or routine mowing operations.
 5. Grade changes shall be allowed within the limits of the critical root zone of any protected tree only upon approval by the city.
 6. No paving with asphalt, concrete or other impervious materials shall be placed within the critical root zone of a protected tree.
 - i. Any existing paved surfaces within the critical root zone of a protected tree may be replaced or maintained.
 7. In those situations where a protected tree is within fifty (50) feet of a construction area, a protective fence, minimum of four (4) feet in height, shall be erected and maintained outside of the critical root zone of each protected tree or tree group.
 8. No protected tree shall be pruned in a manner which would reasonably lead to the death of the tree. This section is not intended to require a tree removal permit for reasonable pruning performed or contracted to be performed by the owner of the tree.

- c. *Tree removal permit.* No person, directly or indirectly, shall cut down, destroy, remove or move, or effectively destroy through damaging, any protected tree without first obtaining a tree removal permit, except as otherwise specified in this section. The application for a tree removal permit shall be submitted on a form provided by the city. Tree removal permits may only be issued when:
 - 1. The proposed removal is consistent with an approved landscaping plan; or
 - 2. The proposed removal is limited to a diseased or damaged tree, which is beyond the point of recovery or in danger of falling and removal of a diseased trees as required to reduce the chance of spreading the disease to adjacent, healthy trees. In disputed cases, the city may require the owner to provide the written opinion of a qualified arborist to the city; or
 - 3. The proposed removal is on unplatted property that is zoned E-1, R-1, R-2, or R-3 and the cumulative removal of protected trees including the proposed removal and trees removed during the five-year period preceding the request is less than ten (10) percent of the protected trees on the property. The determination of the number of protected trees on the property may be estimated and does not require a survey of the property.

- d. *Tree removal permit exceptions.* No tree removal permit is required when:
 - 1. During the period of an emergency, such as a hurricane, tornado, storm, flood or other natural disaster, the requirements for a tree removal permit are waived as deemed necessary by the emergency management coordinator or other designee of the city manager.
 - 2. In the pursuit of maintenance and installation of its facilities, registered users of rights-of-way acting in accordance with the provisions of article II of [chapter] 95 of the Code of Ordinances shall not be required to obtain tree removal permits.

- e. *Tree preservation credit.* Landscaping plans that preserve protected trees shall be given credit toward the total number of trees required as shown below, unless an alternate landscaping plan is approved:

<i>Diameter of Existing Tree (inches)</i>	<i>Credit Against Tree Requirement</i>
5—9	2.0 trees
9½—15	3.0 trees
15½—30	6.0 trees
30½ or greater	12.0 trees

- 1. If protected trees, shown [on] an approved landscaping plan, are removed then replacement trees are required.
- 2. Replacement trees shall be planted in accordance with the provisions of this chapter per the following rates:

<i>For Each Protected Tree to be Removed</i>	<i>Required Size and Number of New Replacement Trees</i>
6-inch DBH to 12-inch DBH	Minimum 3-inch DBH, equivalent to 100 percent of DBH removed

<i>For Each Protected Tree to be Removed</i>	<i>Required Size and Number of New Replacement Trees</i>
Greater than 12-inch DBH	Minimum 4-inch DBH, equivalent to 100 percent of DBH removed
Greater than 30-inch DBH	Minimum 6-inch DBH, equivalent to 100 percent of DBH removed

3. Replacement trees shall be a minimum height of seven (7) feet, measured at ground level, at the time of planting.
 4. No more than thirty-five (35) percent of the number of replacement trees shall be of the same species when twelve (12) or more trees are required.
 5. Acceptable types of replacement trees are designated in the approved tree list, in the development manual.
 6. The replacement trees shall be located on the subject site whenever possible. However, if there is not a suitable location for the replacement trees on the subject site the city council or their designee may approve the planting of the replacement trees within a public right-of-way, public park land or any other publicly owned property.
 7. Subdividers are required to replace any replacement trees that die within two (2) years of the date they were planted.
- (6) *Buffering and screening.* Screening shall conform to sections 110-168, 110-171 and 110-172 of this Code.
- (7) *Landscaping plan.* A landscaping plan shall be submitted. For properties less than two (2) acres, the landscaping plan shall be submitted to the building official. For properties two (2) acres or greater, a landscaping plan shall be submitted in conjunction with preliminary plat for approval by the planning commission. The landscaping plan required under this section must contain the following information:
- a. Location, DBH, and type of all existing protected trees on the lot or having thirty (30) percent or more of their critical root zone on the lot and other natural features, and delineation of which trees or natural features are to be retained.
 - b. Location, height and material of proposed screening and fencing, with berms to be delineated by one-foot contours.
 - c. Location and dimension of proposed landscaping development.
 - d. A description of trees, shrubs, ground cover plants, shown on the plan, names, location, quantities, size (diameter and/or container), heights, spread and spacing.
- (8) *Alternate landscaping plan.*
- a. The planning commission may approve an alternate landscaping plan which is not in strict compliance with the requirements of this section. The alternate landscaping plan must meet the purposes of this section as determined by the planning commission. The subdivider must provide the planning commission with specific facts that explain (1) why the subdivider's business site or type of

business makes complying with the requirements of this section excessively burdensome, and (2) why the alternate landscaping plan is the best substitute. In making the determination, the planning commission may:

1. Consider the existing trees to be preserved; the topography, shape, size or other natural features of the property; the suitability of any alternative screening or buffering proposal;
 2. Consider the type of business that occupies or will occupy the site, prior unsuccessful attempts to comply with this section, any unusual features of the property or of existing landscaping, and other similar factors.
 3. Award credit against the tree requirement of subsection (5) for alternate landscaping plans that preserve existing trees and natural settings or beauty.
 4. Consider easements and rights-of-way which have resulted in the request for the alternate landscaping plan.
 5. Alter the number of trees required and the size of trees required based on the type of business that will occupy the site (for example, a business which regularly displays its product for sale outdoors).
- b. The city staff may approve an alternate landscaping plan that is not in strict compliance with the requirements of this section on developmental tracts of less than two (2) acres, provided that all of the rules under subsection (c)(8)a. are complied with.
- (9) *Replacement of dead landscaping plants.* If any required landscaping tree, shrub or ground cover plant should die, the subdivider shall replace these plants in compliance with subsections (4) and (5) of this subsection by the end of the next planting season. If the plants are dying due to a required size or type of plant required under this section, the subdivider may request an alternate landscaping plan from the planning commission. The subdivider must provide the planning commission with specific facts as to why the size or types of plants cannot sustain life on the subdivider's site as well as the requirements listed in subsection (8)(a).
- (10) *Replacement of existing landscape development.* Any major modification to the existing landscape development plan must be approved by the city's building official.
- (11) *City property.* Requirements of this section shall apply to land owned or developed by the city.
- (d) *Parking lot requirements.*
- (1) *Interior landscaping of parking lots.*
- a. Any parking lot to be constructed on a tract of property governed by this section that contains twenty (20) or more spaces shall be subject to this subsection.

- b. Landscaping is not required for interior of the parking lots. For a reduction in parking, as required by section 110-162 of the Zoning Code, each percent over the first five (5) percent may be reduced by that same percentage up to a twenty (20) percent maximum reduction in parking spaces.
- (2) *Tree requirements.* When landscaping is provided to decrease the parking spaces required under section 110-162 of the Zoning Code, one (1) small tree shall be required for every ten (10) parking spaces of each parking lot that contains twenty (20) or more spaces. Each island shall have a minimum of one hundred (100) square feet of landscaped development and shall have at least one (1) tree. The formula used to calculate the number of islands will be the total parking spaces divided by ten (10). Those islands may be grouped or separated. Some flexibility may be used provided the parking lot is broken by landscaped island and the intent of this section is met.
- (3) *Distribution.* The landscaped areas for parking lots shall be distributed throughout the parking lot. Adjustments to this requirement may be approved by the planning commission.
- (4) *Inclusive of minimum requirements.* The landscaping area for the interior of parking lots provided for herein shall be inclusive of the minimum landscaped area requirement set forth in subsection (c) herein. The requirements set forth in this section are exclusive of other screening and landscape requirements for parking lot perimeters set forth in subsection (b) herein.
- (e) *Screening of parking lots.*
- (1) *Perimeter trees.* The perimeter of each parking lot, excluding driveways, which fronts upon or is adjacent to a public street other than a public alley shall include trees. The number of trees required under subsection (c)(2) shall be one (1) tree for every thirty-foot interval of parking lot frontage, starting at end points with a tree. Trees planted in accordance with this section shall not interfere with the existing utilities, roadways, sidewalks or street lights. Trees planted to meet the requirements of this subsection shall be a minimum of fifty (50) percent large trees. However, if power line easements or other easements or impediments make use of large trees impractical or unreasonable as to a particular tract, the planning commission may entertain alternate landscaping under subsection (c)(8) herein. Alternate plans, particularly those that focus on preservation of existing trees to meet the requirements of this section, can be approved in conformance with subsection (c)(8).
- (2) *Perimeter screening.* The perimeter of each parking lot, excluding driveways, which fronts upon or is adjacent to a public street, other than a public alley, shall contain a visual screen of a minimum height of three (3) feet, measured from the surface of the parking lot perimeter. The screening must extend along the entire street frontage of the parking lot exclusive of driveways and access ways at points of ingress and egress to and from the parking lot and visibility triangles. Sites adjacent to a city parkway (twenty-five (25) feet in width or greater) may use a perimeter design which includes berms, shrubs and trees in a cluster format to where a solid line of landscaping is not

required. This will allow flexibility in the design of perimeter planting to take advantage of city parkway. Also, at the discretion of the planning commission, sites adjacent to extra wide right-of-way where the pavement is over twenty-five (25) feet from the property line, may also take advantage of this depth and do as is described above. Alternate plans, particularly those that focus on preservation of existing trees, to meet the requirements of this section herein can be approved in conformance with subsection (c)(8).

- (3) *Screening materials.* The perimeter screening shall be constructed of at least one (1) of the following materials:
- a. Earthen berm which has a slope not to exceed one (1) foot in height for each three (3) feet in width to be used in conjunction with shrubs, trees and other landscaping materials.
 - b. Evergreen shrubbery and trees.
 - c. A solid stone or masonry fence used in conjunction with shrubs, trees and other landscaping materials.

(f) *Easements.*

- (1) Trees and shrubs shall not be placed on city easements, utility easements or city parkways without the approval of the city. Other plantings may be planted with the permission of the city, subject to the city's right to remove the plantings if entrance to the easement is needed.
- (2) City-owned easements do not count as area to be landscaped by the subdivider or developer, nor do they count as credit toward landscaping requirements for the remainder of the tract unless there is alternative landscaping under subsection (c)(8) herein.
- (3) Easements on land owned by landowners may be counted toward the landscaping percentage requirements.

(g) *Maintenance.* All landscaping required herein shall be maintained in a healthy, growing condition at all times. The subdivider shall on a regular basis mow the grass, irrigate, fertilize, prune and otherwise maintain all landscaped areas. The subdivider shall also keep all landscaped areas free of refuse and debris at all times.

(h) *Compliance with landscaping plan.* The subdivider shall implement and maintain the landscaped areas as described herein in accordance with the landscaping plan approved by the planning commission; and after implementation of the plan, the subdivider shall not deviate from the plan unless the subdivider receives approval from the planning commission.

(i) *Noncompliance of landscaping plan.* If the city's building official determines that the subdivider is not in compliance with the landscaping plan approved by the planning commission, said official shall give written notice of such noncompliance to the subdivider at the address of the property. Such notice shall contain a description of the noncompliance and require compliance within thirty (30) days of the date of receipt of the notice by the subdivider.

If the noncompliance is a result of trees, shrubs or ground cover dying, the subdivider shall comply with the landscaping plan by planting new trees, shrubs or ground cover by the end of the next planting season following the date of receipt of the notice; or if the notice is received during a planting season, the subdivider must comply by the end of that planting season.

(j) *Irrigation.* The subdivider shall be required to irrigate the landscaped areas by one (1) of the following methods:

- (1) A fully automatic or manual underground irrigation system.
- (2) Hose attachment within fifty (50) feet of all landscaped area.
- (3) Installation of quick coupler system with a valve one hundred (100) feet on center.

(k) The plans that have been approved by the planning commission (or in cases of less than two (2) acres, by city staff), prior to May 15, 2000, shall be subject to the provisions of the Code in effect on May 14, 2000.

(Ord. No. 81-824, § 1, 11-2-81; Ord. No. 86-1004, § 1, 5-19-86; Ord. No. 92-1202, § 1, 6-15-92; Ord. No. 00-1627, § 1, 5-9-2000; Ord. No. 01-1656, § 1, 4-2-2001; Code 1958, § 19-9.2; Ord. No. 03-1735, § 1, 10-6-2003; Ord. No. 05-1777, § 1, 3-1-2005; Ord. No. 11-1973, § 1, 10-17-2011; Ord. No. 13-2017, § 1, 8-5-2013)

Chapters 91–93

RESERVED



Chapter 110

ZONING*

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State law references—Municipal zoning authority, V.T.C.A., Local Government Code ch. 211; procedures for amending zoning ordinance, V.T.C.A., Local Government Code §§ 211.002, 211.006, 211.007.

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- Sec. 110-67. E-1, single-family residence, estates.
- Sec. 110-68. R-1, single-family residence.
- Sec. 110-69. R-2, single-family residence.
- Sec. 110-69.1. R-2A, single-family residence.
- Sec. 110-70. R-3, two-family residence.
- Sec. 110-71. R-4, multifamily residence.
- Sec. 110-72. B-1, neighborhood business.
- Sec. 110-73. B-1A, professional offices.
- Sec. 110-74. B-2, central business.
- Sec. 110-75. B-3, institutional zone.
- Sec. 110-76. C-1, commercial.
- Sec. 110-77. C-2, commercial.
- Sec. 110-78. M-1, light industrial.
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- Sec. 110-80. T-1, single-family residence, townhouse.
- Sec. 110-81. PUD, planned unit development.
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- Sec. 110-173. Fences—Construction permits required.
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- Sec. 110-174. Surfacing of off-street parking areas.
- Sec. 110-175. Lot widths.
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ARTICLE I. IN GENERAL**Sec. 110-1. General purpose.**

The purposes of this chapter shall be to:

- (1) Promote the desirable development of all land.
- (2) Protect the desirable development.
- (3) Promote stability of development.
- (4) Enhance and protect building and land values.
- (5) Protect the public health and general welfare.

(Ord. No. 259, 7-17-61; Code 1958, § 25-1)

State law reference—Zoning regulations to be designed to carry out certain planning purposes, V.T.C.A., Local Government Code § 211.004.

Sec. 110-2. Definitions.

The following words, terms and phrases, when used in this chapter, shall have the meaning ascribed to them in this section, except where the context clearly indicates a different meaning. Words in the present tense include the future; words in the singular number include the plural and words in the plural number include the singular. The word "shall" is mandatory and not discretionary; the word "may" is permissive.

Accessory building means a building subordinate to the principal building on a lot. Where a wall or portion of a wall and roof is common to the principal building, the accessory building shall be counted as part of the principal building.

Accessory structure means an object constructed or erected on a lot that is subordinate to the principal building, such as an accessory building, fence, swimming pool, or deck.

Accessory use means land and/or building uses which are allowed in a zone only when they are clearly subordinate to and in conjunction with a permitted use.

Apartment hotel means a building with three (3) or more apartments and with the dining or cooking facilities separate.

Apartment house or rooming house means a building with three (3) or more apartments and without separate dining or cooking facilities.

Boardinghouse means a building other than a hotel, apartment hotel or apartment house where lodging with meals is offered for compensation.

Building means any structure built for the support, shelter or enclosure of persons, animals, chattels or movable property.

Building line means a line, usually parallel to street or property line, beyond which buildings shall not be erected. Once a building is legally erected under the provisions of this

chapter, the front of the building shall be considered to be the building line for that building for the purpose of determining placement of all fences, except ornamental fences as outlined in section 110-171.

Bungalow court means a development consisting of two (2) or more one-family or two-family dwellings on a single tract where the building may face onto a courtyard or mall rather than on the street.

Carport means a structure designed for the shelter or storage of motor vehicles that is open on at least two (2) sides. A carport that is open on only one (1) side shall be treated as a garage.

Church means a facility principally used for people to gather together for public worship, religious training, or other religious activities. This includes monasteries, convents, rectories, etc. This does not include home meetings or other religious activities conducted in a privately occupied residence.

Cinerarium means a durable, fireproof structure containing niches used or intended to be used to contain cremains.

Common area means an area held, designed and designated principally for the common use of the occupants of a townhouse project.

Conditional uses means land and/or building uses which, because they may generate special problems such as excessive traffic, excessive noise or other conditions, may in certain cases prove undesirable for a certain zone.

Cremains means cremated human remains.

Customary home occupations means an occupation which may be conducted in the home without changing the character of the residential use and which is incidental and secondary to the residential use. See section 110-161.

Day care facility means a facility that is licensed or registered with the state which regularly provides care for persons less than twenty-four (24) hours a day.

Driveway means a private roadway leading from a public street or right-of-way to a garage, carport or parking area.

Duplex. See Dwelling, two-family.

Dwelling, one-family, means a detached building having accommodation for and occupied by not more than one (1) family.

Dwelling, two-family, means a detached building having separate accommodations for and occupied by not more than two (2) families.

Facility means a building or group of buildings that exist to serve a particular purpose, such as rehabilitation and training.

Family means one (1) or more people domiciled together in one (1) dwelling unit and who are living together as a single housekeeping unit and sharing common living, cooking, and eating facilities. This definition shall not include:

- (1) Any society, club, fraternity, sorority, association, lodge, or similar organizations;
- (2) Boarding houses, lodging houses, or hotels; or
- (3) Supervised living facilities or other similar facilities.

Floor area means the total horizontal area of the several floors of a structure covered by a roof, exclusive of garages, stoops, carports and unenclosed porches; same as living area.

Footprint means the gross horizontal area of the first floor, as determined by the most recent survey of the property, of a principal building, including attached garages and carports.

Garage means a structure used for the shelter or storage of motor vehicles.

Garden structure means a structure that is used only for decorative purposes, such as a trellis or statue.

Gross floor area means the total horizontal area of the several floors of a structure covered by a roof, inclusive of garages, stoops, carports, unenclosed porches and other similar areas.

Health services (medical, dental or optical) means the care, diagnosis, and treatment of persons by health professionals on a non-emergency and out-patient basis.

Height of building means the distance from average grade or curb level to the highest point of the roof, but not including chimneys, towers, spires and the like.

Hotels means a building containing rooms intended or designed to be used, rented or hired out to be occupied or which are occupied for sleeping purposes by guests and where only a general kitchen and dining room are provided within the building or in an accessory building.

Incidental livestock means livestock, not including pigs or goats, and poultry kept for the use of or the consumption by the occupants of the lot; provided however, that no corrals, stables, chicken houses or their yards shall be located closer than fifty (50) feet from any property line, and that they shall comply with the sanitary regulations; and that the number of livestock and poultry and their manner of keeping do not constitute a nuisance to the neighborhood.

Living area means gross horizontal areas of the several floors of a structure covered by a roof exclusive of garages, carports and unenclosed porches; same as floor area.

Lot frontage means the width of the lot at either front line or building line, whichever is greater.

Lot line means the boundaries of any lot as described on the subdivision plat.

Medical office means the use of a site for the consultation, diagnosis or therapeutic, preventative, or corrective personal treatment by doctors, dentists, medical or dental laboratories, chiropractors, masseurs, pharmacists, veterinarians or similar practitioners of medical and healing arts, licensed for practice by the state.

Motel has the same definition as hotel.

Niche means a space in a cinerarium used or intended to be used for the placement of cremains in an urn or other container.

Off-street parking space means an area on a lot or site, other than on a public street or alley, that is permanently reserved for the temporary parking of a motor vehicle.

Playfield or stadium means an athletic facility or stadium owned and operated by a public or private agency for the general public including a baseball field, golf course, football field or stadium.

Principal building means the largest habitable building on a residential lot.

Private yard means an area of open space within a townhouse but which is unoccupied and unobstructed by any portion of a structure.

Recreation center means a building or complex of buildings housing community recreation facilities.

Recreational business means an establishment that is primarily engaged in the operation of sports and recreation services such as baseball instruction, basketball instruction, handball courts, and rock climbing centers.

Religious institution means any place of worship for the carrying on of religious activities which consists of one (1) or more permanent buildings.

Residential care facility means a building containing services for:

- (1) Convalescent and nursing facilities and related institutions licensed under V.T.C.A., Health and Safety Code Ch. 242.
- (2) Continuing care facilities licensed under V.T.C.A., Health and Safety Code Ch. 246.
- (3) Assisted living facilities licensed under V.T.C.A., Health and Safety Code Ch. 247.
- (4) Intermediate care facilities for individuals with an intellectual disability licensed under V.T.C.A., Health and Safety Code Ch. 252.
- (5) Residential child care facilities licensed under V.T.C.A., Human Resources Code Ch. 42.

Screen enclosure means a metal structure that has no roof and is completely encapsulated only by a fabric which allows the elements to pass freely through it.

Service shops means bakeries, beauty shops, restaurants, laundry agency, washateria, shoe repair, gasoline service, etc., but excluding auto repair, bus terminals, machinery repair and welding.

Self-storage facility or mini-warehouse means a facility from which space is leased to individuals for the exclusive purpose of storing property and such property is cared for and controlled by the tenant.

Setback means a minimum yard dimension measured from the lot line to the building or other structure.

Space means an area that is permanently reserved for the temporary parking of a motor vehicle.

Stacking lane means an area on a site with direct forward access to a service window or station of a drive-through facility or passenger drop-off/pickup.

Stacking space means an area in a stacking lane that is meant to be occupied by a single motor vehicle.

Street right-of-way means property either conveyed or dedicated to the public for use as a public street.

Structure means any object that is erected, constructed or installed by man that requires location in or on the ground or attachment to something having location on the ground having a definite pattern of organization, including buildings, the construction of buildings or accessory buildings, decks, decking or swimming pools, spas, hot tubs, saunas and other similar constructions or installations.

Supervised living facility means a residential facility that provides care, training, education, custody, treatment, or supervision for persons over the age of seventeen (17) who are not related by blood, marriage, or adoption to the owner or operator of the facility, whether or not the facility is operated for profit or charges for the services it offers. This definition does not include shelter, supervision, or rehabilitation services for former inmates of county, state, or federal correctional institutions and who require, upon release of said institution, a group residential setting to facilitate their transition back into society.

Swimming pool means a constructed pool, used for swimming or bathing, with over twenty-four (24) inches in depth or a surface area exceeding two hundred (200) square feet.

Temporary structure means a structure that is intended to be used ninety (90) days or less, that does not meet state and federal windstorm requirements, and that can be disassembled quickly.

Townhouse means a dwelling unit structure having a separate wall with one (1) or more adjoining dwelling unit structures.

Townhouse group means four (4) to ten (10) contiguous townhouses connected by common walls.

Townhouse project means a townhouse development or plan which is submitted and approved by a single special permit.

Water feature means a manmade body of water, such as an koi pond or fountain, that is not a swimming pool, lake, stream or river.

(Ord. No. 259, 7-17-61; Ord. No. 69-397, § 1, 7-7-69; Ord. No. 84-914, § 1, 2-20-84; Ord. No. 87-1048, § 1, 10-5-87; Ord. No. 88-1061, § 1, 5-2-88; Ord. No. 90-1143, § 1, 12-3-90; Ord. No. 92-1201, § 1, 6-15-92; Code 1958, § 25-2; Ord. No. 96-1384, § 3, 7-1-96; Ord. No. 08-1884, § 1, 7-7-2008; Ord. No. 10-1932, § 1, 3-15-2010; Ord. No. 10-1951, § 1, 12-6-2010; Ord. No. 11-1960, § 1, 6-6-2011; Ord. No. 14-2025, § 1, 6-2-2014; Ord. No. 14-2037, § 1, 4-7-2014; Ord. No. 15-2066, § 1, 6-1-2015; Ord. No. 16-2100, § 1, 5-2-2016; Ord. No. 17-2124, § 1, 2-6-2017; Ord. No. 17-2129, § 1, 4-3-2017)

Cross reference—Definitions generally, § 1-2.

Sec. 110-3. Administration generally.

(a) *Enforcing officials.* The provisions of this chapter shall be administered and enforced by the building official of the city.

(b) *Right of entry.* The building official or any duly authorized person shall have the right to enter upon any premises necessary to carry out his duties in the enforcement of this chapter.

(c) *Stop orders.* Whenever any building work is being done contrary to provisions of this chapter, the building official may order the work stopped by notice in writing served on any person engaged in doing or causing such work to be done, and any such person shall forthwith stop such work until authorized by the building official to proceed with the work.

(d) *Furnishing utilities.* No person or public utility shall furnish water, gas or electric energy to, nor make connection with, any building in the city which has been erected or structurally altered after July 17, 1961, unless and until such person or public utility shall have received from the building official, city secretary or city council notification that such erection or structural alteration of such building complies with this and other ordinances of the city.

(Ord. No. 259, 7-17-61; Code 1958, § 25-10)

Cross reference—Administration, ch. 2.

State law reference—Enforcement of zoning ordinance, V.T.C.A., Local Government Code § 211.012.

Sec. 110-4. Interim zoning of newly annexed territory.

(a) No permit for the construction of a building shall be issued by the building official in a territory where an ordinance has passed on the first reading, annexing same to the city, other than a permit which will allow the construction of a building permitted to be constructed in what is defined as R-1 single-family residence as defined in section 110-68. An application for any other use than that specified hereinabove shall be made to the building official and by him referred to the planning commission which acts as the zoning commission on the designation by the council for a consideration and recommendation to the city council. Whenever such recommendation is filed with the city council by the planning

commission, such classification and such recommendation shall be advisory in its nature and the council shall be at liberty to affirm it or allow such construction as the facts in their opinion may justify.

(b) No existing building in a territory where an ordinance has been passed on first reading, annexing the same to the city, not at that time lawfully used for business purposes, shall be altered, remodeled or constructed for business purposes without a permit from the city council. This permit shall be obtained under the same procedure set out in subsection (a) of this section.

(c) The owner, lessees, or any other person owning, controlling, constructing or directing the construction of any building or structure now in process of construction and which is incomplete at the time the land upon which it is situated is covered in an ordinance passed on first reading, annexing same to the city, before proceeding any further with the construction, alteration or completion thereof, shall apply to the building official for a permit authorizing further work on such building or structure and shall attach to such application for such permit plans and specifications relating to the construction of such building, or structure, which such application for building permit shall be promptly referred to the planning commission for consideration and the commission shall promptly thereafter file with the council its recommendation as to granting, modifying or rejecting such permit, the recommendation to be advisory, as stated in subsection (a) of this section. Such construction work shall be suspended until the permit provided for in this section has been issued, or until final zoning regulations have been adopted which permit the construction, use and occupancy of the structure or building.

(Ord. No. 259, 7-17-61; Code 1958, § 25-18)

Sec. 110-5. Permanent zoning of new territory.

The permanent zoning of newly annexed territory shall be handled in the same manner as amendments to the zoning ordinance provided under section 110-6 and the subsections thereunder.

(Ord. No. 259, 7-17-61; Code 1958, § 25-19)

Sec. 110-6. Amendments.

(a) *Requirements for change.* Whenever the public necessity, convenience, general welfare or good zoning practice justifies such action, and after consideration by the city council, city planning commission, zoning board of adjustment or the joint consideration of the planning commission and the city council, or by a petition by one (1) or more of the owners, optionees or lessees of property within the area proposed to be changed, the zoning of any specific property in the city may be changed pursuant to the provisions of this section.

(b) *Initiation of change.* A proposed change of zone may be initiated by the city council, city planning commission, zoning board of adjustment, or by a petition by one (1) or more of the owners, optionees or lessees of property within the area proposed to be changed.

(c) *Changing ordinance; public hearing required.* At any regularly scheduled meeting of the planning commission, the owners, optionees or lessees of property who desire a change of zone may appear and request that a public hearing be called to consider their petition. The city council may at any time request that the planning commission hold a special hearing to consider zoning matters. Written notice of all public hearings before the planning commission on proposed changes in classification shall be sent to owners of real property lying within two hundred (200) feet of the property on which the change in classification is proposed, such notice to be given not less than ten (10) days before the date set for hearing to all such owners who have rendered their property for city taxes as the ownership appears on the last approved city tax roll. Such notice may be served by depositing the same, properly addressed and postage paid, in the city post office. Where property lying within two hundred (200) feet of the property proposed to be changed is located in territory which was annexed to the city after final date for making the renditions which are included on the last approved city tax roll, notice to such owners shall be given by publication in the manner provided in subsection (d) of this section. After published notice has been given as required by subsection (d) of this section, the city council may hold a public hearing jointly with the planning commission, but after such joint hearing, the city council shall not take any action until it has received the final report of the planning commission. The city council shall, however, be able to call and hold a public hearing on its own to consider, approve or disapprove requests for changes whenever a majority of the entire council deem it necessary or appropriate, and a report from the planning commission concerning the same tract of land is not pending. The planning commission may also meet in its own capacity to hold public hearings, when required under this Code. The city planning commission may approve or disapprove any proposed change either in whole or in part. If approved in whole or in part, a recommendation in conformity with such approved change, shall be presented to the city council and an

ordinance approving such a change in whole or in part may be adopted by the council after a public hearing. If such proposed change is disapproved by the city planning commission, a report of its decision shall be made to the city council. The city council may then review the decision of the planning commission. If the city council is in favor of the proposed change, it may, after a public hearing, make such change in such ordinance by a majority vote of the entire membership of the city council. A joint public hearing of the planning commission and the city council shall satisfy this requirement.

(d) *Notice of public hearing by city council or by planning commission.* Notice of a public hearing by the city council or by the planning commission to consider proposed changes to this chapter shall be given by publication in the official paper of the city once a week for three (3) consecutive weeks. Such notice shall state the time, place and nature of such public hearing and such hearing shall not be held earlier than fifteen (15) days from the date of the first publication of such notice.

(e) *Passage of rezoning ordinances where written protest filed.* In case, however, of a written protest against such change, signed by the owners of twenty (20) percent or more either of the area of the lots or land included in such proposed change, or of the lots or land immediately adjoining the same and extending two hundred (200) feet therefrom, such amendment shall not become effective except by the favorable vote of three-fourths ($\frac{3}{4}$) of all the members of the city council. The provisions of subsection (d) relative to public hearing and official notice shall apply equally to all changes or amendments.

(f) *Restrictions.* Any prior deed restrictions or other prior restrictions placed on any lot or land that is the subject of a zoning change request shall be disclosed to the city planning commission and to the city council by the land owner or optionee of land, when a change is requested by such owner or optionee. Any restriction on land or lots which was agreed to by the owner or optionee of property at the time the change of zone is approved by the city council shall be entered in the council minutes as a part of the permanent record. If the land is undeveloped, the restriction shall be placed in the plat at the time of plat approval by the planning commission. A violation of this subsection constitutes a misdemeanor and shall be punishable in accordance with section 110-12.

(Ord. No. 259, 7-17-61; Ord. No. 74-519, § 1, 2-18-74; Ord. No. 74-524, § 1, 3-18-74; Code 1958, § 25-17)

State law reference—Procedures for amending zoning ordinance, V.T.C.A., Local Government Code §§ 211.002, 211.006, 211.007.

Sec. 110-7. Advertising costs.

Persons applying for variances and zoning amendments must pay for the cost of advertising for such requests.

(Ord. No. 259, 7-17-61; Code 1958, § 25-13; Ord. No. 14-2025, § 2, 6-2-2014)

Sec. 110-8. Nonconforming uses.

Any use or structure existing at the time of enactment or subsequent amendment of this chapter, but not in conformity with its provisions, may be continued with the following limitations. Any use or building which does not conform to this chapter may not be:

- (1) Changed to another nonconforming use;
- (2) Reestablished after discontinuance for six (6) months;
- (3) Extended except in conformity to this chapter; or
- (4) Rebuilt after damage exceeding two-thirds ($\frac{2}{3}$) of its fair sales value immediately prior to damage.

(Ord. No. 259, 7-17-61; Code 1958, § 25-14)

Sec. 110-9. Reserved.

Editor's note—Ord. No. 15-2074, § 1, adopted Aug. 3, 2015, repealed § 110-9, which pertained to building permits and derived from Code 1958, § 25-11; Ord. No. 259, adopted July 17, 1961; Ord. No. 76-593, § 1, adopted Aug. 2, 1976; Ord. No. 81-820, § 2, adopted Sept. 21, 1981; Ord. No. 14-2025, § 3, adopted June 2, 2014.

Sec. 110-10. Special permits.

The following land uses shall require approval of the planning commission instead of the building inspector because of special problems of traffic, parking safety or effect on surrounding property:

- (1) Public buildings erected by city, county, state, school district, federal or any other governmental body.
- (2) Airports, landing fields or airport facilities.
- (3) Water reservoirs, pumping station, water towers or artesian wells.
- (4) Radio or television transmitting or receiving towers taller than one hundred (100) feet, whether commercial or private.
- (5) Trailer camps.
- (6) Drive-in theaters.
- (7) Large scale developments, including housing projects and shopping centers, after submission to the planning commission of a site plan drawn to scale and showing the development in detail, including such essential requirements as parking facilities, location of buildings and uses to be permitted, and means of ingress and egress.

(8) Any of those uses which may be obnoxious or offensive by reason of emission of odor, dust, smoke, gas, noise, vibration and the like.

(9) Strip lighting.

(Ord. No. 259, 7-17-61; Code 1958, § 25-5; Ord. No. 94-1311, § 1, 10-3-94)

State law reference—Authority of local governments under Texas Clean Air Act, V.T.C.A., Health and Safety Code § 382.111 et seq.

Sec. 110-11. External lighting.

(a) *Purpose:*

(1) The purpose of this section is to amend the city's comprehensive zoning code to ensure that outdoor lighting does not (a) interfere with the safety and welfare of the community and does not (b) interfere with or endanger the public in traveling to and from on streets, and does not (c) interfere with the reasonable use and enjoyment of property. It is also the purpose of this section to encourage outdoor electrically powered illuminating devices, lighting design practices, and systems which will conserve energy, while preserving the natural environment while increasing nighttime safety, utility, security, and productivity.

(b) *Outdoor illuminating devices:*

(1) Generally, artificial outdoor or extended illuminating devices shall be installed in accordance with, and when permitted by, the requirements of this section.

(c) *Outdoor illuminating devices, in nonresidential zones:*

(1) In all nonresidential zones the proposed lighting plan shall be reviewed by the city engineer and be included as part of the site plan, under section 90-35 of the city subdivision code. The owner shall stay in compliance with the lighting requirements of the site plan and shall not deviate from such requirements unless the owner receives approval from the planning commission.

(2) When a nonresidential zone is located adjacent to a residential zone, all external lighting shall be shielded to prohibit illumination at the boundary of the nonresidential zone and the residential zone in excess of one-fourth (0.25) footcandles of average general light overflow or one-half (0.50) footcandles at any point on such boundary. In all cases, exterior lighting shall be installed, hooded, regulated, and maintained by the owner or person in control thereof in such manner that the direct beam of any such light will not glare upon any lot, tract, or parcel of land other than that upon which it is situated.

(d) *Outdoor illuminated devices in other zones:*

(1) Lighting in R4, PUD, PURZ, or MH-1 zones shall also comply with this section.

(e) *Special permits:*

(1) Laser source light, strobe light and similar high intensity light sources for advertising or entertainment shall be prohibited in any zone, unless a permit is obtained from the building official for specific events and timeframes.

- (2) Searchlights shall be prohibited in any zone, unless a permit is obtained from the building official for specific events and timeframes.

(f) *Phased in compliance.*

- (1) For those tracts that have lighting that does not conform to the provisions of this section at the inception of the section (January 5, 1998), such lighting shall either be abated, removed or modified to conform with the code as determined by the city building official, within a period of two (2) years, from the effective date of this adoption of this section (January 5, 1998).
- (2) After the enactment of this section, the city administrator shall as soon as practicable, survey the city for lighting which does not conform to the requirements of this Code. Upon determination that lighting is nonconforming, the administrator shall use reasonable efforts to so notify, in writing, the user or owner of the property on which the lighting is located of the following:
 - a. The nonconformity of the lighting; and
 - b. The need to conform within two (2) years, as well as the potential penalties for failure to do so. If the user or owner of the property cannot be located, the notice may be affixed in a conspicuous place to the premises with which the lighting is associated.

(g) *Exemptions:*

- (1) Strip lighting approved by the planning commission under section 110-10(9) shall be exempt from this section.
 - (2) Emergency lighting by police, fire, and rescue authorities is exempt from this section.
- (Ord. No. 98-1443, § 1, 1-5-98)

Sec. 110-12. Certificate of occupancy.

(a) *Required.* No change in the use or occupancy of land nor any change of use or occupancy in an existing building other than for single-family residences or for farming or gardening shall be made, nor shall any new building be occupied for any purpose other than for single-family residence use until a certificate of occupancy has been issued by the building official.

(b) *Record kept by building official.* A record of all certificates of occupancy shall be kept on file in the office of the building official, and copies shall be furnished on request to any person having a proprietary or tenancy interest in land or a building affected by such certificate of occupancy.

(c) *Nonconforming uses must apply for certificates.* A certificate of occupancy shall be required of all nonconforming uses of land or buildings existing on July 17, 1961. Application for such certificate of occupancy for nonconforming uses shall be filed with the building official by the owner or lessee of the land or building occupied by such nonconforming use not later

than July 17, 1962. It shall be the duty of the building official to issue a certificate of occupancy for nonconforming use. Failure to apply for such certificate of occupancy for nonconforming use shall be considered evidence that such nonconforming use did not exist on July 17, 1961.

(Ord. No. 259, 7-17-61; Code 1958, § 25-12; Ord. No. 98-1443, § 1, 1-5-98)

Sec. 110-13. Penalty.

(a) Any person who shall violate any of the provisions of this chapter, or who shall build, alter, occupy or use any building or property in violation of any statement or plan submitted and approved under this chapter shall be guilty of a misdemeanor and upon conviction thereof shall be fined in any sum not to exceed two thousand dollars (\$2,000.00). Each day such violation shall be continued, or shall be allowed to continue to exist, shall constitute a separate offense.

(b) The owner of any building or property or part thereof where anything in violation of this chapter shall be placed or shall exist, and any architect, builder, contractor, agent, attorney or other person employed in connection therewith and who has assisted in the commission of such violations, shall be guilty of a separate offense, and upon conviction thereof shall be fined in any sum not to exceed five hundred dollars (\$500.00).

(c) In addition to the remedies provided for in this section the enforcing officer may, in case any buildings or structures are erected, constructed, reconstructed, altered, repaired, converted or maintained, or any building, structure or land is used in violation of this chapter, institute any appropriate action or proceedings to prevent such unlawful erection, reconstruction, alteration, repair, conversion, maintenance, or use to restrain, correct or abate such violation, to prevent the occupancy of such building, structure, or land, or to prevent any illegal act, conduct of business or use in or about such premises.

(Ord. No. 259, 7-17-61; Ord. No. 83-907, § 10, 11-21-83; Ord. No. 88-1060, § 10, 1-18-88; Code 1958, § 25-15; Ord. No. 98-1443, § 1, 1-5-98)

Sec. 110-14. Conditional use permit.

To apply for a conditional use permit, the applicant must notify the engineering department in writing and supply the following information:

- (1) Type of conditional use desired;
- (2) Site plan showing ingress and egress to the conditional use;
- (3) Hours the conditional use will be operated or used;
- (4) Types of noise the conditional use will generate;
- (5) Amount of traffic the conditional use will generate; and
- (6) Any other information required by the engineering department.

(Ord. No. 14-2025, § 4, 6-2-2014)

Sec. 110-15. Same—Restrictions.

(a) Only the conditional uses listed in each zone are allowed.

(b) Applicants must apply for each conditional use separately, and each use must attain approval of the planning commission separately. The planning commission's approval of a conditional use does not mean that the use becomes a permitted use for that zone.

(Ord. No. 14-2025, § 4, 6-2-2014)

Sec. 110-16. Same—Actions.

(a) The planning commission may approve, conditionally approve, or deny an application for a conditional use. The planning commission may also impose requirements and conditions on the location, construction, operating hours, maintenance, and operation of the conditional use in order to protect adjacent properties.

(b) If the conditions of the permit are not being complied with, the planning commission may revoke the permit. The permit holder shall receive at least ten (10) days written notification of the meeting at which the planning commission will consider the revocation.

(Ord. No. 14-2025, § 4, 6-2-2014)

Sec. 110-17. Same—Expiration.

The conditional use must be operational within one (1) year of the date the permit is granted unless the planning commission sets a different time limit.

(Ord. No. 14-2025, § 4, 6-2-2014)

Secs. 110-18—110-35. Reserved.

ARTICLE II. BOARD OF ADJUSTMENT*

Sec. 110-36. Powers, duties generally.

The zoning board of adjustment of the city shall have all of the powers and duties granted in section 8.04 of the home rule Charter of the city, as well as this article.

(Ord. No. 259, 7-17-61; Ord. No. 79-684, § 1, 2-19-79; Code 1958, § 25-20(a))

Sec. 110-37. Composition, compensation.

The zoning board of adjustment shall consist of five (5) members who shall be residents of the city and who shall serve without compensation.

(Ord. No. 259, 7-17-61; Ord. No. 79-684, § 1, 2-19-79; Code 1958, § 25-20(b))

*State law references—Board of adjustment, V.T.C.A., Local Government Code § 211.008 et seq.; appeal to board of adjustment, V.T.C.A., Local Government Code § 211.010.

Sec. 110-38. Appointment, terms; ex officio members.

All members of the zoning board of adjustment shall be appointed by the city council. Two (2) such members to be appointed in each odd-numbered year, and three (3) such members to be appointed in each even-numbered year, the appointments to be made each year within thirty (30) days following election. The term of office of each such member shall be two (2) years. In addition, a representative of the city manager shall be an ex officio member of the board and shall serve the board in an advisory capacity, but shall have no voting rights, and shall attend meetings as requested.

(Ord. No. 259, 7-17-61; Ord. No. 79-684, § 1, 2-19-79; Code 1958, § 25-20(c))

Sec. 110-39. Officers; rules of procedure.

A board chairman and secretary shall be elected by the board annually, and the board shall establish its own rules and procedures which shall include the following:

- (1) A quorum shall consist of four (4) voting members of the board, and an affirmative vote of four (4) members of the board shall be necessary to pass upon pending questions, or to reverse any order, requirement, decision or determination of any administrative official, or to decide in favor of the applicant on any matter upon which the board may or is required to pass under this section, the chairman being entitled to vote upon all questions.
- (2) Meetings shall be held as needed.
- (3) A record of all proceedings shall be kept, which records shall be filed with the person performing the duties of the city secretary.
- (4) Notice of meetings of the zoning board of adjustment shall be provided to persons living within two hundred (200) feet of the property that is the subject of a variance request or an appeal from a decision of an administrative official.

(Ord. No. 259, 7-17-61; Ord. No. 79-684, § 1, 2-19-79; Code 1958, § 25-20(e); Ord. No. 97-1413, § 1, 3-3-97)

Sec. 110-40. Appeals.

Appeals to the board of adjustment shall be taken within a reasonable time as determined by the rules of the board, complete with a notice of appeal specifying the grounds thereof. The officer, or body, from whom the appeal is taken shall forthwith transmit to the board all the papers constituting the record upon which the action appealed from was taken.

(Ord. No. 259, 7-17-61; Ord. No. 79-684, § 1, 2-19-79; Code 1958, § 25-20(f))

Sec. 110-41. Conduct of hearings.

The board of adjustment shall fix a reasonable time for the hearing of the appeal, give public notice thereof, as well as due notice to the parties in interest, and decide the same within a reasonable time or thirty (30) days, whichever is less. Upon the hearing, any party may appear in person or by agent or by attorney. An applicant for a variance or an appellant from an administrative decision shall have the burden of proving that his proposed use is reasonably necessary and that it will not conflict with the public interest or adversely affect uses of adjacent and neighboring property.

(Ord. No. 259, 7-17-61; Ord. No. 79-684, § 1, 2-19-79; Code 1958, § 25-20(g))

Sec. 110-42. Special exceptions to chapter not under board's jurisdiction.

In no case shall it be appropriate for the zoning board of adjustment to hear and make special exceptions to this chapter.

(Ord. No. 259, 7-17-61; Ord. No. 79-684, § 1, 2-19-79; Code 1958, § 25-20(h))

Sec. 110-43. Scope of cases.

The cases which are appropriate for the zoning board of adjustment to hear and decide are limited to the following:

- (1) Appeals from a decision of an administrative official:
 - a. In the enforcement of this chapter or any ordinance adopted pursuant thereto.
 - b. In the refusal of building permits for any use that is permitted by this chapter for the zone where the proposed building would occur.
- (2) Variances from the terms of this chapter as will not be contrary to the public interest where there is an unusual condition and a literal enforcement of the provisions of this chapter will result in unnecessary hardship to the applicant with regard to this chapter, including:
 - a. Building lines.
 - b. Side line setback.
 - c. Rear line setback.
 - d. Front line setback.
 - e. Lot size.
 - f. Width or length of lots.
 - g. Permitting driveways to intrude on easements.
 - h. Building slab heights.
 - i. Home occupations.
 - j. Cases in which this chapter does not permit any reasonable use of a tract or lot, not merely to accommodate the highest or best use of the property.

k. Abatement of, extension of, or addition to a nonconforming use.
 (Ord. No. 259, 7-17-61; Ord. No. 79-684, § 1, 2-19-79; Code 1958, § 25-20(i); Ord. No. 06-1828, § 1, 11-20-2006)

Secs. 110-44—110-65. Reserved.

ARTICLE III. ZONE REGULATIONS*

Sec. 110-66. Establishment of zones.

In order to carry out the provisions of this chapter, the city is hereby divided into seventeen (17) zones known as:

- (1) E-1 Single-family residence, estates.
- (2) R-1 Single-family residence.
- (3) R-2 Single-family residence.
- (4) R-2A Single-family residence.
- (5) R-3 Two-family residence.
- (6) R-4 Multifamily residence.
- (7) B-1 Neighborhood business.
- (8) B-1A Professional offices.
- (9) B-2 Central business.
- (10) B-3 Institutional zone.
- (11) C-1 Commercial.
- (12) C-2 Commercial.
- (13) M-1 Light industrial.
- (14) M-2 Heavy industrial.
- (15) T-1 Single-family residence, townhouse.
- (16) PURZ Planned unit residential zone.
- (17) PUD Planned unit development.

***Editor's note**—Ord. No. 79-700, § 21, enacted May 21, 1979, which amended this article, as amended by Ord. No. 80-727, § 1, adopted Feb. 4, 1980, provided:

"Section 21. This ordinance shall take effect on May 21, 1979, for zoning purposes and shall not affect properties platted (as provided in sections 19.10 through 19.14 of the subdivision ordinance of the City Code) prior to February 11, 1980, the date of the adoption of this correcting ordinance, nor shall it affect the Briarwood Subdivision Reserve west of Walnut Street as recorded in Volume 15, Page 251 of the plat records of Brazoria County."

State law reference—Zoning districts, V.T.C.A., Local Government Code § 211.005.

(18) MH-1 Mobile home park.

(19) MH-2 Manufactured home.

(Ord. No. 259, 7-17-61; Ord. No. 69-397, §§ 3, 4, 7-7-69; Ord. No. 74-545, §§ 1—4, 12-2-74; Ord. No. 76-602, §§ 1, 2, 9-20-76; Ord. No. 79-700, §§ 1—18, 5-21-79; Ord. No. 80-734, § 1, 3-3-80; Ord. No. 80-742, § 1, 6-16-80; Ord. No. 81-185, § 1, 8-24-81; Ord. No. 82-847, § 1, 3-1-82; Ord. No. 82-870, § 1, 9-20-82; Ord. No. 84-951, § 1, 1-21-85; Ord. No. 85-961, § 1, 2-4-85; Ord. No. 85-975, § 1, 5-6-85; Ord. No. 86-1008, § 1, 7-21-86; Ord. No. 86-1021, § 1, 11-3-86; Ord. No. 88-1061, § 2, 5-2-88; Ord. No. 90-1143, § 2, 12-3-90; Ord. No. 92-1201, § 1, 6-15-92; Code 1958, § 25-3(1); Ord. No. 97-1421, § 1, 6-2-97; Ord. No. 99-1593, § 2, 3-15-99)

Sec. 110-67. E-1, single-family residence, estates.

The following regulations shall be applicable to the E-1, single-family residence, estates, zoning district:

- (1) *Description and purpose:* The most restrictive of residential zones, composed chiefly of individual homes on relatively large lots.
- (2) *Permitted use:* One-family dwellings.
- (3) *Maximum percentage of lot to be used for buildings or accessory structures:* Twenty-five (25) percent.
- (4) *Minimum living area for houses:* Two thousand (2,000) square feet.
- (5) *Maximum height of buildings:* Two and one-half (2½) stories.
- (6) *Minimum lot area:* One (1) acre.
- (7) *Minimum frontage of lot:* Two hundred (200) feet.
- (8) *Minimum lot depth:* One hundred fifty (150) feet.
- (9) *Minimum lot setback:*
 - a. From front, forty (40) feet.
 - b. From side, twenty-five (25) feet.
 - c. From rear, twenty (20) percent of depth.
 - d. Side street, twenty-five (25) feet.
- (10) *Permitted accessory uses:* Servant quarters, garden, tool and play houses, personal recreational facilities, country club and incidental livestock, customary home occupations.
- (11) *Accessory structures:*
 - a. Height, fifteen (15) feet.
 - b. Side yard setback, twenty-five (25) feet minimum.
 - c. Rear yard setback, thirty (30) feet.
 - d. Front yard setback, sixty-five (65) feet.

- e. Maximum floor area, fifty (50) percent of principal building.
- f. No accessory structure shall be closer than the interior line of any easement.

(12) *Conditional uses:* Golf course, parks.

(13) *Off-street parking:* Minimum two-space garage (see section 110-162).

(Ord. No. 259, 7-17-61; Ord. No. 69-397, §§ 3, 4, 7-7-69; Ord. No. 74-545, §§ 1—4, 12-2-74; Ord. No. 76-602, §§ 1, 2, 9-20-76; Ord. No. 79-700, §§ 1—18, 5-21-79; Ord. No. 80-734, § 1, 3-3-80; Ord. No. 80-742, § 1, 6-16-80; Ord. No. 81-185, § 1, 8-24-81; Ord. No. 82-847, § 1, 3-1-82; Ord. No. 82-870, § 1, 9-20-82; Ord. No. 84-951, § 1, 1-21-85; Ord. No. 85-961, § 1, 2-4-85; Ord. No. 85-975, § 1, 5-6-85; Ord. No. 86-1008, § 1, 7-21-86; Ord. No. 86-1021, § 1, 11-3-86; Ord. No. 88-1061, § 2, 5-2-88; Ord. No. 90-1143, § 2, 12-3-90; Ord. No. 92-1201, § 1, 6-15-92; Code 1958, § 25-3(2); Ord. No. 10-1951, § 2, 12-6-2010)

Sec. 110-68. R-1, single-family residence.

The following regulations shall be applicable to the R-1, single-family residence, zoning district:

- (1) *Description and purpose:* A highly restricted zone composed chiefly of individual homes.
- (2) *Permitted use:* One-family dwelling.
- (3) *Maximum percentage of lot to be used for buildings or accessory structures:* Thirty (30) percent.
- (4) *Minimum living area for houses:* One thousand four hundred (1,400) square feet.
- (5) *Maximum height of buildings:* Two and one-half (2½) stories or thirty-five (35) feet.
- (6) *Minimum lot area:* Fifteen thousand (15,000) square feet.
- (7) *Minimum frontage of lot:* One hundred (100) feet.
- (8) *Minimum depth:* One hundred fifty (150) feet.
- (9) *Minimum yard setback:*
 - a. Front, thirty (30) feet.
 - b. Side, ten (10) feet.
 - c. Rear, fifteen (15) feet.
 - d. Side street, fifteen (15) feet.
- (10) *Permitted accessory use:* Garden, tool and playhouses, personal recreation facilities.
- (11) *Accessory structures:*
 - a. No storage, garden, tool or playhouse shall be used as a garage.
 - b. Garages shall meet all the setback requirements as required for the principal building.
 - c. No garage or driveway shall exit out the back of the lot.

- d. Maximum height, fifteen (15) feet.
- e. If the total square footage of any individual accessory structure exceeds two hundred (200) square feet, that structure shall meet the setbacks for the principal building.
- f. An accessory structure whose square footage equals two hundred (200) square feet or less may be eligible for the alternate setbacks in accordance with section 110-86.

(12) *Conditional uses*: Golf course, parks.

(13) *Off-street parking*: Minimum two-space garage (see section 110-162).

(Ord. No. 259, 7-17-61; Ord. No. 69-397, §§ 3, 4, 7-7-69; Ord. No. 74-545, §§ 1—4, 12-2-74; Ord. No. 76-602, §§ 1, 2, 9-20-76; Ord. No. 79-700, §§ 1—18, 5-21-79; Ord. No. 80-734, § 1, 3-3-80; Ord. No. 80-742, § 1, 6-16-80; Ord. No. 81-185, § 1, 8-24-81; Ord. No. 82-847, § 1, 3-1-82; Ord. No. 82-870, § 1, 9-20-82; Ord. No. 84-951, § 1, 1-21-85; Ord. No. 85-961, § 1, 2-4-85; Ord. No. 85-975, § 1, 5-6-85; Ord. No. 86-1008, § 1, 7-21-86; Ord. No. 86-1021, § 1, 11-3-86; Ord. No. 88-1061, § 2, 5-2-88; Ord. No. 90-1143, § 2, 12-3-90; Ord. No. 92-1201, § 1, 6-15-92; Code 1958, § 25-3(3); Ord. No. 93-1235, § 1, 4-5-93; Ord. No. 07-1856, § 1, 8-6-2007; Ord. No. 10-1951, § 3, 12-6-2010)

Sec. 110-69. R-2, single-family residence.

The following regulations shall be applicable to the R-2, single-family residence, zoning district:

- (1) *Description and purpose*. A medium-density zone composed primarily of individual homes.
- (2) *Permitted use*. One-family dwelling.
- (3) *Maximum percentage of lot to be used for buildings or accessory structures*. Thirty-five (35) percent.
- (4) *Minimum living area for houses*.
 - a. For lots platted prior to July 3, 1961 that have less than seventy (70) feet of frontage, one thousand one hundred (1,100) square feet;
 - b. For all other lots, one thousand two hundred (1,200) square feet.
- (5) *Maximum height of buildings*. Two and one-half (2 ½) stories or thirty-five (35) feet.
- (6) *Minimum lot area*. Eight thousand four hundred (8,400) square feet.
- (7) *Minimum frontage of lot*.
 - a. For lots platted prior to July 3, 1961, sixty (60) feet;
 - b. For all other lots, seventy (70) feet.
- (8) *Minimum lot depth*.
 - a. For lots platted prior to July 3, 1961, one hundred (100) feet;

- b. For all other lots one hundred twenty (120) feet.

(9) *Minimum yard setback.*

- a. For lots platted prior to July 3, 1961 that have less than seventy (70) feet of frontage:
 - 1. Front, twenty-five (25) feet.
 - 2. Side, no less than five (5) feet on any one (1) side.
 - 3. Rear, fifteen (15) feet.
 - 4. Side street, fifteen (15) feet.
- b. For all other lots:
 - 1. Front, twenty-five (25) feet.
 - 2. Side, fifteen (15) feet total for both sides, no less than five (5) feet on any one (1) side.
 - 3. Rear, fifteen (15) feet.
 - 4. Side street, fifteen (15) feet.

(10) *Permitted accessory use.* Garden, tool and playhouses, personal recreation facilities.

(11) *Accessory structures.*

- a. No storage, garden, tool or playhouse shall be used as a garage.
- b. Garages shall meet all the setback requirements as required for the principal building.
- c. No garage or driveway shall exit out the back of the lot.
- d. Maximum height, fifteen (15) feet.
- e. If the total square footage of any individual accessory structure exceeds two hundred (200) square feet, that structure shall meet the setbacks for the principal building.
- f. An accessory structure whose square footage equals two hundred (200) square feet or less may be eligible for the alternate setbacks in accordance with section 110-86.

(12) *Conditional uses.* Parks.

(13) *Off-street parking.*

- a. Minimum, for lots platted prior to July 3, 1961 that have less than seventy (70) feet of frontage, two (2) off-street parking spaces;
- b. For all other lots, minimum two-space garage (see section 110-162).

(Ord. No. 259, 7-17-61; Ord. No. 69-397, §§ 3, 4, 7-7-69; Ord. No. 74-545, §§ 1—4, 12-2-74; Ord. No. 76-602, §§ 1, 2, 9-20-76; Ord. No. 79-700, §§ 1—18, 5-21-79; Ord. No. 80-734, § 1, 3-3-80; Ord. No. 80-742, § 1, 6-16-80; Ord. No. 81-185, § 1, 8-24-81; Ord. No. 82-847, § 1, 3-1-82; Ord. No. 82-870, § 1, 9-20-82; Ord. No. 84-951, § 1, 1-21-85; Ord. No. 85-961, § 1, 2-4-85; Ord. No. 85-975, § 1, 5-6-85; Ord. No. 86-1008, § 1, 7-21-86; Ord. No. 86-1021, § 1,

11-3-86; Ord. No. 88-1061, § 2, 5-2-88; Ord. No. 90-1143, § 2, 12-3-90; Ord. No. 92-1201, § 1, 6-15-92; Code 1958, § 25-3(4); Ord. No. 93-1235, § 2, 4-5-93; Ord. No. 07-1856, § 1, 8-6-2007; Ord. No. 10-1951, § 4, 12-6-2010; Ord. No. 11-1964, § 1, 7-5-2011; Ord. No. 16-2099, § 1, 5-2-2016; Ord. No. 18-2164, § 1, 10-1-2018)

Sec. 110-69.1. R-2A, single-family residence.

The following regulations shall be applicable to the R-2A, single-family residence zoning district:

- (1) *Description and purpose:* A medium-density zone composed primarily of individual homes.
- (2) *Permitted use:* One-family dwelling.
- (3) *Maximum percentage of lot to be used for buildings or accessory structure:* Thirty-five (35) percent.
- (4) *Minimum living area for houses:* One thousand (1,000) square feet.
- (5) *Maximum height of buildings:* Two and one-half (2½) stories or thirty-five (35) feet.
- (6) *Minimum lot area:* Seven thousand two hundred (7,200) square feet.
- (7) *Minimum frontage of lot:* Sixty (60) feet.
- (8) *Minimum lot depth:* One hundred twenty (120) feet.
- (9) *Minimum yard setback:*
 - a. Front, twenty-five (25) feet.
 - b. Side, five (5) feet total for both sides.
 - c. Rear, fifteen (15) feet.
 - d. Side street, fifteen (15) feet.
- (10) *Permitted accessory use:* Garden, tool and playhouses, personal recreation facilities.
- (11) *Accessory structures:*
 - a. No storage, garden, tool or playhouse shall be used as a garage.
 - b. Garages shall meet all the setback requirements as required for the principal building.
 - c. No garage or driveway shall exit out the back of the lot.
 - d. Maximum height, fifteen (15) feet.
 - e. If the total square footage of any individual accessory structure exceeds two hundred (200) square feet, that structure shall meet the setbacks for the principal building.
 - f. An accessory structure whose square footage equals two hundred (200) square feet or less may be eligible for the alternate setbacks in accordance with section 110-86.

(12) *Conditional uses:* Parks.

(13) *Off-street parking:* Either a two-space garage or a carport type garage (See section 110-162).

(Ord. No. 97-1421, § 1, 6-2-97; Ord. No. 07-1856, § 1, 8-6-2007; Ord. No. 10-1951, § 5, 12-6-2010)

Sec. 110-70. R-3, two-family residence.

The following regulations shall be applicable to the R-3, two-family residence, zoning district:

- (1) *Description and purpose:* A two-family dwelling zone providing most of the desirable residential characteristics attributed to single-family districts. In addition to large areas appropriate for such use it has useful application as a buffer zone bordering neighborhood shopping centers.
- (2) *Permitted use:* One-family dwelling, duplexes.
- (3) *Maximum percentage of lot to be used for buildings or accessory structures:* Forty-five (45) percent.
- (4) *Minimum living area per family:* Nine hundred (900) square feet.
- (5) *Maximum height of buildings:* Two and one-half (2½) stories or thirty-five (35) feet.
- (6) *Minimum lot area:* Eight thousand five hundred (8,500) square feet.
- (7) *Minimum frontage of lot:* One hundred (100) feet.
- (8) *Minimum depth:* Eighty-five (85) feet.
- (9) *Minimum yard setback:*
 - a. Front, twenty-five (25) feet.
 - b. Sides, ten (10) feet.
 - c. Rear, fifteen (15) percent of depth.
 - d. Side street, fifteen (15) feet.
- (10) *Permitted accessory use:* Garden, tool and playhouses, personal recreation facilities.
- (11) *Accessory structures:*
 - a. No storage, garden, tool or playhouse shall be used as a garage.
 - b. Garages shall meet all the setback requirements as required for the principal building.
 - c. No garage or driveway shall exit out the back of the lot.
 - d. Maximum height, fifteen (15) feet.

- e. If the total square footage of any individual accessory structure exceeds two hundred (200) square feet, that structure shall meet the setbacks for the principal building.
- f. An accessory structure whose square footage equals two hundred (200) square feet or less may be eligible for the alternate setbacks in accordance with section 110-86.

(12) *Conditional uses: Parks.*

(13) *Off-street parking:* Minimum four (4) covered spaces (see section 110-162).

(Ord. No. 259, 7-17-61; Ord. No. 69-397, §§ 3, 4, 7-7-69; Ord. No. 74-545, §§ 1—4, 12-2-74; Ord. No. 76-602, §§ 1, 2, 9-20-76; Ord. No. 79-700, §§ 1—18, 5-21-79; Ord. No. 80-734, § 1, 3-3-80; Ord. No. 80-742, § 1, 6-16-80; Ord. No. 81-185, § 1, 8-24-81; Ord. No. 82-847, § 1, 3-1-82; Ord. No. 82-870, § 1, 9-20-82; Ord. No. 84-951, § 1, 1-21-85; Ord. No. 85-961, § 1, 2-4-85; Ord. No. 85-975, § 1, 5-6-85; Ord. No. 86-1008, § 1, 7-21-86; Ord. No. 86-1021, § 1, 11-3-86; Ord. No. 88-1061, § 2, 5-2-88; Ord. No. 90-1143, § 2, 12-3-90; Ord. No. 92-1201, § 1, 6-15-92; Code 1958, § 25-3(5); Ord. No. 93-1235, § 3, 4-5-93; Ord. No. 07-1856, § 1, 8-6-2007; Ord. No. 10-1951, § 6, 12-6-2010)

Sec. 110-71. R-4, multifamily residence.

The following regulations shall be applicable to the R-4, multifamily residence, zoning district:

- (1) *Description and purpose:* A medium density zone for garden apartments, group housing and courts.
- (2) *Permitted uses:* One-family dwelling, apartment houses, duplexes, condominiums.
- (3) *Maximum percentage of lot to be used for buildings or accessory structures:* Fifty (50) percent.
- (4) *Minimum living area per family:* Four hundred fifty (450) square feet.
- (5) *Maximum height of buildings:* Two and one-half (2½) stories or thirty-five (35) feet, or as approved by city council after receiving the planning commission's recommendation.
- (6) *Maximum density:* Twenty (20) units per acre.
- (7) *Minimum frontage of site:* One hundred (100) feet.
- (8) *Minimum site depth:* One hundred twenty (120) feet.
- (9) *Minimum site area:* One (1) acre.
- (10) *Minimum yard setback:*
 - a. Front, twenty-five (25) feet.
 - b. Side, twenty-five (25) feet.
 - c. Rear, twenty-five (25) feet.

- d. Side street, fifteen (15) feet.
 - (11) *Permitted accessory uses:* Garden, tool, and playhouses, personal recreation facilities, boardinghouses, day nurseries, nursing homes, professional offices.
 - (12) *Accessory structures:*
 - a. No storage, garden, tool or playhouse shall be used as a garage.
 - b. Garages shall meet all of the setback requirements as required for the principal building.
 - c. No garage or driveway shall exit out the back of the lot.
 - d. Maximum height, fifteen (15) feet.
 - e. If the total square footage of any individual accessory structure exceeds two hundred (200) square feet, that structure shall meet the setbacks for the principal building.
 - f. An accessory structure whose square footage equals two hundred (200) square feet or less may be eligible for the alternate setbacks in accordance with section 110-86.
 - (13) *Conditional uses:* Hospitals, clinics, membership clubs, funeral homes, fraternity/sorority houses, supervised living facilities, cemeteries, and residential care facilities.
 - (14) *Off-street parking:* See section 110-162.
 - (15) *Off-street loading:* None.
 - (16) *Other provisions:* All signs shall be shielded and source of steady light. No signs larger than one hundred (100) square feet, nor exceeding 4:1 height to width or width to height ratio.
- (Ord. No. 259, 7-17-61; Ord. No. 69-397, §§ 3, 4, 7-7-69; Ord. No. 74-545, §§ 1—4, 12-2-74; Ord. No. 76-602, §§ 1, 2, 9-20-76; Ord. No. 79-700, §§ 1—18, 5-21-79; Ord. No. 80-734, § 1, 3-3-80; Ord. No. 80-742, § 1, 6-16-80; Ord. No. 81-185, § 1, 8-24-81; Ord. No. 82-847, § 1, 3-1-82; Ord. No. 82-870, § 1, 9-20-82; Ord. No. 84-951, § 1, 1-21-85; Ord. No. 85-961, § 1, 2-4-85; Ord. No. 85-975, § 1, 5-6-85; Ord. No. 86-1008, § 1, 7-21-86; Ord. No. 86-1021, § 1, 11-3-86; Ord. No. 88-1061, § 2, 5-2-88; Ord. No. 90-1143, § 2, 12-3-90; Ord. No. 92-1201, § 1, 6-15-92; Code 1958, § 25-3(6); Ord. No. 93-1235, § 4, 4-5-93; Ord. No. 07-1856, § 1, 8-6-2007; Ord. No. 10-1951, § 7, 12-6-2010; Ord. No. 17-2129, § 2, 4-3-2017; Ord. No. 17-2131, § 1, 4-3-2017)

Sec. 110-72. B-1, neighborhood business.

The following regulations shall be applicable to the B-1, neighborhood business zoning district after January 1, 2000:

- (1) *Description and purpose:* A neighborhood shopping zone wherein retail business or selected service establishments supply commodities or services to meet the daily

needs of the surrounding neighborhood, in which they are located. Uses which are not necessary to serve the neighborhood such as industrial/business supply or service facilities such as theaters, motels or warehouse style retail stores and automobile dealerships are not permitted in the zone unless built prior to January 1, 2000. B-1 neighborhood businesses that would be harmful to, or would adversely impact, single-family residential areas or facilities which are either hazardous, noxious or offensive to an ordinary reasonable person because of congested vehicular traffic, generation or emission of noise, vibration, smoke, dust, particulate matter, odorous matter, heat, humidity, glare, refuse, radiation or other objectionable emission, are not permitted in this zone unless built prior to January 1, 2000. Those businesses and properties built prior to January 1, 2000, may be remodeled or rebuilt under the terms of the applicable building code or ordinance in effect on January 1, 2000.

Potentially harmful or objectionable characteristics of certain development may be mitigated by the inclusion of additional design or architectural features. To provide additional basis for exercising judgment in the determination of potential harm or adverse impact, permitted and conditional uses are listed below as well as use requirements and design limitations that serve to prevent potential harm.

- (2) *Permitted uses:* Office and office buildings, medical offices, studios, retail shops, service shops, drive-in eating places, groceries, day care facilities, auto repair, membership clubs, and residential care facilities.
- (3) *Maximum percentage of lot to be used by building:* One hundred (100) percent.
- (4) *Minimum floor area:* None required.
- (5) *Maximum height of building:* Two and one-half (2½) stories or thirty-five (35) feet.
- (6) *Minimum lot area:* Two thousand (2,000) square feet.
- (7) *Minimum frontage of lot:* Twenty (20) feet.
- (8) *Minimum depth of lot:* One hundred (100) feet.
- (9) *Minimum yard setback:* None required.
- (10) *Permitted accessory use:* None allowed.
- (11) *Accessory building:* None allowed.
- (12) *Conditional uses:* Supervised living facilities, churches, and recreational businesses.
- (13) *Off-street parking:* See section 110-162.
- (14) *Off-street loading:* See section 110-163.
- (15) *Other provisions:* All signs shall be shielded and sources of light steady. All signs must be physically attached to the building and on property owned or leased.

(16) The following provisions shall apply when B-1 neighborhood businesses have business lot lines within sixty (60) feet of single-family residential lot lines.

a. *Permitted uses:*

Professional offices.

Medical offices.

Retail stores.

Convenience stores (not open more than nineteen (19) hours per day).

Service shops (i.e., hair salons, shoe repair, banking, dry cleaners and personal care facilities).

Day care centers.

Restaurants excluding those with drive-in or drive-through facilities.

Health clubs.

b. *Maximum percentage of lot to be used by building:* That percentage allowed after taking into consideration the limits dictated by the provisions of (1)(1)4 below.

c. *Minimum floor area:* None required.

d. *Maximum height of building:* Two and one-half (2½) stories or thirty-five (35) feet.

e. *Minimum lot area:* Two thousand (2,000) square feet.

f. *Minimum frontage of lot:* Twenty (20) feet.

g. *Minimum depth of lot:* One hundred (100) feet.

h. *Minimum yard setback.*

i. *Permitted accessory use:* None allowed.

j. *Accessory building:* None allowed.

k. *Conditional uses:*

Gasoline services not including car wash services.

Automotive repair conducted completely within an enclosed facility.

Supervised living facilities.

Convenience stores (twenty-four (24) hours per day).

Vehicular drive-in or drive-through restaurants.

l. 1. Design limitations applicable to B-1 businesses with business lot lines within sixty (60) feet of single-family residential area lot lines:

i. All garbage storage shall be screened and located no closer than ten (10) feet from a single-family residential zone and may not be located between the front of the structure and any street right-of-way.

- ii. See section 110-178 for additional design limitations and performance standards.

(17) The following performance standards shall be used for the purpose of evaluating the development proposals in the neighborhood business zone if the proposed B-1 neighborhood business lot line is within sixty (60) feet of single-family residential area lot lines:

- a. New development shall be designed to be compatible with neighboring residential areas. This shall require that materials used on the outside of the buildings be of earth tone colors or colors conducive to colors in the surrounding residential area.
 - 1. Colors of awnings should be muted, natural or earth toned and related to major materials of the building.
 - 2. Window frames may be of an accent color to complement the major wall material.
 - 3. Paint shall be flat or semi-gloss.
 - 4. Metal roofs grey, natural green, rust or brown.
 - 5. Metal canopies dark anodized or black or to match roof.

This shall involve the preservation of the character and integrity of residential areas and the maintaining of an appropriate visual and functional interrelationship between residential and commercial uses. Potential intrusive design elements such as traffic circulation and light and glare shall be designed to avoid interference with the residential environment.

- b. The height, scale, mass and bulk of buildings shall not be overbearing in relation to neighborhood residential structures. Height, scale, mass and bulk shall also be a function of their proximity to residential structures, with buildings in close proximity made to adhere to a similar scale of development. Potential view impediments shall also be considered.
- c. Architectural styles and features shall be compatible with and complementary to neighborhood residential structures to the extent commercial and residential structures share a visual relationship.

(Ord. No. 259, 7-17-61; Ord. No. 69-397, §§ 3, 4, 7-7-69; Ord. No. 74-545, §§ 1—4, 12-2-74; Ord. No. 76-602, §§ 1, 2, 9-20-76; Ord. No. 79-700, §§ 1—18, 5-21-79; Ord. No. 80-734, § 1, 3-3-80; Ord. No. 80-742, § 1, 6-16-80; Ord. No. 81-185, § 1, 8-24-81; Ord. No. 82-847, § 1, 3-1-82; Ord. No. 82-870, § 1, 9-20-82; Ord. No. 84-951, § 1, 1-21-85; Ord. No. 85-961, § 1, 2-4-85; Ord. No. 85-975, § 1, 5-6-85; Ord. No. 86-1008, § 1, 7-21-86; Ord. No. 86-1021, § 1, 11-3-86; Ord. No. 88-1061, § 2, 5-2-88; Ord. No. 90-1143, § 2, 12-3-90; Ord. No. 92-1201, § 1, 6-15-92; Code 1958, § 25-3(7); Ord. No. 93-1241, § 1, 5-3-93; Ord. No. 00-1621, § 1, 1-18-2000; Ord. No. 13-2008, § 1, 4-15-2013; Ord. No. 15-2066, §§ 2, 3, 6-1-2015; Ord. No. 16-2100, § 2, 5-2-2016; Ord. No. 17-2129, § 3, 4-3-2017)

Sec. 110-73. B-1A, professional offices.

The following regulations shall be applicable to the B-1A, professional offices, zoning district:

- (1) *Purpose and description:* A zone comprised of professional offices.
- (2) *Permitted uses:* Professional offices and office buildings, medical offices, studios, clinics; and daycares. No retail sales.
- (3) *Maximum percentage of lot to be used by building:* One hundred (100) percent.
- (4) *Minimum floor area:* None required.
- (5) *Maximum height of building:* Two and one-half (2½) stories or thirty-five (35) feet.
- (6) *Minimum lot area:* Two thousand (2,000) square feet.
- (7) *Minimum frontage of lot:* One hundred (100) feet.
- (8) *Minimum depth of lot:* One hundred (100) feet.
- (9) *Minimum yard setback:* None required.
- (10) *Permitted accessory use:* None allowed.
- (11) *Accessory building:* None allowed.
- (12) *Conditional uses:* Hospital, churches.
- (13) *Off-street parking:* See section 110-162.
- (14) *Off-street loading:* See section 110-163.
- (15) *Other provisions:*
 - a. All signs shall be shielded and source of light steady. All signs must be physically attached to the building and on property owned or leased.
 - b. See section 110-178 for additional design limitations and performance standards. (Ord. No. 259, 7-17-61; Ord. No. 69-397, §§ 3, 4, 7-7-69; Ord. No. 74-545, §§ 1—4, 12-2-74; Ord. No. 76-602, §§ 1, 2, 9-20-76; Ord. No. 79-700, §§ 1—18, 5-21-79; Ord. No. 80-734, § 1, 3-3-80; Ord. No. 80-742, § 1, 6-16-80; Ord. No. 81-185, § 1, 8-24-81; Ord. No. 82-847, § 1, 3-1-82; Ord. No. 82-870, § 1, 9-20-82; Ord. No. 84-951, § 1, 1-21-85; Ord. No. 85-961, § 1, 2-4-85; Ord. No. 85-975, § 1, 5-6-85; Ord. No. 86-1008, § 1, 7-21-86; Ord. No. 86-1021, § 1, 11-3-86; Ord. No. 88-1061, § 2, 5-2-88; Ord. No. 90-1143, § 2, 12-3-90; Ord. No. 92-1201, § 1, 6-15-92; Code 1958, § 25-3(8); Ord. No. 93-1241, § 2, 5-3-93; Ord. No. 00-1626, § 1, 3-20-2000; Ord. No. 09-1922, § 1, 12-21-2009; Ord. No. 13-2008, § 2, 4-15-2013; Ord. No. 15-2066, § 4, 6-1-2015)

Sec. 110-74. B-2, central business.

The following regulations shall be applicable to the B-2, central business, zoning district:

- (1) *Description and purpose:* This zone is the principal area and permits most types of general commercial enterprise. Manufacturing and nuisance industries are excluded.

- (2) *Permitted uses:* Office and office buildings, medical offices, studios, retail shops, service shops, drive-in eating places, groceries, day care center, auto repair shops, membership clubs, newspaper, auto dealers, hotels, theatres, motels, banks and financial institutions, and residential care facilities.
- (3) *Maximum percentage of lot to be used by building:* One hundred (100) percent.
- (4) *Minimum floor area:* None required.
- (5) *Maximum height:* Four (4) stories, fifty (50) feet or as approved.
- (6) *Minimum lot area:* Two thousand (2,000) square feet.
- (7) *Minimum frontage of lot:* Thirty (30) feet.
- (8) *Minimum depth of lot:* One hundred (100) feet.
- (9) *Minimum yard setback:* None required unless abutting residential zone of E-1, R-1, R-2, R-3 or T-1, then there shall be a minimum setback of twenty (20) feet on the rear and on the side, for all buildings up to fifty (50) feet in height, where the property abuts such zones. If the building is greater than fifty (50) feet in height, the setback on the rear and side shall be twenty (20) feet plus twice the height of that portion of the building that is in excess of the first fifty (50) feet. Portions of drainage ditches on the property or between properties shall be credited to the landowner for the purposes of establishing the setback.
- (10) *Permitted accessory use:* None allowed.
- (11) *Accessory building:* Any customary, incidental to business as a conditional use. Materials must be similar to the principal building.
- (12) *Conditional uses:* Bowling alley and other recreational facilities, clinics and supervised living facilities, churches, and accessory buildings. No funeral homes.
- (13) *Off-street parking:* See section 110-162.
- (14) *Off-street loading:* See section 110-163.
- (15) *Other provisions:*
 - a. All signs shall be shielded and source of light steady. All signs must be physically attached to the building and on property owned or leased.
 - b. See section 110-178 for additional design limitations and performance standards.
(Ord. No. 259, 7-17-61; Ord. No. 69-397, §§ 3, 4, 7-7-69; Ord. No. 74-545, §§ 1—4, 12-2-74; Ord. No. 76-602, §§ 1, 2, 9-20-76; Ord. No. 79-700, §§ 1—18, 5-21-79; Ord. No. 80-734, § 1, 3-3-80; Ord. No. 80-742, § 1, 6-16-80; Ord. No. 81-185, § 1, 8-24-81; Ord. No. 82-847, § 1, 3-1-82; Ord. No. 82-870, § 1, 9-20-82; Ord. No. 84-951, § 1, 1-21-85; Ord. No. 85-961, § 1, 2-4-85; Ord. No. 85-975, § 1, 5-6-85; Ord. No. 86-1008, § 1, 7-21-86; Ord. No. 86-1021, § 1, 11-3-86; Ord. No. 88-1061, § 2, 5-2-88; Ord. No. 90-1143, § 2, 12-3-90; Ord. No. 92-1201, § 1, 6-15-92; Code 1958, § 25-3(9); Ord. No. 93-1241, § 3, 5-3-93; Ord. No. 00-1626, § 1, 3-20-2000; Ord. No. 11-1975, § 1, 11-21-2011; Ord. No. 13-2008, § 3, 4-15-2013; Ord. No. 15-2066, § 5, 6-1-2015; Ord. No. 17-2129, § 4, 4-3-2017)

Sec. 110-75. B-3, institutional zone.

The following regulations shall be applicable to the B-3, institutional zone, zoning district:

- (1) *Description and purpose:* A zone for cultural, educational and other institutional uses.
 - (2) *Permitted uses:* Church, religious institution, public, private or parochial schools.
 - (3) *Minimum floor area:* None required.
 - (4) *Maximum height:* Four (4) stories, fifty (50) feet or as approved. The distance from average grade or curb level to the highest point of the roof, but not including chimneys, towers, spires and the like.
 - (5) *Minimum lot area:* One (1) acre.
 - (6) *Minimum frontage of lot:* Two hundred (200) feet.
 - (7) *Minimum yard setback:* None required unless abutting residential zones of E-1, R-1, R-2, R-3 or T-1, then there shall be a minimum setback of twenty (20) feet on the rear and on the side, for all buildings up to fifty (50) feet in height, where the property abuts such zones. If the building is greater than fifty (50) feet in height, the setback on the rear side shall be twenty (20) feet, plus twice the height of that portion of the building that is in excess of the first fifty (50) feet. Portions of drainage ditches on the property or between properties shall be credited to the landowner for the purposes of establishing the setback. Front setback is thirty (30) feet.
 - (8) *Permitted accessory use:* Parking garage, day care facility, cinerarium for a church or religious institution that meets the requirements listed in section 110-179.
 - (9) *Accessory building:* Any customary, incidental to business.
 - (10) *Conditional uses:* Playfield or stadium, recreation center; dental, non-surgical medical, and optical health services.
 - (11) *Off-street parking:*
 - a. No parking facility shall occupy any portion of a required setback within ten (10) feet of a public street or within ten (10) feet of a lot line adjacent to a residential zone (E-1, R or T-1) or more restrictive district.
 - b. The parking requirements of section 110-162 shall apply.
 - (12) *Special conditions:*
 - a. Section 98-56 will apply.
 - b. Screening devices will be required in accordance with the standards of section 90-63.
 - (13) *Off-street loading:* See section 110-163.
- (Ord. No. 259, 7-17-61; Ord. No. 69-397, §§ 3, 4, 7-7-69; Ord. No. 74-545, §§ 1—4, 12-2-74; Ord. No. 76-602, §§ 1, 2, 9-20-76; Ord. No. 79-700, §§ 1—18, 5-21-79; Ord. No. 80-734, § 1, 3-3-80; Ord. No. 80-742, § 1, 6-16-80; Ord. No. 81-185, § 1, 8-24-81; Ord. No. 82-847, § 1,

3-1-82; Ord. No. 82-870, § 1, 9-20-82; Ord. No. 84-951, § 1, 1-21-85; Ord. No. 85-961, § 1, 2-4-85; Ord. No. 85-975, § 1, 5-6-85; Ord. No. 86-1008, § 1, 7-21-86; Ord. No. 86-1021, § 1, 11-3-86; Ord. No. 88-1061, § 2, 5-2-88; Ord. No. 90-1143, § 2, 12-3-90; Ord. No. 92-1201, § 1, 6-15-92; Code 1958, § 25-3(10); Ord. No. 11-1960, § 2, 6-6-2011; Ord. No. 14-2037, § 2, 4-7-2014)

Sec. 110-76. C-1, commercial.

The following regulations shall be applicable to the C-1, commercial, zoning district:

- (1) *Description and purpose:* This is a zone designed to contain commercial businesses.
- (2) *Permitted uses:* Office and office buildings, medical offices, studios, retail shops, home improvement centers, service shops, restaurants, grocery stores, day care centers, auto repair shops, membership clubs, residential care facilities, newspapers, auto dealers, hotels, theatres, motels, banks and financial institutions, warehouses, wholesale business, veterinary clinic with or without temporary small animal boarding, laundries and cleaners, self-storage facilities or mini-warehouses and recreational businesses.
- (3) *Maximum percentage of lot to be used by building:* One hundred (100) percent.
- (4) *Minimum floor area:* None required.
- (5) *Maximum height of building:* Four (4) stories, fifty (50) feet or as approved.
- (6) *Minimum lot area:* Three thousand (3,000) square feet.
- (7) *Minimum frontage of lot:* Thirty (30) feet.
- (8) *Minimum depth of lot:* One hundred (100) feet.
- (9) *Minimum yard setbacks:* None required unless abutting residential zone of E-1, R-1, R-2, R-3 or T-1, then there shall be a minimum setback of twenty (20) feet on the rear and on the side, for all buildings up to fifty (50) feet in height, where the property abuts such zones. If the building is greater than fifty (50) feet in height, the setback on the rear and side shall be twenty (20) feet, plus twice the height of that portion of the building that is in excess of the first fifty (50) feet. Portions of drainage ditches on the property or between properties shall be credited to the landowner for the purposes of establishing the setback.
- (10) *Permitted accessory uses:* None allowed.
- (11) *Accessory building:* Any customary building that is incidental to the business located in the primary structure. The exterior of the accessory building will be consistent in appearance with the exterior of the primary structure.
- (12) *Conditional uses:* Churches; one (1) residential unit for a caretaker or similar personnel of self-storage facilities or mini-warehouses; research, development and testing laboratories; lumberyards; brickyards; warehouses; and small manufacturing.

(13) *Off-street parking*: See section 110-162.

(14) *Off-street loading*: See section 110-163.

(15) *Other provisions*: See section 110-178 for additional design limitations and performance standards.

(Ord. No. 259, 7-17-61; Ord. No. 69-397, §§ 3, 4, 7-7-69; Ord. No. 74-545, §§ 1—4, 12-2-74; Ord. No. 76-602, §§ 1, 2, 9-20-76; Ord. No. 79-700, §§ 1—18, 5-21-79; Ord. No. 80-734, § 1, 3-3-80; Ord. No. 80-742, § 1, 6-16-80; Ord. No. 81-185, § 1, 8-24-81; Ord. No. 82-847, § 1, 3-1-82; Ord. No. 82-870, § 1, 9-20-82; Ord. No. 84-951, § 1, 1-21-85; Ord. No. 85-961, § 1, 2-4-85; Ord. No. 85-975, § 1, 5-6-85; Ord. No. 86-1008, § 1, 7-21-86; Ord. No. 86-1021, § 1, 11-3-86; Ord. No. 88-1061, § 2, 5-2-88; Ord. No. 90-1143, § 2, 12-3-90; Ord. No. 92-1201, § 1, 6-15-92; Code 1958, § 25-3(11); Ord. No. 93-1241, § 4, 5-3-93; Ord. No. 00-1626, § 1, 3-20-2000; Ord. No. 08-1884, § 2, 7-7-2008; Ord. No. 13-2008, § 4, 4-15-2013; Ord. No. 14-2029, § 1, 1-6-2014; Ord. No. 15-2066, § 6, 6-1-2015; Ord. No. 17-2129, § 5, 4-3-2017)

Sec. 110-77. C-2, commercial.

The following regulations shall be applicable to the C-2, commercial, zoning district:

- (1) *Description and purpose*: This zone is designed to contain highrise buildings.
- (2) *Permitted uses*: Hotels, motels, office buildings, medical offices, hospitals, banks, and financial institutions and research, development and testing laboratories.
- (3) *Maximum percentage of lot to be used by building*: One hundred (100) percent.
- (4) *Minimum floor area*: None required.
- (5) *Maximum height of building*: Four (4) stories, fifty (50) feet or as approved.
- (6) *Minimum lot area*: Ten thousand (10,000) square feet.
- (7) *Minimum frontage of lot*: Thirty (30) feet.
- (8) *Minimum depth of lot*: One hundred (100) feet.
- (9) *Minimum yard setback*: None required unless abutting residential zone of E-1, R-1, R-2, R-3 or T-1, then there shall be a minimum setback of twenty (20) feet on the rear and on the side, for all buildings up to fifty (50) feet in height, where the property abuts such zones. If the building is greater than fifty (50) feet in height the setback on the rear and side shall be twenty (20) feet plus twice the height of that portion of the building that is in excess of the first fifty (50) feet. Portions of drainage ditches on the property or between properties shall be credited to the landowner for the purposes of establishing the setback.
- (10) *Permitted accessory uses*: None allowed.
- (11) *Accessory building*: Any customary, incidental to business.
- (12) *Conditional uses*: None allowed.
- (13) *Off-street parking*: See section 110-162.

(14) *Off-street loading*: See section 110-163.

(15) *Other provisions*: See section 110-178 for additional design limitations and performance standards.

(Ord. No. 259, 7-17-61; Ord. No. 69-397, §§ 3, 4, 7-7-69; Ord. No. 74-545, §§ 1—4, 12-2-74; Ord. No. 76-602, §§ 1, 2, 9-20-76; Ord. No. 79-700, §§ 1—18, 5-21-79; Ord. No. 80-734, § 1, 3-3-80; Ord. No. 80-742, § 1, 6-16-80; Ord. No. 81-185, § 1, 8-24-81; Ord. No. 82-847, § 1, 3-1-82; Ord. No. 82-870, § 1, 9-20-82; Ord. No. 84-951, § 1, 1-21-85; Ord. No. 85-961, § 1, 2-4-85; Ord. No. 85-975, § 1, 5-6-85; Ord. No. 86-1008, § 1, 7-21-86; Ord. No. 86-1021, § 1, 11-3-86; Ord. No. 88-1061, § 2, 5-2-88; Ord. No. 90-1143, § 2, 12-3-90; Ord. No. 92-1201, § 1, 6-15-92; Ord. No. 00-1626, § 1, 3-20-2000; Code 1958, § 25-3(12); Ord. No. 13-2008, § 5, 4-15-2013; Ord. No. 14-2029, § 2, 1-6-2014; Ord. No. 15-2066, § 7, 6-1-2015)

Sec. 110-78. M-1, light industrial.

The following regulations shall be applicable to the M-1, light industrial, zoning district:

- (1) *Description and purpose*: This zone permits most compounding, assembling or treatment of articles or materials with the exception of heavy manufacturing and the processing of raw materials.
- (2) *Permitted uses*: Machine shops, carpenter shops, ice manufacturing, light metal processing, meat and food processing, paper fabricating, plastic manufacturing, clay products manufacturing, trucking yard, dairy product manufacturing, feed and fuel yards and miniwarehouses.
- (3) *Maximum percentage of lot to be used by building*: One hundred (100) percent.
- (4) *Minimum floor area*: None required.
- (5) *Maximum height*: Four (4) stories, fifty (50) feet or as approved.
- (6) *Minimum lot area*: Eight thousand four hundred (8,400) square feet.
- (7) *Minimum frontage of lot*: Sixty (60) feet.
- (8) *Minimum depth of lot*: One hundred (100) feet.
- (9) *Minimum yard setback*: None required unless abutting residential zone of E-1, R-1, R-2, R-3, or T-1, then there shall be a minimum setback of twenty (20) feet on the rear and on the side, for all buildings up to fifty (50) feet in height, where the property abuts such zones. If the building is greater than fifty (50) feet in height the setback on the rear and side shall be twenty (20) feet plus twice the height of that portion of the building that is in excess of the first fifty (50) feet. Portions of drainage ditches on the property or between properties shall be credited to the landowner for the purposes of establishing the setback.
- (10) *Permitted accessory use*: No restrictions.
- (11) *Accessory building*: No restrictions.
- (12) *Conditional use*: Churches.

- (13) *Off-street parking*: See section 110-162.
- (14) *Off-street loading*: See section 110-163.
- (15) *Other provisions*: See section 110-178 for additional design limitations and performance standards.
- (16) This subsection is cumulative of subsections 110-76 and 110-77. All permitted and conditional [uses] in subsections 110-76 and 110-77 shall apply to the M-1 Zone. In the case of conflict, the stricter requirements shall apply.
- (Ord. No. 259, 7-17-61; Ord. No. 69-397, §§ 3, 4, 7-7-69; Ord. No. 74-545, §§ 1—4, 12-2-74; Ord. No. 76-602, §§ 1, 2, 9-20-76; Ord. No. 79-700, §§ 1—18, 5-21-79; Ord. No. 80-734, § 1, 3-3-80; Ord. No. 80-742, § 1, 6-16-80; Ord. No. 81-185, § 1, 8-24-81; Ord. No. 82-847, § 1, 3-1-82; Ord. No. 82-870, § 1, 9-20-82; Ord. No. 84-951, § 1, 1-21-85; Ord. No. 85-961, § 1, 2-4-85; Ord. No. 85-975, § 1, 5-6-85; Ord. No. 86-1008, § 1, 7-21-86; Ord. No. 86-1021, § 1, 11-3-86; Ord. No. 88-1061, § 2, 5-2-88; Ord. No. 90-1143, § 2, 12-3-90; Ord. No. 92-1201, § 1, 6-15-92; Code 1958, § 25-3(13); Ord. No. 93-1241, § 5, 5-3-93; Ord. No. 00-1626, § 1, 3-20-2000; Ord. No. 13-2008, § 6, 4-15-2013; Ord. No. 14-2040, § 1, 4-21-2014)

Sec. 110-79. M-2, heavy industrial.

The following regulations shall be applicable to the M-2, heavy industrial, zoning district:

- (1) *Description and purpose*: This zone is designed to contain those industries which process raw material into useful goods.
- (2) *Permitted uses*: Machine shop, carpenter shops, ice manufacturing, light metal processing, meat and food processing, paper fabricating, plastic manufacturing, clay products manufacturing, trucking yard, dairy product manufacturing, feed and fuel yards and miniwarehouses. All other manufacturing must obtain special permits.
- (3) *Maximum percentage of lot to be used for building*: One hundred (100) percent.
- (4) *Minimum floor area*: None required.
- (5) *Maximum height*: Four (4) stories, fifty (50) feet or as approved.
- (6) *Minimum lot area*: Fifteen thousand (15,000) square feet.
- (7) *Minimum frontage of lot*: One hundred fifty (150) feet.
- (8) *Minimum depth of lot*: One hundred (100) feet.
- (9) *Minimum yard setback*: None required unless abutting residential zone of E-1, R-1, R-2, R-3 or T-1, then there shall be a minimum setback of twenty (20) feet on the rear and on the side, for all buildings up to fifty (50) feet in height, where the property abuts such zones. If the building is greater than fifty (50) feet in height the setback on the rear and side shall be twenty (20) feet plus twice the height of that portion of the building that is in excess of the first fifty (50) feet. Portions of drainage ditches on the property or between properties shall be credited to the land owner for the purposes of establishing the setback.

- (10) *Permitted accessory uses*: No restriction except no dwellings.
- (11) *Accessory building*: No restrictions.
- (12) *Conditional use*: Churches.
- (13) *Off-street parking*: See section 110-162.
- (14) *Off-street loading*: See section 110-163.
- (15) *Other provisions*: See section 110-178 for additional design limitations and performance standards.

(Ord. No. 259, 7-17-61; Ord. No. 69-397, §§ 3, 4, 7-7-69; Ord. No. 74-545, §§ 1—4, 12-2-74; Ord. No. 76-602, §§ 1, 2, 9-20-76; Ord. No. 79-700, §§ 1—18, 5-21-79; Ord. No. 80-734, § 1, 3-3-80; Ord. No. 80-742, § 1, 6-16-80; Ord. No. 81-185, § 1, 8-24-81; Ord. No. 82-847, § 1, 3-1-82; Ord. No. 82-870, § 1, 9-20-82; Ord. No. 84-951, § 1, 1-21-85; Ord. No. 85-961, § 1, 2-4-85; Ord. No. 85-975, § 1, 5-6-85; Ord. No. 86-1008, § 1, 7-21-86; Ord. No. 86-1021, § 1, 11-3-86; Ord. No. 88-1061, § 2, 5-2-88; Ord. No. 90-1143, § 2, 12-3-90; Ord. No. 92-1201, § 1, 6-15-92; Code 1958, § 25-3(14); Ord. No. 93-1241, § 6, 5-3-93; Ord. No. 00-1626, § 1, 3-20-2000; Ord. No. 13-2008, § 7, 4-15-2013)

Sec. 110-80. T-1, single-family residence, townhouse.

In a T-1, single-family residence, townhouse, zone designated and approved according to the provisions of this chapter, within the city or within the extraterritorial jurisdiction of the city for subdivision purposes, a townhouse or townhouse group may be erected or constructed, provided it meets the following requirements:

- (1) *Description and purpose*: A highly restricted high density residential zone composed of single-family townhouse dwellings.
- (2) *Permitted uses*: Single-family dwelling.
- (3) *Maximum percent of project to be used for covered buildings*: Fifty (50) percent, including common area. Those structures constituting "covered buildings" under this provision include, but are not limited to, buildings and required covered parking spaces.
- (4) *Minimum living area per family*: Eight hundred (800) square feet.
- (5) *Lots*: Each townhouse is located on an individual lot.
- (6) *Units and area*:
 - a. There shall be at least four (4) connected units in each townhouse project.
 - b. Each townhouse group shall have not less than four (4) adjoining townhouse units.
- (7) *Maximum height of building*: Thirty-five (35) feet or two and one-half (2½) stories.
- (8) *Minimum area per family*: Three thousand five hundred (3,500) square feet, including common area.

- (9) *Minimum lot area:* Two thousand (2,000) square feet.
- (10) *Minimum frontage of lot:* Twenty (20) feet.
- (11) *Minimum lot depth:* One hundred (100) feet.
- (12) *Minimum yard setback:*
 - a. Each townhouse or townhouse group shall be set back from the front street five (5) feet for the building line.
 - b. Each townhouse or townhouse group shall be set back from a side street twenty-five (25) feet for the building line.
 - c. Each townhouse or townhouse group shall be set back from the rear lot line at least ten (10) feet for the building line. Garages or carports having direct access to a rear alley or common driveway shall set back from the rear lot line at least ten (10) feet; provided, however, the planning commission may reduce or waive the required rear setback requirements where a common area of at least twenty-five (25) feet in width is provided and there is provision for pedestrian and vehicular safety, utility service and privacy.

- (13) *Permitted accessory use:* Mechanical building, maintenance and tool shop and recreational building, customary home occupations.
- (14) *Accessory building:* Shall be the same design and appearance as townhouses and subject to the same maximum height restrictions.
- (15) *Conditional uses:* There are no conditional uses allowed.

(16) *Yards:*

- a. Each lot shall contain a private yard with not less than three hundred (300) square feet of area. Not more than fifty (50) percent of the required private yard may be occupied by a driveway, but parking areas shall not be included in the computation of the required private yard. A wall or solid fence, not less than five (5) feet in height, shall be required on side lot lines where the required private yard adjoins such lot lines. A private yard may be a patio cover or roof which does not cover more than twenty-five (25) percent of the private yard.
- b. Within a townhouse project there shall be at least fifteen (15) feet of separation or combined sideyard between each townhouse group.
- c. No side yard shall be required between connected townhouses or units.

(17) *Parking spaces and driveways:*

- a. *Off-street parking:* Minimum two-space garage.
 - 1. Off-street parking spaces shall be provided for each townhouse in the number specified in section 110-162.
 - 2. No parking shall be provided in the front five (5) feet of a townhouse lot or common area (unless the rear of the lot abuts Loop Road) nor in the twenty-five (25) feet adjacent to a side street.
- b. *Driveways:*
 - 1. No driveway shall be located in the front yard of a townhouse, unless the rear of the lot abuts Loop Road.
 - 2. One-way driveways shall be at least nine (9) feet in width, and two-way driveways shall be at least eighteen (18) feet in width.

(18) *Off-street loading:* None.

(Ord. No. 259, 7-17-61; Ord. No. 69-397, §§ 3, 4, 7-7-69; Ord. No. 74-545, §§ 1—4, 12-2-74; Ord. No. 76-602, §§ 1, 2, 9-20-76; Ord. No. 79-700, §§ 1—18, 5-21-79; Ord. No. 80-734, § 1, 3-3-80; Ord. No. 80-742, § 1, 6-16-80; Ord. No. 81-185, § 1, 8-24-81; Ord. No. 82-847, § 1, 3-1-82; Ord. No. 82-870, § 1, 9-20-82; Ord. No. 84-951, § 1, 1-21-85; Ord. No. 85-961, § 1, 2-4-85; Ord. No. 85-975, § 1, 5-6-85; Ord. No. 86-1008, § 1, 7-21-86; Ord. No. 86-1021, § 1, 11-3-86; Ord. No. 88-1061, § 2, 5-2-88; Ord. No. 90-1143, § 2, 12-3-90; Ord. No. 92-1201, § 1, 6-15-92; Code 1958, §§ 25-3(15), 25-3.1)

Sec. 110-81. PUD, planned unit development.

See article IV for regulations applicable to the PUD, planned unit development, zoning district.

(Ord. No. 259, 7-17-61; Ord. No. 69-397, §§ 3, 4, 7-7-69; Ord. No. 74-545, §§ 1—4, 12-2-74; Ord. No. 76-602, §§ 1, 2, 9-20-76; Ord. No. 79-700, §§ 1—18, 5-21-79; Ord. No. 80-734, § 1, 3-3-80; Ord. No. 80-742, § 1, 6-16-80; Ord. No. 81-185, § 1, 8-24-81; Ord. No. 82-847, § 1, 3-1-82; Ord. No. 82-870, § 1, 9-20-82; Ord. No. 84-951, § 1, 1-21-85; Ord. No. 85-961, § 1, 2-4-85; Ord. No. 85-975, § 1, 5-6-85; Ord. No. 86-1008, § 1, 7-21-86; Ord. No. 86-1021, § 1, 11-3-86; Ord. No. 88-1061, § 2, 5-2-88; Ord. No. 90-1143, § 2, 12-3-90; Ord. No. 92-1201, § 1, 6-15-92; Code 1958, § 25-3(17))

Sec. 110-82. PURZ, planned unit residential zone.

See article V for regulations applicable to the PURZ, planned unit residential, zoning district.

(Ord. No. 259, 7-17-61; Ord. No. 69-397, §§ 3, 4, 7-7-69; Ord. No. 74-545, §§ 1—4, 12-2-74; Ord. No. 76-602, §§ 1, 2, 9-20-76; Ord. No. 79-700, §§ 1—18, 5-21-79; Ord. No. 80-734, § 1, 3-3-80; Ord. No. 80-742, § 1, 6-16-80; Ord. No. 81-185, § 1, 8-24-81; Ord. No. 82-847, § 1, 3-1-82; Ord. No. 82-870, § 1, 9-20-82; Ord. No. 84-951, § 1, 1-21-85; Ord. No. 85-961, § 1, 2-4-85; Ord. No. 85-975, § 1, 5-6-85; Ord. No. 86-1008, § 1, 7-21-86; Ord. No. 86-1021, § 1, 11-3-86; Ord. No. 88-1061, § 2, 5-2-88; Ord. No. 90-1143, § 2, 12-3-90; Ord. No. 92-1201, § 1, 6-15-92; Code 1958, § 25-3(16))

Sec. 110-83. MH-1, mobile home park.

See chapter 58 for regulations applicable to the MH-1 mobile home park zoning district. In addition to chapter 58, the following additional regulations shall be applicable to the MH-1 mobile home park zoning district:

- (1) *Description and purpose:* A medium-density zone composed primarily of individual mobile or manufactured homes.
- (2) *Permitted use:* One-family mobile home dwelling, to include HUD code manufactured homes.

(Ord. No. 259, 7-17-61; Ord. No. 69-397, §§ 3, 4, 7-7-69; Ord. No. 74-545, §§ 1—4, 12-2-74; Ord. No. 76-602, §§ 1, 2, 9-20-76; Ord. No. 79-700, §§ 1—18, 5-21-79; Ord. No. 80-734, § 1, 3-3-80; Ord. No. 80-742, § 1, 6-16-80; Ord. No. 81-185, § 1, 8-24-81; Ord. No. 82-847, § 1, 3-1-82; Ord. No. 82-870, § 1, 9-20-82; Ord. No. 84-951, § 1, 1-21-85; Ord. No. 85-961, § 1, 2-4-85; Ord. No. 85-975, § 1, 5-6-85; Ord. No. 86-1008, § 1, 7-21-86; Ord. No. 86-1021, § 1, 11-3-86; Ord. No. 88-1061, § 2, 5-2-88; Ord. No. 90-1143, § 2, 12-3-90; Ord. No. 92-1201, § 1, 6-15-92; Code 1958, § 25-3(18); Ord. No. 99-1593, § 1, 3-15-99)

Cross reference—Mobile home park zone, § 58-41 et seq.

Sec. 110-84. MH-2, manufactured homes.

Manufactured homes shall have the same definition found in Vernon's Ann. Civ. Stat. arts. 5221 et seq. The following regulations shall be applicable to the MH-2 manufactured homes zoning district:

- (1) *Description and purpose:* A medium-density zone composed primarily of individual manufactured homes.
- (2) *Permitted use:* One-family manufactured home dwelling.
- (3) *Compliance with Code.* Manufactured homes in MH-2 zone shall be subject to the terms, rules and regulations found in chapter 58 of this Code, specifically sections 58-65 et seq.

(Ord. No. 99-1593, § 2, 3-15-99)

Sec. 110-85. Exceptions.

The following are exceptions to the regulations set out in this article:

- (1) Ornamental features and mechanical appurtenances may exceed height limitations, but in no case exceed one hundred forty (140) feet.
- (2) Unattached garages may be placed within ten (10) feet of rear lot line if an alley is used between lots.
- (3) Corner lots.
 - a. Side yards for corner lots, where front and side setbacks have not been established by plat (approved by the planning commission), shall have a minimum front yard setback from the lot line required for that zone from both streets.
 - b. For corner lots which have established front and side setbacks by plat (approved by the planning commission), those platted setbacks will control which is the front of the home and which is the side of the home (the front setback will be the larger of the two (2)).
- (4) If, for any reason of solar orientation, an entire area or any entire block is developed cooperatively or as a unit, standard yard regulations may be waived to carry out such purpose, providing that the zoning board of adjustment after public notice and hearing is of the opinion that such a development is not injurious to adjacent property.
- (5) Lots with schools and/or churches shall have twice the side setback requirements of residence when in residential zones.
- (6) Libraries and museums may be permitted in residential zones and must meet restrictions for churches.
- (7) This section shall not apply to the location, construction, maintenance or use of central office buildings or corporations, firms or individuals engaged in the furnish-

ing of telephone service to the public, or to the location, construction, maintenance or any use of any equipment in connection with such buildings or a part of such telephone system, necessary in the furnishing of telephone service to the public.

- (8) The rear setback for in-ground swimming pools is whichever of the following is the greater distance from the rear property line (i) five (5) feet from the rear property line or (ii) the rear utility easement. This exception does not apply to screened enclosures or any other pool related structures.

(Ord. No. 259, 7-17-61; Code 1958, § 25-6; Ord. No. 94-1298, § 1, 7-5-94; Ord. No. 99-1593, § 2, 3-15-99; Ord. No. 18-2165, § 1, 10-1-2018)

Sec. 110-86. Accessory structures in residential zones.

(a) The total percentage of square feet for principal buildings and accessory structures may not exceed the maximum percentage of lot to be used for buildings.

(b) The square footage of a single accessory structure shall not exceed fifty (50) percent of the principal building's footprint.

(c) The total square footage of all accessory structures shall not exceed one hundred (100) percent of the principal building's footprint or shall not exceed the maximum percentage of lot to be used for buildings, whichever is less.

(d) Accessory structures whose square footage equals two hundred (200) square feet or less may meet the alternate accessory setbacks as follows:

Alternate minimum accessory structure setback:

- (1) Side, five (5) feet or interior line of easement.
- (2) Rear, five (5) feet or interior line of easement.
- (3) Front, to front of house.

(e) If the total square footage of accessory structures exceeds two hundred (200) square feet, only two hundred (200) square feet of those individual structures may meet the accessory setbacks. All other structures must meet the principal building setbacks. Square footage of structures may not be split between the alternate and principal building setback.

- (1) For example, if a residential lot has one (1) five (5) by ten (10) (fifty (50) square foot) structure and one (1) eight (8) by twelve (12) (ninety-six (96) square foot) structure, both structures may meet the alternate setbacks. However, adding a ten (10) by ten (10) (one hundred (100) square feet) structure would cause the total amount of accessory structure square footage to exceed two hundred (200) square feet, so the ten (10) by ten (10) building would be required to meet the principal building setback.

(f) The following structures do not count towards the two hundred (200) square foot amount or to the maximum percentage of lot to be used for buildings:

- (1) In ground flag poles;

- (2) Fences;
 - (3) Light poles;
 - (4) Antennas;
 - (5) Satellite dishes;
 - (6) Screen enclosures;
 - (7) Swimming pools;
 - (8) Water features;
 - (9) Garden structures;
 - (10) A-frame playground equipment not anchored to the ground and that can be moved without being disassembled;
 - (11) Flat decks that are no more than two (2) feet in height and are not attached to the principal building and do not have a roof; and
 - (12) Flat decks that are attached to the principal building.
- (Ord. No. 10-1951, § 8, 12-6-2010)

Secs. 110-87—110-105. Reserved.

ARTICLE IV. PLANNED UNIT DEVELOPMENT DISTRICT*

Sec. 110-106. Purpose.

The purpose of a Planned Unit Development District (PUD) is to promote diversity and creativity in site design. The PUD process is provided as an option to encourage unique developments which may combine a mixture of land uses and building uses. The PUD allows flexibility in the application of development standards by permitting departures from the conventional sites, setback, and density requirements of a particular zoning district in the interest of achieving site development not otherwise possible. A PUD may not be used for the purpose of avoiding the zoning regulations applicable to the primary zoning districts. All PUD applications shall be developed in compliance with the standards of the city's master plan.

(Ord. No. 09-1907, § 1, 7-6-2009)

***Editor's note**—Ord. No. 09-1907, § 1, adopted July 6, 2009, amended Art. IV in its entirety to read as herein set out. Former Art. IV, §§ 110-106—110-111, pertained to similar subject matter and derived from Ord. No. 79-700, §§ 19, 20, enacted May 21, 1979, amended Code 1958, § 25-21. See also the Code Comparative Table.

State law reference—Local appraisal of property owned by a planned unit development association, V.T.C.A., Tax Code § 25.09.

Sec. 110-107. Effect of article on prior PUD approvals.

This article shall not apply to any PUD application approved by city council prior to the city's adoption of this article. In the event that a previously approved PUD is modified or requires a series of approvals, the application or modification will be evaluated under the rules and state laws in effect of the time the original PUD was approved.

(Ord. No. 09-1907, § 1, 7-6-2009)

Sec. 110-108. Underlying zoning.

a. PUDs are created as an overlay district through an ordinance and the underlying zoning classification shall remain in place. The establishment of a PUD overlay district will supersede the underlying zoning classification unless the PUD expires or is terminated; in which case the underlying zoning classification and related regulations will be enforced. PUDs may be located in any zoning district, pursuant to the terms and provisions of this article.

b. The applicant shall follow the city's subdivision ordinance, sign ordinance, comprehensive development manual, and the PUD development manual. Any request for deviation from these ordinances or manuals shall be specifically detailed in the PUD application at the time of submission. All building and sign permits must be acquired and all permit fees must be paid during development.

(Ord. No. 09-1907, § 1, 7-6-2009)

Sec. 110-109. PUD development size requirements.

A small PUD shall be from 5 to 50 acres; a medium size PUD shall be from 50 to 150 acres; and a large PUD shall contain at least 150 acres. All land within a PUD shall be contiguous unless divided by an existing railroad, publicly owned property, a right-of-way, or a waterway.

(Ord. No. 09-1907, § 1, 7-6-2009)

Sec. 110-110. Eligible applicants.

PUD applications may only be initiated by a property owner. If the ownership of the land is not under a single ownership, then all owners shall either join in the application or provide a letter of consent to submit with the PUD application.

(Ord. No. 09-1907, § 1, 7-6-2009)

Sec. 110-111. PUD approval process.

1) *Pre-application Conference.* Prior to the submittal of a PUD application, the applicant shall attend a pre-application meeting with the city manager or his designated representative. The purpose of the meeting is to discuss the development with respect to compatibility with existing and anticipated land uses in the vicinity and to guide the applicant in the preparation of a development plan.

2) *Application and Plan.* An application and fee for the establishment of a PUD must be accompanied by two hard copies of the development plan and one electronic copy. If the PUD will be developed in phases, such phases shall be shown on the development plan.

a. The development plan must contain the following information:

- (1) Delineation of site boundaries;
- (2) General site layout showing the approximate location of buildings, parking lots, land uses, maximum and projected building height, and setbacks;
- (3) Major thoroughfares and collector streets and other streets necessary to demonstrate the circulation system;
- (4) Proposed residential development densities and acreages;
- (5) Proposed areas for schools and municipal buildings, such as fire and police substations;
- (6) Significant environmental features, including flood plains, water courses, and the impact on these features;

- (7) General topographic conditions;
 - (8) All recorded and proposed easements;
 - (9) A list of proposed land uses and the approximate acreage devoted to each type of use;
 - (10) An open space plan;
 - (11) A parks and recreation plan and a hike and bike plan;
 - (12) Illustrations indicating the general form and character of development, including representative examples of residential and non-residential buildings;
 - (13) A description of the different phases of the development and schedule for commencement and completion of each phase; and
 - (14) A development schedule indicating the rate of anticipated development from the date on which construction begins to completion, along with clearly defined benchmarks. As part of the PUD plan, the development schedule shall be adhered to by the owner, applicant, and any successor in interest.
- b. The city reserves the right to waive one or more of the required items of a PUD application as deemed necessary due to the size of the PUD, proposed use, or availability of existing infrastructure in the immediate area; and retains the authority to request additional information deemed necessary to provide a thorough review of the application.
- 3) *City Engineer.* The city engineer shall present a written report on the development plan that summarizes the anticipated impacts of the proposed development on planning goals, utilities, emergency services, traffic, and taxes and give this report to the planning commission and the council.
- 4) *Planning Commission.* The planning commission will conduct a public hearing on all completed PUD applications in accordance with public notification procedures contained in this chapter. The planning commission will provide its final recommendation to city council for action.
- 5) *Final Approval.* Following the receipt of the final report from the planning commission, city council shall hold a public hearing in accordance with this chapter. A PUD may be created by ordinance upon approval of the development plan.
- 6) *PUD Review Criteria.* A PUD application shall be evaluated based on the following criteria:
- a. The proposal is unique in design to warrant the use of a PUD overlay and the development is not possible using the existing underlying zoning of the property;
 - b. The project depicts creative land development, providing a variety in the development patterns of the city which conform to the intended purpose of the city's master plan;
 - c. All uses within the site shall be complimentary and pose minimal impact to adjacent uses; and

- d. Landscaping areas visually enhance the structures within the development and conform to the city's master plan.

(Ord. No. 09-1907, § 1, 7-6-2009)

Sec. 110-112. Modification of approved PUDs.

A modification of an approved medium or large PUD may be approved by the city manager if the modification does not deviate more than

- a. $\pm 10\%$ in the amount of acreage of residential and multifamily land uses;
- b. $\pm 15\%$ in the amount of acreage of commercial land uses; or
- c. $\pm 10\%$ in the amount of acreage of open space.

The above-mentioned modifications are intended to give the development elasticity, not to allow the applicant to move a land use or open space to a different area of the PUD. Therefore, all modifications must retain their respective percentages of the original footprint in order for the modification to be approved by the city manager. For example, if the type of modification is allowed 10% flexibility, then 90% of the footprint shall be retained. If the modification is allowed 15% flexibility then 85% of the original footprint must be retained. Any other change shall require submittal of an amended plan to the planning commission and council. The public hearing and notice procedures of this chapter shall apply to such requested changes.

(Ord. No. 09-1907, § 1, 7-6-2009)

Sec. 110-113. Monitoring PUD development.

(a) The applicant or applicant's designee shall submit an annual progress report to the city on the PUD anniversary date (the date of final approval of the PUD) and upon city council's or the planning commission's request. A formal review of the PUD shall be presented to council every three years or more frequently if requested by the planning commission and city council. The reporting requirements shall cease once 80% of the lot plan in all of the residential areas and 80% of all of the commercial areas are ready for building permits to be issued, which means that the area has been platted, the plats recorded, and 100% of the infrastructure in those areas have been accepted by the city. However, a final report shall be given to city council once the PUD is 100% complete.

(b) The progress report shall provide the: percentage of project completed, expected completion date of uncompleted portion, and status of the development.

(c) In the event the applicant or designee fails to provide the annual progress report or if the applicant fails to meet designated benchmarks, the planning commission may freeze all permits and plat recordation approval and not allow further permits to be issued or plats recorded. In addition, the planning commission may consider recommending to the city council that the PUD be terminated.

(Ord. No. 09-1907, § 1, 7-6-2009)

Sec. 110-114. PUD approval.

PUD approvals shall be valid from the date of council approval in the following manner: a small PUD shall be valid for five (5) years; medium PUD shall be valid for ten (10) years; and a large PUD shall be valid for fifteen (15) years.

(Ord. No. 09-1907, § 1, 7-6-2009)

Sec. 110-115. Termination of PUD.

If the planning commission recommends termination of the PUD, city council shall give the applicant an opportunity to show good cause why the PUD should not be terminated. If good cause is not shown, council shall terminate the PUD through an ordinance.

(Ord. No. 09-1907, § 1, 7-6-2009) - -

Sec. 110-116. Extension of PUD approval.

PUD extensions may be requested if the project is not completely constructed by the end of the original approval timeline. An extension cannot be granted unless at least 60% of the lot plan in all of the residential areas and 30% of all of the commercial areas are ready for building permits to be issued, which means that the area has been platted, the plats recorded, and 100% of the infrastructure in those areas have been accepted by the city. The applicant or designee may apply for multiple two (2) year extensions. The request must not only be made before the PUD expires, but in sufficient time that the ordinance extending the PUD can be approved before the PUD expires. Extensions shall be first presented to the planning commission. The planning commission shall then give its recommendation to city council.

(Ord. No. 09-1907, § 1, 7-6-2009)

Sec. 110-117. Dedications and improvements.

All public dedications and improvements, including (but not limited to) rights-of-way, easements, streets and roads, alleys, pedestrian way, bikeways, sidewalks, storm drainage facilities, sewer systems, and water and electrical distribution systems, shall be provided in accordance with the requirements of the City of Lake Jackson Code of Ordinances at the time of the dedication or improvement.

(Ord. No. 09-1907, § 1, 7-6-2009)

Sec. 110-118. Issuance of permits.

The approval of a subdivision plat, or the issuance of building or other development permits for the development of an approved PUD may be delayed or issued contingent upon the applicant's providing adequate access, storm drainage facilities, water and sanitary sewer supply systems, and electrical power supply systems.

(Ord. No. 09-1907, § 1, 7-6-2009)

Sec. 110-119. Subsequent owners or assignees.

The applicant shall ensure that all prospective or future owners or assignees shall be informed in writing that the property is bound by the PUD documents.
(Ord. No. 09-1907, § 1, 7-6-2009)

Secs. 110-120—110-130. Reserved.**ARTICLE V. PLANNED UNIT RESIDENTIAL ZONE****Sec. 110-131. Intent.**

The planned unit residential zone is intended as a zone to encourage unified design of housing, commercial or institutional zones and facilities or combinations thereof to provide for related developments having harmony of design and variety of function.
(Ord. No. 80-734, § 2, 3-3-80; Code 1958, § 25-22)

Sec. 110-132. Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Common open space means a parcel of land or an area of water, or a combination of land and water within the site designated as a planned unit residential zone, and designed and intended for the use or enjoyment of residents of the planned unit residential zone, common open space may contain such complementary structures and improvements as are necessary and appropriate for the benefit and enjoyment of residents of the planned unit residential development. Parking areas shall not be considered as common open space.

Landowner means the legal or beneficial owner or owners of all of the land proposed to be included in a planned unit residential zone. The holder of an option or contract to purchase, a lessee having a remaining term of not less than forty (40) years, or other person having an enforceable proprietary interest in such land, shall be deemed to be a landowner for the purpose of this zoning section.

Plan means the proposal for development of a planned residential zone, including all covenants, grants of easement and other conditions relating to use, location and bulk of buildings, density of development, common open space and public facilities. The plan shall include such information as required by section 110-138. The phrase "provisions of plan" where used in this article shall mean those documents, verbal or graphic, referred to in this definition.

Planned unit residential zone means an area of land, controlled by a landowner, to be developed as a single entity for a number of dwelling units, the plan for which does not

correspond in lot size, bulk or type of dwelling, density, lot coverage or required open space to the regulations in any one (1) residential district established by any other article of this chapter.

Single ownership means the proprietary interest of a landowner.

Statement of objectives for planned unit residential zone means that statement of objectives contained in section 110-134 and shall include all maps and attachments incorporated in that statement of reference.

(Ord. No. 80-734, § 2, 3-3-80; Code 1958, § 25-22(A))

Cross reference—Definitions generally, § 1-2.

Sec. 110-133. Purpose.

(a) The city, being confronted with increasing urbanization, and acknowledging that the technology of land development and the demand for housing are undergoing substantial and rapid changes, and recognizing the applicability of the objectives set forth by the city council, does hereby adopt this article for application to areas of land which are to be developed as planned residential developments.

(b) Of primary concern is the need to provide increased flexibility in the laws governing the development of those large areas in the city which are at present substantially open land; and to encourage such development in directions that will recognize both the changes in design and technology in the building industry and the new demands in the housing market; and to ensure that the uniform regulations appropriate to previously developed residential neighborhoods do not operate to discourage efficient and imaginative development of such substantially open areas consistent with the reasonable enjoyment of neighboring properties.

(c) Also of concern is the need for the redevelopment of those congested and blighted areas abutting the central areas of the city in order to furnish adequate housing facilities in proximity to the commercial and civic amenities of the central areas of the city, and in the belief that private investment should be encouraged to contribute to that redevelopment; and in recognition that such necessary redevelopment cannot be expected to take place in strict accordance with those uniform regulations appropriate to more viable established residential areas of the city.

(Ord. No. 80-734, § 2, 3-3-80; Code 1958, § 25-22(B))

Sec. 110-134. Objectives.

(a) It is the intent of this article to encourage unified design of housing, related facilities or combinations thereof to provide for related developments having harmony of design and variety of function, and to provide for a greater flexibility in the design of buildings, yards, courts and circulation than would otherwise be possible through the strict application of standard regulations. It is further the intent of this article to provide for:

- (1) A maximum choice in the types of environment and living units available to the public.

- (2) An integration of open space and recreation areas with residential development.
 - (3) A pattern of development which preserves trees, outstanding natural topography and geologic features.
 - (4) A creative approach to the use of land and related physical development.
 - (5) An efficient use of land, resulting in small networks of utilities and streets and thereby lowering housing and maintenance costs.
 - (6) An environment of stable character in harmony with surrounding development.
- (b) The city council is hereby designated as the municipal authority.
(Ord. No. 80-734, § 2, 3-3-80; Code 1958, § 25-22(C))

Sec. 110-135. Application of article.

(a) The provisions of this article shall apply only to a tract of land proposed to be developed for fifty (50) or more dwelling units, which tract is under single ownership, and for which an application for a planned unit residential zone is made as hereinafter provided.

(b) An application for a planned unit residential zone on a tract of land for more than five (5) but less than fifty (50) or more dwelling units may be filed, but no tentative approval of such an application shall be given by the planning commission unless the commission shall find, upon a showing by the landowner, that the minimum of fifty (50) dwelling units should be waived because a planned unit residential zone is in the public interest, and that one (1) or more of the following conditions exist:

- (1) Because of unusual physical features of the property itself or of the neighborhood in which it is located, a substantial deviation from the regulations otherwise necessary or appropriate in order to conserve a physical or topographic feature of importance to the city.
- (2) The property or its neighborhood has a unique character of economic importance to the community that will be protected by use of a planned unit residential development.

(Ord. No. 80-734, § 2, 3-3-80; Code 1958, § 25-22(D); Ord. No. 17-2135, § 1, 7-3-2017)

Sec. 110-136. Permitted uses.

Uses permitted in a planned unit residential development may include and shall be limited to:

- (1) Dwelling units in detached, semidetached, attached or multistoried structures, or any combination thereof; and

- (2) Nonresidential uses of religious, cultural, recreational and commercial character to the extent they are designed and intended to serve the residents of the planned unit residential zone.

No commercial use, nor any building devoted primarily to a commercial use, shall be built or established prior to the residential buildings or uses it is designed or intended to serve.

(Ord. No. 80-734, § 2, 3-3-80; Code 1958, § 25-22(E))

Sec. 110-137. Standards and criteria.

- (a) The plan for a planned unit residential zone shall be consistent with:

- (1) The statement of objectives for planned unit residential zone;
- (2) The general standards set out hereinafter; and
- (3) The specific rules and regulations for the planned unit residential zone adopted from time to time and placed in the public record by the city council. No such rules and regulations shall be revised or added to so as to be applicable to a specific proposal for a planned unit residential zone after an application for tentative approval has been filed by the landowner.

(b) A plan shall be consistent with the following general standards for use of land, and the use, type, bulk, design and location of building, the density or intensity of use, the common open space, the public facilities and the development by geographic division of the site:

- (1) The plan may provide for a variety of housing types.
- (2) The total ground areas occupied by buildings, structures and parking areas, shall not exceed seventy (70) percent of the total ground area of the planned unit residential zone. For the purpose of this subsection, total ground area shall be equal to the gross area of the proposed planned unit residential zone site, less those areas required for public street improvements or excavated drainage areas.
- (3) Height of particular building shall not be a basis for denial or approval of a plan, provided any structures in excess of thirty-five (35) feet shall be designed and platted to be consistent with the reasonable enjoyment of neighboring property and the efficiency of existing public services.
- (4) Architectural style of buildings shall not be a basis for denying approval of a plan.
- (5) Nonresidential uses of religious, educational or recreational nature shall be presumed to be designed or intended for the use of the residents of the planned unit residential zone, and the burden shall be on the planning commission or objecting parties appearing at the public hearings to show by substantial evidence that the use will primarily serve persons residing outside the planned unit residential zone. The burden shall be on the landowner to show that nonresidential uses of a commercial character are intended to serve principally the residents of the planned unit residential zone. No

- building designed or intended to be used, in part or in whole, for commercial purposes shall be constructed prior to the construction of not less than fifty (50) percent of the dwelling units proposed in the plan.
- (6) If the density or intensity of land use exceeds twenty (20) units per acre, the landowner has the burden to show that such excess will not have an undue and adverse impact on existing public facilities and on the reasonable enjoyment of neighboring property. The planning commission, in determining the reasonableness of the increase in the units per acre, shall recognize that increased density may be compensated for by additional private amenities and by increased efficiency in public services to be achieved by the amount, location and proposed use of common open space and achieved by the location, design and type of dwelling units. The planning commission shall, in its determination, also consider that the physical characteristics of the site may make increased densities appropriate in the particular location.
 - (7) The amount and location of common open space shall be consistent with the declared function of the common open space as set forth in the application for a planned unit residential zone, and there shall be such provisions for the ownership and maintenance of the common open space as reasonable to ensure its continuity and conservation. If the common open space is permitted to deteriorate or is not maintained in a condition consistent with the best interest of the entire city then, and in such event, the city shall take those remedial steps provided for in section 82-41.
 - (8) The plan shall contain such proposed covenants, easements and other provisions relating to the bulk, location and density of such residential units, nonresidential uses and public facilities as are necessary for the welfare of the planned unit residential zone and are not inconsistent with the best interest of the entire city. Such covenants, easements and other provisions, if part of the plan as finally approved, may be modified, removed or released only in accordance with those requirements specified by this Code.
 - (9) The planning commission may designate divisible geographic sections of the entire planned unit residential zone to be developed sequentially, and shall, in such case, specify reasonable periods within which development of each such section must be commenced, and may permit in each section deviations from the number of dwelling units per acre established for the entire planned unit residential zone, provided such deviation shall be adjusted for in other sections of the development so that the number of dwelling units per acre authorized for the entire planned unit residential zone is not affected. The period of the entire development and the commencement date for each section thereof, may be modified from time to time by the planning commission upon the showing of good cause by the landowner, provided that in no case, shall any extension exceed twelve (12) months. If the landowner does not appear in the specified time, his final plat approval may be revoked by the planning commission. The landowner shall make such easements, covenants and other arrangements as may be determined by the planning commission to be reasonably required to assure perfor-

mance in accordance with the plan and to protect the public interest in the event of abandonment of such plan before completion.

- (10) The uniqueness of each proposal for a planned unit residential zone may require waiver from the specifications established in chapter 90. The planning commission may, therefore, within the limits specified, waive or modify the specifications otherwise applicable for a particular public facility where the planning commission finds that such specifications are not required in the interests of the residents of the planned unit residential zone and that the modifications of such specifications are not inconsistent with the interests of the entire city. No such modifications shall be made without prior approval of the city council. Any such modifications must be stated in the plan.

(Ord. No. 80-734, § 2, 3-3-80; Code 1958, § 25-22(F))

Sec. 110-138. Application for approval.

(a) *Application for planned unit residential zone.* To zone property as provided for in this article, the applicant must complete all of the steps in the following process:

- (1) *Preapplication conference.* Prior to the formal application for a planned unit residential zoning change, the applicant shall discuss with the city manager the elements of the proposed planned unit development, including, but not limited to:
 - a. The project location.
 - b. The project size.
 - c. The project's intended land use.
 - d. The variation from normal zoning provisions needed to implement the plan.
 - e. The relationship of the proposed project to existing adjacent development.
 - f. The proposed document concerning ownership and maintenance of the common areas. Such document shall provide at a minimum a trust instrument or equivalent device that shall establish an institution other than the city to assure maintenance of the common areas in case of financial or other emergency.

The purpose of the preapplication conference is to clarify for the applicant, the city's policies regarding planned unit development and for the city to provide an informal nonbinding opinion on the acceptability of the proposal.

(b) *Preliminary plan.* To receive preliminary approval of a request for planned unit residential zoning, the applicant shall submit the following:

- (1) A preliminary plan including:
 - a. A location diagram at a convenient scale.
 - b. A land use plan at a scale of one (1) inch equals one hundred (100) feet, illustrating the boundaries of the proposed tract, any existing land uses on proposed tract, any interesting or unusual existing features of the tract, including, but not necessarily limited to, topography, vegetation or flooding, and adjacent existing

land uses to a distance of two hundred (200) feet. This land use of plan shall also illustrate existing zoning on and within two hundred (200) feet of the proposed development.

- (2) Two (2) copies of a plan of the proposed development at a scale of one (1) inch equals one hundred (100) feet, illustrating all of the elements of the proposal, including, but not limited to:
 - a. Land uses and drainage.
 - b. Circulation and parking.
 - c. Common area(s).
 - (3) A staging plan, if appropriate to the proposal.
 - (4) The variation from normal zoning provisions needed to implement the plan.
 - (5) Sketches and/or elevation drawings illustrating visually the general features of the proposed plan.
 - (6) A written statement outlining the applicant's views on the relationship of the proposal to any existing adjacent development, and the landowner's reasons why, in his opinion, the planned unit residential zone would be in the public interest and would be consistent with the city's statement of objectives for planned unit residential zone and with the specific criteria, if any, theretofore published by the planning commission.
 - (7) The proposed document concerning ownership and maintenance of the common areas. Such document shall provide at a minimum a trust instrument or equivalent device that shall establish an institution other than the city to assure maintenance of the common areas in case of financial or other emergency.
 - (8) One (1) copy for every application for tentative approval received by the secretary shall be promptly delivered to the planning commission for its review. As part of its review the planning commission shall consult to the extent it deems necessary with the fire, health, building and other departments of the city concerning such application.
 - (9) Nothing contained in this section shall be deemed to forbid or discourage informal consultations between the landowner and the city staff prior to the filing of an application for a tentative approval, provided no statement or representation by a member of the staff shall be binding upon the planning commission.
- (Ord. No. 80-734, § 2, 3-3-80; Code 1958, § 25-22(G))

Sec. 110-139. Public hearing.

The planning commission and the city council shall hold a joint public hearing on each proposed planned residential development, as specified in section 110-6, and all the requirements of section 110-6 must be met. Applicant should return to the planning commission if the commission requires changes of the preliminary or final plan.

(Ord. No. 80-734, § 2, 3-3-80; Code 1958, § 25-22(H))

Sec. 110-140. Final plan and recordation.

(a) *Final plan.* To complete the zoning process, the applicant for a planned residential development shall, as soon as possible following action on the preliminary plan, submit the following for review and approval:

- (1) Two (2) copies of a plan of the proposed development at a scale of one (1) inch equals one hundred (100) feet illustrating all of the elements of the proposal and reflecting all elements and changes required by the planning commission during the preliminary plan review process. Such changes shall be reviewed and approved by the planning commission. All of the requirements of the preliminary plan shall also be requirements of the final plan.
- (2) Two (2) copies of staging plan, if appropriate to the proposal, reflecting all changes required by the planning commission during the preliminary plan review process.
- (3) A specific listing of variations required in chapter 90.
- (4) Two (2) copies of a legal instrument or instruments setting forth a plan or method of permanent care and maintenance of open spaces, recreational areas and other commonly owned properties including the legal instrument required by section 110-138(b)(7).

The city council shall notify the applicant of their approval or disapproval. This approval shall constitute the final step in the process and when received, the zoning shall be changed.

(b) *Subdivision plat.* Review of the preliminary plan and the final plan may, at the option of the applicant, be undertaken simultaneously with subdivision plat review; provided, however, that all requirements of this section and those of chapter 90 shall be met.

(c) *Recording of the approved plan.* Two (2) copies of the final approved plan shall be marked approved, dated, signed by the planning commission and submitted to the city manager for use in subdivision platting and/or issuing building permits.

(d) *Changes in the plan.* Following favorable action by the planning commission, minor alterations to the plan that do not affect platting, the general character or overall design of the plan may be approved by the city manager and city engineer. Any other alterations shall be resubmitted for review by the planning commission.
(Ord. No. 80-734, § 2, 3-3-80; Code 1958, § 25-22(I))

Secs. 110-141—110-160. Reserved.

ARTICLE VI. SUPPLEMENTARY REGULATIONS**Sec. 110-161. Customary home occupations.***(a) Definitions.*

Answering service means the receiving and relaying of telephone messages by a human operator. Answering service does not include telemarketing or soliciting business or the purchase of goods and/or services by telephone.

Community home means a personal care facility licensed under V.T.C.A., Health and Safety Code ch. 247, provided that the exterior structure retains compatibility with the surrounding residential dwellings. No more than six (6) persons with disabilities can reside in a community home and the principal resident/owner must reside in the home. The aforementioned is subject to reasonable building occupancy limits as may be required of the building official and/or fire marshal. A community home may not keep, either on the premises of the home or on a public right-of-way adjacent to the home, motor vehicles in numbers that exceed the number of bedrooms in the home.

Customary home occupation means an occupation which may be conducted in the home without changing the character of the residential use and which is incidental and secondary to the residential use.

Daycare facility means a facility that is licensed or registered with the state which regularly provides care for persons less than twenty-four (24) hours a day.

Demand responsive transport services means a service that offers on-demand call-up door-to-door service from any origin to any destination in a service area.

Kennel means any lot, building, structure, enclosure or premises where animals are kept wherein any person engages in the business of boarding, breeding, buying, letting for hire, training for a fee, or selling dogs, cats or other animals.

Limousine means a motor vehicle with a lengthened wheelbase.

Person with a disability means a person whose ability to care for himself, perform manual tasks, learn, work, walk, see, hear, speak, or breathe is substantially limited because the person has:

- (1) An orthopedic, visual, speech, or hearing impairment;
- (2) Alzheimer's disease;
- (3) Pre-senile dementia;
- (4) Cerebral palsy;
- (5) Muscular dystrophy;
- (6) Multiple sclerosis;
- (7) Epilepsy;

- (8) Cancer;
- (9) Heart disease;
- (10) Diabetes;
- (11) Mental retardation;
- (12) Autism; or
- (13) Emotional illness.

Service representative means an occupation whereby a service is provided. Service representative includes but is not limited to electrician, plumber, interior decorator, accountant, air conditioning repair, small appliance repair, janitorial service, pool service, lawn and landscape service, real estate appraiser and similar occupation.

(b) Customary home occupations may be conducted in the home within the limits of the following:

- (1) Uses permitted Customary home occupations include home office for a salesman, sales or service representative, manufacturer representative, studio of an artist, musician, music teacher, etiquette teacher, photographer, writer, tailor, architect, dressmaker, launderer, registered family homes, agency homes, community home for the disabled, daycare facilities for twelve (12) or fewer persons, caterers licensed by the city, the transfer of firearms, demand responsive transport services, answering service, or other similar occupations.
 - (a) Under this subsection, firearms may only be transferred by a person who holds a federal firearms license and may only be transferred to a person who already owns, but does not yet possess, the firearm. Commercial selling or trading of firearms is prohibited. Maintaining stock or inventory of firearms is prohibited.
 - (b) Under this subsection, the operator of a demand responsive transport service must comply with the following:
 - 1. Only one (1) vehicle may be used for the occupation;
 - 2. The vehicle may not be more than thirty-five (35) feet in length;
 - 3. The vehicle may not be a limousine or any other vehicle listed in subsection 98-154(b);
 - 4. The vehicle cannot be a 15-person passenger van or bus;
 - 5. The vehicle shall be parked on a concrete pad;
 - 6. The vehicle shall be parked completely behind the sidewalk; or within a five-foot setback from the curb edge if there is no sidewalk;
 - 7. The vehicle shall not be operated on a fixed route;
 - 8. The operator shall not deviate from a route to pick up or discharge other passengers unless at the request of the customer that initiated the call; and

9. The operator shall obtain a permit from the city on which all drivers of the vehicle are listed as well as the license plate number and the vehicle identification number of the vehicle. The city manager may revoke or suspend the permit for any violations of this section.
- (2) *Uses not permitted.* Uses not considered customary home occupations include, but are not limited to, barbershops, beauty parlors, animal hospitals, kennels, carpenter shops, electrical shops, plumbing shops, radio shops, tin shops, auto repair, auto paint and body repair shops, furniture repairing shops, clinics, doctor offices, hospitals, real estate offices, insurance agent offices, health studios, palm readers, day care centers or day care facilities which care for more than twelve (12) persons, taxi and limousine services, garage/yard sales (except that as many as two (2) garage/yard sales may be held per year), major appliance repair shops, dance studios or other similar occupations.
- (3) *Use restrictions.* In addition to the requirements of the appropriate section of this chapter, a home occupation shall comply with the following restrictions.
- a. No home occupation shall cause, by reason of its existence, a significant increase in the number of vehicles traveling to and from the home or on the public streets surrounding or abutting the home, nor shall the home occupation receive regular deliveries from delivery trucks.
 - b. A home occupation shall in no way destroy, restrict or interfere with the primary use of the home as a place of residence.
 - c. No stock in trade shall be displayed or sold on the premises except that which is custom made to order.
 - d. The home occupation shall be conducted entirely within the principal dwelling unit or accessory structure, and in no event shall such use be visible from any other residential structure or public way.
 - e. There shall be no outdoor storage of equipment or material used in the home occupation.
 - f. No mechanical, electrical or other equipment which produces noise, electrical or magnetic interference, vibration, heat, glare or other annoyance outside the residential or accessory structure shall be used.
 - g. No home occupation shall be permitted which is noxious or offensive to a person of ordinary sensitivity or hazardous by reason of vehicular traffic, generation or emission of noise, vibration, smoke, dust, or other particulate matter, odorous matter, heat, humidity, glare, refuse, radiation or other objectionable emission.
 - h. No person other than members of the family residing on the premises shall be engaged in the home occupation unless required by licensing requirements or where such engagement is occasional and incidental to the occupation.
- (4) *Advertising.* No sign advertising the home occupation shall be allowed on or off the premises.

- (5) *Preexisting day care facilities.* Day care facilities operating prior to June 1, 1992, which are permitted for more than twelve (12) persons may continue to exist or operate, provided that such facilities do not modify the terms and conditions of their current license with regard to owner and number of clients.
- (6) *Penalty.* Any person who violates this section shall be subject to a fine of not more than two thousand dollars (\$2,000.00) for each violation for each day that the violation continues.

(Ord. No. 92-1201, § 1, 6-15-92; Code 1958, § 25-4.1; Ord. No. 99-1603, § 1, 7-6-99; Ord. No. 01-1653, § 1, 3-26-2001; Ord. No. 03-1735, § 1, 10-6-2003; Ord. No. 08-1876, § 1, 2-18-2008; Ord. No. 12-1989, § 1, 7-16-2012; Ord. No. 13-2021, § 1, 10-7-2013; Ord. No. 14-2048, § 1, 8-4-2014)

State law reference—Industrial homework, V.T.C.A., Health and Safety Code § 143.001 et seq.

Sec. 110-162. Parking requirements.

- (a) Off-street parking facilities must conform to the table of parking requirements when:
 - (1) A building is erected;
 - (2) The building's number of dwelling units, dimensions, or seating capacity is increased;
 - (3) The building is moved;
 - (4) The type of use changes; or
 - (5) When a site with multiple businesses adds one (1) or more restaurants.
- (b) In addition to the table of parking requirements, businesses shall provide one (1) parking space per the greatest number of staff on duty at any time.
- (c) Exceptions to the table of parking requirements are:
 - (1) Downtown buildings (Area J) do not need a specific number of spaces. Instead, the following shall be used as a guide: each use shall be given credit for the spaces abutting the use as well as one-half (½) of the spaces in the center of the street where there is center parking;
 - (2) A site with two (2) or more businesses that will share off-street parking. Shared off-street parking must comply with subsection (i) of this section.
- (d) The planning commission may approve an alternative parking plan that is not in strict compliance with the requirements of this section. The alternative plan must meet the objective and purposes of this section. In making the determination, the planning commission may consider whether the alternative plan will preserve existing trees, the shape and size of the property, industry parking standards, and any other information the planning commission finds helpful.
- (e) Off-street parking or stacking for uses not specified in the table of parking requirements shall be determined by the planning commission.

(f) The parks and recreation board is responsible for designating the number of off-street parking spaces needed for parks.

(g) All off-street parking and stacking spaces must be a minimum of nine (9) feet by eighteen (18) feet.

(h) For businesses with a drive-through or passenger drop-off/pickup area, a stacking lane shall be at least nine (9) feet wide and shall not constitute space for any other circulation aisle, parking space, or maneuvering area. The required length of stacking lanes is in the table of parking requirements. The stacking lane shall not be curbed or, if it is curbed, shall have a curb cut to allow vehicles to leave the stacking lane.

(i) All off-street parking spaces required in this section shall be located on the same lot with the building or use served, except as follows:

(1) Where an increase in number of spaces is required by a change or enlargement of use or where such spaces are provided collectively or used jointly by two (2) or more buildings or establishments, the required off-street parking spaces may be located no more than three hundred (300) feet from an institutional building served and no more than five hundred (500) feet from any other nonresidential building served.

(2) The planning commission may allow a business, commercial or institutional use to share off-street parking spaces with another use to meet the required number of off-street parking spaces. The developer must present a site plan and calculations to show that sharing the parking will not cause a shortage of parking spaces or congestion.

(3) All shared off-street parking arrangements must be acknowledged in a written agreement executed by all involved parties and approved by the city attorney as to form. The agreement shall be filed with the application for a building permit.

(j) Any head-in parking or parking on public right-of-way where street width is less than forty-eight (48) feet is prohibited.

(k) No off-street parking shall be allowed in city parkway, including downtown (Area J).

(l) All other parking requirements in this chapter shall be followed.

TABLE OF PARKING REQUIREMENTS

(This table is meant only to give the required ratio of spaces. All other parking requirements in this chapter must be followed.)

<i>Type of Use</i>	<i>Number of Spaces Required</i>
<i>Institutional</i>	
Assembly with no fixed seating	10 spaces: 1,000 sq. ft.
Church or other assembly with fixed seating	1 space: 3 seats
Library	3 spaces: 1,000 sq. ft.
Day care, child care, nursery school, kindergarten, playgroups, day habilitation or workshops for disabled	1 space: 5 students + a stacking lane with 1 space per 5 students
School - Elementary, middle, junior high	1 space: 6 students + stacking lane with 1 space per 5 students + bus lanes
School - High school	1 space: 2 students
College educational facilities	1 space: each student and staff expected at the busiest time of the day
<i>Retail/Services</i>	
Convenience store with gas pumps	10 spaces: 1,000 sq. ft. + stacking lane with 1.5 spaces per pump
Mini-warehouses/storage	5 spaces
Offices - Medical/dentist	5 spaces: 1,000 sq. ft.
Offices (except medical or dental)	3 spaces: 1,000 sq. ft.
Retail - General (includes grocery and personal services)	5 spaces: 1,000 sq. ft.
Retail - Large item (e.g., furniture, appliance, carpet, non-public wholesale)	2 spaces: 1,000 sq. ft.
Retail or service with drive-thru (e.g., pharmacy, drycleaners, bank)	3 spaces: 1,000 sq. ft. + stacking lane with 3 spaces for drive-thru lanes
Shopping centers	6 spaces: 1,000 sq. ft.
Warehouse	1 space: 1,000 sq. ft.
All automotive services (e.g., gas, car wash, oil changes)	4 [spaces]: 1,000 sq. ft. including service bays; excluding spaces for detailing
<i>Recreation & Entertainment</i>	
Arcade or game room	5 spaces: 1,000 sq. ft.
Billiard hall	6 spaces: billiard table
Bowling alley	5 spaces: bowling lane
Recreation hall with no fixed seating	1 space for every 3 people that can be accommodated at one time
Health/fitness club or studio	8 space: 1,000 sq. ft.
Sports venue with fixed seating, theater	1 space: 3 seats
Game courts (racquetball, tennis, etc.)	4 spaces: court

<i>Type of Use</i>	<i>Number of Spaces Required</i>
Recreational businesses	1 space for every 4 persons normally accommodated in the establishment at one time
<i>Restaurant</i>	
Restaurant, high turnover & fast food	15 spaces: 1000 sq. feet (including patio & play area) + a stacking lane with 5 spaces before the first stopping space + 3 spaces between penultimate stopping place and service window
Restaurants, general	20 spaces: 1,000 sq. ft.
<i>Residential / Lodging</i>	
Apartment/condominium	1 space: bedroom or 2 spaces: dwelling unit, whichever is highest
Hotel/motel	1 space: sleeping room + spaces for accessory uses
Mobile home park	1 space: mobile home
Nursing home	0.5 space: bed
Senior assisted living	1.5 spaces: dwelling unit
Senior independent living	1 space: dwelling unit
Single family detached	2-spaced garage: dwelling unit
Townhouse	2-spaced garage: dwelling unit
Duplex	2 covered spaces: dwelling unit

(Ord. No. 259, 7-17-61; Ord. No. 69-397, § 5, 7-7-69; Ord. No. 73-506, § 1, 9-10-73; Ord. No. 81-780, § 1, 2-23-81; Ord. No. 90-1143, § 3, 12-3-90; Code 1958, § 25-7; Ord. No. 11-1964, § 2, 7-5-2011; Ord. No. 15-2067, §§ 1, 2, 6-1-2015; Ord. No. 17-2124, § 2, 2-6-2017)

Sec. 110-163. Loading requirements.

(a) On the same premises with every building devoted to retail trade, retail and wholesale food markets, warehouses, supply houses, wholesale and manufacturing trade, hotels, hospitals, laundry, dry cleaning establishments or other buildings where large amounts of goods are received or shipped, erected in any zone after July 17, 1961, shall provide loading and unloading space as follows:

- (1) Buildings of less than ten thousand (10,000) square feet of floor area must provide at the rear of each establishment a loading and unloading space which is adequate for the particular type of business.
- (2) Buildings of ten thousand (10,000) square feet of floor area and over must provide one (1) off-street loading and unloading space within minimum dimensions of ten (10) feet by twenty-five (25) feet by fifteen (15) feet overhead clearance, plus one (1) additional such space for each additional fifteen thousand (15,000) square feet of floor space or major fraction thereof.

- (3) Loading space being maintained in connection with any existing building on the effective date of the ordinance from which this provision derives shall thereafter be maintained so long as such building remains, unless an equivalent number of such spaces are provided conforming to the requirements of this section; provided, however, that this regulation shall not require the maintenance of more loading space than is required for a new building.

(b) Supervised living facilities and other health care institutions or other buildings where large amounts of goods are received or shipped, erected in any zone after December 3, 1990, shall provide loading and unloading space as follows:

- (1) Off-street facilities shall be provided and maintained for receiving and loading of merchandise, supplies and materials within a building or on the premises.
- (2) Required off-street loading facilities may be adjacent to a public alley or private service drive, or may consist of a berth within a structure.
- (3) No portion of a loading facility may extend into a public right-of-way.
- (4) The off-street loading spaces or truck berths shall provide maneuvering areas on site to prevent any blockage of public right-of-way.

(Ord. No. 259, 7-17-61; Ord. No. 90-1143, § 4, 12-3-90; Code 1958, § 25-8)

Sec. 110-164. Mining, excavation, soil removal.

No mining, excavation, or soil removal except in connection with construction covered by building permit.

(Ord. No. 259, 7-17-61; Code 1958, § 25-4(1))

Sec. 110-165. Number of main buildings—Residential.

Only one (1) principal building may be located upon an R-1, R-2, R-2A, or R-3 lot. The principal building shall be habitable.

(Ord. No. 259, 7-17-61; Code 1958, § 25-4(2); Ord. No. 10-1951, § 9, 12-6-2010)

Sec. 110-166. Same—Nonresidential.

Where a lot is used for retail, commercial, industrial or a combination of same, more than one (1) main building may be located upon the lot but only when such building conforms to all the open space, parking and density requirements applicable to the uses and zones and when all such main buildings face upon a street.

(Ord. No. 259, 7-17-61; Code 1958, § 25-4(3))

Sec. 110-167. Same—Facing streets.

Whenever two (2) or more main buildings, or portions thereof, are placed upon a single lot and such buildings will not face upon a street, the same may be permitted when the site plan for such development is approved by the city planning commission so as to comply with the normal requirements for platting.

(Ord. No. 259, 7-17-61; Ord. No. 85-969, § 1, 3-4-85; Code 1958, § 25-4(5))

Sec. 110-168. Screening.

Screening consisting of either masonry, or berms with adequate trees or shrubs, or chainlink fencing with adequate trees or shrubs shall be required when a business, commercial or industrial building backs up to either a major city street or a state highway and there are garbage receptacles, work vehicles and other common but unsightly operational or back-door materials visible. Such screening must be thick or dense enough to hide the unsightly items up to a height of at least six (6) feet.

(Ord. No. 259, 7-17-61; Ord. No. 85-969, § 1, 3-4-85; Code 1958, § 25-4(4))

Sec. 110-169. Permits for multiple buildings.

Whenever an area or tract of land under one (1) or several ownerships is proposed for development with more than one (1) main building, permits may be issued for housing projects, shopping centers, institutions, industrial development, or a combination development of two (2) or more uses when the same is issued with the approval of the planning commission.

(Ord. No. 259, 7-17-61; Ord. No. 85-969, § 1, 3-4-85; Code 1958, § 25-4(6))

Sec. 110-170. Height restrictions generally.

No structure shall be built with a height of more than one hundred forty (140) feet within ten thousand (10,000) feet of the center of an airport. No structure shall be built with a height of more than one hundred (100) feet within three (3) miles of either end of and in a line with any runway of an airport.

(Ord. No. 259, 7-17-61; Ord. No. 85-969, § 1, 3-4-85; Code 1958, § 25-4(7))

Sec. 110-171. Sight-obstruction at intersections.

On any corner lot on which front and side yards are required, no fence, structure, sign, tree, shrub or hedge may be maintained within a twenty-five-foot isosceles triangle formed by the lot lines on the corner, as to cause danger to traffic by obstructing the view.

(Ord. No. 259, 7-17-61; Ord. No. 84-914, § 2, 2-20-84; Ord. No. 85-969, § 1, 3-4-85; Code 1958, § 25-4(9))

Sec. 110-172. Reserved.

Editor's note—Ord. No. 14-2038, § 1, adopted Apr. 21, 2014, repealed § 110-172, which pertained to fences—when required and derived from Ord. No. 259, adopted July 17, 1961; Ord. No. 80-764, § 1, adopted Nov. 17, 1980; Ord. No. 85-969, § 1, adopted Mar. 4, 1985; and Code 1958, § 25-4(8).

Cross reference—Fence required for swimming pools, § 14-272.

Sec. 110-173. Fences—Construction permits required.

(a) It shall be unlawful for any person, business, partnership, corporation, or other entity, to commence the construction, enlargement, extension or relocation of a fence without first obtaining a permit from the building official for such work.

(1) *Application.* Application for a fence construction permit shall be made to the building official on forms provided for that purpose.

- (2) *Requirements.* The building official shall require that every application for a fence construction permit be accompanied by one (1) copy of a plan or plot drawn to scale and showing the following in sufficient detail to enable the building official to ascertain whether the proposed fence and its placement is in accordance with this chapter:
- a. *Lot dimensions and corners.* The actual shape, proportion and dimensions of the lot to be built upon and satisfactory evidence that actual corners of the lot are known and are identified by stakes or rods and established on the ground. The proposed fence should be within the property line of the lot seeking the permit.
 - b. *Existing yards.* The dimensions of all yards and such other information concerning the lot or adjoining lots as may be essential for determining whether the provisions of this chapter are being observed.
 - c. *Proposed structures.*
 1. The shape, height, type, quality, fabric, and location of all fences on a lot shall be consistent.
 2. All nails or fasteners shall be of nonrusting, noncorrosive metal such as hot dipped galvanized steel. All nails or fasteners shall be of the type (such as screw shank, ring shank, or divergent point staples) that when properly driven, will not work free, due to wind, vibration or shrinkage of members.
 3. All materials shall be securely fastened, vertical boards to horizontal stringers, stringers to vertical posts, top rail, to ensure an ongoing attractive appearance and safe condition, free from rust, rot, vandalism, and other sources of decay.
- (3) *Issuance.* If the proposed fence as set forth in the application is in conformity with the provisions of this chapter, the building official shall issue a fence permit.
- (4) *Disapproval.* If an application for a fence permit is not approved, the building official shall state in writing on the application the reasons for such disapproval.
- (Ord. No. 259, 7-17-61; Ord. No. 84-914, § 2, 2-20-84; Ord. No. 85-969, § 1, 3-4-85; Code 1958, § 25-4(10); Ord. No. 93-1253, § 1, 8-2-93; Ord. No. 96-1399, § 1, 11-4-96; Ord. No. 13-2008, § 8, 4-15-2013; Ord. No. 14-2038, § 2, 4-21-2014; Ord. No. 18-2173, § 1, 12-3-2018)

Sec. 110-173.1. Same—Height, location, and maintenance.

(a) No fence or enclosure shall exceed a height of seven (7) feet measured from the ground directly below the fence, with the following exceptions:

- (1) The side of the property abutting an arterial street or state highway may have fences up to eight and one-half (8½) feet in height.
- (2) Business properties in business, commercial and manufacturing zones (B-1 through M-2) may, for security purposes, have fences up to ten (10) feet in height.

- (3) Multi-family, business, commercial or industrial uses that abut a single-family residence zone on any side or the rear must be screened with a fence that is at least six (6) feet but no more than ten (10) feet in height. If the fence is to exceed eight (8) feet in height, the applicant must prove a specific need to the planning commission and the applicant must submit a site plan or landscape plan that depicts the fence.
- (4) Applicants for uses in business, commercial and industrial zones may have a fence that exceeds seven (7) feet in height if the applicant proves a specific need to the planning commission. The applicant must submit a site plan or landscape plan that depicts the fence.

(b) The planning commission may grant an applicant's request not to have a fence if the applicant proves that there is a physical need related to the property to omit the fence.

(c) No fence or enclosure shall extend closer to any street right-of-way line than the building line in front (see section 110-2 building line definition, being the front of the building) and the point of intersection of the building line with the property line on the side, except that when the lot is at least one (1) acre or more, ornamental see-thru (spaces six (6) inches to eighteen (18) inches in width) iron or steel fences with brick pillars may be erected up to and along the minimum setback line in front and on the property line on the side to its intersection with the minimum setback line in front.

(d) All fences shall be maintained by the property owner/lessee and shall be kept clean, free from all hazards such as, but not limited to faulty and loose fastenings, nails, boards, so as not to be detrimental to the public health and safety.

(Ord. No. 14-2038, § 3, 4-21-2014)

Sec. 110-174. Surfacing of off-street parking areas.

All off-street parking areas shall be graded and paved with an all weather type pavement, either concrete, asphaltic concrete or other surfacing material.

(Ord. No. 259, 7-17-61; Ord. No. 85-969, § 1, 3-4-85; Code 1958, § 25-4(11))

Sec. 110-175. Lot widths.

For the purpose of determining the minimum required width of the lot for building purposes, the width required may be measured at either the front line or the building line, whichever is greater, as long as either the front line or the building line meets the minimum requirement for the frontage of the lot or site under this Code for the particular zone and the lot meets the total square footage requirement of the Code for that zone.

(Ord. No. 259, 7-17-61; Ord. No. 84-929, § 1, 5-21-84; Ord. No. 85-969, § 1, 3-4-85; Code 1958, § 25-4(12))

Sec. 110-176. Tents in business and commercial zones.

The time period for which a business or other entity may erect or have a tent on their premises in business and commercial zones for the purpose of housing materials, providing

cover from the elements, providing for an outside sale area, providing for entertainment, conventions or any other social, business or commercial purpose shall not exceed thirty (30) days total for a calendar year.

(Ord. No. 93-1262, § 1(25-4(13)), 11-1-93)

Sec. 110-177. Screen enclosures.

(a) Interpretation of the definition of a screen enclosure shall be the duty of the building official.

(b) Appeals of the definition may be made to the zoning board of adjustments through the building official. The decision of the zoning board of adjustments shall be final if no challenge suit is filed in district court within fifteen (15) days after the decision.

(c) Screen enclosures shall not be counted toward total percentage of allowable structures on any lot. This subsection shall apply to all those structures existing on February 17, 1997, as well as those that are erected after that date.

(d) Additionally, screen enclosures shall:

- (1) Be designed and stamped by an engineer to meet Texas windstorm standards;
- (2) Not encroach onto any easements or setback requirement;
- (3) Be considered a structure and a permit is required;
- (4) Be exempted from the percentage of lot allowed for buildings or structures; and
- (5) Be subject to all other requirements for buildings or structures and those requirements shall be enforced.

(Ord. No. 97-1412, § 1, 2-17-97; Ord. No. 10-1951, § 10, 12-6-2010)

Sec. 110-178. Design limitations.

(a) The following design limitations shall apply after March 1, 2000, when a B-1A, B-2, C-1, C-2, M-1 or M-2 zone lot line is within sixty (60) feet of single-family residential area lot lines:

- (1) All garbage storage shall be screened and located no closer than ten (10) feet from a single-family residential zone and may not be located between the front of the structure and any street right-of-way.
- (2) All lots zoned for business, commercial, or industrial uses shall be screened in accordance with section 110-180 if the lot line is within sixty (60) feet of a single-family residential area lot line.
- (3) Hours of operation shall be limited to 5:00 a.m. to 12:00 midnight unless planning commission review determines alternative hours will not adversely impact the neighborhood residents outside normal hours of operations, all external lighting except that necessary for security purposes shall be secured.
- (4) No structure shall be located nearer to any single-family residential property than a distance equal to one and one-half (1½) times the height of the exterior walls of such building or structure. But those businesses built prior to March 1, 2000, are excepted from this requirement.
- (5) No mechanical, electrical or other equipment which produces noise, electrical or magnetic interference, vibration, heat, glare or other annoyance at nearby residential lot lines shall be permitted. Mechanical and electrical equipment shall be designed and installed to minimize noise impact on surrounding residential property. Additionally, no external amplified sound for other than safety or security purposes is allowed.
- (6) Uses that typically and inherently produce significant noise such as tire shops, muffler shops and car wash facilities are not allowed unless design features are present to eliminate noise that would intrude on the neighborhood.
- (7) All exterior signage, both temporary and permanent, shall meet the conducive color standards of section 110-72(17) and is subject to a design review and placement study by the planning commission. All signage detached from buildings/structures shall meet the requirements of a monument sign as defined in section 78-10 of this Code.
- (8) All storage, both temporary and permanent, of materials, pending customer work (i.e., vehicles), freight/deliveries or products intended for sale/lease shall be within the building or structure.

(b) The following performance standards shall be used after March 1, 2000 for the purpose of evaluating the development proposals when a B-1A, B-2, C-1, C-2, M-1 or M-2 zone lot line is within sixty (60) feet of single-family residential area lot line:

- (1) New development shall be designed to be compatible with neighboring residential areas. This shall require that materials used on the outside of the buildings be of earth tone colors or colors conducive to colors in the surrounding residential area.
 - a. Colors of awnings should be muted, natural or earth toned and related to major materials of the building.

- b. Window frames may be of an accent color to complement the major wall material.
- c. Paint shall be flat or semi-gloss.
- d. Metal roofs grey, natural green, rust or brown.
- e. Metal canopies dark anodized or black or to match roof.

This shall involve the preservation of the character and integrity of residential areas and the maintaining of an appropriate visual and functional interrelationship between residential and commercial uses. Potential intrusive design elements such as traffic circulation and light and glare shall be designed to avoid interference with the residence environment.

- (2) The height, scale, mass and bulk of buildings shall not be overbearing in relation to neighboring residential structures. Height, scale, mass and bulk shall also be a function of their proximity to residential structures, with buildings in close proximity made to adhere to a similar scale of development. Potential view impediments shall also be considered.
- (3) Architectural styles and features shall be compatible with and complementary to neighborhood residential structures to the extent commercial and residential structures share a visual relationship.

(Ord. No. 00-1626, § 2, 3-20-2000; Ord. No. 13-2008, § 9, 4-15-2013)

Sec. 110-179. Cinerariums.

(a) [*Definition.*] For purposes of this section, building means a free standing occupiable structure, exclusive of any other structure connected to the building by breezeways, walkways, or other types of attachment.

- (b) *All cinerariums.* The following regulations shall apply to all cinerariums.
 - (1) Only a church or religious institution that owns and uses the property on which the cinerarium shall sit may install and use a cinerarium.
 - (2) Only one (1) cinerarium is allowed per church or religious institution.
 - (3) Only one (1) cinerarium is allowed per lot.
 - (4) A cinerarium shall contain no more than one hundred fifty (150) niches, with each niche measuring no more than twelve (12) inches by twelve (12) inches by twelve (12) inches.
 - (5) Each niche shall only contain the cremains of one (1) person at a time.
 - (6) No sign permit shall be issued that identifies an area as a cinerarium.
 - (7) Cinerariums may not occupy more than three hundred (300) square feet. This three hundred (300) square foot limitation includes the niches as well as the concrete slab or wall that contains the niches.
 - (8) The church or religious institution must maintain a current list of those interred in the cinerarium.

- (9) The church or religious institution must file a plat with the county clerk showing the layout or plan of the cinerarium. The church must file an amended plat if the number of niches in the cinerarium changes.
- (c) *Interior cinerariums.* The following regulations shall apply to all interior cinerariums.
- (1) The cinerarium may only be inside of a building and it must adjoin and be a part of the building that houses the main sanctuary.
 - (2) Niches may only be accessible and viewed from the interior of the building.
 - (3) If the sanctuary is moved, then the cinerarium must also be moved so that all requirements in this section are met.
- (d) *Exterior cinerariums.* The following regulations shall apply to all exterior cinerariums.
- (1) The cinerarium shall consist of an in-ground concrete slab with niches constructed in the slab for placement of urns or other suitable containers for cremains.
 - (2) The cinerarium must adjoin the building that houses the main sanctuary on the church or religious institution's campus.
 - (3) The cinerarium must be constructed so that the niches do not collect water.
 - (4) The top surface of the cinerarium, including the niche covers, cannot be higher than the top elevation of the building's foundation to which the cinerarium adjoins.
 - (5) All niches shall have a uniform cover.
 - (6) The cinerarium shall be built so that no items such as ornaments, flower vases, or other memorials that extend above the surface of the cinerarium are accommodated.
 - (7) The cinerarium may be enclosed within a wall. The wall either must be made from masonry materials or must consist of a hedge that completely screens the cinerarium. Wooden fences may not be used to screen the cinerarium. The wall may not contain niches.
 - (8) If the sanctuary is moved, then the cinerarium must also be moved so that all requirements in this section are met.
- (e) *Removal of cremains.*
- (1) Once the property ceases to be used for a church or religious institution or if the property is deemed to be a nuisance, the property owner shall be responsible for the removal of all cremains.
 - (2) If the property owner does not remove the cremains, the city shall remove and dispose of the cremains as allowed by state law. The city shall document the place and manner of disposal and shall keep such documentation as a permanent record.

(Ord. No. 11-1960, § 3, 6-6-2011)

Sec. 110-180. Screening and fencing materials.

(a) *Unsightly features.* When a business, commercial or industrial use backs up to a major city street or a state highway and there are garbage receptacles, work vehicles and other common but unsightly operational or back-door materials visible, the unsightly area may be required to have at least a six-foot screen consisting of:

- (1) Masonry walls;
- (2) Wood fencing;
- (3) Chain link fencing with trees or shrubs thick or dense enough to hide the unsightly items; or
- (4) Berms with adequate trees or shrubs thick or dense enough to hide the unsightly items.

(b) *Abutting single-family residential zones.* Where a multi-family, business, commercial or industrial use abuts a single-family residence zone on any side or the rear, the fence must be solid enough to prevent light penetration.

(c) *Fencing materials.* Fencing materials for fences that are over two (2) feet and are not installed to fence agricultural uses may only consist of:

- (1) Chain link;
- (2) Wood that is decay resistant;
- (3) Iron or steel ornamental;
- (4) Chain link with vinyl slats;
- (5) Masonry;
- (6) Wrought iron;
- (7) Solid stone;
- (8) Galvanized welded wire with a minimum thickness of at least wire gauge 14 if used as a backing fabric in conjunction with wood, masonry, stone, or otherwise approved fencing. The fence shall be constructed with adequate frame and rail structure so that the wire does not sag, does not become misshapen when a person or animal climbs over the fence or pushes against the fence, and the mesh opening does not permit the passage of a sphere with a diameter of four (4) inches. This does not include woven or knotted wire fabric similar to commercial rural field fence products. (See Fig. 1)

(d) *Barbed wire.* Fences surrounding commercial and industrial uses may contain barbed wire on the top of the fencing if the use is not adjacent to a residential zone. Barbed wire may be used in E-1 residential zones.



(Ord. No. 13-2008, § 10, 4-15-2013; Ord. No. 14-2038, § 4, 4-21-2014)

Secs. 110-181—110-195. Reserved.

ARTICLE VII. AIRPORT ZONING

Sec. 110-196. Airport zoning.

(Reserved)

(Ord. No. 259, 7-17-61; Code 1958, § 25-9)

Editor's note—The above section is reserved for future airport zoning regulations.

State law reference—Municipal and county zoning authority around airports, V.T.C.A., Local Government Code ch. 241.

Landscape



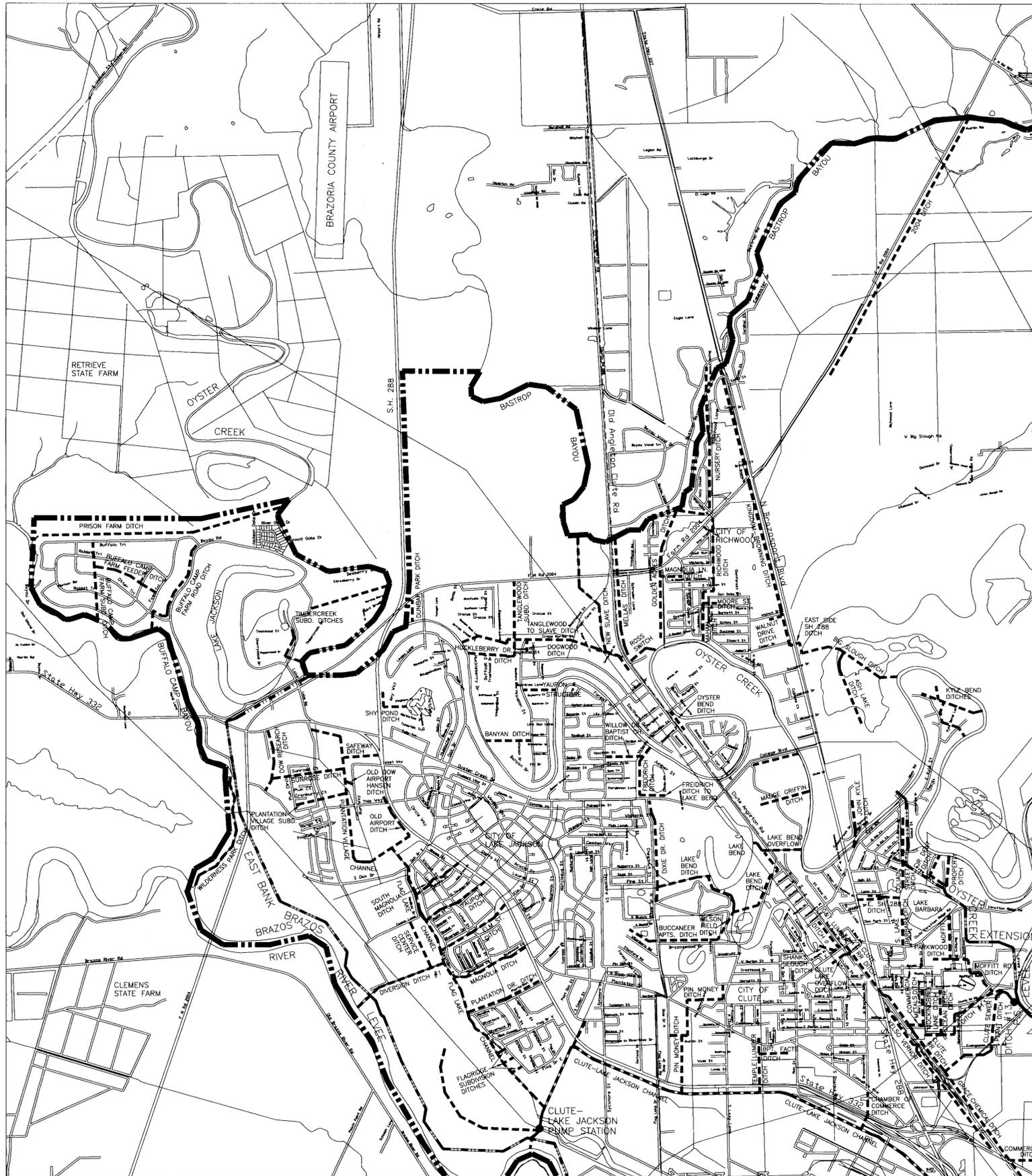
- Guidelines for Growth -

***CITY OF LAKE JACKSON
DEVELOPMENT MANUAL***

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- City of Enchantment -

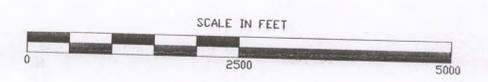
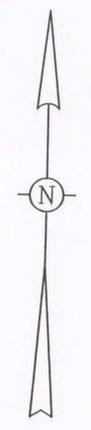




DITCHES IN LAKE JACKSON

1. **WILDERNESS PARK** - the area below the Buffalo Camp Hayou dam to the entrance into the Brazos River approximate acres 13, approximate length 4,257' average width 132'
2. **OLD DOW AIRPORT DITCH** - beginning at Airport on S.H. 332 then turning to right, behind St. Michael's Catholic Church, and ending at large Flag Lake Drainage Channel behind Oak Drive in Lake Jackson. Width 55', length 2,949', acres 3.72
3. **SHY POND DITCH** - a ditch beginning west of Shy Pond and running west into row 60" pipe connecting to the structure. 66' width, 1,333' length, 2 acres.
4. **PRISON FARM DITCH AND LEVEE** - a levee and ditch separating the prison farm from Buffalo Camp Farms Subdivision approximate total acres 12.5, approximate length 9,199', approximate width 59'
5. **BUFFALO CAMP FARM ROAD DITCH** - the ditch begins at the intersection of Buffalo Trail and Bayou Road and thereafter follows the west side of Lake Farms and turns along Otter Trail, then crosses under Otter Trail and ends into Buffalo Camp Farms Subdivision. Approximate length 4,395' approximate width 41', acres 4.3
6. **BUFFALO CAMP FARM SUBDIVISION** - located in the center of the above subdivision, this ditch begins at the bayou and runs North and ends at the prison farm property. This ditch parallels a utility line which will help to identify the location. Also, a feeder ditch between Otter Trail and Rabbit Trail should be included as a part of the above ditch. This short feeder ditch ends into the above described ditch. Width 42' length 3,843', approx. acres 3.7
7. **BUFFALO CAMP FARM FEEDER DITCH** - a ditch between Otter Trail and Rabbit Trail. Width 40' length, 1,013', acres .93
8. **DUNBAR PARK DITCH** - a ditch beginning at the Dunbar Park Structure and going North to F.M. 2004. Approx. length 655' width 28', acres 4.2
9. **TANGLEWOOD SUBDIVISION DITCH** - a ditch beginning at the Tanglewood Creek structure and running north to F.M. 2004, width 50' length 4,986', acres 5.8
10. **TANGLEWOOD TO SLAVE DITCH** - a ditch connecting the Tanglewood ditch to the old Slave ditch 50' width, length 2,777', acres 3.6
11. **DOGWOOD DITCH** - a ditch on the north side of Dogwood Street which goes to the Slave Ditch width 50', length 958', ac 1
12. **YAUPON STRUCTURE** - between Raintree Lane & Hayberry Ct., from Yaupon Street east to Oyster Creek.
13. **GOLDEN ACRES DITCH** - is located on the west side of Golden Acres Subdivision which is on the west side of Old Angleton Road between Willow Drive and F.M. 2004. Golden Acres ditch ends at the Old Slave Ditch. Width 29', length 2,275', acres 1.5
14. **NEW SLAVE DITCH** - a ditch which replaced the Old Slave Ditch connecting the Old Slave Ditch to Bastrop Bayou. Approx. length 2,619', width 64', acres 3.82
15. **OYSTER BEND DITCH** - a ditch from the Oyster Bend structure to the railroad trestle, width 52', length 771', acres .93
16. **FRIEDRICH DITCH TO LAKE BEND** - a ditch running along south side of FRIEDRICH property from fire station to the north side of Lake Bend, width 35' length 2,148', acres 1.77
17. **FRIEDRICH DITCH** - a ditch beginning at Oyster Creek Drive in front of the Speedy Stop and going north to the creek structure width 78', length 2,664', acres 4.7
18. **WILLOW DRIVE BAPTIST CHURCH DITCH** - a ditch beginning at Willow Drive south of Baptist Church and ending at the FRIEDRICH ditch width 42', length 1,125', acres 1
19. **PLANTATION DRIVE DITCH** - a ditch in the Oaks of Flagridge subdivision going from S.H. 332 to the Flaglake Channel. Width 54', length 2,838', acres 3.5
20. **MAGNOLIA DITCH** - a ditch parallel to Basswood Street beginning at S.H. 332 and ending into the Flaglake channel, width 77', length 3,029', acres 5.4
21. **ELM STREET DITCH** - a ditch parallel to Silverbell Street and across from Elm Street and beginning at S.H. 332 and ending at the Flagridge Channel. Width 65', length 2,761', acres 4.1
22. **YAUPON DITCH** - a ditch parallel to Yaupon Street and beginning at S.H. 332 and ending into Flaglake Channel. Length 2,718', acres 3
23. **SOUTH MAGNOLIA DITCH** - a ditch parallel to south Magnolia Street, beginning at S.H. 332 and ending at Flaglake Channel. Width 44', length 1,711', acres 1.75
24. **DIXIE DRIVE DITCH** - a ditch along the east side of Dixie Drive between Oyster Creek Drive and Plantation Drive width 25', length 5,912', acres 3.4
25. **DIVERSION DITCH #1** - a major ditch on the Brazos River dump area running from the Flaglake Channel to the Lake Jackson width 90', length 2,900', acres 6
26. **CLUTE - LAKE JACKSON CHANNEL** - along the west side from the Sycamore Bridge to the Clute Lake Jackson pump station width 52', length 3,662', acres 4.42 -- Along the east and west side of channel from Sycamore Bridge to Lary Lane Street width 49', length 4,635', acres 5.2 -- Along the east side of channel from Lary Lane Street to Main Street width 43', length 2,283', acres 2.25, along the east side of channel between Main Street and BASF Road, width 12', length 3,642', acres 1 -- Along the east bank of channel from BASF Road to S.H. 288 width 10', length 3,508', acres 8
27. **FLAGLAKE CHANNEL** - along the west bank of channel from Clute-Lake Jackson Pump Station to Oak Drive Bridge width 45', length 12,113', acres 18.5 along the east bank between Oak Drive Bridge and the Magnolia Ditch width 61', length 4,437', acres 6.26 -- Along the east bank of Flagridge channel between the Magnolia Ditch and the Sycamore Bridge width 30', length 12,023', acres 8.0
28. **FLAGRIDGE SUBDIVISION DITCHES** - three ditches on the west end of Flagridge Subdivision which running from underground street culverts to the Flaglake Channel width 17', length 5,563', acres 2.17
29. **PLANTATION VILLAGE CHANNEL** - the extension of Flaglake Channel beginning at Oak Drive Bridge and ending at S.H. 332 near Lake Road Speedy Stop / 167 x 528 = 2.02 acres, 100 x 2238 = 5.14 acres, 100 x 1925 = 4.42 acres, 50 x 2607 = 3 acres = 14.6 acres total.
30. **PLANTATION VILLAGE SUBDIVISION DITCH** - 1st ditch off Plantation Village Channel on left side. Ditch runs from Plantation Village Channel toward west for a section and then becomes a concrete lined ditch in the above subdivision 65' x 418' = .62 acres + ROW 12 x 418' = .75 acres total.
31. **DOW RESEARCH DITCH** - a ditch existing from Plantation Village Channel and running west thru the Dow research center and stopping at S.H. 332. P.V.C. 80' x 809' to fence = 1.60 acres, fence 57' x 3671' to 332 = 4.80 acres, ROW 12' x 4480' = 1.23 acres total = 7.63 acres.
32. **OLD DOW AIRPORT HANSEN DITCH** - a ditch existing Plantation Village Channel to the east toward Abner Jackson Parkway area 67' x 326' = .5 acre.
33. **TIMBERCREEK SUBDIVISION SECTION 1 STRUCTURE** - the structure and entrance ditch from Lake Jackson Farms Lake 60' x 150' = 21 acres + 50' x 997' = 1.14 acres Total = 1.35 acres.
34. **SERVICE CENTER DITCH** - a ditch parallel to Flag Lake Channel between Cannan Lane and Diversion Ditch #1
35. **BANYAN DITCH** - a ditch beginning at west side of Yaupon Street to Oyster Creek.

KEY		DATE		REVISIONS		BY	
<p>CITY OF LAKE JACKSON EXHIBIT "A" V.D.D. OUTFALL CHANNEL/DITCH MAINTENANCE MAP</p>							
DESIGNED BY	DATE	DRAWN BY	DATE	SCALE	PROJECT NO.		
CHECKED BY	DATE	APPROVED BY	DATE	CITY ENGINEER	SHEET	OF	



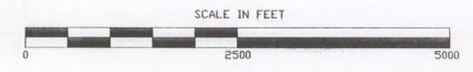
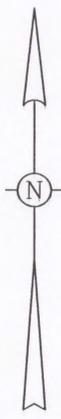
SCALE 1"=1000'

LEGEND

- WATER MAIN
- JUNCTION
- ⊙ PUMP STATION
- ▣ STORAGE TANK

PLATE 1

CITY OF LAKE JACKSON
WATER DISTRIBUTION SYSTEM



SCALE: 1"=1000'

PLATE 2

CITY OF LAKE JACKSON
WATER DISTRIBUTION SYSTEM

- Guidelines for Growth -

***CITY OF LAKE JACKSON
DEVELOPMENT MANUAL***

CONSTRUCTION STANDARD DRAWINGS

Electronic File available on request

- City of Enchantment -