

REVIEW BY FORT BEND COUNTY COMMISSIONERS COURT

On this 6th day of September, 2016, Commissioners Court came on to be heard and reviewed the accompanying notice of Jaho, Inc.
Job Location 5600 L J Parkway, Sugar Land, TX 77479
Date 7/27/2016 Bond No. LPM9217475, Permit No. 2016-9065 to make use of certain Fort Bend County property subject to, "A Revised Order Regulating the Laying, Construction, Maintenance, and Repair of Buried Cables, Conduits, and Pole Lines, In, Under, Across or Along Roads, Streets, Highways, and Drainage Ditches in Fort Bend County, Texas, Under the Jurisdiction of the Commissioners Court of Fort Bend County, Texas," as passed by the Commissioners Court of Fort Bend County, Texas the 3rd day of August, 1987, recorded in Volume _____ of the Minutes of the Commissioners Court of Fort Bend County, Texas, to the extent that such order is not inconsistent with Article 1436a, Vernon's Texas Civil Statutes. Upon Motion of Commissioner Meyers, seconded by Commissioner Patterson, duly put and carried, it is ORDERED, ADJUDGED AND DECREED that said notice of said above purpose is hereby acknowledged by the Commissioners Court of Fort Bend County, Texas, and that said notice be placed on record according to the regulation order thereof.

Notes:

1. Evidence of review by the Commissioners Court must be kept on the job site and failure to do so constitutes grounds for job shutdown.
2. Written notices are required:
 - a. 48 hours in advance of construction start up, and
 - b. when construction is completed and ready for final inspection
 Mail notices to: Permit Administrator
 Fort Bend County Engineering
 301 Jackson Street
 Richmond, Texas 77469
 281-633-7500
3. This permit expires one (1) year from date of permit if construction has not commenced.

By: Charles O. AS9
County Engineer

By: N/A
Drainage District Engineer/Manager

Presented to Commissioners Court and approved.
Recorded in Volume 916/14 15N
Minutes of Commissioners Court

By: [Signature]
Clerk of Commissioners Court
By: [Signature]
Deputy **RENEE MICHULKA**

County of Fort Bend
Engineering Department

301 Jackson Street
Richmond, Texas 77469

Phone: (281) 633-7500

**Permit Application Review Form For
Cable, Conduit, and Pole Line Activity
In Fort Bend County**

Permit No. 2016-9065

The following "Notice of Proposed Cable, Conduit, and/or Pole Line activity in Fort Bend County" and accompanying attachments have been reviewed and the notice conforms to appropriate regulations set by Commissioner's Court of Fort Bend County, Texas.

- (1) Complete Application Form:
- a. Name of road, street, and/or drainage ditch affected.
 - b. Vicinity map showing course of directions
 - c. Plans and specifications

- (2) Bond:
- District Attorney, approval when applicable.
Perpetual bond currently posted.
- No: _____
Amount: _____
- Performance bond submitted.
- No: LPM9217475
Amount: \$5,000.00
Cashier's Check
- No: _____
Amount: _____

(3) Verbal permission given for emergencies, to start construction before approved in Commissioner's Court.

Precinct Engineer Acknowledgment _____ Date

Precinct Commissioner Acknowledgment _____ Date

(4)

Drainage District Approval when applicable

We have reviewed this project and agree it meets minimum requirements.



Assistant County Engineer

8/29/16

Date

**PERFORMANCE BOND COVERING ALL CABLE, CONDUIT AND/OR POLE LINE
ACTIVITY IN, UNDER, ACROSS OR ALONG FORT BEND COUNTY ROAD, COMMERCIAL
DRIVEWAY AND MEDIAN OPENINGS OR MODIFICATIONS**

AUTHORIZED

BOND NO LPM9217475

THE STATE OF TEXAS §

KNOW ALL MEN BY THESE PRESENTS:

COUNTY OF FORT BEND §

THAT WE, Jaho, Inc. whose address is 2003 Wilson Road, Humble, Texas 77396 Texas, hereinafter called the Principal, And Fidelity and Deposit Company of Maryland, a Corporation existing under and by virtue of the laws of the state of Maryland and authorized to do an indemnifying business in the state of Texas, and whose principal office is located at 1400 American Lane, Tower I, 18th Floor, Schaumburg, IL 60196, whose officer residing in the State of Texas, authorized to accept service in all suits and actions brought whining said state is Tracy Haley and Whose address is Zurich North America, 12222 Merit Dr., 8th Floor, Dallas TX 75251, hereinafter called the Surety, and held and firmly bound unto, Robert e. Hebert, County Judge of Fort Bend County, Texas, or his successors in office, in the full sum of Five Thousand and No/100----- Dollars (\$ 5,000.00) current, lawful money of the United States of America, to be paid to said Robert E. Hebert, County Judge of Fort Bend County, Texas, or his successors in office, to which payment well and truly to be made and done, we, the undersigned, bind ourselves and each of us, our heirs, executors, administrators, successors, assigns, and legal representatives, jointly and severally, by these presents.

THE CONDITION OF THIS BOND IS SUCH THAT, WHEREAS, the above bounden principal contemplates laying, constructing, maintaining and/or repairing one or more cables, conduits, and/or pole lines in, under, across and/or along roads, streets and highways, commercial driveway and median openings or modifications in the County of Fort Bend, and the State of Texas, under the jurisdiction of the Commissioners' Court of Fort Bend County, Texas, pursuant to the Commissioners' Court order adopted on the 1st day of December, A.D. 1980, recorded in Volume 13, of the Commissioners' Court Minutes of Fort Bend County, Texas, regulating same, which Commissioners' Court order is hereby referred to and made a part hereof for all purposes as though fully set out herein;

AND WHEREAS, the principal desires to provide Fort Bend County with a performance bond covering all such cable, conduit and/or pole line activity, commercial driveway and median openings or modifications;

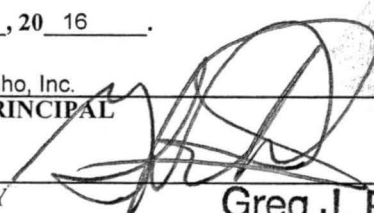
NOW, THEREFORE, if the above bounden principal shall faithfully perform all its cable, conduit and/or pole line activity (including, but not limited to the laying, construction, maintenance and/or repair of cables, conduits and/or pole lines) in, under, across and/or along roads, streets and highways, commercial driveway and median openings or modifications in the County of Fort Bend and State of Texas, under the jurisdiction of the Commissioners Court of Fort Bend County, Texas, pursuant to and in accordance with minimum requirements and conditions of the above mentioned Commissioners' Court order set forth and specified to be by said principal done and performed, at the time and in the manner therein specified, and shall pay over and make good and reimburse Fort Bend County, all loss and damages which Fort Bend County may sustain by reason of any failure or default on the part of said principal, then this obligation shall be null and void, otherwise to remain in full force and effect.

This bond is payable at the County Courthouse in the County of Fort Bend and State of Texas.

It is understood that at any time Fort Bend County deems itself insecure under this bond, it may require further and/or additional bonds of the principal.

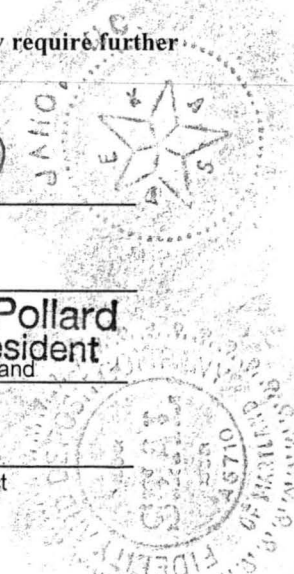
EXECUTED this 27th day of July, 20 16.

Jaho, Inc.
PRINCIPAL

BY  Greg J. Pollard
Vice President

Fidelity and Deposit Company of Maryland
SURETY


BY Jessica Richmond, Attorney-in-Fact



**ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND
POWER OF ATTORNEY**

KNOW ALL MEN BY THESE PRESENTS: That the ZURICH AMERICAN INSURANCE COMPANY, a corporation of the State of New York, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, a corporation of the State of Maryland, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND a corporation of the State of Maryland (herein collectively called the "Companies"), by **MICHAEL BOND, Vice President**, in pursuance of authority granted by Article V, Section 8, of the By-Laws of said Companies, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, do hereby nominate, constitute, and appoint **Philip N. BAIR, Eric S. FEIGHL and Jessica RICHMOND, all of Houston, Texas, EACH** its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings, EXCEPT bonds on behalf of Independent Executors, Community Survivors and Community Guardians.** and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Companies, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the ZURICH AMERICAN INSURANCE COMPANY at its office in New York, New York., the regularly elected officers of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at its office in Owings Mills, Maryland., and the regularly elected officers of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at its office in Owings Mills, Maryland., in their own proper persons.

The said Vice President does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article V, Section 8, of the By-Laws of said Companies, and is now in force.

IN WITNESS WHEREOF, the said Vice-President has hereunto subscribed his/her names and affixed the Corporate Seals of the said ZURICH AMERICAN INSURANCE COMPANY, COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and FIDELITY AND DEPOSIT COMPANY OF MARYLAND, this 31st day of May, A.D. 2016.

ATTEST:

**ZURICH AMERICAN INSURANCE COMPANY
COLONIAL AMERICAN CASUALTY AND SURETY COMPANY
FIDELITY AND DEPOSIT COMPANY OF MARYLAND**



Eric D. Barnes

By: _____

*Secretary
Eric D. Barnes*

Michael Bond

*Vice President
Michael Bond*

State of Maryland
County of Baltimore

On this 31st day of May, A.D. 2016, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, **MICHAEL BOND, Vice President, and ERIC D. BARNES, Secretary**, of the Companies, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and acknowledged the execution of same, and being by me duly sworn, depose and saith, that he/she is the said officer of the Company aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and that the said Corporate Seals and the signature as such officer were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporations.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

Maria D. Adamski

Maria D. Adamski, Notary Public
My Commission Expires: July 8, 2019



EXTRACT FROM BY-LAWS OF THE COMPANIES

"Article V, Section 8, Attorneys-in-Fact. The Chief Executive Officer, the President, or any Executive Vice President or Vice President may, by written instrument under the attested corporate seal, appoint attorneys-in-fact with authority to execute bonds, policies, recognizances, stipulations, undertakings, or other like instruments on behalf of the Company, and may authorize any officer or any such attorney-in-fact to affix the corporate seal thereto; and may with or without cause modify or revoke any such appointment or authority at any time."

CERTIFICATE

I, the undersigned, Vice President of the ZURICH AMERICAN INSURANCE COMPANY, the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY, and the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, do hereby certify that the foregoing Power of Attorney is still in full force and effect on the date of this certificate; and I do further certify that Article V, Section 8, of the By-Laws of the Companies is still in force.

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the ZURICH AMERICAN INSURANCE COMPANY at a meeting duly called and held on the 15th day of December 1998.

RESOLVED: "That the signature of the President or a Vice President and the attesting signature of a Secretary or an Assistant Secretary and the Seal of the Company may be affixed by facsimile on any Power of Attorney...Any such Power or any certificate thereof bearing such facsimile signature and seal shall be valid and binding on the Company."

This Power of Attorney and Certificate may be signed by facsimile under and by authority of the following resolution of the Board of Directors of the COLONIAL AMERICAN CASUALTY AND SURETY COMPANY at a meeting duly called and held on the 5th day of May, 1994, and the following resolution of the Board of Directors of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND at a meeting duly called and held on the 10th day of May, 1990.

RESOLVED: "That the facsimile or mechanically reproduced seal of the company and facsimile or mechanically reproduced signature of any Vice-President, Secretary, or Assistant Secretary of the Company, whether made heretofore or hereafter, wherever appearing upon a certified copy of any power of attorney issued by the Company, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seals of the said Companies, this 27th day of July, 2010.



Gerald F. Haley

Gerald F. Haley, Vice President

SITE PLAN FOR FORT BEND COUNTY L.I.D. NO.15 DRAINAGE & PAVING IMPROVEMENTS FOR WETLANDS PARK AT RIVERSTONE WITHIN FORT BEND COUNTY, TEXAS



APPROVAL BY THE CITY OF SUGAR LAND WILL BE DEEMED VOID IF CONSTRUCTION HAS NOT BEGUN WITHIN ONE YEAR OF APPROVAL DATE.

CONTRACTOR SHALL NOTIFY THE CITY OF SUGAR LAND AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF WORK.

NO CONSTRUCTION SHALL BEGIN UNTIL COVER SHEET IS SIGNED.

CITY OF SUGAR LAND
APPROVED: *[Signature]*
DATE: 08/12/16



Engineering and Surveying
9990 Richmond Avenue, Suite 450 N
Houston, Texas 77042
(713) 783-7788 (713) 783-3580, Fax

TBPE FIRM REG. No. 280
TBPLS FIRM REG. No. 100486

JOB NO. 2016-005-002

DATE: MAY 2016

FORT BEND COUNTY

ENGINEER: *[Signature]* Richard W. Stollis, P.E.
DATE: 8/12/16

THESE SIGNATURES ARE VOID IF CONSTRUCTION HAS NOT COMMENCED IN ONE (1) YEAR FROM DATE OF APPROVAL.

APPROVED: *[Signature]*
DEVELOPMENT COORDINATOR
DATE: 8/16/16



Know what's below.
Call before you dig.

CONTACT NUMBERS

CITY OF SUGAR LAND - ENGINEERING DEPT _____ 281-275-2788
FORT BEND COUNTY L.I.D. No.15 - OPERATOR - SI ENVIRONMENTAL _____ 832-498-1500
FORT BEND COUNTY L.I.D. No.15 - ENGINEER - COSTELLO, Inc. _____ 713-783-7788
FORT BEND COUNTY DRAINAGE DISTRICT _____ 281-342-2863

INDEX OF DRAWINGS
SHEET NO. DESCRIPTION

- 1.....COVER SHEET
- 2.....CONSTRUCTION NOTES
- 3.....PAVING & GRADING AND TOPOGRAPHY LAYOUT
- 4.....UTILITY LAYOUT
- 5.....DRAINAGE AND CALCULATIONS
- 6.....STRIPING & SIGNAGE LAYOUT
- 7.....CONSTRUCTION JOINT LAYOUT
- 8.....PLAN & PROFILE - 12" STORM
- 9.....POLLUTION PREVENTION PLAN
- 10.....POLLUTION PREVENTION DETAILS
- 11.....PEDESTRIAN FACILITIES
- 12.....T-POD TRAFFIC CONTROL PLAN LAKE CLOSURE FOR DIVIDED HIGHWAYS TCPM1-01-12

SUGAR LAND DETAILS

- SL-01 GENERAL CONSTRUCTION NOTES I
- SL-02 GENERAL CONSTRUCTION NOTES II
- SL-15 WATER LINE CONSTRUCTION DETAILS
- SL-16 WATER LINE CROSSING DETAILS
- SL-17 WATER LINE METER VAULT DETAILS
- SL-19 WATER LINE SANITARY SEWER, FORCE MAIN BEDDING DETAILS
- SL-20 STORM SEWER PIPE BEDDING AND BACKFILL DETAILS
- SL-21 CONCRETE PAVEMENT CONSTRUCTION DETAILS
- SL-22 CONCRETE PAVEMENT CONSTRUCTION DETAILS
- SL-23 RESIDENTIAL CURB CONSTRUCTION DETAILS
- SL-25 WHEEL CHAIR RAMP & SIDEWALK DETAILS I
- SL-26 WHEEL CHAIR RAMP & SIDEWALK DETAILS II
- SL-27 DRIVEWAY CONSTRUCTION DETAILS
- SL-32 SIGN CONSTRUCTION DETAILS
- SL-33 GENERAL EROSION CONTROL NOTES
- SL-34 EROSION CONTROL DETAILS - 1
- SL-35 EROSION CONTROL DETAILS - 2

FORT BEND COUNTY DETAILS

FBC 002A.B.C. SIDEWALKS & DRIVEWAYS ON CURB TYPE STREETS RESIDENTIAL AREA

FORT BEND COUNTY L.I.D. No.15 - DRAINAGE & PAVING IMPROVEMENTS FOR WETLANDS PARK AT RIVERSTONE - JOB - 2016-005-002 - MAY 2016

GENERAL NOTES

- 1. CONTRACTOR SHALL CONTACT THE CITY OF SUGAR LAND ENGINEERING DEPARTMENT...
2. CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS FROM THE CITY OF SUGAR LAND AND FORT BEND COUNTY...
3. CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS FROM THE CITY OF SUGAR LAND AND FORT BEND COUNTY...

Continuation of General Notes

- 27. THE CONTRACTOR SHALL CONTACT WITH THE SOILS LABORATORY AND SOIL ANALYSIS UNIT...
28. CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS FROM THE CITY OF SUGAR LAND AND FORT BEND COUNTY...
29. CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS FROM THE CITY OF SUGAR LAND AND FORT BEND COUNTY...

Continuation of Water Main Notes

- 6. 4-INCH THROUGH 16-INCH WATER LINE FITTINGS SHALL BE CASTLE END COMPACT...
7. ALL WATER LINES SHALL HAVE A MINIMUM OF 4 INCHES COVER FROM TOP OF CURB TO TOP OF PIPE...
8. CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS FROM THE CITY OF SUGAR LAND AND FORT BEND COUNTY...

PAVING CONSTRUCTION NOTES

- 1. PAVING SHALL BE CONSTRUCTED IN ACCORDANCE WITH ALL CITY OF SUGAR LAND REQUIREMENTS...
2. ALL PAVING IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FORT BEND COUNTY...
3. CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS FROM THE CITY OF SUGAR LAND AND FORT BEND COUNTY...

TRANS COMMUNICATION ON ENVIRONMENTAL QUALITY WATER DISTRIBUTION SYSTEM GENERAL CONSTRUCTION NOTES

- 1. The water distribution system shall be constructed in accordance with the current Texas Commission on Environmental Quality (TCEQ) Rules and Regulations for Public Water Systems...
2. An approved engineer shall notify in writing the local TCEQ Regional Office when construction will start...
3. All newly installed pipes and related products must conform to American National Standards Institute/National Sanitation Foundation (ANSI/NSF) Standard 61 and must be certified by an organization...

WINDSTREAM COMMUNICATION

NOTE: THE LOCATIONS OF WINDSTREAM COMMUNICATION UTILITIES ARE NOT SHOWN. THE CONTRACTOR SHALL CONTACT THE UTILITY COMPANIES TO DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY DAMAGE TO THE UTILITIES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.

CAUTION: UNDERGROUND GAS FACILITIES

LOCATION OF RELIANT ENERGY ENTER MAIN LINES TO INCLUDE UNDER GAS TRANSMISSION AND/OR DISTRIBUTION GAS SUPPLY CONDUITS (BY WATER AND/OR AIR) IS SHOWN ON THE DRAWING. THE CONTRACTOR SHALL CONTACT THE UTILITY COMPANIES TO DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY DAMAGE TO THE UTILITIES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.

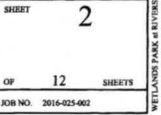
NOTE: WHEN THERE ARE CONFLICTS BETWEEN THE GENERAL NOTES, FORT BEND COUNTY GENERAL NOTES AND THE CITY OF SUGAR LAND STANDARD NOTES, THE MORE STRINGENT NOTES SHALL APPLY.

Costello Engineering and Surveying 9990 Richmond Avenue, Suite 450 N Houston, Texas 77042 (713) 783-7788 (713) 783-3680, Fax (713) 783-7788 (713) 783-3680

WETLANDS PARK at RIVERSTONE CONSTRUCTION NOTES

Table with columns: NO., REVISION, DATE, BY. Includes design and check marks for various stages.

APPROVED: [Signature] DEVELOPER DATE: 8/16/16 SHEET 2 OF 12 SHEETS JOB NO. 2016-025-002



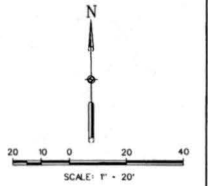
CONTACT JONATHAN ZAHN (713-998-3485) /
JZAHN@SENV.COM AT SENVRO
TO MAKE TAP AND INSTALL
METER AND BACKFLOW

PIPELINE NOTE:
CONTACT RYAN HERWECK WITH SENERGY (281-924-0054) /
RYAN.HERWECK@SENERGY.COM
48 HOURS PRIOR TO ANY WORK AROUND PIPELINE

- LEGEND**
- - - - - BACK OF PROP. 6-INCH CONC. CURB
 - PROP. STORM SEWER
 - PROP. SANITARY SEWER
 - - - - - PROP. WATER LINE
 - EXIST. STORM SEWER
 - EXIST. SANITARY SEWER
 - - - - - EXIST. WATER LINE
 - EXIST. TREE
 - EXIST. TREE TO BE REMOVED (BY OTHERS)

CONTROL BENCHMARK
City of Missouri City survey marker #0440 located
at the base of south median at the intersection of
L.J. Parkway and Lake Riverstone Drive.
Sta. = 88.70, NAD 83, 2005 AD

SEE BENCHMARK 2237-30-1
March 16 to west side of first power pole
north of signal stand located at Southwest
corner of the Parkway project
(Sta. = 89.27)



STORM SEWER COORDINATE TABLE

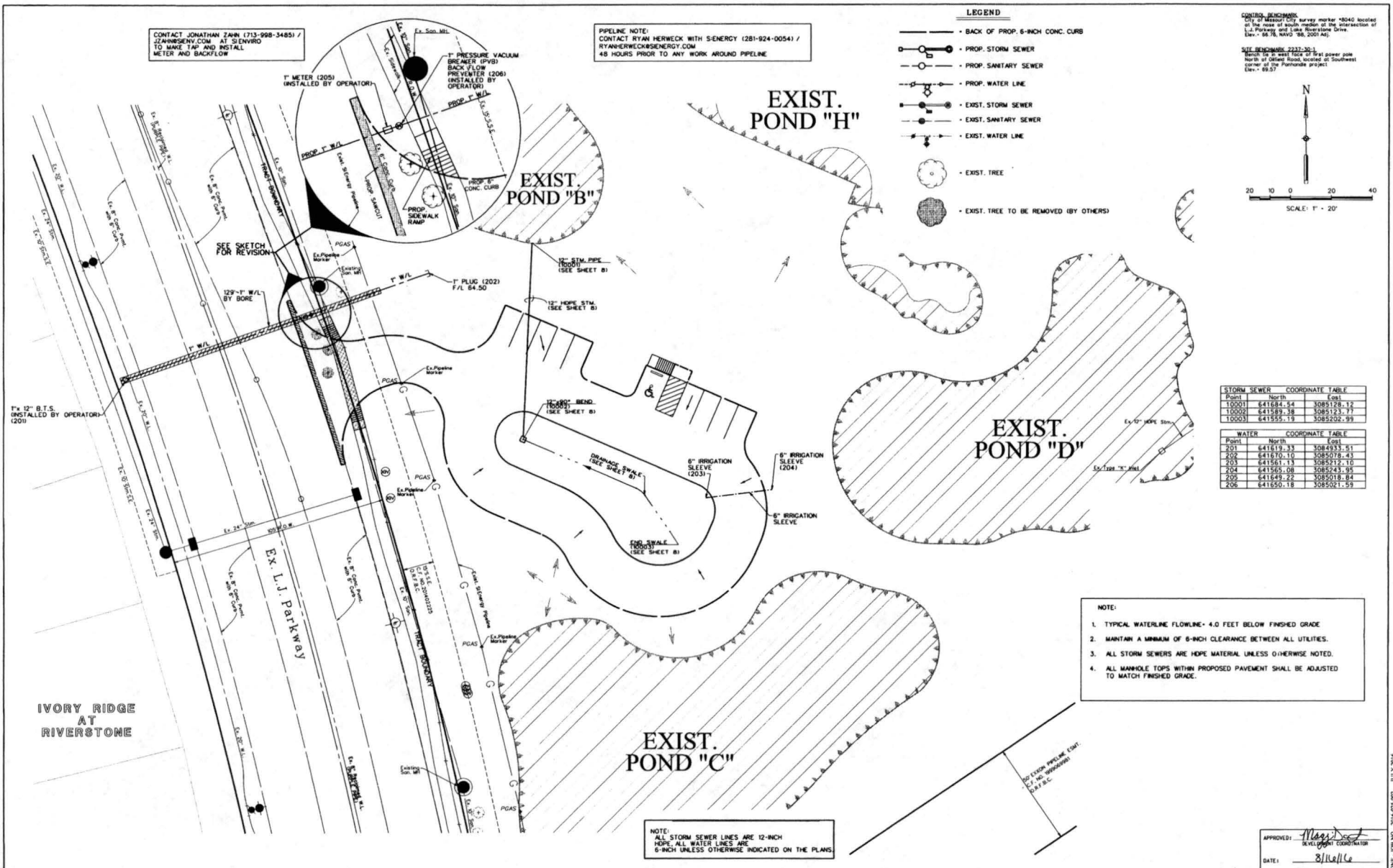
Point	North	East
10001	641584.24	3085128.12
10002	641589.38	3085123.77
10003	641555.19	3085202.99

WATER COORDINATE TABLE

Point	North	East
201	641619.33	3084933.51
202	641670.10	3085078.43
203	641565.13	3085212.10
204	641565.08	3085243.95
205	641649.22	3085018.84
206	641550.18	3085021.59

- NOTE:**
1. TYPICAL WATERLINE FLOWLINE - 4.0 FEET BELOW FINISHED GRADE.
 2. MAINTAIN A MINIMUM OF 6-INCH CLEARANCE BETWEEN ALL UTILITIES.
 3. ALL STORM SEWERS ARE HOPE MATERIAL UNLESS OTHERWISE NOTED.
 4. ALL MANHOLE TOPS WITHIN PROPOSED PAVEMENT SHALL BE ADJUSTED TO MATCH FINISHED GRADE.

NOTE:
ALL STORM SEWER LINES ARE 12-INCH
HOPE. ALL WATER LINES ARE
6-INCH UNLESS OTHERWISE INDICATED ON THE PLANS



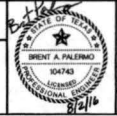
NO.	REVISION	DATE	BY

DESIGNED BY: JM
 DESIGN CHECKED BY: BAP
 DRAWN BY: JM
 CADD CHECKED BY: JM
 SURVEY CHECKED BY: RES
 QAC/QC BY: RES DATE: 8-21-16
 QAC/QC REVISIONS BY:



Engineering and Surveying
 9990 Richmond Avenue, Suite 450 N
 Houston, Texas 77042
 (713) 783-7788 (713) 783-3580, Fax
 TBPE FIRM REG. No. 280
 TBPLS FIRM REG. No. 100486

WETLANDS PARK at RIVERSTONE
 UTILITY LAYOUT

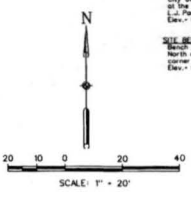


APPROVED: Maggie Scott
 SCHEDULED COORDINATOR
 DATE: 8/16/16

SHEET **4**
 OF 12 SHEETS
 JOB NO. 2016-025-002

CONTROL SURVEY
 17. 40' diameter survey marker #8040 located at the southeast corner of the intersection of L.J. Parkway and Lake Riverstone Drive. (See - 05.26, NAVD 83, 2003 AD.)

SITE SURVEY 2227-01
 16. 30' diameter steel pipe of first lower pole north of control stake located at southwest corner of the Parkstone project. (See - 05.27)



LEGEND

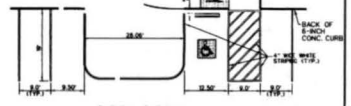
- PROPOSED SIGN
- BACK OF PROP. 6-INCH CONC. CURB
- EDGE OF PROP. 6-INCH CONC. PAVEMENT
- EXIST. STORM SEWER
- EXIST. SANITARY SEWER
- EXIST. WATER LINE



TYPICAL HANDICAP PARKING SYMBOL DETAIL



TYPICAL HANDICAP PARKING SIGN DETAIL

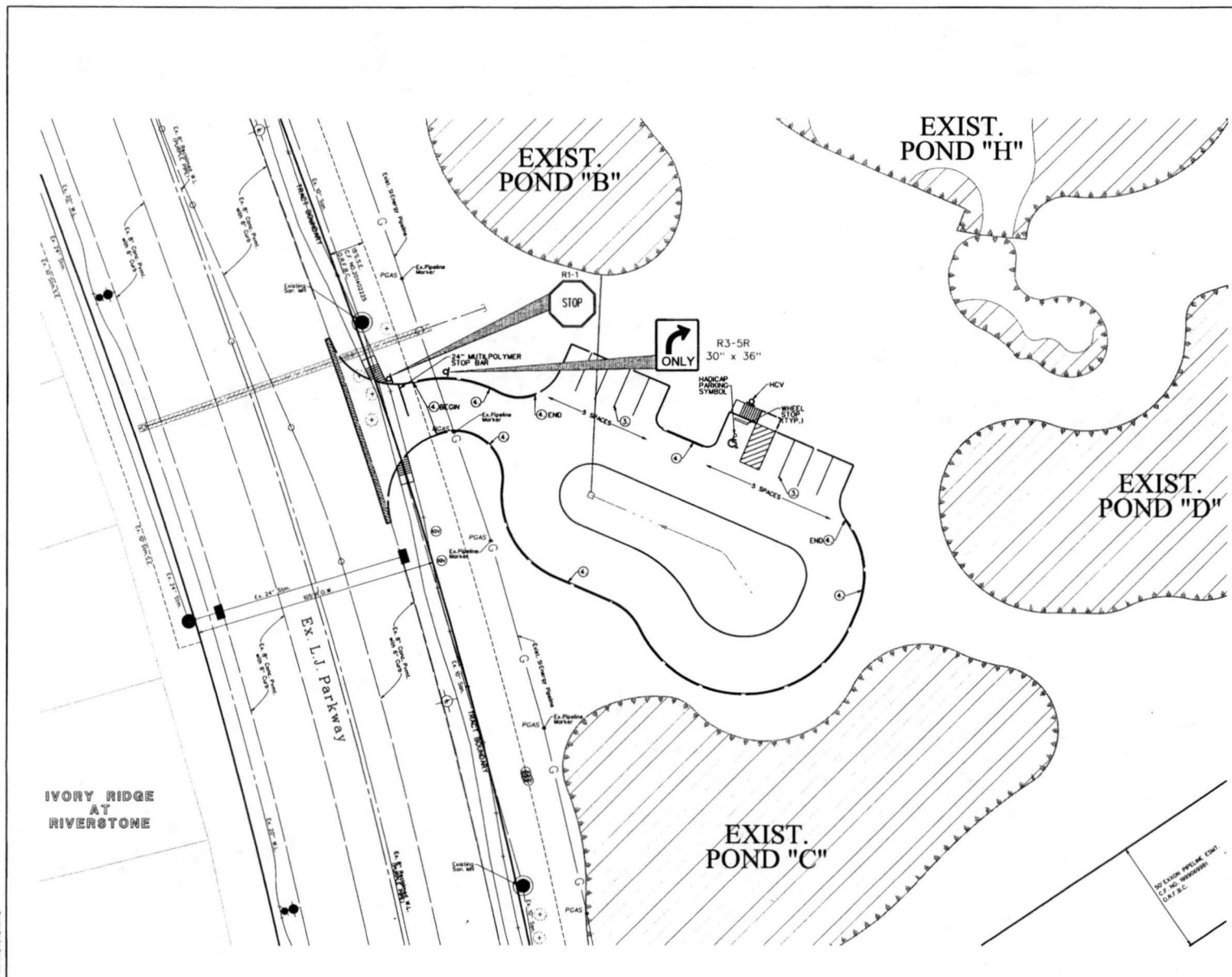


TYPICAL PARKING STRIPING DETAIL

TYPICAL HANDICAP PARKING DETAILS
 (SEE THIS SHEET FOR PARKING SYMBOL FOR EACH ASILE)
 N.T.S.

STRIPING NOTES

- ① ALL SIGN DESIGNATIONS USED ARE REFERENCED IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
- ② ALL "R1-1" STOP SIGNS SHALL BE 30" X 30" UNLESS OTHERWISE NOTED.
- ③ ALL PAINTED PARKING BAYS SHALL BE 4-INCH WIDE REFLECTORIZED WHITE STRIPES (2.5 MIL MINIMUM); (FROM CITY APPROVED LIST).
- ④ CURB PAINTED RED LINE WITH THE WORDS "FIRE LANE - TOW AWAY ZONE" PAINTED IN WHITE ON THE RED STRIPE AT TWENTY FIVE (25) FEET SPACING IN 4-INCH LETTERS.
- ⑤ ALL TRAFFIC SIGNS SHALL INCLUDE SCOTCHLITE BRAND HIGH INTENSITY SHEETING UNLESS SPECIFICALLY NOTED ON THE PLANS.
- ⑥ SOLID 12-INCH WIDE RED LINE WITH THE WORDS "FIRE LANE - TOW AWAY ZONE" PAINTED IN WHITE ON THE RED STRIPE AT TWENTY FIVE (25) FEET SPACING.
- ⑦ SOLID 24-INCH WIDE REFLECTORIZED WHITE STOP BAR PLACED 4'-FEET IN ADVANCE OF AND PARALLEL TO CROSSWALKS OR NEAREST EDGE OF INTERSECTING ROADWAY.
- ⑧ AT EACH LOCATION INDICATED, THE WORD "STOP" AND/OR "ONLY" SHALL BE PAINTED, 5'-FEET IN HEIGHT WITH ELONGATED LETTERS, IN WHITE REFLECTORIZED PAINT.



IVORY RIDGE
 AT
 RIVERSTONE

SEE EXIST. PROPOSED CURB
 FOR 40' WIDENING

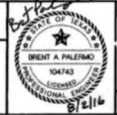
NO.	REVISION	DATE	BY

DESIGNED BY: *J.M.*
 DESIGN CHECKED BY: *R.H.P.*
 DRAWN BY: *J.M.*
 CADD CHECKED BY: *J.M.*
 SURVEY CHECKED BY: *J.M.*
 QA/QC BY: *EC* DATE: *8-21-14*
 QA/QC REVISIONS BY:



Engineering and Surveying
 9990 Richmond Avenue, Suite 450 N
 Houston, Texas 77042
 (713) 783-7788 (713) 783-3580, Fax
 TBPE FIRM REG. No. 280
 TBPLS FIRM REG. No. 100486

WETLANDS PARK at RIVERSTONE
 STRIPING AND SIGNAGE LAYOUT

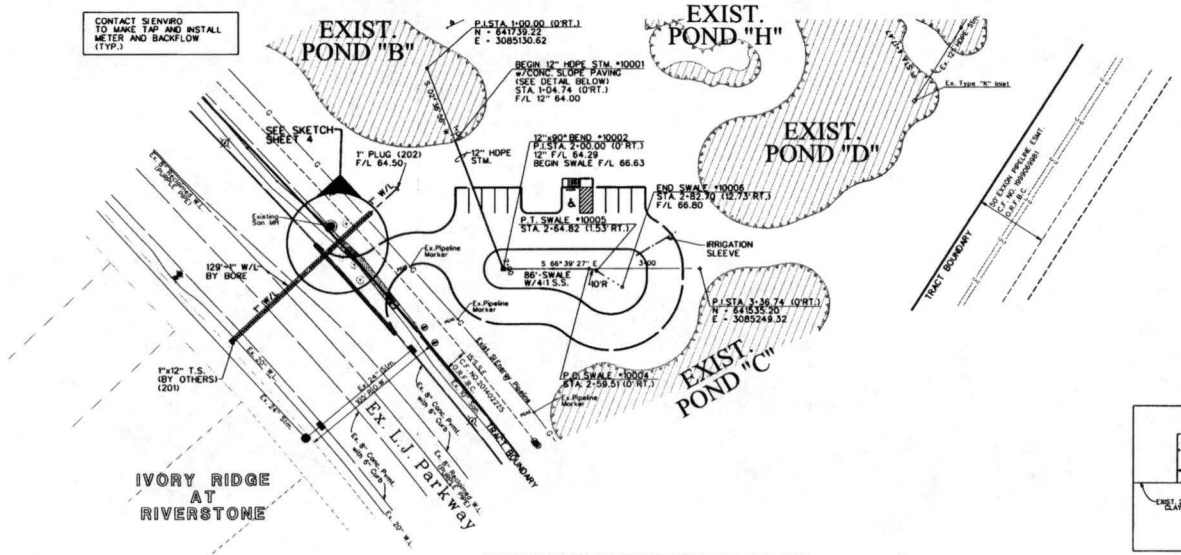


APPROVED: *J. M. Sillia*
 DEVELOPMENT COORDINATOR
 DATE: *8/16/14*

SHEET **6**
 OF 12 SHEETS
 JOB NO. 2016-025-002

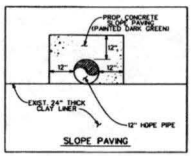
WETLANDS PARK at RIVERSTONE: JOB NO. 2016-025-002 JULY 2016

CONTACT SENVRO
TO MAKE TAP AND INSTALL
METER AND BACKFLOW
(TYP.)



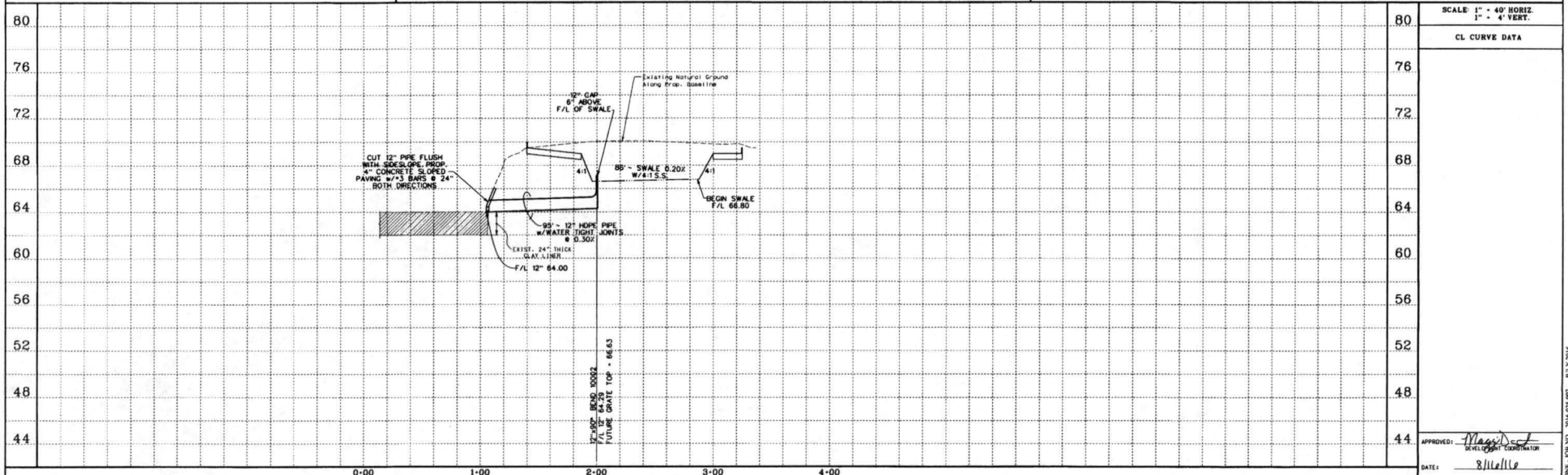
CONTROL BENCHMARK
CITY OF HOUSTON Survey marker #8040 located
at the base of south median of the intersection of
L.J. Parkway and Lake Riverstone Drive.
Elev = 66.76, NAD83 (68, 2011 AD)

SITE BENCHMARK 2137-30-1
Installed in west side of East power pole
base of street light located at southwest
corner of the Parkstone project
Elev = 69.37



12" STORM SEWER

CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO STARTING CONSTRUCTION



SCALE 1" = 40' HORIZ.
1" = 4' VERT.

CL CURVE DATA

NO.	REVISION	DATE	BY

DESIGNED BY: *J/M*
 DESIGN CHECKED BY: *BAP*
 DRAWN BY: *J/M*
 COORD CHECKED BY: *J/M*
 SURVEY CHECKED BY: *J/M*
 QA/QC BY: *R/T* DATE: *07-27-16*
 QA/QC REVISIONS BY: *J/M*



Engineering and Surveying
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 Houston, Texas 77042
 (713) 783-7788 (713) 783-3580, Fax
 TBPE FIRM REG. No. 280
 TBPLS FIRM REG. No. 100486

WETLANDS PARK at RIVERSTONE

PLAN AND PROFILE
 12" STORM SEWER



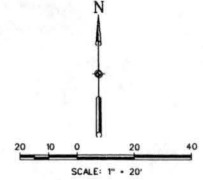
APPROVED: *Maggi*
 DEVELOPMENT COORDINATOR
 DATE: *8/11/16*

SHEET **8**
 OF 12 SHEETS
 JOB NO. 2016-025-002

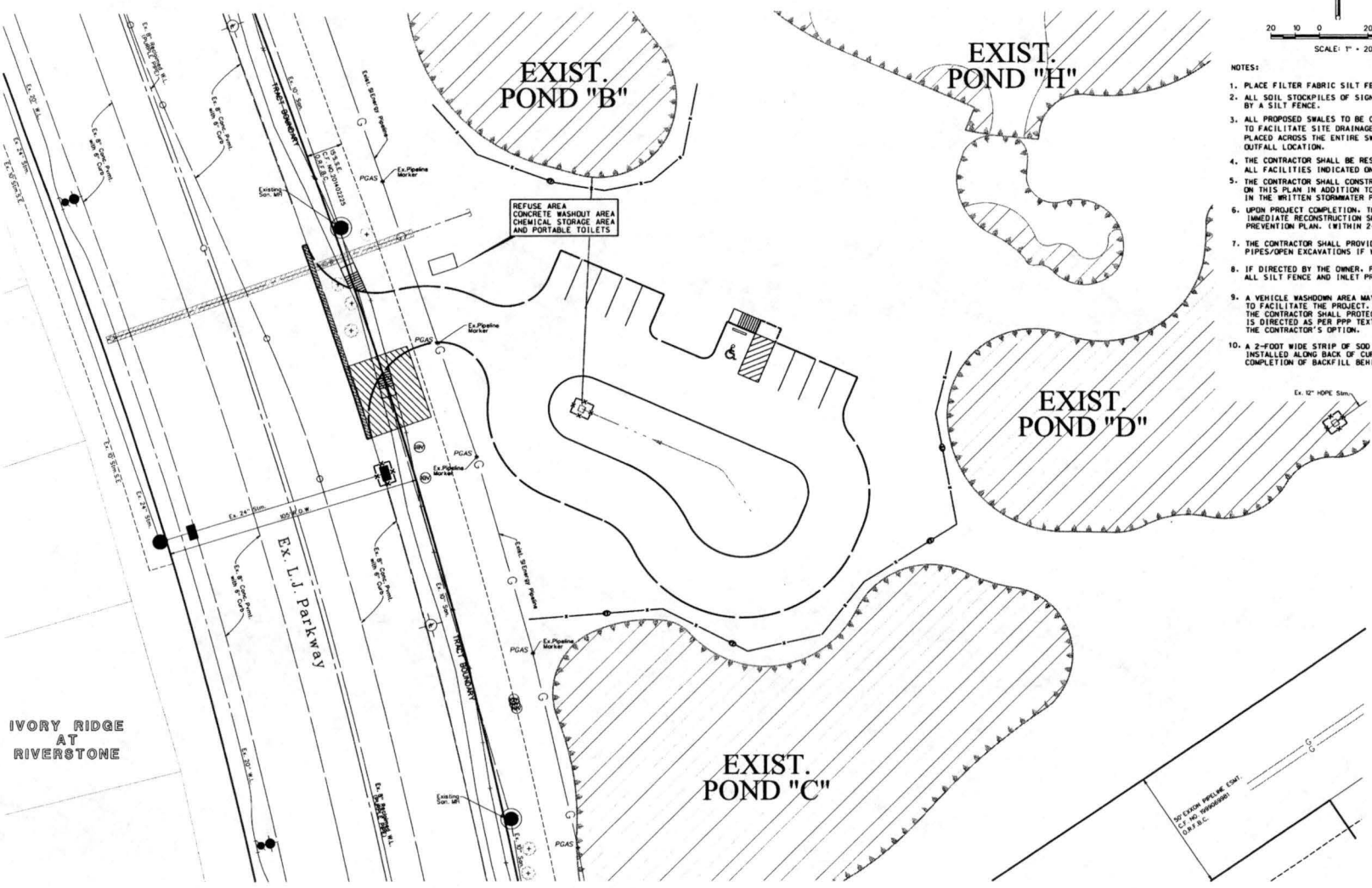
WETLANDS PARK at RIVERSTONE JOB NO. 2016-025-002 JULY 2016

CONTROL BENCHMARK:
 CITY OF HOUSTON CITY survey marker #8040 located at the east of south margin at the intersection of L.J. Parkway and Lina Riverstone Drive.
 (Elev = 46.76 NAVD 83, 2000 AD).

SITE BENCHMARK 2017-30-1
 Bench for the east face of first power pole north of other benchmark located at southwest corner of the Riverstone project.
 (Elev = 69.27)



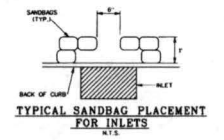
- NOTES:**
1. PLACE FILTER FABRIC SILT FENCE +/- 5 FEET AROUND ALL INLETS.
 2. ALL SOIL STOCKPILES OF SIGNIFICANT SIZE SHALL BE PROTECTED BY A SILT FENCE.
 3. ALL PROPOSED SWALES TO BE CONSTRUCTED BY THE CONTRACTOR TO FACILITATE SITE DRAINAGE SHALL HAVE SILT FENCES PLACED ACROSS THE ENTIRE SWALE JUST UPSTREAM OF THE OUTFALL LOCATION.
 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL FACILITIES INDICATED ON THIS PLAN.
 5. THE CONTRACTOR SHALL CONSTRUCT SILT BARRIERS INDICATED ON THIS PLAN IN ADDITION TO CONFORMING WITH ALL ITEMS DISCUSSED IN THE WRITTEN STORMWATER POLLUTION PREVENTION PLAN TEXT.
 6. UPON PROJECT COMPLETION, THE ENTIRE DISTURBED AREA NOT PROPOSED FOR IMMEDIATE RECONSTRUCTION SHALL BE RESEED AS PER THE POLLUTION PREVENTION PLAN. (WITHIN 2-WEEKS)
 7. THE CONTRACTOR SHALL PROVIDE A SILT FENCE AROUND ALL OPEN PIPES/OPEN EXCAVATIONS IF WEATHER IS INCLEMENT.
 8. IF DIRECTED BY THE OWNER, PAYING CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL SILT FENCE AND INLET PROTECTION DEVICES AT THE END OF THE PROJECT.
 9. A VEHICLE WASHDOWN AREA MAY BE LOCATED BY THE CONTRACTOR TO FACILITATE THE PROJECT, WHILE UTILIZING THE WASHDOWN AREA, THE CONTRACTOR SHALL PROTECT THE INLET WHERE THE WASH-DOWN IS DIRECTED AS PER PPP TEXT. THE LOCATION OF THE WASH-DOWN IS AT THE CONTRACTOR'S OPTION.
 10. A 2-FOOT WIDE STRIP OF SOD SHALL BE INSTALLED ALONG BACK OF CURB UPON COMPLETION OF BACKFILL BEHIND CURB.



IVORY RIDGE AT RIVERSTONE

LEGEND

- EXISTING CONTOURS
- FILTER FABRIC FENCE
- INLET PROTECTION BARRIER
- PROPOSED STORM SEWER
- ▨ STABILIZED CONSTRUCTION ENTRANCE/EXIT



NO.	REVISION	DATE	BY

DESIGNED BY: *UM*
 DESIGN CHECKED BY: *BAP*
 DRAWN BY: *UM*
 CADD CHECKED BY: *UM*
 SURVEY CHECKED BY: *EL*
 QAO/C BY: *EL* DATE: *8-21-16*
 QAO/C REVISIONS BY:



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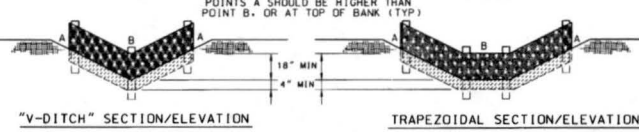
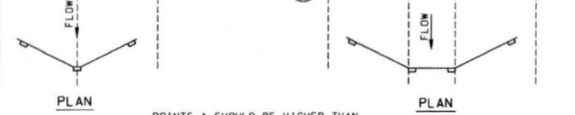
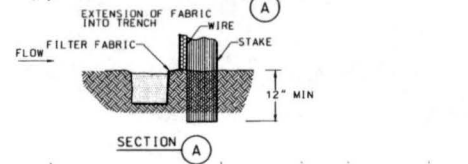
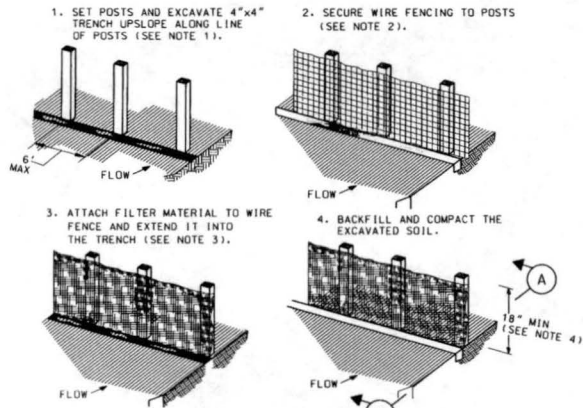
WETLANDS PARK at RIVERSTONE
POLLUTION PREVENTION PLAN



APPROVED: *M. J. ...*
 PROJECT SUPERVISOR
 DATE: *8/16/16*

SHEET **9**
 OF 12 SHEETS
 JOB NO. 2016-025-002

WETLANDS PARK at RIVERSTONE, JOB NO. 2016-025-002, JULY 2016

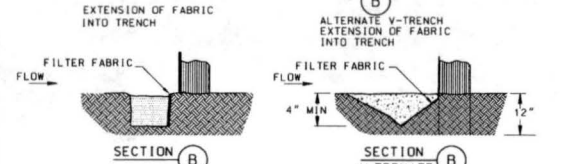
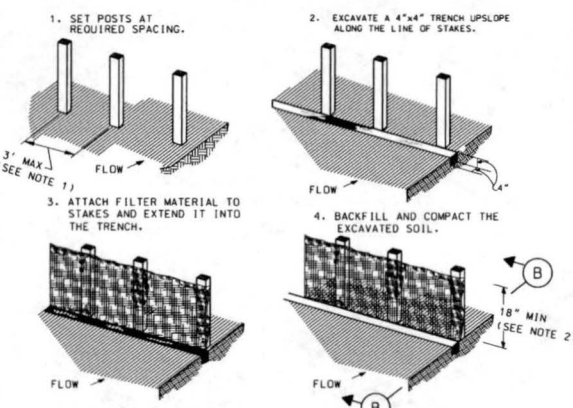


CONSTRUCTION NOTES:

1. SET 2 INCH BY 2 INCH WOODEN STAKES SPACED A MAX OF 6 FEET APART AND EMBEDDED A MIN OF 12 INCHES.
2. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH STAPLES.
3. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE, WITH TIES SPACED EVERY 24 INCHES AT TOP AND MIDSECTION.
4. MINIMUM HEIGHT OF FILTER SHOULD BE 18 INCHES AND A MAXIMUM OF 36 INCHES ABOVE NATURAL GROUND.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
6. SEE SECTION 01568 - REINFORCED FILTER FABRIC BARRIER.

X — (RFB) — X
SYMBOL

REINFORCED FILTER FABRIC BARRIER

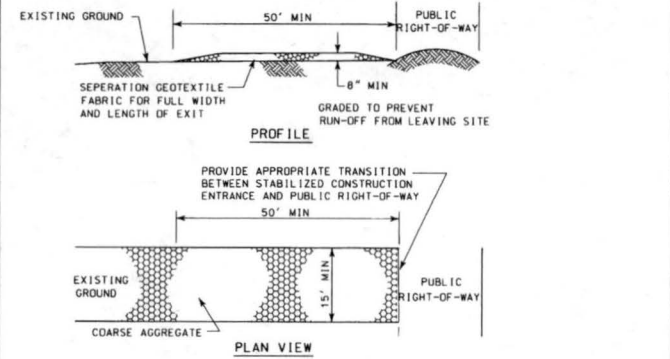
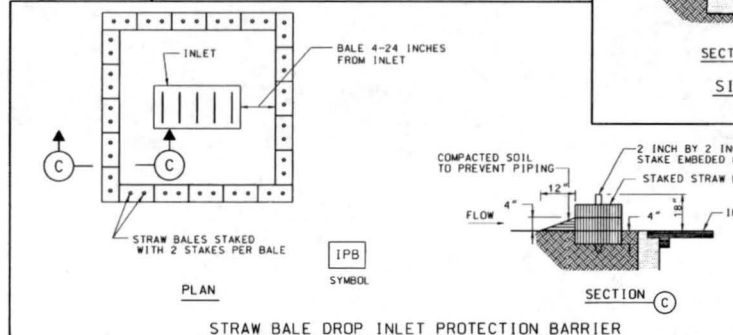


CONSTRUCTION NOTES:

1. 2 INCH THICK BY 2 INCH WOODEN STAKES TO BE SET AT MAX SPACING OF 3 FEET AND EMBEDDED A MIN OF 8 INCHES. IF PREASSEMBLED FENCE WITH SUPPORT NETTING IS USED, SPACING OF POST MAY BE INCREASED TO 8 FEET MAX.
2. ATTACH FILTER FABRIC TO WOODEN STAKES. FILTER FABRIC FENCE SHALL HAVE A MIN HEIGHT OF 18 INCHES AND MAX HEIGHT OF 36 INCHES ABOVE NATURAL GROUND.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHOULD BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.
4. SEE SECTION 01567 - FILTER FABRIC FENCE.

X — (FF) — X
SYMBOL

FILTER FABRIC FENCE

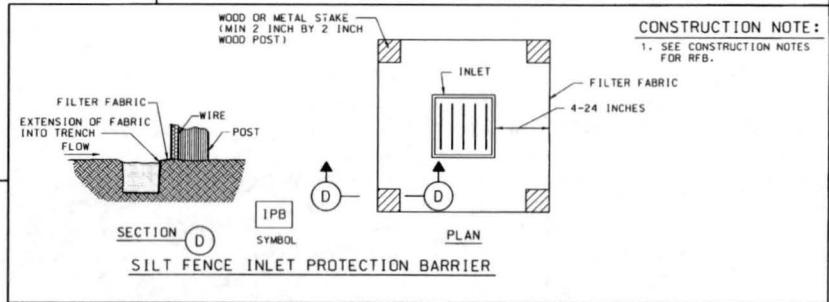


CONSTRUCTION NOTES:

1. LENGTH SHALL BE AS SHOWN ON THE CONSTRUCTION DRAWINGS, BUT NOT LESS THAN 50 FEET.
2. THICKNESS SHALL BE NOT LESS THAN 8 INCHES.
3. WIDTH SHALL BE NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.
4. STABILIZATION FOR OTHER AREAS SHALL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS AS THE STABILIZED CONSTRUCTION EXIT, UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION DRAWINGS.
5. STABILIZED AREA MAY BE WIDENED OR LENGTHENED TO ACCOMMODATE A TRUCK WASHING AREA. AN OUTLET SEDIMENT TRAP MUST BE PROVIDED FOR THE TRUCK WASHING AREA.
6. SEE SECTION 01569 - STABILIZED CONSTRUCTION EXIT.
7. STABILIZED CONSTRUCTION EXIT SHALL BE MAINTAINED FREE OF SEDIMENT FOR THE DURATION OF THE PROJECT.

(SC) — X
SYMBOL

STABILIZED CONSTRUCTION EXIT



CONSTRUCTION NOTE:

1. SEE CONSTRUCTION NOTES FOR RFB.

NO.	REVISION	DATE	BY

DESIGNED BY: *LM*
 DRAWN BY: *SEP*
 CHECKED BY: *LM*
 SURVEY CHECKED BY: *RS*
 QA/QC BY: *RS* DATE: *02-21-16*
 QA/QC REVISIONS BY:



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WETLANDS PARK at RIVERSTONE
POLLUTION PREVENTION DETAILS

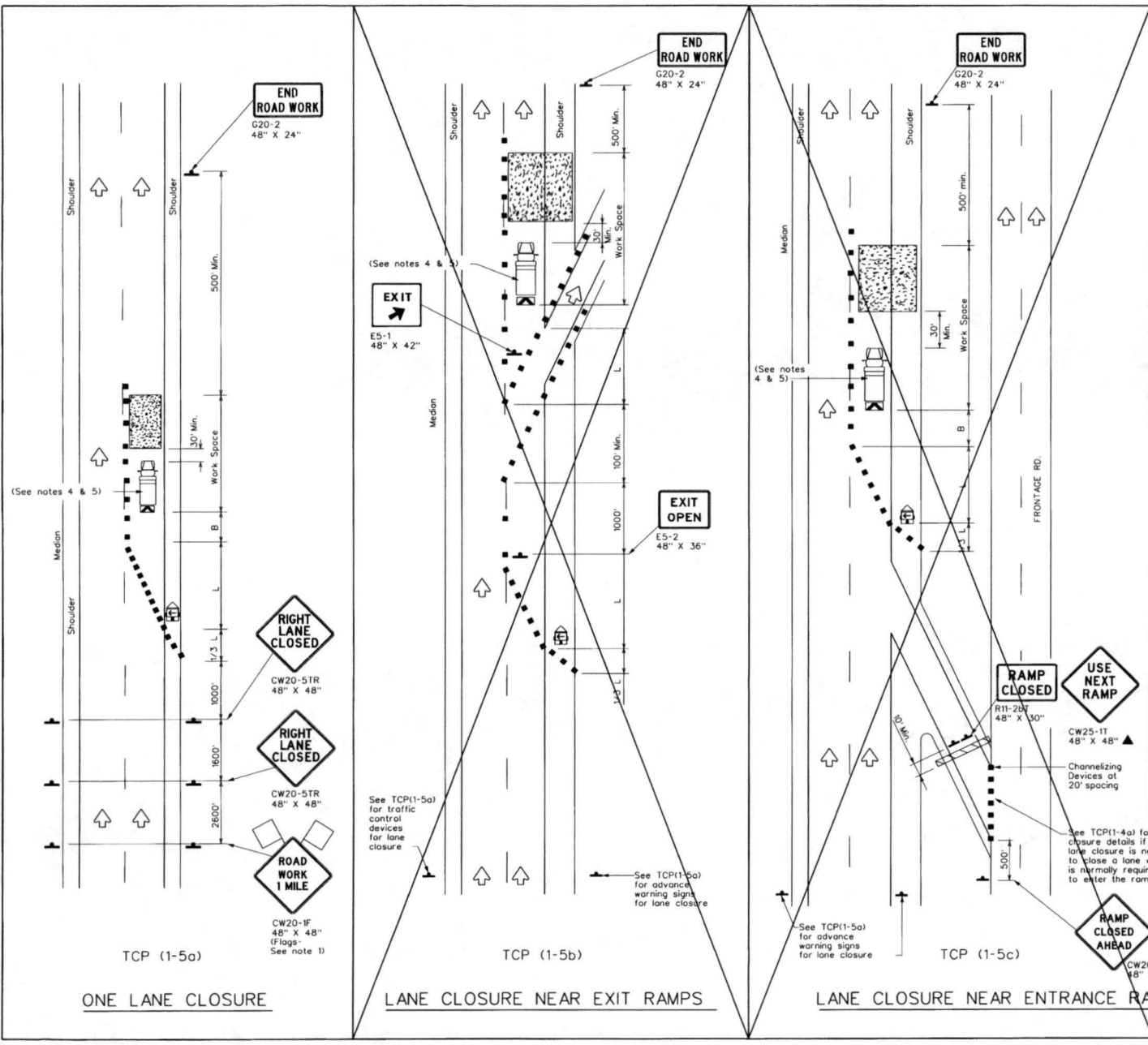


APPROVED: *Mason*
 DATE: *3/11/16*

SHEET **10**
 OF 12 SHEETS
 JOB NO. 2016-025-002

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DATE:
FILE:



LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed x	Formula	Minimum Desirable Taper Lengths x x			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	L = WS ² / 60	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40	L = WS	265'	295'	320'	40'	80'	240'	155'
45		450'	495'	540'	45'	90'	320'	195'
50	L = WS	500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60	L = WS	600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70	L = WS	700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

x Conventional Roads Only
 x x Taper lengths have been rounded off.
 L- Length of Taper (FT) W- Width of Offset (FT) S- Posted Speed (MPH)

TYPICAL USAGE			
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	LONG TERM STATIONARY
		✓	

- GENERAL NOTES**
- Flags attached to signs where shown, are REQUIRED.
 - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
 - Channelizing devices used to close lanes may be supplemented with the Chevron Alignment Sign placed on every other channelizing device. Chevrons may be attached to plastic drums as per BC Standards.
 - Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
 - Additional Shadow Vehicles with TMAs may be positioned in each closed lane, on the shoulder or off the paved surface, next to those shown in order to protect a wider work space.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

Texas Department of Transportation
Traffic Operations Division

TRAFFIC CONTROL PLAN
LANE CLOSURES FOR
DIVIDED HIGHWAYS

TCP(1-5)-12

© TxDOT February 2012	DN: TADOT	DN: TADOT	DN: TADOT	DN: TADOT	DN: TADOT
REVISIONS	CONT	SECT	JOB	HIGHWAY	
	DIST	COUNTY	SHEET NO.		

GENERAL NOTES:

- 1. CONTACT THE ENGINEERING INSPECTORS WITH THE CITY'S ENGINEERING DEPARTMENT AT (281) 275-2780 PRIOR TO STARTING WORK TO SCHEDULE A PRE-CONSTRUCTION MEETING.
2. CONTRACTOR IS RESPONSIBLE FOR HAVING ALL BURRED UTILITIES IDENTIFIED, PROTECTED, REPAIRED AND/OR PROPERLY REPAIRED IF DAMAGED. REPAIRS/REPLACEMENT SHALL BE AT CONTRACTOR'S EXPENSE.
3. CONTRACTOR SHALL OBTAIN AND MAINTAIN ON SITE ALL APPLICABLE PERMITS AND AN APPROVED COPY OF THE PLANS AND SPECIFICATIONS, NOTIFY THE CITY'S ENGINEERING DEPARTMENT 48 HOURS PRIOR TO COMMENCEMENT OF WORK.
4. CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE CITY'S ENGINEERING DEPARTMENT 24 HOURS PRIOR TO WEEKDAY WORK REQUIRING INSPECTION INCLUDING, BUT NOT LIMITED TO, LIMING, PAVING OPERATIONS, CONCRETE PLACEMENT, FORMING AND SET-UP, SIGNAGE, PIPE INSTALLATION, AND ANY TESTING BY LABORATORIES. THE ENGINEERING DEPARTMENT MAY BE REACHED AT 281-275-2780 OR BY CONTACTING THE ASSIGNED INSPECTOR.
5. ALL SATURDAY WORK SHALL BE REQUESTED IN WRITING, WITH THE CITY'S ENGINEERING DEPARTMENT AT LEAST 48-HOURS IN ADVANCE. SUNDAY AND HOLIDAY WORK REQUIRES 72 HR. WRITING REQUESTS AND MUST BE APPROVED BY THE CITY ENGINEER. FAXES MAY BE SENT TO (281) 275-2771. REQUIRED INSPECTIONS MAY BE SUBJECT TO INSPECTION FEES. NON-NOTIFICATIONS MAY RESULT IN NON-COMPLIANCE, WORK ORDERED STOPPAGE AND DOUBLE INSPECTION FEES.
6. FULL-TIME RESIDENT INSPECTION BY THE PROJECT ENGINEER'S REPRESENTATIVE SHALL BE PROVIDED AT ALL CRITICAL POINTS OF CONSTRUCTION OR AS DEMAND NECESSARY BY THE CITY OF SUGAR LAND.
7. FOLLOW-UP INSPECTIONS OF ALL PUBLIC INFRASTRUCTURE SHALL BE SCHEDULED WITHIN 60 DAYS OF THE INITIAL INSPECTION. A COMPLETE RE-INSPECTION AND A NEW PUNCH LIST MAY BE REQUIRED AFTER THE 60 DAY PERIOD.
8. DESIGN AND CONSTRUCTION SHALL CONFORM TO THE TEXAS COMMISSION OF ENVIRONMENTAL QUALITY RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS, THE CITY OF SUGAR LAND DESIGN MANUAL, (REVISED 2005), AND THE CITY OF SUGAR LAND STANDARD DETAIL SHEETS. THE CITY OF SUGAR LAND DESIGN STANDARDS SHALL BE ACQUIRED (AND USED) FROM THE ENGINEERING DEPARTMENT. THE LATEST REVISIONS AND/OR AMENDMENTS SHALL BE OBSERVED. WHERE CONFLICT MAY ARISE BETWEEN INFORMATION IN CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS AND CITY OF SUGAR LAND STANDARDS, THEN THE CITY DESIGN STANDARDS SHALL GOVERN.
9. ALL STATIONS ARE CENTERLINE OF STREET RIGHT-OF-WAY UNLESS OTHERWISE NOTED ON THE PLANS EXCEPT IN SIDE OR BACK LOT LASEMENTS WHERE CENTERLINE IS CENTER OF PIPE. IN EASEMENTS WHERE SIDEWALKS AND SEWERS ARE PRESENT PARALLEL, STATIONS SHALL BE BASED ON CENTERLINE OF STORM SEWER PIPING.
10. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. ANY DRAINAGE AREA OR STRUCTURE DISTURBED, DURING CONSTRUCTION, SHALL BE RESTORED TO THE SATISFACTION OF THE CITY OF SUGAR LAND. CONSTRUCTION STORM RUNOFF SHALL COMPLY WITH THE REQUIREMENTS OF THE CITY OF SUGAR LAND DESIGN STANDARDS. IF NON-COMPLIANCE OCCURS, CONTRACTOR SHALL REMEDY IMMEDIATELY AT HIS OWN EXPENSE.
11. ANY POLLUTION CONTROL DEVICE, SOO, OR SOOED AREA DAMAGED, DISTURBED, OR REMOVED SHALL BE REPLACED OR REPAIRED AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR IS RESPONSIBLE FOR WATERING ANY SEED OR SOO WHICH HE HAS INSTALLED UNTIL ADEQUATE GROWTH IS ACHIEVED TO PREVENT EROSION.
12. STORM WATER POLLUTION PREVENTION SHALL BE DESIGNED, CONSTRUCTED, MAINTAINED AND SHALL BE IN FULL COMPLIANCE WITH THE STORM WATER QUALITY MANUAL OF THE CITY OF SUGAR LAND.
13. ANY MATERIALS OR WORKMANSHIP NOT MEETING OR EXCEEDING CITY OF SUGAR LAND STANDARDS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND WILL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
14. THE CONTRACTOR SHALL KEEP THE STREETS, RIGHT-OF-WAY, AND WORK AREA CLEAN OF DIRT, MUD, AND DEBRIS AS NEEDED OR AS REQUIRED BY CITY STAFF.
15. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL REQUIRED TRAFFIC SAFETY CONTROL DEVICES UP TO AND INCLUDING FLAGMEN OR POLICE OFFICERS, IF DEEMED NECESSARY BY THE CITY OF SUGAR LAND.
16. THE CONTRACTOR SHALL CONTACT THE CITY OR LOCAL MUD AS APPROPRIATE TO OPERATE EXISTING MACHINES AND PRIOR TO MAKING TIE-INS.
17. ALL BACKFILL WITHIN PUBLIC RIGHTS-OF-WAY OR EASEMENTS SHALL BE COMPACTED TO 90% STANDARD PROCTOR DENSITY (IN 8 INCH LIFTS) AND TESTED FOR %23 OPTIMUM MOISTURE BY AN APPROVED LAB.
18. IT IS PERMISSIBLE TO USE A BACKHOE FOR TRENCH EXCAVATION IN LIEU OF A TRENCHING MACHINE.
19. THE CONTRACTOR SHALL NEVER UNLOAD ANY TRACK-TYPE VEHICLE OR EQUIPMENT ON ANY EXISTING PAVEMENT OR CROSS OVER ANY EXISTING PAVEMENT OR CURB.
20. ALL FINISH GRADES ARE TO CONFORM TO A MINIMUM SLOPE OF 6" PER 100 FT. POSITIVE DRAINAGE IS DELETED BY ARROWS.
21. CONTRACTOR SHALL UNCOVER EXISTING UTILITIES AT ALL "POINTS OF CROSSING" TO DETERMINE IF CONFLICTS EXIST BEFORE COMMENCING ANY CONSTRUCTION. NOTIFY THE ENGINEER AT ONCE OF ANY CONFLICT.
22. ALL FINISHED GRADES SHALL VARY UNIFORMLY BETWEEN FINISHED ELEVATIONS.
23. ALL TESTING PROCEDURES SHALL CONFORM TO THE CITY OF SUGAR LAND STANDARDS. THE INITIAL TESTING EXPENSE SHALL BE BORNE BY THE OWNER. IF ANY OF THE TESTS DO NOT MEET THE TESTING STANDARDS, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REMOVE OR REPLACE SUCH MATERIAL SO THE TESTING STANDARDS CAN BE MET. ADDITIONAL TESTING TO MEET COMPLIANCE SHALL BE AT THE CONTRACTOR'S EXPENSE.
24. CONTRACTOR SHALL PROVIDE SHEETING, SHORING, AND BRACING AS NECESSARY TO PROTECT WORKMEN AND EXISTING UTILITIES DURING ALL PHASES OF CONSTRUCTION AS PER O.S.H.A. REQUIREMENTS.
25. ALL MATERIALS AND WORKMANSHIP NOT GOVERNED BY CITY STANDARDS SHALL CONFORM TO THE LATEST VERSION OF THE MOST STANDARD SPECIFICATIONS AND THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, AND ANY REVISIONS THERETO.
26. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFEGUARDING AND PROTECTING ALL MATERIALS AND EQUIPMENT STORED ON THE JOBSITE IN A SAFE AND WORKMAN-LIKE MANNER (DURING AND AFTER WORKING HOURS), UNTIL JOB COMPLETION.
27. THE LOADING AND UNLOADING OF ALL PIPE, VALVES, HYDRANTS, MANHOLES, AND OTHER ACCESSORIES SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDED PRACTICES AND SHALL BE PERFORMED WITH CARE TO AVOID ANY DAMAGE TO THE MATERIAL. THE CONTRACTOR SHALL LOCATE AND PROVIDE THE NECESSARY STORAGE AREAS FOR MATERIAL AND EQUIPMENT.
28. THE CONTRACTOR SHALL FURNISH ALL MATERIALS, EQUIPMENT, AND LABOR FOR EXCAVATION, INSTALLATION, AND COMPLETION OF THE PROJECT AS SHOWN ON THE PLANS AND SPECIAL PROVISIONS TO COMPLY WITH CITY OF SUGAR LAND STANDARDS.
29. NO PRIVATE UTILITIES (I.E. PHONE, CABLE TV, ELECTRICITY, ETC.) SHALL BE INSTALLED WITHIN 4 FEET BACK OF CURB.
30. PLANS DO NOT EXTEND TO OR INCLUDE DESIGNS OR SYSTEMS PERTAINING TO THE SAFETY OF THE CONTRACTOR OR ITS EMPLOYEES, AGENTS, OR REPRESENTATIVES IN THE PERFORMANCE OF THE WORK. THE SEAL OF THE REGISTERED PROFESSIONAL ENGINEER(S) HEREON DOES NOT EXTEND TO ANY SUCH SYSTEMS THAT MAY BE NOW OR HEREAFTER BE INCORPORATED IN THE PLANS. THE CONTRACTOR SHALL PREPARE OR OBTAIN THE APPROPRIATE SAFETY SYSTEMS, INCLUDING CURRENT DESIGN STANDARDS AND REGULATIONS, AND SHALL BE RESPONSIBLE FOR OBTAINING A LICENSED PROFESSIONAL ENGINEER. APPROPRIATE TRENCH SAFETY PLANS SHALL BE SUBMITTED BY THE CONTRACTOR PRIOR TO EXECUTION OF A CONTRACT FOR HIS WORK.
31. FOR TRAFFIC SIGNAL CONSTRUCTION, CONTACT THE CITY OF SUGAR LAND INFORMATION TECHNOLOGY DEPARTMENT TO OBTAIN IP ADDRESSES FOR SIGNAL CABINET EQUIPMENT. ALLOW 5 WORKING DAYS FOR THE ADDRESS. ONCE EQUIPMENT HAS BEEN INSTALLED AND COMMUNICATIONS ESTABLISHED WITH THE TRAFFIC MANAGEMENT CENTER, IT WILL COMMISSION THE COMMUNICATIONS LINK. ALLOW 10 WORKING DAYS FOR COMMISSIONS.

CONCRETE/PAVING NOTES:

- 1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND AUTHORIZATION REQUIRED BY CITY OF SUGAR LAND.
2. CONTRACTOR SHALL HAVE ALL UTILITIES LOCATED PRIOR TO CONSTRUCTION AND WILL REPAIR OR REPLACE ANY DAMAGE AT CONTRACTOR'S EXPENSE.
3. PAVING CONTRACTOR SHALL PROTECT WATER, SEWER, AND DRAINAGE FACILITIES AND WILL REPLACE ANY DAMAGED FACILITIES AT HIS OWN EXPENSE. ALL MANHOLES AND VALVES WITHIN THE PAVEMENT AREA SHALL BE ADJUSTED TO FRESH CRACK BY THE PAVING CONTRACTOR WITH THE USE OF APPROVED BLOCKOUTS.
4. WHEN THE TOP OF CURB OR BOTTOM OF SIDEWALK SLAB ELEVATION VARIES FROM THE NATURAL GROUND, THE PAVING CONTRACTOR SHALL BACKFILL IN LAYERS NOT EXCEEDING 8-INCHES IN DEPTH. EACH LAYER WILL BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY. THE DISTURBED AREA SHALL BE SEEDED, SOOED, FERTILIZED, AND/OR SILT BARRIER FENCED WITHIN 10 WORKING DAYS. THE TYPE OF POLLUTION CONTROL WILL BE DETERMINED BY THE APPROVED PLANS AND/OR THE CITY OF SUGAR LAND CITY ENGINEER.
5. ALL PAVING SHALL BE IN ACCORDANCE WITH THE CITY OF SUGAR LAND DESIGN STANDARDS. APPROVED PLANS AND SPECIFICATIONS WITH THE LATEST REVISIONS OR AMENDMENTS. IN THE EVENT OF A CONFLICT, THE CITY OF SUGAR LAND DESIGN STANDARDS GOVERNS.
6. PAVING CONTRACTOR SHALL PROVIDE AND MAINTAIN SILT PROTECTION FENCES ON ALL STAGE I CURB INLETS. THE PAVING CONTRACTOR SHALL MAINTAIN ANY OTHER POLLUTION CONTROLS ESTABLISHED, I.E. ADDITIONAL SILT BARRIERS, SAND BAGS, ETC. FOR THE DURATION OF THE PROJECT. ANY DAMAGED OR MISSING DEVICES SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
7. EXISTING PAVEMENTS, CURBS, SIDEWALKS, DRIVEWAYS, ETC., DAMAGED OR REMOVED DURING CONSTRUCTION SHALL BE REPLACED TO THE CITY OF SUGAR LAND STANDARDS AT THE CONTRACTOR'S EXPENSE.
8. CONDITION OF THE WORK AREA (INCLUDING ROADS, RIGHT-OF-WAYS, ETC.) UPON COMPLETION OF THE JOB SHALL BE AS GOOD OR BETTER THAN THE CONDITION PRIOR TO STARTING THE WORK.
9. ALL DRIVEWAYS WILL BE LOCATED TO AVOID EXISTING CURB INLET STRUCTURES.
10. REDWOOD AND KEYWAYS SHALL NOT INTERSECT WITHIN 2 FEET OF AN INLET.
11. AT INITIAL AND FINAL INSPECTIONS THE PAVEMENT WILL BE FLOODED TO CHECK FOR BROODTHS AND CRACKS. FLOODING OF STREETS SHALL OCCUR 1 HOUR PRIOR TO INSPECTION.
12. ALL CONCRETE PLACED SHALL BE UNIFORMLY SPRAYED WITH A MEMBRANE CURING COMPOUND AS DESCRIBED IN ITEM 526 IN THE TxDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION. IMPROPER APPLICATION WILL RESULT IN THE REJECTION OF SAID PAVEMENT.
13. SIX (6) INCH, 5.5 SK, 3500 PSI @ 28 DAYS, REINFORCED WITH #4 REBAR, 24" C.C. EACH WAY IS THE MINIMUM ACCEPTABLE CONSTRUCTION FOR LOCAL STREETS.
14. SEVEN (7) INCH, 5.5 SK, 3500 PSI @ 28 DAYS, REINFORCED WITH #4 REBAR, 18" C.C. EACH WAY IS THE MINIMUM ACCEPTABLE PAVEMENT CONSTRUCTION FOR COLLECTOR STREETS.
15. EIGHT (8) INCH, 5.5 SK, 3500 PSI @ 28 DAYS, REINFORCED WITH #4 18" C.C. EACH WAY IS THE MINIMUM ACCEPTABLE FOR ARTERIAL STREETS.
16. WHEN CONCRETE PAVEMENT INTERSECTS THICKER PAVEMENT, THE THICKER PAVEMENT SHALL BE CONSTRUCTED TO THE ENDS OF ALL CURB RETURNS.
17. ALL RETURNS SHALL HAVE A MIN. 25 FT. RADIUS AT THE FACE OF CURB UNLESS OTHERWISE NOTED.
18. ALL INTERSECTIONS SHALL BE CONSTRUCTED WITH WHEELCHAIR RAMPS IN ACCORDANCE WITH THE TEXAS ACCESSIBILITY STANDARDS, THE AMERICAN DISABILITIES ACT, AND THE CITY OF SUGAR LAND STANDARDS (LATEST REVISIONS) (NO BLOCKOUTS).
19. CONCRETE SIDEWALKS SHALL BE CONSTRUCTED WITH EACH STREET RIGHT-OF-WAY IN ACCORDANCE WITH CITY OF SUGAR LAND, THE A.D.A., AND THE T.A.S. STANDARDS (LATEST REVISIONS).
20. CRACKS LARGER THAN 1/16-INCH ARE NOT ACCEPTABLE IN NEW PAVEMENT. CRACKS 1/16-INCH OR SMALLER SHALL BE ADDRESSED ON AN INDIVIDUAL BASIS BY DRILL AND EPOXY INJECTION, SUBJECT TO APPROVAL OR REJECTION.
21. PROPER TESTING AND LAB DOCUMENTATION IS REQUIRED. FAILURE TO MEET THE MINIMUM PAVEMENT REQUIREMENTS WILL RESULT IN THE REJECTION OF SAID PAVEMENT. MAGNITUDE REPAIRS AND REPLACEMENT OF SUBSTANDARD PAVEMENT SECTIONS WILL BE NECESSARY TO SATISFY THESE REQUIREMENTS.
22. 4-CONCRETE CYLINDERS, SLUMP, AND AIR ENTRAINMENT TESTS ARE REQUIRED FOR EACH 100 CUBIC YARDS OF CONCRETE WITH A MINIMUM OF ONE SET OF 4 PER PLACEMENT. THE CITY OF SUGAR LAND RESERVES THE RIGHT TO REQUEST ANY ADDITIONAL TESTS AT THE CONTRACTOR'S EXPENSE, IF ANY MATERIAL APPROVES BELOW STANDARDS.
23. NO. 3 REBAR, 18-INCH C.C. E.W. IS THE MINIMUM ACCEPTABLE FOR SIDEWALKS, NUMBER 4-REBAR, 24-INCH C.C. EACH WAY IS THE MINIMUM ACCEPTABLE FOR COMMERCIAL APPROACHES, HANDICAP RAMPS, RESIDENTIAL APPROACHES AND DRIVEWAYS.
24. COLD WEATHER PRECAUTIONS: CONCRETE PAVEMENT SHALL NOT BE PLACED WHEN THE AMBIENT TEMPERATURE IS 40°F AND FALLING. CONCRETE MAY BE PLACED IF THE AMBIENT TEMPERATURE IS 35° AND RISING. CONTRACTOR SHALL PROVIDE AN APPROVED COVERING MATERIAL (COTTON MATS, POLYETHYLENE SHEETING, ETC.) IN THE EVENT TEMPERATURE SHOULD FALL BELOW 32°F. NO SALT OR OTHER CHEMICALS SHALL BE ADDED TO CONCRETE TO PREVENT FREEZING.
25. HOT WEATHER: NO CONCRETE PAVEMENT MIXTURE SHALL BE PLACED IF THE MIXTURE TEMPERATURE IS ABOVE 95°F. AIR AND WATER REDUCER ARE REQUIRED IF MIXTURE TEMPERATURE REACHES 85°F OR ABOVE.
26. IF NO AIR AND WATER REDUCER HAS BEEN ADDED, NO CONCRETE SHALL BE PLACED IF MORE THAN 80 MINUTES PAST BATCH TIME. IF AIR AND WATER REDUCER HAS BEEN ADDED, NO CONCRETE SHALL BE PLACED IF MORE THAN 90 MINUTES PAST BATCH TIME.
27. STRUCTURE TEMPERATURES AND TAMPING FOR CONCRETE PLACEMENT MAY VARY. REFER TO TxDOT STANDARDS ITEM 420 FOR DETAILS.
28. TRANSVERSE EXPANSION JOINTS SHALL BE PLACED AT ALL POINTS OF CURVATURE, POINTS OF TANGENCY AND ALL INTERSECTION CURB RETURN POINTS. MAXIMUM SPACING SHALL BE 200' AND BE SEALED WITH SEALANT CONFORMING TO TxDOT ITEM 360 (& ITEM 436) AND TxDOT DMS-6310, CLASS-2.
29. CONTROL JOINTS SHALL BE PLACED AT 20' C-C.
30. EXPANSION JOINT LAYOUT FOR INTERSECTIONS SHALL BE PROVIDED BY ENGINEER FOR CITY APPROVAL.
31. NO WIRE MESH IS ALLOWED IN ANY CONCRETE WITHIN THE CITY LIMITS OR E.T.J.
32. ALL REBAR SHALL BE 100% TIED. OVERLAPS SHALL BE DOUBLE TIED MINIMUM. REINFORCED STEEL SHALL BE A MINIMUM 60% COVERAGE.
33. ALL NEW CURB REQUIRES 3,000 P.S.I. @ 28-DAYS. 4 CONCRETE CYLINDERS, SLUMP, AND AIR ENTRAINMENT TESTS ARE REQUIRED FOR EACH 50 CUBIC YARDS OF CONCRETE CURB WITH A MINIMUM OF ONE SET OF 4 PER PLACEMENT.
34. A CITY INSPECTOR MUST BE PRESENT ON ALL PROOF ROLLS, LIME DEPTH CHECKS AND DENSITY TESTS AND MUST BE CONTACTED AT LEAST 24 HOURS PRIOR TO THE TEST.
35. CONCRETE MIX DESIGN MUST BE SENT TO THE CITY FOR APPROVAL A MINIMUM 72 HOURS BEFORE THE FIRST CONCRETE POUR.
36. FOR A REGULAR MIX, SLUMP SHALL BE A MAXIMUM OF 5". FOR A MIX WITH A WATER REDUCER, SLUMP SHALL BE A MAXIMUM OF 6".
37. VEHICLES OF ALL TYPES ARE PROHIBITED FROM DRIVING ON NEW PAVEMENTS SEVEN (7) DAYS AFTER THE CONCRETE POUR AND UNTIL THE CONCRETE HAS REACHED A MINIMUM OF 3,000 PSI. PAVEMENT PROTECTION SUCH AS A DIRT LAYER OF AT LEAST 12" IS REQUIRED FOR TRACK EQUIPMENT AT PAVEMENT CROSSINGS.
38. IN LIEU OF MECHANICALLY CONTROLLED VIBRATORS CONTROLLED BY A SLIP-FORM PAVING MACHINE, HAND MANIPULATED MECHANICAL VIBRATORS SHALL BE USED FOR PROPER CONSOLIDATION OF CONCRETE IN ALL PAVEMENT AREAS (ALONG FENCES, AT JOINTS, ETC.)
39. ALL CONCRETE STREETS AND BRIDGE SURFACES SHALL HAVE A "BAKED BROOD" FINISH, WHILE ALL OTHER CONCRETE PLACEMENTS SHALL HAVE AN ACCEPTABLE BROAD FINISH.
40. ALL PAVEMENT MARKINGS TO BE DONE IN CONFORMANCE WITH THE LATEST VERSION OF MUTCD AND TxDOT STANDARD SPECIFICATIONS AND ANY REVISIONS THERETO.
41. REFER TO GENERAL NOTES.

CEMENT STABILIZED SAND:

- 1. ALL STABILIZED SAND SHALL BE A MINIMUM OF 1.5 SK PER CUBIC YARD.
2. CEMENT STABILIZED SAND (C.S.S.) SHALL ACHIEVE A MINIMUM OF 100 PSI WITHIN 48 HOURS.
3. A MINIMUM OF 2 RANDOM SAMPLES SHALL BE TAKEN EACH WEEK. (FOR SMALLER PROJECTS, ONE SAMPLE MAY SUFFICE WITH CITY OF SUGAR LAND APPROVAL.) THE CITY OF SUGAR LAND RESERVES THE RIGHT TO REQUIRE ADDITIONAL TESTS, AT THE CONTRACTORS EXPENSE, IF IT IS DEEMED NECESSARY.
4. ANY C.S.S. NOT MEETING CITY OF SUGAR LAND STANDARDS SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
5. BOTH CEMENT CONTENT AND COMPRESSIVE TESTS SHALL BE CONDUCTED ON C.S.S. SAMPLES.
6. ALL C.S.S. SHALL BE COMPACTED IN MAXIMUM OF 8-INCH LIFTS AND REQUIRED TO REACH A MINIMUM DENSITY OF 95%. REFER TO GENERAL NOTES.

BANK SAND:

- 1. BANK SAND IS DEFINED AS A WELL-GRADED SAND, FREE OF SILT, CLAY, FRAGILE OR SOLUBLE MATERIALS AND ORGANIC MATERIAL. MEETING THE UNIFIED SOILS CLASSIFICATION SYSTEM GROUP SYMBOLS SW OR GM WITHIN A PLASTICITY INDEX OF LESS THAN 10. NO MORE THAN 12% OF MATERIAL CAN PASS THE No. 200 SIEVE.

ASPHALT - OILS AND EMULSIONS:

- 1. CONTRACTOR SHALL VERIFY LINES AND GRADES AND COMPACTED BASE IS READY TO SUPPORT LOADS.
2. BASE MATERIAL SHALL BE DRY AND THOROUGHLY CLEAN OF LOOSE MATERIAL PRIOR TO APPLICATION.
3. OILS & EMULSION SHALL BE DISTRIBUTED EVENLY AND SMOOTHLY UNDER PRESSURE NECESSARY FOR PROPER DISTRIBUTION.
4. MAINTAIN REQUIRED SURFACE CONDITIONS UNTIL ACCEPTED BY THE CITY OF SUGAR LAND.
5. PRIME COAT SHALL BE M.C.-30, M.C.-70 OR E.P.R-1 PRIME COAT SHALL COMPLY WITH TxDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS, AND BRIDGES (1993) AND ITS LATEST REVISIONS.
6. TACK COAT SHALL BE SS-1 AND SHALL COMPLY TO TxDOT, S.S.C.S.I. & B. (1993) AND ITS LATEST REVISIONS.
7. M.C.-30 AND M.C.-70 AND E.P.R-1 PRIME SHALL BE DISTRIBUTED AT A RATE OF 25 TO 35 GALLONS PER SQUARE YARD AND MAY NOT BE APPLIED WHEN AMBIENT TEMPERATURE IS 50°F AND FALLING. (NOTICE: CUTBACK ASPHALTS MAY BE APPLIED IN THE PERIOD OF APRIL 16 THROUGH SEPT. 15 AS PER ASTM D-244.)
8. E.P.R-1 MAXIMUM WATER DILUTION IS 3 PARTS WATER TO ONE PART E.P.R-1.
9. SS-1 TACK COAT SHALL BE APPLIED AT A RATE NOT TO EXCEED 0.06 GAL. PER SQUARE YARD OF SURFACE AREA. CONTACT JOINTS, CURBS, ETC. SHALL BE PAINTED WITH AN EVEN THIN COAT APPLIED BY BRUSH OR GROOM. COATING MATERIAL SHALL BE HEATED TO 125°F TO 180°F WHEN APPLIED. TACK COAT MAY BE APPLIED WHEN AMBIENT TEMPERATURES ARE 40°F AND RISING. TACK COAT WILL NOT BE APPLIED IF AMBIENT AIR IS 50°F AND FALLING.

LIMING SUBGRADE:

- 1. LIME SHALL BE A "SLURRY" AS PER TxDOT 260 UNLESS SPECIFICALLY RECOMMENDED BY THE GEOCHEMICAL ENGINEER AND APPROVED BY THE CITY ENGINEER.
2. ALL LIME SLURRIES SHALL BE FURNISHED AT OR ABOVE THE AMBIENT TEMPERATURE AS APPROVED BY THE ENGINEER.
3. SUBGRADE SHALL BE STABILIZED WITH A MINIMUM SIX PERCENT (6%) LIME BY WEIGHT. EIGHT INCHES (8") THICK THE INITIAL MIX TO REDUCE PLASTICITY INDEX (PI) TO 20 OR LESS AS DETERMINED BY THE LIME SERIES. THE FINAL MIX SHALL BE AT SIX INCHES (6") THICK.
4. LIME DRY SOLID CONTENT TESTS SHALL BE CONDUCTED ON SILT, ONCE PER ONE-HUNDRED (100) TONS OF MATERIAL DISTRIBUTED, UNLESS OTHERWISE NOTED.
5. THE SUBGRADE SHALL BE SHAPED AND GRADED TO CONFORM TO THE TYPICAL SECTIONS, AS SHOWN ON THE PLANS, PRIOR TO TREATING THE EXISTING MATERIAL.
6. UNLESS APPROVED BY THE CITY ENGINEER, LIME OPERATIONS SHALL NOT BE STARTED WHEN THE AMBIENT AIR TEMPERATURE IS BELOW 40°F AND FALLING. LIMING MAY, WITH APPROVAL, BE STARTED WHEN THE AMBIENT AIR TEMPERATURE IS 50°F AND RISING. LIME SHALL NOT BE PLACED WHEN WEATHER CONDITIONS, IN THE ENGINEER'S OPINION, ARE UNSUITABLE.
7. THE SUBGRADE MATERIAL AND SLURRY SHALL BE THOROUGHLY MIXED THROUGHOUT TO THE PROPER MOISTURE CONTENT (±2) AND LEFT TO CURE USUALLY 3 DAYS (72 HRS.) MINIMUM AS APPROVED BY THE CITY ENGINEER.
8. AFTER CURING, THE SUBGRADE SHALL BE REMOVED UNTIL PAVEMENT REQUIREMENTS ARE MET, AS PER TxDOT TEX-101-E, PART II.
PERCENT MINIMUM PASSING 1-3/4" SIEVE.....100
PERCENT MINIMUM PASSING 3/4" SIEVE.....80
PERCENT MINIMUM PASSING No.4 SIEVE.....60
9. SIEVE TESTS SHALL BE CONDUCTED EVERY 150 LF ON THE FINISHED LAYER OF TRAFFIC OR EVERY 300 LF ON SINGLE LANES AS REQUIRED. AT LEAST ONE TEST SHALL BE CONDUCTED ON EACH ROADWAY OR CUL-DE-SAC.
10. THE MATERIAL SHALL BE AERATED OR MOISTENED TO + OR - 2% OPTIMUM MOISTURE. LIME SHALL BE ACCORDANCE WITH TxDOT MINIMUM 95% DENSITY SHALL BE MET IMMEDIATELY AFTER ALL PAVEMENT PROTECTION SUGGESTED IN THE PLANS IS THROUGHOUT THIS ENTIRE OPERATION, THE SURFACE SHALL BE SMOOTH AND IN CONFORMANCE WITH THE LINES AND GRADES SHOWN ON THE PLANS.
11. WHEN THE SUBGRADE FAILS TO MEET DENSITY REQUIREMENTS OR SHOULD IT LOSE THE REQUIRED STABILITY, DENSITY OR PLASTICITY, REPAIRS SHALL BE ACCORDANCE WITH TxDOT SUBSULATE 260.4(7) "REWORKING A SECTION", WHICH MAY REQUIRE AN ADDITIONAL 25% OF THE SPECIFIED LIME AMOUNT.

LIMING SUBGRADE:

- 12. THE TREATED SUBGRADE SHALL BE KEPT MOIST AND PREVENTED FROM DRYING. IN THE EVENT OF A ONE-HALF (1/2) INCH RAINFALL AND/OR IF THE MATERIAL BECOMES DRY AND IS NOT IN COMPLIANCE WITH THE %23 OPTIMUM MOISTURE, DENSITY AND MOISTURE TESTS SHALL BE REPEATED.
13. LIME DEPTH DETERMINATIONS WILL BE CONDUCTED AT EACH LOCATION OF DENSITY TESTING. LIME STABILIZED SUBGRADE SHALL BE A MINIMUM OF 6" AT 6" UNLESS OTHERWISE DIRECTED BY CITY ENGINEER. DENSITY TESTING SHALL BE DONE IMMEDIATELY PRIOR TO PLACEMENT OF REINFORCING STEEL AND SHALL BE COMPACTED TO A MINIMUM 95% LIME DEPTH TESTS SHALL BE CONDUCTED AT EVERY 150 LF OF ROADWAY ON ALTERNATING LANES OR EVERY 300 LF OF SINGLE LANE. AT LEAST ONE TEST SHALL BE CONDUCTED ON EACH ROADWAY AND/OR CUL-DE-SAC.
14. NO SUBGRADE SHALL BE COVERED WITH ANOTHER MATERIAL UNLESS APPROVED BY THE CITY OF SUGAR LAND AND LIME DEPTH TESTS HAVE BEEN COMPLETED.

HOT MIX ASPHALTIC BASE COURSE:

- 1. NO HOT MIX ASPHALTIC BASE MAY BE INSTALLED UNTIL THE SUBGRADE HAS BEEN PROPERLY PREPARED AND TESTED AS PER THE PLANS AND SPECIFICATIONS. THE SUBGRADE SHALL BE INSPECTED AND APPROVED BY THE CITY OF SUGAR LAND BEFORE ANY BASE MATERIALS ARE INSTALLED.
2. HOT MIX ASPHALTIC BASE MATERIALS, HANDLING, AND INSTALLATION SHALL COMPLY WITH TxDOT STANDARDS FOR CONSTRUCTION OF HIGHWAYS, STREETS, AND BRIDGES 1993 (SECTION 02711) AND ITS LATEST REVISIONS.
3. HOT MIX ASPHALTIC MATERIALS SHALL BE AT TEMPERATURES BETWEEN 250°F AND 325°F, WHEN PLACED.
4. MATERIALS MAY NOT BE PLACED IN WET CONDITIONS OR IF THE AMBIENT TEMPERATURE IS BELOW 50°F AND FALLING. MATERIALS MAY BE INSTALLED IF THE AMBIENT TEMPERATURE IS TAKEN IN THE SHADE AND IS 40°F AND RISING.
5. PLACE BASE COURSES 4 INCHES OR GREATER IN THICKNESS IN TWO OR MORE LAYERS, EACH HAVING A COMPACTED THICKNESS OF NOT GREATER THAN 4 INCHES.
6. BASE MATERIAL MAY ONLY BE PLACED AGAINST CLEAN, STRAIGHT EDGES, SAW CUTTING, FULL DEPTH, IS REQUIRED IF EXISTING EDGES ARE ROUGH OR UNLEVEL.
7. COMPACTION SHALL BEGIN WHILE MATERIAL IS STILL HOT AND AS SOON AS IT WILL BEAR THE ROLLER OR COMPACTOR WEIGHT WITHOUT UNDESIRABLE DISPLACEMENT OR CHIP CRACKING.
8. COMPACT SURFACE UNIFORMLY WITH ROLLERS OR TAMPERS IN LOCATIONS NOT READILY ACCESSIBLE (I.E. ALONG CURBS, WALLS, ETC.)
9. UNLESS OTHERWISE SPECIFIED, COMPACT DENSITY TO NOT LESS THAN 90% MAXIMUM POSSIBLE DENSITY.
10. A CERTIFIED LAB SHALL BE ON SITE AT ALL TIMES TO TEST AND PROPERLY DOCUMENT THE CONSTRUCTION METHODS AND QUALITY OF MATERIALS.
11. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY TO A.S.T.M. ASPHALT INSTITUTE AND CITY OF SUGAR LAND REQUIREMENTS. FAILURE TO COMPLY WILL RESULT IN REJECTION OF SAID MATERIALS AND SUCH SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
12. DO NOT OPEN BASE TO TRAFFIC UNTIL IT CAN BE MAINTAINED IN GOOD CONDITION AND IS CAPABLE OF SUPPORTING VEHICLE WEIGHT WITHOUT DAMAGE OR DEGRADATION.
13. DENSITIES SHALL BE TAKEN AT A MINIMUM OF AT LEAST ONE PER 300 LF OF DRIVE LANE OR ONCE PER 250 SQ. YD., WHICHEVER MAY APPLY AND SHALL BE STAGGERED RELATIVE TO TESTING SITES IN ADJUTING TRAFFIC LANES. FAILURE TO MEET MINIMUM REQUIREMENTS WILL RESULT IN THE REPLACEMENT OF SAID MATERIAL AT CONTRACTOR'S EXPENSE.

Table with 3 columns: No., DATE, REVISION. Includes a signature block for Brent A. Palermo, Design Engineer, TPE Firm Reg. No. 280, dated 6/8/16.



CITY OF SUGAR LAND, TEXAS ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR: WETLANDS PARK at RIVERSTONE

GENERAL CONSTRUCTION NOTES I

JOB No.: SL-01
DESIGNED BY:
CHECKED BY:
DATE: 8/16/16

Signature: Magy D... 8/16/16

ASPHALTIC CONCRETE PAVEMENT:

- 1. ASPHALTIC MATERIAL AND WORKMANSHIP SHALL COMPLY WITH ASTM C 33, ASTM C 131, ASTM C 136, AND TxDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND BRIDGES (1993) AND ITS LATEST REVISIONS. ASPHALT SHALL BE TYPE D-100 UNLESS SPECIFICALLY NOTED AND APPROVED BY CITY OF SUGAR LAND ENGINEER.
2. CONTRACTOR SHALL VERIFY ELEVATIONS AND GRADES AND THAT BASE COURSE IS READY TO SUPPORT IMPOSED LOADS.
3. APPLY A PRIME COAT AS PER CITY OF SUGAR LAND AND TxDOT STANDARDS. DO NOT APPLY TACK COAT UNTIL PRIME BASE COURSE HAS CURED AND IS APPROVED BY THE CONSTRUCTION INSPECTOR.
4. TACK COAT SHALL COMPLY TO CITY OF SUGAR LAND AND TxDOT STANDARDS.
5. DO NOT USE OUTBACK ASPHALT APRIL 16 THROUGH SEPTEMBER 15.
6. DO NOT PLACE ASPHALT WHEN AMBIENT TEMPERATURE IS BELOW 50°F AND FALLING. MIXTURE MAY BE PLACED WHEN AMBIENT TEMPERATURE IS 40°F AND RISING.
7. ON PUBLIC ROADS, STREETS, AND RIGHT-OF-WAY, ASPHALT SHALL BE PLACED IN MAXIMUM 2-INCH LIFTS. IN THE EVENT MORE THAN ONE LIFT IS REQUIRED, EACH LIFT SHALL BE COMPACTED, TESTED, AND GIVEN ADEQUATE TIME FOR THE PREVIOUS LIFT TO CURE AND DRY BEFORE THE NEXT LIFT IS PLACED. IF COMPLETELY CURED AND DRIED, A TACK COAT WILL BE REQUIRED BETWEEN LIFTS.
8. A CERTIFIED LAB SHALL BE ON SITE AT ALL TIMES TO TEST AND PROPERLY DOCUMENT THE CONSTRUCTION METHODS AND QUALITY OF MATERIALS.
9. ROLLING PATTERNS SHALL BE ESTABLISHED BY THE CONTRACTOR AS RECOMMENDED BY THE LAB, TO ACHIEVE THE MAXIMUM COMPACTION. THE SELECTED ROLL PATTERN SHALL BE FOLLOWED UNLESS CHANGES IN THE PLACEMENT OR MIXTURE OCCUR, WHICH AFFECT COMPACTION. COMPACTION OF 95% SHALL BE ACHIEVED.
10. ASPHALT SHALL NOT BE PLACED ON WET BASE.
11. NO "BROADBATS" ARE ALLOWED.
12. IF THE SURFACE RAVELS (SEPARATES), FLUSHES, RUTS, OR DETERIORATES IN ANY MANNER PRIOR TO FINAL ACCEPTANCE, THE CONTRACTOR WILL CORRECT THIS CONDITION AT HIS EXPENSE TO THE SATISFACTION OF THE CITY OF SUGAR LAND ENGINEER.
13. THE CONTRACTOR SHALL PROTECT THE PAVEMENT UNITS DIRECTED BY THE CITY ENGINEER TO OPEN SAID PAVEMENT TO TRAFFIC.
14. RIDE QUALITY SHALL COMPLY WITH TxDOT ITEM 585, "RIDE QUALITY FOR PAVEMENT SURFACES".
15. SPECIAL NOTE: CONTRACTOR, WHILE MAXIMIZING COMPACTION, SHALL USE CAUTION NOT TO "OVER-ROLL" ASPHALT. PAVEMENT STRETCHED OR OVER-ROLLED, WHERE COMPACTION IS BROKEN, SHALL NOT BE ACCEPTED AND SHALL BE REPAIRED OR REPLACED TO THE CITY ENGINEER'S SATISFACTION AT THE CONTRACTOR'S EXPENSE.
16. CORE SAMPLES SHALL BE TAKEN RANDOMLY AT A MINIMUM OF EVERY 300 LF PER LANE OF ROADWAY OR ONE PER EVERY 250 SQ. YD., WHICHEVER IS APPLICABLE AND SHALL BE STAGED RELATIVE TO TESTING SITES IN ADJUTING TRAFFIC LANES.
17. ALL ASPHALTIC CONCRETE PAVEMENT REPAIRS SHALL BE SAW CUT TO FULL ASPHALT DEPTH, REFER TO ASPHALT STABILIZED BASE, FLEXIBLE BASE, ASPHALT BASE, AND OIL AND EMBLEMEN NOTES. ALL DAMAGED BASE AND SUBGRADES SHALL BE REPAIRED OR REPLACED TO THE CITY ENGINEER'S SATISFACTION AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AREA DAMAGED DURING CONSTRUCTION, INCLUDING AREAS OUTSIDE THE DESIGNATED REPAIR.

STABILIZED CRUSHED CONCRETE:

- 1. TEST AND ANALYSIS OF AGGREGATE AND BINDER MATERIALS WILL BE PERFORMED IN ACCORDANCE WITH ASTM 1557 AND ASTM 4318. CEMENT SHALL BE ASTM 150 TYPE I.
2. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH TxDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION OF HIGHWAYS, STREETS AND BRIDGES (1993) AND ITS LATEST REVISIONS AND CITY OF SUGAR LAND STANDARDS.
3. PRIME COAT SHALL BE M.C. 30 OR EPR-1 PRIME.
4. DESIGN MIX FOR MINIMUM AVERAGE COMPRESSIVE STRENGTH OF 200 PSI IN 48 HRS. PROVIDE MINIMUM CEMENT CONTENT OF 2.5% PER TON OF MIX. CEMENT CONTENT MAY BE RAISED AT THE CONTRACTOR'S EXPENSE IF TESTS ON FIELD SAMPLES FALL BELOW 200 PSI.
5. THREE SAMPLES SHALL BE MOULDED EACH DAY FOR EACH 300 TONS OF PRODUCTION. COMPRESSIVE STRENGTH SHALL BE THE AVERAGE OF THREE TESTS FOR EACH PRODUCTION LOT. CONTRACTOR SHALL REPLACE, AT HIS OWN EXPENSE, ANY MATERIAL BELOW MINIMUM REQUIREMENTS.
6. CONTRACTOR SHALL VERIFY LINES, GRADES, AND COMPACTED SUBGRADING AS READY TO RECEIVE MATERIALS PRIOR TO ITS PLACEMENT.
7. CEMENT STABILIZED BASE MAY NOT BE PLACED IF AMBIENT TEMPERATURE IS 40°F AND FALLING. BASE MATERIAL MAY BE PLACED IF AMBIENT TEMPERATURE IS 35°F AND RISING. MATERIAL MAY NOT BE PLACED IN LIFTS EXCEEDING 6 INCHES IN DEPTH. EACH LIFT SHALL HAVE DENSITIES TAKEN.
8. CEMENT STABILIZED BASE MAY NOT BE STORED FOR LONG PERIODS. DELIVERY OF MATERIAL AND UTILIZATION SHOULD BE TIMED ACCORDINGLY. MAXIMUM TIME ALLOWED 3 HRS. FROM BATCH TIME TO HAVING BEEN INSTALLED.
9. CEMENT STABILIZED BASE SHALL NOT BE INSTALLED IN WET OR SOFT AREAS.
10. COMPACT TO MINIMUM DENSITY OF 95 F MAXIMUM DRY DENSITY UNLESS OTHERWISE INDICATED ON DRAWINGS. MOISTURE SHALL BE BETWEEN +/- OR -2% OPTIMUM AS DETERMINED BY ASTM 698.
11. AFTER COMPACTING FINAL COURSE, BLADE SURFACE TO FINAL GRADE. ANY IRREGULARITIES, WEAK SPOTS, AREAS OF EXCESSIVE WEAR, OR SURFACE HAIR LINE CRACKING SHALL BE REPAIRED AND/OR REPLACED AT CONTRACTOR'S EXPENSE.
12. A CERTIFIED LAB SHALL BE ON SITE AT ALL TIMES TO TEST AND PROPERLY DOCUMENT THE CONSTRUCTION METHODS AND QUALITY OF MATERIALS.
13. COMPACTION TESTING WILL BE PERFORMED IN ACCORDANCE WITH ASTM D 1556 OR ASTM D 2922 AND ASTM D 3017 AT RANDOMLY SELECTED LOCATIONS AS DIRECTED BY CITY OF SUGAR LAND CONSTRUCTION INSPECTOR.
14. A MINIMUM OF ONE CORE SHALL BE TAKEN AT RANDOM LOCATIONS PER 300 LF PER LANE OF ROADWAY OR ONE PER 250 SQ. YD., WHICHEVER MAY APPLY AND SHALL BE STAGED RELATIVE TO TESTING SITES IN ADJUTING TRAFFIC LANES.
15. CURE FOR A MINIMUM OF 7 DAYS BEFORE ADDING ASPHALT PAVEMENT COURSES.
16. COVER SURFACE WITH CURING MEMBRANES AT THE FOLLOWING RATES: M.C. 30-01 GAL PER 50 SQ. YD. OR TYP-1 PRIME-015 GAL PER 50 SQ. YD. DO NOT USE OUTBACK ASPHALT APRIL 16 TO SEPTEMBER 15. PROTECT THE MEMBRANE BY ALLOWING MEMBRANE TO FULLY CURE PRIOR TO PERMITTING TRAFFIC TO DRIVE ON IT.
17. UNSTABILIZED CRUSHED CONCRETE MAY NOT BE USED ON PUBLIC STREETS, ROADS, OR RIGHTS-OF-WAY.
18. STABILIZED LIMESTONE BASE MAY BE SUBSTITUTED FOR STABILIZED CRUSHED CONCRETE IF SUBMITTED AND APPROVED BY THE CITY ENGINEER.

STORM SEWER NOTES:

- 1. STORM SEWERS SHALL BE DESIGNED AND CONSTRUCTED WITH CITY OF SUGAR LAND'S STANDARD CONSTRUCTION SPECIFICATIONS AND IN ACCORDANCE WITH CITY OF SUGAR LAND STANDARD DETAILS SHEET AND LATEST REVISIONS.
2. ALL PIPE STORM SEWERS SHALL BE INSTALLED, BEDDED, AND BACKFILLED IN ACCORDANCE WITH CITY OF SUGAR LAND STANDARD DETAIL DRAWINGS.
3. ALL CEMENT STABILIZED BASE (C.S.S.) SHALL BE 1-1/2 SK PER CUBIC YD. AND MEET MINIMUM C.S.S. STANDARDS COMPACTED TO 95%.
4. ALL STORM SEWERS UNDER AND WITHIN TWO (2) FOOT OF PROPOSED OR FUTURE PAVEMENTS SHALL BE BACKFILLED AND COMPACTED WITH 1-1/2 SK C.S.S. TO BOTTOM OF SUBGRADE.
5. ALL PROPOSED PIPE STUB-OUTS FROM MANHOLES OR INLETS ARE TO BE PLUGGED WITH 8" BRICK WALLS WITH FULL MORTAR HEAD AND BED JOINTS AND GROUDED WITH A MINIMUM OF 1/2-INCH NON-SHRINK GROUT INSIDE AND OUTSIDE UNLESS OTHERWISE NOTED.
6. AVOID TO MAXIMUM EXTENT, MANHOLES IN HANDICAP RAMPS.
7. ALL STORM SEWER MANHOLES SHALL BE SUGAR LAND TYPE "C" UNLESS OTHERWISE NOTED AND SHALL BE LOCATED A MINIMUM OF THREE (3) FEET BACK OF CURB. IF CONFLICT EXISTS, BACK OVER MANHOLE TO MISS PROPOSED CURB.
8. RIM ELEVATIONS SHOWN ON THE PLANS ARE APPROXIMATE ONLY. UTILITY CONTRACTOR SHALL ADJUST RIM ELEVATIONS TO 0.4 FEET ABOVE THE FINISH GRADE AT EACH LOCATION AFTER CONTRACTOR HAS COMPLETED FINAL GRADING. SLOPED FILL SHALL BE ADDED FOR STORM WATER DRAINAGE AWAY FROM RIM.
9. RIM ELEVATIONS SHALL BE PROPERLY ADJUSTED TO GRADE IN PAVEMENT AND SIDEWALKS. APPROVED BLOCKOUTS SHALL BE USED IN PAVEMENT.
10. ALL STORM SEWER MANHOLE COVERS MUST INCLUDE "STORM SEWER" AND "DUMP NO WASTE", "DRAINS TO WATERWAYS" WITH CITY OF SUGAR LAND EMBLEM AS DEPICTED IN THE DETAIL SHEETS.
11. MINIMUM STORM SEWER SIZE SHALL BE 24-INCH DIAMETER. ALL STORM SEWER PIPES 24" AND LARGER ARE TO BE REINFORCED CONCRETE PIPE ASTM C-78 CLASS B, INCLUDING INLET LEADS CROSSING UNDER EXISTING OR PROPOSED PAVEMENTS. ALL INLET LEADS SHALL BE 24" R.C.P. OR LARGER. ALL STORM SEWER PIPE SHALL BE RUBBER GASKETED. ALL CMP PIPE SHALL BE IN ACCORDANCE WITH C.O.S.L. APPROVED PRODUCT LIST AND STANDARD DETAILS.
12. CONTRACTOR SHALL VERIFY NATURAL GROUND SHOTS PRIOR TO MANHOLE CONSTRUCTION.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING LOCATION OF ALL EXISTING UTILITIES PRIOR TO EXCAVATION DURING THE COURSE OF ANY AND ALL CLEARING, GRUBBING, FILL GRADING, EXCAVATION OR OTHER CONSTRUCTION OPERATIONS. EXISTING UTILITIES SHALL BE MAINTAINED AND REMAIN OPEN TO ENSURE POSITIVE DRAINAGE AND THAT SUCH CONVEYANCES ARE NOT IMPEDED OR BLOCKED IN ANY WAY. STORM SEWER INLETS SHALL BE PROTECTED FROM ENTRY OF SLIT, TRASH, DEBRIS, AND ANY SUBSTANCES DETERIMENTAL TO THE STORM SEWER SYSTEM AND/OR WATERWAYS RECEIVING STORM WATER RUNOFF. CONTRACTOR SHALL AT COMPLETION OF WORK, FILL LOW SPOTS AND GRADE ALL RIGHTS-OF-WAY AND UTILITIES EASEMENTS AND REPAIR/RESTORE DITCHES AS NECESSARY TO MAINTAIN AND/OR ESTABLISH POSITIVE DRAINAGE.
14. CONTRACTOR TO PROVIDE A MINIMUM OF 6-INCHES CLEARANCE AT UTILITY CROSSINGS AND A MINIMUM OF TWELVE (12) INCHES AT SANITARY SEWER CROSSINGS.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING, MAINTAINING, AND RESTORING ANY BACKSLOPE DRAINAGE SYSTEM DISTURBED AS A RESULT OF THIS WORK.
16. ALL DITCHES SHALL BE RESTORED TO PROPOSED ELEVATIONS TO INSURE PROPER DRAINAGE. ALL OUTFALLS SHALL BE COMPACTED AND ALL DISTURBED AREAS SHALL BE RESEDED OR RESEDED WITHIN 10 WORKING DAYS OF EACH OCCURRENCE OF SUCH DISTURBANCE.
17. THE UTILITY CONTRACTOR SHALL ROUGH CUT ALL ROADSIDE SWALES IN PROPER ALIGNMENT AND SLOPE TO WITHIN 0.2 FT. OF FINISH GRADE. THE PAVING CONTRACTOR, UPON COMPLETION OF PAVING, SHALL COMPLETE FINAL GRADING ALIGNMENT OF SWALES AND RESTORE ALL AREAS WITHIN RIGHT-OF-WAY FOR SEEDING OR SOODING AND FERTILIZATION.
18. ALL STORM SEWERS MUST BE CLEAN/FREE OF DIRT AND DEBRIS AT THE TIME AND INITIAL AND FINAL ACCEPTANCE.
19. REFER TO GENERAL NOTES AND C.S.S. NOTES.

SANITARY SEWER NOTES:

- 1. SANITARY SEWERS, FORCE MAINS, MANHOLES, LIFT STATIONS AND WASTEWATER TREATMENT PLANTS SHALL BE DESIGNED AND CONSTRUCTED AS PER THE REQUIREMENTS OF THE CITY OF SUGAR LAND DESIGN STANDARDS AND CORRESPONDING STANDARD CONSTRUCTION DETAILS SHEETS AND AS PER THE REQUIREMENTS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY "DESIGN CRITERIA FOR SEWERAGE SYSTEMS". SHOULD A CONFLICT ARISE BETWEEN INFORMATION DEPICTED ON APPROVED CONSTRUCTION DRAWINGS AND/OR INFORMATION INCLUDED IN PROJECT SPECIFICATIONS, CITY OF SUGAR LAND DESIGN STANDARDS SHALL GOVERN.
2. ALL MATERIALS AND PRODUCTS USED IN THE CONSTRUCTION OF SANITARY SEWERS, FORCE MAINS, MANHOLES, LIFT STATIONS AND WASTEWATER TREATMENT PLANTS SHALL COMPLY WITH THE CITY OF SUGAR LAND DESIGN STANDARDS AND THE CURRENT APPROVED PRODUCTS LIST.
3. STACKS SHALL BE BUILT IN ACCORDANCE WITH THE CITY OF SUGAR LAND STANDARD DETAIL DRAWING REQUIREMENTS. EXACT LOCATION OF THE STACK SHALL BE SUPPLIED TO THE CITY ENGINEER OF SUGAR LAND BY THE PROJECT ENGINEER ON SEALED AS-BUILT DRAWINGS AT COMPLETION OF CONSTRUCTION. ALL STACKS SHALL BE INSTALLED WITHIN 3% OF PLUMB RELATIVE TO VERTICAL PLANE AND WILL BE CAPPED AND TERMINATED AT A DEPTH OF 4 FEET BELOW FINISHED GRADE, UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER.
4. EACH SANITARY SEWER SERVICE LEAD SHALL BE PLUGGED WITH BRASS OR WIRE BRANCH OUTLET AND STACK SHALL BE MARKED IN ACCORDANCE WITH THE DETAILS AT THE TIME OF CONSTRUCTION, BEGINNING AT THE INVERT ELEVATION OF THE STUB OR WYE AND AT AN ELEVATION TWO FEET BELOW THE CAPPED TERMINATION POINT OF THE STACK AND EXTENDING TWO FEET ABOVE FINISHED GRADE.
5. SANITARY SEWER MANHOLES SHALL BE CONSTRUCTED AS PER DRAWINGS INCORPORATED IN CITY OF SUGAR LAND STANDARD CONSTRUCTION DETAILS SHEETS. SUCH MANHOLES SHALL BE CONSTRUCTED A MINIMUM OF ONE FOOT FROM BACK OF CURB OR CUTTER ROADWAYS AND THREE FEET FROM LOSS OF TRAVELLED ROADWAY ON THOSE THOROUGHFARES HAVING NO CURBING, MEASURED FROM OUTSIDE DIAMETER OF MANHOLE. ALL SANITARY SEWER MANHOLES SHALL INCORPORATE INTERIOR PROTECTORS. SANITARY SEWER MANHOLES SHALL NOT BE INSTALLED BENEATH STREET PAVING EXCEPT WHERE SPECIFICALLY AUTHORIZED BY CITY ENGINEER AND SO DESIGNATED ON APPROVED CONSTRUCTION DRAWINGS. BRICK MANHOLES AND FIBERGLASS MANHOLES ARE PROHIBITED. MANHOLES DEEPER THAN EIGHT FEET SHALL HAVE ECCENTRIC COVERS.
6. SANITARY SEWER MANHOLE COVERS SHALL BE MINIMUM OF 32 INCHES IN DIAMETER. ALL SUCH MANHOLE COVERS SHALL HAVE THE CITY OF SUGAR LAND EMBLEM AND THE WORDS "SUGAR LAND" AND "SANITARY SEWER" CAST IN RAISED RELIEF AS DEPICTED IN CITY OF SUGAR LAND STANDARD CONSTRUCTION DETAILS SHEETS.
7. MANHOLE RIM ELEVATIONS SHOWN ON PLANS ARE APPROXIMATE ONLY. UTILITY CONTRACTORS SHALL ADJUST RIM ELEVATIONS TO 0.4 FEET ABOVE FINISHED GRADE, AND 0.5 FEET ABOVE NATURAL GROUND WITHIN RIGHTS-OF-WAY AND EASEMENTS AT EACH MANHOLE LOCATION AFTER PAVEMENT CONTRACTOR HAS COMPLETED FINAL GRADING. THE AREA ADJACENT TO SANITARY SEWER MANHOLE LOCATIONS SHALL BE GRADED AWAY FROM SUCH MANHOLES SO AS PREVENT ENTRY OF STORM WATER RUNOFF TO THE SANITARY SEWER SYSTEM.
8. MINIMUM SEPARATION DISTANCES AS REQUIRED BY TCEQ SECTION 317.13, APPENDIX E MUST BE MAINTAINED BETWEEN POTABLE WATER LINES AND SANITARY SEWERS, FORCE MAINS, MANHOLES, LIFT STATIONS AND WASTEWATER TREATMENT PLANTS. INSTALLATION OF FIRE HYDRANTS SHALL BE PROHIBITED. REFER TO THE CITY OF SUGAR LAND INFRASTRUCTURE STANDARDS AND CORRESPONDING STANDARD CONSTRUCTION DETAILS SHEETS FOR CONSTRUCTION REQUIREMENTS OF OTHER INSTALLATIONS WHERE SEPARATION DISTANCES OF GREATER THAN NINE FEET CANNOT BE MAINTAINED.
9. TESTING OF SANITARY SEWERS, FORCE MAINS, MANHOLES, LIFT STATIONS AND WASTEWATER TREATMENT PLANTS SHALL BE CONDUCTED AS NOTED IN SANITARY SEWER CHAPTER OF THE CITY OF SUGAR LAND DESIGN STANDARDS AND AS PER THE REQUIREMENTS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY "DESIGN CRITERIA FOR SEWERAGE SYSTEMS".
10. ALL SANITARY SEWER PIPING AND BEDDING SHALL BE INSPECTED BY CITY CONSTRUCTION INSPECTOR FOR CONFORMANCE WITH CITY DESIGN STANDARDS PRIOR TO BACKFILLING OF PIPING IN TRENCH. CONTRACTOR SHALL NOT COVER PIPING UNTIL SUCH TIME AS INSPECTOR HAS NOTIFIED CONTRACTOR THAT RESULTS OF PIPING INSPECTION ARE SATISFACTORY AND THAT BACKFILLING MAY BE ACCOMPLISHED. ANY PIPING INSTALLED AND/OR BACKFILLED WITHOUT INSPECTOR'S SPECIFIC APPROVAL SHALL BE UNCOVERED AT INSPECTOR'S DIRECTION AND INSPECTED ACCORDINGLY. CONTRACTOR SHALL NOTIFY INSPECTOR 24-HOURS PRIOR TO INSPECTION.
11. ALL COMMERCIAL DEVELOPMENTS WITH A FAR SIDE SANITARY SERVICE LEAD AROUND THE STREET SHALL PROVIDE A SIX (6) INCH RISER AND CLEANOUT ON THE PROPERTY SIDE. PUBLIC MAINTENANCE OF THE FAR SIDE LEAD SHALL END AT THIS RISER.

WATER DISTRIBUTION NOTES:

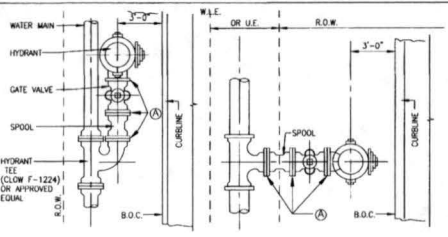
- 1. WATER MAINS, WATER SERVICE LINES AND ASSOCIATED APPURTENANCES SHALL BE DESIGNED AND CONSTRUCTED AS PER REQUIREMENTS OF THE CITY OF SUGAR LAND DESIGN STANDARDS AND CORRESPONDING STANDARD CONSTRUCTION DETAILS SHEETS AND AS PER THE REQUIREMENTS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY. SHOULD A CONFLICT ARISE BETWEEN INFORMATION DEPICTED ON APPROVED CONSTRUCTION DRAWINGS AND/OR INFORMATION INCLUDED IN PROJECT SPECIFICATIONS, CITY OF SUGAR LAND DESIGN STANDARDS SHALL GOVERN.
2. ALL MATERIALS AND PRODUCTS USED IN THE CONSTRUCTION OF WATER MAINS, WATER SERVICE LINES AND ASSOCIATED APPURTENANCES SHALL COMPLY WITH THE CITY OF SUGAR LAND DESIGN STANDARDS AND THE CURRENT APPROVED PRODUCTS LIST AS MAINTAINED BY THE CITY'S ENGINEERING DEPARTMENT.
3. ALL GATE VALVES INSTALLED BELOW GRADE SHALL BE OF NON-RISING STEM DESIGN.
4. ALL FIRE HYDRANTS SHALL BE PAINTED AND/OR REPAINTED WITH GEO-GLEN 301 BRIGHT SILVER POLYURETHANE ENAMEL MANUFACTURED BY GEO-GLEN ENTERPRISES, INC. SURFACE PREPARATION SHALL INCLUDE REMOVAL OF OIL, GREASE AND MOISTURE, FOLLOWED BY MEDIA BLASTING TO SSPC-SP15-10-43 SPECIFICATIONS (NEAR WHITE METAL). AS PER MANUFACTURER'S RECOMMENDATIONS, PRIME BARE METAL WITH TP-251 EPOXY PRIMER EPOXY PRIMER OR WITH TP-221, TP-231 OR TP-241 UNIVERSAL PRIMER. 807 AND 508 RELATIVE HUMIDITY ARE OPTIMAL CONDITIONS FOR APPLICATION OF PRIMER AND OF PAINT. DO NOT APPLY PRIMER AND/OR PAINT WHEN SURFACE TO BE PAINTED IS LESS THAN 5' ABOVE THE DOW POINT IN ORDER TO PREVENT MOISTURE FROM CONDENSING ON THE SURFACE TO BE PRIME AND/OR PAINTED. A BLUE TRAFFIC BUTION SHALL BE INSTALLED ON THE STREET 12" OFF THE CENTER LINE FOR EACH HYDRANT.
5. MINIMUM SEPARATION DISTANCES AS REQUIRED BY TCEQ SECTION 317.13, 290, APPENDIX E MUST BE MAINTAINED BETWEEN POTABLE WATER LINES AND SANITARY SEWERS, FORCE MAINS, LIFT STATIONS AND WASTEWATER TREATMENT PLANTS. INSTALLATION OF FIRE HYDRANTS WITHIN 9' (FT) OF A SANITARY SEWER SYSTEM IS PROHIBITED. REFER TO C.O.S.L. STANDARDS FOR CONSTRUCTION REQUIREMENTS OF OTHER INSTALLATIONS WHERE DISTANCES ARE GREATER THAN 9' (INCH) FT. CANNOT BE MAINTAINED.
6. EACH WATER SERVICE LEAD STUB SHALL BE MARKED WITH A PRESSURE TREATED 4 X 4 TIMBER OR PVC PIPE AT THE TIME OF CONSTRUCTION, BEGINNING AT THE INVERT ELEVATION OF THE STUB AND EXTENDING TWO FEET ABOVE FINISHED GRADE. EACH TIMBER MARKER SHALL BE PAINTED BLUE AND LABELLED "POTABLE WATER" WITH PIPE SIZE NOTED.
7. TESTING OF WATER MAINS, WATER SERVICE LINES AND ASSOCIATED APPURTENANCES SHALL BE CONDUCTED AS PER REQUIREMENTS OF AWWA C605-94.
8. DISINFECTION OF WATER MAINS, WATER SERVICE LINES AND ASSOCIATED APPURTENANCES SHALL BE CONDUCTED AS PER REQUIREMENTS OF AWWA C651 AND TCEQ. NO CONNECTIONS SHALL BE MADE TO EXISTING WATER LINES UNTIL NEWLY CONSTRUCTED WATER LINES HAVE BEEN THOROUGHLY DISINFECTED, TESTED, FLUSHED, AND SAMPLED AND CONNECTION HAS BEEN AUTHORIZED BY THE CITY ENGINEER.
9. ALL WATER PIPING AND BEDDING SHALL BE INSPECTED BY THE CITY INSPECTOR FOR CONFORMANCE TO DESIGN STANDARDS PRIOR TO BACKFILLING OF PIPING IN TRENCH. CONTRACTOR SHALL NOT COVER PIPING UNTIL SUCH TIME AS INSPECTOR HAS NOTIFIED CONTRACTOR THAT RESULTS OF PIPING INSPECTION ARE SATISFACTORY AND THAT BACKFILLING MAY BE ACCOMPLISHED. ANY PIPING INSTALLED AND/OR BACKFILLED WITHOUT INSPECTOR'S SPECIFIC APPROVAL SHALL BE UNCOVERED AT INSPECTOR'S DIRECTION AND INSPECTED ACCORDINGLY. 24-HOUR NOTICE REQUIRED.
10. ALL MECHANICALLY RESTRAINED FITTINGS MUST BE METALLIC RESTRAINED JOINTS OR APPROVED EQUAL.
11. THE CITY OF SUGAR LAND MUST HAVE A COPY OF THE BACTERIOLOGICAL TEST RESULTS AT LEAST 24 HOURS PRIOR TO THE INITIAL INSPECTION. IF, NOT, THEN THE INSPECTION WILL BE RESCHEDULED.

Table with 3 columns: NO., DATE, REASON. Includes a signature block for Brent A. Palermo, Design Engineer, TBE Firm Reg. No. 280, dated 6/28/16.

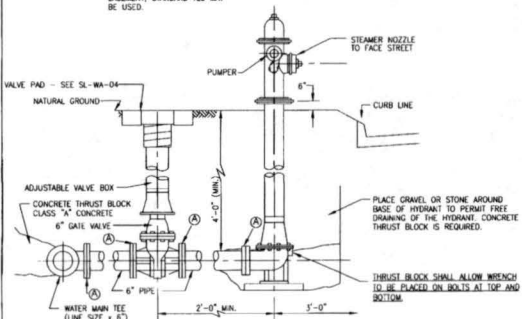
Official stamps and text for City of Sugar Land, Texas, Engineering Department. Includes 'CONSTRUCTION PLANS FOR WETLANDS PARK at RIVERSTONE' and 'GENERAL CONSTRUCTION NOTES II'. A job number 'SL-02' and sheet number 'SHEET OF' are also present.

Handwritten signature 'Maggie' and date '8/11/16' at the bottom right of the page.

PLOT TIME:



NOTE:
WHEN WATER LINE IS LOCATED IN EASEMENT, STANDARD TEE MAY BE USED.



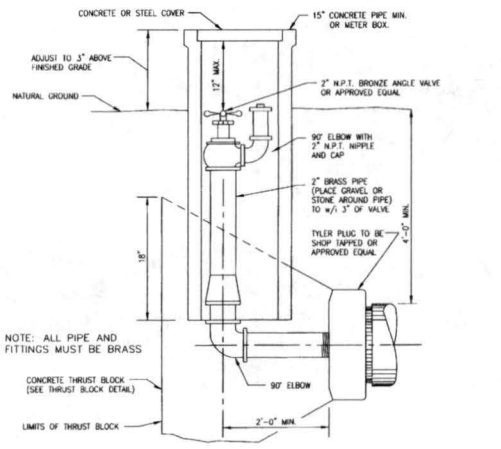
FLUSHING VALVE COLOR CODE

MAIN LINE DIAMETER	BORNET, PUMPER CAP AND STEAMER CAP
8 INCHES (AND LESS)	YELLOW
10 INCHES	WHITE
12 TO 18 INCHES	GREEN
GREATER THAN 18 INCHES	ORANGE

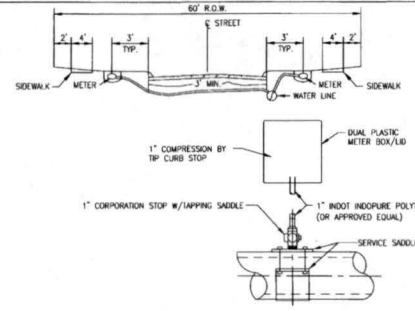
NOTE:
ALL FIRE HYDRANTS SHALL BE MUELLER, KENNEDY, AMERICAN, M & H OR APPROVED EQUAL, WITH STEAMER NOZZLE, SIZE 4.125" PUMPER 2.5" R.S.T.

ALL FLUSHING VALVES TO BE SAND REATED AND PAINTED AS PER C.O.S.L. DESIGN STANDARDS.

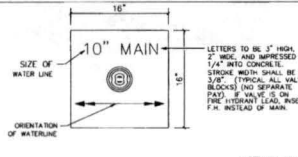
NOTE: ALL FITTINGS SHALL BE BRASS



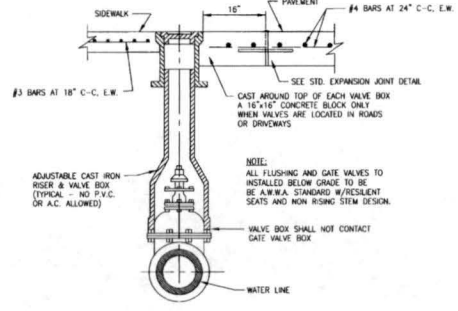
2" BLOW OFF VALVE ASSEMBLY
N.T.S. SL-WA-02



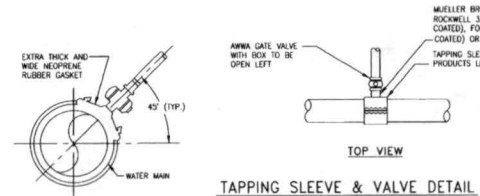
WATER SERVICE CONNECTION AND WATER SERVICE TAPPING ASSEMBLY DETAIL
N.T.S. SL-WA-03



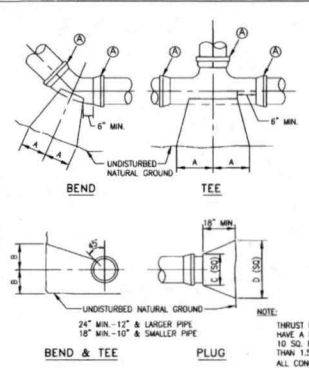
CONCRETE PAD
N.T.S.



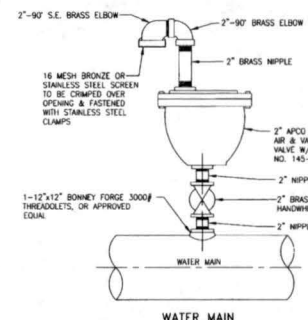
VALVE BOX INSTALLATION DETAIL
N.T.S. SL-WA-04



TAPPING SLEEVE & VALVE DETAIL
N.T.S. SL-WA-07



THRUST BLOCK DETAIL
N.T.S. SL-WA-05



AIR RELEASE VALVE DETAIL
N.T.S. SL-WA-06

**NOTES:
POLYETHYLENE WRAP FOR IRON PIPE**

- NOTE:
- POLYETHYLENE FILM SHALL BE USED AS A WRAP TO PROTECT CAST IRON AND OTHER METALS IN A CORROSIVE SOIL ENVIRONMENT.
 - AN 8 MIL POLYETHYLENE FILM WRAP SHALL BE REQUIRED AROUND ALL METAL PIPE AND APPURTENANCES (EXCEPT FIRE HYDRANTS)
 - POLYETHYLENE FILM SHALL BE FURNISHED AND INSTALLED EITHER IN TUBULAR FORM PRIOR TO LOWERING THE PIPE IN TRENCH OR IN SHEET FORM.
 - POLYETHYLENE TUBE ENCASMENT SHALL CONFORM WITH THE MINIMUM REQUIREMENTS OF POLYETHYLENE ENCASMENT FOR GRAY AND DUCTILE CAST-IRON PIPING FOR WATER AND OTHER LIQUIDS (ANSI/AMPA C105, CURRENT REVISION). SOILS WITHIN A PROJECT SHALL BE TESTED IN ACCORDANCE WITH APPENDIX A OF ANSI/AMPA C105 TO ADEQUATELY DETERMINE THE REQUIREMENTS FOR ENCASMENT.
 - ALL FITTINGS AND PIPE JOINTS WITHIN 10' OF A FITTING SHALL HAVE RESTRAINT JOINTS.

SIZE	90° BEND		45° BEND		22 1/2° BEND		TEES		PLUGS	
	A	B	A	B	A	B	A	B	A	B
2 1/2"	12"	7"	6"	7"	6"	6"	6"	7"	8"	14"
3"	16"	10"	9"	10"	8"	10"	10"	12"	10"	21"
4"	22"	13"	12"	13"	10"	11"	11"	16"	12"	29"
10"	26"	17"	14"	17"	10"	13"	16"	20"	14"	36"
12"	28"	21"	16"	21"	11"	16"	18"	24"	16"	41"
14"	33"	24"	19"	24"	12"	20"	22"	27"	18"	48"
18"	38"	27"	21"	27"	12"	24"	24"	30"	20"	54"
20"	50"	40"	30"	40"	18"	30"	30"	40"	30"	78"
24"	50"	40"	30"	40"	18"	30"	30"	40"	30"	78"
30"	60"	48"	36"	48"	20"	36"	36"	48"	30"	96"

BENDS, TEES & PLUGS FOR PIPE OF VARIOUS SIZES

SL-WA-08

NO.	DATE	REVISION

SEAL:

Brent A. Palermo
DATE: 6/28/16
DESIGN ENGINEER: TPBE FIRM REG. NO. 280



CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

**CONSTRUCTION PLANS FOR:
WETLANDS PARK
at RIVERSTONE**

WATER LINE
CONSTRUCTION DETAILS

- CONSTRUCTION NOTES:**
- WATER LINES 12" (N) AND LESS SHALL BE AMMA C-900 DR18 WATER LINE GREATER THAN 12" (N) IN # SHALL BE AMMA C-905 DR 18
 - ALL FLUSHING VALVES AND GATE VALVES TO BE AMERICAN WATER WORKS ASSOC. (AMWA) STANDARD COUNTERLOCKING, OPENING WITH NON-RISING STEM DESIGN.
 - ALL DUCTILE IRON PIPE SHALL BE CLASS 50 MORTAR LINED. NO A.C. PIPE WILL BE ALLOWED AND ALL DUCTILE IRON FITTINGS SHALL BE MORTAR LINED PUSHON OR MECHANICAL JOINTS.
 - ALL BACKFILL WITHIN THE R.O.W. SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
 - MINIMUM SPACING BETWEEN TAPS SHALL BE 2' AT ALTERNATING TAP ANGLES.

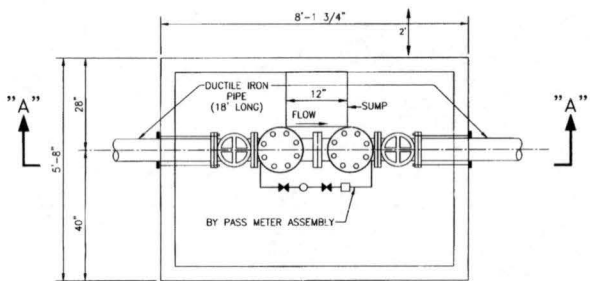
JOB NO.:
DATE DESIGNED BY:
DESIGNED BY:
CHECKED BY:
SCALE:

SL-15

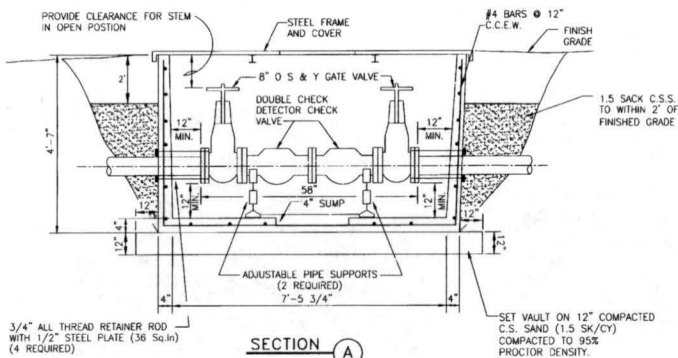
Maggie J. & Mike

CAD FILE PATH:
PLOT DATE:

PLOT TIME:



PLAN VIEW



SECTION A

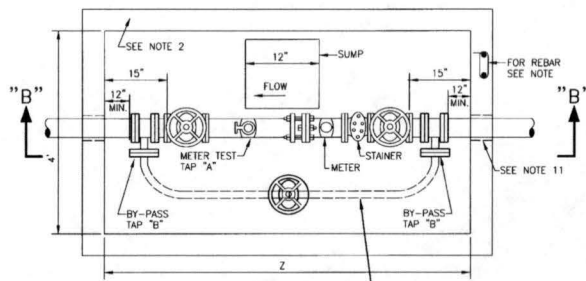
3/4\"/>

- NOTES:
1. SAMESE CONNECTION MAY BE ALLOWED WITHIN THE VAULT WHEN APPROVED BY THE ENGINEERING DEPARTMENT.
 2. FIRE VALVE MAY BE SUBSTITUTED FOR GATE VALVE ON THE CUSTOMER SIDE. SUPPLIED BY PARK EQUIPMENT COMPANY, OR APPROVED EQUAL.

DETECTOR CHECK VALVE

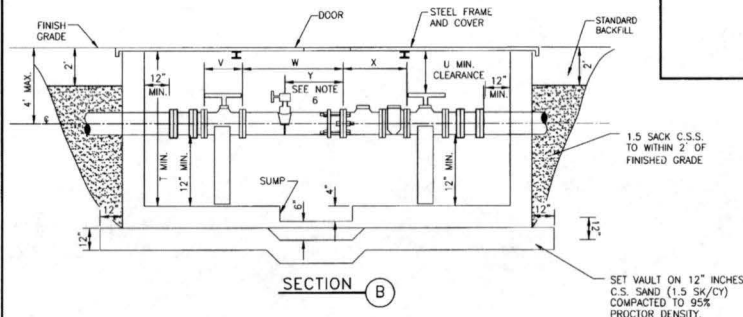
N.T.S.

SL-WA-20



PLAN VIEW

DUCTILE IRON BYPASS FOR 3\"/>



SECTION B

SET VAULT ON 12\"/>

METER VAULT											
DOMESTIC											
METER SIZE	T	U	V	W	X	Y	Z	METER SIZE	T	U	V
3"	4'-6"	25"	8"	11-1/2"	24"	9"	6'-10"	3"	4'-6"	25"	8"
4"	4'-6"	22"	9"	13-1/2"	29"	10"	7'-7"	4"	4'-6"	22"	9"
6"	5'-2"	26"	10-1/2"	13-1/2"	33"	13"	8'-2"	6"	5'-2"	26"	10-1/2"
	8"	6'-0"	31"	11-1/2"	25-1/2"	30"	17'	8"	6'-0"	31"	11-1/2"
	10"	7'-0"	37"	13"	29-1/2"	41"	21'	10"	7'-0"	37"	13"

3" TO 10" METER

N.T.S.

SL-WA-21

SL-WA-19

- NOTES:
1. NOTIFY THE ENGINEERING DEPARTMENT AT (281) 275-2780 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 3,000 PSI 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 PSI CONCRETE WITH #4 REINFORCEMENT STEEL ON EIGHT INCH (8") CENTERS EACH WAY. THESE ARE MINIMAL SPECIFICATIONS.
 3. THE VAULT WILL NOT BE LOCATED IN ANY DRIVE OR PARKING AREAS AND MUST BE LOCATED IN A WATER METER EASEMENT.
 4. THE VAULT LID SHALL BE A BILCO LID, TYPE Q-4 SINGLE LEAF DESIGN. ANGLE FRAME IS 1/4-INCH STEEL WITH STRAP ANCHORS BOLTED TO THE EXTERIOR. THE LEAF IS 1/4-INCH STEEL DIAMOND PATTERN PLATE, PIVOTING ON TORSION BARS FOR EASY OPERATION. THE MINIMUM LIVE LOAD CAPACITY IS 150 POUNDS PER SQUARE FOOT. THE SIZE OF THE DOOR IS THREE FEET (3') BY THREE FEET (3').
 5. THE LID SHALL BE PAINTED WITH 43-38 Tnemec DIFFUSED ALUMINUM PAINT OR APPROVED EQUAL, AND CENTERED OVER METER/NO.
 6. THE BY-PASS AND METER TEST TAP SHALL BE INSTALLED INSIDE THE VAULT. TAP "A" MUST BE AT LEAST TWO (2) PIPE DIAMETERS DOWNSTREAM OF THE METER. TAPS "B" AND "C" MUST BE MADE AT APPROXIMATE FORTY-FIVE (45) DEGREE (45°) ANGLE ON EACH END OF THE PIPE AND CENTERED TEN INCHES (10") AWAY FROM THE WALL. ALL TAPS SHALL BE TWO INCHES (2") AND SHALL BE HARD PIPED.
 7. THE STRAINER, METER AND FLEXIBLE COUPLING WILL NOT BE SET UNTIL THE METER VAULT AND TAPS ARE ACCEPTED BY THE DISTRICT OPERATOR. ALL UTILITIES MUST ALSO HAVE BEEN ACCEPTED AND RELEASED BY THE CITY OF SUGAR LAND PUBLIC WORKS DEPARTMENT PRIOR TO METER.
 8. THE VALVES SHALL BE ANY RESILIENT WEDGE DESIGN GATE VALVE WHICH HAS RECEIVED FORMAL APPROVAL FROM THE CITY OF SUGAR LAND ENGINEERING DEPARTMENT. ALL VALVES SHALL BE FLANGED BOTH ENDS AND HAVE HAND WHEELS.
 9. THE METER VAULT SHALL BE SET ON 12" C.S.S. BEDDING AS SHOWN ON DETAIL DRAWINGS. 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, BOM-NEK SHALL BE USED TO SEAL ALL JOINTS.
 10. ALL THE WALL PENETRATIONS SHALL BE MADE WITH A CAST IN PLACE WALL SLEEVE AS APPROVED BY THE CITY OF SUGAR LAND ENGINEERING DEPARTMENT. BREAKING OUT THE WALL USING A JACKHAMMER OR USING KNOCKOUT PANELS WILL NOT BE ALLOWED.
 11. A CONCRETE SUPPORT WILL BE INSTALLED UNDER EACH VALVE.
 12. DEPTH OF VAULT SHALL BE A MINIMUM OF 4-1/2' AND A MAXIMUM OF 6'.
 13. ALL PIPING INSIDE THE VAULT SHALL BE DUCTILE IRON WITH FLANGE FITTINGS. ALL PIPING SHALL CONFORM TO THE REQUIREMENTS OF THE CITY OF SUGAR LAND ENGINEERING DEPARTMENT.
 14. THE TYPE OF METER, TURBINE OR COMPOUND, WILL BE DETERMINED BASED ON THE APPLICATION AND APPROVED BY THE ENGINEERING DEPARTMENT.

SL-WA-22

NO.	DATE	REVISION

DESIGN ENGINEER: *B. J. Pala* DATE: 6/28/16
 TBPE FIRM REG. No. 280



CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:
WETLANDS PARK
at RIVERSTONE

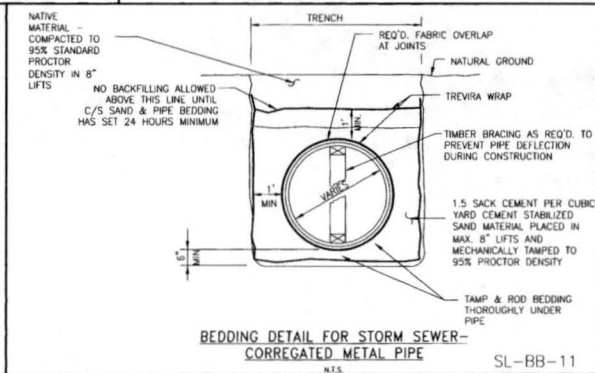
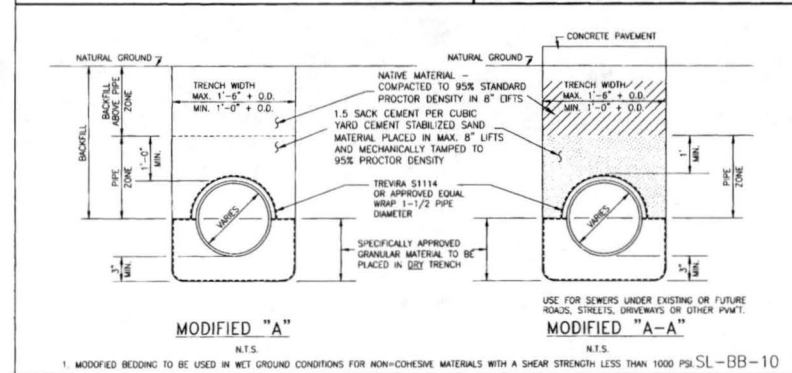
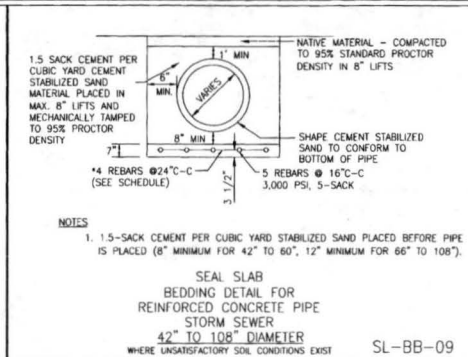
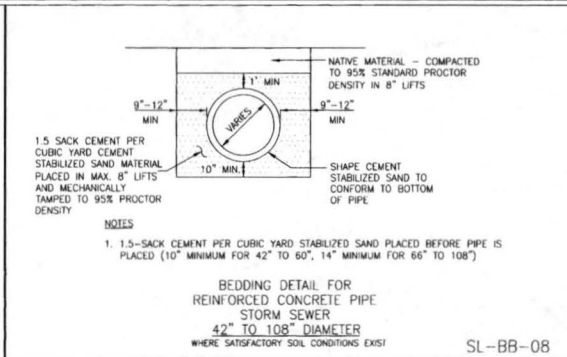
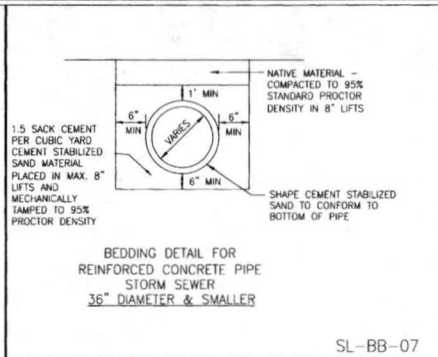
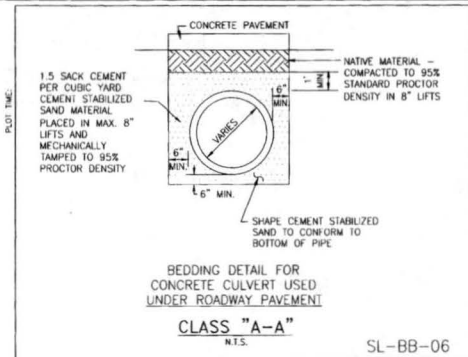
WATER LINE
METER VAULT DETAILS

JOB NO.:
DATE:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SCALE:

DATE: 8/16/16
SHEET OF: SL-17

Maggie J 8/16/16

CAD FILE PATH:
PLOT DATE:



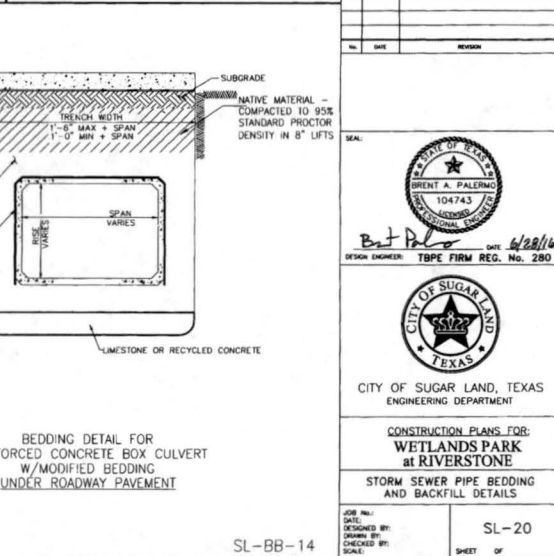
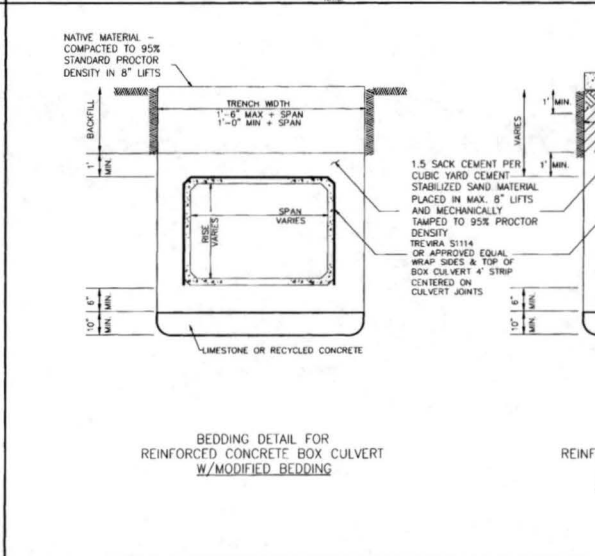
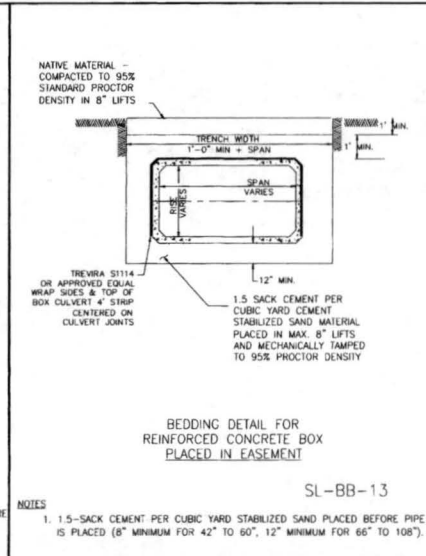
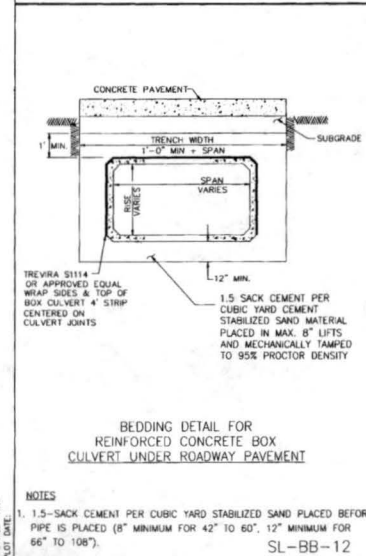
CONSTRUCTION NOTES

- CONTRACTOR SHALL CONTACT SUGAR LAND ENGINEERING DEPARTMENT IMMEDIATELY IF WET SAND CONDITIONS ARE ENCOUNTERED.
- SPECIFICALLY APPROVED GRANULAR MATERIAL DIMENSIONS SHOWN ARE TYPICAL BUT MAY BE VARIED BY ORDER OF CITY ENGINEER.
- SPECIFICALLY APPROVED GRANULAR MATERIAL SHALL BE IN ACCORDANCE WITH TADOT SPECIFICATION No. 247 FLEXIBLE BASE, TYPE A, GRADE 2 AGGREGATE.
- NO BEDDING SHALL BE INSTALLED IN WET CONDITIONS. WHEN WELL POINTING OR IN WET SAND CONDITIONS, MAINTAIN GROUND WATER 1' (FT.) BELOW BOTTOM OF TRENCH FOR A MINIMUM OF 24-HRS AFTER BEDDING AND BACKFILL IS IN PLACE.
- R.C.P. AND BOX CULVERTS SHALL BE INSTALLED WITH APPROVED GASKETS ONLY.
- MANHOLES SHALL BE PROVIDED WHERE MODIFIED "A" OR MODIFIED "A-A" BEDDING IS USED. STACKS ARE NOT ALLOWED.
- REFER TO MANHOLE DETAILS, INLETS, OUTFALL AND END TREATMENT DETAILS, C.S.S., GENERAL NOTES, AND STORM NOTES.
- SPECIFIC DESIGNS MUST BE SUBMITTED AND APPROVED BY THE CITY ENGINEER FOR MANHOLE ACCESS TO BOX CULVERTS AS REQUIRED.
- ALL BACKFILL WITHIN THE R.O.W. SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
- A GEOTECHNICAL REPORT MAY BE REQUIRED TO ANALYZE THE BEARING CAPACITY OF EXISTING SOILS AND MAKE A DETERMINATION IF ADDITIONAL BEDDING AND BACKFILL IS APPROPRIATE.

TYPICAL SEAL SLAB BAR SCHEDULE (OR AS DIRECTED BY ENGINEER)

PIPE SIZE	LET #	LAT #	NO. LONGIT #
42"	5/4"		5
48"	6/8"		6
54"	6/8"		7
60"	8/0"		7
66"	8/0"		7
72"	9/4"		8
78"	9/4"		8
84"	9/4"		8
90"	10/8"		9
96"	10/8"		9
102"	12/0"		10
108"	12/0"		10

SL-BB-15



NOTES

- 1.5-SACK CEMENT PER CUBIC YARD STABILIZED SAND PLACED BEFORE PIPE IS PLACED (8" MINIMUM FOR 42" TO 60", 12" MINIMUM FOR 66" TO 108").

SL-BB-12

NOTES

- 1.5-SACK CEMENT PER CUBIC YARD STABILIZED SAND PLACED BEFORE PIPE IS PLACED (8" MINIMUM FOR 42" TO 60", 12" MINIMUM FOR 66" TO 108").

SL-BB-13

NOTES

- 1.5-SACK CEMENT PER CUBIC YARD STABILIZED SAND PLACED BEFORE PIPE IS PLACED (10" MINIMUM FOR 42" TO 60", 14" MINIMUM FOR 66" TO 108").

SL-BB-08

SL-BB-14

CONSTRUCTION PLANS FOR: WETLANDS PARK at RIVERSTONE

STORM SEWER PIPE BEDDING AND BACKFILL DETAILS

SL-20

SHEET OF

Magi 8/16/16

NO. DATE REVISION

DESIGN ENGINEER: B.J. PALERMO DATE: 6/28/16

TPE FIRM REG. NO. 280

CITY OF SUGAR LAND, TEXAS ENGINEERING DEPARTMENT

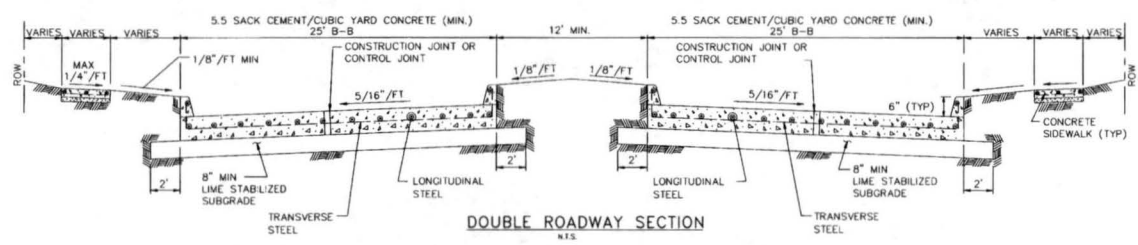
CONSTRUCTION PLANS FOR: WETLANDS PARK at RIVERSTONE

STORM SEWER PIPE BEDDING AND BACKFILL DETAILS

SL-20

SHEET OF

PLOT TIME:



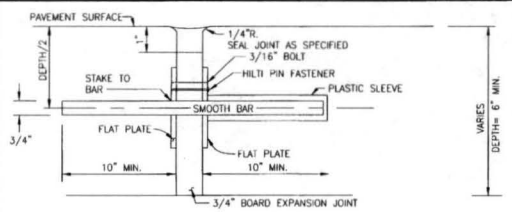
DOUBLE ROADWAY SECTION
N.T.S.

SL-ST-01

CONSTRUCTION NOTES:

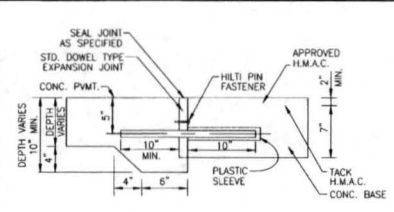
1. 6 INCH, 5.5 SACK CEMENT PER CUBIC YARD CONCRETE, 3500 PSI REINFORCED CONCRETE WITH #4 BARS 24 INCHES C-C, E.W. IS THE MINIMUM ACCEPTABLE PAVEMENT CONSTRUCTION FOR LOCAL STREETS.
2. 7 INCH, 5.5 SACK CEMENT PER CUBIC YARD CONCRETE, 3500 PSI REINFORCED CONCRETE WITH #4 BARS 18 INCHES C-C, IS THE MINIMUM ACCEPTABLE PAVEMENT CONSTRUCTION FOR COLLECTOR STREETS.
3. EIGHT (8) INCH, 5.5 SACK CEMENT PER CUBIC YARD CONCRETE, 3500 PSI REINFORCED WITH #4 18" C.C. EACH WAY IS THE MINIMUM ACCEPTABLE FOR ARTERIAL STREETS.
4. HARD AGGREGATE IS NOT ALLOWED IN STREET PAVEMENT MIX. ADMIXTURES REQUIRE CITY OF SUGAR LAND PUBLIC WORKS DEPARTMENT APPROVAL.
5. TRANSVERSE EXPANSION JOINTS SHALL BE PLACED AT ALL POINTS OF CURVATURE, POINTS OF TANGENCY AND ALL INTERSECTION CURB RETURN POINTS. MAXIMUM SPACING SHALL BE 200' AND BE SEALED WITH SEALANT CONFORMING TO TYPOT ITEM 360 (& ITEM 430) AND TYPOT DMS-6310, CLASS-2.
6. TRANSVERSE CONTROL JOINTS ARE REQUIRED AT MAXIMUM SPACING OF 30'-0" C-C, AND VERTICAL CURB JOINTS TO BE SEALED WITH SPOCK JOINT SEALANT ASTM-D-1190-74 OR ASHTO-M173-60 FOR PAVEMENT 8" THICK AND GREATER (ELASTOMERIC TYPE NOT POURED).
7. PAVEMENT FINISH SHALL BE BAKER BROOM FINISH. CURING COMPOUND REQUIRED ON ALL CONCRETE.
8. STORM WATER POLLUTION PROTECTION SHALL BE DESIGNED, CONSTRUCTED, MAINTAINED AND SHALL BE IN TOTAL COMPLIANCE WITH THE STORM QUALITY MANUAL OF THE CITY OF SUGAR LAND, CITY ENGINEER'S APPROVAL.
9. REFER TO GENERAL, C.S.S., AND PAVEMENT NOTES.

SL-ST-12



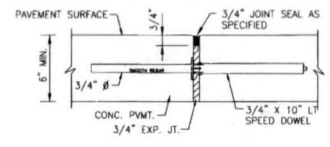
DOWEL TYPE EXPANSION JOINT
N.T.S.

SL-ST-03



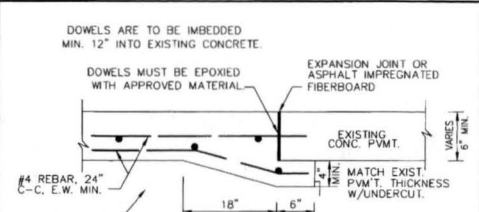
DOWEL TYPE EXPANSION JOINT
(CONC. PAVING TO CONC. BASE)
N.T.S.

SL-ST-06



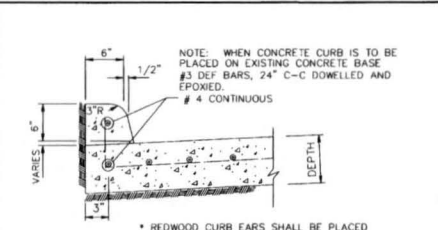
SPEED DOWEL EXPANSION JOINT
N.T.S.

SL-ST-08



UNDERCUT DETAIL WITH HEADER
N.T.S.

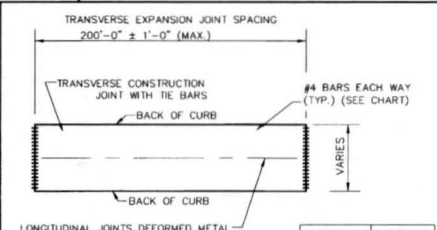
SL-ST-09



CONCRETE CURB
N.T.S.

CONSTRUCTION NOTE:
ALL NEW CURB REQUIRES 3,000 P.S.I. @ 28-DAYS.

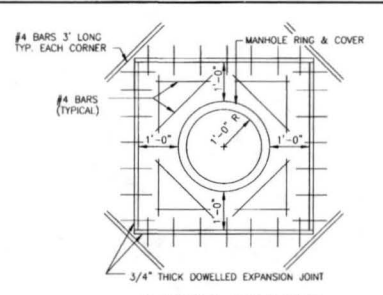
SL-ST-04



PAVING PANEL
N.T.S.

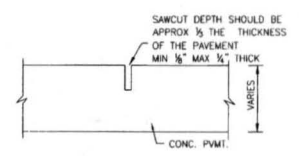
SL-ST-05

PAVEMENT THICKNESS	SPACING (C-C)
6"	24"
7"	18"
8"	18"



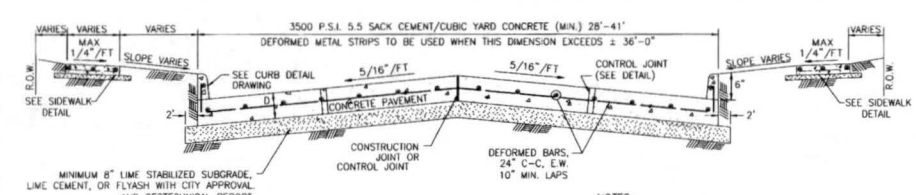
MANHOLE BLOCKOUT
N.T.S.

(STORM & SANITARY) IN PAVEMENT
SL-ST-10



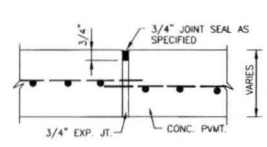
CONTROL JOINT
N.T.S.

SL-ST-11



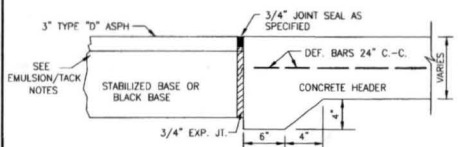
SL-ST-02

SINGLE ROADWAY SECTION
N.T.S.



CONSTRUCTION JOINT SEAL
N.T.S.

SL-ST-12



PAVING HEADER
(FOR USE IN CONNECTING CONC. PMT. TO ASPHALT PMT.)
(PROP. OR EXIST.)

SL-ST-07

NO.	DATE	REVISION

SEAL:

DESIGN ENGINEER: *Brent A. Palermo* DATE: *4/24/10*
TPE FIRM REG. NO. 280

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:
WETLANDS PARK
at RIVERSTONE

CONCRETE PAVEMENT
CONSTRUCTION DETAILS

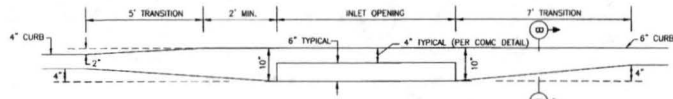
JOB NO.:
DATE:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SCALE:

SL-21
SHEET OF

Maggie J. Silletta

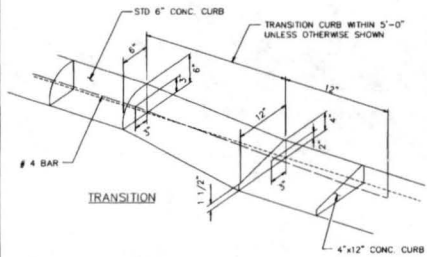
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PLOT DATE:

PLOT TIME



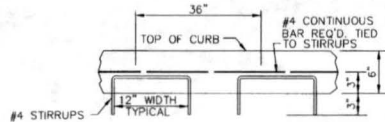
TYPICAL CURB TRANSITION FOR INLET INSTALLATION

SL-ST-13



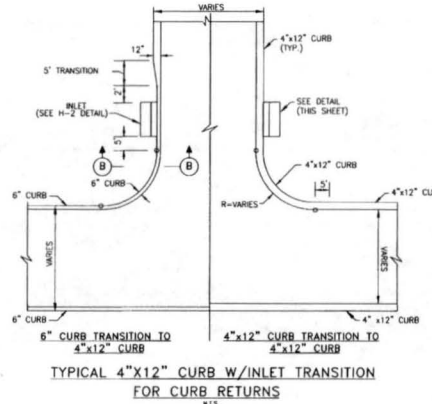
TYPICAL CURB TRANSITION

SL-ST-15



TYPICAL CONCRETE CURB REINFORCING

SL-ST-16



TYPICAL 4"x12" CURB W/INLET TRANSITION FOR CURB RETURNS

SL-ST-14

CONSTRUCTION NOTES:

- 6 INCH, 5.5 SACK CEMENT PER CUBIC YARD CONCRETE, 3500 PSI REINFORCED CONCRETE WITH #4 BARS 24 INCHES C-C, E.K. IS THE MINIMUM ACCEPTABLE PAVEMENT CONSTRUCTION FOR RESIDENTIAL STREETS.
- 7 INCH, 5.5 SACK CEMENT PER CUBIC YARD CONCRETE, 3500 PSI REINFORCED CONCRETE WITH #4 BARS 24 INCHES C-C, IS THE MINIMUM ACCEPTABLE PAVEMENT CONSTRUCTION FOR COLLECTOR STREETS
- EIGHT (8) INCH, 5.5 SK, 3500 PSI @ 28 DAYS, REINFORCED WITH #4 18" C.C. EACH WAY IS THE MINIMUM ACCEPTABLE FOR ARTERIAL STREETS.
- TRANSVERSE EXPANSION JOINTS SHALL BE PLACED AT ALL POINTS OF CURVATURE, POINTS OF TANGENCY AND ALL INTERSECTION CURB RETURN POINTS. MAXIMUM SPACING SHALL BE 200' AND BE SEALED CONFORMING TO TXDOT ITEM 360 (& ITEM 436) AND TXDOT DMS-6310, CLASS-2.
- TRANSVERSE CONTROL JOINTS ARE REQUIRED AT MAXIMUM SPACING OF 20'-0" C-C, AND VERTICAL CURB JOINTS TO BE SEALED WITH SPECIAL JOINT SEALANT ASTM-D-1190-74 OR AASHTO-M173-60 FOR PAVEMENT 8" THICK AND GREATER. (ELASTONETRIC TYPE HOT POURED)
- PAVEMENT FINISH SHALL BE BAKER BRUSH FINISH. CURING COMPOUND ON ALL CONCRETE.
- STORM WATER POLLUTION PROTECTION SHALL BE DESIGNED, CONSTRUCTED, MAINTAINED AND SHALL BE IN TOTAL COMPLIANCE WITH THE STORM WATER QUALITY MANUAL OF THE CITY OF SUGAR LAND.
- UNSTABLE SUBGRADE SHALL BE EXCAVATED AND REPLACED WITH CEMENT STABILIZED SAND.
- USE 1"x2" REDWOOD STAKES FOR HEADERS.
- EDGE ALL SIDES WITH EDGING TOOL.
- DOWEL SHALL BE 3/4" DIAMETER, WITH MINIMUM 8" PENETRATION (BOTH SIDES).
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE CITY OF SUGAR LAND OF ANY BIRDBATH PROBLEMS PRIOR TO CONSTRUCTION OF DRIVEWAY.
- REFER TO GENERAL, C.S.S., AND PAVEMENT NOTES.
- 1.0 LBS. OF APPROVED POLYPROPYLENE FIBER MESH PER C/Y IN 4"x12" CURBS REQUIRED.

SL-ST-20

NO.	DATE	REASON

SEAL:

DESIGN ENGINEER: *Brent A. Palermo* DATE: *4/22/16*
 TYPE FIRM REG. NO. 280

CITY OF SUGAR LAND, TEXAS
 ENGINEERING DEPARTMENT

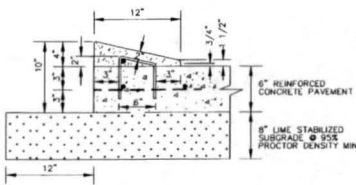
CONSTRUCTION PLANS FOR:
WETLANDS PARK
 at RIVERSTONE
 RESIDENTIAL CURB
 CONSTRUCTION DETAILS

JOB NO.:
 DATE:
 DESIGNED BY:
 DRAWN BY:
 CHECKED BY:
 SCALE:

SL-23
 SHEET OF

Magdalena Stullie

CAD FILE PATH:
 PLOT DATE:

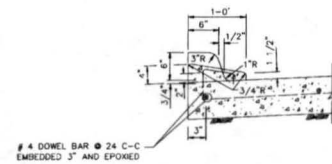


4"x12" MOUNTABLE CONCRETE CURB

NOTES:

- 1.0 LBS. OF APPROVED NON-METALLIC FIBER MESH PER C/Y IN 4"x12" CURBS.
- #3 RE-BAR STIRRUPS TO BE PLACED AT INTERVALS OF 2' (FT) C-C.
- #4 RE-BAR LONGITUDINAL SHALL BE TIED TO EACH STIRRUP
- MOUNTABLE CURB ONLY ALLOWED ON <= 41' (FT), UNDIVIDED, RESIDENTIAL ROADWAYS WITH SUBDIVISIONS.

SL-ST-17



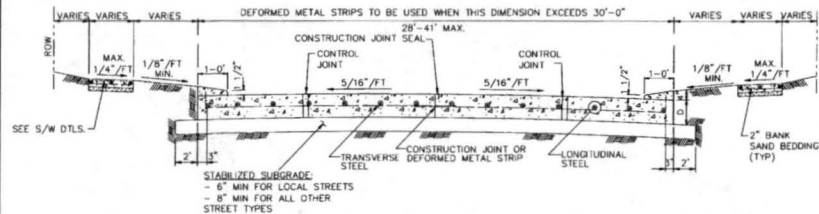
4-INCH x 12-INCH TRANSITION CURB

SL-ST-18

4"x12" MOUNTABLE CONCRETE CURB AND TRANSITION CURB NOTES:

- 6-INCH CONCRETE CURB TO BE CONSTRUCTED ON ALL ESPLANADES, ISLANDS AND NON-RESIDENTIAL STREETS. RESIDENTIAL STREETS MAY BE CONSTRUCTED WITH EITHER 6-INCH CONCRETE CURB OR 4-INCH x 12-INCH CONCRETE CURB AS NOTED ON PLANS.
- ALL 4-INCH x 12-INCH CONCRETE CURBS TO BE POURED SEPARATE FROM PROPOSED CONCRETE PAVEMENT.
- TRANSITIONS FROM 6-INCH CONCRETE CURB TO 4-INCH x 12-INCH CONCRETE CURB TO BE ACCOMPLISHED WITHIN 5 FEET (TYP.), UNLESS OTHERWISE SHOWN. REINFORCING STEEL AS SHOWN IN "4-INCH x 12-INCH TRANSITION CURB" DETAIL IS TO BE INSTALLED.

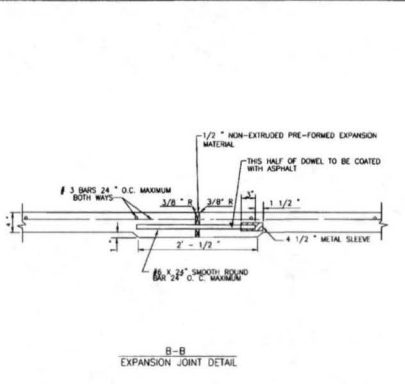
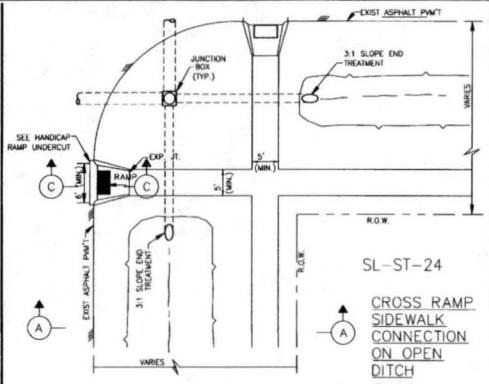
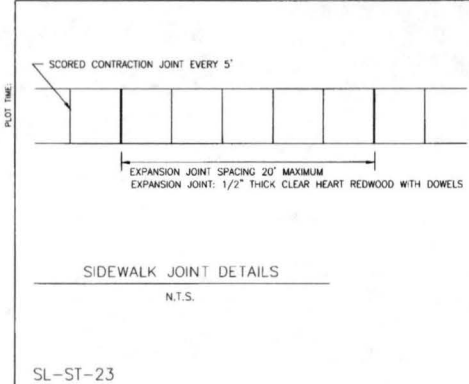
SL-ST-20



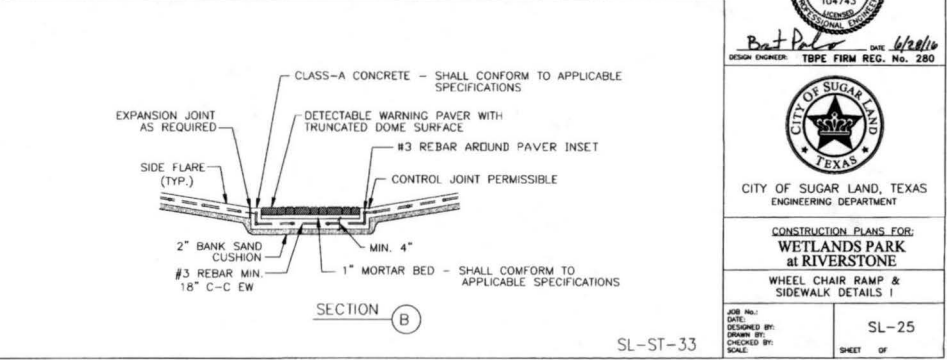
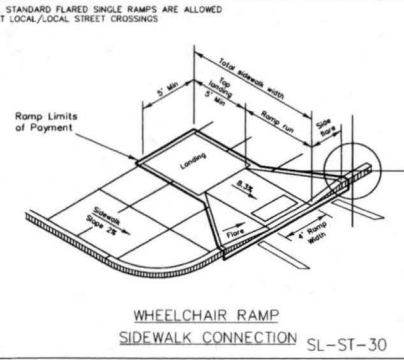
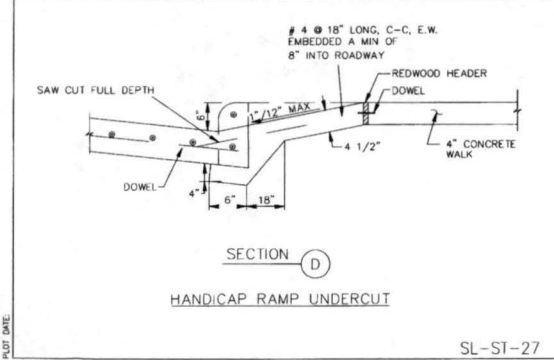
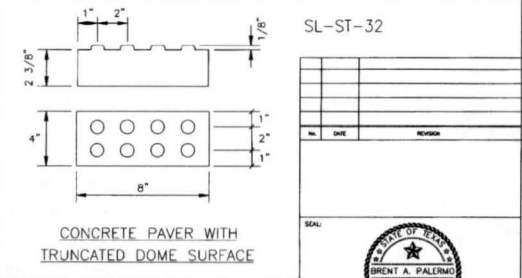
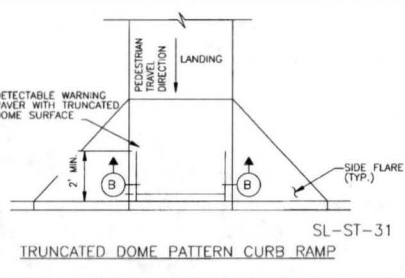
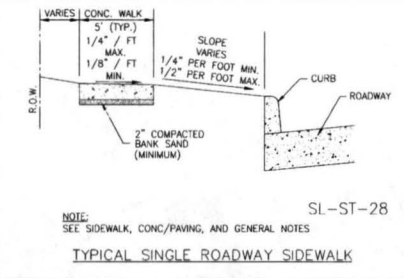
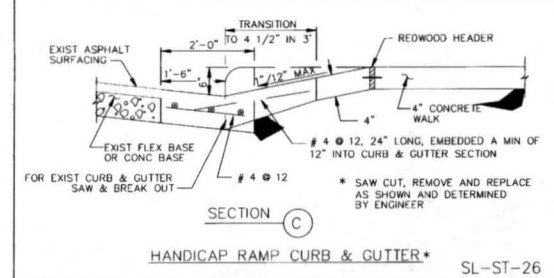
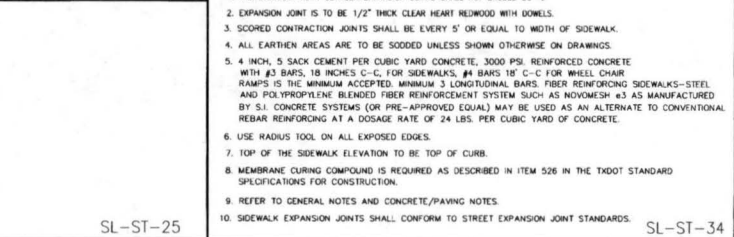
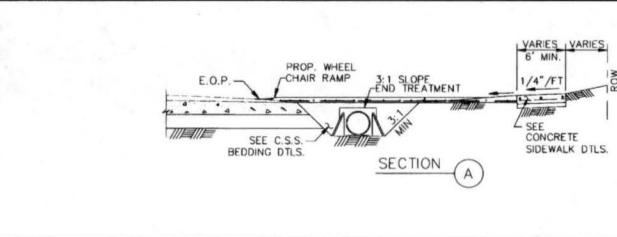
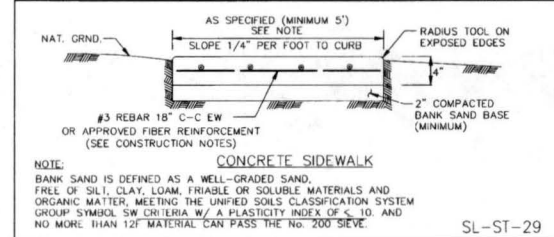
TYPICAL SINGLE ROADWAY SECTION FOR CONCRETE PAVEMENT WITH 4"x12" CURB

* SEE 4" x 12" MOUNTABLE CURB DETAIL (THIS SHEET)

SL-ST-19



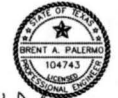
- NOTES:**
- EXISTING CURB AND GUTTER TO BE SAW CUT, REMOVED AND REPLACED. DOWEL STEEL FOR MINIMUM REINFORCING OVERLAP OF 10 INCHES (10") DOWELS SHALL BE EIGHTEEN INCHES (18") LONG AND EPOXIED A MINIMUM OF (8") EIGHT INCHES INTO EXISTING PAVEMENT.
 - IF SIDEWALKS ARE NEITHER EXISTING NOR PROPOSED WHERE WHEELCHAIR RAMP ACCESS IS REQUIRED, CONCRETE SIDEWALK SURFACE 4 1/2" THICK SHALL BE INSTALLED TO PROVIDE ACCESS TO THE PEDESTRIAN PUSH BUTTONS.
 - DETECTABLE WARNINGS REQUIRED BY T.A.S. SECTIONS 4.1 AND 4.7 SHALL COMPLY WITH T.A.S. SECTION 4.29
 - THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. DETECTABLE WARNINGS USED ON INTERIOR SURFACES SHALL DIFFER FROM ADJACENT WALKING SURFACES IN RESILIENCY OR SOUND-ON-GANG.
 - DETECTABLE WARNING SURFACE SHALL COVER THE ENTIRE WIDTH AND DEPTH OF RAMP.
 - DETECTABLE WARNINGS SHALL BE INSTALLED WITH PAVERS IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.
 - CONCRETE PAVEMENT UNITS SHALL MEET ALL REQUIREMENTS OF ASTM C-935, C-33, AND SHALL BE PLACED IN A TWO BY TWO UNIT BASKET WEAVE PATTERN, UNLESS SHOWN OTHERWISE IN THE PLANS.
 - CONCRETE PAVEMENT UNITS SHALL HAVE A TRUNCATED DOME TOP SURFACE FOR DETECTABLE WARNING TO PEDESTRIANS. DOMES SHALL BE ALIGNED IN THE DIRECTION OF PEDESTRIAN TRAVEL.
 - CONCRETE PAVEMENT UNIT COLOR FOR THE RAMP SHALL BE A CONTRASTING COLOR THAT PROVIDES A LIGHT REFLECTIVE THAT SIGNIFICANTLY CONTRASTS WITH THE ADJACENT SURFACES. ADJACENT SURFACES INCLUDE SIDE FLARES.
 - CONCRETE PAVEMENT UNITS SHALL BE SAW CUT ONLY, AND ANY CUT UNIT SHALL NOT BE LESS THAN 25% A FULL UNIT.
- CONSTRUCTION NOTES:**
- THE MAXIMUM WIDTH BETWEEN EXPANSION JOINTS SHALL NOT EXCEED 20'-0"
 - EXPANSION JOINT IS TO BE 1/2" THICK CLEAR HEART REDWOOD WITH DOWELS.
 - SCORED CONTRACTION JOINTS SHALL BE EVERY 5' OR EQUAL TO WIDTH OF SIDEWALK.
 - ALL EARTHEN AREAS ARE TO BE SOODED UNLESS SHOWN OTHERWISE ON DRAWINGS.
 - 4 INCH, 5 SACK CEMENT PER CUBIC YARD CONCRETE, 3000 PSI REINFORCED CONCRETE WITH #3 BARS, 18 INCHES C-C, FOR SIDEWALKS; #4 BARS 18" C-C FOR WHEEL CHAIR RAMPS IS THE MINIMUM ACCEPTED. MINIMUM 3 LONGITUDINAL BARS, FIBER REINFORCED SIDEWALKS-STEEL AND POLYPROPYLENE BLENDED FIBER REINFORCEMENT SYSTEM SUCH AS NOVOMESH #3 AS MANUFACTURED BY S.I. CONCRETE SYSTEMS (OR PRE-APPROVED EQUAL) MAY BE USED AS AN ALTERNATE TO CONVENTIONAL REBAR REINFORCING AT A DOSAGE RATE OF 24 LBS. PER CUBIC YARD OF CONCRETE.
 - USE RADIUS TOOL ON ALL EXPOSED EDGES.
 - TOP OF THE SIDEWALK ELEVATION TO BE TOP OF CURB.
 - MEMBRANE CURING COMPOUND IS REQUIRED AS DESCRIBED IN ITEM 526 IN THE TxDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
 - REFER TO GENERAL NOTES AND CONCRETE/PAVING NOTES.
 - SIDEWALK EXPANSION JOINTS SHALL CONFORM TO STREET EXPANSION JOINT STANDARDS.



SL-ST-33

CAD FILE NAME:
PLOT DATE:

NO.	DATE	REVISION

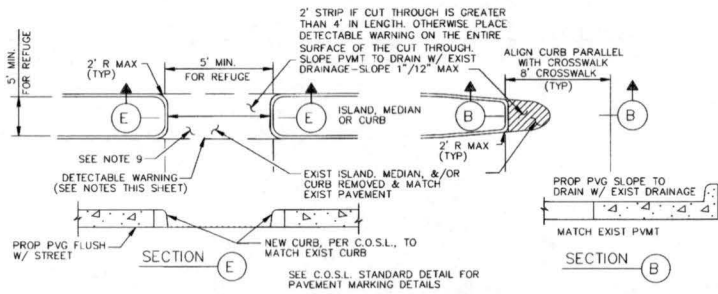
SEAL: 
 DESIGN ENGINEER: *Brent Palmer* DATE: *6/26/16*
 TPE FIRM REG. NO. 280


 CITY OF SUGAR LAND, TEXAS
 ENGINEERING DEPARTMENT
 CONSTRUCTION PLANS FOR:
WETLANDS PARK
 at RIVERSTONE
 WHEEL CHAIR RAMP &
 SIDEWALK DETAILS I

JOB NO.:
 DATE DESIGNED BY:
 DRAWN BY:
 CHECKED BY:
 SCALE: SHEET OF

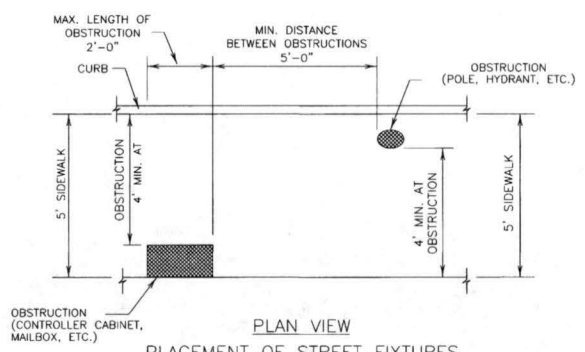
8/11/16

PLOT TIME



FOR ISLAND, MEDIAN, OR CURB MODIFICATIONS FOR CROSSWALKS

SL-ST-35



PLAN VIEW
PLACEMENT OF STREET FIXTURES

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

SL-ST-36

NOTES:

- ALL SLOPES ARE MAXIMUM ALLOWABLE. THE LEAST POSSIBLE SLOPE THAT WILL STILL DRAIN PROPERLY SHOULD BE USED. RAMP LENGTH OR GRADE OF APPROACH SIDEWALKS MAY BE ADJUSTED AS DIRECTED.
- THE MINIMUM SIDEWALK WIDTH IS 5' (FEET). THE LANDING SHALL BE 5' x 5' WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION. MAXIMUM ALLOWABLE CROSS SLOPE ON SIDEWALK AND RAMP SURFACES IS 2%. USUAL SIDEWALK CROSS SLOPE EQUALS 1.5%. CHANGES IN LEVEL GREATER THAN 1/4" (IN) ARE NOT PERMITTED.
- MANUEVERING SPACE AT THE BOTTOM OF CURB RAMP SHALL BE A MINIMUM OF 5' x 5' WHOLLY CONTAINED WITHIN THE CROSSWALK AND WHOLLY OUTSIDE THE PARALLEL VEHICULAR TRAVEL PATH.
- ANY PART OF THE ACCESSIBLE ROUTE WITH A SLOPE GREATER THAN 1:20 (5%) SHALL BE CONSIDERED A RAMP. IF A RAMP HAS A RISE GREATER THAN 6" (IN) OR A HORIZONTAL PROJECTION GREATER THAN 72 INCHES, THEN IT SHALL HAVE HANDRAILS ON BOTH SIDES, WITH THE FOLLOWING EXCEPTIONS:
 - HANDRAILS ARE NOT REQUIRED ON CURB RAMP. CURB RAMP SHALL BE PROVIDED WHEREVER AN ACCESSIBLE ROUTE CROSSES (PENETRATES) A CURB.
 - THE LEAST POSSIBLE GRADE SHOULD BE USED TO MAXIMIZE ACCESSIBILITY. WHERE STRUCTURALLY IMPRACTICAL TO ACHIEVE TEXAS ACCESSIBILITY STANDARDS (TAS) COMPLIANCE, THE RUNNING SLOPE OF SIDEWALKS AND CROSSWALKS, WITHIN THE PUBLIC ROW, MAY FOLLOW THE GRADE OF THE PARALLEL ROADWAY WITHOUT INVOKING TEXAS ACCESSIBILITY STANDARDS (TAS) VARIANCES FOR LANDINGS OR HANDRAILS. WHERE A CONTINUOUS GRADE GREATER THAN 5% MUST BE PROVIDED, HANDRAILS MAY BE DESIRABLE ON ONE OR BOTH SIDES OF THE SIDEWALK TO IMPROVE ACCESSIBILITY. HANDRAILS MAY ALSO BE NEEDED TO PROTECT PEDESTRIANS FROM POTENTIALLY HAZARDOUS CONDITIONS.
- CURB RAMP WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP. OTHERWISE, FLARED SIDES SHALL BE PROVIDED. ALL CONCRETE SURFACES SHALL RECEIVE A LIGHT BROOM FINISH UNLESS NOTED OTHERWISE IN THE PLANS.
- RAMP TEXTURES MUST CONSIST OF TRUNCATED DOME SURFACES, IN ACCORDANCE WITH ADA AND TEXAS DEPARTMENT OF LICENSING AND REGULATIONS (TDLR). TEXTURES ARE REQUIRED TO BE DETECTABLE UNDERFOOT. TEXTURES ALSO SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES. SURFACES THAT WOULD ALLOW WATER TO ACCUMULATE ARE PROHIBITED.
- ADDITIONAL INFORMATION ON CURB RAMP LOCATION, DESIGN, LIGHT REFLECTIVE VALUE AND TEXTURE MAY BE FOUND IN THE CURRENT EDITION OF THE TEXAS ACCESSIBILITY STANDARDS (TAS) PREPARED AND ADMINISTERED BY THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR).
- RAISED MEDIANS SEPARATE OPPOSING DIRECTIONS OF TRAFFIC AND PROVIDE A REFUGE AREA FOR PEDESTRIANS UNABLE TO CROSS THE ENTIRE ROADWAY IN THE ALLOTTED SIGNAL PHASE. TO SERVE AS A REFUGE AREA, THE MEDIAN SHALL BE A MINIMUM OF 5' (FT) WIDE. MEDIANS SHOULD BE DESIGNED TO PROVIDE ACCESSIBLE PASSAGE OVER OR THROUGH THEM.
- SMALL CHANNELIZATION ISLANDS, WHICH CAN NOT PROVIDE A MINIMUM 5' x 5' LANDING AT THE TOP OF RAMPS, SHALL BE CUT THROUGH LEVEL WITH THE SURFACE OF THE STREET.
- CROSSWALK DIMENSIONS, CROSSWALK MARKINGS AND STOP BAR LOCATIONS SHALL BE AS SHOWN IN THE PLANS. AT INTERSECTIONS WHERE CROSSWALK MARKINGS ARE NOT REQUIRED, RAMPS SHALL BE ALIGNED WITH THEORETICAL CROSSWALKS, OR AS DIRECTED BY THE ENGINEER.
- EXISTING FEATURES THAT COMPLY WITH T.A.S. MAY REMAIN IN PLACE UNLESS OTHERWISE SHOWN ON THE PLANS.
- TRAFFIC SIGNAL OR ILLUMINATION POLES, GROUND BOXES, CONTROLLER BOXES, SIGNS, DRAINAGE FACILITIES AND OTHER ITEMS SHALL BE PLACED SO NOT TO OBSTRUCT THE ACCESSIBLE ROUTE.

SL-ST-40

NO.	DATE	REVISION

SEAL: *Brent A. Palermo* DATE: 6/28/16
DESIGN ENGINEER: TPBE FIRM REG. NO. 280

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:
WETLANDS PARK
at RIVERSTONE

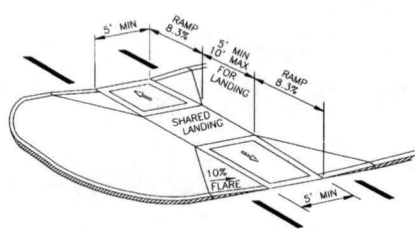
WHEEL CHAIR RAMP &
SIDEWALK DETAILS II

JOB No.:
DATE:
DESIGNED BY:
DRAWN BY:
CHECKED BY:
SCALE:

SL-26

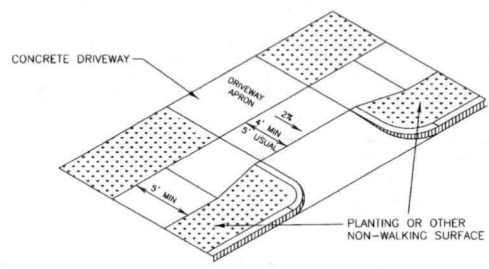
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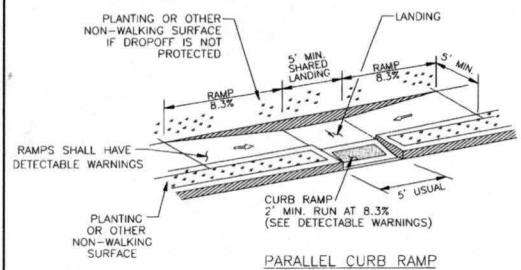
CURB RAMP AT MEDIAN ISLANDS

SL-ST-37



SIDEWALK TREATMENT AT DRIVEWAYS

SL-ST-38

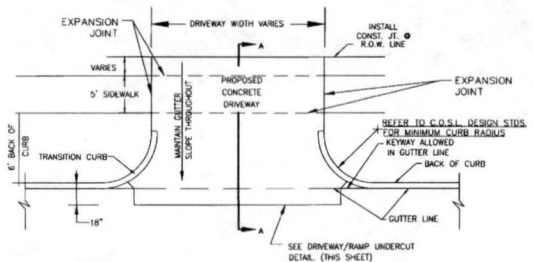


PARALLEL CURB RAMP

SL-ST-39

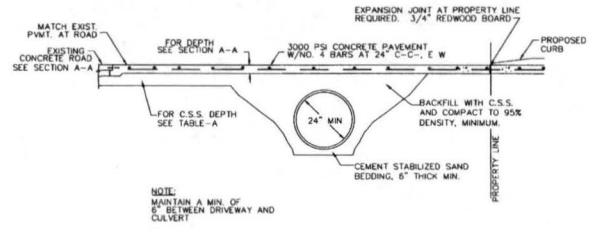
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PLAT TIME:



6" CONCRETE CURB DRIVEWAY PLAN
N.T.S.

SL-ST-41

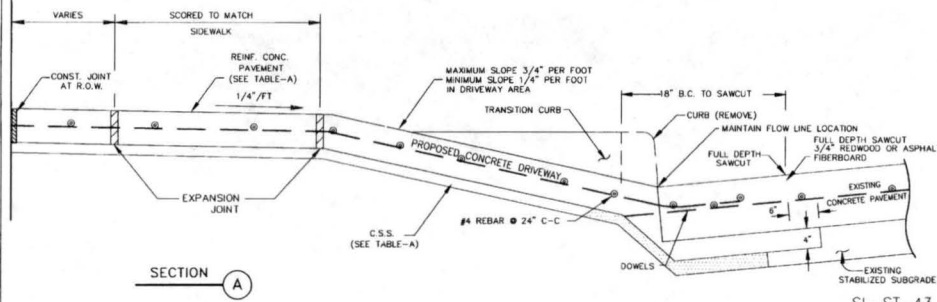


CONCRETE APRON DETAIL - DRIVEWAY PROFILE FOR CULVERT DRAINAGE
N.T.S.

SL-ST-42

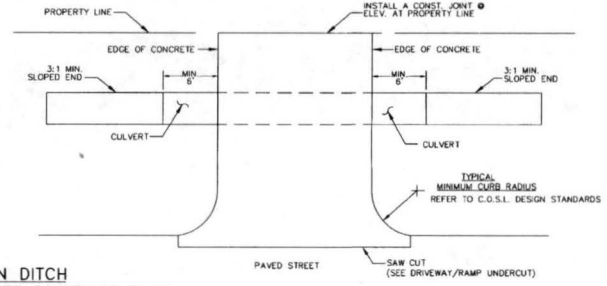
- NOTES:
- 1) SAW CUT & BREAKOUT NO MORE THAN 72 HOURS PRIOR TO PROPOSED CONCRETE PLACEMENT. NOTIFY SUGAR LAND PRIOR TO CUT.
 - 2) UNSTABLE SUBGRADE SHALL BE OVER EXCAVATED & REPLACED WITH CONCRETE.
 - 3) IT IS CONTRACTOR'S RESPONSIBILITY TO NOTIFY SUGAR LAND OF ANY BIRD BATH PROBLEMS PRIOR TO CONSTRUCTION OF DRIVEWAY.
 - 4) USE 1"x2" TREATED REDWOOD FOR HEADER.
 - 5) EDGE ALL SIDES WITH EDGING TOOL AND BROOM FINISH
 - 6) FOR INDUSTRIAL DRIVES, PAYMENT SHALL HAVE A DEPTH OF 8" (IN).
 - 7) EXPANSION JOINT AT PROPERTY LINE REQUIRED. 3/4" REDWOOD BOARD WITH NO. 4 DOWELS MINIMUM.
 - 8) MAXIMUM ALLOWABLE DRIVEWAY GRADE IN PUBLIC R.O.W. IS 5%.
 - 9) DRIVEWAY GRADE MUST MEET A.D.A. AND T.A.S. SIDEWALK SLOPE. SIDEWALKS MUST BE SCORED TO MATCH ADJACENT SIDEWALK. IF SLOPE IS CONTINUED THROUGH THE R.O.W. LINE, PROVIDE A 3/4" REDWOOD EXPANSION JOINT WITH DOWELS AT R.O.W. LINE.
 - 10.) REFER TO GENERAL, C.S.S., ASPHALT, AND CONCRETE PAYMENT NOTES.

SL-ST-49



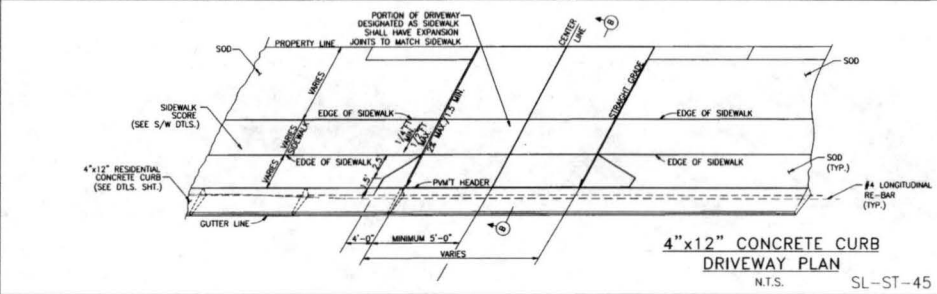
OPEN DITCH CONCRETE DRIVEWAY PLAN
(USED ONLY WHEN CONNECTING TO A CONCRETE ROADWAY)
N.T.S.

SL-ST-43



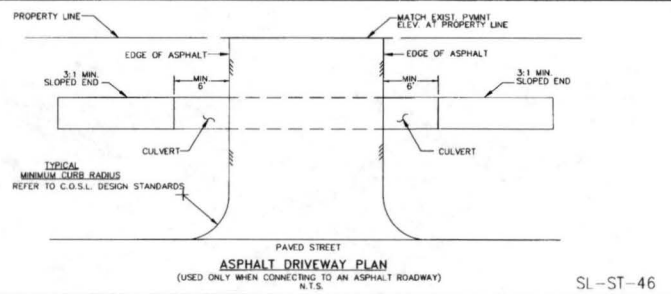
ASPHALT DRIVEWAY PLAN
(USED ONLY WHEN CONNECTING TO AN ASPHALT ROADWAY)
N.T.S.

SL-ST-44



4"x12" CONCRETE CURB DRIVEWAY PLAN
N.T.S.

SL-ST-45



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

SL-ST-48

TABLE-A

CEMENT STABILIZED SAND 2-SK/C.Y.	
RESIDENTIAL	4" MINIMUM
COMMERCIAL	6" MINIMUM
INDUSTRIAL	8" MINIMUM
REINFORCED CONCRETE PAVEMENT 1000 PSI MIN.	
RESIDENTIAL	4" MINIMUM
COMMERCIAL	6" MINIMUM
INDUSTRIAL	8" MINIMUM

DRIVEWAY PAVEMENT CONSTRUCTION TABLE

NO.	DATE	REVISION

SEAL:

DESIGN ENGINEER: *Brent A. Palermo* DATE: *6/16/16*
TBPE FIRM REG. NO. 280

CITY OF SUGAR LAND, TEXAS

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:
WETLANDS PARK at RIVERSTONE

DRIVEWAY CONSTRUCTION DETAILS

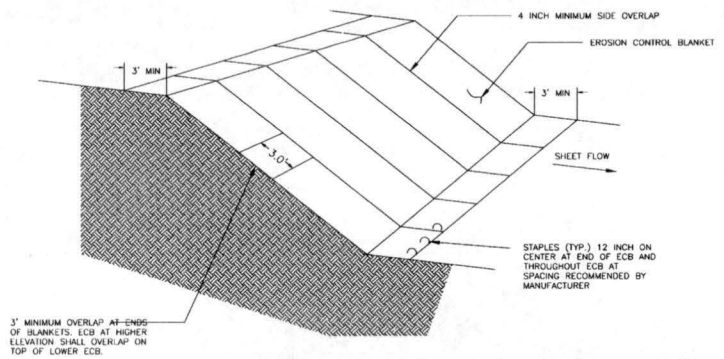
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DRAWN BY:
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SL-27
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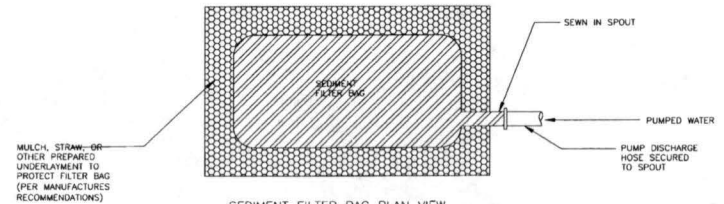
Magi 8/16/16

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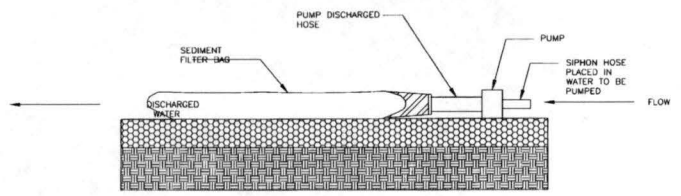
PLOT TIME



EROSION CONTROL BLANKETS
N.T.S.



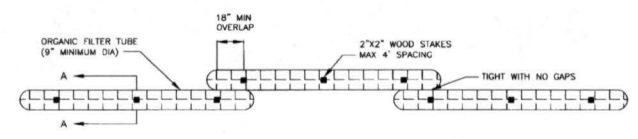
SEDIMENT FILTER BAG PLAN VIEW
N.T.S.



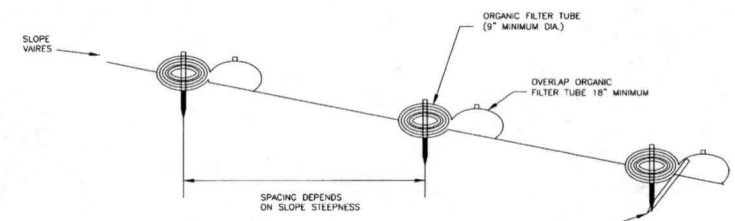
SEDIMENT FILTER BAG PROFILE
N.T.S.

NOTE: A FILTRATION BAG IS NOT REQUIRED IF THE DRAINAGE SYSTEM CAN BE ADEQUATELY PROTECTED

DEWATERING CONTROLS
N.T.S.



ORGANIC FILTER TUBE PERIMETER CONTROL PLAN VIEW
N.T.S.



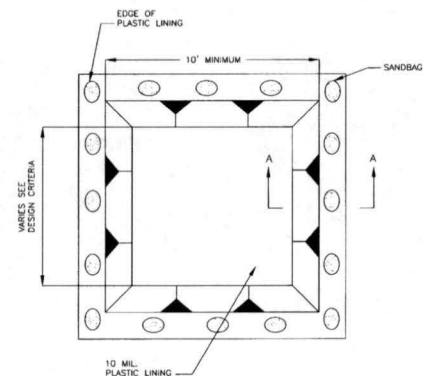
FOR SLOPES OF 2:1 OR STEEPER, A SECOND SHANK AGAINST THE DOWNSLOPE FACE OF THE TUBE MAY BE NEEDED DEPENDING ON SOIL TYPE

ORGANIC FILTER TUBE PERIMETER CONTROL PROFILE
N.T.S.

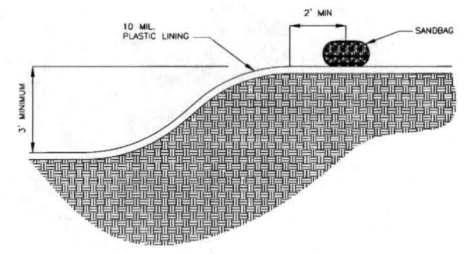
ORGANIC FILTER TUBES NOTES

- TYPE OF NETTING, FILTER MATERIAL, DIAMETER OF TUBE, AND SPACING OF TUBES SHALL BE SPECIFIED BY THE DESIGNER BASED ON THE FOLLOWING SITE PARAMETERS:
 - SIZE OF CONTRIBUTING DRAINAGE AREA
 - STEEPNESS OF SLOPE
 - GROUND CONDITIONS (SOIL OR PAVEMENT)
- DESIGNER SHALL SHOW ON THE DRAWINGS THE LOCATIONS WHERE TUBE ARE TO BE TURNED UPSLOPE. UPSLOPE LENGTHS SHALL BE MINIMUM OF 10 FEET.

FILTER TUBE
N.T.S.



CONCRETE WASHOUT PLAN VIEW
N.T.S.



CONCRETE WASHOUT SECTION A-A
N.T.S.

CONCRETE WASHOUT NOTES

- SANDBAGS MAYBE REPLACED BY A SOIL BERM TO ANCHOR THE PLASTIC BAG

CONCRETE WASHOUT AREA
N.T.S.

NO.	DATE	REVISION

SEAL:

DATE: 6/29/16
DESIGN ENGINEER: TBPE FIRM REG. NO. 280

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR:
WETLANDS PARK
at RIVERSTONE

EROSION CONTROL DETAILS - 2

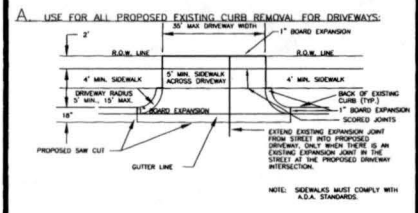
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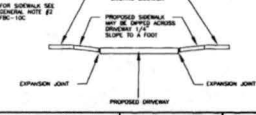
Maggiore 8/16/16

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WHEN A RESIDENTIAL SIDEWALK, DRIVEWAY OR CURB OR GUTTER IS CONSTRUCTED, RECONSTRUCTED, REPAIRED OR REGRADED ON COUNTY RIGHT-OF-WAY, FOR USE WITH CONCRETE OR ASPHALT CURBED TYPE STREETS, USE SECTIONS APPLICABLE.

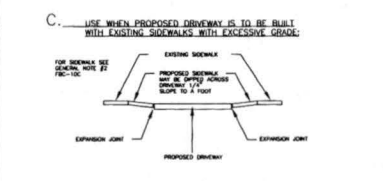


B. USE WHEN PROPOSED DRIVEWAY IS TO BE BUILT WITH EXISTING SIDEWALKS WITH EXCESSIVE GRADE.

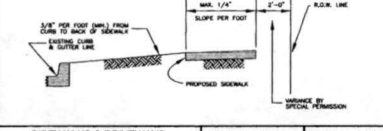


SIDEWALKS & DRIVEWAYS WITH CURB TYPE STREETS RESIDENTIAL AREA
 FORT BEND COUNTY ENGINEERING DEPARTMENT
 DRAWN BY: L. BROECKA DATE DRAWN: 2-1-94
 REVISED BY: L. BROECKA DATE REVISED: 3-10-05
 APPROVED BY: L. HOOD DATE: 2-1-94
 DRAWING NO. FBC-010A

WHEN A RESIDENTIAL SIDEWALK, DRIVEWAY OR CURB OR GUTTER IS CONSTRUCTED, RECONSTRUCTED, REPAIRED OR REGRADED ON COUNTY RIGHT-OF-WAY, FOR USE WITH CONCRETE OR ASPHALT CURBED TYPE STREETS, USE SECTIONS APPLICABLE.



D. USE WHEN SIDEWALK TO BE BUILT OTHER THAN DRIVEWAY.

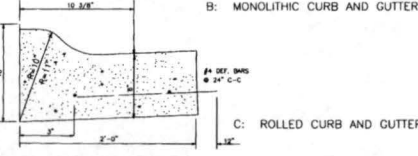
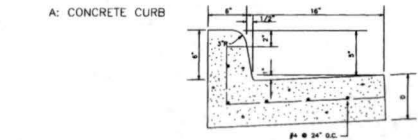
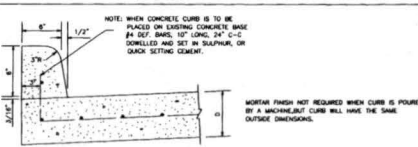


SIDEWALKS & DRIVEWAYS WITH CURB TYPE STREETS RESIDENTIAL AREA
 FORT BEND COUNTY ENGINEERING DEPARTMENT
 DRAWN BY: L. BROECKA DATE DRAWN: 2-1-94
 REVISED BY: L. BROECKA DATE REVISED: 3-10-05
 APPROVED BY: L. HOOD DATE: 2-1-94
 DRAWING NO. FBC-010B

GENERAL NOTES FOR SIDEWALKS AND DRIVEWAYS

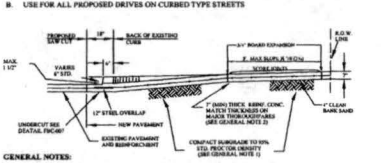
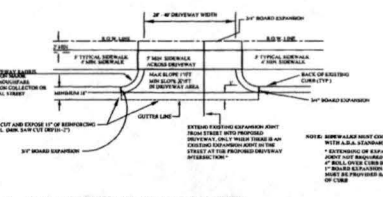
- PROPOSED DRIVEWAY, SIDEWALK, CURB, GUTTER LINE AND GRADE SHALL MATCH EXISTING STREET.
- PROPOSED SIDEWALK SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CLASS A STRUCTURAL (REFER TO SPECIFICATION 03301) 4 INCHES THICK AND 4 FEET MINIMUM WIDTH.
- PROPOSED DRIVEWAY AND CURB SHALL BE BUILT WITH PORTLAND CEMENT CLASS A STRUCTURAL (REFER TO SPECIFICATION 03301) 4 INCHES THICK FROM PROPOSED SAW CUT AT EXISTING PAVEMENT TO RIGHT-OF-WAY LINE AND BE REINFORCED WITH #4 REINFORCING BARS, 18 INCHES MINIMUM LAP (6" x 6" W6 x W6 AS ALTERNATE) SPACED AT 24 INCHES C.C. EACH WAY, WITH 12 INCHES MINIMUM LAP.
- PROPOSED DRIVEWAY REINFORCING STEEL IS TO BE TIED TO EXISTING ROADWAY REINFORCING STEEL WITH A MINIMUM 12 INCHES C.C. EACH WAY, WITH 12 INCHES MINIMUM LAP.
- PROPOSED GUTTER LINE IS TO BE MAINTAINED AT FACE OF EXISTING CURB.
- SAW CUT EXISTING CURB AT EACH END OF PROPOSED DRIVEWAY AND KNOCK OUT EXISTING CURB.
- SAW CUT EXISTING PAVEMENT 2 INCHES AND BREAK OUT TO EXPOSE EXISTING REINFORCING STEEL WITH A MINIMUM 12 INCHES LAP. SHALL BE CUT BY ACCEPTABLE METHOD (E.G. LONG DRILL, IN DRILLS LINE INSTALLED AT A SPACING TO MATCH EXISTING WITH A MIN. OF 24 INCHES).
- COMPACT SUBGRADE FOR PROPOSED DRIVEWAY CONNECTION FROM PROPOSED SAW CUT AT EXISTING PAVEMENT TO RIGHT-OF-WAY LINE, COMPACT TO 95% OF STANDARD PROCTOR DENSITY (+/-) 2% OPT. MOISTURE. THE COUNTY ENGINEER RESERVES THE RIGHT TO REQUIRE LABORATORY TESTS IF HE DEEMS THEM NECESSARY.
- PLACE AND COMPACT A HIGH CLEAR BANK SAND.
- PROPOSED AREA FROM BACK OF CURB TO SIDEWALK AND FROM SIDEWALK TO RIGHT-OF-WAY LINE MAY BE CONCRETE OR SOFT (EQUIVALENTS WITH CURBS AND SIDEWALKS).
- IF MORE THAN ONE PROPOSED DRIVEWAY IS BUILT ON THE SAME PROPERTY, SAND DRIVEWAYS SHALL BE SEPARATED BY A MINIMUM SPACING OF AT LEAST 20 FEET (EQUIVALENTS WITH CURBS AND SIDEWALKS).
- SIDEWALKS SHALL HAVE (1) HIGH REDUCED BEARING EXPANSION JOINTS EVERY 20 FEET OR CENTER.
- PLACE ONE-HIGH BEARING EXPANSION JOINT AT RIGHT-OF-WAY LINE.
- EXPANSION JOINT FILLER SHALL BE FORMED CONFORMING TO ASTM D-33 OR M-213 BETWEEN SIDEWALK AND CURB, INSURE THE HYDRANTS AND UTILITY PIPES.

SIDEWALKS & DRIVEWAYS WITH CURB TYPE STREETS RESIDENTIAL AREA
 FORT BEND COUNTY ENGINEERING DEPARTMENT
 APPROVED BY: LOUIS HOOD DATE DRAWN: 2-1-94
 REVISED BY: L. BROECKA DATE REVISED: 3-10-05
 DRAWING NO. FBC-101C



STANDARD CONCRETE CURB AND MONOLITHIC CURB AND GUTTER
 FORT BEND COUNTY ENGINEERING DEPARTMENT
 APPROVED BY: LOUIS HOOD DATE DRAWN: 2-1-94
 REVISED BY: L. BROECKA DATE REVISED: 3-10-05
 DRAWING NO. FBC-009

WHEN A COMMERCIAL SIDEWALK, DRIVEWAY, CURB OR GUTTER IS CONSTRUCTED, RECONSTRUCTED, REPAIRED OR REGRADED ON COUNTY RIGHT-OF-WAY, FOR USE WITH CONCRETE OR ASPHALT CURB TYPE STREETS, USE SECTIONS APPLICABLE.



SIDEWALKS & DRIVEWAYS ON CURB TYPE STREETS COMMERCIAL AREA
 FORT BEND COUNTY ENGINEERING DEPARTMENT
 DRAWN BY: L. BROECKA DATE DRAWN: 2-1-94
 REVISED BY: L. BROECKA DATE REVISED: 4-7-09
 APPROVED BY: L. HOOD DATE: 2-1-94
 DRAWING NO. FBC-025A

GENERAL NOTES FOR SIDEWALKS AND DRIVEWAYS

- SAW CUT EXISTING CURB AT EACH END AND KNOCK OUT CURB FROM BEGINNING TO END OF PROPOSED DRIVEWAY.
- SAW CUT EXISTING PAVEMENT A MINIMUM OF 18" INCHES AWAY FROM BACK OF CURB (GUTTER LINE) AND BREAK OUT TO EXPOSE EXISTING REINFORCING STEEL.
- COMPACT SUBGRADE FOR PROPOSED DRIVEWAY CONNECTION FROM PROPOSED SAW CUT AT EXISTING PAVEMENT TO RIGHT-OF-WAY LINE, COMPACT TO 95% OF STANDARD PROCTOR DENSITY (+/-) 2% OPT. MOISTURE. THE COUNTY ENGINEER RESERVES THE RIGHT TO REQUIRE LABORATORY TESTS TO BE CONDUCTED.
- PLACE AND COMPACT 4" CLEAR BANK SAND.
- MAINTAIN GUTTER LINE WITH FACE OF EXISTING CURB.
- PROPOSED DRIVEWAY REINFORCING STEEL IS TO BE TIED TO EXISTING ROADWAY REINFORCING STEEL WITH A MINIMUM LAP OF 12 INCHES.
- PROPOSED DRIVEWAY REINFORCING STEEL IS TO BE #4 DEFORMED REINFORCING BARS (ASTM A615 GRADE 60, UNLESS NOTED) SPACED AT 24 INCHES C.C. EACH WAY, WITH 12 INCHES MINIMUM LAP (6" x 6" W6 x W6 AS ALTERNATE) FROM PROPOSED SAW CUT TO RIGHT-OF-WAY LINE.
- PROPOSED DRIVEWAY, CURB, GUTTER LINE, AND GRADE SHALL MATCH EXISTING STREET.
- PROPOSED DRIVEWAY SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CONCRETE, CLASS "A" STRUCTURAL (REFER TO SPECIFICATION 03301), 4 INCHES THICK FROM PROPOSED SAW CUT TO RIGHT-OF-WAY LINE (PROPERTY LINE).
- PROPOSED SIDEWALK SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CONCRETE, CLASS "A" STRUCTURAL (REFER TO SPECIFICATION 03301), 4 INCHES THICK AND 4 FEET MINIMUM WIDTH. SEE DRAWING NO. FBC 24A FOR ADDITIONAL INFORMATION AND DETAILS.

CONSTRUCTION NOTES FOR SIDEWALKS & DRIVEWAYS WITH CURB TYPE STREETS COMMERCIAL AREA
 FORT BEND COUNTY ENGINEERING DEPARTMENT
 DRAWN BY: L. BROECKA DATE DRAWN: 2-1-94
 REVISED BY: L. BROECKA DATE REVISED: 3-10-05
 APPROVED BY: L. HOOD DATE: 2-1-94
 DRAWING NO. FBC-025B

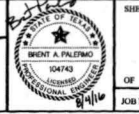
NO.	REVISION	DATE	BY

DESIGNED BY: _____
 DESIGN CHECKED BY: _____
 DRAWN BY: _____
 CADD CHECKED BY: _____
 SURVEY CHECKED BY: _____
 QA/QC BY: _____ DATE: _____
 QA/QC REVISIONS BY: _____



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 TBPE FIRM REG. NO. 280
 TBPLS FIRM REG. NO. 100486

FBC-SIDEWALKS & DRIVEWAYS ON CURB TYPE STREETS RESIDENTIAL AREA



APPROVED: *Messick*
 DEVELOPMENT COORDINATOR
 DATE: *8/1/16*
 SHEET FBC-010A, B, C
 OF SHEETS
 JOB NO. 2016-025-002