Fort Bend County
Engineering Department
301 Jackson Suite 401
Richmond, Texas 77469
281.633.7500
Permits@fortbendcountytx.gov

PERMIT APPLICATION REVIEW FORM FOR CABLE, CONDUIT, AND POLE LINE ACTIVITY IN FORT BEND COUNTY

[X] **Right of Way Permit**

[ ] **Commercial Driveway Permit**

Permit No: 2018-20471

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:

[X] a. Name of road, street, and/or drainage ditch affected.

[X] b. Vicinity map showing course of directions

[X] c. Plans and specifications

(2) BOND:

[ ] County Attorney, approval when applicable.

[ ] Perpetual bond currently posted. Bond No: Amount:

[X] Performance bond submitted. Bond No: [redacted] Amount: $7,383.43

[ ] Cashier's Check Check No: Amount:

(3) DRAINAGE DISTRICT APPROVAL (WHEN APPLICABLE):

Drainage District Approval

Date

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

Permit Administrator

6/1/2018

Date

Fort Bend County
Engineering Department
301 Jackson Suite 401
Richmond, Texas 77469
281.633.7500
Permits@fortbendcountytx.gov

REVIEW BY FORT BEND COUNTY COMMISSIONERS COURT

[X] **Right of Way Permit**

[ ] **Commercial Driveway Permit**

Permit No: 2018-20471

Applicant: **Hurtado Construction Company**

Job Location Site: **Gapps Slough, Rosenberg, TX 77469**

Bond No. [redacted] **Date of Bond:** **5/31/2018** **Amount:** **$7,383.43**

The above applicant came to make use of certain Fort Bend County property subject to, "The 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, of the Minutes of the Commissioners Court of Fort Bend County, Texas, to the extent that such order is not inconsistant with Chapter 181, Vernon's Texas Statutes and Codes Annoted.

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, submit notification to Permit Administrator thru MyGovernmentOnline.org portal.
3. This permit expires one (1) year from date of permit if construction has not commenced.

On this 12th day of June, 2018, Upon Motion of Commissioner _____, seconded by Commissioner _____, 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.

Signature

By: _____
County Engineer

By: _____
Drainage District Engineer/Manager

Presented to Commissioners Court and approved.

Date Recorded _____ Comm. Court No. _____

Clerk of Commissioners Court

By: _____
Deputy

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)

Detention Pond G to Serve
Bonbrook Plantation South

BOND NO [redacted]

THE STATE OF TEXAS

KNOW ALL MEN BY THESE PRESENTS:

COUNTY OF FORT BEND

THAT WE, Hurtado Construction Company **whose (*address, phone*) is** 5629 FM 359 RD S Brookshire, TX 77423 , 281-533-9498 **Texas, hereinafter called the Principal, and** Liberty Mutual Insurance Company , **a Corporation existing under and by virtue of the laws of the state of** MA **and authorized to do an indemnifying business in the state of Texas, and whose principal office is located at (*name/address/phone*)** Liberty Mutual Insurance Company 175 Berkeley Street , Boston, MA 02116 866-547- 6203 **whose officer residing in the State of Texas, authorized to accept service in all suits and actions brought whining said state is** ***See Below **and whose address is** 211 East 7th Street, Suite 620, Austin, Texas 78701 **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** Seven Thousand Three Hundred Eighty Three Dollars and 43/100 **Dollars ($**7,383.43 **) 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 shaft 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 31st **day of** May , 2018

Hurtado Construction Company
PRINCIPAL

BY

Liberty Mutual Insurance Company
SURETY

Denise Raker

BY Denise Raker, Attorney-in-Fact

LIBERTY MUTUAL INSURANCE COMPANY INCORPORATED 1912 MASSACHUSETTS

***Michael Ross McCormick/Corporation Service Company d/b/a/
CSC-Lawyers Incorporating Service Company

THIS POWER OF ATTORNEY IS NOT VALID UNLESS IT IS PRINTED ON RED BACKGROUND.
This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

Certificate No. 7847717

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company West American Insurance Company

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, David Stephen Wightman; Denise Raker; Jo Ann Parker; Sylvia Hinojosa

all of the city of Houston, state of TX each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 28th day of July, 2017.

THE OHIO CASUALTY INSURANCE COMPANY INCORPORATED 1919 NEW HAMPSHIRE
LIBERTY MUTUAL INSURANCE COMPANY INCORPORATED 1912 MASSACHUSETTS
WEST AMERICAN INSURANCE COMPANY INCORPORATED 1991 INDIANA

The Ohio Casualty Insurance Company
Liberty Mutual Insurance Company
West American Insurance Company

By: David M. Carey
David M. Carey, Assistant Secretary

STATE OF PENNSYLVANIA ss
COUNTY OF MONTGOMERY

On this 28th day of July, 2017, before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at King of Prussia, Pennsylvania, on the day and year first above written.

TERESA PASTELLA COMMONWEALTH OF PENNSYLVANIA NOTARY PUBLIC

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Teresa Pastella, Notary Public
Upper Merion Twp., Montgomery County
My Commission Expires March 28, 2021
Member, Pennsylvania Association of Notaries

By: Teresa Pastella
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV – OFFICERS – Section 12. Power of Attorney. Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII – Execution of Contracts – SECTION 5. Surety Bonds and Undertakings. Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation – The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization – By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 31st day of May, 20 18.

THE OHIO CASUALTY INSURANCE COMPANY INCORPORATED 1919 NEW HAMPSHIRE
LIBERTY MUTUAL INSURANCE COMPANY INCORPORATED 1912 MASSACHUSETTS
WEST AMERICAN INSURANCE COMPANY INCORPORATED 1991 INDIANA

By: Renee Llewellyn
Renee C. Llewellyn, Assistant Secretary

Not valid for mortgage, note, loan, letter of credit, currency rate, interest rate or residual value guarantees.

To confirm the validity of this Power of Attorney call 1-610-832-8240 between 9:00 am and 4:30 pm EST on any business day.

LMS_12873_022017

Liberty Mutual.
SURETY

TEXAS
IMPORTANT NOTICE

To obtain information or make a complaint:

You may call toll-free for information or to make a complaint at
1-877-751-2640

You may also write to:

2200 Renaissance Blvd., Ste. 400
King of Prussia, PA 19406-2755

You may contact the Texas Department of Insurance to obtain information on companies, coverages, rights or complaints at
1-800-252-3439

You may write the Texas Department of Insurance
Consumer Protection (111-1A)
P. O. Box 149091
Austin, TX 78714-9091
FAX: (512) 490-1007
Web: http://www.tdi.texas.gov
E-mail: ConsumerProtection@tdi.texas.gov

PREMIUM OR CLAIM DISPUTES:

Should you have a dispute concerning your premium or about a claim you should first contact the agent or call 1-800-843-6446. If the dispute is not resolved, you may contact the Texas Department of Insurance.

ATTACH THIS NOTICE TO YOUR POLICY:

This notice is for information only and does not become a part or condition of the attached document.

TEXAS
AVISO IMPORTANTE

Para obtener informacion o para someter una queja:

Usted puede llamar al numero de telefono gratis para informacion o para someter una queja al
1-877-751-2640

Usted tambien puede escribir a:

2200 Renaissance Blvd., Ste. 400
King of Prussia, PA 19406-2755

Puede comunicarse con el Departamento de Seguros de Texas para obtener informacion acerca de companias, coberturas, derechos o quejas al
1-800-252-3439

Puede escribir al Departamento de Seguros
de Texas Consumer Protection (111-1A)
P. O. Box 149091
Austin, TX 78714-9091
FAX # (512) 490-1007
Web: http://www.tdi.texas.gov
E-mail: ConsumerProtection@tdi.texas.gov

DISPUTAS SOBRE PRIMAS O RECLAMOS:

Si tiena una disputa concerniente a su prima o a un reclamo, debe comunicarse con el agente o primero. Si no se resuelve la disputa, puede entonces comunicarse con el departamento (TDI)

UNA ESTE AVISO A SU POLIZA:

Este aviso es solo para proposito de informacion y no se convierte en parte o condicion del documento adjunto.

CONSTRUCTION PLANS FOR

DETENTION POND "G"

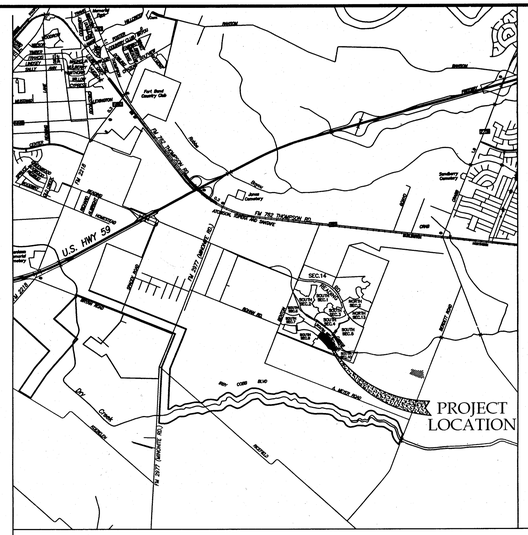
TO SERVE

BONBROOK PLANTATION SOUTH

FORT BEND COUNTY MUD NO. 155
CITY OF ROSENBERG E.T.J.
FORT BEND COUNTY, TEXAS

JOB NO. 2304-1110B

DATE : FEBRUARY 2018



VICINITY MAP
FT BEND COUNTY KEY MAP – 646B ZIP CODE – 77469

SHEET INDEX

1. COVER SHEET
2. GENERAL CONSTRUCTION NOTES
3. OVERALL SITE LAYOUT & DRAINAGE AREA MAP
4. POND "G" & OFFSITE DITCHES LAYOUT
5. FLOODPLAIN MITIGATION PLAN
6. TEMPORARY DRAINAGE SWALES & FUTURE FACILITIES FOR SECTION 10
7. 3–YR DRAINAGE CALCULATIONS
8. 3–YR ADJ. DRAINAGE CALCULATIONS
9. 100–YR DRAINAGE CALCULATIONS
10. OVERALL CLEARING & GRADING PLAN
11. SECTIONS 8 & 10 GRADING PLAN
12. STORM WATER POLLUTION PREVENTION PLAN

PLAN & PROFILE

13. POND "G" ..... STA. 0+00 TO END
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15. OFFSITE DITCH 1 & 2 ..... STA. 13+25 TO END
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DETAILS

18. STORM SEWER CONSTRUCTION DETAILS
19. STORM WATER POLLUTION PREVENTION PLAN DETAILS
20. TXDOT PEDESTRIAN FACILITIES PED–12A

NOTES

1. THESE PLANS WERE DESIGNED TO MEET OR EXCEED CITY OF ROSENBERG AND FORT BEND COUNTY SUBDIVISION RULES AND REGULATIONS (AS APPLICABLE) AS CURRENTLY AMENDED

FORT BEND COUNTY ENGINEER

ENGINEER: Rick J. Steigle, PE, PTOE
for RICHARD W. STOLLEIS, P.E.

DATE: 4/13/18

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

APPROVED: _____
DEVELOPMENT COORDINATOR

DATE: 4/13/18

CITY OF ROSENBERG
FOUNDED 1885

CITY OF ROSENBERG

APPROVED: _____ DATE: 4-9-18
RIGO CALZONCIN
EXECUTIVE DIRECTOR OF PUBLIC SERVICES

APPROVED: _____ DATE: 4/5/18
CHARLES M. EASTLAND, PE
CITY ENGINEER

APPROVAL VOID IF NO PROGRESS HAS BEEN MADE TOWARDS THE COMPLETION OF THE PROJECT WITHIN TWO YEARS FROM DATE OF SIGNATURE.

STATE OF TEXAS
MICHEAL WANG
92053
LICENSED
PROFESSIONAL ENGINEER

3/5/2018

RECORD DRAWING

I CERTIFY THAT THIS DRAWING REFLECTS THE IMPROVEMENTS CONSTRUCTED AS TO SIZE, LOCATION AND GRADE AND THAT THE CONSTRUCTION WAS IN FULL COMPLIANCE WITH THE CONTRACT DOCUMENTS

BY _____ DATE _____

TITLE _____

APPROVED FOR CONSTRUCTION

BY _____ DATE _____

DEVELOPER:
B-BROOK LAND PARTNERS, L.P.

ENGINEER:

LJA Engineering, Inc.

2929 Briarpark Drive
Suite 600
Houston, Texas 77042

Phone 713.953.5200
Fax 713.953.5026
FRN-F-1386

Date\Time : Fri, 09 Mar 2018 – 4:01pm User Name : kirochel
Path\Name : I:\Projdek1\2304\1110B\VCAD_Sheet_Files\1_COVER_SHEET.dwg

BONBROOK PLANTATION SOUTH DETENTION POND "G" – JOB NO. 2304–1110B

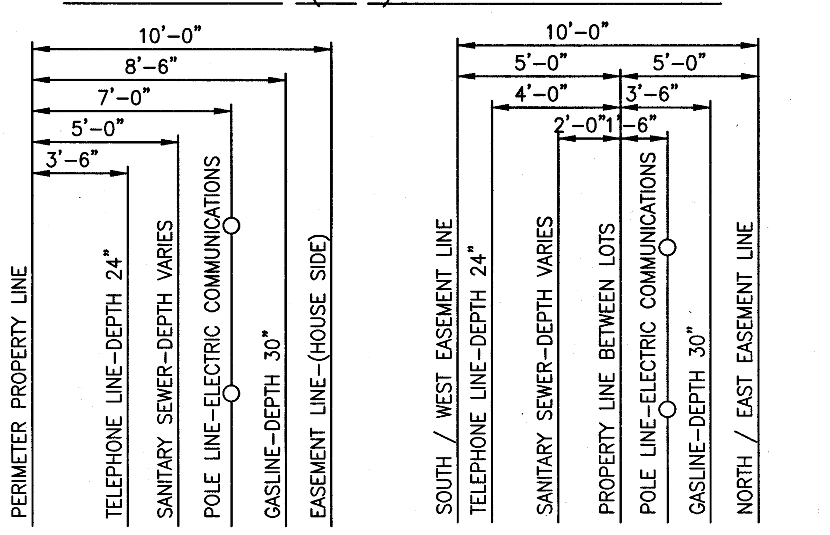
GENERAL NOTES

1. SURFACE RESTORATION: AT THE END OF ALL CONSTRUCTION PROJECTS, THE CONTRACTOR SHALL RESTORE EXISTING FACILITY (I.E. PROPERTY) EQUAL TO OR BETTER THAN EXISTING SITE CONDITIONS PRIOR TO CONSTRUCTION.
2. THE CONTRACTOR SHALL FURNISH ALL MATERIALS, EQUIPMENT, AND LABOR FOR EXCAVATION, INSTALLATION, BACKFILLING OF WATER AND/OR SEWER MAINS AND RELATED APPURTENANCES AS SHOWN ON THE PLANS AND/OR DESCRIBED IN THE SPECIAL PROVISIONS.
3. 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 AT ALL TIMES BE PERFORMED WITH CARE TO AVOID ANY DAMAGE TO THE MATERIAL. THE CONTRACTOR SHALL LOCATE AND PROVIDE THE NECESSARY STORAGE AREAS FOR MATERIALS AND EQUIPMENT.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFEGUARDING AND PROTECTING ALL MATERIAL AND EQUIPMENT STORED ON THE JOBSITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STORAGE OF MATERIALS IN A SAFE AND WORKMANLIKE MANNER TO PREVENT INJURIES, DURING AND AFTER WORKING HOURS, UNTIL PROJECT COMPLETION.
5. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE TEXAS DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, 1982, AND TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 1980 AND ANY REVISIONS THERETO.
6. 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.
7. ALL TESTING PROCEDURES USED ON THIS PROJECT SHALL CONFORM TO THE CITY OF ROSENBERG AND FORT BEND COUNTY STANDARDS. THE INITIAL TESTING EXPENSE SHALL BE BORNE BY THE OWNER. IF ANY OF THE TEST RESULTS DO NOT MEET THE TESTING STANDARDS, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REMOVE OR REPLACE SUCH MATERIAL SO THAT THE TESTING STANDARDS CAN BE MET. ADDITIONAL TESTING TO COMPLY WITH THESE STANDARDS SHALL BE AT THE CONTRACTOR'S EXPENSE.
8. ALL FINISHED GRADES SHALL VARY UNIFORMLY BETWEEN FINISHED ELEVATIONS.
9. 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.
10. TOP OF FOUNDATION (SLAB) SHALL BE A MINIMUM OF 18" ABOVE TOP OF CURB AND/OR 18" ABOVE NATURAL GROUND OR 1' ABOVE 100 YR FLOOD ELEVATION, WHICHEVER IS HIGHER.
11. ALL FINISHED GRADES ARE TO CONFORM TO A MINIMUM SLOPE OF 12" PER 100'. DRAINAGE IS DEPICTED BY ARROWS.
12. THE CONTRACTOR SHALL NOT UNLOAD ANY TRACK-TYPE CONSTRUCTION MACHINERY ON ANY EXISTING PAVEMENT OR CROSS OVER ANY EXISTING PAVEMENT OR CURB DURING ANY PROJECT.
13. IT IS PERMISSIBLE TO USE A BACKHOE FOR TRENCH EXCAVATION IN LIEU OF A TRENCHING MACHINE.
14. CONTRACTOR SHALL NOTIFY CITY OF ROSENBERG UTILITY DEPARTMENT AT (832) 595-3500, CITY ENGINEER AT (713) 462-3242, AND FORT BEND COUNTY ENGINEERING AT CONSTRUCTION@FORTBENDCOUNTYTX.GOV AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF WORK. CONTRACTOR SHALL ALSO CONTACT TEXAS ONE-CALL AT 1-800-245-4545. CONTRACTOR SHALL ALSO NOTIFY COBB FENDLEY AT 713-462-3242.
15. CONTRACTOR SHALL NOTIFY CITY OF ROSENBERG UTILITY DEPARTMENT AND CITY ENGINEER (713) 462-3242 AT LEAST 24 HOURS PRIOR TO COMMENCEMENT OF ALL WORK REQUIRING NORMAL CITY INSPECTION AT (832) 595-3500. WORK REQUIRING INSPECTIONS INCLUDES, BUT IS NOT LIMITED TO, CONCRETE PLACEMENT, SUBGRADE STABILIZATION, UTILITY FACILITY BACKFILL, REINFORCING PLACEMENT, ETC.
16. REGULAR INSPECTION HOURS ARE 7 AM THROUGH 5 PM, MONDAY THROUGH FRIDAY, EXCEPT ON CITY HOLIDAYS. ON SATURDAYS, SUNDAYS AND DAYS DESIGNATED AS CITY HOLIDAYS NO WORK WILL BE ALLOWED THAT REQUIRES INSPECTION BY CITY STAFF, UNLESS THE CITY DEEMS THE WORK NECESSARY TO FACILITATE THE TIMELY COMPLETION OF THE PROJECT. ADVANCE WRITTEN NOTICE OF 72 HOURS, IS REQUIRED. ADVANCED NOTICE CAN BE FAXED TO (832) 595-3501. CONTRACTOR SHALL NOTIFY CITY OF ROSENBERG UTILITY DEPARTMENT AT (832) 595-3500 AND CITY ENGINEER AT (713) 462-3242.
17. INFORMATION REGARDING INSPECTION FEES FOR AFTER HOURS AND HOLIDAY INSPECTIONS IS AVAILABLE BY CALLING CITY OF ROSENBERG AT (832) 595-3500 AND CITY ENGINEER AT (713) 462-3242. CONTRACTOR SHALL BE RESPONSIBLE FOR CHARGES ASSOCIATED WITH THESE INSPECTIONS.
18. AREAS TO BE FILLED SHALL BE SCARIFIED AND COMPACTED TO AT LEAST 95% OF MAXIMUM DENSITY PER ASTM D-698, TO A DEPTH OF 8" PRIOR TO FILL PLACEMENT. FILL MATERIAL SHALL BE AT PLACED IN MAXIMUM 8" THICK LIFTS (MEASURED LOOSE) AND COMPACTED TO AT LEAST 95% OF MAXIMUM DENSITY PER ASTM D-698. MOISTURE CONTENT SHALL BE BETWEEN OPTIMUM AND +3% OF OPTIMUM UNLESS OTHERWISE DIRECTED BY OWNER'S TESTING LAB OR THE ENGINEER. FILL SHALL BE CLEAN EARTH, SAND, OR A COMBINATION, AND BE FREE FROM THRASH , VEGETATION, AND LARGE STONES.
19. ALL TRENCH BACKFILL SHALL HAVE AT LEAST ONE DENSITY TESTING ON EACH LIFT. ONLY STANDARD BACKFILL PROCEDURES ARE ALLOWED. ANY DEVIATION TO THIS STANDARD MUST BE APPROVED BY THE CITY OF ROSENBERG DIRECTOR OF PUBLIC WORKS.
20. CONTACT FORT BEND COUNTY MUNICIPAL UTILITY DISTRICT NO. 155 OPERATOR TO OPERATE EXISTING UTILITIES.
21. CONTACT FORT BEND COUNTY MUNICIPAL UTILITY DISTRICT NO. 155 OPERATOR PRIOR TO MAKING TIE-INS TO EXISTING UTILITIES.
22. WHEN HYDROMULCH IS REQUIRED, CONTRACTOR SHALL KEEP MULCH MOIST AFTER INSTALLATION AND UNTIL AREA SHOWS GROWTH.

STORM SEWER NOTES

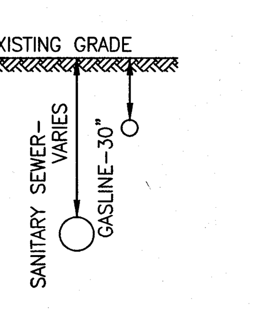
1. ALL STATIONS ARE CENTERLINE OF STREET RIGHT-OF-WAY STATIONS EXCEPT WHERE STORM SEWER IS IN SIDE LOT EASEMENTS; THIS STATIONING IS BASED ON CENTERLINE OF PIPE.
2. STORM SEWERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF ROSENBERG STANDARD DETAIL SHEETS AND LATEST REVISIONS AND/OR AMENDMENTS OF SAME SHALL BE OBSERVED.
3. ALL STORM SEWER 24" AND LARGER TO BE REINFORCED CONCRETE RUBBER GASKET PIPE, A.S.T.M. C-76 CLASS III, INCLUDING INLET LEADS CROSSING UNDER EXISTING OR PROPOSED PAVEMENT.
4. REINFORCED CONCRETE PIPE STORM SEWER SHALL BE INSTALLED, BEDDED AND BACKFILLED IN CONFORMITY WITH CITY OF ROSENBERG STANDARD DETAIL SHEETS. BACKFILL UNDER OR WITHIN 1' (ONE FOOT) OF EXISTING, PROPOSED, OR FUTURE PAVEMENT WITH CEMENT STABILIZED SAND (1.5 SACKS PER CUBIC YARD MIX). CEMENT STABILIZED SAND BEDDING AND/OR BACKFILL COMPACTED IN 12" LIFTS FOR INSTALLATION UNDER OR WITHIN 1' (ONE FOOT) OF PAVEMENT SHALL BE CONSIDERED AS SUBSIDIARY TO THE PAY ITEM FOR PIPE AND SHALL NOT BE PAID FOR DIRECTLY. ALL NORMALLY SUBMERGED STORM SEWER PIPE SHALL BE RUBBER GASKETED.
5. CONTRACTOR SHALL PROVIDE A MINIMUM OF 6" (SIX INCHES) CLEARANCE AT STORM SEWER AND WATER LINE CROSSINGS, AND A MINIMUM OF 6" (SIX INCHES) AT STORM SEWER AND SANITARY SEWER CROSSINGS.
6. ALL STORM SEWER MANHOLES SHALL BE CITY OF ROSENBERG TYPE "C" UNLESS OTHERWISE NOTED AND SHALL BE LOCATED A MINIMUM OF 3' BACK OF CURB.
7. ALL INLETS TO BE CITY OF ROSENBERG TYPE "A" WITH CAST IRON GRATES UNLESS OTHERWISE NOTED. STREETS ARE TO HAVE H-2 INLETS.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING LOCATION OF ALL EXISTING UTILITIES PRIOR TO EXCAVATION.
9. MINIMUM STORM SEWER SIZE IS 24 INCH DIAMETER.
10. ALL STORM SEWER MANHOLE COVER MUST INCLUDE THE WORD "STORM SEWER".
11. STORM SEWER MANHOLE ADJUSTMENTS SHALL BE BY THROAT RINGS ONLY.
12. ALL STORM SEWER CORRUGATED METAL PIPE MUST BE POLYMER COATED.

TEN-FOOT (10') WIDE EASEMENT



PERIMETER EASEMENT

BACK TO BACK EASEMENT



TYPICAL INSTALLATION DEPTHS

UTILITIES ARE NORMALLY INSTALLED AS SHOWN BUT DEPTH MAY VARY DUE TO CUT BY OTHERS MAINTAIN MINIMUM 4" CLEARANCE BETWEEN ALL UTILITY LINES EXTENDING FROM EASEMENT TO HOUSE/BUILDING

FORT BEND COUNTY GENERAL NOTES

1. FORT BEND COUNTY MUST BE INVITED TO THE PRE-CONSTRUCTION MEETING.

2. CONTRACTOR SHALL NOTIFY FORT BEND COUNTY ENGINEERING DEPARTMENT 48 HOURS PRIOR TO COMMENCING CONSTRUCTION AND 48 HOUR NOTICE TO ANY CONSTRUCTION ACTIVITY WITHIN THE LIMITS OF THE PAVING AT CONSTRUCTION@FORTBENDCOUNTYTX.GOV

3. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FROM FORT BEND COUNTY PRIOR TO COMMENCING CONSTRUCTION OF ANY IMPROVEMENTS WITHIN COUNTY ROAD RIGHT OF WAYS.

4. ALL PAVING IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FORT BEND COUNTY "RULES, REGULATIONS, AND REQUIREMENTS" RELATING TO THE APPROVAL AND ACCEPTANCE OF IMPROVEMENTS IN SUBDIVISIONS AS CURRENTLY AMENDED.

5. ALL ROAD WIDTHS, CURB RADII, AND CURB ALIGNMENT SHOWN INDICATES BACK OF CURB.

6. A CONTINUOUS LONGITUDINAL REINFORCING BAR SHALL BE USED IN THE CURBS.

7. ALL CONCRETE PAVEMENT SHALL BE 5½ SACK CEMENT WITH A MINIMUM COMPRESSIVE STRENGTH OF 3500 PSI AT 28 DAYS. TRANSVERSE EXPANSION JOINTS SHALL BE INSTALLED AT EACH CURB RETURN AND AT A MAXIMUM SPACING OF 60 FEET.

8. ALL WEATHER ACCESS TO ALL EXISTING STREETS AND DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES.

9. 4" X 12" REINFORCED CONCRETE CURB SHALL BE PLACED IN FRONT OF SINGLE FAMILY LOTS ONLY. ALL OTHER AREAS SHALL BE 6" REINFORCED CONCRETE CURB.

10. AT ALL INTERSECTION LOCATIONS, TYPE 7 RAMPS SHALL BE PLACE IN ACCORDANCE WITH TXDOT Ped-12a STANDARD DETAIL SHEET. A.D.A.-HANDICAP RAMPS SHALL BE INSTALLED WITH STREET PAVING AT ALL INTERSECTIONS AND COMPLY WITH CURRENT A.D.A. REGULATIONS.

11. CURB HEADERS ARE REQUIRED AT CURB CONNECTIONS TO HANDICAP RAMPS, WITH NO CONSTRUCTION JOINT WITHIN 5' OF RAMPS.

12. ALL INTERSECTIONS UTILIZING TRAFFIC CONTROL MEASURES SHALL HAVE A.D.A. WHEEL CHAIR RAMPS INSTALLED.

13. GUIDELINES ARE SET FORTH IN THE TEXAS "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", AS CURRENTLY AMENDED, SHALL BE OBSERVED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE FLAGMEN, SIGNING, STRIPING AND WARNING DEVICES, ETC., DURING CONSTRUCTION – BOTH DAY AND NIGHT.

14. ALL R1-1 STOP SIGNS SHALL BE 30"X30" WITH DIAMOND GRADE SHEETING PER TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

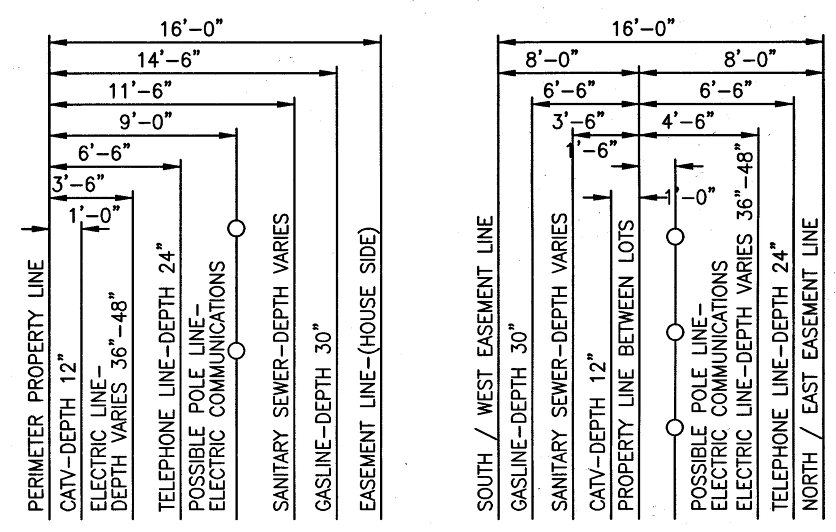
15. STREET NAME SIGNAGE SHALL BE ON A 9" HIGH SIGN FLAT BLADE W/REFLECTIVE GREEN BACKGROUND. STREET NAMES SHALL BE UPPER AND LOWERCASE LETTERING WITH UPPERCASE LETTERS OF 6" MINIMUM AND LOWERCASE LETTERS OF 4.5" MINIMUM. THE LETTERS SHALL BE REFLECTIVE WHITE. STREET NAME SIGNS SHALL BE MOUNTED ON STOP SIGN POST.

16. A BLUE DOUBLE REFLECTORIZED BUTTON SHALL BE PLACED AT ALL FIRE HYDRANT LOCATIONS. THE BUTTON SHALL BE PLACED 12 INCHES OFF THE CENTERLINE OF THE STREET ON THE SAME SIDE AS THE HYDRANT.

17. THE PROJECT AND ALL PARTS THEREOF SHALL BE SUBJECT TO INSPECTION FROM TIME TO TIME BY INSPECTORS DESIGNATED BY FORT BEND COUNTY. NO SUCH INSPECTIONS SHALL RELIEVE THE CONTRACTOR OF ANY OF ITS OBLIGATIONS HEREUNDER. NEITHER FAILURE TO INSPECT NOR FAILURE TO DISCOVER OR REJECT ANY OF THE WORK AS NOT IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS, REQUIREMENTS AND SPECIFICATIONS OF FORT BEND COUNTY OR ANY PROVISION OF THIS PROJECT SHALL BE CONSTRUCTED TO IMPLY AN ACCEPTANCE OF SUCH WORK OR TO RELIEVE THE CONTRACTOR OF ANY OF ITS OBLIGATION HEREUNDER.

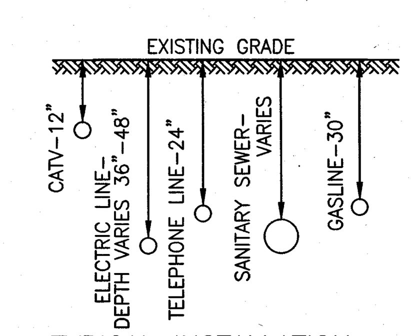
NOTE: FORT BEND COUNTY NOTES SUPERCEDE ANY CONFLICTING NOTES.

SIXTEEN-FOOT (16') WIDE EASEMENT



PERIMETER EASEMENT

BACK TO BACK EASEMENT



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BENCHMARK:

A BRASS DISK STAMPED K-1219, SET IN A CONCRETE HEADWALL, LOCATED IN FORT BEND COUNTY, 0.15 MILE SOUTH OF THE INTERSECTION OF STATE HIGHWAY 36 AND MEYER ROAD, SET IN THE TOP OF A CONCRETE HEADWALL AND 1.7 FEET SOUTH OF THE NORTH END OF THE EAST CONCRETE HEADWALL OF A CULVERT, 24 FEET EAST OF THE CENTERLINE OF STATE HIGHWAY 36, AND LEVEL WITH THE HIGHWAY'S SURFACE.
NAVD-88 (1991 ADJ.) ELEV = 91.69 FEET

TBM (LJA 1)
A ⅝-INCH IRON ROD WITH CAP SET AT THE INTERSECTION OF BRYAN ROAD AND SPACEK ROAD, APPROXIMATELY 18.8 FEET NORTH OF THE CENTERLINE OF BRYAN ROAD AND 40.4 FEET WEST OF THE CENTERLINE OF SPACEK ROAD.
NAVD-88(1991 ADJ.) ELEV = 90.758 FEET

INTERNAL 100-YR FLOOD ELEV = 79.38
PER LJA REPORT "MASTER DRAINAGE PLAN FOR BONBROOK PLANTATION DEVELOPMENT" FORT BEND COUNTY MUD 155, JAN. 2005

FIRM PANEL: 48157C0265 L
DATE: APRIL 2, 2014

NOTES:
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3) CAUTION:
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RECORD DRAWING

I CERTIFY THAT THIS DRAWING REFLECTS THE IMPROVEMENTS CONSTRUCTED AS TO SIZE, LOCATION AND GRADE AND THAT THE CONSTRUCTION WAS IN FULL COMPLIANCE WITH THE CONTRACT DOCUMENTS

BY ____________ DATE ________

TITLE ____________

DATE	REVISION	BY

FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED: [signature] DEVELOPMENT COORDINATOR

DATE: 4/13/18

B-BROOK LAND PARTNERS, L.P.

BONBROOK PLANTATION SOUTH DETENTION POND "G"

GENERAL CONSTRUCTION NOTES

LJA Engineering, Inc.
2929 Briarpark Drive
Suite 600
Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

LJA PROJECT NO.: 2304-1110B

DRAWN: L.O.R. DESIGN: M.F./K.T. DATE: FEBRUARY 2018

SCALE: NONE SHEET NO. 2 OF 20

STATE OF TEXAS – MICHEAL WANG – 92053 – LICENSED PROFESSIONAL ENGINEER – 3/5/2018

Date\Time : Fri, 09 Mar 2018 – 4:01pm User Name : ktrachsel
Path\Name : I:\Projdsk1\2304\1110B\ACAD_Sheet_Files\2_GENERAL CONSTRUCTION NOTES.dwg

BONBROOK PLANTATION SOUTH DETENTION POND "G" – JOB NO. 2304-1110B

LAKE G SUMMARY TABLE:		
SERVICE AREAS:		
SECTION 10	28.94	ACRES
POND G	7.57	ACRES
TOTAL	36.51	ACRES
DETENTION RATE REQUIRED	0.76	ac-ft/ac
DETENTION RATE PROVIDED	0.84	ac-ft/ac
DETENTION VOLUME REQUIRED	21.99	ac-ft
DETENTION VOLUME PROVIDED	34.70	ac-ft
RESTRICTOR SIZE	36 INCHES	
100-Year WSE	81.67	ft.
25-Year WSE	80.57	ft.
Normal WSE	75.50	ft.
Detention Facilities Will Be Owned and Maintained by Fort Bend County Municipal Utility District No. 155		

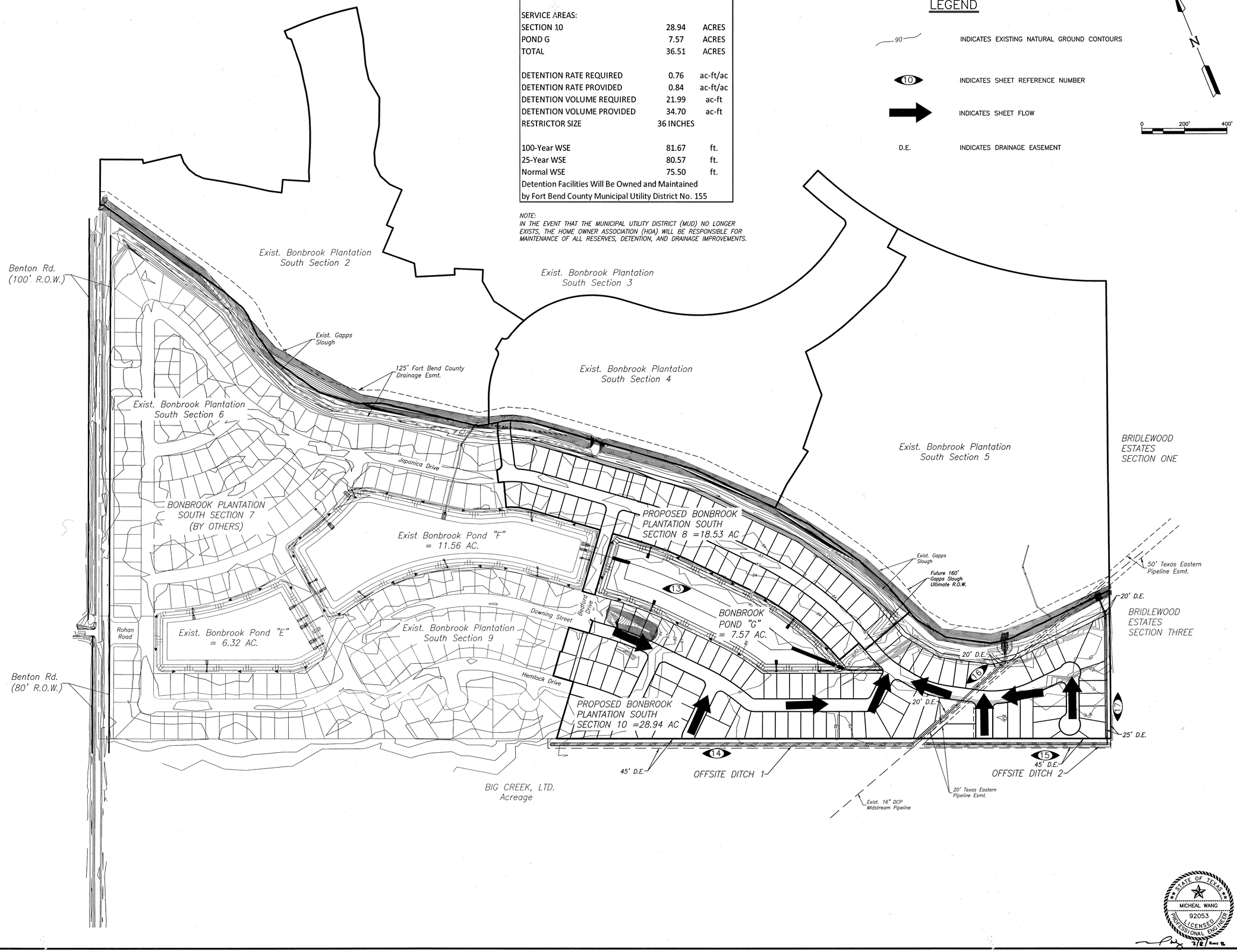
NOTE:
IN THE EVENT THAT THE MUNICIPAL UTILITY DISTRICT (MUD) NO LONGER EXISTS, THE HOME OWNER ASSOCIATION (HOA) WILL BE RESPONSIBLE FOR MAINTENANCE OF ALL RESERVES, DETENTION, AND DRAINAGE IMPROVEMENTS.

LEGEND

90	INDICATES EXISTING NATURAL GROUND CONTOURS
10	INDICATES SHEET REFERENCE NUMBER
	INDICATES SHEET FLOW
D.E.	INDICATES DRAINAGE EASEMENT

N

0 200' 400'



BENCHMARK:
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FIRM PANEL: 48157C0265 L
DATE: APRIL 2, 2014

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BY _____ DATE _____
TITLE _____

DATE	REVISION	BY

FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED: _____ DEVELOPMENT COORDINATOR
DATE: 4/13/18

CITY OF ROSENBERG FOUNDED 1885

B-BROOK LAND PARTNERS, L.P.

BONBROOK PLANTATION SOUTH DETENTION POND "G"

OVERALL SITE LAYOUT & DRAINAGE AREA MAP

LJA Engineering, Inc.
2929 Briarpark Drive
Suite 600
Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

LJA PROJECT NO.: 2304-1110B

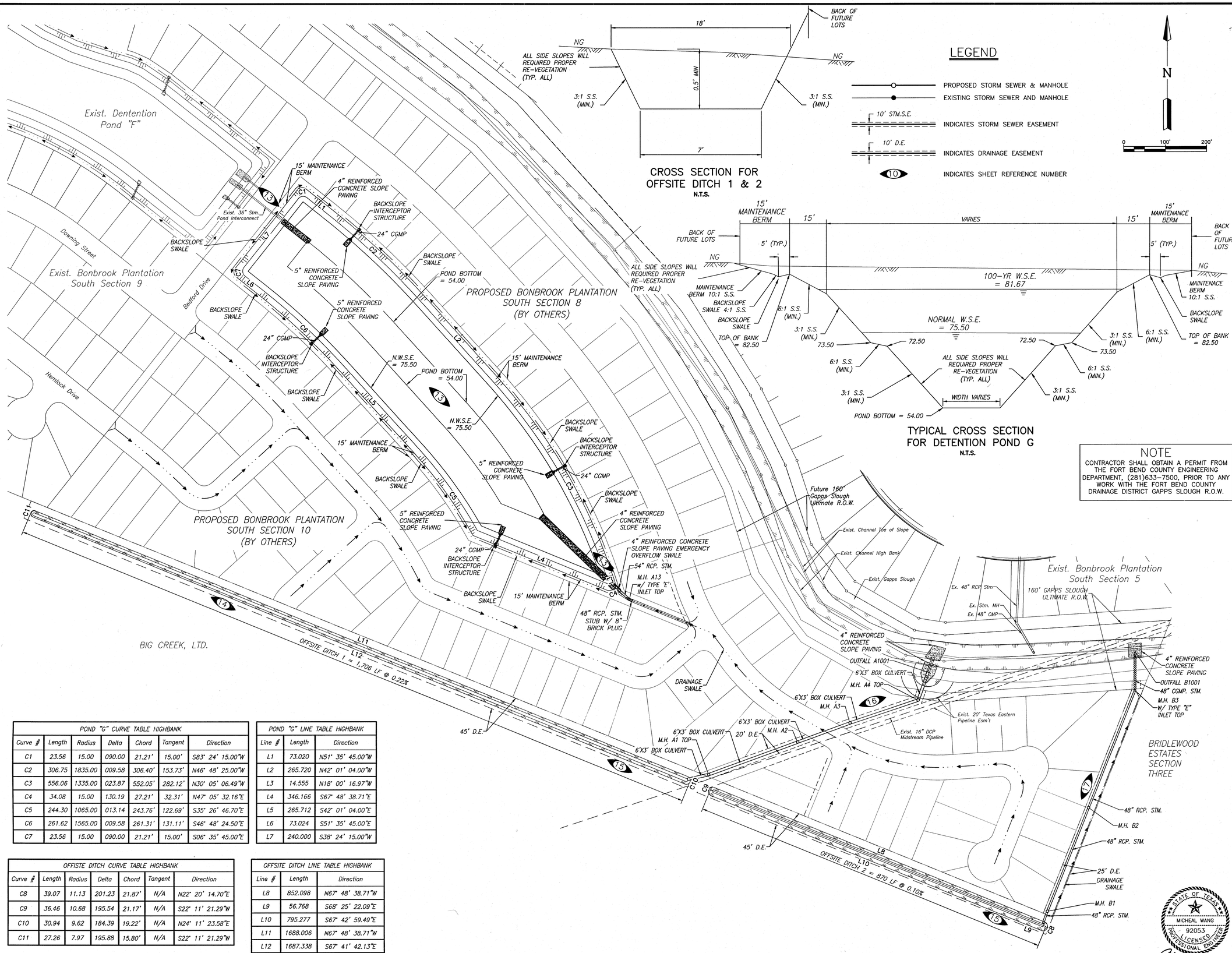
DRAWN: L.O.R. DESIGN: M.F./K.T. DATE: FEBRUARY 2018

SCALE: 1" = 200' SHEET NO. 3 OF 20

STATE OF TEXAS
MICHEAL WANG
92053
LICENSED PROFESSIONAL ENGINEER
3/8/18

BONBROOK PLANTATION SOUTH DETENTION POND "G" – JOB NO. 2304-1110B

Date\Time : Fri, 09 Mar 2018 – 4:02pm User Name : kkrochsel
Path\Name : I:\Projdsk1\2304\1110B\ACAD_Sheet_Files\3_OVERALL & DAM.dwg



CROSS SECTION FOR OFFSITE DITCH 1 & 2

N.T.S.

LEGEND

- PROPOSED STORM SEWER & MANHOLE
- EXISTING STORM SEWER AND MANHOLE
- 10' STM.S.E. — INDICATES STORM SEWER EASEMENT
- 10' D.E. — INDICATES DRAINAGE EASEMENT
- 10 — INDICATES SHEET REFERENCE NUMBER

N

0 100' 200'

TYPICAL CROSS SECTION FOR DETENTION POND G

N.T.S.

POND "G" CURVE TABLE HIGHBANK						
Curve #	Length	Radius	Delta	Chord	Tangent	Direction
C1	23.56	15.00	090.00	21.21'	15.00'	S83° 24' 15.00"W
C2	306.75	1835.00	009.58	306.40'	153.73'	N46° 48' 25.00"W
C3	556.06	1335.00	023.87	552.05'	282.12'	N30° 05' 06.49"W
C4	34.08	15.00	130.19	27.21'	32.31'	N47° 05' 32.16"E
C5	244.30	1065.00	013.14	243.76'	122.69'	S35° 26' 46.70"E
C6	261.62	1565.00	009.58	261.31'	131.11'	S46° 48' 24.50"E
C7	23.56	15.00	090.00	21.21'	15.00'	S06° 35' 45.00"E

POND "G" LINE TABLE HIGHBANK		
Line #	Length	Direction
L1	73.020	N51° 35' 45.00"W
L2	265.720	N42° 01' 04.00"W
L3	14.555	N18° 00' 16.97"W
L4	346.166	S67° 48' 38.71"E
L5	265.712	S42° 01' 04.00"E
L6	73.024	S51° 35' 45.00"E
L7	240.000	S38° 24' 15.00"W

OFFISTE DITCH CURVE TABLE HIGHBANK						
Curve #	Length	Radius	Delta	Chord	Tangent	Direction
C8	39.07	11.13	201.23	21.87'	N/A	N22° 20' 14.70"E
C9	36.46	10.68	195.54	21.17'	N/A	S22° 11' 21.29"W
C10	30.94	9.62	184.39	19.22'	N/A	N24° 11' 23.58"E
C11	27.26	7.97	195.88	15.80'	N/A	S22° 11' 21.29"W

OFFSITE DITCH LINE TABLE HIGHBANK		
Line #	Length	Direction
L8	852.098	N67° 48' 38.71"W
L9	56.768	S68° 25' 22.09"E
L10	795.277	S67° 42' 59.49"E
L11	1688.006	N67° 48' 38.71"W
L12	1687.338	S67° 41' 42.13"E

NOTE

CONTRACTOR SHALL OBTAIN A PERMIT FROM THE FORT BEND COUNTY ENGINEERING DEPARTMENT, (281)633-7500, PRIOR TO ANY WORK WITH THE FORT BEND COUNTY DRAINAGE DISTRICT GAPPS SLOUGH R.O.W.

BENCHMARK:

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FIRM PANEL: 48157C0265 L
DATE: APRIL 2, 2014

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BY _____ DATE _____

TITLE _____

DATE	REVISION	BY

FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED: _____ DEVELOPMENT COORDINATOR

DATE: 4/13/18

CITY OF ROSENBERG FOUNDED 1885

B-BROOK LAND PARTNERS, L.P.

BONBROOK PLANTATION SOUTH DETENTION POND "G"

POND "G" & OFFSITE DITCHES LAYOUT

LJA Engineering, Inc.
2929 Briarpark Drive
Suite 600
Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

LJA PROJECT NO.: 2304-1110B

DRAWN: L.O.R. DESIGN: M.F./K.T. DATE: FEBRUARY 2018

SCALE: 1" = 100'

SHEET NO. 4 OF 20

BONBROOK PLANTATION SOUTH DETENTION POND "G" – JOB NO. 2304-1110B

Date\Time : Fri, 09 Mar 2018 – 4:02pm User Name : strochel
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4

FLOODPLAIN MITIGATION CALCULATIONS		
TOTAL MITIGATION REQUIRED	21.52	ac-ft
MITIGATION PROVIDED		
MITIGATION PROVIDED FOR ALL 3 PONDS	21.52	ac-ft

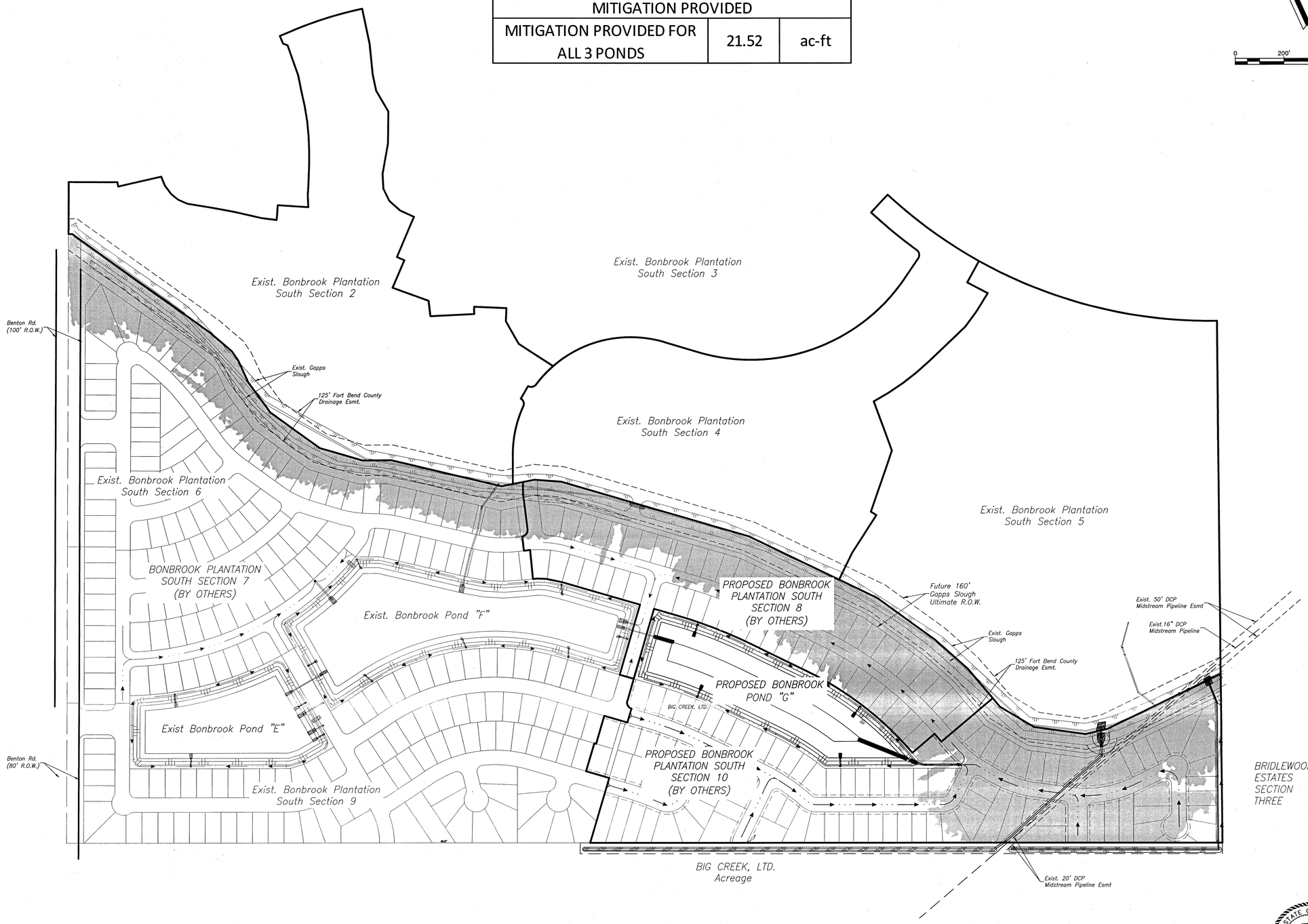
LEGEND

INDICATES 100-YR FLOODPLAIN

— 72 — INDICATES EXISTING NATURAL GROUND CONTOUR

N

0 200' 400'



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BY _____ DATE _____

TITLE _____

DATE	REVISION	BY

FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED: _____ DEVELOPMENT COORDINATOR

DATE: 4/13/18

CITY OF ROSENBERG FOUNDED 1883

B-BROOK LAND PARTNERS, L.P.

BONBROOK PLANTATION SOUTH DETENTION POND "G"

FLOODPLAIN MITIGATION PLAN

LJA Engineering, Inc.
2929 Briarpark Drive
Suite 600
Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

LJA PROJECT NO.: 2304-1110B

DRAWN: L.O.R. DESIGN: M.F./K.T. DATE: FEBRUARY 2018

SCALE: 1" = 200'

SHEET NO. 5 OF 20

STATE OF TEXAS
MICHEAL WANG
92053
LICENSED PROFESSIONAL ENGINEER
3/5/2018

BONBROOK PLANTATION SOUTH DETENTION POND "G" – JOB NO. 2304-1110B

Date\Time : Fri, 09 Mar 2018 - 4:02pm User Name : ktrochsel
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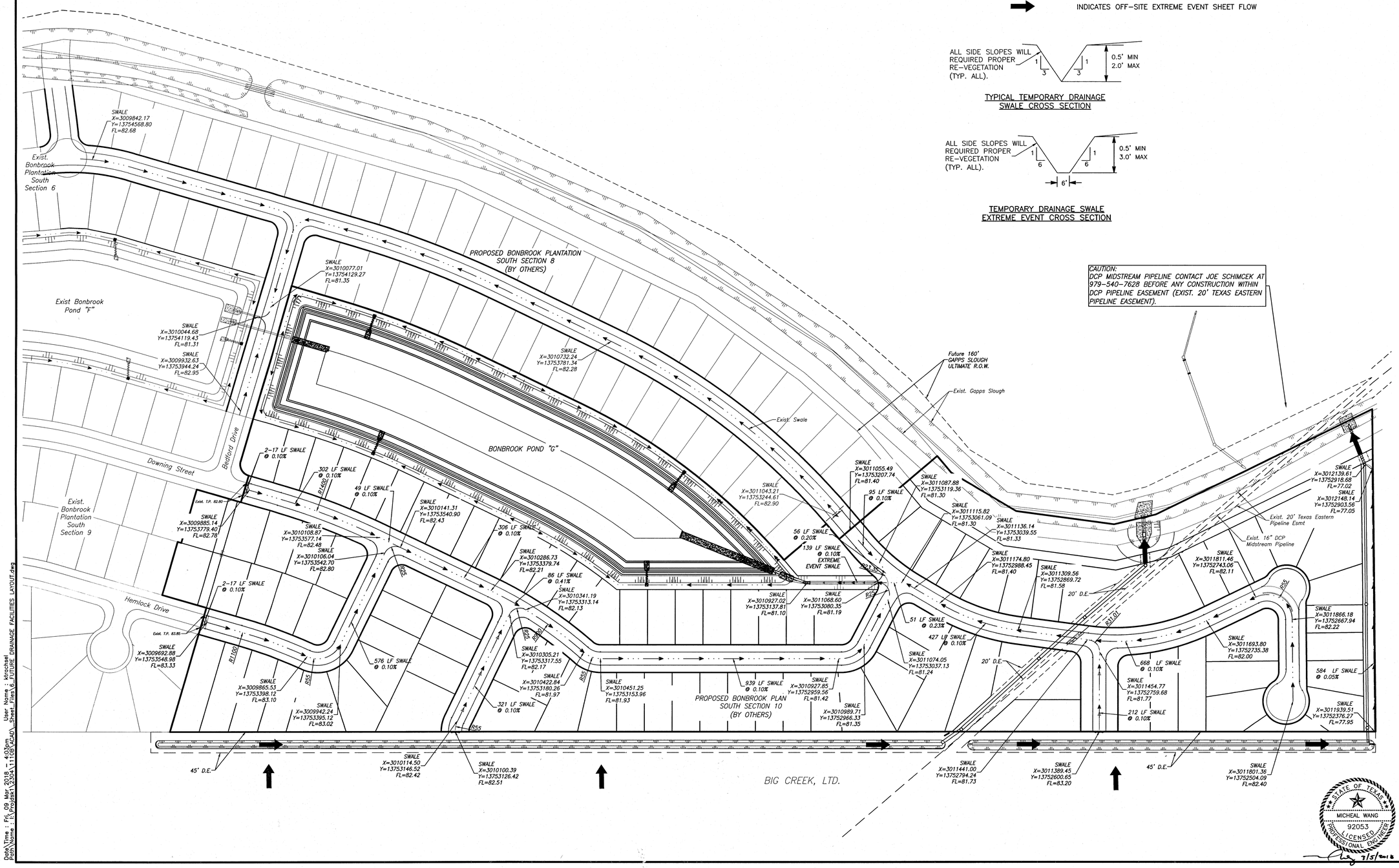

CAUTION:
DCP MIDSTREAM PIPELINE CONTACT JOE SCHIMCEK AT 979-540-7628 BEFORE ANY CONSTRUCTION WITHIN DCP PIPELINE EASEMENT (EXIST. 20' TEXAS EASTERN PIPELINE EASEMENT).

LEGEND

- FUTURE STORM SEWER & MANHOLE
- EXISTING STORM SEWER AND MANHOLE
- FUTURE STORM SEWER, MANHOLE, AND "H-2" OR "C-1" INLETS
- FUTURE PAVEMENT
- FUTURE PAVING SUMMIT
- PROPOSED SWALES
- INDICATES OFF-SITE EXTREME EVENT SHEET FLOW

N

0 100' 200'

TYPICAL TEMPORARY DRAINAGE SWALE CROSS SECTION

TEMPORARY DRAINAGE SWALE EXTREME EVENT CROSS SECTION

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2) THIS CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION

3) CAUTION:
THERE ARE EXISTING UTILITIES WITHIN THE PROJECT AREA. CONTRACTOR SHALL FIELD VERIFY LOCATION OF ALL EXISTING UTILITIES AFFECTING PROPOSED UTILITIES PRIOR TO CONSTRUCTION. IN THE EVEN OF CONFLICT BETWEEN EXISTING UTILITIES AND PROPOSED UTILITIES, THE CONTRACTOR SHALL SUSPEND CONSTRUCTION IN THE VICINITY OF THE CONFLICT, AND SHALL COMMENCE ONLY UPON AUTHORIZATION BY OWNER.

RECORD DRAWING
I CERTIFY THAT THIS DRAWING REFLECTS THE IMPROVEMENTS CONSTRUCTED AS TO SIZE, LOCATION AND GRADE AND THAT THE CONSTRUCTION WAS IN FULL COMPLIANCE WITH THE CONTRACT DOCUMENTS

BY _____ DATE _____

TITLE _____

DATE	REVISION	BY

FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED: _____ DEVELOPMENT COORDINATOR

DATE: 4/13/18

CITY OF ROSENBERG FOUNDED 1865

B-BROOK LAND PARTNERS, L.P.

BONBROOK PLANTATION SOUTH DETENTION POND "G"

TEMPORARY DRAINAGE SWALES & FUTURE DRAINAGE FACILITIES FOR SECTION 10

LJA Engineering, Inc.
2929 Briarpark Drive
Suite 600
Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

LJA PROJECT NO.: 2304-1110B

DRAWN: L.O.R. DESIGN: M.F./K.T. DATE: FEBRUARY 2018

SCALE: 1" = 100'

SHEET NO. 6 OF 20

STATE OF TEXAS
MICHEAL WANG
92053
LICENSED
PROFESSIONAL ENGINEER
7/5/2018

BONBROOK PLANTATION SOUTH DETENTION POND "G" – JOB NO. 2304-1110B

Date\Time : Fri, 09 Mar 2018 - 4:03pm User Name : ktrochsel
Path\Name : E:\Projects\2304\1110B\ACAD_Sheet_Files\6-FUTURE DRAINAGE FACILITIES LAYOUT.dwg

Bonbrook Plantation Pond G

3-YR Storm Calcs

LINE	FROM MH	TO MH	AREA (AC)	TOTAL AREA (AC)	CITY CURVE NO.	Tc (MIN)	CI	Q INPUT (CFS)	Q TOTAL (CFS)	REACH (FT)	LINE SIZE (IN)	(FT)	MANN. CONST.	SLOPE (%)	DESIGN Q (CFS)	DESIGN V (FPS)	SLOPE FALL (FT)	M.H. DROP (FT)	OTHER LOSS (FT)	FLOWLINE UP-STREAM (FT)	FLOWLINE DOWN-STREAM (FT)	ACTUAL V (FPS)	THEOR. H.G.L. SLOPE (%)	H (FT)	ACTUAL H.G.L. SLOPE (%)	UPST. H.G.L. (FT)	DNST. H.G.L. (FT)	UPST. TC ELEV. (FT)	H.G.L. IN RELATION TO TOC (FT)
	DITCH 1																												
LINE	Ditch	A1	0.00	0.00	4	10.00	1.15	68.70	68.70	52		6	3	0.013	0.0010	65.1	3.61	0.05	0.00	0.00	76.65	76.60	3.82	0.00	0.00	0.00	78.51	78.51	82.45	-3.94
A	A1	A2	0.00	0.00	4	10.24	1.14	0.00	68.70	227		6	3	0.013	0.0010	65.1	3.61	0.23	0.00	0.00	76.60	76.37	3.82	0.00	0.01	0.00	78.51	78.50	84.20	-5.69
A	A2	A3	0.00	0.00	4	11.28	1.13	0.00	68.70	133		6	3	0.013	0.0010	65.1	3.61	0.13	4.87	0.00	71.50	71.37	3.82	0.00	0.00	0.00	78.50	78.50	82.90	-4.40
A	A3	A4	0.00	0.00	4	11.90	1.12	0.00	68.70	173		6	3	0.013	0.0010	65.1	3.61	0.17	-0.96	0.00	72.33	72.16	3.82	0.00	0.01	0.00	78.50	78.49	82.92	-4.42
A	A4	A1001	0.00	0.00	4	12.70	1.11	0.00	68.70	71		6	3	0.013	0.0010	65.1	3.61	0.07	0.00	0.00	72.16	72.09	3.82	0.00	0.00	0.00	78.49	78.49	83.37	-4.88
	DITCH 2																												
LINE	Ditch 2	B1	0.00	0.00	4	10.00	1.15	64.60	64.60	32	48			0.013	0.0049	100.8	8.02	0.16	0.00	0.00	75.00	74.84	5.14	0.20	0.06	0.20	79.89	79.82	82.81	-2.92
B	B1	B2	0.00	0.00	4	10.07	1.15	0.00	64.60	267	48			0.013	0.0010	45.5	3.62	0.27	2.99	0.00	71.85	71.58	5.14	0.20	0.54	0.20	79.82	79.29	82.83	-3.01
B	B2	B3	0.00	0.00	4	11.30	1.13	0.00	64.60	302	48			0.013	0.0010	45.5	3.62	0.30	0.00	0.00	71.58	71.28	5.14	0.20	0.61	0.20	79.29	78.68	82.43	-3.14
B	B3	B1001	0.00	0.00	4	12.69	1.11	0.00	64.60	93	48			0.013	0.0020	64.4	5.12	0.19	0.00	0.00	71.28	71.09	5.14	0.20	0.19	0.20	78.68	78.49	78.53	0.15

Bonbrook Plantation South Section 10

3-YR Storm Calcs

LINE	FROM MH	TO MH	AREA (AC)	TOTAL AREA (AC)	CITY CURVE NO.	Tc (MIN)	CI	Q INPUT (CFS)	Q TOTAL (CFS)	REACH (FT)	LINE SIZE (IN)	MANN. CONST.	SLOPE (%)	DESIGN Q (CFS)	DESIGN V (FPS)	SLOPE FALL (FT)	M.H. DROP (FT)	OTHER LOSS (FT)	FLOWLINE UP-STREAM (FT)	FLOWLINE DOWN-STREAM (FT)	ACTUAL V (FPS)	THEOR. H.G.L. SLOPE (%)	H (FT)	UPST. H.G.L. (FT)	DNST. H.G.L. (FT)	UPST. TC ELEV. (FT)	H.G.L. IN RELATION TO TOC (FT)
	LINE A																										
A	1	2	3.00	3.00	4	10.00	1.15	0.00	3.45	186.499	24	0.013	0.0018	9.6	3.06	0.34	0.00	0.00	75.88	75.54	1.10	0.02	0.04	80.91	80.87	82.81	-1.90
A	2	3	0.00	3.00	4	11.01	1.13	0.00	3.39	87.941	24	0.013	0.0018	9.6	3.06	0.16	0.00	0.00	75.54	75.38	1.08	0.02	0.02	80.87	80.85	83.70	-2.83
A	3	4	0.00	3.00	4	11.49	1.12	0.00	3.37	139.101	24	0.013	0.0018	9.6	3.06	0.25	0.00	0.00	75.38	75.13	1.07	0.02	0.03	80.85	80.82	83.20	-2.35
A	4	5	2.83	5.83	4	12.25	1.11	0.00	6.48	138.859	30	0.013	0.0013	14.8	3.02	0.18	0.50	0.00	74.63	74.45	1.32	0.02	0.03	80.82	80.78	82.66	-1.84
A	5	6	0.00	5.83	4	13.02	1.10	0.00	6.42	72.526	30	0.013	0.0013	14.8	3.02	0.09	0.00	0.00	74.45	74.36	1.31	0.02	0.02	80.78	80.76	83.20	-2.42
A	6	7	0.80	6.63	4	13.42	1.10	0.00	7.26	29.859	30	0.013	0.0013	14.8	3.02	0.04	0.00	0.00	74.36	74.32	1.48	0.03	0.01	80.76	80.75	83.32	-2.56
A	7	8	0.00	6.63	4	13.58	1.09	0.00	7.25	79.507	36	0.013	0.0010	21.1	2.99	0.08	7.48	0.00	66.10	66.02	1.03	0.01	0.01	80.75	80.74	83.10	-2.35
A	8	9	0.00	6.63	4	14.02	1.09	0.00	7.21	67.484	36	0.013	0.0010	21.1	2.99	0.07	-5.59	0.00	71.61	71.54	1.02	0.01	0.01	80.74	80.74	82.60	-1.86
A	9	10	2.45	9.08	4	14.40	1.08	0.00	9.83	162.484	36	0.013	0.0010	21.1	2.99	0.16	0.00	0.00	71.54	71.38	1.39	0.02	0.04	80.74	80.70	82.35	-1.61
A	10	11	0.00	9.08	4	15.31	1.07	0.00	9.73	120.981	36	0.013	0.0010	21.1	2.99	0.12	0.00	0.00	71.38	71.26	1.38	0.02	0.03	80.70	80.68	82.81	-2.11
A	11	12	0.92	10.00	4	15.98	1.06	0.00	10.64	63.319	36	0.013	0.0010	21.1	2.99	0.06	1.20	0.00	70.06	70.00	1.51	0.03	0.02	80.68	80.66	82.30	-1.62
A	12	Stub	15.86	25.86	4	16.33	1.06	0.00	27.43	157.702	48	0.013	0.0010	45.5	3.62	0.16	0.00	0.00	70.00	69.84	2.18	0.04	0.06	80.66	80.60	82.09	-1.43
A	Stub	A13	0.00	25.86	4	17.06	1.05	0.00	27.24	8.000	48	0.013	0.0010	45.5	3.62	0.01	0.00	0.00	69.84	69.83	2.17	0.04	0.00	80.60	80.60	83.34	-2.74
A	A13	Outfall	0.00	25.86	4	17.09	1.05	0.00	27.23	155.067	54	0.013	0.0010	62.3	3.92	0.16	0.00	0.00	69.83	69.67	1.71	0.02	0.03	80.60	80.57	83.85	-3.25
	LINE A INLETS																										
A	101	102	1.03	1.03	4	10.00	1.15	0.00	1.18	29.002	24	0.013	0.0069	18.8	5.99	0.20	0.00	0.00	78.01	77.81	0.38	0.00	0.00	80.91	80.91	82.81	-1.90
A	102	1	1.97	3.00	4	10.08	1.15	0.00	3.44	7.500	24	0.013	0.0133	26.2	8.34	0.10	0.00	0.00	77.81	77.71	1.10	0.02	0.00	80.91	80.91	82.81	-1.90
A	401	402	1.02	1.02	4	10.00	1.15	0.00	1.17	29.000	24	0.013	0.0069	18.8	6.00	0.20	0.00	0.00	77.86	77.66	0.37	0.00	0.00	80.82	80.82	82.66	-1.84
A	402	4	1.81	2.83	4	10.08	1.15	0.00	3.25	7.500	24	0.013	0.0133	26.2	8.34	0.10	0.00	0.00	77.66	77.56	1.03	0.02	0.00	80.82	80.82	82.66	-1.84
A	901	902	1.30	1.30	4	10.00	1.15	0.00	1.49	29.000	24	0.013	0.0069	18.8	6.00	0.20	0.00	0.00	77.55	77.35	0.48	0.00	0.00	80.74	80.74	82.35	-1.61
A	902	9	1.15	2.45	4	10.08	1.15	0.00	2.81	7.500	24	0.013	0.0133	26.2	8.34	0.10	1.00	0.00	77.35	77.25	0.89	0.02	0.00	80.74	80.74	82.35	-1.61
A	1101	11	0.92	0.92	4	10.00	1.15	0.00	1.06	10.193	24	0.013	0.0196	31.8	10.11	0.20	0.00	0.00	77.50	77.30	0.34	0.00	0.00	80.68	80.68	82.30	-1.62
	LINE B																										
B	1	A6	0.80	0.80	4	10.00	1.15	0.00	0.92	132.048	24	0.013	0.0018	9.6	3.06	0.24	0.00	0.00	79.00	78.76	0.29	0.00	0.00	81.00	80.76	82.78	-1.78
	LINE B INLETS																										
B	101	102	0.62	0.62	4	10.00	1.15	0.00	0.71	29.000	24	0.013	0.0069	18.8	6.00	0.20	0.50	0.00	79.30	79.10	0.23	0.00	0.00	81.30	81.10	82.78	-1.48
B	102	1	0.18	0.80	4	10.08	1.15	0.00	0.92	7.500	24	0.013	0.0133	26.2	8.34	0.10	0.67	0.00	79.10	79.00	0.29	0.00	0.00	81.10	81.00	82.78	-1.68
	LINE C																										
C	1	2	2.69	2.69	4	10.00	1.15	0.00	3.09	76.774	24	0.013	0.0018	9.6	3.06	0.14	0.00	0.00	77.78	77.64	0.98	0.02	0.01	80.88	80.87	82.88	-2.00
C	2	3	0.00	2.69	4	10.42	1.14	0.00	3.07	228.929	24	0.013	0.0018	9.6	3.06	0.41	0.00	0.00	77.64	77.23	0.98	0.02	0.04	80.87	80.83	83.30	-2.43
C	3	4	2.40	5.09	4	11.66	1.12	0.00	5.70	61.390	30	0.013	0.0013	14.8	3.02	0.08	0.50	0.00	76.73	76.65	1.16	0.02	0.01	80.83	80.82	82.20	-1.37
C	4	5	0.00	5.09	4	12.00	1.12	0.00	5.68	29.766	30	0.013	0.0013	14.8	3.02	0.04	0.00	0.00	76.65	76.61	1.16	0.02	0.01	80.82	80.81	82.60	-1.78
C	5	6	1.47	6.56	4	12.17	1.11	0.00	7.30	268.678	36	0.013	0.0010	21.1	2.99	0.27	0.50	0.00	76.11	75.84	1.03	0.01	0.03	80.81	80.78	82.45	-1.64
C	6	7	2.26	8.82	4	13.66	1.09	0.00	9.63	28.951	36	0.013	0.0010	21.1	2.99	0.03	0.00	0.00	75.84	75.81	1.36	0.02	0.01	80.78	80.77	82.30	-1.52
C	7	8	1.22	10.04	4	13.82	1.09	0.00	10.94	205.196	36	0.013	0.0010	21.1	2.99	0.21	0.00	0.00	75.81	75.61	1.55	0.03	0.05	80.77	80.72	82.20	-1.43
C	8	9	0.00	10.04	4	14.97	1.08	0.00	10.80	282.718	48	0.013	0.0010	45.5	3.62	0.28	2.60	0.00	73.01	72.73	0.86	0.01	0.02	80.72	80.70	82.70	-1.98
C	9	10	4.00	14.04	4	16.27	1.06	0.00	14.90	257.470	48	0.013	0.0010	45.5	3.62	0.26	0.00	0.00	72.73	72.47	1.19	0.01	0.03	80.70	80.67	81.80	-1.10
C	10	11	0.00	14.04	4	17.45	1.05	0.00	14.73	137.661	48	0.013	0.0010	45.5	3.62	0.14	1.27	0.00	71.20	71.06	1.17	0.01	0.01	80.67	80.66	82.30	-1.63
C	C11	A12	1.82	15.86	4	18.09	1.04	0.00	16.55	18.887	48	0.013	0.0010	45.5	3.62	0.02	0.00	0.00	71.06	71.03	1.32	0.00	0.00	80.66	80.66	81.70	-1.04
	LINE C INLETS																										
C	101	102	1.47	1.47	4	10.00	1.15	0.00	1.69	30.437	24	0.013	0.0066	18.4	5.85	0.20	0.00	0.00	78.08	77.88	0.54	0.01	0.00	80.89	80.89	82.88	-1.99
C	102	1	1.22	2.69	4	10.09	1.15	0.00	3.09	7.500	24	0.013	0.0133	26.2	8.34	0.10	0.00	0.00	77.88	77.78	0.98	0.02	0.00	80.89	80.88	82.88	-1.99
C	301	302	1.30	1.30	4	10.00	1.15	0.00	1.49	29.000	24	0.013	0.0069	18.8	6.00	0.20	0.00	0.00	77.40	77.20	0.48	0.00	0.00	80.83	80.83	82.20	-1.37
C	302	3	1.10	2.40	4	10.08	1.15	0.00	2.75	7.509	24	0.013	0.0133	26.2	8.33	0.10	0.00	0.00	77.20	77.10	0.88	0.01	0.00	80.83	80.83	82.20	-1.37
C	501	5	1.47	1.47	4	10.00	1.15	0.00	1.69	7.293	24	0.013	0.0137	26.6	8.45	0.10	0.00	0.00	77.65	77.55	0.54	0.01	0.00	80.81	80.81	82.45	-1.64
C	701	7	1.22	1.22	4	10.00	1.15	0.00	1.40	7.300	24	0.013	0.0137	26.5	8.45	0.10	0.00	0.00	77.40	77.30	0.45	0.00	0.00	80.77	80.77	82.20	-1.43
C	901	902	2.21	2.21	4	10.00	1.15	0.00	2.54	29.056	24	0.013	0.0069	18.8	5.99	0.20	0.00	0.00	77.00	76.80	0.81	0.01	0.00	80.71	80.71	81.80	-1.09
C	902	9	1.79	4.00	4	10.08	1.15	0.00	4.59	9.283	24	0.013	0.0108	23.5	7.49	0.10	0.00	0.00	76.80	76.70	1.46	0.04	0.00	80.71	80.70	81.80	-1.09
C	1101	1102	1.08	1.08	4	10.00	1.15	0.00	1.24	29.056	24	0.013	0.0069	18.8	5.99	0.20	0.00	0.00	76.90	76.70	0.39	0.00	0.00	80.66	80.66	81.70	-1.04
C	1102	11	0.74	1.82	4	10.08	1.15	0.00	2.09	9.283	30	0.013	0.0108	42.7	8.69	0.10	0.50	0.00	76.20	76.10	0.43	0.00	0.00	80.66	80.66	81.70	-1.04
	LINE D																										
D	1	C6	2.26	2.26	4	10.00	1.15	0.00	2.60	60.770	24	0.013	0.0018	9.6	3.06	0.11	0.00	0.00	77.01	76.90	0.83	0.01	0.01	80.79	80.78	82.11	-1.32
	LINE D INLETS																										
D	101	102	1.06	1.06	4	10.00	1.15	0.00	1.22	29.244	24	0.013	0.0068	18.8	5.97	0.20	0.00	0.00	77.31	77.11	0.39	0.00	0.00	80.79	80.79	82.11	-1.32
	102	1	1.20	2.26	4	10.08	1.15	0.00	2.59	7.541	24	0.013	0.0133	26.1	8.31	0.10	0.00	0.00	77.11	77.01	0.83	0.01	0.00	80.79	80.79	82.11	-1.32

BONBROOK PLANTATION SOUTH POND G

STATE OF TEXAS
MICHEAL WANG
92053
LICENSED
PROFESSIONAL ENGINEER
3/5/2018

BENCHMARK:

A BRASS DISK STAMPED K-1219, SET IN A CONCRETE HEADWALL, LOCATED IN FORT BEND COUNTY, 0.15 MILE SOUTH OF
THE INTERSECTION OF STATE HIGHWAY 36 AND MEYER ROAD, SET IN THE TOP OF A CONCRETE HEADWALL AND 1.7 FEET SOUTH OF THE NORTH END OF THE EAST CONCRETE HEADWALL
OF A CULVERT, 24 FEET EAST OF THE CENTERLINE OF STATE HIGHWAY 36, AND LEVEL WITH THE HIGHWAY'S SURFACE.
NAVD-88 (1991 ADJ.) ELEV = 91.69 FEET

TBM (LJA 1)
A ⅝-INCH IRON ROD WITH CAP SET AT THE INTERSECTION OF BRYAN ROAD AND SPACEK ROAD, APPROXIMATELY 18.8 FEET NORTH OF THE CENTERLINE OF BRYAN ROAD AND 40.4 FEET WEST OF THE CENTERLINE OF SPACEK ROAD.
NAVD-88(1991 ADJ.) ELEV = 90.758 FEET

INTERNAL 100-YR FLOOD ELEV = 79.38
PER LJA REPORT "MASTER DRAINAGE PLAN FOR BONBROOK PLANTATION DEVELOPMENT" FORT BEND COUNTY MUD 155, JAN. 2005

FIRM PANEL: 48157C0265 L
DATE: APRIL 2, 2014

NOTES:

1) ALL UTILITIES ARE PROPOSED UNLESS OTHERWISE NOTED.

2) THIS CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION

3) CAUTION:
THERE ARE EXISTING UTILITIES WITHIN THE PROJECT AREA. CONTRACTOR SHALL FIELD VERIFY LOCATION OF ALL EXISTING UTILITIES AFFECTING PROPOSED UTILITIES PRIOR TO CONSTRUCTION. IN THE EVEN OF CONFLICT BETWEEN EXISTING UTILITIES AND PROPOSED UTILITIES, THE CONTRACTOR SHALL SUSPEND CONSTRUCTION IN THE VICINITY OF THE CONFLICT, AND SHALL COMMENCE ONLY UPON AUTHORIZATION BY OWNER.

RECORD DRAWING

I CERTIFY THAT THIS DRAWING REFLECTS THE IMPROVEMENTS CONSTRUCTED AS TO SIZE, LOCATION AND GRADE AND THAT THE CONSTRUCTION WAS IN FULL COMPLIANCE WITH THE CONTRACT DOCUMENTS

BY _____ DATE _____

TITLE _____

DATE	REVISION	BY

FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED: _____ DEVELOPMENT COORDINATOR

DATE: 4/13/18

CITY OF ROSENBERG FOUNDED 1885

B-BROOK LAND PARTNERS, L.P.

BONBROOK PLANTATION SOUTH DETENTION POND "G"

3-YR DRAINAGE CALCULATIONS

LJA Engineering, Inc.
2929 Briarpark Drive
Suite 600
Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

LJA PROJECT NO.: 2304-1110B

DRAWN: L.O.R. DESIGN: M.F./K.T. DATE: FEBRUARY 2018

SCALE: NONE

SHEET NO. 7 OF 20

BONBROOK PLANTATION SOUTH DETENTION POND "G" - JOB NO. 2304-1110B

Bonbrook Plantation Pond G
3-YR Adj. Storm Calcs

LINE	FROM MH	TO MH	AREA (AC)	TOTAL AREA (AC)	CITY CURVE NO.	Tc (MIN)	CI	Q INPUT (CFS)	Q TOTAL (CFS)	REACH (FT)	LINE SIZE (IN)	LINE SIZE (FT)	LINE SIZE (FT)	MANN. CONST.	SLOPE (%)	DESIGN Q (CFS)	DESIGN V (FPS)	SLOPE FALL (FT)	M.H. DROP (FT)	OTHER LOSS (FT)	FLOWLINE UP-STREAM (FT)	FLOWLINE DOWN-STREAM (FT)	ACTUAL V (FPS)	THEOR. H.G.L. SLOPE (%)	H (FT)	ACTUAL H.G.L. SLOPE (%)	UPST. H.G.L. ELEV. (FT)	DNST. H.G.L. ELEV. (FT)	UPST. TC (FT)	H.G.L. IN RELATION TO TOC (FT)
	DITCH 1																													
LINE	Ditch	A1	0.00	0.00	4	10.00	1.15	68.70	137.40	52	0	6	3	0.013	0.0010	65.1	1.02	0.05	0.00	0.00	76.65	76.60	19.44	0.01	0.01	0.10	79.65	79.60	82.45	-2.80
A	A1	A2	0.00	0.00	4	10.84	1.13	0.00	137.40	227	0	6	3	0.013	0.0010	65.1	1.02	0.23	0.00	0.00	76.60	76.37	19.44	0.01	0.03	0.10	79.60	79.37	84.20	-4.60
A	A2	A3	0.00	0.00	4	14.54	1.08	0.00	137.40	133	0	6	3	0.013	0.0010	65.1	1.02	0.13	4.87	0.00	71.50	71.37	19.44	0.01	0.02	0.01	78.54	78.52	82.90	-4.36
A	A3	A4	0.00	0.00	4	16.71	1.06	0.00	137.40	173	0	6	3	0.013	0.0010	65.1	1.02	0.17	-0.96	0.00	72.33	72.16	19.44	0.01	0.02	0.01	78.52	78.50	82.92	-4.40
A	A4	A1001	0.00	0.00	4	19.53	1.03	0.00	137.40	71	0	6	3	0.013	0.0010	65.1	1.02	0.07	0.00	0.00	72.16	72.08	19.44	0.01	0.01	0.01	78.50	78.49	83.37	-4.87
	Adjustment factor		**2.00**																											
	DITCH 2																													
LINE	Ditch 2	B1	0.00	0.00	4	10.00	1.15	64.60	67.18	32	48			0.013	0.0049	100.8	8.02	0.16	0.00	0.00	75.00	74.84	5.35	0.22	0.07	0.22	80.00	79.93	82.81	-2.81
B	B1	B2	0.00	0.00	4	10.07	1.15	0.00	67.18	267	48			0.013	0.0010	45.5	3.62	0.27	2.99	0.00	71.85	71.59	5.35	0.22	0.58	0.22	79.93	79.35	82.83	-2.90
B	B2	B3	0.00	0.00	4	11.30	1.13	0.00	67.18	302	48			0.013	0.0010	45.5	3.62	0.30	0.00	0.00	71.58	71.27	5.35	0.22	0.66	0.22	79.35	78.69	82.43	-3.08
B	B3	B1001	0.00	0.00	4	12.69	1.11	0.00	67.18	93	48			0.013	0.0020	64.4	5.12	0.19	0.00	0.00	71.28	71.10	5.35	0.22	0.20	0.22	78.69	78.49	78.53	0.16
	Adjustment factor		**1.04**																											

Bonbrook Plantation South Section 10
3-YR Adj. Storm Calcs

LINE	FROM MH	TO MH	AREA (AC)	TOTAL AREA (AC)	CITY CURVE NO.	Tc (MIN)	CI	Q INPUT (CFS)	Q TOTAL (CFS)	REACH (FT)	LINE SIZE (IN)	LINE SIZE (FT)	LINE SIZE (FT)	MANN. CONST.	SLOPE (%)	DESIGN Q (CFS)	DESIGN V (FPS)	SLOPE FALL (FT)	M.H. DROP (FT)	OTHER LOSS (FT)	FLOWLINE UP-STREAM (FT)	FLOWLINE DOWN-STREAM (FT)	ACTUAL V (FPS)	THEOR. H.G.L. SLOPE (%)	H (FT)	ACTUAL H.G.L. SLOPE (%)	UPST. H.G.L. ELEV. (FT)	DNST. H.G.L. ELEV. (FT)	UPST. TC (FT)	H.G.L. IN RELATION TO TOC (FT)
	LINE A																													
A	1	2	3.00	3.00	4	10.00	1.15	0.00	9.93	186		24		0.013	0.0018	9.6	3.06	0.34	0.00	0.00	75.88	75.54	3.16	0.19	0.36	0.19	83.38	83.02	82.81	0.57
A	2	3	0.00	3.00	4	11.01	1.13	0.00	9.77	88		24		0.013	0.0018	9.6	3.06	0.16	0.00	0.00	75.54	75.38	3.11	0.19	0.16	0.19	83.02	82.86	83.70	-0.68
A	3	4	0.00	3.00	4	11.49	1.12	0.00	9.71	139		24		0.013	0.0018	9.6	3.06	0.25	0.00	0.00	75.38	75.13	3.09	0.18	0.25	0.18	82.86	82.60	83.20	-0.34
A	4	5	2.83	5.83	4	12.25	1.11	0.00	18.67	139		30		0.013	0.0013	14.8	3.02	0.18	0.50	0.00	74.63	74.45	3.80	0.21	0.29	0.21	82.60	82.32	82.66	-0.06
A	5	6	0.00	5.83	4	13.02	1.10	0.00	18.48	73		30		0.013	0.0013	14.8	3.02	0.09	0.00	0.00	74.45	74.36	3.77	0.20	0.15	0.20	82.32	82.17	83.20	-0.88
A	6	7	0.80	6.63	4	13.42	1.10	0.00	20.92	30		30		0.013	0.0013	14.8	3.02	0.04	0.00	0.00	74.36	74.32	4.26	0.26	0.08	0.26	82.17	82.09	83.32	-1.15
A	7	8	0.00	6.63	4	13.58	1.09	0.00	20.87	80		36		0.013	0.0010	21.1	2.99	0.08	7.48	0.00	66.10	66.02	2.95	0.10	0.08	0.10	82.09	82.02	83.10	-1.01
A	8	9	0.00	6.63	4	14.02	1.09	0.00	20.77	67		36		0.013	0.0010	21.1	2.99	0.07	-5.59	0.00	71.61	71.54	2.94	0.10	0.07	0.10	82.02	81.95	82.60	-0.58
A	9	10	2.45	9.08	4	14.40	1.08	0.00	28.32	162		36		0.013	0.0010	21.1	2.99	0.16	0.00	0.00	71.54	71.38	4.01	0.18	0.29	0.18	81.95	81.66	82.35	-0.40
A	10	11	0.00	9.08	4	15.31	1.07	0.00	28.04	121		36		0.013	0.0010	21.1	2.99	0.12	0.00	0.00	71.38	71.26	3.97	0.18	0.21	0.18	81.66	81.45	82.81	-1.15
A	11	12	0.92	10.00	4	15.98	1.06	0.00	30.66	63		36		0.013	0.0010	21.1	2.99	0.06	1.20	0.00	70.06	70.00	4.34	0.21	0.13	0.21	81.45	81.31	82.30	-0.85
A	12	Stub	15.86	25.86	4	16.33	1.06	0.00	79.02	158		48		0.013	0.0010	45.5	3.62	0.16	0.00	0.00	70.00	69.84	6.29	0.30	0.47	0.30	81.31	80.84	82.09	-0.78
A	Stub	A13	0.00	25.86	4	17.06	1.05	0.00	78.46	8		48		0.013	0.0010	45.5	3.62	0.01	0.00	0.00	69.84	69.83	6.24	0.30	0.02	0.30	80.84	80.82	83.34	-2.50
A	A13	Outfall	0.00	25.86	4	17.09	1.05	0.00	78.43	155		54		0.013	0.0010	62.3	3.92	0.16	0.00	0.00	69.83	69.67	4.93	0.16	0.25	0.16	80.82	80.57	83.85	-3.03
	Adjustment factor		**2.88**																											
	LINE A INLETS																													
A	101	102	1.03	1.03	4	10.00	1.15	0.00	3.41	29		24		0.013	0.0069	18.8	5.99	0.20	0.00	0.00	78.01	77.81	1.08	0.02	0.01	0.02	83.40	83.39	82.81	0.59
A	102	1	1.97	3.00	4	10.08	1.15	0.00	9.91	8		24		0.013	0.0133	26.2	8.34	0.10	0.00	0.00	77.81	77.71	3.16	0.19	0.01	0.19	83.39	83.38	82.81	0.58
A	401	402	1.02	1.02	4	10.00	1.15	0.00	3.38	29		24		0.013	0.0069	18.8	6.00	0.20	0.00	0.00	77.86	77.66	1.07	0.02	0.01	0.02	82.62	82.62	82.66	-0.04
A	402	4	1.81	2.83	4	10.08	1.15	0.00	9.35	8		24		0.013	0.0133	26.2	8.34	0.10	0.00	0.00	77.66	77.56	2.98	0.17	0.01	0.17	82.62	82.60	82.66	-0.04
A	901	902	1.30	1.30	4	10.00	1.15	0.00	4.30	29		24		0.013	0.0069	18.8	6.00	0.20	0.00	0.00	77.55	77.35	1.37	0.04	0.01	0.04	81.97	81.96	82.35	-0.38
A	902	9	1.15	2.45	4	10.08	1.15	0.00	8.10	8		24		0.013	0.0133	26.2	8.34	0.10	1.00	0.00	77.35	77.25	2.58	0.13	0.01	0.13	81.96	81.95	82.35	-0.39
A	1101	11	0.92	0.92	4	10.00	1.15	0.00	3.04	10		24		0.013	0.0196	31.8	10.11	0.20	0.00	0.00	77.50	77.30	0.97	0.02	0.00	0.02	81.45	81.45	82.30	-0.85
	LINE B																													
B	1	A6	0.80	0.80	4	10.00	1.15	0.00	2.65	132		24		0.013	0.0018	9.6	3.06	0.24	0.00	0.00	79.00	78.76	0.84	0.01	0.02	0.01	82.19	82.17	82.78	-0.59
	Adjustment factor		**2.88**																											
B	101	102	0.62	0.62	4	10.00	1.15	0.00	2.05	29		24		0.013	0.0069	18.8	6.00	0.20	0.50	0.00	79.30	79.10	0.65	0.01	0.00	0.01	82.19	82.19	82.78	-0.59
B	102	1	0.18	0.80	4	10.08	1.15	0.00	2.64	8		24		0.013	0.0133	26.2	8.34	0.10	0.67	0.00	79.10	79.00	0.84	0.01	0.00	0.01	82.19	82.19	82.78	-0.59
	LINE C																													
C	1	2	2.69	2.69	4	10.00	1.15	0.00	8.90	77		24		0.013	0.0018	9.6	3.06	0.14	0.00	0.00	77.78	77.64	2.83	0.15	0.12	0.15	83.23	83.11	82.88	0.35
C	2	3	0.00	2.69	4	10.42	1.14	0.00	8.84	229		24		0.013	0.0018	9.6	3.06	0.41	0.00	0.00	77.64	77.23	2.81	0.15	0.35	0.15	83.11	82.76	83.30	-0.19
C	3	4	2.40	5.09	4	11.66	1.12	0.00	16.43	61		30		0.013	0.0013	14.8	3.02	0.08	0.50	0.00	76.73	76.65	3.35	0.16	0.10	0.16	82.76	82.66	82.20	0.56
C	4	5	0.00	5.09	4	12.00	1.12	0.00	16.35	30		30		0.013	0.0013	14.8	3.02	0.04	0.00	0.00	76.65	76.61	3.33	0.16	0.05	0.16	82.66	82.61	82.60	0.06
C	5	6	1.47	6.56	4	12.17	1.11	0.00	21.03	269		36		0.013	0.0010	21.1	2.99	0.27	0.50	0.00	76.11	75.84	2.97	0.10	0.27	0.10	82.61	82.35	82.45	0.16
C	6	7	2.26	8.82	4	13.66	1.09	0.00	27.74	29		36		0.013	0.0010	21.1	2.99	0.03	0.00	0.00	75.84	75.81	3.92	0.17	0.05	0.17	82.35	82.30	82.30	0.05
C	7	8	1.22	10.04	4	13.82	1.09	0.00	31.52	205		36		0.013	0.0010	21.1	2.99	0.21	0.00	0.00	75.81	75.61	4.46	0.22	0.46	0.22	82.30	81.84	82.20	0.10
C	8	9	0.00	10.04	4	14.97	1.08	1.00	34.00	283		48		0.013	0.0010	45.5	3.62	0.28	2.60	0.00	73.01	72.73	2.71	0.06	0.16	0.06	81.84	81.69	82.70	-0.86
C	9	10	4.00	14.04	4	16.27	1.06	0.00	42.93	257		48		0.013	0.0010	45.5	3.62	0.26	0.00	0.00	72.73	72.47	3.42	0.09	0.23	0.09	81.69	81.46	81.80	-0.11
C	10	11	0.00	14.04	4	17.45	1.05	0.00	42.44	138		48		0.013	0.0010	45.5	3.62	0.14	1.27	0.00	71.20	71.06	3.38	0.09	0.12	0.09	81.46	81.34	82.30	-0.84
C	C11	A12	1.82	15.86	4	18.09	1.04	1.00	50.54	19		48		0.013	0.0010	45.5	3.62	0.02	0.00	0.00	71.06	71.04	4.02	0.12	0.02	0.12	81.34	81.31	81.70	-0.36
	Adjustment factor		**2.88**																											
	LINE C INLETS																													
C	101	102	1.47	1.47	4	10.00	1.15	0.00	4.86	30		24		0.013	0.0066	18.4	5.85	0.20	0.00	0.00	78.08	77.88	1.55	0.05	0.01	0.05	83.25	83.24	82.88	0.37
C	102	1	1.22	2.69	4	10.09	1.15	0.00	8.89	8		24		0.013	0.0133	26.2	8.34	0.10	0.00	0.00	77.88	77.78	2.83	0.15	0.01	0.15	83.24	83.23	82.88	0.36
C	301	302	1.30	1.30	4	10.00	1.15	0.00	4.30	29		24		0.013	0.0069	18.8	6.00	0.20	0.00	0.00	77.40	77.20	1.37	0.04	0.01	0.04	82.78	82.77	82.20	0.58
C	302	3	1.10	2.40	4	10.08	1.15	0.00	7.93	8		24		0.013	0.0133	26.2	8.33	0.10	0.00	0.00	77.20	77.10	2.52	0.12	0.01	0.12	82.77	82.76	82.20	0.57
C	501	5	1.47	1.47	4	10.00	1.15	0.00	4.86	7		24		0.013	0.0137	26.6	8.45	0.10	0.00	0.00	77.65	77.55	1.55	0.05	0.00	0.05	82.62	82.61	82.45	0.17
C	701	7	1.22	1.22	4	10.00	1.15	0.00	4.04	7		24		0.0130	0.0137	26.5	8.45	0.10	0.00	0.00	77.40	77.30	1.29	0.03	0.00	0.03	82.30	82.30	82.20	0.10
C	901	902	2.21	2.21	4	10.01	1.15	0.00	7.31	29		24		0.0130	0.0069	18.8	5.99	0.20	0.00	0.00	77.00	76.80	2.33	0.10	0.03	0.10	81.75	81.72	81.80	-0.05
C	902	9	1.79	4.00	4	10.10	1.15	0.00	13.22	9		24		0.0130	0.0108	23.5	7.49	0.10	0.00	0.00	76.80	76.70	4.21	0.34	0.03	0.34	81.72	81.69	81.80	-0.08
C	1101	1102	1.08	1.08	4.00	10.00	1.15	0.00	3.57	29		24		0.0130	0.0069	18.8	5.99	0.20	0.00	0.00	76.90	76.70	1.14	0.02	0.01	0.02	81.35	81.34	81.70	-0.35
C	1102	11	0.74	1.82	4.00	10.08	1.15	0.00	6.01	9		30		0.0130	0.0108	42.7	8.69	0.10	0.50	0.00	76.20	76.10	1.23	0.02	0.00	0.02	81.34	81.34	81.70	-0.36
	LINE D																													
D	1	C6	1.08	1.08	4	10.00	1.15	0.00	3.57	61		24		0.0130	0.0069	18.8	5.99	0.42	0.00	0.00	76.90	76.48	1.14	0.02	0.02	0.02	82.36	82.35	82.11	0.25
	Adjustment factor		**2.88**																											
	LINE D INLETS																													
D	101	102	1.06	1.06	4.00	10.00	1.15	0.00	3.51	29		24		0.0130	0.0068	18.8	5.97	0.20	0.00	0.00	77.31	77.11	1.12	0.02	0.01	0.02	82.38	82.37	82.11	0.27
	102	1	1.20	2.26	4.00	10.08	1.15	0.00	7.47	8		24		0.0130	0.0133	26.1	8.31	0.10	0.00	0.00	77.11	77.01	2.38	0.11	0.01	0.11	82.37	82.36	82.11	0.26

BONBROOK PLANTATION SOUTH POND G

3-YEAR ADJUSTED STORM CALCULATIONS SHOW THE MAXIMUM AMOUNT OF CFS THAT CAN BE HYDRAULICALLY FORCED THROUGH THE PIPES BEFORE THE WATER SHEET FLOWS OVER THE DOWNSTREAM HIGH POINT. THE ADJUSTMENT FACTOR IS CHANGED UNTIL THE HGL IN RELATION TO TOC (LAST COLUMN) IS EQUAL TO THE DIFFERENCE IN HEIGHT OF THE LOW POINT AND THE DOWNSTREAM HIGH POINT.

HERE THAT IS AT INLETS C101 AND C102. THE TOC EQUALS 82.50 AT THE INLETS AND THE DOWNSTREAM HIGH POINT IS AT 83.03. THE ADJUSTMENT FACTOR IS CHANGED UNTIL THE LAST COLUMN VALUE AT INLETS A101 AND A102 IS EQUAL TO 0.53 (83.03– 82.50).

STATE OF TEXAS
MICHEAL WANG
92053
LICENSED
PROFESSIONAL ENGINEER
3/3/2019

BENCHMARK:
A BRASS DISK STAMPED K-1219, SET IN A CONCRETE HEADWALL, LOCATED IN FORT BEND COUNTY, 0.15 MILE SOUTH OF
THE INTERSECTION OF STATE HIGHWAY 36 AND MEYER ROAD, SET IN THE TOP OF A CONCRETE HEADWALL AND 1.7 FEET SOUTH OF THE NORTH END OF THE EAST CONCRETE HEADWALL
OF A CULVERT, 24 FEET EAST OF THE CENTERLINE OF STATE HIGHWAY 36, AND LEVEL WITH THE HIGHWAY'S SURFACE.
NAVD-88 (1991 ADJ.) ELEV = 91.69 FEET

TBM (LJA 1)
A ⅝-INCH IRON ROD WITH CAP SET AT THE INTERSECTION OF BRYAN ROAD AND SPACEK ROAD, APPROXIMATELY 18.8 FEET NORTH OF THE CENTERLINE OF BRYAN ROAD AND 40.4 FEET WEST OF THE CENTERLINE OF SPACEK ROAD.
NAVD-88(1991 ADJ.) ELEV = 90.758 FEET

INTERNAL 100-YR FLOOD ELEV = 79.38
PER LJA REPORT "MASTER DRAINAGE PLAN FOR BONBROOK PLANTATION DEVELOPMENT" FORT BEND COUNTY MUD 155, JAN. 2005

FIRM PANEL: 48157C0265 L
DATE: APRIL 2, 2014

NOTES:
1) ALL UTILITIES ARE PROPOSED UNLESS OTHERWISE NOTED.
2) THIS CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION
3) CAUTION:
THERE ARE EXISTING UTILITIES WITHIN THE PROJECT AREA. CONTRACTOR SHALL FIELD VERIFY LOCATION OF ALL EXISTING UTILITIES AFFECTING PROPOSED UTILITIES PRIOR TO CONSTRUCTION. IN THE EVEN OF CONFLICT BETWEEN EXISTING UTILITIES AND PROPOSED UTILITIES, THE CONTRACTOR SHALL SUSPEND CONSTRUCTION IN THE VICINITY OF THE CONFLICT, AND SHALL COMMENCE ONLY UPON AUTHORIZATION BY OWNER.

RECORD DRAWING
I CERTIFY THAT THIS DRAWING REFLECTS THE IMPROVEMENTS CONSTRUCTED AS TO SIZE, LOCATION AND GRADE AND THAT THE CONSTRUCTION WAS IN FULL COMPLIANCE WITH THE CONTRACT DOCUMENTS
BY _____ DATE _____
TITLE _____

DATE	REVISION	BY

FORT BEND COUNTY ENGINEERING DEPARTMENT
APPROVED: _____ DEVELOPMENT COORDINATOR
DATE: 4/13/18

CITY OF ROSENBERG FOUNDED 1885

B-BROOK LAND PARTNERS, L.P.

BONBROOK PLANTATION SOUTH DETENTION POND "G"

3-YR ADJ. DRAINAGE CALCULATIONS

LJA Engineering, Inc.
2929 Briarpark Drive
Suite 600
Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

LJA PROJECT NO.: 2304-1110B
DRAWN: L.O.R. DESIGN: M.F./K.T. DATE: FEBRUARY 2018
SCALE: NONE
SHEET NO. 8 OF 20

BONBROOK PLANTATION SOUTH DETENTION POND "G" – JOB NO. 2304-1110B

Date\Time : Fri, 09 Mar 2018 – 4:03pm User Name : ktrochsel
Path\Name : I:\Projdsk1\2304\1110B\ACAD_Sheet_Files\8_3-YR-ADJ-DRAINAGE CALCS.dwg

Bonbrook Plantation Pond G
100-YR Storm Calcs FBC

LINE	FROM MH	TO MH	AREA (AC)	TOTAL AREA (AC)	C VALUE	Tc (MIN)	I	Q INPUT (CFS)	Q TOTAL (CFS)	REACH (FT)	LINE SIZE (IN)	(FT)	(FT)	LINE MANN. CONST.	LINE SLOPE	DESIGN Q (CFS)	DESIGN V (FPS)	SLOPE FALL (FT)	M.H. DROP (FT)	FLOWLINE UP-STREAM (FT)	FLOWLINE DOWN-STREAM (FT)	ACTUAL V (FPS)	THEOR. H.G.L. SLOPE (%)	H (FT)	ACTUAL H.G.L. SLOPE (%)	UPST. H.G.L. (FT)	DNST. H.G.L. (FT)	UPST. TC ELEV. (FT)	UPST. MAX H.G.L. (FT)	H.G.L. IN RELATION TO GUTTER (FT)	H.G.L. IN RELATION TO TOC (FT)
DITCH 1																															
LINE	Ditch	A1	0.00	0.00	0.20	10.00	11.63	68.70	68.70	51.52	6	3		0.013	0.0010	65.1	3.61	0.05	0.00	76.650	76.598	3.82	0.00	0.00	0.00	78.51	78.51	82.45	81.95	-3.44	-3.94
A	A1	A2	0.00	0.00	0.20	10.24	11.55	0.00	68.70	226.94	6	3		0.013	0.0010	65.1	3.61	0.23	0.00	76.598	76.372	3.82	0.00	0.01	0.00	78.51	78.50	84.20	83.70	-5.19	-5.69
A	A2	A3	0.00	0.00	0.20	11.28	11.19	0.00	68.70	133.32	6	3		0.013	0.0010	65.1	3.61	0.13	4.87	71.502	71.368	3.82	0.00	0.00	0.00	78.50	78.50	82.90	82.40	-3.90	-4.40
A	A3	A4	0.00	0.00	0.20	11.90	10.99	0.00	68.70	172.84	6	3		0.013	0.0010	65.1	3.61	0.17	-0.96	72.328	72.155	3.82	0.00	0.01	0.00	78.50	78.49	82.92	82.42	-3.92	-4.42
A	A4	A1001	0.00	0.00	0.20	12.70	10.74	0.00	68.70	71.21	6	3		0.013	0.0010	65.1	3.61	0.07	0.00	72.155	72.094	3.82	0.00	0.00	0.00	78.49	78.49	83.37	82.87	-4.38	-4.88
DITCH 2																															
LINE	Ditch 2	B1	0.00	0.00	0.20	10.00	11.63	64.60	64.60	31.91	48			0.013	0.0049	100.8	8.02	0.16	0.00	75.000	74.844	5.14	0.20	0.06	0.20	79.89	79.82	82.81	82.31	-2.42	-2.92
B	B1	B2	0.00	0.00	0.20	10.07	11.61	0.00	64.60	267.44	48			0.013	0.0010	45.5	3.62	0.27	2.99	71.854	71.576	5.14	0.20	0.54	0.20	79.82	79.29	82.83	82.33	-2.51	-3.01
B	B2	B3	0.00	0.00	0.20	11.30	11.18	0.00	64.60	302.26	48			0.013	0.0010	45.5	3.62	0.30	0.00	71.576	71.284	5.14	0.20	0.61	0.20	79.29	78.68	82.43	81.93	-2.64	-3.14
B	B3	B1001	0.00	0.00	0.20	12.69	10.74	0.00	64.60	93.30	48			0.013	0.0020	64.4	5.12	0.19	0.00	71.284	71.090	5.14	0.20	0.19	0.20	78.68	78.49	78.53	78.03	0.65	0.15

Manning's Equation for a Ditch or Channel w/ flat bottom - Offsite Ditch 1

Q=(1.49/n)*A*(R)^2/3*S^.5		S= 0.002	Slope %= 0.22	
		n= 0.04	n= 0.04	
Q= 63.35	cfs	A= 28.92	Ditch Width= 19.9	FT.
V= 2.19	fps	P= 20.60	Bottom Width= 7	FT.
		R= 1.40	Depth= 2.15	FT.
			Side Slope= 3	:1

Manning's Equation for a Ditch or Channel w/ flat bottom - Offsite Ditch 2

Q=(1.49/n)*A*(R)^2/3*S^.5		S= 0.001	Slope %= 0.1	
		n= 0.04	n= 0.04	
Q= 94.44	cfs	A= 51.82	Ditch Width= 25.9	FT.
V= 1.82	fps	P= 26.92	Bottom Width= 7	FT.
		R= 1.92	Depth= 3.15	FT.
			Side Slope= 3	:1

Bonbrook Plantation South Section 10
100-YR Storm Calcs

Area	From MH No.	To MH No.	High TC downstream	Low TC Elev.	Max Elev Ponding	Height Feet	H + 0.35 Feet	Area (Acres)	Intensity	C Value	100 Yr. = 1.25CIA CFS	3Yr. Upstream	Accum. CFS	CFS Pass Pipe	Difference in CFS to Sheet Flow					Tc (MIN)
LINE A																				
A	1	2	83.40	82.81	83.81	0.41	0.76	3.00	9.06	0.55	18.70	0.00	18.70	9.93	8.77					10.00
A	2	3	83.40	82.66	83.66	0.26	0.61	3.00	8.82	0.55	18.18	0.00	18.18	9.77	8.41					11.01
A	3	4	83.39	82.66	83.66	0.27	0.62	3.00	8.71	0.55	17.96	0.00	17.96	9.71	8.25					11.49
A	4	5	83.39	82.66	83.66	0.27	0.62	5.83	8.54	0.55	34.25	0.00	34.25	18.67	15.58					12.25
A	5	6	83.39	82.66	83.66	0.27	0.62	5.83	8.39	0.55	33.62	0.00	33.62	18.48	15.14					13.02
A	6	7	82.70	82.19	83.19	0.49	0.84	6.63	8.31	0.55	37.88	0.00	37.88	20.92	16.97					13.42
A	7	8	82.70	82.19	83.19	0.49	0.84	6.63	8.28	0.55	37.74	0.00	37.74	20.87	16.87					13.58
A	8	9	82.70	82.19	83.19	0.49	0.84	6.63	8.20	0.55	37.37	0.00	37.37	20.77	16.60					14.02
A	9	10	82.85	82.35	83.35	0.50	0.85	9.08	8.13	0.55	50.75	0.00	50.75	28.32	22.43					14.40
A	10	11	83.10	82.30	83.30	0.20	0.55	9.08	7.97	0.55	49.77	0.00	49.77	28.04	21.74					15.31
A	11	12	83.10	82.30	83.30	0.20	0.55	10.00	7.86	0.55	54.06	0.00	54.06	30.66	23.39					15.98
A	12	Stub	82.54	81.70	82.70	0.16	0.51	25.86	7.81	0.55	138.80	0.00	138.80	79.02	59.78					16.33
A	Stub	A13	82.54	81.70	82.70	0.16	0.51	25.86	7.70	0.55	136.82	0.00	136.82	78.46	58.36					17.06
A	A13	Outfall	82.54	81.70	82.70	0.16	0.51	25.86	7.69	0.55	136.72	0.00	136.72	78.43	58.29	*	Worst Case less than 59.24 CFS			17.09
LINE A INLETS																				
A	101	102	83.40	82.81	83.81	0.41	0.76	1.03	9.06	0.55	6.42	0.00	6.42	3.41	3.01					10.00
A	102	1	83.40	82.81	83.81	0.41	0.76	3.00	9.04	0.55	18.65	0.00	18.65	9.91	8.74					10.08
A	401	402	83.39	82.66	83.66	0.27	0.62	1.02	9.06	0.55	6.36	0.00	6.36	3.38	2.98					10.00
A	402	4	83.39	82.66	83.66	0.27	0.62	2.83	9.04	0.55	17.60	0.00	17.60	9.35	8.24					10.08
A	901	902	82.85	82.35	83.35	0.50	0.85	1.30	9.06	0.55	8.10	0.00	8.10	4.30	3.80					10.00
A	902	9	82.85	82.35	83.35	0.50	0.85	2.45	9.04	0.55	15.23	0.00	15.23	8.10	7.14					10.08
A	1101	11	82.54	82.30	83.30	0.76	1.11	0.92	9.06	0.55	5.73	0.00	5.73	3.04	2.69					10.00
LINE B																				
B	1	A6	83.20	82.78	83.78	0.58	0.93	0.80	9.06	0.55	4.99	0.00	4.99	2.65	2.34					10.00
LINE B INLETS																				
B	101	102	83.20	82.78	83.78	0.58	0.93	0.62	9.06	0.55	3.86	0.00	3.86	2.05	1.81					10.00
B	102	1	83.20	82.78	83.78	0.58	0.93	0.80	9.04	0.55	4.97	0.00	4.97	2.64	2.33					10.08
LINE C																				
C	1	2	83.41	82.88	83.88	0.47	0.82	2.69	9.06	0.55	16.76	0.00	16.76	8.90	7.86					10.00
C	2	3	83.05	82.20	83.20	0.15	0.50	2.69	8.96	0.55	16.57	0.00	16.57	8.84	7.73					10.42
C	3	4	83.00	82.20	83.20	0.20	0.55	5.09	8.67	0.55	30.34	0.00	30.34	16.43	13.91					11.66
C	4	5	83.00	82.45	83.45	0.45	0.80	5.09	8.60	0.55	30.08	0.00	30.08	16.35	13.73					12.00
C	5	6	83.08	82.45	83.45	0.37	0.72	6.56	8.56	0.55	38.61	0.00	38.61	21.03	17.59					12.17
C	6	7	82.94	82.20	83.20	0.26	0.61	8.82	8.26	0.55	50.11	0.00	50.11	27.74	22.37					13.66
C	7	8	82.94	82.20	83.20	0.26	0.61	10.04	8.23	0.55	56.84	0.00	56.84	31.52	25.32					13.82
C	8	9	82.54	81.80	82.80	0.26	0.61	10.04	8.03	0.55	55.43	0.00	55.43	34.00	21.44					14.97
C	9	10	82.54	81.80	82.80	0.26	0.61	14.04	7.82	0.55	75.45	0.00	75.45	42.93	32.53					16.27
C	10	11	82.70	81.70	82.70	0.00	0.35	14.04	7.64	0.55	73.72	0.00	73.72	42.44	31.28					17.45
C	C11	A12	82.70	81.70	82.70	0.00	0.35	15.86	7.55	0.55	82.28	0.00	82.28	50.54	31.73					18.09
LINE C INLETS																				
C	101	102	83.03	82.88	83.88	0.85	1.20	1.47	9.06	0.55	9.16	0.00	9.16	4.86	4.30					10.00
C	102	1	83.03	82.88	83.88	0.85	1.20	2.69	9.04	0.55	16.72	0.00	16.72	8.89	7.83					10.09
C	301	302	83.00	82.20	83.20	0.20	0.55	1.30	9.06	0.55	8.10	0.00	8.10	4.30	3.80					10.00
C	302	3	83.00	82.20	83.20	0.20	0.55	2.40	9.04	0.55	14.92	0.00	14.92	7.93	6.99					10.08
C	501	5	83.00	82.45	83.45	0.45	0.80	1.47	9.06	0.55	9.16	0.00	9.16	4.86	4.30					10.00
C	701	7	82.94	82.20	83.20	0.26	0.61	1.22	9.06	0.55	7.60	0.00	7.60	4.04	3.57					10.00
C	901	902	82.54	81.80	82.80	0.26	0.61	2.21	9.06	0.55	13.77	0.00	13.77	7.31	6.46					10.00
C	902	9	82.54	81.80	82.80	0.26	0.61	4.00	9.04	0.55	24.87	0.00	24.87	13.22	11.65					10.08
C	1101	1102	82.70	81.70	82.70	0.00	0.35	1.08	9.06	0.55	6.73	0.00	6.73	3.57	3.16					10.00
C	1102	11	82.70	81.70	82.70	0.00	0.35	1.82	9.04	0.55	11.32	0.00	11.32	6.01	5.30					10.08
LINE D																				
D	1	C6	82.27	82.11	83.11	0.84	1.19	2.26	9.06	0.55	14.08	0.00	14.08	3.57	10.51					10.00
LINE D INLETS																				
D	101	102	82.27	82.11	83.11	0.84	1.19	1.06	9.06	0.55	6.61	0.00	6.61	3.51	3.10					10.00
0	102	1	82.27	82.11	83.11	0.84	1.19	2.26	9.04	0.55	14.05	0.00	14.05	7.47	6.58					10.08

BONBROOK PLANTATION SOUTH POND G

Weir Equation for a Rectangular Weir

Q=2.8*(L)*(H+0.35)^3/2				
		L (Width of Weir) =	27	FT.
Q=	59.24	cfs	H (Height of Weir)= 0.85	FT.

THE CFS PASS PIPE COLUMN IS THE MAXIMUM AMOUNT OF CFS THAT CAN BE HYDRAULICALLY FORCED THROUGH PIPES. THIS NUMBER COMES FROM THE 3-YR. ADJUSTED CFS. THIS IS THEN USED TO SHOW THE AMOUNT OF CFS REMAINING CAN BE CARRIED BY THE STREET USING THE WEIR EQUATION.

BENCHMARK:
A BRASS DISK STAMPED K-1219, SET IN A CONCRETE HEADWALL, LOCATED IN FORT BEND COUNTY, 0.15 MILE SOUTH OF
THE INTERSECTION OF STATE HIGHWAY 36 AND MEYER ROAD, SET IN THE TOP OF A CONCRETE HEADWALL AND 1.7 FEET SOUTH OF THE NORTH END OF THE EAST CONCRETE HEADWALL
OF A CULVERT, 24 FEET EAST OF THE CENTERLINE OF STATE HIGHWAY 36, AND LEVEL WITH THE HIGHWAY'S SURFACE.
NAVD-88 (1991 ADJ.) ELEV = 91.69 FEET
TBM (LJA 1)
A ⅝-INCH IRON ROD WITH CAP SET AT THE INTERSECTION OF BRYAN ROAD AND SPACEK ROAD, APPROXIMATELY 18.8 FEET NORTH OF THE CENTERLINE OF BRYAN ROAD AND 40.4 FEET WEST OF THE CENTERLINE OF SPACEK ROAD.
NAVD-88(1991 ADJ.) ELEV = 90.758 FEET

INTERNAL 100-YR FLOOD ELEV = 79.38
PER LJA REPORT "MASTER DRAINAGE PLAN FOR BONBROOK PLANTATION DEVELOPMENT" FORT BEND COUNTY MUD 155, JAN. 2005

FIRM PANEL: 48157C0265 L
DATE: APRIL 2, 2014

NOTES:
1) ALL UTILITIES ARE PROPOSED UNLESS OTHERWISE NOTED.
2) THIS CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION
3) CAUTION:
THERE ARE EXISTING UTILITIES WITHIN THE PROJECT AREA. CONTRACTOR SHALL FIELD VERIFY LOCATION OF ALL EXISTING UTILITIES AFFECTING PROPOSED UTILITIES PRIOR TO CONSTRUCTION. IN THE EVEN OF CONFLICT BETWEEN EXISTING UTILITIES AND PROPOSED UTILITIES, THE CONTRACTOR SHALL SUSPEND CONSTRUCTION IN THE VICINITY OF THE CONFLICT, AND SHALL COMMENCE ONLY UPON AUTHORIZATION BY OWNER.

RECORD DRAWING
I CERTIFY THAT THIS DRAWING REFLECTS THE IMPROVEMENTS CONSTRUCTED AS TO SIZE, LOCATION AND GRADE AND THAT THE CONSTRUCTION WAS IN FULL COMPLIANCE WITH THE CONTRACT DOCUMENTS
BY _____ DATE _____
TITLE _____

DATE	REVISION	BY

FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED: _____ DEVELOPMENT COORDINATOR
DATE: 4/13/18

CITY OF ROSENBERG FOUNDED 1865

B-BROOK LAND PARTNERS, L.P.

BONBROOK PLANTATION SOUTH DETENTION POND "G"

100-YR DRAINAGE CALCULATIONS

STATE OF TEXAS MICHEAL WANG 92053 LICENSED PROFESSIONAL ENGINEER 7/5/2018

LJA Engineering, Inc.
2929 Briarpark Drive
Suite 600
Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

LJA PROJECT NO.: 2304-1110B
DRAWN: L.O.R. DESIGN: M.F./K.T. DATE: FEBRUARY 2018
SCALE: NONE
SHEET NO. 9 OF 20

BONBROOK PLANTATION SOUTH DETENTION POND "G" - JOB NO. 2304-1110B

Date/Time : Fri, 09 Mar 2018 - 4:24pm User Name : kirochsel
Path/Name : I:\Projects\2304\1110B\ACAD_Sheet_Files\9_100-YR-ADJ-DRAINAGE CALCS.dwg

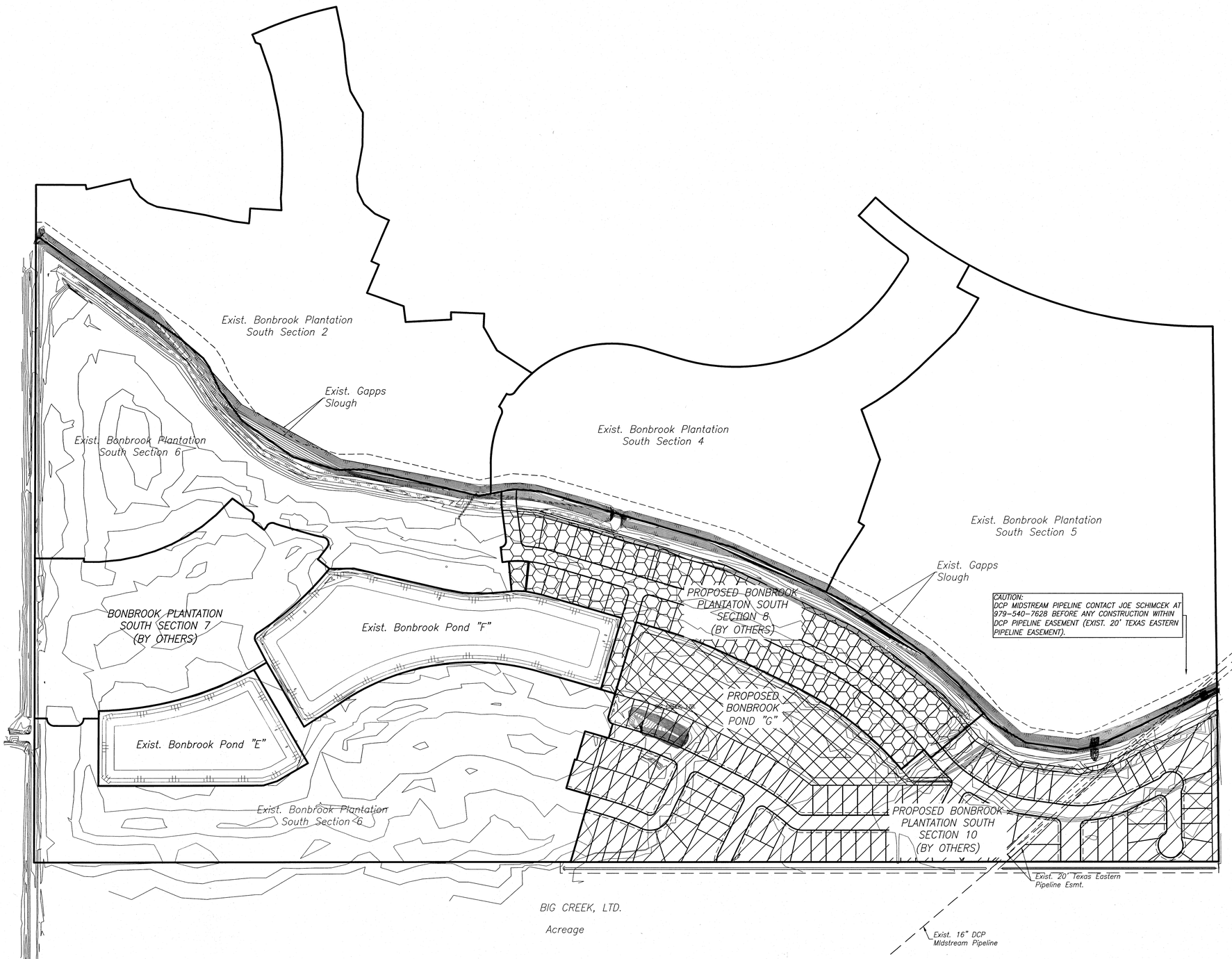
CLEARING	SURFACE	CUT (C.Y.)	FILL (C.Y.)	Future Utility Spoils	CLEARING (AC.)	STRIPPING (AC.)
	SECTION 10	9,687	130,731	8,321	0.00	28.92
	SECTION 8	12,390	21,429	4,165		
	POND "G"	119,460	5,722	4,098	0.00	7.586
	TOTAL	141,537	157,882	16,584	0.00	36.51

LEGEND

— 72 — INDICATES EXISTING NATURAL GROUND CONTOUR

N

0 200' 400'



BENCHMARK:

A BRASS DISK STAMPED K-1219, SET IN A CONCRETE HEADWALL, LOCATED IN FORT BEND COUNTY, 0.15 MILE SOUTH OF
THE INTERSECTION OF STATE HIGHWAY 36 AND MEYER ROAD, SET IN THE TOP OF A CONCRETE HEADWALL AND 1.7 FEET SOUTH OF THE NORTH END OF THE EAST CONCRETE HEADWALL
OF A CULVERT, 24 FEET EAST OF THE CENTERLINE OF STATE HIGHWAY 36, AND LEVEL WITH THE HIGHWAY'S SURFACE.
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FIRM PANEL: 48157C0265 L
DATE: APRIL 2, 2014

NOTES:

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RECORD DRAWING

I CERTIFY THAT THIS DRAWING REFLECTS THE IMPROVEMENTS CONSTRUCTED AS TO SIZE, LOCATION AND GRADE AND THAT THE CONSTRUCTION WAS IN FULL COMPLIANCE WITH THE CONTRACT DOCUMENTS

BY _____ DATE _____

TITLE _____

DATE	REVISION	BY

FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED: _____ DEVELOPMENT COORDINATOR

DATE: 4/13/18

CITY OF ROSENBERG FOUNDED 1885

B-BROOK LAND PARTNERS, L.P.

BONBROOK PLANTATION SOUTH DETENTION POND "G"

OVERALL CLEARING & GRADING PLAN

LJA Engineering, Inc.
2929 Briarpark Drive
Suite 600
Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

LJA PROJECT NO.: 2304-1110B

DRAWN: L.O.R. DESIGN: M.F./K.T. DATE: FEBRUARY 2018

SCALE: 1" = 200'

SHEET NO. 10 OF 20

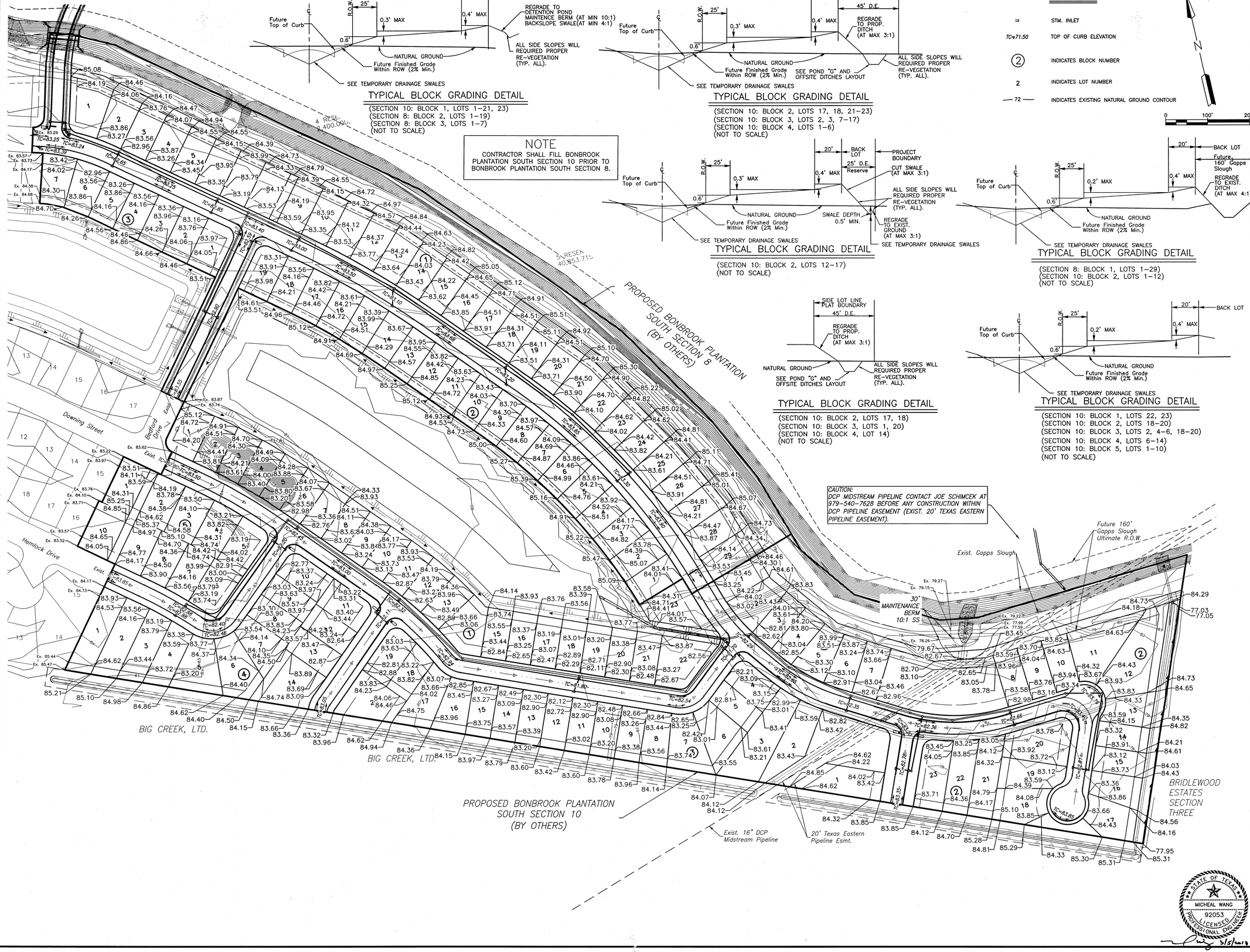
STATE OF TEXAS
MICHEAL WANG
92053
LICENSED
PROFESSIONAL ENGINEER

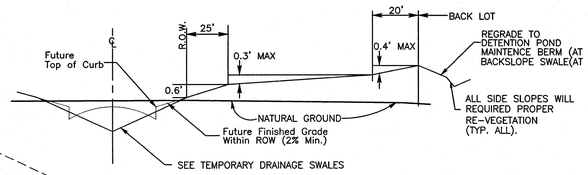
3/5/2018

BONBROOK PLANTATION SOUTH DETENTION POND "G" – JOB NO. 2304-1110B

Date\Time : Fri, 09 Mar 2018 – 4:04pm User Name : ktrochell
Path\Name : I:\Projdsk1\2304\1110B\ACAD_Sheet_Files\10_CLEARING & GRADING PLAN.dwg

10

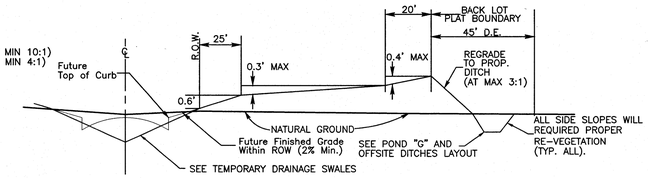




TYPICAL BLOCK GRADING DETAIL

(SECTION 10: BLOCK 1, LOTS 1–21, 23)
(SECTION 8: BLOCK 2, LOTS 1–19)
(SECTION 8: BLOCK 3, LOTS 1–7)
(NOT TO SCALE)

NOTE
CONTRACTOR SHALL FILL BONBROOK PLANTATION SOUTH SECTION 10 PRIOR TO BONBROOK PLANTATION SOUTH SECTION 8.



TYPICAL BLOCK GRADING DETAIL

(SECTION 10: BLOCK 2, LOTS 17, 18, 21–23)
(SECTION 10: BLOCK 3, LOTS 2, 3, 7–17)
(SECTION 10: BLOCK 4, LOTS 1–6)
(NOT TO SCALE)

TYPICAL BLOCK GRADING DETAIL

(SECTION 10: BLOCK 2, LOTS 12–17)
(NOT TO SCALE)

TYPICAL BLOCK GRADING DETAIL

(SECTION 8: BLOCK 1, LOTS 1–29)
(SECTION 10: BLOCK 2, LOTS 1–12)
(NOT TO SCALE)

TYPICAL BLOCK GRADING DETAIL

(SECTION 10: BLOCK 2, LOTS 17, 18)
(SECTION 10: BLOCK 3, LOTS 1, 20)
(SECTION 10: BLOCK 4, LOT 14)
(NOT TO SCALE)

TYPICAL BLOCK GRADING DETAIL

(SECTION 10: BLOCK 1, LOTS 22, 23)
(SECTION 10: BLOCK 2, LOTS 18–20)
(SECTION 10: BLOCK 3, LOTS 2, 4–6, 18–20)
(SECTION 10: BLOCK 4, LOTS 6–14)
(SECTION 10: BLOCK 5, LOTS 1–10)
(NOT TO SCALE)

CAUTION:
DCP MIDSTREAM PIPELINE CONTACT JOE SCHIMCEK AT 979-540-7628 BEFORE ANY CONSTRUCTION WITHIN DCP PIPELINE EASEMENT (EXIST. 20' TEXAS EASTERN PIPELINE EASEMENT).

LEGEND

	STM. INLET
TC=71.50	TOP OF CURB ELEVATION
(2)	INDICATES BLOCK NUMBER
2	INDICATES LOT NUMBER
— 72 —	INDICATES EXISTING NATURAL GROUND CONTOUR

N

0 100' 200'

BENCHMARK:
A BRASS DISK STAMPED K-1219, SET IN A CONCRETE HEADWALL, LOCATED IN FORT BEND COUNTY, 0.15 MILE SOUTH OF
THE INTERSECTION OF STATE HIGHWAY 36 AND MEYER ROAD, SET IN THE TOP OF A CONCRETE HEADWALL AND 1.7 FEET SOUTH OF THE NORTH END OF THE EAST CONCRETE HEADWALL
OF A CULVERT, 24 FEET EAST OF THE CENTERLINE OF STATE HIGHWAY 36, AND LEVEL WITH THE HIGHWAY'S SURFACE.
NAVD-88 (1991 ADJ.) ELEV = 91.69 FEET

TBM (LJA 1)
A ⅝-INCH IRON ROD WITH CAP SET AT THE INTERSECTION OF BRYAN ROAD AND SPACECK ROAD, APPROXIMATELY 18.8 FEET NORTH OF THE CENTERLINE OF BRYAN ROAD AND 40.4 FEET WEST OF THE CENTERLINE OF SPACEK ROAD.
NAVD-88(1991 ADJ.) ELEV = 90.758 FEET

INTERNAL 100-YR FLOOD ELEV = 79.38
PER LJA REPORT "MASTER DRAINAGE PLAN FOR BONBROOK PLANTATION DEVELOPMENT" FORT BEND COUNTY MUD 155, JAN. 2005

FIRM PANEL: 48157C0265 L
DATE: APRIL 2, 2014

NOTES:

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RECORD DRAWING
I CERTIFY THAT THIS DRAWING REFLECTS THE IMPROVEMENTS CONSTRUCTED AS TO SIZE, LOCATION AND GRADE AND THAT THE CONSTRUCTION WAS IN FULL COMPLIANCE WITH THE CONTRACT DOCUMENTS

BY _____ DATE _____

TITLE _____

DATE	REVISION	BY

FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED: _____ DEVELOPMENT COORDINATOR

DATE: 4/13/18

CITY OF ROSENBERG FOUNDED 1885

B-BROOK LAND PARTNERS, L.P.

BONBROOK PLANTATION SOUTH DETENTION POND "G"

SECTIONS 8 & 10 GRADING PLAN

STATE OF TEXAS — MICHEAL WANG 92053 LICENSED PROFESSIONAL ENGINEER — 5/3/2018

LJA Engineering, Inc.
2929 Briarpark Drive
Suite 600
Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

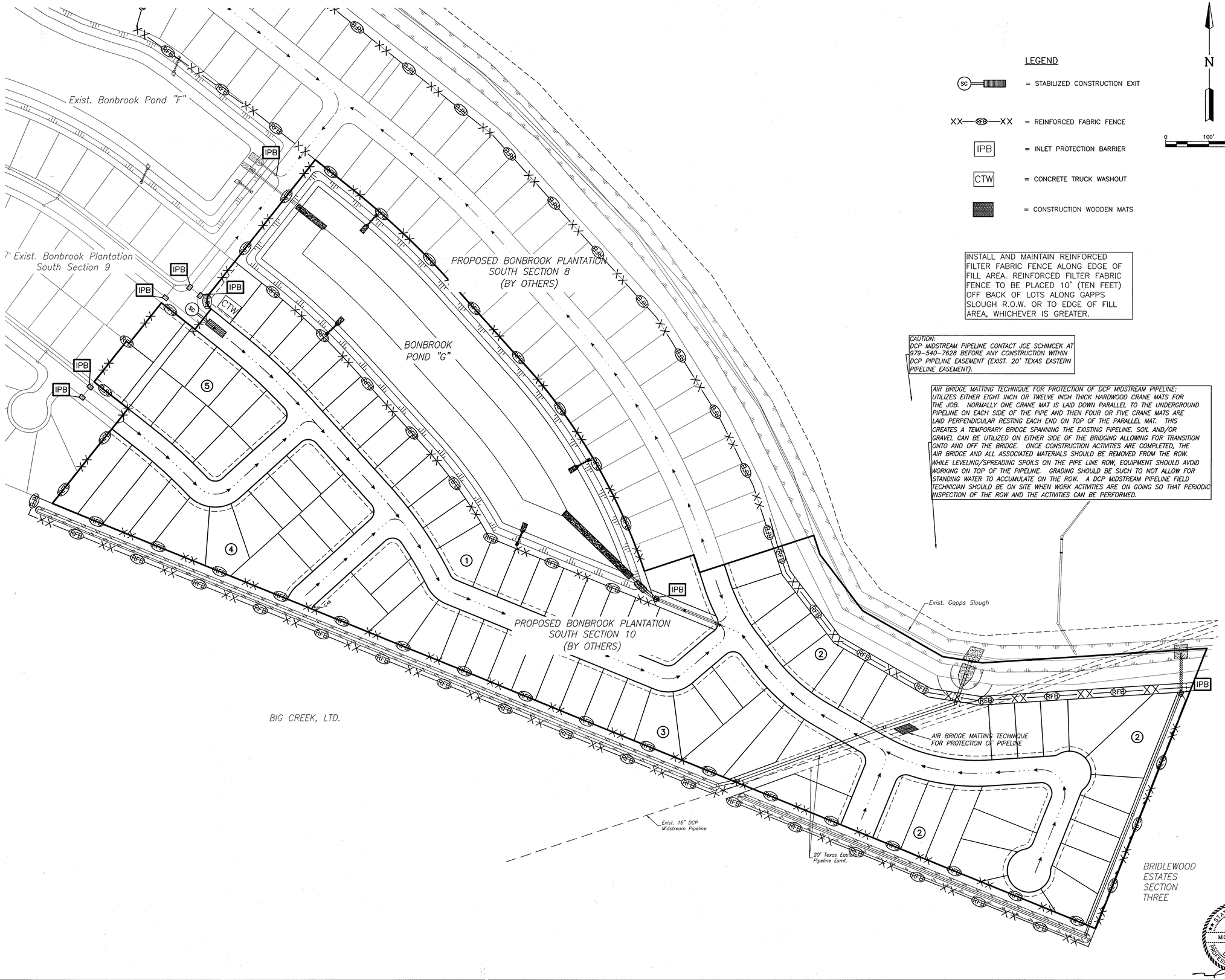
LJA PROJECT NO.: 2304-1110B

DRAWN: L.O.R. DESIGN: M.F./K.T. DATE: FEBRUARY 2018

SCALE: 1" = 100' SHEET NO. 11 OF 20

BONBROOK PLANTATION SOUTH DETENTION POND "G" – JOB NO. 2304-1110B

Date\Time : Fri, 09 Mar 2018 – 4:04pm User Name : kirschsel
Path\Name : F:\Projdsk1\2304\1110B\ACAD_Sheet_Files\11-SECTION 10 GRADING PLAN.dwg



LEGEND

- SC — = STABILIZED CONSTRUCTION EXIT
- XX—RFB—XX = REINFORCED FABRIC FENCE
- IPB = INLET PROTECTION BARRIER
- CTW = CONCRETE TRUCK WASHOUT
- = CONSTRUCTION WOODEN MATS

N

0 100' 200'

INSTALL AND MAINTAIN REINFORCED FILTER FABRIC FENCE ALONG EDGE OF FILL AREA. REINFORCED FILTER FABRIC FENCE TO BE PLACED 10' (TEN FEET) OFF BACK OF LOTS ALONG GAPPS SLOUGH R.O.W. OR TO EDGE OF FILL AREA, WHICHEVER IS GREATER.

CAUTION:
DCP MIDSTREAM PIPELINE CONTACT JOE SCHIMCEK AT 979-540-7628 BEFORE ANY CONSTRUCTION WITHIN DCP PIPELINE EASEMENT (EXIST. 20' TEXAS EASTERN PIPELINE EASEMENT).

AIR BRIDGE MATTING TECHNIQUE FOR PROTECTION OF DCP MIDSTREAM PIPELINE: UTILIZES EITHER EIGHT INCH OR TWELVE INCH THICK HARDWOOD CRANE MATS FOR THE JOB. NORMALLY ONE CRANE MAT IS LAID DOWN PARALLEL TO THE UNDERGROUND PIPELINE ON EACH SIDE OF THE PIPE AND THEN FOUR OR FIVE CRANE MATS ARE LAID PERPENDICULAR RESTING EACH END ON TOP OF THE PARALLEL MAT. THIS CREATES A TEMPORARY BRIDGE SPANNING THE EXISTING PIPELINE. SOIL AND/OR GRAVEL CAN BE UTILIZED ON EITHER SIDE OF THE BRIDGING ALLOWING FOR TRANSITION ONTO AND OFF THE BRIDGE. ONCE CONSTRUCTION ACTIVITIES ARE COMPLETED, THE AIR BRIDGE AND ALL ASSOCIATED MATERIALS SHOULD BE REMOVED FROM THE ROW. WHILE LEVELING/SPREADING SPOILS ON THE PIPE LINE ROW, EQUIPMENT SHOULD AVOID WORKING ON TOP OF THE PIPELINE. GRADING SHOULD BE SUCH TO NOT ALLOW FOR STANDING WATER TO ACCUMULATE ON THE ROW. A DCP MIDSTREAM PIPELINE FIELD TECHNICIAN SHOULD BE ON SITE WHEN WORK ACTIVITIES ARE ON GOING SO THAT PERIODIC INSPECTION OF THE ROW AND THE ACTIVITIES CAN BE PERFORMED.

STATE OF TEXAS
MICHEAL WANG
92053
LICENSED
PROFESSIONAL ENGINEER
2/15/2018

BENCHMARK:

A BRASS DISK STAMPED K-1219, SET IN A CONCRETE HEADWALL, LOCATED IN FORT BEND COUNTY, 0.15 MILE SOUTH OF
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FIRM PANEL: 48157C0265 L
DATE: APRIL 2, 2014

NOTES:

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RECORD DRAWING

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BY _____ DATE _____

TITLE _____

DATE	REVISION	BY

FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED: _____ DEVELOPMENT COORDINATOR

DATE: 4/13/18

CITY OF ROSENBERG FOUNDED 1865

B-BROOK LAND PARTNERS, L.P.

BONBROOK PLANTATION SOUTH DETENTION POND "G"

STORM WATER POLLUTION PREVENTION PLAN

LJA Engineering, Inc.
2929 Briarpark Drive
Suite 600
Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

LJA PROJECT NO.: 2304-1110B

DRAWN: L.O.R. DESIGN: M.F./K.T. DATE: FEBRUARY 2018

SCALE: 1" = 100'

BONBROOK PLANTATION SOUTH DETENTION POND "G" – JOB NO. 2304-1110B

Date\Time : Fri, 09 Mar 2018 – 4:04pm User Name : kkrochsel
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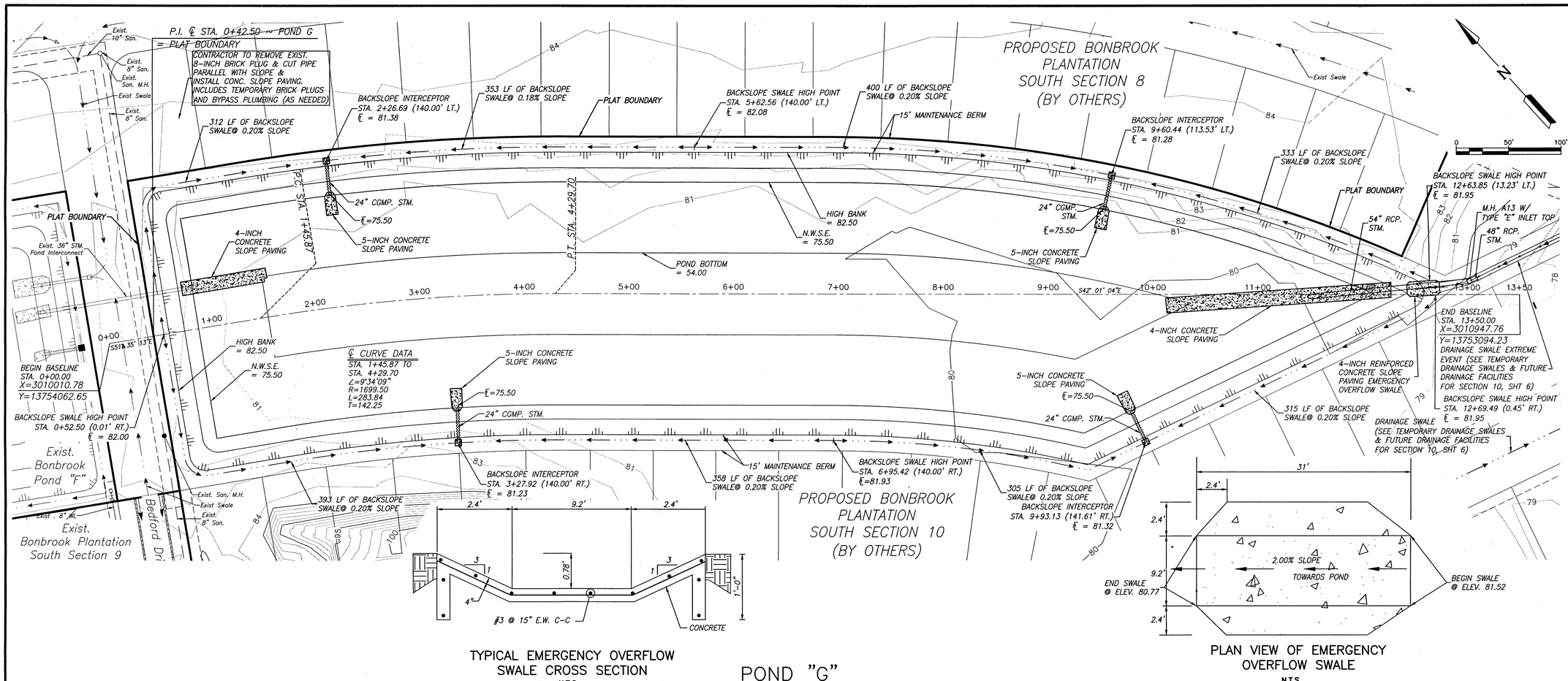
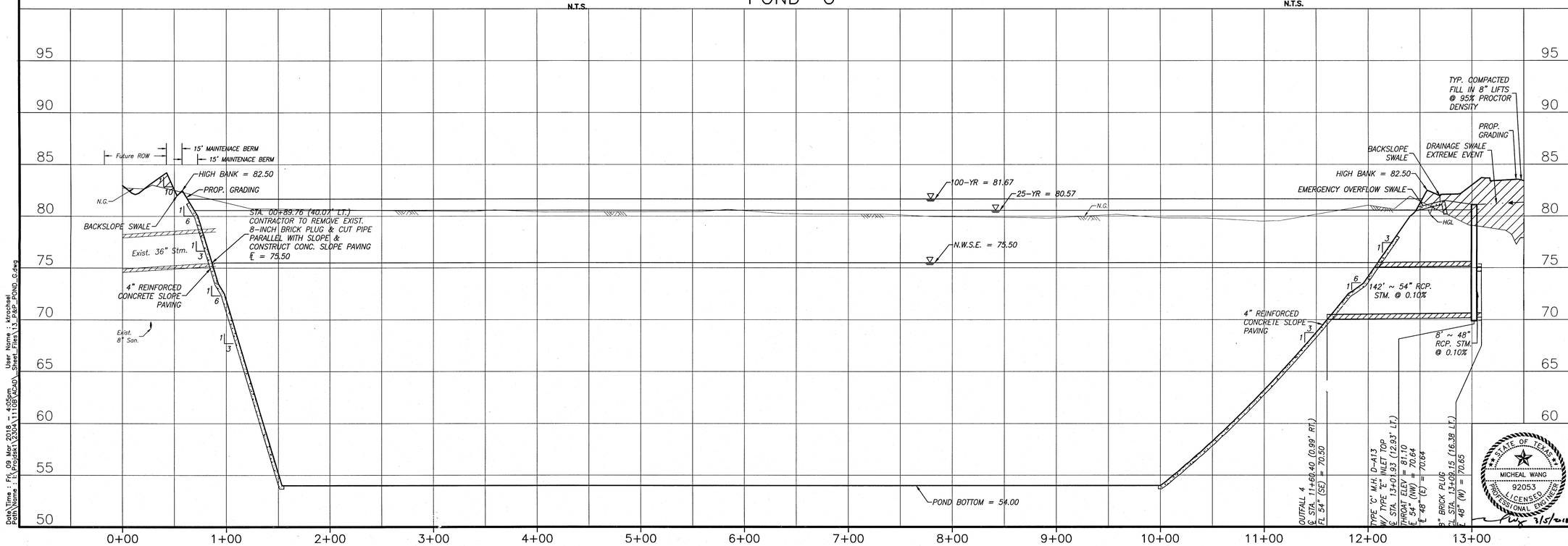


TYPICAL EMERGENCY OVERFLOW SWALE CROSS SECTION
N.T.S.

PLAN VIEW OF EMERGENCY OVERFLOW SWALE
N.T.S.

POND "G"



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BENCHMARK:

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FIRM PANEL: 48157C0265 L
DATE: APRIL 2, 2014

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BY _____ DATE _____

TITLE _____

DATE	REVISION	BY

FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED: _____ DEVELOPMENT COORDINATOR

DATE: 4/13/18

CITY OF ROSENBERG FOUNDED 1885

B-BROOK LAND PARTNERS, L.P.

BONBROOK PLANTATION SOUTH DETENTION POND "G"

POND "G"
STA. 0+00 TO END

STATE OF TEXAS
MICHEAL WANG
92053
LICENSED PROFESSIONAL ENGINEER
3/5/2018

LJA Engineering, Inc.
2929 Briarpark Drive
Suite 600
Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

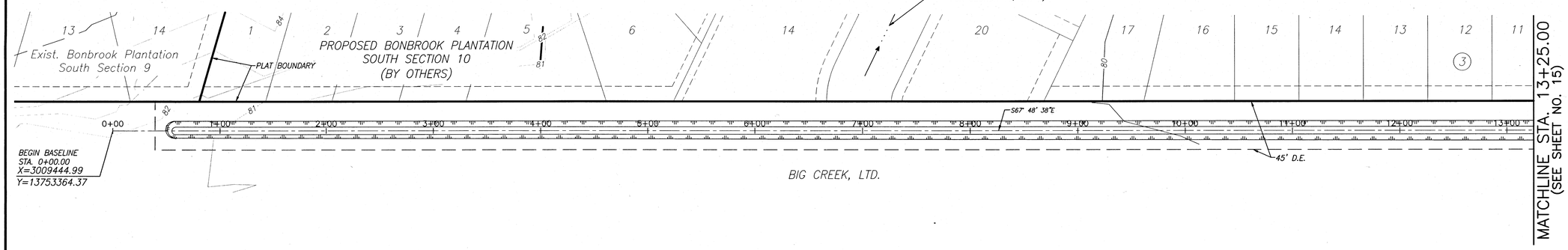
LJA PROJECT NO.: 2304-1110B

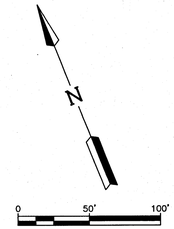
DRAWN: L.O.R. DESIGN: M.F./K.T. DATE: FEBRUARY 2018

HORZ: 1" = 50'
VERT: 1" = 5'

SHEET NO. 13 OF 20

BONBROOK PLANTATION SOUTH DETENTION POND "G" – JOB NO. 2304-1110B





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DATE	REVISION	BY

FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED: _____ DEVELOPMENT COORDINATOR

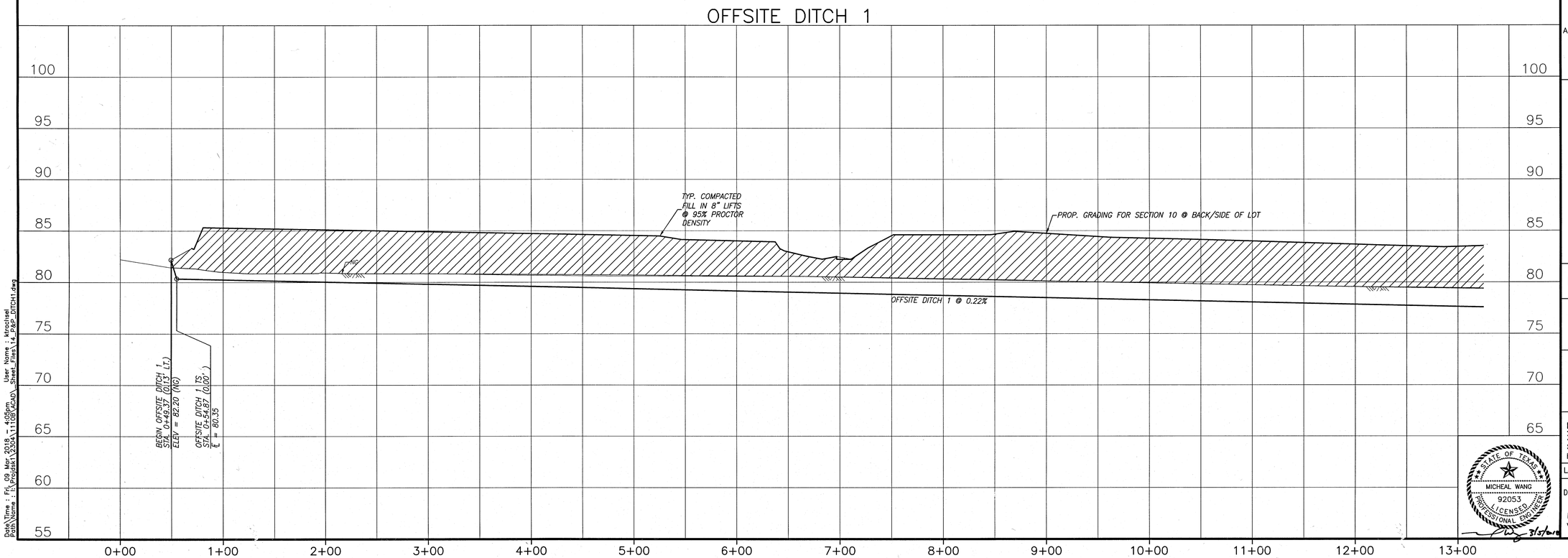
DATE: 4/13/18

CITY OF ROSENBERG FOUNDED 1883

B-BROOK LAND PARTNERS, L.P.

BONBROOK PLANTATION SOUTH DETENTION POND "G"

OFFSITE DITCH 1
STA. 0+00 TO 13+25



STATE OF TEXAS
MICHEAL WANG
92053
LICENSED
PROFESSIONAL ENGINEER
3/5/2018

LJA Engineering, Inc.
2929 Briarpark Drive
Suite 600
Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

LJA PROJECT NO.: 2304-1110B

DRAWN: L.O.R. DESIGN: M.F./K.T. DATE: FEBRUARY 2018

HORZ: 1" = 50'
VERT: 1" = 5'

SHEET NO. 14 OF 20

BONBROOK PLANTATION SOUTH DETENTION POND "G" – JOB NO. 2304-1110B

Date\Time : Fri, 09 Mar 2018 - 4:05pm User Name : ktrochsel
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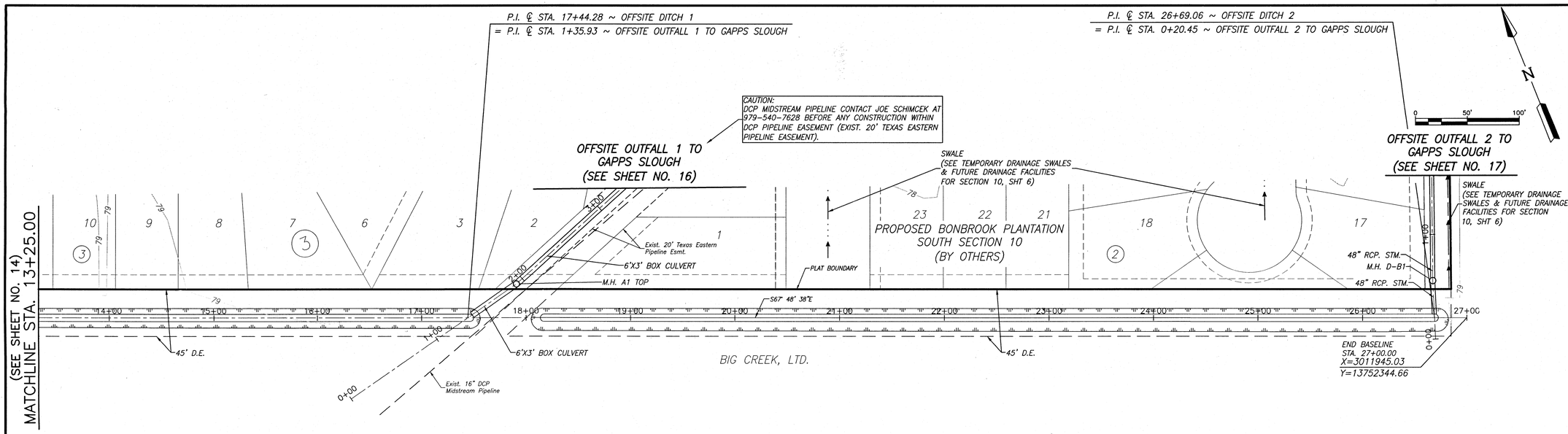
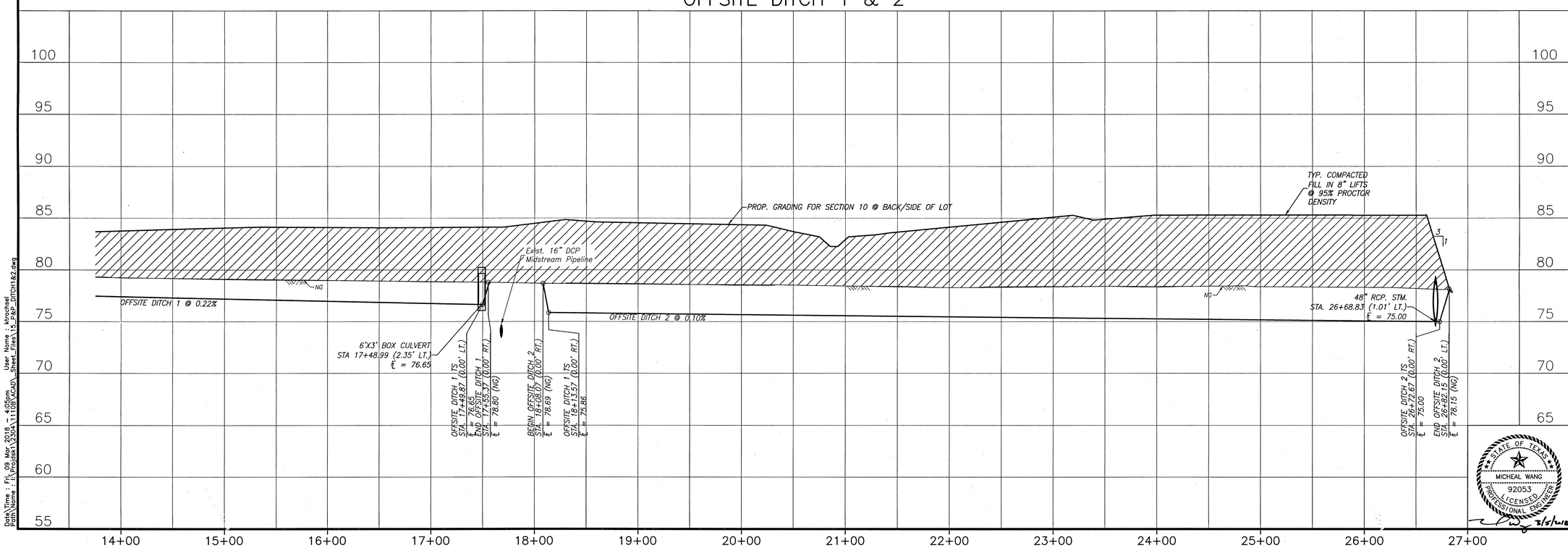
14



OFFSITE DITCH 1 & 2



BENCHMARK:
A BRASS DISK STAMPED K-1219, SET IN A CONCRETE HEADWALL, LOCATED IN FORT BEND COUNTY, 0.15 MILE SOUTH OF
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FIRM PANEL: 48157C0265 L
DATE: APRIL 2, 2014

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BY _____ DATE _____
TITLE _____

DATE	REVISION	BY

FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED: _____ DEVELOPMENT COORDINATOR
DATE: 4/13/18

CITY OF ROSENBERG FOUNDED 1885

B-BROOK LAND PARTNERS, L.P.

BONBROOK PLANTATION SOUTH DETENTION POND "G"

OFFSITE DITCH 1 & 2
STA. 13+25 TO END

LJA Engineering, Inc.
2929 Briarpark Drive
Suite 600
Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

LJA PROJECT NO.: 2304-1110B

DRAWN: L.O.R. DESIGN: M.F./K.T. DATE: FEBRUARY 2018

HORZ: 1" = 50'
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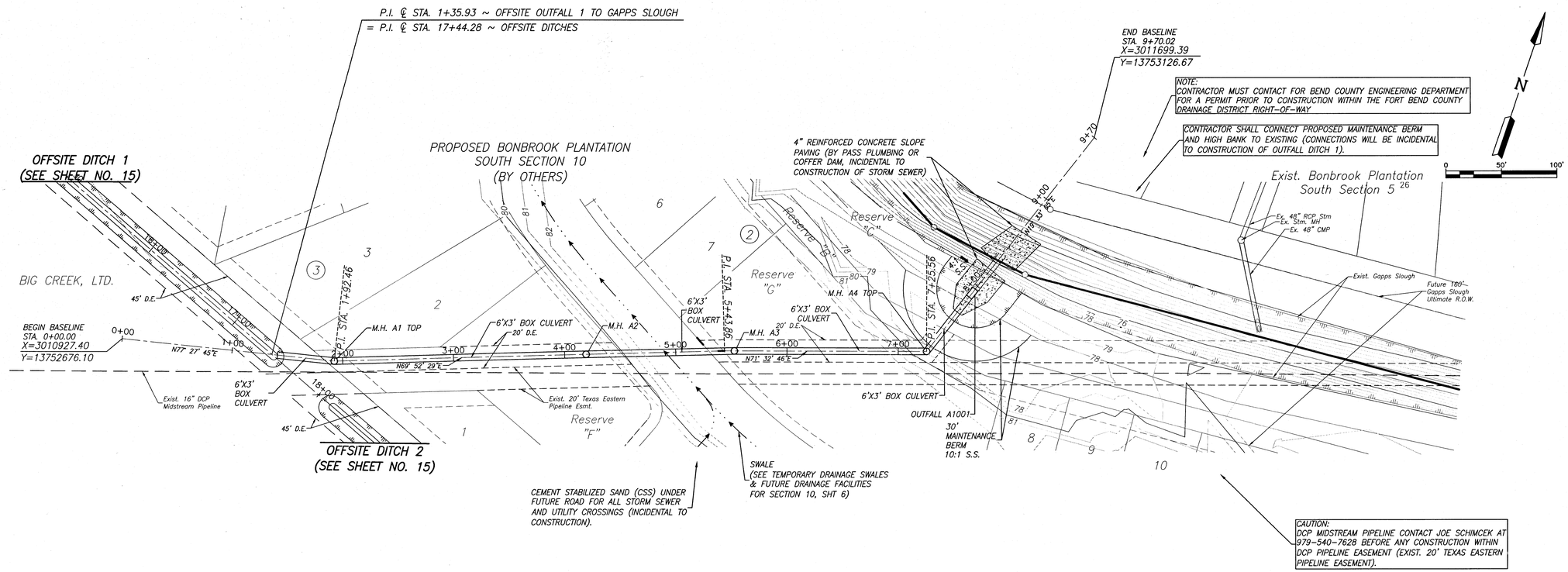
STATE OF TEXAS MICHEAL WANG 92053 LICENSED PROFESSIONAL ENGINEER 2/5/18

SHEET NO. 15 OF 20

BONBROOK PLANTATION SOUTH DETENTION POND "G" – JOB NO. 2304-1110B

Date\Time : Fri, 09 Mar 2018 - 4:05pm User Name : ktrochsel
Path\Name : E:\Projdsk1\2304\1110B\ACAD_Sheet_Files\15_P&P_DITCH1&2.dwg

15



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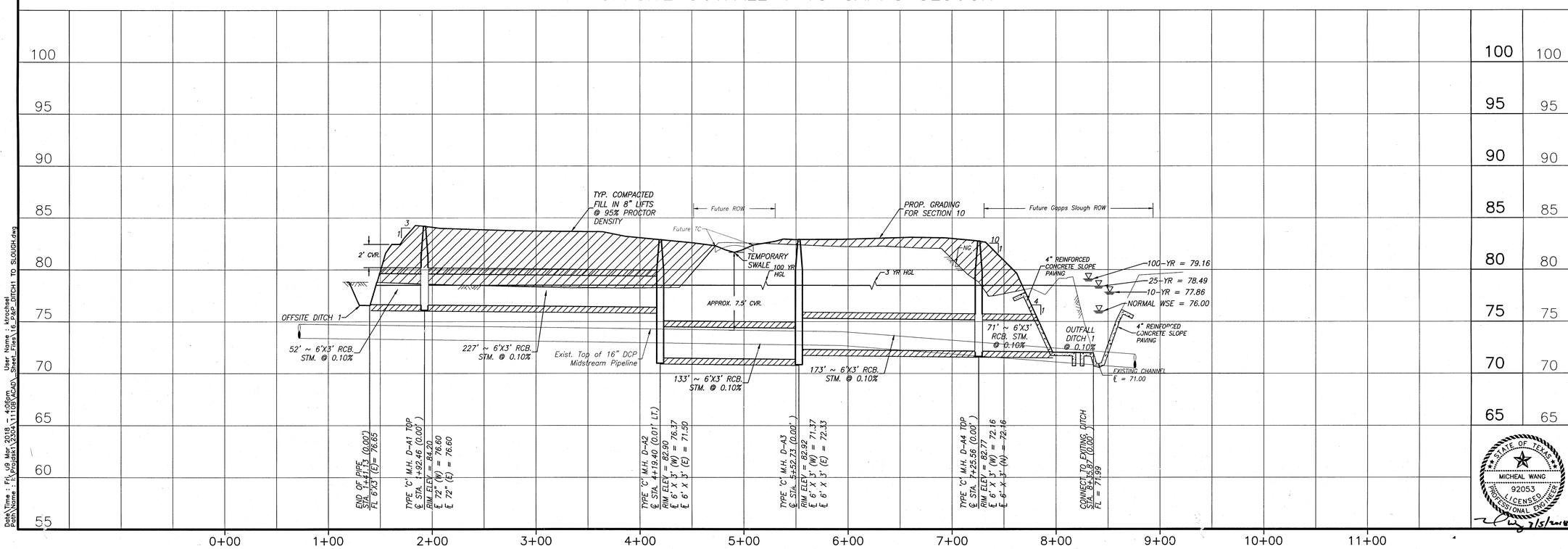
BY _____ DATE _____
TITLE _____

DATE	REVISION	BY

FORT BEND COUNTY ENGINEERING DEPARTMENT

OFFSITE OUTFALL 1 TO GAPPS SLOUGH



APPROVED: _____ DEVELOPMENT COORDINATOR
DATE: 4/13/18

CITY OF ROSENBERG FOUNDED 1883

B-BROOK LAND PARTNERS, L.P.

BONBROOK PLANTATION SOUTH DETENTION POND "G"

OFFSITE OUTFALL 1 TO GAPPS SLOUGH
STA. 00+00 TO END

LJA Engineering, Inc.
2929 Briarpark Drive
Suite 600
Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

LJA PROJECT NO.: 2304-1110B

DRAWN: L.O.R. DESIGN: M.F./K.T. DATE: FEBRUARY 2018

HORZ: 1" = 50'
VERT: 1" = 5'

SHEET NO. 16 OF 20

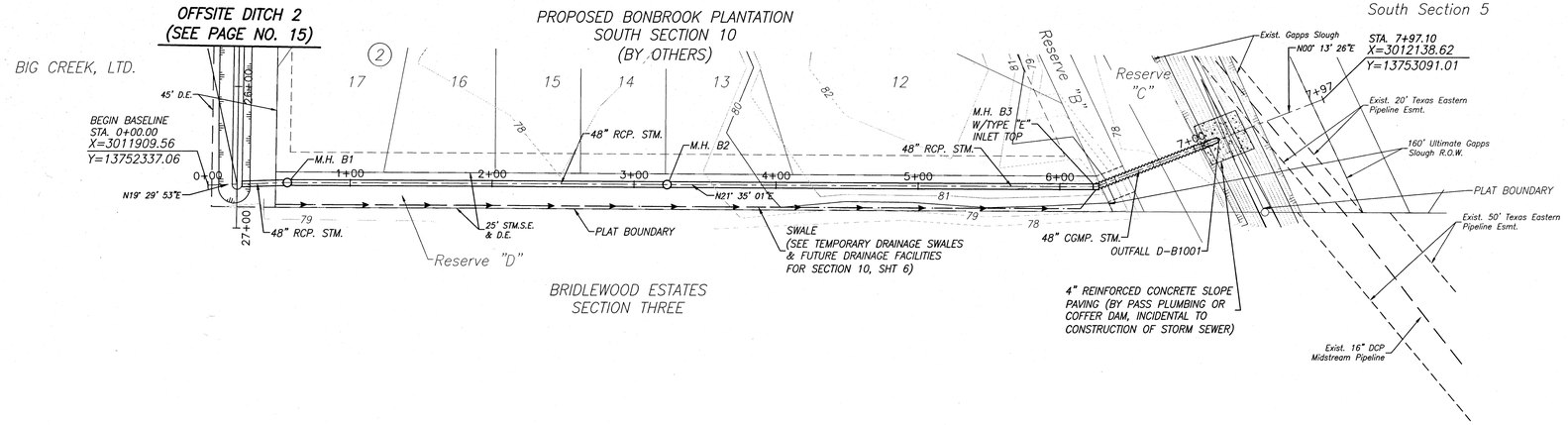
STATE OF TEXAS
MICHEAL WANG
92053
LICENSED
PROFESSIONAL ENGINEER
2/5/2018

BONBROOK PLANTATION SOUTH DETENTION POND "G" - JOB NO. 2304-1110B

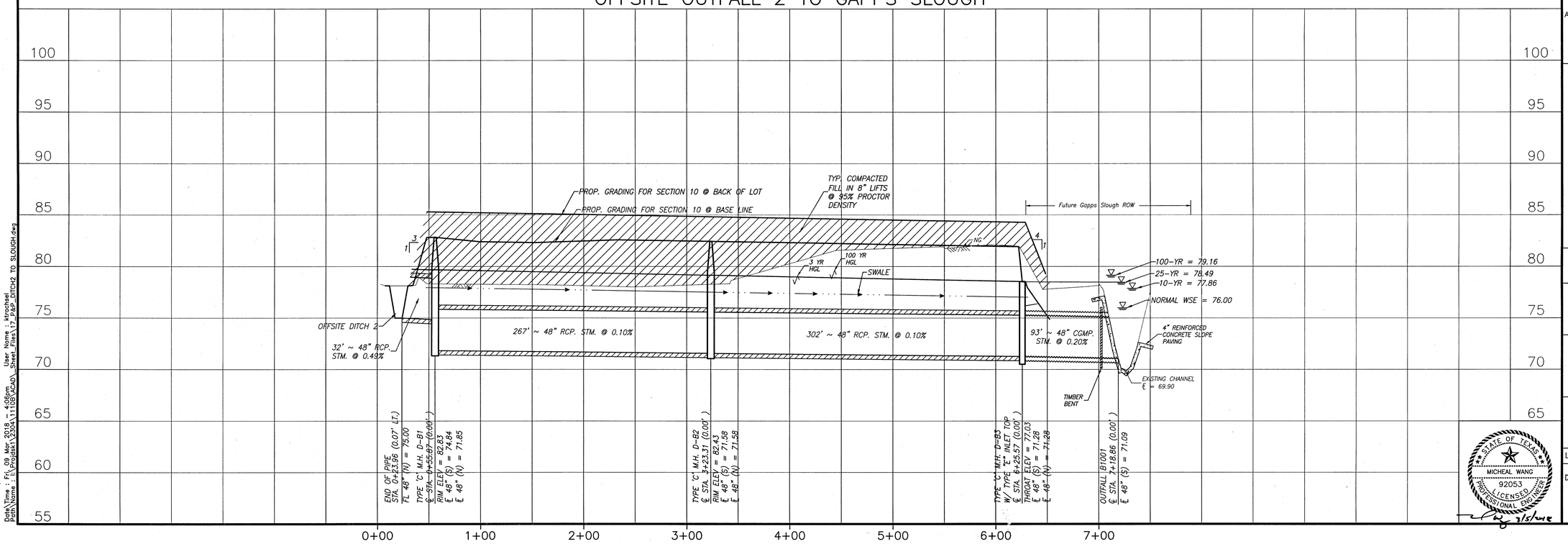
Date\Time : Fri, 09 Mar 2018 - 4:06pm User Name : ktrochel
Path\Name : I:\Projects\2304\1110B\ACAD_Sheet_Files\16-P&P-DITCH1 TO SLOUGH.dwg

P.I. ℄ STA. 0+20.43 ~ OFFSITE OUTFALL 2 TO GAPPS SLOUGH
= P.I. ℄ STA. 26+69.07 ~ OFFSITE DITCHES

NOTE:
CONTRACTOR MUST CONTACT FOR BEND COUNTY ENGINEERING DEPARTMENT FOR A PERMIT PRIOR TO CONSTRUCTION WITHIN THE FORT BEND COUNTY DRAINAGE DISTRICT RIGHT-OF-WAY



OFFSITE OUTFALL 2 TO GAPPS SLOUGH



BENCHMARK:
A BRASS DISK STAMPED K-1219, SET IN A CONCRETE HEADWALL, LOCATED IN FORT BEND COUNTY, 0.15 MILE SOUTH OF
THE INTERSECTION OF STATE HIGHWAY 36 AND MEYER ROAD, SET IN THE TOP OF A CONCRETE HEADWALL AND 1.7 FEET SOUTH OF THE NORTH END OF THE EAST CONCRETE HEADWALL
OF A CULVERT, 24 FEET EAST OF THE CENTERLINE OF STATE HIGHWAY 36, AND LEVEL WITH THE HIGHWAY'S SURFACE.
NAVD-88 (1991 ADJ.) ELEV = 91.69 FEET

TBM (LJA 1)
A ⅝-INCH IRON ROD WITH CAP SET AT THE INTERSECTION OF BRYAN ROAD AND SPACEK ROAD, APPROXIMATELY 18.8 FEET NORTH OF THE CENTERLINE OF BRYAN ROAD AND 40.4 FEET WEST OF THE CENTERLINE OF SPACEK ROAD.
NAVD-88(1991 ADJ.) ELEV = 90.758 FEET

INTERNAL 100-YR FLOOD ELEV = 79.38
PER LJA REPORT "MASTER DRAINAGE PLAN FOR BONBROOK PLANTATION DEVELOPMENT" FORT BEND COUNTY MUD 155, JAN. 2005

FIRM PANEL: 48157C0265 L
DATE: APRIL 2, 2014

NOTES:
1) ALL UTILITIES ARE PROPOSED UNLESS OTHERWISE NOTED.
2) THIS CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION
3) CAUTION:
THERE ARE EXISTING UTILITIES WITHIN THE PROJECT AREA. CONTRACTOR SHALL FIELD VERIFY LOCATION OF ALL EXISTING UTILITIES AFFECTING PROPOSED UTILITIES PRIOR TO CONSTRUCTION. IN THE EVEN OF CONFLICT BETWEEN EXISTING UTILITIES AND PROPOSED UTILITIES, THE CONTRACTOR SHALL SUSPEND CONSTRUCTION IN THE VICINITY OF THE CONFLICT, AND SHALL COMMENCE ONLY UPON AUTHORIZATION BY OWNER.

RECORD DRAWING
I CERTIFY THAT THIS DRAWING REFLECTS THE IMPROVEMENTS CONSTRUCTED AS TO SIZE, LOCATION AND GRADE AND THAT THE CONSTRUCTION WAS IN FULL COMPLIANCE WITH THE CONTRACT DOCUMENTS
BY _____ DATE _____
TITLE _____

DATE	REVISION	BY

FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED: DEVELOPMENT COORDINATOR
DATE: 4/13/18

CITY OF ROSENBERG FOUNDED 1883

B-BROOK LAND PARTNERS, L.P.

BONBROOK PLANTATION SOUTH DETENTION POND "G"

OFFSITE OUTFALL 2 TO GAPPS SLOUGH
STA. 00+00 TO END

LJA Engineering, Inc.
2929 Briarpark Drive
Suite 600
Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

LJA PROJECT NO.: 2304-1110B

DRAWN: L.O.R. DESIGN: M.F./K.T. DATE: FEBRUARY 2018

HORZ: 1" = 50'
VERT: 1" = 5'

STATE OF TEXAS
MICHEAL WANG
92053
LICENSED PROFESSIONAL ENGINEER
3/5/18

BONBROOK PLANTATION SOUTH DETENTION POND "G" – JOB NO. 2304-1110B

Date\Time : Fri, 09 Mar 2018 - 4:06pm User Name : ktrochsel
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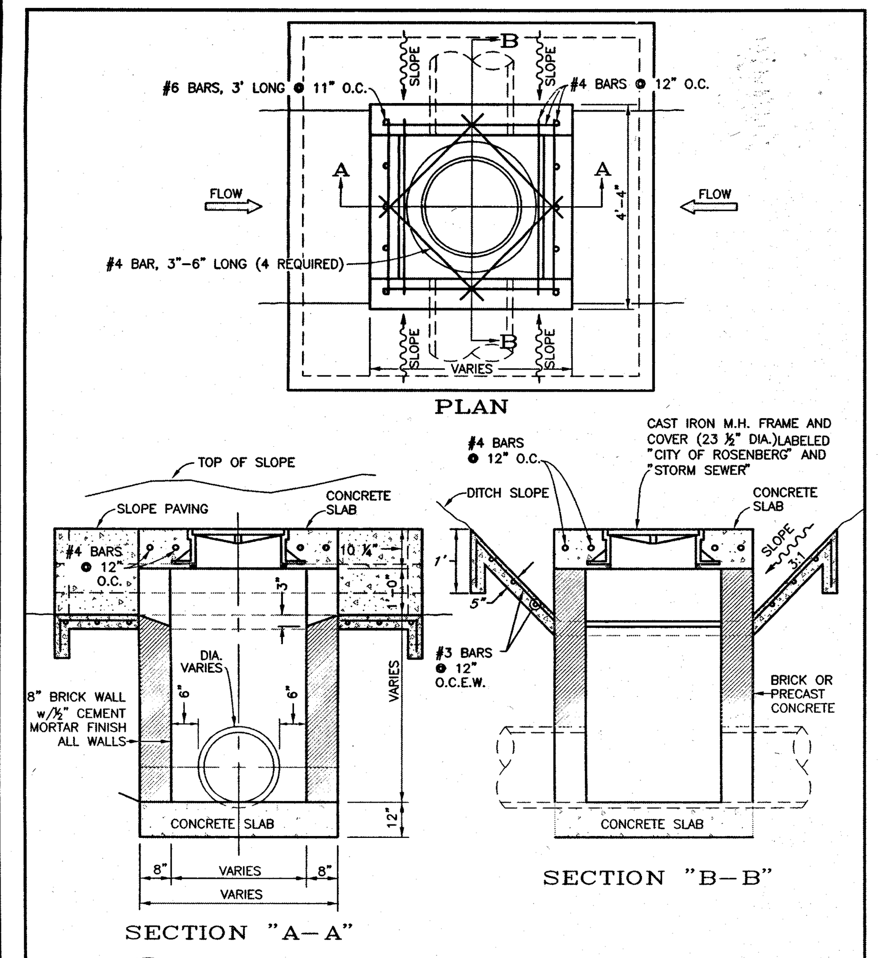
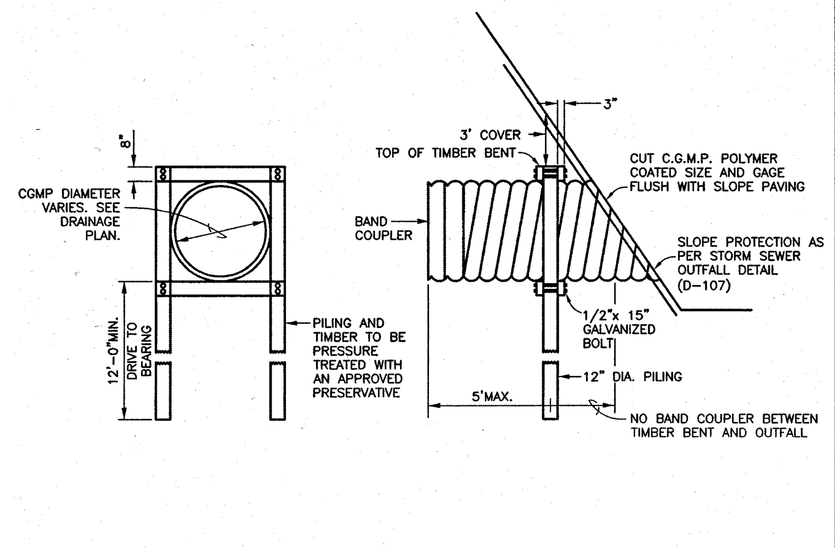


NOTE:
1. ALL STORM SEWER INLETS MUST HAVE A NO DUMPING STORM DRAIN MARKER (SEE DETAIL D-109) PLACED ON IT WHEN INSTALLED.

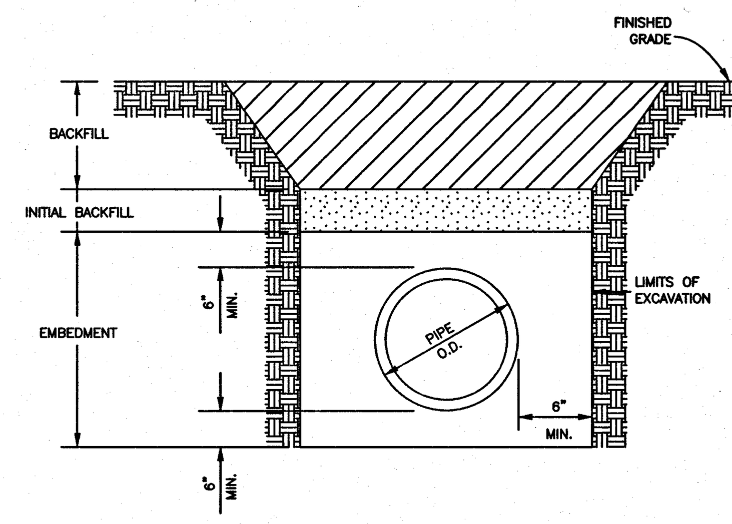
THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
STANDARD TYPE "E" INLET WITH SLOPE PAVING

DESIGN:	CAD:	SCALE:	DATE:	DRAWING:
CAK	STAFF	NTS	11/10	D-105



THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
TIMBER BENT FOR C.G.M.P. OUTFALL

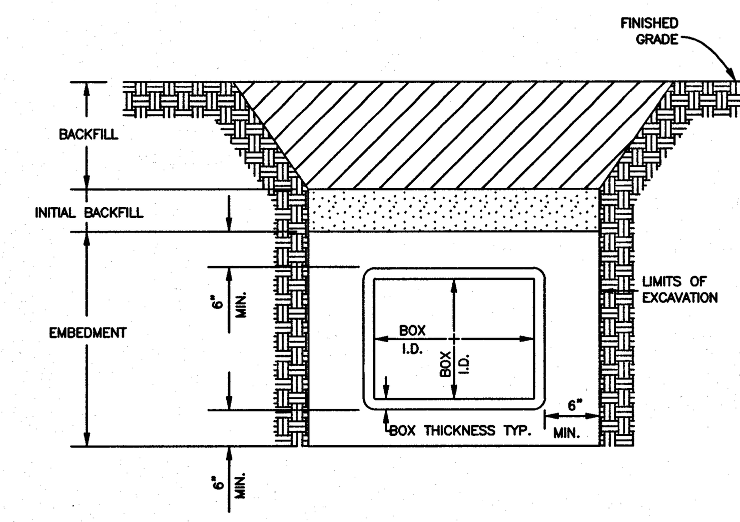
DESIGN:	CAD:	SCALE:	DATE:	DRAWING:
CAK	STAFF	NTS	11/10	D-108



NOTES:
1. BACKFILL SHALL BE NATIVE SOIL, FREE OF DEBRIS, COMPACTED TO 95% STANDARD PROCTOR DENSITY, EXCEPT AS REQUIRED UNDER PAVEMENT.
2. INITIAL BACKFILL SHALL BE UNIFORMLY GRADED MATERIAL (MAXIMUM SIZE, 3" DIAMETER), PLACE IN 8" LIFTS AND COMPACTED TO 95% STANDARD PROCTOR DENSITY, EXCEPT AS REQUIRED UNDER PAVEMENT.
3. EMBEDMENT SHALL BE CEMENT STABILIZED SAND (1.5 SACKS PER CUBIC YARD) COMPACTED TO 95% STANDARD PROCTOR DENSITY.
4. UNDER PAVING OR WITHIN 3' OF PAVEMENT, THE INITIAL BACKFILL AND ALL BACKFILL UP TO THE PAVEMENT SUBGRADE SHALL BE CEMENT STABILIZED SAND (1.5 SACKS PER CUBIC YARD) COMPACTED TO 95% STANDARD PROCTOR DENSITY.
5. TRENCH SHORING IN ACCORDANCE WITH OSHA, SHALL BE INSTALLED WHERE REQUIRED.
6. SOIL IN THE PIPE ZONE SHALL CONSIST OF NON-WATERBEARING, COHESIVE SOILS WITH A SHEAR STRENGTH OF 1000 PSF OR GREATER. WHEN WET SAND EXISTS IN THE PIPE ZONE, MODIFIED BEDDING SHALL BE INSTALLED.

THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
STORM SEWER BEDDING & BACKFILL

DESIGN:	CAD:	SCALE:	DATE:	DRAWING:
CAK	STAFF	NTS	11/10	D-100a



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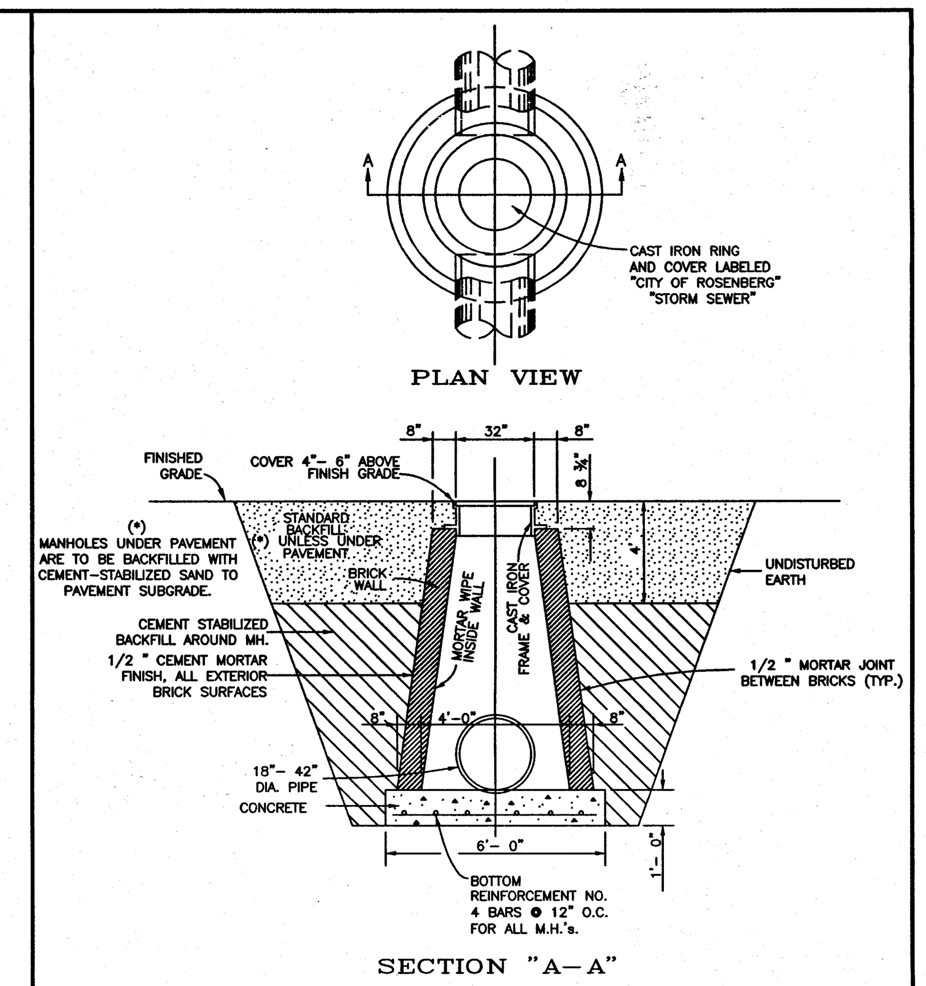
THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
STORM SEWER BEDDING & BACKFILL

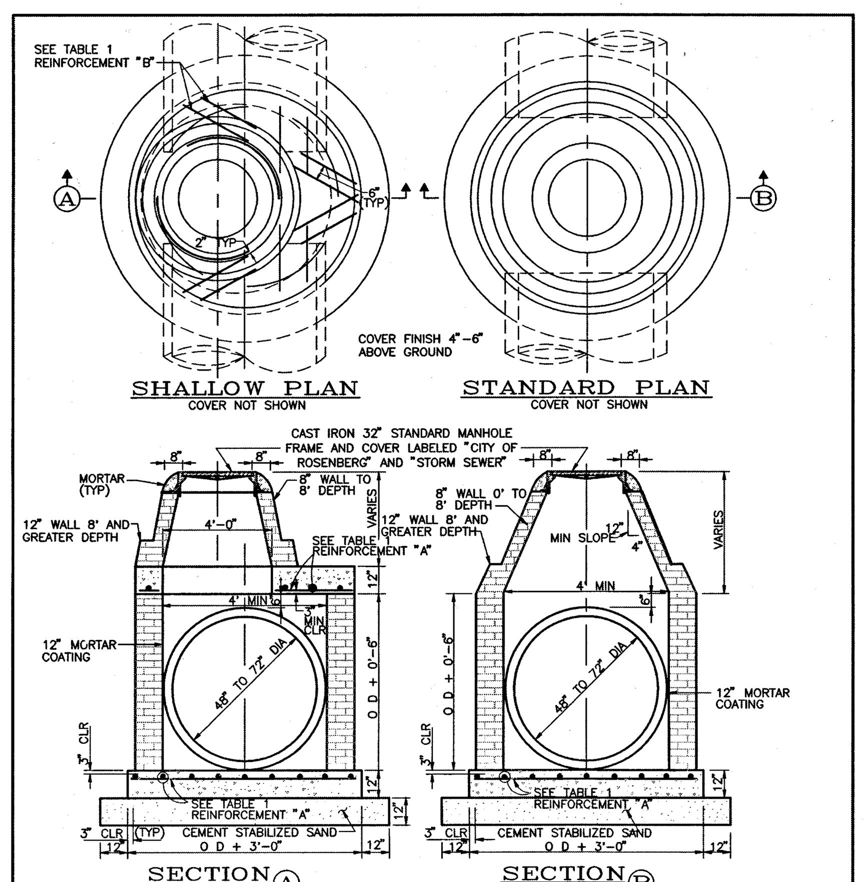
DESIGN:	CAD:	SCALE:	DATE:	DRAWING:
CAK	STAFF	NTS	11/10	D-100b



NOTES:
1. BRICK WALLS 8'- 0" BELOW CASTING TO BE 12" THICK.
2. ALL BRICK MATERIAL SHALL CONFORM WITH ASTM C32, GRADE NA, EXCEPT NOT MORE THAN 16% GRADE ABSORPTION WILL BE PERMITT
3. ALL MANHOLE CHIMNEYS SHALL BE BRICK OR THROAT RING.

THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
BRICK TYPE "C" MANHOLE 18"- 42"

DESIGN:	CAD:	SCALE:	DATE:	DRAWING:
CAK	STAFF	NTS	11/10	D-101



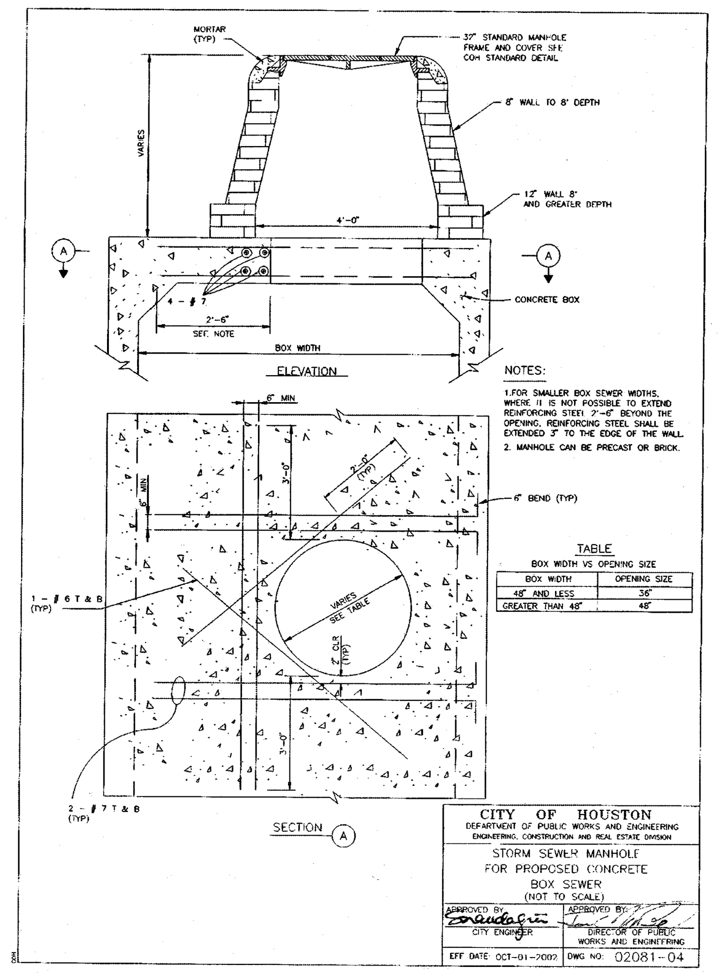
NOTE:
WHEN MANHOLE HAS LESS DEPTH THAN MIN SHOWN ON TABLE 1, BUILD "SECTION A" OTHERWISE BUILD "SECTION B".

TABLE 1
DATA FOR VARIOUS PIPE DIAMETERS

PIPE DIA (INCHES)	MIN DEPTH	REINFORCEMENT ("A")	REINFORCEMENT ("B")
48"	8'-0"	# 5 @ 12 E W	2 - # 6
54"	9'-4"	# 5 @ 10 E W	2 - # 6
60"	10'-7"	# 5 @ 8 E W	2 - # 7
66"	11'-10"	# 5 @ 7 E W	2 - # 7
72"	13'-2"	# 5 @ 6 E W	2 - # 7

THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
STORM SEWER MANHOLE TYPE "C" FOR 48" TO 72" DIAMETER RCP

DESIGN:	CAD:	SCALE:	DATE:	DRAWING:
CAK	STAFF	NTS	11/10	D-102

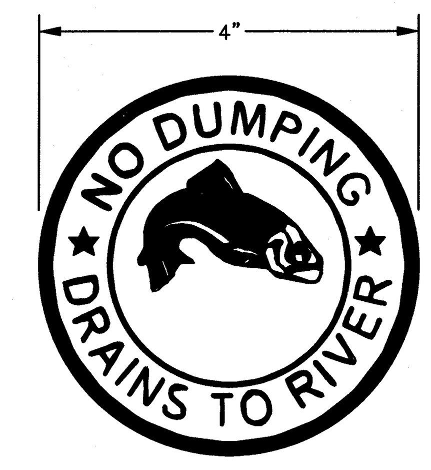


NOTES:
1. FOR SMALLER BOX SEWER WIDTHS, WHERE IT IS NOT POSSIBLE TO EXTEND REINFORCING STEEL 2'-6" BEYOND THE OPENING, REINFORCING STEEL SHALL BE EXTENDED 3" TO THE EDGE OF THE WALL.
2. MANHOLE CAN BE PRECAST OR BRICK.

TABLE
BOX WIDTH VS OPENING SIZE

BOX WIDTH	OPENING SIZE
48" AND LESS	36"
GREATER THAN 48"	48"

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
ENGINEERING, CONSTRUCTION AND REAL ESTATE DIVISION
STORM SEWER MANHOLE FOR PROPOSED CONCRETE BOX SEWER (NOT TO SCALE)
APPROVED BY: CITY ENGINEER
APPROVED BY: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: OCT-01-2002 DWG NO: 02081-04

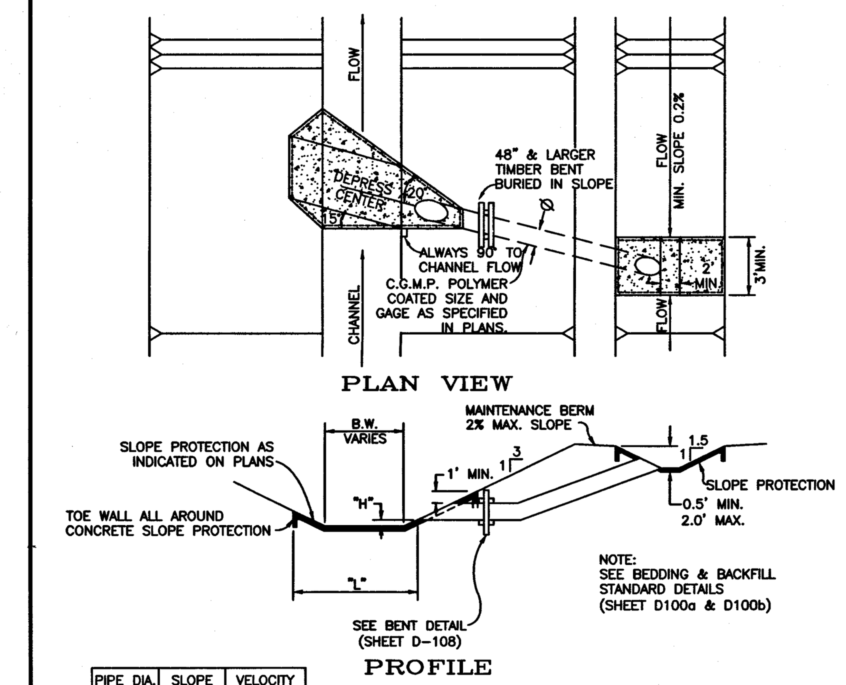


STORM DRAIN MARKER
ITEM NO. SD-4
1 COLOR: BLUE, 4" DISC
MATERIAL: STAINLESS STEEL
SYMBOL: FISH
MANUFACTURED BY:
ALMETEK INDUSTRIES, INC.
2 JOY DRIVE
HACKETTSTOWN, NJ 07840
1 (800) 248-2080
www.almetek.com

NOTES:
1. Surface installation requires the surface be brushed with a wire brush and all dust blown off that surface.
2. Install marker with [SIKS-ADH] Sikabound Adhesive using a dripless caulking tube gun. Place the adhesive on the back side of the marker in a circular motion from the outside of the marker into the middle of the marker. Place marker in place and apply pressure to the face of the marker.
3. Markers may be applied to concrete, asphalt or steel. The City of Rosenberg requires the marker to be placed on the middle of every catch basin on all storm drains.

THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
NO DUMPING METAL STORM DRAIN MARKER

DESIGN:	CAD:	SCALE:	DATE:	DRAWING:
CAK	STAFF	NTS	11/10	D-109



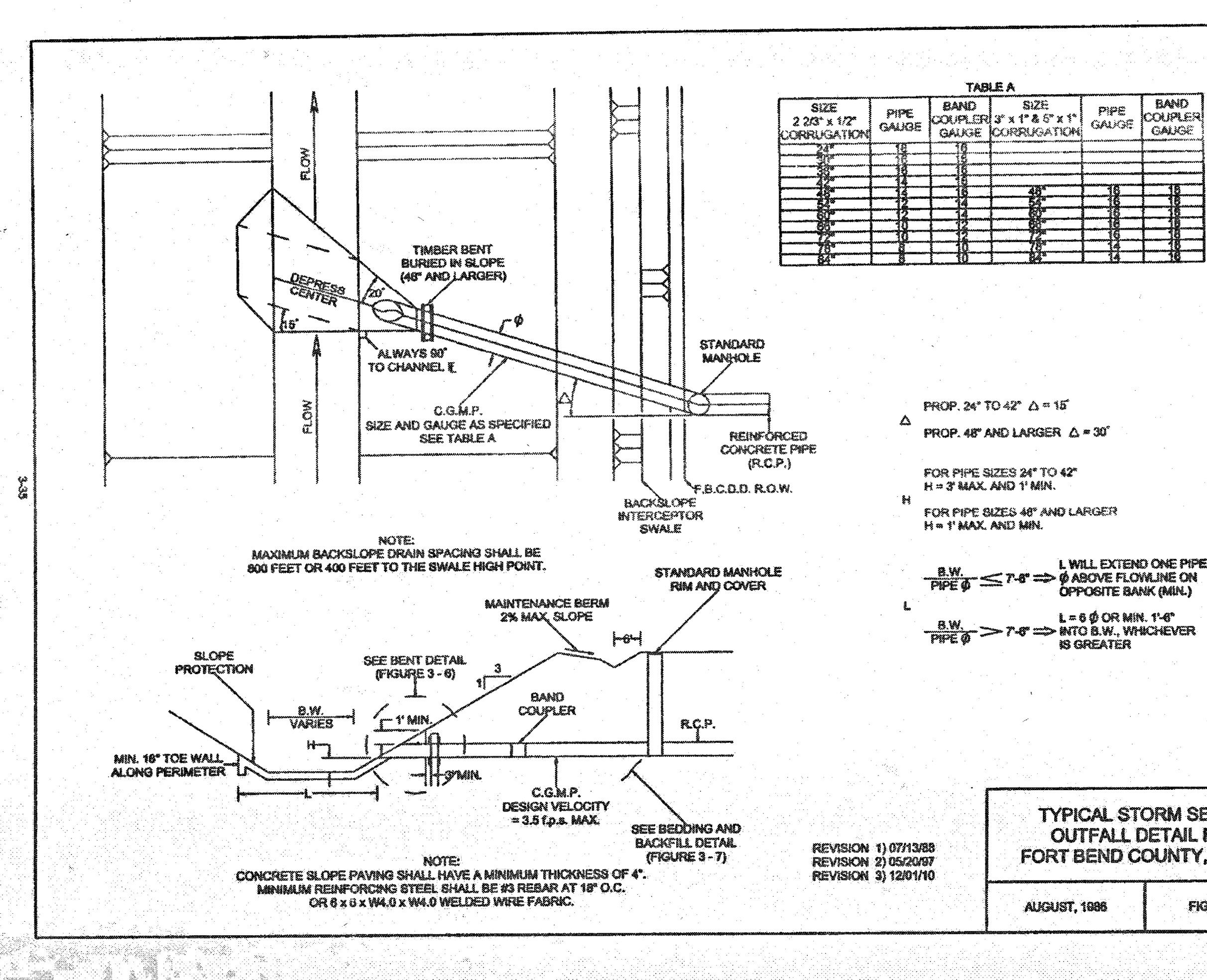
PIPE DIA.	SLOPE	VELOCITY
24"	0.6%	3.25 f.p.s.
36"	0.3%	3.00 f.p.s.
42"	0.2%	2.75 f.p.s.
48"	0.2%	3.00 f.p.s.
54"	0.2%	3.25 f.p.s.

"H" : FOR PIPE SIZES UP TO 42" H = 3 FT. MAX. AND 1 FT. MIN.
FOR PIPE SIZES OVER 48" H = 1 FT. MAX. AND MIN.
"L" : B.W. / PIPE SIZE ≤ 7' -6" → "L" WILL EXTEND ONE PIPE Ø ABOVE FL ON OPPOSITE BANK (MIN.)
B.W. / PIPE SIZE > 7' -6" → "L" = 6 Ø OR MIN. 1' -6" INTO B.W. WHICHEVER IS GREATER
NOTE: MAX. BACKSLOPE DRAIN SPACING SHALL BE 800 FT. OR 400 FT. TO THE SWALE HIGH POINT.

NOTES:
1. THE MINIMUM THICKNESS OF CONCRETE SLOPE PAVING USED SHALL BE (5") FIVE INCHES.

THE CITY OF ROSENBERG, FORT BEND COUNTY, TEXAS
DEPARTMENT OF PUBLIC WORKS
TYPICAL BACKSLOPE DRAIN

DESIGN:	CAD:	SCALE:	DATE:	DRAWING:
CAK	STAFF	NTS	11/10	D-110



NOTE:
MAXIMUM BACKSLOPE DRAIN SPACING SHALL BE 800 FEET OR 400 FEET TO THE SWALE HIGH POINT.

NOTE:
CONCRETE SLOPE PAVING SHALL HAVE A MINIMUM THICKNESS OF 4". MINIMUM REINFORCING STEEL SHALL BE #3 REBAR AT 18" O.C. OR 6 x 6 x W4.0 x W4.0 WELDED WIRE FABRIC.

TABLE A

SIZE 2 2/3" x 1/2" CORRUGATION	PIPE GAUGE	BAND COUPLER GAUGE	SIZE 3" x 1" & 5" x 1" CORRUGATION	PIPE GAUGE	BAND COUPLER GAUGE
24"	16	16			
30"	16	16			
36"	14	16			
42"	14	16			
48"	14	16	48"	16	16
54"	12	14	54"	16	16
60"	12	14	60"	16	16
66"	10	12	66"	16	16
72"	10	12	72"	16	16
78"	8	10	78"	14	16
84"	8	10	84"	14	16

Δ PROP. 24" TO 42" Δ = 15°
PROP. 48" AND LARGER Δ = 30°
H FOR PIPE SIZES 24" TO 42" H = 3' MAX. AND 1' MIN.
FOR PIPE SIZES 48" AND LARGER H = 1' MAX. AND MIN.
L B.W. / PIPE Ø ≤ 7'-6" ⇒ L WILL EXTEND ONE PIPE Ø ABOVE FLOWLINE ON OPPOSITE BANK (MIN.)
B.W. / PIPE Ø > 7'-6" ⇒ L = 6 Ø OR MIN. 1'-6" INTO B.W., WHICHEVER IS GREATER

REVISION 1) 07/13/88
REVISION 2) 05/20/97
REVISION 3) 12/01/10

TYPICAL STORM SEWER OUTFALL DETAIL FOR FORT BEND COUNTY, TEXAS
AUGUST, 1986 | FIGURE 3 - 5

BENCHMARK:
A BRASS DISK STAMPED K-1219, SET IN A CONCRETE HEADWALL, LOCATED IN FORT BEND COUNTY, 0.15 MILE SOUTH OF
THE INTERSECTION OF STATE HIGHWAY 36 AND MEYER ROAD, SET IN THE TOP OF A CONCRETE HEADWALL AND 1.7 FEET SOUTH OF THE NORTH END OF THE EAST CONCRETE HEADWALL
OF A CULVERT, 24 FEET EAST OF THE CENTERLINE OF STATE HIGHWAY 36, AND LEVEL WITH THE HIGHWAY'S SURFACE.
NAVD-88 (1991 ADJ.) ELEV = 91.69 FEET
TBM (LJA 1)
A ⅝-INCH IRON ROD WITH CAP SET AT THE INTERSECTION OF BRYAN ROAD AND SPACEK ROAD, APPROXIMATELY 18.8 FEET NORTH OF THE CENTERLINE OF BRYAN ROAD AND 40.4 FEET WEST OF THE CENTERLINE OF SPACEK ROAD.
NAVD-88(1991 ADJ.) ELEV = 90.758 FEET
INTERNAL 100-YR FLOOD ELEV = 79.38
PER LJA REPORT "MASTER DRAINAGE PLAN FOR BONBROOK PLANTATION DEVELOPMENT" FORT BEND COUNTY MUD 155, JAN. 2005

FIRM PANEL: 48157C0265 L
DATE: APRIL 2, 2014

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RECORD DRAWING
I CERTIFY THAT THIS DRAWING REFLECTS THE IMPROVEMENTS CONSTRUCTED AS TO SIZE, LOCATION AND GRADE AND THAT THE CONSTRUCTION WAS IN FULL COMPLIANCE WITH THE CONTRACT DOCUMENTS
BY ____________ DATE ________
TITLE ____________

DATE	REVISION	BY

FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED: [signature] DEVELOPMENT COORDINATOR
DATE: 4/13/18

CITY OF ROSENBERG FOUNDED 1883

B-BROOK LAND PARTNERS, L.P.

BONBROOK PLANTATION SOUTH DETENTION POND "G"

STORM SEWER CONSTRUCTION DETAILS

LJA Engineering, Inc.
2929 Briarpark Drive
Suite 600
Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

LJA PROJECT NO.: 2304-1110B
DRAWN: L.O.R. DESIGN: M.F./K.T. DATE: FEBRUARY 2018
SCALE: NONE SHEET NO. 18 OF 20

STATE OF TEXAS MICHEAL WANG 92053 LICENSED PROFESSIONAL ENGINEER [signature] 3/5/2018

BONBROOK PLANTATION SOUTH DETENTION POND "G" – JOB NO. 2304-1110B

18
Date\Time : Fri, 09 Mar 2018 – 4:06pm User Name : ktrachsel
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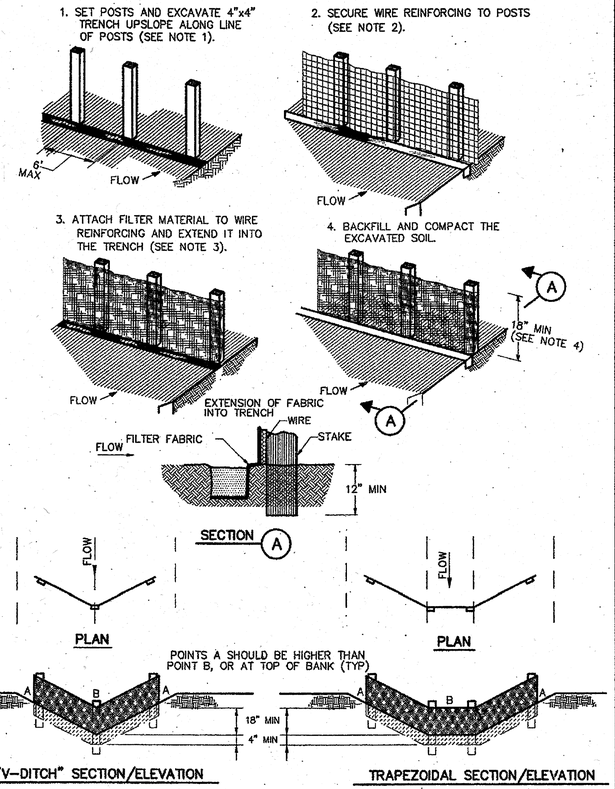
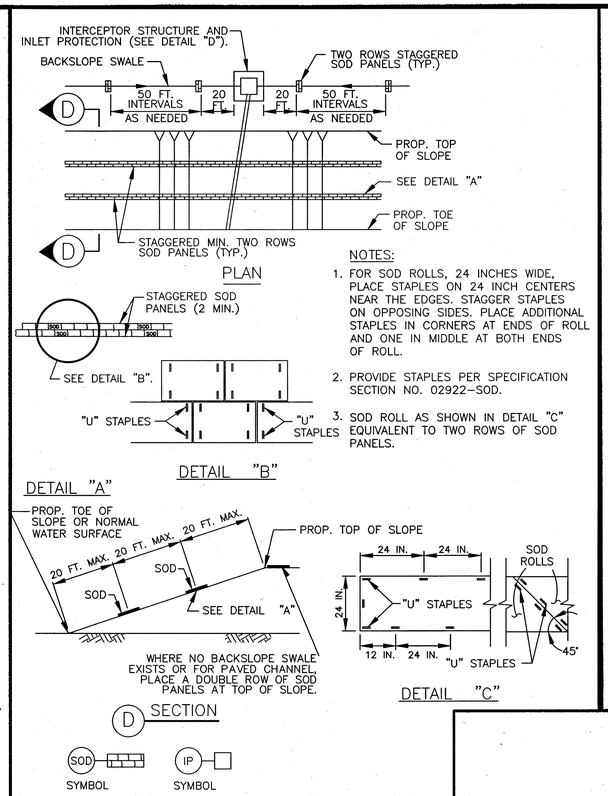


CONSTRUCTION NOTES:

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 REINFORCING TO BE FASTENED SECURELY TO BARRIER POSTS WITH STAPLES.
3. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE REINFORCING, 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 COH STANDARD SPECIFICATION FOR FILTER FABRIC BARRIER.

X—(RFB)—X
SYMBOL

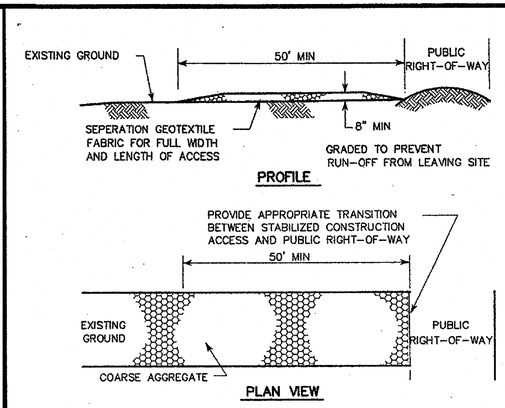
REINFORCED FILTER FABRIC BARRIER



NOTES:

1. FOR SOD ROLLS, 24 INCHES WIDE, PLACE STAPLES ON 24 INCH CENTERS NEAR THE EDGES. STAGGER STAPLES ON OPPOSING SIDES. PLACE ADDITIONAL STAPLES IN CORNERS AT ENDS OF ROLL AND ONE IN MIDDLE AT BOTH ENDS OF ROLL.
2. PROVIDE STAPLES PER SPECIFICATION SECTION NO. 02922-SOD.
3. SOD ROLL AS SHOWN IN DETAIL "C" EQUIVALENT TO TWO ROWS OF SOD PANELS.

SODDING

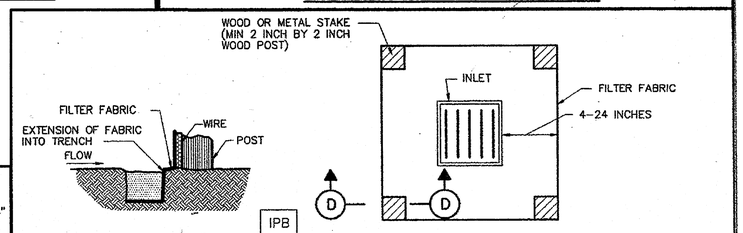


CONSTRUCTION NOTES:

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 ACCESS, UNLESS OTHERWISE SHOWN ON THE CONSTRUCTION DRAWINGS.
5. STABILIZED AREA MAY BE WIDENED OR LENGTHENED TO ACCOMODATE A WASHING AREA. AN OUTLET SEDIMENT TRAP MUST BE PROVIDED FOR THE WASHING AREA.
6. COH STANDARD SPECIFICATION FOR STABILIZED CONSTRUCTION ACCESS.
7. STABILIZED CONSTRUCTION ACCESS SHALL BE MAINTAINED FREE OF SEDIMENT FOR THE DURATION OF THE PROJECT.

(SC)
SYMBOL

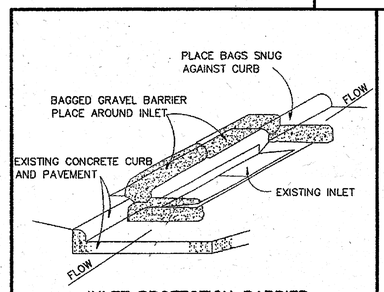
STABILIZED CONSTRUCTION ACCESS



SILT FENCE INLET PROTECTION BARRIER

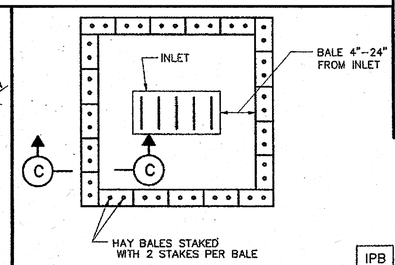
CONSTRUCTION NOTE:

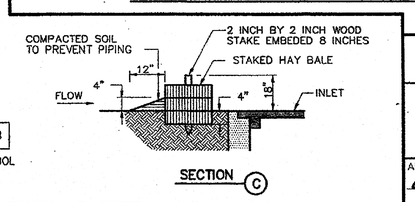
1. SEE CONSTRUCTION NOTES FOR RFB.



INLET PROTECTION BARRIER

(FOR STAGE II INLETS)
BAGGED GRAVEL BARRIER





HAY BALE INLET PROTECTION BARRIER

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

STORM WATER POLLUTION PREVENTION PLAN DETAILS

(NOT TO SCALE)

APPROVED: CITY ENGINEER	APPROVED: DIRECTOR OF PUBLIC WORKS AND ENGINEERING
EFF DATE: JULY-01-2010	DWG NO: 01571-01

BENCHMARK:

A BRASS DISK STAMPED K-1219, SET IN A CONCRETE HEADWALL, LOCATED IN FORT BEND COUNTY, 0.15 MILE SOUTH OF
THE INTERSECTION OF STATE HIGHWAY 36 AND MEYER ROAD, SET IN THE TOP OF A CONCRETE HEADWALL AND 1.7 FEET SOUTH OF THE NORTH END OF THE EAST CONCRETE HEADWALL
OF A CULVERT, 24 FEET EAST OF THE CENTERLINE OF STATE HIGHWAY 36, AND LEVEL WITH THE HIGHWAY'S SURFACE.
NAVD-88 (1991 ADJ.) ELEV = 91.69 FEET

TBM (LJA 1)
A ¾-INCH IRON ROD WITH CAP SET AT THE INTERSECTION OF BRYAN ROAD AND SPACEK ROAD, APPROXIMATELY 18.8 FEET NORTH OF THE CENTERLINE OF BRYAN ROAD AND 40.4 FEET WEST OF THE CENTERLINE OF SPACEK ROAD.
NAVD-88(1991 ADJ.) ELEV = 90.758 FEET

INTERNAL 100-YR FLOOD ELEV = 79.38
PER LJA REPORT "MASTER DRAINAGE PLAN FOR BONBROOK PLANTATION DEVELOPMENT" FORT BEND COUNTY MUD 155, JAN. 2005

FIRM PANEL: 48157C0265 L
DATE: APRIL 2, 2014

NOTES:

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RECORD DRAWING

I CERTIFY THAT THIS DRAWING REFLECTS THE IMPROVEMENTS CONSTRUCTED AS TO SIZE, LOCATION AND GRADE AND THAT THE CONSTRUCTION WAS IN FULL COMPLIANCE WITH THE CONTRACT DOCUMENTS

BY _____ DATE _____

TITLE _____

DATE	REVISION	BY

FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED: _____ DEVELOPMENT COORDINATOR

DATE: 4/13/18

CITY OF ROSENBERG FOUNDED 1885

B-BROOK LAND PARTNERS, L.P.

BONBROOK PLANTATION SOUTH DETENTION POND "G"

STORM WATER POLLUTION PREVENTION PLAN DETAILS

LJA Engineering, Inc.
2929 Briarpark Drive
Suite 600
Houston, Texas 77042
Phone 713.953.5200
Fax 713.953.5026
FRN - F-1386

LJA PROJECT NO.: 2304-1110B

DRAWN: L.O.R. DESIGN: M.F./K.T. DATE: FEBRUARY 2018

SCALE: NONE

SHEET NO. 19 OF 20

STATE OF TEXAS
MICHEAL WANG
92053
LICENSED
PROFESSIONAL ENGINEER
3/5/2018

BONBROOK PLANTATION SOUTH DETENTION POND "G" – JOB NO. 2304-1110B

Date\Time : Fri, 09 Mar 2018 – 4:07pm User Name : ktrochsel
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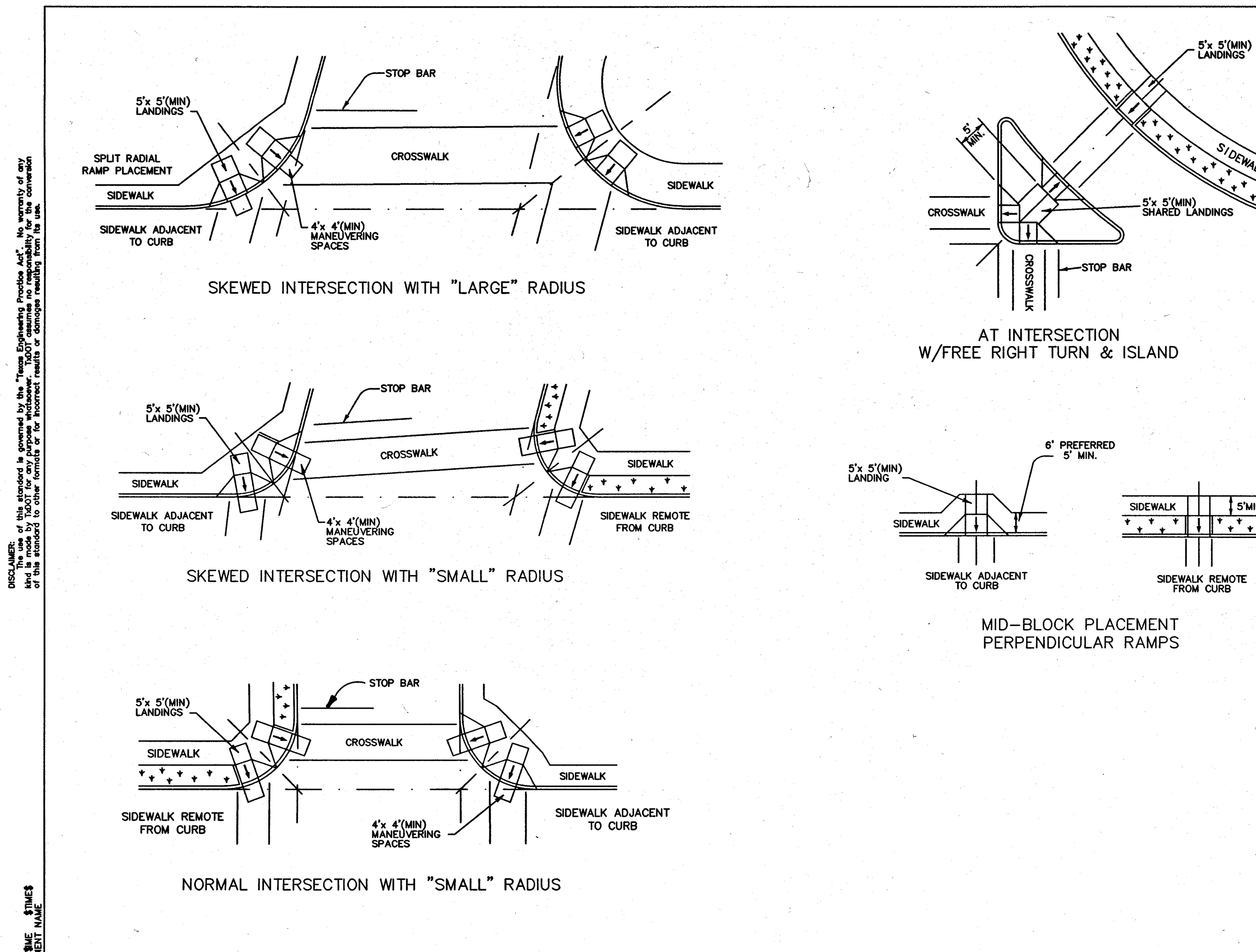
19



TYPICAL CROSSING LAYOUTS

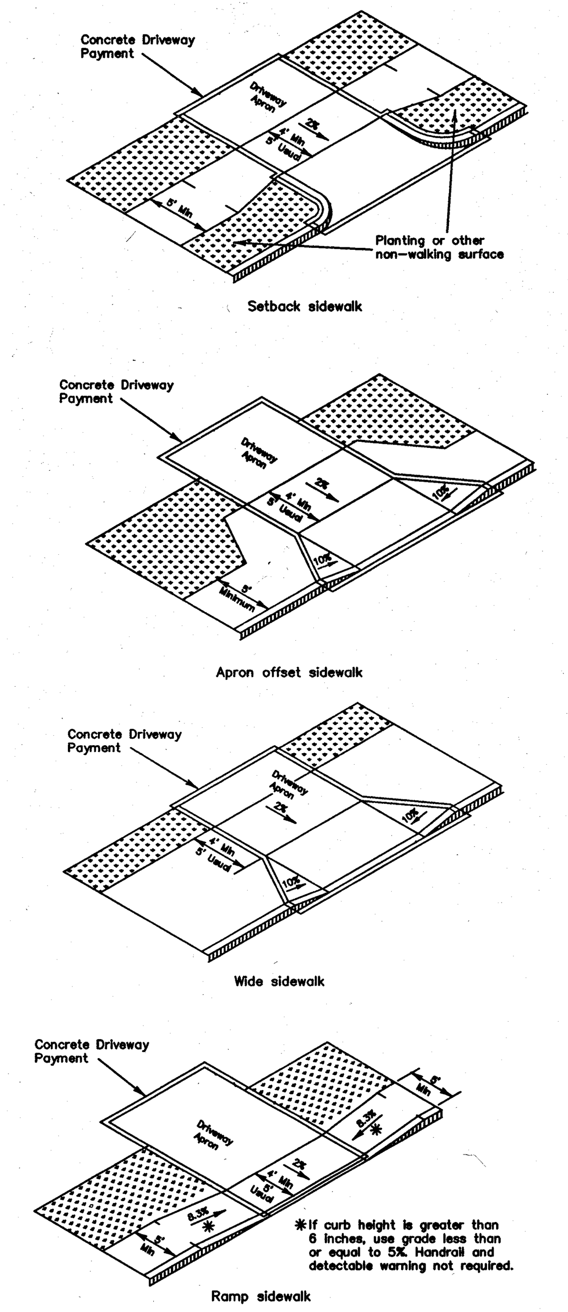
SHEET 4 OF 4

Texas Department of Transportation
Design Division Standard

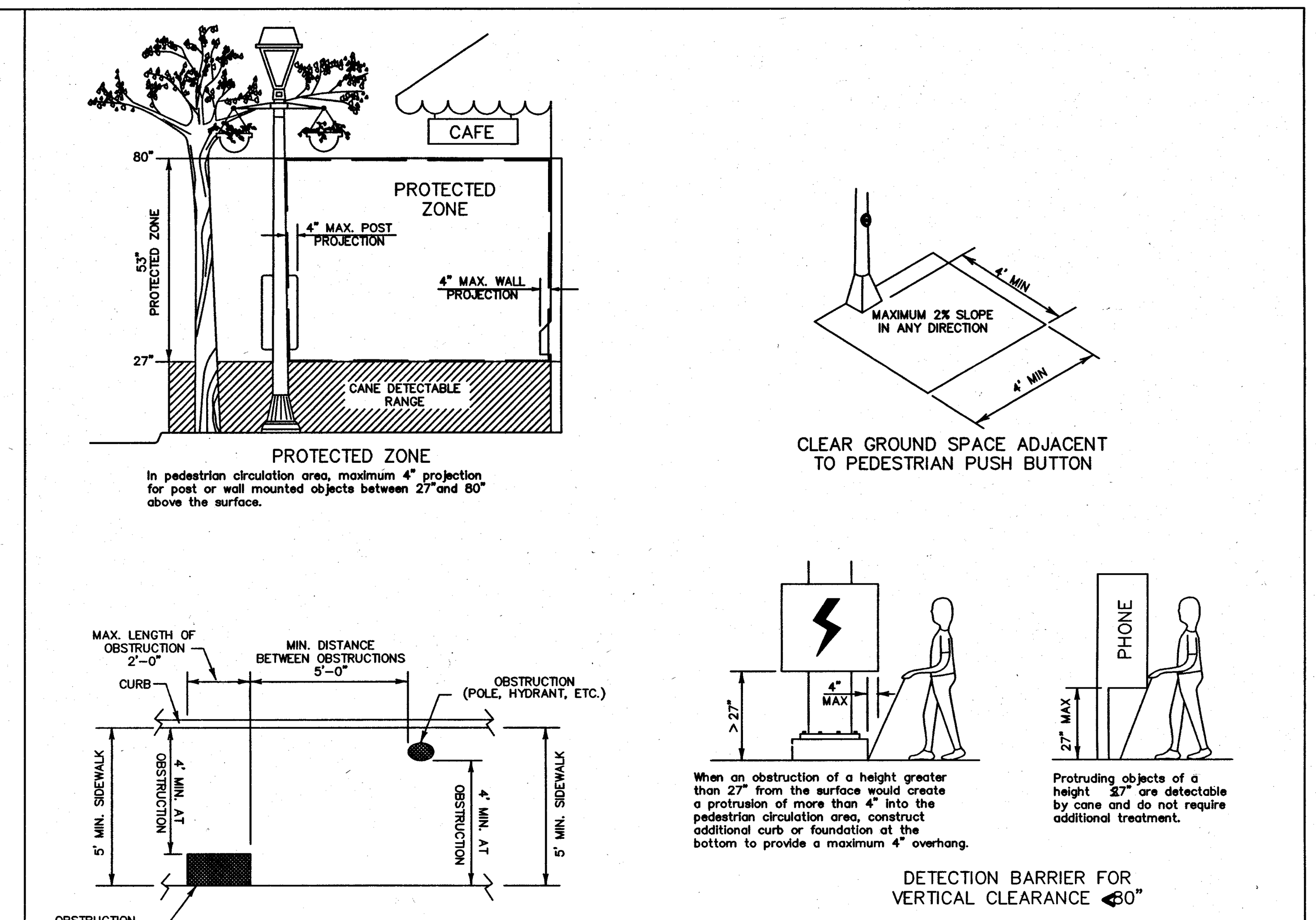
PEDESTRIAN FACILITIES
CURB RAMPS

PED-12A

FILE: ped12a.dgn | DN: TxDOT | CK: PK | DW: TxDOT | CK: HD
©TxDOT March 2002 | CONT | SECT | JOB | HIGHWAY
REVISIONS | C | S | J | HWY
VP June 13, 2012 | DIST | COUNTY | SHEET NO.
DST | CTY | AA3



SIDEWALK TREATMENT AT DRIVEWAYS



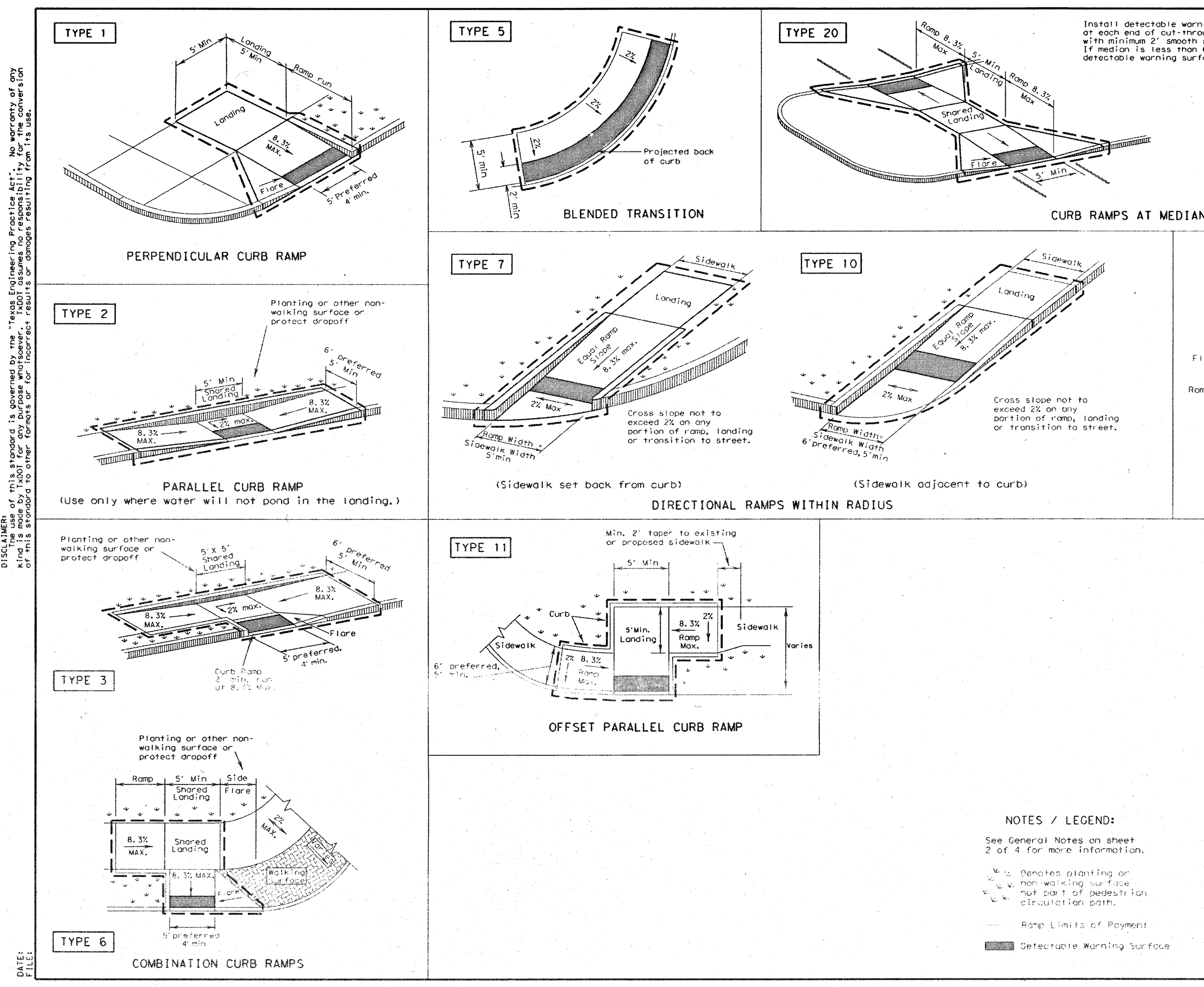
SHEET 3 OF 4

Texas Department of Transportation
Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS

PED-12A

FILE: ped12a.dgn | DN: TxDOT | CK: PK | DW: TxDOT | CK: HD
©TxDOT March 2002 | CONT | SECT | JOB | HIGHWAY
REVISIONS | C | S | J | HWY
VP June 13, 2012 | DIST | COUNTY | SHEET NO.
DST | CTY | AA4



NOTES / LEGEND:

See General Notes on sheet 2 of 4 for more information.

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

Ramp Limits of Payment

Detectable Warning Surface

SHEET 1 OF 4

Texas Department of Transportation
Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS

PED-12

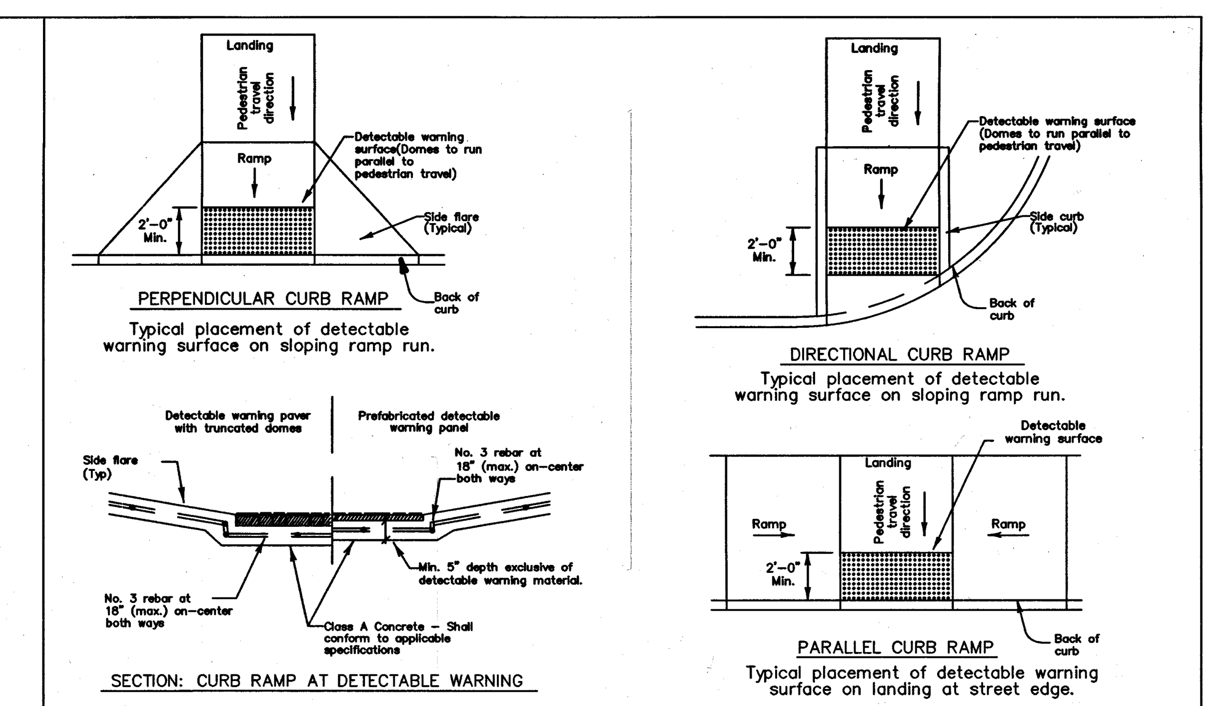
General Notes

Curb Ramps

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

Detectable Warning Material

18. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with Section 705 of the TAS. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
19. Detectable Warning Materials must meet TxDOT Departmental Materials Specification DMS 4350 and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
20. Detectable warning surfaces must be slip resistant and not allow water to accumulate.
21. Detectable warning surfaces shall be a minimum of 24" in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
22. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb. Align the rows of domes to be perpendicular to the grade break between the ramp run and the street. Detectable warning surfaces may be curved along the corner radius.
23. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.



DETECTABLE WARNINGS

Detectable Warning Pavers

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

Sidewalks

26. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within one or more reach ranges specified in TAS 308.
27. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
28. Street grades and cross slopes shall be as shown elsewhere in the plans.
29. Changes in level greater than 1/4 inch are not permitted.
30. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than 5% must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with TAS 505.
31. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.
32. Driveways and turnouts shall be constructed and paid for in accordance with Item "Intersections, Driveways and Turnouts". Sidewalks shall be constructed and paid for in accordance with Item, "Sidewalks".
33. Sidewalk details are shown elsewhere in the plans.

SHEET 2 OF 4

Texas Department of Transportation
Design Division Standard

PEDESTRIAN FACILITIES
CURB RAMPS

PED-12A

FILE: ped12a.dgn | DN: TxDOT | CK: PK | DW: TxDOT | CK: HD
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REVISIONS | C | S | J | HWY
VP June 13, 2012 | DIST | COUNTY | SHEET NO.
DST | CTY | AA2

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DATE	REVISION	BY

FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED: [signature]
DEVELOPMENT COORDINATOR

DATE: 4/13/18

CITY OF ROSENBERG — FOUNDED 1883

B-BROOK LAND PARTNERS, L.P.

BONBROOK PLANTATION SOUTH DETENTION POND "G"

TXDOT PEDESTRIAN FACILITIES PED-12A

LJA Engineering, Inc.
2929 Briarpark Drive
Suite 600
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Fax 713.953.5026
FRN - F-1386

LJA PROJECT NO.: 2304-1110B

DRAWN: L.O.R. DESIGN: M.F./K.T. DATE: FEBRUARY 2018

SCALE: NONE SHEET NO. 20 OF 20

STATE OF TEXAS — MICHEAL WANG — 92053 — LICENSED PROFESSIONAL ENGINEER
3/5/2018

BONBROOK PLANTATION SOUTH DETENTION POND "G" – JOB NO. 2304-1110B

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