



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

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

- ☒ **Right of Way Permit**
☐ **Commercial Driveway Permit**

Permit No: 2018-20486

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

(1) COMPLETE APPLICATION FORM:

- ☒ a. Name of road, street, and/or drainage ditch affected.
☒ b. Vicinity map showing course of directions
☒ c. Plans and specifications

(2) BOND:

- ☐ County Attorney, approval when applicable.
- ☐ Perpetual bond currently posted. Bond No: _____ Amount: _____
- ☒ Performance bond submitted. Bond No: XXXXXXXXXX Amount: \$5,000.00
- ☐ 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

6/5/2018

Date



REVIEW BY FORT BEND COUNTY
COMMISSIONERS COURT

Fort Bend County
Engineering Department

301 Jackson Suite 401
Richmond, Texas 77469
281.633.7500

Permits@fortbendcountytx.gov

☒

Right of Way Permit

☐

Commercial Driveway Permit

Permit No: 2018-20486

Applicant: Tejas Underground Utilities, LLC

Job Location Site: 15928 Old Richmond Road, Sugar Land, TX 77498

Bond No. **Date of Bond:** 4/12/2018 **Amount:** \$5,000.00

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 inconsistent with Chapter 181, Vernon's Texas Statutes and Codes Annotated.

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

Presented to Commissioners Court and approved.

By: _____

County Engineer

Date Recorded _____ Comm. Court No. _____

Clerk of Commissioners Court

N/A

By: _____

Drainage District Engineer/Manager

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)**

BOND NO [REDACTED]

THE STATE OF TEXAS

KNOW ALL MEN BY THESE PRESENTS:

COUNTY OF FORT BEND

THAT WE, Tejas Underground Utilities, L.L.C. whose (address, phone) is P. O. Box 1419 Magnolia, TX 77353-1419, (281) 356 - 6960 Texas, hereinafter called the Principal, and International Fidelity Insurance Company, a Corporation existing under and by virtue of the laws of the state of NJ and authorized to do an indemnifying business in the state of Texas, and whose principal office is located at (name/address/phone) International Fidelity Insurance Company 10077 Grogans Mill Road, Suite 260, The Woodlands, TX 77380 whose officer residing in the State of Texas, authorized to accept service in all suits and actions brought whining said state is Jillian McKenzie c/o Technical Assurance, L.L.C. and whose address is 26623 Oak Ridge Drive, The Woodlands, TX 77380

hereinafter called the Surety, and held and firmly bound unto, Robert E. Hebert, County Judge of Fort Bend County, Texas, or his successors in office, in the full sum of Five Thousand Dollars and 00/100 Dollars (\$5,000.00) current, lawful money of the United States of America, to be paid to said Robert E. Hebert, County Judge of Fort Bend County, Texas, or his successors in office, to which payment well and truly to be made and done, we, the undersigned, bind ourselves and each of us, our heirs, executors, administrators, successors, assigns, and legal representatives, jointly and severally, by these presents.

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

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

NOW, THEREFORE, if the above bounden principal shall faithfully perform all its cable, conduit and/or pole line activity (including, but not limited to the laying, construction, maintenance and/or repair of cables, conduits and/or pole lines) in, under, across and/or along roads, streets and highways, commercial driveway and median openings or modifications in the County of Fort Bend and State of Texas, under the jurisdiction of the Commissioners Court of Fort Bend County, Texas, pursuant to and in accordance with minimum requirements and conditions of the above mentioned Commissioners' Court order set forth and specified to be by said principal done and performed, at the time and in the manner therein specified, and 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 12th day of April, 2018

Tejas Underground Utilities, L.L.C.

PRINCIPAL

BY

International Fidelity Insurance Company

SURETY

BY Jillian McKenzie, Attorney-in-Fact



POWER OF ATTORNEY
INTERNATIONAL FIDELITY INSURANCE COMPANY
ALLEGHENY CASUALTY COMPANY

Bond # _____

One Newark Center, 20th Floor, Newark, New Jersey 07102-5207 PHONE: (973) 624-7200

KNOW ALL MEN BY THESE PRESENTS: That **INTERNATIONAL FIDELITY INSURANCE COMPANY**, a corporation organized and existing under the laws of the State of New Jersey, and **ALLEGHENY CASUALTY COMPANY** a corporation organized and existing under the laws of the State of New Jersey, having their principal office in the City of Newark, New Jersey, do hereby constitute and appoint

EDWARD ARENS, PHILIP BAKER, JILLIAN MCKENZIE, ERICA ANNE COX, REBECCA GARZA
MICHELE BONNIN.

The Woodlands, TX.

their true and lawful attorney(s)-in-fact to execute, seal and deliver for and on its behalf as surety, any and all bonds and undertakings, contracts of indemnity and other writings obligatory in the nature thereof, which are or may be allowed, required or permitted by law, statute, rule, regulation, contract or otherwise, and the execution of such instrument(s) in pursuance of these presents, shall be as binding upon the said **INTERNATIONAL FIDELITY INSURANCE COMPANY** and **ALLEGHENY CASUALTY COMPANY**, as fully and amply, to all intents and purposes, as if the same had been duly executed and acknowledged by their regularly elected officers at their principal offices.

This Power of Attorney is executed, and may be revoked, pursuant to and by authority of the By-Laws of **INTERNATIONAL FIDELITY INSURANCE COMPANY** and **ALLEGHENY CASUALTY COMPANY** and is granted under and by authority of the following resolution adopted by the Board of Directors of **INTERNATIONAL FIDELITY INSURANCE COMPANY** at a meeting duly held on the 20th day of July, 2010 and by the Board of Directors of **ALLEGHENY CASUALTY COMPANY** at a meeting duly held on the 10th day of July, 2015 :

"**RESOLVED**, that (1) the Chief Executive Officer, President, Executive Vice President, Vice President, or Secretary of the Corporation shall have the power to appoint, and to revoke the appointments of, Attorneys-in-Fact or agents with power and authority as defined or limited in their respective powers of attorney, and to execute on behalf of the Corporation and affix the Corporation's seal thereto, bonds, undertakings, recognizances, contracts of indemnity and other written obligations in the nature thereof or related thereto; and (2) any such Officers of the Corporation may appoint and revoke the appointments of joint-control custodians, agents for acceptance of process, and Attorneys-in-fact with authority to execute waivers and consents on behalf of the Corporation; and (3) the signature of any such Officer of the Corporation and the Corporation's seal may be affixed by facsimile to any power of attorney or certification given for the execution of any bond, undertaking, recognizance, contract of indemnity or other written obligation in the nature thereof or related thereto, such signature and seals when so used whether heretofore or hereafter, being hereby adopted by the Corporation as the original signature of such officer and the original seal of the Corporation, to be valid and binding upon the Corporation with the same force and effect as though manually affixed."

IN WITNESS WHEREOF, **INTERNATIONAL FIDELITY INSURANCE COMPANY** and
ALLEGHENY CASUALTY COMPANY have each executed and attested these presents
on this 31st day of December, 2016



STATE OF NEW JERSEY
County of Essex

George R. James

Executive Vice President (International Fidelity Insurance Company) and
Vice President (Allegheny Casualty Company)



On this 31st day of December, 2016, before me came the individual who executed the preceding instrument, to me personally known, and, being by me duly sworn, said he is the therein described and authorized officer of **INTERNATIONAL FIDELITY INSURANCE COMPANY** and of **ALLEGHENY CASUALTY COMPANY**; that the seals affixed to said instrument are the Corporate Seals of said Companies; that the said Corporate Seals and his signature were duly affixed by order of the Boards of Directors of said Companies.



IN TESTIMONY WHEREOF, I have hereunto set my hand affixed my Official Seal, at the City of Newark,
New Jersey the day and year first above written.

Cathy Cruz a Notary Public of New Jersey
My Commission Expires April 16, 2019

CERTIFICATION

I, the undersigned officer of **INTERNATIONAL FIDELITY INSURANCE COMPANY** and **ALLEGHENY CASUALTY COMPANY** do hereby certify that I have compared the foregoing copy of the Power of Attorney and affidavit, and the copy of the Sections of the By-Laws of said Companies as set forth in said Power of Attorney, with the originals on file in the home of said companies, and that the same are correct transcripts thereof, and of the whole of the said originals, and that the said Power of Attorney has not been revoked and is now in full force and effect.

IN TESTIMONY WHEREOF, I have hereunto set my hand on this day, April 12, 2018

Maria H. Branco, Assistant Secretary

IMPORTANT NOTICE

To obtain information or make a complaint:

You may call International Fidelity Insurance Company's toll-free telephone number for information or to make a complaint at:

1-800-333-4167

You may also write to International Fidelity Insurance Company at:

**Attn: Claims Department
One Newark Center, 20th Floor
Newark, NJ 07102**

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:

**P. O. Box 149104
Austin, TX 78714-9104
Fax: (512) 475-1771
Web: <http://www.tdi.state.tx.us>
E-mail: ConsumerProtection@tdi.state.tx.us**

PREMIUM OR CLAIM DISPUTES:

Should you have a dispute concerning your premium or about a claim you should contact the agent or the company first. If the dispute is not resolved, you may contact the Texas Department of Insurance.

ATTACH THIS NOTICE TO YOUR BOND:

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

AVISO IMPORTANTE

Para obtener informacion o para someter una queja:

Usted puede llamar al numero de telefono gratis de International Fidelity Insurance Company's para informacion o para someter una queja al:

1-800-333-4167

Usted tambien puede escribir a International Fidelity Insurance Company:

**Attn: Claims Department
One Newark Center, 20th Floor
Newark, NJ 07102**

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:

**P. O. Box 149104
Austin, TX 78714-9104
Fax: (512) 475-1771
Web: <http://www.tdi.state.tx.us>
E-mail: ConsumerProtection@tdi.state.tx.us**

DISPUTAS SOBRE PRIMAS O RECLAMOS:

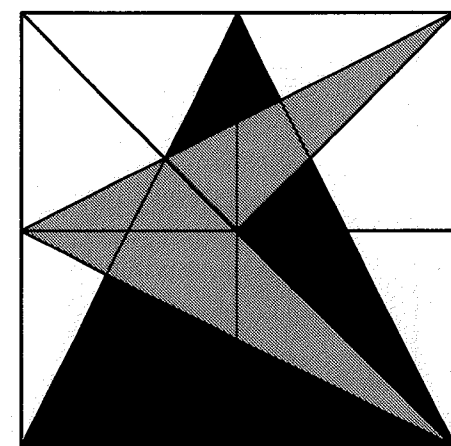
Si tiene una disputa concerniente a su prima o a un reclamo, debe comunicarse con el agente o la compania primero. Si no se resuelve la disputa, puede entonces comunicarse con el departamento (TDI).

UNA ESTE AVISO A SU FIANZA DE GARANTIA:

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

SITE DEVELOPMENT PLANS FOR TERRACES AT ARBORETUM PARK

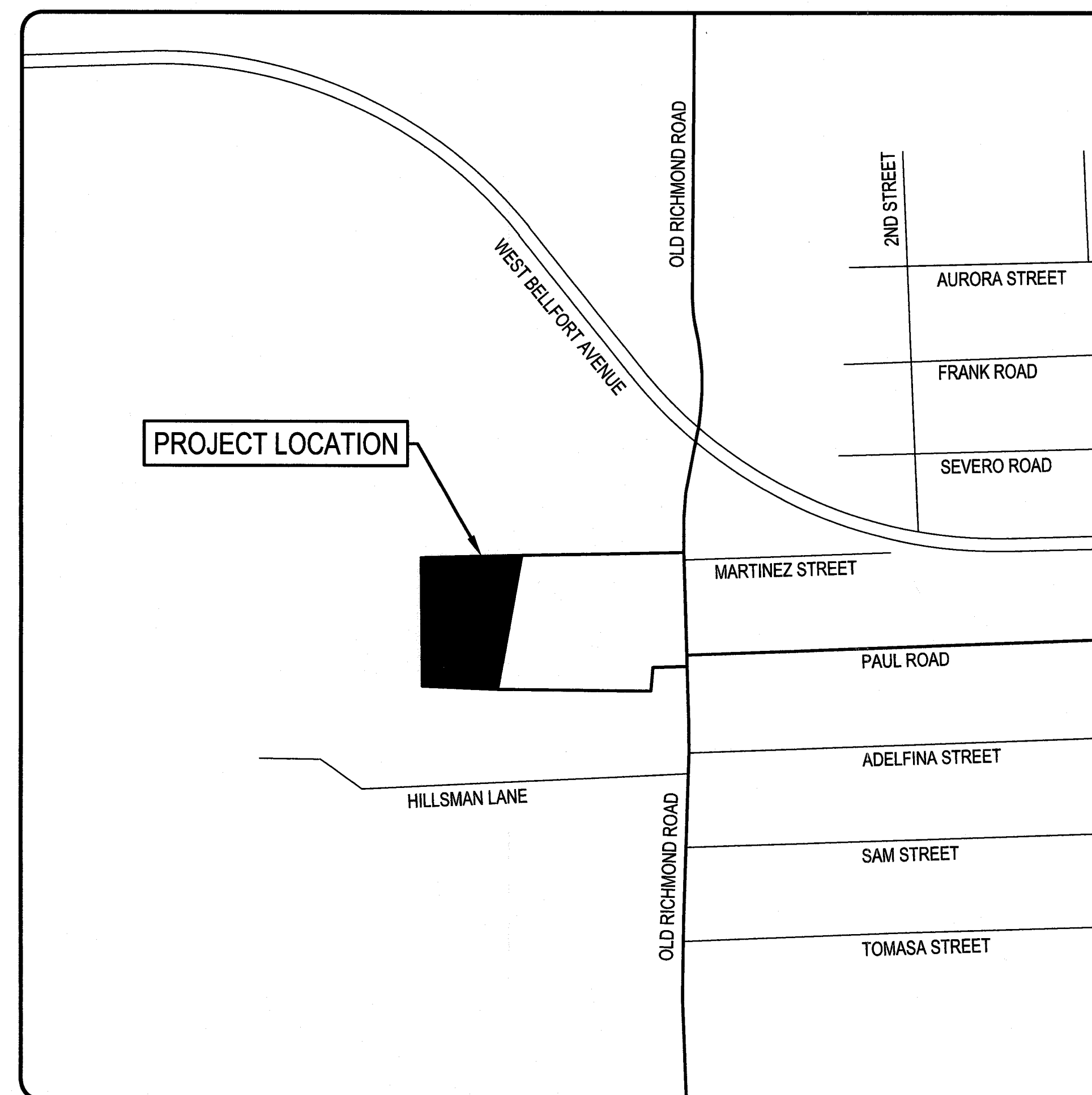
15928 OLD RICHMOND ROAD
FORT BEND COUNTY, TEXAS



**CARNEY
ENGINEERING,
PLLC.**

4588 Hinton Dr.
Plano, Texas 75024
PH (469) 443-0861
FAX (469) 443-0863

TBPE FIRM REGISTRATION NO: F-5033



VICINITY MAP
N.T.S.

SHEET INDEX

SHEET NO.	DESCRIPTION
TERRACES AT ARBORETUM APARTMENTS	
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C2.0	TOPOGRAPHIC SURVEY
C3.0	EROSION AND SEDIMENTATION CONTROL PLAN - PHASE I
C3.1	EROSION AND SEDIMENTATION CONTROL PLAN - PHASE II
C3.2	EROSION AND SEDIMENTATION CONTROL DETAILS
C4.0	DEMOLITION PLAN
C5.0	SITE PLAN
C6.0	UTILITY PLAN
C7.0	OVERALL GRADING AND DRAINAGE PLAN
C7.1	ENLARGED GRADING AND DRAINAGE PLAN - ENTRANCE ROAD
C7.2	ENLARGED GRADING AND DRAINAGE PLAN - NORTH
C7.3	ENLARGED GRADING AND DRAINAGE PLAN - SOUTH
C8.0	EXISTING DRAINAGE AREA PLAN
C8.1	PROPOSED DRAINAGE AREA PLAN
C8.0	PAVING DETAILS
C8.1	WATER & SEWER DETAILS
C9.2	STORM SEWER DETAILS

ALERT TO CONTRACTOR:

- ALL WORK FOR THIS PROJECT SHALL MEET OR EXCEED THE "SITE SPECIFIC SPECIFICATIONS."
- ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO CONTRACT COMPLETION AND THE FINAL CONNECTION OF SERVICES.

DEVELOPER/OWNER

ATLANTIC PACIFIC COMMUNITIES
MIAMI, FLORIDA 33133
(305) 357-4737
CONTACT: GREG GRIFFITH
EMAIL: ggriffith@apmanagement.net

ADDITIONAL AGENCIES CONTACT LIST

ARCHITECT: HUMPHREYS & PARTNERS ARCHITECTS, L.P.
5339 ALPHA ROAD SUITE 300
DALLAS, TEXAS 75240
PH: (972) 701-8636
FAX: (972) 701-8639
CONTACT: KIEL SIEMONEIT
EMAIL: kiel@humphreys.com

CEC: CARNEY ENGINEERING, PLLC.
4588 HINTON DRIVE
PLANO, TEXAS 75024
PH: (469) 443-0861
FAX: (469) 443-0863
CONTACT: CRAIG CARNEY
EMAIL: tccarney@verizon.net

SURVEYOR: LJA ENGINEERING, INC.
2829 BRIARPARK DRIVE SUITE 600
HOUSTON, TEXAS 77042
PH: (713) 953-5200

GEOTECH: THE MURILLO COMPANY
10325 LANDSBURY STE 400
HOUSTON, TEXAS 77069-4299
PH: (281) 933-9702
FAX: (281) 933-1051
CONTACT: DANIEL GUTIERREZ, P.E.
EMAIL: dgutierrez@murillocompany.com

TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY (TCEQ):

STORM WATER & GENERAL PERMITS TEAM, REGION 12
5425 POLK STREET, STE H
HOUSTON, TX 77023-1452
PH: (713) 767-3500
CONTACT: ASHLEY K. WADICK, REGIONAL DIRECTOR
WEB SITE: www.tceq.tx.gov

COUNTY/CONTACT:

FORT BEND COUNTY
301 JACKSON STREET
RICHMOND, TEXAS 77469
CONTACT: MAGGIE DALTON
PH: (281) 633-7515
EMAIL: maggie.dalton@fortbendcountytx.gov

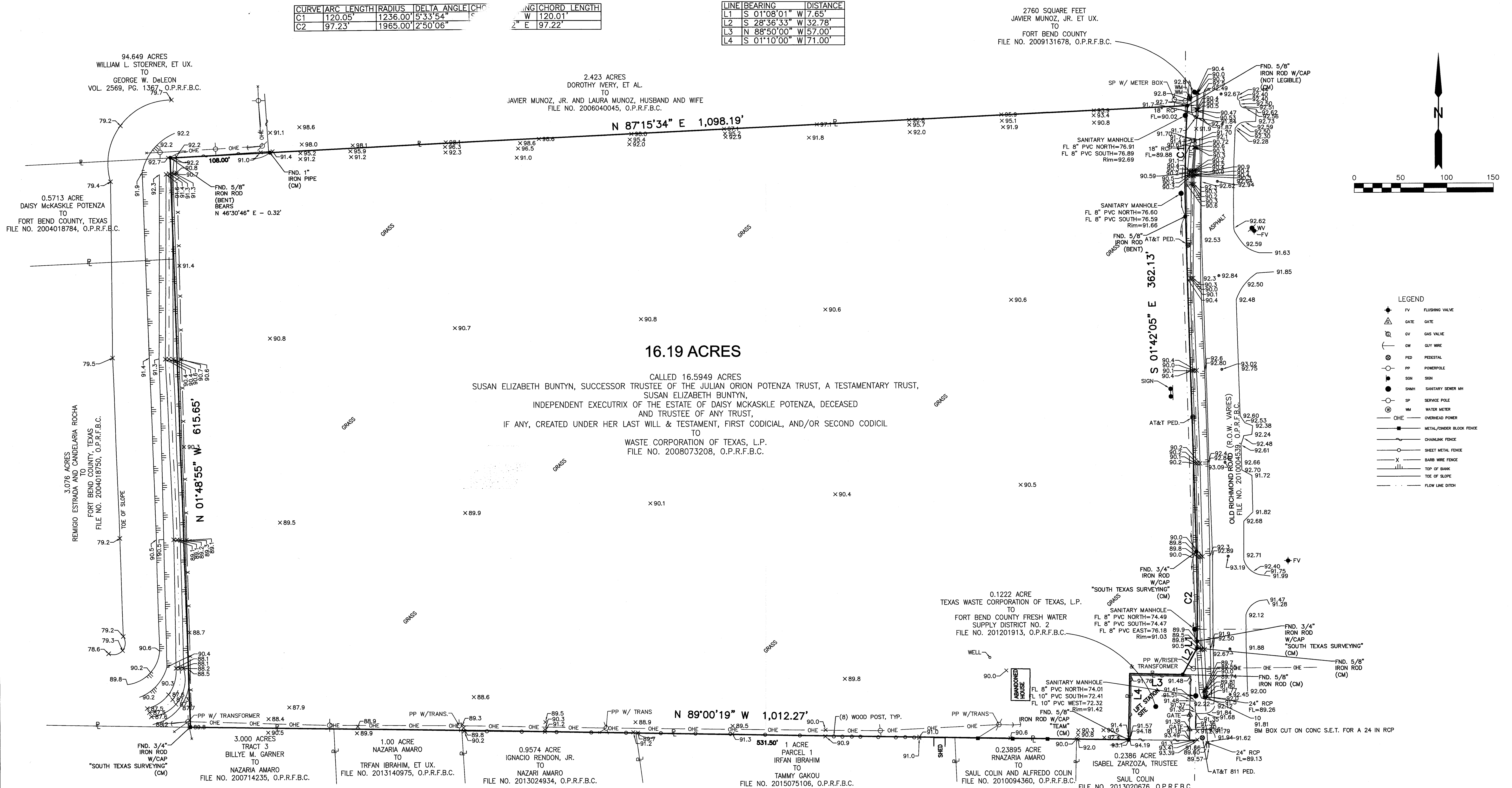
TERRACES AT ARBORETUM APARTMENTS
PROJECT NO. 2068-062

FORT BEND COUNTY ENGINEER	
ENGINEER:	<i>Richard W. Stolleis, Jr.</i>
DATE:	2/21/18
THESE SIGNATURES ARE VOID IF CONSTRUCTION HAS NOT COMMENCED IN (1) YEAR FROM DATE OF APPROVAL.	
APPROVED:	<i>Greg Griffith</i>
DATE:	2/20/18

CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD
C1	120.05'	1236.00'	5°33'54"	120.01'
C2	97.23'	1965.00'	2°50'06"	97.22'

LINE	BEARING	DISTANCE
L1	S 01°08'01" W	7.65'
L2	S 28°36'33" W	32.78'
L3	N 88°50'00" W	57.00'
L4	S 01°10'00" W	71.00'

LINE	BEARING	DISTANCE
L1	S 01°08'01" W	7.65'
L2	S 28°36'33" W	32.78'
L3	N 88°50'00" W	57.00'
L4	S 01°10'00" W	71.00'



- LEGEND**
- FLUSHING VALVE
 - GATE
 - GAS VALVE
 - GUY WIRE
 - PEDESTAL
 - POWERPOLE
 - SON
 - SON
 - SANITARY SENDER MH
 - SERVICE POLE
 - WATER METER
 - OVERHEAD POWER
 - METAL/CONCRETE BLOCK FENCE
 - CHAINLINK FENCE
 - SHEET METAL FENCE
 - BARB WIRE FENCE
 - TOP OF BANK
 - TOE OF SLOPE
 - FLOW LINE DITCH

**TOPOGRAPHIC SURVEY
OF
16.19 ACRES
IN THE
M.M. BATTLE SURVEY, A-9
FORT BEND COUNTY, TEXAS**

JUNE 2017 JOB NO. 2378-0005

LJA Engineering, Inc.

2929 Briarpark Drive
Suite 600
Houston, Texas 77042

Phone 713.953.5200
Fax 713.953.5026
T.B.P.L.S. Firm No. 10110501

Project Benchmark

SGR-RM019: A 3" Brass Disc set at the northern end of the median for the access drive to Eldridge Park located at 2511 Eldridge Rd, Sugar Land, TX 77478. The point is located +/- 500 feet along the curve of the access drive in a northwesterly direction from the intersection of Nantucket Dr. and Eldridge Road.

Elevation = 85.37 Feet (NAVD88 2001 Adj.)

Site TBM-A

TBM-A: A chiseled box in concrete on top of the North end of an S.E.T. (Safety End Treatment) for a 24" culvert located at the west side of Old Richmond Road. The point is located +/- 114 feet south of the intersection of Old Richmond Road and Paul Road and +/- 8 feet West of the edge of pavement.

Elevation = 91.81 Feet (NAVD88 2001 Adj.)

Site TBM-B

TBM-B: A 5/8 inch iron rod with orange plastic cap stamped "LJA ENG Control" set at the west side of Old Richmond Road. The point is located +/- 254 feet south the intersection of Old Richmond Road and West Belfort Ave and +/- 12 feet West of the edge of pavement.

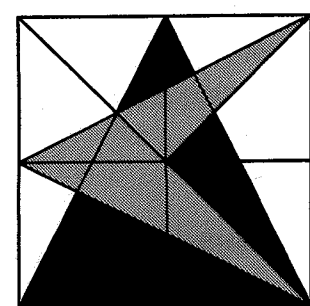
Elevation = 92.47 Feet (NAVD88 2001 Adj.)

CLB 2/20/18

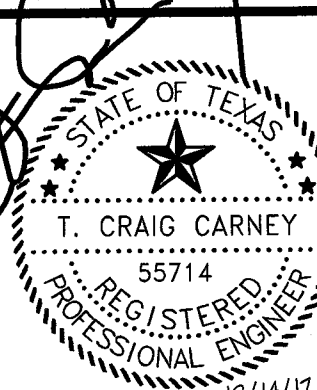
REVISIONS	
A	08/24/17 ISSUED FOR PERMIT
B	08/28/17 ISSUED FOR BIDDING
C	09/01/17 ISSUED FOR BIDDING
D	12/14/17 COUNTY COMMENTS

TERRACES AT ARBORETUM PARK
15928 OLD RICHMOND ROAD
FORT BEND COUNTY, TEXAS

PHASE I
EROSION AND SEDIMENTATION
CONTROL PLAN
ISSUED FOR BIDDING



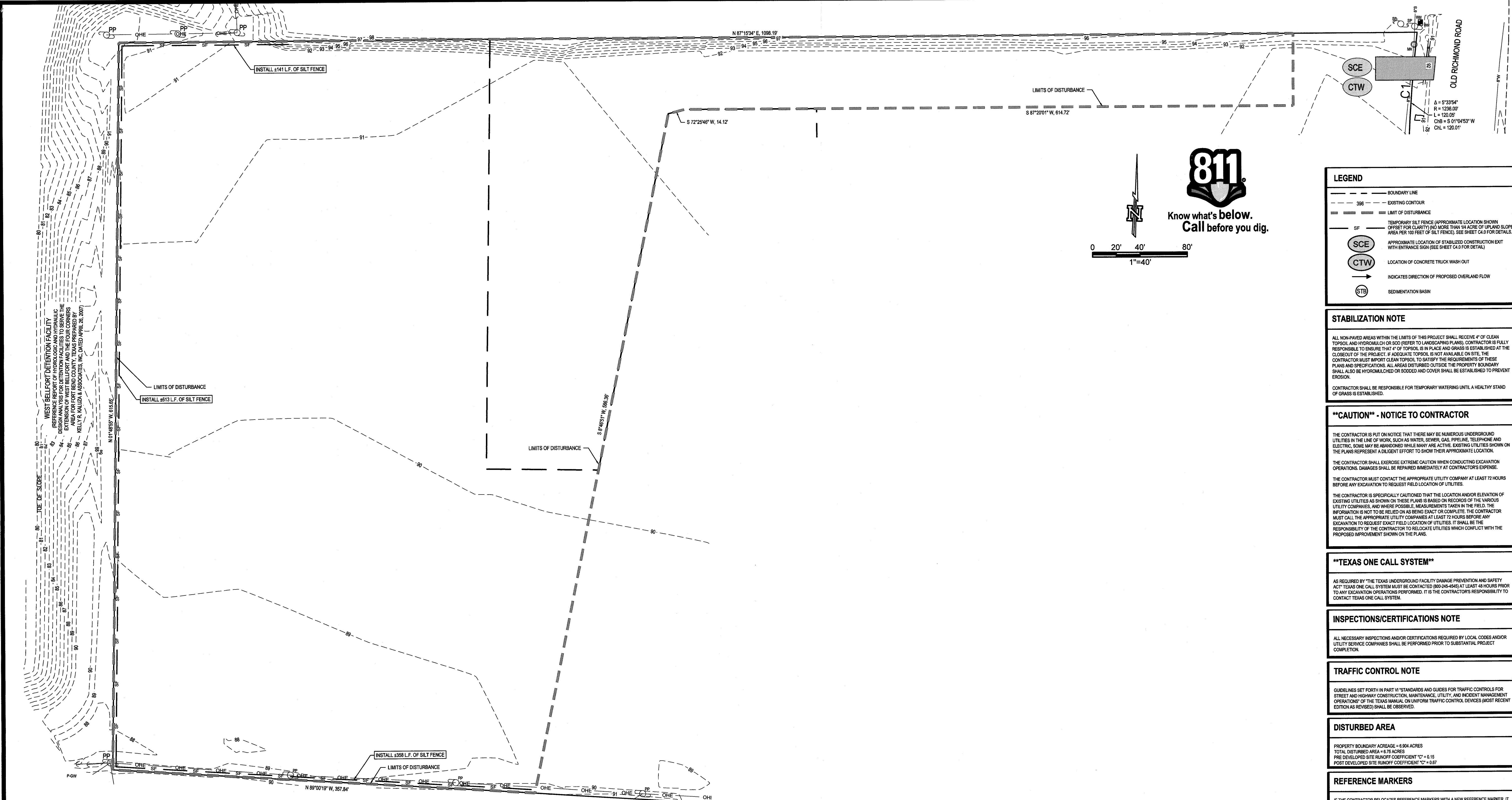
CARNEY
ENGINEERING,
PLLC.
4588 Hinton Dr.
Plano, Texas 75024
PH (469) 443-0861
FAX (469) 443-0863



TBPE FIRM REGISTRATION NO. F-5033

DRAWN BY: XLR
CHECKED BY: JAH
START DATE: 07/25/2017
SCALE: 1" = 40'
PROJECT NO.: 2008-062

SHEET
C3.0



LEGEND	
---	BOUNDARY LINE
---	EXISTING CONTOUR
---	LIMIT OF DISTURBANCE
SF	TEMPORARY SILT FENCE (APPROXIMATE LOCATION SHOWN OFFSET FOR CLARITY) (NO MORE THAN 1/4 ACRE OF UPR AND SLOPE AREA PER 100 FEET OF SILT FENCE. SEE SHEET C4.0 FOR DETAILS.)
SCE	APPROXIMATE LOCATION OF STABILIZED CONSTRUCTION EXIT WITH ENTRANCE SIGN (SEE SHEET C4.0 FOR DETAIL)
CTW	LOCATION OF CONCRETE TRUCK WASH OUT
STB	INDICATES DIRECTION OF PROPOSED OVERLAND FLOW
STB	SEDIMENTATION BASIN

STABILIZATION NOTE

ALL NON-PAVED AREAS WITHIN THE LIMITS OF THIS PROJECT SHALL RECEIVE 4" OF CLEAN TOPSOIL AND HYDROMULCH OR SOD (REFER TO LANDSCAPING PLANS). CONTRACTOR IS FULLY RESPONSIBLE TO ENSURE THAT 4" OF TOPSOIL IS IN PLACE AND GRASS IS ESTABLISHED AT THE CLOSEOUT OF THE PROJECT. IF ADEQUATE TOPSOIL IS NOT AVAILABLE ON SITE, THE CONTRACTOR MUST IMPORT CLEAN TOPSOIL TO SATISFY THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS. ALL AREAS DISTURBED OUTSIDE THE PROPERTY BOUNDARY SHALL ALSO BE HYDROMULCHED OR SODDED AND COVER SHALL BE ESTABLISHED TO PREVENT EROSION.

CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY WATERING UNTIL A HEALTHY STAND OF GRASS IS ESTABLISHED.

****CAUTION** - NOTICE TO CONTRACTOR**

THE CONTRACTOR IS PUT ON NOTICE THAT THERE MAY BE NUMEROUS UNDERGROUND UTILITIES IN THE LINE OF WORK, SUCH AS WATER, SEWER, GAS, PIPELINE, TELEPHONE AND ELECTRIC. SOME MAY BE ABANDONED WHILE MANY ARE ACTIVE. EXISTING UTILITIES SHOWN ON THE PLANS REPRESENT A DILIGENT EFFORT TO SHOW THEIR APPROXIMATE LOCATION.

THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN CONDUCTING EXCAVATION OPERATIONS. DAMAGES SHALL BE REPAIRED IMMEDIATELY AT CONTRACTOR'S EXPENSE.

THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST FIELD LOCATION OF UTILITIES.

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENT SHOWN ON THE PLANS.

****TEXAS ONE CALL SYSTEM****

AS REQUIRED BY THE TEXAS UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT, TEXAS ONE CALL SYSTEM MUST BE CONTACTED (800-445-4545) AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION OPERATIONS PERFORMED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT TEXAS ONE CALL SYSTEM.

INSPECTIONS/CERTIFICATIONS NOTE

ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY LOCAL CODES AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO SUBSTANTIAL PROJECT COMPLETION.

TRAFFIC CONTROL NOTE

GUIDELINES SET FORTH IN PART VI "STANDARDS AND GUIDES FOR TRAFFIC CONTROLS FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE, UTILITY, AND INCIDENT MANAGEMENT OPERATIONS" OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MOST RECENT EDITION AS REVISED) SHALL BE OBSERVED.

DISTURBED AREA

PROPERTY BOUNDARY ACREAGE = 6.804 ACRES
TOTAL DISTURBED AREA = 6.75 ACRES
PRE DEVELOPED SITE RUNOFF COEFFICIENT "C" = 0.15
POST DEVELOPED SITE RUNOFF COEFFICIENT "C" = 0.67

REFERENCE MARKERS	
IF THE CONTRACTOR RELOCATES REFERENCE MARKERS WITH A NEW REFERENCE MARKER, IT SHALL BE LOCATED WITHIN A HORIZONTAL AND VERTICAL TOLERANCE OF 0.10'	
TBM# 1	BM BOX CUT ON CONCRETE S.E.T. NORTHING: 13804920.82 EASTING: 303057.97 ELEVATION: 91.91
REFERENCE POINT #1	5/8" IRON ROD W/ CAP NORTHING: 13805560.61 EASTING: 303040.86
REFERENCE POINT #2	1" IRON PIPE NORTHING: 13805513.16 EASTING: 302601.62
REFERENCE POINT #3	3/4" IRON ROD W/ CAP NORTHING: 13804922.87 EASTING: 302863.18

WEATHER NOTE

CONTRACTOR SHALL CAREFULLY MONITOR WEATHER AND PREPARE FOR EXPECTED EVENT. SPECIAL CARE SHALL BE TAKEN TO EXAMINE SITE PRIOR TO WEEKENDS OR ABSENCES FROM THE WORKSITE.

PERMITS NOTE

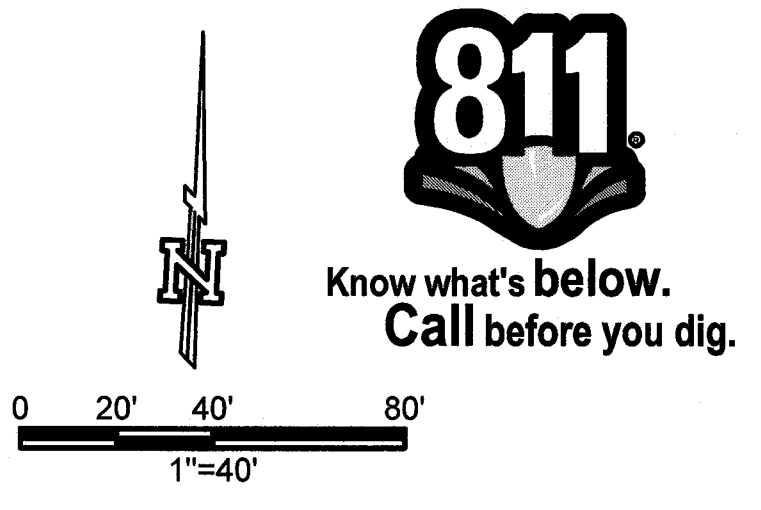
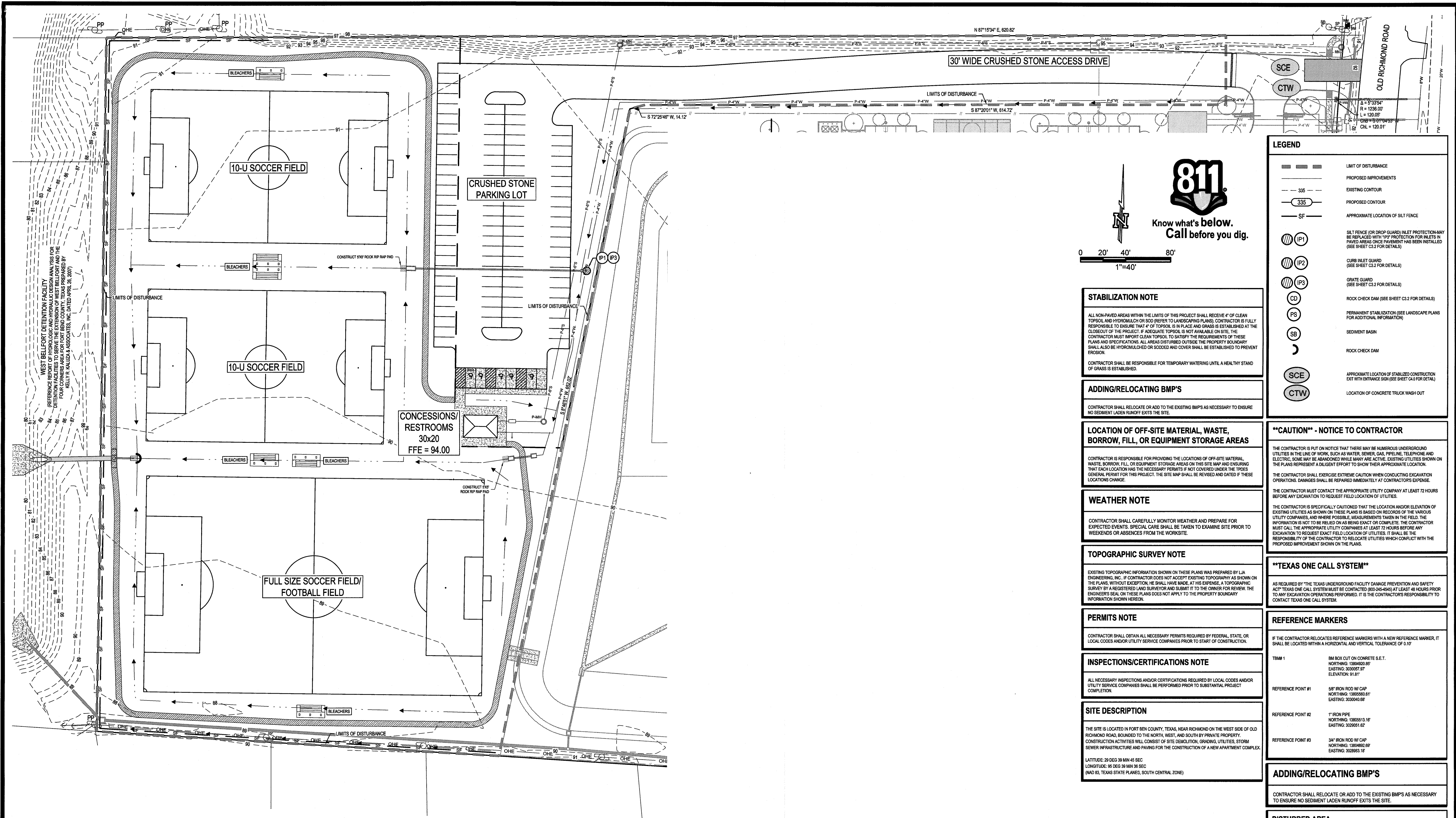
CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED BY FEDERAL, STATE, OR LOCAL CODES AND/OR UTILITY SERVICE COMPANIES PRIOR TO START OF CONSTRUCTION.

ADDING/RELOCATING BMP'S

CONTRACTOR SHALL RELOCATE OR ADD TO THE EXISTING BMP'S AS NECESSARY TO ENSURE NO SEDIMENT LADEN RUNOFF EXISTS THE SITE.

SOIL EROSION/SEDIMENTATION CONTROL OPERATION TIME SCHEDULE		(NOTE: GENERAL CONTRACTOR TO COMPLETE TABLE WITH THEIR SPECIFIC PROJECT SCHEDULE)																							
CONSTRUCTION SEQUENCE		NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1	INSTALL STABILIZED CONSTRUCTION ENTRANCE/EXIT WITH APPROPRIATE SIGNAGE (SEE DETAIL SHEET C3.2). THIS WILL BE THE FIRST CONSTRUCTION WORK ON THE PROJECT.																								
2	INSTALL SILT FENCES AND SEDIMENT BASIN. CONTRACTOR SHALL INSURE THERE ARE SEDIMENT BARRIERS LOCATED DOWN SLOPE FROM CONSTRUCTION ACTIVITIES THAT DISTURB SITE SOIL.																								
3	CLEAR AND GRUB SITE ONLY AS NEEDED FOR CONSTRUCTION. CONTRACTOR SHALL NOT CLEAR AND GRUB AREAS WHERE CONSTRUCTION OPERATIONS DO NOT OCCUR.																								
4	GRADE SITE TO SUBGRADE.																								
5	INSTALL STORM SEWER PIPE AND STRUCTURES.																								
6	INSTALL INLET PROTECTION.																								
7	INSTALL UTILITIES.																								
8	FINISH GRADING FOR SITE SUBGRADE AND BASE.																								
9	PAVE SITE.																								
10	INSTALL PERMANENT SEEDING AND PLANTING.																								
11	REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES (ONLY IF SITE IS STABILIZED).																								

APPROVED: *[Signature]*
Development Coordinator
DATE: 2/20/18



STABILIZATION NOTE

ALL NON-PAVED AREAS WITHIN THE LIMITS OF THIS PROJECT SHALL RECEIVE 4" OF CLEAN TOPSOIL AND HYDROMULCH OR SOD (REFER TO LANDSCAPING PLANS). CONTRACTOR IS FULLY RESPONSIBLE TO ENSURE THAT 4" OF TOPSOIL IS IN PLACE AND GRASS IS ESTABLISHED AT THE CLOSEOUT OF THE PROJECT. IF ADEQUATE TOPSOIL IS NOT AVAILABLE ON SITE, THE CONTRACTOR MUST IMPORT CLEAN TOPSOIL TO SATISFY THE REQUIREMENTS OF THESE PLANS AND SPECIFICATIONS. ALL AREAS DISTURBED OUTSIDE THE PROPERTY BOUNDARY SHALL ALSO BE HYDROMULCHED OR SODDED AND COVER SHALL BE ESTABLISHED TO PREVENT EROSION.

CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY WATERING UNTIL A HEALTHY STAND OF GRASS IS ESTABLISHED.

ADDING/RELOCATING BMP'S

CONTRACTOR SHALL RELOCATE OR ADD TO THE EXISTING BMP'S AS NECESSARY TO ENSURE NO SEDIMENT LADEN RUNOFF EXITS THE SITE.

LOCATION OF OFF-SITE MATERIAL, WASTE, BORROW, FILL, OR EQUIPMENT STORAGE AREAS

CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE LOCATIONS OF OFF-SITE MATERIAL, WASTE, BORROW, FILL, OR EQUIPMENT STORAGE AREAS ON THIS SITE MAP AND ENSURING THAT EACH LOCATION HAS THE NECESSARY PERMITS IF NOT COVERED UNDER THE TYPES GENERAL PERMIT FOR THIS PROJECT. THE SITE MAP SHALL BE REVISED AND DATED IF THESE LOCATIONS CHANGE.

WEATHER NOTE

CONTRACTOR SHALL CAREFULLY MONITOR WEATHER AND PREPARE FOR EXPECTED EVENTS. SPECIAL CARE SHALL BE TAKEN TO EXAMINE SITE PRIOR TO EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENT SHOWN ON THE PLANS.

TOPOGRAPHIC SURVEY NOTE

EXISTING TOPOGRAPHIC INFORMATION SHOWN ON THESE PLANS WAS PREPARED BY LJA ENGINEERING, INC. IF CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, HE SHALL HAVE MADE, AT HIS EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR AND SUBMIT IT TO THE OWNER FOR REVIEW. THE ENGINEER'S SEAL ON THESE PLANS DOES NOT APPLY TO THE PROPERTY BOUNDARY INFORMATION SHOWN HEREON.

PERMITS NOTE

CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED BY FEDERAL, STATE, OR LOCAL CODES AND/OR UTILITY SERVICE COMPANIES PRIOR TO START OF CONSTRUCTION.

INSPECTIONS/CERTIFICATIONS NOTE

ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY LOCAL CODES AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO SUBSTANTIAL PROJECT COMPLETION.

SITE DESCRIPTION

THE SITE IS LOCATED IN FORT BEN COUNTY, TEXAS, NEAR RICHMOND ON THE WEST SIDE OF OLD RICHMOND ROAD, BOUNDED TO THE NORTH, WEST, AND SOUTH BY PRIVATE PROPERTY. CONSTRUCTION ACTIVITIES WILL CONSIST OF SITE DEMOLITION, GRADING, UTILITIES, STORM SEWER INFRASTRUCTURE AND PAVING FOR THE CONSTRUCTION OF A NEW APARTMENT COMPLEX.

LATITUDE: 29 DEG 39 MIN 45 SEC
LONGITUDE: 95 DEG 39 MIN 36 SEC
(NAD 83, TEXAS STATE PLANS, SOUTH CENTRAL ZONE)

LEGEND

---	LIMIT OF DISTURBANCE
---	PROPOSED IMPROVEMENTS
---	EXISTING CONTOUR
---	PROPOSED CONTOUR
---	APPROXIMATE LOCATION OF SILT FENCE
IP1	SILT FENCE (OR DROP GUARD) INLET PROTECTION MAY BE REPLACED WITH 10% PROTECTION FOR INLETS IN PAVED AREAS ONCE PAVEMENT HAS BEEN INSTALLED (SEE SHEET C3.2 FOR DETAILS)
IP2	CURB INLET GUARD (SEE SHEET C3.2 FOR DETAILS)
IP3	GRATE GUARD (SEE SHEET C3.2 FOR DETAILS)
CD	ROCK CHECK DAM (SEE SHEET C3.2 FOR DETAILS)
PS	PERMANENT STABILIZATION (SEE LANDSCAPE PLANS FOR ADDITIONAL INFORMATION)
SB	SEDIMENT BASIN
SC	ROCK CHECK DAM
SCE	APPROXIMATE LOCATION OF STABILIZED CONSTRUCTION EXIT WITH ENTRANCE SIGN (SEE SHEET C4.0 FOR DETAIL)
CTW	LOCATION OF CONCRETE TRUCK WASH OUT

****CAUTION** - NOTICE TO CONTRACTOR**

THE CONTRACTOR IS PUT ON NOTICE THAT THERE MAY BE NUMEROUS UNDERGROUND UTILITIES IN THE LINE OF WORK, SUCH AS WATER, SEWER, GAS, PIPELINE, TELEPHONE AND ELECTRIC. SOME MAY BE ABANDONED WHILE MANY ARE ACTIVE. EXISTING UTILITIES SHOWN ON THE PLANS REPRESENT A DILIGENT EFFORT TO SHOW THEIR APPROXIMATE LOCATION.

THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN CONDUCTING EXCAVATION OPERATIONS. DAMAGES SHALL BE REPAIRED IMMEDIATELY AT CONTRACTOR'S EXPENSE.

THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST FIELD LOCATION OF UTILITIES.

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENT SHOWN ON THE PLANS.

****TEXAS ONE CALL SYSTEM****

AS REQUIRED BY "THE TEXAS UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT" TEXAS ONE CALL SYSTEM MUST BE CONTACTED (800-245-4545) AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION OPERATIONS PERFORMED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT TEXAS ONE CALL SYSTEM.

REFERENCE MARKERS

BM# 1	BM BOX OUT ON CONCRETE S.E.T. NORTHING: 1384620.89 EASTING: 302057.87 ELEVATION: 91.81'
REFERENCE POINT #1	5/8" IRON ROD W/ CAP NORTHING: 1385550.81 EASTING: 302040.68'
REFERENCE POINT #2	1" IRON PIPE NORTHING: 1385551.16 EASTING: 302051.62'
REFERENCE POINT #3	3/4" IRON ROD W/ CAP NORTHING: 1384620.89 EASTING: 302053.18'

ADDING/RELOCATING BMP'S

CONTRACTOR SHALL RELOCATE OR ADD TO THE EXISTING BMP'S AS NECESSARY TO ENSURE NO SEDIMENT LADEN RUNOFF EXITS THE SITE.

DISTURBED AREA

PROPERTY BOUNDARY ACRES = 6.804 ACRES
TOTAL DISTURBED AREA = 6.750 ACRES
PRE-DEVELOPED SITE RUNOFF COEFFICIENT "C" = 0.15
POST-DEVELOPED SITE RUNOFF COEFFICIENT "C" = 0.67

TRAFFIC CONTROL NOTE

GUIDELINES SET FORTH IN PART VI "STANDARDS AND GUIDES FOR TRAFFIC CONTROLS FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE, UTILITY, AND INCIDENT MANAGEMENT OPERATIONS" OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MOST RECENT EDITION AS REVISED) SHALL BE OBSERVED.

SOIL EROSION/SEDIMENTATION CONTROL OPERATION TIME SCHEDULE
(NOTE: GENERAL CONTRACTOR TO COMPLETE TABLE WITH THEIR SPECIFIC PROJECT SCHEDULE)

CONSTRUCTION SEQUENCE	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1. INSTALL STABILIZED CONSTRUCTION ENTRANCE/EXIT WITH APPROPRIATE SIGNAGE (SEE DETAIL SHEET C3.2). THIS WILL BE THE FIRST CONSTRUCTION WORK ON THE PROJECT.																								
2. INSTALL SILT FENCES AND SEDIMENT BASIN. CONTRACTOR SHALL INSURE THERE ARE SEDIMENT BARRIERS LOCATED DOWN SLOPE FROM CONSTRUCTION ACTIVITIES THAT DISTURBS SITE SOIL.																								
3. CLEAR AND GRUB SITE ONLY AS NEEDED FOR CONSTRUCTION. CONTRACTOR SHALL NOT CLEAR AND GRUB AREAS WHERE CONSTRUCTION OPERATIONS DO NOT OCCUR.																								
4. GRADE SITE TO SUBGRADE.																								
5. INSTALL STORM SEWER PIPE AND STRUCTURES.																								
6. INSTALL INLET PROTECTION.																								
7. INSTALL UTILITIES.																								
8. FINISH GRADING FOR SITE SUBGRADE AND BASE.																								
9. PAVE SITE.																								
10. INSTALL PERMANENT SEEDING AND PLANTING.																								
11. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES (ONLY IF SITE IS STABILIZED).																								

APPROVED: *[Signature]*
Development Coordinator
DATE: 7/20/18

REVISIONS

A	08/25/17	ISSUED FOR PERMIT
B	09/08/17	ISSUED FOR BIDDING
C	09/27/17	ISSUED FOR BIDDING
D	12/14/17	COUNTY COMMENTS

TERRACES AT ARBORETUM PARK
15928 OLD RICHMOND ROAD
FORT BEND COUNTY, TEXAS

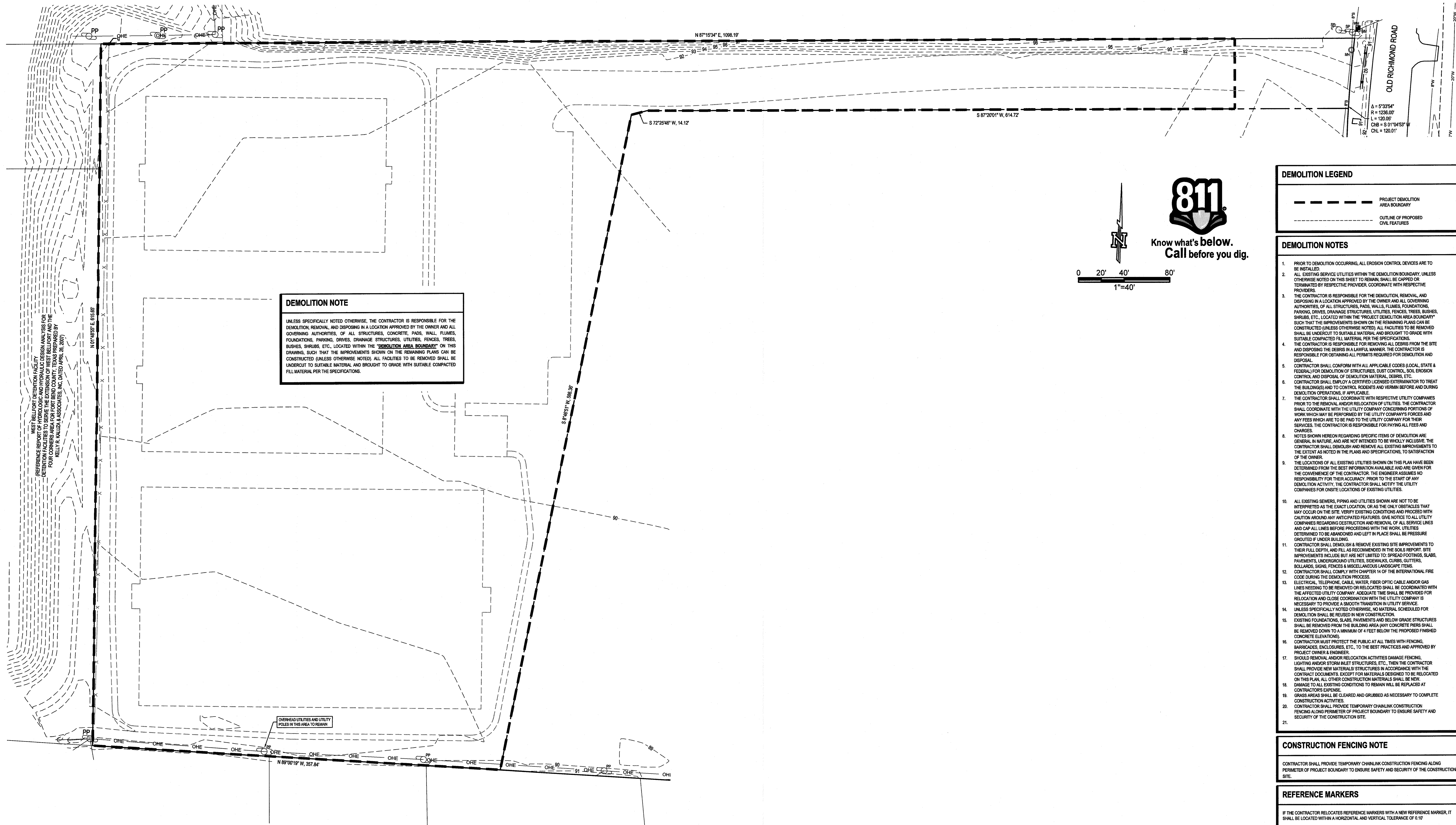
PHASE II
EROSION AND SEDIMENTATION
CONTROL PLAN
ISSUED FOR BIDDING

CARNEY ENGINEERING, PLLC.
4588 Hinton Dr.
Piano, Texas 75024
PH (469) 443-0851
FAX (469) 443-0863

STATE OF TEXAS
REGISTERED PROFESSIONAL ENGINEER
T. CRAIG CARNEY
12/14/17
TYPE FIRM REGISTRATION NO: F-5003

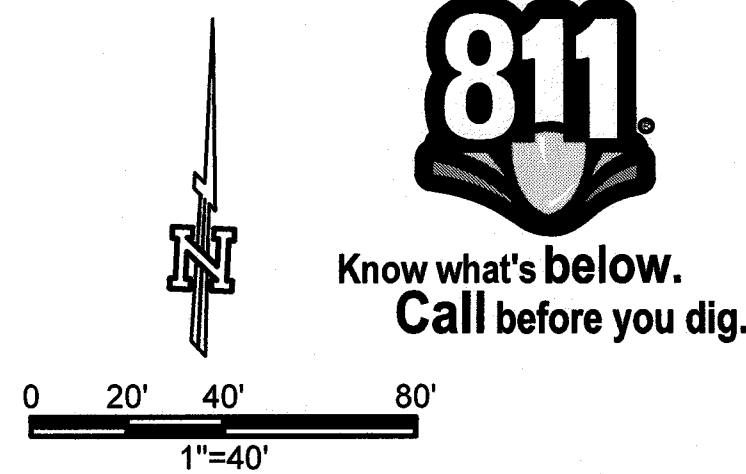
DRAWN BY: KLR
CHECKED BY: JAH
START DATE: 07/25/2017
SCALE: 1" = 40'
PROJECT NO.: 2009-002

SHEET
C3.1



DEMOLITION NOTE

UNLESS SPECIFICALLY NOTED OTHERWISE, THE CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION, REMOVAL, AND DISPOSING IN A LOCATION APPROVED BY THE OWNER AND ALL GOVERNING AUTHORITIES, OF ALL STRUCTURES, CONCRETE, PADS, WALL, FLUMES, FOUNDATIONS, PARKING, DRIVES, DRAINAGE STRUCTURES, UTILITIES, FENCES, TREES, BUSHES, SHRUBS, ETC., LOCATED WITHIN THE DEMOLITION AREA BOUNDARY ON THIS DRAWING, SUCH THAT THE IMPROVEMENTS SHOWN ON THE REMAINING PLANS CAN BE CONSTRUCTED (UNLESS OTHERWISE NOTED). ALL FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER THE SPECIFICATIONS.



DEMOLITION LEGEND

--- PROJECT DEMOLITION AREA BOUNDARY

--- OUTLINE OF PROPOSED CIVIL FEATURES

- DEMOLITION NOTES**
1. PRIOR TO DEMOLITION OCCURRING, ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED.
 2. ALL EXISTING SERVICE UTILITIES WITHIN THE DEMOLITION BOUNDARY, UNLESS OTHERWISE NOTED ON THIS SHEET TO REMAIN, SHALL BE CAPPED OR TERMINATED BY RESPECTIVE PROVIDER, COORDINATE WITH RESPECTIVE PROVIDERS.
 3. THE CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION, REMOVAL, AND DISPOSING IN A LOCATION APPROVED BY THE OWNER AND ALL GOVERNING AUTHORITIES, OF ALL STRUCTURES, PADS, WALLS, FLUMES, FOUNDATIONS, PARKING, DRIVES, DRAINAGE STRUCTURES, UTILITIES, FENCES, TREES, BUSHES, SHRUBS, ETC., LOCATED WITHIN THE PROJECT DEMOLITION AREA BOUNDARY SUCH THAT THE IMPROVEMENTS SHOWN ON THE REMAINING PLANS CAN BE CONSTRUCTED (UNLESS OTHERWISE NOTED). ALL FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER THE SPECIFICATIONS.
 4. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL DEBRIS FROM THE SITE AND DISPOSING THE DEBRIS IN A LAWFUL MANNER. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION AND DISPOSAL.
 5. CONTRACTOR SHALL CONFORM WITH ALL APPLICABLE CODES (LOCAL, STATE & FEDERAL) FOR DEMOLITION OF STRUCTURES, DUST CONTROL, SOIL EROSION CONTROL AND DISPOSAL OF DEMOLITION MATERIAL, DEBRIS, ETC.
 6. CONTRACTOR SHALL EMPLOY A CERTIFIED LICENSED EXTERMINATOR TO TREAT THE BUILDINGS AND TO CONTROL RODENTS AND VERMIN BEFORE AND DURING DEMOLITION OPERATIONS, IF APPLICABLE.
 7. THE CONTRACTOR SHALL COORDINATE WITH RESPECTIVE UTILITY COMPANIES PRIOR TO THE REMOVAL AND/OR RELOCATION OF UTILITIES. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY CONCERNING PORTIONS OF WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY'S FORCES AND ANY FEES WHICH ARE TO BE PAID TO THE UTILITY COMPANY FOR THEIR SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR PAYING ALL FEES AND CHARGES.
 8. NOTES SHOWN HEREON REGARDING SPECIFIC ITEMS OF DEMOLITION ARE GENERAL IN NATURE, AND ARE NOT INTENDED TO BE WHOLLY INCLUSIVE. THE CONTRACTOR SHALL DISCLOSELY AND REMOVE ALL EXISTING IMPROVEMENTS TO THE EXTENT AS NOTED IN THE PLANS AND SPECIFICATIONS, TO SATISFACTION OF THE OWNER.
 9. THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY DEMOLITION ACTIVITY, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES FOR ON-SITE LOCATIONS OF EXISTING UTILITIES.
 10. ALL EXISTING SEWERS, PIPING AND UTILITIES SHOWN ARE NOT TO BE INTERFERED AS THE EXACT LOCATION, OR AS THE ONLY OBSTACLES THAT MAY OCCUR ON THE SITE. VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES. GIVE NOTICE TO ALL UTILITY COMPANIES REGARDING DESTRUCTION AND REMOVAL OF ALL SERVICE LINES AND CAP ALL LINES BEFORE PROCEEDING WITH THE WORK. UTILITIES DETERMINED TO BE ABANDONED AND LEFT IN PLACE SHALL BE PRESSURE GROUTED IF UNDER BUILDING.
 11. CONTRACTOR SHALL DEMOLISH & REMOVE EXISTING SITE IMPROVEMENTS TO THEIR FULL DEPTH, AND FILL AS RECOMMENDED IN THE SOILS REPORT. SITE IMPROVEMENTS INCLUDE BUT ARE NOT LIMITED TO: SPREAD FOOTINGS, SLABS, PAVEMENTS, UNDERGROUND UTILITIES, SIDEWALKS, CURBS, GUTTERS, BOLLARDS, SIGNS, FENCES & MISCELLANEOUS LANDSCAPE ITEMS. CONTRACTOR SHALL COMPLY WITH CHAPTER 14 OF THE INTERNATIONAL FIRE CODE DURING THE DEMOLITION PROCESS.
 12. ELECTRICAL, TELEPHONE, CABLE, WATER, FIBER OPTIC CABLE AND/OR GAS LINES NEEDING TO BE REMOVED OR RELOCATED SHALL BE COORDINATED WITH THE AFFECTED UTILITY COMPANY. ADEQUATE TIME SHALL BE PROVIDED FOR RELOCATION AND CLOSE COORDINATION WITH THE UTILITY COMPANY IS NECESSARY TO PROVIDE A SMOOTH TRANSITION IN UTILITY SERVICE.
 13. UNLESS SPECIFICALLY NOTED OTHERWISE, NO MATERIAL SCHEDULED FOR DEMOLITION SHALL BE REUSED IN NEW CONSTRUCTION.
 14. EXISTING FOUNDATIONS, SLABS, PAVEMENTS AND BELOW GRADE STRUCTURES SHALL BE REMOVED FROM THE BUILDING AREA (ANY CONCRETE PIERS SHALL BE REMOVED DOWN TO A MINIMUM OF 4 FEET BELOW THE PROPOSED FINISHED CONCRETE ELEVATION).
 15. CONTRACTOR MUST PROTECT THE PUBLIC AT ALL TIMES WITH FENCING, BARRICADES, ENCLOSURES, ETC., TO THE BEST PRACTICES AND APPROVED BY PROJECT OWNER & ENGINEER.
 16. SHOULD REMOVAL AND/OR RELOCATION ACTIVITIES DAMAGE FENCING, LIGHTING AND/OR STORM INLET STRUCTURES, ETC., THEN THE CONTRACTOR SHALL PROVIDE NEW MATERIALS/STRUCTURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. EXCEPT FOR MATERIALS DESIGNED TO BE RELOCATED ON THIS PLAN, ALL OTHER CONSTRUCTION MATERIALS SHALL BE NEW.
 17. DAMAGE TO ALL EXISTING CONDITIONS TO REMAIN WILL BE REPLACED AT CONTRACTOR'S EXPENSE.
 18. GRASS AREAS SHALL BE CLEARED AND GRUBBED AS NECESSARY TO COMPLETE CONSTRUCTION ACTIVITIES.
 19. CONTRACTOR SHALL PROVIDE TEMPORARY CHAINLINK CONSTRUCTION FENCING ALONG PERIMETER OF PROJECT BOUNDARY TO ENSURE SAFETY AND SECURITY OF THE CONSTRUCTION SITE.
 - 20.
 - 21.

CONSTRUCTION FENCING NOTE

CONTRACTOR SHALL PROVIDE TEMPORARY CHAINLINK CONSTRUCTION FENCING ALONG PERIMETER OF PROJECT BOUNDARY TO ENSURE SAFETY AND SECURITY OF THE CONSTRUCTION SITE.

REFERENCE MARKERS

IF THE CONTRACTOR RELOCATES REFERENCE MARKERS WITH A NEW REFERENCE MARKER, IT SHALL BE LOCATED WITHIN A HORIZONTAL AND VERTICAL TOLERANCE OF 0.10'

TBM#1	84 BOX CUT ON CONCRETE S.E.T. NORTHING: 1304500.89 EASTING: 3000557.97 ELEVATION: 91.81'
REFERENCE POINT #1	58" IRON ROD W/ CAP NORTHING: 1300590.87 EASTING: 3000400.97
REFERENCE POINT #2	1" IRON PIPE NORTHING: 1300513.16 EASTING: 302051.62
REFERENCE POINT #3	3/4" IRON ROD W/ CAP NORTHING: 1304500.89 EASTING: 3000557.97

APPROVED: *CJB*
Development Coordinator

DATE: 2/20/18

REVISIONS

A	08/26/17	ISSUED FOR PERMIT
B	08/28/17	ISSUED FOR BIDDING
C	08/27/17	ISSUED FOR BIDDING

TERRACES AT ARBORETUM PARK
15928 OLD RICHMOND ROAD
FORT BEND COUNTY, TEXAS

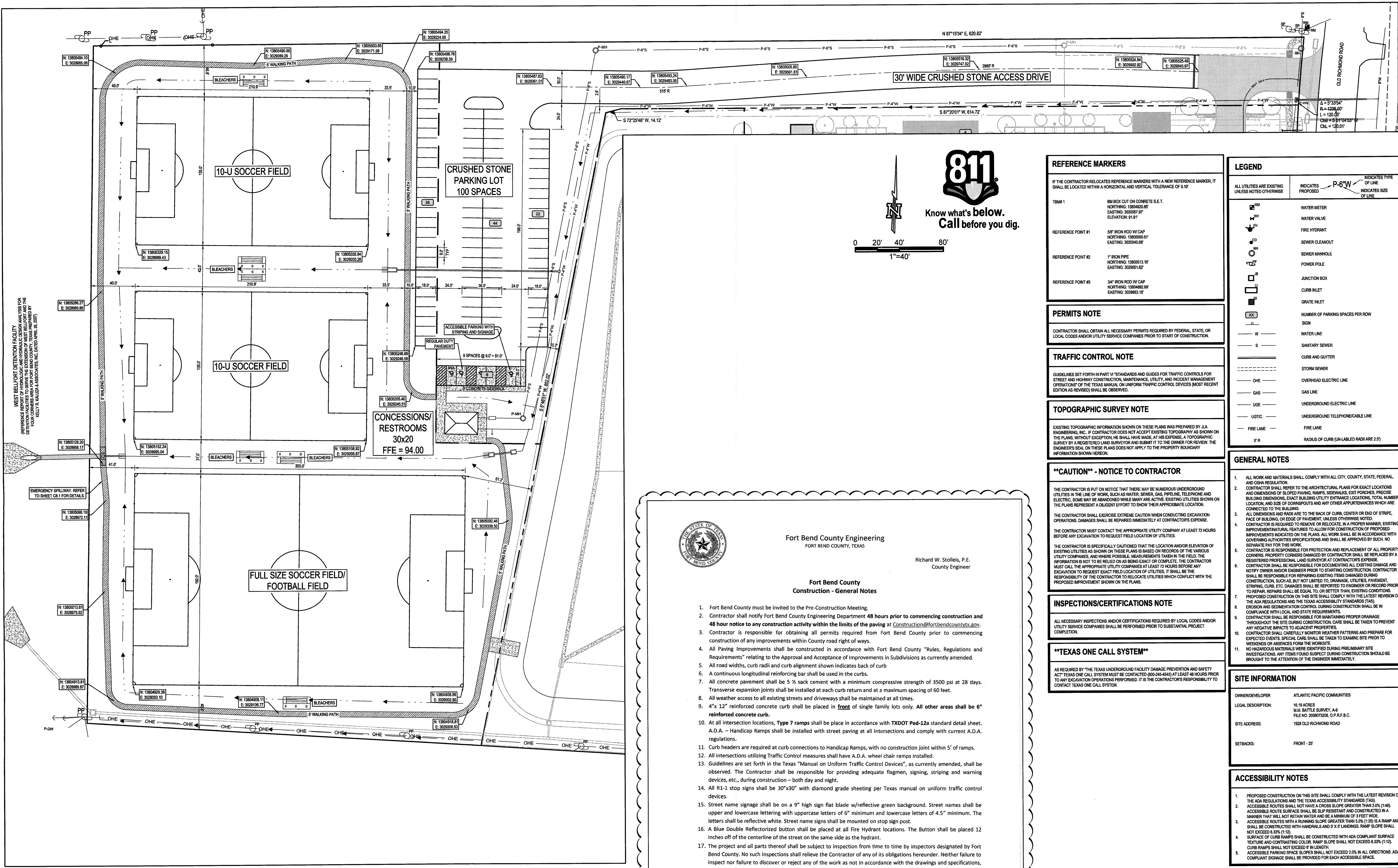
DEMOLITION PLAN
ISSUED FOR BIDDING

CARNEY
ENGINEERING, PLLC.
4588 Hinton Dr.
Piano, Texas 75024
PH (469) 443-0861
FAX (469) 443-0863

STATE OF TEXAS
REGISTERED PROFESSIONAL ENGINEER
T. CRAIG CARNEY
55714
02/15/17
TYPE FIRM REGISTRATION NO: F-6033

DRAWN BY: ACA
CHECKED BY: JAH
SENT DATE: 07/25/2017
SCALE: 1" = 40'
PROJECT NO.: 2008-062

SHEET
C4.0



Fort Bend County Engineering
FORT BEND COUNTY, TEXAS

Richard W. Stolleis, P.E.
County Engineer

**Fort Bend County
Construction - General Notes**

- Fort Bend County must be invited to the Pre-Construction Meeting.
- 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@fortbendcountytexas.gov.
- Contractor is responsible for obtaining all permits required from Fort Bend County prior to commencing construction of any improvements within County right of ways.
- 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.
- All road widths, curb radii and curb alignment shown indicates back of curb.
- A continuous longitudinal reinforcing bar shall be used in the curbs.
- All concrete pavement shall be 5 % 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.
- All weather access to all existing streets and driveways shall be maintained at all times.
- 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.
- At all intersection locations, Type 7 ramps shall be placed 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.
- Curb headers are required at curb connections to Handicap Ramps, with no construction joint within 5' of ramps.
- All intersections utilizing Traffic Control measures shall have A.D.A. wheel chair ramps installed.
- 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.
- All R1-1 stop signs shall be 30"x30" with diamond grade sheeting per Texas manual on uniform traffic control devices.
- 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.
- A Blue Double Rectangular button shall be placed at all Fire Hydrant locations. The button shall be placed 12 inches off of the centerline of the street on the same side as the hydrant.
- 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 construed to imply an acceptance of such work or to relieve the Contractor of any of its obligations hereunder.

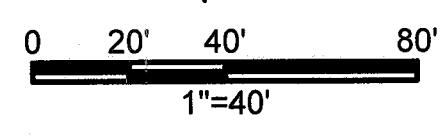
NOTE: Fort Bend County notes supersede any conflicting notes.

301 Jackson St., Suite 401, Richmond, TX 77469
Phone 281-633-7500

I:\Construction\Forms\FBC_Construction_General_Notes_REVISED 2017-05-11.docx



Know what's below.
Call before you dig.



REFERENCE MARKERS

IF THE CONTRACTOR RELOCATES REFERENCE MARKERS WITH A NEW REFERENCE MARKER, IT SHALL BE LOCATED WITHIN A HORIZONTAL AND VERTICAL TOLERANCE OF 0.10'

BM#1	BM BOX CUT ON CONCRETE S.E.T. NORTHING: 13804620.85 EASTING: 302297.97 ELEVATION: 91.87'
REFERENCE POINT #1	5/8" IRON ROD W/ CAP NORTHING: 13805560.61 EASTING: 302290.86
REFERENCE POINT #2	1" IRON PIPE NORTHING: 13805513.16 EASTING: 302291.82
REFERENCE POINT #3	3/4" IRON ROD W/ CAP NORTHING: 13804882.89 EASTING: 302293.18

PERMITS NOTE

CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED BY FEDERAL, STATE, OR LOCAL CODES AND/OR UTILITY SERVICE COMPANIES PRIOR TO START OF CONSTRUCTION.

TRAFFIC CONTROL NOTE

GUIDELINES SET FORTH IN PART VI "STANDARDS AND GUIDES FOR TRAFFIC CONTROLS FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE, UTILITY, AND INCIDENT MANAGEMENT OPERATIONS" OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MOST RECENT EDITION AS REVISED) SHALL BE OBSERVED.

TOPOGRAPHIC SURVEY NOTE

EXISTING TOPOGRAPHIC INFORMATION SHOWN ON THESE PLANS WAS PREPARED BY J.A. ENGINEERING, INC. IF CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, HE SHALL HAVE MADE, AT HIS EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR AND SUBMIT IT TO THE OWNER FOR REVIEW. THE ENGINEER'S SEAL ON THESE PLANS DOES NOT APPLY TO THE PROPERTY BOUNDARY INFORMATION SHOWN HEREON.

****CAUTION** - NOTICE TO CONTRACTOR**

THE CONTRACTOR IS PUT ON NOTICE THAT THERE MAY BE NUMEROUS UNDERGROUND UTILITIES IN THE LINE OF WORK, SUCH AS WATER, SEWER, GAS, PIPELINE, TELEPHONE AND ELECTRIC. SOME MAY BE ABANDONED WHILE MANY ARE ACTIVE. EXISTING UTILITIES SHOWN ON THE PLANS REPRESENT A DILIGENT EFFORT TO SHOW THEIR APPROXIMATE LOCATION. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN CONDUCTING EXCAVATION OPERATIONS. DAMAGES SHALL BE REPAIRED IMMEDIATELY AT CONTRACTOR'S EXPENSE. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANY AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST FIELD LOCATION OF UTILITIES. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

INSPECTIONS/CERTIFICATIONS NOTE

ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY LOCAL CODES AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO SUBSTANTIAL PROJECT COMPLETION.

****TEXAS ONE CALL SYSTEM****

AS REQUIRED BY THE TEXAS UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT TEXAS ONE CALL SYSTEM MUST BE CONTACTED (800-943-4343) AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION OPERATIONS PERFORMED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT TEXAS ONE CALL SYSTEM.

LEGEND

ALL UTILITIES ARE EXISTING UNLESS NOTED OTHERWISE	INDICATES PROPOSED	INDICATES TYPE OF LINE	INDICATES SIZE OF LINE

GENERAL NOTES

- ALL WORK AND MATERIALS SHALL COMPLY WITH ALL CITY, COUNTY, STATE, FEDERAL, AND OSHA REGULATION.
- CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF SLOPED PAVING, RAMPS, SIDEWALKS, ETC. FOR EXISTING, PRECISE BUILDING DIMENSIONS, EXACT BUILDING UTILITY ENTRANCE LOCATIONS, TOTAL NUMBER, LOCATION, AND SIZE OF DOWNSPOUTS AND ANY OTHER APPURTENANCES WHICH ARE CONNECTED TO THE BUILDING.
- ALL DIMENSIONS AND RADII ARE TO THE BACK OF CURB, CENTER OR END OF STRIPE, FACE OF BUILDING, OR EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED.
- CONTRACTOR IS REQUIRED TO REMOVE OR RELOCATE, IN A PROPER MANNER, EXISTING IMPROVEMENTS/NATURAL FEATURES TO ALLOW FOR CONSTRUCTION OF PROPOSED IMPROVEMENTS INDICATED ON THE PLANS. ALL WORK SHALL BE IN ACCORDANCE WITH GOVERNING AUTHORITIES SPECIFICATIONS AND SHALL BE APPROVED BY SUCH. NO SEPARATE PAY FOR THIS WORK.
- CONTRACTOR IS RESPONSIBLE FOR PROTECTION AND REPLACEMENT OF ALL PROPERTY CORNERS, PROPERTY CORNERS DAMAGED BY CONTRACTOR SHALL BE REPLACED BY A REGISTERED PROFESSIONAL LAND SURVEYOR AT CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DOCUMENTING ALL EXISTING DAMAGE AND NOTIFY OWNER AND/OR ENGINEER PRIOR TO STARTING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING EXISTING ITEMS DAMAGED DURING CONSTRUCTION, SUCH AS, BUT NOT LIMITED TO, DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURBS, ETC. DAMAGES SHALL BE REPORTED TO ENGINEER OR RECORD PRIOR TO REPAIR. REPAIRS SHALL BE EQUAL TO, OR BETTER THAN, EXISTING CONDITIONS.
- PROPOSED CONSTRUCTION ON THIS SITE SHALL COMPLY WITH THE LATEST REVISION OF THE ADA REGULATIONS AND THE TEXAS ACCESSIBILITY STANDARDS (TAS).
- EROSION AND SEDIMENTATION CONTROL DURING CONSTRUCTION SHALL BE IN COMPLIANCE WITH LOCAL AND STATE REQUIREMENTS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING PROPER DRAINAGE THROUGHOUT THE SITE DURING CONSTRUCTION. CARE SHALL BE TAKEN TO PREVENT ANY NEGATIVE IMPACTS TO ADJACENT PROPERTIES.
- CONTRACTOR SHALL CAREFULLY MONITOR WEATHER PATTERNS AND PREPARE FOR EXPECTED EVENTS. SPECIAL CARE SHALL BE TAKEN TO EXAMINE SITE PRIOR TO WEEKENDS OR ABSENCES FROM THE WORKSITE.
- NO HAZARDOUS MATERIALS WERE IDENTIFIED DURING PRELIMINARY SITE INVESTIGATIONS. ANY ITEMS FOUND SUSPECT DURING CONSTRUCTION SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.

SITE INFORMATION

OWNER/DEVELOPER:	ATLANTIC PACIFIC COMMUNITIES
LEGAL DESCRIPTION:	16.19 ACRES M.M. BATTLE SURVEY, A-9 FILE NO. 200903262, O.P. & B.C.
SITE ADDRESS:	1528 OLD RICHMOND ROAD
SETBACKS:	FRONT - 25'

ACCESSIBILITY NOTES

- PROPOSED CONSTRUCTION ON THIS SITE SHALL COMPLY WITH THE LATEST REVISION OF THE ADA REGULATIONS AND THE TEXAS ACCESSIBILITY STANDARDS (TAS).
- ACCESSIBLE ROUTES SHALL NOT HAVE A CROSS SLOPE GREATER THAN 2.0% (1/48). ACCESSIBLE ROUTE SURFACE SHALL BE SLIP RESISTANT AND CONSTRUCTED IN A MANNER THAT WILL NOT RETAIN WATER AND BE A MINIMUM OF 3 FEET WIDE.
- ACCESSIBLE ROUTES WITH A RUNNING SLOPE GREATER THAN 4.0% (1/20) IS A RAMP AND SHALL BE CONSTRUCTED WITH HANDRAILS AND 5' X 5' LANDINGS. RAMP SLOPE SHALL NOT EXCEED 4.3% (1/23).
- SURFACE OF CURB RAMPS SHALL BE CONSTRUCTED WITH ADA COMPLIANT SURFACE TEXTURE AND CONTRASTING COLOR. RAMP SLOPE SHALL NOT EXCEED 8.3% (1/12). CURB RAMPS SHALL NOT EXCEED 6' IN LENGTH.
- ACCESSIBLE PARKING SPACE SLOPES SHALL NOT EXCEED 2.0% IN ALL DIRECTIONS. ADA COMPLIANT SIGNAGE SHALL BE PROVIDED FOR EACH ACCESSIBLE SPACE.

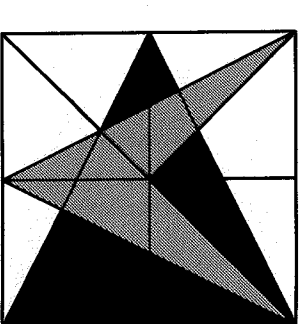
FIRE LANE STRIPING NOTE

LOCATION OF FIRE LANE STRIPING SHALL BE APPROVED BY THE LOCAL FIRE MARSHAL PRIOR TO APPLICATION. UNLESS OTHERWISE DIRECTED BY THE FIRE MARSHAL, FIRE LANE STRIPING SHALL BE 6" RED PAINTED STRIPE ALONG TOP AND FACE OF CURB, FACE OF SIDEWALK OR DIRECTLY ADJACENT TO PROPOSED PARKING LOT STRIPING, WITH 4" WHITE STENCILLED LETTERS "FIRE LANE - NO PARKING" PAINTED ON RED STRIPE AT 20' CENTER TO CENTER.

APPROVED:
DATE: 2/20/18
Development Coordinator

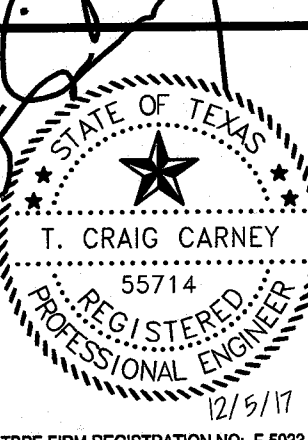
TERRACES AT ARBORETUM PARK
15928 OLD RICHMOND ROAD
FORT BEND COUNTY, TEXAS

SITE PLAN
ISSUED FOR BIDDING



CARNEY
ENGINEERING,
PLLC.

4588 Hinton Dr.
Plano, Texas 75024
PH (469) 443-0861
FAX (469) 443-0863

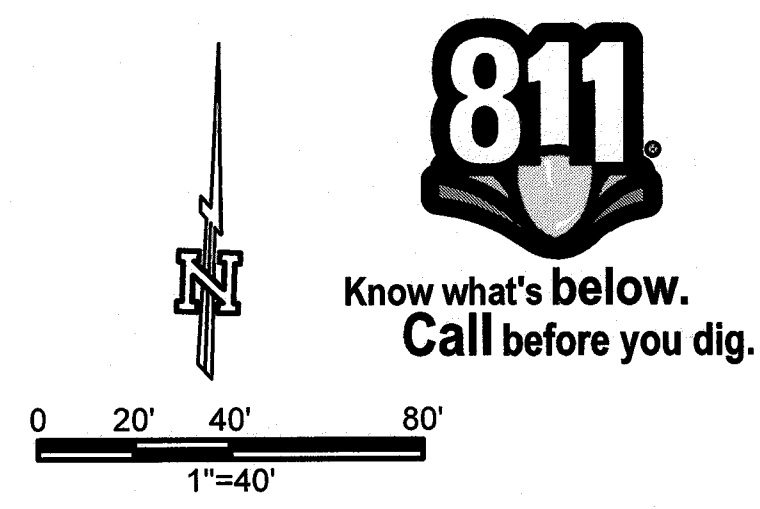
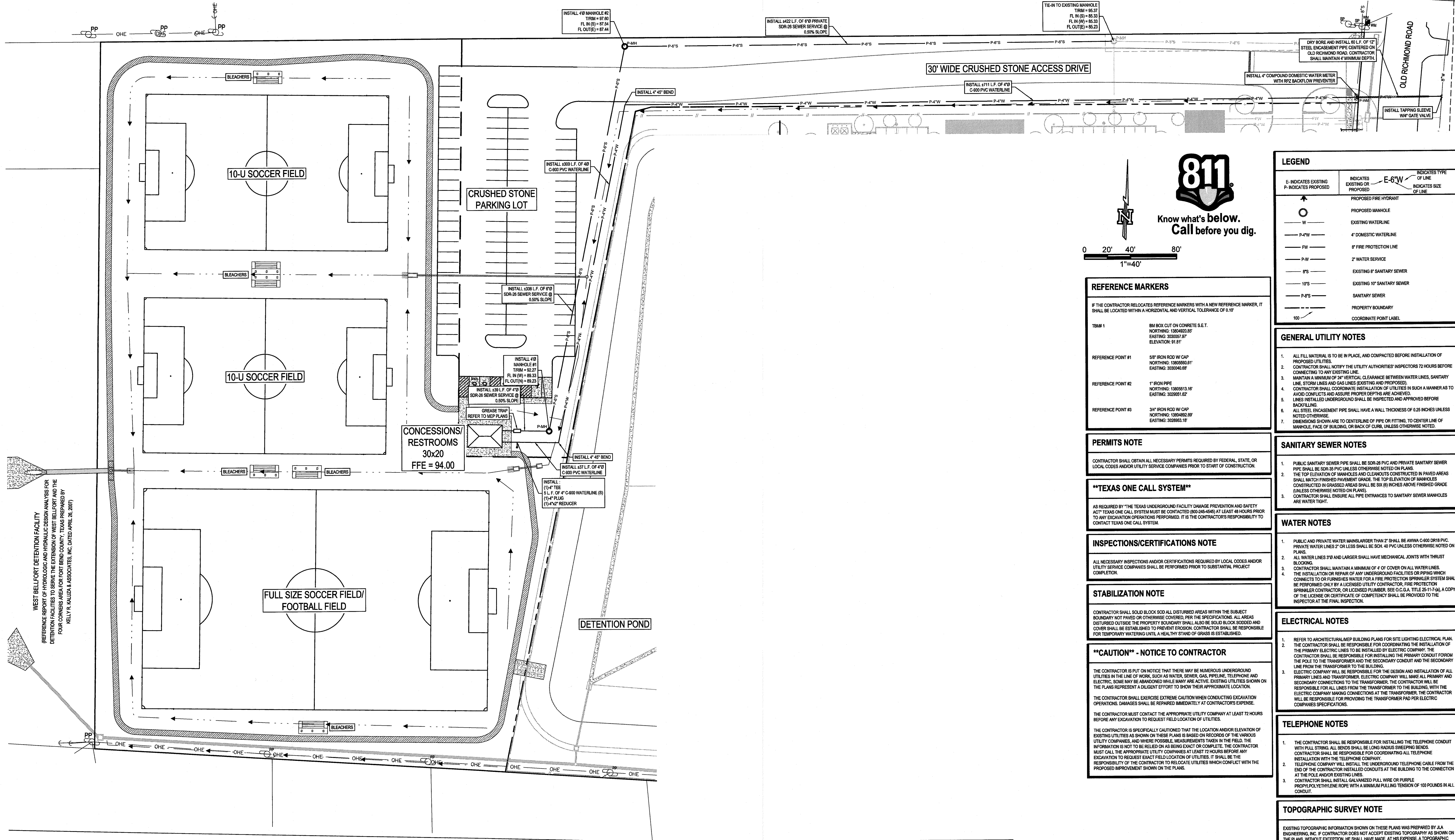


TYPE FIRM REGISTRATION NO. F-5033

DRAWN BY: TP
CHECKED BY: JAH
ESTIM. DATE: 10/28/2016
SCALE: 1" = 40'
PROJECT NO.: 2008-052

SHEET
C5.0

Planned by: T. Craig Carney, Professional Engineer, No. 55714, State of Texas. Project: 2008-062. Scale: 1" = 40'. Date: 07/25/2017. Sheet: C6.0. Prepared by: J. A. Engineering, Inc. Checked by: J. A. Engineering, Inc. Drawn by: J. A. Engineering, Inc. Title: UTILITY PLAN ISSUED FOR BIDDING. Project: 2008-062. Scale: 1" = 40'. Date: 07/25/2017. Sheet: C6.0.



REFERENCE MARKERS
IF THE CONTRACTOR RELOCATES REFERENCE MARKERS WITH A NEW REFERENCE MARKER, IT SHALL BE LOCATED WITHIN A HORIZONTAL AND VERTICAL TOLERANCE OF 0.10'

TBM#1
BM BOX CUT ON CONCRETE S.E.T.
NORTHING: 1305023.35
EASTING: 330507.97
ELEVATION: 91.81'

REFERENCE POINT #1
5" IRON ROD W/ CAP
NORTHING: 1305060.81'
EASTING: 3305040.68'

REFERENCE POINT #2
1" IRON PIPE
NORTHING: 1305051.16'
EASTING: 3305051.62'

REFERENCE POINT #3
3/4" IRON ROD W/ CAP
NORTHING: 1304892.87'
EASTING: 3305053.18'

PERMITS NOTE
CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED BY FEDERAL, STATE, OR LOCAL CODES AND/OR UTILITY SERVICE COMPANIES PRIOR TO START OF CONSTRUCTION.

****TEXAS ONE CALL SYSTEM****
AS REQUIRED BY THE TEXAS UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT, TEXAS ONE CALL SYSTEM MUST BE CONTACTED (800-464-4646) AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION OPERATIONS PERFORMED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT TEXAS ONE CALL SYSTEM.

INSPECTIONS/CERTIFICATIONS NOTE
ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY LOCAL CODES AND/OR UTILITY SERVICE COMPANIES SHALL BE PERFORMED PRIOR TO SUBSTANTIAL PROJECT COMPLETION.

STABILIZATION NOTE
CONTRACTOR SHALL SOLID BLOCK SOD ALL DISTURBED AREAS WITHIN THE SUBJECT BOUNDARY NOT PAVED OR OTHERWISE COVERED, PER THE SPECIFICATIONS. ALL AREAS DISTURBED OUTSIDE THE PROPERTY BOUNDARY SHALL ALSO BE SOLID BLOCK SODDED AND COVER SHALL BE ESTABLISHED TO PREVENT EROSION. CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY WATERING UNTIL A HEALTHY STAND OF GRASS IS ESTABLISHED.

****CAUTION** - NOTICE TO CONTRACTOR**
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THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN CONDUCTING EXCAVATION OPERATIONS. DAMAGES SHALL BE REPAIRED IMMEDIATELY AT CONTRACTOR'S EXPENSE.
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THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

LEGEND	
E- INDICATES EXISTING P- INDICATES PROPOSED	INDICATES EXISTING OR PROPOSED E-6" W INDICATES TYPE OF LINE INDICATES SIZE OF LINE
PROPOSED FIRE HYDRANT	
PROPOSED MANHOLE	
EXISTING WATERLINE	
4" DOMESTIC WATERLINE	
8" FIRE PROTECTION LINE	
2" WATER SERVICE	
EXISTING 8" SANITARY SEWER	
EXISTING 10" SANITARY SEWER	
SANITARY SEWER	
PROPERTY BOUNDARY	
COORDINATE POINT LABEL	

GENERAL UTILITY NOTES

- ALL FILL MATERIAL IS TO BE IN PLACE, AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.
- CONTRACTOR SHALL NOTIFY THE UTILITY AUTHORITIES' INSPECTORS 72 HOURS BEFORE CONNECTING TO ANY EXISTING LINE.
- MAINTAIN A MINIMUM OF 24" VERTICAL CLEARANCE BETWEEN WATER LINES, SANITARY LINE, STORM LINES AND GAS LINES (EXISTING AND PROPOSED).
- CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND ASSURE PROPER DEPTHS ARE ACHIEVED.
- ALL LINES INSTALLED UNDERGROUND SHALL BE INSPECTED AND APPROVED BEFORE BACKFILLING.
- ALL STEEL ENCASUREMENT PIPE SHALL HAVE A WALL THICKNESS OF 0.25 INCHES UNLESS NOTED OTHERWISE.
- DIMENSIONS SHOWN ARE TO CENTERLINE OF PIPE OR FITTING TO CENTER LINE OF MANHOLE, FACE OF BUILDING, OR BACK OF CURB, UNLESS OTHERWISE NOTED.

SANITARY SEWER NOTES

- PUBLIC SANITARY SEWER PIPE SHALL BE SDR-35 PVC AND PRIVATE SANITARY SEWER PIPE SHALL BE SDR-35 PVC UNLESS OTHERWISE NOTED ON PLANS.
- THE TOP ELEVATION OF MANHOLES AND CLEANOUTS CONSTRUCTED IN PAVED AREAS SHALL MATCH FINISHED PAVEMENT GRADE. THE TOP ELEVATION OF MANHOLES CONSTRUCTED IN GRASSY AREAS SHALL BE 6" (6 INCHES) ABOVE FINISHED GRADE (UNLESS OTHERWISE NOTED ON PLANS).
- CONTRACTOR SHALL ENSURE ALL PIPE ENTRANCES TO SANITARY SEWER MANHOLES ARE WATER TIGHT.

WATER NOTES

- PUBLIC AND PRIVATE WATER MAINS LARGER THAN 2" SHALL BE AWWA C-900 DR18 PVC. PRIVATE WATER LINES 2" OR LESS SHALL BE SDR-40 PVC UNLESS OTHERWISE NOTED ON PLANS.
- ALL WATER LINES 3" AND LARGER SHALL HAVE MECHANICAL JOINTS WITH THRUST BLOCKING.
- CONTRACTOR SHALL MAINTAIN A MINIMUM OF 4" OF COVER ON ALL WATER LINES.
- THE INSTALLATION OR REPAIR OF ANY UNDERGROUND FACILITIES OR PIPES WHICH CONNECTS TO OR FURNISHES WATER FOR A FIRE PROTECTION SPRINKLER SYSTEM SHALL BE PERFORMED ONLY BY A LICENSED UTILITY CONTRACTOR. FIRE PROTECTION SPRINKLER CONTRACTOR, OR LICENSED PLUMBER, SEE D.C.D.A. TITLE 25-11-4(a). A COPY OF THE LICENSE OR CERTIFICATE OF COMPETENCY SHALL BE PROVIDED TO THE INSPECTOR AT THE FINAL INSPECTION.

ELECTRICAL NOTES

- REFER TO ARCHITECTURAL/MEP BUILDING PLANS FOR SITE LIGHTING ELECTRICAL PLAN.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE INSTALLATION OF THE PRIMARY ELECTRICAL LINES TO BE INSTALLED BY ELECTRIC COMPANY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING THE PRIMARY CONDUIT FROM THE POLE TO THE TRANSFORMER AND THE SECONDARY CONDUIT AND THE SECONDARY LINE FROM THE TRANSFORMER TO THE BUILDING.
- ELECTRIC COMPANY WILL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF ALL PRIMARY LINES AND TRANSFORMER. ELECTRIC COMPANY WILL MAKE ALL PRIMARY AND SECONDARY CONNECTIONS TO THE TRANSFORMER. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL LINES FROM THE TRANSFORMER TO THE BUILDING, WITH THE ELECTRIC COMPANY MAKING CONNECTIONS AT THE TRANSFORMER. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING THE TRANSFORMER PAD PER ELECTRIC COMPANY SPECIFICATIONS.

TELEPHONE NOTES

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING THE TELEPHONE CONDUIT WITH PULL STRIPS. ALL BENDS SHALL BE LONG RADIUS SWEEPING BENDS. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL TELEPHONE INSTALLATION WITH THE TELEPHONE COMPANY.
- TELEPHONE COMPANY WILL INSTALL THE UNDERGROUND TELEPHONE CABLE FROM THE END OF THE CONTRACTOR INSTALLED CONDUITS AT THE BUILDING TO THE CONNECTION AT THE POLE AND/OR EXISTING LINES.
- CONTRACTOR SHALL INSTALL GALVANIZED PULL WIRE OR PURPLE PROPOLYETHYLENE ROPE WITH A MINIMUM PULLING TENSION OF 100 POUNDS IN ALL CONDUIT.

TOPOGRAPHIC SURVEY NOTE
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FORT BEND COUNTY FRESH WATER SUPPLY GENERAL NOTES

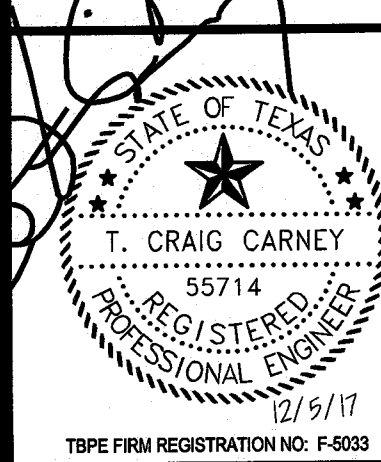
- THE SUBJECT TRACT IS LOCATED WITHIN THE BOUNDARIES OF FORT BEND COUNTY FRESH WATER SUPPLY DISTRICT 2.
- THE CONTRACTOR IS TO CONTACT BOTH THE DISTRICT'S OPERATOR AND ENGINEER 48 HOURS IN ADVANCE OF MOBILIZING TO THE SITE.
OPERATOR:
ENVIRONMENTAL DEVELOPMENT PARTNERS
17405 VILLAGE GREEN
HOUSTON, TX 77040
(832) 461-1599
ENGINEER:
SHERRINGTON HUBBLE LLC
8029 WHITEHORSE DRIVE
HOUSTON, TX 77065
(281) 656-8837
- ONLY THE DISTRICT OPERATOR IS AUTHORIZED TO OPERATE THE DISTRICT'S WATER DISTRIBUTION FACILITIES.
- THE DISTRICT OPERATOR WILL FURNISH AND INSTALL ALL METERS AND MAKE ALL TAPS IN ACCORDANCE WITH THE DISTRICT'S RATE ORDER.
- THE CONTRACTOR WILL FURNISH AND INSTALL ALL BACKFLOW PREVENTERS.
- THE DISTRICT OPERATOR IS TO INSPECT ALL WATER, SANITARY, AND STORM UTILITIES PRIOR TO PLACEMENT OF ANY BEDDING AND BACKFILL MATERIAL.

APPROVED: *JAC*
Development Coordinator
DATE: 2/20/18

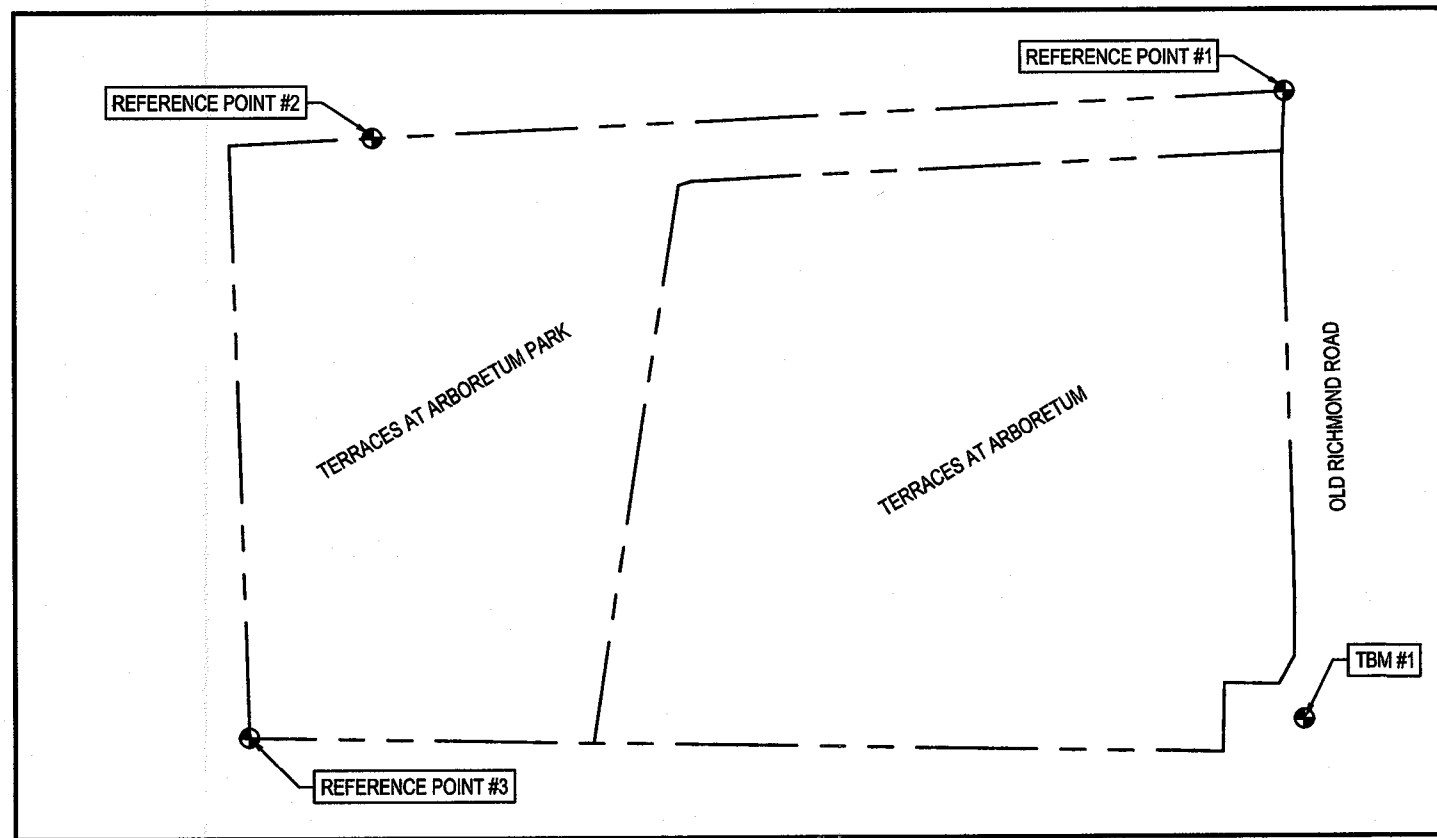
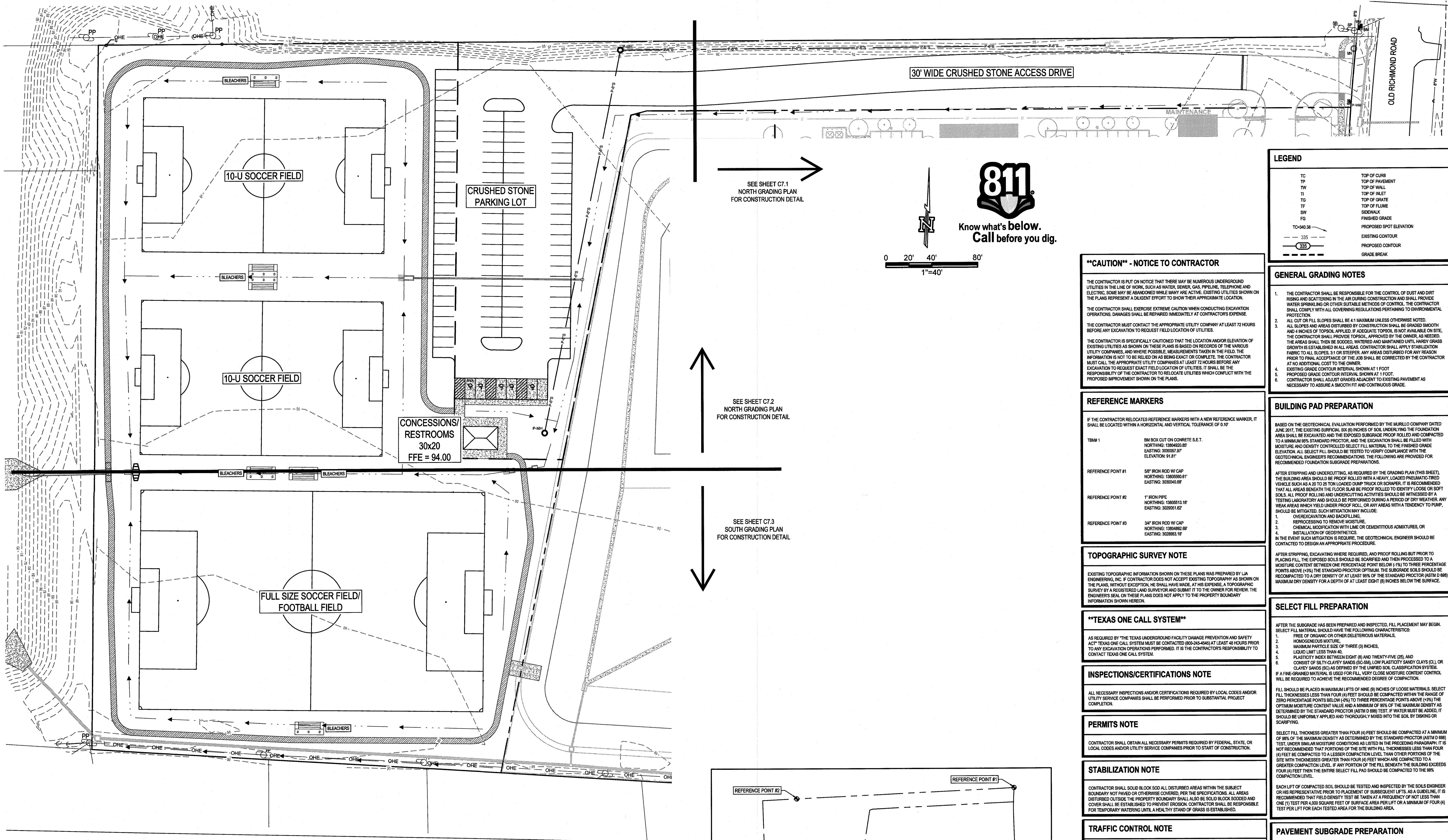
TERRACES AT ARBORETUM PARK
15928 OLD RICHMOND ROAD
FORT BEND COUNTY, TEXAS

UTILITY PLAN
ISSUED FOR BIDDING

CARNEY ENGINEERING, PLLC.
4588 Hinton Dr.
Plano, Texas 75024
PH (469) 443-0861
FAX (469) 443-0863



DATE: 07/25/2017
SCALE: 1" = 40'
PROJECT NO.: 2008-062
SHEET
C6.0



BENCHMARK KEY MAP
N.T.S.



0 20' 40' 80'
1"=40'

LEGEND	
TC	TOP OF CURB
TP	TOP OF PAVEMENT
TW	TOP OF WALL
TI	TOP OF INLET
TG	TOP OF GATE
TF	TOP OF FLUME
SW	SIDEWALK
FG	FINISHED GRADE
TS=60.28	PROPOSED SPOT ELEVATION
---	EXISTING CONTOUR
---	PROPOSED CONTOUR
---	GRADE BREAK

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REFERENCE MARKERS

IF THE CONTRACTOR RELOCATES REFERENCE MARKERS WITH A NEW REFERENCE MARKER, IT SHALL BE LOCATED WITHIN A HORIZONTAL AND VERTICAL TOLERANCE OF 0.10'

TBM #1
8" B.O. CUT ON CONCRETE S.E.T.
NORTHING: 1384620.85
EASTING: 302002.87
ELEVATION: 91.81'

REFERENCE POINT #1
5/8" IRON ROD W/ CAP
NORTHING: 1382650.81
EASTING: 302004.08

REFERENCE POINT #2
1" IRON PIPE
NORTHING: 1382651.18
EASTING: 302001.62

REFERENCE POINT #3
3/4" IRON ROD W/ CAP
NORTHING: 1382650.89
EASTING: 302003.18

TOPOGRAPHIC SURVEY NOTE

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****TEXAS ONE CALL SYSTEM****

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PERMITS NOTE

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STABILIZATION NOTE

CONTRACTOR SHALL SOLID BLOCK SOIL ALL DISTURBED AREAS WITHIN THE SUBJECT BOUNDARY NOT PAVED OR OTHERWISE COVERED, PER THE SPECIFICATIONS. ALL AREAS DISTURBED OUTSIDE THE PROPERTY BOUNDARY SHALL ALSO BE SOLID BLOCK SOCCED AND COVER SHALL BE ESTABLISHED TO PREVENT EROSION. CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY WATERING UNTIL A HEALTHY STAND OF GRASS IS ESTABLISHED.

TRAFFIC CONTROL NOTE

GUIDELINES SET FORTH IN PART 11 STANDARDS AND GUIDES FOR TRAFFIC CONTROLS FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE, UTILITY, AND INCIDENT MANAGEMENT OPERATIONS OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MOST RECENT EDITION AS REVISED) SHALL BE OBSERVED.

GENERAL GRADING NOTES

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF DUST AND DIRT RISING AND SCATTERING IN THE AIR DURING CONSTRUCTION AND SHALL PROVIDE WATER SPRINKLING OR OTHER SUITABLE METHODS OF CONTROL. THE CONTRACTOR SHALL COMPLY WITH ALL GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.
- ALL CUT OR FILL SLOPES SHALL BE 4:1 MAXIMUM UNLESS OTHERWISE NOTED.
- ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED SMOOTH AND 4 INCHES OF TOPSOIL APPLIED. IF ADEQUATE TOPSOIL IS NOT AVAILABLE ON SITE, THE CONTRACTOR SHALL PROVIDE TOPSOIL, APPROVED BY THE OWNER, AS NEEDED. THE AREAS SHALL THEN BE SOODED, WATERED AND MAINTAINED UNTIL HARDY GRASS GROWTH IS ESTABLISHED IN ALL AREAS. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES, 3:1 OR STEEPER. ANY AREAS DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE JOB SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- EXISTING GRADE CONTOUR INTERVAL SHOWN AT 1 FOOT.
- PROPOSED GRADE CONTOUR INTERVAL SHOWN AT 1 FOOT.
- CONTRACTOR SHALL ADJUST GRADES ADJACENT TO EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.

BUILDING PAD PREPARATION

BASED ON THE GEOTECHNICAL EVALUATION PERFORMED BY THE MUELLER COMPANY DATED JUNE 2017, THE EXISTING SURFICIAL SIX (6) INCHES OF SOIL UNDERLYING THE FOUNDATION AREA SHALL BE EXCAVATED AND THE EXPOSED SUBGRADE PROOF ROLLED AND COMPACTED TO A MINIMUM 90% STANDARD PROCTOR. THE EXCAVATION SHALL BE FILLED WITH MOISTURE AND DENSITY CONTROLLED SELECT FILL MATERIAL TO THE FINISHED GRADE ELEVATION. ALL SELECT FILL SHOULD BE TESTED TO VERIFY COMPLIANCE WITH THE GEOTECHNICAL ENGINEER'S RECOMMENDATIONS. THE FOLLOWING ARE PROVIDED FOR RECOMMENDED FOUNDATION SUBGRADE PREPARATIONS.

AFTER STRIPPING AND UNDERCUTTING, AS REQUIRED BY THE GRADING PLAN (THIS SHEET), THE BUILDING AREA SHOULD BE PROOF ROLLED WITH A HEAVY, LOADED PNEUMATIC-TIRED TIRE (SUCH AS A 20 TO 25 TON LOADED DUMP TRUCK OR SCARPER). IT IS RECOMMENDED THAT ALL AREAS BENEATH THE FLOOR SLAB BE PROOF ROLLED TO IDENTIFY LOOSE OR SOFT SOILS. ALL PROOF ROLLING AND UNDERCUTTING ACTIVITIES SHOULD BE WITNESSED BY A TESTING LABORATORY AND SHOULD BE PERFORMED DURING A PERIOD OF DRY WEATHER. ANY WEAK AREAS WHICH WELLY UNDER PROOF ROLL, OR ANY AREAS WITH A TENDENCY TO PUMP, SHOULD BE MITIGATED. SUCH MITIGATION MAY INCLUDE:

- OVEREXCAVATION AND BACKFILLING.
- REPROCESSING TO REMOVE MOISTURE.
- CHEMICAL MODIFICATION WITH LIME OR CEMENTITIOUS ADMIXTURES, OR
- INSTALLATION OF GEOSYNTHETICS.

IN THE EVENT SUCH MITIGATION IS REQUIRED, THE GEOTECHNICAL ENGINEER SHOULD BE CONTACTED TO DESIGN AN APPROPRIATE PROCEDURE.

AFTER STRIPPING, EXCAVATING WHERE REQUIRED, AND PROOF ROLLING BUT PRIOR TO PLACING FILL, THE EXPOSED SOILS SHOULD BE SCARIFIED AND THEN PROCESSED TO A MOISTURE CONTENT BETWEEN ONE PERCENTAGE POINT BELOW (-1%) TO THREE PERCENTAGE POINTS ABOVE (+3%) THE STANDARD PROCTOR OPTIMUM. THE SUBGRADE SOILS SHOULD BE RECOMPACTED TO A DRY DENSITY OF AT LEAST 90% OF THE STANDARD PROCTOR (ASTM D 698) MAXIMUM DRY DENSITY FOR A DEPTH OF AT LEAST EIGHT (8) INCHES BELOW THE SURFACE.

SELECT FILL PREPARATION

AFTER THE SUBGRADE HAS BEEN PREPARED AND INSPECTED, FILL PLACEMENT MAY BEGIN. SELECT FILL MATERIAL SHOULD HAVE THE FOLLOWING CHARACTERISTICS:

- FREE OF ORGANIC OR OTHER DELETERIOUS MATERIALS.
 - NON-COHESSIVE MATERIAL.
 - MAXIMUM PARTICLE SIZE OF THREE (3) INCHES.
 - LIQUID LIMIT LESS THAN 40.
 - PLASTICITY INDEX BETWEEN EIGHT (8) AND TWENTY-FIVE (25) AND
 - CONSIST OF SILTY-CLAYEY SANDS (SC-SM), LOW PLASTICITY SANDY CLAYS (CL), OR CLAYEY SANDS (SC) AS DEFINED BY THE UNIFIED SOIL CLASSIFICATION SYSTEM.
- IF A FINE-GRAINED MATERIAL IS USED FOR FILL, VERY CLOSE MOISTURE CONTENT CONTROL WILL BE REQUIRED TO ACHIEVE THE RECOMMENDED DEGREE OF COMPACTION.

FILL SHOULD BE PLACED IN MAXIMUM LIFTS OF NINE (9) INCHES OF LOOSE MATERIALS. SELECT FILL THICKNESSES LESS THAN FOUR (4) FEET SHOULD BE COMPACTED WITHIN THE RANGE OF ZERO PERCENTAGE POINTS BELOW (-1%) TO THREE PERCENTAGE POINTS ABOVE (+3%) THE OPTIMUM MOISTURE CONTENT VALUE AND A MINIMUM OF 90% OF THE MAXIMUM DENSITY AS DETERMINED BY THE STANDARD PROCTOR (ASTM D 698) TEST. IF WATER MUST BE ADDED, IT SHOULD BE UNIFORMLY APPLIED AND THOROUGHLY MIXED INTO THE SOIL BY DISKING OR SCARIFYING.

SELECT FILL THICKNESS GREATER THAN FOUR (4) FEET SHOULD BE COMPACTED AT A MINIMUM OF 90% OF THE MAXIMUM DENSITY AS DETERMINED BY THE STANDARD PROCTOR (ASTM D 698) TEST. UNDER SIMILAR MOISTURE CONDITIONS AS LISTED IN THE PRECEDING PARAGRAPH, IT IS NOT RECOMMENDED THAT PORTIONS OF THE SITE WITH FILL THICKNESSES LESS THAN FOUR (4) FEET BE COMPACTED TO A LESSER COMPACTION LEVEL THAN OTHER PORTIONS OF THE SITE WITH THICKNESSES GREATER THAN FOUR (4) FEET WHICH ARE COMPACTED TO A GREATER COMPACTION LEVEL. IF ANY PORTION OF THE FILL BENEATH THE BUILDING EXCEEDS FOUR (4) FEET THEN THE ENTIRE SELECT FILL PAD SHOULD BE COMPACTED TO THE 90% COMPACTION LEVEL.

SOIL LIFT OF COMPACTED SOIL SHOULD BE TESTED AND INSPECTED BY THE SOILS ENGINEER OR HIS REPRESENTATIVE PRIOR TO PLACEMENT OF SUBSEQUENT LIFTS. AS A GUIDELINE, IT IS RECOMMENDED THAT FIELD DENSITY TEST BE TAKEN AT A FREQUENCY OF NOT LESS THAN ONE (1) TEST PER 400 SQUARE FEET OF SURFACE AREA PER LIFT OR A MINIMUM OF FOUR (4) TEST PER LIFT FOR EACH TESTED AREA FOR THE BUILDING AREA.

PAVEMENT SUBGRADE PREPARATION

PLEASE REFER TO THE BUILDING PAD PREPARATION SECTION FOR INITIAL SUBGRADE REQUIREMENT. IN ADDITION, THE FINAL EIGHT (8) INCHES OF SUBGRADE UNDER PORTION AND CEMENT CONCRETE AND ASPHALTIC FLEXIBLE PAVEMENTS SHALL BE STABILIZED AS OUTLINED BELOW.

ALL PAVEMENT SUBGRADE SHOULD MEET DENSITY REQUIREMENTS AND PASS A PROOF ROLLING TEST AND INSPECTION TO CONFIRM SUBGRADE STABILITY IN ACCORDANCE WITH TBM 216 PROOF ROLLING OF THE 2004 EDITION OF THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT) STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MAINTENANCE OF HIGHWAYS, STREETS AND BRIDGES. A MINIMUM 25-TON ROLLER SHOULD BE USED FOR THE APPLICATION.

COHESIVE (CLAY) SUBGRADE SOILS SHOULD BE COMPACTED TO A MINIMUM OF 90% OF MAXIMUM DRY DENSITY DEFINED BY THE STANDARD PROCTOR (ASTM D 698). NON-COHESSIVE (SILT AND SANDS) SUBGRADE SOILS SHOULD BE COMPACTED TO 100% OF MAXIMUM DRY DENSITY DEFINED BY THE STANDARD PROCTOR (ASTM D 698).

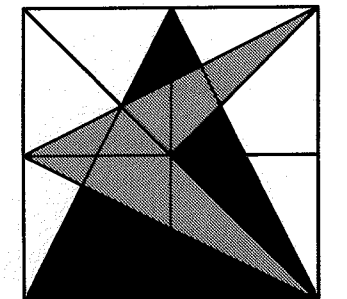
THIS SHEET IS INTENDED TO PRESENT THE OVERALL GRADING CONCEPT. REFER TO SHEETS C 7.1, C7.2 & C7.3 FOR DETAILED GRADING INFORMATION

APPROVED:
Development Coordinator
DATE: 2/20/18

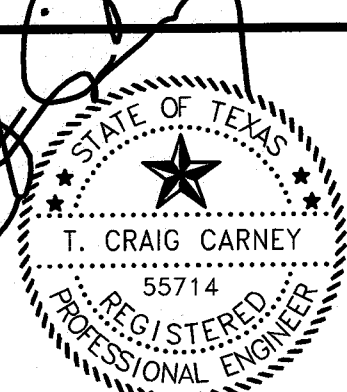
REVISIONS	
A	08/26/17 ISSUED FOR PERMIT
B	08/28/17 ISSUED FOR BIDDING
C	09/27/17 ISSUED FOR BIDDING

TERRACES AT ARBORETUM PARK
15928 OLD RICHMOND ROAD
FORT BEND COUNTY, TEXAS

OVERALL GRADING
AND DRAINAGE PLAN
ISSUED FOR BIDDING



4588 Hinton Dr.
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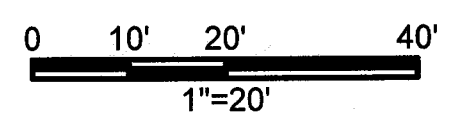
DATE: 7/5/17
TYPE FIRM REGISTRATION NO: F-5033

DRAWN BY: KLR
CHECKED BY: JAH
START DATE: 07/25/2017
SCALE: 1"=40'
PROJECT NO.: 2058-062

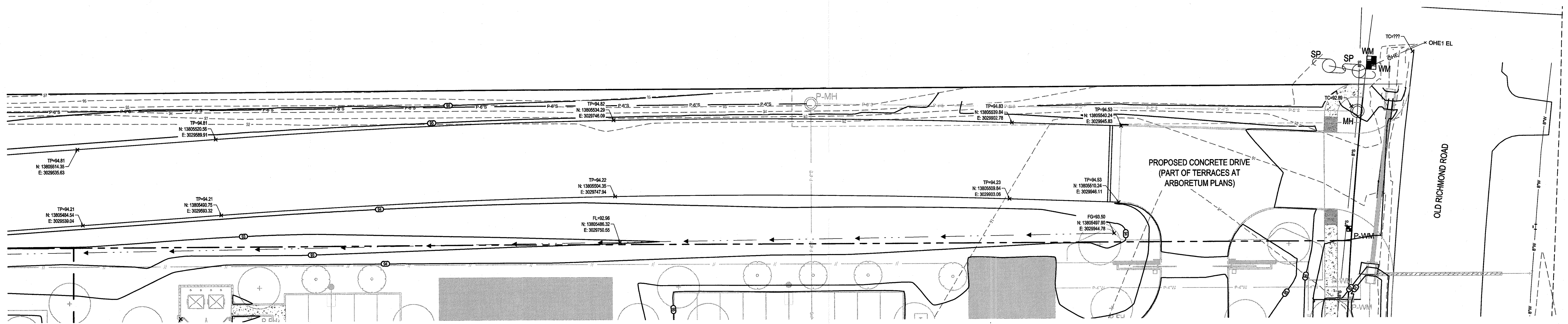
SHEET
C7.0



Know what's below.
Call before you dig.



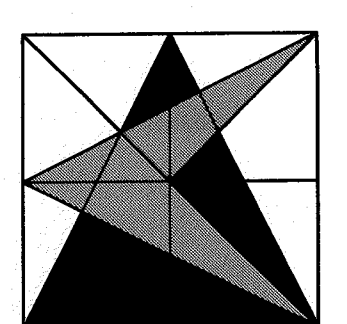
LEGEND	
TC	TOP OF CURB
TP	TOP OF PAVEMENT
TI	TOP OF INLET
TG	TOP OF GRATE
TF	TOP OF FLUME
SW	SIDEWALK
FG	FINISHED GRADE
TC=40.38	PROPOSED SPOT ELEVATION
---	EXISTING CONTOUR
---	PROPOSED CONTOUR
---	GRADE BREAK



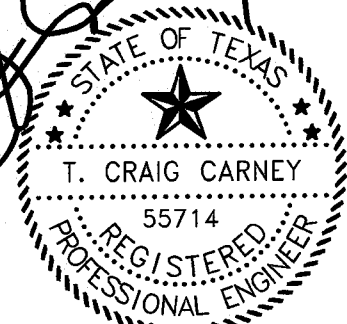
REVISIONS	
A	08/26/17 ISSUED FOR PERMIT
B	09/08/17 ISSUED FOR BIDDING
C	09/27/17 ISSUED FOR BIDDING

TERRACES AT ARBORETUM PARK
15928 OLD RICHMOND ROAD
FORT BEND COUNTY, TEXAS

ENLARGED GRADING
AND DRAINAGE PLAN
ENTRANCE ROAD
ISSUED FOR BIDDING



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T. CRAIG CARNEY
55714
REGISTERED
PROFESSIONAL ENGINEER
12/31/17
TBPCE FIRM REGISTRATION NO.: F-5033

APPROVED: 
Development Coordinator

DATE: 2/20/18

DRAWN BY: KLR

CHECKED BY: JAH

START DATE: 07/25/2017

SCALE: 1" = 20'

PROJECT NO.: 2058-062

SHEET

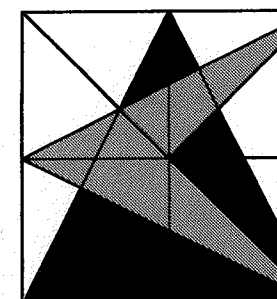
C7.1

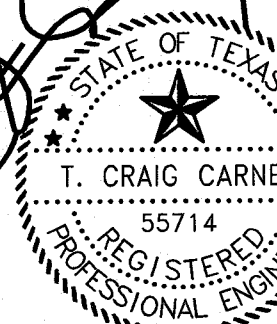
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REVISIONS
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B. 09/26/17 ISSUED FOR BIDDING
C. 09/27/17 ISSUED FOR BIDDING
D. 10/26/17 ISSUED FOR BIDDING

TERRACES AT ARBORETUM PARK
15928 OLD RICHMOND ROAD
FORT BEND COUNTY, TEXAS

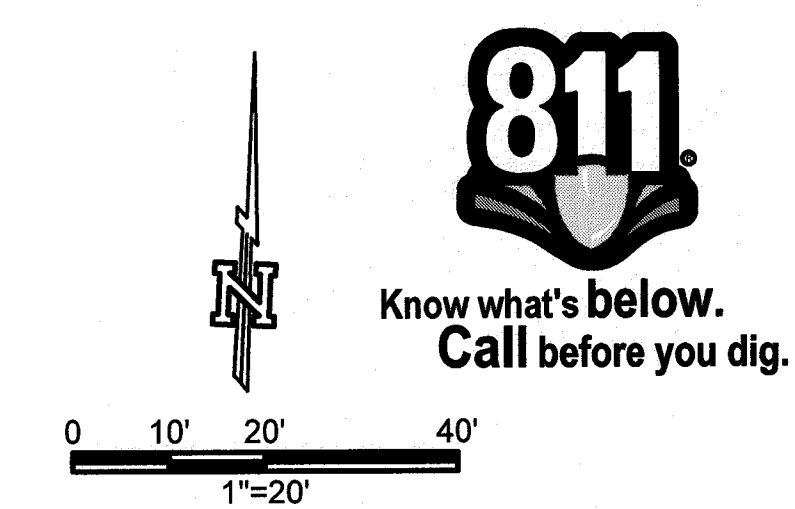
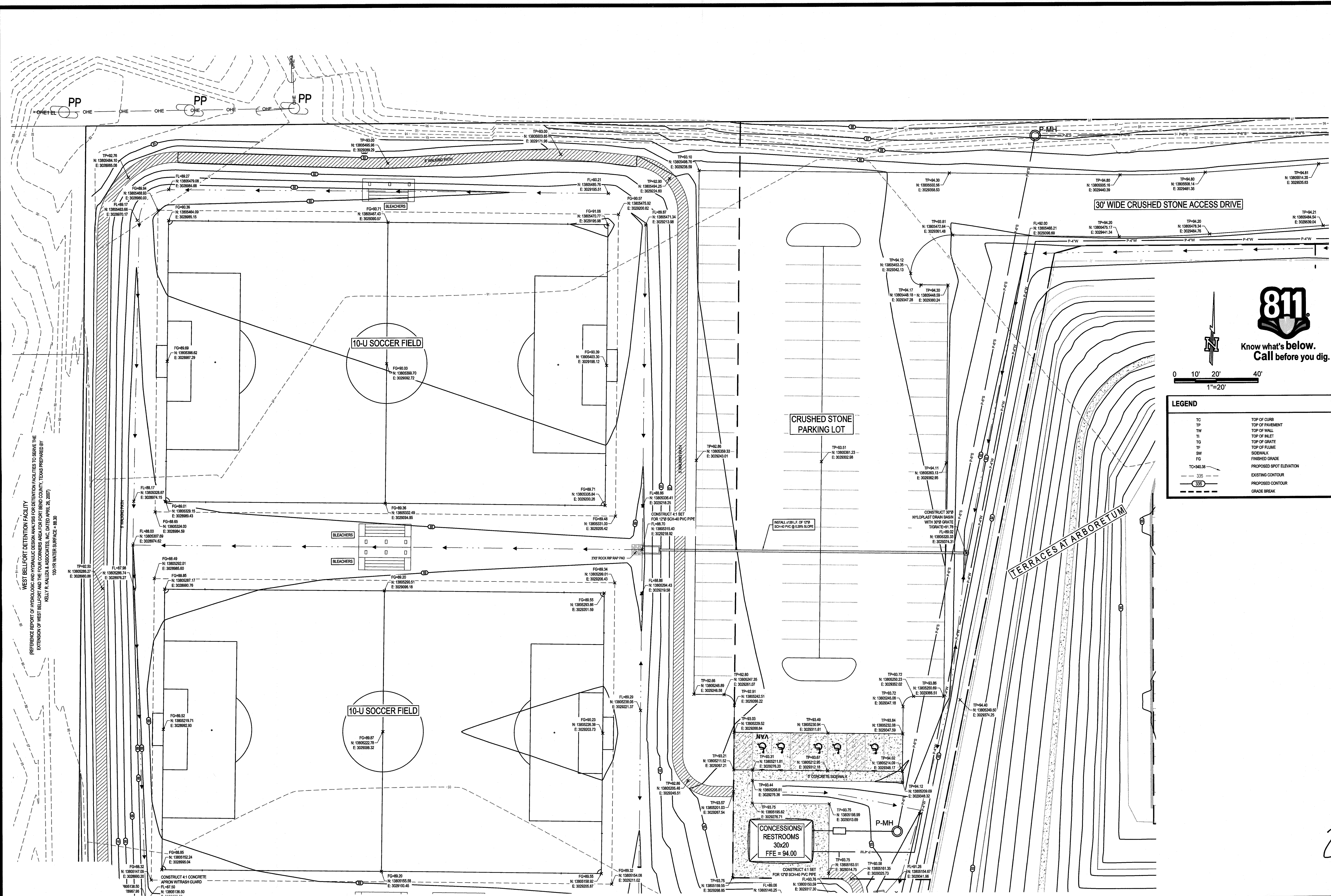
ENLARGED GRADING
AND DRAINAGE PLAN
NORTH
ISSUED FOR BIDDING


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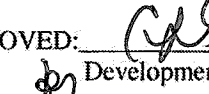

T. CRAIG CARNEY
55714
REGISTERED
PROFESSIONAL ENGINEER
12/5/17
TBPCE FIRM REGISTRATION NO: F-5033

DESIGNED BY: KLR
CHECKED BY: JAH
START DATE: 07/25/2017
SCALE: 1" = 20'
PROJECT NO: 2008-062

SHEET
C7.2



LEGEND	
TC	TOP OF CURB
TP	TOP OF PAVEMENT
TW	TOP OF WALL
TI	TOP OF INLET
TO	TOP OF GRATE
TF	TOP OF FLUME
SW	SIDEWALK
FG	FINISHED GRADE
TO-94.08	PROPOSED SPOT ELEVATION
---	EXISTING CONTOUR
---	PROPOSED CONTOUR
---	GRADE BREAK

APPROVED: 
Development Coordinator
DATE: 7/20/18

Reference: Final Development Plan and Grading and Drainage Plan for Terraces at Arboretum Park, Fort Bend County, Texas, dated 07/25/2017. Project: 2008-062. Scale: 1" = 20'. Prepared by: T. Craig Carney, P.E.



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DRAWN BY: KLI

CHECKED BY: JAL

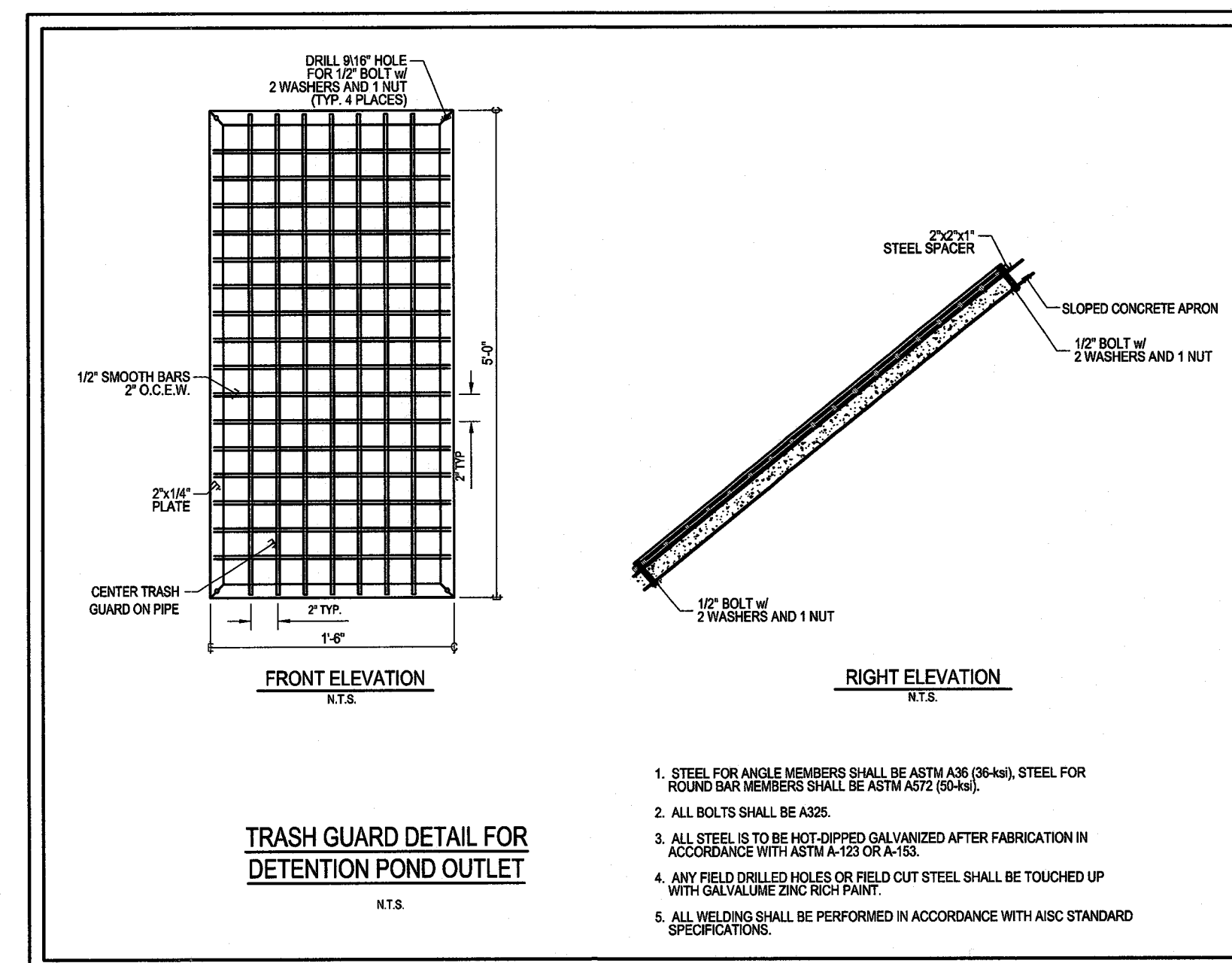
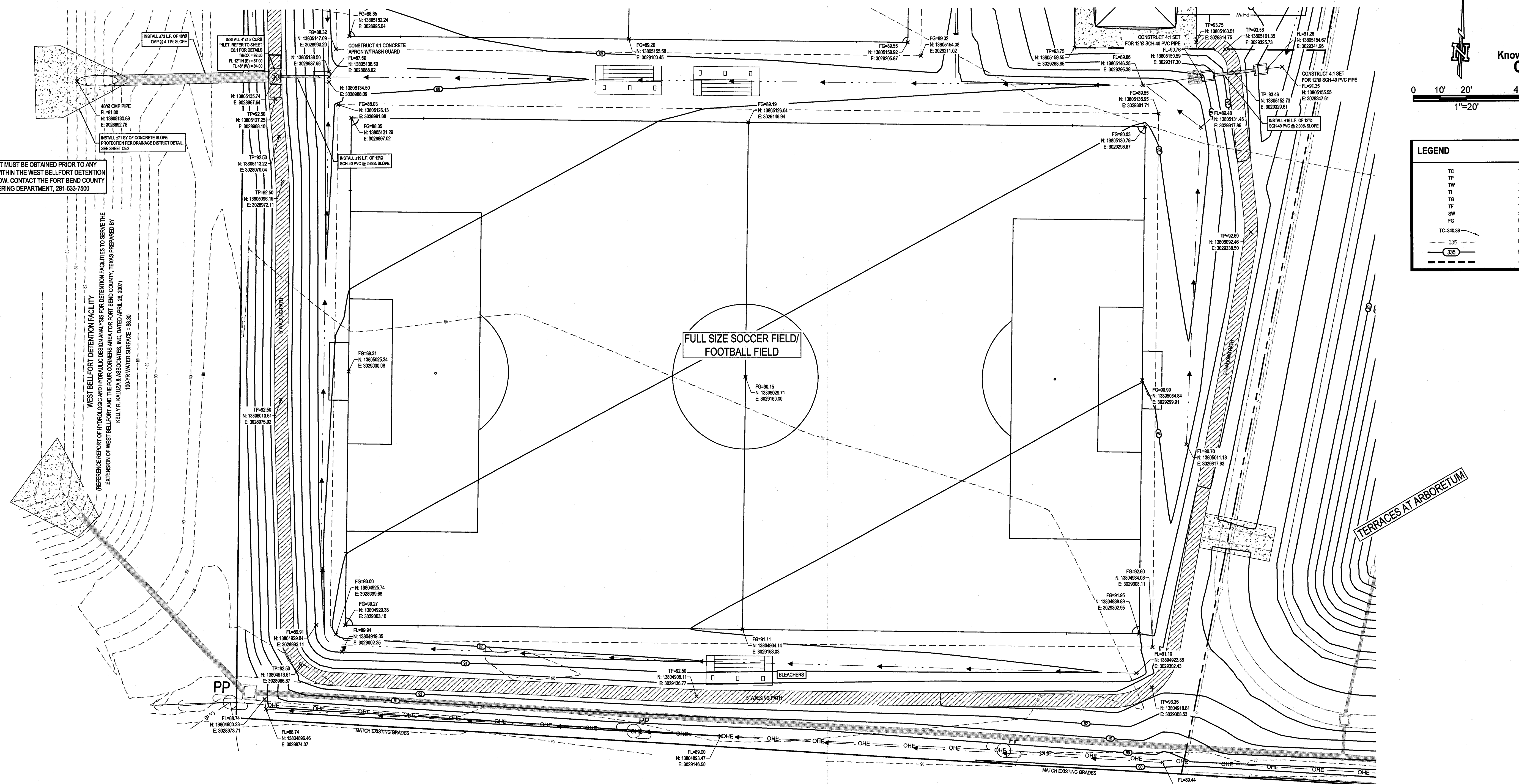
START DATE: 07/25/201

SCALE: 1" = 2'

PROJECT NO. : 2088-08

SHEET
070

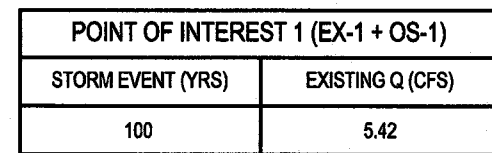
C7.3



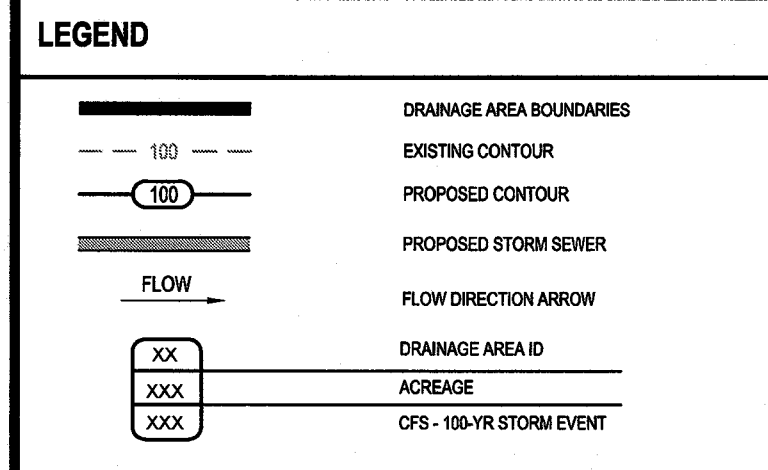
APPROVED: (Signature)
Development Coordinator

DATE: 2/20/18

C7.3



DA	Area Designation	Total Area (acres)	Time of Concentration (min)	Composite Runoff Coefficient Calculation				Composite Runoff Coefficient 100-Year	Rainfall Intensity 100-Year	Runoff (cfs)
				Lawn/Pasture	Lawn/Pasture	Impervious	Impervious			
				C	C	C	C			
EX-1	SITE TO WEST	8.80	67	0.15	8.80	0.90	0.00	0.15	4.59	4.68
OS-1	OFFSITE 1	0.32	10	0.20	0.32	0.90	0.00	0.20	11.63	0.74

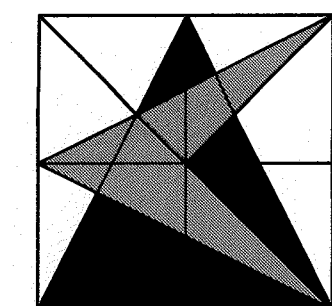


DETENTION DESIGNED FOR A 100-YR MODIFIED RATIONAL EVENT
FORT BEND COUNTY (100-YR) IDF VALUES: B = 146.18; D = 15.129; E = 0.785
TIME OF CONCENTRATION = 10 MINUTES FOR DEVELOPED LAND
100-YR RAINFALL INTENSITY = 11.6 IN/HR

REFER TO DRAWING C8.1 FOR PROPOSED DRAINAGE AREA CALCULATIONS

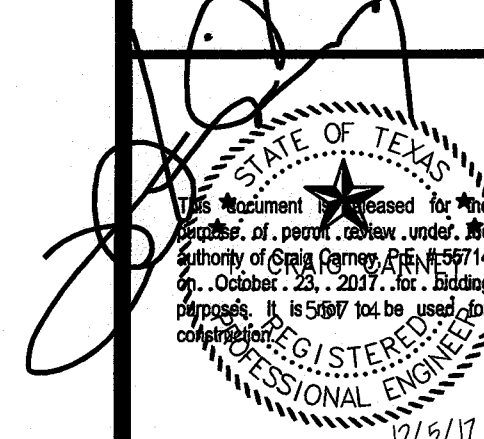
TERRACES AT ARBORETUM PARK
15928 OLD RICHMOND ROAD
FORT BEND COUNTY, TEXAS

**EXISTING
DRAINAGE AREA PLAN
ISSUED FOR BIDDING**



**CARNEY
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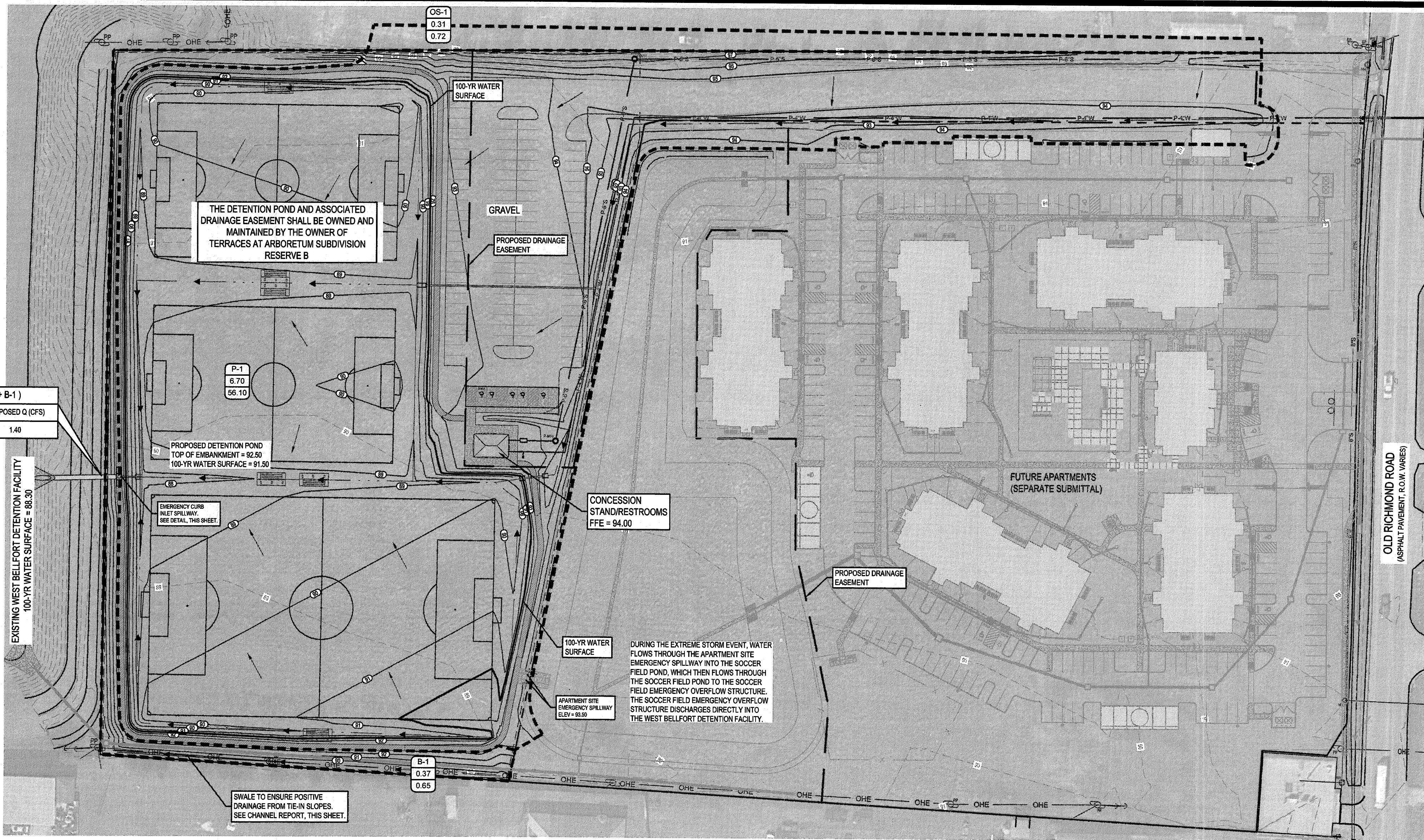


12/27/11
TBPE FIRM REGISTRATION NO: F-5033

DRAWN BY: ACA
CHECKED BY: JAH
START DATE: 07/25/2017
SCALE: 1" = 60'
PROJECT NO.: 2068-082

SPORT
C8.0

CdS 2/20/18



POINT OF INTEREST 1 (POND DISCHARGE + B-1)		
STORM EVENT (YRS)	EXISTING Q (CFS)	PROPOSED Q (CFS)
100	5.42	1.40

Know what's below.
Call before you dig.

0 20' 40' 60' 120'
1"=60'

LEGEND

- DRAINAGE AREA BOUNDARIES
- - - EXISTING CONTOUR
- - - PROPOSED CONTOUR
- - - PROPOSED STORM SEWER
- FLOW
- FLOW DIRECTION ARROW
- XX DRAINAGE AREA ID
- XXX ACREAGE
- XXX CFS - 100-YR STORM EVENT

HYDROLOGY AND HYDRAULICS DESIGN PARAMETERS

DETENTION DESIGNED PER FORT BEND COUNTY DRAINAGE DISTRICT SIMPLIFIED PROCEDURE

FORT BEND COUNTY (100-YR) IDF VALUES: B=146.18; D=15.128; E=0.7851

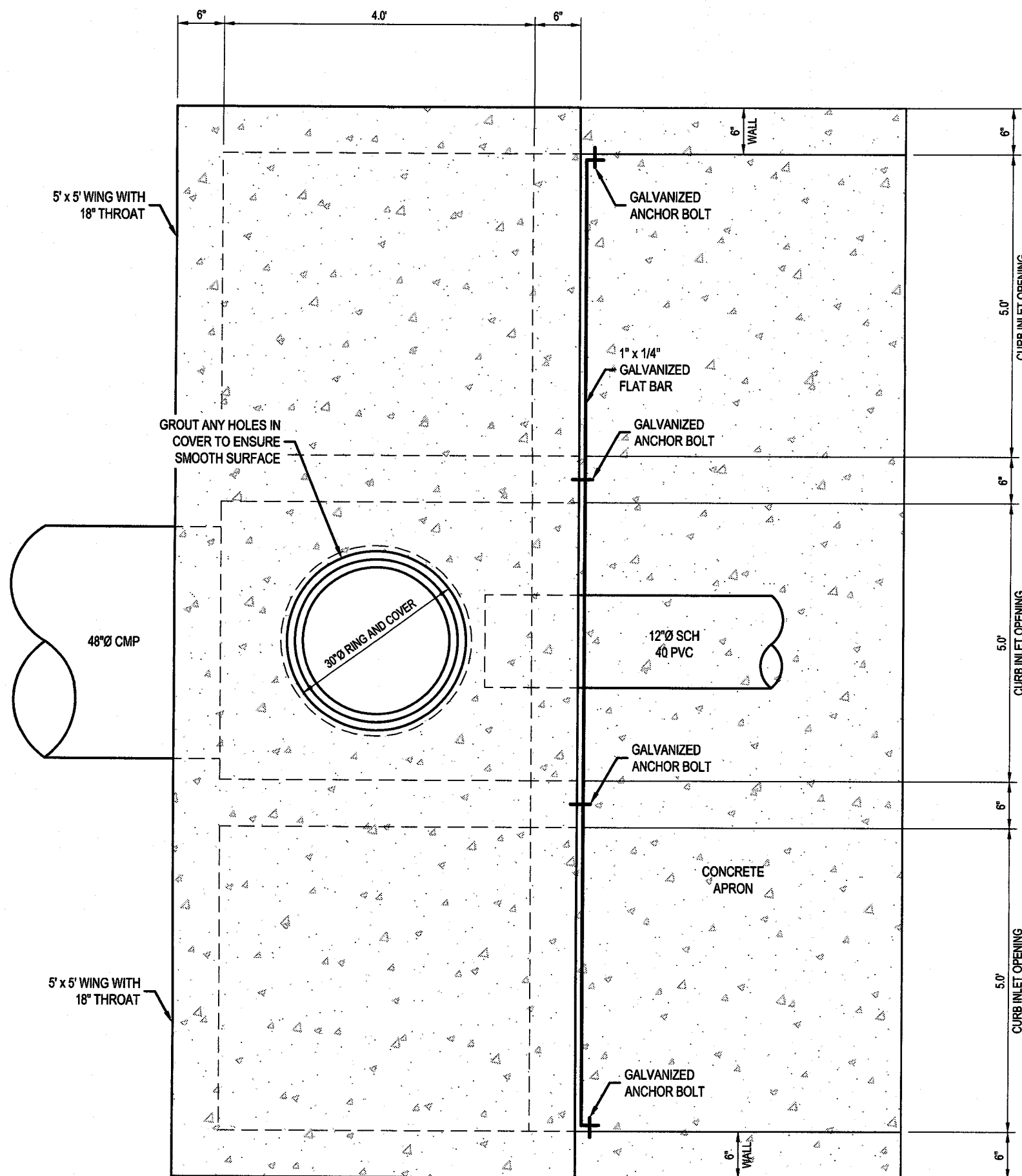
TIME OF CONCENTRATION = 10 MINUTES FOR DEVELOPED LAND

100-YR RAINFALL INTENSITY = 11.6 IN/HR

REFER TO DRAWING C8.0 FOR EXISTING DRAINAGE AREA CALCULATIONS

MINIMUM FLOOR ANALYSIS TABLE			
ID	ELEVATION	REQUIRED DISTANCE ABOVE	MINIMUM ELEVATION
OLD RICHMOND RD CROWN	92.94	12"	93.94
MAXIMUM PONDING ELEVATION AT INLET	92.48	12"	93.48
MAXIMUM PONDING ELEVATION IN APT POND	92.50	18"	94.00

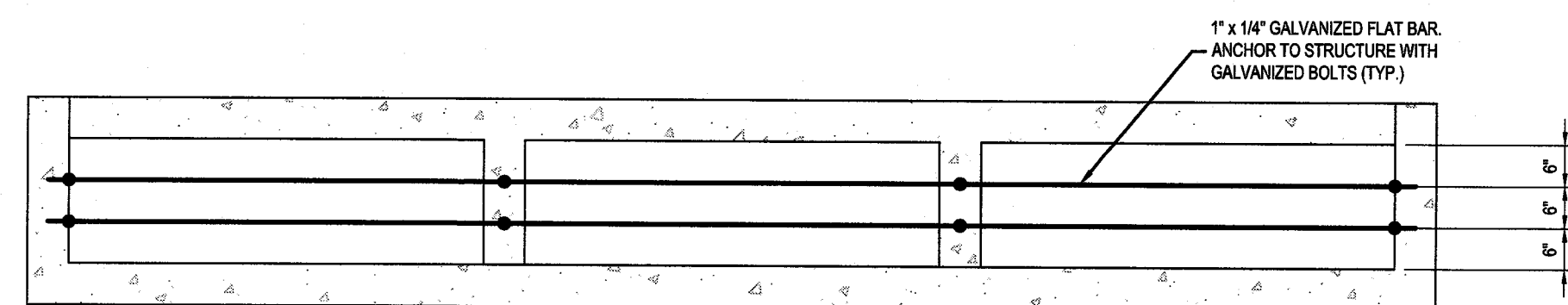
BASED UPON THE ABOVE TABLE, THE TOP OF ALL FLOOR SLABS SHALL BE A MINIMUM OF 94.00 FEET ABOVE MEAN SEA LEVEL.



DETENTION POND SUMMARY							
TOTAL AREA DRAINAGE TO POND = 7.01 ACRES							
Developed Acreage	Impervious Area	% Impervious	Detention Rate per Drainage District	Storage Required per Drainage District	Storage Provided	Peak W.S.E.L.	Q _{PEAK} OUT OF POND
7.01	5.13	73.18	0.87	266,491	274,283	91.50	0.75

POND RATING TABLE - (1) 4" ORIFICE, 10' EMERGENCY SPILLWAY					
Stage (ft)	Elevation (ft)	Contour Area (sq ft)	Incremental Storage (cu ft)	Total Storage (cu ft)	Total Discharge (cfs)
0.00	87.50	1	0	0	0.00
0.50	88.00	1,052	181	181	0.00
1.00	88.50	6,227	1,640	1,821	0.19
1.50	89.00	20,249	6,284	8,105	0.35
2.00	89.50	54,955	18,082	26,197	0.46
2.50	90.00	99,301	38,017	64,214	0.54
3.00	90.50	133,036	57,873	122,087	0.82
3.50	91.00	154,971	71,925	194,012	0.89
4.00	91.50	166,212	80,271	274,283	0.75
4.50	92.00	172,485	84,681	358,944	68.87
5.00	92.50	176,744	87,296	446,240	106.04

100 YR DETENTION RELEASE SUMMARY			
TOTAL AREA DRAINAGE TO POND = 7.01 ACRES			
Q _{PEAK} OUT OF POND	Q _{ALLOWABLE} PER DRAINAGE DISTRICT	(0.125 CFS PER ACRE)	
0.75	0.87		



EMERGENCY OVERFLOW STRUCTURE TRASH COVER DETAIL
N.T.S.

REFER TO CURB INLET DETAIL FOR REINFORCING STEEL, SEE SHEET C12.3

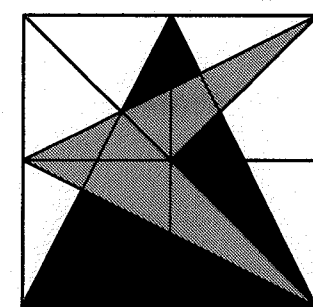
SOCCER FIELD EMERGENCY OVERFLOW STRUCTURE
(MODELED TO ACCOMMODATE APARTMENT SITE + SOCCER FIELDS EXTREME EVENT)
(Q = 115.17 CFS)
N.T.S.

APPROVED:
DATE: 7/20/18

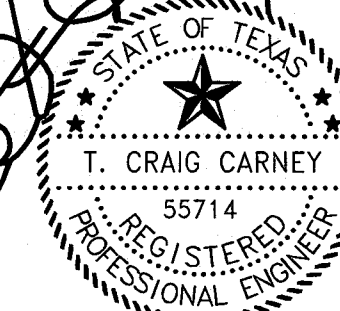
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A	08/21/17 PLAT APPROVAL
B	08/28/17 ISSUED FOR PERMIT
C	09/05/17 ISSUED FOR BIDDING
D	09/27/17 ISSUED FOR BIDDING
E	10/30/17 ISSUED FOR BIDDING
F	12/14/17 COUNTY COMMENTS

TERRACES AT ARBORETUM PARK
15928 OLD RICHMOND ROAD
FORT BEND COUNTY, TEXAS

PROPOSED
DRAINAGE AREA PLAN
ISSUED FOR BIDDING



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12/14/17
TYPE FIRM REGISTRATION NO. F-5533

DRAWN BY: ACA
CHECKED BY: JAH
START DATE: 07/25/2017
SCALE: 1" = 60'
PROJECT NO.: 2008-062

C8.1

Filename: F:\Land Development\20398\2039-082 Termsos at AbcervumCADLAND DEVELOPMENT\ISOCOR FIELD\9/29/0 PAVING DETAILS.dwg Plotted: 12/7/2017 11:09:28 AM Plot Device: None Page Setup: --- Plotted by: Thuzman Pascare

GENERAL TRENCH EXCAVATION SAFETY NOTES

1. RECOMMENDATIONS AND DETAILS PROVIDED ON THE ATTACHED PAGES ARE FOR THE REFERENCED PROJECT ONLY. THESE RECOMMENDATIONS ARE SPECIFICALLY FOR THIS SITE AND ARE NOT FOR REUSE.
2. MATERIALS AND EQUIPMENT USED FOR PROTECTIVE SYSTEMS SHALL BE FREE FROM DAMAGE OR DEFECTS THAT MIGHT IMPAIR THEIR PROPER FUNCTION.
3. MANUFACTURED MATERIALS AND EQUIPMENT USED FOR PROTECTIVE SYSTEMS SHALL BE USED AND MAINTAINED IN A MANNER THAT IS CONSISTENT WITH THE RECOMMENDATIONS OF THE MANUFACTURER, AND IN A MANNER THAT WILL PREVENT EMPLOYEE EXPOSURE TO HAZARDS.
4. WHEN MATERIAL OR EQUIPMENT THAT IS USED FOR PROTECTIVE SYSTEMS IS DAMAGED, A COMPETENT PERSON SHALL EXAMINE THE MATERIAL OR EQUIPMENT AND EVALUATE ITS SUITABILITY FOR CONTINUED USE. IF THE COMPETENT PERSON CANNOT ASSURE THE MATERIAL OR EQUIPMENT IS ABLE TO SUPPORT THE INTENDED LOADS OR IS OTHERWISE SUITABLE FOR SAFE USE, THEN SUCH MATERIAL OR EQUIPMENT SHALL BE REMOVED FROM SERVICE, AND SHALL BE EVALUATED AND APPROVED BY A REGISTERED PROFESSIONAL ENGINEER BEFORE BEING RETURNED TO SERVICE.
5. MEMBERS OF SUPPORT SYSTEMS SHALL BE SECURELY CONNECTED TOGETHER TO PREVENT SLIDING, FALLING, KICKOUTS, OR OTHER PREDICTABLE FAILURES.
6. SUPPORT SYSTEMS SHALL BE INSTALLED AND REMOVED IN A MANNER THAT PROTECTS EMPLOYEES FROM CAVE-INS, STRUCTURAL COLLAPSES, OR FROM BEING STRUCK BY MEMBERS OF THE SUPPORT SYSTEM.
7. INDIVIDUAL MEMBERS OF SUPPORT SYSTEMS SHALL NOT BE SUBJECTED TO LOADS EXCEEDING THOSE WHICH THOSE MEMBERS WERE DESIGNED TO WITHSTAND.
8. REMOVAL SHALL BEGIN AT, AND PROGRESS FROM, THE BOTTOM OF THE EXCAVATION. MEMBERS SHALL BE RELEASED SLOWLY SO AS TO NOTE ANY INDICATION OF POSSIBLE FAILURE OF THE REMAINING MEMBERS OF THE STRUCTURE OR POSSIBLE CAVE-IN OF THE SIDES OF THE EXCAVATION.
9. BACKFILLING SHALL PROGRESS TOGETHER WITH THE REMOVAL OF SUPPORT SYSTEMS FROM EXCAVATIONS.
10. EMPLOYEES SHALL NOT BE PERMITTED TO WORK ON THE FACES OF SLOPED OR BENCHED EXCAVATIONS AT LEVELS ABOVE OTHER EMPLOYEES EXCEPT WHEN EMPLOYEES AT THE LOWER LEVELS ARE ADEQUATELY PROTECTED FROM THE HAZARD OF FALLING, ROLLING, OR SLIDING MATERIAL, OR EQUIPMENT.
11. SHIELD SYSTEMS SHALL NOT BE SUBJECTED TO LOADS EXCEEDING THOSE WHICH THE SYSTEM WAS DESIGNED TO WITHSTAND.
12. SHIELDS SHALL BE INSTALLED IN A MANNER TO RESTRICT LATERAL OR OTHER HAZARDOUS MOVEMENT OF THE SHIELD IN THE EVENT OF THE APPLICATION OF SUBSTANTIAL LOADS. EMPLOYEES SHALL BE PROTECTED FROM THE HAZARD OF CAVE-INS WHEN ENTERING OR EXITING THE AREAS PROTECTED BY SHIELDS.
13. EMPLOYEES SHALL NOT BE ALLOWED IN SHIELDS WHEN SHIELDS ARE BEING INSTALLED, REMOVED, OR MOVED VERTICALLY.
14. EXCAVATIONS OF EARTH MATERIAL TO A LEVEL NOT GREATER THAN 2 FEET (61 CM) BELOW THE BOTTOM OF A SHIELD SHALL BE PERMITTED, BUT ONLY IF THE SHIELD IS DESIGNED TO RESIST THE FORCES CALCULATED FOR THE FULL DEPTH OF THE TRENCH, AND THERE ARE NO INDICATIONS WHILE THE TRENCH IS OPEN OF A POSSIBLE LOSS OF SOIL FROM BEHIND OR BELOW THE BOTTOM OF THE SHIELD.
15. ALL SURFACE ENCUMBRANCES THAT ARE LOCATED SO AS TO CREATE A HAZARD TO EMPLOYEES SHALL BE REMOVED OR SUPPORTED, AS NECESSARY, TO SAFEGUARD EMPLOYEES.
16. THE ESTIMATED LOCATION OF UTILITY INSTALLATIONS, SUCH AS SEWER, TELEPHONE, FUEL, ELECTRIC, WATER LINES, OR ANY OTHER UNDERGROUND INSTALLATIONS THAT REASONABLY MAY BE EXPECTED TO BE ENCOUNTERED DURING EXCAVATION WORK, SHALL BE DETERMINED PRIOR TO OPENING AN EXCAVATION.
17. UTILITY COMPANIES OR OWNERS SHALL BE CONTACTED WITHIN ESTABLISHED OR CUSTOMARY LOCAL RESPONSE TIMES, ADVISED OF THE PROPOSED WORK, AND ASKED TO ESTABLISH THE LOCATION OF THE UTILITY UNDERGROUND INSTALLATIONS PRIOR TO THE START OF ACTUAL EXCAVATION. WHEN UTILITY COMPANIES OR OWNERS CANNOT RESPOND TO A REQUEST TO LOCATE UNDERGROUND UTILITY INSTALLATIONS WITHIN 24 HOURS (UNLESS A LONGER PERIOD IS REQUIRED BY STATE OR LOCAL LAW), OR CANNOT ESTABLISH THE EXACT LOCATION OF THESE INSTALLATIONS, THE EMPLOYER MAY PROCEED, PROVIDED THE EMPLOYER DOES SO WITH CAUTION, AND PROVIDED DETECTION EQUIPMENT OR OTHER ACCEPTABLE MEANS TO LOCATE UTILITY INSTALLATIONS ARE USED.
18. WHEN EXCAVATION OPERATIONS APPROACH THE ESTIMATED LOCATION OF UNDERGROUND INSTALLATIONS, THE EXCAVATION OF THE INSTALLATIONS SHALL BE DETERMINED BY SAFE AND ACCEPTABLE MEANS.
19. A STAIRWAY, LADDER, RAMP OR OTHER SAFE MEANS OF EGRESS SHALL BE LOCATED IN TRENCH EXCAVATIONS THAT ARE 4 FEET (1.22 M) OR MORE IN DEPTH SO AS TO REQUIRE NO MORE THAN 25 FEET (7.62 M) OF LATERAL TRAVEL FOR EMPLOYEES.
20. EMPLOYEES SHALL NOT WORK IN EXCAVATIONS IN WHICH THERE IS ACCUMULATED WATER, OR IN EXCAVATIONS IN WHICH WATER IS ACCUMULATING, UNLESS ADEQUATE PRECAUTIONS HAVE BEEN TAKEN TO PROTECT EMPLOYEES AGAINST THE HAZARDS POSED BY WATER.
21. THE PRECAUTIONS NECESSARY TO PROTECT EMPLOYEES ADEQUATELY VARY WITH EACH SITUATION, BUT COULD INCLUDE SPECIAL SUPPORT OR SHIELD SYSTEMS TO PROTECT FROM CAVE-INS, WATER REMOVAL TO CONTROL THE LEVEL OF ACCUMULATING WATER, OR USE OF A SAFETY HARNESS AND LIFELINE.
22. IF WATER IS CONTROLLED OR PREVENTED FROM ACCUMULATING BY THE USE OF WATER REMOVAL EQUIPMENT, THE WATER REMOVAL EQUIPMENT AND OPERATORS SHALL BE MONITORED BY A COMPETENT PERSON TO ENSURE PROPER OPERATION.
23. IF EXCAVATION WORK INTERRUPTS THE NATURAL DRAINAGE OF SURFACE WATER (SUCH AS STREAMS, DIVERSION DITCHES, DIKES, OR OTHER SUITABLE MEANS) SHALL BE USED TO PREVENT SURFACE WATER FROM ENTERING THE EXCAVATION AND TO PROVIDE ADEQUATE DRAINAGE OF THE AREA ADJACENT TO THE EXCAVATION.
24. DAILY INSPECTIONS OF EXCAVATIONS, THE ADJACENT AREAS, AND PROTECTIVE SYSTEMS SHALL BE MADE BY A COMPETENT PERSON FOR EVIDENCE OF A SITUATION THAT COULD RESULT IN POSSIBLE CAVE-INS, INDICATIONS OF FAILURE OF PROTECTIVE SYSTEMS, HAZARDOUS ATMOSPHERES, OR OTHER HAZARDOUS CONDITIONS. AN INSPECTION SHALL BE CONDUCTED BY THE COMPETENT PERSON PRIOR TO THE START OF WORK AND AS NEEDED THROUGHOUT THE SHIFT. INSPECTIONS SHALL ALSO BE MADE AFTER EVERY RAINFALL OR OTHER HAZARD INCREASING OCCURRENCE. THESE INSPECTIONS ARE ONLY REQUIRED WHEN EMPLOYEE EXPOSURE CAN BE REASONABLY ANTICIPATED.
25. WHERE THE COMPETENT PERSON FINDS EVIDENCE OF A SITUATION THAT COULD RESULT IN A POSSIBLE CAVE-IN, INDICATIONS OF FAILURE OF PROTECTIVE SYSTEMS, HAZARDOUS ATMOSPHERES, OR OTHER HAZARDOUS CONDITIONS, EXPOSED EMPLOYEES SHALL BE REMOVED FROM THE HAZARDOUS AREA UNTIL THE NECESSARY PRECAUTIONS HAVE BEEN TAKEN TO ENSURE THEIR SAFETY.

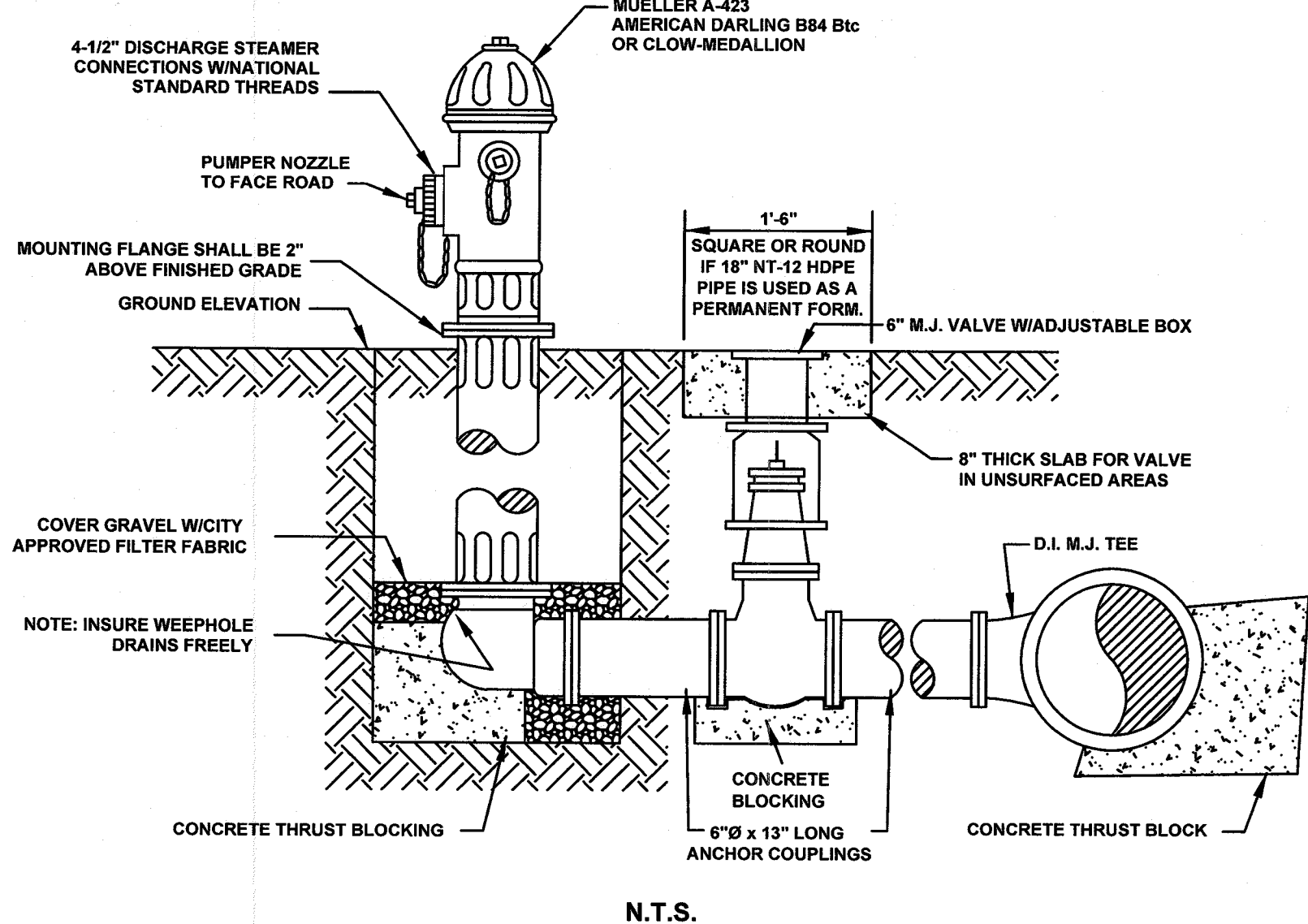
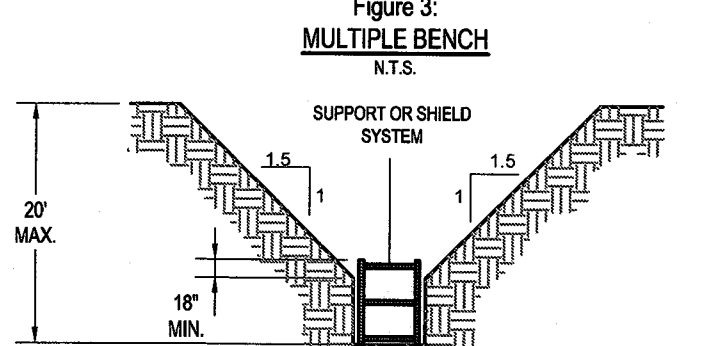
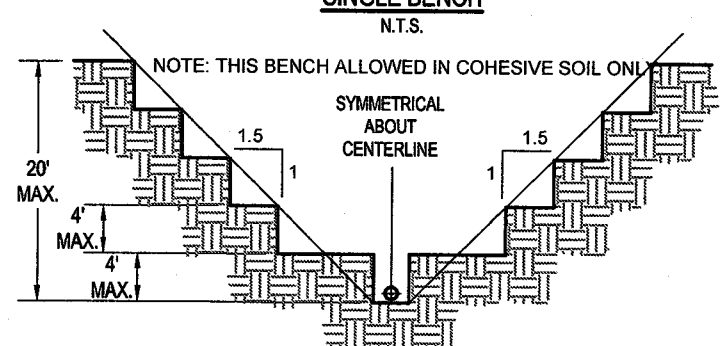
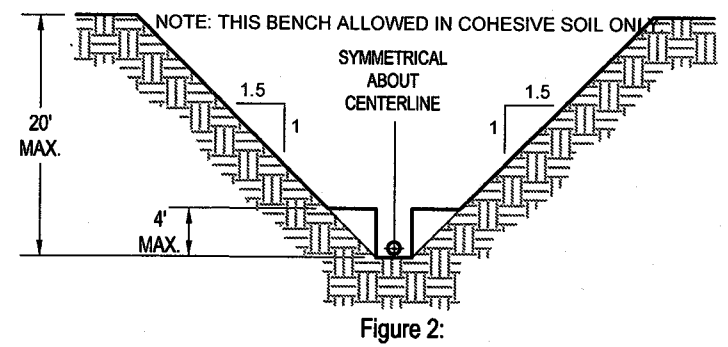
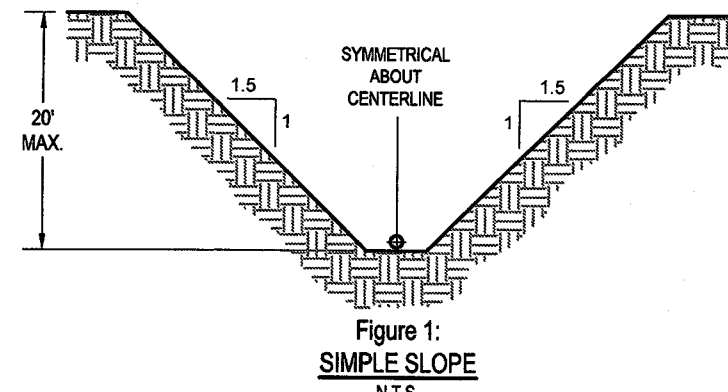
SLOPING AND BENCHING CRITERIA DEFINITIONS

1. ACTUAL SLOPE - SLOPE TO WHICH AN EXCAVATION FACE IS EXCAVATED.
2. DISTRESS - SOIL IS IN A CONDITION WHERE A CAVE-IN IS IMMINENT OR IS LIKELY TO OCCUR. DISTRESS IS EVIDENCED BY SUCH PHENOMENA AS THE DEVELOPMENT OF FISSURES IN THE FACE OF AN EXCAVATION, OR THE SUBSURRENCE OF THE EDGE OF AN EXCAVATION, THE SLUMPING OF MATERIAL FROM THE FACE OR THE BULGING OR HEAVING OF MATERIAL FROM THE BOTTOM OF AN EXCAVATION, THE SPALLING OF MATERIAL FROM THE FACE OF AN EXCAVATION, AND BAILING (I.E. SMALL AMOUNTS OF MATERIAL SUCH AS PEBBLES OR LITTLE CLUMPS OF MATERIAL SUDDENLY SEPARATING FROM THE FACE OF AN EXCAVATION AND TROILING OR ROLLING DOWN INTO THE EXCAVATION).
3. MAXIMUM ALLOWABLE SLOPE - STEEPEST INCLINE OF AN EXCAVATION FACE THAT IS ACCEPTABLE FOR THE MOST FAVORABLE SITE CONDITIONS AS PROTECTION AGAINST CAVE-INS, AND IS EXPRESSED AS THE RATIO OF HORIZONTAL DISTANCE TO VERTICAL RISE (H:V).
4. SHORT TERM EXPOSURE - PERIOD OF TIME LESS THAN OR EQUAL TO 24 HOURS THAT AN EXCAVATION IS OPEN.

GUIDELINES

1. ALL SIMPLE SLOPE EXCAVATIONS 20 FEET OR LESS IN DEPTH SHALL HAVE A MAXIMUM ALLOWABLE SLOPE OF 1:1.
2. SEE FIGURE 1 FOR SIMPLE SLOPE.
3. ALL BENCHED EXCAVATIONS 20 FEET OR LESS IN DEPTH SHALL HAVE A MAXIMUM ALLOWABLE SLOPE OF 1:1 AND MAXIMUM BENCH DIMENSIONS AS FOLLOWS: SEE FIGURE 2 FOR SINGLE BENCH.
4. SEE FIGURE 3 FOR MULTIPLE BENCH.
5. ALL EXCAVATIONS 20 FEET OR LESS IN DEPTH WHICH HAVE VERTICALLY SIDED LOWER PORTIONS SHALL BE SHIELDED OR SUPPORTED TO A HEIGHT AT LEAST 18 INCHES ABOVE THE TOP OF THE VERTICAL SIDE. ALL SUCH EXCAVATIONS SHALL HAVE A MAXIMUM ALLOWABLE SLOPE OF 1:1.
6. SEE FIGURE 4 FOR VERTICALLY SIDED LOWER PORTION.

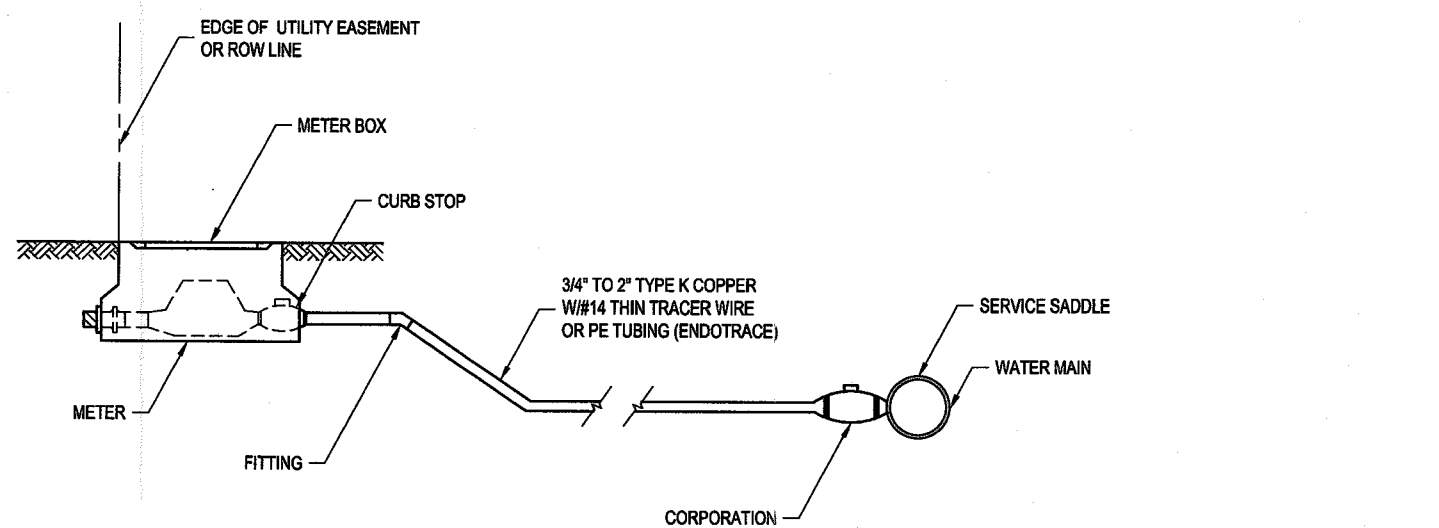
TRENCH SAFETY PLAN



GENERAL NOTES CONCERNING FIRE HYDRANTS :

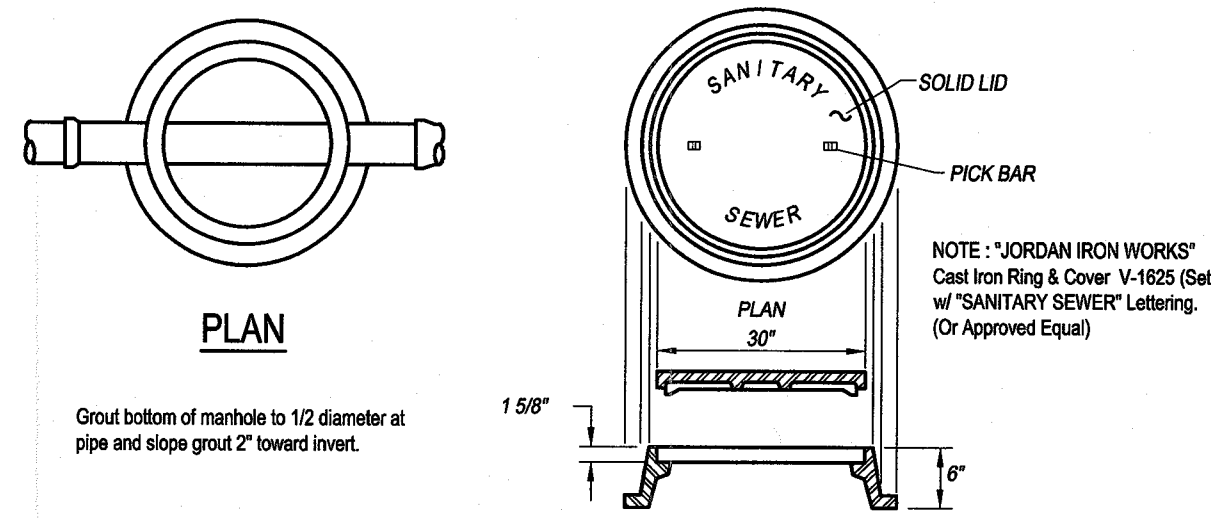
1. DRAINAGE BED SHALL CONSIST OF CRUSHED STONE OR COARSE GRAVEL WITH COARSE SAND; MIN. VOL. 7 CU. FT. DRAIN BED SHALL EXTEND A MIN. 6\"/>
2. USE 6\"/>
3. FIRE HYDRANTS TO BE BLOCKED AGAINST FIRM SOIL AS SHOWN.
4. ALL HYDRANTS SHALL BE INSTALLED PLUMB.
5. LARGE NOZZLE FACES ROAD, UNLESS OTHERWISE NOTED. ROTATE BARREL AS REQUIRED.
6. HYDRANT SHOULD NOT BE SET CLOSER THAN 4\"/>
7. M.J. ANCHOR TEE FOR 16\"/>
8. PLACE FIRE HYDRANT WITHIN 5\"/>

FIRE HYDRANT



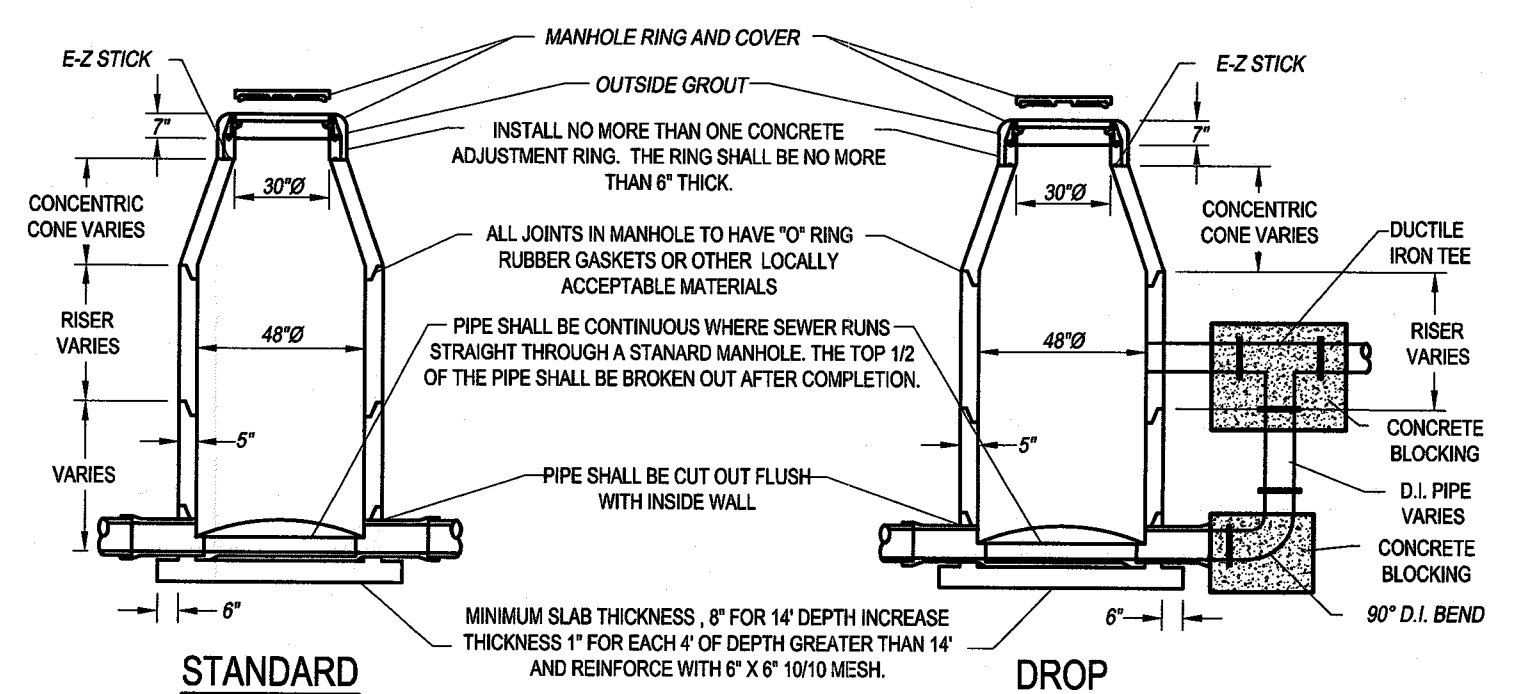
TYPICAL WATER SERVICE

N.T.S.



STANDARD MANHOLE COVER DETAIL

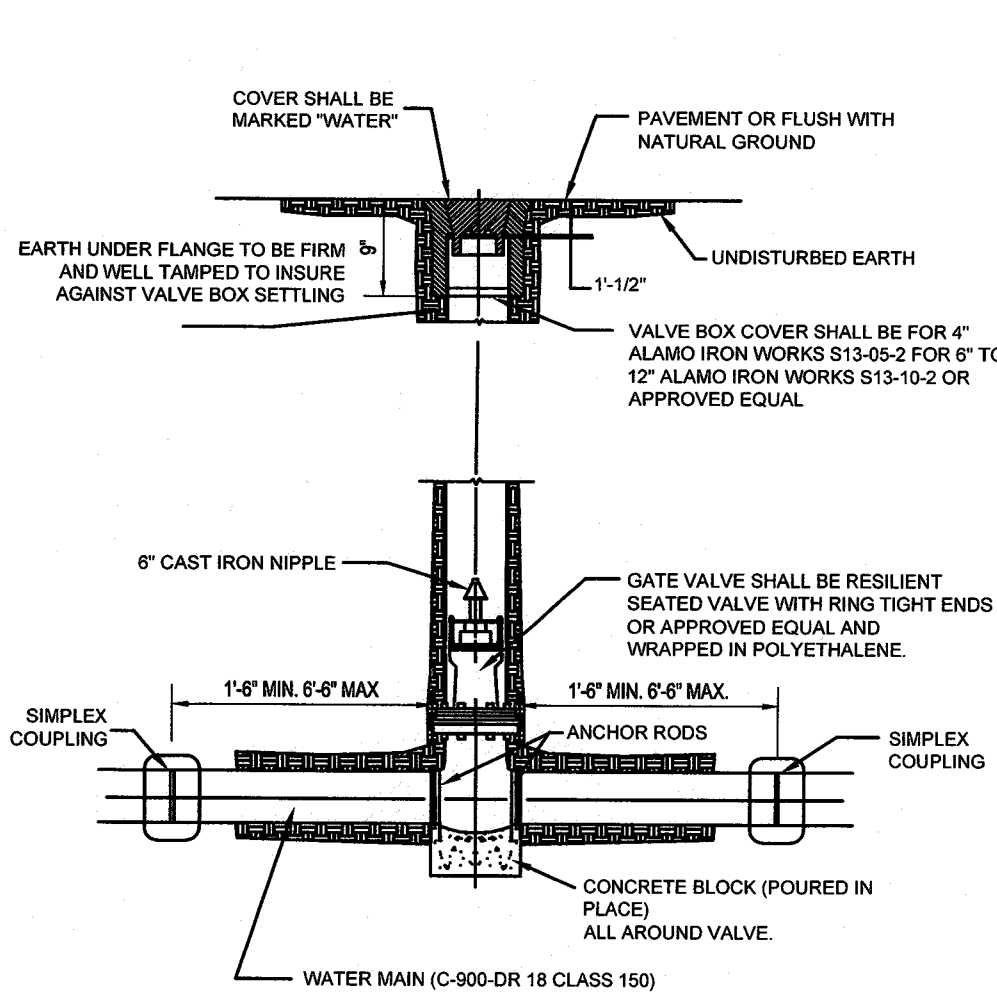
N.T.S.



NOTE: WATERSTOP SLEEVE SHALL BE INCORPORATED INTO PRECAST MANHOLE SECTIONS.

CONCRETE SANITARY SEWER MANHOLE DETAIL

N.T.S.



TYPICAL VALVE & VALVE BOX

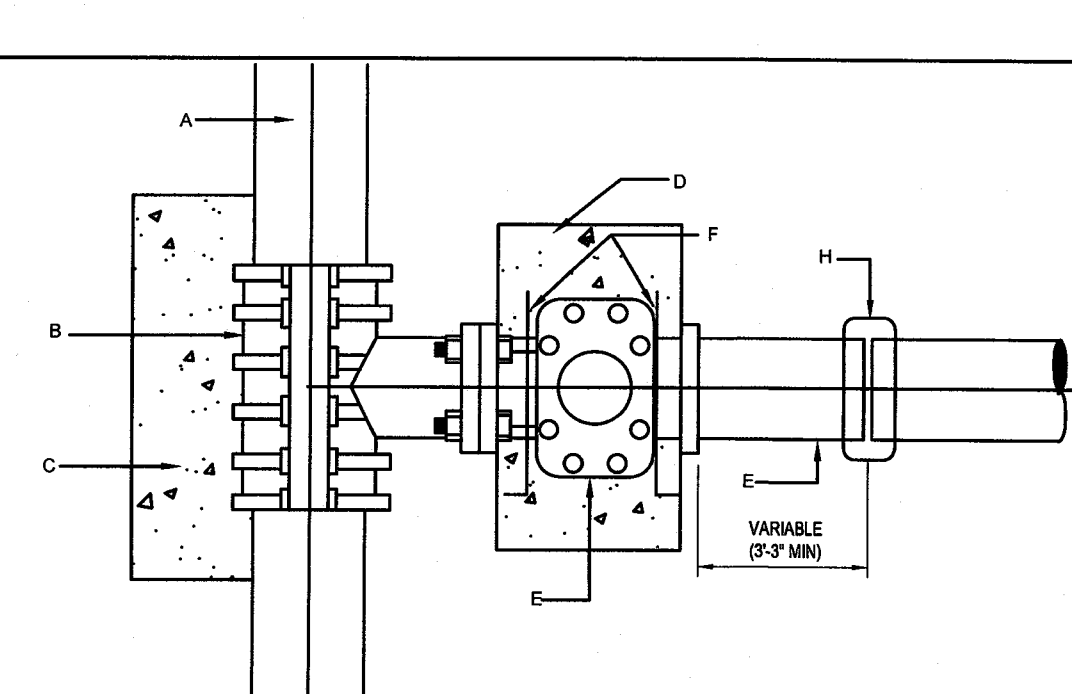
1. CAST IRON BOOT TO BE USED IN HEAVY TRAFFIC AREAS CONCRETE BLOCK (POURED IN PLACE)

THRUST BLOCK REQUIREMENTS VS. FITTING TYPE										
DIAMETER (IN.)	"X" (FT.)	END/TEE (S.F.)	90° BEND		45° BEND		22.5° BEND		11.25° BEND	
			(S.F.)	(L.B.)	(S.F.)	(L.B.)	(S.F.)	(L.B.)	(S.F.)	(L.B.)
4	1	1.4	1.9	3839	1.0	2077	0.5	1059	0.3	532
6	1	2.8	4.0	7932	2.1	4293	1.1	2188	0.5	1100
8	1.25	4.8	6.8	13646	3.7	7385	1.9	3765	0.9	1892
10	1.25	7.3	10.3	20528	5.8	11110	2.8	5664	1.4	2846
12	1.50	10.3	14.5	29030	7.9	16711	4.0	8009	2.0	4024
14	1.75	13.8	19.5	39001	10.8	21107	5.4	10760	2.7	5406
16	2	17.8	25.2	50442	13.6	27299	7.0	13917	3.5	6992

NOTES:

1. THRUST BLOCKING TO BE PLACED AT ALL DEAD ENDS, TEES, BENDS, WYES, AND REDUCERS AND OTHER AREAS THAT REQUIRE THRUST RESISTANCE.
2. MINIMUM AREAS SHOWN ARE IN SQUARE FEET. BLOCK WEIGHTS FOR VERTICAL BENDS ARE IN POUNDS.
3. THRUST BLOCK AREAS SHOWN ARE BASED ON A TEST PRESSURE OF 150 P.S.I., SOIL BEARING CAPACITY OF 2000 PSF, AND MINIMUM 30\"/>
4. AT DOWNWARD VERTICAL BENDS, PIPING SHALL BE RESTRAINED BY THRUST BLOCK AS SHOWN WITH WEIGHT INDICATED IN THE TABLE. ANCHOR RODS OR FLAT BARS SHALL BE STAINLESS STEEL.
5. BEARING MUST BE ON UNDISTURBED EARTH.
6. USE 3000 PSI CONCRETE.
7. RESTRAINING JOINTS SHALL BE REQUIRED AT ALL LOCATIONS.
8. THRUST BLOCK SHALL BEAR ON FULL 180° OF CIRCUMFERENCE OF PIPE.

CONCRETE THRUST BLOCKS



CONSTRUCTION NOTES:

GENERAL NOTES:

1. ALL CONCRETE TO HAVE A MINIMUM OF 28 DAYS COMPRESSIVE STRENGTH OF 3,000 P.S.I.
- A. WATER MAIN (SEE PLANS AND SPECIFICATION)
- B. TAPPING SLEEVE (SIZE AS REQUIRED)
- C. CONCRETE SUPPORT UNDER TAPPING SLEEVE AND BEHIND
- D. THRUST BLOCK AS PER SPECIFICATIONS
- E. FLANGED AND HUB ENDS \"O\" RING SEALS WITH 2\"/>
- F. ANCHOR RODS
- G. PVC PIPE
- H. SIMPLEX COUPLING

WATER TAPPING SLEEVE & VALVE INSTALLATION

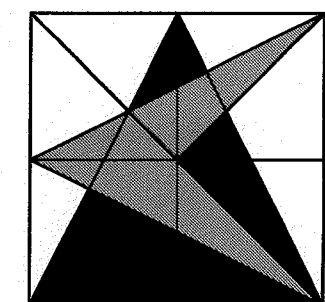
REVISIONS		
A.	08/26/17	ISSUED FOR PERMIT
B.	09/08/17	ISSUED FOR BIDDING
C.	09/27/17	ISSUED FOR BIDDING

NOTES

1. CONTRACTOR TO CONTACT ALL UTILITIES COMPANIES IN THE AREA FOR FIELD VERIFICATION OF EXISTING FACILITIES. UTILITY COMPANY'S SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:
2. CONTRACTOR TO EXPOSE ANY EXISTING FACILITY THAT MAY BE IN CONFLICT PRIOR TO START OF CONSTRUCTION.
3. ALL EXISTING CITY UTILITIES (WATER/SEWER) SHOWN ARE FROM BEST INFORMATION AVAILABLE. NEITHER THE ENGINEER NOR THE CITY IS RESPONSIBLE FOR THE ACCURACY OF LOCATION.
4. CONTRACTOR SHALL AT ALL TIMES ALLOW ACCESS TO EXISTING DRIVEWAYS OR PROVIDE MAINTAIN ALTERNATIVE ALL WEATHER ROUTES.
5. ALL TRAFFIC CONTROL DEVICES SHALL BE IN CONFORMANCE WITH TEXAS MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
6. TRENCHES OR EXCAVATIONS MAY NOT BE LEFT OPEN OVERNIGHT UNLESS AUTHORIZED IN WRITING BY THE ENGINEERING DEPARTMENT. IN SUCH CASES, THE CONTRACTOR MUST PROVIDE 1/2\"/>
7. ANY DAMAGE TO FENCES, WALKS, OR PRIVATE PROPERTY SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.
8. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REMOVE ALL EXCAVATED MATERIAL AND DEBRIS FROM THE SITE AT NO ADDITIONAL EXPENSE TO THE OWNER.
9. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING CONSTRUCTION MATERIALS TESTING THROUGH THE CITY'S DESIGNATED FIELD REPRESENTATIVE 24 HOURS PRIOR TO TESTING. CONTRACTOR IS RESPONSIBLE FOR ADHERING CLOSELY TO TESTING SCHEDULE AND AVOID ANY DELAYS IN THE FIELD.

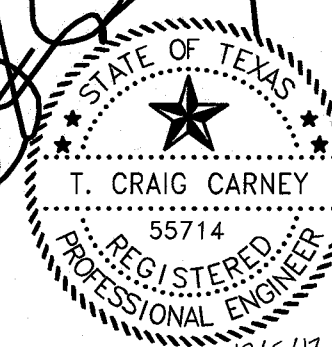
TERRACES AT ARBORETUM PARK
15928 OLD RICHMOND ROAD
FORT BEND COUNTY, TEXAS

WATER AND SEWER DETAILS
ISSUED FOR BIDDING



CARNEY ENGINEERING, PLLC.

4588 Hinton Dr.
Plano, Texas 75024
PH (469) 443-0861
FAX (469) 443-0863



TYPE FIRM REGISTRATION NO: F-5033

DRAWN BY: KLR
CHECKED BY: JAH
START DATE: 08/03/17
SCALE: N.T.S.
PROJECT NO.: 2088-062

SHEET
C9.1

APPROVED:
Development Coordinator
DATE: 2/20/18

