

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

REVIEW BY FORT BEND COUNTY
COMMISSIONERS COURT

- Right of Way Permit
- Commercial Driveway Permit

Permit No: 2018-18448

Applicant: Houston Enterprise

Job Location Site: 12521 FM 1464, Richmond, TX 77407

Bond No. **Date of Bond:** 1/11/2018 **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 inconsistant 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 27th day of February, 2018, Upon Motion of Commissioner Meyers, seconded by Commissioner Patterson, duly put and carried, it is ORDERED, ADJUDGED AND DECREED that said notice of said above purpose is hereby acknowledged by the Commissioners Court of Fort Bend County, Texas, and that said notice be placed on record according to the regulation order thereof.

Signature

Presented to Commissioners Court and approved.

By: Charles O. Ay
for County Engineer

Date Recorded 3-6-2018 Comm. Court No. 14V

By: N/A
Drainage District Engineer/Manager

Clerk of Commissioners Court
By: Arinda Willis
Deputy



**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@fortbendcountytexas.gov

- Right of Way Permit
- Commercial Driveway Permit

Permit No: 2018-18448

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.

Chandy O. AJ

Permit Administrator

2/19/2018

Date

44



Effective Date: February 1st, 2018

**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. 69182811

THE STATE OF TEXAS §
COUNTY OF FORT BEND § **KNOW ALL MEN BY THESE PRESENTS:**

THAT WE, Houston Enterprise
whose (address, phone) is 8137 Way Street, Houston, TX 77028

(832) 876-7441 Texas,
hereinafter called the Principal, and WESTERN SURETY COMPANY, a Corporation existing under and
by virtue of the laws of the state of South Dakota and authorized to do an indemnifying business in the state of
Texas, and whose principal office is located at (name/address/phone) P.O. Box 5077, Sioux Falls,
SD 57117-5077, (605)336-0850, whose officer residing in the State of Texas, authorized to accept service in all
suits and actions brought whining said state is F S I A Craig William Covey
and whose address is 17280 W. Lake Houston Pkwy., Humble, TX 77346,

hereinafter called the Surety, and held and firmly bound unto, Robert E. Hebert, County Judge of Fort Bend County, Texas,
or his successors in office, in the full sum of Five Thousand and 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
shall pay over and make good and reimburse Fort Bend County, all loss and damages which Fort Bend County may sustain
by reason of any failure or default on the part of said principal, then this obligation shall be null and void, otherwise to remain
in full force and effect.

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

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

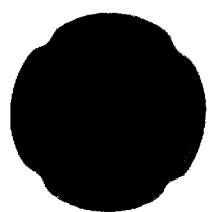
EXECUTED this 11th day of January, 2018.

Houston Enterprise CO
PRINCIPAL

[Signature]
BY

WESTERN SURETY COMPANY
SURETY

[Signature]
BY



CCM 2-27-2018 #14V
Fort Bend County Clerk
Return Admin Serv Coord
Permit # 2018-18448 RAC

Western Surety Company

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS:

That WESTERN SURETY COMPANY, a corporation organized and existing under the laws of the State of South Dakota, and authorized and licensed to do business in the States of Alabama, Alaska, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, and the United States of America, does hereby make, constitute and appoint

Craig William Covey of Humble, State of Texas, with limited authority, its true and lawful Attorney-in-Fact, will full power and authority hereby conferred to sign, execute, acknowledge and deliver for and on its behalf as Surety and as its act and deed, the following bond:

Cable, Conduit and/or Pole line Activity in, under, across or along County
One Roads County of Fort Bend

bond with bond number [REDACTED]

for Houston Enterprise

as Principal in the penalty amount not to exceed: \$5,000.00

Western Surety Company further certifies that the following is a true and exact copy of Section 7 of the by-laws of Western Surety Company duly adopted and now in force, to-wit:

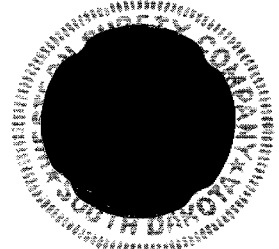
Section 7. All bonds, policies, undertakings, Powers of Attorney, or other obligations of the corporation shall be executed in the corporate name of the Company by the President, Secretary, any Assistant Secretary, Treasurer, or any Vice President, or by such other officers as the Board of Directors may authorize. The President, any Vice President, Secretary, any Assistant Secretary, or the Treasurer may appoint Attorneys-in-Fact or agents who shall have authority to issue bonds, policies, or undertakings in the name of the Company. The corporate seal is not necessary for the validity of any bonds, policies, undertakings, Powers of Attorney or other obligations of the corporation. The signature of any such officer and the corporate seal may be printed by facsimile.

In Witness Whereof, the said WESTERN SURETY COMPANY has caused these presents to be executed by its Vice President with the corporate seal affixed this 11th day of January, 2018.

ATTEST

A. Vietor
A. Vietor, Assistant Secretary

WESTERN SURETY COMPANY
By Paul T. Bruflat
Paul T. Bruflat, Vice President



STATE OF SOUTH DAKOTA }
COUNTY OF MINNEHAHA } ss

On this 11th day of January, 2018, before me, a Notary Public, personally appeared Paul T. Bruflat and A. Vietor

who, being by me duly sworn, acknowledged that they signed the above Power of Attorney as Vice President and Assistant Secretary, respectively, of the said WESTERN SURETY COMPANY, and acknowledged said instrument to be the voluntary act and deed of said Corporation.

J. MOHR
NOTARY PUBLIC
SOUTH DAKOTA
My Commission Expires June 23, 2021

J. Mohr
Notary Public

To validate bond authenticity, go to www.cnasurety.com > Owner/Obligee Services > Validate Bond Coverage.

Figure: 28 TAC §1.601(a)(3)

IMPORTANT NOTICE

- 1 To obtain information or make a complaint:
- 2 You may contact Western Surety Company, Surety Bonding Company of America or Universal Surety of America at 605-336-0850.
- 3 You may call Western Surety Company's, Surety Bonding Company of America's or Universal Surety of America's toll-free telephone number for information or to make a complaint at:

1-800-331-6053

- 4 You may also write to Western Surety Company, Surety Bonding Company of America or Universal Surety of America at:

P.O. Box 5077
Sioux Falls, SD 57117-5077

- 5 You may contact the Texas Department of Insurance to obtain information on companies, coverages, rights or complaints at:

1-800-252-3439

- 6 You may write the Texas Department of Insurance:

P.O. Box 149104
Austin, TX 78714-9104
Fax: (512) 490-1007
Web: www.tdi.texas.gov
E-Mail: ConsumerProtection@tdi.texas.gov

7 PREMIUM OR CLAIM DISPUTES:

Should you have a dispute concerning your premium or about a claim you should contact Western Surety Company, Surety Bonding Company of America or Universal Surety of America first. If the dispute is not resolved, you may contact the Texas Department of Insurance.

8 ATTACH THIS NOTICE TO YOUR POLICY:

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:

Puede comunicarse con Western Surety Company, Surety Bonding Company of America o Universal Surety of America al 605-336-0850.

Usted puede llamar al numero de telefono gratis de Western Surety Company's, Surety Bonding Company of America's o Universal Surety of America's para informacion o para someter una queja al:

1-800-331-6053

Usted tambien puede escribir a Western Surety Company, Surety Bonding Company of America o Universal Surety of America:

P.O. Box 5077
Sioux Falls, SD 57117-5077

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) 490-1007
Web: www.tdi.texas.gov
E-Mail: ConsumerProtection@tdi.texas.gov

DISPUTAS SOBRE PRIMAS O RECLAMOS:

Si tiene una disputa concierne a su prima o a un reclamo, debe comunicarse con el Western Surety Company, Surety Bonding Company of America o Universal Surety of America primero. Si no se resuelve la disputa, puede entonces comunicarse con el departamento (TDI).

UNA ESTE AVISO A SU POLIZA:

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

CNA SURETY

Thank you for placing this business with CNA Surety. This obligee requires that the Surety Company place its Corporate Seal on the bond form and **Power of Attorney**. They require a raised embossed seal.

Please place a Corporate Seal of Surety on this bond form and **Power of Attorney** before delivering it to your client to ensure its acceptance.

If you have any questions, please call us at 1-800-331-6053.

FILED AND RECORDED
OFFICIAL PUBLIC RECORDS



Laura Richard, County Clerk

Fort Bend County Texas

March 05, 2018 03:19:28 PM



FEE \$0.00

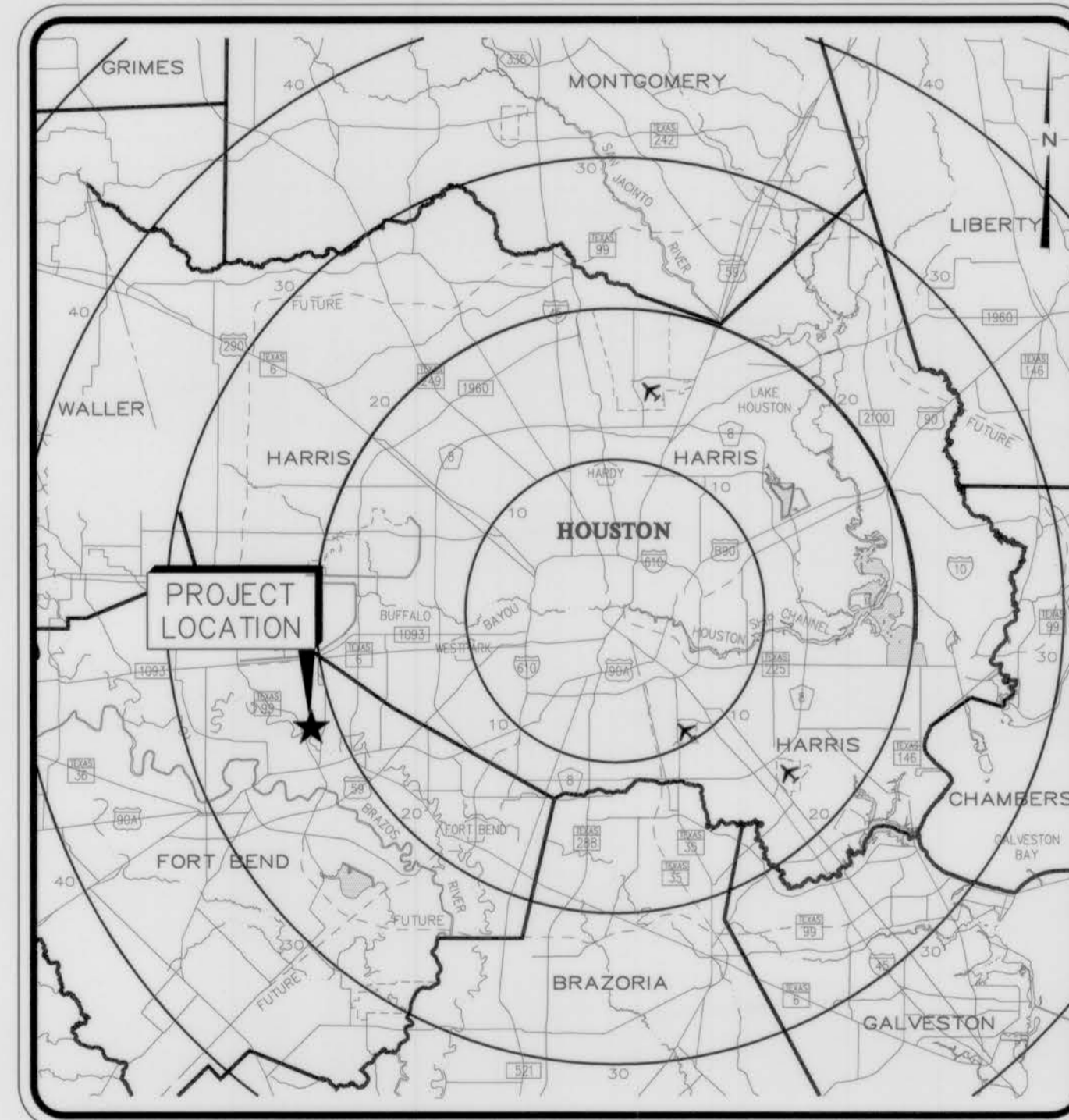
CR1

2018023287

PLANS FOR CONSTRUCTION OF A MASTER PLAN LOCATED AT THE SEC OF FM 1464 AND OLD RICHMOND ROAD 6.659 ACRES FORT BEND COUNTY, SUGAR LAND, TEXAS 77498 OCTOBER, 2016

INDEX OF SHEETS

SHEET	DESCRIPTION
C1	COVER SHEET
C1.1	PLAT (HMAIDAN RESERVES AT FM 1464)
C1.2	PROPOSED EASEMENT EXHIBIT
C2	CONSTRUCTION NOTES
C3	OVERALL LAYOUT
C4	DIMENSION PLAN
C4.1	DIMENSION PLAN
C4.2	DIMENSION PLAN
C5	GRADING AND DRAINAGE PLAN
C5.1	GRADING AND DRAINAGE PLAN
C5.2	GRADING AND DRAINAGE PLAN
C5.3	GRADING AND DRAINAGE CALCULATIONS & DETAIL
C6	UTILITY PLAN
C6.1	UTILITY PLAN
C6.2	UTILITY PLAN
C7	PAVING PLAN
C7.1	PAVING PLAN
C7.2	PAVING PLAN
C8	EROSION CONTROL PLAN
C8.1	EROSION CONTROL PLAN
C8.2	EROSION CONTROL PLAN
C9	DEMOLITION PLAN
C9.1	DEMOLITION PLAN
C9.2	DEMOLITION PLAN
C10	EROSION CONTROL DETAILS
C11	UTILITY DETAILS
C12	PAVING DETAILS
C13	LIFT STATION
C14	VERTICAL WALLS DETAILS
C15	INTERCEPTOR STRUCTURE DETAILS
C16	SAFETY END TREATMENT DETAILS
C17	PEDESTRIAN FACILITIES CURB RAMPS
C18	TRAFFIC CONTROL PLAN



PROJECT LOCATION MAP
SCALE: N.T.S.



VICINITY MAP
SCALE: N.T.S.

FIRM INFORMATION
 BASED ON THE FLOOD INSURANCE RATE MAP NO. 48157C1045L, MAP REVISED DATE OF APRIL 2, 2014 INDICATES THAT THE TRACT LIES WITHIN AREA ZONE 'X'(SHADED)-AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD AND IN ZONE 'X'(UNSHADED)-AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
 THIS INFORMATION IS BASED ON GRAPHICAL PLOTTING ONLY. WE DO NOT ASSUME RESPONSIBILITY FOR EXACT DETERMINATION.

FORT BEND COUNTY ENGINEER
 ENGINEER: *Richard W. Stollers, PE, PTOE*
 For: Richard W. Stollers, P.E.
 DATE: 11/21/17
 THESE SIGNATURES ARE VOID IF CONSTRUCTION HAS NOT COMMENCED IN (1) YEAR FROM DATE OF APPROVAL.
 APPROVED: *Cassandra A. G.*
 Development Coordinator
 DATE: 11/9/17

DAC
ENGINEERING
 17725 Katy Freeway, Suite 103 • Houston, TX 77094 • Phone: 281.506.7119
 Firm TBPE Registration No. F-12959 • www.dacengineers.com

JOB No.: 0802-1501
 ORIGINAL ISSUE DATE: AUGUST, 2016
 DRAWN BY: DRI
 CHECKED BY: DBK
 SHEET No.: **C1**
 08/01/2017

PRIVATE PLANS-F.M. 1464 AND OLD RICHMOND ROAD
 PLAT: HMAIDAN RESERVES AT FM 1464

LAST SAVE DATE: 8/15/2017 8:38 PM BY: donald_hes
 PLOTTED: 8/15/2017 7:54 AM
 W: Shared\Clients\0802- HQ Properties LLC\0802-1501 FM 1464\Drawings\Master Plan\Drawings\C1.0-Cover-FM1464 and Old Richmond Road-Master Plan.dwg

STATE OF TEXAS
COUNTY OF HARRIS

WE, HQ 1464, LLC, A TEXAS LIMITED LIABILITY COMPANY, ACTING BY AND THROUGH GARY HMAIDAN, OWNER, HEREAFTER REFERRED TO AS OWNER OF THE 6,652.8 ACRES TRACT DESCRIBED IN THE ABOVE AND FOREGOING MAP OF HMAIDAN RESERVES AT FM 1464, DO HEREBY MAKE AND ESTABLISH SAID SUBDIVISION AND DEVELOPMENT PLAN OF SAID PROPERTY ACCORDING TO ALL LINES, DEDICATIONS, RESTRICTIONS, AND NOTATIONS ON SAID MAPS OR PLAT AND HEREBY DEDICATE TO THE USE OF THE PUBLIC FOREVER, ALL STREETS (EXCEPT THOSE STREETS DESIGNATED AS PRIVATE STREETS, OR PERMANENT ACCESS EASEMENTS), ALLEYS, PARKS, WATER COURSES, DRAINS, EASEMENTS AND PUBLIC PLACES SHOWN THEREON FOR THE PURPOSES AND CONSIDERATIONS THEREIN EXPRESSED, AND DO HEREBY BIND OURSELVES, OUR HEIRS, SUCCESSORS AND ASSIGNS TO WARRANT AND FOREVER DEFEND THE TITLE ON THE LAND SO DEDICATED.

FURTHER, OWNERS HAVE DEDICATED AND BY THESE PRESENTS DO DEDICATE TO THE USE OF THE PUBLIC FOR PUBLIC UTILITY PURPOSES FOREVER UNOBSTRUCTED AERIAL EASEMENTS, THE AERIAL EASEMENTS SHALL EXTEND HORIZONTALLY AN ADDITIONAL TEN FEET (10' 0") FOR TEN FEET (10' 0") PERIMETER GROUND EASEMENTS OR SEVEN FEET, SIX INCHES (7' 6") FOR FOURTEEN FEET (14' 0") PERIMETER GROUND EASEMENTS OR FIVE FEET, SIX INCHES (5' 6") FOR SIXTEEN FEET (16' 0") PERIMETER GROUND EASEMENTS, FROM A PLANE SIXTEEN FEET (16' 0") ABOVE THE GROUND LEVEL UPWARD, LOCATED ADJACENT TO AND ADJOINING SAID PUBLIC UTILITY EASEMENTS THAT ARE DESIGNATED WITH AERIAL EASEMENTS (U.E. AND A.E.) AS INDICATED AND DEPICTED HEREON, WHEREBY THE AERIAL EASEMENT TOTALS TWENTY ONE FEET, SIX INCHES (21' 6") IN WIDTH.

FURTHER, OWNERS HAVE DEDICATED AND BY THESE PRESENTS DO DEDICATE TO THE USE OF THE PUBLIC FOR PUBLIC UTILITY PURPOSES FOREVER UNOBSTRUCTED AERIAL EASEMENTS, THE AERIAL EASEMENTS SHALL EXTEND HORIZONTALLY AN ADDITIONAL TEN FEET (10' 0") FOR TEN FEET (10' 0") BACK-TO-BACK GROUND EASEMENTS, OR EIGHT FEET (8' 0") FOR FOURTEEN FEET (14' 0") BACK-TO-BACK GROUND EASEMENTS OR SEVEN FEET (7' 0") FOR SIXTEEN FEET (16' 0") BACK-TO-BACK GROUND EASEMENTS, FROM A PLANE SIXTEEN FEET (16' 0") ABOVE THE GROUND LEVEL UPWARD, LOCATED ADJACENT TO AND ADJOINING SAID PUBLIC UTILITY EASEMENTS THAT ARE DESIGNATED WITH AERIAL EASEMENTS (U.E. AND A.E.) AS INDICATED AND DEPICTED HEREON, WHEREBY THE AERIAL EASEMENT TOTALS THIRTY FEET (30' 0") IN WIDTH.

FURTHER, OWNERS DO HEREBY COVENANT AND AGREE THAT ALL OF THE PROPERTY WITHIN THE BOUNDARIES OF THIS PLAT IS HEREBY RESTRICTED TO PREVENT THE DRAINAGE OF ANY SEPTIC TANKS INTO ANY PUBLIC OR PRIVATE STREET, PERMANENT ACCESS EASEMENT, ROAD OR ALLEY OR ANY DRAINAGE DITCH, EITHER DIRECTLY OR INDIRECTLY.

FURTHER, OWNERS DO HEREBY DEDICATE TO THE PUBLIC A STRIP OF LAND FIFTEEN FEET (15' 0") WIDE ON EACH SIDE OF THE CENTER LINE OF ANY AND ALL BAYOUS, CREEKS, GULLIES, RAVINES, DRAINS, SLOUGHS OR OTHER NATURAL DRAINAGE COURSES LOCATED IN SAID PLAT, AS EASEMENTS FOR DRAINAGE PURPOSES, GIVING THE CITY OF HOUSTON, HARRIS COUNTY, OR ANY OTHER GOVERNMENTAL AGENCY, THE RIGHT TO ENTER UPON SAID EASEMENT AT ANY AND ALL TIMES FOR THE PURPOSE OF CONSTRUCTION AND MAINTENANCE OF DRAINAGE FACILITIES AND STRUCTURES.

FURTHER, OWNERS DO HEREBY COVENANT AND AGREE THAT ALL OF THE PROPERTY WITHIN THE BOUNDARIES OF THIS PLAT AND ADJACENT TO ANY DRAINAGE EASEMENT, DITCH, GULLY, CREEK OR NATURAL DRAINAGE COURSE, SHALL BE RESTRICTED TO KEEP SUCH DRAINAGE WAYS AND EASEMENTS CLEAR OF FENCES, BUILDINGS, PLANTING AND OTHER OBSTRUCTIONS TO THE OPERATIONS AND MAINTENANCE OF THE DRAINAGE FACILITY AND THAT SUCH ADJUTING PROPERTY SHALL NOT BE PERMITTED TO DRAIN DIRECTLY INTO THIS EASEMENT EXCEPT BY MEANS OF AN APPROVED DRAINAGE STRUCTURE.

FURTHER, WE DO HEREBY ACKNOWLEDGE THE RECEIPT OF THE "ORDER FOR REGULATION OF OUTDOOR LIGHTING IN THE UNINCORPORATED AREAS OF FORT BEND COUNTY, TEXAS" AND DO HEREBY COVENANT AND AGREE AND SHALL ABIDE BY THIS ORDER AS ADOPTED BY THE FORT BEND COUNTY COMMISSIONERS COURT OF MARCH 23, 2004, AND ANY SUBSEQUENT AMENDMENTS.

IN TESTIMONY WHEREOF, THE HQ 1464, LLC, A TEXAS LIMITED LIABILITY COMPANY HAS CAUSED THESE PRESENTS TO BE SIGNED BY GARY HMAIDAN, ITS OWNER, THEREUNTO AUTHORIZED, THIS ____ DAY OF ____ 2017.

By: HQ 1464, LLC
A TEXAS LIMITED LIABILITY COMPANY
By: *[Signature]*
GARY HMAIDAN, OWNER

HOUSTONIAN GOLF CLUB
BLOCK 1
SLIDE NO. 2126A
F.B.C.P.R.

RESTRICTED RESERVE "A"
(RESTRICTED TO GOLF CLUB/
RELATED FACILITIES)

F.M. ROAD NO. 1464

150' R.O.W.
SLIDE NO. 1225A, F.B.C.P.R.
VOL. 276, PG. 233 F.B.C.P.R.
2010018428, 2010018429, 2010030377,
2010018428, 2010018429, 2010030377,
O.P.R.F.B.C.T.

STATE OF TEXAS
COUNTY OF _____

BEFORE ME, THE UNDERSIGNED NOTARY, ON THIS DAY PERSONALLY APPEARED GARY HMAIDAN, OWNER, KNOWN TO ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT AND ACKNOWLEDGED TO ME THAT THEY EXECUTED THE SAME FOR THE PURPOSES AND CONSIDERATIONS THEREIN EXPRESSED.

GIVEN UNDER MY HAND AND SEAL OF OFFICE, THIS ____ DAY OF ____ 2017.

NOTARY PUBLIC IN AND FOR THE STATE OF TEXAS

PRINT NAME: _____

MY COMMISSION EXPIRES: _____

1.) B.L. INDICATES BUILDING LINE; U.E. INDICATES UTILITY EASEMENT; STM, S.E. INDICATES STORM SEWER EASEMENT; W.L.E. INDICATES WATER LINE EASEMENT; S.S.E. INDICATES SANITARY SEWER EASEMENT; H.L.&P.E. INDICATES HOUSTON LIGHTING AND POWER EASEMENT; D.E. INDICATES DRAINAGE EASEMENT; P.L. INDICATES PROPERTY LINE.

2.) THE COORDINATES SHOWN HEREON ARE TEXAS STATE PLANE GRID COORDINATES, SOUTH CENTRAL ZONE (GRID NAD 83) AND MAY BE BROUGHT TO SURFACE BY APPLYING THE FOLLOWING COMBINED SCALE FACTOR OF 1.000131217.

3.) BENCHMARK: CONTOURS & DATUM STATEMENT WERE PROVIDED BY DAC ENGINEERING. FLOODPLAIN REFERENCE MARK NUMBER 33 IS A SPIKE IN POWER POLE, APPROXIMATELY 40 FEET EAST OF THE CENTERLINE OF FM 1464 AND 2.05 MILES NORTH OF INTERSECTION OF FM 1464 AND U.S. HIGHWAY 90 AT INTERSECTION OF FM 1464 AND OLD RICHMOND ROAD, IN KEYMAP NO. 567K, ELEV. 83.5 FEET, NAVD 29, 1973 ADJUSTMENT.

4.) THIS PLAT WAS PREPARED TO MEET CITY OF HOUSTON AND FORT BEND COUNTY REQUIREMENTS.

5.) THIS PLAT WAS PREPARED FROM INFORMATION FURNISHED BY FIDELITY NATIONAL TITLE INSURANCE COMPANY, G.F. NO. 15047856, EFFECTIVE DATE SEPTEMBER 21, 2016. THE SURVEYOR HAS NOT ABSTRACTED THE ABOVE PROPERTY.

6.) THIS PLAT LIES WHOLLY WITHIN FORT BEND MUNICIPAL UTILITY DISTRICT NO. 25, FORT BEND COUNTY DRAINAGE DISTRICT, FORT BEND I.S.D., CITY OF HOUSTON ETJ, AND FORT BEND COUNTY.

7.) BASED ON THE FLOOD INSURANCE RATE MAP NO. 48157C1045L, MAP REVISED DATE OF APRIL 2, 2014 INDICATES THAT THE TRACT LIES WITHIN AREA ZONE "X"(SHADED)-AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD AND IN ZONE "X"(UNSHADED)-AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

8.) FIVE-EIGHTHS (5/8") IRON RODS THREE FEET (3') IN LENGTH ARE SET ON ALL PERIMETER BOUNDARY CORNERS, ALL ANGLE POINTS, ALL POINTS OF CURVATURE AND TANGENCY, AND ALL BLOCK CORNERS, UNLESS OTHERWISE NOTED.

9.) THE MINIMUM SLAB ELEVATION SHALL BE 85.25, EIGHTEEN INCHES (18") ABOVE THE 100-YEAR FLOOD PLAN OR IMPACTING WATER SURFACE ELEVATION, TWELVE INCHES (12") ABOVE THE MAXIMUM PONDING ELEVATION, EIGHTEEN INCHES (18") ABOVE NATURAL GROUND, WHICHEVER IS HIGHER.

10.) THE TOP OF SLAB ELEVATION AT ANY POINT ON THE PERIMETER OF THE SLAB SHALL NOT BE LESS THAN EIGHTEEN (18) INCHES ABOVE NATURAL GROUND AS REQUIRED BY FORT BEND COUNTY REGULATIONS OF SUBDIVISIONS, SEC. 4.16.

11.) THE DRAINAGE SYSTEM FOR THIS SUBDIVISION SHALL BE DESIGNED TO MEET THE REQUIREMENTS OF THE FORT BEND COUNTY DRAINAGE CRITERIA MANUAL WHICH ALLOWS STREET PONDING DURING INTENSE RAINFALL EVENTS.

12.) THIS PLAT LIES WITHIN FORT BEND COUNTY LIGHTING ORDINANCE ZONE "L23" OF THE FORT BEND COUNTY LIGHTING ORDINANCE ZONE, DATE JUNE 2004.

13.) ALL DRAINAGE EASEMENTS TO BE KEPT CLEAR OF FENCES, BUILDINGS, VEGETATION AND OTHER OBSTRUCTIONS TO THE OPERATION AND MAINTENANCE OF THE DRAINAGE FACILITY.

14.) ALL PROPERTY TO DRAIN INTO THE DRAINAGE EASEMENT ONLY THROUGH AN APPROVED DRAINAGE STRUCTURE.

15.) SIDEWALKS SHALL BE BUILT OR CAUSED TO BE BUILT NOT LESS THAN 5' IN WIDTH ON BOTH SIDES OF ALL DEDICATED RIGHT-OF-WAY WITH SAID PLAT AND ON THE CONTIGUOUS RIGHT-OF-WAY OF ALL PERIMETER ROADS SURROUNDING SAID PLAT, IN ACCORDANCE WITH THE A.D.A.

16.) THERE ARE NO EXISTING PIPELINES OR PIPELINE EASEMENTS WITHIN THE LIMITS OF THIS PLAT.

17.) THE CURRENT OWNER OF THE PROPOSED DRAINAGE FACILITIES AND DRAINAGE EASEMENTS BY SEPARATE EASEMENT (DETENTION, STORM SEWER, AND DRAINAGE) AS PROPOSED IS HQ LLC. IN THE FUTURE, WHEN AT THE TIME OF SALE OF THE NEWLY PLATTED LOTS, THERE WILL BE A PROPERTY OWNER'S ASSOCIATION OR SIMILAR ENTITY FORMED WHICH, AT THAT TIME, WILL DRAFT AND RECORD RESPONSIBILITIES, RIGHTS, AND MAINTENANCE OBLIGATIONS AS REQUIRED.

THIS IS TO CERTIFY THAT THE PLANNING COMMISSION OF THE CITY OF HOUSTON, TEXAS, HAS APPROVED THIS PLAT AND SUBDIVISION OF HMAIDAN RESERVES AT FM 1464 IN CONFORMANCE WITH THE LAWS OF THE STATE OF TEXAS AND THE ORDINANCES OF THE CITY OF HOUSTON AS SHOWN HEREON AND AUTHORIZED THE RECORDING OF THIS PLAT THIS ____ DAY OF ____ 2017.

By: MARTHA L. STEIN OR M. SONNY GARZA
CHAIR OR VICE CHAIRMAN

By: PATRICK WALSH, P.E.
SECRETARY

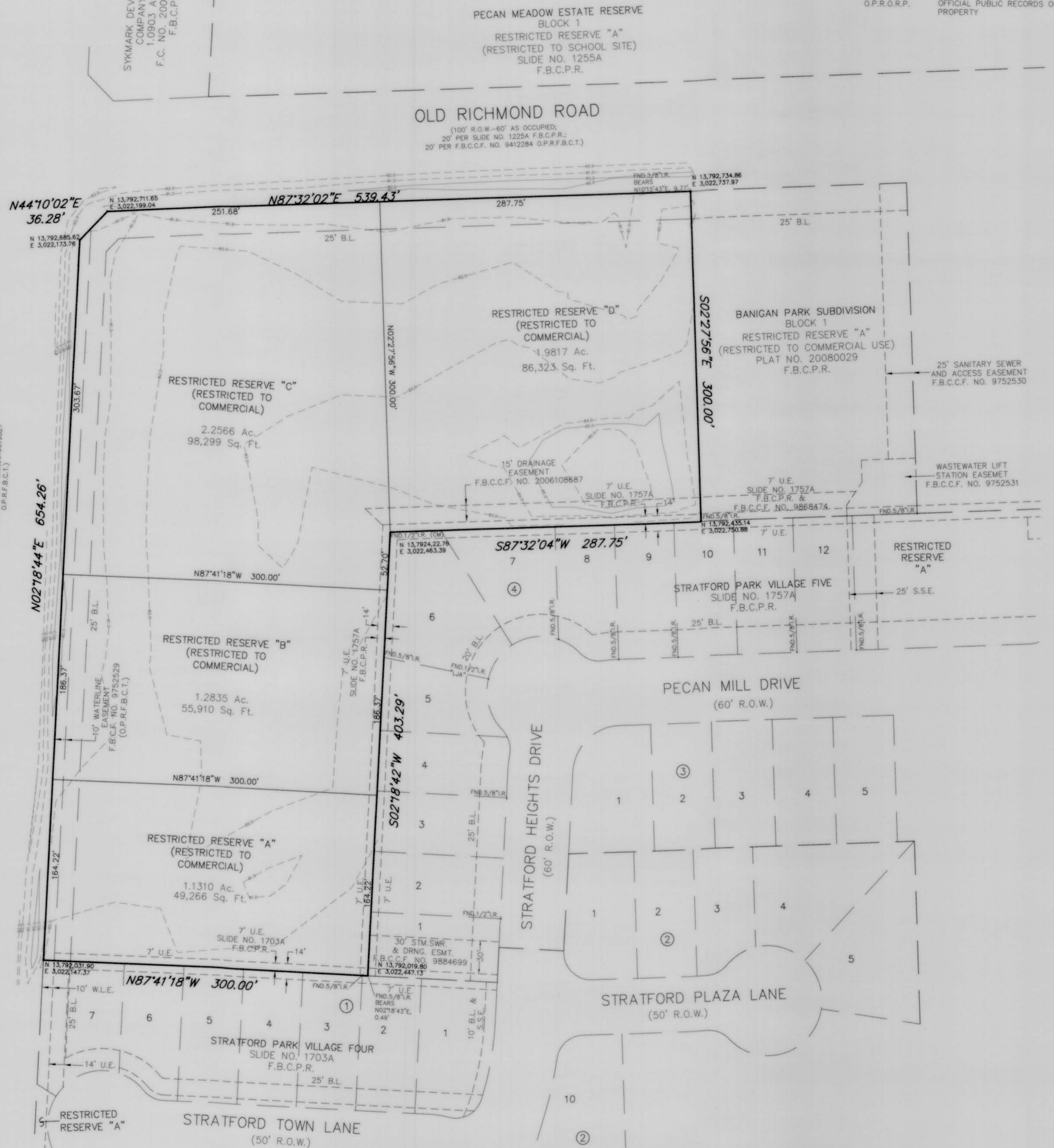
I, DAVID B. KEEL, A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF TEXAS, DO HEREBY CERTIFY THIS PLAT MEETS ALL REQUIREMENTS OF FORT BEND COUNTY, TO THE BEST OF MY KNOWLEDGE.

DAVID B. KEEL, PROFESSIONAL ENGINEER
TEXAS REGISTRATION NO. 88541
FIRM AND TBPE NO. F-12959

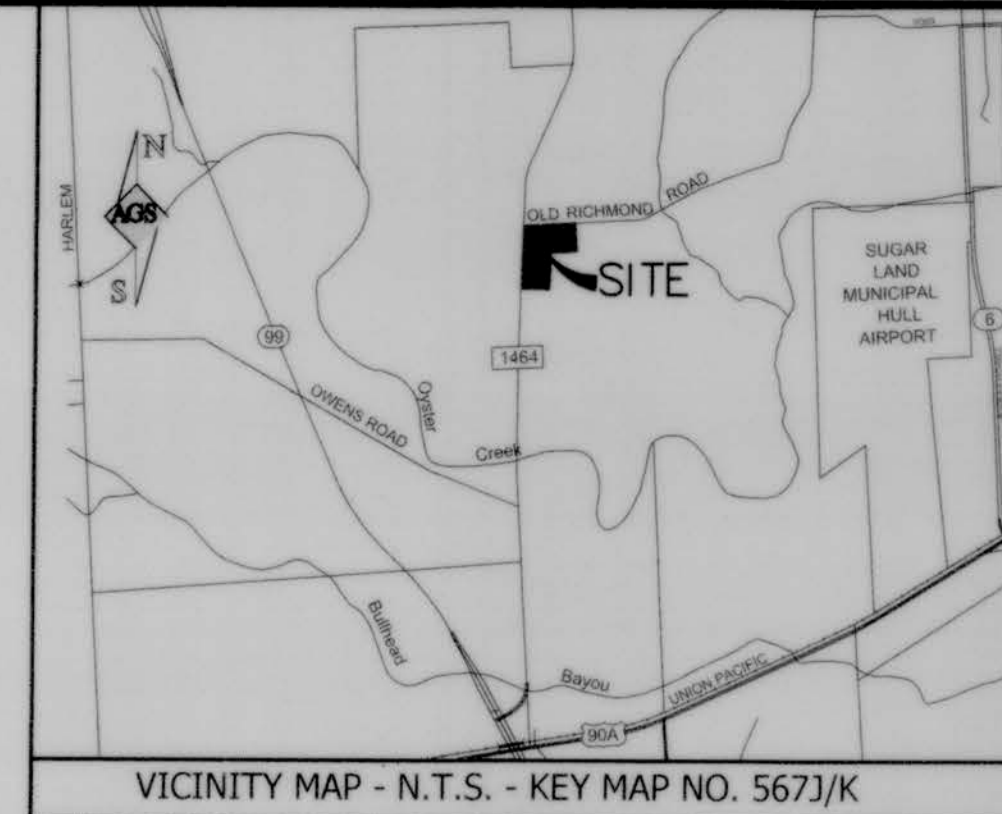
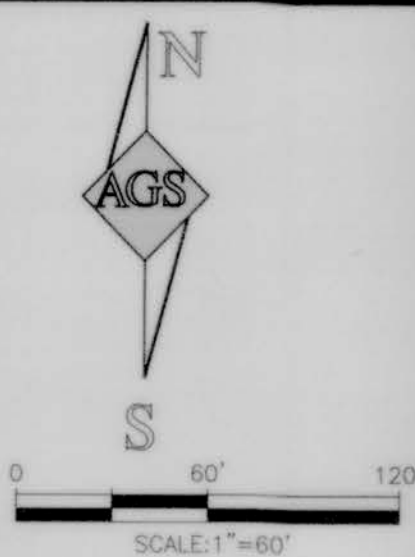


I, GRACE Y. CERVIN, AM REGISTERED UNDER THE LAWS OF THE STATE OF TEXAS TO PRACTICE THE PROFESSION OF SURVEYING AND HEREBY CERTIFY THAT THE ABOVE SUBDIVISION IS TRUE AND ACCURATE; WAS PREPARED FROM AN ACTUAL SURVEY OF THE PROPERTY MADE UNDER MY SUPERVISION ON THE GROUND; THAT EXCEPT AS SHOWN ALL BOUNDARY CORNERS, ANGLE POINTS, POINTS OF CURVATURE AND OTHER POINTS OF REFERENCE WILL BE MARKED WITH IRON (OR OTHER OBJECTS OF A PERMANENT NATURE) PIPES OR RODS HAVING AN OUTSIDE DIAMETER OF NOT LESS THAN FIVE EIGHTHS (5/8) INCH AND A LENGTH OF NOT LESS THAN THREE (3) FEET; AND THAT THE PLAT BOUNDARY CORNERS HAVE BEEN TIED TO THE TEXAS COORDINATE SYSTEM OF 1983 (NAD 83), SOUTH CENTRAL ZONE.

GRACE Y. CERVIN
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 5564



LEGEND
B.L. BUILDING LINE
CM. CONTROLLING MONUMENT
FND. FOUND
F.B.C.M.R. FORT BEND COUNTY MAP RECORDS
F.B.C.C.F. FORT BEND COUNTY CLERKS FILE
I.R. IRON ROD
I.R.C. IRON ROD CAPPED
O.P.R.O.R.P. OFFICIAL PUBLIC RECORDS OF REAL PROPERTY



I, RICHARD W. STOLLEIS, FORT BEND COUNTY ENGINEER, DO HEREBY CERTIFY THAT THE PLAT OF THIS SUBDIVISION COMPLIES WITH ALL OF THE EXISTING RULES AND REGULATIONS OF THIS OFFICE AS ADOPTED BY THE FORT BEND COUNTY COMMISSIONERS' COURT. HOWEVER, NO CERTIFICATION IS HEREBY GIVEN AS TO THE EFFECT OF DRAINAGE FROM THIS SUBDIVISION ON THE INTERCEPTING DRAINAGE ARTERY OR PARENT STREAM OR ON ANY OTHER AREA OR SUBDIVISION WITHIN THE WATERSHED.

RICHARD W. STOLLEIS, P.E.
FORT BEND COUNTY ENGINEER

APPROVED BY THE COMMISSIONERS' COURT OF FORT BEND COUNTY, TEXAS, THIS ____ DAY OF ____ 2017.

VINCENT MORALES
PRECINCT 1, COUNTY COMMISSIONER

GRADY PRESTAGE
PRECINCT 2, COUNTY COMMISSIONER

ROBERT HERBERT, Ph.D.
COUNTY JUDGE

W.A. (ANDY) MEYERS
PRECINCT 3, COUNTY COMMISSIONER

JAMES PATTERSON
PRECINCT 4, COUNTY COMMISSIONER

I, LAURA RICHARD, COUNTY CLERK IN AND FOR FORT BEND COUNTY, HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT WITH ITS CERTIFICATE OF AUTHENTICATION WAS FILED FOR RECORDATION IN MY OFFICE ON ____ OF ____ 2017 AT ____ O'CLOCK ____ M. FILED IN SLIDE NUMBER ____ OF THE PLAT RECORDS OF FORT BEND COUNTY, TEXAS.

WITNESS MY HAND AND SEAL OF OFFICE, AT RICHMOND, TEXAS, THE DAY AND DATE LAST ABOVE WRITTEN.

LAURA RICHARD, COUNTY CLERK
FORT BEND COUNTY, TEXAS

By: _____
DEPUTY

HMAIDAN RESERVES AT FM 1464

A SUBDIVISION OF 6,652.8 ACRES (289,798 SQUARE FEET) OF LAND SITUATED IN THE J.H. CARTWRIGHT SURVEY, ABSTRACT NO. 16 FORT BEND COUNTY, TEXAS

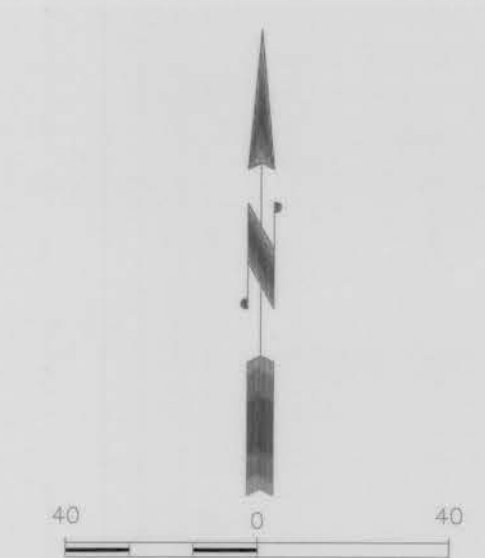
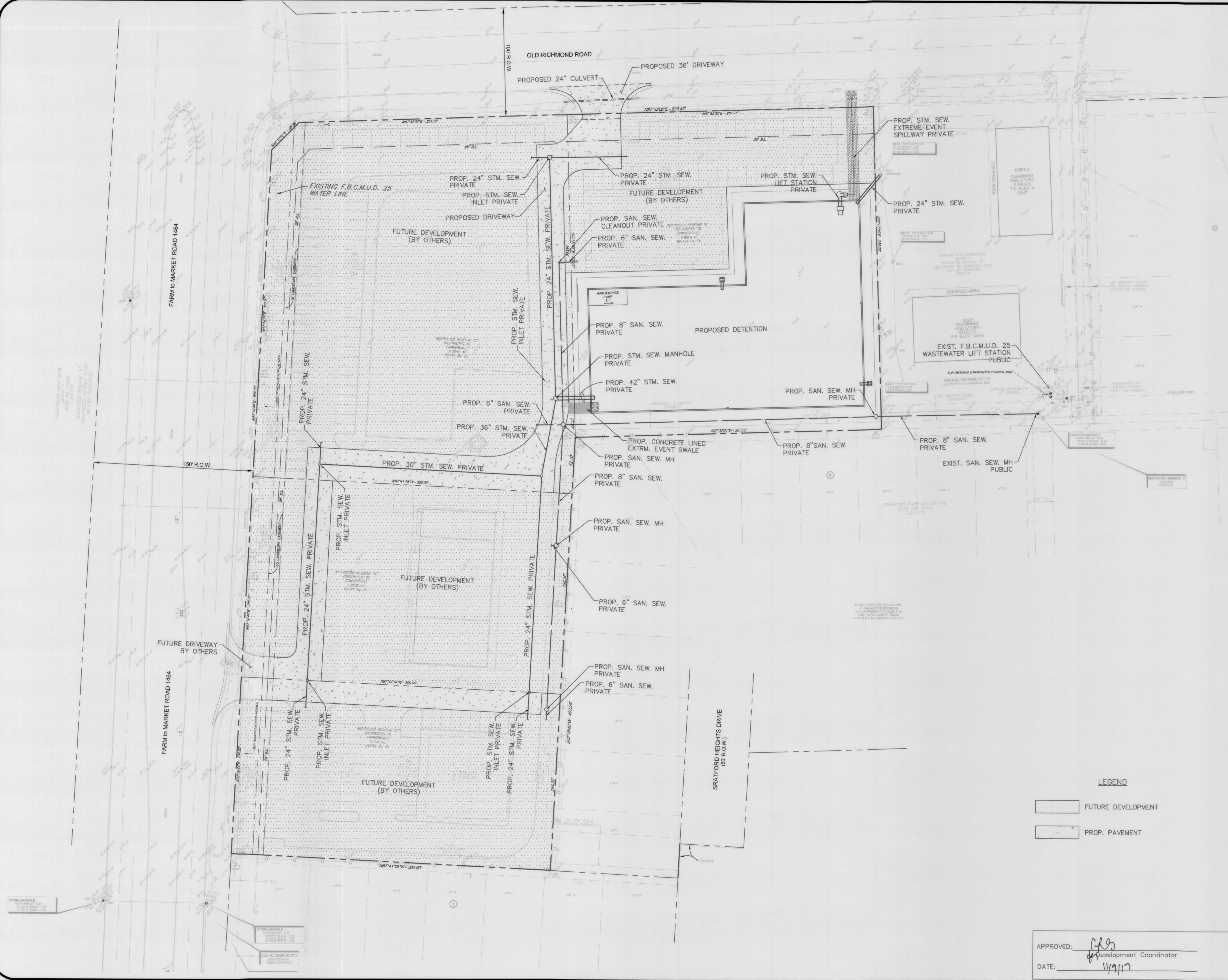
4 RESERVES 1 BLOCK 0 LOTS

SURVEYOR:
AGS CONSULTANTS, LLC
18800 GREENSPRING PARK DR.
SUE 180N
HOUSTON, TEXAS 77060
(832) 301-3815
TBPLS FIRM NO. 10193810

ENGINEER:
DAC ENGINEERING
17725 KATY FREEWAY
SUITE 103
HOUSTON, TEXAS 77094
281-506-7119

OWNER:
HQ 1464, LLC
P.O. BOX 19443
HOUSTON, TEXAS 77224
832-721-5527

LAST SAVE DATE: 8/7/2017 5:19 PM
 PLOTTED: 8/14/2017 8:17 AM
 P:\Projects\0802-1501 FM 1464\Drawings\Master Plan\Overall Layout-FM1464.mxd dba Stantec Road - Master Planning

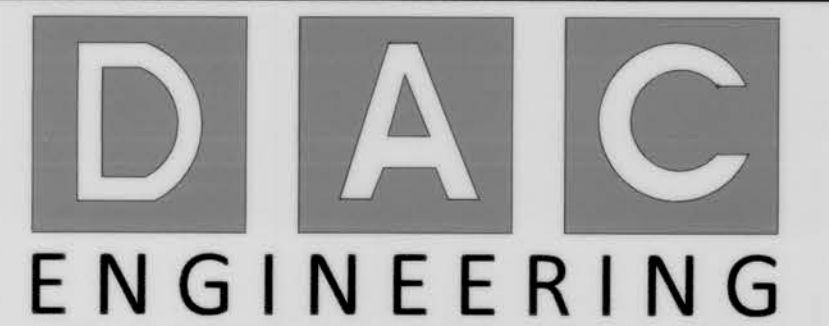


FLOODPLAIN

BASED ON THE FLOOD INSURANCE RATE MAP NO. 48157C1046L MAP REVISED DATE OF APRIL 2, 2014 INDICATES THAT THE TRACT LIES WITHIN AREA ZONE 'X' (SHADED) AREAS OF 0.2% ANNUAL CHANCE FLOOD, AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE, AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD AND IN ZONE 'X' (UNSHADED) AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

BENCHMARK

FLOODPLAIN REFERENCE MARK NUMBER 33 IS A SPIKE IN POWER POLE, APPROXIMATELY 40 FEET EAST OF THE CENTERLINE OF FM 1464 AND 2.05 MILES NORTH OF INTERSECTION OF FM 1464 AND U.S. HIGHWAY 99 AT INTERSECTION OF FM 1464 AND OLD RICHMOND ROAD, IN KEYMAP NO. 567K, ELEV. 83.5 FEET, NAVD 29, 1973 ADJUSTMENT.



REV.	DATE	DESCRIPTION
△		
△		

PROPOSED MASTER PLAN
 6.7 ACRES
 SEC OF FM 1464 AND
 OLD RICHMOND ROAD
 FORT BEND COUNTY,
 SUGAR LAND, TEXAS 77407

OVERALL LAYOUT

JOB No.: 0802-1501
 ORIGINAL ISSUE DATE: AUGUST, 2016
 DRAWN BY: DRI
 CHECKED BY: DBK
 SHEET No.: **C3**

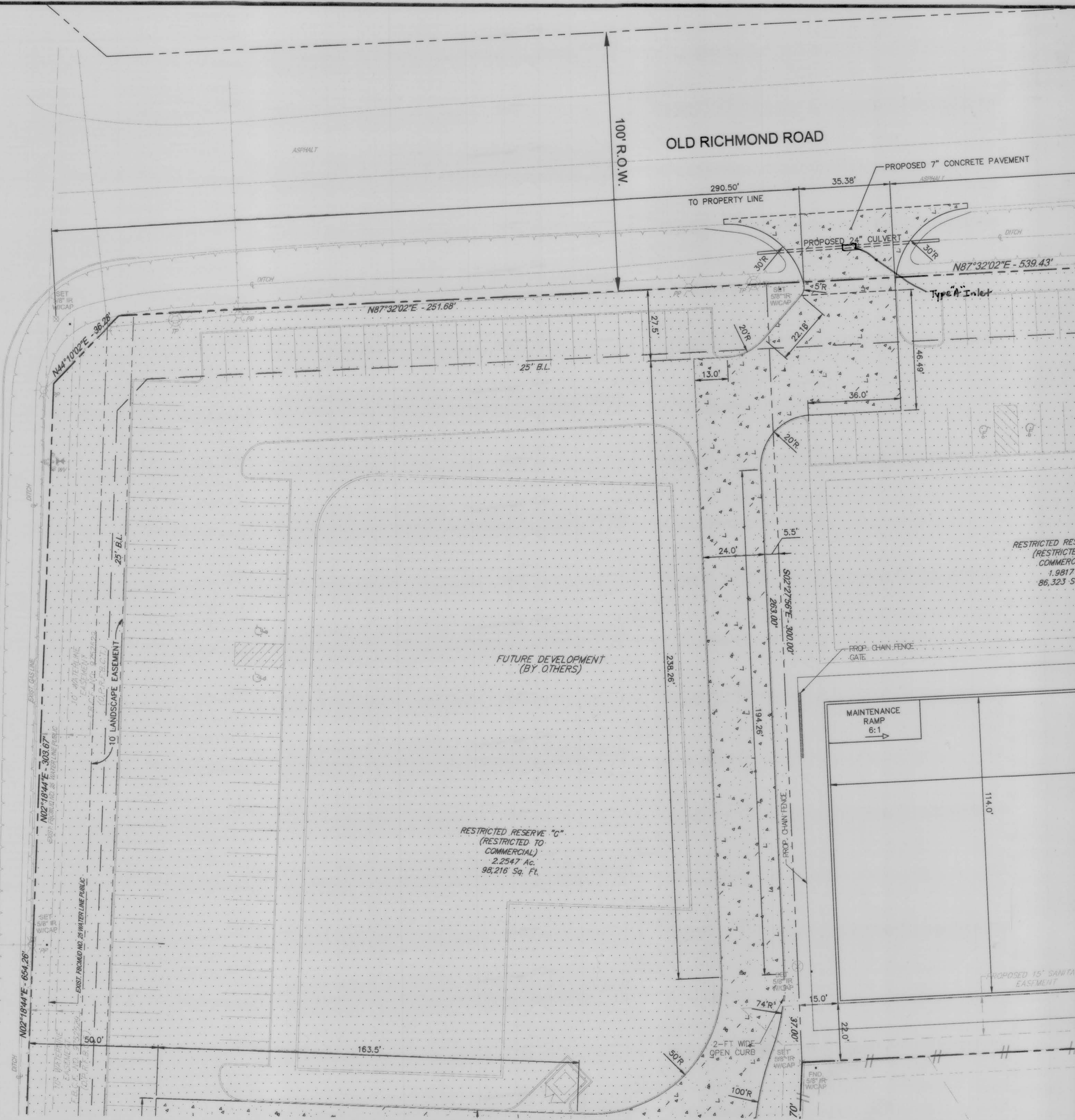
08/01/2017

APPROVED: *[Signature]*
 DATE: 8/14/17
 Development Coordinator

LEGEND
 [Hatched Box] FUTURE DEVELOPMENT
 [Solid Line Box] PROP. PAVEMENT

RESTRICTED RESERVE "A"
 (RESTRICTED TO GOLF CLUB/
 RELATED FACILITIES)

FARM to MARKET ROAD 1464



NOTE:

1. ALL DIMENSIONS ARE SHOWN TO FACE OF CURB UNLESS OTHERWISE NOTED.
2. REFERENCE ARCHITECTURAL PLANS FOR EXACT DIMENSIONS OF PROPOSED BLDG.
3. ENTIRE SITE IS PARALLEL OR PERPENDICULAR TO NORTH PROPERTY LINE UNLESS OTHERWISE NOTED.



LEGEND

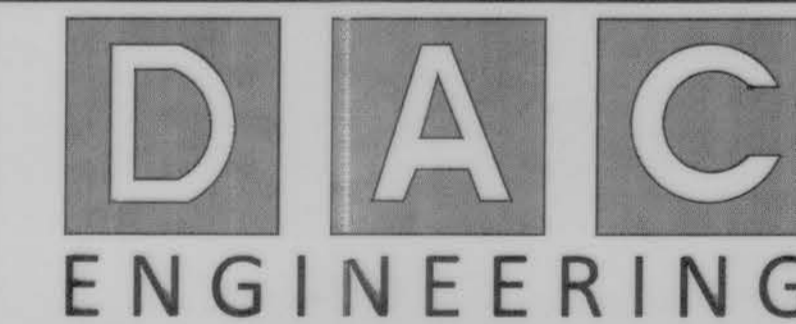
- PROPOSED 7" CONCRETE PAVEMENT
- FUTURE DEVELOPMENT

FLOODPLAIN

BASED ON THE FLOOD INSURANCE RATE MAP NO. 48157C1045L MAP REVISED DATE OF APRIL 2, 2014 INDICATES THAT THE TRACT LIES WITHIN AREA ZONE X (SHADED) AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD AND IN ZONE X (UNSHADED) AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

BENCHMARK

FLOODPLAIN REFERENCE MARK NUMBER 33 IS A SPIKE IN POWER POLE APPROXIMATELY 40 FEET EAST OF THE CENTERLINE OF FM 1464 AND 2.05 MILES NORTH OF INTERSECTION OF FM 1464 AND U.S. HIGHWAY 90 AT INTERSECTION OF FM 1464 AND OLD RICHMOND ROAD, IN KEYMAP NO. 567K. ELEV. 85.5 FEET, NAVD 29, 1973 ADJUSTMENT.



REV. DATE DESCRIPTION

PROPOSED MASTER PLAN
 6.7 ACRES
 SEC OF FM 1464 AND
 OLD RICHMOND ROAD
 FORT BEND COUNTY,
 SUGAR LAND, TEXAS 77407

DIMENSION PLAN

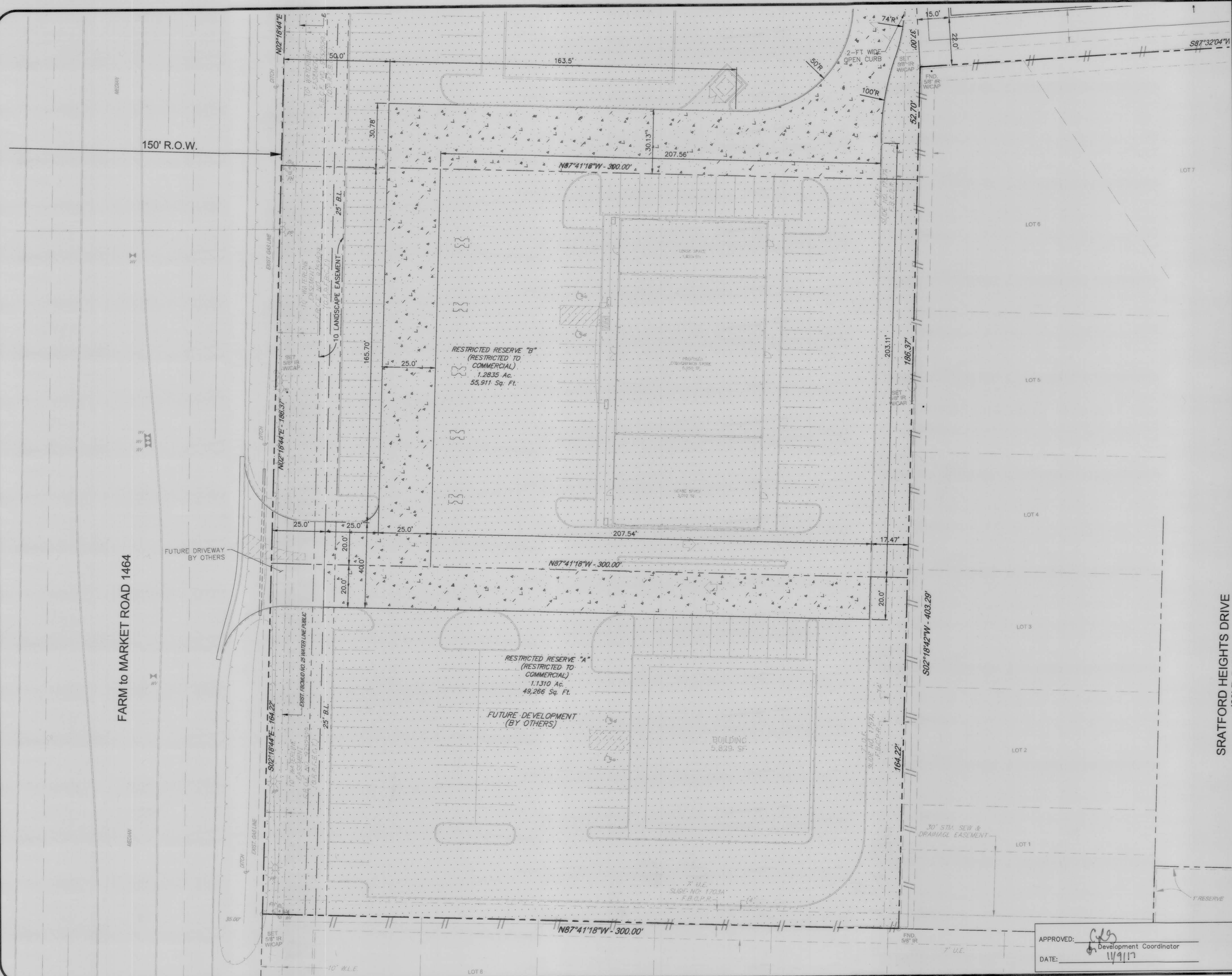


JOB No.: 0802-1501
 ORIGINAL ISSUE DATE: AUGUST, 2016
 DRAWN BY: DRI
 CHECKED BY: DBK
 SHEET No.:

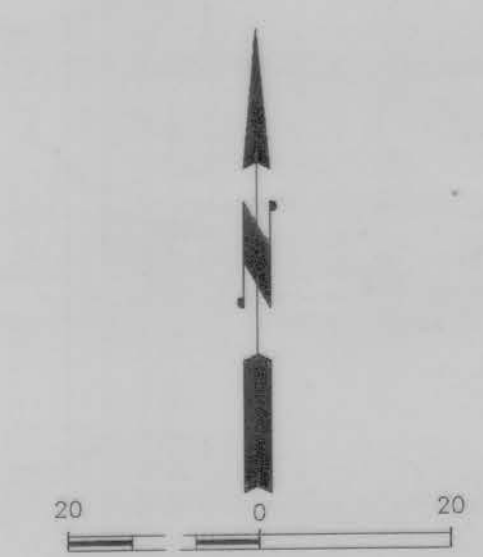
C4.1

08/01/2017

APPROVED: *[Signature]*
 Development Coordinator
 DATE: 8/1/17



- NOTE:
1. ALL DIMENSIONS ARE SHOWN TO FACE OF CURB UNLESS OTHERWISE NOTED.
 2. REFERENCE ARCHITECTURAL PLANS FOR EXACT DIMENSIONS OF PROPOSED BLDG.
 3. ENTIRE SITE IS PARALLEL OR PERPENDICULAR TO NORTH PROPERTY LINE UNLESS OTHERWISE NOTED.



LEGEND

- PROPOSED 7" CONCRETE PAVEMENT
- FUTURE DEVELOPMENT

FLOODPLAIN

BASED ON THE FLOOD INSURANCE RATE MAP NO. 48157C1045L, MAP REVISED DATE OF APRIL 2, 2014, INDICATES THAT THE TRACT LIES WITHIN AREA ZONE X (SHADED) AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD AND IN ZONE X (UNSHADED) AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

BENCHMARK

FLOODPLAIN REFERENCE MARK, NUMBER 33 IS A SPIKE IN POWER POLE, APPROXIMATELY 40 FEET EAST OF THE CENTERLINE OF FM 1464 AND 2.05 MILES NORTH OF INTERSECTION OF FM 1464 AND U.S. HIGHWAY 90 AT INTERSECTION OF FM 1464 AND OLD RICHMOND ROAD, IN KEYMAP NO. 567K, ELEV. 83.5 FEET, NAVD 29, 1973 ADJUSTMENT.

DAC ENGINEERING

17725 Katy Freeway, Suite 113 • Houston, TX 77094 • Phone: 281.506.7119
 Firm TBP Registration No. F-12959 • www.dacengineers.com

REV: DATE: DESCRIPTION:

1		
2		

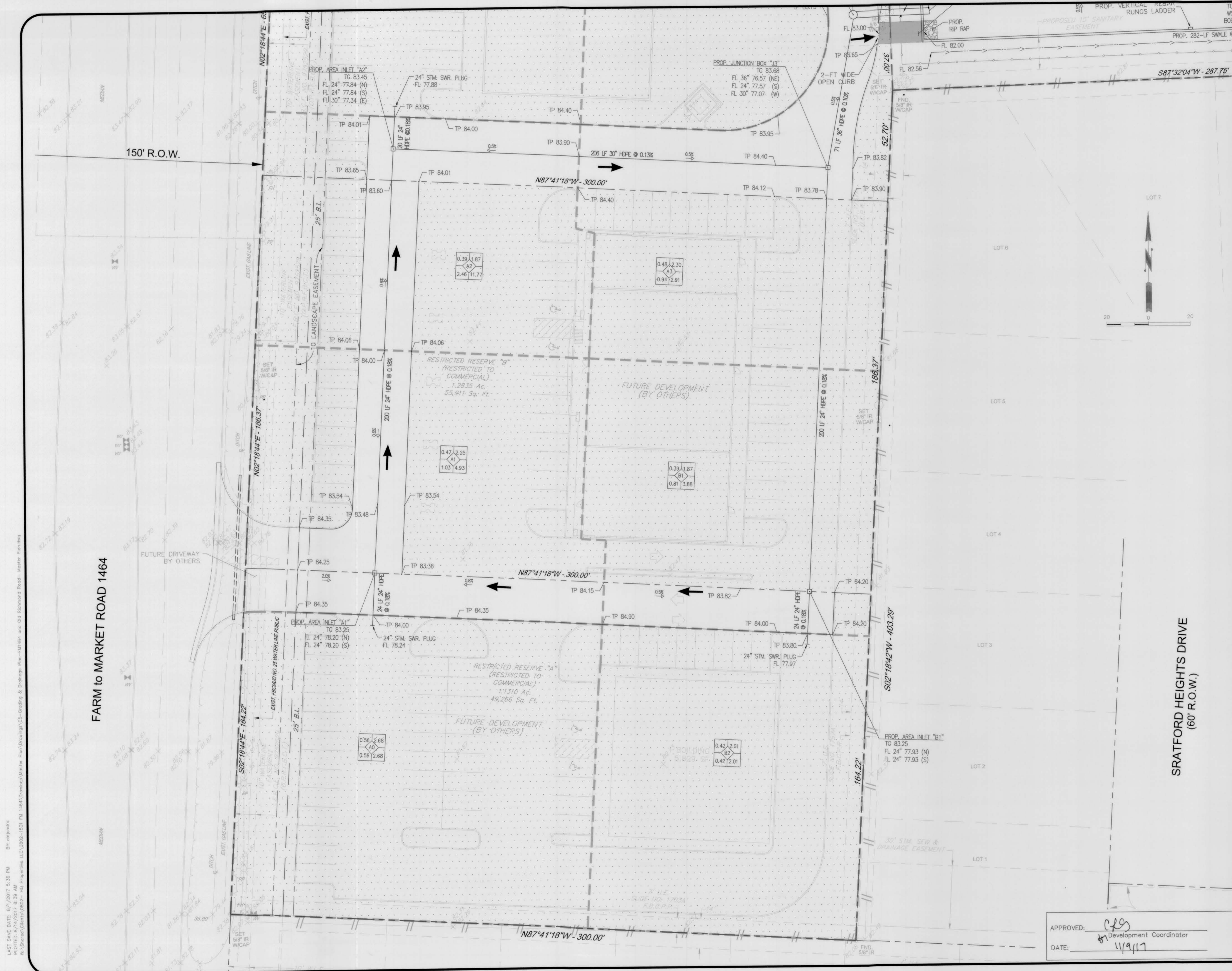
PROPOSED MASTER PLAN
 6.7 ACRES
 SEC OF FM 1464 AND
 OLD RICHMOND ROAD
 FORT BEND COUNTY,
 SUGAR LAND, TEXAS 77407

DIMENSION PLAN

STATE OF TEXAS
 DAVID B. KEEL
 88541
 LICENSED PROFESSIONAL ENGINEER

JOB No.: 0802-1501
 ORIGINAL ISSUE DATE: AUGUST, 2016
 DRAWN BY: DRI
 CHECKED BY: DBK
 SHEET No.: **C4.2**

APPROVED: [Signature]
 Development Coordinator
 DATE: 8/9/17



DRAINAGE AND GRADING LEGEND

FFE144.70	FINISHED FLOOR
TG144.40	TOP OF GRATE
TP144.50	TOP OF PAVEMENT
TW144.90	TOP OF SIDEWALK
TC 144.70	TOP OF CURB
FL 144.40	FLOW LINE
BOB 144.90	BOTTOM OF BANK
TOB 144.70	TOP OF BANK
WSE 144.40	100-YR WATER SURFACE ELEVATION
MEG	MATCH EXISTING GRADE
○	PROP. STORM MANHOLE
□	PROP. STORM INLET
1.5%	SLOPE ARROW
●	EXISTING INLET
○	EXISTING MANHOLE
▭	EXISTING DRIVEWAY
→	PROP. STORM SWALE
---	PROPOSED DRAINAGE AREA BOUNDARY
→	100-YR OVERLAND FLOW
AC. Q3	ACRES THIS AREA
○	RUNOFF 3yr (cfs) THIS AREA
□	AREA NAME
○	RUNOFF 3yr (CFS) CUMULATIVE
□	ACRES CUMULATIVE

LEGEND

▭	FUTURE DEVELOPMENT
---	--------------------

FLOODPLAIN

BASED ON THE FLOOD INSURANCE RATE MAP NO. 48157C1045L, MAP REVISED DATE OF APRIL 2, 2014 INDICATES THAT THE TRACT LIES WITHIN AREA ZONE 'X' (SHADED) AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD AND IN ZONE 'X' (UNSHADED) AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

BENCHMARK

FLOODPLAIN REFERENCE MARK NUMBER 33 IS A SPIKE IN POWER POLE, APPROXIMATELY 40 FEET EAST OF THE CENTERLINE OF FM 1464 AND 2.05 MILES NORTH OF INTERSECTION OF FM 1464 AND U.S. HIGHWAY 90 AT INTERSECTION OF FM 1464 AND OLD RICHMOND ROAD, IN KEYMAP NO. 567K, ELEV. 83.5 FEET, NAVD 29, 1973 ADJUSTMENT.

DAC ENGINEERING

17725 Katy Freeway, Suite 103 • Houston, TX 77094 • Phone: 281.506.7119
Firm TBPE Registration No. F-12959 • www.dacengineers.com

REV.	DATE	DESCRIPTION
1		
2		

PROPOSED MASTER PLAN
6.7 ACRES
SEC OF FM 1464 AND
OLD RICHMOND ROAD
FORT BEND COUNTY,
SUGAR LAND, TEXAS 77407

GRADING AND DRAINAGE PLAN

JOB No.:	0802-1501
ORIGINAL ISSUE DATE:	AUGUST, 2016
DRAWN BY:	DRI
CHECKED BY:	DBK
SHEET No.:	C52

APPROVED: *[Signature]*
Development Coordinator
DATE: 11/9/17

08/01/2017

LAST SAVE DATE: 8/7/2017 5:38 PM
 PLOTTED: 8/14/2017 8:59 AM
 BY: aejgndg
 W:\Shared\Clients\0802 - HD Properties LLC\0802-1501 FM 1464 Drawings\Master Plan\Drawings\CS-Grading & Drainage\0802-1501 FM 1464 Drawings\Master Plan.dwg

ULTIMATE DETENTION VOLUME CALCULATIONS

DETENTION POND SERVICE TRACT AREA	8.03 Acres
PROPOSED SERVICE TRACT AREA	6.65 Acres
ADJACENT PROPERTY SERVICE TRACT AREA	1.38 Acres
$A_{prop} + A_{adj} = A_t$	
$6.65 + 1.38 = 8.04$ (AC)	
PROPOSED IMPERVIOUS AREA (acres) =	6.78 Acres
PERCENT IMPERVIOUS =	84%
ACCORDING TO FORT BEND COUNTY DRAINAGE MANUAL TABLE 6-1	
8.04 ACRES X 0.92 ACRES-FT/ACRE =	7.39 Acres-FT
DETENTION PROVIDED:	8.14 Acres-FT

RELEASE RATE AND OUTFALL CALCULATIONS

ACCORDING TO FORT BEND COUNTY DRAINAGE REQUIREMENTS FOR DRAINAGE AREAS LESS THAN 0.125 CFS/ACRE x 8.04 ACRES (CFS) = 1.00 (cfs)

ACCORDING TO THE LIDAR MAP, WE ESTIMATE ABOUT 5.22 -ACRES DRAINING FROM THE SUBJECT AND ADJACENT TRACT, TOWARDS THE OLD RICHMOND ROAD SIDE DITCH, THE SIDE ROAD DITCH DRAINS EAST TO THE RED GULLY CHANNEL.

$Q_{100yr} = CIA$
 $Q_{100yr} = (0.30)(10.7)(5.22)$
 $Q_{100yr} = 16.75$ (cfs)

$Q_{3yr} = CIA$
 $Q_{3yr} = (0.30)(4.6)(5.22)$
 $Q_{3yr} = 7.2$ (cfs)

THEREFORE, THE DETENTION OUTFALL RATE OF 1.01 (cfs) DOES NOT EXCEED EXISTING FLOW RATE CONDITIONS FOR THE 3 YEAR & 100 YEAR FLOWRATES.

WE ESTIMATE THE TOTAL AREA CONTRIBUTING TO THE DITCH FROM THE REFERENCE TRACT AND OLD RICHMOND ROAD/DITCH IS 5.79 ACRES.

DITCH/STREET = 0.57 ACRES, C = 0.90
 SUBJECT TRACT = 3.84 ACRES, C = .30
 Adj. PROPERTY = 1.38 ACRES, C = 0.8
 WEIGHTED COEFFICIENT $C_w = 0.49$
 $Q_{100yr} = 29.73$ (cfs)
 $Q_{3yr} = 12.82$ (cfs)

DITCH CAPACITY CALCULATIONS USING MANNING'S EQUATION

THE ESTIMATED CAPACITY OF THE DITCH IS = 52.65 (cfs)
 THE EXISTING FLOWRATE OF THE SUBJECT TRACT DRAINING TO THE DITCH IS
 $Q_{100yr} = 29.73$ (cfs)
 $Q_{3yr} = 12.82$ (cfs)
 THE PROPOSED FLOWRATE OUTFALLING INTO THE DITCH IS 1.0 (cfs). THE PROPOSED FLOWRATE IS APPROXIMATELY 1.9% OF THE DITCH CAPACITY

FLOOD NOTE:

PROPERTY IS NOT IN THE 100 YEAR FLOOD ZONE "X" ACCORDING TO F.I.R.M. MAP NO. 48157C0145L DATE APRIL 2, 2014.

Drainage Area and Area Ponding Elevation Table			
Name	Area	Ponding	Max. Elevt.
Area	Sq.Ft.	Acres	Elevt.
A0	24731	0.57	84.00
A1	20658	0.47	84.25
A2	17298	0.40	83.90
A2.1	45460	1.04	83.95
A3	21081	0.48	83.50
B2	18511	0.42	83.80
B1	17117	0.39	83.77
C3	34559	0.79	84.00
C2	27827	0.64	84.15
C1	7873	0.18	84.25
Adj. Property	59996	1.38	82.43
Pond	54633	1.25	82.00

OLD RICHMOND ROAD SIDE CHANNEL DITCH						
Bottom Width (ft)	b	2.00	Date:	7/3/2017		
Top Width (ft)	T	18.00	By:	DBK		
Side Slopes (ft/ft)	m	4.00				
Channel Depth (ft)	d	2.10				
AREA	Wetted Perimeter	Hydraulic Radius	Manning's Coef. n	S	Q	
SQFT	FT	FT/FT		(ft/ft)	cfs	
2184	19.32	1.13	0.03	0.002	52.65	

MASTER DET. VOLUME				
Elev. ft	Area sqft.	Increase acre	Total Volume acre-ft	Volume acre-ft
83	37325	0.86	0.86	9.00
82	37325	0.86	8.14	8.14
72.5	37325	0.86	0.00	0.00

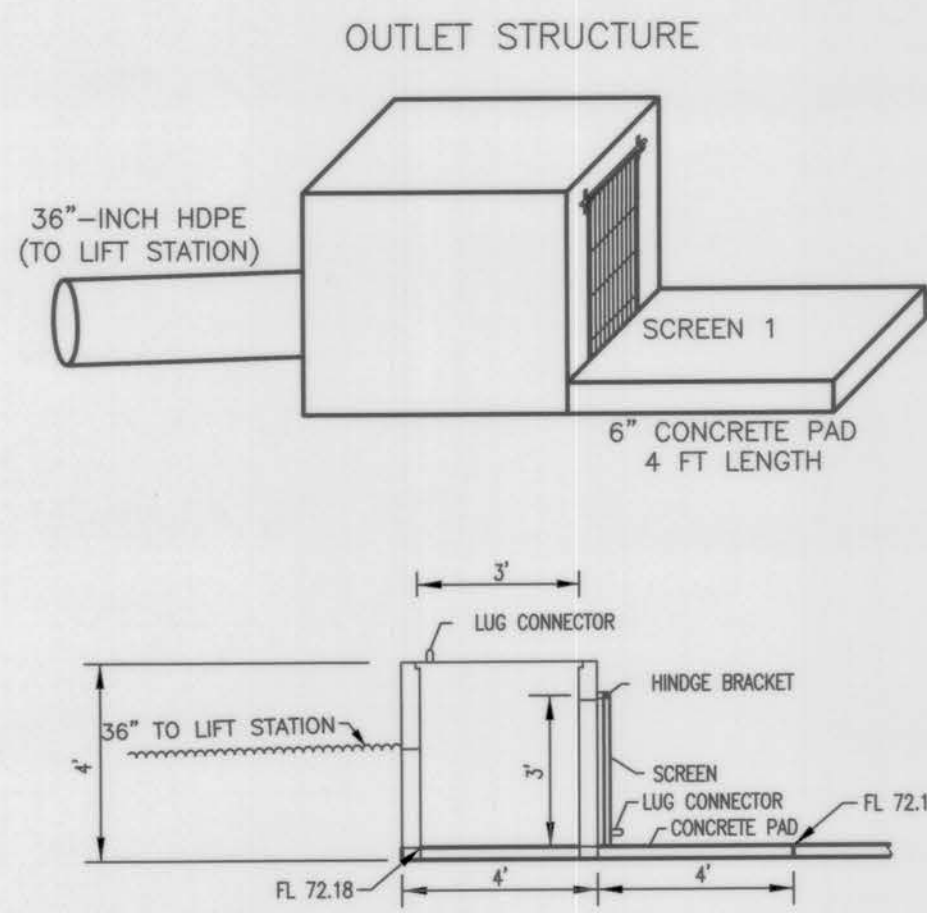
EXTREME EVENT CONCRETE LINED EMERGENCY SWALE FROM DRIVEWAY TO DETENTION POND USING MANNING'S EQUATION

CALCULATED CAPACITY OF SWALE = 145 (cfs)
 PROP. FLOWRATE THAT WILL DRAIN TO THE SWALE FROM THE 100-YEAR STORM
 A = 5.39 ACRES
 C = 0.8
 I = 11.63 (in/hr)
 $Q = C^0.58 * A$
 $Q = 50.17$ (cfs)
 THE PROP. FLOW RATE OUTFALLING INTO THE CONCRETE LINED SWALE IS 50.17 (cfs). WHICH IS APPROXIMATELY 34.6% OF THE SWALE CAPACITY

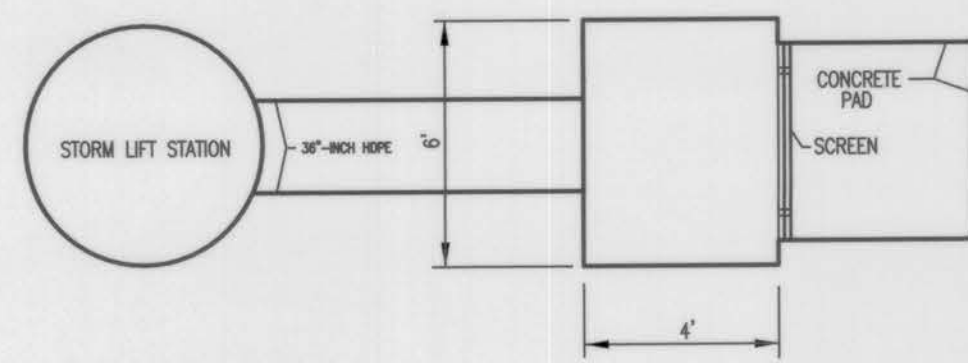
Extreme Event Swale From Driveway to the Detention Pond

Bottom Width (ft)	b1	4.00	Date:	7/3/2017
Top Width (ft)	T1	10.00	By:	DBK
Side Slopes (ft/ft)	m1	3.00		
Channel Depth (ft)	d1	1.00		

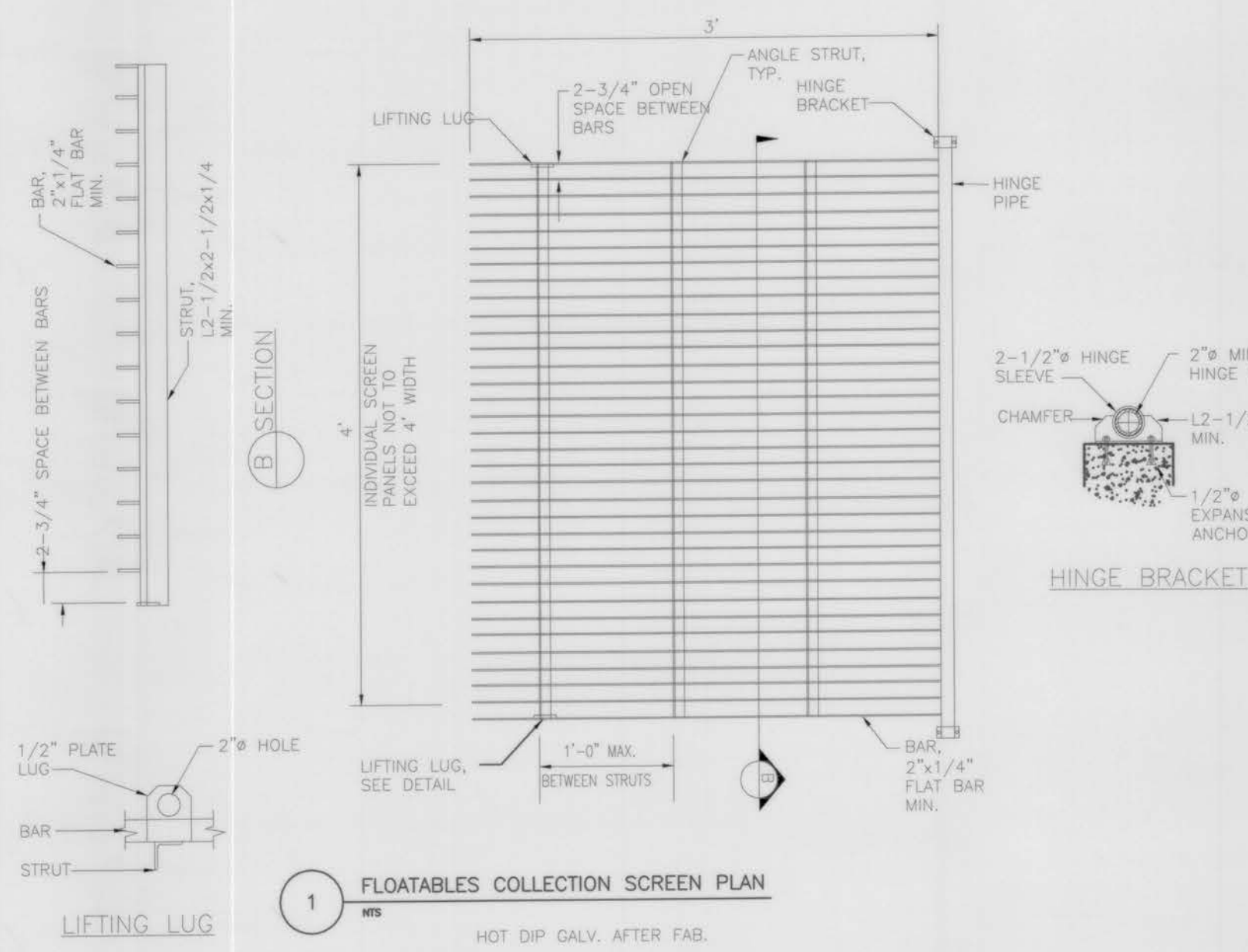
AREA	Perimeter	Radius	Manning's Coefficient	S	Q
SQFT	FT	FT/FT	n	(ft/ft)	cfs
7.00	10.32	0.68	0.012	0.047	145.42



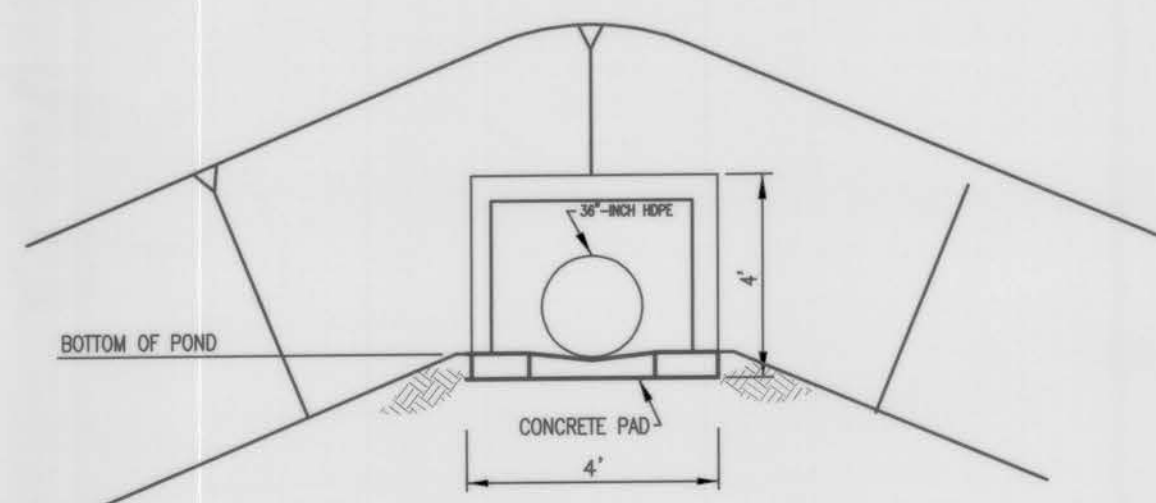
2 FLOATING SCREEN ELEVATION @ DETENTION POND 1



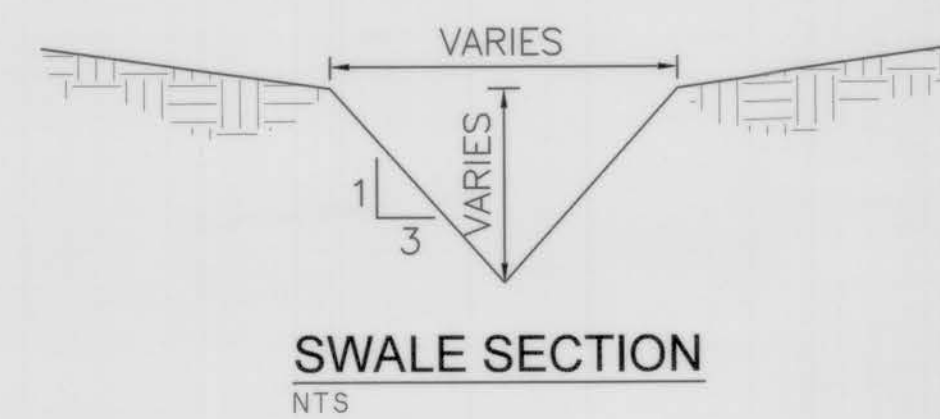
3 FLOATING SCREEN PLAN @ DETENTION POND



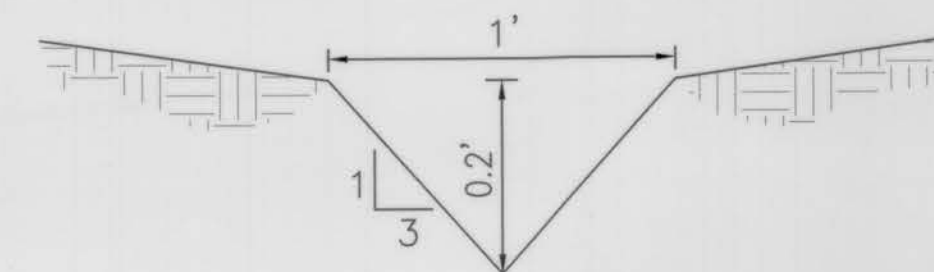
1 FLOATABLES COLLECTION SCREEN PLAN



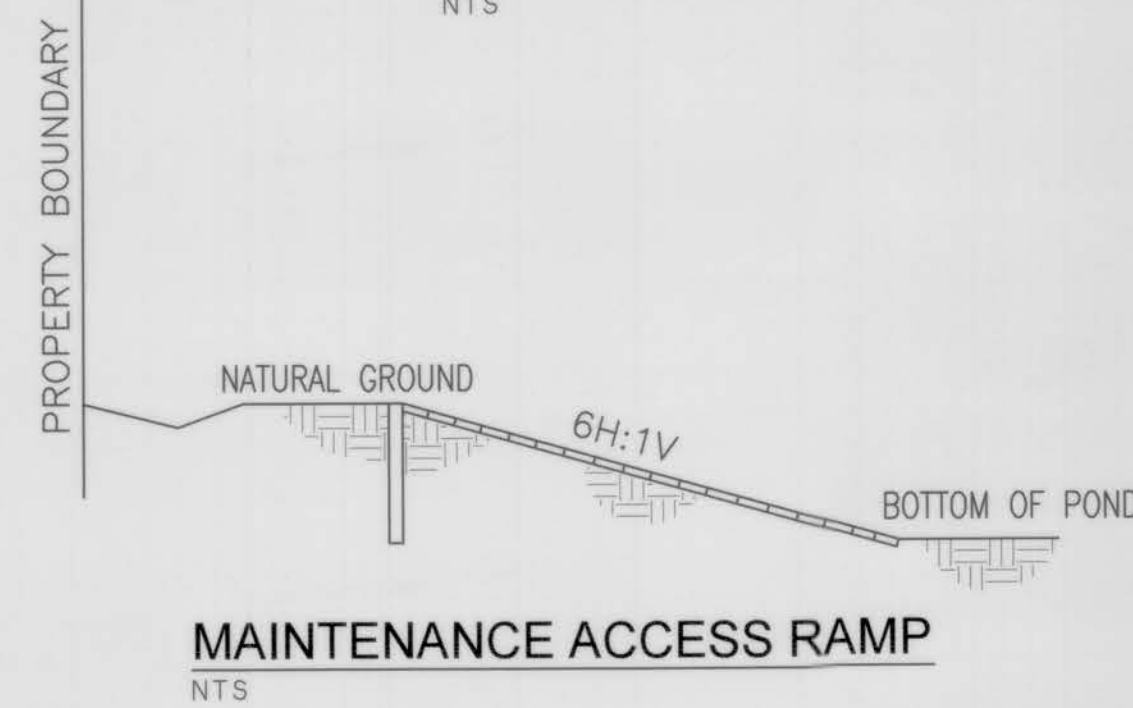
4 FLOATING SCREEN FRONT VIEW @ DETENTION POND



SWALE SECTION



CONCRETE PILOT CHANNEL



MAINTENANCE ACCESS RAMP

FLOODPLAIN

BASED ON THE FLOOD INSURANCE RATE MAP NO. 48157C1045L, MAP REVISED DATE OF APRIL 2, 2014 INDICATES THAT THE TRACT LIES WITHIN AREA ZONE "X" (SHADED) AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD AND IN ZONE "X" (UNSHADED) AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

BENCHMARK

FLOODPLAIN REFERENCE MARK NUMBER 33 IS A SPIKE IN POWER POLE, APPROXIMATELY 40 FEET EAST OF THE CENTERLINE OF FM 1464 AND 2.05 MILES NORTH OF INTERSECTION OF FM 1464 AND U.S. HIGHWAY 90 AT INTERSECTION OF FM 1464 AND OLD RICHMOND ROAD, IN KEYMAP NO. 567K. ELEV. 83.5 FEET, NAVD 29, 1973 ADJUSTMENT.

DAC ENGINEERING
 17725 Katy Freeway, Suite 103 • Houston, TX 77094 • Phone: 281.506.7119
 Firm TBPE Registration No. F-12959 • www.dacengineers.com

REV.	DATE	DESCRIPTION
1		

PROPOSED MASTER PLAN
 6.7 ACRES
 SEC OF FM 1464 AND
 OLD RICHMOND ROAD
 FORT BEND COUNTY,
 SUGAR LAND, TEXAS 77407

CALCULATIONS AND DETAILS



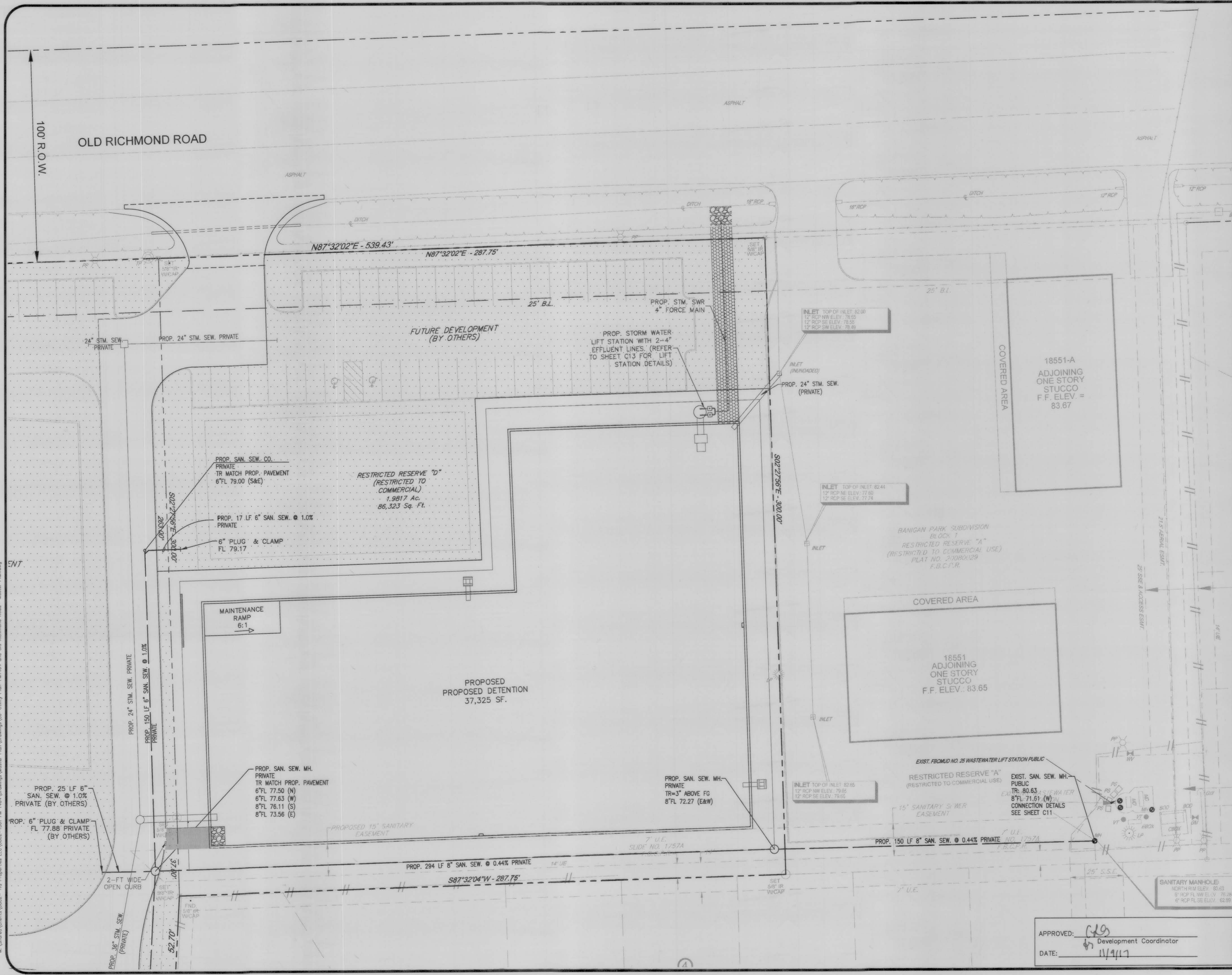
JOB No.: 0802-1501
 ORIGINAL ISSUE DATE: AUGUST, 2016
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 SHEET No.:

C5.3

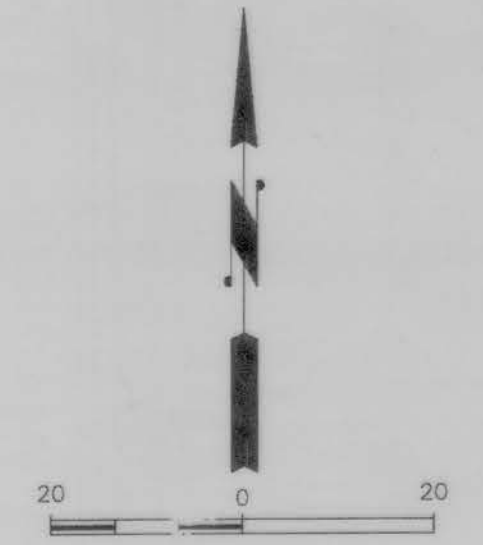
APPROVED: [Signature]
 Development Coordinator
 DATE: 8/1/2017

08/01/2017

LAST SAVE DATE: 7/19/2017 5:17 PM BY: aepedro
 PLOTTED: 8/1/2017 5:38 PM
 W:\Shoreline\clients\0802 - HD Properties LLC\0802-1501 FM 1464 Drawings\Master Plan\Drawings\0802 - HD Properties LLC\0802-1501 FM 1464 and Old Richmond Road - Master Plan.dwg



NOTE: UNDERGROUND FIRE LINES MUST BE SUBMITTED TO FIRE PROTECTION GROUP FOR REVIEW AND A NOTIFICATION OF CONSTRUCTION IN RIGHT-OF-WAY PERMIT WILL BE REQUIRED FOR THE PROPOSED WORK WITHIN FORT BEND COUNTY RIGHT-OF-WAY.



LEGEND



FLOODPLAIN

BASED ON THE FLOOD INSURANCE RATE MAP NO. 48157C1045L, MAP REVISED DATE OF APRIL 2, 2014 INDICATES THAT THE TRACT LIES WITHIN AREA ZONE 'X' (SHADED) AREAS OF 0.2% ANNUAL CHANCE FLOOD, AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREA'S LESS THAN 1 SQUARE MILE, AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD AND IN ZONE 'X' (UNSHADED) AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

BENCHMARK

FLOODPLAIN REFERENCE MARK NUMBER 33 IS A SPIKE IN POWER POLE APPROXIMATELY 40 FEET EAST OF THE CENTERLINE OF FM 1464 AND 2.05 MILES NORTH OF INTERSECTION OF FM 1464 AND U.S. HIGHWAY 90 AT INTERSECTION OF FM 1464 AND OLD RICHMOND ROAD, IN KEYMAP NO. 567K, ELEV. 83.5 FEET, NAVD 29, 1973 ADJUSTMENT.

D A C
ENGINEERING
 17725 Katy Freeway, Suite 111 • Houston, TX 77094 • Phone: 281.506.7119
 Firm TBPE Registration No. F-12959 • www.dacengineers.com

REV.	DATE	DESCRIPTION

PROPOSED MASTER PLAN
 6.7 ACRES
 SEC OF FM 1464 AND
 OLD RICHMOND ROAD
 FORT BEND COUNTY,
 SUGAR LAND, TEXAS 77407

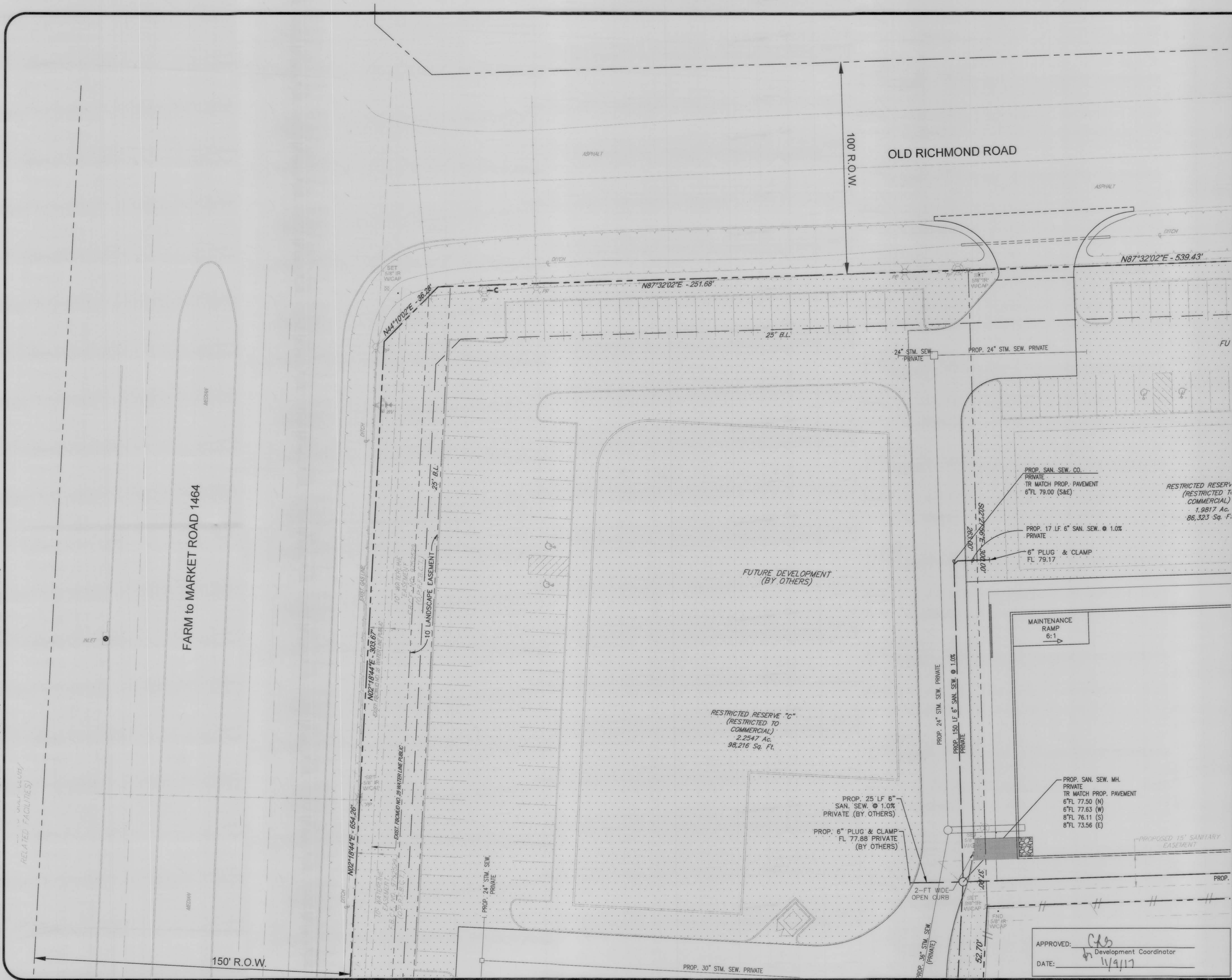
UTILITY PLAN



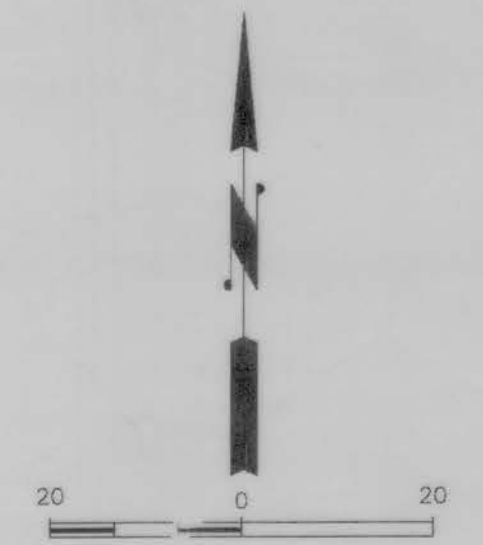
JOB No.:	0802-1501
ORIGINAL ISSUE DATE:	AUGUST, 2016
DRAWN BY:	DRI
CHECKED BY:	DBK
SHEET No.:	C6

APPROVED: *[Signature]*
 Development Coordinator
 DATE: 8/1/17

08/01/2017



NOTE:
 UNDERGROUND FIRE LINES MUST BE SUBMITTED TO FIRE PROTECTION GROUP FOR REVIEW AND A NOTIFICATION OF CONSTRUCTION IN RIGHT-OF-WAY PERMIT WILL BE REQUIRED FOR THE PROPOSED WORK WITHIN FORT BEND COUNTY RIGHT-OF-WAY.



LEGEND

FUTURE DEVELOPMENT

FLOODPLAIN

BASED ON THE FLOOD INSURANCE RATE MAP NO. 48197C1045L, MAP REVISED DATE OF APRIL 2, 2014 INDICATES THAT THE TRACT LIES WITHIN AREA ZONE 'X' (SHADED) AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD AND IN ZONE 'X' (UNSHADED) AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

BENCHMARK

FLOODPLAIN REFERENCE MARK, NUMBER 33 IS A SPIKE IN POWER POLE, APPROXIMATELY 40 FEET EAST OF THE CENTERLINE OF FM 1464 AND 2.65 MILES NORTH OF INTERSECTION OF FM 1464 AND U.S. HIGHWAY 90 AT INTERSECTION OF FM 1464 AND OLD RICHMOND ROAD, IN KEYMAP NO. 367K, ELEV. 83.5 FEET, NAVD 29, 1973 ADJUSTMENT.

D A C
ENGINEERING
 17725 Katy Freeway, Suite 1103 • Houston, TX 77094 • Phone: 281.506.7119
 Firm TBPE Registration No. F-12959 • www.dacengineers.com

REV.	DATE	DESCRIPTION

PROPOSED MASTER PLAN
 6.7 ACRES
 SEC OF FM 1464 AND
 OLD RICHMOND ROAD
 FORT BEND COUNTY,
 SUGAR LAND, TEXAS 77407

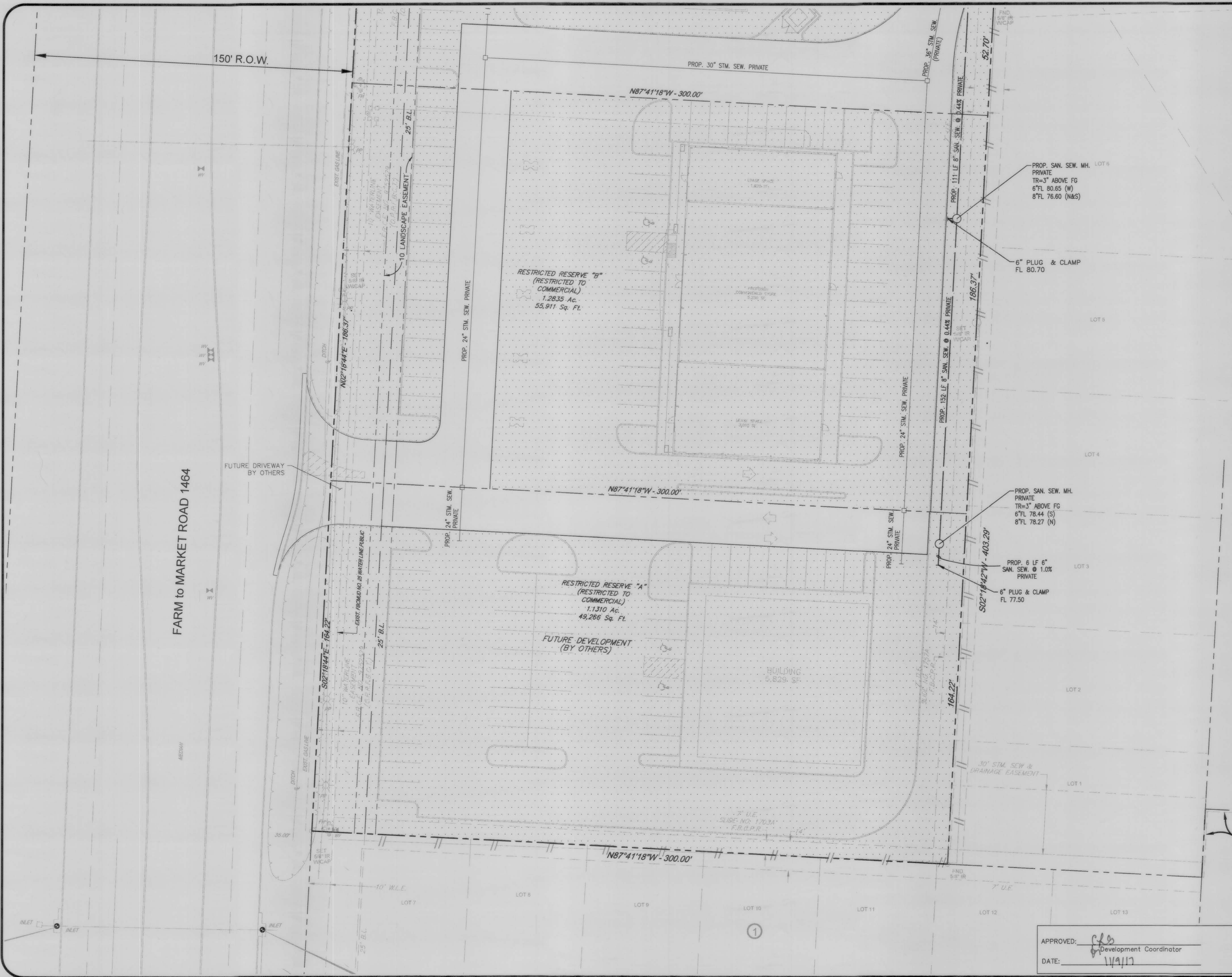
UTILITY PLAN



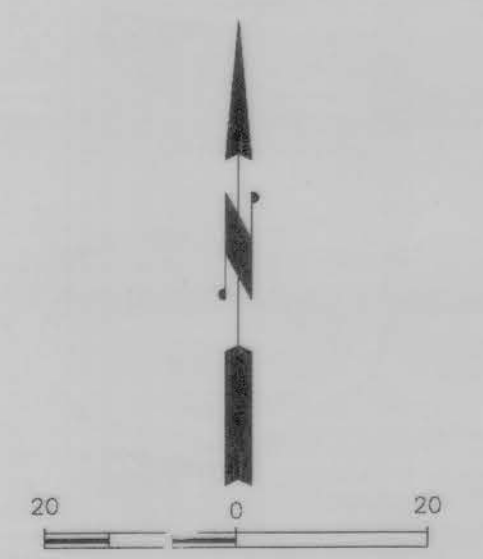
JOB No.:	0802-1501
ORIGINAL ISSUE DATE:	AUGUST, 2016
DRAWN BY:	DRI
CHECKED BY:	DBK
SHEET No.:	C6.1

APPROVED: Development Coordinator
 DATE: 8/1/17

08/01/2017



NOTE:
UNDERGROUND FIRE LINES MUST BE SUBMITTED TO FIRE PROTECTION GROUP FOR REVIEW AND A NOTIFICATION OF CONSTRUCTION IN RIGHT-OF-WAY PERMIT WILL BE REQUIRED FOR THE PROPOSED WORK WITHIN FORT BEND COUNTY RIGHT-OF-WAY.



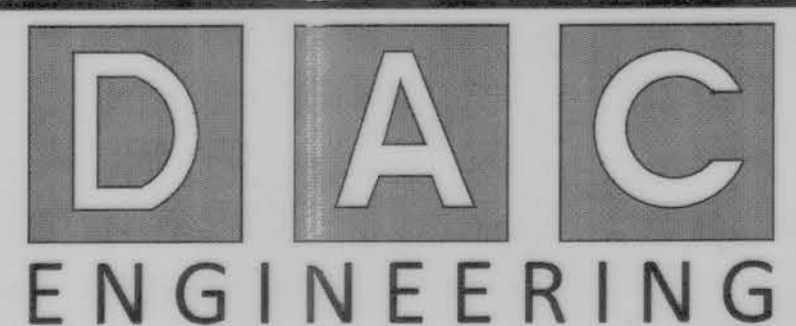
LEGEND
 FUTURE DEVELOPMENT

FLOODPLAIN

BASED ON THE FLOOD INSURANCE RATE MAP NO. 48157C1045L, MAP REVISED DATE OF APRIL 2, 2014 INDICATES THAT THE TRACT LIES WITHIN AREA ZONE X (UNSHADED) AREAS OF 0.2% ANNUAL CHANCE FLOOD, AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE, AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD AND IN ZONE X (UNSHADED) AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

BENCHMARK

FLOODPLAIN REFERENCE MARK, NUMBER 33 IS A SPIKE IN POWER POLE, APPROXIMATELY 40 FEET EAST OF THE CENTERLINE OF FM 1464 AND 2.05 MILES NORTH OF INTERSECTION OF FM 1464 AND U.S. HIGHWAY 90 AT INTERSECTION OF FM 1464 AND OLD RICHMOND ROAD, IN KEYMAP NO. 567K, ELEV. 83.5 FEET, NAVD 29, 1973 ADJUSTMENT.



17725 Katy Freeway, Suite 113 • Houston, TX 77094 • Phone: 281.506.7119
 Firm TBPE Registration No. F-12959 • www.dacengineers.com

REV.	DATE	DESCRIPTION
1		
2		

PROPOSED MASTER PLAN
 6.7 ACRES
 SEC OF FM 1464 AND
 OLD RICHMOND ROAD
 FORT BEND COUNTY,
 SUGAR LAND, TEXAS 77407

UTILITY PLAN



JOB No.: 0802-1501
 ORIGINAL ISSUE DATE: AUGUST, 2016
 DRAWN BY: DBK
 CHECKED BY: DBK
 SHEET No.:

C6.2

APPROVED:
 DATE: 11/9/17

08/01/2017

CURBS LOCATED ON EITHER SIDE OF A FIRE LINE SHALL BE PAINTED RED OR A RED STRIPE SHALL BE PLACED ALONG THE PAVEMENT WHERE THERE IS NO CURB. WHERE A FIRE LANE PASSES BETWEEN HEAD IN PARKING SPACES, THE RED STRIPE SHOULD BE PLACED ALONG THE REAR OF THESE SPACES CLEARLY DEFINING THE FIRE LANE. PAINTED CURBS AND FIRE LANE STRIPES SHALL ALSO BE CONSPICUOUSLY AND LEGIBLY MARKED WITH THE WARNING "FIRE LANE-TOW AWAY ZONE" IN WHITE LETTERS AT LEAST THREE (3) INCHES IN HEIGHT, AT INTERVALS NOT EXCEEDING FIFTY (50) FEET. WHERE FIRE LANES ARE CLEARLY DEFINED BY CURB/PAVEMENT STRIPING, FIRE LANE SIGNS ARE NOT REQUIRED. FIRE LANE SIGNS SHOULD BE PLACED EVERY (75) FEET ALONG ANY FIRE LANE WHERE PAVEMENT OR CURB STRIPING IS NOT PRACTICAL.







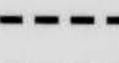
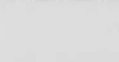
NOTES:

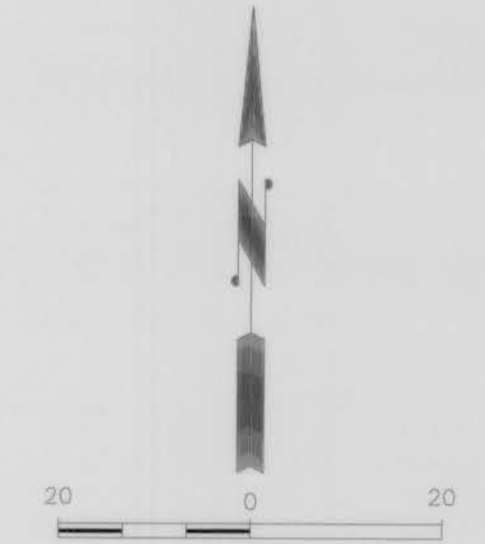
PROVIDE LONGITUDINAL AND TRANSVERSE CONTRACTION JOINTS AT 12.5' MAXIMUM EACH WAY FOR 5" THICK PAVEMENT AND 15' MAXIMUM EACH WAY FOR 6" OR GREATER PAVEMENT THICKNESS. CONTRACTION JOINTS SHALL BE 1/4" x 1/4" DEPTH OF PAVEMENT SHALL BE SAWN. REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONTRACTION JOINTS. JOINTS SHALL BE CONTINUOUS THROUGH CURBS. SAWCUTTING SHALL BE COMPLETED BEFORE EIGHT HOURS HAVE ELAPSED SINCE CONCRETE PLACEMENT. JOINTS SHALL BE SEALED FOLLOWING SAWCUTTING. REFER TO GEOTECHNICAL REPORT.

*PAVEMENT THICKNESS SHOWN ON THIS PLANS ARE FOR REFERENCE ONLY. REFER TO GEOTECHNICAL FOR PAVEMENT DETAILS.

GEOTECHNICAL REPORT BY: BANDY & ASSOCIATES, INC.
REPORT NO. 116233
DATED: NOVEMBER 23, 2016

PAVING LEGEND

-  CONCRETE PAVEMENT BY OTHERS
-  7-INCH CONC. PAVEMENT (3500 P.S.I.)
-  CONCRETE SIDEWALK
-  LANDSCAPE AREA
-  FUTURE DEVELOPMENT
-  PROPOSED FIRE LANE
-  PROPOSED FIRE LANE (BY OTHERS)
-  PROPOSED SAWCUT



FLOODPLAIN

BASED ON THE FLOOD INSURANCE RATE MAP NO. 48157C1049L MAP REVISED DATE OF APRIL 2, 2014 INDICATES THAT THE TRACT LIES WITHIN AREA ZONE 'X'(UNSHADED)-AREAS OF 0.2% ANNUAL CHANCE FLOOD. AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE. AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD AND IN ZONE 'X'(UNSHADED)-AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

BENCHMARK

FLOODPLAIN REFERENCE MARK NUMBER 33 IS A SPIKE IN POWER POLE. APPROXIMATELY 40 FEET EAST OF THE CENTERLINE OF FM 1464 AND 2.05 MILES NORTH OF INTERSECTION OF FM 1464 AND U.S. HIGHWAY 90 AT INTERSECTION OF FM 1464 AND OLD RICHMOND ROAD, IN KEYMAP NO. 567K. ELEV. 83.5 FEET, NAVD 29, 1973 ADJUSTMENT.



17725 Katy Freeway, Suite 103-Houston, TX 77094 • Phone: 281.506.7119
Firm TBPE Registration No. F-12959 • www.dacengineers.com

REV.	DATE	DESCRIPTION
1		

PROPOSED MASTER PLAN
6.7 ACRES
SEC OF FM 1464 AND
OLD RICHMOND ROAD
FORT BEND COUNTY,
SUGAR LAND, TEXAS 77407

PAVING PLAN AND
FIRE ACCESS PLAN

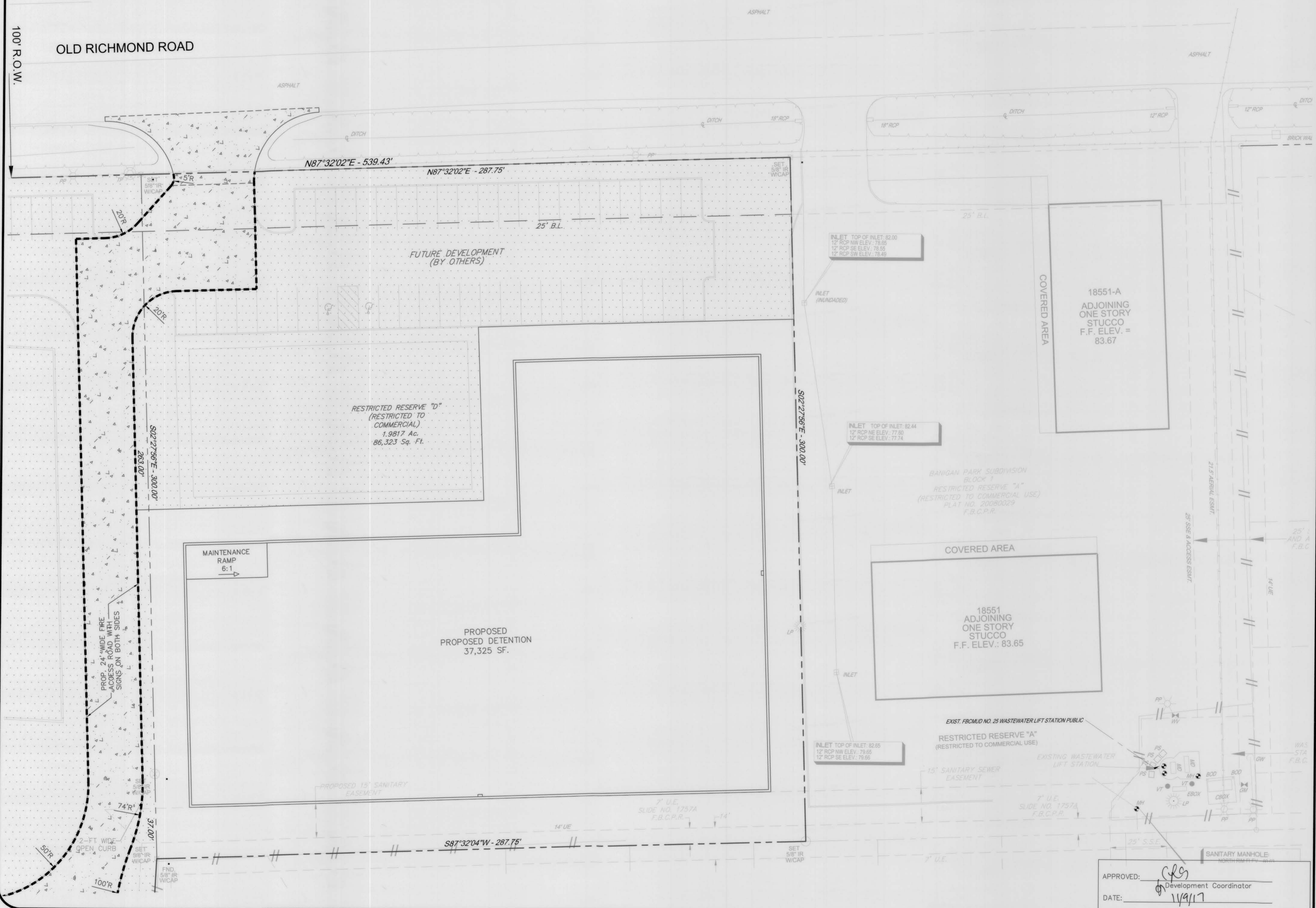


JOB No.: 0802-1501
ORIGINAL ISSUE DATE: AUGUST, 2016
DRAWN BY: DRI
CHECKED BY: DBK
SHEET No.:

C7

08/01/2017

APPROVED: *[Signature]*
Development Coordinator
DATE: 11/9/17



LAST SAVE DATE: 8/14/2017 8:51 AM BY: dph/ndk
 PLOTTED: 8/14/2017 4:43 PM W:\Shere\Gis\GIS\8802-1501 FM 1464\Drawings\Master Plan\Drawings\C7-Paving & Fire Access Plan-C1464.dwg and Old Richmond Road-Master Plan.dwg
 W:\Shere\Gis\GIS\8802-1501 FM 1464\Drawings\Master Plan\Drawings\C7-Paving & Fire Access Plan-C1464.dwg and Old Richmond Road-Master Plan.dwg

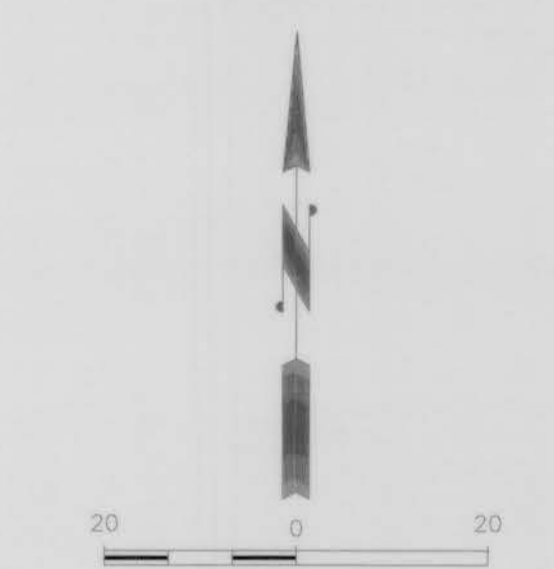
LAST SAVE DATE: 8/11/2017 9:51 AM BY: dlpjndr
 PLOTTED: 8/17/2017 4:43 PM
 W:\Projects\2017\1464\1464.dwg

NOTES:
 PROVIDE LONGITUDINAL AND TRANSVERSE CONTRACTION JOINTS AT 12.5' MAXIMUM EACH WAY FOR 5" THICK PAVEMENT AND 15' MAXIMUM EACH WAY FOR 6" OR GREATER PAVEMENT THICKNESS. CONTRACTION JOINTS SHALL BE 1/4" x 1/4" DEPTH OF PAVEMENT SHALL BE SAWN. REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONTRACTION JOINTS. JOINTS SHALL BE CONTINUOUS THROUGH CURBS. SAWCUTTING SHALL BE COMPLETED BEFORE EIGHT HOURS HAVE ELAPSED SINCE CONCRETE PLACEMENT. JOINTS SHALL BE SEALED FOLLOWING SAWCUTTING. REFER TO GEOTECHNICAL REPORT.
 *PAVEMENT THICKNESS SHOWN ON THIS PLANS ARE FOR REFERENCE ONLY. REFER TO GEOTECHNICAL FOR PAVEMENT DETAILS.
 GEOTECHNICAL REPORT BY: BANDY & ASSOCIATES, INC.
 REPORT No. 116233
 DATED: NOVEMBER 23, 2016

CURBS LOCATED ON EITHER SIDE OF A FIRE LINE SHALL BE PAINTED RED OR A RED STRIPE SHALL BE PLACED ALONG THE PAVEMENT WHERE THERE IS NO CURB. WHERE A FIRE LANE PASSES BETWEEN HEAD IN PARKING SPACES, THE RED STRIPE SHOULD BE PLACED ALONG THE REAR OF THESE SPACES CLEARLY DEFINING THE FIRE LANE. PAINTED CURBS AND FIRE LANE STRIPES SHALL ALSO BE CONSPICUOUSLY AND LEGIBLY MARKED WITH THE WARNING "FIRE LANE-TOW AWAY ZONE" IN WHITE LETTERS AT LEAST THREE (3) INCHES IN HEIGHT, AT INTERVALS NOT EXCEEDING FIFTY (50) FEET. WHERE FIRE LANES ARE CLEARLY DEFINED BY CURB/PAVEMENT STRIPING, FIRE LANE SIGNS ARE NOT REQUIRED. FIRE LANE SIGNS SHOULD BE PLACED EVERY (75) FEET ALONG ANY FIRE LANE WHERE PAVEMENT OR CURB STRIPING IS NOT PRACTICAL.

PAVING LEGEND

- CONCRETE PAVEMENT BY OTHERS
- 7-INCH CONC. PAVEMENT (3500 P.S.I.)
- CONCRETE SIDEWALK
- LANDSCAPE AREA
- FUTURE DEVELOPMENT
- PROPOSED FIRE LANE
- PROPOSED FIRE LANE (BY OTHERS)
- PROPOSED SAWCUT



FLOODPLAIN

BASED ON THE FLOOD INSURANCE RATE MAP NO. 48157C1048L. MAP REVISED DATE OF APRIL 2, 2014 INDICATES THAT THE TRACT LIES WITHIN AREA ZONE "X"(SHADED)-AREAS OF 0.2% ANNUAL CHANCE FLOOD, AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE. AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD AND IN ZONE "X"(UNSHADED)-AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

BENCHMARK

FLOODPLAIN REFERENCE MARK NUMBER 33 IS A SPIKE IN POWER POLE. APPROXIMATELY 40 FEET EAST OF THE CENTERLINE OF FM 1464 AND 2.05 MILES NORTH OF INTERSECTION OF FM 1464 AND U.S. HIGHWAY 90 AT INTERSECTION OF FM 1464 AND OLD RICHMOND ROAD, IN KEYMAP NO. 567K. ELEV. 83.5 FEET, NAVD 29, 1973 ADJUSTMENT.

DAC ENGINEERING
 17725 Katy Freeway, Suite 103 • Houston, TX 77094 • Phone: 281.506.7119
 Firm TBPE Registration No. F-12959 • www.dacengineers.com

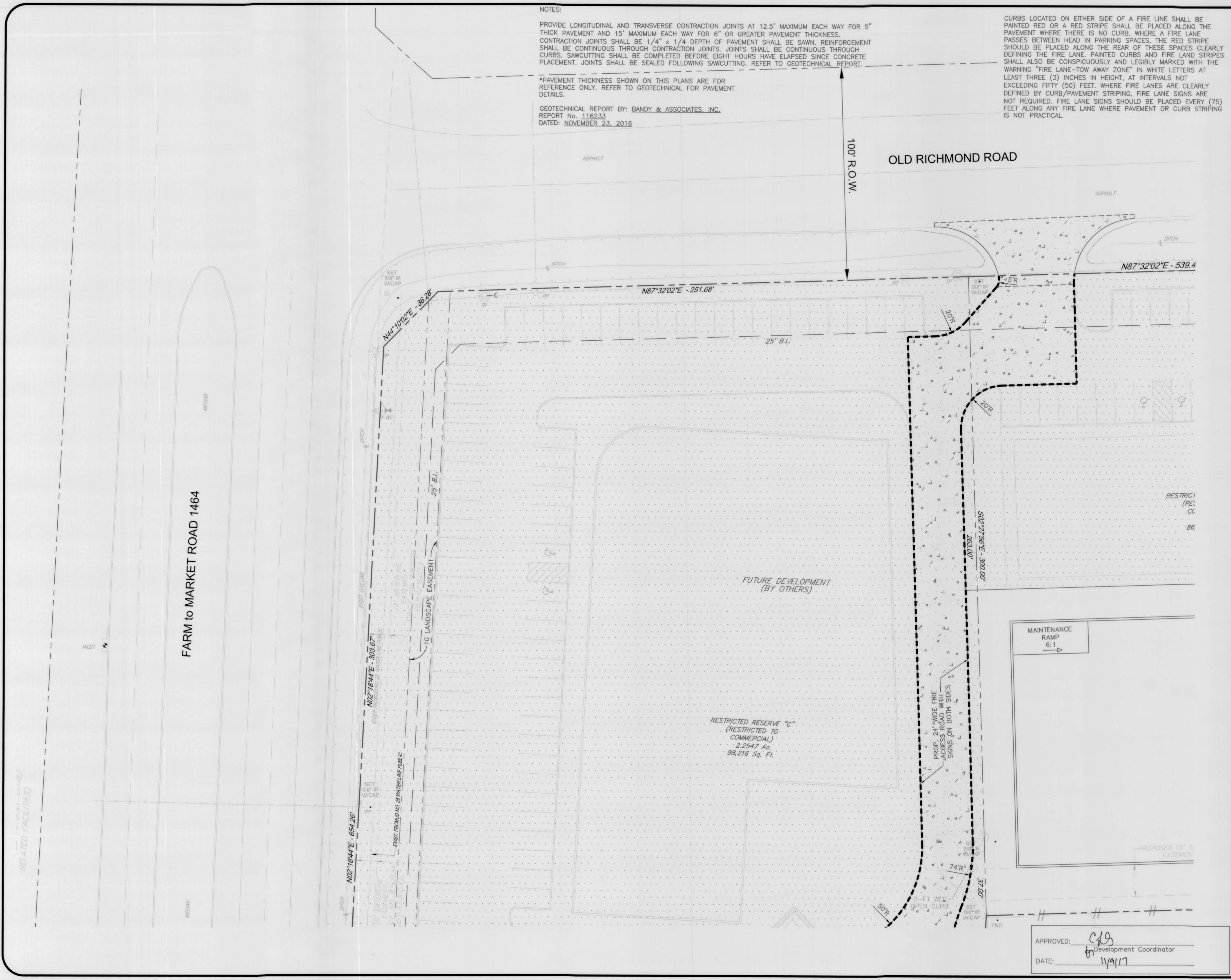
REV.	DATE	DESCRIPTION

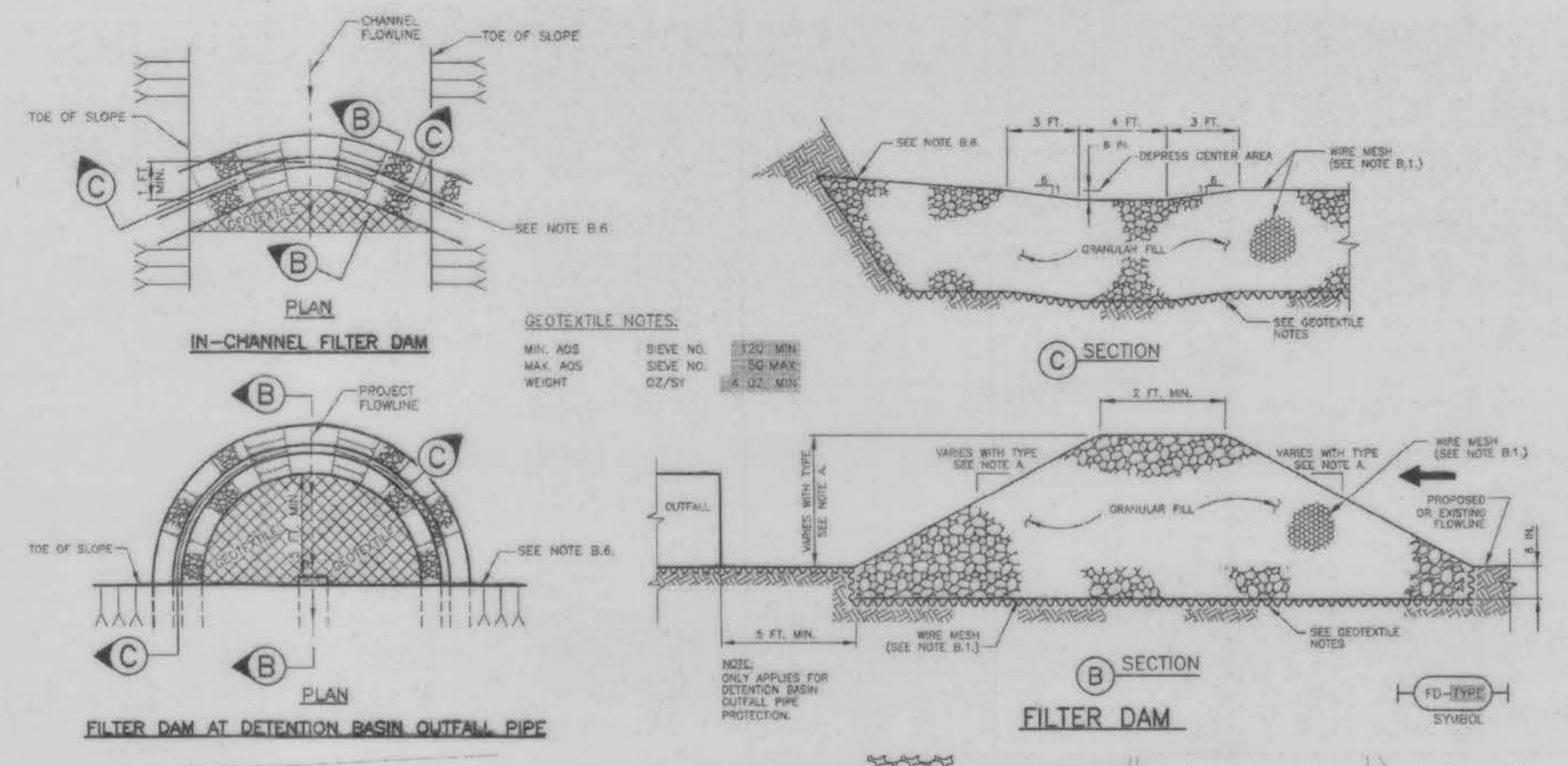
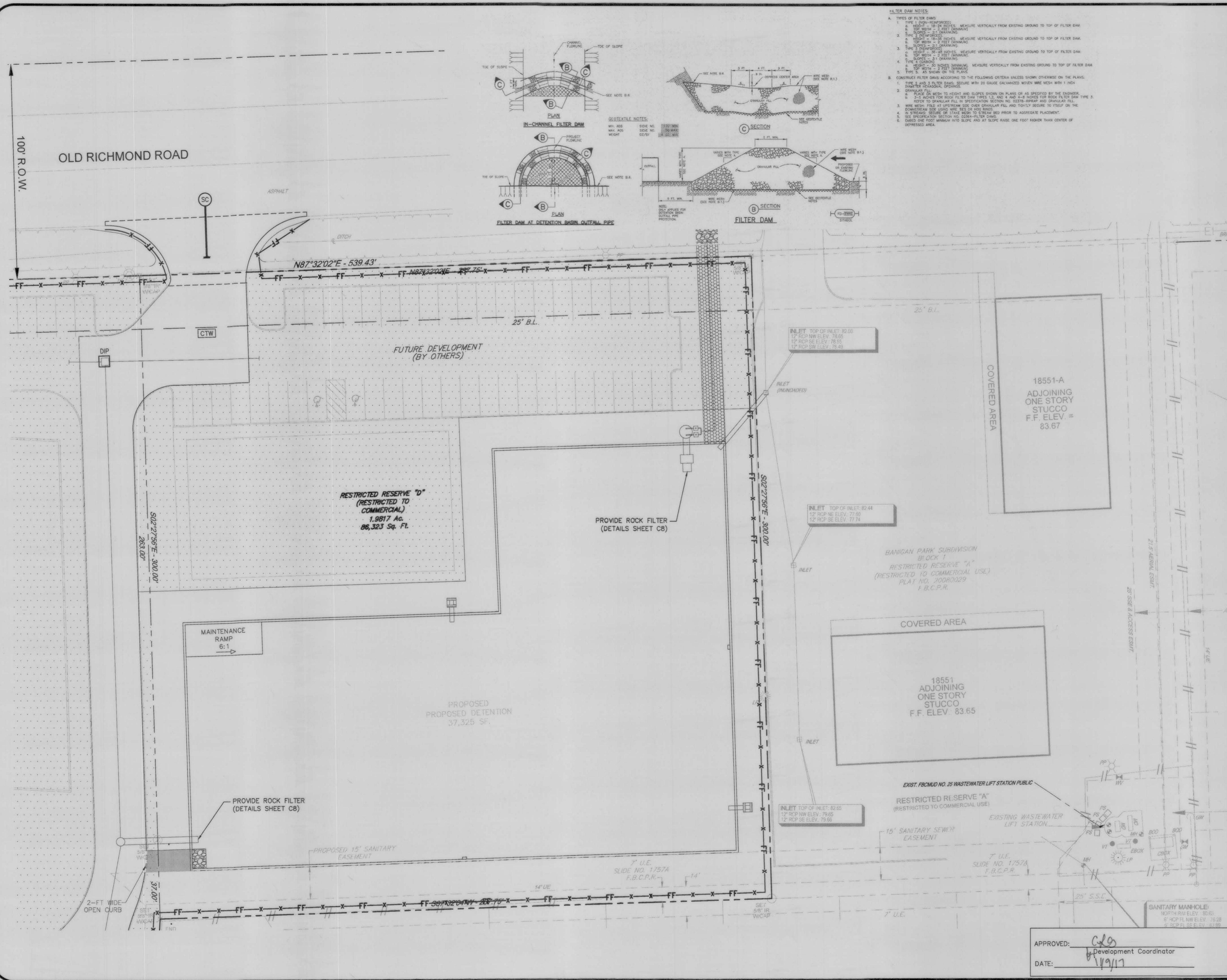
PROPOSED MASTER PLAN
 6.7 ACRES
 SEC OF FM 1464 AND
 OLD RICHMOND ROAD
 FORT BEND COUNTY,
 SUGAR LAND, TEXAS 77407

**PAVING PLAN AND
 FIRE ACCESS PLAN**

	JOB No.:	0802-1501
	ORIGINAL ISSUE DATE:	AUGUST, 2016
	DRAWN BY:	DRI
	CHECKED BY:	DBK
SHEET No.:		C7.1
DATE:		08/01/2017

APPROVED:
 DATE: 11/9/17

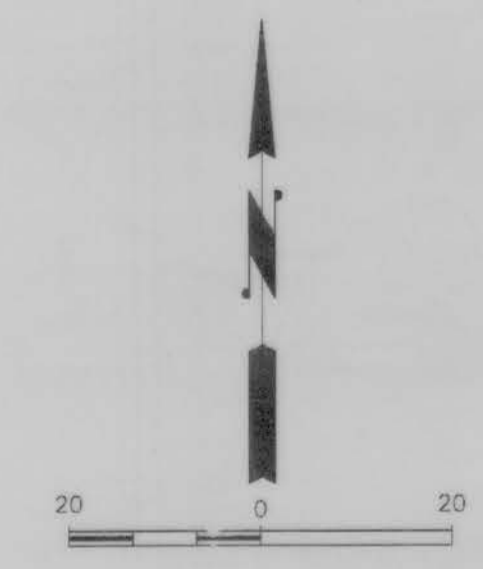




- FILTER DAM NOTES**
- TYPE 1 (NON-REINFORCED)
 - HEIGHT - 18-24 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
 - TOP WIDTH - 2 FEET (MINIMUM).
 - LENGTH - 12 FEET (MINIMUM).
 - TYPE 2 (REINFORCED)
 - HEIGHT - 18-24 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
 - TOP WIDTH - 2 FEET (MINIMUM).
 - LENGTH - 12 FEET (MINIMUM).
 - REINFORCEMENT - 2 #4 BARS (MINIMUM).
 - TYPE 3 (REINFORCED)
 - HEIGHT - 24-30 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
 - TOP WIDTH - 2 FEET (MINIMUM).
 - LENGTH - 12 FEET (MINIMUM).
 - REINFORCEMENT - 2 #4 BARS (MINIMUM).
 - TYPE 4 (CONCRETE)
 - HEIGHT - 24-30 INCHES (MINIMUM). MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
 - TOP WIDTH - 2 FEET (MINIMUM).
 - LENGTH - 12 FEET (MINIMUM).
 - TYPE 5 (24\"/>

NPDES LEGEND

- X-FF-X FILTER FABRIC FENCE
- DIP DROP INLET PROTECTION INSERT BASKET
- SC STABILIZED CONSTRUCTION EXIT
- ETR EXISTING TO REMAIN
- CTW CONCRETE TRUCK WASHOUT
- Future Development



FLOODPLAIN

BASED ON THE FLOOD INSURANCE RATE MAP NO. 48157C1045L, MAP REVISED DATE OF APRIL 2, 2014 INDICATES THAT THE TRACT LIES WITHIN AREA ZONE X (UNSHADED) AREAS OF 0.2% ANNUAL CHANCE FLOOD, AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE, AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD AND IN ZONE X (UNSHADED) AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

BENCHMARK

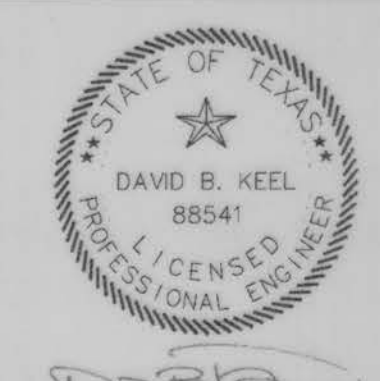
FLOODPLAIN REFERENCE MARK NUMBER 33 IS A SPIKE IN POWER POLE, APPROXIMATELY 40 FEET EAST OF THE CENTERLINE OF FM 1464 AND 2.05 MILES NORTH OF INTERSECTION OF FM 1464 AND U.S. HIGHWAY 90 AT INTERSECTION OF FM 1464 AND OLD RICHMOND ROAD. IN KEYMAP NO. 5676, ELEV. 83.5 FEET NAVD 29, 1973 ADJUSTMENT.

DAC ENGINEERING
 17725 Katy Freeway, Suite 103 • Houston, TX 77094 • Phone: 281.506.7119
 Firm TBPE Registration No. F-12959 • www.dacengineers.com

REV.	DATE	DESCRIPTION

PROPOSED MASTER PLAN
 6.7 ACRES
 SEC OF FM 1464 AND
 OLD RICHMOND ROAD
 FORT BEND COUNTY,
 SUGAR LAND, TEXAS 77407

EROSION CONTROL PLAN



JOB No.: 0802-1501
 ORIGINAL ISSUE DATE: AUGUST, 2016
 DRAWN BY: DRI
 CHECKED BY: DBK
 SHEET No.: C8

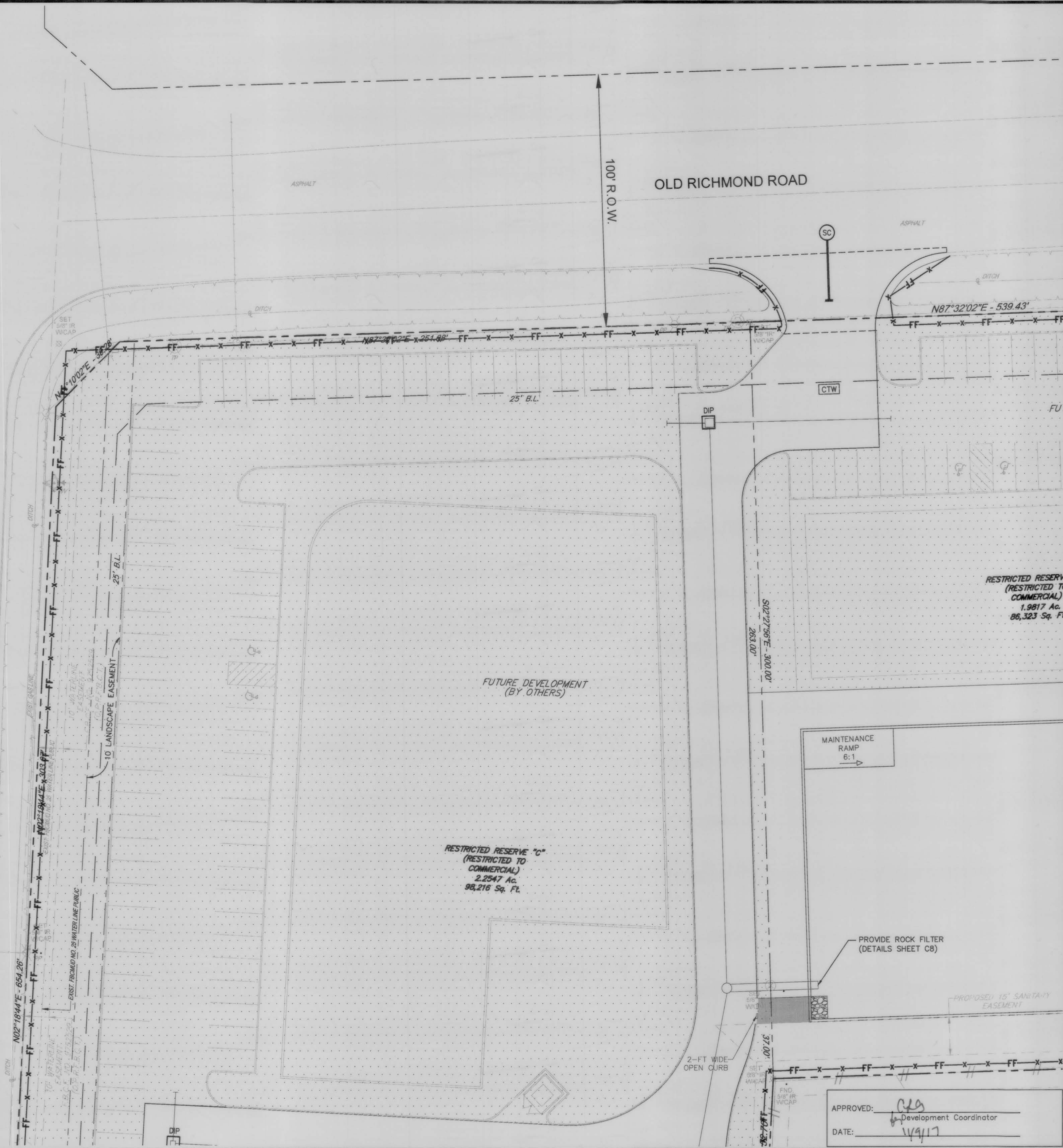
APPROVED: *[Signature]*
 Development Coordinator
 DATE: 7/19/17

08/01/2017

RELATED FACILITIES

FARM to MARKET ROAD 1464

150' R.O.W.



NPDES LEGEND

- X-FF-X FILTER FABRIC FENCE
- DIP DROP INLET PROTECTION INSERT BASKET
- SC STABILIZED CONSTRUCTION EXIT
- ETR EXISTING TO REMAIN
- CTW CONCRETE TRUCK WASHOUT
- FUTURE DEVELOPMENT



FLOODPLAIN

BASED ON THE FLOOD INSURANCE RATE MAP NO. 48157C1045L, MAP REVISED DATE OF APRIL 2, 2014 INDICATES THAT THE TRACT LIES WITHIN AREA ZONE X (SHADED) AREAS OF 0.2% ANNUAL CHANCE FLOOD, AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE, AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD AND IN ZONE X (SHADED) AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

BENCHMARK

FLOODPLAIN REFERENCE MARK NUMBER 13 IS A SPIKE IN POWER POLE, APPROXIMATELY 40 FEET EAST OF THE CENTERLINE OF FM 1464 AND 2.05 MILES NORTH OF INTERSECTION OF FM 1464 AND U.S. HIGHWAY 90 AT INTERSECTION OF FM 1464 AND OLD RICHMOND ROAD, IN KEYMAP NO. 567K, ELEV. 85.5 FEET, NAVD 29, 1973 ADJUSTMENT.

DAC ENGINEERING
 17725 Katy Freeway, Suite 103 • Houston, TX 77094 • Phone: 281.506.7119
 Firm TSPPE Registration No. F-12959 • www.dacengineers.com

REV.	DATE	DESCRIPTION
1		

PROPOSED MASTER PLAN
 6.7 ACRES
 SEC OF FM 1464 AND
 OLD RICHMOND ROAD
 FORT BEND COUNTY,
 SUGAR LAND, TEXAS 77407

EROSION CONTROL PLAN

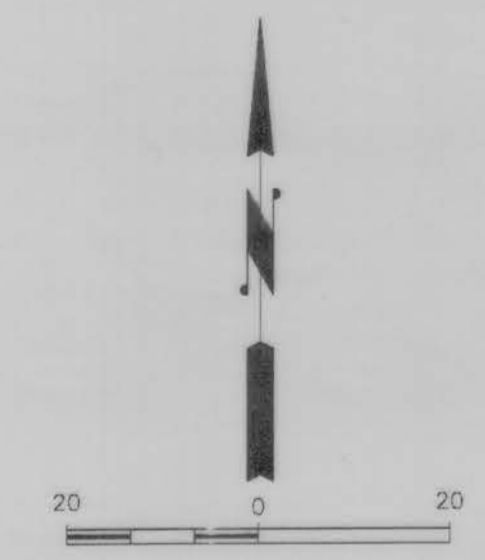
JOB No.: 0802-1501
 ORIGINAL ISSUE DATE: AUGUST, 2016
 DRAWN BY: DRI
 CHECKED BY: DBK
 SHEET No.: **C8.1**
 08/01/2017

APPROVED: *[Signature]*
 Development Coordinator
 DATE: 11/9/17



NOTES LEGEND

X-FF-X	FILTR FABRIC FENCE
DIP	DROP INLET PROTECTION INSERT BASKET
SC	STABILIZED CONSTRUCTION EXIT
ETR	EXISTING TO REMAIN
CTW	CONCRETE TRUCK WASHOUT
[Dotted Area]	FUTURE DEVELOPMENT



FLOODPLAIN

BASED ON THE FLOOD INSURANCE RATE MAP NO. 48157C1045L, MAP REVISED DATE OF APRIL 2, 2014 INDICATES THAT THE TRACT LIES WITHIN AREA ZONE XX (SHADED) AREAS OF 0.2% ANNUAL CHANCE FLOOD, AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE, AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD AND IN ZONE X (UNSHADED) AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

BENCHMARK

FLOODPLAIN REFERENCE MARK NUMBER 33 IS A SPIKE IN POWER POLE, APPROXIMATELY 40 FEET EAST OF THE CENTERLINE OF FM 1464 AND 2.05 MILES NORTH OF INTERSECTION OF FM 1464 AND U.S. HIGHWAY 90 AT INTERSECTION OF FM 1464 AND OLD RICHMOND ROAD, IN KEYMAP NO. 567K, ELEV. 83.5 FEET, NAVD 29, 1973 ADJUSTMENT.

DAC ENGINEERING
 17725 Katy Freeway, Suite 103 • Houston, TX 77094 • Phone: 281.506.7119
 Firm TPE Registration No. F-12959 • www.dacengineers.com

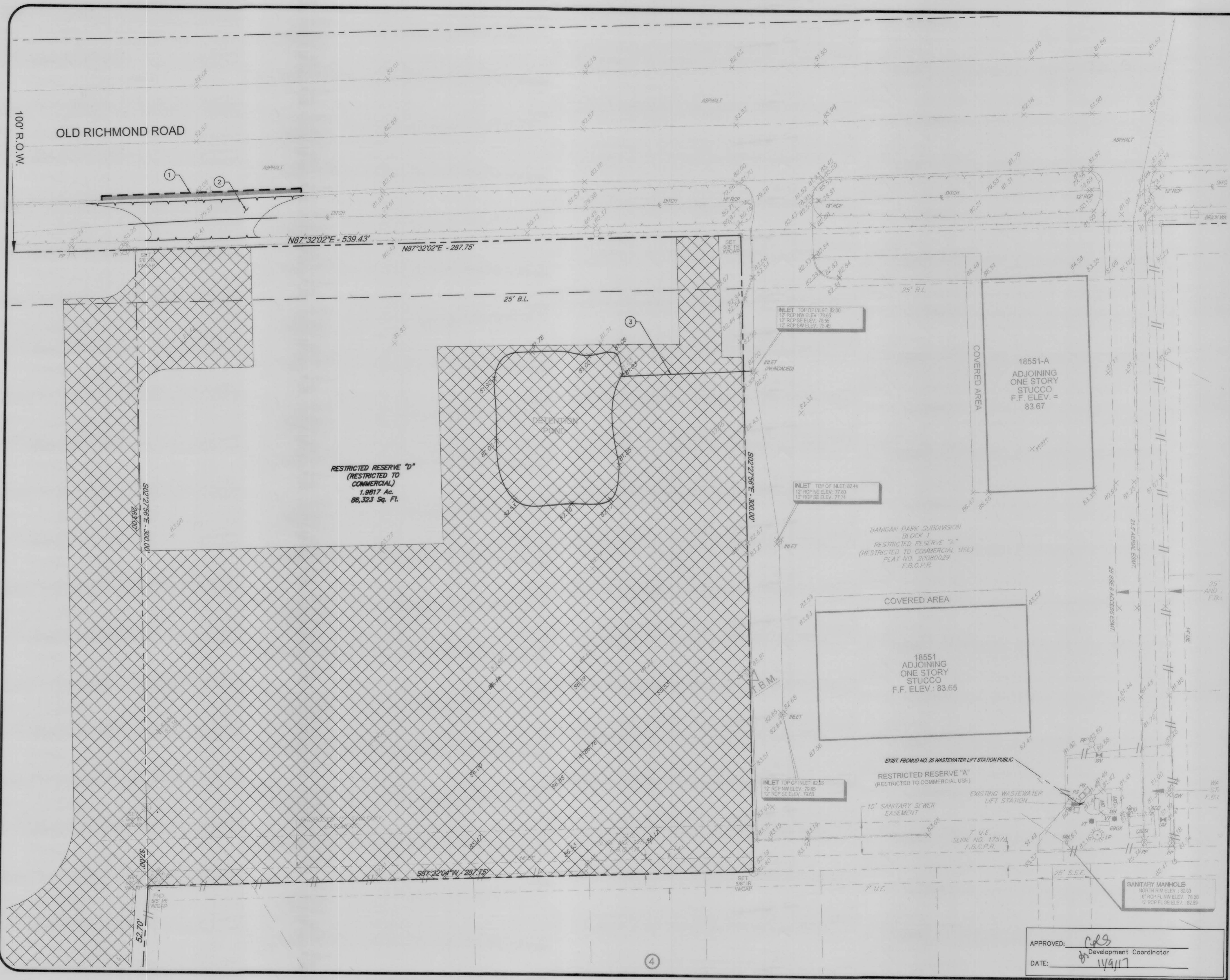
REV.	DATE	DESCRIPTION

PROPOSED MASTER PLAN
 6.7 ACRES
 SEC OF FM 1464 AND
 OLD RICHMOND ROAD
 FORT BEND COUNTY,
 SUGAR LAND, TEXAS 77407

EROSION CONTROL PLAN

	JOB No.:	0802-1501
	ORIGINAL ISSUE DATE:	AUGUST, 2016
	DRAWN BY:	DRI
	CHECKED BY:	DBK
SHEET No.:		C8.2
DATE:		08/01/2017

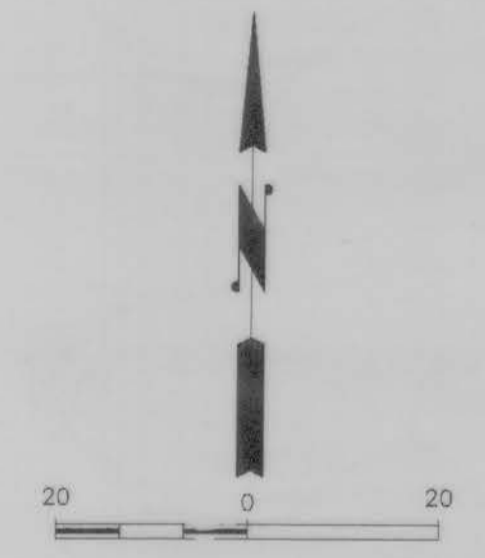
APPROVED: *[Signature]*
 Development Coordinator
 DATE: 8/1/17



LEGEND

- AREA OF CLEARING AND GRUBBING
- LIMIT OF SAWCUT

- 1 LIMIT OF EXISTING ASPHALT PAVEMENT TO BE REMOVED
- 2 LIMIT OF EXISTING ROADSIDE DITCH TO BE FILLED.
- 3 EXISTING 12" STORM SEWER TO BE REMOVED.



FLOODPLAIN

BASED ON THE FLOOD INSURANCE RATE MAP NO. 48157C1048, MAP REVISED DATE OF APRIL 2, 2014 INDICATES THAT THE TRACT LIES WITHIN AREA ZONE X (SHADED) AREAS OF 0.2% ANNUAL CHANCE FLOOD, AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREA LESS THAN 1 SQUARE MILE AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD AND IN ZONE X (UNSHADED) AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

BENCHMARK

FLOODPLAIN REFERENCE MARK NUMBER 33 IS A SPIKE IN POWER POLE, APPROXIMATELY 40 FEET EAST OF THE CENTERLINE OF FM 1464 AND 2.05 MILES NORTH OF INTERSECTION OF FM 1464 AND U.S. HIGHWAY 90 AT INTERSECTION OF FM 1464 AND OLD RICHMOND ROAD, IN KEYMAP NO. 5678, ELEV. 83.5 FEET, NAVD 29, 1973 ADJUSTMENT.

DAC ENGINEERING
 17725 Katy Freeway, Suite 103 • Houston, TX 77094 • Phone: 281.506.7119
 Firm TSPCE Registration No. F-12959 • www.dacengineers.com

REV.	DATE	DESCRIPTION

PROPOSED MASTER PLAN
 6.7 ACRES
 SEC OF FM 1464 AND
 OLD RICHMOND ROAD
 FORT BEND COUNTY,
 SUGAR LAND, TEXAS 77407

DEMOLITION PLAN

JOB No.: 0802-1501
 ORIGINAL ISSUE DATE: AUGUST, 2016
 DRAWN BY: DRI
 CHECKED BY: DBK
 SHEET No.: **C9**
 08/01/2017

APPROVED:
 DATE: 8/1/17

GENERAL NOTE

NOT ALL AREAS OF PAVEMENT REMOVAL MAY BE SHOWN ON DEMOLITION PLAN DUE TO SOIL EROSION. CONTRACTOR TO REMOVE ALL EXISTING ON-SITE PAVEMENT TO FULL DEPTH TO PREPARE SITE FOR CONSTRUCTION OF F.M. 1464 AND OLD RICHMOND ROAD DEVELOPMENT.

DEMOLITION NOTES

1. THE CONTRACTOR WILL BE REQUIRED TO REMOVE ALL PAVEMENT MATERIALS AND SUCH ITEMS SHALL BECOME THE PROPERTY OF THE CONTRACTOR. ALL ITEMS SHALL BE PROPERLY DISPOSED OF AT AN OFF-SITE LOCATION.
2. IF AT ANY TIME PRIOR TO OR DURING THE DEMOLITION WORK, HAZARDOUS MATERIAL IS ENCOUNTERED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DEVELOPMENT MANAGER.
3. THE CONTRACTOR SHALL NOTIFY ADJACENT OWNERS OF WORK WHICH MAY AFFECT THEIR PROPERTY, POTENTIAL NOISE, UTILITY OUTAGE OR DISRUPTION. SUCH OPERATIONS SHALL BE CONDUCTED BY THE CONTRACTOR WITH MINIMUM INTERFERENCE TO ADJACENT OWNERS. ADJACENT EGRESS AND ACCESS SHALL BE PROPERLY MAINTAINED AT ALL TIMES. DO NOT CLOSE OR OBSTRUCT ANY ROADWAYS, PARKING OR SIDEWALKS WITHOUT PERMISSION FROM THE ADJACENT OWNERS AND/OR CITY OF HOUSTON.
4. PRIOR TO THE COMMENCEMENT OF DEMOLITION/GRADING OPERATIONS, ALL OVERHEAD AND UNDERGROUND UTILITIES SHALL BE LOCATED. ALL REMOVAL AND/OR RELOCATION OF UTILITIES SHALL BE COORDINATED WITH THE RESPECTIVE UTILITY COMPANIES.
5. ALL UTILITIES, UTILITY POLES, AND TRAFFIC SIGNALS WITHIN PUBLIC R.O.W. SHALL REMAIN.
6. GREASE TRAPS, SAMPLE WELLS, ETC. SHALL BE PROPERLY DISPOSED OF AT AN OFF-SITE LOCATION PER LOCAL, STATE, AND FEDERAL REQUIREMENTS.

UTILITY NOTES

1. UNLESS OTHERWISE NOTED, ALL UTILITY ADJUSTMENTS WILL BE PERFORMED BY THE UTILITY OWNERS OR ITS REPRESENTATIVE. THE CONTRACTOR AND UTILITY OWNERS WILL BE REQUIRED TO COOPERATE WITH EACH OTHER TO EXPEDITE THE WORK REQUIRED BY THIS CONTRACT.
2. THE CONTRACTOR WILL PROVIDE ALL NECESSARY PROTECTIVE MEASURES TO SAFEGUARD EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION OF THIS PROJECT. IN THE EVENT THAT SPECIAL EQUIPMENT IS REQUIRED TO WORK OVER OR AROUND THE UTILITIES, THE CONTRACTOR WILL BE REQUIRED TO FURNISH SUCH EQUIPMENT. THE COST OF PROTECTING UTILITIES FROM DAMAGE AND FURNISHING SPECIAL EQUIPMENT WILL BE INCLUDED IN THE BID PRICE FOR OTHER ITEMS OF CONSTRUCTION.
3. THE CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR CONTACTING ALL AFFECTED UTILITIES PRIOR TO SUBMITTING HIS BID TO DETERMINE THE EXTENT TO WHICH UTILITY DISCONNECTIONS AND/OR ADJUSTMENTS WILL HAVE UPON THE SCHEDULE OF THE WORK FOR THE PROJECT. SOME UTILITY FACILITIES MAY NEED TO BE ADJUSTED CONCURRENTLY WITH THE CONTRACTOR'S OPERATIONS, WHILE SOME WORK MAY BE REQUIRED AROUND UTILITY FACILITIES THAT WILL REMAIN IN PLACE. IT IS UNDERSTOOD AND AGREED THAT THE CONTRACTOR WILL RECEIVE NO ADDITIONAL COMPENSATION FOR DELAYS OR INCONVENIENCE CAUSED BY THE UTILITY ADJUSTMENT.
4. THE CONTRACTOR SHALL NOTIFY EACH INDIVIDUAL UTILITY OWNER OF HIS PLAN OF OPERATIONS IN THE AREA OF THE UTILITIES. PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL CONTACT THE UTILITY OWNERS AND REQUEST THEM TO PROPERLY LOCATE THEIR RESPECTIVE UTILITY ON THE GROUND.
5. EXISTING ON-SITE UTILITIES ARE TO BE REMOVED AND CAPPED AT THE PROPERTY LINE UNLESS OTHERWISE NOTICED.

CLEARING

CLEARING SHALL CONSIST OF THE FELLING, TRIMMING AND CUTTING OF TREES INTO SECTIONS, AND THE SATISFACTORY DISPOSAL OF ANY TREES AND OTHER VEGETATION DESIGNATED FOR REMOVAL, INCLUDING DOWN TIMBER, SNAGS, BRUSH AND RUBBISH OCCURRING WITHIN THE AREAS TO BE CLEARED. TREES, STUMPS, ROOTS, BRUSH AND OTHER VEGETATION IN AREAS TO BE CLEARED SHALL BE CUT OFF FLUSH WITH OR BELOW THE ORIGINAL GROUND SURFACE, EXCEPT SUCH TREES AND VEGETATION AS MAY BE INDICATED OR DIRECTED TO BE LEFT STANDING.

PROTECT ALL REFERENCE POINTS, BENCHMARKS AND MONUMENTS FROM DAMAGE OR DISLOCATION. REPLACE AND/OR REPAIR ANY REFERENCE POINTS DAMAGED, DESTROYED OR DISLOCATED. PROTECT AND MAINTAIN ALL FACILITIES, CONDUITS, DRAINS, INLETS, SEWERS, PIPES, ELECTRICAL AND COMMUNICATIONS SYSTEMS, AND ALL OTHER SITE FEATURES THAT ARE TO REMAIN IN SERVICE. PROTECT ADJACENT VEGETATED OR SURFACE AREAS OUTSIDE CLEARING AND GRUBBING LIMITS FROM DAMAGE.

GRUBBING

GRUBBING SHALL CONSIST OF THE REMOVAL AND DISPOSAL OF STUMPS, ROOTS EQUAL TO OR LARGER THAN TWO INCHES IN DIAMETER, AND MATED ROOTS FROM THE DESIGNATED GRUBBING AREAS. THIS MATERIAL, TOGETHER WITH LOSS AND OTHER ORGANIC OR METALLIC DEBRIS NOT SUITABLE FOR FOUNDATION PURPOSES, SHALL BE EXCAVATED AND REMOVED TO A DEPTH OF NOT LESS THAN 18 INCHES BELOW THE ORIGINAL SURFACE LEVEL OF THE GROUND. FILL DEPRESSIONS MADE BY GRUBBING WITH SUITABLE NATIVE SOILS AND COMPACT TO MAKE THE SURFACE CONFORM WITH THE ORIGINAL ADJACENT SURFACE OF THE GROUND.

DISPOSAL OF MATERIALS

ALL LOGS, STUMPS, ROOTS, BRUSH, ROTTEN WOOD, AND OTHER DEBRIS FROM THE CLEARING AND GRUBBING OPERATIONS SHALL BE DISPOSED OF OFF SITE IN A LANDFILL DULY LICENSED BY THE STATE OF TEXAS.

NOTE:

IT IS THE INTENT THAT ALL EXISTING IMPROVEMENTS UNLESS NOTICED OTHERWISE ON THIS PROPERTY TO BE REMOVED TO MAKE THIS PROPERTY SUITABLE FOR THE PROPOSED F.M. 1464 AND OLD RICHMOND ROAD DEVELOPMENT.

LEGEND

- AREA OF CLEARING AND GRUBBING
- LIMIT OF SAWCUT

- 1 LIMIT OF EXISTING ASPHALT PAVEMENT TO BE REMOVED
- 2 LIMIT OF EXISTING ROADSIDE DITCH TO BE FILLED.



FLOODPLAIN

BASED ON THE FLOOD INSURANCE RATE MAP NO. 48157C1045L, MAP REVISED DATE OF APRIL 2, 2014 INDICATES THAT THE TRACT LIES WITHIN AREA ZONE 'X' (SHADED) AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD AND IN ZONE 'X' (UNSHADED) AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

BENCHMARK

FLOODPLAIN REFERENCE MARK NUMBER 33 IS A SPIKE IN POWER POLE APPROXIMATELY 40 FEET EAST OF THE CENTERLINE OF FM 1464 AND 2.05 MILES NORTH OF INTERSECTION OF FM 1464 AND U.S. HIGHWAY 90 AT INTERSECTION OF FM 1464 AND OLD RICHMOND ROAD, IN KEYMAP NO. 567K, ELEV. 83.5 FEET, NAVD 29, 1973 ADJUSTMENT.

D A C ENGINEERING
 17725 Katy Freeway, Suite 103 • Houston, TX 77094 • Phone: 281.506.7119
 Firm T&PE Registration No. F-12959 • www.dacengineers.com

REV.	DATE	DESCRIPTION

PROPOSED MASTER PLAN
 6.7 ACRES
 SEC OF FM 1464 AND
 OLD RICHMOND ROAD
 FORT BEND COUNTY,
 SUGAR LAND, TEXAS 77407

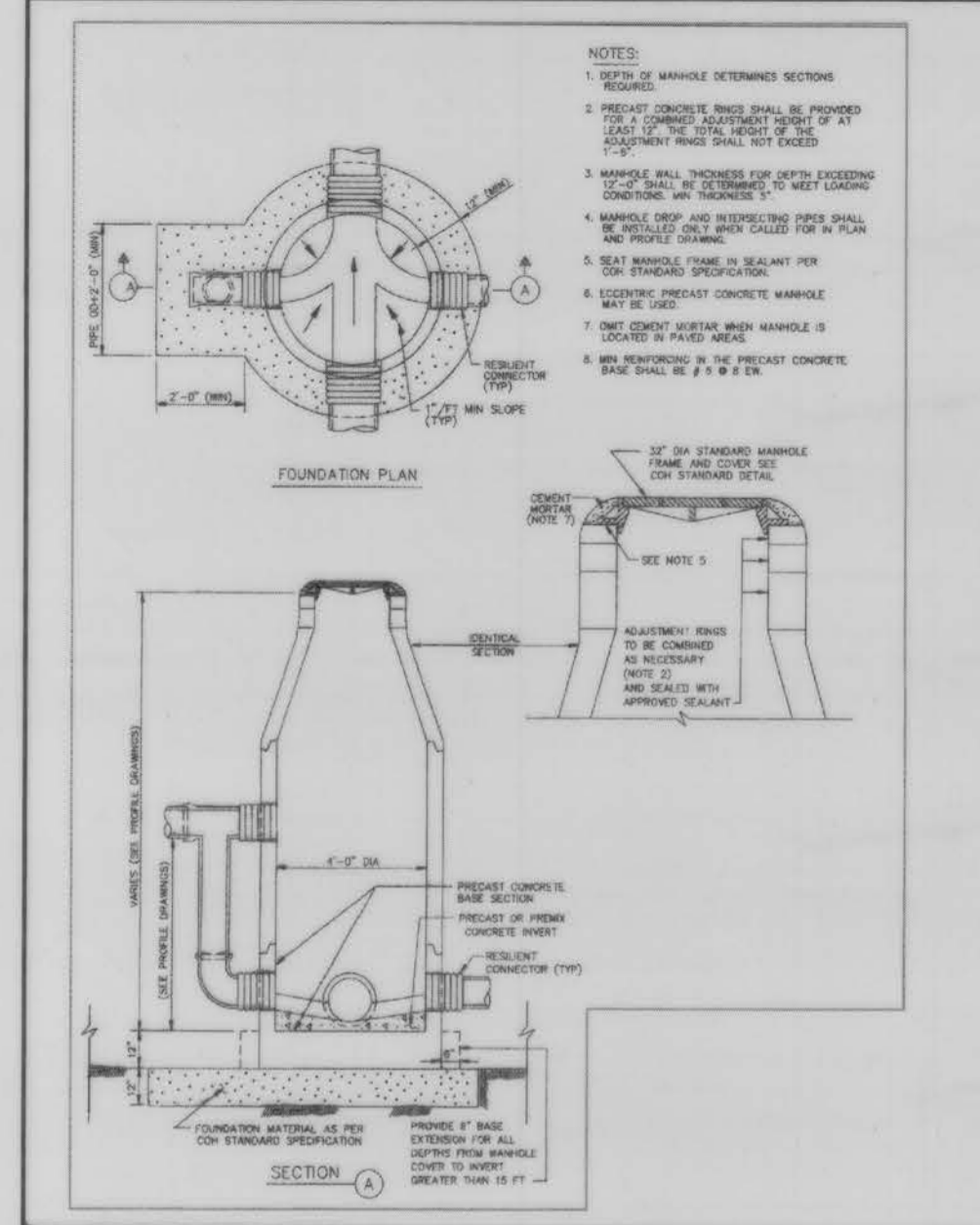
DEMOLITION PLAN

STATE OF TEXAS
 DAVID B. KEEL
 88541
 LICENSED PROFESSIONAL ENGINEER

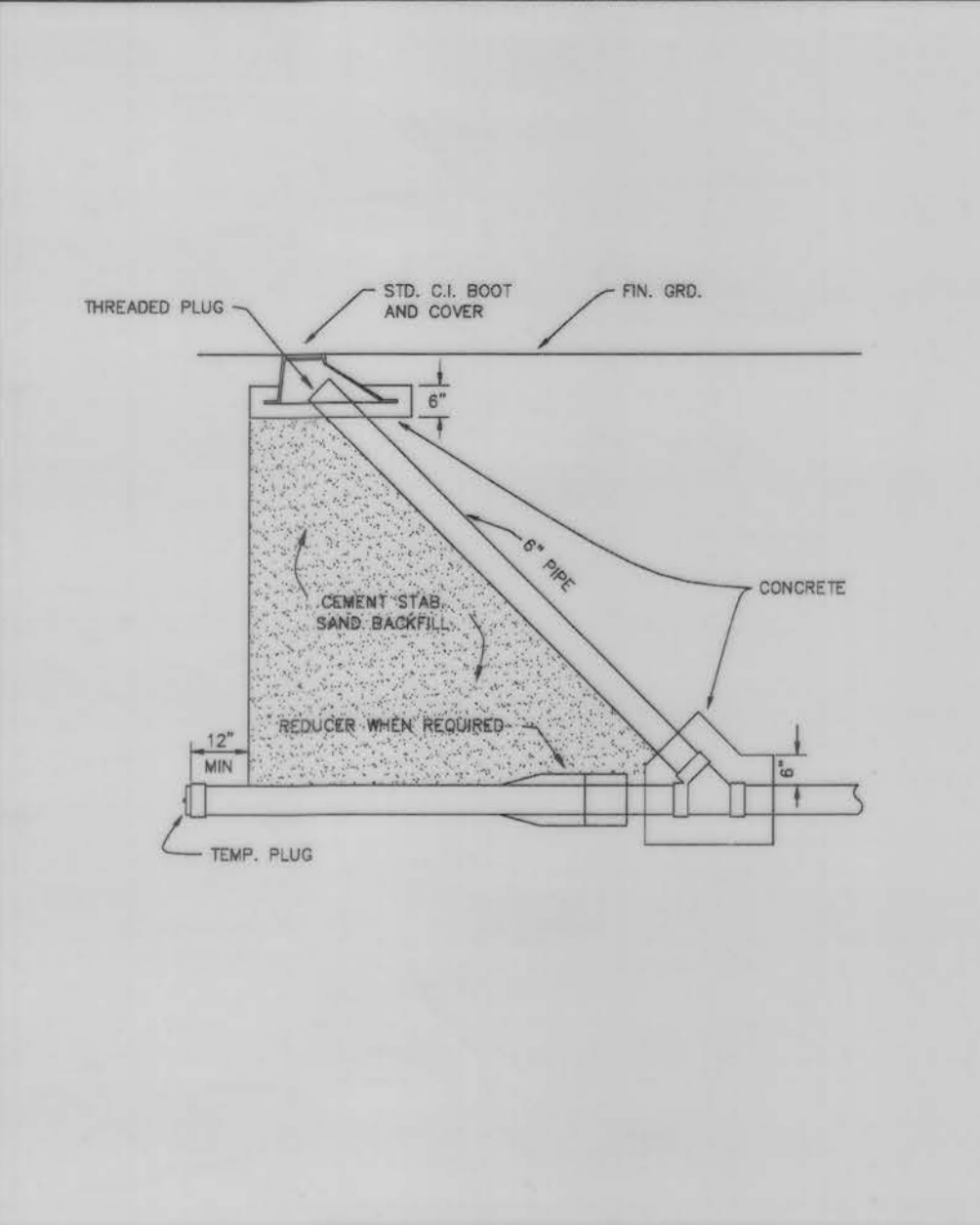
JOB No.: 0802-1501
 ORIGINAL ISSUE DATE: AUGUST, 2016
 DRAWN BY: DRI
 CHECKED BY: DBK
 SHEET No.: **C9.1**
 08/01/2017

APPROVED: *C.B.S.*
 Development Coordinator
 DATE: 8/1/17

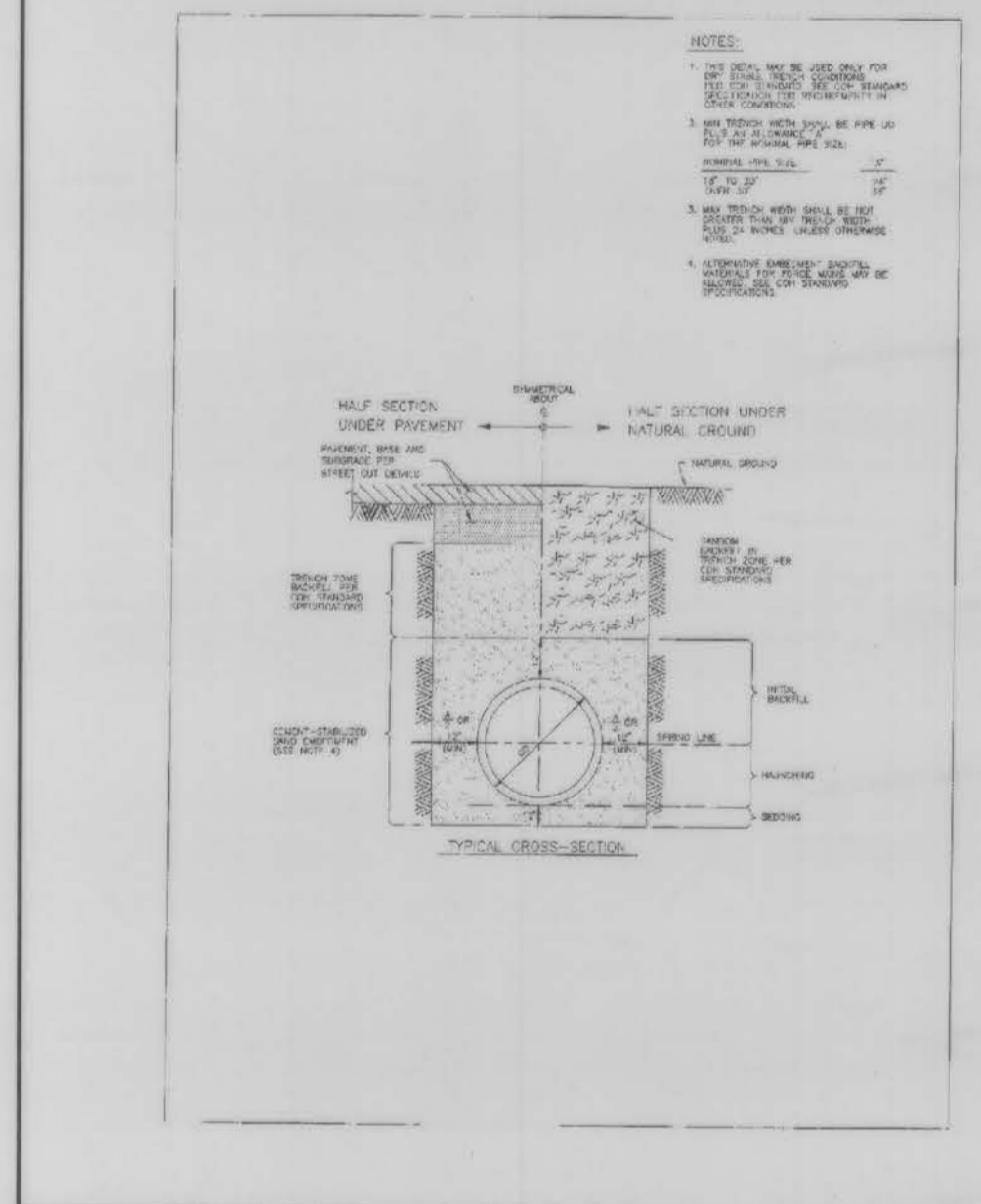
SHEET 22-30
 LAST SAVE DATE: 7/6/2017 7:29 PM
 PLOTTED: 8/1/2017 8:11 PM
 W:\Shared\Clients\0802-1501 FM 1464\Drawings\Master Plan\Drawings\C9-Demolition Plan-FM1464 and Old Richmond Road-Master Plan.dwg
 BY: dbrinko



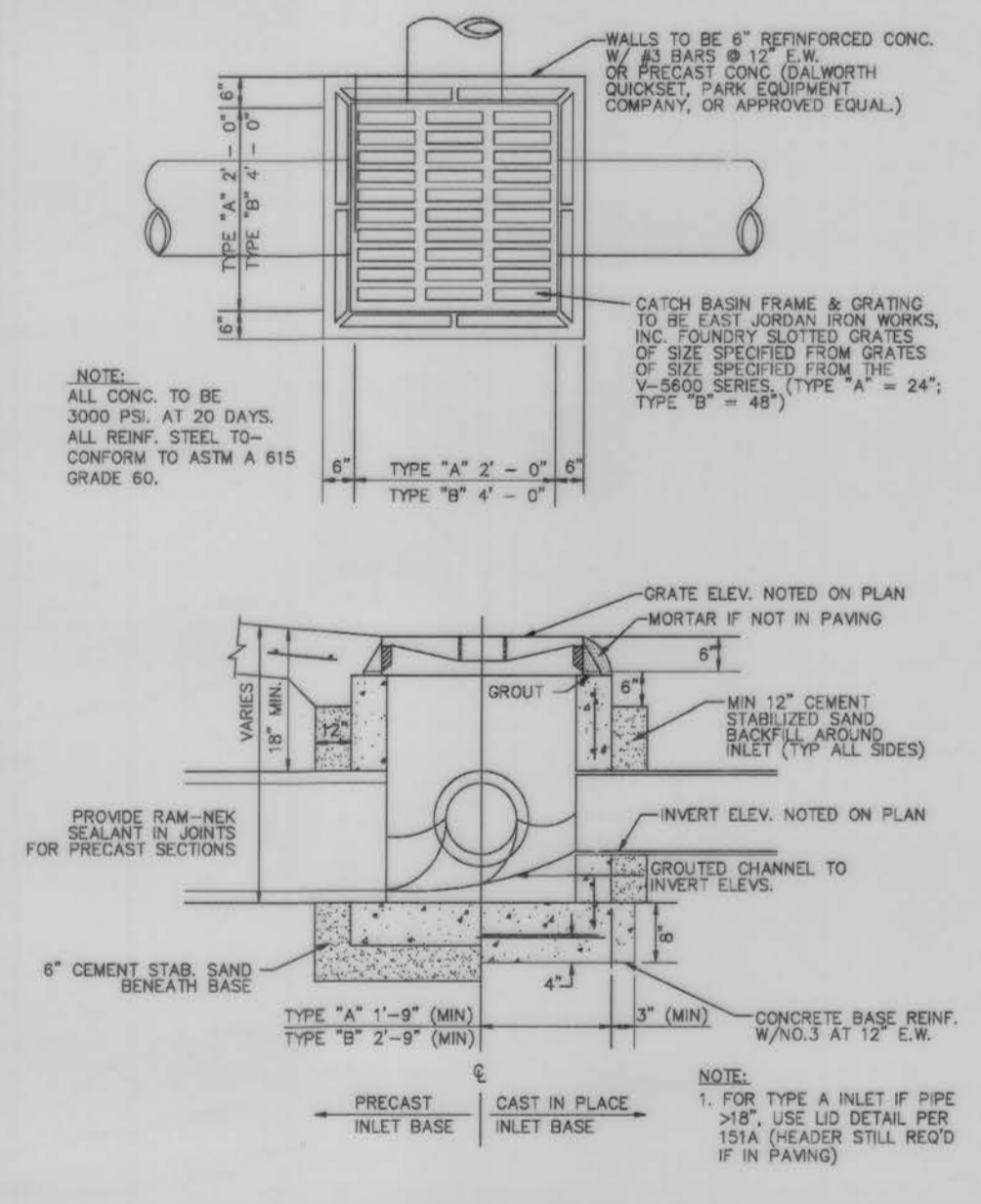
SANITARY SEWER 4'-0" DIA. PRECAST CONCRETE MANHOLE No.261



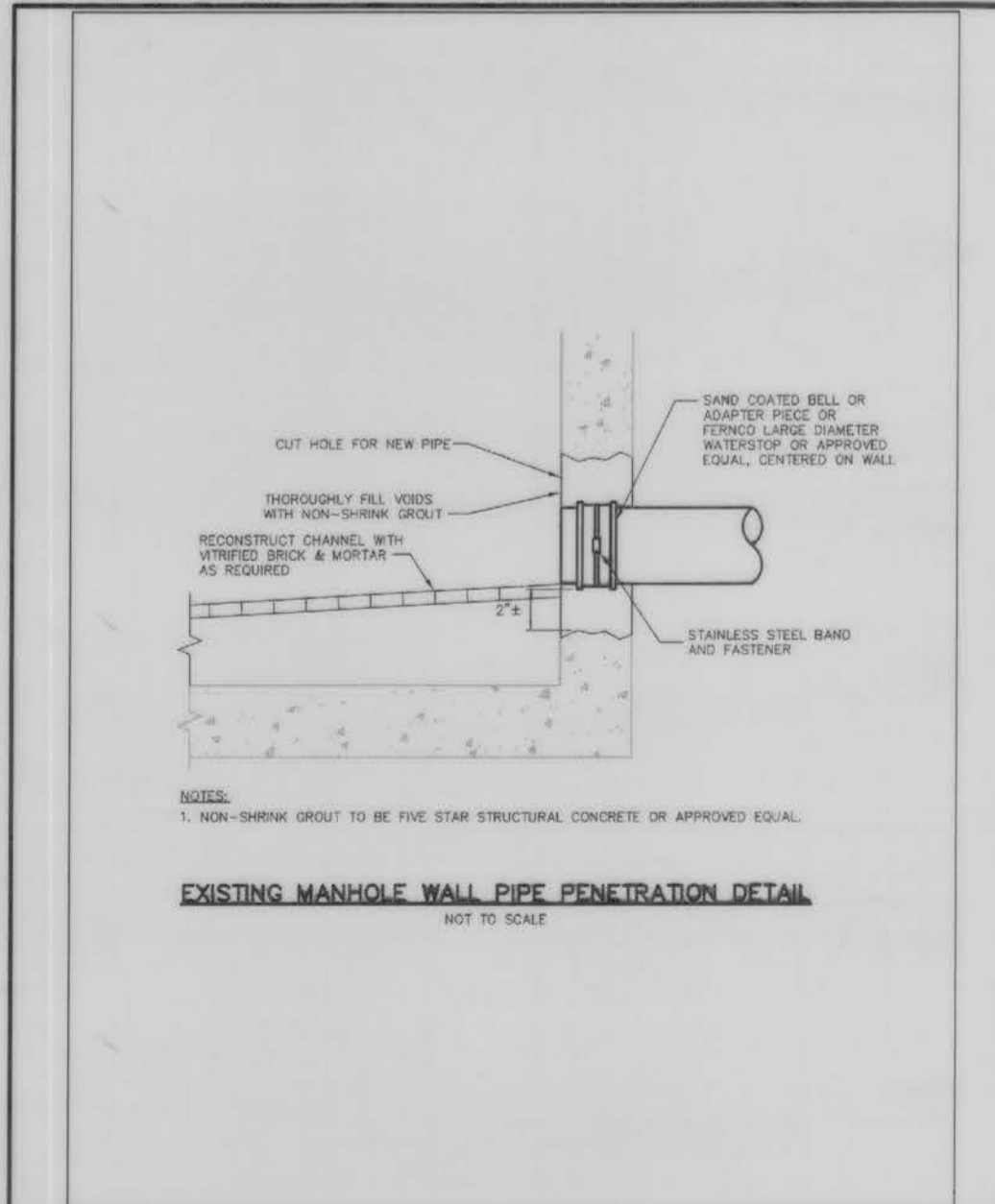
PRIVATE SEWER CLEANOUT SANITARY AND STORM No. 154



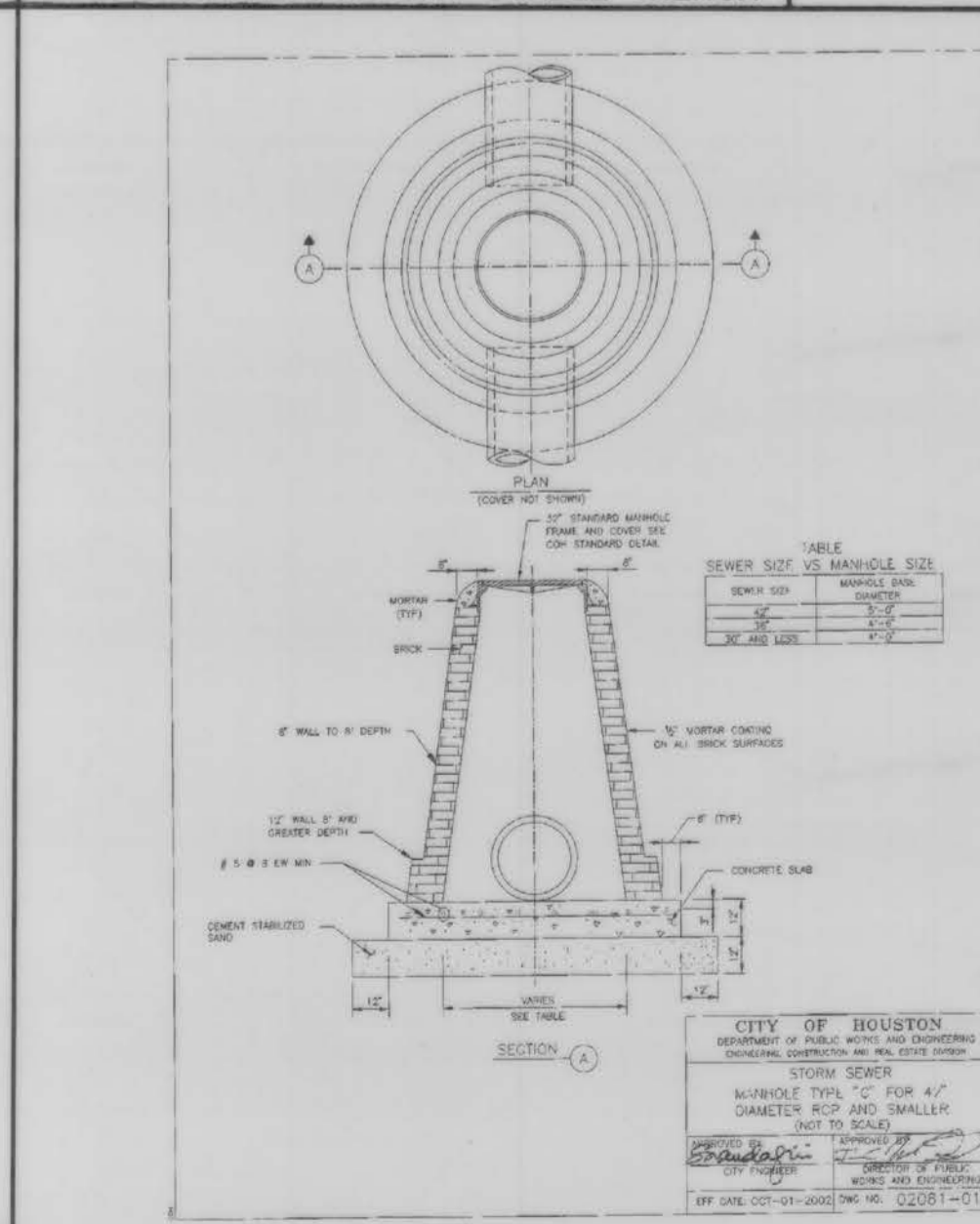
SANITARY OR STORM SEWER BEDDING AND BACKFILL FOR DRY STABLE TRENCH No.161



INLET DETAIL TYPE "A" No. 151



EXISTING SANITARY MANHOLE WALL PIPE PENETRATION DETAIL No.262



GRATE INLET JOINT & CURB DETAIL No. 143

D A C
ENGINEERING
17725 Katy Freeway, Suite 103 • Houston, TX 77094 • Phone: 281.506.7119
Firm TBPE Registration No. F-12959 • www.dacengineers.com

REV.	DATE	DESCRIPTION

PROPOSED MASTER PLAN
6.7 ACRES
SEC OF FM 1464 AND
OLD RICHMOND ROAD
FORT BEND COUNTY,
SUGAR LAND, TEXAS 77407

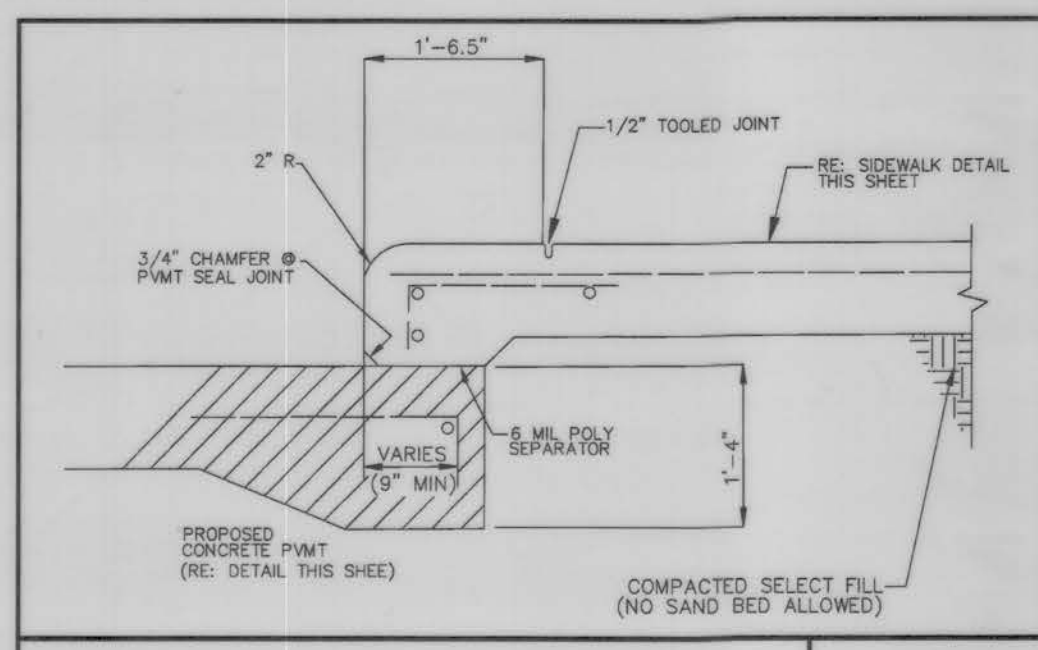
UTILITY DETAILS

STATE OF TEXAS
DAVID B. KEEL
88541
LICENSED PROFESSIONAL ENGINEER

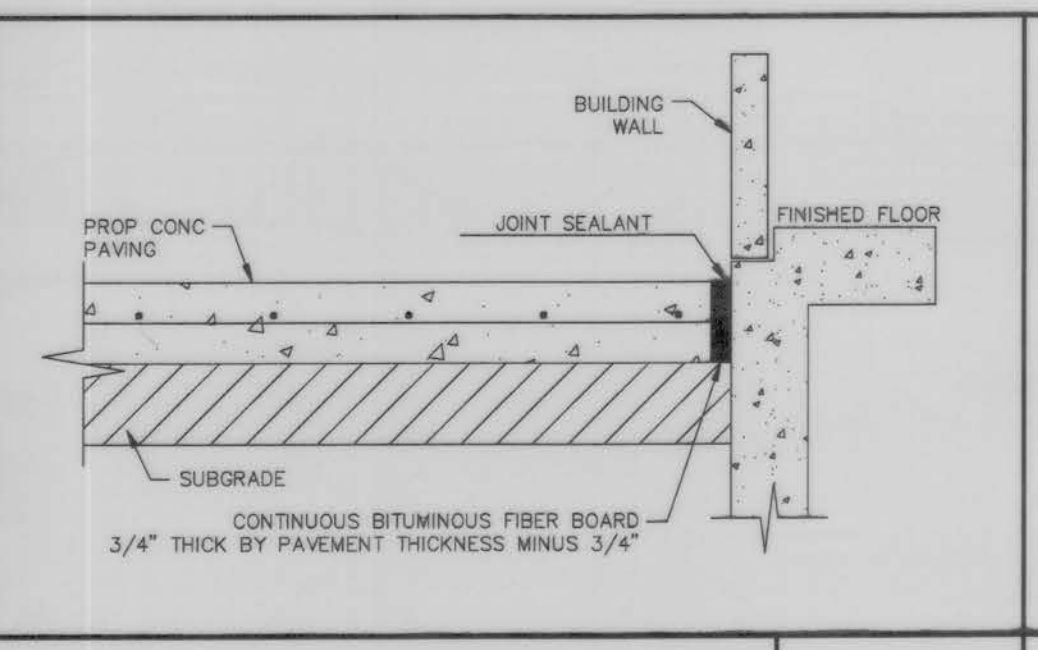
JOB No.: 0802-1501
ORIGINAL ISSUE DATE: AUGUST, 2016
DRAWN BY: DRI
CHECKED BY: DBK
SHEET No.: C11

08/01/2017

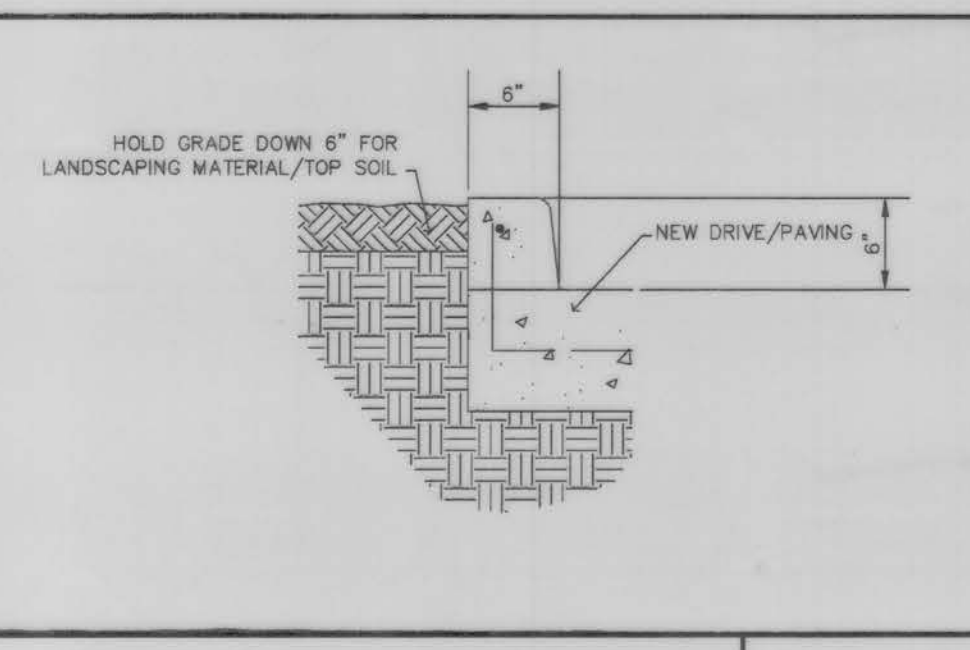
APPROVED: *[Signature]*
Development Coordinator
DATE: 11/9/17



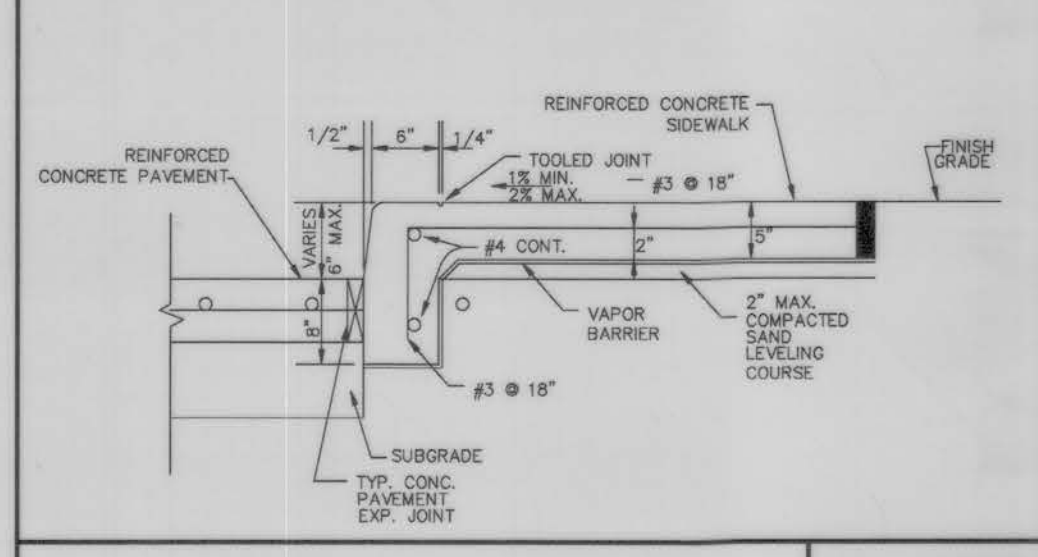
CONC. CURB & CURB REINFORCEMENT No. 137



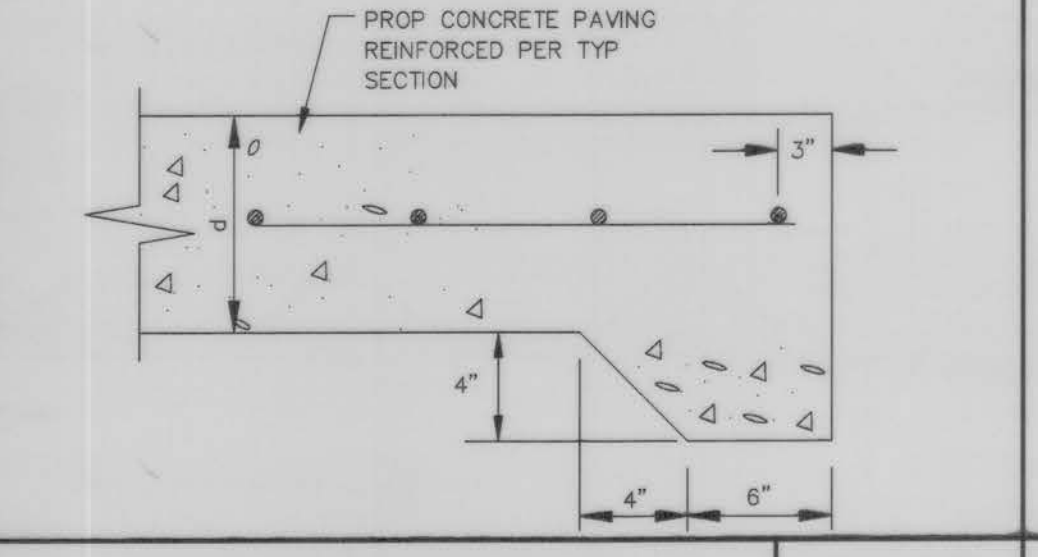
TYPICAL CURB @ LANDSCAPING No. 138



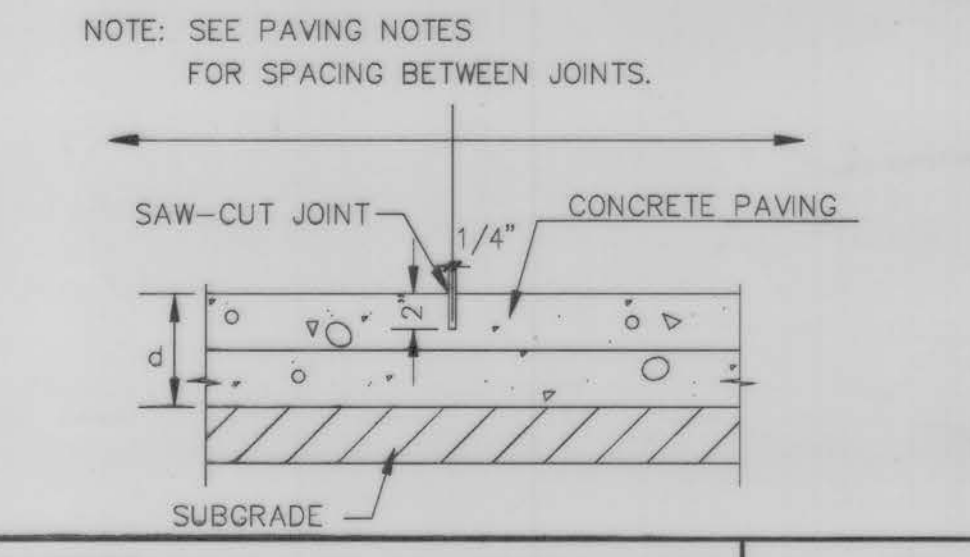
HANDICAP SIGN ASSEMBLY No. 172



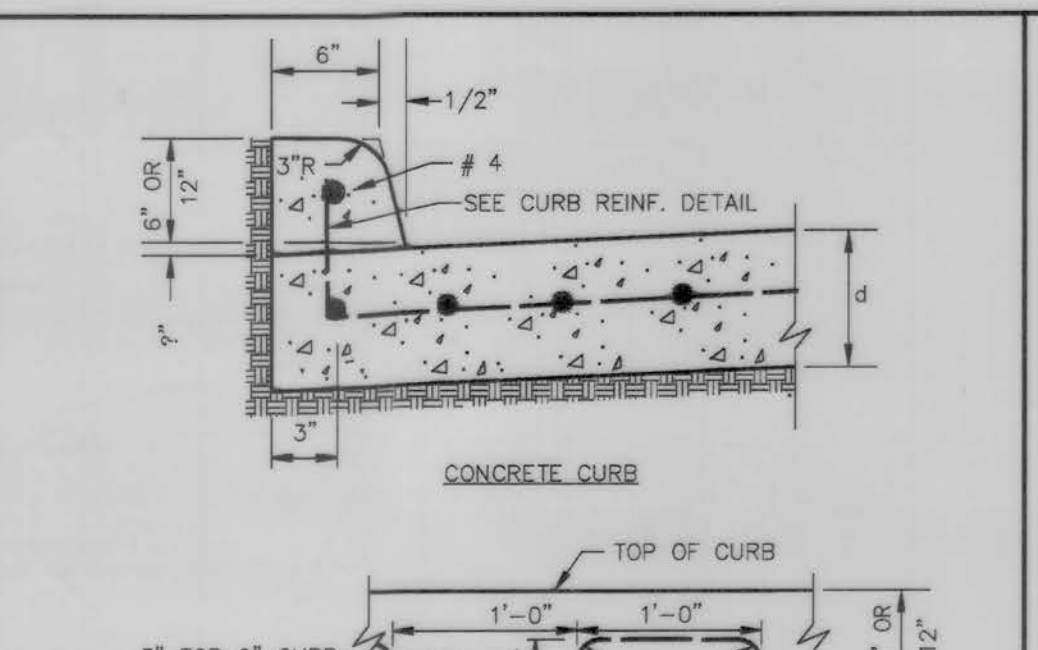
REMOVABLE PIPE BOLLARD No. 140



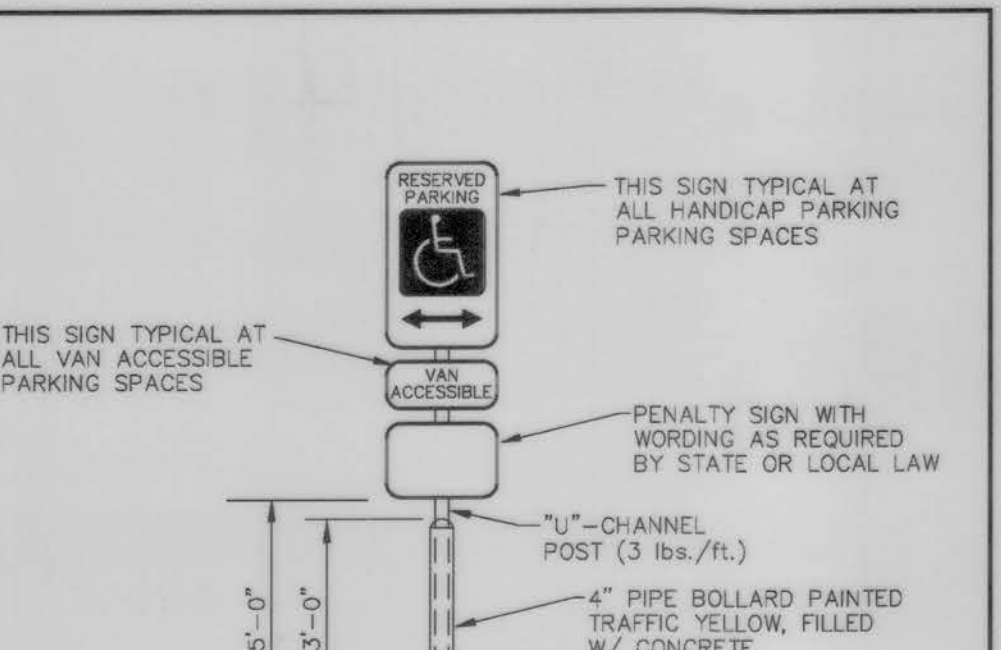
STANDARD PAVING HEADER No. 141



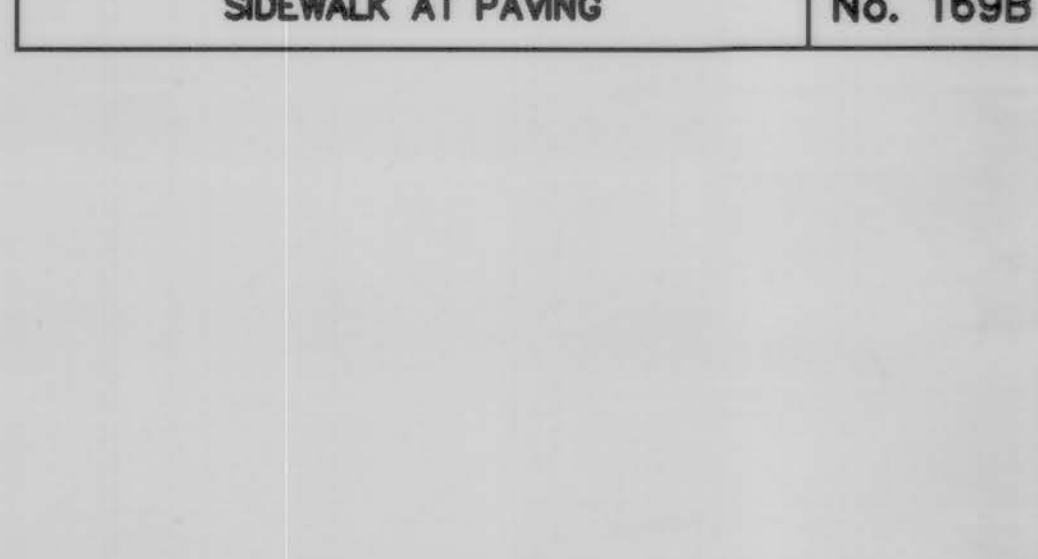
PAVING ISOLATION JOINT AT BUILDING No. 142



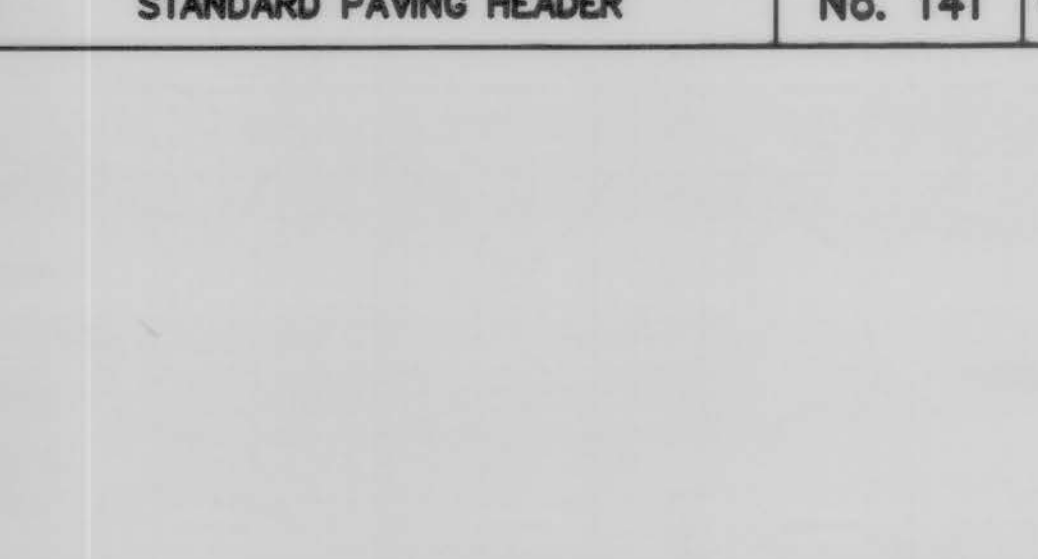
CONCRETE PAVING CRACK CONTROL JOINT No. 132



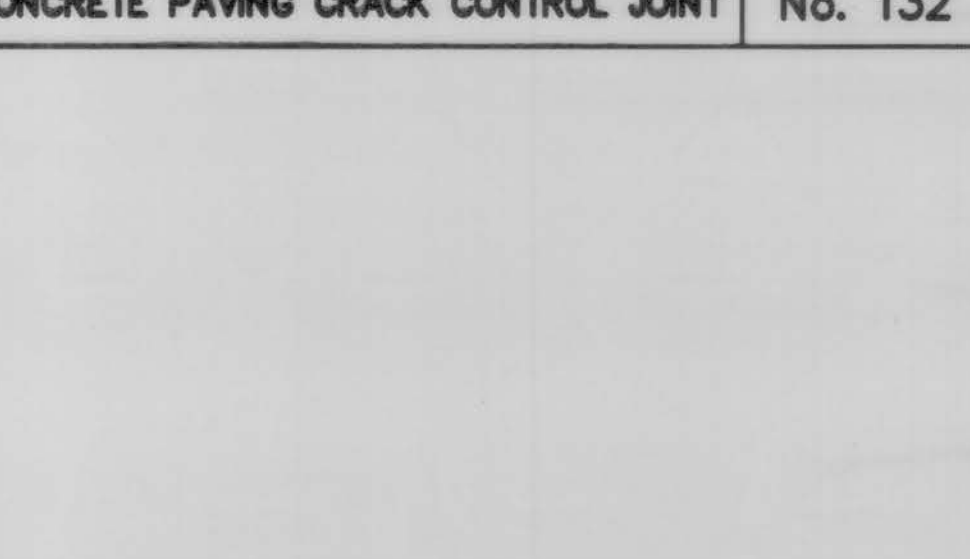
EXPANSION JOINT DETAIL No. 131



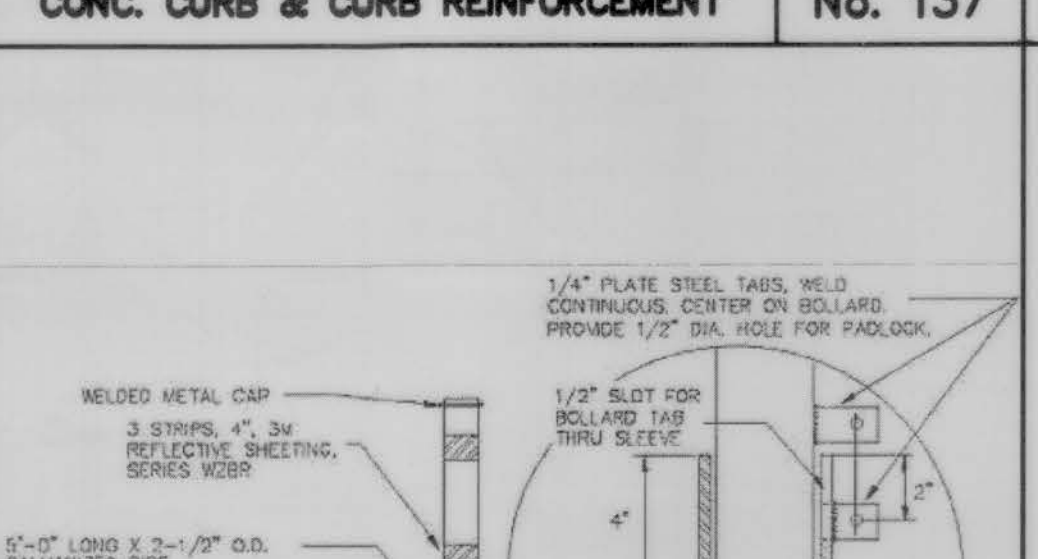
SIDEWALK TIE-IN AT PAVEMENT NTS



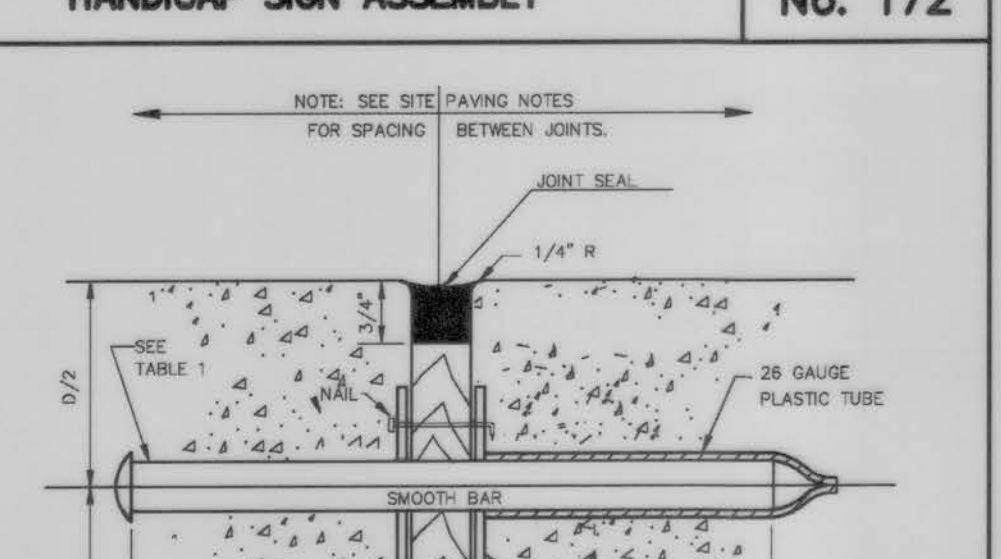
SIDEWALK & DRIVEWAYS ON CURB TYPE STREETS No. 169B



CONSTRUCTION JOINT SEAL N.T.S.



TYPICAL SECTION CONCRETE PAVING No. 129



DEFORMED METAL STRIP N.T.S.

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

A. USE FOR ALL PROPOSED EXISTING CURB REMOVAL FOR DRIVEWAYS (PLAN VIEW NOT TO SCALE)

B. USE FOR ALL PROPOSED DRIVES ON CURBED TYPE STREETS

GENERAL NOTES:

1. COMPACT SUBGRADE FOR PROPOSED DRIVEWAY CONNECTION FROM PROPOSED SAW CUT AT EXISTING PAVEMENT TO R.O.W. LINE. COMPACT TO 95% OF STANDARD PROCTOR DENSITY (+/- 2% OPT. MOISTURE). THE COUNTY ENGINEER RESERVES THE RIGHT TO REQUIRE LABORATORY TESTS TO BE CONDUCTED.
2. PROPOSED DRIVEWAY REINFORCING STEEL IS TO BE #4 DEFORMED REINFORCING BARS (ASTM A615, GRADE 60, UNLESS NOTED) SPACED AT 24" C.C., EACH WAY, WITH 12" MINIMUM LAP FROM PROPOSED SAW CUT TO R.O.W. LINE.
3. PROPOSED DRIVEWAY SHALL BE CONSTRUCTED WITH PORTLAND CEMENT (5 SACKS (900 PLS) OF CEMENT PER CUBIC YARD OF CONCRETE), CLASS "A" STRUCTURAL (REFER TO SPECIFICATION 0108), 7" THICK, FROM PROPOSED SAW CUT TO R.O.W. LINE.
4. PROPOSED SIDEWALKS SHALL BE CONSTRUCTED WITH PORTLAND CEMENT (5 SACKS (900 PLS) OF CEMENT PER CUBIC YARD OF CONCRETE), CLASS "A" STRUCTURAL (REFER TO SPECIFICATION 0108), 4" THICK.
5. FOR TYPICAL SIDEWALK DETAIL SEE FBC-01.

SIDEWALKS & DRIVEWAYS ON CURB TYPE STREETS
 DRAWN BY: L. BRDECKA
 DATE DRAWN: 2-1-94
 REVISED BY: J. NETARDUS
 DATE REVISED: 4-7-09
 APPROVED BY: L. HOOD
 DATE: 2-1-94
 DRAWING NO. FBC-025A

FORT BEND COUNTY ENGINEERING DEPARTMENT

JOINT SEAL: HOT POURED RUBBER ASPHALT (TEXAS DEPARTMENT OF TRANSPORTATION, ITEM 4332, CLASS 3) FLUSH WITH PAVEMENT SURFACE. ALL JOINT SEALANT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

CONSTRUCTION JOINT SEAL
 N.T.S.

DEFORMED METAL STRIP
 N.T.S.

THE LOCATION OF DEFORMED STRIPS MAY BE VARIED, WITH THE APPROVAL OF THE FORT BEND COUNTY ENGINEERING DEPARTMENT, TO SUIT THE PROPOSED CONSTRUCTION METHODS OF THE CONTRACTOR. MAXIMUM LONGITUDINAL SPACING FOR DEFORMED STRIPS IS 14'-0". DEFORMED METAL STRIPS SHALL BE PLACED VERTICALLY ALONG A STRAIGHT ALIGNMENT.

TYPICAL CONSTRUCTION JOINT
 N.T.S.

FORT BEND COUNTY ENGINEERING DEPARTMENT

APPROVED BY: L. HOOD
 DATE DRAWN: 2-1-94
 REVISED: FBC-005

DRAWN BY: L. BRDECKA
 DATE REVISED: 4-7-09
 DRAWING NO. FBC-005

1/4" PLATE STEEL TABS, WELD CONTINUOUS CENTER ON BOLLARD PRODUCE 1/2" DIA. HOLE FOR PADLOCK.

REMOVABLE PIPE BOLLARD No. 140

TABLE 1
 DOWEL SIZES AND SPACINGS

PAVEMENT THICKNESS (IN)	DIAMETER (IN)	LENGTH (IN)	SPACING (IN)
5	3/4	18	12
6	3/4	18	12
8	1	18	12
9	1	18	12
10	1 1/4	18	12
11	1 1/4	18	12
12	1 1/4	18	12

EXPANSION JOINT DETAIL No. 131

CONCRETE PAVING, SEE NOTE 4.
 REINFORCING, SEE NOTE 3.
 SUBGRADE TO BE PREPARED, STABILIZED & COMPACTED IN CONFORMANCE WITH GEOTECHNICAL STUDY.
 ASTM A615, GRADE 60 DEFORMED BARS, BAR SIZE & SPACING PER NOTES ON SHEET C2, ON CENTER, MINIMUM LAP 30-INCHES.
 PORTLAND CEMENT CONCRETE, 5 SACK, 4-INCH SLUMP, 3500 PSI COMPRESSIVE STRENGTH AT 28 DAYS FOR 6" & 8" PAVEMENT, AND 4,000 PSI COMPRESSIVE STRENGTH 28 DAYS FOR 7" PAVEMENT THICKNESS, 500 PSI FLEXURAL STRENGTH AT 7 DAYS.
 SHAPE SUBGRADE SURFACE TO FINAL GRADE. DO NOT INSTALL SAND CUSHION. DO NOT INSTALL SAND LEVELING COURSE.

TYPICAL SECTION CONCRETE PAVING No. 129

DAC ENGINEERING
 17725 Kay Freeway, Suite 101, Houston, TX 77094 • Phone: 281.506.7119
 Firm TBPE Registration No. F-12959 • www.dacengineers.com

REV: DATE: DESCRIPTION:

PROPOSED MASTER PLAN
 6.7 ACRES
 SEC OF FM 1464 AND
 OLD RICHMOND ROAD
 FORT BEND COUNTY,
 SUGAR LAND, TEXAS 77407

PAVING DETAILS

JOB No.: 0802-1501
 ORIGINAL ISSUE DATE: AUGUST, 2016
 DRAWN BY: DRI
 CHECKED BY: DBK
 SHEET No.: C12

APPROVED: [Signature] Development Coordinator
 DATE: 11/9/17

08/01/2017

STATION OPERATION LEVELS		
RISING LEVEL CYCLE		
WATER LEVEL ELEVATION	ACTION	PUMPS IN OPERATION
71.44'	PUMP 1 TURNS "ON", FS-2	PUMP 1 "ON"
71.44'	PUMP 2 TURNS "ON", FS-3	PUMP 2 "ON"
74.50'	HIGH WATER "ALARM" LEVEL, FS-4	HIGH LEVEL ALARM "ON"
TBD	HIGH WATER IN DITCH, FS-5	ALL PUMPS "OFF"
FALLING LEVEL CYCLE		
WATER LEVEL ELEVATION	ACTION	PUMPS IN OPERATION
74.50'	HIGH WATER ALARM, FS-4	HIGH LEVEL ALARM "OFF"
TBD	DITCH FLOAT HIGH WATER, FS-5	ALL PUMPS "ON"
70.19'	PUMPS "OFF" LEVEL, FS-1	ALL PUMPS "OFF" LAG PUMP SWITCHES TO LEAD PUMP

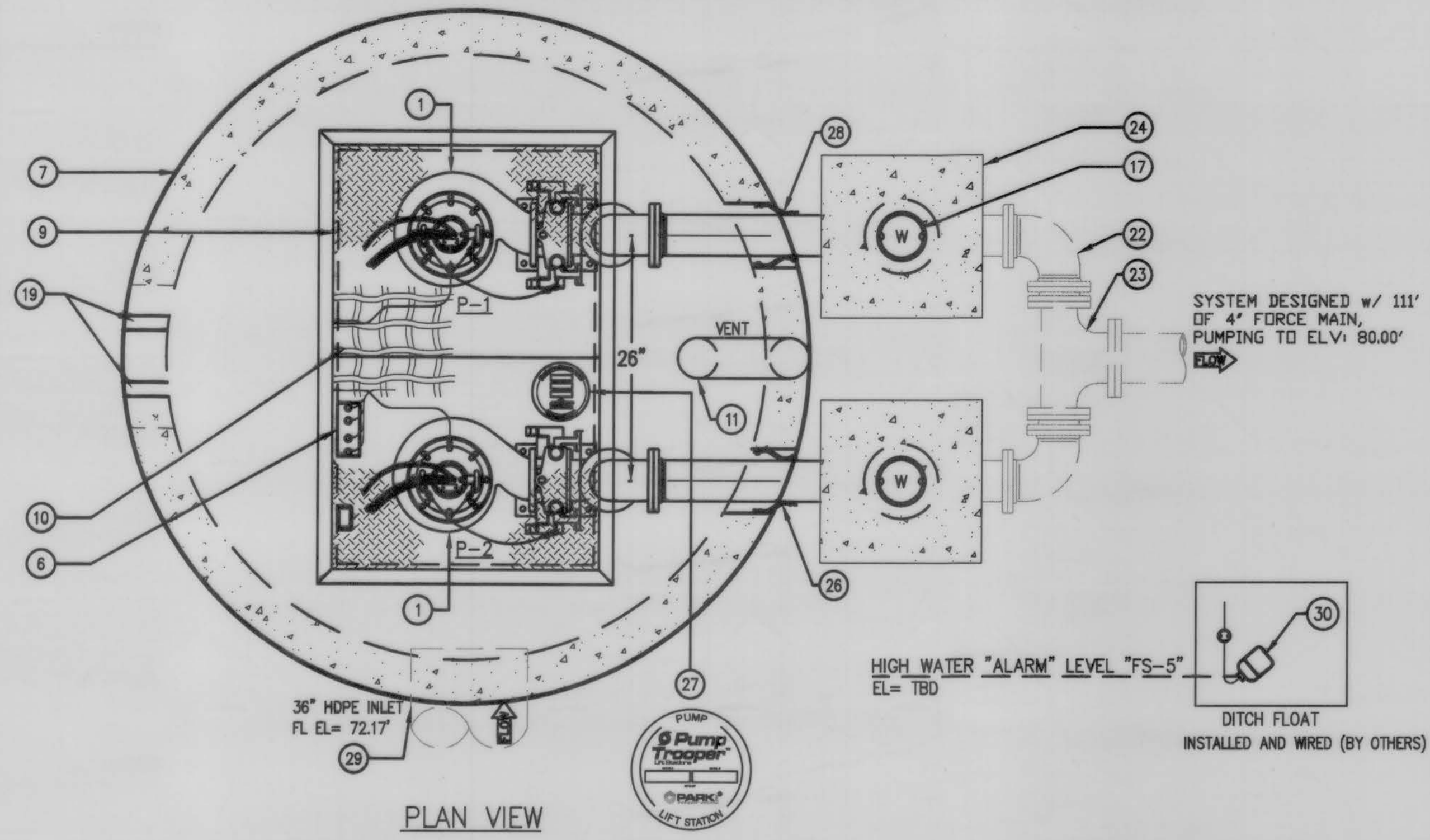
NOTE:
ALL DASHED PIPING TO BE FURNISHED BY CONTRACTOR

NOTE:
VERIFY ALL ELEVATIONS PRIOR TO FABRICATION

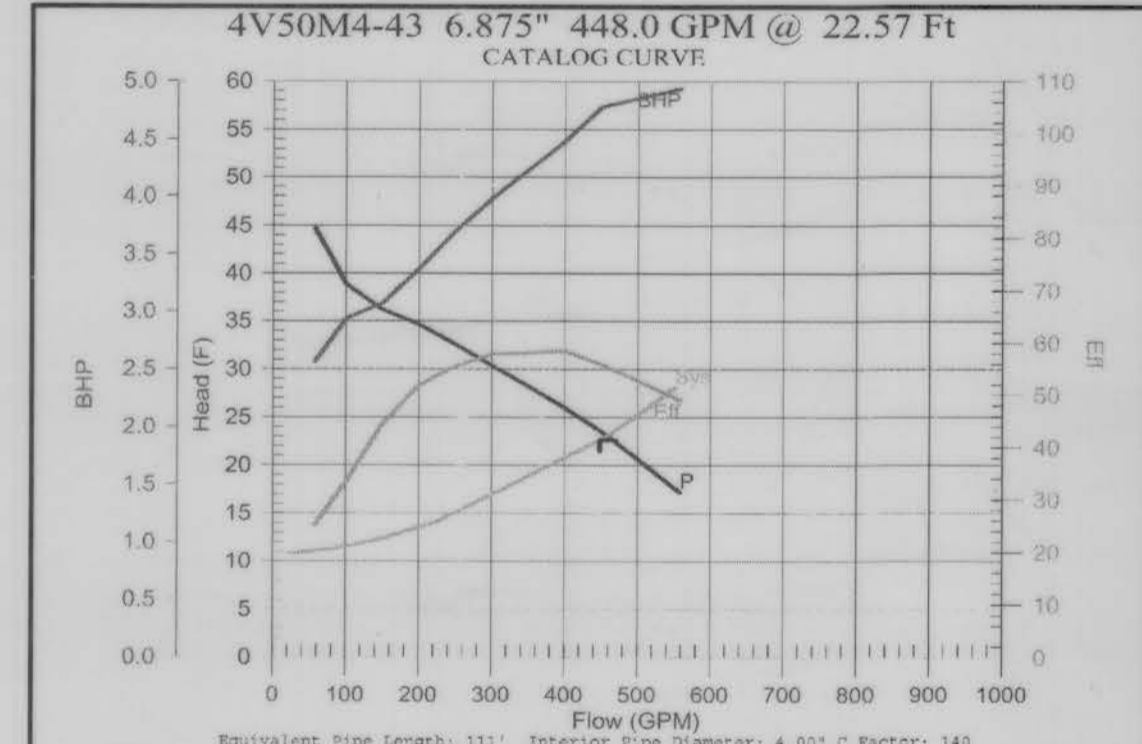
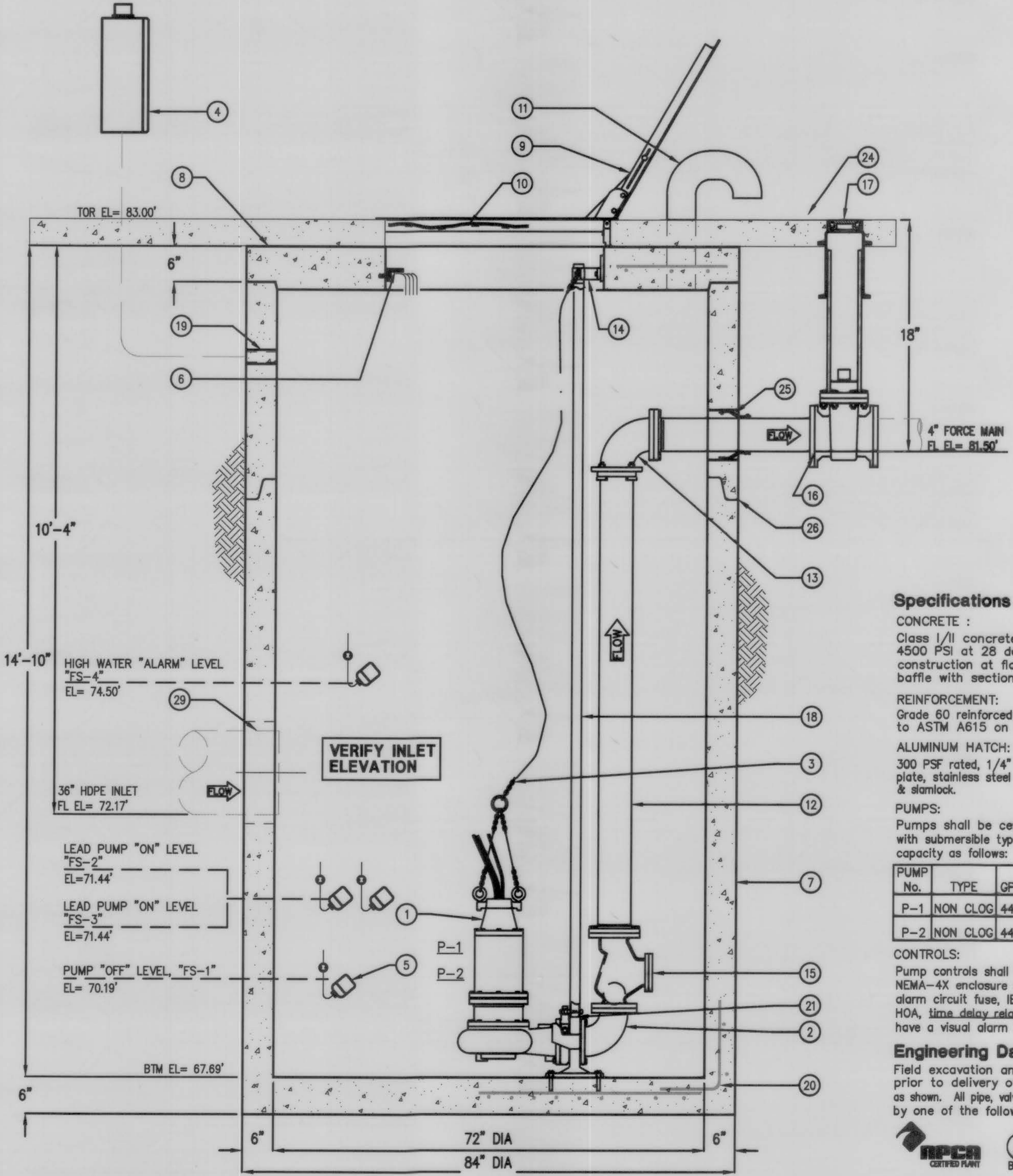
NOTE:
VERIFY ALL INLET/OUTLET ORIENTATIONS PRIOR TO FABRICATION

SYSTEM DESIGN TO RUN 1 PUMP AT A TIME (ALTERNATING)

PUMP OPERATIONS:
PUMPS RUN TIMES SHALL NOT EXCEED 20 MINUTES PER CYCLE. PUMP CONTROLS SHALL ALSO BE EQUIPPED WITH A TIME DELAY RELAY TO PROVIDE A MINIMUM DELAY OF 20 MINUTES BETWEEN ALL PUMP OFF LEVEL AND LEAD PUMP ON LEVEL. UNDER NO CONDITIONS SHALL BOTH PUMPS OPERATE SIMULTANEOUSLY.



KEYED NOTES		
MARK	QTY	DESCRIPTION
1	2	4" SUBMERSIBLE PUMP
2	2	4" BASE ELBOWS
3	2	3" SS STEEL CHAINS
4	1	DUPLIX CONTROL PANEL NEMA 4X (MOUNTED & WIRED BY CONTRACTOR) W/ GENERATOR RECEPTACLE
5	4	FLOAT SWITCH
6	1	SS CABLE BRACKET
7	1	72" DIA x 14'-10" DEEP CONCRETE WET WELL
8	1	6" THK FLAT CONCRETE TOP
9	1	36"x48" DOUBLE LEAF SS HATCHWAY (PROVIDED LOOSE)
10	1	SAFETY NET
11	1	4" GALVANIZED VENT
12	2	FL x PE 4" DUCTILE IRON PIPE
13	2	4" DI 90° ELBOW FL x MJ w/ STAR GRIPS
14	2	SS UPPER GUIDE BRACKETS
15	2	4" HDL BALL CHECK VALVE
16	2	4" DIRECT BURY GATE VALVES
17	2	CAST IRON VALVE BOX
18	4	SS GUIDE RAILS
19	2	3" CONDUIT
20	-	REBAR AS REQ'D
21	2	LIFT-OUT ASSEMBLY
22	2	4" DUCTILE IRON ELBOW (BY OTHERS)
23	1	4" DUCTILE IRON TEE (BY OTHERS)
24	2	24" SQ CONCRETE PAD (BY OTHERS)
25	2	RESILIENT RUBBER BOOT
26	-	ALL JOINTS MADE WATER-TIGHT w/ PLASTIC FLEXIBLE GASKET (RAM-NEK)
27	1	NAMEPLATE INDICATING: MFG: PARKUSA 888-611-PARK WWW.PARK-USA.COM MODEL: WW72-NCD4-4448-23-050-43 DATE MANUFACTURED
28	-	NOT USED
29	1	STORM INLET PIPING SEAL w/ NON-SHRINK GROUT (BY OTHERS)
30	-	REMOTE MOUNT DITCH FLOAT (INSTALLED AND WIRED BY OTHERS)



PUMP PERFORMANCE DATA									
Model	HP	Phase	Voltage	Start Amps	Run Amps	Service Factor	Run Factor	Start Run Code	Service Factor
4V50M4-43	5.0	3	480	48.00	9.00	10.80	0.90	28-40	1.2

Specifications

CONCRETE:
Class 1/II concrete with design strength of 4500 PSI at 28 days. Unit is of monolithic construction at floor, first stage of wall and baffle with sectional riser to required depth.

REINFORCEMENT:
Grade 60 reinforced with steel rebar conforming to ASTM A615 on required centers or equal.

ALUMINUM HATCH:
300 PSF rated, 1/4" aluminum skid-resistant floor plate, stainless steel tamperproof bolting & hinges & slamlock.

PUMPS:
Pumps shall be centrifugal solids handling type with submersible type motor. Pumps shall have a capacity as follows:

PUMP No.	TYPE	GPM	TDM	RPM	HP	V	PH	Hz
P-1	NON CLOG	448	23'	1750	5.0	480	3	60
P-2	NON CLOG	448	23'	1750	5.0	480	3	60

CONTROLS:
Pump controls shall be mounted inside a UL Listed NEMA-4X enclosure and include circuit breakers, alarm circuit fuse, IEC rated motor starter, pump HOA, time delay relay and alternator relay. Panel shall have a visual alarm beacon. Panel is designed for remote mounting.

Engineering Data

Field excavation and preparation shall be completed prior to delivery of assembly. Use dimensional data as shown. All pipe, valves and fittings of the assembly are approved by one of the following associations:



* PUMP SHALL USE EITHER : A.) SINGLE PHASE, 230V OR B.) THREE PHASE, 460V SERVICE.

MODEL NUMBER: WW72-NCD4-448-23-050-43	
WET WELL SIZE (DIA)	POWER CHARACTERISTICS
48 - 48" DIA	43 - 460V/3PH/60Hz
60 - 60" DIA	23 - 230V/3PH/60Hz
72 - 72" DIA	21 - 230V/1PH/60Hz
96 - 96" DIA	
PUMP CONFIGURATION	PUMP MOTOR SIZE
S - SIMPLEX	020 - 2.0 HP
D - DUPLEX	030 - 3.0 HP
	050 - 5.0 HP
PUMP DISCHARGE SIZE	075 - 7.5 HP
3 - 3"	100 - 10.0 HP
4 - 4"	150 - 15.0 HP
6 - 6"	200 - 20.0 HP
8 - 8"	
FLOW RATE CAPACITY (GPM)	PUMP HEAD CAPACITY (TDH)
100 - 100 GPM	10 - 10' TOTAL DYNAMIC HEAD
200 - 200 GPM	20 - 20' TOTAL DYNAMIC HEAD
ETC...	ETC...

STORM SEWER LIFT STATION PUMP CURVE

PROJECT: MASTER PLAN FM 1464 & OLD RICHMOND RD.
ENGINEER: DAC ENGINEERING
DATE: 08/25/2016

888.611.7275
www.park-usa.com

STORM SEWER LIFT STATION SUBMERSIBLE NON-CLOG PUMP STATION

DATE: 09/16	DRN: DJ	DWG. NO.: WW72-NCD4	REV.: A
-------------	---------	---------------------	---------

APPROVED: [Signature] Development Coordinator
DATE: 11/9/17

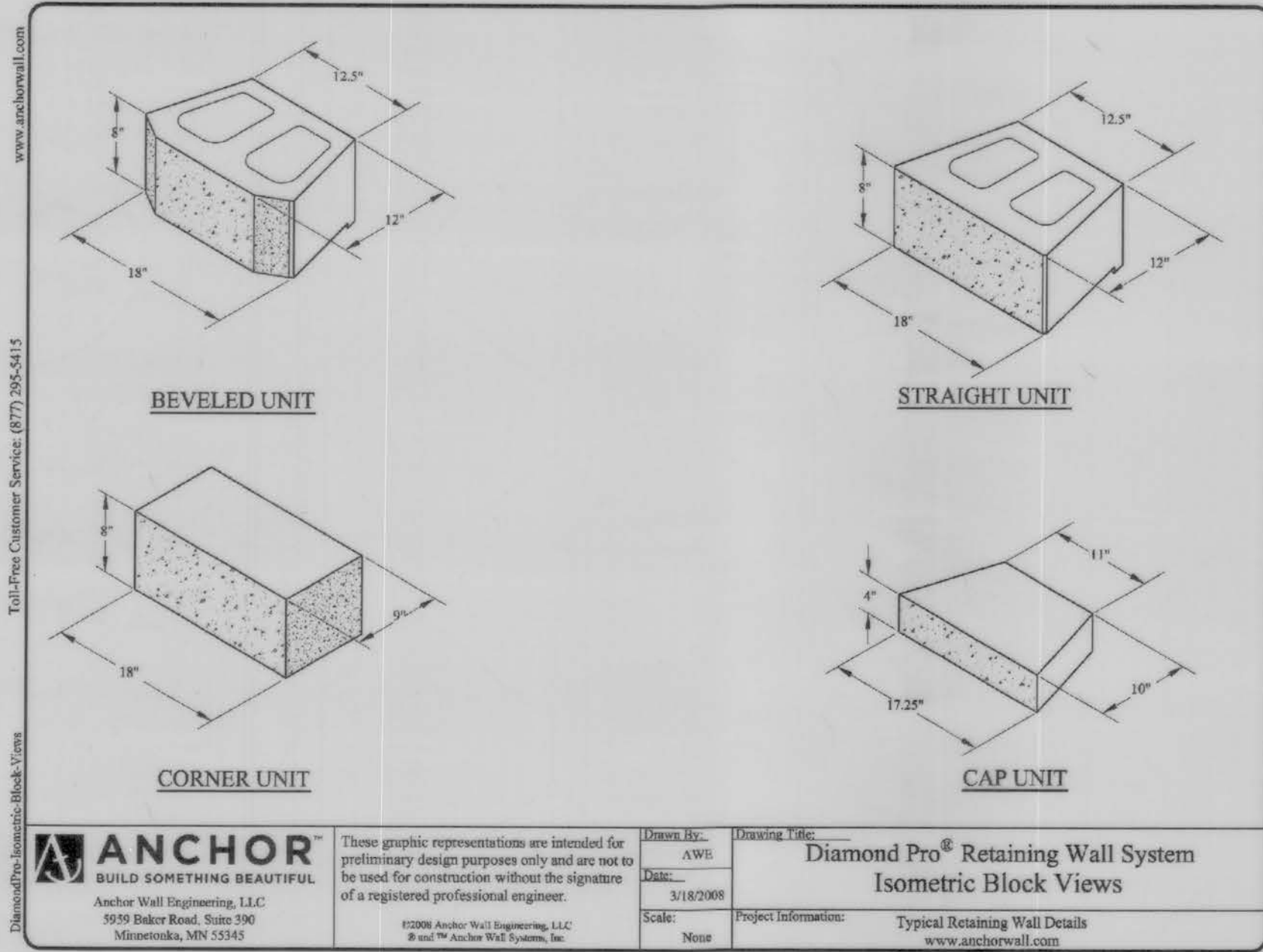
17725 Katy Freeway, Suite 105 • Houston, TX 77094 • Phone: 281.506.7119
Firm TBPE Registration No. F-12859 • www.dacengineers.com

PROPOSED MASTER PLAN 6.7 ACRES
SEC OF FM 1464 AND OLD RICHMOND ROAD
FORT BEND COUNTY, SUGAR LAND, TEXAS 77407

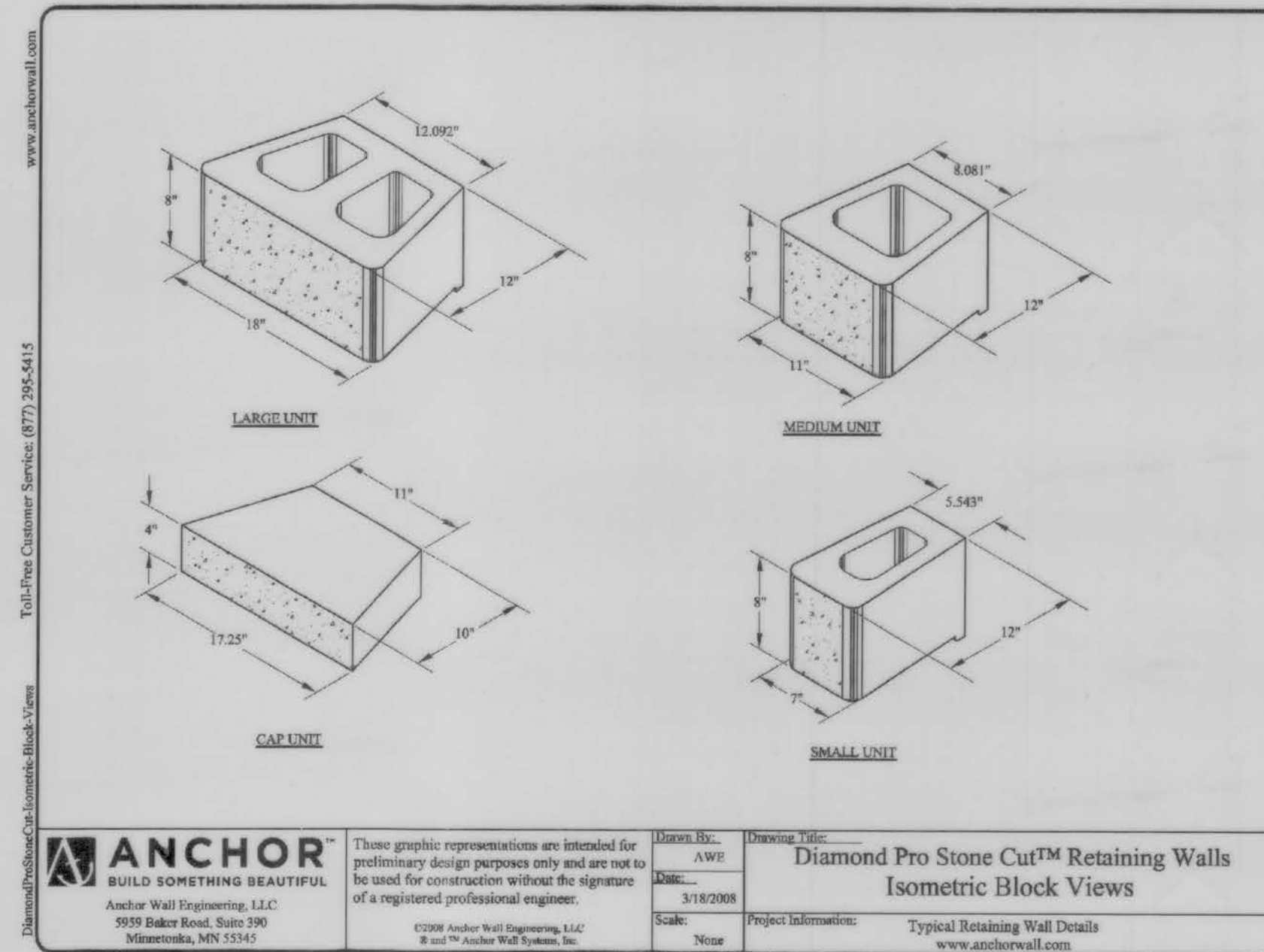
STORM SEWER LIFT STATION

JOB No.: 0802-1501	ORIGINAL ISSUE DATE: AUGUST, 2016
DRAWN BY: DRI	CHECKED BY: DBK
SHEET No.: C13	DATE: 08/01/2017

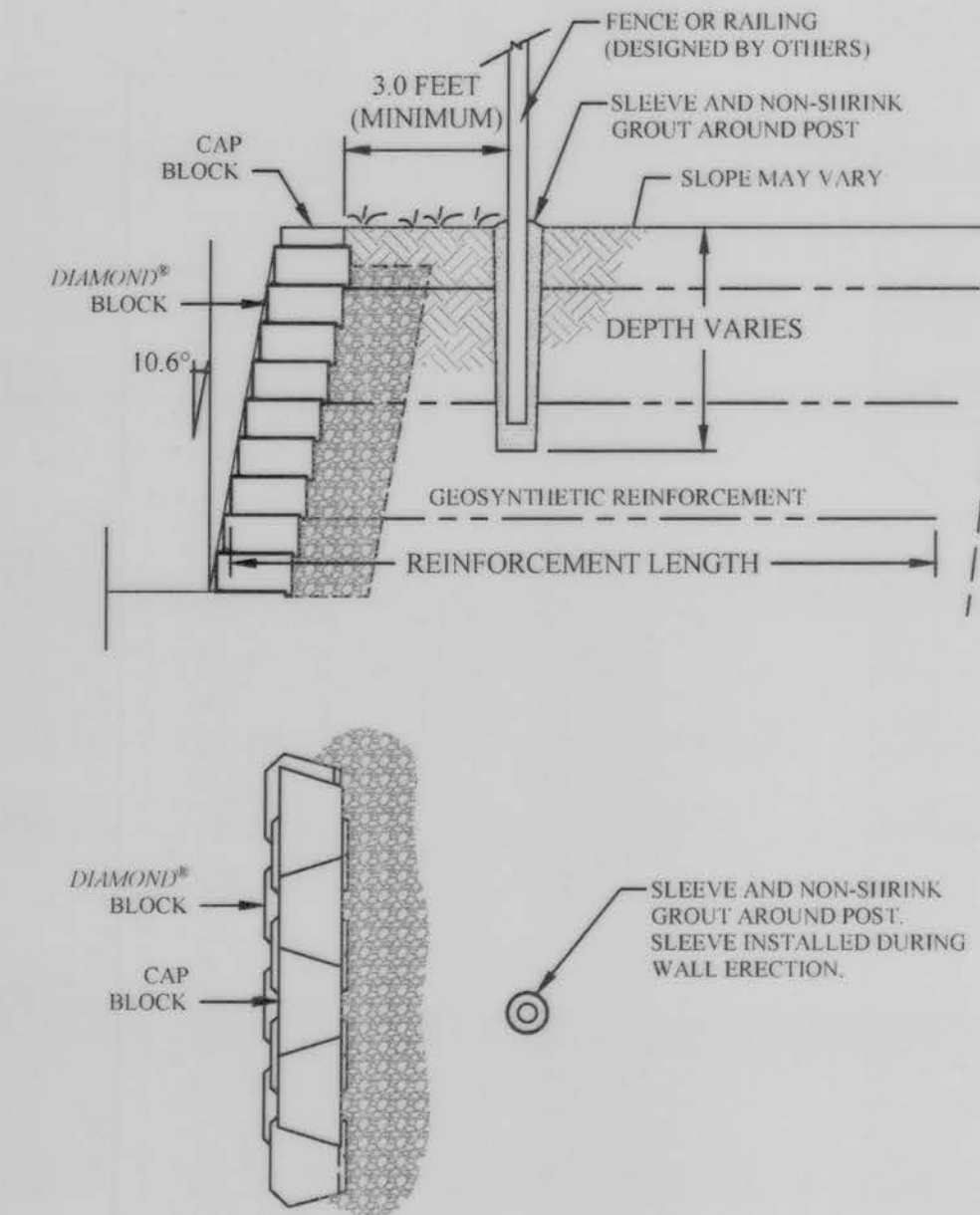
SHEET 27-30
LAST SAVE DATE: 7/5/2017 10:25 AM BY: djpardo
PLOT DATE: 8/1/2017 8:16 PM
W: \\Shored\clients\0802-1501 FM 1464\Drawings\Water Plan\Drawings\C13-LIFT Station-FM1464 and Old Richmond Road- Master Plan.dwg



1 RETAINING WALL SYSTEM ISOMETRIC BLOCK VIEWS DETAIL
C15 NTS

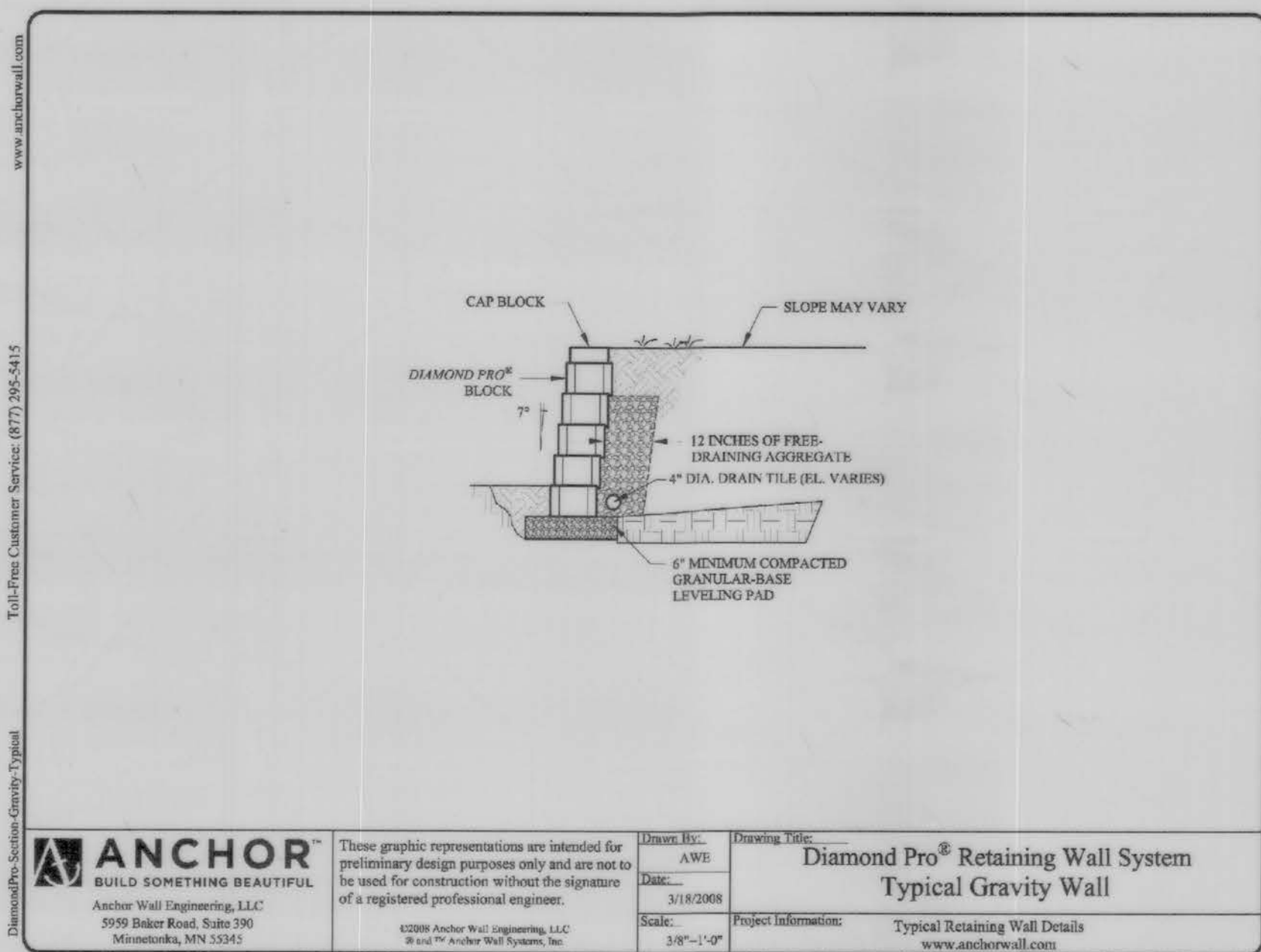


2 RETAINING ISOMETRIC BLOCK VIEWS DETAIL
C15 NTS

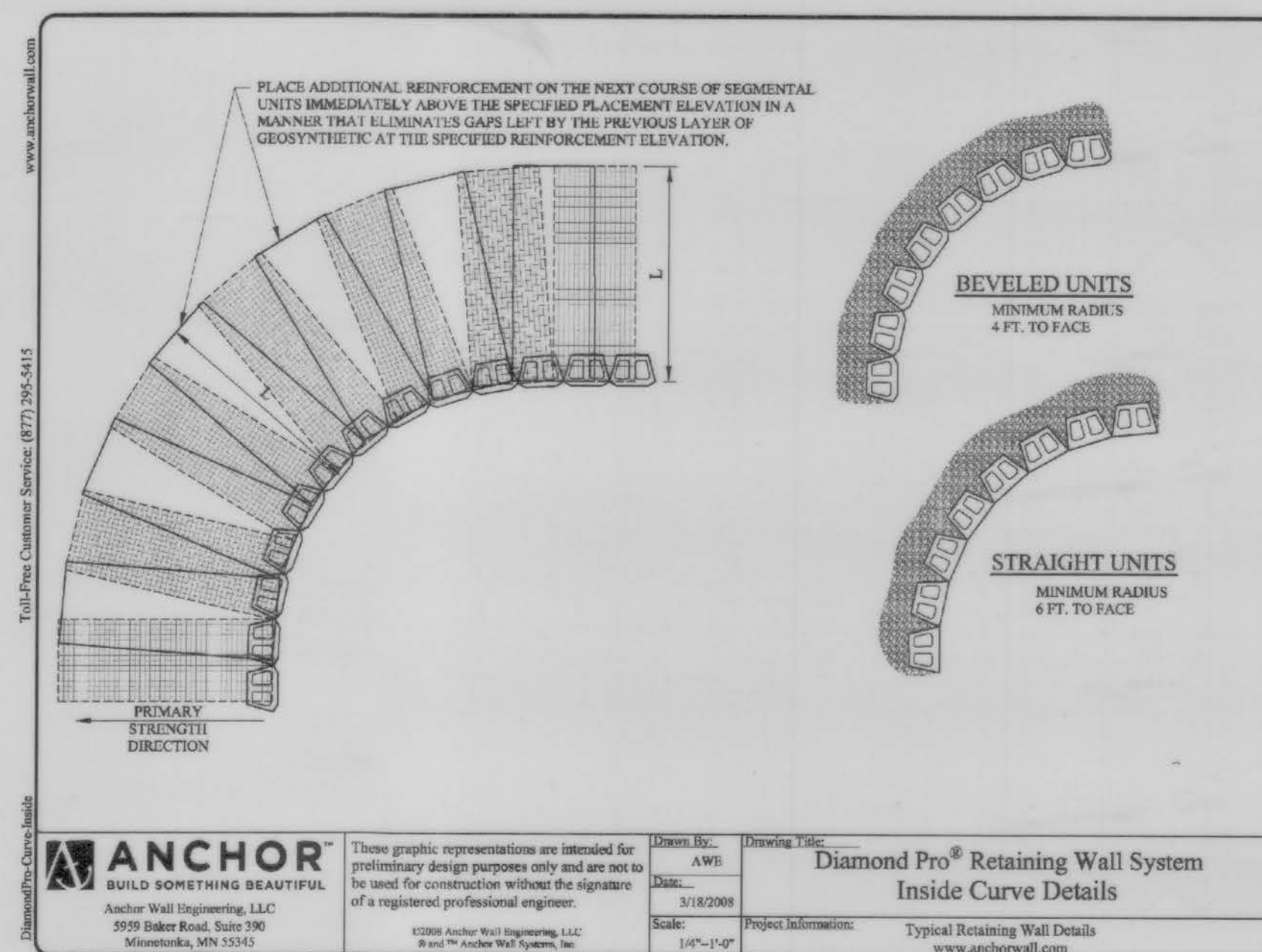


6 ANCHOR™ DIAMOND® FENCE BEHIND WALL
C15 NTS

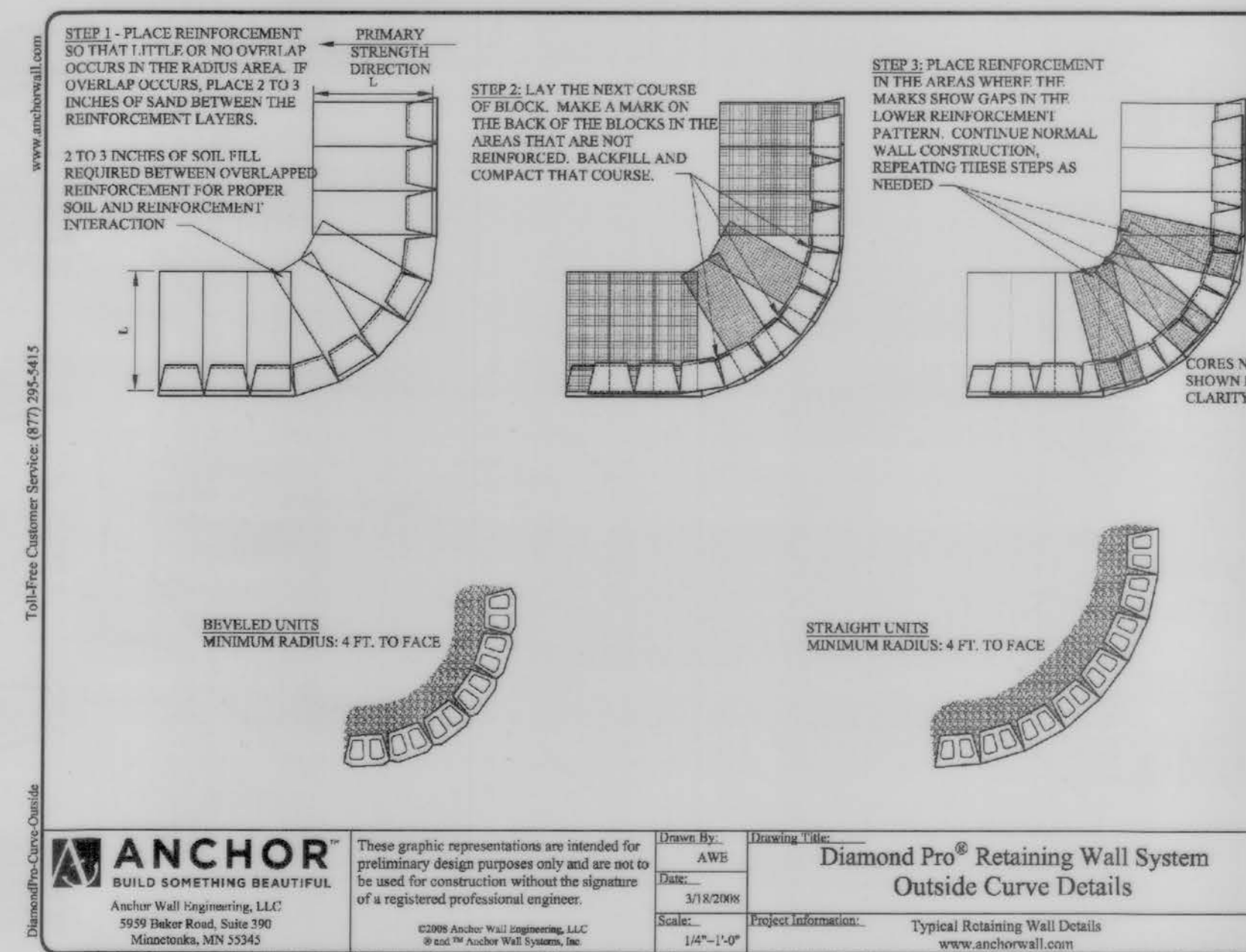
CONTRACTOR TO CONTACT THE PAVESTONE LOCAL REPRESENTATIVE:
MIKE DONE @ 832-452-4012



3 RETAINING WALL SYSTEM SYSTEM TYPICAL GRAVITY WALL DETAIL
C15 NTS



4 RETAINING WALL SYSTEM INSIDE CURVE DETAILS
C15 NTS



5 RETAINING WALL SYSTEM OUTSIDE CURVE DETAILS
C15 NTS

APPROVED: *[Signature]*
Development Coordinator
DATE: 4/9/17

FLOODPLAIN

BASED ON THE FLOOD INSURANCE RATE MAP NO. 48157C1045L, MAP REVISED DATE OF APRIL 2, 2014 INDICATES THAT THE TRACT LIES WITHIN AREA ZONE XX (SHADED) AREAS OF 0.2% ANNUAL CHANCE FLOOD. AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE, AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD AND IN ZONE XX (UNSHADED) AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

BENCHMARK

FLOODPLAIN REFERENCE MARK: NUMBER 33 IS A SPIKE IN POWER POLE, APPROXIMATELY 40 FEET EAST OF THE CENTERLINE OF FM 1464 AND 2.05 MILES NORTH OF INTERSECTION OF FM 1464 AND U.S. HIGHWAY 90 AT INTERSECTION OF FM 1464 AND OLD RICHMOND ROAD, IN KEYMAP NO. 567K. ELEV. 83.5 FEET NAVD 83, 1973 ADJUSTMENT.

DAC ENGINEERING
17725 Katy Freeway, Suite 103 • Houston, TX 77094 • Phone: 281.506.7119
Firm TBPPE Registration No. F-12959 • www.dacengineers.com

REV.	DATE	DESCRIPTION

PROPOSED MASTER PLAN
6.7 ACRES
SEC OF FM 1464 AND
OLD RICHMOND ROAD
FORT BEND COUNTY,
SUGAR LAND, TEXAS 77407

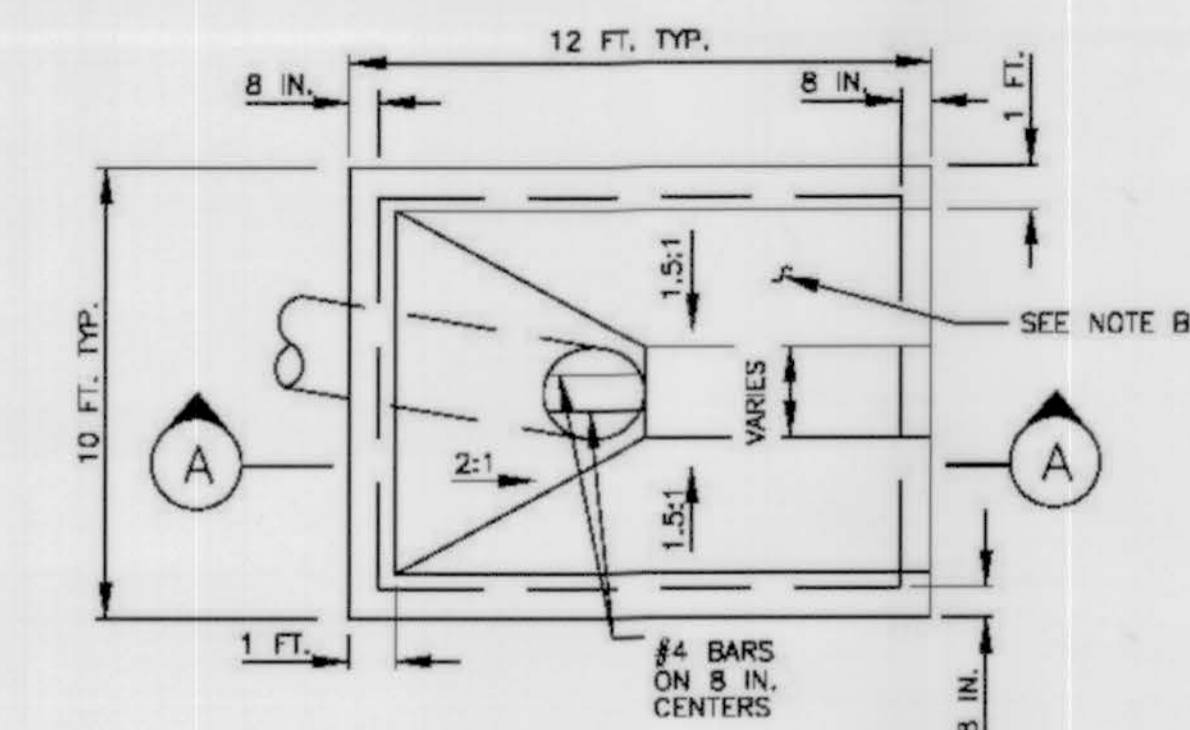
**VERTICAL WALLS
DETAILS**



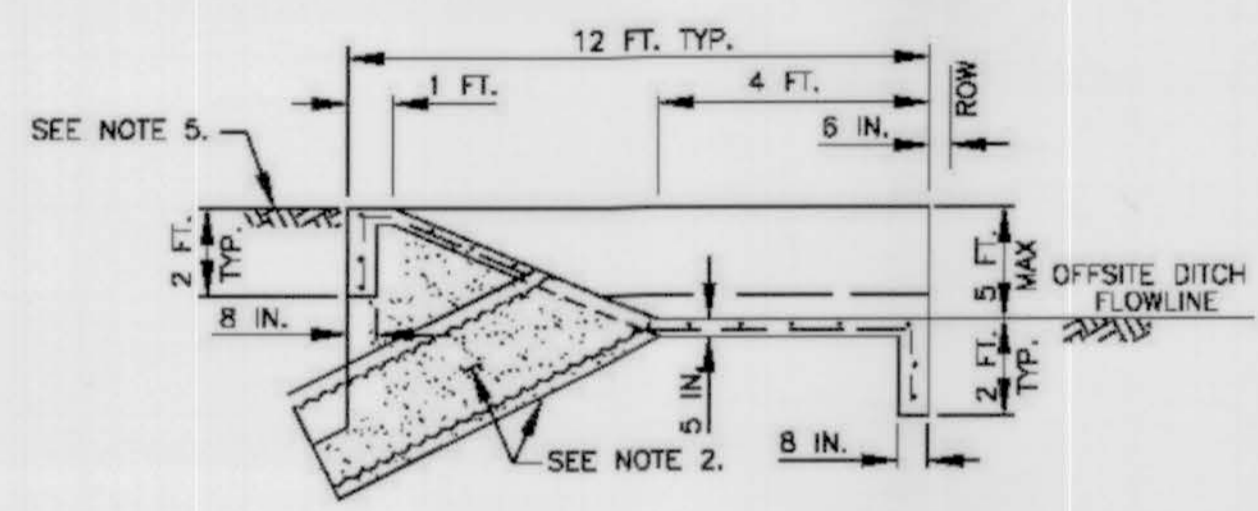
JOB No.: 0802-1501
ORIGINAL ISSUE DATE: AUGUST, 2016
DRAWN BY: DRI
CHECKED BY: DBK
SHEET No.:

C14

08/01/2017

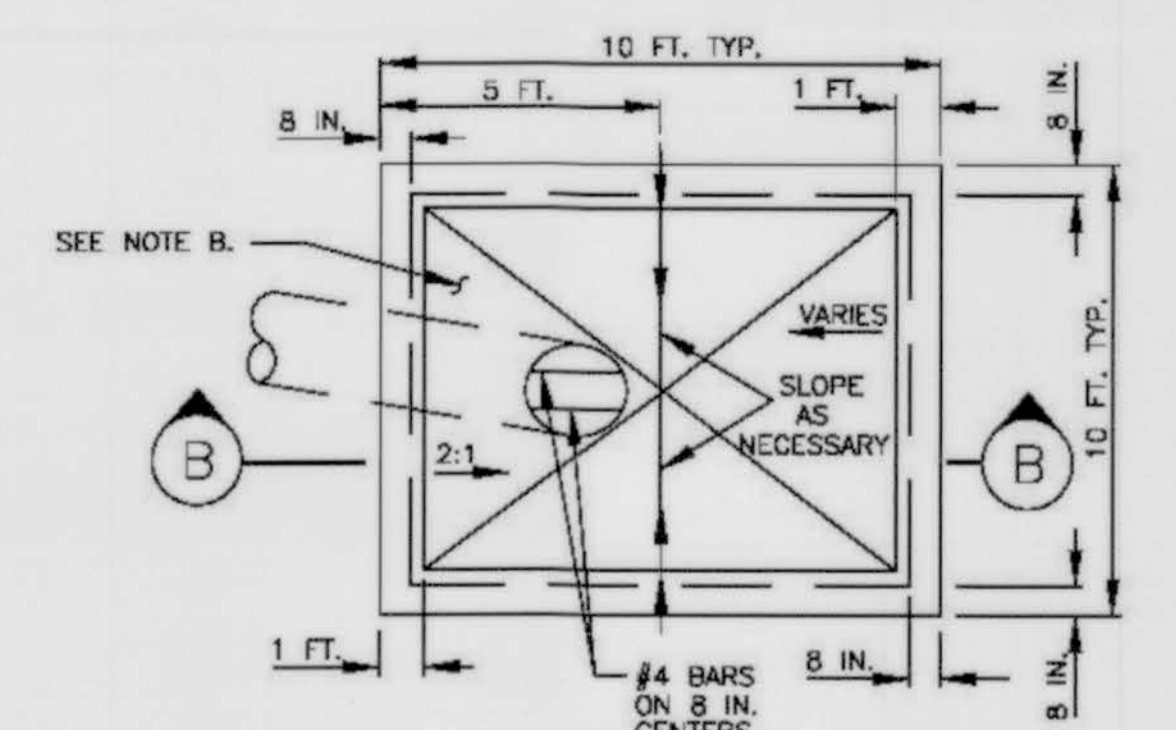


PLAN

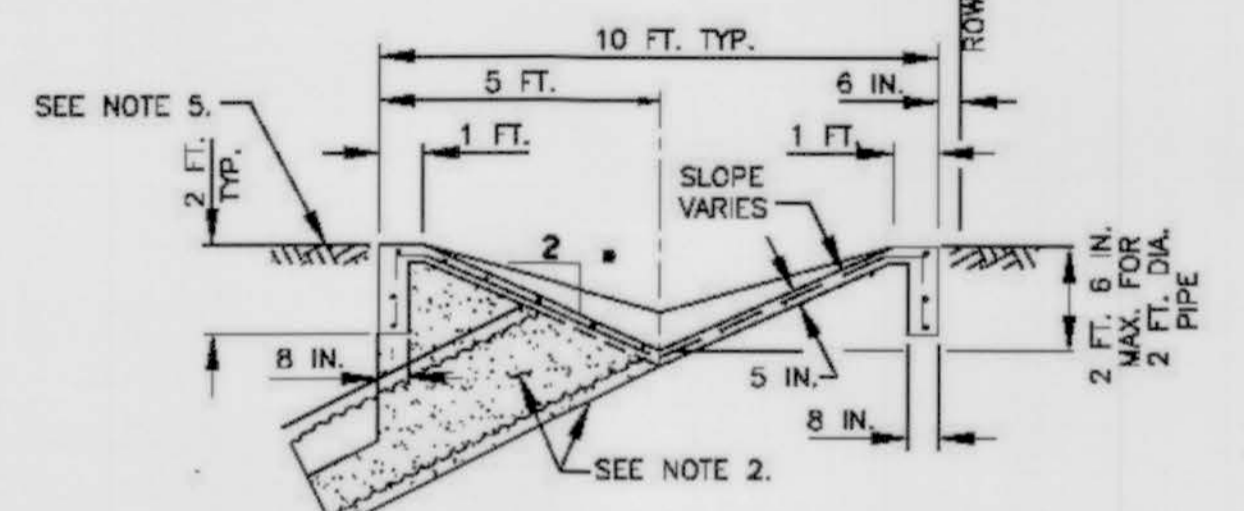


SECTION A

TYPICAL OFFSITE DITCH INTERCEPTOR STRUCTURE (42 INCH MAX.)

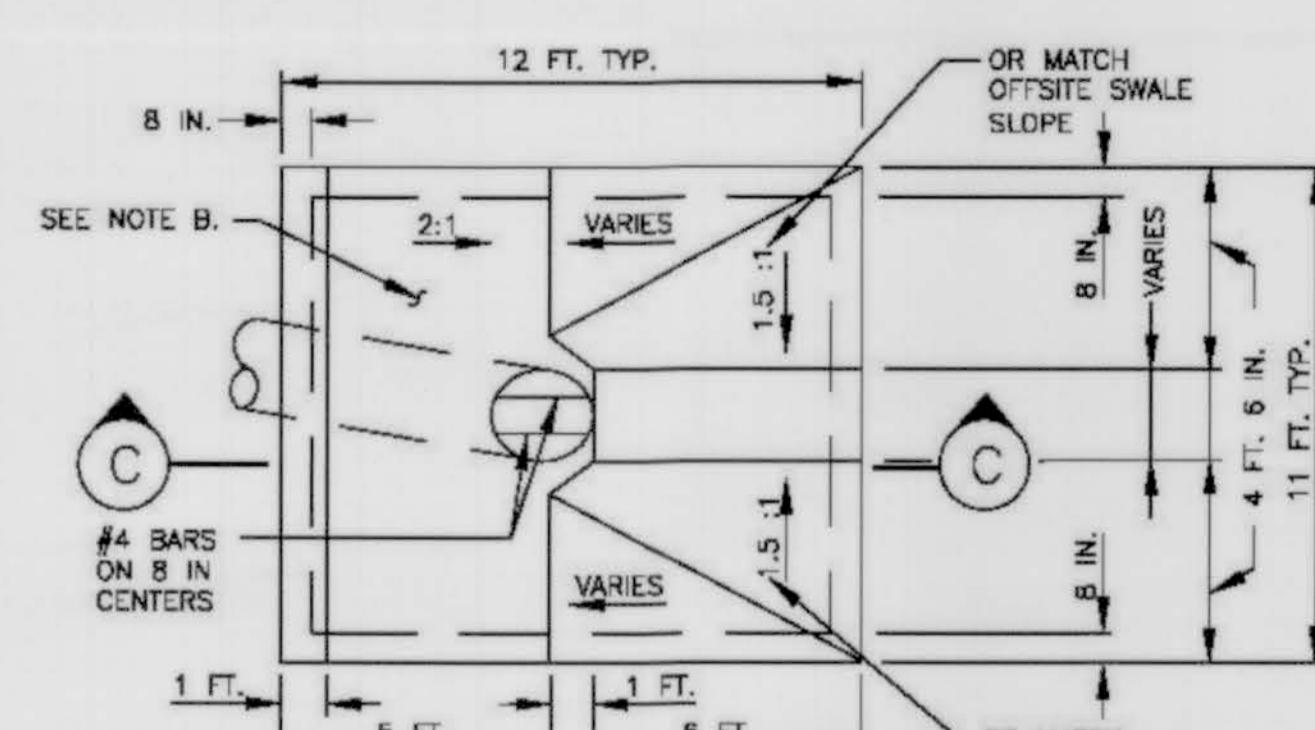


PLAN

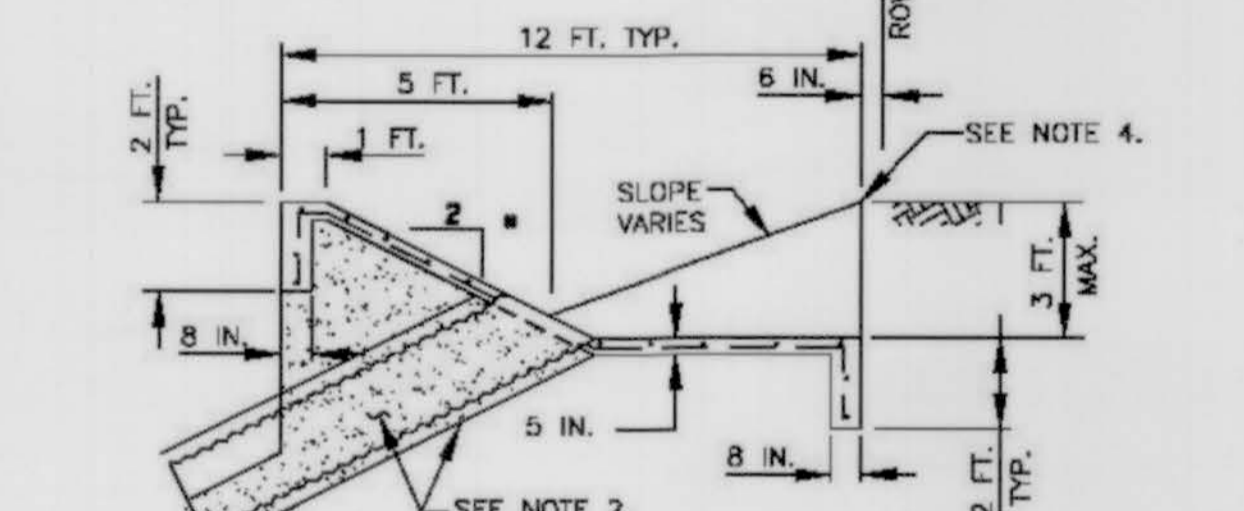


SECTION B

TYPICAL BACKSLOPE INTERCEPTOR STRUCTURE (24 INCH & 30 INCH ONLY)



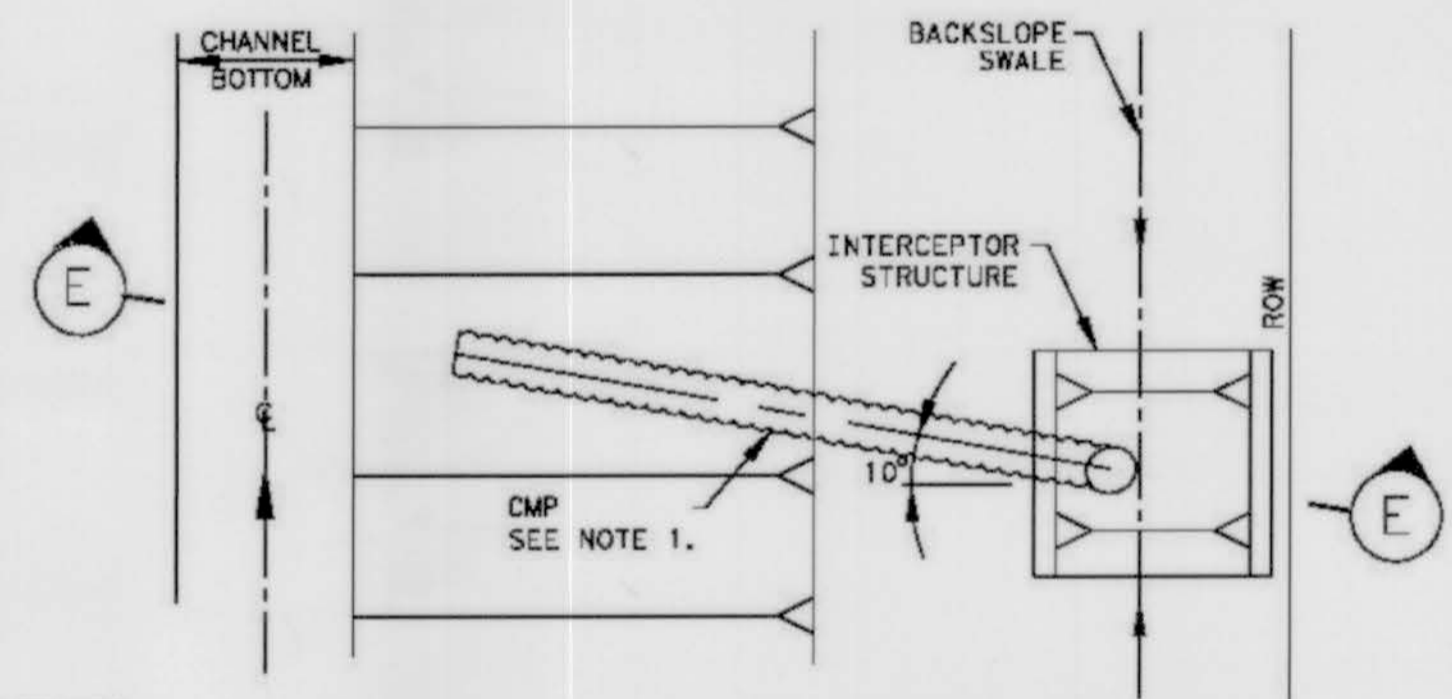
PLAN



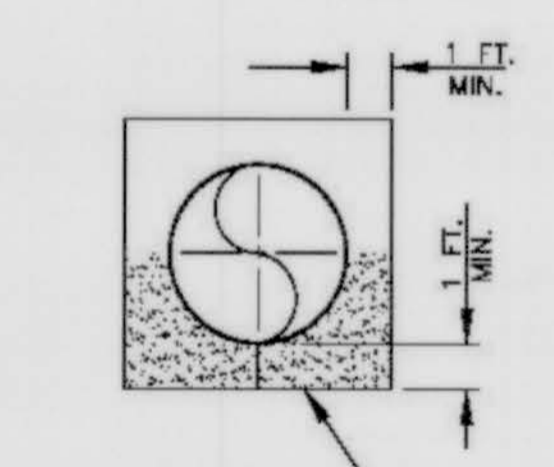
SECTION C

COMBINATION BACKSLOPE & OFFSITE DITCH INTERCEPTOR (42 INCH MAX.)

- GENERAL NOTES:**
- PLACE CORRUGATED METAL PIPE INTERCEPTOR OUTFALL PIPES IN ACCORDANCE WITH ITEM 460, "CORRUGATED METAL PIPE." WITHIN HCFCD ROW, USE MINIMUM 24" DIA, 16 GAUGE PIPE.
 - PROVIDE AND PLACE CEMENT STABILIZED BACKFILL AND STRUCTURAL EXCAVATION IN ACCORDANCE WITH ITEM 400, "EXCAVATION AND BACKFILL FOR STRUCTURES."
 - INSTALL STORM SEWER PLANT OUTFALLS, 48 INCHES DIAMETER OR LARGER WITH RIPRAP EROSION PROTECTION, DIMENSIONED AS SHOWN IN THE "TYPICAL STORM SEWER OUTFALL LAYOUT" DETAIL. EXCAVATE AND PLACE EMBANKMENT AND BACKFILL FOR STORM SEWER OUTFALLS IN ACCORDANCE WITH ITEM 400. "EXCAVATION AND BACKFILL FOR STRUCTURES."
 - PROVIDE AND PLACE CONCRETE IN ACCORDANCE WITH ITEM 420-2294 "CL A" CONCRETE (DITCH INTERCEPTOR STRUCTURE) (EA.)
 - INTERCEPTOR STRUCTURES:
 - ADJUST LENGTH AND WIDTH IN FIELD AS NECESSARY.
 - PROVIDE A 2 FT. DEEP X 8 IN. WIDE TOE WALL AROUND THE STRUCTURE.
 - STEEL REINFORCEMENT - #4 BARS (GRADE 40) AT 12 INCHES ON CENTER EACH WAY.
 - ANY INTERCEPTOR OUTFALL PIPE LARGER THAN MAXIMUM SIZE INDICATED REQUIRES A SEPARATE DETAIL.
 - MATCH TOP OF CONCRETE WITH NATURAL GROUND
 - SET THE FLOWLINE OF OUTFALL PIPES 1 FOOT ABOVE THE CHANNEL FLOWLINE OR 1 FOOT ABOVE THE NORMAL WATER LEVEL, WHICHEVER IS HIGHEST, UNLESS OTHERWISE SHOW IN PLANS.
 - BACKFILL ANY VOIDS BEYOND THE LIMITS OF THE CONCRETE INTERCEPTOR PAD WITH CEMENT STABILIZED BACKFILL PER ITEM 400.
 - INTERCEPTOR STRUCTURES SHOWN ARE FOR SIZES 42 INCH DIAMETER AND SMALLER. LARGER DIAMETER PIPE ARE DETAILED ELSEWHERE IN THE PLANS.
 - SEE CONCRETE CHANNEL LINING DETAIL SHEET FOR CMP OUTFALL DETAILS THROUGH CONCRETE CHANNEL RIPRAP.
 - OUTFALL DETAILS SHOWN ARE SUITABLE ON SLOPES UP TO AND INCLUDING 4:1. FLATTER SLOPES WILL REQUIRE AN INDIVIDUALLY DESIGNED STRUCTURE.
 - FOR URBAN INTERCEPTOR STRUCTURES, IF APPLICABLE, SEE TxDOT STANDARDS FOR INLETS TYPES A, AD, AND AAD, AND RIPRAP DETAILS AROUND.

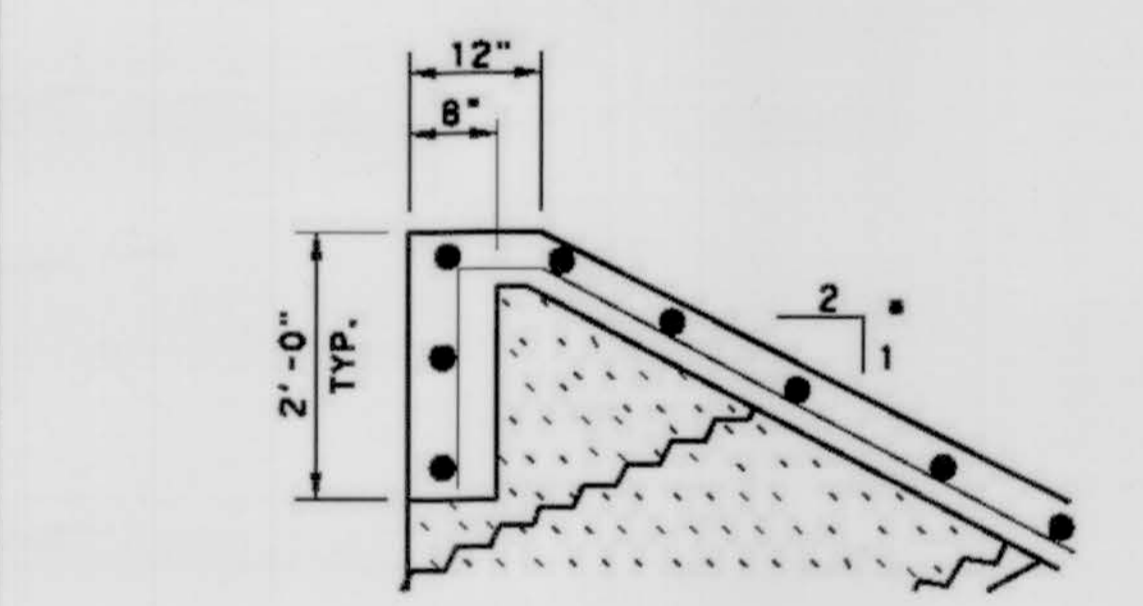


PLAN



SECTION F

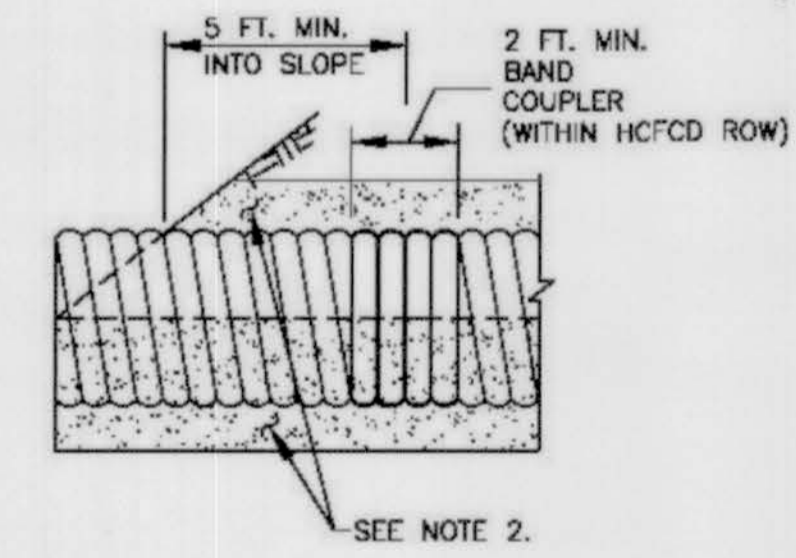
BEDDING CMP DETAIL



DETAIL "A" TYPICAL TOEWALL CONSTRUCTION

(A) THESE ARE GENERAL DETAILS AND NOTES. IF THERE ARE ANY DISCREPANCIES BETWEEN THIS STANDARD AND THE DETAILED SEALED DRAINAGE PLANS, THE SEALED PLANS WILL OVERRIDE. THE ONLY EXCEPTION IS NOTE AA ON THIS SHEET.

(B) DESIGNER TO CONSULT WITH DISTRICT ENVIRONMENTAL SECTION TO DETERMINE IF OUTFALL IS OR IS NOT JURISDICTIONAL. IF JURISDICTIONAL, REQUEST ORDINARY HIGH WATER ELEVATION AND CORP OF ENGINEER'S PERMIT FROM ENVIRONMENTAL SECTION FOR ANY WORK BELOW ORDINARY HIGH WATER ELEVATION.



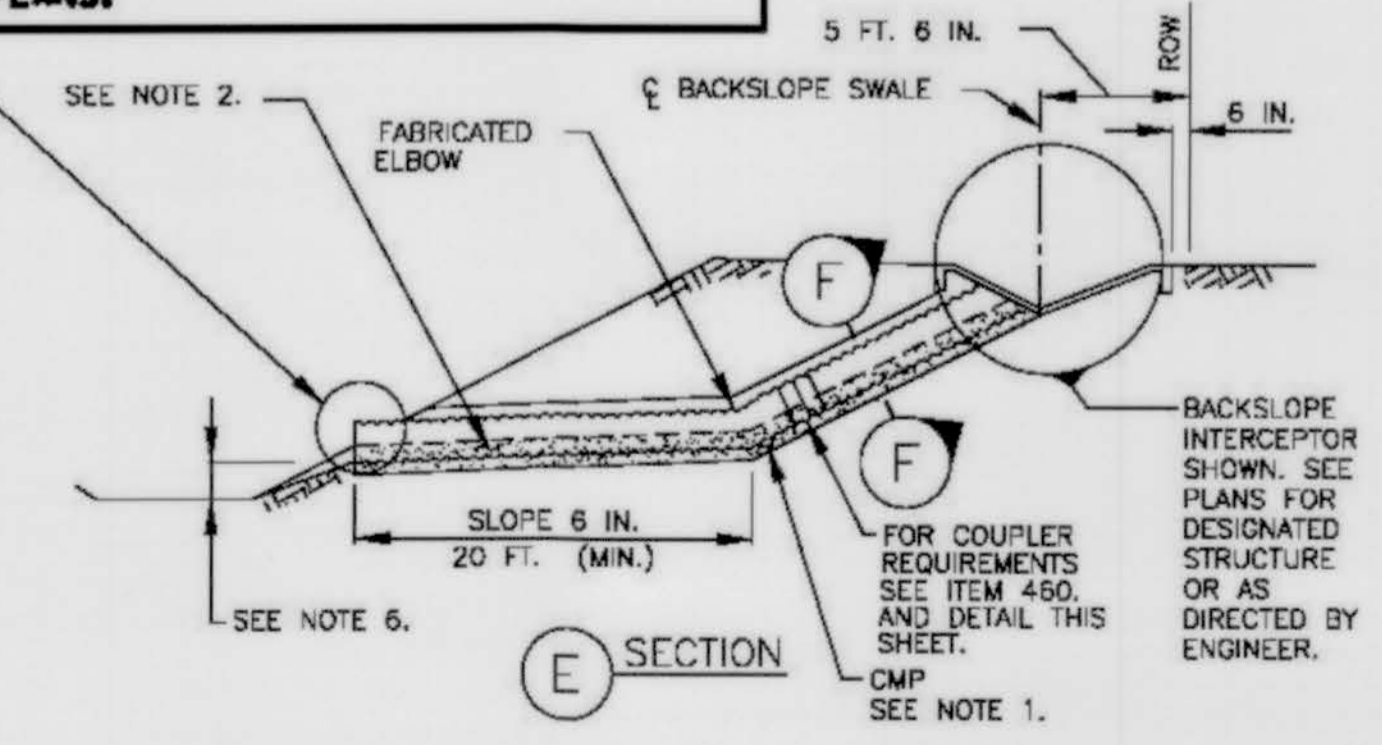
CMP BAND COUPLER DETAIL

PIPE OUTFALL IN CHANNELS

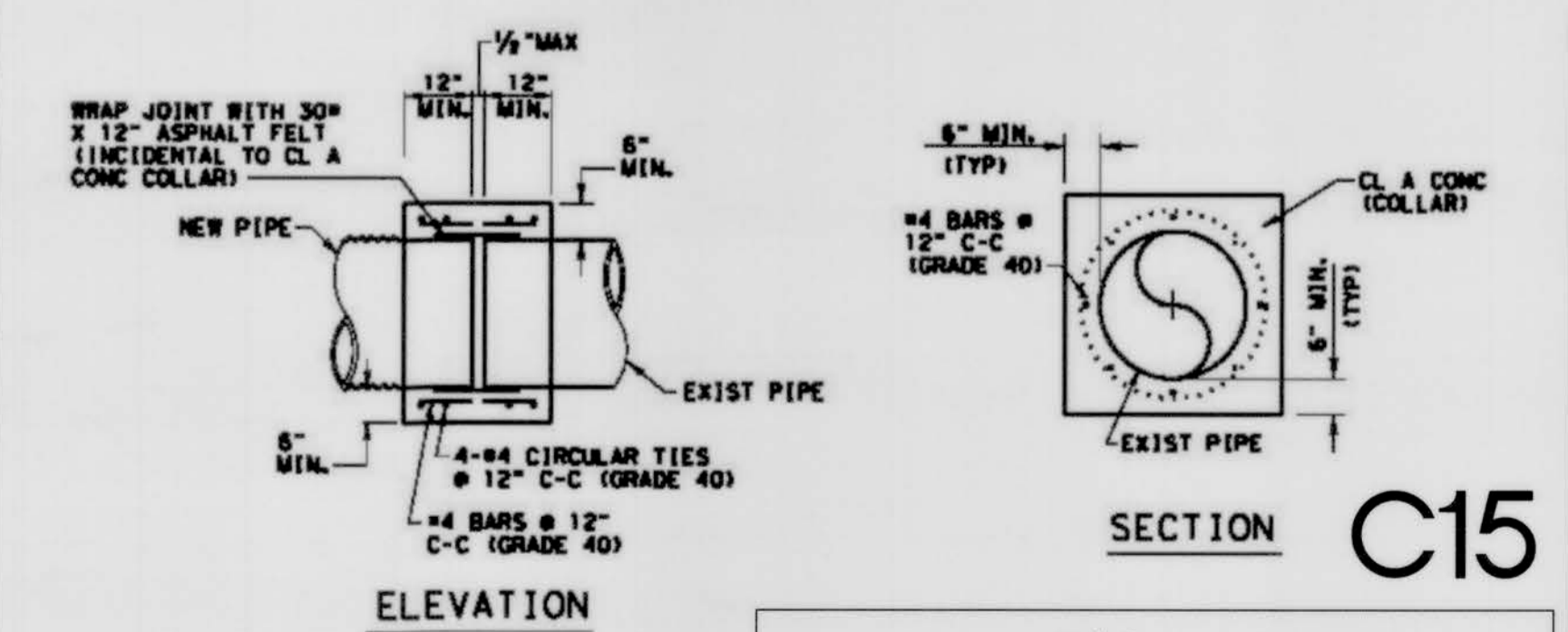
BOTTOM WIDTH	PIPE OUTLET INVERT (FLOW LINE)
6 FEET ≤ BW ≤ 20 FT	1 FOOT ABOVE CHANNEL FLOWLINE
20 FEET ≤ BW ≤ 60 FT	AT TOE OF SLOPE
BW > 60 FT	AT TOE OF SLOPE

TABLE 1

NOTE AA
THIS DETAIL OF CENTERLINE OF ANY PIPE END ALIGNING WITH CHANNEL SIDE SLOPE IS OF UTMOST IMPORTANCE. THIS DETAIL SHALL SUPERSEDE ANY OTHER DETAILS/PIPE LENGTHS SHOWN ELSEWHERE IN PLANS.



TYPICAL INTERCEPTOR OUTFALL STRUCTURE LAYOUT



ELEVATION CONCRETE COLLAR DETAIL

APPROVED: *[Signature]*
Development Coordinator
DATE: 1/19/17

SHEET 1 OF 2

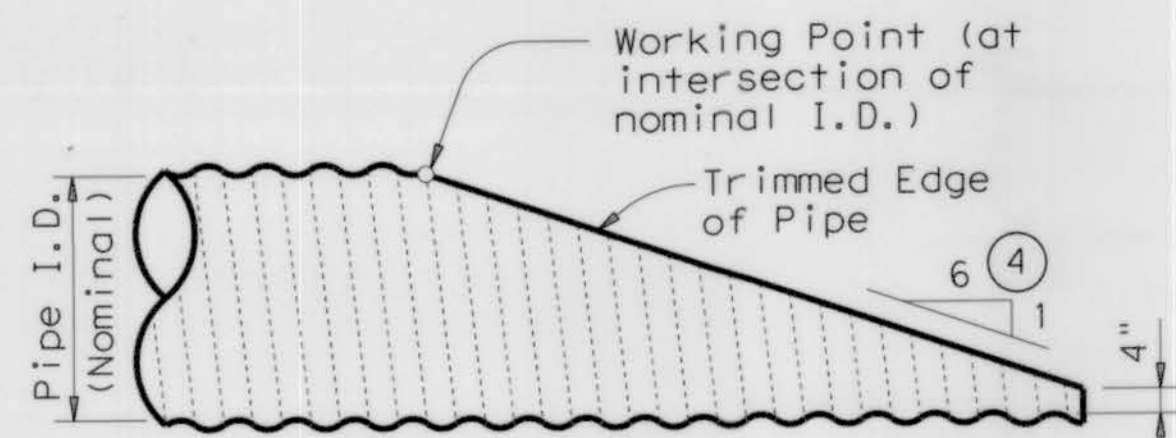
Texas Department of Transportation
Houston District

HCFCD
INTERCEPTOR
STRUCTURE DETAILS
HCFCD-ISD (1)

FILE: STDG5.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
© TxDOT DEC, 2012	DIST	FED REG	PROJECT NO.	SHEET
REVISIONS	HOU	6		
11/2013 FIX MISSPELLINGS	COUNTY	CONTROL	SECT	JOB
				HIGHWAY

STDG5C6

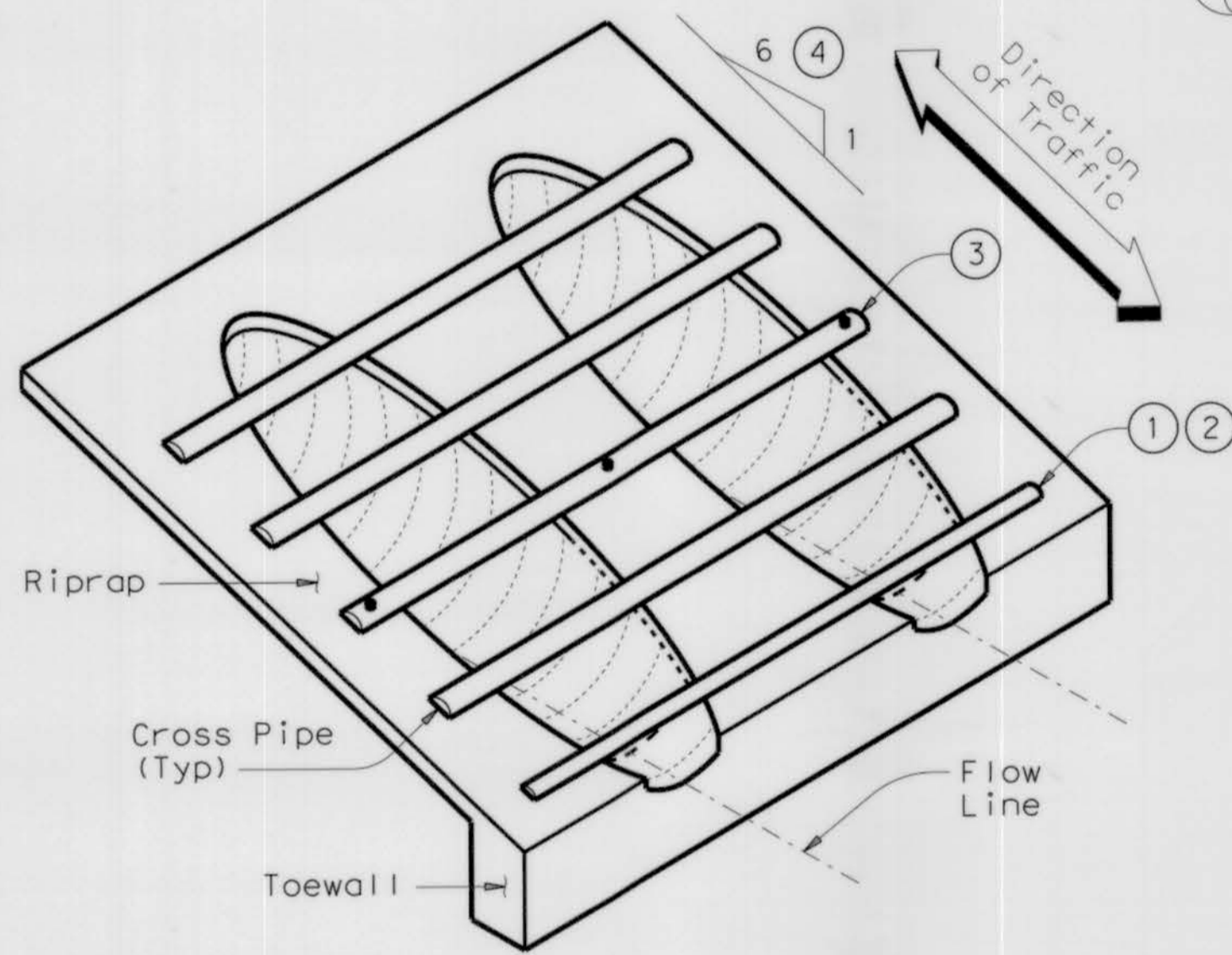
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



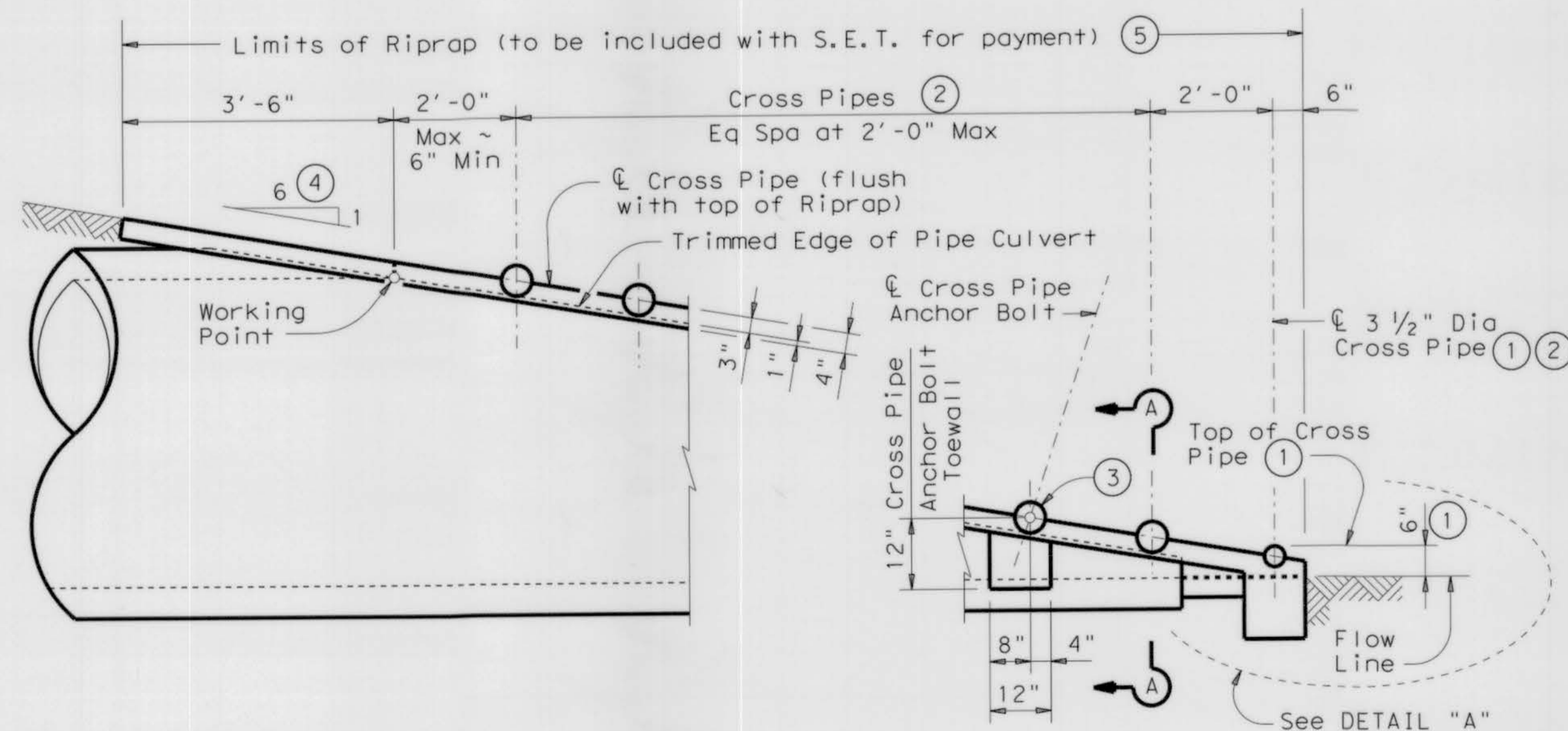
NOTE: All Cross Pipes, calculations, and dimensions are based on the pipe culverts mitered as shown in this detail. Alternate styles of mitered ends will require that appropriate adjustments be made to the values presented on this standard.

SIDE ELEVATION OF TYPICAL PIPE CULVERT MITER

(Showing Corrugated Metal Pipe Culvert.)
(Details at Concrete Pipe Culvert are similar.)

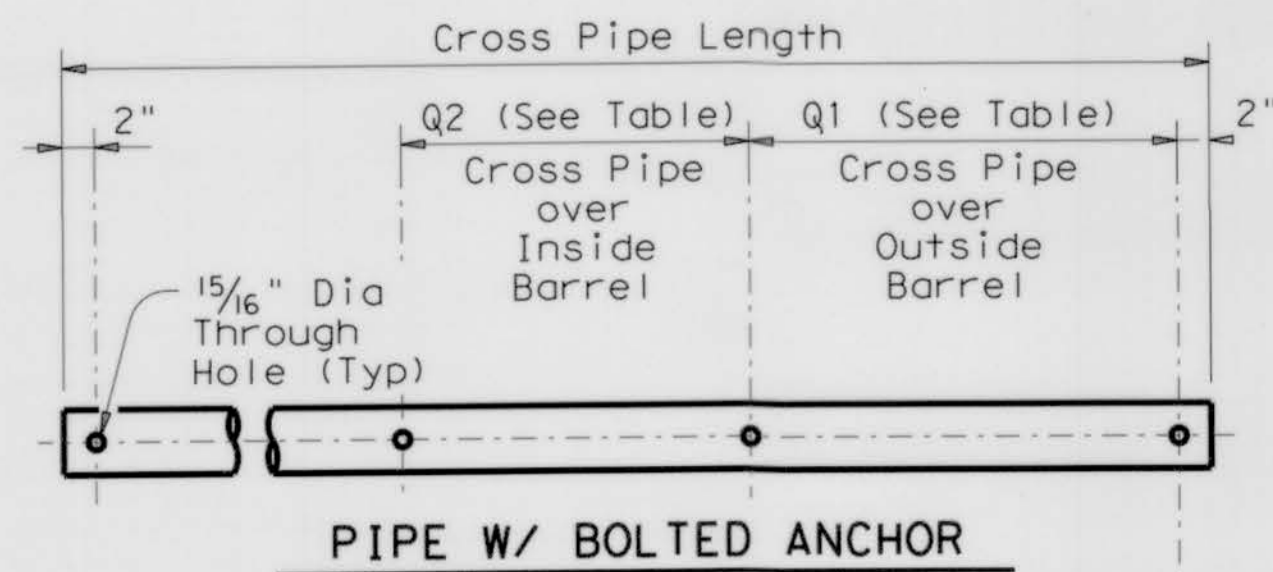


ISOMETRIC VIEW OF TYPICAL INSTALLATION

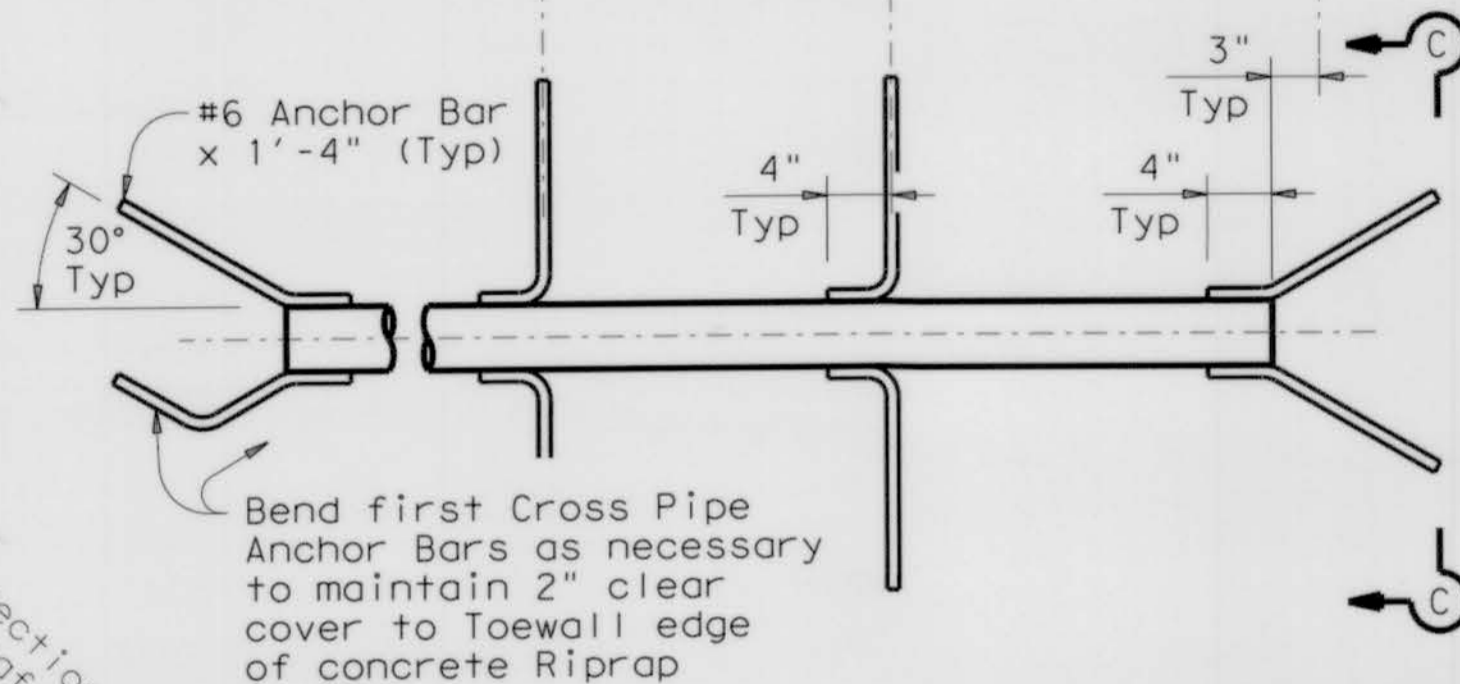


SIDE ELEVATION OF CAST-IN-PLACE CONCRETE

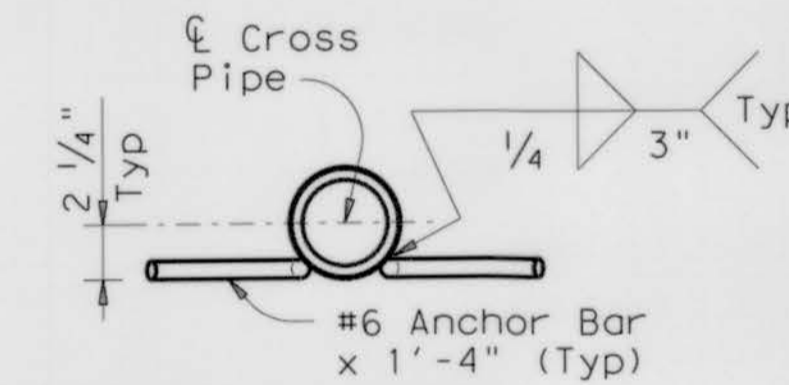
(Showing Concrete Pipe Culvert.)
(Details at Corrugated Metal Pipe Culvert are similar.)



PIPE W/ BOLTED ANCHOR



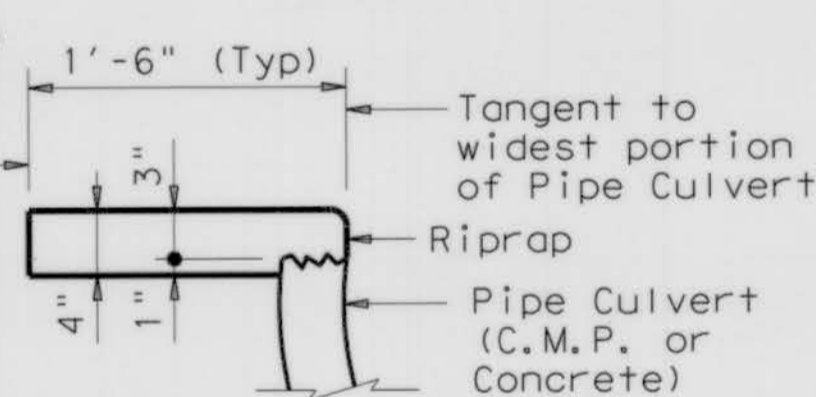
PIPE W/ ANCHOR BARS



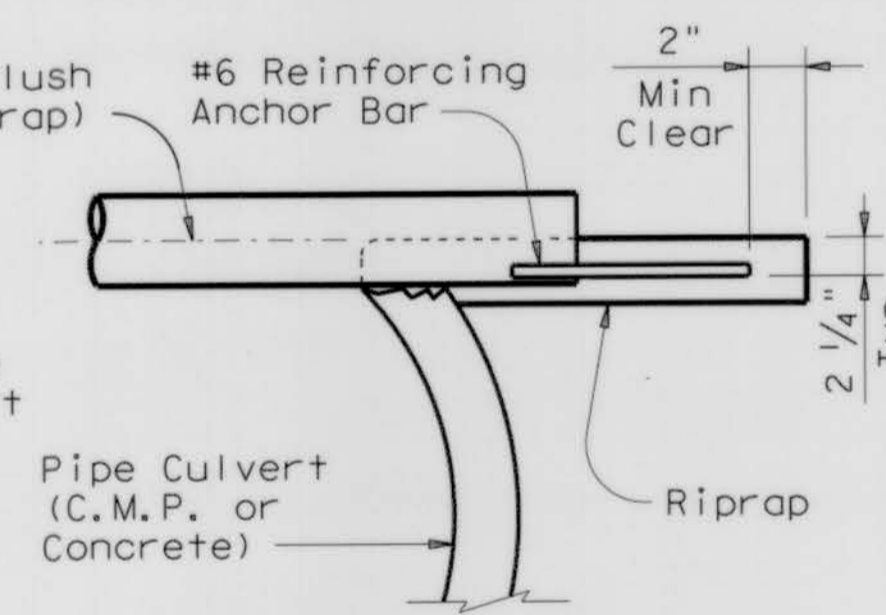
SECTION C-C

CROSS PIPE DETAILS

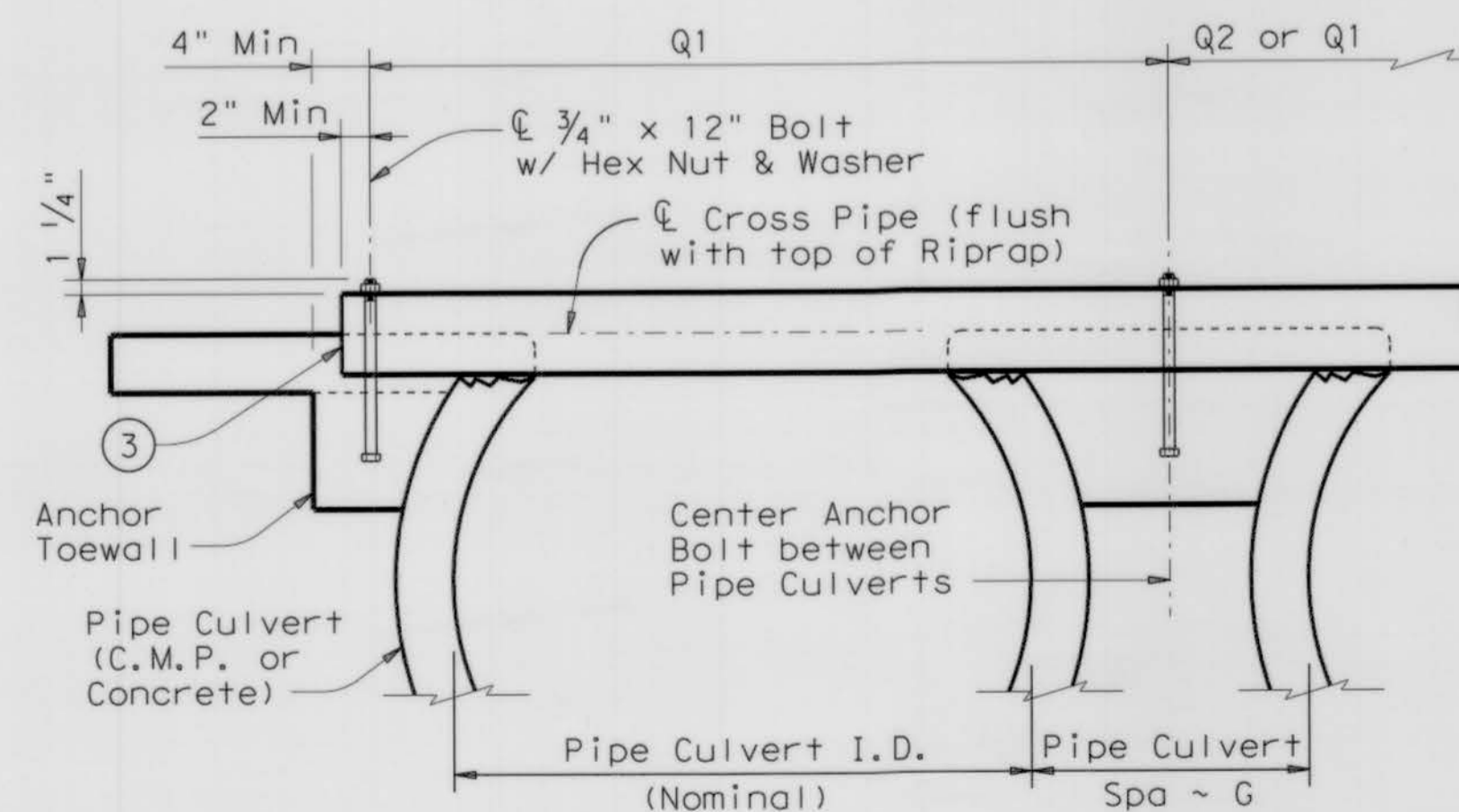
Limits of Riprap (to be included with S.E.T. for payment)



SHOWING TYPICAL PIPE CULVERT & RIPRAP



SHOWING CROSS PIPE WITH ANCHOR BAR



SHOWING CROSS PIPE WITH BOLTED ANCHOR

SECTION A-A

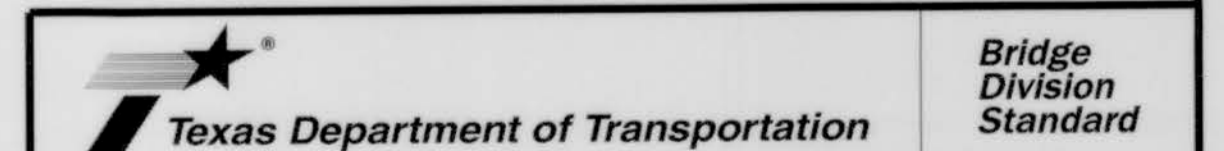
CROSS PIPE LENGTHS, REQUIRED PIPE SIZES, & RIPRAP QUANTITIES

Nominal Culvert I.D.	Conc Riprap (CY)	Pipe Culvert Spa ~ G	Single Barrel ~ Q1	Multi-Barrel ~ Q1	Q2	Conditions for use of Cross Pipes	Cross Pipe Size
12"	0.6	9"	N/A	2'-1"	1'-9"	3 or more Pipe Culverts	3" Std (3.500" O.D.)
15"	0.7	11"	N/A	2'-5"	2'-2"		
18"	0.8	1'-2"	N/A	2'-10"	2'-8"		
21"	0.9	1'-4"	N/A	3'-2"	3'-1"		
24"	0.9	1'-7"	N/A	3'-6"	3'-7"	3 or more Pipe Culverts	3 1/2" Std (4.000" O.D.)
27"	1.0	1'-8"	N/A	3'-10"	3'-11"		
30"	1.1	1'-10"	N/A	4'-2"	4'-4"	2 or more Pipe Culverts	4" Std (4.500" O.D.)
33"	1.2	1'-11"	4'-2"	4'-5"	4'-8"	All Pipe Culverts	
36"	1.3	2'-1"	4'-5"	4'-9"	5'-1"	All Pipe Culverts	4" Std (4.500" O.D.)
42"	1.5	2'-4"	4'-11"	5'-5"	5'-10"		
48"	1.7	2'-7"	5'-5"	6'-0"	6'-7"	All Pipe Culverts	5" Std (5.563" O.D.)
54"	2.0	3'-0"	5'-11"	6'-9"	7'-6"		
60"	2.2	3'-3"	6'-5"	7'-4"	8'-3"		
66"	2.4	3'-3"	6'-11"	7'-10"	8'-9"		
72"	2.7	3'-4"	7'-5"	8'-5"	9'-4"		

- The proper installation of the first Cross Pipe is critical for vehicle safety. The top of the first Cross Pipe must be placed at no more than 6" above the flow line.
- Size of Cross Pipes, except the first bottom pipe, shall be as shown in the PIPE SIZE table. The first bottom pipe shall be 3 1/2" Standard Pipe (4" O.D.).
- The third Cross Pipe from the bottom of the Culvert shall always be installed using a bolted connection. Care shall be taken to ensure that Riprap concrete does not flow into the Cross Pipe so as to permit disassembly of the bolted connection to allow cleanout access. At the Contractor's option, all other Cross Pipes may also be installed using the bolted connection details.
- Match Cross Slope as shown elsewhere in the plans. Cross Slope of 6:1 or flatter is required for vehicle safety.
- Riprap placed beyond the limits shown will be paid as Concrete Riprap in accordance with Item 432, "Riprap".
- Quantities shown are for one end of one reinforced Concrete Pipe Culvert. For multiple pipe culverts or for Corrugated Metal Pipe Culverts, quantities will need to be adjusted. Riprap quantities are for Contractor's information only.

GENERAL NOTES:

Cross Pipes are designed for a traversing load of 10,000 pounds at yield as recommended by Research Report 280-2F, "Safety Treatment of Roadside Parallel-Drainage Structures", Texas Transportation Institute, March 1981. Safety End Treatments shown herein are intended for use in those installations where out of control vehicles are likely to traverse the openings approximately perpendicular to the Cross Pipes. Riprap and all necessary inverts shall be Concrete Riprap conforming to the requirements of Item 432, "Riprap". Synthetic fibers listed on the "Fibers for Concrete" Material Producer List (MPL) may be used in lieu of steel reinforcing in riprap concrete unless noted otherwise. Payment for riprap and toewall is included in the Price Bid for each Safety End Treatment. Cross Pipes shall conform to the requirements of ASTM A53 (Type E or S, Grade B), ASTM A500 (Grade B), or API 5LX52. Bolts and nuts shall conform to ASTM A307. All steel components, except concrete reinforcing, shall be galvanized after fabrication. Galvanizing damaged during transport or construction shall be repaired in accordance with the specifications.



SAFETY END TREATMENT FOR 12" DIA TO 72" DIA PIPE CULVERTS TYPE II ~ PARALLEL DRAINAGE

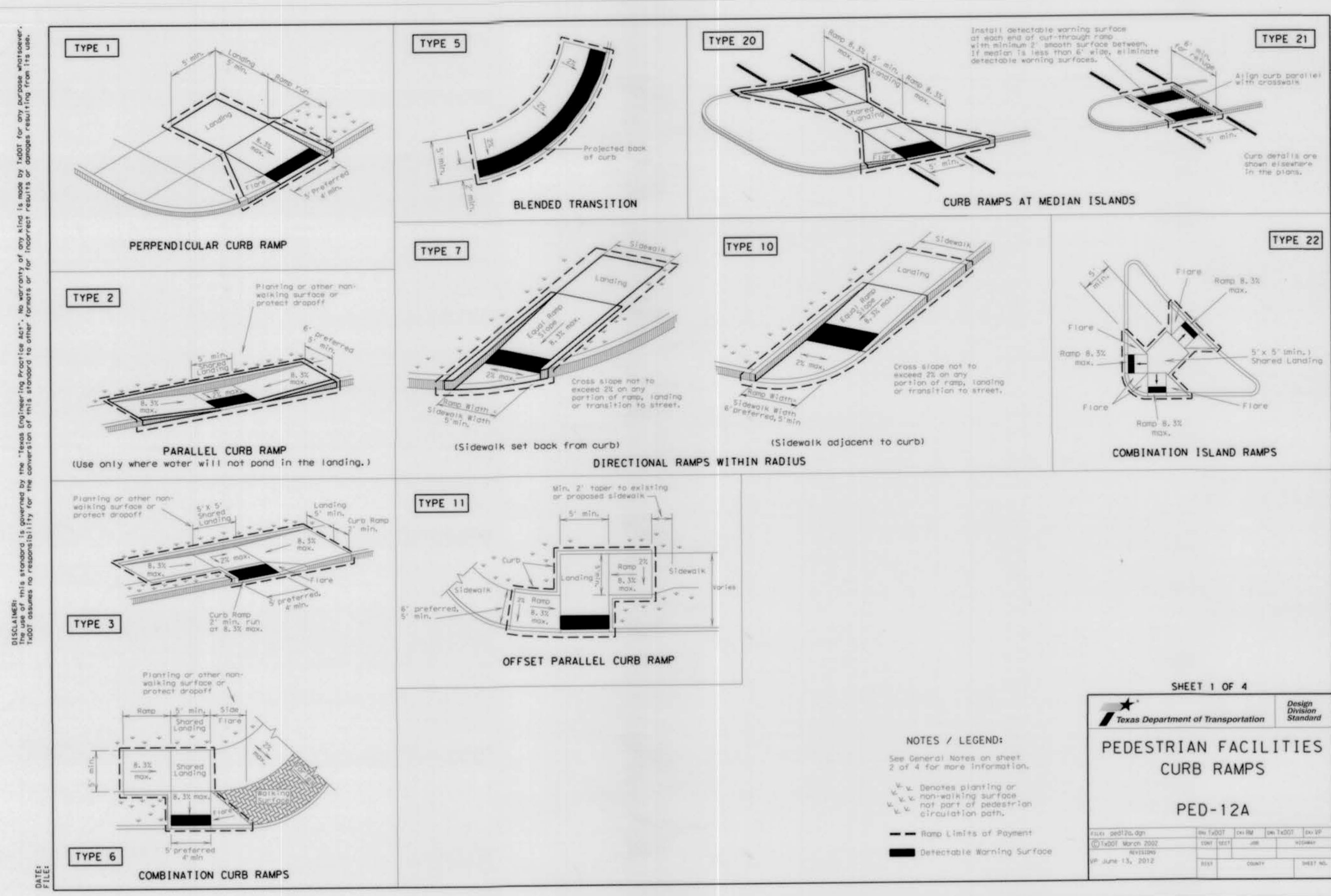
C16

SETP-PD

APPROVED: *[Signature]*
Development Coordinator
DATE: 11/9/17

FILE: setppdse.dgn	DN: GAF	CK: CAT	DW: JRP	CK: GAF
©TxDOT February 2010	CONF	SECT	JOB	HIGHWAY
REVISIONS				
11-10: Add note for synthetic fibers.	DIST	COUNTY	SHEET NO.	

DATE: FILE:

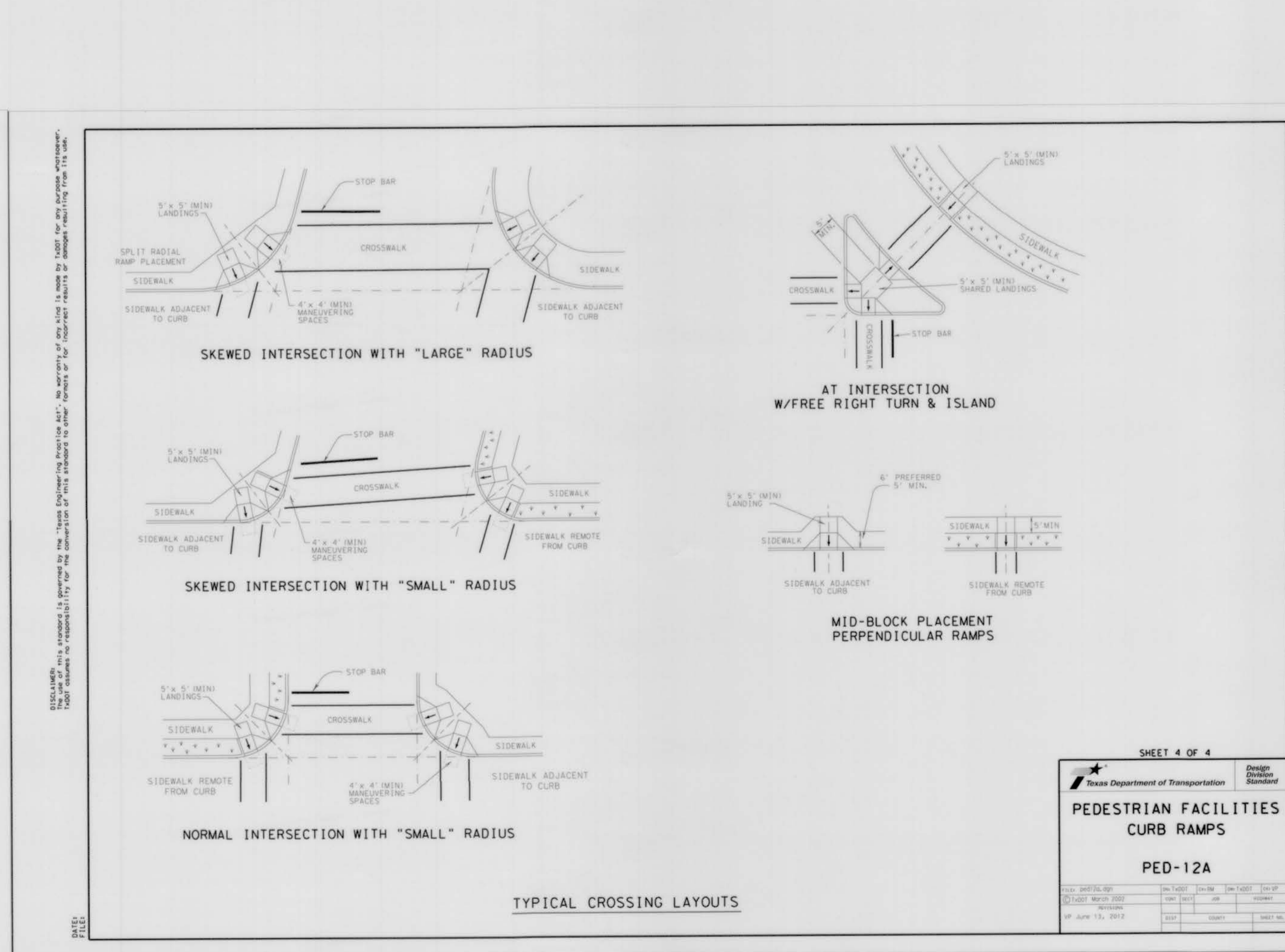
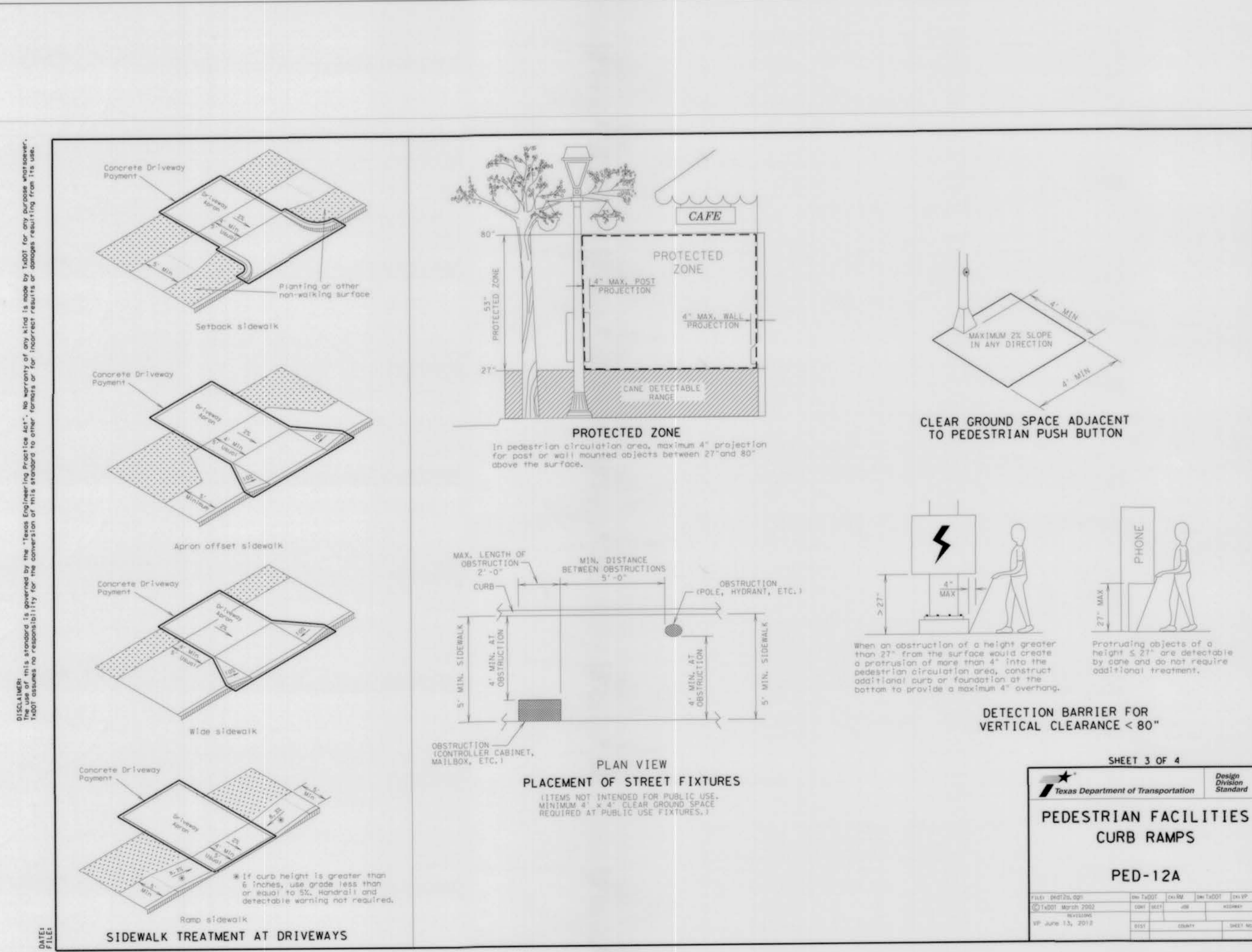
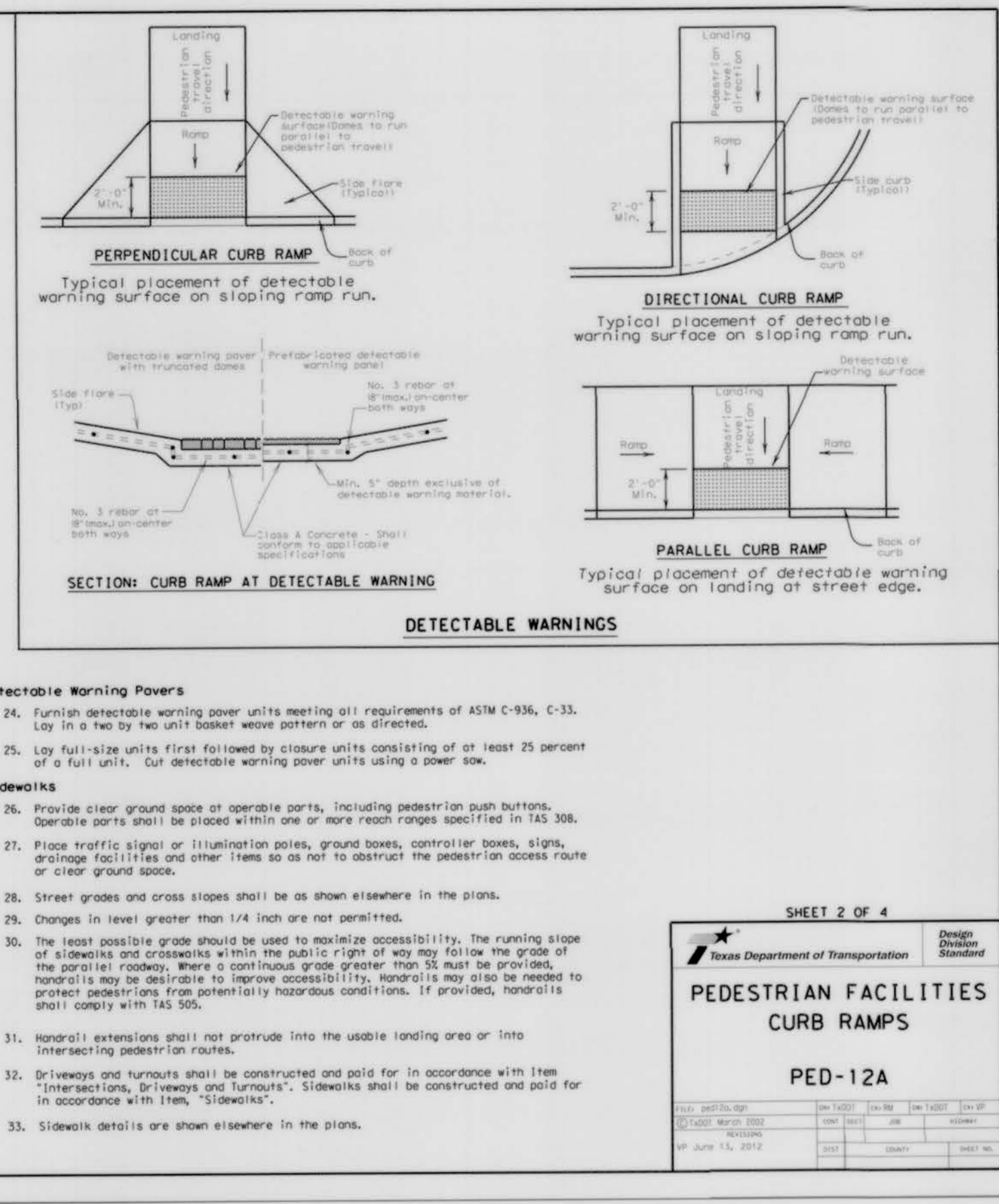


General Notes

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

Detectable Warning Material

18. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with Section 105 of the TAS. The surface must contrast visually with adjoining surfaces, including slope flares. Furnish and install an approved cast-in-place brick or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
19. Detectable Warning Materials must meet TxDOT Departmental Materials Specification 065.430B and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
20. Detectable warning surfaces must be slip resistant and not allow water to accumulate.
21. Detectable warning surfaces shall be a minimum of 24" in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
22. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb. Align the rows of domes to be perpendicular to the grade break between the ramp run and the street. Detectable warning surfaces may be curved along the corner radius.
23. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.



FLOODPLAIN

BASED ON THE FLOOD INSURANCE RATE MAP NO. 48157C1045L. MAP REVISED DATE OF APRIL 2, 2014 INDICATES THAT THE TRACT LIES WITHIN AREA ZONE 2 (SHADED) AREAS OF 0.2% ANNUAL CHANCE FLOOD, AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE, AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD AND IN ZONE 2 (UNSHADED) AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

BENCHMARK

FLOODPLAIN REFERENCE MARK NUMBER 33 IS A SPIKE IN POWER POLE, APPROXIMATELY 40 FEET EAST OF THE CENTERLINE OF FM 1464 AND 2.05 MILES NORTH OF INTERSECTION OF FM 1464 AND U.S. HIGHWAY 90 AT INTERSECTION OF FM 1464 AND OLD RICHMOND ROAD, IN KEYMAP NO. 567K, ELEV. 83.5 FEET, NAVD 29, 1973 ADJUSTMENT.

DAC ENGINEERING

17725 Katy Freeway, Suite 103 • Houston, TX 77094 • Phone: 281.506.7119
Firm TPBE Registration No. F-12959 • www.dacengineers.com

REV. / DATE: DESCRIPTION:

PROPOSED MASTER PLAN
6.7 ACRES
SEC OF FM 1464 AND
OLD RICHMOND ROAD
FORT BEND COUNTY,
SUGAR LAND, TEXAS 77407

PEDESTRIAN FACILITIES CURB RAMPS DETAILS

JOB No.: 0802-1501
ORIGINAL ISSUE DATE: AUGUST, 2016
DRAWN BY: DRI
CHECKED BY: DBK
SHEET No.: C17

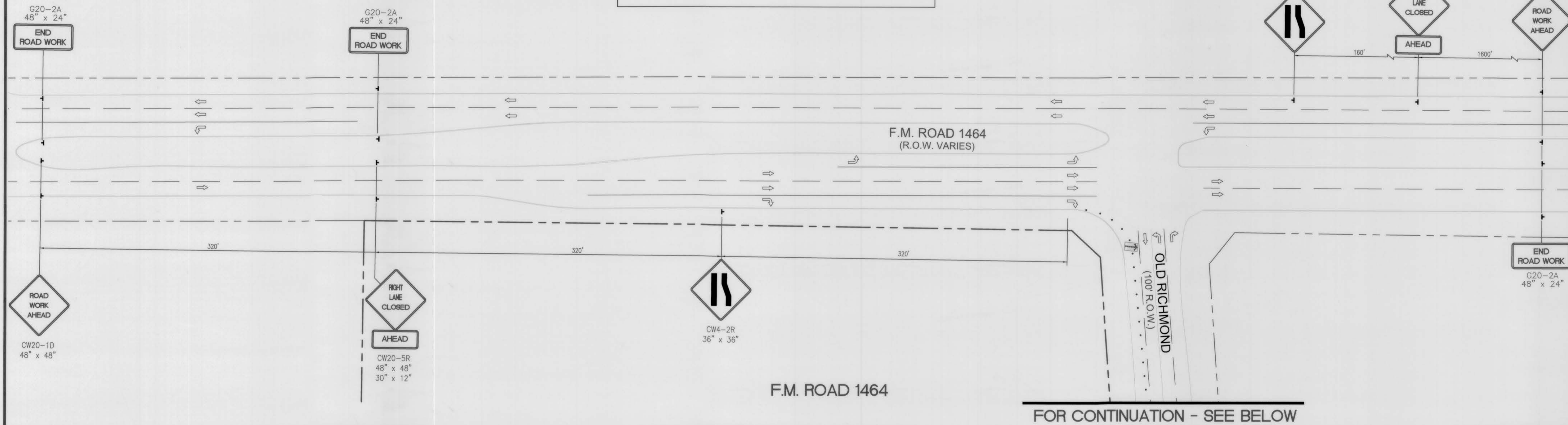
APPROVED: [Signature] Development Coordinator
DATE: 11/9/17

08/01/2017

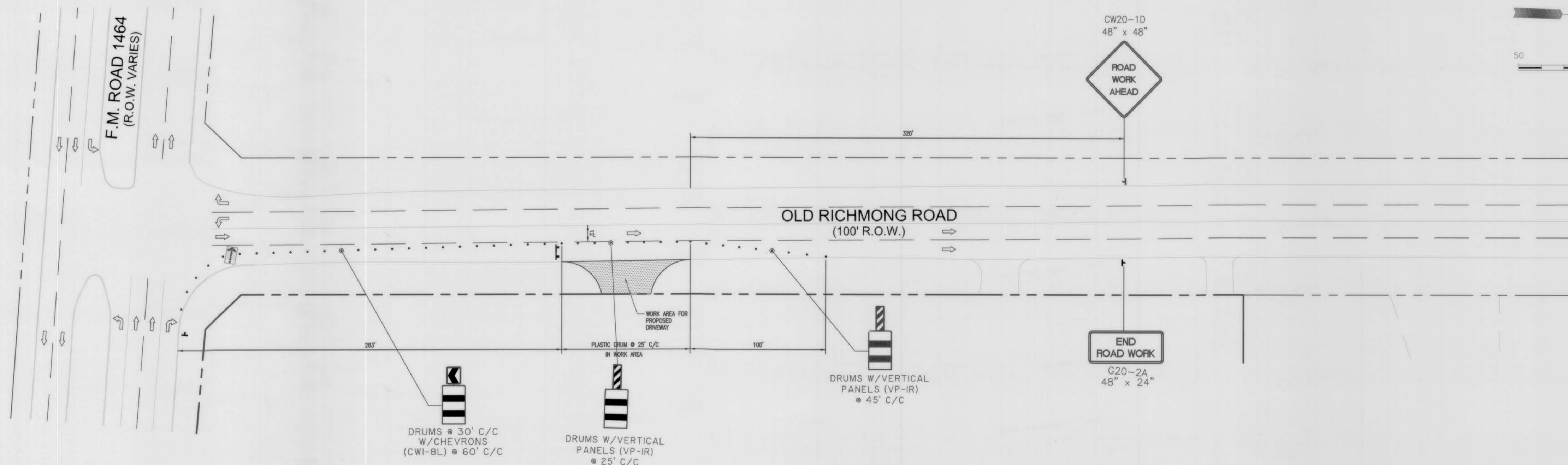
LAST SAVE DATE: 8/17/2017 1:28 PM BY: cjeandra
FILED: C:\Users\cjeandra\Documents\Projects\1464\Drawings\Master Plan\Drawings\C17 7001-PED-12A - FM1464 and Old Richmond Road.dwg

FM 1464
 OLD RICHMOND
 STREET NAME

50 M.P.H.
 35 M.P.H.
 SPEED LIMIT



FOR CONTINUATION - SEE BELOW



OLD RICHMOND ROAD
 TRAFFIC CONTROL PLAN FOR PROPOSED DRIVEWAY

TRAFFIC CONTROL NOTES

- CONTRACTOR SHALL PROVIDE AND INSTALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART VI OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TEXAS MUTCD, MOST RECENT EDITION WITH REVISIONS) DURING CONSTRUCTION.
- NO LANES SHALL BE BLOCKED DURING THE HOURS OF 7:00 A.M. TO 9:00 A.M. AND 4:00 P.M. TO 6:30 P.M. MONDAY THRU FRIDAY.
- OFF DUTY UNIFORMED POLICE OFFICER(S)/FLAGGER(S) IS/ARE REQUIRED TO DIRECT TRAFFIC WHEN LANES ARE BLOCKED.
- CONTRACTOR SHALL COVER OPEN EXCAVATIONS WITH STEEL PLATES ANCHORED PROPERLY DURING NON-WORKING HOURS, AND ALLOW NORMAL TRAFFIC FLOW IF COVERING IS NOT FEASIBLE. USE TRAXTEX FR 336 EPX 36" DELINEATOR OR APPROVED EQUAL WITH SHIELDING AND BASE EPOXIED TO PAVEMENT NEXT TO EXCAVATION DURING NON-WORKING HOURS.
- APPROVED COPIES OF "TRAFFIC CONTROL PLANS" SHALL BE AVAILABLE FOR INSPECTION AT ALL TIMES.
- IF THE CONTRACTOR CHOOSES TO USE A DIFFERENT METHOD OF "TRAFFIC CONTROL PLANS" DURING THE CONSTRUCTION THAN WHAT IS OUTLINED IN THE CONTRACT DRAWINGS, (SHE SHALL BE RESPONSIBLE TO PREPARE AND SUBMIT AN ALTERNATE SET OF PLANS* TO TRAFFIC SECTION OF HCPID FOR APPROVAL TEN WORKING DAYS PRIOR TO IMPLEMENTATION.

SPACING FOR CHANNELING DEVICES

- PLASTIC DRUMS ON MERGING TAPER @ 30' C-C WITH CHEVRON SIGN @ 60' C-C AND TYPE 'C' WARNING LIGHT (FOR OVERNIGHT CLOSURE).
- PLASTIC DRUMS ON DOWNSTREAM TAPER @ 35' C-C.
- PLASTIC DRUMS ON RADII @ 5' C-C.
- PLASTIC DRUMS ON TANGENT @ 35' C-C WITH VERTICAL PANEL @ 70' C-C AND TYPE 'C' WARNING LIGHT (FOR OVERNIGHT CLOSURE).
- PLASTIC DRUMS IN FRONT OF CONSTRUCTION ZONE @ 20' C-C WITH VERTICAL PANEL @ 40' C-C AND TYPE 'A' WARNING LIGHT @ 40' C-C (FOR OVERNIGHT CLOSURE).
- CONCRETE TRAFFIC BARRIER (CTB) OR LOW PROFILE CONCRETE BARRIER (LPCTB) WITH REFLECTORS @ 10' C-C IF PAVEMENT DROP IS MORE THAN TWELVE (12) INCHES OR PLASTIC DRUMS W/ GUARDRAIL MOUNTED.

SPACINGS SHOWN ON THE TRAFFIC CONTROL PLANS SHALL SUPERCEDE THE ABOVE SPACINGS. SPACINGS MAY BE ADJUSTED TO PROVIDE FOR DRIVEWAYS, INTERSECTIONS AND/OR MEDIAN OPENINGS.

LEGEND
 (TYPICAL)

- TYPE III BARRICADE
- PLASTIC DRUMS
- POLE SIGNS
- TRAFFIC FLOW ARROW
- FLASHING ARROW PANEL



APPROVED: *[Signature]*
 DATE: 8/19/17
 Development Coordinator

DAC
 ENGINEERING

17725 Katy Freeway, Suite 103-Houston, TX 77094 • Phone: 281.506.7119
 Firm TBPE Registration No. F-12959 • www.dacengineers.com

REV.	DATE	DESCRIPTION
△		
△		

PROPOSED MASTER PLAN
 6.7 ACRES
 SEC OF FM 1464 AND
 OLD RICHMOND ROAD
 FORT BEND COUNTY,
 SUGAR LAND, TEXAS 77407

TRAFFIC CONTROL PLAN
 FOR PROPOSED DRIVEWAY



JOB No.:	0802-1501
ORIGINAL ISSUE DATE:	AUGUST, 2016
DRAWN BY:	DBK
CHECKED BY:	DBK
SHEET No.:	

C18

08/01/2017

LAST SAVE DATE: 8/17/2017 12:36 PM BY: daniel lee
 PLOTTED: 8/17/2017 12:51 PM
 W: Source\Gis\mxd\0802-1501-FM 1464\Drawings\Master Plan\Drawings\C18-Traffic Control Plan-FM-1464 and Old Richmond Road-Master Plan.dwg