

REVIEW BY FORT BEND COUNTY
COMMISSIONERS COURT

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

X

Right of Way Permit



Commercial Driveway Permit

Permit No: 2018-20155

Applicant: Resicom, Inc.

Job Location Site: Clear Creek Lateral VI-A, Pearland, TX 77584

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

The above applicant came to make use of certain Fort Bend County property subject to, "The Order Regulating the Laying, Construction, Maintenance, and Repair of Buried Cables, Conduits, and Pole Lines, In, Under, Across or Along Roads, Streets, Highways, and Drainage Ditches in Fort Bend County, Texas, Under the Jurisdiction of the Commissioners Court of Fort Bend County, Texas," as passed by the Commissioners Court of Fort Bend County, Texas, of the Minutes of the Commissioners Court of Fort Bend County, Texas, to the extent that such order is not inconsistent with Chapter 181, Vernon's Texas Statutes and Codes Annotated.

Notes:

1. Evidence of review by the Commissioners Court must be kept on the job site and failure to do so constitutes grounds for job shutdown.
2. Written notices are required:
 - a. 48 hours in advance of construction start up, and
 - b. When construction is completed and ready for final inspection, submit notification to Permit Administrator thru [MyGovernmentOnline.org](https://mygovernmentonline.org) portal.
3. This permit expires one (1) year from date of permit if construction has not commenced.

On this 1st day of May, 2018, Upon Motion of Commissioner _____, seconded by Commissioner _____, duly put and carried, it is ORDERED, ADJUDGED AND DECREED that said notice of said above purpose is hereby acknowledged by the Commissioners Court of Fort Bend County, Texas, and that said notice be placed on record according to the regulation order thereof.

Signature

Presented to Commissioners Court and approved.

By:

Rick J. Staigle, PE, PTOE
County Engineer

Date Recorded Comm. Court No.

Clerk of Commissioners Court

By:

Mark Vogler
Drainage District Engineer/Manager

By: _____
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@fortbendcountytx.gov

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

Permit No: 2018-20155

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: [REDACTED] Amount: \$5,000.00
- ☐ Cashier's Check Check No: _____ Amount: _____

(3) DRAINAGE DISTRICT APPROVAL (WHEN APPLICABLE):

Mark Vogler
Drainage District Approval

Date

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

Rich J. Staigle, PE, PTOE
Permit Administrator

4/23/2018

Date

**PERFORMANCE BOND COVERING ALL CABLE, CONDUIT AND/OR POLE LINE
ACTIVITY IN, UNDER, ACROSS OR ALONG FORT BEND COUNTY ROADS**

AUTHORIZED

BOND NO.

THE STATE OF TEXAS §

KNOW ALL MEN BY THESE PRESENTS:

COUNTY OF FORT BEND §

THAT WE, Resicom, Inc. whose
address is Bellaire, TX 77401, Texas, hereinafter called the Principal,
and The Guarantee Co. Of North America USA, a Corporation existing under and by virtue of
the laws of the State of Michigan and authorized to do an indemnifying business in the State of
Texas, and whose principal office is located at One Towne Square Ste 1470, Southfield, MI 48076, whose
officer residing in the State of Texas, authorized to accept service in all suits and actions brought
within said State is TX and whose address is 1999 Bryan St, Ste 900 Dallas, TX 75201,
hereinafter called the Surety, and held and firmly bound unto, **Robert E. Hebert, County Judge**
of Fort Bend County, Texas, or his successors in office, in the full sum of Five Thousand Dollars
Dollars (\$ 5,000) 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 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;

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 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 12th day of April, 2018

Resicom, Inc.

PRINCIPAL

BY

The Guarantee Co. Of North America USA

SURETY

BY

Misty Witt
Misty Witt, Attorney-in-Fact



The Guarantee Company of North America USA
Southfield, Michigan

POWER OF ATTORNEY

POWER OF ATTORNEY NUMBER (must match bond number on bond): [REDACTED]

Fort Bend County Cable Line Performance Bond

Five Thousand Dollars (\$5,000.00)

KNOW ALL BY THESE PRESENTS: That **THE GUARANTEE COMPANY OF NORTH AMERICA USA**, a corporation organized and existing under the laws of the State of Michigan, having its principal office in Southfield, Michigan, does hereby constitute and appoint

Misty Witt, The Woodlands, TX

its true and lawful attorney(s)-in-fact to execute, seal and deliver for and on its behalf as surety, any and all bonds and undertakings, contracts of indemnity and other writings obligatory in the nature thereof, which are or may be allowed, required or permitted by law, statute, rule, regulation, contract or otherwise.

The execution of such instrument(s) in pursuance of these presents, shall be as binding upon **THE GUARANTEE COMPANY OF NORTH AMERICA USA** as fully and amply, to all intents and purposes, as if the same had been duly executed and acknowledged by its regularly elected officers at the principal office.

The Power of Attorney is executed and may be certified so, and may be revoked, pursuant to and by authority of Article IX, Section 9.03 of the By-Laws adopted by the Board of Directors of **THE GUARANTEE COMPANY OF NORTH AMERICA USA** at a meeting held on the 31st day of December, 2003. The President, or any Vice President, acting with any Secretary or Assistant Secretary, shall have power and authority:

1. To appoint Attorney(s)-in-fact, and to authorize them to execute on behalf of the Company, and attach the Seal of the Company thereto, bonds and undertakings, contracts of indemnity and other writings obligatory in the nature thereof; and
2. To revoke, at any time, any such Attorney-in-fact and revoke the authority given, except as provided below
3. In connection with obligations in favor of the Florida Department of Transportation only, it is agreed that the power and authority hereby given to the Attorney-in-Fact includes any and all consents for the release of retained percentages and/or final estimates on engineering and construction contracts required by the State of Florida Department of Transportation. It is fully understood that consenting to the State of Florida Department of Transportation making payment of the final estimate to the Contractor and/or its assignee, shall not relieve this surety company of any of its obligations under its bond.
4. In connection with obligations in favor of the Kentucky Department of Highways only, it is agreed that the power and authority hereby given to the Attorney-in-Fact cannot be modified or revoked unless prior written personal notice of such intent has been given to the Commissioner – Department of Highways of the Commonwealth of Kentucky at least thirty (30) days prior to the modification or revocation.

Further, this Power of Attorney is signed and sealed by facsimile pursuant to resolution of the Board of Directors of the Company adopted at a meeting duly called and held on the 6th day of December 2011, of which the following is a true excerpt:

RESOLVED that the signature of any authorized officer and the seal of the Company may be affixed by facsimile to any Power of Attorney or certification thereof authorizing the execution and delivery of any bond, undertaking, contracts of indemnity and other writings obligatory in the nature thereof, and such signature and seal when so used shall have the same force and effect as though manually affixed.

IN WITNESS WHEREOF, **THE GUARANTEE COMPANY OF NORTH AMERICA USA** has caused this instrument to be signed and its corporate seal to be affixed by its authorized officer, this 1st day of March, 2018.



THE GUARANTEE COMPANY OF NORTH AMERICA USA

Stephen C. Ruschak, President & Chief Operating Officer

Randall Musselman, Secretary

STATE OF MICHIGAN
County of Oakland

On this 1st day of March, 2018 before me came the individuals who executed the preceding instrument, to me personally known, and being by me duly sworn, said that each is the herein described and authorized officer of The Guarantee Company of North America USA; that the seal affixed to said instrument is the Corporate Seal of said Company; that the Corporate Seal and each signature were duly affixed by order of the Board of Directors of said Company.



Cynthia A. Takai
Notary Public, State of Michigan
County of Oakland

My Commission Expires February 27, 2024
Acting in Oakland County

IN WITNESS WHEREOF, I have hereunto set my hand at The Guarantee Company of North America USA offices the day and year above written.

I, Randall Musselman, Secretary of **THE GUARANTEE COMPANY OF NORTH AMERICA USA**, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney executed by **THE GUARANTEE COMPANY OF NORTH AMERICA USA**, which is still in full force and effect.



IN WITNESS WHEREOF, I have thereunto set my hand and attached the seal of said Company this 12th day of April, 2018

Randall Musselman, Secretary



TEXAS CONSUMER NOTICE

1. IMPORTANT NOTICE To obtain information or make a complaint: 2. You may contact your agent at: 3. You may call The Guarantee Company of North America USA's toll-free telephone number for information or to make a complaint at: 1-866-328-0567 4. You may also write to The Guarantee Company of North America USA at: One Towne Square, Suite 1470 Southfield, Michigan 48076 Web: www.theguaranteeus.com E-mail: Info@theguaranteeus.com Fax: 248-750-0431 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: 333 Guadalupe Street P.O. Box 149104 Austin, TX 78701 Fax: (512) 490-1007 Web: http://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 the (agent) (company) (agent or the company) 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 su agent al Usted puede llamar al numero de telefono gratis de The Guarantee Company of North America USA's para informacion o para someter una queja al: 1-866-328-0567 Usted tambien puede escribir a to The Guarantee Company of North America USA; One Towne Square, Suite 1470 Southfield, Michigan 48076 Web: www.theguaranteeus.com E-mail: Info@theguaranteeus.com Fax: 248-750-0431 Puede comunicarse con el Departamento de Seguros de Texas para obtener informacion acerca de companies, coberturas, derechos o quejas al: 1-800-252-3439 Puede escribir al Departamento de Seguros de Texas: 333 Guadalupe Street P.O. Box 149104 Austin, TX 78701 Fax: (512) 490-1007 Web: http://www.tdi.texas.gov E-mail: ConsumerProtection@tdi.texas.gov DISPUTAS SOBRE PRIMAS O RECLAMOS: Si tiene una disputa concerniente a su prima o a un reclamo, debe comunicarse con el (agente) (la compania) agente o la compania) 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 document adj unto.
---	---

City of Pearland, Texas

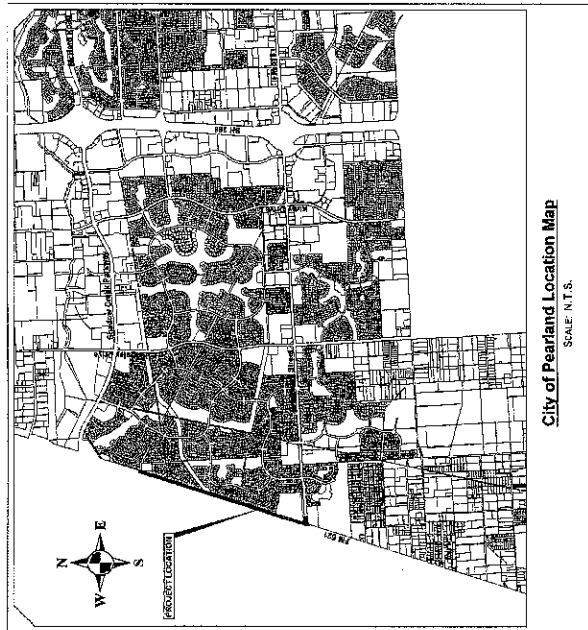
FM 521 Water Line

(Broadway to Mooring Pointe)

COP Project Number: WA1505

Bid Number: 1018-08

October 2017



MAYOR
Tom Reid
COUNCIL

Position 1
Position 2, Mayor Pro Tem
Position 3
Position 4
Position 5
Position 6
Position 7

Tony Carbone
Derrick Reed
Gary Moore
Keith Ordeneaux
J David Little
Trent Perez
Woody Owens

CITY MANAGER

Clay Pearson

ASST. CITY MANAGER

Trent Epperson

Director of Engineering

Robert Upton, P.E.

DEPUTY CITY MANAGER

Jon Branson

Director of Public Works

Eric Wilson



7322 South West Fwy., Suite 1000 • Houston, Texas 77036
(713) 400-2155 • Fax (713) 400-2254 • www.arkkengineers.com • TX Reg. Firm No. 13872

ARKK JOB NO. 16-012

Drawing List

- 1 Cover
- 2 General Notes
- 3 Survey Control Map Sheet 1 of 2
- 4 Survey Control Map Sheet 2 of 2
- 5 Strip Map
- 6 Sheet Layout I
- 7 Sheet Layout II
- 8 Sheet Layout III
- 9 Broadway Street, Sta. 1+00 to End
- 10 FM 521, Sta. 1+00 to Sta. 5+50
- 11 FM 521, Sta. 5+50 to Sta. 14+00
- 12 FM 521, Sta. 14+00 to Sta. 18+00
- 13 FM 521, Sta. 18+00 to Sta. 23+00
- 14 FM 521, Sta. 23+00 to Sta. 28+00
- 15 FM 521, Sta. 28+00 to Sta. 32+00
- 16 FM 521, Sta. 32+00 to Sta. 37+00
- 17 FM 521, Sta. 37+00 to Sta. 41+00
- 18 FM 521, Sta. 41+00 to Sta. 46+00
- 19 FM 521, Sta. 46+00 to Sta. 50+00
- 20 FM 521, Sta. 50+00 to Sta. 55+00
- 21 FM 521, Sta. 55+00 to Sta. 59+00
- 22 FM 521, Sta. 59+00 to Sta. 64+00
- 23 FM 521, Sta. 64+00 to Sta. 68+00
- 24 FM 521, Sta. 68+00 to Sta. 73+00
- 25 FM 521, Sta. 73+00 to Sta. 77+00
- 26 FM 521, Sta. 77+00 to End
- 27A F.O. Conduit Layout I
- 27B F.O. Conduit Layout II
- 28 TxDOT TCP Conventional Road/Shoulder Work Traffic Control (11-12)
- 29 Typical Paving or Moving Operation Detail
- 30 Storm Water Pollution Prevention Plan I
- 31 Storm Water Pollution Prevention Plan II
- 32 Storm Water Pollution Prevention Plan Details
- 33 TxDOT Water Line Standard WLS-11
- 34 City of Pearland Water Line Details I
- 35 City of Pearland Water Line Details II
- 36 Miscellaneous Details I
- 37 Miscellaneous Details II



SUBMITTED BY:

DATE: 10/16/2017

DATE:

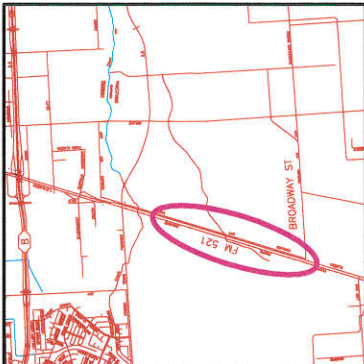
10/16/17

David Kneaf, P.E.

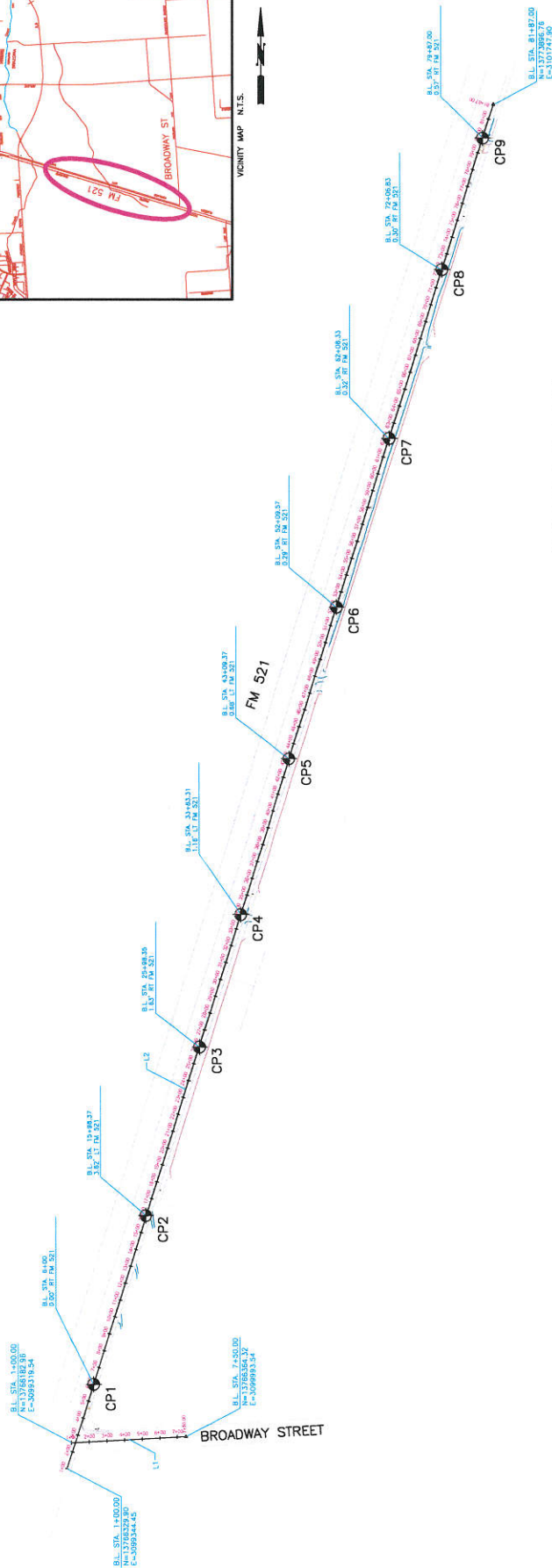
ARKK Engineers, LLC

Robert Upton, P.E.

Director of Engineering



VICINITY MAP N.T.S.



CITY OF PEABODY
HORIZONTAL CONTROL MONUMENT
PEABODY, TEXAS
ELEVATION: 59.03 FEET

DESCRIPTION:
BRASS CAP SET FLUSH IN CONCRETE. STATIONED CITY OF PEABODY, TEXAS. THE MONUMENT IS LOCATED IN THE INTERSECTION OF THE WEST ACCESS ROAD TO HIGHWAY 288 AND COUNTY ROAD 12. THE MONUMENT IS APPROXIMATELY 500 FEET NORTH OF COUNTY ROAD 12. THE MONUMENT IS A CONCRETE PAD FOR STORM DRAIN INLETS.



I, the undersigned, a Registered Professional Land Surveyor of the State of Texas, do hereby certify that this survey was made on the ground and is true and correct to the best of my knowledge and belief.

Robert D. Ellis
Registered Professional Land Surveyor No. 4006

CONTROL SHEET

FOR
FM 521 (F.M. 521)
NEAR BROADWAY ST (F.M. 518)
FORT BEND COUNTY, TEXAS

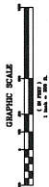
CP#	NORTHING	EASTING	ELEVATION IN FEET	DESCRIPTION
CP1	1276059.89	309949.68	65.12	MAGNAIL IN ASPHALT
CP2	1276059.89	309949.68	65.12	MAGNAIL IN ASPHALT
CP3	1276059.89	309949.68	65.12	MAGNAIL IN ASPHALT
CP4	1276059.89	309949.68	65.12	MAGNAIL IN ASPHALT
CP5	1276059.89	309949.68	65.12	MAGNAIL IN ASPHALT
CP6	1276059.89	309949.68	65.12	MAGNAIL IN ASPHALT
CP7	1276059.89	309949.68	65.12	MAGNAIL IN ASPHALT
CP8	1276059.89	309949.68	65.12	MAGNAIL IN ASPHALT
CP9	1276059.89	309949.68	65.12	MAGNAIL IN ASPHALT

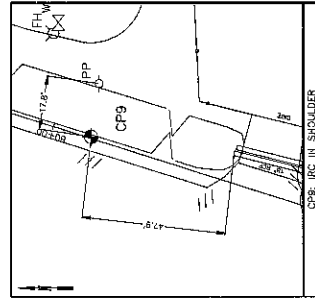
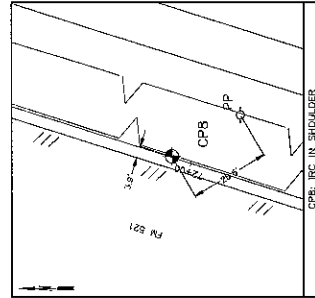
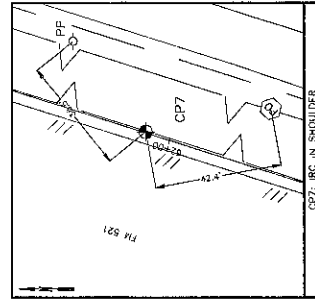
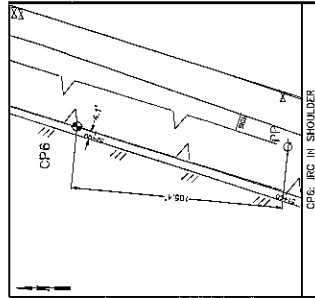
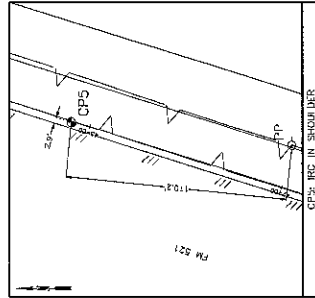
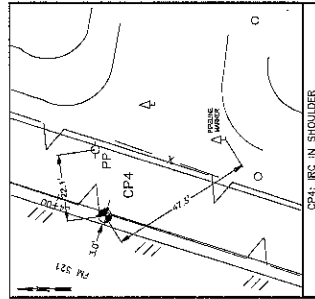
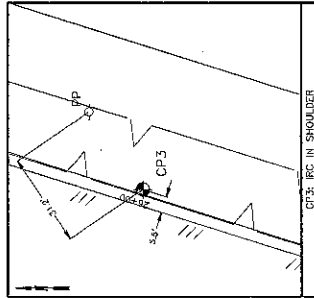
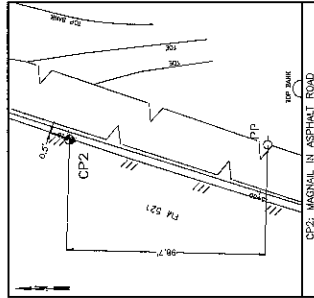
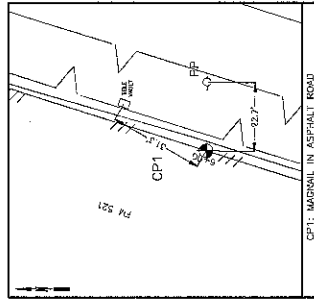
LINE	LENGTH	BEARING
FM 521	1.00	N 89° 57' 30" E

LINE	LENGTH	BEARING
FM 521	1.00	N 89° 57' 30" E

ELLIS SURVEYING SERVICES
10000 Katy Road, Suite 100
Houston, Texas 77059
Tel.: 409-928-4700
www.ellisurvey.com

SCALE: 1" = 300'
PHONE: (409) 838-8700
DATE: 3-28-2018
SHEET 3 OF 37



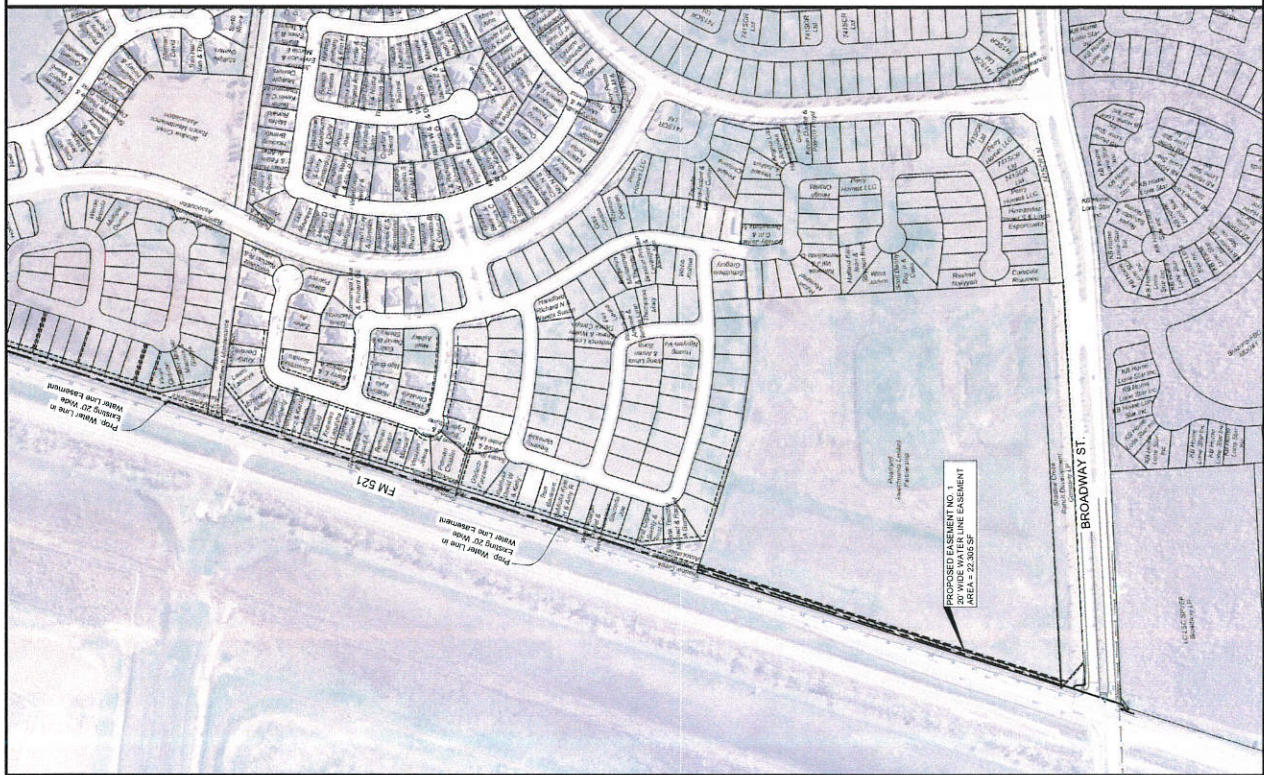
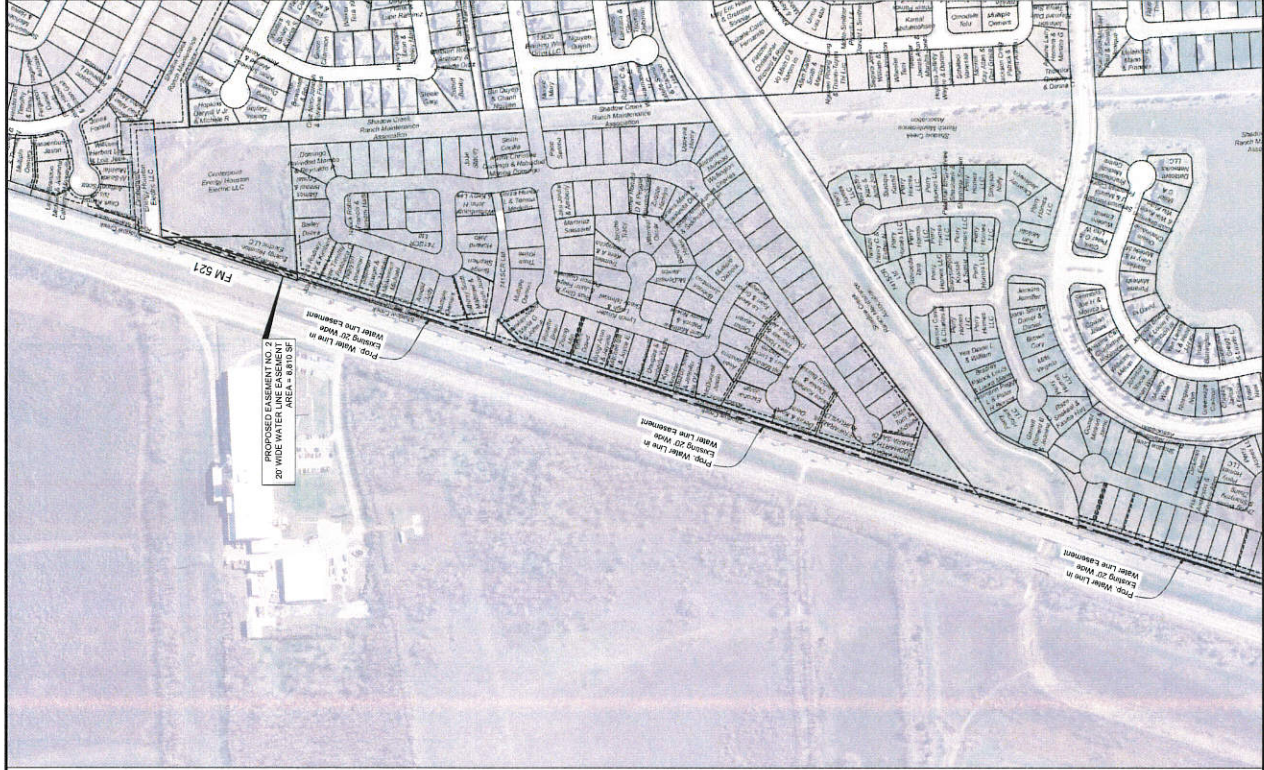


CP#	POINTING	EASTING	NORTHING	DESCRIPTION
CP1	1276515.30	3000000.00	3000000.00	IRC IN SHOULDER
CP2	1276515.30	3000000.00	3000000.00	IRC IN SHOULDER
CP3	1276515.30	3000000.00	3000000.00	IRC IN SHOULDER
CP4	1276515.30	3000000.00	3000000.00	IRC IN SHOULDER
CP5	1276515.30	3000000.00	3000000.00	IRC IN SHOULDER
CP6	1276515.30	3000000.00	3000000.00	IRC IN SHOULDER
CP7	1276515.30	3000000.00	3000000.00	IRC IN SHOULDER
CP8	1276515.30	3000000.00	3000000.00	IRC IN SHOULDER
CP9	1276515.30	3000000.00	3000000.00	IRC IN SHOULDER

ELLIS SURVEYING SERVICES
 11111 Highway 100
 Texas City, Texas 77590
 Tel: 409-338-5700
 www.ellisurveying.com

CONTROL SHEET FOR
FM 521 (F.M. 521)
NEAR BROADWAY ST (F.M. 518)
FORT BEND COUNTY, TEXAS

SCALE: AS SHOWN
 PROJ. NUMBER: 2011
 DATE: 5-28-2018
 SHEET: 4 OF 37



DATE	DATE	DATE	DATE
10/19/2017			

DAVID W. KASPER
CITY CLERK

10/19/2017

ARKENGINEERS

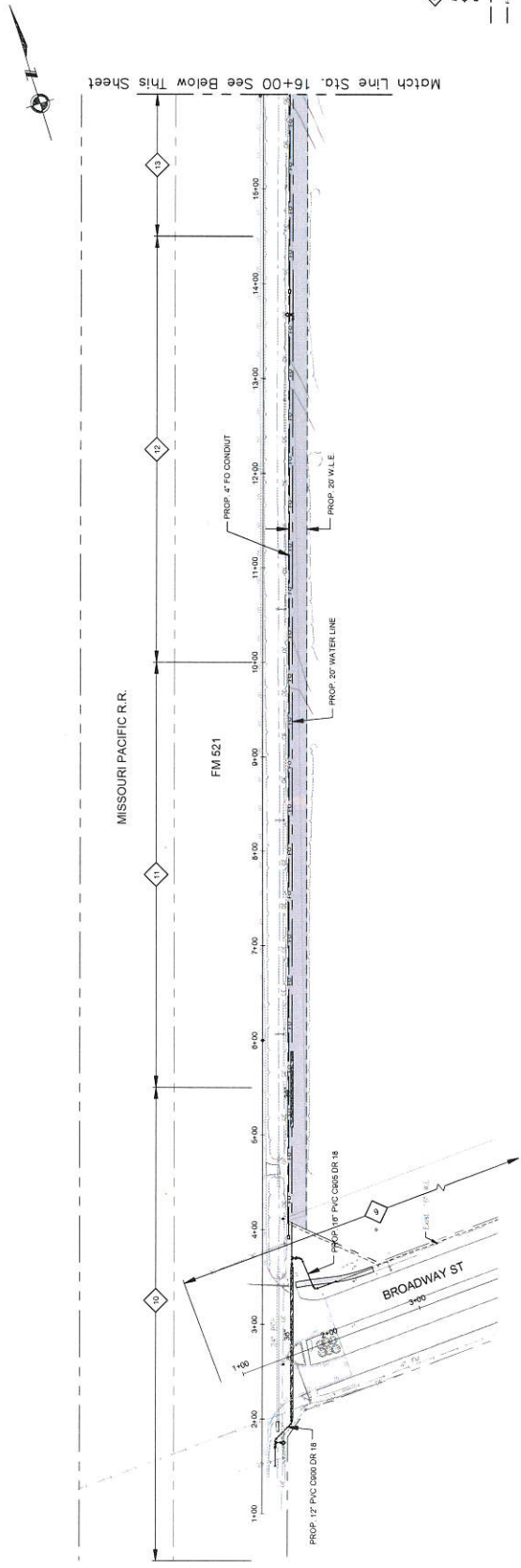
1333 West 28th Street, Suite 200 • Houston, Texas 77058
713.265.2255 • ark@arkengineers.com • www.arkengineers.com

City of Pearland, Texas
FM 521 Water Line
(Broadway to Moving Pointe)

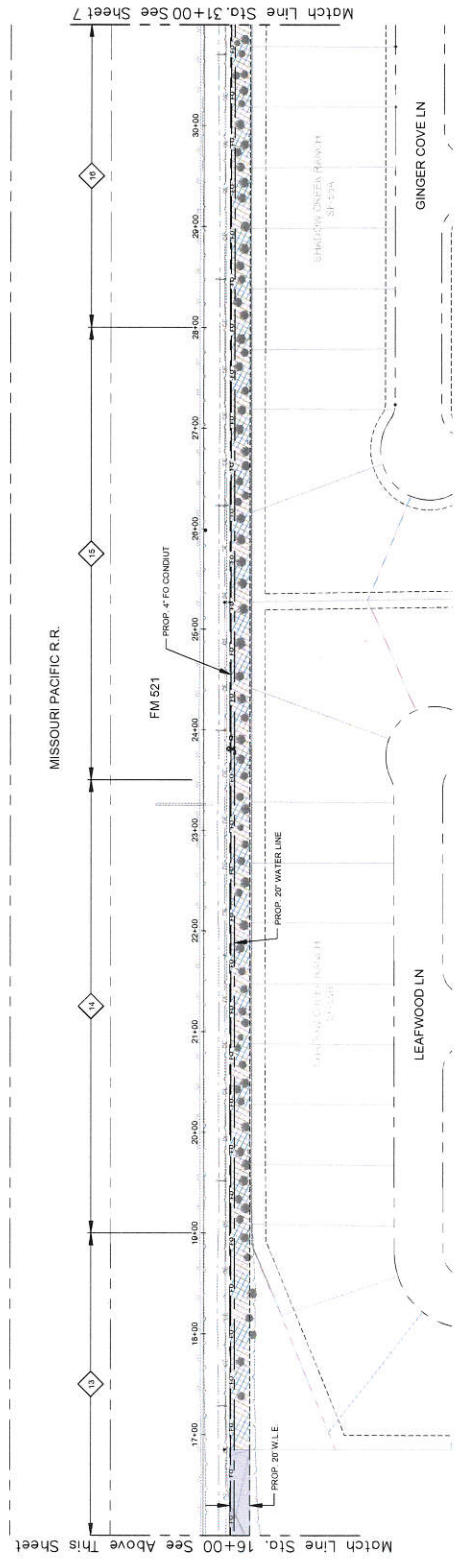
FM 521 Strip Map

Drawn By: 16-0373	Scale: 1" = 200'	SHEET
Check By: D. Kasper	Drawn By: D. Kasper	5
Scale By: M. Brown	Drawn By: M. Brown	OF 37

BEREAVEMENT
SEE SURVEY CONTROL MAP SHEETS 3-4



Match Line Sta. 16+00 See Below This Sheet



Match Line Sta. 31+00 See Sheet 7

- LEGEND**
- SHEET NUMBER
 - PROP. VALVE
 - PROP. FIRE HYDRANT
 - PROP. WATER LINE
 - PROP. FIBER OPTIC CONDUIT
 - PROP. CASING
 - PROP. WATER LINE ESMT
 - EXST. WATER & SEWER ESMT

NO.	DESCRIPTION	DATE	BY

12/19/2017

ARIK ENGINEERS

1000 Southwest Freeway, Suite 2000 • Fort Worth, Texas 76104
 (817) 336-0000 • Fax: (817) 336-0001 • Email: info@arikeng.com

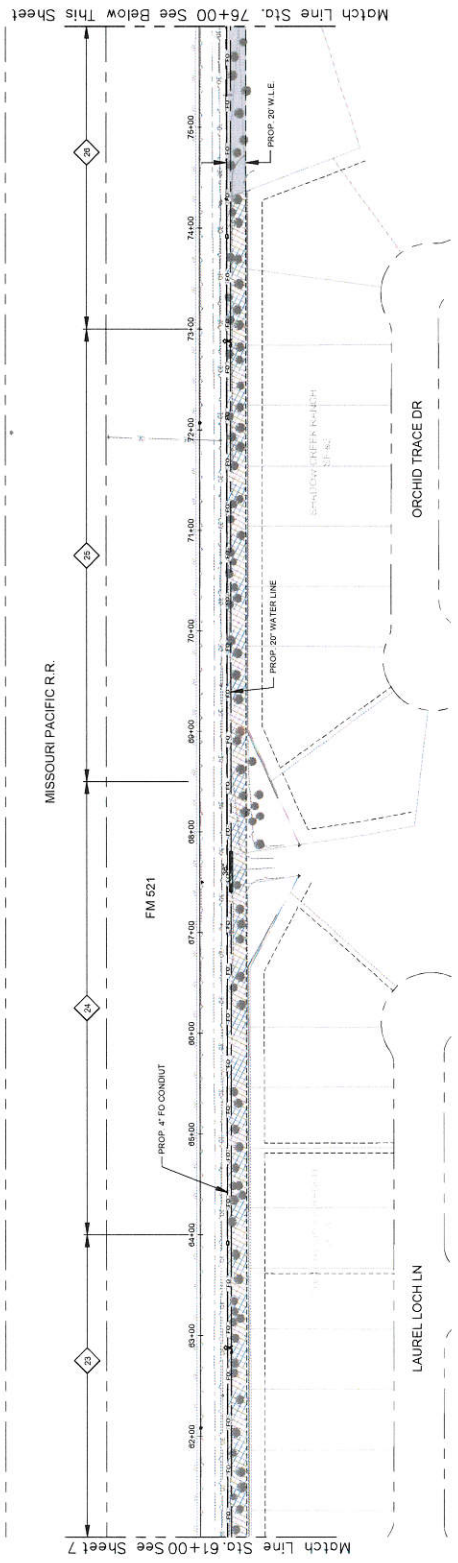
City of Pearland, Texas
 FM 521 Water Line
 (Broadway to Moving Painter)

Project Layout I

Date: Nov. 16, 2017 Drawn: October 2017 Scale: 1" = 60' Check: M. Brown	SHEET 6 OF 37
--	----------------------------

[illegible]

BENCHMARKS:
SEE SURVEY CONTROL MAP SHEETS 3-4



LEGEND

- SHEET NUMBER
- PROP. VALVE
- PROP. FIRE HYDRANT
- PROP. WATER LINE
- PROP. FIBER OPTIC CONDUIT
- PROP. CASING
- PROP. WATER LINE ESMT.
- EXIST. WATER & SEWER ESMT.

DATE	12/19/2017
BY	DAVID W. KASPER
CHECKED BY	DAVID W. KASPER
DATE	12/19/2017



ARK ENGINEERS

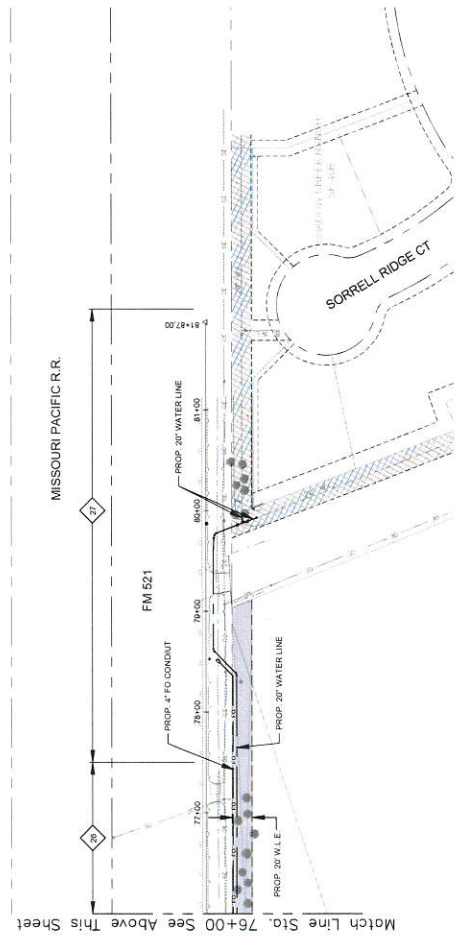
12/19/2017
ARK ENGINEERS
 1500 West Loop South, Suite 1000, Houston, Texas 77063
 (713) 862-2255 • www.arkengineers.com • 201 F.E. License No. 12545

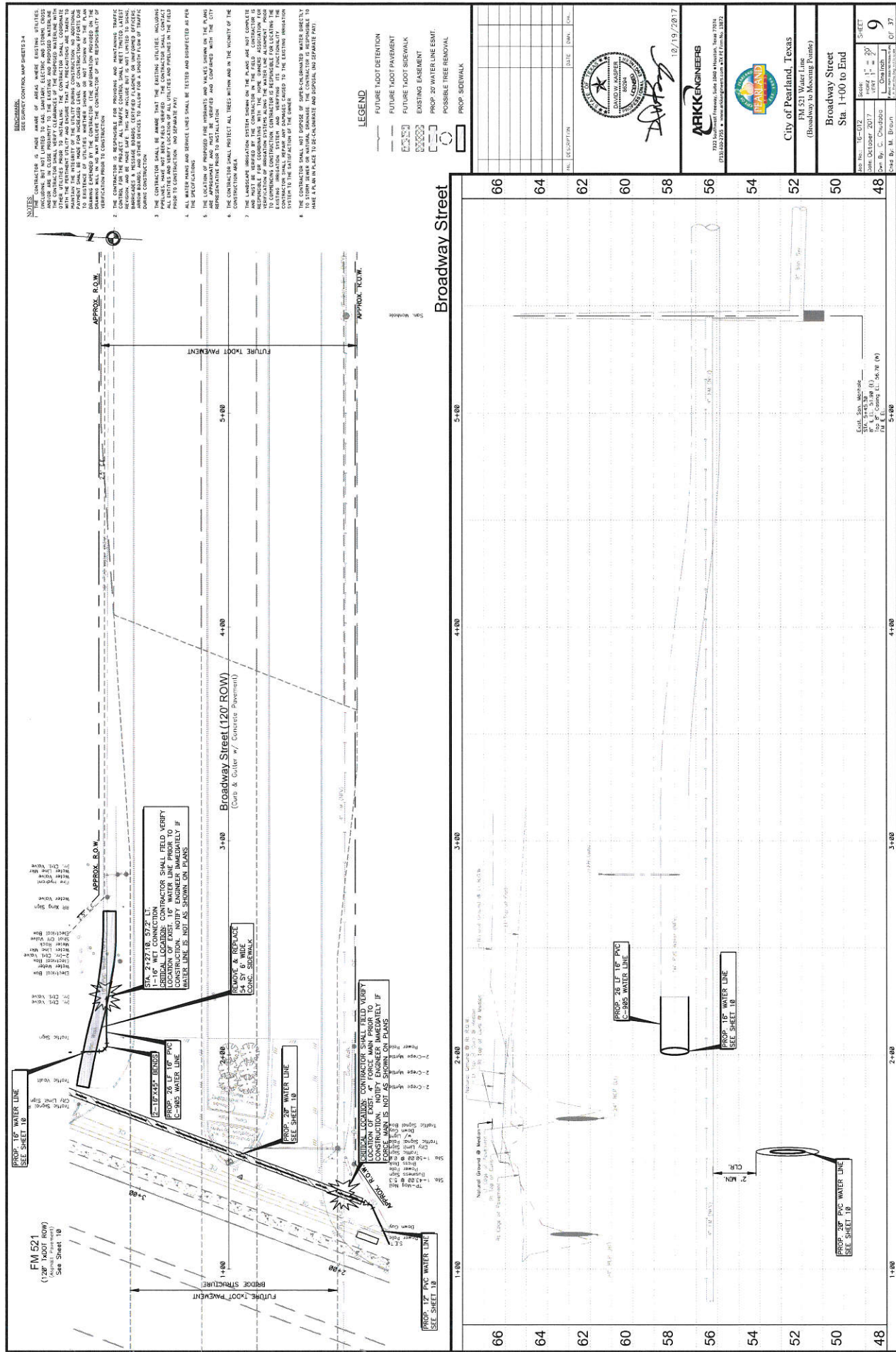


City of Pearland, Texas
 FM 521 Water Line
 (Broadway to Mount Pointe)

Project Layout III

Proj No.	16-0132	Scale	1" = 60'	SHEET
Date	OCTOBER 2017			
Drawn By	C. Choudhury	Checked By		8
Drawn By	M. Brown	Checked By		37





NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARTLAND, TEXAS, INCLUDING BUT NOT LIMITED TO SANITARY, ELECTRIC AND STORM DRAINAGE PERMITS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARTLAND, TEXAS, INCLUDING BUT NOT LIMITED TO SANITARY, ELECTRIC AND STORM DRAINAGE PERMITS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARTLAND, TEXAS, INCLUDING BUT NOT LIMITED TO SANITARY, ELECTRIC AND STORM DRAINAGE PERMITS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARTLAND, TEXAS, INCLUDING BUT NOT LIMITED TO SANITARY, ELECTRIC AND STORM DRAINAGE PERMITS.
4. ALL WATER MAINS AND SERVICE LINES SHALL BE TESTED AND DISINFECTED AS PER THE SPECIFICATIONS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARTLAND, TEXAS, INCLUDING BUT NOT LIMITED TO SANITARY, ELECTRIC AND STORM DRAINAGE PERMITS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARTLAND, TEXAS, INCLUDING BUT NOT LIMITED TO SANITARY, ELECTRIC AND STORM DRAINAGE PERMITS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARTLAND, TEXAS, INCLUDING BUT NOT LIMITED TO SANITARY, ELECTRIC AND STORM DRAINAGE PERMITS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARTLAND, TEXAS, INCLUDING BUT NOT LIMITED TO SANITARY, ELECTRIC AND STORM DRAINAGE PERMITS.

LEGEND

- FUTURE TxDOT DETENTION
- FUTURE TxDOT PAVEMENT
- FUTURE TxDOT SIDEWALK
- EXISTING BASEMENT
- PROP. 20" WATER LINE EMB.
- POSSIBLE TREE REMOVAL
- PROP. SIDEWALK

NO.	DESCRIPTION	DATE	BY
1	DESIGN	10/19/2017	ARK ENGINEERS
2	REVISION		
3	REVISION		
4	REVISION		
5	REVISION		
6	REVISION		
7	REVISION		
8	REVISION		
9	REVISION		
10	REVISION		

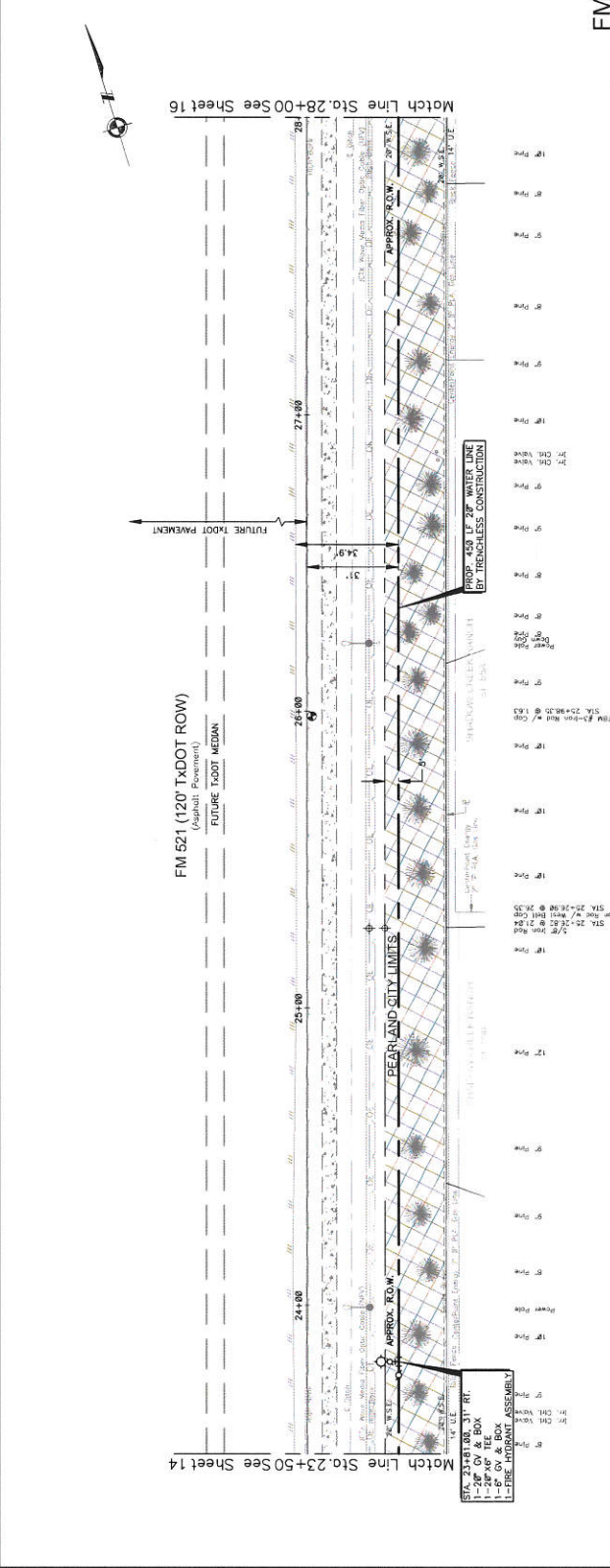


ARK ENGINEERS
7031 West Loop South, Suite 200, Houston, Texas 77056
(713) 860-2225 • www.arkengineers.com • P.E. David W. Asprey

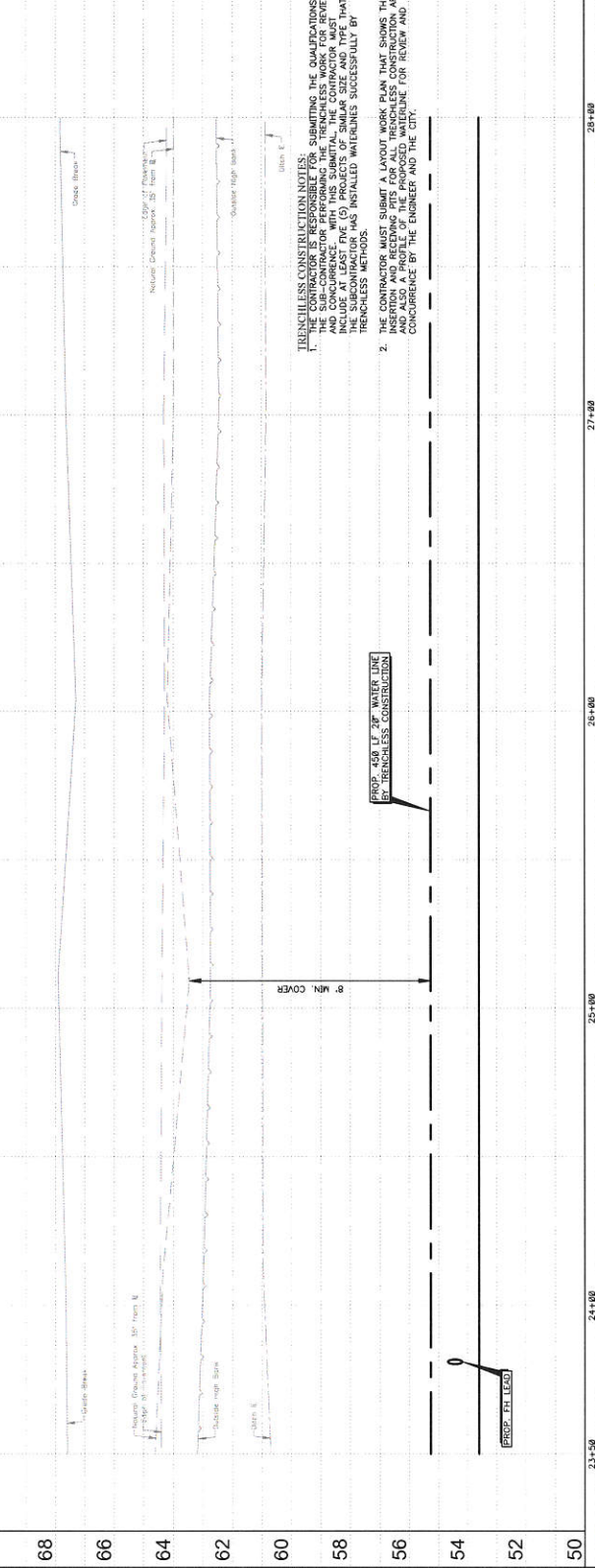
City of Pearland, Texas
FM 521 Water Line
(Broadway to Mooring Pointe)

FM 521
Sta. 23+50 to Sta. 28+00

15
SHEET
Date: October 2017
Drawn By: M. Brown
Checked By: M. Brown



FM 521



50
Job No.: 16-012

Date: October 2017
Scale: Horiz 1" = 20'

Des By: C. Chudoba
VERT 1" = 2'

Cont By: M. Braun
Sheet 16 of 37

One Inch
1" = 20'

If different sizes than 1/2" scale, please
 specify on drawing.

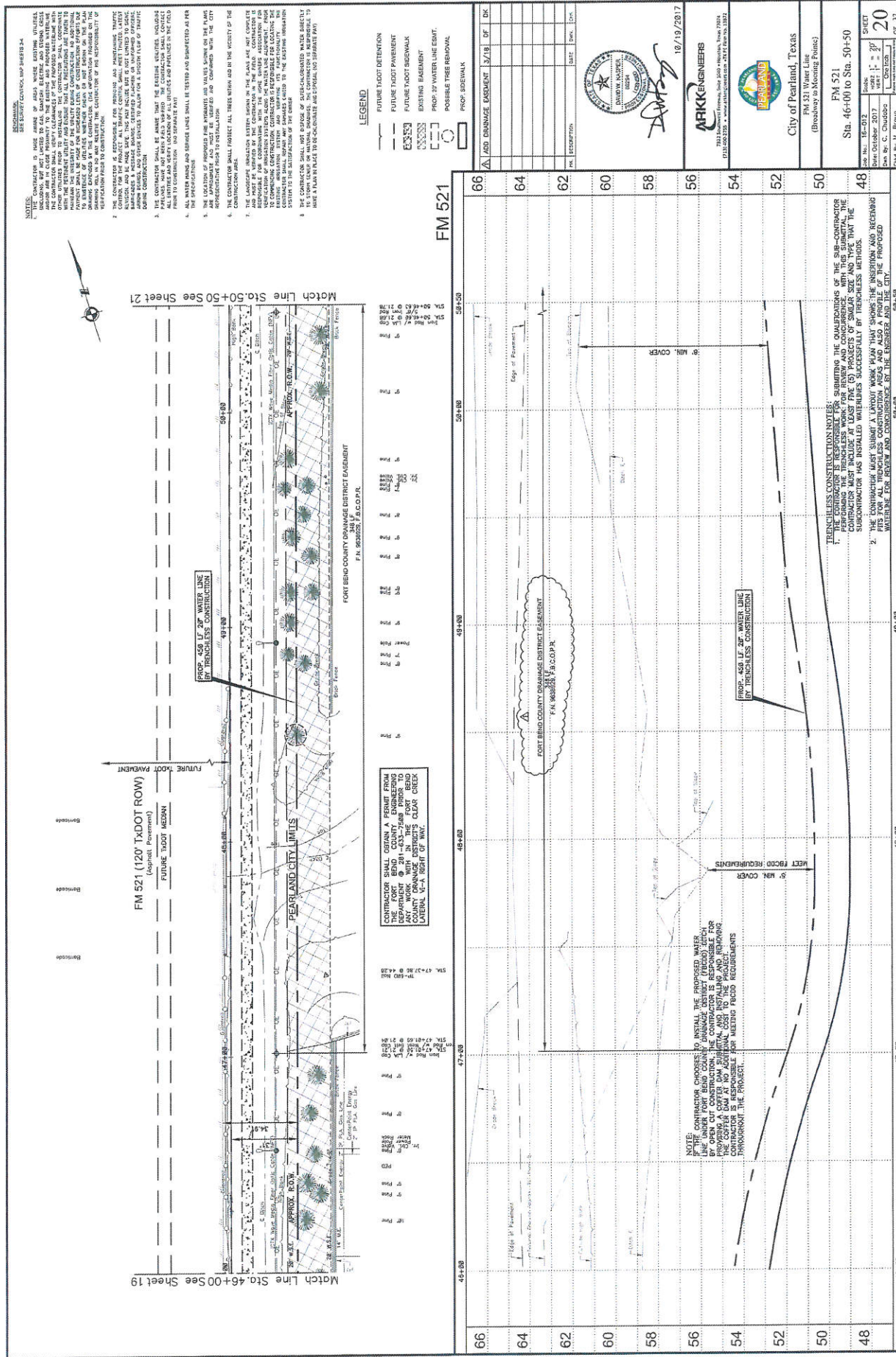
32+00	32+50
-------	-------

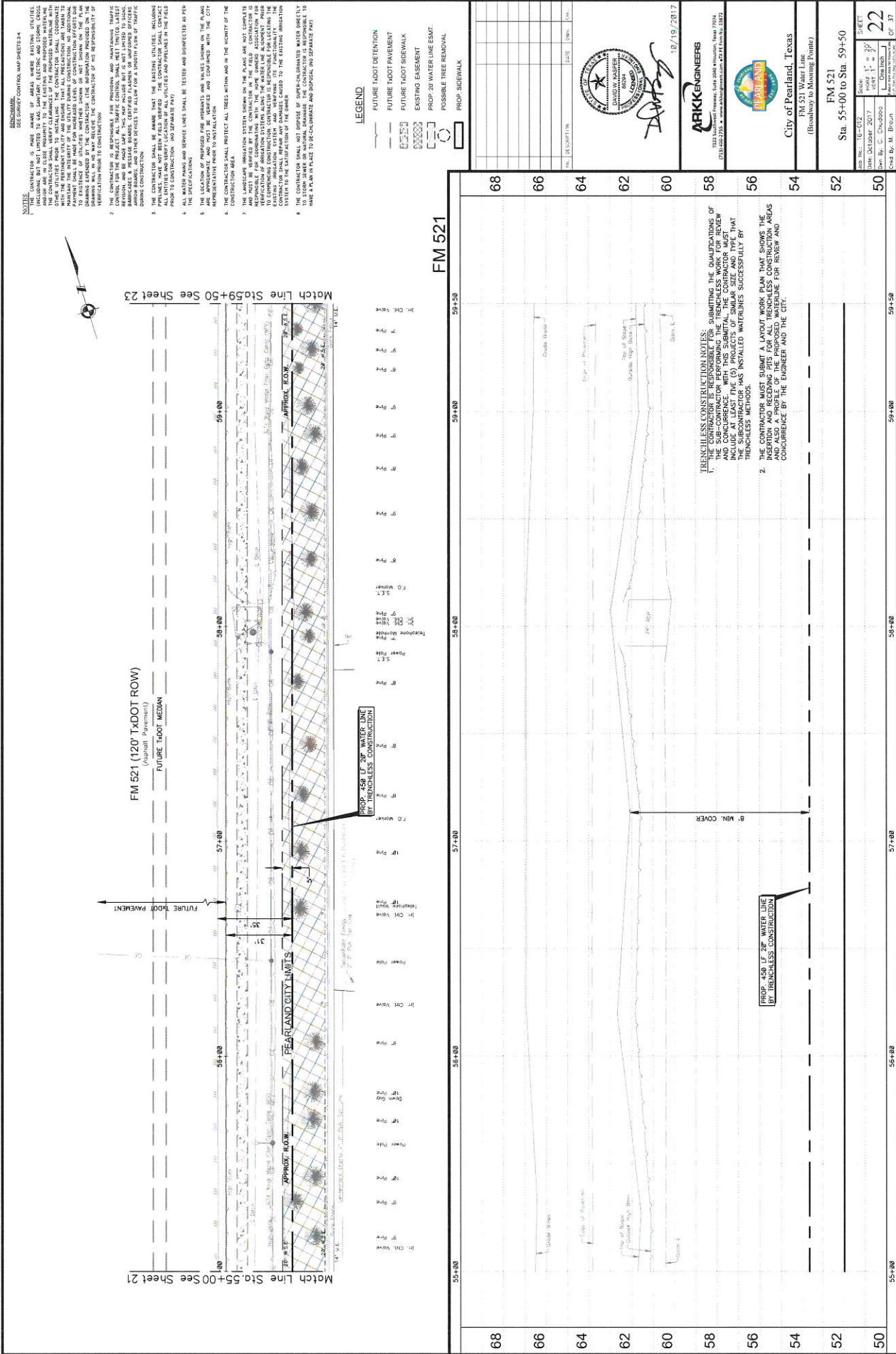
31 + 22

38+00

28+00	29+00
-------	-------

50





NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT) PRIOR TO CONSTRUCTION.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT) PRIOR TO CONSTRUCTION.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT) PRIOR TO CONSTRUCTION.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT) PRIOR TO CONSTRUCTION.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT) PRIOR TO CONSTRUCTION.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT) PRIOR TO CONSTRUCTION.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT) PRIOR TO CONSTRUCTION.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT) PRIOR TO CONSTRUCTION.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT) PRIOR TO CONSTRUCTION.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT) PRIOR TO CONSTRUCTION.

LEGEND

— FUTURE TxDOT DETENTION

— FUTURE TxDOT PAVEMENT

— FUTURE TxDOT SIDEWALK

— EXISTING BASEMENT

— PROP. 20' WATER LINE ESMIT

— POSSIBLE TREE REMOVAL

— PROP. SIDEWALK

FM 521

10/19/2017

ARIK ENGINEERS

12333 East Loop West, Suite 1000 Houston, Texas 77041

(713) 865-1234

PEARLAND

City of Pearland, Texas

FM 521 (Boulevard to Morning Pointe)

Sta. 55+00 to Sta. 59+50

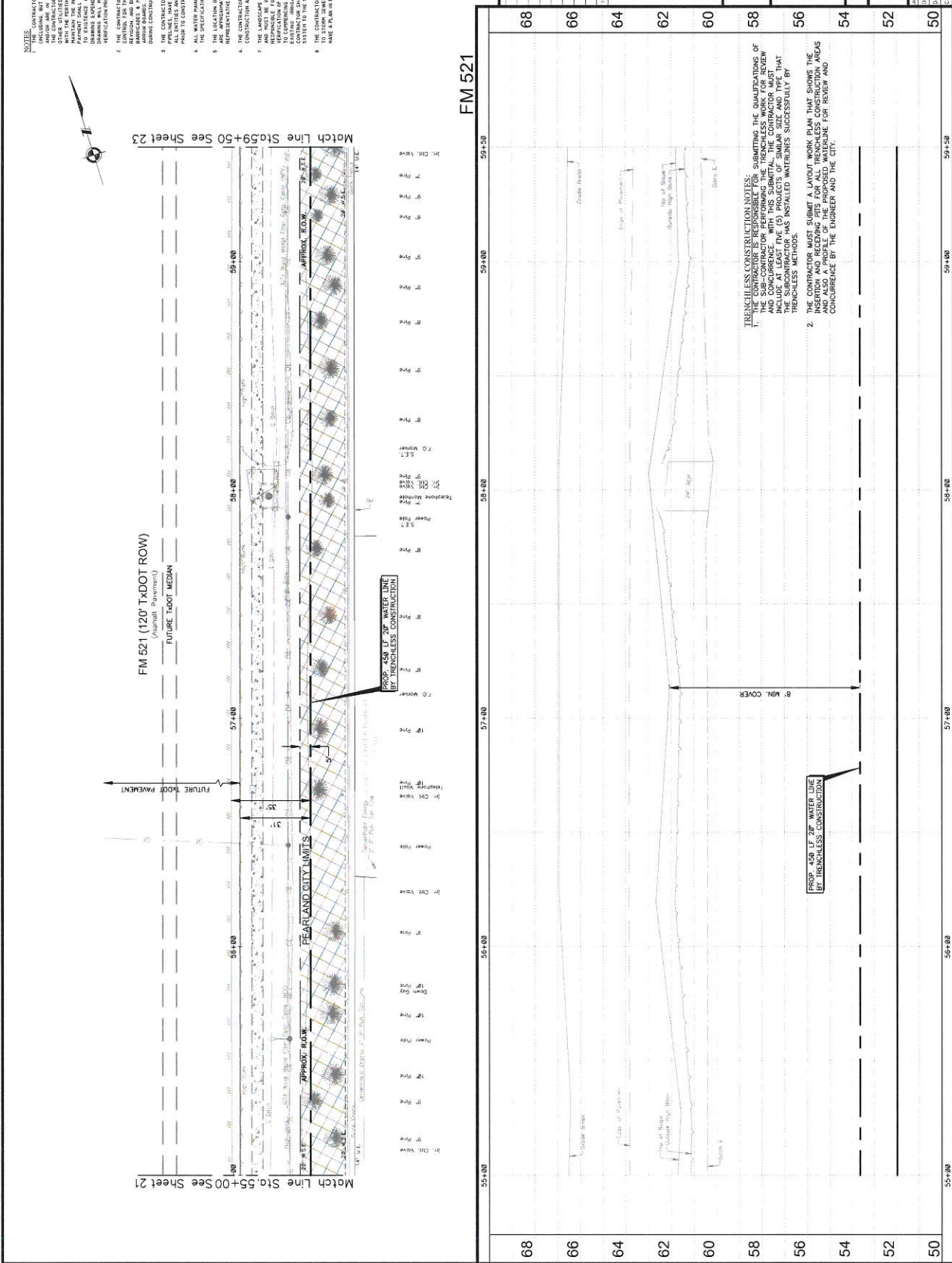
Scale: 1" = 20'

Sheet: 22

Drawn By: M. Brown

Check By: M. Brown

Of: 37



NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND, TEXAS, AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT). THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND, TEXAS, AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT).
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND, TEXAS, AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT). THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND, TEXAS, AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT).
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND, TEXAS, AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT). THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND, TEXAS, AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT).
4. ALL WATER MAINS AND SERVICE LINES SHALL BE TESTED AND DISINFECTED AS PER THE SPECIFICATIONS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND, TEXAS, AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT). THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND, TEXAS, AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT).
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND, TEXAS, AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT). THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND, TEXAS, AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT).
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND, TEXAS, AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT). THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND, TEXAS, AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT).
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND, TEXAS, AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT). THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND, TEXAS, AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT).
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND, TEXAS, AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT). THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND, TEXAS, AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT).
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND, TEXAS, AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT). THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF PEARLAND, TEXAS, AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT).

LEGEND

- FUTURE TxDOT DETENTION
FUTURE TxDOT PAVEMENT
FUTURE TxDOT SIDEWALK
EXISTING EASEMENT
PROP. 20' WATER LINE EMBANKMENT
PROP. FREE REMOVAL
PROP. SIDEWALK

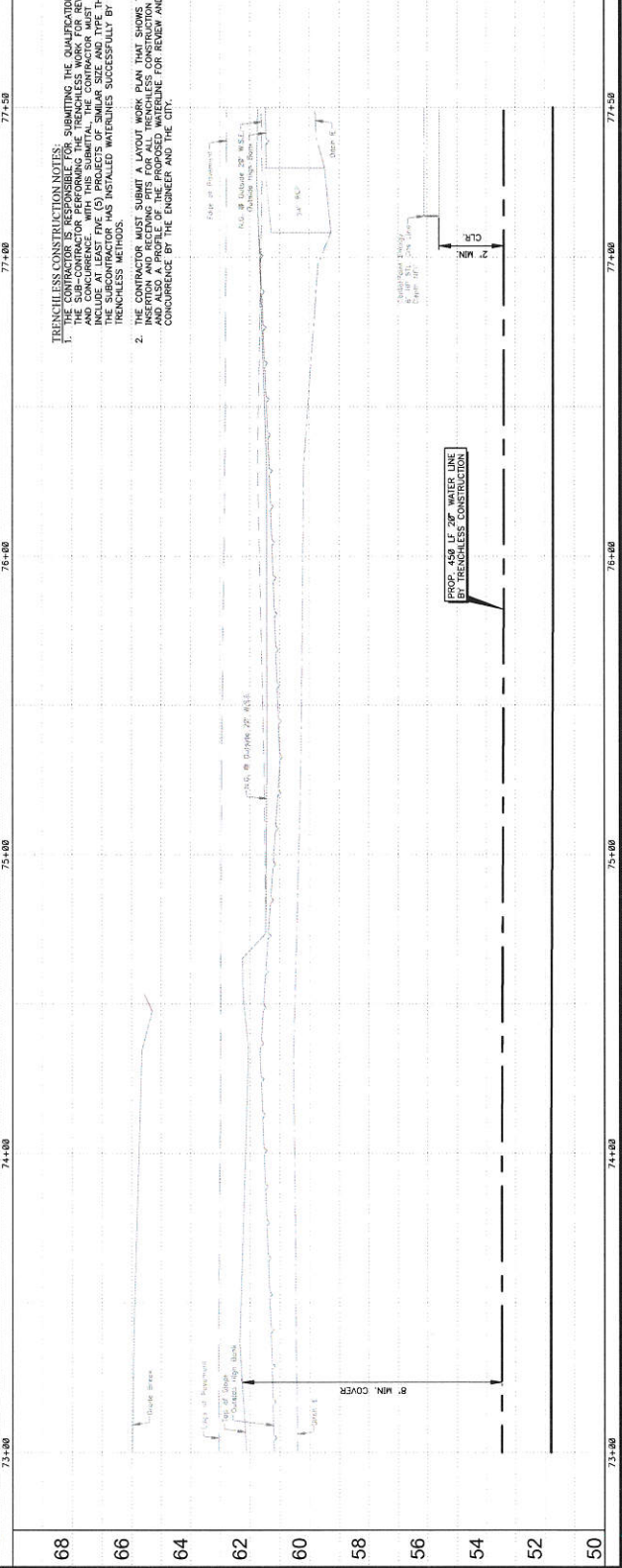
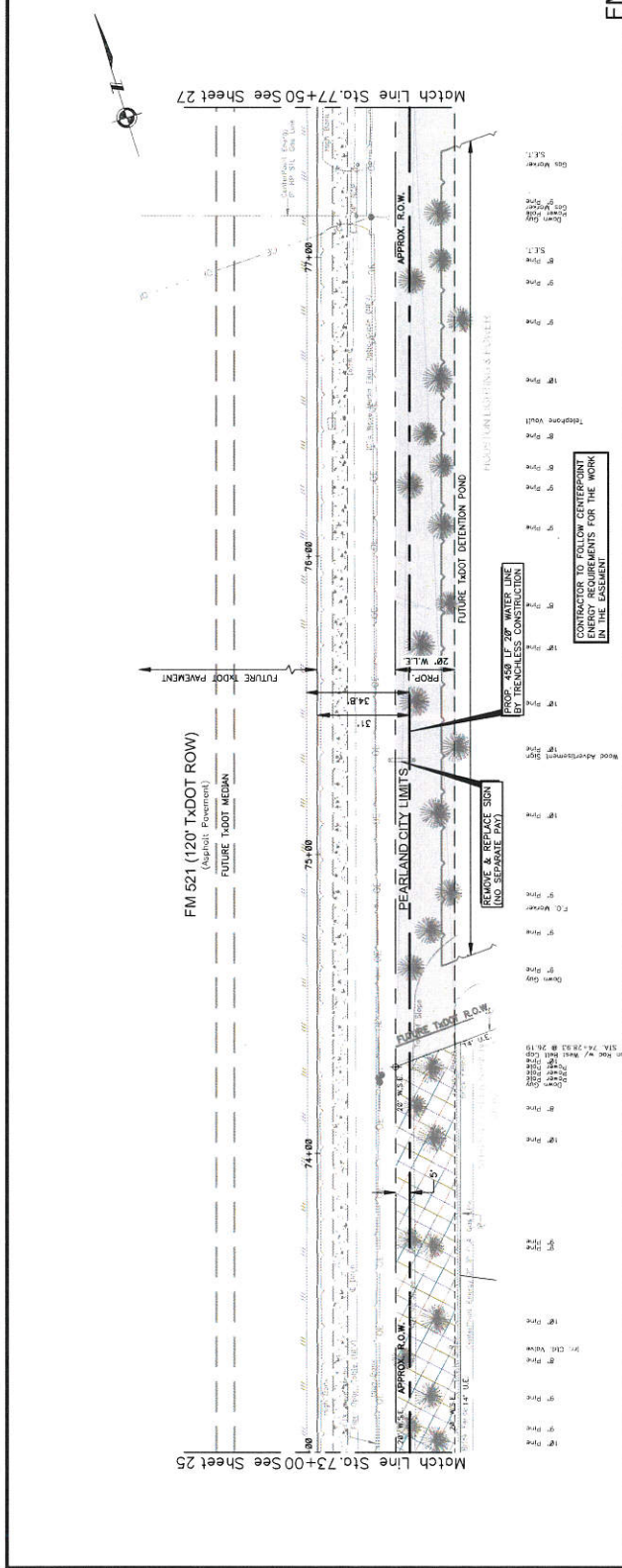
PEARLAND CITY ENGINEERS
10000 S. MAIN ST., SUITE 100, PEARLAND, TEXAS 77581
713.385.2225 • www.pearlandcityengineers.com

City of Pearland, Texas
FM 521 Water Line
(Broadway to Mustang Pointe)

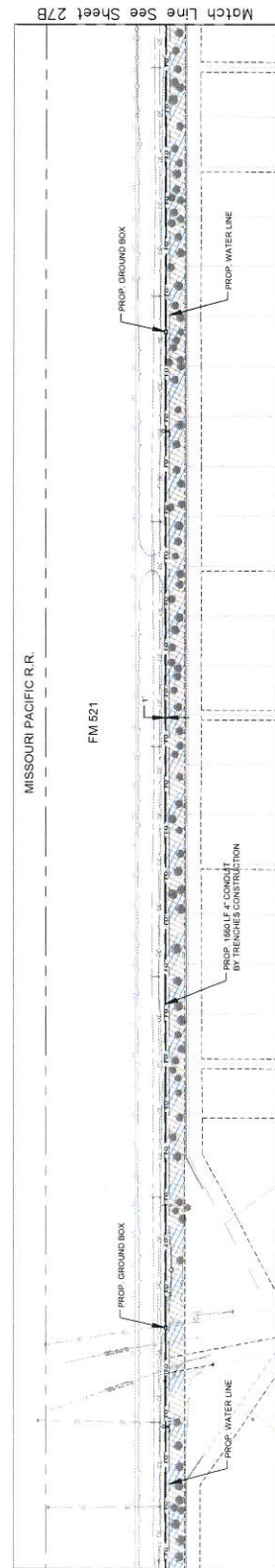
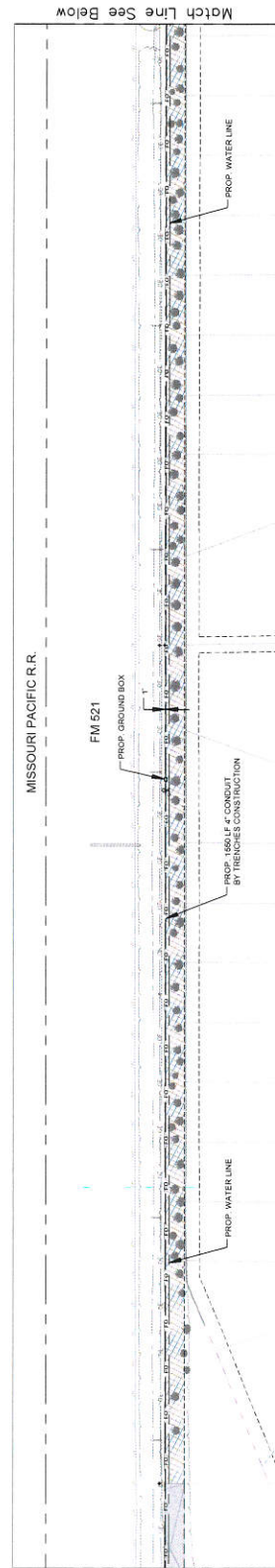
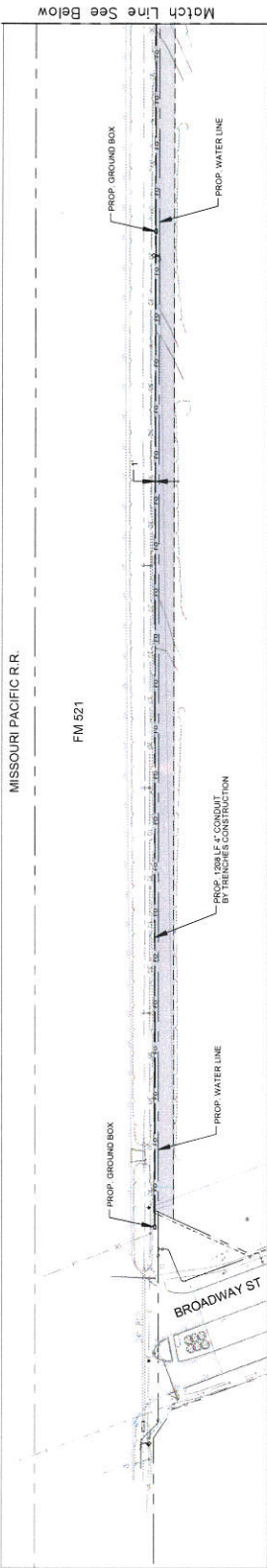
FM 521
Sta. 73+00 to Sta. 77+50

Scale: 1" = 20'
Date: October 2017
Drawn By: C. Chaudhary
Checked By: M. Brown

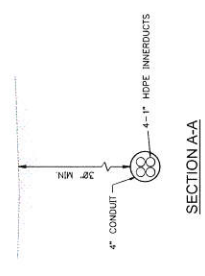
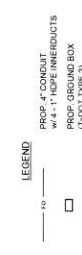
Sheet 26 of 37



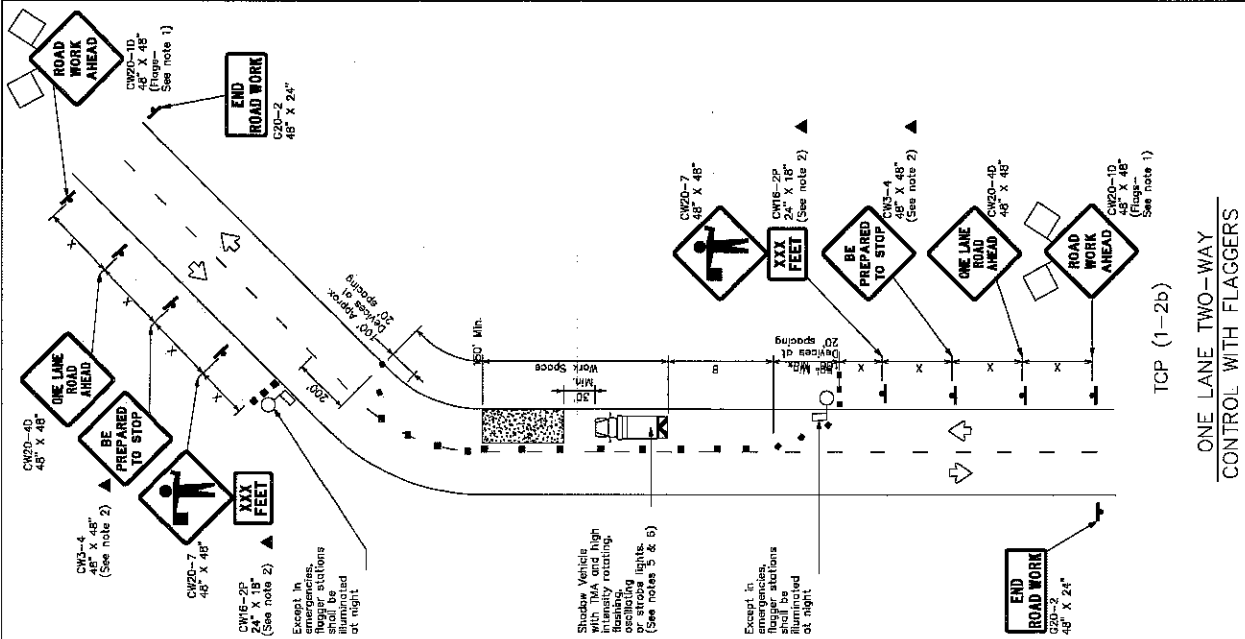
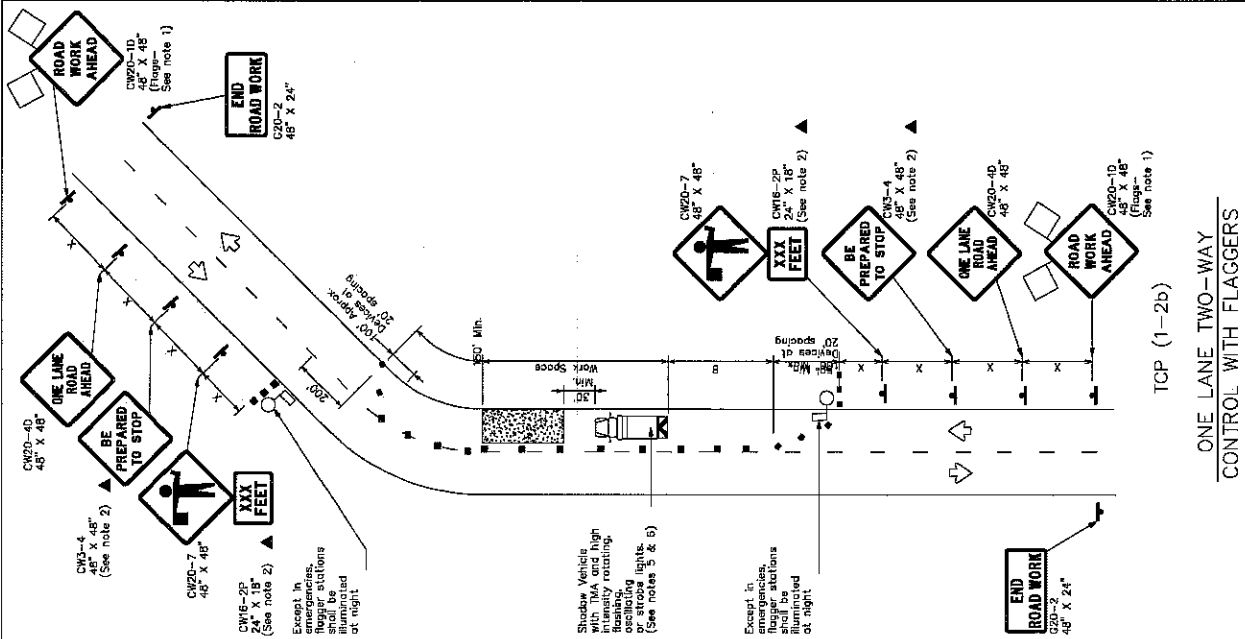




- NOTES:**
1. PROPOSED FIBER CONDUIT SHALL BE INSTALLED PER CITY OF PEARLAND REQUIREMENTS. ALL PROPOSED TRENCHES SHALL BE SUBMITTED TO THE CITY FOR REVIEW & APPROVAL PRIOR TO INSTALLATION.
 2. MAINTAIN 30" MINIMUM DEPTH OF COVER BELOW FINAL GRADE.
 3. PROPOSED GROUND BOX LOCATIONS SHALL BE DETERMINED BY CONSULTATION WITH THE CITY SITE REPRESENTATIVE PRIOR TO INSTALLATION.
 4. CONDUIT INSTALLATION ACROSS ALL DRIVEWAYS, STREET CROSSINGS, TREE CROSSINGS, LANDSCAPED AREAS AND ANY OTHER AREAS IDENTIFIED IN THE FIELD SHALL BE ACCOMPANIED BY INSTRUCTIONS TO THE CONSTRUCTION.
 5. CITY OF PEARLAND FIBER OPTIC CABLE MARKING POSTS SHALL BE INSTALLED AT EACH GROUND BOX AND AT EACH WATER LINE CROSSING. TWO GROUND BOXES, UNLESS DIRECTED OTHERWISE BY THE CITY, PERMANENT INTERMARKERS SHALL BE INSTALLED TO THE PROPOSED CONDUIT INSTALLATION.



7322 Locust Street, Suite 200 • Houston, Texas 77024 (713) 865-1234 • www.arkengineers.com • 2017 License No. 12345		City of Pearland, Texas FM 521 Water Line (Broadway to Mustang Pointe)
F.O. Conduit Layout I		
Date: 10/19/2017 Drawn By: M. Brown Check By: M. Brown	Scale: 1" = 60' Sheet No.: 27A Total Sheets: 37	Project No.: 17-007 Revision: 01 Date: 10/19/2017 Drawn By: M. Brown Check By: M. Brown



Posed Speed *	Formula	Minimum Torque ***	Minimum Torque Length **	Suggested Diameters of Coupling ***	Suggested Minimum Shaft Diameter ***	Minimum Shaft Span ***	Suggested Longitudinal Buffer Stroke ***	Stopping Spd 1 Distance
30	$M \leq 3$	1560	185	180	30	50	90	2300
35	$M \leq 60$	2385	225	245	35	70	120	2580
40		285	285	320	40	80	240	3035
45		450	495	540	45	90	320	3600
50		550	595	600	50	100	400	4255
55	$L = M5$	550	600	660	55	110	500	495
60		600	660	720	60	120	600	570
65		650	715	780	65	130	700	645
70		700	770	840	70	140	800	730
75		750	825	900	75	150	900	820

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

1. Traffic intended to stop when shown an **REQUIRED** sign.
2. All traffic control devices **REQUIRED** are **REQUIRED**, except those depicted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
3. **REQUIRED** **STOP** signs may be installed after the **W202-40** "ONE LANE AHEAD" sign.
4. Sign spacing may be increased or on additional **W202-10** "ROAD WORK AHEAD" sign may be used if advance warning cleared of the flagger or R1-2 "WELD" sign is less than 1500 feet.
5. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet behind the work area. The Shadow Vehicle should be used to maintain the quality and safety of the work. If workers are on large projects but road or work conditions require the traffic control to remain in place, Type 3 barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
6. Additional Shadow Vehicles with TMAs may be substituted for the Shadow Vehicle work zones.
7. Additional Shadow Vehicles with TMAs may be substituted for the Shadow Vehicle work zones.
8. Additional Shadow Vehicles with TMAs may be substituted for the Shadow Vehicle work zones.

TOP (1-20)

7. R1-2 "YIELD" sign traffic control may be used on projects with approaches that have congested signal delays. For projects in urban areas, work spaces should be no longer than one half city block. In rural areas on roadways with less than 2000 ADT, work spaces should be no longer than 400 feet.

8. R1-2 "YIELD" sign with R1-2aP "TO ONCOMING TRAFFIC" plaque shall be placed on a support at a 7 foot minimum mounting height.

TCP 1 (1-2b)

1. Planners should use two-way radio or other methods of communication to control traffic.
2. Length of work space should be based on the ability of workers to communicate.
3. If length of work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain adequate stopping sight distance to the trigger device.
4. Channelizing devices on the center-line may be omitted when a pilot car is leading traffic and approved by the Engineer.
5. Flaggers should always signalize the work zone.
6. Flaggers should always signalize to control traffic. Flags should be

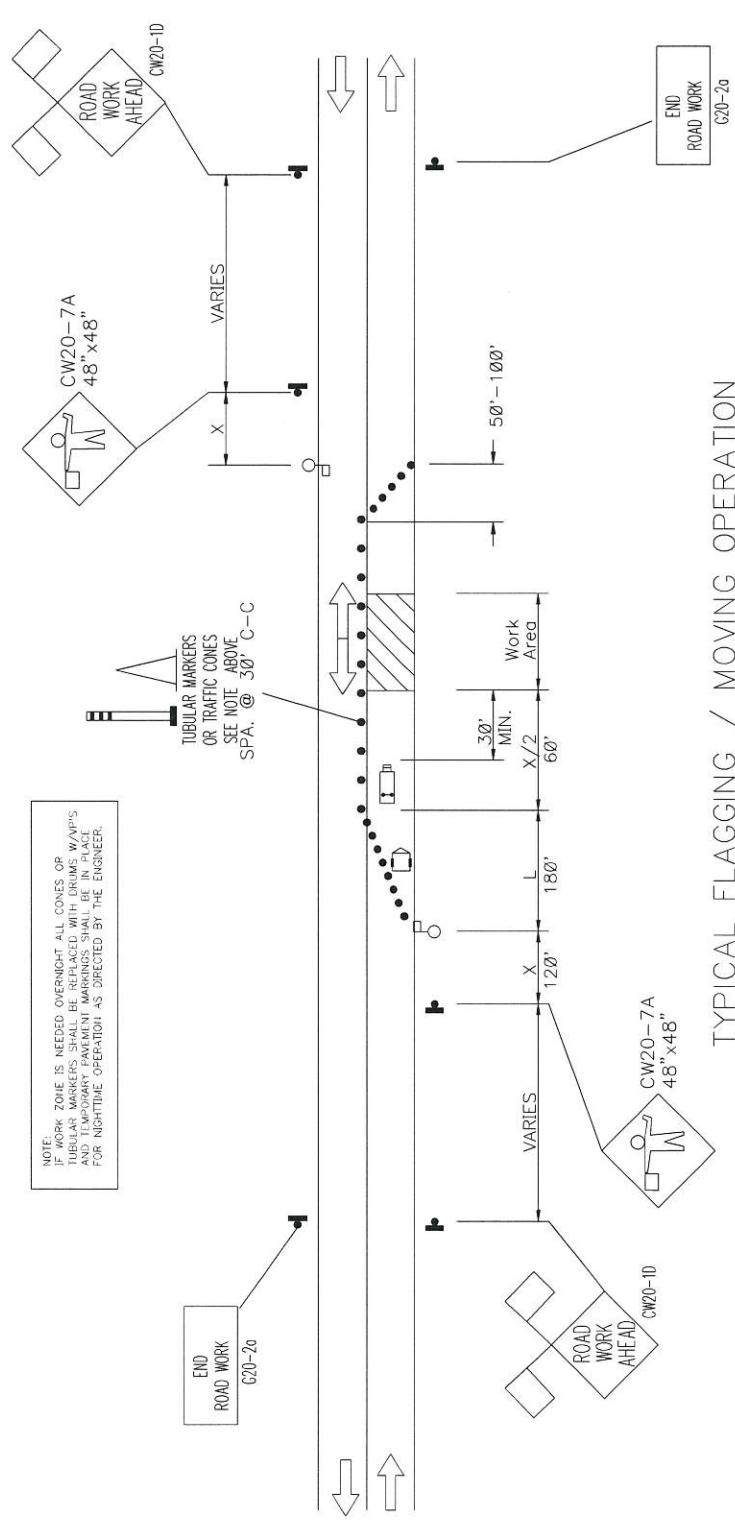
 Texas Department of Transportation
Traffic Operations Division

TRAFFIC CONTROL PLAN
ONE-LANE TWO-WAY
TRAFFIC CONTROL

TCP(1-2)-12

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

7	JANUARY	December 1955	544 730077	ENC 730107	ENC 730505	QC 730507
		REVIEWS	COMAT	5277	509	REQUEST
4-80	2-12					
2-94						
1-97						
4-86			DAFT	COUNTRY		SHEET NO.
						28
150						



TYPICAL FLAGGING / MOVING OPERATION

TYPICAL TRANSITION LENGTHS AND SUGGESTED MAXIMUM SPACING OF DEVICES

Posted Speed	Formula	10' Offset	11' Offset	12' Offset	On a Tangent	On a Curve
30		150'	165'	180'	30'	60'-75'
35		205'	225'	245'	35'	70'-90'
40		265'	295'	320'	40'	80'-100'
45		450'	495'	540'	45'	90'-110'
50		500'	550'	600'	50'	100'-125'
55		550'	605'	660'	55'	110'-140'
60		600'	660'	720'	60'	120'-150'
65		650'	715'	780'	65'	130'-175'

Posted Speed or 85% Speed (MPH)	Min. Distance (feet)	X
30 or less	120	
35	140	
40	160	
45	200	
50	240	
55	280	
60	320	
65	360	

X=SIGN SPACING
2X=1/2 MILE

* 85th Percentile Speed may be used on roads where traffic speeds normally exceed the posted speed limit.
** Tower heights have been rounded off.

LEGEND

- CONSTRUCTION AREA
- OPEN TO TRAFFIC
- HEAVY WORK VEHICLE
- FLASHING ARROW BOARD (OPTIONAL)
- SIGN POST
- TUBULAR MARKERS, CONES OR DRUMS
- FLAGGER
- X = SIGN SPACING
- L = TAPER LENGTH
- XX SPEED TO BE DETERMINED BY ENGINEER

City of Portland, Texas
FM 521 Water Line
(Broadway to Moving Pointe)

Typical Flagging or Moving Operation Detail

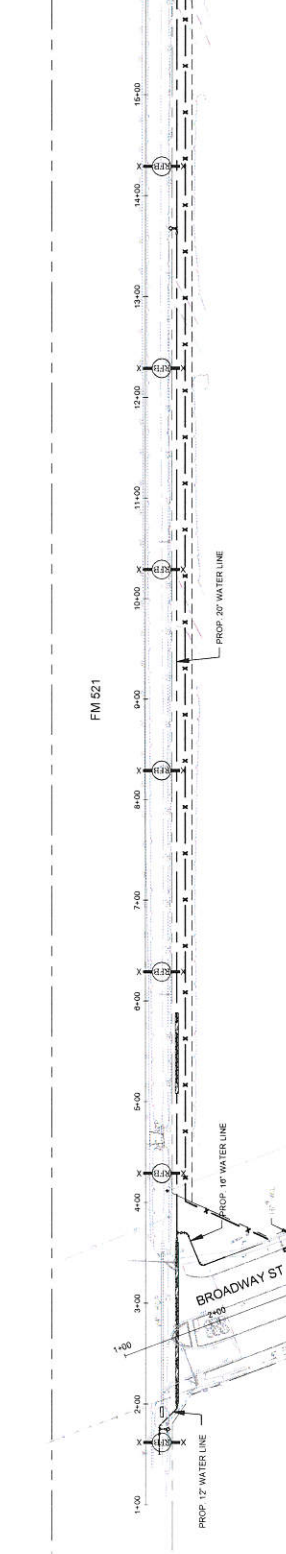
Drawn By: 18-093	Scale: N/A	Sheet: 29
Date: October 2017	Drawn By: C. Chidoba	Project: CF 37
Check By: M. Brown	Project: CF 37	

Ark Engineers
1322 S. 10th Street, Suite 200, Amarillo, Texas 79102
(806) 435-1234
www.arkengineers.com

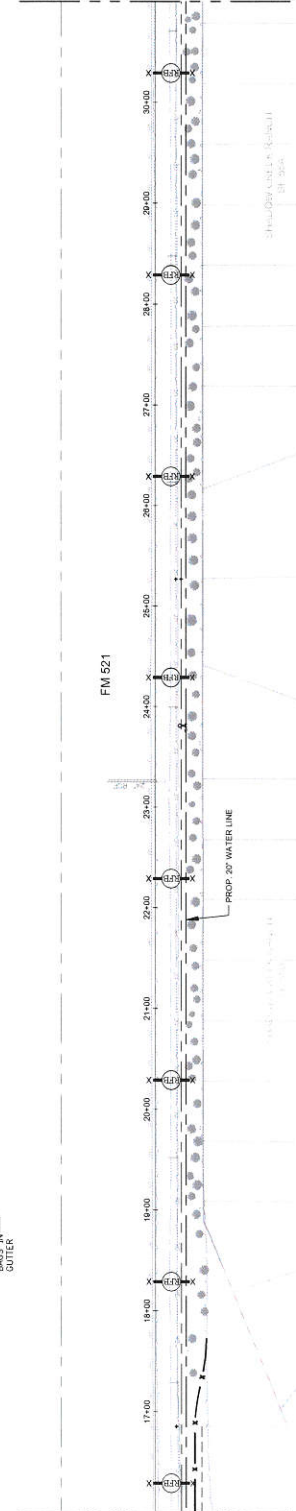
DAVID W. JASPER
No. 10082
State of Texas

12/19/2017

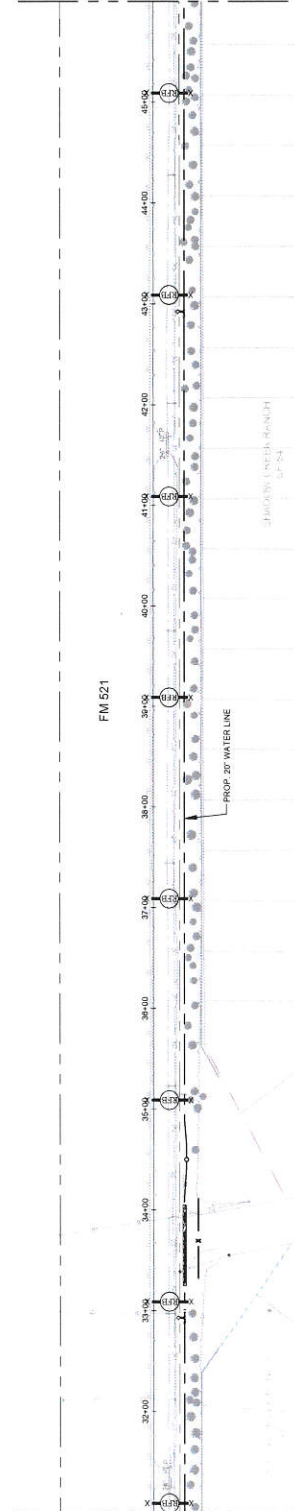
Match Line Sta. 16+00 See Below



Match Line Sta. 16+00 See Above



Match Line Sta. 31+00 See Above



EROSION & SEDIMENTATION CONTROL NOTES:

1. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL INSTALL EROSION AND SEDIMENTATION CONTROLS AT LOCATION SHOWN ON PLANS.
2. CONTRACTOR SHALL MAINTAIN, REPAIR AND/OR REPLACE DAMAGED EROSION AND SEDIMENTATION CONTROL SYSTEM THROUGHOUT THE DURATION OF THE PROJECT. (NO SEPARATE PAY).
3. CONTRACTOR SHALL MAINTAIN ALL EROSION AND SEDIMENTATION CONTROL SYSTEMS. FERTILIZERS, SOLVENTS, PAINTS, AND OTHER POTENTIALLY TOXIC MATERIALS SHALL BE STORED IN A SECURE AREA AWAY FROM EROSION AND SEDIMENTATION CONTROL SYSTEMS. CONTRACTOR SHALL USE BERM AROUND FUEL STORAGE AREAS. (NO SEPARATE PAY).
4. CONTRACTOR SHALL LOCATE FUEL/MATERIAL STORAGE AREAS AWAY FROM EROSION AND SEDIMENTATION CONTROL SYSTEMS. CONTRACTOR SHALL USE BERM AROUND FUEL STORAGE AREAS. (NO SEPARATE PAY).
5. CONTRACTOR SHALL ADVISE OWNER IMMEDIATELY, VERBALLY, AND IN WRITING, OF ANY FUEL OR TOXIC MATERIAL SPILLS ONTO THE PROJECT AREA AND THE ACTION TAKEN TO REMEDY THE PROBLEM.
6. CONTRACTOR IS RESPONSIBLE FOR DISPOSING OF HIS FUELS, MATERIALS, AND CONTAMINATED EXCAVATIONS IN A LEGALLY APPROVED MANNER. (NO SEPARATE PAY). NO DISPOSAL SHALL BE PERMITTED ON PROJECT SITE.
7. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE ENVIRONMENTAL LAWS.
8. CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATELY MAINTAINED SANITARY FACILITIES.
9. AT COMPLETION OF THE PROJECT, OWNER AND/OR OWNER'S REPRESENTATIVE WITH THE CONTRACTOR SHALL EXAMINE EROSION AND SEDIMENTATION CONTROL SYSTEM BEFORE RELINQUISHING CONTRACTOR OF HIS MAINTENANCE RESPONSIBILITIES.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR STREET CLEANING, ON A DAILY BASIS, OF ALL MUD AND DIRT DEPOSITED ON THE EXISTING PAVEMENT DUE TO HIS CONSTRUCTION ACTIVITY.
11. INLETS AND MANHOLES THAT ARE NOT COMPLETE AND/OR ARE SUBJECT TO CONVEYING STORM WATER INTO THE EXISTING STORM SEWER SYSTEM SHALL BE PROTECTED TO PREVENT SEDIMENT FROM ENTERING THE EXISTING STORM SEWER SYSTEM.
12. IF PAVING CONTRACTOR REMOVES OR PUNCTURES TIMBER GRATE TO ESTABLISH DRAINAGE, INLET MUST BE SURROUNDED BY INLET FILTER FABRIC AS SHOWN IN DETAILS.
13. FILTER FABRIC TO BE CLEANED OR REPLACED WHEN IT CEASES TO FUNCTION PROPERLY OR AS DIRECTED BY THE ENGINEER.
14. LOCATION OF CONSTRUCTION ACCESS IS APPROXIMATE. EXACT LOCATION SHALL BE BASED ON THE ACTUAL SCHEDULING OF WORK AND LOCATIONS FOR EGRESS OF THE SITE BY THE CONTRACTOR.
15. SEDIMENT CONTROL ITEMS SHALL TYPICALLY BE INSTALLED AT UPSTREAM ENDS OF CULVERTS OR STORM SEWER SYSTEMS OR AT MAXIMUM 200' SPACING IN OPEN DITCHES.

LEGEND

- EXISTING MANHOLE / MANWAY
- EXISTING STORM JUNCTION BOX
- EXISTING INLET
- EXISTING STORM SEWER OR CULVERT
- EXISTING STORM SEWER BOX CULVERT
- EXISTING ASPHALT PAVEMENT
- ROCK FILTER DAM
- FILTER FABRIC BARRIER
- REINFORCED FABRIC BARRIER
- INLET PROTECTION BARRIER
- ROW IN PROJECT AREA



DATE: 10/19/2017

PROJECT: FM 521 WATER LINE

SCALE: 1" = 60'

BY: C. CHANDLER

CHECKED BY: M. BROWN

APPROVED

DAVID W. JASPER

REGISTERED PROFESSIONAL ENGINEER

NO. 12827

ARK ENGINEERS

7001 W. UNIVERSITY BLVD., SUITE 200, DALLAS, TEXAS 75205

(214) 342-2200 • WWW.ARKENGINEERS.COM • FAX (214) 342-1287

PEARLAND

City of Pearland, Texas

FM 521 Water Line

(Broadway to Moving Pointe)

FM 521 - Storm Water

Pollution Prevention Plan I

DATE: 10-19-2017

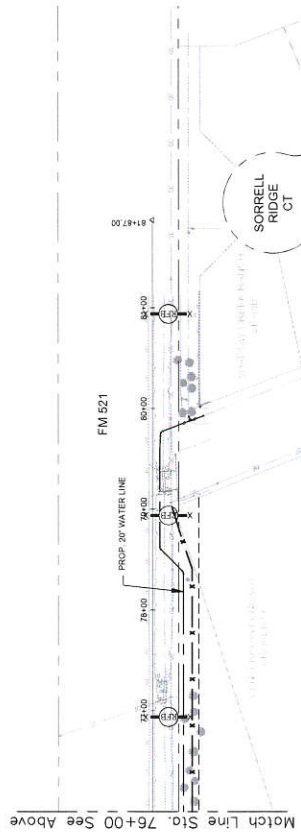
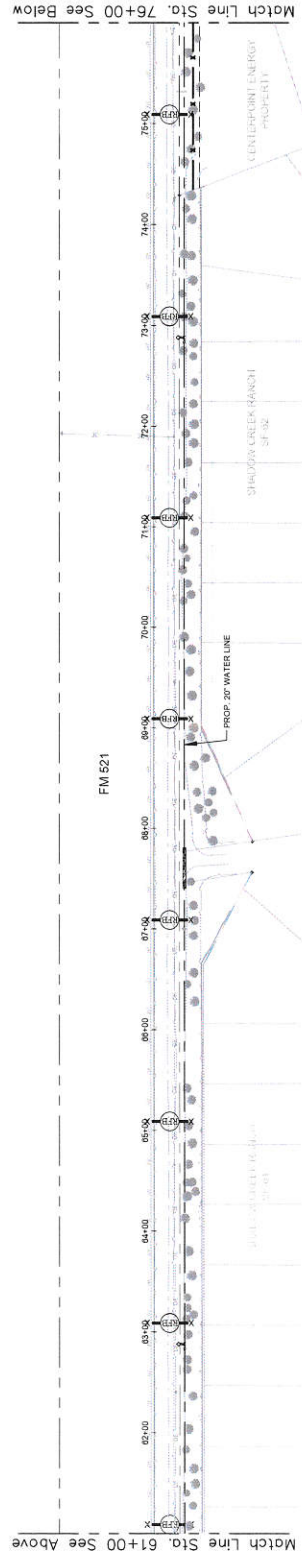
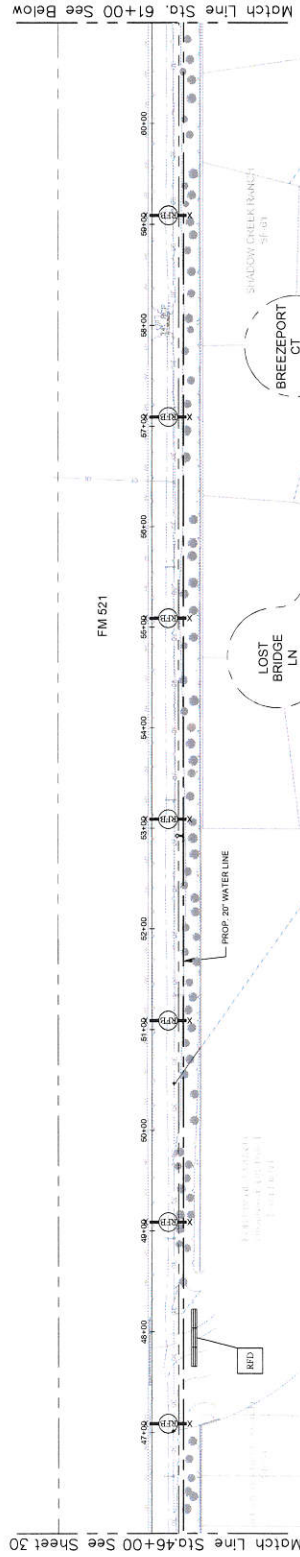
SCALE: 1" = 60'

BY: C. CHANDLER

CHECKED BY: M. BROWN

30

OF 37



- EROSION & SEDIMENTATION CONTROL NOTES**
1. CONTRACTOR SHALL INSTALL EROSION AND SEDIMENTATION CONTROLS AT LOCATION SHOWN ON PLANS.
2. CONTRACTOR SHALL MAINTAIN, REPAIR AND/OR REPLACE DAMAGED EROSION AND SEDIMENTATION CONTROL SYSTEMS THROUGHOUT THE DURATION OF THE CONTRACT, (NO SEPARATE PAY).
3. CONTRACTOR SHALL PROVIDE PROTECTED STORAGE AREAS FOR CHEMICALS, PAINTS, SOLVENTS, FERTILIZERS, AND OTHER POTENTIALLY TOXIC MATERIALS.
4. CONTRACTOR SHALL LOCATE FUEL/INERT STORAGE AREAS AWAY FROM STORM WATER CONVEYANCE SYSTEMS. CONTRACTOR SHALL USE BURNS AROUND FUEL STORAGE AREAS. (NO SEPARATE PAY).
5. CONTRACTOR SHALL ADVISE OWNER IMMEDIATELY, VERBALLY, AND IN WRITING, OF ANY FUEL OR TOXIC MATERIAL SPILLS ONTO THE PROJECT AREA AND THE ACTION TAKEN TO REMEDY THE PROBLEM.
6. CONTRACTOR SHALL ADVISE OWNER IMMEDIATELY, VERBALLY, AND IN WRITING, OF ANY FUEL OR TOXIC MATERIAL SPILLS ONTO THE PROJECT AREA AND THE ACTION TAKEN TO REMEDY THE PROBLEM.
7. CONTRACTOR SHALL ADVISE OWNER IMMEDIATELY, VERBALLY, AND IN WRITING, OF ANY FUEL OR TOXIC MATERIAL SPILLS ONTO THE PROJECT AREA AND THE ACTION TAKEN TO REMEDY THE PROBLEM.
8. CONTRACTOR SHALL ADVISE OWNER IMMEDIATELY, VERBALLY, AND IN WRITING, OF ANY FUEL OR TOXIC MATERIAL SPILLS ONTO THE PROJECT AREA AND THE ACTION TAKEN TO REMEDY THE PROBLEM.
9. AT COMPLETION OF THE CONTRACT, OWNER AND/OR OWNER'S REPRESENTATIVE WITH THE CONTRACTOR SHALL EXAMINE EROSION AND SEDIMENTATION CONTROL SYSTEM BEFORE RELEASING CONTRACTOR OF HIS MAINTENANCE RESPONSIBILITIES.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR STREET CLEANING, ON A DAILY BASIS, OF ALL MUD AND DIRT DEPOSITED ON THE EXISTING PAVEMENT DUE TO HIS CONSTRUCTION ACTIVITY.
11. INLETS AND MANHOLES THAT ARE NOT COMPLETE AND/OR ARE SUBJECT TO CONVERTING STORM WATER INTO SEWER FLOW, SHALL BE PROTECTED TO PREVENT SEDIMENT FROM ENTERING THE EXISTING STORM SEWER SYSTEM.
12. IF PAVING CONTRACTOR REMOVES OR PUNCTURES THRU GRATE TO ESTABLISH DRAINAGE, INLET MUST BE SURROUNDED BY INLET FILTER FABRIC AS SHOWN IN DETAILS.
13. FLYER FABRIC TO BE CLEANED OR REPLACED WHEN IT CEASES TO FUNCTION PROPERLY OR AS DIRECTED BY THE ENGINEER.
14. LOCATION OF CONSTRUCTION ACCESS IS APPROXIMATE. EXACT LOCATION SHALL BE BASED ON THE ACTUAL SEQUENCING OF WORK AND LOCATIONS FOR EGRESS OF THE SITE BY THE CONTRACTOR.
15. SEDIMENT CONTROL ITEMS SHALL TYPICALLY BE INSTALLED AT UPSTREAM ENDS OF CULVERTS OR STORM SEWER SYSTEMS OR AT MAXIMUM 200' SPACING IN OPEN DITCHES.
16. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE ENVIRONMENTAL LAWS.
17. CONTRACTOR IS RESPONSIBLE FOR PROVIDING, MAINTAINING, SANITARY FACILITIES.

		EXISTING MANHOLE / MANWAY	
EXISTING STORM JUNCTION BOX		EXISTING STORM INLET	
EXISTING STORM SEWER OR CULVERT		EXISTING STORM SEWER BOX CULVERT	
EXISTING ASPHALT PAVEMENT		ROCK FILTER DAM	
FILTER FABRIC BARRIER		REINFORCED FABRIC BARRIER	
INLET PROTECTION BARRIER		ROW IN PROJECT AREA	

DATE: 10/19/2017

BY: [Signature]

PROJECT: FM 521 Water Pollution Prevention Plan II

LOCATION: [Address]

SCALE: 1" = 40'

10/19/2017

ARKENGINEERS

7705 West Loop South, Suite 100, Houston, Texas 77036

713.462.2705 • www.arkengineers.com • NCEC Reg. No. 18374

City of Pearland, Texas

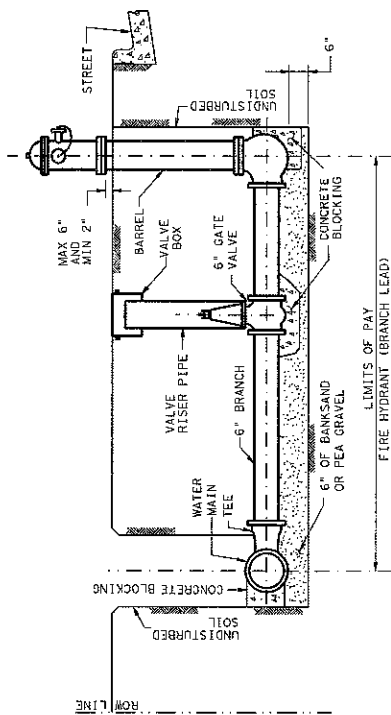
FM 521 Water Line

(Broadway to Mowbray Pointe)

FM 521 - Storm Water Pollution Prevention Plan II

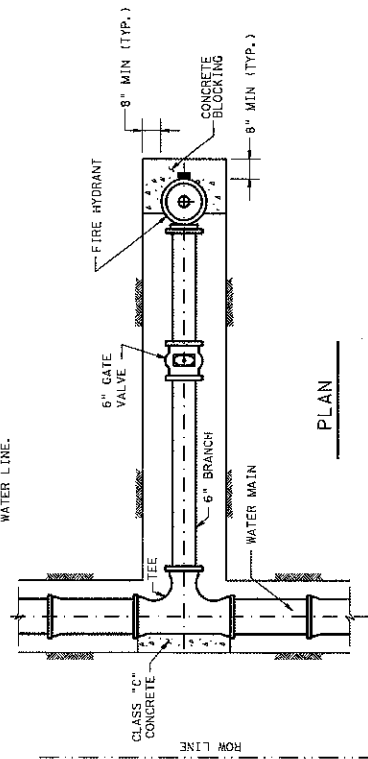
DATE: 10-19-17 DATE: October 2017 BY: C. Chudoba CHK BY: M. Brown	Scale: 1" = 40' Sheet: 31 OF 37
---	--

Job No.: 16-012	Scale: N/A HORZ: N/A VERT: N/A	SHEET 32 OF 37
Date: October 2017	One Inch If don't show not include on 1/8" = 1' (1/4" = 3' 0" = 6' 0" = 12' 0")	
Drawn By: C. Chudoba		
Check By: M. Braun		



SECTION

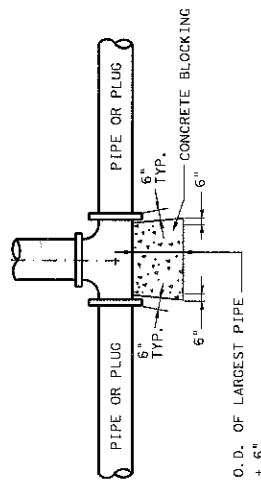
- NOTES:
1. FIRE HYDRANT ASSEMBLY INCLUDES HYDRANT, BARREL, GATE VALVE W/ BOX, AND RISER PIPE.
 2. ON CURB AND GUTTER ROADWAYS, LOCATE FIRE HYDRANTS AT PC'S OF INTERSECTION CURB RADIUS, 3 FT. BEHIND CURB OR PROJECTED FUTURE CURB.
 3. ON OPEN-DITCH ROADWAYS, LOCATE HYDRANTS WITHIN 5 FT. OF THE RIGHT-OF-WAY LINES.
 4. ENSURE FIRE HYDRANT NOZZLE FACES THE STREET.
 5. LOCATE HYDRANT VALVE IMMEDIATELY ADJACENT TO WATER LINE.



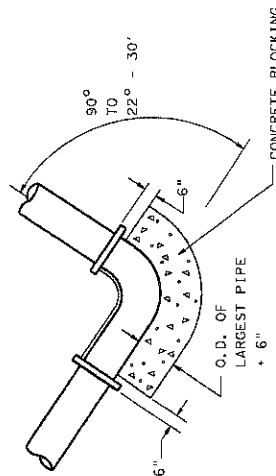
PLAN

STANDARD
FIRE HYDRANT DETAIL
(NOT TO SCALE)

NOTE: MINIMUM THICKNESS OF THURST IS THE O.D. OF LARGEST PIPE + 6 IN.

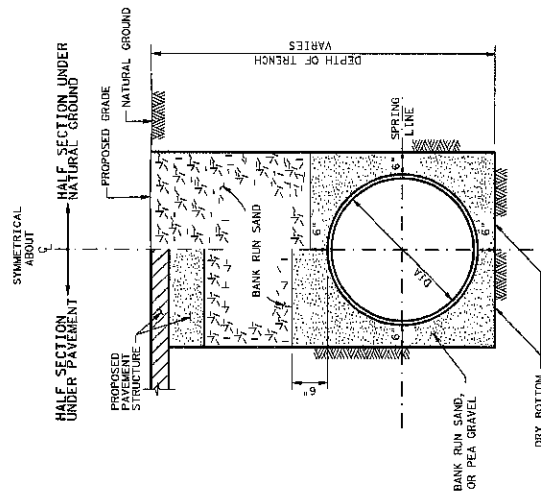


DETAIL "A"



DETAIL "B"

CONCRETE BLOCKING DETAILS
(NOT TO SCALE)

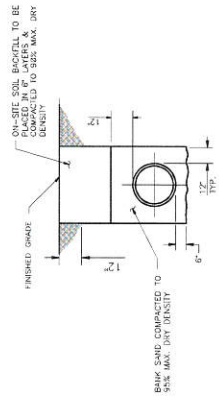


WATER DISTRIBUTION MAIN
BEDDING AND BACKFILL FOR
OPEN CUT TRENCHES
(NOT TO SCALE)

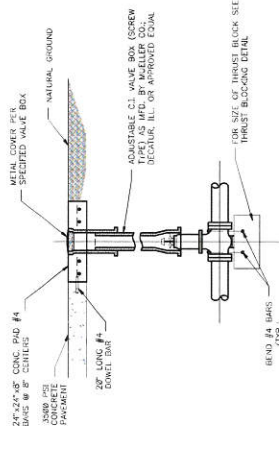
WATER LINE STANDARD

WLS-II

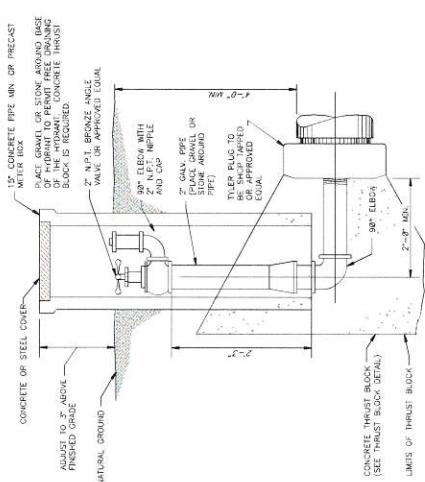
FILE	DESCRIPTION	DATE	BY	CHKD	DATE	BY	CHKD
01/20/01	PROJECT 2011	1/20/01	1/20/01	1/20/01	1/20/01	1/20/01	1/20/01
01/20/01	PROJECT 2011	1/20/01	1/20/01	1/20/01	1/20/01	1/20/01	1/20/01
01/20/01	PROJECT 2011	1/20/01	1/20/01	1/20/01	1/20/01	1/20/01	1/20/01
01/20/01	PROJECT 2011	1/20/01	1/20/01	1/20/01	1/20/01	1/20/01	1/20/01



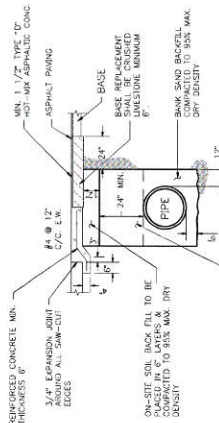
1 **TYPICAL TRENCH SECTION GRADED AREA**
(COP STANDARD)



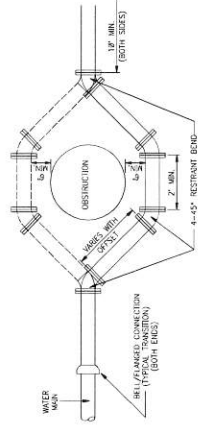
2 **VALVE BOX**
(COP STANDARD)



3 **2' BLOW OFF VALVE ASSEMBLY**
(COP STANDARD)

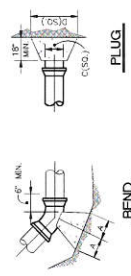
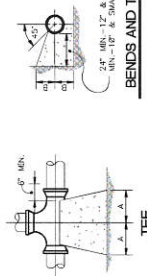


4 **TYPICAL TRENCH SECTION IN PAVED AREA**
(COP STANDARD)

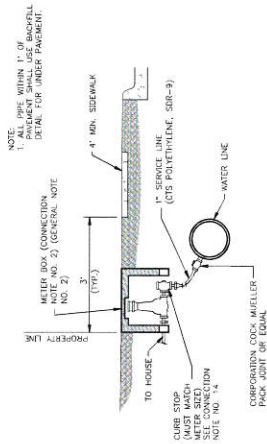


5 **OFFSET ASSEMBLY**
(COP STANDARD)

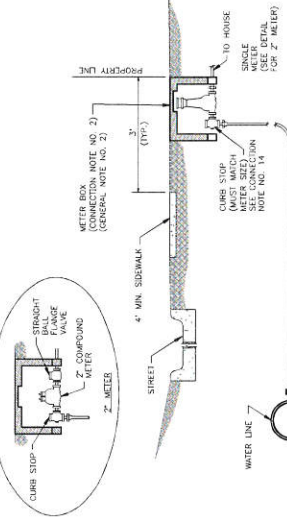
MIN PIPE WALL THICKNESS	
4"	- Ø 25.8"
6"	- Ø 28.8"
8"	- Ø 32.2"
12" AND LARGER	- Ø 37.5"



6 **THRUST BLOCKING DETAIL**
(COP STANDARD)



7 **WHEN SERVICE METER IS NEAR WATER MAIN**
(COP STANDARD)

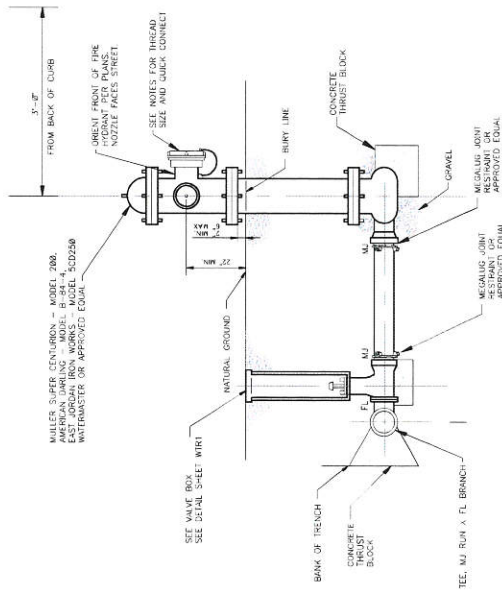


8 **WHEN SERVICES CROSS PAVED STREET**
(COP STANDARD)

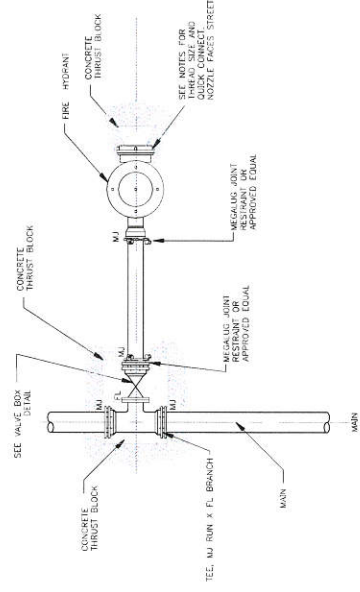
SERVICE CONNECTION DETAILS

- NOTES:**
1. THE WATER MAIN SHALL HAVE A MINIMUM COVER OF 48\"/>
 2. THE WATER MAIN SHALL HAVE A MINIMUM COVER OF 48\"/>
 3. THE WATER MAIN SHALL HAVE A MINIMUM COVER OF 48\"/>
 4. THE WATER MAIN SHALL HAVE A MINIMUM COVER OF 48\"/>
 5. THE WATER MAIN SHALL HAVE A MINIMUM COVER OF 48\"/>
 6. THE WATER MAIN SHALL HAVE A MINIMUM COVER OF 48\"/>
 7. THE WATER MAIN SHALL HAVE A MINIMUM COVER OF 48\"/>
 8. THE WATER MAIN SHALL HAVE A MINIMUM COVER OF 48\"/>
 9. THE WATER MAIN SHALL HAVE A MINIMUM COVER OF 48\"/>
 10. THE WATER MAIN SHALL HAVE A MINIMUM COVER OF 48\"/>
 11. THE WATER MAIN SHALL HAVE A MINIMUM COVER OF 48\"/>
 12. THE WATER MAIN SHALL HAVE A MINIMUM COVER OF 48\"/>
 13. THE WATER MAIN SHALL HAVE A MINIMUM COVER OF 48\"/>
 14. THE WATER MAIN SHALL HAVE A MINIMUM COVER OF 48\"/>
 15. THE WATER MAIN SHALL HAVE A MINIMUM COVER OF 48\"/>
 16. THE WATER MAIN SHALL HAVE A MINIMUM COVER OF 48\"/>

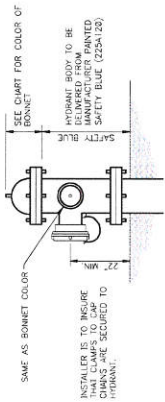
	50° BEND				22° BEND				TESTS				P.O.JOS			
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
18"	18"	18"	9"	9"	18"	18"	9"	9"	10"	10"	10"	10"	21"	21"		
24"	24"	24"	12"	12"	12"	12"	6"	6"	10"	13"	16"	17"	29"	29"		
30"	30"	30"	15"	15"	15"	15"	6"	6"	10"	13"	16"	20"	36"	36"		
36"	36"	36"	18"	18"	18"	18"	6"	6"	10"	13"	16"	24"	14"	38"		
42"	42"	42"	21"	21"	21"	21"	6"	6"	10"	13"	16"	24"	18"	40"		
48"	48"	48"	24"	24"	24"	24"	6"	6"	10"	13"	16"	24"	18"	46"		
54"	54"	54"	27"	27"	27"	27"	6"	6"	10"	13"	16"	24"	27"	105"		
60"	60"	60"	30"	30"	30"	30"	6"	6"	10"	13"	16"	24"	30"	118"		
66"	66"	66"	33"	33"	33"	33"	6"	6"	10"	13"	16"	24"	33"	131"		
72"	72"	72"	36"	36"	36"	36"	6"	6"	10"	13"	16"	24"	36"	144"		
78"	78"	78"	39"	39"	39"	39"	6"	6"	10"	13"	16"	24"	39"	157"		
84"	84"	84"	42"	42"	42"	42"	6"	6"	10"	13"	16"	24"	42"	170"		
90"	90"	90"	45"	45"	45"	45"	6"	6"	10"	13"	16"	24"	45"	183"		
96"	96"	96"	48"	48"	48"	48"	6"	6"	10"	13"	16"	24"	48"	196"		
102"	102"	102"	51"	51"	51"	51"	6"	6"	10"	13"	16"	24"	51"	209"		
108"	108"	108"	54"	54"	54"	54"	6"	6"	10"	13"	16"	24"	54"	222"		
114"	114"	114"	57"	57"	57"	57"	6"	6"	10"	13"	16"	24"	57"	235"		
120"	120"	120"	60"	60"	60"	60"	6"	6"	10"	13"	16"	24"	60"	248"		
126"	126"	126"	63"	63"	63"	63"	6"	6"	10"	13"	16"	24"	63"	261"		
132"	132"	132"	66"	66"	66"	66"	6"	6"	10"	13"	16"	24"	66"	274"		
138"	138"	138"	69"	69"	69"	69"	6"	6"	10"	13"	16"	24"	69"	287"		
144"	144"	144"	72"	72"	72"	72"	6"	6"	10"	13"	16"	24"	72"	300"		
150"	150"	150"	75"	75"	75"	75"	6"	6"	10"	13"	16"	24"	75"	313"		
156"	156"	156"	78"	78"	78"	78"	6"	6"	10"	13"	16"	24"	78"	326"		
162"	162"	162"	81"	81"	81"	81"	6"	6"	10"	13"	16"	24"	81"	339"		
168"	168"	168"	84"	84"	84"	84"	6"	6"	10"	13"	16"	24"	84"	352"		
174"	174"	174"	87"	87"	87"	87"	6"	6"	10"	13"	16"	24"	87"	365"		
180"	180"	180"	90"	90"	90"	90"	6"	6"	10"	13"	16"	24"	90"	378"		
186"	186"	186"	93"	93"	93"	93"	6"	6"	10"	13"	16"	24"	93"	391"		
192"	192"	192"	96"	96"	96"	96"	6"	6"	10"	13"	16"	24"	96"	404"		
198"	198"	198"	99"	99"	99"	99"	6"	6"	10"	13"	16"	24"	99"	417"		
204"	204"	204"	102"	102"	102"	102"	6"	6"	10"	13"	16"	24"	102"	430"		
210"	210"	210"	105"	105"	105"	105"	6"	6"	10"	13"	16"	24"	105"	443"		
216"	216"	216"	108"	108"	108"	108"	6"	6"	10"	13"	16"	24"	108"	456"		
222"	222"	222"	111"	111"	111"	111"	6"	6"	10"	13"	16"	24"	111"	469"		
228"	228"	228"	114"	114"	114"	114"	6"	6"	10"	13"	16"	24"	114"	482"		
234"	234"	234"	117"	117"	117"	117"	6"	6"	10"	13"	16"	24"	117"	495"		
240"	240"	240"	120"	120"	120"	120"	6"	6"	10"	13"	16"	24"	120"	508"		
246"	246"	246"	123"	123"	123"	123"	6"	6"	10"	13"	16"	24"	123"	521"		
252"	252"	252"	126"	126"	126"	126"	6"	6"	10"	13"	16"	24"	126"	534"		
258"	258"	258"	129"	129"	129"	129"	6"	6"	10"	13"	16"	24"	129"	547"		
264"	264"	264"	132"	132"	132"	132"	6"	6"	10"	13"	16"	24"	132"	560"		
270"	270"	270"	135"	135"	135"	135"	6"	6"	10"	13"	16"	24"	135"	573"		
276"	276"	276"	138"	138"	138"	138"	6"	6"	10"	13"	16"	24"	138"	586"		
282"	282"	282"	141"	141"	141"	141"	6"	6"	10"	13"	16"	24"	141"	599"		
288"	288"	288"	144"	144"	144"	144"	6"	6"	10"	13"	16"	24"	144"	612"		
294"	294"	294"	147"	147"	147"	147"	6"	6"	10"	13"	16"	24"	147"	625"		
300"	300"	300"	150"	150"	150"	150"	6"	6"	10"	13"	16"	24"	150"	638"		
306"	306"	306"	153"	153"	153"	153"	6"	6"	10"	13"	16"	24"	153"	651"		
312"	312"	312"	156"	156"	156"	156"	6"	6"	10"	13"	16"	24"	156"	664"		
318"	318"	318"	159"	159"	159"	159"	6"	6"	10"	13"	16"	24"	159"	677"		
324"	324"	324"	162"	162"	162"	162"	6"	6"	10"	13"	16"	24"	162"	690"		
330"	330"	330"	165"	165"	165"	165"	6"	6"	10"	13"	16"	24"	165"	703"		
336"	336"	336"	168"	168"	168"	168"	6"	6"	10"	13"	16"	24"	168"	716"		
342"	342"	342"	171"	171"	171"	171"	6"	6"	10"	13"	16"	24"	171"	729"		
348"	348"	348"	174"	174"	174"	174"	6"	6"	10"	13"	16"	24"	174"	742"		
354"	354"	354"	177"	177"	177"	177"	6"	6"	10"	13"	16"	24"	177"	755"		
360"	360"	360"	180"	180"	180"	180"	6"	6"	10"	13"	16"	24"	180"	768"		
366"	366"	366"	183"	183"	183"	183"	6"	6"	10"	13"	16"	24"	183"	781"		
372"	372"	372"	186"	186"	186"	186"	6"	6"	10"	13"	16"	24"	186"	794"		
378"	378"	378"	189"	189"	189"	189"	6"	6"	10"	13"	16"	24"	189"	807"		
384"	384"	384"	192"	192"	192"	192"	6"	6"	10"	13"	16"	24"	192"	820"		
390"	390"	390"	195"	195"	195"	195"	6"	6"	10"	13"	16"	24"	195"	833"		
396"	396"	396"	198"	198"	198"	198"	6"	6"	10"	13"	16"	24"	198"	846"		
402"	402"	402"	201"	201"	201"	201"	6"	6"	10"	13"	16"	24"	201"	859"		
408"	408"	408"	204"	204"	204"	204"	6"	6"	10"	13"	16"	24"	204"	872"		
414"	414"	414"	207"	207"	207"	207"	6"	6"	10"	13"	16"	24"	207"	885"		
420"	420"	420"	210"	210"	210"	210"	6"	6"	10"	13"	16"	24"	210"	898"		
426"	426"	426"	213"	213"	213"	213"	6"	6"	10"	13"	16"	24"	213"	911"		
432"	432"	432"	216"	216"	216"	216"	6"	6"	10"	13"	16"	24"	216"	924"		
438"	438"	438"	219"	219"	219"	219"	6"	6"	10"	13"	16"	24"	219"	937"		
444"	444"	444"	222"	222"	222"	222"	6"	6"	10"	13"	16"	24"	222"	950"		
450"	450"	450"	225"	225"	225"	225"	6"	6"	10"	13"	16"	24"	225"	963"		
456"	456"	456"	228"	228"	228"	228"	6"	6"	10"	13"	16"	24"	228"	976"		
462"	462"	462"	231"	231"	231"	231"	6"	6"	10"	13"	16"	24"	231"	989"		
468"	468"	468"	234"	234"	234"	234"	6"	6"	10"	13"	16"	24"	234"	1002"		
474"	474"	474"	237"	237"	237"	237"	6"	6"	10"	13"	16"	24"	237"	1015"		
480"	480"	480"	240"	240"	240"	240"	6"	6"	10"	13"	16"	24"	240"	1028"		
486"	486"	486"	243"	243"	243"	243"	6"	6"	10"	13"	16"	24"	243"	1041"		
492"	492"	492"	246"	246"	246"	246"	6"	6"	10"	13"	16"	24"	246"	1054"		
498"	498"	498"	249"	249"	249"	249"	6"	6"	10"	13"	16"	24"	249"	1067"		
504"	504"	504"	252"	252"	252"	252"	6"	6"	10"	13"	16"	24"	252"	1080"		
510"	510"	510"	255"	255"	255"	255"	6"	6"	10"	13"	16"	24"	255"	1093"		
516"	516"	516"	258"	258"	258"	258"	6"	6"	10"	13"	16"	24"	258"	1106"		
522"	522"	522"	261"	261"	261"	261"	6"	6"	10"	13"	16"	24"	261"	1119"		
528"	528"	528"	264"	264"	264"	264"	6"	6"	10"	13"	16"	24"	264"	1132"		
534"	534"	534"	267"	267"	267"	267"	6"	6"	10"	13"	16"	24"	267"	1145"		
540"	540"	540"	270"	270"	270"	270"	6"	6"	10"	13"	16"	24"	270"	1158"		
546"	546"	546"	273"	273"	273"	273"	6"	6"	10"	13"	16"	24"	273"	1171"		
552"	552"	552"	276"	276"	276"	276"	6"	6"	10"	13"	16"	24"	276"	1184"		
558"	558"	558"	279"	279"	279"	279"	6"	6"	10"	13"	16"	24"	279"	1197"		
564"	564"	564"	282"	282"	282"	282"	6"	6"	10"	13"	16"	24"	282"	1210"		
570"	570"	570"	285"	285"	285"	285"	6"	6"	10"	13"	16"	24"	285"	1223"		
576"	576"	576"	288"	288"	288"	288"	6"	6"	10"	13"	16"	24"	288"	1236"		
582"	582"	582"	291"	291"	291"	291"	6"	6"	10"	13"	16"	24"	291"	1249"		
588"	588"	588"	294"	294"	294"	294"	6"	6"	10"	13"	16"	24"	294"	1262"		
594"	594"	594"	297"	297"	297"	297"	6"	6"	10"	13"	16"	24"	297"	1275"		
600"	600"	600"	300"	300"	300"	300"	6"	6"	10"	13"	16"	24"	300"	1288"		
606"	606"	606"	303"	303"	303"	303"	6"	6"	10"	13"	16"	24"	303"	1301"		
612"	612"	612"	306"	306"	306"	306"	6"	6"	10"	13"	16"	24"	306"	1314"		
618"	618"															



1
2
FIRE HYDRANT - PLAN
(COP STANDARD)

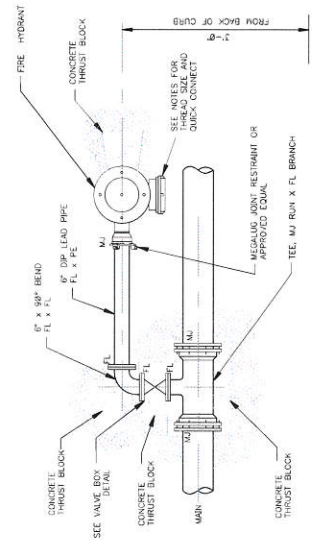


3
2
FIRE HYDRANT - PLAN
(COP STANDARD)



COLOR CODE (BONNETS AND CAPS)
MAIN SITE
GROSS WHITE CODE NO. 225A120
SAFETY ORANGE CODE NO. 225A122
JOHN DEERE YELLOW CODE NO. 225A133
OVER 2\"/>

2
2
FIRE HYDRANT - COLOR CODE
(COP STANDARD)



4
2
ALTERNATE FIRE HYDRANT - PLAN
(COP STANDARD)

- NOTES:
1. PRESSURE TEST OF ALL WATER LINES SHALL BE AT 120 PSI FOR DURATION OF 8 HOURS.
 2. FIRE HYDRANT THREAD SIZE: PUMPED CONNECTION 4-492 SIZE-4.492\"/>

NO.	DESCRIPTION	DATE	BY
1	REVISION	10/19/2017	DAVID W. WASSER

10/19/2017

ARK ENGINEERS

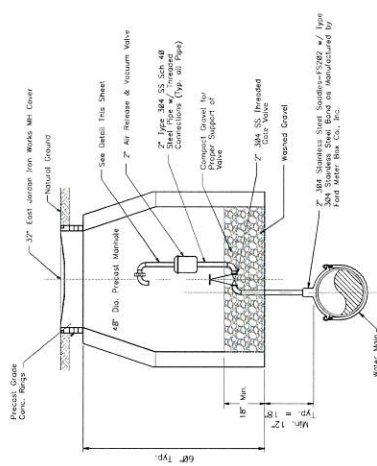
2322 Locust Street, Suite 1000 • Houston, Texas 77024
(713) 462-1234 • www.arkengineers.com • ark@arkengineers.com

PEARLAND

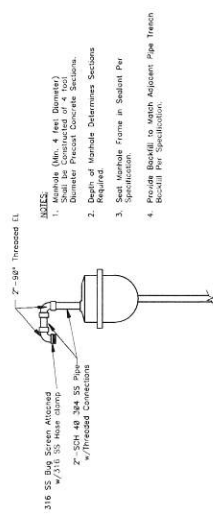
City of Pearland, Texas
10453 West Loop South
(Boulevard to Mustang Pkwy)

City of Pearland
Water Line Details II

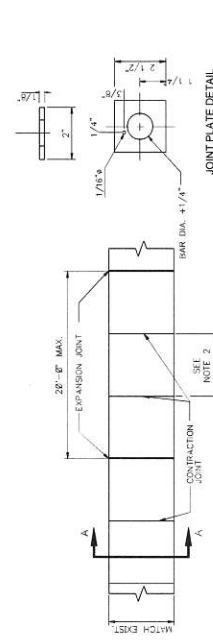
Scale	N/A
Sheet	35
Drawn By	M. Brown
Checked By	M. Brown



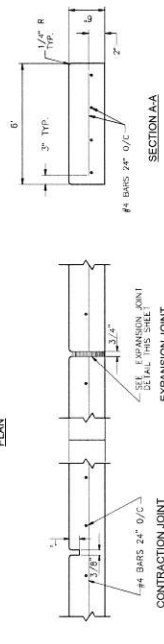
AIR RELEASE/VACUUM RELIEF VALVE MANHOLE
NOT TO SCALE



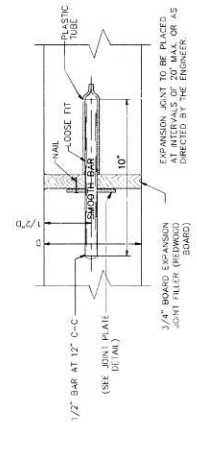
- NOTES:**
1. Manhole (Min. 4 ft. Diameter) Shall Be Constructed of 24\"/>
 2. Depth of Manhole Determines Sections Required.
 3. Set Manhole Frame in Shallow Per Penetration.
 4. Joint Separation to Match Adjacent Pipe Trench Backfill Per Specifications.



JOINT PLATE DETAIL

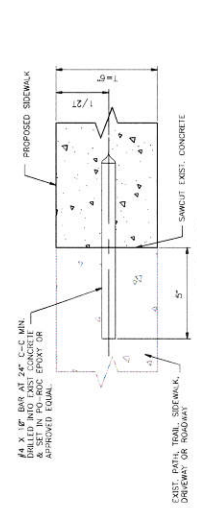


CONTRACTION JOINT

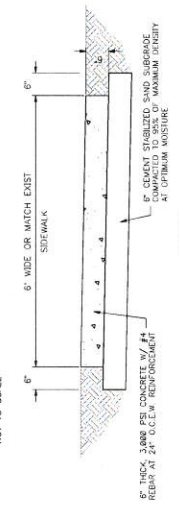


EXPANSION JOINT

EXPANSION JOINT DETAILS
NOT TO SCALE



PROPOSED SIDEWALK AT EXISTING SIDEWALK DETAIL
NOT TO SCALE



SECTION

- NOTES:**
1. ALL EDGES SHALL BE ROUNDED WITH 1/4\"/>
 2. CONSTRUCTION JOINTS SHALL BE SPACED TO MATCH EXIST CURB PATH.
 3. CONSTRUCTION JOINTS SHALL BE 1\"/>
 4. EXPANSION JOINTS SHALL BE SPACED AT 20 FT. INTERVALS (MAXIMUM).
 5. WHERE SIDEWALK JOINTS EXIST, SIDEWALK SHALL EXIST SIDEWALK TO AN EVEN STRAIGHT LINE PRIOR TO INSTALLATION OF THE NEW SIDEWALK.

CONCRETE SIDEWALK REPAIR DETAILS
NOT TO SCALE

DATE	10/19/2017
BY	ARKENGINEERS
FOR	City of Pearland, Texas
PROJECT	FM 521 Water Line
LOCATION	(Broadway to Moving Pointe)
DESCRIPTION	Miscellaneous Details II
DATE	10/19/2017
BY	ARKENGINEERS
FOR	City of Pearland, Texas
PROJECT	FM 521 Water Line
LOCATION	(Broadway to Moving Pointe)
DESCRIPTION	Miscellaneous Details II
DATE	10/19/2017
BY	ARKENGINEERS
FOR	City of Pearland, Texas
PROJECT	FM 521 Water Line
LOCATION	(Broadway to Moving Pointe)
DESCRIPTION	Miscellaneous Details II

Sheet	N/A
Date	October 2017
Drawn By	C. Chudoba
Checked By	M. Brown
Scale	CF 37