



**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](mailto:Permits@fortbendcountytx.gov)

☐

**Right of Way Permit**

☒

**Commercial Driveway Permit**

Permit No: 2017-16242

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

**(1) COMPLETE APPLICATION FORM:**

X
X
X

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: \$10,000.00

☐

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.**

*Charles O. Ay*

Permit Administrator

12/08/2017

Date



Effective Date: September 1, 2017

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

BOND NO [REDACTED]

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

THAT WE, Built, Inc.  
whose (address, phone) is 610 Woodrow St., Houston, TX 77006

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 Carter & Company L L P  
and whose address is 522 Crockett, Luling, TX 78648-2604

hereinafter called the Surety, and held and firmly bound unto, Robert E. Hebert, County Judge of Fort Bend County, Texas,  
or his successors in office, in the full sum of Five thousand and no/100  
Dollars (\$ 5,000.00) current, lawful money of the United States of America, to be paid to said Robert E. Hebert,  
County Judge of Fort Bend County, Texas, or his successors in office, to which payment well and truly to be made and done,  
we, the undersigned, bind ourselves and each of us, our heirs, executors, administrators, successors, assigns, and legal  
representatives, jointly and severally, by these presents.

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

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

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

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

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

EXECUTED this 5th day of September, 2017



PRINCIPAL

BY

SURETY

BY

Charles M. Poosch  
CHARLES M. POOSCH  
Paul T. Bruflat  
Paul T. Bruflat Vice President



# 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

Paul T. Bruflat of Sioux Falls,  
State of South Dakota, its regularly elected Vice President,  
as Attorney-in-Fact, with full power and authority hereby conferred upon him to sign, execute, acknowledge and deliver for and on its behalf as Surety and as its act and deed, the following bond:

PERFORMANCE BOND COVERING ALL CABLE, CONDUIT &/OR POLE LINE ACT- COUNTY JUDGE  
One OF FORT BEND COUNTY

bond with bond number                     

for BUILT, INC.

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  
Vice President with the corporate seal affixed this 5th day of September,  
2017.

ATTEST

L. Nelson

L. Nelson, Assistant Secretary

WESTERN SURETY COMPANY

By

Paul T. Bruflat

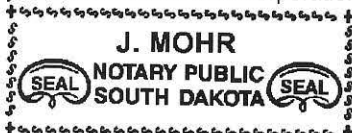
Paul T. Bruflat, Vice President



STATE OF SOUTH DAKOTA }  
COUNTY OF MINNEHAHA } ss

On this 5th day of September, 2017, before me, a Notary Public, personally appeared  
Paul T. Bruflat and L. Nelson

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.



My Commission Expires June 23, 2021

J Mohr

Notary Public

To validate bond authenticity, go to [www.cnasurety.com](http://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](http://www.tdi.texas.gov)  
E-Mail: [ConsumerProtection@tdi.texas.gov](mailto: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](http://www.tdi.texas.gov)  
E-Mail: [ConsumerProtection@tdi.texas.gov](mailto: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 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.

TX

# Western Surety Company

## RIDER INCREASING OR DECREASING PENALTY OF BOND

To be attached to and form part of Performance Bond Covering All Cable, Conduit &/Or Pole Line Act-

(Description of Bond)

Bond No.                      issued on behalf of Built, Inc.

as principal in favor of County of Fort Bend

Obligee.

WESTERN SURETY COMPANY, (hereinafter called the Company) hereby increases  
the penalty from Five Thousand and 00/100 DOLLARS (\$5,000.00),  
to Ten Thousand and 00/100 DOLLARS (\$10,000.00),  
subject to the covenants and conditions of said bond, except as herein stated.

This rider becomes effective on the 10th day of October, 2017, at  
twelve and one minute o'clock AM standard time.

Signed and dated this 10th day of October, 2017.



BUILT, INC.

Principal

By                     

ACCEPTED

WESTERN SURETY COMPANY

By                     

Paul T. Brufat, Vice President

Obligee

By                     

By                     





# Western Surety Company

## POWER OF ATTORNEY

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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

Paul T. Bruflat of Sioux Falls,  
State of South Dakota, its regularly elected Vice President,  
as Attorney-in-Fact, with full power and authority hereby conferred upon him to sign, execute, acknowledge and deliver for and on its behalf as Surety and as its act and deed, the following bond:

One Performance Bond Covering All Cable, Conduit &/Or Pole Line Act-

bond with bond number [REDACTED]

for Built, Inc.

as Principal in the penalty amount not to exceed: \$10,000.00

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  
Vice President with the corporate seal affixed this 10th day of October,  
2017.

ATTEST

L. Nelson

L. Nelson, Assistant Secretary

WESTERN SURETY COMPANY

By

Paul T. Bruflat

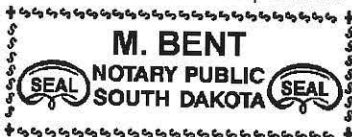
Paul T. Bruflat, Vice President

STATE OF SOUTH DAKOTA }  
COUNTY OF MINNEHAHA } ss



On this 10th day of October, 2017, before me, a Notary Public, personally appeared  
Paul T. Bruflat and L. Nelson

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.



M. Bent

Notary Public

My Commission Expires March 2, 2020



# FM 521 C-STORE

LOCATION ADDRESS: 106 MAIN STREET, FRESNO, TEXAS, 77545

DESIGNERS: CISNEROS DESIGN GROUP, L.L.C.

GENERAL CONTRACTOR: AXIS DEVELOPMENT, L.L.C.

ENGINEER: NEDU ENGINEERING SERVICES, INC

### APPLICABLE CODES

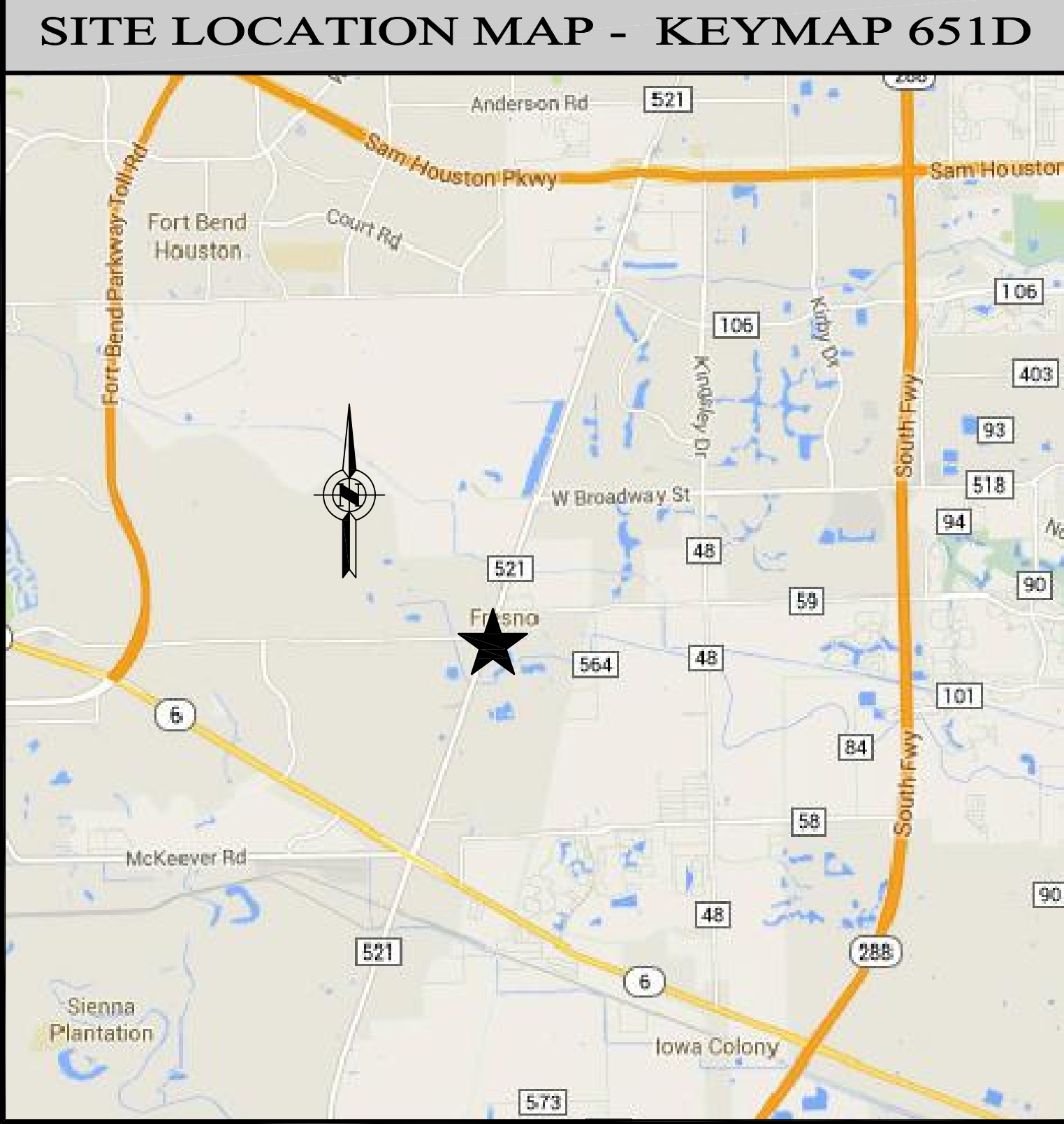
- 2009 IBC (INTERNATIONAL BUILDING CODE)
- 2009 IECC (INTERNATIONAL ENERGY CONSERVATION CODE)
- 2006 IMC (INTERNATIONAL MECHANICAL CODE)
- 2009 IPC (INTERNATIONAL PLUMBING CODE)
- 2012 IFC (INTERNATIONAL FIRE CODE)
- 2011 NEC (NATIONAL ELECTRIC CODE)

### DISCLAIMER

CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS. NOTIFY CISNEROS DESIGN GROUP OR OWNER IMMEDIATELY AND PRIOR TO CONSTRUCTION OF ANY DISCREPANCIES FOR RESOLUTION.

CISNEROS DESIGN GROUP MAKES NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY OR SUITABILITY OF THIS DRAWING FOR ITS INTENDED PURPOSE. ALL INFORMATION IS SUPPLIED BY THE OWNER AND CISNEROS DESIGN GROUP ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY. DRAWINGS SHOULD BE REVIEWED BY THE OWNER FOR ACCURACY OF DESIGN, COLOR SELECTIONS, MATERIAL SELECTIONS, ENGINEERING ACCURACY AND ANY OTHER ITEMS WHICH MAY EFFECT THE PERFORMANCE OF THE ITEMS SHOWN HEREON.

IDEAS AND DESIGNS DEVELOPED BY CISNEROS DESIGN GROUP ARE THE PROPERTY OF CISNEROS DESIGN GROUP AND MAY NOT BE USED OR REPRODUCED WITHOUT THE EXPRESS WRITTEN PERMISSION OF CISNEROS DESIGN GROUP.



CDG

CISNEROS  
DESIGN  
GROUP

2501 W 11th St  
HOUSTON, TX  
77008

OFFICE:  
713. 524. 2880

FAX:  
713. 524. 9803

eMAIL:  
cisneros @  
cis-axis.com

SEAL:

PROJECT:  
**FM 521 C-STORE**  
**106 MAIN STREET, FRESNO, TEXAS, 77545**  
**COVER SHEET**

PROJECT:

#### REVISIONS & DATE


DRAWN BY:  
**F. ARIZA**

DATE:  
**06/30/2017**

SCALE:  
**< NONE >**

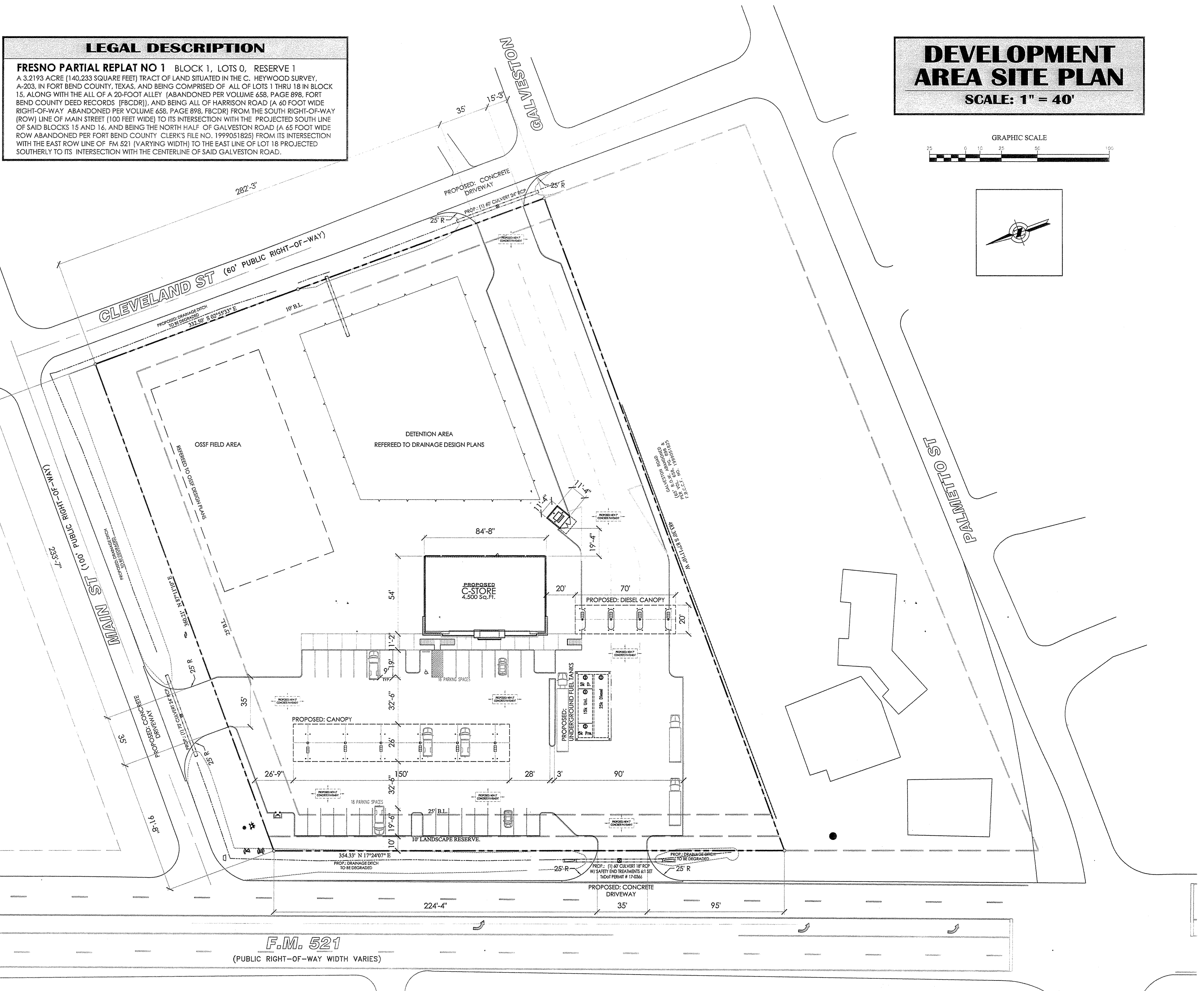
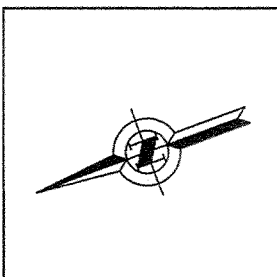
SHEET NO:  
**CS**

//Work/Jobs/A\_1\_FM\_521/Sht\_1\_Cover Sheet.dwg

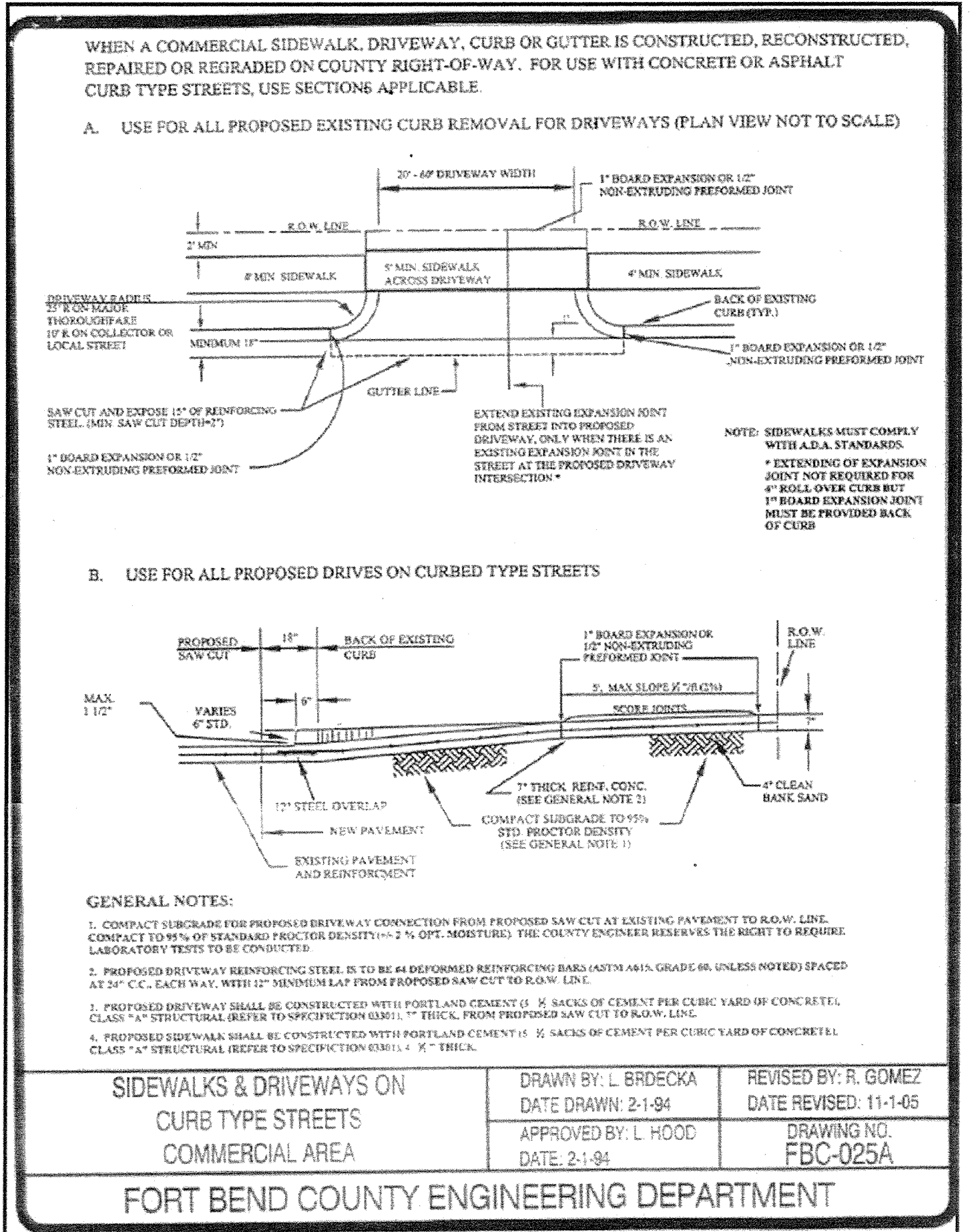


**LEGAL DESCRIPTION**  
**FRESNO PARTIAL REPLAT NO 1** BLOCK 1, LOTS 0, RESERVE 1  
A 3.2193 ACRE (140,233 SQUARE FEET) TRACT OF LAND SITUATED IN THE C. HEYWOOD SURVEY, A-203, IN FORT BEND COUNTY, TEXAS, AND BEING COMPRISED OF ALL OF LOTS 1 THRU 18 IN BLOCK 15, ALONG WITH THE ALL OF A 20-FOOT ALLEY (ABANDONED PER VOLUME 658, PAGE 898, FORT BEND COUNTY DEED RECORDS (FBCDR)), AND BEING ALL OF HARRISON ROAD (A 60 FOOT WIDE RIGHT-OF-WAY ABANDONED PER VOLUME 658, PAGE 898, FBCDR) FROM THE SOUTH RIGHT-OF-WAY (ROW) LINE OF MAIN STREET (100 FEET WIDE) TO ITS INTERSECTION WITH THE PROJECTED SOUTH LINE OF SAID BLOCKS 15 AND 16, AND BEING THE NORTH HALF OF GALVESTON ROAD (A 65 FOOT WIDE ROW ABANDONED PER FORT BEND COUNTY CLERK'S FILE NO. 1999051825) FROM ITS INTERSECTION WITH THE EAST ROW LINE OF FM 521 (VARYING WIDTH) TO THE EAST LINE OF LOT 18 PROJECTED SOUTHERLY TO ITS INTERSECTION WITH THE CENTERLINE OF SAID GALVESTON ROAD.

**DEVELOPMENT  
AREA SITE PLAN**  
SCALE: 1" = 40'



- FBC DRIVEWAY/CULVERT SPECS**
- A. REINFORCE CONCRETE PIPE**  
(MINIMUM SIZE EIGHTEEN INCH (18") INSIDE DIAMETER)
- MATERIALS, MANUFACTURE AND DESIGN OF REINFORCED CONCRETE PIPE SHALL CONFORM TO ASTM C76, CLASS III, FOR CIRCULAR PIPE, ASTM C506 FOR ARCH PIPE OR ASTM C507 FOR ELLIPTICAL PIPE.
    - PIPE SHALL BE SUBJECT TO REJECTION FOR FAILURE TO CONFORM TO ANY OF THE SPECIFICATION REQUIREMENTS. INDIVIDUAL SECTIONS OF PIPE MAY BE REJECTED BECAUSE OF ANY OF THE FOLLOWING:
      - FRACTURES OR CRACKS.
      - DEFECTS THAT INDICATE IMPERFECT PROPORTIONING, MIXING, AND MOLDING.
      - SURFACE DEFECTS INDICATING HONEYCOMBED OR OPEN TEXTURE.
      - DAMAGED ENDS, WHEN SUCH DAMAGE WOULD PREVENT MAKING A SATISFACTORY JOINT.
  - USED PIPE MAY BE USED PROVIDING IT IS IN GOOD CONDITION AND DOES NOT CONTAIN ANY OF THE DEFECTS LISTED ABOVE AND IS INSPECTED AND APPROVED FOR USE BY THE COUNTY ENGINEER OR ROAD AND BRIDGE DEPARTMENT.
- B. CORRUGATED POLYETHYLENE PIPE**
- MATERIALS, MANUFACTURE, AND DESIGN OF HIGH DENSITY POLYETHYLENE PIPE SHALL CONFORM TO:
    - ASTM F468, STANDARDS SPECIFICATIONS FOR CORRUGATED POLYETHYLENE PIPE AND FITTINGS.
    - ASTM F667, STANDARDS SPECIFICATIONS FOR LARGE DIAMETER CORRUGATED POLYETHYLENE PIPE AND FITTINGS.
    - AASHTO M252, STANDARDS SPECIFICATIONS FOR POLYETHYLENE CORRUGATED DRAINAGE PIPE.
    - AASHTO M294, STANDARDS SPECIFICATIONS FOR CORRUGATED POLYETHYLENE PIPE, 12" TO 18" DIAMETER.
    - ASTM D3221, STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS.
- C. CORRUGATED STEEL PIPE (CMP)**
- CORRUGATED STEEL PIPE WITH 2-2/3" X 1/2" CORRUGATIONS MEETING THE REQUIREMENTS OF AASHTO DESIGNATION M-218 OF THE LATEST ISSUE AND BE A MINIMUM OF 16 GAUGE. HEAVIER GAUGE MAY BE REQUIRED DEPENDING ON BACKFILL, DEPTH, LOADING ETC.
  - CORRUGATED ALUMINIZED STEEL WITH 2-2/3" X 1/2" CORRUGATIONS MEETING THE REQUIREMENTS OF AASHTO DESIGNATION M-274 OF THE LATEST ISSUE AND BE A MINIMUM OF 16 GAUGE. HEAVIER GAUGE MAY BE REQUIRED DEPENDING ON BACKFILL DEPTH, LOADING, ETC.
  - GALVANIZED OR ALUMINIZED STEEL PIPE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M-36.
  - ALL PIPE SHALL BE ANNULAR CORRUGATED OR HAVE ANNULAR CORRUGATIONS ON END OF PIPE TO PERMIT BANDING AT JOINTS.
  - ANNULARLY CORRUGATED PIPE SEAMS SHALL BE RIVETED. SPIRAL PIPE SHALL NOT BE PERMITTED.
- D. CEMENT STABILIZED SAND**
- CEMENT STABILIZED BACKFILL SHALL CONTAIN AGGREGATE, WATER AND A MINIMUM OF SEVEN (7) PERCENT PORTLAND CEMENT BASED ON THE DRY MASS OF THE AGGREGATE, (1.5 SACK OF PORTLAND CEMENT PER TON OF MIXTURE PLACED) IN ACCORDANCE WITH TEST METHOD TEX-120-E. CEMENT STABILIZED BACKFILL SHALL BE PLACED IN A MANNER THAT WILL COMPLETELY FILL ALL VOIDS IN THE TRENCH. SHOULD COMPACTION BE REQUIRED TO FILL ALL VOIDS, HAND OPERATED TAMPERS MAY BE USED.
- E. INSTALLATION**
- ALL DRIVEWAY CONSTRUCTION INCLUDING CULVERT AND DRAINAGE STRUCTURES SHALL COMPLY WITH THE ABOVE MATERIALS SPECIFICATION AND FORT BEND COUNTY STANDARD DETAILS.
  - FORT BEND COUNTY WILL PROVIDE ONLY CRUSHED CONCRETE OR (APPROVED EQUAL) SURFACE. ALL OTHER SURFACES, CONCRETE ASPHALT, ETC., MUST BE PROVIDED AND INSTALLED BY THE APPLICANT.
  - DECORATIVE FEATURES SUCH AS BRICK PAVERS, STONES HEADWALLS OR COLORED CONCRETE WILL NOT BE MAINTAINED BY THE COUNTY. IF REPAIRS WORK AT A DRIVEWAY OR CULVERT IS REQUIRED THE COUNTY SHALL NOT BE RESPONSIBLE TO REPLACE OR REPAIR SUCH ITEMS.
- F. CONCRETE DRIVEWAYS OVER CULVERTS**
- CONCRETE DRIVEWAYS ARE NOT ALLOWED TO EXTEND INTO THE COUNTY RIGHT OF WAY EXCEPT AS NOTED BELOW:
    - IN SUBDIVISIONS THAT WERE PLATTED AND APPROVED BY COMMISSIONERS COURT PRIOR TO APPROVAL OF THESE REGULATIONS.
  - CONTROL JOINTS SHALL BE PLACED AT TWELVE (12) INCHES ON EACH SIDE OF THE CULVERT TO PERMIT FUTURE REWORK OF CULVERT AND OR DITCH GRADES (18" + DIAMETER OF PIPE ON EACH SIDE OF CENTERLINE).
- G. EXPANSION JOINT FILLER**
- USE PREFORMED EXPANSION JOINT FILLER CONFORMING TO THE REQUIREMENTS OF AASHTO M-33 OR M-213.
  - INSTALL EXPANSION JOINT FILLER AT LOCATIONS AND SPACING SHOWN ON THE DETAIL SHEETS AND/OR AS SPECIFIED HEREIN.
  - INSTALL PRE-MOLDED EXPANSION JOINT FILLER THREE-FOURTH (3/4) INCH THICK AROUND ALL APPURTENANCES SUCH AS INLETS, MANHOLES, UTILITY POLES, ETC. THAT FALL WITHIN THE LIMITS OF CONCRETE PAVEMENT.
  - INSTALL PRE-MOLDED EXPANSION JOINT FILLER THREE-FOURTH (3/4) INCH BETWEEN CONCRETE PAVEMENT OR SIDEWALKS AND ANY OTHER FIXED STRUCTURE SUCH AS INTERSECTING WALKS, CURBS AND PAVEMENT.
  - INSTALL PRE-MOLDED EXPANSION JOINT FILLER TO THE FULL DEPTH OF CONCRETE.



**FORT BEND COUNTY ENGINEER**  
ENGINEER: Richard W. Stangle, P.E., M.O.E.  
For: Richard W. Stangle, P.E.  
DATE: 9/17/17  
THESE SIGNATURES ARE VOID IF CONSTRUCTION HAS NOT COMMENCED IN (1) YEAR FROM DATE OF APPROVAL.  
APPROVED: Casandre dfg  
for Development Coordinator  
DATE: 9/22/17





# FM 521 C-STORE 106 MAIN STREET, FRESNO, TEXAS, 77545 DEVELOPMENT SITE PLAN

//Work/Jobs/A301\_FM 521 at Main St in Fresno/SP1\_Site Plan.dwg

PROJECT:

## REVISIONS &amp; DATE

1/01/30/2017	
9/22/09/2017	

DRAWN BY:  
F. ARIZADATE:  
06/27/2014SCALE:  
1" = 40'SHEET NO:  
SP1

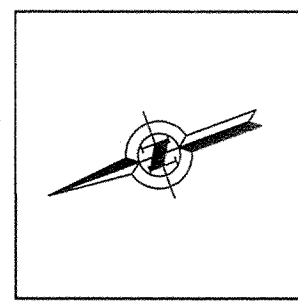
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15, ALONG WITH THE ALL OF A 20-FOOT ALLEY (ABANDONED PER VOLUME 658, PAGE 898, FORT  
BEND COUNTY DEED RECORDS (FBCDR)), AND BEING ALL OF HARRISON ROAD (A 60 FOOT WIDE  
RIGHT-OF-WAY ABANDONED PER VOLUME 658, PAGE 898, FBCDR) FROM THE SOUTH RIGHT-OF-WAY  
(ROW) LINE OF MAIN STREET (100 FEET WIDE) TO ITS INTERSECTION WITH THE PROJECTED SOUTH LINE  
OF SAID BLOCKS 15 AND 16, AND BEING THE NORTH HALF OF GALVESTON ROAD (A 65 FOOT WIDE  
ROW ABANDONED PER FORT BEND COUNTY CLERK'S FILE NO. 1999051823) FROM ITS INTERSECTION  
WITH THE EAST ROW LINE OF FM 521 (VARYING WIDTH) TO THE EAST LINE OF LOT 18 PROJECTED  
SOUTHERLY TO ITS INTERSECTION WITH THE CENTERLINE OF SAID GALVESTON ROAD.

DEVELOPMENT  
AREA SITE PLAN

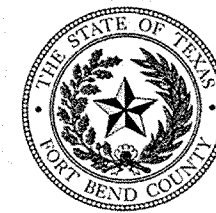
SCALE: 1" = 40'

GRAPHIC SCALE



## FBC DRIVEWAY/CULVER SPECS

- A. REINFORCE CONCRETE PIPE**  
(MINIMUM SIZE EIGHTEEN INCH (18") INSIDE DIAMETER)
- MATERIALS, MANUFACTURE AND DESIGN OF REINFORCED CONCRETE PIPE SHALL CONFORM TO ASTM C76, CLASS III, FOR CIRCULAR PIPE, ASTM C506 FOR ARCH PIPE OR ASTM C507 FOR ELLIPTICAL PIPE.
    - PIPE SHALL BE SUBJECT TO REJECTION FOR FAILURE TO CONFORM TO ANY OF THE SPECIFICATION REQUIREMENTS. INDIVIDUAL SECTIONS OF PIPE MAY BE REJECTED BECAUSE OF ANY OF THE FOLLOWING:
      - FRACTURES OR CRACKS.
      - DEFECTS THAT INDICATE IMPERFECT PROPORTIONING, MIXING, AND MOLDING.
      - SURFACE DEFECTS INDICATING HONEYCOMBED OR OPEN TEXTURE.
      - DAMAGED ENDS, WHEN SUCH DAMAGE WOULD PREVENT MAKING A SATISFACTORY JOINT.
  - USED PIPE MAY BE USED PROVIDING IT IS IN GOOD CONDITION AND DOES NOT CONTAIN ANY OF THE DEFECTS LISTED ABOVE AND IS INSPECTED AND APPROVED FOR USE BY THE COUNTY ENGINEER OR ROAD AND BRIDGE DEPARTMENT.
- B. CORRUGATED POLYETHYLENE PIPE**
- MATERIALS, MANUFACTURE, AND DESIGN OF HIGH DENSITY POLYETHYLENE PIPE SHALL CONFORM TO:
    - ASTM F405, STANDARDS SPECIFICATIONS FOR CORRUGATED POLYETHYLENE PIPE AND FITTINGS.
    - ASTM F667, STANDARDS SPECIFICATIONS FOR LARGE DIAMETER CORRUGATED POLYETHYLENE PIPE AND FITTINGS.
    - AASHTO M252, STANDARDS SPECIFICATIONS FOR POLYETHYLENE CORRUGATED DRAINAGE PIPE.
    - AASHTO M294, STANDARDS SPECIFICATIONS FOR CORRUGATED POLYETHYLENE PIPE, 12" TO 18" DIAMETER.
    - ASTM D2321, STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS.
- C. CORRUGATED STEEL PIPE (CMP)**
- CORRUGATED STEEL PIPE WITH 2-2/3" X 1/2" CORRUGATIONS MEETING THE REQUIREMENTS OF AASHTO DESIGNATION M-218 OF THE LATEST ISSUE AND BE A MINIMUM OF 16 GAUGE. HEAVIER GAUGE MAY BE REQUIRED DEPENDING ON BACKFILL, DEPTH, LOADING ETC.
  - CORRUGATED ALUMINIZED STEEL WITH 2-2/3"X1/2" CORRUGATIONS MEETING THE REQUIREMENTS OF AASHTO DESIGNATION M-274 OF THE LATEST ISSUE AND BE A MINIMUM OF 16 GAUGE. HEAVIER GAUGE MAY BE REQUIRED DEPENDING ON BACKFILL DEPTH, LOADING, ETC.
  - GALVANIZED OR ALUMINIZED STEEL PIPE SHALL CONFORM TO THE REQUIREMENTS OF ASHTO M-36.
  - ALL PIPE SHALL BE ANNULAR CORRUGATED OR HAVE ANNULAR CORRUGATIONS ON END OF PIPE TO PERMIT BANDING AT JOINTS.
  - ANNULAR CORRUGATED PIPE SEAMS SHALL BE RIVETED. SPIRAL PIPE SHALL NOT BE PERMITTED.
- D. CEMENT STABILIZED SAND**
- CEMENT STABILIZED BACKFILL SHALL CONTAIN AGGREGATE, WATER AND A MINIMUM OF SEVEN (7) PERCENT PORTLAND CEMENT BASED ON THE DRY MASS OF THE AGGREGATE, (1.5 SACK OF PORTLAND CEMENT PER TON OF MIXTURE PLACED) IN ACCORDANCE WITH TEST METHOD TEX-120-E. CEMENT STABILIZED BACKFILL SHALL BE PLACED IN A MANNER THAT WILL COMPLETELY FILL ALL VOIDS IN THE TRENCH. SHOULD COMPACTION BE REQUIRED TO FILL ALL VOIDS, HAND OPERATED TAMPERS MAY BE USED.
- E. INSTALLATION**
- ALL DRIVEWAY CONSTRUCTION INCLUDING CULVERT AND DRAINAGE STRUCTURES SHALL COMPLY WITH THE ABOVE MATERIALS SPECIFICATION AND FORT BEND COUNTY STANDARD DETAILS.
  - FORT BEND COUNTY WILL PROVIDE ONLY CRUSHED CONCRETE OR (APPROVED EQUAL) SURFACE. ALL OTHER SURFACES, CONCRETE ASPHALT, ETC., MUST BE PROVIDED AND INSTALLED BY THE APPLICANT.
  - DECORATIVE FEATURES SUCH AS BRICK PAVERS, STONES HEADWALLS OR COLORED CONCRETE WILL NOT BE MAINTAINED BY THE COUNTY. IF REPAIRS WORK AT A DRIVEWAY OR CULVERT IS REQUIRED THE COUNTY SHALL NOT BE RESPONSIBLE TO REPLACE OR REPAIR SUCH ITEMS.
- F. CONCRETE DRIVEWAYS OVER CULVERTS**
- CONCRETE DRIVEWAYS ARE NOT ALLOWED TO EXTEND INTO THE COUNTY RIGHT OF WAY EXCEPT AS NOTED BELOW:
    - IN SUBDIVISIONS THAT WERE PLATTED AND APPROVED BY COMMISSIONERS COURT PRIOR TO APPROVAL OF THESE REGULATIONS.
  - CONTROL JOINTS SHALL BE PLACED AT TWELVE (12) INCHES ON EACH SIDE OF THE CULVERT TO PERMIT FUTURE REWORK OF CULVERT AND OR DITCH GRADES (18" + DIAMETER OF PIPE ON EACH SIDE OF CENTERLINE).
- G. EXPANSION JOINT FILLER**
- USE PREFORMED EXPANSION JOINT FILLER CONFORMING TO THE REQUIREMENTS OF AASHTO M-33 OR M-213.
  - INSTALL EXPANSION JOINT FILLER AT LOCATIONS AND SPACING SHOWN ON THE DETAIL SHEETS AND/OR AS SPECIFIED HEREIN.
  - INSTALL PRE-MOLDED EXPANSION JOINT FILLER THREE-FOURTH (3/4) INCH THICK AROUND ALL APPURTENANCES SUCH AS INLETS, MANHOLES, UTILITY POLES, ETC. THAT FALL WITHIN THE LIMITS OF CONCRETE PAVEMENT.
  - INSTALL PRE-MOLDED EXPANSION JOINT FILLER THREE-FOURTH (3/4) INCH BETWEEN CONCRETE PAVEMENT OR SIDEWALKS AND ANY OTHER FIXED STRUCTURE SUCH AS INTERSECTING WALKS, CURBS AND PAVEMENT.
  - INSTALL PRE-MOLDED EXPANSION JOINT FILLER TO THE FULL DEPTH OF CONCRETE.

Fort Bend County Engineering  
FORT BEND COUNTY, TEXASRichard W. Stolleis, P.E.  
County EngineerFort Bend County  
Construction - General Notes

- Fort Bend County must be invited to the Pre-Construction Meeting.
- Contractor shall notify Fort Bend County Engineering Department 48 hours prior to commencing construction and 48 hour notice to any construction activity within the limits of the paving at [Construction@fortbendcountytexas.gov](mailto:Construction@fortbendcountytexas.gov).
- Contractor is responsible for obtaining all permits required from Fort Bend County prior to commencing construction of any improvements within County road right of ways.
- All Paving Improvements shall be constructed in accordance with Fort Bend County "Rules, Regulations and Requirements" relating to the Approval and Acceptance of Improvements in Subdivisions as currently amended.
- All road widths, curb radii and curb alignment shown indicates back of curb.
- A continuous longitudinal reinforcing bar shall be used in the curbs.
- All concrete pavement shall be 5 1/2 sack cement with a minimum compressive strength of 3500 psi at 28 days. Transverse expansion joints shall be installed at each curb return and at a maximum spacing of 60 feet.
- All weather access to all existing streets and driveways shall be maintained at all times.
- 4"x 12" reinforced concrete curb shall be placed in front of single family lots only. All other areas shall be 6" reinforced concrete curb.
- At all intersection locations, Type 7 ramps shall be placed in accordance with TxDOT Ped-12a standard detail sheet. A.D.A. - Handicap Ramps shall be installed with street paving at all intersections and comply with current A.D.A. regulations.
- Curb headers are required at curb connections to Handicap Ramps, with no construction joint within 5' of ramps.
- All intersections utilizing Traffic Control measures shall have A.D.A. wheel chair ramps installed.
- Guidelines are set forth in the Texas "Manual on Uniform Traffic Control Devices", as currently amended, shall be observed. The Contractor shall be responsible for providing adequate flagmen, signing, striping and warning devices, etc., during construction - both day and night.
- All R1-1 stop signs shall be 30"x30" with diamond grade sheeting per Texas manual on uniform traffic control devices.
- Street name signage shall be on a 9" high sign flat blade w/reflective green background. Street names shall be upper and lowercase lettering with uppercase letters of 6" minimum and lowercase letters of 4.5" minimum. The letters shall be reflective white. Street name signs shall be mounted on stop sign post.
- A Blue Double Reflectorized button shall be placed at all Fire Hydrant locations. The Button shall be placed 12 inches off of the centerline of the street on the same side as the hydrant.
- The project and all parts thereof shall be subject to inspection from time to time by inspectors designated by Fort Bend County. No such inspections shall relieve the Contractor of any of its obligations hereunder. Neither failure to inspect nor failure to discover or reject any of the work as not in accordance with the drawings and specifications, requirements and specifications of Fort Bend County or any provision of this project shall be construed to imply an acceptance of such work or to relieve the Contractor of any of its obligations hereunder.

NOTE: Fort Bend County notes supersede any conflicting notes.

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

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## TRAFFIC CONTROL PLAN

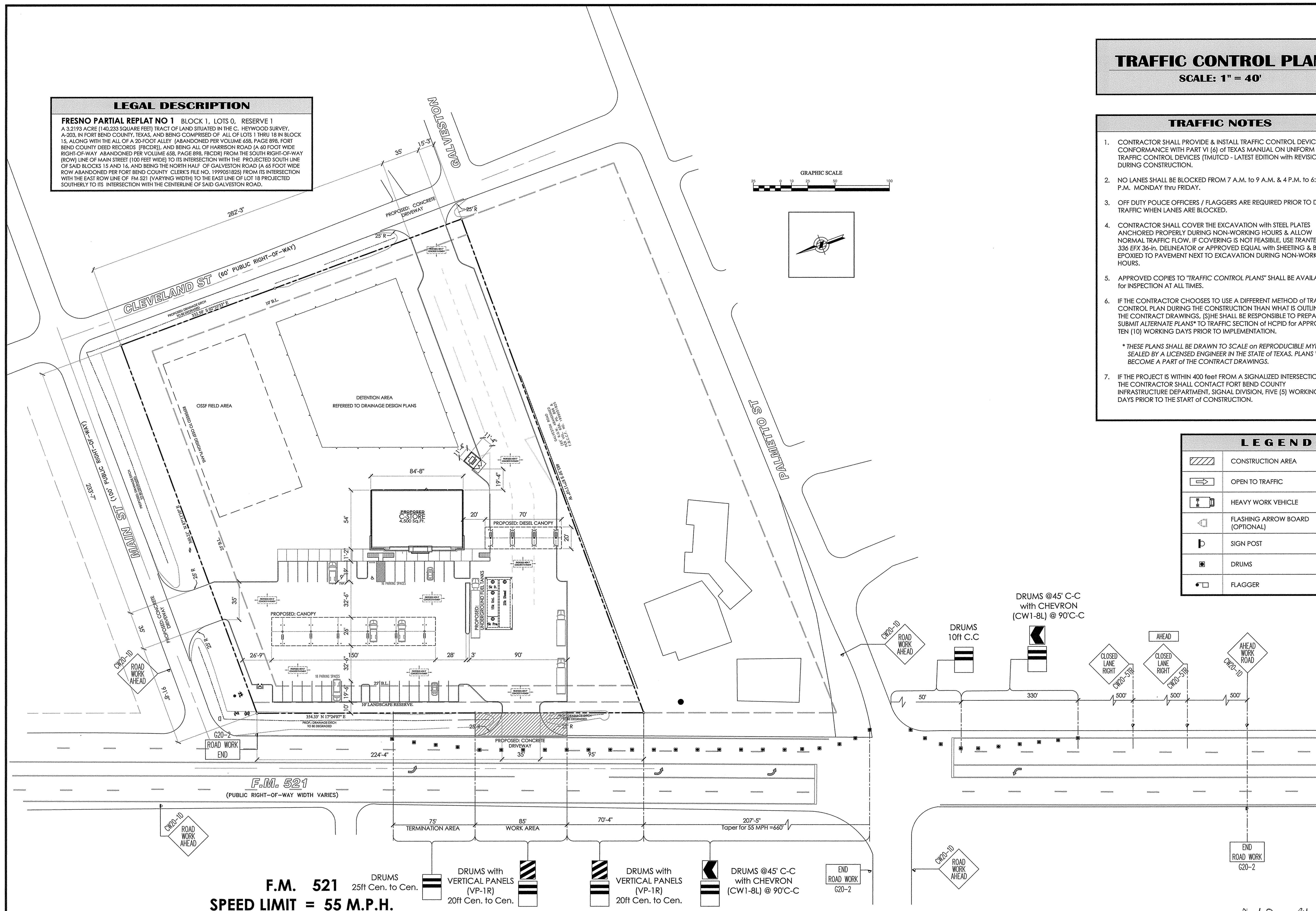
SCALE: 1" = 40'

## TRAFFIC NOTES

1. CONTRACTOR SHALL PROVIDE & INSTALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART VI (6) OF TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD - LATEST EDITION WITH REVISIONS) DURING CONSTRUCTION.
2. NO LANES SHALL BE BLOCKED FROM 7 A.M. to 9 A.M. & 4 P.M. to 6:30 P.M. MONDAY thru FRIDAY.
3. OFF DUTY POLICE OFFICERS / FLAGGERS ARE REQUIRED PRIOR TO DIRECT TRAFFIC WHEN LANES ARE BLOCKED.
4. CONTRACTOR SHALL COVER THE EXCAVATION WITH STEEL PLATES ANCHORED PROPERLY DURING NON-WORKING HOURS & ALLOW NORMAL TRAFFIC FLOW. IF COVERING IS NOT FEASIBLE, USE TRANTEX FR 336 EFX 36-in. DELINEATOR or APPROVED EQUAL with SHEETING & BASE EPOXIED TO PAVEMENT NEXT TO EXCAVATION DURING NON-WORKING HOURS.
5. APPROVED COPIES TO "TRAFFIC CONTROL PLANS" SHALL BE AVAILABLE FOR INSPECTION AT ALL TIMES.
6. IF THE CONTRACTOR CHOOSES TO USE A DIFFERENT METHOD OF TRAFFIC CONTROL PLAN DURING THE CONSTRUCTION THAN WHAT IS OUTLINED IN THE CONTRACT DRAWINGS, (S)HE SHALL BE RESPONSIBLE TO PREPARE & SUBMIT ALTERNATE PLANS\* TO TRAFFIC SECTION of HCPID for APPROVAL TEN (10) WORKING DAYS PRIOR TO IMPLEMENTATION.  
  
\* THESE PLANS SHALL BE DRAWN TO SCALE on REPRODUCIBLE MYLARS & SEALED BY A LICENSED ENGINEER IN THE STATE OF TEXAS. PLANS WILL BECOME A PART OF THE CONTRACT DRAWINGS.
7. IF THE PROJECT IS WITHIN 400 feet FROM A SIGNALIZED INTERSECTION, THE CONTRACTOR SHALL CONTACT FORT BEND COUNTY INFRASTRUCTURE DEPARTMENT, SIGNAL DIVISION, FIVE (5) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.

## LEGEND

	CONSTRUCTION AREA
	OPEN TO TRAFFIC
	HEAVY WORK VEHICLE
	FLASHING ARROW BOARD (OPTIONAL)
	SIGN POST
	DRUMS
	FLAGGER



**FM 521 C-STORE**  
**106 MAIN STREET, FRESNO, TEXAS, 77545**  
**TRAFFIC SITE PLAN - FM 521**

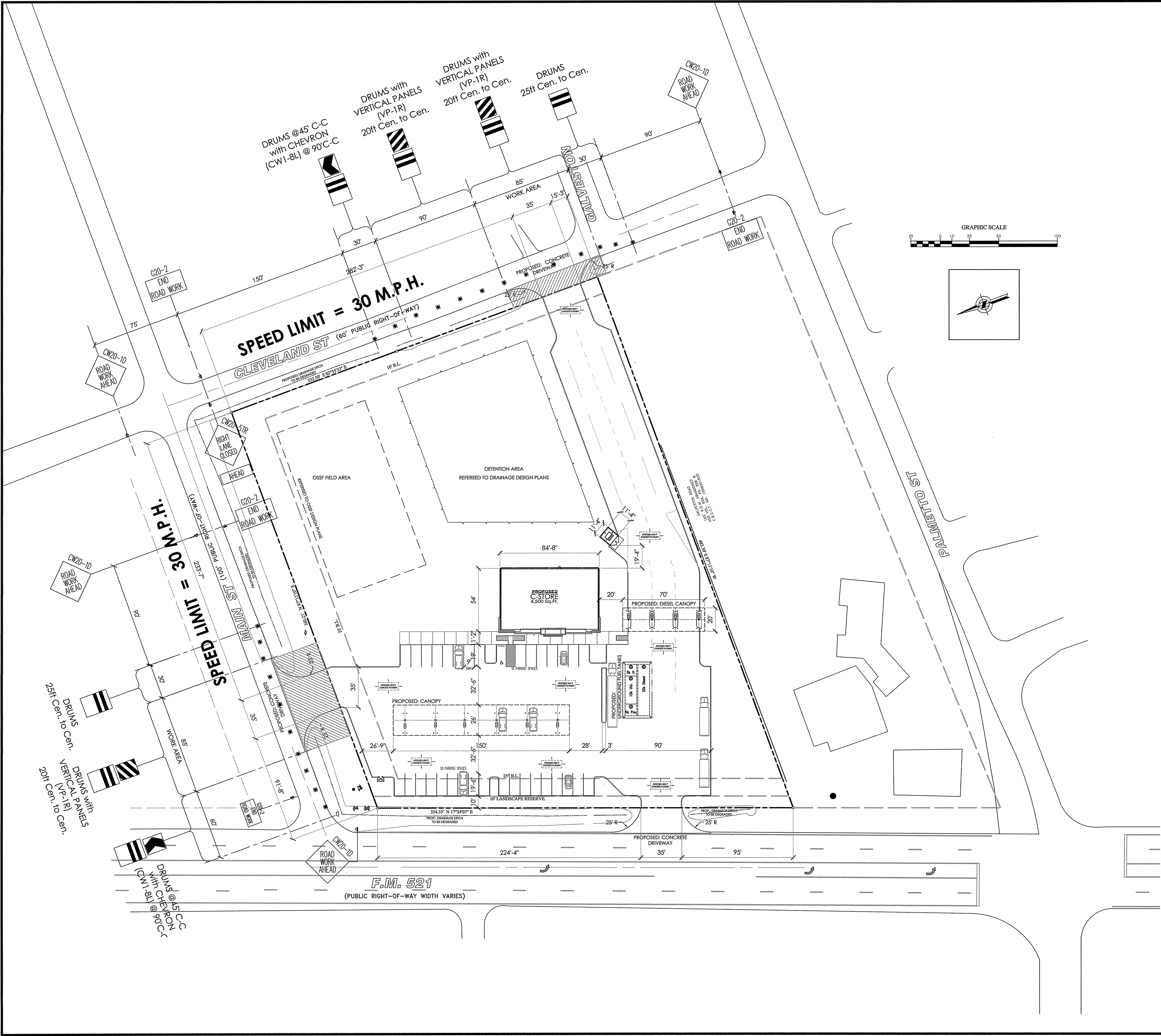
PROJECT:

## REVISIONS &amp; DATE

1/09/22/2017	

DRAWN BY:  
**F. ARIZA**DATE:  
**08/07/2017**SCALE:  
**1" = 40'**SHEET NO:  
**T1**





# TRAFFIC CONTROL PLAN

SCALE: 1" = 40'

- ### TRAFFIC NOTES
- CONTRACTOR SHALL PROVIDE & INSTALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART VI (6) of TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD - LATEST EDITION WITH REVISIONS) DURING CONSTRUCTION.
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LEGEND	
	CONSTRUCTION AREA
	OPEN TO TRAFFIC
	HEAVY WORK VEHICLE
	FLASHING ARROW BOARD (OPTIONAL)
	SIGN POST
	DRUMS
	FLAGGER

CDG

CISNEROS  
DESIGN  
GROUP

2501 W 11th St  
HOUSTON, TX  
77008

OFFICE:  
713. 524. 2880

FAX:  
713. 524. 9803

eMAIL:  
cisneros @  
cis-axis.com

PROJECT:

F.M. 521 C-STORE

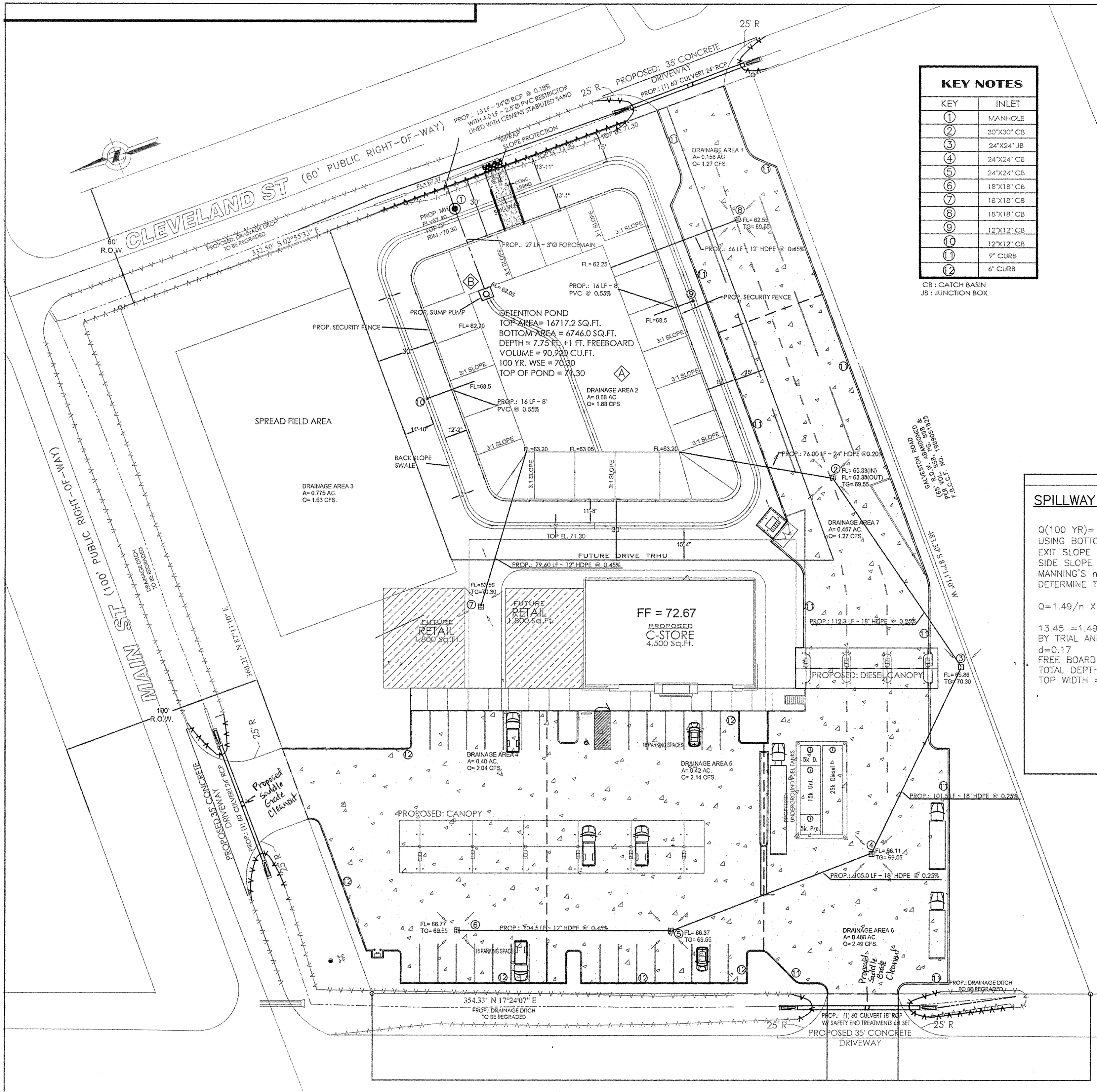
106 MAIN STREET, FRESNO, TEXAS, 77545

TRAFFIC SITE PLAN - MAIN AND CLEVELAND

//Work/Jobs/1301\_F.M. 521 at Main St in Fresno/SPT1-Site Plan.dwg

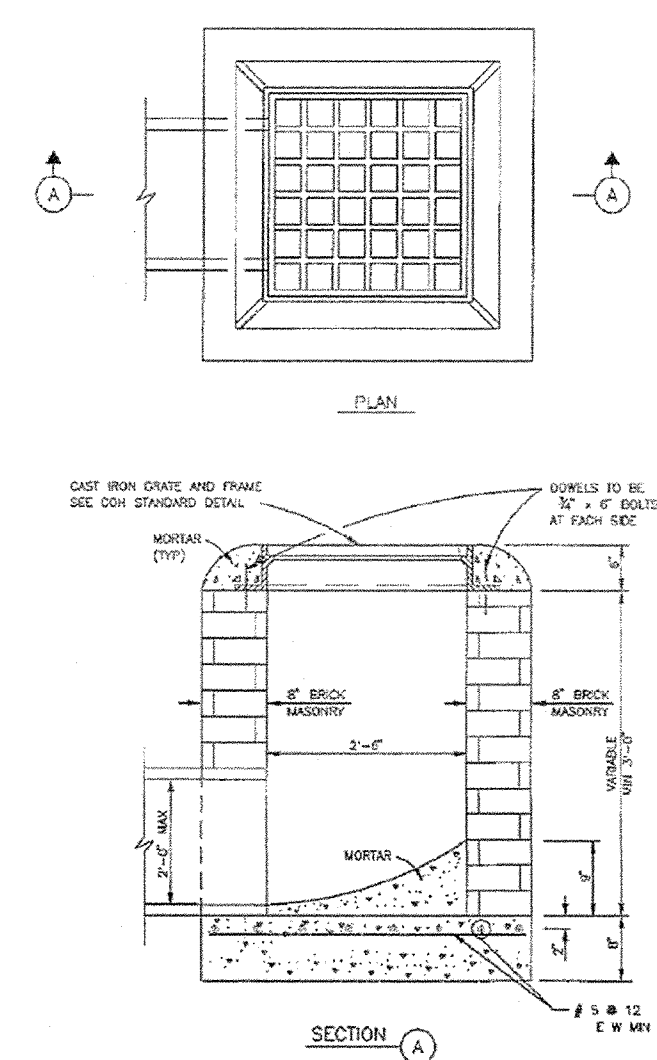
REVISIONS & DATE	
1/09/22/2017	
DRAWN BY: F. ARIZA	
DATE: 08/07/2017	
SCALE: 1" = 40'	
SHEET NO: T2	





KEY NOTES	
KEY	INLET
①	MANHOLE
②	30"x30" CB
③	24"x24" JB
④	24"x24" CB
⑤	24"x24" CB
⑥	18"x18" CB
⑦	18"x18" CB
⑧	18"x18" CB
⑨	12"x12" CB
⑩	12"x12" CB
⑪	9" CURB
⑫	6" CURB

CB : CATCH BASIN  
JB : JUNCTION BOX



LEGEND	
TC.....	TOP OF CURB
TG.....	TOP OF GRATE
TP.....	TOP OF PAVEMENT
FF.....	FINISHED FLOOR
FG.....	FINISHED GRADE
FL.....	FLOW LINE
.....	EXISTING GRADES
+TP=71.70	= PROPOSED GRADES

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
STORM SEWER  
TYPE "A" GRATE INLET  
(NOT TO SCALE)  
CITY ENGINEER: [Signature]  
DATE: OCT-01-2002 DWG NO: 02532-AL

**SPILLWAY :**

Q(100 YR)= 13.45 CFS  
USING BOTTOM WIDTH=10 ft (min.)  
EXIT SLOPE = 5% (MIN.)  
SIDE SLOPE = 1:3  
MANNING'S n=0.013  
DETERMINE THE DEPTH OF FLOW USING MANNINGS EQUATION

$$Q = 1.49/n \times A \times (R)^{2/3} \times (S)^{1/2}$$

13.45 = 1.49/0.013 x (10d+3d^2) x ((10d+3d^2)/(6.32d+10))^(2/3) x (0.05)^0.5

BY TRIAL AND ERROR  
d=0.17  
FREE BOARD=1ft  
TOTAL DEPTH = 1.17ft  
TOP WIDTH = 17.02ft

**TABLE**  
SEWER SIZE VS MANHOLE SIZE

SEWER SIZE	MANHOLE SIZE
18"	36"
24"	48"
30"	60"
36"	72"
42"	84"
48"	96"
54"	108"
60"	120"
66"	132"
72"	144"
78"	156"
84"	168"
90"	180"
96"	192"
102"	204"
108"	216"
114"	228"
120"	240"
126"	252"
132"	264"
138"	276"
144"	288"
150"	300"
156"	312"
162"	324"
168"	336"
174"	348"
180"	360"
186"	372"
192"	384"
198"	396"
204"	408"
210"	420"
216"	432"
222"	444"
228"	456"
234"	468"
240"	480"
246"	492"
252"	504"
258"	516"
264"	528"
270"	540"
276"	552"
282"	564"
288"	576"
294"	588"
300"	600"

CITY OF HOUSTON  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING  
STORM SEWER  
MANHOLE - 48" FOR 42" DIAMETER R.C. AND SMALLER  
(NOT TO SCALE)  
APPROVED BY: [Signature]  
DATE: OCT-01-2002 DWG NO: 02081-0

STORM SEWER ROUTING TABLE (25 YRS FREQUENCY)

INLET FROM	INLET TO	AREA (ACRES)	RUNOFF COEFFICIENT (C <sub>PA</sub> )	SUM OF INTENSITY (C*CPA MIN/HR)	SUM OF FLOWS (CFS)	DIAMETER (IN)	SPAN (FT)	SLOPE (IN)	MANNING'S (n)	DESIGN CAPACITY (cfs)	DESIGN VELOCITY (ft/s)	FLOW LINE ELEVATION UPSTREAM (ft)	FLOW LINE ELEVATION DOWNSTREAM (ft)	ACTUAL VELOCITY (ft/s)	HYDRAULIC GRADIENT (ft/ft)	CHANGE IN HEAD (ft)	ELEVATION OF HYDRAULIC GRADIENT UP-STREAM (ft)	ELEVATION OF HYDRAULIC GRADIENT DOWN-STREAM (ft)	NATURAL GROUND (UPSTREAM)	NATURAL GROUND (DOWNSTREAM)	
6	5	0.4	0.935	0.374	5.45	2.038	12	104.5	0.45%	0.009	3.48	4.41	0.47	66.77	66.30	2.60	0.45%	0.47	66.87	66.40	69.55
5	4	0.42	0.935	0.393	5.45	4.178	18	105	0.25%	0.009	7.57	4.28	0.26	66.37	66.11	2.36	0.25%	0.26	66.46	66.20	69.55
4	3	0.488	0.935	0.456	5.45	6.665	18	101.5	0.25%	0.009	7.55	4.27	0.25	66.11	65.86	3.77	0.25%	0.25	66.33	66.08	69.55
3	2	0	0.935	0	5.45	6.665	18	112.3	0.25%	0.009	7.60	4.30	0.28	65.86	65.58	3.77	0.25%	0.28	66.08	65.80	69.55
2	DET	0.457	0.935	0.427	5.45	8.994	24	76	0.20%	0.009	14.56	4.63	0.15	63.35	63.20	2.86	0.20%	0.15	63.48	63.33	69.55
7	DET	0.775	0.385	0.298	5.45	1.626	12	79.6	0.45%	0.009	3.47	4.42	0.36	63.56	63.20	2.07	0.45%	0.36	63.63	63.27	70.30
8	det	0.156	0.935	0.146	5.45	0.795	12	66	0.45%	0.009	3.48	4.43	0.3	62.55	62.25	1.01	0.45%	0.3	62.57	62.27	69.55

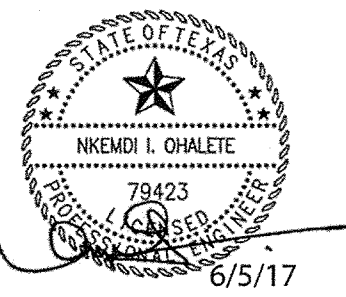
NOTE:  
CONTRACTOR SHALL COORDINATE ALL WORK WITHIN THE MAIN STREET AND CLEVELAND STREET RIGHT-OF-WAY WITH THE FORT BEND COUNTY ROAD & BRIDGE DEPARTMENT, (281)342-4513.

NOTE:  
DETENTION VOLUME ACCOUNTS FOR FUTURE OVERALL BUILD OUT.

NOTE:  
THE PROPERTY OWNER IS RESPONSIBLE FOR MAINTENANCE OF THE DETENTION FACILITY WITHIN THE EASEMENT.

PROPOSED DETENTION POND  
2-2000 GPM CAPACITY SUMP PUMPS, 7 FEET HEAD EACH.  
NOTE:  
1. INSTALL A DEBRIS GUARD AROUND THE PUMP INTAKE.  
2. IN CASE OF EMERGENCY A PORTABLE GENERATOR SHOULD BE KEPT ON SITE.

NEDU ENGINEERING SERVICES, INC.  
ENGINEERS - PROJECT MANAGERS - ESTIMATORS - INSPECTORS  
6076 SOUTHVIEW DRIVE SUITE 320  
FRESNO, TEXAS 77705  
PHONE: (713) 312-2688  
FAX: (713) 312-2689  
TYPE NO. F-8029



FM 521 C-STORE  
106 MAIN STREET  
FRESNO, TEXAS 77545

PRINTED		DESCRIPTION / REVISION	DATE	NO.
NO.	DATE			

DRAWING NAME:  
**SITE DRAINAGE PLAN**

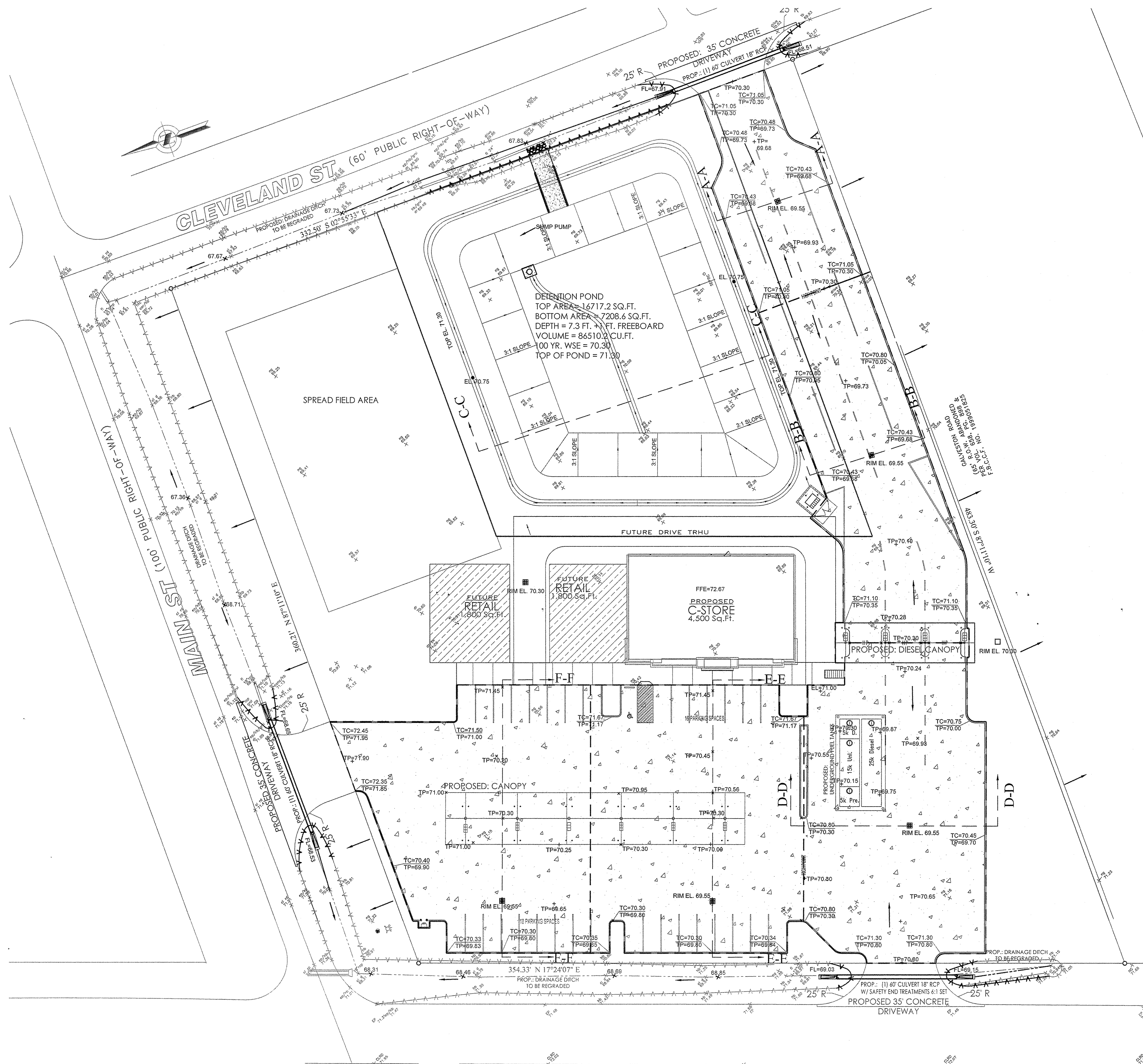
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PROJECT NO.:  
DATE: 12-05-2016  
PHASE:

DRAWING NO.

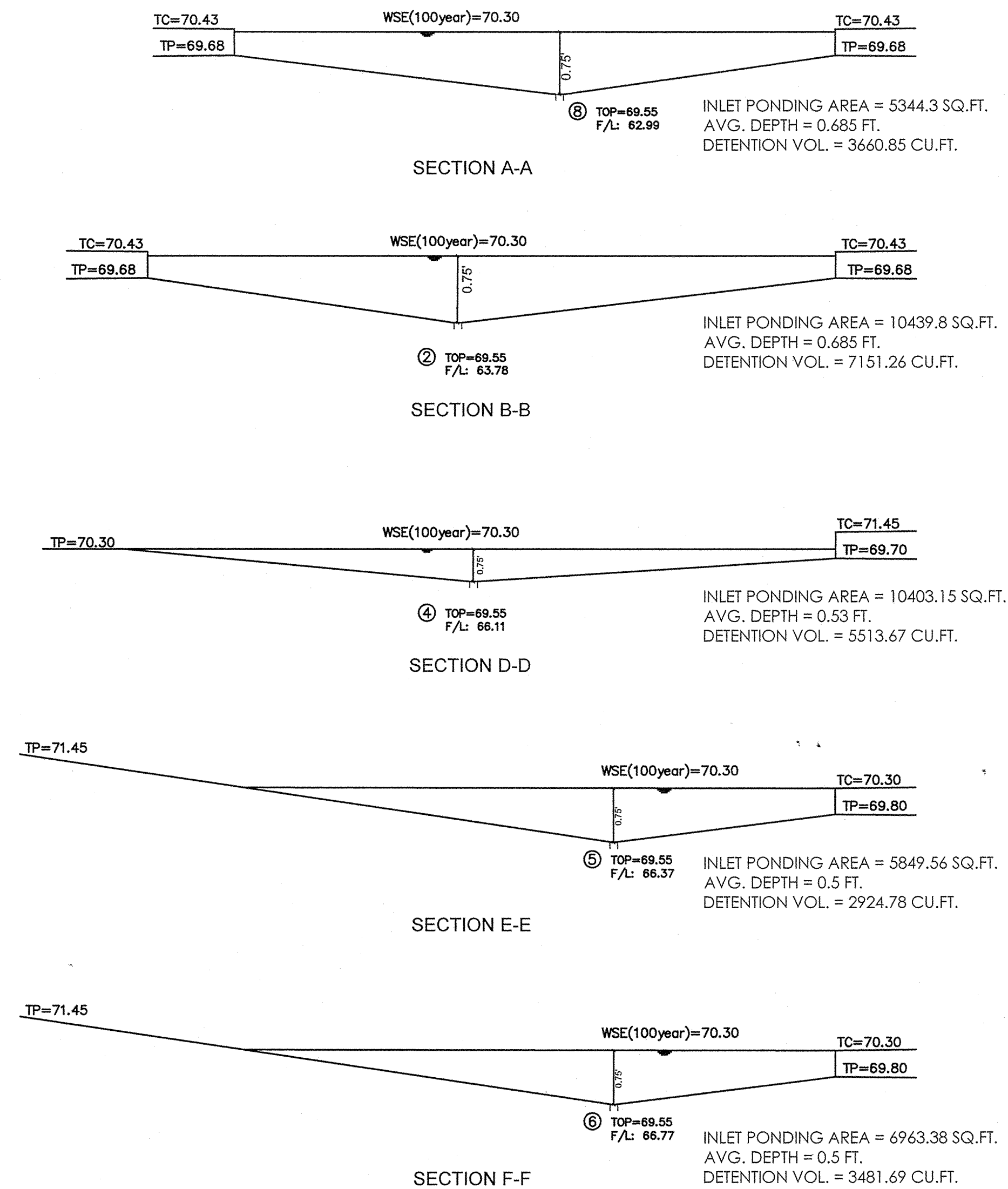
C90 9/22/17





**F.M. 521**  
(PUBLIC RIGHT-OF-WAY WIDTH VARIES)

LEGEND	
TC.....	TOP OF CURB
TG.....	TOP OF GRATE
TP.....	TOP OF PAVEMENT
FF.....	FINISHED FLOOR
FG.....	FINISHED GRADE
FL.....	FLOW LINE
	= EXISTING GRADES
	+TP=71.70 = PROPOSED GRADES



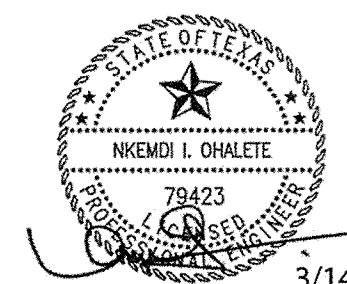
SEE SHEET C3-0 FOR SECTION C-C

#### MINIMUM SLAB ELEVATION ANALYSIS

- Nearest 100 Year BFE = 68  
Slab Elevation =  $1.5' + 68 = 69.5$
- Extreme Event Ponding in Parking Lot = 70.3'  
Slab Elevation =  $1' + 70.3' = 71.3'$
- Lowest Significant Contour = 69.03'  
Slab Elevation =  $1.5' + 69.03' = 70.53'$
- Ditch High Bank Elevation = 71.67'  
Slab Elevation =  $1' + 71.67' = 72.67'$   
Slab Elevation(Max.) = 72.67'

*(Handwritten signature)*

**NEDU ENGINEERING SERVICES, INC.**  
ENGINEERS, PROJECT MANAGERS, ESTIMATORS, INSPECTORS  
6775 SOUTHVIEW Fwy, SUITE 320  
FRESNO, TEXAS 77754  
PHONE: (713) 268-1666  
FAX: (713) 268-1667  
TYPE NO. F-8029



**FM 521 C-STORE**  
**106 MAIN STREET**  
**FRESNO, TEXAS 77545**

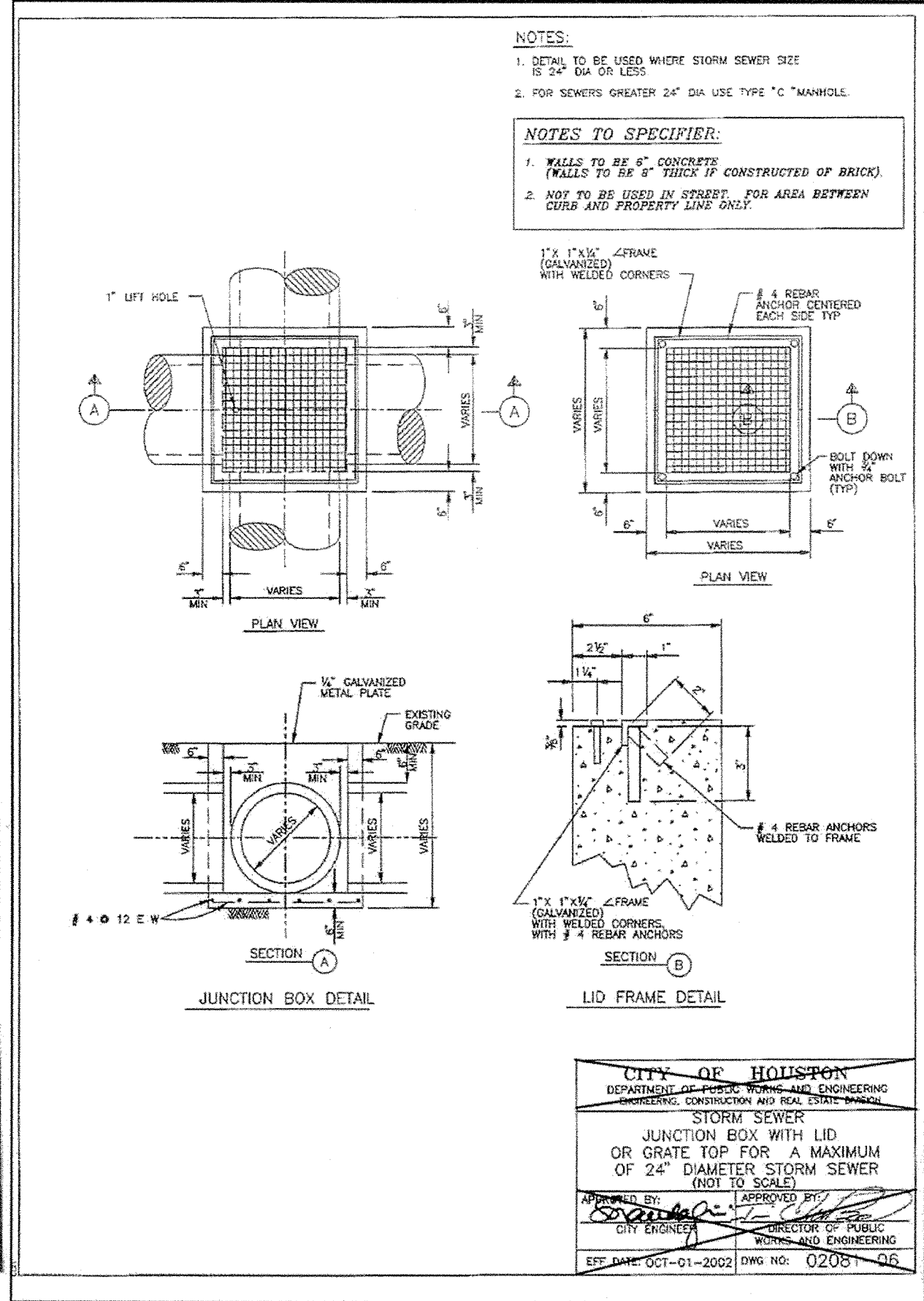
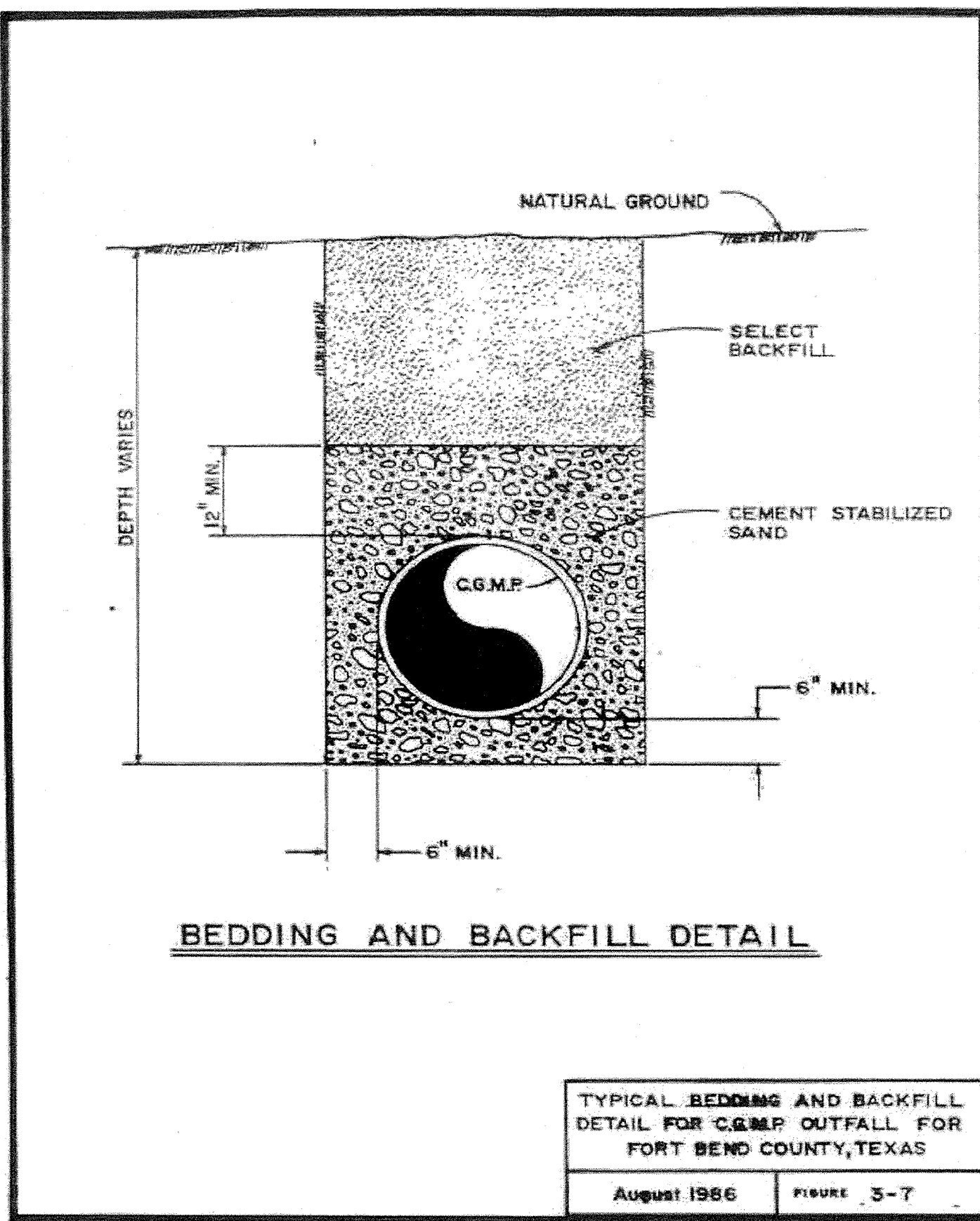
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NO.	DESCRIPTION / REVISION	SITE GRADING PLAN	
DATE			
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PHASE:			
DRAWING NO.			
SHEET	2	OF	5



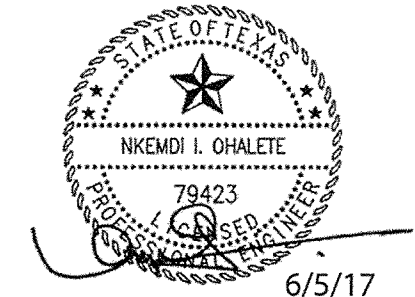
106 MAIN ST (25yr)		
Cwt = $(0.85 \times 0.328) + (0.35) \times (2.8913)$		
Cwt = 0.40	3.22	
Existing		
A(imperv) = 0.328 ac		
A(per) = 2.891 ac		
I(25yr) =	5.45 IN/HR	
Q		CIA/Z
Q(imperv) =	0.4x0.328x5.45	0.72 cfs
Q(per) =	0.4x2.891x5.45	6.30 cfs
Q(Total existing) =	0.72+6.3	7.02 cfs
Qall=0.125cfs/acre	0.125x3.2193	0.402 cfs (Allowed flow)
Developed		
Cwt = $(0.85 \times 2.0347) + (0.35) \times (1.1846)$	3.22	
I = 5.45 IN/HR		
A(dev) = 2.035 ac		
A(per) = 1.185 ac		
Qdev =	0.63x5.45x2.0347	6.99 cfs
Qper =	0.63x5.45x1.1846	4.07 cfs
Q(tot) =	6.99+4.07	11.06 cfs
OUT FLOW ORIFICE SIZE CALCULATION		
Use 2.5" dia. Restrictor		
A		0.03 ft <sup>2</sup>
$Q = CA\sqrt{2gh}$		
C=0.8		
g=32.2ft/s <sup>2</sup>		
h=2.65ft		
Q=0.8*0.03*sqrt(2*32.2*2.65)		0.31 cfs
Required rate of storage		
% impervious cover	63.20%	proposed + future
Detention rate required for 63.20% impervious cover		0.833 ac.ft./ac.
Required detention volume		
0.833ac.ft./ac. X total area (3.2193ac.)	116,785.80	ft <sup>3</sup> For Prop. & Future
Summary		
1 Area Served= 3.219 Acres=	140219.64	Sq.ft
2 Detention Volume Req'd 0.833 acre-feet/acre		
3 Land Area Required to provide detention= 88631.53 Sq.ft		
4 Total Detention Storage Volume Required = 116,785.80 Cu.ft		Proposed and Future
5 Total Detention Storage Volume Provided = 116,895.35 Cu.ft		Proposed and Future
6 Maximum Outfall Rate Allowed = 0.40 cfs		
7 Maximum Outfall Rate Provided = 0.31 cfs		
8 Restrictor Size= 2.5 inches		

106 MAIN ST (100yr)		
Cwt = $(0.85 \times 0.328) + (0.35) \times (2.8913)$		
Cwt = 0.40	3.22	
Existing		
A(imperv) = 0.328 ac		
A(per) = 2.891 ac		
I(100yr) =	6.85 IN/HR	
Q		CIA/Z
Q(imperv) =	0.4x0.328x6.85	0.90 cfs
Q(per) =	0.4x2.891x6.85	7.92 cfs
Q(Total existing) =	0.9+7.92	8.82 cfs
Qall=0.125cfs/acre	0.125x3.2193	0.402 cfs (Allowed flow)
Developed		
Cwt = $(0.85 \times 2.0347) + (0.35) \times (1.1846)$	3.22	
I = 6.85 IN/HR		
A(dev) = 2.035 ac		
A(per) = 1.185 ac		
Qdev =	0.63x2.0347x6.85	8.78 cfs
Qper =	0.63x6.85x1.1846	5.11 cfs
Q(tot) =	8.78+5.11	13.89 cfs
OUT FLOW ORIFICE SIZE CALCULATION		
Use 2.5" dia. Restrictor		
A		0.03 ft <sup>2</sup>
$Q = CA\sqrt{2gh}$		
C=0.8		
g=32.2ft/s <sup>2</sup>		
h=2.65ft		
Q=0.8*0.03*sqrt(2*32.2*2.65)		0.31 cfs

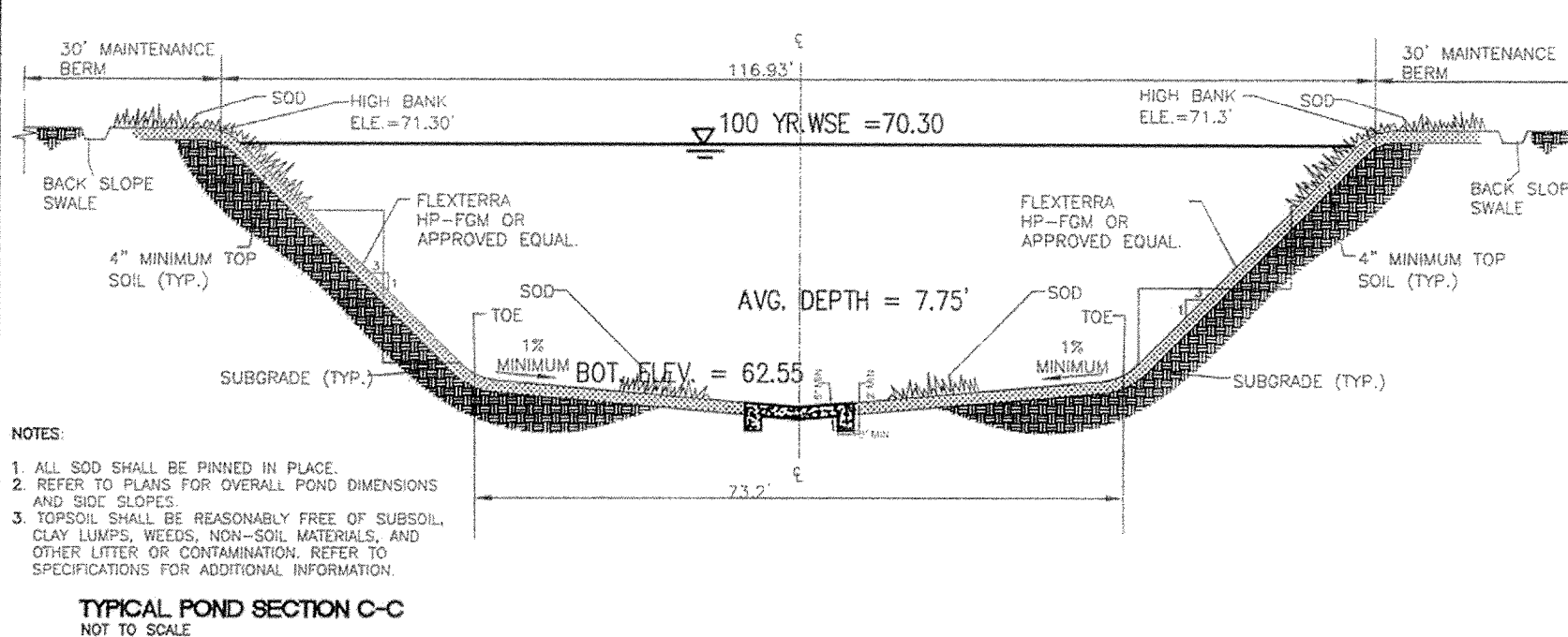
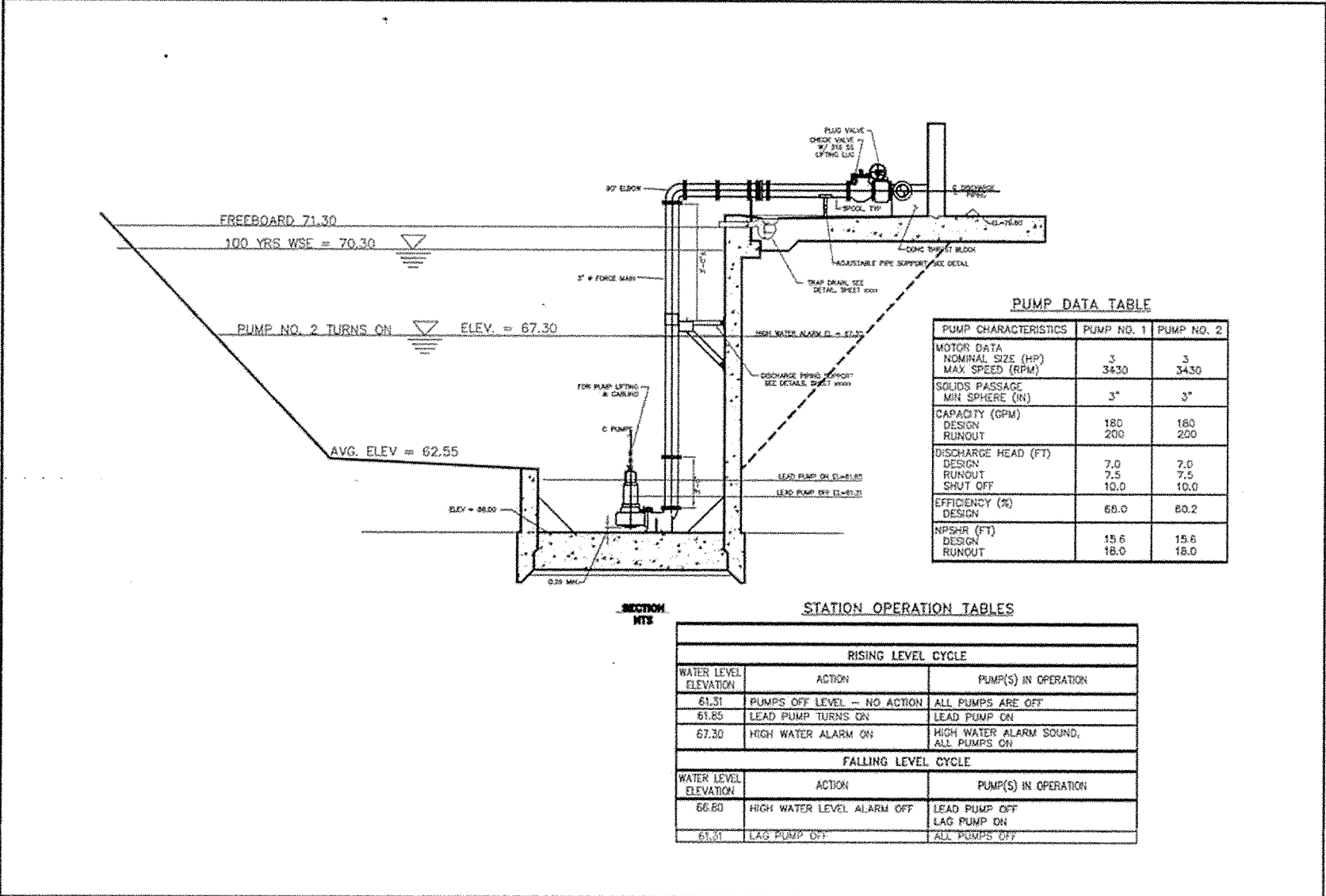
DETENTION PROVIDED SUMMARY	
1.) PROPOSED PIPES	1,115.08
2.) PROPOSED INLETS	119.25 CUF.
3.) INLET PONDING	24,741.04 CUF.
4.) PROP. DETENTION POND	90,919.98
TOTAL	116,895.35 CUF.



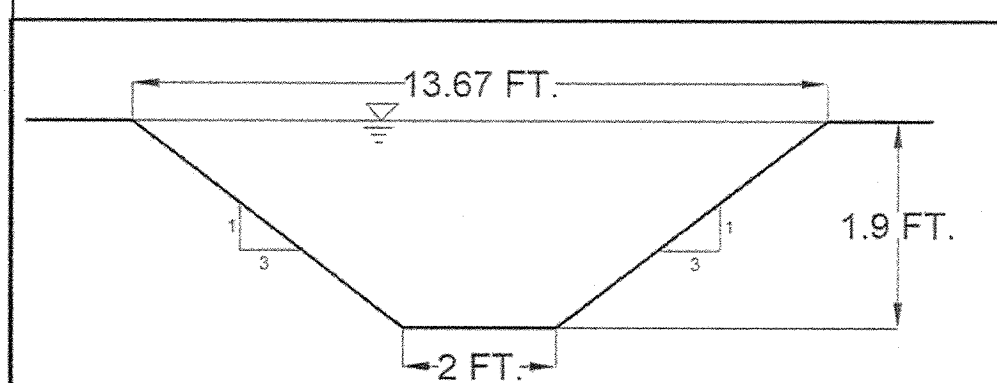
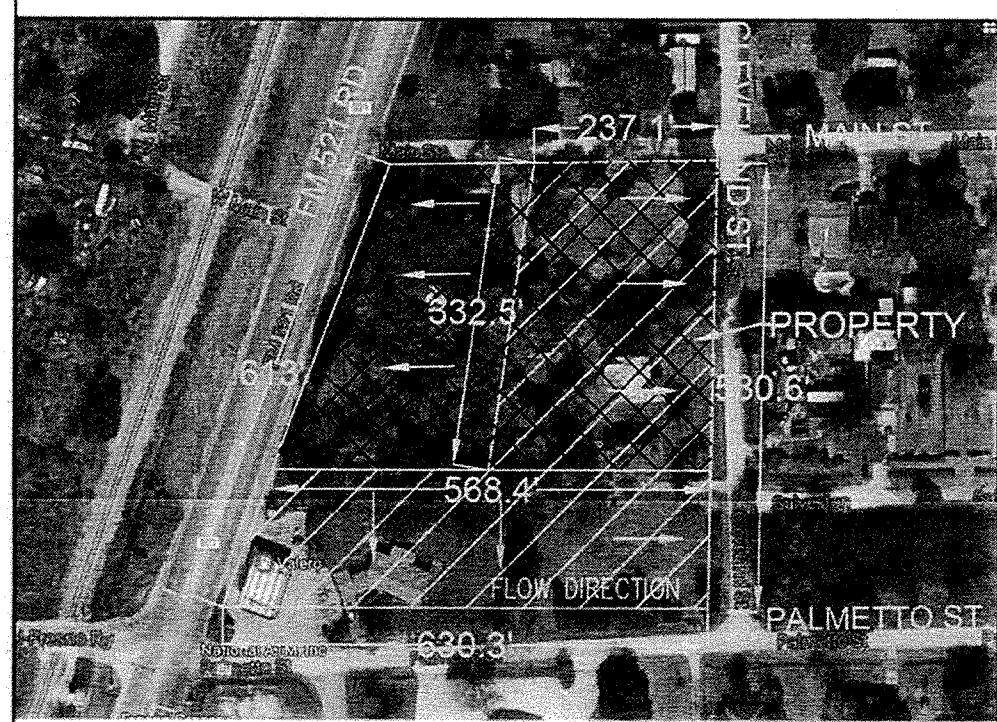
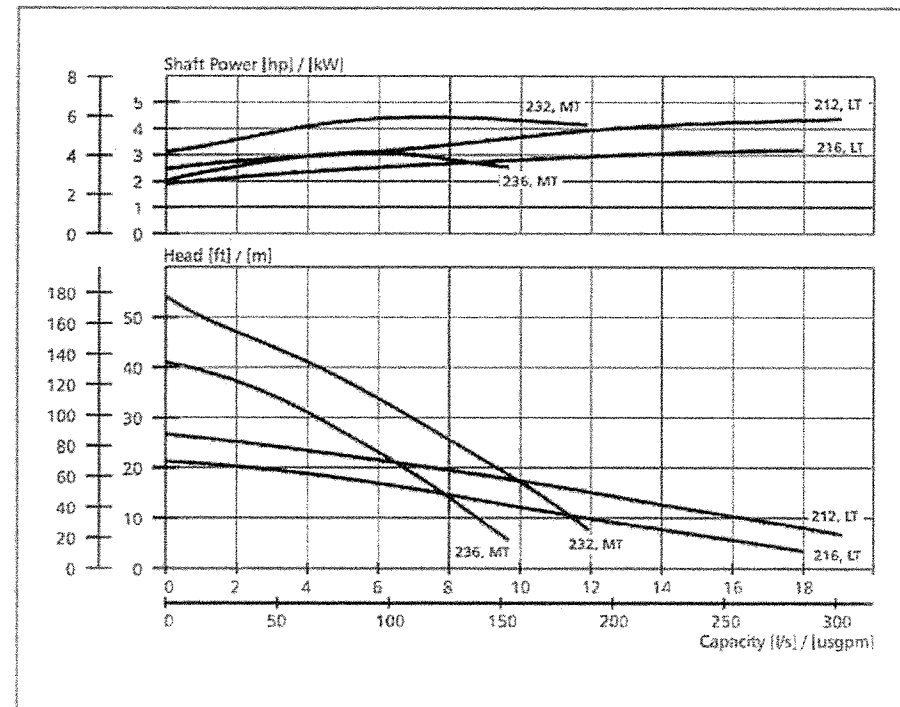
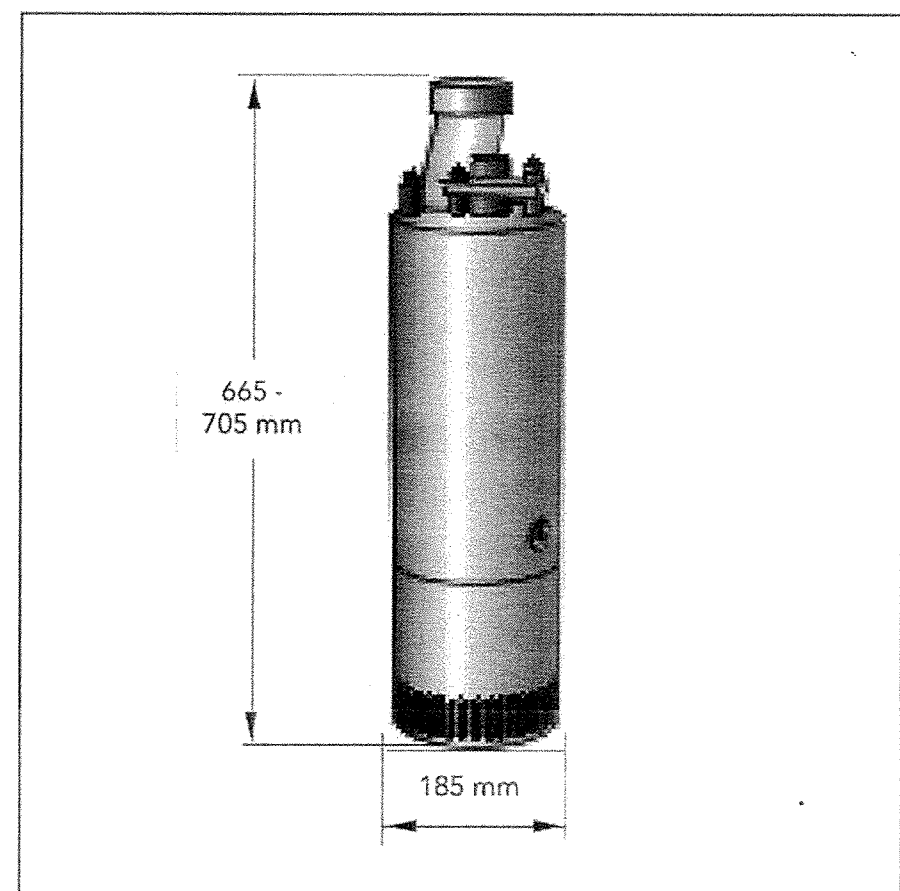
**NEDU ENGINEERING SERVICES, INC.**  
ENGINEERS, PROJECT MANAGERS, ESTIMATORS, INSPECTORS  
6776 SOUTHVIEW PARKWAY, SUITE 320  
HOUSTON, TEXAS 77054  
PHONE: (713) 868-1667  
FAX: (713) 868-1667  
TBE NO. F-8029



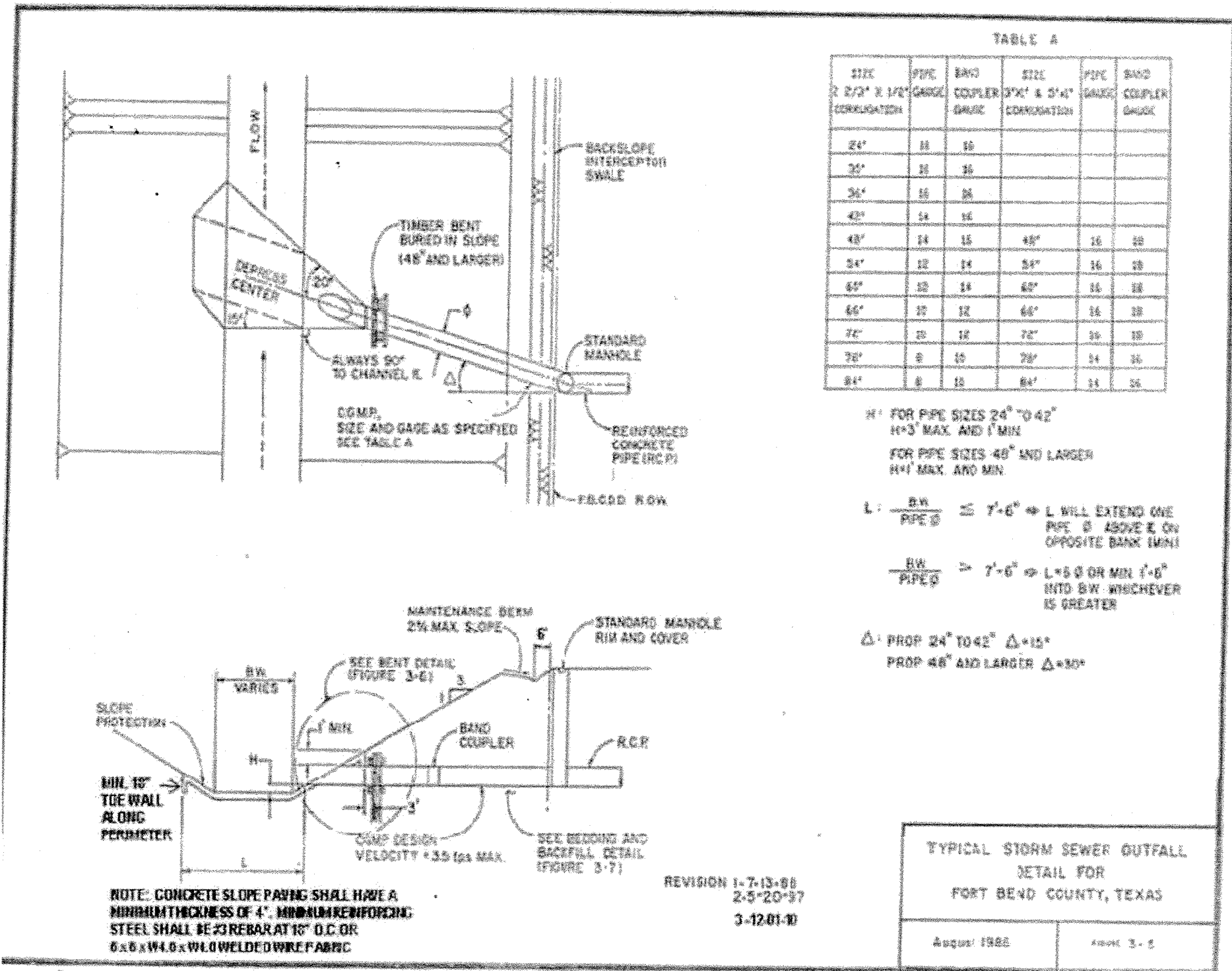
**FM 521 C-STORE**  
**106 MAIN STREET**  
**FRESNO, TEXAS 77545**



## Flygt 2071.010 DEWATERING PUMP



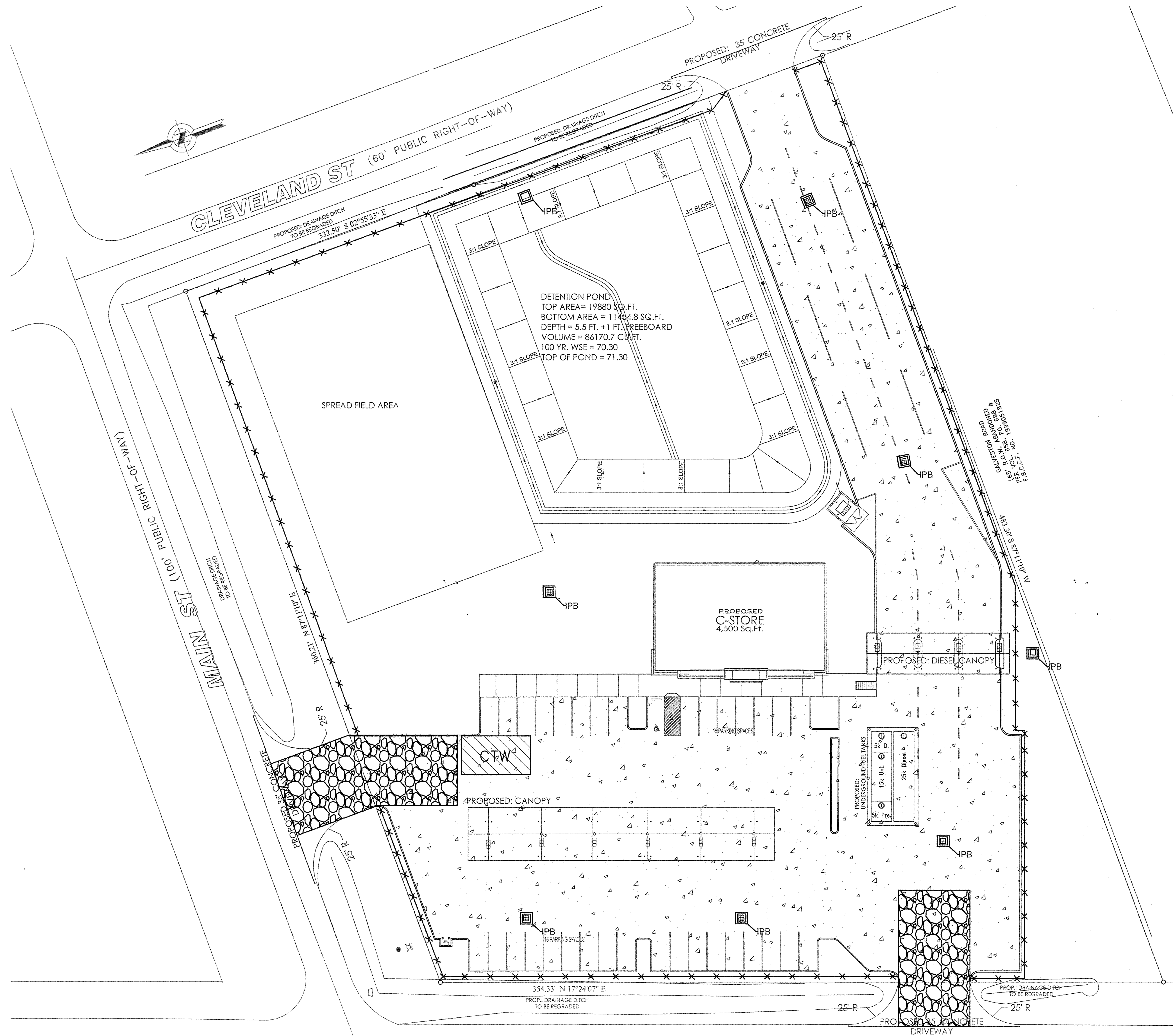
DRAINAGE AREA CONTRIBUTING TO THE DITCH =  $(332.5 \times 237.1) + (599.35 \times 178.65) = 185,910$  SF.  
= 4.27 ACRES.  
AREA OF DEVELOPMENT DRAINING TO THE DITCH =  $237.1 \times 332.5$  SF. = 78,835.75 SF.  
= 1.81 ACRES.  
EXIST. 100 YRS DISCHARGE COMING TO DITCH,  $Q = 0.4 \times 6.85 \times 4.27 = 11.7$  CFS.



**DITCH CAPACITY USING MANNING'S EQUATION**  
 $Q = \frac{1}{48.3} A R^{2/3} S^{1/2}$   
 $n = 0.03$   
 $R =$  Hydraulic Radius =  $A/P$   
 $P =$  Wetted Perimeter = 14.27 FT.  
 $S =$  Longitudinal Slope of Ditch = Change in Elevation / Total Length of Ditch  
 $= (68 - 67.12) / 376.7 = 0.23\%$   
 $Q = \frac{1}{48.3} \times 14.89 \times 1.04^{2/3} \times 0.0023^{1/2} = 24.44$  CFS  
Pro Rata Share of the Property =  $\frac{\text{Proposed Development Area Draining to the Ditch}}{\text{Total Drainage Area}} \times \text{Ditch Capacity}$   
 $= \frac{(1.81/4.27) \times 24.44}{1} = 10.36$  CFS.  
Actual Discharge from Proposed Development to the Existing Ditch = 1.93 CFS.

PRINTED		DESCRIPTION / REVISION	
DATE			
NO.			
DRAWING NAME:			
DETENTION CALCULATION AND DETAILS			
SCALE: NTS			
PROJECT NO.:			
DATE: 12-05-2016			
PHASE:			
DRAWING NO.			
SHEET 3 OF 5			





**LEGEND**

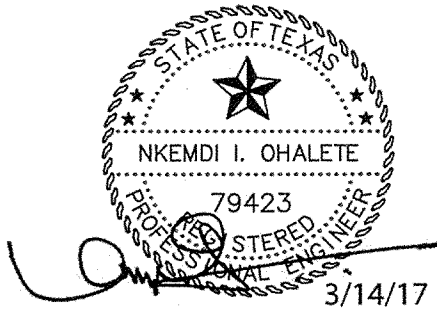
\*\*\* SILT FENCE

STABILIZED CONSTRUCTION ACCESS

CONCRETE TRUCK WASH OUT AREA

IPB INLET PROTECTION BARRIER

**NEDU ENGINEERING SERVICES, INC**  
ENGINEERS, PROJECT MANAGERS, ESTIMATORS, INSPECTORS  
1776 S. GULFWEST Fwy, SUITE 330  
FRESNO, CA 93706  
PHONE: (713) 266-1666  
FAX: (713) 266-1667  
TBPE NO. F-8029



**106 MAIN STREET  
FRESNO, TEXAS 77545**

PRINTED		DESCRIPTION / REVISION			
DATE					
NO.					

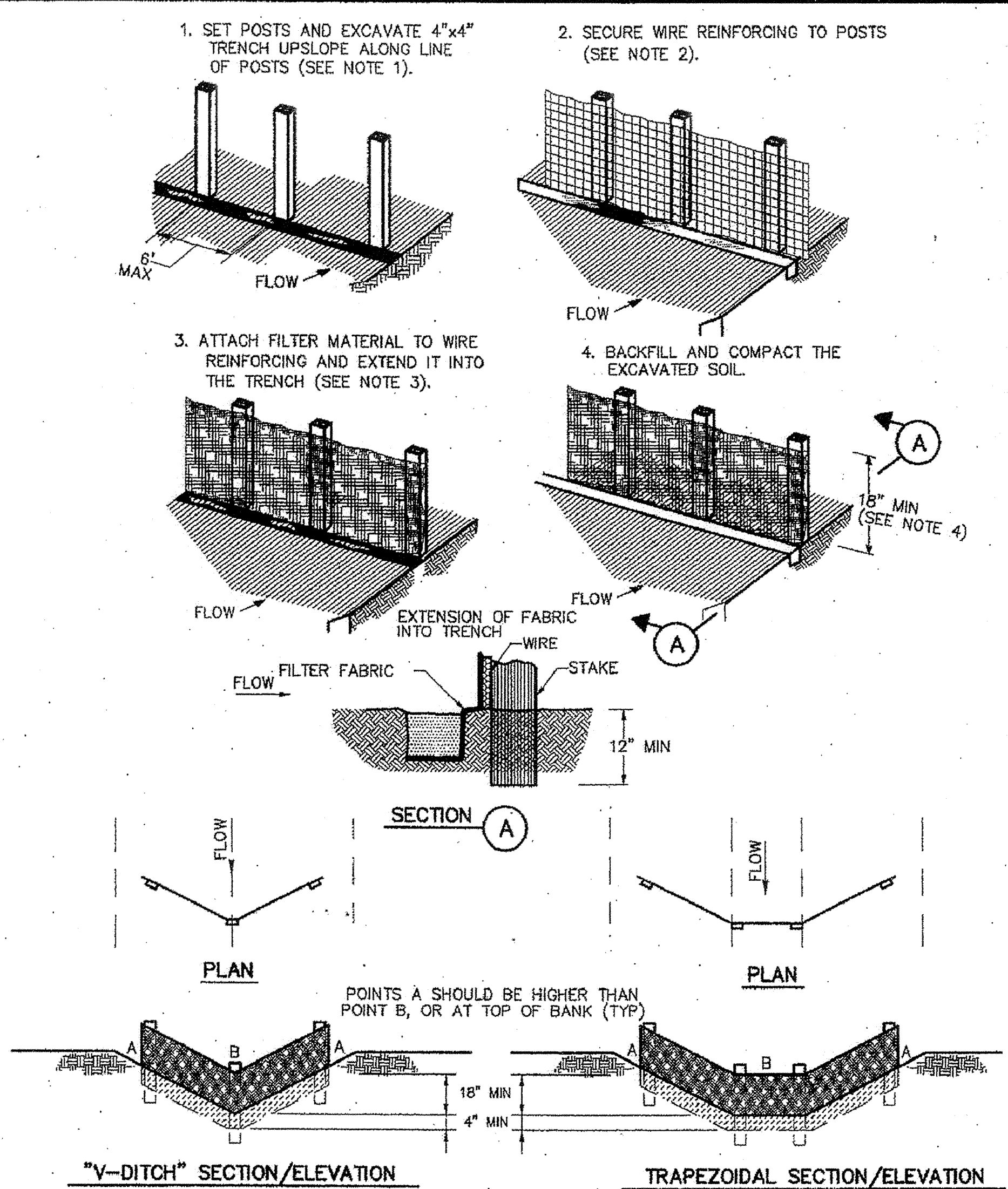
DRAWING NAME:  
**SWPP PLAN**

SCALE: 1"=30'  
PROJECT NO.:  
DATE: 12-05-2016  
PHASE:

DRAWING NO.

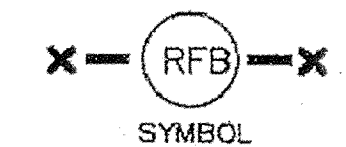
CFS 9/22/17



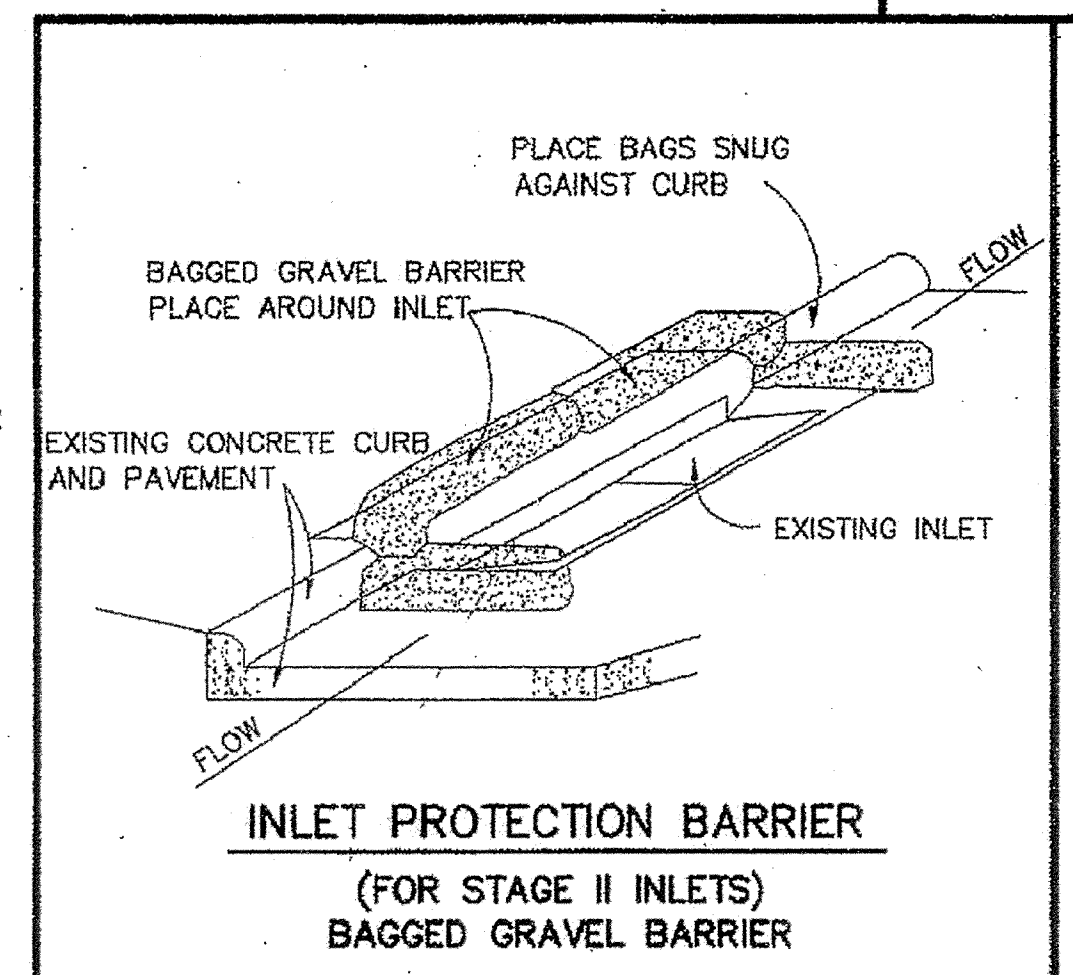


**CONSTRUCTION NOTES:**

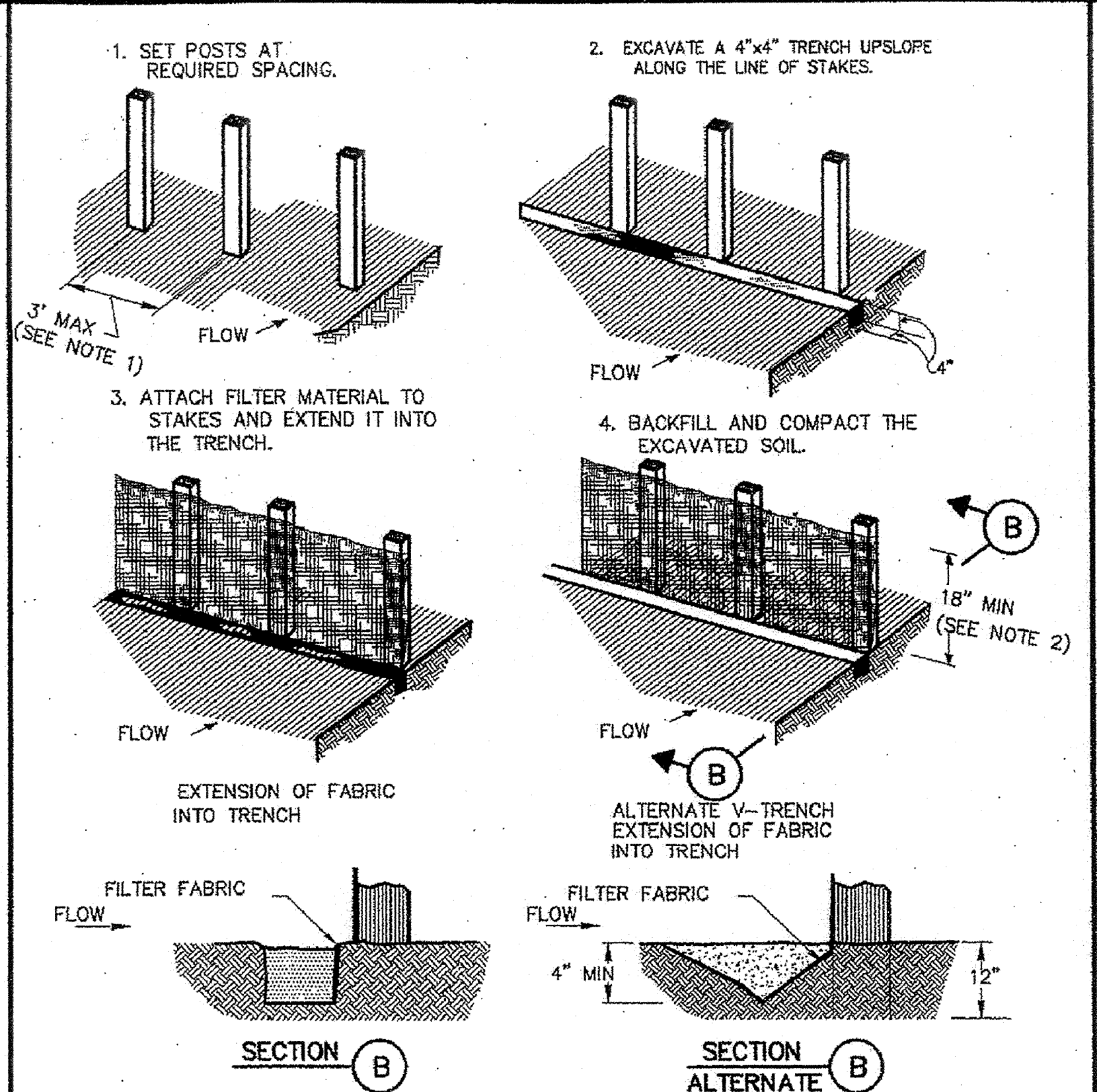
1. SET 2 INCH BY 2 INCH WOODEN STAKES SPACED A MAX OF 6 FEET APART AND EMBEDDED A MIN OF 12 INCHES.
2. WOVEN WIRE REINFORCING TO BE FASTENED SECURELY TO BARRIER POSTS WITH STAPLES.
3. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE REINFORCING, WITH TIES SPACED EVERY 24 INCHES AT TOP AND MIDSECTION.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



**REINFORCED FILTER FABRIC BARRIER**



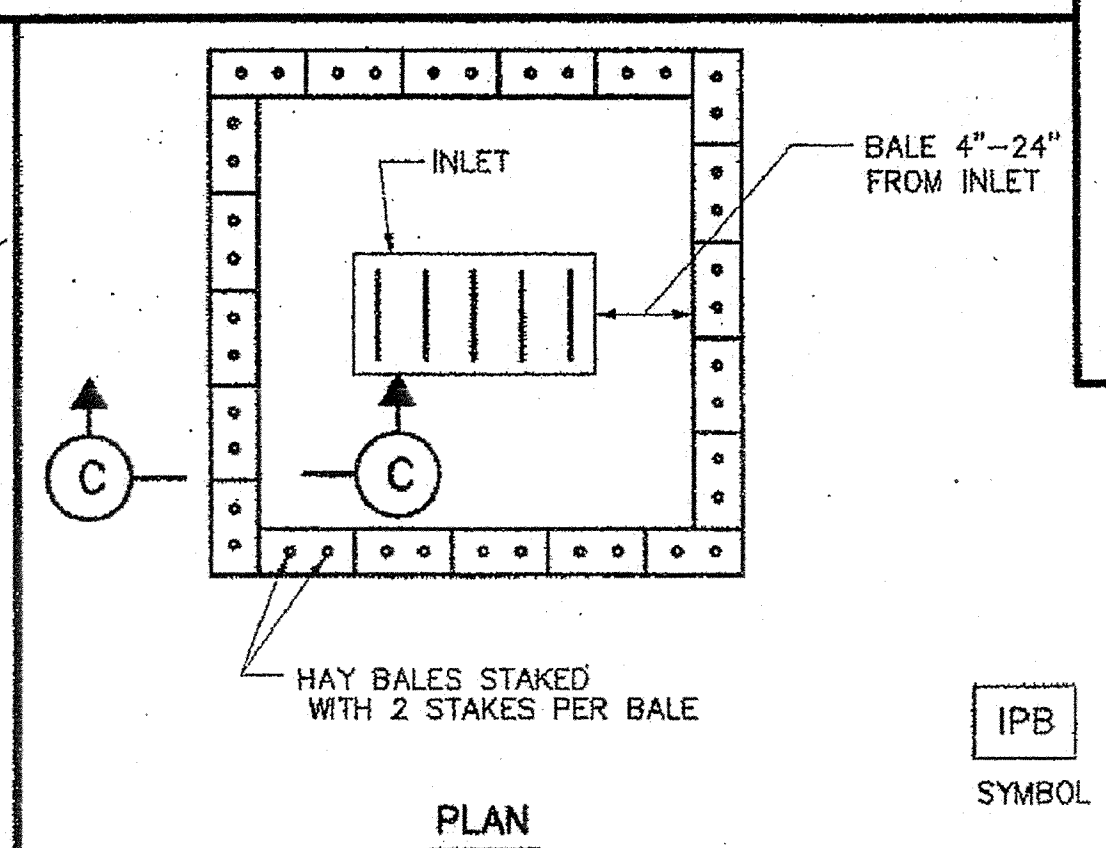
**INLET PROTECTION BARRIER  
(FOR STAGE II INLETS)  
BAGGED GRAVEL BARRIER**



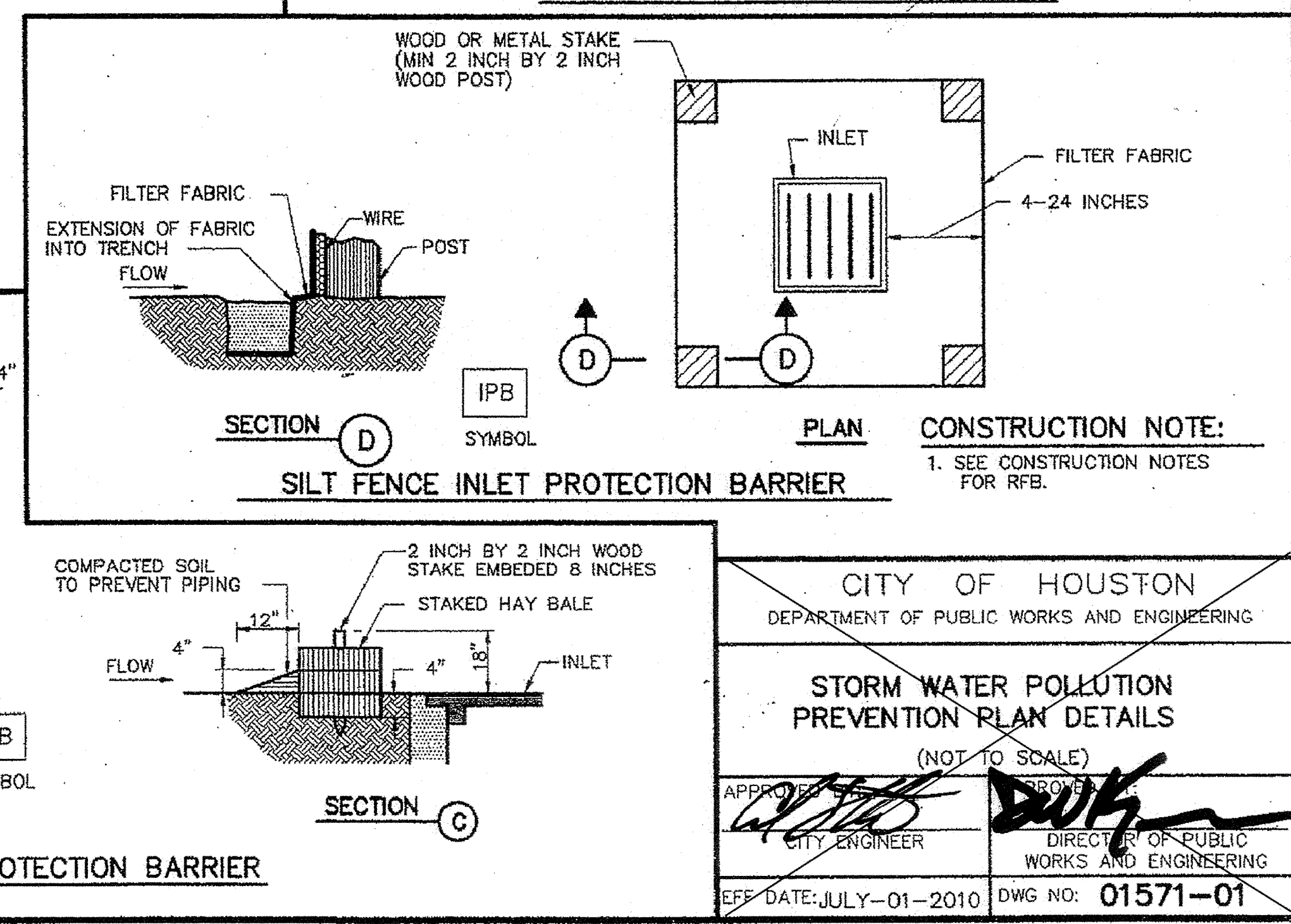
**CONSTRUCTION NOTES:**

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

**FILTER FABRIC BARRIER**



**HAY BALE INLET PROTECTION BARRIER**



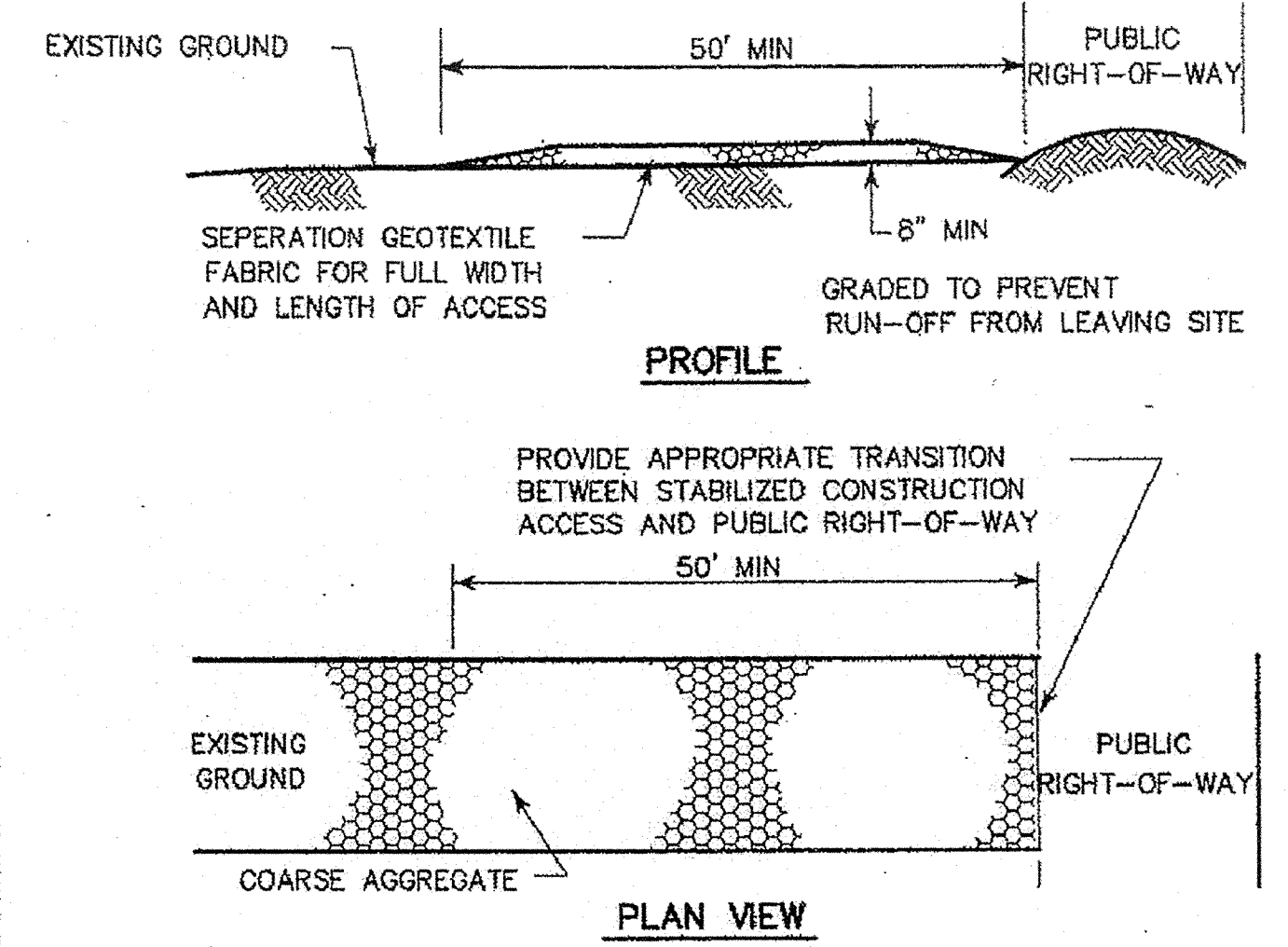
**SILT FENCE INLET PROTECTION BARRIER**

**CITY OF HOUSTON**  
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

**STORM WATER POLLUTION PREVENTION PLAN DETAILS**  
(NOT TO SCALE)

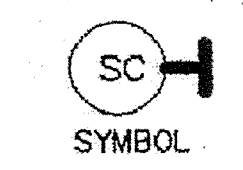
APPROVED: *[Signature]* CITY ENGINEER  
APPROVED: *[Signature]* DIRECTOR OF PUBLIC WORKS AND ENGINEERING

DATE: JULY-01-2010  
DWG NO: 01571-01



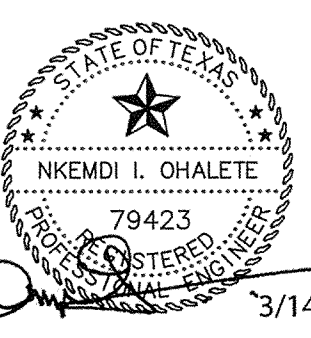
**CONSTRUCTION NOTES:**

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



**STABILIZED CONSTRUCTION ACCESS**

**NEDU ENGINEERING SERVICES, INC.**  
ENGINEERS - PROJECT MANAGERS, ESTIMATORS, INSPECTORS  
6775 SOUTHWEST Fwy, Suite 320  
Fresno, CA 93726  
PHONE: (559) 268-1666  
FAX: (559) 268-1667  
TYPE NO. F-8029



**106 MAIN STREET  
FRESNO, TEXAS 77545**

PRINTED	DESCRIPTION / REVISION
DATE	
NO.	

DRAWING NAME:  
**SWPP DETAILS**

SCALE:  
PROJECT NO.:  
DATE: 12-05-2016  
PHASE: NTS

DRAWING NO.

*CPS 9/22/17*



