

REVIEW BY FORT BEND COUNTY COMMISSIONERS COURT

On this 14 day of JUNE, 2011, before the Fort Bend Commissioners Court came on to be heard and reviewed the accompanying notice of D.L. ELLIOTT ENTERPRISES, INC.

Job Location GRAND MISSION BOULEVARD, LONG PIONT SLOUGH

Dated 06/02/11 BOND NO 58S201179 Permit No. 83959

to make use of certain Fort Bend County property subject to, "A Revised 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, date the 3rd day of August, 1987, recorded in Volume _____ of the Minutes of the Commissioners Court of Fort Bend County, Texas, to the extent that such order is not inconsistent with Article 1436a, Vernon's Texas Civil Statues. Upon Motion of Commissioner Meyers, seconded by Commissioner Prestage, duly put and carried, it is ORDERED, ADJUGED 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.

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

Mail notices to: Permit Administrator
Fort Bend County Engineering
P.O. Box 1449
Rosenberg, Texas 77471
281-633-7500

3. This permit expires one (1) year from date of permit if construction has not commenced.

By [Signature]
County Engineer

By _____
Drainage District Engineer/Manager

Presented to Commissioners Court and approved.
Recorded in Volume 6-14-11
Minutes of Commissioners Court.

Clerk of Commissioners Court
By [Signature]
Deputy

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

AUTHORIZED

BOND NO 58S201179

THE STATE OF TEXAS §

KNOW ALL MEN BY THESE PRESENTS:

COUNTY OF FORT BEND §

THAT WE D.L. Elliott Enterprises, Inc. whose address is 13405 SW Freeway*, Texas, hereinafter called the Principal, and Liberty Mutual Insurance Company, a Corporation existing under and by virtue of the laws of the State of MA and authorized to do an indemnifying business in the State of Texas, and whose principal office is located at 175 Berkeley St, Boston, MA 02116, whose officer residing in the State of Texas, authorized to accept service in all suits and actions brought within said State is ** and whose address is 12750 Merit Drive, Suite 710, Dallas, TX 75251 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 Two Hundred Eighteen Thousand Five Hundred Dollars (\$218,591.50) 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.

*Suite 210,
Sugar Land

**Richard
Maxey

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 25th day of May, 2011.

D.L. Elliott Enterprises, Inc.

PRINCIPAL

[Signature]

BY

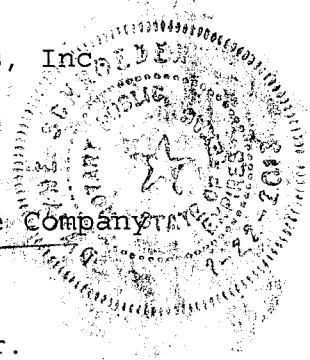
Liberty Mutual Insurance Company
SURETY

[Signature]

BY

Dennis M. Descant, Jr.

Attorney-in-Fact



THIS POWER OF ATTORNEY IS NOT VALID UNLESS IT IS PRINTED ON RED BACKGROUND.

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

LIBERTY MUTUAL INSURANCE COMPANY
BOSTON, MASSACHUSETTS
POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS: That Liberty Mutual Insurance Company (the "Company"), a Massachusetts stock insurance company, pursuant to and by authority of the By-law and Authorization hereinafter set forth, does hereby name, constitute and appoint DENNIS M. DESCANT, JR., JEFFREY LEE BRADY, CHERYL A. SANDERS, ALL OF THE CITY OF HOUSTON, STATE OF TEXAS.....

, each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations in the penal sum not exceeding TWENTY FIVE MILLION AND 00/100***** DOLLARS (\$ 25,000,000.00*****) each, and the execution of such undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents, shall be as binding upon the Company as if they had been duly signed by the president and attested by the secretary of the Company in their own proper persons.

That this power is made and executed pursuant to and by authority of the following By-law and Authorization:

ARTICLE XIII - Execution of Contracts: Section 5. Surety Bonds and Undertakings.

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

By the following instrument the chairman or the president has authorized the officer or other official named therein to appoint attorneys-in-fact:

Pursuant to Article XIII, Section 5 of the By-Laws, Garnet W. Elliott, Assistant Secretary of Liberty Mutual Insurance Company, is hereby authorized to appoint such attorneys-in-fact as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

That the By-law and the Authorization set forth above are true copies thereof and are now in full force and effect.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Company and the corporate seal of Liberty Mutual Insurance Company has been affixed thereto in Plymouth Meeting, Pennsylvania this 17th day of February, 2011.

LIBERTY MUTUAL INSURANCE COMPANY

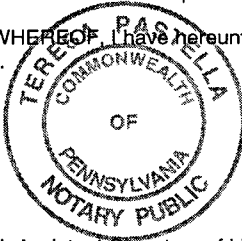
By Garnet W. Elliott, Assistant Secretary



COMMONWEALTH OF PENNSYLVANIA ss
COUNTY OF MONTGOMERY

On this 17th day of February, 2011, before me, a Notary Public, personally came Garnet W. Elliott, to me known, and acknowledged that he is an Assistant Secretary of Liberty Mutual Insurance Company; that he knows the seal of said corporation; and that he executed the above Power of Attorney and affixed the corporate seal of Liberty Mutual Insurance Company thereto with the authority and at the direction of said corporation.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at Plymouth Meeting, Pennsylvania, on the day and year first above written.



COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Teresa Pastella, Notary Public
Plymouth Twp., Montgomery County
My Commission Expires March 28, 2013
Member, Pennsylvania Association of Notaries

By Teresa Pastella, Notary Public

CERTIFICATE

I, the undersigned, Assistant Secretary of Liberty Mutual Insurance Company, do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy, is in full force and effect on the date of this certificate; and I do further certify that the officer or official who executed the said power of attorney is an Assistant Secretary specially authorized by the chairman or the president to appoint attorneys-in-fact as provided in Article XIII, Section 5 of the By-laws of Liberty Mutual Insurance Company.

This certificate and the above power of attorney may be signed by facsimile or mechanically reproduced signatures under and by authority of the following vote of the board of directors of Liberty Mutual Insurance Company at a meeting duly called and held on the 12th day of March, 1980.

VOTED that the facsimile or mechanically reproduced signature of any assistant secretary of the company, wherever appearing upon a certified copy of any power of attorney issued by the company in connection with surety bonds, shall be valid and binding upon the company with the same force and effect as though manually affixed.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed the corporate seal of the said company, this 25th day of May, 2011.



By David M. Carey, Assistant Secretary

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

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

COUNTY OF FORT BEND

Engineering Department

P.O. BOX 1449
Rosenberg, Texas 77471-1449

Johnny Ortega
Permit Administrator

1124 Blume Road
Phone: (281) 341-7500

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

PERMIT NO. 083959

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 direction.
- c. Plans and specifications.

- (2) Bond:
- District Attorney, approval when applicable.
- Perpetual bond currently posted.
- No. _____
- Amount _____
- Performance bond submitted.
- No. 58S201179
- Amount \$218,591.50
- Cashier's Check.
- No. _____
- Amount _____

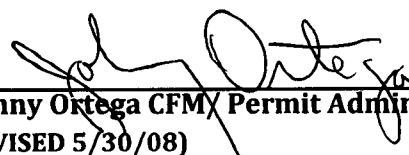
- (3) Verbal permission given for emergencies, to start construction before approved in Commissioner's Court.

Precinct Engineer Acknowledgment Date _____

Precinct Commissioner Acknowledgment Date _____

- (4) 
Drainage District Approval when applicable

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



Johnny Ortega CFM/ Permit Administrator
(REVISED 5/30/08)

05/26/2011

Date

**NOTICE OF PROPOSED CABLE, CONDUIT AND/OR POLE LINE ACTIVITY
IN, UNDER, ACROSS OR ALONG ROADS, STREETS, HIGHWAYS AND DRAINAGE DITCHES
IN FORT BEND COUNTY**

APPLICANT'S JOB NO. 228
 PERMIT No. 83959 PCT. No. 3
 BOND No. 585201179

Formal notice is hereby given that D.L. Elliott Enterprises, Inc.
 proposes to lay, construct, maintain and/or repair cable, conduit and/or pole line, in, under,
 across, or along roads, streets, highways and drainage ditches in Fort Bend County, as follows:

In, Under, or Across Roads and/or Drainage Ditches

Road or Ditch Name	Distance & Direction From Nearest Intersection	Length of Crossing	Type of Construction			
			Bored:	Jacked:	Driven:	Cased
<u>GRAND MISSION BLVD.</u>	<u>LONG POINT SLOUGH</u>	<u>70 FT</u>		<u>X</u>		<u>X</u>

Along Roads and/or Drainage Ditches

Road or Ditch Name	Distance & Direction From Nearest Intersection	To	Distance
<u>LONG POINT SLOUGH</u>	<u>HARLEM ROAD</u>	<u>800 FT WEST OF FUTURE MASON ROAD</u>	<u>9,186 FT</u>

General Description

16-inch water Grand mission - NORTH FORT BEND WATER AUTHORITY

The Location and description of the proposed installation and appurtenances is more fully shown on the attached detail drawings. The laying, construction, maintenance and/or repair of the proposed installation shall be subject to "A Revised Order Regulating the Laying, Construction, Maintenance and/or Repair of Cables, Conduits, and/or 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 Commissioners Court of Fort Bend County, Texas, dated the 3rd. day of August, 1987, recorded in Volume 639 of the Minutes of the Commissioners Court of Fort Bend County, Texas.

Written notices are required: 1) 48 hours in advance of start of construction and
 2) when construction is complete and ready for final inspection.

Mail to: Permit Administrator/Fort Bend County Engineering
 P.O. Box 1449, Rosenberg, TX 77471.

Violation of requirements shall constitute grounds for job shut down.

COMPANY NAME: D.L. Elliott Enterprises, Inc.
 AGENT and/or OWNER


 (Signature)

NAME & TITLE Duane Schroeder, V.P.
 (Please Print)

DATE 5-26-2011

ADDRESS 13405 Southwest Freeway # 210
 (Street/P.O. Box)
Sugar Land TX 77478
 City State Zip

TELEPHONE NO: 281-277-4220
 (accessible 24 hrs/day, 7 days/week)

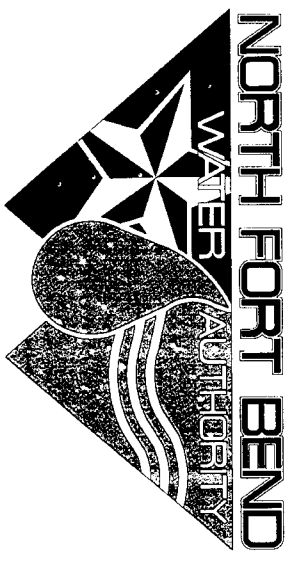
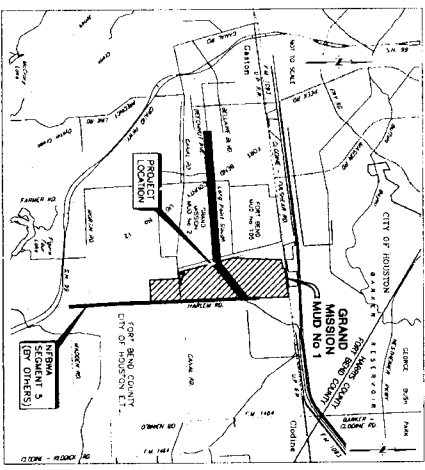
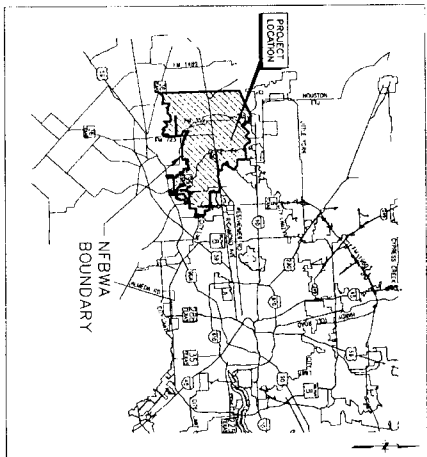
Does project comply with Fort Bend County Outdoor Lighting Ordinance? Yes () No ()
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NORTH FORT BEND WATER AUTHORITY

GRAND MISSION M.U.D. NO. 1 WATER PLANT NO. 1 CONNECTION

PROPOSED 16" WATER LINE ALONG LONG POINT SLOUGH

FROM 715' WEST OF MASON ROAD TO HARLEM ROAD



- DIRECTORS**
- DAVID SPELL
 - ROBERT DARGEN
 - BRUCE FAY
 - MELONY F. GAY, P.E.
 - ROBERT L. PATTON
 - PETER HOUGHTON
 - PAT HEBERT
- PRECINCT**
- 1
 - 2
 - 3
 - 4
 - 5
 - 6
 - 7



FORT BEND COUNTY

[Signature]
 FORT BEND COUNTY ENGINEER
 FORT BEND COUNTY

FOR FLOOD INSURANCE RATE MAP
 PANEL (985 & 105) OF (540)
 MAP# 48157C0085J & 48157C0105J
 DATE ELEVATION 52.0

[Signature]
 DATE

- NOTES:**
1. Prior to the construction of these facilities with or by the Authority, the Authority or its Engineer will give written notice by Registered or Certified Mail to the Director of Public Works and Engineering, City of Houston, stating the date when construction will begin.
 2. Contractor shall notify the City of Houston, Department of Public Works and Engineering (713-568-1450) 48 hours before starting work on this project.
 3. No proposed storm sewer or drainage work is shown, nor any proposed change in drainage path or pattern is in this project proposed work scope.
 4. No loan proposed wastewater line work is included in this project's work scope.

ONE-CALL NOTIFICATION SYSTEM
 CALL BEFORE YOU DIG!!!
 (713) 223-4587 (in Houston)
 (New Statewide) 1-800-546-6005

• SEE SHEET 2 FOR INDEX

J. JONES & CARTER, INC.
 ENGINEERS & PLANNERS
 4300 Calhoun, Suite 100 Houston, Texas 77057 (713) 773-2820



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

[Signature]
 DATE: 11.23.10

CITY ENGINEER FOR CITY OF HOUSTON (USE ONLY)

DIRECTOR OF PUBLIC WORKS AND ENGINEERING

SHEET NO. 01 OF 63



SHEET NO.

DWG. NAME

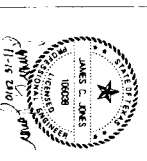
SHEET NO.

DWG. NAME

01	COVER SHEET	53	CONTROL DIAGRAM SHEET 6
02	SHEET INDEX	54	CONTROL DIAGRAM SHEET 7
03	CONSTRUCTION NOTES	55	CONTROL DIAGRAM SHEET 8
04	OVERALL LAYOUT	56	CONTROL DIAGRAM SHEET 9
05	SURVEY CONTROL SHEET 1 OF 4	57	CONTROL DIAGRAM SHEET 10
06	SURVEY CONTROL SHEET 2 OF 4	58	CONTROL DIAGRAM SHEET 11
07	SURVEY CONTROL SHEET 3 OF 4	59	ELECTRICAL CONTROL PANEL LAYOUT & SPECIAL DEVICE SCHEDULE
08	SURVEY CONTROL SHEET 4 OF 4	60	ELECTRICAL CONTROL PANEL SHEET 1
09	LONG POINT SLOUGH STA 0+00 TO 4+00	61	ELECTRICAL DETAIL SHEET 1
10	LONG POINT SLOUGH STA 4+00 TO 8+00	62	ELECTRICAL DETAIL SHEET 2
11	LONG POINT SLOUGH STA 8+00 TO 12+00		
12	LONG POINT SLOUGH STA 12+00 TO 17+00		
13	LONG POINT SLOUGH STA 17+00 TO 22+00		
14	LONG POINT SLOUGH STA 22+00 TO 27+00		
15	LONG POINT SLOUGH STA 27+00 TO 32+00		
16	LONG POINT SLOUGH STA 32+00 TO 37+00		
17	LONG POINT SLOUGH STA 37+00 TO 42+00		
18	LONG POINT SLOUGH STA 42+00 TO 47+00		
19	LONG POINT SLOUGH STA 47+00 TO 52+00		
20	LONG POINT SLOUGH STA 52+00 TO 57+00		
21	LONG POINT SLOUGH STA 57+00 TO 62+00		
22	LONG POINT SLOUGH STA 62+00 TO 66+00		
23	LONG POINT SLOUGH STA 66+00 TO 71+00		
24	LONG POINT SLOUGH STA 71+00 TO 76+00		
25	LONG POINT SLOUGH STA 76+00 TO 80+00		
26	LONG POINT SLOUGH STA 80+00 TO 85+00		
27	LONG POINT SLOUGH STA 85+00 TO 90+00		
28	LONG POINT SLOUGH STA 90+00 TO 95+00		
29	TRAFFIC CONTROL PLAN		
30	STORM WATER POLLUTION PREVENTION PLAN SHEET 1 OF 2		
31	STORM WATER POLLUTION PREVENTION PLAN SHEET 2 OF 2		
32	METERING STATION LAYOUT		
33	CONTROL VALVE STATION LAYOUT		
34	METERING STATION AND CONTROL VALVE STRUCTURAL DETAILS		
35	SIDEWALK DETAILS		
36	STORM WATER POLLUTION PREVENTION DETAILS		
37	PROJECT SIGN AND PIPELINE MARKER DETAILS		
38	STANDARD WATERLINE DETAILS		
39	EXCAVATION, BEDDING, BACKFILL AND PAVEMENT REPAIR DETAILS		
40	TRENCHLESS CONSTRUCTION DETAILS		
41	HEAVY DUTY MANHOLE RING AND COVER DETAILS		
42	VALVE AND SERVICE MANHOLE DETAILS		
43	COMBINATION AIR VALVE DETAILS		
44	EXTRA DEPTH MANHOLE DETAILS		
45	INTERCEPTOR STRUCTURE DETAILS		
46	METER AND CONTROL VALVE STATION INSTALLATION & ROUTING		
47	ELECTRICAL CONDUIT SCHEDULE		
48	CONTROL DIAGRAM SHEET 1		
49	CONTROL DIAGRAM SHEET 2		
50	CONTROL DIAGRAM SHEET 3		
51	CONTROL DIAGRAM SHEET 4		
52	CONTROL DIAGRAM SHEET 5		

53	CONTROL DIAGRAM SHEET 6
54	CONTROL DIAGRAM SHEET 7
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56	CONTROL DIAGRAM SHEET 9
57	CONTROL DIAGRAM SHEET 10
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60	ELECTRICAL CONTROL PANEL SHEET 1
61	ELECTRICAL DETAIL SHEET 1
62	ELECTRICAL DETAIL SHEET 2

LOT: MODIFIED No. 13, 2010 10:44am BY: US&K: CLK
 FILE: LOCATION: \\V:\M04\CTS\05462 North Fort Bend Water Authority\002 NFMA Ground Masson Connection\Con\Constr Draw\1\from NR 11-2-2010\
 DWG: NAME: INDEX.dwg



J. JONES & CARTER, P.C.
 ENGINEERS-PLANNERS-SURVEYORS
 2333 Cambridge, Suite 100, Houston, Texas 77057 (713)771-2337
GRAND MISSION MULD. NO. 1 CONNECTION



CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
 PROJECT: 108710
 DRAWING: 11-210
 DATE: 11-15-2010

NOTE: CITY ENGINEERS SHALL FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

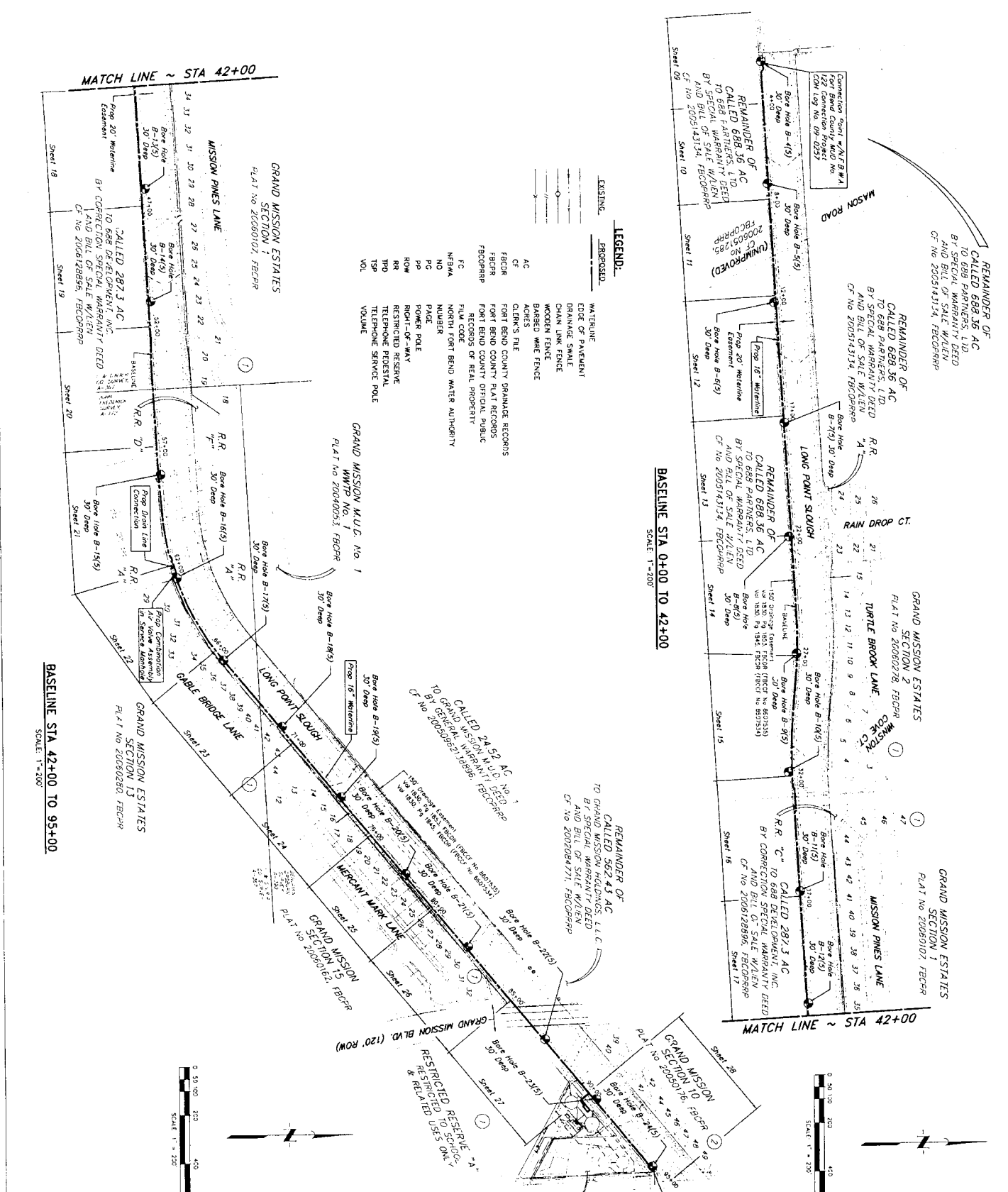
FILE NO. _____

DRAWING SCALE _____

FOR CITY OF HOUSTON USE ONLY (DO NOT SCALE)

SHEET NO. **02** OF **62**

1/5/11
 100-00-09-0225



GRAND MISSION M.U.D. No. 1
 WATER PLANT No. 1
 PLAT No. 20040054, FBCFR

PRIVATE UTILITY LINES SHOWN

DATE: _____
 City of Houston
 Department of Public Works and Engineering
 Design Engineer: _____
 Date: 11/12/10

NOTICE: EXISTING UTILITIES SHOWN FOR INFORMATION ONLY. THE CITY OF HOUSTON IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION SHOWN ON THIS DRAWING. THE USER SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES BEFORE CONSTRUCTION.

NO. DATE REVISION

J. JONES & C. CARTER, INC.
 ENGINEERS-PLANNERS-ARCHITECTS
 2200 West Loop West, Suite 100, Houston, Texas 77027 (713) 771-3337

GRAND MISSION M.U.D. No. 1 CONNECTION

OVERALL LAYOUT

NORTH FORT BEND WATER AUTHORITY

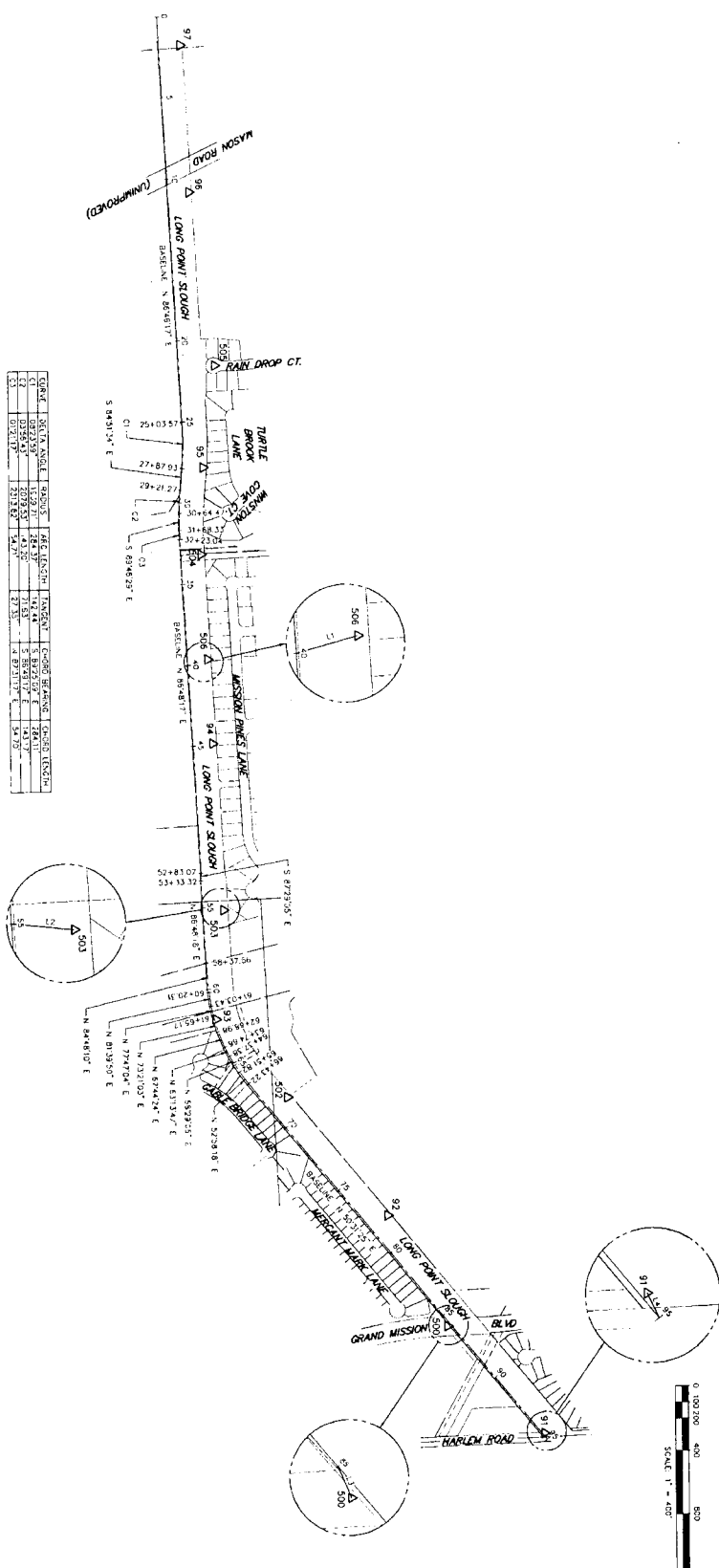
CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

DATE: 11/30/10
 SHEET: 4 OF 62
 SCALE: 1" = 200'

FILE NO: GRAND SCALE
 100-07-01-AUTON-10
 DWG: 07-01-04

77614

- GENERAL NOTES
- BOUNDARY WORK WAS PERFORMED BY OTHERS.
 - BOUNDARIES SHOWN HEREON ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM. ALL DISTANCES AND BEARINGS ARE IN FEET AND DECIMALS THEREOF. ALL BEARINGS ARE TRUE BEARINGS. COORDINATES SHOWN HEREON ARE STATE PLANE AND HAVE BEEN CONVERTED TO GRID BY ADDING 567.00 FEET TO THE EASTING COORDINATES AND 10.00 FEET TO THE NORTHING COORDINATES.
 - ELEVATIONS SHOWN HEREON ARE BASED ON NORTH CAROLINA WATER AUTHORITY 2002 ADJUSTMENT.
 - THIS SURVEY DOES NOT PROVIDE ANY DETERMINATION CONCERNING WHETHER FAULT LINES EXIST OR NOT OR ANY OTHER INFORMATION CONCERNING THE LOCATION OR CHARACTER OF FAULT LINES. THE CLIENT IS RESPONSIBLE FOR OBTAINING SUCH INFORMATION TO THE EXTENT OF NECESSITY.



POINT	BEARING	DISTANCE	BEARING	DISTANCE
91	S 84°21'34" E	25.00	S 84°21'34" E	25.00
92	S 84°21'34" E	25.00	S 84°21'34" E	25.00
93	S 84°21'34" E	25.00	S 84°21'34" E	25.00
94	S 84°21'34" E	25.00	S 84°21'34" E	25.00
95	S 84°21'34" E	25.00	S 84°21'34" E	25.00
96	S 84°21'34" E	25.00	S 84°21'34" E	25.00
97	S 84°21'34" E	25.00	S 84°21'34" E	25.00

LINE	BEARING	DISTANCE	BEARING	DISTANCE
1	N 1°52'27" W	1.118	N 1°52'27" W	1.118
2	N 89°24'33" E	1.117	N 89°24'33" E	1.117
3	S 89°24'33" W	1.117	S 89°24'33" W	1.117
4	S 89°24'33" W	42.235	S 89°24'33" W	42.235

POINT	NORTHING (Y)	EASTING (X)	ELEVATION (Z)	DESCRIPTION	STATION OFFSET
97	138149.06	500725.28	92.43	ALUMINUM CAP STAMPED NORTH FORT BEND WATER AUTHORITY 97	1283.81 11.72 L
96	138149.06	500725.28	92.43	ALUMINUM CAP STAMPED NORTH FORT BEND WATER AUTHORITY 96	1048.66 12.46 L
95	138149.06	500553.63	91.05	ALUMINUM CAP STAMPED NORTH FORT BEND WATER AUTHORITY 95	2747.76 13.59 L
94	138149.06	500428.19	91.98	ALUMINUM CAP STAMPED NORTH FORT BEND WATER AUTHORITY 94	5343.00 13.24 L
93	138149.06	500672.75	91.79	ALUMINUM CAP STAMPED NORTH FORT BEND WATER AUTHORITY 93	3847.52 12.40 L
92	138149.06	500725.28	91.18	ALUMINUM CAP STAMPED NORTH FORT BEND WATER AUTHORITY 92	4443.71 12.49 L
91	138149.06	500827.19	91.78	ALUMINUM CAP STAMPED NORTH FORT BEND WATER AUTHORITY 91	6147.59 8.33 L
90	138149.06	500943.77	91.75	ALUMINUM CAP STAMPED NORTH FORT BEND WATER AUTHORITY 90	5846.03 12.00 L
90	138149.06	500943.77	91.75	ALUMINUM CAP STAMPED NORTH FORT BEND WATER AUTHORITY 90	8438.50 10.66 R
90	138149.06	500943.77	91.75	ALUMINUM CAP STAMPED NORTH FORT BEND WATER AUTHORITY 90	9445.95 10.48 L
90	138149.06	500943.77	91.75	ALUMINUM CAP STAMPED NORTH FORT BEND WATER AUTHORITY 90	

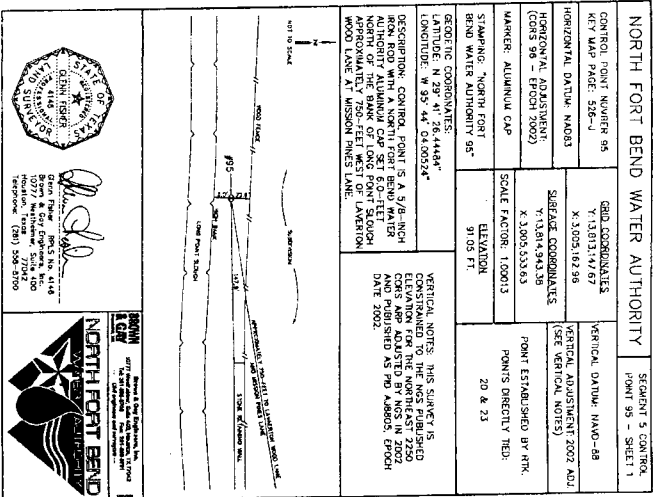
SURVEY CONTROL MAP
 FOR
NORTH FORT BEND WATER AUTHORITY
GRAND MISSION M.U.D. NO. 1 CONNECTION

FORT BEND COUNTY, TEXAS
 DECEMBER 2009

1/5/11

<p>BRICKMARK CONTROL POINT NO. 94 BEING A SET 3/8" DIA. ALUMINUM CAP LOCATED APPROXIMATELY 700 FEET SOUTH-EAST OF THE SOUTH END OF SAGE LAKE CREEK, 4.5 FEET NORTH OF THE 10" DIA. POINT STAKE (NAVD 88, 2002 ADJUSTMENT)</p>	
<p>DATE: 12/10/09</p>	
<p>BY: J.C. JONES & C. CARTER, INC.</p>	
<p>1038 Galloway Dr., Suite 100 Houston, Texas 77041 (713) 771-5537</p>	
<p>GRAND MISSION M.U.D. NO. 1 CONNECTION</p>	
<p>SURVEY CONTROL SHEET OF 4</p>	
<p>CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING</p>	
<p>NOTE: CIVIL SQUARES SHALL FOR ONE YEAR ONLY AFTER DATE OF SQUARES</p>	
<p>DATE: 12/10/09</p>	
<p>FILE NO: 10277.01 MOBILE 08</p>	
<p>DRAWING SCALE: 1" = 400'</p>	
<p>SHEET NO: 5 OF 62</p>	

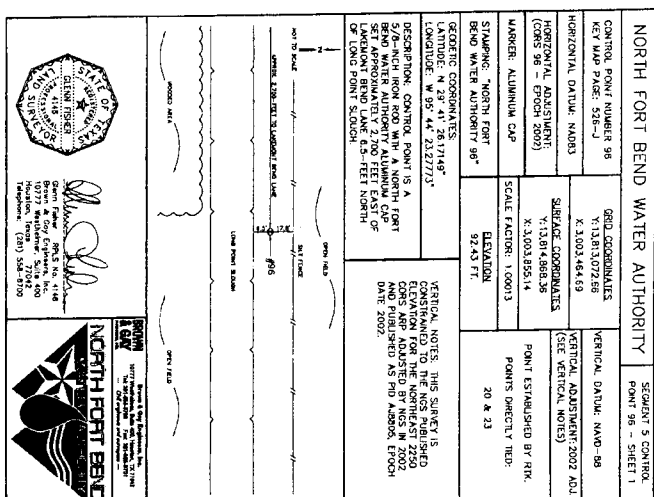




NORTH FORT BEND WATER AUTHORITY		SEGMENT 5 CONTROL POINT 95 - SHEET 1	
CONTROL POINT NUMBER 95 KEY MAP PAGE: 52E-4	GRID COORDINATES X: 3,005,182.96 Y: 13,811,442.57	VERTICAL ADJUSTMENT: 2022 ADJ (SEE VERTICAL NOTES)	POINT ESTABLISHED BY: RIK
HORIZONTAL DATUM: NAD83 HORIZONTAL ADJUSTMENT: (CONS 96 - EPOCH 2002)	SURFACE COORDINATES X: 3,005,333.63 Y: 13,814,343.35	SCALE FACTOR: 1.00013	POINTS DIRECTLY TIED: 20 & 23
MARKER: ALUMINUM CAP	STAMPING: "NORTH FORT BEND WATER AUTHORITY 95"	ELEVATION: 91.05 FT	
GEODETIC COORDINATES: LATITUDE: N 29° 41' 28.4444" LONGITUDE: W 95° 44' 04.00524"		VERTICAL NOTES: THIS SURVEY IS CONSTRAINED TO THE NGS PUBLISHED ELEVATION FOR THE NORTHEAST 2200 CORNER OF LONG POINT SLICHOUS AND PUBLISHED AS PD ADDRESS, EPOCH DATE 2002.	
DESCRIPTION: CONTROL POINT IS A 5/8-INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY ALUMINUM CAP SET APPROXIMATELY 120 FEET EAST OF LONG POINT SLICHOUS APPROXIMATELY 750 FEET WEST OF LAVERTON WOOD LAKE N. WISCONSIN PINES DAM.			



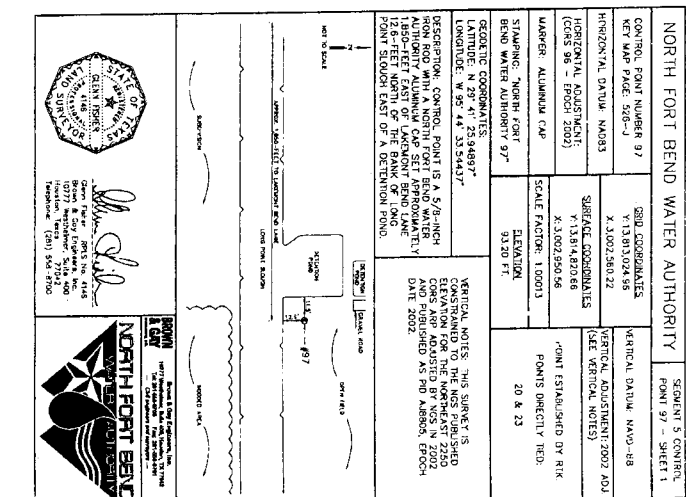
NORTH FORT BEND WATER AUTHORITY		SEGMENT 5 CONTROL POINT 97 - SHEET 1	
CONTROL POINT NUMBER 97 KEY MAP PAGE: 52E-4	GRID COORDINATES X: 3,002,580.22 Y: 13,810,024.95	VERTICAL ADJUSTMENT: 2002 ADJ (SEE VERTICAL NOTES)	POINT ESTABLISHED BY: RIK
HORIZONTAL DATUM: NAD83 HORIZONTAL ADJUSTMENT: (CONS 96 - EPOCH 2002)	SURFACE COORDINATES X: 3,002,590.86 Y: 13,814,820.86	SCALE FACTOR: 1.00013	POINTS DIRECTLY TIED: 20 & 23
MARKER: ALUMINUM CAP	STAMPING: "NORTH FORT BEND WATER AUTHORITY 97"	ELEVATION: 93.80 FT	
GEODETIC COORDINATES: LATITUDE: N 29° 44' 33.54437" LONGITUDE: W 95° 44' 33.54437"		VERTICAL NOTES: THIS SURVEY IS CONSTRAINED TO THE NGS PUBLISHED ELEVATION FOR THE NORTHEAST 2200 CORNER OF LONG POINT SLICHOUS AND PUBLISHED AS PD ADDRESS, EPOCH DATE 2002.	
DESCRIPTION: CONTROL POINT IS A 5/8-INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY ALUMINUM CAP SET APPROXIMATELY 120 FEET EAST OF LAVERTON WOOD LAKE APPROXIMATELY 750 FEET WEST OF LONG POINT SLICHOUS EAST OF A DETENTION POND.			



NORTH FORT BEND WATER AUTHORITY		SEGMENT 5 CONTROL POINT 98 - SHEET 1	
CONTROL POINT NUMBER 98 KEY MAP PAGE: 52E-4	GRID COORDINATES X: 3,003,464.69 Y: 13,813,072.86	VERTICAL ADJUSTMENT: 2002 ADJ (SEE VERTICAL NOTES)	POINT ESTABLISHED BY: RIK
HORIZONTAL DATUM: NAD83 HORIZONTAL ADJUSTMENT: (CONS 96 - EPOCH 2002)	SURFACE COORDINATES X: 3,003,855.14 Y: 13,814,968.34	SCALE FACTOR: 1.00013	POINTS DIRECTLY TIED: 20 & 23
MARKER: ALUMINUM CAP	STAMPING: "NORTH FORT BEND WATER AUTHORITY 98"	ELEVATION: 92.40 FT	
GEODETIC COORDINATES: LATITUDE: N 29° 41' 28.17497" LONGITUDE: W 95° 44' 52.27733"		VERTICAL NOTES: THIS SURVEY IS CONSTRAINED TO THE NGS PUBLISHED ELEVATION FOR THE NORTHEAST 2200 CORNER OF LONG POINT SLICHOUS AND PUBLISHED AS PD ADDRESS, EPOCH DATE 2002.	
DESCRIPTION: CONTROL POINT IS A 5/8-INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY ALUMINUM CAP SET APPROXIMATELY 200 FEET EAST OF LONG POINT SLICHOUS.			



NORTH FORT BEND WATER AUTHORITY		SEGMENT 5 CONTROL POINT 96 - SHEET 1	
CONTROL POINT NUMBER 96 KEY MAP PAGE: 52E-4	GRID COORDINATES X: 3,003,464.69 Y: 13,813,072.86	VERTICAL ADJUSTMENT: 2022 ADJ (SEE VERTICAL NOTES)	POINT ESTABLISHED BY: RIK
HORIZONTAL DATUM: NAD83 HORIZONTAL ADJUSTMENT: (CONS 96 - EPOCH 2002)	SURFACE COORDINATES X: 3,003,855.14 Y: 13,814,968.34	SCALE FACTOR: 1.00013	POINTS DIRECTLY TIED: 20 & 23
MARKER: ALUMINUM CAP	STAMPING: "NORTH FORT BEND WATER AUTHORITY 96"	ELEVATION: 92.40 FT	
GEODETIC COORDINATES: LATITUDE: N 29° 41' 28.17497" LONGITUDE: W 95° 44' 52.27733"		VERTICAL NOTES: THIS SURVEY IS CONSTRAINED TO THE NGS PUBLISHED ELEVATION FOR THE NORTHEAST 2200 CORNER OF LONG POINT SLICHOUS AND PUBLISHED AS PD ADDRESS, EPOCH DATE 2002.	
DESCRIPTION: CONTROL POINT IS A 5/8-INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY ALUMINUM CAP SET APPROXIMATELY 200 FEET EAST OF LONG POINT SLICHOUS.			



NORTH FORT BEND WATER AUTHORITY		SEGMENT 5 CONTROL POINT 99 - SHEET 1	
CONTROL POINT NUMBER 99 KEY MAP PAGE: 52E-4	GRID COORDINATES X: 3,003,464.69 Y: 13,813,072.86	VERTICAL ADJUSTMENT: 2022 ADJ (SEE VERTICAL NOTES)	POINT ESTABLISHED BY: RIK
HORIZONTAL DATUM: NAD83 HORIZONTAL ADJUSTMENT: (CONS 96 - EPOCH 2002)	SURFACE COORDINATES X: 3,003,855.14 Y: 13,814,968.34	SCALE FACTOR: 1.00013	POINTS DIRECTLY TIED: 20 & 23
MARKER: ALUMINUM CAP	STAMPING: "NORTH FORT BEND WATER AUTHORITY 99"	ELEVATION: 92.40 FT	
GEODETIC COORDINATES: LATITUDE: N 29° 41' 28.17497" LONGITUDE: W 95° 44' 52.27733"		VERTICAL NOTES: THIS SURVEY IS CONSTRAINED TO THE NGS PUBLISHED ELEVATION FOR THE NORTHEAST 2200 CORNER OF LONG POINT SLICHOUS AND PUBLISHED AS PD ADDRESS, EPOCH DATE 2002.	
DESCRIPTION: CONTROL POINT IS A 5/8-INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY ALUMINUM CAP SET APPROXIMATELY 200 FEET EAST OF LONG POINT SLICHOUS.			



NORTH FORT BEND WATER AUTHORITY		SEGMENT 5 CONTROL POINT 100 - SHEET 1	
CONTROL POINT NUMBER 100 KEY MAP PAGE: 52E-4	GRID COORDINATES X: 3,003,464.69 Y: 13,813,072.86	VERTICAL ADJUSTMENT: 2022 ADJ (SEE VERTICAL NOTES)	POINT ESTABLISHED BY: RIK
HORIZONTAL DATUM: NAD83 HORIZONTAL ADJUSTMENT: (CONS 96 - EPOCH 2002)	SURFACE COORDINATES X: 3,003,855.14 Y: 13,814,968.34	SCALE FACTOR: 1.00013	POINTS DIRECTLY TIED: 20 & 23
MARKER: ALUMINUM CAP	STAMPING: "NORTH FORT BEND WATER AUTHORITY 100"	ELEVATION: 92.40 FT	
GEODETIC COORDINATES: LATITUDE: N 29° 41' 28.17497" LONGITUDE: W 95° 44' 52.27733"		VERTICAL NOTES: THIS SURVEY IS CONSTRAINED TO THE NGS PUBLISHED ELEVATION FOR THE NORTHEAST 2200 CORNER OF LONG POINT SLICHOUS AND PUBLISHED AS PD ADDRESS, EPOCH DATE 2002.	
DESCRIPTION: CONTROL POINT IS A 5/8-INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY ALUMINUM CAP SET APPROXIMATELY 200 FEET EAST OF LONG POINT SLICHOUS.			

BENCHMARK CONTROL POINT NO. 94 BEING A SET 7/9" FROM ROD WITH AN ALUMINUM CAP STAMPED "NORTH FORT BEND WATER AUTHORITY 94" IS LOCATED AT THE INTERSECTION OF THE SOUTH END OF SHADY LAKE DRIVE 4.5 FEET NORTH OF THE BANK OF LONG POINT SLICHOUS (NAD83 98, 2002 ADJUSTMENT) ELEV = 91.18

NO.	DATE	REVISION
1		
2		
3		
4		

J.C. JONES & CARTE R. JONES
 ENGINEERS - PLANNERS - SURVEYORS
 4033 Calhoun St., Suite 100 Houston, Texas 77031 (713) 771-2231

GRAND MISSION MUD, No. 1 CONNECTION
 SURVEY CONTROL
 SHEET 3 OF 4

NORTH FORT BEND WATER AUTHORITY
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
 10777 Westheimer, Suite 400 Houston, Texas 77036 Telephone: (281) 558-3700

FILE NO. 15110
 DRAWING SCALE: AS SHOWN
 SHEET NO. 7 OF 62

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
 10777 Westheimer, Suite 400 Houston, Texas 77036 Telephone: (281) 558-3700

GRAND MISSION MUD, No. 1 CONNECTION
 SHEET 3 OF 4

NORTH FORT BEND WATER AUTHORITY		SEGMENT 6 CONTROL POINT 91 - SHEET 1	
CONTROL POINT NUMBER 91 KEY MAP PAGE: 528-1	GRID COORDINATES X: 3,201,126.89 Y: 13,815,166.69	VERTICAL DATUM: NAVD-83	VERTICAL ADJUSTMENT: 2002 ADJ. (SEE VERTICAL NOTES)
HORIZONTAL ADJUSTMENT (CONS 98 - EPOCH 2002)	SURFACE COORDINATES X: 3,201,126.89 Y: 13,815,166.69	POINT ESTABLISHED BY: RIK	POINTS DIRECTLY TIED: 20 & 23
MARKER: ALUMINUM CAP	SCALE FACTOR: 1.00013	ELEVATION: 91.03 FT.	
STAMPING: "NORTH FORT BEND WATER AUTHORITY 91"			
GEODETIC COORDINATES: LATITUDE: N 29° 41' 43.96847" LONGITUDE: W 95° 42' 55.725955" DESCRIPTION: CONTROL POINT IS A 5/8" INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY ALUMINUM CAP SET AT THE INTERSECTION OF HARLEM ROAD AND LONG POINT SCOURF SOUTH OF GRAND MISSION BOULEVARD.		VERTICAL NOTES: THIS SURVEY IS CONTINUED TO THE NGS PUBLISHED CONTS APP ADJUSTED BY NGS IN 2002 AND PUBLISHED AS PD ADJUST. EPOCH DATE: 2002.	

J.E. Jones & Carter, Inc.
 Surveying & Engineering
 10777 Westpark Drive, Suite 400
 Houston, Texas 77042
 Telephone: (281) 294-8700

NORTH FORT BEND WATER AUTHORITY		SEGMENT 5 CONTROL POINT 92 - SHEET 1	
CONTROL POINT NUMBER 92 KEY MAP PAGE: 528-1	GRID COORDINATES X: 3,200,864.43 Y: 13,815,195.21	VERTICAL DATUM: NAVD-83	VERTICAL ADJUSTMENT: 2002 ADJ. (SEE VERTICAL NOTES)
HORIZONTAL ADJUSTMENT (CONS 98 - EPOCH 2002)	SURFACE COORDINATES X: 3,200,864.43 Y: 13,815,195.21	POINT ESTABLISHED BY: RIK	POINTS DIRECTLY TIED: 20 & 23
MARKER: ALUMINUM CAP	SCALE FACTOR: 1.00013	ELEVATION: 90.91 FT.	
STAMPING: "NORTH FORT BEND WATER AUTHORITY 92"			
GEODETIC COORDINATES: LATITUDE: N 29° 41' 25.44564" LONGITUDE: W 95° 42' 48.29116" DESCRIPTION: CONTROL POINT IS A 5/8" INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY ALUMINUM CAP SET APPROXIMATELY 700- FEET SOUTHWEST OF THE NORTH OF THE BANK OF LONG POINT SCOURF.		VERTICAL NOTES: THIS SURVEY IS CONTINUED TO THE NGS PUBLISHED CONTS APP ADJUSTED BY NGS IN 2002 AND PUBLISHED AS PD ADJUST. EPOCH DATE: 2002.	

J.E. Jones & Carter, Inc.
 Surveying & Engineering
 10777 Westpark Drive, Suite 400
 Houston, Texas 77042
 Telephone: (281) 294-8700

NORTH FORT BEND WATER AUTHORITY		SEGMENT 5 CONTROL POINT 93 - SHEET 1	
CONTROL POINT NUMBER 93 KEY MAP PAGE: 528-1	GRID COORDINATES X: 3,200,850.08 Y: 13,815,207.08	VERTICAL DATUM: NAVD-83	VERTICAL ADJUSTMENT: 2002 ADJ. (SEE VERTICAL NOTES)
HORIZONTAL ADJUSTMENT (CONS 98 - EPOCH 2002)	SURFACE COORDINATES X: 3,200,850.08 Y: 13,815,207.08	POINT ESTABLISHED BY: RIK	POINTS DIRECTLY TIED: 20 & 23
MARKER: ALUMINUM CAP	SCALE FACTOR: 1.00013	ELEVATION: 91.04 FT.	
STAMPING: "NORTH FORT BEND WATER AUTHORITY 93"			
GEODETIC COORDINATES: LATITUDE: N 29° 41' 25.49550" LONGITUDE: W 95° 42' 25.49550" DESCRIPTION: CONTROL POINT IS A 5/8" INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY ALUMINUM CAP SET APPROXIMATELY 2,400- FEET SOUTHWEST OF GRAND MISSION BOULEVARD.		VERTICAL NOTES: THIS SURVEY IS CONTINUED TO THE NGS PUBLISHED CONTS APP ADJUSTED BY NGS IN 2002 AND PUBLISHED AS PD ADJUST. EPOCH DATE: 2002.	

J.E. Jones & Carter, Inc.
 Surveying & Engineering
 10777 Westpark Drive, Suite 400
 Houston, Texas 77042
 Telephone: (281) 294-8700

NORTH FORT BEND WATER AUTHORITY		SEGMENT 5 CONTROL POINT 94 - SHEET 1	
CONTROL POINT NUMBER 94 KEY MAP PAGE: 528-1	GRID COORDINATES X: 3,200,864.43 Y: 13,815,195.21	VERTICAL DATUM: NAVD-83	VERTICAL ADJUSTMENT: 2002 ADJ. (SEE VERTICAL NOTES)
HORIZONTAL ADJUSTMENT (CONS 98 - EPOCH 2002)	SURFACE COORDINATES X: 3,200,864.43 Y: 13,815,195.21	POINT ESTABLISHED BY: RIK	POINTS DIRECTLY TIED: 20 & 23
MARKER: ALUMINUM CAP	SCALE FACTOR: 1.00013	ELEVATION: 91.18 FT.	
STAMPING: "NORTH FORT BEND WATER AUTHORITY 94"			
GEODETIC COORDINATES: LATITUDE: N 29° 41' 25.44564" LONGITUDE: W 95° 42' 48.29116" DESCRIPTION: CONTROL POINT IS A 5/8" INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY ALUMINUM CAP SET APPROXIMATELY 700- FEET SOUTHWEST OF THE NORTH OF THE BANK OF LONG POINT SCOURF.		VERTICAL NOTES: THIS SURVEY IS CONTINUED TO THE NGS PUBLISHED CONTS APP ADJUSTED BY NGS IN 2002 AND PUBLISHED AS PD ADJUST. EPOCH DATE: 2002.	

J.E. Jones & Carter, Inc.
 Surveying & Engineering
 10777 Westpark Drive, Suite 400
 Houston, Texas 77042
 Telephone: (281) 294-8700

BENCHMARK: CONTROL POINT NO. 34 BEING A SET 5/8" IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY ALUMINUM CAP APPROXIMATELY 700 FEET SOUTHWEST OF THE SOUTH END OF SHRYVER LAKE ABOVE 4.5 FEET NORTH OF THE BANK OF LONG POINT SCOURF. (CONS 98 - 2002 ADJUSTMENT)
 DATE: 11/21/2022

NO.	DATE	REVISIONS	APPROVED
1			
2			
3			
4			

J.E. JONES & CARTER, INC.
 SURVEYING & ENGINEERING
 10777 Westpark Drive, Suite 400
 Houston, Texas 77042
 Telephone: (281) 294-8700

GRAND MISSION MUD. NO. 1 CONNECTION
 SURVEY CONTROL
 SHEET 4 OF 4



NOTE: CITY SQUARES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

DATE: 11/21/2022
 SHEET 4 OF 4

DESIGNED BY: *[Signature]*
 CHECKED BY: *[Signature]*
 DATE: 11/23/10

TITLE: GRAND MISSION MUD. NO. 1 CONNECTION

FILE NO.:

DRAWING SCALE:

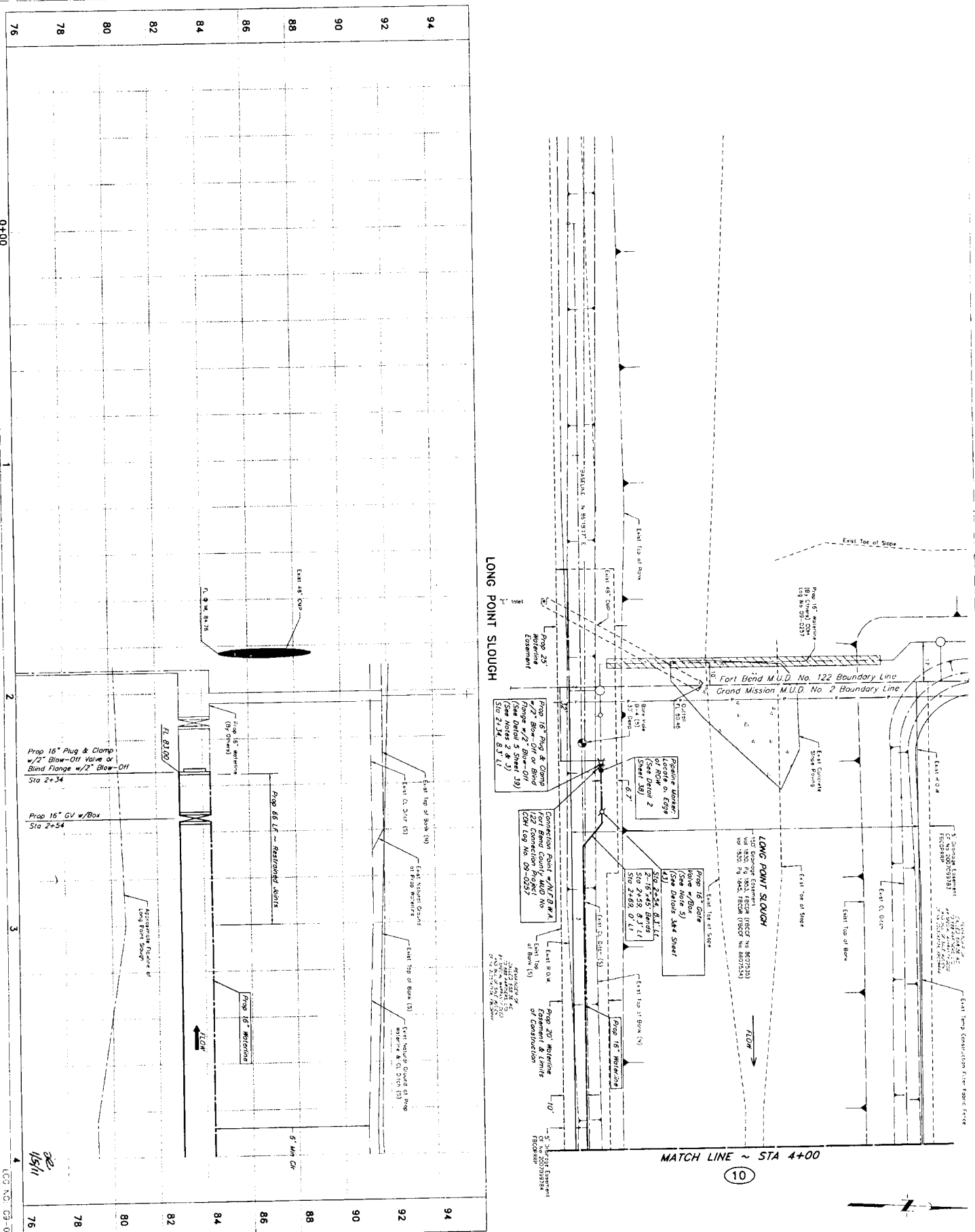
HORIZ. NO. SCALE:

VERT.:

SHEET NO. 8 OF 62



15/11



PRIVATE UTILITY LINES SHOWN

Date: _____
 Drawn by: **James C. Jones**
 Checked by: **David L. K. 10**
 Date: **11-16-10**
 Scale: _____
 Project: _____
 Date: **11-17-10**

NOTICE

1. HAVE 48 HOURS BEFORE COMMENCING WORK IN STREET, ROAD OR EXISTING DRAINAGE FACILITY. STATE, COUNTY, CITY, AND LOCAL AGENCIES MUST BE ADVISED AND APPROVED. (713) 253-4567 OR 1-800-669-8344

2. ADVANCE FOR LINES TO BE TAPPED OFF OR MOVED. CALL BENCHMARK CONTROL POINT NO. 34 BEING A SET 5/8" FROM 800 W. MAIN AVENUE APPROXIMATELY 700 FEET SOUTHWEST OF THE SOUTH END OF STUDY LAKE CROW. 4.5 FEET NORTH OF THE BANK OF LONG POINT SLOUGH (LAWD-89-2002 ADJUSTMENT).

NOTES:

1. CONTRACTOR SHALL NOT EXCEED MANUFACTURER'S MAXIMUM DEFLECTION OR 3" WHICHEVER IS SMALLER. ALL SECTIONS WITH EXISTING JOINTS SHALL BE REINFORCED GATE VALVE, PLUG & CLAMP AND 2" BLOW-OFF IS IN PLACE. CONTRACTOR SHALL REINFORCE THE PLUG & CLAMP AND PROVIDE AN ANCHER AND FIVE (5) "x" STUD-OUT (BY OTHERS) IS NOT IN PLACE.
2. CONTRACTOR SHALL INSTALL PROPOSED MANHOLE WITH GATE MANHOLE NUMBER 2" IN THE END OF THE ASSEMBLY AS SHOWN.
3. CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE EXISTING EXISTING CONDITION OF ALL UTILITIES. THE WORK IS CONSIDERED MODERN TO THE PROJECT. ABOVE A SORE TOP OF BANK ELEVATION.

LEGEND

NO.	DATE	REVISION	APPROVED
1			
2			
3			
4			

J. C. JONES
 ENGINEER, PLANS AND SUPERVISOR
 1500 GLENVIEW DRIVE, SUITE 100
 HOUSTON, TEXAS 77057
 (713) 516-1000

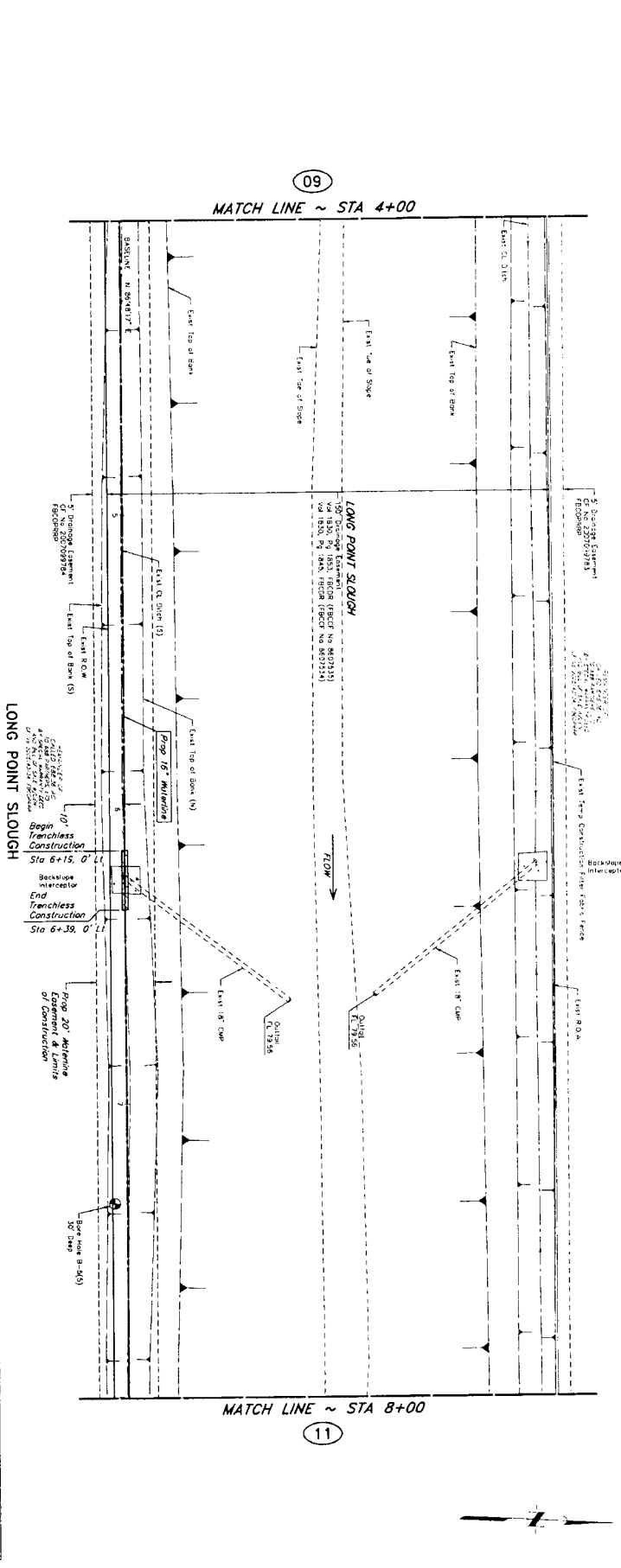
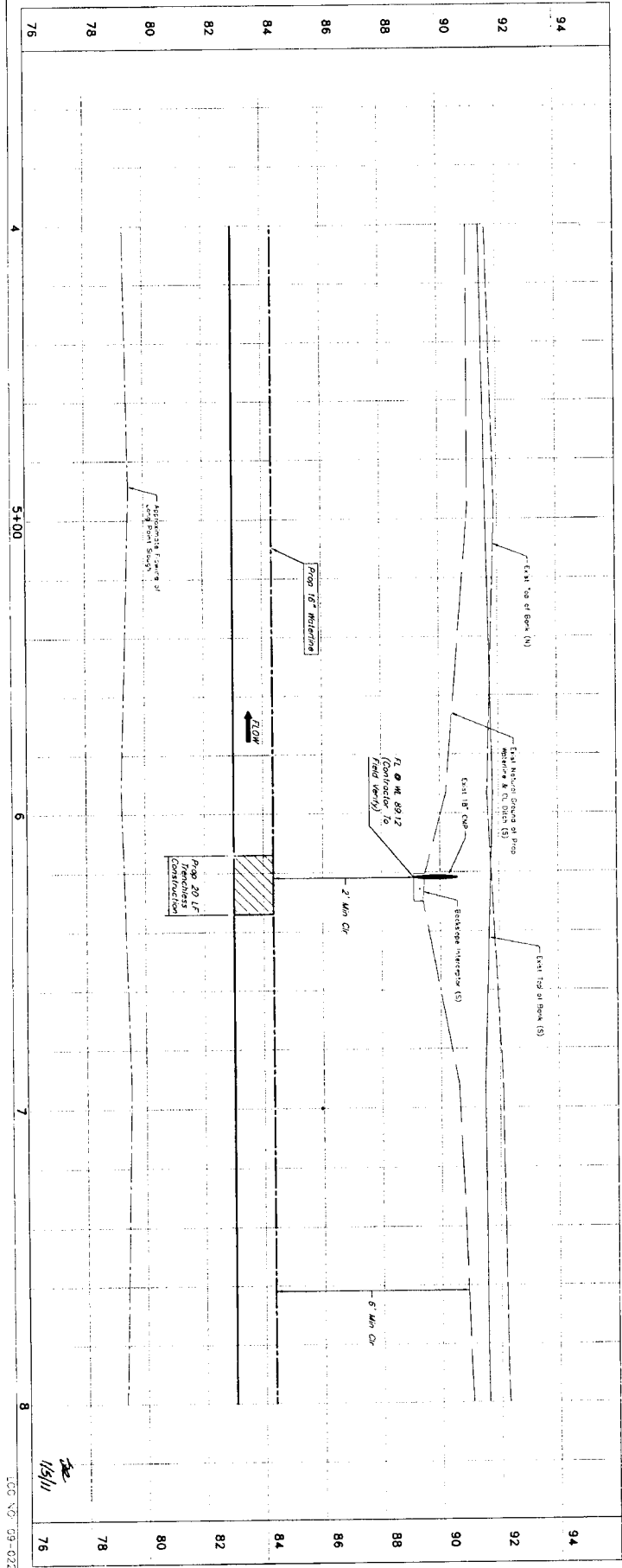
LONG POINT SLOUGH
 STA 0+00 TO 4+00

GRAND MISSION M.U.D. No. 1 CONNECTION

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
 DATE: 11/16/10
 DRAWN BY: **James C. Jones**
 CHECKED BY: **David L. K. 10**
 PROJECT: **South Fort Bend Water Authority**
 SHEET: **9 OF 62**

NORTH FORT BEND
 COUNTY ENGINEER
 DATE: 11/17/10

1975701 OF 1975701
 DATE: 11/17/10



NOTE: CIVIL SQUARES LAYED FOR ONE YEAR ONLY AFTER DATE OF COMPLETION.

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

DATE: 10/19/10
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]

SCALE: 1" = 20'
 SHEET: 10 OF 62

47044

PRIVATE UTILITY LINES SHOWN

DATE: 10/19/10
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]

NOTES:

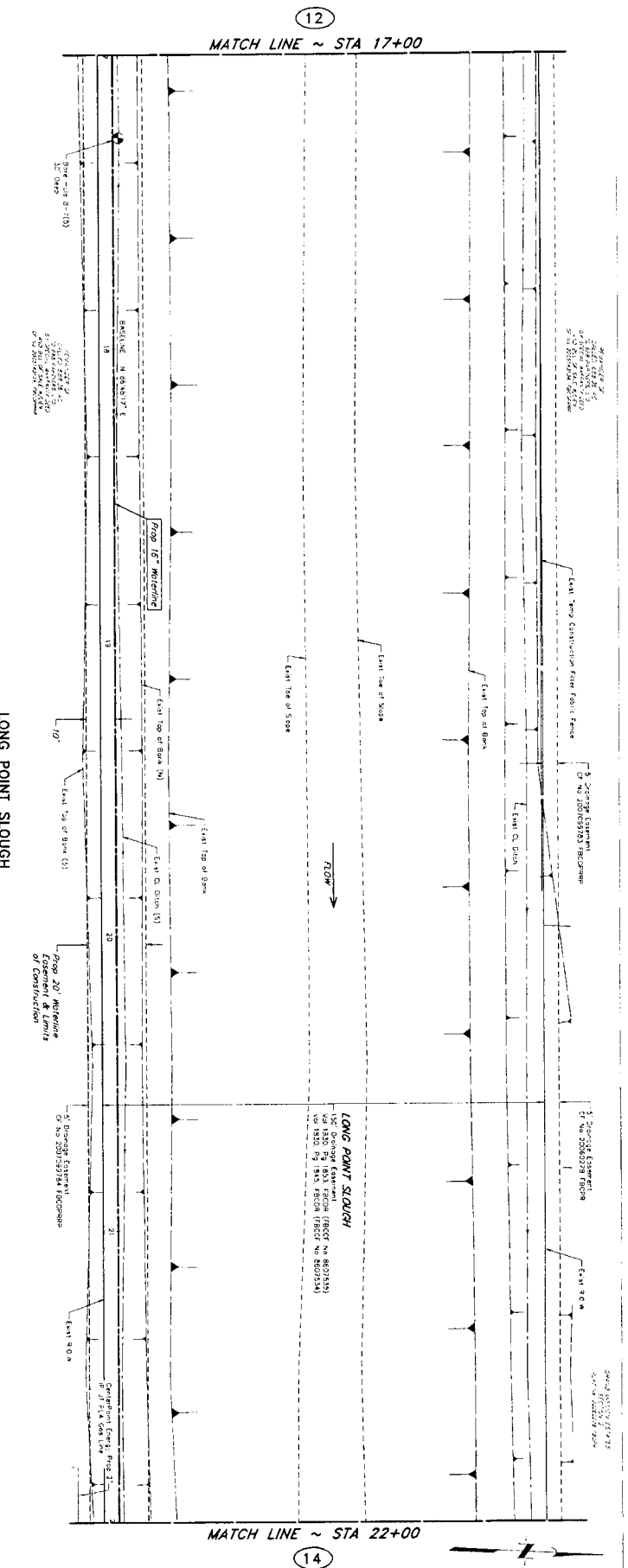
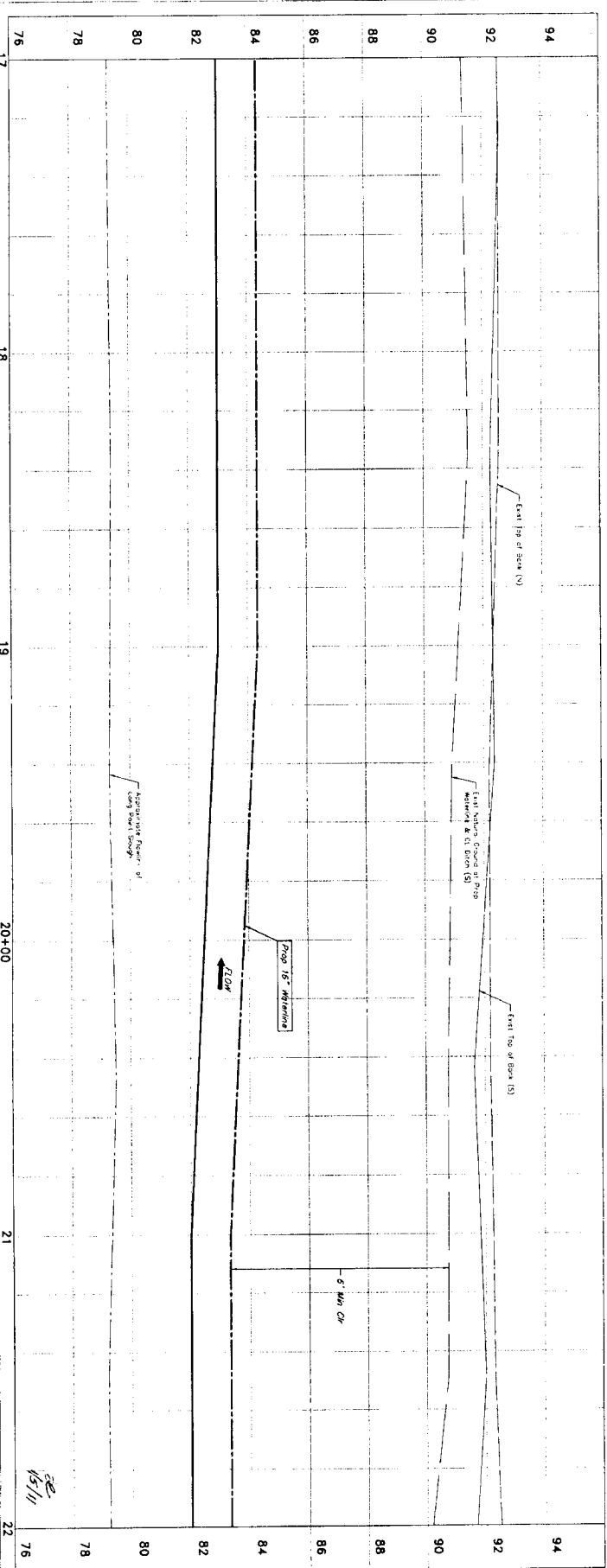
- CONTRACTOR SHALL NOT TO EXCEED VARIATIONS IN ANY SECTION WITH DEFLECTED JOINTS SHALL BE RESTRAINED.
- CONTRACTOR IS RESPONSIBLE FOR RESTORING THE DITCHES ALONG THE SOUTHERN SIDE OF LONG POINT SLOUGH TO ORIGINAL CONDITION. THIS WORK IS CONSIDERED PART OF THE PROJECT.

GRAND MISSION MUD. NO. 1 CONNECTION

LONG POINT SLOUGH
 STA 4+00 TO 8+00

J. JONES & CARTER, INC.
 ENGINEERS-PLANNERS-SURVEYORS
 6000 Oldham Road, Suite 100, Houston, Texas 77057

Professional Seal: JAMES C. JONES, License No. 10000, State of Texas, Mechanical Engineering



DATE: 11/11/10
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 PROJECT: GRAND MISSION WLD No. 1 CONNECTION
 SHEET: 13 OF 62

NOTES:

- CONTRACTOR SHALL NOT TO PERMIT MANHOLES OR MANHOLE DEFECTION OR 3' MANHOLES IN DUALS. ALL SECTIONS WITH DEFLECTED JOINTS SHALL BE RESTRAINED.
- CONTRACTOR IS RESPONSIBLE FOR DETECTING THE DITCHES ALONG THE EXISTING SITE OF LONG POINT SLOUGH HAS INCIDENTAL TO THE PROJECT. THIS WORK IS CONSIDERED INCIDENTAL TO THE PROJECT.

PRIVATE UTILITY LINES SHOWN

DATE: 11-11-10
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]

CONTRACTOR: [Signature]
 DATE: 11-11-10

CONTRACTOR: [Signature]
 DATE: 11-11-10

CONTRACTOR: [Signature]
 DATE: 11-11-10

CONTRACTOR: [Signature]
 DATE: 11-11-10

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

LONG POINT SLOUGH
 STA 17+00 TO 22+00

GRAND MISSION WLD No. 1 CONNECTION

J.C. JONES & CARTER, Inc.
 ENGINEERS PLANNERS-SURVEYORS
 6333 North Loop West, Suite 1000, Houston, Texas 77041 (713) 777-2200

NORTH FORT BEARD

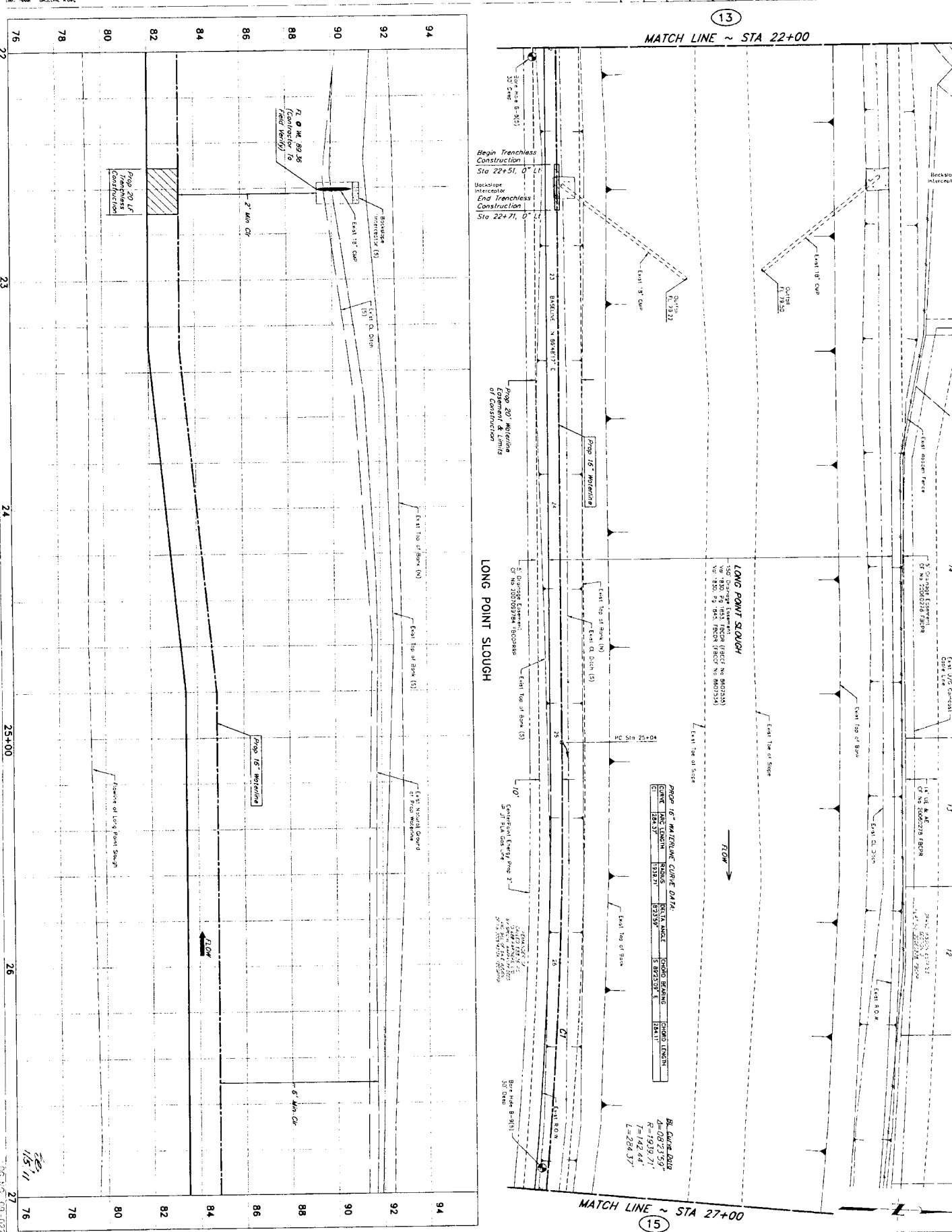
DATE: 11/11/10
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]

CONTRACTOR: [Signature]
 DATE: 11-11-10

CONTRACTOR: [Signature]
 DATE: 11-11-10

CONTRACTOR: [Signature]
 DATE: 11-11-10

CONTRACTOR: [Signature]
 DATE: 11-11-10



PRIVATE UTILITY LINES SHOWN

DATE: 11/16/10
 DATE: 11/17/10

NOTICE

AT LEAST 48 HOURS BEFORE EXCAVATING IN STREET R.O.W. OR EXCAVATING CALL LONG STAR NOTIFICATION CENTER (713) 221-4343 OR 1-800-669-8444

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED CALL TELEPHONE: (713) 221-4343

RESPONSE: 1. TO BE TURNED OFF: 24 HOURS AHEAD 5:45 P.M. (MAY VARY BY LOCALITY) 2. TO BE MOVED: 14 DAYS AHEAD 5:45 P.M. (MAY VARY BY LOCALITY) 3. TO BE MOVED: 14 DAYS AHEAD 5:45 P.M. (MAY VARY BY LOCALITY) 4. TO BE MOVED: 14 DAYS AHEAD 5:45 P.M. (MAY VARY BY LOCALITY)

NOTES:

- DEFLECTIONS ARE NOT TO EXCEED MANUFACTURER'S ALL SECTIONS WITH DIRECTED JOINTS SHALL BE RESTRAINED
- CONTRACTOR IS RESPONSIBLE FOR RESTRAINING THE JOINTS ALONG THE SOUTHERN SIDE OF LONG POINT SLOUGH TO EXISTING CONDITION OR BETTER. THIS WORK IS CONSIDERED NECESSARY TO PROTECT THE SLOUGH.

CONSTRUCTION

J. JONES & CARTER, P.C.
 PROFESSIONAL ENGINEERS - CIVIL ENGINEERS
 6000 Corner of S. Loop West, Suite 1000, Houston, Texas 77057 (713) 771-3333

GRAND MISSION MUD. NO. 1 CONNECTION

LONG POINT SLOUGH
 STA 22+00 TO 27+00

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
 STREET & BRIDGE
 413010
 DATE: 11/16/10
 BY: [Signature]

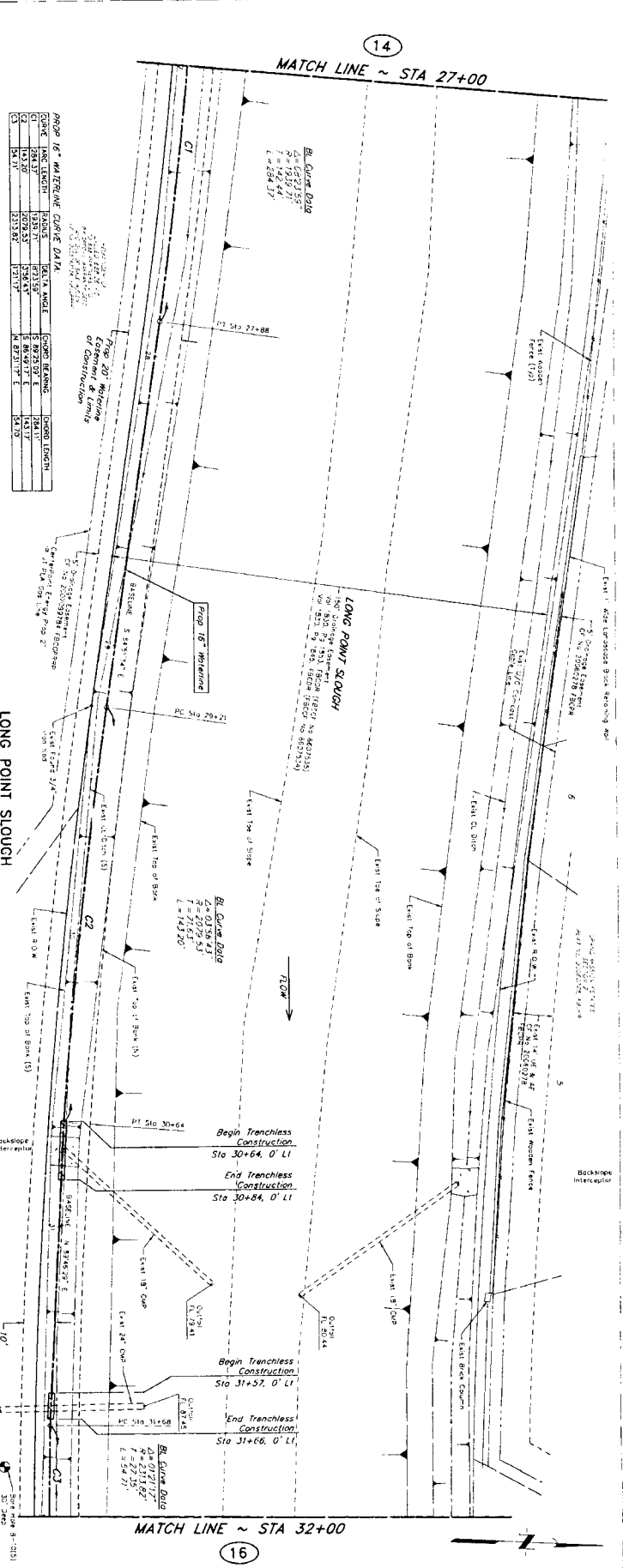
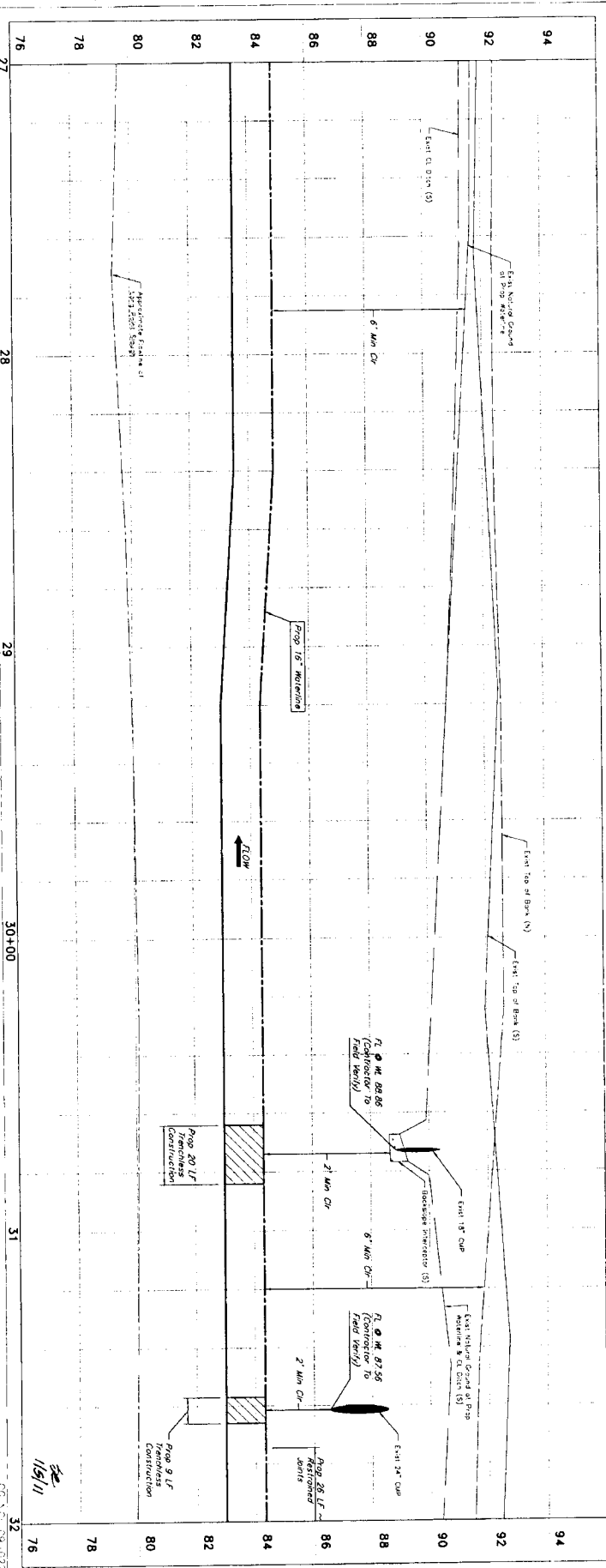
INDICIES

FILE NO.
 DRAWING SCALE
 HORIZ 1" = 40'
 VERT 1" = 2'

SHEET NO. 14 OF 62

FOR CITY OF HOUSTON USE
 ONLY ON THIS SHEET

DATE: 11/16/11
 PROJECT: GRAND MISSION CONNECTION
 SHEET: 15 OF 62



PRIVATE UTILITY LINES SHOWN

NOTES:

- DEFLECTORS ARE NOT TO EXCEED MANUFACTURERS' MAXIMUM DEFLECTOR OR SPAN/CLEARER IS SMALLER. ALL SECTIONS WITH DEFLECTED JOINTS SHALL BE RESPONSIBLE.
- CONTRACTOR IS RESPONSIBLE FOR NEGOTIATING THE RIGHTS EXISTING CONDITION OR BETTER. THIS WORK IS CONSIDERED INCIDENTAL TO THE PROJECT.

CONSTRUCTION

MANHOLES

NO.	DATE	REVISION	APPROVED
1			
2			

LONG POINT SLOUGH
 STA 27+00 TO 32+00

GRAND MISSION MUD. NO. 1 CONNECTION

J.C. JONES & CARTER, INC.
 4330 Danbury Dr., Suite 100, Houston, Texas 77051 (713) 771-5337

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

North Point Bend

DATE: 11/16/11

SCALE: 15 OF 62

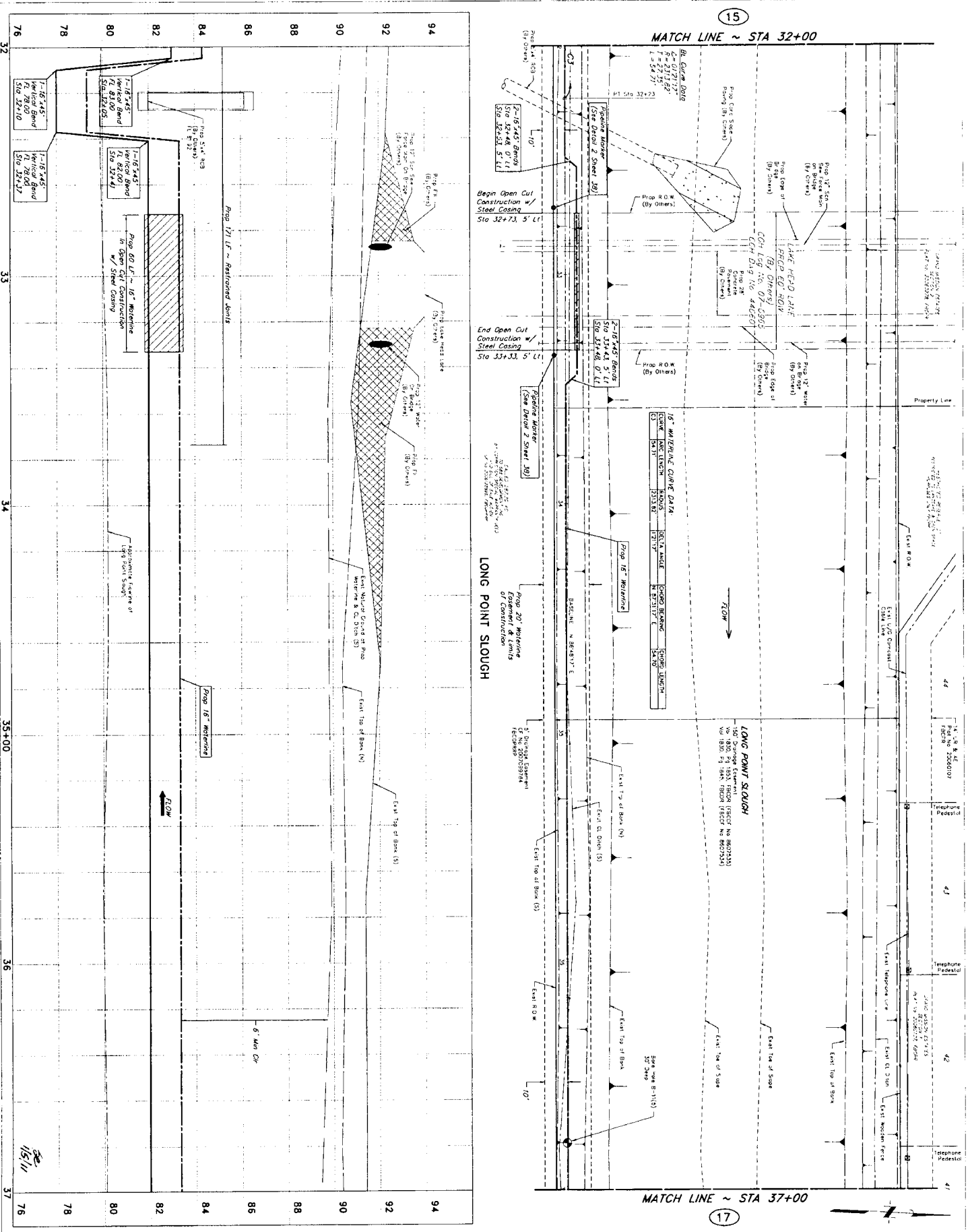
APPROVED: [Signature]

DATE: 11/16/11

PROJECT: GRAND MISSION CONNECTION

SHEET: 15 OF 62

DATE: 11/16/11



PRIVATE UTILITY LINES SHOWN

DATE: 11/16/10

DATE: 11/16/10

DATE: 11/16/10

NOTICE

AT LEAST 48 HOURS BEFORE EXPIRING IN STREET R.O.W. OR

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED. CALL

BENCHMARK CONTROL POINT NO. 94 BEING A SET 5/8" IRON

THE SOUTH END OF 5/8" X 4" LIME CRONE 4.5 FEET NORTH OF THE

OF LONG POINT SLOUGH. (NAD 83, 2000 ADJUSTMENT)

UT 10

NOTES:

1. DIRECTION ARE NOT TO EXCEED MANUFACTURER'S

VARIATION DEFLECTION OR 3" WHICH EVER IS SMALLER. ALL

RECORDS WITH DEFLECTED JOINTS SHALL BE REWARDED

2. CONTRACTOR IS RESPONSIBLE FOR REWORKING THE DITCHES

LONG THE SLOUGH. SEE THE LONG POINT SLOUGH RECORD

ADDITIONAL TO THE PROJECT.

3. CONSTRUCTION OF STEEL CASING (SEE DETAIL SHEET 41)

REVISIONS

NO.	DATE	REVISION	BY
1			
2			
3			

JE JONES & CARTER, P.C.

ENGINEERS & PLANNERS/SURVEYORS

635 Crawford Lane, North Mission, Texas 77620

GRAND MISSION MUD. NO. 1 CONNECTION

LONG POINT SLOUGH

STA 32+00 TO 37+00

NORTH PORT BAND

10801 N. MISSION AVE.

PORT CHARLES, TEXAS 77665

CITY OF HOUSTON

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

1000 PINEBARK DRIVE

HOUSTON, TEXAS 77002

DATE: 11/16/10

BY: [Signature]

DATE: 11/16/10

BY: [Signature]

DATE: 11/16/10

BY: [Signature]

DATE: 11/16/10

BY: [Signature]

DATE: 11/16/10

BY: [Signature]

DATE: 11/16/10

BY: [Signature]

DATE: 11/16/10

BY: [Signature]

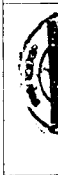
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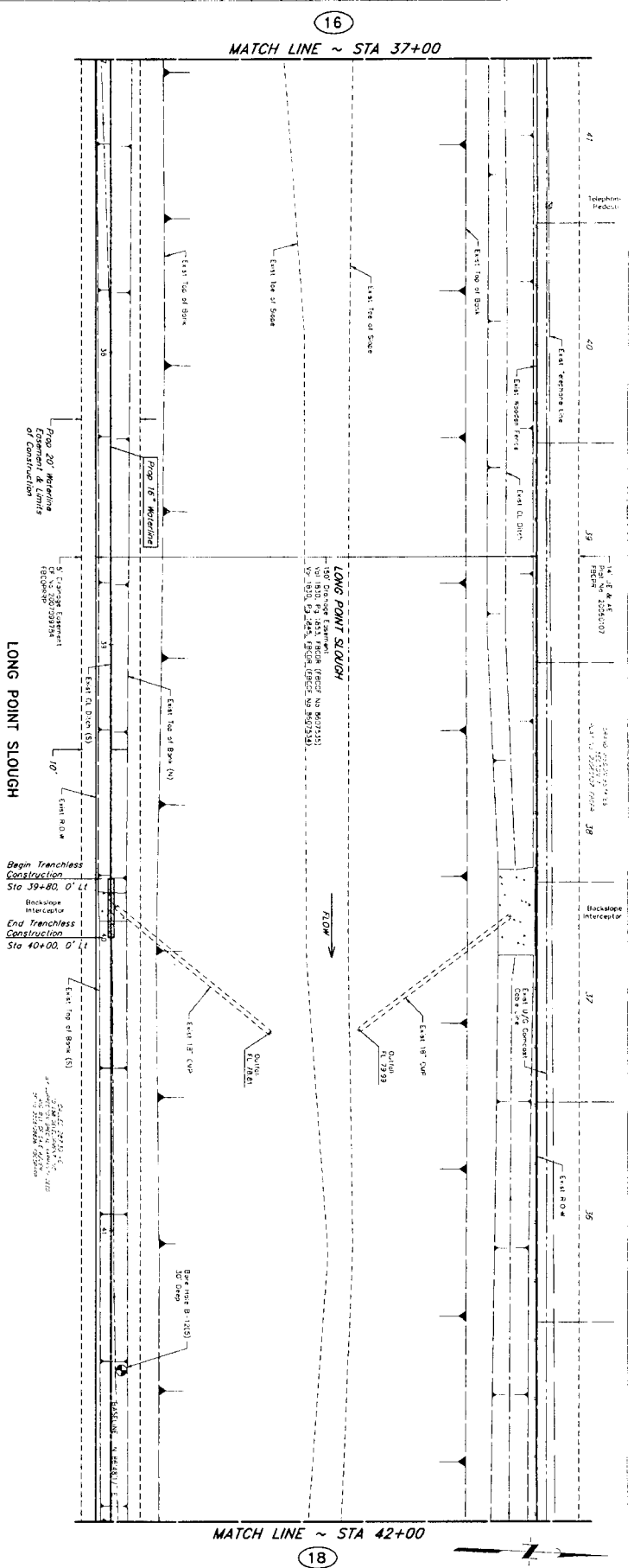
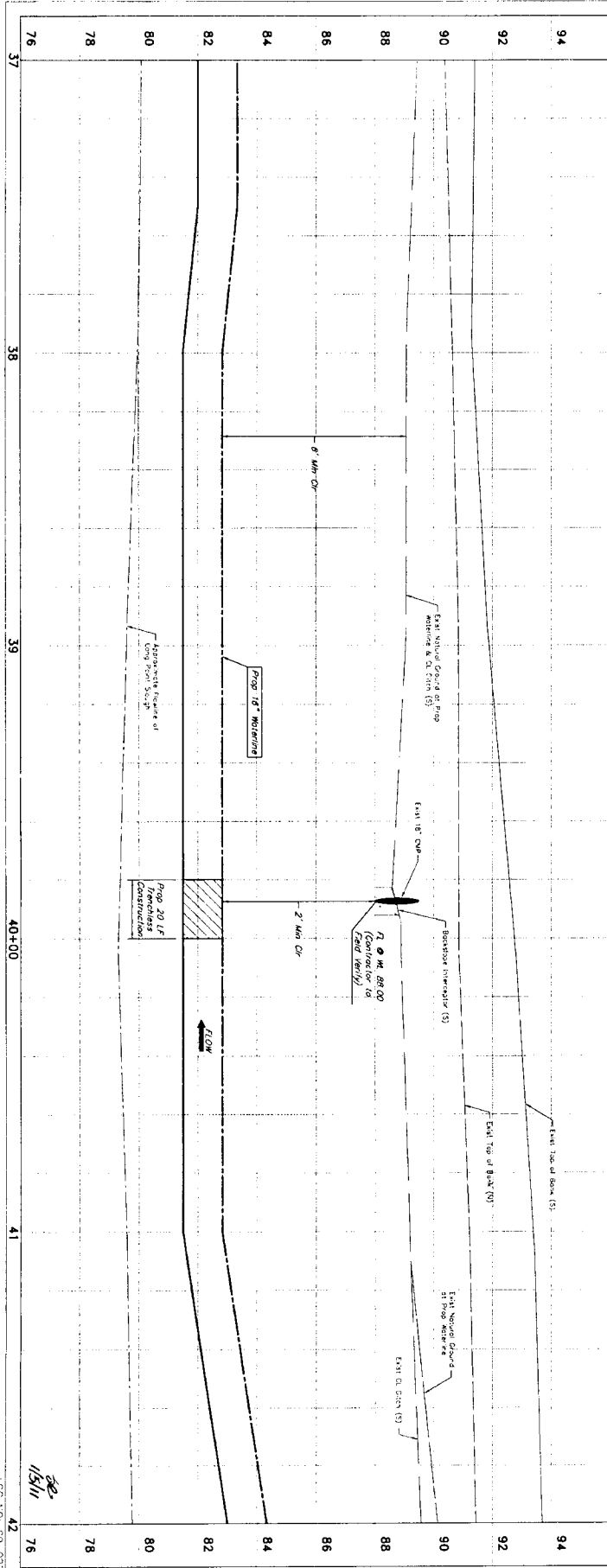
BY: [Signature]

DATE: 11/16/10

BY: [Signature]

SCALE: 16 OF 62





NOTE: CITY SQUARES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURE

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

DATE: 11/11/10
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]

PROJECT: GRAND MISSION MUD. NO. 1 CONNECTION
 SHEET: 17 of 62

DATE: 11/11/10

PRIVATE UTILITY LINES SHOWN

DATE: 11-16-10
 BY: [Signature]

DATE: 11-17-10
 BY: [Signature]

NOTES:

1. DEFLECTIONS ARE NOT TO EXCEED MANUFACTURER'S MAXIMUM DEFLECTION OR 3" WHICHEVER IS SMALLER. ALL SECTIONS WITH DEFLECTED JOINTS SHALL BE RESTRICED.
2. CONTRACTOR IS RESPONSIBLE FOR RESTORING THE DITCHES EXISTING CONDITION OR BETTER. THIS WORK IS CONSIDERED INCIDENTAL TO THE PROJECT.

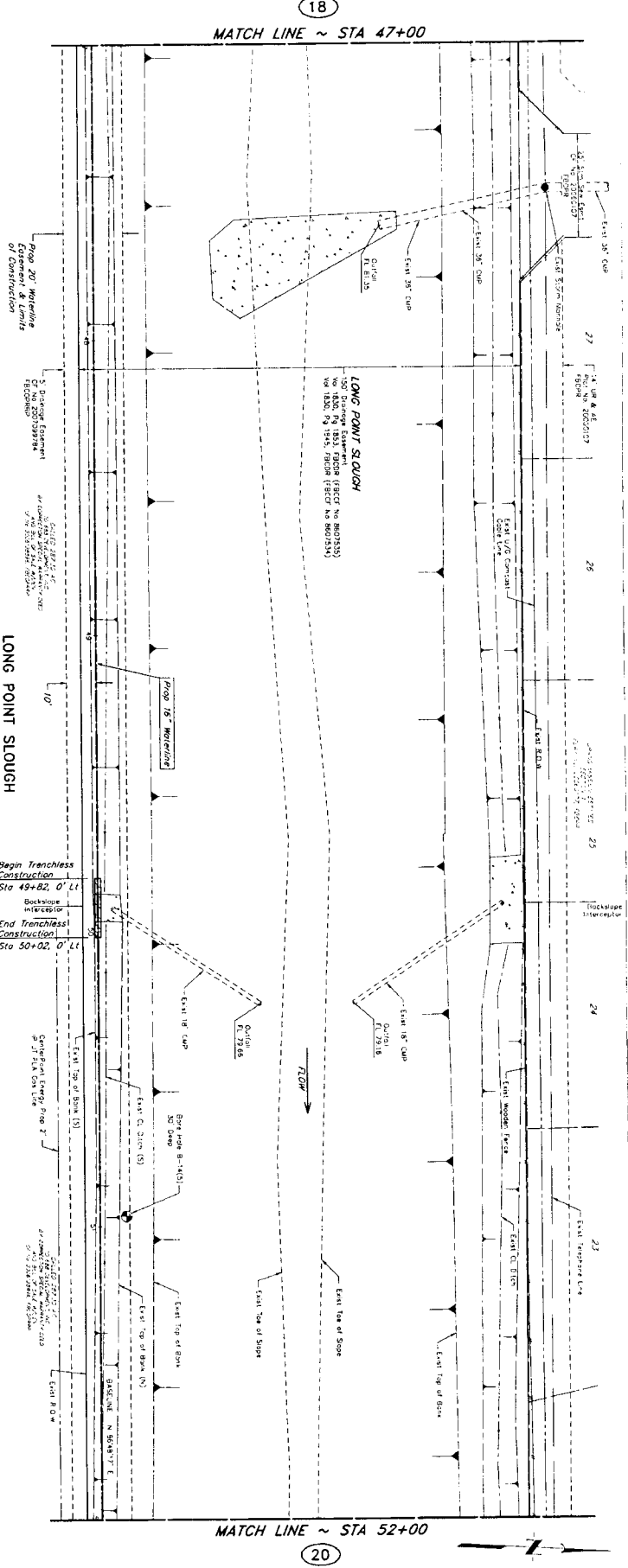
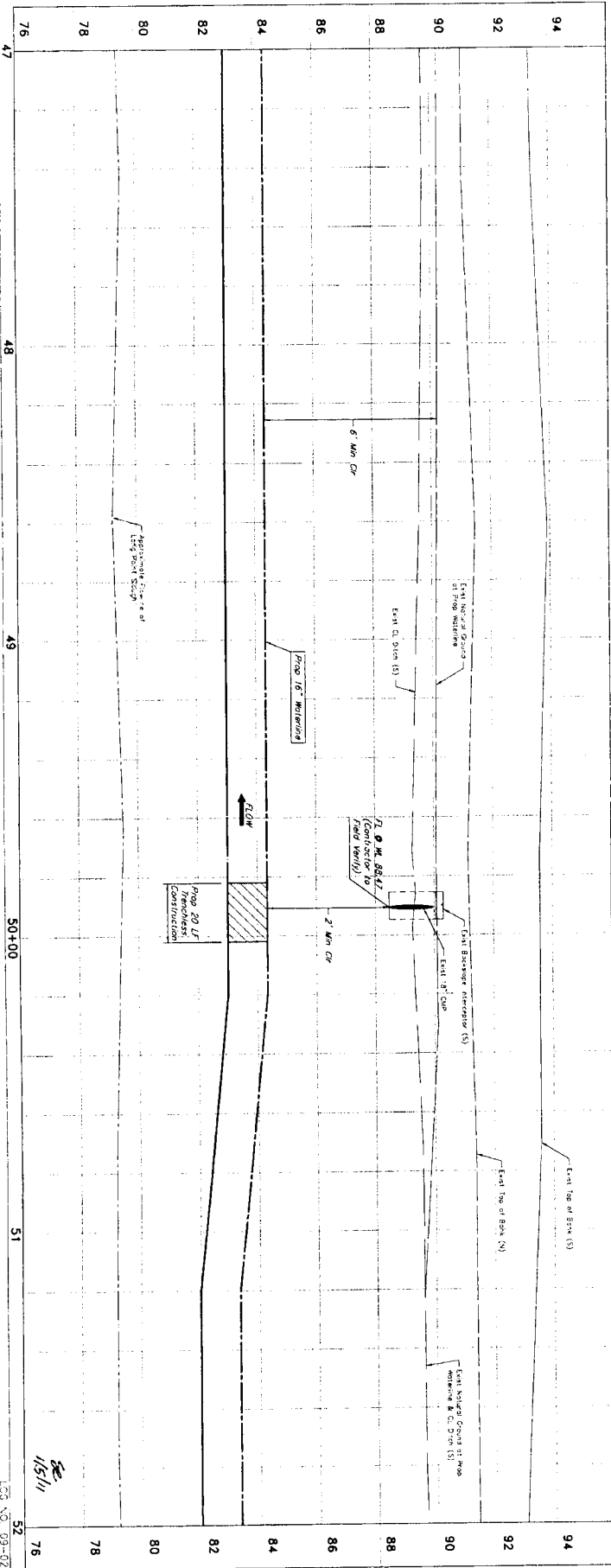
LONG POINT SLOUGH
 STA 37+00 TO 42+00

GRAND MISSION MUD. NO. 1 CONNECTION

J. JONES & CARTER, INC.
 8838 Glenway Dr., Suite 100, Houston, Texas 77033 (713) 777-3333

NORTH PORT BAND

JAMES C. SMIS
 10000 Katy Road, Suite 100, Houston, Texas 77058 (281) 415-1100



NOTE: CITY ENGINEERS MAILED FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

DATE: 11/30/16
 DRAWN BY: J. Jones & R. Barter
 CHECKED BY: J. Jones & R. Barter
 PROJECT NO.: 15457

J. JONES & R. BARTER
 7724 Road of Professional Engineers Registration No. 7-420
 6000 Clearwater, Suite 100 Houston, Texas 77030 (713) 972-2255

GRAND MISSION MUD, NO. 1 CONNECTION

LONG POINT SLOUGH
 STA 47+00 TO 52+00

NORTH FORT BEND

DATE: 11/30/16
 SHEET NO. 19 OF 62

DRAWING SCALE: 1" = 20'
 TITLE: CIVIL

ONE CITY OF HOUSTON, TEXAS
 ONE CITY OF HOUSTON, TEXAS

PRIVATE UTILITY LINES SHOWN

DATE: 11/30/16
 DRAWN BY: J. Jones & R. Barter

NOTES:

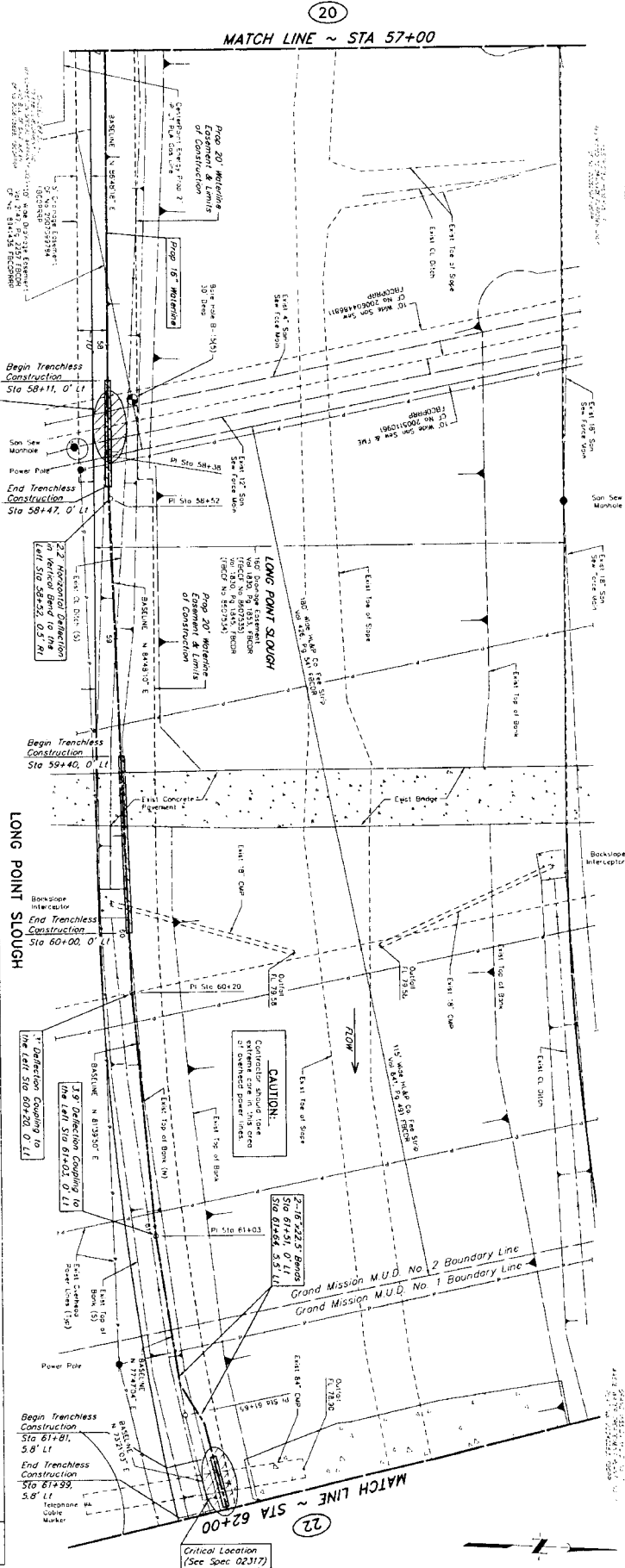
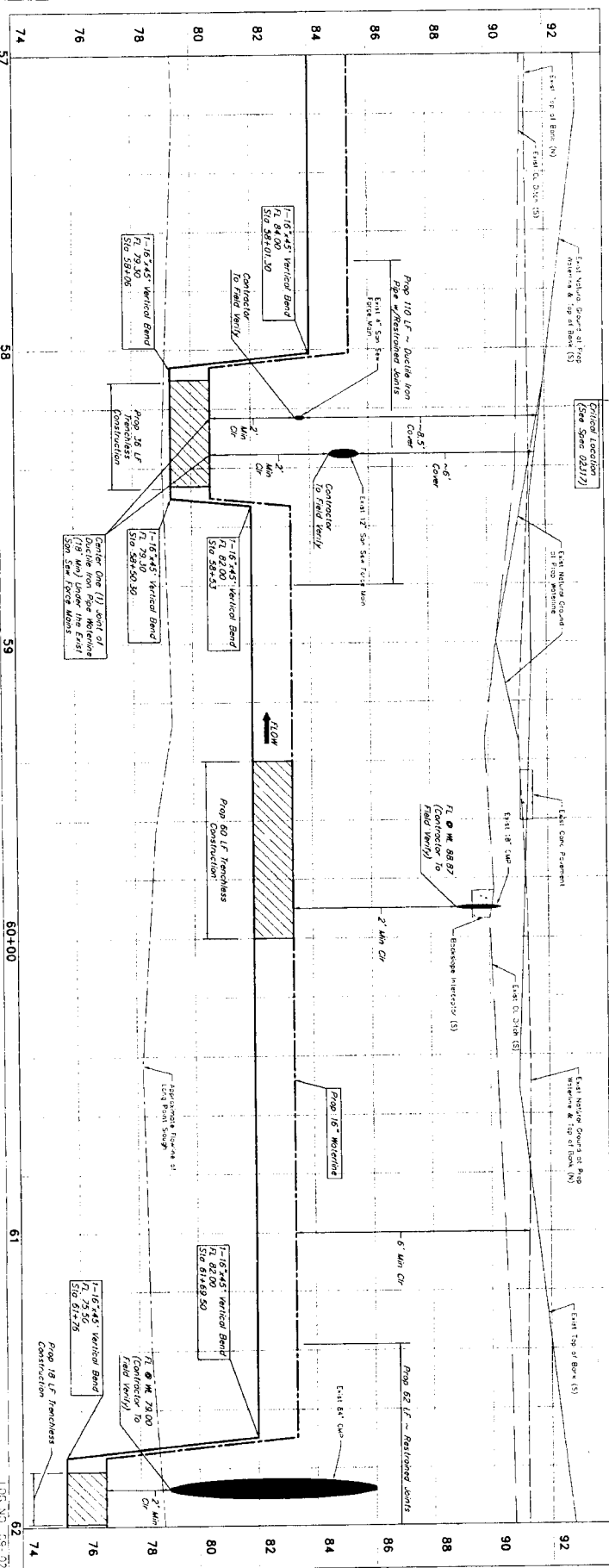
1. DETECTIONS ARE NOT TO EXCEED VARIATIONS OF ±0.10 FEET. DETECTIONS SHOULD BE RECORDED AND SHOWN AS DETECTED.
2. CONSTRUCTION IS RESPONSIBLE FOR RESTORING THE APPROXIMATE ORIGINAL CONDITION OR BETTER. THIS WORK IS CONSIDERED PART OF THE PROJECT.

APPROVALS:

DATE: 11/30/16
 DRAWN BY: J. Jones & R. Barter

DATE: 11/30/16
 CHECKED BY: J. Jones & R. Barter

DATE: 11/30/16
 APPROVED BY: J. Jones & R. Barter



PRIVATE UTILITY LINES SHOWN

DATE: 11-11-10
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]

NOTES:

- DEFLECTIONS ARE NOT TO EXCEED MANUFACTURER'S ALLOWABLE DEFLECTION OR 3/8 INCH PER SPAN UNLESS OTHERWISE SPECIFIED.
- CONTRACTOR IS TO BE RESPONSIBLE FOR DETERMINING THE EXISTING CONDITION AND BETTER THIS WORK IS CONSIDERED INCIDENTAL TO THE PROJECT.

CRITICAL LOCATION (See Spec 02317)

LONG POINT SLOUGH
 STA 57+00 TO 62+00

GRAND MISSION M.U.D. NO. 1 CONNECTION

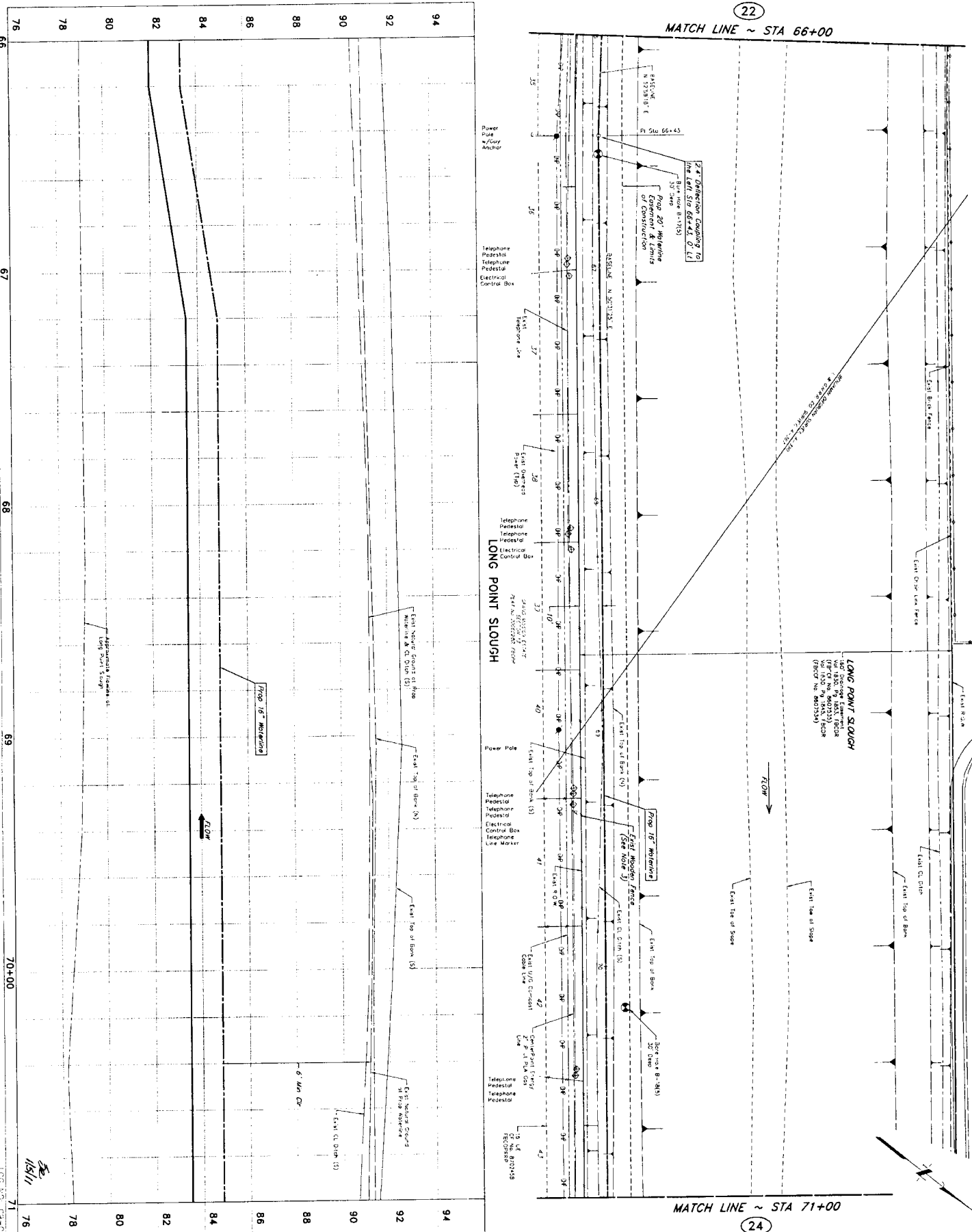
CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

J.C. JONES & COMPANY
 7707 Main Street, Houston, Texas 77054
 281-410-1100

NORTH FORT BAND

DATE: 11-11-10
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]

FILE NO: [Blank]
 DRAWING SCALE: AS SHOWN
 SHEET: 21 OF 62



PRIVATE UTILITY LINES SHOWN

DATE: 11/17/10
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 DATE: 11/17/10

NOTICE:
 AT LEAST 48 HOURS BEFORE EXCAVATING IN STREET ROW OR EASEMENTS CALL LONG STAR NOTIFICATION CENTER (713) 223-4507 OR 1-800-689-8244
 TO AVOID FOR LINES TO BE TAPPED OR WORKED CALL DELTA/DELTA 1-713-251-1100 OR 1-800-689-8244
 DELTA/DELTA 1-713-251-1100 OR 1-800-689-8244
 AUTHORITY IS LOCATED APPROXIMATELY 200 FEET SOUTH-EAST OF THE ROW IN EASEMENT SHOWN ON SHEET 23 OF 62 (ELEV = 91.18' (AMD-BB, 2009 A325-WFV))

NOTES:
 1. CONTRACTOR SHALL NOT BE RESPONSIBLE FOR THE LOCATION OF UTILITIES SHOWN ON THIS SHEET UNLESS INDICATED OTHERWISE.
 2. CONTRACTOR IS RESPONSIBLE FOR RELOCATING THE UTILITIES SHOWN ON THIS SHEET TO THE PROPOSED ALIGNMENT OF THE PROJECT.
 3. CONTRACTOR IS RESPONSIBLE FOR RELOCATING ANY UTILITIES SHOWN ON THIS SHEET TO THE PROPOSED ALIGNMENT OF THE PROJECT.

REVISIONS:

NO.	DATE	DESCRIPTION	APPROVED
1			
2			
3			

JONES & SCARLETT
 ENGINEERS-ARCHITECTS-INTERIORS
 4225 GARDNER, SUITE 100, HOUSTON, TEXAS 77031 (713) 771-5311

LONG POINT SLOUGH
 STA 66+00 TO 71+00

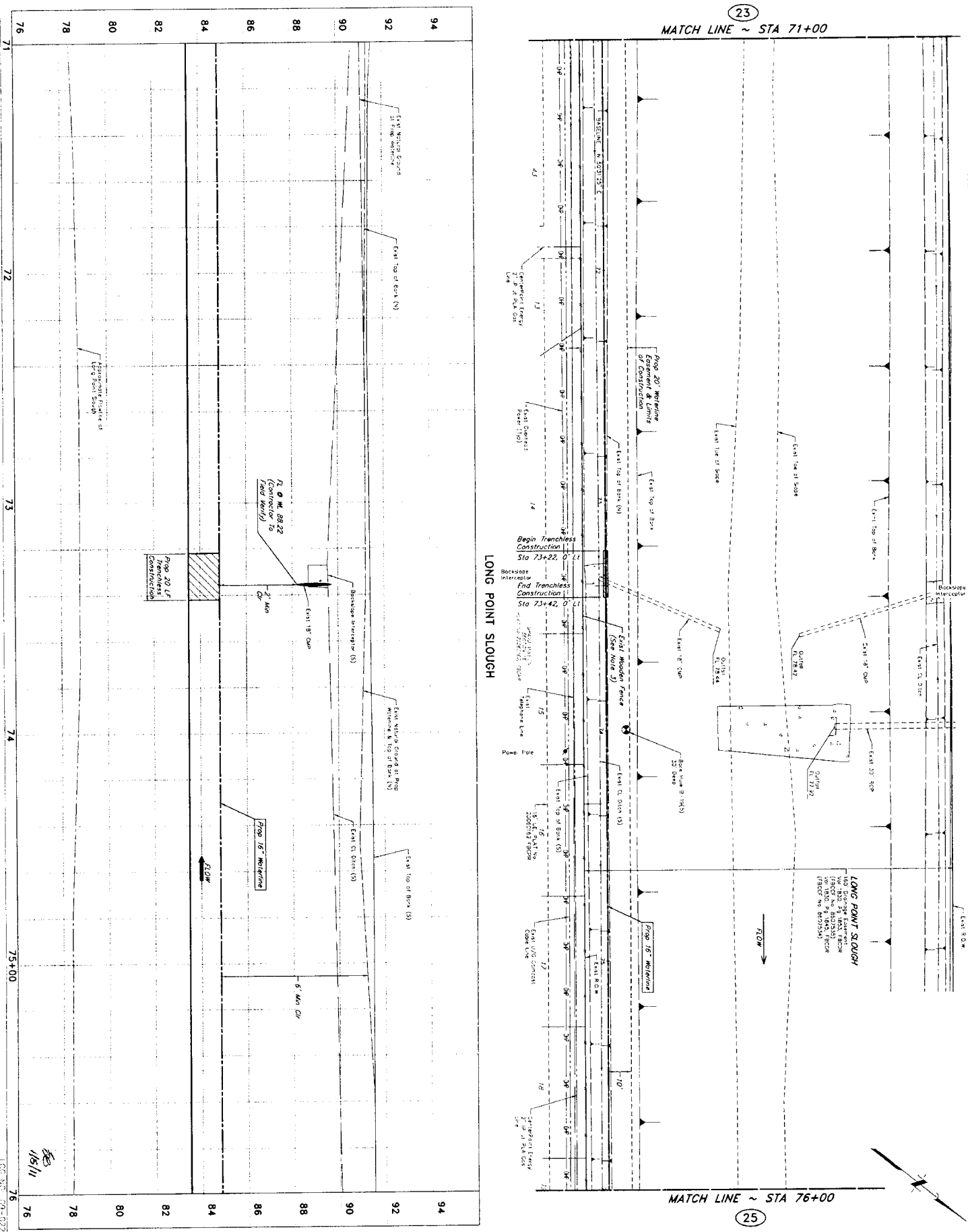
GRAND MISSION MUD. NO. 1 CONNECTION

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
 SHEET 23 OF 62
 DATE: 11/17/10

DRAWING SCALE:
 HORIZONTAL: 1" = 20'
 VERTICAL: 1" = 2'

FILE NO:
 17644

FOR CITY OF HOUSTON USE ONLY (BY 2ND NO.)



PRIVATE UTILITY LINES SHOWN

Date: _____

Contractor (Employer/Engine/Inspector) (Approved only)
 V. J. Jones, Inc. (Contractor)
 580 UTILITY LINES SHOWN Date: 1/16/10

City of Houston
 Department of Public Works and Engineering
 Date: 1/17/10

NOTE: CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES BEFORE EXCAVATING IN STREET R.O.W. OR EXCAVATING ON ALL-GONE SIDEWALK/PAVEMENT CENTER (V.I.S.) TO AVOID THE RISK OF BEING TURNED OFF OR WORKING UNDERGROUND.

BRANCHING: CONTROL POINT NO. 9A BEING A SET 5/8" IRON ROD WITH AN ALUMINUM CAP STAMPED "NORTH FORT BEND WATER AUTHORITY 5/8" (CROSS APPROXIMATELY 700 FEET SOUTHWEST OF BANK OF LONG POINT SLOUGH) 5/8" IRON ROD (V.I.S.) OF THE LEV = 91.9 (NAD 83, 2002 ADJUSTMENT)

NOTES:

- DEFLECTORS ARE NOT TO EXCEED MANUFACTURER'S MAXIMUM DEFLECTOR OR J-METER IS SMALLER. ALL SECTIONS WITH DEFLECTED JOINTS SHALL BE RESTRIPPED.
- CONTRACTOR IS RESPONSIBLE FOR RESTORING THE DITCH'S EXISTING CONDITION OR BETTER. THIS WORK IS CONSIDERED INCIDENTAL TO THE PROJECT.
- CONTRACTOR IS RESPONSIBLE FOR RESTORING WOODEN FENCING DAMAGED DURING CONSTRUCTION TO EXISTING CONDITION OR BETTER.

CONSTRUCTION

NO. DATE REVISION APPROVAL

1
 2
 3

J. JONES & CARTER, INC.
 ENGINEERS, PLANNERS, ARCHITECTS
 5550 Campbell Street, Suite 200, Houston, Texas 77057 (713) 771-3333

GRAND MISSION MUD. NO. 1 CONNECTION

LONG POINT SLOUGH
 STA 71+00 TO 76+00

NORTH FORT BEND WATER AUTHORITY

NOTE: CITY SQUARES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

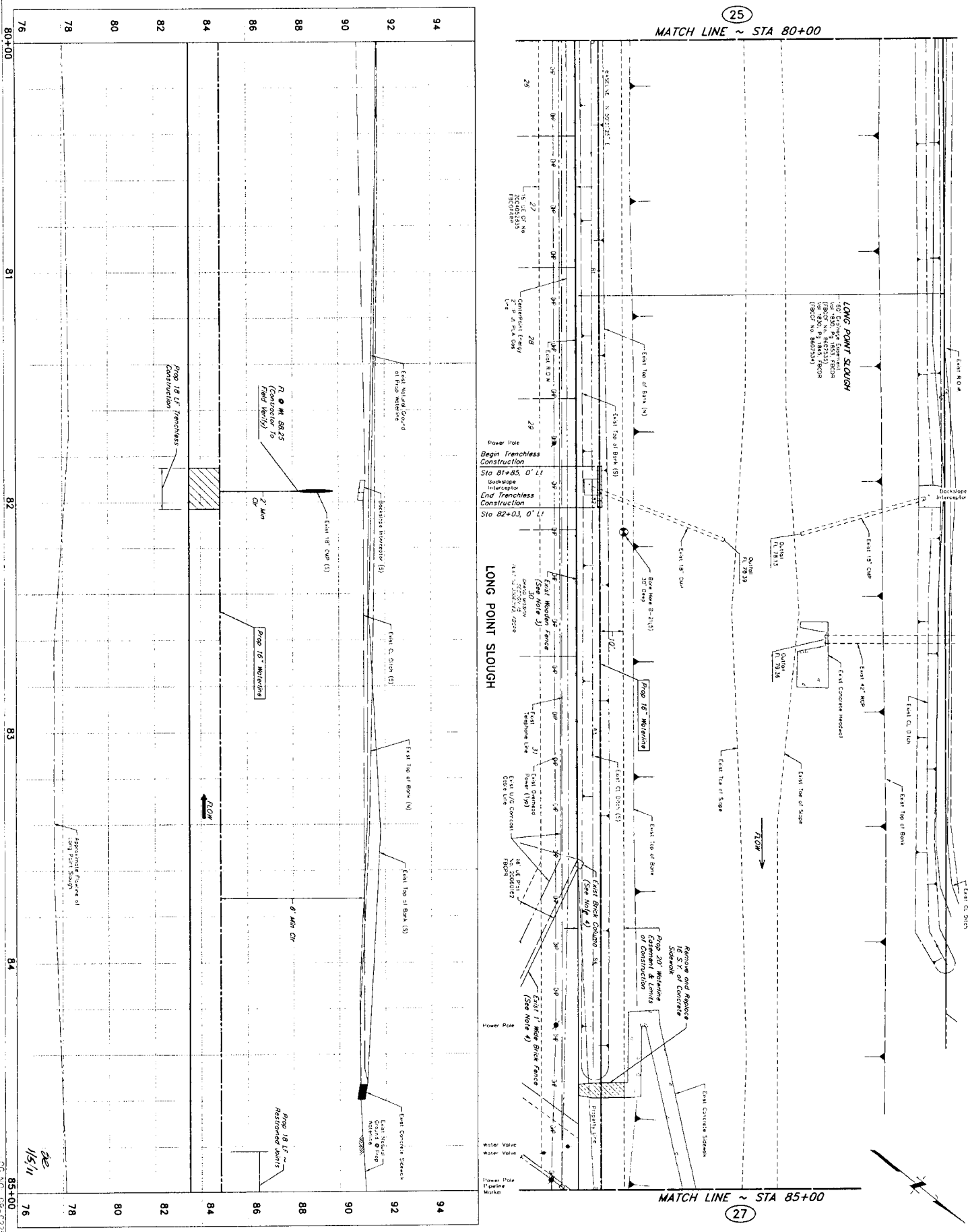
CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

DATE: 1/16/10

FILE NO. _____

SCALE: 1" = 20'
 SHEET NO. 24 OF 62

47844



PRIVATE UTILITY LINES SHOWN

Date: _____
 300 JUNE 1993 SHOWN
 Date: 11-11-10
 50% Modified for underground conduit location only
 Date: _____

Contractor: *W. J. Jones* Date: 11/10
 Checked: *W. J. Jones* Date: 11/10

NOTE:
 AT LEAST 48 HOURS BEFORE EXCAVATING IN STREET R.O.W. OR EXPOSURE CALL LONG STAR NOTIFICATION CENTER (713) 225-2500 OR (800) 889-3344
 CONTRACTOR FOR LINES TO BE TURNED OFF OR MOVED CALL CONTRACTOR - CONTACT POINT NO. 24 8000 E. ST. 247' FROM R.O.W. WITH AN ALUMINUM CAP STAMPED NORTH FORT BEND WATER AUTHORITY 34" LOCATED APPROXIMATELY 700 FEET SOUTHWEST OF BANK OF LONG POINT SLOUGH 435 FEET NORTH OF THE ELEV = 511.8' (MAD-88-1002 ADJUSTMENT)

NOTES:
 1. DETERMINE USE AND TO EXISTING MAINS/CONDUITS
 2. ALL SECTIONS AND DEFLECTED ADJUSTS SHALL BE RESTORED TO EXISTING CONDITION OR BETTER. THIS WORK IS CONSIDERED A FENCING DURING CONSTRUCTION ALONG THE CONDUIT OR BETWEEN 15' TO 20' FROM THE CONDUIT.
 3. CONTRACTOR IS RESPONSIBLE FOR RESTORING BACK CONSTRUCTION ALONG THE SOUTHERN SIDE OF LONG POINT SLOUGH TO EXISTING CONDITION OR BETTER.

NO.	DATE	REVISION	BY	APP'D.
1				
2				
3				

J. JONES & CARTE R.L.P.
 3 ENGINEERS & ARCHITECTS - S.L.B.#0083
 7200 Grandwood Professional Advisory Agreement No. F-749
 6555 Grandwood, Suite 800 Houston, Texas 77030 (713) 777-3880

GRAND MISSION MUDD. NO. 1 CONNECTION

LONG POINT SLOUGH - STA 80+00 TO 85+00

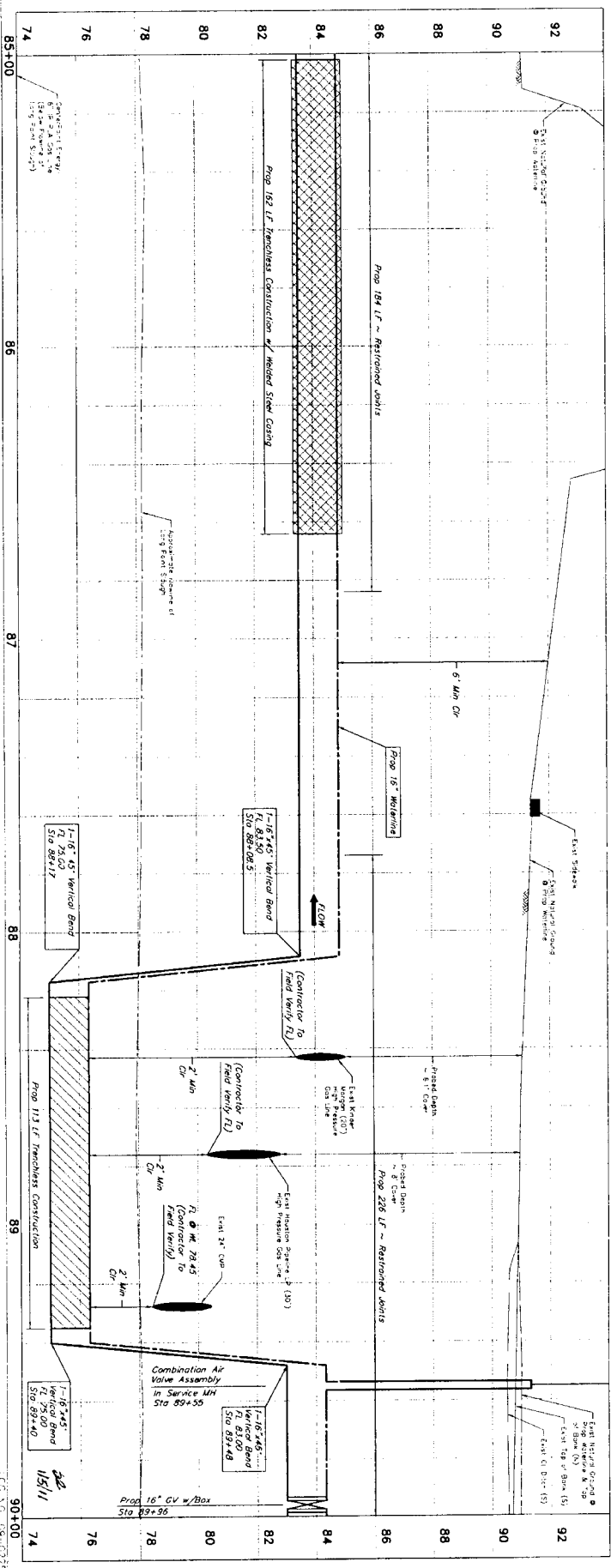
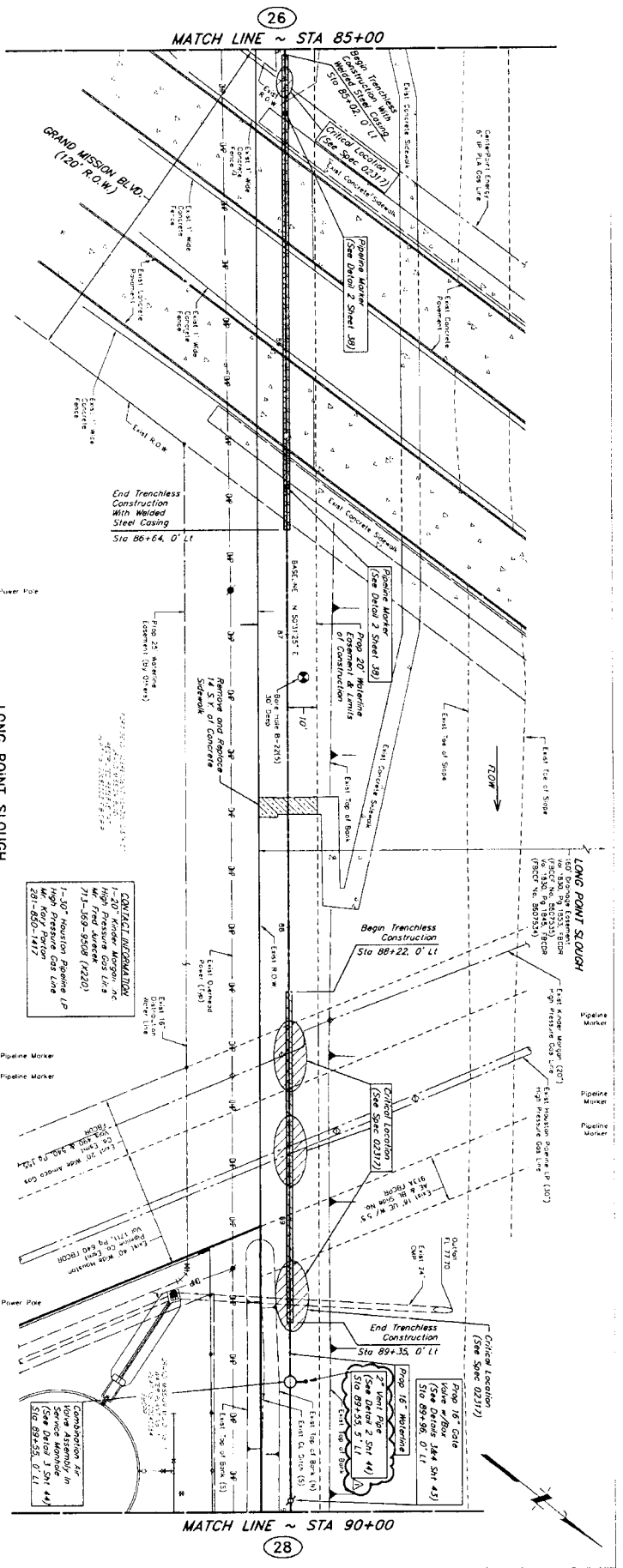
NOTE: CITY SQUARES WOULD FOR ONE YEAR ONLY AFTER DATE OF SLOUGH CONSTRUCTION

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

DATE: 11/10
 DRAWN BY: *W. J. Jones*
 CHECKED BY: *W. J. Jones*
 SCALE: 1" = 20'
 1" = 2'

SHEET 26 OF 62

17614



PRIVATE UTILITY LINES SHOWN

Date: 11/16/10

Contractor: [Signature]

DATE: 11/17/10

NOTICE:

1. AT LEAST 48 HOURS BEFORE EXCAVATING A STREET R.O.W OR EXISTING CURB, LONG STAKE NOTIFICATION CENTER (713) 421-4301 OR 1-800-388-5834.

2. CONTRACTOR IS RESPONSIBLE FOR REPAIRING THE OWNER'S EXISTING CONDITION OR BETTER. THIS WORK IS CONSIDERED INCIDENTAL TO THE PROJECT.

3. DEFLECTIONS ARE NOT TO EXCEED MANUFACTURER'S MAXIMUM DEFLECTION OR 3" WHICHEVER IS SMALLER. ALL SECTIONS WITH SKEWED JOINTS SHALL BE REINFORCED.

4. CONTRACTOR IS RESPONSIBLE FOR REPAIRING THE OWNER'S EXISTING CONDITION OR BETTER. THIS WORK IS CONSIDERED INCIDENTAL TO THE PROJECT.

5. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MICHIGAN STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (M.S.S.C.) (MVD-88-2002 ADJUSTMENT), EDITION 9178.

NOTES:

1. DEFLECTIONS ARE NOT TO EXCEED MANUFACTURER'S MAXIMUM DEFLECTION OR 3" WHICHEVER IS SMALLER. ALL SECTIONS WITH SKEWED JOINTS SHALL BE REINFORCED.

2. CONTRACTOR IS RESPONSIBLE FOR REPAIRING THE OWNER'S EXISTING CONDITION OR BETTER. THIS WORK IS CONSIDERED INCIDENTAL TO THE PROJECT.

3. DEFLECTIONS ARE NOT TO EXCEED MANUFACTURER'S MAXIMUM DEFLECTION OR 3" WHICHEVER IS SMALLER. ALL SECTIONS WITH SKEWED JOINTS SHALL BE REINFORCED.

4. CONTRACTOR IS RESPONSIBLE FOR REPAIRING THE OWNER'S EXISTING CONDITION OR BETTER. THIS WORK IS CONSIDERED INCIDENTAL TO THE PROJECT.

5. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MICHIGAN STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION (M.S.S.C.) (MVD-88-2002 ADJUSTMENT), EDITION 9178.

JE JONES & CARTER, P.A.
 ENGINEERS & PLANNERS
 6500 West Loop South, Suite 100, Houston, Texas 77056
 281-465-1417

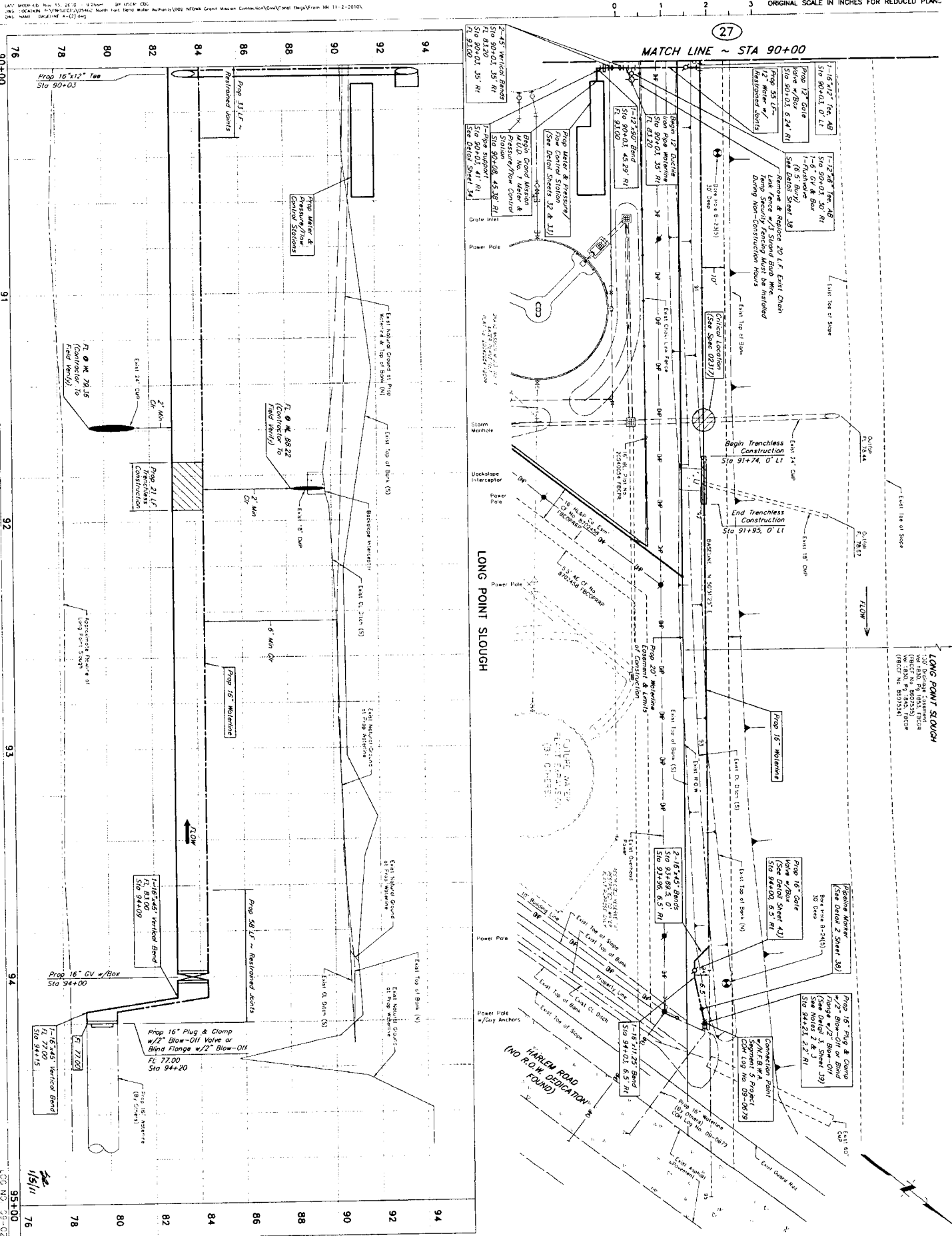
GRAND MISSION BLVD. NO. 1 CONNECTION
 LONG POINT SLOUGH
 STA 85+00 TO 90+00

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
 STREET & BRIDGE
 11511
 11/16/10

SCALE:
 HORIZONTAL SCALE: 1" = 20'
 VERTICAL SCALE: 1" = 2'

SHEET NO. 27 OF 62

47844

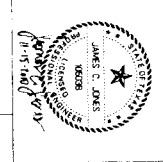


PRIVATE UTILITY LINES SHOWN

Contractor: **James C. Jones**
 Date: **1/16/10**
 Scale: **AS SHOWN**

NOTE: AT LEAST 48 HOURS BEFORE EXCAVATING IN STREET ROW OR TO ADJACENT PROPERTY, THE CONTRACTOR SHALL CALL THE UTILITY LOCATING SERVICE AT 713-207-7177 TO OBTAIN A UTILITY LOCATING REPORT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A UTILITY LOCATING REPORT AND FOR MARKING ALL UTILITIES BEFORE EXCAVATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL UTILITIES AND FOR RESTORING THE STREET TO ORIGINAL CONDITION AFTER COMPLETION OF WORK.

NOTES:
 1. ALL UTILITIES SHOWN ARE BASED ON RECORD DRAWINGS AND FIELD SURVEY.
 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES BEFORE EXCAVATION.
 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL UTILITIES AND FOR RESTORING THE STREET TO ORIGINAL CONDITION AFTER COMPLETION OF WORK.



J.C. JONES & CARTER, INC.
 ENGINEERS, PLANNERS, SURVEYORS
 1000 South Loop West, Suite 1000
 Houston, Texas 77047
 Phone: 713-865-1100
 Fax: 713-865-1101
 Website: www.jcjc.com

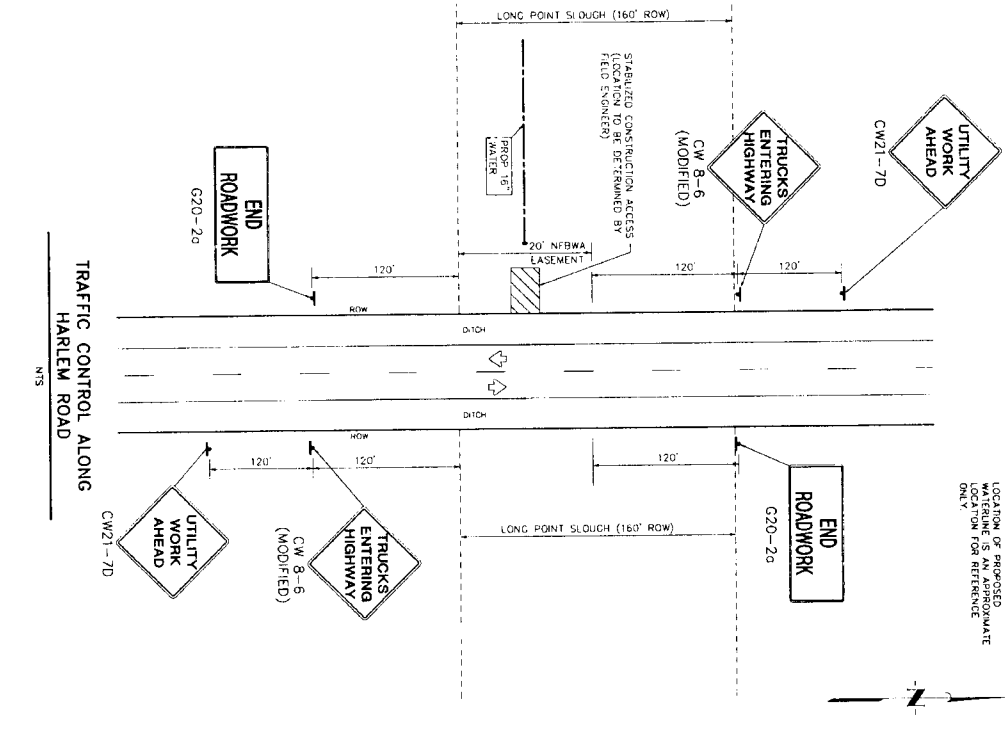
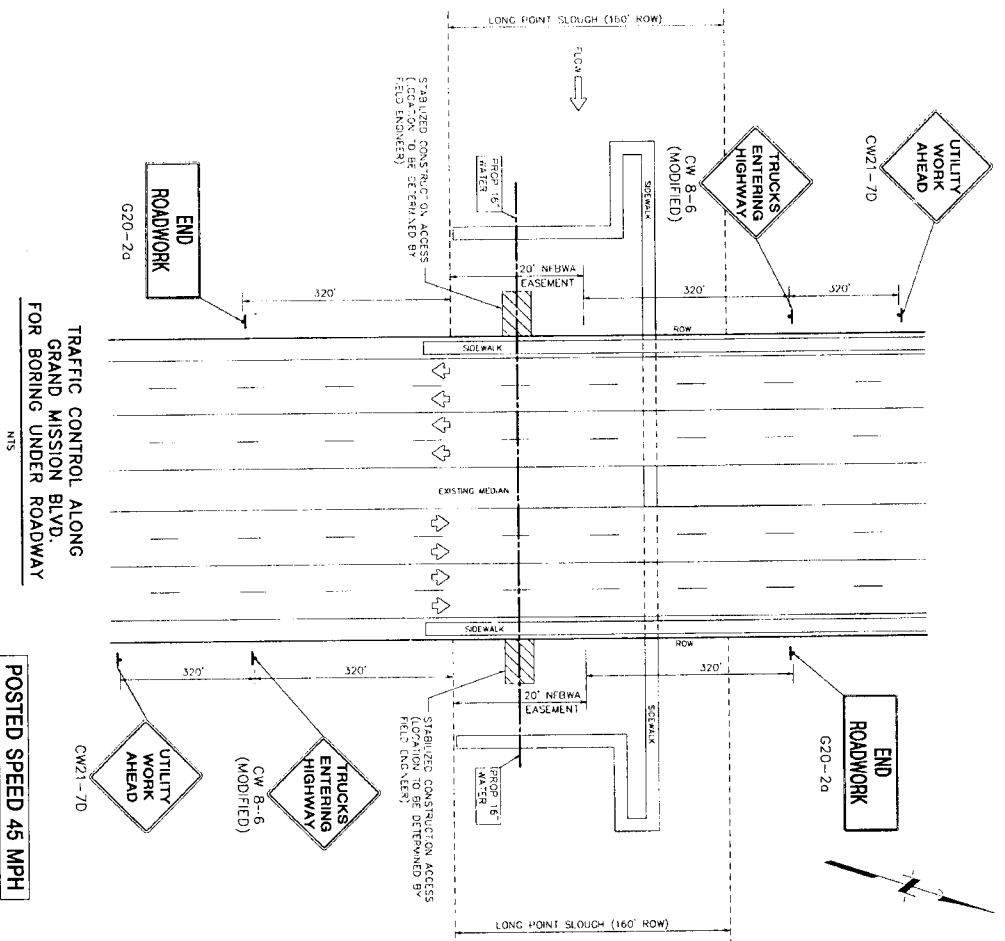


CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
 1100 North Loop West, Suite 1000
 Houston, Texas 77047
 Phone: 713-865-1100
 Fax: 713-865-1101
 Website: www.houstontx.gov

NOTE: CONTRACTOR SHALL VERIFY ALL UTILITIES BEFORE EXCAVATION.
 CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL UTILITIES AND FOR RESTORING THE STREET TO ORIGINAL CONDITION AFTER COMPLETION OF WORK.
 CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A UTILITY LOCATING REPORT AND FOR MARKING ALL UTILITIES BEFORE EXCAVATION.
 CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL UTILITIES AND FOR RESTORING THE STREET TO ORIGINAL CONDITION AFTER COMPLETION OF WORK.



DATE: **1/16/10**
 SHEET: **28 of 62**



- NOTES:
1. CONTRACTOR SHALL PROVIDE AND INSTALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART IV OF TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TWOED) - LATEST EDITION WITH REVISIONS) DURING CONSTRUCTION.
 2. NO LANES SHALL BE BLOCKED FROM 7 A.M. TO 9 A.M. AND 4 P.M. TO 6:30 P.M. MONDAY THRU FRIDAY.
 3. OFF DUTY POLICE OFFICERS/AGENTS ARE REQUIRED TO DIRECT TRAFFIC WHEN LANES ARE BLOCKED.
 4. CONSTRUCTION SHALL COVER THE EXCAVATION WITH STEEL PLATES ASSIGNED PROPERLY DURING NON-WORKING HOURS AND ALLOW NORMAL TRAFFIC FLOW.
 5. APPROVED COPIES OF "TRAFFIC CONTROL PLANS" SHALL BE AVAILABLE FOR INSPECTION AT ALL TIMES.
 6. IF THE CONTRACTOR CHOOSES TO USE A DIFFERENT METHOD OF TRAFFIC CONTROL, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND SUBMIT ALTERNATE PLANS TO TRAFFIC SECTION OF HARD FOR APPROVAL. TEN WORKING DAYS PRIOR TO IMPLEMENTATION.
 7. IF THE PROJECT IS WITHIN 400 FEET FROM A SIGNALIZED INTERSECTION, THE CONTRACTOR SHALL CONTACT FORT BEND COUNTY TRANSPORTATION DEPARTMENT AT 281-483-7433 THE TEN WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.

CONSTRUCTION WARNING SIGN SPACING:

Posted Speed or 85% Speed (MPH)	Min. Distance (feet)	X
30 or less	120	
35	160	
40	240	
45	320	
50	400	
55	500	
65	700	

- LEGEND:
- STABILIZED CONSTRUCTION ACCESS (LOCATION TO BE DETERMINED BY FIELD ENGINEER)
 - OPEN TO TRAFFIC
 - SIGN WITH POST
 - TUBULAR MARKERS, CONES OR DRUMS

TRAFFIC CONTROL PLAN

NOTE: CITY ENGINEERS AND FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

DATE: 11/14/10
DRAWN BY: [Signature]
CHECKED BY: [Signature]

FILE NO. 194-1718-00100-001
DRAWING SCALE: AS SHOWN
HORIZ. NOT TO SCALE

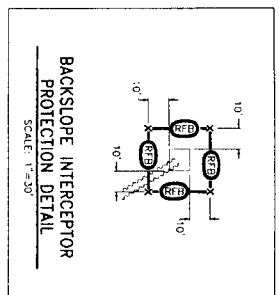
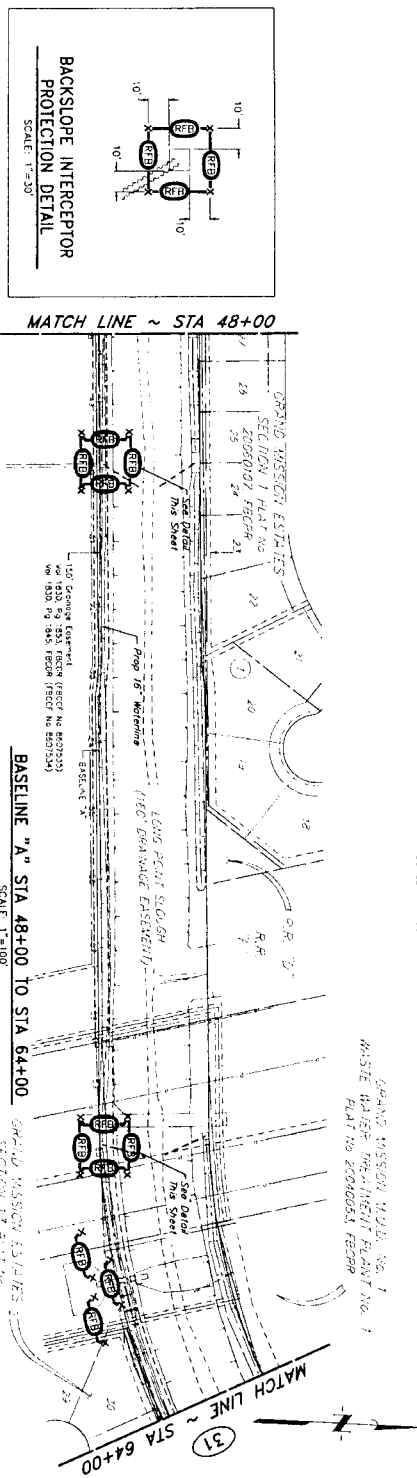
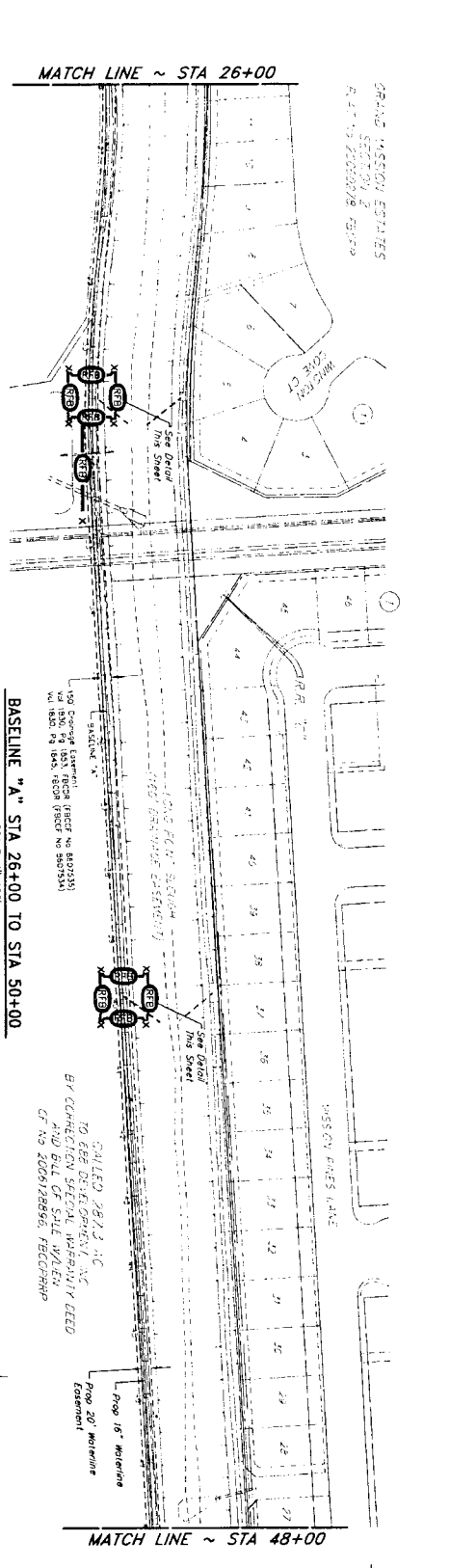
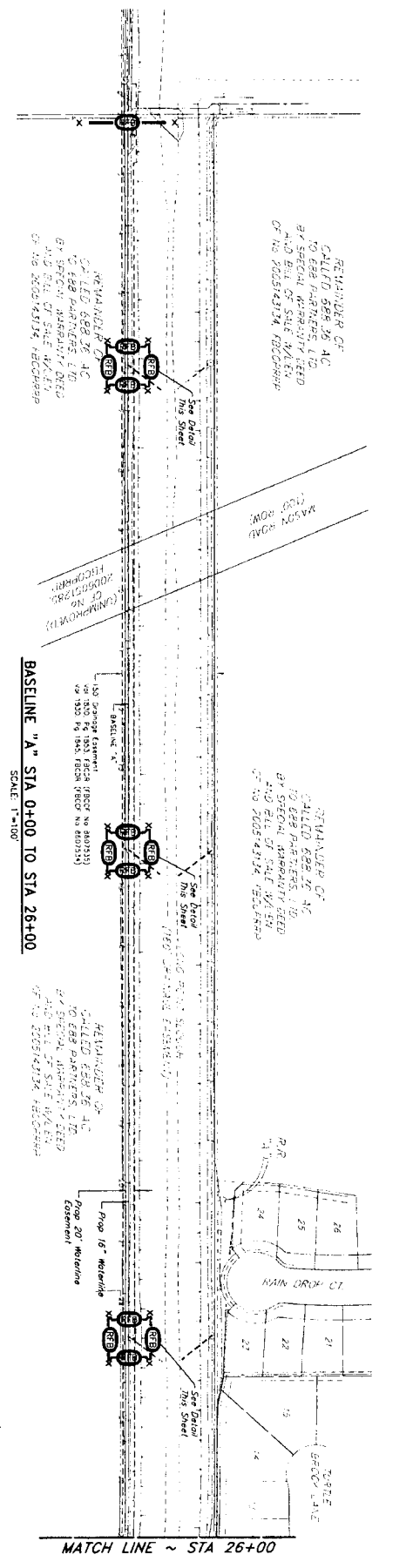
Sheet No. 29 of 62

11-15-10

J. JONES & CARTER, INC.
REGISTERED PROFESSIONAL ENGINEERS-PLANNERS-SURVEYORS
6300 S. Loop West, Suite 100, Houston, Texas 77057 (713) 776-1337

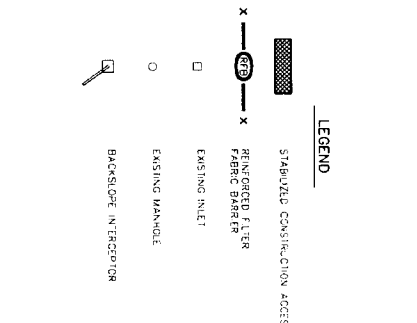
GRAND MISSION MUD. No. 1 CONNECTION



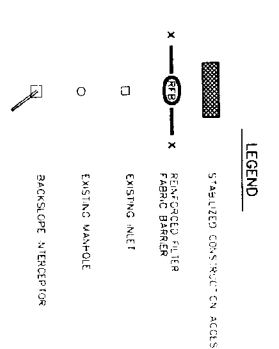
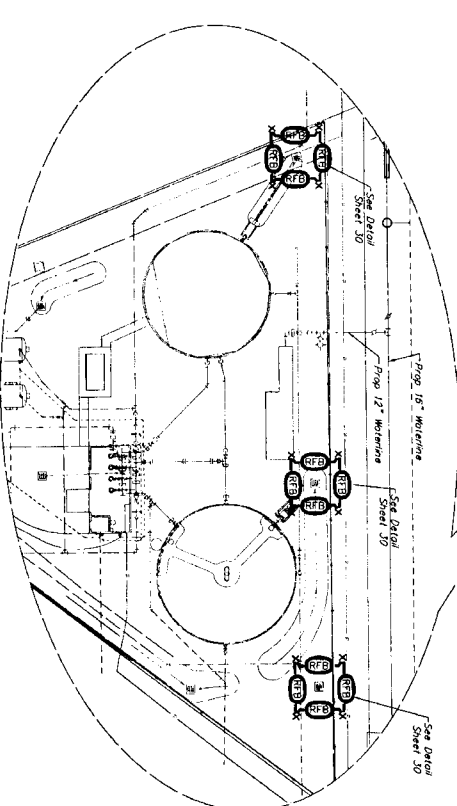
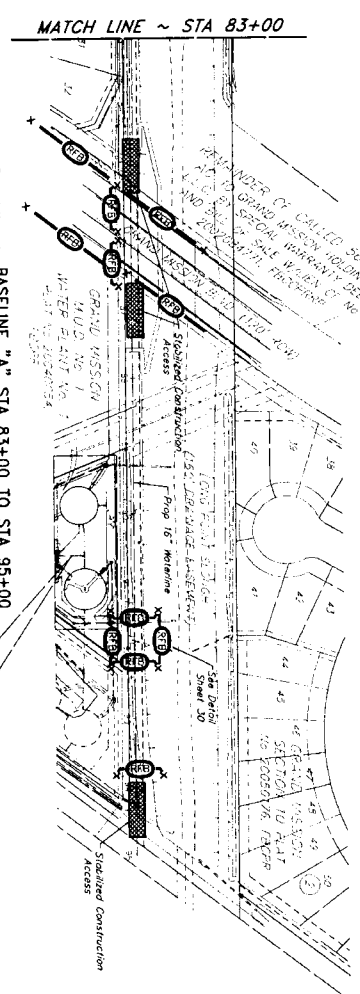
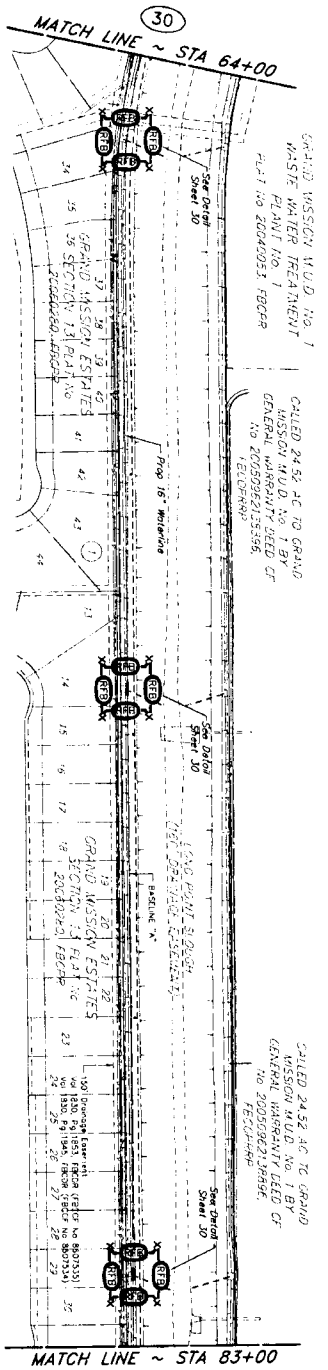


MATCH LINE ~ STA 48+00

BASELINE "A" STA 48+00 TO STA 64+00
 SCALE: 1"=100'



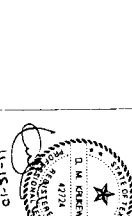
<p>NOTE: CITY ENGINEERS MUST FOR ONE YEAR AFTER DATE OF SIGNATURES</p> <p>CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING</p> <p>DATE: 11/15/16 SHEET: 1 OF 2</p> <p>SCALE: 1"=100'</p> <p>FILE NO: 160117.dwg</p> <p>DRAWING SCALE: 1"=100'</p> <p>SHEET NO: 30 OF 62</p>	<p>FOR CITY OF HOUSTON USE ONLY</p> <p>DATE: 11/15/16</p>
<p>NORTH FORT BEND</p> <p>GRAND MISSION MUD. NO. 1 CONNECTION</p> <p>STORM WATER POLLUTION PREVENTION PLAN</p> <p>SHEET 1 OF 2</p>	<p>J. JONES & CARTER, P.C. ENGINEERS, PLANNERS, ARCHITECTS 6333 Shepherd, Suite 100 Houston, Texas 77030 (713) 772-3333</p> <p>DATE: 11-15-16</p>



NO.	DATE	REVISION
1		
2		
3		
4		

J. JONES & CARTE R. P.A.C.
 ENGINEERS - PLANNERS - SURVEYORS
 Total Board of Professional Engineers Registration No. 12003
 6000 Katy Road, Suite 100 Houston, Texas 77057 (713) 773-2200

GRAND MISSION W.U.D. No. 1 CONNECTION
 STORM WATER POLLUTION PREVENTION PLAN
 SHEET 2 OF 2



CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

DATE: 11/23/10
 DRAWN BY: J. JONES
 CHECKED BY: J. JONES
 IN CHARGE: J. JONES

NOTE: CITY SCOURERS VALID FOR ONE YEAR ONLY AFTER DATE OF EXPIRATION.

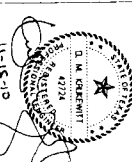
FILE NO.: 10-11-2-2310

DRAWING SCALE: AS SHOWN

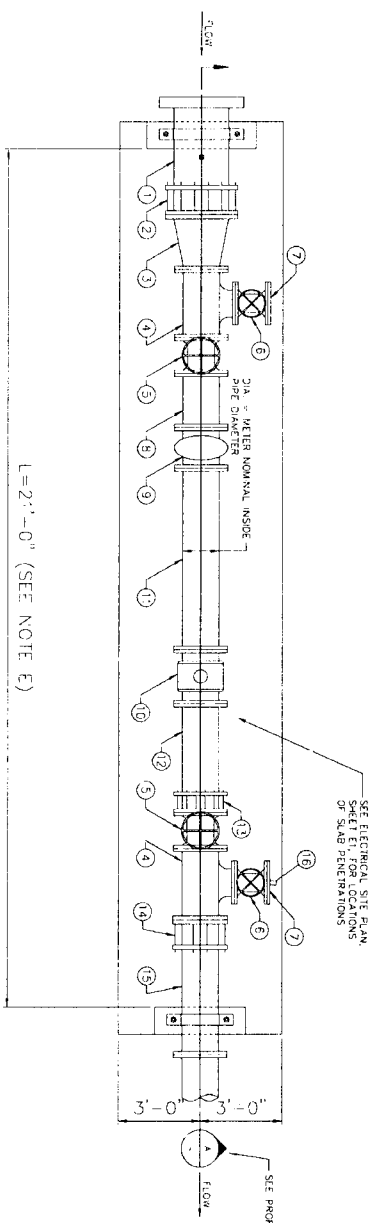
DATE: 11/23/10

SCALE: 1" = 200'

SHEET NO. 31 OF 62



11/5/11
 105 NO. 03-0725

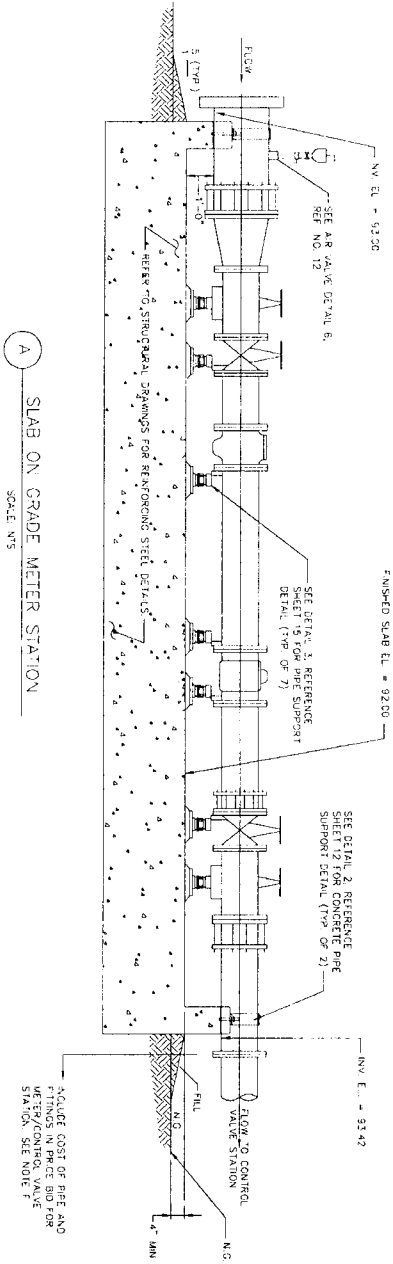


1 PLAN - SLAB ON GRADE METER STATION
SCALE NTS

SLAB ON GRADE METER STATION

ITEM NO.	DESCRIPTION	QTY	UNIT
1	PIPE (DIAMETER) x 2' - (REAR) TAP	12	INCH
2	FLANGED COUPLING ADAPTER WITH RESTRAINTS (DIAMETER)	12	INCH
3	REDUCER	12	INCH
4	TEE W/BASE (DIAMETER, RUN X RUN X BRANCH)	12	INCH
5	VALVE, GATE CV-1 (SEE NOTE B) (DIAMETER)	10	INCH
6	VALVE, GATE CV-1 (SEE NOTE B) (DIAMETER)	6	INCH
7	BLIND FLANGE (SIZE)	6	INCH
8	PIPE SPOOL (DIAMETER)	10	INCH
9	STRAINER ASSEMBLY	10	INCH
10	FLOW METER SIZE (ELECTROKINETIC METER SEE NOTE C)	10	INCH
11	PIPE SPOOL (DIAMETER) LENGTH=(5 x DIA) MINIMUM	10	INCH
12	PIPE SPOOL (DIAMETER) LENGTH=(3 x DIA) MINIMUM	10	INCH
13	FLANGED COUPLING ADAPTER WITH RESTRAINTS (DIAMETER)	10	INCH
14	FLANGED COUPLING ADAPTER WITH RESTRAINTS (DIAMETER)	10	INCH
15	PIPE (DIAMETER)	10	INCH
16	BLIND FLANGE W/2" THREADED CONNECTION AND 2" HOSE ADAPTOR	10	INCH

NOTES:
 (A) METER SIZE TO BE DETERMINED BY NEMA ENGINEER DESIGN CONSULTANT, IS TO MATCH FITTING SIZES IN THIS TABLE CONSISTENT WITH SPECIFIED METER SIZE AND SURFACE WATER SUPPLY LINE SIZE
 (B) DESIGN IS BASED ON AMERICAN R/D RESILIENT GATE VALVE, PATENT 2652 W/4" AND WHEEL OPERATOR OR APPROVED EQUAL
 (C) DESIGN IS BASED ON THE KROHNE F5 4000 KC (ELECTROKINETIC) OR SEWERS STRAINERS PV 5100 W ELECTROKINETIC (IF REQUIRED)
 (D) PROVIDE AND INSTALL INSTRUMENTATION AND CONTROLS PER TECHNICAL SPECIFICATIONS
 (E) LENGTH (L) OF METER RUN IS APPROXIMATE, IT MAY BE ADJUSTED BASED ON PILING SOFT-DRAWINGS
 (F) RESTRAINED JOINT PIPING SHALL BE USED WITHIN WATER PLANT SITE
 (G) APPLY SHERMAN WILLIAMS POLYMER BLUE SW 4055 TO ALL ABOVE GRADE PIPING AND APPEARANCE IN ACCORDANCE WITH SECTION 09001-PROTECTIVE COATINGS



A SLAB ON GRADE METER STATION
SCALE NTS

INITIAL INSTALLATION NOTES:
 1. INSTALL SPRING METER ETC AS SLABON, DISINFECT, PRESSURE TEST AND VERIFY SWINGING ONLY OPERATION.
 2. FAILURE THAN AS A RESULT OF THE TESTING GROUND STORAGE TANK BE ALLOWED TO ENTER THE DISTRICTS DESIGN CONSULTANT IS RESPONSIBLE FOR THE LOCATION OF THE CONDUITS.

REVISIONS

NO.	DATE	REVISION
1		
2		
3		
4		

J.E. JONES
 REGISTERED PROFESSIONAL ENGINEER
 CIVIL ENGINEERING
 1155211

J.E. JONES & CARTER, L.P.
 ENGINEERS - PLANNERS - SURVEYORS
 2000 West Loop South, Suite 1000, Houston, Texas 77020 (713) 779-3500

GRAND MISSION MUD NO. 1 CONNECTION

METERING STATION LAYOUT

NORTH FORT BRAND

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

DATE: 01/21/14
 SHEET # 302
 PROJECT: GRAND MISSION MUD NO. 1 CONNECTION

DESIGNED BY: [Signature]
 CHECKED BY: [Signature]
 DATE: 11/22/12

FOR CITY OF HOUSTON
 CIVIL ENGINEER

DATE: 11/22/12

NOTE: CITY ENGINEERS VALID FOR ONE YEAR AFTER DATE OF SIGNATURE.

DRAWING SCALE: HORIZ NOT TO SCALE

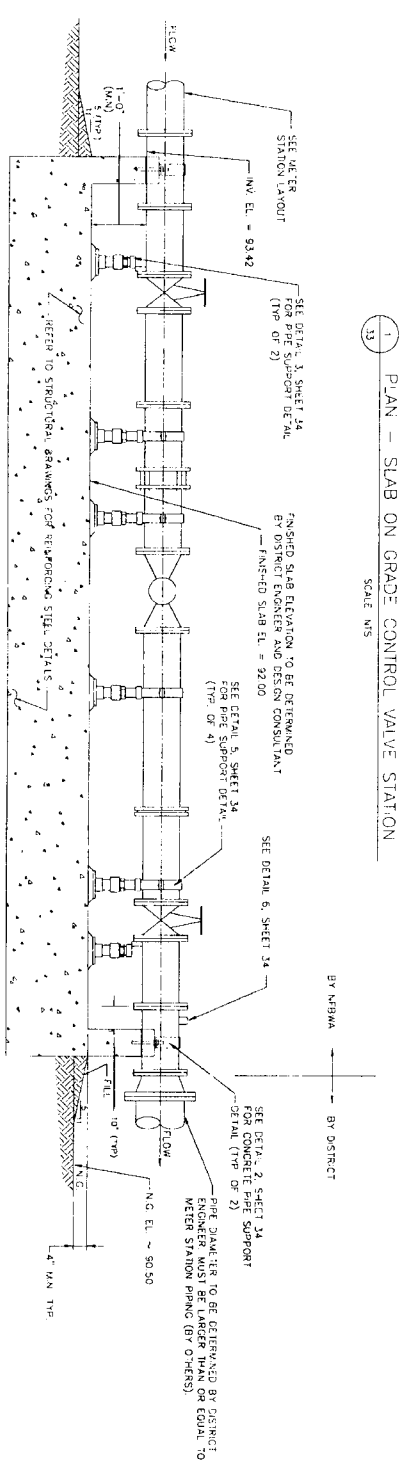
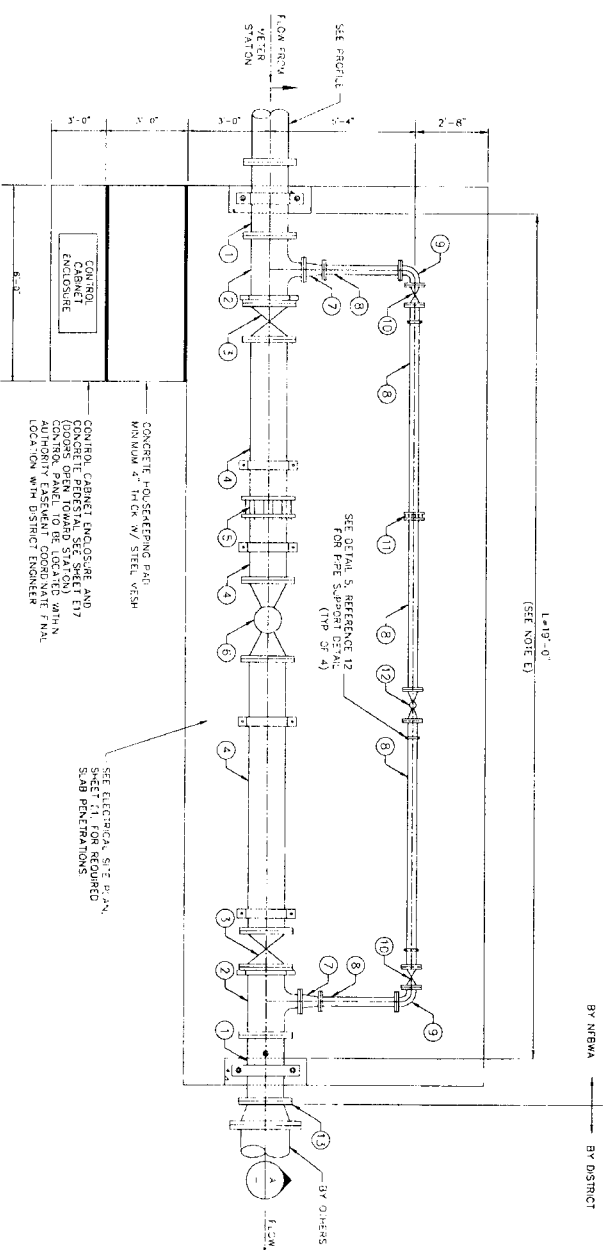
SHEET NO. 32 OF 62

NOTES

- (A) CONTROL VALVE GATES TO BE DETERMINED BY NREWA ENGINEER CONSULTANT IS TO MODIFY FITTING SIZE IN THIS TABLE CONSISTENT WITH SIZED STEEL
- (B) DESIGN IS BASED ON AMERICAN R/D RESILIENT GATE VALVE, PAT. NO. 2052 W/HAHD WHEEL OPERATOR OR APPROVED EQUAL.
- (C) DESIGN IS BASED ON THE CLA-VAL 131-EGGENSKOG BERNARD 21052-03-18-43-Q OR WATTS M13-BY
- (D) FEATURE AND INSTALL INSTRUMENTATION AND CONTROLS PER TECHNICAL SPECIFICATIONS, IF REQUIRED.
- (E) LENGTH (L1) OF CONTROL VALVE RUN IS APPROXIMATE. IT MAY BE ADJUSTED BASED ON PIPING SHOP DRAWINGS.
- (F) GATE BLIND FLANGE AND CONNECT TO DISTRICT PANEL # 11 EN1515
- (G) CONTROL PANEL LOCATION MAY ONLY BE MODIFIED WITH APPROVAL OF NREWA ENGINEER.
- (H) APPLY STEELWOL WILLIAMS POWDER BLUE SPRAYS TO ALL ABOVE GRADE PIPING AND APPURTENANCE IN ACCORDANCE WITH SECTION 0990-PROTECTIVE COATINGS

SLAB ON GRADE CONTROL VALVE STATION

ITEM	FITTING DESCRIPTION	FITTING SIZE (INCH)
1	PIPE (DIAMETER) W/ 2" THREADED TAP (ONE BRANCH)	10"
2	TEE (DIAMETER RUN X RUN X BRANCH)	10X10X8
3	VALVE, GATE G-1 (SEE NOTE B) (DIAMETER)	10"
4	PIPE SPOOL (DIAMETER)	10"
5	FLEXIBLE COUPLING (DIAMETER)	10"
6	VALVE, FLOW CONTROL, FCV-1 (SEE NOTE C) (DIAMETER)	10"
7	REDUCER, CONCENTRIC	10X4"
8	PIPE SPOOL (DIAMETER)	4"
9	ELBOW, 90 DEGREE (DIAMETER)	4"
10	VALVE, GATE G-1 (SEE NOTE A) (DIAMETER)	4"
11	FLEXIBLE COUPLING (DIAMETER)	4"
12	VALVE, FLOW CONTROL, FCV-2 (SEE NOTE C) (DIAMETER)	4"
13	BLIND FLANGE (SEE NOTE F)	10"

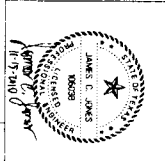


1 PLAN - SLAB ON GRADE CONTROL VALVE STATION
SCALE: N15

2 SLAB ON GRADE CONTROL VALVE STATION
SCALE: N15

15/11

SHEET NO 33 OF 62



J.C. JONES & CARTE R., P.C.
ENGINEERS-PLANNERS-SURVEYORS
2505 Central Expressway, Suite 200, Houston, Texas 77055
Phone: 713-771-3300

GRAND MISSION MUD, NO. 1 CONNECTION



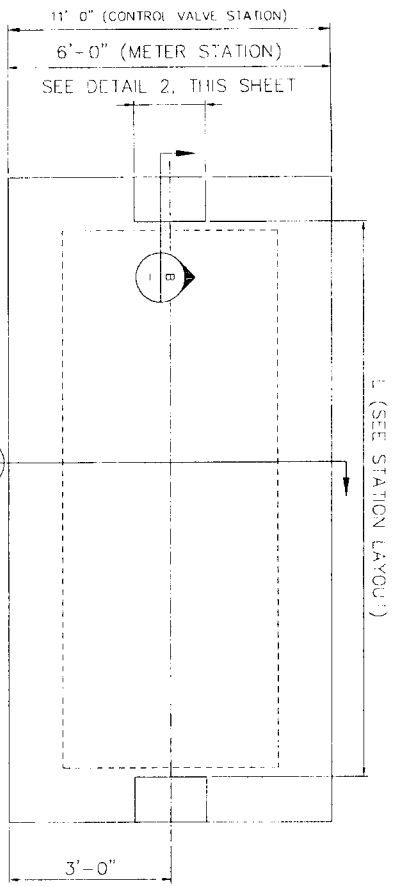
CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
11376
SHEET 3 OF 62
DATE: 11/15/11
BY: [Signature]

NOTE: CONTRACTORS SHALL FOR ONE YEAR AFTER DATE OF COMPLETION
FOR ONE YEAR AFTER DATE OF COMPLETION

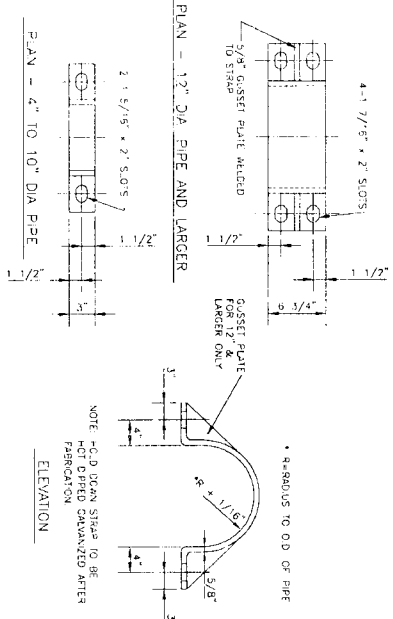
DRAWING SCALE
AS SHOWN - NOT TO SCALE

FOR OFFICE USE ONLY
DATE: 11/15/11

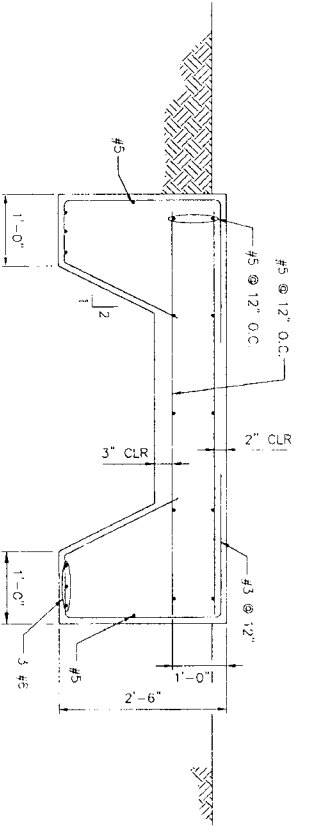
106 NO. 63-0223



1 PLAN - METER AND CONTROL VALVE STRUCTURAL
SCALE: NTS

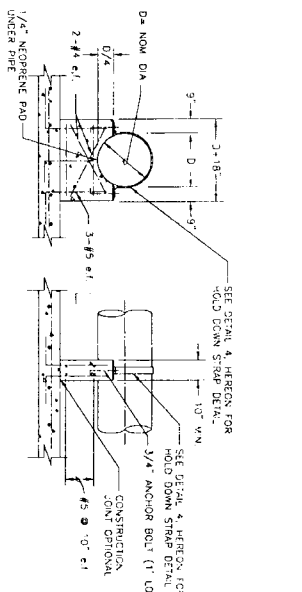


2 HOLD DOWN STRAP DETAIL
SCALE: NTS

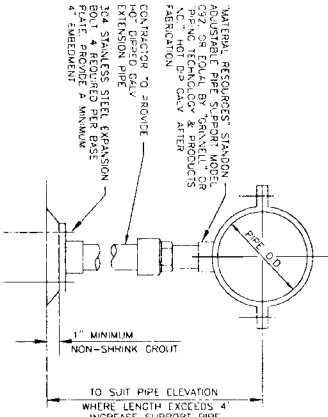


3 STRUCTURAL DETAIL A
SCALE: NTS

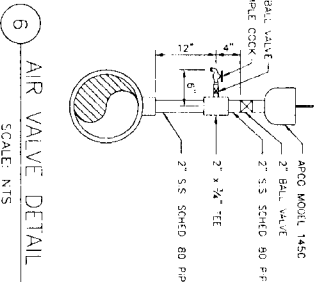
- NOTES:
1. CONCRETE STRENGTH AT 28 DAYS, $f_c=4,000$ psi
 2. STEEL REINFORCEMENT $f_y=60,000$ psi
 3. ALL EXPOSED CORNERS SHALL BE CHAMFERED 1/2"



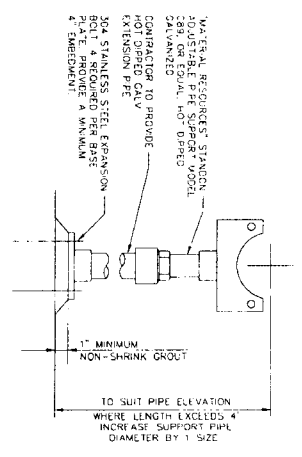
4 CONCRETE PIPE SUPPORT DETAIL
SCALE: NTS



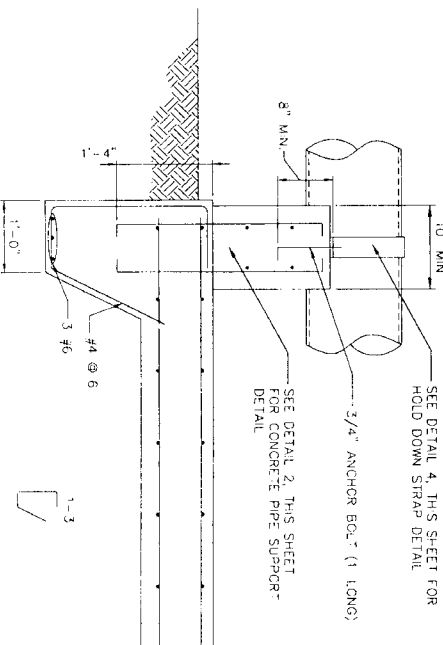
5 PIPE SUPPORT DETAIL W/ STRAP
SCALE: NTS



6 AIR VALVE DETAIL
SCALE: NTS



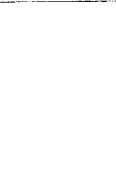
7 PIPE SUPPORT DETAIL
SCALE: NTS



8 STRUCTURAL DETAIL B
SCALE: NTS

- NOTES:
1. CONCRETE STRENGTH AT 28 DAYS, $f_c=4,000$ psi
 2. STEEL REINFORCEMENT $f_y=60,000$ psi
 3. ALL EXPOSED CORNERS SHALL BE CHAMFERED 1/2"

DATE: 11/10/10
DRAWN BY: J. JONES
CHECKED BY: J. JONES
SCALE: NOT TO SCALE
SHEET NO: 34 OF 62



NOTE: CITY SQUARES VALID FOR ONE YEAR ONLY AFTER DATE OF SOWAVERS

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

PROJECT: GRAND MISSION MUD. NO. 1 CONNECTION
SHEET 3 OF 62

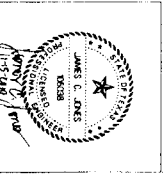
DATE: 11/10/10
DRAWN BY: J. JONES
CHECKED BY: J. JONES

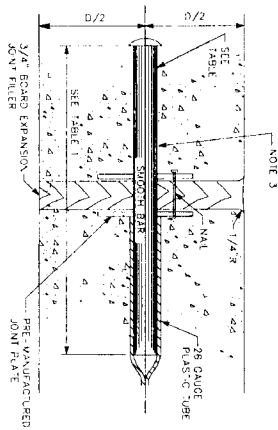


GRAND MISSION MUD. NO. 1 CONNECTION

METER & CONTROL VALVE
STATION STRUCTURAL &
MECHANICAL DETAILS

J.C. JONES & CARTER, INC.
Professional Engineer
11111 North Loop West, Suite 100, Houston, Texas 77037
(713) 777-5337

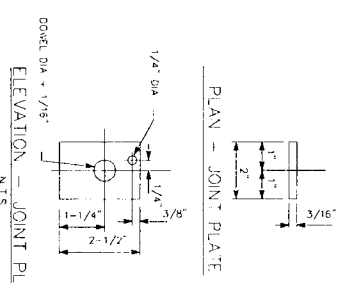




SECTION
 DOWEL TYPE EXPANSION JOINT
 N.T.S.

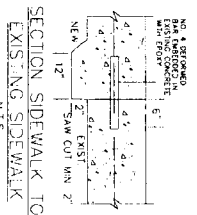
TABLE 1
 DOWEL SIZES AND SPACINGS

PAVEMENT THICKNESS (IN)	DOWEL DIAMETER (IN)	LENGTH (IN)	SPACING (IN)
4 1/2	1/2	18	12
5	1/2	18	12
6	3/4	18	12

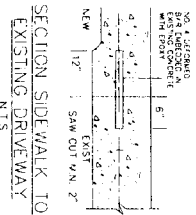


PLAN - JOINT PLATE
 ELEVATION - JOINT PLATE
 N.T.S.

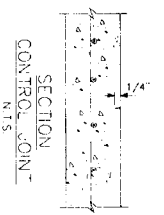
- NOTES
1. STEEL TO MEET ASTM STANDARD SPECIFICATIONS FOR CONCRETE REINFORCING BARS
 2. EXPANSION JOINT TO BE PLACED AT THE END OF EACH CONCRETE PAVEMENT SPAN AND AT MAXIMUM SPACING FOR CONTROL JOINTS SHALL BE 57 FEET
 3. CENTER DOWEL HORIZONTAL ON JOINT
 4. CENTER DOWEL VERTICALLY IN CONCRETE AS REFERRED TO MAIN PLAN 2" MIN COVER



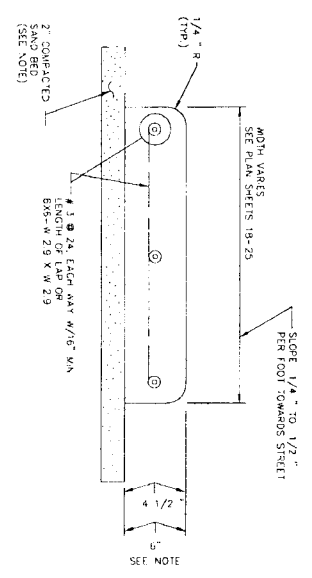
SECTION SIDEWALK TO EXISTING SIDEWALK
 N.T.S.



SECTION SIDEWALK TO EXISTING DRIVEWAY
 N.T.S.



SECTION CONTROL JOINT
 N.T.S.



CONCRETE SIDEWALK

- NOTE
6. REINFORCED CONCRETE SIDEWALK THRU DRIVEWAY OPENINGS ONLY USE # 3 @ 11-INCHES EACH WAY-18" MIN LAP LENGTH OR # 4 @ 20-INCHES EACH WAY -22" MIN LAP LENGTH. PRODUCT OF STEELBILT SUBGRADE IN DRIVEWAY OPENING

1
 35 SIDEWALK EXPANSION AND CONSTRUCTION JOINT DETAILS
 COH. DWG. NO. 02752-02

1/5/11

SHEET NO. 35 of 62



NOTE: CITY SIGNATURES SHALL BE ONE YEAR ONE" AFTER DATE OF SIGNATURES

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

DATE: 1/30/10
 NAME: [Signature]
 TITLE: [Signature]
 DATE: 11/23/10



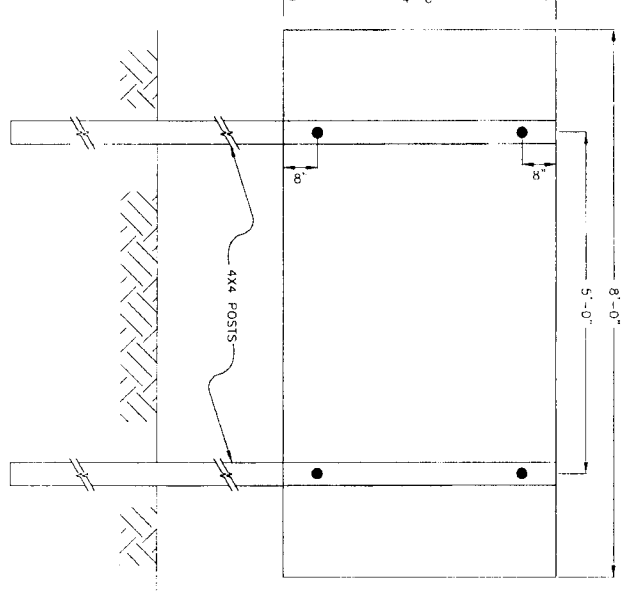
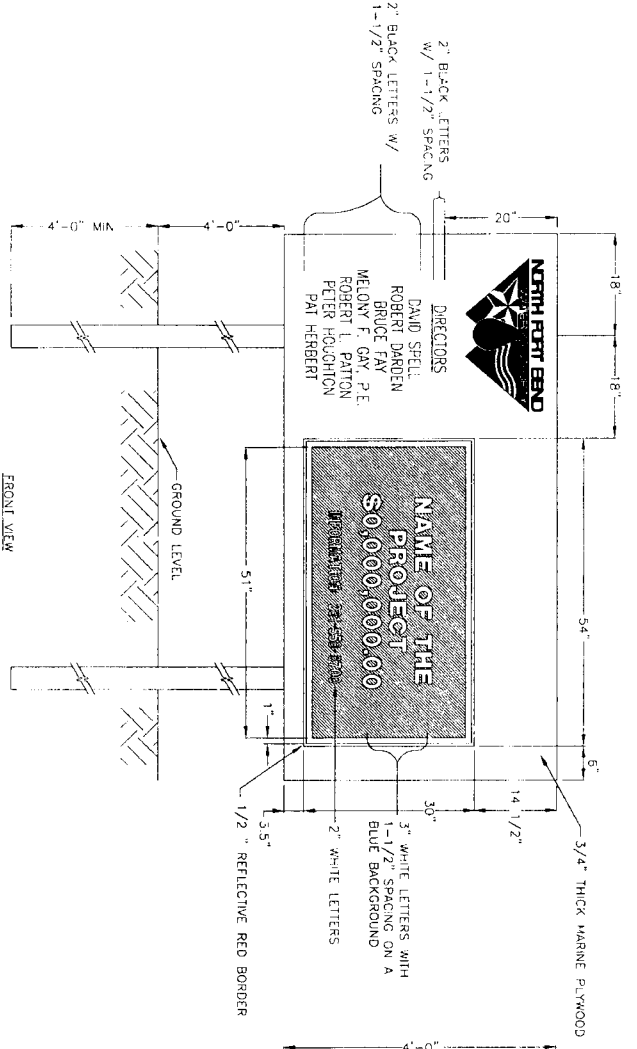
GRAND MISSION MUD. No. 1 CONNECTION

SIDEWALK DETAILS

J.C. JONES & C. R. JONES
 ENGINEERS-PLANNERS-SURVEYORS
 4330 S. LOOP WEST, SUITE 100, HOUSTON, TEXAS 77057 (713) 770-1237

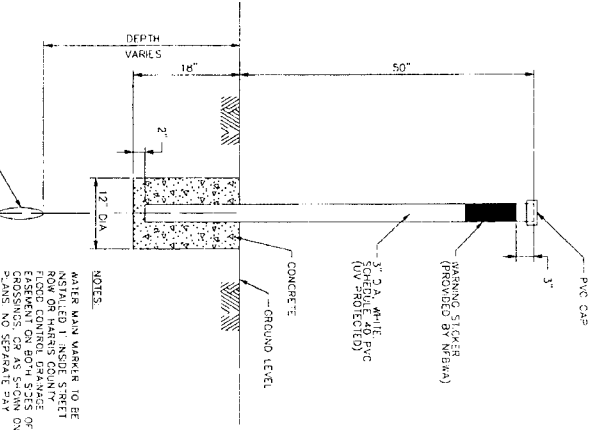
NO.	DATE	REVISION	APPROVED
1			
2			





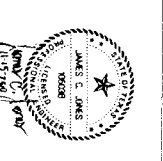
LOCATIONS OF PROJECT SIGNS	
ROAD	APPROX. STATION
HARLEM ROAD	94+75
GRAND MISSION BLVD.	66+55

1 PROJECT SIGN



2 PIPELINE MARKER

NOTES:
 WATER MAIN MARKER TO BE INSTALLED 1' INSIDE STREET FLOOR CONTROL DEGRADE EASEMENT ON BOTH SIDES OF CROSSINGS OR AS SHOWN UNLESS NOTED OTHERWISE.



J.C. JONES & CARTER, INC.
 1320 Dallas Dr., Suite 100, Houston, Texas 77061 (713) 771-5877

GRAND MISSION WUD, No. 1 CONNECTION
 PROJECT SIGN AND PIPELINE MARKER DETAILS



CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
 STREET & BRIDGE

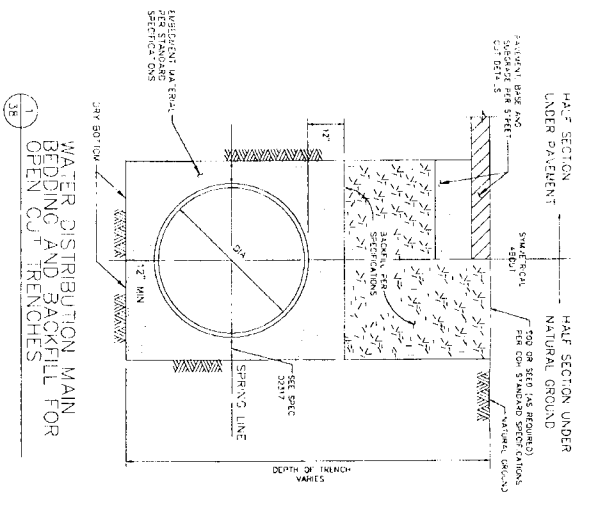
DATE	NO. OF SHEETS	TOTAL SHEETS
11/16/16	1	1
11/16/16	1	1
11/16/16	1	1
11/16/16	1	1

DATE	NO. OF SHEETS	TOTAL SHEETS
11/16/16	1	1
11/16/16	1	1
11/16/16	1	1
11/16/16	1	1

LCG NO. 05-0225

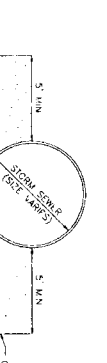
37 of 62





NOTES:

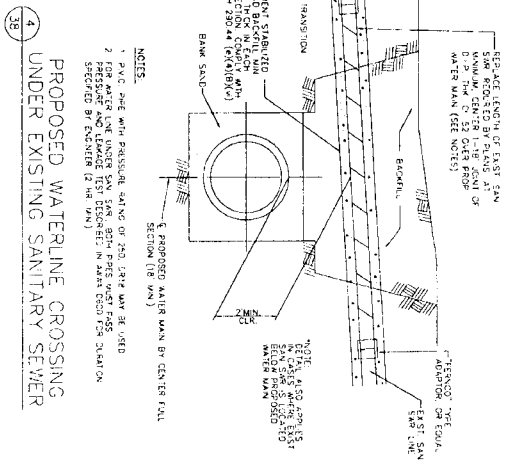
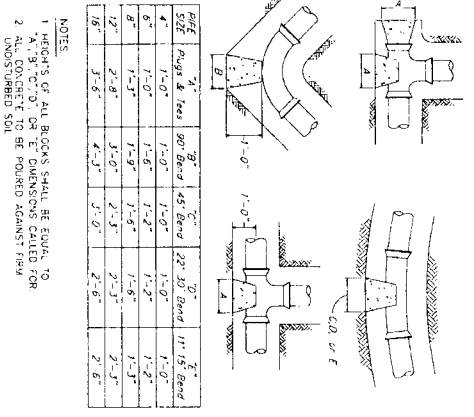
1. ALL TRENCHES SHALL BE BACKFILLED WITH 20% GRAVEL OR EQUIVALENT MATERIAL TO THE SPECIFICATIONS OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, SECTION 201.01.
2. THE TRENCHES SHALL BE BACKFILLED WITH 20% GRAVEL OR EQUIVALENT MATERIAL TO THE SPECIFICATIONS OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, SECTION 201.01, TO A MINIMUM DEPTH OF 18\"/>



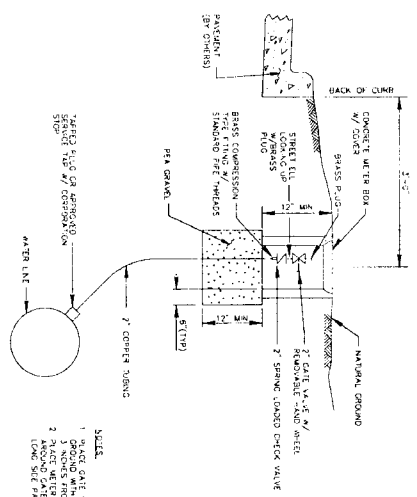
NOTE:

1. THE WATER LINE SHALL BE INSTALLED AT A MINIMUM DEPTH OF 4 FEET BELOW THE FINISHED GRADE OF THE STORM SEWER. THE WATER LINE SHALL BE INSTALLED AT A MINIMUM DEPTH OF 6 FEET BELOW THE FINISHED GRADE OF THE STORM SEWER.

3. THRUST BLOCK DETAILS



4. PROPOSED WATERLINE CROSSING UNDER EXISTING SANITARY SEWER



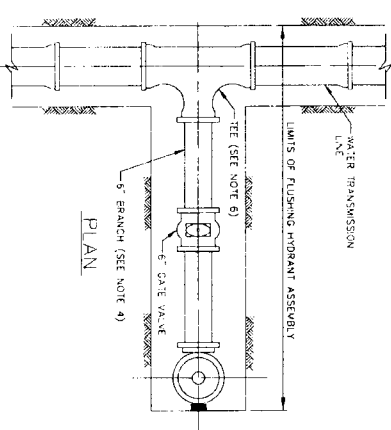
NOTE:

1. THE BLOW-OFF SHALL BE INSTALLED AT A MINIMUM DEPTH OF 4 FEET BELOW THE FINISHED GRADE OF THE STREET.
2. THE BLOW-OFF SHALL BE INSTALLED AT A MINIMUM DEPTH OF 6 FEET BELOW THE FINISHED GRADE OF THE STREET.

2. WATER LINE CROSSING UNDER STORM SEWER (OPEN CUT)

NOTES:

1. LOCATE FLUSHING HYDRANTS AS SHOWN ON PLANS. PROVIDE TEMPORARY MEANS TO PREVENT FLOW FROM HYDRANT AND PREVENT EROSION OF EXISTING GROUND DURING FLUSHING.
2. ON OPEN-DIE, HOOPWAYS OR OTHER CURBINGS, SET THE FLUSHING HYDRANTS WITHIN 3 FEET OF RIGHTS-OF-WAY LINES. EASEMENT LINE OR AS SHOWN ON PLANS.
3. THE FLUSHING HYDRANT STEAKS NOZZLE SHALL FACE THE STREET UNLESS DIRECTED OTHERWISE BY ENGINEER.
4. PROVIDE RESTRAINED JOINTS FOR FLUSHING HYDRANT ASSEMBLY.
5. PAINT FLUSHING HYDRANT BLACK. INSTALL OSK ON HYDRANT NOZZLE AND LABEL "NEMA" - FOR FLUSHING ONLY.
6. WATER TRANSMISSION LINE IS PVC OR D. PIPE WATER MAIN SHALL BE 18\"/>



6. STANDARD FLUSHING HYDRANT ASSEMBLY

STANDARD WATERLINE DETAILS

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

DATE: *11/11/11*
 DRAWN BY: *11/11/11*
 CHECKED BY: *11/11/11*

PROJECT: *11/11/11*

SCALE: DISTANCE SCALE
 HORIZ. NOT TO SCALE

SHEET NO. **38** OF **62**

DATE: **11/11/11**

J. JONES & CARTER, INC.
 PROFESSIONAL ENGINEERS

10000 Katy Freeway, Suite 100, Houston, Texas 77054 (713) 775-5555

GRAND MISSION MUD. NO. 1 CONNECTION

DATE: *11/11/11*

PROJECT: *11/11/11*

SCALE: DISTANCE SCALE
 HORIZ. NOT TO SCALE

SHEET NO. **38** OF **62**

DATE: **11/11/11**

NORTH FORT BEND

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

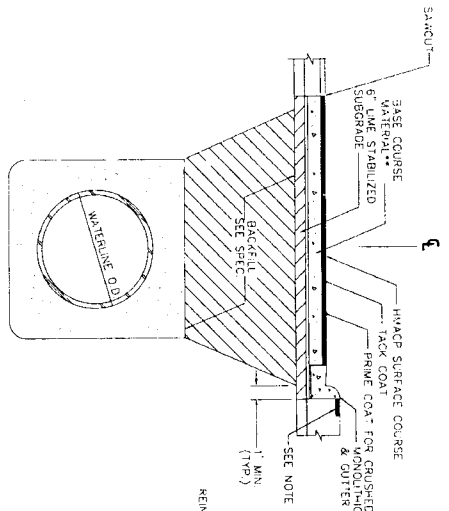
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 DRAWN BY: *11/11/11*
 CHECKED BY: *11/11/11*

PROJECT: *11/11/11*

SCALE: DISTANCE SCALE
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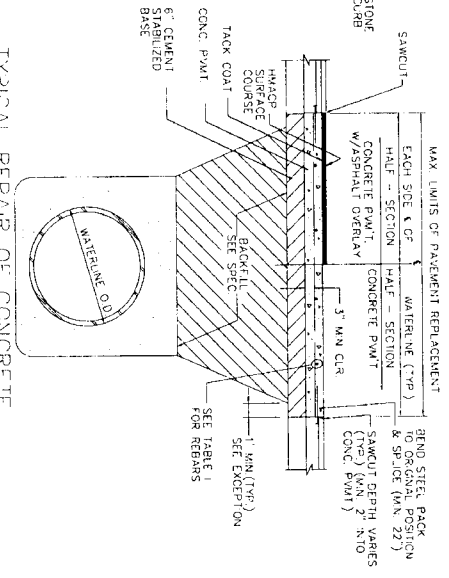
SHEET NO. **38** OF **62**

DATE: **11/11/11**



1 TYPICAL REPAIR OF FLEXIBLE BASE PAVEMENT

- NOTES:
- 1. CURB WHEN EXISTING ROADWAY DOES NOT HAVE FOR MATERIAL SHALL CONSIST OF THE FOLLOWING OPTIONS:
 1. 6" HOT MIX ASPHALTIC BASE COURSE (BLACK BASE)
 2. 2" FINE GRADED CONCRETE BASE COURSE
 3. 1" FINE GRADED CONCRETE BASE COURSE
 4. 1" FINE GRADED CONCRETE BASE COURSE WITH 1" FOOT STRIP OF SO2 GRASS TO PREVENT EROSION
 5. 1" FINE GRADED CONCRETE BASE COURSE WITH 1" FINE GRADED CONCRETE BASE COURSE
 6. 1" FINE GRADED CONCRETE BASE COURSE WITH 1" FINE GRADED CONCRETE BASE COURSE
 7. 1" FINE GRADED CONCRETE BASE COURSE WITH 1" FINE GRADED CONCRETE BASE COURSE
 8. 1" FINE GRADED CONCRETE BASE COURSE WITH 1" FINE GRADED CONCRETE BASE COURSE
 9. 1" FINE GRADED CONCRETE BASE COURSE WITH 1" FINE GRADED CONCRETE BASE COURSE
 10. 1" FINE GRADED CONCRETE BASE COURSE WITH 1" FINE GRADED CONCRETE BASE COURSE
 11. 1" FINE GRADED CONCRETE BASE COURSE WITH 1" FINE GRADED CONCRETE BASE COURSE
 12. 1" FINE GRADED CONCRETE BASE COURSE WITH 1" FINE GRADED CONCRETE BASE COURSE
 - 2. LATEL GRASS IS ESTABLISHED



2 TYPICAL REPAIR OF CONCRETE PAVEMENT OR CONCRETE PAVEMENT W/ ASPHALT OVERLAY

- NOTES:
- 1. MIN. THICKNESS OF CUR ROADWAY WIDTH LESS THAN OR EQUAL TO 27' F/2 OF CURB
 - 2. MIN. THICKNESS OF CUR ROADWAY WIDTH GREATER THAN 27' F/2 OF CURB
 - 3. MIN. THICKNESS OF HMA/C THOROUGHFARES
 - 4. MIN. THICKNESS OF HMA/C THOROUGHFARES
 - 5. MIN. THICKNESS OF HMA/C THOROUGHFARES
 - 6. MIN. THICKNESS OF HMA/C THOROUGHFARES
 - 7. MIN. THICKNESS OF HMA/C THOROUGHFARES
 - 8. MIN. THICKNESS OF HMA/C THOROUGHFARES
 - 9. MIN. THICKNESS OF HMA/C THOROUGHFARES
 - 10. MIN. THICKNESS OF HMA/C THOROUGHFARES
 - 11. MIN. THICKNESS OF HMA/C THOROUGHFARES
 - 12. MIN. THICKNESS OF HMA/C THOROUGHFARES

- GENERAL NOTES:
1. ALL EXCAVATION, SITE GRADING AND HYDROLOGICAL SODDING OR SOODING SHALL BE ACCORDANCE WITH THE LATEST EDITION OF THE NFBWA CONSTRUCTION SPECIFICATIONS.
 2. NEARBY EXISTING AND PAVEMENT (INCLUDING DRIVEWAYS) SHALL BE AS PER SPECIFICATION SECTIONS UNLESS OTHERWISE SHOWN ON BID FORM.
 3. NEW ASPHALTIC PAVEMENTS SHALL BE MIN. 2" HMA/C TOP W/BASE AND SO/SUBGRADE PER DETAILS AND SPECIFICATIONS.
 4. NEW CONCRETE PAVEMENTS TO BE SAME THICKNESS AS EXISTING UNLESS OTHERWISE DIRECTED BY THE NFBWA.
 5. STREETS OR DRIVEWAYS SHALL BE REPAIRED OR REPLACED USING HIGH EARLY STRENGTH CONCRETE AS INDICATED ON DRAWINGS ACCORDING TO PAVEMENT REPLACEMENT SCHEDULE WHERE PROVIDED, OR AS DIRECTED BY NFBWA.
 6. APPLICABLE TO EXISTING CONCRETE AREAS THAT REQUIRE REMOVAL AND REPLACEMENT CONCRETE DUE TO OPEN TRENCH (EXCLUDE THE MEDIAN ISLAND)
 7. ANY REMOVAL AND RE-ACCENT OF PAVEMENT NOT IDENTIFIED ON THE DRAWINGS SHALL BE COORDINATED WITH THE PROJECT MANAGER AND THE NFBWA.
 8. ALL PAVEMENT REPLACEMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ABEAL CABLE COUNTY CONSTRUCTION SPECIFICATIONS

TABLE 1 REINFORCING STEEL INFORMATION FOR VARIOUS PAVEMENT THICKNESSES (F) WITH 1" MIN. SPACING AND 18" MIN. LAP

F (IN)	REBAR SIZE & SPACING	MIN. LENGTH OF LAP (N)
6	#3 AT 11 IN. B) #4 AT 20 IN.	16 & 22
7	#4 AT 17 IN.	22
8	#4 AT 23 IN. B) #4 AT 15 IN.	22
9	#4 AT 20 IN. B) #4 AT 13 IN.	22
10	#4 AT 12 IN. B) #5 AT 18 IN.	22 & 27
11	A) #4 AT 10 IN. B) #5 AT 16 IN.	22 & 27
12	A) #4 AT 10 IN. B) #5 AT 15 IN.	22 & 27

DOVELS AT EXPANSION JOINTS FOR REINFORCED PAVEMENT CHANGE THE DOVELS SIZE & SPACING FROM 1" IN DIAMETER TO 1.5" LONG & SPACED 18" ON CENTER. (SEE TABLE 2 ABOVE)

TABLE 2 DOVEL SIZES & SPACINGS AT EXPANSION JOINTS FOR VARIOUS PAVEMENT THICKNESSES

PAVEMENT THICKNESS (IN)	DOVEL DIAMETER (IN)	DOVEL LENGTH (IN)	SPACING (IN)
6	3/4"	18	12
7	7/8"	18	12
8	1"	18	12
9	1-1/8"	20	12
10	1-1/4"	20	12
11	1-1/2"	20	12
12	1-3/4"	20	12

NO.	DATE	REVISION	APPROVED
1			
2			
3			

JC JONES & CARTER, INC.
 ENGINEERS-PLANNERS-SURVEYORS
 1000 Mission Blvd. Suite 1000, Houston, Texas 77016 (713) 778-1000

GRAND MISSION MILD No. 1 CONNECTION
 EXCAVATION, BEDDING, BACKFILL AND PAVEMENT REPAIR DETAILS



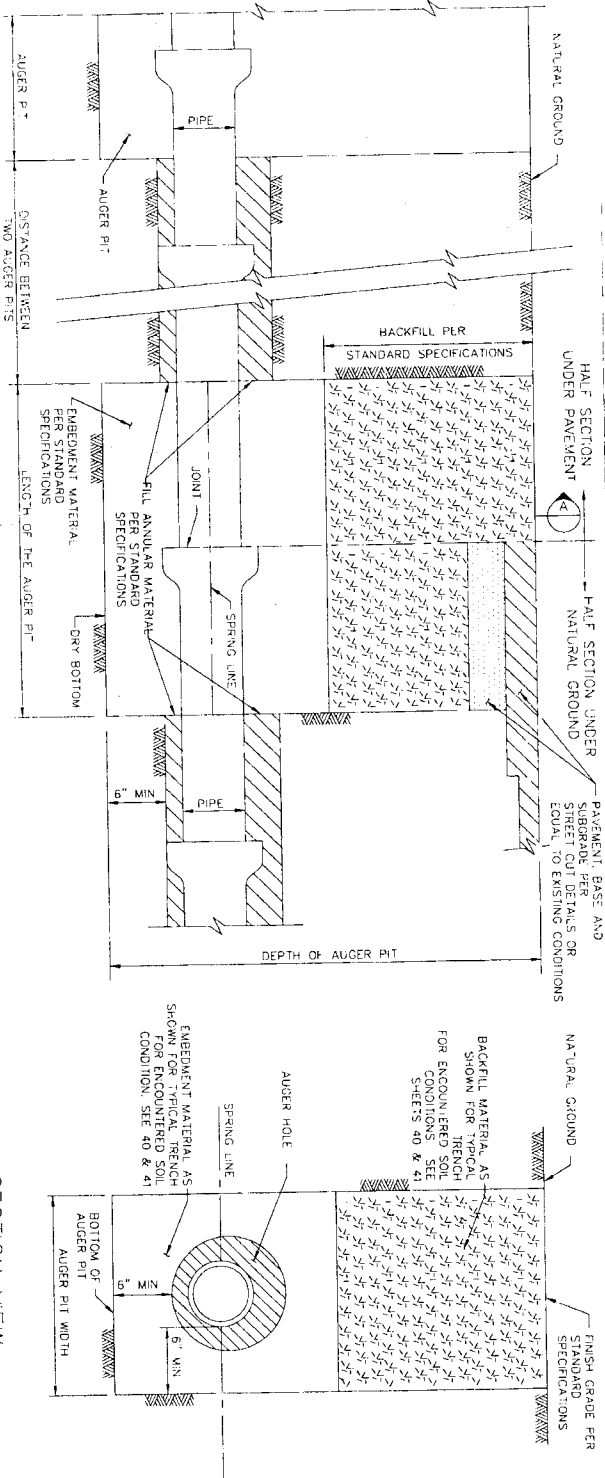
CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

DATE: 11/15/16
 DRAWN BY: J. JONES
 CHECKED BY: J. JONES
 IN CHARGE: J. JONES

DRAWING SCALE: NOT TO SCALE
 SHEET NO. 39 OF 62

MINIMUM CASING SIZES AND THICKNESS

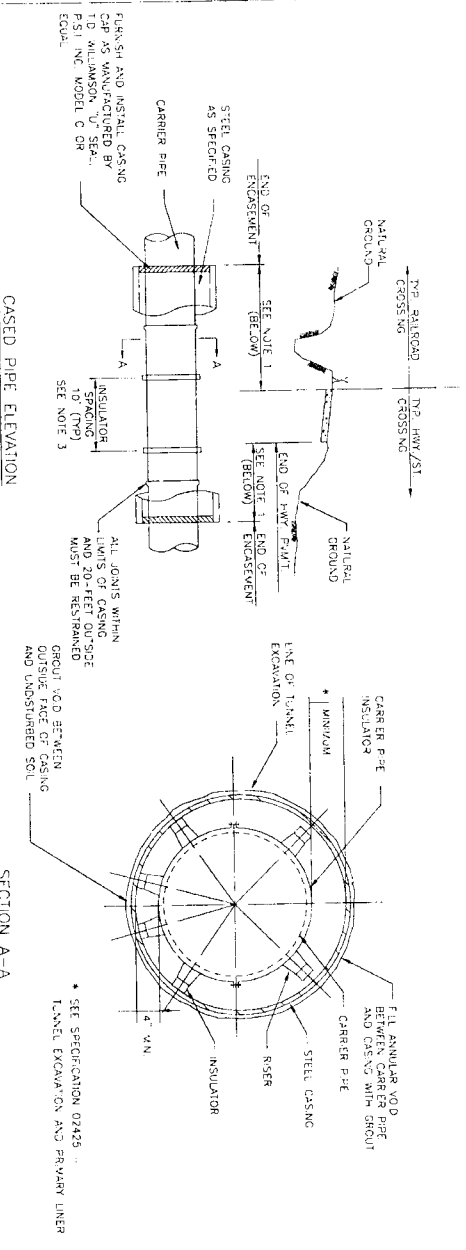
LOCATION	Casing Type	Minimum Diameter	Material	Min. Wall Thickness (in.)
UNDER TUNNEL ROAD CROSSING (SHEET 31 STA. 32+00 TO 32+40)	Steel Casing/Pressure Tunnel Liner	16	P-C/D/P	30/0.250
TUNNEL LANE HEAD LANE CROSSING (SHEET 16 STA. 32+08 TO 32+38)	Concrete/Pressure Tunnel Liner	16	P-C/D/P	30/0.250
GRAND MISSION BLVD CROSSING (SHEET 27 STA. 45+00 TO 45+75)	Welded Steel Casing	16	P-C/D/P	30/0.250



ELEVATION

SECTION VIEW

1 AUGER PIT & AUGER HOLE
40 X 15



CASED PIPE ELEVATION

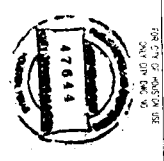
SECTION A-A

- NOTES:
1. LENGTH OF ENCASEMENT SHALL BE AS SHOWN ON THE PLAN & PROFILE DRAWINGS.
 2. LAY CASING PIPE IN OPEN CUT, TUNNEL OR BORE AS NOTED ON PLAN & PROFILE DRAWINGS.
 3. SEE SPECIFICATIONS FOR APPROPRIATE MODELS ACCORDING TO PIPE DIAMETER.

2 CASING DETAIL
40 (TOP WATER MAINS LESS THAN 16\"/>

LEG. NO. 09-0275

40 of 62



NOTE: CITY SQUADWORKERS VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES.

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

DATE: 11/10/10
BY: [Signature]
TITLE: [Signature]

FOR CITY OF HOUSTON USE ONLY (DO NOT SCALE)

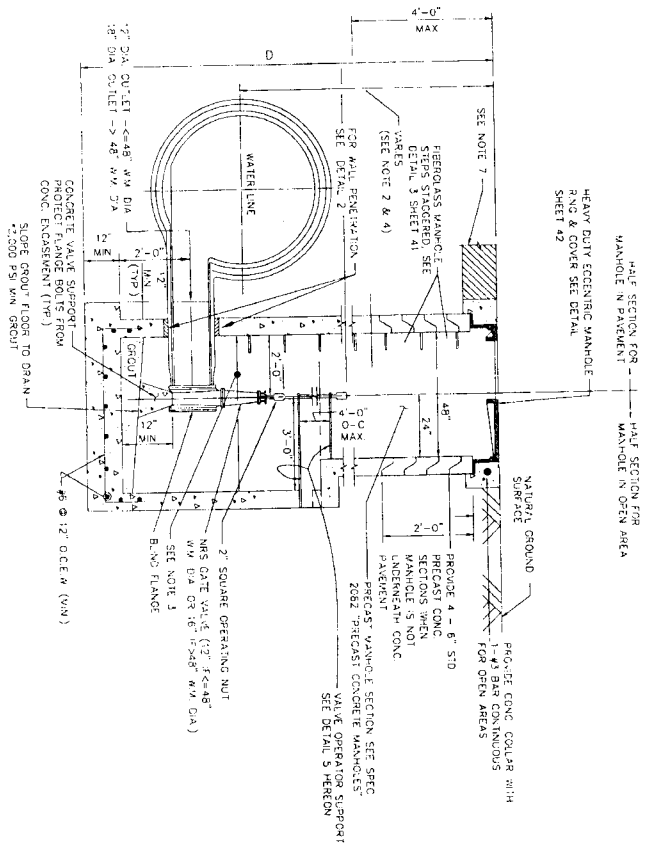


TRENCHLESS CONSTRUCTION DETAILS

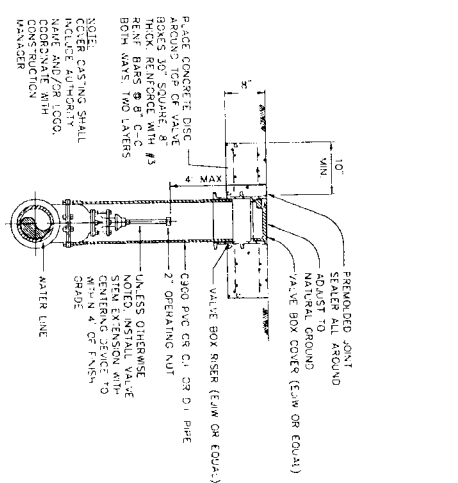
GRAND MISSION MUD No. 1 CONNECTION

J.C. JONES & CARTEER, INC.
11010 N. LOOP WEST, SUITE 1700
HOUSTON, TEXAS 77038
630-584-0000 • FAX: 630-584-0001 • WWW: JCI.COM

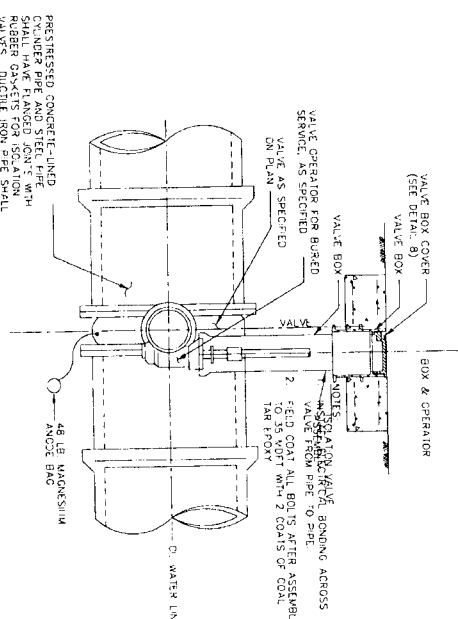
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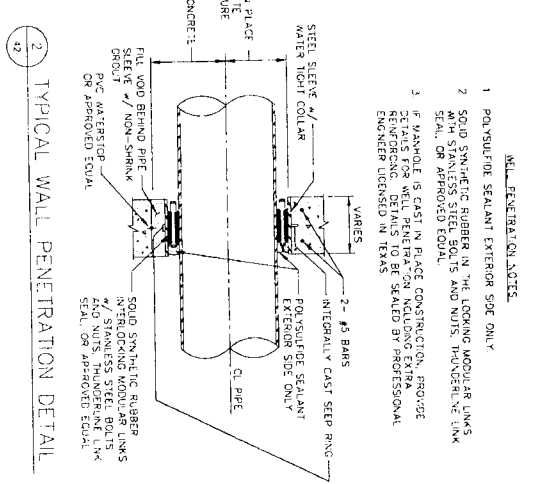
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 MODIFIED DRAINLINE CONNECTION DETAIL



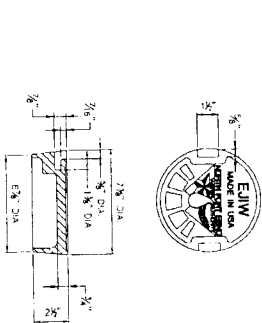
3A
 VALVE BOX DETAIL



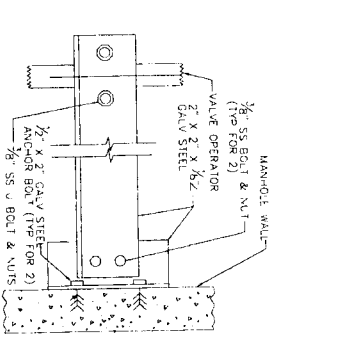
4
 ISOLATION VALVE ASSEMBLY
 (FOR WATER LINES 24-INCHES N DIAMETER AND SMALLER)



2
 TYPICAL WALL PENETRATION DETAIL



3B
 VALVE BOX COVER DETAIL
 (EAST JORDAN RGN WORKS (E/W) OR E/QUA.)



5
 VALVE OPERATOR SUPPORT

- NOTES
- PROVIDE FRAME OR APPROVED EQUAL FOR MANHOLE SEALS.
 - PROVIDE ALL APPROVED FIBERGLASS BASED TAP ENCASEMENT ALL BOLTS IN MANHOLES & VALVES.
 - FOR DRAINLINE MANHOLE WITH NUTS DEPTH > 8" SEE DETAIL SHEET 45.
 - FIELD COAT ALL FLANGE BOLTS, FLANGE COUPLING, FLANGE ADAPTER AND THROUGH THE ASSEMBLY AFTER ASSEMBLY WITH 1/2" VOLT W/ 2 COATS OF GOAL TANK ETCH.
 - SOLID SYNTHETIC RUBBER INTERLOCKING MODULAR LINKS WITH STAINLESS STEEL BOLTS AND NUTS. THUNDERLINE LINK SEAL OR APPROVED EQUAL.
 - PLACE MANHOLE ON NEW COMPACTED (35% SPD) BOTTOM.
 - FOR PAVEMENT REPAIR, SEE CITY OF HOUSTON STANDARDS.
 - IF MANHOLE IS CAST IN PLACE CONSTRUCTION, PROVIDE DETAILS FOR WALL PENETRATION INCLUDING EXTRA REINFORCING. DETAILS TO BE SEALED BY PROFESSIONAL ENGINEER LICENSED IN TEXAS.



JAMES C. JONES & ASSOCIATES
 1100 West 17th Street, Suite 1100
 Houston, Texas 77058
 (713) 779-5333

GRAND MISSION MUD, No. 1 CONNECTION
 VALVE AND SERVICE MANHOLE
 DETAILS

NO.	DATE	REVISION	APPROVED
1			
2			
3			

NORTH PORT BEND

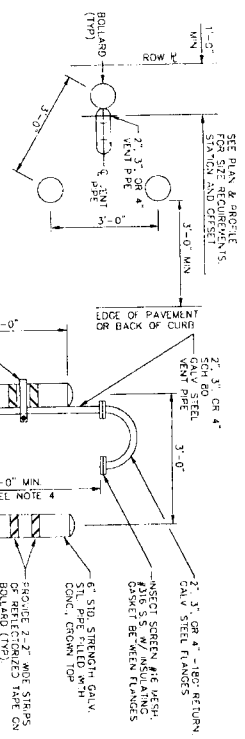
CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

DATE: 11/10/10
 DRAWN BY: J. Jones
 CHECKED BY: J. Jones
 SCALE: AS SHOWN

FILE NO.
 DRAWING SCALE
 H-087 - NOT TO SCALE

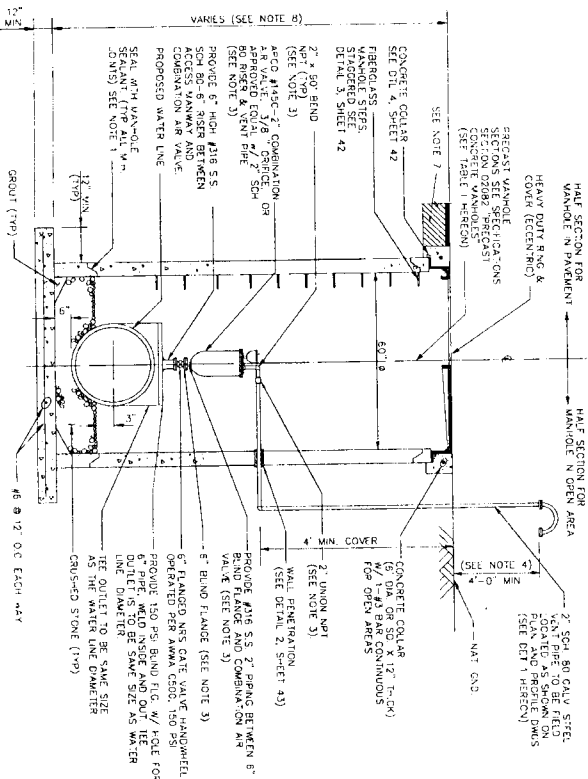
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 DATE: 04/11/2011

SHEET NO. 42 OF 62



- NOTES - BOLLARDS
1. PROVIDE 3 BOLLARDS IN TRIANGULAR PATTERN AROUND VENT PIPE AND AROUND PIPE.
 2. CLASS B CONCRETE WILL BE USED IN AND AROUND BOLLARDS.
 3. SEE DETAIL 2A FOR LOCATION OF ONE BOLLARD AROUND VENT PIPE.

21 VENT PIPE WITH 3 BOLLARDS DETAIL



22 BREAKAWAY VENT PIPE DETAIL

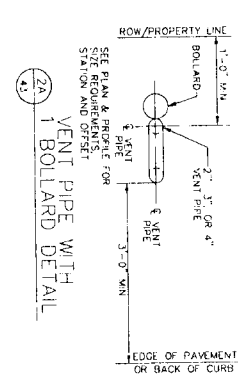
- NOTES:
1. PROVIDE RAIN-NEX OR APPROVED EQUAL BETWEEN PRECAST SEGMENTS OF THE MANHOLE.
 2. PROVIDE AN APPROVED PETROLEUM BASED TAPE ENCAPSULATING ALL BOLTS IN MANHOLES & VALVES.
 3. IF 4" AIR VALVE IS CALLED FOR ON THE PLAN AND PROFILE SHEETS, THE AIR VALVE SHALL BE 4" IN DIAMETER AND SHALL BE CONSTRUCTED OF THE SAME MATERIAL AND CLASS AS THE MANHOLE AND CLASSIFIED AS PER DETAIL 45.
 4. VERIFY THAT LOCATION OF SCREEN IS 1 FOOT ABOVE 100-YEAR FLOOD PLAN ELEVATION OR 4 FEET ABOVE NATURAL GROUND SWELCHER.

Water Main Diameter	Air Valve Size	Accessories	Min. Size
5.56"	2"	143C	60"
5.56"	3"	147C	60"
>5.56"	3"	15031C	60"
	4"	1504C	60"

*or approved equal

23 MODIFIED COMBINATION AIR VALVE ASSEMBLY IN SERVICE MANHOLE

FOR WATER LINES SMALLER THAN 30-INCHES IN DIAMETER



SEE PLAN & PROFILE FOR SIZE REQUIREMENTS. SEE PLAN & PROFILE FOR LOCATION OF BOLLARD.

23 MODIFIED COMBINATION AIR VALVE ASSEMBLY IN SERVICE MANHOLE

FOR WATER LINES SMALLER THAN 30-INCHES IN DIAMETER

11/5/11

43 OF 62



NOTE: CITY SIGNALS VALID FOR ONE YEAR UNLESS OTHERWISE NOTED.

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

DATE: 11/09/10
BY: [Signature]

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DRAWING SCALE: [Blank]
MISC: NOT TO SCALE

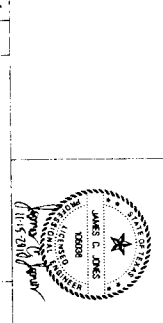
NORTH PORT BEND
ENGINEERS-PLANNERS-SURVEYORS

J. JONES & C. R. RILEY
ENGINEERS-PLANNERS-SURVEYORS
4000 Dallas St., Suite 100, Houston, Texas 77025 (713) 777-8337

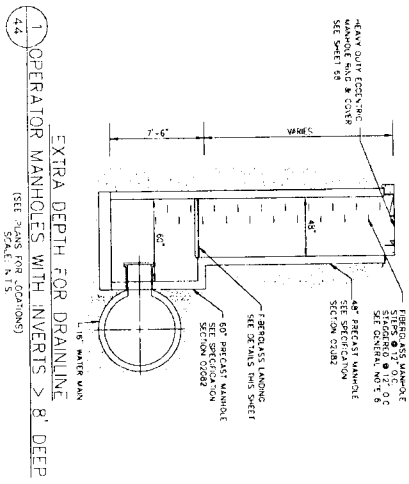
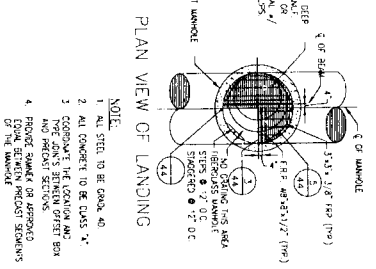
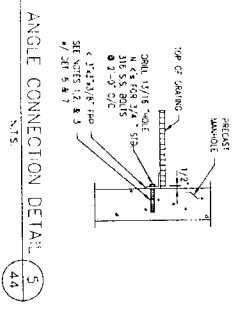
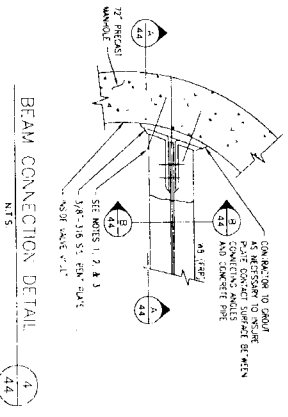
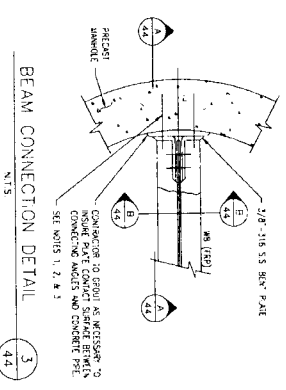
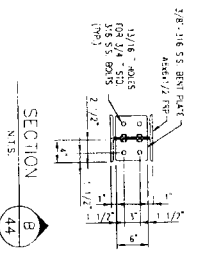
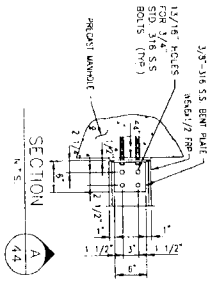
GRAND MISSION W.U.D. No. 1 CONNECTION

COMBINATION AIR VALVE DETAILS

NO.	DATE	REVISION
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NOTES:
 1. CONFORM TO S&U 1.1.4.4. PARTIAL
 PART 4. REIN. AND REINFORCED CONCRETE
 PART FOR 1/4" JAMMER ANCHOR BOLTS
 2. S&U 1.1.4.4. PARTIAL FOR ANCHOR BOLTS
 3. S&U 1.1.4.4. PARTIAL FOR ANCHOR BOLTS
 4. ANCHOR BOLTS SHALL BE 1/4" JAMMER
 FOLLOWED BY STEEL ANCHOR BOLT
 5. ANCHOR BOLTS SHALL BE 1/4" JAMMER
 FOLLOWED BY STEEL ANCHOR BOLT
 6. PROTECTION



1. OPERATOR MANHOLES WITH INVERTS > 8' DEEP
 (SEE PLANS FOR LOCATIONS)
 (SEE SHEET N.1.3)

NO.	DATE	REVISION	APPROVED
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2			
3			
4			

J.C. JONES & CARTER, INC.
 ENGINEERS-PLANNERS-SURVEYORS
 Total Station of Professional Engineer Registration No. P-439
 6250 Shepherd Dr., Suite 100, Houston, Texas 77061 (713) 771-3300



NOTE: CITY STAMPS ARE VALID FOR ONE YEAR ONLY AFTER DATE OF
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CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
 DATE: 11/15/10
 SHEET & BOOK: 44 OF 62
 SIGNATURE: [Signature]
 TITLE: [Title]
 SIGNATURE BOOK: [Book No.]

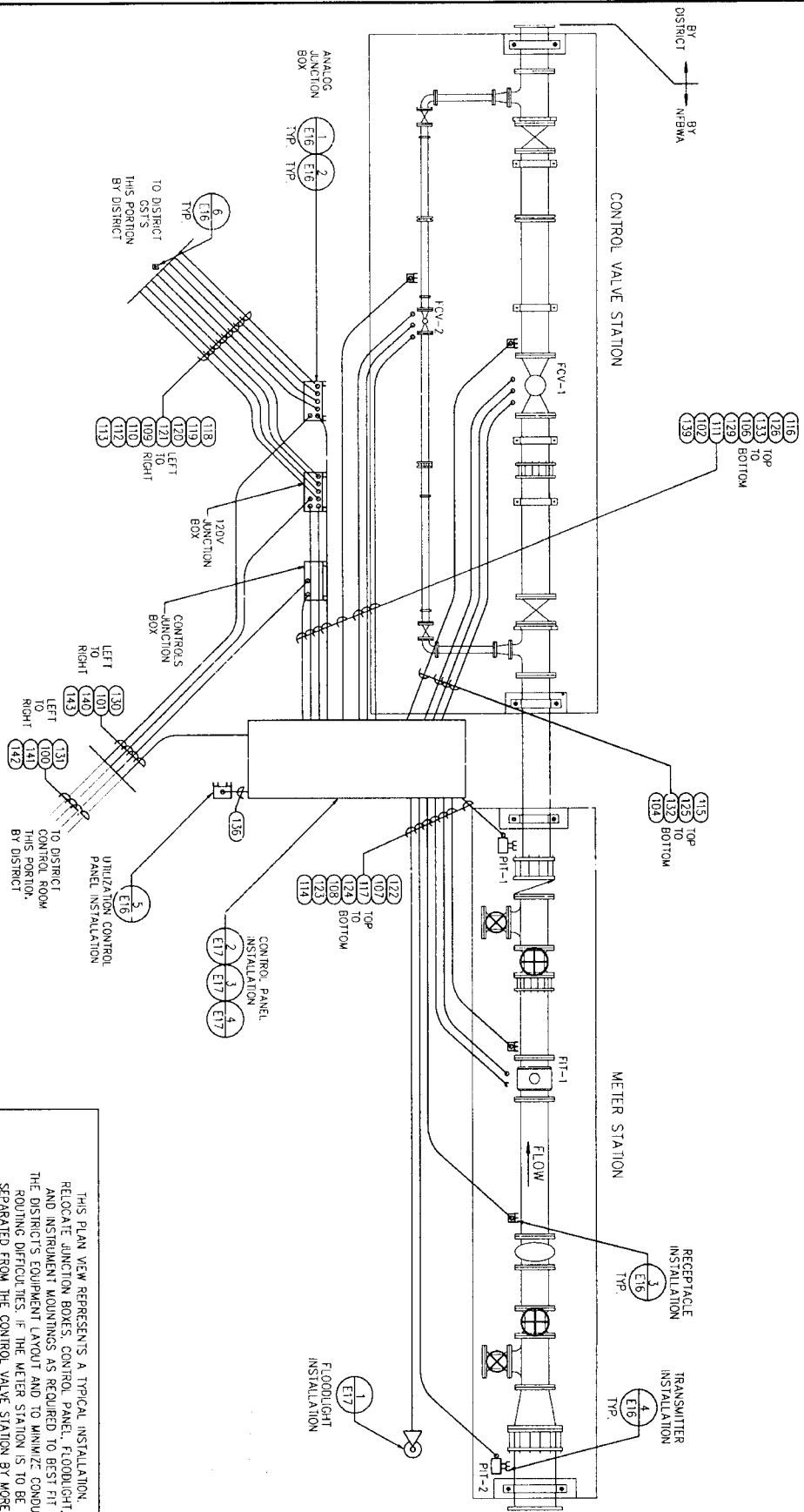
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 DRAWING SCALE
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 SHEET NO. 44 OF 62
 FOR CITY OF HOUSTON USE
 DATE: 11/15/10



LOG NO. 03-0225
 11/11/10

- LEGEND**
- ELECTRICAL DUCT BANK MARKER (SEE DET. SHIT E18)
 - GROUND CONDUCTOR
 - ELECTRICAL DUCT BANK (SEE DET. SHIT E17)
 - CAPPED ELECTRICAL CONDUIT
 - GROUND ROD
 - MEASUREMENT
 - FLOODLIGHT (SEE DET. SHIT E17)

TYPICAL ELECTRICAL SITE PLAN



THIS PLAN VIEW REPRESENTS A TYPICAL INSTALLATION. RELOCATE JUNCTION BOXES, CONTROL PANEL, FLOODLIGHT, AND INSTRUMENT MOUNTINGS AS REQUIRED TO BEST FIT THE DISTRICT'S EQUIPMENT LAYOUT AND TO MINIMIZE CONDUIT ROUTING DIFFICULTIES. IF THE METER STATION IS TO BE SEPARATED FROM THE CONTROL VALVE STATION BY MORE THAN 50', PROVIDE A SECOND FLOODLIGHT SO BOTH AREAS ARE ILLUMINATED.

- NOTES:**
1. ALL ASPECTS OF THIS INSTALLATION SHALL COMPLY WITH LOCAL AND NATIONAL CODES.
 2. CONDUITS SHALL NOT BE ROUTED ACROSS WALKWAYS OR PATHS OF TRAFFIC. ROUTE AROUND OR BENEATH EXISTING EQUIPMENT. DO NOT INSTALL CONDUITS OVER EXISTING CONDUITS, EQUIPMENT OR STRUCTURES.
 3. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY AND ALL PERMITS ASSOCIATED WITH THE WORK. THE COSTS OF THE PERMITS IF ANY, SHALL BE BORNE BY THE CONTRACTOR.
 4. PLAN VIEW CONDUIT ROUTING IS DIAGNOSTIC. PLAN VIEW DOES NOT INDICATE DEPTH.
 5. ALL EXTERIOR ABOVE GROUND CONDUIT IS TO BE RIGID GALVANNEZ STEEL.
 6. ALL JOINING HARDWARE, SUPPORTS, CLAMPS, STEEL, UNLESS SHOWN OTHERWISE.
 7. ALL VALVES FAIL CLOSE.
 8. GET COMPENSATE SIGNALS HERE ARE TWO CUSING DISTRICT COSTS AND TWO JUNE COSTS. MATCH SIGNAL SPLITTERS & COST SELECTOR SWITCH POLES TO DISTRICT'S ANTICIPATED ULTIMATE NUMBER OF COSTS. PREPARE FOR FUTURE TO THE FULLEST EXTENT POSSIBLE.
 9. ALL HEAT TRACE TAP IS TO BE 150 DEGREE MAX. TRANSMITTER INSTALLATION TO NOT BE ON INSULATION BLANKETS IN A FASHION TO ALLOW EASE OF OPERATION & CALIBRATION. LONG TERM MEASUREMENT DURABILITY WHERE PROTECTION WITHOUT OVERHEATING.

<p>CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING</p>	<p>Brymcon, Inc. Electrical Engineering 8200 Wynn Road, Houston, TX 77066 (409) 866-1286</p>	<p>PROJECT: GRAND MISSION MUD NO. 1 CONNECTION</p>
		<p>DATE: 1/5/11</p>
<p>REF NO: E1</p>	<p>SHEET NO: 46 OF 62</p>	<p>SCALE: AS SHOWN</p>

CONDUIT SCHEDULE

CONDUIT NO.	DESCRIPTION	CONDUIT SIZE	POWER CONDUCTORS					CONTROL CONDUCTORS					ROUTING	REMARKS
			NO.	SIZE	NEUTRAL	GROUND	NO.	SIZE	CMD	FROM	TO			
100	NEMA CONTROL PANEL POWER FEED	1 1/2	2	6	6	6	6	6	6	6	6	DISTRICT CONTROL ROOM	DUCTBANK MARKER	BY DISTRICT, COMPLETE W/CONDUIT AND WIRE PROVIDED BY DISTRICT, CONTROL RW TO JB
101	NEMA CONTROL PANEL POWER FEED	1 1/2	2	6	6	6	6	6	6	6	6	DISTRICT CONTROL ROOM	DUCTBANK MARKER	
102	NEMA CONTROL PANEL POWER FEED	1 1/2	2	6	6	6	6	6	6	6	6	DISTRICT CONTROL ROOM	DUCTBANK MARKER	
103	(NOT USED)													
104	FCV-1 HEAT TRACE POWER	1	1	12	12	12	12	12	12	12	12	NEMA CONTROL PANEL	FCV-1	
105	(NOT USED)													
106	FCV-2 HEAT TRACE POWER	1	1	12	12	12	12	12	12	12	12	NEMA CONTROL PANEL	FCV-2	
107	FLOWMETER HEAT TRACE POWER	1	1	12	12	12	12	12	12	12	12	NEMA CONTROL PANEL	F11-1 FLOWMETER	
108	FLOWMETER AREA UTILITY RECEIPT/ALC	1	1	12	12	12	12	12	12	12	12	NEMA CONTROL PANEL	FLOWMETER UTILITY REC.	
109	OST No. 1 HEAT TRACE POWER	1	1	12	12	12	12	12	12	12	12	120V JUNCTION BOX	DUCTBANK MARKER	CONDUIT & WIRE COMPLETED TO OST No. 1 BY DISTRICT
110	OST No. 2 HEAT TRACE POWER	1	1	12	12	12	12	12	12	12	12	120V JUNCTION BOX	DUCTBANK MARKER	CONDUIT & WIRE COMPLETED TO OST No. 2 BY DISTRICT
111	OST HEAT TRACE POWER	1	2	12	12	12	12	12	12	12	12	120V JUNCTION BOX	DUCTBANK MARKER	SPLIT CONDUIT, FUTURE USE
112	FURDER OST No. 3 HEAT TRACE POWER	1	1	PULL WIRE ONLY								120V JUNCTION BOX	DUCTBANK MARKER	SPLIT CONDUIT, FUTURE USE
113	FURDER OST No. 4 HEAT TRACE POWER	1	1	PULL WIRE ONLY								120V JUNCTION BOX	DUCTBANK MARKER	SPLIT CONDUIT, FUTURE USE
114	FLOODLIGHT	1	2	12	12	12	12	12	12	12	12	NEMA CONTROL PANEL	FLOODLIGHT	ADD CONDUIT & SECOND FLOODLIGHT IF REQ'D. SEE E1
115	SPARE TO FCV-1	1	1									NEMA CONTROL PANEL	FCV-1	
116	SPARE TO FCV-2	1	1									NEMA CONTROL PANEL	FCV-2	
117	SPARE TO FLOWMETER	1	1	12	12	12	12	12	12	12	12	NEMA CONTROL PANEL	F11-1 FLOWMETER	
118	UT-1-OST No. 1 SIGNAL TO NEMA CONTROL PANEL	1	1									ANALOG JUNCTION BOX	DUCTBANK MARKER	CONDUIT & WIRE COMPLETED TO OST No. 1 BY DISTRICT
119	UT-2-OST No. 2 SIGNAL TO NEMA CONTROL PANEL	1	1									ANALOG JUNCTION BOX	DUCTBANK MARKER	CONDUIT & WIRE COMPLETED TO OST No. 2 BY DISTRICT
120	FURDER UT-3-OST No. 3 SIGNAL TO NEMA CONTROL PANEL	1	1									ANALOG JUNCTION BOX	DUCTBANK MARKER	SPLIT CONDUIT, FUTURE USE
121	FURDER UT-4-OST No. 4 SIGNAL TO NEMA CONTROL PANEL	1	1									ANALOG JUNCTION BOX	DUCTBANK MARKER	SPLIT CONDUIT, FUTURE USE
122	PI-1-DOWNSTEAM PRESS SWITCHER SIGNAL TO CONT PNL	1	1									NEMA CONTROL PANEL	PI-1	
123	PI-2-DOWNSTEAM PRESS SWITCHER SIGNAL TO CONT PNL	1	1									NEMA CONTROL PANEL	PI-2	
124	PI-1-FLOWMETER SIGNAL TO NEMA CONTROL PANEL	1	1									NEMA CONTROL PANEL	FCV-1	
125	FCV-1 TO CONT PNL	1	1									NEMA CONTROL PANEL	FCV-1	
126	FCV-2 TO CONT PNL	1	2									NEMA CONTROL PANEL	FCV-2	
127	(NOT USED)													
128	(NOT USED)													
129	ANALOG SIGNALS TO ANALOG JUNCTION BOX	2	5									ANALOG JUNCTION BOX	DUCTBANK MARKER	FOR FUTURE CONNECTION TO CONDUIT #13
130	ANALOG SIGNALS TO ANALOG JUNCTION BOX	1	1									ANALOG JUNCTION BOX	DUCTBANK MARKER	FOR FUTURE CONNECTION TO CONDUIT #13
131	ANALOG SIGNALS TO ANALOG JUNCTION BOX	2	6									ANALOG JUNCTION BOX	DUCTBANK MARKER	BY DISTRICT, WIRE LENGTH CONTROL ROOM TO JB
132	FCV-1 OPEN AND CLOSED LIMIT SWITCH SIGNALS	1	4									NEMA CONTROL PANEL	FCV-1	
133	FCV-2 OPEN AND CLOSED LIMIT SWITCH SIGNALS	1	4									NEMA CONTROL PANEL	FCV-2	
134	(NOT USED)													
135	(NOT USED)													
136	NEMA WATER UTILIZATION PANEL	1	9									NEMA CONTROL PANEL	NEMA WATER UTIL. PANEL	
137	(NOT USED)													
138	(NOT USED)													
139	NEMA CONTROLS TO DISTRICT	1	8									NEMA CONTROL PANEL	CONTROL'S JUNCTION BOX	
140	NEMA CONTROLS TO DISTRICT	1	1									CONTROL'S JUNCTION BOX	DUCTBANK MARKER	FOR FUTURE CONNECTION TO CONDUIT #14
141	NEMA CONTROLS TO DISTRICT	1	8									CONTROL'S JUNCTION BOX	DUCTBANK MARKER	BY DISTRICT, WIRE LENGTH CONTROL ROOM TO JB
142	TELEPHONE LINE (DISCONNECTED) TO NEMA CONTROL PANEL	1	1									TELEPHONE LINE	DUCTBANK MARKER	BY DISTRICT, COMPLETE W/CONDUIT #14
143	TELEPHONE LINE (DISCONNECTED) TO NEMA CONTROL PANEL	1	1									TELEPHONE LINE	DUCTBANK MARKER	

REF. NO. **E2**
 SHEET **47** OF **62**
 DATE **11/11/11**
 DRAWING SCALE
 PROJECT NO. **47011**

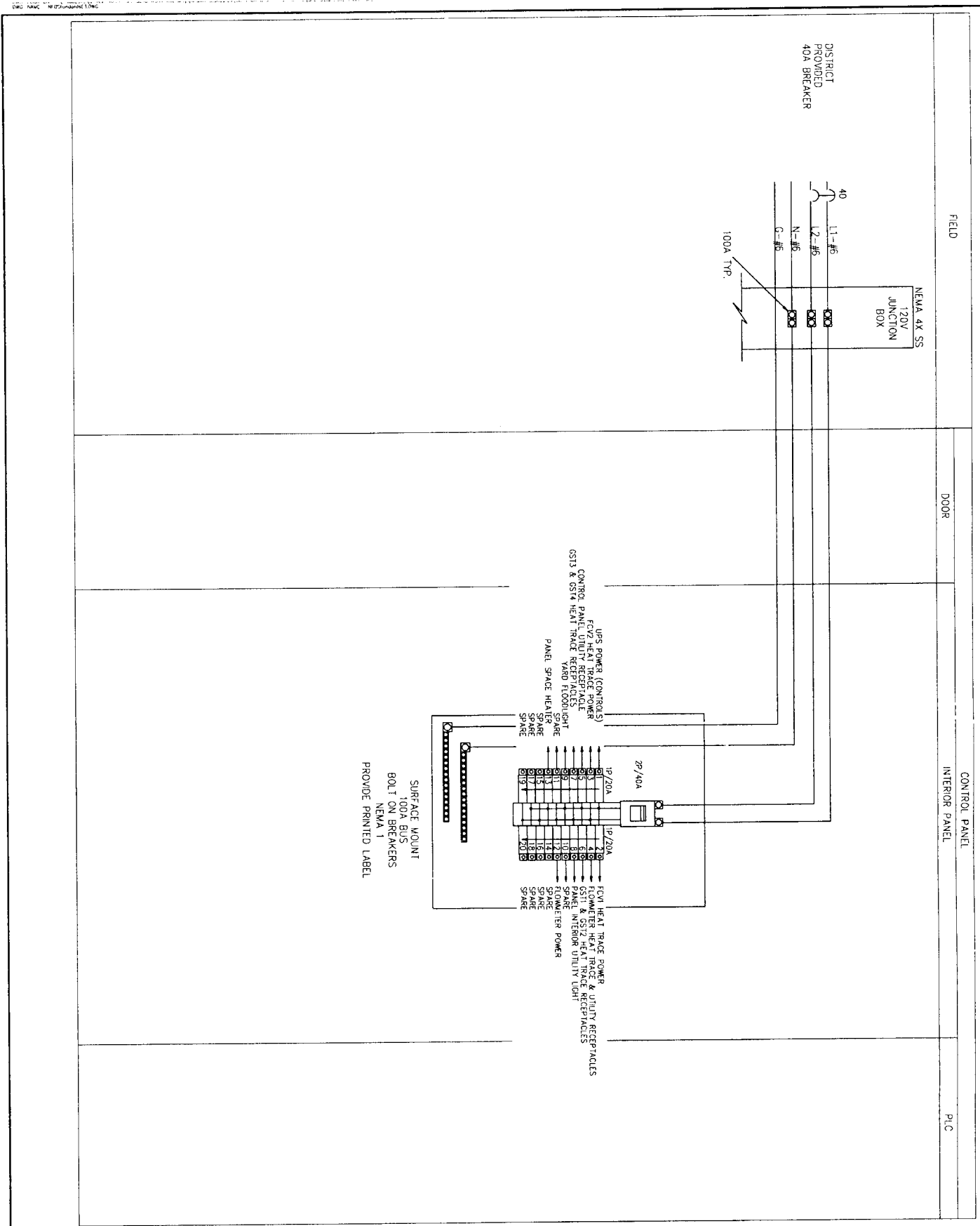
CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
 PROJECT NO. **47011**
 SHEET NO. **47** OF **62**
 DATE **11/11/11**



ELECTRICAL CONDUIT SCHEDULE

GRAND MISSION MUD No. 1

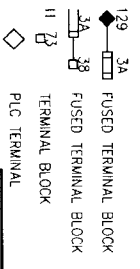
Brymcon, Inc.
 Electrical Engineering
 8300 White Road
 Houston, TX 77064
 (409) 966-7096



NOTES:

1. ALL VALVES FAIL CLOSE
2. GSI COMPONENTS SHOWN HERE ARE TWO EXISTING DISTRICT GSI'S AND TWO FUTURE GSI'S. MATCH SIGNAL SPLITTERS & GSI SELECTOR SWITCH POLES TO DISTRICT'S ANTICIPATED ULTIMATE NUMBER OF GSI'S. PREPARE FOR FUTURE TO THE FULLEST EXTENT POSSIBLE.
3. ALL HEAT TRACE TAPE IS TO BE 150 DEGREE MAX MAINTAIN. CONTRACTOR TO PROVIDE VALVE & TRANSMITTER INSULATION, HOT BOX, OR INSULATION BLANKETS IN A FASHION TO ALLOW EASE OF OPERATION & CALIBRATION. LONG TERM WEATHERPROOF DURABILITY W/ FREEZE PROTECTION WITHOUT OVERHEATING.

LEGEND



1/5/11
E3
SHEET NO. 48 OF 62



Brymcon, Inc.
 Electrical Engineering
 13911 West Loop South, Suite 100
 Houston, TX 77040
 Phone: (281) 499-7986
 Fax: (281) 499-7987

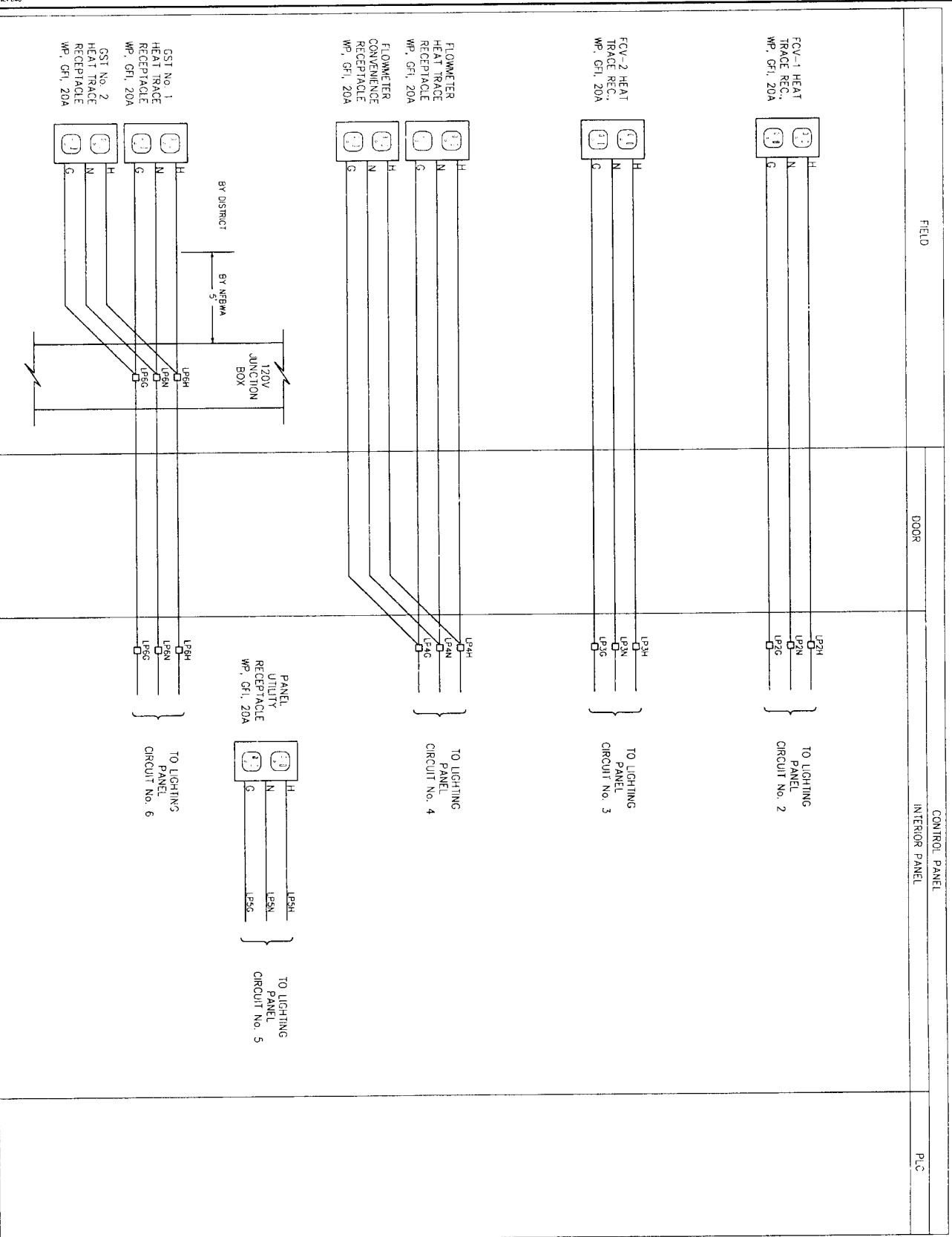
SEAL: H. J. BRYMCON, REGISTRAR, PROFESSIONAL ENGINEER, NO. 48473, STATE OF TEXAS, EXPIRES 12/31/10

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
 PROJECT: GRAND MISSION WUD No. 1
 SHEET: CONTROL DIAGRAM SHEET 1

NORTH PORT BAND
 NORTH PORT BAND
 17011

DESIGNED SCALE: AS SHOWN
 DATE: 1/5/11
 DRAWN: [Signature]
 CHECKED: [Signature]
 APPROVED: [Signature]
 TITLE: PROJECT ENGINEER

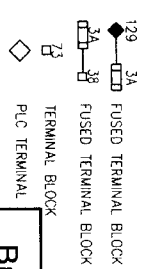
FILE NO: 17011
 FOR CITY OF HOUSTON USE ONLY



NOTES:

1. ALL VALVES FAIL CLOSE
2. GST COMPONENTS SHOWN HERE ARE TWO EXISTING DISTRICT GST'S AND TWO FUTURE GST'S MATCH SIGNAL SPLITTERS & GST SELECTOR SWITCH POLES TO DISTRICTS ANTICIPATED ULTIMATE NUMBER OF GST'S. PREPARE FOR FUTURE TO THE FULLEST EXTENT POSSIBLE.
3. ALL HEAT TRACE TAPE IS TO BE 150 DEGREE MAX MAINTAIN CONTRACTOR TO PROVIDE VALVE & TRANSMITTER INSULATION, HOT BOX, OR INSULATION BLANKETS IN A FASHION TO ALLOW EASE OF OPERATION & CALIBRATION. LONG TERM WEATHERROOM DURABILITY w/ FREEZE PROTECTION WITHOUT OVERHEATING.

LEGEND



Brymcon, Inc.
 Electrical Engineering
 TBEPE Registration No. F-3175
 8320 White Road Beaumont, TX 77706 (409) 866-7966

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

NORTH PORT BAND

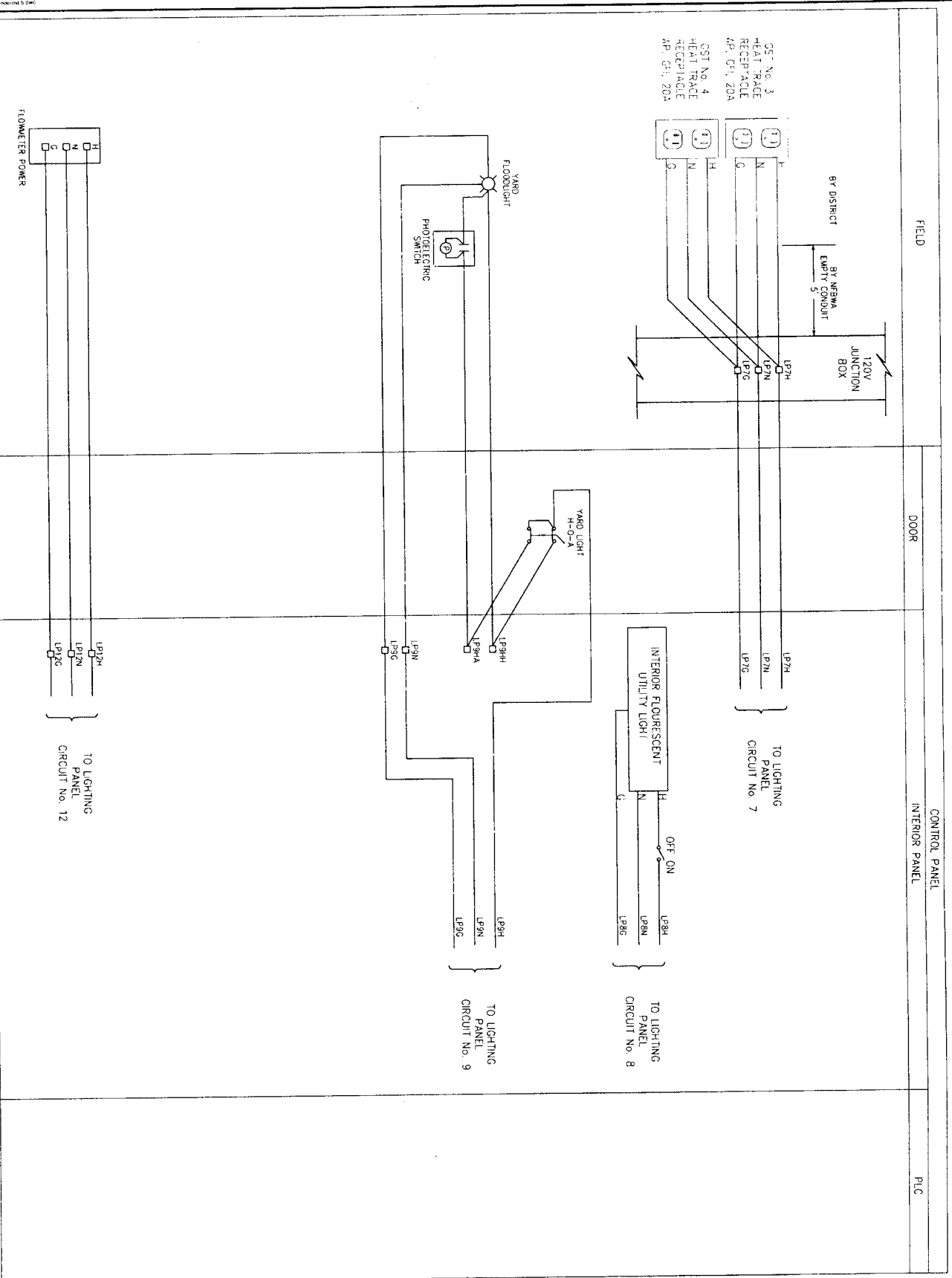
GRAND MISSION MUD No. 1
 CONNECTION

CONTROL DIAGRAM
 SHEET 2

DATE: 11/11/11
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 TITLE: [Signature]

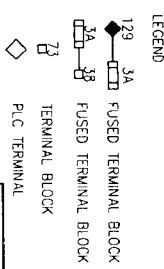
FILE NO: [Blank]
 DRAWING SCALE: [Blank]
 SHEET NO: 49 of 62

REF NO: E4



NOTES:

1. ALL VALVES FAIL CLOSE
2. GST COMPONENTS SHOWN HERE ARE TWO EXISTING DISTRICT GST'S AND TWO FUTURE GST'S. MATCH SIGNAL SPLITTERS & GST SELECTOR SWITCH POLES TO DISTRICT'S ANTICIPATED ULTIMATE NUMBER OF GST'S. PREPARE FOR FUTURE TO THE FULLEST EXTENT POSSIBLE.
3. ALL HEAT TRACE TAPE IS TO BE 150 DEGREE MAX MAINTAIN. CONTRACTOR TO PROVIDE VALVE & TRANSMITTER INSULATION, HOT BOX, OR INSULATION BLANKETS IN A FASHION TO ALLOW EASE OF OPERATION & CALIBRATION, LONG TERM WEATHERPROOF DURABILITY w/ FREEZE PROTECTION WITHOUT OVERHEATING.



Brymcon, Inc.
 Electrical Engineering
 8200 Wink Road
 Beaumont, TX 77705 (409) 866-7996

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
 11594
 11/19/14
 11/19/14
 11/19/14

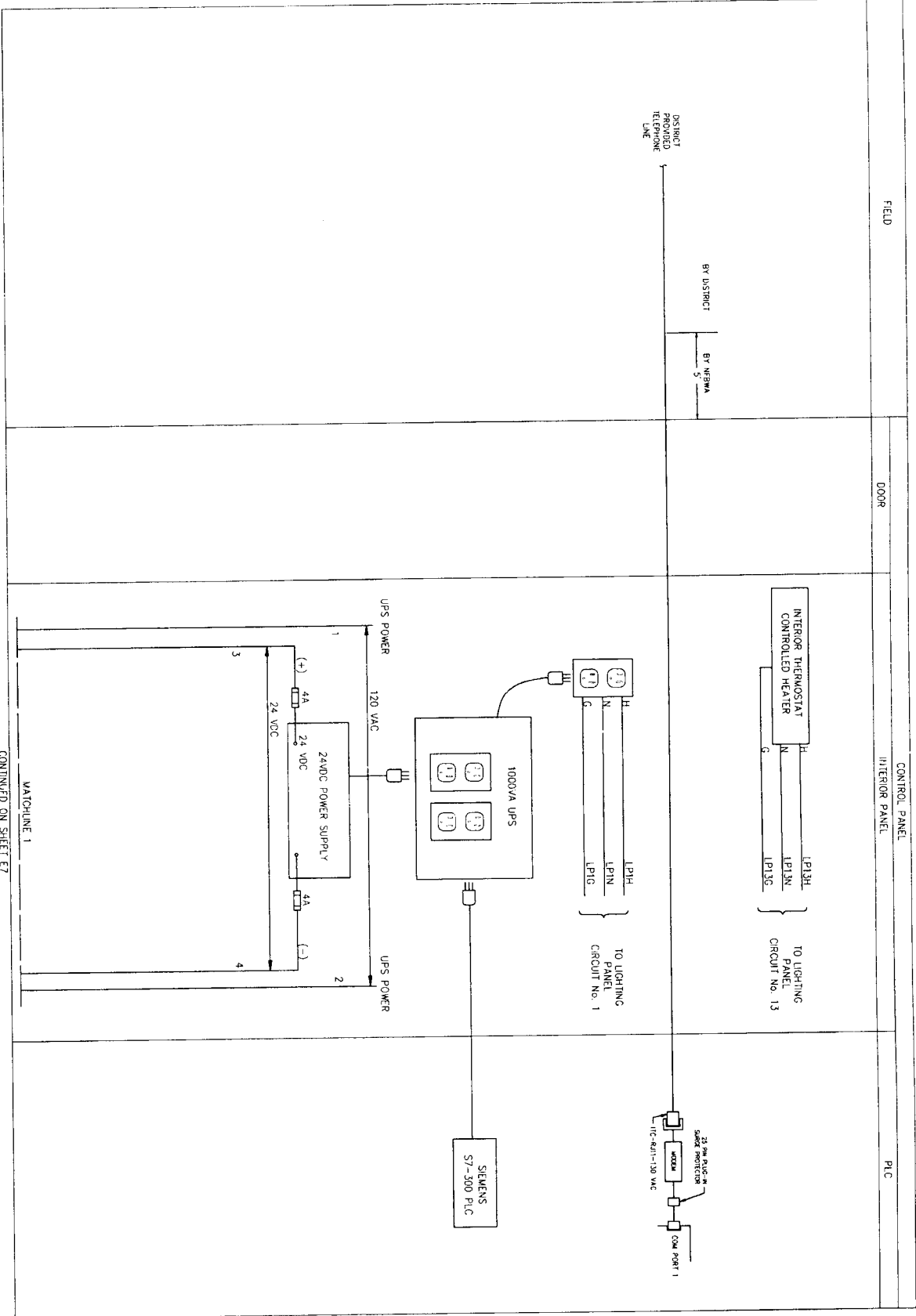
NORTH PORT SAND

CONTROL DIAGRAM
 SHEET 3

GRAND MISSION HUID No. 1
 CONNECTION

DATE: 11/19/14
 DRAWN: [Signature]
 CHECKED: [Signature]
 TITLE: CONTROL DIAGRAM
 SHEET NO. 50 OF 62

REF. NO. E5

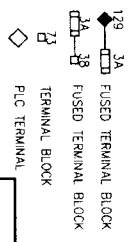


CONTINUED ON SHEET E7

NOTES:

1. ALL VALVES FAIL CLOSE
2. CST COMPONENTS SHOWN HERE ARE TWO EXISTING DISTRICT CST'S AND TWO FUTURE DISTRICT MATCH SIGNAL SPLITTERS & CST SELECTOR SWITCH POLES TO DISTRICT'S ANTICIPATED ULTIMATE NUMBER OF CST'S. PREMISE FOR FUTURE TO THE FULLEST EXTENT POSSIBLE.
3. ALL HEAT TRACE TAPE IS TO BE 150 DEGREE MAX MAINTAIN CONTRACTOR TO PROVIDE VALVE & TRANSMITTER INSULATION, HOT BOX, OR INSULATION BLANKETS IN A FASHION TO ALLOW EASE OF OPERATION & CALIBRATION, LONG TERM WEATHER-PROOF DURABILITY W/ FREEZE PROTECTION WITHOUT OVERHEATING.

LEGEND



REF. NO.	SHEET	NO.
E6	51	62

Brymcon, Inc.
 Electrical Engineering
 1330 White Road
 Baytown, TX 77528
 (409) 866-7098

SEAL OF THE CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
 TRADING AND INSPECTION

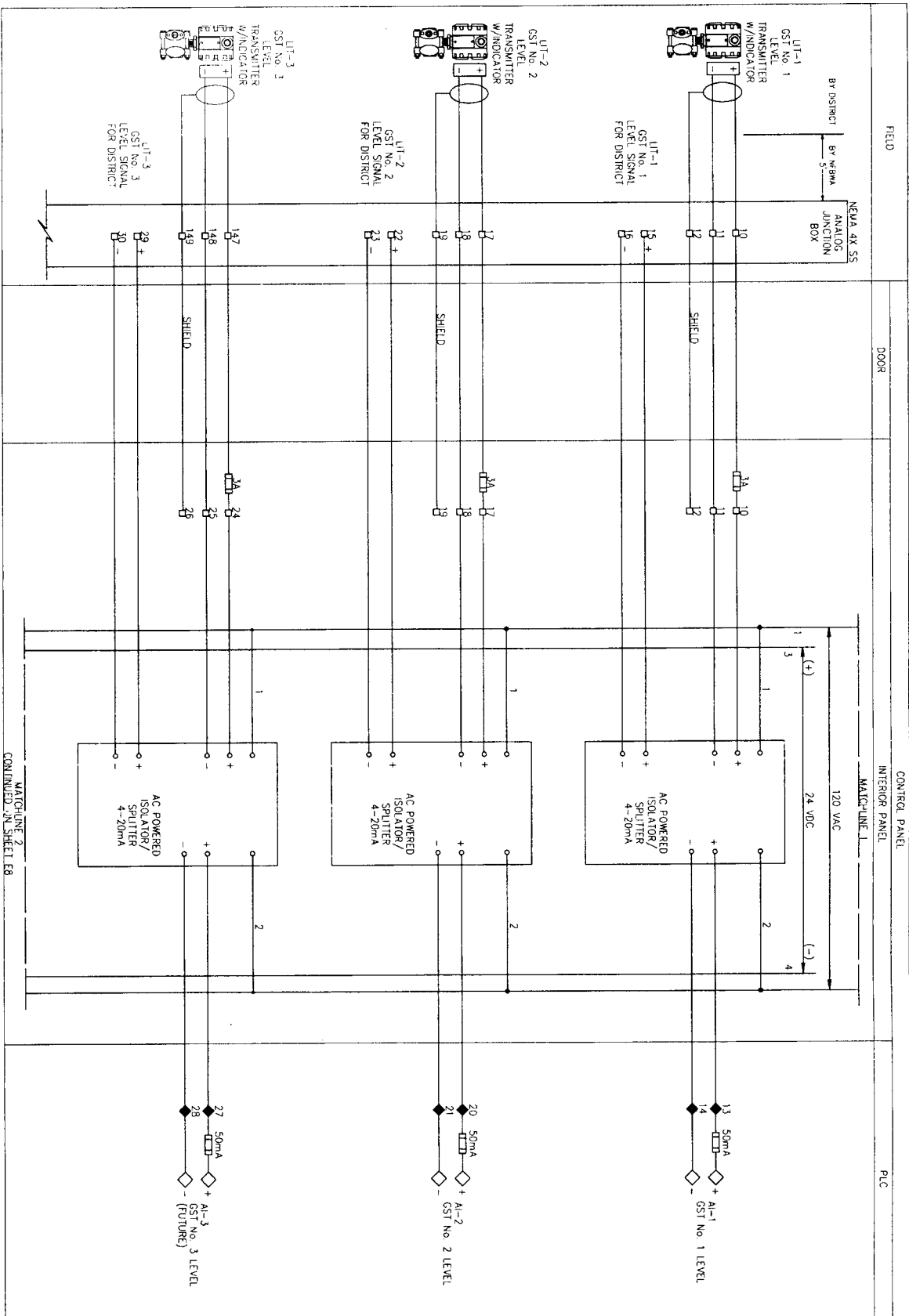
GRAND MISSION WUD No. 1
 CONNECTION

CONTROL DIAGRAM
 SHEET 4

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
 TRADING AND INSPECTION

DATE: 11/19/11
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 TITLE NO. 158 (17) OF 40379 (4) (2007)

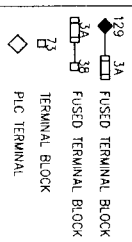







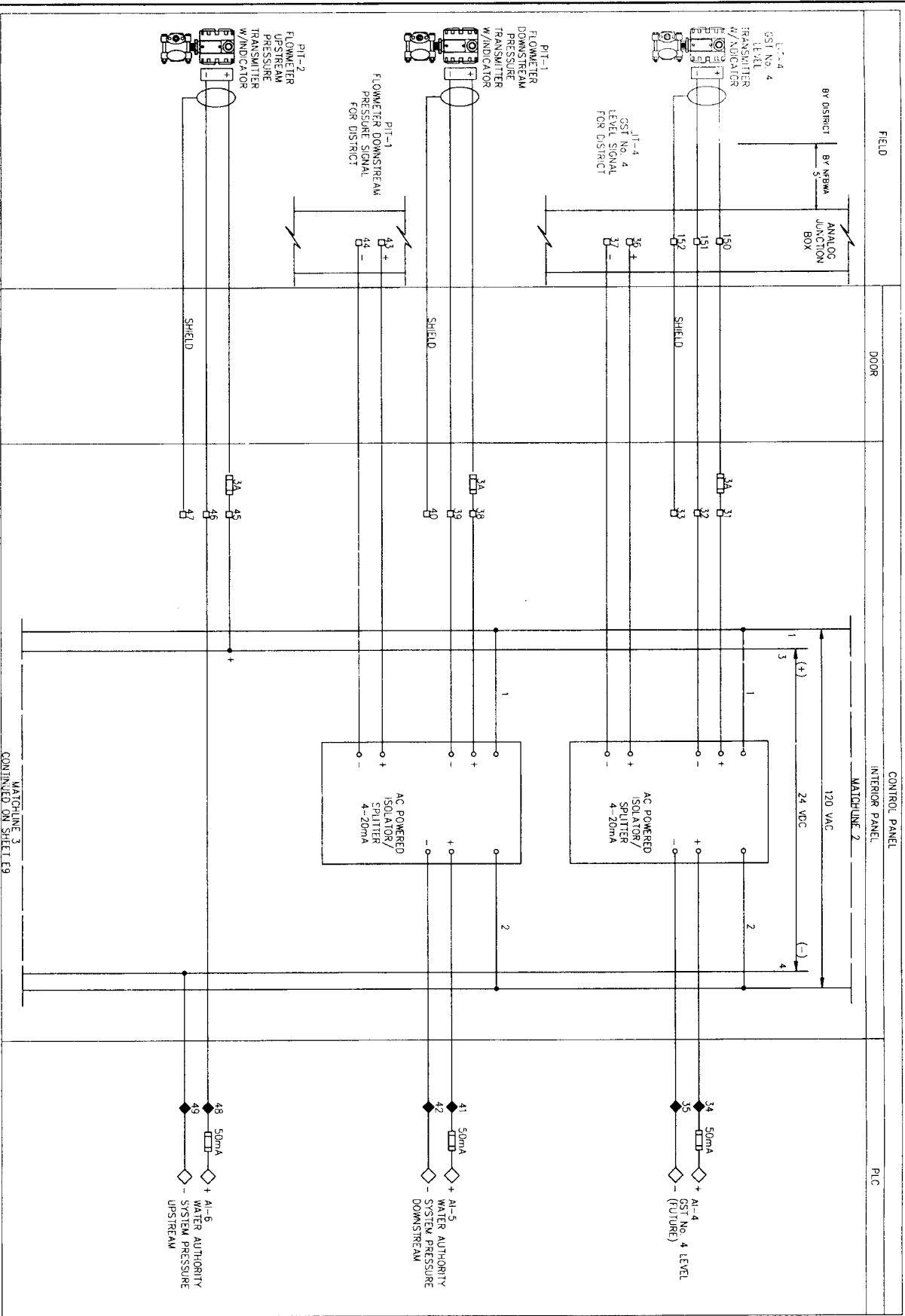
NOTES:

- 1. ALL VALVES FAIL CLOSE
- 2. GST COMPONENTS SHOWN HERE ARE TWO EXISTING DISTRICT GST'S AND TWO FUTURE GST'S. MATCH SIGNAL SPLITTERS & GST SELECTOR SWITCH POLES TO DISTRICT'S ANCHOR PILES UNDER EXISTING GST'S. FUTURE FUTURE BE TO THE FULLEST EXTENT POSSIBLE.
- 3. ALL HEAT TRACE TAPE IS TO BE ISO DEGREE MAX MAINTAIN CONTRACTOR TO PROVIDE VALVE & TRANSMITTER INSULATION BOX FOR INSULATION BLOCKS IN A FASHION TO ALLOW EASE OF OPERATION & CALIBRATION. LINC THERM W/ FREEZE PROOF DURABILITY W/ FREEZE PROTECTION WITHOUT OVERHEATING.

LEGEND



 Brymcon, Inc. Electrical Engineering 1700 West Road Beaumont, TX 77705 (409) 860-7096		 LARRY KENNETH LICENSE NO. 4473 REGISTERED ELECTRICAL ENGINEER STATE OF TEXAS
 NORTH FORT BEND		CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING DIVISION OF TRANSPORTATION
CONTROL DIAGRAM SHEET 5		
GRAND MISSION MUD No. 1 CONNECTION		
DRAWING SCALE: 1/8" = 1'-0" SHEET NO: 52 of 62 DATE: 06/29/2011		

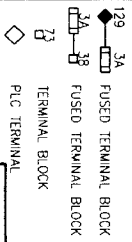


MATCHLINE 3
CONTINUED ON SHEET E9

NOTES:

1. ALL VALVES FAIL CLOSE
2. CST COMPONENTS SHOWN HERE ARE TWO EXISTING DISTRICT CST'S AND TWO FUTURE CST'S. MATCH SIGNAL SPLITTERS & CST SELECTOR SWITCH POLES TO DISTRICTS ANTICIPATED ULTIMATE NUMBER OF CST'S. PREWIRE FOR FUTURE TO THE FULLEST EXTENT POSSIBLE.
3. ALL HEAT TRACE TAPE IS TO BE 150 DEGREE MAX MAINTAIN, CONTRACTOR TO PROVIDE VALVE & TRANSMITTER INSULATION, HOT BOX, OR INSULATION BLANKETS IN A FASHION TO ALLOW EASE OF OPERATION & CALIBRATION, LONG TERM WEATHERPROOF DURABILITY W/ FREEZE PROTECTION WITHOUT OVERHEATING.

LEGEND



REF. NO. **E8** SHEET NO. **53** OF **62**



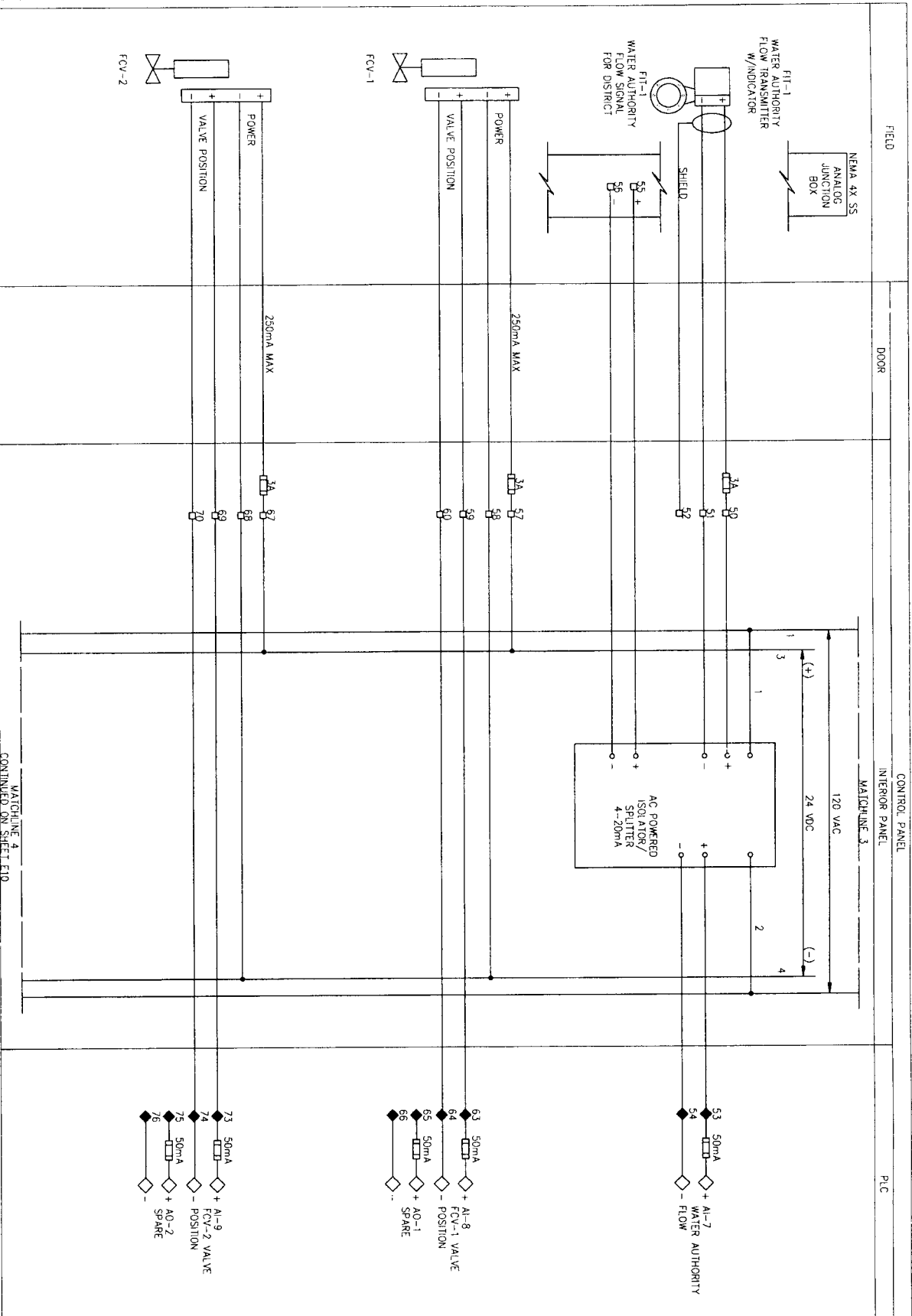
Brymcon, Inc.
 The Electrical Engineering
 8320 West Loop South, Suite 100
 Houston, TX 77036 (713) 260-5800

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
 WATER AND SEWERAGE DIVISION
 GRAND MISSION WUD No. 1
 CONNECTION
 CONTROL DIAGRAM
 SHEET 6

NORTH FORT BEND
 COUNTY ENGINEER
 11/23/12

CITY OF HOUSTON
 11/23/12

DATE: 11/23/12
 DRAWING SCALE: 1"=10'-0"
 PROJECT NO: 04-010-004



MATCHLINE 3
MATCHLINE 4
CONTINUED ON SHEET E10

NOTES:

- 1 ALL VALVES FAIL CLOSE
- 2 CST COMPONENTS SHOWN HERE ARE TWO EXISTING DISTRICT CST'S AND TWO FUTURE CST'S. MATCH SIGNAL SPLITTERS & CST SELECTOR SWITCH POLES TO DISTRICTS ANTICIPATED. ULTIMATE NUMBER OF CST'S, PREWIRE FOR FUTURE TO THE FULLEST EXTENT POSSIBLE.
- 3 ALL HEAT TRACE TAPE IS TO BE 150 DEGREE MAX MAINTAIN CONTRACTOR TO PROVIDE VALVE & TRANSMITTER INSULATION, HOT BOX, OR INSULATION BLANKETS IN A FASHION TO ALLOW EASE OF OPERATION & CALIBRATION, LONG TERM WEATHERPROOF DURABILITY W/ FREEZE PROTECTION WITHOUT OVERHEATING.

LEGEND

- 129 FUSED TERMINAL BLOCK
- 3A FUSED TERMINAL BLOCK
- TERMINAL BLOCK
- TERMINAL BLOCK
- PLC TERMINAL

Brymcon, Inc.
 Electrical Engineering
 2020 White Road
 Baytown, TX 77706 (409) 866-7068

GRAND MISSION MUD No. 1
 CONNECTION
 CONTROL DIAGRAM
 SHEET 7

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

APPROVED: *[Signature]* 11/20/16
 PROJECT NO. 15016
 DATE: 11/20/16

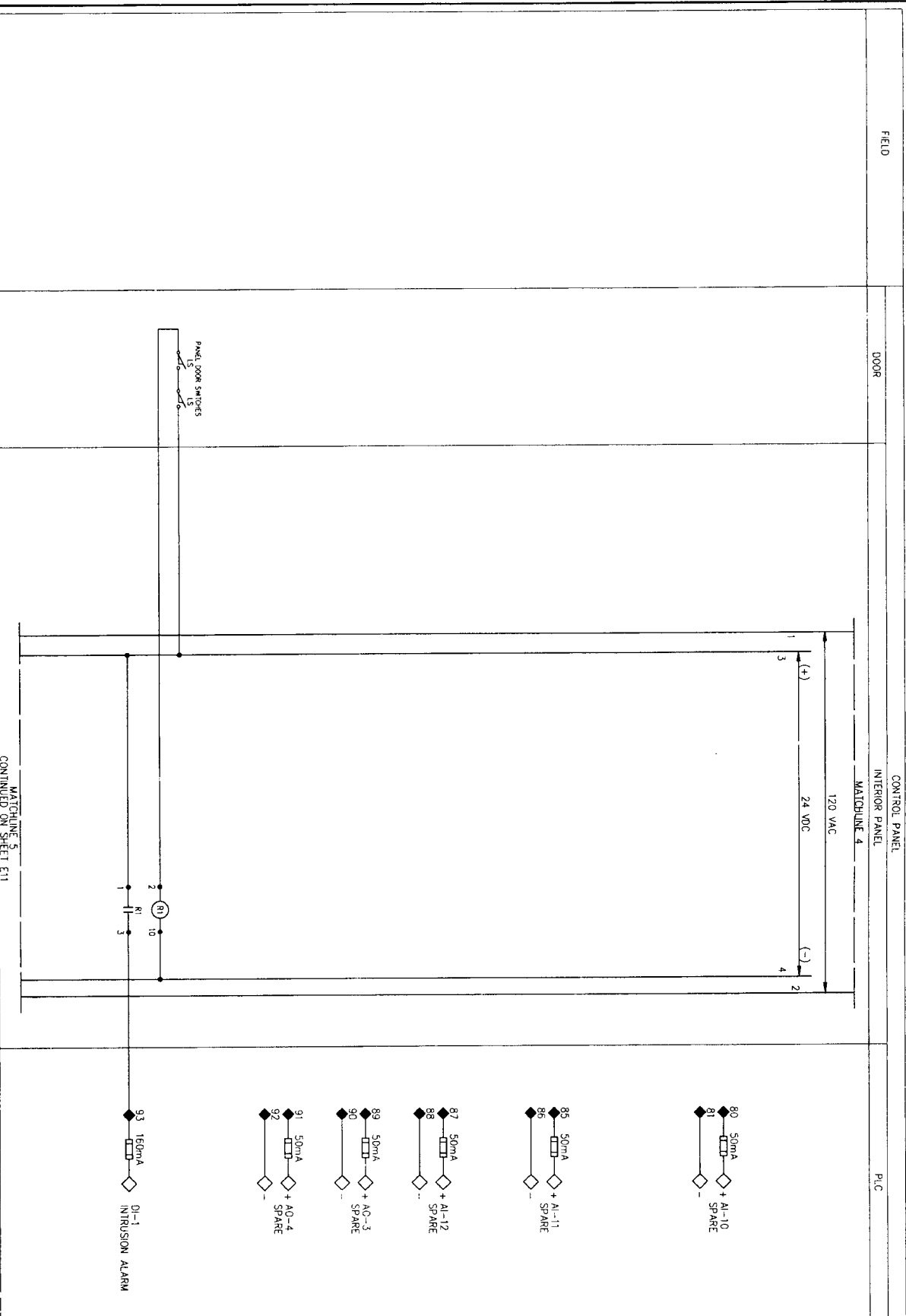
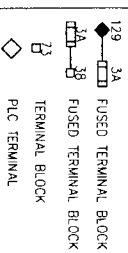
FILE NO:	726 CITY OF HOUSTON USE ONLY
DRAWING SCALE:	
DATE:	
SHEET NO:	54 OF 62
REF NO:	E9

5/8/16

NOTES:

- 1. ALL VALVES FAIL CLOSE
- 2. CST COMPONENTS SHOWN HERE ARE TWO EXISTING DISTRICT CST'S AND TWO FUTURE CST'S. MATCH SIGNAL SPLITTERS & CST SELECTOR SWITCH POLES TO DISTRICT'S ANTICIPATED ULTIMATE NUMBER OF CST'S. PREWIRE FOR FUTURE TO THE FULLEST EXTENT POSSIBLE.
- 3. ALL HEAT TRACE TAPE IS TO BE 150 DEGREE MAX MAINTAIN. CONTRACTOR TO PROVIDE VALVE & TRANSMITTER INSULATION, HOT BOX OR INSULATION BLANKETS IN A FASHION TO ALLOW EASE OF OPERATION & CALIBRATION. LONG TERM WEATHERPROOF DURABILITY W/ FREEZE PROTECTION WITHOUT OVERHEATING.

LEGEND



MATCHLINE 5
CONTINUED ON SHEET E11

REF NO	DATE	SHEET	OF
E10	08/15/11	55	62

COP-LOG NO. 09-0225

Brymcon, Inc.
 Electrical Engineering
 8320 Wink Road
 Houston, TX 77066 (409) 966-7098



GRAND MISSION MUD No. 1
 CONNECTION

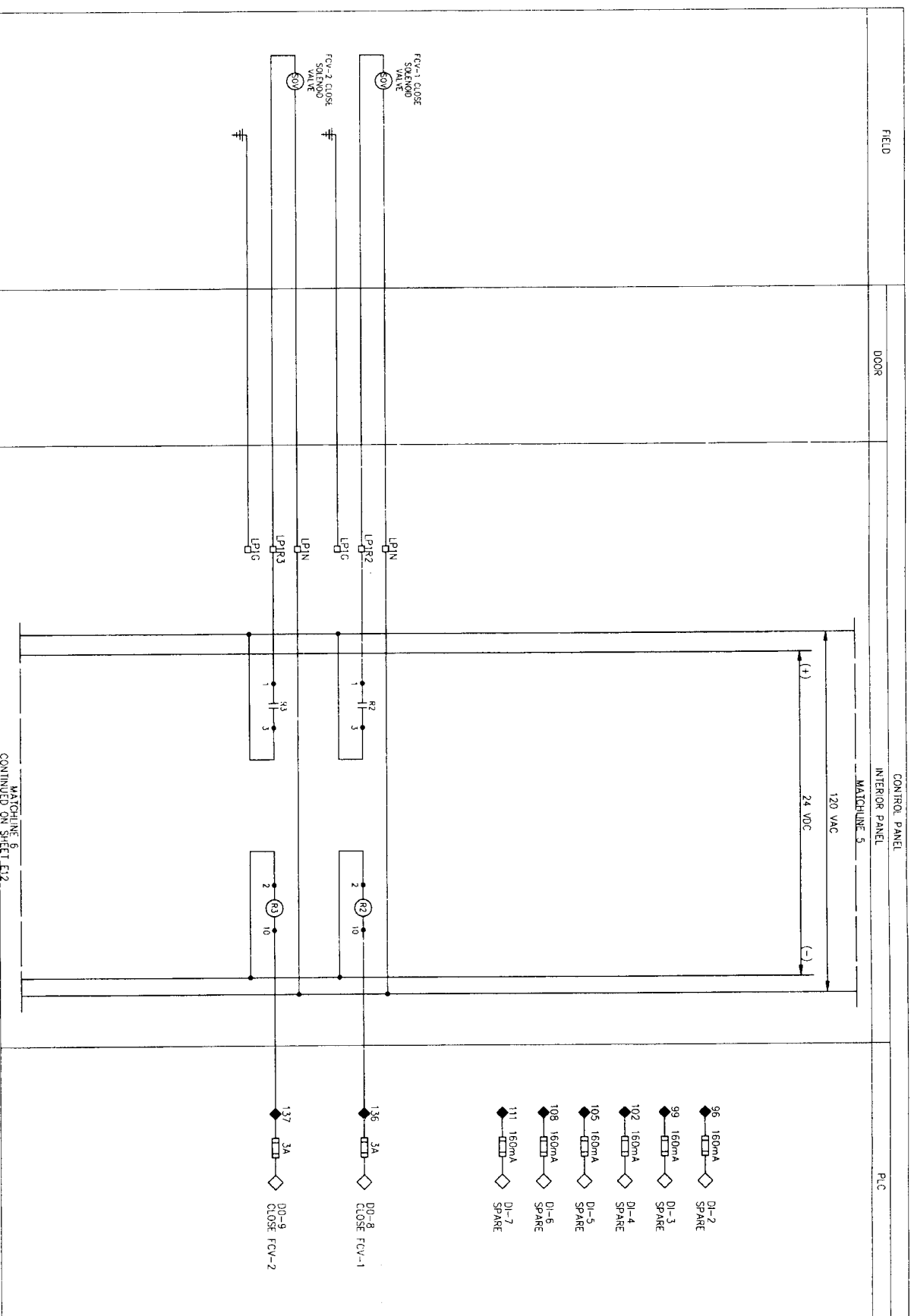
CONTROL DIAGRAM
 SHEET 8



CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

PROJECT NO. 10040
 SHEET NO. 55 OF 62
 DATE: 08/15/11
 DRAWING SCALE: AS SHOWN
 CHECKED BY: [Signature]
 DESIGNED BY: [Signature]





- 96 160mA DI-2 SPARE
- 99 160mA DI-3 SPARE
- 102 160mA DI-4 SPARE
- 105 160mA DI-5 SPARE
- 108 160mA DI-6 SPARE
- 111 160mA DI-7 SPARE
- 136 3A FUSED TERMINAL BLOCK DI-8 CLOSE FCV-1
- 137 3A FUSED TERMINAL BLOCK DI-9 CLOSE FCV-2

NOTES:

1. ALL VALVES FAIL CLOSE
2. CST COMPONENTS SHOWN HERE ARE TWO EXISTING DISTRICT CST'S AND TWO FUTURE CST'S. CONTRACTOR TO PROVIDE VALVE & TRANSMITTER INSULATION, HOT BOX, OR INSULATION BLANKETS IN A FASHION TO ALLOW EASE OF OPERATION & CALIBRATION. LONG TERM WEATHERPROOF DURABILITY W/ FREEZE PROTECTION WITHOUT OVERHEATING.
3. ALL HEAT TRACE TAPE IS TO BE 150 DEGREE MAX MAINTAIN CONTRACTOR TO PROVIDE VALVE & TRANSMITTER INSULATION, HOT BOX, OR INSULATION BLANKETS IN A FASHION TO ALLOW EASE OF OPERATION & CALIBRATION. LONG TERM WEATHERPROOF DURABILITY W/ FREEZE PROTECTION WITHOUT OVERHEATING.

LEGEND

- 129 3A FUSED TERMINAL BLOCK
- 3A 38 FUSED TERMINAL BLOCK
- Terminal Block
- PLC Terminal

Brymcon, Inc.

Electrical Engineering
 TBE Registration No. F-375
 6220 West Road Houston, TX 77066 (281) 582-1288

GRAND MISSION WUD No. 1 CONNECTION SHEET 9

M. J. H. 11/16/10

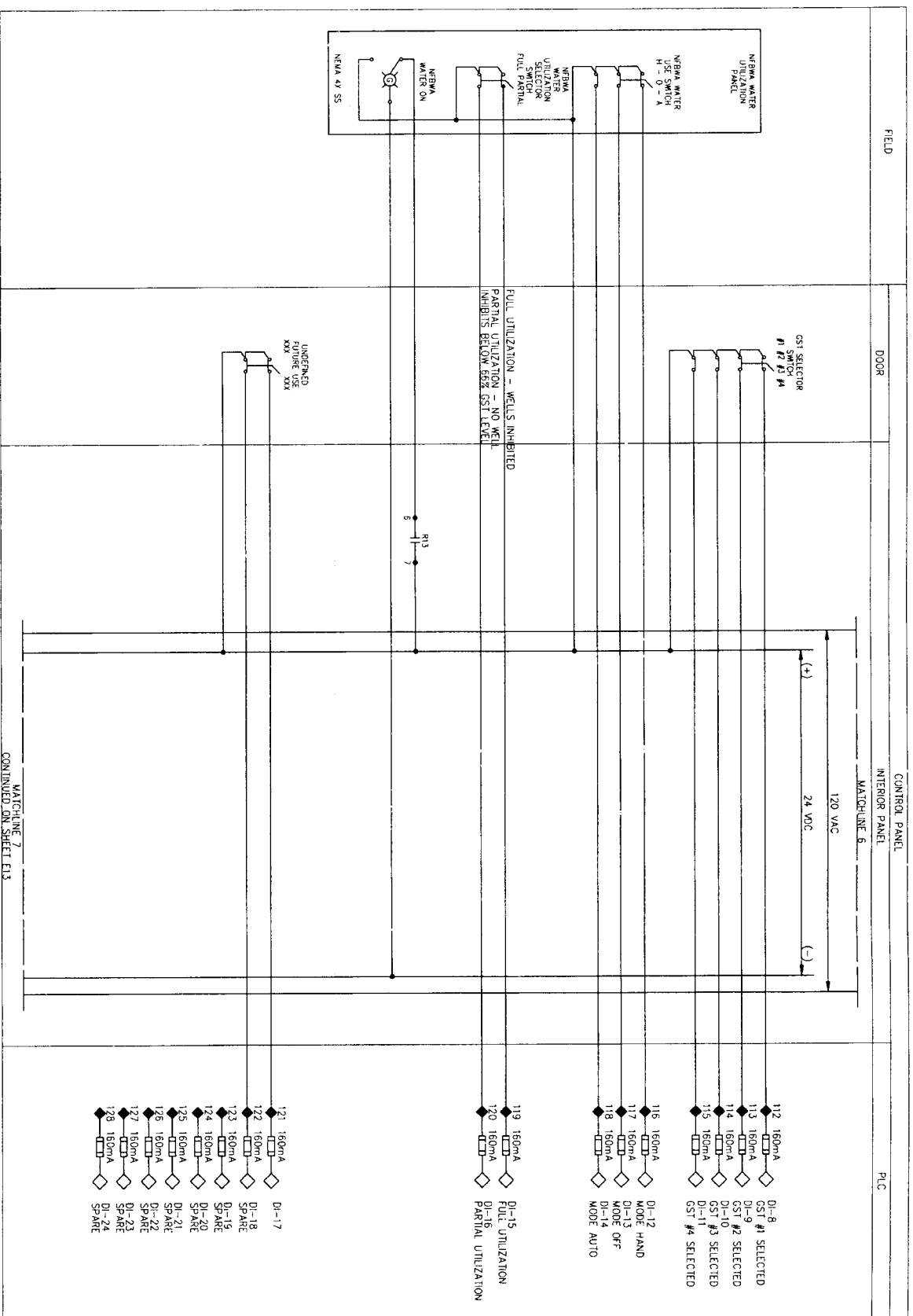


CITY OF HOUSTON
 DEPARTMENT OF PUBLIC UTILITIES

DATE: 11/16/10
 DRAWN BY: TBL
 CHECKED BY: TBL
 TITLE: CONTROL DIAGRAM SHEET 9 OF 62

REF NO: E11
 SHEET: 56 OF 62





MATCHLINE 7
CONTINUED ON SHEET E13

NOTES:

1. ALL VALVES FAIL CLOSE
2. GSI COMPONENTS SHOWN HERE ARE TWO EXISTING DISTRICT GSI'S AND TWO FUTURE GSI'S. MATCH SIGNAL SPLITTERS & GSI SELECTOR SWITCH POLES TO DISTRICT'S ANTICIPATED ULTIMATE NUMBER OF GSI'S. PREPARE FOR FUTURE TO THE FULLEST EXTENT POSSIBLE.
3. ALL HEAT TRACE TAPE IS TO BE 150 DEGREE MAX MAINTAIN. CONTRACTOR TO PROVIDE VALVE & TRANSMITTER INSULATION, HOT BOX, OR INSULATION BLANKETS IN A FASHION TO ALLOW EASE OF OPERATION & CALIBRATION. LONG TERM W/ATHERPROOF DURABILITY W/ FREEZE PROTECTION WITHOUT OVERHEATING.

LEGEND

- 129 FUSED TERMINAL BLOCK
- 3A TERMINAL BLOCK
- 73 PLC TERMINAL

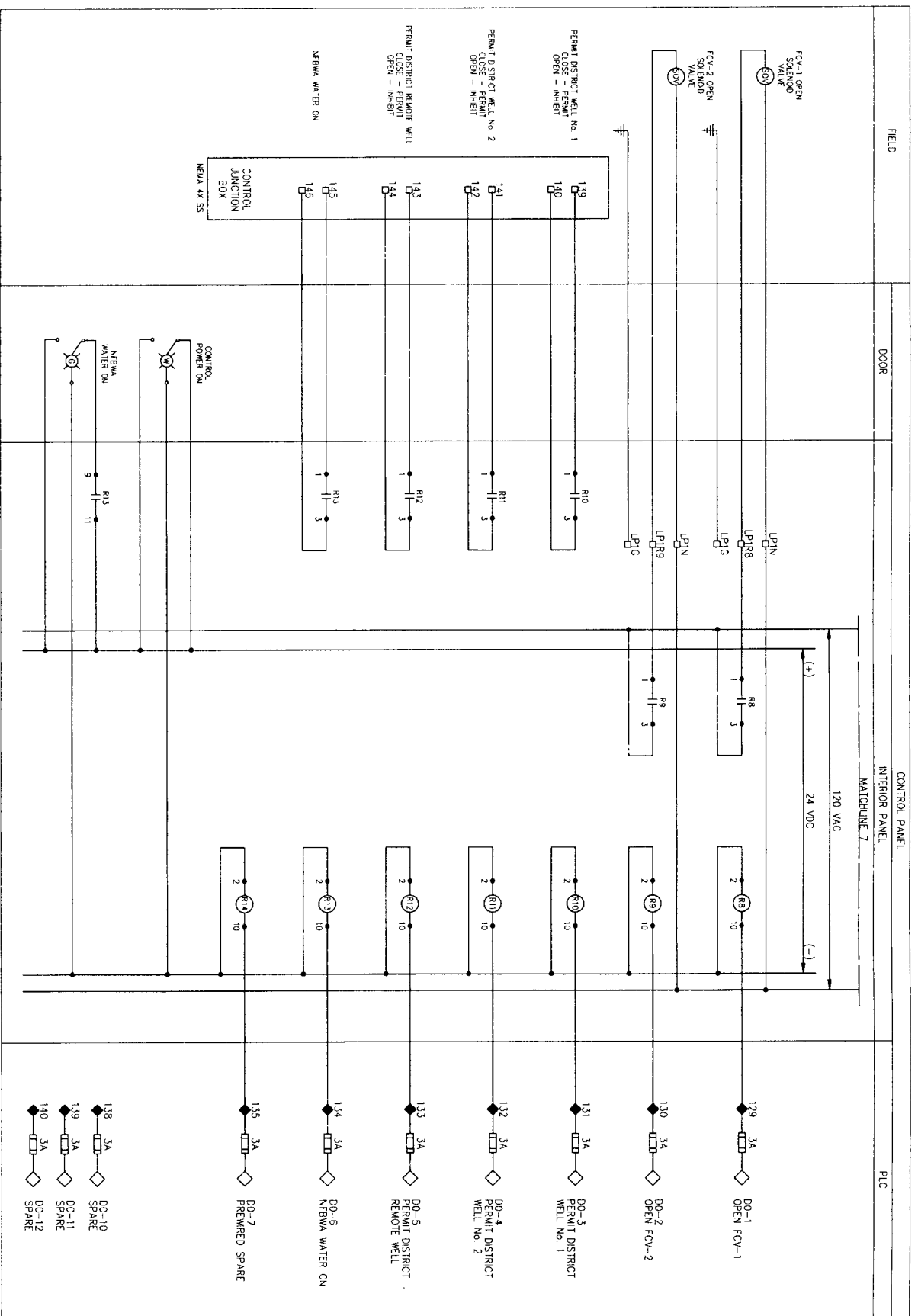
Brymcon, Inc.
 Electrical Engineering
 8320 White Road
 Beaufort, TX 77706 (409) 865-7086

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
 15010
 11/18/19

GRAND MISSION AULD NO. 1
 CONNECTION

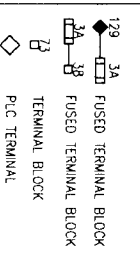
CONTROL DIAGRAM
 SHEET 10

FILE NO. _____
 DRAWING SCALE _____
 DATE _____
 SHEET 57 OF 62



NOTES:

1. ALL VALVES FAIL CLOSE
2. GST COMPONENTS SHOWN HERE ARE TWO EXISTING DISTRICT GST'S AND TWO FUTURE GST'S. MATCH SIGNAL SWITCHES & GST SELECTION SWITCH POLES TO DISTRICT'S ANTICIPATED ULTIMATE NUMBER OF GST'S. FUTURE NUMBER OF GST'S TO BE DETERMINED AT THE FULLEST EXTENT POSSIBLE.
3. ALL HEAT TRACE TAPE IS TO BE 150 DEGREE MAX MAINTAIN CONTRACTOR TO PROVIDE VALVE & TRANSMITTER INSULATION, HOT BOX, OR INSULATION BLANKETS IN A FASHION TO ALLOW EASE OF OPERATION & CALIBRATION. LONG TERM WEATHERPROOF DURABILITY W/ FREEZE PRO-TECTION WITHOUT OVERHEATING.



Brymcom, Inc.
 Electrical Engineering
 1000 West Loop South, Suite 2025
 Houston, TX 77028
 (713) 550-0500



GRAND MISSION MUD No. 1
 CONNECTION

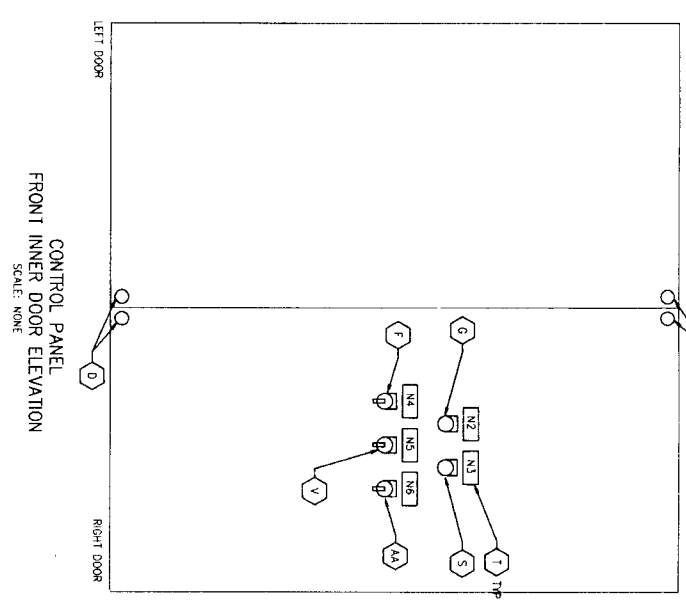
CONTROL DIAGRAM
 SHEET 11



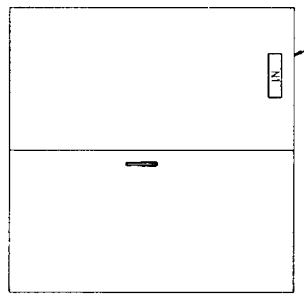
CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
 1000 West Loop South, Suite 2025
 Houston, TX 77028
 (713) 550-0500

FILE NO. 024 017 2 HOUSTON DEE ONE
 DRAWING SCALE: AS SHOWN
 SHEET NO. 58 OF 62

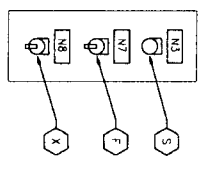
EQUIPMENT & DEVICE SCHEDULE	
ITEM	DESCRIPTION
A	1 PANEL BOARD, 200/240V, 1 PHASE, 3 WIRE, 100 X 20 COTS
B	6 SIGNAL SWITCHES/SIGNALOR, DIN RAIL MOUNT, 120VAC, 4-20MA INPUT, DUAL, ISOLATED 4-20MA OUTPUTS, ACRIMAG 6311-0100 OR EQUAL
C	1 THERMOSTAT
D	4 QUARTER TURN CARTRIDGE DOOR CLOSURE
E	1 120VAC - 240VAC POWER SUPPLY
F	2 HAND-OFF-AUTO SWITCH, HEAVY DUTY OIL TIGHT, WHITE, 24 VDC, 2.5 WATT
G	1 INDICATING LIGHT, HEAVY DUTY OIL TIGHT, WHITE, 24 VDC, 2.5 WATT
H	1 STRIP HEATER
I	1 PROGRAMMABLE LOGIC CONTROLLER, SIMENS S7-300
J	1 SWITCH FOR CABINET LIGHT, 120V, 20A, SPST
K	2 40 WATT FLUORESCENT STRIP LIGHT W/BALAST SUITABLE FOR ZERO DEGREE OPERATION
L	1 SURGE PROTECTOR - INCOMING POWER
M	1 UNINTERUPTABLE POWER SUPPLY, 1000VA MINIMUM
N	1 RIGGED TERMINAL BLOCKS, AS REQUIRED
O	1 MOCOV
P	1 CONTROL RELAY, TUMBLE 24 VDC RELAY WITH THREE FORM C CONTACTS AND 11 PIN SOCKET BASE
Q	2 INDICATING LIGHT, HEAVY DUTY OIL TIGHT, GREEN, 24 VDC, 2.5 WATT
R	2 INDICATING LIGHT, HEAVY DUTY OIL TIGHT, WHITE, 24 VDC, 2.5 WATT
S	2 40 WATT FLUORESCENT STRIP LIGHT W/BALAST SUITABLE FOR ZERO DEGREE OPERATION
T	1 90 DEGREE TURN CARTRIDGE DOOR CLOSURE
U	2 DOOR LIMIT SWITCH (SEE NOTE 2)
V	1 GSI SELECTOR SWITCH, HEAVY DUTY OIL TIGHT, FOUR POSITION, W/120V, 20A RATING
W	1 NEWA 36 CASKETS ALUMINUM ENCLOSURE WITHOUT VENTS, 60" X 72" X 24"
X	1 WATER UTILIZATION SWITCH, HEAVY DUTY OIL TIGHT, TWO POSITION, W/120V, 20A RATING
Y	1 TERMINAL BLOCKS AS REQUIRED
Z	1 WIRE DUCT 7" WIDE X 2" DEEP MINIMUM
AA	1 FUTURE USE SWITCH, HEAVY DUTY OIL TIGHT, TWO POSITION, W/120V, 20A RATING



CONTROL PANEL
 FRONT INNER DOOR ELEVATION
 SCALE: NONE



CONTROL PANEL
 EXTERIOR ELEVATION
 SCALE: NONE



NFBWA WATER
 UTILIZATION PANEL ELEVATION
 SCALE: NONE

- NOTES
1. NAMEPLATES SHALL BE MOUNTED TO PANELS USING STAINLESS STEEL HARDWARE.
 2. PROVIDE ONE LIMIT SWITCH PER EXTERIOR DOOR, WIRED IN PARALLEL.

NAMEPLATE SCHEDULE
 ENGRAVED

DESIGNATION

- N1 NORTH FORT BEND WATER AUTHORITY
- N2 NEWA WATER ON FLOODLIGHT H-O-A
- N3 GSI SELECTOR
- N4 NEWA WATER USE H-O-A PARTIAL FILL
- N5 NEWA WATER UTILIZATION
- N6 NEWA WATER UTILIZATION
- N7 NEWA WATER UTILIZATION
- N8 NEWA WATER UTILIZATION

Brymcon, Inc.
 Electrical Engineering
 8200 White Road
 Beaumont, TX 77706
 (409) 666-7296



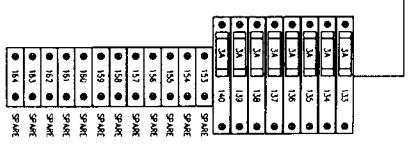
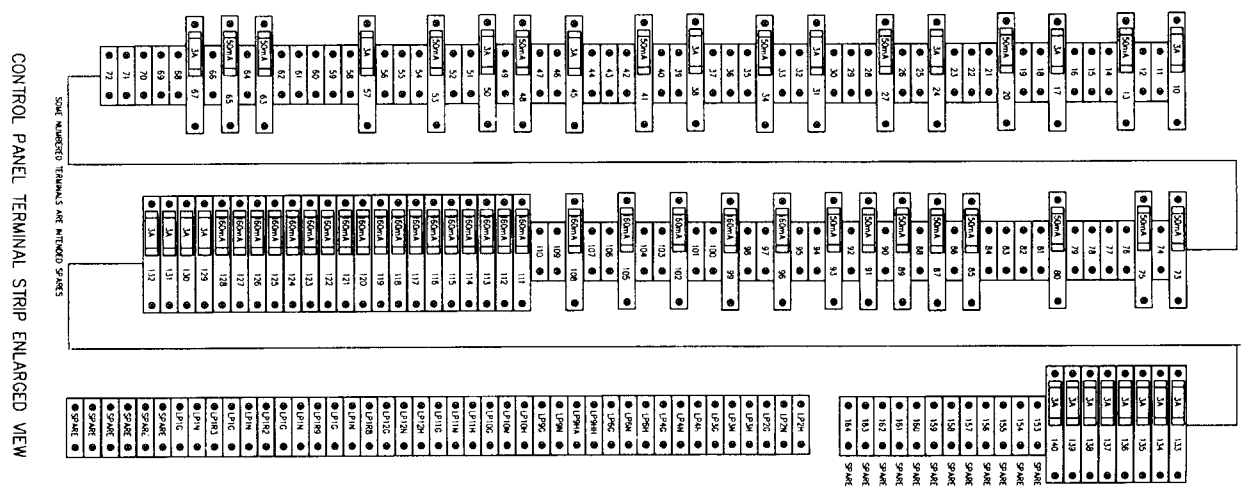
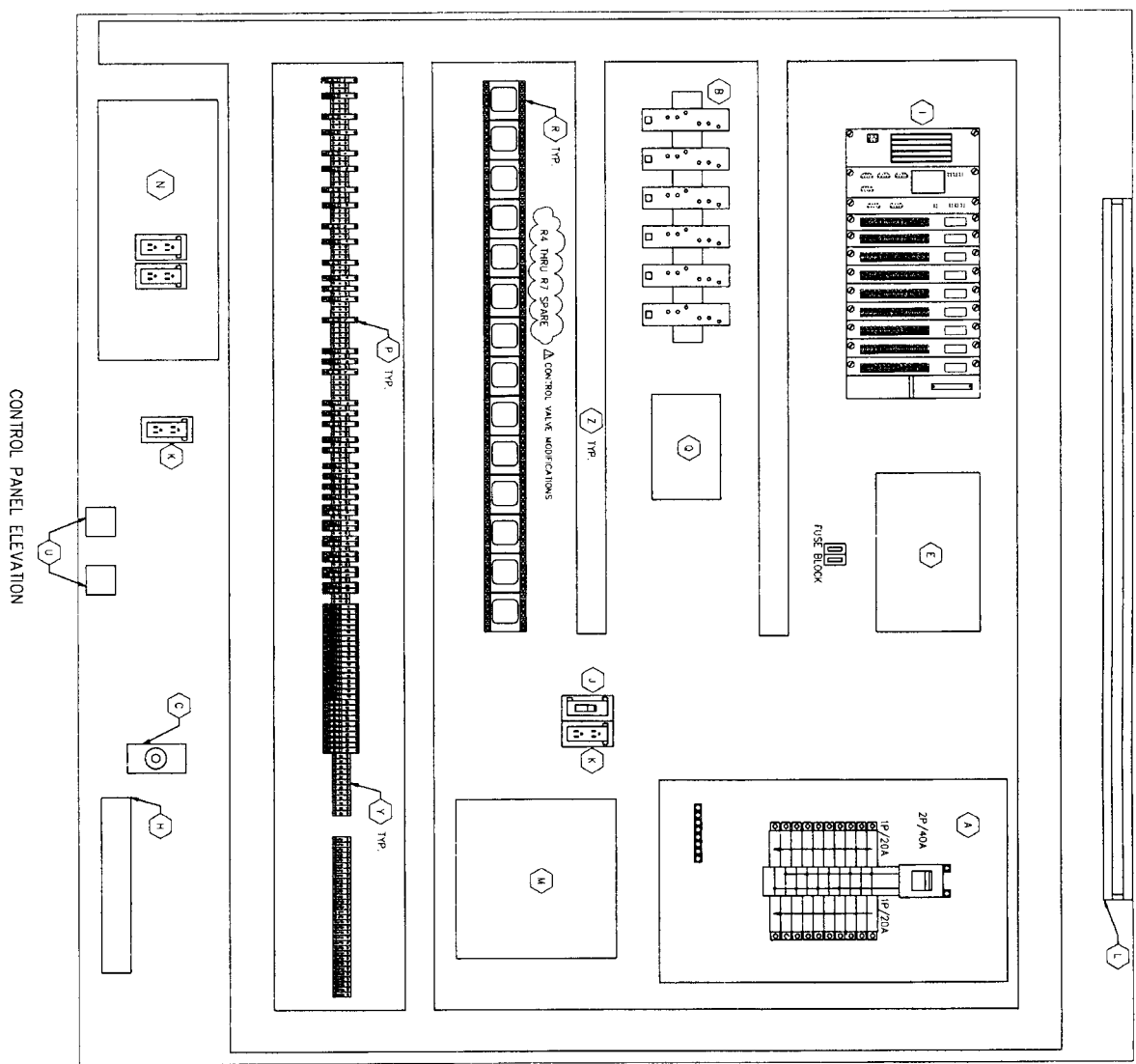
GRAND MISSION WUD No. 1
 CONNECTION
 ELECTRICAL
 CONTROL PANEL
 LAYOUT & SPECIAL
 DEVICE SCHEDULE



CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

DATE: 11/04/16
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 PROJECT: GRAND MISSION WUD No. 1
 SHEET NO. 59 OF 62

DATE: 11/04/16
 DRAWING SCALE: AS SHOWN
 SHEET NO. 59 OF 62
 PROJECT: GRAND MISSION WUD No. 1
 CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
 PROJECT: GRAND MISSION WUD No. 1
 SHEET NO. 59 OF 62



NOTES
 1. SEE SHEET E14 FOR EQUIPMENT SCHEDULE.

CDP LDC N3 09-0223

REF. NO.	E15
SHEET	60 OF 62

Brymcon, Inc.
 Electrical Engineering
 8320 White Road
 Beaumont, TX 77705 (409) 956-7096

CITY OF HOUSTON
 DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
 11110 Katy Freeway, Suite 100
 Houston, TX 77058

NORTH FORT SAND
 ELECTRICAL CONTROL PANEL LAYOUT

GRAND MISSION MUD NO. 1 CONNECTION

DATE: 11/04/10

PROJECT: 310665

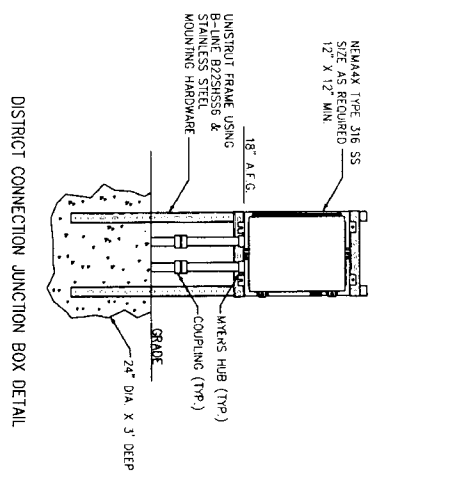
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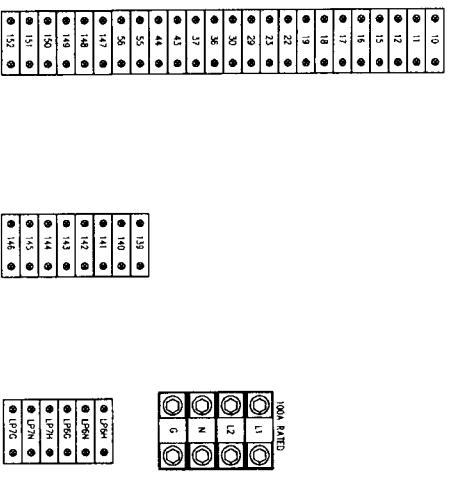
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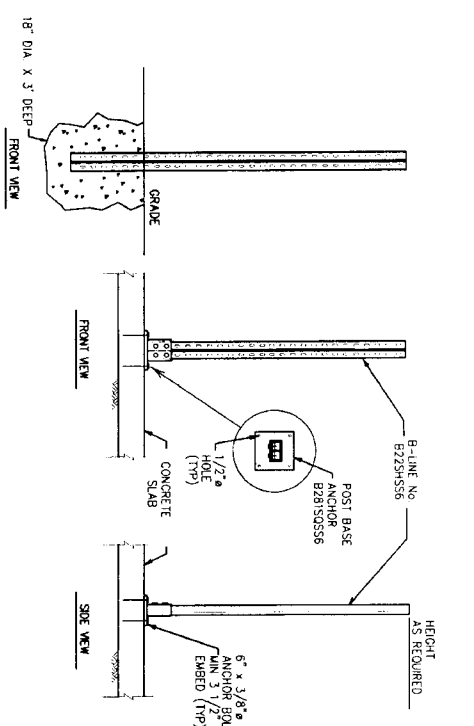




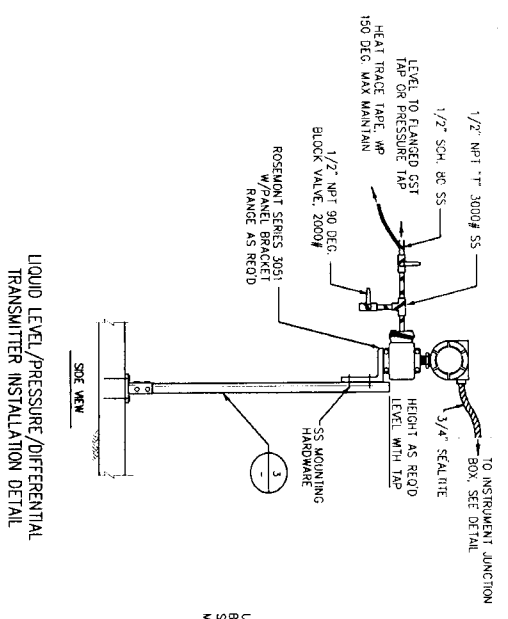
DETAIL 1



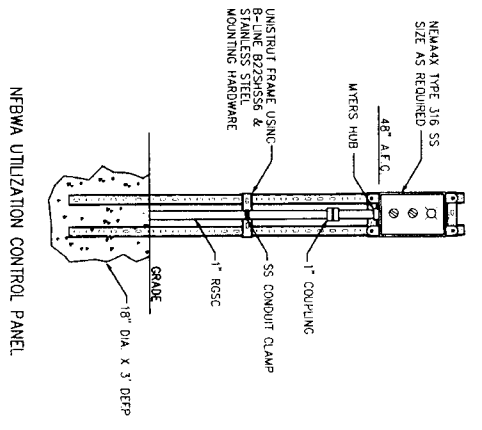
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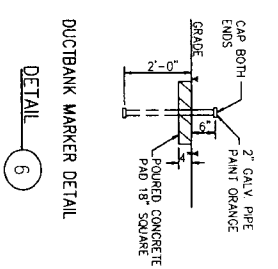
DETAIL 3



DETAIL 4



DETAIL 5



DETAIL 6

		City of Houston DEPARTMENT OF PUBLIC WORKS AND ENGINEERING 4801 White Road, Houston, TX 77056 (713) 866-7098	
Grand Mission HUD No. 1 ELECTRICAL DETAILS SHEET 1		Brymcon, Inc. Electrical Engineering 7801 Regeneration No. 6-375 4801 White Road, Houston, TX 77056 (409) 866-7098	
PROJECT NO. 117010 SHEET NO. 61 OF 62	DATE: 11/04/10 DRAWING SCALE: AS SHOWN	TITLE NO. 100 CITY OF HOUSTON (04) 0007	

