

REVIEW BY FORT BEND COUNTY COMMISSIONERS COURT

On this 04 day of JANUARY, 2011, before the Fort Bend Commissioners Court came on to be heard and reviewed the accompanying notice of GONZALES CONSTRUCTION ENTERPRISE, INC.

Job Location WILLIWAW DRIVE, KEEGANS BAYOU, ADDICKS CLODINE

Dated 12/27/10 BOND NO 929497378 Permit No. 83874
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 Statutes. Upon Motion of Commissioner Prestage, seconded by Commissioner Morrison, 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 Donald Prochley
for County Engineer

By N/A
Drainage District Engineer/Manager

Presented to Commissioners Court
and approved.
Recorded in Volume 1-4-11
Minutes of Commissioners Court.

Clerk of Commissioners Court
By Sherry Fisk
Deputy

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

AUTHORIZED

BOND NO 929497378

THE STATE OF TEXAS §

KNOW ALL MEN BY THESE PRESENTS:

COUNTY OF FORT BEND §

THAT WE, Gonzalez Construction Enterprise, Inc.
whose address is 3114 Blackwood Road, Rosenberg, Texas 77471, Texas, hereinafter called
the Principal, and Continental Casualty Company, a Corporation existing under and by virtue of
the laws of the State of IL and authorized to do an indemnifying business in the State of Texas,
and whose principal office is located at Chicago, IL, whose officer residing in the State of
Texas, authorized to accept service in all suits and actions brought within said State is Ron
Bartulla and whose address is 5151 San Felipe, Suite 1800, Houston, Texas 77056, 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 Fifty Thousand Four
Hundred Eighty Six & 51/100 Dollars (\$250,486.51) current, lawful money of the United States
of America, to be paid to said Robert E. Hebert, County Judge of Fort Bend County, Texas, or
his successors in office, to which payment well and truly to be made and done, we, the
undersigned, bind ourselves and each of us, our heirs, executors, administrators, successors,
assigns, and legal representatives, jointly and severally, by these presents.

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

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

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

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

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

EXECUTED this 17th day of December, 2010.

**Houstoun, Woodard, Eason, Gentle,
Tomforde, and Anderson, Inc.
dba Insurance Alliance
1776 Yorktown, Suite 200
Houston, Texas 77056-4114
TDI License #1381 FEIN #760362043**

Gonzalez Construction Enterprise, Inc.
PRINCIPAL

BY

Continental Casualty Company
SURETY

BY Jo Ann Parker, Attorney-in-Fact

POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

Know All Men By These Presents, That Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company (herein called "the CNA Companies"), are duly organized and existing insurance companies having their principal offices in the City of Chicago, and State of Illinois, and that they do by virtue of the signatures and seals herein affixed hereby make, constitute and appoint

Harlan J Berger, Donald E Woodard Jr, Andrew J Janda, Sue Kohler, C W Adams, Leland L Rauch, Sharon Cavanaugh, Cheryl R Colson, Michael Cole, Jo Ann Parker, Andrew J Janda, Individually

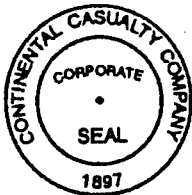
of Houston, TX, their true and lawful Attorney(s)-in-Fact with full power and authority hereby conferred to sign, seal and execute for and on their behalf bonds, undertakings and other obligatory instruments of similar nature

- In Unlimited Amounts -

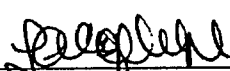
and to bind them thereby as fully and to the same extent as if such instruments were signed by a duly authorized officer of their insurance companies and all the acts of said Attorney, pursuant to the authority hereby given is hereby ratified and confirmed.

This Power of Attorney is made and executed pursuant to and by authority of the By-Law and Resolutions, printed on the reverse hereof, duly adopted, as indicated, by the Boards of Directors of the insurance companies.

In Witness Whereof, the CNA Companies have caused these presents to be signed by their Senior Vice President and their corporate seals to be hereto affixed on this 14th day of September, 2009.



Continental Casualty Company
National Fire Insurance Company of Hartford
American Casualty Company of Reading, Pennsylvania


Jacquelyne M. Belcastro Senior Vice President

State of Illinois, County of Cook, ss:

On this 14th day of September, 2009, before me personally came Jacquelyne M. Belcastro to me known, who, being by me duly sworn, did depose and say: that she resides in the City of Chicago, State of Illinois; that she is a Senior Vice President of Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company described in and which executed the above instrument; that she knows the seals of said insurance companies; that the seals affixed to the said instrument are such corporate seals; that they were so affixed pursuant to authority given by the Boards of Directors of said insurance companies and that she signed her name thereto pursuant to like authority, and acknowledges same to be the act and deed of said insurance companies.



My Commission Expires September 17, 2013


Eliza Price Notary Public

CERTIFICATE

I, Mary A. Ribikawskis, Assistant Secretary of Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company do hereby certify that the Power of Attorney herein above set forth is still in force, and further certify that the By-Law and Resolution of the Board of Directors of the insurance companies printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said insurance companies this 17th day of December, 2010.



Continental Casualty Company
National Fire Insurance Company of Hartford
American Casualty Company of Reading, Pennsylvania


Mary A. Ribikawskis Assistant Secretary

Authorizing By-Laws and Resolutions

ADOPTED BY THE BOARD OF DIRECTORS OF CONTINENTAL CASUALTY COMPANY:

This Power of Attorney is made and executed pursuant to and by authority of the following By-Law duly adopted by the Board of Directors of the Company.

"Article IX—Execution of Documents

Section 3. Appointment of Attorney-in-fact. The Chairman of the Board of Directors, the President or any Executive, Senior or Group Vice President may, from time to time, appoint by written certificates attorneys-in-fact to act in behalf of the Company in the execution of policies of insurance, bonds, undertakings and other obligatory instruments of like nature. Such attorneys-in-fact, subject to the limitations set forth in their respective certificates of authority, shall have full power to bind the Company by their signature and execution of any such instruments and to attach the seal of the Company thereto. The Chairman of the Board of Directors, the President or any Executive, Senior or Group Vice President or the Board of Directors, may, at any time, revoke all power and authority previously given to any attorney-in-fact."

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company at a meeting duly called and held on the 17th day of February, 1993.

"Resolved, that the signature of the President or any Executive, Senior or Group Vice President and the seal of the Company may be affixed by facsimile on any power of attorney granted pursuant to Section 3 of Article IX of the By-Laws, and the signature of the Secretary or an Assistant Secretary and the seal of the Company may be affixed by facsimile to any certificate of any such power and any power or certificate bearing such facsimile signature and seal shall be valid and binding on the Company. Any such power so executed and sealed and certified by certificate so executed and sealed shall, with respect to any bond or undertaking to which it is attached, continue to be valid and binding on the Company."

ADOPTED BY THE BOARD OF DIRECTORS OF AMERICAN CASUALTY COMPANY OF READING, PENNSYLVANIA:

This Power of Attorney is made and executed pursuant to and by authority of the following By-Law duly adopted by the Board of Directors of the Company.

"Article VI—Execution of Documents

Section 3 Appointment of Attorney-in-fact. The Chairman of the Board of Directors, the President or any Executive or Senior Vice President may, from time to time, appoint by written certificates attorneys-in-fact to act in behalf of the Company in the execution of policies of insurance, bonds, undertakings and other obligatory instruments of like nature. Such attorneys-in-fact, subject to the limitations set forth in their respective certificates of authority, shall have full power to bind the Company by their signature and execution of any such instruments and to attach the seal of the Company thereto. The President or any Executive, Senior Vice President or the Board of Directors may at any time revoke all power and authority previously given to any attorney-in-fact."

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company at a meeting duly called and held on the 17th day of February, 1993.

"Resolved, that the signature of the President or any Executive, Senior or Group Vice President and the seal of the Company may be affixed by facsimile on any power of attorney granted pursuant to Section 2 of Article VI of the By-Laws, and the signature of the Secretary or an Assistant Secretary and the seal of the Company may be affixed by facsimile to any certificate of any such power and any power or certificate bearing such facsimile signature and seal shall be valid and binding on the Company. Any such power so executed and sealed and certified by certificate so executed and sealed shall, with respect to any bond or undertaking to which it is attached, continue to be valid and binding on the Company."

ADOPTED BY THE BOARD OF DIRECTORS OF NATIONAL FIRE INSURANCE COMPANY OF HARTFORD:

This Power of Attorney is made and executed pursuant to and by authority of the following By-Law duly adopted by the Board of Directors of the Company.

"Article VII—Execution of Documents

Section 3. Appointment of Attorney-in-Fact. The Chairman of the Board of Directors, the President or any Executive or Senior Vice President may, from time to time, appoint by written certificates attorneys-in-fact to act in behalf of the Company in the execution of policies of insurance, bonds, undertakings and other obligatory instruments of like nature. Such attorneys-in-fact, subject to the limitations set forth in their respective certificates of authority shall have full power to bind the Company by their signature and execution of any such instruments and to attach the seal of the Company thereto. The Chairman of the Board of Directors, the President or any Executive, Senior Vice President or the Board of Directors, may, at any time, revoke all power and authority previously given to any attorney-in-fact."

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company at a meeting duly called and held on the 17th day of February, 1993.

"RESOLVED: That the signature of the President, an Executive Vice President or any Senior or Group Vice President and the seal of the Insurance Company may be affixed by facsimile on any power of attorney granted pursuant to the Resolution adopted by this Board of Directors on February 17, 1993 and the signature of a Secretary or an Assistant Secretary and the seal of the Insurance Company may be affixed by facsimile to any certificate of any such power, and any power or certificate bearing such facsimile signature and seal shall be valid and binding on the Insurance Company. Any such power so executed and sealed and certified by certificate so executed and sealed, shall with respect to any bond or undertaking to which it is attached, continue to be valid and binding on the Insurance Company."

1 IMPORTANT NOTICE

To obtain information or make a complaint:

2 You may contact Continental Casualty Company, National Fire Insurance Company, American Casualty Company or Continental Insurance Company at 312-822-5000.

3 You may call Continental Casualty Company, National Fire Insurance Company, American Casualty Company or Continental Insurance Company's toll-free telephone number for information or to make a complaint at:

1-877-672-6115

4 You may also write to Continental Casualty Company, National Fire Insurance Company, American Casualty Company or Continental Insurance Company at:

CNA Surety
333 South Wabash
Chicago, IL 60604

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

1-800-252-3439

6 You may write the Texas Department of Insurance:

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

7 PREMIUM OR CLAIM DISPUTES:

Should you have a dispute concerning your premium or about a claim you should contact Continental Casualty Company, National Fire Insurance Company, American Casualty Company or Continental Insurance Company first. If the dispute is not resolved, you may contact the Texas Department of Insurance.

8 ATTACH THIS NOTICE TO YOUR POLICY:

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

Form F8277

AVISO IMPORTANTE

Para obtener informacion o para someter una queja:

Puede comunicarse con Continental Casualty Company, National Fire Insurance Company, American Casualty Company or Continental Insurance Company al 312-822-5000.

Usted puede llamar al numero de telefono gratis de Continental Casualty Company, National Fire Insurance Company, American Casualty Company or Continental Insurance Company's para informacion o para someter una queja al:

1-877-672-6115

Usted tambien puede escribir a Continental Casualty Company, National Fire Insurance Company, American Casualty Company or Continental Insurance Company:

CNA Surety
333 South Wabash
Chicago, IL 60604

Puede comunicarse con el Departamento de Seguros de Texas para obtener informacion acerca de companias, coberturas, derechos o quejas al:

1-800-252-3439

Puede escribir al Departamento de Seguros de Texas:

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

DISPUTAS SOBRE PRIMAS O RECLAMOS:

Si tiene una disputa concerniente a su prima o a un reclamo, debe comunicarse con el Continental Casualty Company, National Fire Insurance Company, American Casualty Company or Continental Insurance Company primero. Si no se resuelve la disputa, puede entonces comunicarse con el departamento (TDI).

UNA ESTE AVISO A SU POLIZA: Este aviso es solo para proposito de informacion y no se convierte en parte o condicion del documento adjunto.

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.

083874

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.

- X (1) Complete Application Form.
- X a. Name of road, street, and/or drainage ditch affected.
- X b. Vicinity map showing course of direction.
- _____ c. Plans and specifications.

_____ (2) Bond:

_____ District Attorney, approval when applicable.

_____ Perpetual bond currently posted.

No. _____

Amount _____

 X Performance bond submitted.

No. 929497378

Amount \$250,486.51

_____ Cashier's Check.

No. _____

Amount _____

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

_____ Precinct Engineer Acknowledgment

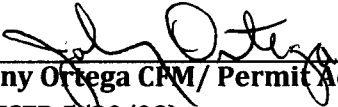
_____ Date

_____ Precinct Commissioner Acknowledgment

_____ Date

_____ (4) _____
Drainage District Approval when applicable

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


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

12/27/2010
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. _____
 PERMIT No. 83874 PCT. No. 3
 BOND No. 929497378

Formal notice is hereby given that Gonzalez Construction Enterprise, 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>Willow Drive</u>	<u>Mission Glen Drive</u>	<u>1400'</u>	<u>Bore & Open Cut</u>
<u>Keegans Bayou</u>	<u>Willow Drive</u>	<u>2200'</u>	<u>Open cut</u>
<u>Addicks</u>	<u>Keegans Bayou</u>	<u>2000'</u>	<u>Bore & Open Cut</u>

Along Roads and/or Drainage Ditches

Road or Ditch Name	Distance & Direction From : Nearest Intersection	To : Distance

General Description

Construction of 12" Waterline for NFB 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: Gonzalez Construction Enterprise, Inc.
AGENT and/or OWNER

(Signature)
 NAME & TITLE Maria Gonzalez
Vice President (Please Print)
 DATE 12-17-2010
 ADDRESS 3114 Blackwood Rd.
(Street/P.O. Box)
Rosenberg, TX 77471
City State Zip
 TELEPHONE NO: 832 606 2361
(accessible 24 hrs/day, 7 days/week)

Does project
 comply with Fort
 Bend County
 Outdoor Lighting
 Ordinance?

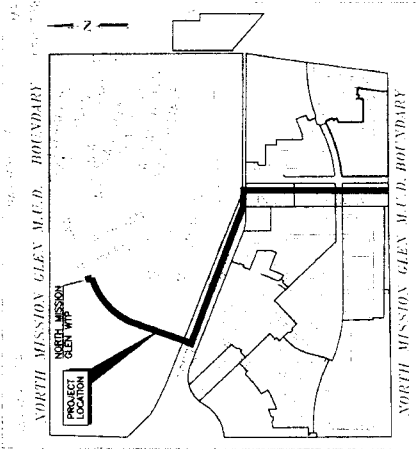
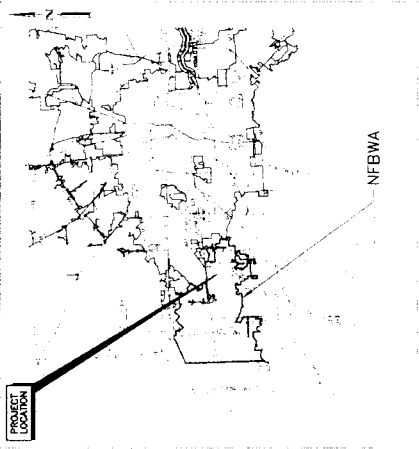
Yes (☒)

No (☐)

NORTH FORT BEND WATER AUTHORITY

NORTH MISSION GLEN MUD CONNECTION

PROPOSED 12-INCH WATER LINE



* NO KNOWN PROPOSED WASTEWATER WORK IS SHOWN ON THIS PLAN SET, NOR INCLUDED IN ITS WORK SCOPE.

** NO KNOWN PROPOSED STORM WATER WORK IS SHOWN ON THIS PLAN SET, NOR INCLUDED IN ITS WORK SCOPE.

ONE-CALL NOTIFICATION SYSTEM
CALL BEFORE YOU DIG!!
(713) 223-4567
{New Statewide Number Outside Houston}
1-800-545-6005

DIRECTORS	PRECINCT
DAVID SPELL	1
ROBERT DARDEN	2
BRUCE FAY	3
MELONY E. GAY, P.E.	4
ROBERT J. PATTON	5
PETER HOUGHTON	6
PAT HEBERT	7

Contractor shall notify the City of Houston Department of Public Works and Engineering, Engineering Construction Division (Telephone No. 832-395-4405) 48 hours before starting work on this project.

FIRM
Flood Insurance Rate Map
Panel 120
48157C0120 J
BFE Elevation: 86' to 88'

I, ROBERT WEMPE, P.E., certify that all open trench construction within this project is entirely located outside the area with 100-year flood frequency.

D. JESSE HECHEMER, P.E.
FORT BEND COUNTY ENGINEER
DATE: 12/18/10

ISSUE DATE: JUNE 2010

Note:
prior to the construction of these facilities, within or by the Authority, the Authority or its Engineer will give written notice by Certified Mail to the owner of the property located within the project limits in Houston, stating the date such construction will begin.

AECOM ATLANTIC TECHNICAL SERVICES, INC. 1500 WESTWIND DRIVE, SUITE 100 HOUSTON, TEXAS 77057-1010 WWW.AECOM.COM DATE: 10/1/10		NOTE: CITY ENGINEER REVIEW REQUIRED FOR ONE YEAR ONLY AFTER DATE OF SIGNATURE. 12/18/10 9-27-10
CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
APPROVED: <i>Robert W. Wempe</i> DATE: 12/18/10 PROJECT: 48157C0120 J SHEET: 10 OF 10	DATE: 12/18/10 PROJECT: 48157C0120 J SHEET: 10 OF 10	DATE: 12/18/10 PROJECT: 48157C0120 J SHEET: 10 OF 10
CITY ENGINEER FOR CITY OF HOUSTON USE ONLY CITY ENG. NO.		
SHEET NO. 01 OF 59		

01 COVER SHEET
02 SHEET INDEX
03 CONSTRUCTION NOTES
04 OVERALL LAYOUT
05 SOL BORING LAYOUT
06 PP (STA. 1+00 TO STA. 5+00)
07 PLAN (STA. 5+00 TO STA. 10+00)
08 PROFILE (STA. 5+00 TO STA. 10+00)
09 PP (STA. 10+00 TO STA. 15+00)
10 PLAN (STA. 15+00 TO STA. 20+00)
11 PROFILE (STA. 15+00 TO STA. 20+00)
12 PLAN (STA. 20+00 TO STA. 25+00)
13 PROFILE (STA. 20+00 TO STA. 25+00)
14 PP (STA. 25+00 TO STA. 28+50)
15 PP (STA. 28+50 TO STA. 33+00)
16 PP (STA. 33+00 TO STA. 38+00)
17 PP (STA. 38+00 TO STA. 43+00)
18 PP (STA. 43+00 TO STA. 48+00)
19 PP (STA. 48+00 TO STA. 52+50)
20 PP (STA. 52+50 TO STA. 57+00)
21 PP (STA. 57+00 TO STA. 61+00)
22 PP (STA. 61+00 TO STA. 64+00)
23 PP (STA. 64+00 TO STA. 65+28.76)
24 PROJECT SIGN DETAIL
25 STANDARD WATER LINE DETAILS
26 TRENCHLESS CONSTRUCTION DETAILS
27 AIR VALVE IN SERVICE MANHOLE DETAILS
28 VALVE AND VENT PIPING AND SERVICE MANHOLE DETAILS
29 HEAVY DUTY MANHOLE DETAILS
30 EXCAVATION, BEDDING, BACKFILL AND PAVEMENT REPAIR DETAILS
31 METER STATION LAYOUT
32 METER AND CONTROL VALVE STATION LAYOUT
33 METER AND CONTROL VALVE STATION STRUCTURAL AND MECHANICAL DETAILS
34 TREE PROTECTION DETAILS
35 METER AND CONTROL VALVE STATION INSTALLATION & ROUTING
36 ELECTRICAL CONDUIT SCHEDULE
37 CONTROL DIAGRAM SHEET 1
38 CONTROL DIAGRAM SHEET 2
39 CONTROL DIAGRAM SHEET 3
40 CONTROL DIAGRAM SHEET 4
41 CONTROL DIAGRAM SHEET 5
42 CONTROL DIAGRAM SHEET 6
43 CONTROL DIAGRAM SHEET 7
44 CONTROL DIAGRAM SHEET 8
45 CONTROL DIAGRAM SHEET 9
46 CONTROL DIAGRAM SHEET 10
47 CONTROL DIAGRAM SHEET 11
48 ELECTRICAL CONTROL PANEL LAYOUT & SPECIAL DEVICE SCHEDULE
49 ELECTRICAL CONTROL PANEL LAYOUT
50 ELECTRICAL DETAILS SHEET 1
51 ELECTRICAL DETAILS SHEET 2
52 SURVEY CONTROL MAP SWING FILE SHEET 1 OF 2
53 SURVEY CONTROL MAP SWING FILE SHEET 2 OF 2
54 TRAFFIC CONTROL PLAN (ADDICKS CLODINE ROAD) SHEET 1 OF 2
55 TRAFFIC CONTROL PLAN (WILLIAMS DRIVE) SHEET 2 OF 2
56 TRAFFIC CONTROL DETAILS
57 STORM WATER POLLUTION PREVENTION PLAN
58 STORM WATER POLLUTION PREVENTION PLAN DETAILS
59 STANDARD PAVEMENT DETAILS

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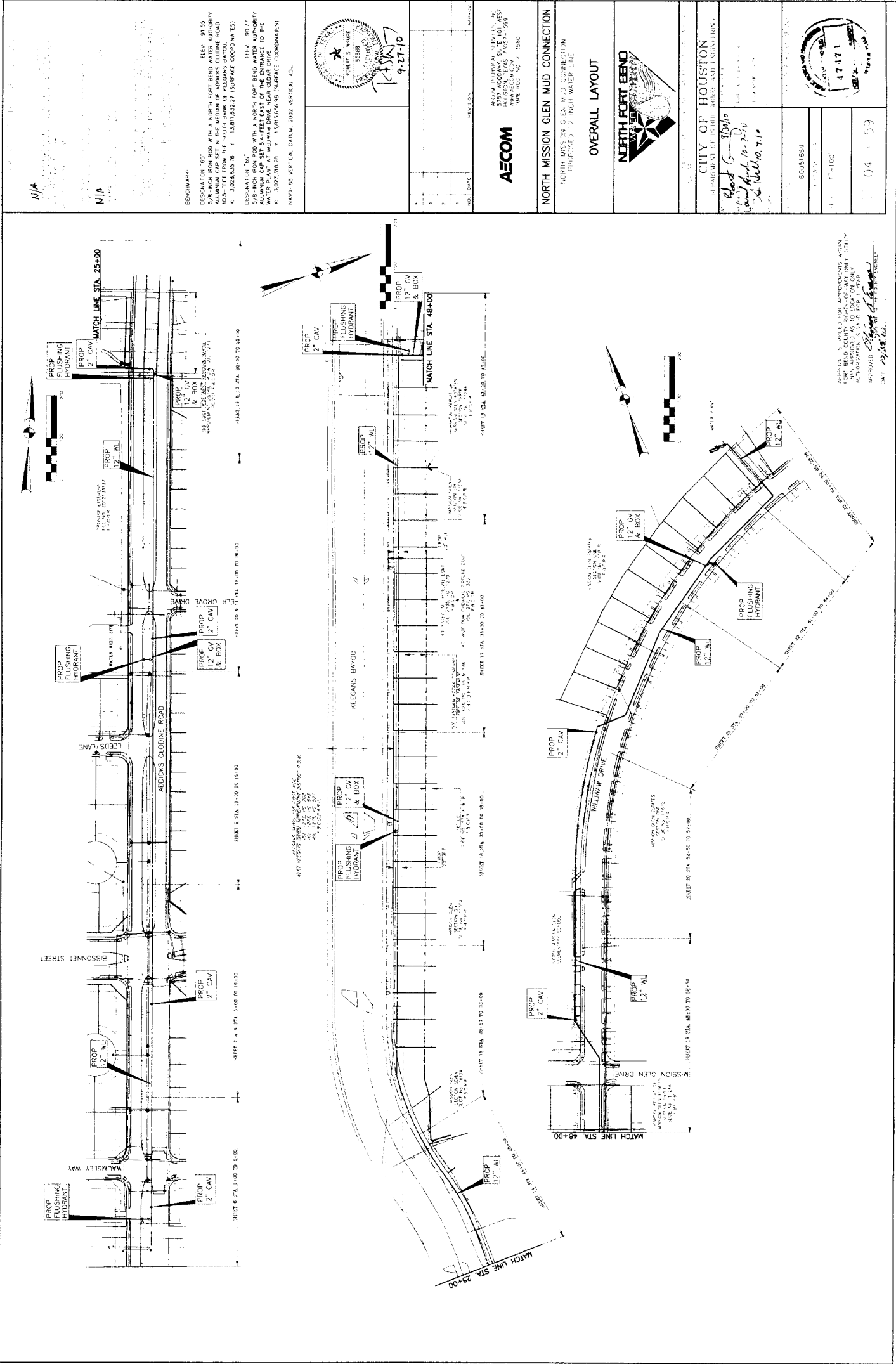
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N/A

N/A

BENCHMARK

DESIGNATION "50"
5/8-INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY
ALUMINUM CAP SET IN THE MIDDLE OF ADDISON'S CLOTHING ROAD
103-FEET FROM THE SOUTH BANK OF KEEGAN'S BAYOU (NAD 83)
X: 302565.76 Y: 3381524.27 (SURFACE COORDINATES)
ELEV: 91.45
DESIGNATION "50"
5/8-INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY
ALUMINUM CAP SET 5-FEET EAST OF THE UNPAVED TO THE
WATER PLANT AT WILLIAM DRIVE NEAR CEDAR DRIVE
X: 302739.78 Y: 3381565.98 (SURFACE COORDINATES)
ELEV: 90.77
NAD: 83 WGP-CA DATUM, 2022 VERTICAL A.D.



AECOM

AECOM TECHNICAL SERVICES, INC.
5975 MIDWAY DRIVE, SUITE 100 WEST
HOUSTON, TEXAS 77056-3976
WWW.AECOM.COM
THE REG. NO. F-15860

NORTH MISSION GLEN MUD CONNECTION

PROPOSED 12" R/W WATER LINE

OVERALL LAYOUT



CITY OF HOUSTON

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

Project 5-13310
Final Plan 10-2-20
10/10/20

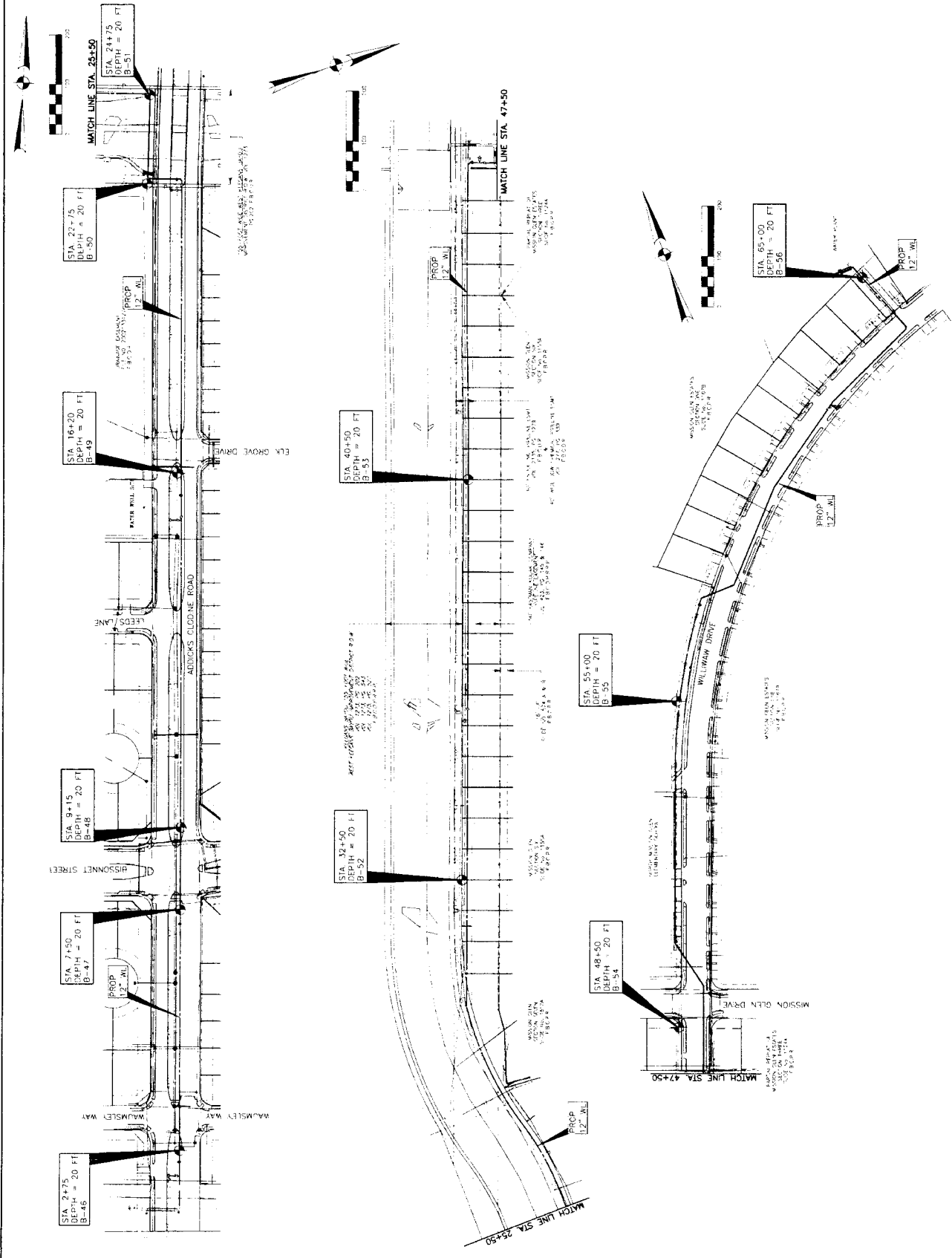


60951559

1"=100'

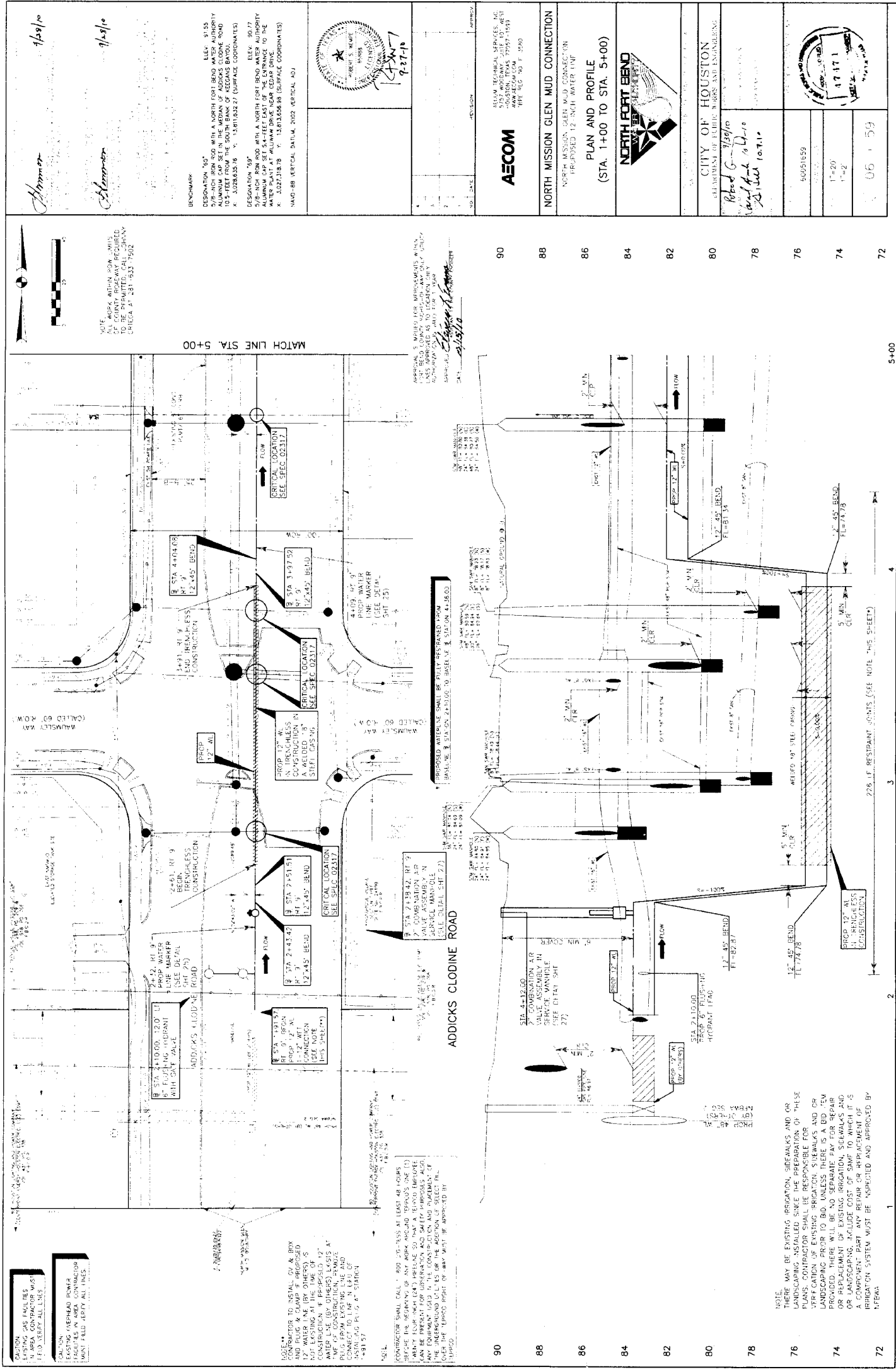
04 59

APPROVAL IS NOTED FOR IMPROVEMENTS WITHIN
FORT BEND COUNTY DEPARTMENT OF PUBLIC WORKS
AUTHORIZATION IS VALID FOR 1 YEAR
APPROVED: *[Signature]*
DATE: 10/10/20



DESIGNER'S SEAL FOR MECHANICAL ENGINEER
PORT BEND COUNTY RIGHTS OF WAY OFFICE, 2010
THIS PROJECT IS NOT TO BE CONSIDERED A
SUBSTITUTION OF LAND FOR 10-10-10
APPROVAL DATE 9/15/10

	DESIGNATION "56" 48-INCH IRON ROD WITH A NORTH PORT BEND WATER AUTHORITY ALUMINUM CAP SET IN THE MEDIAN OF ADDICKS CLODINE ROAD 105-FOOT FROM THE SOUTH BANK OF ADDICKS BAYOU X: 328833.76 Y: 13811832.27 (SURFACE COORDINATES) DESIGNATION "59" 48-INCH IRON ROD WITH A NORTH PORT BEND WATER AUTHORITY 178-FOOT FROM THE SOUTH BANK OF ADDICKS BAYOU WATER PLANT AT WILLIAM DRIVE NEAR CEDAR DRIVE X: 3307378.78 Y: 13813556.98 (SURFACE COORDINATES) NAD-88 VERTICAL DATUM, 2002 VERTICAL ADJ	
		NO. DATE REVISION 1 7-27-10
AECOM ALCON TECHNICAL SERVICES, INC. 5435 ARROYO, SUITE 301 WEST ARROYO, TEXAS 75911 WWW.AECOM.COM TSP REG. NO. F-3580		
NORTH MISSION GLEN MUD CONNECTION NORTH MISSION GLEN MUD CONNECTION PROPOSED 12-INCH WATER LINE		
SOIL BORING LAYOUT		
CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		
Revised 9/15/10 and final 10-3-10 A. Wolfe 10.7.10		
61051559		
1"=100'		
05 59		



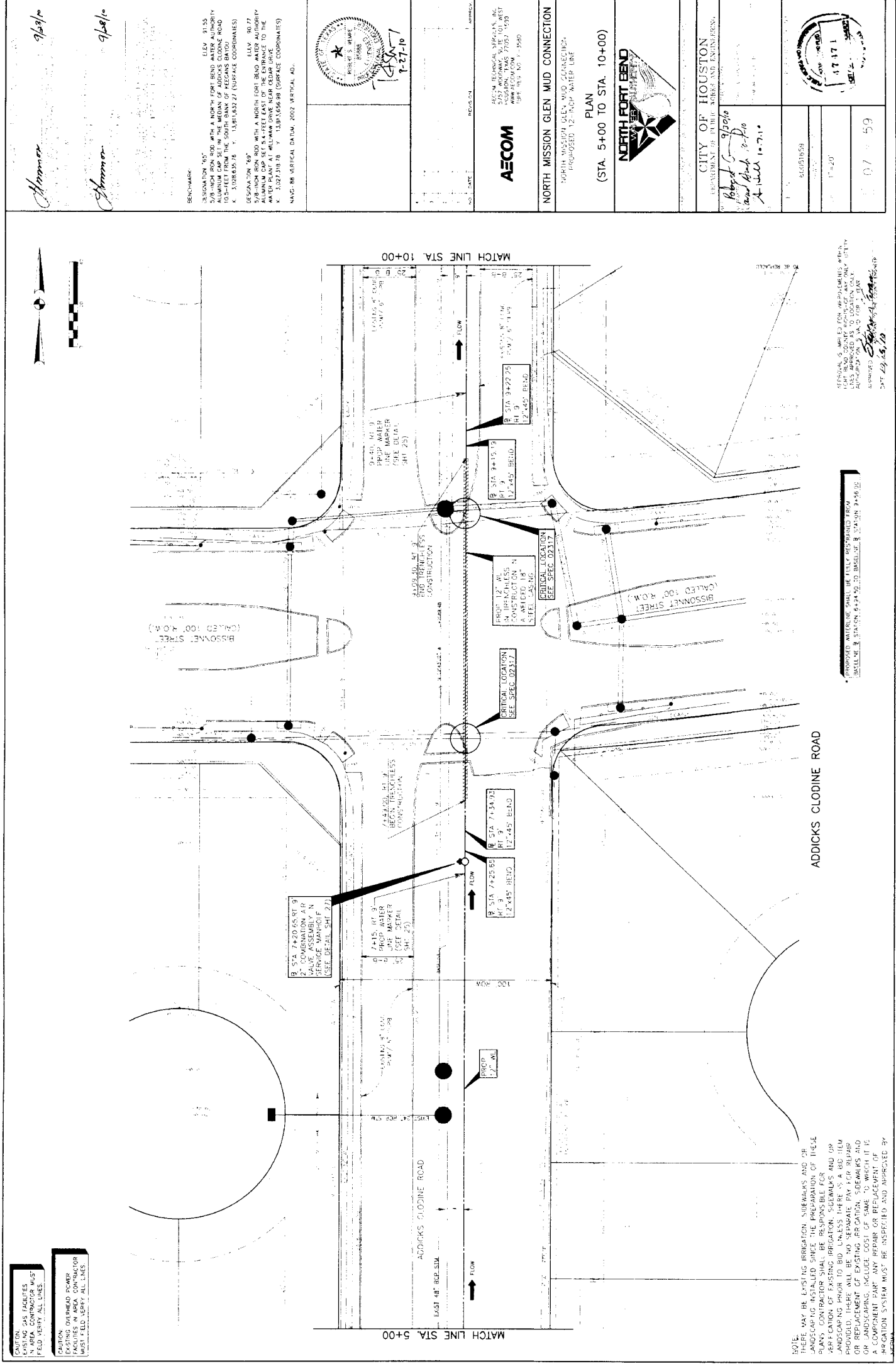
NOTE:
ALL WORK WITHIN ROW MUST BE PERMITTED BY THE CITY OF HOUSTON.
CITY OF HOUSTON
CITY OF HOUSTON

MATCH LINE STA. 5+00

APPROVAL: S. WILSON FOR IMPROVEMENTS WITHIN
12" BOLD LINES INDICATE WORK TO BE PERMITTED BY THE CITY OF HOUSTON.
APPROVAL: S. WILSON FOR IMPROVEMENTS WITHIN
12" BOLD LINES INDICATE WORK TO BE PERMITTED BY THE CITY OF HOUSTON.

AECOM	
NORTH MISSION GLEN MUD CONNECTION PROPOSED 12" INCH WATER LINE PLAN AND PROFILE (STA. 1+00 TO STA. 5+00)	
NORTH PORT BEND	
CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
9/28/10 9/28/10 9/28/10	
6051559	
1"=20'	
1"=2'	
06 59	

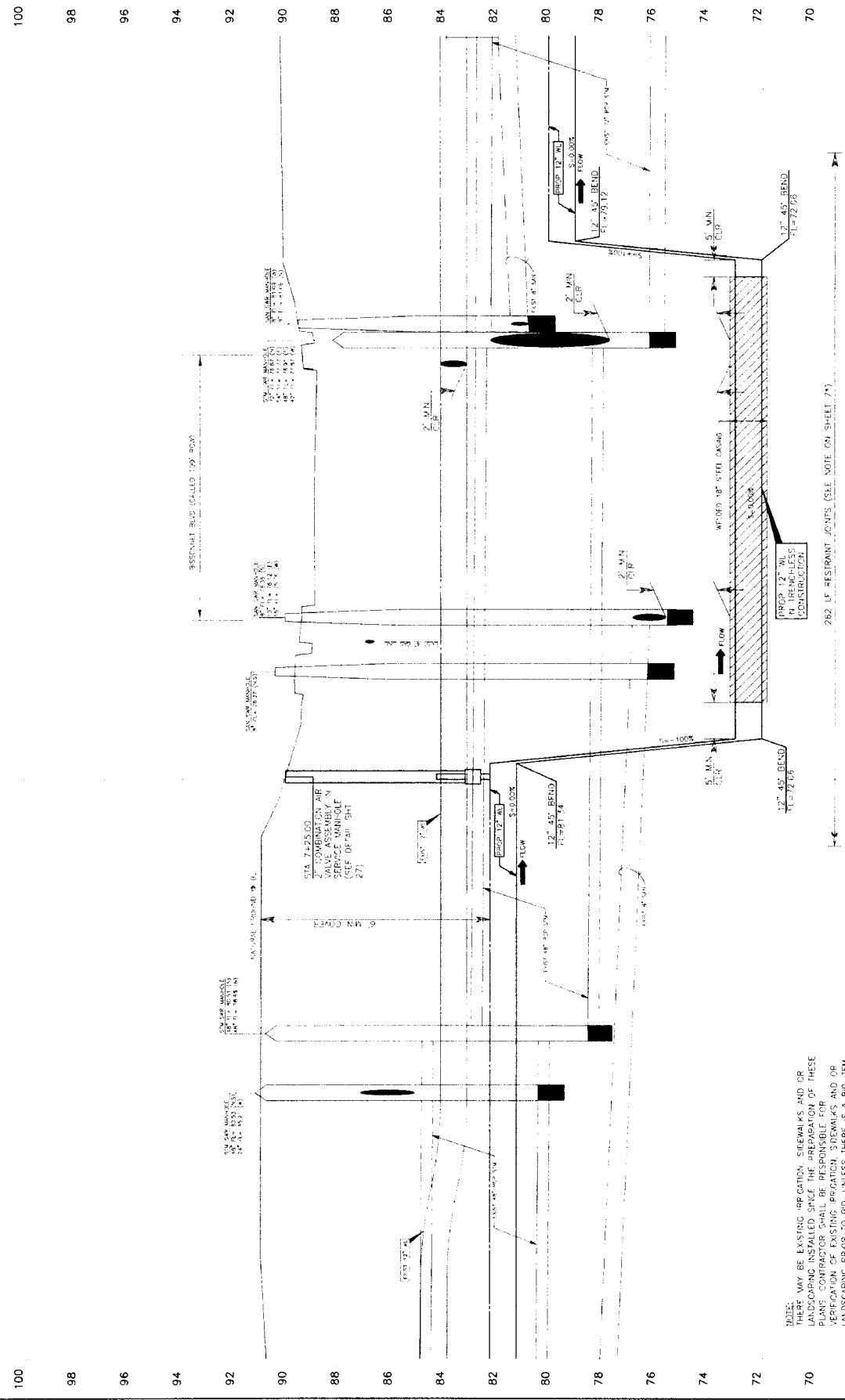
NOTE:
THERE MAY BE EXISTING IRRIGATION, SIDEWALKS AND/OR
LANDSCAPING INSTALLED SINCE THE PREPARATION OF THESE
PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR THE
VERIFICATION OF EXISTING IRRIGATION, SIDEWALKS AND/OR
LANDSCAPING PRIOR TO BID. UNLESS THERE IS A BID ITEM
FOR THE REPLACEMENT OF EXISTING IRRIGATION, SIDEWALKS AND/OR
LANDSCAPING, INCLUDE COST OF SAME TO WHICH IT IS
A COMPONENT PART. ANY REPAIR OR REPLACEMENT OF
IRRIGATION SYSTEM MUST BE INSPECTED AND APPROVED BY
THE CITY OF HOUSTON.



APPROVAL IS IMPLIED FOR MEMBERS WITH-
OUT HEAD COUNTY RIGHTS-OF-WAY ONLY SETTL-
MENTS APPROVED AS TO LOCATION ONLY.
AUTHORIZATION IS VALID FOR 1 YEAR

APPROVED *John J. Connelley*
DATE *12.15.10*

ADDICKS CLODINE ROAD



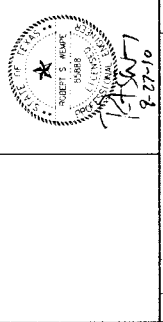
NOTE: THERE MAY BE EXISTING IRRIGATION, SIDEWALKS, AND/OR LANDSCAPING INSTALLED SINCE THE PREPARATION OF THESE PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF EXISTING IRRIGATION, SIDEWALKS, AND/OR LANDSCAPING PRIOR TO BID. UNLESS THERE IS A BID ITEM PROVIDED, THERE WILL BE NO SEPARATE PAY FOR REPAIR OR REPLACEMENT OF EXISTING IRRIGATION, SIDEWALKS, AND/OR LANDSCAPING, INCLUDING COST OF SAME TO WHICH IT IS A COMPONENT PART. ANY REPAIR OR REPLACEMENT OF IRRIGATION SYSTEM MUST BE RESPECTED AND APPROVED BY MSWA.

9/28/10
 Hammer
 9/28/10
 Hammer

DESCRIPTION: "65"
5/8" INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY
ALUMINUM CAP SET IN THE MIDDLE OF ADDONS CLONING ROAD
10.5 FEET FROM THE SOUTH SIDE OF MEGANS ROAD
X: 3.02845E+06 Y: 13.911632 27 (SURFACE COORDINATES)
ELEV: 31.55

DESCRIPTION: "59"
5/8" INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY
ALUMINUM CAP SET 5.4 FEET EAST OF THE ENTRANCE TO THE
WATER PLANT AT MILLWAVE DRIVE NEAR CEDAR DRIVE
X: 3.027139E+06 Y: 13.913656 98 (SURFACE COORDINATES)
ELEV: 40.22

WAVE: 08 VERTICAL DATUM: 2002 VERTICAL ADJ.



NO	DATE	REVISION	AUTHOR
1			
2			
3			

AECOM
AECOM USA GROUP, INC.
5757 WOODWAY, SUITE 'G' WEST
HOUSTON, TEXAS 77057-1509
WWW.AECOM.COM
TELE: 832.3562 FAX: 3562

NORTH MISSION GLEN MUD CONNECTION
NORTH MISSION GLEN MUD CONNECTION
PROPOSED 12-INCH WATER LINE

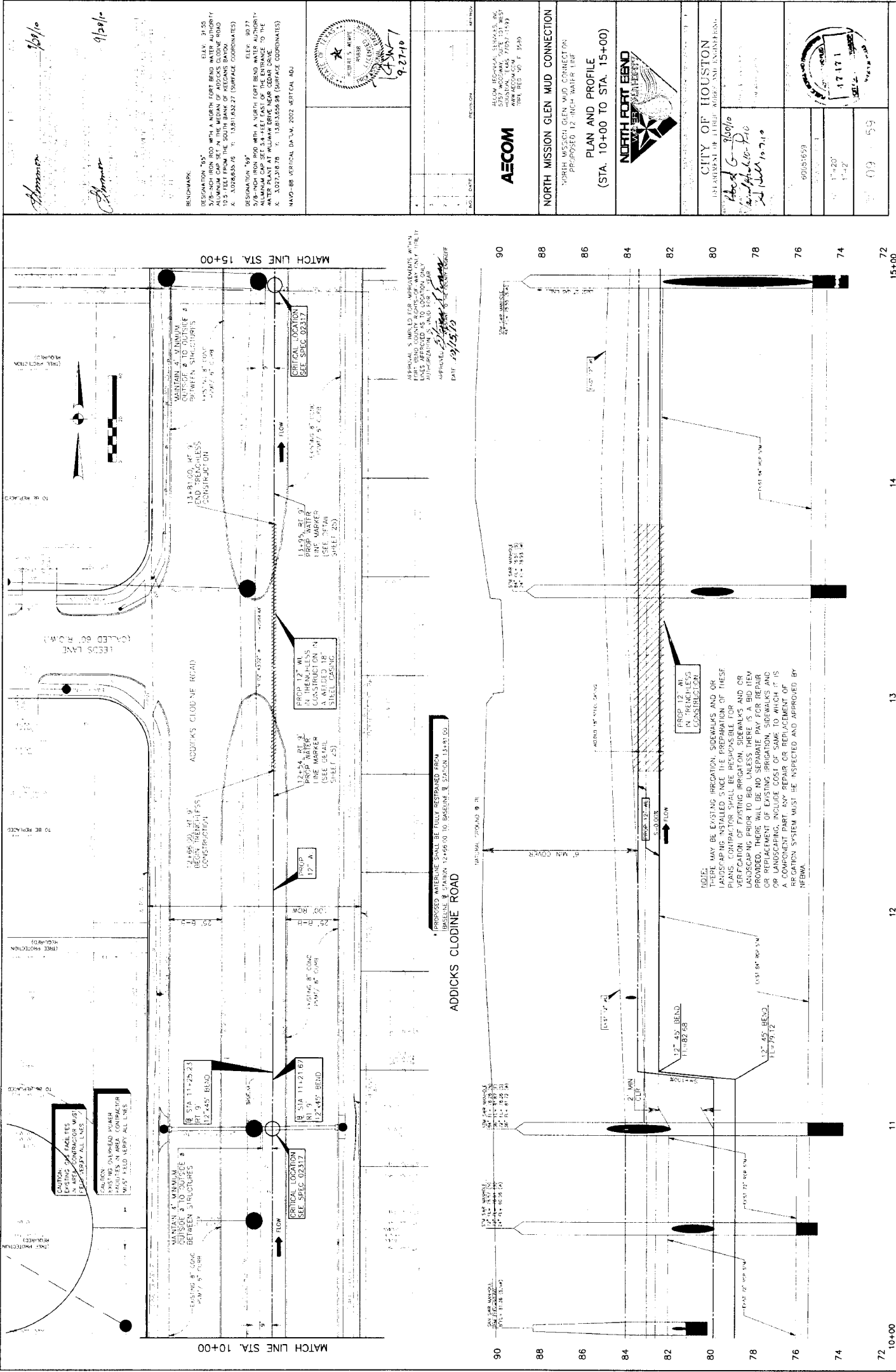
PROFILE
(STA. 5+00 TO STA. 10+00)
NORTH FORT BEND

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

and took 10-12-10
L. 1 July 10.7.10

60051659	1 st = 20
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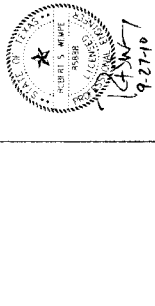
1-22	08 - 50
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9/20/10

9/20/10

BENCHMARK
DESIGNATION "BY"
578-INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY
ALUMINUM CAP SET IN THE MEDIAN OF ADDICKS CLOODINE ROAD
ELEV. 31.55
X. 3327338.78 Y. 13813356.98 (SURFACE COORDINATES)
X. 3327338.78 Y. 13813327.27 (SURFACE COORDINATES)
DESIGNATION "BY"
578-INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY
ALUMINUM CAP SET 5.8 FEET EAST OF THE ENTRANCE TO THE
WATER PLANT AT WILLIAM DRIVE NEAR CEDAR DRIVE
ELEV. 30.77
X. 3327338.78 Y. 13813356.98 (SURFACE COORDINATES)
NAVD-88 VERTICAL DATUM, 2002 VERTICAL ADJ



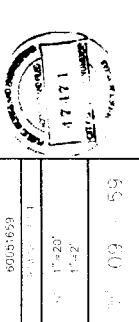
AECOM

NORTH MISSION GLEN MUD CONNECTION
NORTH MISSION GLEN MUD CONNECTION
PROPOSED 12-INCH WATER LINE
PLAN AND PROFILE
(STA. 10+00 TO STA. 15+00)



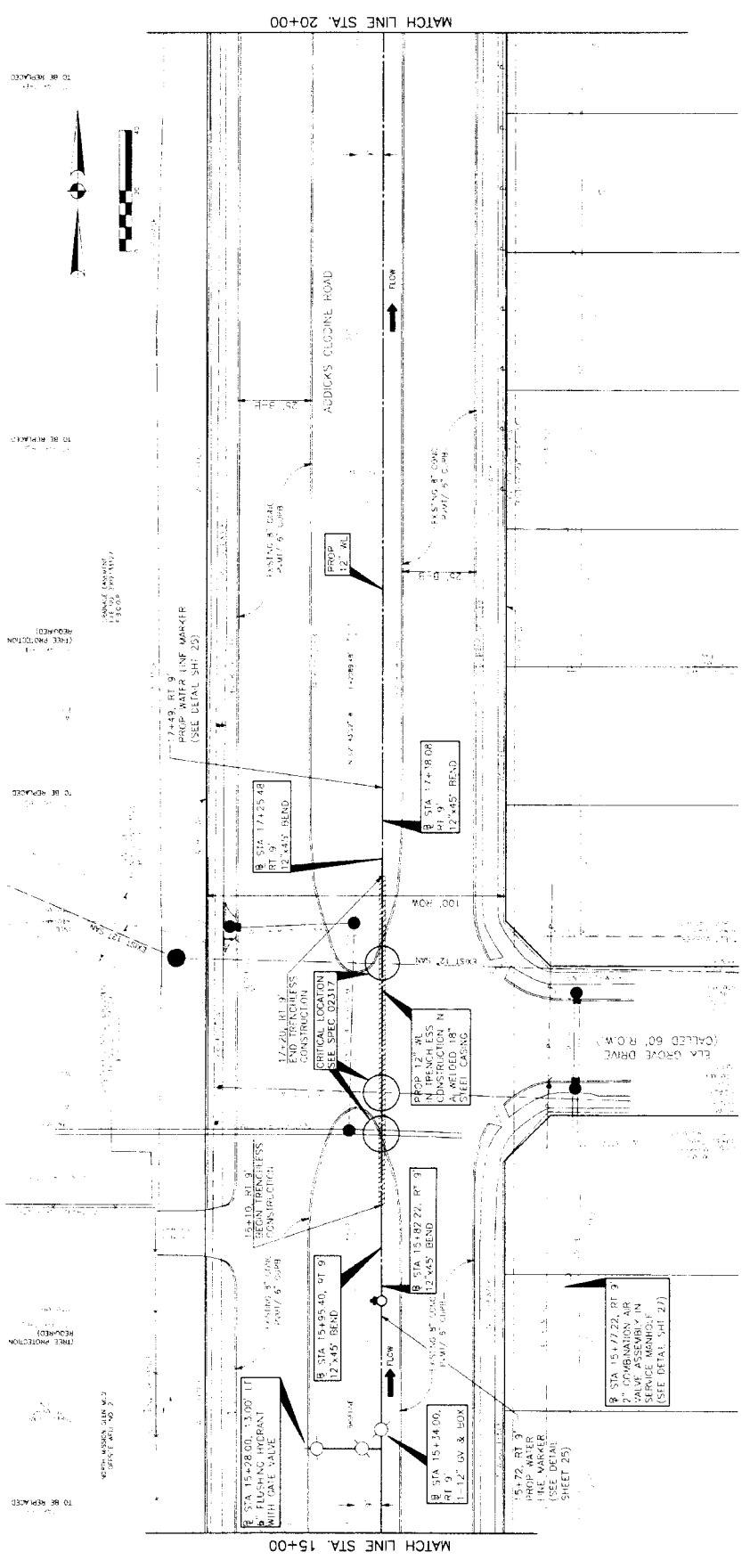
CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

Drawn: G. 9/20/10
Checked: J. 9/20/10
Date: 9/20/10



CAUTION: WORK IN PROGRESS
IN AREA CONTRACTOR MUST
FIELD VERIFY ALL LINES

CAUTION:
EXISTING OVERHEAD POWER
LINES MAY BE PRESENT
CONTRACTOR MUST FIELD VERIFY ALL LINES



NOTE:
THERE MAY BE EXISTING IRRIGATION SYSTEMS AND/OR
LANDSCAPING INSTALLED SINCE THE PREPARATION OF THESE
PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR
VERIFICATION OF EXISTING IRRIGATION, SIDEWALKS AND/OR
LANDSCAPING PRIOR TO BID. UNLESS THERE IS A 90 DEGREE
OR REPLACEMENT OF EXISTING IRRIGATION, SIDEWALKS AND/OR
OR LANDSCAPING INCLUDE EGO'S OF SAME TO WHICH IT IS
A COMPONENT PART. ANY REPAIR OR REPLACEMENT OF
IRRIGATION SYSTEM MUST BE INSPECTED AND APPROVED BY
NFBM.

* PROPOSED WATERLINE SHALL BE FULLY PREPARED PRIOR
TO BEING PLACED IN SERVICE. SEE DETAIL 17-113.00.

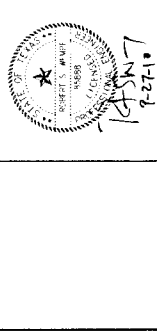
ADDICKS CLOODINE ROAD

APPROVAL IS GRANTED FOR THE PREPARATION OF THESE
PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR
VERIFICATION OF EXISTING IRRIGATION, SIDEWALKS AND/OR
LANDSCAPING PRIOR TO BID. UNLESS THERE IS A 90 DEGREE
OR REPLACEMENT OF EXISTING IRRIGATION, SIDEWALKS AND/OR
OR LANDSCAPING INCLUDE EGO'S OF SAME TO WHICH IT IS
A COMPONENT PART. ANY REPAIR OR REPLACEMENT OF
IRRIGATION SYSTEM MUST BE INSPECTED AND APPROVED BY
NFBM.

DATE: 11/15/10

9/15/10
9/15/10

BENCHMARK
DESIGNATION: 655
ELEV: 91.55
5/8-INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY
ALUMINUM CAP SET 5.4-FEET EAST OF THE ENTRANCE TO THE
WATER PLANT AT MILLHAM DRIVE NEAR CLEGG DRIVE.
X: 3038635.76 Y: 13911532.27 (SURFACE COORDINATES)
ELEV: 89.71
DESIGNATION: 1407
ELEV: 89.71
5/8-INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY
ALUMINUM CAP SET 5.4-FEET EAST OF THE ENTRANCE TO THE
WATER PLANT AT MILLHAM DRIVE NEAR CLEGG DRIVE.
X: 3037378.18 Y: 1391305.86 (SURFACE COORDINATES)
NAVD-83 VERTICAL DATUM, 2002 VERTICAL ADJ.



AECOM
ALCON TEXAS, MEDICAL, INC.
10000 WESTHEIMER ROAD, SUITE 100
HOUSTON, TEXAS 77067-1549
WWW.AECOM.COM
WORK NO. 15590

NORTH MISSION GLEN MUD CONNECTION
PROPOSED 12" INCH WATER LINE
PLAN
(STA. 15+00 TO STA. 20+00)

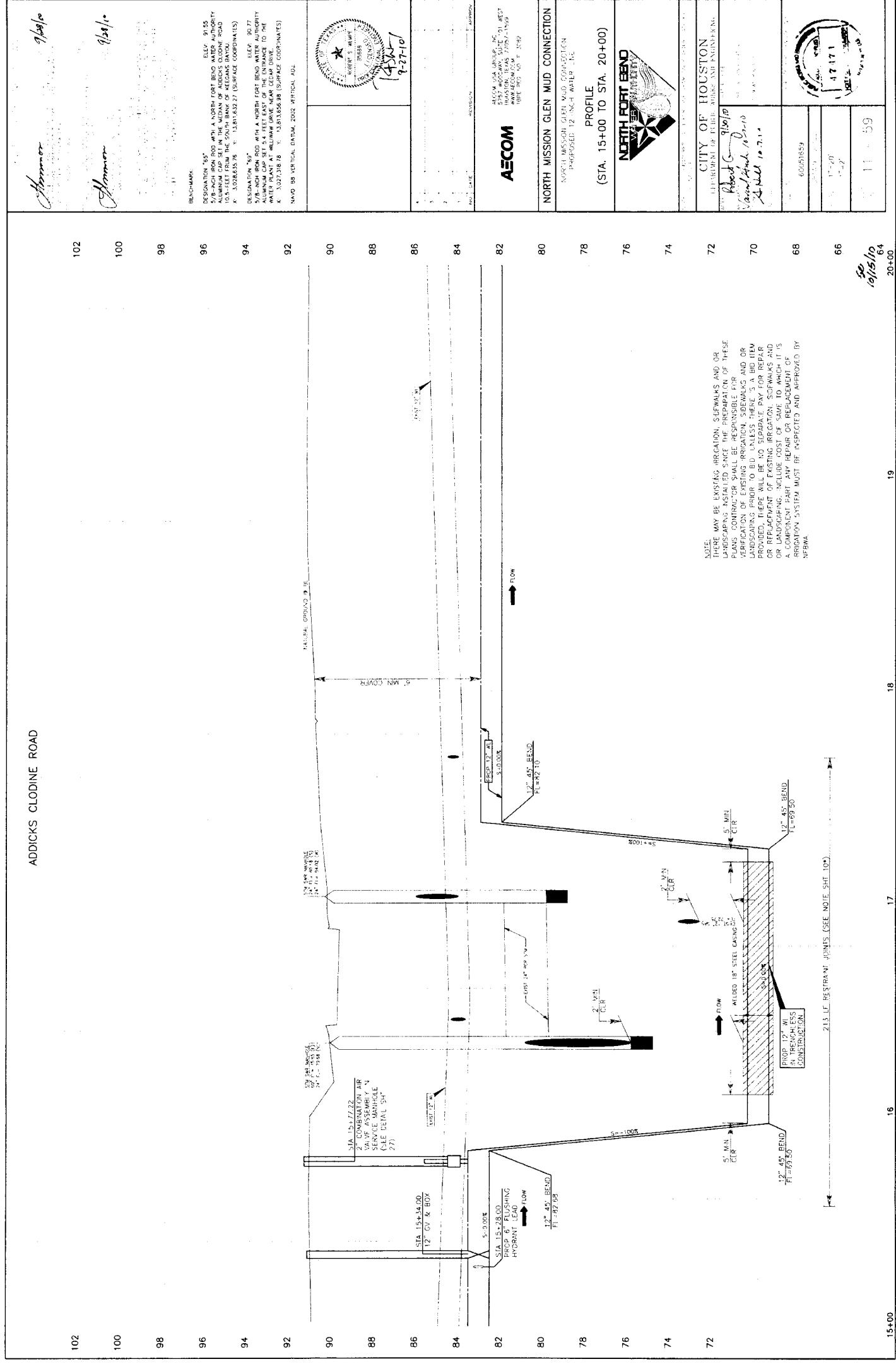


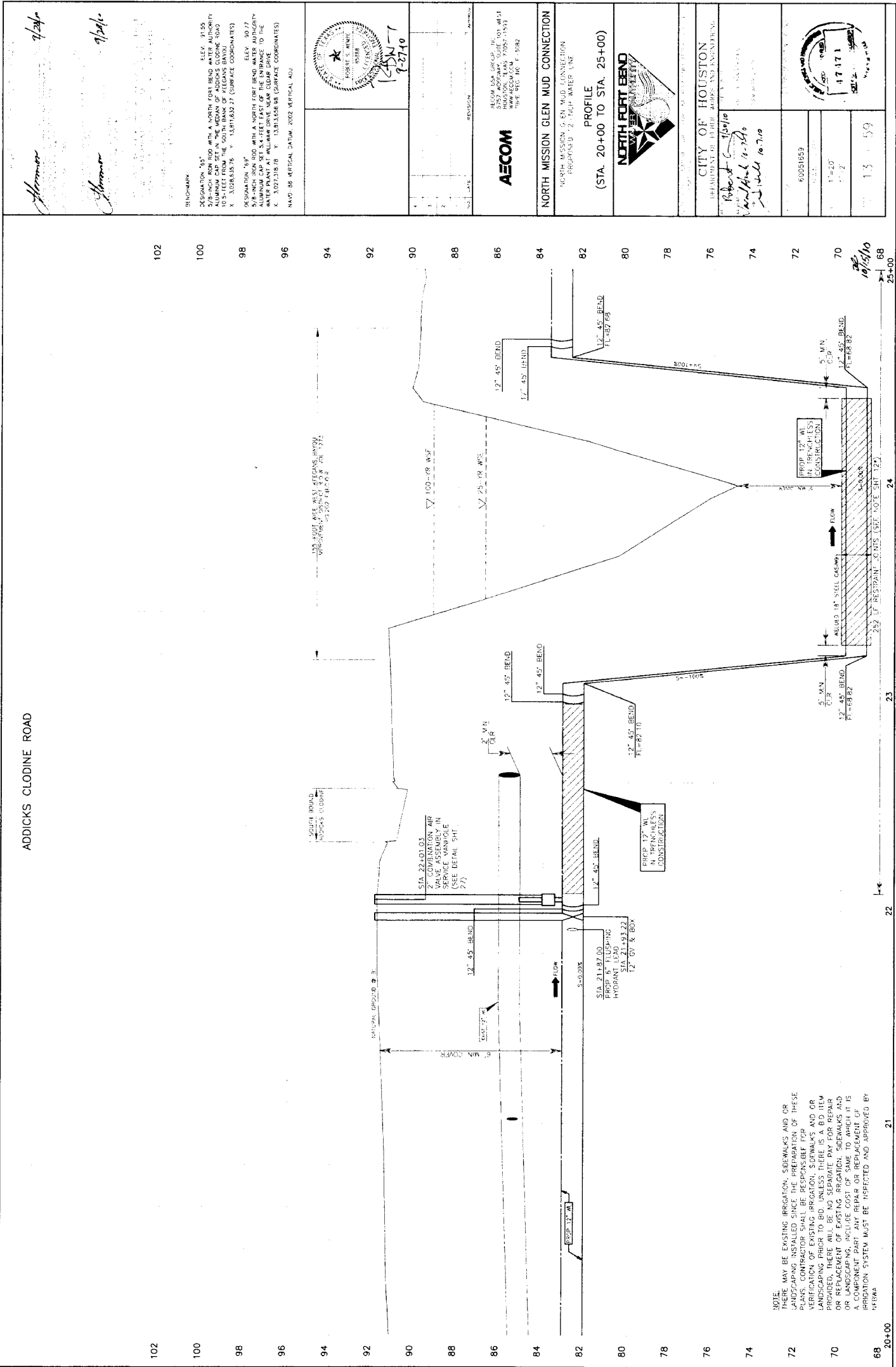
CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

Project: 15590
Drawn: 10/10
Checked: 10/10

50001650
1"=20'
10' x 59'



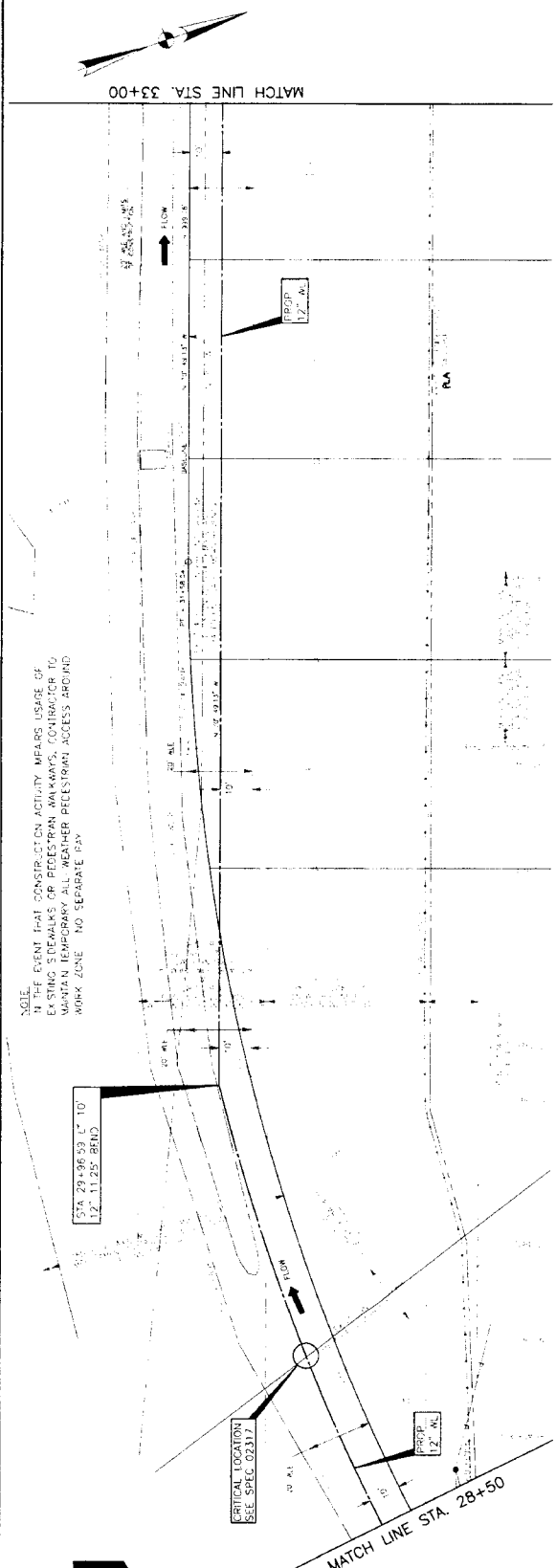




LAST REVISION: 06/27/2010 11:00am BY: ERMK/ERK/ML
FILE: 000001.dwg

CAUTION: GAS VALVES IN AREA CONTRACTOR MUST FIELD VERIFY ALL LINES.

CAUTION: EXISTING OVERHEAD POWER FACILITIES IN AREA CONTRACTOR MUST FIELD VERIFY ALL LINES.



NOTE:
REPAIR/REPLACEMENT OF EXISTING WEST KEEGANS BAYOU INCLUDING BOTTOM, SIDE CUTS, COLLECTOR DITCHES, AND SIDEWALKS UPON COMPLETION OF PROPOSED 12 INCH WATER LINE CONNECTION PROJECT SHALL BE EQUAL TO OR BETTER THAN EXISTING WEST KEEGANS BAYOU CONDITIONS. RECONSTRUCTION/RESTORATION OF EXISTING WEST KEEGANS BAYOU SHALL BE PER WEST KEEGANS BAYOU IMPROVEMENT DISTRICT REQUIREMENTS.

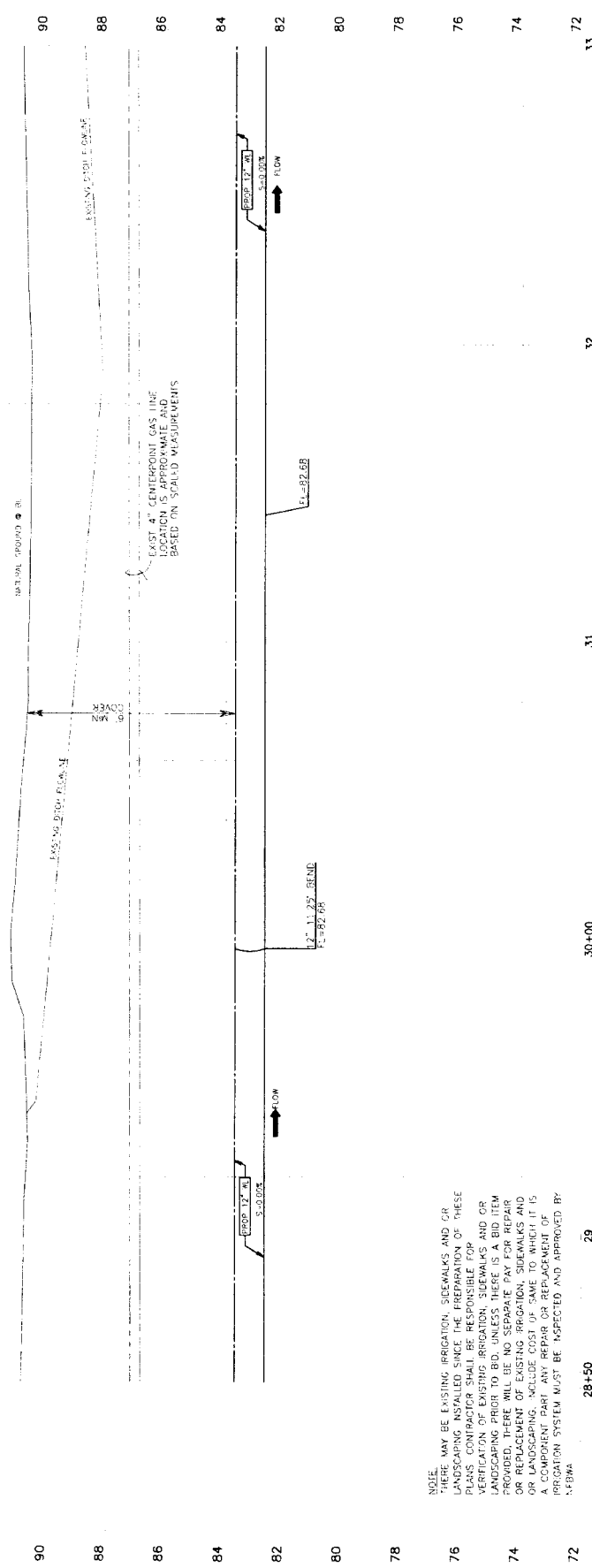
NOTE:
CONTRACTOR TO NOTIFY BRIDGE (HAWEL) A REPRESENTATIVE OF WEST KEEGANS BAYOU DISTRICT 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITY WITHIN OR ADJACENT TO WEST KEEGANS BAYOU ROW AT 715-287-2895.

21 CURVE DATA:
PCC= 28+15.64
AZ= 295.751°
R= 656.40
PT= 31+58.04

NOTE:
CURVE OPEN CUT TRENCH CONSTRUCTION OF 12" WATER LINE WITH 12" PROP 20' ALE AND EXIST 40' EXISTING PIPELINE EXIST. IF CONTRACTOR ENCOUNTERS EXIST ABANDONED 4" CENTERPOINT GAS LINE DURING CONSTRUCTION OPERATIONS CONTRACTOR IS TO COORDINATE REMOVAL AND DISPOSAL OF OFFSITE WITH CENTER POINT ENERGY.

APPROVAL IS GRANTED FOR MEASUREMENTS WITHIN TOWN AND COUNTY BOUNDS OF ANY ONLY "UTILITY" AUTHORIZATION IS VALID FOR 1 YEAR.
DATE: 9/27/10
BY: [Signature]

WEST KEEGANS BAYOU



NOTE:
THERE MAY BE EXISTING IRRIGATION, SIDEWALKS AND/OR LANDSCAPING INSTALLED SINCE THE PREPARATION OF THESE PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR AND/OR VERIFICATION OF EXISTING IRRIGATION, SIDEWALKS AND/OR LANDSCAPING. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROVISION OF EXISTING IRRIGATION, SIDEWALKS AND/OR LANDSCAPING. INCLUDE COST OF SAME TO WHICH IT IS A COMPONENT PART. ANY REPAIR OR REPLACEMENT OF IRRIGATION SYSTEM MUST BE INSPECTED AND APPROVED BY L.F.B.M.A.

Hammer 9/28/10

Johnson 9/28/10

DESIGNATION: "60"

5/8-INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY ALUMINUM CAP SET IN THE MEDIAN OF ADJACENT CLODINE ROAD

3.5 INCHES DIAMETER

X: 1308.855 N Y: 1381.622 E7 (SURFACE COORDINATES)

DESIGNATION: "60"

5/8-INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY ALUMINUM CAP SET IN THE MEDIAN OF ADJACENT CLODINE ROAD

3.5 INCHES DIAMETER

X: 1307.318 N Y: 1381.622 E8 (SURFACE COORDINATES)

NAD83 88 VERTICAL DATUM, 2002 VERTICAL ADJ.

APPROVED

NOT DATE

REVISION

APPROVED

AECOM

ALCOA UTILITIES SERVICES, INC.

10000 WEST 10TH STREET

HOUSTON, TEXAS 77036-1107

TEL: 281-460-6300

NORTH MISSION GLEN MUD CONNECTION

NORTH MISSION GLEN MUD CONNECTION

PROPOSED 12 INCH WATER LINE

PLAN AND PROFILE

(STA. 28+50 TO STA. 33+00)

NORTH FORT BEND

WATER AUTHORITY

CITY OF HOUSTON

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

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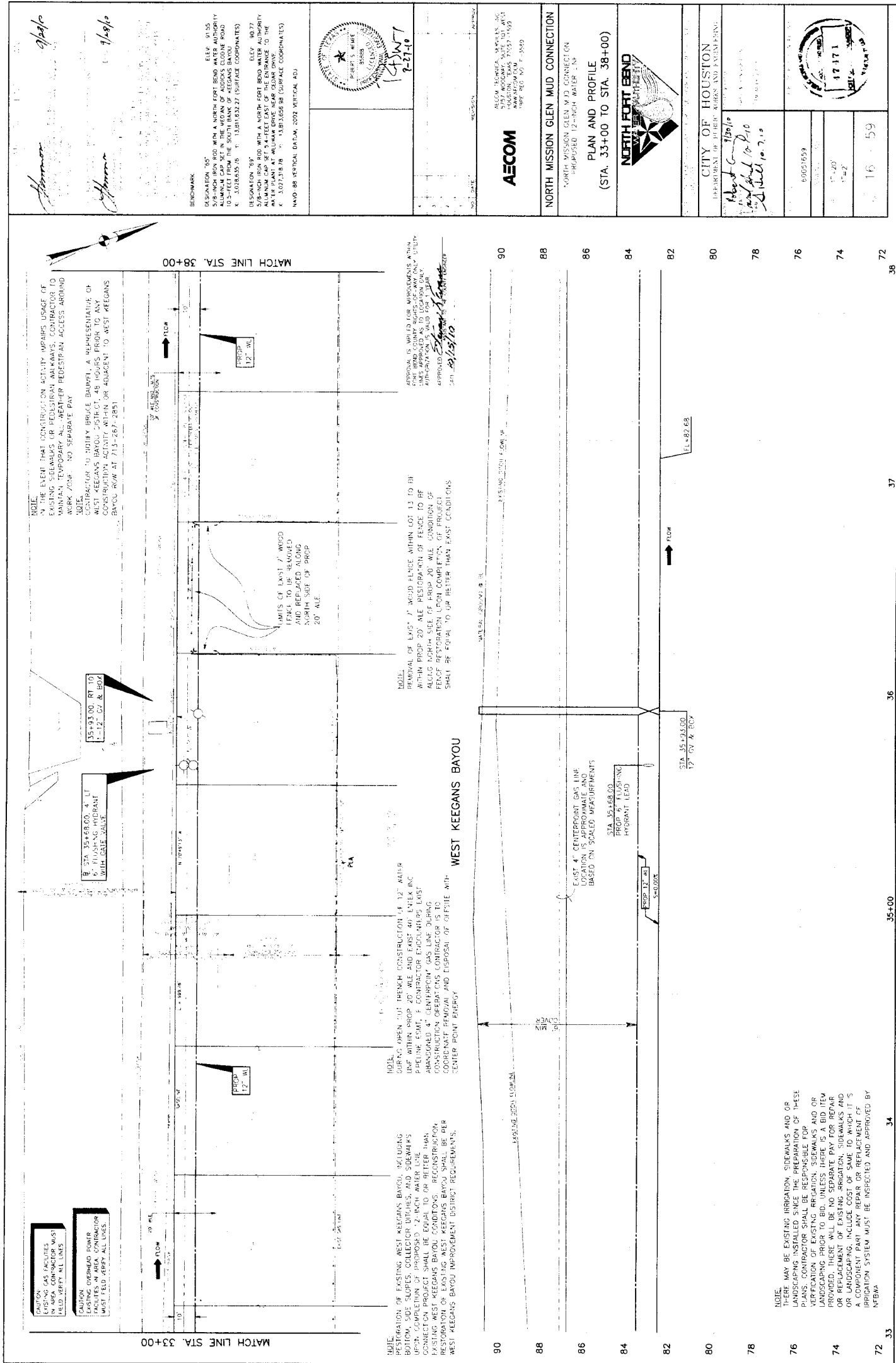
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AECOM

ARTH MISSION GLEN MUD CONNECTION

NORTH MISSION GLEN M JO CONNECTION
PROPOSED 12-INCH WATER LINE

PLAN AND PROFILE
(STA. 33+00 TO STA. 38+00)



CITY OF HOUSTON

UNITED STATES OF AMERICA

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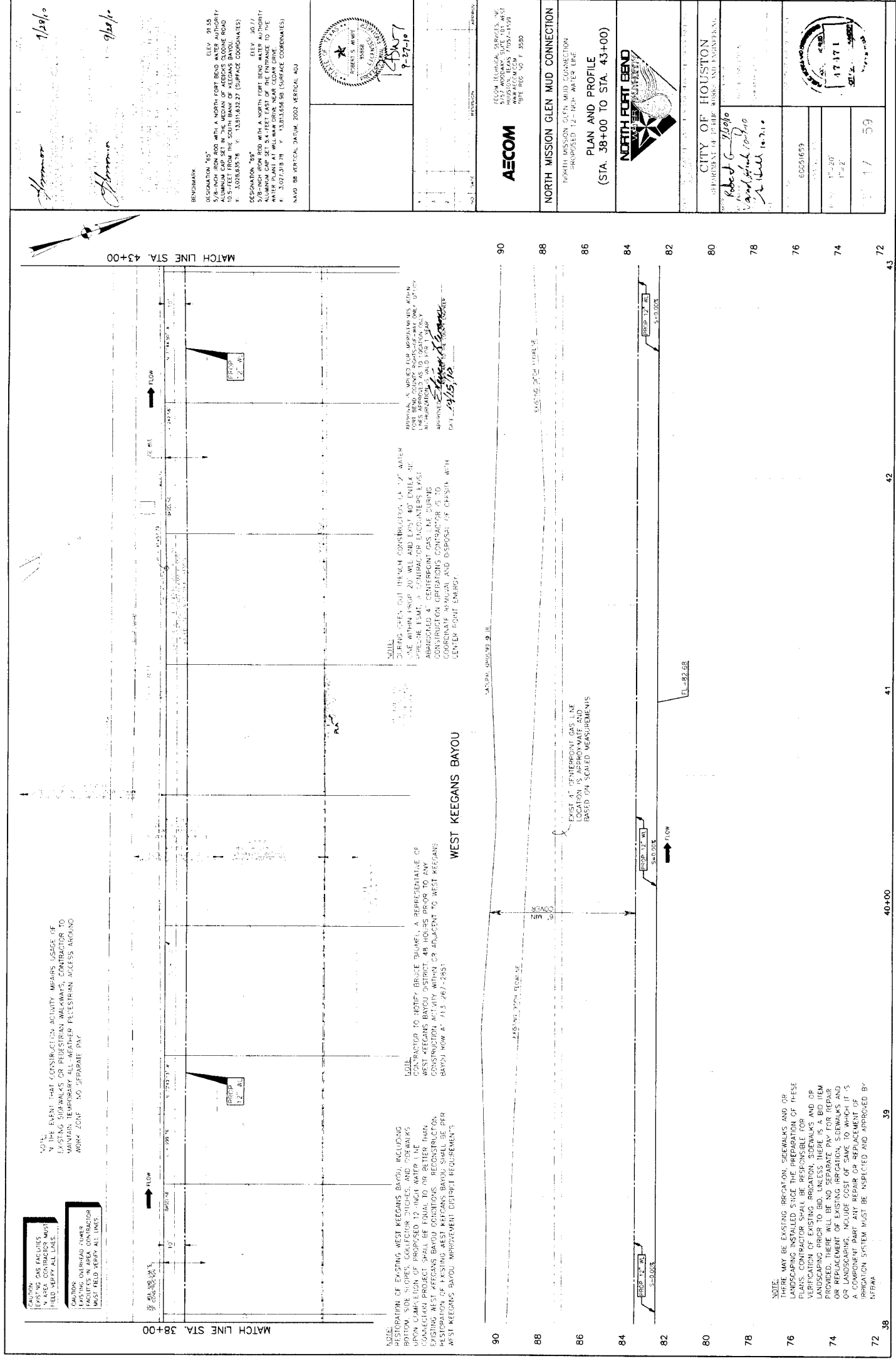
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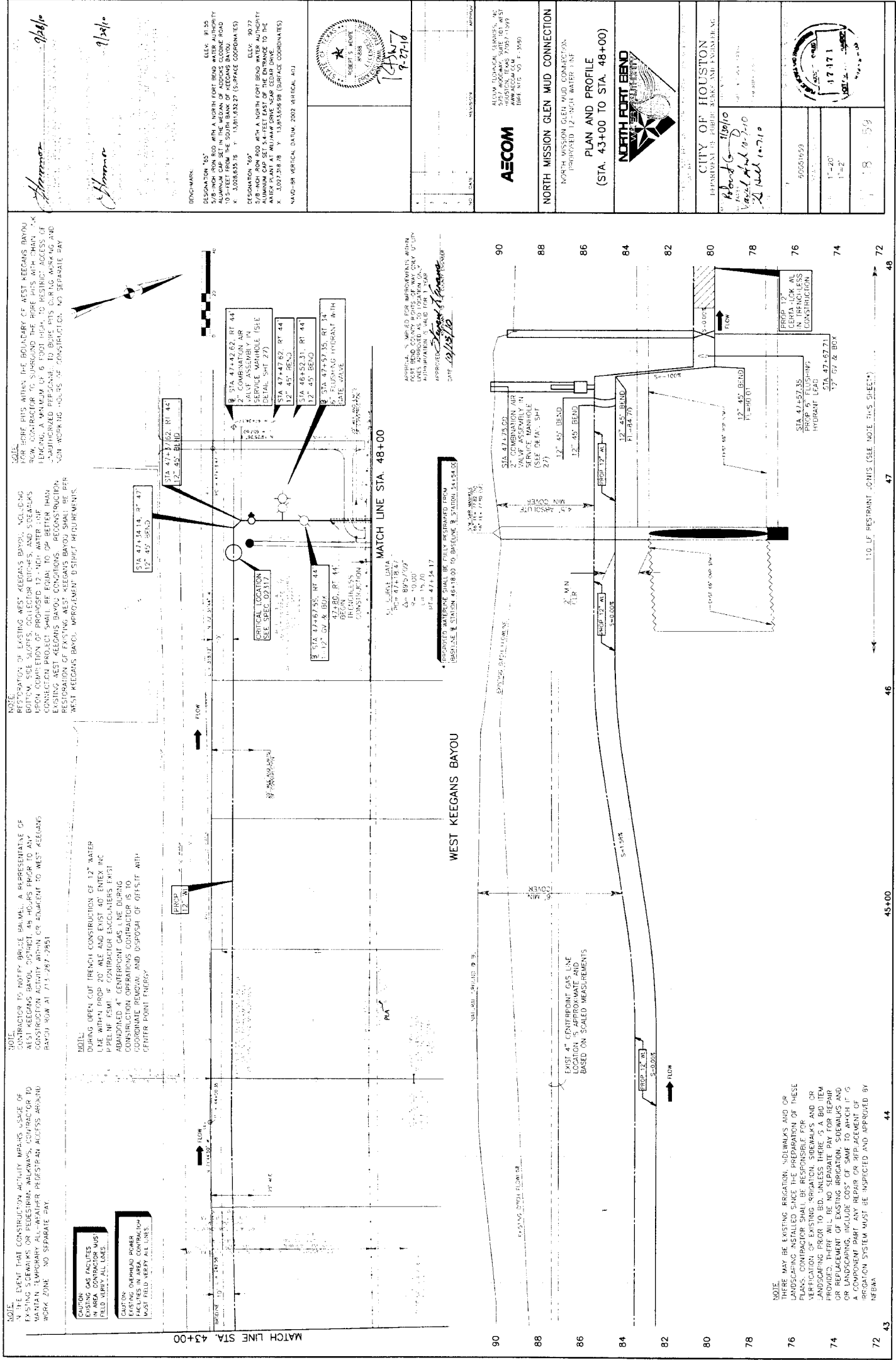
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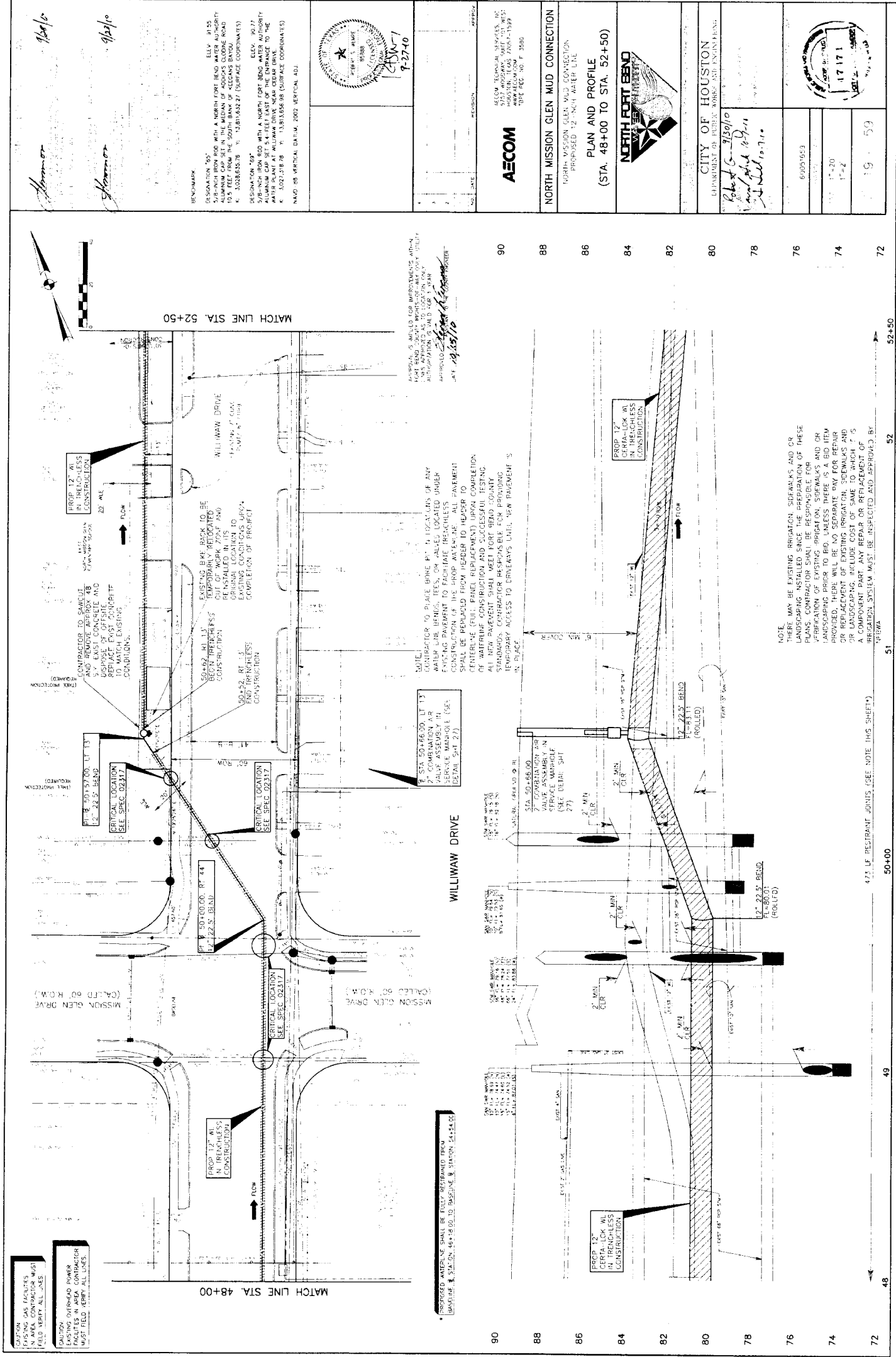
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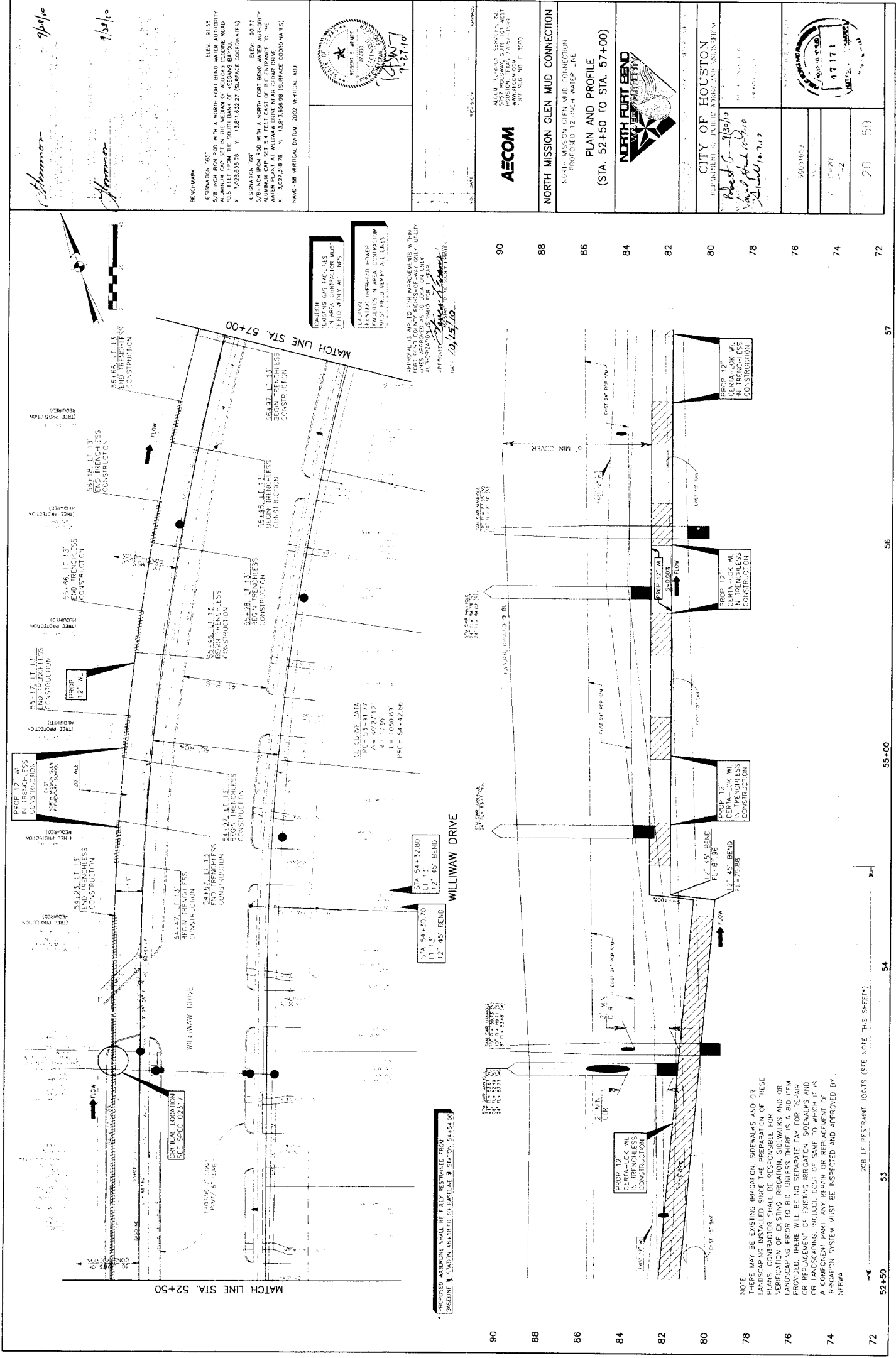
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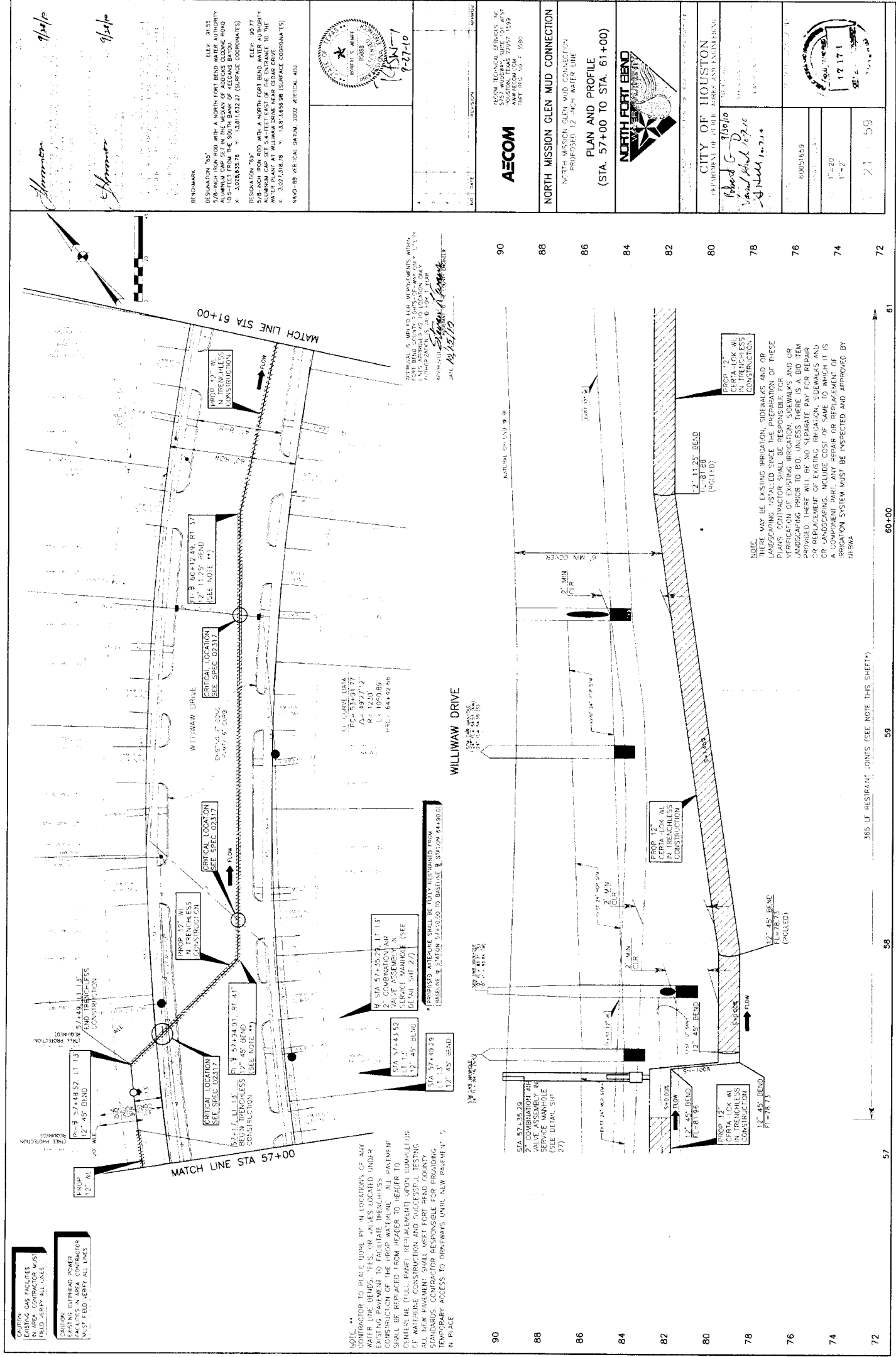
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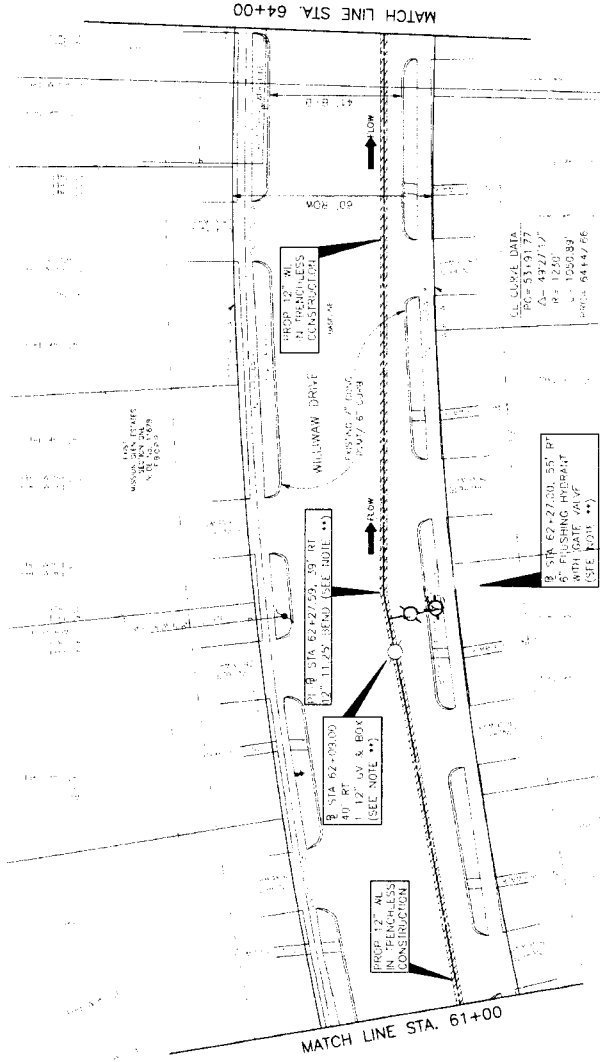




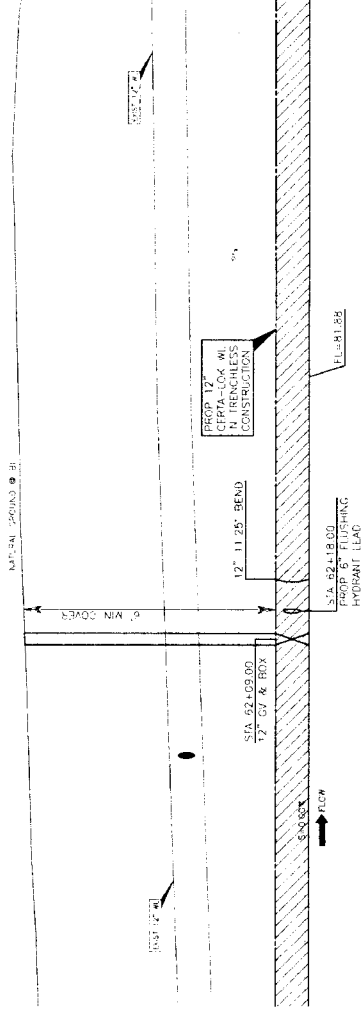








NOTE: CONTRACTOR TO PLACE BOX PIT IN LOCATIONS OF ANY
WATER, AIR BRINDS, TIES, OR VALVES LOCATED UNDER
EXISTING PAVEMENT TO FACILITATE REPAIRS.
CONSTRUCTION OF THE PROP. WATER INLET PAVEMENT
SHALL BE REPLACED FROM HEADER TO HEADER TO
CENTER IN FULL GATE. REPLACEMENT UPON COMPLETION
OF WATERLINE CONSTRUCTION AND SUCCESSFUL TESTING
ALL NEW PAVEMENT SHALL MEET OR EXCEED BRAND COUNTY
STANDARDS. CONTRACTOR RESPONSIBLE FOR PROVIDING
TEMPORARY ACCESS TO DRIVEWAYS UNTIL NEW PAVEMENT IS
IN PLACE.



76 THERE MAY BE EXISTING IRRIGATION, SIDEWALKS AND OF LANDSCAPING INSTALLED SINCE THE PREPARATION OF THESE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND VERIFICATION OF EXISTING IRRIGATION, SIDEWALKS AND OF LANDSCAPING PRIOR TO BID. UNLESS THERE IS A BID ITEM PROVIDED, THERE WILL BE NO SEPARATE PAY FOR REPAIR OR REPLACEMENT OF EXISTING IRRIGATION, SIDEWALKS AND OF LANDSCAPING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COMPONENT PAINT AND REPAIR OR REPLACEMENT OF IRRIGATION SYSTEM MUST BE SPECIFIED AND APPROVED BY THE

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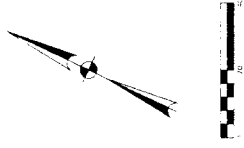
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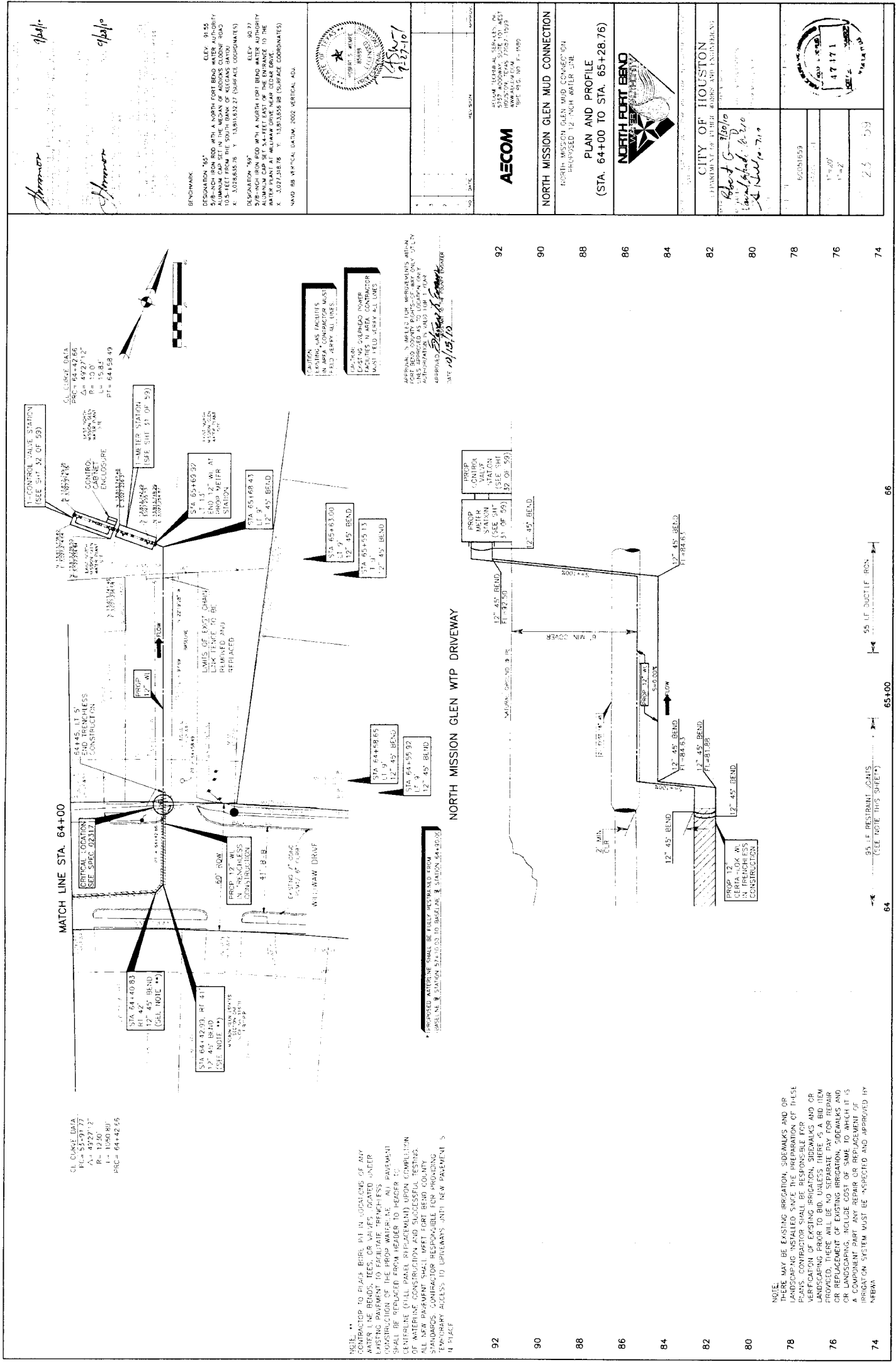
CAUTION:
EXISTING GAS FACILITIES
IN AREA CONTRACTOR MUST
FIELD VERIFY ALL LINES.

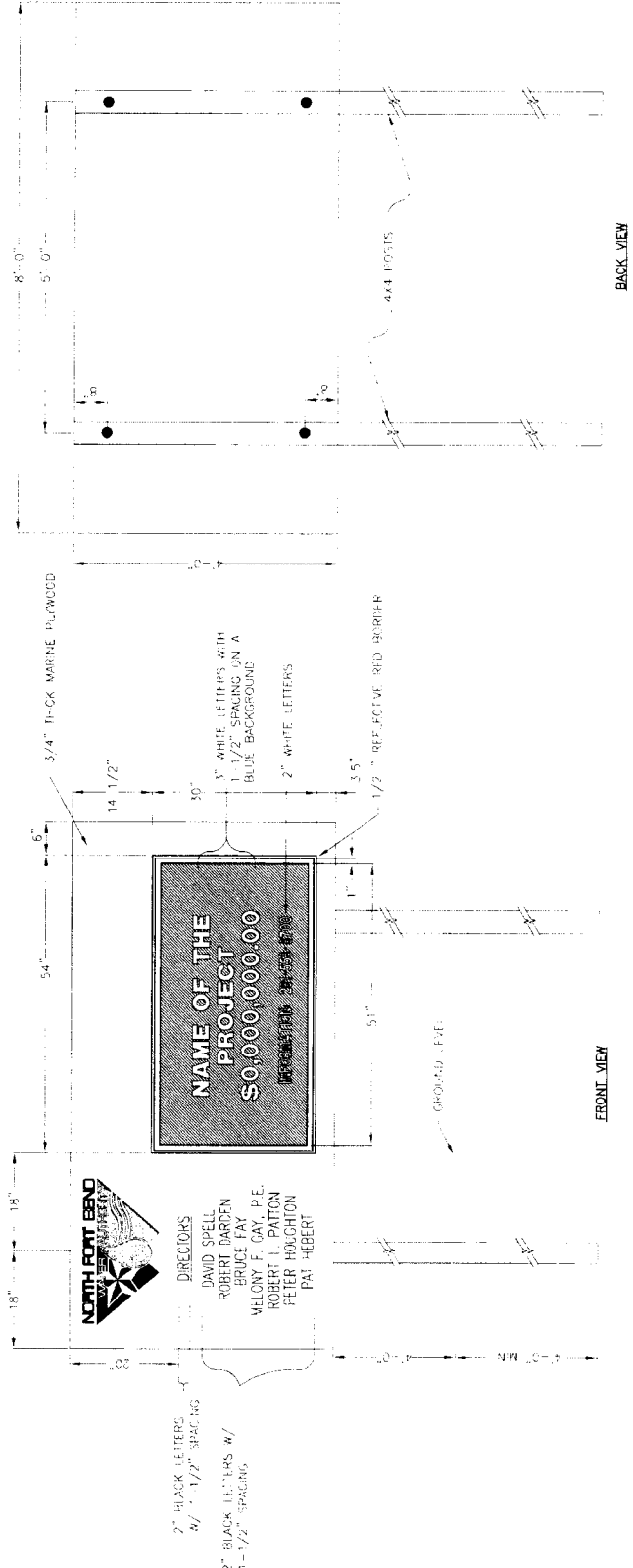
APPROVAL IS IMPLIED FOR IMPROVEMENTS WITHIN
FIRST TENSILE COUNTY RIGHTS-OF-WAY ONLY. JUDICIAL
AUTHORIZATION IS VALID FOR 1 YEAR

APPROVED: John H. Francis
COUNTY ENGINEER

DATE: 10/15/10

[illegible]





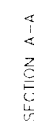
PROJECT SIGN
SCALE: 1"=1'

NO.	DATE	REVISION	APPROVED
AECOM AECOM TECHNICAL SERVICES, INC. 5257 WOODWAY, SUITE 100, WEST HOUSTON, TEXAS 77057-1594 WWW.AECOM.COM TDR REG. NO. 1-3590			
NORTH MISSION GLEN MUD CONNECTION			
NORTH MISSION GLEN MUD CONNECTION PROPOSED 12-INCH WATER LINE			
PROJECT SIGN DETAIL			
CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING			
APPROVED BY: <i>Robert L. White</i> 9/30/10 1788-10 1788-10 1788-10			
DATE: 9/30/10			
TIME: 2:24			
PAGE: 1 OF 1			

20
10/19/10



AD 12



(FOR WATER MAINS LESS THAN 36 INCHES IN DIAMETER, UNLESS ALLOWED BY ENGINEER.)

(FOR WATER MAINS 36" - 48" AND LARGER)



TABLE 1 - Air Valve & Types			
Water Main Diameter	Valve Size	APC/M Model	MH Size
<30"	2"	145C	60"
	3"	147C	80"
	3"	1503C	60"
≥30"	4"	1503C	60"
	4"	1504C	80"

*or approved equal

GENERAL NOTES:

1. PROVIDE PAM-NEX OR APPROVED EQUAL AIR VALVE DEEPER THAN 20 FEET. PROVIDE 2" OF 1/2" DIA. STEEL WALL TO 2" BELOW TOP OF VALVE. PROVIDE 2" MIN. OF 8" DIA. AIR VALVE. PROVIDE SAFETY CLIMBING RAIL (SAF-T-CLIMB OR APPROVED EQUAL).
2. PROVIDE AN APPROVED PETROLEUM BASED TAPE ENCAPSULATING ALL BOLTS IN MANHOLES & VAULTS.
3. IF 3" AIR VALVE IS CALLED FOR ON THE PLAN AND APPROVED SHEETS WHEN PROVIDE APPROVED EQUAL, ALL OTHER PIPING AND MANHOLES SHALL BE 3" IN DIAMETER. SHOWN IN THE PLAN SHALL BE 3" IN DIAMETER. CONSTRUCTED OF THE SAME MATERIAL AND CLASS.
4. VERIFY THAT LOCATION OF SCREEN IS 1. FOOT ABOVE 100-YEAR FLOOD PLAIN ELEVATION OR 4 FEET ABOVE NATURAL GROUND WHICHEVER IS HIGHER TO PLAN AND PROVIDE DETAILS FOR THE LOCATIONS OF COMBINATION AIR VALVES.
5. IF 4" AIR VALVE IS CALLED FOR ON THE PLAN AND APPROVED SHEETS WHEN PROVIDE APPROVED EQUAL, ALL OTHER PIPING AND MANHOLES SHALL BE 4" IN DIAMETER AND CONSTRUCTED OF THE SAME MATERIAL AND CLASS.
6. FOR MANHOLE 3, SEE REF. NO. 9 EXAMINATION, BEDDING, BACKFILL AND PAVEMENT REPAIR DETAILS.



AECOM

NORTH MISSION GLEN MUD CONNECTION

AIR VALVE IN SERVICE MANHOLE DETAILS



CITY OF HOUSTON

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
Robert C. Heston 11/19/10
17471
11/19/10



4A) ACCESS MANWAY AND DRAIN CONNECTION (W/OUT AIR VALVE) IN SERVICE MANHOLE
(FOR WATER LINES 36-INCHES AND LARGER IN DIAMETER)

4B) COMBINATION AIR VALVE ASSEMBLY IN SERVICE MANHOLE
(FOR WATER LINES 36-INCHES AND LARGER IN DIAMETER)

3A) DRAIN CONNECTION (W/OUT AIR VALVE) IN SERVICE MANHOLE
(FOR WATER LINES SMALLER THAN 36-INCHES IN DIAMETER)

3B) COMBINATION AIR VALVE ASSEMBLY IN SERVICE MANHOLE
(FOR WATER LINES SMALLER THAN 36-INCHES IN DIAMETER)

1) FLUSHING HYDRANT ASSEMBLY WITH ACCESS MANWAY IN SERVICE MANHOLE
(FOR WATER LINES 36-INCHES AND LARGER IN DIAMETER)

2) LOW PROFILE AIR INLET / VACUUM RELIEF ASSEMBLY

OMIT ABOVE 6" BOND FLANGE FOR DRAIN CONNECTION 3A.

OMIT ABOVE 6" BOND FLANGE FOR ACCESS MANWAY AND DRAIN CONNECTION 4A.

Figure 1 illustrates the experimental setup. A subject is seated at a table, viewing a video screen. A camera is positioned above the screen. A target is located on the screen. A horizontal line is drawn on the screen, representing the target position. The subject's hand is positioned at the starting point. The distance between the starting point and the target is labeled as 'D'. The distance between the starting point and the video screen is labeled as 'L'. The distance between the video screen and the camera is labeled as 'L_c'.

SPORT
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Figure 1. The effect of the concentration of the *Agrobacterium* suspension on the transformation efficiency of *Agrobacterium* strains. The *Agrobacterium* strains were incubated in the presence of 100 mg/ml of tetracycline and 100 mg/ml of kanamycin. The concentration of the *Agrobacterium* suspension was 10⁶ cells/ml. The transformation efficiency was determined by the number of transformants per 10⁶ cells.

Age Group	2006	2007	2008
18-29	~85	~88	~90
30-49	~75	~78	~80
50-69	~65	~68	~70
70+	~55	~58	~60

NOTES:

- 1 PROVIDE RAMMER OR APPROVED EQUAL BETWEEN PRECAST SEGMENTS OF THE MAN-HOLE
- 2 PROVIDE AN APPROVED PETROLEUM BASED TAPE ENCAPSULATING ALL BOLTS IN MANHOLES & VAULTS.

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7 FOR PAVEMENT REPAIR, SEE REF. NO. 9
EXCAVATION, BEDDING, BACKFILL, AND
BOTTOM

10 IF MANHOLE IS ()
MODULAR LINK,
AND NUTS, THEN
APPROVED EQUIVALENT

D CONNECTION
WATER LINE

11. FOR MANHOLES DEEPER THAN 20 FEET, INCREASE SIZE OF ACCESS MANHOLES TO 72-INCH OR 84-INCH DIAMETER & PROVIDE SAFETY CLIMBING RAIL (SAFETY CLIMB) OR RECOVERED CABLE.

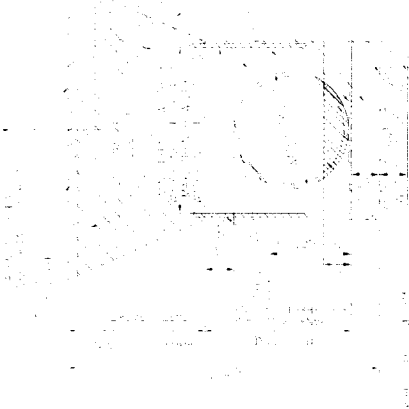
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2. CLASS B CONCRETE WILL BE USED IN AND AROUND BOLLARDS AND ANODE PIPE.

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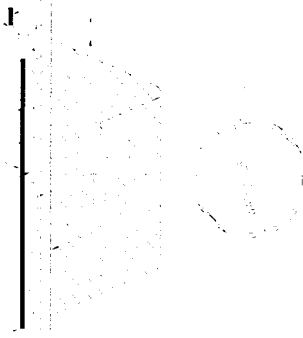
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1. Excavation & Backfill Detail

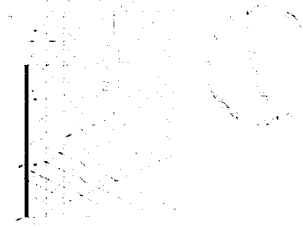


1. EXCAVATION & BACKFILL DETAIL

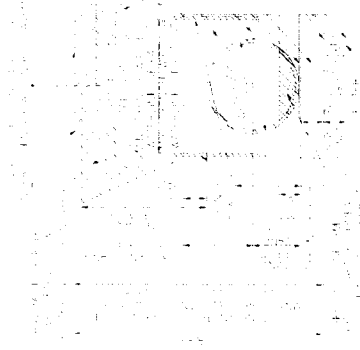
2. TYPICAL REPAIR OF FLEXIBLE BASE PAVEMENT



3. TYPICAL REPAIR OF CONCRETE PAVEMENT OR CONCRETE PAVEMENT W/ ASPHALT OVERLAY



4. WATER LINE WITH HEIGHT OF EARTH COVER GREATER THAN 16'



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NES

CITY OF HOUSTON

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

Revised 5/20/10
August 18/2/10
Nell 10/10



DETAILS

EXCAVATION, BEDDING, BACKFILL

AND PAVEMENT REPAIR

NORTH MISSION GLEN MUD CONNECTION

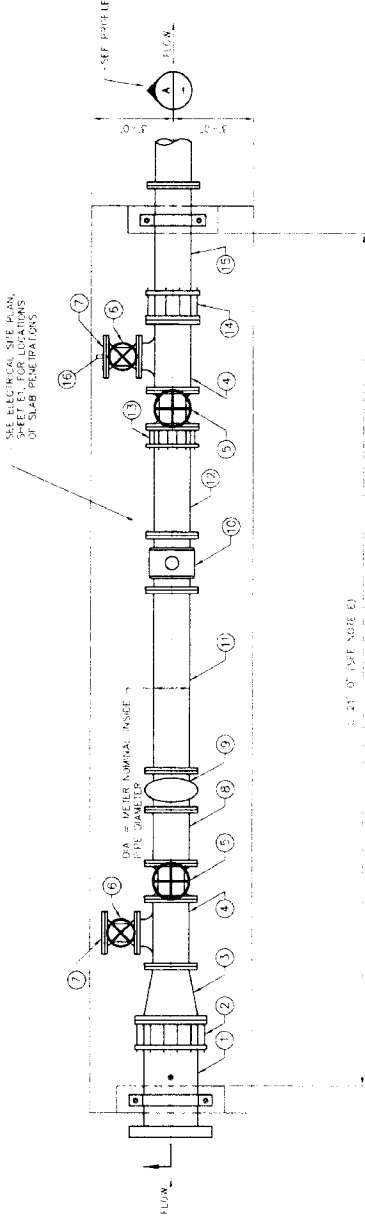
AECOM

AECOM TECHNICAL SERVICES, INC.
5555 ALBUQUERQUE SUITE 101 WEST
HOUSTON, TEXAS 77057-1199
WWW.AECOM.COM
PHONE 281.452.1000 FAX 281.452.1000



SLAB ON GRADE METER STATION

PIPE RUN SIZE = METER NOMINAL INSIDE DIAMETER, DIA (INCH) =			DIA. = 8 INCH
ITEM	FITTING DESCRIPTION	FITTING SIZE (INCH)	
1	PIPE (DIAMETER) 2" 2" THREADED TAP	12	
2	FLANGED COUPLING ADAPTER WITH RESTRAINTS (DIAMETER)	12	
3	REDUCER	12x8	
4	TEE W/BASE (DIAMETER, RUN X RUN X BRANCH)	8x8x6	
5	VALVE, GATE DV-1 (SEE NOTE B) (DIAMETER)	8	
6	VALVE, GATE DV-1 (SEE NOTE B) (DIAMETER)	6	
7	BLIND FLANGE (SIZE)	6	
8	PIPE SPOOL (DIAMETER)	6	
9	STRAINER ASSEMBLY	8	
10	FLOW METER SIZE (ELECTROMAGNETIC METER SEE NOTE C)	8	
11	PIPE SPOOL (DIAMETER) LENGTH (S X DIA.) MINIMUM	8	
12	PIPE SPOOL (DIAMETER) LENGTH (S X DIA.) MINIMUM	8	
13	FLANGED COUPLING ADAPTER WITH RESTRAINTS (DIAMETER)	8	
14	FLANGED COUPLING ADAPTER WITH RESTRAINTS (DIAMETER)	8	
15	PIPE (DIAMETER)	8	
16	BLIND FLANGE 1/2" THREADED CONNECTION AND 2" HOSE ADAPTOR	8	



SCALE: 1/4" = 1'-0" (SEE NOTE E)

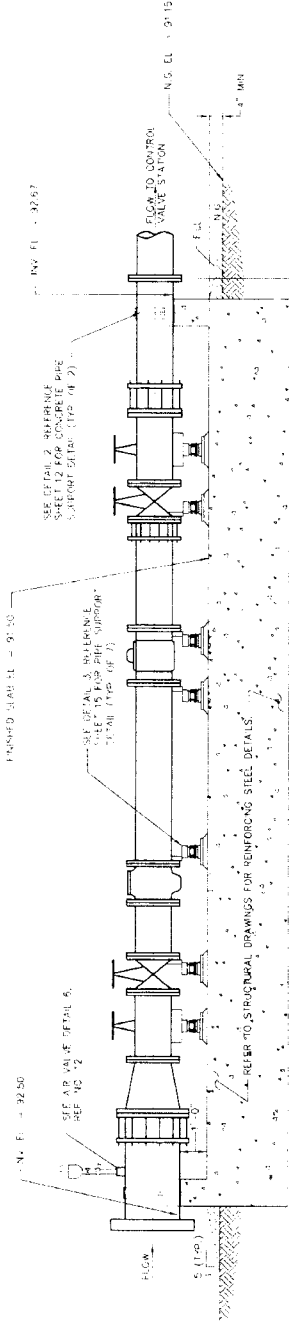
1 PLAN - SLAB ON GRADE METER STATION

SCALE: 1/4" = 1'-0"

NOTES:

- (A) METER SIZE TO BE DETERMINED BY METER ENGINEER. DESIGN CONSULTANT IS TO MODIFY 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, PATTERN 2052 W/HAND WHEEL OPERATOR OR APPROVED EQUAL.
- (C) DESIGN IS BASED ON THE ABOVE #5 4000 FC (ELECTROMAGNETIC) OR SIMILAR STRAINS FM 5100 W/ELECTROMAGNETIC.
- (D) PROVIDE AND INSTALL INSTRUMENTATION AND CONTROLS PER TECHNICAL SPECIFICATIONS.
- (E) LENGTH (L) OF METER RUN IS APPROXIMATE. IT MAY BE ADJUSTED BASED ON PIPING SHOP DRAWINGS.
- (F) RESTRAINED JOINT PIPING SHALL BE USED WITHIN WATER PLANT SITE.
- (G) APPLY SHOWN WILLIAMS PIPE CODES FOR ALL ABOVE GRADE PIPING AND APPURTENANCE IN ACCORDANCE WITH SECTION 09200-PROTECTIVE COATINGS.

FINISHED SLAB ELEVATION TO BE DETERMINED BY DISTRICT ENGINEER AND DESIGN CONSULTANT



A SLAB ON GRADE METER STATION

SCALE: 1/4" = 1'-0"

INSTALLATION NOTES:

1. INS ALL PIPING, METER ETC. AS SHOWN, DISINFECT, PRESSURE TEST AND VERIFY SATISFACTORY OPERATION.
2. ENSURE THAT AS A RESULT OF THE TESTING PROCESS, NO ALLOW WILL BE ALLOWED TO ENTER THE DISTRICT'S GROUND STORAGE TANK.
3. DESIGN CONSULTANT IS RESPONSIBLE FOR THE LOCATION OF THE CONDUITS.

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NORTH MISSION GLEN MUD CONNECTION

NORTH MISSION GLEN MUD CONNECTION
PROPOSED 12-INCH WATER LINE

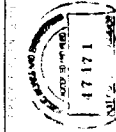
METER STATION
LAYOUT



CITY OF HOUSTON

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

Robert S. Rupp
10/16/10

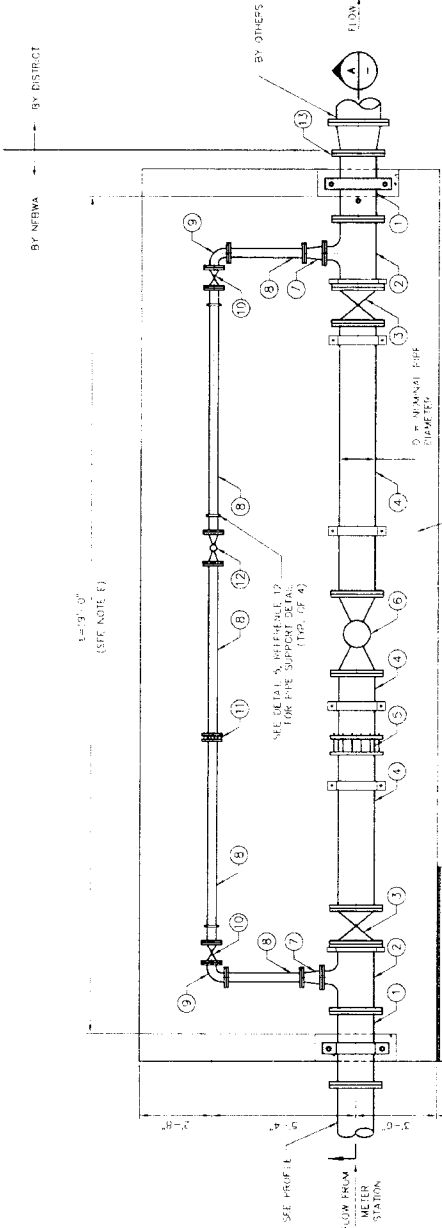


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SLAB ON GRADE CONTROL VALVE STATION

ITEM	FITTING DESCRIPTION	FITTING SIZE (INCH)
1	PIPE (DIAMETER) W/ 2" THREADED TAP (ONE PLACE)	B
2	TIE (DIAMETER, RUN X RUN X BRANCH)	BXBX4
3	VALVE, GATE GV-1 (SEE NOTE B) (DIAMETER)	A
4	PIPE SPOOL (DIAMETER)	B
5	FLEXIBLE COUPLING (DIAMETER) WITH RESTRAINT	B
6	VALVE, FLOW CONTROL, FGV-1 (SEE NOTE C) (DIAMETER)	B
7	REDUCER, CONCENTRIC	4X3
8	PIPE SPOOL (DIAMETER)	3
9	ELBOW, 90 DEGREE (DIAMETER)	3
10	VALVE, GATE GV-1 (SEE NOTE A) (DIAMETER)	3
11	FLEXIBLE COUPLING (DIAMETER) WITH RESTRAINT	3
12	VALVE, FLOW CONTROL, FGV-2 (SEE NOTE C) (DIAMETER)	3
13	BLIND FLANGE (SEE NOTE F)	A

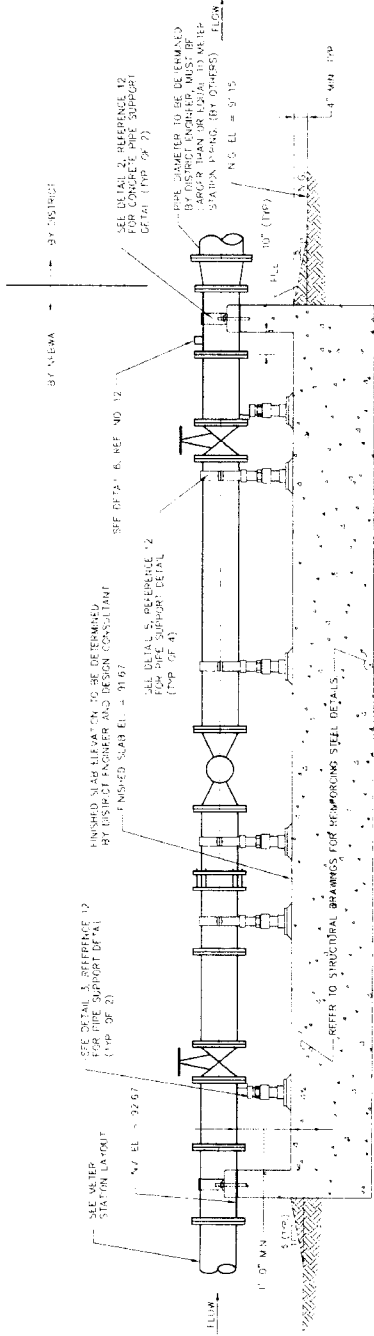


- NOTES:
- (A) CONTROL VALVE SIZES TO BE DETERMINED BY NEMBA ENGINEER. DESIGN CONSULTANT IS TO MODIFY FITTING SIZES IN THIS TABLE CONSISTENT WITH SPECIFIED SIZES.
 - (B) DESIGN IS BASED ON AMERICAN R/D RESILIENT GATE VALVE, PATTERN 2052 W/HAND WHEEL OPERATOR OR APPROVED EQUAL.
 - (C) DESIGN IS BASED ON THE CLA-VAL 131 (CELENSKOCK), BERMAID 10022 03-18-49 Q, OR MATIS M113-BY.
 - (D) PROVIDE AND INSTALL INSTRUMENTATION AND CONTROLS PER TECHNICAL SPECIFICATIONS, F REQUIRED.
 - (E) LENGTH (L) OF CONTROL VALVE RUN IS APPROXIMATE. IT MAY BE ADJUSTED BASED ON PIPING SHOP DRAWINGS.
 - (F) OMIT BLIND FLANGE AND CONNECT TO EXISTING PIPING IF IT EXISTS.
 - (G) CONTROL PANEL LOCATION MAY ONLY BE MODIFIED WITH APPROVAL OF NEMBA ENGINEER.
 - (H) APPLY SULLWAIN WILLIAMS POLYMER BLUE, SW 4025, TO ALL ABOVE GRADE PIPING AND APPURTEANCES IN ACCORDANCE WITH SECTION 09001-PROTECTIVE COATINGS.

PLAN — SLAB ON GRADE CONTROL VALVE STATION

SCALE: 1/8\"/>

1



SLAB ON GRADE CONTROL VALVE STATION

SCALE: 1/8\"/>

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NORTH MISSION GLEN MUD CONNECTION
NORTH MISSION GLEN MUD CONNECTION
PROPOSED 12\"/>



CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

Robert S. White
12/14/10
12/14/10

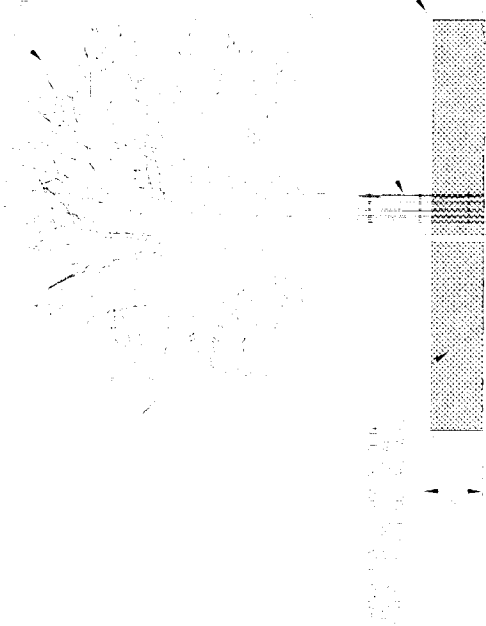


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REF. NO.

11



1 TREE PROTECTION DETAIL



2 TREE PROTECTION DETAIL

- NOTES:**
- ALL TREES SHOWN ON THE TREE PROTECTION PLANS SHALL BE PROTECTED THROUGHOUT CONSTRUCTION WITH TREE PROTECTION.
 - TREE PROTECTION FENCING SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY SITE PREPARATION WORK (CLEARING, GRUBBING OR GRADING).
 - FENCING SHALL BE LOCATED AS SHOWN ON DRAWINGS, OR COMPLETELY SURROUND THE TREE OR CLUSTERS OF TREES AND WILL BE LOCATED AT THE OUTERMOST LIMITS OF THE TREE BRANCHES (DRIPLINE). THE DRIPLINE DEFINES THE "ROOT ZONE". WITHIN THE LIMITS OF FENCING, THE CONTRACTOR SHALL PREVENT THE FOLLOWING FROM OCCURRING WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE OWNER'S REPRESENTATIVE:
 - SOIL COMPACTION IN THE ROOT ZONE AREA RESULTING FROM VEHICULAR TRAFFIC OR STORAGE OF EQUIPMENT OR MATERIALS.
 - ROOT ZONE DISTURBANCES DUE TO GRADE CHANGES (GREATER THAN 3" CUT OR FILL) OR TRENCHING NOT REVIEWED OR AUTHORIZED.
 - WOUNDS TO EXPOSED ROOTS, TRUNK, OR LIMBS BY MECHANICAL EQUIPMENT.
 - OTHER ACTIVITIES DETRIMENTAL TO TREES SUCH AS CHEMICAL STORAGE, CONCRETE TRUCK CLEANING, AND FIRES.
 - WHERE EXCEPTIONS RESULT IN A FENCE BEING CLOSER THAN 4 FEET TO A TRUNK, PROTECT THE TRUNK WITH STRAPPED-ON PLANKING TO A HEIGHT OF 8' (OR TO THE LIMITS OF THE LOWER BRANCHING) AS INDICATED ON TREE PROTECTION PLANS.
 - ALL GRADING WITHIN PROTECTED ROOT ZONE AREAS SHALL BE DONE BY HAND AND TO MINIMIZE SOIL COMPACTION. SOIL COMPACTION SHALL BE BACKFILLED WITHIN 2 DAYS COVER THE ENTIRE PROTECTED ROOT ZONE IN A MANNER WHICH REDUCES SOIL TEMPERATURE AND MINIMIZES DRYING OF THE ROOT DUE TO EVAPORATION.
 - ANY ROOT SEVERED BY CONSTRUCTION ACTIVITY SHALL BE PRUNED SLUSH WITH THE SOIL. BACKFILL ROOT AREAS WITH GOOD QUALITY TOP SOIL. EXPOSED ROOT AREAS SHALL BE COVERED WITH MULCH. EXPOSED ROOT AREAS SHALL BE COVERED WITH MULCH. EXPOSED ROOT AREAS SHALL BE COVERED WITH MULCH. EXPOSED ROOT AREAS SHALL BE COVERED WITH MULCH.
 - TREES IMPACTED BY CONSTRUCTION ACTIVITIES SHALL BE WATERED THOROUGHLY ONCE A WEEK DURING PERIODS OF HOT AND/OR DRY WEATHER. TREE PROMS SHALL BE SPRAYED WITH WATER PERIODICALLY TO REDUCE DUST ACCUMULATION ON THE LEAVES.
 - NO LANDSCAPE TOPSOIL DRESSING GREATER THAN 3" MAXIMUM SHALL BE PERMITTED WITHIN THE DRIPLINE OF TREES. NO PERMANENT SOIL OR MULCH IS PERMITTED ON THE ROOT FLARE OF ANY TREE.
 - PRUNING SHALL BE PERFORMED BY THE CONTRACTOR TO PROVIDE CLEARANCE FOR STRUCTURES OR CONSTRUCTION BEGINS. ONLY WITH PRIOR APPROVAL FROM AUTHORITY'S ENGINEER. ALL PRUNING MUST BE ACCORDING TO RECOGNIZED, APPROVED STANDARDS OF THE INDUSTRY (REFERENCE THE NAA PRUNING STANDARDS), AND BY AN EXPERIENCED AND QUALIFIED ARBORIST WHOSE PRIMARY BUSINESS IS TREE CARE.
 - PROVIDE CORRECTIVE PRUNING AT THE COMPLETION OF CONSTRUCTION TO REMOVE ANY BROKEN OR DAMAGED LIMBS, UNDER THE DIRECTION OF THE AUTHORITY'S ENGINEER.
 - IF REQUIRED, ROOT PRUNE BY TRENCHING A CLEAN 4" WIDE X 24" DEEP CUT BETWEEN THE DISTURBED AND UNDISTURBED ROOT ZONE'S WITH IRRIGATION TRENCHER TO MINIMIZE DAMAGE TO REMAINING ROOTS. MARK AND REVIEW TRENCH LINE WITH AUTHORITY'S ENGINEER PRIOR TO TRENCHING.
 - AS SOON AS 4" WIDE X 24" DEEP TRENCH IS CUT, EXPOSED ROOTS SHALL BE HAND CUT TO CREATE CLEAN ROOT CUTS. AS SOON AS HAND CUTS ARE COMPLETE, BACKFILL TRENCH WITH A SANDY LOAM TOPSOIL PLACED IN 6" LIFTS, AND COMPACTED AS REQUIRED BY SPECIFICATIONS.
 - IN AREAS WHERE LIMB STABILIZATION ABUTS OR ENDOCHORES UPON ROOT ZONES, AND WHERE ROOTS ARE EXPOSED DUE TO TRENCHING AND 6" OVER TOP, CUT AND REMOVE EXPOSED PLASTIC AT COMPLETION OF WORK.



NO.	DATE	REVISION	BY/CHKD
1			
2			
3			

AECOM

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5401 ARCADE, SUITE 101 WEST
HOUSTON, TEXAS 77057-1544
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TELEPHONE: 713.861.1000
FAX: 713.861.1001
E-MAIL: ECOM@AECOM.COM

NORTH MISSION GLEN MUD CONNECTION
NORTH MISSION GLEN MUD CONNECTION
PROPOSED 12" HIGH WATER LINE

TREE PROTECTION DETAILS

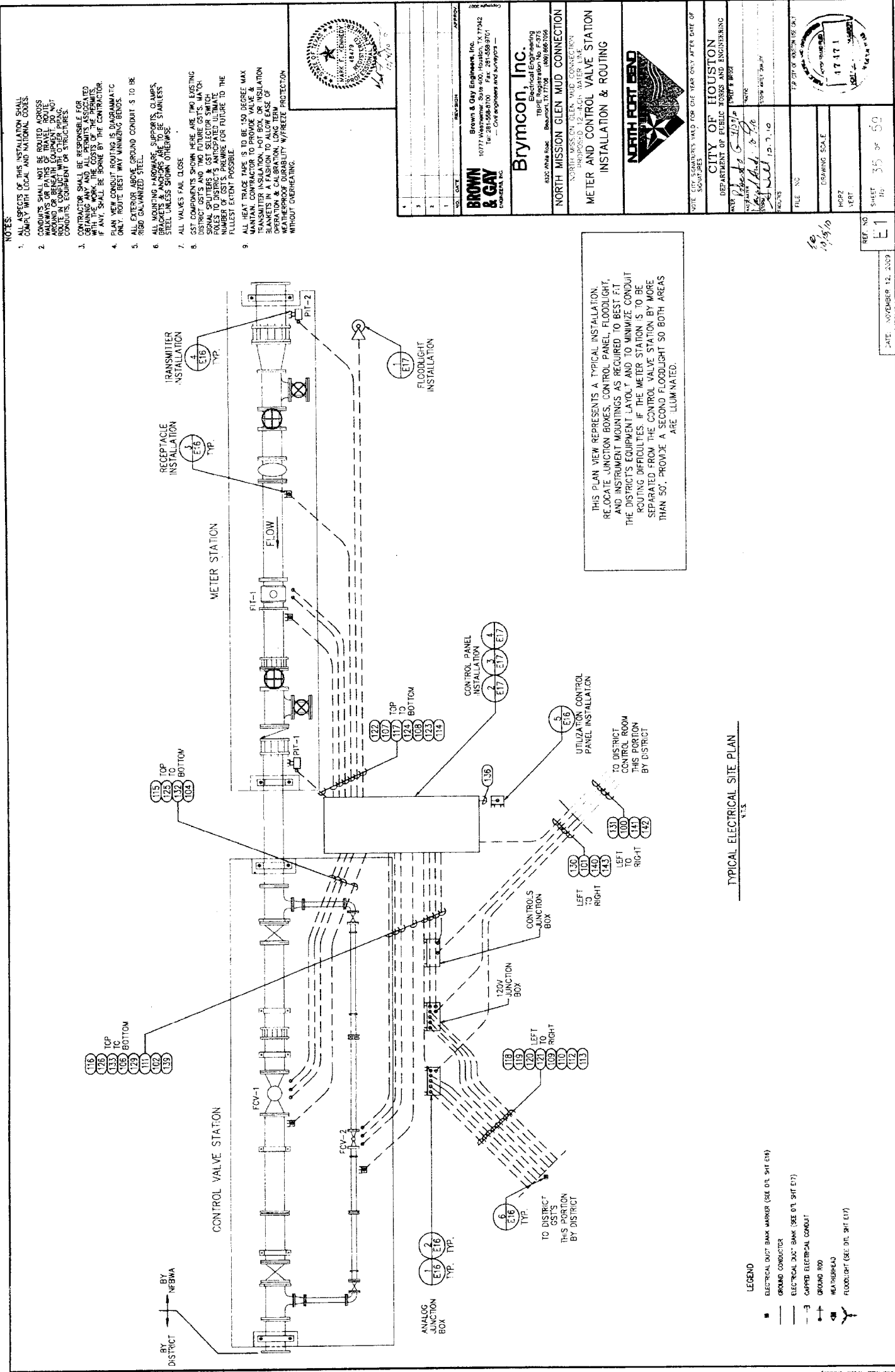
NORTH FORT BEND COUNTY
PLANNING AND DEVELOPMENT DEPARTMENT

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

Robert S. White
16750
7-27-19

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BROWN & GAY
Brown & Gay Engineers, Inc.
10777 Westheimer, Suite 400, Houston, TX 77042
Tel: 281-568-8700 Fax: 281-568-8701
www.brownandgay.com
— Civil Engineers and Surveyors —

Brymcon, Inc.
Electrical Engineering
1837 Arline Road, Houston, TX 77058 (281) 866-7066
TBE-E Registration No. F-275

NORTH MISSION GLEN MUD CONNECTION
PROPOSED 12" JACK WATER LINE
METER AND CONTROL VALVE STATION
INSTALLATION & ROUTING

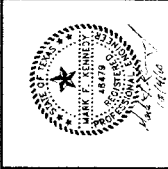
CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
Project: 0-10110
Sheet: 35 of 50
Date: 10/14/10
Scale: AS SHOWN
Title: NORTH MISSION GLEN MUD CONNECTION
METER AND CONTROL VALVE STATION
INSTALLATION & ROUTING

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

FILE NO.
HOPZ
VERT.
SHEET 35 OF 50

CONDUIT SCHEDULE

CONDUIT NO.	DESCRIPTION	CONDUIT SIZE	POWER CONDUCTORS				CONTROL CONDUCTORS				ROUTING		REMARKS
			NO.	SIZE	NEUTRAL	GROUND	NO.	SIZE	GROUND	FROM	METHOD	TO	
100	NEWA CONTROL PANEL POWER FEED	1 1/2	2	8	4	6				DISTRICT CONTROL ROOM	UNDERGROUND DUCTBANK	DUCTBANK MARKER	BY DISTRICT COMPLETE W/CONDUIT #101
101	NEWA CONTROL PANEL POWER FEED	1 1/2	2	8	4	6				DUCTBANK MARKER	UNDERGROUND DUCTBANK	NEWA JUNCTION BOX	WIRE PROVIDED BY DISTRICT CONTROL ROOM TO JB
102	NEWA CONTROL PANEL POWER FEED	1 1/2	2	8	4	6				DUCTBANK MARKER	UNDERGROUND DUCTBANK	NEWA CONTROL PANEL	
103	(NOT USED)												
104	FCV-1 HEAT TRACE POWER	1		12	12	12				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	FCV-1	
105	(NOT USED)												
106	FCV-2 HEAT TRACE POWER	1		12	12	12				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	FCV-2	
107	FLOWMETER LEAK TRACE POWER	1		12	12	12				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	FT-1 FLOWMETER	
108	FLOWMETER AREA UTILITY RECEPTACLE	1		12	12	12				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	FLOWMETER UTILITY REC.	
109	GST No. 1 HEAT TRACE POWER	1		12	12	12				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	DUCTBANK MARKER	CONDUIT & WIRE COMPLETED TO GST No. 1 BY DISTRICT
110	GST No. 2 HEAT TRACE POWER	1		12	12	12				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	DUCTBANK MARKER	CONDUIT & WIRE COMPLETED TO GST No. 2 BY DISTRICT
111	GST No. 3 HEAT TRACE POWER	1		12	12	12				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	DUCTBANK MARKER	
112	GST No. 4 HEAT TRACE POWER	1		12	12	12				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	DUCTBANK MARKER	
113	FCV-1 HEAT TRACE POWER	1		12	12	12				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	DUCTBANK MARKER	EMPTY CONDUIT FUTURE USE
114	FCV-2 HEAT TRACE POWER	1		12	12	12				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	DUCTBANK MARKER	EMPTY CONDUIT FUTURE USE
115	FCV-1 HEAT TRACE POWER	1		12	12	12				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	DUCTBANK MARKER	AND CONDUIT & SECOND LOCKOUT # REQD. SEE E1
116	SPARE TO FCV-2	1		12	12	12				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	FCV-1	
117	POWER TO FLOWMETER	1		12	12	12				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	FCV-2	
118	UT-1 GST No. 1 SIGNAL TO NEWA CONTROL PANEL	1		18 SA 2-COND SH PR		12				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	FT-1 FLOWMETER	
119	UT-2 GST No. 2 SIGNAL TO NEWA CONTROL PANEL	1		18 SA 2-COND SH PR		12				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	DUCTBANK MARKER	CONDUIT & WIRE COMPLETED TO GST No. 1 BY DISTRICT
120	UT-3 GST No. 3 SIGNAL TO NEWA CONTROL PANEL	1		18 SA 2-COND SH PR		12				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	DUCTBANK MARKER	CONDUIT & WIRE COMPLETED TO GST No. 2 BY DISTRICT
121	UT-4 GST No. 4 SIGNAL TO NEWA CONTROL PANEL	1		PULL WIRE ONLY						NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	DUCTBANK MARKER	EMPTY CONDUIT FUTURE USE
122	PIT-1 DOWNSTREAM PRESS WATER SIGNAL TO CONT PNL	1		PULL WIRE ONLY						NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	DUCTBANK MARKER	
123	PIT-2 DOWNSTREAM PRESS WATER SIGNAL TO CONT PNL	1		18 SA 2-COND SH PR		12				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	PT-1	
124	PIT-3 DOWNSTREAM PRESS WATER SIGNAL TO CONT PNL	1		18 SA 2-COND SH PR		12				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	PT-2	
125	FCV-1 TO CONT PNL	1		18 SA 2-COND SH PR		12				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	FCV-1	
126	FCV-2 TO CONT PNL	1		18 SA 2-COND SH PR		12				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	FCV-2	
127	(NOT USED)												
128	(NOT USED)												
129	ANALOG SIGNALS TO ANALOG JUNCTION BOX	2		18 SA 2-COND SH PR		12				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	ANALOG JUNCTION BOX	FOR FUTURE CONNECTION TO CONDUIT #11
130	ANALOG SIGNALS TO ANALOG JUNCTION BOX	2		PULL WIRE ONLY						ANALOG JUNCTION BOX	UNDERGROUND DUCTBANK	DUCTBANK MARKER	FOR FUTURE CONNECTION TO CONDUIT #11
131	ANALOG SIGNALS TO ANALOG JUNCTION BOX	2		18 SA 2-COND SH PR		12				ANALOG JUNCTION BOX	UNDERGROUND DUCTBANK	DISTRICT CONTROL ROOM	BY DISTRICT WIRE LENGTH CONTROL ROOM TO JB
132	FCV-1 OPEN AND CLOSED UNIT SOLENOID VALVES	1		14		14				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	FCV-1	
133	FCV-2 OPEN AND CLOSED UNIT SOLENOID VALVES	1		14		14				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	FCV-2	
134	(NOT USED)												
135	(NOT USED)												
136	NEWA WATER UTILIZATION PANEL	1		14		14				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	NEWA WATER UTIL. PANEL	
137	(NOT USED)												
138	(NOT USED)												
139	NEWA CONTROLS TO DISTRICT	1											
140	NEWA CONTROLS TO DISTRICT	1		12		12				NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	CONTROLS JUNCTION BOX	FOR FUTURE CONNECTION TO CONDUIT #41
141	NEWA CONTROLS TO DISTRICT	1		PULL WIRE ONLY						CONTROLS JUNCTION BOX	UNDERGROUND DUCTBANK	DUCTBANK MARKER	BY DISTRICT WIRE LENGTH CONTROL ROOM TO JB
142	TELEPHONE LINE (Dedicated) TO NEWA CONTROL PANEL	1		TEL PAIR						DUCTBANK MARKER	UNDERGROUND DUCTBANK	DISTRICT CONTROL ROOM	BY DISTRICT COMPLETE W/CONDUIT #43
143	TELEPHONE LINE (Dedicated) TO NEWA CONTROL PANEL	1		PULL WIRE ONLY						NEWA CONTROL PANEL	UNDERGROUND DUCTBANK	DUCTBANK MARKER	



1	DATE	1/15/10
2	PROJ. NO.	10717
3	PROJ. NAME	PROPOSED LEAK AND WATER LINE
4	PROJ. LOCATION	NORTH MISSION GLEN MUD CONNECTION

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Type Registration No. F 373
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Tel: 281-558-9700 Fax: 281-558-9701

NORTH MISSION GLEN MUD CONNECTION
PROPOSED LEAK AND WATER LINE
ELECTRICAL
CONDUIT SCHEDULE

NOTICE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES



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10717 Mission, Suite 400, Houston, TX 77042
Tel: 281-558-9700 Fax: 281-558-9701

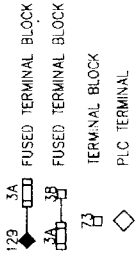
NOTICE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

FILE NO.	NO.	47171
DRAWING SCALE		
NO. OF SHEETS		
SHEET NO.		59
DATE		NOVEMBER 12, 2009

NOTES:

1. ALL VALVES FAL CLOSE
2. GST COMPONENTS SHOWN HERE ARE TWO EXISTING DISTRICT GST'S AND TWO FUTURE GST'S. WATCH SIGNAL SPLITTERS & GST SELECTOR SWITCH POLES TO DISTRICT'S ANTICIPATED ULTIMATE NUMBER OF GST'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



NO.	DATE	REVISION	APPROVAL
1			
2			
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4			

BROWN & GAY
Electrical Engineering
10777 Westchase Drive, Suite 400, Houston, TX 77036
Tel: 281.463.3000 Fax: 281.463.3001
www.brownandgay.com
— Civil Engineers and Surveyors —

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Electrical Engineering
10777 Westchase Drive, Suite 400, Houston, TX 77036
Tel: 281.463.3000 Fax: 281.463.3001
www.brymcon.com
— Civil Engineers and Surveyors —

NORTH MISSION GLEN MUD CONNECTION
NORTH MISSION GLEN MUD CONNECTION
PROPOSED 12" NCH WATER LINE

CONTROL DIAGRAM
SHEET 1



NOTE: CITY SCALES VALID FOR ONE YEAR ONLY AFTER DATE OF SCALES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

PROJECT NO. 6-107710
DATE: 6/10/10
BY: [Signature]
CHECKED: [Signature]
DATE: 10/15/10

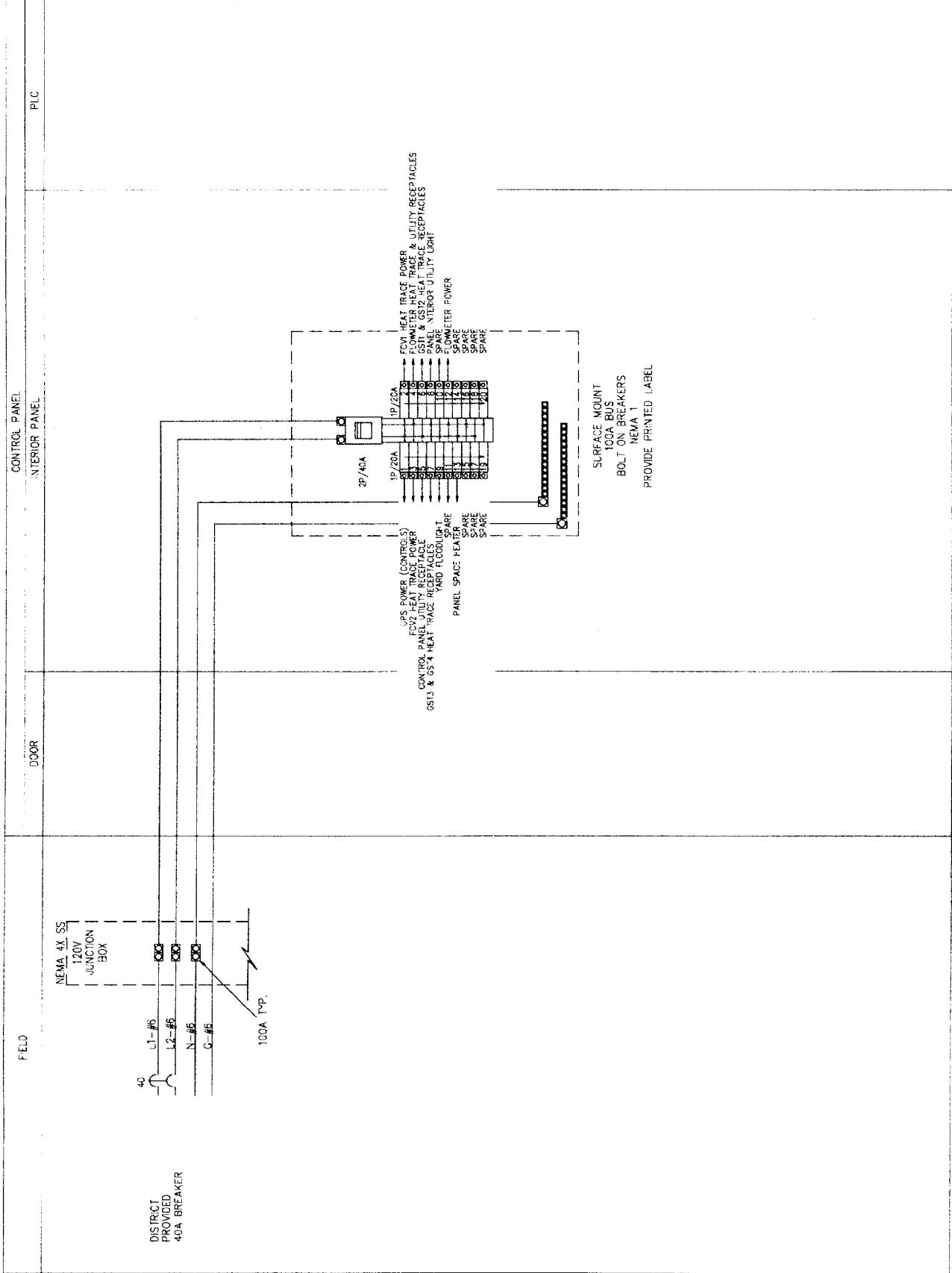
FILE NO. 17471
DRAWING SCALE
HDT
VET

FOR CITY OF HOUSTON USE ONLY



REF. NO. E3

DATE: NOVEMBER 12, 2009



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. 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 INSULA TON, HOT BOX, OR INSULATION BLANKETS IN A FASHION TO A LOW EASE OF OPERATION & CALIBRATION. LONG TERM WEATHERPROOF DURABILITY W/ FREEZE PROTECTION WITHOUT OVERHEATING.

LEGEND

- 128 3A FUSED TERMINAL BLOCK
FUSED TERMINAL BLOCK
TERMINAL BLOCK
PLC TERMINAL



NO.	DATE	REVISION
1		
2		
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BROWN & GAY
Brown & Gay Engineers, Inc.
10777 Westheimer, Suite 400, Houston, TX 77042
Tel: 281.465.1000 Fax: 281.465.1001
www.brownandgay.com
P.E. - Civil Engineers and Surveyors

Brymcon, Inc.
Electrical Engineering
1300 West Loop South, Suite 200
Houston, TX 77063
Tel: 281.465.1000 Fax: 281.465.1001
www.brymcon.com

NORTH MISSION GLEN MUD CONNECTION
NORTH MISSION GLEN MUD CONNECTION
FACILITY FOR THE NORTH MISSION GLEN MUD CONNECTION
CONTROL DIAGRAM
SHEET 2



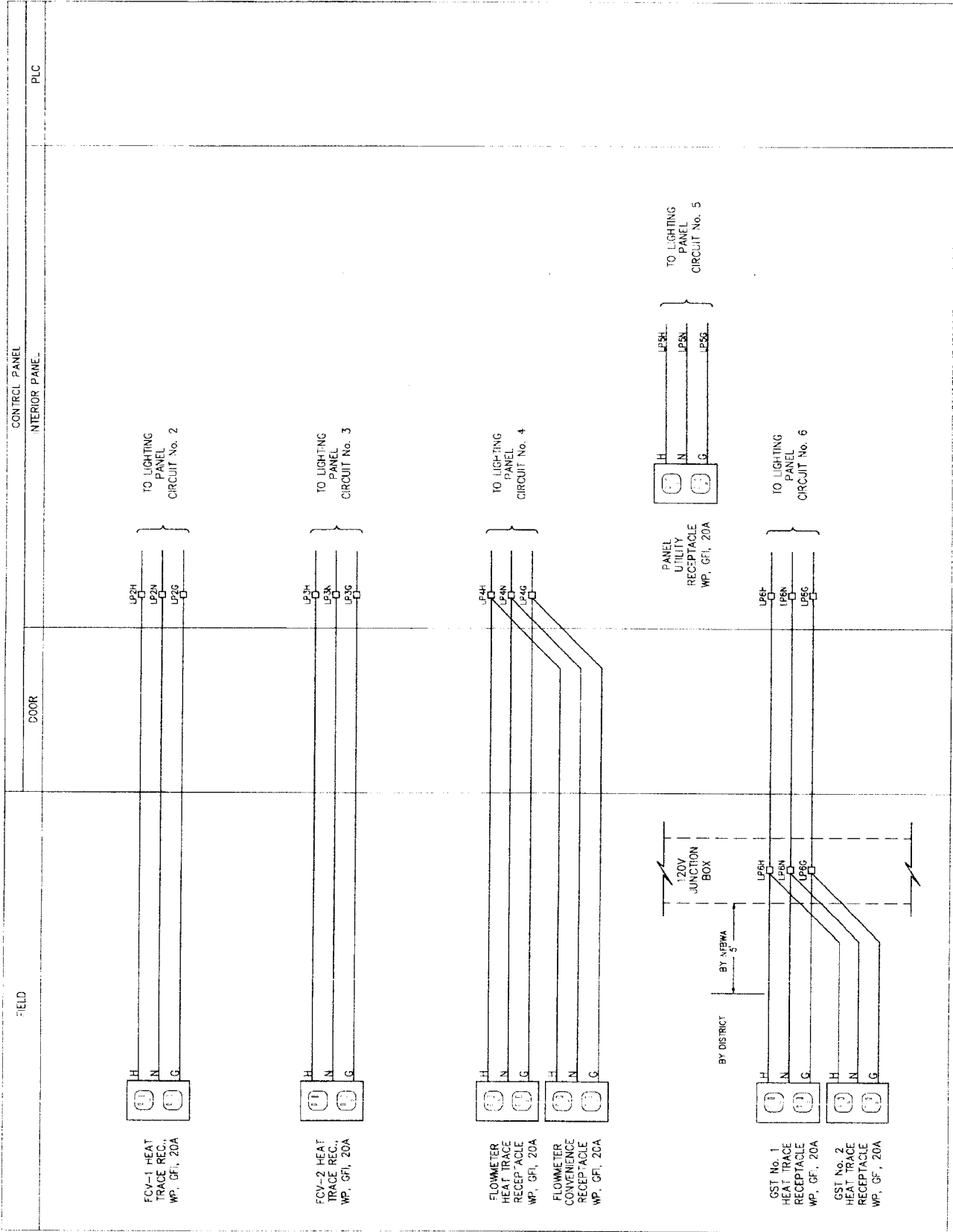
NOTE: CITY SIGNALS VALID FOR ONE YEAR ONLY AFTER DATE OF SUPPLIES

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
STREET BOX
10777 Westheimer, Suite 400, Houston, TX 77042
Tel: 281.465.1000 Fax: 281.465.1001
www.brownandgay.com

FILE NO.
DRAWING SCALE
PROJECT NO.
SHEET NO.



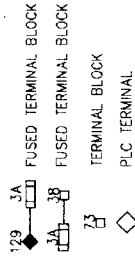
REF. NO. E4
SHEET NO. 38 OF 59
DATE: NOVEMBER 12, 2009



NOTES:

1. ALL VALVES FAIL CLOSE
2. GST COMPONENTS SHOWN HERE ARE TWO EXISTING DISTRICT GST'S AND TWO FUTURE GST'S. MATCH SIGNAL SWITCH POLES TO DISTRICT'S ANTICIPATED ULTIMATE NUMBER OF GST'S. PREPARE FOR FUTURE TO THE FULLEST EXTENT POSSIBLE.
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LEGEND



NO.	DATE	REVISION
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BROWN & GAY
Brown & Gay Engineers, Inc.
13777 Westheimer, Suite 400, Houston, TX 77042
Tel: 281-558-9700 Fax: 281-558-9701
www.brymcon.com — Civil Engineers and Surveyors —

Brymcon, Inc.

Electrical Engineering
TYPE Registration No. E-375
Brymcon, Inc. Houston, TX 77056 (281) 558-9700

NORTH MISSION GLEN MUD CONNECTION

PROPOSED 12-INCH WATER LINE
CONTROL DIAGRAM

SHEET 3



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

CITY OF HOUSTON

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

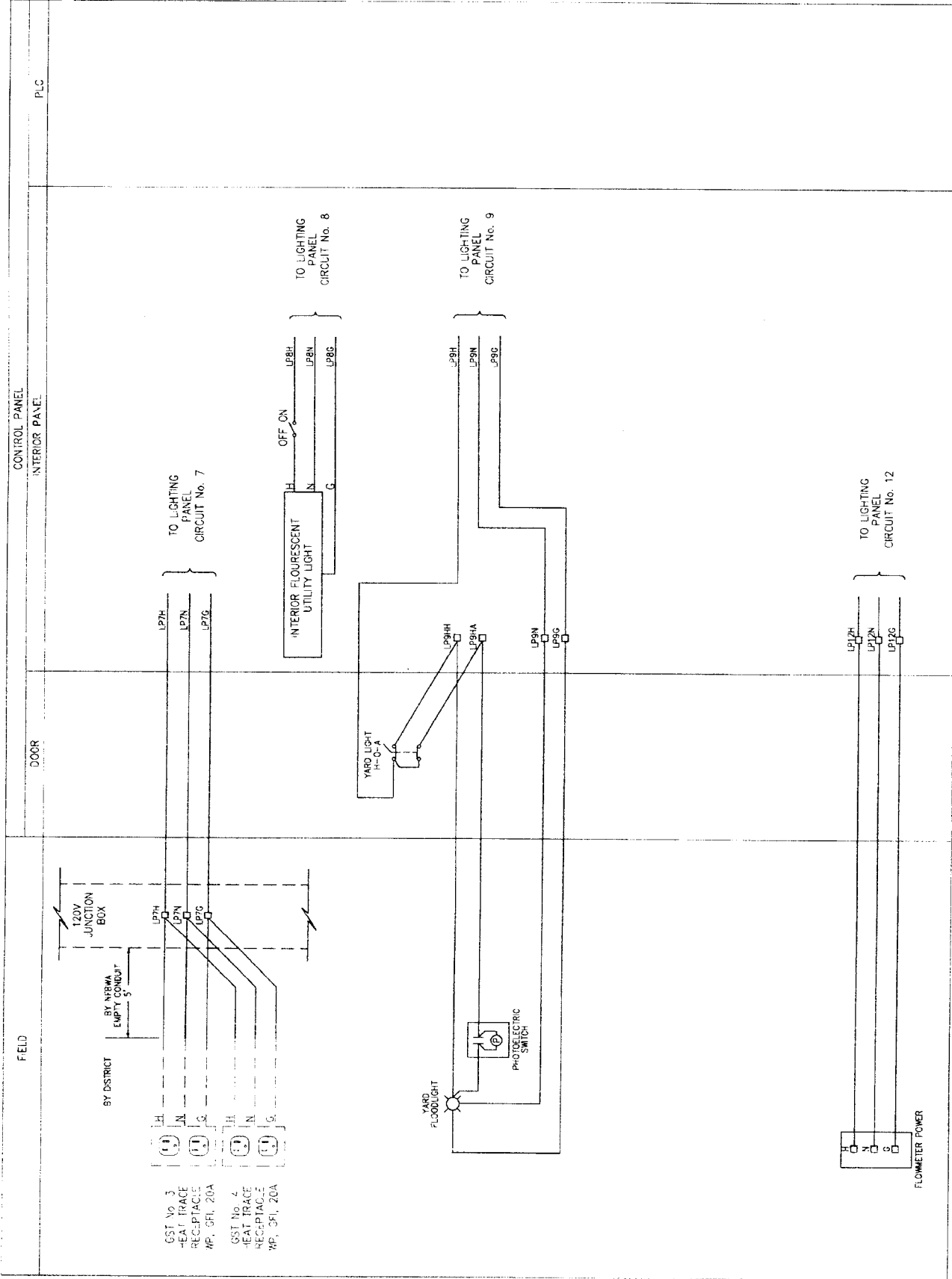
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BY	Robert G. D.	NAME	
DESIGNED BY	Robert G. D.	DATE	10/17/10
CHECKED BY	Robert G. D.	DATE	10/17/10

FOR CITY OF HOUSTON USE ONLY

DATE	10/15/10
BY	Robert G. D.
NAME	
DATE	10/15/10
NAME	

REF. NO. E5

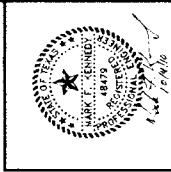
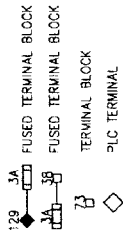
DATE: NOVEMBER 12, 2009



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.
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LEGEND



NO.	DATE	REV./BY
1		SP/2002
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BROWN & GAY
Brown & Gay Engineers, Inc.
10777 Westheimer, Suite 400 Houston TX 77042
Tel. 281.466.0000 Fax 281.466.0001
www.brownandgay.com
— Civil Engineers and Surveyors —

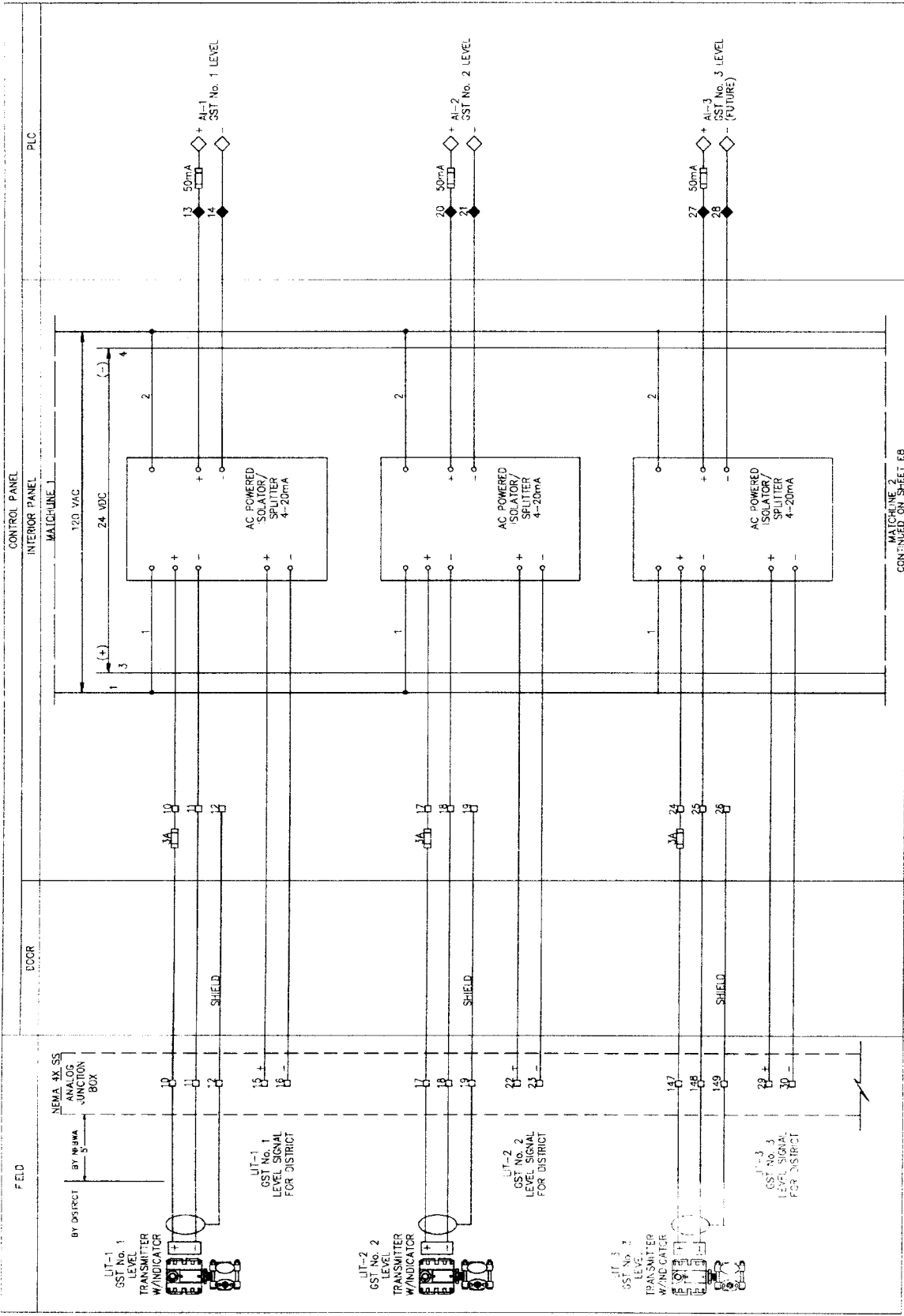
Brymco, Inc.
Electrical Engineering
1900 West Loop South, Suite 100
Houston, TX 77058
8320 West Loop South, Suite 100
Houston, TX 77058
www.brymco.com

NORTH MISSION GLEN MUD CONNECTION
PROJECT: 14-000000-0000
CONTROL DIAGRAM
SHEET 5



NOTE: CITY SCALES VALID FOR ONE YEAR ONLY AFTER DATE OF 30 AUGUST 2009

CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
DATE: 12/16/10	PROJECT: 14-000000-0000
DESIGNED BY: [Signature]	DATE: 12/16/10
CHECKED BY: [Signature]	DATE: 12/16/10
FILE NO.	47171
PROJECT NO.	47171
SHEET NO.	41 OF 59



12/16/10

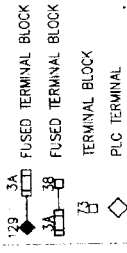
REF. NO. E7

DATE: NOVEMBER 12, 2009

NOTES:

1. ALL VALVES FAIL CLOSE
2. GST COMPONENTS SHOWN HERE ARE TWO EXISTING DISTRICTS. GST'S AND TWO FUTURE GST'S MATCH SIGNAL SPLITTERS & GST SELECTOR SWITCH POLES TO DISTRICT'S ANTICIPATED ULTIMATE NUMBER OF GST'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



NO.	DATE	REVISION	APPROVED
1	10/15/16		
2	10/15/16		
3	10/15/16		

BROWN & GAY
Brown & Gay Engineers, Inc.
10777 Westheimer, Suite 400, Houston, TX 77042
Tel: 281.465.7300 Fax: 281.465.7301
www.brymcon.com
— CIVIL ENGINEERS AND SURVEYORS —

Brymcon, Inc.
Electrical Engineering
10777 Westheimer, Suite 400, Houston, TX 77042
Tel: 281.465.7300 Fax: 281.465.7301
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NORTH MISSION GLEN MUD CONNECTION
PROPOSED TREATMENT PLANT
CONTROL DIAGRAM
SHEET 6



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

CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

DATE: 10/15/16
BY: [Signature]
CHECKED: [Signature]
FOR CITY OF HOUSTON USE ONLY

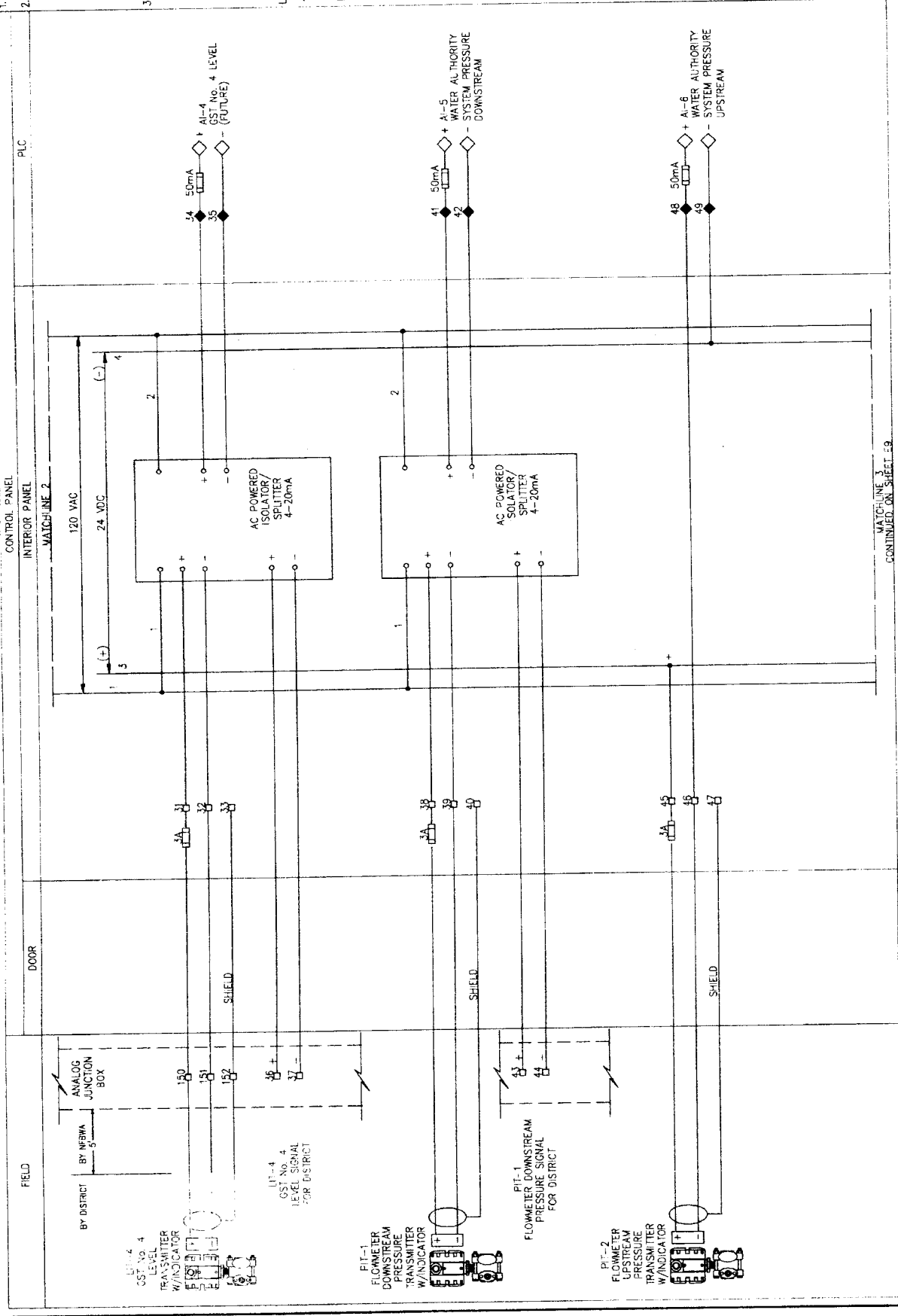
FILE NO.:
DRAWING SCALE:
100%
VER: 1

SHEET 42 OF 59



REF. NO. E8

DATE: NOVEMBER 12, 2009

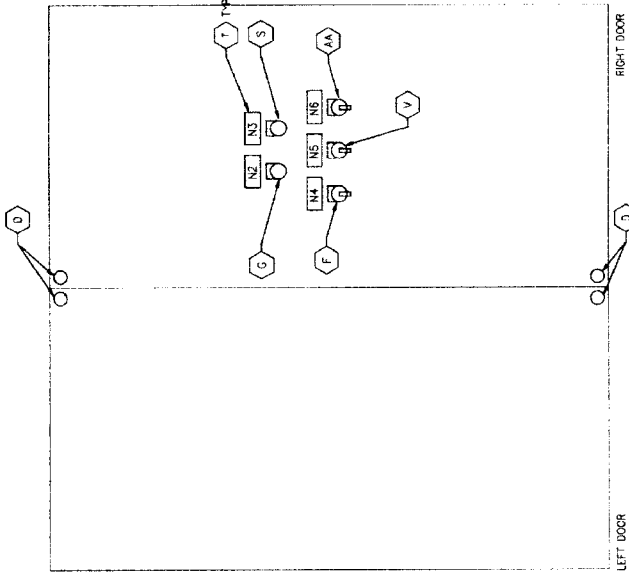


WATCHLINE 3
CONTINUED ON SHEET E9

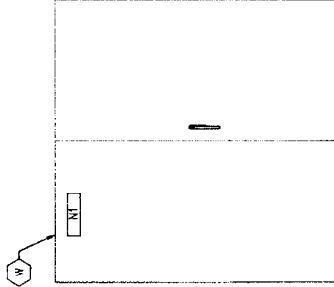
NOTES:

- 1. NAMEPLATES SHALL BE MOUNTED TO PANELS USING STAINLESS STEEL HARDWARE
- 2. PROVIDE 6 AMP SWITCH PER EXTERIOR DOOR, WIRED IN PARALLEL.

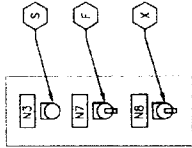
EQUIPMENT & DEVICE SCHEDULE		
ITEM	QUANTITY	DESCRIPTION
A	1	PANEL BOARD, 120/240V, 1 PHASE, 3 WIRE, 100 A, 20 CKTS
B	6	SIGNAL SPLITTER/RELAY/VR ON RAIL MOUNT, 120VAC, 4-20mA INPUT, DUAL ISOLATED 4-20mA OUTPUTS, ALUMINUM 8.5"X10"X3" OR EQUAL
C	1	TERMINAL BLOCK
D	4	QUARTER TURN CAPTIVE DOOR CLOSURE
E	1	120VAC - 24VDC POWER SUPPLY
F	2	HAND-OFF-AUTO SWITCH, HEAVY DUTY OIL TIGHT, W/20V, 20A RATING
G	1	INDICATING LIGHT, HEAVY DUTY OIL TIGHT, WHITE, 24 VDC, 2.5 WATT
H	1	STRIP HEATER
I	1	PROGRAMMABLE LOGIC CONTROLLER, SIEMENS S7-300
J	1	SWITCH FOR CABINET LIGHT, 120V, 20A, SPST
K	2	DUPLEX RECEPTACLE, 120V, 20A, 2 WIRE, GROUNDING, GFCI TYPE
L	1	40 WATT FLUORESCENT STRIP LIGHT "W/BAULAS" SUITABLE FOR ZERO DEGREE OPERATION
M	1	SURGE PROTECTOR - NOISING POWER
N	1	UNINTERRUPTIBLE POWER SUPPLY 1000VA MINIMUM
P	.01	FUSED TERMINAL BLOCKS AS REQUIRED
Q	1	MODEM
R	14	CONTROL RELAY, TURCK 24 VDC RELAY WITH THREE FORM C CONTACTS AND 11 PIN SOCKET BASE
S	2	INDICATING LIGHT, HEAVY DUTY OIL TIGHT, GREEN, 24 VDC, 2.5 WATT
T	9	NAMEPLATES, 3/4" HIGH LETTERING IN WHITE LETTERS ON BLACK BACKGROUND (SEE NAMEPLATE SCHEDULE) (SEE NOTE 1)
U	2	DOOR LIMIT SWITCH (SEE NOTE 2)
V	1	GST SELECTOR SWITCH, HEAVY DUTY OIL TIGHT, FOUR POSITION, W/20V, 20A RATING
W	1	NEWA 3R GASKETED ALUMINUM ENCLOSURE WITHOUT VENTS, 60" X 17" X 24"
X	1	WATER UTILIZATION SWITCH, HEAVY DUTY OIL TIGHT, TWO POSITION, W/20V, 20A RATING
Y	.01	TERMINAL BLOCKS AS REQUIRED
Z	1	WIRE DUCT, 2" WIDE X 2' DEEP MINIMUM
AA	1	FUTURE USE SWITCH, HEAVY DUTY OIL TIGHT, TWO POSITION, W/20V, 20A RATING



CONTROL PANEL
FRONT INNER DOOR ELEVATION
SCALE: NONE



CONTROL PANEL
EXTERIOR ELEVATION
SCALE: NONE



NFBWA WATER
UTILIZATION PANEL ELEVATION
SCALE: NONE

NAMEPLATE SCHEDULE

DESIGNATION	ENGRAVED
N1	NORTH FORT BEND WATER AUTHORITY
N2	NEWA WATER ON
N3	FLOODLIGHT H-O-A
N4	GST SELECTOR
N5	GST, GST2, GST3, GST4
N6	NEWA WATER UTILIZATION
N7	NEWA WATER USE H-O-A
N8	PARTIAL FULL



NO.	DATE	REVISION	APPROVAL
1			
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Brown & Gay Engineers, Inc.
10777 North Loop West, Suite 1000
Houston, Texas 77036
Tel: 281-558-8700 Fax: 281-558-9701
— Civil Engineers and Surveyors —

Brymcon, Inc.
Brymcon Engineering
8320 WFA Road, Suite 100
Houston, Texas 77054
Tel: 281-558-8700 Fax: 281-558-9701
— Civil Engineers and Surveyors —

NORTH MISSION GLEN MUD CONNECTION
ELECTRICAL
CONTROL PANEL
LAYOUT & SPECIAL
DEVICE SCHEDULE



NOTE: THIS SCHEDULE IS VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES
CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
APPROVED: *[Signature]* DATE: 10/17/10
DESIGNED: *[Signature]* DATE: 10/17/10
CHECKED: *[Signature]* DATE: 10/17/10
TITLES: PROJECT ENGINEER, SENIOR ENGINEER, JUNIOR ENGINEER
SIGNATURE: *[Signature]* DATE: 10/17/10
TITLES: PROJECT ENGINEER, SENIOR ENGINEER, JUNIOR ENGINEER

FILE NO.:
DRAWING SCALE:
HORIZ. SECT:
VERT. SECT:
SHEET NO. 48 OF 59
DATE: NOVEMBER 12, 2009

●	3A	10	●	150A	75	●	1A	131	●	150A	111	●	150A	112	●	150A	113	●	150A	114	●	150A	115	●	150A	116	●	150A	117	●	150A	118	●	150A	119	●	150A	120	●	150A	121	●	150A	122	●	150A	123	●	150A	124	●	150A	125	●	150A	126	●	150A	127	●	150A	128	●	150A	129	●	150A	130	●	150A	131	●	150A	132	●	150A	133	●	150A	134	●	150A	135	●	150A	136	●	150A	137	●	150A	138	●	150A	139	●	150A	140	●	150A	141	●	150A	142	●	150A	143	●	150A	144	●	150A	145	●	150A	146	●	150A	147	●	150A	148	●	150A	149	●	150A	150	●	150A	151	●	150A	152	●	150A	153	●	150A	154	●	150A	155	●	150A	156	●	150A	157	●	150A	158	●	150A	159	●	150A	160	●	150A	161	●	150A	162	●	150A	163	●	150A	164	●	150A	165	●	150A	166	●	150A	167	●	150A	168	●	150A	169	●	150A	170	●	150A	171	●	150A	172	●	150A	173	●	150A	174	●	150A	175	●	150A	176	●	150A	177	●	150A	178	●	150A	179	●	150A	180	●	150A	181	●	150A	182	●	150A	183	●	150A	184	●	150A	185	●	150A	186	●	150A	187	●	150A	188	●	150A	189	●	150A	190	●	150A	191	●	150A	192	●	150A	193	●	150A	194	●	150A	195	●	150A	196	●	150A	197	●	150A	198	●	150A	199	●	150A	200	●	150A	201	●	150A	202	●	150A	203	●	150A	204	●	150A	205	●	150A	206	●	150A	207	●	150A	208	●	150A	209	●	150A	210	●	150A	211	●	150A	212	●	150A	213	●	150A	214	●	150A	215	●	150A	216	●	150A	217	●	150A	218	●	150A	219	●	150A	220	●	150A	221	●	150A	222	●	150A	223	●	150A	224	●	150A	225	●	150A	226	●	150A	227	●	150A	228	●	150A	229	●	150A	230	●	150A	231	●	150A	232	●	150A	233	●	150A	234	●	150A	235	●	150A	236	●	150A	237	●	150A	238	●	150A	239	●	150A	240	●	150A	241	●	150A	242	●	150A	243	●	150A	244	●	150A	245	●	150A	246	●	150A	247	●	150A	248	●	150A	249	●	150A	250	●	150A	251	●	150A	252	●	150A	253	●	150A	254	●	150A	255	●	150A	256	●	150A	257	●	150A	258	●	150A	259	●	150A	260	●	150A	261	●	150A	262	●	150A	263	●	150A	264	●	150A	265	●	150A	266	●	150A	267	●	150A	268	●	150A	269	●	150A	270	●	150A	271	●	150A	272	●	150A	273	●	150A	274	●	150A	275	●	150A	276	●	150A	277	●	150A	278	●	150A	279	●	150A	280	●	150A	281	●	150A	282	●	150A	283	●	150A	284	●	150A	285
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NO.	DATE	REV./B/C/N	APPROV.
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October 2001

BROWN & GAY
ENGINEER INC.

Brown & Gay Engineers, Inc.
10777 Westheimer, Suite 400, Houston, TX 77042
Tel. 281-558-4100 Fax 281-558-3701
— Civil Engineers and Surveyors

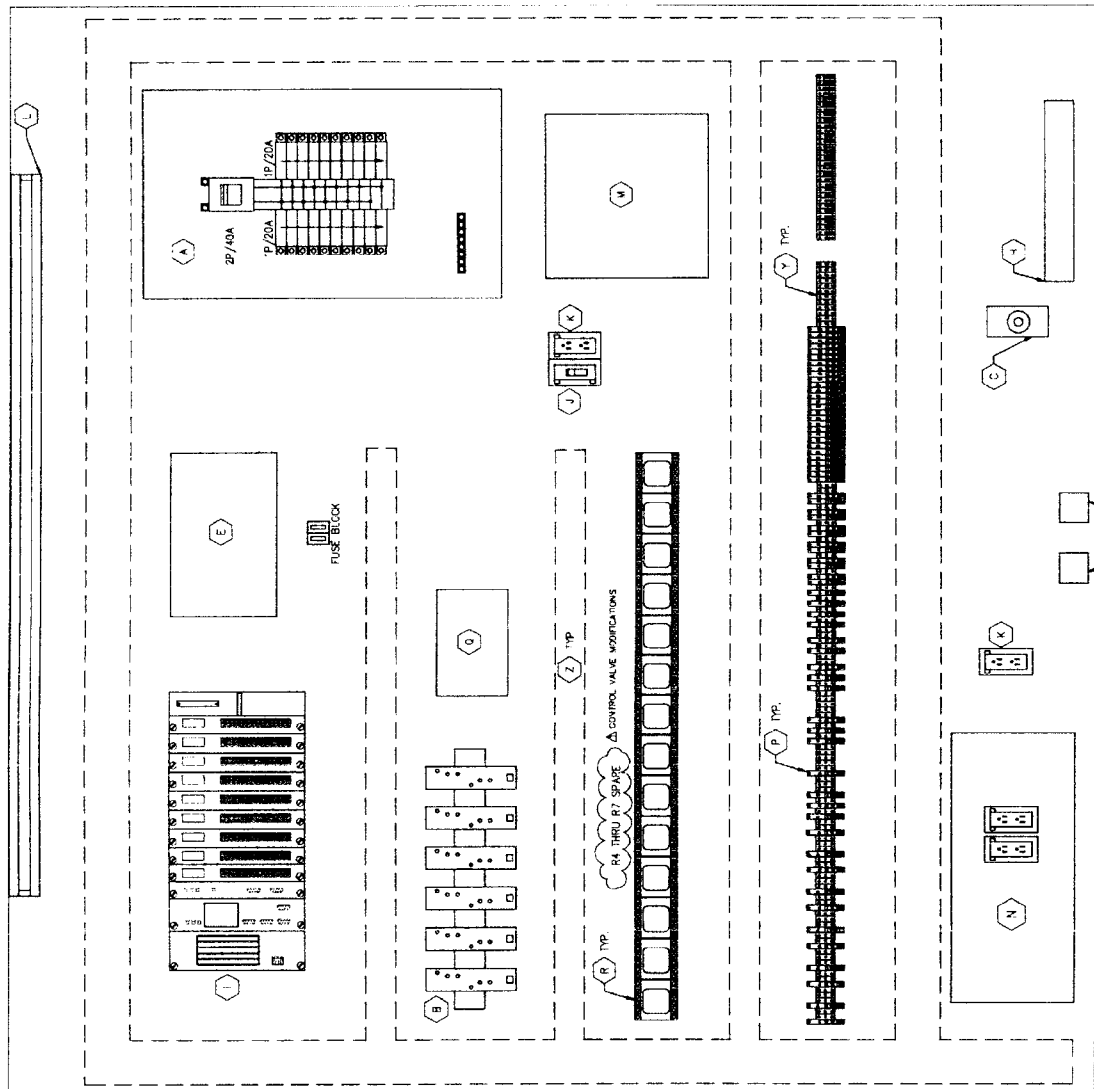
Brymco, Inc.
Electrical Engineering
TBPE Registration No. E-375
6320 White Road Beaumont, TX 77705 (409) 969-7096

ELECTRICAL CONTROL PANEL LAYOUT

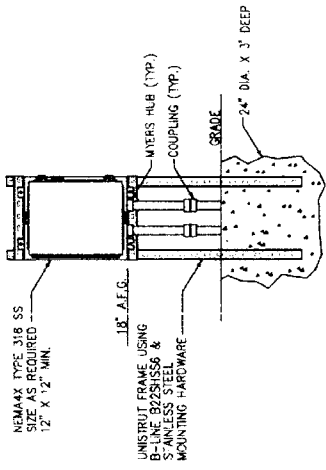
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FILE NO.	
DRAWING SCALE	
POFZ	
REF	
SHEET 49 of 59	
He:	

CONTROL PANEL TERMINAL STRIP ENLARGED VIEW

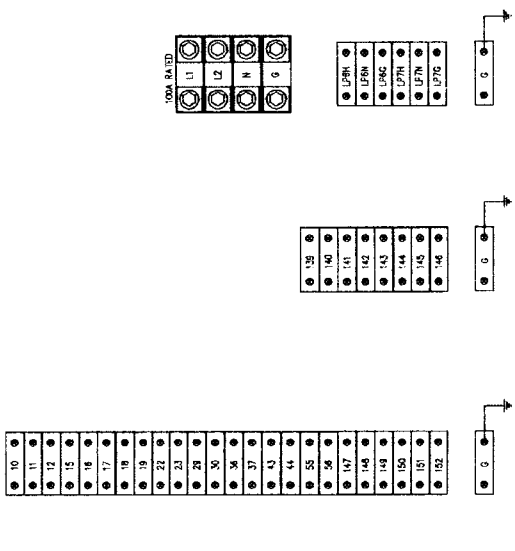


CONTROL PANEL ELEVATION



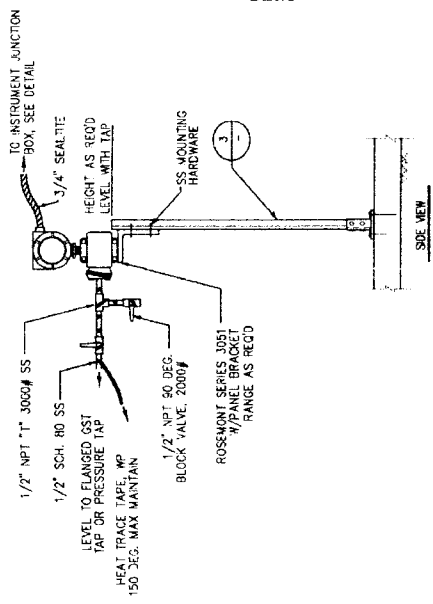
DISTRICT CONNECTION JUNCTION BOX DETAIL

DETAIL 1



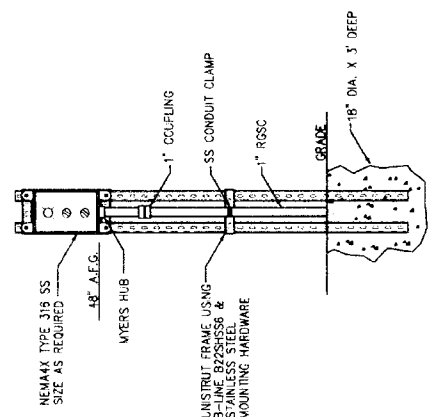
ANALOG JUNCTION BOX CONTROL JUNCTION BOX 120V JUNCTION BOX

DETAIL 2



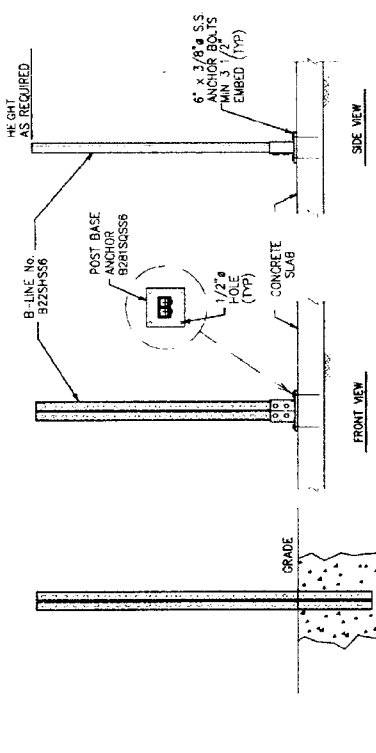
LIQUID LEVEL/PRESSURE/DIFFERENTIAL TRANSMITTER INSTALLATION DETAIL

DETAIL 4



NFBWA UTILIZATION CONTROL PANEL

DETAIL 5



ON-SLAB INSTALLATION

FRONT VIEW

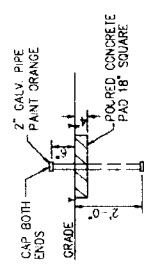
SIDE VIEW

18" DIA. X 3" DEEP

IN-GROUND INSTALLATION

FRONT VIEW

DETAIL 3



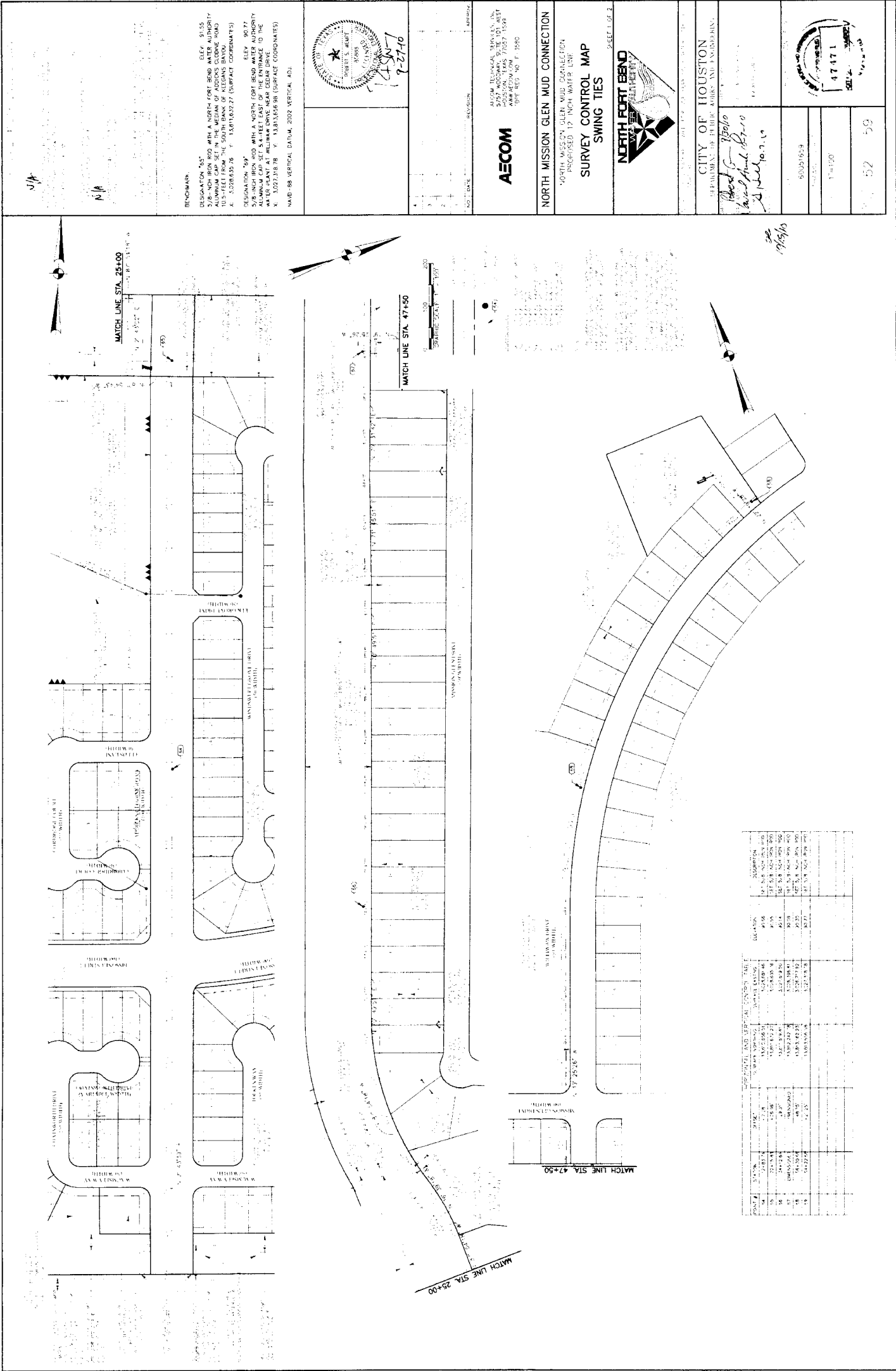
DUCTBANK MARKER DETAIL

DETAIL 6



BROWN & GAY Brown & Gay Engineers, Inc. 10777 North Mission Glen Road, Suite 100 Houston, Texas 77042 Tel: 281-568-8700 Fax: 281-568-8701 www.brymcon.com		Brymcon, Inc. Electrical Engineering 8320 White Road, Baytown, TX 77628 (409) 888-7058	
NORTH MISSION GLEN MUD CONNECTION NORTH MISSION GLEN MUD CONNECTION PROPOSED 12-INCH WATER LINE ELECTRICAL DETAILS SHEET 1		NORTH MISSION GLEN MUD CONNECTION PROPOSED 12-INCH WATER LINE ELECTRICAL DETAILS SHEET 1	
CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING 10777 North Mission Glen Road, Suite 100 Houston, Texas 77042 Tel: 281-568-8700 Fax: 281-568-8701 www.brymcon.com			
DATE: 10/15/10 DRAWN: [Signature] CHECKED: [Signature] APPROVED: [Signature]			
FOR CITY OF HOUSTON USE ONLY			
DRAWING SCALE			
SHEET 50 OF 59			

U.S. DEPARTMENT OF JUSTICE
FEDERAL BUREAU OF INVESTIGATION
WASHINGTON, D.C. 20535



BENCHMARK
DESIGNATION "55"
ELEV. 91.55
5/8-INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY
ALUMINUM CAP SET 5.4 FEET EAST OF THE ENTRANCE TO THE
WATER MAIN AT MILLWATER DRIVE NEAR CEDAR DRIVE (TO THE
NORTH) (SURFACE COORDINATES)
X: 3328.635 78 Y: 15811.637 27 (SURFACE COORDINATES)
DESIGNATION "50"
ELEV. 90.77
5/8-INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY
ALUMINUM CAP SET 5.4 FEET EAST OF THE ENTRANCE TO THE
WATER MAIN AT MILLWATER DRIVE NEAR CEDAR DRIVE (TO THE
NORTH) (SURFACE COORDINATES)
X: 3327.616 78 Y: 15810.556 26 (SURFACE COORDINATES)
NAVD-88 VERTICAL DATUM, 2002 VERTICAL ADJ.



AECOM
AECOM TECHNICAL SERVICES, INC.
2000 WEST 17TH STREET, SUITE 100
HOUSTON, TEXAS 77057-1529
WWW.AECOM.COM
NORTH FORT BEND
NO. 1580

NORTH MISSION GLEN MUD CONNECTION
PROPOSED 17' INCH WATER LIFT
SURVEY CONTROL MAP
SWING TIES
SHEET 1 OF 2



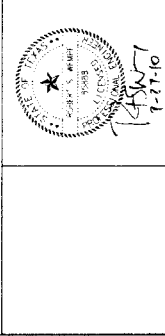
CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING	
Project No. 173610 Location: Cedar Drive at Millwater Drive Date: 9/27/10	47471 SHEET 1 OF 2
500,000,000	1"=120'
52	59

POINT	STATION	DATE	DESCRIPTION	REMARKS
1	25+00	9/27/10	START OF PROJECT	
2	25+00	9/27/10	START OF PROJECT	
3	25+00	9/27/10	START OF PROJECT	
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99	25+00	9/27/10	START OF PROJECT	
100	25+00	9/27/10	START OF PROJECT	

N/A

N/A

BRANCH: 557
DESIGNATION: 557
ELEV. 31.55
5/8-INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY
ALUMINUM CAP SET 54-FEET EAST OF THE ENTRANCE TO THE
WATER PLANT AT MILWAU DRIVE NEAR CEDAR SPRING
K. 3.0218357 N. 13.81143227 (SURFACE COORDINATES)
DESIGNATION: 567
ELEV. 100.77
5/8-INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY
ALUMINUM CAP SET 54-FEET EAST OF THE ENTRANCE TO THE
WATER PLANT AT MILWAU DRIVE NEAR CEDAR SPRING
K. 3.0218357 N. 13.81143227 (SURFACE COORDINATES)
NAD-83 VERTICAL DATUM 2002 VERTICAL ADJ.



NO. 1 DATE: 7-27-10

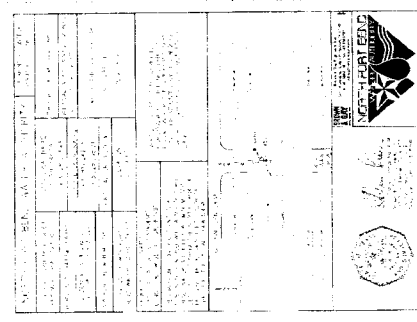
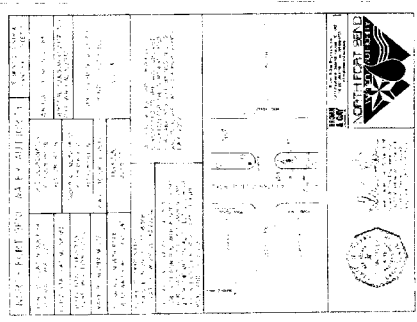
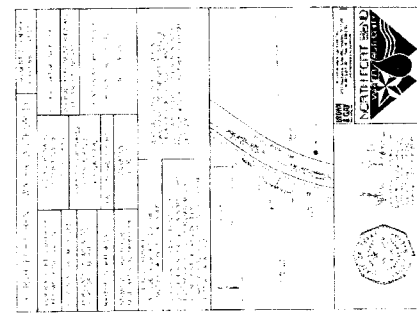
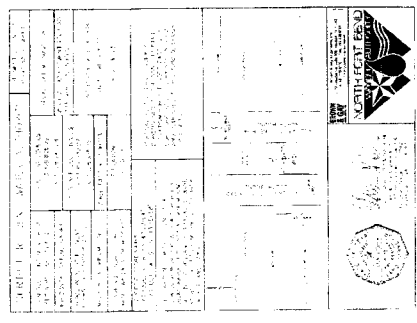
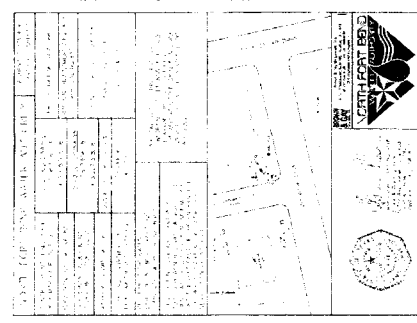
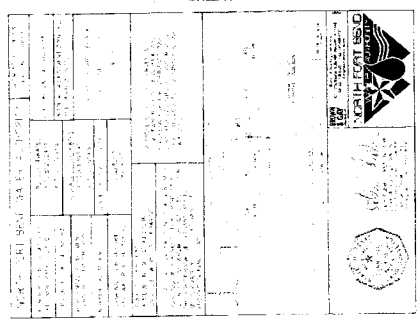
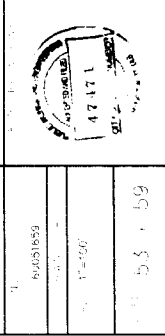
AECOM
AECOM TECHNICAL SERVICES, INC.
10000 WESTHEIMER BOULEVARD, SUITE 100
HOUSTON, TEXAS 77037-1529
WWW.AECOM.COM
WPP NO. 10-1090

NORTH MISSION GLEN MUD CONNECTION
NORTH MISSION GLEN MUD CONNECTION
PROPOSED 12-INCH WATER LINE
SURVEY CONTROL MAP
SWING TIES
SHEET 2 OF 2

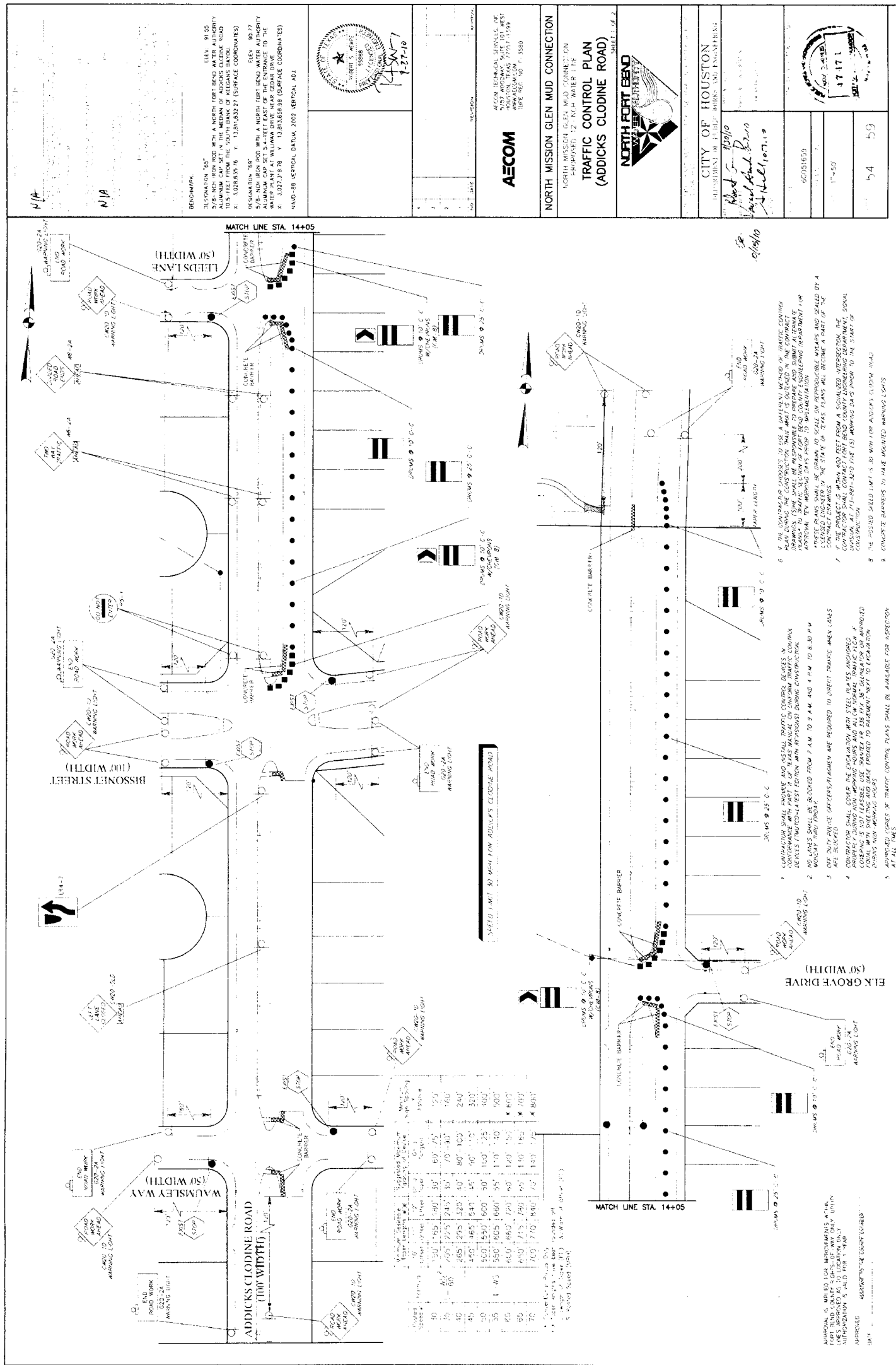


CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

Project: 134110
Date: 10/27/10
10/27/10

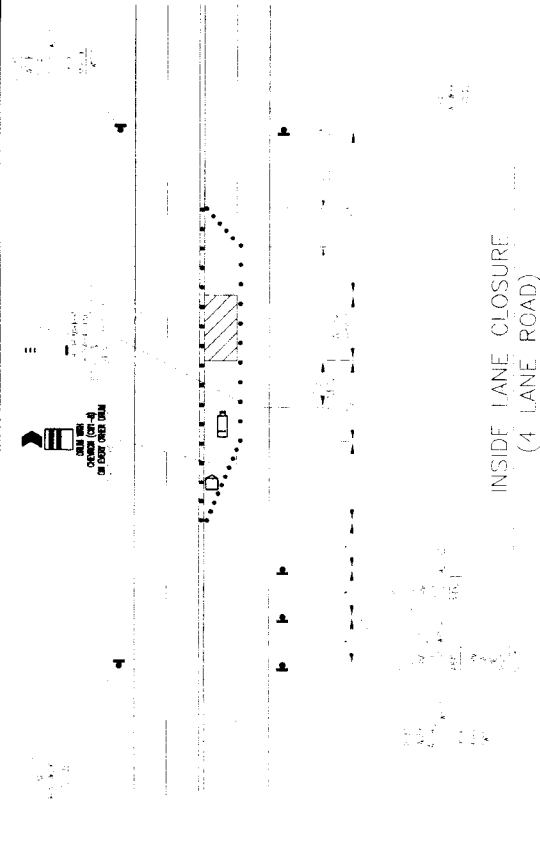


10/27/10

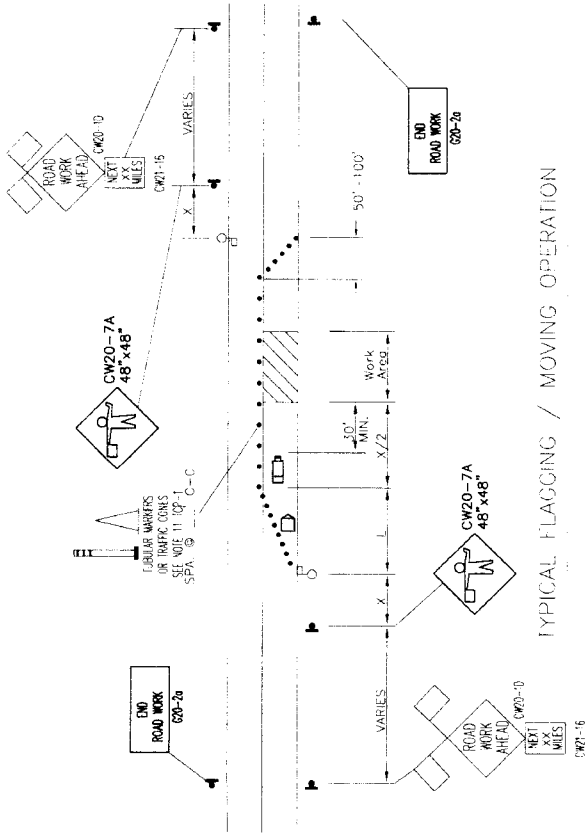


APPROVAL IS LIMITED FOR MEMBERS WITH
FORT BEND COUNTY RESIDENCE ONLY. UTILITIES
LINES APPROVED AS TO LOCATION ONLY.
AUTHORIZATION IS VALID FOR 1 YEAR.

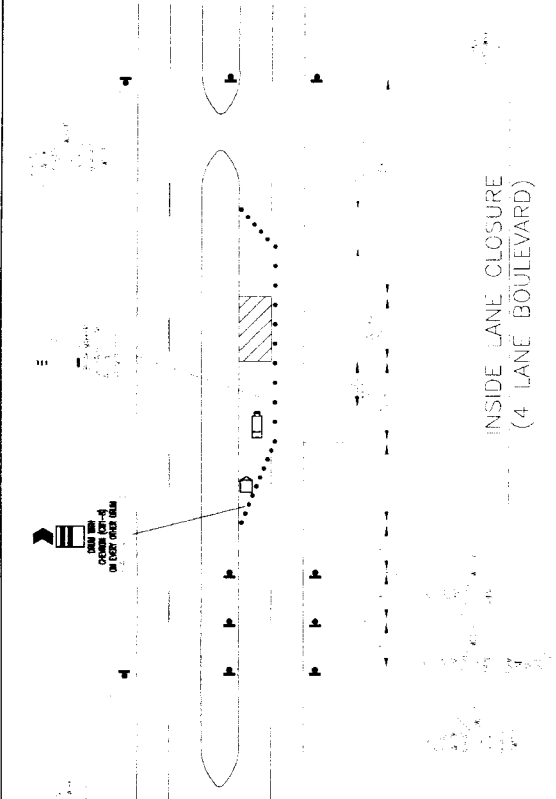
APPROVED _____
ASISTANT TO THE COUNTY ENGINEER



INSIDE LANE CLOSURE
(4 LANE ROAD)



TYPICAL FLAGGING / MOVING OPERATION

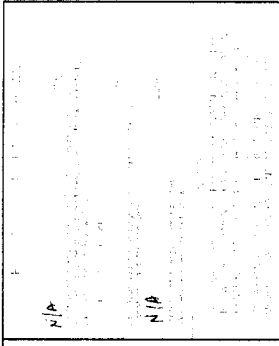


INSIDE LANE CLOSURE
(4 LANE BOULEVARD)

NOTES

1. ALL MANAGED WARNING SIGNS TO BE SET UP PRIOR TO THE START OF CONSTRUCTION. ALL SIGNS MUST BE MAINTAINED AND REPAIRED AS NECESSARY. ALL SIGNS MUST BE REMOVED AT THE END OF EACH DAY. ALL SIGNS MUST BE COVERED BY HARRIS COUNTY POLICE OFFICERS AT ALL TIMES. THE CONTRACTOR WILL COORDINATE WITH THE HARRIS COUNTY PUBLIC INFRASTRUCTURE DEPARTMENT, ENGINEERING DEPARTMENT, FOR THE ESTABLISHING TRAFFIC ROUTES.
2. LANE CLOSURES SHALL BE LIMITED TO PEAK HOURS ONLY MON-FRI AM 7-4 PM (LOCAL).
3. ALL SIGNS MARKED (*) SHALL HAVE A WARNING PLATE MOUNTED TOP OF THE SIGN. EXCEED 4'.
4. MAXIMUM TAPER LENGTH SHALL BE 100'.
5. ALL SIGNS SHALL BE MAINTAINED IN FULL CONTACT WITH EACH OTHER AT ALL TIMES.
6. ALL SIGNS SHALL BE MAINTAINED IN FULL CONTACT WITH EACH OTHER AT ALL TIMES.
7. ALL PAVEMENT MARKINGS COVERED BY OVERLAY SHALL BE REPAIRED BEFORE OPENING TO TRAFFIC.
8. ADVANCE WARNING SHALL BE PLACED A MINIMUM OF 100' PRIOR TO THE START OF CONSTRUCTION. HARRIS COUNTY ENGINEERING DEPARTMENT SHALL ADVISE THE HARRIS COUNTY ENGINEERING DEPARTMENT AT LEAST TWO WEEKS PRIOR TO ANY CONSTRUCTION.

9. ALL PORTABLE SIGNING, BARRIERS AND CONES SHALL BE REMOVED AT THE END OF EACH DAY. ALL OVERLAY IS COMPLETED ALL CHANNELIZATION SHALL BE MOVED ON TO LANE LINES TO OPEN CENTER LEFT TURN LANE TO TRAFFIC.
11. IF WORK ZONE IS NEEDED OVERNIGHT ALL CONES OR TUBULAR MARKERS SHALL BE REPLACED WITH DRUMS W/ WP'S AND TEMPORARY PAVEMENT MARKINGS SHALL BE IN PLACE FOR NIGHTTIME OPERATION. ALL DIRECTED BY THE ENGINEER.
12. SIGN R20-3 IS REQUIRED IN ADVANCE OF PROJECT LIMITS.
13. ACCESS TO EXISTING BUSINESSES OR RESIDENCES SHALL BE MAINTAINED AT ALL TIMES.



BENCHMARK
DESIGNATION "55"
ELEV. 91.55
5/8-INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY
ALUMINUM CAP SET 5.4-FEET EAST OF THE ENTRANCE TO THE
WATERWAY AT WILLIAM DRYAN NEAR CEDAR DRIVE
X: 3,028,835.76 Y: 13,911,832.27 (SURFACE COORDINATES)
DESIGNATION "56"
ELEV. 90.17
5/8-INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY
ALUMINUM CAP SET 5.4-FEET EAST OF THE ENTRANCE TO THE
WATERWAY AT WILLIAM DRYAN NEAR CEDAR DRIVE
X: 3,022,518.18 Y: 13,915,659.98 (SURFACE COORDINATES)
NAVD 88 VERTICAL DATUM, 2002 VERTICAL ADJ.



AECOM

AECOM TECHNICAL SERVICES, INC.
10000 WEST 10TH STREET
HOUSTON, TEXAS 77036-1599
WWW.AECOM.COM
PHONE: 281.431.1390

NORTH MISSION GLEN MUD CONNECTION

NORTH MISSION GLEN MUD CONNECTION
STRIPPED 12-INCH WATER TRP

TRAFFIC CONTROL DETAILS



CITY OF HOUSTON

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
Report G-7702/10
10/10/10
10/10/10
10/10/10



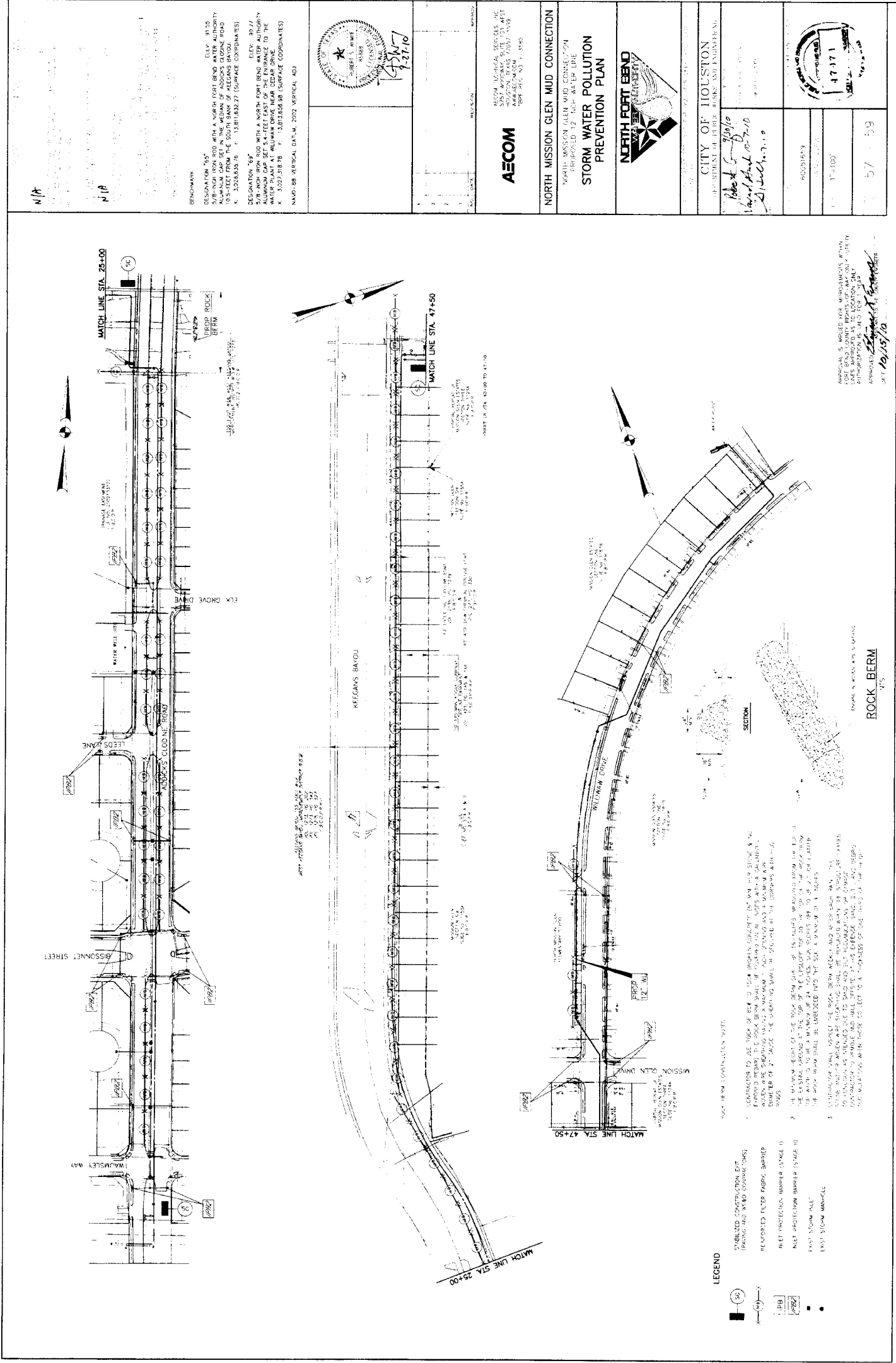
60051859
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55

50

* 85th Percentile Speeds may be used on roads where traffic speeds normally exceed the posted speed limit.
** Taper lengths have been rounded off.

CONSTRUCTION WARNING		SIGN SPACING		SUGGESTED MAXIMUM SPACING OF DEVICES		TYPICAL TRANSITION LENGTHS	
Posted Speed (MPH)	85th Percentile Speed (MPH)	Minimum Distance	Maximum Distance	Minimum Distance	Maximum Distance	Minimum Distance	Maximum Distance
30	35	100'	150'	100'	150'	100'	150'
35	40	100'	150'	100'	150'	100'	150'
40	45	100'	150'	100'	150'	100'	150'
45	50	100'	150'	100'	150'	100'	150'
50	55	100'	150'	100'	150'	100'	150'
55	60	100'	150'	100'	150'	100'	150'
60	65	100'	150'	100'	150'	100'	150'
65	70	100'	150'	100'	150'	100'	150'



N/A

DESIGNATION "A" 5/8-INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY ALUMINUM CAP SET IN THE MEDIAN OF ADRIOS ELEGANCE ROAD TO 3-FEET FROM THE SOUTH BANK OF MEGANS BAYOU

DESIGNATION "B" 5/8-INCH IRON ROD WITH A NORTH FORT BEND WATER AUTHORITY ALUMINUM CAP SET AT THE EAST OF THE NORTH FORT BEND WATER PLANT AT MILLWAY DRIVE NEAR CEDAR DRIVE

NAVD-88 VERTICAL DATUM, 2002 VERTICAL ADJ



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NO. 81	46' 5' 0"	46' 5' 0"
NO. 82	46' 5' 0"	46' 5' 0"
NO. 83	46' 5' 0"	46' 5' 0"
NO. 84	46' 5' 0"	46' 5' 0"
NO. 85	46' 5' 0"	46' 5' 0"
NO. 86	46' 5' 0"	46' 5' 0"
NO. 87	46' 5' 0"	46' 5' 0"
NO. 88	46' 5' 0"	46' 5' 0"
NO. 89	46' 5' 0"	46' 5' 0"
NO. 90	46' 5' 0"	46' 5' 0"
NO. 91	46' 5' 0"	46' 5' 0"
NO. 92	46' 5' 0"	46' 5' 0"
NO. 93	46' 5' 0"	46' 5' 0"
NO. 94	46' 5' 0"	46' 5' 0"
NO. 95	46' 5' 0"	46' 5' 0"
NO. 96	46' 5' 0"	46' 5' 0"
NO. 97	46' 5' 0"	46' 5' 0"
NO. 98	46' 5' 0"	46' 5' 0"
NO. 99	46' 5' 0"	46' 5' 0"
NO. 100	46' 5' 0"	46' 5' 0"

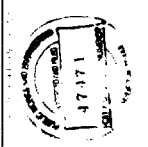
AECOM

NORTH MISSION GLEN MUD CONNECTION
PROPOSED 12" RCP WATER LINE
STORM WATER POLLUTION
PREVENTION PLAN

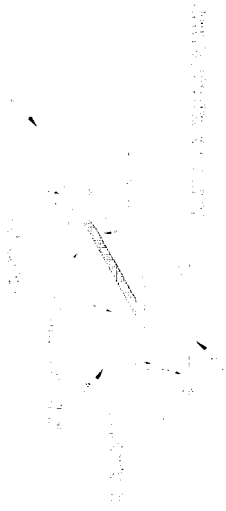


CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
Robert S. White, P.E.
David L. White, P.E.

PROJECT NO.	10031619
DATE	10/13/10
BY	57
CHECKED	59

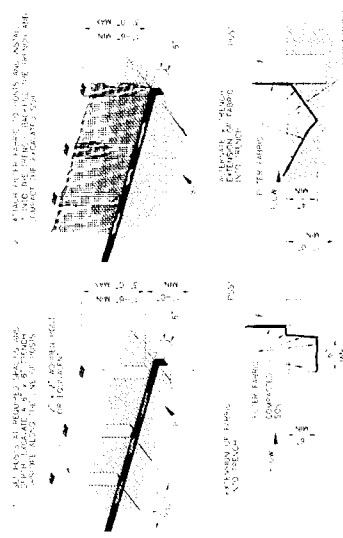


APPROVAL IS GRANTED FOR MODIFICATIONS WITHIN
THE BOUNDARY OF THE PROJECT ONLY. ANY
MODIFICATIONS OUTSIDE THE BOUNDARY
WILL BE AT THE USER'S RISK.
APPROVED: *[Signature]*
DATE: 10/13/10



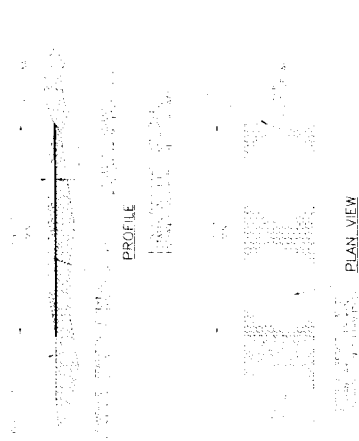
- GENERAL NOTES:
1. THESE BARRIERS SHALL BE CONSTRUCTED WITH 12" DIA. RIGID PILES.
 2. THE BARRIERS SHALL BE CONSTRUCTED WITH 12" DIA. RIGID PILES.
 3. THE BARRIERS SHALL BE CONSTRUCTED WITH 12" DIA. RIGID PILES.
 4. THE BARRIERS SHALL BE CONSTRUCTED WITH 12" DIA. RIGID PILES.

**INLET PROTECTION
BARRIERS FOR
STAGE II INLETS**

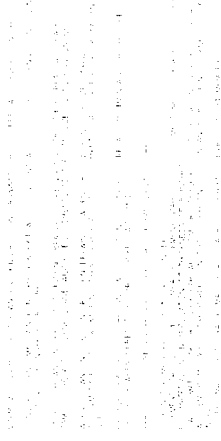


- GENERAL NOTES:
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 4. THE BARRIERS SHALL BE CONSTRUCTED WITH 12" DIA. RIGID PILES.

FILTER FABRIC FENCE



PROFILE



PLAN VIEW

STABILIZED CONSTRUCTION ACCESS

1



AECOM AECOM TECHNICAL SERVICES, INC. 10000 WESTHEIMER BOULEVARD, SUITE 100 HOUSTON, TEXAS 77060-1150 WWW.AECOM.COM DATE: 9-27-10		NORTH MISSION GLEN MUD CONNECTION NORTH MISSION GLEN MUD CONNECTION PROPOSED 12" RICH WATER LINE STORM WATER POLLUTION PREVENTION PLAN DETAILS		NORTH FORT BEND WATER UTILITY	
CITY OF HOUSTON DEPARTMENT OF PUBLIC WORKS AND ENGINEERING		Project G-10 10/15/10 10/15/10		47471	
N/S		58		59	

[illegible]

NOTES.

6. A MINIMUM WIDTH BETWEEN LONGITUDINAL JOINTS SHALL NOT EXCEED 15'.
7. ALL SUBGRADE SHALL BE STABILIZED, LANCESS GLOTTICHOUS INVESTIGATIONS SHOW THAT STABILIZATION IS REQUIRED TO OBTAIN THE DESIRED STRENGTH OF FORT-BEAD EMBANKMENT AND DRAINAGE PIPES TO OBTAIN AN APPLICATION OF SURFACING.
8. IF SUBGRADE STABILIZATION IS REQUIRED, APPLICATION SHALL BE AT THE RATE OF DEFINING BY LABORATORY TESTING OF THE SUBGRADE MATERIAL.
9. 6 INCH AND 4 INCH BY 12-INCH CUBES (WHERE APPLICABLE) SHALL BE 5.5 SACK MIX.

AECOM

NORTH MISSION GLEN MUD CONNECTION
NORTH MISSION GLEN MUD CONNECTION
PROPOSED 12-INCH WATER LINE

STANDARD PAVEMENT DETAILS

CITY OF HOUSTON
ARGUMENT OF PUBLIC WORKS AND ENGINE

Robert C. 9/10/10
Vernon Street, No. 7-11
St. Paul, Mo. 7.10

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