REVIEW BY FORT BEND COUNTY COMMISSIONERS COURT

On this	14	day of	DECEMBER	, 2010 , before the Fort Bend
Commiss	ioners Co	urt cam	e on to be heard a	and reviewed the accompanying notice
of <u>LEWI</u>	S CONTRA	CTORS,	INC.	
Job Locat	tion <u>HARLI</u>	ЕМ		
Dated 1	2/06/10	BOND	NO 105511508	Permit No. <u>83864</u>
to make	use of cert	tain For	t Bend County pro	operty subject to, "A Revised Order
Regulati	ng the Lay	ing, Coi	istruction, Mainte	enance, and Repair of Buried Cables,
				or Along Roads, Streets, Highways, and
Drainage	e Ditches i	n Fort I	Bend County, Texa	s, Under the Jurisdiction of the
				Texas," as passed by the Commissioners
Court of	Fort Bend	County	, Texas, date the 3	3 rd day of <u>August</u> , <u>1987</u> , recorded in
Volume _		_ of the	Minutes of the Co	mmissioners Court of Fort Bend County,
Texas, to	the exten	it that s	uch order is not ii	nconsistent with Article 1436a, Vernon's
Texas Ci	vil Statues	s. Upon	Motion of Commis	ssioner <u>weyers</u> , seconded
by Comn	nissioner_	Pres	Habe , du	ly put and carried, it is ORDERED,
				said above purpose is hereby
				t of Fort Bend County, Texas, and that said
notice b	e placed o	n recor	d according to the	e regulation order thereof.
Notos				
Notes:	vidonao of	Formou	by the Commission	oners Court must be kept on the job site
				nds for job shutdown.
			e required:	nus for job shucuowiii
Z. VI				ruction start up, and
				ted and ready for final inspection
T.M			Permit Administ	
1*;	ian notice.	3 to.	Fort Bend Count	
			P.O. Box 1449	y g
			Rosenberg, Texa	as 77471
			281-633-7500	
3. T	his permi	t expire	es one (1) year fro	m date of permit if construction has not
	ommence		1	
	(n)	1/	•
By /	N. L	Her	u Hayem	Presented to Commissioners Court
Co	unty Engir	1eer	. 0	and approved.
				Recorded in Volume 12-14-10
Ву				Minutes of Commissioners Court.
Dr	ainage Dis	strict Er	igineer/Manager	
				Clerk of Commissioners Court
				By Them Fish
(REVISEI	5/30/08)			Deputy

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

AUTHORIZED BOND NO 105511508

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THE	CT A	TE	$\mathbf{O}\mathbf{F}$	TEXA	. S
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KNOW ALL MEN BY THESE PRESENTS:

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§

Lewis Contractors, Inc. THAT WE. _,Texas, hereinafter called the Principal, address is PO Box 1623, Bertram, TX 78605 and Travelers Casualty and Surety Company of America Corporation existing under and by virtue of __and authorized to do an indemnifying business in the State of the laws of the State of CT____ Texas, and whose principal office is located at One Tower Square, Hartford, CT 06183 officer residing in the State of Texas, authorized to accept service in all suits and actions brought within said State is John W. Schuler and whose address is 1405 E. Riverside Dr., Austin, TX 78741 hereinafter called the Surety, and held and firmly bound unto, Robert E. Hebert, County Judge of Fort Bend County, Texas, or his successors in office, in the full sum of Five Hundred Seventy Thousand One Hundred Twenty Six Dollars (\$570,126.62) 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 30th day of November , 20 10

Lewis Contractors, Inc.

BY

Travelers Casualty and Surety Company of America

and move the

SURETY

BY John W. Schuler, Attorney-in-Fact

WARNING: THIS POWER OF ATTORNEY IS INVALID WITHOUT THE RED BORDER

TRAVELERS

POWER OF ATTORNEY

Farmington Casualty Company
Fidelity and Guaranty Insurance Company
Fidelity and Guaranty Insurance Underwriters, Inc.
St. Paul Fire and Marine Insurance Company
St. Paul Guardian Insurance Company

St. Paul Mercury Insurance Company Travelers Casualty and Surety Company Travelers Casualty and Surety Company of America United States Fidelity and Guaranty Company

Attorney-In Fact No.

220331

Certificate No. 003683304

KNOW ALL MEN BY THESE PRESENTS: That St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company and St. Paul Mercury Insurance Company are corporations duly organized under the laws of the State of Minnesota, that Farmington Casualty Company, Travelers Casualty and Surety Company, and Travelers Casualty and Surety Company of America are corporations duly organized under the laws of the State of Connecticut, that United States Fidelity and Guaranty Company is a corporation duly organized under the laws of the State of Iowa, and that Fidelity and Guaranty Insurance Underwriters, Inc., is a corporation duly organized under the laws of the State of Wisconsin (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint

(herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint Todd Jackson, and John W. Schuler ____, their true and lawful Attorney(s)-in-Fact, , State of____ of the City of ____Austin_ each in their separate capacity if more than one is named above, to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law. 24th IN WITNESS WHEREOF, the Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this ____ St. Paul Mercury Insurance Company **Farmington Casualty Company** Fidelity and Guaranty Insurance Company Travelers Casualty and Surety Company Travelers Casualty and Surety Company of America Fidelity and Guaranty Insurance Underwriters, Inc. United States Fidelity and Guaranty Company St. Paul Fire and Marine Insurance Company St. Paul Guardian Insurance Company State of Connecticut vice President City of Hartford ss. 2010 , before me personally appeared George W. Thompson, who acknowledged day of On this the himself to be the Senior Vice President of Farmington Casualty Company, Eidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

In Witness Whereof, I hereunto set my hand and official set. My Commission expires the 30th day of June, 2011



Marie C. Tetreault Notary Public

58440-4-09 Printed in U.S.A.

WARNING: THIS POWER OF ATTORNEY IS INVALID WITHOUT THE RED BORDER

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Company, St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, and Assistant Vice President, any Secretary, and Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, Kori M. Johanson, the undersigned, Assistant Secretary, of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 304h

day of November

01 00

Kori M. Johanson Assistant Secretary



















To verify the authenticity of this Power of Attorney, call 1-800-421-3880 or contact us at www.travelersbond.com. Please refer to the Attorney-In-Fact number, the above-named individuals and the details of the bond to which the power is attached.



IMPORTANT NOTICE

TO OBTAIN INFORMATION OR MAKE A COMPLAINT:

You may contact <u>Travelers Casualty and Surety Company of America</u>, for information or to make a complaint at:

Travelers Bond Attn: Claims

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

Texas Department of Insurance P.O. Box 149104 Austin, TX 78714-9104 (800) 252-3439

ATTACH THIS NOTICE TO YOUR BOND. This notice is for information only and does not become a part or a condition of the attached document and is given to comply with Section 2253-021, Government Code, and Section 53.202, Property Code, effective September 1, 2001.

COUNTY OF FORT BEND

Engineering Department

P.O. BOX 1449

(REVISED 5/39/08)

Rosenberg, Texas 77471-1449

Johnny Ortega Permit Administrator 1124 Blume Road

12/06/2010

Date

Phone: (281) 341-7500

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

X	_ (1) Comple	te Application For	m.	
	-		street, and/or drain	age ditch affected.
			showing course of di	_
		_ c. Plans and spe	cifications.	
	(2) Bond:			
	•	·	y, approval when ap I currently posted.	plicable.
	-	=	currency posteu.	
		Amount		
	X	Performance be	and submitted	
		No. <u>105511508</u>		
			.126.62	_
		Cashier's Check	•	_
	-		\	
		ermission given fo oproved in Commi	r emergencies, to sta	art construction
	_	Engineer Acknowl		Date
	110011100			
	Precinct	Commissioner Ack	knowledgment	Date
	_ (4)			
		o Dietriet Annacys	l when applicable	

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. 3	864 PCT. No. 3					
BOND No	5511508	-				
proposes to lay, o	reby given that	repair cable	, cond	uit and/o	r pole lin	e, in, under,
actoss, or along to		_			County,	is follows:
	In, Under, or Across Roa	ds and/or D	rainage	Ditches		
Road or : D Ditch Name :	istance & Direction From : Nearest Intersection :	Length of Crossing			of Constru icked: Dr	ction iven: Cased
:	:		:	:	:	:
:	·		:		:	
•	•		:	•	•	•
	Along Roads and	or Drainage	Ditche	ıs		
Road or :	Distance & Direction From	n : To			Distanc	e
	WEST BELFORT ! Ha	iden L	016	Petert		
Hariem Ro :	GOTUG NORTH	: <	المحاذ	GH .	12,4	851F
:		:			:	
		Description				
Cables, Conduits, an Ditches in Fort Bend County, Texas," as p	A Revised Order Regulating the d/or Pole Lines, In, Under, Acr I County, Texas, Under the Ju- assed by Commissioners Cou- ad in Volume 639 of the Minute	oss, or Alon urisdiction o rt of Fort Be	g Roads f the Co and Cou	s, Streets, ommission nty, Texas	Highways ers Court , dated the	and Drainage of Fort Bend a 3rd. day of
	quired: 1) 48 hours in advance 2) when construction is				spection.	
	ministrator/Fort Bend County E 1449, Rosenberg, TX 77471.	·	•		•	
∕iolation of requireme	ents shall constitute grounds for	r job shut do	wn.			
	COMPA	NY NAME:_	LENT			ioes Ivc.
	\sim	N15	•	AGENIAN	d/or OWNER	•
Does project			* (8	Signature)		
comply with For Bend County	NAME A	& TITLE ST	EVE F	luc/an	L - A	DIFIT MANA
Outdoor Lighting	9		_		e Print)	J
Ordinance?	DATE_	11/2/1	0			
Yes ()	 	-10	E _M	naka		
No ()	ADDRE	ss 7200		1243 Street/P.O. B	ox)	
• •	GEO	GETOWN		Te	•	3128
		ity		State	,	Zip
	TELEPH	ONE NO: 5	12-2	60-89	00 /51	2-203-85
					nrs/day, 7 da	rys/week)

FORT BEND

GRAND MISSION MUD No 2

FEMA MAP No. 48157C0105J ZIP CODE 77407 GIMS TILES 4653 B & D, 4654 D KEY MAP NO 526 L, Q, U, & Y

SSUE

DATE:

JULY 2010

LOG NO: 09-0679

No. SHEET

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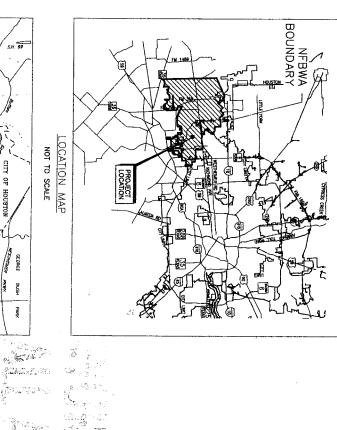
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DATE:

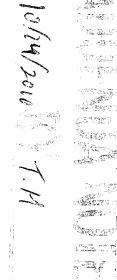
10/01/08

NORTH FORT BEND **SEGMENT 5** WATER AUTHORI

ROAD FROM MADDEN ROAD NORTH TO LONG POIN PROPOSED 20", 24" AND 42" WATERLINES ALONG HARLEM I SLOUGH







DIRECTORS

PRECINCT

DAVID SPELL

ROBERT L PATTON MELONY F. GAY, P.E. ROBERT DARDEN PETER HOUGHTON BRUCE FAY

FORT BEND COUNTY CITY OF HOUSTON E.T.

FORT BEND COUNTY

FIRM FLOOD INSURANCE RATE MAP PANEL (105 & 115) OF (550) MAP # 48157000105J & 4815700115J BFE ELEVATION 93,0 KENNETH J. MARTINEC, P.E., certify that this project is entirely area with a 100 year flood frequency. ocated outside the

ONE-CALL NOTIFICATION SYSTEM
CALL BEFORE YOU DIG!!
(713) 223-4507 (in Houston)
(New Statewide Number Outside
Houston)
1-800-545-6005

 Contractor shall notify the City of Houston, Department of Public Works and Engineering (713-837-7000) 48 hours before starting work on this project. Contractor shall notify the City of Houston, Department of Public Works and Engineering, Engineering Construction Division (Telephone No. 713–883–1450) 48 hours before starting work on this project.

No proposed storm sewer or drainage work is shown, nor any proposed change in drainage path or patter is in this project proposed work scope.

4. No known proposed wastewater line work is included in this 来project's work scope.

MOTE OTT SOMATURES AND PRO ONE TEAR ONLY DEPARTMENT HALFILL & CHANGE OF TREES. OF HOUSTON CITY OF HOUSTON USE ONLY CITY DWG NO.:

JONES & CARTER, INC.
Trus Board of Professional Engineers - SHANERS - SHANER

PROPOSED 20", 24" AND 42" WATERLINES ALONG HARLEM ROAD FROM MADDEN ROAD NORTH TO LONG POINT SLOUGH CATHODIC PROTECTION JOINT BONDING

CATHODIC PROTECTION INSULATING JOINT DETAILS

CATHODIC

PROTECTION

RECTIFIER DETAILS SHEET 2 OF RECTIFIER DETAILS SHEET 1 OF

CATHODIC PROTECTION CATHODIC PROTECTION

PRESTRESSED CONCRETE CYLINDER PIPE DETAILS

STEEL PIPE DETAILS

STANDARD WATERLINE DETAILS

PROJECT SIGN AND PIPELINE MARKER DETAILS

CATHODIC PROTECTION MISCELLANEOUS DETAILS SHEET 1 OF CATHODIC PROTECTION MISCELLANEOUS DETAILS SHEET 2 OF

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TRAFFIC CONIRCE POLICITION PREVENTION PLAN SHEET 1
STORM WATER POLICITION PREVENTION PLAN SHEET 2

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TRAFFIC CONTROL PLAN SHEET 1 OF 2 TRAFFIC CONTROL PLAN SHEET 2 OF 2

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CATHODIC PROTECTION SCHEDULES

CATHODIC PROTECTION TEST STATION DETAILS CATHODIC PROTECTION TEST STATION DETAILS

PROTECTION TEST STATION DETAILS SHEET 1
PROTECTION TEST STATION DETAILS SHEET 2
PROTECTION TEST STATION DETAILS SHEET 3
PROTECTION TEST STATION DETAILS SHEET 4

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                                                                                    SURVEY CONTROL SHEET 1 OF
                                                                                                           OVERALL SITE LAYOUT SHEET
                                                              SURVEY CONTROL SHEET 2 OF
                                                                                                                                OVERALL SITE LAYOUT
                                                                                                                                                      CONSTRUCTION NOTES
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TRENCHLESS CONSTRUCTION DETAILS

VALVE AND SERVICE MANHOLE DETAILS HEAVY DUTY MANHOLE RING AND COVER DETAILS

COMBINATION AIR VALVE DETAILS

EXTRA DEPTH MANHOLE DETAILS

EXCAVATION, BEDDING, BACKFILL, & PAVEMENT REPAIR DETAILS

STORM WATER POLLUTION PREVENTION DETAILS BARRICADE DETAILS

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			22210	12410	C 7/21/10	CITY OF PUBLIC 1	CITY SIGNATURES VAILD FOR ONE SIGNATURES		SHEET INDEX	SEGMENT	ENGINEERS - Frages Board of Professional Ex-	REV				
	FOR CITY OF HOUSTON USE ONLY CITY DWG NO.:		STORM WATER QUALITY	TRAFFIC	STREET & BRIDGE	HOUSTON WORKS AND ENGINEERING	ONE YEAR ONLY AFTER DATE		NDEX	ENT 5	JONES & CARTER, INC. ENGINEERS - PLANNERS - SURVEYORS Tozas Board of Professional Engineers Regammins No. 7-439 8835 Quillion, Dr., Sulis 100 Houston, Tenss 77881 (713) 777-8837	REVISION				
	ž					SING	ATE OF					APPROV.				

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GENERAL CONSTRUCTION NOTES

- THERE WILL BE NO SEPARATE PAYMENT FOR WORK SHOWN ON THESE PLANS, UNLESS SPECIFICALLY ESTABLISHED IN THE BID SECTION OF THE CONTRACT DOCUMENTS. INCLUDE COST OF THIS WORK IN THE CONTRACT LIMIT PRICE FOR TIEMS OF WHICH THIS WORK IS A COMPONENT OR INCIDENTAL.
- CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF EXISTING FACILITIES PRIOR TO CONSTRUCTION OF PROPOSED FACILITIES. ANY DAMAGE TO EXISTING FACILITIES INCURRED AS A RESULT OF CONSTRUCTION OPERATIONS WILL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.
- CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE TO THE EXISTING PUBLIC OR PRIVATE UTILITY LINES, INCLUDING BUT NOT LIMITED TO WATER LINES, WASTEWARE COLLECTION SYSTEMS AND STORM SEWERS, DIRING CONSTRUCTION, ALL DAMAGES SHALL BE REPAIRED IN ACCORDANCE WITH THE CITY OF HOUSTOW, DEPAITMENT OF PUBLIC WORKS AND ENGINEERING STANDARD CONSTRUCTION SPECIFICATIONS. WITH LATEST ADDENDA AND AMENDMENTS THERETO, WITH NO COST TO THE AUTHORITY.
- CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR PROJECT STAKING AND THE RE-ESTABLISHMENT OF CONTROL POINTS. ALIGNMENT, CENTERLINE CURVE DATA, AND STATIONING TO BE DETERMINED FROM APPROVED, RECORDED SUBDIVISION PLAT OR ROAD RIGHT-OF WAY.
- CONTRACTOR SHALL REMOVE EXISTING PLUGS AND CONNECT PROPOSED UTILITY LINES AS INDICATED ON PLANS. CONTRACTOR SMALL VERRY LOCATION OF UNDERGROUND UTILITY LINES AND SHALL NOTIFY THE FOLLOWING AGENCIES 48 HOURS PRIOR TO EXCAVATING NEAR EXISTING FACILITIES:
- CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS AND ALL REGULATIONS OF UTILITY COMPANIES CONCERNING SAFETY AND HEALTH PRACTICES. A.) LONE STAR NOTIFICATION CENTER AT 713-223-4567
 B.) TEXAS EXCAVATION SAFETY SYSTEM INC. AT 1-800-344-8377
 C.) DISTRICT OPERATORS - SEE NOTE 1 OF "WATERLINE CONSTRUCTION NOTES"
- RELOCATION OR REPLACEMENT OF EXISTING UTILITIES SHALL BE CONSTRUCTED ACCORDANCE WITH THE AUTHORITY'S STANDARD SPECIFICATIONS AND STANDARD DETAILS, UNLESS OTHERWISE NOTED AND APPROVED ON THESE PLANS.
- 10. ALL TRENCH EXCAVATION, BEDDING AND BACKFILL SHALL BE IN CONFORMANCE WITH THE AUTHORITY'S STANDARD SPECIFICATION 02317—EXCAVATION AND BACKFILL FOR UTILITIES AND SPECIFICATION 02320 UTILITY BACKFILL MATERIAL. INCLUDE PRICE OF ALL BEDDING AND BACKFILL OF TYPE REQUIRED IN PRICE BID PER LINEAR FOOT OF PIPE.
- 11. ALL SEWER TREMCHES UNDER OR WITHIN ONE FOOT OF PROPOSED AND/OR FUTURE PAYMENT OR CHEB SHALL BE BACKFILED WITH 1-1/2 SACKS OF CEMENT FER CUBIC YARD CHEMIT-STABILIZED SAND TO A POINT ONE FOOT BELOW PAYEMENT SUBGRADE. THE REMAINING BACKFILL SHALL BE MADE WITH COMPACTED SUITABLE MATERIAL.
- BASIC CONSTRUCTION PRODUCTS AS DESIGNATED IN THE TECHNICAL
 SPECIFICATIONS OR AS SHOWN ON PLANS, SHALL BE INTRUSHED BY A
 MANUFACTURER OR SUPPLIER THOSE PRODUCTS SHALL BE IN FULL COMPLIANCE
 WITH APPLICABLE TECHNICAL SPECIFICATION AND/OR STANDARD CONSTRUCTION
- ALL MANHOLES IN UNPAYED AREAS SHALL BE ENCAPSULATED WITH CEMENTSTRBICIZED SAND A MINIMUM OF 1-FOOT BELOW BASE AND A MINIMUM OF 1FOOT AROUND WALL UP TO 1-FOOT ABOVE THE HIGHEST ADJOINING PIPE
 STRUCTURE. THE REMAINING BACKFILL SHALL BE MADE WITH SELECT FILL
 MATERIAL PLACED IN UNIFORM BEINGH MAXIMUM LOSSE LIFTS COMPACTED TO
 AT LEAST 95 PERCENT OF MAXIMUM STANDARD PROCTOR DENSITY. ALL
 MANHOLES IN PAYED AREAS SHALL BE ENCAPSULATED WITH CEMENT—
 MANHOLES IN PAYED AREAS SHALL BE MICAPSULATED WITH CEMENT—
 STABILIZED SAND A MINIMUM OF 1-FOOT BELOW BASE AND A MINIMUM OF
 1-FOOT AROUND WALL AND UP TO WITHIN 1-FOOT OF PAYEMENT SUBGRADE.
 MICHOLE PRICE OF ALL BEDDING AND BACKFILL OF TYPE REQUIRED IN PRICE O
- WHEN TRENCH CONDITION WARRANTS THE USE OF DEWATERING SYSTEMS, THEIR USE SHALL BE REQUESTED BY THE CONTRACTOR AND APPROVED BY THE PROGRAM MANAGER.
- THE AUTHORITY WILL FURNISH INTIAL LABORATORY TESTS, SUBSCOURT TESTING OUR TO FALED DUSTINES SHALL BE AT CONTRACTOR'S EXPENSE, A COPY OF ALL TEST RESULTS SHALL BE SUBMITTED TO THE PROGRAM MANAGER.
- ALL TRAFFIC CONTROL AND WARNING SIGNS SHALL BE IN ACCORDANCE WITH TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (LATEST REVISION). CONTRACTOR SHALL REMOVE ALL MUD, DIRT AND DEERIS DEPOSITED ACTIVITY DAILY. MATERIAL THAT IS HAZARDOUS TO TRAFFIC SHALL BE REMOVED IMMEDIATELY.
- 18. HESE PLANS REFEARED BY JONES & CAPTER, INC. DO NOT EXTEND TO OR CONTRACTOR OR THE SERVEY OF THE CONTRACTOR OR THE SERVEY OF THE CONTRACTOR OR THE SERVEY OF THE LONG OF THE JONES & CARTER, INC. RESTREMENANCE OF THE JONES & CARTER, INC. RESISTENCE ASSETTING OF THE JONES & CARTER, INC. RESISTENCE OF THE JONES & CARTER, INC. RESISTENCE OF THE JONES & CARTER, INC. RESISTENCE OF THE JONES OF TH
- CONTRACTOR SHALL PROTECT ALL TREES ADJACENT TO WORK AREA. NO TREES SHALL BE REMOVED WITHOUT PERMISSION OF THE AUTHORITY.
- 20. CONTRACTOR SHALL GIVE MOTOR TO ALL ANTHORIZED INSPECTORS.
 2UPERINTENDENTS OR PERSONS IN CHARGE OF RRIVATE AND PUBLIC UTILITIES
 OR FALIROADS AFFECTED BY HIS OPERATIONS PRIOR TO COMMENCEMENT OF
 WORK, CONTRACTOR SHALL OBTAIN ALL CONSTRUCTION PERMITS PRIOR TO
 STARTING CONSTRUCTION.
- CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED BY FORT BEND COUNTY, TEXAS PRIOR TO STARTING CONSTRUCTION OF UTILITIES AND/OR CULVERTS WITHIN COUNTY ROAD RIGHTS-OF-WAY, IF APPLICABLE. CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED PRIOR TO STARTING CONSTRUCTION OF UTLITIES WITHIN FORT BEND COUNTY DRAINAGE DISTRICT RIGHTS-OF-WAY. CONTACT MR. JOHNNY ORTEGA WITH FORT BEND COUNTY ENGINEERING DEPARTMENT (281) 833-7500.

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- FORT BEND COUNTY ENGINEERING DEPARTMENT SHALL BE NOTIFIED BY TELEPHONE (2B1) 633-7500 BY THE CONTRACTOR 48 HOURS IN ADVANCE OF STARTING CONSTRUCTION, FOLLOWED BY A LETTER OF CONFIRMATION, THE CONTRACTOR SHALL ALSO NOTIFY FORT BEND COUNTY ENGINEERING DEPARTMENT BY TELEPHONE 124 HOURS IN ADVANCE OF SUBCRADE PREPARATION AND CONCRETE POURS. A COPY OF THE WRITTEN NOTIFICATION SHALL BE SENT TO THE WRITTEN NOTIFICATION SHALL BE SENT TO THE WRITTEN NOTIFICATION SHALL BE SENT TO
- SURPLUS EXCAVATED MATERIAL FROM CONSTRUCTION OF WATER LINE AND SEWERS SHALL BE DISPOSED OF OFF SITE BY THE CONTRACTOR.
- CONTRACTOR RESPONSIBLE FOR FILING CONTRACTORS NO! AND NOT. WEEKLY INSPECTIONS, INSPECTIONS AFTER 0.5-INCHES OF RAINFALL, AND NOTIFICATION TO ENGINEER OF OWNER OF ANY INADEQUACIES OR FAILURES IN THE STORM WATER POLLUTION PREVENTION PLAN.
- ADEQUATE DRAINAGE SHALL BE MANYANID AT ALL TIMES DURNIC CONSTRUCTION AND ANY DRAINAGE DITCH OR STRUCTURE DISTURBED DURNIC CONSTRUCTION SHALL BE RESTORED TO THE SATISFACTION OF THE AUTHORITY.

WATER LINE CONSTRUCTION NOTES

- CONTRACTOR SHALL CONTACT HE DISTRICT OFERATOR PRIOR TO MAKING ANY CONNECTION THE EXISTING WATER LINES OR ANYTIME A VALVE ON AN EXISTING WATER LINE IS TO BE OPENED OR CLOSED.
- A DISTRICT NAME: GRAND MISSION MUD No. 1
 OISTRICT COMPANY: MUNICIPAL DISTRICT SERVICES
 OPERATION CONTACT: MR. BRYAN N. CHAPLINE
 CONTACT PHONE NUMBER: (281) 290-3103
 B. DISTRICT NAME: FORT BEND COUNTY MUD No. 190
 DISTRICT COMPANY: N/A
 ENGINEER CONTRACT: MR. WADE MORGAN, P.E.
 CONTRACT PHONE NUMBER: 713-461-9600
- CONTRACTOR SHALL ALLOW A MINIMUM OF 2-FOOT VERTICAL AND 4-FOOT HORIZONTAL CLEARANCE BETWEEN PROPOSED WATER LINES AND OTHER UTILITIES. FOR ADDITIONAL SPARATION NOTES BETWEEN WATER LINES AND SANITARY SEWERS, SEE NOTES 3 & 4.
- WHEN A WATER LINE IS PLACED NEAR A SANTARY SENER MANHOLE, IT SMALL HAVE A MINISHM OF BEET WALL TO WALL SEPARATION WHERE A WATER UNE PARALLELS A SANTARY SENER BY FEET OF SEPARATION WHERE A WATER UND IN ALL DIRECTIONS. IF THE BY FOUR SENER BY THE SENER BY THE SENER WATER OF SHILL BE AND JOINTS SHALL BY FRESSHIRE RATHK OF SHALL BE WATER TIGHT. THE VERTICAL SEPARATION SHALL BE ANNIHOLES SHALL BE MATER TIGHT. THE VERTICAL SEPARATION SHALL BE ANNIHOLD OF A FEET BETWEEN OUTSIDE DAMETERS. THE SEWER SHALL BE COCKIED BELOW THE WATER UNE.
- SEPARATION DISTANCES FOR INSTALLATION OF POTABLE WATER DISTRIBUTION LINES AND WASTEWATER COLLECTION LINES, WASTEWATER FORCE MAINS AND OTHER CONVEXANCES/APPURITEMANCES IDENTIFIED AS POTENTIAL SOURCES OF CONTAMINATION MUST CONFORM TO CURRENT COMMISSION (TCEQ) RULES.

WHEN A NEW WATERLINE CROSSES UNDER A WASTEWATER MAIN OR LATERAL. THE WATERLINE SHALL BE ENCASED OR CONSTRUCTED OF DUCTILE BROW OR STEEL PIPE WATERLANICAL OR WELDED JOINTS AS JAPRADPRIATE. WHEN ENCASED, ALL SECTIONS OF WASTEWATER MAIN OR LATERAL WITHIN NINE FEET HORIZONTALLY OF THE WATERLINE SHALL BE ENCASED IN AN 19-FOOT (OR LONGER) SECTION OF PIPE FLEXIBLE ENCASED IN AN 19-FOOT (OR LONGER) SECTION OF PIPE FALL BE AND SHALL BE AT LEAST TWO NOMINAL PIPE DIAMETERS ON THE WATERLINE SHALL BE ENCASED PIPE SHALL BE CENTERED ON THE WATERLINE BAD SHALL BE AT LEAST TWO NOMINAL PIPE DIAMETERS LARGER THAN THE WATERLINE AND SHALL BE CHARTER ON THE WATERLINE BAD SHALL BE CASHER PIPE SHALL BE SUPPORTED AT FIVE-FOOT (OR LESS) INTERVALS WITH SPACERS OR BE FILLED TO THE SPACERS OR BE FIRED THE WATERLINE AND WATERTICH SEAL AND ASSOLUTE MINIMUM SEPARATION DISTANCE OF ONE FOOT BETWEEN THE WATERLINE AND THE WATERWATER WAIN OR LATERAL SHALL BE PROVIDED. BOTH THE WATERLINE AND THE WATERWATER MAIN OR LATERAL SHALL BE PROVIDED. BOTH THE WATERLINE AND THE WATERWATER MAIN OR LATERAL SHALL BE PROVIDED. BOTH THE WATERWATER AND MASTEWATER MAIN OR LATERAL SHALL BE PROVIDED. BOTH THE WATERWATER AND MASTEWATER MAIN OR LATERAL SHALL BE PROVIDED. BOTH THE WATERWATER AND MASTEWATER MAIN OR LATERAL SHALL BE PROVIDED. BOTH THE WATERWATER AND MASTEWATER MAIN OR LATERAL SHALL BE PROVIDED. BOTH THE WATERWATER AND MASTEWATER AND MASTEWATER AND MASTEWATER AND MASTEWATER AND MASTEWATER.

WHERE A NEW POTABLE WATERLINE CROSSES AN EXISTING, PRESSURE RATED WASTEWATER MANN OR LUTERAL, ONE SECMENT OF THE WATERLINE PIPE SYALL BE CENTERED OVER THE WASTEWATER AND OR LUTERAL SUCH THAT THE JOINTS OF THE WASTEWATER AND OR LUTERAL SUCH THAT THE JOINTS OF THE WASTEWATER AND OR LUTERAL THE POTABLE WATERLINE SHALL BE AT LEAST WORKES ABOVE THE WASTEWATER AND OR LUTERAL WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERAL BRAIN OR LUTERAL SHOWS SIGNS OF LEANING, IT SHALL BE REPLACED FOR AT LEAST NINE FEET IN LINES SHOWN SIGNS OF LEANING, IT SHALL BE REPLACED FOR AT LEAST NINE FEET IN SHOTH DIRECTIONS (18 FEET TOTAL) WITH AT LEAST 150 PSI PRESSURE RATED PIPE.

- ALL WATER LINES WITHIN THE DEDICATED EASEMENTS SHALL HAVE A MINIMUM 6-FOOT COVER FROM THE NATURAL GROUND. ALL WATER LINES WITHIN THE RIGHT OF WAY (ROW) WITH IMPROVED ROADWAY SHALL HAVE A MINIMUM 6-FOOT COVER FROM THE EXISTING OR PROPOSED TOP OF CURB (TOC). ALL WATER LINES WITHIN THE ROW WITH UNIMPROVED ROADWAY SHALL HAVE A MINIMUM 8-FOOT COVER FROM THE NATURAL GROUND.
- CONSTRUCT WATER LINES WITH ONE JOINT OF PIPE BEYOND VALVES AND PLUG FOR FUTURE LINES, UNLESS SHOWN ON PLANS OTHERWISE.
- BACKFILL OF EXISTING STORM SEWER: WHEN CROSSING AN EXISTING STORM SEWER USING THE OPEN CUT METHOD, THE WATER LINE TRENGH ZONE SHALL BE BACKFILLED FOR 3 TO \$ FEET EITHER SIDE OF THE STORM SEWER WITH CEMENT STABILIZED SAND TO THE SPRING LINE OF THE STORM SEWER. VALVES SHALL BE EQUIPPED WITH OPERATING NUT EXTENSIONS TO WITHIN FOUR FEET OF NATURAL GROUND.
- 9 ALL WATER LINES 20-INCHES AND SMALLER SHALL BE PYC PIPE OR DUCTILE IRON PIPE.
- <u>;</u> ALL WATER LINES 24-INCHES TO 30-INCHES SHALL BE PRESTRESSED CONCRETE CYLINDER PIPE, BAR-WARPED CONCRETE CYLINDER PIPE, STEEL PIPE, DUCTILE TRON PIPE, OR PVC PIPE,
- ALL WAITER LINES 38-INCHES AND LARGER SHALL BE PRESTRESSED CONCRETE CYLINDER PIPE, BAR-WRAPPED CONCRETE CYLINDER PIPE, STEEL PIPE, OR DUCTILE IRON PIPE.
- MECHANICAL RESTRAINED JOINTS TO BE USED IN PLACE OF WELDED RESTRAINED JOINTS IF DUCTILE IRON PIPE IS USED.

CONTRACTOR WORK ZONE NOTES

- CONTRACTOR WILL BE REQUIRED TO MAINTAIN TWO LANES OPEN WHEN WORKING IN BOULEVARD SECTIONS, RESIDENTIAL SECTIONS WILL MAINTAIN ONE LANE OPEN WITH ADEQUATE SIGNAGE AND/OR FLAGMEN TO FACILITATE USE OF THE LANE.
- DRIVEWAY ACCESS WILL BE MAINTAINED OPEN AFTER WORKING HOURS. A MINIMUM OF ONE DRIVEWAY ACCESS WILL BE MAINTAINED OPEN AT ALL TIMES TO COMMERCICAL, APARTMENTS, AND/OR NON-RESIDENTIAL DEVELOPMENTS.
- THE LENGTH OF THE WORK ZONE MUST BE MINIMIZED WITHIN THE STREET ROW OR EASEMENTS. THERE SHALL NOT BE MORE THAN 200-FEET OF TRENCH OPEN AT ANY ONE TIME: THE CONSTRUCTION ZONE WILL BE A ROLLING CONSTRUCTION ZONE WITH APPROPRIATE TRANSITIONS ON EACH END.
- SIGNALIZED INTERSECTIONS: LANES WILL NOT BE CLOSED AT A SIGNALIZED INTERSECTION, UNLESS APPROVED BY THE PROGRAM MANAGER. AN APPROPRIATE TRANSITION AS DEFINED IN THE TRAFFIC CONTROL PLAN WILL BE PROVIDED AT SIGNALIZED INTERSECTIONS. TEMPORARY PAVEMENT MARKERS: TEMPORARY EPOXY-GLUED BOTTONS TOONSTRUCTION GRADE TAPE PAVEMENT MARKERS SHOULD BE USED O PERMANENT PAVEMENT TO REMAIN IN-PLACE TO ELIMINATE GRINDING AN SCARRING OF THE SURFACE.
- PEDESTRIAN TRAFFIC. CARE SHALL BE TAKEN TO PROVIDE FOR TEMPORARY PEDESTRIAN TRAFFIC AND CROSSING AT AREAS SUCH SCHOOLS, PARKS, AND SHOPPING AREAS. A N N
- CONTRACTOR IS TO BE AWARE CONSTRUCTION IS TAKING PLACE FOR THE WIDENING OF HARLEM ROAD. TOPOGRAPHIC FEATURES CUPRENTLY SHOWN ON THE PLANS MAY BE ALTERED PRIOR TO BIDDING/COMMENCEMENT OF CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR FAMILIARIZING ITELE WITH ANY CHANGED CONDITIONS PRIOR TO BIDDING THE PROJECT.

UTILITY NOTES

CENTERPOINT ENERGY (ELECTRICAL FACILITIES)

- OVERHEAD LINES MAY EXIST ON THE PROPERTY. WE HAVE NOT ATTEMPTED TO MARK THOSE LINES SINCE THEY AGE LOCARTY VISIBLE. CONTRACTOR SHALL LOCART HEM PROPE TO BEGINNING MY CONSTRUCTION. TEXAS LAW, SECTION 752, HEALTH AND SAFETY CODE, FORBIDS ALL ACTIVITIES IN WHICH PERSONS OR THINGS MAY COME WITHIN SIX (6) FEET OF LAVE OVERHEAD HICH YOLTAGE LINES, PARTIES RESPONSIBLE FOR THE SAFETY OF CONSTRUCTION WORKERS UNDER THIS LAW. THIS LAW CARRIES BOTH CRIMINAL AND CIVIL LIABILITY. TO ARRANGE FOR LINES TO BE TURNED OF OR REMOVED CALL "CENTER POINT" ENERGY AT 713-207-2222.
- TO STAKE CENTERPOINT ENERGY ELECTRIC UNDERGROUND FACILITIES, PREASE CALL THE LONE STAR INFORMATION CENTER AT (713) 223-4567. OR TOLL FREE AT (800) 669-8344, AT LEAST 48 HOURS BEFORE STARTING EXCAVATION.

- LOCATIONS OF CENTERPOINT ENERGY MAIN LINES (TO INCLUDE CONTERPOINT ENERGY, INITACTIATE PIPELINE LLC WHERE APPLICABLE) ARE SHOWN IN AN APPROXIMATE LOCATION ONLY. SERVICE LINES ARE USUALLY NOT SHOWN, OUR SIGNATURE ON THESE PLANS ONLY INICIATES THAT OUR FACILITIES ARE SHOWN IN APPROXIMATE LOCATION, IT DOES NOT IMPLY THAT A CONFLICT ANALYSIS HAS BEEN MADE. THE CONTRACTION SHALL CONTRACT, THE UTILITY COORDINATING COMMITTEE AT 713-223-4567 OR 1-800-669-8344 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE MAIN AND SERVICE LINES FIELD LOCATED.
- WHEN CENTERPOINT ENERGY PIPE LINE MARKINGS ARE NOT VISIBLE, CALL 713-967-8037 (7:00 A.M. TO 4:30 P.M.) FOR STATUS OF LINE LOCATION REQUEST BEFORE EXCAVATION BEGINS.
- WHEN CENTERPOINT ENERGY FACILITIES ARE EXPOSED, SUFFICIENT SUPPORT MUST BE PROVIDED TO THE FACILITIES TO PREVENT EXCESSIVE STRESS ON THE PIPING.

HOUSTON PIPELINE LP FACILITIES

- NO EXCAVATION SHALL OCCUR IN THE VICINITY OF HPL'S FACILITIES UNTIL:

<u>B</u> AN HPL INSPECTOR IS ON SITE TO MONITOR THE EXCAVATION ACTIVITIES

- THE CONTRACTOR SHALL CALL TEXAS ONE-CALL AT 1-800-245-4545 A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION TO HAVE UNDERGROUND LINES FIELD LOCATED.
- WHEN COMCAST CABLE FACILITIES / RE EXPOSED, THE CONTRACTOR WILL PROVIDE SUPPORT TO PREVENT DALAGE TO THE CONDUIT DUCTS OR CABLES WHEN EXCANATION CHEAR TELEPHONE POLES, THE CONTRACTOR SHALL BRACE THE POLE FOR SUPPORT.
- THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL UNDERGROUND FACILITIES BEFORE COMMENCING WORK AND AGREES TO BE FULLY RESPONSIBLE FOR ALL DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ALL UNDERGROUND FACILITIES.

NATURAL GAS PIPELINE NOTES

CONTRACTOR SHALL PERFORM CONSTRUCTION WITHIN KINDER MORGAN INC., NETO PIPELINE, TEPPCO PIPELINE, CENTERPOINT ENERGY, AND HOUSTON PIPELINE LP, ACCORDING TO EACH PIPELINE COMPANY'S REGULATIONS IN SPECIFICATION SECTION 01110.

CITY SIGNATURES VAILD FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

7/21/10 STREET & BRIDGE

STORM WATER QUALITY

CONSTRUCTION NOTES

1/1/200

EWETH L MARTINED

SEGMENT 5

- CONTRACTOR SHALL CONTACT PIPELINE REPRESENTATIVES A MINIMUM OF 72 HOURS PRIOR TO CONSTRUCTION IN THE VICINITY OF THE PIPELINE EASEMENTS. A REPRESENTATIVE FROM EACH PIPELINE COMPANY SHALL BE PRESENT DURING CONSTRUCTION ACTIVITIES CROSSING EACH PIPELINE EASEMENT.
- -NETCO PIPELINE COMPANY MR. PD LEONARD 512-502-0101

erpoint Energy/ Gas Facilities service lines are not shown.)

Supa Commo

Date: 7-13-10

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED. CALL CENTERPOINT AT 713-207-2222.

NOTICE:
AT LEAST 48 HOURS BEFORE EXCANATING IN STREET
R.O.W. OR EASEMENTS CALL LONE STAR NOTIFICATION
CENTER, (713) 223-4587 OR 1-800-889-8344

EERY-HAMRY. CONTROL POINT NO. 103 BENG A SET 5/6"
RRON ROD WITH AN ALLIMINUM CUP STAMPED YROTH FORT
BEND WATER ALTHORITY SET APPROXIMATELY 3,500-FEET
BOAD WATER ALTHOROUPE SET EAST OF HARLEM
ROAD NEAR A TEPPOO PRELINE EASTMENT.

(NAVO-88, 2002 ADJUSTMENT)

point Energy/ Electric Facilities, (approved only issing underground ductlines, unless otherwise noted.)

PRIVATE UTILITY LINES SHOWN

CENTERPOINT ENERGY (GAS FACILITIES)

- B) WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF CENTERPOINT ENERGY FACILITIES, AL EXCAVATION MUST BE ACCOMPLISHED USING NON-MECHANIZED EXCAVATION PROCEDURES.
- THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND FACILITIES.

- HOUSTON PIPE LINE COMPANY LP (HPL) SHALL BE NOTIFIED AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO ANY CONSTRUCTION OR MAINTENANCE ACTIVITIES ACROSS, ON, OR IN THE VIGURITY OF ITS FACULTIES. SHALL INCLUDE, BUT ARE NOT LIMITED TO, RIGHT-OF WAY, FEE PROPERTIES, EASEMENTS, PIPELINES, METER AND REGULATORS BUILDINGS, AND VALVE SITE. NO EQUIPMENT SHALL ENTER ONTO HPL'S FACILITIES UNLESS AND HPL REPRESENTATIVE IS ON LOCATION.
- PROPER TELEPHONE NOTIFICATION HAS BEEN MADE TO ONE OF THE STATE APPROVED NOTIFICATION CENTERS. HPL CURRENTLY UTILIZES THE TEXAS EXCANATION SAFETY SYSTEM (TESS) AS ITS NOTIFICATION CENTER. YOU MUST CONTACT THE TESS NOTIFICATION CENTER AT 1-800-544-8377, IN ADDITION TO CONTACTING THE FOLLOWING HPL REPRESENTATIVE, BEFORE COMMENCING ANY CONSTRUCTION ACTIVITY AT OR NEAR HPL'S FACILITIES:

MR. KORY PARTON - LINE PATROL PERSON MOBILE (281) 850-1437

COMCAST OF HOUSTON, LLC: CABLE FACILITIES

- THE LOCATIONS OF COMCAST CABLE FACILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION BEFORE COMMENCING WORK. CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES, WHICH MIGHT BE OCCASIONED BY THIS FAILURE TO EXACTLY LOCATE AND PRESERVE THESE UNDERGROUND UTILITIES.
- WHEN EXCAVATING WITHIN EIGHTEEN INCHES (18") OF THE INDICATED LOCATION OF COMPAST CABLE FACILITIES, ALL EXCAVATIONS MUST BE ACCOMPANIED USING NON-VECTANIZED EXCAVATION ROCEDURES, WHEN BORING, THE CONTRACTOR SHALL EXPOSE THE COMCAST CABLE FACILITIES.

- CONTACT INFORMATION:
 -KINDER MORGAN INC.
 MR. BURREL THOMAS
 713-369-9502 × 231 -CENTERPOINT ENERGY MR. BRIAN LYN 281-342-8881 -HOUSTON PIPELINE LP MR. KORY PARTON 281-850-1417

TEPPCO PIPELINE MR. JIMMY HICKS 713-446-5099

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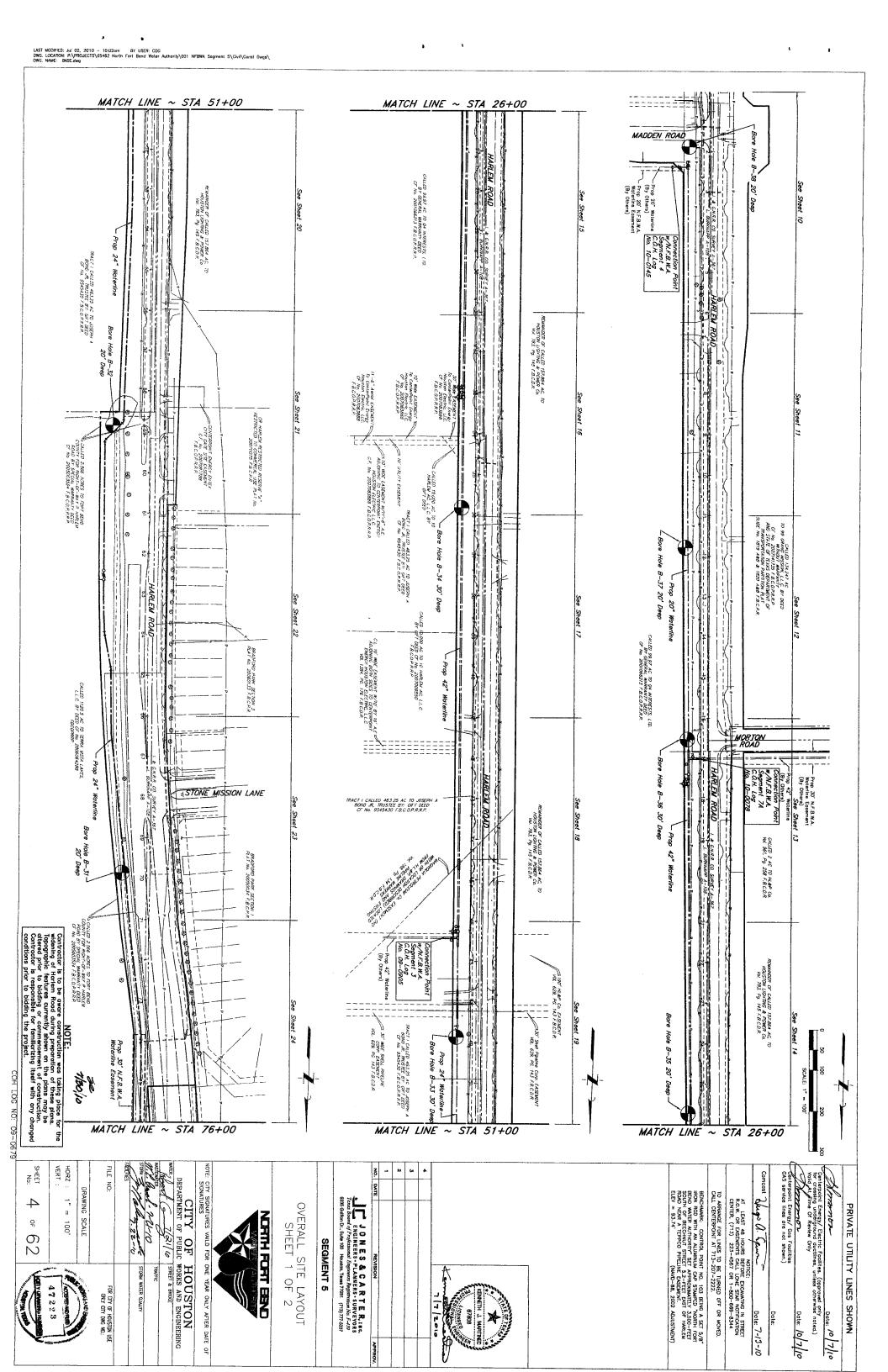
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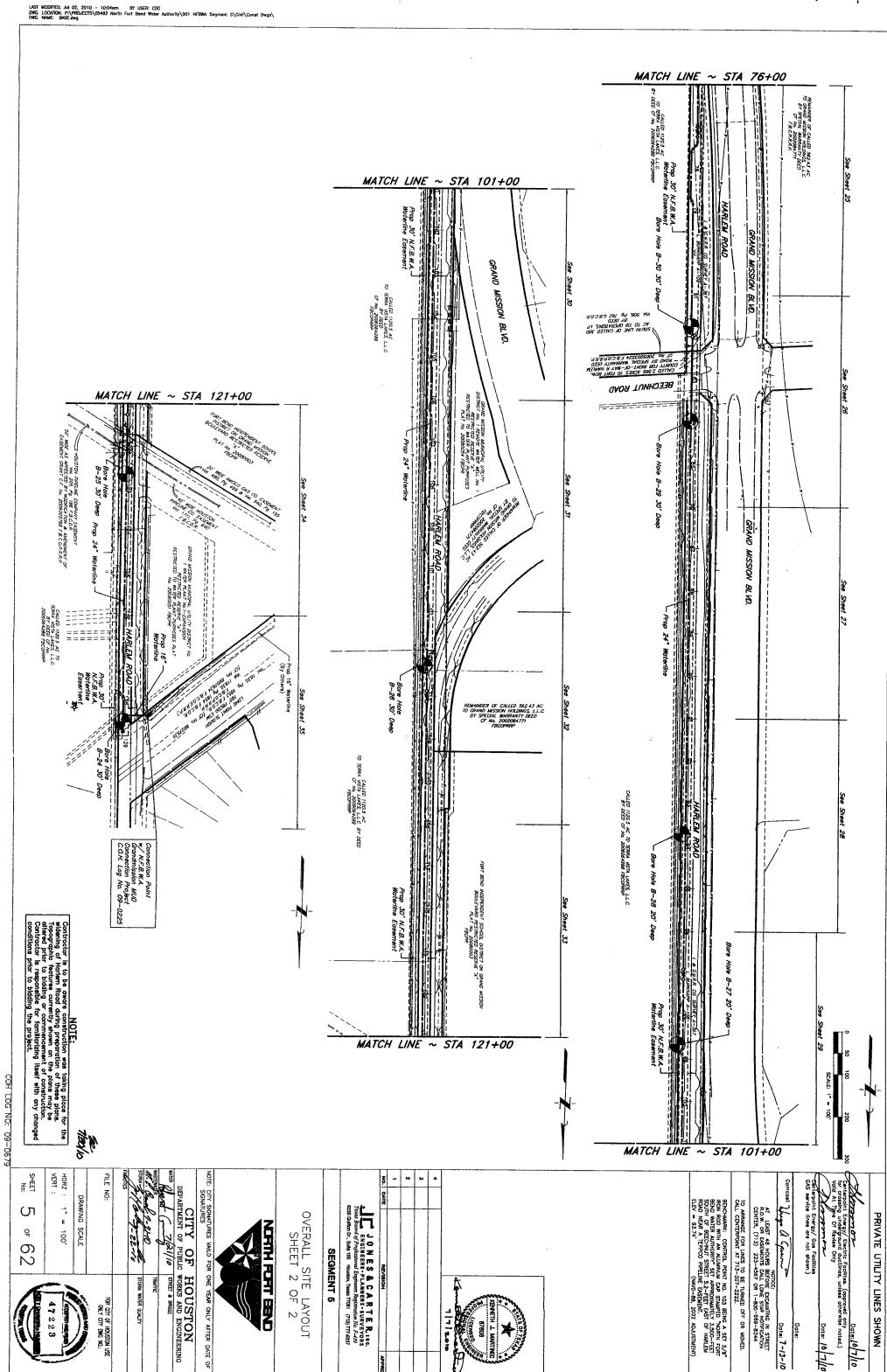
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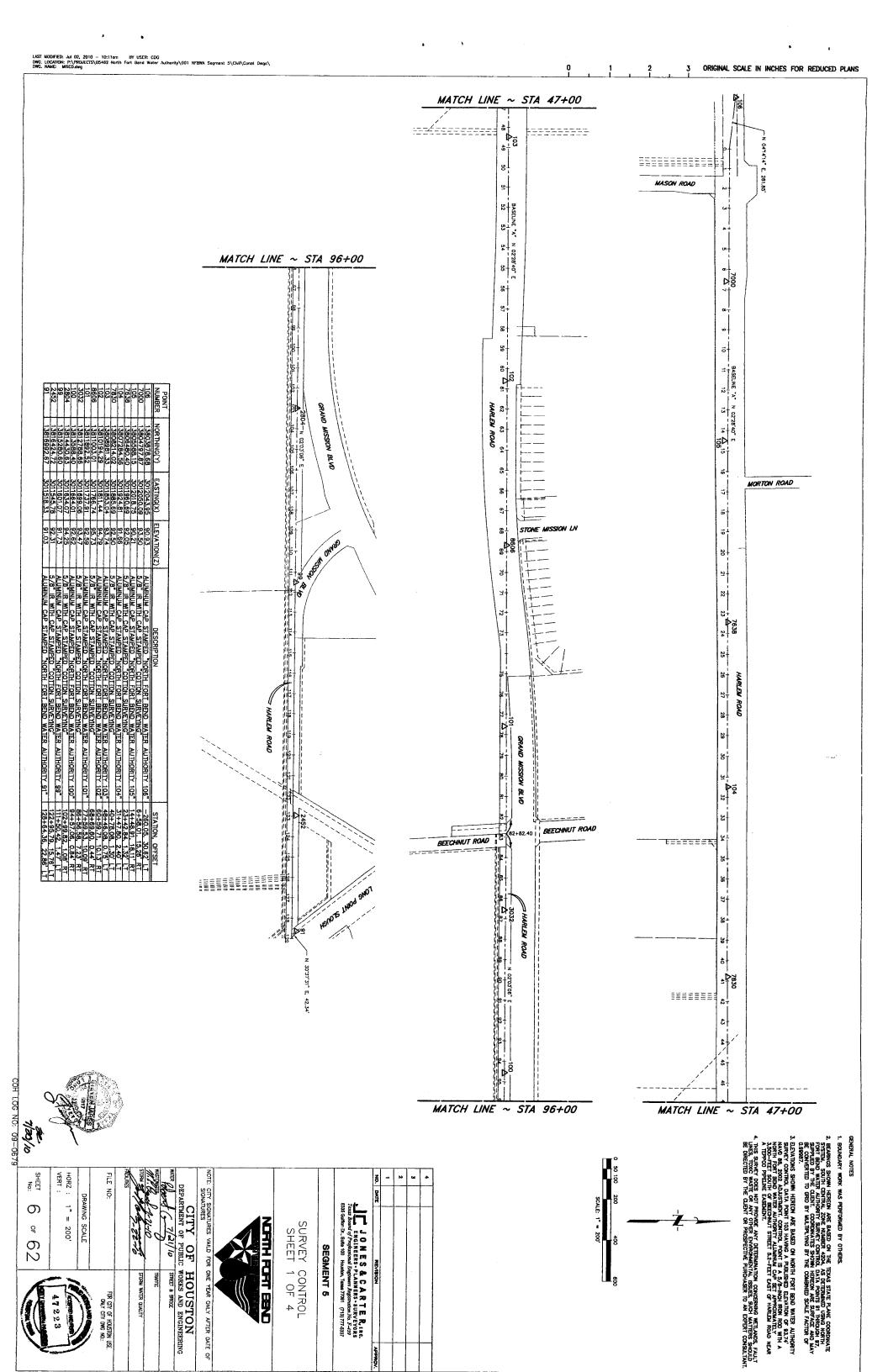


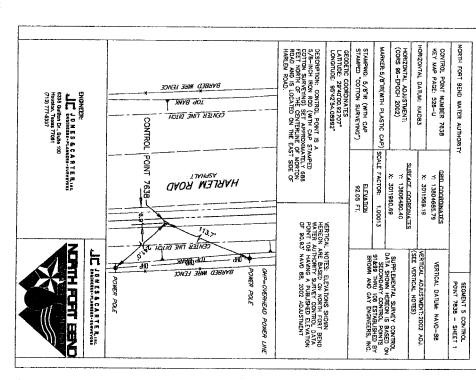
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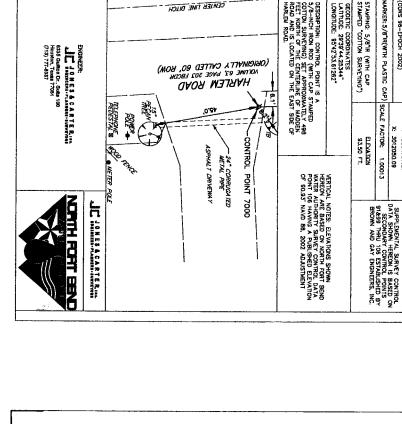
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CENTER LINE DITCH

DESCRIPTION: CONTROL POWT IS A 5/8-WCH ROW ROD WITH A NORTH FORT BEYO WATER ALTHOUGHTY ALLAWALL CAP CRAND PARKWAY 11.6-FEET WEST OF JARLEM ROAD.

VERTICAL NOTES: THIS SURVEY IS CONSTRAINED TO THE NOS PUBLISHED ELEVATION FOR THE NORTHEAST 2250 CORS APP ADJUSTED BY NOS IN 2002 AND PUBLISHED AS PID AJBBOD, EPOCHDATE 2002

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CONTRACT

STAMPING: "NORTH FORT BEND WATER AUTHORITY 106"

ARKER: ALUMINUM CAP CORS 96 - EPOCH 2002) DRIZONTAL DATUM: NAD83

SURFACE COORDINATES
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L NOTES)

POINT ESTABLISHED BY RTK.
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20 & 23

VERTICAL DATUM: NAVD-88

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CONTROL POINT NUMBER 106 KEY MAP PAGE: 526-Y

NORTH FORT BEND WATER AUTHORITY

NORTH FORT BEND WATER AUTHORITY

FORIZONTAL DATUM: NAD83 CONTROL POINT NUMBER 7000 KEY MAP PAGE: 526-Y

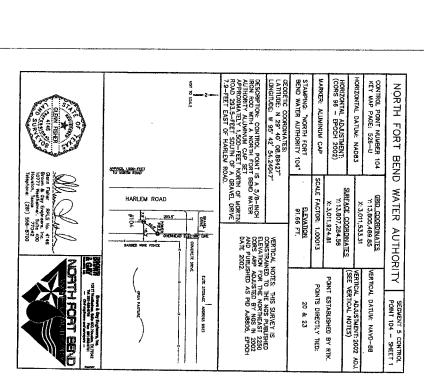
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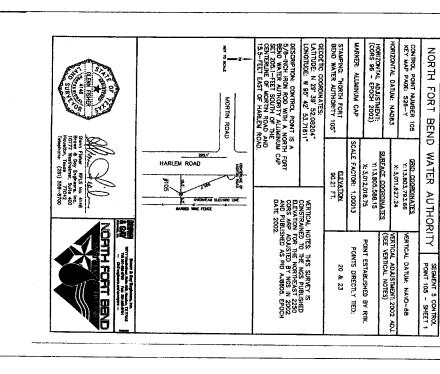
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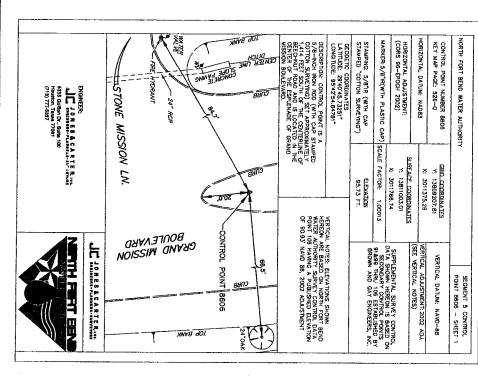
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DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

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SEGMENT 5

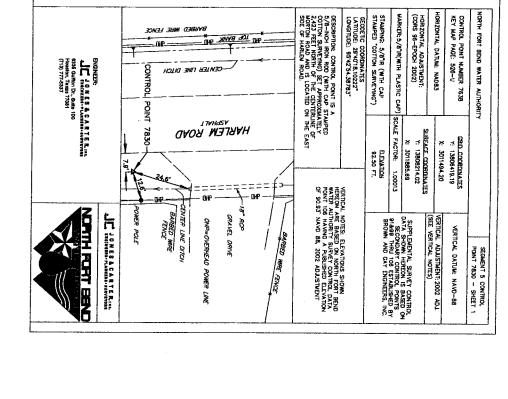
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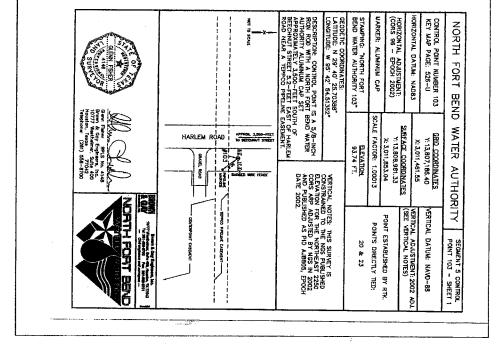


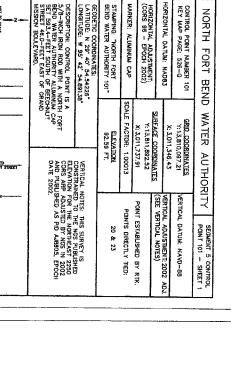
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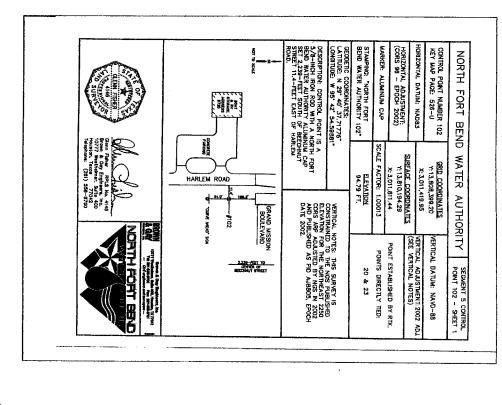
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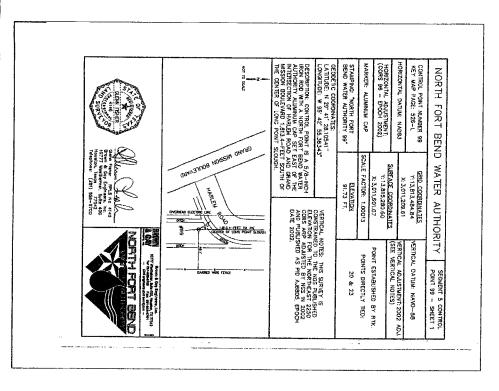
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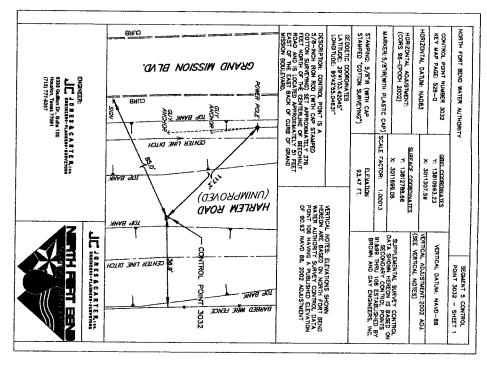
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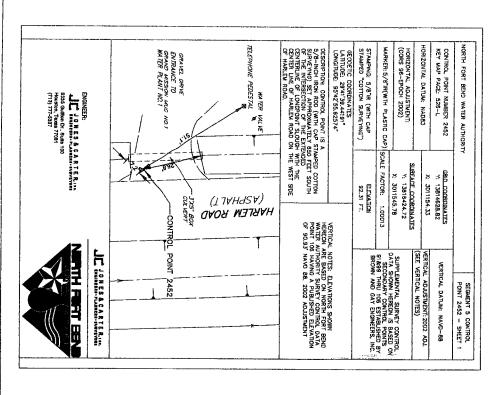
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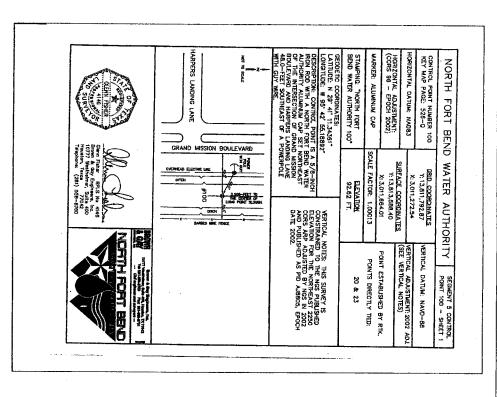
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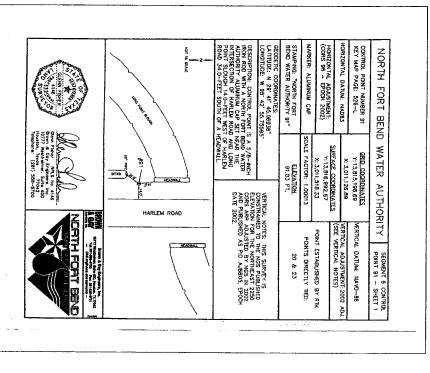
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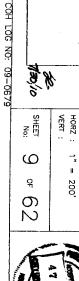








ENGINEER: LO N ES A CARTE NIVERSITA LINGUIS CARTE NIVERSITÀ POSSE CARTO C. S. S. S. (10) POSSE TOUR TOUR (13) 777-5537	2-20° CORRUGATED METAL PIPES POMET POLE	ECORTIO COMPINATES LATITUDE: 294119.85897 LONGTUDE: 854255.28004* DESCRIPTION: CONTROL POWN IS A 5/8-NCH RON ROD (WITH GAP STAMPED COTTON SURCENIOS) SET APPROMINATELY 2,022 PEET MORTH OF THE CENTRALINE OF BEECHULT ROAD AND IS LOCALED IN THE CENTER OF THE GLD HARLEN ROAD BED.	EYING")	HORIZONTAL ADJUSTMENT: (CORS 96-EPOCH 2002) MARKER: 5/8"IR(WITH PLASTIC CAP)	ר DVI	CONTROL POINT NUMBER 2804 KEY MAP PAGE: 526-L
& CARTER.	HARLEM ROAD (UNIMPROVED) \$15 TOP BANK \$25 TOP BANK	<u> </u>	ELEYAD 94.25	X: 3011834.07 X: 3011834.07 SCALE FACTOR: 1.00013	X: 3011242.61	(SID_COORDINATES Y: 13812834.99
NAUH LAU EN	NITE OF THE STATE WITH STATE S	VERRICAL NOTES, ELEVATIONS SHOWN HIPRON ARE BASED ON NORTH FORT BEND MATER AUTHORITY SURVEY COMPROL DATA FORM TO SHAWAY A PUBLISHED ELEVATION OF 90.93' NAVO 88, 2002 ADJUSTMENT	BROWN AND GAY ENGINEERS, INC.	SUPPLEMENTAL SURVEY CONTROL DATA SHOWN HEREON IS BASED ON SECONDARY CONTROL POINTS	VERTICAL ADJUSTMENT: 2002 ADJ. (SEE VERTICAL NOTES)	POINT 2804 - SHEET 1 VERTICAL DATUM: NAVD-88





ONLY CITY DWG NO.:

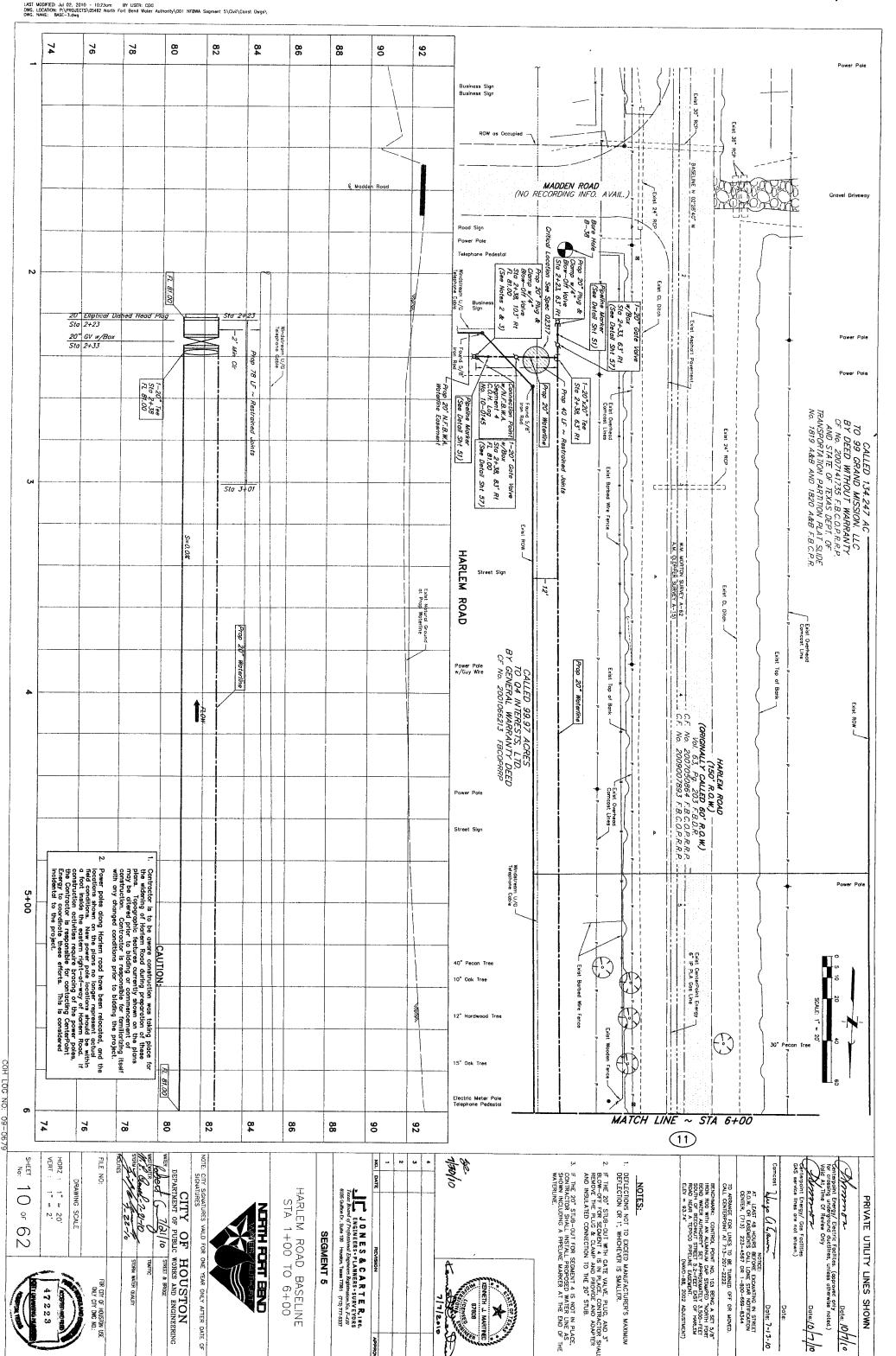
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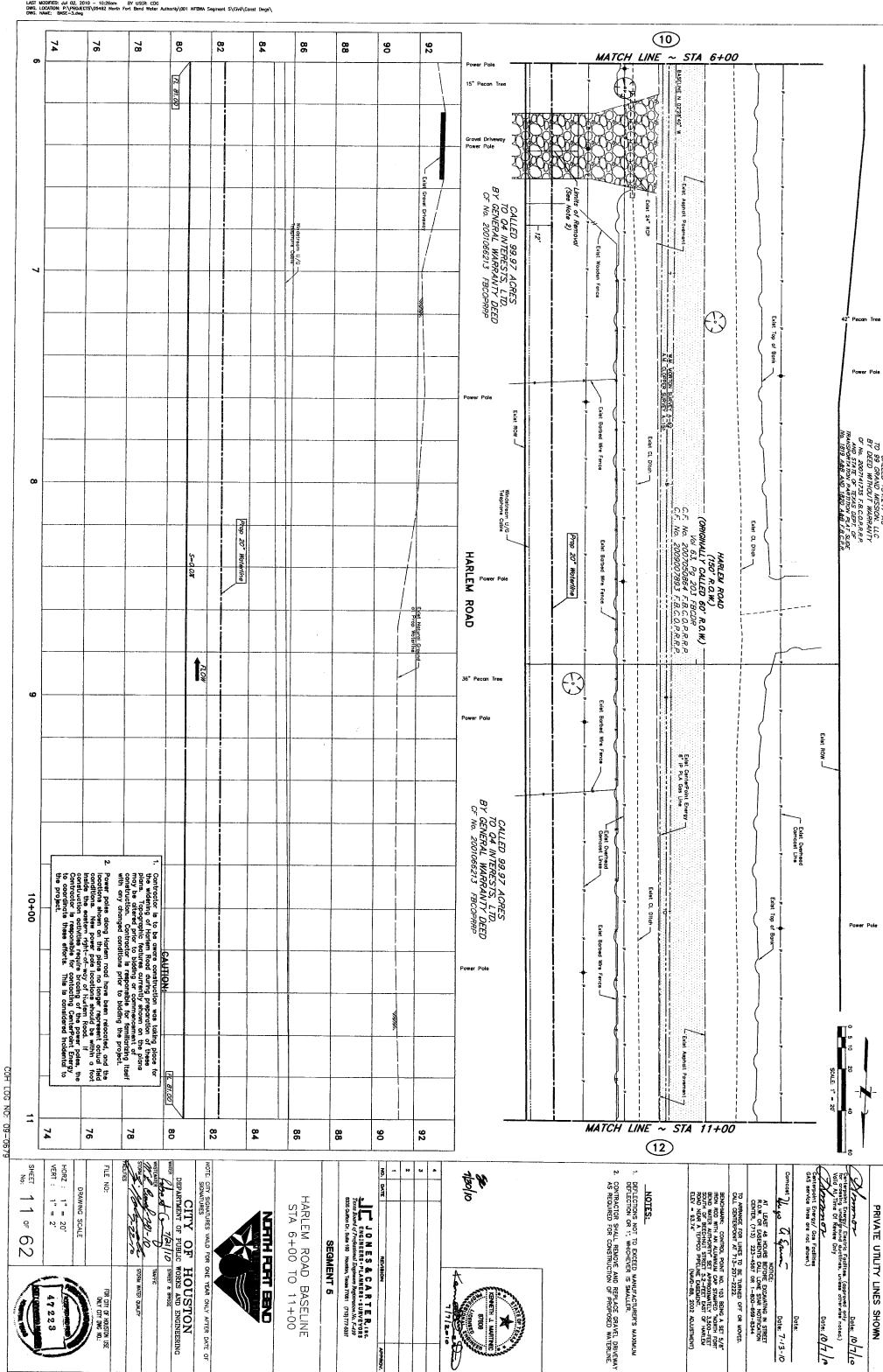
OTE: CITY SIGNATURES VAILD FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES DEPARTMENT OF PUBLIC WORKS AND ENGINEERING 199-10 STORM WATER QUALITY

SURVEY CONTROL SHEET 4 OF 4

JONES & CARTER, Inc.
ENGINEERS - FLANNERS - SURVEYORS
Trans Board of Professional Engineers Registration No. F-439
8335 Galton Dr., Subs 100 Houston, Tools 17041 (713) 777-5337 SEGMENT 5





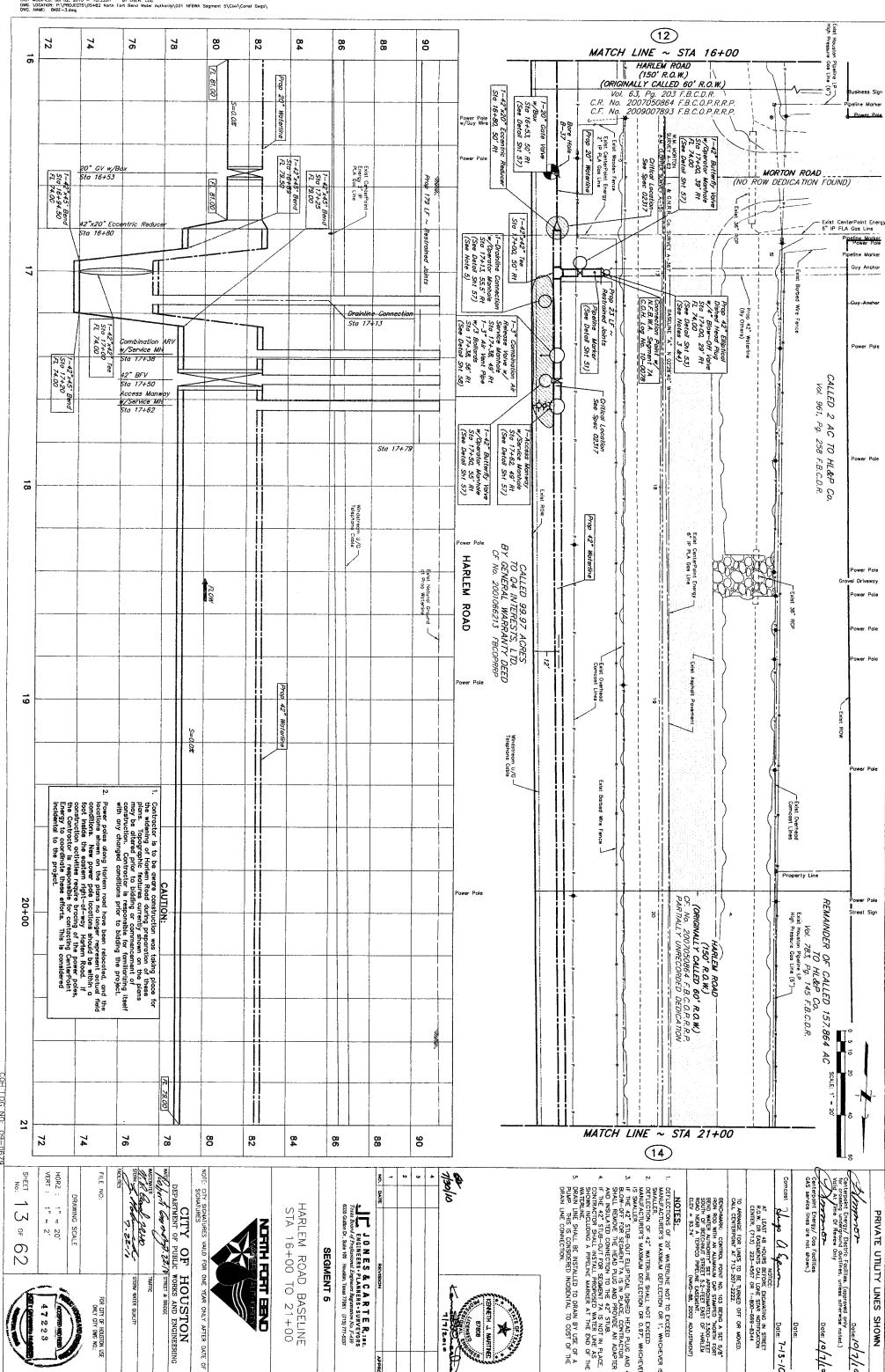


FOR CITY OF HOUSTON USE ONLY CITY DWG NO.: 47223

7/7/2010

Date: 7-13-10

PRIVATE UTILITY LINES SHOWN Date: 10/7/10



ONLY CITY DWG NO.:

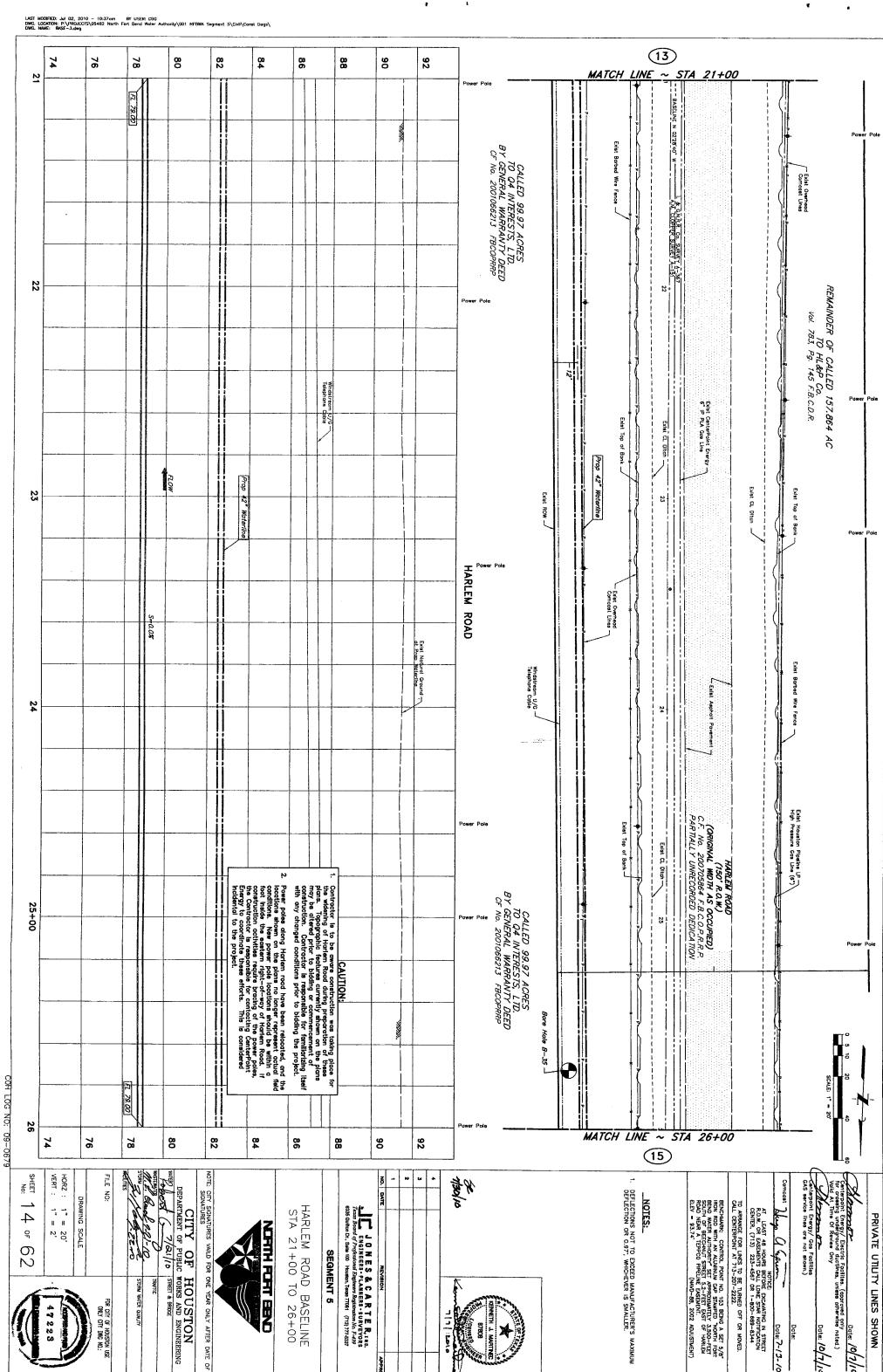
KENNETH L MARTINEC

BENCHMARK: CONTROL POINT NO. 103 BEING A SET 5/8"
IRON ROD MITH AN ALLIMNIUM CAP STAMPED "NORTH FORT
BEND WATER AUTHORITY" SET APPROXIMENTELY 3,500-FEE
SOUTH OF BECCHAUT STREET 5,2-FEET EXT. OF HARLEN
ROAD NARA A TEPPCO PPELINE EASEMENT.
ELEV = 93.7.4"

(NAVD-88, 2002 ADJUSTMENT)

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED. CALL CENTERPOINT AT 713-207-2222. AT LEAST 48 HOURS BEFORE EXCAVATING IN STREET R.O.W. DR EASEMENTS CALL LONE STAR NOTIFICATION CENTER, (713) 223-4567 OR 1-800-669-8344 Date: 7-13-1C

Date: /0/



APPROV

Date: 7-/3- /0

47223

ONLY OF HOUSTON USE ONLY CITY DWG NO.:

STORM WATER QUALITY

JONES & CARTER, INC.

I SAN ESS CARTER, INC.

I CASI Board of Professional Engineers Regerentian No. F-498
ESS Guilton Dr., Suite 109 Houston, Teast 17081 (719) 777-5357

GRAFIN T WALLES

BENCHMARK: CONTROL POINT NO. 103 BENG A SET 5/8"
IRON ROD WITH AN ALLIMINUM CAP STAMPED "NORTH FORT
BEND WATER ANTHONIT" SET APPROXIMENTE, 3,500-FET
BEND WATER ANTHONIT" STREET 52-FET EAST OF HAREAM
ROAD NEAR A TEPPOO PIPCINE EASEHOT.

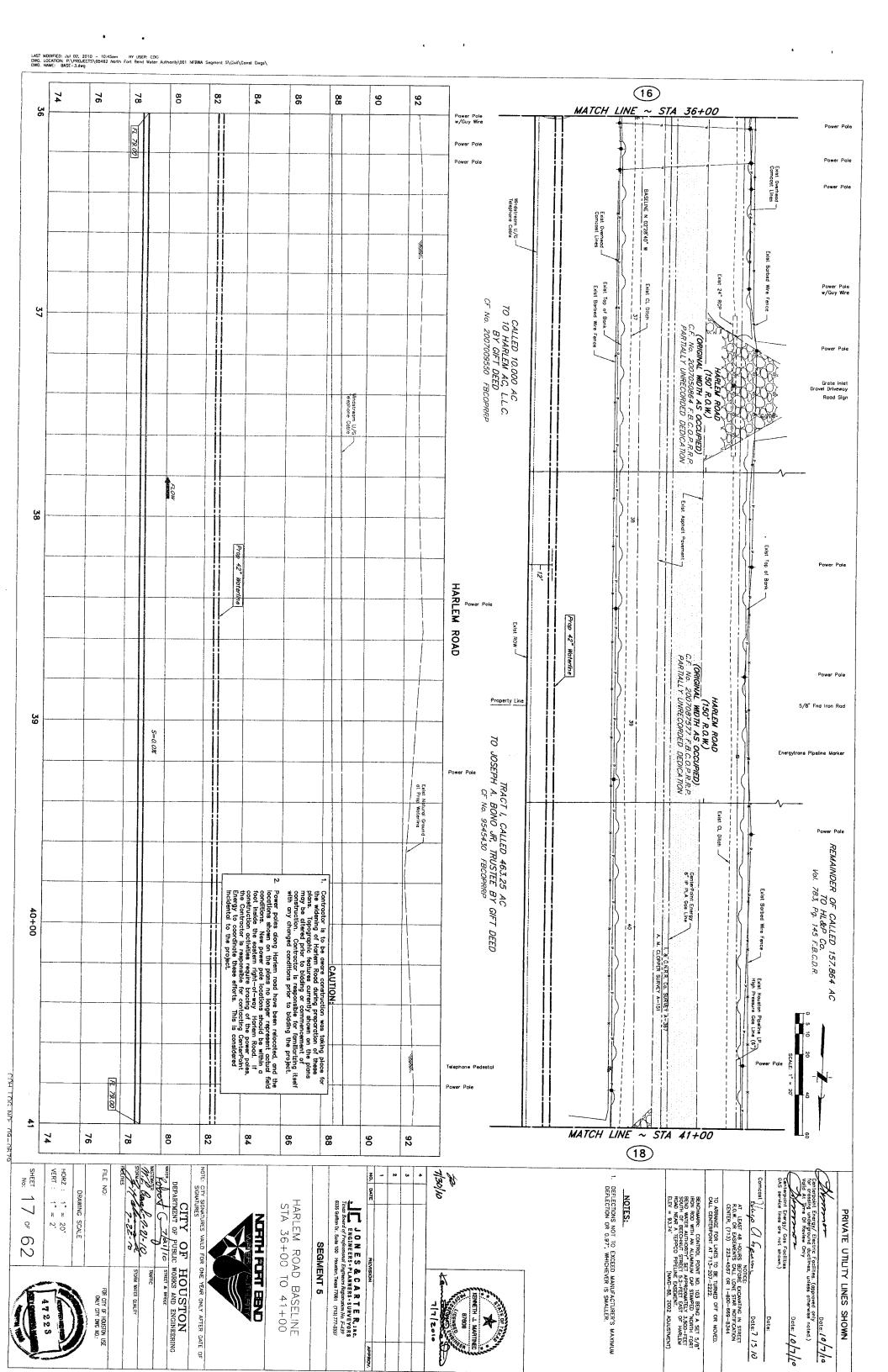
ELEV = 93.74"

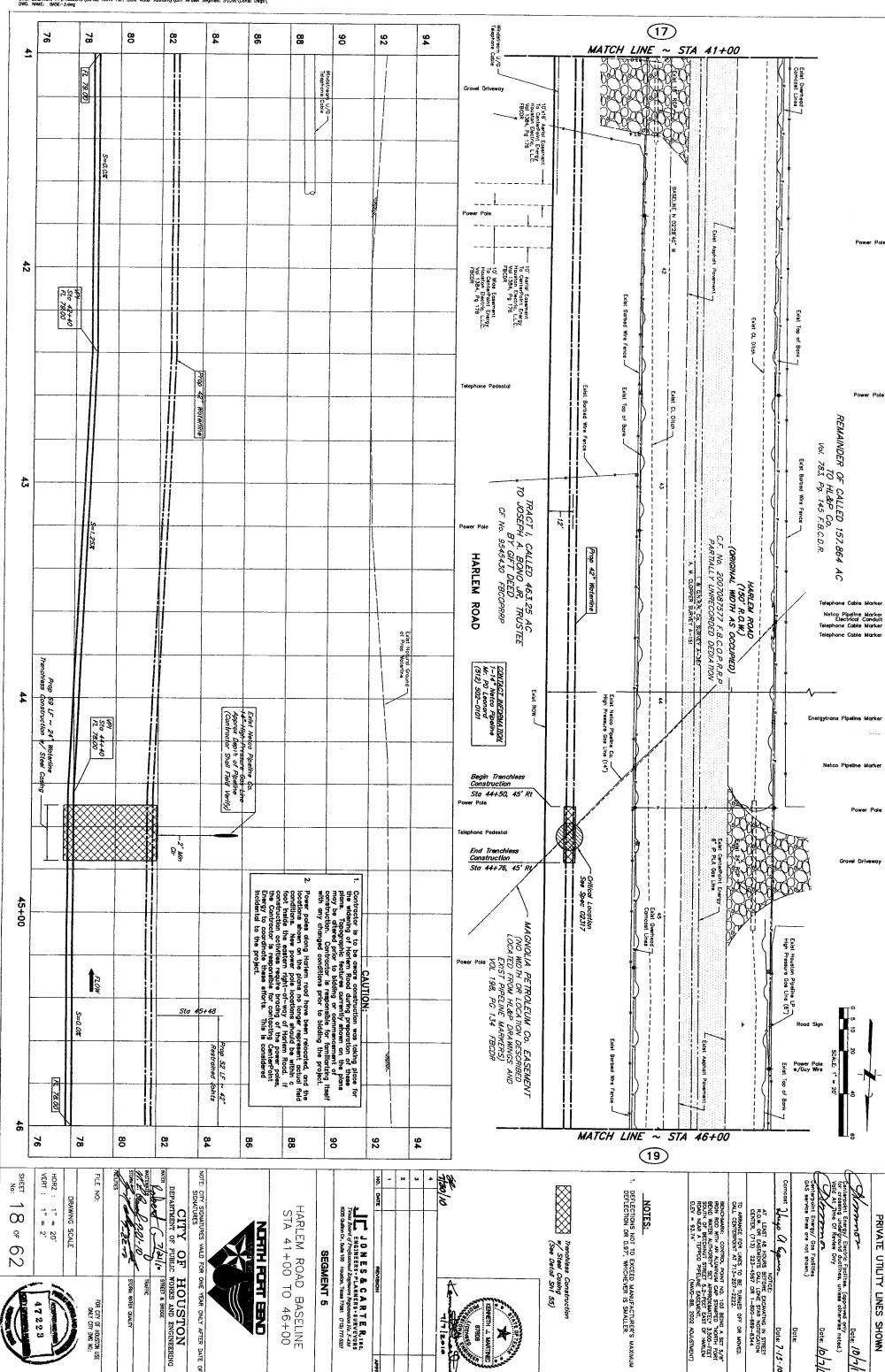
(NAVD-BB, 2002 AQUISTMENT)

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED. CALL CENTERPOINT AT 713-207-2222.

NOTICE:
AT LEAST 48 HOURS BEFORE EXCAVATING IN STREET
R.O.W. OR EASEMENTS CALL LONE STAR NOTIFICATION
CENTER, (713) 223-4567 OR 1-800-669-8344 Date: 7-/3-/0

Oote: /0/7/13





47223

ONLY OF HOUSTON USE

STORM WATER QUALITY

HARLEM ROAD BASELINE STA 41+00 TO 46+00

ENGINEERS - PLANNERS - SURVEYORS
Traus Board of Professional Engineers Regionation for F-49
833 Guilton Dr., Suite 100 Houston, Texas 77081 (719) 777-9337

SEGMENT 5

KENNETH & MARTINED 1/1/2010

Trenchless Construction
w/ Steel Casing
(See Detail Sht 55)

DEFLECTIONS NOT TO EXCEED MANUFACTURER'S MAXIMUM DEFLECTION OR 0.97', WHICHEVER IS SMALLER.

EEVOHMARK: CONTROL POINT NO. 103 BEING * SET 5/8*

RRN ROD WITH AN ALMINIMUM CAP STAMED: "NORTH FORT

BEND WATER AUTHORIT" SET APPROXIMATELY 3,500-FEET

SOUTH OF BECONNUT STREET 5,2-FEET EXIST

ROAD NEAR A TEPPOO PHEALER EASELIERT.

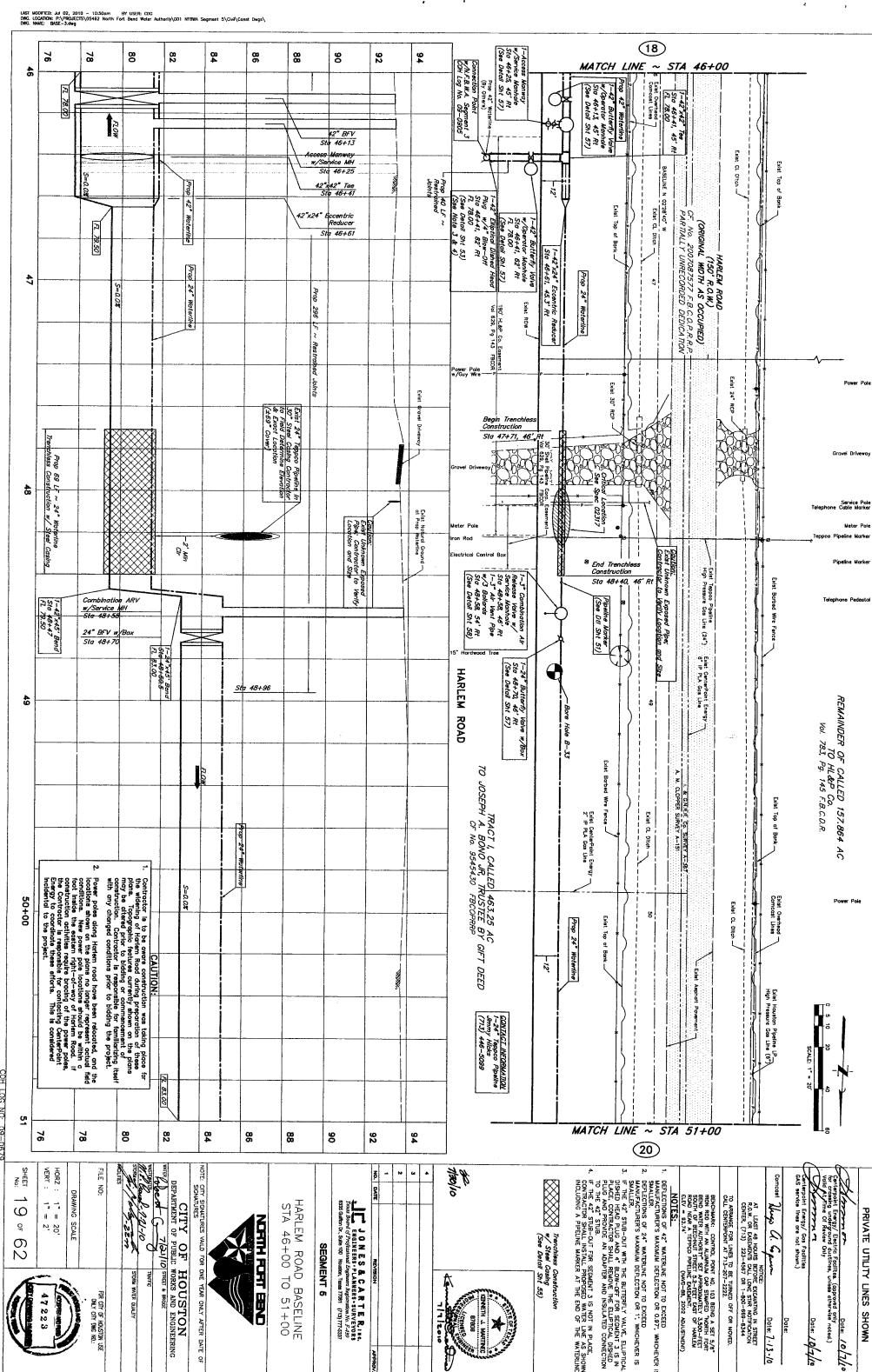
(NAVD-BB. 2002 ADJUSTMENT)

NOTICE:
AT LEAST 48 HOURS BEFORE EXCAVATING IN STREET R.O.W. OR EASEMENTS CALL LONE STAR NOTIFICATION CENTER, (713) 223-4567 OR 1-800-669-8344 Date: 7-/5-

Date: /0/7/

terpoint Energy/ Electric Facilites. (approved only crossing underground ductines, unless otherwise noted.) id At Time Of Review Only

Date: 18/7/1



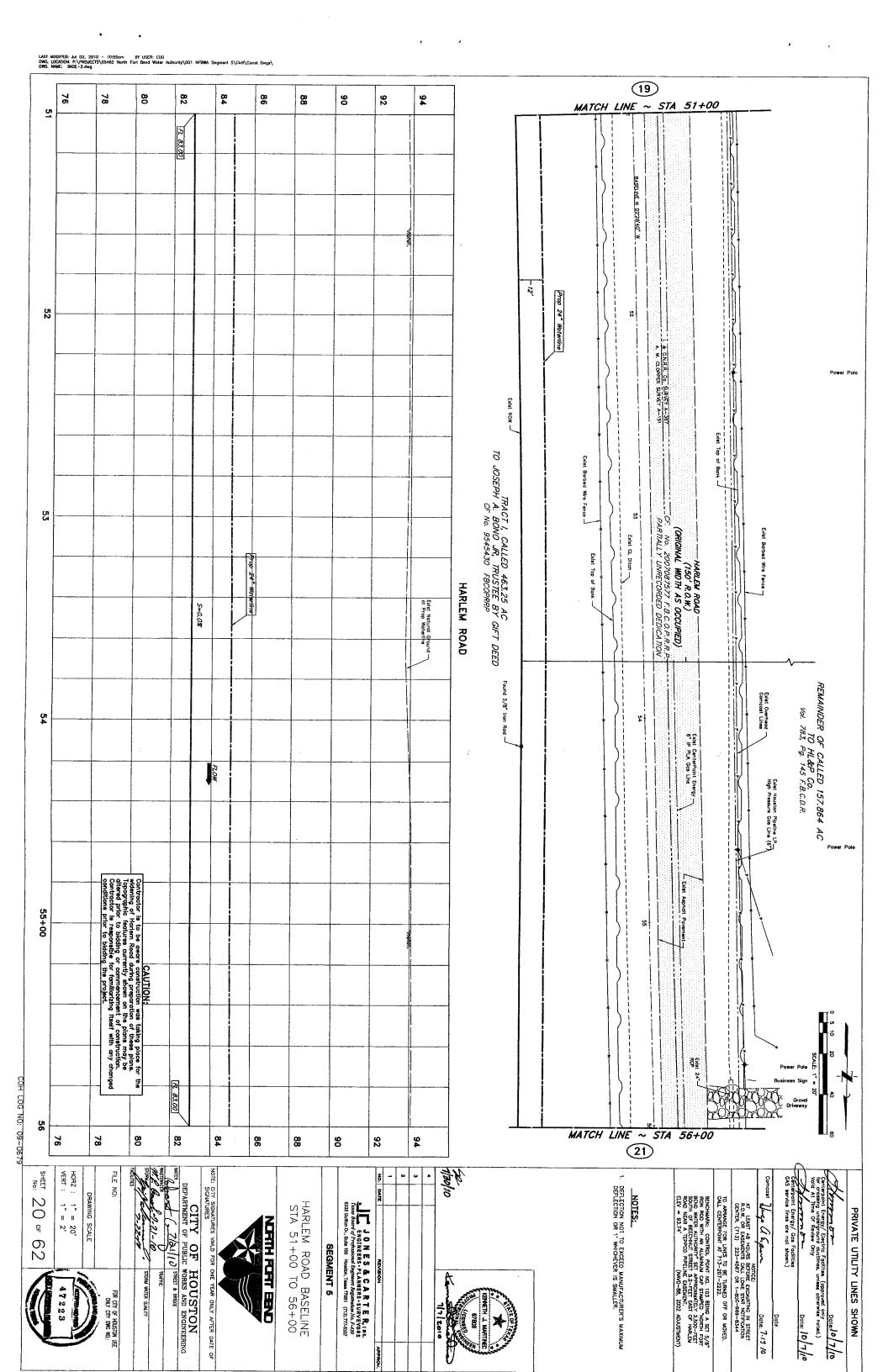
ONLY OF HOUSTON USE

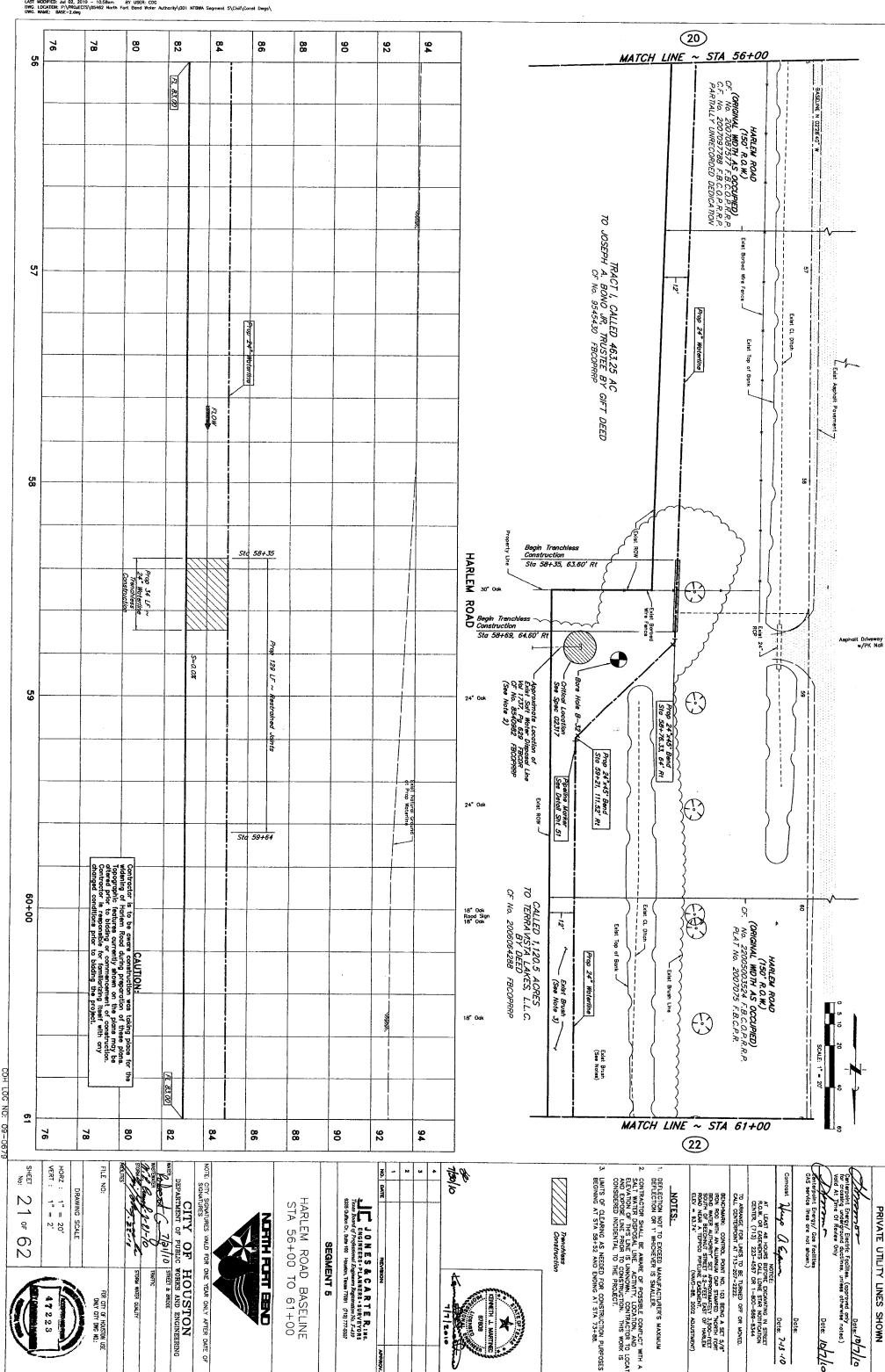
17/2010

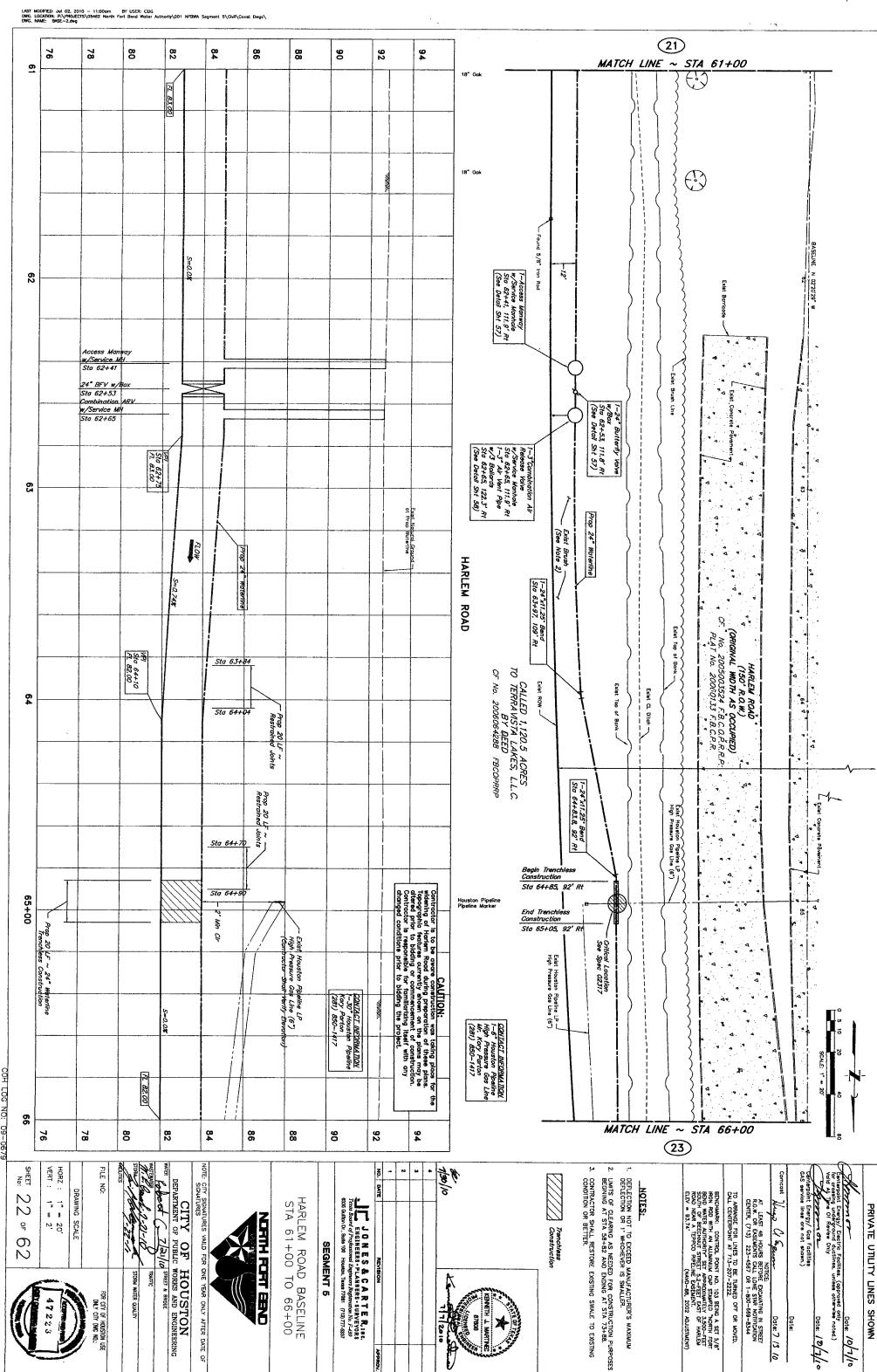
IONS OF 24" WATERLINE NOT TO EXCEED
CTURER'S MAXIMUM DEFLECTION OR 1; WHICHEVER IS

Date: 7-13-/0

Date: 10/7/



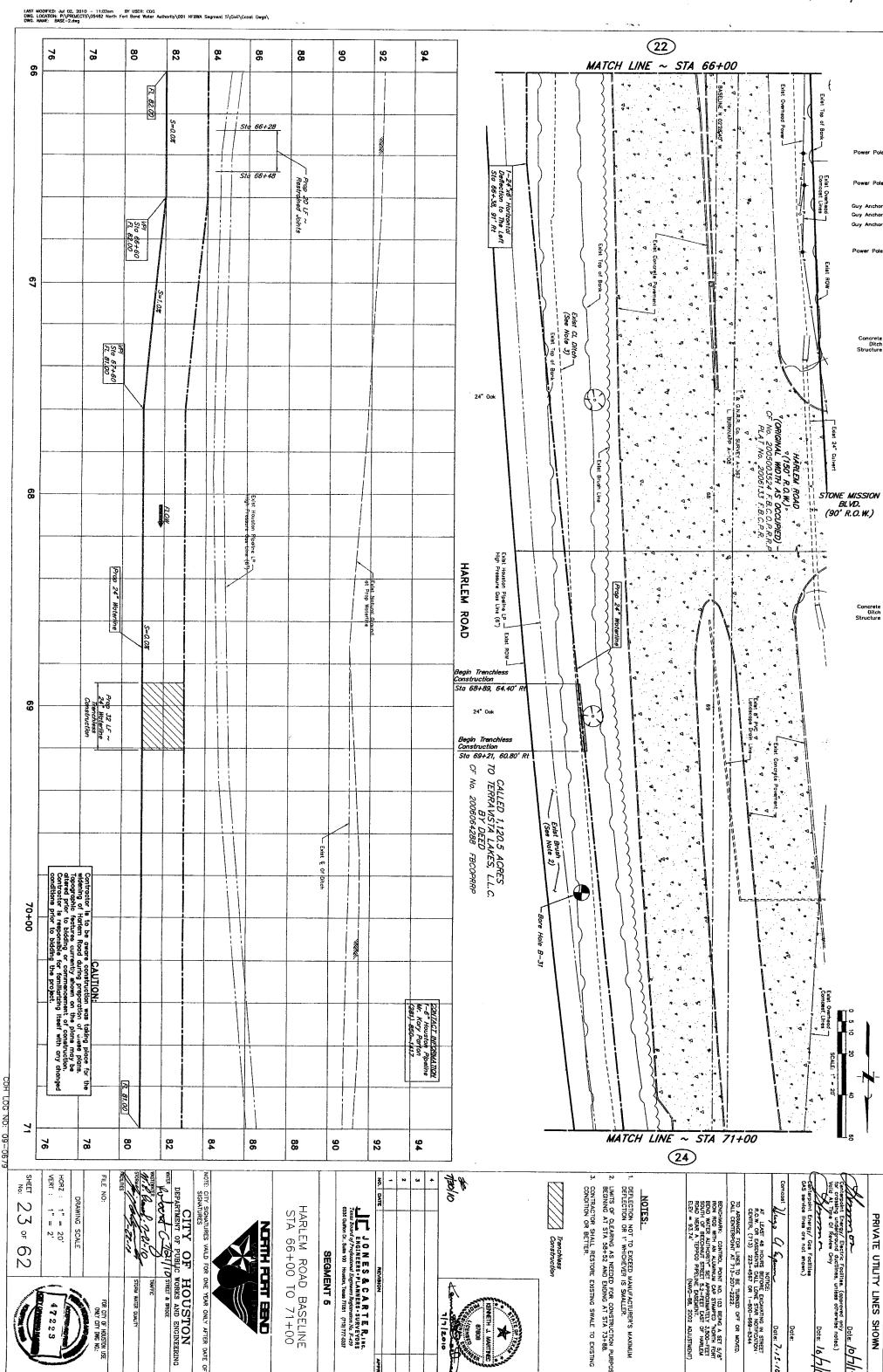




ONLY CITY DWG NO.:

Date: 7 /3 /0

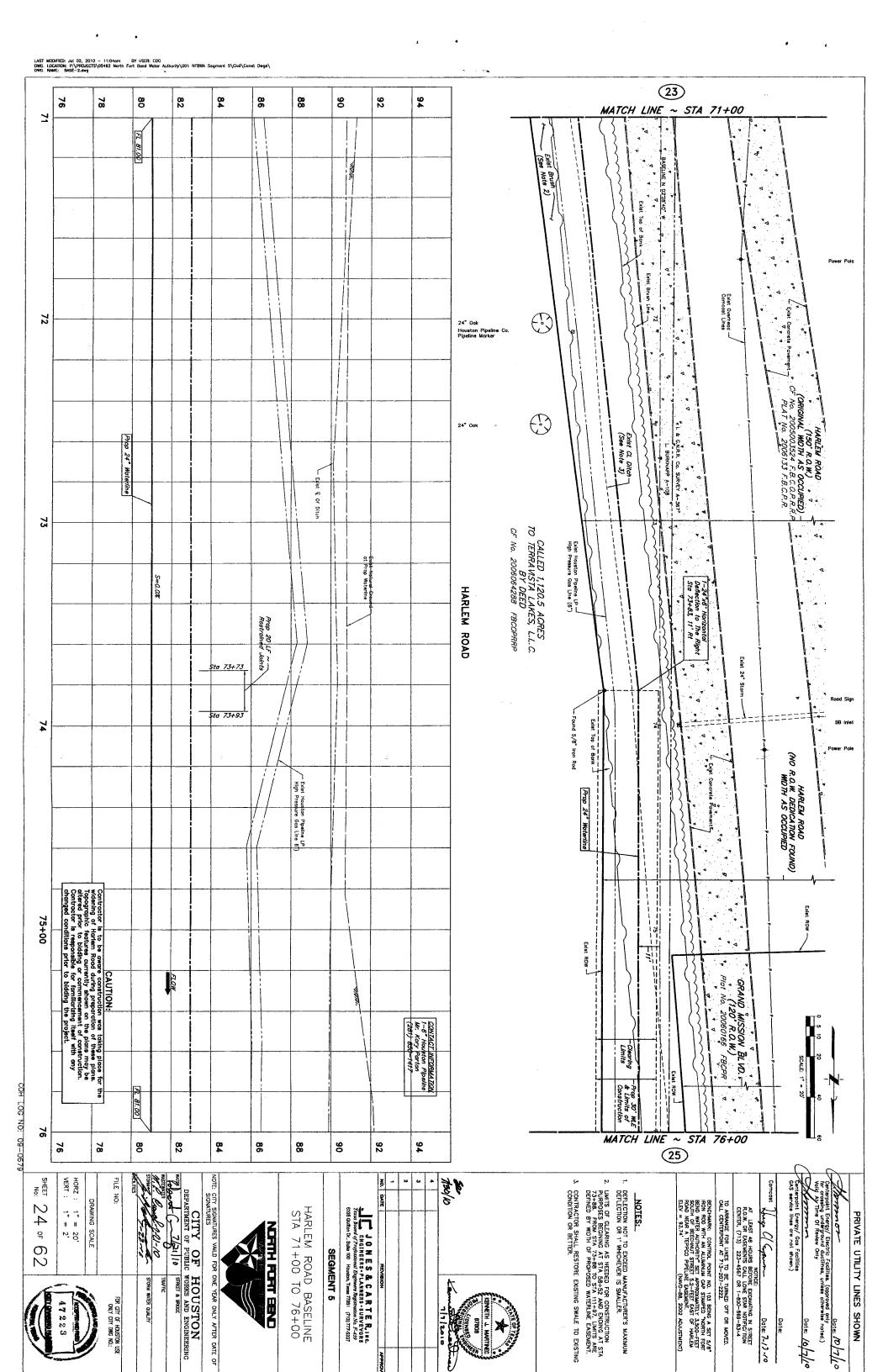
Date: 12/7/10



FOR CITY OF HOUSTON

1-1 E-10

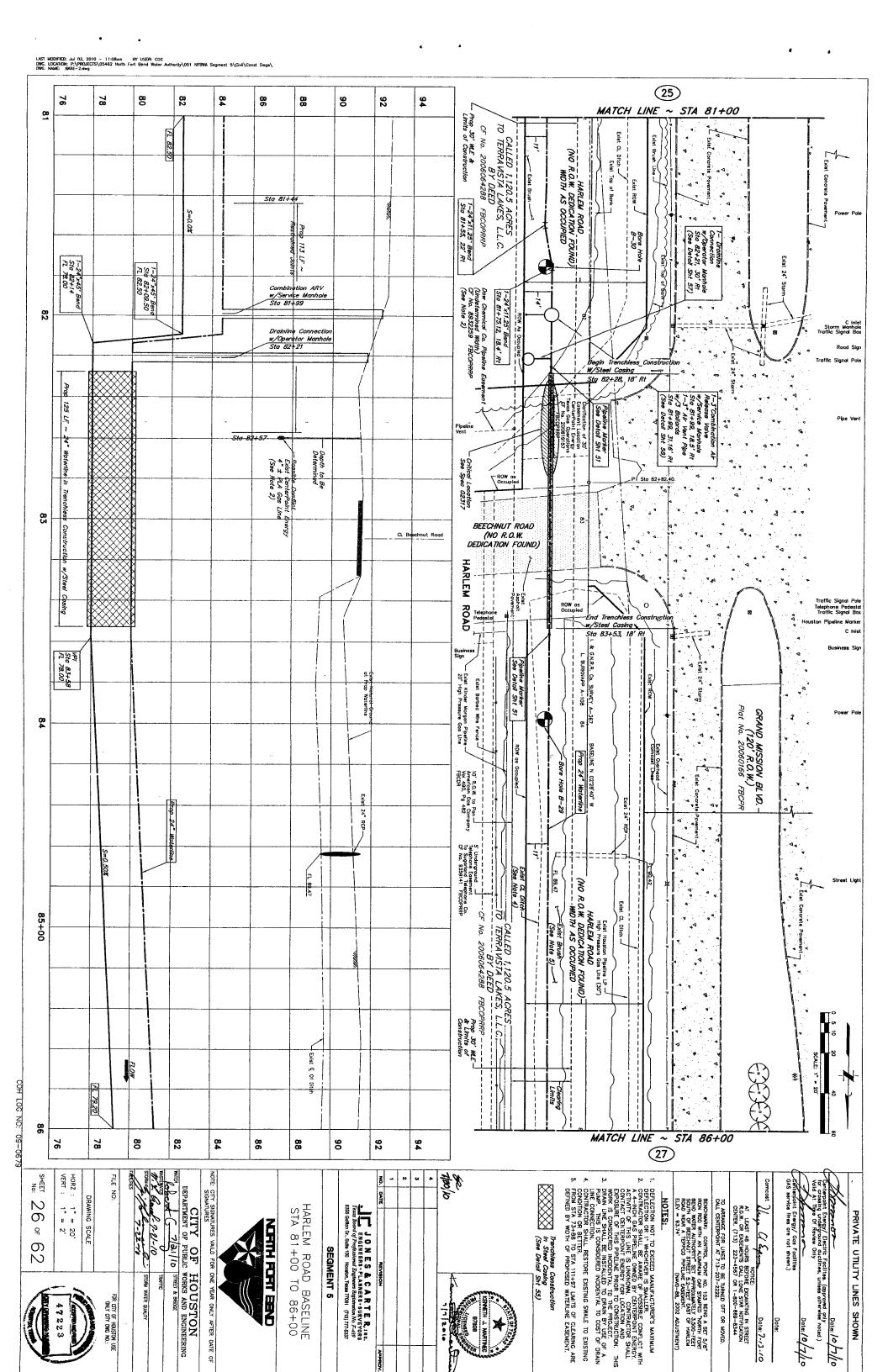
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Date: 7-13-70

Date: 10/7/10

Date: 10/7/2



COH LOC NO. DO-DE 79

47223

ONLY CITY DWG NO.:

7/7/2010

Date: 7-13 10

PRIVATE UTILITY LINES SHOWN

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-		17. 80.00											Exist 9					DASELINE N 02'03'06" W)		9		
													Barbed Wire Fence						Exist Houston Pipeline LP—I High Pressure Gas Line (30*)			4 4		
92																	Prop 24° Waterline	92			Exist Overhead Compast Lines	4 4		Str
			\$0.0=S	Prop 24"						Exist Natural Grou at Prop Waterline			} 			of Construction		I. & G.N.R.R. Co. SURVEY A- L BURKNAPP A-108		2 ∮		4 4 4		Pe Pc
93) de	Woterline						und			Exist	Exist Top of Bank	ROW As Occupied		Exist Top of Bank	-367 93	Exist Top of Bank -		Exist ROW -	Exist 24 Storm V	GRAND MISSION BLVD. (120' R.O.W.) Plat No. 20060166 FBCPR	
												HARLEM ROAD	Exist Kinder Morgan Pipeline — High Pressure Gas Line (20")	dank		D	Exist CL Ditch (See Note 2)	T CM	(NO R.O.W.		P Exist Top	4	N BL VD 1 W.) 56 FBCPR	
40		:	FLOW								1.	CALLED 1,120.5 TO TERRA WSTA LA BY DEED CF No. 2006064288	Bore Hole B-28	*				AS OCCUPIED	HARLEM ROAD (NO R.O.W. DEDICATION FOUND))	Top of Bank	Exist Concrete F	-	Houste Pipel
							Exist © Or Ditch					5 ACRES AKES, L.L.C. B FBCOPRAP	10' R.O.W. to Pon American Gos Company Vol 490, Pg 482 FBCDR								7	overnent.		Spri Spri
							9						Filhother Country Coun	**************************************				95	}					Ç
									2777.				1] 		Limits Exist Brush						4 4 4	Street Light SCALE: 1" = 20"	20
L		<u>R. 80.00</u>		82	84	œ o	80	90	8	92	94			*		TCH		29	STA.	96+	00		20'	6
	DRAWING SCALE HORZ : 1" = 20' VERT : 1" = 2'	FILE NO:	11-12-L PH-LINESSAN	or Pu		NOFITHE	HARLEM ROAD STA 91+00 T	SEGI	JONE; ENGINEERS Texas Board of Projestional 6335 Guffton Dr., Suite 100 Ho	DATE	† toolio	K		DEFINED BY MOTH OF PRO	OF DEPORTS OF CLEARING ARE	DEFLECTION OR 1' WHICHEVER IS SWALLER. 2. CONTRACTOR SHALL RESTORE EXISTING SWALE TO EXISTING			SOUTH OF BEECHNUT STR ROAD NEAR A TEPPCO PIP ELEV = 93.74	BENCHMARK: CONTROL PURON ROD WITH AN ALUMIN	CENTER, (713) 223-4 TO ARRANGE FOR LINES TI CALL CENTERPOINT AT 713	Comcost As Hours B	Void at the of Review Order Void at the of Review Order Void at the of Review Order Only Cafferpoint Energy Cas Facilities CAS service lines are not shown.) Date:	Centerpoint Energy/ Electric Fac
A STITLE SHAMEN OF THE STATE OF	47228	FOR CITY OF HOUSTON USE ONLY CITY DING NO.:	TRAFFIC STORM WATER QUALITY	HOUSTON WORKS AND ENGINEER	FOR ONE YEAR ONLY AFTER DATE OF	NAME AND THEORY	AD BASELINE	SEGMENT 5	JONES & CARTER. ENGINEERS - PLANNERS - SURVEYORS Traces Board of Professional Distineer Registration No. F-439 8835 Guithon Dr., Suite 100 Houston, Tense 1708: (719) 717-8337	REVISION APP	7/1/2010	CENTRAL T WALLS		POSED WATERLINE EASEME	111+97 LIMITS OF CLEARIN	RE EXISTING SWALE TO EX	O MANUFACTURER'S MAXIM		SOUTH OF BEECHNUT STREET 5.2-FEET DAST OF HARLEM ROW NEAR A TEPPCO PIPELINE EASEMENT. (NAVD-88, 2002 ADJUSTMENT)	INT NO. 103 BEING A SET 5/ UM CAP STAMPED "NORTH FO	CENTER, (713) 223-557 OR 1-800-569-8344 TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED. CALL CENTERPOINT AT 713-207-2222.	NOTICE: Date: 7-/3-/O	Date: 16/7//0	Date: //

47223

FOR CITY OF HOUSTON USE

3. FROM STA 73+88 TO STA 111+97 LIMITS OF CLEARING ARE DEFINED BY WIDTH OF PROPOSED WATERLINE EASEMENT.

DEFLECTION NOT TO EXCEED MANUFACTURER'S MAXIMUM DEFLECTION OR 1' WHICHEVER IS SMALLER.

BENCHMARK: CONTROL POINT NO. 103 BEING A SET 5/8
IRON ROD WITH AN ALUMINUM CAP STAMPED "NORTH FORT
BEND WATER ANTHORIT" SET APPROXIMETELY 3,500-FET
SOUTH OF BECCHMUT STREET 5.2-FET EAST
ROAD NEAR A TEPPCO PPETURE EASTBURNT.

ELEV = 93.74"

(NAVD-88, 2002 ADJUSTMENT)

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED. CALL CENTERPOINT AT 713-207-2222.

Date: Date: 7-17 /0

Date: 10/1/10 Date: 14 7/10

PRIVATE UTILITY LINES SHOWN



47223

ONLY CITY DWG NO.:

STORM WATER QUALITY

CITY SIGNATURES VAILD FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

HARLEM ROAD BASELINE STA 101+00 TO 106+00

SEGMENT 5

JONES & CARTER, INC.

INC. BOARD OF THE PROPERTY OF THE PROPER

FROM STA 73+88 TO STA 111+97 LIMITS OF CLEARING ARE DEFINED BY WIDTH OF PROPOSED WATERLINE EASEMENT.

2. CONTRACTOR SHALL RESTORE EXISTING SWALE TO EXISTING CONDITION OR BETTER.

NOTE:

DEFLECTIONS ARE NOT TO EXCEED MANUFACTURER'S MAXINDEFLECTION OR 1" WHICHEYER IS SMALLER.

BENCHMARK: CONTROL POINT NO. 103 BEING A SET 5/8* IRON ROD WITH AN ALLIMINUM CAP SYMPED "NORTH FORT BEND WATER ANDROIN" SET APPROXIMETE 3,300-FET SOUTH OF BECOHNT STREET 52-FET EAST OF HARLEM ROAD NEAR A TEPPOO PIPCINE EASEMENT.

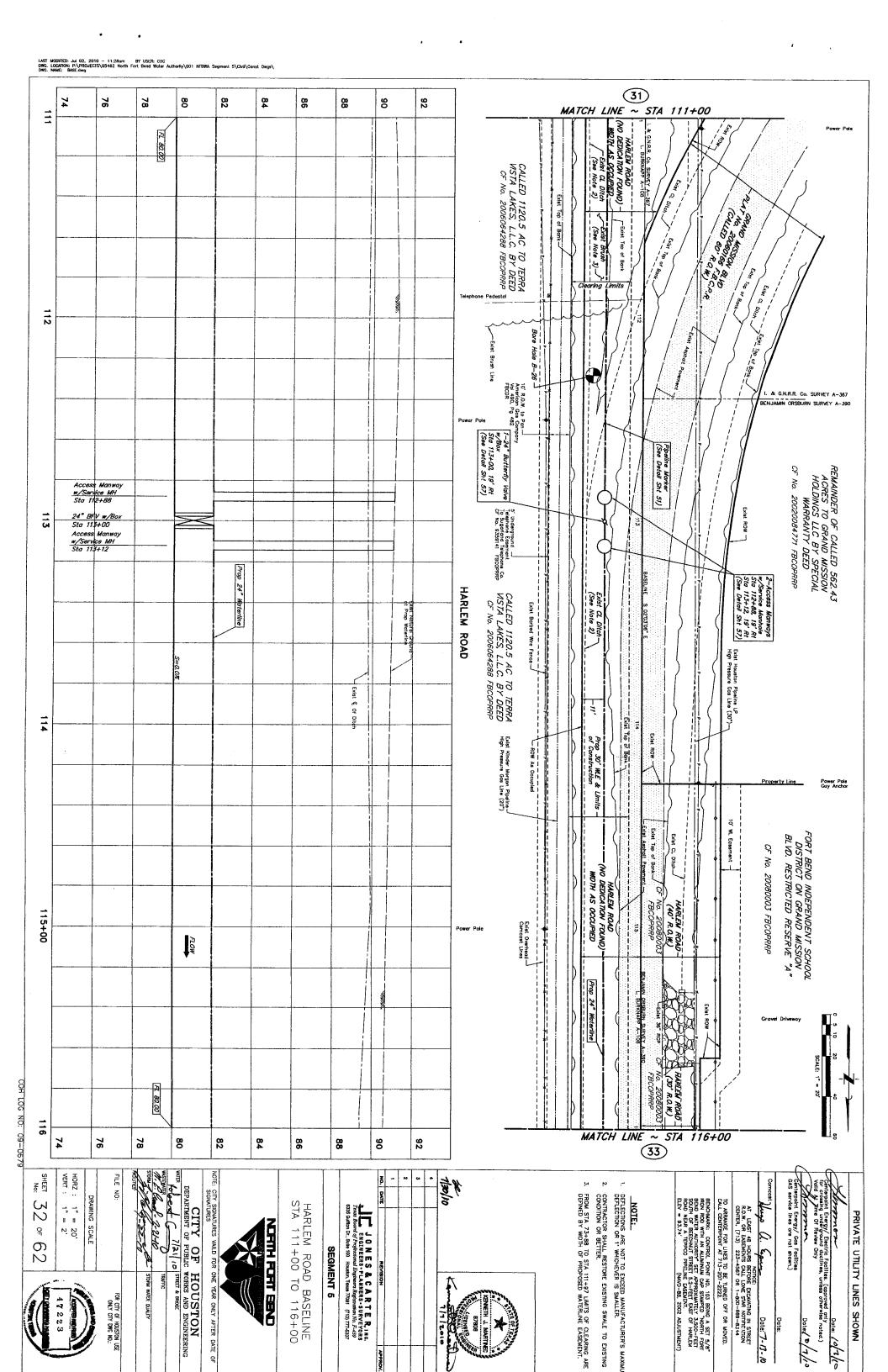
ELEY = 93.74*

TO ARRANGE FOR LINES TO BE TURNED OFF OR MOVED. CALL CENTERPOINT AT 713-207-2222.

AT LEAST 48 HOURS BEFORE EXCAVATING IN STREET R.O.W. OR EASEMENTS CALL LONE STAR NOTIFICATION CENTER, (713) 223-4567 OR 1-800-889-8344 Date: 7-/5-10

Date:10/h/P

PRIVATE UTILITY LINES SHOWN



47223

DNLY OF HOUSTON L

JONES & CARTER, INC.
ENGINEERS-PLANNERS-SURVEYORS
Texas Board of Professional Engineers Registration No. 5-439
ESSS Quilton Dr., Sales 100 Houston, Texas 17081 (713) 777-5337

7/7/2010

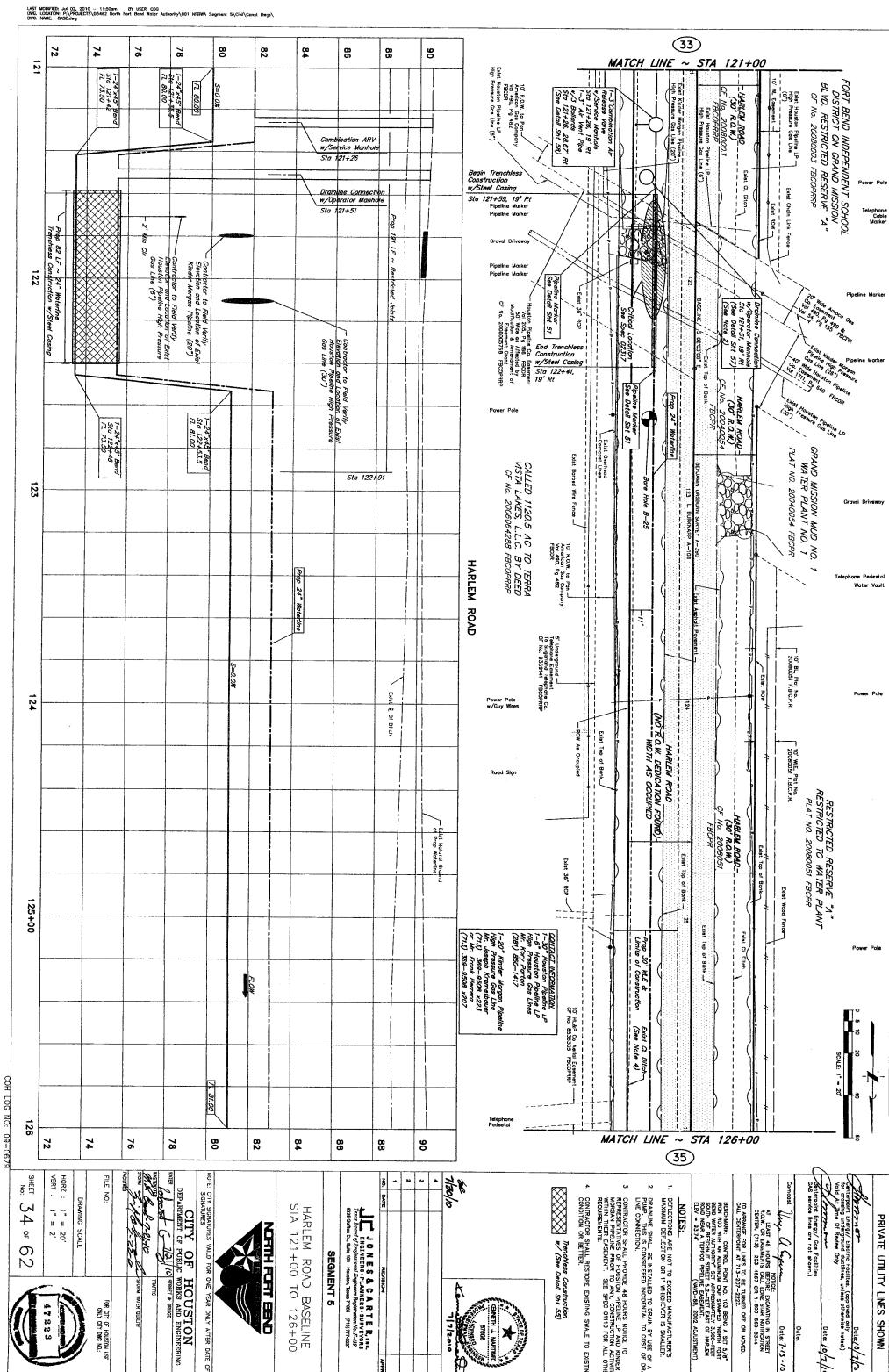
BENCHMARK: CONTROL POINT NO. 103 BEING A SET 5/8" RON ROD WITH AN ALLIMINUM CAP STAMPED "NORTH FORT BEND WATER AUTHORIT" SET SPROXUMETEY, 3500-FET SOUTH OF BECCHMUT STREET 52-FET EAST OF HARLEM ROAD NEW A TEPPOD PIPCINE EASENEY.

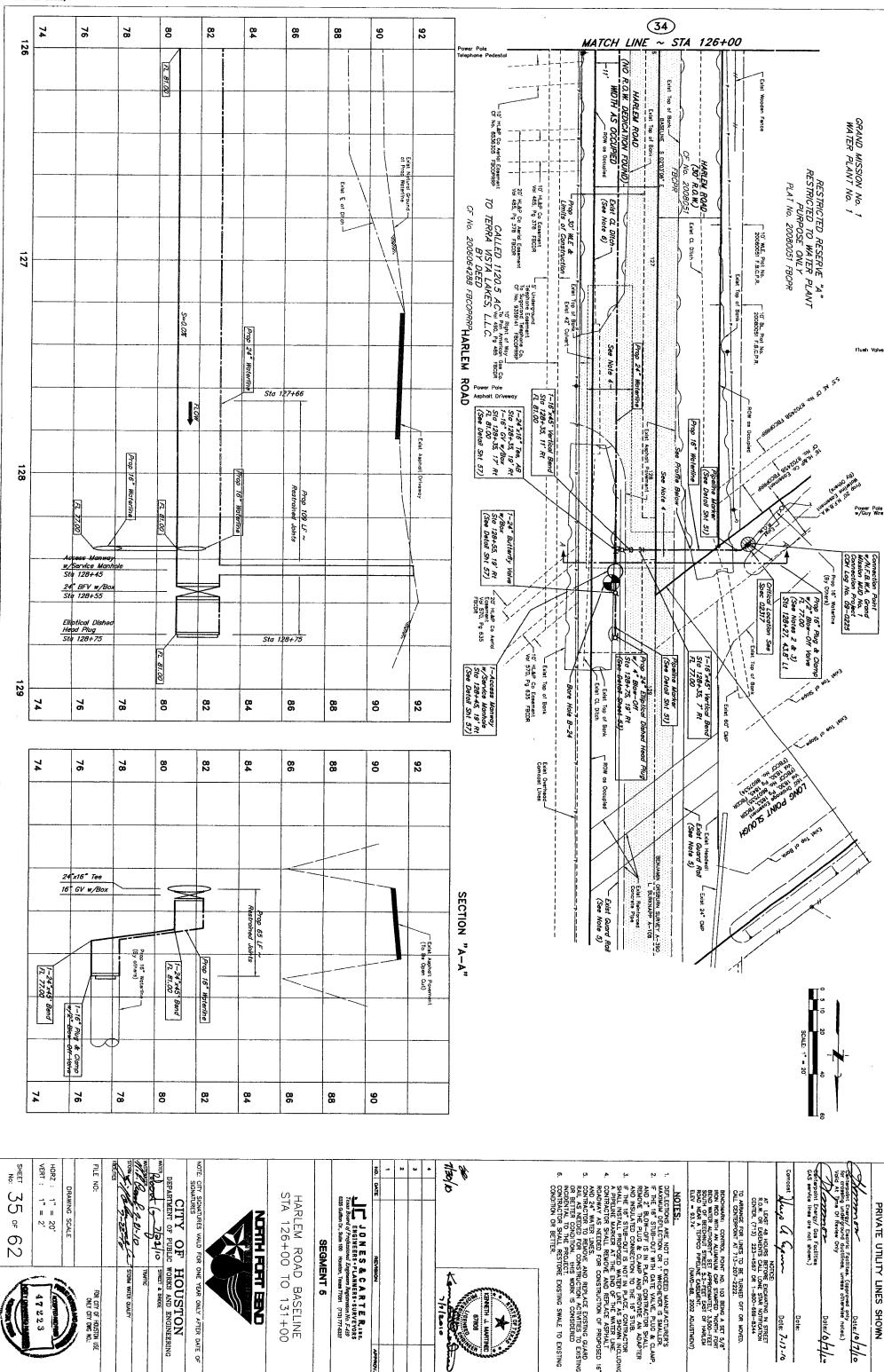
ELFY = 93.74" (NWO-88, 2002 ADJUSTMENT)

Date: 7-/3-

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PRIVATE UTILITY LINES SHOWN





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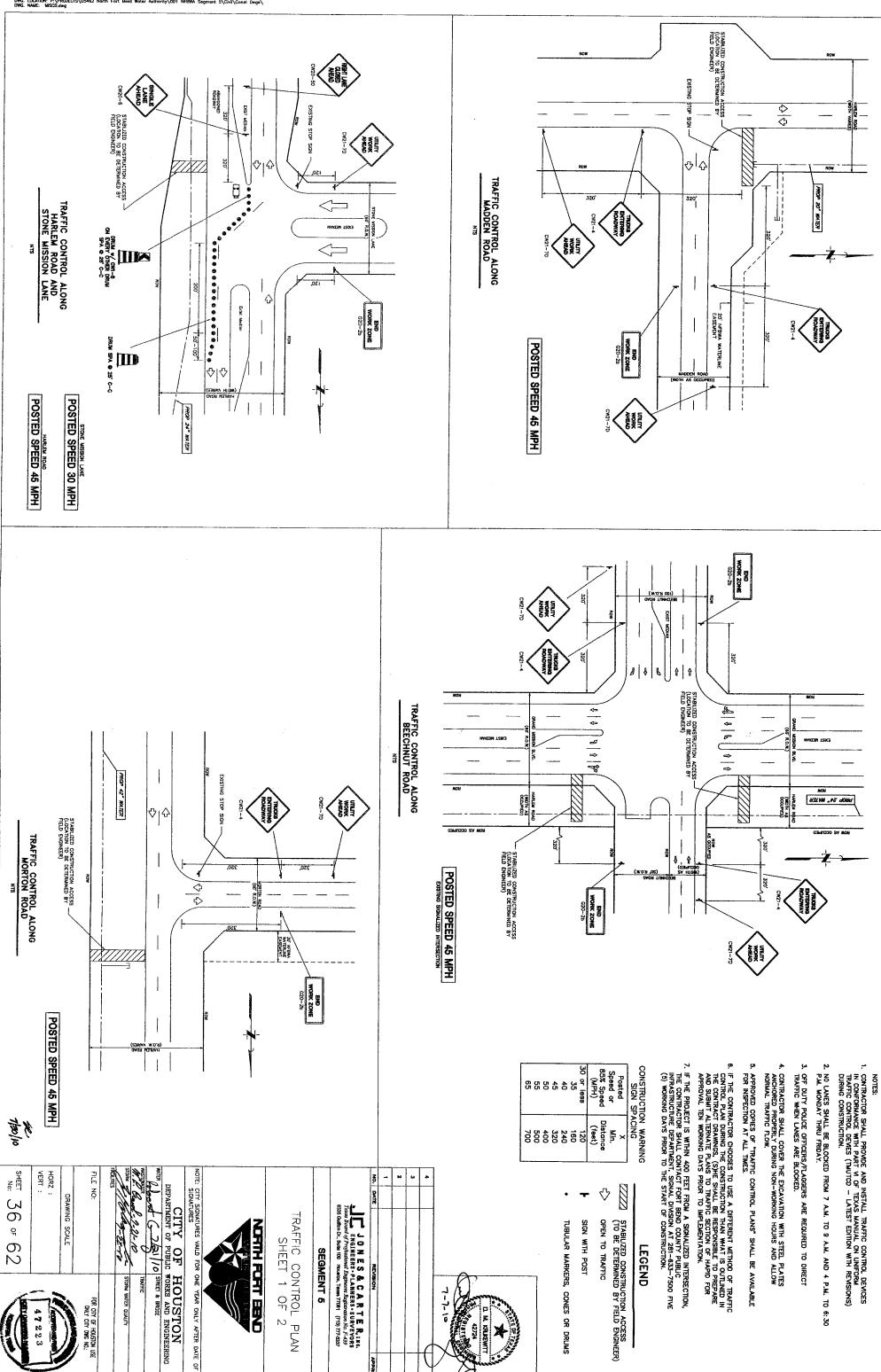
Date: 10/7/10

Date: 7-/3-/0

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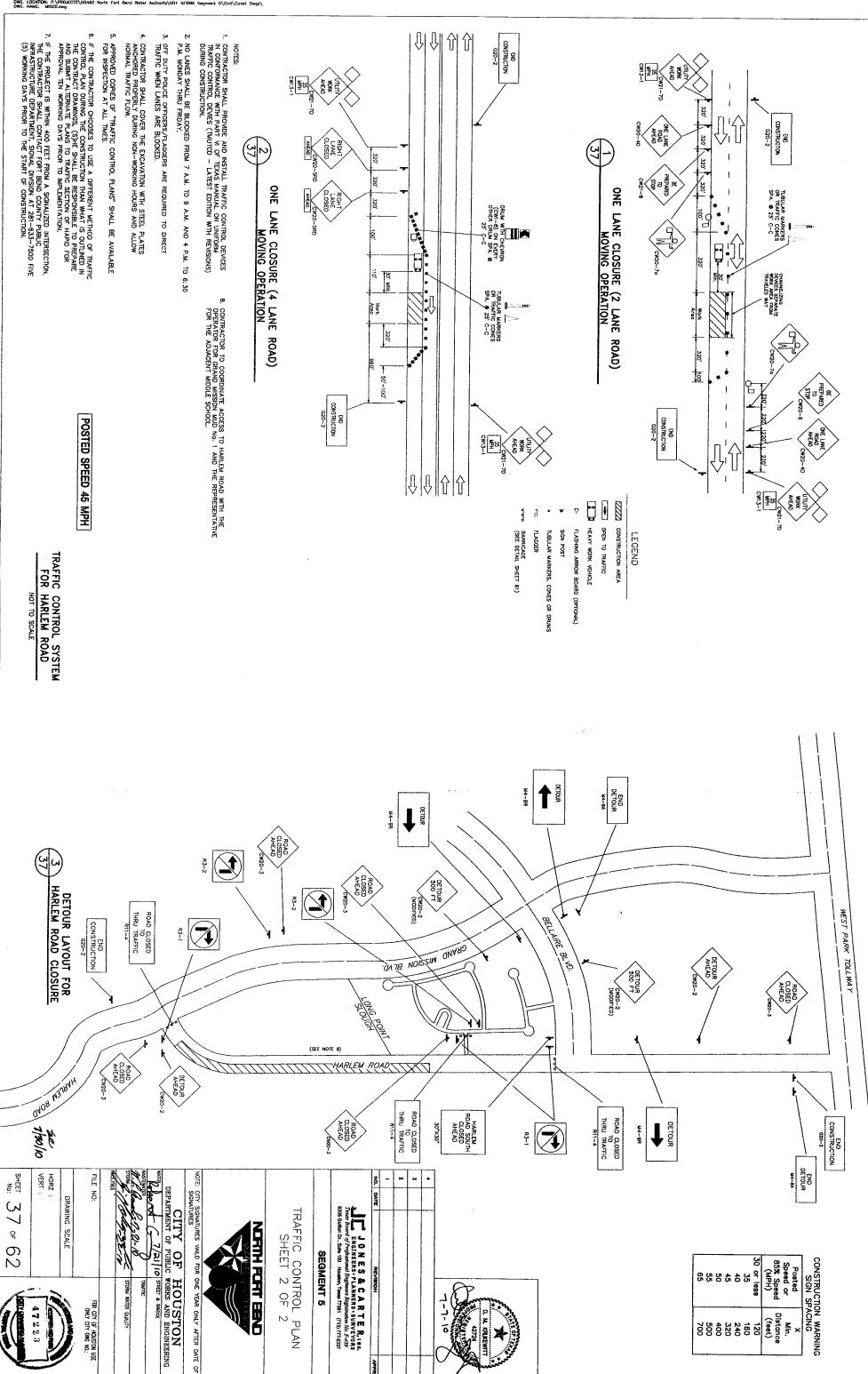
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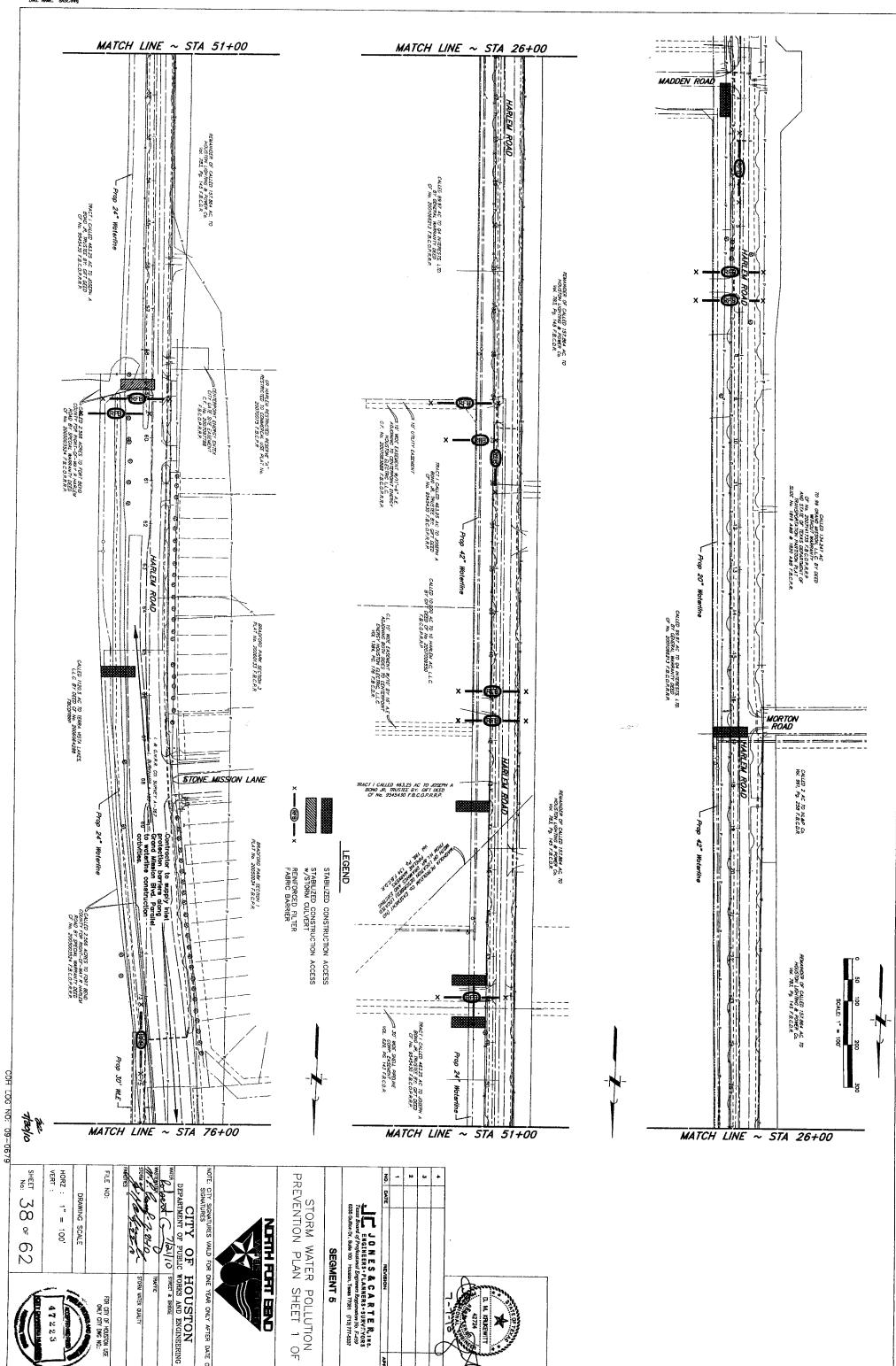
FOR CITY OF HOUSTON USE ONLY CITY DWG NO.:

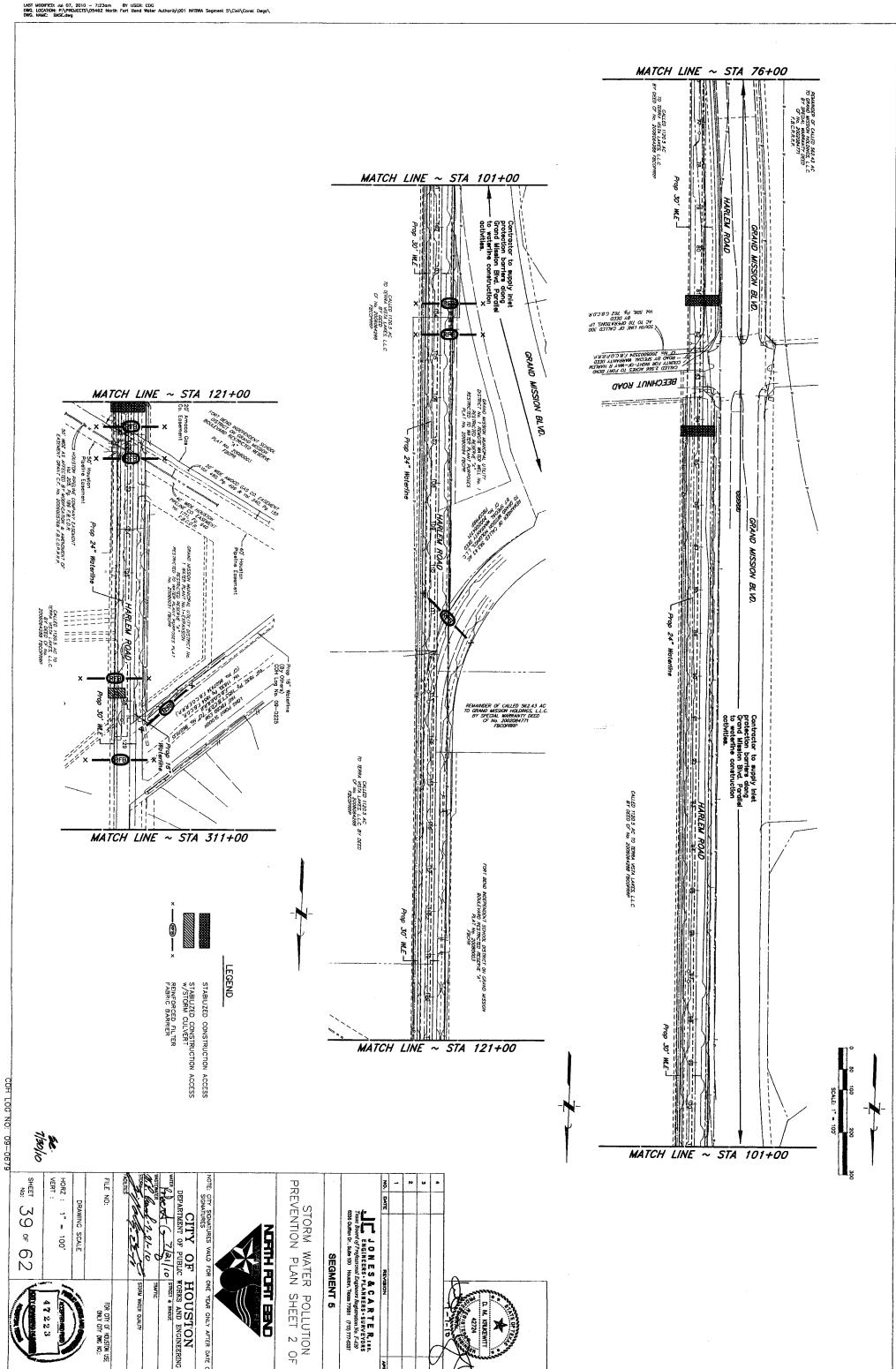


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JR CITY OF HOUSTON I







FOR CITY OF HOUSTON USE ONLY CITY DWG NO.:



TEST STATION SCHEDULE

							T.,			T.,		/-							T			<u> </u>	Γ
128+27	122+41	122+10	121+80	121+72	113+53	103+53	93+53	83+53	82+23	74+95	64+95	58+40	48+40	48+20	46+41	44+60	44+40	37+00	27+00	17+00	12+38	2+38	0.000
POST MOUNTED IJTS	POST MOUNTED CASING TEST STATION	POST MOUNTED FPTS	POST MOUNTED FPTS	POST MOUNTED FPTS	POST MOUNTED MONITORING TEST STATION	POST MOUNTED MONITORING TEST STATION	POST MOUNTED MONITORING TEST STATION	POST MOUNTED CASING TEST STATION	POST MOUNTED CASING TEST STATION	POST MOUNTED MONITORING TEST STATION	POST MOUNTED FPTS	POST MOUNTED MONITORING TEST STATION	POST MOUNTED CASING TEST STATION	POST MOUNTED FPTS	POST MOUNTED IJTS	POST MOUNTED FPTS 4	POST MOUNTED CASING TEST STATION	POST MOUNTED MONITORING TEST STATION	POST MOUNTED MONITORING TEST STATION	POST MOUNTED IJTS	POST MOUNTED MONITORING TEST STATION	POST MOUNTED LITS 3	THE OF LEGICAL
24" & 16" TEE (ISOLATED 16") 7	CASING ON 24" W	24" W & 30" HPL	24" W & 20" KMI6	24" W & 6" HPL	24" W	24" W	24" W	CASING ON 24" W	CASING ON 24" W	24" W	24" W & 6" HPL ⁵	24" W	CASING ON 24" W	24" W & 14" TEPPCO GL	42" W @ SEGMENT 32	42" W & 14" NETCO GL	CASING ON 42" W	42" W	42" W	42" TEE @ SEGMENT 7A2	20" W	20" W @ SEGMENT 42	いっぱってってスロン
HARLEM RD, S. OF LONG POINT SLOUGH	HARLEM RD	HARLEM RD	HARLEM RD	HARLEM RD	HARLEM RD & GRAND MISSION BLVD.	HARLEM RD	HARLEM RD	HARLEM RD, S. OF BEECHNUT RD	HARLEM RD, S. OF BEECHNUT RD	HARLEM RD	HARLEM RD	HARLEM RD	HARLEM RD	HARLEM RD	HARLEM RD	HARLEM RD	HARLEM RD	HARLEM RD	HARLEM RD	HARLEM RD, N. OF MADDEN RD	HARLEM RD, N. OF MADDEN RD	HARLEM RD, N. OF MADDEN RD	LUCATION
1/47	1/50	4/44	4/44	4/44	1/41	1/41	1/41	1/50	1/50	1/41	4/44	1/41	1/50	4/44	1/47	4/44	1/50	1/41	1/41	1/47	1/41	1/47	DETAIL

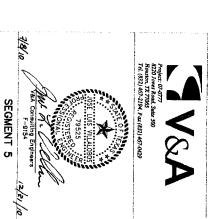
- REFER TO CIVIL PLANS SHEETS 40 TO 50 FOR CP DETAILS.
- INSTALL DIELECTRIC INSULATING JOINT IE THE OTHER SEGMENT'S PIPE IS EXISTING.
- IJTS = INSULATING JOINT FLANGE CONNECTION TEST STATION
- FPTS = FOREIGN PIPELINE TEST STATION (WITHOUT ANODES)
- HPL = HOUSTON PIPELINE COMPANY, LP (HIGH PRESSURE GAS LINE)
- KMI = KINDER MORGAN, INC. (HIGH PRESSURE GAS LINE)
- ISOLATE THE 16" WATERLINE IE EXISTING

GENERAL NOTES

- 1. THE LOCATIONS FOR RECTIFIERS, ANODES AND TEST STATIONS INDICATED ON THE SITE PLANS ARE APPROXIMATE. FIELD LOCATE AND MARK THE FINAL LOCATIONS FOR NFBWA APPROVAL.
- PROTECT EXISTING TEST STATIONS AND EXISTING ANODE WIRES, DAMAGE TO EXISTING WIRES, ANODES, TEST STATIONS OR STRUCTURES SHALL BE REPLACED BY THE CONTRACTOR. UNAPPROVED CABLE SPLICES ARE NOT ALLOWED.
- 3. REFERENCE SHEET No.'S CP-1 TO CP-11 ARE TIED TO SHEET NUMBERS 40 TO 50 OF 62. THE SEQUENCE OF SHEETS CP-1 THROUGH CP-11 ARE NOT IN NUMERICAL ORDER BECAUSE THEY ON TIED TO NORTH FORT BEND WATER AUTHORITY STANDARD DETAILS.

CATHODIC PROTECTION RECTIFIER SCHEDULE

RECTIFIER OPTION	PIPE OPTION	RECTIFIER	STATION	SIZE OF RECTIFIER	NUMBER OF	ANODE WELL
	STEEL PIPE WITH BONDED DIELECTRIC COATING	-1	69+74	12V/8A	4	110
Standard Labor	MORTAR-COATED STEEL		39+50	30V/16A	6	132
2	STÉEL CYLINDER PIPE	2	69+74	12V/8A	6	132







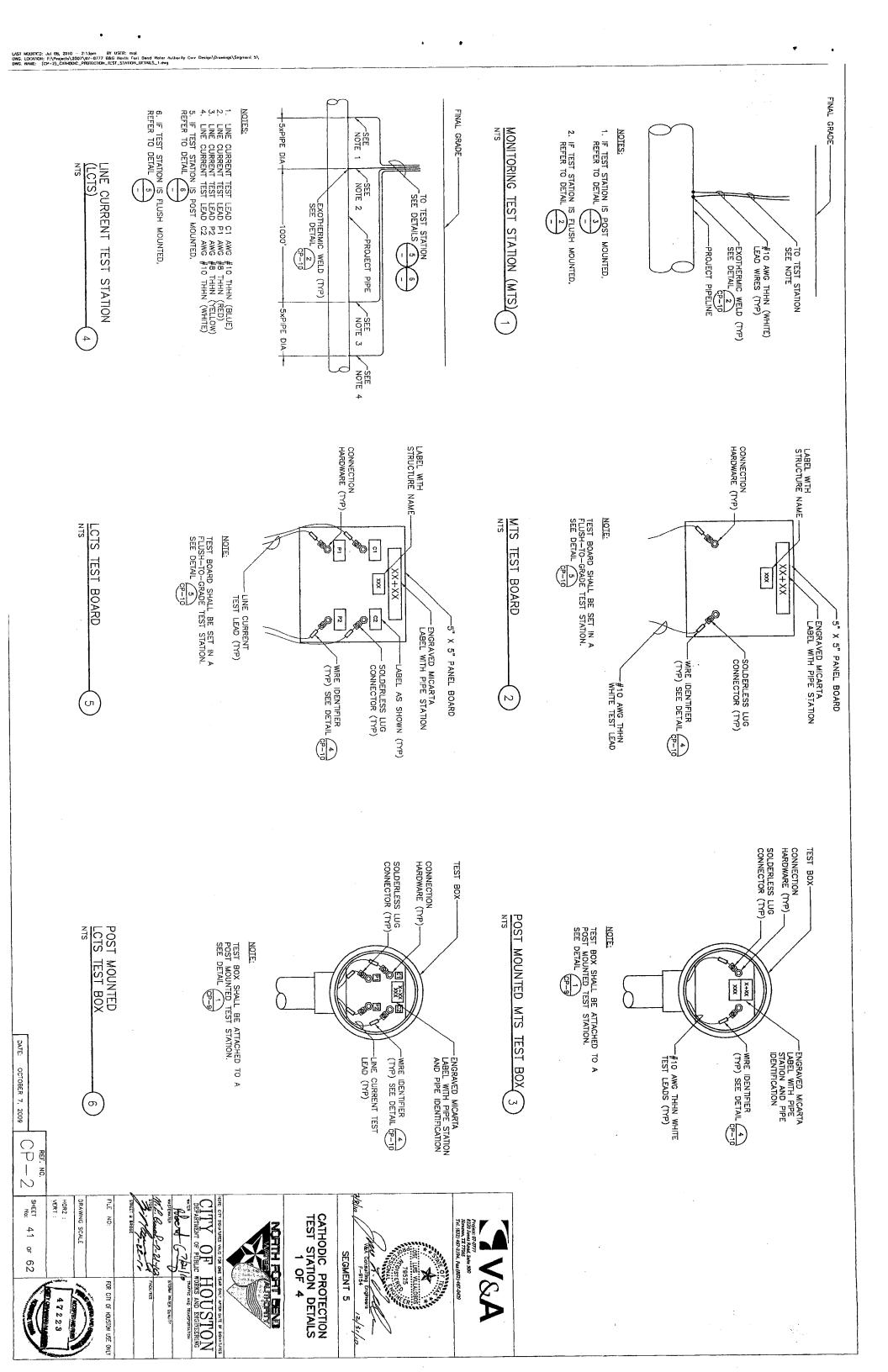
ACCOME	MERCH 1-21-10	Bood (72/10 BATE AN BANGGERATON	PARTMENT OF PUBLIC W	NOTE: CITY SIGNATURES VALID FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES		
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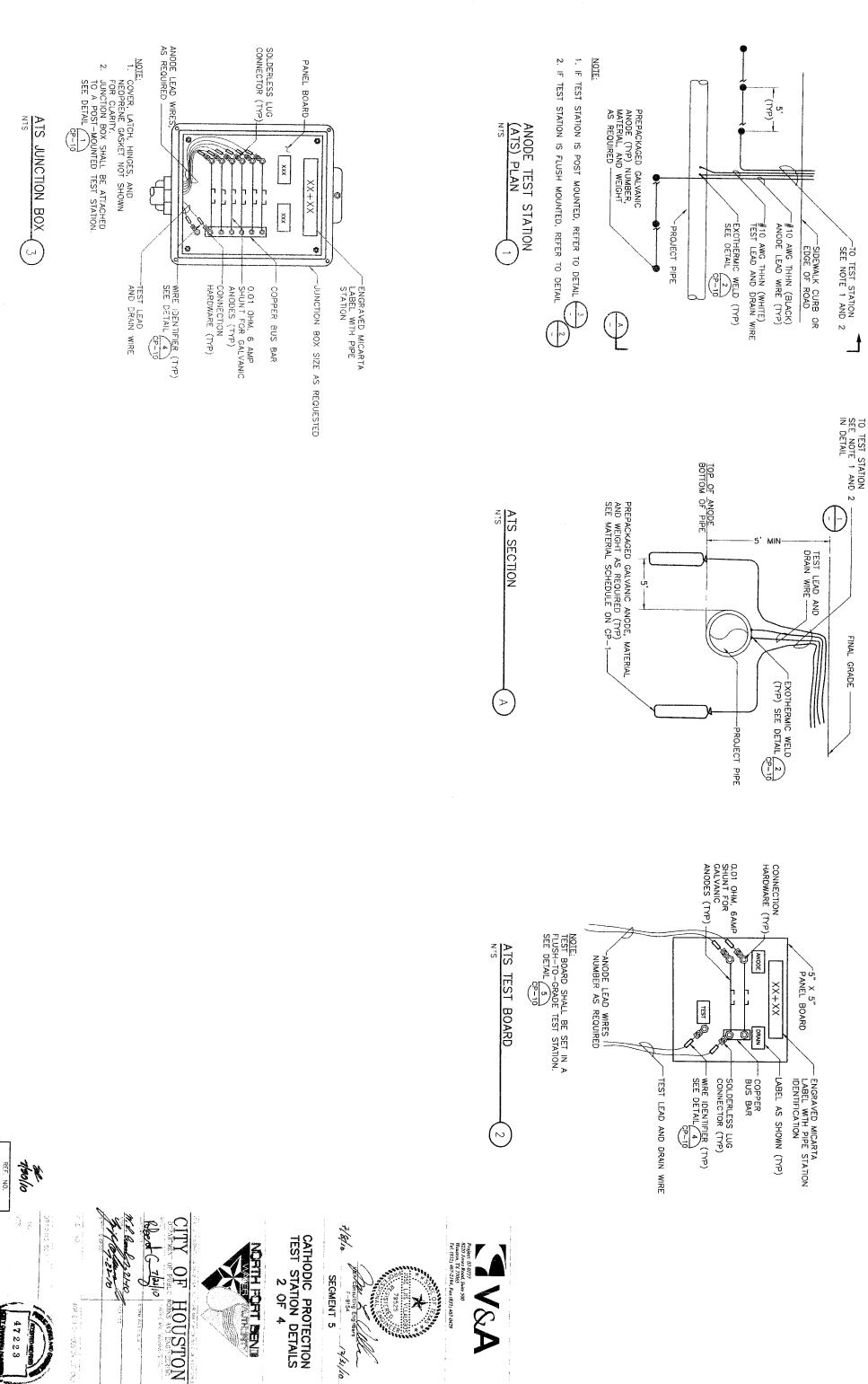
CNO TEL NO.SOC: -C A. 3 804

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47223

OCTOBER 7, 2009





2009 CP-4

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42 > 62

47223

GENERAL NOTES:

2. INSTALL ANODES ON ALL METALLIC VALVES, FITTINGS, TEES, CROSSES, FIRE HYDRANTS, AND OTHER METALLIC APPURTENANCES AS SHOWN ON THE DRAWINGS AND INDICATED IN THE SPECIFICATIONS

SEE DETAIL FOR TYPICAL SECTION OF ANODE AND FITTING

4. METALLIC FITTINGS WITH TWO OR MORE VALVES SHALL BE INSTALLED WITH TWO GALVANIC ANODES. METALLIC FITTINGS WITH ONE OR NO VALVES SHALL BE INSTALLED WITH ONE GALVANIC ANODE.

ភ

TOP OF ANODE SHOULD BE AT THE PIPE'S INVERT DEPTH AS SHOWN ON DETAIL AND 2

1. THESE DETAILS ARE TYPICAL. THE NUMBER, AND ARRANGEMENT OF FITTINGS AND VALVES MAY VARY. THE DETAIL THAT IS MOST SIMILAR TO THE ACTUAL ARRANGEMENT SHOULD BE USED.

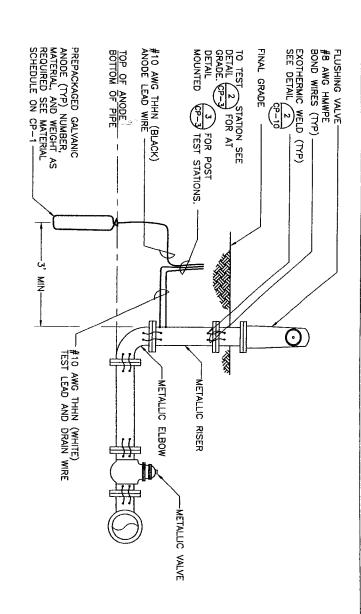
BOTTOM OF PIPE AWG #10 THHN (BLACK)
ANODE LEAD WIRE -----FINAL GRADE PREPACKAGED GALVANIC ANODE,
MATERIAL AND WEIGHT AS REQUIRED TO TEST STATION SEE
DETAIL POP FOR AT
GRADE. (P-3) FOR AT
GRADE. (P-3) FOR POST
AND DETAIL GP-3 TEST STATIONS

#10 AWG THHN (WHITE)
TEST LEAD AND DRAIN WIRE

EXOTHERMIC WELD (TVP)
SEE DETAIL 2

OP-10

OP-10 METALLIC VALVE BOND WIRES (TYP) METALLIC FOR POST TEST STATIONS. FITTING -PVC PIPE





1/30/10 RAWNG SCA

CP-6 SJEST 43 or 62

DCTOBER 7, 2009

HOUSTION WORKS AND ENGINEERING FOR CITY OF HOUSING USE ONLY

CATHODIC PROTECTION TEST STATION DETAILS 3 OF 4

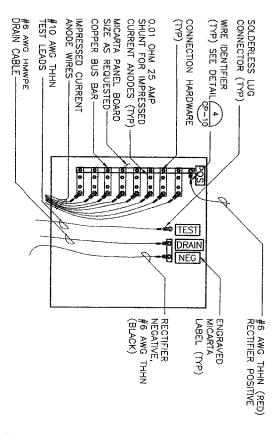
SEGMENT 5

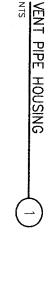
TYPICAL ANODE INSTALLATION AT FLUSHING VALVE (

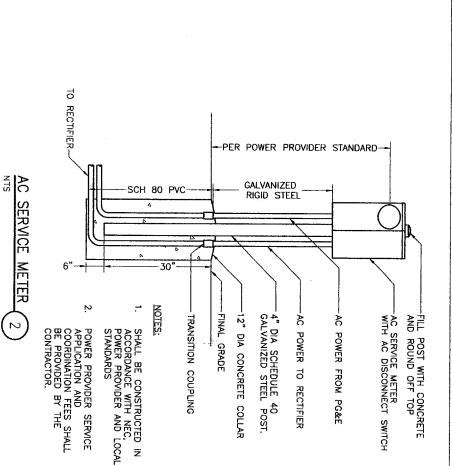


THE GROUND ROD SHALL BE INSTALLED OBLIQUELY THROUGH THE FOUNDATION IN UNDISTURBED SOIL AT AN ANGLE NOT TO EXCEED 45' FROM VERTICAL.

GROUND ROD







COPPER BUS BAR-PANEL BOARD

MPRESSED CURRENT

SHUNT FOR IMPRESSED CURRENT ANODES (TYP)

--10" TO 18"--

~4" DIA UV STABILIZED PIPE

P K

UV STABILIZED PVC TEE

ROUND PLASTIC GRATE

WIRE IDENTIFIER

(TYP) SEE DETAIL

(TYP)

想

SOLDERLESS LUG CONNECTOR (TYP).

CONNECTION HARDWARE (TYP)

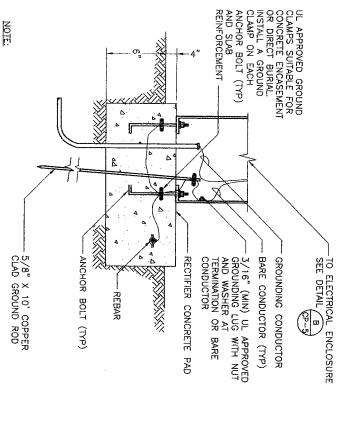
JUNCTION BOX SIZE AS REQUESTED

FILL WITH GROUT

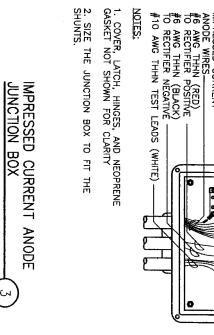
-12" DIA X 24" DEEP CONCRETE COLLAR

PVC VENT PIPE

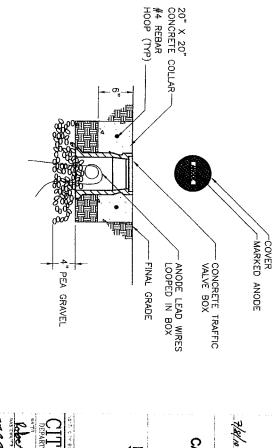
SECTION (B)

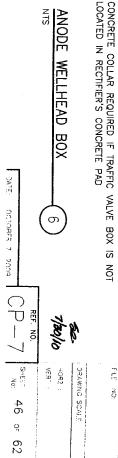






NOTES:





FLE NO:

TWO JSF VCLSTON AN ALO NO.

ANODE WELLHEAD BOX

DATE

47223

HOUSTON WORKS AND ENGINEERING ALTYRIG ELIYM MHOLS

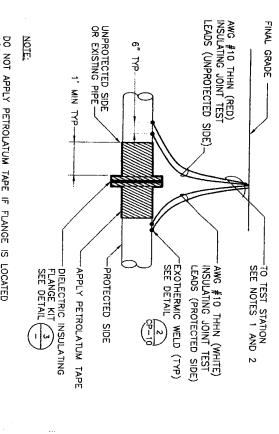
CATHODIC PROTECTION RECTIFIER DETAILS
2 OF 2

SEGMENT 5

₹

NOTE:
TEST BOARD SHALL BE SET
IN A FLUSH-TO-GRADE TEST
STATION. SEE DETAIL
5

INSULATING JOINT TEST
LEADS (UNPROTECTED SIDE OR EXISTING PIPE)



DO NOT APPLY PETROLATUM TAPE IF FLANGE IS LOCATED ABOVE GRADE OR IN A VAULT.

1. IF TEST STATION IS POST MOUNTED, REFER TO DETAIL (

2. IF TEST STATION IS FLUSH MOUNTED, REFER TO DETAIL

INSULATING JOINT FLANGE CONNECTION TEST STATION (IJTS)

AWG #10 THHN (WHITE)
INSULATING JOINT TEST
LEADS (UNPROTECTED SIDE)— UNPROTECTED SIDE OR EXISTING PIPE FINAL GRADE 1' MIN TYP SEE DETAIL 2 (TYP) ON DETAIL (1) PROTECTED SIDE INSULATING COUPLING AWG #10 THHN (WHITE)
INSULATING JOINT TEST
LEADS (PROTECTED SIDE)

> FULL LENGTH INSULATING SLEEVE STAINLESS STEEL WASHER (TYP)___ STAINLESS STEEL STUD ____

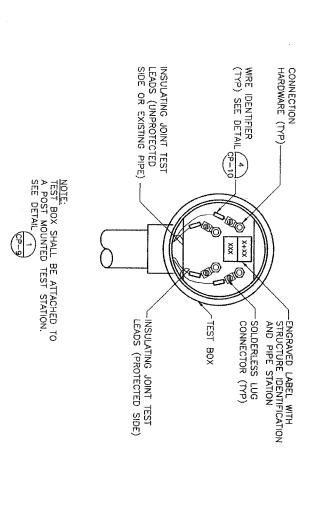
INSULATING GASKET-

INSULATING JOINT TEST STATION—COUPLING CONNECTION (IJTS—COUPLING)

DIELECTRIC INSULATING FLANGE KIT 3

Y&A

2



The state of

××

×

-SOLDERLESS LUG CONNECTOR (TYP)

-LABEL WITH STRUCTURE NAME (TYP)

ENGRAVED MICARTA
LABEL WITH PIPE STATION 5" X 5" PANEL BOARD

XX+XX

N. Common of the common of the

--CONNECTION
HARDWARE (TYP)
-- WIRE IDENTIFIER
(TYP) SEE DETAIL (P-10)

-INSULATING JOINT TEST LEADS (PROTECTED SIDE)

POST MOUNTED IJTS

IJTS TEST BOARD

OCTOBER 7, 2009 CP-8

o N E N E

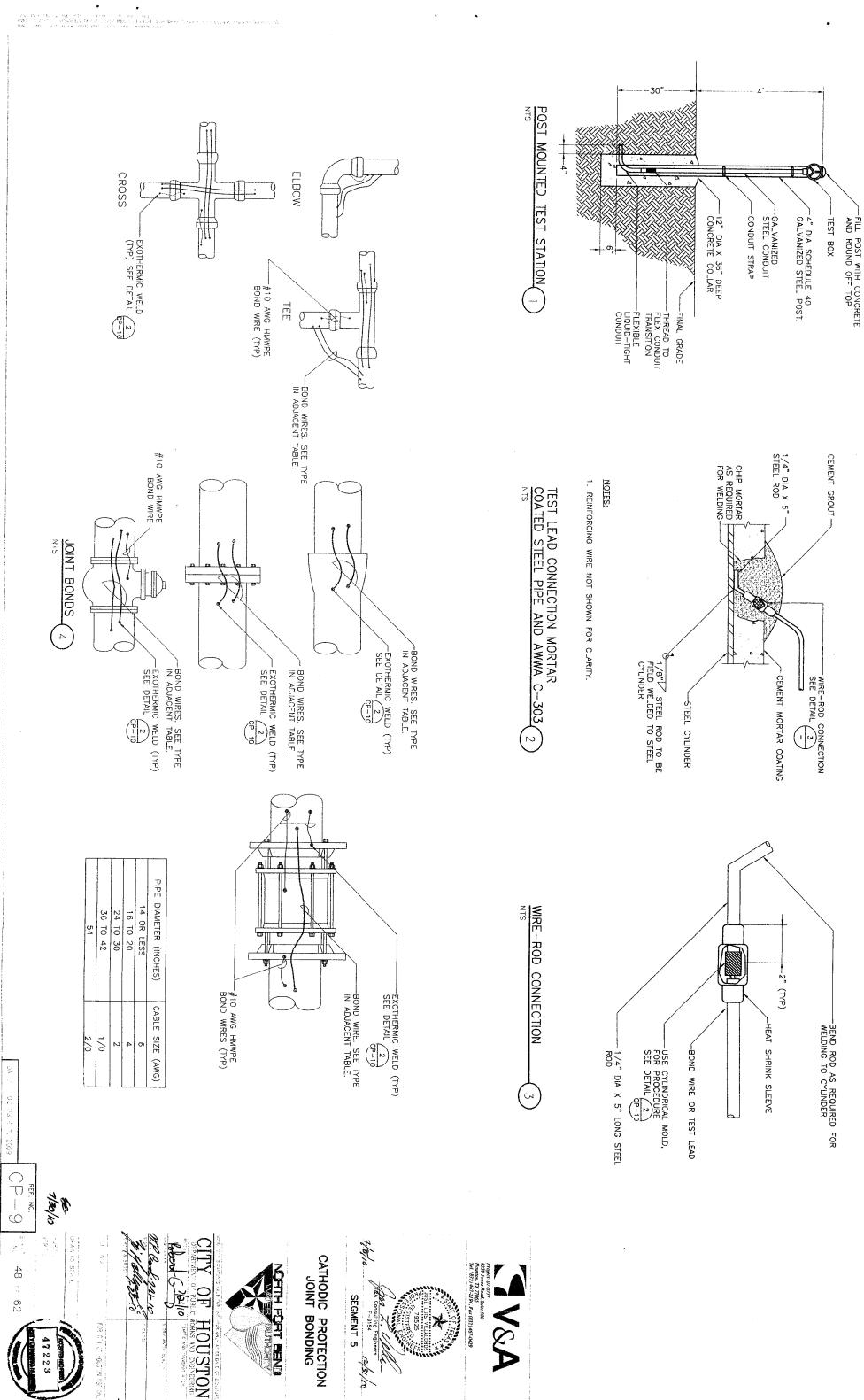
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HOUSTON
WORKS AND ENGINEERING

SEGMENT 5

CATHODIC PROTECTION INSULATING JOINT DETAILS

DRAWING SCALE



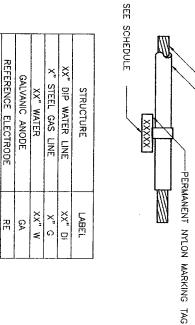
NOTE:

SAND OR NATIVE SOIL FREE OF CONCRETE, ROCK OR DEBRIS

WIRE IDENTIFIER

"XX" INDICATES PIPE DIAMETER IN INCHES.

REFERENCE ELECTRODE
IMPRESSED CURRENT ANODE XX" DIP WATER LINE X" STEEL GAS LINE GALVANIC ANODE XX" WATER XX" W XX. Di Ŝ S



20" X 20"
CONCRETE COLLAR—
#4 REBAR
HOOP (TYP)

SIDEWALK

CURB

FINAL GRADE

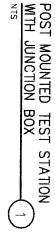
TEST BOARD

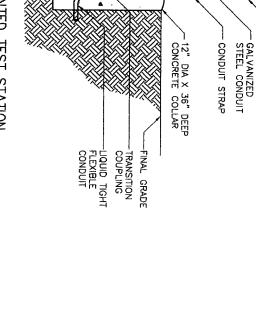
¥IRE

INSULATION

←COVER ←MARKED CP-TEST

-CONCRETE TRAFFIC VALVE





4" DIA SCHEDULE 40 GALVANIZED STEEL POST.

JUNCTION BOX.

(J)

2. STRIP INSULATION FROM WIRE AND ATTACH SLEEVE.

—ADJUSTABLE LINKED RUBBER SEAL (TYP)

WALL SLEEVE (TYP) WEEP RING (TYP)

CEMENT MORTAR COATED WALL SPOOL

PIPE/STRUCTURE

1. FILE PIPE/STRUCTURE TO BARE METAL AND CLEAN SURFACE.

DISC

WELD METAL

-GRAPHITE MOLD

FILL POST WITH CONCRETE AND ROUND OFF TOP

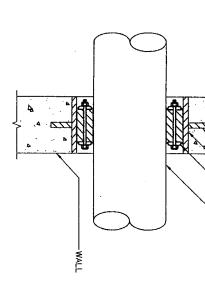
EXOTHERMIC WELD -BITUMASTIC COATING -WELD CAP -WIRE DETAIL SHOWS PROCEDURE FOR HORIZONTAL ORIENTATION. PROCEDURE FOR VERTICAL ORIENTATION IS SIMILAR.

4. COVER CONNECTION WITH BITUMASTIC COATING OVER ALL EXPOSED METAL, PLACE WELD CAP OVER CONNECTION. REPAIR ALL DAMAGE TO COATING AND LINING IN ACCORDANCE WITH MFG RECOMMENDATIONS.

3. HOLD MOLD FIRMLY WITH OPENING AWAY FROM OPERATOR, IGNITE WITH FLINT GUN REMOVE SLAG FROM CONNECTION WITH CHIPPING HAMMER.

PIPE/STRUCTURE

¥RE



WALL PENETRATION

FLUSH-TO GRADE TEST STATION BOX (5)

TO STRUCTURES AND/OR ANODES

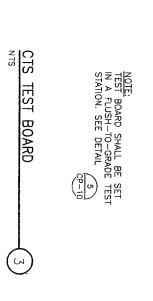
DATE: 00T08ER 7, 2008 CP-10 SHEET 49

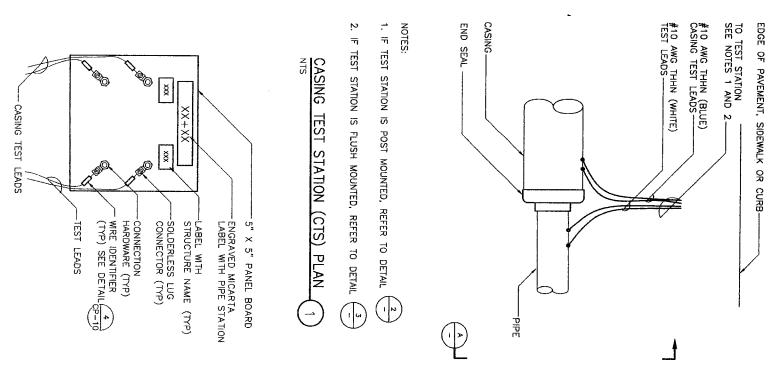
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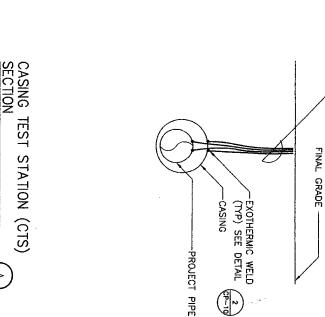
12 gr

62

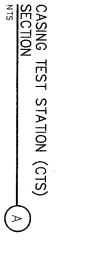
-IORZ LE NO: DRAWNG SCALE CATHODIC PROTECTION MISCELLANEOUS DETAILS 1 OF 2 Y OF HOUSTON SEGMENT 5

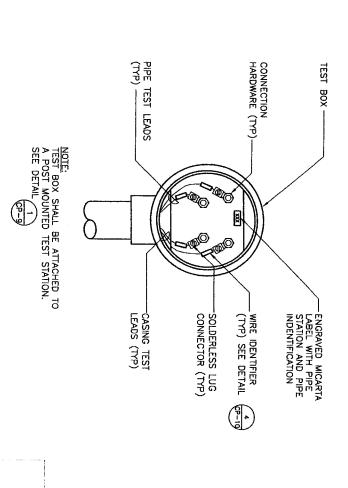




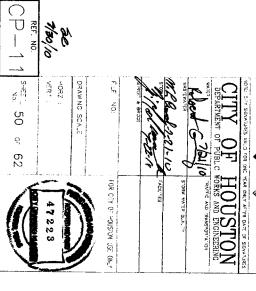


TO TEST STATION SEE NOTES 1 AND 2





POST MOUNTED CTS TEST BOX

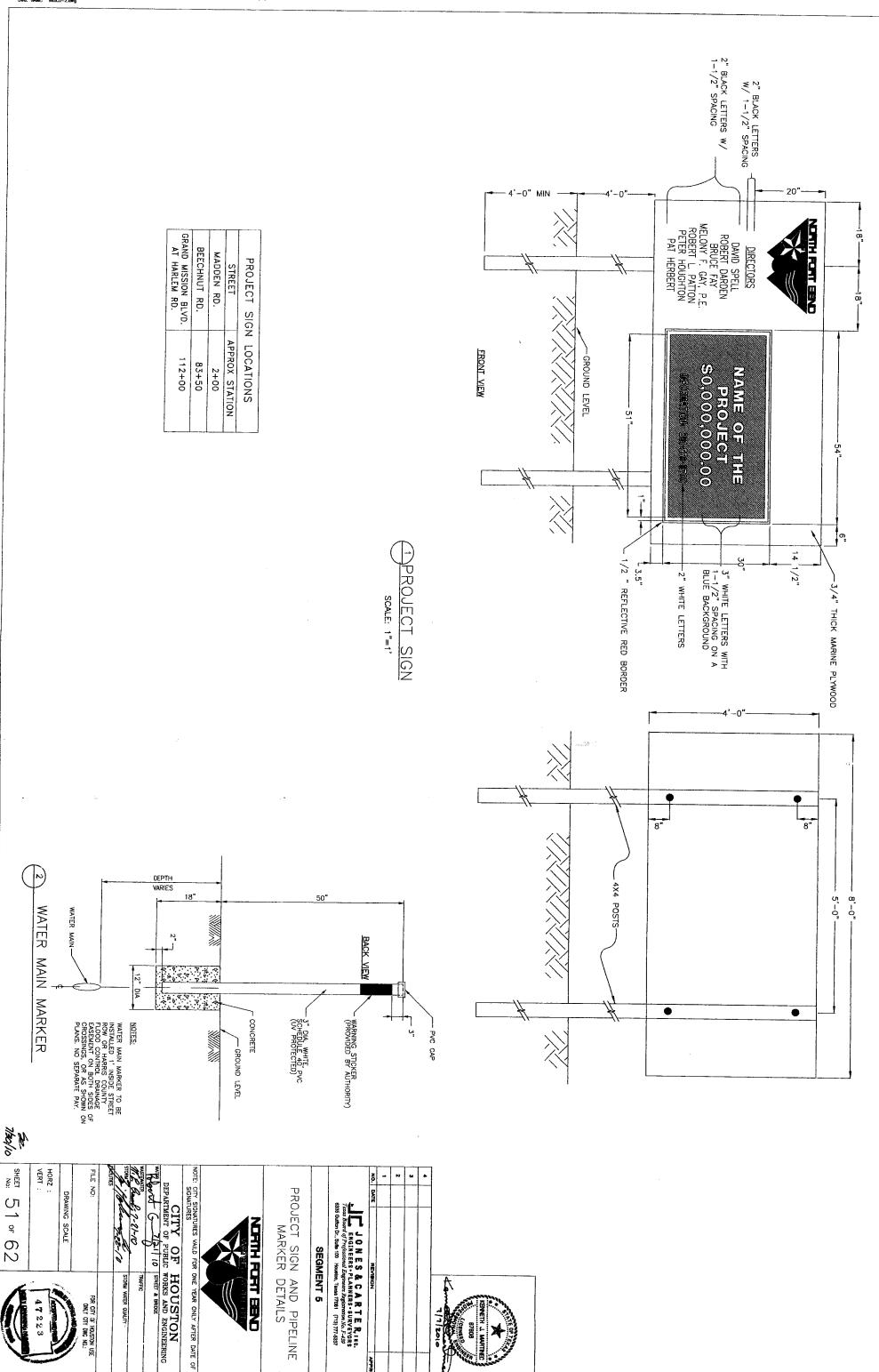


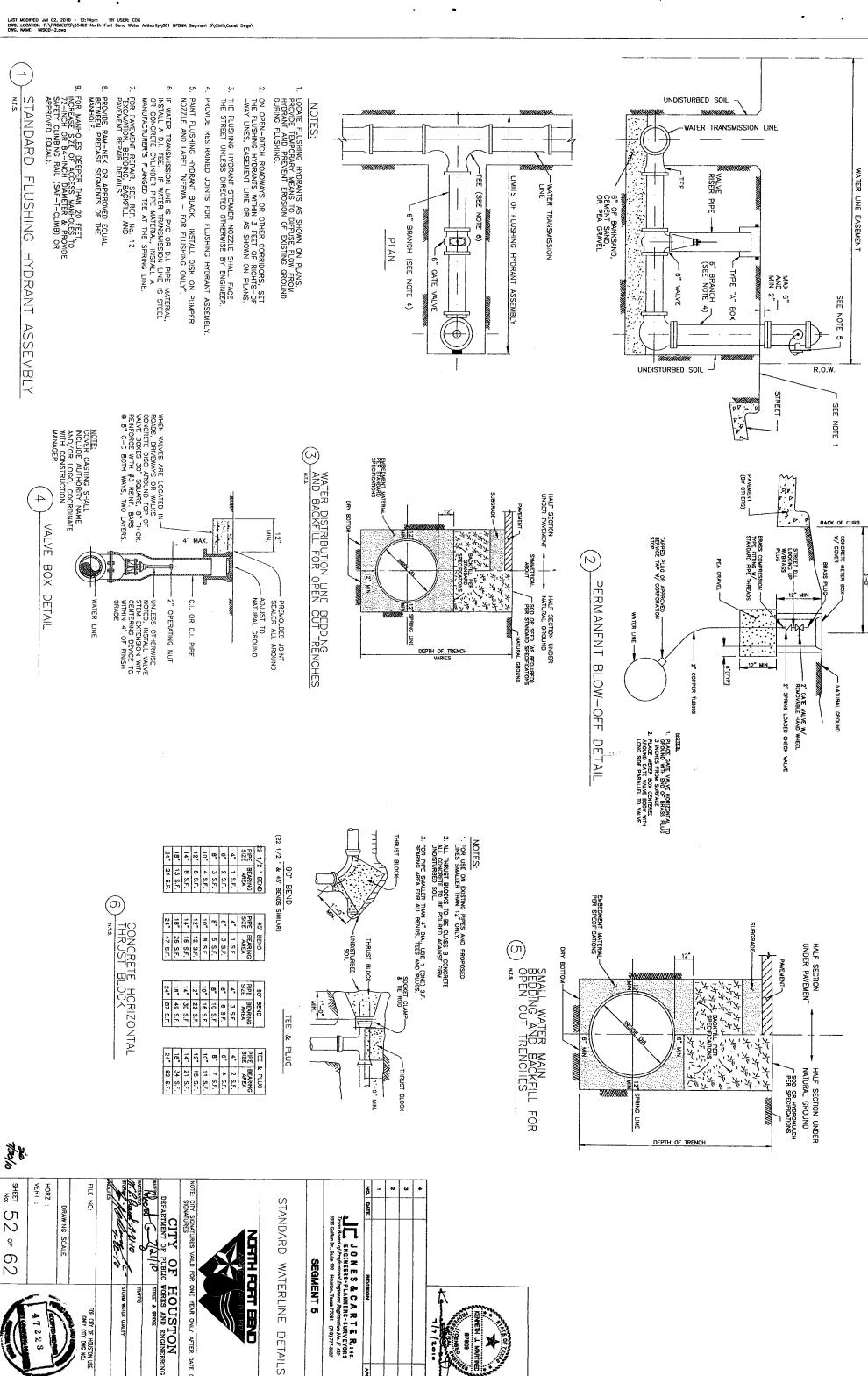
OCTOBER 7, 2009

CATHODIC PROTECTION
MISCELLANEOUS DETAILS
2 OF 2

Type Consulting Engineers
F-9154 SEGMENT 5

Houston, TX 77065 Tel. (832) 467-2194, Fax (832) 467-0429





47228

HOUSTON WORKS AND ENGINEERING

YEAR ONLY AFTER DATE OF

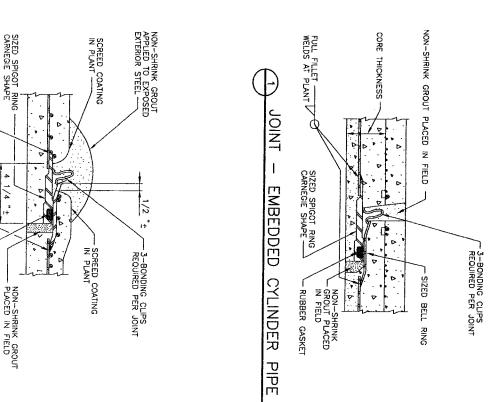
STREET & BRIDGE

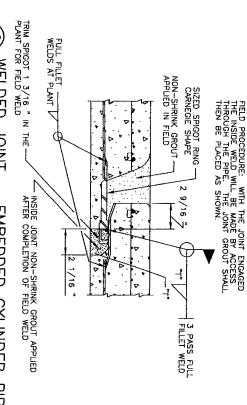
STORM WATER QUALITY

JR CITY OF HOUSTON USE ONLY CITY DWG NO.:

(CONCRETE EMBEDDED CYLINDER PIPE IS SIMILAR, AS APPROVED BY ENGINEER) (SEE NOTE 4)

NTERNAL ELLIPTICAL DISHED HEAD PLUGINED CYLINDER PIPE





(FOR WATERLINES 36-INCHES DIAMETER AND LARGER WELDED JOINT EMBEDDED CYLINDER PIPE

NON-SHRINK GROUT APPLIED AFTER COMPLETION OF FIELD WELD.

SCREED COATING ON SPIGOT & BELL TO ALLOW ACCESS FOR FIELD ______

-₫

FILLET WELD ON EACH SIDE OF ROD. (COMPLETE FUSION REQUIRED BETWEEN BELL & ROD)

3 1/4

WELDS AT PLANT V

INTERIOR BUTT WELD WITH NO EXTERIOR — INTERIOR BUTT WELD FOR 10 GA. TO 3/16 " THIC CYLINDERS WELDED FOR THRUST. DOUBLE—WELDED M3515 OR M3818 SPIGOTS REQUIRED FOR TICKER CYLINDERS WELDED FOR TUDIEST CYLINDERS WELDED FOR

THICK

CARNEGIE SPIGOT

WELDED JOINT - LI

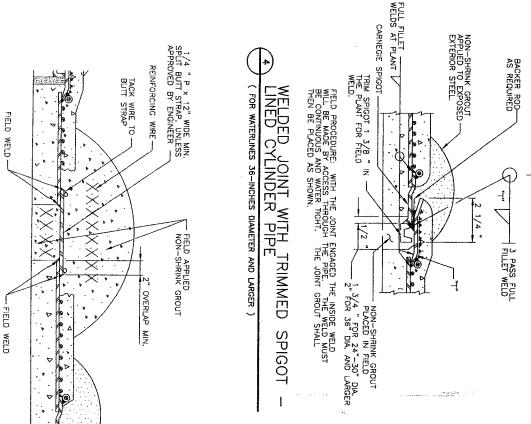
NED CYLINDER PIPE

FIELD PROCEDURE: PLACE A 3/8" DIA STEEL ROD SNUGLY INTO THE RECESS BETWEEN THE BELL AND SPIGOT. THE WELD MUST BE CONTINUOUS.

(FOR WATER LINES LESS THAN 36-INCHES IN DIAMETER)

NOTES

- T = PIPE WALL THICKNESS AND SIZE OF FILLET ATTACHMENT WELD.
- P = STEEL CYLINDER PERIMETER.
- INSTALL 6~INCH FLANGED OUTLETS ON EITHER SIDE OF THE DISHED HEAD PLUG
- DISHED HEAD PLUGS SHALL BE CAPABLE OF WITHSTANDING THE HYDROSTATIC TEST PRESSURE FROM ETHER SIDE, WITH THE OPPOSITE SIDE EMPTY OF WATER.
- FLEXIBLE MASTIC SEALER SHALL BE APPLIED TO THE EXTERIOR OF THE JOINT PRIOR TO JOINT ENGAGEMENT WHEN PIPE IS INSTALLED IN A TUNNEL OR ENCASE—MENT PIPE.



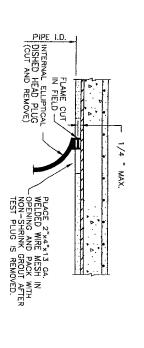
WELDS AT PLANT

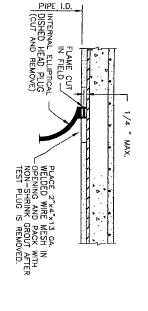
RUBBER GASKET

2" GATE VALVE TO BE REMOVED; APPLY NON-SHRINK GROUT AFTER HYDRO TEST

(FOR WATER LINES LESS THAN 36-INCHES IN DIAMETER)

LINED CYLINDER PIPE





CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING
WATER & BROCE HORZ : NOTE: CITY SIGNATURES VAILD FOR ONE SIGNATURES FILE NO: DRAWING SCALE aller in STORM WATER QUALITY YEAR ONLY AFTER DATE OF 47223 ONLY OF HOUSTON USE

NICRETE EMBEDDED CYLINDER PIPE SHOWN ONCRETE LINED CYLINDER PIPE IS SIMILAR, APPROVED BY ENGINEER) JPTICAL PLUG REMOVAL YLINDER PIPE 7/36/10 COH LOG NO: 09-0679

SHEET No: 54 ° 62

(INTERNAL WELD NOT REQUIRED FOR 30" DIAMETER PIPE AND SMALLER)

CLOSURE PIECE

INTERNAL ELLIF DISHED HEAD I EMBEDDED CYL

SEGMENT 5

APPROV.

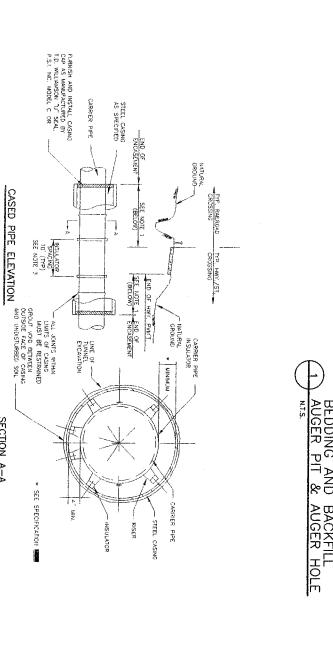
I JONES & CARTER, INC.
ENGINEERS - PLANNERS - SURVEYORS
Texas Board of Professional Engineers Ingeteration No. 7-439
8335 Guitton Dr., Suite 100 Housion, Texas 77081 (713) 777-8337

PRESTRESSED CONCRETE CYLINDER PIPE DETAILS

1. LENGTH OF ENCASEMENT SHALL BE AS SHOWN ON THE PLAN & PROPILE DRAWINGS.
2. LAY CASING PIPE IN OPEN CUT, TUNKEL OR BORE, AS NOTED ON PLAN & PROPILE DRAWINGS.
3. SEE SPECIFICATIONS TOR APPROPRIATE MODEL ACCORDING TO PIPE DIAMETER.
4. PROVIDE CATHODIC PROTECTION FOR CASING.

CASING DETAIL (FOR WATER MAINS LESS THAN 36-INCHES IN DIAMETER)

SECTION A-A



BEDDING AND BACKFILL AUGER PIT & AUGER HOLE

AUCER PIT

DISTANCE BETWEEN TWO AUGER PITS

4-EMBEDMENT MATERIAL PER STANDARD SPECIFICATIONS

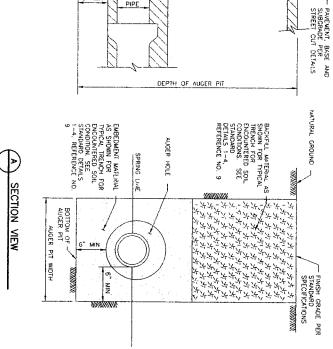
DRY BOTTOM

PER STANDARD
SPECIFICATIONS

LENGTH OF THE AUGER PIT

ELEVATION

AUGER PIT



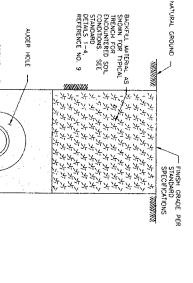
2. MINIMUM CLEARANCES SHOWN ON THE PLAN & PROFILE DRAWNOS ARE TO THE O.D. OF TUNNEL LINER. ADJUST PROFILE AS REQUIRED TO MAINTAIN CLEARANCES IDENTIFIED. NO SEPARATE PAY.

PROVIDE CATHODIC PROTECTION FOR LINER,
ALL JOINTS WITHIN LIMITS OF CASING MUST BE RESTRAINED.

TUNNEL (FOR WATER M

CONTRACTOR TO PROVIDE SUBMITTAL OF THE TUNNEL LINER DESIGN SIGNED AND SEALED BY A PROFESSIONAL ENGINEER.

1. DETAIL IS FOR PRESTRESSED CONCRETE CYLINDER PIPE (STEEL PIPE ALTERNATE SIMILAR).



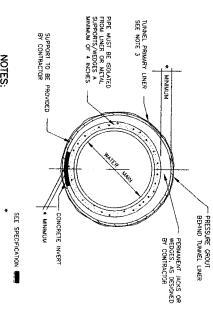
NATURAL GROUND

HALF SECTION
UNDER PAVEMENT

HALF SECTION UNDER NATURAL GROUND

BACKFILL PER STANDARD SPECIFICATI

VAVAVAVAVAVAVAVAVAVA



Location	Casing Type	Watermain Diameter	Water main Material	Casing I.D./ Wall Thickness (In/in)	2-Flange Liner 4-Flange Diameter/ Diame Thickness (In/in) Thicknes	4-Flange Diame Thickness
Netco Pipeline Crossing	Steel Casing/Primary	42	Steel	60/0.375	56/0.0747 in	56/0.17
(Sheet 18 Sta. 44+50 to 44+76)	Tunnel Liner		PCCP	66/0.375	64/0.0747 in	64/0.17
Teppco Pipeline Crossing	Steel Casing/Primary	24	Steel	<u>36/0.21</u> 9	36/0.0747 in.	36/0.17
(Sheet 19 Sta. 47+71 to 48+40)	Tunnel Liner		PCCP	36/0.0219	48/0.0747 in.	48/0.17
Beechnut Road Crossing	Steel Casing/Primary	24	Stee!	36/0.219	36/0.0747 in.	38/0.17
(Sheet 26 Sta. 82+28 to 83+53)	Tunnel Liner		PCCP	36/0.0219	48/0.0747 in.	48/0.17
Houston Pipeline and Kinder Morgan Pipeline Crossings (Sheet 34 Sta. 121+59 to 122+41)	Steel Casing/Primary Tunnel Liner	24	Steel PCCP	<u>36/0.21</u> 9 36/0.0219	36/0.0747 in 48/0.0747 in	36/0,17 48/0.17

Casing Type	Watermain Diameter	Water main Material	Casing I.D./ Wall Thickness (In/in)	2-Flange Liner 4-Flange Liner Diameter/ Diameter/ Thickness (In/in) Thickness (in/in)	4-Flange Liner Diameter/ Thickness (in/in)
l Casing/Primary	42	Stee!	60/0.375	56/0.0747 in.	56/0,179 in.
Tunnel Liner		PCCP	66/0.375	64/0.0747 in.	64/0,179 in.
i Casing/Primary	24	Stee!	<u>36/0.21</u> 9	36/0.0747 in.	36/0,179 in.
Tunnel Liner		PCCP	36/0.0219	48/0.0747 in.	48/0,179 in.
d Casing/Primary Tunnel Liner	24	Steel	<u>36/0.21</u> 9 36/0.0219	36/0.0747 in. 48/0.0747 in.	36/0.179 in. 48/0.179 in.
l Casing/Primary	24	Steel	<u>36/0.21</u> 9	36/0.0747 in.	36/0,179 in.
Tunnel Liner		PCCP	36/0.0219	48/0.0747 in.	48/0,179 in.

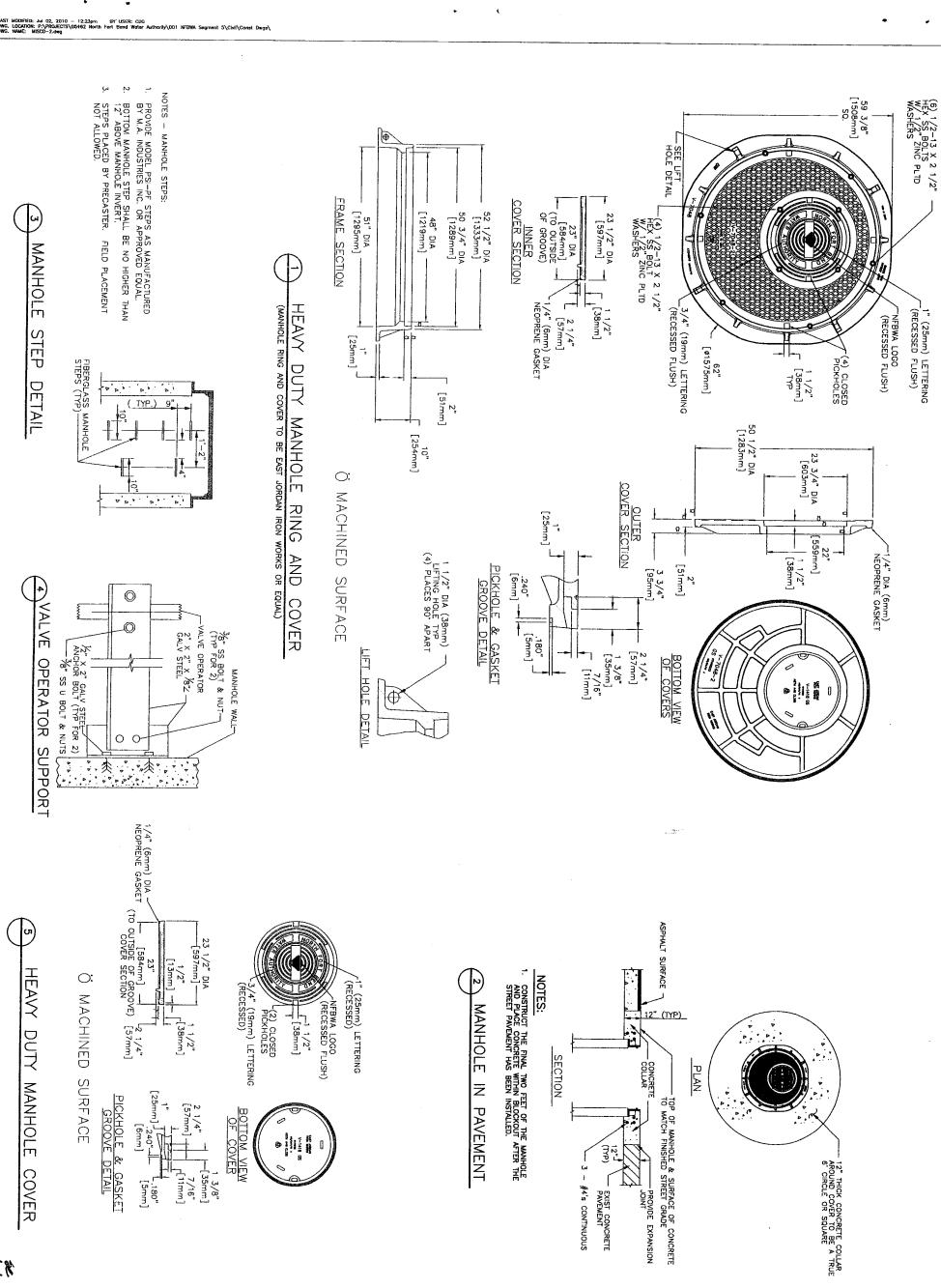
VOTE: CITY SIGNATURES VAILD SIGNATURES

ONE YEAR ONLY AFTER DATE OF

7/20/10									
SHEET 55 of 62	HORZ :	DRAWING SCALE	FILE NO:	retries c	STORMON STORMO	W.P. d 2-10	Color Color	CITY OF DEPARTMENT OF PUBLIC	
The same of	47223		FOR CITY OF HOUSTON USE ONLY CITY DWG NO.:		STORM WATER QUALITY	TRAFFIC	STREET & BRADGE	OF HOUSTON PUBLIC WORKS AND ENGINEERING	

TRENCHLESS CONSTRUCTION DETAILS JONES & CARTER, INC.
ENGINEERS - PLANNESS - SURVEYORS
Traus Board of Professional Engineers Reguments No. 1-439
8339 Guillion Dr., Suite 100 Houston, Texas 17081 (713)171-5337 SEGMENT 5

ENNETH J. MARTINEC



1/00/10 0/00/10

No: HEEH HORZ :

. တ က DRAWING SCALE 62 R CITY OF HOUSTON USE

FILE NO:

DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

STORM WATER QUALITY

CITY SIGNATURES VAILD FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES

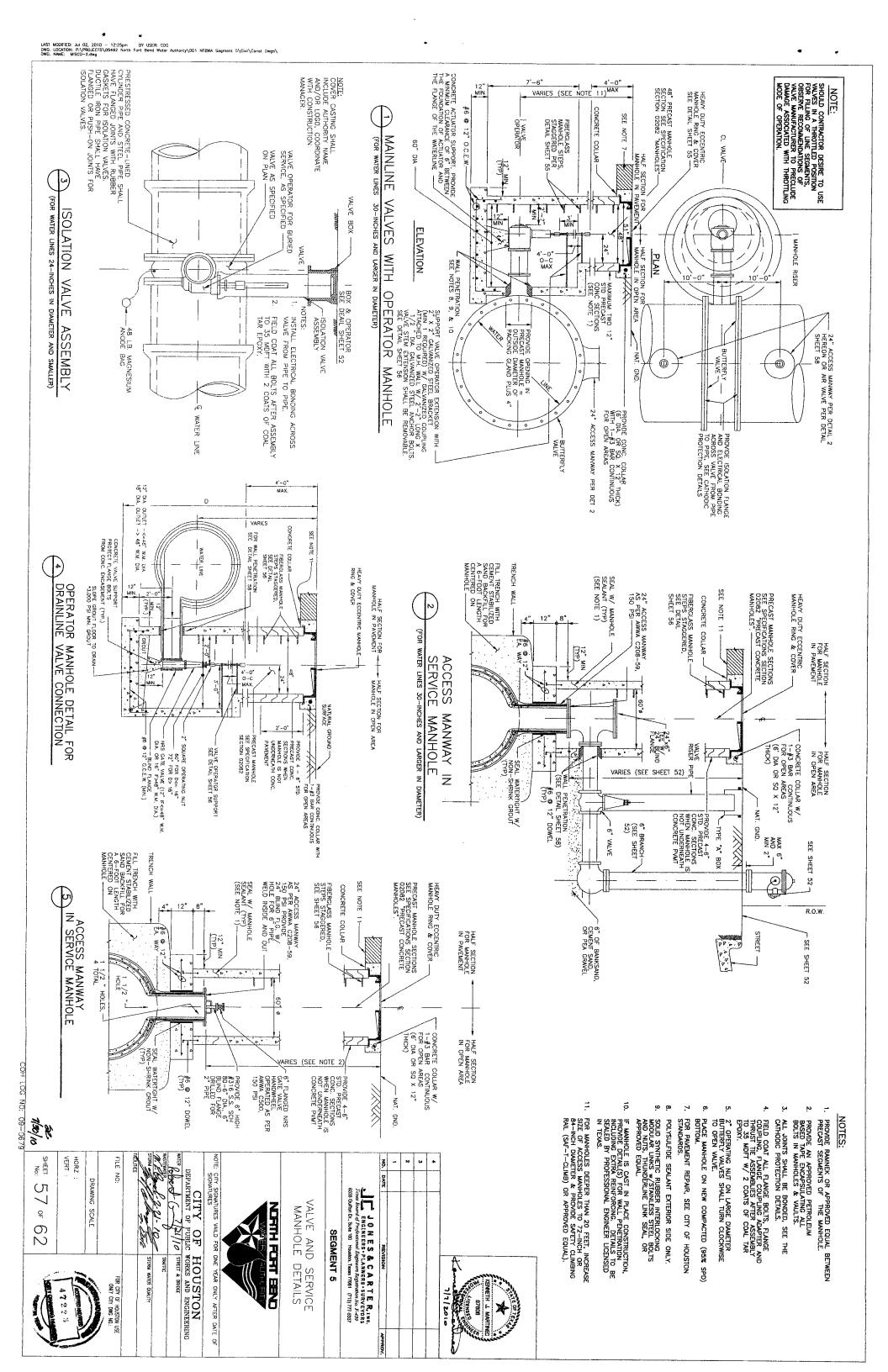
HEAVY DUTY MANHOLE RING AND COVER DETAILS

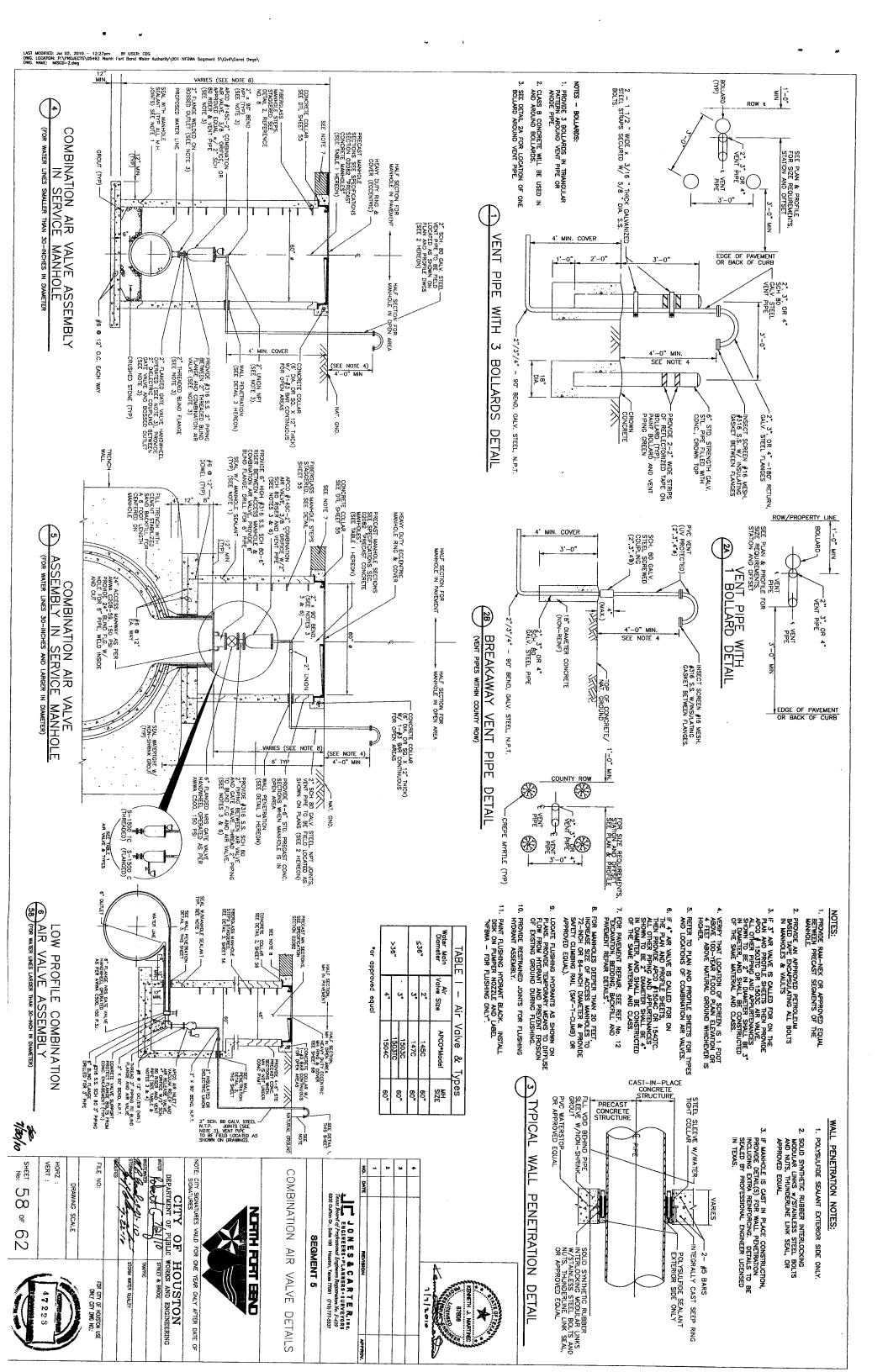
DATE

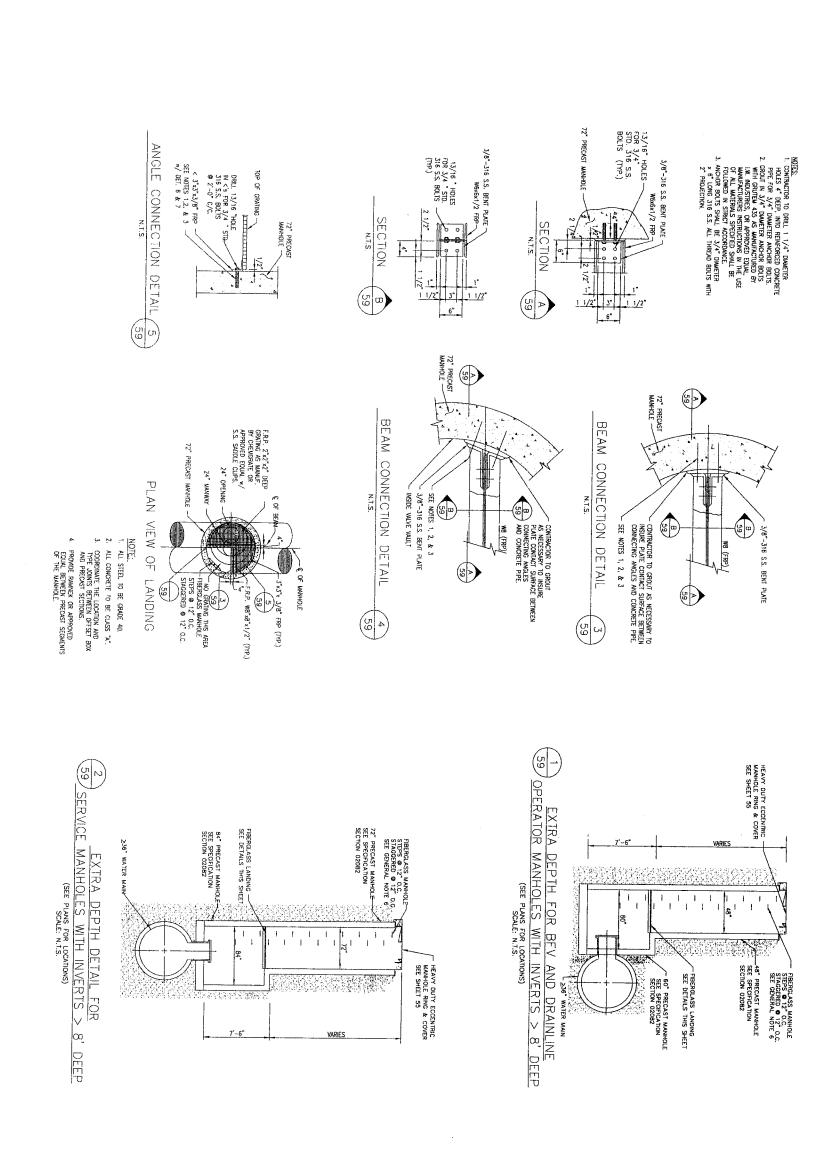
JONES & CARTER, Inc.

ICAS Board of Professional Engineers Registration No. F-439
838 Guiton Dr., Salin 100 Houston, Texas 17081 (713)777-5337

SEGMENT 5







COH LOG NO: 09-0679 1/sel/0 No:

DRAWING SCALE 59 °₁ 62 STORM WATER QUALITY FOR CITY OF HOUSTON USE ONLY CITY DWG NO.:

HORZ VERT : FILE NO:

DEPARTMENT OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

101/10 STREET & BRODGE CITY SIGNATURES VAILD SIGNATURES YEAR ONLY AFTER DATE OF

SEGMENT 5

EXTRA DEPTH MANHOLE DETAILS

JONES & CARTER, INC.
ENGINEERS-PLANNERS-SURVEYORS
Texas Board of Professional Engineers Registration No. F-139
6335 Gulfton Dr., Sulle 100 Houston, Texas 77061 (713)777-5337

NOTES:

1. SEE TRENCH SAFETY SYSTEM SPECIFICATIONS FOR MAXIMUM ALLOWABLE SLOPES.
2. FOR WET BOTTOM EXCANATION LIMITS OF CRUSHED STONE, EXTEND AS SHOWN.
2. FOR WET BOTTOM EXCANATION LIMITS OF CRUSHED STONE, EXTEND AS SHOWN WALLS.
3. KEY CONCRETE TRENCH DAM MINIMUM OF 6 INCHESS NITO TRENCH BOTTOM AND WALLS.
4. TRENCH DAM MAY BE FORRIED OR UNFORMED. ACTUAL SHAPE OF CONCRETE TRENCH DAM SCROSS SECTION MAY BE DETERMINED BY CONTRACTOR IN FELD, MEETING 6 INCH MINI. THICKNESS AND 6 INCH MAY DEPTH RECOMPREMENTS.
5. BINCH MEY DEPTH RECOMPREMENTS.
6. INCH MEY DESCRIBED AND SHALL BE PLACED AT LEAST 5 FT. AWAY FROM ANY PIPELINE STRUCTURE (EACH SIDE). SEE SECTION 02317 FOR OTHER RECOMPRACTED TO PROPER DENSITIES AFTER MOVING SUPPORT SYSTEM FORWARD.
7. USE POLYETHYLENE WRAP AS A BOND BREAKER BETWEEN CEMENT STABILIZED SAND AND PIPE.

WATER LINE WITH HEIGHT OF EARTH COVER GREATER THAN 16'

PIPE ZONE (NOTE 7) CMNT STABILIZED SAND (SEE SPECS)

—FILER FABRIC (FOR MET COMMINGS) (MIN. L.P. 12")
—BEDDING MATERAL UNIFORMLY FACED & COMMINGED TO 95%
—STD. FROCTOR BELOW MATERIANE
—MET BOTTOM EXCANATION GRADE
—MET BOTTOM EXCANATION GRADE
—MET BOTTOM EXCANATION GRADE
—MET BOTTOM EXCANATION GRADE
—MET BOTTOM SELOW BOTTOM
—MET COMMINDS BELOW BOTTOM
—MET COMMINDS BELOW BOTTOM
—MET COMMINDS BELOW BELOW FOR
—MET COMMINDS BELOW BELOW FOR
—MET COMMINDS BELOW BELOW FOR
—MET COMMINDS BELOW BOTTOM
—MET COMMI

ABOVE PIPE ZONE EARTH BACKFILL

1 NW.

SHAPE TO CONFORM TO-PIPE O.D. AFTER COMPACTION OF BEDDING AND PRIOR TO PLACEMENT OF PIPE. ABOVE PIPE ZONE BANK RUN SAND SPECIFICATIONS) EARTH BACKFILL NDER OPEN AREAS | UNDER PAVEMENT FILTER FABRIC WET BOTTOM EXCAVATION GRADE (USE 12" CRUSHED STONE FOR WET CONDITIONS BELOW BOTTOM OF PIPE. NO SAND BELOW PIPE REQUIRED.) COMPACT TO 95% STD. PROCTOR () ± ₹

1) (FOR LARGE DIAMETER WATER LINE)

NOTES.

1. SEE TRENCH SAFETY SYSTEM SPECIFICATIONS FOR MAXIMUM ALLOWABLE SLOPES.
2. FOR WET BOTTOM EXCAVATION LIMITS OF CRUSHED STONE, EXTEND AS SHOW.
2. FOR WET BOTTOM EXCAVATION LIMITS OF CRUSHED STONE, EXTEND AS SHOWN.
3. KEY CONCRETE TRENCH DAM MINIMUM OF 6 INCHES INTO TRENCH BOTTOM AND WALLS.
4. TRENCH DAM MAY BE FORMED OR UNFORMED, CITUAL SLAPE OF CONCRETE TRENCH DAM CROSS SECTION MAY BE DETTERMINED BY CONTRACTION IN FIELD, MEETING 6-INCH MONDAM SHALL BE PLACED AT LEAST 5 FT, AWAY FROM ANY PRELINE STRUCTURE (EACH SIDE), SEE SECTION 0.2317 FOR OTHER REQUIREMENTS.
(EACH SIDE), SEE SECTION 0.2317 FOR OTHER REQUIREMENTS.
(EACH SIDE), SEE SECTION 0.2317 FOR OTHER RECOMPACTED TO PROPER DENSITIES AFTER MONNES UPPORT SYSTEM FORWARD.

PROVIDE CEMENT STABILIZED SAND
IN THE PIFE, DONE TOR ENCASSMENT IN
THE PIFA. SEE NOTE 7.
FILTER FABRIC (FOR WET CONDITIONS)
(VINL LAF 12)
FILDEDING MATERIAL IMPORMLY
FILMED & COMPACTED TO 95%
STD. PROCTOR BELOW WATERINE
DRY BOTTOM EXCAVATION GRADE

TYPICAL F REPAIR OF
BASE PAVEMENT

FURIE MATE EXISTING ROADWAY DOES
HAVE ONE
ECOURSE MATERIAL SHALL CONSIST OF THE
OWNICE DE TONE
HAT TAX ASSHALTIC BASE COURSE (BLACK BASE)
"ROCKLED COURSE COURSE COURSE
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"ROCKLED COURSE OF THE PARTY OF

SAWCUT P SURFACE COURSE CK COAT -PRIME COAT FOR CI COAT FOR CRUSHED STONE
MONOLITHIC CURB SEE NOTE 4

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

NOTES:

1. MIN. THICKNESS 6" FOR ROADWAY WIDTH LESS THAN OR EQUAL TO 27" F/F OF CURB.

2. MIN. THICKNESS 7" FOR ROADWAY WIDTH GREATER THAN 2.7" F/F OF CURB.

3. MIN. THICKNESS 8" FOR MAJOR THOROUGHFARES.

4. REINFORCING STELL ARE SHOWN ON TABLE 1 & M. 1.

5. SEAL CONCRETE JOINTS BEFORE APPLYING ASPHALT OVERLAY

CENTEN 1 MARTINES

REINF, CONC. PVMT. 6" CEMENT STABILIZED BASE HALF - SECTION HALF - SECTION CONCRETE P'NA'T.
W/ASPHALT OVERLAY 3" MIN CLR. FOR REBA BEND STEEL BACK
TO ORIGINAL POSITION
& SPLICE (MIN. 22") SAWCUT DEPTH VARIES (TYP.) (MIN. 2" INTO CONC. PVMT.) EE.₹ EXCEPTION

VEMENT DIAMETER LENGTH SPACING (IN.)

DOWEL SIZES & SPACINGS
NSION JOINTS FOR
PAVEMENT THICKNESS.
DOWEL SIZES & SPACING

REBAR SIZE & SPACING OF LAP (N.)

A #3 AT 11 NN. B) #4 AT 20 NN. 16 & 22

#4 AT 17 NN. B) #4 AT 15 NN. 22

A #5 AT 23 NN. B) #4 AT 15 NN. 22

A #5 AT 12 NN. B) #5 AT 18 NN. 22

A #6 AT 10 NN. B) #5 AT 18 NN. 22 & 27

A #6 AT 10 NN. B) #5 AT 18 NN. 22 & 27

A #6 AT 10 NN. B) #5 AT 18 NN. 22 & 27

A #6 AT 10 NN. B) #5 AT 18 NN. 22 & 27

A #6 AT 10 NN. B) #5 AT 18 NN. 22 & 27

A #6 AT 10 NN. B) #5 AT 18 NN. 22 & 27

A #6 AT 10 NN. B) #5 AT 18 NN. 22 & 27

A #7 PENANGON JOINTS FOR REINFORCED PAREMENTS

ENT. GHAMOE THE DOMELS SIZES & SPACING

ENT. GHAMOE THE DOMELS SIZES & SPACING

NN. DOMETER SIGN LOOK & SPACED

NN. DOMETER SIGN LOOK & SPACED

NN. DOMETER SIGN THE TOLLOWING:

NEW THE SIGN THE TOLLOWING:

: REINFORCING STEEL INFORMATION FOR PAYEMENT THECKNESS (F) WITH CAUSION JOHN SPACING - 80 FT.

OF LAP (IN.)

EXCAVATION, BEDDING, BACKFILL, PAVEMENT REPAIR DETAILS JONES & CARTER, INC.

I ONES & CARTER, INC.

Texas Board of Professional Regiment Regimental Alb. F-439

8235 Guillan Dr., Sulfa 100 Houston, Tanas 17081 (713) 171-5337 SEGMENT 5 1/2/20

GENERAL NOIES.

ROADWAY EXCAVATION, SITE GRADING, AND HYDROMULCH SEEDING OR SODDING WITHIN R.O.W. AND /OR LIMITS OF CONSTRUCTION IN ACCORDANCE WITH CONSTRUCTION SPECIFICATIONS.

MEASUREMENT AND PAYMENT (INCLUDING DRIVEWAYS) SHALL BE AS PER SPECIFICATION SECTIONS UNLESS OTHERWISE SHOWN ON BID FORM.

NEW CONCRETE PAVEMENTS TO BE SAME THICKNESS AS EXISTING, UNLESS OTHERWISE DIRECTED BY THE NFBWA. NEW ASPHALTIC PAVEMENTS SHALL BE MIN. 2" HMAC TOP, W/BASE AND SUBGRADE PER DETAILS AND SPECIFICATIONS.

STREETS OR ORVIYMYS SHALL BE REPAIRED OR REPLACED USING HIGH EARLY STREAGYH CONGRUETE AS NOCHED ON RECORDING TO PANCHENT REPLACEMENT SOHEDULE WHERE PROVIDED, OR AS DIRECTED BY NEBWA.

ALL PAVEMENT REPLACEMENT SHALL BE CONDUCTED IN ACCORDANCE WITH APPLICABLE COUNTY CONSTRUCTION SPECIFICATIONS. ANY REMOVAL AND REPLACEMENT OF PAVEMENT NOT IDENTIFIED ON THE DRAWMOS SHALL BE COORDINATED WITH THE PROJECT MANAGER AND THE NEBWA. APPLICABLE TO EXISTING CONCRETE AREAS THAT REQUIRE REMOVAL AND REPLACEMENT CONCRETE DUE TO OPEN TRENCH (EXCLUDE THE MEDIAN ISLAND).

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CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING CITY SIGNATURES VAILD FOR SIGNATURES STREET & BRIDGE 1- 20 % ONE YEAR ONLY AFTER DATE OF ALTIVITO BISLYM MUSICS 짱

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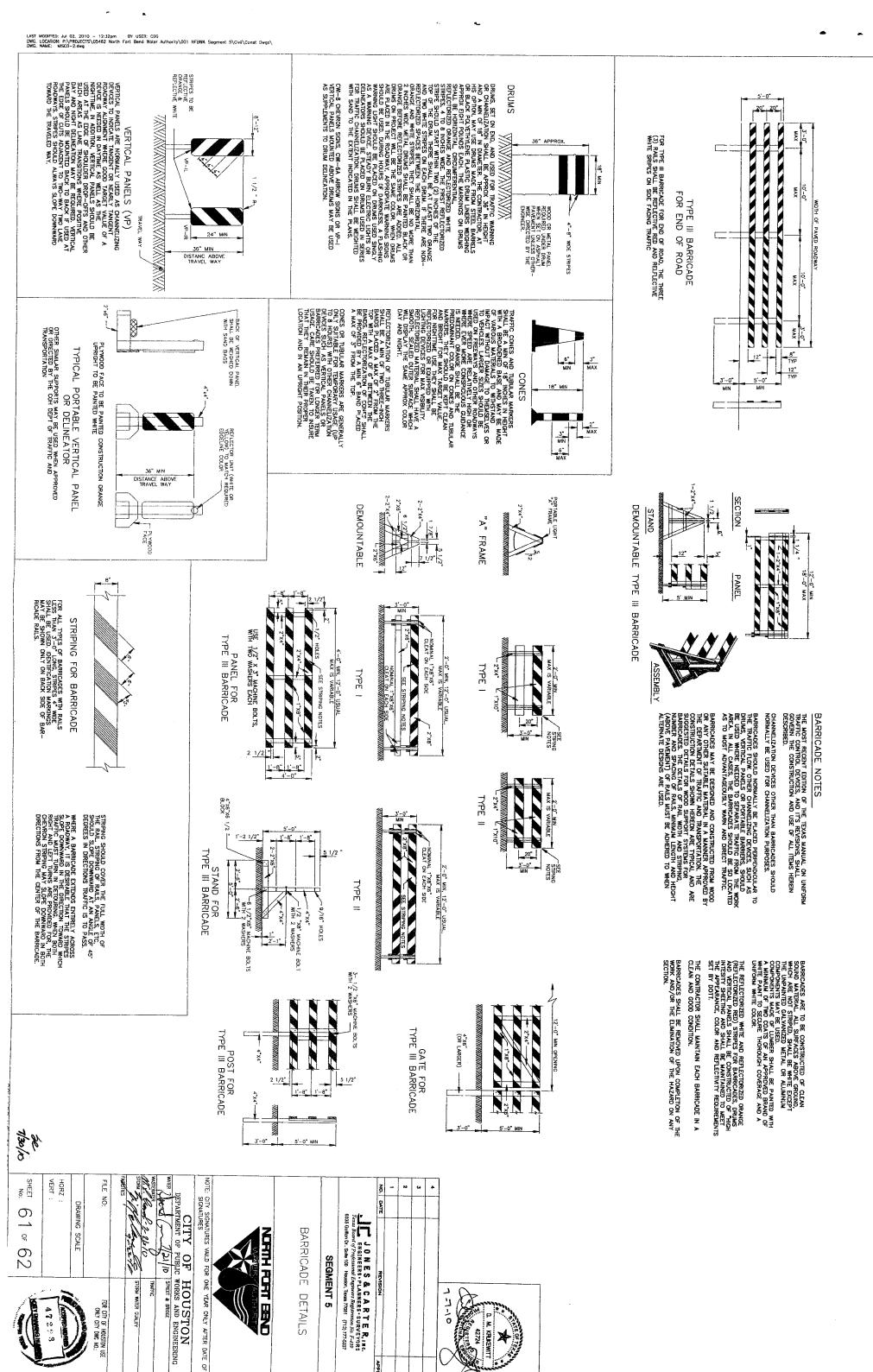
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OR CITY OF HOUSTON

3. PROVIDE COMPSE CAMPAGAMAGREGATE MIX FOR FILL MATERIAL FOR BAGS. USE ONLY PARTICLES CONSISTING OF CLEAN, MAD, DURRBLE MATERIALS FREE FROM ADMERBYT COATINGS. SUIT, ALKALL DIFT, CLAY, LOAM, SHALE, SOFT OR FLAY MATERIALS, OR ORGANIC AND INJURIOUS MATTER.

REMOVE SEDIMENT DEPOSIT WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-THIRD THE HEIGHT OF THE BARRIER.

INLET PROTECTION

BARRIERS FOR

STAGE II INLETS

TORMAS

2. PROVIDE WOVEN OR UNWOVEN GEOTEXTILE FILTER FABRIC FOR BAGS. 1. BAGS OR WATTLES CAN BE USED FOR THIS APPLICATION. GENERAL NOTES:

SEE CONSTRUCTION HANDBOOK SECTION 4.3.4 FOR SANDBAG DESIGN AND MAINTENANCE REQUIREMENTS

SET POSTS AT REQUIRED SPACING AND DEPTH. EXCAVATE 6" x 6" TRENCH UPSLOPE ALONG THE LINE OF POSTS. FILTER FABRIC FILTER PABRIC-EXTENSION OF FABRICINTO TRENCH. ALTERNATE V-TRENCH EXTENSION OF FABRIC INTO TRENCH SECURELY FASTEN MESH FENCING TO POSTS WITH STAPLES OR THE WIRES.
 SECURELY FASTEN FILTER FABRIC TO MESH FENCING. GENERAL NOTES: POST OR EQUIVALENT WIRE POST 1'-6" MIN. 3'-0" MAX 1'-0" MIN ATTACH FILTER MATERIAL TO WIRE FENCE AND EXTEND IT INTO THE TRENCH. BACKFILL AND COMPACT THE EXCAVATED SOIL. 2. SECURE MESH FENCING TO POSTS GALVANIZED WELDED WIRE MESH OR EQUIVALENT TO SUPPORT FILTER FABRIC 1'-6" MIN. 3'-0" MAX. COMPACTED SOIL FILTER FABRIC EXTENSION OF FILTER FABRIC INTO TRENCH. SECTION A-A SEE REINFORCED FILTER FABRIC BARRIER DETAIL FOR REINFORCED FILTER FABRIC BARRIER REQUIREMENTS WOOD OR METAL POST A-A STAKE WATTLE OR WEIGH DOWN WITH SANDBAGS POST - TELINI WOOD OR METAL POST WATTLE STAKED
WITH 2 STAKES PER
BALE OR WEIGHTED
WITH SANDBAGS PLAN PLAN L VARIES - VARIABLE DISTANCE 36 INCHES MINIMUM FILTER FABRIC BARRIER -- WOOD OR METAL BEAM METAL BEAM

PERMEABLE, SEPARATION GEOTEXTILE FABRIC FOR FULL WIDTH AND LENGHT OF EXIT

PUBLIC RIGHT-OF-WAY

L 8" MIN.

PROFILE

GRADED TO PREVENT RUN-OFF FROM LEAVING SITE

PROVIDE APPROPRIATE TRANSITION BETWEEN STABILIZED CONSTRUCTION ENTRANCE AND PUBLIC RIGHT-OF-WAY

- WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER, OVERLAP $\boldsymbol{6}$ INCHES AT A POST, FOLD TOGETHER, AND ATTACH TO A POST.
- REMOVE SEDIMENT DEPOSITS WHEN SILT REACHES ONE-THRD OF THE HEIGHT OF THE FENCE IN DEPTH.

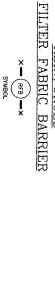


EXISTING CONCRETE CURB

SXISTING INLET

BALGEO GRAVEL
SANDBAGE PLACED SNU
AROUND INLET

PLACE BAGS SNUG AGAINST CURB





2. CON

GENERAL NOTES:

COARSE AGGREGATE ~ 3" TO5" GRANULAR FILL (BROKEN
CONCRETE IS NOT PERMITTED) PLAN

YIEW

PUBLIC PUBLIC PARY

1. MINIMUM LENGTH IS AS SHOWN ON CONSTRUCTION DRAWINGS OR 50 FEET, WHICHEVER IS MORE.

INLET PROTECTION BARRIERS

7. ALTERNATIVE METHODS OF CONSTRUCTION INCLUDE: --CEMENT STABILIZED SOIL: COMPACTED CEMENT STABILIZED SOIL, LIMESTONE AGGREGATE, OR OTHER FILL MATERIAL IN AN APPLICATION OF THICKNESS OF 8 INCHES. --WOOD MATS: ONK OR OTHER HAROWOOD TIMBERS PLACED EDGE TO EDGE AND ACROSS SUPPORT WOODEN BEAMS WHICH ARE PLACED ON TOP OF EXISTING SOIL IN AN APPLICATION THICKNESS OF 6 INCHES. --STEEL MATS: PERFORATED MATS PLACED ACROSS PERPENDICULAR SUPPORT MEMBERS. STABILIZED CONSTRUCTION ACCESS

6. PERIODICALLY TURN AGGREGATE TO EXPOSE A CLEAN DRIVING SURFACE.

5. PROVIDE PERIODIC TOP DRESSING WITH ADDITIONAL COARSE AGGREGATE TO MAINTAIN THE REQUIRED DEPTH OR WHEN SURFACE BECOMES PACKED WITH MUD.

ACCOMMODATE A TRUCK WASHING AREA. PROVIDE OUTLET SEDIMENT TRAP FOR THE TRUCK WASHING AREA.

SC SC SC



COH LOG NO: 09-0679 1/30/10 SHEET No: HORZ : FILE NO: DRAWING SCALE o2 읶 \circ STORM WATER CHALITY TRAFFIC ONLY CITY DWG NO.: 47223

JONES & CARTER, INC.

HOLINERS - PLANNERS - SURVEYORS

Texas Board of Professional Engineers Regardance No. F-439

6335 Guillon Dr., Sulles 100 Houston, Texas 77081 (713) 777-5337 SEGMENT 5

STORM WATER POLLUTION PREVENTION DETAILS

NOTE: CITY SIGNATURES VAILD FOR ONE YEAR ONLY AFTER DATE OF SIGNATURES DEPARTMENT OF PUBLIC WORKS AND ENGINEERING RULE TO TO THE STREET & BROOK