

REVIEW BY FORT BEND COUNTY COMMISSIONERS COURT

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

Right of Way Permit
 Commercial Driveway Permit
Permit No: 2017-15468

Applicant: Reliance Construction Services, L.P./Costello, Inc.

Job Location Site: New Territory, Sugar Land, TX 77479

Bond No. **Date of Bond:** 8/9/2017 **Amount:** \$185,993.00

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

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

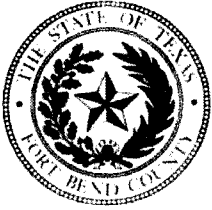
On this 22nd day of August, 2017, Upon Motion of Commissioner Meyers, seconded by Commissioner Morales, duly put and carried, it is ORDERED, ADJUDGED AND DECREED that said notice of said above purpose is hereby acknowledged by the Commissioners Court of Fort Bend County, Texas, and that said notice be placed on record according to the regulation order thereof.

Signature
By: Cheryl O. Ay
County Engineer

Presented to Commissioners Court and approved.
Date Recorded 9-6-2017 Comm. Court No. 12K

N/A
By: _____
Drainage District Engineer/Manager

Clerk of Commissioners Court
By: Ronda Willis
Deputy



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

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

- Right of Way Permit
 Commercial Driveway Permit

Permit No: 2017-15468

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

(1) COMPLETE APPLICATION FORM:

- a. Name of road, street, and/or drainage ditch affected.
 b. Vicinity map showing course of directions
 c. Plans and specifications

(2) BOND:

- County Attorney, approval when applicable.
- Perpetual bond currently posted. Bond No: _____ Amount: _____
- Performance bond submitted. Bond No: XXXXXXXXXX Amount: \$185,993.00
- Cashier's Check Check No: _____ Amount: _____

(3) DRAINAGE DISTRICT APPROVAL (WHEN APPLICABLE):

Drainage District Approval

Date

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

Charley O. Ay

Permit Administrator

8/14/17

Date



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

BOND NO [REDACTED]

THE STATE OF TEXAS §
COUNTY OF FORT BEND §

KNOW ALL MEN BY THESE PRESENTS:

THAT WE, Reliance Construction Services, L.P. whose address is 4302 Almeda Genoa Road, Houston, Texas 77048; (713) 991-6685, hereinafter called the Principal, and Continental Casualty Company, a Corporation existing under and by virtue of the laws of the state of Illinois and authorized to do an indemnifying business in the state of Texas, and whose principal office is located at 333 S. Wabash Avenue, Chicago, IL 60604; (312) 822-5000, whose officer residing in the State of Texas, authorized to accept service in all suits and actions brought whining said state is John G. Sutter and whose address is 5999 Summerside Drive, Suite 200, Dallas, TX 75252, 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 One Hundred Eighty Five Thousand Nine Hundred Ninety Three and 00/100 Dollars (\$185,993.00) current, lawful money of the United States of America, to be paid to said Robert E. Hebert, County Judge of Fort Bend County, Texas, or his successors in office, to which payment well and truly to be made and done, we, the undersigned, bind ourselves and each of us, our heirs, executors, administrators, successors, assigns, and legal representatives, jointly and severally, by these presents.

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

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

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

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

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

EXECUTED this 9th day of August , 2017 .

Reliance Construction Services, L.P.

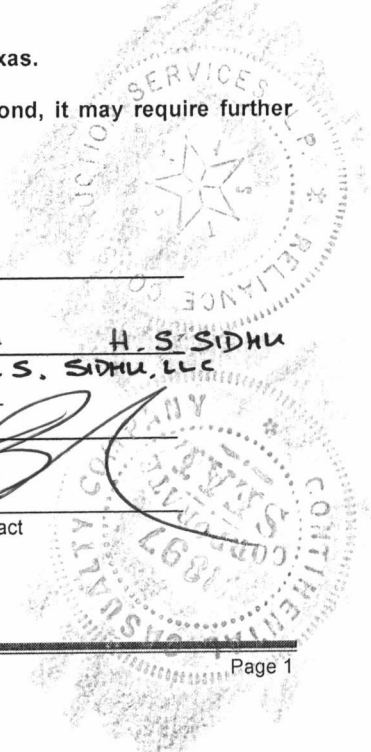
PRINCIPAL

H.S. Sidhu H.S. SIDHU
BY PRESIDENT OF H.S. SIDHU, LLC
GENERAL PARTNER

Continental Casualty Company

SURETY

[Signature]
BY Steven K. Brandon, Attorney-in-Fact



POWER OF ATTORNEY APPOINTING INDIVIDUAL ATTORNEY-IN-FACT

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

T J Griffin, William A Pirret, Steven K Brandon, John L Budde, Susan L Small, Terence J Griffin, Individually

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

- In Unlimited Amounts -

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

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

In Witness Whereof, the CNA Companies have caused these presents to be signed by their Vice President and their corporate seals to be hereto affixed on this 1st day of July, 2015.



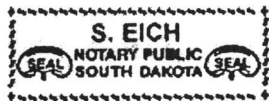
Continental Casualty Company
National Fire Insurance Company of Hartford
American Casualty Company of Reading, Pennsylvania

Paul T. Bruflat

Paul T. Bruflat Vice President

State of South Dakota, County of Minnehaha, ss:

On this 1st day of July, 2015, before me personally came Paul T. Bruflat to me known, who, being by me duly sworn, did depose and say: that he resides in the City of Sioux Falls, State of South Dakota; that he is a Vice President of Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company described in and which executed the above instrument; that he knows the seals of said insurance companies; that the seals affixed to the said instrument are such corporate seals; that they were so affixed pursuant to authority given by the Boards of Directors of said insurance companies and that he signed his name thereto pursuant to like authority, and acknowledges same to be the act and deed of said insurance companies.



My Commission Expires February 12, 2021

S. Eich

S. Eich Notary Public

CERTIFICATE

I, D. Bult, Assistant Secretary of Continental Casualty Company, an Illinois insurance company, National Fire Insurance Company of Hartford, an Illinois insurance company, and American Casualty Company of Reading, Pennsylvania, a Pennsylvania insurance company do hereby certify that the Power of Attorney herein above set forth is still in force, and further certify that the By-Law and Resolution of the Board of Directors of the insurance companies printed on the reverse hereof is still in force. In testimony whereof I have hereunto subscribed my name and affixed the seal of the said insurance companies this 9th day of August, 2017.



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

D. Bult

D. Bult Assistant Secretary

Authorizing By-Laws and Resolutions

ADOPTED BY THE BOARD OF DIRECTORS OF CONTINENTAL CASUALTY COMPANY:

This Power of Attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the Board of Directors of the Company at a meeting held on May 12, 1995:

“RESOLVED: That any Senior or Group Vice President may authorize an officer to sign specific documents, agreements and instruments on behalf of the Company provided that the name of such authorized officer and a description of the documents, agreements or instruments that such officer may sign will be provided in writing by the Senior or Group Vice President to the Secretary of the Company prior to such execution becoming effective.”

This Power of Attorney is signed by Paul T. Bruflat, Vice President, who has been authorized pursuant to the above resolution to execute power of attorneys on behalf of Continental Casualty Company.

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company by unanimous written consent dated the 25th day of April, 2012:

“Whereas, the bylaws of the Company or specific resolution of the Board of Directors has authorized various officers (the “Authorized Officers”) to execute various policies, bonds, undertakings and other obligatory instruments of like nature; and

Whereas, from time to time, the signature of the Authorized Officers, in addition to being provided in original, hard copy format, may be provided via facsimile or otherwise in an electronic format (collectively, “Electronic Signatures”); Now therefore be it resolved: that the Electronic Signature of any Authorized Officer shall be valid and binding on the Company.”

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

This Power of Attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the Board of Directors of the Company by unanimous written consent dated May 10, 1995:

“RESOLVED: That any Senior or Group Vice President may authorize an officer to sign specific documents, agreements and instruments on behalf of the Company provided that the name of such authorized officer and a description of the documents, agreements or instruments that such officer may sign will be provided in writing by the Senior or Group Vice President to the Secretary of the Company prior to such execution becoming effective.”

This Power of Attorney is signed by Paul T. Bruflat, Vice President, who has been authorized pursuant to the above resolution to execute power of attorneys on behalf of National fire Insurance Company of Hartford.

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company by unanimous written consent dated the 25th day of April, 2012:

“Whereas, the bylaws of the Company or specific resolution of the Board of Directors has authorized various officers (the “Authorized Officers”) to execute various policies, bonds, undertakings and other obligatory instruments of like nature; and

Whereas, from time to time, the signature of the Authorized Officers, in addition to being provided in original, hard copy format, may be provided via facsimile or otherwise in an electronic format (collectively, “Electronic Signatures”); Now therefore be it resolved: that the Electronic Signature of any Authorized Officer shall be valid and binding on the Company.”

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

This Power of Attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the Board of Directors of the Company by unanimous written consent dated May 10, 1995:

“RESOLVED: That any Senior or Group Vice President may authorize an officer to sign specific documents, agreements and instruments on behalf of the Company provided that the name of such authorized officer and a description of the documents, agreements or instruments that such officer may sign will be provided in writing by the Senior or Group Vice President to the Secretary of the Company prior to such execution becoming effective.”

This Power of Attorney is signed by Paul T. Bruflat, Vice President, who has been authorized pursuant to the above resolution to execute power of attorneys on behalf of American Casualty Company of Reading, Pennsylvania.

This Power of Attorney is signed and sealed by facsimile under and by the authority of the following Resolution adopted by the Board of Directors of the Company by unanimous written consent dated the 25th day of April, 2012:

“Whereas, the bylaws of the Company or specific resolution of the Board of Directors has authorized various officers (the “Authorized Officers”) to execute various policies, bonds, undertakings and other obligatory instruments of like nature; and

Whereas, from time to time, the signature of the Authorized Officers, in addition to being provided in original, hard copy format, may be provided via facsimile or otherwise in an electronic format (collectively, “Electronic Signatures”); Now therefore be it resolved: that the Electronic Signature of any Authorized Officer shall be valid and binding on the Company.”

FILED AND RECORDED
OFFICIAL PUBLIC RECORDS

Laura Richard



Laura Richard, County Clerk
Fort Bend County, Texas

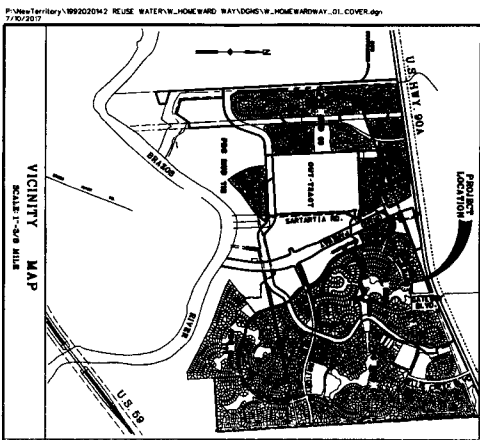
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BOND

2017097477

CONSTRUCTION PLANS FOR WEST HOMEWARD WAY (RECLAIMED EFFLUENT) RE-USED WATER LINE PHASE 2 FOR NEW TERRITORY LOCATED IN FORT BEND COUNTY, TEXAS

FORT BEND COUNTY LID 7 FORT BEND COUNTY, TEXAS



Costello

Engineering and Surveying
9990 Richmond Avenue, Suite 450 N
Houston, Texas 77042
(713) 782-7189 (713) 782-5800 Fax
TERRITORY REG. NO. 280
TERRITORY REG. NO. 104546

JOB NO. 190600-148
DATE: JULY, 2017

APPROVED: *[Signature]*
DATE: 25 July 2017

811
Call before you dig

CONTACT NUMBERS

CITY OF SLOAN LAND - ENGINEERING DEPT - 281-279-2786
P.E.C. HOLDING CO. #1 & #3 - OPERATION - MANICORN OPERATIONS & CONSULTING, INC. - 281-287-5511
P.E.C. HOLDING CO. #1 & #3 - ENGINEER - COSTELLO, INC. - 713-782-7788
FORT BEND COUNTY DAMAGE DISTRICT - 281-242-2803

FORT BEND COUNTY
ENGINEER: *[Signature]* P.E. 714
DATE: 7/24/17
APPROVED: *[Signature]*
DATE: 7/12/17

INDEX OF DRAWINGS

SHEET NO.	DESCRIPTION
1	CIVIL BENT
2	CONSTRUCTION NOTES
3	OVERALL LAYOUT
4	PLAN VIEW
5	SECTION VIEW
6	SECTION VIEW
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CHURCH SITE
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CLAS RIDGE SECTION
 EX. STIM.M.H.

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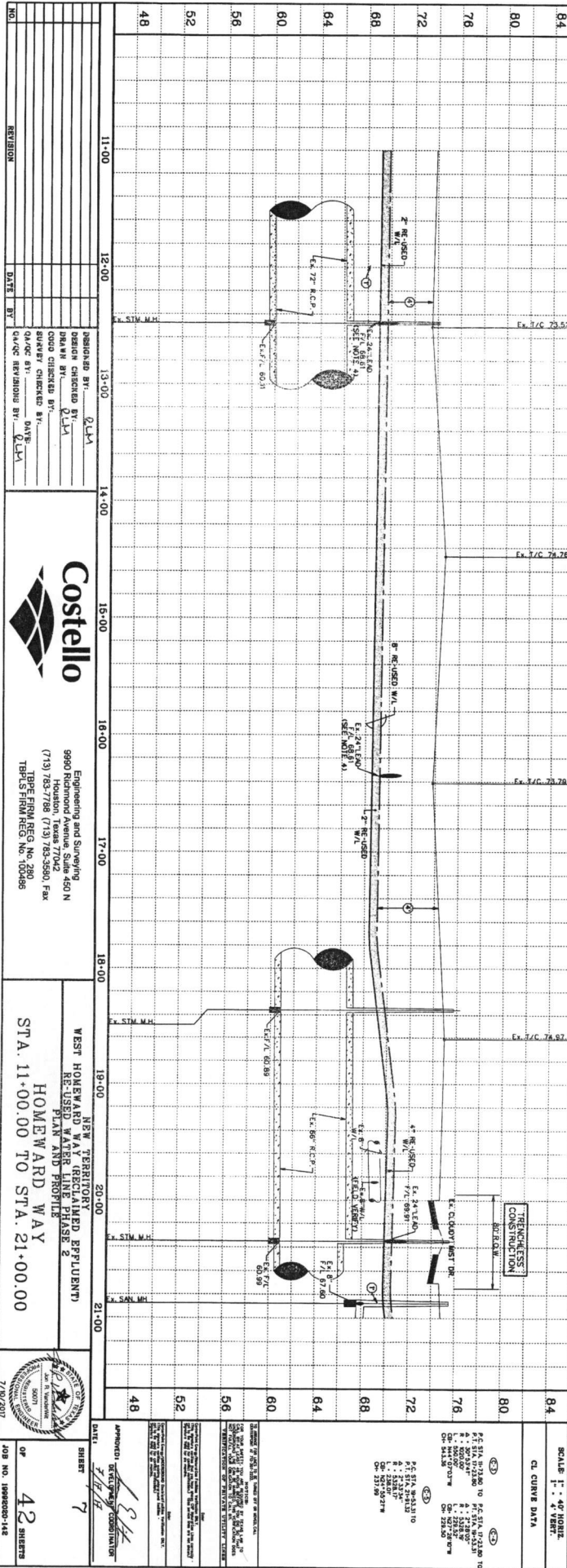


CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO STARTING CONSTRUCTION

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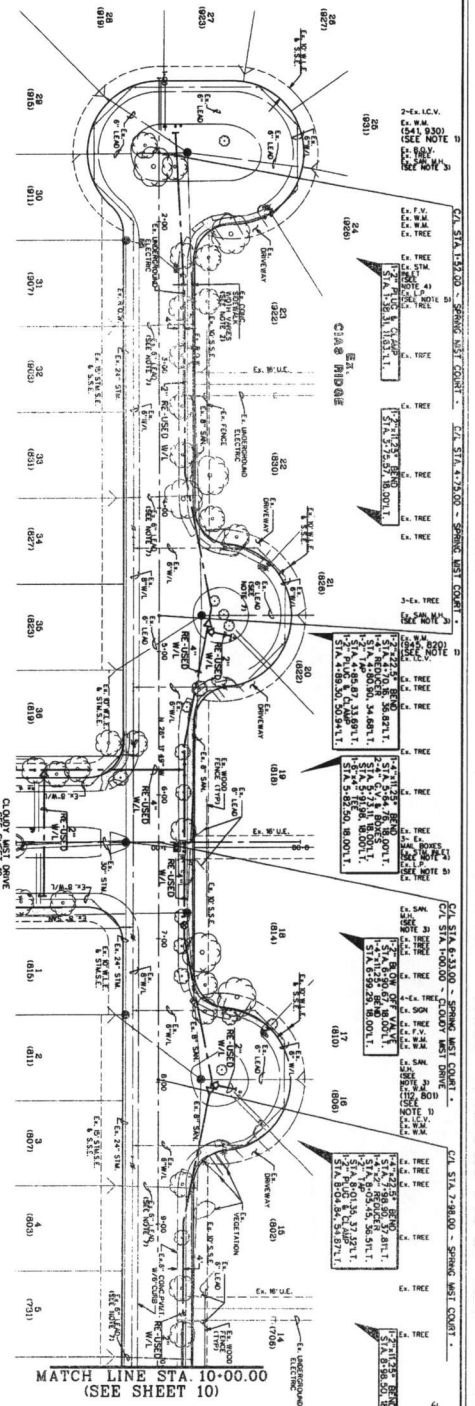
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DATE: 06/21/2017

West Howeard Way (Reclaimed Effluent) Re-Used Water Line Phase 2
 PLAN AND PROFILE
 HOWEARD WAY
 STA. 11+00.00 TO STA. 21+00.00

Costello
 Engineering and Surveying
 9980 Richmond Avenue, Suite 450 N
 (713) 783-7788 (713) 783-3580 Fax
 TBM'S FROM REG. NO. 7880
 TBM'S FROM REG. NO. 70088



Know what's below?
Call before you dig



MATCH LINE STA. 10+00.00
(SEE SHEET 10)

CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO STARTING CONSTRUCTION

LEGEND

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DESIGNED BY: CLM
 CHECKED BY: CLM
 DRAWN BY: CLM
 CADD CHECKED BY: CLM
 SURVEY CHECKED BY: CLM
 QUANTITY BY: CLM
 DATE: CLM

Costello
 Engineering and Surveying
 9900 Richmond Avenue, Suite 450 N
 Houston, Texas 77056
 (713) 787-7928 (713) 787-9590
 TBS@COSTELLO.COM
 TBS@COSTELLO.COM

NEW TERRITORY
 WEST HOBEARVARD WAY (RECLAIMED EFFLUENT)
 RE-USED WATER LINE PHASE 2
 SPRING MIST COURT
 STA. 1+00.00 TO STA. 10+00.00

APPROVED: SAW
 DATE: 7/27/2017
 SHEET: 9
 OF 42 SHEETS
 JOB NO. 1992020-148



CL STA 4+00.00 - RE-USE GROUND WATER LINE
CL STA 2+75.00 - ROADWAY W.V.

CL STA 6+00.00 - RE-USE GROUND WATER LINE
CL STA 1+00.00 - ROADWAY W.V.

CL STA 6+00.00 - RE-USE GROUND WATER LINE
CL STA 1+00.00 - ROADWAY W.V.

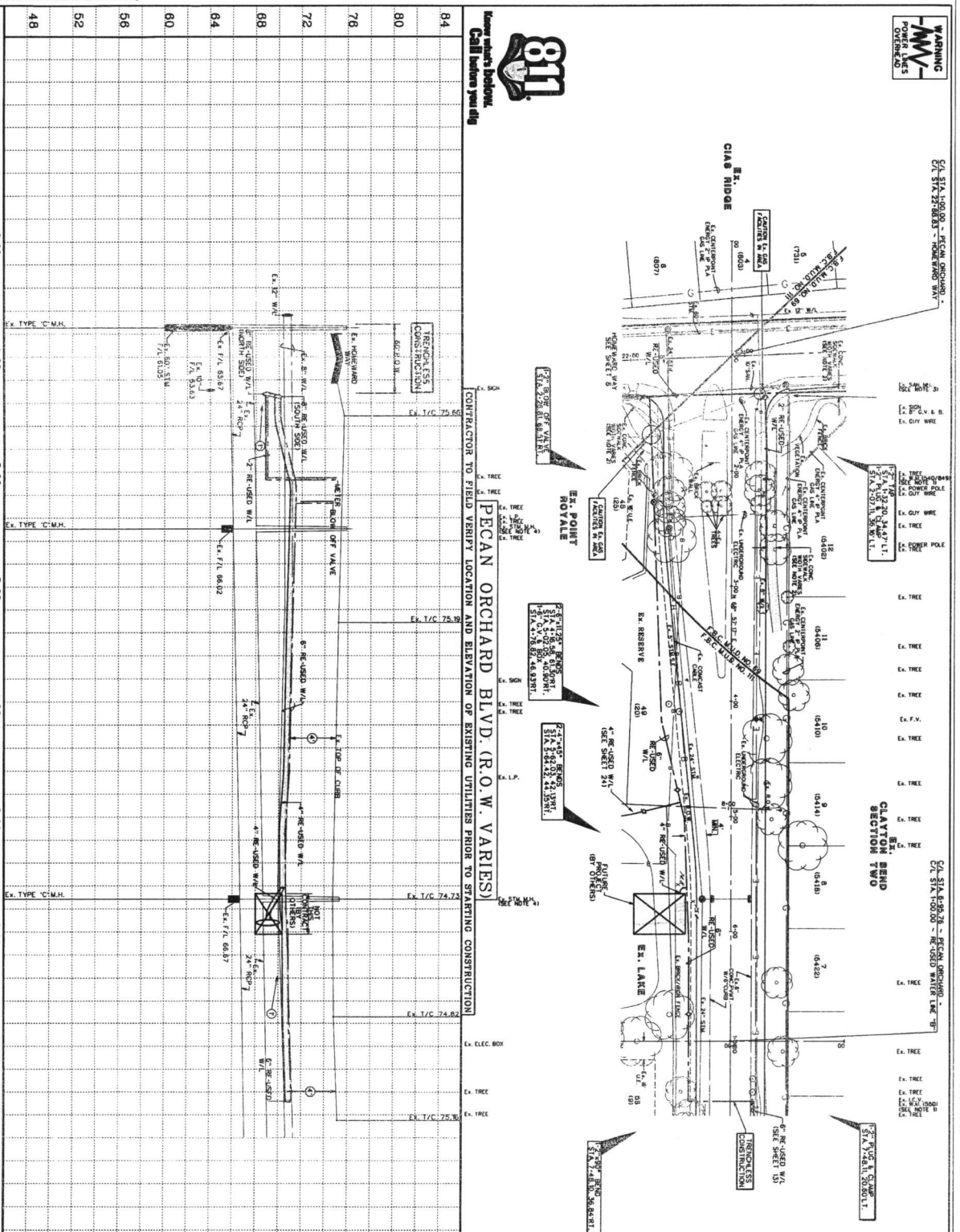
CL STA 6+00.00 - RE-USE GROUND WATER LINE
CL STA 1+00.00 - ROADWAY W.V.

CL STA 6+00.00 - RE-USE GROUND WATER LINE
CL STA 1+00.00 - ROADWAY W.V.

CL STA 6+00.00 - RE-USE GROUND WATER LINE
CL STA 1+00.00 - ROADWAY W.V.



Know what's Below.
Call before you dig



NO.	DATE	BY	REVISION
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DESIGNED BY:	CLM
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QU./QC REVISIONS BY:	CLM
DATE:	

DESIGNED BY:	CLM
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DATE:	

Costello

Engineering and Surveying
9960 Richmond Avenue, Suite 450 N
(713) 783-7788 (713) 783-3560 Fax
TBP'S FROM REG. NO. 100086

NEW TERRITORY
WEST HOWARD WAY (RECLAIMED EFFLUENT)
RE-USED WATER LINE PHASE 2
PLAN AND PROFILE
PECAN ORCHARD BLVD.

SCALE: 1" = 40' HORIZONTAL
1" = 4' VERTICAL

CL CURVE DATA

DATE: 11/11/2007

SHEET 11 OF 42 SHEETS

JOB NO. 1996020-142

WEST HOWARD WAY (RECLAIMED EFFLUENT) RE-USED WATER LINE PHASE 2 - JOB NO. 1996020-142

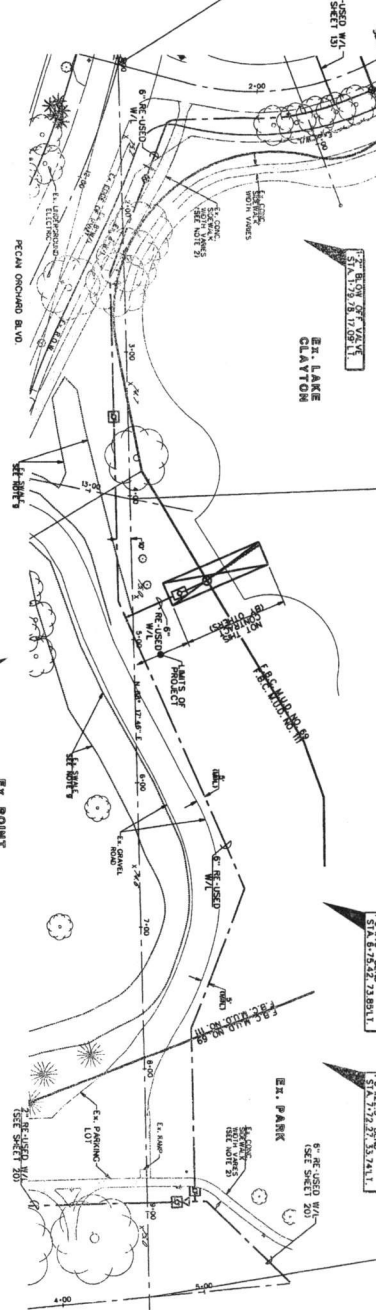
WARNING
-M-W-
 POWER LINES
 OVERHEAD

C/S STA 1+00.00 - RE-USED WATER LINE "A"
 C/L STA 1+00.00 - LANE BOUND DRIVE
 C/L STA 1+17.24 - FROM ORCHARD B.V.D.

C/S STA 4+00.00 - RE-USED WATER LINE "A"
 C/L STA 3+88.99 - RE-USED WATER LINE "A"

C/S STA 8+00.00 - RE-USED WATER LINE "A"
 C/L STA 8+00.00 - RE-USED WATER LINE "A"

NOTES:
 1. ALL DIMENSIONS ARE IN FEET AND DECIMALS THEREOF.
 2. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
 3. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
 4. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
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 8. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
 9. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
 10. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.



Know what's below.
 Call before you dig.

RE-USED WATER LINE "A"
 CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO STARTING CONSTRUCTION

SCALE 1" = 40' HORIZ.
 1" = 4' VERT.

CL CURVE DATA

NO.	REVISION	DATE	BY
84			
80			
76			
72			
68			
64			
60			
56			
52			
48			

NO.	REVISION	DATE	BY
84			
80			
76			
72			
68			
64			
60			
56			
52			
48			

DESIGNED BY: **RLM**
 DRAWN BY: **RLM**
 CHECKED BY: **RLM**
 SURVEY CHECKED BY: **RLM**
 DATE: **DATE**
 QUOTE REVISIONS BY: **RLM**

Costello

Engineering and Surveying
 9990 Richmond Avenue, Suite 450 N
 (713) 783-7788 (713) 783-3660 Fax
 TBE'S FROM REG. NO. 20046

NEW TERRITORY
 WEST HOMEWARD WAY (RECLAIMED EFFLUENT)
 RE-USED WATER LINE PHASE 2
 PLAN AND PROFILE

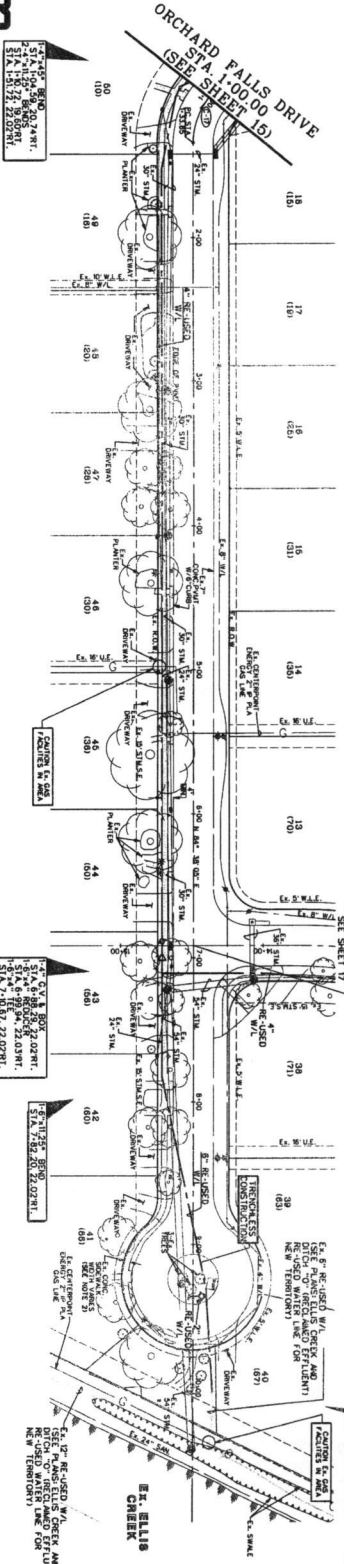
RE-USED WATER LINE "A"

APPROVED: **[Signature]**
 DATE: **DATE**

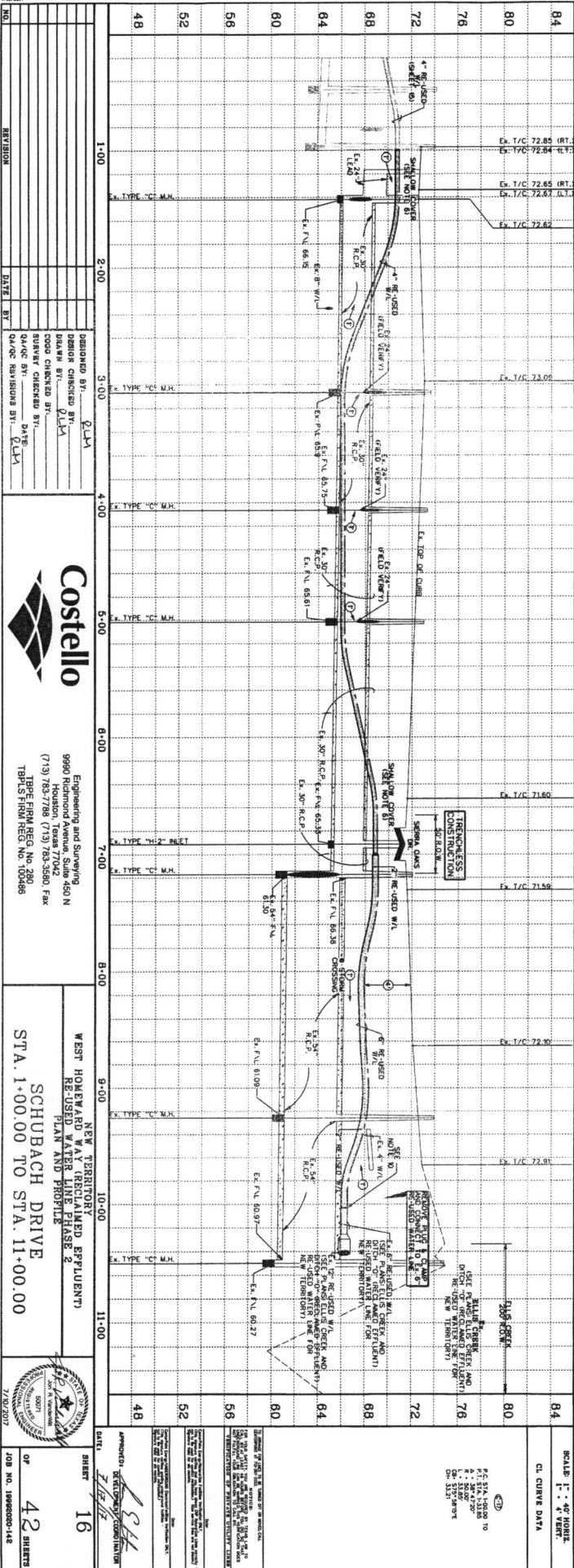
SHEET 12
 OF 42 SHEETS

JOB NO. 1999020-142

**PECAN PARK
ESTATES**



SCHUBACH DRIVE (60' R.O.W.)
CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO STARTING CONSTRUCTION



NO.	REVISION	DATE	BY

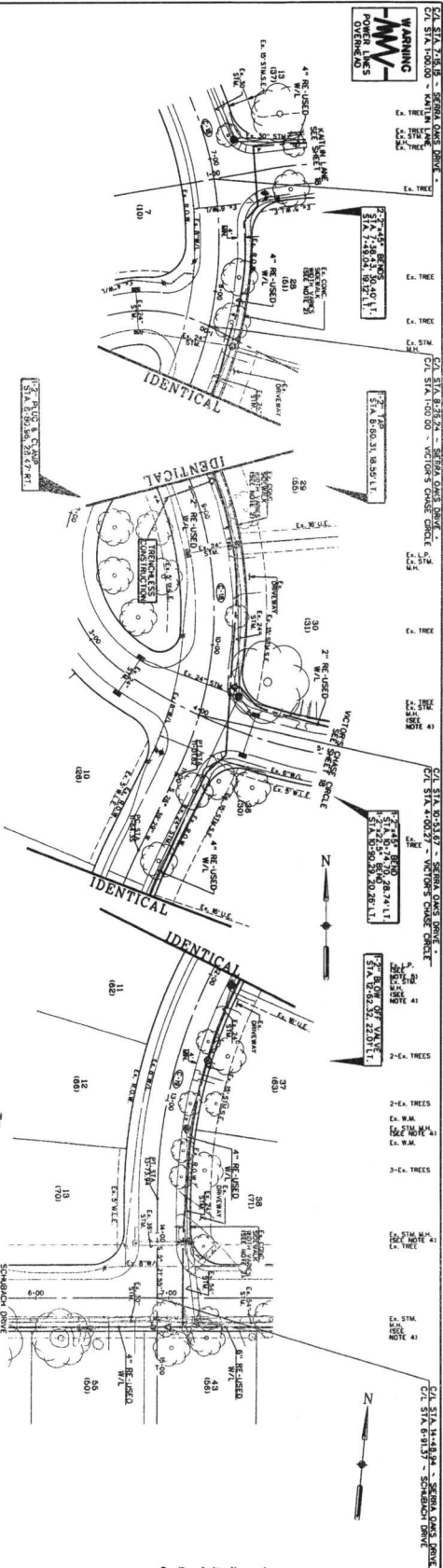
DESIGNED BY:	CLL
DRAWN BY:	CLL
CHECKED BY:	CLL
DATE:	

Costello
Engineering and Surveying
9990 Richmond Avenue, Suite 450 N
(713) 763-7788 (713) 763-5690 Fax
TSP#STW#REG# No. 00486

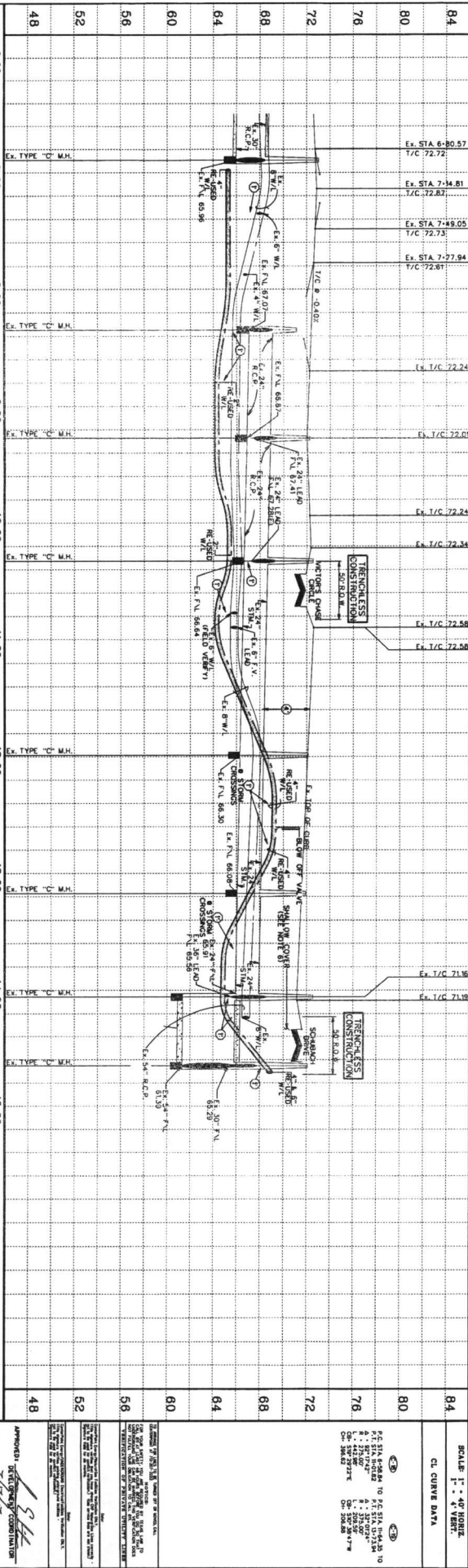
WEST HOWARD WAY (RECLAIMED EFFLUENT) RE-USED WATER LINE PHASE 2
SCHUBACH DRIVE
STA. 1+00.00 TO STA. 11+00.00

DATE: 7/25/2022
SHEET: 16
OF 42 SHEETS
JOB NO. 1998000-146

WARNING
POWER LINES
EXISTENCE



SIERRA OAKS DRIVE (50' R.O.W.)
CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO STARTING CONSTRUCTION



NO.	REVISION	DATE	BY

Costello
Engineering and Surveying
9980 Redmond Avenue, Suite 450 N
Portland, Oregon 97228
(503) 785-7788 (713) 783-3550 Fax
TBE# 51876 REG. No. 280
TBE# 51876 REG. No. 10088

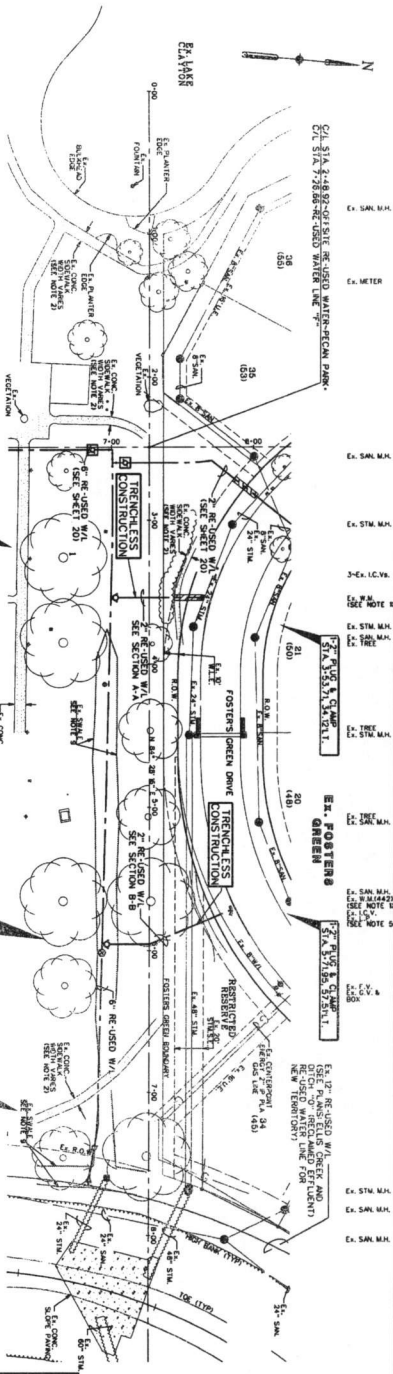
WEST HONEYARD WAY (RECLAIMED EFFLUENT)
RE-USED WATER LINE PHASE 2
SIERRA OAKS DRIVE

APPROVED: [Signature]
DATE: 7/11/2007

JOB NO. 1998080-142

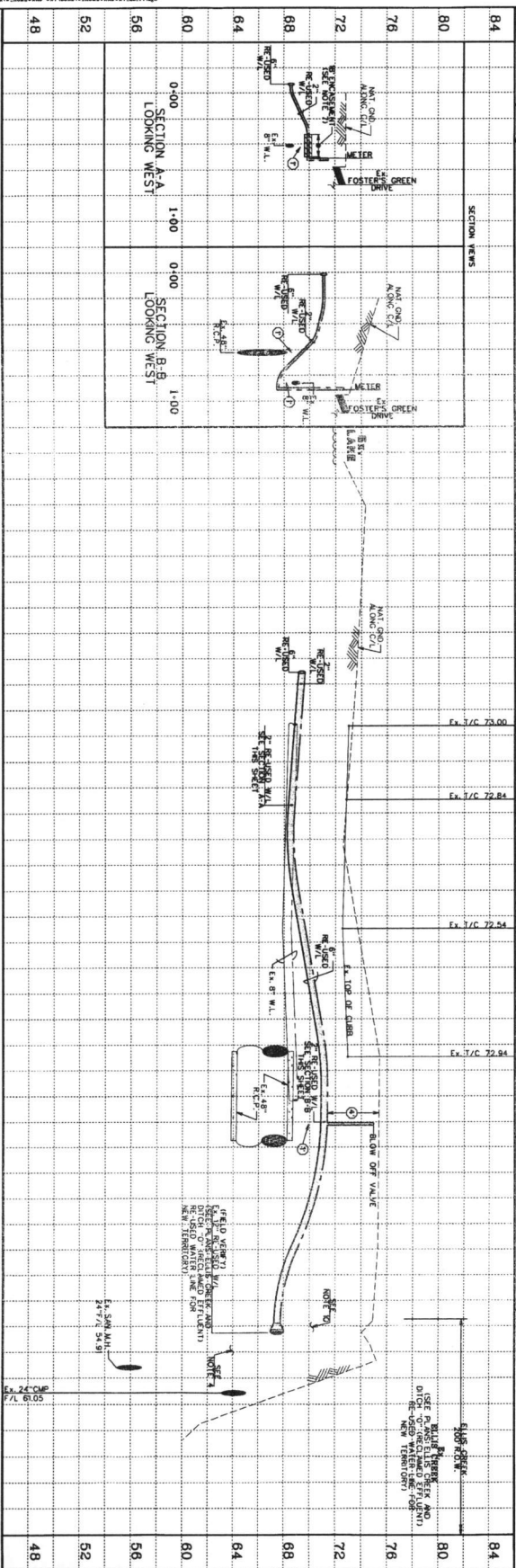


Know what's below.
Call before you dig.



CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO STARTING CONSTRUCTION

OFFSITE RE-USED WATER~PECAN PARK



DESIGNED BY:	CLL
DRAWN BY:	CLL
CHECKED BY:	CLL
DATE:	11/11/2017

SECTION VIEWS	0-00	1-00	2-00	3-00	4-00	5-00	6-00	7-00	8-00	9-00	
SECTION A-A	LOOKING WEST										
SECTION B-B	LOOKING WEST										

Costello
Engineering and Surveying
9900 Richmond Avenue, Suite 400 N
(713) 783-7788 (713) 783-5890, Fax
TPI'S FIRM REG. NO. 100486

WEST HOWARD WAY (RECLAIMED EFFLUENT)
RE-USED WATER PHASE 2
OFFSITE RE-USED WATER
~ PECAN PARK

DATE: 11/11/2017

APPROVED: [Signature]

SHEET 22 OF 42 SHEETS

JOB NO. 1998020-148

WARNING
FW
POWER LINES
OVERHEAD

811
Know what's below
Call before you dig

NO.	REVISION	DATE	BY

DESIGNED BY: DLH	CHECKED BY: DLH
DRAWN BY: DLH	QUALITY CHECKED BY: DLH
DATE: 11/11/11	DATE: 11/11/11
APPROVED BY: DLH	DATE: 11/11/11

Costello

Engineering and Surveying
 9990 Richmond Avenue, Suite 400 N
 (713) 783-7788 (713) 783-3880 Fax
 TBRLS.FIRM.REG. No. 100486

NEW TERRITORY
WEST HOMEWARD WAY (RECLAIMED EFFLUENT)
RE-USED WATER LINE PHASE 2
PLAN AND PROFILE

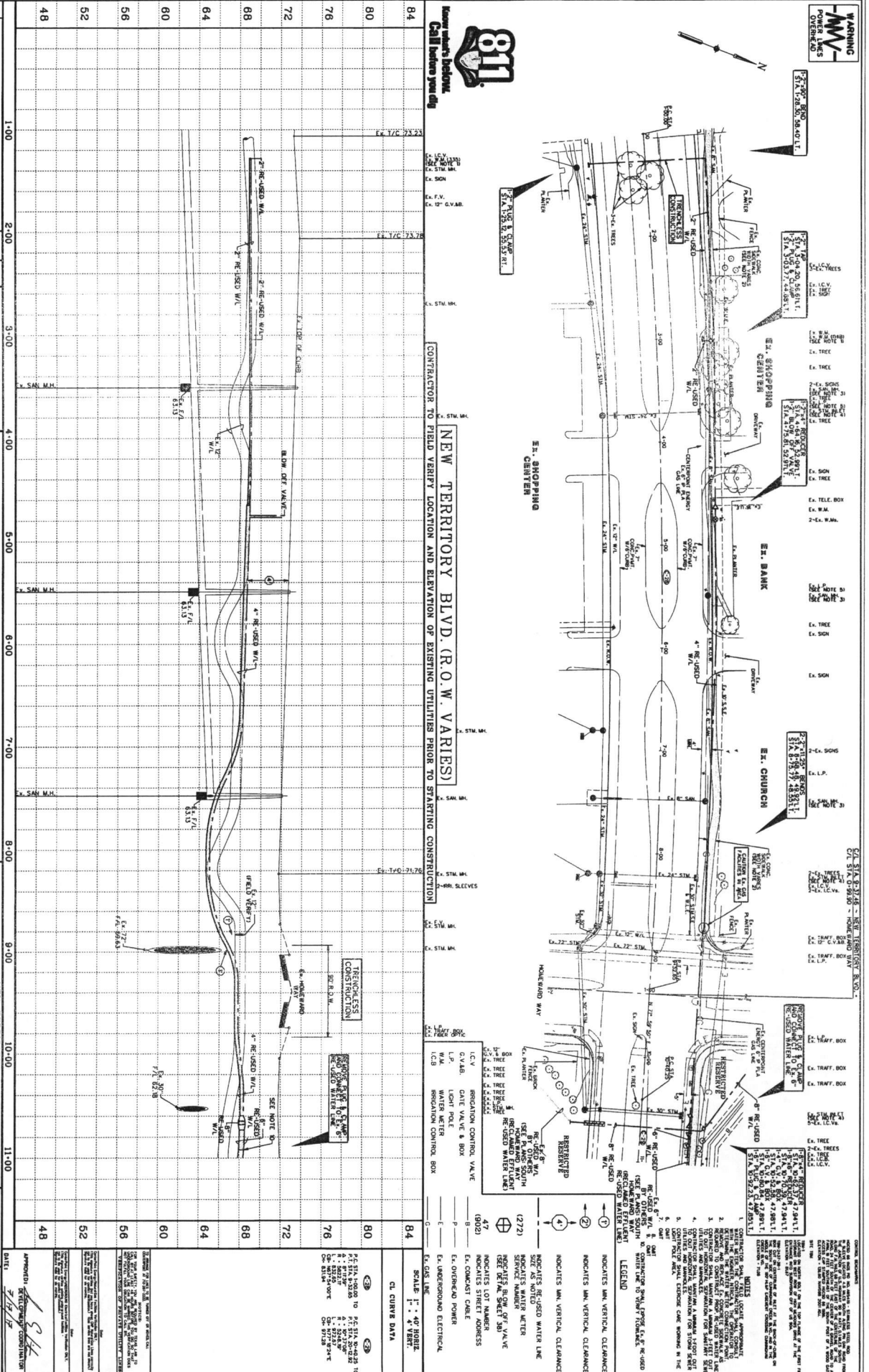
NEW TERRITORY BLVD.
STA. 1+00.00 TO STA. 11+00.00

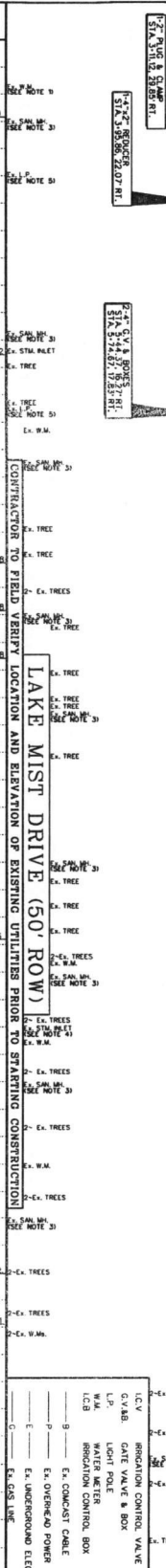
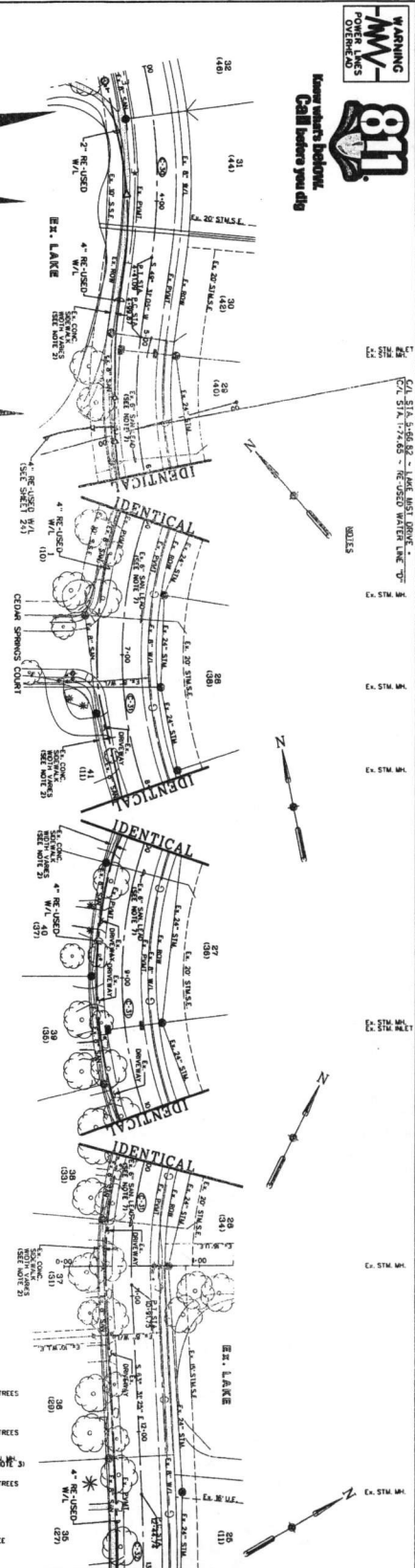
DATE: **11/11/11**

SHEET: **23**

OF **42** SHEETS

JOB NO. 1992000-142





STATION	DESCRIPTION
3+00	EX. SAN. M.H.
4+00	EX. SAN. M.H.
5+00	EX. SAN. M.H.
6+00	EX. SAN. M.H.
7+00	EX. SAN. M.H.
8+00	EX. SAN. M.H.
9+00	EX. SAN. M.H.
10+00	EX. SAN. M.H.
11+00	EX. SAN. M.H.
12+00	EX. SAN. M.H.
13+00	EX. SAN. M.H.

Costello
Engineering and Surveying
9960 Richmond Avenue, Suite 450 N
Houston, Texas 77024
(713) 783-7788 (713) 783-3800 Fax
TBS#17411 REG. No. 02006
TBS#17411 REG. No. 104986

WEST HOWEYARD WAY (RECLAIMED EFFLUENT)
RE-USED WATER LINE PHASE 2
LAKE MIST DRIVE
STA. 3+00.00 TO STA. 13+00.00

DESIGNED BY: *[Signature]*
CHECKED BY: *[Signature]*
REVISIONS: *[Signature]*

DATE: 7/14/07

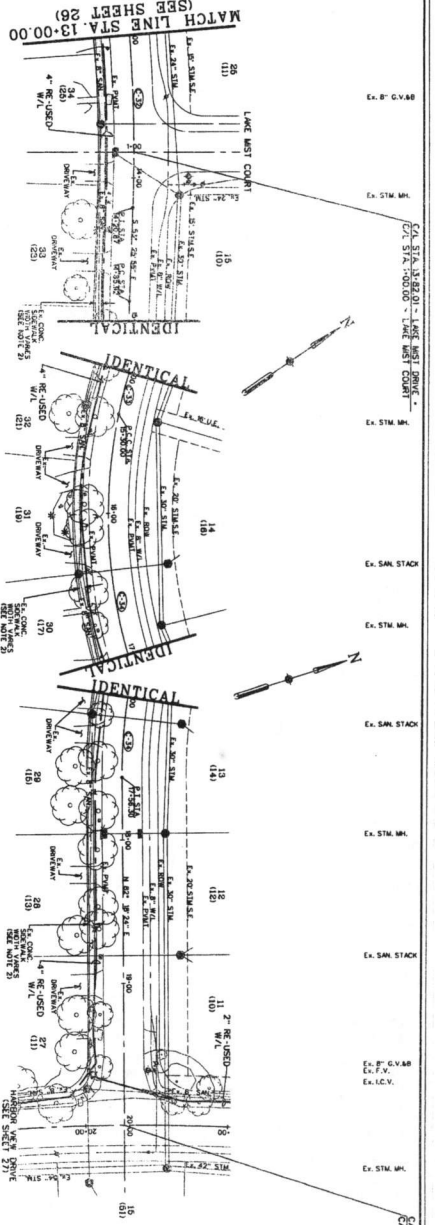
APPROVED: *[Signature]*
DATE: 7/14/07

JOB NO. 1090200-148

LEGEND:
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 (100) INDICATES MIN. VERTICAL CLEARANCE



Know what's below.
Call before you dig.



LAKE MIST DRIVE (50' ROW)
CONTRACTOR TO FIELD VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO STARTING CONSTRUCTION

LEGEND

- ① INDICATES MAN VERTICAL CLEARANCE
- ② INDICATES MAN VERTICAL CLEARANCE
- ③ INDICATES RE-USED WATER LINE
- ④ INDICATES WATER METER
- ⑤ INDICATES LOT NUMBER
- ⑥ INDICATES STREET ADDRESS
- ⑦ INDICATES LIGHT POLE
- ⑧ INDICATES OVERHEAD POWER
- ⑨ INDICATES UNDERGROUND ELECTRICAL
- ⑩ INDICATES UNDERGROUND WATER LINE
- ⑪ INDICATES WATER METER
- ⑫ INDICATES WATER VALVE
- ⑬ INDICATES WATER METER
- ⑭ INDICATES WATER METER
- ⑮ INDICATES WATER METER
- ⑯ INDICATES WATER METER
- ⑰ INDICATES WATER METER
- ⑱ INDICATES WATER METER
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NO.	REVISION	DATE	BY
48		13-00	
52		14-00	
56		15-00	
60		16-00	
64		17-00	
68		18-00	
72		19-00	
76		20-00	
80			
84			

NO.	REVISION	DATE	BY
48		13-00	
52		14-00	
56		15-00	
60		16-00	
64		17-00	
68		18-00	
72		19-00	
76		20-00	
80			
84			

NO.	REVISION	DATE	BY
48		13-00	
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56		15-00	
60		16-00	
64		17-00	
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72		19-00	
76		20-00	
80			
84			



Costello
Engineering and Surveying
9990 Richmond Avenue, Suite 450 N
(713) 783-7788 (713) 783-3860 Fax
TBR'S FIRM REG. NO. 298
TBR'S FIRM REG. NO. 02986


NEW TERRITORY
WEST HOMEWARD WAY RECLAIMED EFFLUENT
RE-USED WATER LINE PHASE 2
LAKE MIST DRIVE
STA. 13-00.00 TO 20-50.00



DATE: 11/27/2017
SHEET: 26
JOB NO. 1992020-148

NO.	REVISION	DATE	BY


DESIGNER: J. JOHNSON
 CHECKED BY: J. JOHNSON
 DATE: 7/11/2017
 DRAWN BY: J. JOHNSON
 CHECKED BY: J. JOHNSON
 DATE: 7/11/2017
 QUAD: Q40C
 REVISIONS BY: J. JOHNSON
 DATE: 7/11/2017




Costello
 Engineering and Surveying
 9900 Richmond Avenue, Suite 450 N
 (713) 785-7788 (713) 783-3550 Fax
 TBP'S FIRM REG. NO. 280
 TBP'S FIRM REG. NO. 10098




POLLUTION PREVENTION LEGEND



FLAG PROTECTION REQUIRED



FILTER FABRIC FENCE



STABILIZED CONSTRUCTION ACCESS

NOTES:

1. PLACE FILTER FABRIC SILT FENCE +/- 5 FEET AROUND ALL INLETS.
2. ENCLOSURES OR SIGNIFICANT SIZE SHALL BE HAZARDOUSLY PLACED AROUND THE ENTIRE SITE.
3. ALL EXPOSED SOILS TO BE COMPLETED BY THE HAZARDOUSLY PLACED AROUND THE ENTIRE SITE.
4. JUST UPSTREAM OF THE DUMP ALL SOILS SHALL BE COVERED BY THE CONTRACTOR. WHEN IN USE, THE FILTER FABRIC SHALL BE MAINTAINED IN THE DIRECTION OF FLOW. THE MAINTENANCE SHALL BE INDICATED ON THIS PLAN.
5. ALL SWAMP FEATURES INDICATED ON THIS PLAN.
6. UPON PROJECT COMPLETION, THE ENTIRE DISTURBED AREA SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION AS PER THE POLLUTION PREVENTION PLAN.
7. UPON PROJECT COMPLETION AND FINAL STABILIZATION, ALL SILT FENCE SHALL BE REMOVED AND DISPOSED OF.
8. SLOTTED FILTER FABRIC SHALL BE USED FOR ALL SLOTTED FILTER FABRIC.

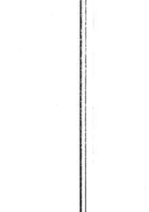
NEW TERRITORY
WEST HOMEWARD WAY (RECLAIMED EFFLUENT) RE-USED WATER LINE PHASE 2

POLLUTION PREVENTION PLAN

SHEET 28
OF 42 SHEETS

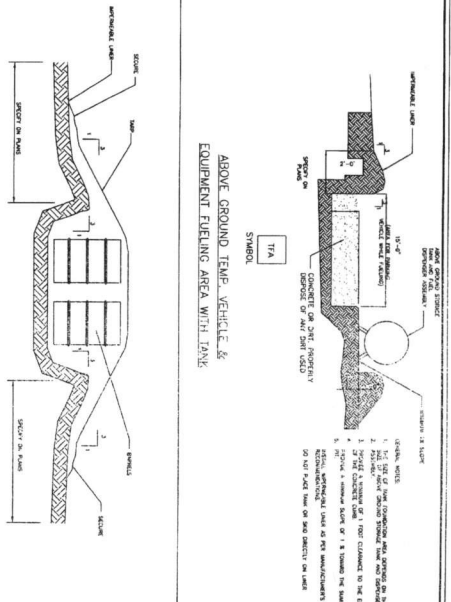
DATE: 7/11/2017

JOB NO. 1998200-142



300 150 0 150 300 450 600
 SCALE: 1" = 200'

ABOVE GROUND TEMP. VEHICLE & EQUIPMENT PARKING AREA WITH TANK



BARREL STORAGE AREA

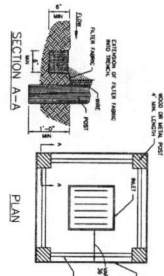
1. CONCRETE ON COMPACTED GRAVEL

2. GRAVEL BASE

3. CONCRETE ON GRAVEL

4. GRAVEL BASE

5. CONCRETE ON GRAVEL



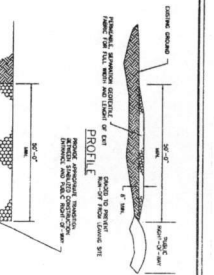
INLET PROTECTION BARRIERS FOR STAGE I INLETS

1. CONCRETE ON GRAVEL

2. GRAVEL BASE

3. CONCRETE ON GRAVEL

4. GRAVEL BASE



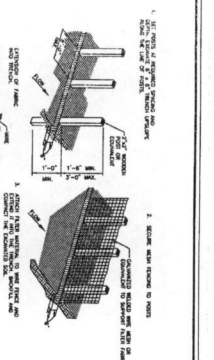
STABILIZED CONSTRUCTION ACCESS

1. CONCRETE ON GRAVEL

2. GRAVEL BASE

3. CONCRETE ON GRAVEL

4. GRAVEL BASE



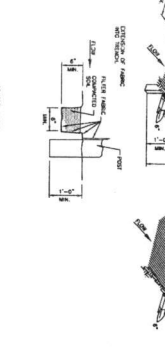
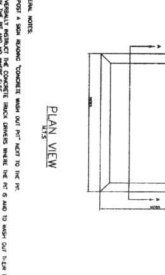
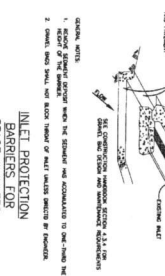
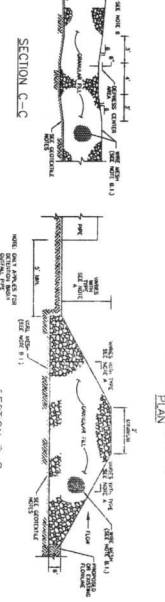
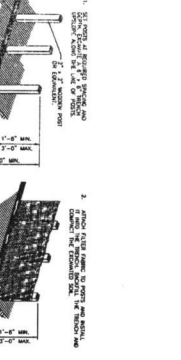
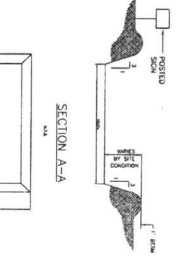
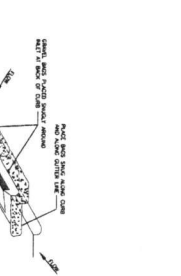
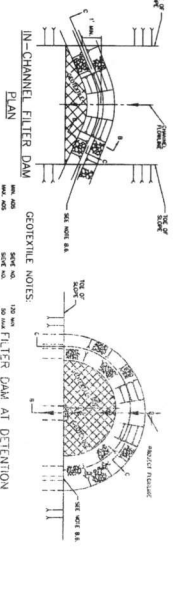
REINFORCED FILTER FABRIC BARRIER

1. CONCRETE ON GRAVEL

2. GRAVEL BASE

3. CONCRETE ON GRAVEL

4. GRAVEL BASE



IN-CHANNEL FILTER DAM

1. CONCRETE ON GRAVEL

2. GRAVEL BASE

3. CONCRETE ON GRAVEL

4. GRAVEL BASE

CONCRETE FILTER DAM

1. CONCRETE ON GRAVEL

2. GRAVEL BASE

3. CONCRETE ON GRAVEL

4. GRAVEL BASE

CONCRETE BRICK WASHOUT AREA

1. CONCRETE ON GRAVEL

2. GRAVEL BASE

3. CONCRETE ON GRAVEL

4. GRAVEL BASE

REINFORCED FILTER FABRIC BARRIER

1. CONCRETE ON GRAVEL

2. GRAVEL BASE

3. CONCRETE ON GRAVEL

4. GRAVEL BASE

NO.	REVISION	DATE	BY

DESIGNED BY: *CLM*

CHECKED BY: *CLM*

DESIGNED BY: *CLM*

CHECKED BY: *CLM*

Engineering and Surveying

9990 Richmond Avenue, Suite 450 N

Houston, Texas 77042

(713) 785-7188 (713) 785-3580, FAX

P.E. FROM REG. NO. 236

T.B.S. FROM REG. NO. 19386

COSTELLO

NEW TERRITORY WEST HOWEYARD WAY RECLAIMED EFFLUENT RE-USED WATER LINE PHASE 2

POLLUTION PREVENTION DETAILS

APPROVED: *[Signature]*

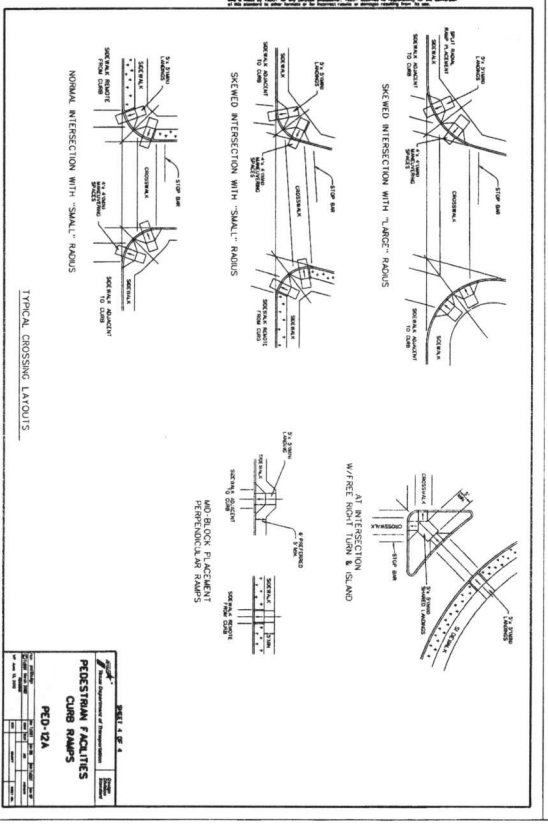
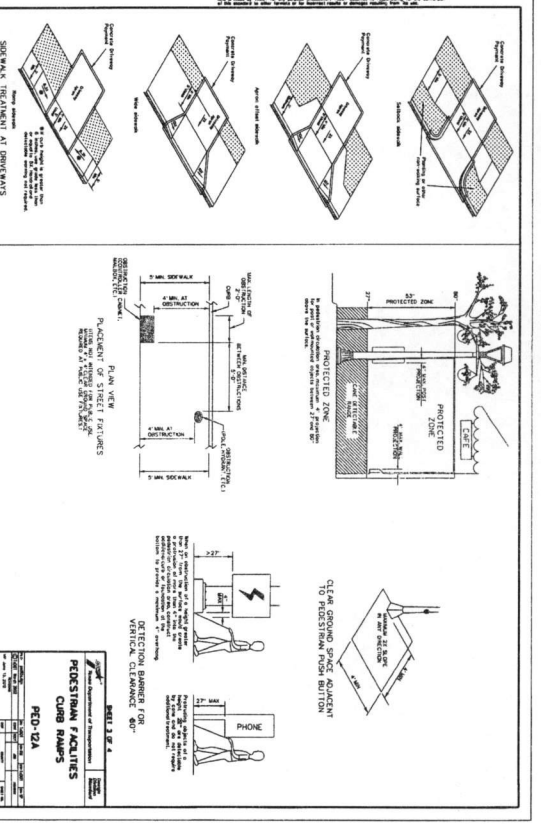
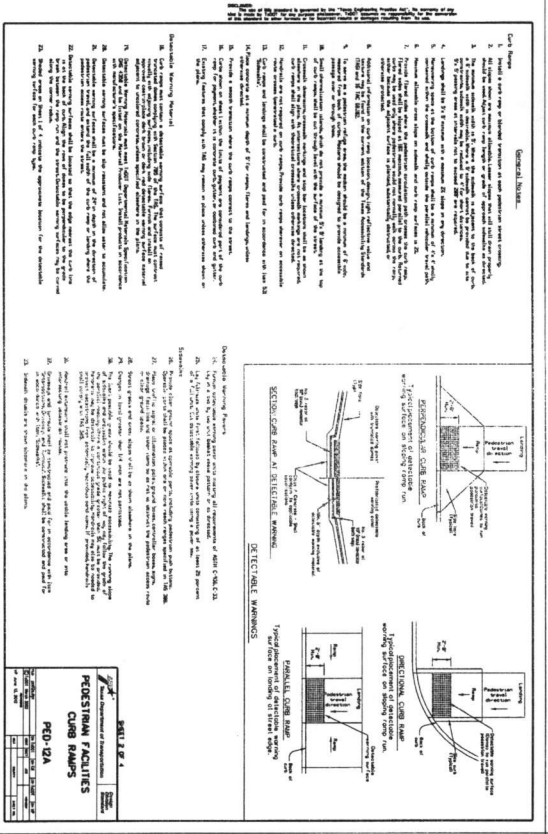
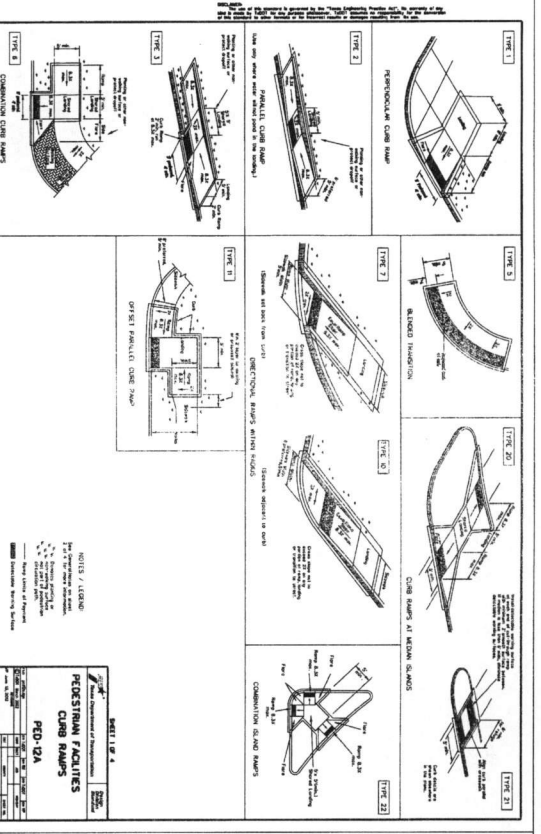
DATE: 7/17/12

SHEET: 29

OF 42 SHEETS

JOB NO. 15996200-142

7/10/2017



NO.	REVISION	DATE BY

DESIGNED BY:	CLM
DRAWN BY:	CLM
CHECKED BY:	CLM
DATE:	CLM
QUANTITY:	CLM

Costello

Engineering and Surveying
 8990 Richmond Avenue, Suite 450 N
 (713) 783-7788 (713) 483-5800, Fax
 TSP#STFRMREG No. 100486

NEW TERRITORY
 WEST HOWARD WAY (RECLAIMED EFFLUENT)
 RE-USED WATER LINE PHASE 2
**PEDESTRIAN FACILITIES
 CURB RAMP**

APPROVED: *[Signature]*
 DATE: 1/12/2017
 SHEET: 32
 OF 42 SHEETS
 JOB NO. 19990200-142

ASPHALTIC CONCRETE PAVEMENT:

1. ASPHALTIC MATERIAL AND WORKMANSHIP SHALL COMPLY WITH ASTM C 31, ASTM C 131, ASTM C 132, AND TROPICAL ASPHALT SHALL BE TYPE D UNLESS SPECIFICALLY NOTED AND APPROVED BY CITY OF SUGAR LAND ENGINEERS.
2. CONSTRUCTION SHALL VERIFY ELEVATIONS AND GRADES AND THAT BASE COURSE IS 4-INCH TO SURFACE. SURFACE COURSE SHALL BE 4-INCH TO TOP OF ASPHALT. ASPHALT SHALL BE 4-INCH TO TOP OF ASPHALT. ASPHALT SHALL BE 4-INCH TO TOP OF ASPHALT.
3. FOR EACH COURSE OF ASPHALT, THERE SHALL BE A MINIMUM OF 100 YARDS OF ASPHALT PER HOUR OF CONSTRUCTION.
4. FOR EACH COURSE OF ASPHALT, THERE SHALL BE A MINIMUM OF 100 YARDS OF ASPHALT PER HOUR OF CONSTRUCTION.
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16. FOR EACH COURSE OF ASPHALT, THERE SHALL BE A MINIMUM OF 100 YARDS OF ASPHALT PER HOUR OF CONSTRUCTION.
17. FOR EACH COURSE OF ASPHALT, THERE SHALL BE A MINIMUM OF 100 YARDS OF ASPHALT PER HOUR OF CONSTRUCTION.

STABILIZED CRUSHED CONCRETE:

1. 15% AND ANALYSIS OF AGGREGATE AND SANDER MATERIALS WILL BE REQUIRED IN ACCORDANCE WITH ASTM 1557 AND ASTM 4318. CRUSHED SHALL BE APPROVED 100 TON IN TON FOR CONSTRUCTION OF HIGHWAYS, STREETS AND BRIDGES (1990) AND 15 TONS FOR ROADWAYS AND CITY OF SUGAR LAND SPECIFICATIONS.
2. FINE COEFFICIENT SHALL BE 0.30 OR PER-1-1000.
3. FINE COEFFICIENT SHALL BE 0.30 OR PER-1-1000.
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17. FINE COEFFICIENT SHALL BE 0.30 OR PER-1-1000.
18. FINE COEFFICIENT SHALL BE 0.30 OR PER-1-1000.
19. FINE COEFFICIENT SHALL BE 0.30 OR PER-1-1000.
20. FINE COEFFICIENT SHALL BE 0.30 OR PER-1-1000.

STORM SEWER NOTES:

1. CONSTRUCTION SPECIFICATIONS AND IN ACCORDANCE WITH CITY OF SUGAR LAND STANDARD SHEET AND CITY OF SUGAR LAND STANDARD SPECIFICATIONS.
2. ALL PIPELINES SHALL BE INSTALLED, BEGGING, AND BACKFILLED IN ACCORDANCE WITH CITY OF SUGAR LAND STANDARD SPECIFICATIONS.
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20. ALL PIPELINES SHALL BE INSTALLED, BEGGING, AND BACKFILLED IN ACCORDANCE WITH CITY OF SUGAR LAND STANDARD SPECIFICATIONS.

WATER DISTRIBUTION NOTES:

1. WATER MAINS, WATER SERVICE LINES AND ASSOCIATED APPURTENANCES SHALL BE DESIGNED AND CONSTRUCTED AS PER REQUIREMENTS OF THE CITY OF SUGAR LAND DESIGN STANDARDS AND SPECIFICATIONS.
2. WATER MAINS, WATER SERVICE LINES AND ASSOCIATED APPURTENANCES SHALL BE DESIGNED AND CONSTRUCTED AS PER REQUIREMENTS OF THE CITY OF SUGAR LAND DESIGN STANDARDS AND SPECIFICATIONS.
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1/14/12
LCH

CONSTRUCTION PLANS FOR WEST HOMEWARD WAY NEED LAMIED FULLY REDESIGNED WATER LINE PROBE 2	
GENERAL CONSTRUCTION NOTES II	
CITY OF SUGAR LAND, TEXAS ENGINEERING DEPARTMENT	
DESIGNED BY: [Signature]	
CHECKED BY: [Signature]	
DATE: 1/14/12	
SCALE: 1"=20'	
SHEET 24 OF 42	

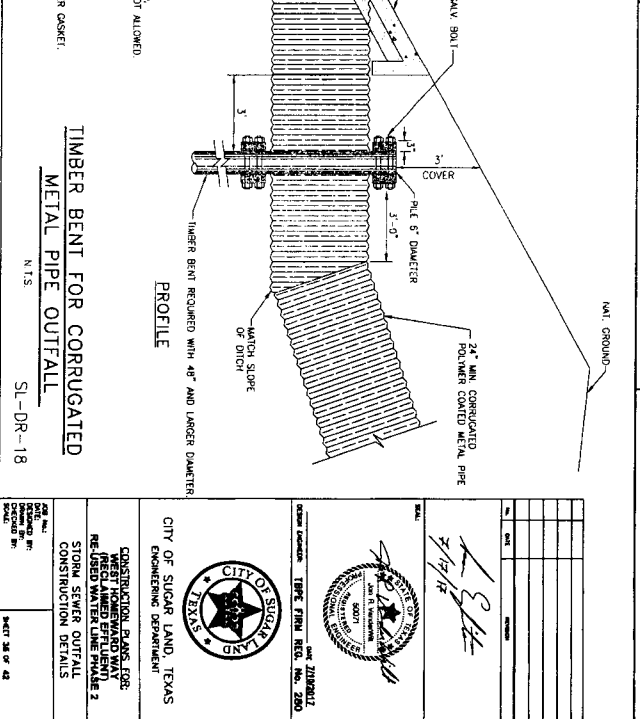
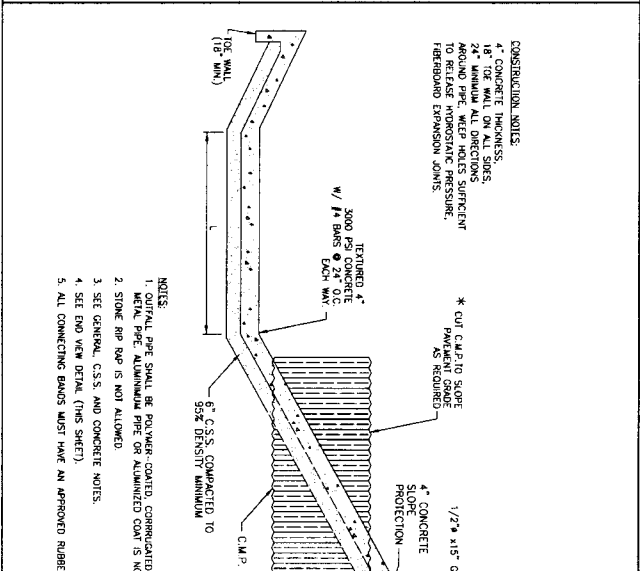
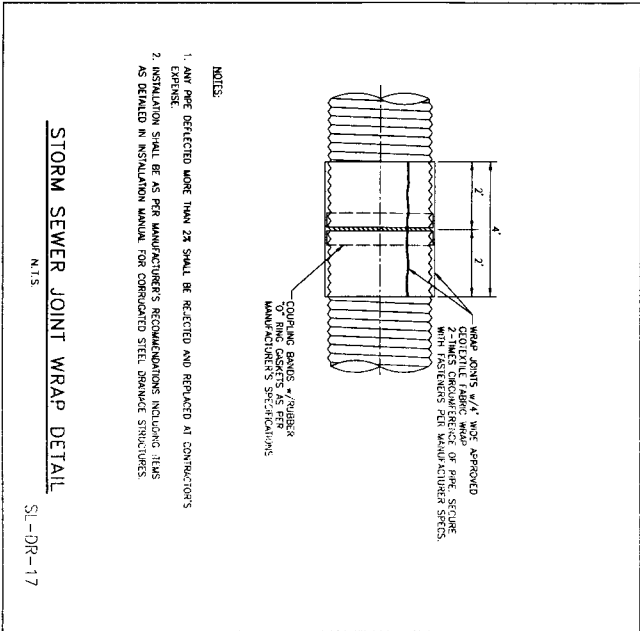
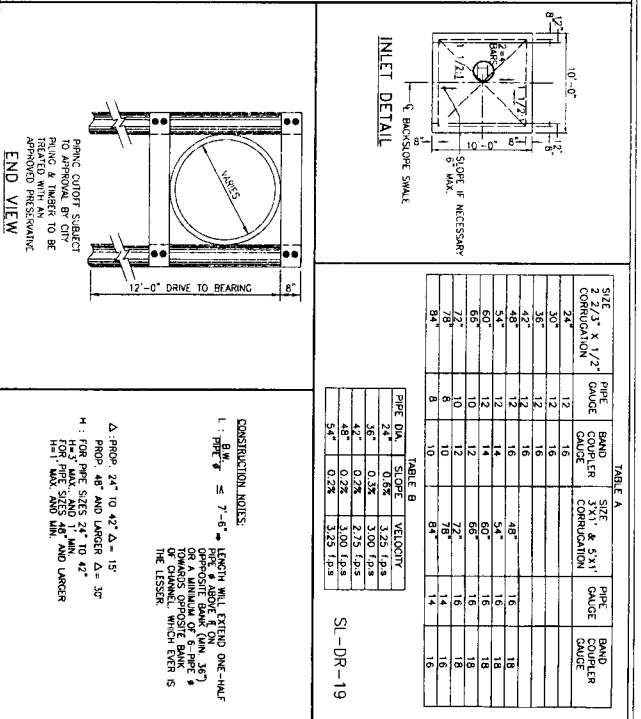
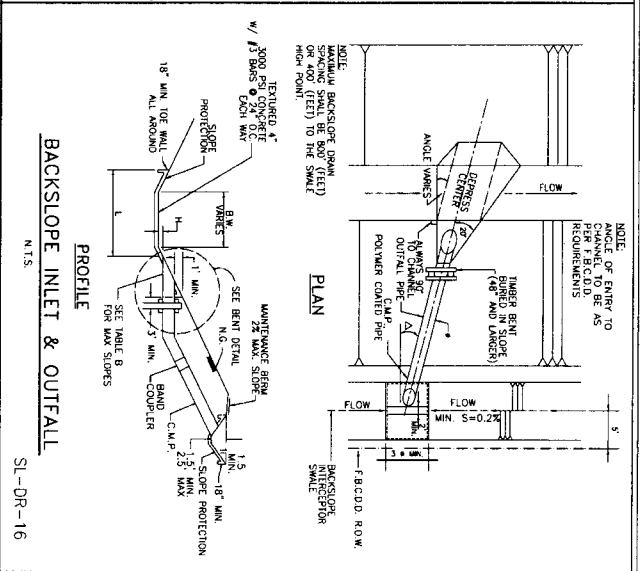
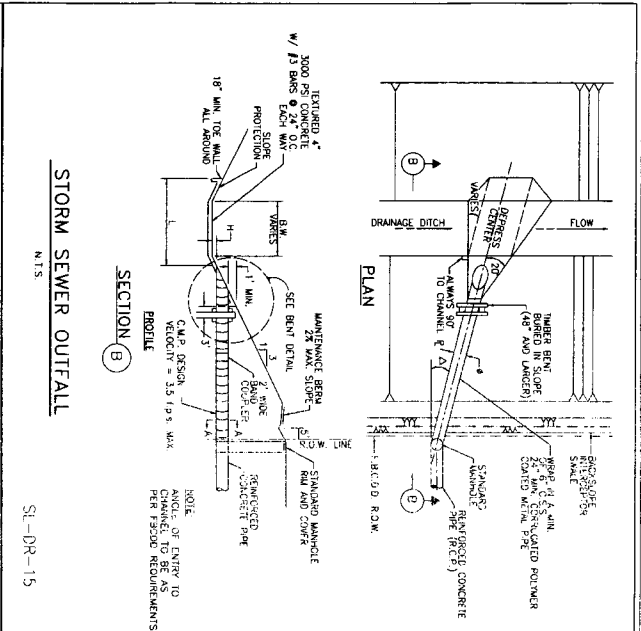


TABLE A

PIPE DIA.	PIPE GAUGE	VELOCITY
24"	0.5%	3.25 f.p.s.
36"	0.3%	3.00 f.p.s.
42"	0.2%	2.75 f.p.s.
48"	0.2%	3.00 f.p.s.
54"	0.2%	3.25 f.p.s.

CONSTRUCTION NOTES:

1. PIPE ϕ = 7'-6" * 180° MIN. EXTERIOR ONE-HALF (OPPOSITE BANK (MIN. 35°) TOWARDS OPPOSITE BANK OF CHANNEL WHICH EVER IS THE LESSER.

Δ APPROX. 24" TO 42" A.S. 15'

PROF. 48" AND UNDER A.S. 30'

H: FOR PIPE SIZES 24" TO 42"

H: 3' MAX. AND 11' MIN.

H: 11' MAX. AND 48" UNDER 11' MAX. AND 11' MIN.

CITY OF SUGAR LAND, TEXAS

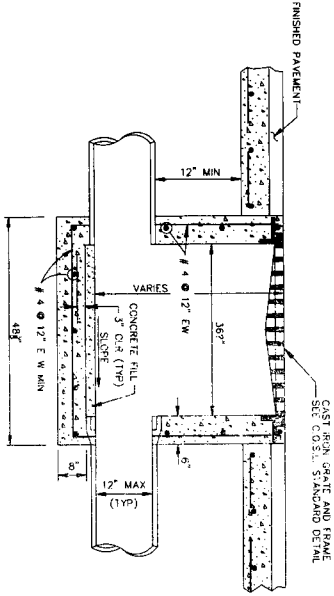
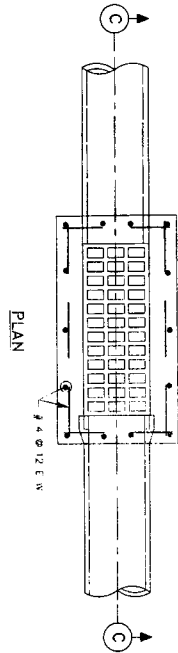
CONSTRUCTION PLANS FOR WEST HONOWAYD VALLEY WASTEWATER TREATMENT PLANT 2

STORM SEWER OUTFALL CONSTRUCTION DETAILS

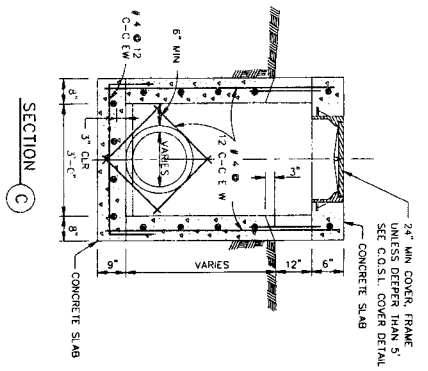
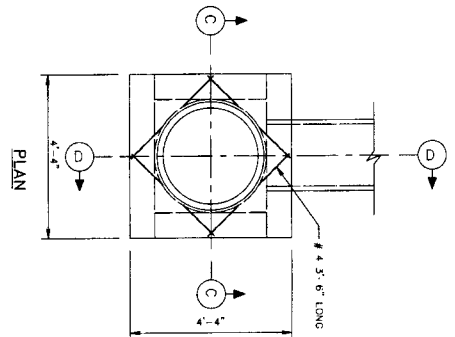
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PROJECT NO. 18-01

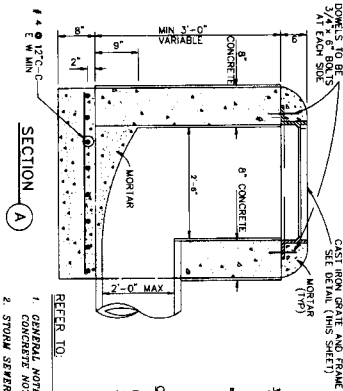
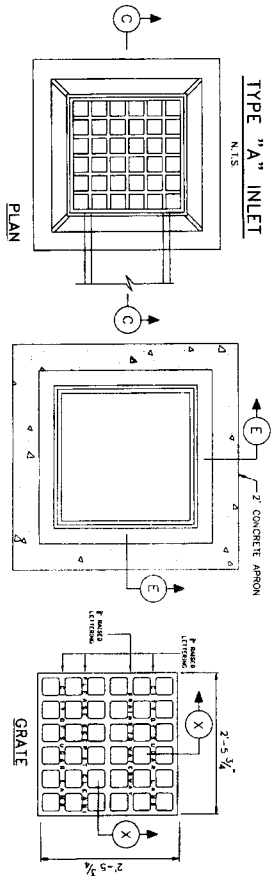


SL-DR-24



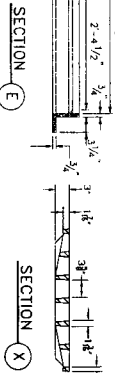
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SL-DR-22





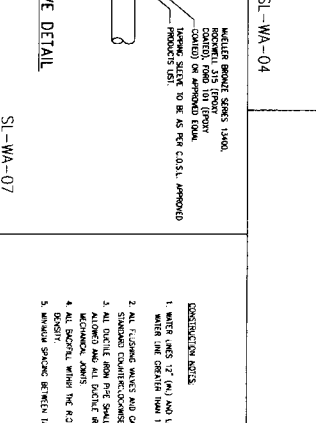
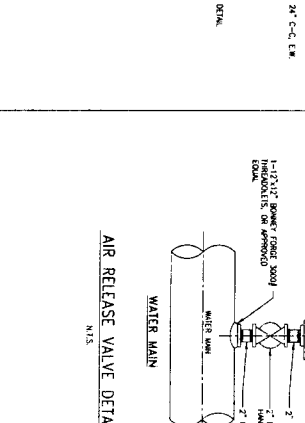
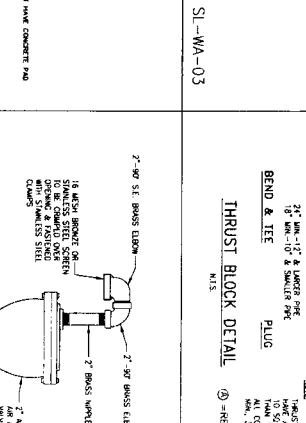
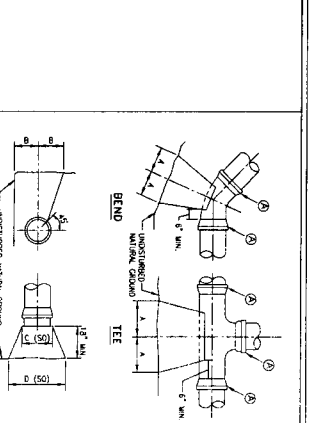
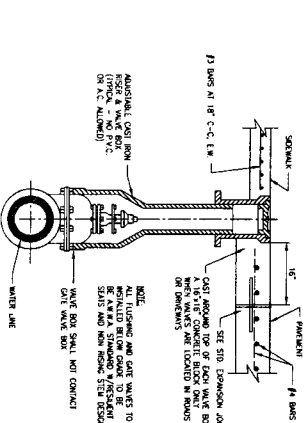
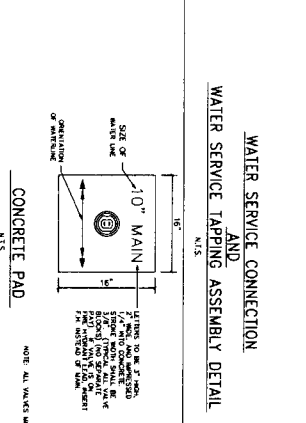
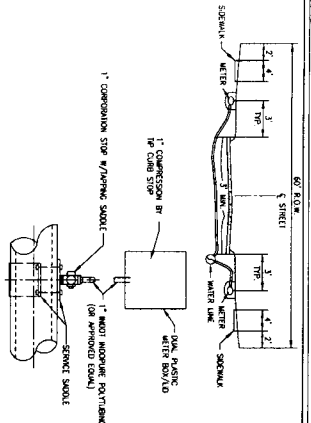
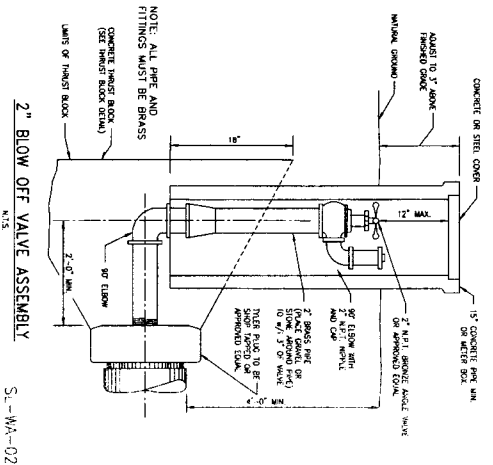
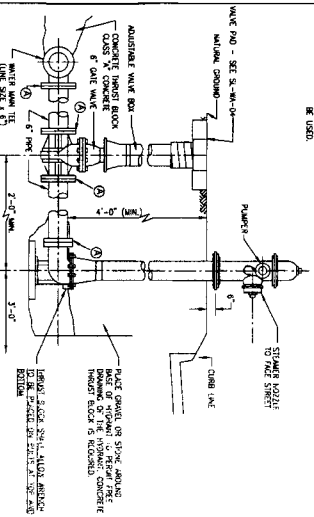
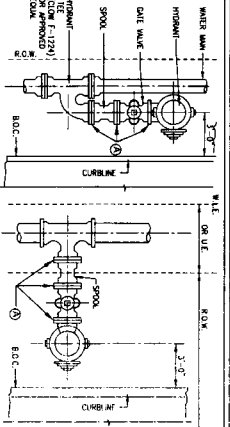
REFER TO:
1. GENERAL NOTES, C.S.S. #
2. STORM SEWER NOTES

GENERAL CONSTRUCTION NOTES:
1. CONCRETE CAST WALLS SHALL HAVE #4 REBAR PLACED @ 12" C-C E-W.
2. GRATE LID IS EAST JORDAN IRON WORKS OR APPROVED EQUAL.



SL-DR-23

 <p>CITY OF SUGAR LAND, TEXAS</p>	 <p>FOR THE STATE OF TEXAS JAMES W. WILSON REGISTERED PROFESSIONAL ENGINEER NO. 208912</p>	<p>CONSTRUCTION PLANS, JOB: WEST HONORWAY WALK REAR WALKWAY REAR WALKWAY LINE PHASE 2 STORM SEWER INLET CONSTRUCTION DETAILS</p>	<p>DATE: 7/14/12</p>
<p>DATE: 7/14/12</p>	<p>DATE: 7/14/12</p>	<p>DATE: 7/14/12</p>	<p>DATE: 7/14/12</p>



NOTES:

POLYETHYLENE WRAP FOR IRON PIPE

- POLYETHYLENE WRAP SHALL BE USED AS A MEANS TO PROTECT GUT ROW AND CURB FROM DAMAGE.
- ALL BENDS, FITTINGS, TEES AND VALVES SHALL BE RECORDED AROUND ALL UTIL. PIPE AND APPURTENANCES (EXCEPT FIRE HYDRANTS).
- POLYETHYLENE WRAP SHALL BE EMPLOYED AND REGULATED OTHER IN ACCORDANCE WITH THE POLYETHYLENE WRAP MANUFACTURER'S RECOMMENDATIONS.
- RECOMMENDATIONS FOR POLYETHYLENE WRAP SHALL BE OBTAINED FROM THE MANUFACTURER OF THE WRAP TO BE USED. ALL WRAP SHALL BE TESTED IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER TO DETERMINE THE TENSILE STRENGTH OF THE WRAP.
- ALL FITTINGS AND PIPE JOINTS SHALL BE 10' OF A TYPING SHALL HAVE RESTRAINT JOINTS.

BENDS, TEES & PLUGS FOR PIPE OF VARIOUS SIZES

SIZE	90° BEND	45° BEND	1/2" BEND	TEES	PLUGS
1/2"	A	B	A	A	B
3/4"	A	B	A	A	B
1"	A	B	A	A	B
1 1/4"	A	B	A	A	B
1 1/2"	A	B	A	A	B
1 3/4"	A	B	A	A	B
2"	A	B	A	A	B
2 1/2"	A	B	A	A	B
3"	A	B	A	A	B
3 1/2"	A	B	A	A	B
4"	A	B	A	A	B
4 1/2"	A	B	A	A	B
5"	A	B	A	A	B
5 1/2"	A	B	A	A	B
6"	A	B	A	A	B
6 1/2"	A	B	A	A	B
7"	A	B	A	A	B
7 1/2"	A	B	A	A	B
8"	A	B	A	A	B
8 1/2"	A	B	A	A	B
9"	A	B	A	A	B
9 1/2"	A	B	A	A	B
10"	A	B	A	A	B
10 1/2"	A	B	A	A	B
11"	A	B	A	A	B
11 1/2"	A	B	A	A	B
12"	A	B	A	A	B
12 1/2"	A	B	A	A	B
13"	A	B	A	A	B
13 1/2"	A	B	A	A	B
14"	A	B	A	A	B
14 1/2"	A	B	A	A	B
15"	A	B	A	A	B
15 1/2"	A	B	A	A	B
16"	A	B	A	A	B
16 1/2"	A	B	A	A	B
17"	A	B	A	A	B
17 1/2"	A	B	A	A	B
18"	A	B	A	A	B
18 1/2"	A	B	A	A	B
19"	A	B	A	A	B
19 1/2"	A	B	A	A	B
20"	A	B	A	A	B
20 1/2"	A	B	A	A	B
21"	A	B	A	A	B
21 1/2"	A	B	A	A	B
22"	A	B	A	A	B
22 1/2"	A	B	A	A	B
23"	A	B	A	A	B
23 1/2"	A	B	A	A	B
24"	A	B	A	A	B
24 1/2"	A	B	A	A	B
25"	A	B	A	A	B
25 1/2"	A	B	A	A	B
26"	A	B	A	A	B
26 1/2"	A	B	A	A	B
27"	A	B	A	A	B
27 1/2"	A	B	A	A	B
28"	A	B	A	A	B
28 1/2"	A	B	A	A	B
29"	A	B	A	A	B
29 1/2"	A	B	A	A	B
30"	A	B	A	A	B

CONSTRUCTION NOTES:

- ALL VALVES SHALL BE 15' MIN. FROM CURB LINE AND 10' MIN. FROM SIDEWALK.
- ALL VALVES SHALL BE 15' MIN. FROM OTHER VALVES AND 15' MIN. FROM BUILDINGS AND POWER LINES.
- ALL VALVES SHALL BE 15' MIN. FROM CURB LINE AND 10' MIN. FROM SIDEWALK.
- ALL VALVES SHALL BE 15' MIN. FROM OTHER VALVES AND 15' MIN. FROM BUILDINGS AND POWER LINES.
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- ALL VALVES SHALL BE 15' MIN. FROM OTHER VALVES AND 15' MIN. FROM BUILDINGS AND POWER LINES.

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT

CONSTRUCTION PLANS JOB:
WEST HOUSTON PLANS 100
RESERVED WATER LINE PHASE 2

WATER LINE CONSTRUCTION DETAILS

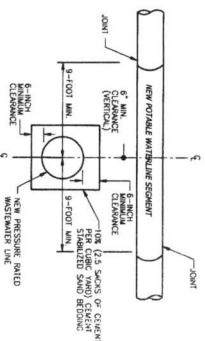
DATE: 12/14/12

SCALE: AS SHOWN

PROJECT: WEST HOUSTON PLANS 100

DATE: 12/14/12

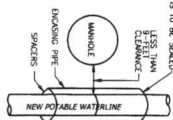
NEW POTABLE WATERLINE CROSSING NEW PRESSURE RATED WASTEWATER LINE WITH SEGMENT LENGTHS OF EIGHTEEN (18) FEET OR GREATER, HAVING 6 INCHES OF VERTICAL CLEARANCE AND 4 FEET OF HORIZONTAL CLEARANCE



- WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED
- WHEN JOINTS OF THE WASTEWATER LINE ARE NEARER THAN 10 FEET TO EITHER END OF THE CROSSING, THE CROSSING SHALL BE OFFSET TO CLEAR THE JOINT
- ENCASED WASTEWATER LINE IN CONCRETE STABILIZED SAND TO A MINIMUM OF 18 FEET IN LENGTH AND CENTERED ON THE POINT OF CROSSING

SL-WA-09

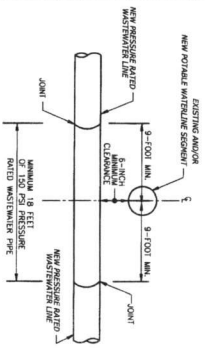
DETAIL OF WATER LINE CROSSING WASTEWATER FACILITIES WHERE SEPARATION IS LESS THAN 9' (NINE FEET)



MANHOLE CLEARANCE

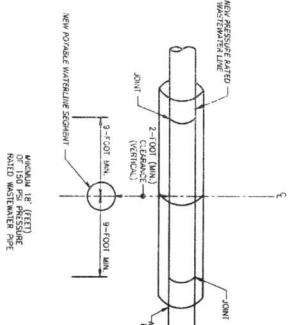
SL-WA-12

ALTERNATIVE A: PRESSURE RATED WASTEWATER PIPE



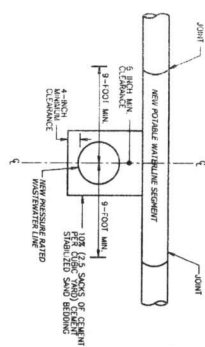
SL-WA-14

ALTERNATIVE B: EXISTING POTABLE WATERLINE CROSSING EXISTING PRESSURE RATED WASTEWATER LINE



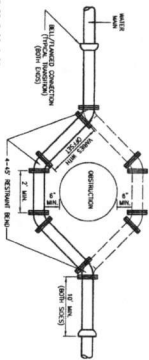
SL-WA-15

NEW POTABLE WATERLINE CROSSING NEW PRESSURE RATED WASTEWATER LINE



- WHENEVER POSSIBLE, THE CROSSING SHALL BE CENTERED
- WHEN JOINTS OF THE WASTEWATER LINE ARE NEARER THAN 10 FEET TO EITHER END OF THE CROSSING, THE CROSSING SHALL BE OFFSET TO CLEAR THE JOINT
- ENCASED WASTEWATER LINE IN CONCRETE STABILIZED SAND TO A MINIMUM OF 18 FEET IN LENGTH AND CENTERED ON THE POINT OF CROSSING

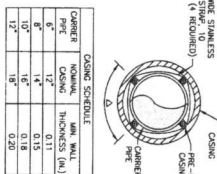
SL-WA-10



MIN. PIPE WALL THICKNESS	MIN. CONCRETE CASING WALL THICKNESS
4" - 0.300	0.375
6" - 0.375	0.500
8" - 0.500	0.625
12" - 0.750	1.000

PVC WATER PIPE OFFSET ASSEMBLY

SL-WA-11

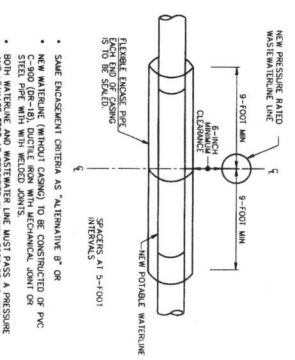


CONCRETE CASING SCHEDULE	CONCRETE CASING WALL THICKNESS (IN)
4" - 0.300	0.375
6" - 0.375	0.500
8" - 0.500	0.625
12" - 0.750	1.000

1. CASING SIZE AND THICKNESS SHALL CONFORM TO SCHEDULE, OTHER PRINTS AS REQUIRED.
2. MANHOLE 1" MINIMUM CLEARANCE BETWEEN THE CASING AND EXISTING POTABLE WATER PIPE AND CASING AT ALL LOCATIONS.
3. DIMENSIONS ARE APPROXIMATE ONLY, CONTRACTOR SHALL VERIFY AND CORRECTLY SIZE CASING TO ACCOMMODATE THE CASING PIPE.

SL-WA-13

ALTERNATIVE C: ENCASE NEW POTABLE WATERLINE UNDER A NEW PRESSURE RATED WASTEWATER LINE



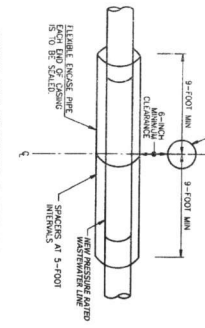
SL-WA-16

GENERAL NOTES

1. CONTRACTOR SHALL CONTACT CITY OF SUGAR LAND ENGINEERING DEPARTMENT AT (281) 574-2200 FOR ALL SUGAR LAND SPECIFICATIONS, HAZARDOUS MATERIAL, AND/OR UNDERGROUND UTILITIES AND INFORMATION INCLUDED IN PROJECT SPECIFICATIONS, CITY OF SUGAR LAND DESIGN STANDARDS SMALL CODES.
2. ALL NEW POTABLE WATER LINES AND SANITARY SEWER FORCE MAINS SHALL BE BORED IN COMPLETELY DRY SOIL AND A MINIMUM OF 6 FEET BELOW ADJACENT AND TO EITHER SIDE OF SUCH PIPING.
3. ALL NEW POTABLE WATER LINES SHALL BE BORED IN COMPLETELY DRY SOIL AND A MINIMUM OF 6 FEET BELOW ADJACENT AND TO EITHER SIDE OF SUCH PIPING.
4. ALL NEW POTABLE WATER LINES SHALL BE BORED IN COMPLETELY DRY SOIL AND A MINIMUM OF 6 FEET BELOW ADJACENT AND TO EITHER SIDE OF SUCH PIPING.
5. ALL NEW POTABLE WATER LINES SHALL BE BORED IN COMPLETELY DRY SOIL AND A MINIMUM OF 6 FEET BELOW ADJACENT AND TO EITHER SIDE OF SUCH PIPING.
6. ALL NEW POTABLE WATER LINES SHALL BE BORED IN COMPLETELY DRY SOIL AND A MINIMUM OF 6 FEET BELOW ADJACENT AND TO EITHER SIDE OF SUCH PIPING.
7. ALL NEW POTABLE WATER LINES SHALL BE BORED IN COMPLETELY DRY SOIL AND A MINIMUM OF 6 FEET BELOW ADJACENT AND TO EITHER SIDE OF SUCH PIPING.
8. ALL NEW POTABLE WATER LINES SHALL BE BORED IN COMPLETELY DRY SOIL AND A MINIMUM OF 6 FEET BELOW ADJACENT AND TO EITHER SIDE OF SUCH PIPING.
9. ALL NEW POTABLE WATER LINES SHALL BE BORED IN COMPLETELY DRY SOIL AND A MINIMUM OF 6 FEET BELOW ADJACENT AND TO EITHER SIDE OF SUCH PIPING.
10. ALL NEW POTABLE WATER LINES SHALL BE BORED IN COMPLETELY DRY SOIL AND A MINIMUM OF 6 FEET BELOW ADJACENT AND TO EITHER SIDE OF SUCH PIPING.
11. ALL NEW POTABLE WATER LINES SHALL BE BORED IN COMPLETELY DRY SOIL AND A MINIMUM OF 6 FEET BELOW ADJACENT AND TO EITHER SIDE OF SUCH PIPING.
12. ALL NEW POTABLE WATER LINES SHALL BE BORED IN COMPLETELY DRY SOIL AND A MINIMUM OF 6 FEET BELOW ADJACENT AND TO EITHER SIDE OF SUCH PIPING.
13. ALL NEW POTABLE WATER LINES SHALL BE BORED IN COMPLETELY DRY SOIL AND A MINIMUM OF 6 FEET BELOW ADJACENT AND TO EITHER SIDE OF SUCH PIPING.
14. ALL NEW POTABLE WATER LINES SHALL BE BORED IN COMPLETELY DRY SOIL AND A MINIMUM OF 6 FEET BELOW ADJACENT AND TO EITHER SIDE OF SUCH PIPING.
15. REFER TO EXISTING SANITARY, WATER AND C.S.S. NOTES.

ENCASED WASTEWATER LINE

NEW POTABLE WATERLINE CROSSING NEW PRESSURE RATED WASTEWATER LINE WITH SEGMENT LENGTHS OF LESS THAN EIGHTEEN (18) FEET



SL-WA-17

SL-WA-18

DATE: 7/1/14

DESIGNED BY: [Signature]

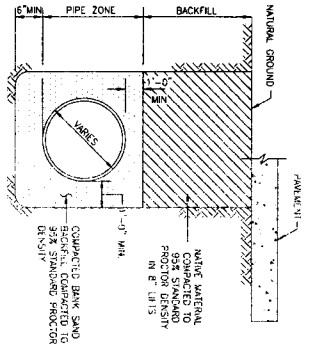
CHECKED BY: [Signature]

CITY OF SUGAR LAND TEXAS

ENGINEERING DEPARTMENT

CONSTRUCTION PLANS FOR
WATER LINE
CROSSING DETAILS

SHEET 28 OF 42

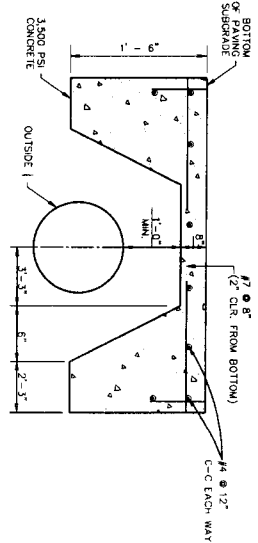


P.V.C. PIPE BEDDING & BACKFILL

N.T.S.
*SEE CONSTRUCTION NOTES

SANITARY FORCE MAIN & WATER LINE
BEDDING AND BACKFILL

SL-BB-01



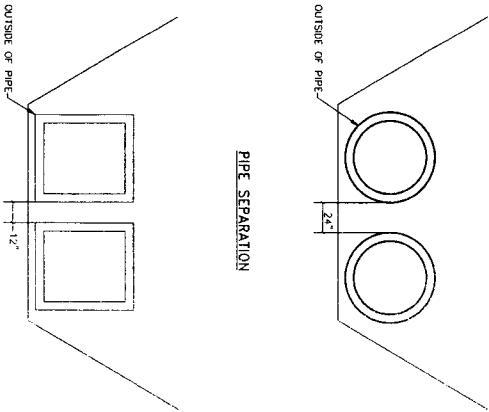
PROTECTIVE SLAB DETAIL

ZERO LOAD TRANSFER CONCRETE SLAB

SL-BB-04

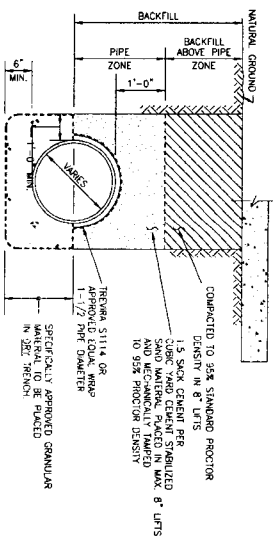
- CONSTRUCTION NOTES
1. CONTRACTOR SHALL CONTACT STATE LAND ENGINEERING DEPARTMENT IMMEDIATELY IF WET SAND CONDITIONS ARE ENCOUNTERED.
 2. LIMESTONE AND RECYCLED CONCRETE DIMENSIONS SHOWN ARE TYPICAL AND MAY BE VARYED BY ORDER OF CITY ENGINEER.
 3. LIMESTONE OR RECYCLED CONCRETE SHALL BE IN ACCORDANCE WITH APPROVED SPECIFICATION NO. 248 (TYPICAL BASE), TYPE A, GRADE 2.
 4. NO BEDDING SHALL BE INSTALLED IN WET CONDITIONS WHEN WELL BELOW BOTTOM OF TRENCH FOR A MINIMUM OF 24-HRS AFTER BEDDING AND BACKFILL IS IN PLACE.
 5. ALL MATERIALS SHALL BE FROM THE APPROVED PRODUCTS LIST UNLESS SPECIFICALLY APPROVED BY THE CITY ENGINEER.
 6. SANITARY SEWER BEDDING FOR WET SAND CONDITIONS SHALL BE AS PER MODIFIED "A".
 7. ALL SAND BEDDING FOR WATER LINES SHALL BE CLEAN, MECHANICALLY COMPACTED BANK SAND.
 8. REFER TO MANHOLE DETAILS, SANITARY, C.S.S., GENERAL, WATER CROSSING, WATER DISTRIBUTION DETAILS AND NOTES.
 9. ALL BEDDING WILL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
 10. A GEOTECHNICAL REPORT MAY BE REQUIRED TO ANALYZE THE BEARING CAPACITY OF EXISTING SOILS AND MAKE A DETERMINATION IF ADDITIONAL BEDDING AND BACKFILL IS APPROPRIATE.

SL-BB-05



PIPE SEPARATION

RCB SEPARATION



MODIFIED "A"

N.T.S.

NOTE: C.S.S. SHALL BE INSTALLED A MIN. 1' ABOVE TOP OF PIPE.

SANITARY SEWER
BEDDING AND BACKFILL

SL-BB-03

REFER TO:

1. GENERAL NOTES
2. C.S.S. NOTES

CITY OF SUGAR LAND, TEXAS ENGINEERING DEPARTMENT	
CONSTRUCTION PLANS FOR: WEST HONOLULU WAY REAR LINED WATER LINE PHASE 2 WATER MAIN BEDDING DETAILS	
DATE: 11/14/24 DRAWN BY: [Signature] CHECKED BY: [Signature]	TITLE: TRENCH DATE: 11/14/24 SCALE: AS SHOWN
CITY OF SUGAR LAND, TEXAS ENGINEERING DEPARTMENT 11000 SUGAR CREEK ROAD SUGAR LAND, TEXAS 77478	11/14/24

HYPER-CHLORINATED WATER NOTES

1. HYPER-CHLORINATED WATER SHALL NOT BE DISCHARGED TO THE STORM SEWER OR DRAINAGE SYSTEM UNLESS THE CHLORINE CONCENTRATION IS OR BY ORBIT RETENTION UNIT. MANUAL ATTENUATION OCCURS AT THE ORBIT RETENTION UNIT. MANUAL ATTENUATION OCCURS AT THE ORBIT RETENTION UNIT. MANUAL ATTENUATION OCCURS AT THE ORBIT RETENTION UNIT.
2. CHLORINE CAN BE USED TO DISINFECT WATER. CHLORINE CAN BE USED TO DISINFECT WATER. CHLORINE CAN BE USED TO DISINFECT WATER.
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SANITARY WASTE NOTES

1. THE OPERATOR SHALL PROVIDE AN APPROPRIATE NUMBER OF PORTABLE TOILETS THAT WILL WORK. THE OPERATOR SHALL PROVIDE AN APPROPRIATE NUMBER OF PORTABLE TOILETS THAT WILL WORK.
2. FROM STORM DRAIN WATERS, CONFORMANCE CHANNELS OR SURFACE WATERS, FROM STORM DRAIN WATERS, CONFORMANCE CHANNELS OR SURFACE WATERS, FROM STORM DRAIN WATERS, CONFORMANCE CHANNELS OR SURFACE WATERS.
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DEBRIS AND TRASH NOTES



1. ALL WASTE BOXES AND STORAGE AREAS SHALL BE LOCATED A MINIMUM OF 10 FEET FROM ALL BUILDINGS, DRIVEWAYS, AND OTHER WATERS. ALL WASTE BOXES AND STORAGE AREAS SHALL BE LOCATED A MINIMUM OF 10 FEET FROM ALL BUILDINGS, DRIVEWAYS, AND OTHER WATERS.
2. CONSTRUCTION WASTE AND TRASH SHALL BE STORED IN A MANNER THAT PREVENTS PESTS, VERMIN, AND OTHER ANIMALS FROM ACCESSING THE WASTE. CONSTRUCTION WASTE AND TRASH SHALL BE STORED IN A MANNER THAT PREVENTS PESTS, VERMIN, AND OTHER ANIMALS FROM ACCESSING THE WASTE.
3. WASTE STORAGE AREAS SHALL BE COVERED WITH A TIGHTLY FITTING LID OR OTHER MEANS OF PROTECTION. WASTE STORAGE AREAS SHALL BE COVERED WITH A TIGHTLY FITTING LID OR OTHER MEANS OF PROTECTION.
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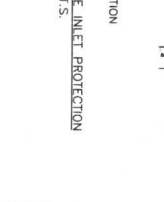
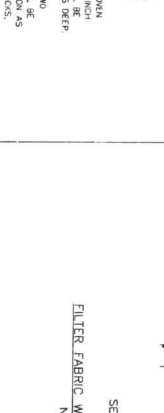
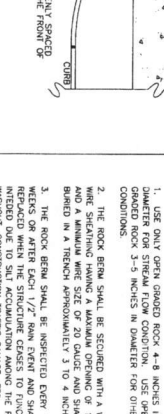
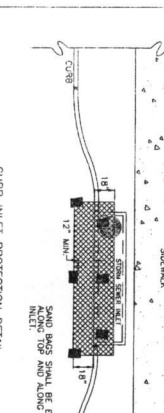
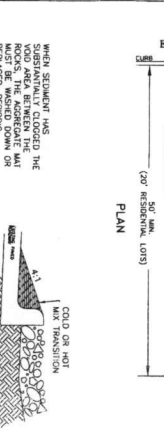
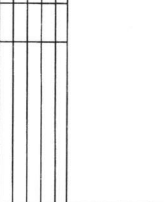
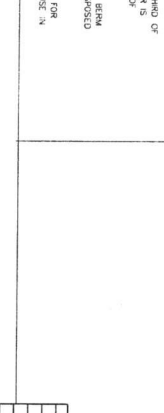
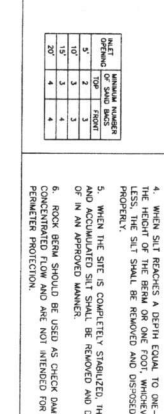
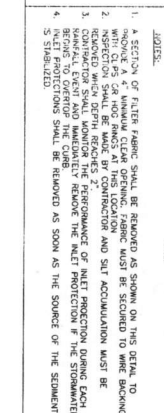
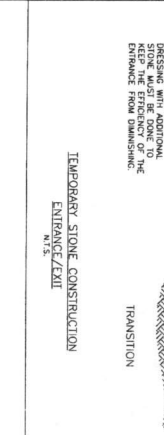
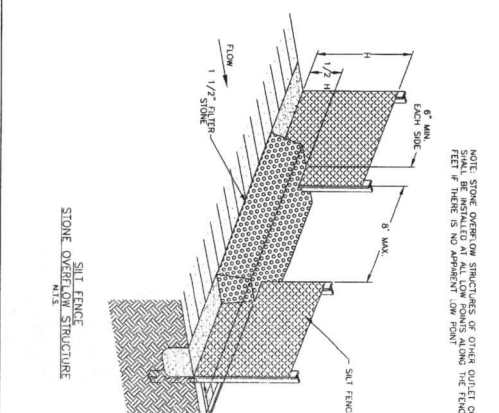
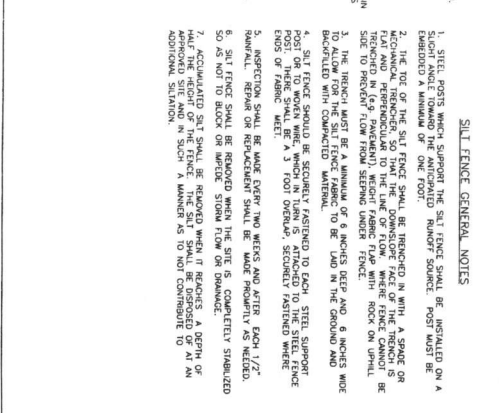
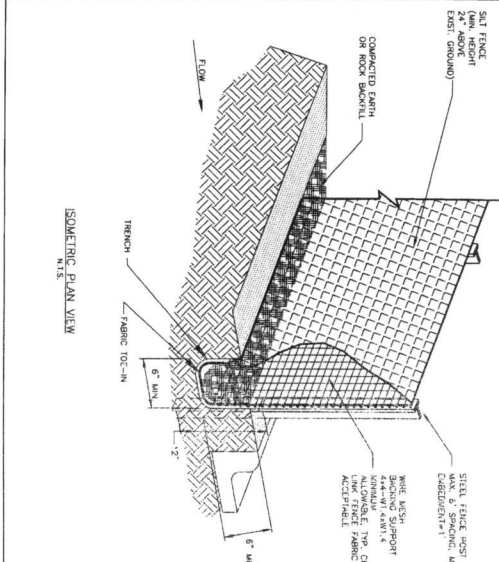
SPILL AND LEAK RESPONSE NOTES

1. RECORDS OF RELEASES THAT EXCEED THE REPORTABLE QUANTITY (RQ) FOR OIL AND HAZARDOUS SUBSTANCES SHOULD BE MAINTAINED IN ACCORDANCE WITH THE FEDERAL SUPERFUND ACT AND THE SUPERFUND REPORTING AND REMEDIATION ACT.
2. HAZARDOUS MATERIALS INFORMATION AND SPILL RESPONSE PROCEDURES SHOULD BE MAINTAINED AT THE SITE AND MADE AVAILABLE TO ALL PERSONNEL AND SUBCONTRACTORS.
3. SPILL CONTAINMENT FENCE SHOULD BE MAINTAINED FOR HAZARDOUS PRODUCTS AND MATERIALS. SPILL CONTAINMENT FENCE SHOULD BE MAINTAINED FOR HAZARDOUS PRODUCTS AND MATERIALS.
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SUBGRADE STABILIZATION NOTES

1. STABILIZE THE DISTURBED AREAS OF THE SUBGRADE WITH STABILIZING AGENTS. STABILIZE THE DISTURBED AREAS OF THE SUBGRADE WITH STABILIZING AGENTS.
2. STABILIZATION SHALL BE APPLIED AT RATES THAT RESULT IN NO SIGN OF WEAKNESSES. STABILIZATION SHALL BE APPLIED AT RATES THAT RESULT IN NO SIGN OF WEAKNESSES.
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 <p>CITY OF SUGAR LAND, TEXAS ENGINEERING DEPARTMENT</p>	 <p>CONSTRUCTION PLANS FOR WEST HORNWARD WAY LINED WATER LINE PHASE 2</p>	<p>DATE: 7/19/14</p> <p>BY: [Signature]</p>	<p>GENERAL EROSION CONTROL NOTES</p>
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- SILT FENCE GENERAL NOTES**
1. STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RIMFORD SOURCE. POST MUST BE SPACED AT A MINIMUM OF ONE FOOT.
 2. THE SILT FENCE SHALL BE INSTALLED IN WITH A SPACED OR MECHANICAL JOINTS TO THE LINE OF FLOW, WHERE FENCE CANNOT BE FLAT AND PERPENDICULAR TO THE LINE OF FLOW, WHERE FENCE CANNOT BE SIDE TO PREVENT FLOW FROM STOPPING UNDER FENCE.
 3. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAD IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
 4. TO EACH FABRIC SHALL BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TRENCH SHALL BE 3 FOOT OVERLAP, SECURELY FASTENED WHERE OVER OF FABRIC MEET.
 5. FABRIC SHALL BE REMOVED AFTER TWO WEEKS AND AFTER EACH 1/2" SAND ACCUMULATION SHALL BE REMOVED WITHIN 15 DAYS.
 6. SILT FENCE SHALL BE REMOVED WHEN THE SET IS COMPLETELY SUBLIMATED, SO AS NOT TO BLOCK OR IMPIDE STORM FLOW OR DAMAGE.
 7. ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF IN AN ADDITIONAL SITUATION, IN SUCH A MANNER AS TO NOT CONTRIBUTE TO POLLUTION.

JUNCTIONS

1. A SECTION OF FILTER FABRIC SHALL BE REMOVED AS SHOWN ON THE DETAIL TO INSURE A 4" MINIMUM CLEAR OPENING FABRIC MUST BE SECURED TO WIRE BACKING.
2. INSPECTION SHALL BE MADE BY CONSTRUCTION AND Silt ACCUMULATION MUST BE REMOVED WITHIN DEPTH REACHES 2".
3. INSPECTION SHALL BE MADE BY CONSTRUCTION AND Silt ACCUMULATION MUST BE REMOVED WITHIN DEPTH REACHES 2".
4. SMALL REST AND IMMEDIATELY REMOVE THE NET PROTECTION IF THE STOPWATER INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF THE SEDIMENT IS STOPPED.

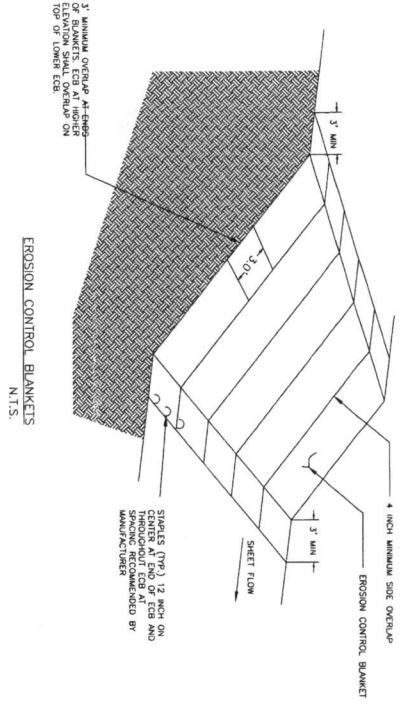
Number of Sand Bags	Type	Height
20	1	4"
10	2	3"
5	3	2"
2	4	1"

- ROCK BERM GENERAL NOTES**
1. USE ONLY OPEN GRADED ROCK 4-8 INCHES IN DIAMETER ROCK 3-5 INCHES IN DIAMETER FOR OTHER CONDITIONS.
 2. THE ROCK BERM SHALL BE SECURED WITH A WOOD WIRE SHIELDING HAVING SIZE OF 20 GAUGE AND SHALL BE BARRIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP.
 3. THE ROCK BERM SHALL BE INSPECTED EVERY TWO WEEKS AND AFTER EACH 1/2" SAND ACCUMULATION SHALL BE REMOVED WITHIN 15 DAYS. REPAIRED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED. CONSTRUCTION THREAT DAMAGE, ETC.
 4. WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD OF THE HEIGHT OF THE BERM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSAL IN AN APPROVED MANNER.
 5. WHEN THE SET IS COMPLETELY SUBLIMATED, THE BERM OF IN AN APPROVED MANNER.
 6. ROCK BERM SHOULD BE USED AS CHECK DAMS FOR CONCENTRATED FLOW AND ARE NOT INTENDED FOR USE IN PERMANENT PROTECTION.

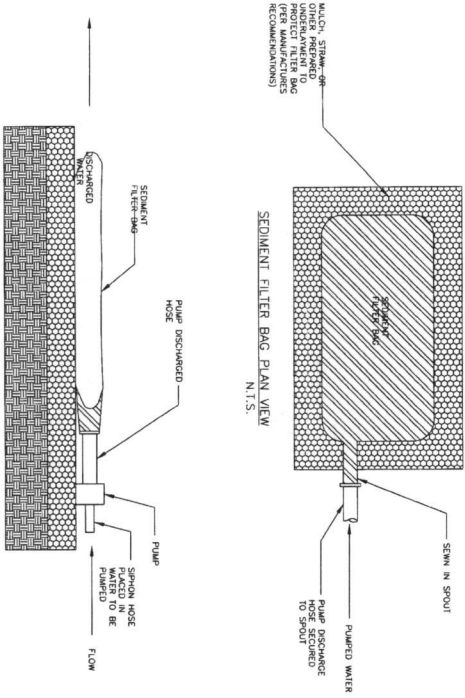
DATE: 7/12/12
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CHECKED BY: [Signature]
SCALE: AS SHOWN
SHEET: 41 OF 42

CITY OF SUGAR LAND, TEXAS
ENGINEERING DEPARTMENT
CONSTRUCTION PLANS FOR
WEST HEMPHARD WAY
RE-USED WATER LINE PHASE 2
EROSION CONTROL DETAILS - 1

DATE: 7/12/12
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CHECKED BY: [Signature]
SCALE: AS SHOWN
SHEET: 41 OF 42



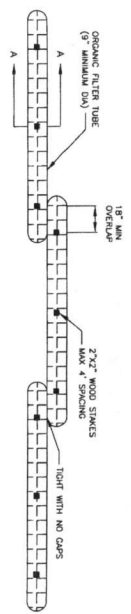
EROSION CONTROL BLANKETS
N.T.S.



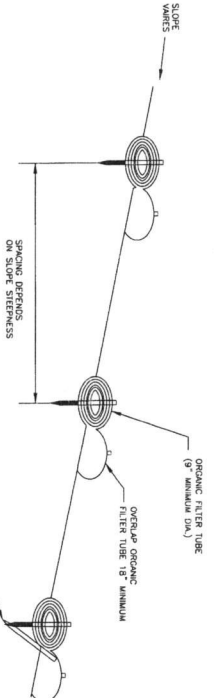
SEDIMENT FILTER BAG PROFILE
N.T.S.

DEWATERING CONTROLS
N.T.S.

NOTE: A FILTRATION BAG IS NOT REQUIRED IF THE DRAINAGE SYSTEM CAN BE ADEQUATELY PROTECTED



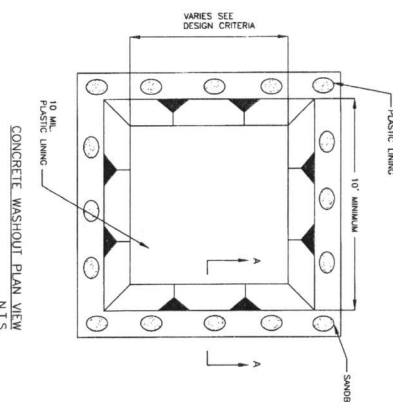
ORGANIC FILTER TUBE PERIMETER CONTROL PLAN VIEW
N.T.S.



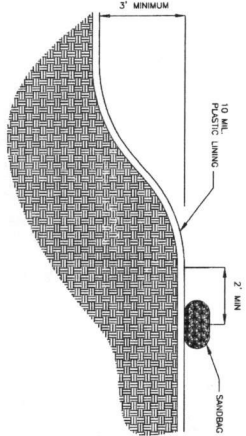
ORGANIC FILTER TUBE PERIMETER CONTROL PROFILE
N.T.S.

FOR SLOPES OF 2:1 OR STEEPER, A SECOND SHANK MAY BE REQUIRED DEPENDING ON SOIL TYPE

FILTER TUBE
N.T.S.



CONCRETE WASHOUT PLAN VIEW
N.T.S.



CONCRETE WASHOUT SECTION A-A
N.T.S.

CONCRETE WASHOUT NOTES

1. SAMBAGS MAY BE REPLACED BY A SOL BERM TO ANCHOR THE PLASTIC BAG

CONCRETE WASHOUT AREA
N.T.S.

- ORGANIC FILTER TUBES NOTES**
- TYPE OF SETTING FILTER MATERIAL, SPACING OF TUBES AND SPACING OF TUBES SHALL BE SPECIFIED BY THE DESIGNER BASED ON THE FOLLOWING SITE PARAMETERS:
• SLOPE STEEPNESS
• SLOPE STEEPNESS
• GROUND CONDITIONS (SOIL OR PACKED)
 - DESIGNER SHALL SHOW ON THE DRAWINGS THE LOCATIONS WHERE TUBES ARE TO BE PLACED. SPACING OF TUBES SHALL BE MINIMUM OF 10 FEET.

DATE: 7/12/12	SCALE: AS SHOWN	PROJECT: WEST HONOLULU WATER REUSE
DESIGNER: JOHN R. HANCOCK	CITY OF SUGAR LAND, TEXAS	CONSTRUCTION PLANS FOR WEST HONOLULU WATER REUSE WATER LINE PHASE 2
ENGINEER: JOHN R. HANCOCK	ENGINEERING DEPARTMENT	EROSION CONTROL DETAILS - 2
PROJECT NO. 280	TYPE FROM REG. NO. 280	SHEET 42 OF 42