Control Number: 45848

Item Number: 40

Addendum StartPage: 0

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2016 SEP -7 PM 2:22
PUBLIC UTILITY COMMISSION
FILING CLERK

SOAH DOCKET NO. 473-16-5011.WS
DOCKET NO. 45848

CITY OF CELINA'S NOTICE OF INTENT TO PROVIDE WATER AND SEWER SERVICE TO AREA DECERTIFIED FROM AQUA TEXAS, INC. IN DENTON COUNTY	§ § § § §	**BEFORE THE PUBLIC UTILITY COMMISSION OF TEXAS**

AQUA TEXAS' RESPONSE TO STAFF'S FIRST REQUESTS FOR INFORMATION

To: Public Utility Commission of Texas Staff, by and through their attorney of record, Erika Garcia, Public Utility Commission of Texas, 1701 N. Congress Avenue, P.O. Box 13326, Austin, Texas 78711-3326.

Aqua Texas, Inc. ("Aqua") provides this response to Commission Staff's First Request for Information to Aqua Texas, Inc. Aqua stipulates that the following response to request for information may be treated by all parties as if the answer was filed under oath.

Respectfully submitted,

By: _____

Paul M. Terrill III
State Bar No. 00785094
Geoffrey P. Kirshbaum
State Bar No. 24029665
TERRILL & WALDROP
810 W. 10th Street
Austin, Texas 78701
(512) 474-9100
(512) 474-9888 (fax)

ATTORNEYS FOR AQUA TEXAS, INC. D/B/A AQUA TEXAS

CERTIFICATE OF SERVICE

I hereby CERTIFY that on September 7, 2016, a true and complete copy of the above was sent by the method indicated to counsel of record at the following addresses in accordance with P.U.C. PROC. R. 22.74:

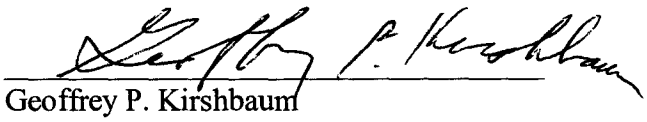
Andrew Barrett — ***via fax to: (512) 600-3899 and e-mail***
BARRETT & ASSOCIATES, PLLC
3300 Bee Cave Road, Suite 650 #189
Austin, Texas 78746

David Tuckfield — ***via fax to:(512) 366-9949 and e-mail***
THE AL LAW GROUP, PLLC
12400 West Highway 71
Suite 350-150
Austin, Texas 78738

ATTORNEYS FOR CITY OF CELINA

Erika Garcia — ***via fax to: (512) 936-7268 and e-mail***
Public Utility Commission of Texas
1701 N Congress PO Box 13326
Austin, Texas 78711-3326

ATTORNEY FOR COMMISSION STAFF



Geoffrey P. Kirshbaum

RESPONSES TO REQUESTS FOR INFORMATION

STAFF 1-1 Please reference Page 7, Lines 16-17 of the Direct Testimony of Darryl G. Waldock.

a) Please describe what property is included in the designation "Prosper Point."
b) Is "Prosper Point" used to refer to more land in Aqua's north Texas Region than just the 128-acre property at issue in this matter?

RESPONSE:

a) The "Prosper Point" project name refers to the 127.897 acres of land in Denton County immediately northeast of the intersection of Crutchfield Road and FM Road 1385. This was the name of the project in 2000 when the first developer Letter of Intent was executed. This is the same property that was released from Aqua's CCN in P.U.C. Docket No. 45329.

b) No. All Aqua references to "Prosper Point" refer to only the 128-acre property at issue in this matter.

Prepared and Sponsored by: Darryl G. Waldock, North Texas Area Manager for Aqua Texas, Inc.

STAFF 1-2 Please reference Page 8, Line 21 through Page 9, Line 1 of the Direct Testimony of Darryl G. Waldock: "Aqua also negotiated with various Property owners related to other aspects of water supply development and wastewater treatment/collection system for the Property."

a) Please provide any other correspondence or other documentation, if any, from previous developers and/or property owners related to these negotiations.

RESPONSE:

Available non-privileged responsive documents are attached hereto as Aqua 000662-000881.

As reflected in these records, the original developer was Affordable Housing Communities, LP. Other developers, entities and land owners Aqua met and discussed the project with over the years were:

1. Prosper Meadows, LLP
2. Brazos Investors, Inc.
3. Jorco Group, Inc.
4. Denton County 128 Development, LLC
5. D.R. Horton
6. Upper Trinity Regional Water District
7. City of Celina
8. Centurion American
9. Mustang SUD

In addition to opposing the original wastewater permit application (resolved with the 12/2/02 Wastewater Service Agreement attached at the end of all Prosper Point WWTP permits, *see e.g.* AT-1 at Aqua 000336-000342) Upper Trinity Regional Water District opposed Aqua's wastewater permit renewal on June 7, 2011 and wanted to provide a wastewater point of service at Good Hope Rd. and Parvin Rd. *See* documents attached hereto as Aqua 000879-000881. Aqua was forced to review the route, which subsequently needed easements and affected landowners.

Prepared and Sponsored by: Darryl G. Waldock, North Texas Area Manager for Aqua Texas, Inc.

STAFF 1-3 Please reference Attachment AT-1 to the Direct Testimony of Darryl G. Waldock, Exhibit 3, Page Aqua 000126, Paragraph 5 "Legal Agreements."

a) Did counsel for Aqua and Denton County 128 Development, LLC, respectively, execute an agreement within 60 days of acceptance of the letter? If yes, please provide a copy of that agreement. If no, why not?

b) Did Aqua and Denton County 128 Development, LLC take any further steps after acceptance of the letter to facilitate the provision of service to the property?

RESPONSE:

a) No. Draft agreements were negotiated, but the final drafts was never executed. Aqua does not know specifically why Mr. James L. Mabrey, Managing Member for Denton County 128 Development, LLC, decided not to execute the final drafts.

b) Yes. Over the course of two years, there were meetings with engineers, hydrogeologists, Upper Trinity Regional Water District, and Mustang SUD. There was much correspondence and many conversations with Mr. Mabrey about moving forward with the project.

Prepared and Sponsored by: Darryl G. Waldock, North Texas Area Manager for Aqua Texas, Inc.

STAFF 1-4 Please provide a timeline of the relationship between Aqua and Denton County 128 Development, LLC. Along with all other relevant dates, please include the date on which communications began between the parties regarding the provision of water and wastewater service to the property, and the date on which Denton County 128 Development, LLC sold the property.

RESPONSE:

Aqua's first contact with Denton County 128 Development, LLC. was on 10/10/2013 and it was a phone call to Aqua's Steve Dunnahoe from Mr. James L. Mabrey, its Managing

Member, regarding Aqua's water and wastewater rates. Denton County 128 Development, LLC. sent Aqua a Request for Service letter on 1/23/2014. A Letter of Intent was then executed on 3/10/2014. Aqua emailed the first draft of the Prosper Point Water & Wastewater Agreements on 10/27/2014. They were never executed. Denton County 128 Development, LLC sold the property on 11/5/2015.

Prepared and Sponsored by: Darryl G. Waldock, North Texas Area Manager for Aqua Texas, Inc.

STAFF 1-5 Please reference Attachment AT-1, Pages 5-6, relating to the Prosper Point wastewater permit (TPDES Permit No. WQ0014234001).

a) Please provide supporting documentation for the approximately $15,000 Aqua states is attributable to the original cost to obtain the permit.

b) Please provide supporting documentation for the $12,000 Aqua states is attributable to the three renewals of the permit.

RESPONSE:

a) The original permit, which includes a settlement agreement attachment with Upper Trinity Regional Water District, is located within AT-1 as Aqua 000308-000342. The $15,000.00 amount is an estimate of the cost to obtain an uncontested wastewater permit based on the experience of Aqua personnel in managing Aqua wastewater permit applications. The original permit application cost more than average due to the protest and subsequent agreement with Upper Trinity Regional Water District, but Aqua cannot document the precise amount.

b) The renewed permits are located within AT-1 as Aqua 000170-000201 and Aqua 000260-000300. The $12,000.00 amount is an estimate of the cost for work on three renewal applications at the cost of $4000 each based on the experience of Aqua personnel in managing Aqua wastewater permit renewal applications (*see* Aqua 000472). However, Aqua cannot document the precise amount for each renewal, which was likely higher. In particular the cost for Aqua's second renewal in 2011 was above average due to a protest by the Upper Trinity Regional Water District.

Prepared and Sponsored by: Darryl G. Waldock, North Texas Area Manager for Aqua Texas, Inc.

STAFF 1-6 Please reference Attachment AT-1 at Page Aqua 000170 (2007 renewal); Attachment AT-1 at Page Aqua 000260 (2012 renewal); Attachment AT-5 (notice that renewal in 2016 would not be sought).

a) Based on the above referenced attachments, the Prosper Point wastewater permit was issued January 9, 2003, renewed May 21, 2007, renewed again on January 31, 2012, and set to expire on October 1, 2016. Please reconcile with Page 10, Line 1-2 of the Direct Testimony of Darryl G. Waldock stating that

"the Prosper Point wastewater permit required a TCEQ renewal application every five years."

b) Based on the above referenced attachments, and Attachment AT-1 at Page Aqua 000472, the Prosper Point wastewater permit was renewed twice, once in 2007 and once in 2012. Please reconcile to Attachment AT-1 at Page 6, which seeks compensation for three permit renewals.

RESPONSE:

a) The original permit was issued only after the agreement with Upper Trinity Regional Water District was signed on 12/2/2002, however the renewal date was set based on the filing date of the permit application which Aqua believes was in 2001. Permit renewals have to be filed six months prior to expiration (unless an exception is granted) and then the issue date is based on the processing of the renewal which can be affected by protests. But permit renewal applicants may operate while a renewal application is processed after filing. The three permit expirations were scheduled five years apart, thus requiring the renewal application work every five years.

b) There have been three wastewater treatment plant permit applications, but Aqua started work on a fourth; the original and two renewal applications were filed, but the third renewal application was prepared, close to final, but not filed because of the CCN release in P.U.C. Docket No. 45329.

1. Original permit: Issued 1/9/2003, Expiration 10/1/2006
2. First renewal: Issued 5/21/2007, Expiration 10/1/2011
3. Second renewal: Issued 1/31/2012, Expiration 10/1/2016
4. Third renewal: Filing was due April 1, 2016; Permit not renewed due to CCN release.

Prepared and Sponsored by: Darryl G. Waldock, North Texas Area Manager for Aqua Texas, Inc.

STAFF 1-7 Please reference Attachment AT-1, Page Aqua 000241-246. Do permit costs referenced in Staff 1-5 include the cost of leasing the site of the proposed wastewater treatment plant site?

RESPONSE:

No.

Prepared and Sponsored by: Darryl G. Waldock, North Texas Area Manager for Aqua Texas, Inc.

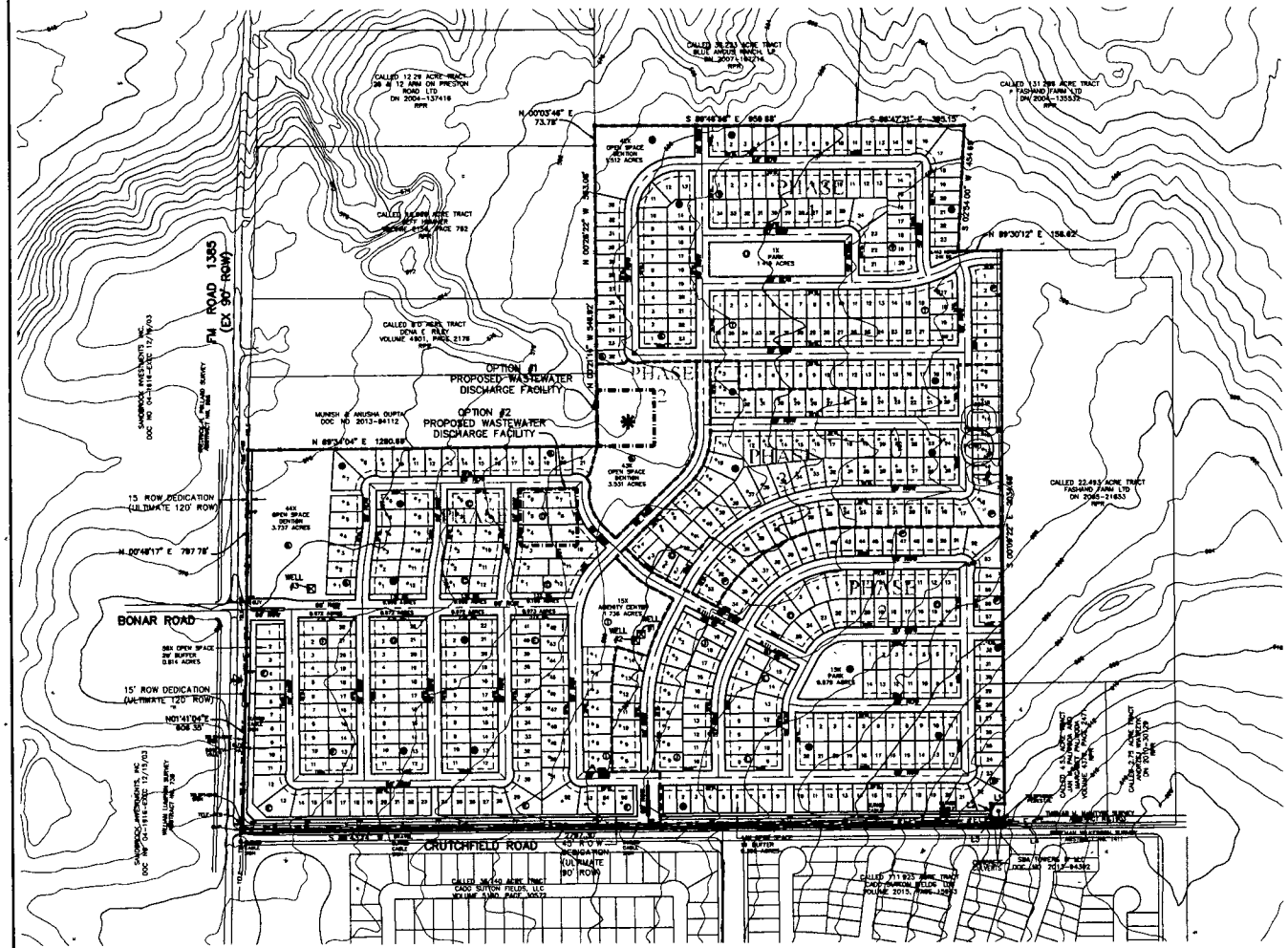
STAFF 1-8 Does the Prosper Point wastewater permit and the proposed wastewater treatment plant have the capacity to serve more area than just the 128-acre Property at issue in this proceeding?

a) If yes, then how much of the surrounding area beyond the 128-acre property, currently in Aqua's CCN area, does the Prosper Point wastewater permit cover and could the proposed wastewater treatment plant serve?

RESPONSE:

First, the Prosper Point wastewater permit is effectively expired (officially in October 2016) and of no use to any area at all. Second, if Aqua had renewed the wastewater permit, its capacity was limited to anticipated needs for development within the 128-acre Property at issue in this proceeding. If the development had moved forward without a CCN release, and if a wastewater treatment plant was built for the development that had unanticipated extra capacity available under the permit, Aqua would not have been able to use that capacity outside the 128-acre Property at issue in this proceeding because it is surrounded by area certificated to other providers.

Prepared and Sponsored by: Darryl G. Waldock, North Texas Area Manager for Aqua Texas, Inc.



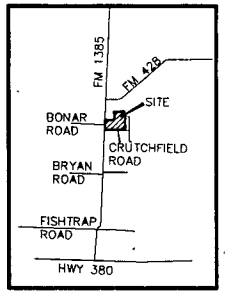
SUMMARY TABLE				
PHASE	50'X105'	60'X105'	TOTAL	ACREAGE
1	107	78	185	43.774
2	142	16	158	36.108
3	0	84	84	16.342
4	151	0	151	29.673
TOTAL	400	178	578	127.897
PERCENTAGE OF LOT SIZES FOR ALL 4 PHASES				
50' X105'	69.2%			
60'X105'	30.8%			

LAND USE DENSITY				
	ACREAGE	PERCENTAGE	LOTS	HOMES/ACRES
RESIDENTIAL	111.623 AC+/	87.30%	578	5.1
OPEN SPACE	15.274 AC+/-	11.90%		
WASTEWATER DISCHARGE FACILITY	1 AC+/	0.8%		
TOTAL	127.897 AC+/-	100%		

BUILDING SETBACK SUMMARY	
FRONT YARD	15', 20' GARAGE
REAR YARD	10'
SIDE YARD	5'
SIDE YARD ADJACENT TO STREET	15'

PHASES OF DEVELOPMENT	
	EXPECTED TIMEFRAMES
PHASES 1 & 2	November 2014
PHASES 3 & 4	May 2016

MINIMUM HOUSE SIZE	
50' X 105'	1,200 SF
60' X 105'	1,200 SF



LOCATION MAP (N.T.S.)

LEGEND

IPF	IRON PIPE FOUND
IRF	IRON ROD FOUND
PP	POWER POLE
ROW	RIGHT-OF-WAY
OS	OPEN SPACE LOT
E	OVERHEAD ELECTRIC LINE
TELE	TELECOMMUNICATION
*	60' X 105' LOTS
⊠	PROPOSED PUBLIC WATER SUPPLY WELL
✱	PROSPER POINT WASTEWATER TREATMENT FACILITY SIC CODE 4952 TPDES PERMIT NO WQ0014234001

ESTIMATED POPULATION:
3.23P/HH X 578 HOMES = 1,877 PEOPLE

CURRENT LAND USE: AGRICULTURE
PROPOSED LAND USE PLANNED DEVELOPMENT SINGLE FAMILY
PER CELINA FUTURE LAND USE MAP. DESIGNATED AS SUBURBAN MODERATE HIGH RESIDENTIAL

NOTES
- THERE ARE NO HIKE AND BIKE TRAILS, PER CITY OF CELINA COMPREHENSIVE PLAN, SHOWN ON THE PROPERTY.
- NO MAJOR DRAINAGEWAYS TRAVERSE THE PROPERTY

200 100 0 200 400
1" = 200' - 0"

GENERAL DEVELOPMENT PLAN

HIGHLAND TRAILS

BEING 127.897 ACRES OUT OF THE
THOMAS H. McINTYRE SURVEY, ABSTRACT NO. 903
DENTON COUNTY, TEXAS

578 RESIDENTIAL LOTS
1 AMENITY CENTER LOT
3 OPEN SPACE DETENTION LOTS
2 OPEN SPACE PARK LOT
12 OPEN SPACE BUFFER LOTS
1 WASTEWATER DISCHARGE FACILITY SITE

DENTON COUNTY 128 DEVELOPMENT LLC — OWNER /APPLICANT
5956 Sherry Lane, Suite 1000
Dallas, Texas 75225 Contact:
Contact: James Mabrey
(214) 546-5400

JBI PARTNERS, INC. — SURVEYOR/ENGINEER
16301 Querum Drive, Suite 200 B
Addison, Texas 75001
Contact: Jeff Miles
• TBPE No F-438 TBPLS No 10078000
(972) 248-7676

JUNE 15, 2015

Sheet 1 of 1

FLOOD STATEMENT According to Community Panel No. 48121C0270D, dated April 18, 2011 of the Federal Emergency Management Agency, National Flood Insurance Program Map, this property is within Flood Zone "X", (areas determined to be outside 500-year floodplain), which is not a special flood hazard area. If this site is not within an identified special flood hazard area, this flood statement does not imply that the property and/or the structures thereon will be free from flooding or flood damage. On rare occasions, greater floods can and will occur and flood heights may be increased by man-made or natural causes. This statement shall not create liability on the part of the Surveyor

Plotted by: Keough Plot Date: 6/15/2015 5:07 PM
Drawing: H:\Projects\LAND05-Celina 128\Dwg\LAND05-GDP(ALTERNATE)-05-20-15.dwg Saved By: keough Save Time: 6/15/2015 5:05 PM

Aqua 000662

TCEQ Public Water System Plan Review Submittal Form
(Complete, Seal and Attach to Submittal Package)

Date	August 20, 2015				
TCEQ PWS Identification No.*	XXXXXXX	**CCN No. or Application No. ****	11157		
Water System Name	Highland Trails				
Water System Owner	Aqua Texas, Inc.	**Type of Entity**	Corporation		
Address	9450 Silver Creek Road, Ft. Worth, TX 76108	**Phone (AC)**	817-367-3625		
Responsible Official	Darryl Waldock	**Title**	Regional Manager		
***County (system location)**	Denton	**Mechanism & Source of Financing**	Private		
Subdivision Sec., Phase, Unit, Etc.	Water Well #1				
Engineer	Joe W. Lane	**Registration No.**	20857	**E-Mail**	joe@collierconsulting.com
Firm Name	**Collier Consulting, Inc.**	**Phone (AC)**	254-968-8741	**Fax:(AC)**	254-968-8725
Firm Address	590 E. Southloop, Stephenville, TX 76401	**Firm Registration No.**	F-8170		

* If no PWS Number exists, the owner must submit a business plan, if required, in accordance with §290.39(f) and (g).

** If a CCN is required and a CCN does not exist, an application to obtain a CCN number must be accepted before a project submittal can be technically reviewed. In addition, if a submittal is for a project located outside the CCN area, a CCN amendment application must be submitted before a project may be reviewed for construction approval. Please refer to 30 TAC Chapter 291 for additional information regarding CCNs.

If this is a new (proposed) system, you must attach the following with this submittal:

- ☐ Attach a list of all water utilities within ½ mile of the proposed service area boundaries
- ☐ Copies of formal applications for service from each of the following:
  - ☐ any municipality if the system is within its ETJ;
  - ☐ any district or other political subdivision whose corporate boundaries are within ½ mile of the proposed service area boundaries
  - ☐ any other water service provider whose certificated service area boundary is within ½ mile of the proposed service area boundaries
- ☐ Documentation that all application requirements including payment of fees are compliant.
- ☐ Copies of written responses from each of the entities listed above.
- ☐ Business plan. The business plan financial requirements for non-community water systems must confirm capital availability to construct the system according to TCEQ requirements. This would consist of a balance sheet that shows liabilities as well as assets, not just a bank confirmation of a deposit account. Alternatively, if the project is being constructed with loan funds, then a loan commitment letter from the lender specific to that project will suffice.
- ☐ Justification for constructing a separate system (unless none of the entities listed above exist)
- ☐ TCEQ Core Data Form (No. 10400)
- ☐ Emergency Preparedness Plan (No. 20536) if serving water in Harris, Fort Bend Counties and have overnight accommodations.

Type of Project (please check the appropriate boxes). All engineering documents must be sealed, signed and dated by a Texas registered professional engineer. An engineering report that includes the number of connections to be served must accompany each project.

- ☐ Distribution System Modifications
- ☐ Storage Capacity Modifications
- ☐ Pressure Maintenance Facilities Modifications
- X ***Water Well Construction, Proposed
- ☐ ***Well completion data for approved well
- ☐ ***Ground Water Treatment Plant, New
- ☐ Disinfection Facilities or Other Modifications
- ☐ Surface Water Treatment Plant, New
- ☐ Modification of Surface Water Treatment Plant
- ☐ Proposed Innovative/Alternative Process Study
- ☐ Request for Rule Exception
- ☐ Preliminary Engineering Report w/o plans
- ☐ Tex. Water Dev. Board. Project No._____
- ☐ Pilot Study for Innovative/Alternative Project (Any treatment process not described in Ch 290 requiring an exception.)
- ☐ Other (please describe

***Please refer to the **following page** for a list of counties where an elevated risk of RADIONUCLIDES in the groundwater exists. The website also has helpful information regarding the radionuclide testing required in these counties.

IF THIS SUBMITTAL IS A REVISION OF PREVIOUSLY SUBMITTED PLANS, PLEASE ENTER THE ASSIGNED TCEQ LOG NUMBER: _____ Please call (512) 239-4691 if you have questions regarding this form. Your cooperation will help us provide better service.

Additional helpful information and rules are available at the **Public Water System Plan Review website**

I hereby certify that the above information is, to the best of my knowledge, true and correct.

Joe W. Lane

Printed Engineer's Name

August 20, 2015

Date

Signed P.E. Seal below

COLLIER
CONSULTING

Box 1137
590 East South Loop
Stephenville, TX 76401
Office: (254) 968-8721
Fax: (254) 968-8725
www.collierconsulting.com

August 20, 2015

TCEQ Water Supply Division MC 153
PO Box 13087
Austin, TX 78711-3087

RE: Public Water System
Highland Trails
PWS # XXXXXXX
Denton County, Texas

Dear Sirs:

Request is made for "Approval for Construction" for the Highland Trails Trinity Well #1. A Public Water Supply Number is not being requested at this time as the Owner would like to make ensure the well will produce the expected quantity and quality of water before investing in the design of a water system.

If the well does make the predicted quantity and quality of water, then plans, specifications, and an engineering report for a water plant will be submitted to TCEQ for a Public Water Supply Number and "Approval for Construction". The anticipated capacity of this well is 350 gpm. Aqua Texas has the CCN for this property.

If you have any questions, please contact me.

Thank you.

Sincerely,

Matt Van Hattem

Matt Van Hattem
254-968-8741

HIGHLAND TRAILS
PROPOSED
TRINITY WATER WELL #1
CONSTRUCTION PACKET

DENTON CO., TEXAS
PWS NO. XXXXXXX

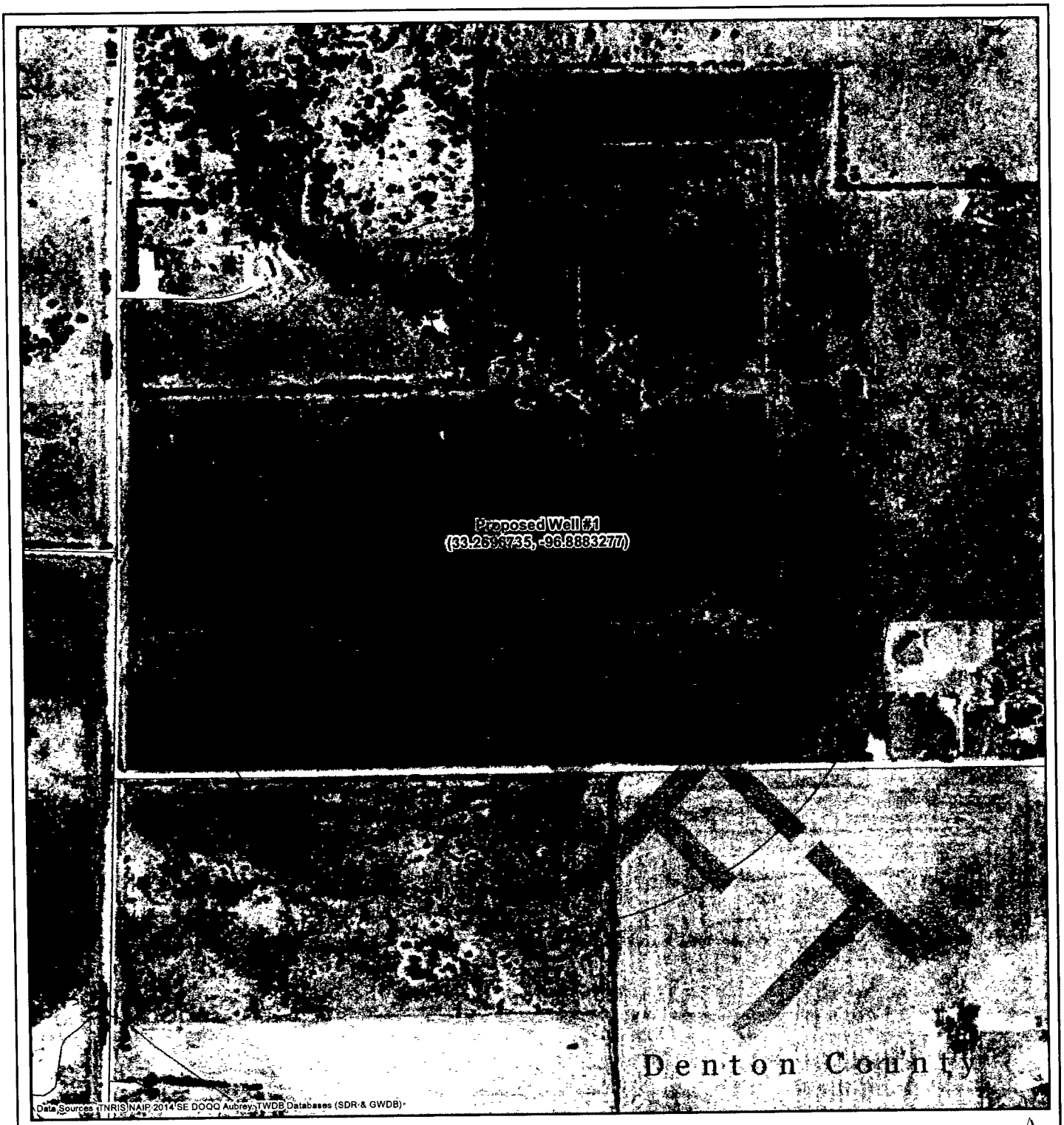
AUGUST 20, 2015
PREPARED BY:

COLLIER CONSULTING, INC.
590 EAST SOUTH LOOP
STEPHENVILLE, TEXAS 76401
PHONE 254-968-8721
FAX 254-968-8725

COLLIER
CONSULTING

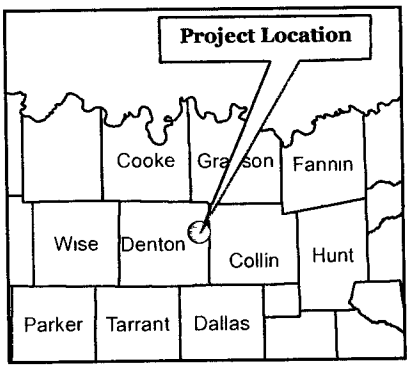
F-8170

MARS



Legend

- Area Water Wells (TD')
- Water Feature
- Roads
- Proposed Water Well
- 1/4 - Mile Buffer



Feet
0 250 500 1,000
N

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet

Location Map

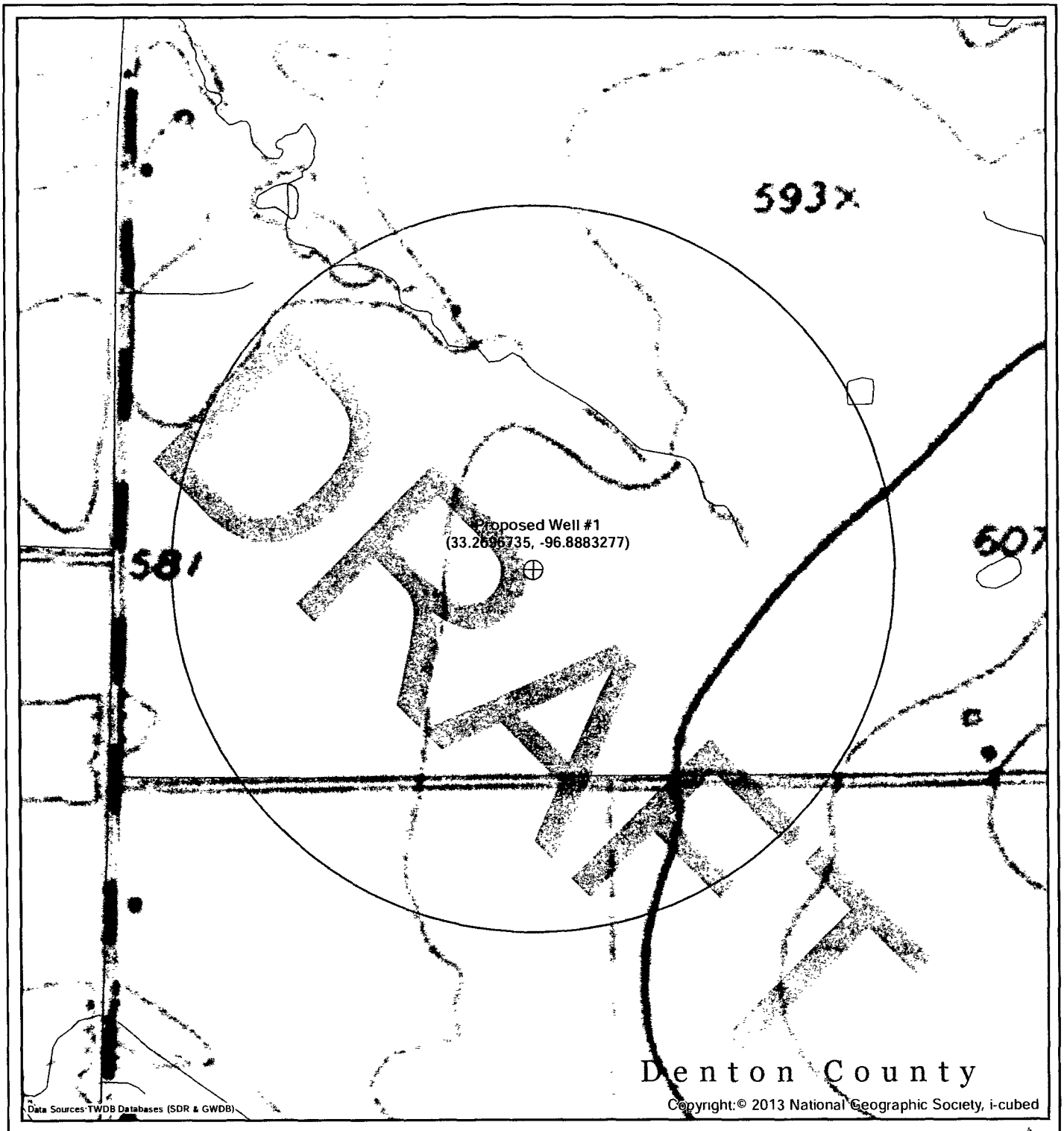
Highland Trails
Proposed Trinity Well #1

Denton County, Texas

DESIGN: NV	CHECKED: MV	DATE: 5/29/2015
DRAWN: NV	SCALE: 1 to 6,000	REVISION: 1

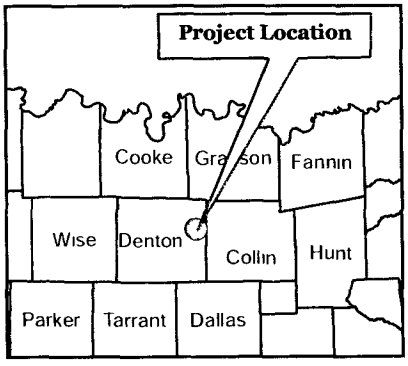
COLLIER CONSULTING
254-968-8741
www.collierconsulting.com

¼ MILE SURVEY MAPS



Legend

- Area Water Wells (TD')
- Water Feature
- Roads
- Proposed Water Well
- 1/4 - Mile Buffer



0 250 500 1,000 Feet

Coordinate System: NAD 1983 StatePlane Texas North Central FIPS 4202 Feet

N

Location Map

Highland Trails
Proposed Trinity Well #1

Denton County, Texas

DESIGN: NV	CHECKED: MV	DATE: 5/29/2015
DRAWN: NV	SCALE: 1 to 6,000	REVISION: 1

COLLIER CONSULTING
254-968-8741
www.collierconsulting.com

POTENTIAL POLLUTION SURVEY

SYSTEM NAME: Highland Trails
SYSTEM ID. NO.: XXXXXXX
FACILITY NAME: Proposed Well #1
INSPECTION PERFORMED BY: Matt Van Hattem
DATE INSPECTION PERFORMED: MARCH 9, 2015

290.41.(c) Groundwater sources and development.

(1) Are the proposed groundwater sources located so that there will be no danger of pollution from flooding or from unsanitary surroundings, such as privies, sewage, sewage treatment plants, livestock and animal pens, solid waste disposal sites, underground petroleum and chemical storage tanks, liquid transmission pipelines, or abandoned and improperly sealed wells?

YES

(2) Are there any abandoned or inoperative wells (unused wells that have not been plugged) within a quarter mile of the proposed well site?

NONE OBSERVED

(3) Are there any existing or potential pollution hazards which may affect groundwater quality including, but not limited to: landfill and dump sites; animal feedlots; military facilities; industrial facilities; wood-treatment facilities; liquid petroleum and petrochemical production, storage, and transmission facilities; Class 1, 2, 3, or 4 injections wells; or pesticide storage and mixing facilities within ¼ mile of the proposed well site?

NONE OBSERVED

(4) Is the site located within 500 feet of a sewage treatment facility or within 500 feet of animal feed lots, solid waste disposal sites, lands on which sewage plant or septic tank sludge is applied, or lands irrigated by sewage plant effluent?

NONE OBSERVED

(5) Is the site located within 500 feet of a sewage treatment facility or within 300 feet of a sewage wet well, sewage pumping station or drainage ditch which contains industrial waste discharges or the wastes from sewage treatment systems?

NONE OBSERVED

(6) Is the proposed well site within 50 feet of a tile or concrete sanitary sewer, sewage appurtenance, septic tank, storm sewer, or cemetery: or within 150 feet of a septic tank perforated drainfield, areas irrigated by low dosage, low angle spray on-site sewage facilities, absorption bed, evapotranspiration bed, improperly constructed water well or underground petroleum and chemical storage tank or liquid transmission pipeline?

NONE OBSERVED

(7) Is the site located within 50 feet of livestock in pastures?

NO

(8) Are all sanitary or storm sewers located within 50 feet of the proposed well constructed of ductile iron or PVC pipe meeting AWWA standards, having a minimum working pressure of 150 psi or greater, and equipped with pressure type joints?

YES

(9) Are there any sanitary or storm sewers located within 10 feet of the proposed well?

NONE OBSERVED

DRAFT

DEED

Denton

Current datetime: 5/29/2015 2:27:58 PM

DETAILS REPORT

**Note: report is Sorted in Ascending Order by Recorded Date, Document Number

Doc#	Type Desc.	Instr. Date	Book/Vol/Page	File Date	Consideration
135475	SPECIAL WARRANTY DEED	11/07/2013		11/12/2013	

Grantor	Grantee
AFFORDABLE HOUSING COMMU , BRAZOS INV INC	DENTON COUNTY 128 DEV LL

Volume/Cabinet	Page	Lot	Block	Description

References

Book/Vlm/Page	Description	Recorded year

****** Electronically Filed Document ******

Denton County
Cynthia Mitchell
County Clerk

Document Number: 2013-135475
Recorded As : ERX-WARRANTY DEED

Recorded On:	**November 12, 2013**
Recorded At:	**09:26:56 am**
Number of Pages:	**6**
Recording Fee:	**$46.00**
Parties:	**Direct- AFFORDABLE HOUSING COMMUNITY**
	Indirect-
Receipt Number:	**1107367**
Processed By:	**Jane Kline**

*************** THIS PAGE IS PART OF THE INSTRUMENT **************

Any provision herein which restricts the Sale, Rental or use of the described REAL PROPERTY because of color or race is invalid and unenforceable under federal law.

THE STATE OF TEXAS)
COUNTY OF DENTON)

I hereby certify that this instrument was FILED in the File Number sequence on the date/time printed hereon, and was duly RECORDED in the Official Records of Denton County, Texas.

County Clerk
Denton County, Texas

DE-1

REUNION TITLE

GF#2001-51391-RU

NOTICE OF CONFIDENTIALITY RIGHTS: IF YOU ARE A NATURAL PERSON, YOU MAY REMOVE OR STRIKE ANY OF THE FOLLOWING INFORMATION FROM THIS INSTRUMENT BEFORE IT IS FILED FOR RECORD IN THE PUBLIC RECORDS: YOUR SOCIAL SECURITY NUMBER OR DRIVER'S LICENSE NUMBER.

Special Warranty Deed

THE STATE OF TEXAS }

KNOW ALL MEN BY THESE PRESENTS:

COUNTY OF DENTON }

THAT, AFFORDABLE HOUSING COMMUNITIES, LTD. ("Grantor"), for and in consideration of the sum of $10.00 cash in hand paid by DENTON COUNTY 128 DEVELOPMENT LLC ("Grantee"), whose address is 5956 Sherry Lane, Suite 1000, Dallas, Texas 75225, and other good and valuable consideration, the receipt of which are hereby acknowledged by Grantor, has GRANTED, BARGAINED, SOLD AND CONVEYED, and by these presents does GRANT, BARGAIN, SELL AND CONVEY unto Grantee, that certain real property situated in Denton County, Texas, and described in **Exhibit "A"** attached hereto and mad a part hereof for all purposes (the "Land"), and all buildings, fixtures and other improvements located on the Land, if any, together with all and singular the rights, privileges, hereditaments, and appurtenances pertaining to such real estate, including, but not limited to, any right, title and interest of Grantor in and to (1) any strips and gores, if any, between the Land and any abutting properties, whether owned or claimed by deed, limitations or otherwise; and (2) any land lying within any highway, avenue, street, road, alley, easement or right of way, open or proposed, in, or across, abutting or adjacent to the Land, to the center line of said highway, avenue, street, road, alley or right-of-way (collectively, the "Property").

This conveyance is made by Grantor, and accepted by Grantee subject to any easements, restrictions and other matters described in **Exhibit B** attached hereto and incorporated herein by reference (collectively, the "Permitted Exceptions") and the following:

TO HAVE AND TO HOLD the Property, together with, all and singular, the rights and appurtenances thereto in anywise belonging, to Grantee and Grantee's successors and assigns forever; and subject only to the Permitted Exceptions, Grantor does hereby bind Grantor and Grantor's successors and assigns to warrant and forever defend, all and singular, the Property unto the Grantee and Grantee's successors and assigns, against every person whomsoever lawfully claiming or to claim the same, or any part thereof, by, through or under Grantor, but not otherwise.

EXCEPT AS AND TO THE EXTENT EXPRESSLY PROVIDED IN THAT ONE CERTAIN CONTRACT OF SALE BETWEEN THE PARTIES DATED April 29, 2013 THE PROPERTY IS TRANSFERRED TO GRANTEE ON AN "AS IS", WHERE IS" BASIS ONLY, WITHOUT REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED AS TO THE MERCHANTABILITY, CONDITION, OR HABITABILITY THEREOF, AS TO FITNESS FOR A PARTICULAR PURPOSE, AS TO COMPLIANCE WITH ANY GOVERNMENTAL REQUIREMENTS, OR AS TO THE PRESENCE OF ANY ENVIRONMENTALLY HAZARDOUS MATERALS OR ENVIRONMENTAL CONDITION, EXCEPT FOR THE SPECIAL WARRANTY OF TITLE CONTAINED HEREIN AND THE EXPRESS

REPRESENTATIONS AND WARRANTIES IN THE CONTRACT OF SALE. TO THE EXTENT THAT GRANTOR MAY HAVE PROVIDED ANY INFORMATION REGARDING THE PROPERTY, GRANTOR IS NOT MAKING ANY REPRESENTATIONS OR WARRANTIES AS TO THE ACCURACY OR COMPLETENESS OF SUCH INFORMATION. GRANTEE HAS BEEN GIVEN THE OPPORTUNITY TO INSPECT THE PROPERTY AND GRANTEE IS RELYING SOLELY ON ITS OWN INVESTIGATIONS AND NOT ON ANY INFORMATION PROVIDED BY GRANTOR EXCEPT FOR THE SPECIAL WARRANTY OF TITLE CONTAINED HEREIN FROM GRANTOR TO GRANTEE AND THE EXPRESS REPRESENTATIONS AND WARRANTIES IN THE CONTRACT OF SALE. TO THE MAXIMUM EXTENT PERMITTED BY LAW, THE SALE OF THE PROPERTY AS PROVIDED HEREIN IS MADE ON AN "AS IS WHERE IS" CONDITION AND BASIS WITH ALL KNOWN AND UNKNOWN DEFECTS AND FAULTS, AND THAT A MATERIAL FACTOR IN DETERMINING THE PURCHASE PRICE OF THE PROPERTY WAS GRANTEE'S AGREEMENT TO THE FOREGOING. THIS PROVISION SHALL SURVIVE THE CLOSING.

Current ad valorem taxes on the property have been prorated; the payment thereof is assumed by Grantee.

When the context requires, singular nouns and pronouns include the plural.

Executed to be effective the 1st day of November, 2013.

Grantor:

Affordable Housing Communities, Ltd., a Texas Limited Liability Partnership

By: Brazos Investors, Inc., its General Partner

By: Gary L. Howard
Gary L. Howard, President

STATE OF TEXAS §
§
COUNTY OF TARRANT §

This instrument was acknowledged before me on the 5th day of November, 2013, by Gary L. Howard, President of Brazos Investors, Inc.

Lisa Ooten
Commission Expires
05-24-2016

Lisa Ooten
Notary Public, State of Texas

AFTER RECORDING RETURN TO:
DENTON COUNTY 128 DEVELOPMENT LLC
5956 Sherry Lane, Suite 1000
Dallas, Texas 75225

EXHIBIT "A"
Legal Description

All that certain tract or parcel of land lying and being situated in the THOMAS H. McINTYRE SURVEY, Abstract Number 903, Denton County, Texas, being part of a called 128.01 acre tract described in a deed to Affordable Housing Communities, Ltd., recorded in Volume 4730, Page 1923, Real Property Records, Denton County, Texas, and being more particularly described as follows:

BEGINNING at a 1/2 inch iron pin found at the Southwest corner of said 128.01 acre tract in the East right-of-way of F.M. Road 1385 and the centerline of a Crutchfield Road, the South boundary line of said McIntyre Survey and the North line of the Freeman Wilkerson Survey, Abstract 1411;

THENCE North 01 degrees 41 minutes 04 seconds East, along the East right of way of F.M. Road 1385, a distance of 606.35 feet to a 1/2 inch iron pin found for corner;

THENCE North 00 degrees 48 minutes 17 seconds East, along the East right-of-way of F.M. Road 1385, a distance of 797.78 feet to a 1/2 inch iron pin found at the western most Northwest corner of said 128.01 acre tract and the East right-of-way of F.M. Road 1385;

THENCE North 89 degrees 34 minutes 04 seconds East, a distance of 1280.69 feet to a 1/2 inch iron pin found at an inner ell corner of said 128.01 acre tract;

THENCE North 00 degrees 21 minutes 14 seconds West, a distance of 546.92 feet to a 5/8-inch iron pin found on a West line of said 128.01 acre tract and the Northeast corner of a called 16.03 acre tract described in a deed to Dena E. Riley, recorded in Volume 4601, Page 2176, Real Property Records, Denton County, Texas, said pin also being at the Southeast corner of a called 16.000 acre tract described in a deed to Jeff Hammer, recorded in Volume 3156, Page 762, Real Property Records, Denton County, Texas;

THENCE North 00 degrees 26 minutes 22 seconds West, a distance of 553.08 feet to a 1/2 inch iron pin found on a West line of said 128.01 acre tract and the Northeast corner of said Hammer tract, said pin also being at the Southeast corner of a called 12.29 acre tract described in a deed to 28 & 12 ARM on Preston Road, Ltd., recorded under Document Number 2004-137416, Real Property Records, Denton County, Texas;

THENCE North 00 degrees 03 minutes 46 seconds East with a West line of said 128.01 acre tract and the East line of said 12.29 acre tract, a distance of 73.78 feet to a 1/2 inch iron pin found at the northern most Northwest corner of said 128.01 acre tract and the East line of said 12.29 acre tract, said pin also being at the southern most Southwest corner of a called 38.223 acre tract described in a deed to Blue Angus Ranch, LP, recorded under Document Number 2007-107216, Real Property Records, Denton County, Texas;

THENCE South 89 degrees 46 minutes 58 seconds East with the northern most North line of said 128.01 acre tract and the southern most South line of said Blue Angus Ranch tract, a distance of 959.68 feet to a 3/8 inch iron pin found on the northern most North line of said 128.01 acre tract and the southern most Southeast corner of said Blue Angus Ranch tract, said pin also being at the western most Southwest corner of a called 131.286 acre tract described in a deed to Fashand Farm Ltd., recorded under Document Number 2064-135532, Real Property Records, Denton County, Texas;

THENCE South 89 degrees 47 minutes 31 seconds East with the northern most North line of said 128.01 acre tract and the southern most South line of said 131.286 acre tract, a distance of 395.15 feet to a 1/2 inch iron pin found at the northern most Northeast corner of said 128.01 acre tract and an inner ell corner of said 131.286 acre tract;

THENCE South 02 degrees 54 minutes 00 seconds West, a distance of 454.69 feet 1/2 inch iron pin found at an inner ell corner of said 128.01 acre tract;

THENCE North 89 degrees 30 minutes 12 seconds East, a distance of 156.62 feet to a 1/2 inch iron pin found at the eastern most Northeast corner of said 128.01 acre tract and on the southern most South line of said 131.286 acre tract, said pin also being at the Northwest corner of a called 22.493 acre tract described in a deed to Fashand Farm Ltd., recorded under Document Number 2005-21653, Real Property Records, Denton County, Texas;

THENCE South 00 degrees 09 minutes 22 seconds East, a distance of 2034.68 feet to a 1/2 inch iron pin found on the eastern most East line of said 128.01 acre tract;

THENCE South 89 degrees 14 minutes 57 seconds West, a distance of 50.31 feet to a 1/2 inch iron pin found for corner;

THENCE South 00 degrees 56 minutes 28 seconds East, a distance of 50.03 feet to a 1/2 inch iron pin found for corner;

THENCE North 89 degrees 12 minutes 15 seconds East, a distance of 49.92 feet to a 1/2 inch iron pin found on the eastern most East line of said 128.01 acre tract;

THENCE South 01 degrees 18 minutes 52 seconds East with the eastern most East line of said 128.01 acre tract, a distance of 31.07 feet to a 1/2 inch iron pin found at the southern most Southeast corner of said 128.01 acre tract in the centerline of Crutchfield Road and the South boundary line of said McIntyre Survey;

THENCE South 89 degrees 43 minutes 14 seconds West along the centerline of Crutchfield Road and the South boundary line of said McIntyre Survey, a distance of 2797.30 feet to the POINT OF BEGINNING and containing in all 127.897 acres of land.

EXHIBIT "B"
Permitted Exceptions

Mineral estate and interest in coal, lignite and other minerals together with all rights, privileges and immunities thereto described in instrument filed 10/11/1979, recorded in Volume 980, Page 516, Real Property Records, Denton County, Texas. Title to said interest not checked subsequent to the date thereof.

Title to all coal, lignite, oil, gas and other minerals in, under and that may be produced from the land, together with all rights, privileges, and immunities relating thereto, all of such interest, to the extent not previously reserved or conveyed being described in instrument filed 08/04/1983, recorded in Volume 1241, Page 727, Real Property Records, Denton County, Texas. Title to said interest not checked subsequent to the date thereof.

Easement granted by Bankers Life Insurance Co., to Denton County Electric Cooperative, Inc., filed 09/05/1953, recorded in Volume 402, Page 154, Real Property Records, Denton County, Texas and as affected by Agreement Defining Area Embraced within Easement filed 08/30/2013, recorded in cc# 2013-109502, Real Property Records, Denton County, Texas, and as noted on survey of subject property certified to by Gary W. Hammett, R.P.L.S. No. 1849, dated 05/20/2013, last revised 10/09/2013.

Easement granted by Affordable Housing Communities, Ltd., to TowerCo II LLC, filed 05/31/2011, recorded in cc# 2011-49036, Real Property Records, Denton County, Texas and as shown on survey of subject property certified to by Gary W. Hammett, R.P.L.S. No. 1849, dated 05/20/2013, last revised 10/09/2013.

Overhead power lines and power poles encroaching subject property along the West property line and outside of the easement area along the South property line as shown on survey of subject property certified to by Gary W. Hammett, R.P.L.S. No. 1849, dated 05/20/2013, last revised 10/09/2013.

Underground telephone/fiber optic lines encroaching subject property along the West property line and outside of the easement area along the South property line as evidenced by buried cable signs and telephone pedestals as shown on survey of subject property certified to by Gary W Hammett, R.P.L.S. No.1849,dated 05/20/2013, last revised 10/09/2013.

Encroachment of fence along the East property line as shown on survey of subject property certified to by Gary W. Hammett, R.P.L.S. No. 1849, dated 05/20/2013, last revised 10/09/2013.

Rights, if any, of third parties with respect to that portion of the subject property lying within the boundaries of Crutchfield Road as shown on survey of subject property certified to by Gary W. Hammett, R.P.L.S. No.1849, dated 05/20/2013, last revised 10/09/2013.

SPECIFICATIONS

HIGHLAND TRAILS
PROPOSED TRINITY WELL #1
TECHNICAL SPECIFICATIONS

INDEX

ITEM 1

GENERAL

1 Scope of Work: The work covered by these Specifications consists of furnishing all labor, equipment, machinery and materials and performing all operations in connection with the construction of water system. It is the intent of these Specifications that water service be uninterrupted throughout the construction. Wherever the term "Engineer" is used in the Specifications, it shall be construed to mean "Collier Consulting, Inc.", or its designated representatives. Wherever the term "Owner" is used in the Specifications, it shall be construed to mean "Denton County 128 Development, LLC", or its designated representatives.

2 Construction Site: During construction the Contractor shall keep the site free and clear of all rubbish and debris and shall clean-up the site promptly when notified to do so by the Engineer. The Contractor shall, at his own expense, maintain streets free from dust, mud, excess earth, or debris which constitutes a nuisance or danger to the public using the thoroughfare or the occupants of the adjacent properties. Care shall be taken to prevent spillage on streets over which hauling is done, and any such spillage or debris due to construction operations shall be immediately removed. The Contractor shall keep any drilling fluids, tailings, cuttings, or spoils contained in such a manner so as to prevent spillage onto adjacent property not under the jurisdiction or control of the Owner without the adjacent property manager's written consent or into any body of surface water in accordance with TCEQ regulation 76.1000(f)(g).

3 Backwork: The Contractor shall coordinate his operations in such a manner as to prevent the amount of clean-up and completion of backwork from becoming excessive. Should such a condition exist, the Engineer may order all or portions of the work to cease and refuse to allow any work to continue until the backwork is done to his satisfaction.

4 Grading: The Contractor shall do such grading in the area adjacent to backfilled trenches and structures as may be necessary to leave the area in a neat and satisfactory condition, approved by the Engineer.

5 Inspection of Work: The principal inspection for the work covered under this Contract shall be done by the Engineer. The quality of materials and installation shall be to the satisfaction of the Engineer.

6 Notification: The Engineer must be notified a minimum of 24-hours in advance of beginning construction. Additional notifications to the Engineer shall be made as detailed in the various sections pertaining to each work phase.

7 Testing and Acceptance of Improvements: The Engineer shall be present during geophysical logging, cementing/grouting, development, and production testing.

The Contractor will test all work and be confident that the work will be able to pass the test prior to calling the Engineer to observe the tests. No work will be accepted by the Owner without the Engineer observing the tests and certifying to the works acceptability.

8 Work in Freezing Weather: Portions of the work may continue as directed by the Engineer.

9 Property Lines and Monuments: The Contractor shall be responsible for the protection, reference, and resetting of property corner monuments if disturbed. The Contractor shall not move any monument marking a well location until the drilling equipment is on location and then only in the presence of the Engineer.

10 Trade Names: Except as specified otherwise, wherever in the Specifications an article or class of material is designated by a trade name or by the name or catalog number of any maker, patentee, manufacturer, or dealer, such designations shall be taken as intending to mean and specify the articles described or another equal thereto in quality, finish, and serviceability for the purpose intended, as may be determined and judged by the Engineer in his sole discretion. Where materials or equipment are specified by a trade or brand name, it is not the intention of the Owner or Engineer to discriminate against an equal product of another manufacturer, but rather to set a definite standard of quality for performance, and to establish an equal basis for the evaluation of bids. Notwithstanding this paragraph, the pump end shall be manufactured by Peerless and purchased through the Owner's National Sales Contract.

11 Material and Workmanship: No material which has been used by the Contractor for any temporary purpose whatever is to be incorporated in the permanent structure without written consent of the Engineer. Where the words "equivalent", "proper", or "equal to" are used, they shall be understood to mean that the item referred to shall be proper, the equivalent of, or equal to some other item, in the opinion or judgment of the Engineer. Unless otherwise specified, all materials shall be the best of their respective kinds and shall be in all cases fully equal to approved samples. Notwithstanding that the words "or equal to" or other such expressions may be used in the Specifications in connection with a material, manufactured article or process, the material, article, or process specifically designed shall be used unless a substitute shall be approved in writing by the Engineer and the Engineer shall have the right to require the use of such specifically designated material, article or process.

12 Operation and Maintenance Manuals: Six (6) sets of complete Operation and Maintenance (O&M) Manuals shall be supplied by the Contractor. Manuals shall be submitted to the Engineer for approval.

13 "AS-BUILT DRAWINGS": The Contractor shall furnish to the Engineer one (1) set of marked-up Drawings, showing all the changes and deviations made to the original Drawings during the construction of this Project. Dimensions shall be

provided where necessary to properly locate all structures, pipelines, and appurtenances. One (1) set of electrical "as-built" wiring diagrams shall also be furnished to the Engineer for all equipment and controls installed by the Electrical Subcontractor through the General Contractor. The Engineer will record the changes, include the electrical diagrams on the original Drawings, and provide the required sets of "as-built" Drawings to the Owner.

14 Safety: All work shall comply with the rules set out by the Occupational Safety and Health Act. A minimum of one competent person who is not working in the excavation shall monitor excavations exceeding four feet in depth. The person shall be trained to recognize dangerous conditions, proper use of trench protection, CPR, and First Aid in accordance with 29 CFR 1926, Subpart P. All excavations over five feet deep shall be shored, shielded, or sloped in accordance with 29 CFR, Subpart P.

Machinery guards and safety devices shall be present and functional on all equipment. Workers present at the work site shall at a minimum wear steel toe boots, hardhat, and gloves; eye protection shall be worn as needed to protect worker safety in accordance to 29 CFR 1926 Subpart P.

15 Warranties: In addition to any warranties created by law or provided in the Contract Documents, Contractor agrees that the Work will be completed in a good and workmanlike manner, of good quality, free from defects in design, material and workmanship, and fit for its intended use (the "Work Warranty") for a period of twelve (12) months following Substantial Completion of the Work (the "Work Warranty Period"). Contractor shall remedy any Work Warranty claim by Owner that is brought to the attention of Contractor during the Work Warranty Period.

16 Contamination Precautions: The Contractor shall avoid contamination of the project area. No oil, rubbish, or other waste material shall be dumped on the ground. All petroleum fuels and lubricants are to be stored and handled in accordance with state and local regulations. The Contractor shall be responsible for remediation or restoration that may result from construction activities.

17 Project Schedule: Adherence to a schedule is critical to the completion of this project; time is of the essence. Payment for items in the Bid Proposal shall be made if the project is on schedule and the item has been completed.

18 Measurement and Payment: No separate payment for work performed under this item. Include cost of same in Contract price bid for all items of which this work is a component.

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ITEM 2

SITE PREPARATION

1 Scope: This section of the specifications describes materials and equipment to be utilized and requirements for their use in preparing the work site for construction and performing all earthwork. Site clearing and grubbing within the construction area will be performed by the Contractor. The Contractor shall furnish all materials, equipment, and labor necessary to complete the work.

2 Underground Soil Data: No soil borings have been taken on this project.

3 Existing Utilities and Obstructions: The Drawings indicate underground utilities or obstructions that are known to exist according to the best information available to the Owner. The site shall be carefully scrutinized for evidence of utilities. Prior to any ground disturbance, the Contractor shall call the Texas One Call system at (800) 245-4545 for utility locates. Calling the number will only confirm the existence of underground utilities owned by companies that subscribe to the service. There may be other utilities in the area and the Contractor will be responsible for insuring that no damage is done to any utilities, whether shown or not shown.

A Electronic Pipe and Cable Finder: Furnish and have available at all times an electronic pipe detector, in good working order, to locate existing pipelines or other obstructions.

B Relocation of Services: Locate all utility services to avoid interference with such services and determine whether these services should be relocated. Repair any damage done to utility services or pipelines resulting from efforts to locate services or resulting from the construction operation.

NOTE: Any delay or extra cost due to encountering above or underground utilities or obstructions not shown on the Drawings or found in locations different from those shown on the Drawings shall not constitute a claim for additional payments.

4 Surface Drainage: The Contractor shall prevent surface water and groundwater from flowing into excavations or flooding project site and surrounding areas. Dewater excavated areas as required to remove any water. The Contractor shall keep any drilling fluids, tailings, cuttings, or spoils contained in such a manner so as to prevent spillage onto adjacent property not under the jurisdiction or control of the Owner without the adjacent property manager's written consent or into any body of surface water in accordance with TCEQ regulation 76.1000(f)(g).

5 Clearing: The Contractor shall clear from areas indicated on the Drawings

and/or at the Work Site all natural and artificial obstructions, including, but not limited to trees, stumps, brush, shrubs, rubbish, existing storm sewers, abandoned utility lines, and debris with the exception of trees designated to be left in place. The natural ground surface shall be cleared of all vegetable growth, such as trees, logs, stumps, roots of downed trees, brush, grass, and weeds. Contractor shall haul all trash, rubbish, and debris discussed in herein from site prior to starting excavation or grading. Unless otherwise authorized, the area to be cleared and grubbed shall include the area three feet outside the work area.

A Removal Procedures:

1 Stumps: Remove to a depth at least 3 feet below finished subgrade and backfill with suitable material to a density not less than that of adjacent soil.

2 Abandoned Obstructions: Remove or break down masonry and asphalt structures to a depth of at least 1 foot below finished grade. Thoroughly crack or otherwise break abandoned structures remaining in place which may impound water where they exist within 10 feet of finished grade backfill with suitable material to a density not less than that of adjacent soil.

3 Tap roots and other significant objectionable matter: Remove to a depth of at least 1 foot below subgrade.

4 Protect from damage those trees and bushes designated to be left in place. Such designation shall be made on the Drawings or at the Work Site.

5 Accomplish clearing and grubbing well in advance of earth work to allow sufficient time for inspection and staking.

6 Excavation: The Contractor shall perform all excavation of every description and of whatever substances encountered, to the dimensions and levels shown on the Drawings and/or specified within this document. Excavation may be accomplished by any customary method.

A Excavation Protection: All excavations shall be protected by fencing to prevent unauthorized entry.

B Topsoil: Topsoil shall be stripped from the construction areas. Material determined suitable by the Engineer shall be stockpiled on site at a location designated by the Engineer. Unsuitable material shall be removed from the site. Replacing topsoil after final grading operation is included in this work. Stockpiled topsoil shall be spread evenly over designated areas at the end of grading operations.

C Disposal of Material: Unless otherwise specifically authorized, all objectionable material is the Contractor's property and must be removed from the project area.

7 Proof-rolling: Does not apply.

8 Compaction: Scarified soil and fill material shall be compacted to dry densities as determined by the Standard Proctor Compaction Test performed in accordance with ASTM D 698. The fill material shall be spread in loose lifts of not more than eight inches and shall be compacted with a vibratory or sheepsfoot roller. Each lift shall be compacted to a minimum density of 95% of the maximum dry density as determined in accordance with ASTM D 698, current edition. The fill soil moisture content shall be maintained within 3% of the optimum moisture content as determined in accordance with ASTM D 698, current edition.

If tests indicate that density of fill is less than that specified, the area shall be either re-compacted or under-cut, filled, and compacted until specified density is achieved at no cost to the Owner.

9 Construction Along Highways, Streets, and Roadways: Conduct all construction related activities along highways, streets and roadways in accordance with the applicable regulations of the City, County, and State with reference to construction operations, safety, traffic control, road maintenance, and repair.

A Protection of Traffic: Provide and maintain suitable signs, barricades, and lights, as required by the County and/or State for protection of traffic. Replace all highway signs removed for construction as soon as possible. Do not close or block any highway, street, or roadway without first obtaining permission from the proper authorities. Flagmen shall be provided to direct and expedite the flow of traffic.

B Construction Operations: Perform all work along highways, streets and roadways to least interfere with traffic.

1 Shaping: Reshape damaged slopes, side ditches, and ditch lines immediately after completing backfilling operations. Replace topsoil, sod, and any other materials removed from shoulders.

C Excavated Materials: Do not place excavated material along highways, streets and roadways in a manner which obstructs traffic. Sweep all scattered excavated material off the pavement.

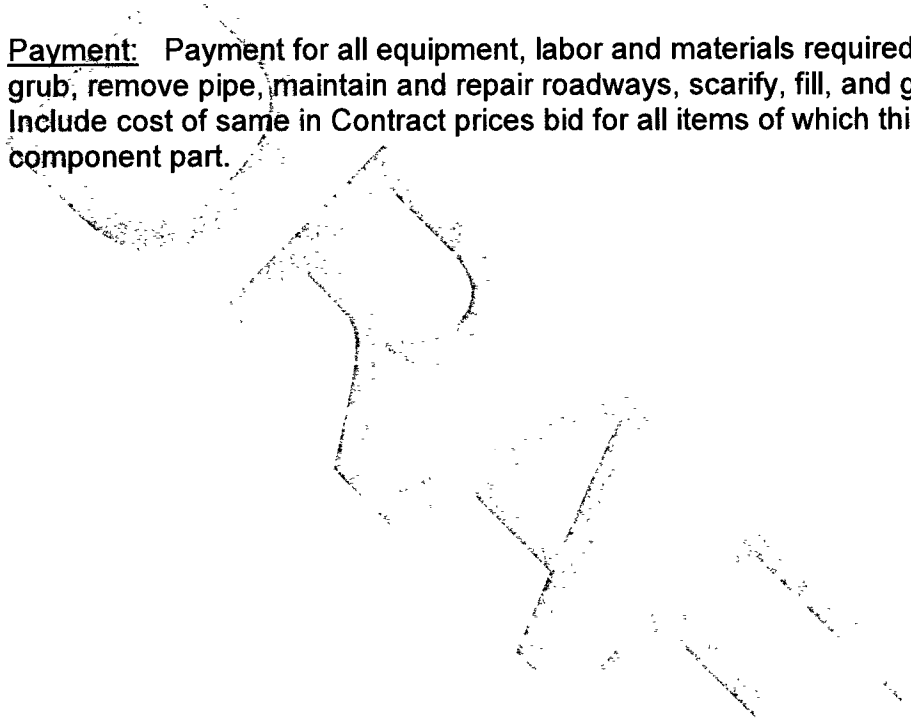
D Drainage Structures: Keep all side ditches, culverts, cross drains, and other drainage structures clear of excavated material and free to drain at all times.

E Maintaining Highways, Streets, Roadways and Driveways: Maintain streets, highways, and roadways in suitable condition for movement of traffic until completion and final acceptance of the work. Use steel running plate to maintain traffic until pavement replacement is completed.

10 Backfilling and Embankment: Does not apply.

11 Final Grading: Graded areas shall be made to blend into conformation with remaining ground surfaces. All surfaces shall be left smooth and free to drain.

12 Payment: Payment for all equipment, labor and materials required to clear, grub, remove pipe, maintain and repair roadways, scarify, fill, and grade the site. Include cost of same in Contract prices bid for all items of which this work is a component part.



ITEM 3

ELECTRICAL

1 General Conditions: The Drawings and Specifications of other sections of this Contract, as well as supplements issued thereto, information to bidders and pertinent documents issued by the Engineer are a part of these Drawings and Specifications and shall be complied within every respect. All of the above documents will be on file at the office of the Engineer and shall be examined by all bidders. Failure to examine all documents shall not relieve the responsibility or be used as a basis for additional compensation due to omission of details of other sections from the electrical documents. The Contractor shall be responsible for visiting the site, checking existing conditions, and ascertaining the conditions to be met for installing the work and bid accordingly.

2 Scope: The Contractor shall furnish all work, labor, tools, superintendence, material, equipment, and operations necessary to provide for a complete and workable electrical system as defined by the Contract documents. It is the intent of the Contract documents that upon completion of the electrical work, the entire system shall be in a finished, workable condition.

All work that may be called for in the Specifications but not shown on Drawings; or, all work that may be shown on Drawings but not called for in Specifications, shall be performed by the Contractor as if described in both. Should work be required which is not set forth in either document, but which work is nevertheless required for fulfilling of the intent thereof, then, the Contractor shall perform all work as fully as if it were specifically set forth in the Contract documents.

3 Definition of Terms: The definition of terms used in Contract documents shall be in accordance with:

Underwriters Laboratories, Inc.
National Electrical Manufacturers Association
American National Standards Institute
Insulated Power Cable Engineers Association
National Electrical Code
National Fire Protection Association

4 Permits, Codes and Utilities: The Contractor shall secure all permits, licenses, and inspections as required by all authorities having jurisdiction. The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations, and Contract requirements bearing on the work. The minimum requirements of the electrical system installation shall conform to the latest edition of the National Electrical Code as well as state and local codes. All electrical work shall be performed by an electrician licensed for work in the State of Texas.

Codes and ordinances having jurisdiction and specified codes shall serve as minimum requirements; but, if the Contract documents indicate requirements which are in excess of those minimum requirements then the requirements of the Contract documents shall be followed. Should there be any conflicts between the Contract documents and codes, or any ordinances, report these with bid. Determine the exact requirements for the utility service connections and metering facilities as set forth by the utilities that will serve the project, and pay for and perform all work as required by those utilities.

5 Standards: All materials and equipment shall conform to the requirements of the Contract documents. They shall be new, free from defects, and they shall conform to the following standards where these organizations have set standards:

Underwriters Laboratories, Inc. (UL)
National Electrical Manufacturers Association (NEMA)
American National Standards Institute (ANSI)
Insulated Power Cable Engineers Association (ICEA)

All material and equipment, of the same class, shall be supplied by the same manufacturer unless specified to the contrary. All products shall bear UL labels where standards have been set for listing.

6 Shop Drawings and Submittals: Shop drawings shall be taken to mean detailed drawings with dimensions, schedules, weights, capacities, installation details, and pertinent information that will be needed to describe the material or equipment in detail. Submittals shall be taken to mean catalog cuts, general descriptive information, catalog numbers, and manufacturer's name.

Submit six copies for review within thirty (30) days after notice to proceed, all shop drawings and submittals as hereinafter called for. If shop drawings and submittals are not received in thirty (30) days, the Engineer reserves the right to go directly to the manufacturer for the information and any expense incurred shall be borne by the Contractor.

Review of submittals or shop drawings shall not remove the responsibility for furnishing materials or equipment of proper dimensions, quantity and quality; nor will such review remove responsibility for errors in shop drawings or submittals.

Failure to process submittals or shop drawings on any item and/or items specified shall make the Contractor responsible for suitability of the item and/or items, even though the item and/or items installed appear to comply with the Contract.

The Contractor assumes all costs and liabilities which may result from the ordering of any material or equipment prior to the review of the shop drawings or

submittals, and no work shall be done until the shop drawings or submittals have been reviewed. In case of correction or rejection, resubmit until such time as they are accepted by the Engineer and such procedures will not be cause for delay. After final review, supply up to six (6) copies, if requested.

Submittals and shop drawings shall be compiled from the manufacturer's latest product data. Should there be any conflicts between this data and the Contract documents, report this information for each submittal and/or shop drawing. Shop drawings and submittals will be returned unchecked if the specific items proposed are not clearly marked, or if the general's approval stamp is omitted.

When requested, furnish samples of materials for acceptance review. If a sample has been reviewed and accepted, then that item of material or equipment installed on the job shall be equal in quality to the sample; if it is found that the installed item is not equal, then replace all such items with the accepted sample equivalent. Materials to be submitted are as follows:

Motor Controllers
Disconnect Switches
Lighting Fixtures
Wire
Conduit and Fittings
Heat Trace Equipment
Wiring Devices
Level Transmitters
Control System

7 Acceptance and Substitutions: All manufacturers named are a basis as a standard of quality and substitutions of any equal product will be considered for acceptance. The judgment of equality of product substitution shall be made by the Engineer. Substitutions after award of Contract shall be made only within thirty (30) days after the notice to proceed. Furnish all required supporting data. The submittal of substitutions for review shall not be cause for time extensions. Where substitutions are offered, the substituted product shall meet the product performance as set forth in the specified manufacturer's current catalog literature, as well as meeting the details of the Contract documents.

The details on the drawings and the requirements of the specifications are based on the first listed item of material or equipment; if any other than the first listed material or equipment is furnished, then the Contractor shall assume responsibility for the correct function, operation, and accommodation of the substituted item. In the event of misfits or changes in work required, either in this section or other sections of the Contract, or in both, the Contractor shall bear all costs in connection with all changes arising out of the use of other than the first listed item specified.

8 Cutting and Patching: Cutting and patching required under this section shall be done in a neat workmanlike manner. Cutting lines shall be uniform and smooth. Concrete saws shall be used for large cuts in concrete and use core drills for small round cuts in concrete. Where openings are cut through masonry walls, provide lintel or other structural supports to protect the remaining masonry. Adequate support shall be provided during the cutting operation to prevent damage to masonry. Where large openings are cut through metal surfaces, attach metal angles around the opening. Concrete openings that are to be patched shall be filled with non-shrinking cementing compound. Finished concrete patching shall be troweled smooth and shall be uniform with surrounding surfaces.

9 Waterproofing: Provide waterproof flashing for each penetration of exterior walls and roof. Flashing for conduit penetrations through built-up roofs shall be made with pitch pans filled with pitch. Conduit penetrations through poured concrete roofs shall be made with sleeves and annulus caulked. Penetrations through walls at below ground elevations shall be waterproofed by conduit sealing fittings or other methods as indicated. Interiors of raceways that are likely to have water ingress such as runs from hand-holes into below-grade installations shall have waterstops installed to prevent water from entering into installations.

10 Equipment Protection: The Contractor shall provide suitable protection for all equipment, work and property against damage during construction and shall assume full responsibility for material and equipment stored at the site. Conduit openings shall be closed with caps or plugs during installation. All outlet boxes and cabinets shall be kept free of concrete, plaster, dirt, and debris. Equipment shall be covered and tightly sealed against entrance of dust, dirt, and moisture.

11 Clean-up: The Contractor shall remove all temporary labels, dirt, paint, grease, and stains from all exposed equipment. Upon completion of work, clean equipment and the entire installation so as to present a first class job suitable for occupancy. No loose parts or scraps or equipment shall be left on the premises. Equipment paint scars shall be repaired with paint kits supplied by the equipment manufacturer, or with an approved paint. At completion of work all equipment interiors shall be free from dust, dirt, and debris.

12 Tests: All equipment shall be put through a trial run-in test to ascertain the performance complies with the intent of the specifications. All run-in tests shall be made in the presence of the Engineer.

13 Record Drawings: At the start and during the progress of the job, keep one separate set of Drawings for making construction notes and mark-ups. Conduit routing and wiring runs shall be shown as constructed with each identified. All deviations from the Contract documents shall be noted. A set of marked-up Drawings shall be submitted for review.

14 Operations and Maintenance Manuals: Two (2) weeks prior to the completion of the project, compile an operations and maintenance manual on each item of equipment. These manuals shall include detailed instructions and maintenance, as well as spare parts lists. Submit six (6) copies for review.

15 Products:

A Conduit Fittings

1 NEMA 1 locknuts for indoor rigid metallic conduit shall be galvanized steel.

2 Outdoor field applied hubs for sheet metal enclosures shall be galvanized steel ring, nylon throat, threaded NPT insert and shall be MYERS "SCRU-TITE", or equal.

3 Conduit hubs for non-metallic enclosures shall be fiberglass polyester reinforced with galvanized steel core, complete with locknut and grounding bushing and shall be Square D Type NH, or equal.

4 Rigid metallic conduit chase nipples, slip fittings, union, reducers shall be hot dipped galvanized steel.

5 Rigid metallic conduit grounding bushings shall be hot dipped galvanized steel with threaded hub, nylon insulated throat, and ground lug.

6 Liquid tight flexible conduit fittings shall be hot dipped galvanized steel body with internal locking ring.

B Conduit Bodies and Boxes

1 Conduit bodies such as "C", "LB", "T" and the like pulling fittings shall be zinc coated with sand-cast malleable iron. Covers shall be gasketed cast metal with stainless steel cover screws and clamp style attachment. Furnish Crouse- Hinds Form 7 or equal.

2 Conduit bodies such as "GUA", "GUAT", "GUAL", and the like pulling/splicing fittings shall be zinc coated malleable iron with threaded cast metal zinc coated covers. All such conduit bodies shall be Crouse-Hinds GU/EA series, Appleton "GR" series, or equal.

3 Cast metal outlet boxes, pull boxes, and junction boxes whose volume is smaller than 100 cubic inches, and cast metal device

boxes, shall be zinc coated sand-cast malleable iron. All boxes shall have threaded hubs. Furnish Crouse-Hinds "FD" style Condulets, Appleton "FD" style Unilets, or equal.

4 Covers for cast metal boxes shall be gasketed cast metal covers with stainless steel screws.

C Wire and Cable

1 All conductors shall be soft-drawn, stranded annealed copper that meets ANSI 44, ASTM B3-74/38-72.

2 Insulation for all 460V conductors in sizes larger than #3/0 AWG shall be insulated with ethylene propylene rubber and shall have chlorosulfonated flame retardant outer jacket. All such wire shall be type RHH, RHW, USE, VW- 1. Furnish Okonite "Okolon", Rockbestos "Firewall", or equal.

3 Insulation for all 460V conductors in sizes #3/0 AWG and smaller shall be cross-linked polyethylene. Furnish type RHH, RHW, USE wire, Okonite "X-Olene", G.E. "Vulkene", or equal.

4 All power signal-conductor cables shall be factory pigmented black insulation.

5 Insulation for all 120/240V conductors, insulated equipment grounding conductors and control conductors shall be cross-linked polyethylene. Furnish type XHHW wire, Okonite "X-Olene", G.E. "Vulkene", or equal.

6 Multiconductor shielded cables shall be polyethylene insulated tinned copper conductors within an aluminumpolyester shield tinned copper drain wire and a chrome PVC jacket. Shield shall provide 100% coverage. Cables shall be UL style 2092 and shall be Belden Beldfoil #8760 or equal, with number of conductors shown.

7 Multiconductor signal cables shall consist of pairs of insulated copper conductors, size and number of pairs as indicated cabled together using polyethylene filler cords where necessary. The cabled assembly shall be wrapped with a clear polyester tape. The integral supporting messenger shall be ¼" (7 strand) class A galvanized extra high strength steel with a minimum breaking strain of 6650 lbs. The messenger shall be flooded with a rubber-asphalt compound for corrosion protection and shall comply with sections 10 and 11 of IMSA specifications 19-3 or 20-3. Overall jacket shall have a black sunlight resistant overall jacket. The cable core and

messenger shall be assembled to form a figure 8 construction.

D Connectors

1 Mechanical connectors shall be copper alloy bolted pressure type with bronze hardware.

2 Insulated spring-sire connectors, "wire-nuts", for small building wire taps and splices shall be plated spring steel with thermoplastic jacket. Connector shall be rated at 1500C continuous. Furnish 3M "Hyflex", T&B "PT", or equal.

3 Insulated set-screw connectors shall consist of copper body with flame-retardant plastic insulated shield. Furnish Ideal, T&B, or equal.

4 Connectors for control conductor connections to screw terminals shall be crimp-type with vinyl insulated barrel and tin-plated copper ring-tongue style connector. Furnish T&B "Sta-kon", 3M "Scotchlok", or equal.

E Insulating Products

1 Tape products shall be furnished as hereinafter specified and shall be Plymouth, Okonite, P.E., 3M, or equal.

2 General purpose electrical tape shall be 7 mil thick stretchable vinyl plastic, pressure adhesive type, "Slipknot Grey", 3M Scotch 33+, or equal.

3 Insulating void-filling tape and high voltage bedding tape shall be stretchable ethylene propylene rubber with hightack and fast fusing surfaces. Tape shall be rated for 900C continuous, 1300C overload, and shall be moisture-proof. Void-filling tape shall be "plysafe", 3M Scotch 23, or equal.

4 High temperature protective tape shall be rated 1800C continuous indoor/outdoor, stretchable, self-bonding silicone rubber. High temperature tape shall be "Plysil #3455", 3M Scotch 70, or equal.

5 Insulation putty filler-tape shall be Plymouth #2074; 3M, or equal.

F Labels

1 Colored banding tape shall be 5 mil stretchable vinyl with permanent solid color. Colors shall be as hereinafter specified.

Tape shall be Plymouth "Slipknot 45", 3M Scotch #35, or equal.

2 Numbered marking labels shall be colored vinyl markers, T&B, Brady, or equal.

3 Cable identification labels shall be weather resistant polyester with blank write-on space, T&B, Brady, or equal.

4 Buried conduit marking tape for marking path or buried conduits shall be four inch (4") nominal width strip of polyethylene with highly visible, repetitive marking "BURIED CONDUIT", or similar language, along its length.

5 Name plates shall be micarta lamicoid material, 1/6" thick, black background with white engraving. Attachment means shall be self-tapping stainless steel screws.

G Ground Devices

1 Exothermally welded joints shall be made with Enrico "Cadweld", Burndy "Thermweld", or equal kits.

2 Ground bus connectors shall be Square D type "LU", OZ Type "XLH", or equal.

3 Conduit grounding bushings shall be as specified under CONDUIT FITTINGS.

H Supporting Devices

1 Mounting hardware, nuts, bolts, lock washers, and washers shall be grade 304 stainless steel.

2 Unless otherwise indicated, slotted channel framing and supporting devices shall be manufactured of ASTM 6063, T-6 grade aluminum; 1-5/8" wide x 3/14" deep (double opening type). Clamp nuts for use with slotted channels shall be grade 304 stainless steel.

3 Conduit straps for use with slotted channels shall be galvanized steel with stainless steel hardware.

4 After-set concrete inserts shall consist of stainless steel expansion bolts, 1/4" minimum diameter, 500 lbs. minimum pull-out resistance. Furnish Phillips, Wej-it, or equal.

5 Hanger rod shall be 3/8" minimum diameter galvanized steel all-thread.

6 Nest-back or clamp-back conduit supports shall be two piece hot-dipped galvanized malleable iron devices. Furnish Crouse-Hinds "MW + CB", Gedney 140 series, or equal.

7 One-hole conduit clamps shall be hot-dipped galvanized malleable iron type, Crouse-Hinds type "MW", T&B 1270/1280 series, or equal.

8 Conduit "U" bolts shall be hot-dipped galvanized steel with galvanized hex-head bolts.

9 Plastic saddles for supporting buried conduits shall be interlocking type that provides separation between conduits vertically and laterally and between bottom of conduits and trench floor.

I Miscellaneous Material

1 Double bushing for insulating wiring through sheet metal panels shall consist of mating male and female threaded phenolic bushings. Phenolic insulation shall be highimpact "ABB", Gedney type "ABB" or equal.

2 Cable grips shall be grip-type wire mesh with machined metal support. Furnish Kellems, Appleton, or equal products.

3 Conduit pull-cords for use in empty raceways shall be glass-fiber reinforced tape with foot-marked along its length. Furnish Thomas, Greenlee, or equal products.

4 Conduit thread coating compound shall be conductive, nongalling, and corrosion-inhibiting. Furnish Crouse-Hinds type "STL", Appleton type "ST", or equal.

5 Wire pulling compound shall be non-injurious to insulation and to conduit and shall be lubricating, non-crumbling, and non-combustible. Furnish Gedney "Wire-Quick", Ideal "Yellow", or equal.

6 Plastic compound for field-coating of ferrous material products shall be PVC in liquid form that sets-up semi-hard upon curing. Furnish Rob Roy "Rob Kote", Sedco "Patch Coat", or equal.

7 Zinc spray for coating electrogalvanized steel products shall be Research Laboratory type "LPS", Mobil "Zincspray", or equal.

8 Splicing kit shall be provided with insulating and sealing compound

to provide a moisture-tight splice. Provide Scotchcast Series 82 or equal splicing kit.

J Lighting

1 Fixture lamps shall be furnished as scheduled and as specified.

2 Each fixture shall be complete with its appropriate hardware, finish trim, and appurtenances as required for a finished installation.

K Wiring Devices

1 All wiring devices shall be specification grade and shall meet NEMA WD 1-1971 requirements. Furnish following types unless otherwise indicated.

2 Two-pole, 3-wire grounding, 15A/125V, NEMA 5-15R duplex receptacle shall be Arrow-Hart #5662-S, Hubbell #5262, or equal.

3 Two-pole, 3-wire grounding, 20A/125V, NEMA 5-20R duplex receptacle shall be Arrow-Hart #5739-S, Hubbell #5362, or equal.

4 GFCI receptacle shall be single receptacle in a duplex body with upper half containing reset and test pushbuttons. Furnish Square D "GFSR", or equal.

5 Two-pole, 3-wire grounding, #20A/250V, NEMA 6-20R single receptacle shall be Arrow-Hart #5861, Hubbell #5461, or equal.

6 Single-pole, single throw, 20A toggle switch shall be Arrow-Hart #1791, Hubbell #1221, or equal.

7 Single-pole, double throw (three way), 20A toggle switch shall be Arrow-Hart #1993, Hubbell #1223, or equal.

8 Double-pole, double throw (four way), 20A toggle switch shall be Arrow-Hart #1994, Hubbell #1224, or equal.

9 Double-pole, single throw, 29A toggle switch shall be Arrow-Hart #1992, Hubbell #1222, or equal.

10 Single-pole, double throw, momentary/centeroff, 20A toggle switch shall be Arrow-Hart #1995, Hubbell #1556, or equal.

11 Door switch, single-throw pressure sensitive shall be Pass & Seymore #1205, or equal

L Panelboards

1 Panelboards shall have voltage overcurrent devices and features as indicated.

2 Breakers shall be bolt-on type, trip-free. Multipole breakers shall be provided with a common internal trip which opens all poles simultaneously and with a single operating handle for all posed. Handle ties between breakers are not acceptable.

3 Breakers for 460V distribution panels shall be rated at least 14,000 amps I.C., and breakers for 120/240V panels shall be rated at least 10,000 amps I.C.

4 Provide ground bus inside each cabinet.

5 Enclosures shall be NEMA 1 surface mounted cabinet with gasketed, hinged door, inside gutter trim and with door mounted directory pocket. All metal surfaces shall be painted with baked-on acrylic enamel.

M Dry-Type Transformers

1 Dry-type transformers shall have continuous KVA and voltage characteristics as shown.

2 Enclosures shall be indoor type.

3 Coils shall be provided with NEMA standard taps in high voltage windings.

4 Furnish Square D or equal dry-type transformers.

N Safety Switches

1 Safety switches shall be fused or non-fused as indicated. Each fused type switch shall be equipped with class R rejection clips.

2 Switch mechanism in each safety switch shall be quickmake, quick-break, heavy-duty type that meets Federal Specification W-S-865C.

3 Enclosures shall be NEMA types as indicated. NEMA 4X types shall be fiberglass reinforced polyester with gasketed door and stainless steel hardware.

4 Conduit hubs for NEMA 4X enclosed safety switches shall be steel body type with fiberglass reinforced polyester covering and with grounding bushing inside.

5 Conduit hubs for NEMA 3 and NEMA 4 enclosures shall be water-tight threaded hubs with grounding bushing inside.

6 Each enclosure shall be equipped with ground lug.

7 Where indicated furnish disconnect mechanism with auxiliary control disconnect contact rated 10 amp make, 6 amp break 120V A.C., 35% p.f.

8 Where indicated furnish NEMA 4X safety switches.

9 NEMA 1, 3, 4, or 12 enclosed safety switches with integrally mounted pilot operators.

10 NEMA 4X safety switches shall be Square D "Krydon" or equal.

O Motor Controllers

1 Enclosures shall be NEMA types as indicated. NEMA 4X types shall be fiberglass reinforced polyester with gasketed door and stainless steel hardware.

2 Each motor controller shall be as follows:

a All motor controllers shall be full-voltage, non-reversing type except where other types are indicated. Contactors and over-current devices and conductors shown shall be minimum sizes, confirm all external loads prior to manufacture.

b Each controller shall have a hinged door. Disconnect device operating handles shall have on off positions clearly marked and each handle shall have padlocking provisions. Controller doors shall have mechanical interlocks to prevent their being opened unless the disconnect is in the "off" position. However, there shall be a defeat mechanism for authorized personnel entry.

c Each controller shall be equipped with its own fuses and control power transformer. VA capacity of control power transformer shall be sized to handle its compartment load plus external connected loads.

d Each controller shall be equipped with pull apart terminal blocks.

e Each controller shall be equipped with indicated pilot operators and other devices. All pilot operators such as pilot lights, selector switches, and pushbuttons shall be oil-tight grade. Each device shall be equipped with engraved metal surround legend with functions engraved.

f Provide one ambient-compensated overload for each motor controller. Size five and larger contactors shall have overloads fed from CT's in motor leads. Overload blocks shall be adjustable from 80% to 115% of their nominal value. Where indicated, provide overloads with auxiliary contacts. Selection of overloads shall be determined by the full load current of motor to be supplied.

g All control relays shall be industrial type each with 10 amp, 120V rated contacts. Each contact shall be field convertible. Each relay shall have open-close position indication. Relay coils shall be rated 120VAC continuous duty, including latch type relay coils.

h Motor branch circuit overcurrent protection shall be motor circuit protectors, unless otherwise indicated. Each "MCP" shall have adjustable current setting pickup. Minimum I.C. of each "MCP" shall be 22KA rms symmetrical amps.

P Phase Converters

1 Phase converters shall be sized for the anticipated load plus 30%.

2 Phase converters shall be Phase Perfect type or approved equal operating at the supplied line voltage.

3 Phase converters shall be either NEMA 3R or enclosed in a weatherproof structure with adequate ventilation according to manufacturer's guidelines.

16 Installation: The following methods shall be used on this project:

A Conduit Bodies and Boxes:

1 Conduit bodies such as "LB", "T", etc., shall be installed in exposed runs of conduit wherever indicated and where required to overcome obstructions and to provide pulling access to wiring. Covers for

such fittings shall be accessible and unobstructed by the adjacent construction.

2 Covers for conduit bodies installed shall be gasketed cast metal type.

3 All conduit boxes installed shall be cast metal type. Covers for all such boxes shall be gasketed cast metal type.

B Wiring:

1 Conductors shall be sized as shown and where no size is indicated, the conductor size shall be #12 AWG.

2 All control wiring, 120/240V wiring and insulated equipment grounding conductors shall be type XHHW insulated stranded copper conductors.

3 All 460V wiring in sizes #4/0 and larger shall be made with type RHH, RH, USE, VW-1 wire with stranded copper conductors that has EPR insulation and flame retardant jacket.

4 All 460V wiring in sizes smaller than #4/0 shall be installed with type RHH, RHW, USE insulated stranded copper conductors.

5 Branch circuits may be spliced for receptacle, lighting and small appliances load inside appropriate junction boxes.

6 Except as otherwise specified, taps and splices with #10 AWG and smaller shall be made with insulated spring wire connectors. Such connectors in damp or wet locations shall be further insulated with an envelope of stretched piece of EPR tape around each wire to fill the interstices between the wires. Then, apply one-half lapped layer of electrical tape over all.

7 Motor connections made with #10 AWG and smaller wire shall be made up with set-screwed copper lugs with threaded-on insulating jacket. After make-up of each connector, install two (2) layers half-lapped, of high temperature tape over connector barrel and down over wires into connector one inch (1").

8 Motor connections made with #8 AWG and larger wire shall be made up with cast copper alloy splice connector. Apply over each connector and down 1.5 inches over each wire entry, wrapping if high temperature tape. Apply at least three (3) layers, half-lapped each layer of such tape with maximum build-up over the connector.

Then apply final wrapping of at least three (3) layers, half-lapped each layer of electrical tape.

9 Taps, splices, and connections in #8 AWG and larger wires shall be made with copper alloy bolted pressure connectors. Each such connector shall be insulated by means of applying insulation putty over sharp edges so as to present a smooth bonding surface. Next, apply at least four (4) layers, half-lapped each layer of EPR tape. Then make final wrapping of at least (3) layers, half-lapped each layer of electrical tape.

10 Control wiring connections to stud type and screw type terminals shall be made with ring-tongue type crimp connectors. Label each terminal jacket with wire marking label at each connection.

11 Each wire connection shall be made up tightly so that resistance of connection is as low as equivalent length of associated conductor resistance.

12 Phase label black-pigmented power wires with color banding tape. Color of tape applied shall be that specified below.

13 Numbered marking labels shall be installed to identify circuit numbers from panelboards. Install labels on each wire in each panelboard, junction, and pull box, and device connection.

14 Label each wiring run with write-on waterproof labels inside each motor control center and in service switchboard. Install write-on label ties around wire group at conduit entrance and write-on label the wire size, and service.

15 Install numbered marking on each control wiring termination at each terminal strip and at each device. Do this in motor control center, terminal cabinets, safety switches, remote controllers, pilot operators, and instrumentation equipment. Number selected shall correspond to number on terminal strip.

16 All wiring inside enclosures will be neatly trained and laced with nylon tie-wraps.

17 All wiring shall be installed in raceways unless otherwise noted; however, no wire shall be drawn into a conduit until all work of a nature which may cause injury is completed. Do no exceed wire and cable manufacturer's recommended pulling tensions. A cable pulling compound shall be used as a lubricant and its composition shall not affect the conductor or its insulation.

C Wiring Devices:

1 Install wiring devices where indicated. Wiring devices shall be type as indicated.

2 Each wiring device shall be set with axis plumb and installed with yoke screws so as to adequately support device yokes to the box.

3 Device boxes shall be cast metal Conduits or equal.

4 Use ganged boxes for ganged devices.

5 Each device box shall be equipped with specified cast metal cover.

D Grounding:

1 Each item of equipment shall be adequately and thoroughly grounded. Comply with Article 250 of N.E.C., except where higher standards of grounding have been specified.

2 Equipment grounding conductors (EGC) shall be installed where indicated. These wires shall be green colored in sized #6 AWG and smaller and green banded in larger sizes.

3 EGC runs into equipment and shall be grounded to equipment bus where available, or to equipment ground lugs.

4 Where grounding type bushings are installed, bond EGC thereto and furthermore ground each bushing lug to equipment ground bus or ground lug, or ground rod.

5 In each motor terminal box, install equipment ground lug and connect EGC thereto.

6 In each floodlight pole, install ground connector to pole and bond to conduit bushing and to EGC in branch circuit.

E Outdoor Lighting Fixtures:

1 Install anchor bolts with templates. Each anchor bolt shall be set plumb and have correct projection above top of concrete to accommodate double nuts and base so that there shall be slight projection of each bolt above top nut when top nut is fully seated.

2 Each pole shall be set so that after tightening the nuts on the

anchor bolts, they shall be plumb.

3 Conduit upcomers into pole bases shall be extended up to hand-hole level. Each conduit shall be equipped with grounding bushing. Bond each bushing lug to pole ground lug.

4 Pole riser wiring shall be made with 600V rated RHH or RHW. Ground green equipment grounding conductor to pole ground lug at base and ground to luminaire at top.

5 Aim floodlighting luminaries at night for maximum coverage. Results shall be acceptable to the Engineer.

F. Labeling: In addition to requirements for labeling as specified throughout this section, install labels as follows:

1 Phase bank each power wire and cable with colored banding tape. Do this at each termination.

2 Apply numbered wire marking labels to control wires, power wiring in panelboards, pull and junction boxes, and at outlets to identify circuit numbers. Each control wire shall be labeled at each connection.

3 Apply write-on identification labels to wiring sets in each hand-hole to identify function. Use waterproof labels.

4 Apply write-on identification labels to empty conduits to identify each with information as to terminus of other end and also trade size of conduit.

5 Install micarta nameplates with engraving to identify function and/or load served for the following:

Starters
Overcurrent Devices
Safety Switches
Panelboards
Motor Controllers
RTU's
Level Transmitters
Flow Switches
Heat Trace Equipment

Micarta nameplates shall be attached with stainless steel screws, use two (2) per each nameplate. Submit for review a schedule for

engraving along with size for each proposed micarta nameplate. Do not fabricate nameplate until review has been completed.

17 Electrical Service: The Engineer shall make arrangements with the Electric Utility Company to install electrical service as required. All charges by Electric Service provider shall be borne by Contractor. Contractor shall be responsible for electrical equipment beginning at and including the meter base.

18 Timeliness of Electric Service: In the event that electrical service is not available by the beginning of the project, the Contractor will provide a generator for all electrical needs for the duration of the project. The generator shall be capable providing power for the motor at the designed rate for the duration of the production test, sampling, and final installation of the pump and motor.

19 Guarantee: All electrical and control equipment shall be guaranteed against defects in material and workmanship for a period of one (1) year from the date of system acceptance.

20 Payment: Charges incurred in Section 17 of the ELECTRICAL are to be entered into the appropriate line item in the Proposal. No other separate payment for work performed under "Electrical" is included. Include cost of same in Contract prices bid for all items of which this work is a component part.

ITEM 4

PIPING

1 Work Included: All labor and materials to complete all work as shown on the Drawings and as specified herein.

2 Care of Pipe Coating and Lining: Pipe shall be so handled that the coating or lining will not be damaged. If however, any part of the coating or lining is damaged, the pipe shall be subject to rejection.

3 General Requirements for Alignment and Grade: The pipe shall be laid and maintained to the required lines and grades with fittings and valves at the required locations; spigots centered in bells; and all valve stems plumb. The inside of the pipe wall at the bottom of the installed pipe shall slope continuously in the direction indicated and shall be located on the invert elevations indicated within 0.01 foot for gravity piping and within 0.03 foot for all other piping.

4 Deviations Occasioned by Other Structures: Wherever obstructions not shown on the Drawings are encountered during the progress of the work and interfere to such an extent that an alteration in the Drawings is required, the Engineer shall have the authority to change the Drawings and order a deviation from the line and grade, or arrange with the Owner's of the structures for the removal, relocation, or reconstruction of the obstructions. If the change in Drawings results in a change in the amount of work by the Contractor, such altered work shall be done on the basis of payment to the Contractor for extra work under the requirements of the General Conditions, or credit to the Owner for less work. No deviations shall be made from the line and grade without the written consent of the Engineer.

5 Interruption of Services: No drainage channel, storm sewer, or other utility shall be put out of service without written approval of the Engineer and/or Owner.

6 Shop Drawings: The Contractor shall submit and obtain approval of shop and material details of pipe and fittings before the materials are manufactured. See Section on "Shop Drawings, Submittals, Operating Manuals, and Service" included as part of these Specifications for items requiring approval.

7 Threads: American Standard Pipe Thread shall be used for I.P.S. threaded work. No screwed pipe joints shall be caulked or connected with rope or packing of any kind. Burrs formed by cutting tools shall be reamed out and, before installation, each section of pipe shall be examined to see that it is clean and clear. Pipes shall be free from tool marks. When erecting plated, polished, or soft-metal piping, friction wrenches shall be used exclusively. In "marking up" screwed joints, Crane or Key White thread lubricant shall be used and applied to male threads only.

8 Supports and Anchors: Pipe supports, unless otherwise shown on the Drawings, shall be provided at the base of all risers, at intervals not to exceed 5 feet on all runs of pipe 2 inches and smaller in diameter. Pipe run in groups shall be spaced equally and kept parallel throughout the length of the run. Pipe abutting walls or ceilings shall be supported by Unistrut P1000 channels, Figure 650 pipe clamps, and hanger rods if necessary.

For pipe over 2 inches, hangers shall be Grinnel Company No. 260.

For pipe 2 inches and less, hangers shall be Grinnel Company No. 97. All items shall be galvanized.

Pipe supports shall be Grinnel Company No. 264, complete with proper size extension pipe and floor flange.

Expansion bolts and inserts driven into concrete slabs for pipe hangers shall be installed without injury to the structure.

Anchorage shall be provided for fittings where there is danger of pulling joint when under pressure.

9 Governing Standards: All codes, standards, and ASTM Standards referred to in these Specifications shall be in accordance with the latest revision of the standards at the time of bidding.

10 Materials: Piping material shall be as herein specified unless otherwise shown on the Drawings. Standard Specification designations shall be the latest published designations.

A Steel Pipe: Pipe 6 inches in diameter and smaller shall be designated black steel pipe (BS), galvanized steel pipe (GS), and Schedule 80 seamless steel pipe (Sch 80 Seamless) and shall be manufactured in accordance with ASTM A-120. The minimum class pipe shall be as designated in the Drawings.

Fittings shall be 125 pounds and threaded, unless otherwise shown on the Drawings. Unions larger than 3 inches shall be standard flanged unions. Welded fittings shall conform to ASTM A-234 with a wall thickness equal to or greater than the pipe wall. Mitered fittings shall conform to AWWA C-208. Flanges shall be ASA-150. Welding shall be in accordance with AWWA C-206.

Pipe larger than 6 inches shall be designated STL and shall be manufactured in accordance with AWWA C-201 or 202. Fittings shall be steel welded fittings ASTM C-208. Flanges shall be in accordance with

AWWA C-207, hub type. Welding shall be in accordance with AWWA C-206.

Pipe 6 to 12 inches shall be Schedule 40; 14 to 28 inches shall be Schedule 10; and 30 inches and larger shall have a wall thickness of 5/16 inch (0.312").

B Polyvinyl Chlorine Pipe (PVC): Polyvinyl chlorine pipe for chlorine and chemical solutions shall conform to Commercial Standard CS207-60, Type I, with a minimum wall thickness corresponding to Schedule 80 unless otherwise shown on the Drawings.

All joints above ground shall be screwed and sufficient unions shall be used, so the piping can be disassembled without the need to cut pipe.

For buried water lines, PVC pipe meeting ASTM D 2241 standard shall be used. The class of pipe to be installed shall be as shown on the Drawings. All pipe shall bear the Nation Sanitation Foundation Seal of Approval (NSF-pw), shall have a Standard Dimension Ratio of 26 or less, and have a pressure rating of 150 psi or greater.

11 Plumbing: The Contractor shall furnish and install all piping, valves, fittings, and accessories to provide a complete plumbing installation as shown on the Drawings and as specified. All materials shall be new and undamaged, and shall conform to the Specifications and to applicable codes.

All work and materials shall be in full accordance with the latest rules and regulations of the National Fire Prevention Association and the State Fire Marshal; the safety orders of the State Division of Industrial Safety; the National Electric Code; the Uniform Plumbing Code published by the Western Plumbing Officials Association; and other applicable local or state laws or regulations. Nothing on the Drawings or in the Specifications is to be construed to permit work not conforming to these codes.

When the Specifications call for material or construction of a better quality or larger size than required by the above mentioned rules and regulations, the provisions of these Specifications shall take precedence over the requirements of the said rules and regulations.

The Contractor shall furnish, without any extra charge, any additional material and labor when required by the compliance with these rules and regulations, though the work may not be mentioned in these particular Specifications or shown on the Drawings.

Spaces are provided in the design for the construction of the building to install the plumbing work and the Contractor shall keep all pipe within the furring lines

established on the Drawings, unless pipes are shown exposed.

All pipes shall be run in the approximate locations shown and shall be of the size given on the Drawings. Unless otherwise shown, pipelines shall be run parallel to, or at right angles to, the structure. Piping must be offset wherever necessary to obtain head room. In all cases, pipelines shall be installed to conform to the actual conditions found in the building such as offsetting to clear structural members, etc.

A Holes for pipes through walls, domes, or ceiling shall be lined with 24-gauge galvanized steel sleeves with ½ inch flanges on each end. Where pipes pass through walls, ceilings, or floors, they shall be fitted (in lavatory and chlorine rooms) with chrome-plated plates. Plates must be securely held in position allowing enough clearance for expansion.

B Pipes through the roof shall be flashed and made watertight using SEMCO 6 pound seamless lead flashing with 6 inch shirt-and caulk type counter flashing sleeve.

C Wherever changes in sizes of piping occur, the changes shall be made with reducing fittings, as the use of bushings will not, in general, be permitted. Eccentric reducing fittings shall be used wherever necessary to provide free drainage of lines.

D All "horizontal" drain pipes within the building shall have a minimum of ¼ inch pitch per foot, unless otherwise marked or required to obtain the indicated inverts.

E Cleanouts shall be installed where required or where indicated on the Drawings. No cleanouts or valves shall be installed in inaccessible places. Where valves, traps, or cleanouts are installed in furred ceilings or walls, the Contractor shall furnish and install access plates and frames in the furring. Traps shall be capable of being disassembled without cutting the pipe.

F The Contractor shall thoroughly clean all plumbing fixtures and trim free from rust, dirt, etc., before any covering or painting is done or the system put in readiness for final inspection.

G The piping system shall be flushed out until it is thoroughly clean in the judgment of the Engineer.

H All openings into pipes shall be effectively capped to keep foreign matter out while under construction.

After the completion of all work, all resulting debris shall be removed to leave the entire work in a complete and undamaged condition and the system adjusted to

proper operation.

12 Installation of Pressure Lines: All pipe and fittings shall be carefully examined for defects and no piece shall be installed which is shown to be defective. Special care shall be taken to avoid leaving bits of wood, dirt, and foreign particles in the pipe.

Every precaution shall be taken to prevent foreign material from entering the pipe while it is being placed in the trench. To prevent getting earth into the pipe, the Engineer may require that, before lowering the pipe into the trench, a heavy, tightly woven canvas bag of suitable size shall be placed over each end and left there until the connection is made to the adjacent pipe. During laying operations, no debris, tools, clothing, or other materials shall be placed in the pipe.

At times when pipe laying is not in progress, the open ends of pipe shall be closed by a watertight plug or other means approved by the Engineer. Pipe shall be laid with the bell ends or coupling ends facing in the direction of the laying unless directed otherwise by the Engineer or specifically indicated on the Drawings.

All pipe shall be carefully placed and supported at the proper line and grade, and shall be sloped to permit drainage. Minor adjustment may be necessary to avoid architectural and structural features. Major relocations shall be approved by the Engineer. Minimum earth cover shall be 30 inches, unless otherwise shown on the Drawings.

Sufficient screw unions, flanges, joints, or flexible couplings shall be used to allow the convenient removal of any run of pipe without removing adjacent runs or equipment. Where practicable, make-up joints have been indicated on the Drawings; however, omission of these joints from the Drawings does not excuse the Contractor from their installation. Wherever a pipe larger than 3 inches in diameter is cast or grouted in place and passes from concrete to earth, a flexible coupling must be used on the earth side. Bare metal pipe passing from concrete to earth shall be wrapped with Scotch Wrap 60 for 3 inches each side of the concrete face on the earth side. All metal pipe below ground shall be wrapped with 4-mil polyethylene.

13 Cleaning and Disinfection: Pressure and gravity lines shall be cleaned of all foreign matter and tested in the presence of and to the satisfaction of the Engineer.

The Contractor shall furnish the necessary pumps, labor, equipment and materials and shall perform the required tests of the completed system before the system is placed in operation or connected to other lines.

A The gravity and pressure lines shall be flushed clean prior to testing or

disinfection.

B Potable water systems shall be disinfected in accordance with AWWA C-651 "Procedure for Disinfecting Water Mains."

14 Pipe Testing: All testing of pipe shall be done under the supervision of the Engineer. The test section shall be bled of air and presoaked in a manner and for a time determined by the Engineer. Leakage shall be corrected at the Contractor's expense. The Contractor shall furnish all equipment and materials for the testing and shall perform such tests as follows:

A The duration of the hydrostatic test shall be a minimum of four (4) hours.

B The test pressure shall be 150 psi actual hydrostatic pressure on the lowest point in the test section. The pressure gauge shall be no more than 30 feet above or below the lowest point; the gauge reading shall compensate for the actual difference in elevation and any movement (change in elevation) of the gauge shall necessitate beginning the test again. The actual hydrostatic pressure shall not exceed 155 psi at any time and not be less than 145 psi for more than 15 minutes. Every effort will be made to maintain an average pressure of 150 psi at the lowest point in each test section throughout the test.

C The maximum allowable leakage for push-on joints is the number of gallons per hour as determined by the following formula:

$$L = \frac{(N)(D)(P)\ 0.5}{7{,}400}$$

where:
L = Allowable leakage in gallons per hour
N = Number of joints in length of pipe being tested
D = Nominal diameter of pipe in inches
P = Square root of the average of the maximum and minimum pressures within the test section in psi

D Maximum filling rate in gallons per minute is equivalent to filling velocities of 1 foot per second for pipes flowing full.

E Air piping shall be tested for a period of four (4) hours at 100 psi or 1.5 times the operating pressure. There shall be no drop in pressure allowed.

F Chlorine solution piping shall be tested with air for a period of four (4) hours at a pressure of 100 psi. There shall be no leakage allowed.

15 Marking Tape: this section intentionally left blank

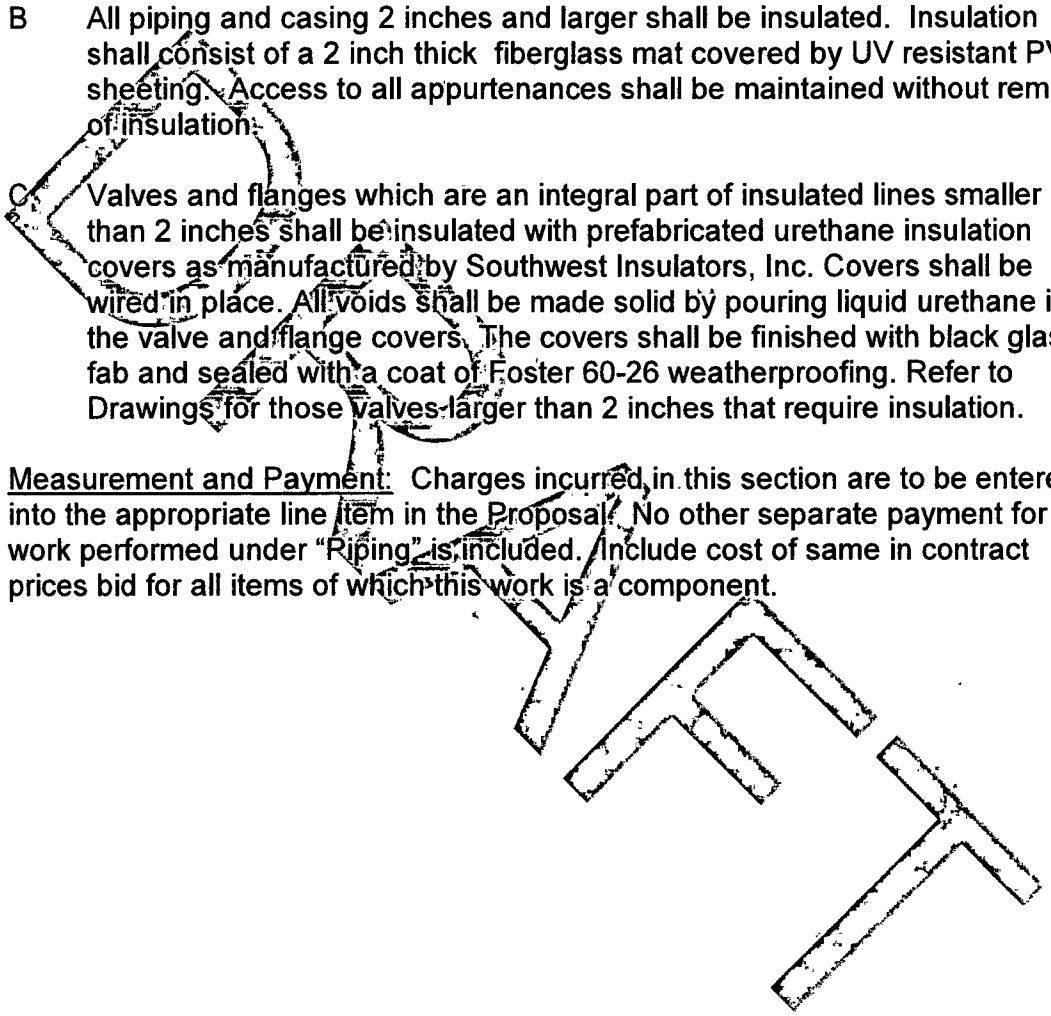
16 Pipe Insulation:

A All piping 2 inches and smaller, and all exposed chemical feed, water supply, washdown, and copper pipelines regardless of size, shall be insulated. Split ½ inch round insulation shall be used with a split PVC pipe covering utilizing galvanized metal straps as required. For piping that is not straight run, the insulation shall be pre-molded sectional urethane with aluminum wrap.

B All piping and casing 2 inches and larger shall be insulated. Insulation shall consist of a 2 inch thick fiberglass mat covered by UV resistant PVC sheeting. Access to all appurtenances shall be maintained without removal of insulation.

C Valves and flanges which are an integral part of insulated lines smaller than 2 inches shall be insulated with prefabricated urethane insulation covers as manufactured by Southwest Insulators, Inc. Covers shall be wired in place. All voids shall be made solid by pouring liquid urethane in the valve and flange covers. The covers shall be finished with black glass fab and sealed with a coat of Foster 60-26 weatherproofing. Refer to Drawings for those valves larger than 2 inches that require insulation.

17 Measurement and Payment: Charges incurred in this section are to be entered into the appropriate line item in the Proposal. No other separate payment for work performed under "Piping" is included. Include cost of same in contract prices bid for all items of which this work is a component.



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ITEM 5

FENCING

1 Scope: This section covers the furnishing and installation of chain link fence and gates for the well yard. It is the intent of the owner to re-use the existing fencing at the existing location unless construction activities prevent it. If existing fencing is destroyed beyond re-use, then contractor shall provide and install fencing as follows:

2 Materials:

A Fence Fabric: Fabric shall be of the "chain link" type conforming to ASTM A 392, composed of individual wire pickets, helically wound and interwoven to form a square mesh. Wire used in the fabric shall be #9 W & M gage, of basic open hearth steel, containing not less than 0.20% copper, and having a tensile strength after galvanizing of 90,000 psi. Fabric shall be woven so as to form mesh two inches square and shall measure six feet in width. The wire ends at the edges of the fabric shall be cut diagonally, and twisted to form barbs. The fabric shall be hot-dipped galvanized after weaving, to produce a zinc coating weighing not less then 1.2 oz. per square foot of uncoated wire surface. The fabric is to be attached to the posts and gates on the outside of the well yard.

B Line Posts: Line posts shall be 2 1/2" O.D. galvanized steel pipe weighing 3.65 pounds per foot and conform to ASTM A 570 Grade 45 steel or ASTM A 569 for steel pipe.

C Top Rails: Top rails shall be 1 5/8" O.D. Schedule 40 steel pipe weighing 2.27 pounds per foot in random lengths averaging not less than 20 feet and joined with minimum 6 inch long pressed steel sleeves. Rail and sleeves shall be hot dipped galvanized to produce a zinc coating equal to that of the fabric.

D Bottom Tension Wire: Bottom tension wire shall be Marcelled (spiralled or crimped) 7 gage galvanized fencing wire conforming to ASTM A 824. Tension wire shall be stretched taut between end posts and attached within the bottom 6 inches of the fence fabric with #9 galvanized hog rings 24 inches center to center.

E Fabric Ties: Ties for attaching fabric to line posts and top rails shall be galvanized wire of approved gage and design. Ties shall be located on line posts every 15 inches, and on top rail and every 24 inches.

F Barbed Wire: The fence fabric shall be surmounted with three strands of barbed wire. Each strand shall consist of two No. 12-1/2 W & M gage twisted copper bearing steel line wires, hot dip galvanized with No. 14 W &

M gage galvanized steel 4-point barbs spaced not more than 5 inches apart.

G Barbed Wire Extension: Gate frame, corner posts, line posts, and swing gate posts shall be equipped with extension arms for supporting barbed wire. The base shall be of malleable iron and the extension pressed Armco Ingot Iron, hot-dipped galvanized after fabrication. The intermediate arm shall have provision for passing top rail, and corner arm casting equipped with set screw.

H End and Corner Posts: Shall be 3 inch O.D. galvanized steel pipe weighing 5.79 pounds per foot and conform to ASTM A 570 Grade 45 steel or ASTM A 569 for steel pipe.

I Swing Gate Posts: Shall be 4 inch O.D. galvanized pipe weighing 9.11 pounds per foot and conform to ASTM A 570 Grade 45 steel or ASTM A 569 for steel pipe.

J Brace and Tension Brands: Bands shall be un-climbable beveled edge type with square shouldered, galvanized carriage bolts, non-removable from outside fence.

K Bracing: All terminal posts shall be braced by horizontal compression members of 1-5/8" O.D. Schedule 40 pipe weighing 2.27 pounds per foot securely attached to terminal and first line posts with malleable iron fittings and beveled edge bands, and shall be truss braced from first line post to bottom of terminal posts with ½" rod and turn buckle. Corner posts shall be braced in each direction.

L Tension Bars: Tension bars for attaching fabric to terminal posts shall be 1/4" x 3/4" high carbon steel attached to terminal post by means of beveled edge bands. Spacing for the bands shall not exceed 15 inches.

M Swing Gate Frames: Swing gate frames shall be 2" O.D. Schedule 40 Pipe weighing 2.72 pounds per foot with internal bracing of 1-5/8" O.D. Schedule 40 pipe weighing 2.27 pounds per foot. Swing gate frames shall be hot-dipped galvanized with a minimum coating of 2 ounces per square foot.

N Gate Fillers: Gate frames shall be filled with same fabric as used in line of fence. Fabric to be attached to the frame with approved fasteners a maximum of 15 inches on center.

O Hinges: Hinges shall be double-clamping offset type, allowing gates to swing back parallel with line of fence and shall be made of malleable iron forgings.

P Latches: Latches shall be of eccentric double-locking type which engage strikes securely bolted to either gate frame or gate post at both top and bottom and in case of double gates engage also a heavy malleable iron non-freezing gate stop anchored in concrete footing. For walk gates up to and including 4' opening, a malleable iron gravity type latch shall be furnished which automatically engages pin welded in gate frame. All latches shall be made so as to be readily locked with padlock.

Q Gate Keeper: Each gate frame shall be equipped with a keeper in which automatically engages the gate frame when swung to the open position.

R Miscellaneous Fittings: All fittings entering into the fence, necessary to make a complete installation, shall be malleable iron, pressed steel, or forgings. All material shall be thoroughly galvanized by the hot dip method.

S Quality: All fencing, posts, and gates shall be of a quality equal to standard six foot fencing as furnished and erected by Viking Fence Co. or approved equal.

3 Construction Methods: Fence and gates shall be installed at locations shown on the Drawings. All posts up to and including 3" inch O.D. shall be set 36" in the ground. All other posts shall be set 42" in the ground. All posts shall be set in bell-shaped concrete footings, crowned at top to shed water. Line posts shall be set equidistant, but not more than 10 feet on centers. Generally, fencing will follow the finished ground surface, but the Engineer may direct that minor irregularities in grade be adjusted during erection. Erection of all fencing shall be supervised by a competent erection man.

4 Temporary Fencing: Temporary fencing shall be provided as shown on the Drawings. Fencing shall be orange in color and attached to posts at intervals no greater than ten feet. Fence shall be equal to Grainger product #5W418. All electrical junction boxes and controls shall be protected by temporary chainlink fence as described above.

5 Payment: No separate payment will be made for materials furnished or work done under this item, since compensation shall be considered as included in the lump sum price.

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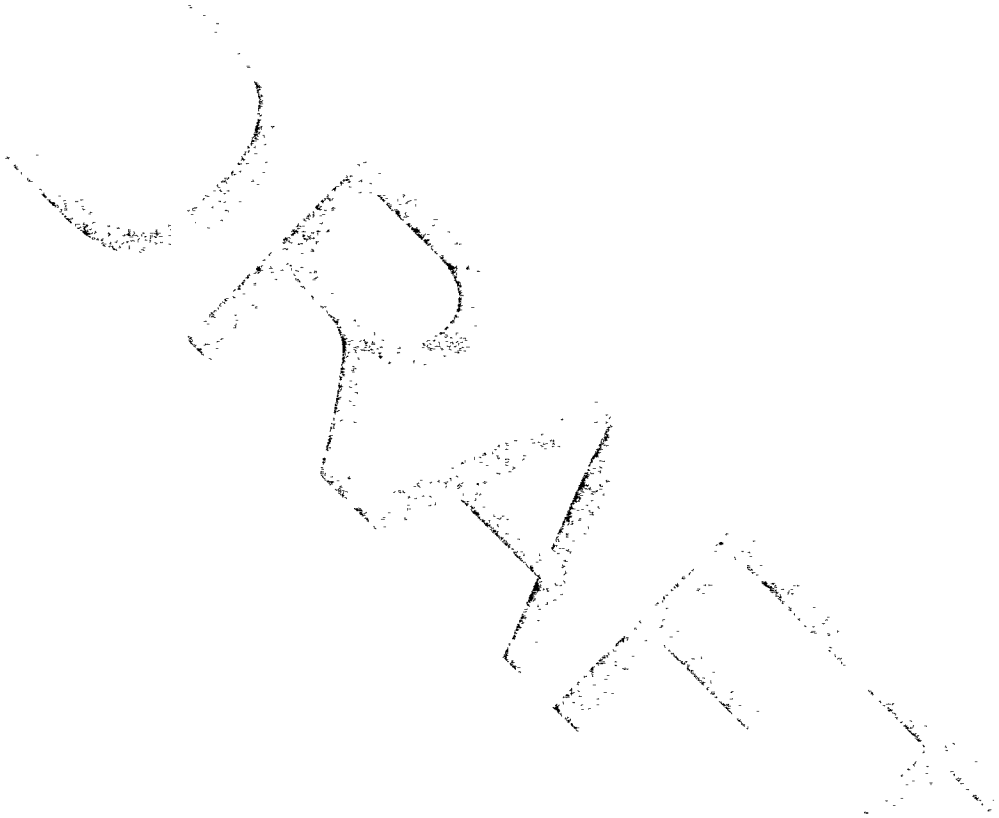


ITEM 6

TWO PIECE, UNDER-REAMED WATER SUPPLY WELL #1 (TRINITY)

1 Location of the Work: A proposed site is shown on the Drawings. That same site is staked on the ground within the 128 acre development in Denton County, Texas. The driller cannot spud the well until the location is verified by the Engineer. The final acceptance of the location shall be determined after drilling of the test hole and analysis of the geophysical log and sieve analysis. If any other site is necessary, it shall be mutually acceptable to the Contractor and the Engineer.

2 Scope of the Work: The work to be done herein shall consist of the installation of the new deep well complete with equipment as specified in the Technical Specifications. The equipment shall be installed and placed into operation by the Contractor. All work done shall be in accordance with AWWA Standard for Water Wells (A100-06) and TCEQ Rules and Regulations for Public Water Systems.

3 Water Supply Protection: The premises, materials, tools, and drilling equipment shall be maintained so as to minimize contamination of the underground water during drilling operations as required in 290.41(c) of the Rules and Regulations for Public Water Systems. At a minimum, the following requirements shall apply:

A Water used in any drilling operation shall be of safe sanitary quality. Water used in the mixing of drilling fluids shall contain a chlorine residual of at least 0.5 milligrams per liter. All drilling fluid additives are to be NSF approved for use in public water well construction. Owner agrees to provide water for drilling at the nearest tap at no expense to Contractor.

B Pits shall be constructed and maintained so as to minimize contamination of drilling fluids.

C No temporary toilet facilities shall be allowed within 150 feet of the well being constructed unless they are a sealed, leak-proof type.

D Drilled holes shall be protected by a tamper-proof steel cover of sufficient strength to prevent accidental entry while no workers are present at the site.

E Safeguards shall be taken to prevent possible contamination of water or damage by trespassers following the completion of the well and prior to installation of permanent pumping equipment.

F Well construction materials containing more than 8.0% lead are prohibited.

G The construction area shall be protected from trespass from domestic

animals and persons with temporary six foot chain link panel fencing and fencing equal to Grainger product #5W418.

4 Test Hole / Pilot Hole Testing and Quality Assurance: A test hole not less than 6 3/4 inches but not more than 9 7/8 inches in diameter shall be drilled to the depth as shown on the plans. The Contractor shall keep an accurate Daily Log as drilling proceeds. The log shall include drilling fluid properties, depth, thickness, and nature of each formation encountered, significant events occurring during the drilling, drill pipe tally showing feet of pipe and collars in hole and on rack at each shift change, and bit size. A copy of the Daily Log shall be provided to the Engineer by hand delivery or fax (254-968-8725) at the end of each shift.

The Contractor shall maintain laboratory equipment for the analysis of drilling mud properties during all drilling operations. Mud weight, sand content, viscosity, and pH shall be measured and recorded at least every four hours or 100 foot intervals, whichever is more frequent.

The Contractor shall collect two sets of cutting samples in cloth sample bags of at least 1 pint ea. from the hole at intervals no greater than 10 feet and at each change in lithology. One set is to be retained by the Contractor and the other is to be submitted to a reputable testing firm for sieve analysis. The specific intervals to be submitted for sieve analysis shall be based on the geophysical log and will be determined by the Engineer. Discrete samples shall be provided for analysis; composite samples are not acceptable.

Geophysical logging of the pilot hole shall, at a minimum, consist of shallow and deep resistivity, spontaneous potential, natural gamma ray, magnetic/slant angle deviation, and shall be performed by the Engineer. Geophysical logging of the upper-reamed hole (before setting outer casing) shall consist of a three or four arm caliper and natural gamma ray tool. A second three or four arm caliper and natural gamma ray tool shall be run on the under-reamed section before the screen and blank are installed. Geophysical logging shall be performed by the Engineer as a fixed cost line item on the bid proposal. The Contractor shall give 24- hour notice to the Engineer before logging is to occur.

Should the deviation log indicate greater than 1 degree deflection, the Contractor shall, at his own expense, correct the deviated test hole and re-run the log or abandon and replace the test hole with one acceptable to the Engineer at no additional cost to the Owner. Should the caliper log indicate areas which are greater than 1.5 inches smaller than the design under-ream diameter, the Contractor shall, at their own expense, correct the tight area(s) of the under-ream and re-run the log to the satisfaction of the Engineer.

A proposed material setting shall be provided to the Contractor for review prior to setting casing and screen. If the Contractor agrees with material setting, then it is mutually acceptable to the Engineer. Changes shall require written approval

from the Engineer.

5 Well Specifications:

A Construction features: The well shall be a two piece, gravel filter AWWA A100-06 type 7 water supply well with the outer casing cemented in place its entire length. The portion of the well through the water bearing sand shall be under-reamed and have a stainless steel screen and gravel pack installed.

It is the intent of these specifications to provide the highest quality installation both from the standpoint of material and workmanship. Therefore, the well and all other equipment shall be of the highest quality obtainable and sized amply large for loads imposed.

The drilling fluid system shall be of adequate design to maintain the highest quality drilling fluid. To insure the highest quality drilling fluid is used and maintained, Baroid products shall be used in conjunction with a Mud Engineer from Baroid or approved equal. All drilling fluid additives shall be NSF approved.

Drilling fluid properties shall be tested once during each 100 feet of hole drilled or 4 hours of circulating time, whichever is more frequent. A separate mixing tank shall be used so that additional mud shall be mixed with desirable properties before introduction into pit. Soda ash (0.5 pounds -2.0 pounds/100 gallons of mixing water) shall be used to reduce hardness of water before mixing with drilling fluid. Drilling fluid shall be bentonite or polymer based with a mud weight no greater than 9.2 pounds per gallon and a Marsh funnel viscosity not less than 33 seconds per quart and have a sand content no greater than 2%. Earthen settling pits are acceptable if adequate drilling fluid properties are maintained. Otherwise, mechanical fluid cleaning systems shall be utilized to maintain adequate mud properties.

B Well Seal: The well seal shall consist of a heavy steel plate used in conjunction with a gasket and bolted flange using stainless steel bolts and nuts that are connected to the outer casing, of adequate size to support entire weight of pump and production string when filled with water. The assembly shall be fitted with suitable openings for the power cable, well vent, water level indicator air line and shall be sealed to prevent the possibility of contaminating the well water.

C Outer Casing: The outer casing shall be installed from 2 feet above the surface of the ground to the top of the water bearing sands to be developed. The casing shall be equipped with a bolted flange complete with gasket which mates with the well seal assembly. Contractor shall

take all precautions necessary to prevent damage of the casing during installation. Casing shall be installed in a drilled hole of four (4) inches larger in diameter than the outside diameter of the casing. Cementing guides shall be attached and the casing accurately centered and plumbed in the drilled hole. Cementing guides shall be placed 5 feet from the top and bottom of the casing and at intervals no greater than 80 feet. Only new seamless or ERW black pipe with plain ends, beveled for welding may be used and shall conform to AWWA standards for steel casing. Field welding of the casing shall be performed by AWS certified welders utilizing materials, equipment, and methods designed specifically to achieve highest quality welds and straight alignment of outer casing. Line-up clamps shall be used to secure the casing ends prior to welding. Alignment tabs shall not be used. A non-AWS welder may be used upon inspection of test welds of the same material as the pipe to be welded and approval of the Engineer. Threaded casing may be used with Engineer's approval. For casing size, see Section 18.

D Cement Outer Casing: After the casing has been installed, centered and plumbed, the two (2) inch annular space between the walls of the drilled hole and the outside of the casing shall be filled with neat cement grout under pressure. Neat cement grout shall consist of a mixture of API Spec. 10, Class A and water in the ratio of not more than 6.0 gallons of water per 94-pound sack of cement. A maximum of 6%, by weight, bentonite may be added in accordance with AWWA Standard for Water Wells (A100-06 section 4.3.5). The grout shall be mixed at the site. The mixing and placing shall be a continuous operation until the grout has filled the entire annular space as evidenced by its over-flowing at the surface. The grout shall be placed from the top of the shallowest producing formation to be developed to the earth's surface. Cement grout shall be placed by a cementing company (i.e. Jet-Star) by pressure cementation method. The driller will utilize one of the following pressure cementation methods in accordance with the AWWA Standard for Water Wells (A100-06), Appendix C: Section C.4 (Interior method-without a plug); Section C.5 (Positive placement-interior method-drillable plug); or Section C.6 (Placement through float shoe attached to the bottom of the casing). The mixture shall weigh approximately fifteen (15) pounds per gallon and at no time during the cementing operation shall the weight fall below fourteen (14) pounds per gallon. The Contractor is cautioned that he must have sufficient pumping and mixing equipment, separate standby equipment, and a sufficient supply of cement at the site before this operation is begun. Once started, the casing installation and cementing shall be done in a continuous operation until the grout overflows at the surface. The Contractor shall guarantee in writing by a cementing certificate the effectiveness of the cement seal around the casing and that there will be no leakage around the casing anywhere along its entire length. The grout shall be allowed to cure a minimum of 48 hours prior to resuming drilling.

E Reaming: The depth below the outer casing to be reamed will be determined after formation samples and geophysical logs are analyzed by the Engineer to determine the thickness of the water bearing formation to be screened and developed. The reamed section shall be drilled to a depth of approximately 10 feet below depth of the formation. The diameter of the reamed section is shown on the Drawings. After the hole has been reamed to the diameter and depth required, the wall of the reamed hole shall be scraped with the reamer prior to removal. Immediately upon removal of the reamer, the diameter of the reamed section shall be verified using a 3-arm caliper geophysical log. Additional reaming shall be performed should the caliper log indicate areas which are 1.5 inches or smaller than the specified diameter.

F Screen: The screen shall be wire-wound, continuous-slot, rod based stainless steel screen as manufactured by Weatherford/Houston Well Screen Company, Howard Smith Company, Nagaoko USA Corporation, Alloy Machine, or U.S. Filters/Johnson Screens or an approved equal designed specifically for use in gravel filter type wells.

The size of the screen openings to be used shall be selected by the Contractor based on the character and sieve analyses of the formation samples and the type and grading of the gravel selected. The type, description, and size of the screen components which the Contractor proposes to use shall be submitted to the Engineer for approval before it is ordered by the Contractor.

The diameter of the screen shall not be less than that specified in Section 18. In order to prevent danger of collapse, the horizontal crushing strength anywhere along the entire screen assembly shall be as great as possible. The wall thickness of the screen shall be not less than No. 7 USS gage and there shall be no black pipe or other material whatsoever in the screen except blank and lap as described below.

Screw couplings, if used, shall be constructed of Type 304 stainless steel. If screen sections are to be welded to each other, only welding rods approved for use with Type 304 stainless steel shall be used. If screen sections are to be welded to steel blank or lap pipe, low carbon weld rings shall be installed on the ends by the screen manufacturer. It is the intent of this section of the specifications that the screen shall be made of Type 304 stainless steel in order to prevent electrolytic action, and all welding rods, fastenings or any portion whatever of the screen must be 18-8 stainless steel. Field welding of the screen shall be performed by AWS certified welders utilizing materials, equipment, and methods designed specifically to achieve highest quality welds and straight alignment of the screen. Line-up clamps shall be used to secure the screen ends prior to

welding. Alignment tabs shall not be used. A non-AWS welder may be used upon inspection of test welds of the same material as the screen to be welded and approval of the Engineer.

The length and position of the screen shall be such as to permit well development of the maximum capacity with a minimum amount of drawdown. The screen must be of such length as will take in the entire thickness of the water bearing sand to be developed based on the geophysical logging and approval of the Engineer. Blank pipe shall be installed opposite unproductive formations to reduce the amount of screen to be developed. Centering guides shall be installed at equal spacings as recommended by the screen manufacturer but in no case be more than fifty (50) feet apart and shall be Type 304 stainless steel. Centering guides shall be placed opposite collars or blank and in no case opposite screen. A minimum of sixty (60) feet blank lap pipe shall extend into the outer casing from the screen section.

G Gravel Filter: After the installation of the screen assembly, a gravel filter shall be constructed around the screen by pumping special washed and screened filter gravel to the bottom of the well through a separate and temporary line, building the filter from the bottom of the well upward in a continuous operation to a point shown on the Drawings. Alternate means of installing gravel may not be used unless the method of installation is approved by the Engineer. A volume of gravel 20% greater than that volume indicated by the caliper log shall be available at the site prior to commencing graveling operations. Filter gravel used shall be a product of filter sand and gravel manufacturer and shall be uniformly screened to size and washed clean. The type and size of the gravel shall be determined and selected by the Contractor based on the character and sieve analyses of the water bearing formations. The gravel shall be one of or a mixture of water gravels furnished and processed by Colorado Silica Sand Company; Texas Silica at Brady, Texas; or approved equal. It shall be washed, screened, and without sharp edges. It shall be free of dirt, trash, clay, and other foreign substances. Crushed gravel shall not be used. The gravel shall be approved by the Engineer before being ordered. The supplier shall provide Toxicity Characteristic Leaching Procedure (TCLP) test results on the gravel filter material for the Engineer's approval. Contractor shall not attempt to construct the gravel filter by dumping filter gravel from the surface of the ground and agitating the well in an effort to settle the filter. A chlorine residual of 50 mg/l shall be maintained in the graveling fluid during the graveling operations. The use of Calcium Hypochlorite for this purpose is expressly prohibited.

6 Well Capacity: The specifications herein provide for the minimum construction requirements. It shall be the responsibility of the Contractor to construct a well of such size that the greatest capacity available from the formation will be produced

continuously (also see Sections 18, 19 and 20).

7 Development: Well development shall be performed using a surge block and/or bailer. Other mechanical or chemical development methods will be considered on a case by case basis by the Engineer. Development will be considered complete when the design capacity is reached with optimization of specific capacity and minimization of sand and suspended solids. Before the test pump is set, the well shall be sounded and if any material is found inside the screen, it shall be cleaned out before the well is tested. The well will not be considered ready for official testing until surging of the test pump indicates a clean sample. The Engineer shall determine when the development is complete and production testing shall commence.

Throughout the development process the gravel filter level shall be monitored. The gravel reserve shall be maintained at least 25 feet above the uppermost screen. When development is complete, the reserve shall be restored to 50 feet above the uppermost screen.

It shall be the Contractor's responsibility to employ the best possible methodology to obtain the specified minimum quantity of water, free from drilling fluids, sand, mud, cuttings and any other foreign material of any nature. The Contractor shall vigorously agitate each section of the screen to accomplish this goal. It is important that the entire screen be thoroughly cleaned and that the forceful action of the water work out through the screen openings and gravel pack, break up, disperse, and remove the wall cake, fine sand, silt and clay.

8 Testing of the Well: When the Contractor has completed the installation of the well, he shall furnish and install temporary test pumping equipment of suitable size specified in the Technical Specifications. When the Contractor has made necessary adjustments and is ready to test the well for capacity, he shall notify the Engineer who will have an authorized representative on the grounds on the date set to perform the test. The contractor shall provide power (generator and fuel if needed) to perform the 36 hr. pump test and step test to test well efficiency.

The water flow rate measurement shall be made through a venturi, meter, or weir box furnished by the Contractor and acceptable to the Engineer, or through a standard orifice measuring device furnished by the Contractor. The 36 hr. pump test shall be continuous and in no case, less than 36 hours in duration, if necessary to such time that the hydraulic conditions reach stabilization as shown by drawdown remaining constant for four (4) consecutive hourly readings. Water level measurement by hand shall conform to the following schedule:

Prior to Test -	at 30 minute intervals for 4 hours unless stable
First 10 minutes	at 1, 1.5, 2, 3, 4, 6, 8, and 10 minutes
From 10 - 120 minutes -	at 15, 20, 25, 30, 40, 60, 80, and 100 and 120

	minutes
After 120 minutes -	at 1 hour intervals until completion of pumping
After pumping ceases -	repeat the above schedule through 4 hours

Production testing shall not proceed until static water levels are stable as indicated by two identical consecutive readings 30 minutes apart. Should stable conditions not occur, testing may commence after 4 hours of non-stable readings. Gauges used in the collection of water level data shall be accurate to 1 psi and not be over-pressured during the test. This may necessitate using different gauges during different portions of the test. In addition, a one inch PVC pipe shall be strapped to the pump column pipe for use by the Engineer for placing a pressure transducer.

9 Disinfection: During the construction of the well, the drilling fluid shall be disinfected with chlorinated lime. After completion of the well and installation of the pump, the entire unit shall be chlorinated with a solution of such volume and strength that a concentration of fifty (50) mg/l chlorine shall be obtained in all parts of the well and pump at six (6) hours after introduction of the chlorine. The disinfection shall be in accordance with current AWWA standards for well disinfection. Before placing well into service, requirements of 290.41(c)(3)(F) and 290.41(c)(3)(G) of Rules and Regulations for Public Water Systems must be complied with.

10 Production Guarantee: Well efficiency shall be measured using a step test or other method approved by the Engineer. A well efficiency less than 70% shall be cause for additional development and re-testing. Likewise, sand production at a rate greater than 5 milligrams per liter will be cause for additional development and re-testing. Sand production at a rate greater than 5 milligrams per liter at the design capacity will not be accepted. These requirements must be met to the satisfaction of the Engineer.

11 Quality of Water: It is desired by both Owner and Engineer that the water produced by the well covered by the specifications be of the best quality available at the site. However, it is understood by all concerned that while the Contractor must exercise due diligence in an effort to obtain a satisfactory water quality, no guarantee is expressed or implied on the part of the Contractor regarding the chemical quality of the water. Prior to being placed into service and after the disinfectant is flushed from the well, samples of water shall be collected and submitted to a laboratory as required in 290.41 (c)(3)(G) of the Rules and Regulations for Public Water Systems.

12 Access of Information: Information gathered in the construction of this well is to be forwarded to the Texas Department of Licensing and Regulation, Water Well Driller/Pump Installer Section.

13 Abandonment Clause: When the Contractor has made an extended and

conscientious effort to complete his Contract (to the satisfaction of the Engineer and Owner) but without success, he will abandon the hole in accordance with State requirements. No abandonment shall be undertaken without the express written approval of the Engineer.

14 Pumping Equipment Requirements: The pump to be installed in the well shall be a deep well submersible turbine pump of heavy construction throughout and suitable for continuous operation at the conditions specified. Operating conditions and major pump dimensions are covered by Sections 19 and 20 of this Item.

A Bowl Assembly: The bowls shall be flanged type, constructed of close grained iron conforming to ASTM A48, class 30. They shall be free from sand holes, blowholes, or other faults and must be accurately machined and fitted to close tolerances. They shall be capable of withstanding a hydrostatic pressure equal to twice the pressure at rated flow or 1.5 times the shut-off head, whichever is greater. The intermediate bowls shall be fitted with sleeve type bearings of bronze alloy C8935. A discharge bowl shall be used to connect the bowl assembly to the discharge pipe. An extra long bronze bearing packed with non-soluble grease shall be provided in the top bowl and extended into the discharge bowl. The bearing shall have a threaded cast iron cap or plug at the top to protect the bearing from abrasives. The hub of the discharge bowl should be such that the bearing can be easily removed through the top of the hub. A thrust ring shall be above the top impeller to prevent excessive vertical thrust.

B Impellers: The impellers shall be constructed from ASTM B584 silicon bronze and be of the closed impeller type. They shall be free from defects and must be accurately cast, machined, balanced, and filed for optimum performance and minimum vibration. Impellers shall be balanced to grade G6.3 of ISO 1940 as minimum. They shall be securely fastened to the bowl shaft with taper locks of C1018.

C Motor Adapter: The inlet motor adapter shall be of ASTM A536 Gr. 60-40-18 ductile iron and shall contain an extra long bronze bearing. The inlet area shall have a net open area of at least four times the eye of the impeller and shall be protected with a 304 stainless steel screen. The openings of the screen shall not be more than 75% of the minimum opening of the water passage through the impeller.

D Shaft: The pump shaft shall be of ASTM 582 type 416 stainless steel. It shall be precision ground and polished with a surface finish better than 40 RMS.

E Coupling: The shaft coupling shall be stainless steel and be capable of

transmitting the total torque and thrust of the motor and bowl assembly in either direction of rotation.

F Discharge Column: The discharge column shall be 6" Schedule 40 threaded and coupled galvanized pipe weighing 18.97 pounds per foot in standard 21 foot lengths. See well detail drawing for lengths and settings. Connections shall be uniformly tightened to prevent leakage and unscrewing torque per manufacturer's guidelines.

G Check Valves: Column check valves shall be installed to prevent backflow. Valves shall be designed for minimum head loss, spring loaded, and provide a positive seal under high or low head applications. Valves shall be lead and zinc free. All internal components except the nitrile seal shall be stainless steel. A check valve shall be installed 5 feet above the pump bowl assembly, within 25 feet of the pumping water level, and every 200 feet thereafter toward the surface.

15 Power Cable: The Contractor shall furnish and install in one continuous length, a sufficient amount of copper power cable and motor lead to reach from the motor terminal connection to the starter. The cable shall be of proper size and voltage rating to permit a depth setting as specified, all as recommended by the submersible motor manufacturer. Insulation resistance after installation must be greater than 2 million ohms.

The cable shall be comprised of a single, flat jacketed cable assembly with three or more conductors as required. Stranding shall meet ASTM Class designation standards. The cable jacket and conductor insulators shall be impervious to oil. The jacket shall be water tight. A corrosion resistant shield shall protect the cable where it passes the pump bowls.

The cable shall be suitably supported on the column pipe by stainless steel strapping designed for that purpose. The cable shall be protected from crushing and chafing as necessary. Cable supports shall be at intervals no greater than 15 feet.

16 Motor: The electric motor shall conform in construction and performance with the National Electrical Manufacturers Associations standards for motors as last revised. They shall be of the squirrel cage, low starting current type in vertical, submersible frames unless otherwise specified. The rotors shall run in ball bearings provided with adequate means of continuous lubrication. The thrust bearing shall be of ample size to carry the thrust load of the pump, the weight of the shaft, couplings and impellers without overheating. It shall be of ample size to insure long life when operating continuously in carrying maximum load. Minimum thrust rating allowable as by Anti-Friction Bearing Manufacturers Association (A.F.B.M.A.) is specified in the Technical Specifications, together with the details of motor service and construction. The motor shall have a service factor of 1.15

and be suitable for use on 480 volt, three phase, 60 Hz service. If the flow rate past the motor is less than that specified by the manufacturer, a flow inducer sleeve shall be installed.

17 Water Samples: After disinfection and flushing of the well, samples shall be sent to a laboratory approved by the Texas Department of Health for all bacteriological, radionuclide, and chemical analyses as required by TCEQ Chapter 290 Subchapter F, the July 1, 2004 Radionuclide Testing document, and any other requirements. If the results are unsatisfactory, the disinfection procedure must be repeated and additional samples taken until satisfactory results are obtained.

18 Well Specifications: Deviation from these specifications may be made based on results from the formation samples and geophysical logging and with the express written approval of the Engineer.

A Anticipated capacity ---------- 350 GPM

B Anticipated pilot hole depth ---------- 2,200 feet +/-

C Anticipated pump setting (length of galvanized column pipe) -/+1,302 feet

D Outer Casing

minimum length ---------- 1,640 feet +/-
size and thickness ---------- black steel pipe, New, Nominal 16", 0.500" minimum wall

E Screen:

minimum length ---------- 300 feet
size and type ---------- 10" Nominal Rod Based Stainless Steel

F Blank for screen section:

minimum length ---------- 160 feet
size and type ---------- black steel pipe, New, 10" O.D., 0.365" minimum wall

G Lap pipe:

minimum length ---------- 100 feet
size and type ---------- black steel pipe, New, 10.75" O.D., 0.365" minimum wall

H Gravel filter:

size ---------- based on sieve analysis
annular gravel wall thickness range ----3" to 4"

I Test Pump

size and operating capacity of test
pump, motor, and equipment ---------- 500 GPM pump with VFD
Length of pumping test -----test shall be run for not less than thirty-six (36) hours and extended, if necessary to such time that the hydraulic conditions reach stabilization as shown by drawdown remaining constant for four (4) consecutive hourly readings.

19 Well Pump Specifications: Deviation from these specifications may be made based on results from the production testing and with the express written approval of the Engineer.

A Pumping conditions

Capacity ---------- 500 GPM
above ground head ---------- 70 feet
pump speed ---------- 3525 RPM

B Pump specifications

discharge outlet size ---------- 6" minimum
column size ---------- 6" minimum

C Pumping submergence ---------- to be determined after the pumping test with the approval of the Engineer

20 Electric Motors, Starters and Control Equipment:

A Motor:
service -------- ---------- ------ 3 phase, 60 cycle, 480volts
capacity ---------- ------- 200 hp
type ---------- Submersible
winding ---------- Class "B" 40C ambient 1.15 S.F.
AFBMA Thrust rating (5 year life) ---- 10,000#

B Motor Starter:

service ---------- ------- 3 phase, 60 cycle, 480 volts

capacity ---------- 200 hp
type ---------- soft start
enclosure ---------- NEMA-3R

Elapsed time meter to be installed inside enclosure. Starter shall be Square D or equal.

21 Accessories:

A Automated controls: The Contractor shall install water pressure controls and wiring to new well. The well shall be equipped with an HOA type switch and shall function in either hand or auto. If a SCADA system is used by the Owner, the Contractor shall install and program the furnished system by the Owner.

B Water Level Air Line: The Contractor shall furnish and install an air line and pressure gauge for the purpose of measuring water level in the well.

C Pressure gauge mounted in discharge line and calibrated in pounds per square inch.

D The well discharge piping shall be provided with a 3/4" tap and hose bib for a raw water sampling tap.

E The outlet of the air vent shall be screened with stainless steel mesh and meet the requirements of 290.41(c)(3)(K).

F The deep well shall be provided with an access port not less than one inch in diameter with screw cap with a 1" PVC line attached to the 1" access port and installed/run to the top of the pump inlet.

G All exposed piping shall be insulated for freeze protection.

22 General Notes: The Bidder's attention is called to the General Conditions "OR EQUAL CLAUSE." When references are made in the Contract documents or specifications to trade names of manufacturers, such references are made solely to designate and identify the quality of strict competitive bidding. The "OR EQUAL" or substitution of equal equipment is clearly defined in the General Conditions. The Contractor shall indicate the manufacturer's name of the equipment to be furnished.

23 Payment: Payment for work under this item shall be compensated under the unit price items on the bid proposal. Payment for the pilot hole shall be based on the geophysical logging total depth. Payment for the casing and screen shall be based on the results of an initial downhole video survey provided by the Engineer. An additional final downhole video survey shall be provided by the

Engineer before the final pump is set. Downhole video surveying is a fixed cost line item on the bid proposal and the Contractor shall give the Engineer 24 hour notice before videoing is to occur.

ITEM 07

AUTOMATIC WELL CONTROLS

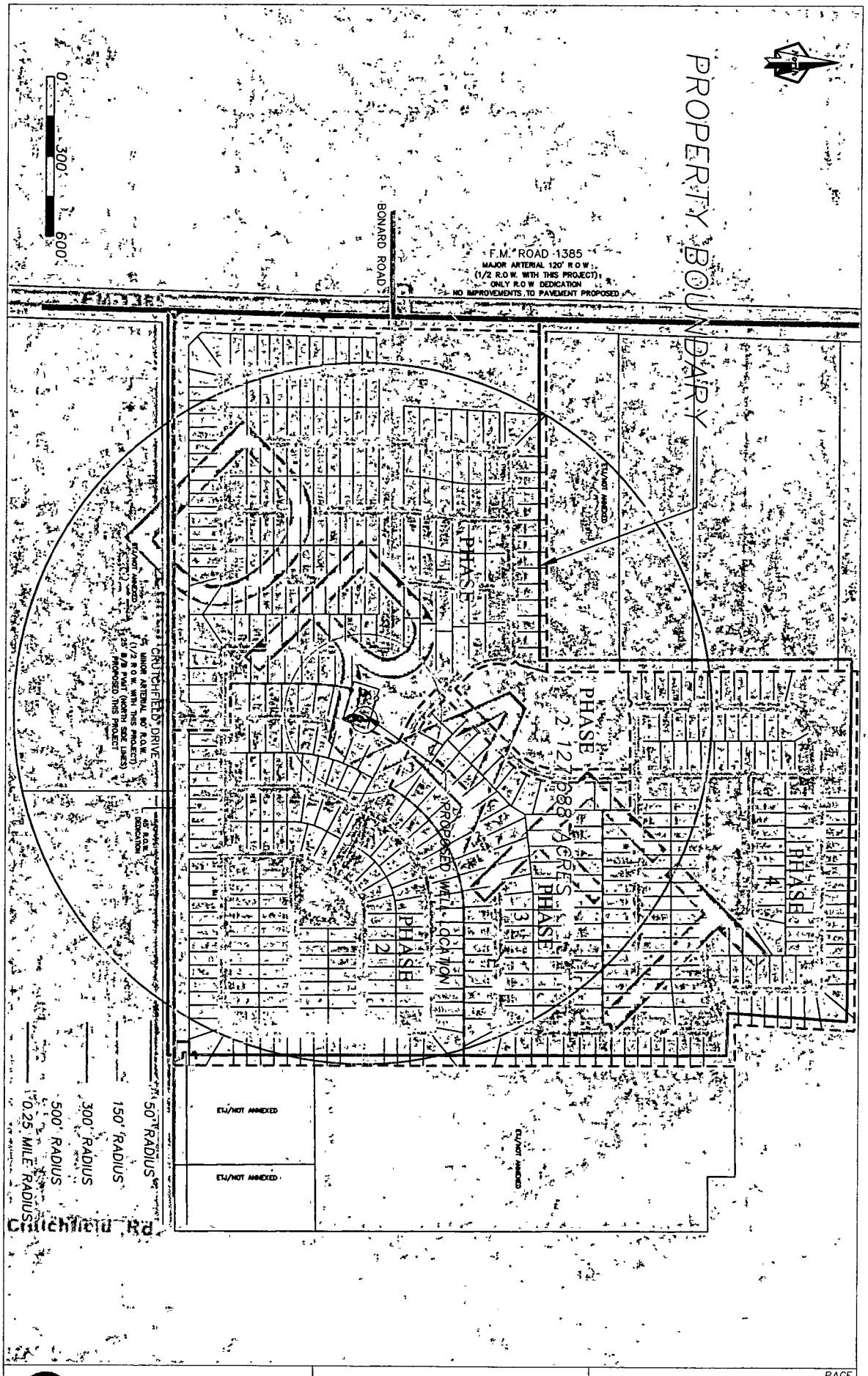
1 General: The Contractor shall furnish and install an HOA switch at the well site and inside the pump house. The proposed well shall be capable of operation on manual or automatic from the well site.

2 Well Site Power Distribution: The proposed well site shall be equipped with a power disconnect.

3 Service: The Contractor shall provide a factory trained field representative to supervise the initial operation of control equipment and to acquaint Owner's personnel with function and operation.

4. Payment: Payment for work under this item shall be compensated under the unit price items on the bid proposal.

DRAWINGS



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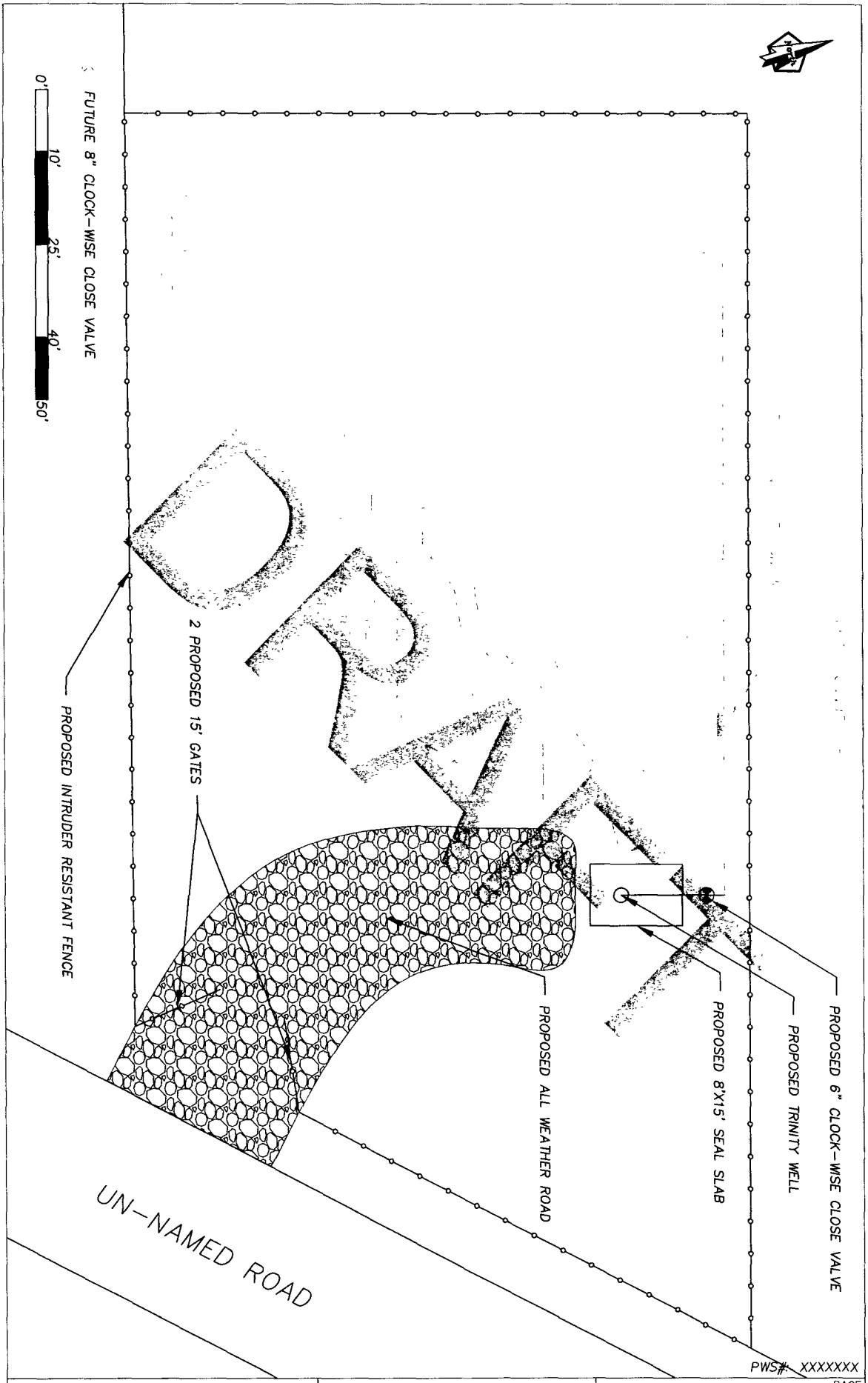
F-8170
STEPHENVILLE, TX
(254) 968-8721
Hydrologists ○ Geologists ○ Engineers

HIGHLAND TRAILS
PROPOSED
TRINITY WELL #1 CONSTRUCTION
DENTON COUNTY
TEXAS

DESIGNED BY. M VAN HATTEM
DRAWN BY: M VAN HATTEM
CHECKED BY J LANE
DATE CREATED. AUG 20, 2015
FILE NAME PLANVIEW

PAGE 1/4



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HIGHLAND TRAILS
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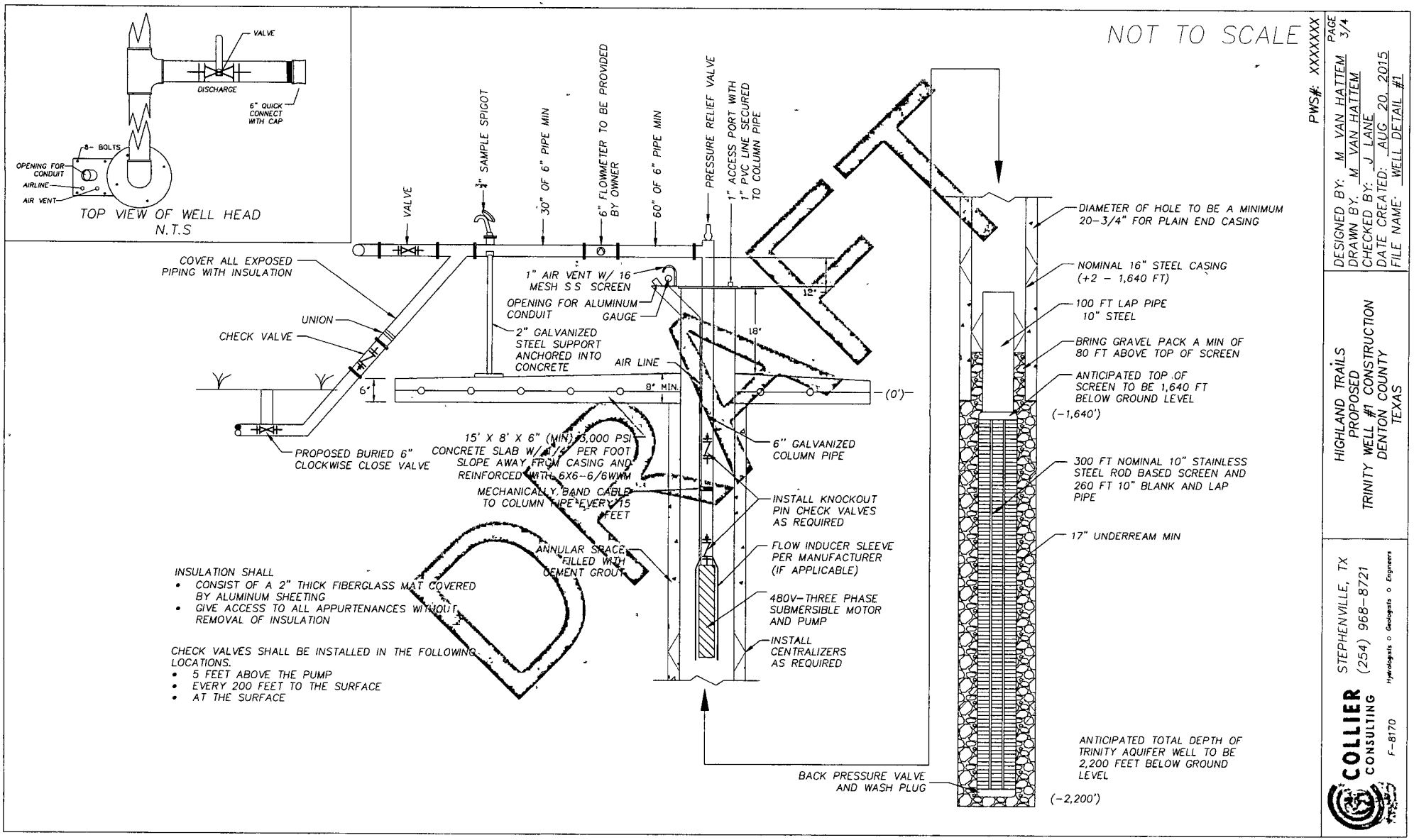
TEXAS

DESIGNED BY. M VAN HATTEM
DRAWN BY. M VAN HATTEM
CHECKED BY J LANE
DATE CREATED. AUG 20, 2015
FILE NAME PLANT LAYOUT

PAGE 2/4


NOT TO SCALE
PWS#: XXXXXXX
PAGE 3/4
DESIGNED BY: M VAN HATTEM
DRAWN BY: M VAN HATTEM
CHECKED BY: J LANE
DATE CREATED: AUG 20, 2015
FILE NAME: WELL DETAIL #1
HIGHLAND TRAILS
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DENTON COUNTY
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TOP VIEW OF WELL HEAD
N.T.S
VALVE
DISCHARGE
6" QUICK CONNECT WITH CAP
8- BOLTS
OPENING FOR CONDUIT
AIRLINE
AIR VENT
VALVE
3" SAMPLE SPIGOT
30" OF 6" PIPE MIN
6" FLOWMETER TO BE PROVIDED BY OWNER
60" OF 6" PIPE MIN
PRESSURE RELIEF VALVE
1" ACCESS PORT WITH 1" PVC LINE SECURED TO COLUMN PIPE
COVER ALL EXPOSED PIPING WITH INSULATION
UNION
CHECK VALVE
1" AIR VENT W/ 16 MESH S S SCREEN
OPENING FOR ALUMINUM CONDUIT
GAUGE
2" GALVANIZED STEEL SUPPORT ANCHORED INTO CONCRETE
AIR LINE
6"
8" MIN.
(0')
PROPOSED BURIED 6" CLOCKWISE CLOSE VALVE
15' X 8' X 6" (MIN) 3,000 PSI CONCRETE SLAB W/ 1/4" PER FOOT SLOPE AWAY FROM CASING AND REINFORCED WITH 6X6-6/6WWM
MECHANICALLY BAND CABLE TO COLUMN PIPE EVERY 15 FEET
ANNULAR SPACE FILLED WITH CEMENT GROUT
6" GALVANIZED COLUMN PIPE
INSTALL KNOCKOUT PIN CHECK VALVES AS REQUIRED
FLOW INDUCER SLEEVE PER MANUFACTURER (IF APPLICABLE)
480V-THREE PHASE SUBMERSIBLE MOTOR AND PUMP
INSTALL CENTRALIZERS AS REQUIRED
BACK PRESSURE VALVE AND WASH PLUG
INSULATION SHALL
• CONSIST OF A 2" THICK FIBERGLASS MAT COVERED BY ALUMINUM SHEETING
• GIVE ACCESS TO ALL APPURTENANCES WITHOUT REMOVAL OF INSULATION
CHECK VALVES SHALL BE INSTALLED IN THE FOLLOWING LOCATIONS.
• 5 FEET ABOVE THE PUMP
• EVERY 200 FEET TO THE SURFACE
• AT THE SURFACE
18"
18'
DIAMETER OF HOLE TO BE A MINIMUM 20-3/4" FOR PLAIN END CASING
NOMINAL 16" STEEL CASING (+2 - 1,640 FT)
100 FT LAP PIPE 10" STEEL
BRING GRAVEL PACK A MIN OF 80 FT ABOVE TOP OF SCREEN
ANTICIPATED TOP OF SCREEN TO BE 1,640 FT BELOW GROUND LEVEL
(-1,640')
300 FT NOMINAL 10" STAINLESS STEEL ROD BASED SCREEN AND 260 FT 10" BLANK AND LAP PIPE
17" UNDERREAM MIN
ANTICIPATED TOTAL DEPTH OF TRINITY AQUIFER WELL TO BE 2,200 FEET BELOW GROUND LEVEL
(-2,200')

Aqua 000738

ELECTRICAL NOTES

1 Underground conduit may be PVC rigid conduit with 24" min cover in lieu of rigid steel

2 Exterior electrical encl shall be NEMA-3R or NEMA 4 weatherproof

3 Wiring and conduit shown for general arrangement only Contractor shall install all control panels, wiring, and conduit required to provide complete and functioning installation in accordance with the latest edition of the National Electrical Code and the intent of the specs

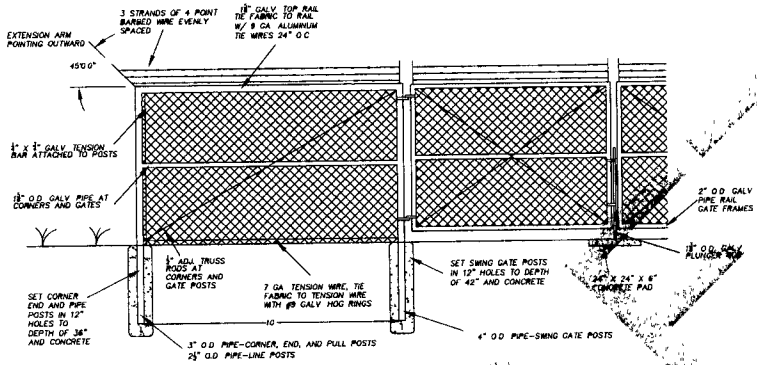
4 All conductors shall be copper Conduit inside pump buildings may be surface mounted EMT All electrical within chlorination rooms shall be PVC sealed to prevent corrosion from gas Seal wyes shall be installed on all conduit runs leaving a chlorine room

5 All control panels shall be labeled with permanent, plastic name plates

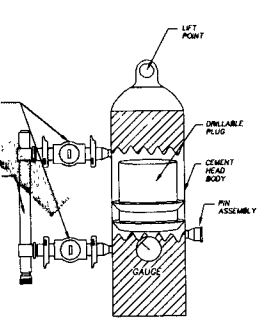
6 All motors shall be provided with adjustable time delays and subtrol monitors

7 All wiring, electrical equipment, controls and motors shall be protected from surges with equipment designed for this application

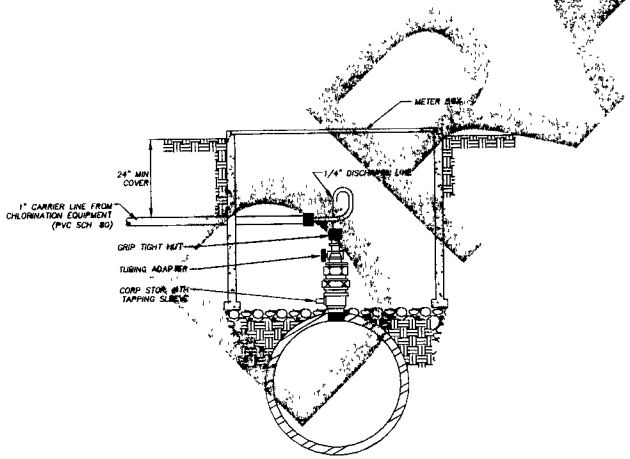
8 It is the intent of these plans and specifications that the contractor shall provide an installation that is complete and functional All items necessary, reasonably incidental, or customarily included, shall be provided



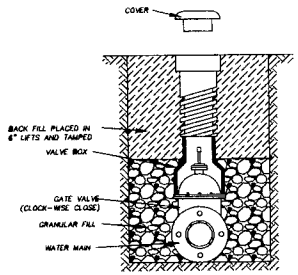
FENCE AND GATE



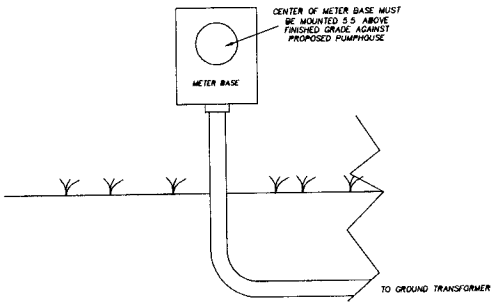
CEMENT HEAD



CHLORINE INJECTOR



VALVE DETAIL



POWER DROP DETAIL

PAGE 4/4

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CHECKED BY: J LANE
DATE CREATED: AUG 20, 2015
FILE NAME: FENCE DETAIL

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DENTON COUNTY
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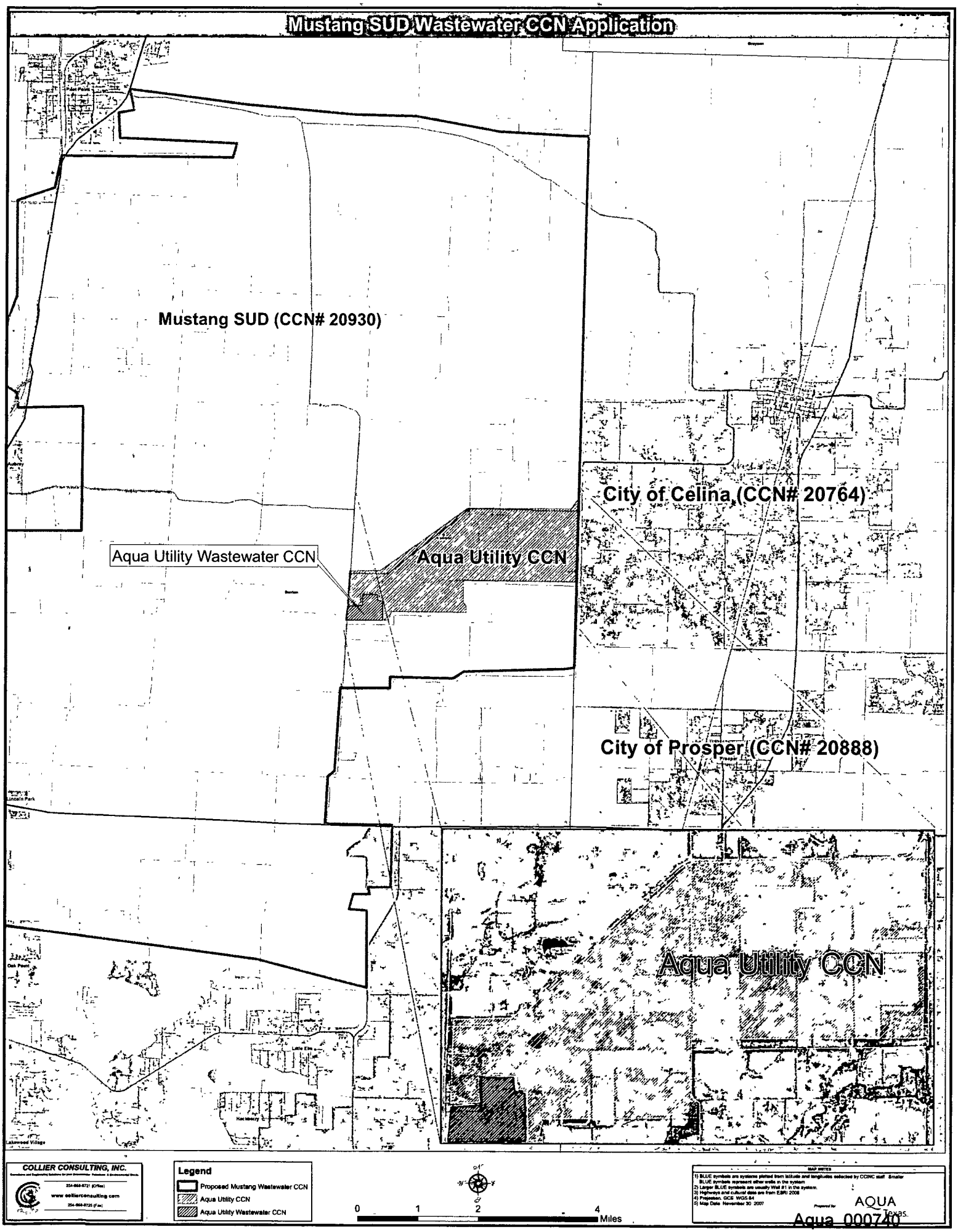
Mustang SUD Wastewater CCN Application
Mustang SUD (CCN# 20930)
City of Celina (CCN# 20764)
Aqua Utility Wastewater CCN
Aqua Utility CCN
City of Prosper (CCN# 20888)
Aqua Utility CCN
COLLIER CONSULTING, INC.
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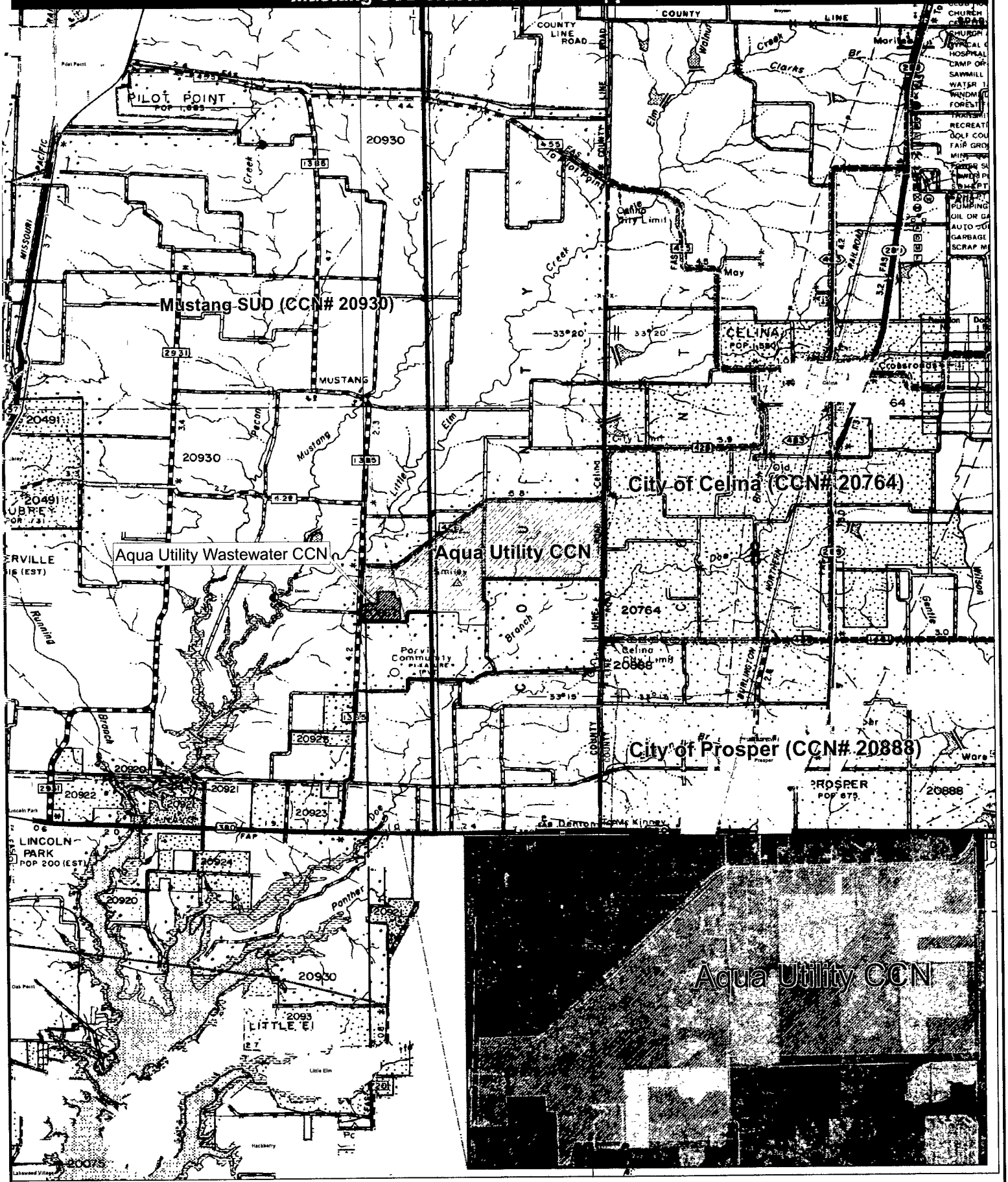
Legend
Proposed Mustang Wastewater CCN
Aqua Utility CCN
Aqua Utility Wastewater CCN
0
1
2
4
Miles
AQUA Texas

Mustang SUD Wastewater CCN Application



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Legend

- Proposed Mustang Wastewater CCN
- Aqua Utility CCN
- Aqua Utility Wastewater CCN

0 1 2 4 Miles

MAP NOTES

1) BLUE symbols are systems plotted from latitude and longitudes collected by CCINC staff. Smaller BLUE symbols represent either wells in the system
2) Larger BLUE symbols are usually Well #1 in the system
3) Highways and cultural data are from ESRI 2006
4) Projection: GCS: WGS 84
5) Map Date: November 30, 2007

Prepared for: AQUA Texas

Aqua_000741

Project	Engineering	Foundation Work	WWTP Construction
Phase 1 - 75,000 gpd	$ 124,000	$ 84,000	$ 535,000
Phase 2 - 150,000 gpd	$ 166,000	$ 113,000	$ 715,000
Phase 1 upgrade to Phase 2	$ 42,000	$ 29,000	$ 180,000
Phase 2 upgrade to Phase 3 - 225,000 gpd	$ 42,000	$ 29,000	$ 180,000

Total Construction Costs (No Land or Easement costs)	
$	743,000
$	994,000
$	251,000
$	251,000

AquaSource Inc.

PROSPER POINT
Proposed Annual Budgets

	PHASE 1 - BUDGET 75,ooo gpd	PHASE 2 - BUDGET 150,ooo gpd	PHASE 3 - BUDGET 225,ooo gpd
EXPENDITURES			
Electricity	36,000	72,000	108,000
Telephone	2,700	2,700	2,700
Wastewater System Maintenance	10,000	20,000	30,000
Wastewater Plant Maintenance	15,000	20,000	40,000
Lift Station Maintenance	7,500	10,000	15,000
Chemicals	5,000	7,500	10,000
Wastewater Tap Inspections	1,200	1,200	1,200
Laboratory Fees	22,000	35,000	50,000
Sludge Hauling	10,000	20,000	30,000
Landscaping	4,500	5,000	6,000
Engineering Fees - General	2,000	3,000	5,000
Management Services	43,500	63,000	82,500
Insurance	5,000	7,500	10,000
Bad Debt Expense	1,000	2,000	3,000
TNRCC Reg. Assess. Fee	1,050	2,100	3,150
TNRCC Plant Fee	1,000	2,000	3,000
Contingency	10,000	10,000	10,000
Major Maintenance/Capital Expenses	10,000	20,000	30,000
TOTAL EXPENDITURES	**$187,450**	**$303,000**	**$439,550**
Cost per 1,000 gallons treated	**$6.85**	**$5.53**	**$5.35**

AQUA

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Suite 400W
Austin, Texas 78723

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Director
Corporate Development
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(512) 990-4410 (Fax)
(512) 529-4280 (Cell)
glewis@aquaamerica.com

March 4, 2014

Mr. James L. Mabrey, Managing Member
Denton County 128 Development, LLC
5956 Sherry Lane, Suite 1000
Dallas, Texas 75225

Re: Letter of Intent to Provide Water & Wastewater Service to Prosper Point Subdivision in Denton County, Texas

Dear Mr. Mabrey:

I am in receipt of the January 23, 2014 request by Denton County 128 Development, LLC ("Developer") for Aqua Texas, Inc. ("Aqua") to participate in providing water and wastewater utility service for a residential development known as Prosper Point in Denton County, Texas ("Development"). The proposed project is within the service area of Aqua's Certificate of Convenience and Necessity ("CCN") and I am able to confirm Aqua will provide water and wastewater utility service to the Development in accordance with the terms of this Letter of Intent. Water and wastewater service for the Development is regulated by the Texas Commission on Environmental Quality ("TCEQ"). Such service will be provided in accordance with the provisions of Aqua's tariff in effect from time to time as approved by the TCEQ and in accordance with all other provisions of law.

1. Terms for the Design, Building, Financing, Ownership and Operation of the Water Utility System:

You have indicated the ultimate buildout for the Development is approximately 600 single family residential lots. Developer will assume full responsibility, at its expense, for the design and construction of all required improvements necessary to provide 100% of the domestic potable water service to the Development from a TCEQ approved Public Water Supply well or wells, which will include pressure, storage, control and disinfection facilities, and the design and construction of the water distribution system within the Development. Prior to construction of the Water Utility System ("Water System"), plans and specifications for the Water System are to be prepared by Developer's Engineer or other professional and submitted to Aqua for approval, which plans and specifications are to include such reasonable standards for water flow and pressure as are appropriate for provision of ordinary domestic potable water service within the Development, according to the statutes of the State of Texas and the rules of the TCEQ. The water system shall also be designed to provde flows at hydrants that comply with the standards specified in Section 4 below. It will be

necessary for you to provide parcels of land within the development for the water plant or plants, together with all easements for lines and facilities, and easements for ingress and egress to said plants, said real estate and easements to be conveyed to Aqua with the transfer of ownership of the system when the system is constructed, approved and accepted by the TCEQ and Aqua.

Developer will obtain, at its expense, all permits and approvals needed to construct the Water System within the Development. Aqua may, at its expense, observe the construction of the Water System for consistency with the approved Water Utility System Plans.

Upon completion of the Water System and approval of same by the TCEQ and Aqua, Aqua agrees to accept ownership of the System, together with all related real estate and easements, at which time Aqua will provide service in accordance with its state approved tariff. Developer shall warrant and guarantee the quality, construction and fitness for purpose of the Water Utility System for a period of one year from the date of the transfer of the system to Aqua.

2. Terms for the Design, Building, Financing, Ownership and Operation of the Wastewater Utility System:

Developer will assume full responsibility, at its expense, for the design and construction of all required improvements necessary to provide 100% of the domestic wastewater service to the Development which will include a wastewater treatment plant, the wastewater collection system, lift stations, and any additional facilities necessary to provide wastewater service to the Development. Prior to construction of the Wastewater Utility System ("Wastewater System"), plans and specifications for said system are to be prepared by Developer's Engineer or other professional and submitted to Aqua for approval, which plans and specifications are to include such reasonable standards for provision of ordinary domestic wastewater service within the Development, according to the statutes of the State of Texas and the rules of the TCEQ. It will be necessary for Developer to provide parcels of land within the development for the wastewater plant, lift stations and any other necessary facilities, together with all easements for lines and facilities, and easements for ingress and egress to said plants, said real estate and easements to be conveyed to Aqua with the transfer of ownership of the system when the system is constructed, approved and accepted by the TCEQ and Aqua.

Developer will obtain, at its expense, all permits and approvals needed to construct the Wastewater System within the Development. Aqua may, at its expense, observe the construction of the Wastewater System for consistency with the approved Wastewater Utility System Plans.

Upon completion of the Wastewater System and approval of same by the TCEQ and Aqua, Aqua agrees to accept ownership of the System, together with all related real estate and easements, at which time Aqua will provide service in accordance with its state approved tariff. Developer shall warrant and guarantee the quality, construction and fitness for purpose of the Wastewater Utility System for a period of one year from the date of the transfer of the system to Aqua.

3. Developer Reimbursement:

In consideration of Developer's expense and effort in designing, constructing and warranting the System, and for transfer of real property upon which the plants and other facilities are located, and except as noted in Section 4 below, Aqua will provide reimbursement for wells, plant, storage, wastewater treatment plant, lift stations and other facilities built to serve water and wastewater to the development in the amount of $1,750.00 per active billable water and wastewater connection, payable quarterly until all lots have active connections or 72 months has passed, whichever shall occur first. This reimbursement provision does not apply to the distribution or collection system built to serve the Development. The details of the procedure for payment of the reimbursement amount will be outlined in the Water and Wastewater Service Agreement described below.

4. Fire Protection:

Developer acknowledges that Section 341.0359 of the Texas Health and Safety Code requires that water systems provide minimum flows of 250 gallons per minute at a pressure of 20 pounds per square inch for a minimum duration of two hours at all hydrants located in residential areas. Developer shall design the system to comply with these standards as well as any additional standards for fire hydrants that are promulgated under TCEQ regulations or local ordinances and shall convey these components of the system to Aqua. Costs for the installation of equipment, wells, storage tanks and other facilities added to the water system in order to comply with these requirements: 1) shall be clearly identified in the plans provided by Developer to Aqua; and 2) shall not be reimbursable to Developer by Aqua unless TCEQ or other agency with rate setting authority specifically consents to the inclusion of such costs into the rate base for the system.

Owner is solely responsible for providing any other equipment that may be necessary in order to comply with state laws or local ordinances regarding fire service or protection in any building(s) and shall not in any way represent that Aqua provides such service. Aqua shall also not assume ownership of, responsibility or reimburse developer for any equipment or infrastructure Developer constructs after any individual or master meter in order to comply with state laws or local ordinances regarding fire protection.

5. Legal Agreements:

This letter does not constitute a binding agreement for the provision of water and wastewater service to the Development. Rather, each of the parties will utilize its best efforts to enter into an Agreement acceptable to it and its counsel, containing usual and customary provisions and representations. The Agreement will be prepared by our counsel, will contain the provisions set forth above and other traditional covenants, warranties and representations, and will be submitted to you for review within Sixty (60) days after your acceptance of this letter.

If you are in agreement with the terms of this letter, please sign and return one copy to me so we may proceed as described above. The terms of this letter shall remain in effect for 90 days from the date of your execution of this document, unless terminated at an earlier date by Aqua providing written notice to you or until the Agreement outlined above is signed and becomes binding. This letter is for the benefit of the above named developer and is not

assignable without the express written consent of Aqua Texas, Inc. which will not be unreasonably withheld.

Please contact me if you have any questions or comments.

Yours truly,

Glen E. Lewis

ACCEPTED:

Denton County 128 Development LLC

By: _____
James L. Mabrey, Managing Member

Date: 3/10/2014

Denton County 128 Development, LLC

5956 Sherry Lane · Suite 1000
Dallas, Texas · 75225
Tel. 214-546-5400 · Fax. 214-722-1578
Email: james@mabreypartnersllc.com
www.preceptrealestatellc.com

Tuesday, June 16, 2015

Ms Helen-Eve Liebman
Director of Planning & Development Services
City of Celina
142 N. Ohio Street
Celina, TX 75009

Re: General Development Plan – 127.897 Acres @ FM 1385 & Crutchfield Road - ("Property")

Dear Ms. Liebman:

We received the notice from the City that the Property is "*subject to annexation in the near future*". Denton County 128 Development, LLC submits the attached general development plan for Highland Trails, a 127.897 acre subdivision at the northeast corner of Crutchfield Road and FM 1385 in accordance with **Sec. 10.03.083 General development plan** of Celina's Code of Ordinances. Section 10.03.083 is referenced as a required step for the approval of a Major subdivision plat according to **Sec. 10.03.082(b)(2) - Statutory procedures** and according to Sec. 10.03.083(i)(2) must be approved prior to the submittal of an application for a construction plat:

> *(i)(2) The commission shall approve, conditionally approve or disapprove a general development plan. **The approval of a general development plan constitutes authorization by the city for the property owner to submit application for a construction plat**, subject to compliance with any conditions attached to the approval of the general development plan.*

The attachment constitutes a completed application for the initial authorization for Denton County 128's planned use of the Property in accordance with Section 43.002, Local Government Code, and a plan for development in accordance with Section 245.002, Local Government Code.

Once we receive authorization to do so as described in Section 10.03.083 (i)(2), we will follow this General Development Plan with an application for a construction plat and plans for our first phase of development.

Aqua Texas, the CCN holder for water and sewer services to the Property, informed us about your meeting in which you stated your desire to seek a "single certification" of the CCN under Section 13.255 of the Water Code. Please note that Section (j) of Section 13.255 does not provide for this. Aqua Texas is a private, "for profit" company. According to Section (j), Section 13.255 of the Water Code "*shall apply only in a case where:" (1) the retail public utility that is authorized to serve in the certificated area that is annexed or incorporated by the municipality is a nonprofit water supply or sewer service corporation, a special utility district under Chapter 65, Water Code, or a fresh water supply district under Chapter 53, Water Code.*

We are filing the following permits in order to supply water to the site:

1) North Texas Ground Water Conservation District (NTGCD) Well Drilling Permit
2) Denton County Well Drilling Permit
3) TCEQ Approval to Construct a Public Water Supply Well

Regarding wastewater service: Aqua Texas already filed an application for a wastewater discharge permit with the TCEQ and received approval of same TPDES PERMIT NO WQ0014234001.

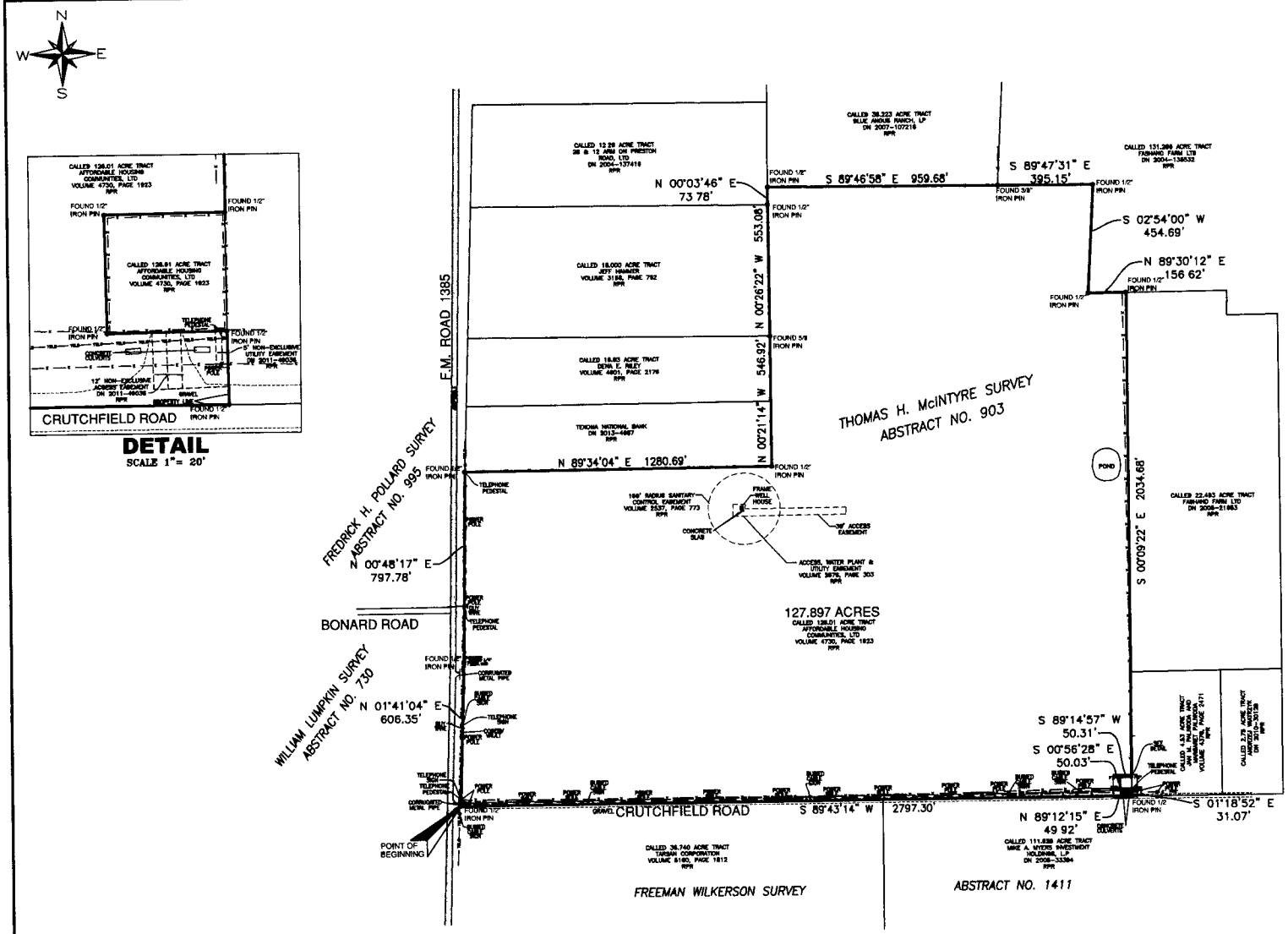
We have met several times with city staff concerning this development. If however, you feel the need for an additional meeting, please fill free to call or e-mail with a proposed date and time.

Sincerely,

James L. Mabrey, Manager
Denton County 128 Development, LLC

Attachments:
General Development Plan
Deed for Proof of Ownership

JLM:anp



37098
06/20/13

ALL THAT CERTAIN TRACT OR PARCEL OF LAND LYING AND BEING SITUATED IN THE THOMAS H McINTYRE SURVEY ABSTRACT NUMBER 903 DENTON COUNTY TEXAS, BEING PART OF A CALLED 126 01 ACRE TRACT DESCRIBED IN A DEED TO AFFORDABLE HOUSING COMMUNITIES LTD RECORDED IN VOLUME 4730 PAGE 1923, REAL PROPERTY RECORDS DENTON COUNTY TEXAS AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS

BEGINNING AT A 1/2 INCH IRON PIN FOUND AT THE SOUTHWEST CORNER OF SAID 126 01 ACRE TRACT IN THE EAST RIGHT-OF-WAY OF F M ROAD 1385 AND THE CENTERLINE OF A CRUTCHFIELD ROAD THE SOUTH BOUNDARY LINE OF SAID McINTYRE SURVEY AND THE NORTH LINE OF THE FREEMAN WILKERSON SURVEY ABSTRACT 1411

THENCE NORTH 01 DEGREES 41 MINUTES 04 SECONDS EAST ALONG THE EAST RIGHT-OF-WAY OF F M ROAD 1385 A DISTANCE OF 606 35 FEET TO A 1/2 INCH IRON PIN FOUND FOR CORNER

THENCE NORTH 00 DEGREES 48 MINUTES 17 SECONDS EAST ALONG THE EAST RIGHT-OF-WAY OF F M ROAD 1385 A DISTANCE OF 797 78 FEET TO A 1/2 INCH IRON PIN FOUND AT THE WESTERN MOST NORTHWEST CORNER OF SAID 126 01 ACRE TRACT AND THE EAST RIGHT-OF-WAY OF F M ROAD 1385

THENCE NORTH 89 DEGREES 34 MINUTES 04 SECONDS EAST A DISTANCE OF 1280 99 FEET TO A 1/2 INCH IRON PIN FOUND AT AN INNER ELL CORNER OF SAID 126 01 ACRE TRACT,

THENCE NORTH 00 DEGREES 21 MINUTES 14 SECONDS WEST A DISTANCE OF 546 92 FEET TO A 5/8 INCH IRON PIN FOUND ON A WEST LINE OF SAID 126 01 ACRE TRACT AND THE NORTHEAST CORNER OF A CALLED 18 03 ACRE TRACT DESCRIBED IN A DEED TO DENA E RILEY RECORDED IN VOLUME 4801 PAGE 2178 REAL PROPERTY RECORDS DENTON COUNTY TEXAS SAID PIN ALSO BEING AT THE SOUTHEAST CORNER OF A CALLED 18 000 ACRE TRACT DESCRIBED IN A DEED TO JEFF HAMMER RECORDED IN VOLUME 3158 PAGE 782, REAL PROPERTY RECORDS DENTON COUNTY TEXAS

THENCE NORTH 00 DEGREES 26 MINUTES 22 SECONDS WEST A DISTANCE OF 553 08 FEET TO A 1/2 INCH IRON PIN FOUND ON A WEST LINE OF SAID 126 01 ACRE TRACT AND THE NORTHEAST CORNER OF SAID HAMMER TRACT SAID PIN ALSO BEING AT THE SOUTHEAST CORNER OF A CALLED 12 29 ACRE TRACT DESCRIBED IN A DEED TO 28 & 12 ARM ON PRESTON ROAD LTD., RECORDED UNDER DOCUMENT NUMBER 2004-137416 REAL PROPERTY RECORDS DENTON COUNTY TEXAS

THENCE NORTH 00 DEGREES 03 MINUTES 46 SECONDS EAST WITH A WEST LINE OF SAID 126 01 ACRE TRACT AND THE EAST LINE OF SAID 12 29 ACRE TRACT A DISTANCE OF 73 78 FEET TO A 1/2 INCH IRON PIN FOUND AT THE NORTHERN MOST NORTHWEST CORNER OF SAID 126 01 ACRE TRACT AND THE EAST LINE OF SAID 12 29 ACRE TRACT SAID PIN ALSO BEING AT THE SOUTHERN MOST SOUTHWEST CORNER OF A CALLED 38 223 ACRE TRACT DESCRIBED IN A DEED TO BLUE ANGUS RANCH, LP RECORDED UNDER DOCUMENT NUMBER 2007-107216 REAL PROPERTY RECORDS DENTON COUNTY TEXAS

THENCE SOUTH 89 DEGREES 46 MINUTES 58 SECONDS EAST WITH THE NORTHERN MOST NORTH LINE OF SAID 126 01 ACRE TRACT AND THE SOUTHERN MOST SOUTH LINE OF SAID BLUE ANGUS RANCH TRACT A DISTANCE OF 959 68 FEET TO A 3/8 INCH IRON PIN FOUND ON THE NORTHERN MOST NORTH LINE OF SAID 126 01 ACRE TRACT AND THE SOUTHERN MOST SOUTHEAST CORNER OF SAID BLUE ANGUS RANCH TRACT SAID PIN ALSO BEING AT THE WESTERN MOST SOUTHWEST CORNER OF A CALLED 131 288 ACRE TRACT DESCRIBED IN A DEED TO FAIHAND FARM LTD RECORDED UNDER DOCUMENT NUMBER 2004-136532 REAL PROPERTY RECORDS DENTON COUNTY TEXAS

THENCE SOUTH 89 DEGREES 47 MINUTES 31 SECONDS EAST WITH THE NORTHERN MOST NORTH LINE OF SAID 126 01 ACRE TRACT AND THE SOUTHERN MOST SOUTH LINE OF SAID 131 288 ACRE TRACT A DISTANCE OF 395 15 FEET TO A 1/2 INCH IRON PIN FOUND AT THE NORTHERN MOST NORTHEAST CORNER OF SAID 126 01 ACRE TRACT AND AN INNER ELL CORNER OF SAID 131 288 ACRE TRACT

THENCE SOUTH 02 DEGREES 54 MINUTES 00 SECONDS WEST A DISTANCE OF 454 69 FEET 1/2 INCH IRON PIN FOUND AT AN INNER ELL CORNER OF SAID 126 01 ACRE TRACT

THENCE SOUTH 89 DEGREES 30 MINUTES 12 SECONDS EAST A DISTANCE OF 156 62 FEET TO A 1/2 INCH IRON PIN FOUND AT THE EASTERN MOST NORTHEAST CORNER OF SAID 126 01 ACRE TRACT AND ON THE SOUTHERN MOST SOUTH LINE OF SAID 131 288 ACRE TRACT SAID PIN ALSO BEING AT THE NORTHWEST CORNER OF A CALLED 22 483 ACRE TRACT DESCRIBED IN A DEED TO FAIHAND FARM LTD., RECORDED UNDER DOCUMENT NUMBER 2005-21863 REAL PROPERTY RECORDS DENTON COUNTY TEXAS

THENCE SOUTH 00 DEGREES 09 MINUTES 22 SECONDS EAST A DISTANCE OF 2034 66 FEET TO A 1/2 INCH IRON PIN FOUND ON THE EASTERN MOST EAST LINE OF SAID 126 01 ACRE TRACT

THENCE SOUTH 89 DEGREES 14 MINUTES 57 SECONDS WEST A DISTANCE OF 50 31 FEET TO A 1/2 INCH IRON PIN FOUND FOR CORNER,

THENCE SOUTH 00 DEGREES 56 MINUTES 28 SECONDS EAST A DISTANCE OF 50 03 FEET TO A 1/2 INCH IRON PIN FOUND FOR CORNER

THENCE NORTH 89 DEGREES 12 MINUTES 15 SECONDS EAST A DISTANCE OF 49 92 FEET TO A 1/2 INCH IRON PIN FOUND ON THE EASTERN MOST EAST LINE OF SAID 126 01 ACRE TRACT

THENCE SOUTH 01 DEGREES 18 MINUTES 52 SECONDS EAST WITH THE EASTERN MOST EAST LINE OF SAID 126 01 ACRE TRACT A DISTANCE OF 31 07 FEET TO A 1/2 INCH IRON PIN FOUND AT THE SOUTHERN MOST SOUTHEAST CORNER OF SAID 126 01 ACRE TRACT IN THE CENTERLINE OF CRUTCHFIELD ROAD AND THE SOUTH BOUNDARY LINE OF SAID McINTYRE SURVEY

THENCE SOUTH 89 DEGREES 43 MINUTES 14 SECONDS WEST ALONG THE CENTERLINE OF CRUTCHFIELD ROAD AND THE SOUTH BOUNDARY LINE OF SAID McINTYRE SURVEY A DISTANCE OF 2797 30 FEET TO THE POINT OF BEGINNING AND CONTAINING IN ALL 127 897 ACRES OF LAND

NOTES

EASEMENTS SHOWN HEREON ARE AS LISTED IN THE FIRST AMERICAN TITLE INSURANCE COMPANY'S TITLE COMMITMENT GF No 2001-51391-RU EFFECTIVE DATE APRIL 9 2013,

10 f Easement granted by Bankers Life Insurance Co., to Denton County Electric Cooperative Inc., filed 04/05/1953 recorded in Volume 402 Page 154 Real Property Records, Denton County Texas is blanket in nature and does affect,

10 g. Easement granted by High Point Farms J C to H2M Water Systems Inc. filed 06/11/1998 recorded in Volume 2578 Page 303 Real Property Records Denton County Texas does affect as shown,

10 h. Terms provisions, conditions and easements contained in Sanitary Control Easement, filed 02/28/1999 recorded in Volume 2837 Page 773 Real Property Records, Denton County Texas, does affect as shown,

10i. Easement granted by Affordable Housing Communities Ltd to TowerCo II LLC filed 05/31/2011 recorded in oc# 2011-49036 Real Property Records Denton County Texas does affect as shown,

BEARINGS ARE BASED ON GPS OBSERVATIONS USING TEXAS STATE PLANE COORDINATE SYSTEM NAD 83 NORTH CENTRAL TEXAS ZONE

BY GRAPHIC PLOTTING ONLY THIS PROPERTY IS WITHIN ZONE "X" AREAS DETERMINED TO BE OUTSIDE OF A DESIGNATED 100 YEAR OR 500 YEAR FLOODPLAIN AS SHOWN BY FIRM MAP COMMUNITY-PANEL NUMBER 48121C0270 G DATED APRIL 18 2011 NO SURVEYING WAS PERFORMED TO DETERMINE THIS FLOOD ZONE

SURVEYOR'S CERTIFICATE

I GARY W HAMMETT DO HEREBY CERTIFY THAT A SURVEY WAS MADE ON THE GROUND THIS 20th DAY OF MAY 2013 OF THE PROPERTY DESCRIBED HEREON AND THERE ARE NO VISIBLE ENCROACHMENTS PROTRUSIONS, OR OVERLAPPING OF IMPROVEMENTS EXCEPT AS SHOWN HEREON

GARY W HAMMETT
REGISTERED PROFESSIONAL LAND SURVEYOR
STATE OF TEXAS NO 1849

GF No. 2001-51391-RU

DATE	REVISIONS	BY:
06/06/13	ADDED TITLE COMMITMENT & REVISED EASEMENT TEXT	JR

DWN JRH | SCALE 1"=200' | CKD. GWH | DATE 05/20/13

Metroplex Surveying, Inc.
940-367-0808 223 W. HICKORY, DENTON, TEXAS 76201 info@metroplexsurveying.com

127.897 ACRES IN THE THOMAS H. McINTYRE SURVEY, ABSTRACT No. 903, DENTON COUNTY, TEXAS.

SHEET 1 OF 1 | JOB No. 37098

BOUNDARY SURVEY

WASTEWATER AGREEMENT

This Wastewater Agreement ("Agreement") is made and entered into this _____ day of _____, 2014 (the "Effective Date") by and between Aqua Texas, Inc. ("Aqua Texas"), a Texas corporation and Denton County 128 Development, LLC ("Developer"), a Texas limited liability company. Aqua Texas and Developer are sometimes referred to herein individually as a "Party" and collectively as "Parties."

I. Recitals

WHEREAS, Aqua Texas is a public utility company engaged in the business of installing, owning, operating and maintaining water and wastewater utility systems in the State of Texas in accordance with the grant of authority by the Texas Commission on Environmental Quality (the "TCEQ"); and

WHEREAS, Developer owns certain real property consisting of 128.01 acres of land in Denton County, Texas, more particularly described in the attached Exhibit A (the "Property"), locally known as Prosper Point Subdivision; and

WHEREAS, Developer intends to develop the Property with the construction of a residential housing subdivision consisting of approximately 578 single family dwelling units, an 11,000 square foot commercial center, and a community activity center, (the "Project") that will require the provisioning of wastewater services, and Developer desires Aqua Texas to provide such services subject to the terms and conditions contained herein; and

WHEREAS, Aqua Texas desires to provide such wastewater services subject to the terms and conditions contained herein.

NOW, THEREFORE, in consideration of the mutual promises hereinafter set forth, and intending to be legally bound hereby, Developer and Aqua Texas hereby agree as follows:

II. Definitions

Certain capitalized terms used herein but not otherwise defined shall have the following meanings:

"Aqua Texas Engineer" means the individual(s) or entity(ies) designated and authorized by Aqua Texas to review and approve or reject engineering plans, and/or oversee and manage construction and installation to the extent of Aqua Texas' rights and obligations in connection with this Agreement.

"Aqua Texas Tariff" means the schedule establishing wastewater service rates and terms and conditions of service adopted by Aqua Texas and approved by the TCEQ from time to time and utilized by Aqua Texas to charge Customers for Services within the Service Area. Aqua Texas will provide a copy of the Aqua Texas Tariff to Developer upon request.

"CCN" means the certificate of convenience and necessity required by the TCEQ prior to Aqua Texas providing Services in the Service Area.

"Costs of Construction" means the actual costs associated with the design and construction of the System and any expansion thereof necessary to provide Services within the Service Area in the various phases of development of the Project, including, without limitation, the cost of constructing and equipping such facilities, and, in later phases of development of the Project, modernizing, improving or upgrading such facility as required, the cost of acquiring necessary licenses, permits or amendments thereto required as a result of any such construction, legal, advertising, engineering and material testing costs, site costs, easements and all other costs and expenses directly related to the foregoing.

"Customer" means any person or entity in the Service Area receiving Services from Aqua Texas or entitled to receive Services under the Aqua Texas Tariff and any applicable regulatory rules and regulations of the TCEQ. This definition includes homebuilders or eventual home occupiers.

"Plants" mean, collectively, the Wastewater Treatment Plant(s).

"Plant Sites" mean collectively, the tracts of land shown on the attached Exhibit B designated for the location of the Plants to be conveyed by Developer by special warranty deed to Aqua Texas. The Plant Sites, whose location is subject to change as required by the Development and agreed to by the parties, must be sufficient to provide an adequate treatment of the wastewater from the Project.

"Regulatory Agency" means any regulatory authority, federal, state, local or other, having jurisdiction concerning wastewater standards, other environmental matters, real estate, zoning or otherwise having jurisdiction over the Project, the Property, the Plant Sites, the Access (as hereinafter defined), the Easements (as hereinafter defined), the Plants, the System, and/or the Services.

"Regulatory Requirements" mean any and all of the following issued, adopted or required from time to time by any Regulatory Agency: (i) the requirements or provisions of any and all state, federal and local laws, regulations, rules, orders, and ordinances; (ii) any and all required Permits; and (iii) CCN(s).

"Service Area" shall mean or refer to all or any portion of the Property or Project in which, during any applicable phase of development of the Project, Aqua Texas provides or intends to provide Services to Customers. The Service Area shall initially be the property described in Exhibit "A" hereto which will be platted as Prosper Point.

"Service Lines" mean that portion of the Wastewater Collection System mains and/or lines on each lot in the Project running from the house, dwelling unit, improvement or other structure to the Wastewater Collection System. These Service Lines shall be owned, maintained, repaired and replaced by Developer or the lot owner and Aqua Texas shall have no responsibility therefore.

"Services" mean wastewater services provided to Customers.