EXHIBIT A

FINAL PLAT

[See Attached]

PAVING & UTILITIES BIDDING PLANS

FOR

MANTUA POINT - PHASE 1

CITY OF VAN ALSTYNE,
GRAYSON COUNTY AND COLLIN COUNTY, TEXAS

PLAN SUBMITTAL/REVIEW LOG

1ST SUBMITTAL TO CITY	05/29/2019
2ND SUBMITTAL TO CITY	06/24/2019
3RD SUBMITTAL TO CITY	08/13/2019

ENGINEER

Kimley»Horn

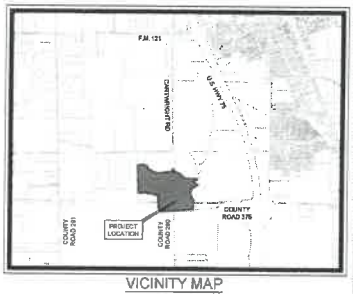
5150 WARREN PKWY
SUITE 210
FRISCO, TEXAS 75034
TEL: (972) 335-3580
CONTACT: THOMAS G. COPPIN, P.E.

STATE OF TEXAS
REGISTRATION NO. F-928

OWNER/DEVELOPER

RISLAND MANTUA, LLC
5800 TENNYSON PARKWAY
SUITE 230
PLANO, TX 75024
TEL: (469) 861-3021
CONTACT: RICK HAGMAYER

811
Know what's below.
Call before you dig.



VICINITY MAP
SCALE: 1" = 2,000'

AUGUST 2019

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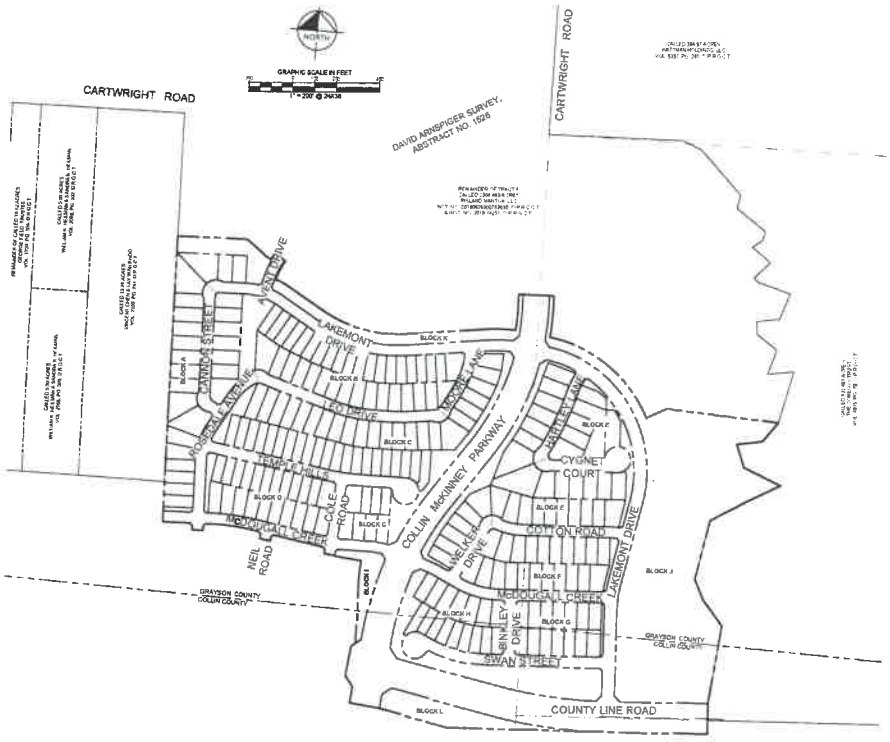
CIVIL CONSTRUCTION PLANS
MANTUA POINT - PHASE 1
KHA PROJECT NO. 064529001



NOTES:

All corners are 5/8" iron rods with plastic cap stamped "RHA" unless otherwise noted.

All bearings shown are based on grid north of the Texas Coordinate System of 1983, North Central Zone (4202), North American Datum of 1983. All dimensions shown are ground distances. To obtain a grid distance, multiply the ground distance by the Project Combined Factor (PCF) of 0.99984751251.

Selling off a portion of this addition by metes and bounds description, without a replat being approved by the City of Van Alstyne, is a violation of city ordinances and state law and is subject to fines and withholding of utilities and building permits.

Visibility Triangles: intersection visibility triangles shall be shown and maintained in accordance with the City Design Manual.

Homeowners' Association Notes:

1) The owner of fee simple title to every individual lot of land within this subdivision must be a member of the homeowners association.
2) The homeowners' association must have the authority to collect membership fees.
3) The homeowners' association must be responsible for the maintenance of all common areas and all screening walls both within and outside of the public rights-of-way.
4) The homeowners' association must grant the city right of access to common areas to abate any nuisances therein, and attach a lien for the prorated cost of abatement upon each individual lot.
5) The homeowners' association shall indemnify and hold the city harmless from any and all costs, expenses, suits, demands, liabilities, damages, or otherwise including attorney's fees and costs of suit, in connection with the city's maintenance of common areas.
6) The homeowners' association shall enter into a license agreement with the City of Van Alstyne, where right-of-way has been dedicated for the purpose of providing landscaping, additional areas for sidewalks, walls, or other amenities, and shall be responsible for the installation and maintenance of all landscape areas that are in the public right-of-way.

A homeowners' association covenant has been recorded in Volume ____, Page ____. Such homeowners' association shall be responsible for the maintenance of all common areas and facilities and screening walls located on Lots 1X-2X, Block A, Lots 1X-2X, Block B, Lots 1X-2X, Block C, Lots 1X-2X, Block D, Lot 1X, Block E, Lots 1X-2X, Block F, Lot 1X, Block G, Lot 1X, Block H, Lot 1X, Block I, Lot 1X, Block J, Lot 1X, Block K, and Lot 1X, Block L, or public right-of-way, or as otherwise identified on the plat.

All common area lots (e.g. 1X, 2X, 3X, etc) are to be owned and maintained by the homeowners' association and are to be dedicated for the purposes of landscape and pedestrian access.

According to Community Panel Nos. 48085C0305J, dated June 02, 2009, & 48181C0505F, dated September 26, 2008, of the National Flood Insurance Program Map, Flood Insurance Rate Map of Grayson & Collin County, Texas, Federal Emergency Management Agency, Federal Insurance Administration, this property is within Zone X & Zone A. 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 flood statement shall not create liability on the part of the surveyor.

VICINITY MAP NOT TO SCALE

SHEET KEY MAP

LEGEND

SEE SHEET No. 5 FOR LINE & CURVE TABLES

SEE SHEET No. 5 FOR LOT AREA TABLE

FINAL PLAT
MANTUA POINT
PHASE 1

222 RESIDENTIAL LOTS
15 COMMON AREA LOTS

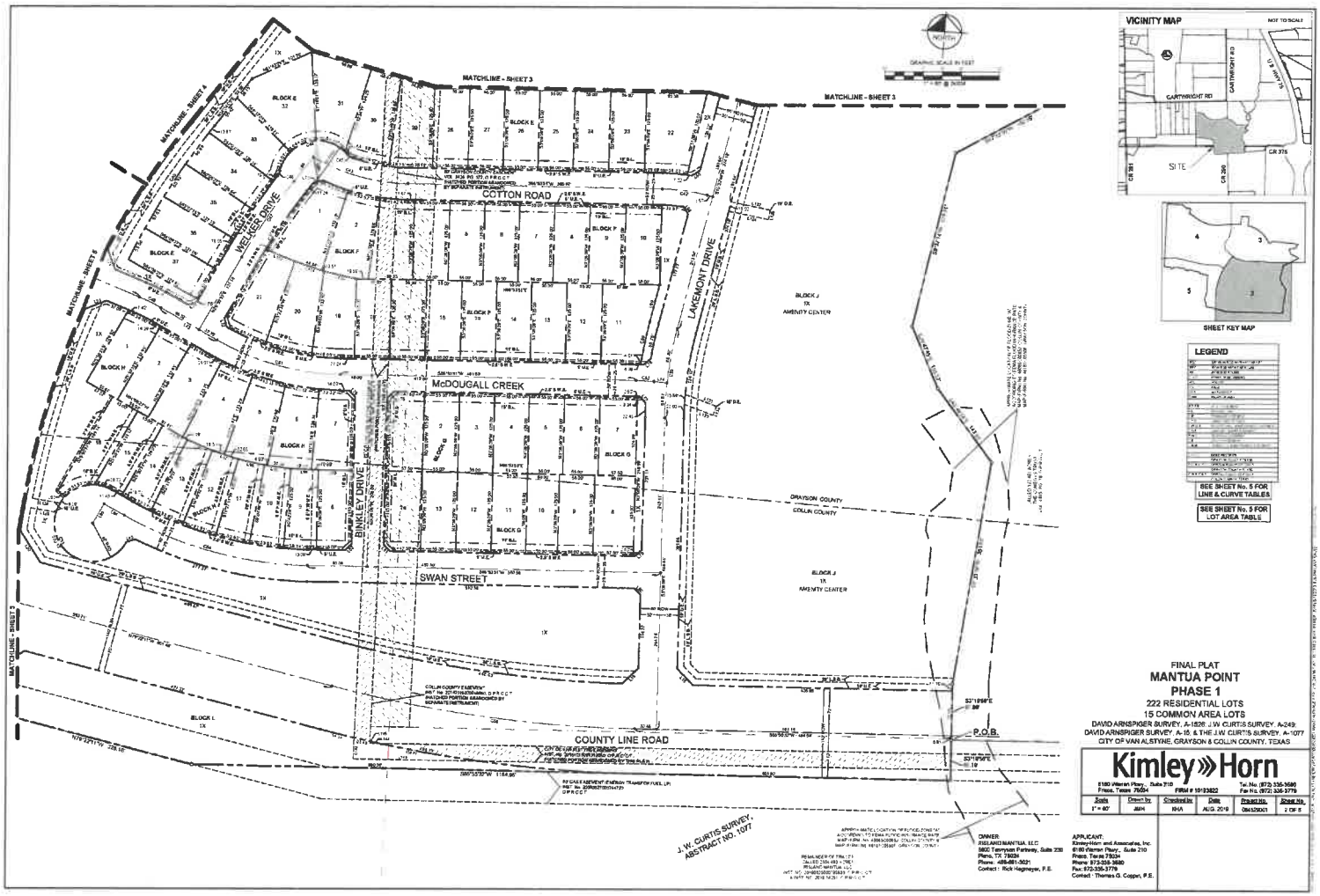
DAVID ARNSPIGER SURVEY, A-1526, J.W. CURTIS SURVEY, A-249
DAVID ARNSPIGER SURVEY, A-15, & THE J.W. CURTIS SURVEY, A-1077
CITY OF VAN ALSTYNE, GRAYSON & COLLIN COUNTY, TEXAS

Kimley»Horn
6160 Warren Pkwy., Suite 210
Frisco, Texas 75034
FIRM # 10193822
Tel. No. (972) 335-3580
Fax No. (972) 335-3779

Scale	Drawn by	Checked by	Date	Project No.	Sheet No.
1" = 200'	JMH	RHA	AUG. 2018	064929001	1 OF 6

OWNER
RIELAND MANTUA, LLC
5000 Tennyson Parkway, Suite 230
Plano, TX 75024
Phone: 469-861-3021
Contact: Rob Hughmyer, P.E.

APPLICANT:
Kimley-Horn and Associates, Inc
6160 Warren Pkwy., Suite 210
Frisco, Texas 75034
Phone: 972-335-3580
Fax: 972-335-3779
Contact: Thomas G. Copper, P.E.



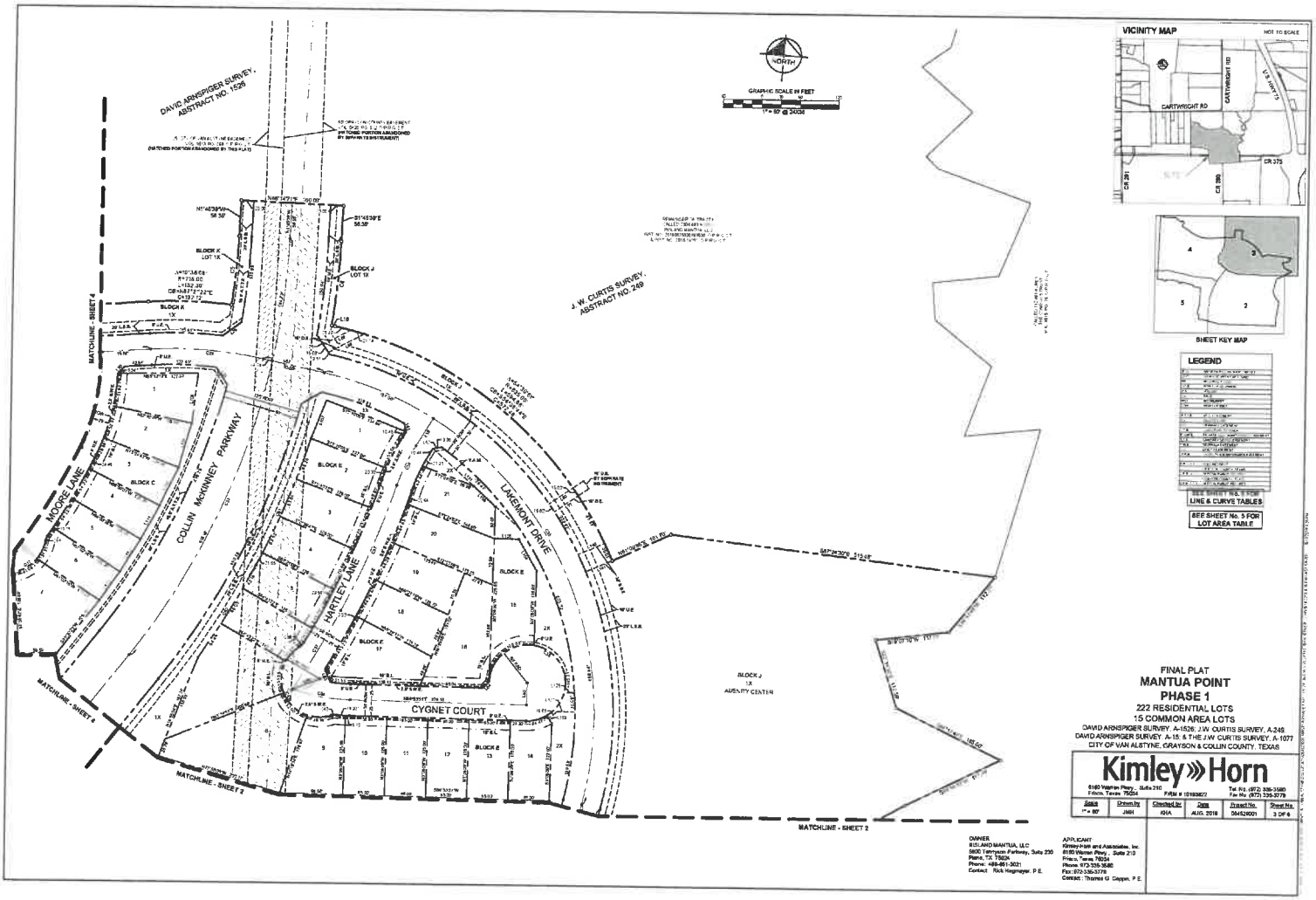
FINAL PLAT
MANTUA POINT
PHASE 1
222 RESIDENTIAL LOTS
15 COMMON AREA LOTS
DAVID ARNSPIGER SURVEY, A-1526 J.W. CURTIS SURVEY, A-249
DAVID ARNSPIGER SURVEY, A-16 & THE J.W. CURTIS SURVEY, A-1077
CITY OF VAN ALSTYNE, GRAYSON & COLLIN COUNTY, TEXAS

Kimley»Horn
6160 Warren Pkwy., Suite 210
Frisco, Texas 75034
FIRM # 10193822
Tel No. (972) 335-3580
Fax No. (972) 335-3779

Scale	Drawn by	Checked by	Date	Project No.	Sheet No.
1" = 60'	JBH	RHA	AUG 2019	066250001	2 OF 6

OWNER:
RIGLAND MANTUA, LLC
5800 Tennyson Parkway, Suite 230
Plano, TX 75024
Phone: 469-661-3021
Contact - Rick Hagmeyer, P.E.

APPLICANT:
Kimley-Horn and Associates, Inc.
6160 Warren Pkwy., Suite 210
Frisco, Texas 75034
Phone: 972-335-3580
Fax: 972-335-3779
Contact - Thomas G. Copper, P.E.



FINAL PLAT

MANTUA POINT

PHASE 1

222 RESIDENTIAL LOTS

15 COMMON AREA LOTS

DAVID ARNSPIGER SURVEY, A-1526; J.W. CURTIS SURVEY, A-249
DAVID ARNSPIGER SURVEY, A-15; & THE J.W. CURTIS SURVEY, A-1077
CITY OF VAN ALSTYNE, GRAYSON & COLLIN COUNTY, TEXAS

Kimley»Horn

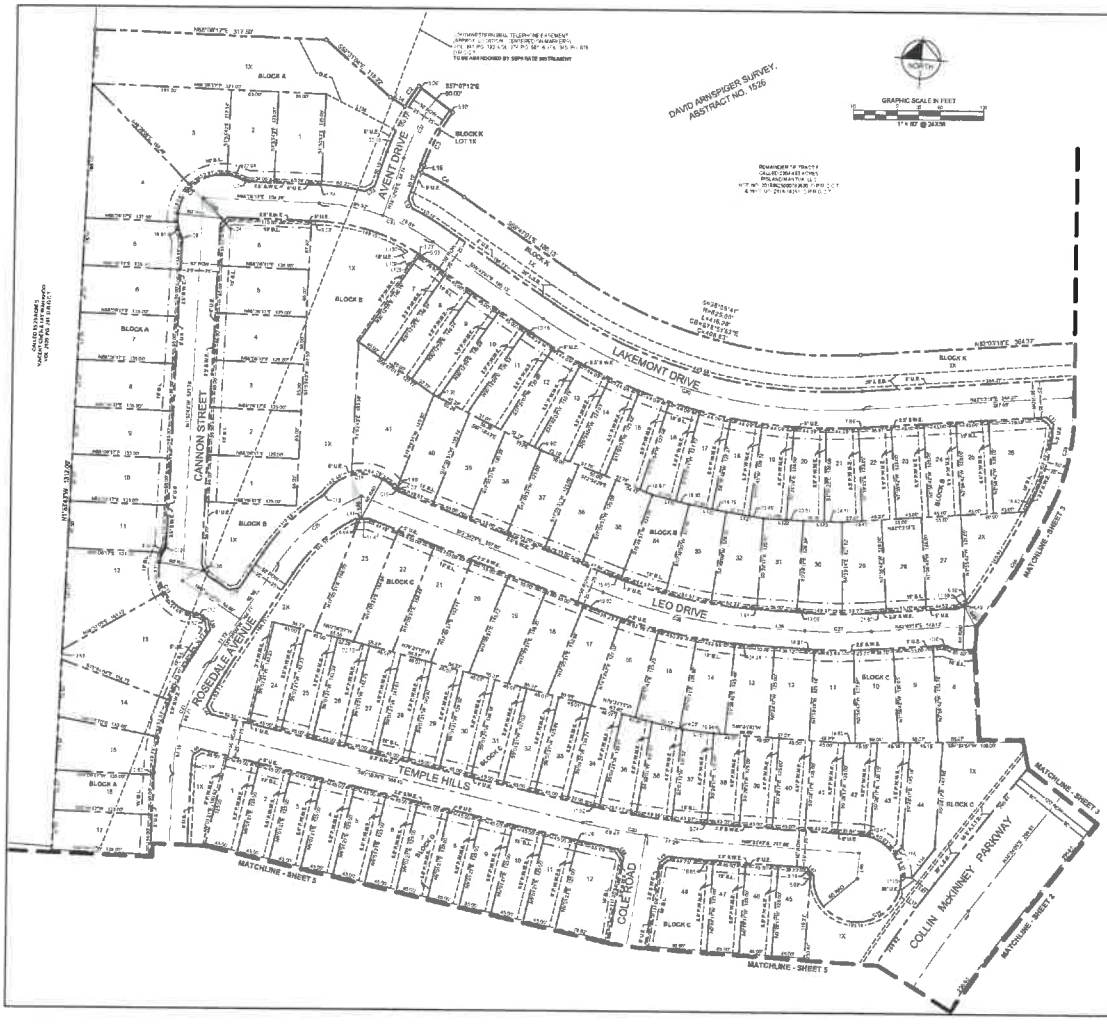
8180 Warren Pkwy., Suite 210
Frisco, Texas 75034
FIRM # 10193822

Tel No. (972) 335-3580
Fax No. (972) 335-3779

Scale	Drawn by	Checked by	Date	Project No.	Sheet No.
1" = 60'	JNH	KHA	AUG. 2018	064526001	3 OF 6

OWNER
ROLLAND MANTUA, LLC
5600 Tennyson Parkway, Suite 230
Plano, TX 75024
Phone: 469-461-3021
Contact: Rick Hegmeyer, P.E.

APPLICANT
Kimley-Horn and Associates, Inc.
8180 Warren Pkwy., Suite 210
Frisco, Texas 75034
Phone: 972-335-3580
Fax: 972-335-3779
Contact: Thomas G. Gepper, P.E.



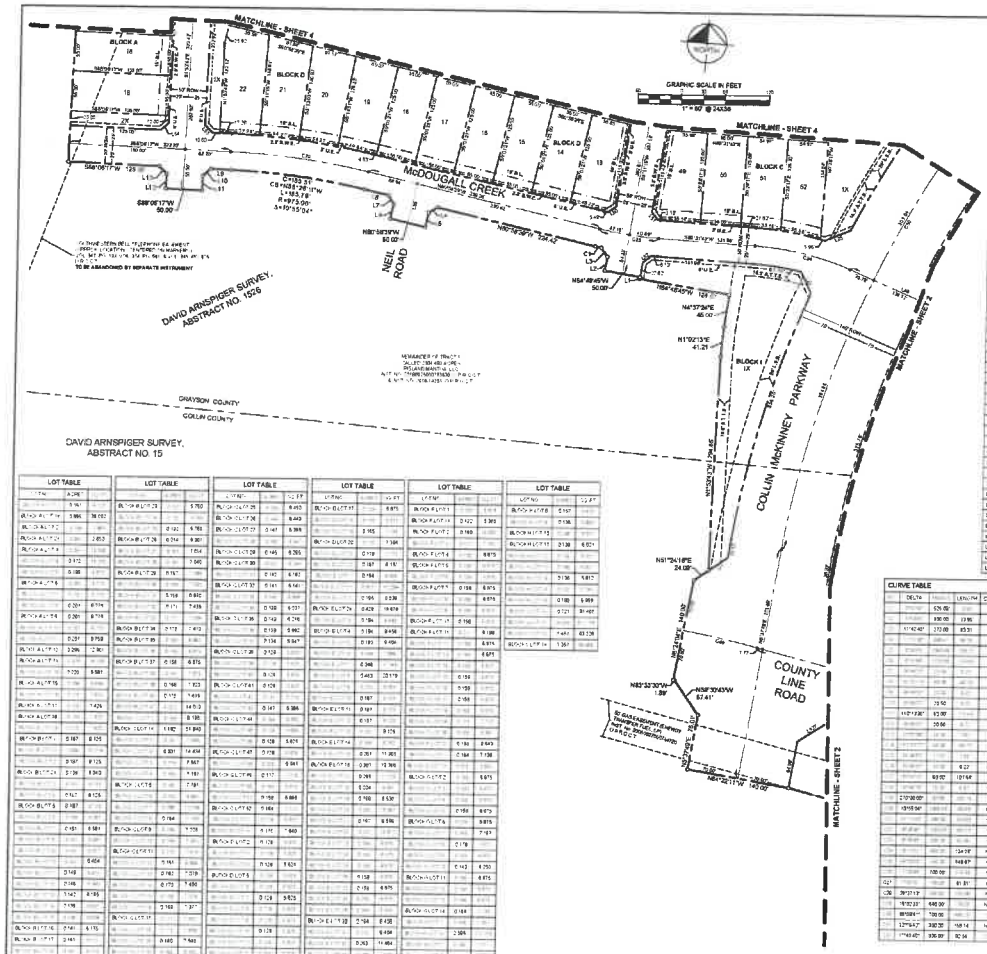
VICINITY MAP

NOT TO SCALE

SHEET KEY MAP

LEGEND

ABBR	ABBREVIATION
BL	BUILDING LINE
CM	CONTROLLING MONUMENT
CO	CLEANOUT
DE	DRAINAGE EASEMENT
ETJ	EXTRA TERRITORIAL JURISDICTION
FD	FOUND
FH	FIRE HYDRANT
IP	IRON PIPE
IR	IRON ROD
LS	LITTLE SCALE
MH	MANHOLE
PE	PUBLIC EASEMENT
PL	PROPERTY LINE
PLAT	PLAT DATA
PLAT BEARING	PLAT BEARING
PLAT DISTANCE	PLAT DISTANCE
PLAT DIST.	PLAT DISTANCE
PLAT DIST.	PLAT DISTANCE
PLAT DIST.



LINE TABLE			LINE TABLE			LINE TABLE		
NO.	BEARING	LENGTH	NO.	BEARING	LENGTH	NO.	BEARING	LENGTH
L1	N89°11'15"E	2.48'	L51	N47°56'57"E	13.55'	L101	S89°01'25"E	47.61'
L2		18.31'	L52	N49°34'30"W	14.62'	L102	N71°54'17"W	
L3		14.12'	L53	N49°34'30"E	14.14'	L103	N29°35'54"W	
L4		14.14'	L54	N49°34'17"E	14.14'	L104		
L5			L55	S89°01'17"W				
L6		23.50'	L56			L106		47.42'
		14.14'	L57					64.68'
L8	N49°34'18"W	10.94'						78.65'
L9		21.22'				L109	N41°57'41"E	72.62'
		14.14'				L110	N71°59'46"E	57.44'
L11						L111	N74°32'12"E	
L12			L62	S71°47'24"W	13.72'	L112		
L13		18.14'	L63					
L14		24.13'	L64					
L15		13.14'	L65					
	S81°54'13"E	5.48'	L66					
							N41°32'27"W	49.98'
							N71°18'46"E	47.48'
								43.07'
	N41°35'51"W	23.98'						
L24	N29°55'06"E	33.98'	L74			L124	N82°42'44"W	43.98'
L25	N82°28'27"E					L125	N27°18'18"E	13.92'
L26						L126	N88°55'16"E	17.71'
L27								
L28			L79	N41°14'30"E	14.17'			
L29			L78	N41°35'51"E	14.14'			
L30			L80	N41°35'51"W	14.14'			
L31	N41°35'51"W	13.36'	L81					195.95'
L32		14.14'						53.02'
						L133	N71°33'15"W	53.28'
L34	N29°55'11"E	14.14'				L134	N18°55'44"E	19.50'
						L135	N73°26'18"E	47.68'
L36						L136		
L37		30.98'	L87	S81°54'13"E		L137		
L38		14.14'		S81°54'13"W	52.99'			
L39	N41°35'51"W		L89					
L40		18.12'	L90					43.05'
L41		19.87'	L91					45.00'
	N32°44'18"W					L142	S81°54'13"E	
L43						L143	N88°43'43"E	180.94'
L44					47.98'	L144	N88°43'43"E	14.76'
L45		13.42'	L95		47.18'	L145		2.99'
L46		35.60'	L96	N81°14'30"W	47.18'			
L47		14.14'	L97					
L48	N29°34'30"W	14.62'	L98					
L49	S49°34'30"W	14.49'						
L50								

CURVE TABLE				CURVE TABLE			
DELTA	RADIUS	LENGTH	CHORD BEARING	DELTA	RADIUS	LENGTH	CHORD BEARING
	125.00'		N41°27'36"W				N41°36'12"E
	800.00'	23.90'	N29°55'57"E		300.00'	68.98'	S73°55'00"W
	370.00'	85.31'	S34°50'30"W		350.00'	186.84'	N53°41'43"W
			N44°58'47"E		300.00'	81.12'	N64°23'55"E
			N71°11'13"E		350.00'	165.00'	N38°13'34"E
							N48°13'34"E
			N18°09'15"E			28.74'	N48°55'18"W
			N42°08'17"W			8.45'	N38°30'17"E
			N44°48'31"W				S29°28'06"W
			N41°55'51"E		300.00'	70.58'	N68°23'42"W
			S81°54'13"E		300.00'	119.18'	N81°15'51"E
			N12°28'46"W			102.68'	S71°33'01"W
			N41°13'27"E			15.54'	S89°13'36"E
			N41°32'24"W			9.08'	N29°33'46"E
			N39°13'27"E			143.54'	S38°57'35"W
			N41°32'24"W			37.00'	N41°13'36"W
			N89°55'55"E			123.34'	N81°12'54"W
			S11°25'25"W			69.97'	S19°33'17"W
			N41°32'24"E				S73°34'41"E
			N89°28'11"W		300.00'	27.44'	S49°31'03"W
			S33°48'50"W				S29°38'16"W
			N41°32'24"E				S19°33'17"E
			N41°32'24"E				S19°33'17"E
			N41°32'24"E				N71°33'17"W
			S81°54'13"E				N71°33'17"W
			N41°32'24"E				N71°33'17"W
			N41°32'24"E				N71°33'17"W
			N41°32'24

STATE OF TEXAS §

COUNTY OF GRAYSON §

WHEREAS RIBLAND MANTUA, LLC, is the owners of a tract of land situated in the J.W. Curtis Survey, Abstract No. 249 (Grayson County) & 1077 (Collin County) and the David Arnspiger Survey, Abstract No. 1526 (Grayson County) & 16 (Collin County), Texas and being a portion of a tract of land described as "Tract 7" in Special Warranty Deeds to Ribland Mantua, LLC, recorded in Instrument No. 2018-14251, Official Public Records, Grayson County, Texas and Instrument No. 20180625000795250, Official Public Records, Collin County, Texas, and being more particularly described by metes and bounds as follows:

BEING a tract of land situated in the J.W. Curtis Survey, Abstract No. 249 (Grayson County) & 1077 (Collin County) and the David Arnspiger Survey, Abstract No. 1526 (Grayson County) & 16 (Collin County), Texas and being a portion of a tract of land described as "Tract 7" in Special Warranty Deeds to Ribland Mantua, LLC, recorded in Instrument No. 2018-14251, Official Public Records, Grayson County, Texas and Instrument No. 20180625000795250, Official Public Records, Collin County, Texas, and being more particularly described by metes and bounds as follows:

BEGINNING at a 5/8-inch iron rod with plastic cap stamped "RPLS" set (hereinafter referred to as an iron rod set) for the southernmost southwest common corner of said Tract 7 and a called 132.481-acre tract of land described in Special Warranty Deed to The Comegys Trust, recorded in Volume 4915, Page 78, said Official Public Records (Grayson);

THENCE westerly, departing the easterly line of said Tract 7 and the westerly line of said 132.481-acre tract and crossing said Tract 7 the following courses and distances:

South 3°19'56" East, a distance of 65.19 feet to an iron rod set for corner;

South 88°56'32" West, a distance of 1184.68 feet to an iron rod set for corner;

North 79°32'11" West, a distance of 328.18 feet to an iron rod set for corner;

North 64°22'11" West, a distance of 140.00 feet to an iron rod set for corner;

North 8°37'49" East, a distance of 78.91 feet to an iron rod set for corner;

North 58°30'43" West, a distance of 67.47 feet to an iron rod set for corner;

North 85°33'30" West, a distance of 1.88 feet to an iron rod set for corner;

North 8°24'04" East, a distance of 140.02 feet to an iron rod set for corner;

North 51°34'18" East, a distance of 24.09 feet to an iron rod set for corner;

North 1°53'43" West, a distance of 294.85 feet to an iron rod set for corner;

North 1°02'13" East, a distance of 41.21 feet to an iron rod set for corner;

North 4°37'24" East, a distance of 46.00 feet to an iron rod set for corner;

North 84°48'46" West, a distance of 124.67 feet to an iron rod set for corner;

North 5°11'15" East, a distance of 2.48 feet to an iron rod set for corner;

North 84°48'46" West, a distance of 50.00 feet to an iron rod set for corner;

North 5°11'15" East, a distance of 19.51 feet to an iron rod set for corner;

North 38°36'58" West, a distance of 14.43 feet to an iron rod set at the beginning of a non-tangent curve to the right having a central angle of 5°57'52", a radius of 639.00 feet, a chord bearing and distance of North 81°27'34" West, 6.65 feet;

In a northwesterly direction, with said curve to the right, an arc distance of 6.65 feet to an iron rod set for the end of said curve to the right;

North 80°58'38" West, a distance of 224.47 feet to an iron rod set for corner;

South 54°01'21" West, a distance of 14.14 feet to an iron rod set for corner;

South 8°01'21" West, a distance of 20.50 feet to an iron rod set for corner;

North 80°58'38" West, a distance of 60.00 feet to an iron rod set for corner;

North 9°01'21" East, a distance of 20.50 feet to an iron rod set for corner;

North 35°58'38" West, a distance of 14.14 feet to an iron rod set for corner;

North 80°58'38" West, a distance of 33.94 feet to an iron rod set at the beginning of a tangent curve to the left having a central angle of 12°54'04", a radius of 975.00 feet, a chord bearing and distance of North 86°25'41" West, 185.51 feet;

In a northwesterly direction, with said curve to the left, an arc distance of 185.78 feet to an iron rod set for the end of said curve to the left;

South 88°08'17" West, a distance of 27.20 feet to an iron rod set for corner;

South 43°08'17" West, a distance of 14.14 feet to an iron rod set for corner;

South 1°53'43" East, a distance of 20.50 feet to an iron rod set for corner;

South 88°08'17" West, a distance of 50.00 feet to an iron rod set for corner;

North 1°53'43" West, a distance of 20.50 feet to an iron rod set for corner;

North 46°53'42" West, a distance of 14.14 feet to an iron rod set for corner;

South 88°08'17" West, a distance of 128.00 feet to an iron rod set for corner;

North 1°53'43" West, passing at a distance of 199.00 feet the southeast corner of a called 16.28-acre tract of land described in Warranty Deed with Vendor's Lien to Western Oaks & Lay-Wins Ribes, recorded in Volume 3109, Page 291, said Official Public Records (Grayson), continue to an angle point in the westerly line of said Tract 7, and continuing along the same course and the common line of said Tract 7 and said 16.28-acre tract for a total distance of 1310.00 feet to an iron rod set for corner;

THENCE easterly, departing said common line and crossing said Tract 7 the following courses and distances:

North 88°08'17" East, a distance of 317.50 feet to an iron rod set for corner;

South 62°31'04" East, a distance of 118.22 feet to an iron rod set for corner;

South 83°00'54" East, a distance of 24.13 feet to an iron rod set at the beginning of a non-tangent curve to the right having a central angle of 5°53'42", a radius of 336.00 feet, a chord bearing and distance of North 29°56'17" East, 33.94 feet;

In a northeasterly direction, with said curve to the right, an arc distance of 33.96 feet to an iron rod set for the end of said curve to the right;

South 57°07'12" East, a distance of 90.00 feet to an iron rod set at the beginning of a non-tangent curve to the left having a central angle of 17°40'47", a radius of 276.00 feet, a chord bearing and distance of South 34°02'29" West, 83.88 feet;

In a southwesterly direction, with said curve to the left, an arc distance of 83.51 feet to an iron rod set for the end of said curve to the left;

South 15°12'05" West, a distance of 10.34 feet to an iron rod set at the beginning of a non-tangent curve to the right having a central angle of 11°11'50", a radius of 348.41 feet, a chord bearing and distance of South 84°08'47" East, 68.14 feet;

In a southeasterly direction, with said curve to the right, an arc distance of 68.25 feet to an iron rod set for the end of said curve to the right;

South 66°47'01" East, a distance of 185.13 feet to an iron rod set at the beginning of a tangent curve to the left having a central angle of 38°08'41", a radius of 625.00 feet, a chord bearing and distance of South 78°51'52" East, 408.69 feet;

In a southeasterly direction, with said curve to the left, an arc distance of 416.28 feet to an iron rod set for the end of said curve to the left;

North 82°53'18" East, a distance of 364.37 feet to an iron rod set at the beginning of a non-tangent curve to the right having a central angle of 52°38'08", a radius of 716.00 feet, a chord bearing and distance of North 82°21'22" East, 132.12 feet;

In a northeasterly direction, with said curve to the right, an arc distance of 132.30 feet to an iron rod set at the beginning of a non-tangent curve to the left having a central angle of 5°32'53", a radius of 1080.00 feet, a chord bearing and distance of North 11°11'12" East, 108.07 feet;

In a northeasterly direction, with said curve to the left, an arc distance of 108.12 feet to an iron rod set for the end of said curve to the left;

North 14°09'38" West, a distance of 98.36 feet to an iron rod set for corner;

North 88°14'21" East, a distance of 180.00 feet to an iron rod set for corner;

South 11°43'38" East, a distance of 96.36 feet to an iron rod set at the beginning of a tangent curve to the right having a central angle of 8°19'38", a radius of 1220.00 feet, a chord bearing and distance of South 11°22'32" West, 133.57 feet;

In a southeasterly direction, with said curve to the right, an arc distance of 133.43 feet to an iron rod set for the end of said curve to the right;

South 81°54'10" East, a distance of 476.78 feet to an iron rod set at the beginning of a tangent curve to the right having a central angle of 54°30'01", a radius of 625.00 feet, a chord bearing and distance of South 54°39'44" East, 572.48 feet;

In a southeasterly direction, with said curve to the right, an arc distance of 594.58 feet to an iron rod set for the end of said curve to the right;

North 81°08'58" East, a distance of 101.70 feet to an iron rod set for corner;

South 87°34'30" East, a distance of 513.48 feet to an iron rod set for an angle point in the common line of said Tract 7 and the aforementioned 132.481-acre tract;

THENCE southerly, along said common line the following courses and distances:

South 34°53'48" West, a distance of 112.37 feet to an iron rod set for corner;

South 76°07'10" West, a distance of 117.77 feet to an iron rod set for corner;

South 22°14'50" East, a distance of 112.68 feet to an iron rod set for corner;

South 88°13'48" East, a distance of 185.00 feet to an iron rod set for corner;

South 58°58'53" West, a distance of 187.09 feet to an iron rod set for corner;

South 67°52'00" West, a distance of 192.09 feet to an iron rod set for corner;

South 8°37'14" West, a distance of 278.81 feet to an iron rod set for corner;

South 28°43'45" East, a distance of 106.67 feet to an iron rod set for corner;

South 42°42'28" East, a distance of 143.80 feet to an iron rod set for corner;

South 5°33'38" West, a distance of 351.60 feet to an iron rod set for corner;

South 3°19'56" East, a distance of 87.98 feet to the POINT OF BEGINNING and containing 90.246 acres (3,930,250 sq. ft.) of land, more or less.

NOW, THEREFORE, KNOW ALL MEN BY THESE PRESENTS:

THAT RIBLAND MANTUA, LLC, ACTING HEREIN BY AND THROUGH ITS DULY AUTHORIZED OFFICERS, DOES HEREBY ADOPT THIS PLAT DESIGNATING THE HEREIN ABOVE DESCRIBED PROPERTY AS MANTUA POINT, PHASE 1, AN ADDITION TO THE CITY OF VAN ALSTYNE, TEXAS AND DOES HEREBY DEDICATE, IN FEE SIMPLE, TO THE PUBLIC USE FOREVER, THE STREETS, ALLEYS, AND PUBLIC USE AREAS SHOWN HEREON; AND DOES HEREBY DEDICATE THE EASEMENTS SHOWN ON THE PLAT FOR THE PURPOSES INDICATED TO THE PUBLIC USE FOREVER, SAID DEDICATIONS BEING FREE AND CLEAR OF ALL LIENS AND ENCUMBRANCES EXCEPT AS SHOWN HEREIN. NO BUILDINGS, FENCES, TREES, SHRUBS, OR OTHER IMPROVEMENTS SHALL BE CONSTRUCTED OR PLACED UPON, OVER, OR ACROSS THE EASEMENTS ON SAID PLAT UTILITY EASEMENTS MAY ALSO BE USED FOR THE MUTUAL USE AND ACCOMMODATION OF ALL PUBLIC UTILITIES DESIRING TO USE OR USING THE SAME UNLESS THE EASEMENT LIMITS THE USE TO A PARTICULAR UTILITY OR UTILITIES. SAID USE BY PUBLIC UTILITIES BEING SUBORDINATE TO THE PUBLIC'S AND CITY OF VAN ALSTYNE'S USE THEREOF. THE CITY OF VAN ALSTYNE AND ANY PUBLIC UTILITY SHALL HAVE THE RIGHT TO REMOVE AND KEEP REMOVED ALL OR PART OF ANY BUILDINGS, FENCES, TREES, SHRUBS, OR OTHER IMPROVEMENTS OR GROWTHS WHICH MAY WAY ENDANGER OR INTERFERE WITH THE CONSTRUCTION, MAINTENANCE, OR EFFICIENCY OF ITS RESPECTIVE SYSTEM ON ANY OF THESE EASEMENTS AND THE CITY OF VAN ALSTYNE OR ANY PUBLIC UTILITY SHALL AT ALL TIMES HAVE THE RIGHT OF INGRESS AND EGRESS TO AND FROM AND UPON ANY OF SAID EASEMENTS FOR THE PURPOSE OF CONSTRUCTING, RECONSTRUCTING, INSPECTING, PATROLLING, MAINTAINING, AND ADDING TO OR REMOVING ALL OR PART OF ITS RESPECTIVE SYSTEM WITHOUT THE NECESSITY AT ANY TIME OF PROCURING THE PERMISSION OF ANYONE. RIBLAND MANTUA, LLC DOES HEREBY BIND ITSELF, ITS SUCCESSORS AND ASSIGNS TO FOREVER WARRANT AND DEFEND ALL AND SINGULAR THE ABOVE DESCRIBED STREETS, ALLEYS, EASEMENTS, AND RIGHTS UNTO THE PUBLIC AGAINST EVERY PERSON WHOMSOEVER LAWFULLY CLAIMING OR TO CLAIM THE SAME OR ANY PART THEREOF. THIS PLAT APPROVED SUBJECT TO ALL PLATTING ORDINANCES, RULES, REGULATIONS, AND RESOLUTIONS OF THE CITY OF VAN ALSTYNE.

WITNESS, my hand, this _____ day of _____, 2019

BY: RIBLAND MANTUA, LLC, a Delaware limited liability company

By: _____
RICK HAGMAYER - PROJECT MANAGER

STATE OF TEXAS §

COUNTY OF COLLIN §

BEFORE ME, the undersigned, a Notary Public in and for The State of Texas, on this day personally appeared RICK HAGMAYER, known to me to be the person and officer whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed and in the capacity therein stated.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this the _____ day of _____, 2019

_____
Notary Public, State of Texas

KRISTIN CLAIR ROSS
Notary Public, State of Texas
Comm. Expires 07-26-2021
Notary ID 132299

SURVEYOR'S CERTIFICATION

[illegible]

Michael B. Marks
Registered Professional Land Surveyor No. 5181
Kimley-Horn and Associates, Inc.
4901 Warren Pkwy., Suite 210
Frisco, Texas 75034
Phone: 972-335-3580
Fax: 972-335-3779

STATE OF TEXAS
MICHAEL B. MARKS
5181
REGISTERED
PROFESSIONAL
LAND SURVEYOR

STATE OF TEXAS §

COUNTY OF COLLIN §

BEFORE ME, the undersigned, a Notary Public in and for The State of Texas, on this day personally appeared Michael B. Marks known to me to be the person and officer whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed and in the capacity therein stated.

[illegible]

KRISTIN CLAIR ROSS
Notary Public, State of Texas
Comm. Expires 07-26-2021
Notary ID 132299

UTILITY CERTIFICATE

THIS PLAT CORRECTLY PRESENTS THE REQUIRED EASEMENTS FOR THIS DEVELOPMENT

ATMOS GAS _____ NAME - TITLE

GRAYSON COLLIN COMMUNICATIONS _____ NAME - TITLE

GRAYSON-COLLIN ELECTRIC COOPERATIVE _____ NAME - TITLE

VAN ALSTYNE WATER SUPPLY _____ NAME - TITLE

AT&T _____ NAME - TITLE

CITY SIGNATURE BLOCK

On the _____ day of _____, 2019, this plat was duly approved by the City Council of the city of Van Alstyne.

Signed: _____ Attest: _____
Chairman City Clerk

Planning and Zoning Commission

Signed: _____ Attest: _____
Mayor City Clerk

FINAL PLAT
MANTUA POINT
PHASE 1
222 RESIDENTIAL LOTS
15 COMMON AREA LOTS
DAVID ARNSPIGER SURVEY, A-1526; J.W. CURTIS SURVEY, A-249,
DAVID ARNSPIGER SURVEY, A-15; & THE J.W. CURTIS SURVEY, A-1077
CITY OF VAN ALSTYNE, GRAYSON & COLLIN COUNTY, TEXAS

Kimley»Horn
6160 Warren Pkwy., Suite 210
Frisco, Texas 75034
Tel. No. (972) 335-3580
Fax No. (972) 335-3779
FIRM # 10193822

Scale	Drawn by	Checked by	Date	Project No.	Sheet No.
-	JMM	KRA	AUG. 2019	064129001	1 OF 6

OWNER:
RIBLAND MANTUA, LLC
5800 Tennyson Parkway, Suite 250
Plano, TX 75024
Phone: 469-891-3021
Contact: Rick Hagmayer, P.E.

APPLICANT
Kimley-Horn and Associates, Inc.
6160 Warren Pkwy., Suite 210
Frisco, Texas 75034
Phone: 972-335-3580
Fax: 972-335-3779
Contact: Thomas G. Cooper, P.E.

ENGINEER'S NOTES

1. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL HAVE IN THEIR POSSESSION ALL NECESSARY PERMITS, PLANS, LICENSES, ETC. CONTRACTOR SHALL HAVE AT LEAST ONE SET OF APPROVED ENGINEERING PLANS AND SPECIFICATIONS ON-SITE AT ALL TIMES.
2. ALL WORK SHALL CONFORM TO THE CITY OF VAN ALSTYNE DESIGN MANUALS AND STANDARDS. IN THE EVENT AN ITEM IS NOT CONSIDED IN THE PLANS OR THE CITY OF VAN ALSTYNE DESIGN MANUALS AND STANDARDS, THE MOST CURRENT NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS (NCTCOG) STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION SHALL APPLY WITH CONSIDERING NOTIFICATION TO THE CITY ENGINEER AND PROJECT ENGINEER. THE CITY ENGINEER SHALL HAVE THE FINAL DECISION ON ALL CONSTRUCTION MATERIALS, METHODS, AND PROCEDURES
3. CONSTRUCTION INSPECTION WILL BE PERFORMED BY REPRESENTATIVES OF THE OWNER, ENGINEER, CITY, GEOTECHNICAL ENGINEER, AND REVIEWING AUTHORITIES AND AGENCIES. UNRESTRICTED ACCESS SHALL BE PROVIDED TO THEM AT ALL TIMES. CONTRACTOR IS RESPONSIBLE FOR UNDERSTANDING AND SCHEDULING REQUIRED INSPECTIONS. TESTING SAMPLES SHALL BE COLLECTED AND PROCESSED BY CERTIFIED TECHNICIANS.
4. ALL CONTRACTORS MUST CONFINE THEIR ACTIVITIES TO THE WORK AREA. NO ENCROACHMENTS ON TO DEVELOPED OR UNDEVELOPED AREAS WILL BE ALLOWED. ANY DAMAGE RESULTING THEREFROM SHALL BE CONTRACTOR'S RESPONSIBILITY TO REPAIR
5. IT WILL BE THE RESPONSIBILITY OF EACH CONTRACTOR TO PROTECT ALL EXISTING PUBLIC AND PRIVATE UTILITIES THROUGHOUT THE CONSTRUCTION OF THIS PROJECT. CONTRACTOR SHALL CONTACT THE APPROPRIATE UTILITY COMPANIES FOR LINE LOCATIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION AND SHALL ASSUME FULL LIABILITY TO THOSE COMPANIES FOR ANY DAMAGES CAUSED TO THEIR FACILITIES
6. TRENCH SAFETY DESIGN WILL BE THE RESPONSIBILITY OF THE UTILITY CONTRACTOR. CONTRACTOR SHALL SUBMIT A TRENCH SAFETY DESIGN APPROVED BY A PROFESSIONAL ENGINEER TO THE CITY ENGINEERING INSPECTOR FOR REVIEW PRIOR TO THE START OF ANY UNDERGROUND UTILITY CONSTRUCTION.
7. IF ANY CONFLICT ARISES BETWEEN THESE GENERALS NOTES AND ANY OTHER NOTES FOUND IN THE PLANS. THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD FOR CLARIFICATION.
8. THE ENGINEER IS NOT RESPONSIBLE FOR THE CONTRACTOR'S MEANS AND METHODS.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR JOB SITE SAFETY AT ALL TIMES DURING THE COURSE OF THE PROJECT. THE CONTRACTOR SHALL HOLD THE OWNER AND ENGINEER HARMLESS FOR ALL CLAIMS THAT MAY ARISE.

EROSION CONTROL & VEGETATION

1. THE CSW OR NOI SHALL BE POSTED IN A LOCATION VIEWABLE TO THE PUBLIC UNTIL CONSTRUCTION IS COMPLETE AND NOTICE OF TERMINATION (NOT) SUBMITTED. THE STORM WATER POLLUTION PREVENTION PLAN (SWPP) SHALL BE READILY AVAILABLE FOR REVIEW BY FEDERAL, STATE, OR LOCAL OFFICIALS.
2. NO SOIL DISTURBING ACTIVITIES WILL OCCUR PRIOR TO THE SWPP, ECP, AND ASSOCIATED BEST MANAGEMENT PRACTICES (BMP) BEING FULLY IMPLEMENTED.
3. THE CONTRACTOR SHALL COMPLY WITH THE CURRENT NCTCOG DRAIN TECHNICAL MANUAL FOR CONSTRUCTION, THE TPDES GENERAL CONSTRUCTION PERMIT TXR150000 AND ANY OTHER STATE AND/OR LOCAL REGULATIONS.
4. THE CONTRACTOR SHALL EMPLOY MEASURES AS NECESSARY TO PREVENT DIRT, MUD, DEBRIS FROM BEING TRACKED OFF SITE. ANY DIRT, MUD, DEBRIS TRACKED OFFSITE SHALL BE CLEANED UP BY THE CONTRACTOR IMMEDIATELY.
5. THE SITE SHALL BE REVIEWED BY THE OPERATOR OR HIS REPRESENTATIVE WEEKLY, AND AFTER ANY MAJOR STORM. ADJUSTMENTS/REPAIRS TO THE EROSION CONTROL MEASURES WILL BE MADE AS NEEDED
6. CONTRACTOR SHALL ESTABLISH PERENNIAL VEGETATION ON ALL OTHER DISTURBED AREAS IMMEDIATELY UPON COMPLETION OF GRADING ACTIVITIES. AN APPROPRIATE SEED MIX SHOULD BE CONSIDERED WITH RESPECT TO THE SEASON AND THE TIMING OF FINAL ACCEPTANCE. A COOL SEASON SEED MIX SHOULD BE USED BETWEEN SEPTEMBER 15TH AND APRIL 15TH

TREE PRESERVATION

1. THE CONTRACTOR SHALL PLACE ORANGE PROTECTIVE FENCING AROUND TREES AND AT LIMITS OF VEGETATION TO BE PRESERVED AS IDENTIFIED ON THE PLANS. NO WORK SHALL OCCUR WITHIN THE LIMITS OF THE PROTECTIVE FENCING. ALL PROTECTIVE MEASURES SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF ANY SITE OR GRADING WORK AND REMAIN IN PLACE UNTIL ALL WORK HAS BEEN COMPLETED
2. THE FOLLOWING ACTIVITIES SHALL BE PROHIBITED WITHIN THE LIMITS OF THE PRIMARY ROOT ZONE: MATERIAL STORAGE, EQUIPMENT CLEANING/LIQUID DISPOSAL, TREE ATTACHMENTS OF SIGNS OR WIRES, AND CONSTRUCTION EQUIPMENT/VEHICULAR TRAFFIC IS PROHIBITED.
3. UNLESS SPECIFICALLY ALLOWED, NO GRADE CHANGES GREATER THAN 6" SHALL BE ALLOWED WITHIN THE LIMITS OF THE PRIMARY ROOT ZONE OF ANY PROTECTED TREE UNLESS THE CITY ARBORIST APPROVES ADEQUATE CONSTRUCTION METHODS

TCEQ GENERAL NOTES

1. THIS WATER DISTRIBUTION SYSTEM MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS 30 TEXAS ADMINISTRATIVE CODE (TAC) CHAPTER 290. SUBCHAPTER D. WHEN CONFLICTS ARE NOTED WITH LOCAL STANDARDS, THE MORE STRINGENT REQUIREMENT SHALL BE APPLIED. CONSTRUCTION FOR PUBLIC WATER SYSTEMS MUST ALWAYS, AT A MINIMUM, MEET TCEQ'S RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS
2. AN APPOINTED ENGINEER SHALL NOTIFY IN WRITING THE LOCAL TCEQ'S REGIONAL OFFICE WHEN CONSTRUCTION WILL START. NOTE THAT UPON COMPLETION OF THE WATER WORKS PROJECT, THE ENGINEER OR OWNER SHALL NOTIFY THE COMMISSION'S WATER SUPPLY DIVISION, IN WRITING, AS TO ITS COMPLETION AND ATTEST TO THE FACT THAT THE WORK HAS BEEN COMPLETED ESSENTIALLY ACCORDING TO THE PLANS AND CHANGE ORDERS ON FILE WITH THE COMMISSION AS REQUIRED IN 30 TAC §290.39(h)(2)
3. ALL NEWLY INSTALLED PIPES AND RELATED PRODUCTS MUST CONFORM TO AMERICAN NATIONAL STANDARDS INSTITUTE/NATIONAL SANITATION FOUNDATION (ANSI/NSF) STANDARD 61-G AND MUST BE CERTIFIED BY AN ORGANIZATION ACCREDITED BY ANSI, AS REQUIRED BY 30 TAC§290.44(a)(1)
4. PLASTIC PIPE FOR USE IN PUBLIC WATER SYSTEMS MUST BEAR THE NATIONAL SANITATION FOUNDATION SEAL OF APPROVAL (NSF PW-G) AND HAVE AN ASTM DESIGN PRESSURE RATING OF AT LEAST 160 PSI OR A STANDARD DIMENSION RATIO OF 26 OR LESS, AS REQUIRED BY 30 TAC§290.44(a)(2)
5. NO PIPE WHICH HAS BEEN USED FOR ANY PURPOSE OTHER THAN THE CONVEYANCE OF DRINKING WATER SHALL BE ACCEPTED OR RELOCATED FOR USE IN ANY PUBLIC DRINKING WATER SUPPLY, AS REQUIRED BY 30 TAC §290.44(a)(3)
6. WATER TRANSMISSION AND DISTRIBUTION LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. HOWEVER, THE TOP OF THE WATER LINE MUST BE LOCATED BELOW THE FROST LINE AND IN NO CASE SHALL THE TOP OF THE WATER LINE BE LESS THAN 24 INCHES BELOW GROUND SURFACE, AS REQUIRED BY 30 TAC §290.44(a)(4)
7. PURSUANT TO 30 TAC §290.44(a)(5), THE HYDROSTATIC LEAKAGE RATE SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY THE MOST CURRENT AWWA FORMULAS FOR PVC PIPE, CAST IRON AND DUCTILE IRON PIPE. INCLUDE THE FORMULAS IN THE NOTES ON THE PLANS

   THE HYDROSTATIC LEAKAGE RATE FOR POLYVINYL CHLORIDE (PVC) PIPE AND APPURTENANCES SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY FORMULAS IN AMERICA WATER WORKS ASSOCIATION (AWWA) C-605 AS REQUIRED IN 30 TAC §290.44(a)(5). THE CONTRACTOR SHALL ENSURE THAT THE FORMULA FOR THIS CALCULATION IS CORRECT AND MOST CURRENT FORMULA IS IN USE.

   $$Q = (D \cdot P \cdot L)/148{,}000$$

   WHERE:
   - Q = THE QUANTITY OF MAKEUP WATER IN GALLONS PER HOUR.
   - L = THE LENGTH OF PIPE SECTION BEING TESTED, IN FEET.
   - D = THE NOMINAL DIAMETER OF THE PIPE IN INCHES, AND
   - P = THE AVERAGE TEST PRESSURE DURING THE HYDROSTATIC TEST IN POUNDS PER SQUARE INCH (PSI)

   THE HYDROSTATIC LEAKAGE RATE FOR DUCTILE IRON (DI) PIPE AND APPURTENANCES SHALL NOT EXCEED THE AMOUNT ALLOWED OR RECOMMENDED BY FORMULAS IN AMERICA WATER WORKS ASSOCIATION (AWWA) C-600 AS REQUIRED IN 30 TAC §290.44(a)(5). THE CONTRACTOR SHALL ENSURE THAT THE FORMULA FOR THE CALCULATION IS CORRECT AND MOST CURRENT FORMULA IS IN USE.

   $$Q = (S \cdot D \cdot P)/148{,}000$$

   WHERE
   - L = THE QUANTITY OF MAKEUP WATER IN GALLONS PER HOUR.
   - S = THE LENGTH OF THE PIPE SECTION BEING TESTED, IN FEET.
   - D = THE NOMINAL DIAMETER OF THE PIPE IN INCHES, AND
   - P = THE AVERAGE TEST PRESSURE DURING THE HYDROSTATIC TEST IN POUNDS PER SQUARE INCH (PSI).
8. PROJECTS CONSTRUCTED ON OR AFTER JANUARY 4, 2014 MUST COMPLY WITH CHANGES TO THE SAFE DRINKING WATER ACT THAT REDUCE THE MAXIMUM ALLOWABLE LEAD CONTENT OF PIPES, PIPE FITTINGS, PLUMBING FITTINGS AND FIXTURES TO 0.25 PERCENT
9. PURSUANT TO 30 TAC §290.44(d)(4), ACCURATE WATER METERS SHALL BE PROVIDED. SERVICE CONNECTIONS AND METER LOCATIONS SHALL CONFORM WITH THE APPROVED PLANS.
10. PURSUANT TO 30 TAC §290.44(d)(6), SUFFICIENT VALVES AND BLOWOFFS TO MAKE REPAIRS SHALL BE PROVIDED. VALVE AND BLOWOFF LOCATIONS SHALL CONFORM WITH THE APPROVED PLANS
11. PURSUANT TO 30 TAC §290.44(d)(8), THE SYSTEM SHALL AFFORD EFFECTIVE CIRCULATION OF WATER WITH A MINIMUM OF DEAD ENDS. ALL DEAD-END MAINS SHALL BE PROVIDED WITH ACCEPTABLE FLUSH VALVES AND DISCHARGE PIPING. ALL DEAD-END LINES LESS THAN TWO INCHES IN DIAMETER SHALL NOT REQUIRE FLUSH VALVES IF THEY END AT A CUSTOMER SERVICE. WHERE DEAD ENDS ARE NECESSARY AS A STAGE IN THE GROWTH OF THE SYSTEM, IF THEY SHALL BE LOCATED AND ARRANGED TO ULTIMATELY CONNECT THE ENDS TO PROVIDE CIRCULATION.
12. THE CONTRACTOR SHALL MAINTAIN A MINIMUM SEPARATION DISTANCE IN ALL DIRECTIONS OF NINE FEET BETWEEN THE PROPOSED WATERLINE AND WASTEWATER COLLECTION FACILITIES (INCLUDING MANHOLES AND SEPTIC TANK DRAINFIELDS). IF THIS DISTANCE CANNOT BE MAINTAINED, THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE PROJECT ENGINEER FOR FURTHER DIRECTION. SEPARATION DISTANCES, INSTALLATION METHODS, AND MATERIALS UTILIZED MUST MEET 30 TAC §290.44(e)(1-4) OF THE CURRENT RULES.
13. PURSUANT TO 30 TAC §290.44(e)(5), THE SEPARATION DISTANCE FROM A POTABLE WATERLINE TO A WASTEWATER MAIN OR LATERAL MANHOLE OR CLEANOUT SHALL BE A MINIMUM OF NINE FEET. WHERE THE NINE-FOOT SEPARATION DISTANCE CANNOT BE ACHIEVED, THE POTABLE WATERLINE SHALL BE ENCASED IN A JOINT OF AT LEAST 150 PSI PRESSURE CLASS PIPE AT LEAST 18 FEET LONG AND TWO NOMINAL SIZES LARGER THAN THE NEW CONVEYANCE. THE SPACE AROUND THE CARRIER PIPE SHALL BE SUPPORTED AT FIVE-FOOT INTERVALS WITH SPACERS OR BE FILLED TO THE SPRINGLINE WITH WASHED SAND. THE ENCASEMENT PIPE SHALL BE CENTERED ON THE CROSSING AND BOTH ENDS SEALED WITH CEMENT GROUT OR MANUFACTURED SEALANT
14. PURSUANT TO 30 TAC §290.44(e)(6), FIRE HYDRANTS SHALL NOT BE INSTALLED WITHIN NINE FEET VERTICALLY OR HORIZONTALLY OF ANY WASTEWATER LINE. WASTEWATER LATERAL OR WASTEWATER SERVICE LINE REGARDLESS OF CONSTRUCTION
15. PURSUANT TO 30 TAC §290.44(e)(8), SUCTION MAINS TO PUMPING EQUIPMENT SHALL NOT CROSS WASTEWATER MAINS, WASTEWATER LATERALS, OR WASTEWATER SERVICE LINES. RAW WATER SUPPLY LINES SHALL NOT BE INSTALLED WITHIN FIVE FEET OF ANY TILE OR CONCRETE WASTEWATER MAIN, WASTEWATER LATERAL, OR WASTEWATER SERVICE LINE.
16. PURSUANT TO 30 TAC §290.44(e)(9), WATERLINES SHALL NOT BE INSTALLED CLOSER THAN TEN FEET TO SEPTIC TANK DRAINFIELDS
17. PURSUANT TO 30 TAC §290.44(f)(1), THE CONTRACTOR SHALL NOT PLACE THE PIPE IN WATER OR WHERE IT CAN BE FLOODED WITH WATER OR SEWAGE DURING ITS STORAGE OR INSTALLATION.
18. PURSUANT TO 30 TAC §290.44(f)(2), WHEN WATERLINES ARE LAID UNDER ANY FLOWING OR INTERMITTENT STREAM OR SEMI-PERMANENT BODY OF WATER THE WATER MAIN SHALL BE INSTALLED IN A SEPARATE WATERTIGHT PIPE ENCASEMENT. VALVES MUST BE PROVIDED ON EACH SIDE OF THE CROSSING WITH FACILITIES TO ALLOW THE UNDERWATER PORTION OF THE SYSTEM TO BE ISOLATED AND TESTED.
19. THE CONTRACTOR SHALL DISINFECT THE NEW WATER MAINS IN ACCORDANCE WITH AWWA STANDARD C-651 AND THEN FLUSH AND SAMPLE THE LINES BEFORE BEING PLACED INTO SERVICE. SAMPLES SHALL BE COLLECTED FOR MICROBIOLOGICAL ANALYSIS TO CHECK THE EFFECTIVENESS OF THE DISINFECTION PROCEDURE WHICH SHALL BE REPEATED IF CONTAMINATION PERSISTS. A MINIMUM OF ONE SAMPLE FOR EACH 1,000 FEET OF COMPLETED WATER LINE WILL BE REQUIRED OR AT THE NEXT AVAILABLE SAMPLING POINT BEYOND 1,000 FEET AS DESIGNATED BY THE DESIGN ENGINEER, IN ACCORDANCE WITH 30 TAC §290.44(f)(3).
20. WHERE CEMENT STABILIZED SAND BEDDING IS REQUIRED, THE CEMENT STABILIZED SAND SHALL HAVE A MINIMUM OF 10% CEMENT PER CUBIC YARD OF STABILIZED SAND MIXTURE. BASED ON LOOSE DRY WEIGHT VOLUME (AT LEAST 2.6 BAGS OF CEMENT PER CUBIC YARD OF MIXTURE). THE CEMENT STABILIZED SAND BEDDING SHALL BE A MINIMUM OF SIX INCHES ABOVE AND FOUR INCHES BELOW THE WASTEWATER MAIN OR LATERAL.

CITY GENERAL ITEMS

1. IT IS NOT THE INTENT OF THESE CONSTRUCTION NOTES TO COVER ALL DETAILS AND/OR SPECIFICATION REQUIREMENTS OF THE CITY OF VAN ALSTYNE. THE CONTRACTOR SHALL REFER TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, FOURTH EDITION - NORTH CENTRAL TEXAS, FOR STANDARD SPECIFICATIONS AND DRAWINGS UNLESS SPECIFICALLY STATED OTHERWISE IN THE ENGINEERING PLANS OR IN THE SPECIAL SPECIFICATIONS SECTION OF THE CONTRACT DOCUMENTS.
2. ANY CONTRACTOR/SUBCONTRACTOR PERFORMING WORK ON THIS PROJECT SHALL FAMILIARIZE HIMSELF WITH THE SITE AND SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGE TO EXISTING FACILITIES RESULTING DIRECTLY OR INDIRECTLY FROM HIS OPERATIONS. SAID EXISTING IMPROVEMENTS SHALL INCLUDE BUT NOT BE LIMITED TO SIGNS, DITCHES, FENCES, TREES, SHRUBS, HEDGES, RETAINING WALLS, LANDSCAPING, BUILDINGS AND WALKS. ANY REMOVAL OR DAMAGE TO EXISTING IMPROVEMENTS SHALL BE REPLACED OR REPAIRED BY THE CONTRACTOR AT HIS EXPENSE AND SHALL BE APPROVED BY THE CITY OF VAN ALSTYNE
3. ALL CONSTRUCTION, TESTING, AND MATERIALS SHALL MEET OR EXCEED ALL REQUIREMENTS OF THE PUBLIC WORKS CONSTRUCTION STANDARDS - NORTH CENTRAL TEXAS. ALL SUBMITTALS MUST BE ORIGINALS WITH SIGNATURES WHERE APPLICABLE; FACSIMILES WILL NOT BE ACCEPTED.
4. THE PUBLIC WORKS DEPARTMENT IS TO BE NOTIFIED 24 HOURS PRIOR TO ANY CONSTRUCTION.
5. ALL TESTING SHALL BE DONE BY AN APPROVED LABORATORY AT THE EXPENSE OF THE CONTRACTOR UNLESS APPROVED OTHERWISE. THE ENGINEER WILL ONLY ACCEPT SIGNED ORIGINAL COPIES OF ALL TESTING REPORTS FOR REVIEW. THE CITY'S INSPECTOR SHALL BE PRESENT AT ALL FIELD TESTS.
6. THE CONTRACTOR SHALL MAKE EVERY EFFORT NOT TO IMPEDE TRAFFIC ON EXISTING STREETS, ALLEYS, OR FIRE LANES OPEN TO THE PUBLIC. IN THE EVENT THE CONSTRUCTION WORK REQUIRES THE CLOSURE OF AN EXISTING STREET, ALLEY, OR FIRE LANE, THE CONTRACTOR SHALL REQUEST THE ROAD CLOSURE THROUGH THE CITY. IF THE CLOSURE ELIMINATES THE SECOND POINT OF ACCESS TO EXISTING BUILDINGS WITH A CERTIFICATE OF OCCUPANCY, THEN THE ACCESS MAY NOT BE CLOSED FOR MORE THAN FORTY-EIGHT (48) HOURS AND WILL REQUIRE FIRE MARSHAL APPROVAL IN EITHER CASE. UNLESS OTHERWISE SPECIFIED BY THE CITY, ALL OTHER STREETS OR ALLEYS MAY NOT BE CLOSED FOR MORE THAN SEVENTY-TWO (72) HOURS
7. ANY SECTION OF ALL EXISTING PUBLIC OR PRIVATE STREETS, ALLEYS, OR FIRE LANES SHALL BE REPLACED WITHIN SEVENTY-TWO (72) HOURS OF REMOVAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING "AS-RECORDED" PLANS TO THE ENGINEER OF RECORD SHOWING THE LOCATION OF ALL PAVING IMPROVEMENTS. THIS INFORMATION SHALL BE PLACED ON THE ENGINEERING PLANS AND MARKED "RECORD DRAWING" PLANS ALONG WITH THE DATE AND THE NAME OF THE CONTRACTOR BY THE ENGINEER OF RECORD. COPIES OF THESE "RECORD DRAWING" PLANS SHALL BE FURNISHED TO THE CITY ON MYLARS, BLACKLINE PRINTS, AND ELECTRONICALLY AS REQUIRED UNDER THE CITY'S "FINAL ACCEPTANCE CHECKLIST"
8. IF LIVESTOCK ARE PRESENT DURING CONSTRUCTION, CONTRACTOR SHALL COORDINATE WITH THE PROPERTY OWNER TO PROVIDE TEMPORARY FENCING DURING CONSTRUCTION TO PROTECT LIVESTOCK FROM INJURY
9. THE CONTRACTOR MAY ELECT TO VIDEO ALL POTENTIALLY IMPACTED PRIVATE PROPERTY AREAS PRIOR TO WORK. VIDEOS SHALL INCLUDE DATE, NOTATION AND AUDIO IDENTIFICATION OF PROPERTY ADDRESS AND MAINLATERAL NAME. THE PRE-CONSTRUCTION VIDEO TAPING OF IMPACTED PROPERTIES SHALL BE CONSIDERED SUBSIDIARY WORK.
10. CONTRACTOR'S PERSONNEL SHALL HAVE IDENTIFYING CLOTHING OR HATS AT ALL TIMES. THE CONTRACTOR SHALL ALSO HAVE IDENTIFICATION ON ALL VEHICLES.
11. CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO THE HOURS OF MONDAY THRU FRIDAY 7:00 A.M. TO 5:00 P.M. & SATURDAYS UPON REQUEST BY THURSDAY @ 12:00 P.M. UNLESS APPROVED OR DIRECTED BY THE ENGINEER.
12. THE LOCATION OF ALL SANITARY SEWER, WATER, STORM SEWER, TELEPHONE, GAS, ELECTRIC, CABLE TELEVISION UTILITIES, DRIVEWAYS, RETAINING WALLS, STRUCTURES, ETC. WHICH MAY BE SHOWN ON THESE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY THE EXACT SIZE, LOCATION, ELEVATION, AND CONFIGURATION OF ALL UTILITIES AND STRUCTURES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL COORDINATE WITH APPROPRIATE UTILITY COMPANIES AND SUCH VERIFICATION SHALL BE CONSIDERED AS SUBSIDIARY TO THE COST OF PROJECT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
13. THE CONTRACTOR SHALL DISTRIBUTE LETTERS TO ALL AFFECTED PROPERTY OWNERS PRIOR TO BEGINNING WORK ON EACH PROPERTY. THE LETTER SHALL INCLUDE NAMES AND TELEPHONE NUMBERS OF CONTRACTOR CONTACTS. A DESCRIPTION OF THE WORK TO BE DONE, AND THE TIME FRAME FOR DOING THE WORK. COPIES OF THE LETTER SHALL BE FORWARDED TO THE CITY. THE CONTRACTOR SHALL NOTIFY RESIDENTS 48 HOURS IN ADVANCE OF PERFORMING ANY WORK ON PRIVATE PROPERTY. DISTRIBUTION OF LETTERS SHALL BE CONSIDERED AS SUBSIDIARY TO THE COST OF PROJECT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED
14. THE CONTRACTOR SHALL FURNISH A TRAFFIC CONTROL PLAN, FOR ALL WORKING AREAS, TO THE ENGINEER FOR APPROVAL PRIOR TO THE THE PRE-CONSTRUCTION MEETING. THIS WAY TRAFFIC MUST BE MAINTAINED AT ALL TIMES. ONE LANE OF TRAVEL AROUND CONSTRUCTION OPERATIONS IN PROGRESS WITH ADEQUATE SAFEGUARDS WILL BE ACCEPTABLE ON MINOR STREETS ONLY. ALL BARRICADES, WARNING SIGNS, LIGHT DEVICES, AND ETC., FOR THE GUIDANCE AND PROTECTION OF TRAFFIC AND PEDESTRIANS, MUST CONFORM TO THE INSTALLATION SHOWN IN THE LATEST REVISION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL HANDBOOK, TEXAS DEPARTMENT OF TRANSPORTATION.
15. BRACING OF UTILITY POLES MAY BE REQUIRED BY UTILITY COMPANIES WHEN TRENCHING OR EXCAVATION IS IN CLOSE PROXIMITY TO THE POLES. THE COST OF BRACING POLES WILL BE BORNE BY THE CONTRACTOR. THERE IS NO SEPARATE PAY ITEM FOR THIS WORK. THE COST IS INCIDENTAL TO THE VARIOUS PAY ITEMS FOR INSTALLATION OF THIS PROJECT.
16. THE CONTRACTOR SHALL IMMEDIATELY REPAIR OR REPLACE ANY PHYSICAL DAMAGE TO PRIVATE PROPERTY, INCLUDING, BUT NOT LIMITED TO FENCES, WALLS, PAVEMENT, GRASS, TREES AND LAWN AND IRRIGATION SYSTEMS AT NO COST TO THE OWNER. THIS WORK SHALL BE SUBSIDIARY TO THE CONTRACT UNLESS OTHERWISE NOTED AND IS NOT A SEPARATE PAY ITEM
17. THE CONTRACTOR SHALL REMOVE SURPLUS MATERIAL FROM THE PROJECT AREA. THIS WORK SHALL BE SUBSIDIARY TO THE CONTRACT AND IS NOT A SEPARATE PAY ITEM.
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION
19. CONTRACTOR SHALL VERIFY BENCHMARKS AND DATUM PRIOR TO COMMENCING CONSTRUCTION OR STAKING IMPROVEMENTS.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF DUST AND DIRT RISING AND SCATTERING IN THE AIR DURING CONSTRUCTION AND SHALL PROVIDE WATER SPRINKLING OR OTHER SUITABLE METHODS OF CONTROL. THE CONTRACTOR SHALL COMPLY WITH ALL GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.
21. CONTRACTOR SHALL COMPLY WITH ALL OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) STANDARDS AND REGULATIONS AS WELL AS ANY OTHER APPLICABLE FEDERAL, STATE OR LOCAL HEALTH AND SAFETY STANDARDS, LAWS OR REGULATIONS. FAILURE TO COMPLY WITH THE REQUIREMENTS SPECIFIED SHALL BE CONSIDERED JUST AND SUFFICIENT CAUSE FOR OWNER TO STOP WORK.
22. CONTRACTOR SHALL COMPLY WITH TEXAS HOUSE BILL 1266, EFFECTIVE SEPTEMBER 1, 1999, TO MAINTAIN A VIABLE TRENCH SAFETY SYSTEM AT ALL TIMES AS WELL AS THE U.S. DEPARTMENT OF LABOR, OSHA, "CONT. SAFETY AND HEALTH REGULATION, VOL. 25, 1926 PART P, AND AMENDMENTS THERE TO, SHEETING, SHORING, BRACING AND OTHER TRENCH SAFETY COSTS SHALL BE SUBSIDIARY TO THE COST OF CONSTRUCTION (NO EXTRA PAY).
23. ALL FILL AREAS SHALL BE COMPACTED TO 95% DENSITY. THE COST SHALL BE INCLUDED IN THE PRICE BID FOR EXCAVATION.
24. THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE AND MAINTAIN ALL NECESSARY WARNING AND SAFETY DEVICES TO PROTECT THE PUBLIC-SAFETY AND HEALTH UNTIL ALL WORK HAS BEEN COMPLETED AND ACCEPTED
25. THE LOCATION OS EXISTING UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE UNLESS SPECIFICALLY NOTED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE AND VERIFY UTILITIES THAT MAY CONFLICT WITH CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT 1-800-DIG-TESS (1-800-344-8377) FOR UTILITY LOCATES AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION. IF CONSTRUCTION IS IN THE VICINITY OF EXISTING UTILITIES, THE CONTRACTOR SHALL NOTIFY THE FOLLOWING AS APPLICABLE:

VAN ALSTYNE WATER DEPARTMENT DISPATCH	AT&T
VAN ALSTYNE INDEPENDENT SCHOOL DISTRICT	ATMOS ENERGY
GCEC ELECTRIC	ONCOR ELECTRIC
VERIZON	TIME WARNER

26. STABILIZATION OF DISTURBED AREAS PRIOR TO FINAL ACCEPTANCE:
   A. PUBLIC RIGHT-OF-WAY, EASEMENTS, AND COMMON AREAS MUST BE STABILIZED WITH PERENNIAL VEGETATION COVER. FULL ESTABLISHED WITH 100% COVERAGE, OR OTHER APPROVED METHOD
   B. DETENTION/RETENTION FACILITIES, CHANNELS, DRAINAGE WAYS AND OUTFALLS SHALL HAVE ESTABLISHED PERENNIAL VEGETATION WITH 100% COVERAGE.
27. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING PEDESTRIAN ACCESS AND SIGNAGE AS DIRECTED BY THE CITY
28. THE CONTRACTOR SHALL FIELD VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING UTILITIES SHOWN OR NOT SHOWN. IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR TO REPLACE THEM AT THEIR OWN EXPENSE
29. THE CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE FROM THE PROPOSED BUILDINGS AND NO PONDING IN PAVED AREAS. CONTRACTOR FIELD ADJUSTMENTS TO SPOT GRADES TO MAINTAIN POSITIVE DRAINAGE ARE ALLOWED THE PRIOR APPROVAL OF THE ENGINEER. CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO PAVING IF ANY AREAS OF POOR DRAINAGE ARE ENCOUNTERED
30. THE CONTRACTOR SHALL PROTECT AL MANHOLE COVERS, VALVE COVERS, VAULT LIDS, FIRE HYDRANTS, POWER POLES, GUY WIRES AND TELEPHONE BOXES WHICH ARE TO REMAIN IN PLACE AND UNDISTURBED DURING CONSTRUCTION.
31. A METAL PLATE OR TEMPORARY ASPHALT PAVING PATCH SHALL BE PLACED OVER ANY OPEN CONSTRUCTION TRENCH AT THE END OF EACH WORKDAY. NO OPEN TRENCHES SHALL BE PERMITTED OVERNIGHT.
32. CONTRACTOR SHALL MAINTAIN FIRE EMERGENCY VEHICLE ACCESS TO FIRE HYDRANTS THROUGHOUT THE DURATION OF THE PROJECT
33. IF, IN THE OPINION OF THE ENGINEER, THE TRAFFIC CONTROL BEING PROVIDED BY THE CONTRACTOR IS INADEQUATE IN TERMS OF SAFETY OR UNREASONABLY RESTRICTS TRAFFIC FLOW, THE CONTRACTOR SHALL IMMEDIATELY REVISE THE TRAFFIC CONTROL, INCLUDING ANY SIGNS, BARRICADES, AND PLACEMENT/REMOVAL OF PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER. PAY IS SUBSIDIARY TO THE PAY ITEM FOR TRAFFIC CONTROL.
34. CONTRACTOR SHALL ENSURE THAT NO STORM WATER RUNOFF ENTERS DRAINAGE SYSTEMS OR EATS THE CONSTRUCTION AREA WITHOUT PASSING THROUGH EROSION CONTROL DEVICES.
35. CONTRACTOR SHALL PROVIDE STREET CLEANING ON ADJACENT STREETS AS NECESSARY TO REMOVE EARTHEN MATERIALS TRANSPORTED FROM THE CONSTRUCTION AREA.
36. NO OIL OR HAZARDOUS MATERIALS SHALL BE STORED IN THE CONSTRUCTION AREA.
37. OFF-SITE SOIL BORROW AND SPOIL AREAS ARE CONSIDERED AS PART OF THE PROJECT SITE AND MUST ALSO COMPLY WITH THE EROSION CONTROL REQUIREMENTS FOR THIS PROJECT. THIS INCLUDES THE INSTALLATION OF BMPS TO CONTROL OFF-SITE SEDIMENTATION AND THE ESTABLISHMENT OF PERMANENT GROUND COVER ON DISTURBED AREAS PRIOR TO FINAL APPROVAL OF THE PROJECT

UTILITY CROSSING NOTES

1. TUNNELING AND BORING UNDER CITY STREETS SHALL BE ACCOMPLISHED BY MEANS OF JACKING, BORING, OR TUNNELING EQUIPMENT WITHOUT THE CITY APPROVAL PRIOR TO START OF CONSTRUCTION
2. THE VOIDS OUTSIDE OF THE CARRIER PIPE OR CASING PIPE SHALL BE BACKFILLED BY HYDRAULICALLY PLACED MATERIAL SO THAT THERE ARE NO OPEN VOIDS OVER THE ROOF OF THE TUNNEL OR BORE. THIS SHALL BE DONE WITHOUT DAMAGE TO THE ROADWAY STRUCTURE.
3. ALL BORE PITS, TRENCHES, AND INSPECTION HOLES SH

WATER AND SANITARY SEWER GENERAL NOTES

1. THE CONSTRUCTION OF WATER AND SANITARY SEWER MAINS, MANHOLES AND SERVICES SHALL COMPLY WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) RULES (CHAPTER 217)
2. CONTRACTOR IS RESPONSIBLE FOR ALL TRENCH SAFETY. THE CONTRACTOR SHALL CONSTRUCT THE PROPOSED WORK UTILIZING A TRENCH SAFETY PLAN, PREPARED BY A PROFESSIONAL ENGINEER FOR THIS PROJECT. A TRENCH SAFETY PLAN SHALL BE SUBMITTED AT THE PRE-CONSTRUCTION MEETING.
3. THE EXISTENCE AN LOCATIONS OF ALL UNDERGROUND UTILITIES SHOWN ON THE DRAWINGS WERE OBTAINED FROM AVAILABLE RECORDS AND ARE APPROXIMATE. NEITHER THE OWNER NO THE ENGINEER ASSUMES ANY RESPONSIBILITY FOR UTILITIES NOT SHOWN OR NOT IN THE LOCATION SHOWN. THE CONTRACTOR SHALL DETERMINE THE DEPTH AND LOCATION OF EXISTING UNDERGROUND UTILITIES PRIOR TO TRENCHING AND SHALL BE REQUIRED TO TAKE ANY PRECAUTIONARY MEASURES TO PROTECT ALL LINES SHOWN AND/OR ANY OTHER UNDERGROUND UTILITIES NOT OF RECORD OR NOT SHOWN ON THE PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL FRANCHISE AND CITY UTILITIES PRIOR TO CONSTRUCTION.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING GENERAL SAFETY AT AND ADJACENT TO THE PROJECT AREA, INCLUDING THE PERSONAL SAFETY OF THE CONSTRUCTION CREW AND GENERAL PUBLIC AND THE SAFETY OF PUBLIC AND PRIVATE PROPERTY. CONTRACTOR SHALL PROVIDE TEMPORARY SANITARY SEWER FACILITIES TO AFFECTED PROPERTY OWNERS, IF NECESSARY. NOT A SEPARATE PAY ITEM.
5. WHEN IT IS REQUIRED THAT A CONTRACTOR WORK IN PRIVATE PROPERTY, THE CONTRACTOR SHALL CONTACT THE PROPERTY OWNER 48 HOURS PRIOR TO CONSTRUCTION. ONCE THE PIPE HAS BEEN INSTALLED OR REHABILITATED, THE CONTRACTOR SHALL IMMEDIATELY COMMENCE SURFACE RESTORATION. SURFACE RESTORATION MUST BE COMPLETED TO THE OWNER'S SATISFACTION WITHIN TEN (10) WORKING DAYS. FAILURE TO MAINTAIN SITE RESTORATION, AS NOTED ABOVE, MAY RESULT IN DEFERMENT OF FURTHER PIPE INSTALLATION ACTIVITIES.
6. PROPOSED UTILITIES AT TIMES WILL BE LAID CLOSE TO OTHER EXISTING UTILITIES AND STRUCTURES BOTH ABOVE AND BELOW GROUND. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS FOR THE SUPPORT AND PROTECTION OF ALL UTILITY POLES, GAS MAINS, TELEPHONE CABLES, SANITARY SEWER LINES, WATER LINES, POWER CABLES, DRAINAGE PIPES, UTILITY SERVICES AND ALL OTHER UTILITIES AND STRUCTURES BOTH ABOVE BELOWGROUND DURING CONSTRUCTION. THE CONTRACTOR IS LIABLE FOR ALL DAMAGES DONE TO SUCH EXISTING FACILITIES AS A RESULT OF THE CONTRACTOR'S OPERATIONS.
7. WORK MAY NOT BE BACKFILLED OR COVERED UNTIL IT HAS BEEN INSPECTED BY THE CITY.
8. THE CONSTRUCTION OF SANITARY SEWER AND WATER MAINS, SERVICES, LATERALS, AND MANHOLES SHALL COMPLY WITH TEXAS COMMISSION ON ENVIRONMENTAL QUALITY (TCEQ) RULES CHAPTER 217
9. MANHOLES SHALL HAVE 32" RING AND COVERS. COVERS TO BE PROVIDED BY THE CITY. NEW MANHOLES SHALL BE LINED WITH 100 MIL SPRAY WALL PCM OR APPROVED EQUAL.
10. SANITARY SEWER LINES SHALL HAVE A MINIMUM COVER OF 4' EXCEPT WHERE SHOWN OTHERWISE IN THESE PLANS.
11. WATER LINES SHALL HAVE A MINIMUM COVER OF 5' EXCEPT WHERE SHOWN OTHERWISE IN THESE PLANS.
12. TRACER TAPE IS TO BE INSTALLED ALONG THE MAJOR AXIS OF ALL NON-METALIC WATER AND SANITARY SEWER PIPES ONE FOOT (1') ABOVE TOP OF PIPE. THE TAPE IS TO BE TWO INCHES (2") WIDE, CONSISTING OF A METAL STRIP COATED WITH A CORROSION RESISTANT SUBSTANCE. THE TAPE MUST BE DETECTABLE BY A METAL DETECTION DEVICE TO A MINIMUM DEPTH OF FOUR FEET (4'). THE TAPE SHALL BE TWO INCHES (2") WIDE ALARMALINE OR APPROVED EQUAL.
13. CONTRACTOR SHALL CONDUCT A PRE-CONSTRUCTION TELEVISION INSPECTION OF ALL EXISTING SANITARY SEWER LINES, WHICH ARE TO BE ABANDONED OR REHABILITATED VIA TRENCHLESS METHODS, TO VERIFY LOCATION OF ALL SEWER SERVICE CONNECTIONS PRIOR TO CONSTRUCTION OF ENTIRE PROJECT.
14. CONTRACTOR SHALL ENSURE THAT ALL ACTIVE SERVICES CAN BE RECONNECTED AND/OR REROUTED TO NEW SEWER MAIN/LATERAL. CONTRACTOR SHALL NOTIFY THE CITY AND ENGINEER OF ANY POTENTIAL CONFLICTS PRIOR TO CONSTRUCTION SO MODIFICATIONS TO THE PLANS CAN BE MADE IF NECESSARY. NOT A SEPARATE PAY ITEM. THIS WORK SHALL BE SUBSIDIARY TO PRE-CONSTRUCTION TELEVISION INSPECTION OF SANITARY SEWER LINES.
15. CONTRACTOR SHALL VERIFY THAT ALL CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE FOR SANITARY SEWER ONLY. CONTRACTOR SHALL NOTIFY CITY OF ALL KNOWN ILLICIT CONNECTIONS.
16. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING WATER AND SEWER CONNECTIONS TO ALL HOMES AND BUSINESSES IN WORKING ORDER AT ALL TIMES, EXCEPT FOR BRIEF INTERRUPTIONS IN SERVICE FOR SEWER SERVICES TO BE REINSTALLED. IN NO CASE SHALL SERVICES BE ALLOWED TO REMAIN OUT OF SERVICE OVERNIGHT.
17. THE CONTRACTOR SHALL BE LIABLE FOR ALL DAMAGES TO PROPERTIES HOMES, AND BASEMENTS FROM BACKUP, WHICH MAY RESULT DURING THE INSTALLATION OF THE NEW PIPE AND/OR ABANDONMENT OF EXISTING PIPE. THE CONTRACTOR WILL BE ALLOWED TO OPEN CLEAN OUTS WHERE AVAILABLE. THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL CLEAN UP ASSOCIATED WITH OPENING CLEAN OUT.
18. ALL SANITARY SEWER MAINS SHALL MAINTAIN A MINIMUM FLOW VELOCITY OF TWO (2) FEET PER SECOND. CONSTRUCT IN ACCORDANCE WITH PLANS AND SPECIFICATIONS.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING "AS-RECORDED" PLANS TO THE ENGINEER OF RECORD SHOWING THE LOCATION OF SEWER SERVICES BY DISTANCE TO THE LOT LINES OR PROPERTY LINES. THIS INFORMATION SHALL BE PLACED ON THE ENGINEERING PLANS AND MARKED "RECORD DRAWING" PLANS ALONG WITH THE DATE AND THE NAME OF THE CONTRACTOR BY THE ENGINEER OF RECORD. COPIES OF THESE "RECORD DRAWING" PLANS SHALL BE FURNISHED TO THE CITY ON MYLARS, BLACKLINE PRINTS, AND ELECTRONICALLY. TIES SHALL BE MADE BY DISTANCE MEASUREMENTS FOR ALL MANHOLES, CLEANOUTS AND SERVICES. TV INSPECTIONS, LOW PRESSURE AIR TESTING, VACUUM TESTING OF THE MANHOLES, AND DEFLECTION TESTING ARE REQUIRED ON ALL SEWER LINES, PRIOR TO PAVING. ALL RESIDENTIAL SANITARY SEWER SERVICES SHALL HAVE TV INSPECTIONS.
20. THE CONTRACTOR SHALL PROVIDE A DVD RECORD OF A TV CAMERA VIDEO OF THE INSTALLED SANITARY SEWER.
21. HORIZONTAL BLOCKING FOR WATER LINES HAS BEEN OMITTED FOR CLARITY. HORIZONTAL BLOCKING SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATION FOR PUBLIC WORKS CONSTRUCTION, FOURTH EDITION - NORTH CENTRAL TEXAS.
22. CORPORATION STOPS SHALL BE TESTED FOR FULL FLOW WHEN THE SYSTEM PRESSURE IS TESTED.
23. ALL NEW WATER MAINS SHALL BE FULLY PURGED. DO NOT TEST AGAINST EXISTING VALVES WHEN CONNECTING TO EXISTING MAINS.
24. CONTRACTOR SHALL INSTALL CHLORINATION AND SAMPLING POINTS AT NECESSARY LOCATIONS.
25. ALL 6", 8", 10", AND 12" WATER MAINS SHALL BE PVC AWWA C900, CLASS 150 PVC PIPE.
26. ALL SANITARY SEWER PIPE SHALL BE PVC SDR-26 IN ACCORDANCE WITH ASTM D-3034 OR ASTM D-2241 AS SHOWN ON THE PLANS. MINIMUM PIPE SIZE SHALL BE 8 INCH DIAMETER UNLESS SPECIFICALLY APPROVED.
27. ALL 4 INCH DIAMETER SANITARY SEWER SERVICE LATERALS SHALL BE SDR-26
28. ALL SANITARY SEWER MAINS ARE TO BE SDR-26 PRESSURE PIPE (150 PSI MINIMUM) IN ACCORDANCE WITH ASTM D-2241 WHEN WATER AND SANITARY SEWER CROSSINGS OCCUR WITHIN A 9-FT RADIUS. THE VERTICAL SEPARATION MUST BE A MINIMUM OF 2-FT BETWEEN THE OUTSIDE DIAMETERS OF PIPES AND THE HORIZONTAL SEPARATION MUST BE A MINIMUM OF 4-FT BETWEEN THE OUTSIDE DIAMETERS OF PIPE. WHERE A SANITARY SEWER PIPE CROSSES OVER A WATER LINE, REFER TO THE ENCASSEMENT AND LOCATION REQUIREMENTS IN THE TCEQ RULES (CHAPTER 217).
29. FIRE HYDRANTS SHALL BE WATEROUS PACER MODEL WITH STORZ CONNECTIONS PAINTED SILVER WITH CAPS PAINTED BASED ON GPM AND 1" REFLECTIVE TAPE MATCHING GAV COLOR.
30. THE NORMAL LOCATION OF WATER SERVICE LINES SHALL BE IN THE PARKWAY IN FRONT OF THE PROPERTY AND 2' TO EITHER SIDE OF THE COMMON PROPERTY LINE.
31. UNLESS OTHERWISE NOTED, GATE VALVES SHALL BE INSTALLED TO LINE UP WITH PROPERTY CORNERS
32. VALVES, INCLUDING TAPPING VALVES, SHALL BE RESILIENT SEAT FULL BODY GATE VALVES.
33. ALL DIRECT BURIAL VALVES SHALL BE PROVIDED WITH CAST IRON VALVE BOXES WITH PVC STACKS. VALVE STACKS SHALL BE VERTICAL AND CONCENTRIC WITH THE VALVE STEM. STAINLESS STEEL VALVE EXTENSIONS ARE REQUIRED ON ALL VALVES WHERE THE OPERATING NUT IS GREATER THAN 4-FEET BELOW FINISHED GRADE.
34. METER BOXES SHALL BE AS APPROVED BY THE CITY OF VAN ALSTYNE. CONTACT THE CITY ENGINEER FOR SPECIFICATIONS. METER BOXES SHALL BE RECTANGULAR (24"X36") WITH DISC INSET.
35. INSTALL MEGALUG JOINT RESTRAINTS, MANUFACTURED BY EBAA IRON INC. OR APPROVED EQUAL, ON ALL IRON WATER LINE FITTINGS
36. ALL EXPOSED BOLTING ON ANY BURIED EQUIPMENT OR MATERIAL SHALL BE STAINLESS STEEL. THIS INCLUDES THE FOLLOWING
    A. BONNET AND STUFFING BOX BOLTS ON VALVES
    B. SHOE BOLTS ON FIRE HYDRANTS.
    C. FLANGE BOLTS

    COR-TEN MECHANICAL JOINT "T" BOLTS ARE ACCEPTABLE FOR DIRECT BURIAL SERVICE.
37. REPLACE EXISTING WATER METERS WITH COMPARABLE SIZE NEPTUNE T-400 WITH FULL WARRANTY FROM MANUFACTURER.
38. THE CONTRACTOR SHALL ADJUST THE TOPS OF ALL MANHOLES, VALVES, METER BOXES, FIRE HYDRANTS AND OTHER UTILITY APPURTENANCES TO FIT THE FINISHED PAVING AND SHOULDERS. THERE WILL BE NO SEPARATE PAY ITEM FOR THIS WORK AND THE COST SHALL BE INCLUDED IN THE PRICED BID FOR OTHER ITEMS.
39. ROUGH GRADING IS TO BE DONE PRIOR TO CONSTRUCTION OF UTILITIES.
40. BACKFILL OF EXCAVATIONS SHALL BE SELECT NATIVE MATERIAL COMPACTED IN MAXIMUM 8" LIFTS TO A MINIMUM OF 95% OF STANDARD PROCTOR DENSITY AS DETERMINED BY LABORATORY TEST. THIS APPLIES TO:
    A. UTILITY EXCAVATIONS ABOVE THE UTILITY EMBEDMENT MATERIAL
    B. STRUCTURAL EXCAVATIONS AND OTHER NON-UTILITY EXCAVATIONS.
    C. IN AREAS OF NEW CONSTRUCTION.
    D. AREAS OF UTILITY REPLACEMENT AND/OR UNDER EXISTING STREETS AND ALLEYS.

EROSION CONTROL NOTES

1. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL EROSION CONSERVATION AND SILTATION ORDINANCES. THE CONTRACTOR SHALL USE SEDIMENT FILTERS OR OTHER MEASURES APPROVED BY THE ENGINEER AND CONSTRUCTION MANAGER TO PREVENT SILT AND CONSTRUCTION DEBRIS FROM CLOGGING STORM SEWER PIPES OR PROPOSED OR EXISTING INLETS, OR FROM BEING TRANSPORTED TO ADJACENT PROPERTIES AND STREET RIGHT-OF-WAYS. ALL EROSION CONTROL DEVICES SHALL BE INSTALLED PRIOR TO SITE DISTURBANCE AND SHALL STABILIZATION IS ACHIEVED.
2. CONSTRUCTION OPERATIONS SHALL BE MANAGED SO THAT AS MUCH OF THE SITE AS POSSIBLE IS LEFT COVERED WITH EXISTING TOPSOIL AND VEGETATION.
3. ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED SMOOTH. THE AREAS SHALL THEN BE SEEDED (OR SODDED), IRRIGATED AND MAINTAINED UNTIL PERMANENT STAND OF GRASS IS ACHIEVED WITH A MINIMUM OF 75% COVERAGE. UNLESS OTHERWISE NOTED, PRIVATE LAWN AREAS AND PARKWAYS IN FRONT OF PRIVATE LAWN AREAS DISTURBED BY CONSTRUCTION SHALL BE REPLACED WITH BLOCK SOD SIMILAR TO THAT EXISTING. AREAS OUTSIDE OF PARKING SHALL BE STABILIZED IMMEDIATELY AFTER PAVING PLACEMENT. FAILURE TO BEGIN STABILIZATION OF THESE AREAS MAY RESULT IN DELAYS FOR BUILDING PAD
4. CONTRACTOR IS RESPONSIBLE FOR PROPER MAINTENANCE OF THE REQUIRED EROSION CONTROL DEVICES THROUGHOUT THE ENTIRE CONSTRUCTION PROCESS. EROSION CONTROLS SHALL BE REPAIRED OR REPLACED AN INSPECTION DEBRIS NECESSARY, OR AS DIRECTED BY THE OWNER'S REPRESENTATIVE. ACCUMULATED SILT IN THE EROSION CONTROL DEVICE SHALL BE REMOVED AND SHALL BE DISTRIBUTED ON SITE IN A MANNER NOT CONTRIBUTING TO ADDITIONAL SILTATION. THE CONTRACTOR IS RESPONSIBLE FOR RE-ESTABLISHING ANY EROSION CONTROL DEVICE WHICH IS DISTURBED.
5. THE CONTRACTOR SHALL MAINTAIN ADEQUATE SITE DRAINAGE DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR SHALL USE FILTER BARRIER (OR OTHER METHOD APPROVED BY THE ENGINEER AND CITY) AS REQUIRED TO PREVENT ADVERSE OFFSITE IMPACTS ON STORM WATER QUALITY FROM SILT AND CONSTRUCTION DEBRIS FLOWING ONTO ADJACENT PROPERTIES AS REQUIRED BY THE CITY.
6. BEFORE ANY EARTHWORK IS DONE THE CONTRACTOR SHALL STAKE OUT AND MARK THE LIMITS OF CONSTRUCTION AND OTHER ITEMS ESTABLISHED BY THE PLANS. THE CONTRACTOR SHALL PROTECT AND PRESERVE CONTROL POINTS AT ALL TIMES DURING THE COURSE OF THE PROJECT. THE GRADING CONTRACTOR SHALL PROVIDE ALL NECESSARY ENGINEERING AND SURVEYING FOR LINE AND GRADE CONTROL POINTS RELATED TO EARTHWORK.
7. CONCRETE CUTTING WASTE MUST BE PROPERLY REMOVED AND DISPOSED OF

PAVING AND STRIPING NOTES

1. ALL SIGNS, PAVEMENT MARKINGS AND OTHER TRAFFIC CONTROL DEVICES REQUIRED FOR THE PROJECT SHALL CONFORM TO THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (TMUTCD).
2. RAISED PAVEMENT MARKERS SHALL BE BONDED TO THE ROADWAY SURFACE WITH ADHESIVE CONFORMING TO THE MANUFACTURER'S RECOMMENDATIONS.
3. THE PAVEMENT UPON WHICH THE LANE AND PAVEMENT MARKERS ARE TO BE PLACED SHALL BE PREPARED TO THE APPROVAL OF THE INSPECTOR TO ENSURE PROPER CLEANING OF THE PAVEMENT SURFACE.
4. ALL TRAFFIC STRIPING SHALL BE EXTRUDED THERMOPLASTIC MARKING MATERIAL.
5. SIGN LOCATIONS AND INSTALLATIONS SHALL BE IN ACCORDANCE WITH CITY STANDARDS. THE CONTRACTOR SHALL REVIEW LOCATION OF ALL TRAFFIC CONTROL DEVICES WITH THE CITY PRIOR TO INSTALLATION.
6. THE PAVING CONTRACTOR SHALL REFER TO THE IRRIGATION PLANS AND M.E.P. PLANS FOR LOCATION OF PROPOSED SLEEVING AND CONDUITS.
7. ALL HANDICAP RAMPING, STRIPING AND PAVEMENT MARKINGS SHALL CONFORM TO THE AMERICANS WITH DISABILITIES ACT OF 1994 AND THE TEXAS ARCHITECTURAL BARRIERS ACT OF 1994, AND ALL ADDENDUMS OR UPDATES.
8. THE CONTRACTOR SHALL SUBMIT A PAVEMENT JOINTING PLAN TO THE ENGINEER AND OWNER PRIOR TO THE BEGINNING OF ANY CONCRETE PAVEMENT WORK.
9. ANY EXISTING CONCRETE OR ASPHALT TO BE REMOVED SHALL BE PROPERLY DISPOSED OF BY THE CONTRACTOR OFFSITE. THIS WORK SHALL BE SUBSIDIARY TO THE CONTRACT AND IS NOT A SEPARATE PAY ITEM.
10. THE PAVING CONTRACTOR AND THE UTILITY CONTRACTOR SHALL COORDINATE WITH THE BUILDING CONTRACTORS TO ENSURE THAT ALL UTILITY SERVICE CONNECTIONS AND CONDUITS ARE IN PLACE PRIOR TO BEGINNING ANY PAVING ACTIVITIES.
11. STORM SEWER LINES SHALL BE LAID WITH CLASS "B+" EMBEDMENT PER NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS (NCTCOG) DETAIL 5030 UNLESS OTHERWISE NOTED ON THE PLANS.
12. SIDEWALK AND DRIVEWAY GEOMETRICS SHALL CONFORM TO STATE AND FEDERAL ACCESSIBILITY STANDARDS.
13. SIDEWALKS SHALL BE FREE DRAINING; LOW SPOTS THAT POND WATER ARE UNACCEPTABLE.
14. SIDEWALKS SHALL DRAIN TOWARDS THE STREET CURB LINE. THE PARKWAY MUST BE ELEVATED A MINIMUM OF ONE FOURTH (¼) OF AN INCH PER FOOT ABOVE THE TOP OF CURB.
15. SIDEWALK CROSS SLOPE AND PATHWAY ACROSS A DRIVEWAY APPROACH SHALL NOT EXCEED 1.5% AT THE TIME OF ACCEPTANCE. EXISTING SLOPES SHALL BE NO MORE THAN 2% OR THE MAXIMUM ALLOWED BY THE AMERICANS WITH DISABILITIES ACT (ADA)
16. LONGITUDINAL ALIGNMENT AND GRADE SHALL FOLLOW THE STREET
17. STANDARD ADA SIDEWALK RAMPS ARE REQUIRED AT DRIVEWAYS, ALLEYS, AND STREET INTERSECTIONS
18. RUNNING SLOPE OF A RAMP SHALL BE EQUAL TO OR LESS THAN 1:12. SLOPES GREATER THAN 1:12 SHALL BE RECONSTRUCTED TO COMPLY WITH ADA STANDARDS
19. SIDEWALK CRACKS THAT HAVE SEPARATED - EITHER HORIZONTALLY OR VERTICALLY - AND DO NOT PRESENT A TRIPPING HAZARD ARE ACCEPTABLE AND REPLACEMENT IS NOT REQUIRED. THE AFFECTED AREA OF SIDEWALKS WITH CRACKS OR JOINTS THAT ARE MISALIGNED VERTICALLY BY THREE FOURTHS (¾) OF AN INCH OR MORE OR HAVE HORIZONTAL SEPARATION OF THREE FOURTHS (¾) OF AN INCH OR MORE SHALL BE REPLACED
20. ALL EXISTING SIDEWALK CONTAINING SPALLED SURFACES SHALL BE REPLACED
21. TREE ROOTS PROTRUDING MORE THAN 4 INCHES INTO THE SIDEWALK PATH OR TREE ROOTS THAT PROMPT REPAIR OF THE SIDEWALK SHALL BE SAWCUT AND REMOVED TO ALLOW THE SIDEWALK TO BE PLACED ON PROPER ALIGNMENT AND GRADE.
22. SITE CONDITIONS MAY DICTATE THAT ADDITIONAL DRIVEWAY PAVING BE REPLACED DUE TO EXCESSIVE CRACKING, SPALLING, GRADE ADJUSTMENT TO NEW SIDEWALK, CURB CONDITIONS OF DRIVEWAY, ETC.
23. ALL AFFECTED AREAS OF APPLIED OR FRACTURED CURB AND GUTTER SHALL BE REPLACED
24. ALL PAVING REMOVE SHALL BE SAW CUT TO A NEAT LINE AND REMOVED.

STORM SEWER NOTES

1. REINFORCED CONCRETE PIPE ONLY (21" MINIMUM).
2. STORM SEWER CONNECTIONS FOR NEW INTERCEPTING MAINS AND LATERALS INTO NEW TRUNK MAINS SHALL BE FACTORY WYES FOR 48" AND SMALLER PIPE
3. JOINT MATERIALS PERMITTED ARE AS FOLLOWS:
    A. RAM-NECK
    B. CON-SEAL
    C. CEMENT GROUT
4. IF REINFORCED BOX CULVERT IS REQUIRED, CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR CITY APPROVAL.

811 Know what's below. Call before you dig.

!WARNING!!
EXISTING UTILITIES IN THE AREA DESCRIBED ON THIS PLAN ARE SHOWN AS ACCURATELY AS POSSIBLE BASED ON THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE OWNER IF ANY UTILITIES ENCOUNTERED IS NOT IN ACCORDANCE. RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES (WHETHER OR NOT SHOWN) IF ANY ARE FOUND TO BE DAMAGED, THE CONTRACTOR SHALL REPAIR AT THEIR OWN EXPENSE

DATE	REVISIONS	No

Kimley»Horn
© 2019 KIMLEY-HORN AND ASSOCIATES, INC.
CONTACT: JOHN DOE, P.E.
PHONE: 972-770-1300

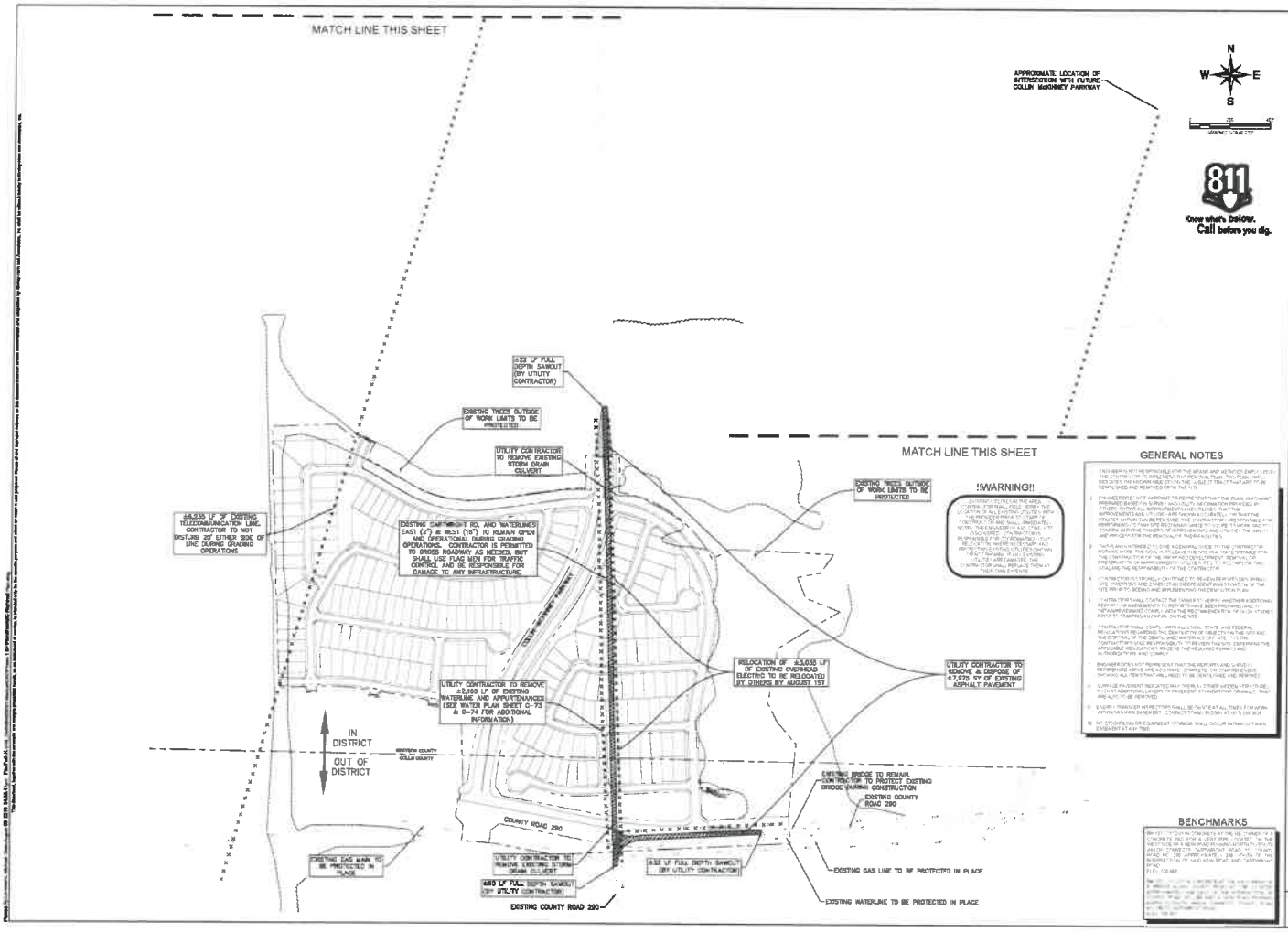
PRELIMINARY
Kimley»Horn
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF JOHN W. BISHOP, P.E. TX No. 123456 on 8/28/2018. IT IS NOT TO BE USED FOR CONSTRUCTION OR BIDDING PURPOSES.

KHA PROJECT NUMBER	069111000
DATE	AUGUST 2018
SCALE	AS SHOWN
DESIGNED BY	MPM
DRAWN BY	MPM
REVIEWED BY	TJC

GENERAL NOTES

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-08B



No.	REVISIONS	DATE	BY

Kimley»Horn

PRELIMINARY

NOT FOR CONSTRUCTION OR RECORDING PURPOSES

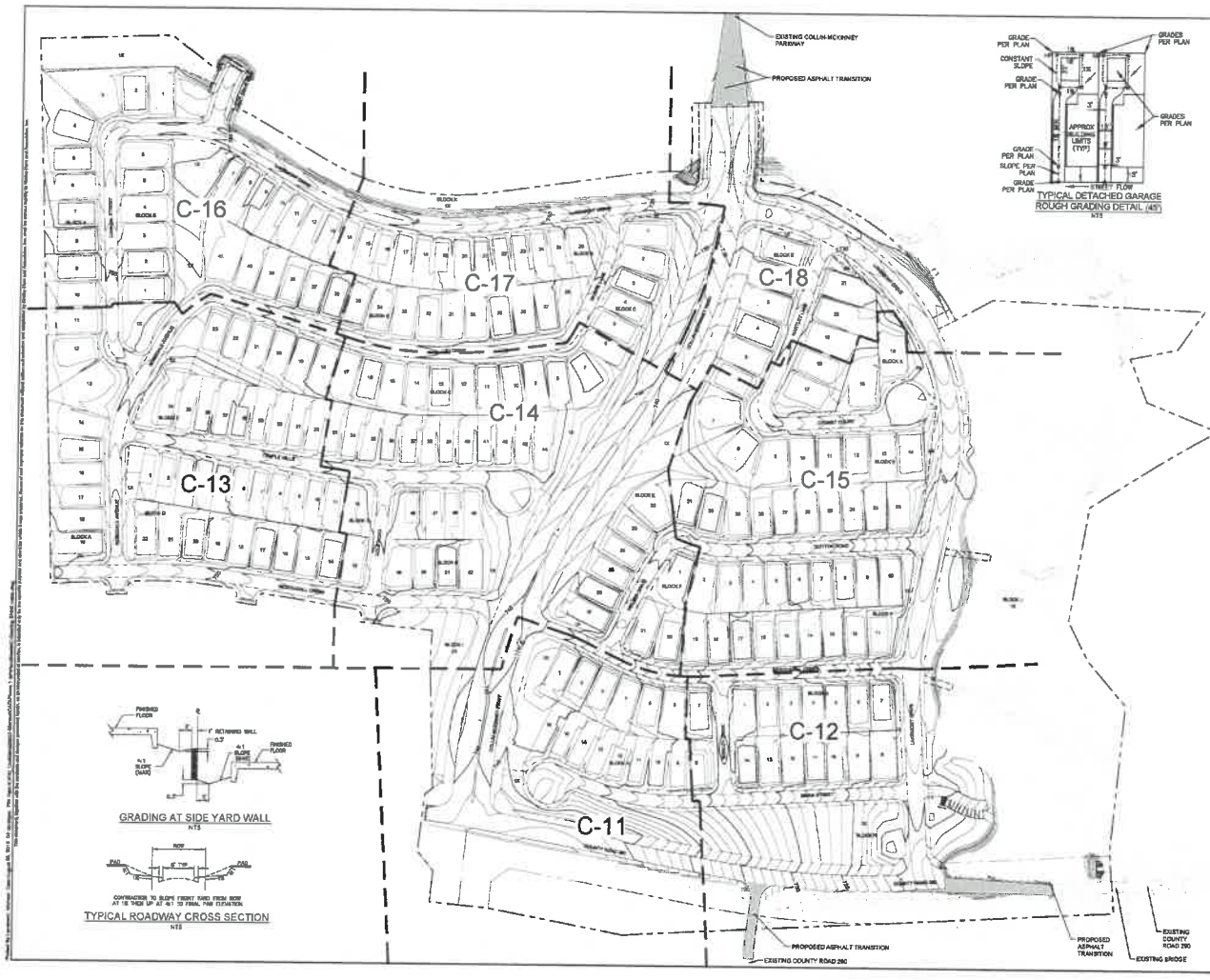
Kimley»Horn

NVA PROJECT NUMBER	
DATE	AUGUST 2019
H.R.	AS SHOWN
DESIGNED	PHG
DRAWN BY	TGC
CHECKED BY	

DEMOLITION AND REMOVAL PLAN

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-09

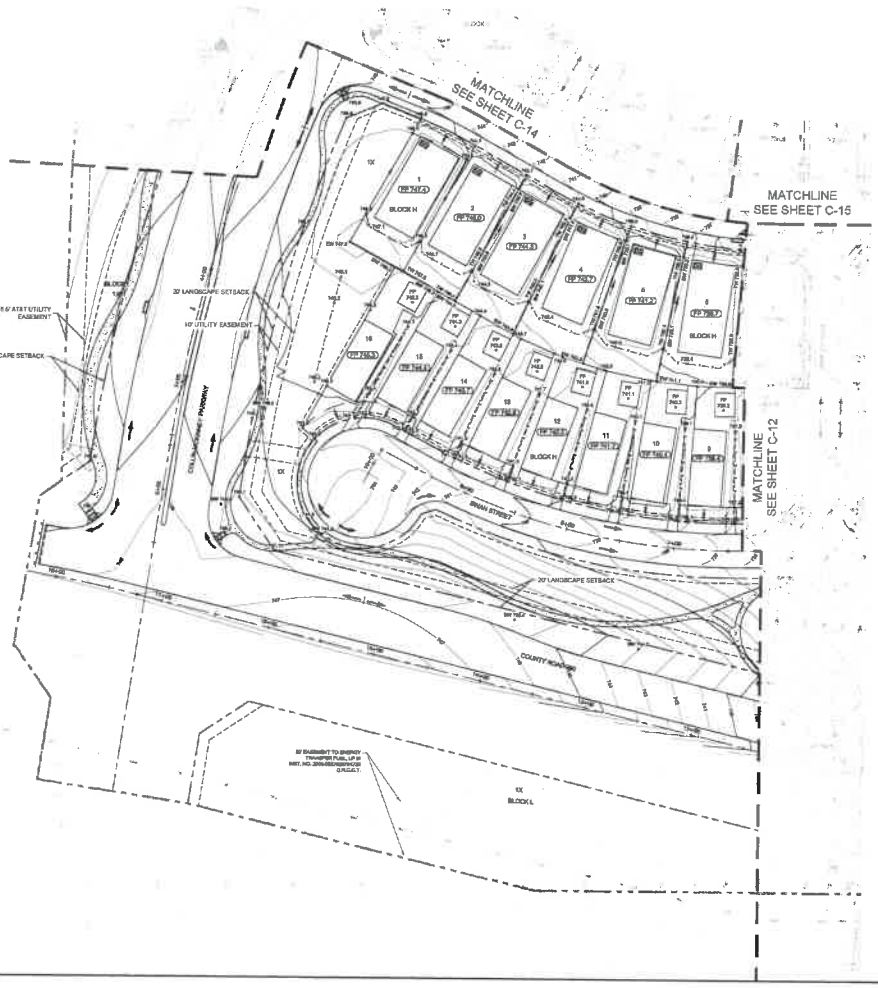


Kimley»Horn

MANTUA POINT
PHASE 1
CITY OF VINCALESTINE
GRAYSON AND COLLIN COUNTY, TEXAS

GRADING SHEET INDEX

SHEET NUMBER
C-10



GRADING GENERAL NOTES

CONTRACTOR SHALL CUT 6 BEHIND BACK OF CURB TO SUBGRADE ELEVATION.

SURVEY SET PRIVATE RETAINING WALL LOCATED IN PRIVATE LOT TO BE MAINTAINED BY THE PROPERTY OWNER.

4. FINAL CIVIL, ARCHITECTURAL DESIGN & RETAINING WALL DESIGNS BY OTHERS.

5. THE ENGINEER OF ALL STRUCTURE RETAINING WALLS DEPICTED ABOVE ELEVATION, STRUCTURAL ELEVATION, ARE TO INSTALL & MAINTAIN SAFE STRUCTURAL INTEGRITY OF THE

6. ALL PROPOSED SLOPES TO NATURAL GROUND ARE 3:1 (BE 4:1 MAX) UNLESS OTHERWISE NOTED.

7. ALL SIDEWALKS SHALL MAINTAIN A MAXIMUM 2% CROSS SLOPE AND 5% LONGITUDINAL SLOPE.

ALL GRADES SHALL BE CONTRACTED IN STRUCTURE WITH NO TRAVELWAY AND NOT IN THE LATE FOOTPRINT OF THE TRAVELWAY OR SIDEWALK. TRANSITIONS.

PROPOSED CONTOURS ARE FOR REFERENCE ONLY. CONTRACTOR TO SUPPLY ELEVATION FOR PROPOSED CONSTRUCTION.

9. SEE LANDSCAPE PLANS FOR TREE AND HARDSCAPE DETAILS AND FINE GRADING.

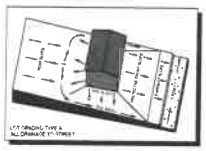
10. ALL GRADING AND MATERIALS OF NEW RETAINING WALL OTHERWISE WITHIN THE RECOMMENDATION CONTAINED IN THE PRELIMINARY GEOTECHNICAL REPORT WITH 3 PREPARED BY ALPHA TESTING AND DATED MAY 28, 2019 AND SEAL 13.02 PREPARED BY ALLIANCE GEOTECHNICAL, APPROVING DATED 8/1/2019 2019.

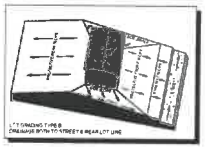
!WARNING!!

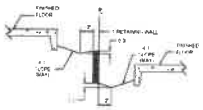
ENTERING UTILITIES IN THE AREA CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IF ANY UTILITY IS FOUND TO BE IN CONFLICT WITH PROPOSED IMPROVEMENTS. RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PRIOR TO ANY UTILITIES CAN BE RELOCATED. THE UTILITIES EXISTING PLANS ARE BASED ON CONTRACTOR SHALL REPAIR THEM AT THEIR OWN EXPENSE

LEGEND

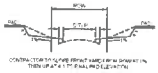
PROPOSED TYPE A WALL ELEVATION
PROPOSED BOTTOM WALL ELEVATION
PROPOSED END WALL ELEVATION
PROPOSED REAR LOT WALL
LOT DRAINAGE FLOW DIRECTION
STREET DRAINAGE FLOW DIRECTION
PROPOSED RETAINING WALL
EXPOSED FACE OF RETAINING WALL
INDICATES SIDE OF LOT DRAINAGE EXCEPTION MUST BE LOCATED ONE TO ONE DIFFERENTIAL TO CONTOUR
CURVED BEAM BR CURBS
PROPOSED CONTOUR
EXISTING CONTOUR
EXISTING TREE TO REMAIN
PROPOSED TREE PROTECTION FENCE







GRADING AT SIDE YARD WALL
NTS



TYPICAL ROADWAY CROSS SECTION
NTS

BENCHMARKS

BM 101 - 1/4" DIA IN CONCRETE AT THE NE CORNER OF A CONCRETE PAD, 5'W X 10'LONG PIPE, LOCATED ON THE NORTH SIDE OF NEW ROAD APPROXIMATELY 1' SOUTH OF THE NORTH EDGE OF NEW ROAD, APPROXIMATELY 300' WEST OF THE INTERSECTION OF SAID NEW ROAD AND JAPHET ROAD.
ELEV 730.607

No.	REVISIONS	DATE	BY

Kimley»Horn
© 2019 KIMLEY-HORN AND ASSOCIATES, INC.
12700 PARK CENTRAL DRIVE, SUITE 1800
DALLAS, TEXAS 75251
PHONE: 972-770-1300
WWW.KIMLEY-HORN.COM
TBPE FIRM REGISTRATION #: F-928

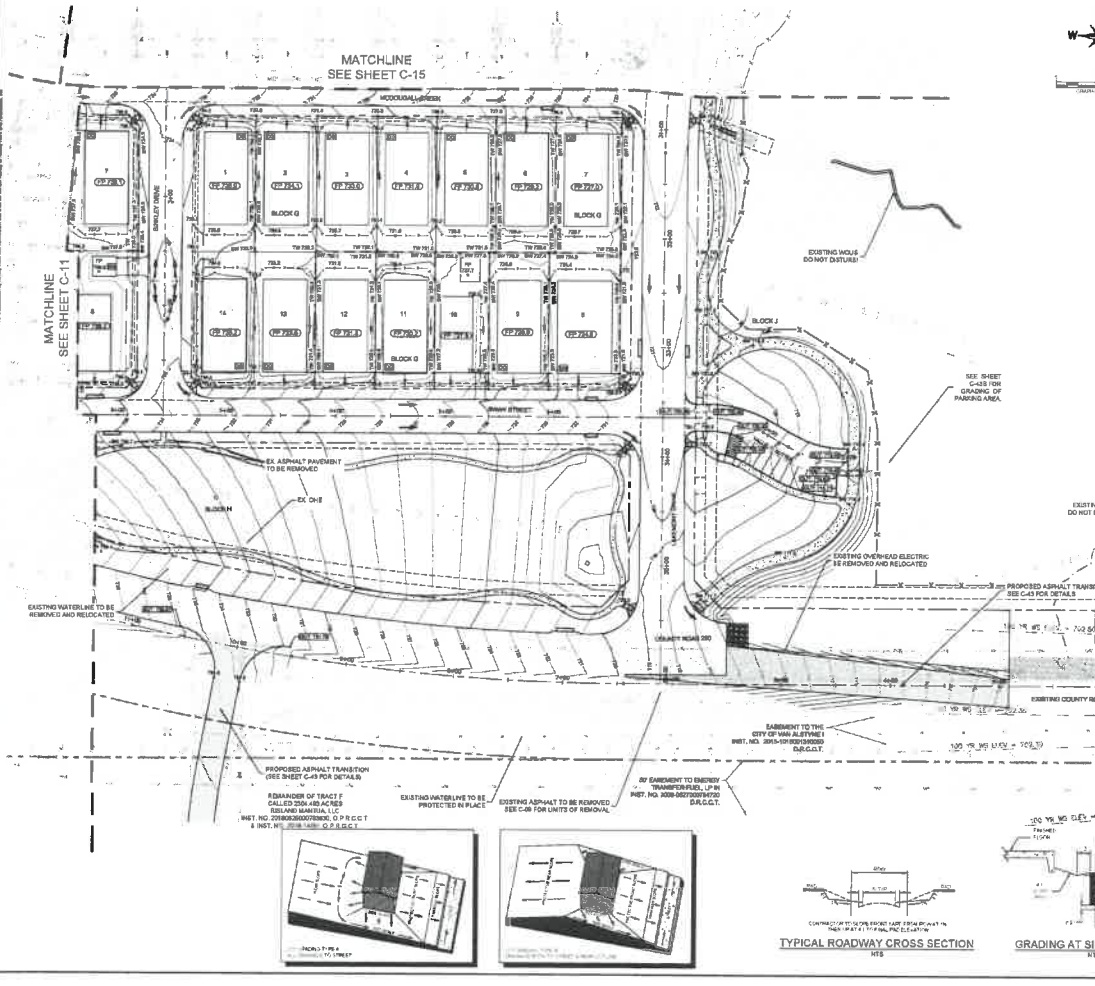
PRELIMINARY
NOT FOR CONSTRUCTION OR PERMIT PURPOSES
Kimley»Horn
Date: 08/21/2019
Date: 08/21/2019

KHA PROJECT NO. 069155001
DATE AUGUST 2019
SCALE AS SHOWN
DESIGNED PHC
DRAWN PHC
CHECKED TGC

GRADING PLAN

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-11



LEGEND

	PROPERTY LINE
725.00	PROPOSED FINISHED PAD ELEVATION
725.0	PROPOSED SPOT ELEVATION
TW 725.0	PROPOSED TOP OF WALL ELEVATION
BW 725.0	PROPOSED BOTTOM OF WALL ELEVATION
EW 725.0	PROPOSED END WALL ELEVATION
	PROPOSED REAR LOT WALL
	LITTER/DRAINAGE FLOW DIRECTION
	STREET DRAINAGE FLOW DIRECTION
	PROPOSED RETAINING WALL
A A	EXPOSED FACE OF RETAINING WALL
*	INDICATES SIDE OF LOT WHERE DRAINAGE MUST BE LOCATED DUE TO GRADE DIFFERENTIAL OR CONFLICT
EB	EXPOSED BEAM BELOW WALL
365	PROPOSED CONTOUR
	EXISTING CONTOUR
	EXISTING TREE TO REMAIN
X X	PROPOSED TREE PROTECTION FENCE

GRADING GENERAL NOTES

1. CONTRACTOR SHALL CUT & FILL BEHIND BACK OF CURB TO SUB-GRADE ELEVATION.
2. PROPOSED PRIVATE RETAINING WALL LOCATED ON PRIVATE LOT TO BE MAINTAINED BY THE PROPERTY OWNER.
3. GLOBAL STABILITY AND STRUCTURAL DESIGN OF RETAINING WALL PROVIDED BY OTHERS.
4. THE BOC ELEVATION TALLY FOR RETAINING WALL DEPICTS FINISHED ELEVATION TOP OF WALL ELEVATION ARE TYPICAL, SEE ABOVE DEPTHS.
5. ALL REPRESENTATIONS TO MATERIAL SIZING ARE TYPICAL & MAY VARY OTHERWISE NOTED.
6. ALL SIDEWALK SHALL MAINTAIN A MAXIMUM 2% SLOPE AGAINST CONTINUAL SLOPE.
7. ALL RPR WALL SHALL BE CONSTRUCTED IN COMPLIANCE WITH SECTION 1.05 AND AS PER THE LATEST EDITION OF THE TEXAS ACCESSIBILITY STANDARDS.
8. PROPOSED CONTOUR FINAL GRADE PER REFERENCE ON CONTINUATION LINE UPTO EQUIVALENT GRADE UNDERGROUND CONSTRUCTION.
9. SEE LANDSCAPE PLAN FOR FINAL AND HARDSCAPE DETAILS AND FINISHES.
10. ALL GRADING AND ASSOCIATED CONSTRUCTION WORK SHALL TAKE PLACE WITHIN THE PROPERTY BOUNDARY LINES AS SHOWN ON THE PRELIMINARY PLAN PREPARED BY KIMLEY-HORN AND ASSOCIATES DATED MAY 28, 2019 AND CITY OF VAN ALSTYNE SUBDIVISION ORDINANCE DATED AUGUST 20, 2018.

BENCHMARKS

BM NO. 1: TOP OF CONCRETE AT THE NE CORNER OF A CONCRETE PAD FOR A TRANSFORMER LOCATED IN THE

Kimley»Horn

PRELIMINARY
NOT FOR CONSTRUCTION OR BIDDING PURPOSES
Kimley»Horn

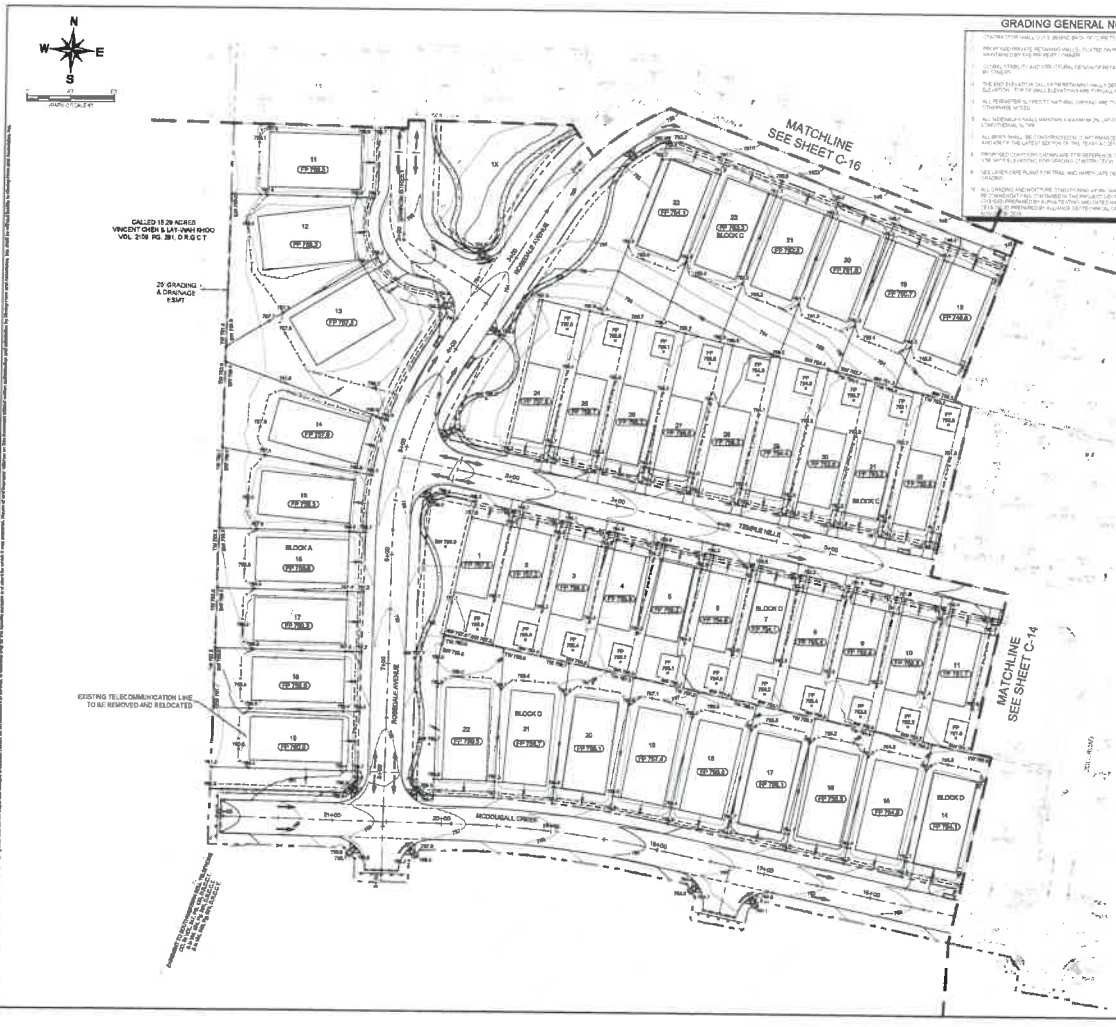
SUM PROJECT MANAGER	
DATE	AUGUST 2019
A.I.	A.S.BROWN
DESIGNED	BRC
DRAWN	BRC
CHECKED	TDC

GRADING PLAN

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-12

No.	REVISIONS	DATE	BY

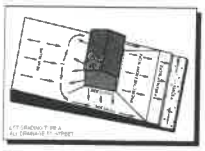


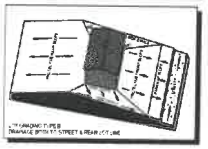
GRADING GENERAL NOTES

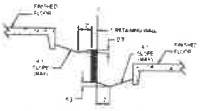
1. CONTOURS TO BE WALL TOP & BRING BACK TO TIE INTO DRAINAGE ELEVATION.
2. PROPOSED PRIVATE RETAINING WALLS, PLATTED ON PRIVATE LOTS TO BE MAINTAINED BY THE PROPERTY OWNER.
3. GLOBAL STABILITY AND STRUCTURAL DESIGN OF RETAINING WALL PROVIDED BY OWNER.
4. THE END ELEVATION OF ALL RETAINING WALLS DEPICTS FINISHED ELEVATION. TOP OF WALL ELEVATIONS ARE TYPICALLY 2.5' ABOVE GROUND.
5. ALL REWAITERS SHALL BE NATURAL GRAVEL AND TO BE 4 MAX. VALLEYS OTHERWISE NOTED.
6. ALL SIDEWALK TRAIL MAINTAIN A MAXIMUM 2% CROSS SLOPE AND 5% LONGITUDINAL SLOPE.
7. ALL WATER SHALL BE TRANSPORTED TO THE DRAINAGE WITHIN STREETS AND WITHIN THE LIMITS SHOWN ON THE TEXAS ACCESSIBILITY STANDARDS.
8. PROPOSED CONTOURS DRAINAGE FOR REFERENCE ONLY. CONTRACTOR TO VERIFY & EXISTING FOR GRADING CONSTRUCTION.
9. SEE LANDSCAPE PLANS FOR TRAIL AND HARDSCAPE DETAILS AND FINE GRADING.
10. ALL GRADING AND MOISTURE CONDITIONING WORK SHALL CONFORM WITH THE RECOMMENDATIONS CONTAINED IN THE PROJECT GEOTECHNICAL REPORT, LATEST REVISED PREPARED BY ALPHA TESTING, DATED MAR. 28, 2018 AND CONTAINED IN THE PROJECT GEOTECHNICAL REPORT PREPARED BY ALLIANCE GEOTECHNICAL GROUP, DATED [illegible]

LEGEND

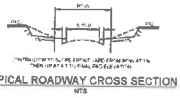
	PROPERTY LINE
98.5	PROPOSED CONTOUR ELEVATION
95.5	PROPOSED SPOT ELEVATION
	EXISTING SPOT ELEVATION
TW 95.5	PROPOSED TOP OF WALL ELEVATION
BW 95.5	PROPOSED BOTTOM OF WALL ELEVATION
DW 95.5	PROPOSED BEND WALL ELEVATION
	PROPOSED CURB / MIC CHANGE
	LOT DRAINAGE FLOW DIRECTION
	STREET DRAINAGE FLOW DIRECTION
	PROPOSED RETAINING WALL
	EXPOSED FACE OF RETAINING WALL
	INDICATE: SIDE OF LOT WHERE RAINFLOW MUST BE LOCATED DUE TO GRADE DIFFERENTIAL OR CONFLICT
	EXPOSED BEAM REQUIRED
	PROPOSED CONTOUR
	EXISTING CONTOUR
	EXISTING TREE TO REMAIN
	PROPOSED TREE PER LANDSCAPE PLAN







GRADING AT SIDE YARD WALL
NTS



TYPICAL ROADWAY CROSS SECTION
NTS

BENCHMARKS

[illegible]

Kimley»Horn

No.	REVISIONS	DATE	BY

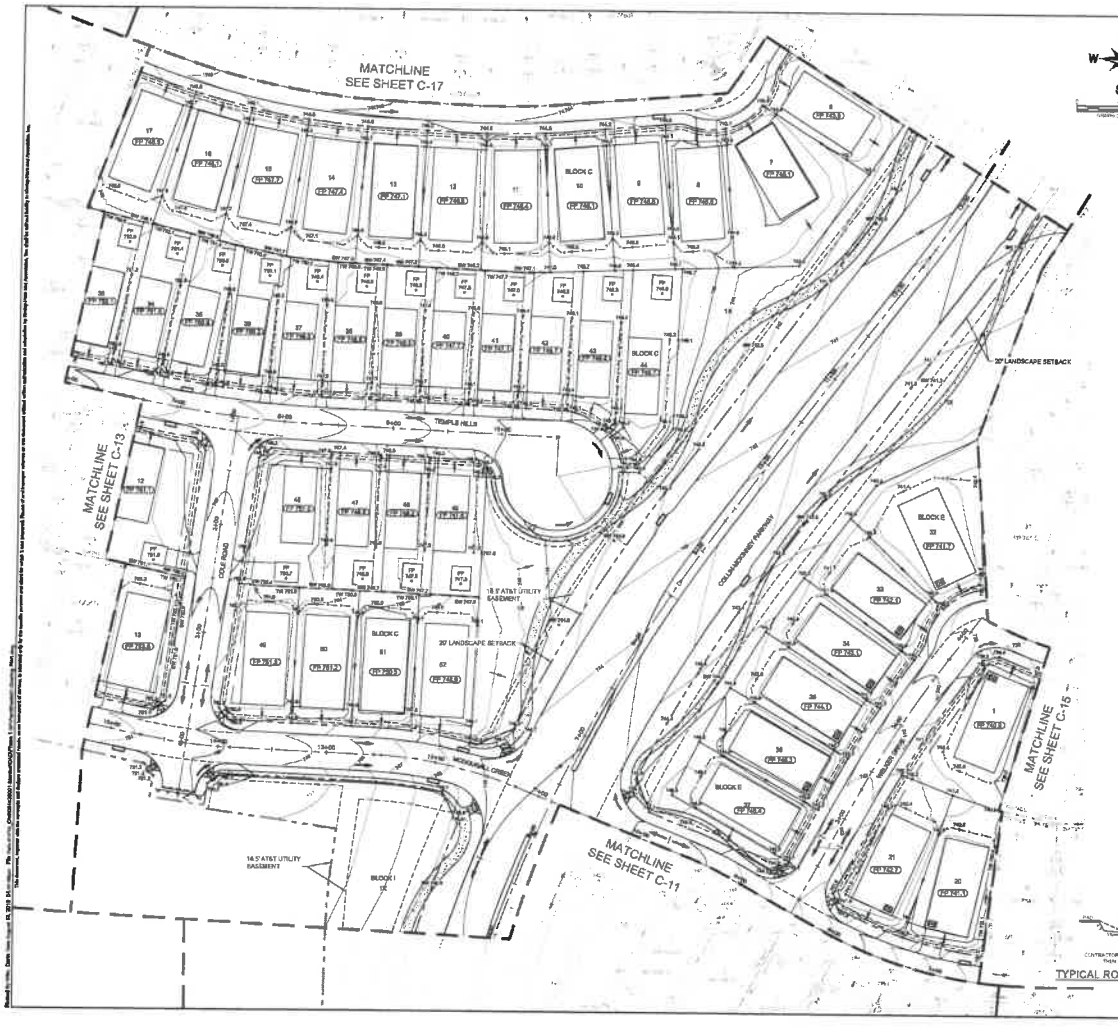
KHA PROJECT NUMBER
DATE
AUGUST 2019
SCALE: 1" = 40' SHOWN
DESIGNED BY: KHGE
DRAWN BY: KHGE
CHECKED BY: TDC

GRADING PLAN

MANTUA POINT PHASE 1

CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-13



LEGEND

- PROPERTY LINE
- PROPOSED FINISHED PAD ELEVATION
- PROPOSED SPOT ELEVATION
- EXISTING SPOT ELEVATION
- PROPOSED TOP OF WALL ELEVATION
- PROPOSED BOTTOM OF WALL ELEVATION
- PROPOSED END WALL ELEVATION
- PROPOSED REAR LARE INLET
- LOT DRAINAGE FLOW DIRECTION
- STREET DRAINAGE FLOW DIRECTION
- PROPOSED RETAINING WALL
- SEE PLAN OF RETAINING WALL
- INDICATES SIDE OF LOT WHERE DRIVEWAY MUST BE LOCATED DUE TO GRADE DIFFERENTIAL OR CONFLICT
- EXPOSED BEAM REQUIRED
- PROPOSED CONTOUR
- EXISTING CONTOUR
- EXISTING TREE TO REMAIN
- PROPOSED TREE PROTECTION FENCE

GRADING GENERAL NOTES

CONTRACTOR WILL CUT SLOPES BACK AT 1.5:1 (MIN) TO MAINTAIN ELEVATION

PROPOSED PRIVATE RETAINING WALL SUCCESSOR OWNER OF PRIVATE LOTS TO BE MAINTAINED BY THE PROPERTY OWNER

LOCAL STABILITY AND STRUCTURAL DESIGN OF RETAINING WALL PROVIDED BY OTHERS

THE GRADE ELEVATION WILL SUPER RETAINING WALL DEPICTED ON GRADING ELEVATION TOP OF WALL ELEVATION ARE TYPICAL TO ALIGNING FEATURE

ALL PERIMETER SLOPES TO NATURAL GROUND ARE TO BE 4:1 MAX UNLESS OTHERWISE NOTED

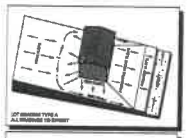
ALL NORMALLY SHALL MAINTAIN A MAXIMUM 2% GRADE TO SPC AND 3% LONGITUDINAL SLOPE

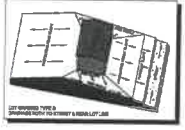
ALL BERM SHALL BE CONSTRUCTED IN ACCORDANCE WITH SITE PLAN AND AND AS THE LATTER DEPICTS THE TEMPLATE TO EXHIBIT STANDARDS

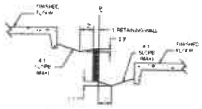
PROPOSED CONTOURS MAYBE AND FOR REFERENCE ONLY. CONTRACTOR TO LINE SPOT ELEVATIONS FOR MORE CONSTRUCTION

SEE LANDSCAPE PLANS FOR FINAL HARDSCAPE DETAILS AND FINE GRADING

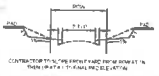
ALL WALLS AND STRUCTURE CONSTRUCTION SHALL COMPLY WITH THE RECOMMENDATIONS CONTAINED IN THE PROJECT GEOTECHNICAL REPORT CITIES REPORTED BY ALPINE TESTING AND DATED MAY 28, 2019 AND 2019.03.01 PREPARED BY ALLANCE GEOTECHNICAL SAN ANTONIO DATED JUNE 24, 2019







GRADING AT SIDE YARD WALL
NTS



TYPICAL ROADWAY CROSS SECTION
NTS

BENCHMARKS

[illegible]

Kimley»Horn

PRELIMINARY
Not for construction or permit purposes
Kimley»Horn

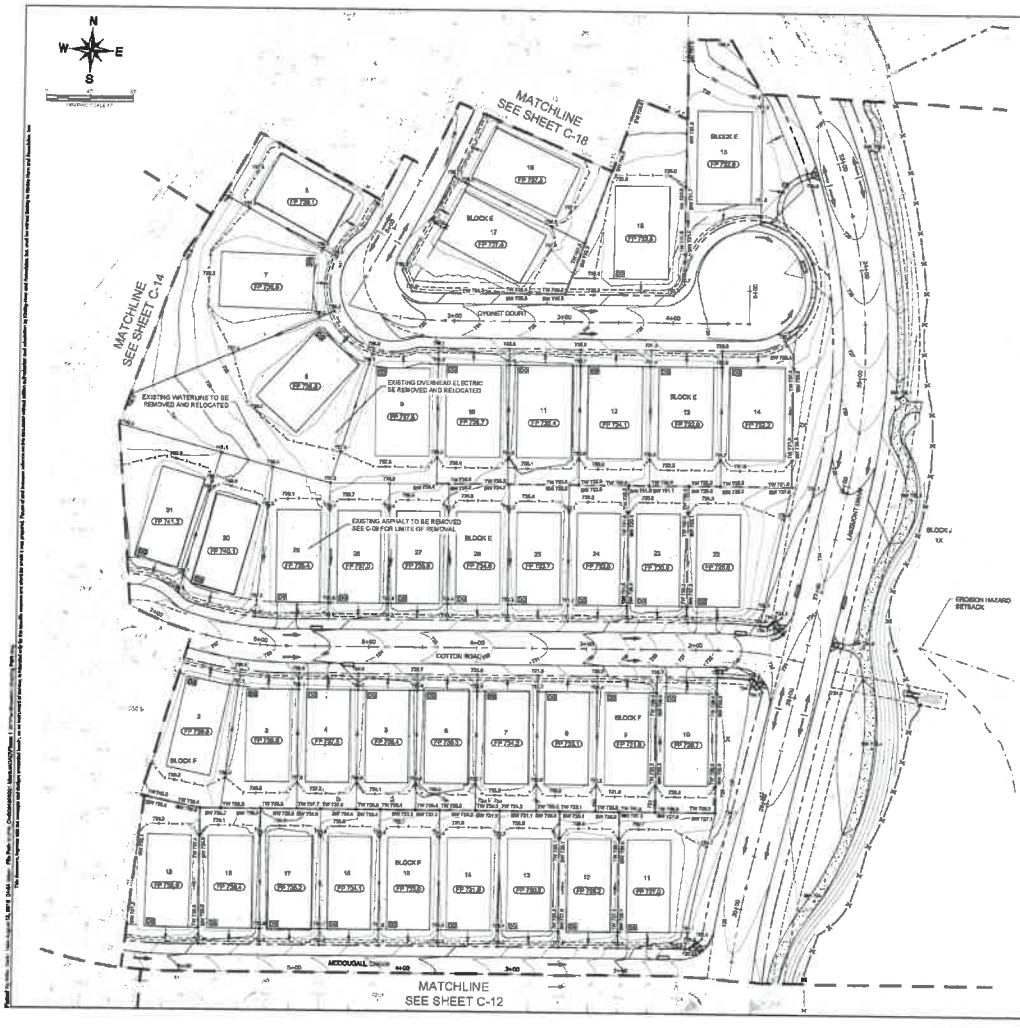
No.	REVISIONS	DATE	BY

FOR PROJECT MANAGER
DATE AUGUST 2019
SCALE AS SHOWN
DESIGNED PRC
DRAWN PRC
REVIEWED TDC

GRADING PLAN

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-14



LEGEND

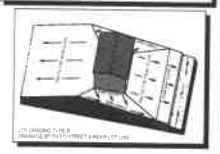
	PROPERTY LINE
725.0	PROPOSED FINISHED PAD ELEVATION
725.0	PROPOSED SPOT ELEVATION
	EXISTING SPOT ELEVATION
TW 725.0	PROPOSED TOP OF WALL ELEVATION
BW 725.0	PROPOSED BOTTOM OF WALL ELEVATION
EW 725.0	PROPOSED END WALL ELEVATION
	PROPOSED HEAVY DUTY PAVING
	LOT DRAINAGE FLOW DIRECTION
	STREET DRAINAGE FLOW DIRECTION
	PROPOSED RETAINING WALL
	PROPOSED TOP OF RETAINING WALL
★	INDICATES SIDE OF LOT WHERE REDIRECTIONAL MUST BE LOCATED DUE TO GRADE DIFFERENTIAL OR CONFLICT
725	EXPOSED BEAM REQUIRED
725	PROPOSED CONTOUR
	EXISTING TREE TO REMAIN
	PROPOSED TREE PROTECTION FENCE

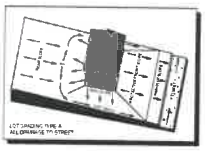
GRADING GENERAL NOTES

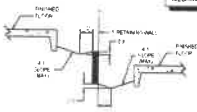
CONTACTOR SHALL SUPPLY BENCHMARK AT EVERY 1' ELEVATION ELEVATION.

PROPOSED PRIVATE RETAINING WALL LOCATED ON PRIVATE PROPERTY TO BE MAINTAINED BY THE PROPERTY OWNER.

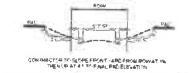
1. GLOBAL STABILITY AND STRUCTURAL DESIGN OF RETAINING WALL PROVIDED BY OTHERS.
2. THE SPOT ELEVATION CALLED FOR ON RETAINING WALL CONTACT DRAWING ELEVATIONS. TOP OF WALL ELEVATIONS ARE TYPICAL 0.5' ABOVE GROUND.
3. ALL PERIMETER SLOPES TO BE NATURAL GROUND WITH 4:1 OR 3:1 MAX UNLESS OTHERWISE NOTED.
4. ALL SIDEWALKS SHALL MAINTAIN A MAXIMUM 2% CROSS SLOPE AND 5% LONGITUDINAL SLOPE.
5. ALL WORK SHALL BE CONSTRUCTED IN STRICT ADHERANCE WITH SECTION 1.05 AND ARE TO THE LATEST EDITION OF THE TEXAS ACCESSIBILITY STANDARDS.
6. PROPOSED CONTOURS SHOWN ARE FOR REFERENCE ONLY. CONTRACTOR TO USE SPOT ELEVATIONS FOR FINAL CONSTRUCTION.
7. SEE LANDSCAPE PLAN FOR FINAL HARDSCAPE DETAILS AND FINAL GRADING.
8. ALL GRADING AND MISCELLANEOUS CONSTRUCTION WORK SHALL CONFORM WITH THE RECOMMENDATIONS CONTAINED IN THE PROJECT GEOTECHNICAL REPORT PREPARED BY ALPHA TESTING AND DATED JUL 18, 2018 AND ITS SUBSEQUENT PROFESSIONAL ALLIANCE GEOTECHNICAL GROUP AND DATED AUGUST 20, 2019.







GRADING AT SIDE YARD WALL
NTS



TYPICAL ROADWAY CROSS SECTION
NTS

BENCHMARKS

BM 101 – 1/2" DIA. IRON ROD WITH CAP STAMPED "KHA" SET IN CONCRETE PAD FOR A VENT PIPE, LOCATED ON THE WEST SIDE OF A NEW PROPOSED DRIVEWAY APPROXIMATELY 20' SOUTH OF THE CENTERLINE OF A NEW PROPOSED 60' WIDE PUBLIC ROAD, CONNECTING CARTWRIGHT ROAD TO COUNTY ROAD 407. SEE SHEET 14 FOR THE PROPOSED PLAN OF THE NEW PROPOSED 60' WIDE PUBLIC ROAD, CONNECTING CARTWRIGHT ROAD TO COUNTY ROAD 407.
ELEV. 730.952

BM 102 – 1/2" DIA. IRON ROD WITH CAP STAMPED "KHA" SET IN CONCRETE PAD FOR A BICYCLE RACK, LOCATED ON THE EAST SIDE OF A NEW PROPOSED 60' WIDE PUBLIC ROAD, CONNECTING CARTWRIGHT ROAD TO COUNTY ROAD 407. SEE SHEET 14 FOR THE PROPOSED PLAN OF THE NEW PROPOSED 60' WIDE PUBLIC ROAD, CONNECTING CARTWRIGHT ROAD TO COUNTY ROAD 407.
ELEV. 730.952

Kimley»Horn

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING PURPOSES
Kimley»Horn
Texas Registration No. F-928

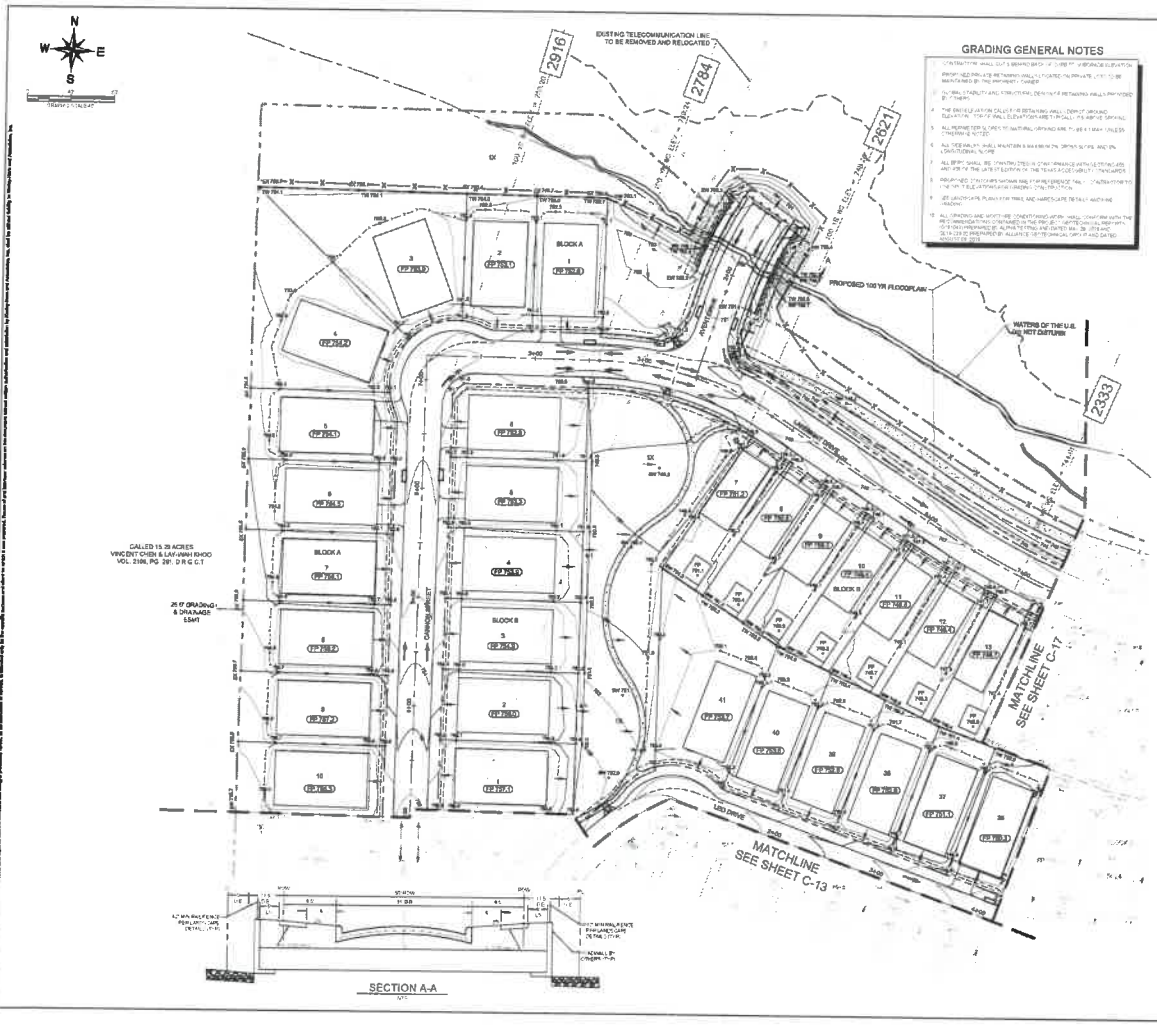
KHA PROJECT NUMBER	069101000
DATE	AUGUST 2019
H:	AS SHOWN
V:	N/A
DESIGNED	BRB
DRAWN	BRB
REVIEWED	TDC

GRADING PLAN

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-15

No.	REVISIONS	DATE	BY

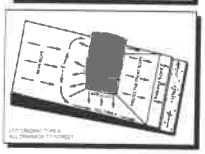


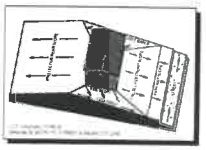
GRADING GENERAL NOTES

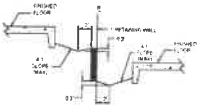
1. CONTRACTOR SHALL SET A BENCHMARK OF ELEVATION ±0.00 FT. AT ARBITRARY ELEVATION.
2. PROPOSED PRIVATE RETAINING WALL LOCATED ON PRIVATE LOT TO BE MAINTAINED BY THE PROPERTY OWNER.
3. OVERALL STABILITY AND STRUCTURAL DESIGN OF RETAINING WALLS PROVIDED BY OWNER.
4. THE ENGINEER OF RECORD FOR RETAINING WALL DEPICTS GROUND ELEVATION, TOP OF WALL ELEVATION AND TYPICALLY PROVIDES GRADING.
5. ALL PERIMETER SLOPES TO MATCH GRADING AND TIE AT 4:1 MAX UNLESS OTHERWISE NOTED.
6. ALL SIDEWALKS, WALL MOUNTED & MASONRY ON DRIVE SLOPE AND ON LONGITUDINAL SLOPE.
7. ALL BMPS SHALL BE CONSTRUCTED IN STRICT ADHERENCE WITH SPECIFICATIONS AND PER THE LATEST EDITION OF THE TEXAS ECOREGION TECHNICAL MANUAL.
8. PROPOSED STRUCTURES MEANS ANY PROPOSED WALL, FOUNDATION TO THE TOP OF THE ROOF, OVERHANGS AND ROOF CONSTRUCTION.
9. SEE LANDSCAPE PLANS FOR TREE AND HARDSCAPE DETAILS AND MORE GRADING.
10. ALL GRADING AND MISCELLANEOUS CONSTRUCTION WORK SHALL COMPLY WITH THE RECOMMENDATIONS CONTAINED IN THE PROJECT GEOTECHNICAL REPORT, GEOTECHNICAL ENGINEERING BY ALPHA TESTING AND DATED MAY 30, 2019 AND 2019-2310 PREPARED BY ALLIANCE GEOTECHNICAL GROUP AND DATED AUGUST 02, 2019.

LEGEND

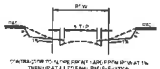
	PROPERTY LINE
(FF 676.00)	PROPOSED FINISHED FLOOR ELEVATION
75.0 ±	
TW 56.0 ±	PROPOSED TOP OF WALL ELEVATION
BW 55.0 ±	PROPOSED BOTTOM OF WALL ELEVATION
EW 55.0 ±	PROPOSED END WALL ELEVATION
	PROPOSED REAR LANE CHANNEL
	LOT DRAINAGE FLOW DIRECTION
	STREET DRAINAGE FLOW DIRECTION
	PROPOSED RETAINING WALL
	EXPOSED FACE OF RETAINING WALL
	INDICATES SIDE OF LOT WHERE DRIVEWAY MUST BE LOCATED DUE TO GRADE DIFFERENTIAL OF 24" OR MORE
EB	EXPOSED BEAM REQUIRED
	PROPOSED CONTOUR
	EXISTING CONTOUR
	EXISTING TREE TO REMAIN
	PROPOSED TREE PROTECTION FENCE







GRADING AT SIDE YARD WALL
NTS



TYPICAL ROADWAY CROSS SECTION
NTS

BENCHMARKS

Kimley»Horn

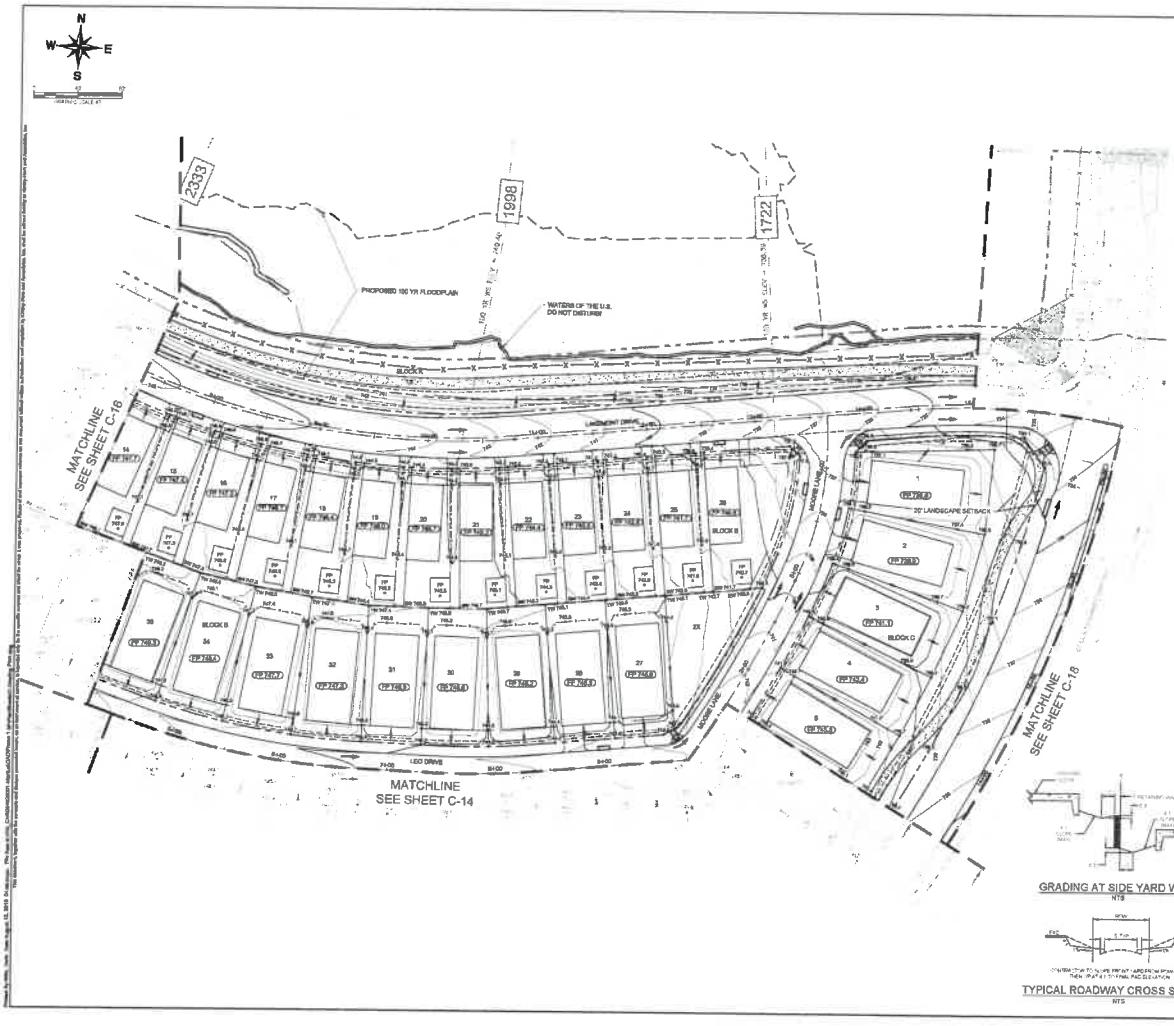
KHA PROJECT NUMBER			
DATE			
AUGUST 2019			
SCALE	AS SHOWN		
DESIGN	RMC		
DRAWN	RMC		
APPROVED	TDC		

GRADING PLAN

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-16

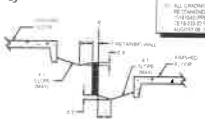
No.	REVISIONS	DATE	BY



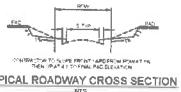
LEGEND

GRADING GENERAL NOTES

1. CONTRACTOR SHALL CUT / BRING BACK TO TOP OF CURB FOR DRAINAGE ELEVATION.
2. PROPOSED PRIVATE RETAINING WALLS LOCATED ON PRIVATE LOT TO BE MAINTAINED BY THE PROPERTY OWNER.
3. FINAL GRADE PLANS WILL DENOTE PRIVATE RETAINING WALLS PRIVATE BY OTHERS.
4. THE END ELEVATION CALLS FOR RETAINING WALLS DEPICT GRAVEL ELEVATION. TOP OF WALL ELEVATIONS ARE TYPICAL, SEE NOTE 3 ABOVE.
5. ALL PERIMETER NOTES TO NATURAL GROUND ARE TO BE 4:1 MAX UNLESS OTHERWISE NOTED.
6. ALL SIDEWALKS SHALL MAINTAIN A MAXIMUM 2% CROSS SLOPE AND 5% LONGITUDINAL SLOPE.
7. ALL WORK SHALL BE CONSTRUCTED IN CONFORMANCE WITH CITY AND AND ADA OF THE LATEST EDITION OF THE TEXAS ACCESSIBILITY STANDARDS.
8. PROPOSED CONTOURS SHOWN ARE TO BE REVISED AS NEW CONTRACTOR TO SPOT ELEVATIONS FOR GRADING / CONSTRUCTION.
9. SEE LANDSCAPE PLAN FOR TRAIL AND HARDSCAPE DETAILS AND FINE GRADING.
10. ALL GRADING AND WORK THREE (3) FOOT BARRIER WALL CONFORM WITH THE RETAINING DETAILS CONTAINED IN THE PRIVATE CITY LIFTS OWNER REPORT - "GEOTECHNICAL ENGINEERING TESTING AND DESIGN - 28 LOT LINE" 2/18/2015 (PREPARED BY ALBANY GEOTECHNICAL GROUP AND DATED AUGUST 28, 2015)



GRADING AT SIDE YARD WALL
NTS



TYPICAL ROADWAY CROSS SECTION
NTS

BENCHMARKS

No.	REVISIONS	DATE	BY

Kimley»Horn

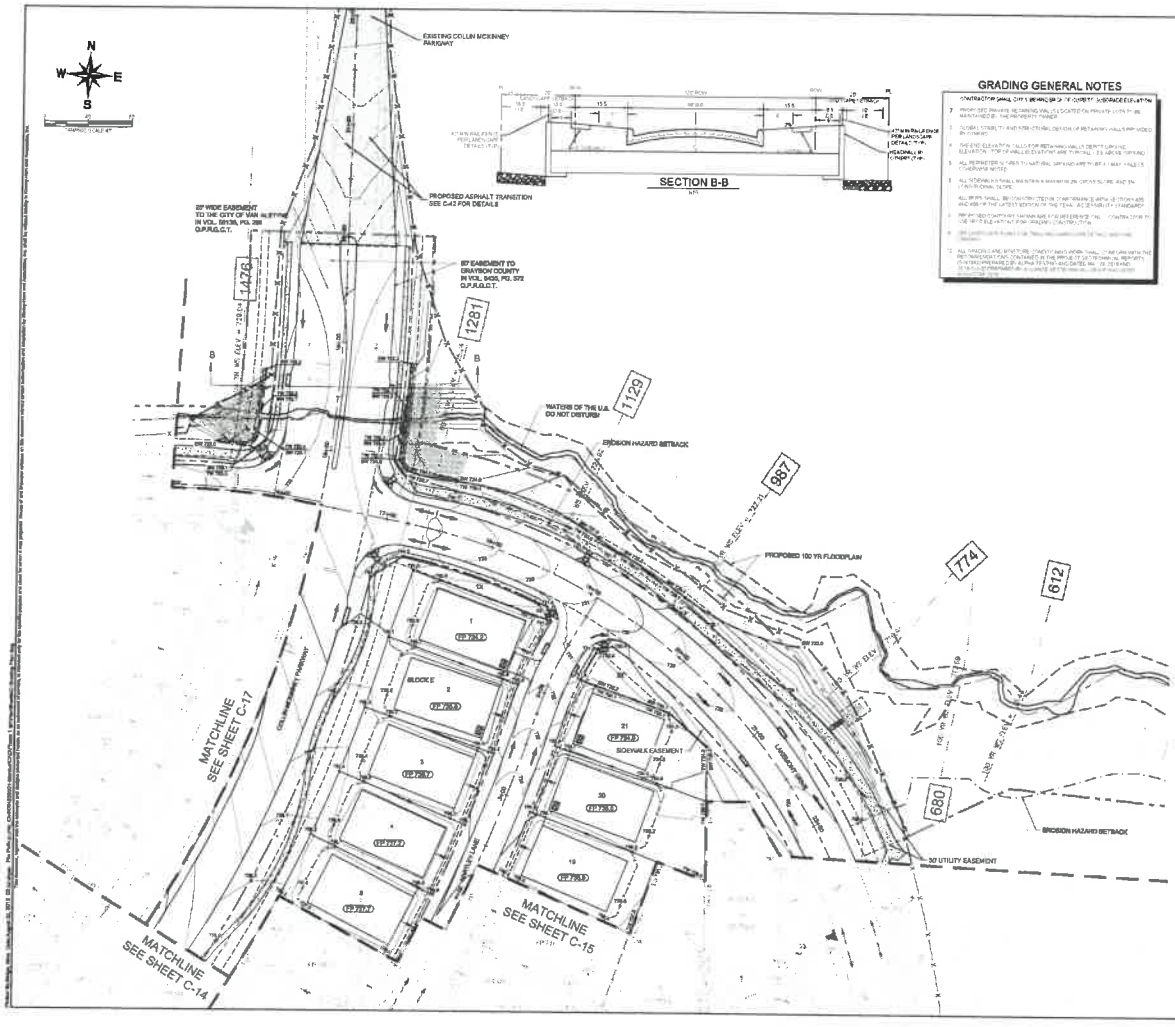
PRELIMINARY

KHA PROJECT	
DATE	AUGUST 2015
SCALE	AS SHOWN
DESIGNED	PAC
DRAWN BY	PAC
CHECKED	TDC

GRADING PLAN

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-17



GRADING GENERAL NOTES

CONTRACTOR SHALL CHECK BENCHMARK & TIE SURVEY & GRADE ELEVATION

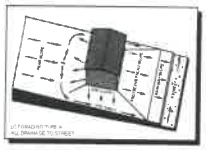
7. PROPOSED RAINING RETAINING WALL LOCATED ON PRIVATE LOTS TO BE MAINTAINED BY THE PROPERTY OWNER
8. GLOBAL STABILITY AND INTERNAL DESIGN OF RETAINING WALLS PROVIDED BY OWNER
9. TWO END ELEVATION CALLS FOR RETAINING WALLS DEPICT GRADING ELEVATION. TOP OF WALL ELEVATIONS ARE TYPICAL 2.5 ABOVE TOP GRADE
10. ALL PERIMETER FLARES TO MATCH SIDEWALKS ARE TYPICAL 1 MAX FALLS OVERGRADE NOTES
11. ALL SIDEWALKS SHALL MAINTAIN A MAXIMUM 2% CROSS SLOPE AND 5% LONGITUDINAL SLOPE

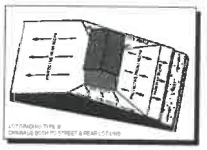
ALL RIPPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITIES AND ARE IN THE LATEST EDITION OF THE TEXAS ACCESSIBILITY STANDARDS

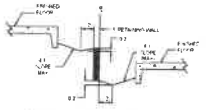
12. PROPOSED CONTOURS SHOWN ARE FOR REFERENCE ONLY. CONTRACTOR TO USE SPOT ELEVATION FOR PROPER CONSTRUCTION
13. [illegible]
14. ALL GRADING AND SPOT SLOPE CONTROL RETAINING WALL TO COMPLY WITH THE RETAINING WALL CALCULATIONS IN THE PROJECT GEOTECHNICAL REPORTS (LATEST REPORT PREPARED BY ALPHA TESTING AND DATED MAY 28, 2019 AND [illegible]) [illegible]

LEGEND

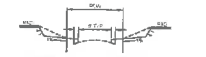
	PROPERTY LINE
99.25 (99)	PROPOSED FINISHED PAD ELEVATION
99.5	[illegible]
99.5	EXISTING SPOT ELEVATION
TW 99.5	PROPOSED TOP OF WALL ELEVATION
BW 99.5	PROPOSED BOTTOM OF WALL ELEVATION
EW 99.5	PROPOSED END WALL ELEVATION
	PROPOSED REAR LOT DRAIN
	LOT DRAINAGE FLOW DIRECTION
	STREET DRAINAGE FLOW DIRECTION
	PROPOSED RETAINING WALL
	EXPOSED FACE OF RETAINING WALL
	INDICATES SIDE FOR LOT WHERE DRAINAGE SWALE IS LOCATED DUE TO GRADE DIFFERENTIAL OF 2 FT OR MORE
EB	EXPOSED BEAM REQUIRED
	[illegible]
	EXISTING CONTOUR
	EXISTING TREE TO REMAIN
	PROPOSED TREE PROTECTIVE FENCE







GRADING AT SIDE YARD WALL
NTS



CONTRACTOR TO SLOPE FRONT AND REAR WALKWAY IN THEN UP AT 1% TO FINAL PAD ELEVATION

TYPICAL ROADWAY CROSS SECTION
NTS

BENCHMARKS

BM 101 = [illegible] CONCRETE AT THE NE CORNER OF A CONCRETE PAD, 9' W & 1' SOUTH OF THE NE CORNER OF THE WEST SIDE OF A NEW ROAD IN NEW CAPITAL DATA WHICH CONNECTS CARPENTER'S CREEK TO STATE HIGHWAY 121 (APPROXIMATELY 200 YDS N OF THE INTERSECTION OF THE NEW ROAD AND CARPENTER'S ROAD)
ELEV = 700.00

REV	REVISIONS	DATE	BY

Kimley»Horn
© 2019 KIMLEY-HORN AND ASSOCIATES, INC.
[illegible]
PHONE: [illegible]
WWW.KIMLEY-HORN.COM
TBPE FIRM REGISTRATION #: F-928 / TBPLS FIRM REGISTRATION #: 10194696

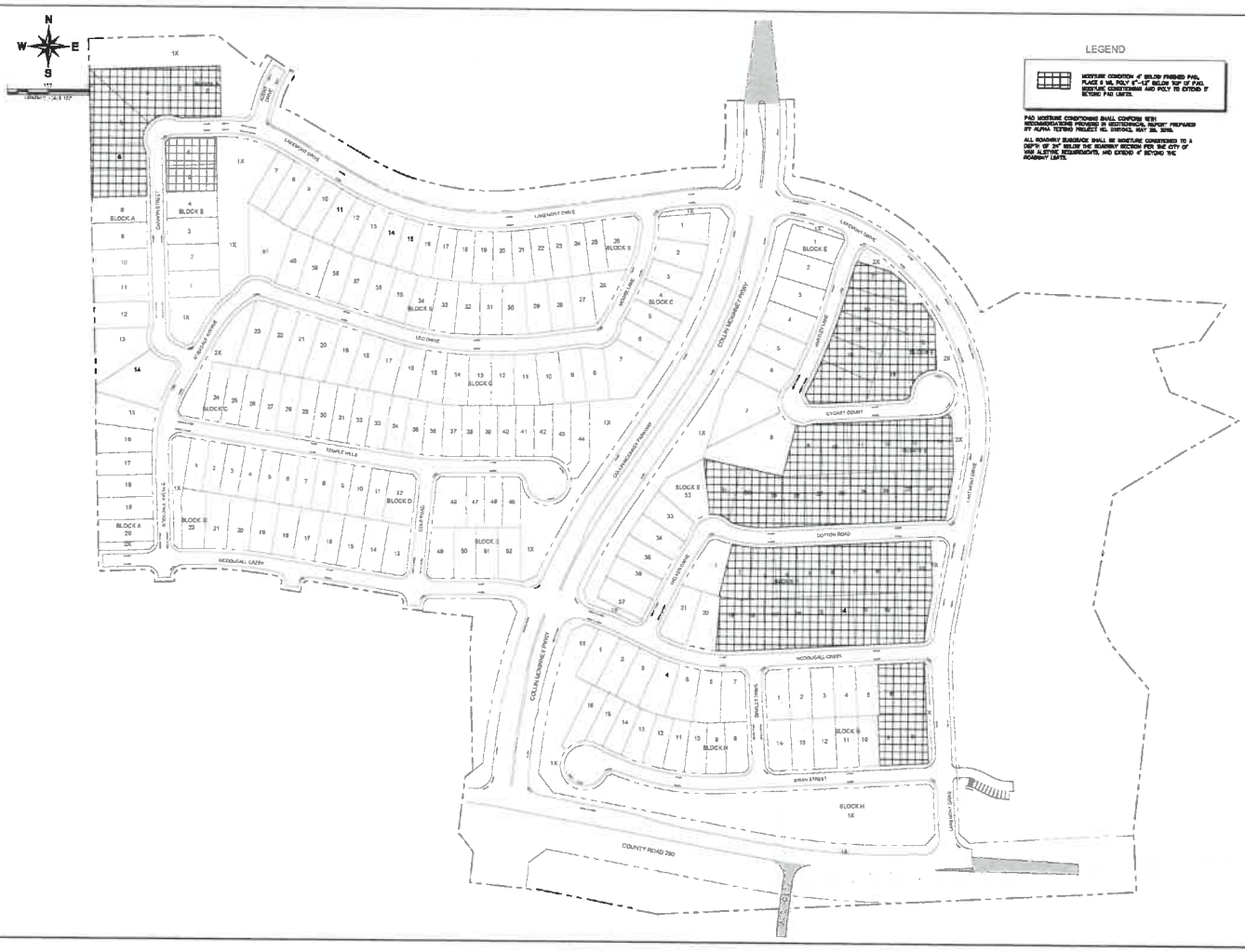
PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING PURPOSES
Kimley»Horn
[illegible]

RSA PROJECT NUMBER: [illegible]
DATE: AUGUST 2019
SCALE: AS SHOWN
DESIGNED: [illegible]
DRAWN: [illegible]
REVIEWED: [illegible]
APPROVED: [illegible]

GRADING PLAN

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-18



No.	REVISIONS	DATE	BY

Kimley»Horn

PRELIMINARY

NOT FOR CONSTRUCTION OR PERMIT PURPOSES

Kimley»Horn

Michael T. O'Brien

P.E. No. 108311 Date: DEC 2015

PLAN PROJECT MANAGER: AB BROWN

DATE: AUGUST 2015

SCALE: AS SHOWN

DESIGNED BY: BRB

DRAWN BY: TDC

PAD MOISTURE CONDITIONING PLAN

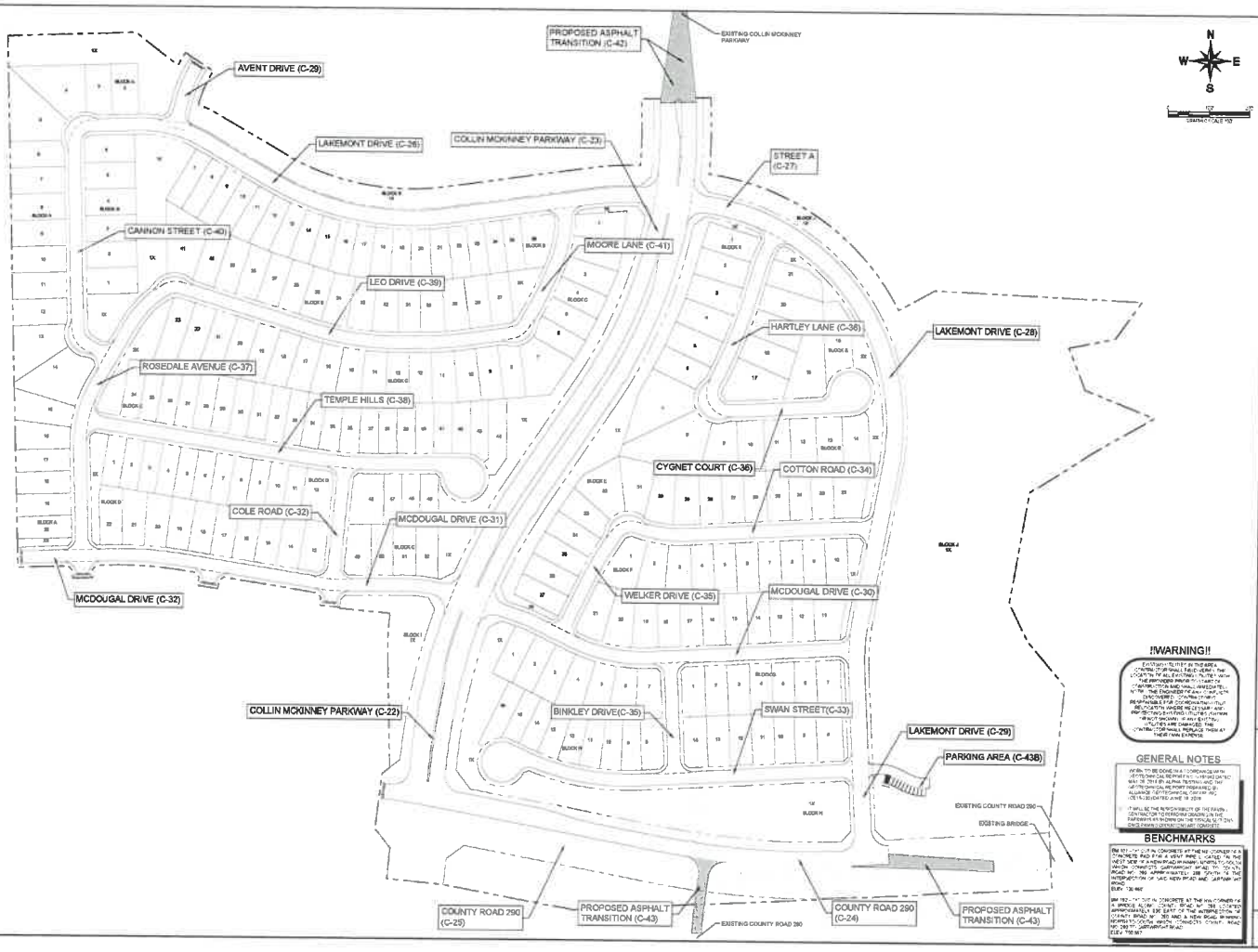
MANTUA POINT PHASE 1

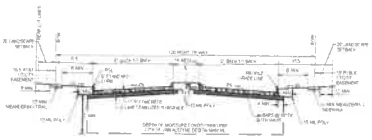
CITY OF VAN ALSTYNE

GRAYSON AND COLLIN COUNTY, TEXAS

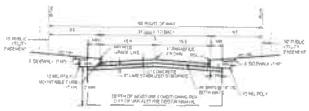
SHEET NUMBER

C-19

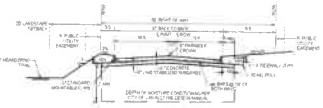

PROPOSED ASPHALT TRANSITION (C-42)
EXISTING COLLIN MCKINNEY PARKWAY
AVENT DRIVE (C-29)
LAKEMONT DRIVE (C-26)
COLLIN MCKINNEY PARKWAY (C-23)
STREET A (C-27)
CANNON STREET (C-40)
MOORE LANE (C-41)
LEO DRIVE (C-39)
HARTLEY LANE (C-36)
LAKEMONT DRIVE (C-28)
ROSEDALE AVENUE (C-37)
TEMPLE HILLS (C-38)
CYGNET COURT (C-36)
COTTON ROAD (C-34)
COLE ROAD (C-32)
MCDOUGAL DRIVE (C-31)
MCDOUGAL DRIVE (C-32)
WELKER DRIVE (C-35)
MCDOUGAL DRIVE (C-30)
COLLIN MCKINNEY PARKWAY (C-22)
BINKLEY DRIVE(C-35)
SWAN STREET(C-33)
LAKEMONT DRIVE (C-29)
PARKING AREA (C-43B)
EXISTING COUNTY ROAD 290
EXISTING BRIDGE
COUNTY ROAD 290 (C-25)
PROPOSED ASPHALT TRANSITION (C-43)
EXISTING COUNTY ROAD 290
COUNTY ROAD 290 (C-24)
PROPOSED ASPHALT TRANSITION (C-43)
N
W
E
S
!WARNING!!
GENERAL NOTES
BENCHMARKS
Kimley»Horn
PRELIMINARY
PAVING SHEET INDEX
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS
SHEET NUMBER
C-20



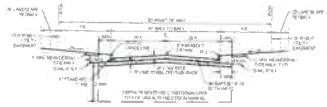
COLLIN-MCKINNEY PKWY DETAIL (120' R/W)
NTS



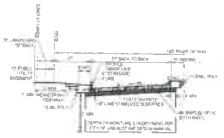
RESIDENTIAL STREET DETAIL (50' ROW - 31' B-B) (TYP)
NTS



RESIDENTIAL STREET DETAIL (50' ROW - 37' B-B) (TYP)
(LAKEMONT DRIVE 3+73.53 TO 15+50.00)
NTS

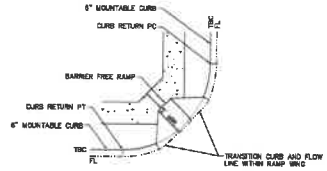


RESIDENTIAL COLLECTOR STREET DETAIL (60' ROW - 41' B-B)
NTS

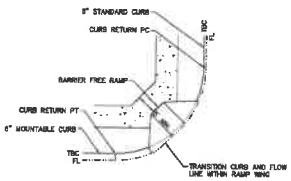


CR 290 STREET DETAIL (140' R/W) - ULTIMATE CONDITION
NTS

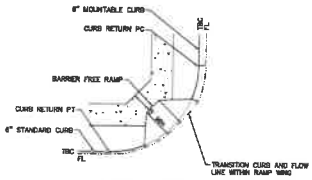
6" MOUNTABLE CURB
NTS



MOUNTABLE CURB
TRANSITION WITHIN BFR
(1 OF 3)
NTS



MOUNTABLE CURB
TRANSITION WITHIN BFR
(2 OF 3)
NTS



MOUNTABLE CURB
TRANSITION WITHIN BFR
(3 OF 3)
NTS

!!WARNING!!

EXISTING UTILITIES IN THE AREA OF CONSTRUCTION SHALL BE LOCATED PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF CONSTRUCTION AREA WILL IMMEDIATELY INTERFERE WITH THE EXISTING UTILITIES DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR THE COST OF REPAIRING EXISTING UTILITIES DAMAGED DURING CONSTRUCTION. ALL EXISTING UTILITIES ARE DAMAGED THE CONTRACTOR SHALL REPAIR AT THEIR OWN EXPENSE.

GENERAL NOTES

1. ALL PAVING TO BE REMOVED AND REPLACED WITH DEPTH AND SIZE EQUAL TO ORIGINAL PAVING MAY BE SCHEDULED AS PER THE LINE BY THE CONTRACT, ALONG THE DEBRIS ALLOWED BETWEEN ORIGINAL.
2. WHILE THE RE SPONSIBILITY IS THE PAVING CONTRACTOR TO PERFORM PAVING IN THE PAVING, LA NEW VIEW IN THE TYPICAL SECTIONS TAKE PAVING OPERATION AND CARPETS.

BENCHMARKS

BM 101 - "X" CUT IN CONCRETE AT THE NW CORNER OF A BRIDGE ALONG COUNTY ROAD NO. 289 (NORTH APPROXIMATELY 300 EAST OF THE INTERSECTION OF COUNTY ROAD NO. 289 AND A NEW ROAD IN MANTUA TO SOUTH MAKE CONNECTION TO NEW ROAD WITH TO CONTINUANT ROAD

No.	REVISIONS	DATE	BY

Kimley»Horn
© 2010 KIMLEY-HORN AND ASSOCIATES, INC.
12700 PARK CENTRAL DRIVE, SUITE 1800
DALLAS, TEXAS 75251
PHONE: 972 770 1300
TBPE FIRM REGISTRATION #: F-928

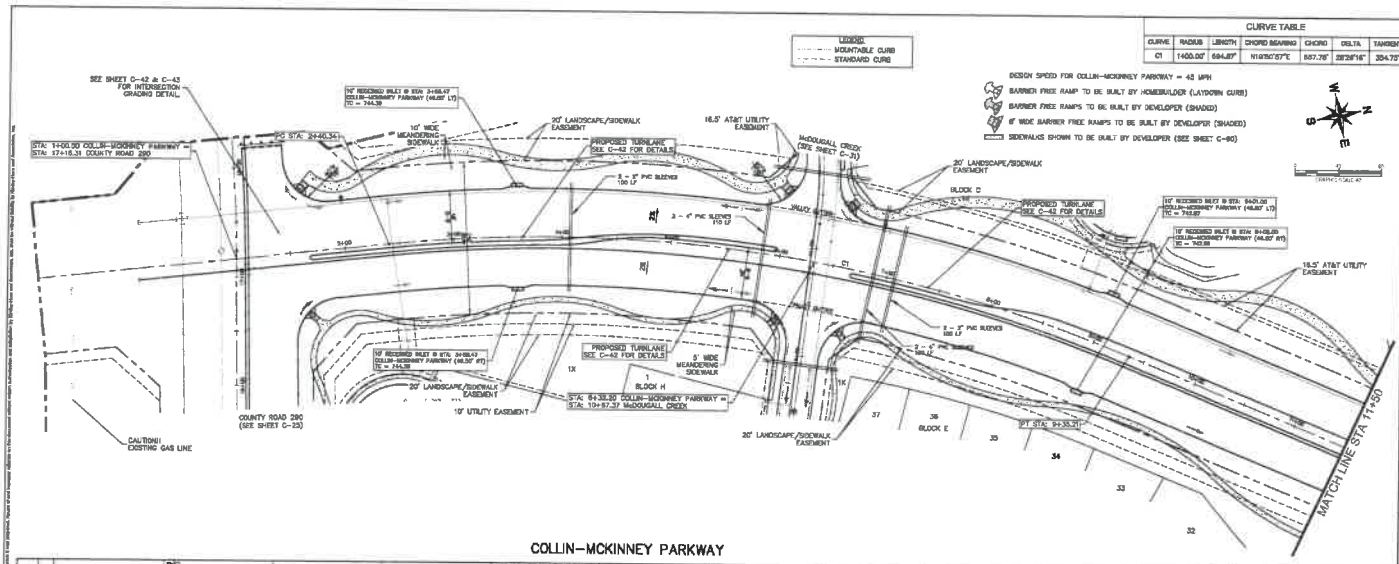
PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING PURPOSES
Kimley»Horn
PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING PURPOSES
Kimley»Horn

BOA PROJECT	
DATE	AUGUST 2014
PROJECT MANAGER	RBM
DESIGNED	JBA
DRAWN BY	TBC
CHECKED BY	

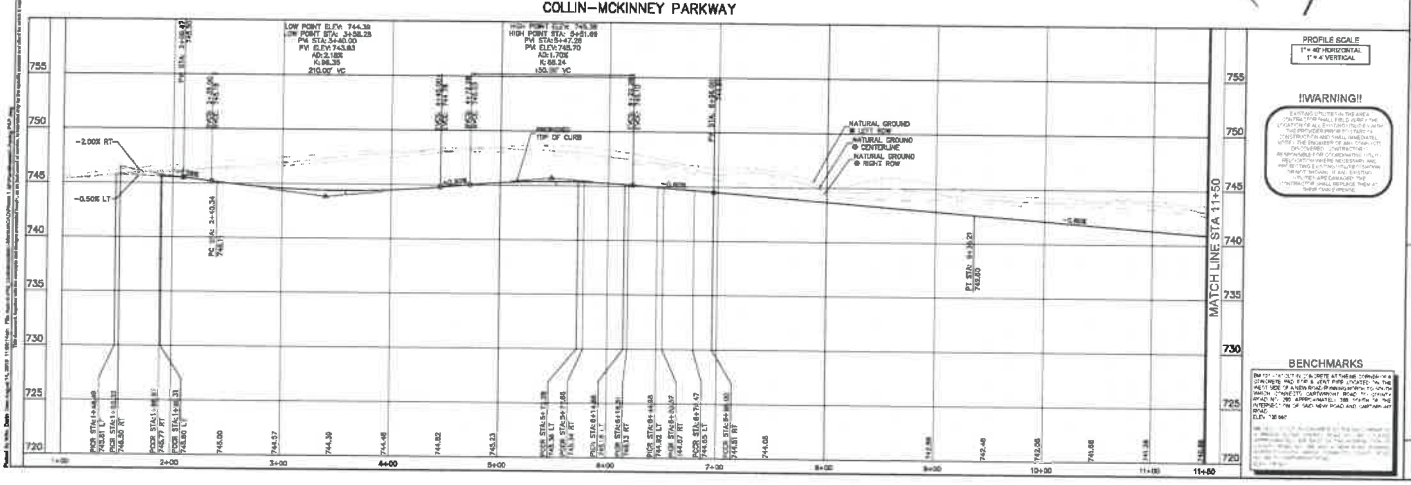
TYPICAL STREET SECTIONS

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-21



COLLIN-MCKINNEY PARKWAY



CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C1	1400.00'	684.87'	N19°50'57"E	677.76'	28°28'16"	354.73'

Kimley»Horn

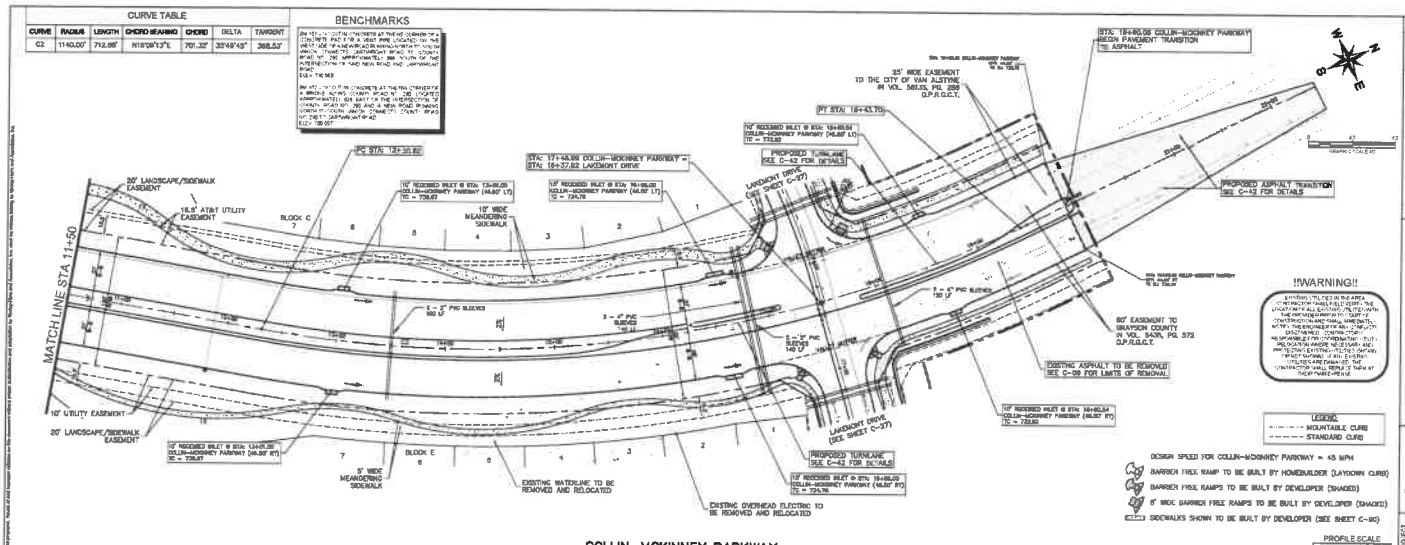
PAVING PLAN & PROFILE - COLLIN-MCKINNEY PARKWAY

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

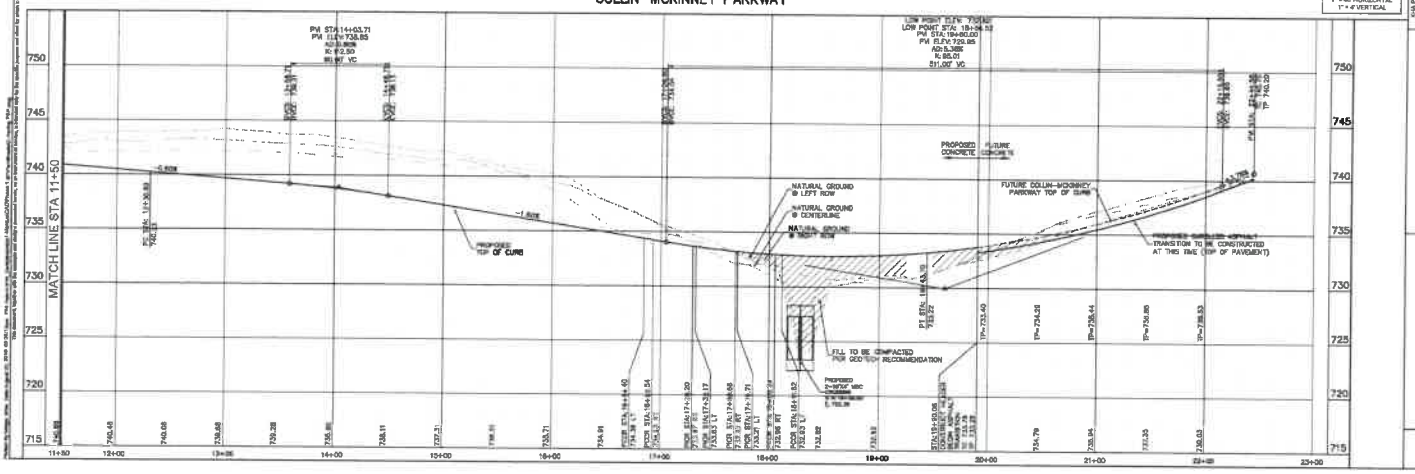
SHEET NUMBER
C-22

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C2	1140.00'	712.88'	N18°09'13"E	701.32'	35°48'45"	368.53'

BENCHMARKS



COLLIN-MCKINNEY PARKWAY



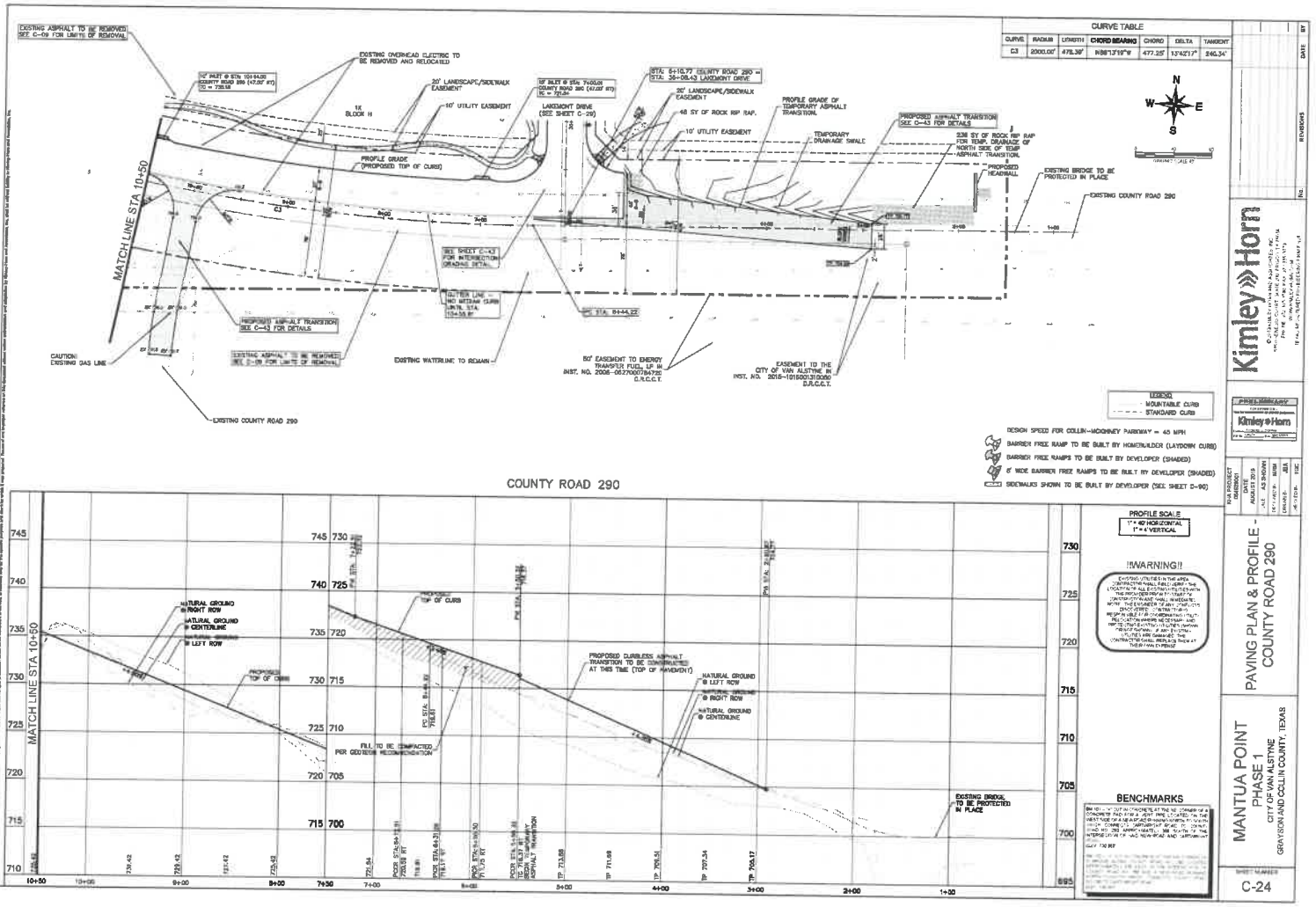
No	REVISIONS	DATE	BY

Kimley»Horn

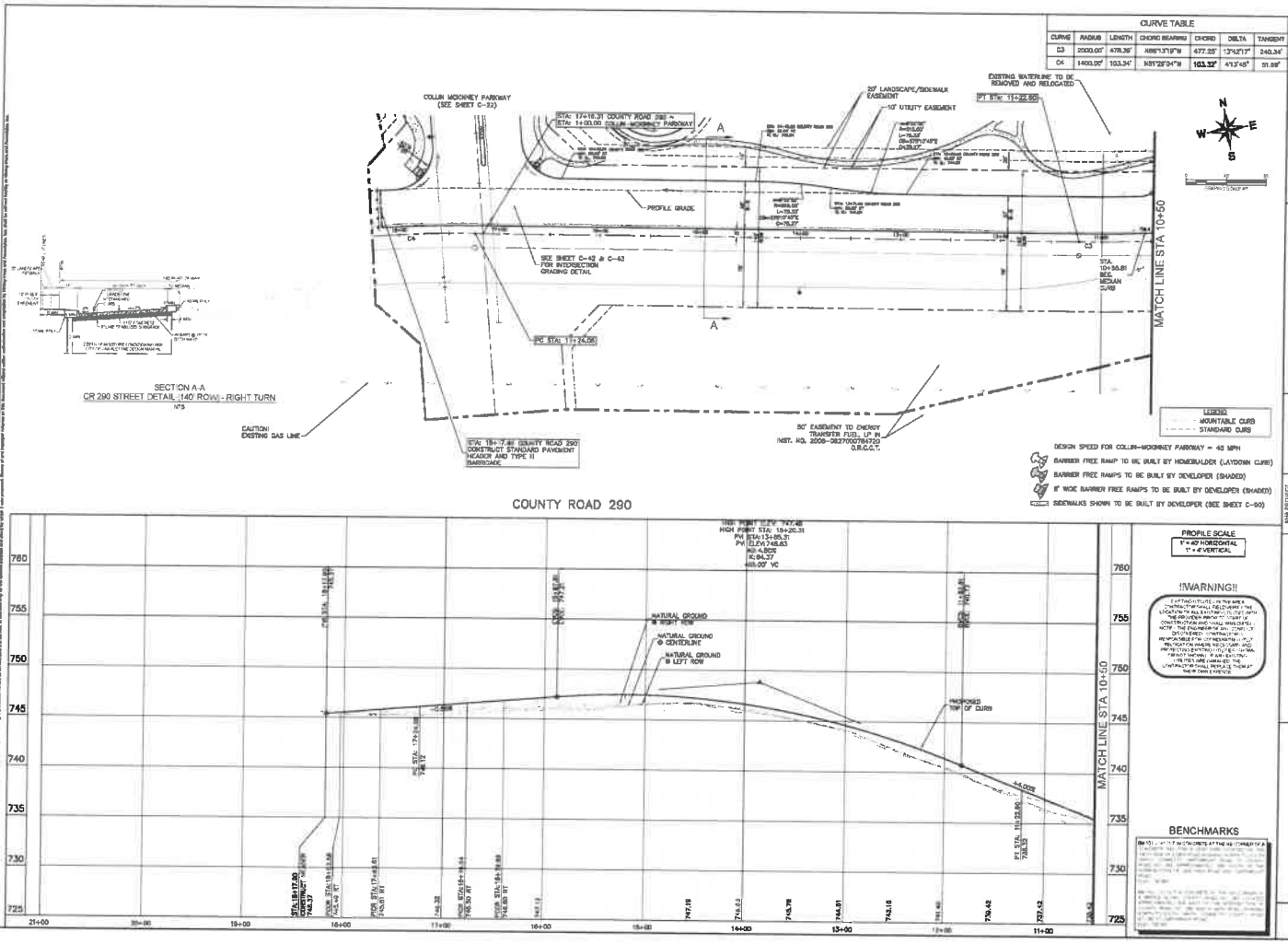
PAVING PLAN & PROFILE - COLLIN-MCKINNEY PARKWAY

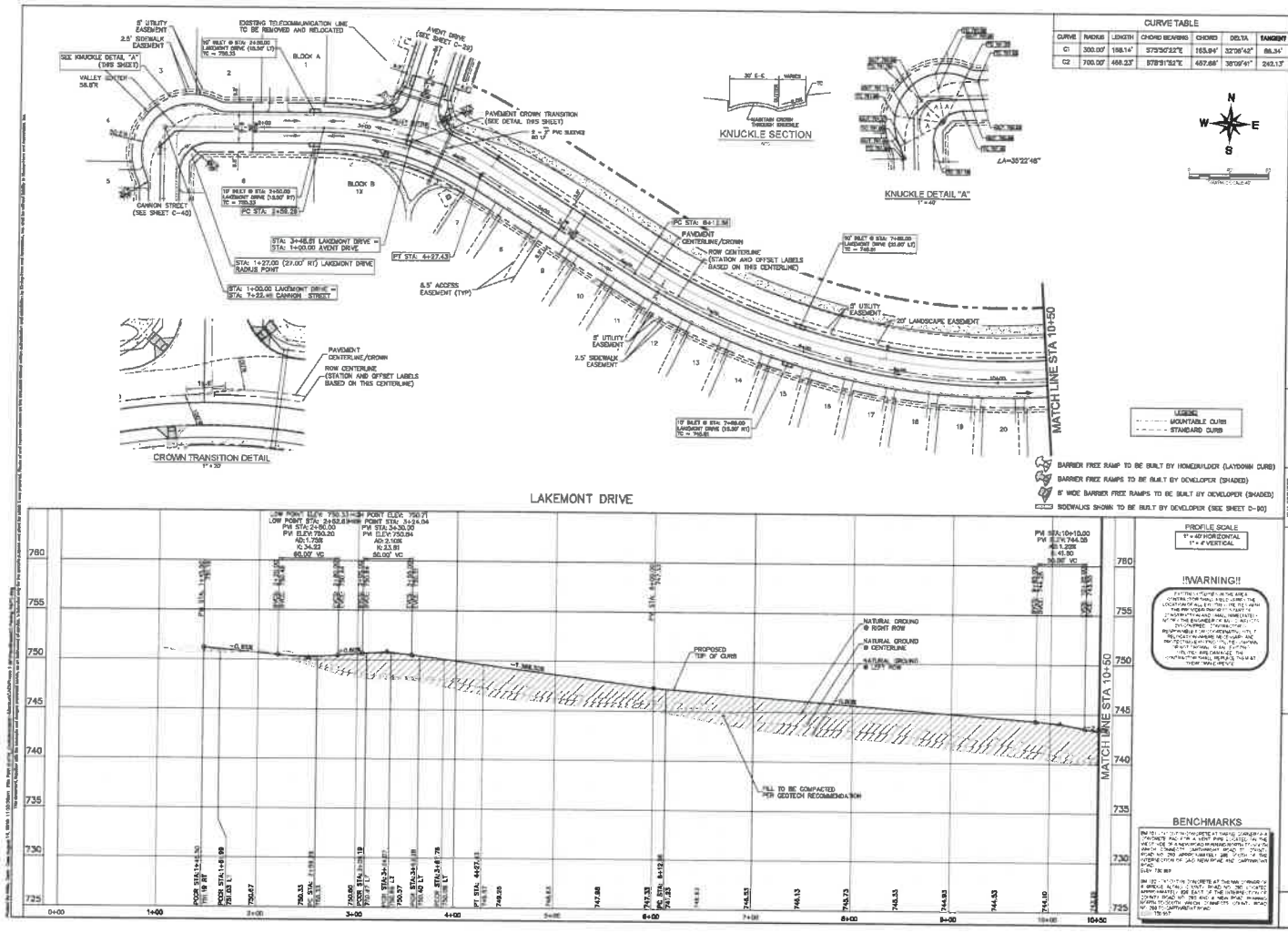
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-23

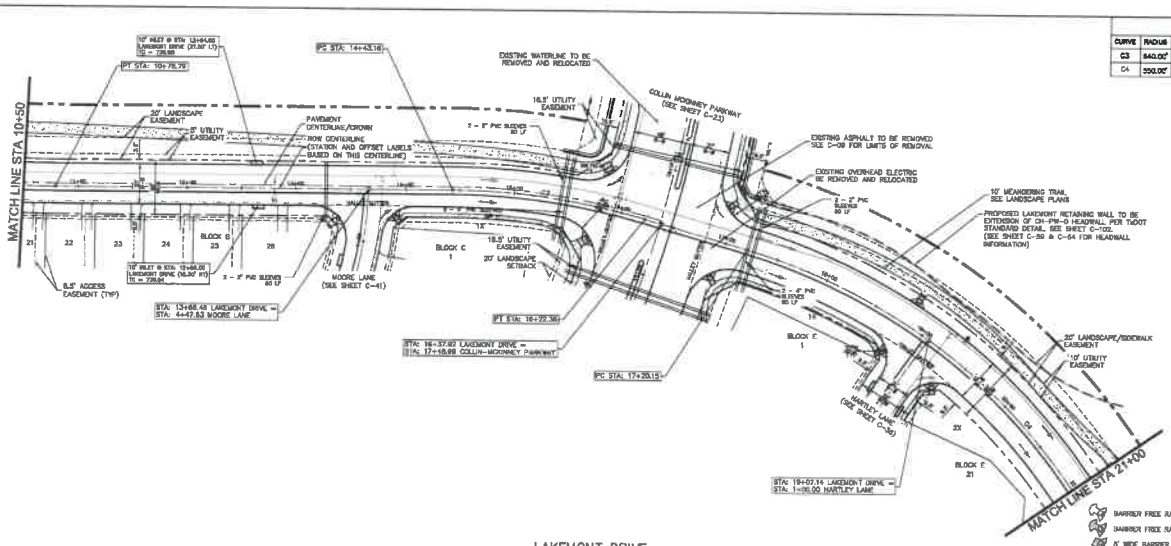

CURVE TABLE
CURVE | RADIUS | LENGTH | CHORD BEARING | CHORD | DELTA | TANGENT
C3 | 2000.00' | 478.38' | N56°13'19"W | 477.25' | 13°42'17" | 240.34'
EXISTING ASPHALT TO BE REMOVED SEE C-09 FOR LIMITS OF REMOVAL
EXISTING OVERHEAD ELECTRIC TO BE REMOVED AND RELOCATED
20' LANDSCAPE/SIDEWALK EASEMENT
10' UTILITY EASEMENT
LANDMONT DRIVE (SEE SHEET C-20)
STA: 5+10.72 COUNTY ROAD 290 = STA: 36+06.43 LANDMONT DRIVE
48 SY OF ROCK RIP RAP.
PROFILE GRADE OF TEMPORARY ASPHALT TRANSITION.
TEMPORARY DRAINAGE SWALE
PROPOSED ASPHALT TRANSITION SEE C-43 FOR DETAILS
236 SY OF ROCK RIP RAP FOR TEMP. DRAINAGE OF NORTH SIDE OF TEMP ASPHALT TRANSITION.
PROPOSED HEADWALL
EXISTING BRIDGE TO BE PROTECTED IN PLACE
EXISTING COUNTY ROAD 290
PROFILE GRADE (PROPOSED TOP OF CURB)
MATCH LINE STA 10+50
SEE SHEET C-43 FOR INTERSECTION GRADING DETAIL
GUTTER LINE - NO MEDIAN CURB UNTIL STA 10+55.87
PC STA. 8+44.22
PROPOSED ASPHALT TRANSITION SEE C-43 FOR DETAILS
EXISTING ASPHALT TO BE REMOVED SEE C-09 FOR LIMITS OF REMOVAL
CAUTION: EXISTING GAS LINE
EXISTING WATERLINE TO REMAIN
80' EASEMENT TO ENERGY TRANSFER FUEL, LP IN INST. NO. 2006-0627000784720 O.R.C.C.T.
EASEMENT TO THE CITY OF VAN ALSTYNE IN INST. NO. 2015-1015001310050 O.R.C.C.T.
EXISTING COUNTY ROAD 290
N
W
E
S
GRAPHIC SCALE 1" = 40'
LEGEND
MOUNTABLE CURB
STANDARD CURB
DESIGN SPEED FOR COLLIN-MCKINNEY PARKWAY = 45 MPH
BARRIER FREE RAMP TO BE BUILT BY HOMEBUILDER (LAYDOWN CURB)
BARRIER FREE RAMPS TO BE BUILT BY DEVELOPER (SHADED)
8' WIDE BARRIER FREE RAMPS TO BE BUILT BY DEVELOPER (SHADED)
SIDEWALKS SHOWN TO BE BUILT BY DEVELOPER (SEE SHEET D-90)
COUNTY ROAD 290
MATCH LINE STA 10+50
NATURAL GROUND @ RIGHT ROW
NATURAL GROUND @ CENTERLINE
NATURAL GROUND @ LEFT ROW
PROPOSED TOP OF CURB
PROPOSED TOP OF CURB
PROPOSED CURBLESS ASPHALT TRANSITION TO BE DOWNGRADED AT THIS TIME (TOP OF PAVEMENT)
FILL TO BE COMPACTED PER GEOTECH RECOMMENDATION
EXISTING BRIDGE TO BE PROTECTED IN PLACE
PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL
!!WARNING!!
BENCHMARKS
Kimley»Horn
PRELIMINARY
PAVING PLAN & PROFILE - COUNTY ROAD 290
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS
C-24

CURVE TABLE							
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C3	2000.00'	478.36'	N86°13'18"W	477.25'	13°42'17"	240.34'
C4	1400.00'	103.34'	N81°29'04"W	103.32'	4°13'45"	51.69'

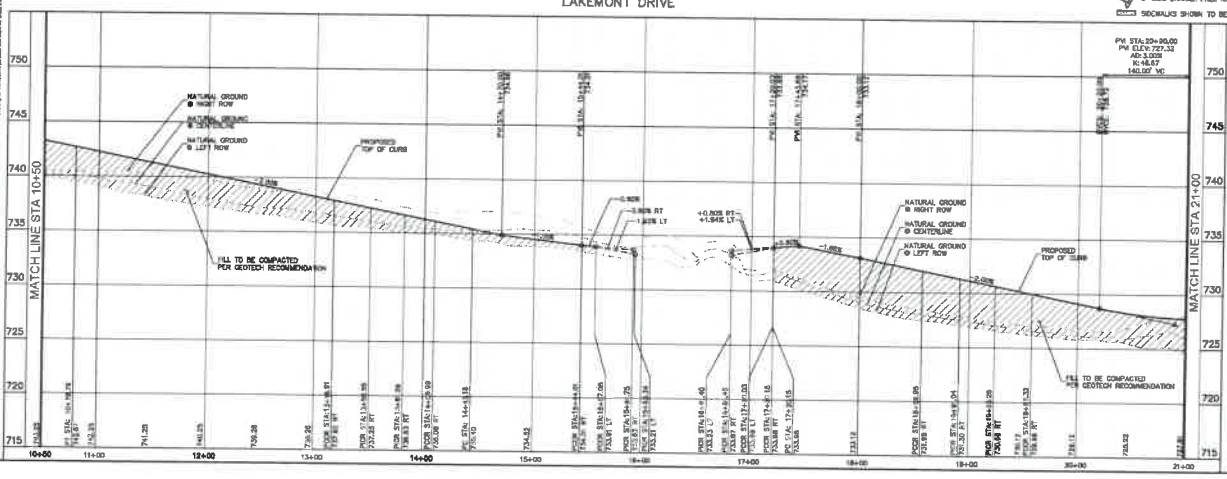



CURVE TABLE
CURVE | RADIUS | LENGTH | CHORD BEARING | CHORD | DELTA | TANGENT
C1 | 300.00' | 168.14' | S73°30'22"E | 165.94' | 32°09'42" | 86.34'
C2 | 700.00' | 468.23' | S78°31'52"E | 467.68' | 38°09'41" | 243.13'
KNUCKLE SECTION
KNUCKLE DETAIL "A"
CROWN TRANSITION DETAIL
LAKEMONT DRIVE
MATCH LINE STA 10+50
PAVEMENT CROWN TRANSITION (SEE DETAIL THIS SHEET)
PAVEMENT CENTERLINE/CROWN
ROW CENTERLINE (STATION AND OFFSET LABELS BASED ON THIS CENTERLINE)
8.5' ACCESS EASEMENT (TYP)
20' LANDSCAPE EASEMENT
2.5' SIDEWALK EASEMENT
EXISTING TELECOMMUNICATION LINE TO BE REMOVED AND RELOCATED
AVENT DRIVE (SEE SHEET C-26)
CANNON STREET (SEE SHEET C-40)
BLOCK A
BLOCK B
LEGEND
MOUNTABLE CURB
STANDARD CURB
BARRIER FREE RAMP TO BE BUILT BY HOMEBUILDER (LAYDOWN CURB)
BARRIER FREE RAMPS TO BE BUILT BY DEVELOPER (SHADED)
8' WIDE BARRIER FREE RAMPS TO BE BUILT BY DEVELOPER (SHADED)
SIDEWALKS SHOWN TO BE BUILT BY DEVELOPER (SEE SHEET C-90)
PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL
!!WARNING!!
BENCHMARKS
NATURAL GROUND @ RIGHT ROW
NATURAL GROUND @ CENTERLINE
NATURAL GROUND @ LEFT ROW
PROPOSED TOP OF CURB
FILL TO BE COMPACTED PER GEOTECH RECOMMENDATION
Kimley»Horn
PAVING PLAN & PROFILE - LAKEMONT DRIVE
MANTUA POINT PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS
C-26

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C3	840.00'	179.20'	S86°50'28"E	178.81'	12°02'33"	90.19'
C4	550.00'	888.84'	S35°45'43"E	793.15'	92°19'54"	572.35'



LAKEMONT DRIVE



!!WARNING!!

EXISTING UTILITIES IN THE AREA CONTRACTOR SHALL RELOCATE THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION. IF UTILITIES ARE FOUND TO BE IN THE ENGINEER PLAN TO BE LOCATED, BUT ARE ENCOUNTERED DURING CONSTRUCTION, RESPONSIBILITY FOR UNNECESSARY PUT RESTORATION WHERE NECESSARY AND REPOSITION EXISTING UTILITIES (NOT IN THE WORK) IS ON THE CONTRACTOR. ALL COSTS ASSOCIATED WITH THE CONTRACTOR HAVING TO DO THIS ARE THEIR TIME EXPENSE

BENCHMARKS

ON RETAINING WALL CONCRETE AT THE NE CORNER OF A CONCRETE PAD FOR A JOINT PIPE LOCATED ON THE

Kimley»Horn

Proof of Consideration

Kimley»Horn

NON-PROJECT RELEVANT DATE AUGUST 2018

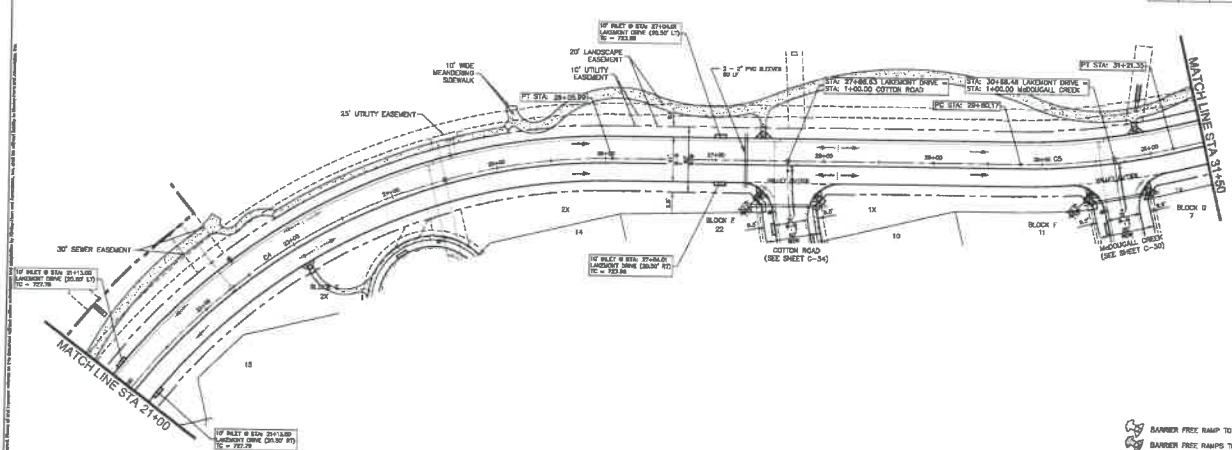
DESIGNED: KB BROWN
DRAWN: JBA
CHECKED: TDC

PAVING PLAN & PROFILE - LAKEMONT DRIVE

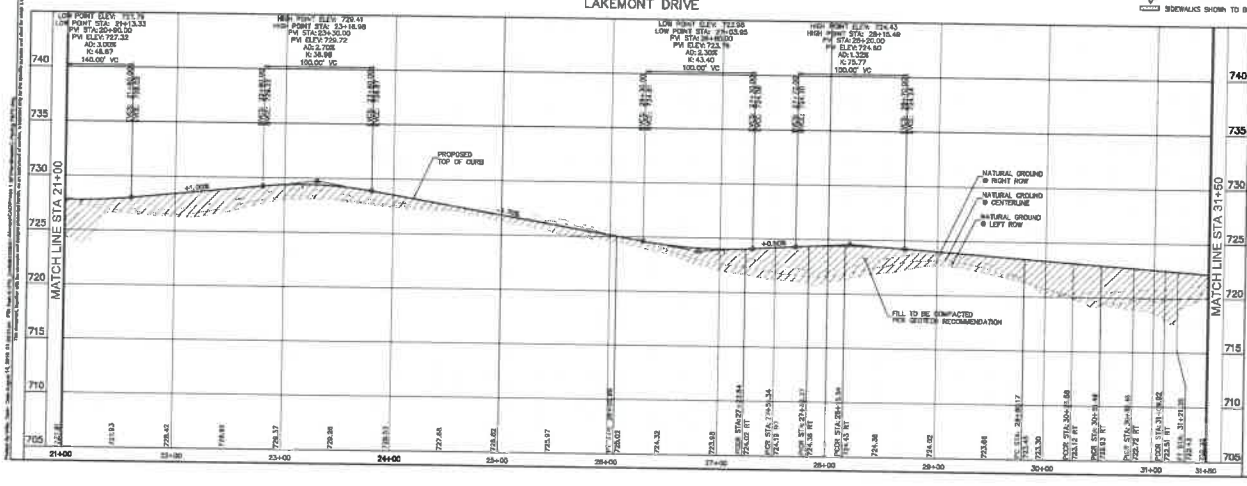
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-27

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C4	550.00'	895.54'	S32°45'43"E	793.15'	92°15'54"	572.35'
C5	600.00'	141.18'	S37°36'18"W	140.85'	13°28'53"	70.92'



LAKEMONT DRIVE



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

!!WARNING!!

EXISTING UTILITIES IN THE AREA OF CONSTRUCTION SHALL BE LOCATED PRIOR TO THE PROPOSED EXISTING UTILITIES WITH THE PROPOSED IMPROVEMENTS. DURING CONSTRUCTION AND WHEN DEEMED NECESSARY BY THE ENGINEER FOR ANY CONFLICTS NOT FORESEEN DURING PLANNING, RESPONSIBLE FOR OFF-SEASON UTILITY RELOCATION, ADJUSTMENT, REPAIR AND PROTECTION EXISTING UTILITY FACILITIES. ANY DAMAGE, IF ANY, TO EXISTING UTILITIES ARE CAUSED BY THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE.

BENCHMARKS

BM NO. 1 - CUT "X" IN CONCRETE AT THE NW CORNER OF A CONCRETE BRIDGE FOR A JOINT PIPE LOCATED ON THE WEST SIDE OF A NEW ROAD IN MANDALAY APARTMENTS WHICH CONNECTS CARPARKWAY ROAD TO COUNTY ROAD 407 (ONE APPROXIMATELY 1.25 SOUTH OF THE INTERSECTION OF SAID NEW ROAD AND CARPARKWAY ROAD).
ELEV. = 730.93

BM NO. 2 - CUT "X" IN CONCRETE AT THE NW CORNER OF A BRIDGE ALONG COUNTY ROAD NO. 407 (ONE APPROXIMATELY 0.75 SOUTH OF THE INTERSECTION OF COUNTY ROAD 407 AND A NEW ROAD WHICH CONNECTS COUNTY ROAD 407 TO CARPARKWAY ROAD).
ELEV. = 731.55

No	REVISIONS	DATE	BY

Kimley»Horn
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7800 N. MOPAC EXPY, STE 200 AUSTIN, TX 78731
PHONE: 512-418-1771
WWW.KIMLEY-HORN.COM
TBPE FIRM REGISTRATION #: F-928 / TBPLS FIRM #: 10194676

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING PURPOSES
Kimley»Horn
Texas Registration No. F-928
Date: 08/24/2018

FOR PROJECT NUMBER	DATE	AS SHOWN
	AUGUST 2018	
TXK-142-01	DESIGNED	JBA
HK-2181	DRAWN	TDC

PAVING PLAN & PROFILE - LAKEMONT DRIVE

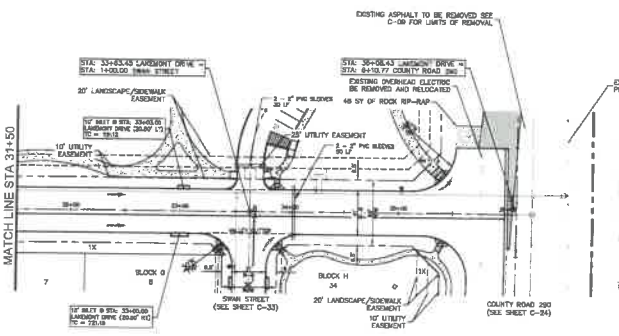
MANTUA POINT PHASE 1

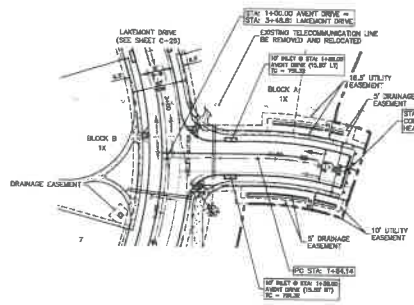
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-28

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C6	300.00'	82.58'	N23°05'10"E	82.30'	15°46'03"	41.54'

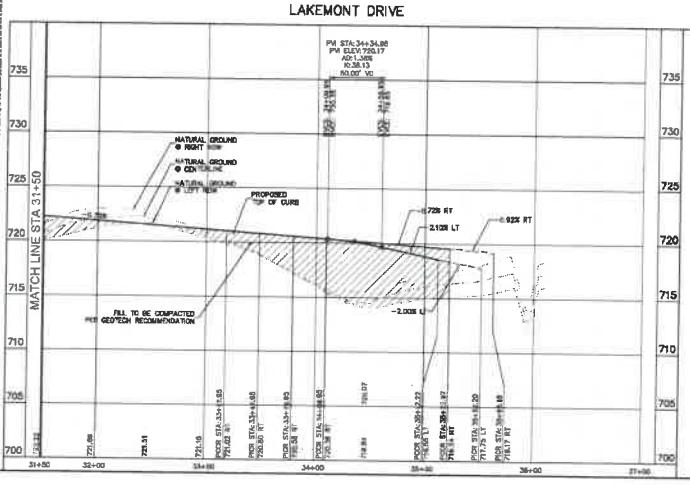
LEGEND
MOUNTABLE CURB
STANDARD CURB



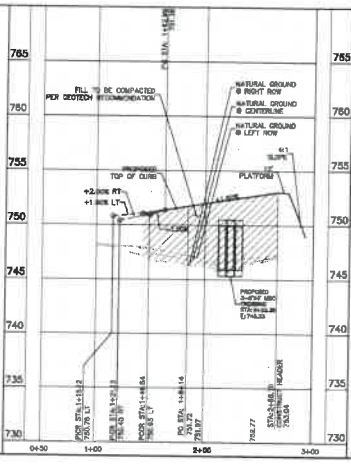


BARRIER FREE RAMP TO BE BUILT BY HOMEBUILDER (LAYDOWN CURB)
BARRIER FREE RAMPS TO BE BUILT BY DEVELOPER (SHADED)
8' WIDE BARRIER FREE RAMPS TO BE BUILT BY DEVELOPER (SHADED)
SIDEWALKS SHOWN TO BE BUILT BY DEVELOPER (SEE SHEET C-30)

LAKEMONT DRIVE



AVENT DRIVE



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

!WARNING!!

EXISTING UTILITIES IN THE AREA CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IF ANY OF THE UTILITIES ARE DAMAGED. CONTRACTOR IS RESPONSIBLE FOR TEMPORARING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES SHOWN ON THE PLANS. IF ANY OF THE UTILITIES ARE DAMAGED BY THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE

BENCHMARKS

REVISIONS		DATE	BY
No.			

Kimley»Horn

PRELIMINARY

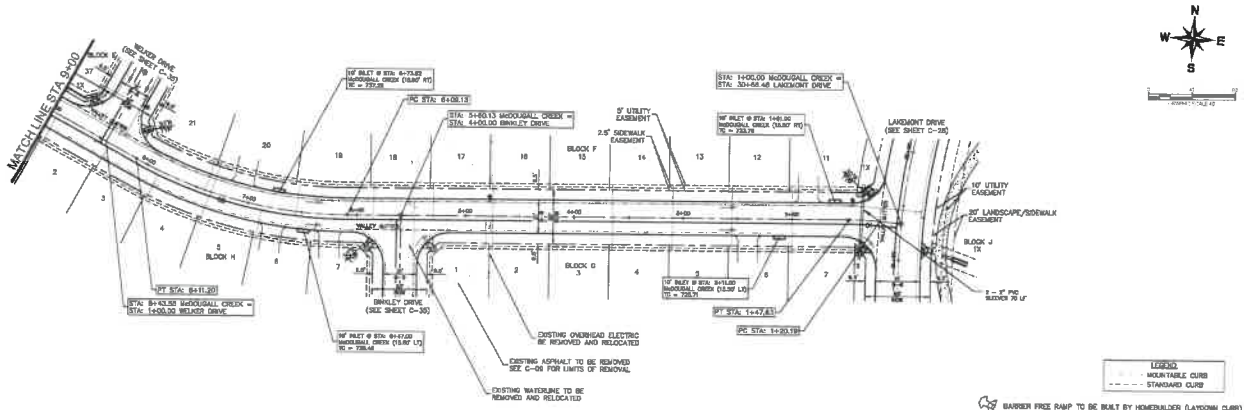
KHA PROJECT
PROJECT DATE
AUGUST 2019
SCALE AS SHOWN
DESIGNED JBA
DRAWN TDC

PAVING PLAN & PROFILE - LAKEMONT DRIVE & AVENT DRIVE

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-29

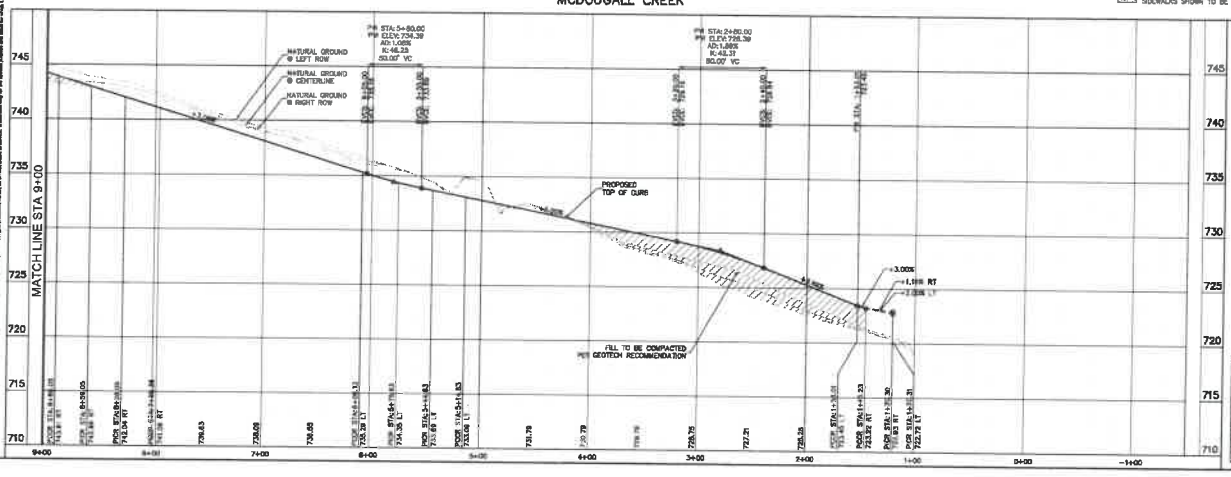
CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C1	300.00'	27.44'	S88°31'03"W	27.43'	5°14'24"	13.73'
C2	400.00'	202.07'	N78°37'48"W	199.83'	28°56'42"	103.24'



LEGEND
MOUNTABLE CURB
STANDARD CURB

BARRIER FREE RAMP TO BE BUILT BY HOMEBUILDER (LAYDOWN CURB)
BARRIER FREE RAMPS TO BE BUILT BY DEVELOPER (SHADED)
8' WIDE BARRIER FREE RAMPS TO BE BUILT BY DEVELOPER (SHADED)
SIDEWALKS SHOWN TO BE BUILT BY DEVELOPER (SEE SHEET C-90)

MCDOUGALL CREEK



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

!WARNING!!

EXISTING UTILITIES IN THE AREA CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO THE PRE-CONSTRUCTION MEETING, PRIOR TO CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR ALL REPAIRS TO UTILITY RELOCATIONS WHERE NECESSARY AND REPAIRS TO ANY DAMAGE TO ROADWAY, DRIVE, SIDEWALK AND SHOULDER UTILITIES CAUSED BY THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE

BENCHMARKS

REVISIONS	DATE	BY
NO.		

Kimley»Horn
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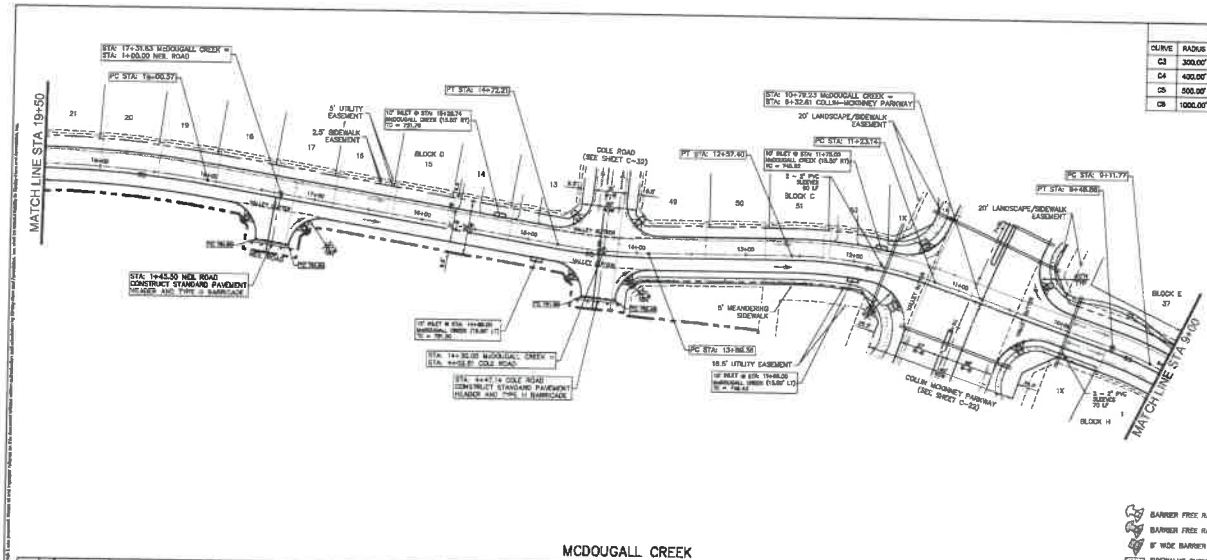
13455 NOEL ROAD, SUITE 1500
DALLAS, TEXAS 75240
PHONE: 972-770-1300
WWW.KIMLEY-HORN.COM
TEXAS REGISTERED ENGINEERING FIRM F-928

PRELIMINARY
NOT FOR CONSTRUCTION OR BIDDING PURPOSES
Kimley»Horn
PAUL J. CORRA
TEXAS REGISTERED ENGINEER NO. 121380
KHA PROJECT NO. 069110001
DATE AUGUST 2018
DESIGNED BY: DRAWN BY: CHECKED BY: JBA TOC

PAVING PLAN & PROFILE - MCDOUGALL CREEK

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

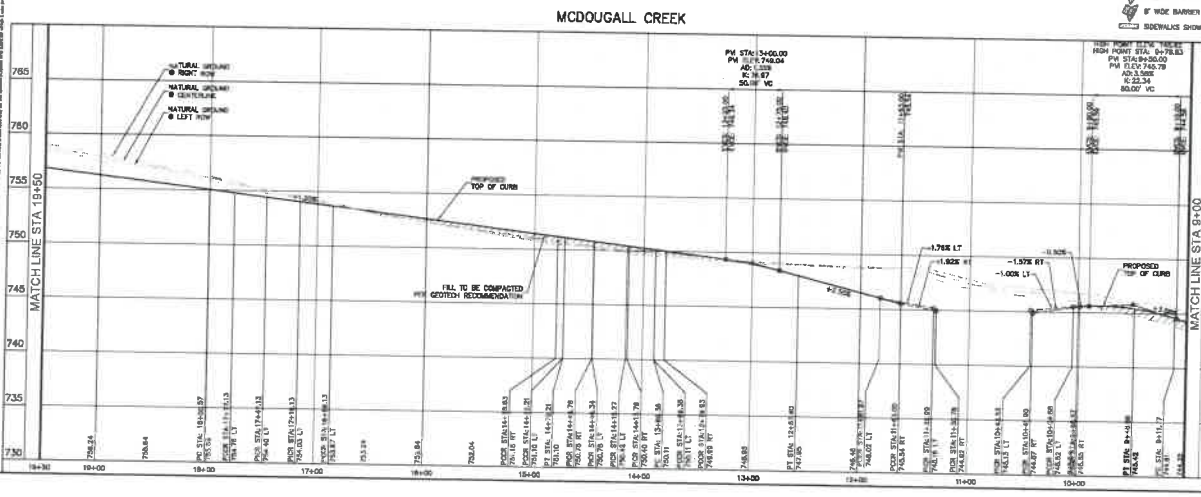
SHEET NUMBER
C-30



CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C3	300.00'	37.08'	N57°41'56"W	37.06'	7°04'38"	18.57'
C4	400.00'	134.26'	N80°51'21"W	133.63'	19°13'51"	67.77'
C5	500.00'	82.85'	N65°43'28"W	82.75'	9°29'35"	41.52'
C6	1000.00'	190.55'	N86°29'11"W	190.26'	10°55'04"	95.56'

LEGEND
- MOUNTABLE CURB
- STANDARD CURB

BARRIER FREE RAMP TO BE BUILT BY HOMEBUILDER (LAYDOWN CURB)
BARRIER FREE RAMPS TO BE BUILT BY DEVELOPER (SHADED)
8' WIDE BARRIER FREE RAMPS TO BE BUILT BY DEVELOPER (SHADED)
SIDEWALKS SHOWN TO BE BUILT BY DEVELOPER (SEE SHEET C-60)



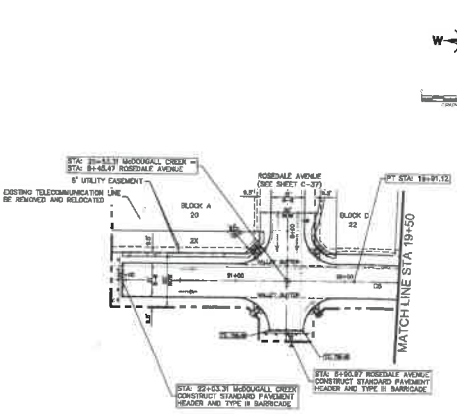
Kimley»Horn

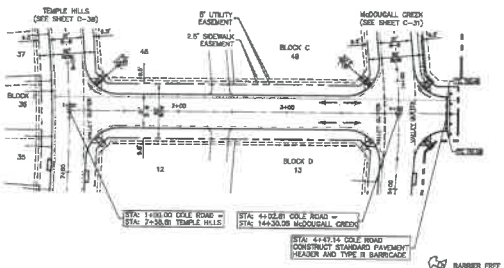
PRELIMINARY

PAVING PLAN & PROFILE - MCDOUGALL CREEK

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-31

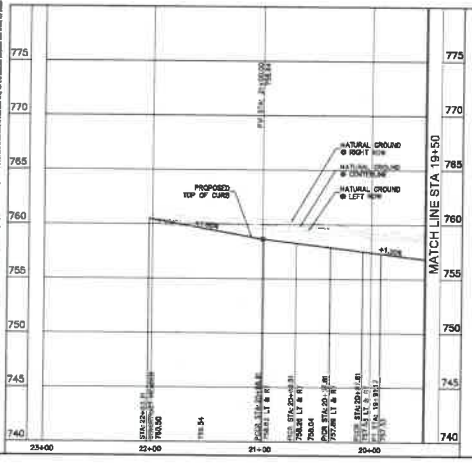




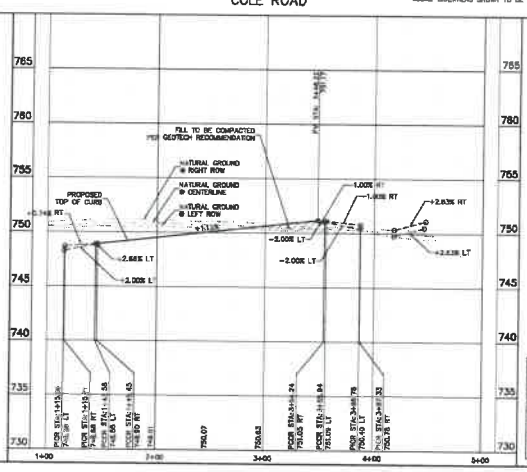
LEGEND
- MOUNTABLE CURB
- STANDARD CURB

BARRIER FREE RAMP TO BE BUILT BY HOMEBUILDER (LAYDOWN CURB)
BARRIER FREE RAMPS TO BE BUILT BY DEVELOPER (SHADED)
8' WIDE BARRIER FREE RAMPS TO BE BUILT BY DEVELOPER (SHADED)
SIDEWALKS SHOWN TO BE BUILT BY DEVELOPER (SEE SHEET C-90)

MCDOUGALL CREEK



COLE ROAD



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

!!WARNING!!

EXISTING UTILITIES ON THE AIR A CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE ENGINEER PRIOR TO BEGINNING CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROVIDING ALL WORK AS SHOWN ON THE PLANS. IF ANY EXISTING UTILITIES ARE DAMAGED THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE

BENCHMARKS

Kimley»Horn

PRELIMINARY
NOT FOR CONSTRUCTION OR PERMITTING PURPOSES
Kimley»Horn

FOR PROJECT MANAGER
DATE AUGUST 2019
DESIGNED BY
DRAWN BY JEA
CHECKED BY TDC

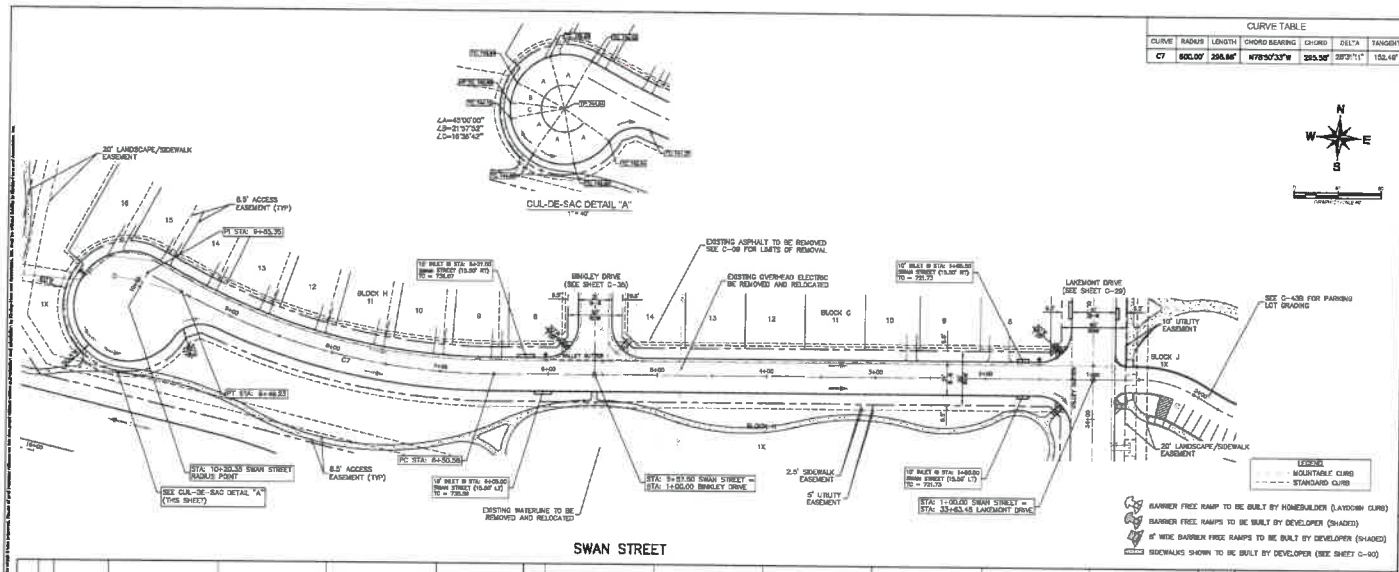
PAVING PLAN & PROFILE - MCDOUGALL CREEK & COLE ROAD

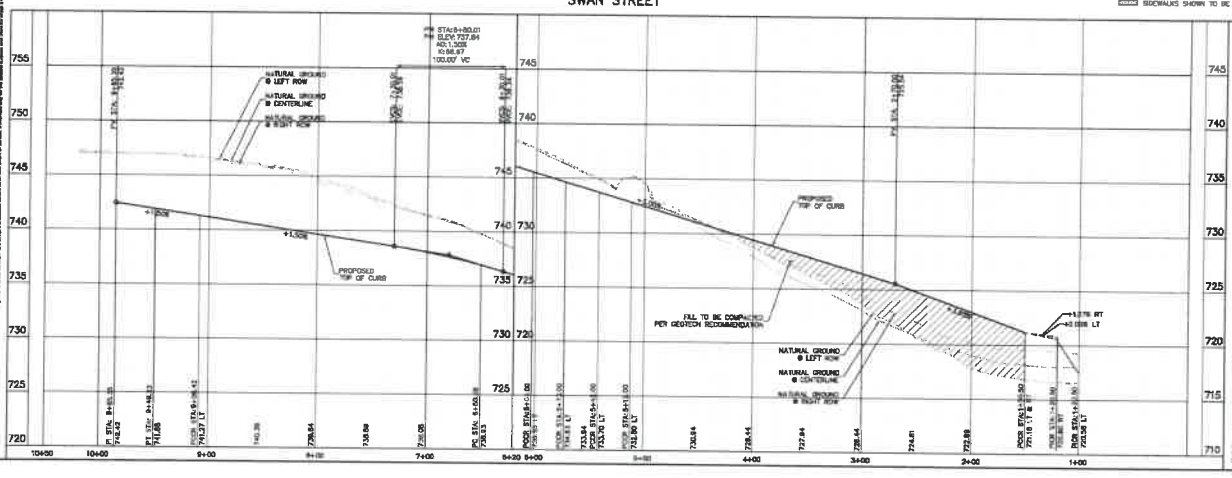
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-32

No.	REVISIONS	DATE	BY

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C7	600.00'	299.86'	N78°50'33"W	293.58'	28°37'11"	152.48'





!WARNING!!

EXISTING UTILITIES IN THE AREA. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO THE BEGINNING OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR DAMAGED UTILITY RELOCATION COSTS NECESSARY AND INCIDENTAL TO THE PROJECT. IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPAIR THEM AT THEIR OWN EXPENSE.

BENCHMARKS

DATE			
REVISIONS			
NO.			

Kimley»Horn

PRELIMINARY

DATE	AUGUST 2013
DESIGNED	JCB
DRAWN	JCB
CHECKED	TDC

PAVING PLAN & PROFILE - SWAN STREET

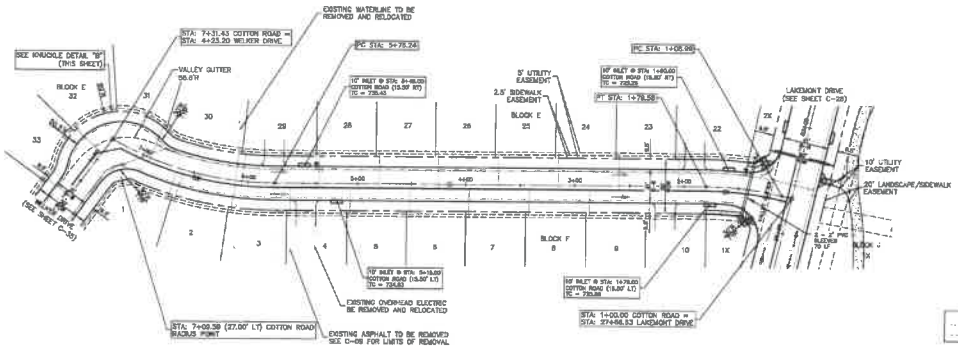
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-33

KNUCKLE DETAIL "B"
1" = 40'

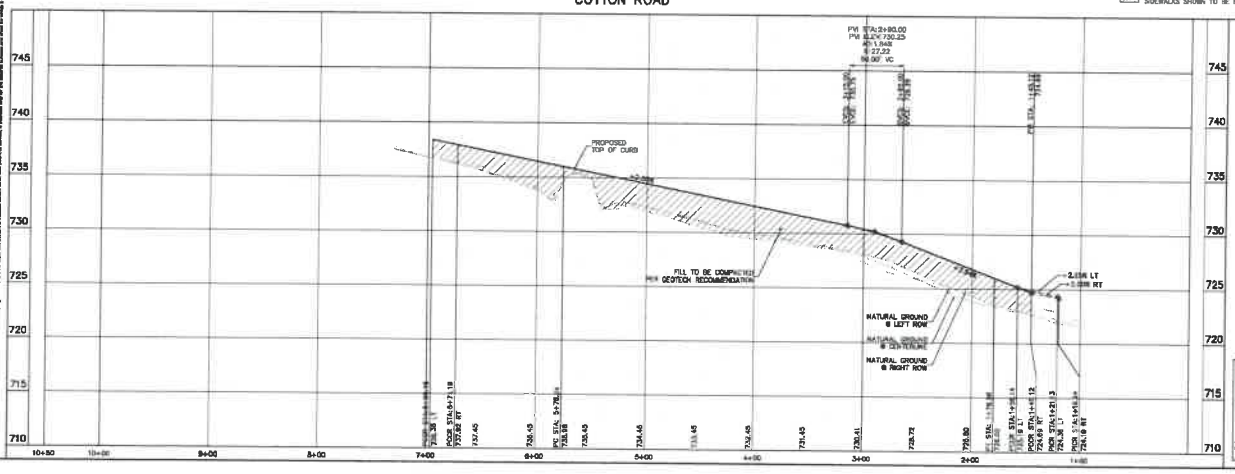
KNUCKLE SECTION

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C1	300.00'	70.59'	N66°21'42"W	70.43'	13°28'53"	35.46'
C2	300.00'	155.19'	N78°17'00"W	153.48'	29°38'16"	79.37'



BARRIER FREE RAMP TO BE BUILT BY HOMEBUILDER (LAYDOWN CURB)
BARRIER FREE RAMPS TO BE BUILT BY DEVELOPER (SHADED)
SIDEWALKS SHOWN TO BE BUILT BY DEVELOPER (SEE SHEET C-80)

COTTON ROAD



MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

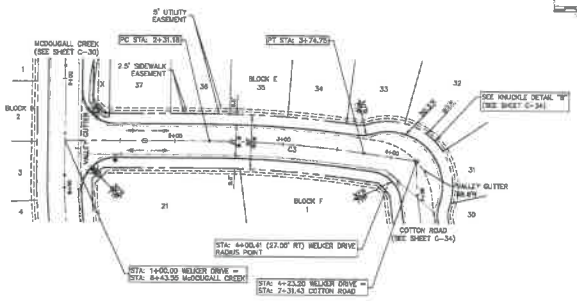
PAVING PLAN & PROFILE - COTTON ROAD

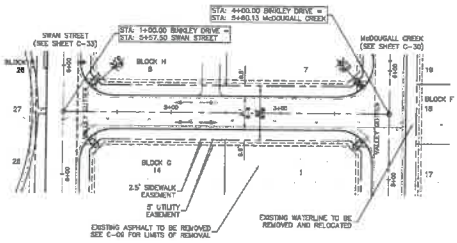
Kimley»Horn

PRELIMINARY

C-34

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C3	1000.00'	143.58'	N29°57'10"E	143.44'	8°13'32"	71.91'

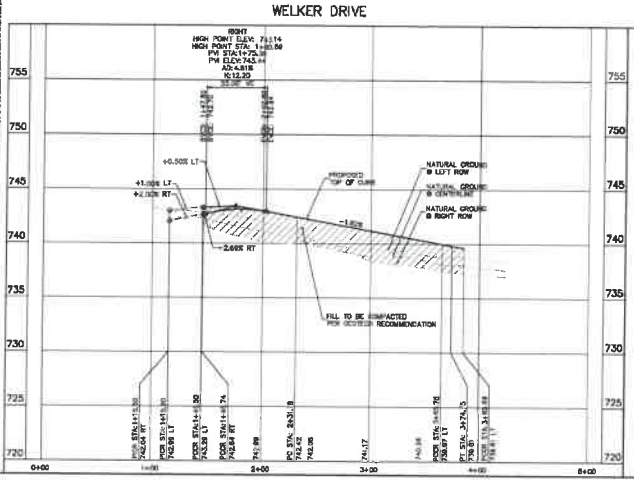




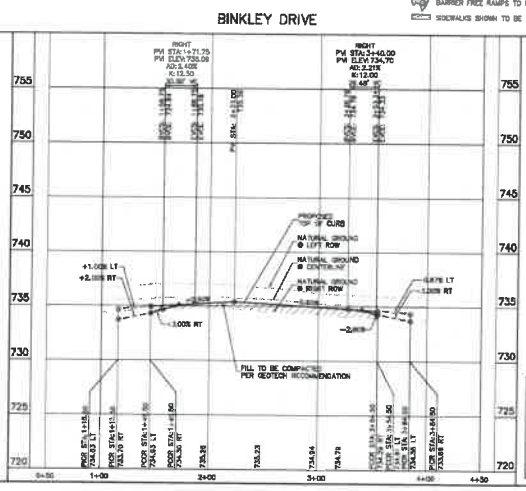
LEGEND
- MOUNTABLE CURB
- STANDARD CURB

BARRIER FREE RAMP TO BE BUILT BY HOMEBUILDER (LAYDOWN CURB)
BARRIER FREE RAMPS TO BE BUILT BY DEVELOPER (SHADED)
SIDEWALKS SHOWN TO BE BUILT BY DEVELOPER (SEE SHEET C-90)

WELKER DRIVE



BINKLEY DRIVE



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

!!WARNING!!

BENCHMARKS

Kimley»Horn

PRELIMINARY
Not for construction or permit purposes
Kimley»Horn

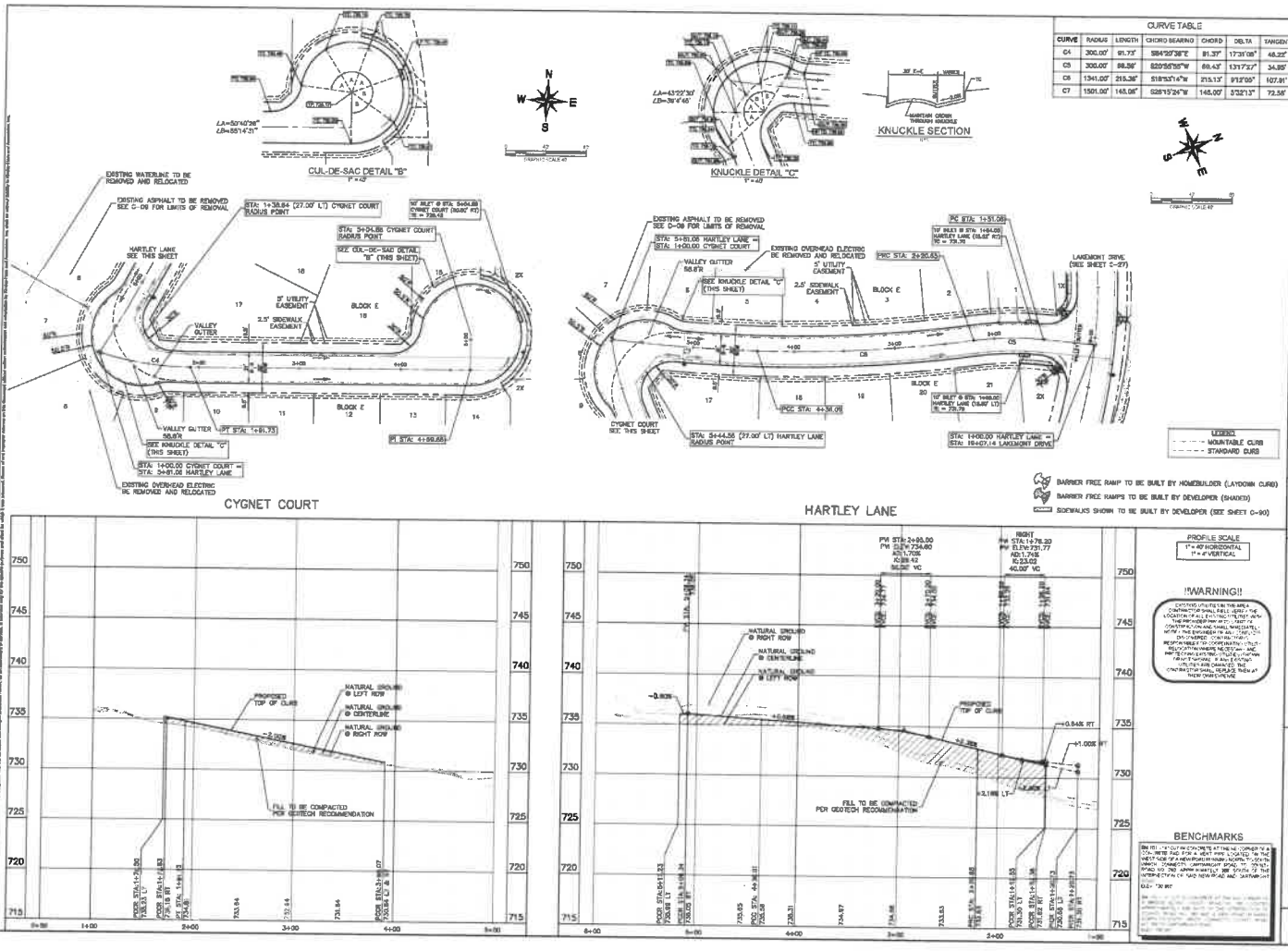
NAN PROJECT NUMBER
DATE AUGUST 2018
DESIGNED JAS
DRAWN JBA
CHECKED TGC

PAVING PLAN & PROFILE - WELKER DRIVE & BINKLEY DRIVE

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-35

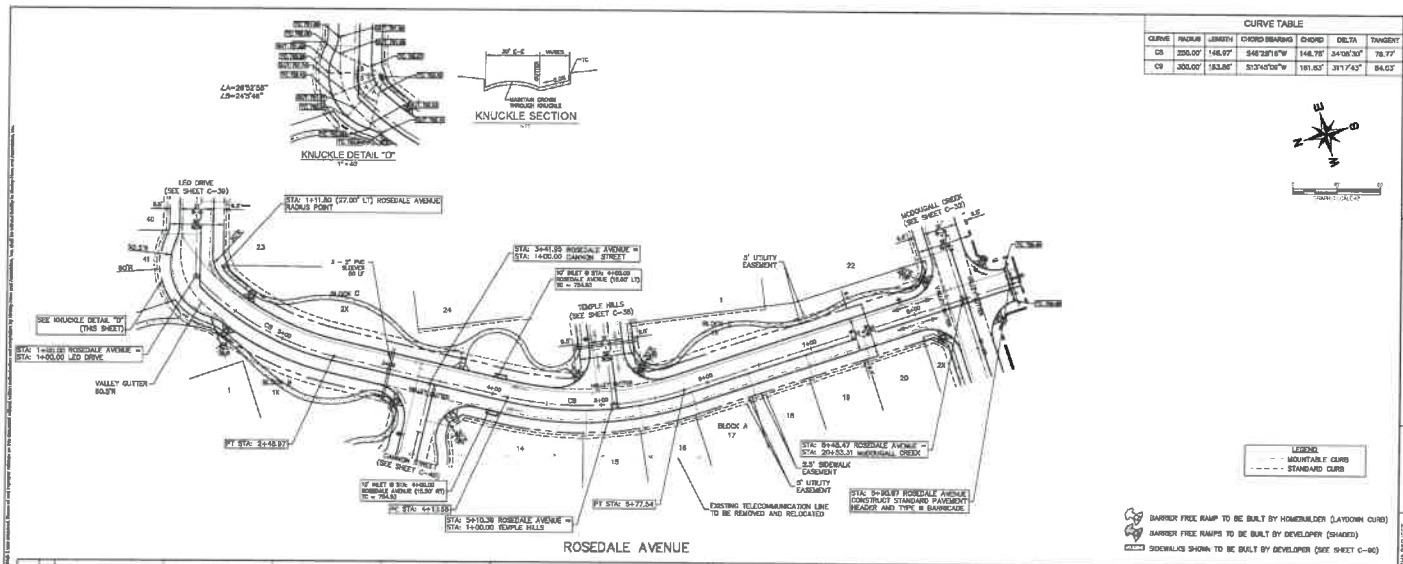
NO.	DATE	BY	REVISIONS

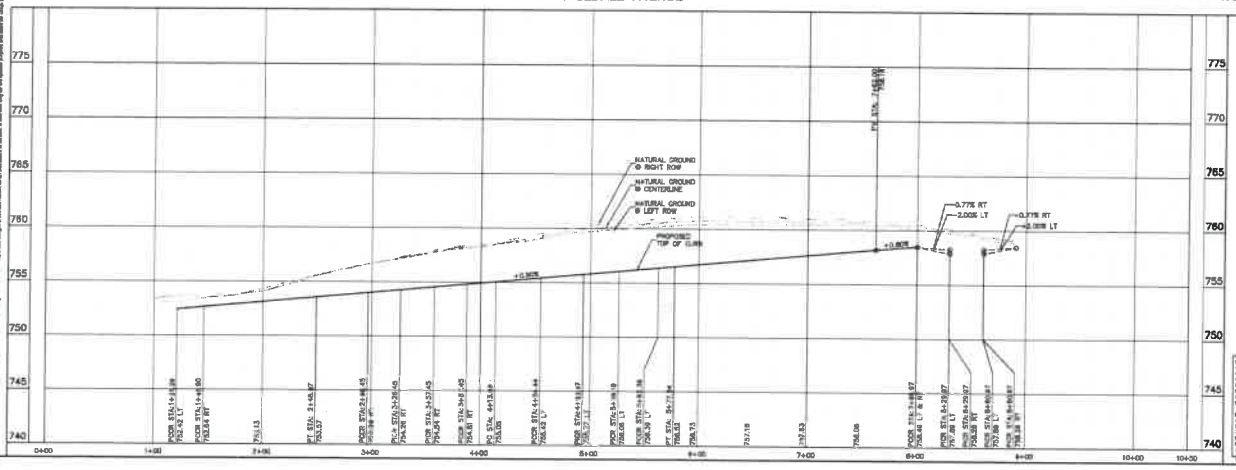


CURVE TABLE

CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C4	300.00'	91.73'	S84°20'38"E	91.37'	17°31'08"	46.22'
C5	300.00'	98.56'	S20°56'55"W	98.43'	13°17'27"	34.85'
C6	1341.00'	215.36'	S18°53'31.6"W	215.13'	9°12'05"	107.91'
C7	1501.00'	145.08'	S26°15'24"W	145.00'	5°32'13"	72.58'

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C8	250.00'	146.97'	S48°28'16"W	145.75'	34°08'30"	75.77'
C9	300.00'	193.86'	S13°45'08"W	191.53'	37°17'43"	84.03'





Kimley»Horn

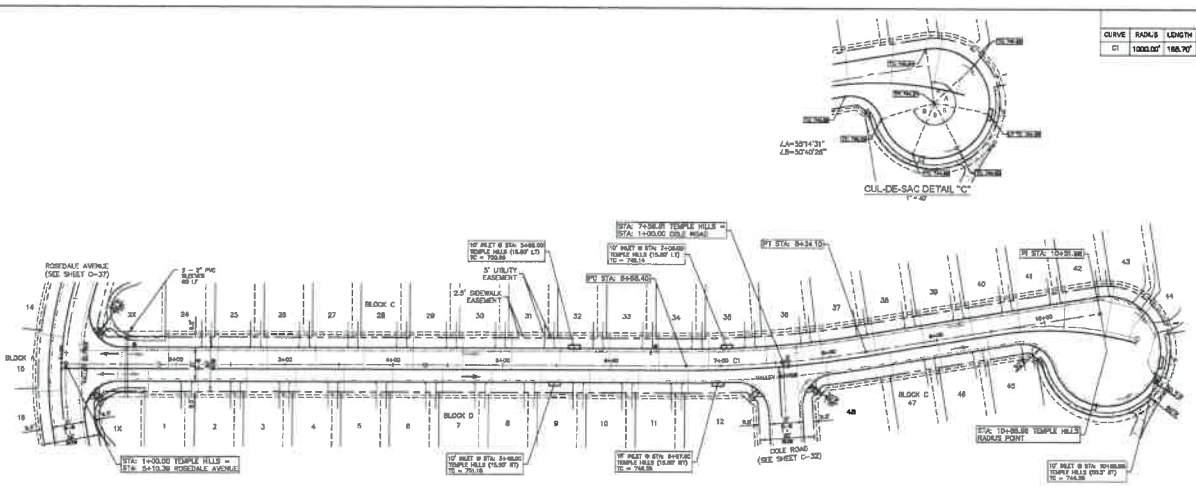
PAVING PLAN & PROFILE - ROSEDALE AVENUE

MANTUA POINT PHASE 1

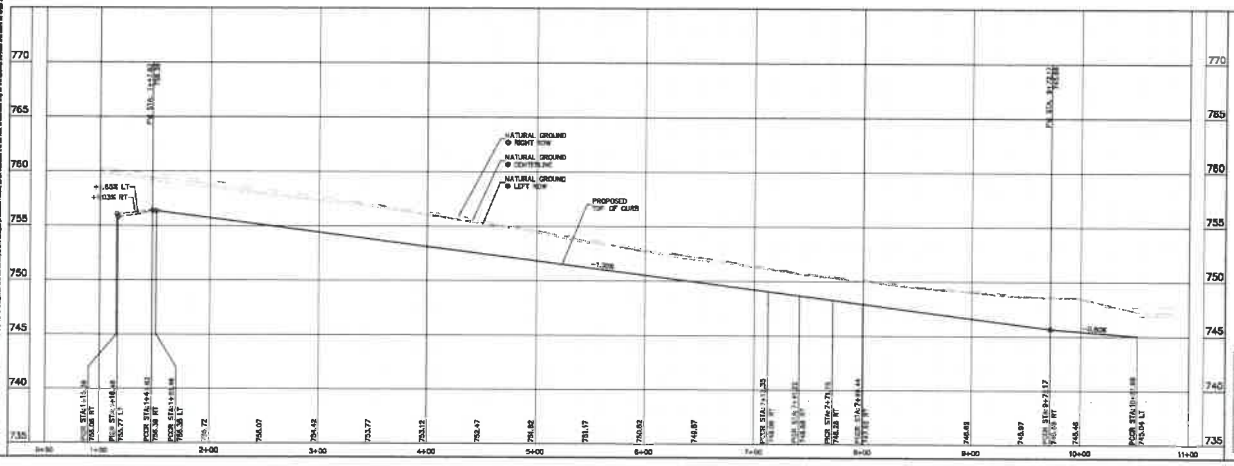
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-37

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C1	1000.00'	166.70'	S65°43'28"E	166.51'	9°29'38"	83.04'



TEMPLE HILLS



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

!WARNING!!

EXISTING UTILITIES IN THE AREA OF CONSTRUCTION ARE SHOWN AS THE LOCATION OF ALL EXISTING UTILITIES. IT IS THE PROVIDER RIGHT TO START THE CONSTRUCTION AND FINAL INVOICE. NOTE: THE ENGINEER OF ANY CONFLICTS DISCOVERED DURING WORK IN ACCESSIBLE UTILITIES WHERE RELOCATION AND PROTECTION OF THE FUTURE LOCATION OF ANY UTILITIES. IF ANY EXISTING UTILITIES ARE DAMAGED THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE

BENCHMARKS

Kimley»Horn

PRELIMINARY

JOB PROJECT NUMBER	
DATE	AUGUST 2019
DESIGNED BY	RJ, JS, BRANNON
DRAWN BY	JBA
PROJECT #	TOC

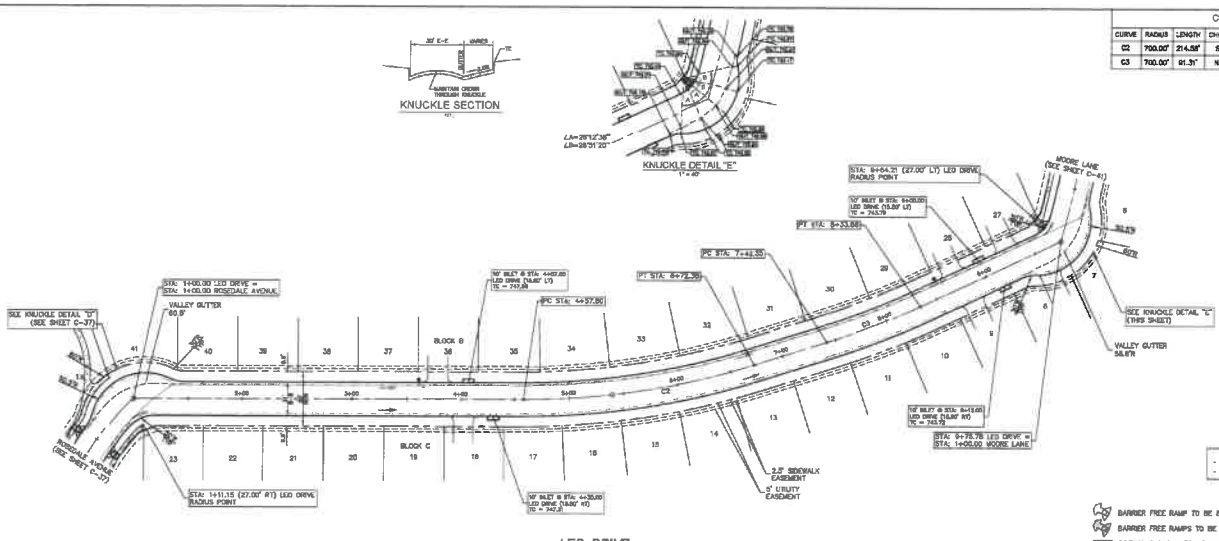
PAVING PLAN & PROFILE - TEMPLE HILLS

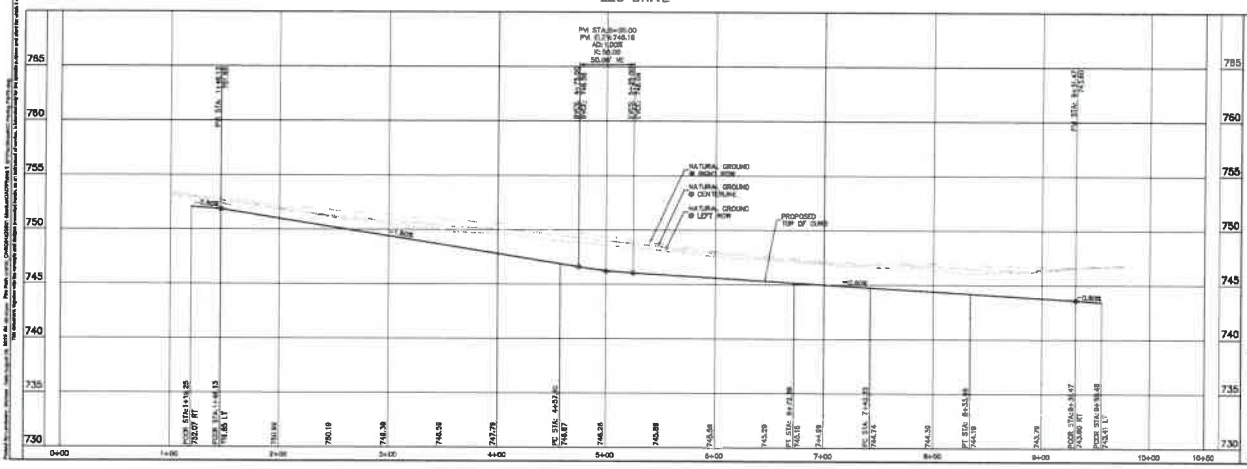
MANTUA POINT PHASE 1

CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-38

CURVE TABLE							
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C2	700.00'	214.58'	S81°41'23"E	213.74'	17°33'46"	108.14'
C3	700.00'	91.31'	N85°47'30"E	91.24'	7°28'25"	45.72'



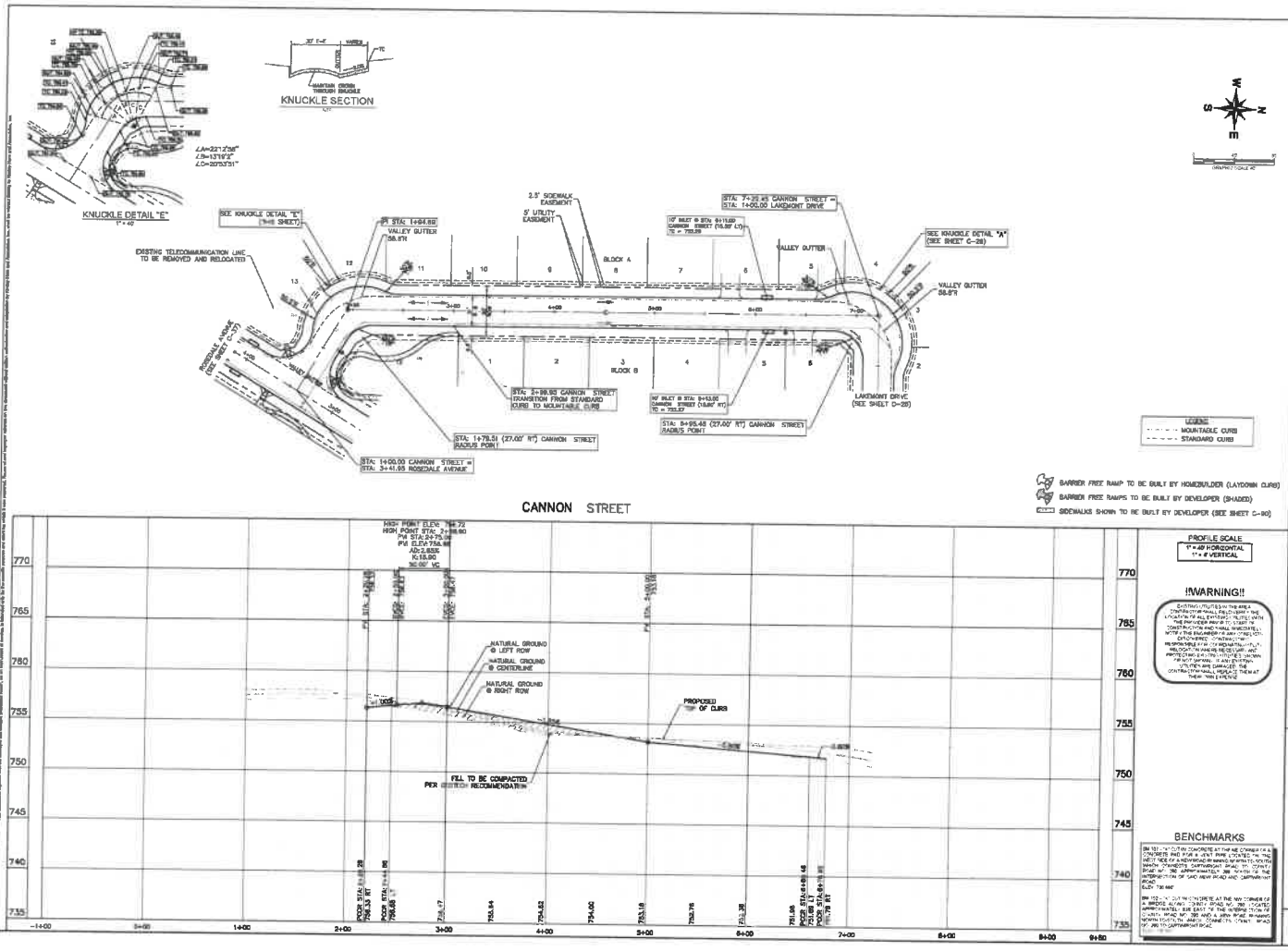


Kimley»Horn

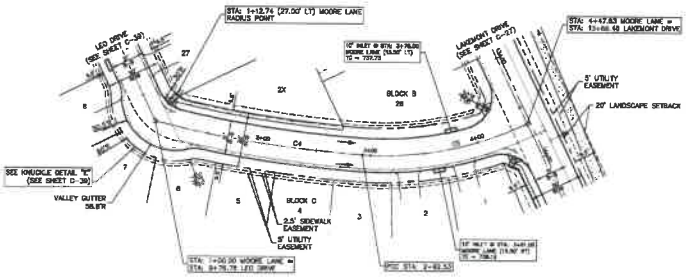
PAVING PLAN & PROFILE - LEO DRIVE

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

C-39


KNUCKLE DETAIL "E"
KNUCKLE SECTION
SEE KNUCKLE DETAIL "E"
EXISTING TELECOMMUNICATION LINE TO BE REMOVED AND RELOCATED
VALLEY GUTTER
2.5' SIDEWALK EASEMENT
5' UTILITY EASEMENT
BLOCK A
BLOCK B
SEE KNUCKLE DETAIL "A" (SEE SHEET C-28)
LAKEMONT DRIVE (SEE SHEET C-28)
STA: 1+00.00 CANNON STREET = STA: 3+41.95 ROSEDALE AVENUE
STA: 1+78.51 (27.00' RT) CANNON STREET RADIUS POINT
STA: 2+98.93 CANNON STREET TRANSITION FROM STANDARD CURB TO MOUNTABLE CURB
STA: 8+95.48 (27.00' RT) CANNON STREET RADIUS POINT
STA: 7+35.45 CANNON STREET = STA: 14+00.00 LAKEMONT DRIVE
LEGEND
MOUNTABLE CURB
STANDARD CURB
BARRIER FREE RAMP TO BE BUILT BY HOMEBUILDER (LAYDOWN CURB)
BARRIER FREE RAMPS TO BE BUILT BY DEVELOPER (SHADED)
SIDEWALKS SHOWN TO BE BUILT BY DEVELOPER (SEE SHEET C-90)
CANNON STREET
PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL
!!WARNING!!
BENCHMARKS
NATURAL GROUND @ LEFT ROW
NATURAL GROUND @ CENTERLINE
NATURAL GROUND @ RIGHT ROW
PROPOSED TOP OF CURB
FILL TO BE COMPACTED PER RECOMMENDATION
Kimley»Horn
PRELIMINARY
PAVING PLAN & PROFILE - CANNON STREET
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS
SHEET NUMBER
C-40

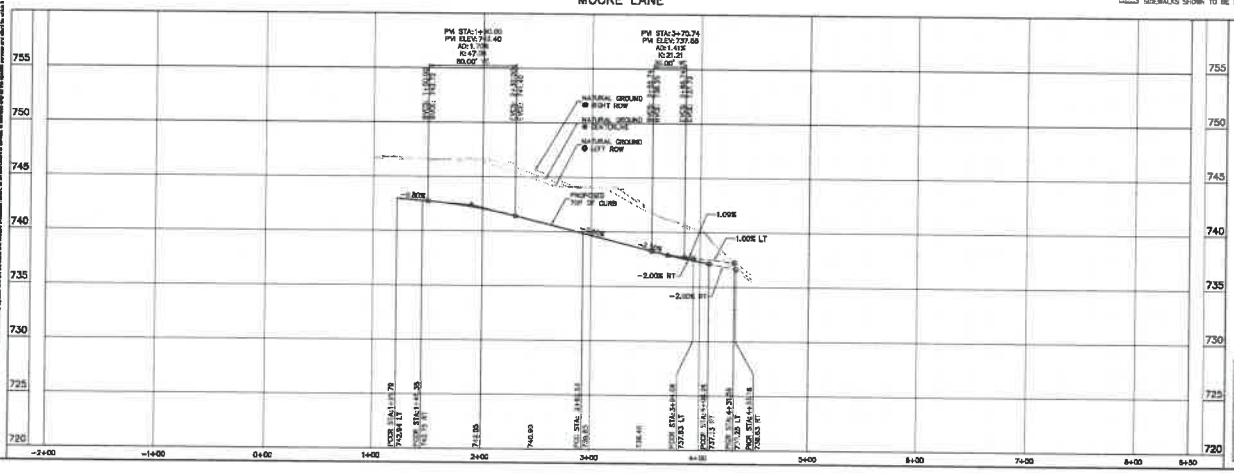
CURVE TABLE							
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C4	1020.00'	192.53'	N27°04'38"E	192.25'	10°48'04"	96.55'
C5	300.00'	155.09'	N69°51'54"E	153.37'	29°37'13"	79.32'



LEGEND
MOUNTABLE CURB
STANDARD CURB

BARRIER FREE RAMP TO BE BUILT BY HOMEBUILDER (LAYDOWN CURB)
BARRIER FREE RAMPS TO BE BUILT BY DEVELOPER (SHADED)
SIDEWALKS SHOWN TO BE BUILT BY DEVELOPER (SEE SHEET C-90)

MOORE LANE



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

!WARNING!!

EXISTING UTILITIES IN THE AREA CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE APPROPRIATE UTILITY COMPANIES. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CONFLICTS ENCOUNTERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WHERE NECESSARY AND PROTECTING EXISTING UTILITIES SHOWN ON THE PLANS. IF EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE

BENCHMARKS

REVISIONS		DATE	BY
No.			

Kimley»Horn

PRELIMINARY
Not for construction or permit purposes
Kimley»Horn

KHA PROJECT NUMBER	
DATE	AUGUST 2019
SCALE	AS SHOWN
DESIGNED	JDB
DRAWN BY	TJC
CHECKED BY	

PAVING PLAN & PROFILE - MOORE LANE

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-41

POINT TABLE

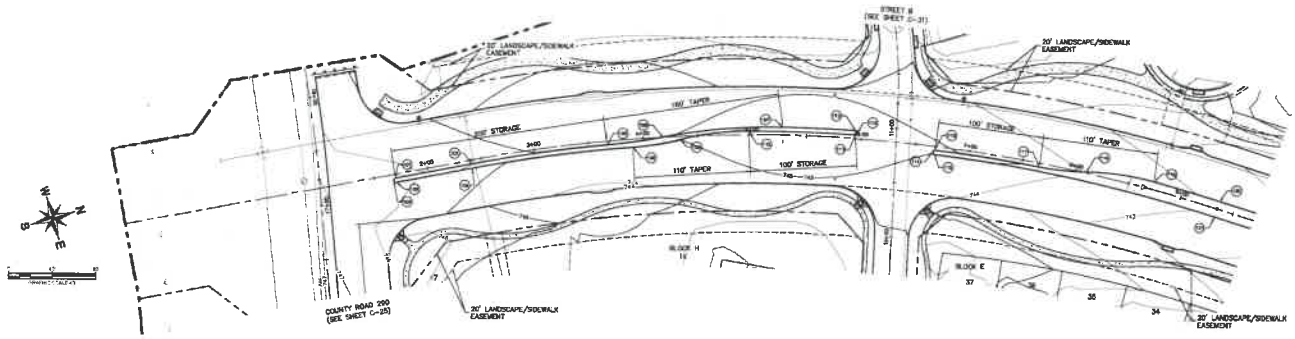
POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET	ELEVATION
100	CURB MID POINT (TS)	COLLIN-MCKINNEY PARKWAY	1+07.23	5.00' RT	716.65
101	CURB (TC)	COLLIN-MCKINNEY PARKWAY	1+05.23	5.00' RT	716.67
102	CURB (TC)	COLLIN-MCKINNEY PARKWAY	1+05.23	7.00' RT	716.67
103	CURB PC (CV)	COLLIN-MCKINNEY PARKWAY	2+05.34	2.00' RT	718.59
104	CURB PC (TC)	COLLIN-MCKINNEY PARKWAY	2+05.34	7.00' RT	718.59
105	CURB PRC (TC)	COLLIN-MCKINNEY PARKWAY	2+07.32	5.00' RT	718.55
106	CURB PRC (TC)	COLLIN-MCKINNEY PARKWAY	4+46.46	5.00' RT	724.46
107	CURB PT (TS)	COLLIN-MCKINNEY PARKWAY	3+05.07	7.00' LT	718.07
108	CURB PRC (TC)	COLLIN-MCKINNEY PARKWAY	3+05.05	7.00' RT	718.19
109	CURB PRC (TC)	COLLIN-MCKINNEY PARKWAY	4+44.42	2.00' RT	719.20
110	CURB PT (TS)	COLLIN-MCKINNEY PARKWAY	4+05.49	5.00' LT	718.15
111	CURB (TC)	COLLIN-MCKINNEY PARKWAY	5+05.47	5.00' LT	719.22
112	CURB (TC)	COLLIN-MCKINNEY PARKWAY	5+05.47	7.00' LT	719.00
113	CURB MID POINT (TC)	COLLIN-MCKINNEY PARKWAY	5+05.48	5.00' LT	719.19
114	CURB MID POINT (TC)	COLLIN-MCKINNEY PARKWAY	5+05.50	5.00' RT	719.02
115	CURB (TC)	COLLIN-MCKINNEY PARKWAY	5+05.51	7.00' RT	719.05

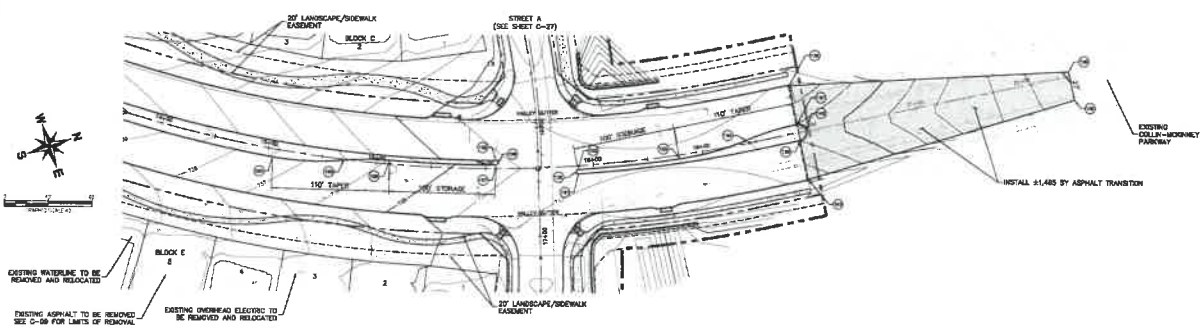
POINT TABLE

POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET	ELEVATION
116	CURB (TS)	COLLIN-MCKINNEY PARKWAY	5+05.51	5.00' RT	719.07
117	CURB PRC (TC)	COLLIN-MCKINNEY PARKWAY	7+05.55	5.00' RT	724.55
118	CURB PRC (TC)	COLLIN-MCKINNEY PARKWAY	7+05.55	1.00' LT	724.45
119	CURB PT (TS)	COLLIN-MCKINNEY PARKWAY	7+73.19	7.00' LT	725.03
120	CURB PT (TS)	COLLIN-MCKINNEY PARKWAY	8+05.31	7.00' LT	725.32
121	CURB PT (TS)	COLLIN-MCKINNEY PARKWAY	9+05.31	7.00' RT	725.32
122	CURB PC (TC)	COLLIN-MCKINNEY PARKWAY	10+05.00	7.00' LT	725.55
123	CURB PC (TC)	COLLIN-MCKINNEY PARKWAY	10+05.00	7.00' RT	725.55
124	CURB PCC (TC)	COLLIN-MCKINNEY PARKWAY	10+05.24	7.00' RT	727.24
125	CURB PRC (TC)	COLLIN-MCKINNEY PARKWAY	10+05.00	5.00' RT	727.24
126	CURB PRC (TC)	COLLIN-MCKINNEY PARKWAY	10+11.67	5.00' LT	725.48
127	CURB (TC)	COLLIN-MCKINNEY PARKWAY	11+05.00	5.00' LT	724.55
128	CURB (TC)	COLLIN-MCKINNEY PARKWAY	11+05.00	7.00' LT	724.67
129	CURB MID POINT (TC)	COLLIN-MCKINNEY PARKWAY	11+11.42	5.00' LT	724.19
130	CURB MID POINT (TC)	COLLIN-MCKINNEY PARKWAY	12+05.75	5.00' RT	725.37
131	CURB (TC)	COLLIN-MCKINNEY PARKWAY	12+05.77	7.00' RT	725.00

POINT TABLE

POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET	ELEVATION
132	CURB (TC)	COLLIN-MCKINNEY PARKWAY	12+05.77	5.00' RT	724.65
133	CURB PRC (TC)	COLLIN-MCKINNEY PARKWAY	13+05.73	5.00' RT	723.73
134	CURB PRC (TC)	COLLIN-MCKINNEY PARKWAY	13+11.45	3.37' LT	724.65
135	CURB (GUTTER)	COLLIN-MCKINNEY PARKWAY	13+05.65	46.00' LT	725.65
137	CURB (TC)	COLLIN-MCKINNEY PARKWAY	13+05.65	7.00' LT	724.47
138	CURB (TC)	COLLIN-MCKINNEY PARKWAY	13+05.65	7.00' RT	724.47
139	MATCH EXISTING (TP)	COLLIN-MCKINNEY PARKWAY	23+04.65	6.00' LT	742.16
140	MATCH EXISTING (TP)	COLLIN-MCKINNEY PARKWAY	23+04.65	30.00' RT	738.16
141	CURB (GUTTER)	COLLIN-MCKINNEY PARKWAY	10+05.00	46.00' RT	726.24
142	CURB MID POINT (TC)	COLLIN-MCKINNEY PARKWAY	10+07.35	5.00'	724.46





!WARNING!!

EXISTING UTILITIES IN THE AREA OF CONSTRUCTION SHALL BE VERIFIED - THE LOCATIONS OF ALL EXISTING UTILITIES WITH CONFLICTS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY. IF ANY UTILITIES NOT SHOWN ON THE ENGINEER'S PLAN ARE DISCOVERED, CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE RELOCATION WHEREVER SUCH UTILITIES ARE FOUND. THE CONTRACTOR IS RESPONSIBLE FOR ANY & ALL EXISTING UTILITIES ARE DAMAGED THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE

BENCHMARKS

No.	REVISIONS	DATE	BY

Kimley»Horn

© COPYRIGHT 2019 KIMLEY-HORN AND ASSOCIATES, INC.
4201 WINFIELD ROAD, SUITE 600 WARRENVILLE, IL 60555
PH: 972.770.1300 FAX: 877.381.6373
TX REG. NO. F-928 IL LICENSE NO. 184-001792

PRELIMINARY
NOT FOR CONSTRUCTION OR PERMIT PURPOSES
Kimley»Horn

RBA PROJECT NUMBER
DATE
AUGUST 2019
DESIGNED RJ BROWN
DRAWN BY JBA
CHECKED TDC

COLLIN-MCKINNEY PARKWAY TURNLANES & TRANSITION

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-42

POINT TABLE

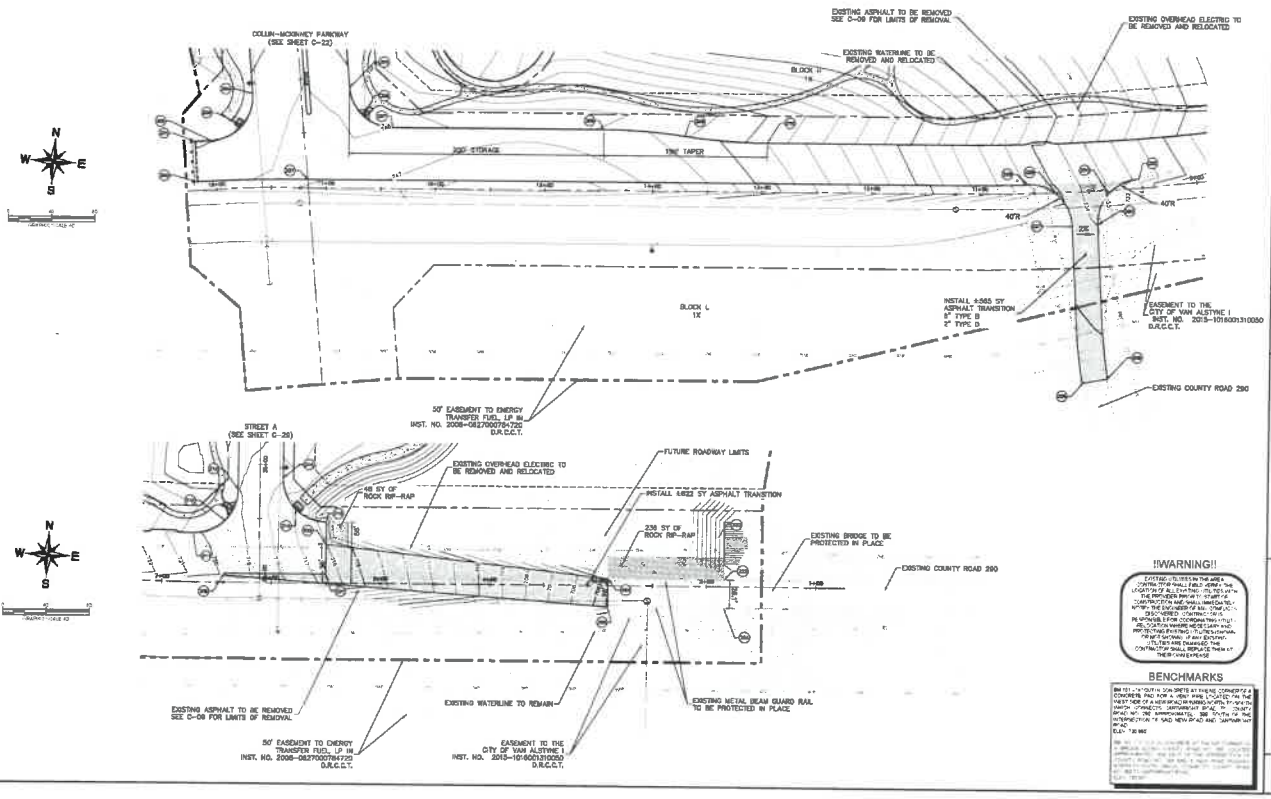
POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET	ELEVATION
100	CURB (TC)	COUNTY ROAD 290	10+17.50	45.00' RT	749.62
101	CURB (TC)	COUNTY ROAD 290	10+17.50	45.00' RT	749.37
102	CURB (TC)	COUNTY ROAD 290	10+25.00	45.00' RT	749.46
103	CURB MID POINT (TC)	COUNTY ROAD 290	17+75.00	45.00' RT	749.45
104	CURB (TC)	COUNTY ROAD 290	17+85.00	50.00' RT	749.60
105	CURB (TC)	COUNTY ROAD 290	18+05.74	62.27' RT	749.77
106	CURB MID POINT (TC)	COUNTY ROAD 290	18+05.81	45.00' RT	749.39
107	CURB (TC)	COUNTY ROAD 290	18+05.88	30.00' RT	749.35
108	CURB PC (TC)	COUNTY ROAD 290	14+05.81	30.00' RT	749.34
109	CURB PRC (TC)	COUNTY ROAD 290	13+71.81	30.00' RT	749.65
110	CURB PC (TC)	COUNTY ROAD 290	13+05.88	45.00' RT	749.80
111	CURB (TC)	COUNTY ROAD 290	6+73.31	45.00' RT	750.42

POINT TABLE

POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET	ELEVATION
212	CURB MID POINT (TC)	COUNTY ROAD 290	8+41.32	30.27' RT	749.80
213	CURB (TC)	COUNTY ROAD 290	8+41.81	30.27' RT	749.84
214	CURB (TC)	COUNTY ROAD 290	9+00.32	30.00' RT	750.03
215	CURB MID POINT (TC)	COUNTY ROAD 290	9+75.00	37.27' RT	757.30
216	CURB (TC)	COUNTY ROAD 290	9+85.32	30.27' RT	758.10
220	FUTURE (TC)	COUNTY ROAD 290	1+85.81	45.00' RT	757.30
221	EDGE OF ASPHALT (TP)	COUNTY ROAD 290	9+85.32	4.00' RT	758.80
222	MATCH EXISTING (TP)	COUNTY ROAD 290	1+85.21	4.00' RT	759.00
224	MATCH EXISTING (TP)	COUNTY ROAD 290	1+85.73	16.00' LT	759.07
225	CURB (TC)	COUNTY ROAD 290	10+05.00	4.00' RT	758.57
226	EDGE OF ASPHALT (TP)	COUNTY ROAD 290	10+07.24	3.00' LT	758.40
227	EDGE OF ASPHALT (TP)	COUNTY ROAD 290	10+10.43	11.47' LT	759.00

POINT TABLE

POINT NO.	DESCRIPTION	ALIGNMENT	STATION	OFFSET	ELEVATION
228	MATCH EXISTING (TP)	COUNTY ROAD 290	10+11.24	12.00' LT	759.41
229	MATCH EXISTING (TP)	COUNTY ROAD 290	9+91.21	17.00' LT	759.41
230	EDGE OF ASPHALT (TP)	COUNTY ROAD 290	9+85.32	21.30' LT	759.28
231	EDGE OF ASPHALT (TP)	COUNTY ROAD 290	9+91.32	3.04' LT	759.29
232	CURB (TC)	COUNTY ROAD 290	9+94.42	9.00' RT	761.56
233	EDGE OF ASPHALT (TP)	COUNTY ROAD 290	9+85.32	20.00' RT	760.80
234	EDGE OF ASPHALT (TP)	COUNTY ROAD 290	9+85.67	4.00' RT	759.77
235	EDGE OF ASPHALT (TP)	COUNTY ROAD 290	9+85.50	10.00' LT	759.80
236	EDGE OF ASPHALT (TP)	COUNTY ROAD 290	9+84.50	9.00' RT	760.00
237	TC AT GL	COUNTY ROAD 290	17+17.01	4.00' RT	745.00



!!WARNING!!

EXISTING UTILITIES IN THE AREA CONSTRUCTION SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE PROVIDER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ALL CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR ALL COSTS TO RELOCATE/PROTECT/REPAIR ANY EXISTING UTILITIES WHERE NECESSARY AND PROTECTING EXISTING UTILITIES OTHERWISE IS MANDATORY. IF ANY EXISTING UTILITIES ARE DAMAGED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE

BENCHMARKS

BM 101 - 1/2" IRON IN CONCRETE AT INTERSECTION OF A CONCRETE END FOR A VERY WIDE LOCATED ON THE WEST SIDE OF A NEW ROAD IN MARINO NORTH OF MAIN ON WATER CONNECTS SARTORIA ROAD IN CONNECTS ROAD NO. 290 APPROXIMATELY 300 SOUTH OF THE INTERSECTION OF SAID NEW ROAD AND SARTORIA ROAD.
ELEV. = 730.960

No.	REVISIONS	DATE	BY

Kimley»Horn

PRELIMINARY
Not for construction or permit purposes
Kimley»Horn
Registered Professional Engineer
State of Texas No. 106201
Date: 08/21/2018

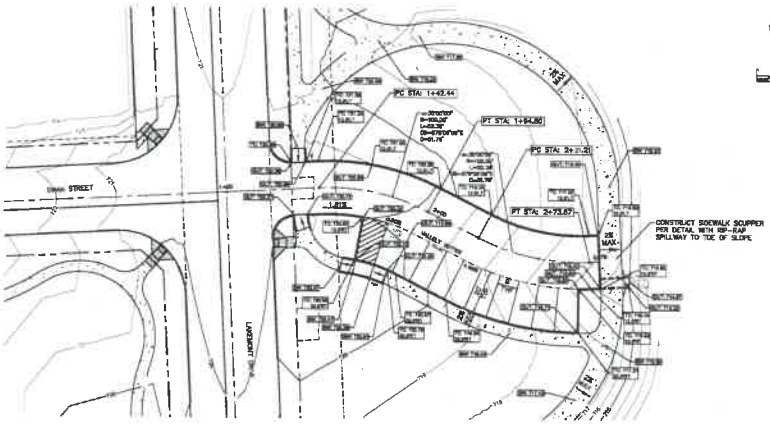
KHA PROJECT NUMBER	
DATE	AUGUST 2018
DR. JOB NO.	068 BROWN
DESIGN	JBB
CHECK	TDC

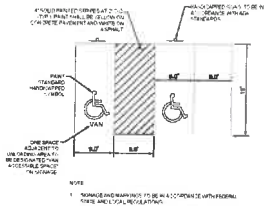
COUNTY ROAD 290 TURNLANES & TRANSITIONS

MANTUA POINT PHASE 1

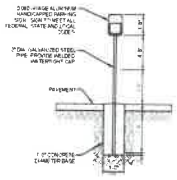
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-43

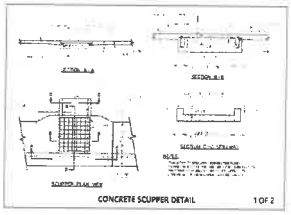




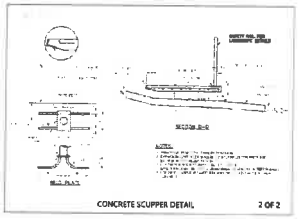
ACCESSIBLE PARKING DETAIL
N.T.S.



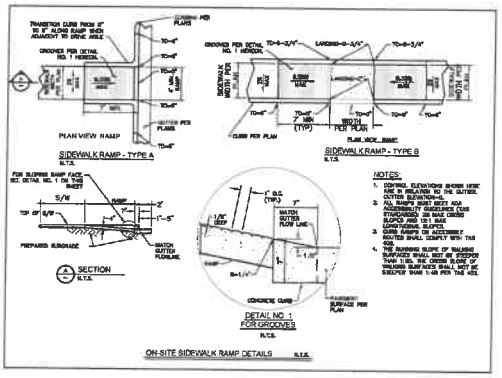
"HANDICAPPED PARKING" SIGN POST DETAIL
N.T.S.



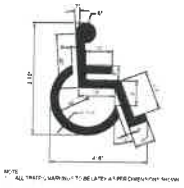
CONCRETE SCUPPER DETAIL 1 OF 2



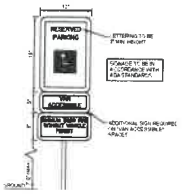
CONCRETE SCUPPER DETAIL 2 OF 2



ON-SITE SIDEWALK RAMP DETAILS N.T.S.



HANDICAPPED PARKING SYMBOL DETAIL
N.T.S.



ADA SIGN DETAIL
N.T.S.

!!WARNING!!

EXISTING UTILITIES IN THE AREA CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WITH THE ENGINEER PRIOR TO ANY CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN ALL CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR OVERHEAD TWO (2) FT. BELOW GROUND UTILITIES TO REMAIN AND PROTECTED DURING CONSTRUCTION. IF DAMAGED OR MOVED, THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE

BENCHMARKS

[illegible]

Kimley»Horn

PRELIMINARY

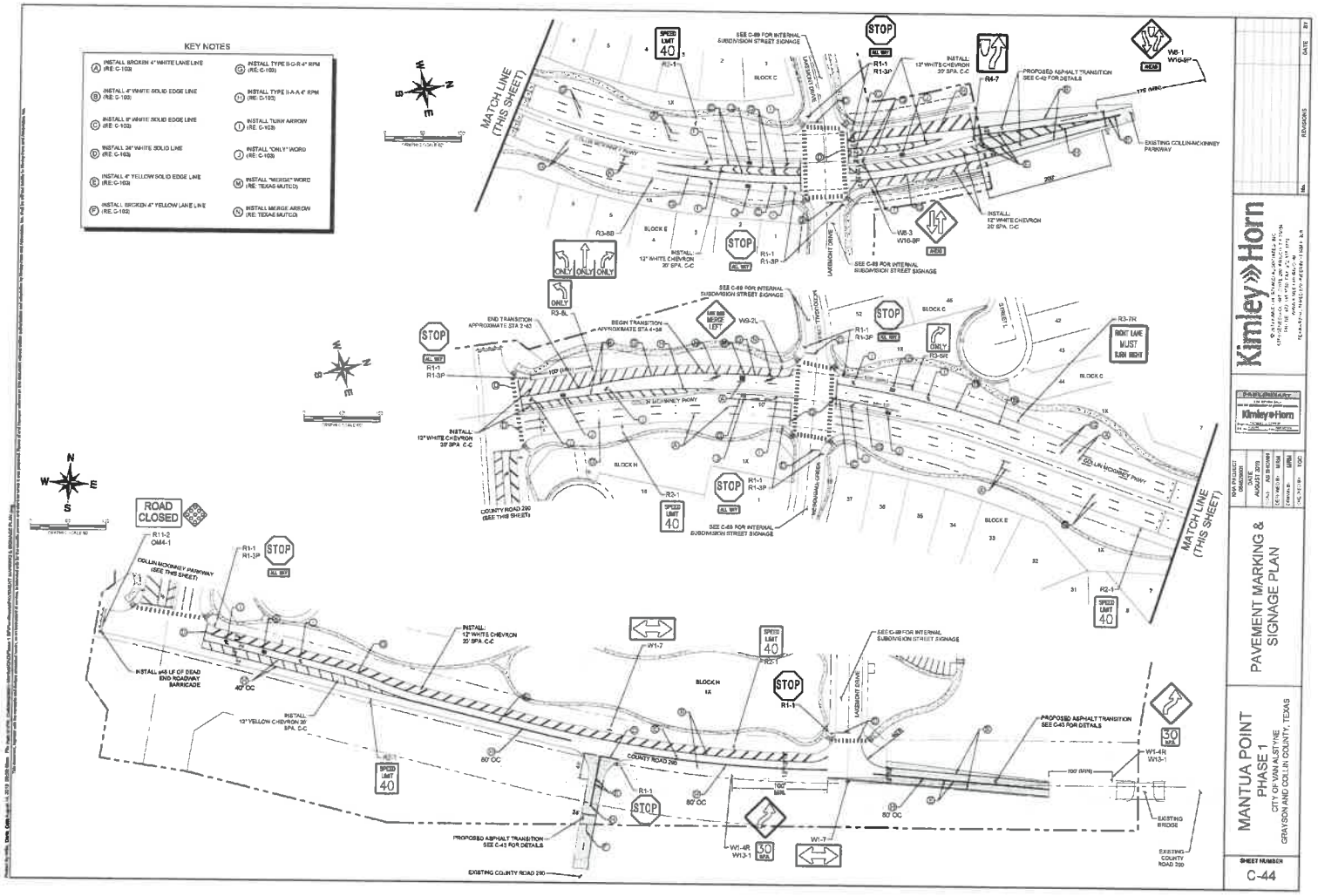
No.	REVISIONS	DATE	BY

KHA PROJECT NUMBER	DATE	
	AUGUST 2019	
Drawn by:	Reviewed by:	
CHECKED:		

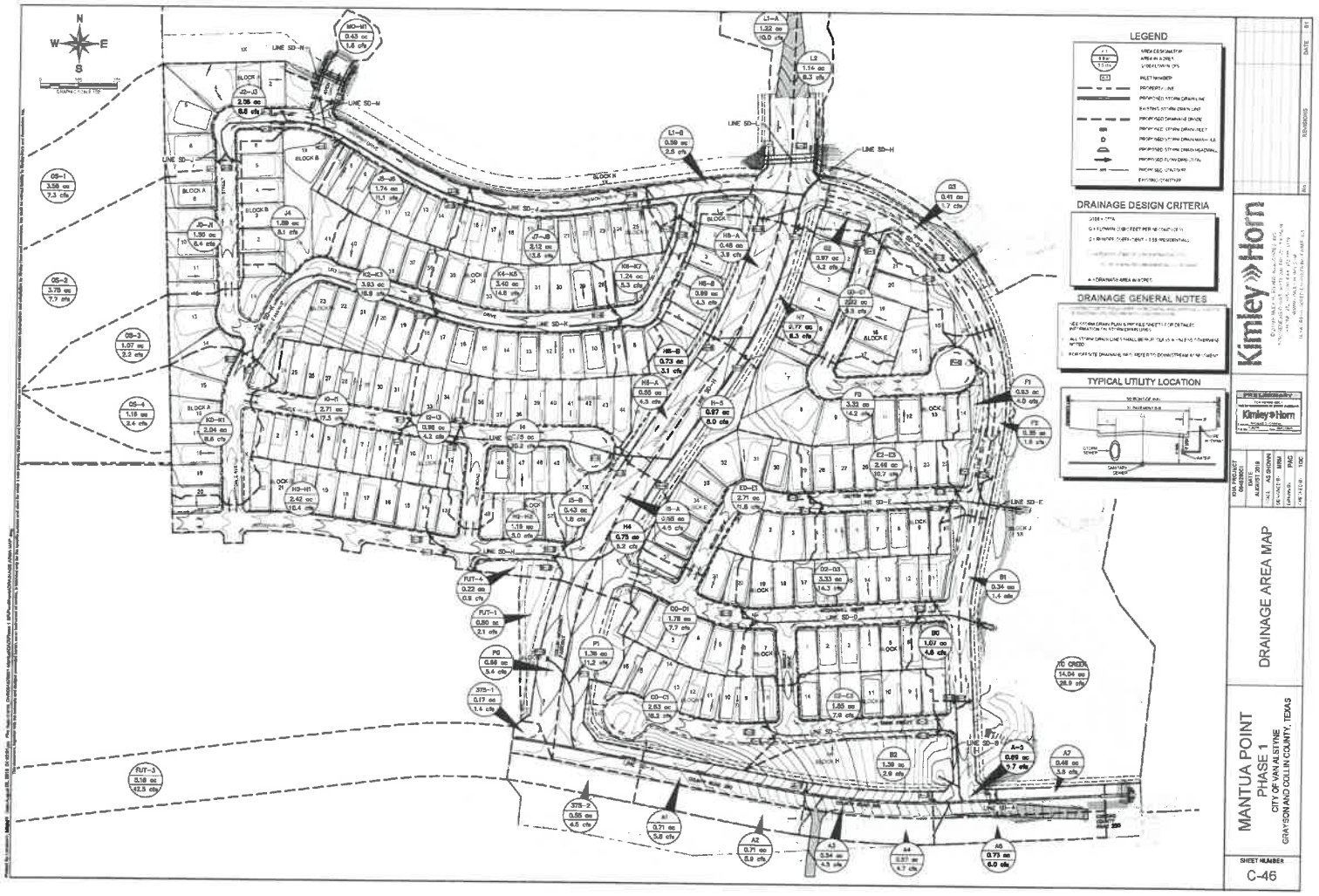
PARKING AREA PAVING PLAN

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-43B


KEY NOTES
A INSTALL BROKEN 4" WHITE LANE LINE (RE: C-103)
B INSTALL 4" WHITE SOLID EDGE LINE (RE: C-103)
C INSTALL 8" WHITE SOLID EDGE LINE (RE: C-103)
D INSTALL 24" WHITE SOLID LINE (RE: C-103)
E INSTALL 4" YELLOW SOLID EDGE LINE (RE: C-103)
F INSTALL BROKEN 4" YELLOW LANE LINE (RE: C-103)
G INSTALL TYPE II-G-R-4" RPM (RE: C-103)
H INSTALL TYPE II-A-A-4" RPM (RE: C-103)
I INSTALL "TURN" ARROW (RE: C-103)
J INSTALL "ONLY" WORD (RE: C-103)
M INSTALL "MERGE" WORD (RE: TEXAS MUTCD)
N INSTALL MERGE ARROW (RE: TEXAS MUTCD)
MATCH LINE (THIS SHEET)
SEE C-49 FOR INTERNAL SUBDIVISION STREET SIGNAGE
INSTALL: 12" WHITE CHEVRON 20' SPA. C-C
PROPOSED ASPHALT TRANSITION SEE C-42 FOR DETAILS
EXISTING COLLIN-MCKINNEY PARKWAY
END TRANSITION APPROXIMATE STA 7+43
BEGIN TRANSITION APPROXIMATE STA 4+58
RIGHT LANE MUST TURN RIGHT
ROAD CLOSED
COLLIN MCKINNEY PARKWAY (SEE THIS SHEET)
INSTALL 448 LF OF DEAD END ROADWAY BARRICADE
INSTALL: 12" YELLOW CHEVRON 20' SPA. C-C
COUNTY ROAD 290
PROPOSED ASPHALT TRANSITION SEE C-43 FOR DETAILS
EXISTING COUNTY ROAD 290
EXISTING BRIDGE
Kimley»Horn
PAVEMENT MARKING & SIGNAGE PLAN
MANTUA POINT PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS
SHEET NUMBER
C-44

LEGEND
2-FT AERIAL TOPOGRAPHY (TNRIS, 2011)
PROPERTY BOUNDARY
EXISTING POND
DRAINAGE AREA
HEC-HMS REACH
HEC-HMS JUNCTION
COUNTY DIVIDE
ETJ DIVIDE
VAN ALSTYNE CITY LIMITS
GRAPHIC SCALE IN FEET
HURRICANE CREEK
HURRICANE CREEK TRIBUTARY 2
HURRICANE CREEK TRIBUTARY 4
HURRICANE CREEK TRIBUTARY 5
HURRICANE CREEK TRIBUTARY 6
HURRICANE CREEK TRIBUTARY 3
HURRICANE CREEK TRIBUTARY 5a
EXISTING 2-250' RCB
EXISTING 3-250' RCB
EXISTING 250' RCB
CR 2
CR 3
CR 4
CR 20
US 75
SH 121
HEXAGON ESTATES TWO
Kimley»Horn
PRELIMINARY
Kimley»Horn
EXISTING DRAINAGE AREA MAP
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS
SHEET NUMBER
C-45


LEGEND
DRAINAGE DESIGN CRITERIA
DRAINAGE GENERAL NOTES
TYPICAL UTILITY LOCATION
Kimley»Horn
DRAINAGE AREA MAP
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS
SHEET NUMBER
C-46

100-Year Street Capacity & Inlet Region Calculations

Project: Mantua Point Phase 1
Location: City of Frisco, Collin / Denton, Texas
Date: 8/31/2018

Inlet No.	Inlet Type	Station	Street	Inlet Curve-Grate (Sag or On-Grade)	Area (ac)	Runoff "C"	Conc. Time (min)	100-year Intensity (in/hr)	100-year Runoff (cfs)	100-year Carryover (cfs)	100-year Total Grate (cfs)	Sag Inlet Recommended Inlet Type	Sag Inlet Spacing (ft)	Sag Inlet Spacing Station	"A" Street Longitudinal Slope (%)	Street Section (Type)	Roadway Cross Slope "Sx" (%)	Manning's Coefficient for Pavement "n"	Street Capacity (cfs)	Depth of Flow (ft)	100-year Depth of Flow (ft)	100-year Spread of Flow "T" (ft)	Gutter Depression (ft)	Width of Depressed Gutter "W"	100-year Gutter Cross Slope "Sw" (ft/ft)	Gutter Depression Cross Slope "Sg" (ft/ft)	Depression Cross Slope "Sd" (ft/ft)	100-year Gutter Length "Lg" (ft)	Length Perpendicular "Lp" (ft)	Inlet Efficiency "E"	100-year Inlet Intercepted "Qi" (cfs)	100-year Carryover "Qb" (cfs)	Target Inlet No.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
H1	CNC NO-A	2+13.00	COLLIN MCKINNEY PARK WAY	Recessed Curb	Sag	41.58	0.90	9.94	745	0.00	745	100%	100%	1.50	3.00	Type A	2.00%	0.0175	77.77	0.88	0.91	19.40	0.17	2.00	0.083	0.083	0.083	6.00	6.00	0.83	0.00	0.00	0.00
H2	CNC NO-A	2+13.00	COLLIN MCKINNEY PARK WAY	Recessed Curb	Sag	4.1	0.90	9.94	73.4	0.00	73.4	100%	100%	1.50	3.00	Type A	2.00%	0.0175	77.77	0.88	0.91	19.40	0.17	2.00	0.083	0.083	0.083	6.00	6.00	0.83	0.00	0.00	0.00
A1	CNC NO-A	9+00.00	COUNTY ROAD 175	Recessed Curb	On-Grade	4.1	0.71	9.90	28.9	1.38	30.3	N/A	20.0	N/A	0.82%	N/A	2.00%	0.0175	109.85	0.44	0.54	12.43	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	23.6	6.7	0.8 / 0.8
A2	CNC NO-A	9+00.00	COUNTY ROAD 175	Recessed Curb	On-Grade	4.2	0.71	9.90	29.3	1.44	30.8	N/A	20.0	N/A	0.82%	N/A	2.00%	0.0175	109.85	0.44	0.54	12.43	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	24.0	6.8	0.8 / 0.8
A3	CNC NO-A	9+00.00	COUNTY ROAD 175	Recessed Curb	On-Grade	4.1	0.74	9.90	30.5	0.94	31.4	100%	100%	1.40	3.00	Type A	2.00%	0.0175	106.33	0.44	0.54	12.43	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	24.5	6.9	0.8 / 0.8
Sag A4	CNC NO-A	9+00.00	COUNTY ROAD 175	Recessed Curb	Sag	4.1	0.74	9.90	30.5	0.00	30.5	100%	100%	1.40	3.00	Type A	2.00%	0.0175	106.33	0.44	0.54	12.43	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	23.8	6.7	0.8 / 0.8
A5	CNC NO-A	9+00.00	COUNTY ROAD 175	Recessed Curb	On-Grade	4.1	0.74	9.90	30.5	0.94	31.4	100%	100%	1.40	3.00	Type A	2.00%	0.0175	106.33	0.44	0.54	12.43	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	24.5	6.9	0.8 / 0.8
Sag A6	CNC NO-A	9+00.00	COUNTY ROAD 175	Recessed Curb	Sag	4.1	0.74	9.90	30.5	0.00	30.5	100%	100%	1.40	3.00	Type A	2.00%	0.0175	106.33	0.44	0.54	12.43	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	23.8	6.7	0.8 / 0.8
CNC A7	CNC NO-A	9+00.00	COUNTY ROAD 175	Recessed Curb	On-Grade	4.2	0.69	9.90	29.0	1.43	30.4	N/A	N/A	N/A	0.82%	N/A	2.00%	0.0175	109.85	0.39	0.49	12.03	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	23.7	6.7	0.8 / 0.8
B1	CNC NO-A	2+00	LEXSHIRE DRIVE	Curb	On-Grade	8.6	0.77	9.55	63.7	7.6	71.3	100%	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.54	0.64	13.98	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	55.6	15.7	0.8 / 0.8
B2	CNC NO-B	2+00.00	LEXSHIRE DRIVE	Curb	On-Grade	8.1	1.14	9.55	88.3	7.42	95.7	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.59	0.69	14.98	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	74.6	21.1	0.8 / 0.8
B3	CNC NO-B	2+00.00	LEXSHIRE DRIVE	Curb	On-Grade	8.1	1.14	9.55	88.3	7.42	95.7	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.59	0.69	14.98	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	74.6	21.1	0.8 / 0.8
C1	CNC NO-C	8+00.00	VENICE STREET	Curb	On-Grade	0.7	0.71	9.55	4.8	0.00	4.8	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.18	0.23	7.00	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	3.8	1.0	0.8 / 0.8
C2	CNC NO-C	8+00.00	VENICE STREET	Curb	On-Grade	0.7	0.71	9.55	4.8	0.00	4.8	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.18	0.23	7.00	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	3.8	1.0	0.8 / 0.8
C3	CNC NO-C	8+00.00	VENICE STREET	Curb	On-Grade	0.7	0.71	9.55	4.8	0.00	4.8	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.18	0.23	7.00	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	3.8	1.0	0.8 / 0.8
C4	CNC NO-C	8+00.00	VENICE STREET	Curb	On-Grade	0.7	0.71	9.55	4.8	0.00	4.8	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.18	0.23	7.00	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	3.8	1.0	0.8 / 0.8
D1	CNC NO-D	2+00.00	BRIDGEWELL STREET	Curb	On-Grade	0.7	0.71	9.55	4.8	0.00	4.8	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.18	0.23	7.00	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	3.8	1.0	0.8 / 0.8
D2	CNC NO-D	2+00.00	BRIDGEWELL STREET	Curb	On-Grade	0.7	0.71	9.55	4.8	0.00	4.8	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.18	0.23	7.00	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	3.8	1.0	0.8 / 0.8
D3	CNC NO-D	2+00.00	BRIDGEWELL STREET	Curb	On-Grade	0.7	0.71	9.55	4.8	0.00	4.8	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.18	0.23	7.00	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	3.8	1.0	0.8 / 0.8
D4	CNC NO-D	2+00.00	BRIDGEWELL STREET	Curb	On-Grade	0.7	0.71	9.55	4.8	0.00	4.8	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.18	0.23	7.00	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	3.8	1.0	0.8 / 0.8
E1	CNC NO-E	8+00.00	COTTON ROAD	Curb	On-Grade	0.7	0.71	9.55	4.8	0.00	4.8	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.18	0.23	7.00	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	3.8	1.0	0.8 / 0.8
E2	CNC NO-E	8+00.00	COTTON ROAD	Curb	On-Grade	0.7	0.71	9.55	4.8	0.00	4.8	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.18	0.23	7.00	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	3.8	1.0	0.8 / 0.8
E3	CNC NO-E	8+00.00	COTTON ROAD	Curb	On-Grade	0.7	0.71	9.55	4.8	0.00	4.8	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.18	0.23	7.00	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	3.8	1.0	0.8 / 0.8
E4	CNC NO-E	8+00.00	COTTON ROAD	Curb	On-Grade	0.7	0.71	9.55	4.8	0.00	4.8	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.18	0.23	7.00	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	3.8	1.0	0.8 / 0.8
F1	CNC NO-F	2+00.00	COUNTY CLUB TR NO.	Curb	Sag	7.0	0.52	9.55	34.6	0.00	34.6	50%	50%	1.10	0.60%	Residential Roll Curb	1.50%	0.0175	19.02	0.71	0.82	12.18	13.33	2.00	0.083	0.083	0.083	10.00	10.00	0.78	14.16	20.5	N/A
F2	CNC NO-F	2+00.00	MCKINNEY PARKWAY	Recessed Curb	Sag	7.1	0.90	9.55	61.9	0.00	61.9	50%	50%	1.10	0.60%	Residential Roll Curb	1.50%	0.0175	19.02	0.91	1.05	13.66	0.83	2.00	0.083	0.083	0.083	10.00	10.00	0.78	16.20	45.7	N/A
F3	CNC NO-F	2+00.00	MCKINNEY PARKWAY	Recessed Curb	Sag	7.2	0.90	9.55	62.8	0.00	62.8	50%	50%	1.10	0.60%	Residential Roll Curb	1.50%	0.0175	19.02	0.91	1.05	13.66	0.83	2.00	0.083	0.083	0.083	10.00	10.00	0.78	16.20	46.6	N/A
G1	CNC NO-G	2+00.00	SMITH PLANO	Curb	On-Grade	0.6	1.11	9.55	19.8	7.82	27.7	100%	N/A	N/A	0.58%	Type A	2.00%	0.0175	110.3	0.49	0.59	13.66	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	21.6	6.1	0.8 / 0.8
G2	CNC NO-G	2+00.00	SMITH PLANO	Curb	On-Grade	0.6	1.11	9.55	19.8	7.82	27.7	100%	N/A	N/A	0.58%	Type A	2.00%	0.0175	110.3	0.49	0.59	13.66	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	21.6	6.1	0.8 / 0.8
G3	CNC NO-G	2+00.00	SMITH PLANO	Curb	Sag	0.6	0.71	9.55	12.8	7.82	20.6	100%	N/A	N/A	0.58%	Type A	2.00%	0.0175	110.3	0.39	0.49	12.66	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	16.0	4.5	0.8 / 0.8

100-Year Street Capacity & Inlet Region Calculations

Project: Mantua Point Phase 1
Location: City of Van Alstyne, Collin & Grayson, Texas
Date: 8/31/2018

Inlet No.	Station (Grade)	Station	Street	Inlet Curve-Grate (Sag or On-Grade)	Area (ac)	Runoff "C"	Conc. Time (min)	100-year Intensity (in/hr)	100-year Runoff (cfs)	100-year Carryover (cfs)	100-year Total Grate (cfs)	Sag Inlet Recommended Inlet Type	Sag Inlet Spacing (ft)	Sag Inlet Spacing Station	"A" Street Longitudinal Slope (%)	Street Section (Type)	Roadway Cross Slope "Sx" (%)	Manning's Coefficient for Pavement "n"	Street Capacity (cfs)	Depth of Flow (ft)	100-year Depth of Flow (ft)	100-year Spread of Flow "T" (ft)	Gutter Depression (ft)	Width of Depressed Gutter "W"	100-year Gutter Cross Slope "Sw" (ft/ft)	Gutter Depression Cross Slope "Sg" (ft/ft)	Depression Cross Slope "Sd" (ft/ft)	100-year Gutter Length "Lg" (ft)	Length Perpendicular "Lp" (ft)	Inlet Efficiency "E"	100-year Inlet Intercepted "Qi" (cfs)	100-year Carryover "Qb" (cfs)	Target Inlet No.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
H1	CNC NO-A	2+13.00	COLLIN MCKINNEY PARK WAY	Recessed Curb	Sag	41.58	0.90	9.94	745	0.00	745	100%	100%	1.50	3.00	Type A	2.00%	0.0175	77.77	0.88	0.91	19.40	0.17	2.00	0.083	0.083	0.083	6.00	6.00	0.83	0.00	0.00	0.00
H2	CNC NO-A	2+13.00	COLLIN MCKINNEY PARK WAY	Recessed Curb	Sag	4.1	0.90	9.94	73.4	0.00	73.4	100%	100%	1.50	3.00	Type A	2.00%	0.0175	77.77	0.88	0.91	19.40	0.17	2.00	0.083	0.083	0.083	6.00	6.00	0.83	0.00	0.00	0.00
A1	CNC NO-A	9+00.00	COUNTY ROAD 175	Recessed Curb	On-Grade	4.1	0.71	9.90	28.9	1.38	30.3	N/A	20.0	N/A	0.82%	N/A	2.00%	0.0175	109.85	0.44	0.54	12.43	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	23.6	6.7	0.8 / 0.8
A2	CNC NO-A	9+00.00	COUNTY ROAD 175	Recessed Curb	On-Grade	4.2	0.71	9.90	29.3	1.44	30.8	N/A	20.0	N/A	0.82%	N/A	2.00%	0.0175	109.85	0.44	0.54	12.43	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	24.0	6.8	0.8 / 0.8
A3	CNC NO-A	9+00.00	COUNTY ROAD 175	Recessed Curb	On-Grade	4.1	0.74	9.90	30.5	0.94	31.4	100%	100%	1.40	3.00	Type A	2.00%	0.0175	106.33	0.44	0.54	12.43	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	24.5	6.9	0.8 / 0.8
Sag A4	CNC NO-A	9+00.00	COUNTY ROAD 175	Recessed Curb	Sag	4.1	0.74	9.90	30.5	0.00	30.5	100%	100%	1.40	3.00	Type A	2.00%	0.0175	106.33	0.44	0.54	12.43	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	23.8	6.7	0.8 / 0.8
A5	CNC NO-A	9+00.00	COUNTY ROAD 175	Recessed Curb	On-Grade	4.1	0.74	9.90	30.5	0.94	31.4	100%	100%	1.40	3.00	Type A	2.00%	0.0175	106.33	0.44	0.54	12.43	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	24.5	6.9	0.8 / 0.8
Sag A6	CNC NO-A	9+00.00	COUNTY ROAD 175	Recessed Curb	Sag	4.1	0.74	9.90	30.5	0.00	30.5	100%	100%	1.40	3.00	Type A	2.00%	0.0175	106.33	0.44	0.54	12.43	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	23.8	6.7	0.8 / 0.8
CNC A7	CNC NO-A	9+00.00	COUNTY ROAD 175	Recessed Curb	On-Grade	4.2	0.69	9.90	29.0	1.43	30.4	N/A	N/A	N/A	0.82%	N/A	2.00%	0.0175	109.85	0.39	0.49	12.03	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	23.7	6.7	0.8 / 0.8
B1	CNC NO-A	2+00	LEXSHIRE DRIVE	Curb	On-Grade	8.6	0.77	9.55	63.7	7.6	71.3	100%	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.54	0.64	13.98	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	55.6	15.7	0.8 / 0.8
B2	CNC NO-B	2+00.00	LEXSHIRE DRIVE	Curb	On-Grade	8.1	1.14	9.55	88.3	7.42	95.7	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.59	0.69	14.98	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	74.6	21.1	0.8 / 0.8
B3	CNC NO-B	2+00.00	LEXSHIRE DRIVE	Curb	On-Grade	8.1	1.14	9.55	88.3	7.42	95.7	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.59	0.69	14.98	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	74.6	21.1	0.8 / 0.8
C1	CNC NO-C	8+00.00	VENICE STREET	Curb	On-Grade	0.7	0.71	9.55	4.8	0.00	4.8	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.18	0.23	7.00	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	3.8	1.0	0.8 / 0.8
C2	CNC NO-C	8+00.00	VENICE STREET	Curb	On-Grade	0.7	0.71	9.55	4.8	0.00	4.8	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.18	0.23	7.00	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	3.8	1.0	0.8 / 0.8
C3	CNC NO-C	8+00.00	VENICE STREET	Curb	On-Grade	0.7	0.71	9.55	4.8	0.00	4.8	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.18	0.23	7.00	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	3.8	1.0	0.8 / 0.8
C4	CNC NO-C	8+00.00	VENICE STREET	Curb	On-Grade	0.7	0.71	9.55	4.8	0.00	4.8	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.18	0.23	7.00	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	3.8	1.0	0.8 / 0.8
D1	CNC NO-D	2+00.00	BRIDGEWELL STREET	Curb	On-Grade	0.7	0.71	9.55	4.8	0.00	4.8	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.18	0.23	7.00	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	3.8	1.0	0.8 / 0.8
D2	CNC NO-D	2+00.00	BRIDGEWELL STREET	Curb	On-Grade	0.7	0.71	9.55	4.8	0.00	4.8	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.18	0.23	7.00	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	3.8	1.0	0.8 / 0.8
D3	CNC NO-D	2+00.00	BRIDGEWELL STREET	Curb	On-Grade	0.7	0.71	9.55	4.8	0.00	4.8	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.18	0.23	7.00	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	3.8	1.0	0.8 / 0.8
D4	CNC NO-D	2+00.00	BRIDGEWELL STREET	Curb	On-Grade	0.7	0.71	9.55	4.8	0.00	4.8	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.18	0.23	7.00	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	3.8	1.0	0.8 / 0.8
E1	CNC NO-E	8+00.00	COTTON ROAD	Curb	On-Grade	0.7	0.71	9.55	4.8	0.00	4.8	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.18	0.23	7.00	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	3.8	1.0	0.8 / 0.8
E2	CNC NO-E	8+00.00	COTTON ROAD	Curb	On-Grade	0.7	0.71	9.55	4.8	0.00	4.8	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.18	0.23	7.00	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	3.8	1.0	0.8 / 0.8
E3	CNC NO-E	8+00.00	COTTON ROAD	Curb	On-Grade	0.7	0.71	9.55	4.8	0.00	4.8	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.18	0.23	7.00	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	3.8	1.0	0.8 / 0.8
E4	CNC NO-E	8+00.00	COTTON ROAD	Curb	On-Grade	0.7	0.71	9.55	4.8	0.00	4.8	N/A	N/A	N/A	0.73%	Type A	2.00%	0.0175	110.3	0.18	0.23	7.00	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	3.8	1.0	0.8 / 0.8
F1	CNC NO-F	2+00.00	COUNTY CLUB TR NO.	Curb	Sag	7.0	0.52	9.55	34.6	0.00	34.6	50%	50%	1.10	0.60%	Residential Roll Curb	1.50%	0.0175	19.02	0.71	0.82	12.18	13.33	2.00	0.083	0.083	0.083	10.00	10.00	0.78	14.16	20.5	N/A
F2	CNC NO-F	2+00.00	MCKINNEY PARKWAY	Recessed Curb	Sag	7.1	0.90	9.55	61.9	0.00	61.9	50%	50%	1.10	0.60%	Residential Roll Curb	1.50%	0.0175	19.02	0.91	1.05	13.66	0.83	2.00	0.083	0.083	0.083	10.00	10.00	0.78	16.20	45.7	N/A
F3	CNC NO-F	2+00.00	MCKINNEY PARKWAY	Recessed Curb	Sag	7.2	0.90	9.55	62.8	0.00	62.8	50%	50%	1.10	0.60%	Residential Roll Curb	1.50%	0.0175	19.02	0.91	1.05	13.66	0.83	2.00	0.083	0.083	0.083	10.00	10.00	0.78	16.20	46.6	N/A
G1	CNC NO-G	2+00.00	SMITH PLANO	Curb	On-Grade	0.6	1.11	9.55	19.8	7.82	27.7	100%	N/A	N/A	0.58%	Type A	2.00%	0.0175	110.3	0.49	0.59	13.66	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	21.6	6.1	0.8 / 0.8
G2	CNC NO-G	2+00.00	SMITH PLANO	Curb	On-Grade	0.6	1.11	9.55	19.8	7.82	27.7	100%	N/A	N/A	0.58%	Type A	2.00%	0.0175	110.3	0.49	0.59	13.66	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	21.6	6.1	0.8 / 0.8
G3	CNC NO-G	2+00.00	SMITH PLANO	Curb	Sag	0.6	0.71	9.55	12.8	7.82	20.6	100%	N/A	N/A	0.58%	Type A	2.00%	0.0175	110.3	0.39	0.49	12.66	N/A	2.00	0.083	0.083	0.083	10.00	10.00	0.78	16.0	4.5	0.8 / 0.8

DRAINAGE AREA TABLE

DRAINAGE AREA NO	AREA (ac)	FREQUENCY FACTOR	RUNOFF COEFFICIENT "C"	RAINFALL INTENSITY "I"(100 yr/hr)	TIME OF CONCENTRATION (minutes)	TOTAL FLOW Q100 (cfs)
375-1	0.17	1.00	0.90	9.14	10.0	1.4
375-2	0.55	1.00	0.90	9.14	10.0	4.5
A-5	0.89	1.00	0.90	9.14	10.0	6.7
A1	0.71	1.00	0.90	9.14	10.0	6.8
A2	0.71	1.00	0.90	9.14	10.0	6.9
A3	0.54	1.00	0.90	9.14	10.0	4.5
A4	0.57	1.00	0.90	9.14	10.0	4.7
A5	0.73	1.00	0.90	9.14	10.0	6.0
A7	0.48	1.00	0.90	9.14	10.0	3.8
B9	1.07	1.00	0.56	7.81	15.0	4.6
B1	0.34	1.00	0.56	7.81	16.0	1.4
B2	1.90	1.00	0.30	6.96	20.0	2.9
CO-C1	2.50	1.00	0.70	8.14	10.0	10.2
CO-C3	1.88	1.00	0.66	7.81	10.0	7.9
CO-C4	1.88	1.00	0.66	7.81	15.0	7.9
CO-D3	3.33	1.00	0.55	7.81	15.0	14.3
CO-E1	2.71	1.00	0.55	7.81	15.0	11.6
CO-E3	2.49	1.00	0.55	7.81	15.0	10.7
F0	5.80	1.00	0.66	7.81	15.0	14.2
F1	0.80	1.00	0.55	7.81	15.0	4.0
F2	0.35	1.00	0.55	7.81	15.0	1.6

DRAINAGE AREA TABLE

DRAINAGE AREA NO	AREA (ac)	FREQUENCY FACTOR	RUNOFF COEFFICIENT "C"	RAINFALL INTENSITY "I"(100 yr/hr)	TIME OF CONCENTRATION (minutes)	TOTAL FLOW Q100 (cfs)
PUT-1	0.58	1.00	0.55	7.81	15.0	2.1
PUT-2	29.65	1.00	0.60	5.30	15.0	847.4
PUT-3	5.18	1.00	0.90	9.14	10.0	42.5
PUT-4	0.22	1.00	0.66	7.81	15.0	0.9
GB-G1	2.22	1.00	0.66	7.81	15.0	8.5
G2	0.97	1.00	0.66	7.81	15.0	4.2
G3	0.41	1.00	0.55	7.81	15.0	1.7
H-5	0.87	1.00	0.90	9.14	10.0	8.0
H9-H1	2.42	1.00	0.55	7.81	15.0	10.4
H3-H5	1.18	1.00	0.55	7.81	15.0	5.0
H4	0.75	1.00	0.90	9.14	10.0	6.2
H8-A	0.55	1.00	0.90	9.14	10.0	4.5
H8-B	0.73	1.00	0.55	7.81	15.0	3.1
H7	0.77

DRAINAGE GENERAL NOTES

1. DRAINAGE TO FIELD VERIFY HORIZONTAL AND VERTICAL LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
2. SEE STORM DRAIN PLAN & PROFILE SHEETS FOR MORE DETAILED INFORMATION ON STORM DRAIN LINES.
3. ALL STORM DRAIN LINES SHALL BE RCP CLASS III UNLESS OTHERWISE NOTED.
4. FINAL AS-BUILT DRAWINGS SHALL REFLECT TO DOWNSTREAM ALIGNMENT.

Kimley»Horn

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12700 HILLCREST ROAD, SUITE 250
DALLAS, TEXAS 75230
PH: 972-770-1300
TEXAS REGISTERED ENGINEERING FIRM F-928

No	REVISIONS	DATE	BY

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING PURPOSES
Kimley»Horn
PE No. | Date

KHA PROJECT
069099001
DATE
AUGUST 2018
DESIGNED
DRAWN BY
CHECKED BY

STORM DRAIN INDEX

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-48

From	To	Pipe Length	Drainage Area			Runoff "C"	Incr. cA	Total cA	Time of Concentration			100-year Intensity	100-year Runoff	Inlet Carryover (To Inlet)	Inlet Carryover "q" (From Inlet)	Q Pipe	Pipe Size Diameter	Box Size			n	SF	HGL		Head Loss Calculations								Design HGL	TC or Ground Elev.
			Incremental No.	Total Area					Inlet	Travel	Total							No. Barrels	Width	Height			US	DS	V1 (in)	V2 (out)	V1^2/2G	a1*V1^2/2G	Kj	K(V1^2/2G)	Hfs			
		ft		acres	acres				min	min	min	in/hr	cfs	cfs	cfs	cfs	in		ft	ft			ft	ft	ft/s	ft/s	ft	ft	ft	ft	ft	ft	ft	ft
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19a	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
LINE S10-A																																			
E7-E11	15+97.13	164.08	MULT AREAS	43.97	43.97	0.81	35.75	35.75	10.8	0.2	10.0	9.14	326.87	0.00	0.00	326.87	36	1	0	0	0.013	0.0065	736.06	736.45	-	4.63	-	0.36	1.00	0.36	0.36	740.88	741.40
15+97.13	9+75.84	221.29	S0.P	2.32	46.29	0.83	2.00	38.54	10.2	0.7	10.9	9.14	352.79	0.00	0.00	352.79	36	1	0	0	0.013	0.0119	738.09	739.74	13.90	13.59	3.00	3.00	1.00	3.00	6.00	744.09	746.13
9+75.84	9+26.14	43.73	A1	0.11	48.60	0.40	0.84	39.38	10.9	0.1	11.0	9.14	359.63	0.00	0.00	359.63	36	1	0	0	0.013	0.0111	742.88	741.88	12.96	14.11	3.00	3.00	1.00	3.00	6.00	748.88	750.24
9+26.14	9+20.52	202.83	A2	0.71	49.31	0.90	0.64	37.12	11.0	0.6	11.6	9.14	364.45	0.00	0.00	364.45	36	1	0	0	0.013	0.0111	744.88	744.96	14.11	14.33	3.09	3.19	1.00	3.19	6.38	751.26	754.15
9+20.52	9+23.62	43.47	A3	0.34	50.05	0.90	0.18	37.61	11.3	0.0	11.3	9.14	368.58	0.00	0.00	368.58	36	1	0	0	0.013	0.0112	745.26	747.42	14.33	14.53	3.19	3.32	1.00	3.32	6.63	751.89	754.15
9+23.62	9+27.62	52.79	A4	0.37	50.67	0.90	0.23	37.12	11.3	0.0	11.3	9.14	369.58	0.00	0.00	369.58	36	1	0	0	0.013	0.0117	747.42	747.17	14.53	14.62	3.32	3.45	1.00	3.45	6.91	754.33	755.30
9+26.89	4+95.53	81.22	B1,B	0.79	58.44	0.55	0.19	38.31	11.3	0.1	11.4	8.83	371.88	0.00	1.43	369.76	60	1	0	0	0.013	0.0141	748.82	749.22	14.62	15.78	3.45	3.87	1.00	3.87	7.74	757.96	758.62
4+95.53	1+95.57	272.05	A5	0.90	57.10	0.90	0.81	38.50	11.4	0.3	11.7	8.83	371.54	0.00	2.24	373.73	60	1	0	0	0.013	0.0146	749.42	752.53	15.78	15.96	3.87	3.96	1.00	3.96	7.91	759.83	761.08
1+95.57	1+25.52	70.19	FPS SIZE (>=36")	0.00	57.10	0.90	0.00	38.50	11.7	0.1	11.8	8.83	371.38	0.00	0.00	371.38	60	1	0	0	0.013	0.0145	752.53	Tie-in	15.96	15.35	3.96	3.96	1.00	3.96	7.91	760.53	762.64
LATERAL A-1																																			
1+00.00	1+00.00	8.26	A1 & FUT.1	0.71	0.71	0.90	0.64	0.64	10.0	0.1	10.1	9.14	5.84	0.00	1.30	4.54	18	1	0	0	0.013	0.0017	729.87	730.66	-	2.58	-	0.09	1.25	0.09	0.12	730.98	741.33
1+00.00																							727.85		7.48	14.11	0.09	3.66	1.00	0.09	3.66	730.85	
LATERAL A-2																																			
3+00.00	1+00.00	99.76	A2	0.71	0.71	0.90	0.64	0.64	10.0	0.7	10.7	9.14	5.84	0.00	1.30	4.54	18	1	0	0	0.013	0.0017	731.66	730.66	-	2.58	-	0.09	1.25	0.09	0.12	731.14	741.33
1+00.00																							727.85		7.48	14.11	0.09	3.66	1.00	0.09	3.66	730.85	
LATERAL A-3																																			
1+00.00	1+00.00	8.26	A3,A4,B	1.34	0.34	0.90	0.66	0.49	10.0	0.0	10.0	9.14	4.44	1.89	0.29	5.85	18	1	0	0	0.013	0.0029	713.66	712.96	-	3.30	-	0.16	1.25	0.20	0.25	713.18	734.61
1+00.00																							714.83		9.30	14.53	0.16	5.19	1.00	0.16	5.19	717.98	
LATERAL A-4																																			
1+00.00	1+00.00	99.76	A4	0.37	0.37	0.90	0.21	0.21	10.0	0.3	10.3	9.14	1.89	1.29	0.36	3.53	18	1	0	0	0.013	0.0051	715.79	715.46	-	3.30	-	0.17	1.25	0.20	0.21	715.98	734.33
1+00.00																							714.17		9.30	14.53	0.17	5.32	1.00	0.17	5.32	717.32	
LATERAL A-5																																			
1+00.00	1+00.00	99.76	A5,B	0.90	0.86	0.90	0.82	0.82	10.0	0.2	10.2	9.14	5.48	0.29	2.24	3.73	18	1	0	0	0.013	0.0043	714.54	714.21	-	3.13	-	0.20	1.25	0.25	0.16	714.34	734.21
1+00.00																							712.82		7.11	14.07	0.20	3.46	1.00	0.20	3.46	716.28	
From	To	Pipe Length	Drainage Area			Runoff "C"	Incr. cA	Total cA	Time of Concentration			100-year Intensity	100-year Runoff	Inlet Carryover (To Inlet)	Inlet Carryover "q" (From Inlet)	Q Pipe	Pipe Size Diameter	Box Size			n	SF	HGL		Head Loss Calculations								Design HGL	TC or Ground Elev.
			Incremental No.	Total Area					Inlet	Travel	Total							No. Barrels	Width	Height			US	DS	V1 (in)	V2 (out)	V1^2/2G	a1*V1^2/2G	Kj	K(V1^2/2G)	Hfs			
		ft		acres	acres				min	min	min	in/hr	cfs	cfs	cfs	cfs	in		ft	ft			ft	ft	ft/s	ft/s	ft	ft	ft	ft	ft	ft	ft	ft
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19a	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
LINE S10-B																																			
9+73.06		7.61		1.81	1.81	0.88	0.80	0.80	10.0	0.0	10.0	9.14	4.48	4.89	0.48	9.85	18	1	0	0	0.013	0.0110	717.88	717.88	-	5.57	-	0.40	1.00	0.40	0.35	718.58	730.64
9+81.67	9+78.16	16.79	B2,B3	0.00	1.81	0.90	0.00	0.80	10.0	0.1	10.1	9.14	4.48	0.00	0.00	9.85	18	1	0	0	0.013	0.0110	717.88	717.25	5.57	5.57	0.40	0.40	0.55	0.14	0.14	717.52	730.18
9+47.16	9+78.66	37.83	LAT B-1	0.34	1.41	0.55	0.18	0.78	10.1	0.4	10.5	7.81	6.08	1.00	0.00	10.43	27	1	0	0	0.013	0.0111	717.15	717.07	5.57	2.82	0.40	0.11	1.00	0.40	0.10	717.25	718.66
9+78.66	1+40.61	1,867.4	B,C	4.38	6.28	0.90	3.80	4.58	10.5	0.4	10.8	7.81	21.96	1.00	0.00	22.96	27	1	0	0	0.013	0.0109	718.15	724.66	2.82	8.33	0.11	1.03	1.00	0.11	0.62	719.77	717.66
1+42.61	1+20.78	22.03	LAT B-2	1.90	7.18	0.58	0.42	4.99	10.8	0.0	10.8	7.81	31.22	0.00	0.00	31.38	27	1	0	0	0.013	0.0132	719.48	724.10	8.13	8.98	1.03	1.25	1.00	1.03	0.22	724.56	717.00
1+20.78	1+00.00	20.78	B2,MD	0.00	7.18	0.55	0.00	4.99	10.8	0.0	10.8	7.81	31.22	0.00	0.00	31.38	27	1	0	0	0.013	0.0132	720.77	720.43	8.93	8.98	1.24	1.24	1.00	1.24	0.22	724.18	0.00
1+00.00																									8.88	13.78	1.24	3.87	1.00	1.24	3.87	724.05	0.00
LATERAL B-1																																			
1+41.52	1+00.00	41.52	B1	0.34	0.34	0.55	0.19	0.19	10.0	0.6	10.6	7.81	1.48	0.00	0.00	1.48	18	1	0	0	0.013	0.0032	717.41	717.40	-	0.83	-	0.01	1.25	0.00	0.10	717.51	720.73
1+00.00																							717.19		0.83	2.82	0.01	0.11	1.00	0.01	0.10	717.25	
LATERAL B-2																																			
1+60.19	1+00.00	60.19	B2	1.39	1.39	0.33	0.42	0.42	10.0	0.6	10.6	8.98	2.87	0.00	0.00	2.87	18	1	0	0	0.013	0.0202	715.99	715.85	-	1.63	-	0.04	1.25	0.00	0.10	715.79	0.00
1+00.00																							714.65		1.63	3.85	0.04	1.34	1.00	0.04	1.34	715.85	0.00
From	To	Pipe Length	Drainage Area			Runoff "C"	Incr. cA	Total cA	Time of Concentration			100-year Intensity	100-year Runoff	Inlet Carryover (To Inlet)	Inlet Carryover "q" (From Inlet)	Q Pipe	Pipe Size Diameter	Box Size			n	SF	HGL		Head Loss Calculations								Design HGL	TC or Ground Elev.
			Incremental No.	Total Area					Inlet	Travel	Total							No. Barrels	Width	Height			US	DS	V1 (in)	V2 (out)	V1^2/2G	a1*V1^2/2G	Kj	K(V1^2/2G)	Hfs			
		ft		acres	acres				min	min	min	in/hr	cfs	cfs	cfs	cfs	in		ft	ft			ft	ft	ft/s	ft/s	ft	ft	ft	ft	ft	ft	ft	ft
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19a	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
LINE S10-C																																			
6+11.60	5+78.28	38.32	C5,C1	1.27	1.27	0.70	0.89	0.89	10.0	0.1	10.1	9.14	8.13	0.00	0.00	8.13	18	1	0	0	0.013	0.0025	725.46	726.32	-	4.62	-	0.30	1.00	0.30	0.38	726.83	730.00
5+78.28	1+92.10	626.18	C0,C1	3.27	3.53	0.70	0.88	1.77	10.1	0.8	10.9	9.14	16.19	0.00	0.00	15.80	18	1	0	0	0.013	0.0231	727.53	727.61	4.62	8.84	0.30	1.21	1.00	0.30	0.91	728.42	734.66
1+92.10	1+40.29	51.82	C2,C3	0.93	3.46	0.58	0.51	2.28	10.9	0.0	10.9	7.81	17.81	0.00	0.00	17.80	21	1	0	0	0.013	0.0127	717.71	717.62	8.84	7.63	1.21	0.87	1.00	1.21	0.42	717.91	730.78
1+40.29	1+00.00	40.29	C3,C5	0.93	4.39	0.58	0.51	2.79	10.9	0.1	11.1	7.81	21.78	0.00	0.00	22.05	21	1	0	0	0.013	0.0201	717.12	716.29	7.63	9.35	0.86	1.36	1.00	0.86	0.30	717.62	730.37
1+00.00																							716.15		9.35	8.15	1.36	1.42	1.00	1.36	0.10	718.25	
LATERAL C-1																																			
1+18.18	1+00.00	18.18	C6,C1	1.27	1.27	0.70	0.89	0.89	10.0	0.1	10.1	9.14	8.09	0.00	0.00	8.09	18	1	0	0	0.013	0.0025	726.26	726.22	-	4.54	-	0.30	1.25	0.00	0.38	726.70	730.56
1+00.00																							727.91		4.62	8.84	0.30	1.21	1.00	0.30	0.91	728.32	
LATERAL C-2																																			
1+00.00	1+00.00	8.00	C2,C3	0.93	0.93	0.58	0.51	0.51	10.0	0.0	10.0	9.14	2.87	0.00	0.00	2.87	18	1	0	0	0.013	0.0013	718.01	718.00	-	2.11	-	0.07	1.25	0.00	0.10	718.01	731.25
1+00.00																							717.71		2.11	7.30	0.07	0.80	1.00	0.07	0.10	718.02	
LATERAL C-3																																			
1+29.76	1+00.00	29.76	C2,C3	0.93	0.93	0.58	0.51	0.51	10.0	0.2	10.2	9.14	2.87	0.00	0.00	2.87	18	1	0	0	0.013	0.0013	718.03	718.01	-	2.11	-	0.07	1.25	0.00	0.10	718.08	731.30
1+00.00																							717.57		2.11	9.26	0.07	1.36	1.00	0.07	1.36	718.41	
From	To	Pipe Length	Drainage Area			Runoff "C"	Incr. cA	Total cA	Time of Concentration			100-year Intensity	100-year Runoff	Inlet Carryover (To Inlet)	Inlet Carryover "q" (From Inlet)	Q Pipe	Pipe Size Diameter	Box Size			n	SF	HGL		Head Loss Calculations								Design HGL	TC or Ground Elev.
			Incremental No.	Total Area					Inlet	Travel	Total							No. Barrels	Width	Height			US	DS	V1 (in)	V2 (out)	V1^2/2G	a1*V1^2/2G	Kj	K(V1^2/2G)	Hfs			
		ft		acres	acres				min	min	min	in/hr	cfs	cfs	cfs	cfs	in		ft	ft			ft	ft	ft/s	ft/s	ft	ft	ft	ft	ft	ft	ft	ft
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19a	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
LINE S10-D																																			
2+72.67	0+50.50	43.09	C0,C1	0.89	0.89	0.55	0.49	0.49	10.0	0.4	10.4	7.81	3.85	0.00	0.34	3.48	18	1	0	0	0.013	0.0011	725.91	725.78	-	1.97	-	0.06	1.25	0.00	0.10	725.11	737.28
0+50.50	0+11.48	139.11	C0,C1	0.89	1.78	0.55	0.88	0.88	10.4	1.2	11.6	7.81	6.93	0.00	2.34	9.27	18	1	0	0	0.013	0.0044	726.08	721.19	1.97	3.64	0.06	0.20	1.00	0.06	0.10	725.39	730.80
2+51.98	1+89.14	62.17	C2,C3	1.87	3.45	0.55	0.92	1.80	11.2	0.2	11.5	7.40	14.02	0.34	2.41	13.27	18	1	0	0	0.013	0.0113	730.80	730.09	0.94	5.36	0.14	0.83	1.00	0.14	0.30	731.19	735.15
1+89.14	0+11.48	177.66	C2,C3	1.87	5.11	0.55	0.97	2.81	11.4	0.4	11.8	7.40	20.78	0.34	2.41	19.97	24	1	0	0	0.013	0.0050	731.88	719.43	0.58	3.08	0.13	0.40	1.00	0.13	0.50	732.09	732.81
LATERAL D-1																																			
1+15.12	1+00.00	15.29	D1,D0	0.89	0.89	0.55	0.49	0.49	10.0	0.1	10.1	7.81	2.55	0.00	0.34	2.89	18	1	0	0	0.013	0.0011	726.76	726.70	-	1.97	-	0.06	1.25	0.00	0.10	726.80	736.66
1+00.00																							726.60		1.97	3.64	0.06	0.20	1.00	0.06	0.10	726.70	0.00
LATERAL D-2																																			
1+05.77	1+00.00	5.77	D2,D0	1.87	1.87	0.55	0.92	0.92	10.0	0.0	10.0	7.81	7.15	0.34	2.41	5.08	18	1	0	0	0.013	0.0033	731.37	731.31	-	2.88	-	0.13	1.25	0.00	0.16	731.48	775.54
1+00.00																							730.80		2.88	6.36	0.13	0.40	1.00	0.13	0.50	731.31	0.00
LATERAL D-3																																			
1+00.00	1+00.00	30.03	D2,D3	1.87	1.87	0.55	0.92	0.92	10.0	0.2	10.2	7.81	7.15	0.34	2.41	5.08	18	1	0	0	0.013	0.0033	730.33	730.26	-	2.88	-	0.13	1.25	0.00	0.16	730.45	721.80
1+00.00																							719.80		2.88	5.08	0.13	0.40	1.00	0.13	0.27	730.28	4.00
From	To	Pipe Length	Drainage Area			Runoff "C"	Incr. cA	Total cA	Time of Concentration			100-year Intensity	100-year Runoff	Inlet Carryover (To Inlet)	Inlet Carryover "q" (From Inlet)	Q Pipe	Pipe Size Diameter	Box Size			n	SF	HGL		Head Loss Calculations								Design HGL	TC or Ground Elev.
			Incremental No.	Total Area					Inlet	Travel	Total							No. Barrels	Width	Height			US	DS	V1 (in)	V2 (out)	V1^2/2G	a1*V1^2/2G	Kj	K(V1^2/2G)	Hfs			
		ft		acres	acres				min	min	min	in/hr	cfs	cfs	cfs	cfs	in		ft	ft			ft	ft	ft/s	ft/s	ft	ft	ft	ft	ft	ft	ft	ft
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19a	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
LINE S10-E																																			
5+55.21	5+85.21	45.26	C0,E1	1.38	1.38	0.55	0.75	0.75	10.0	0.3	10.3	7.81	5.86	0.00	2.81	4.91	18	1	0	0	0.013	0.0060	725.80	725.66	-	2.19	-	0.08	1.25	0.00	0.15	726.00	730.40
5+85.21	2+47.56	337.45	E0,E1	1.38	2.77	0.55	0.75	1.50	10.3	1.3	11.6	7.81	11.64	0.00	0.00	11.64	18	1	0	0	0.013	0.0098	729.44	727.49	2.19	5.58	0.19	0.48	1.00	0.19	0.35	729.66	734.38
2+47.56	1+21.47	26.08	E2,E3	1.25	3.95	0.55	0.68	2.18	11.6	0.1	11.7	7.40	16.10	0.00	1.47	14.18	18	1	0	0	0.013	0.0150	731.97	731.30	5.58	8.07	0.48	1.08	1.00	0.48	0.52	732.49	735.05
2+47.56	1+21.47	26.08	E2,E3	1.25	5.20	0.55	0.68	2.85	10.4	0.1	10.5	7.81	22.15	0.00	1.47	19.62	18	1	0	0	0.013	0.0231	730.73	718.82	8.01	10.62	1.00	1.79	1.00	1.00	1.79	731.90	734.55
1+21.47	0+85.38	36.01	LINE S10-F	4.00	5.60	0.55	2.20	5.05	10.5	0.1	10.6	7.81	40.96	0.00	0.00	38.64	36	1	0	0	0.013	0.0033	718.72	718.61	10.89	9.28	1.78	0.45	1.00	1.78	0.80	719.60	724.05
LATERAL E-1																																			
1+13.10	1+00.00	13.10	E0,E1	1.38	1.38	0.55	0.75	0.75	10.0	0.1	10.1	7.81	5.86	0.00	0.91	4.91	18	1	0	0	0.013	0.0032	731.19	731.16	-	2.19	-	0.07	1.25	0.00	0.13	731.34	734.83
1+00.00																							729.44		2.19	5.58	0.13	0.48	1.00	0.13	0.12	729.88	
LATERAL E-2																																			
1+00.00	1+00.00	29.03	E2,E1	1.25	1.25	0.55	0.68	0.68	10.0	0.2	10.2	7.81	5.26	0.91	2.47	4.79	18	1	0	0	0.013	0.0031	732.44	732.36	-	2.11	-	0.11	1.25	0.00	0.14	732.58	732.57
1+00.00																							730.73		2.11	10.62	0.11	1.78	1.00	0.11	1.68	732.39	

Kimley»Horn

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DATE	BY	REVISIONS

DRAINAGE CALCULATIONS

MANTUA POINT
PHASE 1
CITY OF MANSFIELD
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-49

From	To	Pipe Length	Drainage Area Incremental No.	Drainage Area Incremental Area acres	Drainage Area Total acres	Runoff "C"	Incr. CA	Total CA	Time of Concentration Inlet min	Time of Concentration Travel min	Time of Concentration Total min	100-year Intensity in/hr	100-year Runoff cfs	Inlet Carryover (To Inlet) cfs	Inlet Carryover "Q" (From Inlet) cfs	Q Pipe cfs	Pipe Size Diameter in	Box Size No. Barrels	Box Size Width ft	Box Size Height ft	n	SF	HGL UIS ft	HGL DIS ft	Head Loss Calculations V1 (fps)	V2 (fps)	V1^2/2G ft	V2^2/2G ft	Kj	K(V1^2/2G) ft	H1 ft	Design HGL ft	TIC or Ground Elev. ft
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19a	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
LINE 50-F																																	
5-100.50	4+48.50	51.00	41	3.70	3.70	0.55	1.82	1.82	15.0	0.1	15.1	7.81	14.27	0.00	0.00	14.27	18	1	6	6	0.013	0.0064	727.04	726.09	-	6.07	-	1.01	1.25	0.50	1.26	728.30	729.67
4+48.50	5+73.79	125.29	88HD	0.00	3.30	0.55	0.00	1.80	15.1	3.6	18.7	7.61	14.27	0.00	0.00	14.27	18	1	6	6	0.013	0.0064	728.71	728.27	9.37	6.07	1.01	1.01	0.35	0.35	1.36	729.06	729.71
5+73.79	6+54.38	80.59	F1	0.00	4.00	0.55	0.00	2.20	15.7	1.0	16.7	7.61	16.98	0.00	0.00	16.98	21	1	0	0	0.013	0.0079	730.20	729.71	8.91	8.63	1.23	1.23	1.50	1.51	1.79	731.99	733.09
6+54.38	11+00.00	54.56	F2	0.00	4.00	0.55	0.00	2.20	16.7	2.1	18.8	7.61	16.98	0.00	0.00	16.98	21	1	0	0	0.013	0.0079	731.94	731.51	8.91	8.63	1.23	1.23	1.50	1.51	1.79	733.73	733.09
1+00.00																							718.72		9.44	5.38	1.38	0.45	1.00	1.38	0.10	719.82	
LATERAL F-1																																	
1+00.00	1+39.00	6.26	7.1	0.99	0.99	0.99	0.81	0.81	15.0	3.8	18.8	7.61	4.00	3.94	0.00	4.38	18	1	0	0	0.013	0.0044	721.50	721.47	-	4.92	-	0.24	1.25	0.00	0.30	721.78	723.88
1+00.00																							720.50		2.82	4.91	0.24	1.21	1.00	0.25	0.07	720.57	
LATERAL F-2																																	
1+00.00	1+00.00	28.84	7.2	0.78	0.78	0.55	0.19	0.19	15.0	0.8	15.8	7.61	1.50	0.00	0.00	1.50	18	1	0	0	0.013	0.0002	721.22	721.31	-	0.85	-	0.01	1.25	0.00	0.16	721.42	723.98
1+00.00																							719.84		0.83	3.44	0.01	1.18	1.00	0.01	0.13	719.97	
From	To	Pipe Length	Drainage Area Incremental No.	Drainage Area Incremental Area acres	Drainage Area Total acres	Runoff "C"	Incr. CA	Total CA	Time of Concentration Inlet min	Time of Concentration Travel min	Time of Concentration Total min	100-year Intensity in/hr	100-year Runoff cfs	Inlet Carryover (To Inlet) cfs	Inlet Carryover "Q" (From Inlet) cfs	Q Pipe cfs	Pipe Size Diameter in	Box Size No. Barrels	Box Size Width ft	Box Size Height ft	n	SF	HGL UIS ft	HGL DIS ft	Head Loss Calculations V1 (fps)	V2 (fps)	V1^2/2G ft	V2^2/2G ft	Kj	K(V1^2/2G) ft	H1 ft	Design HGL ft	TIC or Ground Elev. ft
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19a	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
LINE 50-G																																	
5+73.79	9+70.79	96.00	42	0.77	0.77	0.55	0.42	0.42	15.0	0.1	15.1	7.81	3.28	0.00	0.00	3.28	18	1	0	0	0.013	0.0034	728.00	727.88	-	3.82	-	0.23	1.25	0.00	0.14	728.14	731.56
9+70.79	9+82.27	11.48	43.1	1.10	1.87	0.55	1.03	1.23	15.2	0.1	15.3	7.81	9.58	0.00	0.43	9.02	18	1	0	0	0.013	0.0214	727.28	727.00	1.98	5.10	0.11	0.40	1.25	0.11	0.22	727.50	730.54
9+82.27	11+77.82	195.55	43.2	0.00	2.22	0.55	0.00	1.32	15.5	0.5	15.8	7.81	6.54	0.00	0.00	6.02	18	1	0	0	0.013	0.0074	727.34	726.03	3.43	5.10	0.20	0.40	1.25	0.14	0.34	727.68	729.88
11+77.82	14+69.43	91.7	G2	0.97	2.19	0.55	0.53	1.75	15.8	0.5	15.8	7.81	13.71	0.02	0.00	13.71	21	1	0	0	0.013	0.0075	729.85	729.36	4.12	5.10	0.26	0.40	1.50	0.40	0.10	730.05	731.48
14+69.43	15+55.24	14.21	63.HD	0.00	3.10	0.55	0.00	1.70	16.8	0.3	16.8	7.61	13.71	0.00	0.00	13.71	21	1	0	0	0.013	0.0071	730.55	730.05	3.10	5.10	0.15	0.40	1.50	0.30	0.10	730.65	731.21
15+55.24	16+04.1	48.86	44.HD	0.00	2.19	0.55	0.00	1.20	16.8	1.0	17.8	7.61	9.35	0.00	0.00	9.35	21	1	0	0	0.013	0.0035	730.87	730.65	2.70	5.10	0.11	0.40	1.50	0.16	0.10	730.97	731.21
16+04.1	2+19.48	29.93	53	0.61	3.80	0.55	0.21	1.88	15.8	0.1	16.0	7.61	11.47	0.00	0.00	11.47	21	1	0	0	0.013	0.0050	731.21	730.97	3.10	5.10	0.15	0.40	1.50	0.23	0.10	731.31	731.89
LATERAL G-1																																	
1+21.88	1+00.00	20.88	63.G1	1.61	1.61	0.55	0.81	0.81	15.0	1.2	16.2	7.61	4.77	0.00	0.45	4.32	18	1	0	0	0.013	0.0017	727.88	727.88	-	2.44	-	0.09	1.25	0.00	0.12	728.00	731.80
1+00.00																							727.82		2.44	5.10	0.09	0.40	1.00	0.09	0.01	727.83	
LATERAL G-2																																	
1+05.77	1+00.00	5.77	G2	0.97	0.97	0.55	0.53	0.53	15.0	0.0	15.0	7.81	4.17	0.32	0.00	4.49	21	1	0	0	0.013	0.0009	726.35	726.77	-	1.85	-	0.05	1.25	0.00	0.10	726.38	732.76
1+00.00																							726.25		1.85	5.10	0.05	0.40	1.00	0.05	0.01	726.27	
LATERAL G-3																																	
1+22.72	1+00.00	22.72	[illegible]	0.41	0.41	0.55	0.23	0.23	15.0	0.7	15.7	7.81	1.76	0.00	0.00	1.76	21	1	0	0	0.013	0.0001	729.39	729.36	-	0.73	-	0.01	1.25	0.00	0.10	729.49	737.62
1+00.00																							721.86		0.73	5.10	0.01	0.40	1.00	0.01	0.00	721.86	
From	To	Pipe Length	Drainage Area Incremental No.	Drainage Area Incremental Area acres	Drainage Area Total acres	Runoff "C"	Incr. CA	Total CA	Time of Concentration Inlet min	Time of Concentration Travel min	Time of Concentration Total min	100-year Intensity in/hr	100-year Runoff cfs	Inlet Carryover (To Inlet) cfs	Inlet Carryover "Q" (From Inlet) cfs	Q Pipe cfs	Pipe Size Diameter in	Box Size No. Barrels	Box Size Width ft	Box Size Height ft	n	SF	HGL UIS ft	HGL DIS ft	Head Loss Calculations V1 (fps)	V2 (fps)	V1^2/2G ft	V2^2/2G ft	Kj	K(V1^2/2G) ft	H1 ft	Design HGL ft	TIC or Ground Elev. ft
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19a	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
LINE 50-H																																	
15+58.45	17+59.54	53.72	HD+1	1.21	1.21	0.55	0.67	0.67	15.0	0.5	15.5	7.81	3.20	0.00	0.32	4.88	18	1	0	0	0.013	0.0072	747.63	747.00	-	4.19	-	0.17	1.25	0.00	0.15	748.81	751.78
17+59.54	14+68.81	290.73	HD-1	1.21	2.42	0.55	0.67	1.33	15.5	0.6	16.2	7.81	10.40	0.00	0.32	8.79	18	1	0	0	0.013	0.0266	743.83	743.19	3.76	5.52	0.12	0.47	1.50	0.3	0.38	747.50	750.84
14+68.81	14+37.84	30.97	HD-2	0.58	3.00	0.55	0.32	1.65	16.3	0.1	16.3	7.81	11.64	0.00	0.22	11.20	21	1	0	0	0.013	0.0066	743.97	743.83	3.53	5.52	0.19	0.47	1.50	0.47	0.10	744.13	743.61
14+37.84	15+89.97	347.12	HD-3	0.58	3.58	0.55	0.32	2.22	16.3	0.5	17.2	7.60	14.92	0.22	0.00	14.92	21	1	0	0	0.013	0.0088	745.97	745.00	3.07	5.20	0.15	0.42	1.50	0.33	0.30	746.27	748.07
15+89.97	16+24.86	53.88	HD	0.75	4.33	0.55	0.41	2.63	17.2	0.3	17.5	7.45	19.58	0.00	0.54	19.05	21	1	0	0	0.013	0.0151	746.47	746.27	4.20	5.20	0.27	0.42	1.50	0.56	0.30	746.77	748.07
16+24.86	2+88.88	264.69	LINE 50-I	8.54	11.77	0.55	3.78	6.41	17.5	4.7	18.0	7.45	47.39	0.00	0.00	47.39	30	1	0	0	0.013	0.0018	748.47	746.47	7.00	7.44	0.76	0.86	1.00	0.86	0.45	749.32	747.91
2+88.88	0+39.45	50.53	HR	0.87	12.14	0.55	0.47	7.25	18.0	0.1	18.1	7.21	52.48	0.64	1.79	50.69	33	1	0	0	0.013	0.0002	749.32	748.48	7.26	7.44	0.82	0.86	1.00	0.86	0.43	750.20	747.91
0+39.45	1+20.41	118.81	HR-1	1.28	13.42	0.55	0.93	8.21	18.1	0.7	18.8	7.21	59.21	1.79	2.27	56.94	36	1	0	0	0.013	0.0021	750.20	749.32	8.03	7.97	1.00	1.00	0.94	0.94	0.70	751.14	748.24
1+20.41	2+78.25	44.46	[illegible]	0.77	14.19	0.55	0.46	8.68	18.8	0.1	18.9	7.21	64.11	2.27	3.00	61.11	36	1	0	0	0.013	0.0001	751.14	750.20	8.63	8.63	1.15	1.15	1.10	1.15	0.10	751.24	748.00
2+78.25	2+37.90	10.07	HR-1.5	1.21	15.65	0.55	0.33	9.00	18.9	0.1	19.0	7.21	71.06	3.00	3.27	67.79	42	1	0	0	0.013	0.0001	751.24	751.14	9.21	8.63	1.32	1.15	1.30	1.49	0.01	751.25	750.20
2+37.90	1+75.79	60.00	HR	0.00	15.65	0.55	0.00	9.00	19.0	0.3	19.2	7.11	71.06	3.27	0.00	68.34	48	1	0	0	0.013	0.0014	751.25	751.25	8.71	8.63	1.18	1.15	1.30	1.53	0.32	752.46	752.20
1+75.79	1+66.53	9.26	LINE 50-J	1.65	15.72	0.55	0.91	9.91	19.2	0.0	19.2	7.11	70.43	0.00	0.00	70.43	48	1	0	0	0.013	0.0008	752.46	751.25	8.97	8.63	1.25	1.15	1.30	1.59	0.48	753.71	752.20
LATERAL H-1																																	
1+11.10	1+00.00	11.10	HR-1+	1.21	1.21	0.55	0.67	0.67	15.0	0.1	15.1	7.81	5.20	0.00	0.32	4.88	18	1	0	0	0.013	0.0035	745.61	745.99	-	2.75	-	0.12	1.25	0.00	0.15	746.16	751.31
1+00.00																							745.53		2.75	5.52	0.12	0.47	1.50	0.32	0.35	745.90	
LATERAL H-2																																	
1+03.79	1+00.00	3.79	H2-H2	0.58	0.58	0.55	0.32	0.32	15.0	0.1	15.1	7.81	2.49	0.22	0.02	2.79	18	1	0	0	0.013	0.0007	743.42	743.42	-	1.58	-	0.04	1.25	0.00	0.05	743.52	746.05
1+00.00																							743.38		1.58	5.07	0.04	0.40	1.00	0.04	0.00	743.42	
LATERAL H-3																																	
1+29.97	1+00.00	29.97	H2-+3	0.58	0.58	0.55	0.32	0.32	15.0	0.3	15.3	7.81	2.49	0.22	0.02	2.29	18	1	0	0	0.013	0.0097	743.31	743.23	-	1.28	-	0.04	1.25	0.00	0.05	743.36	745.75
1+00.00																							742.67		1.28	5.30	0.04	0.40	1.00	0.04	0.00	742.71	
LATERAL H-4																																	
1+55.58	1+00.00	0.58	H4	0.76	0.76	0.55	0.44	0.44	10.0	0.1	10.0	8.14	6.17	0.00	0.34	5.83	18	1	0	0	0.013	0.0026	740.08	740.04	-	3.13	-	0.15	1.25	0.00	0.19	740.25	743.81
1+00.00																							739.23		3.13	7.96	0.15	0.96	1.00	0.15	0.00	740.04	
LATERAL H-5																																	
1+05.07	1+00.00	5.07	H5	0.97	0.97	0.55	0.47	0.47	10.0	0.0	10.0	8.14	7.66	0.34	0.78	6.54	18	1	0	0	0.013	0.0047	733.54	733.30	-	3.82	-	0.23	1.25	0.00	0.29	734.13	736.73
1+00.00																							732.31		3.82	8.53	0.23	1.13	1.00	0.23	0.00	733.30	
LATERAL H-6																																	
2+00.70	1+00.00	100.70	H6.5.8	1.29	1.29	0.55	0.93	0.93	15.0	0.5	15.5	7.81	7.30	0.00	3.27	4.03	18	1	0	0	0.013	0.0030	733.79	733.37	-	3.38	-	0.18	1.25	0.00	0.22	733.92	739.73
1+00.00																							732.34		3.38	8.63	0.18	1.20	1.00	0.18	0.00	733.37	
LATERAL H-7																																	
1+58.58	1+00.00	8.58	H7	0.77	0.77	0.55	0.92	0.92	15.0	0.0	15.0	7.81	7.23	0.34	1.03	6.20	18	1	0	0	0.013	0.0031	737.14	737.16	-	4.22	-	0.28	1.25	0.00	0.35	737.50	738.39
1+00.00																							732.46		4.22	9.28	0.28	1.33	1.00	0.28	0.00	737.50	
LATERAL H-8																																	
1+98.10	1+00.00	98.10	H8.5.9	1.41	1.41	0.55	1.07	1.07	15.0	0.4	15.4	7.81	8.36	0.21	3.27	5.12	18	1	0	0	0.013	0.0060	738.80	738.30	-	4.71	-	0.34	1.25	0.00	0.42	739.22	737.39
1+00.00																							732.15		4.71	9.07	0.34	0.98	1.00	0.34	0.12	732.30	
Fdwh	To	Pipe Length	Drainage Area Incremental No.	Drainage Area Incremental Area acres	Drainage Area Total acres	Runoff "C"	Incr. CA	Total CA	Time of Concentration Inlet min	Time of Concentration Travel min	Time of Concentration Total min	100-year Intensity in/hr	100-year Runoff cfs	Inlet Carryover (To Inlet) cfs	Inlet Carryover "Q" (From Inlet) cfs	Q Pipe cfs	Pipe Size Diameter in	Box Size No. Barrels	Box Size Width ft	Box Size Height ft	n	SF	HGL UIS ft	HGL DIS ft	Head Loss Calculations V1 (fps)	V2 (fps)	V1^2/2G ft	V2^2/2G ft	Kj	K(V1^2/2G) ft	H1 ft	Design HGL ft	TIC or Ground Elev. ft
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19a	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
INF 50+																																	
0+00.00	1+00.00	100.00	50.F	0.00	1.38	0.55	0.76	0.76	10.0	0.1	10.1	7.81	5.93	0.00	0.00	5.93	18	1	0	0	0.013	0.0060	740.15	740.15	-	3.88	-	0.14	1.25	0.00	0.17	740.32	739.08
1+00.00	5+48.50	448.50	0.F1	0.00	1.38	0.55	0.76	1.52	10.1	0.3	10.4	7.81	11.86	0.00	0.53	10.54	18	1	0	0	0.013	0.0101	740.28	740.07	3.88	5.97	0.18	0.55	1.00	0.18	0.61	740.89	743.31
5+48.50	6+42.50	21.00	0.F2	0.00	3.20	0.55	0.07	4.35	15.4	0.1	15.5	7.81	13.29	0.02	0.00	13.27	18	1	0	0	0.013	0.0147	744.82	744.50	5.87	7.20	0.53	0.80	1.00	0.53	0.60	745.42	746.87
5+42.50	2+58.44	241.28	0.G	0.00	3.58	0.55	0.07	3.43	15.5	1.1	16.6	7.61	13.23	0.02	0.00	11.89	21	1	0	0	0.013	0.0088	744.45	740.94	2.30	5.19	0.08	0.40	1.00	0.08	0.55	745.00	744.46
2+58.44	2+00.68	55.76	H	0.15	0.54	0.55	1.73	0.15	16.6	0.1	16.7	7.60	16.98	0.00	0.00	16.98	24	1	0	0	0.013	0.0146	746.33	738.50	6.19	6.79	0.60	1.20	1.00	0.60	0.61	746.94	744.46
2+00.68	1+00.00	100.68	0.F.5	0.99	7.61	0.75	0.74	4.80	16.7	0.7	16.8	7.60	34.17	0.04	0.56	33.57	27	1	0	0	0.013	0.0126	738.40	738.30	6.79	8.14	0.72	1.03	1.00	1.00	0.10	739.30	742.75
1+00.00																							738.20		6.14	7.88	0.65	0.96	1.00	0.65	0.46	738.30	
LATERAL I-1																																	
1+08.70	1+00.00	38.70	0.H	1.36	1.36	0.55	0.75	0.75	15.0	0.2	15.2	7.81	5.82	0.00	0.56	5.27	18	1	0	0	0.013	0.0094	748.70	748.70	-	2.98	-	0.14	1.25	0.00	0.17	748.87	752.80
1+00.00																							748.26		2.98	5.87	0.14	0.53	1.00	0.14	0.01	748.27	
LATERAL I-2																																	
1+03.77	1+00.00	3.77	0.G	0.49	0.49	0.55	0.27	0.27	15.0	0.1	15.1	7.81	2.11	0.56	0.00	2.68	18	1	0	0	0.013	0.0006	749.56	749.52	-	1.50	-	0.04	1.25	0.00	0.05	749.60	749.23
1+00.00																							749.52		1.50	7.20	0.04	0.80	1.00	0.04	0.00	749.56	
LATERAL I-3																																	
1+20.18	1+00.00	20.18	0.G	0.49	0.49	0.55	0.27	0.27	15.0	0.2	15.3	7.81	2.11	0.55	0.00	2.68	18	1	0	0	0.013	0.0009	744.98	744.96	-	1.50	-	0.04	1.25	0.00	0.05	745.03	749.15
1+00.00																							744.92		1.50	5.58	0.04	0.50	1.00	0.04	0.00	744.96	
LATERAL I-4																																	
1+08.78	1+00.00	8.78	H	5.11	5.19	0.55	1.73	1.73	15.0	0.0	15.0	7.81	13.53	0.00	0.00	13.53	21	1	0	0	0.013	0.0075	741.04	741.04	-	5.63	-	0.49	1.25	0.00	0.61	741.70	744.35
1+00.00																							740.20		5.63	8.79	0.49	1.20	1.00	0.49	0.01	740.21	
LATERAL I-5																																	
1+17.40	1+00.00	17.40	0.H.5	0.96	0.96	0.75	0.74	0.74	10.0	0.1	10.1	8.14	6.72	0.04	0.68	5.68	18	1	0	0	0.013	0.0031	740.51	740.88	-	3.33	-	0.17	1.25	0.00	0.21	740.93	742.91
1+00.00																							740.43		3.33	8.14	0.17	1.03	1.00	0.17	0.00	740.43	

Kimley»Horn

PROFESSIONAL ENGINEER

DRAINAGE CALCULATIONS

MANTUA POINT PHASE 1

CITY OF VAN ALSTYNE

GRAYSON AND COLLIN COUNTY, TEXAS

C-50

DATE 8/7

REVISIONS

DATE 08/07/2018

SCALE AS SHOWN

DESIGNED XXX

DRAWN BY XXX

REVIEWED TGC

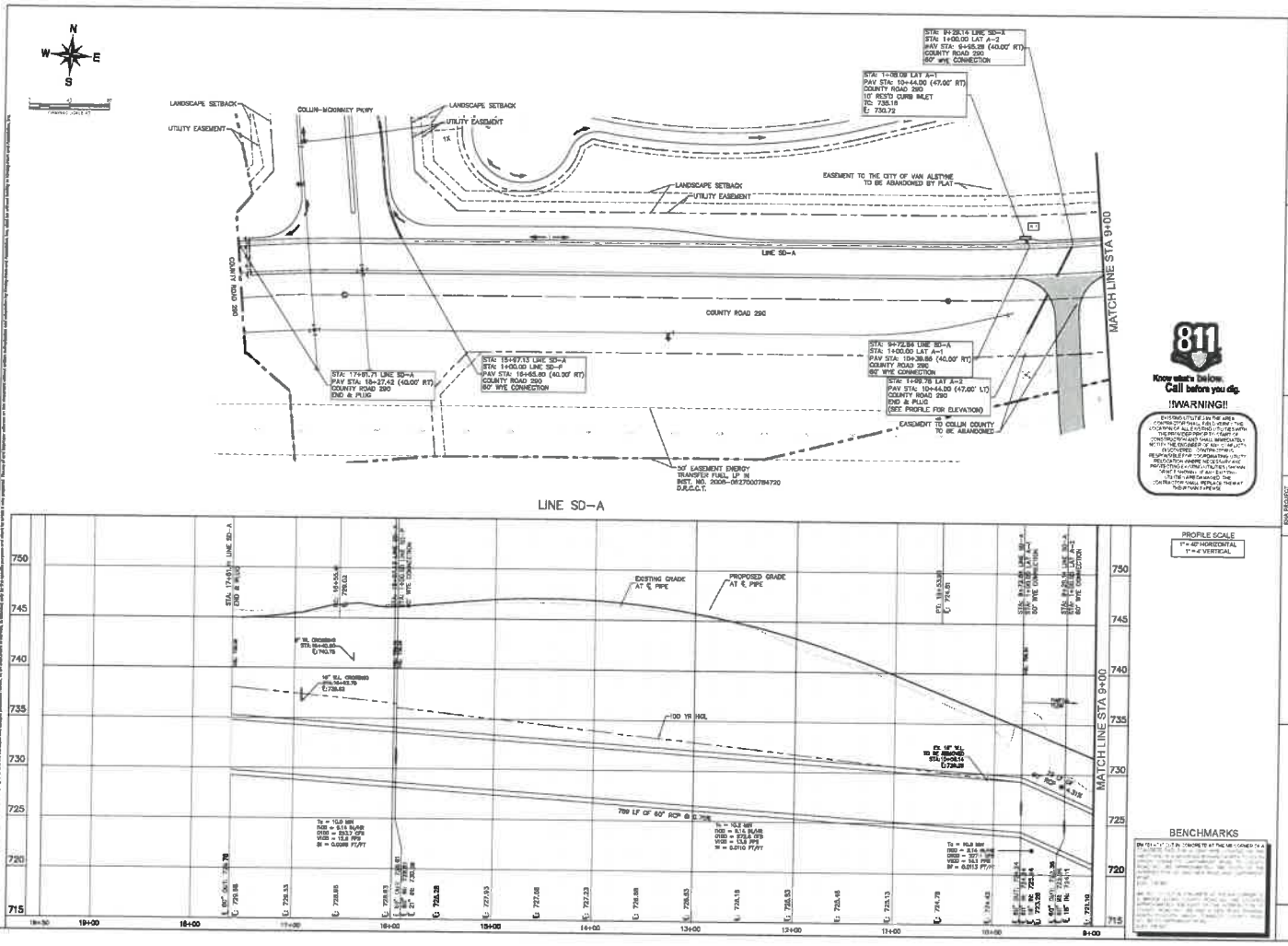
From	To	Pipe Length	Drainage Area Incremental No.	Drainage Area Incremental Area	Drainage Area Total	Runoff "C"	Incr. cA	Total cA	Time of Concentration Inlet	Time of Concentration Travel	Time of Concentration Total	100-year Intensity	100-year Runoff	Inlet Carryover (To Inlet)	Inlet Carryover "Q" (From Inlet)	Q Pipe	Pipe Size Diameter	Box Size No. Barrels	Box Size Width	Box Size Height	n	Sf	HGL US	HGL DS	Head Loss Calculations V1 (in)	V2 (out)	V1^2/2G	V2^2/2G	KJ	KJ*V1^2/2G	Hf	Design HGL	TIC or Ground Elev.
		ft		acres	acres				min	min	min	in/hr	cfs	cfs	cfs	cfs	in		ft	ft		ft/ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft	ft
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	18a	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33
LINE SD-J																																	
17-36.51	17-36.49	37.02	J0-J1	2.63	2.63	0.37	0.97	0.97	15.0	0.2	15.2	7.81	7.59	0.00	0.59	7.60	21	1	6	0	0.013	0.0020	749.98	749.91	2.97		0.13	1.25	0.00	0.18	750.12	752.78
17-56.48	17-00.68	58.83	J0-J1	2.63	5.25	0.37	0.97	1.94	15.2	0.7	15.4	7.81	15.18	0.00	0.58	14.60	21	1	6	0	0.013	0.0079	749.51	749.06	2.91	0.67	0.13	0.53	1.00	0.13	0.39	749.91	752.20
17-00.68	16-72.38	28.28	R0-R0	0.00	5.25	0.35	0.60	1.94	15.4	0.1	15.5	7.81	15.18	0.00	0.00	14.90	21	1	6	0	0.013	0.0079	749.47	749.46	2.89	2.89	0.13	0.53	0.20	0.12	0.18	749.58	751.85
16-72.38	16-39.98	143.00	R0-R0	0.00	5.25	0.35	0.60	1.94	15.5	0.4	15.9	7.81	15.18	0.00	0.00	14.90	21	1	6	0	0.013	0.0079	749.47	747.35	2.82	2.62	0.13	0.53	0.23	0.13	0.18	749.65	751.66
15-39.98	15-17.98	11.85	J0-J1	2.81	8.06	0.36	1.00	3.64	15.9	0.0	15.9	7.81	28.74	0.00	0.00	28.74	27	1	6	0	0.013	0.0039	747.35	747.16	3.60		0.20	0.53	1.00	0.53	0.10	747.35	750.81
15-17.98	14-17.13	100.03	J0-J1	2.81	10.87	0.39	1.10	4.13	15.9	0.2	16.1	7.81	32.30	0.00	0.00	32.30	27	1	6	0	0.013	0.0109	745.84	745.36	3.10	4.12	0.20	1.08	1.00	0.20	0.30	746.18	750.00
14-17.13	13-41.19	30.43	R0-R0	0.43	11.30	0.36	0.21	4.37	16.1	0.1	16.2	7.80	33.21	0.00	0.00	33.21	27	1	6	0	0.013	0.0115	745.48	744.85	6.12	8.29	1.00	1.08	1.00	1.00	0.10	746.58	750.00
13-41.19	8-93.17	348.50	J4	1.88	13.19	0.55	1.04	5.41	16.2	0.7	16.9	7.60	41.11	0.00	[illegible]	41.11	30	1	6	0	0.013	[illegible]	744.73	741.05	8.26	8.37	1.08	1.08	1.00	1.00	0.10	744.85	748.34
8-93.17	8-8.51	18.36	J5-J6	0.87	14.06	0.55	0.48	5.89	16.9	0.0	16.9	7.60	44.75	0.00	0.00	44.75	30	1	6	0	0.013	0.0116	740.83	740.[illegible]	8.37	9.5[illegible]	1.08	1.[illegible]	1.00	1.00	0.20	741.05	748.44
7-[illegible]	7-[illegible]	[illegible]	[illegible]	0.87	14.93	0.55	0.48	6.37	16.9	[illegible]	17.0	7.[illegible]	[illegible]	0.00	0.00	48.38	30	1	6	0	0.013	0.0136	740.44	738.62	9.12	9.89	1.[illegible]	1.51	1.[illegible]	[illegible]	[illegible]	740.66	748.34
7-51.88	6-151.88	100.00	PV	0.00	14.93	0.55	0.00	6.37	17.4	0.3	17.7	7.60	48.38	0.00	0.00	48.38	30	1	6	0	0.013	0.0136	738.52	733.88	9.99	8.34	1.51	1.50	1.00	1.51	0.10	739.42	748.34
5-151.88	4-38.28	13.38	J7-J8	1.09	15.98	0.55	0.58	6.95	17.7	0.0	17.7	7.40	51.42	0.00	0.00	51.34	32	1	6	0	0.013	0.0094	733.76	733.68	9.94	8.34	1.50	1.16	1.00	1.50	0.10	733.88	738.52
4-38.28	4-29.72	91.54	J7-J8	1.09	17.05	0.55	0.58	7.53	17.7	0.4	18.0	7.40	55.73	0.00	0.00	55.65	33	1	6	0	0.013	0.0111	733.68	733.43	8.64	8.37	1.16	1.28	1.00	1.16	0.20	733.88	738.26
4-29.72	1-00.00	308.72	[illegible]	11.77	[illegible]	0.56	6.61	14.01	17.9	0.3	18.4	7.40	100.[illegible]	[illegible]	1.00	99.[illegible]	42	1	6	0	0.013	0.0105	733.73	733.73	9.37	10.76	1.36	1.80	1.00	1.36	0.44	[illegible]	[illegible]
LATERAL J-1																																	
1-28.19	1-00.00	28.18	J0-J1	2.63	2.63	0.37	0.97	0.97	15.0	0.1	15.1	7.81	7.59	0.00	0.59	7.00	18	1	6	0	0.013	0.0044	749.93	749.79		3.96		0.24	1.25	0.00	0.50	750.23	752.80
1-00.00																							749.51		3.96	3.87	0.24	0.53	1.00	0.24	0.26	749.79	
LATERAL J-2																																	
1-56.77	1-00.00	3.77	J2-J3	0.87	0.87	0.38	1.10	1.10	15.0	0.0	15.0	7.81	8.58	0.58	0.00	9.15	18	1	6	0	0.013	0.0075	747.40	747.38		5.18		0.42	1.25	0.00	0.52	747.92	751.24
1-00.00																							747.23		5.18	5.42	0.42	0.59	1.00	0.42	0.31	747.38	
LATERAL J-3																																	
1-28.77	1-00.00	28.77	J2-J3	0.87	0.87	0.38	1.10	1.10	15.0	0.1	15.1	7.81	8.58	0.58	0.00	9.15	18	1	6	0	0.013	0.0075	747.42	747.29		5.18		0.42	1.25	0.00	0.52	748.04	751.24
1-00.00																							748.08		5.18	5.42	0.42	1.00	1.00	0.42	0.31	747.29	
LATERAL J-4																																	
1-28.14	1-00.00	28.14	J4	1.88	1.88	0.55	1.04	1.04	15.0	0.1	15.1	7.81	8.12	0.00	0.00	8.12	18	1	6	0	0.013	0.0060	746.86	746.52		4.60		0.33	1.25	0.00	0.41	746.10	748.41
1-00.00																							746.15		4.60	5.37	0.33	1.00	1.00	0.33	0.18	746.52	
LATERAL J-5																																	
1-28.77	1-00.00	3.77	J5-J6	0.87	0.87	0.38	0.48	0.48	15.0	0.0	15.0	7.81	3.74	0.00	0.00	3.66	18	1	6	0	0.013	0.0012	742.30	742.29		2.87		0.07	1.25	0.00	0.13	742.40	742.81
1-00.00																							742.33		2.87	5.05	0.07	1.00	1.00	0.07	1.44	742.29	
LATERAL J-6																																	
1-37.25	1-00.00	37.25	J5-J6	0.87	0.87	0.55	0.48	0.48	15.0	0.2	15.3	7.81	3.74	0.00	0.15	3.86	18	1	6	0	0.013	0.0012	741.93	741.86		2.43		0.09	1.25	0.00	0.10	742.03	745.84
1-00.00																							742.04		2.43	5.05	0.09	1.51	1.00	0.09	1.44	741.86	
LATERAL J-7																																	
1-52.27	1-00.00	3.27	J7-J8	1.09	1.09	0.55	0.58	0.58	15.0	0.0	15.0	7.81	4.55	0.00	0.04	4.58	18	1	6	0	0.013	0.0018	737.82	737.81		2.81		0.10	1.25	0.00	0.13	738.08	738.95
1-00.00																							738.57		2.81	5.84	0.10	1.62	1.00	0.10	1.40	737.81	
LATERAL J-8																																	
1-38.95	1-00.00	38.95	J7-J8	1.09	1.09	0.55	0.58	0.58	15.0	0.2	15.2	7.81	4.55	0.15	0.17	4.56	18	1	6	0	0.013	0.0018	738.90	738.83		2.80		0.10	1.25	0.00	0.13	739.04	738.95
1-00.00																							739.78		2.80	6.54	0.10	1.80	1.00	0.10	1.08	738.83	
LINE SD-K																																	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.46	0.74	0.74	15.0	0.1	15.1	7.81	5.71	0.00	0.26	5.48	18	1	0	0	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]		0.15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1-[illegible]	8-67.45	598.19	K3-K1	1.60	3.20	0.46	0.74	1.47	15.1	1.8	16.7	7.81	11.30	0.00	0.35	10.98	18	1	0	0	0.013	0.0108	[illegible]	745.68	5.11	6.23	0.15	0.60	1.00	0.15	0.45	[illegible]	753.38
8-67.45	8-76.58	16.87	K3-K3	1.87	5.07	0.50	0.88	2.45	16.7	0.0	16.7	7.80	18.63	0.26	2.41	16.98	18	1	0	0	0.013	0.0231	745.03	744.77	6.21	9.04	0.50	1.27	1.00	0.50	0.07	745.68	747.09
8-76.58	4-90.26	488.31	K3-K3	1.87	7.13	0.52	0.98	3.44	16.7	1.7	17.5	7.80	26.12	0.26	2.41	23.30	24	1	0	0	0.013	0.0089	744.87	740.06	5.04	9.16	0.41	1.27	1.00	0.41	0.69	744.72	746.91
4-90.26	4-84.06	6.20	K4-K5	1.70	[illegible]	0.56	0.94	4.37	17.[illegible]	0.0	17.3	7.40	32.34	2.41	0.03	29.10	[illegible]	1	0	0	0.013	0.0086	740.[illegible]	740.18	6.78	9.[illegible]	0.71	1.[illegible]	1.00	0.7[illegible]	0.61	740.36	743.[illegible]
4-84.06	1-63.71	530.37	K4-K5	1.70	10.53	0.56	1.64	5.31	17.9	0.6	18.5	7.40	39.26	2.41	0.63	37.80	27	1	0	0	0.013	0.0147	739.65	734.60	7.33	9.46	0.83	1.58	1.00	0.83	0.96	740.18	743.36
1-63.71	1-58.56	4.15	K5-K7	0.62	11.15	0.58	0.34	5.65	18.5	0.0	18.5	7.21	40.[illegible]	0.[illegible]	0.17	38.71	33	1	0	0	0.013	0.0096	734.60	734.[illegible]	6.46	1.99	0.39	0.99	1.00	0.39	0.10	734.90	737.43
1-58.56	1-00.00	58.56	K5-K7	0.62	11.77	0.58	0.34	5.99	18.5	0.1	18.6	7.21	43.18	0.83	0.01	43.00	33	1	0	0	0.013	0.0096	734.55	733.88	6.[illegible]	7.21	0.80	0.91	1.00	0.80	0.12	734.67	737.[illegible]
1-00.00																							733.43		7.34	8.57	0.81	1.56	1.00	0.81	0.55	734.00	
LATERAL K-1																																	
1-29.90	1-00.00	29.90	K3-K1	1.60	1.60	0.56	0.74	0.74	15.0	0.1	15.1	7.81	5.75	0.00	0.00	5.48	18	1	0	0	0.013	0.0027	752.75	752.67		3.19	1.75	0.09	1.25	0.00	0.18	752.93	754.93
1-00.00																							752.22		3.11	6.21	0.15	0.90	1.00	0.15	0.46	752.67	
LATERAL K-2																																	
1-30.00	1-00.00	30.00	K2-K3	1.87	1.87	0.50	0.88	0.88	15.0	0.3	15.3	7.81	6.86	0.26	2.43	5.32	18	1	0	0	0.013	0.0026	748.72	748.13		3.13		0.15	1.25	0.00	0.19	748.41	747.88
1-00.00																							748.04		3.13	6.04	0.15	1.22	1.00	0.15	0.18	748.13	
LATERAL K-3																																	
1-30.77	1-00.00	3.77	K2-K3	1.87	1.87	0.50	0.88	0.88	15.0	0.0	15.0	7.81	6.86	0.26	2.41	5.33	18	1	0	0	0.013	0.0026	748.24	748.23		3.13		0.15	1.25	0.00	0.19	748.43	747.92
1-00.00																							748.07		3.13	6.76	0.19	1.27	1.00	0.19	0.06	748.23	
LATERAL K-4																																	
1-28.53	1-00.00	6.98	K4-K5	1.70	1.70	0.56	0.94	0.94	15.0	0.0	15.0	7.81	7.30	2.41	0.03	5.86	18	1	0	0	0.013	0.0072	740.72	740.68		1.59		0.38	1.25	0.00	0.48	741.21	743.72
1-00.00																							740.24		1.59	7.52	0.38	0.85	1.00	0.38	0.44	740.68	
LATERAL K-5																																	
1-31.53	1-00.00	31.53	K4-K5	1.70	1.70	0.56	0.94	0.94	15.0	0.1	15.1	7.81	7.30	2.41	0.03	5.86	18	1	0	0	0.013	0.0072	740.65	740.52		1.59		0.38	1.25	0.00	0.48	741.14	743.80
1-00.00																							739.85		1.59	8.46	0.38	1.06	1.00	0.38	1.00	740.52	
LATERAL K-6																																	
1-30.49	1-00.00	30.49	K5-K7	0.62	0.62	0.55	0.34	0.34	15.0	0.3	15.3	7.81	2.66	0.83	0.17	3.52	18	1	0	0	0.013	0.0015	734.47	734.44		1.86		0.05	1.25	0.00	0.10	735.57	738.12
1-00.00																							734.80		1.86	6.96	0.05	0.80	1.00	0.05	0.04	734.44	
LATERAL K-7																																	
1-29.78	1-00.00	5.78	K5-K7	0.62	0.62	0.55	0.34	0.34	15.0	0.0	15.0	7.81	2.66	0.83	0.21	3.48	18	1	0	0	0.013	0.0071	735.11	735.11		1.92		0.05	1.25	0.00	0.10	735.21	737.90
1-00.00																							734.35		1.92	7.74	0.05	0.91	1.00	0.05	0.13	735.11	
Line SD-M																																	
1-75.19	1-46.42	28.76	M0-M1	0.87	0.87	0.55	0.48	0.48	15.0	0.3	15.3	7.81	3.92	0.00	0.00	3.92	18	1	6	0	0.013	0.0031	748.88	748.67		0.52		0.00	1.25	0.00	0.10	748.78	750.00
1-46.42	1-00.00	46.42	M0-M1	0.87	0.87	0.55	0.48	0.74	15.9	0.3	16.1	7.81	5.86	0.00	0.02	5.82	18	1	6	0	0.013	0.0022	748.67	748.56	0.52	1.06	0.00	0.02	1.00	0.00	0.10	748.67	748.84
1-00.00																							748.46		1.06	8.38	0.02	1.08	1.00	0.02	1.07	748.56	
LATERAL M-1																																	
1-32.13	1-00.00	32.11	M0-M1	0.22	0.22	0.56	0.12	0.12	15.0	1.0	16.0	7.81	0.92	0.00	0.00	0.92	18	1	6	0	0.013	0.0001	748.88	748.87		0.32		0.00	1.25	0.00	0.10	748.78	750.00
1-00.00																							748.37		0.32	1.06	0.00	0.02	1.00	0.00	0.10	748.87	
LINE SD-P																																	
3-60.94	2-73.88	87.06	P-0	1.18	1.18	0.75	0.87	0.87	15.0	0.3	15.3	7.81	6.80	3.00	0.00	3.80	21	1	0	0	0.013	0.0018	749.96	749.87		2.03		0.13	1.25	0.00	0.16	750.13	754.00
2-73.88	1-00.00	173.88	[illegible]	1.30	2.52	0.80	1.77	2.66	15.3	0.4	15.8	7.81	19.36	3.00	0.00	16.36	21	1	0	0	0.013	0.0102	749.72	738.57	2.03	6.80	0.13	0.79	1.00	0.13	0.38	749.87	754.00
1-00.00																							738.09		6.80	12.88	0.72	3.00	1.00	0.72	2.26	738.57	0.00
LATERAL A-1																																	
1-86.54	1-00.00	86.54	A	1.36	1.36	0.60	1.22	1.22	15.0	0.2	15.2	7.81	9.56	0.00	0.00	9.56	18	1	0	0	0.013	0.0083	740.07	740.08		5.41		0.46	1.25	0.00	0.57	741.64	744.00
1-00.00																							740.62		5.41	5.90	0.45	0.72	1.00	0.46	0.36	740.48	

Kimley»Horn

DRAINAGE CALCULATIONS

MANTUA POINT
PHASE 1
CITY OF TAMALASTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-51



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

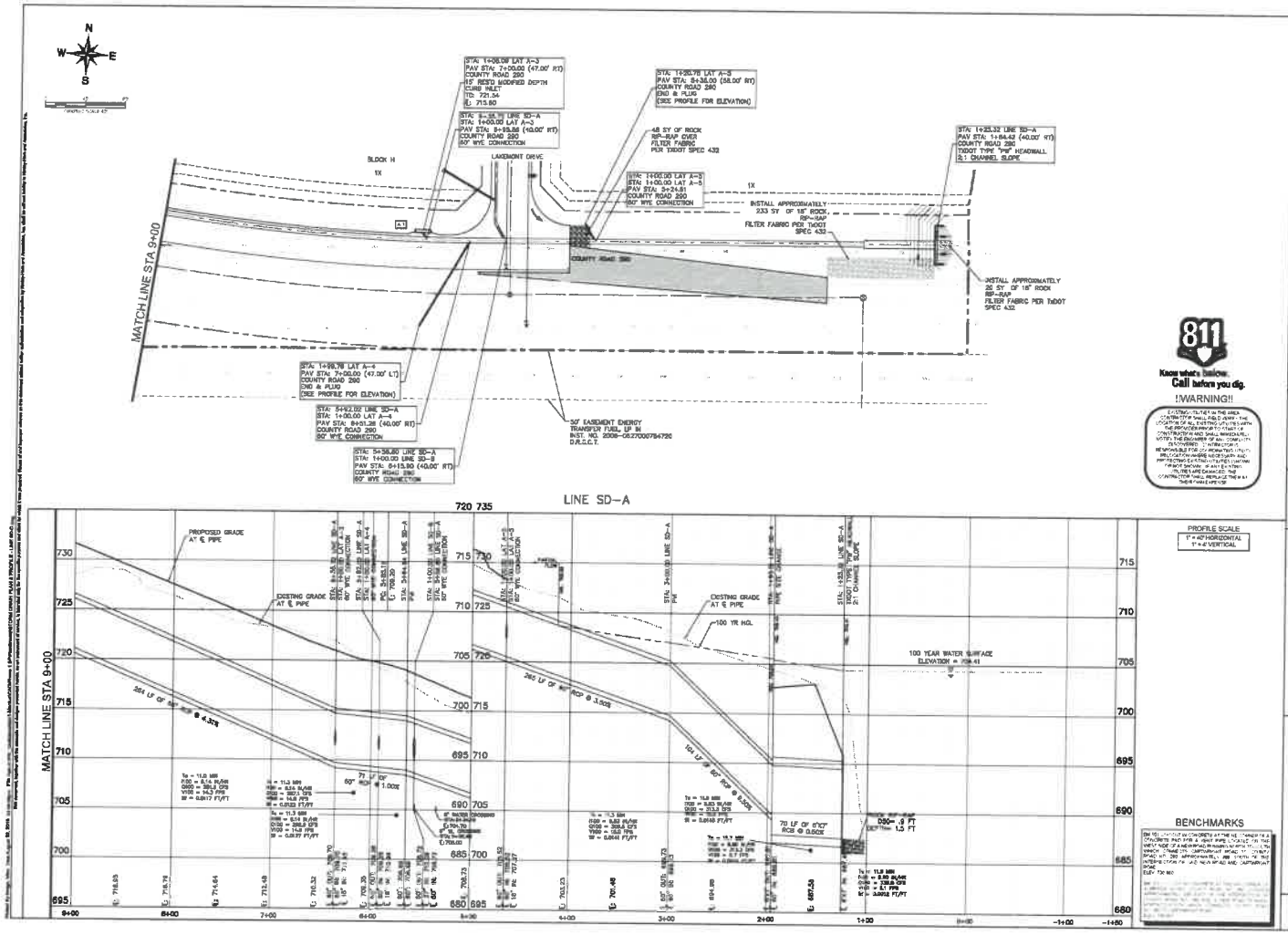
BENCHMARKS

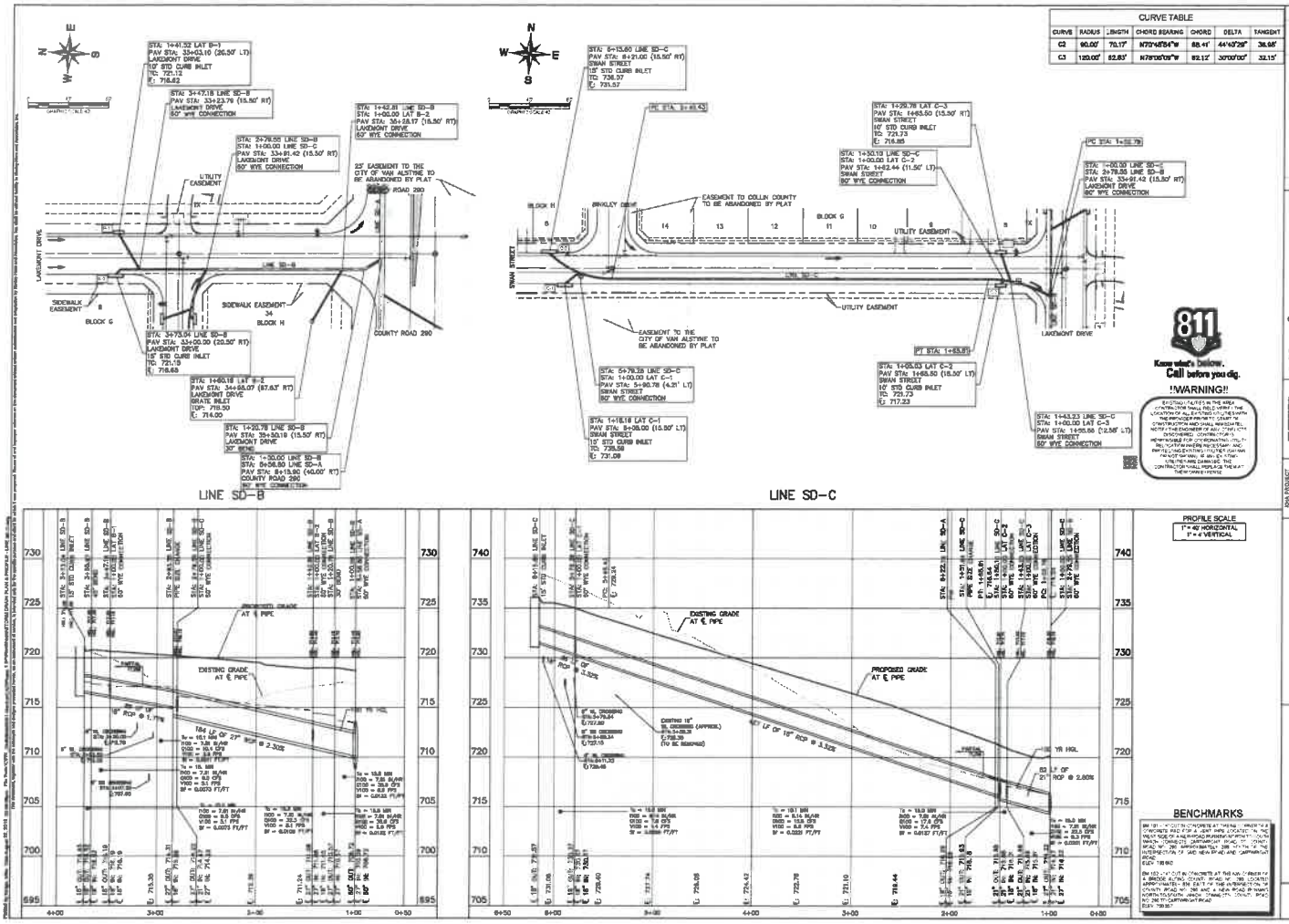
Kimley»Horn

STORM DRAIN PLAN & PROFILE - LINE SD-A

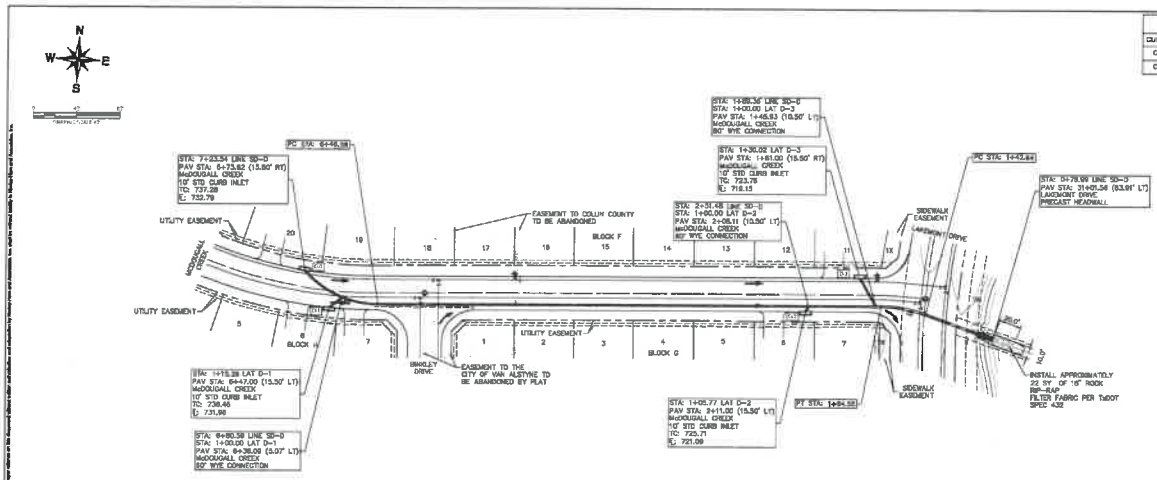
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

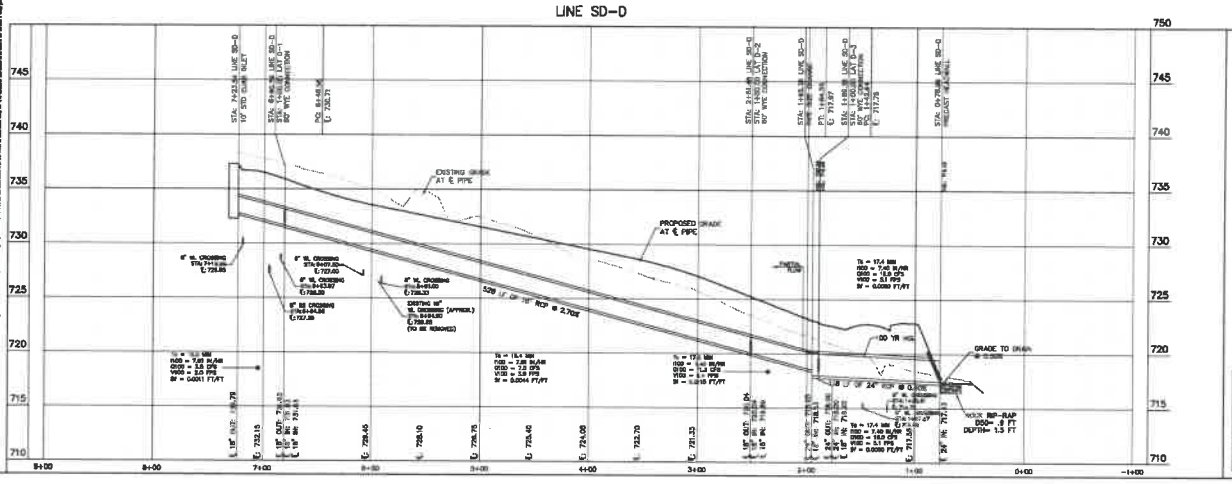
SHEET NUMBER
C-52


N
W
E
S
GRAPHIC SCALE 40'
STA: 1+00.00 LAT A-3
PAV STA: 7+00.00 (47.00' RT)
COUNTY ROAD 290
15" RCSD MODIFIED DEPTH
CURB INLET
TG: 721.54
E: 713.90
STA: 8+35.15 LINE SD-A
STA: 1+00.00 LAT A-3
PAV STA: 8+35.50 (40.00' RT)
COUNTY ROAD 290
90° WYE CONNECTION
STA: 1+20.78 LAT A-3
PAV STA: 5+35.00 (35.00' RT)
COUNTY ROAD 290
END & PLUG
(SEE PROFILE FOR ELEVATION)
48 SY OF ROCK
RIP-RAP OVER
FILTER FABRIC
PER TXDOT SPEC 432
STA: 1+23.32 LINE SD-A
PAV STA: 1+84.42 (40.00' RT)
COUNTY ROAD 290
TXDOT TYPE "PW" HEADWALL
2:1 CHANNEL SLOPE
SLOCK H
1X
LAKEMONT DRIVE
STA: 1+00.00 LAT A-3
STA: 1+00.00 LAT A-5
PAV STA: 3+24.81
COUNTY ROAD 290
90° WYE CONNECTION
1X
INSTALL APPROXIMATELY
233 SY OF 18" ROCK
RIP-RAP
FILTER FABRIC PER TxDOT
SPEC 432
A-3
COUNTY ROAD 290
INSTALL APPROXIMATELY
26 SY OF 18" ROCK
RIP-RAP
FILTER FABRIC PER TxDOT
SPEC 432
MATCH LINE STA 9+00
STA: 1+99.78 LAT A-4
PAV STA: 7+00.00 (47.00' LT)
COUNTY ROAD 290
END & PLUG
(SEE PROFILE FOR ELEVATION)
STA: 5+92.02 LINE SD-A
STA: 1+00.00 LAT A-4
PAV STA: 8+31.26 (40.00' RT)
COUNTY ROAD 290
90° WYE CONNECTION
50' EASEMENT ENERGY
TRANSFER FUEL, LP IN
INST. NO. 2008-0527000754-7326
O.R.C.C.T.
STA: 5+36.80 LINE SD-A
STA: 1+00.00 LINE SD-B
PAV STA: 8+15.90 (40.00' RT)
COUNTY ROAD 290
90° WYE CONNECTION
811
Know what's below.
Call before you dig.
!WARNING!!
EXISTING UTILITIES IN THE AREA
LOCATION OF ALL EXISTING UTILITIES WITH
THE PROVIDER PRIOR TO START OF
CONSTRUCTION AND SHALL IMMEDIATELY
NOTIFY THE ENGINEER OF ANY CONFLICTS
WITH THE PROPOSED IMPROVEMENTS.
RESPONSIBLE FOR ALL REPAIRS AND
RELOCATION WHERE NECESSARY AND
PROTECTING EXISTING UTILITIES UNLESS
OTHERWISE SHOWN. IF ANY EXISTING
UTILITIES ARE DAMAGED BY THE
CONTRACTOR SHALL REPAIR THEM AT
THEIR EXPENSE.
LINE SD-A
720 735
PROPOSED GRADE
AT ℄ PIPE
EXISTING GRADE
AT ℄ PIPE
100 YR HGL
100 YEAR WATER SURFACE
ELEVATION = 708.41
MATCH LINE STA 9+00
364 LF OF 60" RCP @ 4.37%
260 LF OF 60" RCP @ 3.00%
101 LF OF 60" RCP @ 3.00%
70 LF OF 6"CT
RCB @ 0.00%
60" 71 LF OF
@ 1.00%
60" WATER CROSSING
STA: 3+44.00
E: 708.63
STA: 1+00.00 LINE SD-B
STA: 8+15.90 LINE SD-A
90° WYE CONNECTION
STA: 1+00.00 LAT A-3
STA: 8+35.15 LINE SD-A
90° WYE CONNECTION
STA: 3+00.00 LINE SD-A
PVI
STA: 1+00.00 LAT A-3
STA: 1+20.78 LINE SD-A
90° WYE CONNECTION
STA: 1+23.32 LINE SD-A
TXDOT TYPE "PW" HEADWALL
2:1 CHANNEL SLOPE
E: 718.93
E: 716.78
E: 714.64
E: 712.49
E: 710.32
E: 708.39
E: 706.23
E: 704.08
E: 701.48
E: 699.29
E: 697.53
730
725
720
715
710
705
700
695
685
680
9+00
8+00
7+00
6+00
5+00
4+00
3+00
2+00
1+00
0+00
-1+00
-1+80
PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL
BENCHMARKS
Kimley»Horn
PRELIMINARY
NOT FOR CONSTRUCTION OR BIDDING PURPOSES
Kimley»Horn
RAM PROJECT
DATE
AUGUST 2019
DESIGNED
RRM
DRAWN
MJL
REVIEWED
TDC
STORM DRAIN PLAN &
PROFILE - LINE SD-A
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS
SHEET NUMBER
C-53
DATE
BY
REVISIONS
No.


CURVE TABLE
CURVE | RADIUS | LENGTH | CHORD BEARING | CHORD | DELTA | TANGENT
C2 | 90.00' | 70.17' | N70°45'54"W | 68.41' | 44°40'26" | 36.95'
C3 | 120.00' | 62.83' | N78°06'09"W | 62.12' | 30°00'00" | 32.15'
LINE SD-B
LINE SD-C
LAKEMONT DRIVE
SWAN STREET
COUNTY ROAD 290
BROKLEY DRIVE
BLOCK G
BLOCK H
UTILITY EASEMENT
SIDEWALK EASEMENT
EASEMENT TO COLLIN COUNTY TO BE ABANDONED BY PLAT
EASEMENT TO THE CITY OF VAN ALSTYNE TO BE ABANDONED BY PLAT
23' EASEMENT TO THE CITY OF VAN ALSTYNE TO BE ABANDONED BY PLAT
811
Know what's below. Call before you dig.
!!WARNING!!
PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL
EXISTING GRADE AT ℄ PIPE
PROPOSED GRADE AT ℄ PIPE
BENCHMARKS
Kimley»Horn
STORM DRAIN PLAN & PROFILE - LINE SD-B & LINE SD-C
MANTUA POINT PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS
SHEET NUMBER
C-54

CURVE TABLE							
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C4	80.00'	77.09'	N68°33'31"W	74.25'	49°04'25"	41.06'
C5	120.00'	41.82'	N83°05'44"W	41.60'	20°00'46"	21.17'





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

BENCHMARKS

NO.	DATE	REVISIONS	BY

Kimley»Horn

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDATION PURPOSES
Kimley»Horn

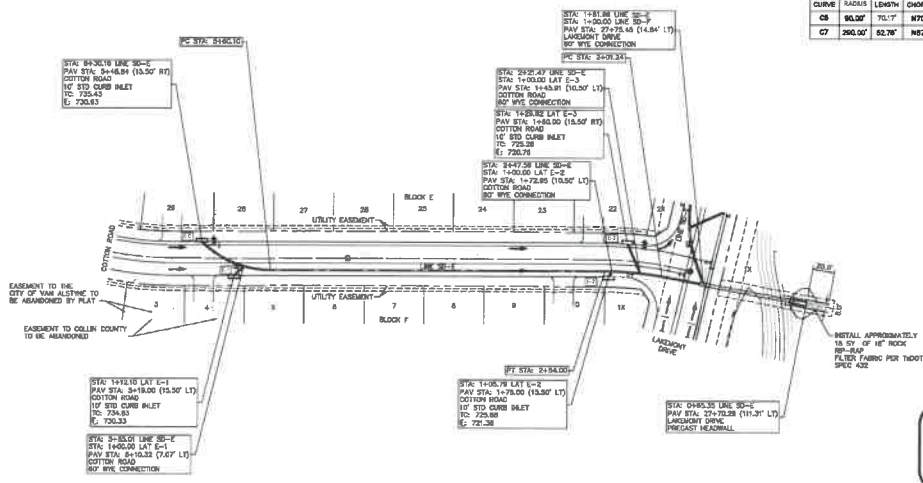
PCN PROJECT NUMBER	
DATE	AUGUST 2015
SCALE	AS SHOWN
DESIGNED	JDW
DRAWN	JDW
REVIEWED	TDC

STORM DRAIN PLAN & PROFILE - LINE SD-D

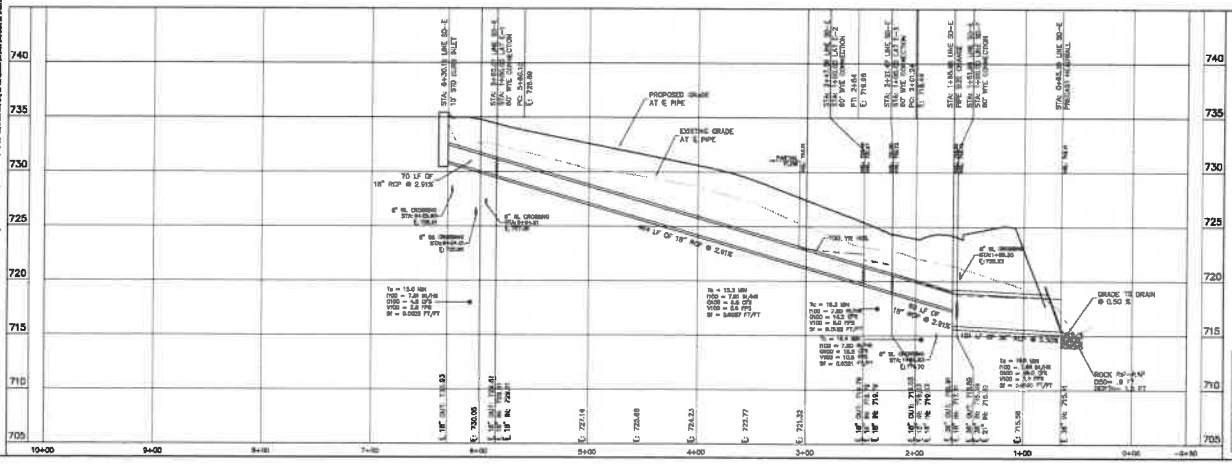
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-55

CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C6	90.00'	70.17'	N70°45'54"W	68.41'	44°40'29"	36.98'
C7	290.00'	52.78'	N82°53'26"W	52.89'	10°25'24"	26.45'



LINE SD-E



BENCHMARKS

BM #1 - A 4" x 4" x 12" IN CONCRETE AT THE NE CORNER OF A CONCRETE PAD FOR A JOINT WYE LOCATED IN THE INLET SIDE OF A NEW ROAD RUNNING NORTH TO SOUTH WHICH CONNECTS LAKEMONT ROAD TO COUNTY ROAD 1. THE APPROXIMATELY 188' NORTH OF THE INTERSECTION OF NAD NEW ROAD AND LAKEMONT ROAD
ELEV 732.962

Kimley»Horn

REVISIONS		DATE	BY
NO			

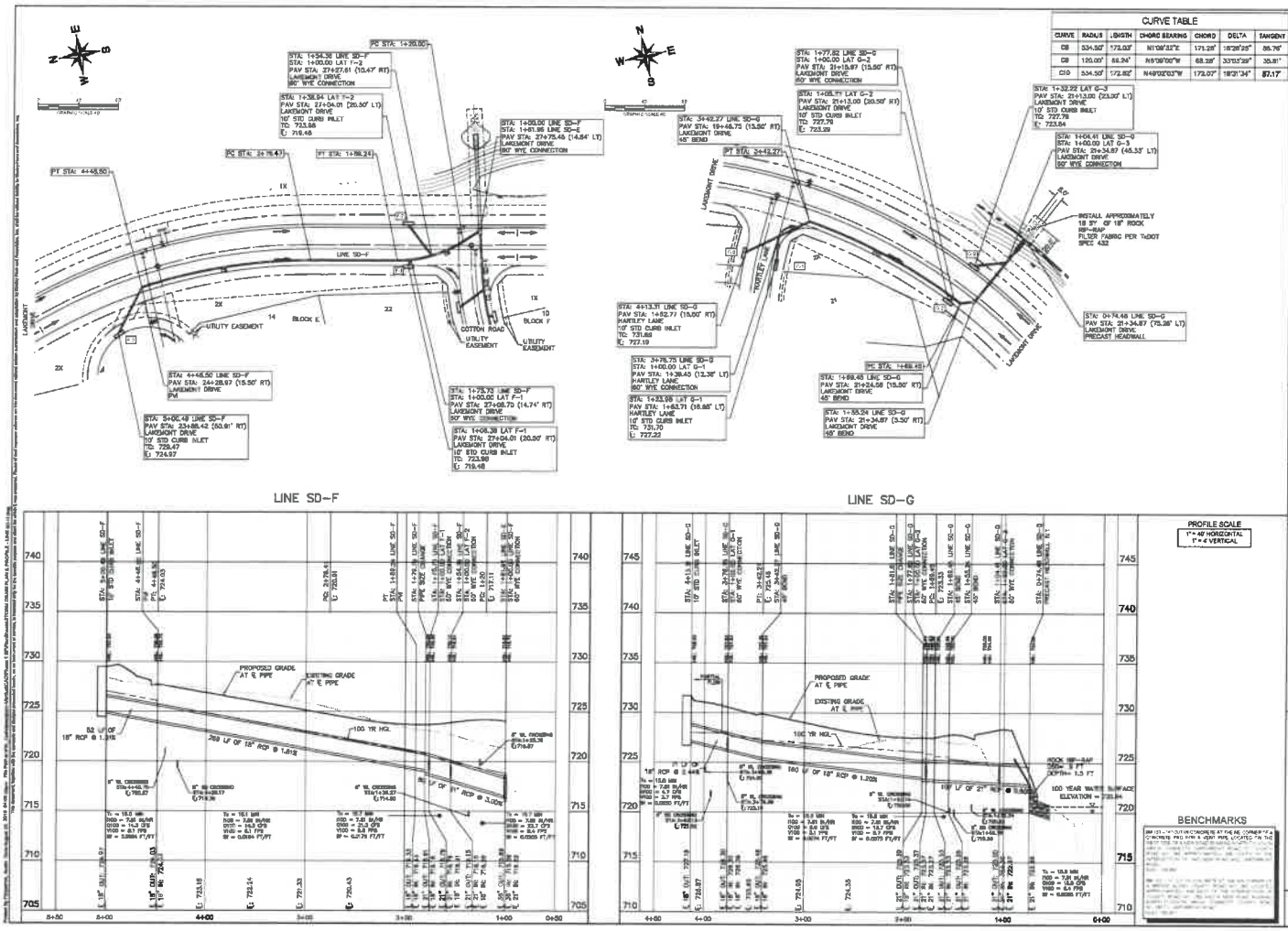
PROFESSIONAL ENGINEER
Kimley-Horn

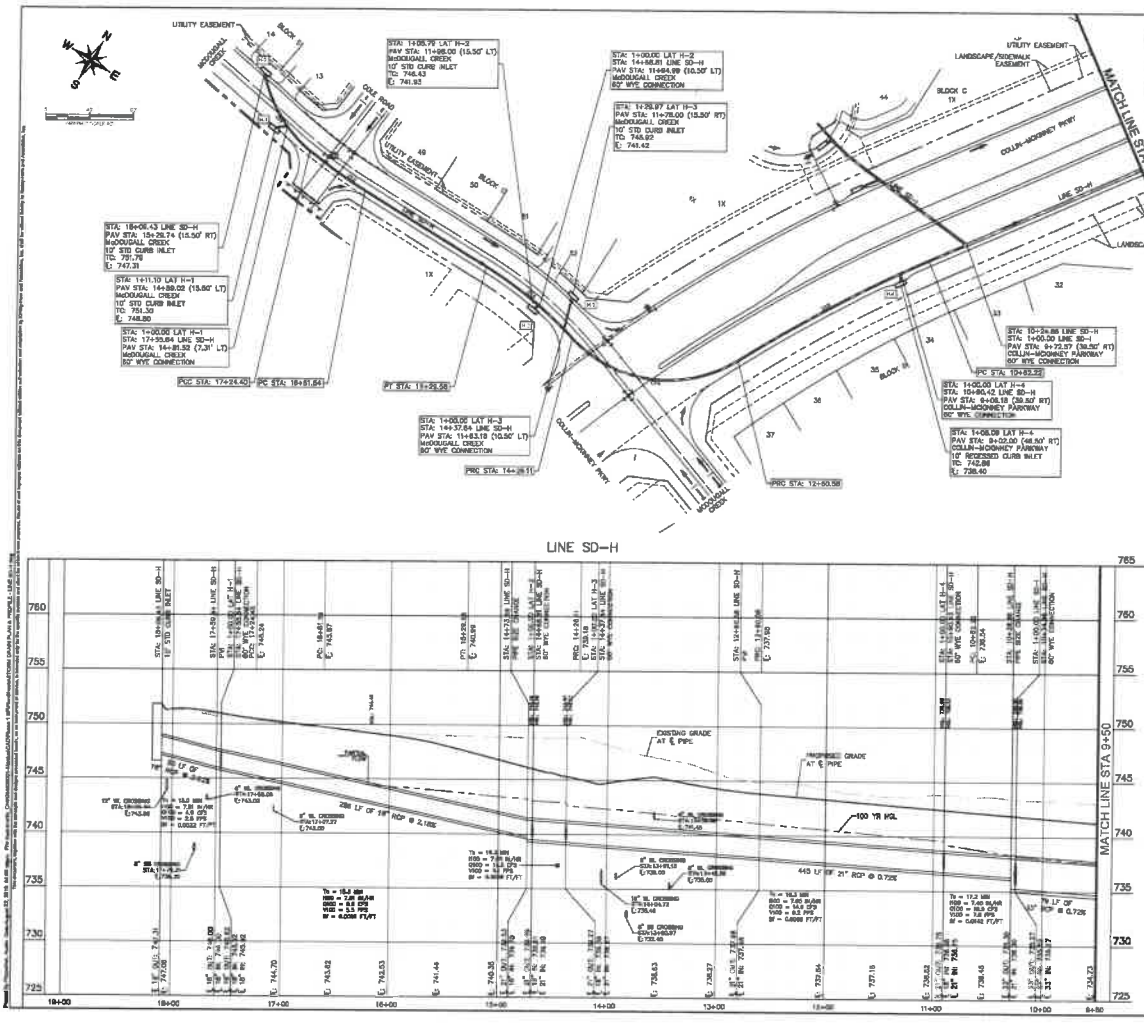
BPA PROJECT MANAGER	
DATE	AUGUST 2019
DESIGNED	JT SHORTS
DRAWN BY	WRM
CHECKED BY	M.A.
QAQC	TDC

STORM DRAIN PLAN & PROFILE - LINE SD-E

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-56


LINE SD-F
LINE SD-G
CURVE TABLE
CURVE | RADIUS | LENGTH | CHORD BEARING | CHORD | DELTA | TANGENT
C8 | 534.50' | 172.03' | N1°08'33"E | 171.28' | 18°26'25" | 86.76'
C9 | 120.00' | 88.34' | N9°09'00"W | 68.28' | 33°53'29" | 35.81'
C10 | 534.50' | 172.82' | N49°02'03"W | 172.07' | 18°31'34" | 87.17'
PROPOSED GRADE AT ℄ PIPE
EXISTING GRADE AT ℄ PIPE
100 YR HGL
PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL
BENCHMARKS
Kimley»Horn
STORM DRAIN PLAN & PROFILE - LINE SD-F & LINE SD-G
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS
SHEET NUMBER
C-57



CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C11	120.00'	85.63'	N63°07'00"W	83.28'	40°35'55"	44.39'
C12	510.30'	52.88'	N68°59'38"W	52.82'	7°03'16"	31.47'
C13	386.50'	103.47'	N62°31'39"W	103.17'	15°13'13"	52.04'
C14	120.00'	163.53'	S59°13'30"W	152.72'	79°02'06"	96.66'
C15	1360.50'	196.38'	S29°37'29"W	196.19'	8°21'13"	98.38'

No.	REVISIONS	DATE	BY

Kimley»Horn

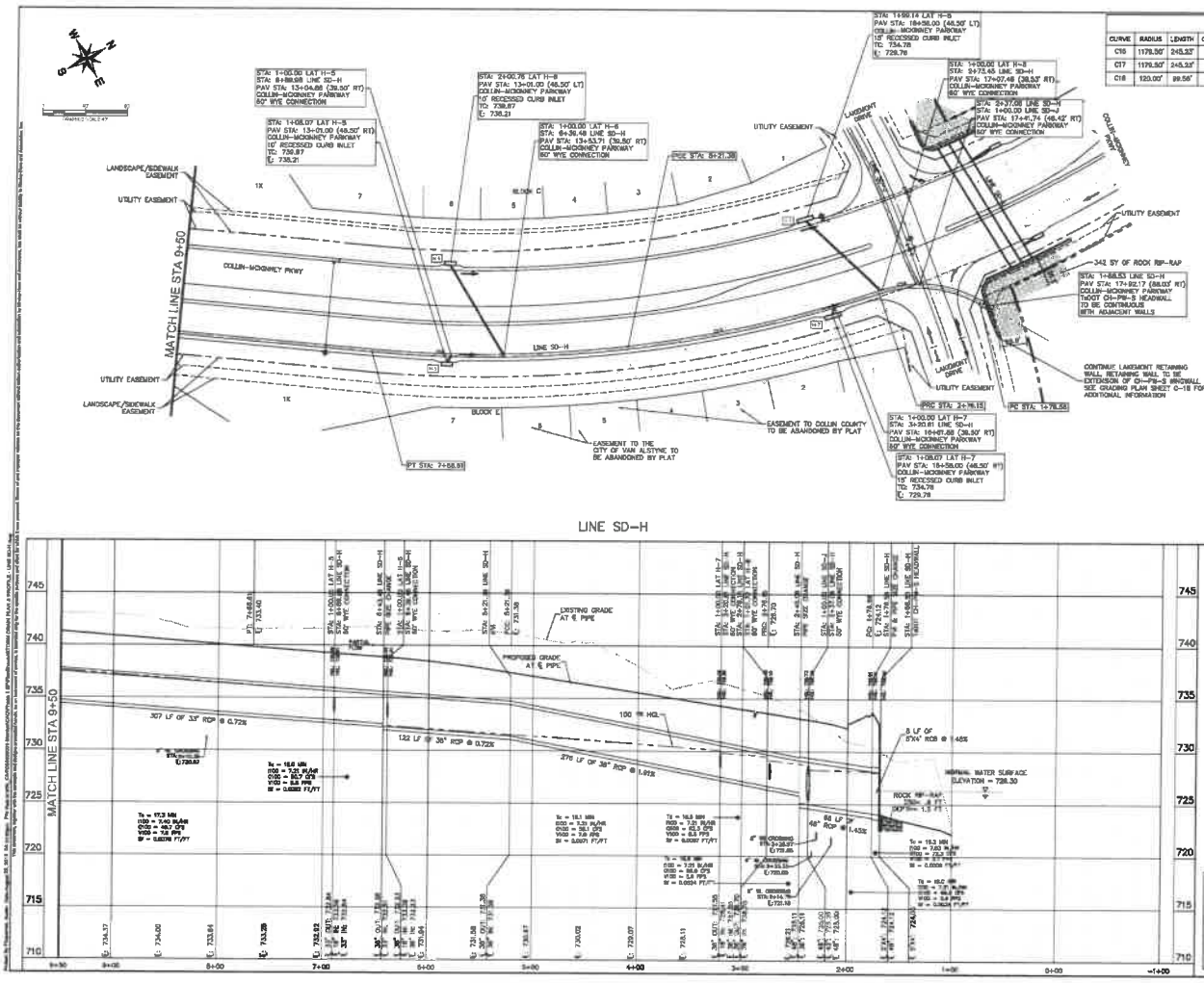
PRELIMINARY
Kimley»Horn

FOR PROJECT MANAGER
DATE AUGUST 2019
SCALE AS SHOWN
DESIGNED M.A.
DRAWN T.R.C.

STORM DRAIN PLAN & PROFILE - LINE SD-H

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-58



CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C16	1179.50'	245.23'	S28°08'43"W	244.79'	11°54'44"	123.08'
C17	1179.50'	245.23'	S18°11'59"W	244.79'	11°54'44"	123.08'
C18	120.00'	89.56'	S34°00'46"W	86.73'	47°32'19"	53.85'

BENCHMARKS

BM NO. 1 - A SOUTH CONCRETE AT THE NE CORNER OF A CONCRETE PAD FOR A VENT PIPE LOCATED ON THE WEST SIDE OF A NEWFIELD IN MANN NORTH-SOUTH GRAVEL ACCESS DRIVEWAY. SE CORNER OF VAN ALSTYNE WATER TOWER. APPROXIMATELY 1 MILE SOUTH OF THE INTERSECTION OF FM 1461 AND NEW ROAD AND CARPENTER ROAD.
ELEV. = 730.99'

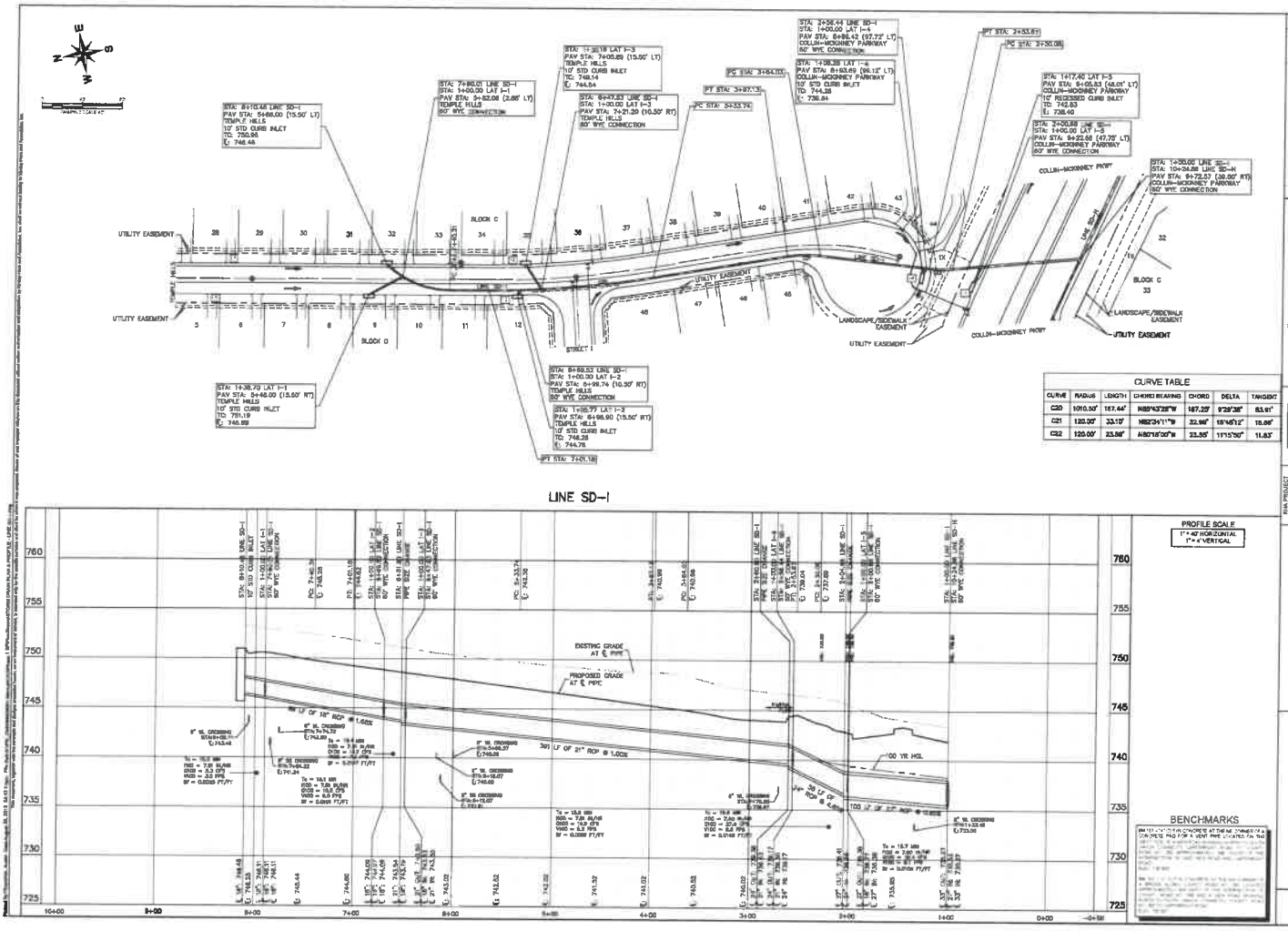
BM NO. 2 - A CUT IN CONCRETE AT THE NW CORNER OF A BRIDGE ALONG COUNTY ROAD NO. 392. LOCATED APPROXIMATELY 300 EAST OF THE INTERSECTION OF COUNTY ROAD NO. 392 AND A NEW ROAD IN MANN NORTH-SOUTH ARCH CONNECTS COUNTY ROAD NO. 392 TO CARPENTER ROAD.
ELEV. = 730.00'

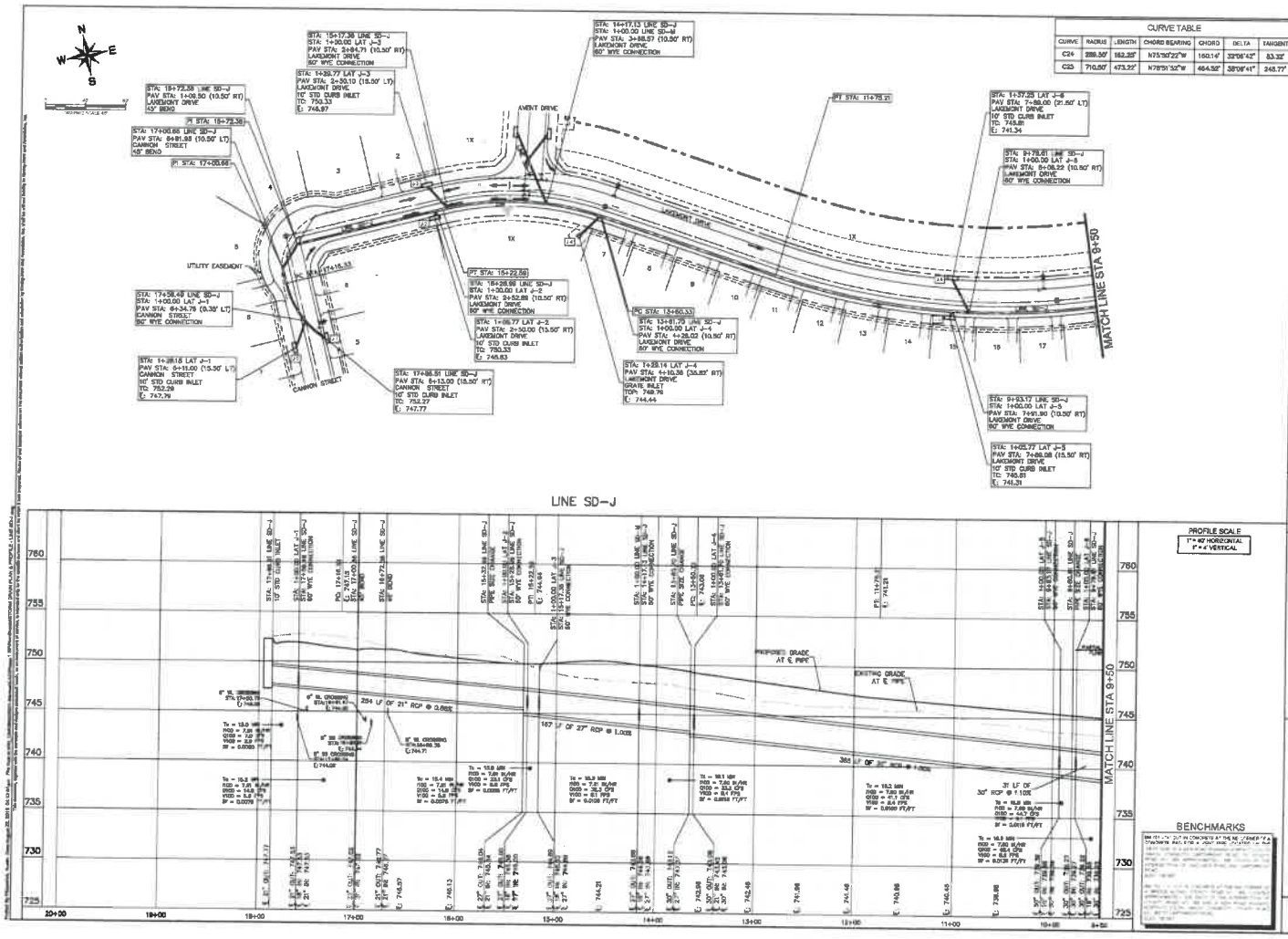
Kimley»Horn

STORM DRAIN PLAN & PROFILE - LINE SD-H

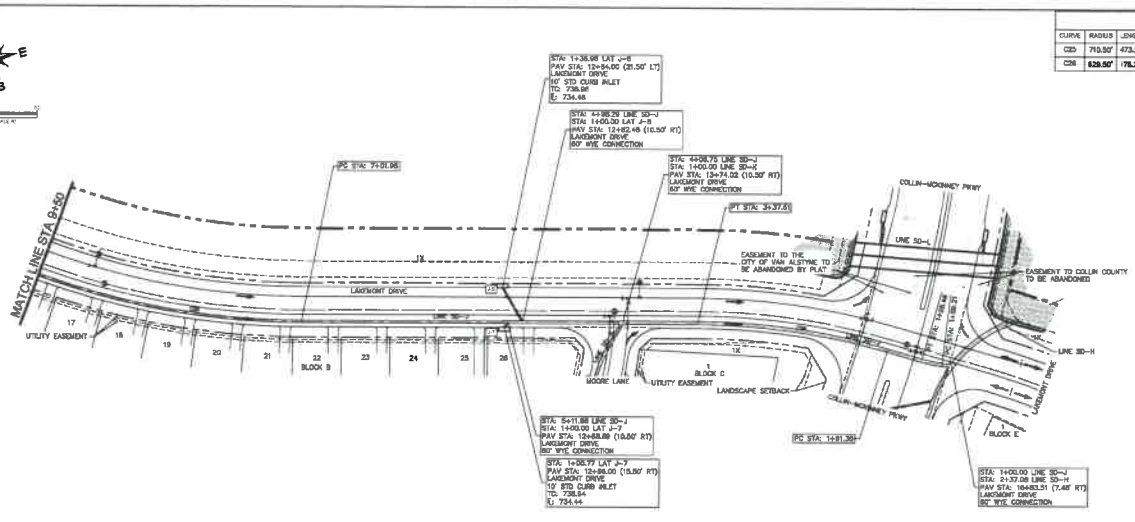
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-59


UTILITY EASEMENT
BLOCK C
BLOCK D
STREET 1
LINE SD-I
LANDSCAPE/SIDEWALK EASEMENT
COLLIN-MCKINNEY PKWY
CURVE TABLE
PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL
EXISTING GRADE AT ℄ PIPE
PROPOSED GRADE AT ℄ PIPE
100 YR HGL
BENCHMARKS
Kimley»Horn
STORM DRAIN PLAN & PROFILE - LINE SD-I
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS
SHEET NUMBER
C-60


CURVE TABLE
CURVE | RADIUS | LENGTH | CHORD BEARING | CHORD | DELTA | TANGENT
C24 | 289.50' | 162.25' | N75°30'22"W | 160.14' | 32°06'42" | 83.32'
C25 | 710.50' | 473.22' | N78°51'32"W | 464.52' | 38°08'41" | 245.77'
LAKEMONT DRIVE
CANNON STREET
UTILITY EASEMENT
MATCH LINE STA 9+50
LINE SD-J
PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL
BENCHMARKS
Kimley»Horn
STORM DRAIN PLAN & PROFILE - LINE SD-J
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS
C-61

CURVE TABLE							
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C23	710.50'	473.22'	N78°51'03"W	464.53'	38°09'41"	245.77'
C26	529.50'	175.26'	N59°55'26"W	174.48'	19°02'33"	88.71'

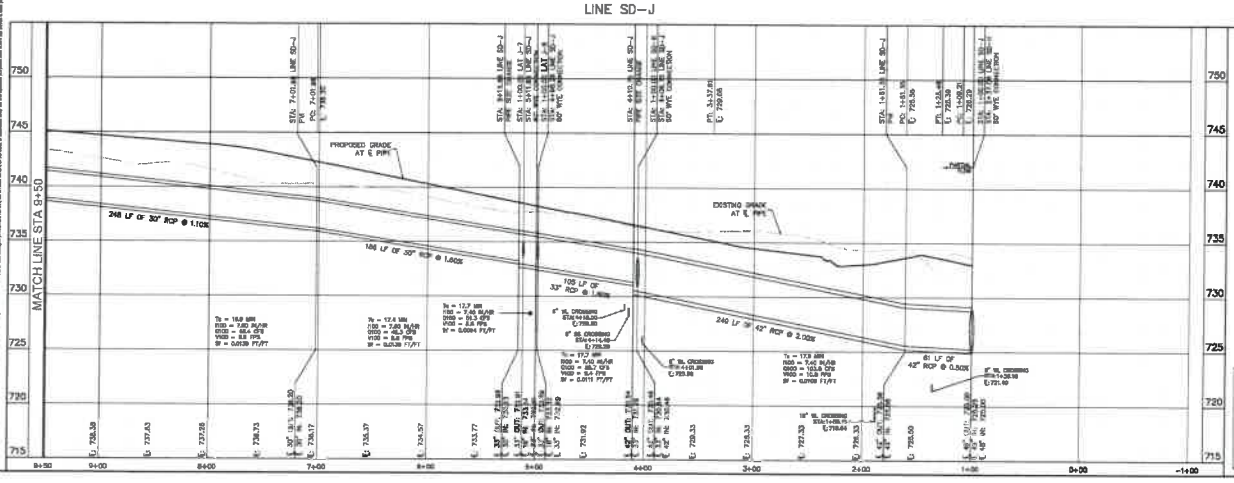


Know what's below. Call before you dig.

!!WARNING!!

EXISTING UTILITIES IN THE AREA OF CONSTRUCTION SHALL BE SURVEYED AND LOCATED BY ALL EXISTING UTILITIES WITH THE APPROPRIATE UTILITY COMPANIES OR UNDERGROUND UTILITY LOCATORS PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR DETERMINING UTILITY RELOCATION NEEDS NECESSARY AND PROTECTING EXISTING UTILITIES. IF NATURAL OR HUMAN CAUSED DAMAGE OCCURS TO UTILITIES, THE CONTRACTOR SHALL REPAIR THEM AT THEIR OWN EXPENSE

LINE SD-J



BENCHMARKS

BM 101 = 1/2" CUTTY CROSSED AT THE NE CORNER OF A CONCRETE PAD FOR A VENT PIPE, LOCATED IN THE WEST SIDE OF A BRIDGE ROAD BEHIND NORTH TOLL BOOTH BRIDGE, CRANE PTS. SURVEYED AT BRIDGE TO TOWN ROAD N.- 398, APPROXIMATELY 300 SOUTH OF THE INTERSECTION OF TOWN ROAD N.- 398 AND MAIN ROAD AND CAMPBELL ROAD.
ELEV. 737.00

BM 102 = 1/2" CUTTY CROSSED AT THE NW CORNER OF A BRIDGE ALONG COUNTY ROAD N.- 282 LOCATED APPROXIMATELY 500 EAST OF THE INTERSECTION OF COUNTY ROAD N.- 282 AND COUNTY ROAD N.- 398 NORTH TO COLLIN WHITE CONNECTOR COUNTY ROAD N.- 282 TO CAMPBELL ROAD
ELEV. 739.00

Kimley»Horn

No.	REVISIONS	DATE	BY

FOR REVIEW ONLY
Not for construction or bidding purposes
Kimley»Horn
Engineer: TX FIRM # 10096
Date: 08/28/2018

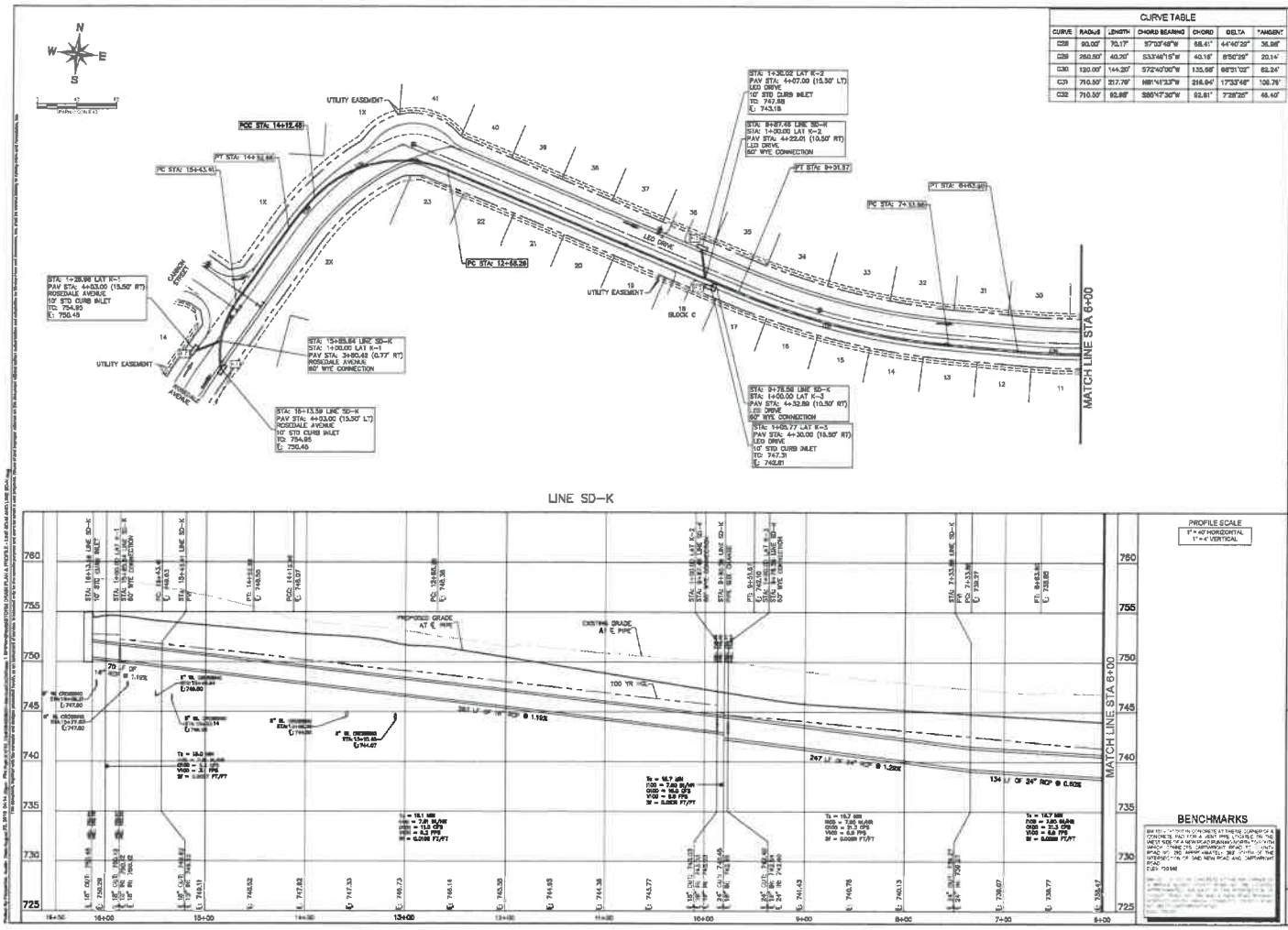
FINAL PROJECT DATE
AUGUST 2018
Designed By: MRM
Drawn By: MRM
Checked By: MJL
Date: 7-31-18
Job No.: TOC

STORM DRAIN PLAN & PROFILE - LINE SD-J

MANTUA POINT PHASE 1

CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-62



CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C28	80.00'	70.17'	S73°32'48"W	68.01'	44°40'20"	36.98'
C29	250.00'	40.20'	S33°46'15"W	40.16'	9°00'29"	20.14'
C30	120.00'	144.20'	S72°40'00"W	135.68'	68°21'02"	82.24'
C31	710.00'	217.79'	N81°41'33"W	216.94'	17°33'48"	109.79'
C32	710.00'	92.88'	S85°47'30"W	92.81'	7°28'25"	46.40'

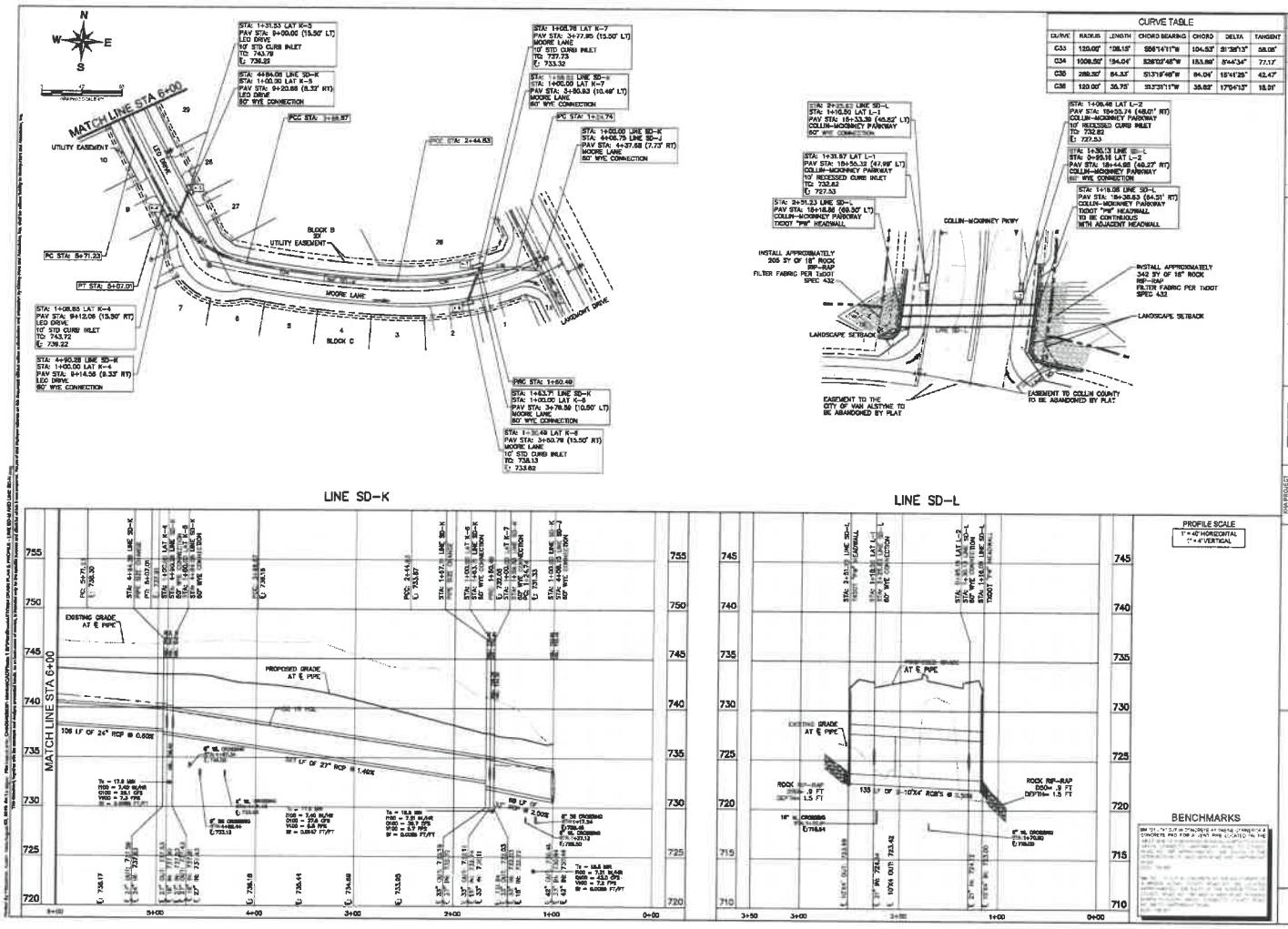
BENCHMARKS

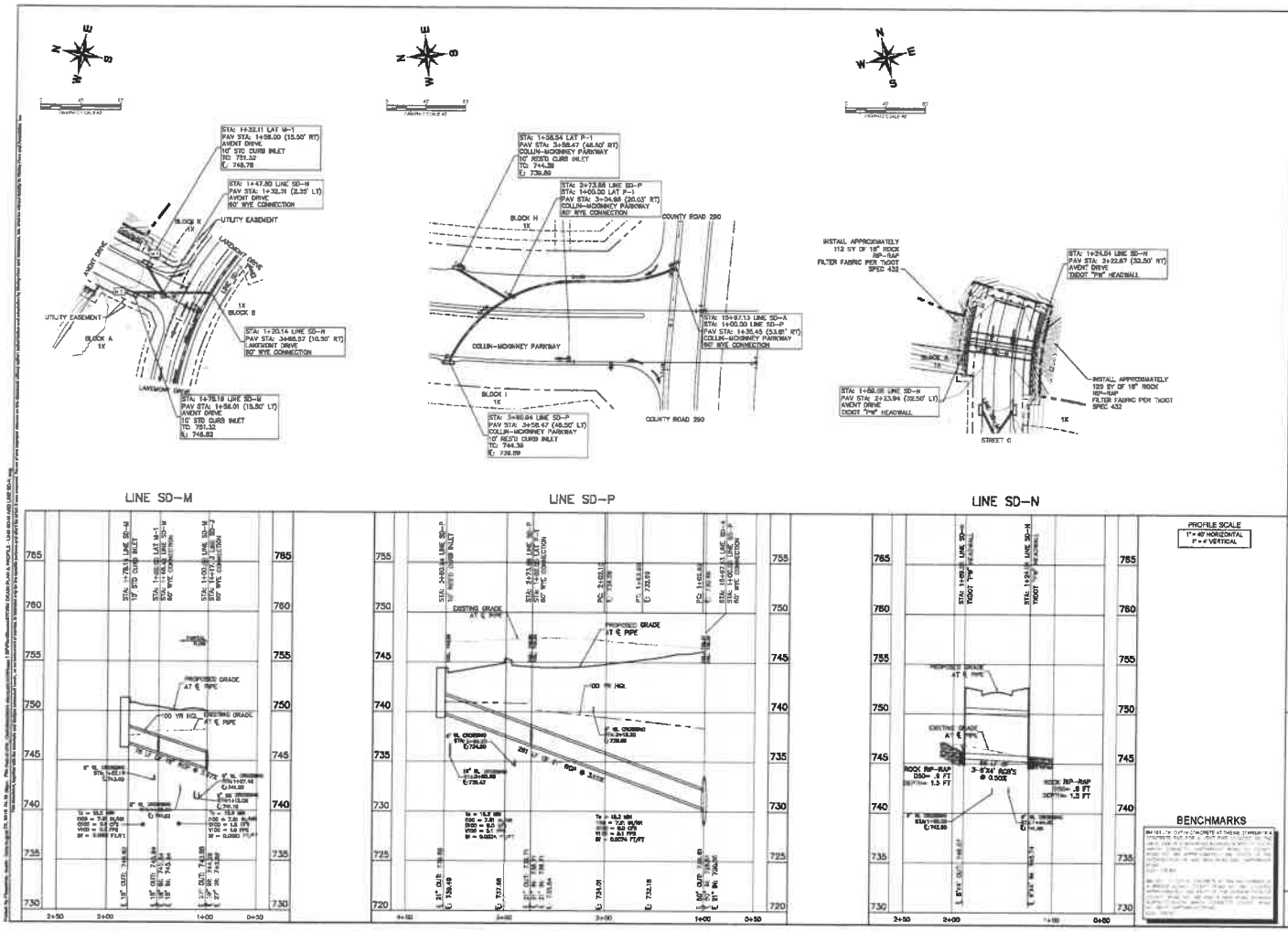
Kimley»Horn

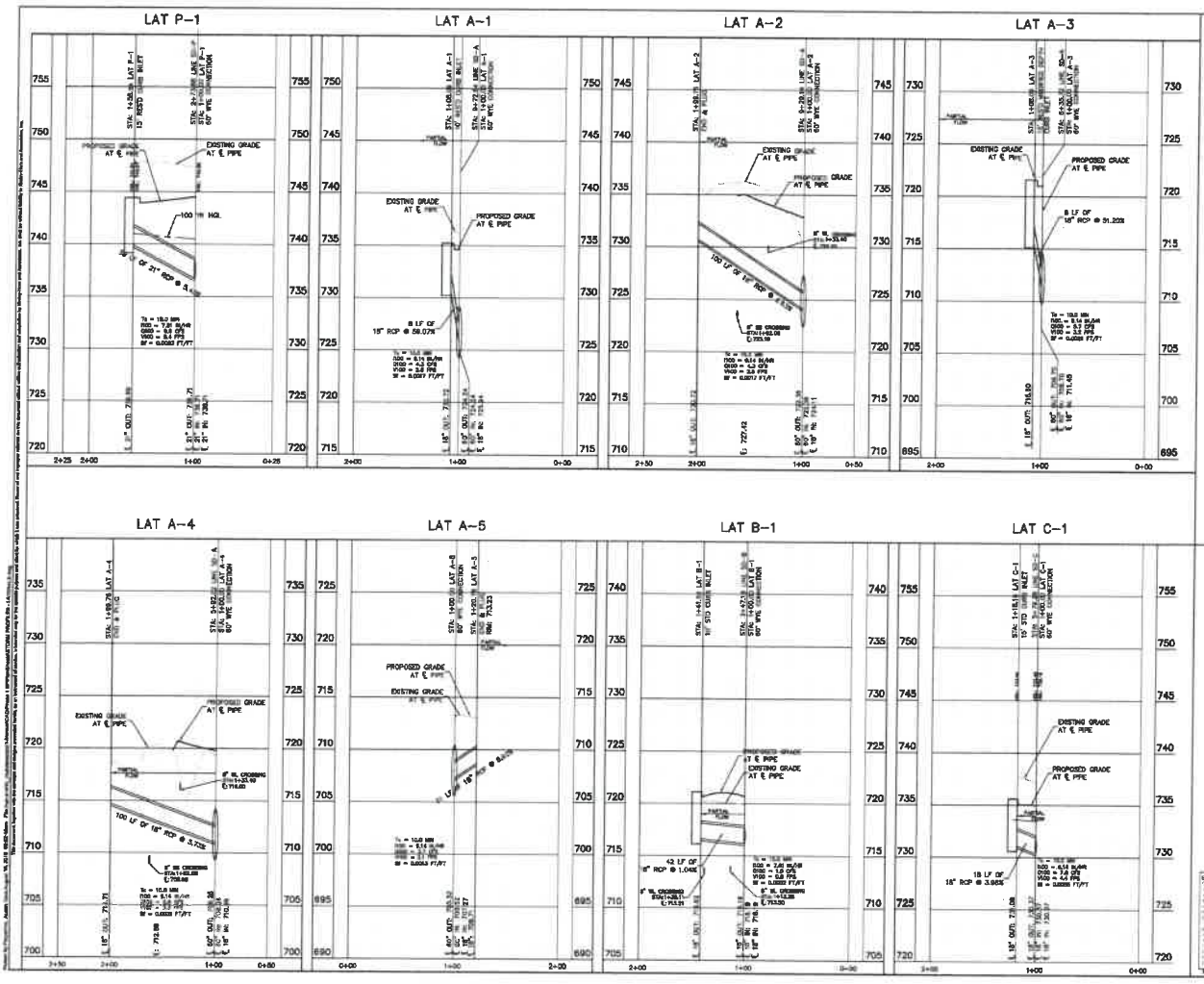
STORM DRAIN PLAN & PROFILE - LINE SD-K

MANTUA POINT
PHASE 1
CITY OF VANALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-63


MATCH LINE STA 6+00
UTILITY EASEMENT
LEO DRIVE
BLOCK B
UTILITY EASEMENT
MOORE LANE
BLOCK C
LANDMONT DRIVE
PC STA: 8+71.23
PT STA: 5+07.01
STA: 1+31.53 LAT K-5
PAV STA: 9+00.00 (15.50' LT)
LEO DRIVE
10' STD CURB INLET
TG: 743.79
E: 736.23
STA: 44+84.08 LINE SD-K
STA: 1+00.00 LAT K-5
PAV STA: 9+20.88 (8.33' RT)
LEO DRIVE
80' WYE CONNECTION
PCC STA: 3+98.87
PRC STA: 2+44.83
STA: 1+08.78 LAT K-7
PAV STA: 3+77.95 (15.50' LT)
MOORE LANE
10' STD CURB INLET
TG: 737.73
E: 733.32
STA: 1+00.00 LINE SD-K
STA: 44+06.75 LINE SD-J
PAV STA: 4+27.58 (7.73' RT)
MOORE LANE
80' WYE CONNECTION
PC STA: 1+[illegible].74
STA: 1+08.86 LAT K-4
PAV STA: 9+12.06 (15.50' RT)
LEO DRIVE
10' STD CURB INLET
TG: 743.72
E: 736.22
STA: 4+90.28 LINE SD-K
STA: 1+00.00 LAT K-4
PAV STA: 9+14.58 (8.33' RT)
LEO DRIVE
80' WYE CONNECTION
PRC STA: 1+50.49
STA: 1+43.71 LINE SD-K
STA: 1+00.00 LAT K-6
PAV STA: 3+78.59 (10.50' LT)
MOORE LANE
80' WYE CONNECTION
STA: 1+[illegible] LAT K-6
PAV STA: 3+50.79 (15.50' RT)
MOORE LANE
10' STD CURB INLET
TG: 738.13
E: 733.82
LINE SD-K
LINE SD-L
EXISTING GRADE AT ℄ PIPE
PROPOSED GRADE AT ℄ PIPE
106 LF OF 24" RCP @ 0.62%
107 LF OF 27" RCP @ 1.40%
MATCH LINE STA 6+00
STA: 2+51.23 LINE SD-L
PAV STA: 1+18.91 (47.99' LT)
COLLIN-MCKINNEY PARKWAY
10' RECESSED CURB INLET
TG: 727.53
STA: 1+31.87 LAT L-1
PAV STA: 1+50.32 (47.99' LT)
COLLIN-MCKINNEY PARKWAY
10' RECESSED CURB INLET
TG: 732.83
STA: 2+51.23 LINE SD-L
PAV STA: 1+18.91 (69.35' LT)
COLLIN-MCKINNEY PARKWAY
TXDOT "PW" HEADWALL
STA: 1+08.46 LAT L-2
PAV STA: 1+53.74 (48.01' RT)
COLLIN-MCKINNEY PARKWAY
10' RECESSED CURB INLET
TG: 732.82
E: 727.53
STA: 1+30.13 LINE SD-L
PAV STA: 1+44.88 (48.27' RT)
COLLIN-MCKINNEY PARKWAY
80' WYE CONNECTION
STA: 1+18.05 LINE SD-L
PAV STA: 1+38.53 (54.21' RT)
COLLIN-MCKINNEY PARKWAY
TXDOT "PW" HEADWALL
TO BE CONTINUOUS
WITH ADJACENT HEADWALL
COLLIN-MCKINNEY PKWY
INSTALL APPROXIMATELY 205 SY OF 18" ROCK RIP-RAP FILTER FABRIC PER TxDOT SPEC 432
INSTALL APPROXIMATELY 342 SY OF 18" ROCK RIP-RAP FILTER FABRIC PER TxDOT SPEC 432
LANDSCAPE SETBACK
EASEMENT TO THE CITY OF VAN ALSTYNE TO BE ABANDONED BY PLAT
EASEMENT TO COLLIN COUNTY TO BE ABANDONED BY PLAT
ROCK RIP-RAP D50= .9 FT DEPTH= 1.5 FT
135 LF OF 10'X4' RCB'S @ 0.50%
AT ℄ PIPE
EXISTING GRADE AT ℄ PIPE
PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL
BENCHMARKS
CURVE TABLE
CURVE | RADIUS | LENGTH | CHORD BEARING | CHORD | DELTA | TANGENT
C33 | 120.00' | 108.15' | S66°14'11"W | 104.53' | 51°38'13" | 58.05'
C34 | 1008.50' | 184.04' | S28°03'48"W | 183.89' | 5°44'34" | 77.17'
C35 | 289.35' | 84.33' | S13°18'46"W | 84.04' | 16°41'25" | 42.47'
C36 | 120.00' | 35.75' | S13°31'11"W | 35.63' | 17°04'13" | 18.01'
Kimley»Horn
STORM DRAIN PLAN & PROFILE - LINE SD-K & LINE SD-L
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS
C-64


LINE SD-M
LINE SD-P
LINE SD-N
PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL
BENCHMARKS
Kimley»Horn
STORM DRAIN PLAN & PROFILE - LINE SD-M, LINE SD-N & LINE SD-P
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS
SHEET NUMBER
C-65

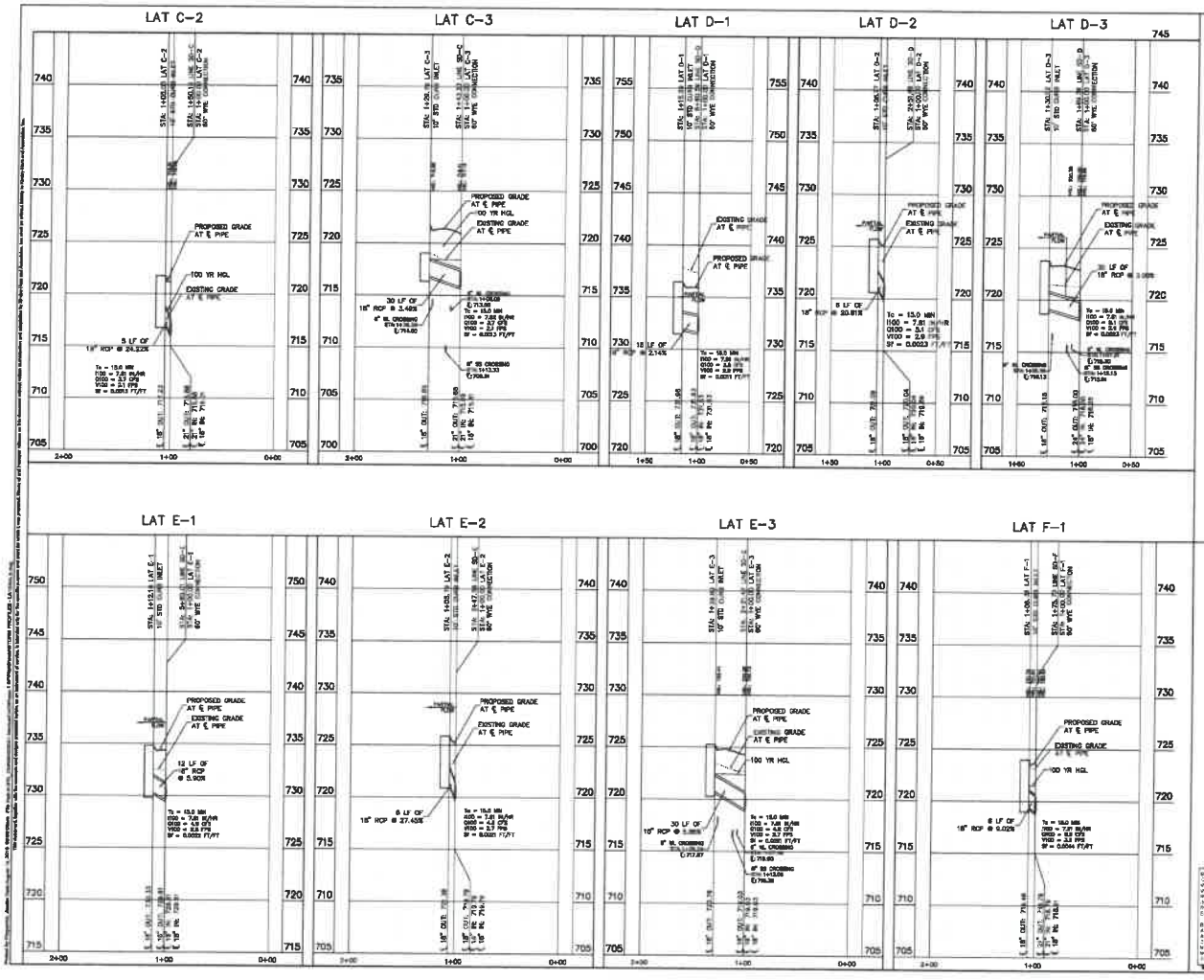


Kimley»Horn

STORM PROFILES - LATERALS

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-66



BENCHMARKS

BM 101 - "X" CUT IN CONCRETE AT THE NE CORNER OF A CONCRETE PAD FOR A VENT PIPE LOCATED ON THE WEST SIDE OF A NEW ROAD BEYOND NORTH TWO-FOOT ARCH CONNECTS CARPARCHIT ROAD TO COUNTY ROAD NO. 393 APPROXIMATELY 300 FEET OF THE INTERSECTION OF THE NEW ROAD AND CARPARCHIT ROAD.
ELEV = 703.90

BM 102 - "X" CUT IN CONCRETE AT THE NW CORNER OF A BRIDGE BETWEEN COUNTY ROAD NO. 393 LOCATED APPROXIMATELY 300 FEET OF THE INTERSECTION OF COUNTY ROAD NO. 393 AND A NEW ROAD BEYOND NORTH-SOUTH ARCH CONNECTS COUNTY ROAD NO. 393 TO CARPARCHIT ROAD.
ELEV = 700.00

No.	REVISIONS	DATE	BY

Kimley»Horn
1700 Redbud Blvd, Suite 300
McKinney, Texas 75069
Tel No. 972-335-3580 Fax No. 972-335-3779
TBPE Firm Registration No. F-928

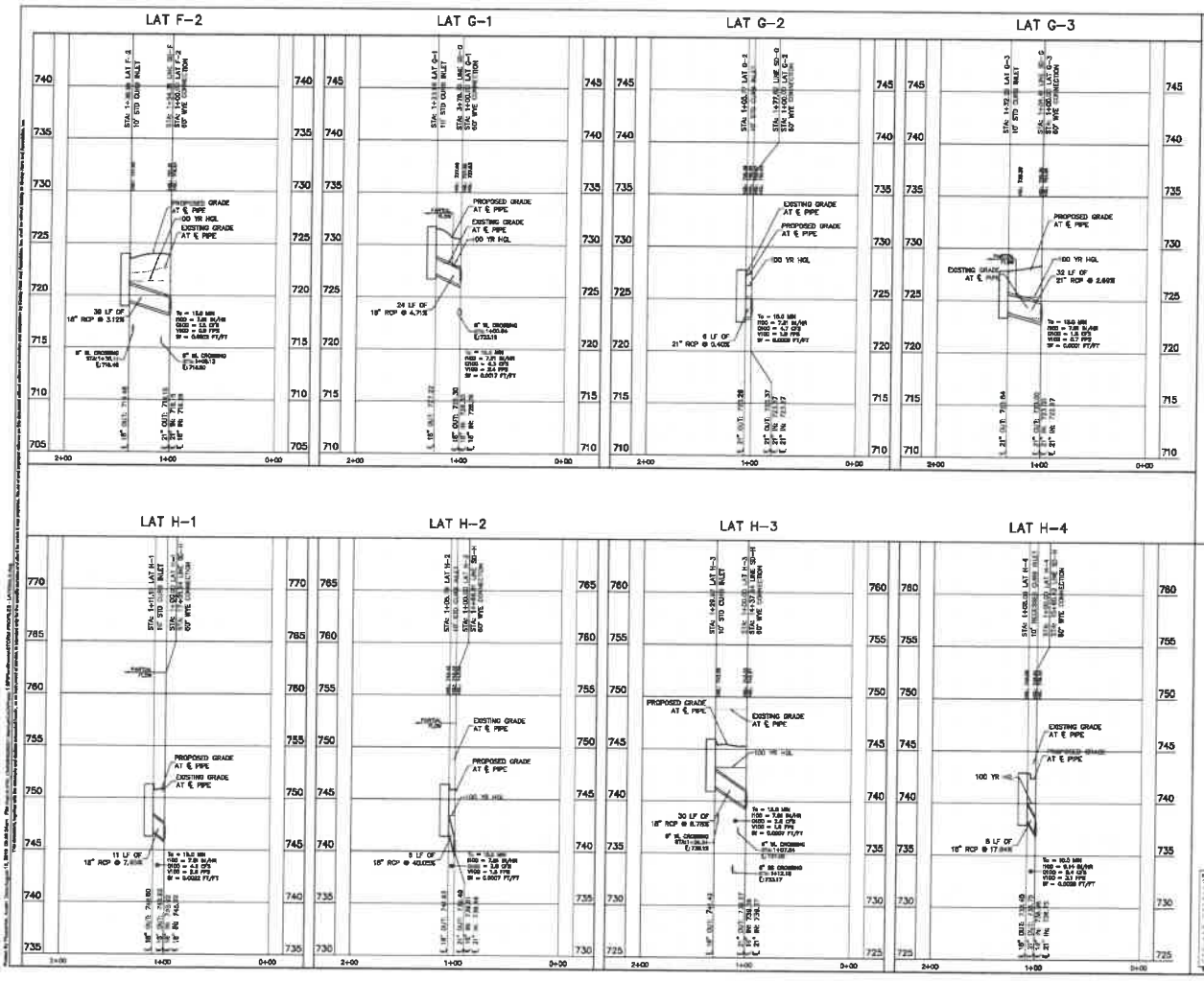
Kimley»Horn

NRA PROJECT 096250001
DATE AUGUST 2018
CADD: A3 SHEAR
DESIGNER: MRM
DRAWN: MAL
REVIEW: TDC

STORM PROFILES - LATERALS (2)

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-67

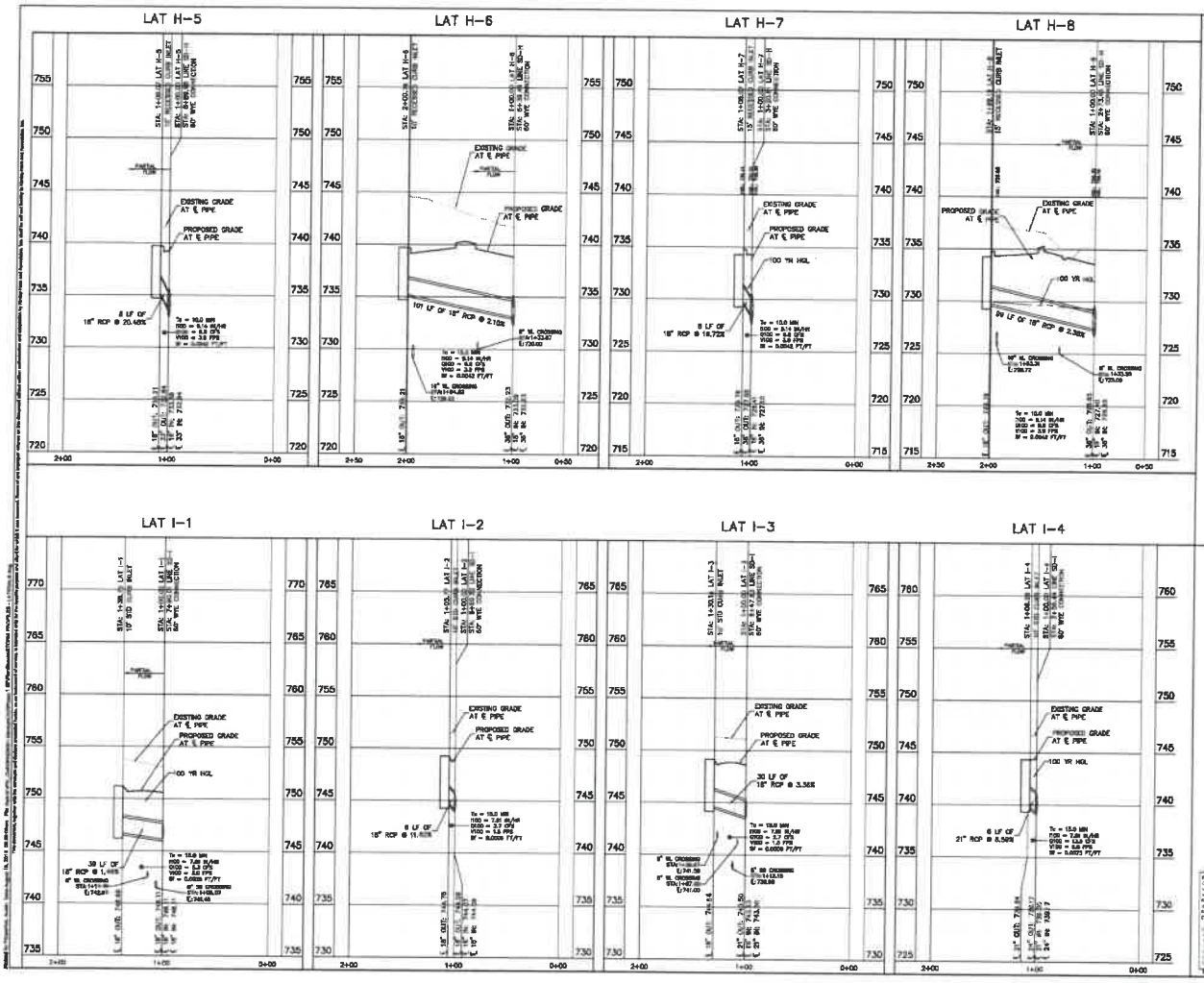


Kimley»Horn

STORM PROFILES - LATERALS (3)

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-68

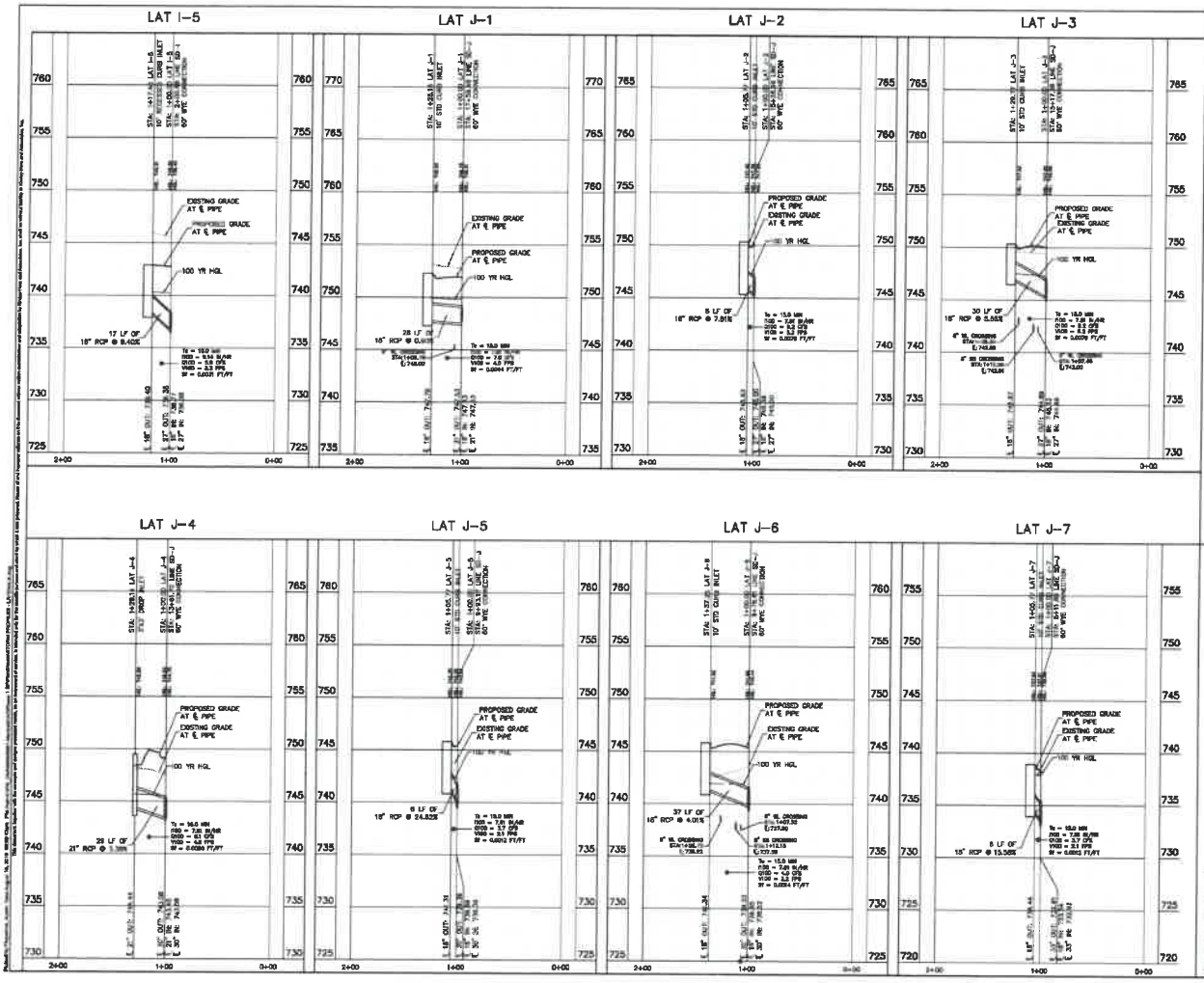


Kimley»Horn

STORM PROFILES - LATERALS (4)

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-69

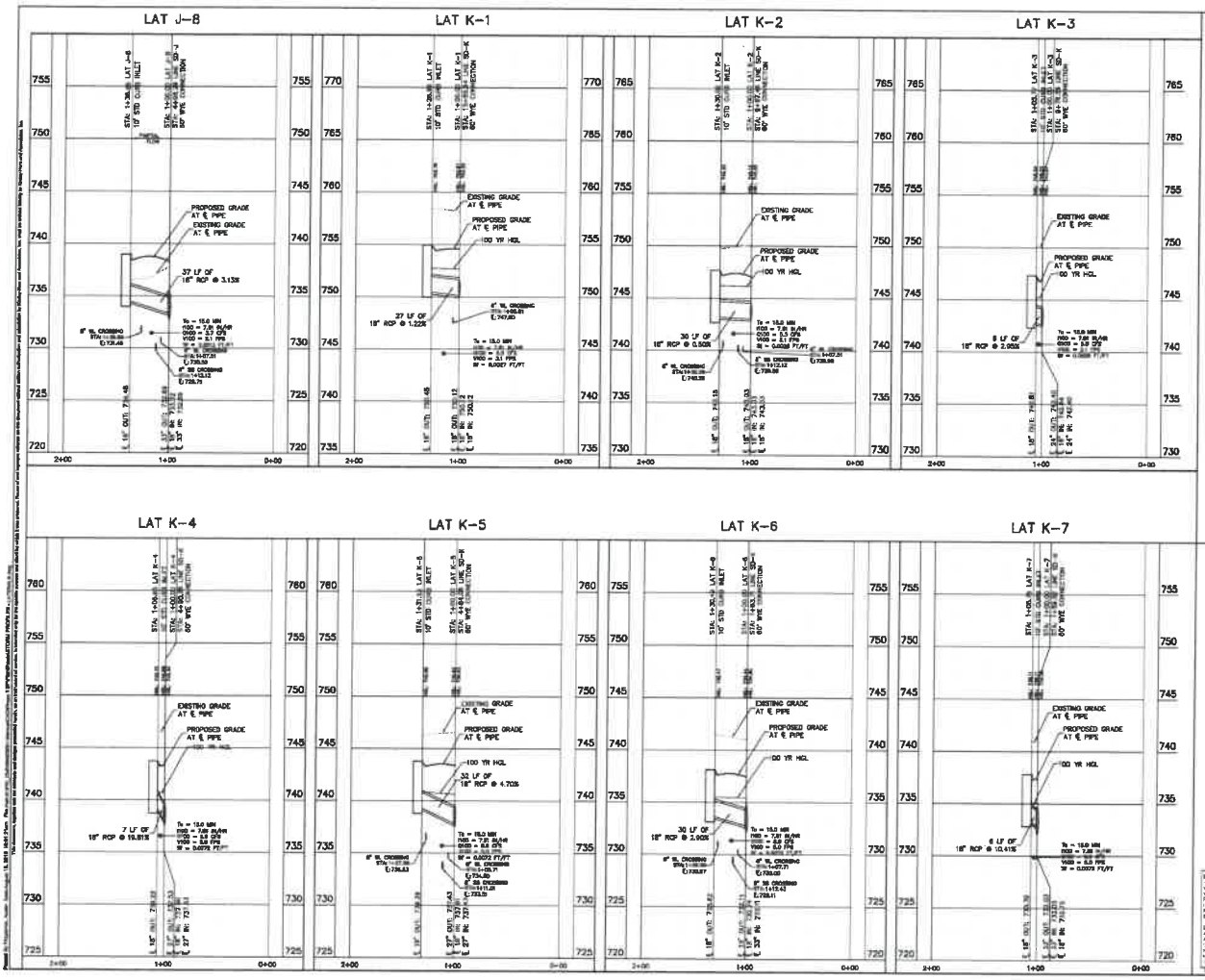


Kimley»Horn

STORM PROFILES - LATERALS (5)

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-70

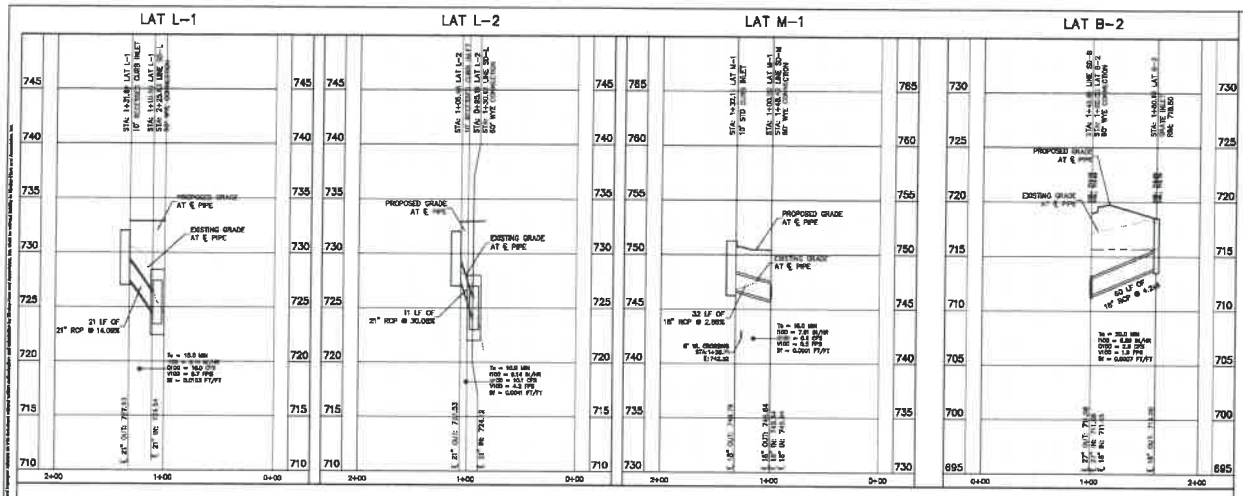


Kimley»Horn

STORM PROFILES - LATERALS (6)

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-71



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

BENCHMARKS

No.	REVISIONS	DATE	BY

Kimley»Horn

PRELIMINARY

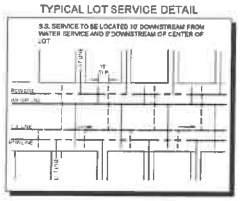
DATE	
AUGUST 2020	
SCALE	AS SHOWN
DESIGNED	MRM
DRAWN	MJL
REVIEWED	TGC

STORM PROFILES - LATERALS (7)

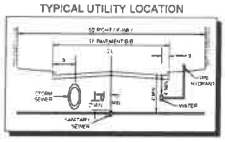
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-72

TYPICAL LOT SERVICE DETAIL



TYPICAL UTILITY LOCATION



SERVICE LATERALS

ITEM	SIZE	CAPACITY	TYPE
PROP. WATER	1"	200	DOMESTIC
PROP. WATER	2"	1	DOMESTIC
PROP. WATER	3"	1	IRRIGATION
PROP. WATER	2"	6	IRRIGATION
PROP. WATER	4"	2	FIRE

UTILITY LEGEND

- PROPERTY LINE
- PROPOSED SANITARY SEWER LINE
- PROPOSED WATER LINE
- PROPOSED RECLAIMED WATER LINE
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED SANITARY SEWER CLEANOUT
- SANITARY SEWER FLOW DIRECTION
- PROPOSED FIRE HYDRANT
- PROPOSED TAPPING SLEEVE & VALVE
- IRRIGATION SLEEVE
- EXISTING OVERHEAD POWER LINE
- EXISTING WATER LINE
- EXISTING SANITARY SEWER LINE
- EXISTING STORM SEWER LINE
- EXISTING POWER POLE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING SANITARY SEWER MANHOLE

CURVE TABLE

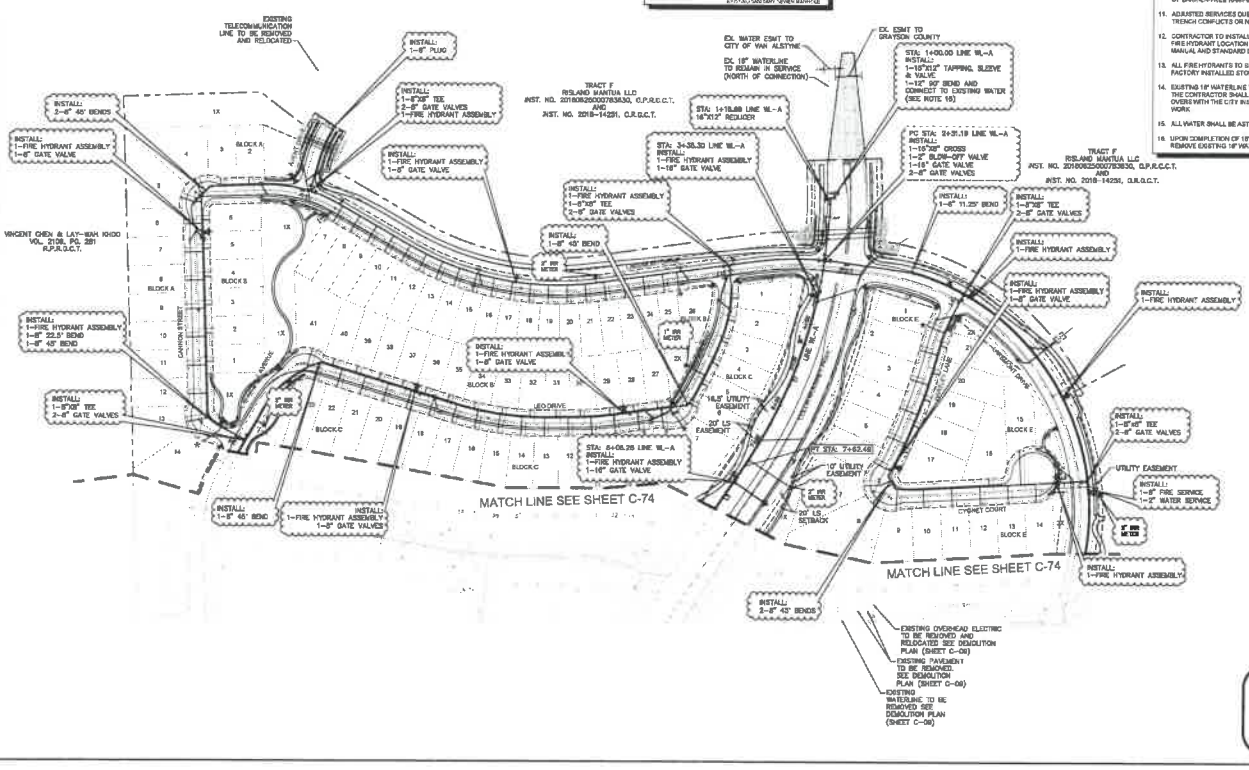
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C1	1086.50'	511.30'	S20°44'32"W	506.70'	26°40'07"	260.37'

LINE TABLE

LINE	LENGTH	BEARING
L2	286.61'	S34°04'05.34"W

WATER GENERAL NOTES

1. FIRE HYDRANTS, VALVES, FITTINGS, ETC. SHOWN AS A GRAPHICAL REPRESENTATION ONLY. CONTRACTOR TO LOCATE AND CONSTRUCT THESE IMPROVEMENTS BASED ON THE CURRENT CITY/TXDOT/SOCTIONAL DESIGN STANDARDS AND DETAILS. CONTRACTOR TO NOTIFY ENGINEER IF ANY DISCREPANCIES ARE DISCOVERED PRIOR TO BEGINNING CONSTRUCTION.
2. WATER AND SANITARY SEWER SEPARATION (VERTICAL AND HORIZONTAL) SHALL BE MAINTAINED IN ACCORDANCE WITH TCEQ REQUIREMENTS.
3. CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
4. FIRE HYDRANT ASSEMBLY INCLUDES ALL FITTINGS, TEES, VALVES AND PIPING.
5. ALL FIRE HYDRANTS TO BE LOCATED ON LOT LINES OR 10' FROM PCCRS.
6. ALL WATERLINES ARE 8" UNLESS OTHERWISE NOTED.
7. ALL WATER SERVICES ARE 1" UNLESS OTHERWISE NOTED.
8. ALL WATERLINE CURVES ARE CONCENTRIC AND PARALLEL TO THE STREET CENTERLINES UNLESS OTHERWISE NOTED.
9. ALL GATE VALVES AND WATER METERS SHALL BE PLACED CLEAR OF BARRIER-FREE RAMPS.
10. ADJUSTED SERVICES DUE TO CONFLICTS (I.E. MANHOLES, INLETS, TRENCH CONFLICTS OR NON-STANDARD PLACEMENT) = $
11. CONTRACTOR TO INSTALL 3-WAY BLUE REFLECTOR BUTTON AT FIRE HYDRANT LOCATION PER CITY OF VAN ALSTYNE DESIGN MANUAL AND STANDARD DETAILS.
12. ALL FIRE HYDRANTS TO BE WATEROUS PAGER MODEL WITH FACTORY INSTALLED STORZ CONNECTOR.
13. EXISTING 18" WATERLINE TO REMAIN IN SERVICE AT ALL TIMES. THE CONTRACTOR SHALL COORDINATE ALL TAPS AND CROSS OVERS WITH THE CITY INSPECTOR PRIOR TO PERFORMING THE WORK.
14. ALL WATER SHALL BE ASTM C-900/DR 18 PIPE.
15. UPON COMPLETION OF 18" WATERLINE, CUT AND CAP LINE AND REMOVE EXISTING 18" WATERLINE.



!WARNING!!

EXISTING UTILITIES IN THE AREA OF CONSTRUCTION MAY NOT BE THE LOCATION OF ALL EXISTING UTILITIES. THE PROPER PRIOR TO START OF CONSTRUCTION AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IF ANY CONFLICTS DISCOVERED. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF THE RELOCATION OF UTILITIES AND PROTECTING EXISTING UTILITIES. CONTRACTOR MUST REPAIR, IF ANY EXISTING UTILITIES ARE DAMAGED. THE CONTRACTOR SHALL REPLACE THEM AT THEIR OWN EXPENSE

No	REVISIONS	DATE	BY

Kimley»Horn

© COPYRIGHT 2018 KIMLEY-HORN AND ASSOCIATES, INC.
13455 NOEL RD, SUITE 1500 DALLAS, TEXAS 75240
PHONE: 972-770-1300 FAX: 972-239-3398
TEXAS REGISTERED ENGINEERING FIRM F-928

PRELIMINARY
THIS DOCUMENT IS NOT INTENDED OR SUITABLE FOR GENERAL CONSTRUCTION PURPOSES
Kimley»Horn
Registered Professional Engineer
State of Texas No. 106300
Date 08/28/2018

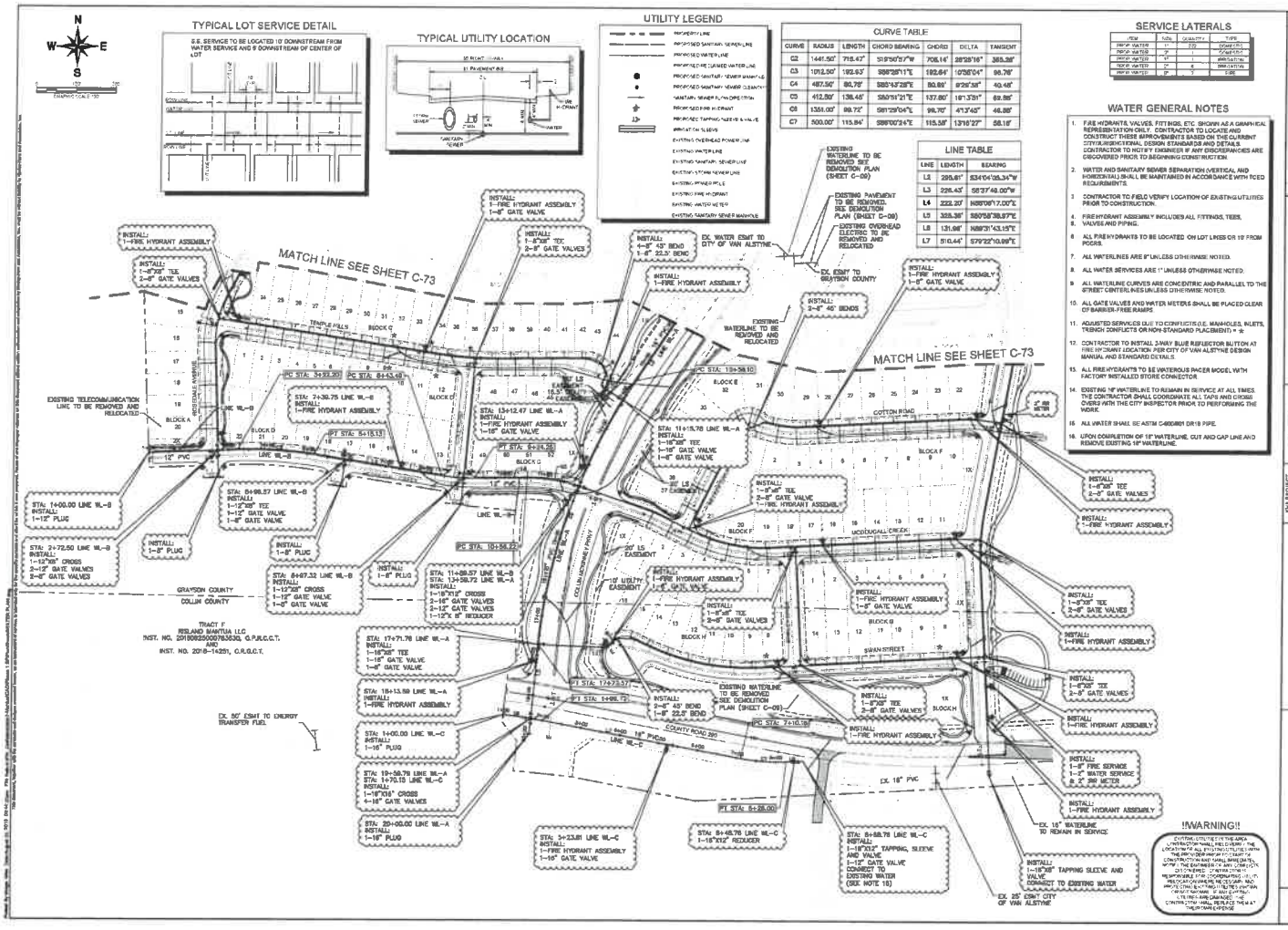
KHA PROJECT	069099000
DATE	AUGUST 2018
DESIGNED:	BRM
DRAWN:	PAC
REVIEWED:	TDC

WATER PLAN

MANTUA POINT PHASE 1

CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-73



CURVE TABLE

CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C2	1441.50'	715.47'	S19°00'51"W	708.14'	28°25'16"	365.28'
C3	1012.50'	192.93'	S38°28'11"E	192.64'	10°55'04"	96.76'
C4	487.50'	80.76'	S85°43'28"E	80.68'	9°29'38"	40.48'
C5	412.50'	138.48'	S80°51'21"E	137.80'	19°13'51"	69.86'
C6	1355.00'	99.72'	S81°29'04"E	99.70'	4°13'45"	49.86'
C7	500.00'	115.94'	S86°00'24"E	115.58'	13°16'27"	58.16'

LINE TABLE

LINE	LENGTH	BEARING
L2	295.61'	S34°04'05.34"W
L3	226.43'	S5°37'40.00"W
L4	222.27'	N88°08'17.00"E
L5	325.35'	S80°58'38.97"E
L6	131.98'	N89°31'43.15"E
L7	510.44'	S79°22'10.69"E

SERVICE LATERALS

ITEM	SIZE	QUANTITY	TYPE
REPAIR WATER	1"	220	CONNECT
REPAIR WATER	2"	1	CONNECT
REPAIR WATER	4"	1	IRRIGATION
REPAIR WATER	6"	6	IRRIGATION
REPAIR WATER	8"	1	FIRE

WATER GENERAL NOTES

1. FIRE HYDRANTS, VALVES, FITTINGS, ETC. SHOWN AS A GRAPHICAL REPRESENTATION ONLY. CONTRACTOR TO LOCATE AND CONSTRUCT THESE IMPROVEMENTS BASED ON THE CURRENT CITY/AUBURN/TRUNAL DESIGN STANDARDS AND DETAILS. CONTRACTOR TO NOTIFY ENGINEER IF ANY DISCREPANCIES ARE DISCOVERED PRIOR TO BEGINNING CONSTRUCTION.
2. WATER AND SANITARY SEWER SEPARATION (VERTICAL AND HORIZONTAL) SHALL BE MAINTAINED IN ACCORDANCE WITH TCEQ REQUIREMENTS.
3. CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
4. FIRE HYDRANT ASSEMBLY INCLUDES ALL FITTINGS, TEES, VALVES AND PIPING.
5. ALL FIRE HYDRANTS TO BE LOCATED ON LOT LINES OR 10' FROM POORS.
6. ALL WATERLINES ARE 8" UNLESS OTHERWISE NOTED.
7. ALL WATER SERVICES ARE 1" UNLESS OTHERWISE NOTED.
8. ALL WATERLINE CURVES ARE CONCENTRIC AND PARALLEL TO THE STREET CENTERLINES UNLESS OTHERWISE NOTED.
9. ALL GATE VALVES AND WATER METERS SHALL BE PLACED CLEAR OF BARRIER-FREE RAMPS.
10. ADJUSTED SERVICES DUE TO CONFLICTS (I.E. MANHOLES, INLETS, TRENCH CONFLICTS OR NON-STANDARD PLACEMENT) * ★
11. CONTRACTOR TO INSTALL 3-WAY BLUE REFLECTOR BUTTON AT FIRE HYDRANT LOCATION PER CITY OF VAN ALSTYNE DESIGN MANUAL AND STANDARD DETAILS.
12. ALL FIREHYDRANTS TO BE WATEROUS PACER MODEL WITH FACTORY INSTALLED STORZ CONNECTOR.
13. EXISTING 16" WATERLINE TO REMAIN IN SERVICE AT ALL TIMES. THE CONTRACTOR SHALL COORDINATE ALL TAPS AND CROSS OVERS WITH THE CITY INSPECTOR PRIOR TO PERFORMING THE WORK.
14. ALL WATER SHALL BE ASTM C400/801 DR18 PIPE.
15. UPON COMPLETION OF 16" WATERLINE, CUT AND CAP LINE AND REMOVE EXISTING 16" WATERLINE.

NO.	REVISIONS	DATE	INT

Kimley»Horn

PRELIMINARY

RCA PROJECT NUMBER	
DATE	
LAST DATE	
SCALE	AS SHOWN
DRAWN	T.S
CHECKED	TCC

WATER PLAN

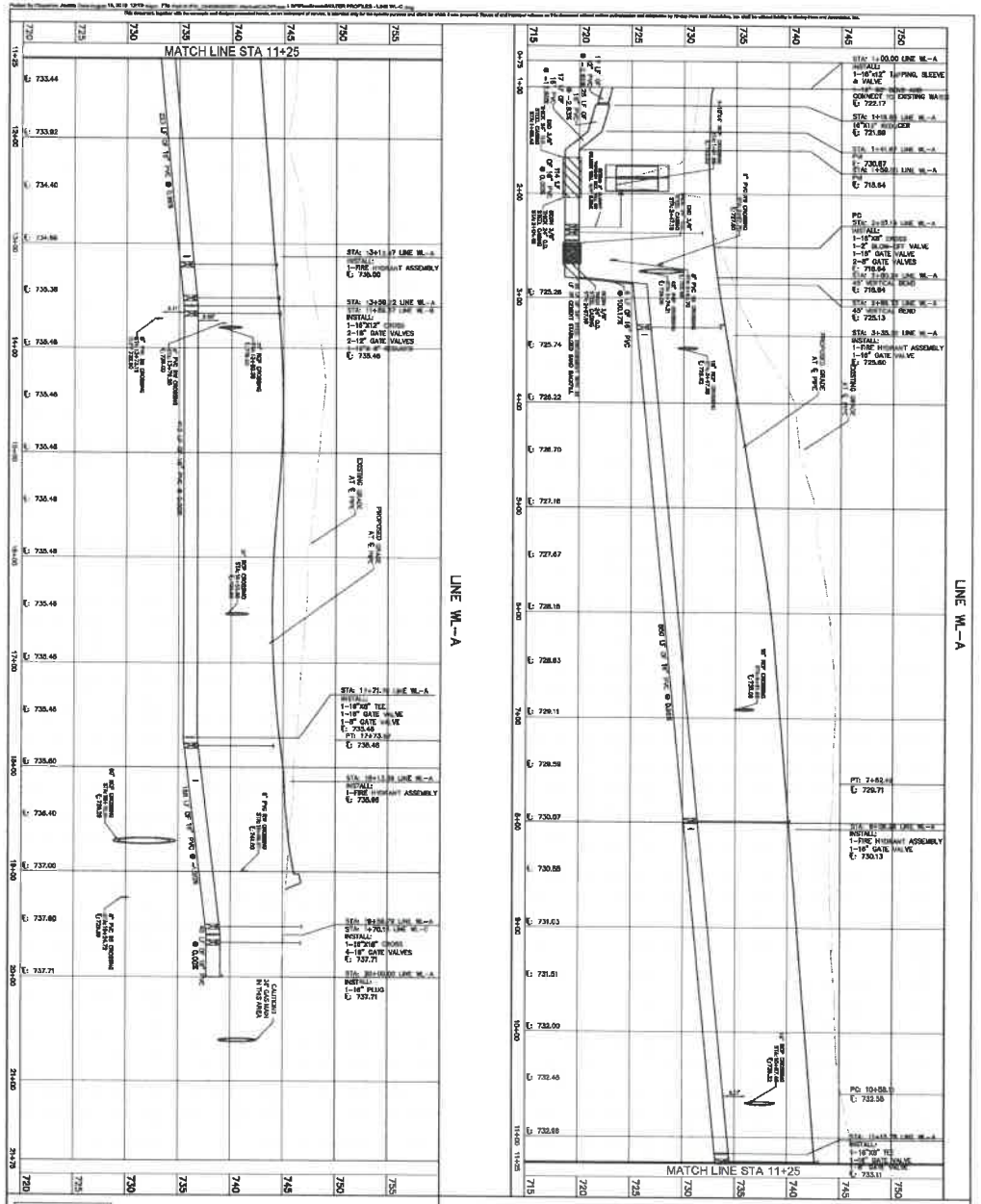
MANTUA POINT PHASE 1

CITY OF VAN ALSTYNE

GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER

C-74



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

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

BENCHMARKS

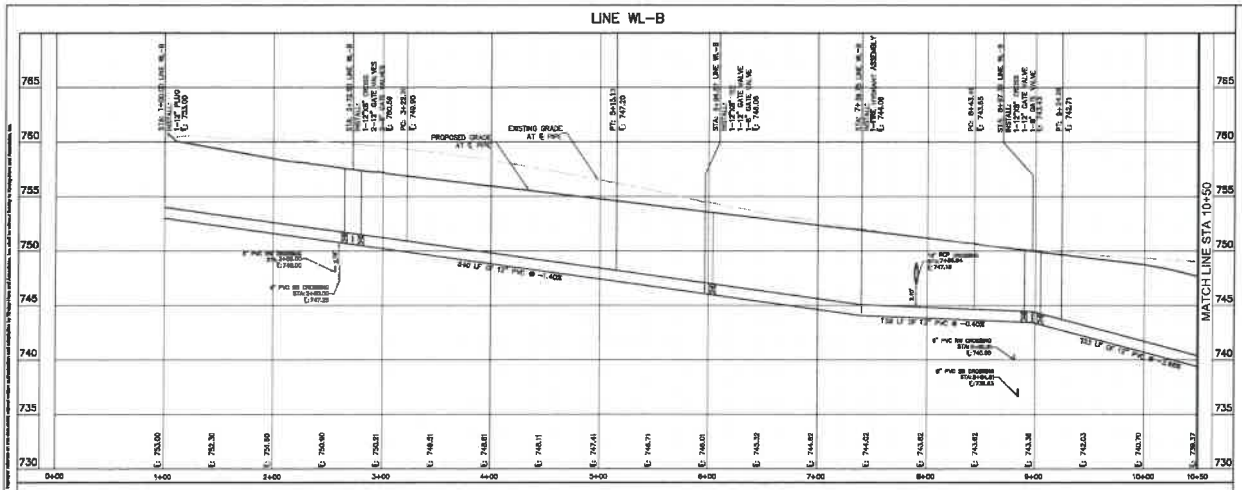
MANTUA POINT PHASE 1 CITY OF VAN ALSTYNE GRAYSON AND COLLIN COUNTY, TEXAS	WATER PROFILES - LINE WL-A

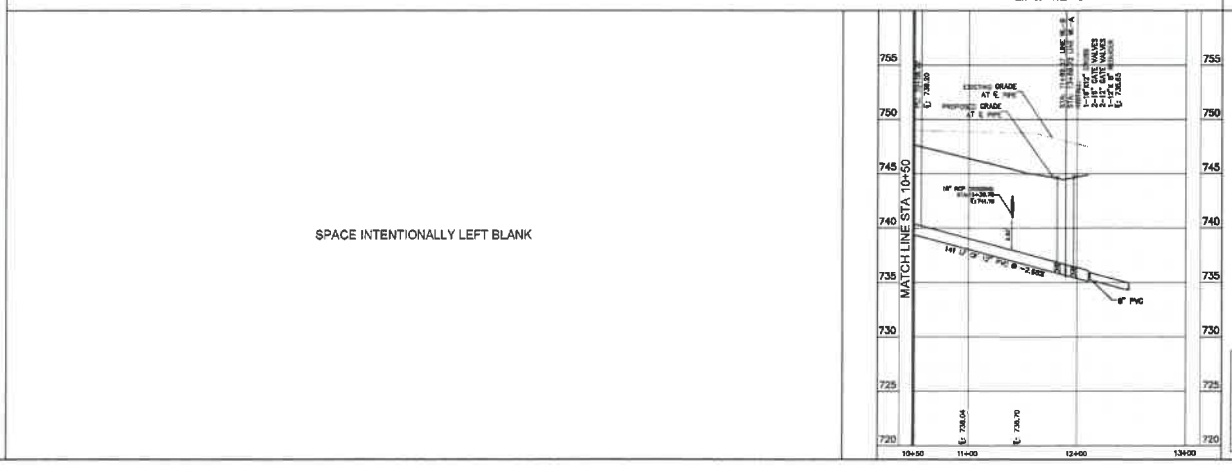
C-75

KHA PROJECT	096420001
DATE	AUGUST 2019
SCALE	AS SHOWN
DESIGNED	MRM
DRAWN	JBA
REVIEWED	TGC

Kimley»Horn

No.	REVISIONS	DATE	BY





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BENCHMARKS

NO.	REVISIONS	DATE	BY

Kimley»Horn

© 2015 KIMLEY-HORN AND ASSOCIATES, INC.
12700 HILLCREST ROAD, SUITE 250 DALLAS, TEXAS 75230
PHONE: 972-770-1300 FAX: 972-239-3398
TEXAS REGISTRATION NUMBER FIRM F-928

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING PURPOSES
Kimley»Horn
NAME - P.E. LICENSE NO.
DATE

KHA PROJECT 069099001
DATE AUGUST 2018
SCALE AS SHOWN
CD / FILE NO. 069099001
DRAWN BY: BBA
DESIGNED BY: TDC

WATER PROFILES - LINE WL-B

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-76

SPACE INTENTIONALLY LEFT BLANK

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

BENCHMARKS

No.	REVISIONS	DATE	BY

Kimley»Horn

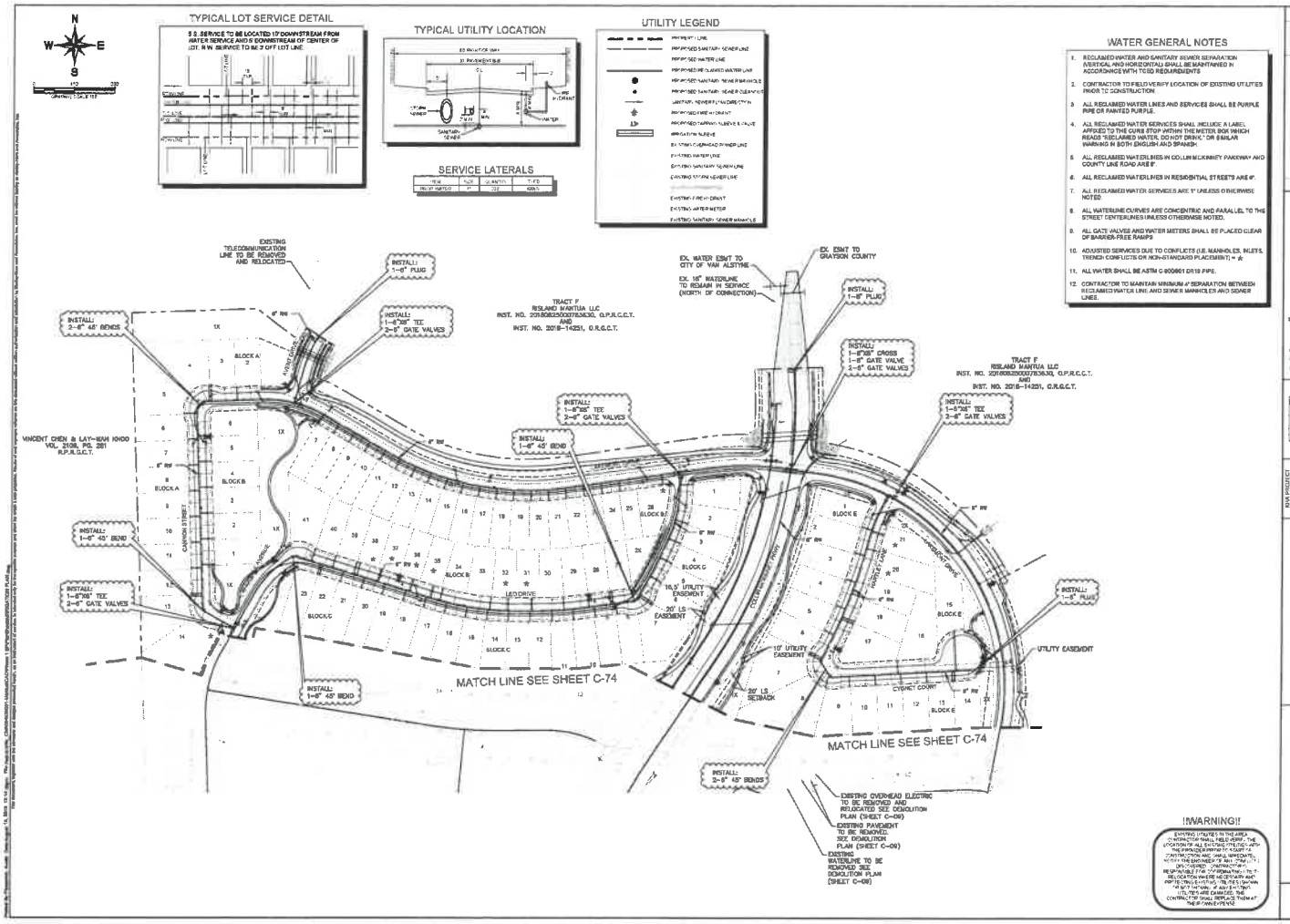
PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING PURPOSES
Kimley»Horn

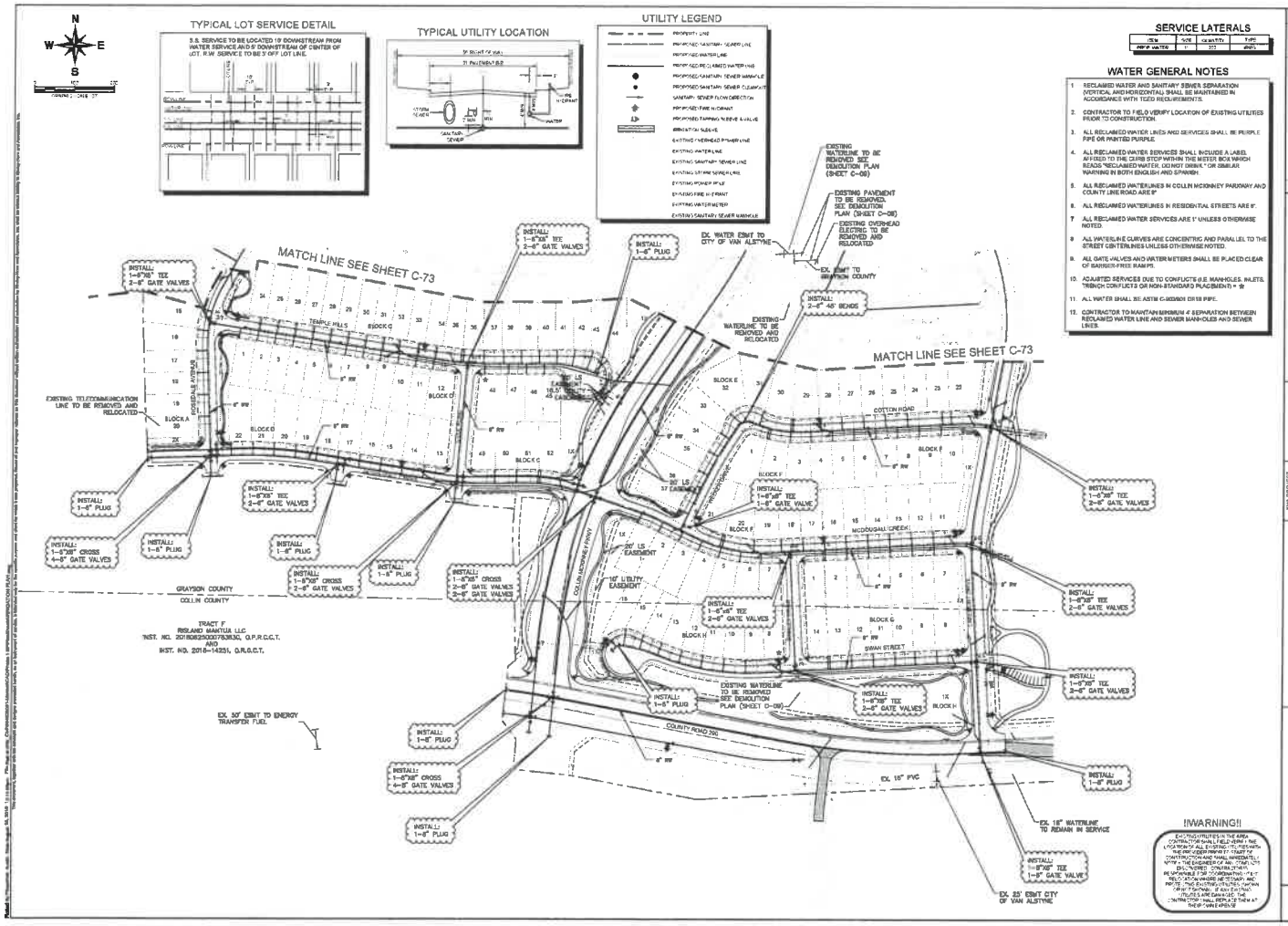
KHA PROJECT NUMBER	
DATE	AUGUST 2019
SCALE: HZ 1" = 40' VERT 1" = 4'	
DESIGNED	BEA
DRAWN BY	TDC

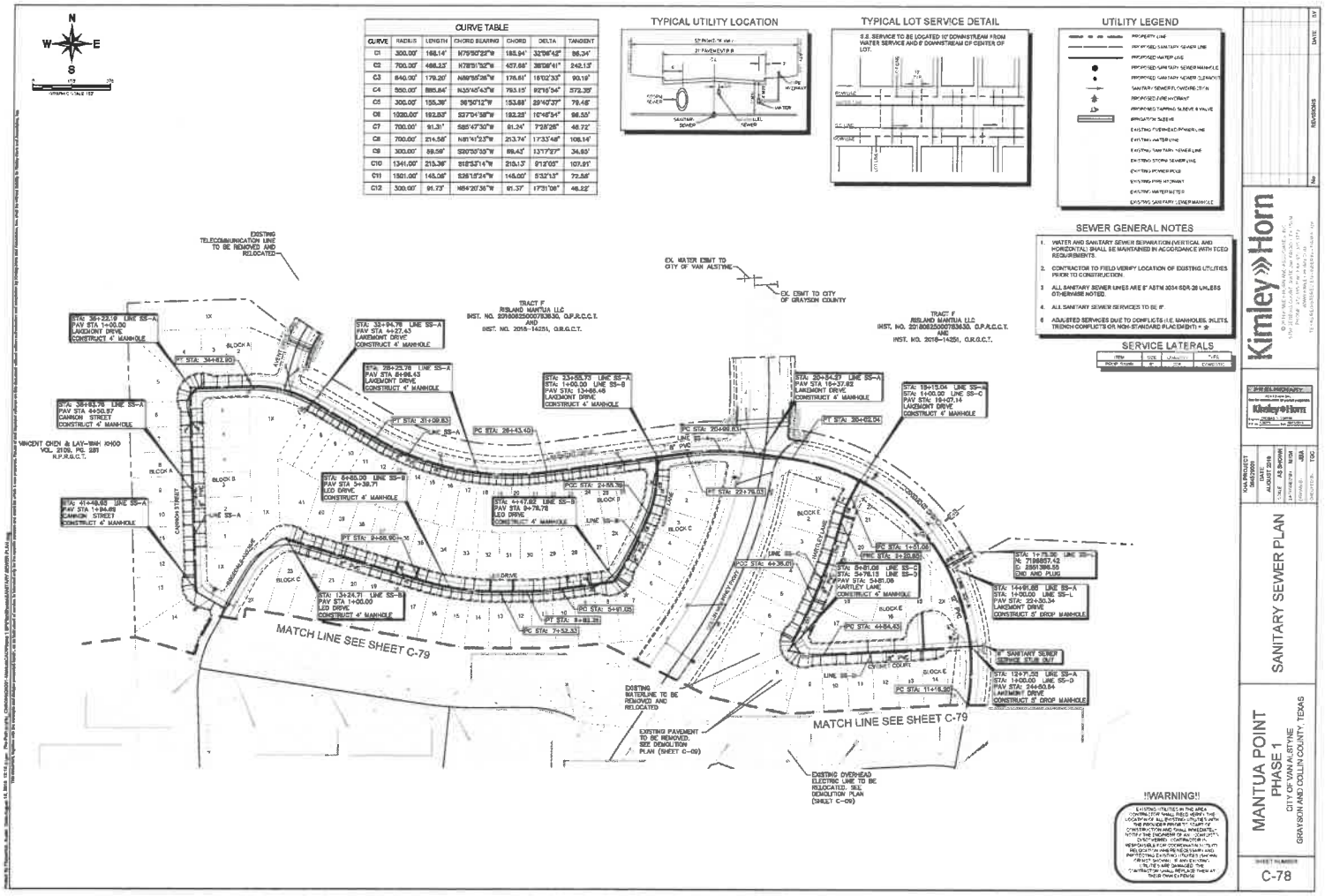
WATER PROFILES - LINE WL-C

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-77


TYPICAL LOT SERVICE DETAIL
TYPICAL UTILITY LOCATION
UTILITY LEGEND
SERVICE LATERALS
WATER GENERAL NOTES
1. RECLAIMED WATER AND SANITARY SEWER SEPARATION (VERTICAL AND HORIZONTAL) SHALL BE MAINTAINED IN ACCORDANCE WITH TCEQ REQUIREMENTS
2. CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION
3. ALL RECLAIMED WATER LINES AND SERVICES SHALL BE PURPLE PIPE OR PAINTED PURPLE.
4. ALL RECLAIMED WATER SERVICES SHALL INCLUDE A LABEL AFFIXED TO THE CURB STOP WITHIN THE METER BOX WHICH READS "RECLAIMED WATER. DO NOT DRINK." OR SIMILAR WARNING IN BOTH ENGLISH AND SPANISH.
5. ALL RECLAIMED WATERLINES IN COLLIN MCKINNEY PARKWAY AND COUNTY LINE ROAD ARE 8".
6. ALL RECLAIMED WATERLINES IN RESIDENTIAL STREETS ARE 6".
7. ALL RECLAIMED WATER SERVICES ARE 1" UNLESS OTHERWISE NOTED.
8. ALL WATERLINE CURVES ARE CONCENTRIC AND PARALLEL TO THE STREET CENTERLINES UNLESS OTHERWISE NOTED.
9. ALL GATE VALVES AND WATER METERS SHALL BE PLACED CLEAR OF BARRIER-FREE RAMPS
10. ADJUSTED SERVICES DUE TO CONFLICTS (I.E. MANHOLES, INLETS, TRENCH CONFLICTS OR NON-STANDARD PLACEMENT) = ★
11. ALL WATER SHALL BE ASTM C-900/901 DR18 PIPE.
12. CONTRACTOR TO MAINTAIN MINIMUM 4' SEPARATION BETWEEN RECLAIMED WATER LINE AND SEWER MANHOLES AND SEWER LINES.
EXISTING TELECOMMUNICATION LINE TO BE REMOVED AND RELOCATED
INSTALL: 1-6" PLUG
INSTALL: 2-6" 45° BENDS
INSTALL: 1-6"X6" TEE 2-6" GATE VALVES
TRACT F RISLAND MANTUA LLC INST. NO. 2018082500078630, O.P.R.C.C.T. AND INST. NO. 2018-14251, O.R.G.C.T.
VINCENT CHEN & LAY-NEAH KHOO VOL. 2106, PG. 281 R.P.R.C.C.T.
INSTALL: 1-6" 45° BEND
INSTALL: 1-6"X6" TEE 2-6" GATE VALVES
INSTALL: 1-6" 45° BEND
INSTALL: 1-6"X6" TEE 2-6" GATE VALVES
MATCH LINE SEE SHEET C-74
EX. WATER ESMT TO CITY OF VAN ALSTYNE
EX. 16" WATERLINE TO REMAIN IN SERVICE (NORTH OF CONNECTION)
EX. ESMT TO GRAYSON COUNTY
INSTALL: 1-6" PLUG
INSTALL: 1-6"X6" CROSS 1-6" GATE VALVE 2-6" GATE VALVES
TRACT F RISLAND MANTUA LLC INST. NO. 2018082500078630, O.P.R.C.C.T. AND INST. NO. 2018-14251, O.R.G.C.T.
INSTALL: 1-6"X6" TEE 2-6" GATE VALVES
INSTALL: 1-6" PLUG
UTILITY EASEMENT
MATCH LINE SEE SHEET C-74
INSTALL: 2-6" 45° BENDS
EXISTING OVERHEAD ELECTRIC TO BE REMOVED AND RELOCATED SEE DEMOLITION PLAN (SHEET C-09)
EXISTING PAVEMENT TO BE REMOVED. SEE DEMOLITION PLAN (SHEET C-09)
EXISTING WATERLINE TO BE REMOVED SEE DEMOLITION PLAN (SHEET C-09)
!!WARNING!!
Kimley»Horn
PRELIMINARY
RECLAIMED WATER PLAN
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS
C-77A


TYPICAL LOT SERVICE DETAIL
TYPICAL UTILITY LOCATION
UTILITY LEGEND
SERVICE LATERALS
WATER GENERAL NOTES
MATCH LINE SEE SHEET C-73
TEMPLE HILLS
COTTON ROAD
SWAN STREET
COUNTY ROAD 290
GRAYSON COUNTY
COLLIN COUNTY
TRACT 7
RISLAND MANTUA LLC
INST. NO. 20180825000783030, O.P.R.C.C.T.
AND
INST. NO. 2018-14251, O.R.C.C.T.
EXISTING TELECOMMUNICATION LINE TO BE REMOVED AND RELOCATED
EXISTING WATERLINE TO BE REMOVED AND RELOCATED
EXISTING PAVEMENT TO BE REMOVED. SEE DEMOLITION PLAN (SHEET C-09)
EXISTING OVERHEAD ELECTRIC TO BE REMOVED AND RELOCATED
EXISTING WATERLINE TO BE REMOVED. SEE DEMOLITION PLAN (SHEET C-09)
EX. 50' ESMT TO ENERGY TRANSFER FUEL
EX. 15' PVC
EX. 16" WATERLINE TO REMAIN IN SERVICE
EX. 25' ESMT CITY OF VAN ALSTYNE
!WARNING!!
Kimley»Horn
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS
RECLAIMED WATER PLAN
C-77B



CURVE TABLE						
CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C1	300.00'	168.14'	N79°50'22"W	165.94'	32°06'42"	86.34'
C2	700.00'	468.23'	N78°51'32"W	457.66'	38°08'41"	242.13'
C3	640.00'	179.20'	N86°55'26"W	178.61'	16°02'33"	90.19'
C4	550.00'	885.64'	N35°45'43"W	793.15'	92°16'54"	572.39'
C5	300.00'	155.36'	S6°50'12"W	153.68'	29°40'37"	79.48'
C6	1030.00'	192.83'	S37°01'38"W	192.22'	10°43'34"	96.55'
C7	700.00'	91.31'	S65°47'30"W	91.24'	7°28'26"	45.72'
C8	700.00'	214.56'	N81°41'23"W	213.74'	17°33'48"	108.14'
C9	300.00'	59.59'	S20°33'33"W	59.43'	11°77'27"	34.85'
C10	1341.00'	213.36'	S12°32'14"W	213.13'	9°12'05"	107.01'
C11	1501.00'	145.08'	S26°15'24"W	145.00'	5°32'13"	72.56'
C12	300.00'	91.73'	N64°20'36"W	91.37'	17°31'08"	46.22'

TYPICAL UTILITY LOCATION

TYPICAL LOT SERVICE DETAIL

S.S. SERVICE TO BE LOCATED 10' DOWNSTREAM FROM WATER SERVICE AND 5' DOWNSTREAM OF CENTER OF LOT.

UTILITY LEGEND

SEWER GENERAL NOTES

1. WATER AND SANITARY SEWER SEPARATION (VERTICAL AND HORIZONTAL) SHALL BE MAINTAINED IN ACCORDANCE WITH TCEQ REQUIREMENTS.
2. CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
3. ALL SANITARY SEWER LINES ARE 8" ASTM 3034 SDR-26 UNLESS OTHERWISE NOTED.
4. ALL SANITARY SEWER SERVICES TO BE 6".
5. ADJUSTED SERVICES DUE TO CONFLICTS (I.E. MANHOLES, INLETS, TRENCH CONFLICTS OR NON-STANDARD PLACEMENT) = ★

SERVICE LATERALS

ITEM	SIZE	QUANTITY	TYPE
SERVICE LATERAL	6"	1 EA.	CONNECTION

CURVE TABLE

CURVE	RADIUS	LENGTH	CHORD BEARING	CHORD	DELTA	TANGENT
C13	500.00'	141.18'	N3°38'18"E	140.68'	13°28'53"	70.92'
C14	1000.00'	88.41'	N83°30'37"W	88.38'	5°03'55"	44.23'
C15	1000.00'	77.99'	S88°13'28"E	77.97'	4°25'43"	38.97'
C16	300.00'	184.85'	S74°44'54"E	182.58'	31°28'46"	94.46'
C17	300.00'	67.15'	N14°31'02"E	67.01'	12°49'31"	33.72'
C18	1000.00'	190.55'	N86°28'11"W	190.26'	10°55'04"	95.56'
C19	300.00'	92.85'	N85°43'28"W	92.75'	9°29'38"	47.02'
C20	400.00'	134.28'	N80°51'21"W	133.63'	19°13'31"	67.77'
C21	300.00'	37.09'	N67°41'56"W	37.06'	7°04'66"	18.57'
C22	400.00'	202.07'	N78°37'48"W	199.93'	28°56'42"	103.24'
C23	300.00'	27.44'	S88°31'03"W	27.43'	5°14'24"	13.73'
C24	300.00'	70.59'	N86°21'42"W	70.43'	13°28'33"	35.46'
C25	300.00'	155.19'	N70°17'00"W	153.46'	29°36'18"	79.37'
C26	1000.00'	143.55'	S28°57'18"W	143.44'	8°13'32"	71.91'
C27	300.00'	94.59'	N75°18'10"W	94.20'	18°03'57"	47.69'
C28	500.00'	270.52'	N80°11'10"W	266.33'	23°48'57"	137.60'
C29	1368.00'	102.31'	N81°29'04"W	102.28'	4°16'45"	51.18'
C30	2014.00'	481.73'	N88°12'18"W	480.58'	13°42'17"	242.02'

SEWER GENERAL NOTES

1. WATER AND SANITARY SEWER SEPARATION (VERTICAL AND HORIZONTAL) SHALL BE MAINTAINED IN ACCORDANCE WITH TCEQ REQUIREMENTS.
2. CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
3. ALL SANITARY SEWER LINES ARE 8" ASTM 3034 SDR-26 UNLESS OTHERWISE NOTED.
4. ALL SANITARY SEWER SERVICES TO BE 6".
5. ADJUSTED SERVICES DUE TO CONFLICTS (I.E. MANHOLES, INLETS, TRENCH CONFLICTS OR NON-STANDARD PLACEMENT) = ☆

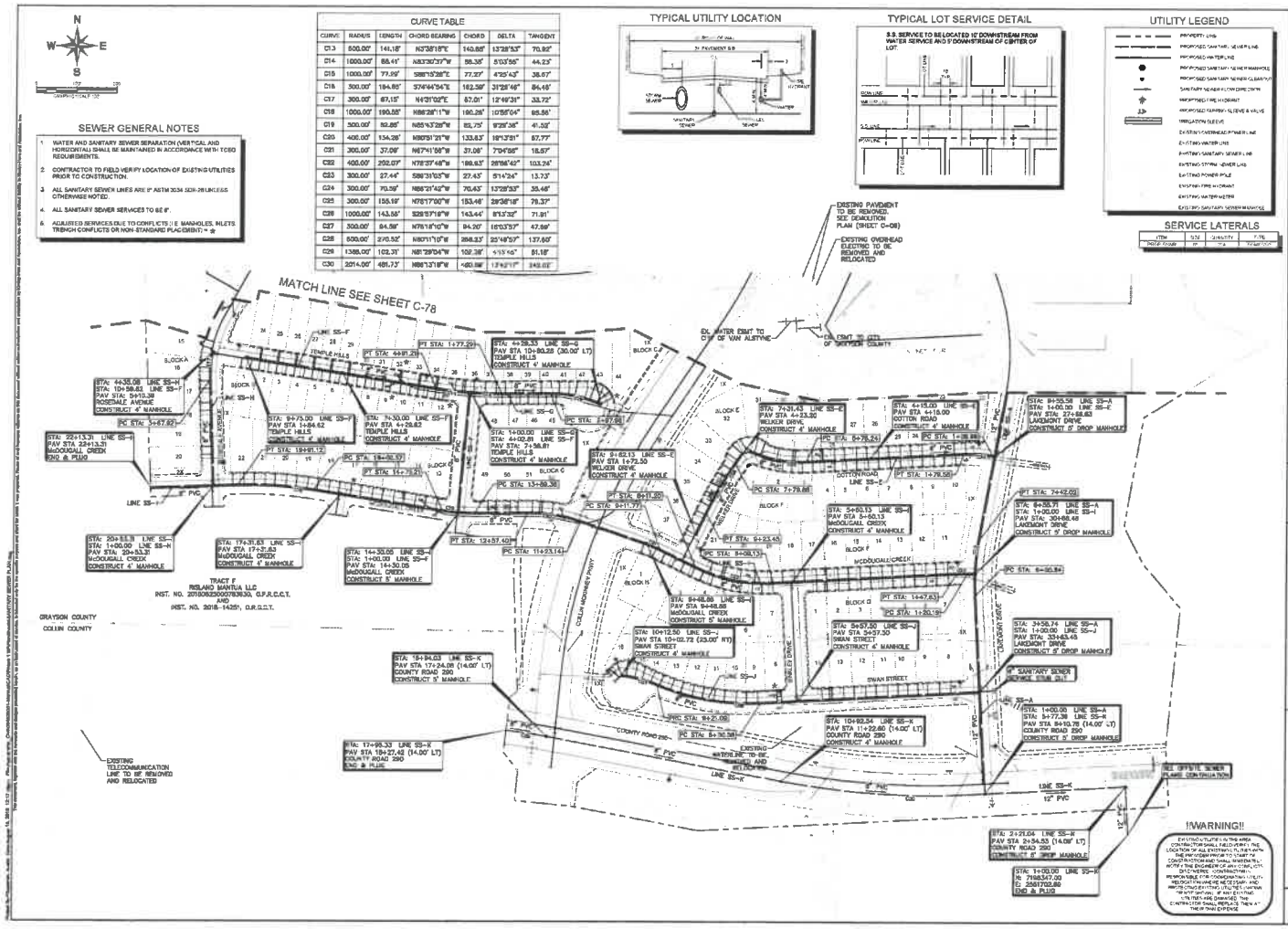
TYPICAL UTILITY LOCATION

TYPICAL LOT SERVICE DETAIL

UTILITY LEGEND

SERVICE LATERALS

ITEM	SIZE	QUANTITY	TYPE
PROP. SEWER	6"	[illegible]	[illegible]



Kimley»Horn

PRELIMINARY

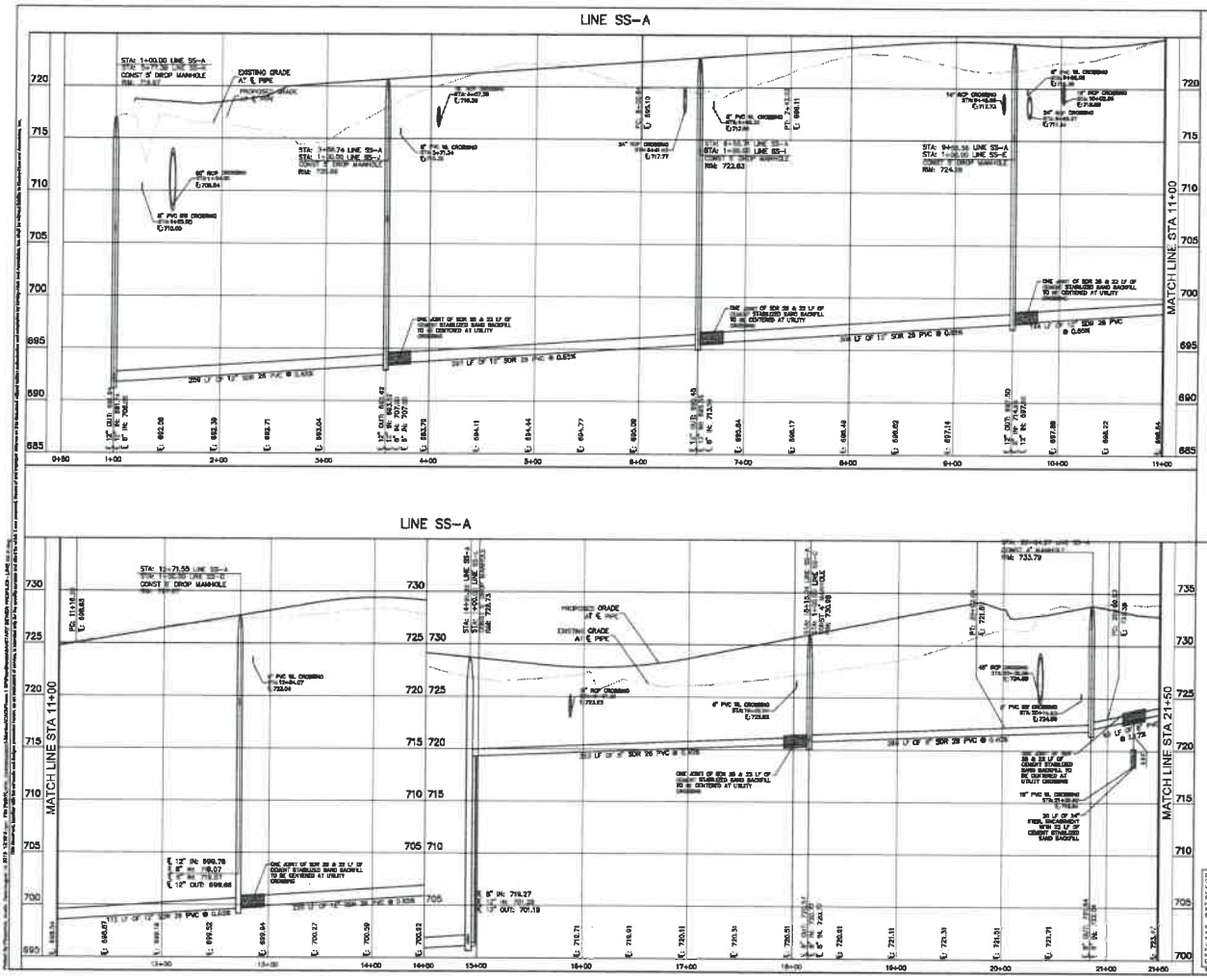
No.	REVISIONS	DATE	BY

RDA PROJECT	
DATE	AUGUST 2019
Drawn by:	J.D. BROWN
Checked by:	JDB
Drawing:	TOC
HCTS Tab:	TOC

SANITARY SEWER PLAN

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-79



BENCHMARKS

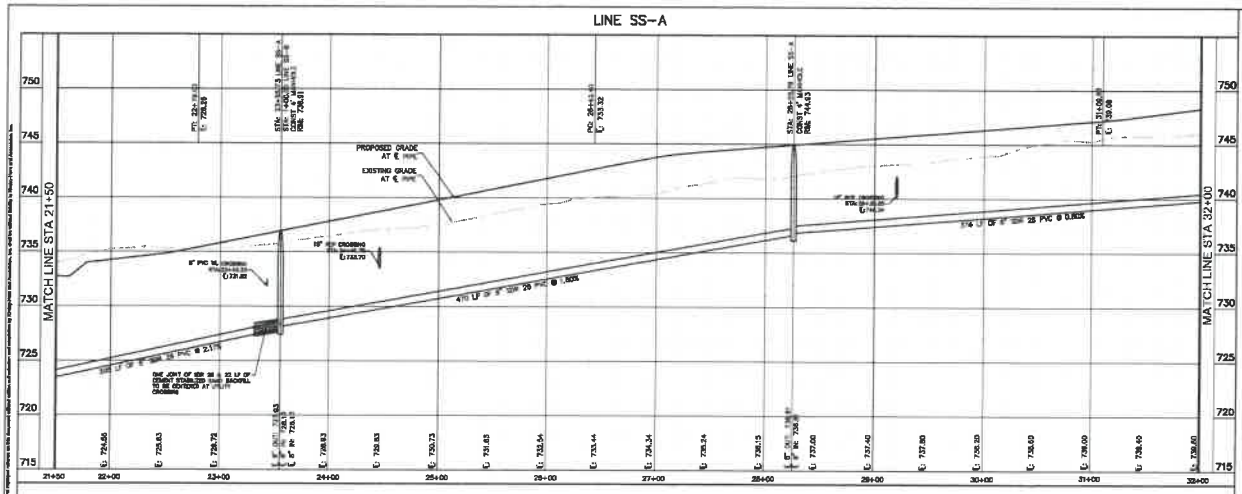
REVISIONS	DATE	BY

Kimley»Horn

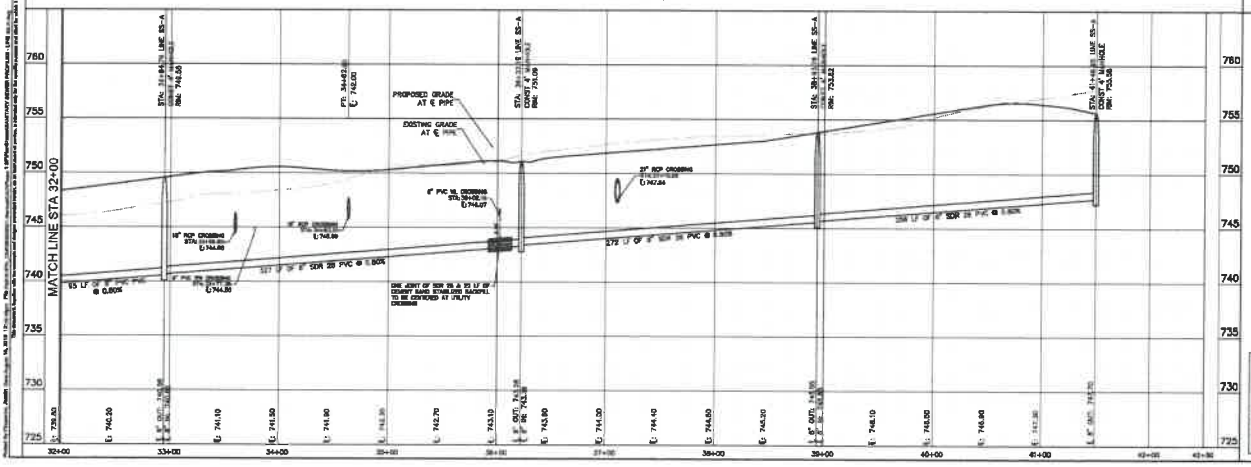
SANITARY SEWER PROFILES - LINE SS-A

MANTUA POINT
PHASE 1
CITY OF VANALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

C-80



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



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

BENCHMARKS

No	REVISIONS	DATE	BY

Kimley»Horn

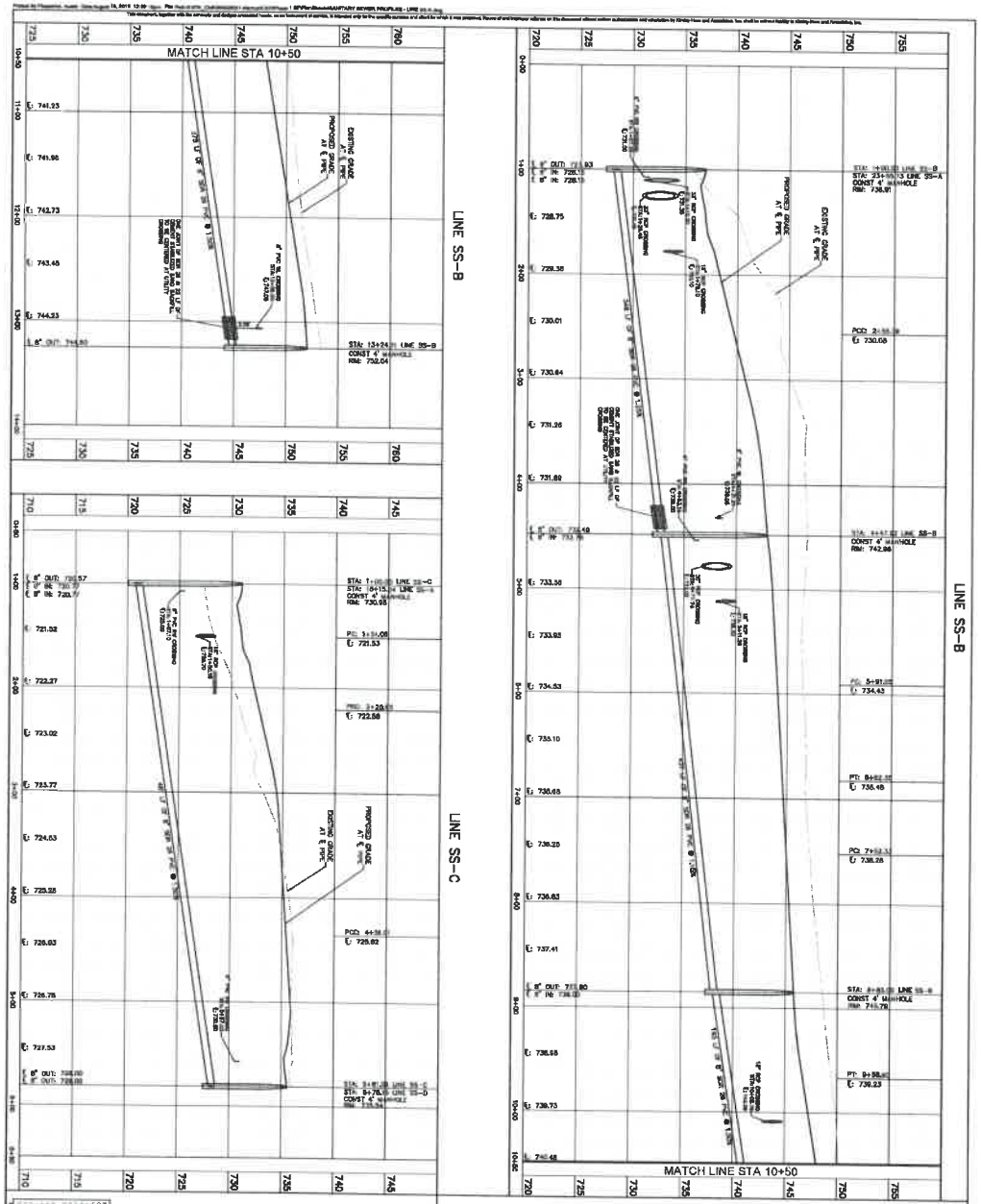
PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING PURPOSES
Kimley»Horn

KHA PROJECT NUMBER	
DATE	AUGUST 2018
SCALE	AS SHOWN
DESIGNED	JBA
DRAWN BY	JBA
CHECKED BY	TGC

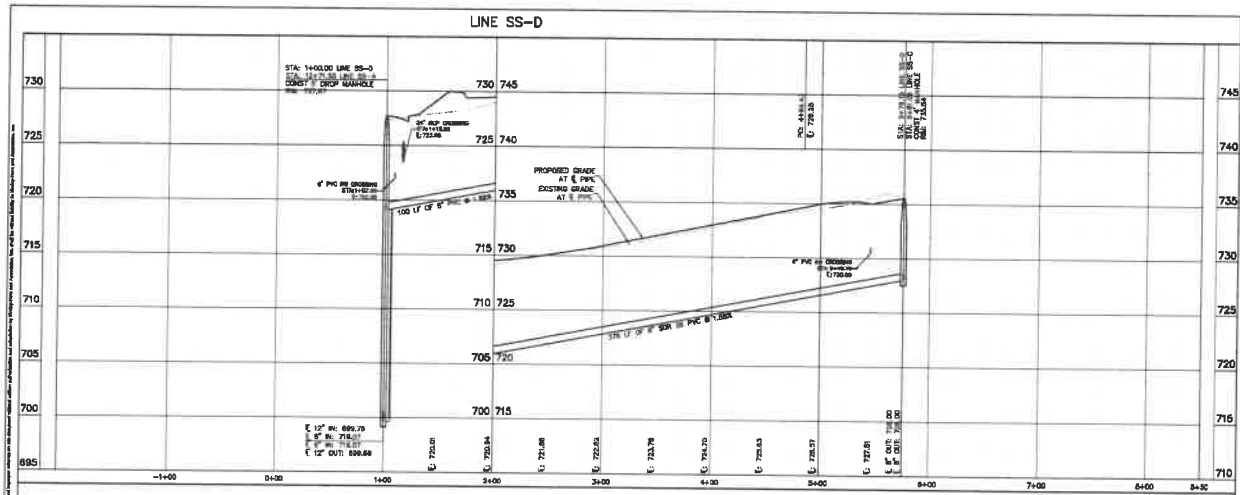
SANITARY SEWER PROFILES - LINE SS-A

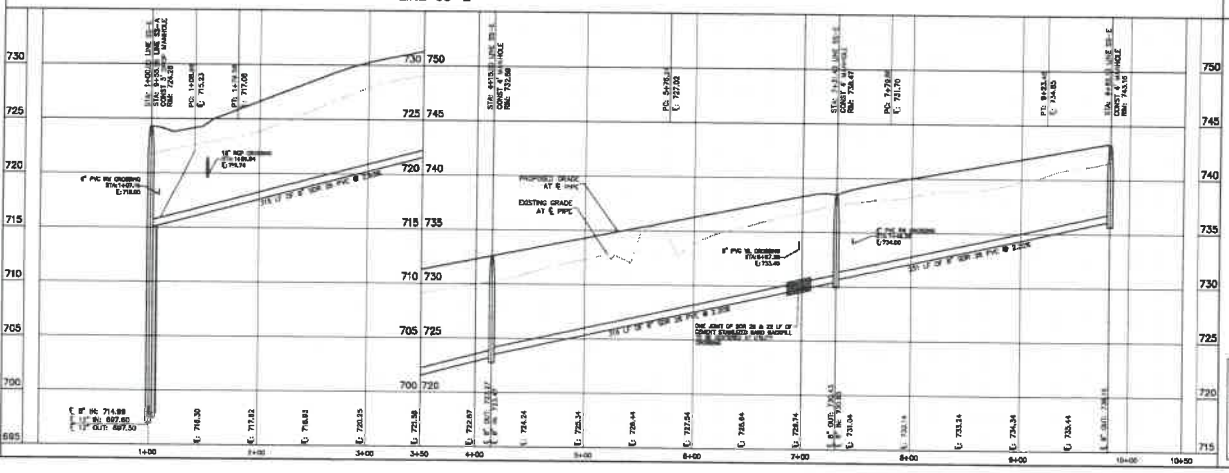
MANTUA POINT
PHASE 1
CITY OF VANALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-81



SHEET NUMBER C-B2	MANTUA POINT PHASE 1 CITY OF VAN ALSTYNE GRAYSON AND COLLIN COUNTY, TEXAS	SANITARY SEWER PROFILES - LINE SS-B & LINE SS-C	KHA PROJECT 069039001 DATE AUGUST 2019 DESIGNED AS SHOWN REVIEWED MRM DRAWN JBA CHECKED TGC	Kimley»Horn	No. REVISIONS DATE BY





BENCHMARKS

No.	REVISIONS	DATE	BY

Kimley»Horn

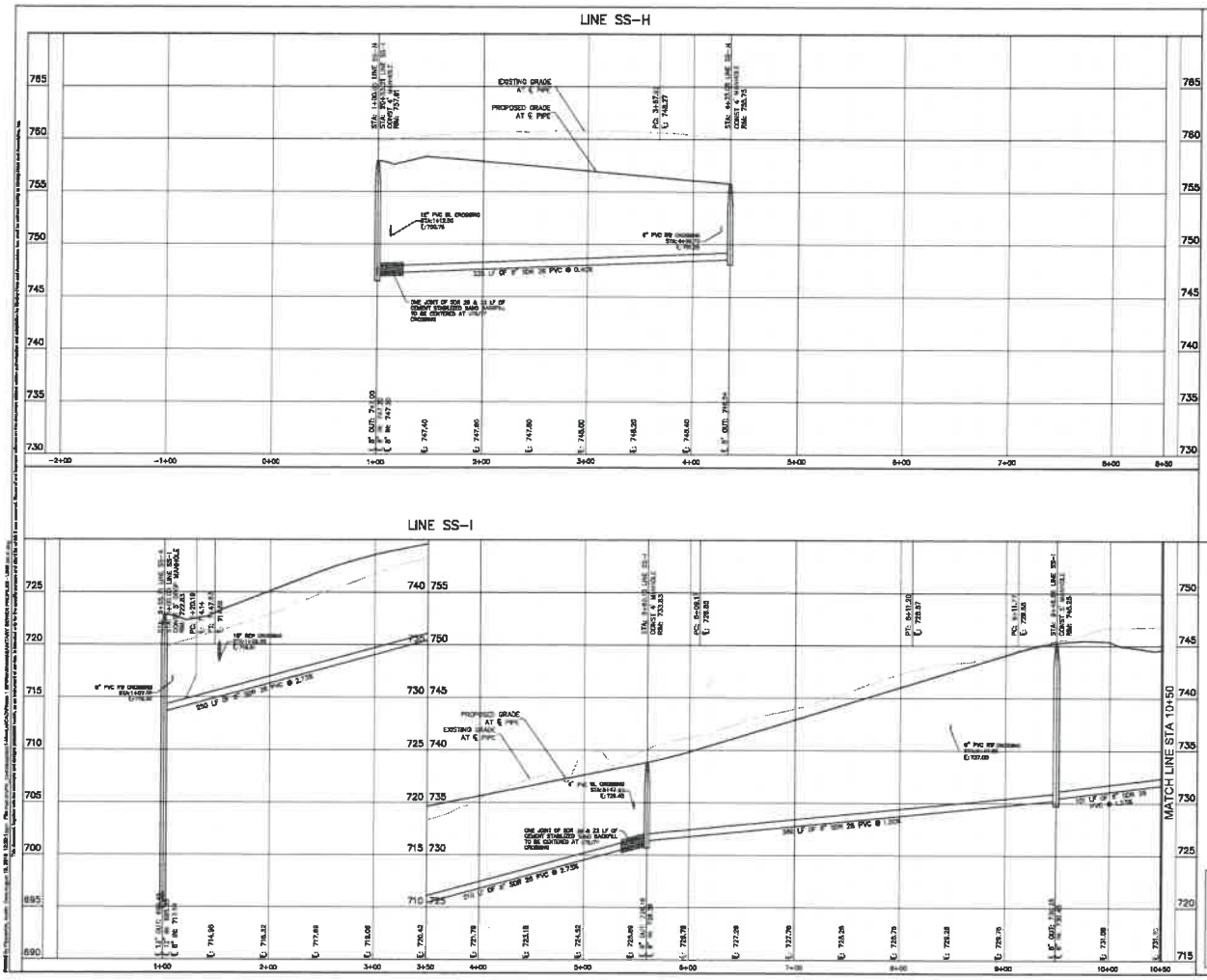
DATE	AUGUST 2019
DESIGNED	JBA
DRAWN	JBA
APPROVED	TGC

SANITARY SEWER PROFILES - LINE SS-D & LINE SS-E

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-83

LINE SS-F
PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL
EXISTING GRADE AT ℄ PIPE
PROPOSED GRADE AT ℄ PIPE
LINE SS-G
PROFILE SCALE
1" = 40' HORIZONTAL
1" = 4' VERTICAL
EXISTING GRADE AT ℄ PIPE
BENCHMARKS
Kimley»Horn
SANITARY SEWER PROFILES - LINE SS-F & LINE SS-G
MANTUA POINT
PHASE 1
CITY OF MANALISTINE
GRAYSON AND COLLIN COUNTY, TEXAS
SHEET NUMBER
C-84



Kimley»Horn

SANITARY SEWER PROFILES - LINE SS-H & LINE SS-I

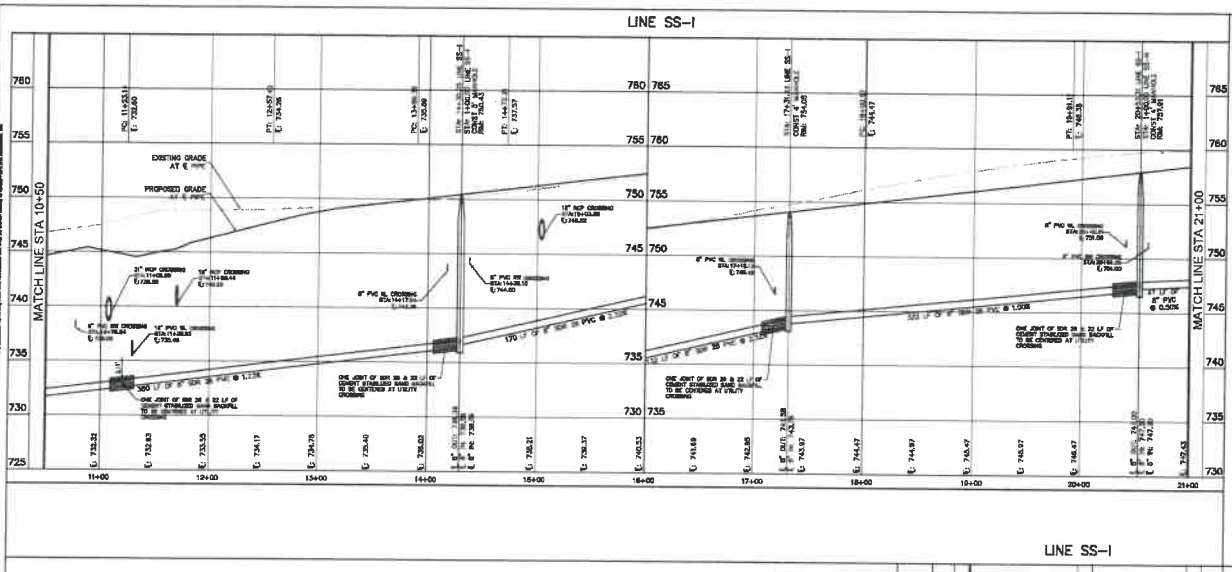
MANTUA POINT PHASE 1

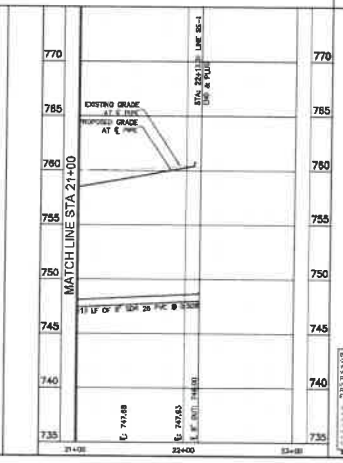
CITY OF VAN ALSTYNE

GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER

C-85





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BENCHMARKS

No	REVISIONS	DATE	BY

Kimley»Horn

PRELIMINARY

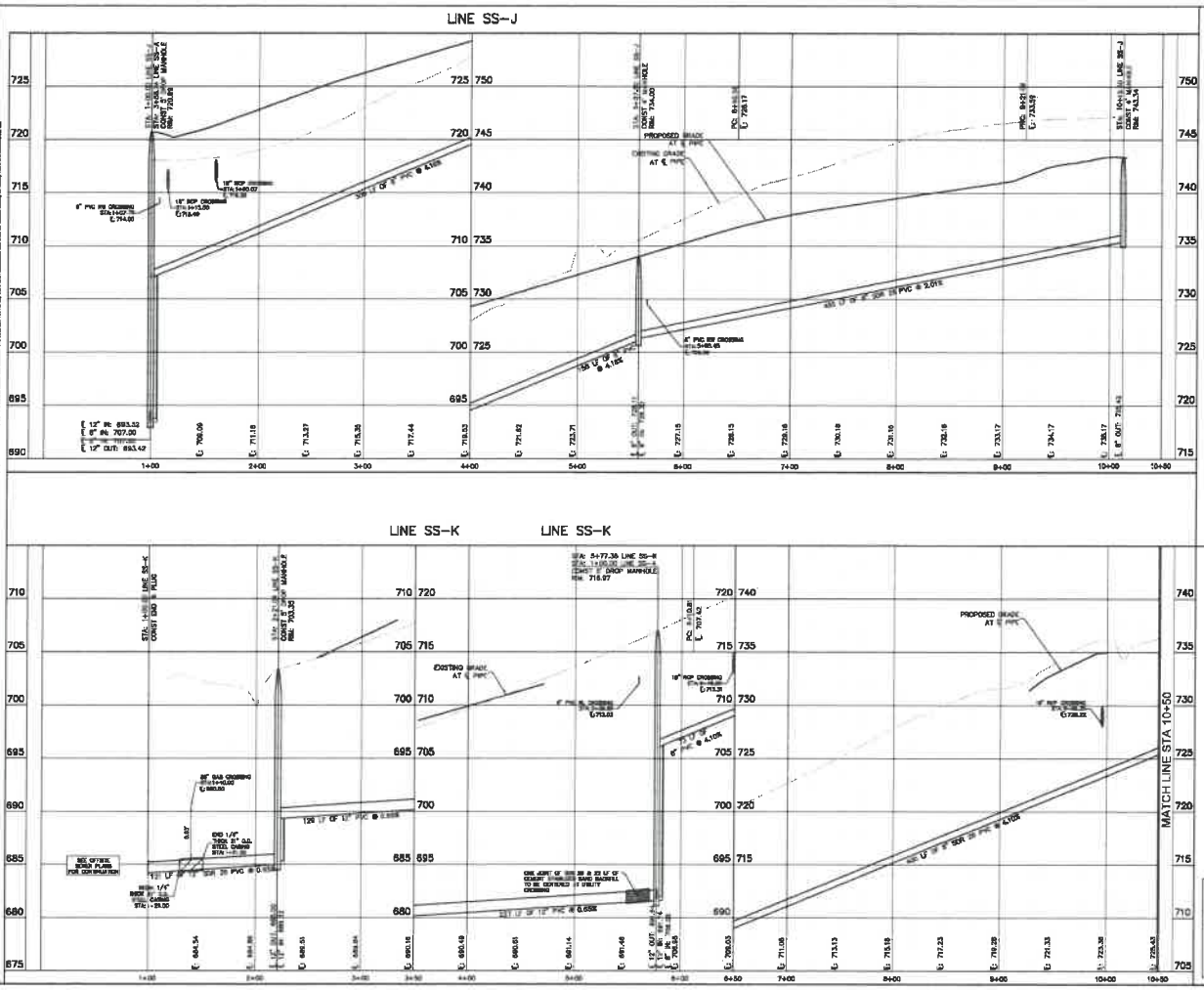
Kimley»Horn

KH PROJECT NUMBER: 069111001
DATE: AUGUST 2019
SCALE: 1" = 40' HORIZ. 1" = 4' VERT.
DESIGNED: BRWM
DRAWN: JBA
REVIEWED: TGC

SANITARY SEWER PROFILES - LINE SS-I

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-86



BENCHMARKS

Kimley»Horn

SANITARY SEWER PROFILES - LINE SS-J & LINE SS-K

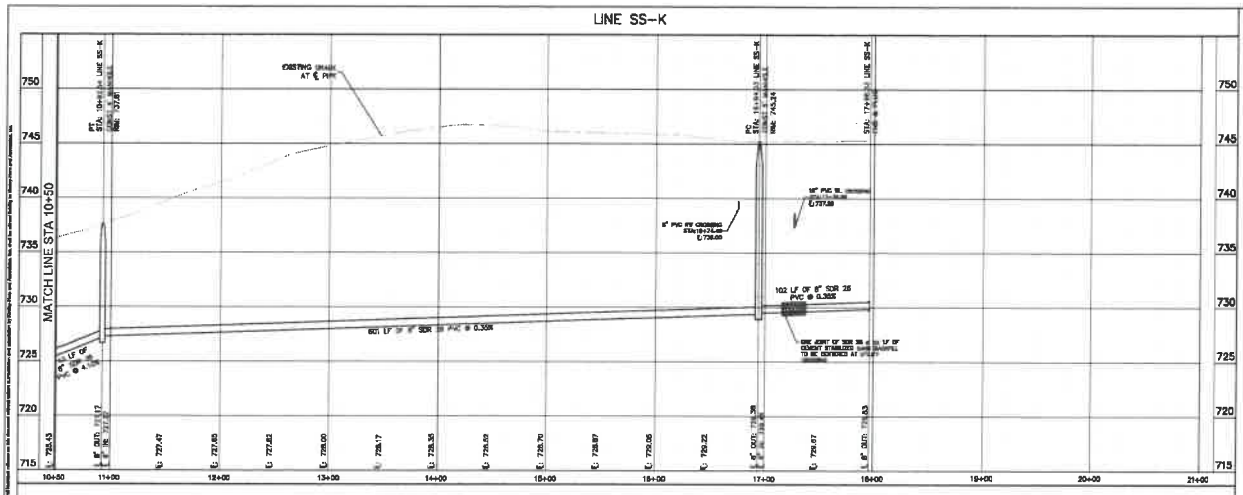
MANTUA POINT PHASE 1

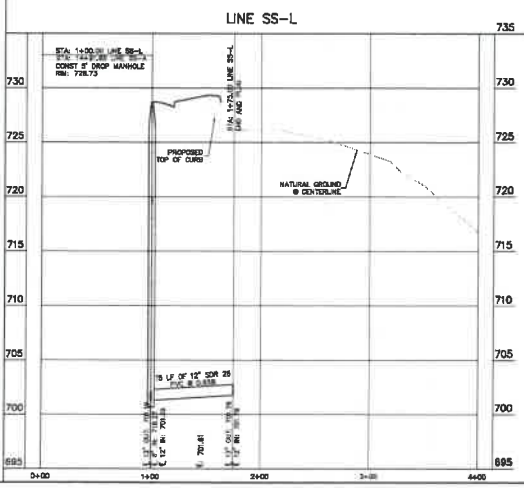
CITY OF WAXAHACHIE

GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER

C-87





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

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

BENCHMARKS

No.	REVISIONS	DATE	BY

Kimley»Horn

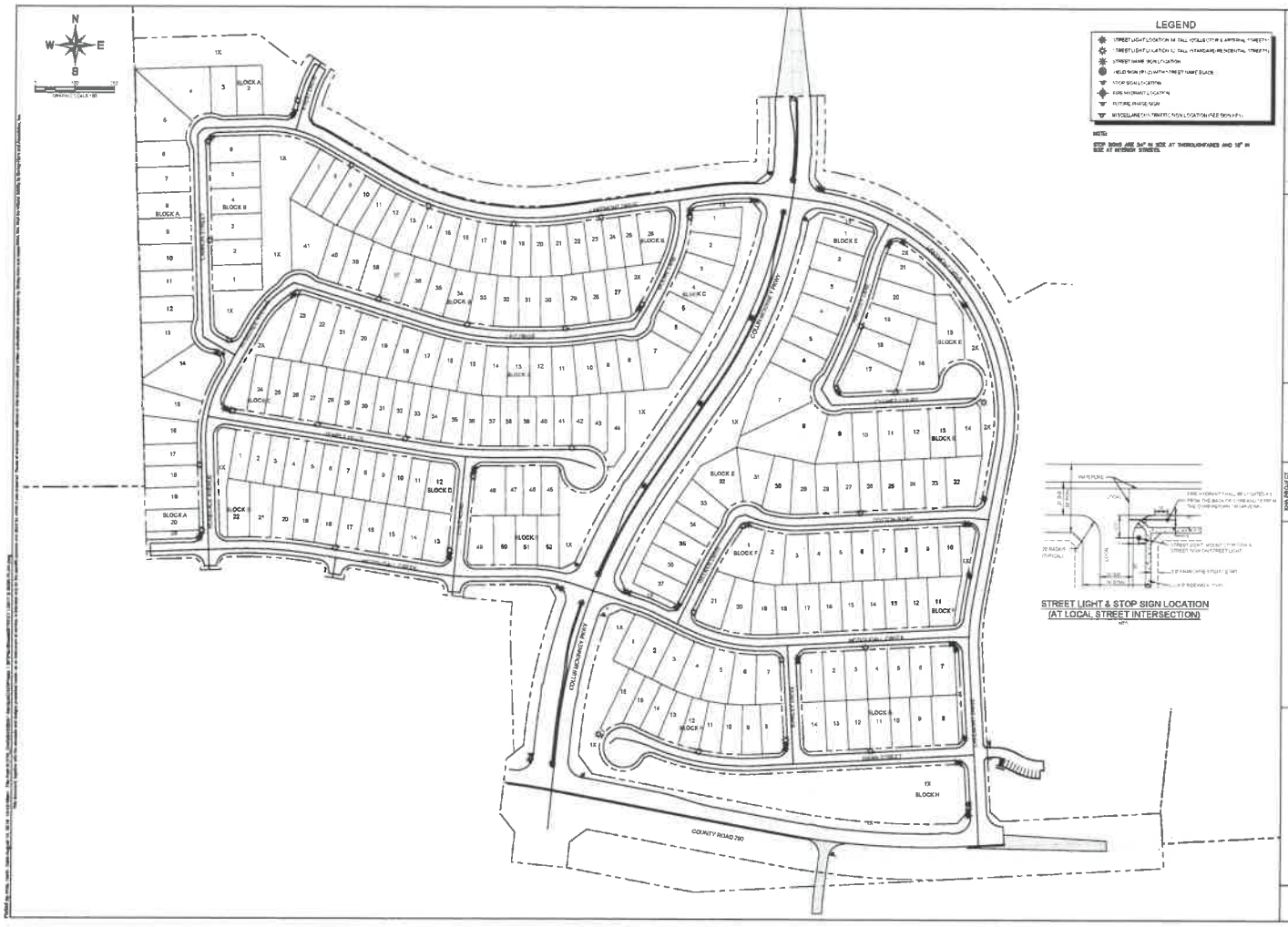
PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING PURPOSES
Kimley»Horn
Registered Texas Firm F-928

RGN PROJECT NUMBER
DATE
AUGUST 2019
DESIGNED: SRM
DRAWN: JBA
CHECKED: TDC

SANITARY SEWER PROFILES - LINE SS-K

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-88

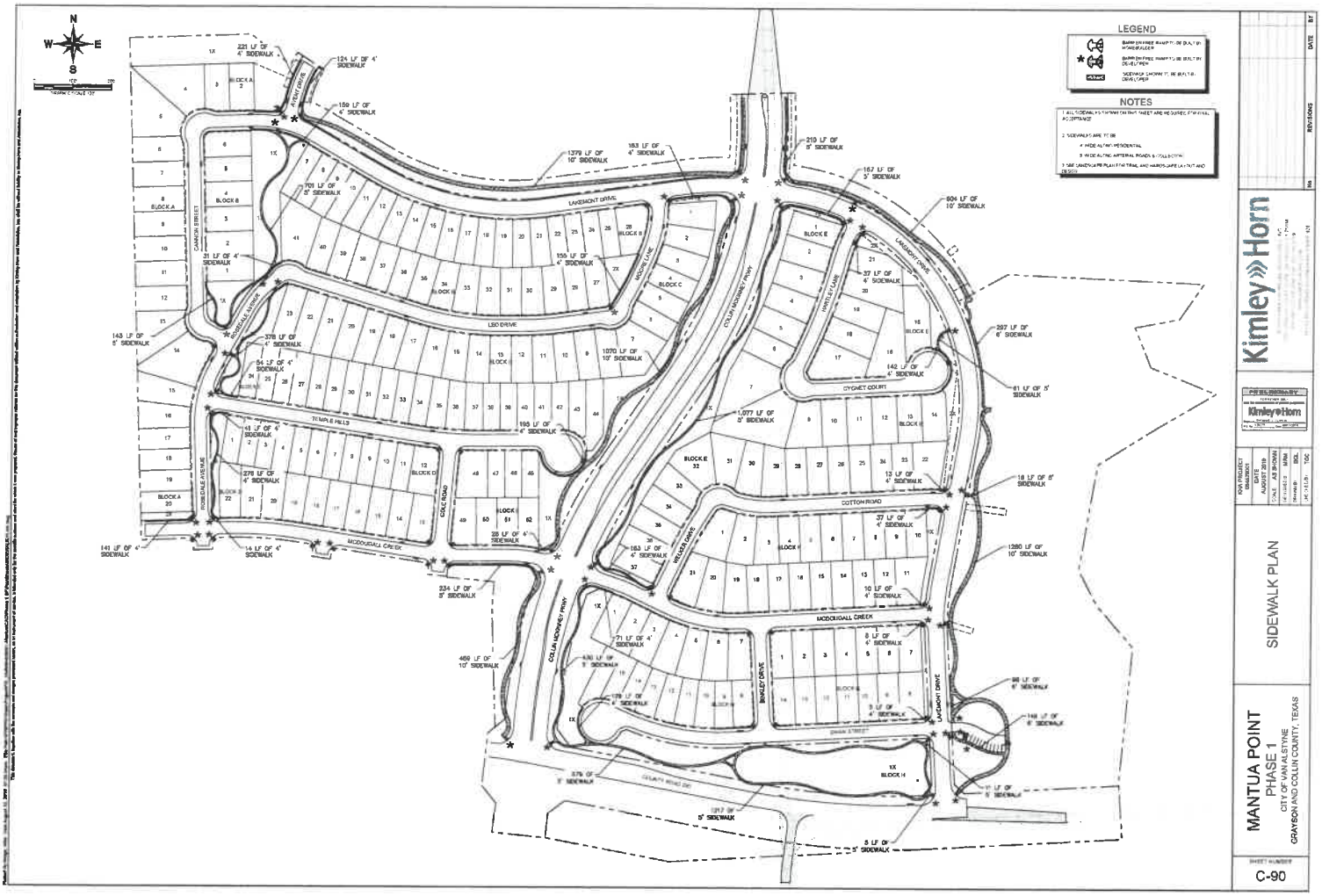


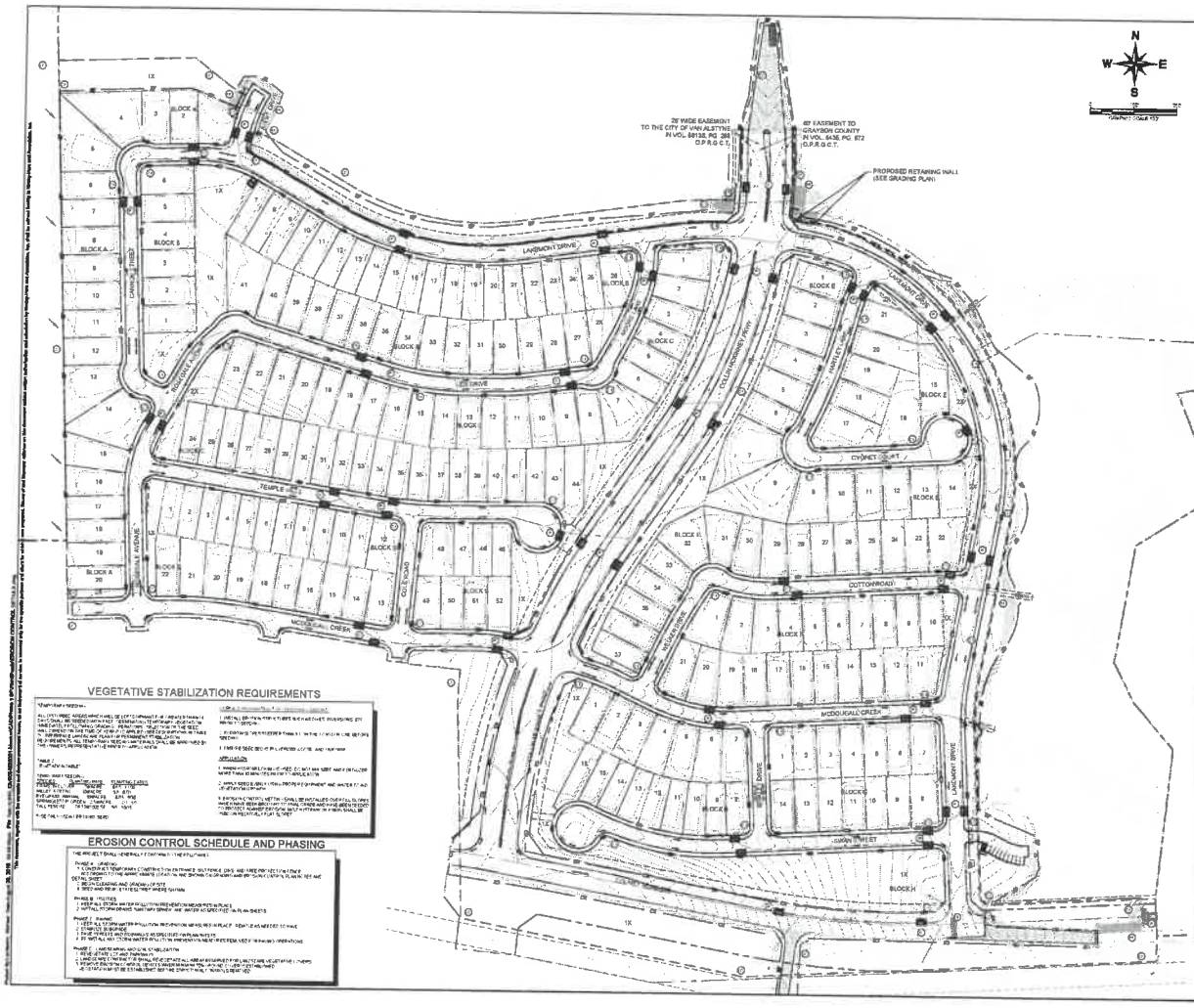
Kimley»Horn

STREET LIGHT & SIGN PLAN

MANTUA POINT
PHASE 1
CITY OF FAIRVIEW
GRAYSON AND COLLIN COUNTY, TEXAS

C-89


LEGEND
NOTES
LAKEMONT DRIVE
LEO DRIVE
TEMPLE HILLS
MCDOUGALL CREEK
COLLIN MCKINNEY PKWY
COTTON ROAD
CYGNET COURT
COLE ROAD
BIGKLEY DRIVE
CAMPUS STREET
ROSEDALE AVENUE
MOON DRIVE
MOON LANE
HELLER LANE
WHITE PLAINS
SIDEWALK PLAN
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS
C-90
Kimley»Horn



EROSION CONTROL LEGEND

	PROPOSED CONTOUR
	EXISTING CONTOUR
	HIGH POINT
	TABLE
CO	CURBS
SF	SILT FENCE
LP	LIMITS OF DISTURBANCE
CE	CONSTRUCTION ENTRANCE/EXIT
IP	INLET PROTECTION
CD	BRICK CHECK DAM
TP	TREE PROTECTION
SM	MANHOLE

STANDARD EROSION CONTROL GENERAL NOTES

1. GRADING PATTERNS SHOWN ON THIS PLAN SHALL BE ESTABLISHED PRIOR TO THE START OF LAND DISTURBING ACTIVITIES ON THE PROJECT.
2. ALL EROSION CONTROL DEVICES MUST BE IN PLACE IN ACCORDANCE WITH THE APPROVED PLAN AND MAINTAINED THROUGHOUT THE PROJECT. CHANGES ARE TO BE MADE AND REPORTED TO THE CONSTRUCTION ON THE DISCRETION OF THE CITY ENGINEER AND EPSCOR.
3. AFTER EROSION CONTROL PLAN AS APPROVED CAUSES FAILURE TO CONTROL EROSION AND OFF SITE SEDIMENTATION FROM THE PROJECT, THE EROSION CONTROL PLAN WILL BE REQUIRED TO BE REVISED AND/OR ADDITIONAL EROSION CONTROL DEVICES WILL BE ADDED ON SITE.
4. VEHICLE TIRES SHALL BE MADE HEEDFUL AND AFTER EACH TRIP THEY SHALL BE SWEPT AND THE DEBRIS REMOVED FROM PUBLIC WAYS. ALL DIRT, MUD, ROCKS, DEBRIS, ETC. TRACKED ONTO PUBLIC WAYS SHALL BE REMOVED BY HAND OR WITH A PUBLIC SWEEPER. THE SEDIMENT AND MUST BE SWEPT DOWN OR REPLACED. SWEEP PRIOR TO THE END OF EACH WORKING DAY. THE PROJECT CONTRACTOR SHALL OFFER AND MAINTAIN FULL TIME SERVICE TO SWEEP ALL OFF SITE SEDIMENTATION REGARDLESS OF CAUSE, UNTIL THE EROSION PREVENTION HAS BEEN RESTORED AND THE EFFICIENCY OF THE INSTALLATION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING A NOI AND MAY ADDITIONAL INFORMATION NEED BED IN THE TCEQ WEBSITE. THE NOI MUST BE SENT TO THE CITY ENGINEER FOLLOWING RECEIPT OF THE NOI ON HAND.

SITE MAP GENERAL NOTES

CONTRACTOR IS SOLELY RESPONSIBLE FOR INSPECTION, MAINTENANCE AND REPAIR OF ALL EROSION CONTROL DEVICES ON THIS SITE AND ADJACENT CONTROLS ONLY.

CONTRACTOR SHALL REPAIR ANY DETRITUS WHICH PRIMARILY THE MODIFICATION AND REPAIRING OF ALL EROSION CONTROL DEVICES WHICH FAILED DUE TO THE ORIGINAL CONTRACTOR'S INSTALLATION ON THE SITE.

DRAINAGE PATTERNS ARE SHOWN ON THE PLAN BUT DO NOT ADD EXISTING CONTOURS, FLOW ARROWS AND/OR SUTTERS.

CONTRACTOR AND REPAIRER TEMPORARY EROSION CONTROL DEVICES SHALL BE INSTALLED AT THE EARLIEST POSSIBLE TIME DURING THE CONSTRUCTION SEQUENCE. AS ADDITIONAL REPAIRS OR CHANGES SHALL BE INSTALLED BY THE CONTRACTOR AT THE DISCRETION OF THE CITY ENGINEER. ALL DEVICES SHALL BE MAINTAINED IN GOOD WORKING ORDER UNTIL FINAL SITE STABILIZATION IS ACHIEVED. CONTRACTOR SHALL NOT REMOVE ANY DEVICE PRIOR TO THE ENGINEER'S APPROVAL. ALL DEVICES PROVIDED BY CONTRACTOR SHALL BE REMOVED AND DISPOSED OFF SITE.

BMP'S HAVE BEEN CREATED AS INDICATED ON THIS PLAN IN ACCORDANCE WITH CURRENT NCTCOG STORMWATER ENGINEERING PRACTICES IN ORDER TO MINIMIZE SEDIMENT TRANSPORT. THE BMP'S HAVE BEEN PLACED AS CLOSE TO THE NEC AND THE PROPERTY AS THE NATURE FLOW PATTERNS SHOWN FROM SITE WILL AIR.

SANITARY SEWER STAKE OUT IS ONE FOOT OFF OF AN AND WATER SEWER SYSTEM CONNECTED TO A MUNICIPAL SEWER SYSTEM.

BMP MAINTENANCE SCHEDULE

TEMPORARY FOR CONSTRUCTION ENTRANCE EXIT

INSPECTIONS SHALL BE MADE WEEKLY AND AFTER EVERY RAINFALL EVENT. STONE AND SURFACE MATERIAL TO BE REPLACED WHEN THE EXISTING SURFACE MATERIAL IS NO LONGER FUNCTIONAL. ALL SEDIMENT HAULED ONTO THE PUBLIC STREETS SHALL BE REMOVED IMMEDIATELY. THE VEHICLE TIRES BETWEEN THE STREET AND THE JOB SITE SHALL BE SWEPT AND THE PROJECT CONTRACTOR IS RESPONSIBLE FOR REMOVING ANY SEDIMENT TRACKED ONTO THE STREET.

SILT FENCE

INSPECTIONS SHALL BE MADE WEEKLY AND AFTER RAIN EVENTS. SEDIMENT SHALL BE REMOVED TO BE BEHIND THE FENCE WHEN THE LEVEL OF SEDIMENT HAS BUILT UP TO THE THIRD FENCE POST. THE FENCE SHALL BE REPAIRED IMMEDIATELY IF THE FENCE BECOMES DAMAGED. ANY SEDIMENT CONTAINED WITHIN THE FENCE SHALL BE REMOVED AND DISPOSED OF.

STONE INSPECTION CHECK DAM

INSPECTIONS SHALL BE MADE WEEKLY AND AFTER RAIN EVENTS. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT HAS BUILT UP TO HALF THE HEIGHT OF THE DAM. ANY DAMAGED AREAS WHEN SEDIMENT STILL HAS BEEN REMOVED. THE DAMAGED AREAS SHALL BE REPAIRED. ANY DISCHARGE OF SEDIMENT OF THE REPAIR MUST BE REMOVED FROM THE DOWNSTREAM EROSION.

ROCK CHECK DAM

INSPECTIONS SHALL BE MADE WEEKLY AND AFTER ALL RAIN EVENTS. ENSURE THAT THE DEVICE IS FUNCTIONING PROPERLY. REMOVE SEDIMENT FROM THE DRAINAGE AREA UPSTREAM OF THE DAM WHEN THE DEPTH OF SEDIMENT HAS BEEN LIKELY THE HEIGHT OF THE DAM HIGHER. REMOVE THE SEDIMENTS IN THE CHANNEL IN THE DAM. IF THERE HAS BEEN SIGNIFICANT DAMAGE TO THE DAM, REPAIR THE DAM. ANY DAMAGED AREAS SHALL BE REPAIRED AS NEEDED TO MAINTAIN THE DESIGNED HEIGHT AND FORM SECTION OF THE CHECK DAM.

CURB INLET PROTECTION

INSPECTIONS SHALL BE MADE WEEKLY AND AFTER ALL RAIN EVENTS. ENSURE THAT THE DEVICE IS FUNCTIONING PROPERLY. REMOVE SEDIMENT FROM THE DRAINAGE AREA UPSTREAM OF THE DAM WHEN THE DEPTH OF SEDIMENT HAS BEEN LIKELY THE HEIGHT OF THE DAM HIGHER. REMOVE THE SEDIMENTS IN THE CHANNEL IN THE DAM. IF THERE HAS BEEN SIGNIFICANT DAMAGE TO THE DAM, REPAIR THE DAM. ANY DAMAGED AREAS SHALL BE REPAIRED AS NEEDED TO MAINTAIN THE DESIGNED HEIGHT AND FORM SECTION OF THE CHECK DAM.

VEGETATIVE STABILIZATION REQUIREMENTS

TEMPORARY SEEDING

ALL DISTURBED AREAS WHICH WILL BE DORMANT FOR 14 DAYS OR MORE SHALL BE SEEDED WITH A FAST GERMINATING TEMPORARY VEGETATION. HAND EATS, FERTILIZING, GRADING, REPAIRING, ETC. MUST WORK IN THE SEED. IN SUMMER MONTHS, A MIXTURE OF WHEAT, RYE OR OATS MAY BE SUFFICIENT. IN THE WINTER MONTHS, A MIXTURE OF WHEAT, RYE, OATS OR TEMPORARY TURF GRASS MAY BE REQUIRED. FOLLOW THE SEED WITH A LIGHT MULCH. ALL SEEDED AREAS MUST BE WATERED IN. APPLICATION

1. INSTALL EROSION PREVENTION MEASURES BEFORE THE BEGINNING OF ANY SITE DISTURBANCE.
2. PROTECT ALL EXISTING VEGETATION THAT IS NOT TO BE DISTURBED DURING CONSTRUCTION.
3. MAINTAIN EROSION PREVENTION MEASURES DURING CONSTRUCTION.
4. REMOVE EROSION PREVENTION MEASURES AFTER FINAL STABILIZATION.

EROSION CONTROL SCHEDULE AND PHASING

THE PROJECT SHALL GENERALLY CONTAIN THE FOLLOWING:

PHASE 1 GRADING
1. CONTRACTS TEMPORARY CONTROLS ON THE WEST SIDE OF THE DRAINAGE AREA AND THE PROJECT IN THE APPROXIMATE LOCATION AS SHOWN ON GRADING AND EROSION CONTROL PLAN SHEETS, SEE AND DETAILS.
2. BEGIN CLEARING AND GRADING OF SITE
3. BEGIN AND REPAIR STAKE FOR WHERE SUITABLE

PHASE 2 PIPELINES
1. INSTALL STORM WATER POLLUTION PREVENTION MEASURES AS PLANS
2. INSTALL STORM SEWER, SANITARY SEWER, AND WATER AS SPECIFIED ON PLAN SHEETS

PHASE 3 PAVING
1. INSTALL STORM WATER POLLUTION PREVENTION MEASURES AS PLANS NOTES
2. STAKE THE SUBGRADE
3. PAVE THE STREETS AS ACCEPTABLE AS SPECIFIED ON PLAN NOTES
4. INSTALL ALL STORM WATER POLLUTION PREVENTION MEASURES FROM USE OF STREETS OPERATIONS

PHASE 4 LANDSCAPING AND SITE STABILIZATION
1. REVEGETATE CUT AND FILL SLOPES
2. LANDSCAPE THE PARKS AND SHALL REVEGETATE ALL AREAS DISTURBED BY INSTALLATION AND LATERAL LINES
3. REMOVE EROSION CONTROL DEVICES WHEN REMOVAL WOULD NOT CAUSE SEDIMENTATION
4. REVEGETATION MUST BE ESTABLISHED BEFORE STABILITY WILL BE ACCEPTED

BMP MAINTENANCE SCHEDULE

TEMPORARY FOR CONSTRUCTION ENTRANCE EXIT

INSPECTIONS SHALL BE MADE WEEKLY AND AFTER EVERY RAINFALL EVENT. STONE AND SURFACE MATERIAL TO BE REPLACED WHEN THE EXISTING SURFACE MATERIAL IS NO LONGER FUNCTIONAL. ALL SEDIMENT HAULED ONTO THE PUBLIC STREETS SHALL BE REMOVED IMMEDIATELY. THE VEHICLE TIRES BETWEEN THE STREET AND THE JOB SITE SHALL BE SWEPT AND THE PROJECT CONTRACTOR IS RESPONSIBLE FOR REMOVING ANY SEDIMENT TRACKED ONTO THE STREET.

SILT FENCE

INSPECTIONS SHALL BE MADE WEEKLY AND AFTER RAIN EVENTS. SEDIMENT SHALL BE REMOVED TO BE BEHIND THE FENCE WHEN THE LEVEL OF SEDIMENT HAS BUILT UP TO THE THIRD FENCE POST. THE FENCE SHALL BE REPAIRED IMMEDIATELY IF THE FENCE BECOMES DAMAGED. ANY SEDIMENT CONTAINED WITHIN THE FENCE SHALL BE REMOVED AND DISPOSED OF.

STONE INSPECTION CHECK DAM

INSPECTIONS SHALL BE MADE WEEKLY AND AFTER RAIN EVENTS. SEDIMENT SHALL BE REMOVED WHEN THE LEVEL OF SEDIMENT HAS BUILT UP TO HALF THE HEIGHT OF THE DAM. ANY DAMAGED AREAS WHEN SEDIMENT STILL HAS BEEN REMOVED. THE DAMAGED AREAS SHALL BE REPAIRED. ANY DISCHARGE OF SEDIMENT OF THE REPAIR MUST BE REMOVED FROM THE DOWNSTREAM EROSION.

ROCK CHECK DAM

INSPECTIONS SHALL BE MADE WEEKLY AND AFTER ALL RAIN EVENTS. ENSURE THAT THE DEVICE IS FUNCTIONING PROPERLY. REMOVE SEDIMENT FROM THE DRAINAGE AREA UPSTREAM OF THE DAM WHEN THE DEPTH OF SEDIMENT HAS BEEN LIKELY THE HEIGHT OF THE DAM HIGHER. REMOVE THE SEDIMENTS IN THE CHANNEL IN THE DAM. IF THERE HAS BEEN SIGNIFICANT DAMAGE TO THE DAM, REPAIR THE DAM. ANY DAMAGED AREAS SHALL BE REPAIRED AS NEEDED TO MAINTAIN THE DESIGNED HEIGHT AND FORM SECTION OF THE CHECK DAM.

CURB INLET PROTECTION

INSPECTIONS SHALL BE MADE WEEKLY AND AFTER ALL RAIN EVENTS. ENSURE THAT THE DEVICE IS FUNCTIONING PROPERLY. REMOVE SEDIMENT FROM THE DRAINAGE AREA UPSTREAM OF THE DAM WHEN THE DEPTH OF SEDIMENT HAS BEEN LIKELY THE HEIGHT OF THE DAM HIGHER. REMOVE THE SEDIMENTS IN THE CHANNEL IN THE DAM. IF THERE HAS BEEN SIGNIFICANT DAMAGE TO THE DAM, REPAIR THE DAM. ANY DAMAGED AREAS SHALL BE REPAIRED AS NEEDED TO MAINTAIN THE DESIGNED HEIGHT AND FORM SECTION OF THE CHECK DAM.

Kimley»Horn

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6500 PRESTON ROAD, SUITE 300, PLANO, TX 75024
PHONE: 972-770-1300
TBPE FIRM REGISTRATION #: F-928
TBPLS FIRM REGISTRATION #: 10194004

PRELIMINARY
THIS DOCUMENT IS RELEASED FOR THE PURPOSE OF REVIEW UNDER THE AUTHORITY OF
Kimley»Horn
REGISTERED PROFESSIONAL ENGINEER
PE NO. 128677 Date 08/24/2018

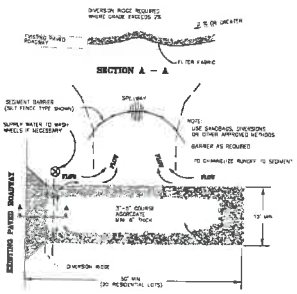
IRA PROJECT NUMBER	
DATE	AUGUST 2018
SCALE	AS SHOWN
DESIGNED	BRB
DRAWN BY	AJ
REVIEWED	TDC

DATE | BY | REVISIONS | No.

EROSION CONTROL PLAN

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-91



CE TEMPORARY STONE CONSTRUCTION ENTRANCE / EXIT
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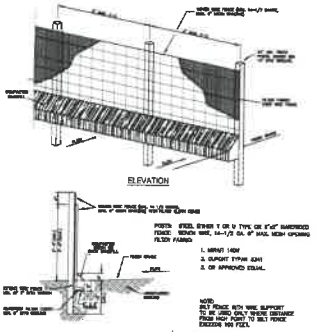

SF SEDIMENTATION/SILT FENCE WITH WIRE SUPPORT
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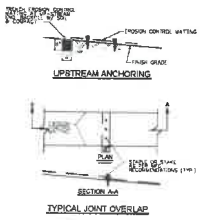

CX EROSION CONTROL MATTING (CURLEX)
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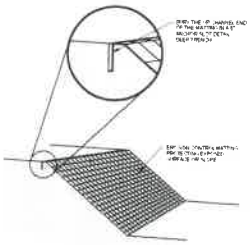
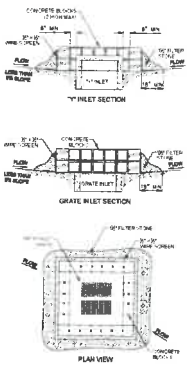


EROSION CONTROL MATTING
NTS



BLOCK AND GRAVEL AREA INLET PROTECTION
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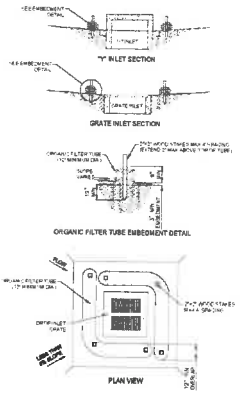

ORGANIC FILTER TUBE AREA INLET PROTECTION
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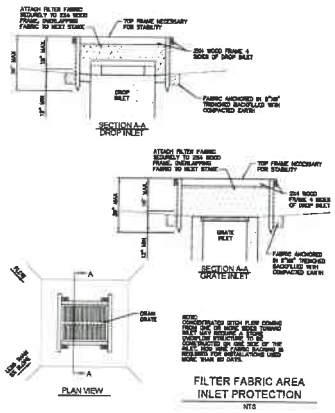


FILTER FABRIC AREA INLET PROTECTION
NTS

Kimley»Horn

No.	REVISIONS	DATE	BY

PRELIMINARY

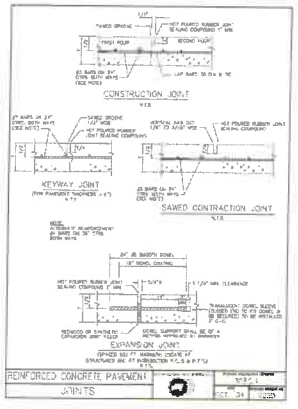
Kimley»Horn

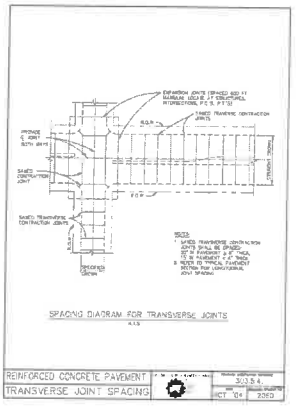
KHA PROJECT NUMBER	DATE	SCALE	DRAWN BY
069146000	AUGUST 2018	AS SHOWN	M.A.

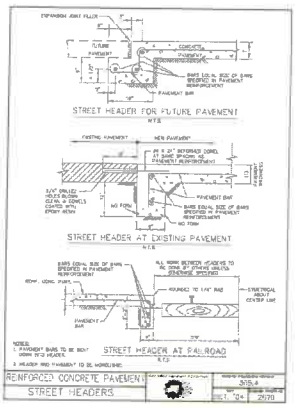
EROSION CONTROL DETAILS

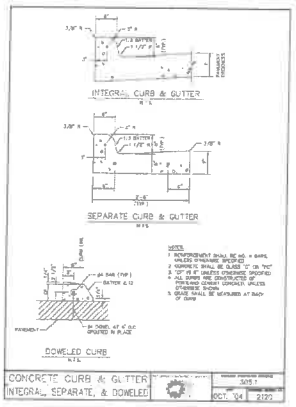
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

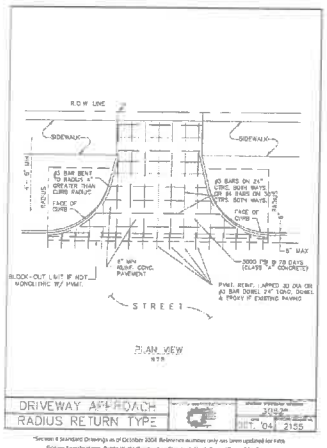
SHEET NUMBER
C-92

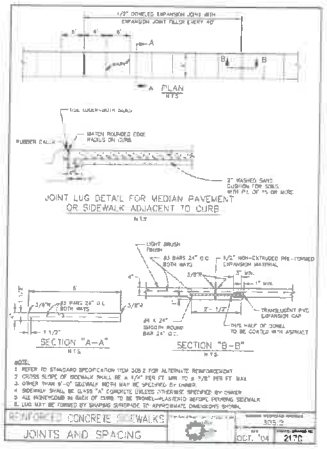












GENERAL NOTES:

1. REINFORCED CONCRETE PAVEMENT:
   A. ALL CURBS SHALL BE PLACED INTEGRAL WITH PAVEMENT UNLESS OTHERWISE APPROVED BY THE OWNER.
   B. CURBS SHALL MEET THE SAME COMPRESSIVE STRENGTH AS THE PAVEMENT IN WHICH THEY ARE PLACED.
   C. BAR LAPS SHALL BE 30 DIAMETERS.
   D. REINFORCING BARS SHALL BE SUPPORTED BY CHAIRS OR OTHER DEVICES APPROVED BY THE OWNER.
2. SUBGRADE: (UNLESS OTHERWISE SPECIFIED BY OWNER)
   A. SUBGRADE UNDER ALL PAVEMENT SHALL BE STABILIZED TO A MINIMUM DEPTH OF 6" WITH HYDRATED LIME (HYDROXIDE) WHEN PI.I. OF THE NATURAL MATERIAL IS GREATER THAN 15. LABORATORY TESTS MUST BE PERFORMED TO DETERMINE THE AMOUNT OF LIME OR CEMENT REQUIRED TO LOWER THE PI TO 15 OR BELOW. SATURATION PI. OF 0.2 (0.4) MUST BE THE LIMIT WHEN A SOILS P.I. CANNOT BE BROUGHT TO 15 OR LOWER.
   B. WHERE THE INPLACE MATERIAL HAS A PI OF LESS THAN 15 THE SUBGRADE SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 6" AND RECOMPACTED.
3. IF THE ROADWAY IS A DESIGNATED BIKE ROUTE OR BIKE USAGE IS ANTICIPATED, REFER TO NCTCOG'S REGIONAL BICYCLE AND PEDESTRIAN FACILITIES DESIGN MANUAL FOR OVERSIZE SHOULDERS.

PAVEMENT SYSTEMS
GENERAL NOTES

REVISIONS		
No.	DATE	BY

Kimley»Horn

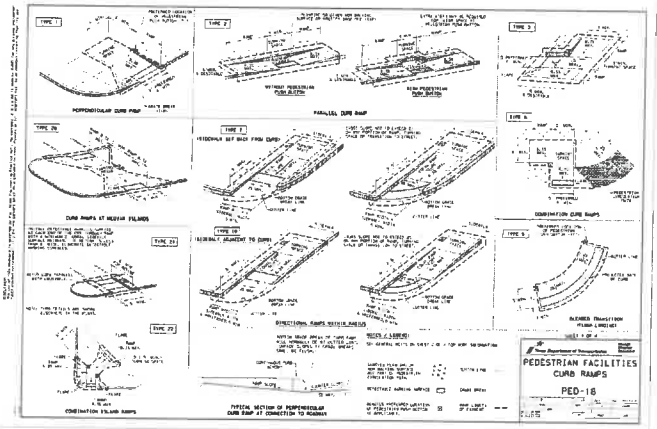
PROFESSIONAL ENGINEER
Kimley-Horn

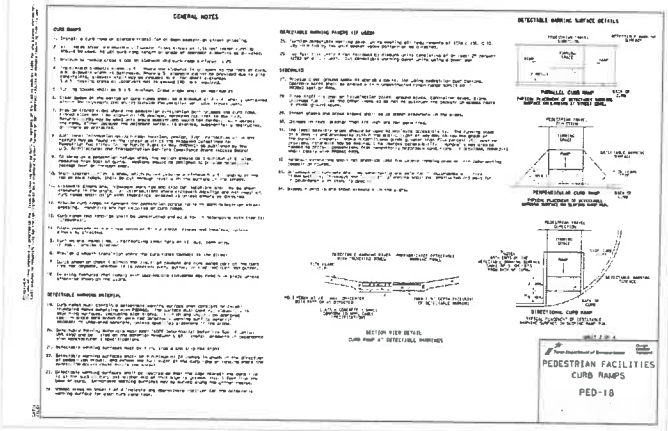
PROJECT NO.	069096000
DATE	AUGUST 2010
DESIGNED	BOWEN
DRAWN BY	M.L.
CHECKED BY	EGC

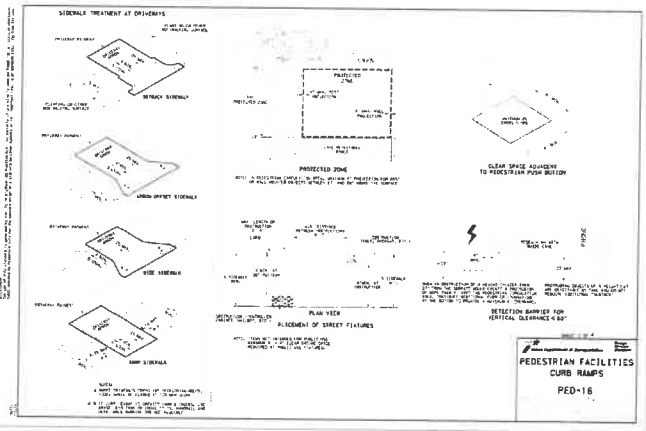
CONSTRUCTION DETAILS - PAVEMENT

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-93







Kimley»Horn

No.	REVISIONS	DATE

PRELIMINARY

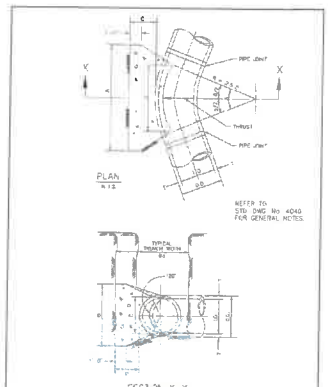
Kimley»Horn

DATE	AUGUST 2019
SCALE	AS SHOWN
DESIGNED	MAL
DRAWN	MAL
REVIEWED	TGC

CONSTRUCTION DETAILS
- BARRIER FREE RAMPS

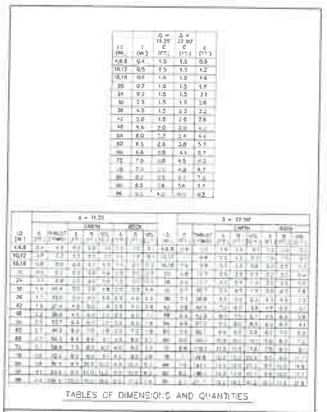
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-94



HORIZONTAL THRUST BLOCK AT PIPE BEND

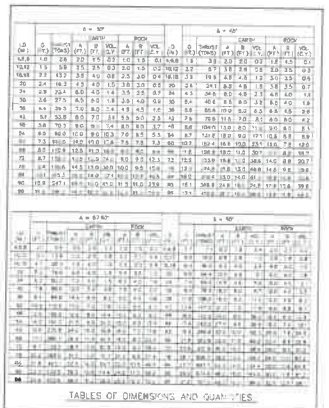
OCT. '04 4010A



TABLES OF DIMENSIONS AND QUANTITIES

HORIZONTAL THRUST BLOCK AT PIPE BEND

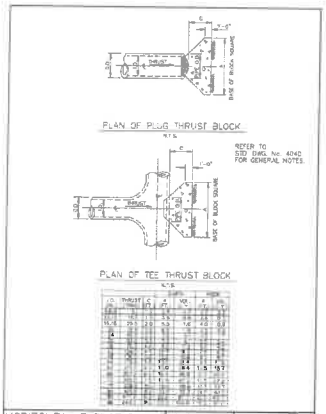
502.4 OCT. '04 4010B



TABLES OF DIMENSIONS AND QUANTITIES

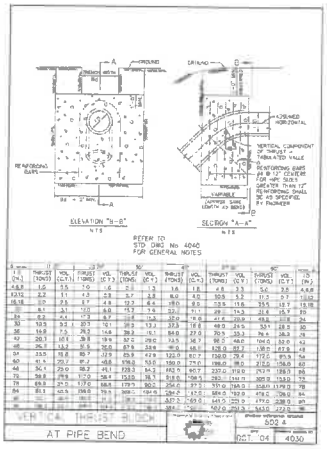
HORIZONTAL THRUST BLOCK AT PIPE BEND

502.4 OCT. '04 4010C



HORIZONTAL THRUST BLOCK AT TEES AND PLUGS

502.4 OCT. '04 4020



HORIZONTAL THRUST BLOCK AT PIPE BEND

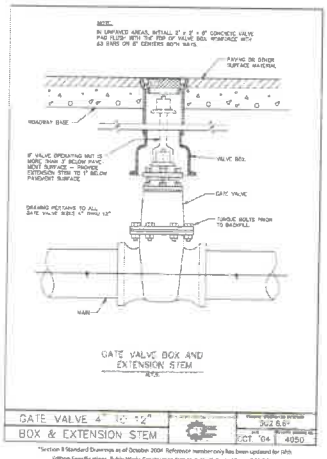
502.4 OCT. '04 4030

GENERAL NOTES FOR ALL THRUST BLOCKS

1. CONCRETE FOR BLOCKING SHALL BE CLASS "B"
2. ALL CALCULATIONS ARE BASED ON INTERNAL PRESSURE OF 200 PSI FOR DUCTILE IRON, PVC, AND 150 PSI FOR CONCRETE PIPE.
3. VOLUMES OF THRUST BLOCKS ARE NET VOLUMES OF CONCRETE TO BE FURNISHED. THE CORRESPONDING WEIGHT OF THE CONCRETE (CLASS "B") IS EQUAL TO OR GREATER THAN THE VERTICAL COMPONENT OF THE THRUST ON THE VERTICAL BEND.
4. WALL THICKNESS (T) ASSUMED HERE FOR ESTIMATING PURPOSES ONLY.
5. POUR CONCRETE FOR BLOCK AGAINST UNDISTURBED EARTH.
6. DIMENSIONS MAY BE VARIED AS REQUIRED BY FIELD CONDITIONS WHERE AND AS DIRECTED BY THE ENGINEER. THE VOLUME OF CONCRETE BLOCKING SHALL NOT BE LESS THAN SHOWN HERE.
7. THE SOIL BEARING PRESSURES ARE BASED ON 1000 LBS /S.F. IN SOIL AND 2000 LBS./S.F. IN ROCK.
8. USE POLYETHYLENE WRAP OR EQUAL BETWEEN CONCRETE AND BEND, TEE OR PLUG TO PREVENT THE CONCRETE FROM STICKING TO IT.
9. CONCRETE SHALL NOT EXTEND BEYOND JOINTS.

THRUST BLOCK GENERAL NOTES

502.4 OCT. '04 4040



GATE VALVE BOX AND EXTENSION STEM

GATE VALVE 4" TO 12" BOX & EXTENSION STEM

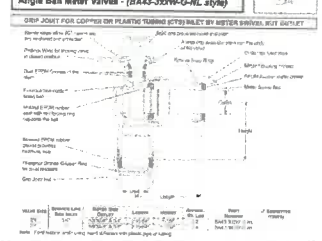
502.6* OCT. '04 4050

*Section 9 Standard Drawings as of October 2004. Reference number only has been updated for 14th Edition Specifications, Public Works Construction Standards North Central Texas, 5th Edition

SUBMITTAL INFORMATION

Angle Ball Meter Valves - *(BA43-3xxW-G-WL style)*

GRIP JOINT FOR COPPER OR PLASTIC TUBING (CTS) INLET BY METER SWIVEL NUT OUTLET



FEATURES

- All brass and bronze in contact with potable water conforms to AWWA Standard C800 (ASTM B584, UNS C89833)
- The product has the lead free, NL, SMS and the their body for sensitive classification
- Certified to NSF/ANSI Standard 61 and NSF/ANSI Standard 372 lead approved
- Small components that do not come in contact with potable water conform to AWWA Standard C800 (ASTM B62 and ASTM B584 UNS C83600, 85-3-5-5)
- Ends are integral or brazed with adhesive to prevent unintentional disassembly
- Hole for attaching handle is provided to tie-head
- Tee head is standard
- Position wing for locking valve in closed position
- Conforms to AWWA C700 for meter threads
- Note: Reason number for this sale shown

The Ford Meter Box Company, Inc.
P.O. Box 443, Wabash, Indiana U.S.A. 46992-0443
Phone: 260 563-3175 Fax: 800 826-1267
Overseas Fax: 260 563-4197
www.fordmeterbox.com

Suite-Bid By

Kimley»Horn
© COPYRIGHT 2004 KIMLEY-HORN AND ASSOCIATES, INC.
11700 CEDAR EXPY, SUITE 400 PEGASUS TOWER
ROUND ROCK, TEXAS 78665-1799
PHONE: 512-418-1771 FAX: 512-418-1778
TEXAS REGISTERED ENGINEERING FIRM F-928

No	REVISIONS	DATE	BY

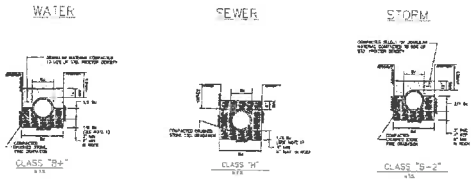
PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING PURPOSES
Kimley»Horn
PROJECT MANAGER
DESIGNED
DRAWN
REVIEWED
APPROVED

HAL PROJECT NUMBER
DATE AUGUST 2010
SCALE AS SHOWN
DESIGNED BLB
DRAWN
REVIEWED TGC
APPROVED

CONSTRUCTION DETAILS - WATER

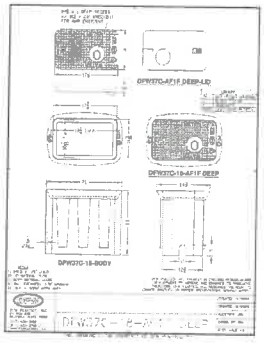
MANTUA POINT PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

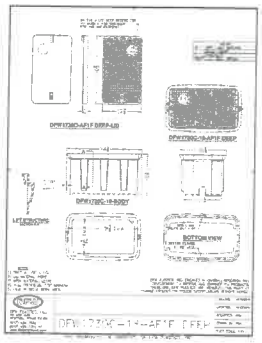
SHEET NUMBER
C-95

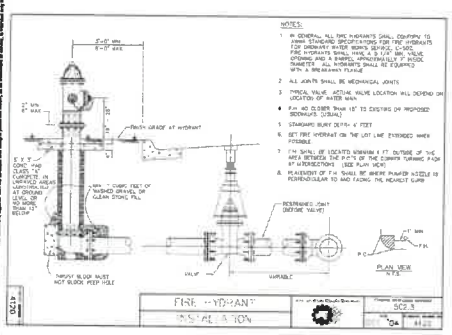


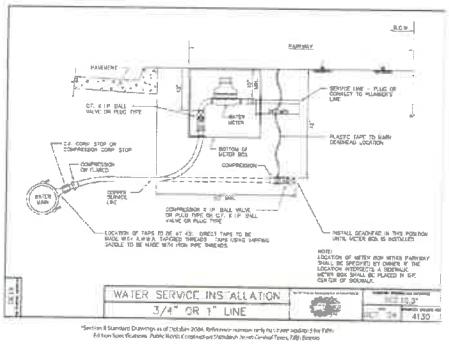
NOTES:
1. FOR MAINS 16" DIAMETER AND LARGER, 2 IN. SHALL BE 1 FOOT AND 8"
2. IN = OUTSIDE DIAMETER OF PIPE
3. BM = "BENT" BEDDING

FROM METRO STANDARD DETAILS, SECTION 3000

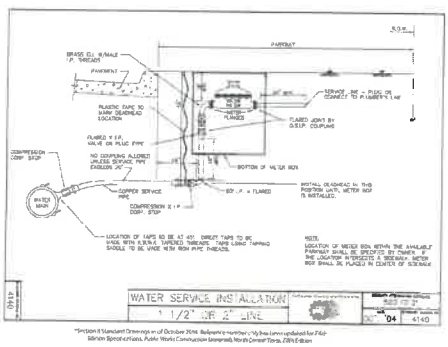








*Section 8 Standard Drawings as of October 2004. Reference number only by 12 year update for Fifth Edition Specifications, Public Works Construction (Imprint), North Central Texas, 2004 Edition



*Section 8 Standard Drawings as of October 2004. Reference number only by 12 year update for Fifth Edition Specifications, Public Works Construction (Imprint), North Central Texas, 2004 Edition

REVISIONS		DATE	BY
No.			

Kimley»Horn

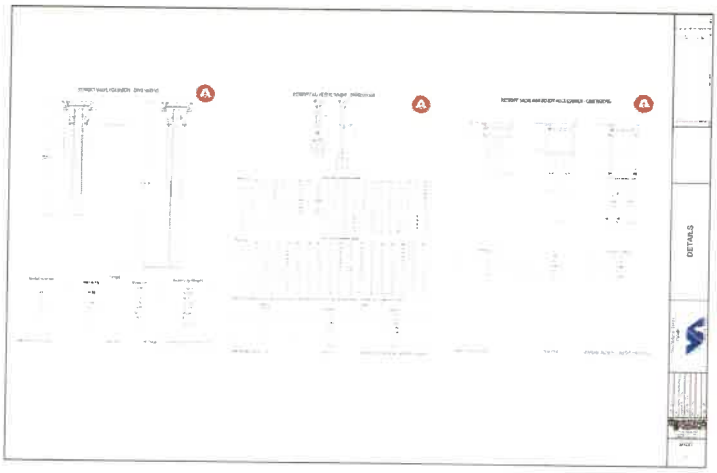
PRELIMINARY
Not for construction or permit purposes
Kimley»Horn
Date: 11/17/15

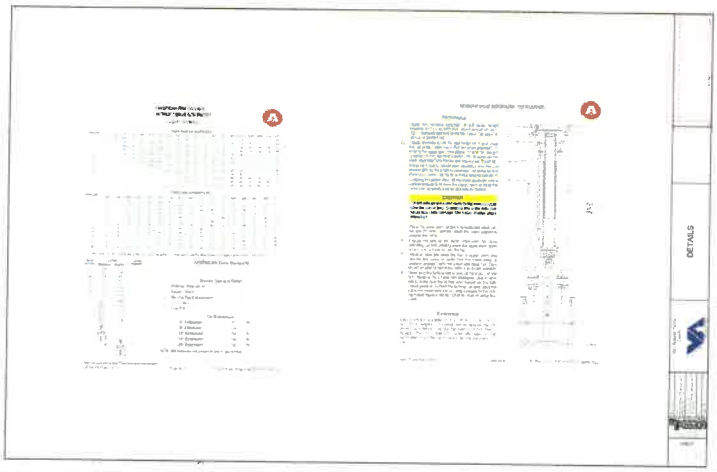
VOA PROJECT NUMBER	
DATE	AUGUST 2015
DESIGNED	J.C. BROWN
DRAWN	M.L.
REVIEWED	TCC

CONSTRUCTION DETAILS - WATER

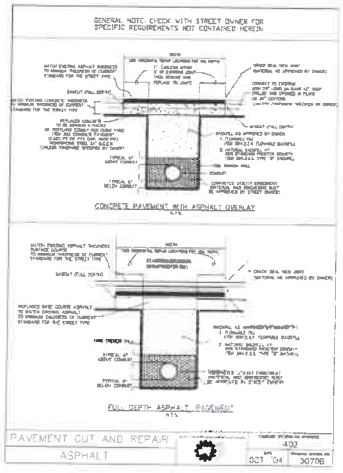
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-96





GENERAL NOTE: CHECK WITH STREET OWNER FOR SPECIFIC REQUIREMENTS NOT CONTAINED HEREIN



PAVEMENT CUT AND REPAIR

ASPHALT

402

021 04 30706

DETAILS

DETAILS

No.	REVISIONS	DATE	BY

Kimley»Horn

PRELIMINARY

NOT FOR CONSTRUCTION OR RECORDING PURPOSES

Kimley»Horn

NCA PROJECT NUMBER

DATE AUGUST 2018

DESIGNED JLC

DRAWN JLC

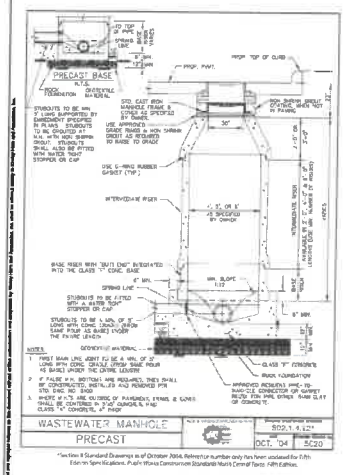
REVIEWED MB

CHECKED TOC

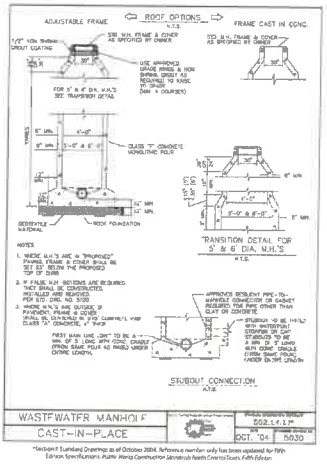
CONSTRUCTION DETAILS - WATER

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-97



*Section 4 Standard Drawings as of October 2004. Reference number only has been updated for Fifth Edition Specifications. Public Works Construction Standards North Central Texas, Fifth Edition.



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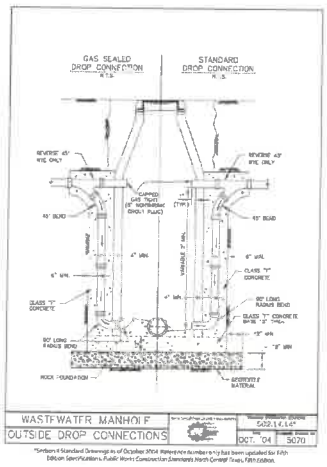

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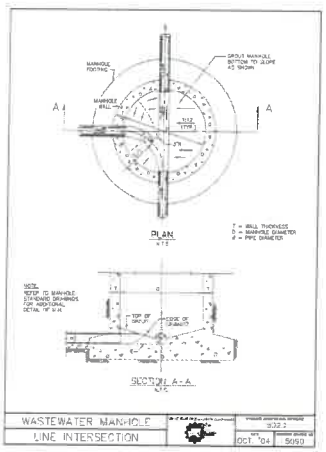

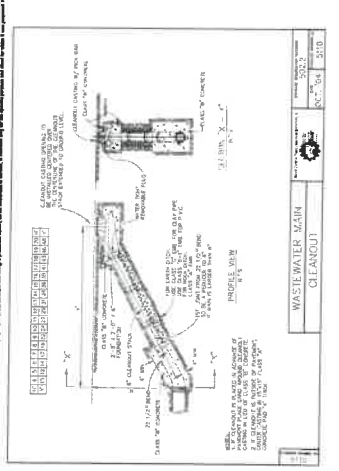

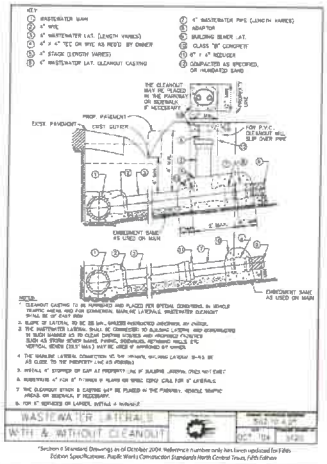

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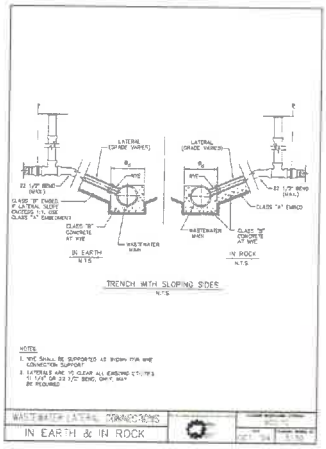
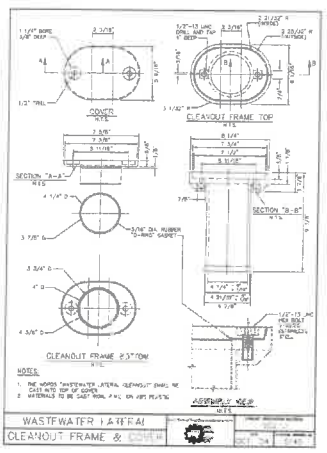




Kinley Horn

REVISIONS

No.	DATE	BY

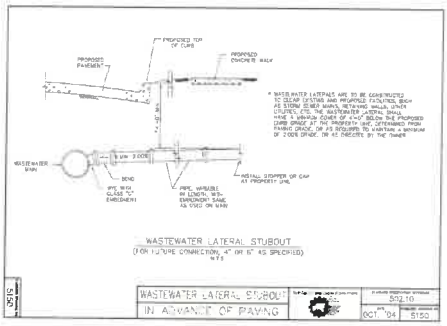
KHA PROJECT NUMBER
DATE AUGUST 2013
SCALE AS SHOWN
DESIGNED BRW
DRAWN BJL
CHECKED TEC

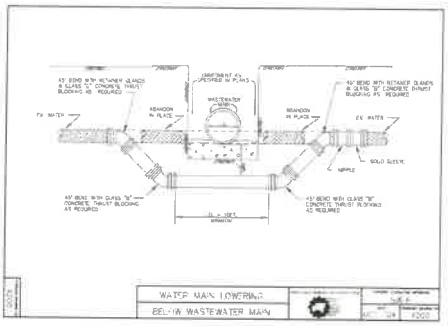
CONSTRUCTION DETAILS - SANITARY SEWER

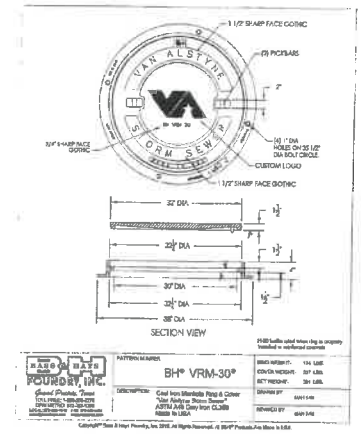
MANTUA POINT PHASE 1

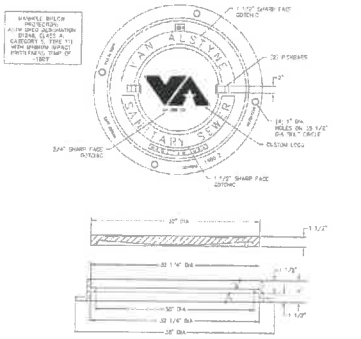
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-98









REVISIONS	DATE	BY

Kimley»Horn
© 2014 KIMLEY-HORN AND ASSOCIATES, INC.
4901 DUNCANVILLE ROAD, DALLAS, TX 75236
PHONE: 972-770-1300
WWW.KIMLEY-HORN.COM
TBPE FIRM #F-928 TBPLS FIRM #10194-00

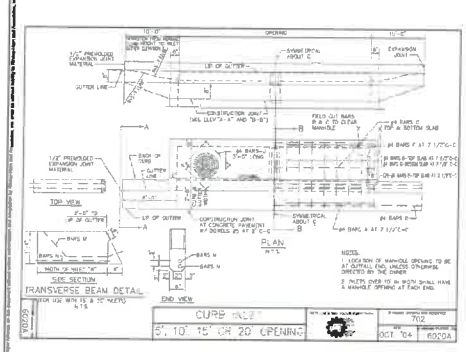
PRELIMINARY
NOT FOR CONSTRUCTION OR PERMIT PURPOSES
Kimley»Horn
DATE: 8/14/2018

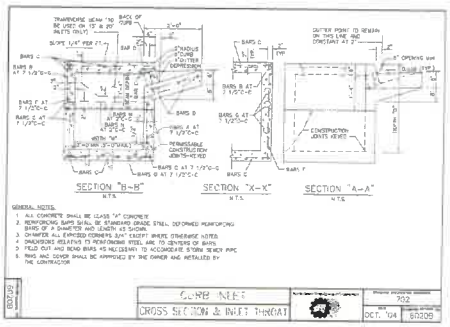
RUN PROJECT NAME
DATE: AUGUST 2018
CALC: JCB BROWN
DRAWN BY: BRB
CHECKED BY: BRB
APPROVED: TGC

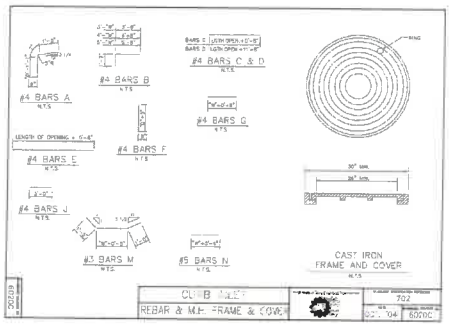
CONSTRUCTION DETAILS
- SANITARY SEWER

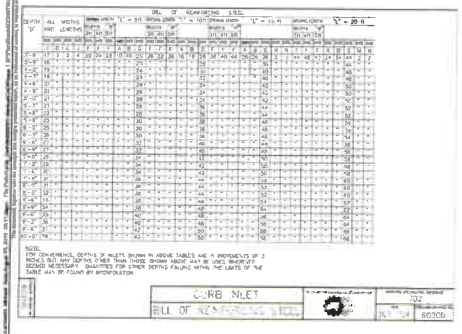
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

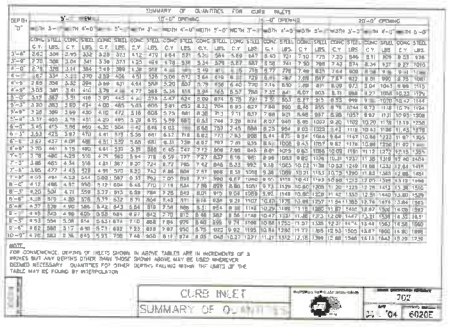
SHEET NUMBER
C-99

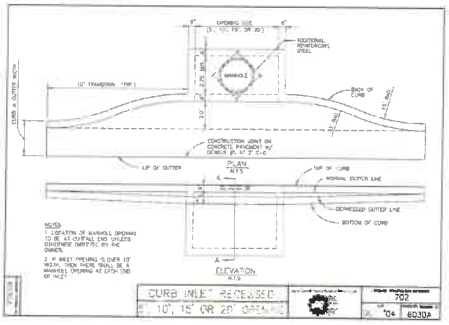










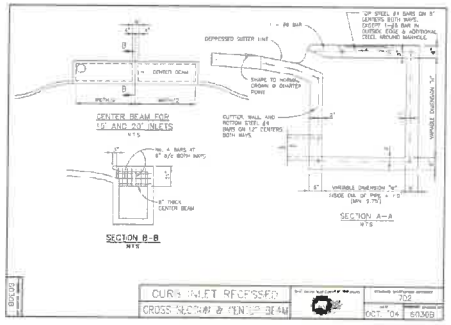


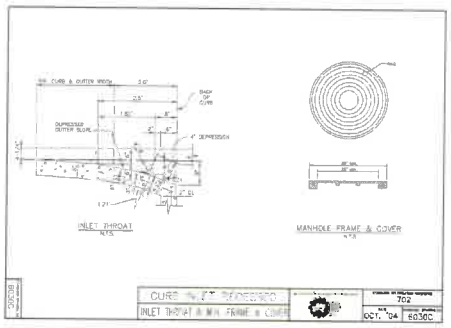
Kimley»Horn

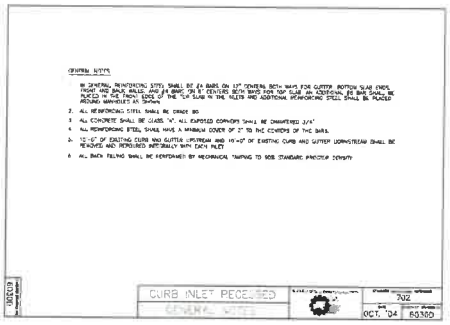
CONSTRUCTION DETAILS
- STORM SEWER

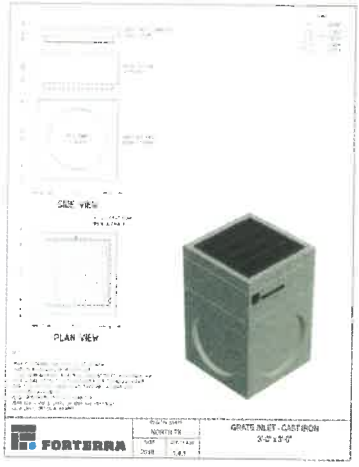
MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

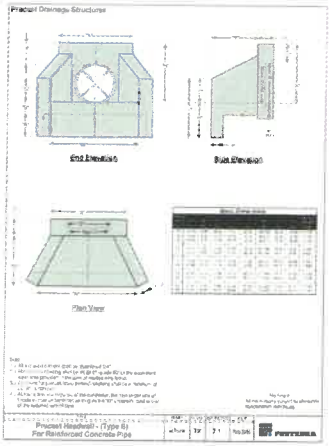
C-100











Kimley»Horn

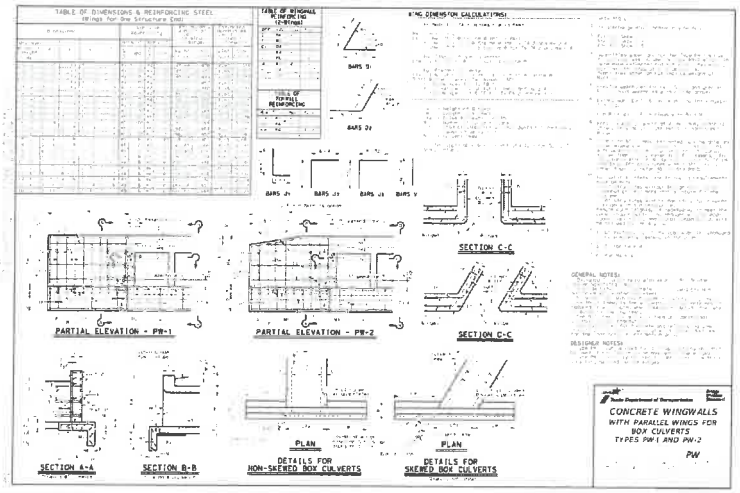
REVISIONS	DATE

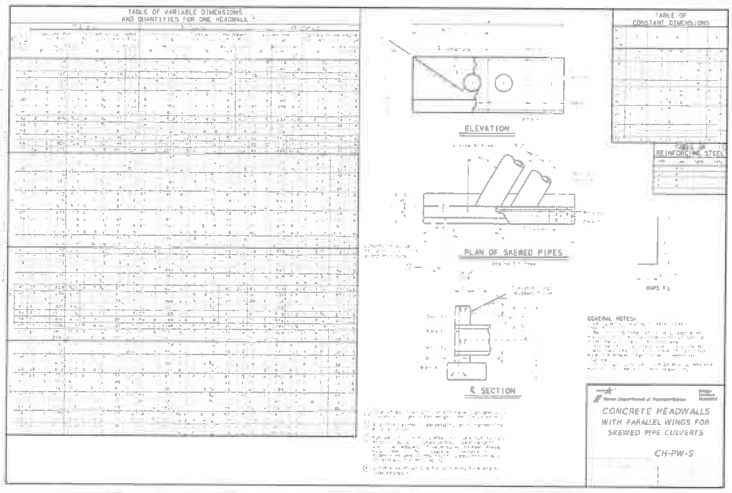
KHA PROJECT NUMBER
DATE
AUGUST 2019
CAD RS DRAWN
DESIGNED RS
DRAWN RS
CHECKED TDC

CONSTRUCTION DETAILS
- STORM SEWER

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-101





No.	REVISIONS	DATE	BY

Kimley»Horn

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4801 GAUTIER DRIVE, SUITE 100, PLANO, TX 75024
PH: 972-335-3580 FAX: 972-335-3779
WWW.KIMLEY-HORN.COM
TBPE FIRM REGISTRATION #10032401

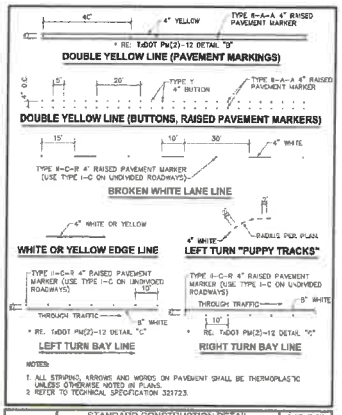
PRELIMINARY
NOT FOR CONSTRUCTION OR PERMITTING PURPOSES
Kimley»Horn
Michael J. Gaines
PE No. 125470 Date 08/14/2019

KHA PROJECT 069093
DATE AUGUST 2019
SCALE AS SHOWN
DESIGNED BJK
DRAWN BJK
CHECKED TGC

CONSTRUCTION DETAILS
- STORM SEWER

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

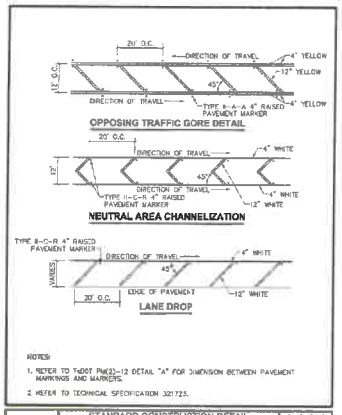
SHEET NUMBER
C-102



STANDARD CONSTRUCTION DETAIL
PAVEMENT MARKINGS AND MARKERS
SHEET 1 OF 2

SCALE: 1"=20'

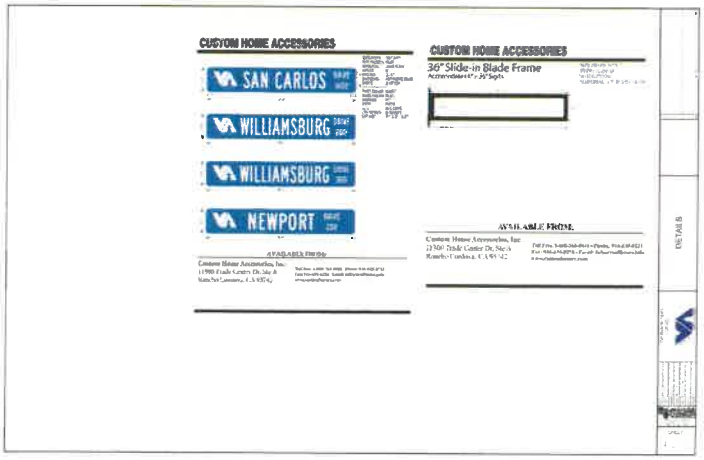
TD1



STANDARD CONSTRUCTION DETAIL
PAVEMENT MARKINGS AND MARKERS
SHEET 2 OF 2

SCALE: 1"=20'

TD2



DETAILS

Kimley»Horn

No	REVISIONS	DATE
1		
2		

PRELIMINARY
NOT FOR CONSTRUCTION OR RECORDING PURPOSES
Kimley»Horn

KHA PROJECT 143190001
DATE AUGUST 2019
SCALE AS SHOWN
DESIGNED BWB
DRAWN BWB
REVIEWED MJS
APPROVED TDC

CONSTRUCTION DETAILS
- PAVEMENT MARKINGS &
STREET SIGNS

MANTUA POINT
PHASE 1
CITY OF VAN ALSTYNE
GRAYSON AND COLLIN COUNTY, TEXAS

SHEET NUMBER
C-103