AGENDA ITEM REQUEST FORM
CITY OF JOHNSON CITY, TEXAS
CITY COUNCIL

ITEM NO. 10

MEETING DATE: **March 1, 2022**

AGENDA PLACEMENT:

☐ Ceremonial
☐ Consent
☒ Individual
☐ Closed Session

CAPTION:

Discussion of and action on a Preliminary Plat Application from Legacy Capital Funding, LLC establishing Phase One of the Homesteads at Deer Creek consisting of seventy-seven (77) lots out of the Joseph Duel Survey, Abstract No. 147 and Elijah Marshall Survey Abstract No. 393, Blanco County, Texas, more particularly described as 217 281 Loop Rd., Johnson City, Texas 78636 and BCAD Prop. ID No. 8609. (Applicant)

STRATEGIC WORK PLAN:

☐ Not Applicable
☒ Goal 1: Increase Housing Diversity
☐ Goal 2: Expand Quality Lodging
☐ Goal 3: Improve Code Enforcement
☐ Goal 4: Improve Streetscaping & Signage
☐ Goal 5: Improve Fire Safety
☐ Goal 6: Improve Streets
☐ Goal 7: Increase Publicity & Promotion of the Community
☐ Goal 8: Increase Economic Development Activities

EXECUTIVE SUMMARY:

Legacy Capital Funding, LLC submitted a Preliminary Plat Application establishing Phase One of the Homesteads at Deer Creek on January 18, 2022. The development, which received preliminary plat approval under another development team in the latter part of 2020, was granted vested status on January 21, 2022; consequently, the development has been reviewed in accordance with the Subdivision Ordinance in effect at the time of preliminary plat approval in November 2020.

The Application was reviewed by the Planning and Zoning Commission on February 22, 2022. The Commission recommended approval of the Application, pending the developer addressing City Engineer and Staff concerns / comments prior to the completion of the Final Plat.

FINANCIAL: N/a

ATTACHMENTS:

- Application
- Location Map
- Sewer Calculations dated 2/9/22 and 2/21/22
- Proposed preliminary plat and related documents.

SUGGESTED ACTION:

Motion to approve a Preliminary Plat Application from Legacy Capital Funding, LLC establishing Phase One of the Homesteads at Deer Creek consisting of seventy-seven (77) lots out of the Joseph Duel Survey, Abstract No. 147 and Elijah Marshall Survey Abstract No. 393, Blanco County, Texas, more particularly described as 217 281 Loop Rd., Johnson City, Texas 78636 and BCAD Prop. ID No. 8609. The approval should be contingent upon the developer addressing the following City Engineer and Staff concerns / comments prior to the completion of the Final Plat:

In accordance with Chapter 10 *Subdivision Regulation*, Article 10.02 *Subdivision Ordinance*, Sections 8 *Preliminary Plats* and 9 *Final Plats* of the Municipal Code of Ordinances in effect at the time of vested status for the project, please revise the preliminary plat to reflect the following:

1. Show proposed drainage, utility, and non-access easements, if applicable, including their dimensions. From what I can see, utility easements are located on the utility layout plan, but not on the actual plat.
2. Correct the floodplain note showing the presence of a special flood hazard area within the property.
3. Place the following note on the plat: "Preliminary Plat for Inspection Purposes Only."
4. Place the following note on the plat: " Water and Wastewater impact fees were not paid at the time of platting for this plat. All impact fees must be paid in full, at the rate in effect at the time of service applications, prior to water meter set and/or wastewater service connection."
5. Surveyors Notes. Add "City" under Note 3 to read as follows: "There are no encroachments, conflicts or protrusions, except as shown hereon, and said property has access to and from a dedicated City roadway."
6. Engineer Signatory. Replace "Blanco County" with "City of Johnson City" to read as follows: "I, the undersigned, a registered professional engineer in the State of Texas, do hereby certify that I prepared all drainage calculations and designed all drains, streets/roads and appurtenances in accordance with the City of Johnson City Subdivision Regulations."
7. What does "LOOK" mean for property corners? The acronym is not located within the legend. Note that all property corner markers must be permanent.
8. Add a right of way width for 281 Loop. If variable, so state.
9. Add topographical information approximately equivalent to two (2) foot contour lines, and based on U.S. Geological Survey datum.
10. The plat only shows the front building setback line of 20'. Please add all setback lines as follows. A standard note applicable to all lots or individually notated is fine:

a. Front – 20'
b. Sides – 10'
c. Rear – 15'

11. Identify all lots with less than 50' street frontage and submit a Board of Adjustment variance application for said lots. BOA variance application can be found here: https://www.johnsoncitytx.org/documents/board-of-adjustment-variance-application/
12. Identify all lots with less than 8,000 sq. ft., if any. See note above for BOA variance application.
13. Plat Title Block:

    a. Change "Final" to "Preliminary"
    b. Change 91.567 acres to reflect actual acreage of Phase One
    c. Remove S.F. reference. Not necessary.
    d. The total lots referenced under Surveyors Notes (73 Lots) does not match the lots referenced under the plat title block (77 lots). At the very least, its confusing. Please clarify.

14. A certificate of dedication of all streets, alleys, parks, easements, and other land intended for public use and approved by the City shall be submitted prior to recording the final plat. The certificate must be signed by the owner or owners and by all other persons, firms or corporations holding a lien or owning an interest in the property subdivided and platted, which shall be acknowledged in the manner prescribed by the laws of the State of Texas for conveyance of real property.
15. The locations, sizes, structures, et cetera of all drainage structures were submitted as attachments to the Preliminary Plat. I will defer to the City Engineer on the review and approval of all drainages.

Additionally,

1. Please ensure that sufficient right of way (ROW) width is provided for the residential roadway section and utilities, including any proposed roadside ditches. Spacing of utilities should follow TCEQ guidelines.
2. Please provide an overall utility layout that shows proposed connections to the existing utility systems, approximate FL and slopes. Depending on the final utility layout, the Final Plat may need to show an extension of ROW and/or an easement to the point of connection with the existing utility systems.
3. Please submit a complete plat application and requisite fees, attached hereto. The dollar amounts have been filled out for Phase One of the development. To date, I have not received any fees.

Prior to final plat approval, the City will require the following information be submitted, addressed, and agreed to:

1. A WWTP capacity limitation plan will need to be developed, particularly for additional phases of development.

2. A development agreement is suggested between the City and the developer to outline:

    a. Payment / applicability of impact fees and/or tap fees.
    b. Timing / criteria for installation of a third pump at the Gonzalez lift station.
    c. Operation and maintenance of detention ponds.

3. A floodplain development permit, attached hereto, including a study to establish the Atlas 14 floodplain will be required.
4. Please note that additional final plat comments may need to be addressed once the application and supporting documents requested above are reviewed.
5. If to be governed by an HOA, documents establishing the HOA and its authority over common areas not dedicated to the City.

PREPARED BY: City Staff

Date Submitted: 2/21/22

JOHNSON CITY
P O Box 369 (Mail)
303 E Pecan Dr. (Physical)
Johnson City, TX 78636
830 868 7111 (Phone)
830 868 7118 (Fax)

PLAT APPLICATION
CHAPTER 10

Section I. *Plat and Applicant Information*

PLAT NAME: Homestead at Deer Creek, Phase I

Owner/Agent: Legacy Capital Funding, LLC Phone: _____ Fax: _____

Owner/Agent Address: 10008 Loxely Lane, Austin, TX Zip Code: 78717

Engineer/Surveyor: Belton Engineering, Inc Phone: 254-771-5600 Fax: _____

Address: 106 N. East Street, Belton, TX Zip Code: 76513

Elevation Survey: ☒ Major Plat ☐ Amending Plat ☐ Replat ☐ Minor Plat

Water Service: ☒ City ☐ Well

Sewer Service: ☒ City ☐ Septic System

Plat is over, within, or includes the following:	Land Area Being Platted:	Lots	Acres
Yes ☒ No ☐ Johnson City City Limits Yes ☐ No ☐ Johnson City Extraterritorial Jurisdiction Yes ☒ No ☐ Flood Plain	Single-Family (SF) Non-Single Family (NSF)	73	21.28 ac

Base preliminary platting fee	$ 654.00	Base final platting fee	$ 402.00
Single family residential development 77 lots x $67.00 / lot	$ 5159.00	Non-single family residential development	$
Variance	$	Plat deferral	$
Performance agreement time extension	$	Vacating declaration	$
Re-plat involving notification	$	Amending plat	$
Plat withdrawal	$	Emergency add-on	$
Plat recording fee	$ Actual County Cost	Processing fee	$ 123.00
Plan review fee	$ 442.00		

Total Fee: $ 6,780.00

All fees shall be paid at the time of plat filing.

Required Letters of Certification, if applicable: PEC; TX Dept. of Transportation (TxDOT); City; Texas Commission on Environmental Quality (TCEQ); Blanco County; and Current Property Tax Certificate.

I hereby certify that the above information is true and correct.

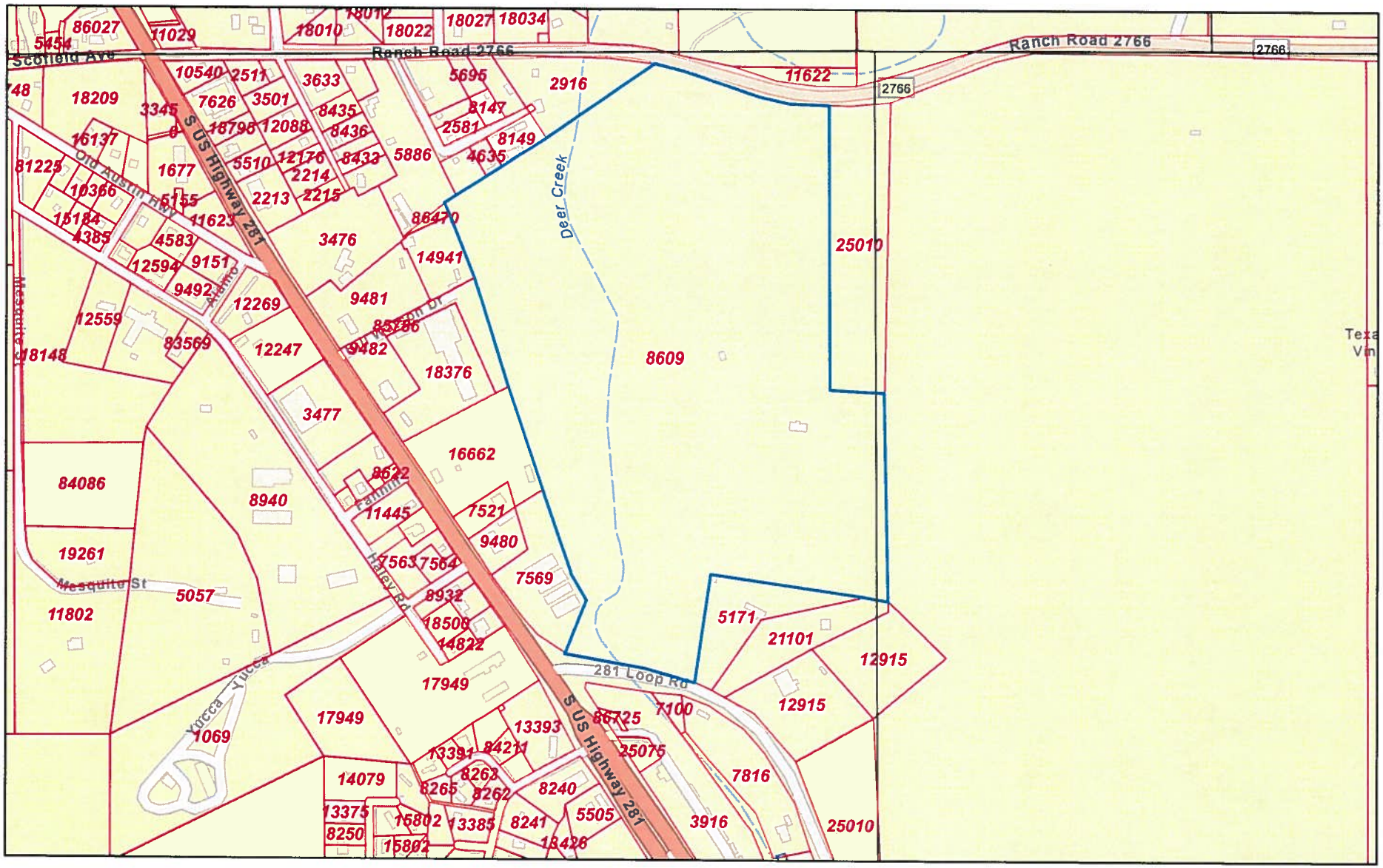
Print Name: Lina Chtay Signature: _____

Date: Feb, 21st 2022 ☒ Professional Engineer ☐ Registered Professional Land Surveyor

Office Use Only:

Updated 11/27/20

217 281 Loop



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Parcels

Abstracts

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0 0.05 0.1 0.2 mi

0 0.1 0.2 0.4 km

Esri Community Maps Contributors, Texas Parks & Wildlife, ©

Blanco County Appraisal District, BIS Consulting - www.bisconsulting.com

Disclaimer: This product is for informational purposes only and has not been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of boundaries.

BELTON ENGINEERING, INC.
Engineering • Design/Build • Planning

Feb 9, 2022

CITY OF JOHNSON CITY
ATTN.: BRENT SULTEMEIER
303 E. Pecan Dr. Johnson City TX 78636

RE: SEWER CALCULATIONS FOR "HOMESTEADS ON DEER CREEK SUBDIVISION"

As requested below is the sewer calculations for the proposed single family subdivision along Loop 281 (Blanco County Road No. 213).

- Single family subdivision
- Total number of proposed lots = 201 lots
- Total subdivision acreage = 91.57 ac.
- Number of capita per household = 3.5 capita
- Max. Flow Peak Factor = 3
- Total daily wastewater flow per capita 100 gal/day (Table B.1 Design organic loadings and flows for new wastewater treatment systems/TCEQ chapter 217/317.)

Total flows are calculated as following:-

1) Max dry weather flow= 201 lots x 3.5 capita/lot x 100 gal/capita/day x 3 (max flow peak factor) = 211,050 gal/day
=146.56 gal/min

2) Max wet weather flow= 201lots x 3.5 capita/lot x 100gal/capita/day x 3 (max flow peak factor)+91.57 acres x 1500 gal/day/acre= 348,405 gal/day
= 241.95 gal/min

Sincerely,

BELTON ENGINEERING, INC.

Lina Chtay, P.E., C.F.M.

BELTON ENGINEERING, INC.
Engineering • Design/Build • Planning

Feb 21, 2022

CITY OF JOHNSON CITY
ATTN.: BRENT SULTEMEIER
303 E. Pecan Dr. Johnson City TX 78636

RE: SEWER CALCULATIONS FOR "HOMESTEADS ON DEER CREEK SUBDIVISION PHASE I"

As requested below is the sewer calculations for the proposed single family subdivision along Loop 281 (Blanco County Road No. 213).

- Single family subdivision
- Total number of proposed lots = 73 lots
- Number of capita per household = 3.5 capita
- Total daily wastewater flow per capita 100 gal/day (Table B.1 Design organic loadings and flows for new wastewater treatment systems/TCEQ chapter 217/317.)

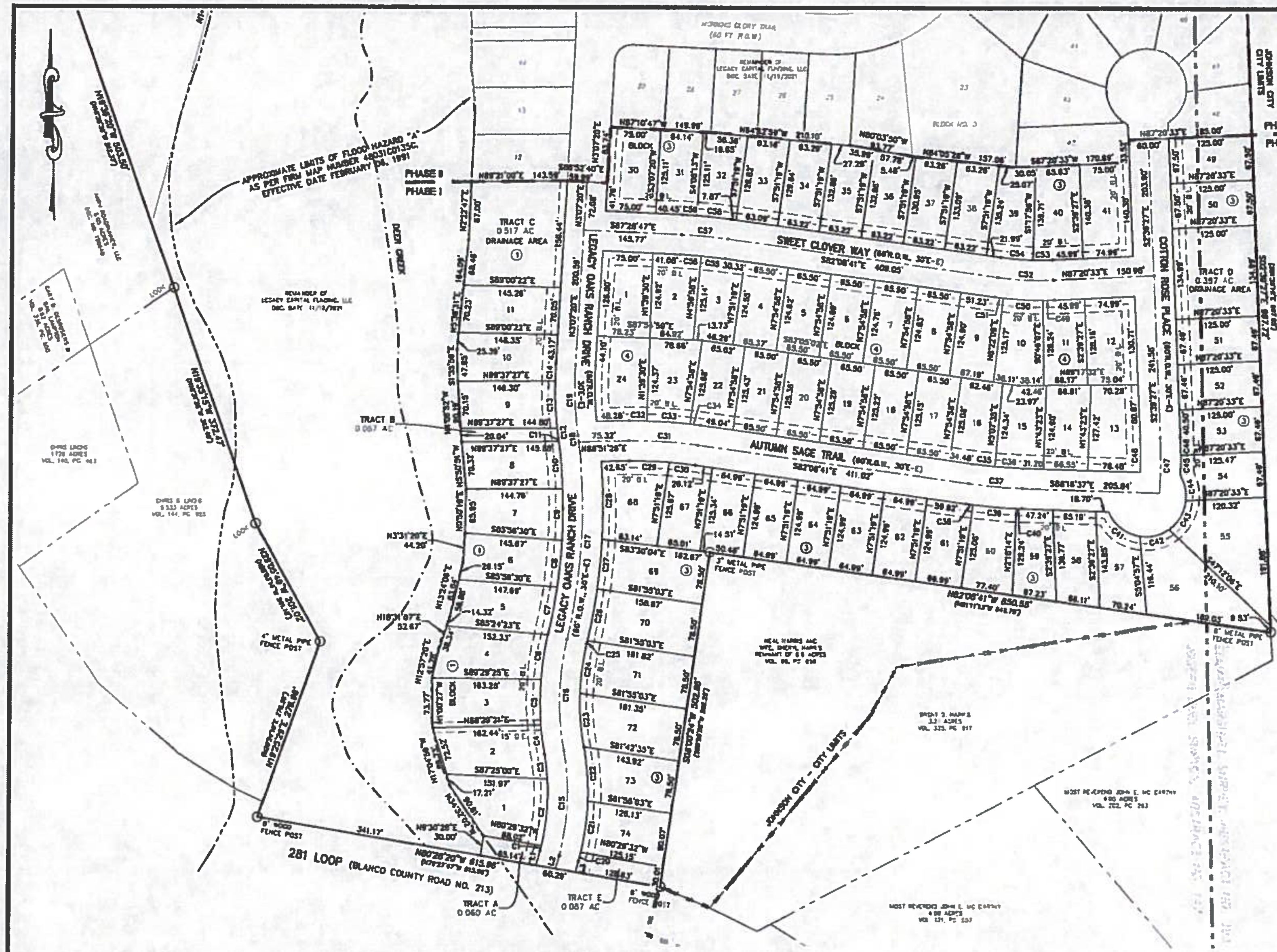
Total flows are calculated as following:-

1) Max dry weather flow= 71 lots x 3.5 capita/lot x 100 gal/capita/day
   =25,550 gal/day
   =17.74 gal/min

Sincerely,

BELTON ENGINEERING, INC.

Lina Chtay, P.E., C.F.M.

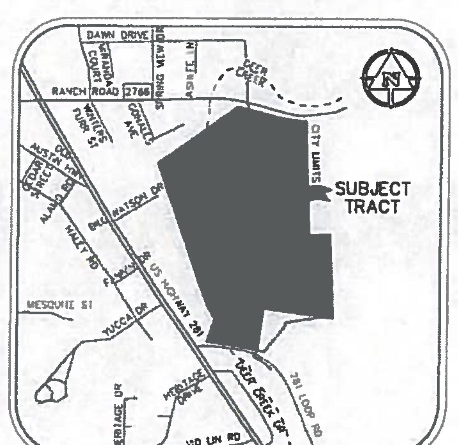


Curve Table			
Curve #	Length	Radius	Chord
C1	7.41'	320.00'	N14°29'09"E 7.41'
C2	99.71'	320.00'	N4°53'45"E 99.31'
C3	37.36'	320.00'	N7°22'31"W 37.34'
C4	43.85'	430.00'	S7°47'58"E 43.83'
C5	68.09'	430.00'	S0°20'28"E 68.02'
C6	67.16'	430.00'	S8°40'11"W 67.10'
C7	71.91'	806.00'	N10°35'18"E 71.89'
C8	70.05'	806.00'	N5°32'34"E 70.02'
C9	77.24'	806.00'	N0°18'28"E 77.21'
C10	70.24'	806.00'	N4°56'03"W 70.22'
C11	5.09'	806.00'	N7°38'42"W 5.09'
C12	15.06'	585.00'	S7°03'18"E 15.06'
C13	70.11'	585.00'	S2°53'04"E 70.07'
C14	28.27'	585.00'	S1°50'08"W 28.27'
C15	158.03'	350.00'	N2°12'53"E 156.69'
C16	166.81'	400.00'	S1°12'44"W 165.40'
C17	295.91'	836.00'	N3°00'16"E 294.36'
C18	9.56'	836.00'	N7°27'31"W 9.56'
C19	105.73'	555.00'	S2°20'06"E 105.57'
C20	13.33'	380.00'	N14°08'41"E 13.33'
C21	77.09'	380.00'	N7°18'41"E 76.96'
C22	81.15'	380.00'	N4°36'08"W 81.00'
C23	80.06'	370.00'	S4°31'17"E 79.90'
C24	74.05'	370.00'	S7°24'39"W 73.93'
C25	4.59'	864.00'	N12°59'33"E 4.59'
C26	78.56'	864.00'	N10°14'27"E 78.56'
C27	74.12'	868.00'	N5°11'21"E 74.10'
C28	115.87'	868.00'	N1°05'57"W 115.88'
C29	59.41'	626.00'	N86°25'24"W 59.39'
C30	38.89'	626.00'	N83°56'29"W 38.89'

Curve Table			
Curve #	Length	Radius	Chord
C31	103.02'	658.00'	N86°36'37"W 102.91'
C32	28.73'	688.00'	S89°56'28"W 28.72'
C33	65.02'	688.00'	N86°11'41"W 65.00'
C34	15.88'	688.00'	N82°48'43"W 15.98'
C35	34.05'	715.00'	S83°30'33"E 34.05'
C36	42.47'	715.00'	S86°34'31"E 42.46'
C37	79.73'	745.00'	N85°12'39"W 79.70'
C38	10.07'	775.00'	S82°31'01"E 10.07'
C39	65.02'	775.00'	S85°17'33"E 65.00'
C40	7.86'	775.00'	S87°58'11"E 7.86'
C41	62.67'	60.00'	S52°07'06"E 59.86'
C42	46.29'	60.00'	N78°20'11"E 44.22'
C43	51.67'	60.00'	N30°02'41"E 50.08'
C44	38.48'	60.00'	N12°58'48"W 37.82'
C45	30.33'	780.00'	N0°28'22"E 30.33'
C46	27.00'	780.00'	N1°38'58"W 27.00'
C47	82.13'	750.00'	S0°28'46"W 82.08'
C48	49.83'	720.00'	S0°40'30"E 49.82'
C49	15.99'	485.00'	N88°17'13"E 15.99'
C50	60.42'	485.00'	S87°11'58"E 60.38'
C51	12.58'	485.00'	S82°53'18"E 12.58'
C52	83.49'	455.00'	S87°24'04"E 83.37'
C53	28.31'	425.00'	N89°18'06"E 28.31'
C54	48.67'	425.00'	S85°25'31"E 48.64'
C55	35.89'	720.00'	N83°34'21"W 35.88'
C56	31.16'	720.00'	N86°14'24"W 31.15'
C57	69.84'	750.00'	S84°48'44"E 69.81'
C58	51.08'	780.00'	N84°01'14"W 51.07'
C59	21.55'	780.00'	N86°41'17"W 21.55'

Line Table		
Line	Direction	Length
L1	N15°08'58"E	22.73'
L2	N15°08'58"E	19.76'
L3	N15°08'58"E	16.60'

TRACT	AREA (ac)	USAGE	OWNER
A	0.060	COMMON AREA	HOA
B	0.067	DRAINAGE	HOA
C	0.517	DRAINAGE	HOA
D	0.387	DRAINAGE	HOA
E	0.087	COMMON AREA	HOA



VICINITY MAP

FINAL PLAT OF:

HOMESTEADS AT DEER CREEK, PHASE I

91.567 ACRES 3,988,679.40 S.F.
77 LOTS, 3 BLOCKS AND 5 TRACTS INCLUDING:
3,289.93 L.F. OF NEW STREETS AND 4.48 A.C. OF R.O.W.
JOSEPH DUEL SURVEY, ABSTRACT #147 &
ELIJAH MARSHALL SURVEY ABSTRACT #393, BLANCO COUNTY, TEXAS
A SUBDIVISION IN THE CITY OF JOHNSON CITY, BLANCO COUNTY, TEXAS

100 200 300

STATE OF TEXAS
COUNTY OF BLANCO

KNOW ALL MEN BY THESE PRESENTS, THAT LEGACY CAPITAL FUNDING, LLC, A TEXAS LIMITED LIABILITY COMPANY, WHOSE ADDRESS IS 10008 LOXELY LANE, AUSTIN, TEXAS 78717, BEING THE SOLE OWNER OF THAT 91.567 ACRE TRACT OF LAND SITUATED IN THE JOSEPH DUEL SURVEY, ABSTRACT NO. 147, AND THE ELIJAH MARSHALL, ABSTRACT NO. 393, BLANCO COUNTY, TEXAS, AS CONVEYED TO IT BY DEED DATED NOVEMBER 22, 2021, AND RECORDED IN DOCUMENT NO. 216769, BLANCO COUNTY DEED RECORDS, DOES HEREBY SUBDIVIDE SAID TRACT OF LAND TO BE KNOWN AS THE HOMESTEADS AT DEER CREEK, PHASE I, IN ACCORDANCE WITH THE PLAT SHOWN HEREON, SUBJECT TO ANY AND ALL EASEMENTS OR RESTRICTIONS HERETOFORE GRANTED, AND DOES HEREBY DEDICATE TO THE PUBLIC THE USE OF THE STREETS AND EASEMENTS SHOWN HEREON

MEHUL PATEL, MEMBER
LEGACY CAPITAL FUNDING, LLC, A TEXAS LIMITED LIABILITY COMPANY
10008 LOXELY LANE
AUSTIN, TEXAS, 78717

MEHUL PATEL, MANAGER

STATE OF TEXAS
COUNTY OF BLANCO

BEFORE ME, THIS UNDERSIGNED AUTHORITY, ON THIS DAY PERSONALLY APPEARED ________ KNOWN BY ME TO BE THE PERSON WHOSE NAME IS SUBSCRIBED TO THE FOREGOING INSTRUMENT, IT HAS BEEN ACKNOWLEDGED TO ME THAT HE/SHE EXECUTED THE FOREGOING INSTRUMENT AS THE OWNER OF THE PROPERTY DESCRIBED HEREON

NOTARY PUBLIC, STATE OF TEXAS — DATE NOTARY COMMISSION EXPIRES

STATE OF TEXAS
COUNTY OF BLANCO

APPROVED THIS ______ DAY OF ________ 20___ BY THE CITY COUNCIL OF THE CITY OF JOHNSON CITY, TEXAS

MAYOR — CITY SECRETARY

TAX CERTIFICATE

THE BLANCO COUNTY TAX APPRAISAL DISTRICT, THE TAXING AUTHORITY FOR ALL TAXING ENTITIES IN BLANCO COUNTY, TEXAS, DOES HEREBY CERTIFY THAT THERE ARE CURRENTLY NO DELINQUENT TAXES DUE OR OWING ON THE PROPERTY DESCRIBED BY THIS PLAT.

DATED ON THE ______ DAY OF ________ 20___

BLANCO COUNTY TAX APPRAISAL DISTRICT

BY: ____________

I, LAURA WALLA, COUNTY CLERK OF BLANCO COUNTY, TEXAS, DO HEREBY CERTIFY THAT THE FOREGOING INSTRUMENT OF WRITING WITH ITS CERTIFICATE OF AUTHENTICATION WAS FILED FOR RECORD IN MY OFFICE THE ______ DAY OF ________ A.D., 20___ AT ______ O'CLOCK ___M., IN THE PLAT RECORDS OF BLANCO COUNTY, TEXAS, IN BOOK ______ PAGE ______

WITNESS MY HAND AND SEAL OF OFFICE THIS THE 30TH DAY OF DECEMBER A.D., 20___

LAURA WALLA, COUNTY CLERK
BLANCO, COUNTY, TEXAS

STATE OF TEXAS
COUNTY OF BLANCO
KNOW ALL MEN BY THESE PRESENTS:

THAT I, BRUCE LANE BRYAN, DO HEREBY CERTIFY THAT I MADE AN ACTUAL AND ACCURATE SURVEY OF THE PLATTED LAND AND THAT THE CORNER MONUMENTS SHOWN ON THE FOREGOING PLAT WERE PROPERLY PLACED UNDER MY PERSONAL SUPERVISION, IN ACCORDANCE WITH THE SUBDIVISION REGULATIONS OF THE CITY OF JOHNSON CITY, TEXAS

FOR REVIEW ONLY

BRUCE LANE BRYAN — JANUARY 27, 2022
REGISTERED PROFESSIONAL LAND SURVEYOR NO. 4249 — DATE
BRYAN TECHNICAL SERVICES, INC
911 NORTH MAIN
TAYLOR, TX 76574

STATE OF TEXAS REGISTERED PROFESSIONAL LAND SURVEYOR BRUCE LANE BRYAN 4249

TRACT SURVEYED NOVEMBER 02, 2021

91.567 ACRES MORE FULLY DESCRIBED BY METES & BOUNDS BY SEPARATE FIELD NOTES PREPARED AND ATTACHED TO DEDICATION INSTRUMENT

STATE OF TEXAS
COUNTY OF BLANCO
KNOW ALL MEN BY THESE PRESENTS:

I, THE UNDERSIGNED, A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF TEXAS, DO HEREBY CERTIFY THAT I PREPARED ALL DRAINAGE CALCULATIONS AND DESIGNED ALL DRAINS, STREETS/ROADS AND APPURTENANCES IN ACCORDANCE WITH THE BLANCO COUNTY SUBDIVISION REGULATIONS.

LINA CHTAY, P.E. NO. 107211

STATE OF TEXAS LINA CHTAY 107211 LICENSED PROFESSIONAL ENGINEER

SURVEYORS NOTES:

1. THE BEARINGS SHOWN HEREON ARE ORIENTED TO THE TEXAS STATE PLANE COORDINATE SYSTEM, CENTRAL ZONE, NAD 83, 93 ADJUSTMENT
2. THE PROPERTY DEPICTED HEREON IS WITHIN A SPECIAL FLOOD HAZARD AREA AS DETERMINED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY; THE FLOOD AREA BEING IDENTIFIED ON F.I.R.M. PANEL NO. 48031C0135C, EFFECTIVE DATE FEBRUARY 02, 1991, IN ZONE "A".
3. THERE ARE NO ENCROACHMENTS, CONFLICTS OR PROTRUSIONS, EXCEPT AS SHOWN HEREON, AND SAID PROPERTY HAS ACCESS TO AND FROM A DEDICATED ROADWAY.
4. ALL SET IRON RODS HAVE ORANGE PLASTIC CAPS STAMPED "BRYAN TECH SERVICES".
5. THERE IS A METES AND BOUNDS DESCRIPTION WHICH ACCOMPANIES THIS PLAT.
6. WATER AND WASTEWATER IMPACT FEES WERE NOT PAID AT THE TIME OF PLATTING FOR THIS PLAT. ALL IMPACT FEES MUST BE PAID IN FULL, AT THE RATE IN EFFECT AT THE TIME OF SERVICE APPLICATIONS, PRIOR TO WATER METER SET AND/OR WASTEWATER SERVICE CONNECTION.

LEGEND

IRS	IRON ROD SET STAMPED "BRYAN TECHNICAL SERVICES"
IRF	IRON ROD FOUND
IRFC	IRON ROD FOUND WITH CAP
D.E.	DRAINAGE EASEMENT
U.E.	UTILITY EASEMENT
N.A.E.	NON-ACCESS EASEMENT
B.L.	BUILDING LINE
P.O.B.	POINT OF BEGINNING
C-E	BACK TO BACK OF CURB
R.O.W.	RIGHT-OF-WAY
( )	DEED CALLS

BLOCK NO.	# OF LOTS
1	11
3	38
4	24
	TOTAL 73

OWNER:
LEGACY CAPITAL FUNDING, LLC
10008 LOXLEY LANE, AUSTIN, TEXAS, 78717

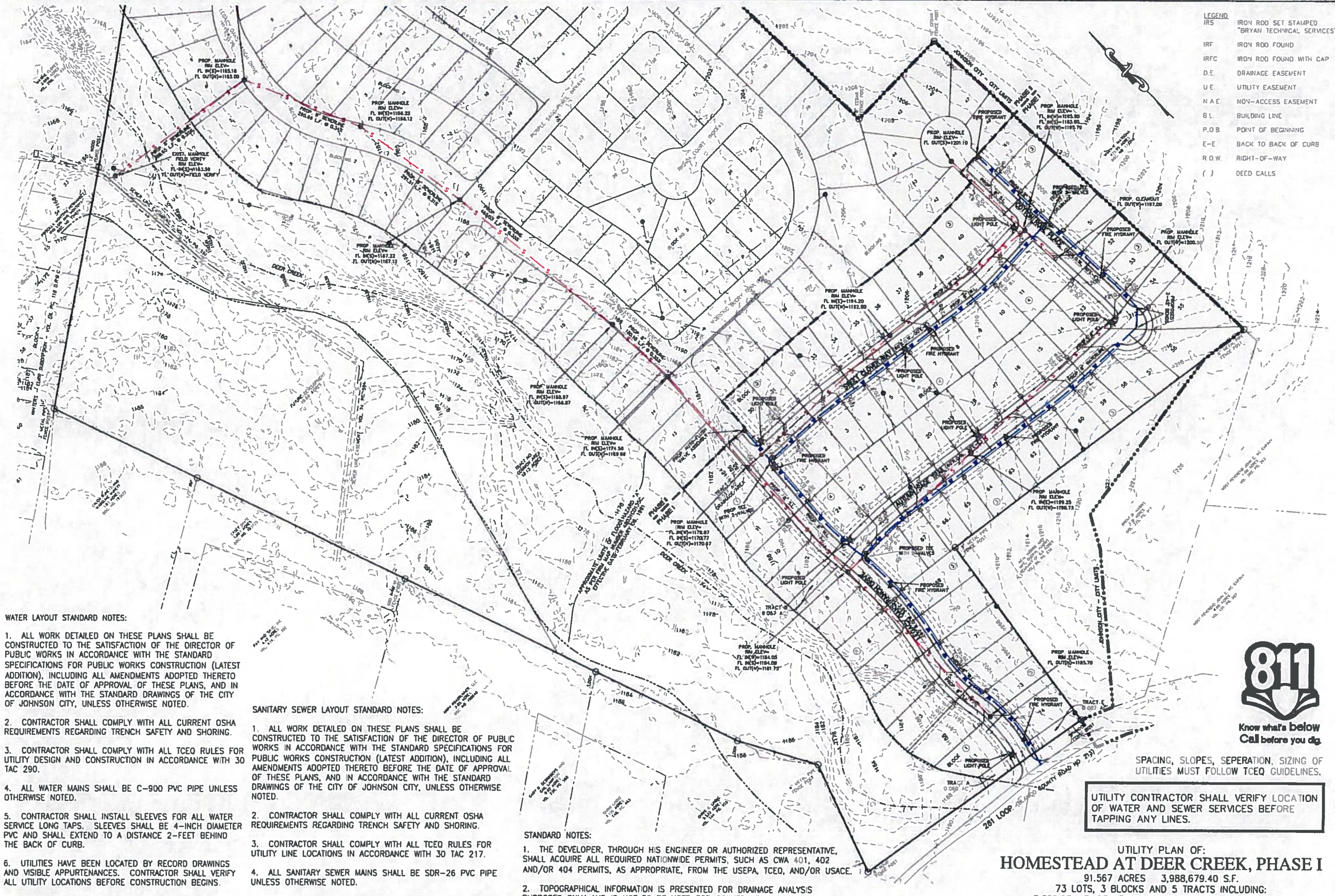
PRELIMINARY PLAT FOR INSPECTION PURPOSES ONLY
(SHEET 1 OF 1)

BELTON ENGINEERING, INC.
Engineering • Design/Build • Planning
106 EAST STREET, BELTON, TEXAS 76513

BRYAN TECHNICAL SERVICES, INC.
911 NORTH MAIN
TAYLOR, TX 76574
FIRM No. 10128500

NO	DATE	REVISIONS	BY

DRAWN BY: RR — CHECKED BY: BLB
SCALE 1" = 100' — APPROVED BY: BLB
PROJECT FILE 21032-FP — DATE FEBRUARY 21, 2022



LEGEND

IRS	IRON ROD SET STAMPED "BRYAN TECHNICAL SERVICES"
IRF	IRON ROD FOUND
IRFC	IRON ROD FOUND WITH CAP
D.E.	DRAINAGE EASEMENT
U.E.	UTILITY EASEMENT
N.A.E.	NON-ACCESS EASEMENT
B.L.	BUILDING LINE
P.O.B.	POINT OF BEGINNING
E-E	BACK TO BACK OF CURB
R.O.W.	RIGHT-OF-WAY
( )	DEED CALLS

WATER LAYOUT STANDARD NOTES:

1. ALL WORK DETAILED ON THESE PLANS SHALL BE CONSTRUCTED TO THE SATISFACTION OF THE DIRECTOR OF PUBLIC WORKS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST ADDITION), INCLUDING ALL AMENDMENTS ADOPTED THERETO BEFORE THE DATE OF APPROVAL OF THESE PLANS, AND IN ACCORDANCE WITH THE STANDARD DRAWINGS OF THE CITY OF JOHNSON CITY, UNLESS OTHERWISE NOTED.
2. CONTRACTOR SHALL COMPLY WITH ALL CURRENT OSHA REQUIREMENTS REGARDING TRENCH SAFETY AND SHORING.
3. CONTRACTOR SHALL COMPLY WITH ALL TCEQ RULES FOR UTILITY DESIGN AND CONSTRUCTION IN ACCORDANCE WITH 30 TAC 290.
4. ALL WATER MAINS SHALL BE C-900 PVC PIPE UNLESS OTHERWISE NOTED.
5. CONTRACTOR SHALL INSTALL SLEEVES FOR ALL WATER SERVICE LONG TAPS. SLEEVES SHALL BE 4-INCH DIAMETER PVC AND SHALL EXTEND TO A DISTANCE 2-FEET BEHIND THE BACK OF CURB.
6. UTILITIES HAVE BEEN LOCATED BY RECORD DRAWINGS AND VISIBLE APPURTENANCES. CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS BEFORE CONSTRUCTION BEGINS.
7. ALL WATER MAINS SHALL HAVE A MINIMUM OF 42 INCHES OF COVER MATERIAL BELOW FINISH GRADE.
8. FIRE HYDRANT SYMBOLS ARE FOR REPRESENTATION ONLY. FIRE HYDRANT ORIENTATION SHALL BE PRESENTED ON A SEPARATE DETAIL.

SANITARY SEWER LAYOUT STANDARD NOTES:

1. ALL WORK DETAILED ON THESE PLANS SHALL BE CONSTRUCTED TO THE SATISFACTION OF THE DIRECTOR OF PUBLIC WORKS IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST ADDITION), INCLUDING ALL AMENDMENTS ADOPTED THERETO BEFORE THE DATE OF APPROVAL OF THESE PLANS, AND IN ACCORDANCE WITH THE STANDARD DRAWINGS OF THE CITY OF JOHNSON CITY, UNLESS OTHERWISE NOTED.
2. CONTRACTOR SHALL COMPLY WITH ALL CURRENT OSHA REQUIREMENTS REGARDING TRENCH SAFETY AND SHORING.
3. CONTRACTOR SHALL COMPLY WITH ALL TCEQ RULES FOR UTILITY LINE LOCATIONS IN ACCORDANCE WITH 30 TAC 217.
4. ALL SANITARY SEWER MAINS SHALL BE SDR-26 PVC PIPE UNLESS OTHERWISE NOTED.
5. DOUBLE SEWER SERVICES SHALL CONSIST OF TWO SEPARATE 4-INCH DIAMETER PVC TAPS LOCATED IN THE SAME TRENCH.
6. UTILITIES HAVE BEEN LOCATED BY RECORD DRAWINGS AND VISIBLE APPURTENANCES. CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS BEFORE CONSTRUCTION BEGINS.

STANDARD NOTES:

1. THE DEVELOPER, THROUGH HIS ENGINEER OR AUTHORIZED REPRESENTATIVE, SHALL ACQUIRE ALL REQUIRED NATIONWIDE PERMITS, SUCH AS CWA 401, 402 AND/OR 404 PERMITS, AS APPROPRIATE, FROM THE USEPA, TCEQ, AND/OR USACE.
2. TOPOGRAPHICAL INFORMATION IS PRESENTED FOR DRAINAGE ANALYSIS PURPOSES ONLY AND IS NOT TO BE USED FOR CONSTRUCTION.
3. TOPOGRAPHICAL INFORMATION PRESENTED HEREIN IS DERIVED FROM TNRIS DATA HUB MAPS.
4. THE ENGINEER OF RECORD MUST BE NOTIFIED IMMEDIATELY IF ANY DISCREPANCIES IN THE PLANS EXIST.

SPACING, SLOPES, SEPERATION, SIZING OF UTILITIES MUST FOLLOW TCEQ GUIDELINES.

UTILITY CONTRACTOR SHALL VERIFY LOCATION OF WATER AND SEWER SERVICES BEFORE TAPPING ANY LINES.

UTILITY PLAN OF:

HOMESTEAD AT DEER CREEK, PHASE I

91.567 ACRES 3,988,679.40 S.F.
73 LOTS, 3 BLOCKS AND 5 TRACTS INCLUDING:
3,289.93 L.F. OF NEW STREETS AND 4.48 A.C. OF R.O.W.
JOSEPH DUEL SURVEY, ABSTRACT #147 &
ELIJAH MARSHALL SURVEY ABSTRACT #393, BLANCO COUNTY, TEXAS
A SUBDIVISION IN THE CITY OF JOHNSON CITY, BLANCO COUNTY, TEXAS

100 0 100 200

REVISIONS

FIRM # F-13392

BELTON ENGINEERING INC.
106 NO. EAST STREET
BELTON, TEXAS 76513
OFFICE (254)731-5600
MOBILE (254)289-7273
BELTONENGINEERS.COM

Engineering
Design/Build
Planning

811 Know what's below Call before you dig.

UTILITY PLAN OF:
HOMESTEAD AT DEER CREEK, PHASE I
217 281 LOOP
CITY OF JOHNSON CITY, BLANCO COUNTY, TEXAS
LEGACY CAPITAL FUNDING, LLC
10008 LOXLEY LANE, AUSTIN, TEXAS, 78717

STATE OF TEXAS
LINA CHTAY
107211
LICENSED PROFESSIONAL ENGINEER
02/21/22

SCALE: 1"=100'
DRAWN.: RR
ELEC. DRAWING FILE
C:\21032-UP.DWG
DATE: 02/21/22
JOB NO.: 21032
02 OF 10

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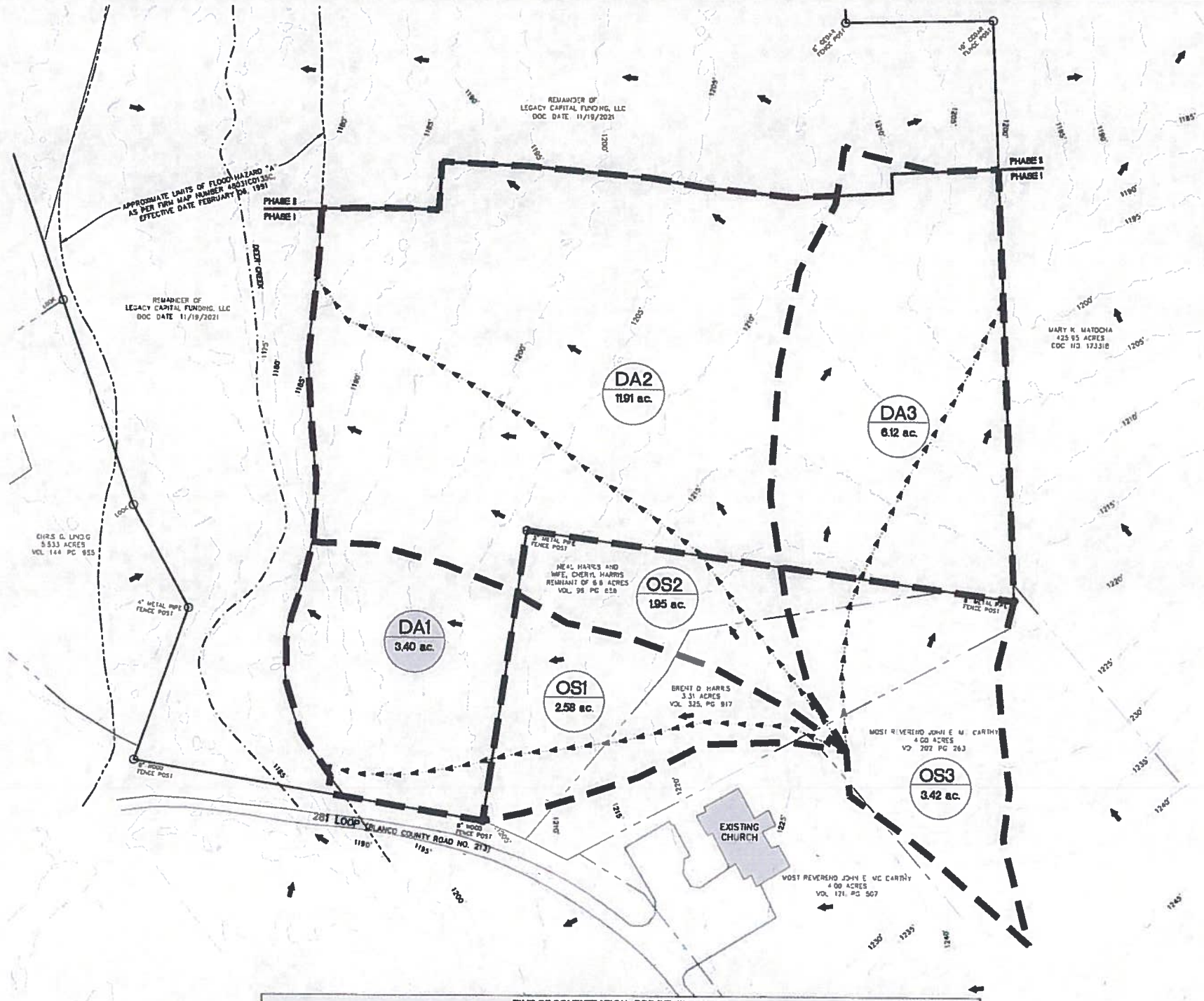

TIME OF CONENTRATION - PRE DEVELOPMENT

POST		Sheet				Shallow				Concentrated							Total	Calc
DA	Area	n	L	S	Te	n	L	S	Te	Ch/P	n	L	S	Wp	X-Area	Te	Te	Te
OS1+DA1	5.98	0.13	300	0.033	2.402	0.13	622.84	0.052	7.933								10.3	10.3
OS2+DA2	13.86	0.13	300	0.033	2.402	0.13	948.45	0.042	13.73								16.1	16.1
OS3+DA3	9.54	0.13	300	0.037	2.312	0.13	532.57	0.038	8.268								10.6	10.6

Drainage Calculations, Existing Conditions

DA	AREA	T_c	C_{10}	i_{10}	Q_{10}	C_{25}	i_{25}	Q_{25}	C_{100}	i_{100}	Q_{100}
	(acres)	(min.)		(in./hr.)	(cfs)		(in./hr.)	(cfs)		(in./hr.)	(cfs)
OS1+DA1	5.98	10.3	0.38	7.14	16.23	0.42	8.78	22.06	0.49	11.45	33.53
OS2+DA2	13.86	16.1	0.38	5.97	31.42	0.42	7.37	42.89	0.49	9.88	65.74
OS3+DA3	9.54	10.6	0.38	7.08	25.69	0.42	8.71	34.91	0.49	11.36	53.10

100 0 100 200

REVISIONS

FIRM # F-13392

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106 NO EAST STREET
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POST DRAINAGE PLAN OF:
HOMESTEADS AT DEER CREEK
217 LOOP 281
JOHNSON CITY TX 78636, BLANCO COUNTY
MEHUL DARBAR

STATE OF TEXAS
UNA CHTAY
107211
LICENSED PROFESSIONAL ENGINEER
02/03/22

SCALE: 1"=100'
DRAWN.: AM
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DATE: 02/03/22
JOB NO.: 21032
03 OF 10
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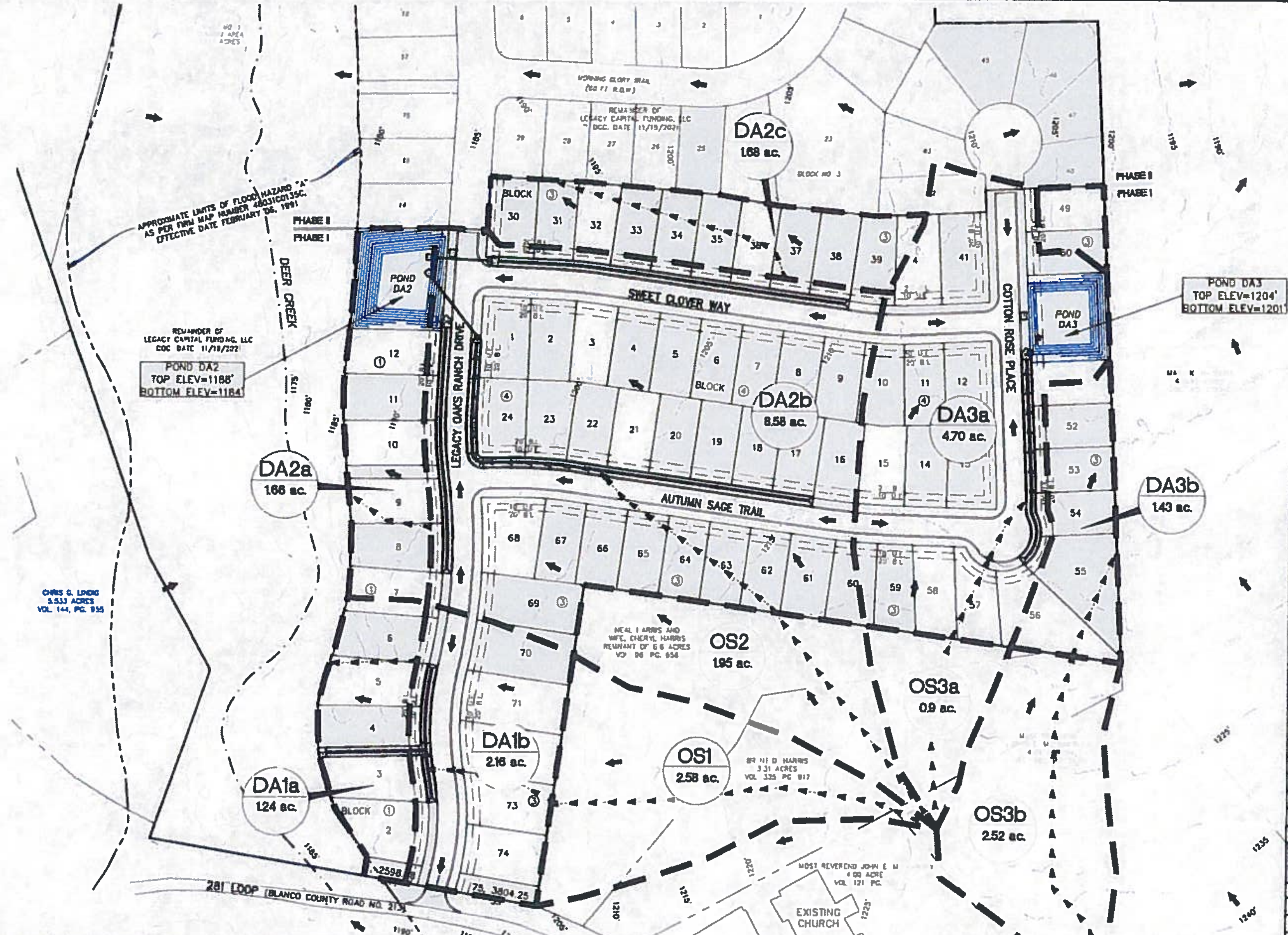
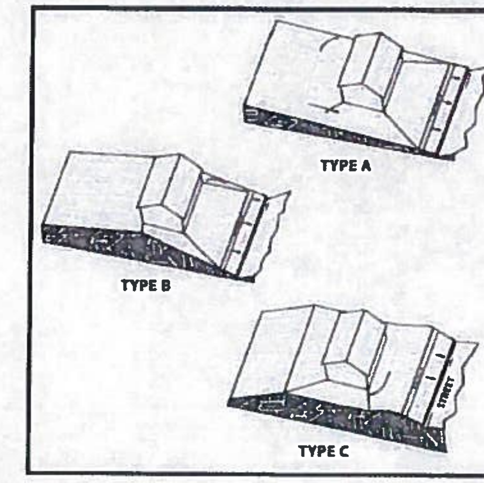




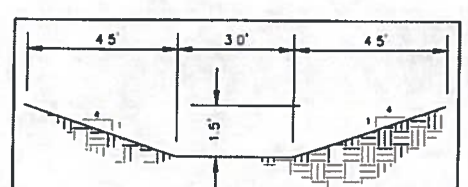
NOTE:
1. THE ENGINE IMMEDIATELY F PLANS EXIST
2. THE HOMEB BETWEEN LOTS PLAN

Drainage Calculations, Proposed Conditions

DA	AREA (acres)	Tc (min.)	C_{10}	i_{10} (in/hr.)	Q_{10} (cfs)	C_{25}	i_{25} (in/hr.)	Q_{25} (cfs)	C_{100}	i_{100} (in/hr.)	Q_{100} (cfs)
DA1a	1.24	5.0	0.51	8.83	5.54	0.55	10.80	7.35	0.63	13.91	10.79
OS1+DA1b	4.74	10.7	0.44	7.05	14.75	0.48	8.67	19.85	0.56	11.31	29.80
DA2a	1.66	5.0	0.48	8.83	7.00	0.52	10.80	9.32	0.60	13.91	13.74
OS2+DA2b	10.53	13.1	0.44	6.52	30.04	0.48	8.03	40.55	0.55	10.51	61.19
DA2c	1.68	9.7	0.58	7.29	7.09	0.62	8.96	9.39	0.70	11.67	13.77
OS3a+DA3a	5.60	8.8	0.45	8.19	20.66	0.49	10.03	27.66	0.57	12.97	41.16
OS3b+DA3b	3.94	12.5	0.42	6.65	11.09	0.46	8.19	14.99	0.54	10.71	22.65

TIME OF CONENTRATION - POST DEVELOPMENT

POST		Sheet				Shallow				Concentrated							Total	Calc
DA	Area	n	L	S	Tc	n	L	S	Tc	ChP	n	L	S	Wp	X-Area	Tc	Tc	Tc
DA1a	1.24	0.24	138.4	0.110	1.295												1.3	5.0
OS1+DA1b	4.74	0.13	300	0.033	2.402	0.13	309.42	0.040	4.566	A1	0.035	64.73	0.038	9.36	12.8	0.02	10.7	10.7
						0.24	167	0.060	3.617									
						0.015	33	0.030	0.067									
DA2a	1.66	0.24	143.67	0.052	1.819												1.8	5.0
OS2+DA2b	10.53	0.13	300	0.033	2.402	0.13	119.7	0.033	1.993	A3	0.035	400	0.03	10.59	8.15	0.804	13.1	13.1
						0.24	298.5	0.044	7.827									
						0.015	42.78	0.023	0.102									
DA2c	1.68	0.24	150	0.017	2.973	0.24	258.14	0.043	6.773								9.7	9.7
OS3a+DA3a	5.60	0.13	300	0.040	2.233	0.24	135.43	0.041	3.703	A5	0.035	250.7	0.024	11.06	8.76	0.508	8.8	8.8
						0.015	108.94	0.017	0.31									
OS3b+DA3b	3.94	0.13	300	0.040	2.233	0.13	345.43	0.038	5.356								12.5	12.5
						0.24	180.95	0.041	4.888									



(A) PROPOSED CHANNEL SECTION
NTS

*REFER TO DETAIL "A" FOR ALL PROPOSED CHANNELS

C-COMPOSITE CALCULATIONS 10 YR

AREA	C GRASS	GRASS AREA (ac.)	C RANGE	RANGE AREA (ac.)	C ROOF/CONC (ac.)	ROOF/CONC AREA (ac.)	TOTAL AREA (ac.)	C COMPOSITE
DA1a	0.35	0.84	0.38	0.00	0.83	0.40	1.24	0.51
OS1+DA1b	0.35	1.42	0.38	2.58	0.83	0.74	4.74	0.44
DA2a	0.35	1.22	0.38	0.00	0.83	0.44	1.66	0.48
OS2+DA2b	0.35	6.77	0.38	1.95	0.83	1.81	10.53	0.44
DA2c	0.35	0.87	0.38	0.00	0.83	0.80	1.68	0.58
OS3a+DA3a	0.35	3.58	0.38	0.90	0.83	1.12	5.60	0.45
OS3b+DA3b	0.35	0.98	0.38	2.52	0.83	0.44	3.94	0.42

C-COMPOSITE CALCULATIONS 25 YR

AREA	C GRASS	GRASS AREA (ac.)	C RANGE	RANGE AREA (ac.)	C ROOF CONC (ac.)	ROOF/CONC AREA (ac.)	TOTAL AREA (ac.)	C COMPOSITE
DA1a	0.39	0.84	0.42	0.00	0.88	0.40	1.24	0.55
OS1+DA1b	0.39	1.42	0.42	2.58	0.88	0.74	4.74	0.48
DA2a	0.39	1.22	0.42	0.00	0.88	0.44	1.66	0.52
OS2+DA2b	0.39	6.77	0.42	1.95	0.88	1.81	10.53	0.48
DA2c	0.39	0.87	0.42	0.00	0.88	0.80	1.68	0.62
OS3a+DA3a	0.39	3.58	0.42	0.90	0.88	1.12	5.60	0.49
OS3b+DA3b	0.39	0.98	0.42	2.52	0.88	0.44	3.94	0.46

C-COMPOSITE CALCULATIONS 100 YR

AREA	C GRASS	GRASS AREA (ac.)	C RANGE	RANGE AREA (ac.)	C ROOF/CONC. (ac.)	ROOF/CONC AREA (ac.)	TOTAL AREA (ac.)	C COMPOSITE
DA1a	0.46	0.84	0.49	0.00	0.97	0.40	1.24	0.63
OS1+DA1b	0.46	1.42	0.49	2.58	0.97	0.74	4.74	0.56
DA2a	0.46	1.22	0.49	0.00	0.97	0.44	1.66	0.60
OS2+DA2b	0.46	6.77	0.49	1.95	0.97	1.81	10.53	0.55
DA2c	0.46	0.87	0.49	0.00	0.97	0.80	1.68	0.70
OS3a+DA3a	0.46	3.58	0.49	0.90	0.97	1.12	5.60	0.57
OS3b+DA3b	0.46	0.98	0.49	2.52	0.97	0.44	3.94	0.54

Assumptions. Total impervious (driveways and rooftops is 3500sf/ Lot)

DETENTION POND -DA2

STORM EVENT	Q PRE (OS1+DA1)+(OS2+DA2) (cfs)	Q POST DA1a+(OS1+DA1b)+DA2a+DA2c+(POND DA2) (cfs)	Q DISCHARGE POND DA2 (cfs)	MAX. ELEV (ft)	MAX STORAGE (cf)
10-YEAR EVENT	38.11	22.98	14.41	1186.03	17,802
25-YEAR EVENT	51.97	31.36	20.22	1186.54	23,522
100-YEAR EVENT	79.54	47.82	31.06	1187.38	33,587

DETENTION POND -DA3

STORM EVENT	Q PRE OS3+DA3 (cfs)	Q POST (OS3b+DA3b)+POND DA3 (cfs)	Q POST POND DA3 (cfs)	MAX. ELEV (ft)	MAX STORAGE (cf)
10-YEAR EVENT	25.69	19.66	11.44	1201.90	7,086
25-YEAR EVENT	34.91	26.66	17.40	1202.20	8,787
100-YEAR EVENT	53.10	47.67	29.14	1202.70	11,154

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FRM # F 13392

BELTON ENGINEERING INC.

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Design Build
Planning

P RANA N
HOMESTEADS AT DEER CREEK

N
MEHUL DARBAR

STATE OF TEXAS
LINA CHTAY
107211
LICENSED PROFESSIONAL ENGINEER
02/03

SCALE: 1"=100'
DRAWN.: AM
DATE: 2/03/22
JOB NO.: 21003
04 OF 10
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Hydrograph Report

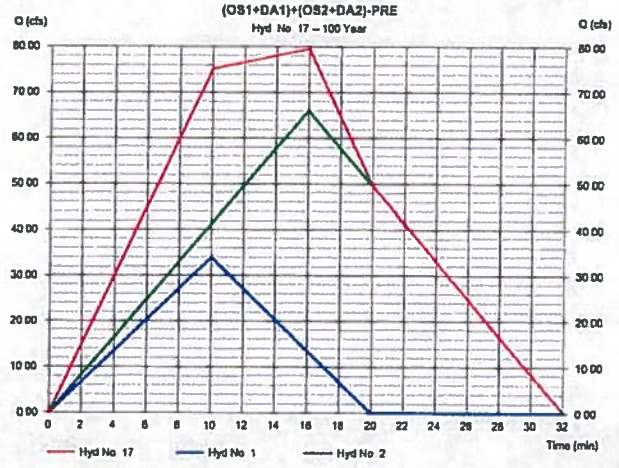
17

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v12 — Thursday, 02 / 3 / 2022

Hyd. No. 17

(OS1+DA1)+(OS2+DA2)-PRE

Hydrograph type	= Combine	Peak discharge	= 79.54 cfs
Storm frequency	= 100 yrs	Time to peak	= 16 min
Time interval	= 1 min	Hyd. volume	= 83,681 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 19.840 ac



Hydrograph Report

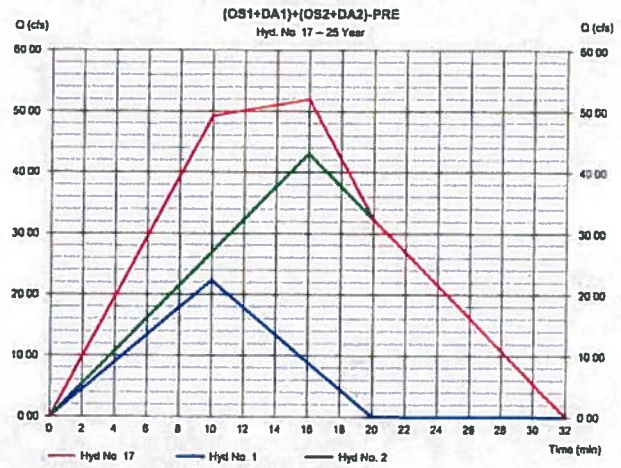
17

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v12 — Thursday, 02 / 3 / 2022

Hyd. No. 17

(OS1+DA1)+(OS2+DA2)-PRE

Hydrograph type	= Combine	Peak discharge	= 51.97 cfs
Storm frequency	= 25 yrs	Time to peak	= 16 min
Time interval	= 1 min	Hyd. volume	= 54,715 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 19.840 ac



Hydrograph Report

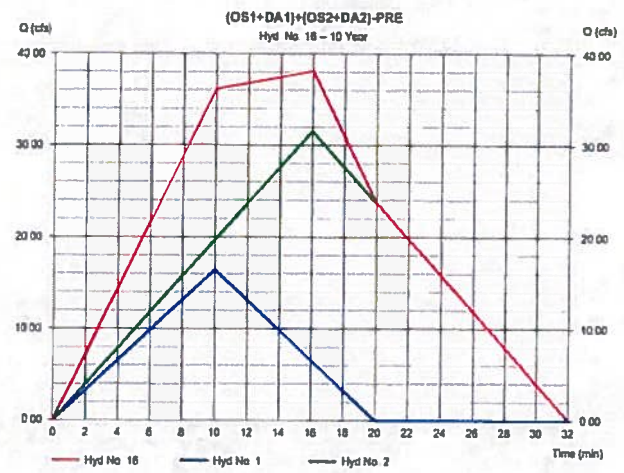
17

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v12 — Thursday, 02 / 3 / 2022

Hyd. No. 16

(OS1+DA1)+(OS2+DA2)-PRE

Hydrograph type	= Combine	Peak discharge	= 38.11 cfs
Storm frequency	= 10 yrs	Time to peak	= 16 min
Time interval	= 1 min	Hyd. volume	= 40,133 cuft
Inflow hyds.	= 1, 2	Contrib. drain. area	= 19.840 ac



Hydrograph Report

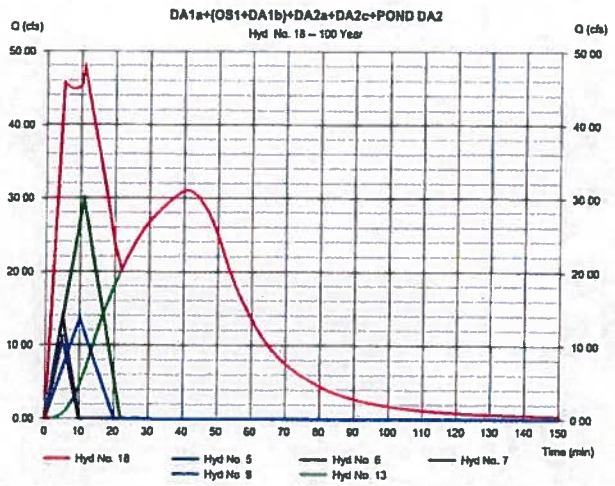
18

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v12 — Thursday, 02 / 3 / 2022

Hyd. No. 18

DA1a+(OS1+DA1b)+DA2a+DA2c+POND DA2

Hydrograph type	= Combine	Peak discharge	= 47.82 cfs
Storm frequency	= 100 yrs	Time to peak	= 11 min
Time interval	= 1 min	Hyd. volume	= 119,626 cuft
Inflow hyds.	= 5, 6, 7, 9, 13	Contrib. drain. area	= 9.320 ac



Hydrograph Report

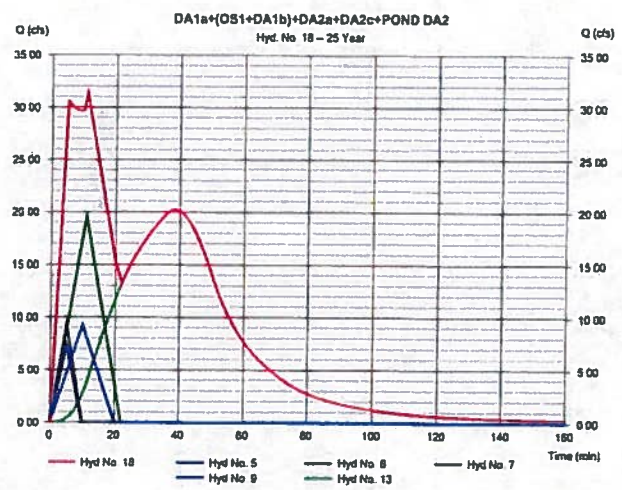
18

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v12 — Thursday, 02 / 3 / 2022

Hyd. No. 18

DA1a+(OS1+DA1b)+DA2a+DA2c+POND DA2

Hydrograph type	= Combine	Peak discharge	= 31.36 cfs
Storm frequency	= 25 yrs	Time to peak	= 11 min
Time interval	= 1 min	Hyd. volume	= 78,834 cuft
Inflow hyds.	= 5, 6, 7, 9, 13	Contrib. drain. area	= 9.320 ac



Hydrograph Report

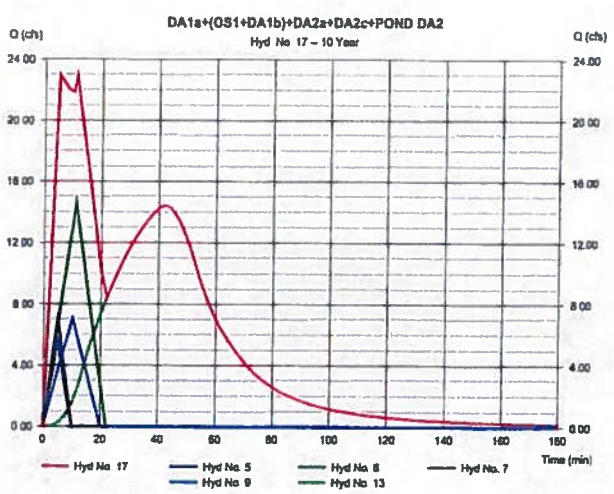
18

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v12 — Thursday, 02 / 3 / 2022

Hyd. No. 17

DA1a+(OS1+DA1b)+DA2a+DA2c+POND DA2

Hydrograph type	= Combine	Peak discharge	= 22.98 cfs
Storm frequency	= 10 yrs	Time to peak	= 5 min
Time interval	= 1 min	Hyd. volume	= 58,564 cuft
Inflow hyds.	= 5, 6, 7, 9, 13	Contrib. drain. area	= 9.320 ac



REVISIONS

FIRM # F-13392

BELTON ENGINEERING INC.

105 NO. EAST STREET
BELTON, TEXAS 76513
OFFICE (254)731-5600
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BELTONENGINEERS.COM

Engineering
Design/Build
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POND DA2 DRAINAGE AREA HYDROGRAPHS FOR:
HOMESTEADS AT DEER CREEK
217 LOOP 281
JOHNSON CITY TX 78636, BLANCO COUNTY

MEHUL DARBAR

STATE OF TEXAS
LINA CHTAY
107211
LICENSED PROFESSIONAL ENGINEER

02/03/22

SCALE: NTS

DRAWN.: AM

ELEC. DRAWING FILE
C:\21032-DR.DWG

DATE: 02/03/22

JOB NO.: 21032

05 OF 10

C3.02

Hydrograph Report

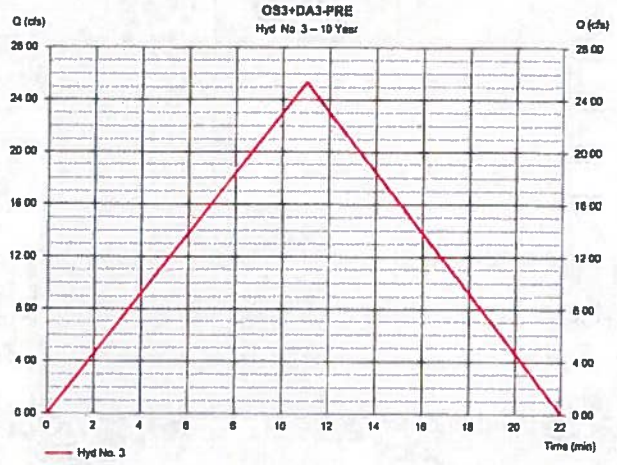
5

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v12 — Thursday, 02 / 3 / 2022

Hyd. No. 3

OS3+DA3-PRE

Hydrograph type	= Rational	Peak discharge	= 25.31 cfs
Storm frequency	= 10 yrs	Time to peak	= 11 min
Time interval	= 1 min	Hyd. volume	= 16,707 cuft
Drainage area	= 9.540 ac	Runoff coeff.	= 0.38
Intensity	= 6.983 in/hr	Tc by User	= 11.00 min
IDF Curve	= Johnson City IDF	Asc/Rec limb fact	= 1/1



Hydrograph Report

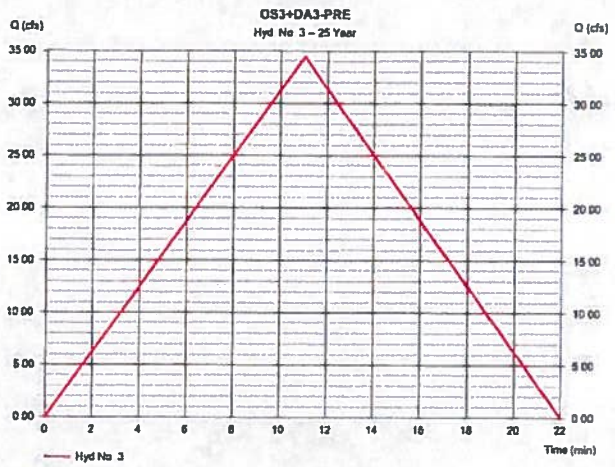
5

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v12 — Thursday, 02 / 3 / 2022

Hyd. No. 3

OS3+DA3-PRE

Hydrograph type	= Rational	Peak discharge	= 34.42 cfs
Storm frequency	= 25 yrs	Time to peak	= 11 min
Time interval	= 1 min	Hyd. volume	= 22,717 cuft
Drainage area	= 9.540 ac	Runoff coeff.	= 0.42
Intensity	= 8.590 in/hr	Tc by User	= 11.00 min
IDF Curve	= Johnson City IDF	Asc/Rec limb fact	= 1/1



Hydrograph Report

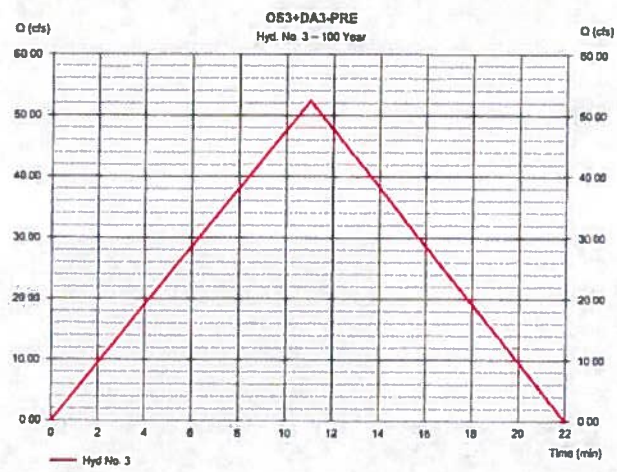
5

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v12 — Thursday, 02 / 3 / 2022

Hyd. No. 3

OS3+DA3-PRE

Hydrograph type	= Rational	Peak discharge	= 52.38 cfs
Storm frequency	= 100 yrs	Time to peak	= 11 min
Time interval	= 1 min	Hyd. volume	= 34,571 cuft
Drainage area	= 9.540 ac	Runoff coeff.	= 0.49
Intensity	= 11.205 in/hr	Tc by User	= 11.00 min
IDF Curve	= Johnson City IDF	Asc/Rec limb fact	= 1/1



Hydrograph Report

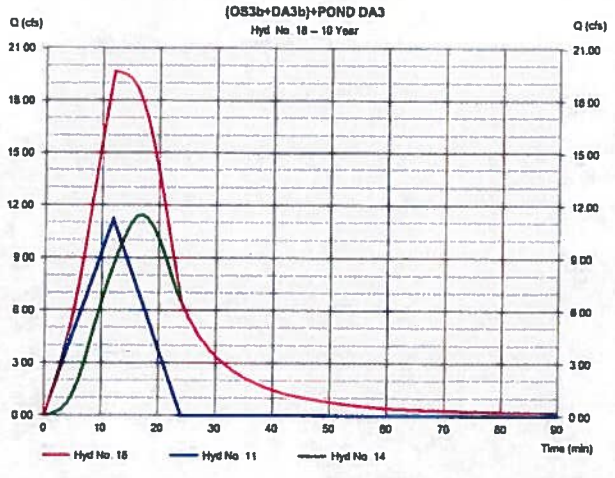
19

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v12 — Thursday, 02 / 3 / 2022

Hyd. No. 18

(OS3b+DA3b)+POND DA3

Hydrograph type	= Combine	Peak discharge	= 19.66 cfs
Storm frequency	= 10 yrs	Time to peak	= 12 min
Time interval	= 1 min	Hyd. volume	= 21,999 cuft
Inflow hyds.	= 11, 14	Contrib. drain. area	= 3.940 ac



Hydrograph Report

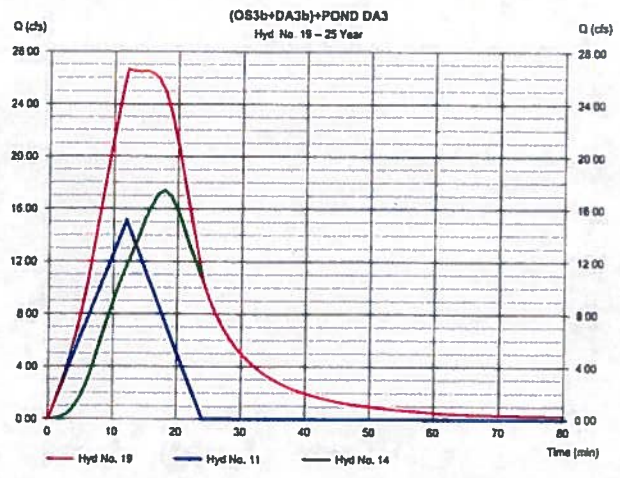
19

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v12 — Thursday, 02 / 3 / 2022

Hyd. No. 19

(OS3b+DA3b)+POND DA3

Hydrograph type	= Combine	Peak discharge	= 26.66 cfs
Storm frequency	= 25 yrs	Time to peak	= 12 min
Time interval	= 1 min	Hyd. volume	= 30,996 cuft
Inflow hyds.	= 11, 14	Contrib. drain. area	= 3.940 ac



Hydrograph Report

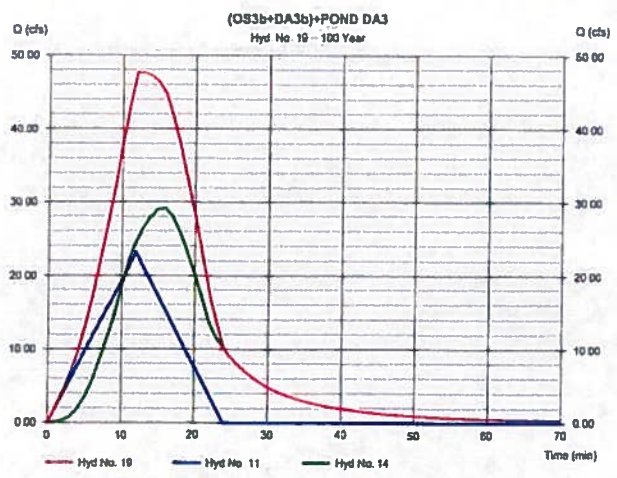
19

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v12 — Thursday, 02 / 3 / 2022

Hyd. No. 19

(OS3b+DA3b)+POND DA3

Hydrograph type	= Combine	Peak discharge	= 47.87 cfs
Storm frequency	= 100 yrs	Time to peak	= 13 min
Time interval	= 1 min	Hyd. volume	= 45,263 cuft
Inflow hyds.	= 11, 14	Contrib. drain. area	= 3.940 ac



REVISIONS

FIRM # F-13392

BELTON ENGINEERING INC.

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Engineering
Design/Build
Planning

POND DA3 DRAINAGE AREA HYDROGRAPHS FOR:
HOMESTEADS AT DEER CREEK
217 LOOP 281
JOHNSON CITY TX 78636, BLANCO COUNTY
MEHUL DARBAR

STATE OF TEXAS
LINA CHTAY
107211
LICENSED PROFESSIONAL ENGINEER

02/03/22

SCALE: NTS
DRAWN.: AM
ELEC. DRAWING FILE
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DATE: 02/03/22
JOB NO.: 21003
06 OF 10

C3.03

Hydrograph Report 13

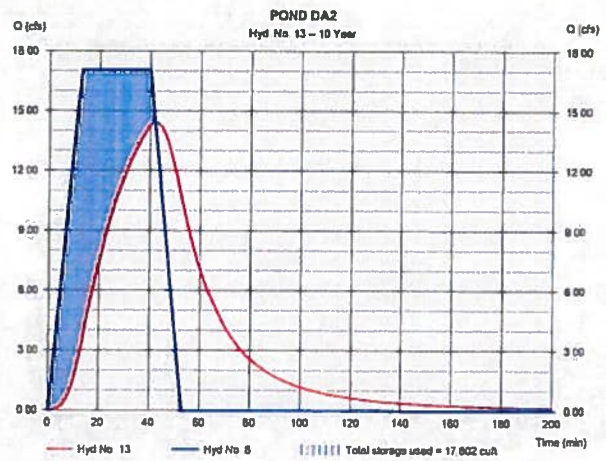
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v12 — Thursday, 02 / 3 / 2022

Hyd. No. 13

POND DA2

Hydrograph type	= Reservoir	Peak discharge	= 14.41 cfs
Storm frequency	= 10 yrs	Time to peak	= 42 min
Time interval	= 1 min	Hyd. volume	= 40,938 cuft
Inflow hyd. No.	= 8 - OS2+DA2b-POST	Max. Elevation	= 1186.03 ft
Reservoir name	= POND DA2	Max. Storage	= 17,802 cuft

Storage Indication method used.



Hydrograph Report 13

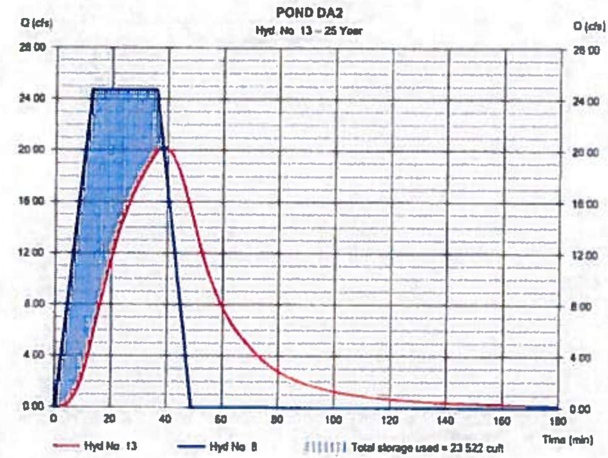
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v12 — Thursday, 02 / 3 / 2022

Hyd. No. 13

POND DA2

Hydrograph type	= Reservoir	Peak discharge	= 20.22 cfs
Storm frequency	= 25 yrs	Time to peak	= 38 min
Time interval	= 1 min	Hyd. volume	= 53,377 cuft
Inflow hyd. No.	= 8 - OS2+DA2b-POST	Max. Elevation	= 1186.54 ft
Reservoir name	= POND DA2	Max. Storage	= 23,522 cuft

Storage Indication method used.



Hydrograph Report 13

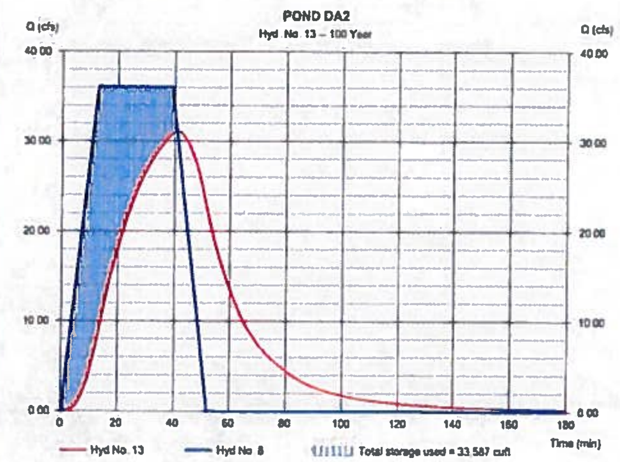
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v12 — Thursday, 02 / 3 / 2022

Hyd. No. 13

POND DA2

Hydrograph type	= Reservoir	Peak discharge	= 31.08 cfs
Storm frequency	= 100 yrs	Time to peak	= 41 min
Time interval	= 1 min	Hyd. volume	= 84,416 cuft
Inflow hyd. No.	= 8 - OS2+DA2b-POST	Max. Elevation	= 1187.38 ft
Reservoir name	= POND DA2	Max. Storage	= 33,587 cuft

Storage Indication method used.



Pond Report 14

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v12 — Thursday, 02 / 3 / 2022

Pond No. 1 - POND DA2

Pond Data

Contours -User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 1184.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1184.00	7,288	0	0
1.00	1185.00	8,720	8,000	8,000
2.00	1186.00	10,281	9,508	17,500
3.00	1187.00	11,901	11,141	28,647
4.00	1188.00	13,821	12,808	41,562

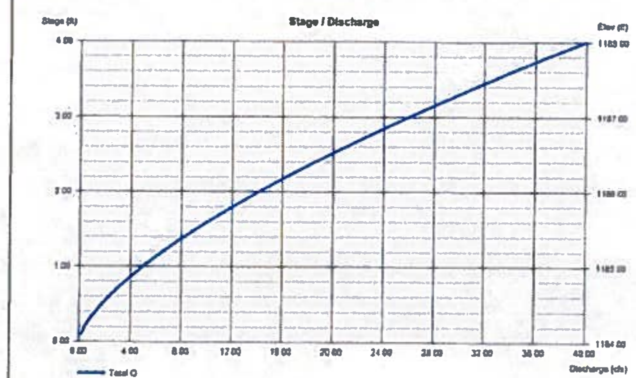
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 1.50	0.00	0.00	0.00
Crest El. (ft)	= 1184.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Contour)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Hydrograph Report 15

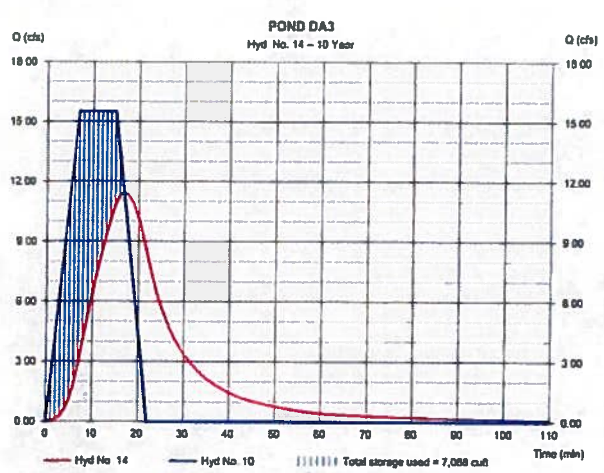
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v12 — Thursday, 02 / 3 / 2022

Hyd. No. 14

POND DA3

Hydrograph type	= Reservoir	Peak discharge	= 11.44 cfs
Storm frequency	= 10 yrs	Time to peak	= 17 min
Time interval	= 1 min	Hyd. volume	= 13,951 cuft
Inflow hyd. No.	= 10 - OS3a+DA3a-POST	Max. Elevation	= 1201.90 ft
Reservoir name	= POND DA3	Max. Storage	= 7,068 cuft

Storage Indication method used.



Hydrograph Report 15

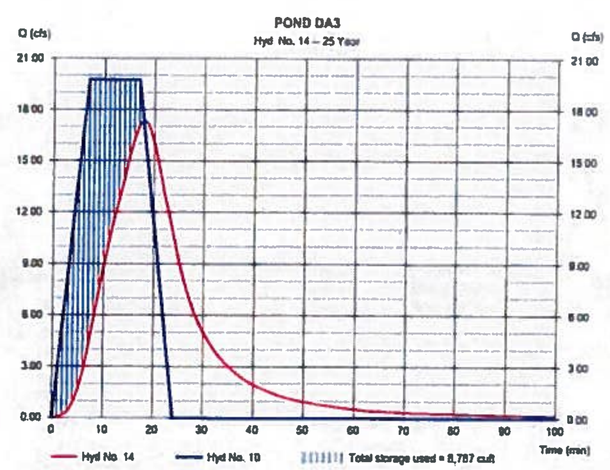
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v12 — Thursday, 02 / 3 / 2022

Hyd. No. 14

POND DA3

Hydrograph type	= Reservoir	Peak discharge	= 17.40 cfs
Storm frequency	= 25 yrs	Time to peak	= 18 min
Time interval	= 1 min	Hyd. volume	= 20,143 cuft
Inflow hyd. No.	= 10 - OS3a+DA3a-POST	Max. Elevation	= 1202.20 ft
Reservoir name	= POND DA3	Max. Storage	= 8,787 cuft

Storage Indication method used.



Hydrograph Report 15

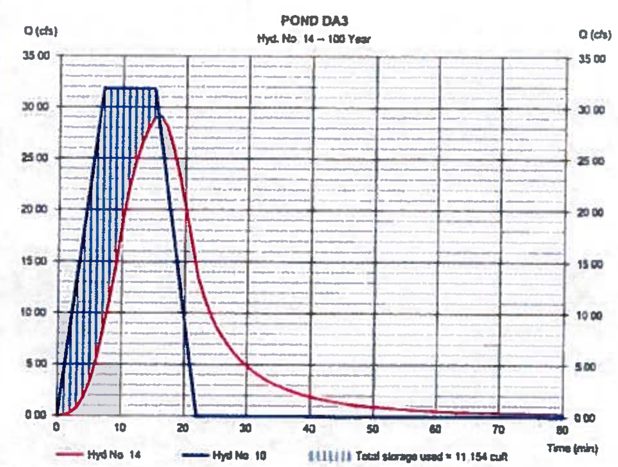
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v12 — Thursday, 02 / 3 / 2022

Hyd. No. 14

POND DA3

Hydrograph type	= Reservoir	Peak discharge	= 29.14 cfs
Storm frequency	= 100 yrs	Time to peak	= 16 min
Time interval	= 1 min	Hyd. volume	= 28,618 cuft
Inflow hyd. No.	= 10 - OS3a+DA3a-POST	Max. Elevation	= 1202.70 ft
Reservoir name	= POND DA3	Max. Storage	= 11,154 cuft

Storage Indication method used.



Pond Report 16

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® 2019 by Autodesk, Inc. v12 — Thursday, 02 / 3 / 2022

Pond No. 2 - POND DA3

Pond Data

Contours -User-defined contour areas. Average end area method used for volume calculation. Begining Elevation = 1201.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	1201.00	7,139	0	0
1.00	1202.00	8,556	7,847	7,847
2.00	1203.00	1,098	4,827	12,674
3.00	1204.00	11,771	6,435	19,109

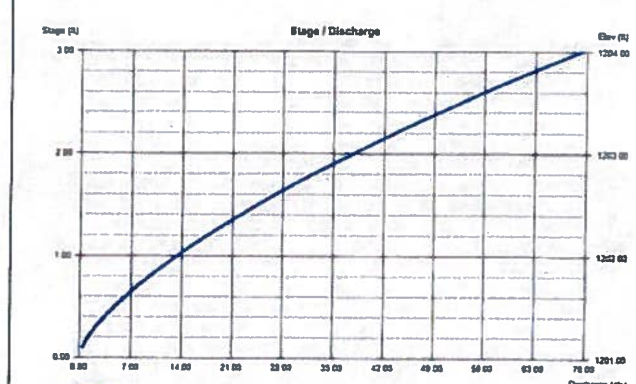
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 4.00	0.00	0.00	0.00
Crest El. (ft)	= 1201.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Contour)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



REVISIONS

FIRM # F-13392

BELTON ENGINEERING INC.

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Engineering
Design/Build
Planning

DETENTION POND HYDROGRAPHS FOR:
HOMESTEADS AT DEER CREEK
217 LOOP 281
JOHNSON CITY TX 78636, BLANCO COUNTY

MEHUL DARBAR

STATE OF TEXAS
LINA CHTAY
107211
LICENSED PROFESSIONAL ENGINEER
02/03/22

SCALE: NTS
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DATE: 02/03/22
JOB NO.: 21032
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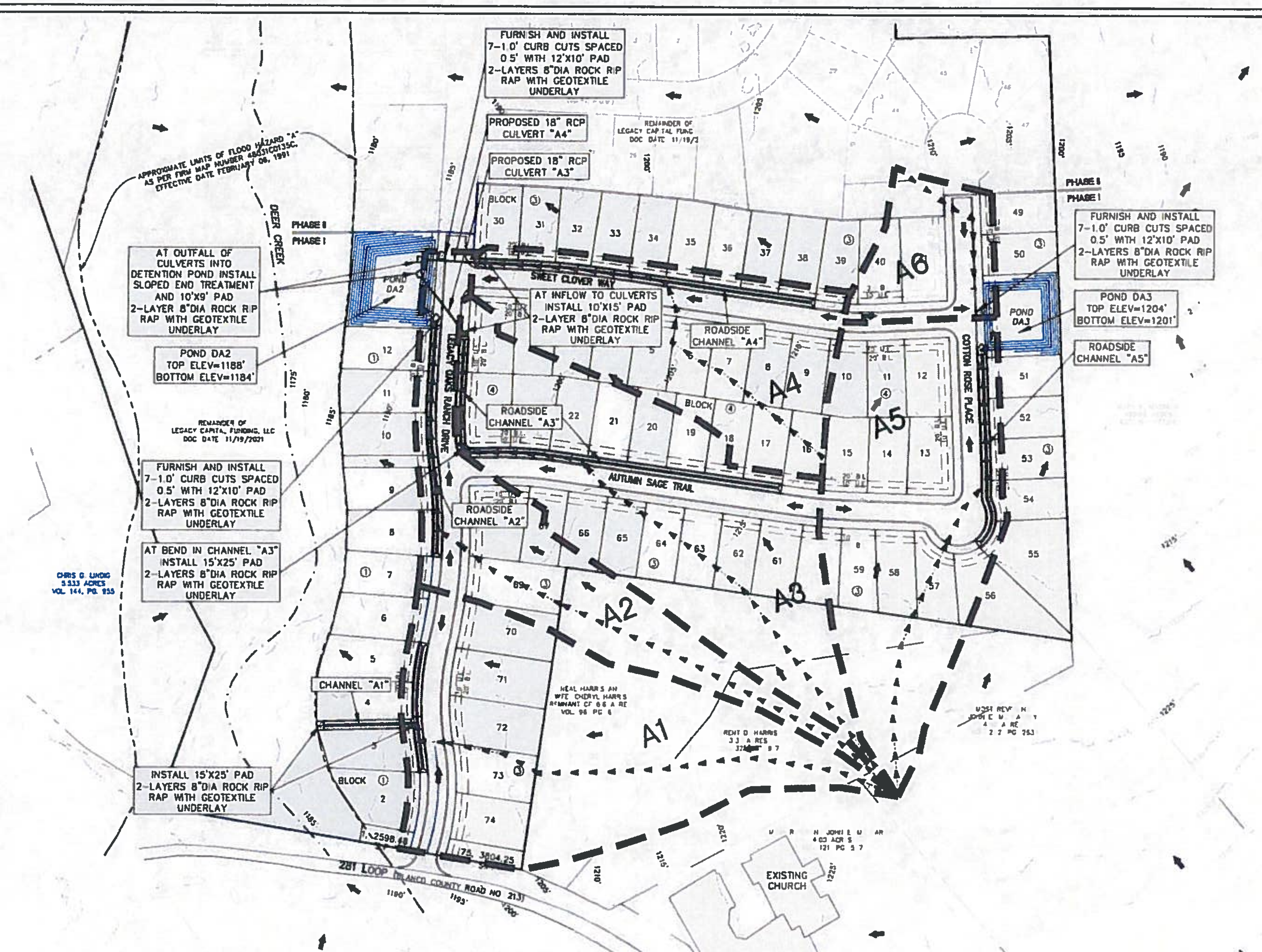
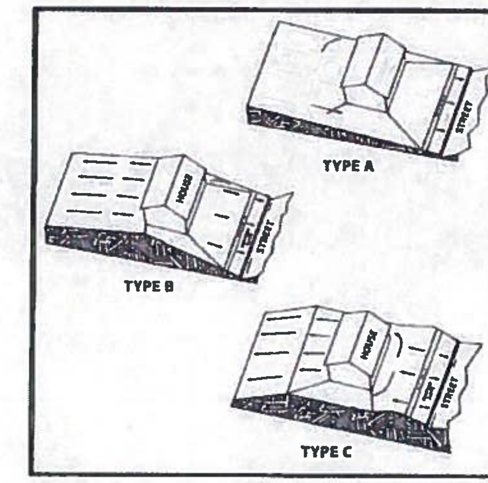
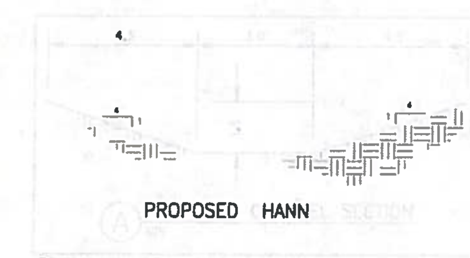




NOTE:
1. THE ENGINEER OF RECORD MUST BE NOTIFIED IMMEDIATELY IF ANY DISCREPANCIES IN THE PLANS EXIST.
2. THE HOMEBUILDER IS TO MAINTAIN DRAINAGE BETWEEN LOTS AS SHOWN ON THIS DRAINAGE PLAN.



TIME OF CONENTRATION - POST DEVELOPMENT

POST		Sheet				Shallow				Concentrated							Total	Calc
DA	Area	n	L	S	Tc	n	L	S	Tc	CH/P	n	L	S	Wp	X-Area	Tc	Tc	Tc
A1	4.74	0.13	300	0.033	2.402	0.13	309.42	0.040	4.598	A1	0.035	64.73	0.039	9.36	12.9	0.02	10.7	10.7
						0.24	167	0.060	3.617									
						0.015	33	0.030	0.067									
A2	2.66	0.13	300	0.033	2.402	0.13	350.64	0.043	5.034	A2	0.035	373.8	0.020	9.18	4.5	1.29	14.0	14.0
						0.24	187.49	0.040	5.174									
						0.015	60	0.033	0.115									
A3	4.65	0.13	300	0.033	2.402	0.13	119.7	0.033	1.993	A3	0.035	400	0.03	10.59	6.15	0.804	13.1	13.1
						0.24	298.5	0.044	7.827									
						0.015	42.78	0.023	0.102									
A4	3.15	0.24	100	0.030	1.699	0.24	270	0.031	8.602	A4	0.035	321.2	0.037	9.35	4.682	0.778	11.2	11.2
						0.015	55	0.036	0.1									
A5	4.06	0.13	300	0.040	2.233	0.24	135.43	0.041	3.703	A5	0.035	250.7	0.024	11.08	6.78	0.508	8.8	8.8
						0.015	106.94	0.017	0.31									
A6	1.07	0.24	117.34	0.030	1.935	0.015	154	0.016	0.456								2.4	5.0

Drainage Calculations, Proposed Conditions

DA	AREA (acres)	T_c (min.)	C_{10}	i_{10} (in./hr.)	Q_{10} (cfs)	C_{25}	i_{25} (in./hr.)	Q_{25} (cfs)	C_{100}	i_{100} (in./hr.)	Q_{100} (cfs)
A1	4.74	10.7	0.44	7.05	14.75	0.48	8.67	19.85	0.58	11.31	29.80
A2	2.66	14.0	0.49	6.34	8.20	0.53	7.82	10.99	0.60	10.25	16.45
A3	4.65	13.1	0.46	6.52	13.94	0.50	8.03	18.75	0.58	10.51	28.18
A4	3.15	11.2	0.55	6.94	12.08	0.60	8.54	16.06	0.68	11.14	23.70
A5	4.06	8.8	0.53	8.19	17.51	0.57	10.03	23.22	0.65	12.97	34.10
A6	1.07	5.0	0.53	8.83	5.04	0.57	10.80	6.67	0.65	13.91	9.75

C-COMPOSITE CALCULATIONS 10 YR

AREA	C GRASS	GRASS AREA (ac.)	C RANGE	RANGE AREA (ac.)	C ROOF/CONC.	ROOF/CONC. AREA (ac.)	TOTAL AREA (ac.)	C COMPOSITE
A1	0.35	1.42	0.38	2.58	0.83	0.74	4.74	0.44
A2	0.35	1.00	0.38	0.96	0.83	0.70	2.66	0.49
A3	0.35	2.66	0.38	0.99	0.83	1.00	4.65	0.46
A4	0.35	1.82	0.38	0.00	0.83	1.33	3.15	0.55
A5	0.35	1.73	0.38	0.90	0.83	1.44	4.06	0.53
A6	0.35	0.67	0.38	0.00	0.83	0.41	1.07	0.53

C-COMPOSITE CALCULATIONS 25 YR

AREA	C GRASS	GRASS AREA (ac.)	C RANGE	RANGE AREA (ac.)	C ROOF/CONC. (ac.)	ROOF/CONC. AREA (ac.)	TOTAL AREA (ac.)	C COMPOSITE
A1	0.39	1.42	0.42	2.58	0.88	0.74	4.74	0.48
A2	0.39	1.00	0.42	0.96	0.88	0.70	2.66	0.53
A3	0.39	2.66	0.42	0.99	0.88	1.00	4.65	0.50
A4	0.39	1.82	0.42	0.00	0.88	1.33	3.15	0.60
A5	0.39	1.73	0.42	0.90	0.88	1.44	4.06	0.57
A6	0.39	0.67	0.42	0.00	0.88	0.41	1.07	0.57

C-COMPOSITE CALCULATIONS 100 YR

AREA	C GRASS	GRASS AREA (ac.)	C RANGE	RANGE AREA (ac.)	C ROOF/CONC (ac.)	ROOF/CONC AREA (ac.)	TOTAL AREA (ac.)	C COMPOSITE
A1	0.46	1.42	0.49	2.58	0.97	0.74	4.74	0.58
A2	0.46	1.00	0.49	0.96	0.97	0.70	2.66	0.60
A3	0.46	2.66	0.49	0.99	0.97	1.00	4.65	0.58
A4	0.46	1.82	0.49	0.00	0.97	1.33	3.15	0.68
A5	0.46	1.73	0.49	0.90	0.97	1.44	4.06	0.65
A6	0.46	0.67	0.49	0.00	0.97	0.41	1.07	0.65

Assumptions: Total impervious (driveways and rooftops is 3500sf Lot)

REV N

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Engineering
Design/Build
Planning

STREET CAPACITY DRAINAGE PLAN OF:
HOMESTEADS AT DEER CREEK
217 LOOP 281
JOHNSON CITY TX 78636, BLANCO COUNTY

MEHUL DARBAR

STATE OF TEXAS
LINA CHITAY
107211
LICENSED
PROFESSIONAL ENGINEER
02/03/22

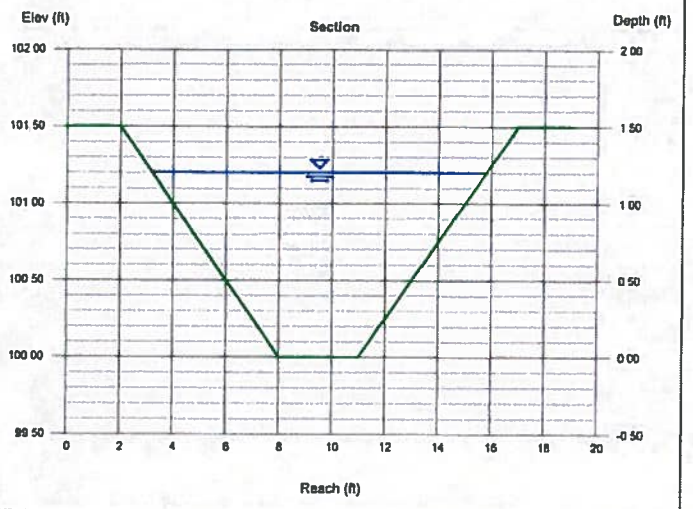
SCALE: 1"=100'
DRAWN.: AM
DATE: 02/03/22
JOB NO.: 21032
08 of 10
C3.05

Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. — Thursday, Feb 3 2022

ROADSIDE CHANNEL - A1 - 100YR

Trapezoidal		Highlighted	
Bottom Width (ft)	= 3.00	Depth (ft)	= 1.20
Side Slopes (z:1)	= 4.00, 4.00	Q (cfs)	= 29.80
Total Depth (ft)	= 1.50	Area (sqft)	= 9.36
Invert Elev (ft)	= 100.00	Velocity (ft/s)	= 3.18
Slope (%)	= 0.87	Wetted Perim (ft)	= 12.90
N-Value	= 0.035	Crit Depth, Yc (ft)	= 0.97
		Top Width (ft)	= 12.60
Calculations		EGL (ft)	= 1.36
Compute by:	Known Q		
Known Q (cfs)	= 29.80		

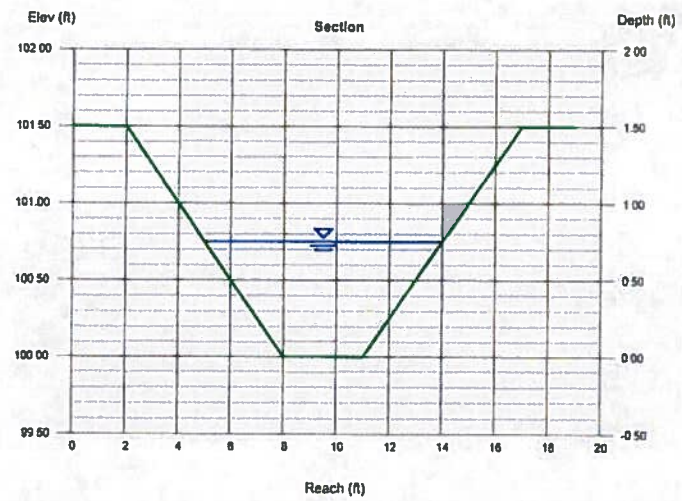


Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. — Thursday, Feb 3 2022

ROADSIDE CHANNEL - A2 - 100YR

Trapezoidal		Highlighted	
Bottom Width (ft)	= 3.00	Depth (ft)	= 0.75
Side Slopes (z:1)	= 4.00, 4.00	Q (cfs)	= 16.45
Total Depth (ft)	= 1.50	Area (sqft)	= 4.50
Invert Elev (ft)	= 100.00	Velocity (ft/s)	= 3.66
Slope (%)	= 2.00	Wetted Perim (ft)	= 9.18
N-Value	= 0.035	Crit Depth, Yc (ft)	= 0.72
		Top Width (ft)	= 9.00
Calculations		EGL (ft)	= 0.96
Compute by:	Known Q		
Known Q (cfs)	= 16.45		

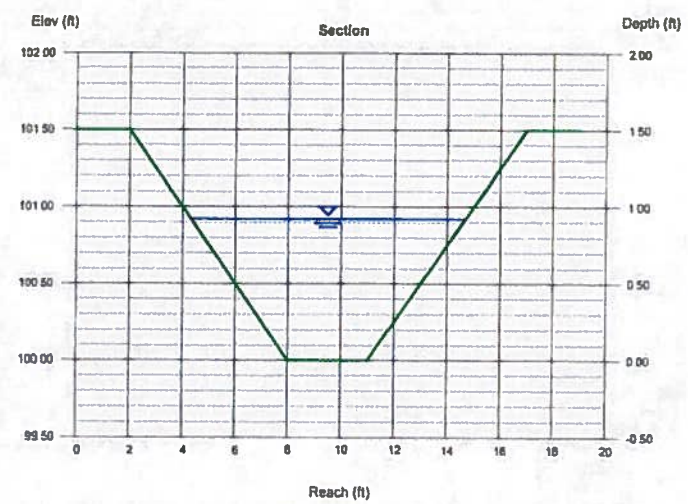


Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. — Thursday, Feb 3 2022

ROADSIDE CHANNEL - A3 - 100YR

Trapezoidal		Highlighted	
Bottom Width (ft)	= 3.00	Depth (ft)	= 0.92
Side Slopes (z:1)	= 4.00, 4.00	Q (cfs)	= 28.18
Total Depth (ft)	= 1.50	Area (sqft)	= 8.15
Invert Elev (ft)	= 100.00	Velocity (ft/s)	= 4.59
Slope (%)	= 2.50	Wetted Perim (ft)	= 10.59
N-Value	= 0.035	Crit Depth, Yc (ft)	= 0.95
		Top Width (ft)	= 10.38
Calculations		EGL (ft)	= 1.25
Compute by:	Known Q		
Known Q (cfs)	= 28.18		

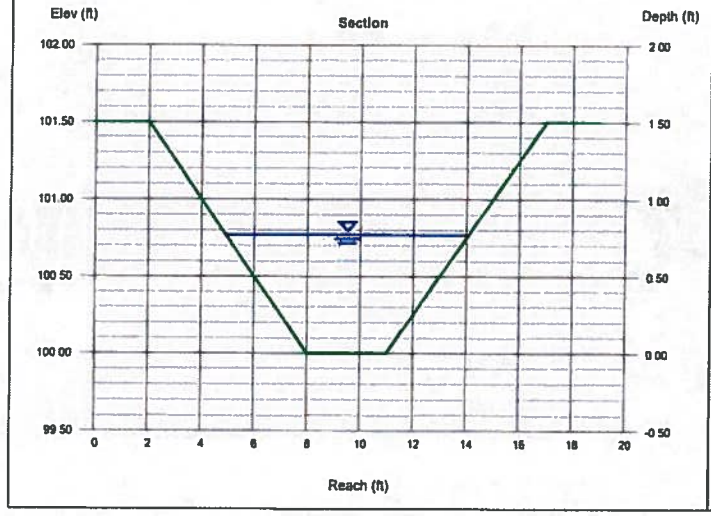


Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. — Thursday, Feb 3 2022

ROADSIDE CHANNEL - A4 - 100YR

Trapezoidal		Highlighted	
Bottom Width (ft)	= 3.00	Depth (ft)	= 0.77
Side Slopes (z:1)	= 4.00, 4.00	Q (cfs)	= 23.70
Total Depth (ft)	= 1.50	Area (sqft)	= 4.68
Invert Elev (ft)	= 100.00	Velocity (ft/s)	= 5.06
Slope (%)	= 3.70	Wetted Perim (ft)	= 9.35
N-Value	= 0.035	Crit Depth, Yc (ft)	= 0.87
		Top Width (ft)	= 9.18
Calculations		EGL (ft)	= 1.17
Compute by:	Known Q		
Known Q (cfs)	= 23.70		

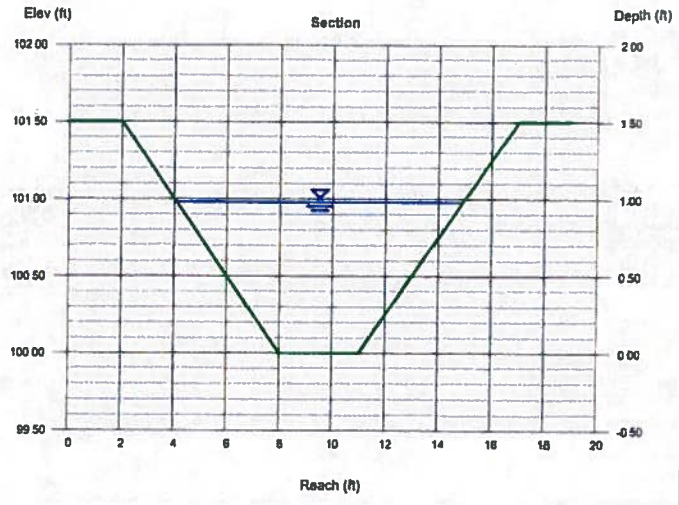


Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. — Thursday, Feb 3 2022

ROADSIDE CHANNEL - A5 - 100YR

Trapezoidal		Highlighted	
Bottom Width (ft)	= 3.00	Depth (ft)	= 0.98
Side Slopes (z:1)	= 4.00, 4.00	Q (cfs)	= 34.10
Total Depth (ft)	= 1.50	Area (sqft)	= 6.78
Invert Elev (ft)	= 100.00	Velocity (ft/s)	= 5.03
Slope (%)	= 2.80	Wetted Perim (ft)	= 11.08
N-Value	= 0.035	Crit Depth, Yc (ft)	= 1.04
		Top Width (ft)	= 10.84
Calculations		EGL (ft)	= 1.37
Compute by:	Known Q		
Known Q (cfs)	= 34.10		



REVISIONS

FIRM # F-13392

BELTON ENGINEERING INC.

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Engineering
Design/Build
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CHANNEL REPORTS FOR:
HOMESTEADS AT DEER CREEK
217 LOOP 281
JOHNSON CITY TX 78636, BLANCO COUNTY

MEHUL DARBAR

STATE OF TEXAS
LINA CHTAY
107211
LICENSED PROFESSIONAL ENGINEER

02/03/22

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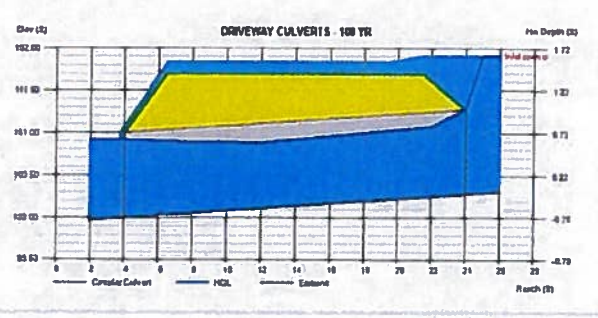
Culvert Report

HydraFlow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. — Thursday, Feb 3 2022

DRIVEWAY CULVERTS - 100 YR

Invert Elev Dn (ft)	= 100.00	**Calculations**	
Pipe Length (ft)	= 20.00	Qmin (cfs)	= 34.43
Slope (%)	= 1.40	Qmax (cfs)	= 34.43
Invert Elev Up (ft)	= 100.28	Tailwater Elev (ft)	= (dc+D)/2
Rise (in)	= 12.0		
Shape	= Circular	**Highlighted**	
Span (in)	= 12.0	Qtotal (cfs)	= 34.43
No. Barrels	= 1	Qpipe (cfs)	= 3.89
n-Value	= 0.012	Qovertop (cfs)	= 30.54
Culvert Type	= Circular Concrete	Veloc Dn (ft/s)	= 5.15
Culvert Entrance	= Square edge w/headwall (C)	Veloc Up (ft/s)	= 5.54
Coeff. K,M,c,Y,k	= 0.0098, 2, 0.0398, 0.67, 0.5	HGL Dn (ft)	= 100.92
		HGL Up (ft)	= 101.12
Embankment		Hw Elev (ft)	= 101.92
Top Elevation (ft)	= 101.70	Hw/D (ft)	= 1.64
Top Width (ft)	= 15.00	Flow Regime	= Inlet Control
Crest Width (ft)	= 100.00		

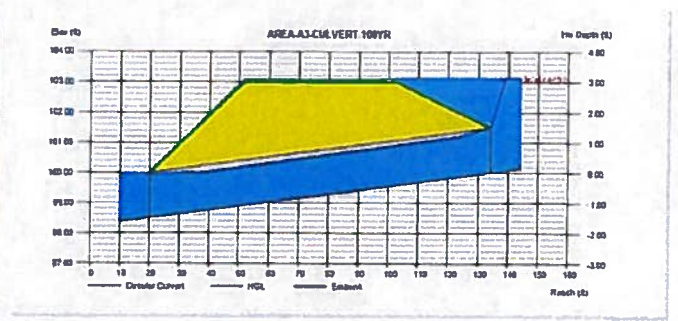


Culvert Report

HydraFlow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. — Thursday, Feb 3 2022

AREA-A3-CULVERT-100YR

Invert Elev Dn (ft)	= 98.50	**Calculations**	
Pipe Length (ft)	= 114.20	Qmin (cfs)	= 28.18
Slope (%)	= 1.31	Qmax (cfs)	= 28.18
Invert Elev Up (ft)	= 100.00	Tailwater Elev (ft)	= (dc+D)/2
Rise (in)	= 18.0		
Shape	= Circular	**Highlighted**	
Span (in)	= 18.0	Qtotal (cfs)	= 28.18
No. Barrels	= 1	Qpipe (cfs)	= 12.97
n-Value	= 0.012	Qovertop (cfs)	= 15.21
Culvert Type	= Circular Concrete	Veloc Dn (ft/s)	= 7.48
Culvert Entrance	= Square edge w/headwall (C)	Veloc Up (ft/s)	= 7.74
Coeff. K,M,c,Y,k	= 0.0098, 2, 0.0398, 0.67, 0.5	HGL Dn (ft)	= 99.92
		HGL Up (ft)	= 101.35
Embankment		Hw Elev (ft)	= 103.14
Top Elevation (ft)	= 103.00	Hw/D (ft)	= 2.09
Top Width (ft)	= 51.42	Flow Regime	= Inlet Control
Crest Width (ft)	= 100.00		

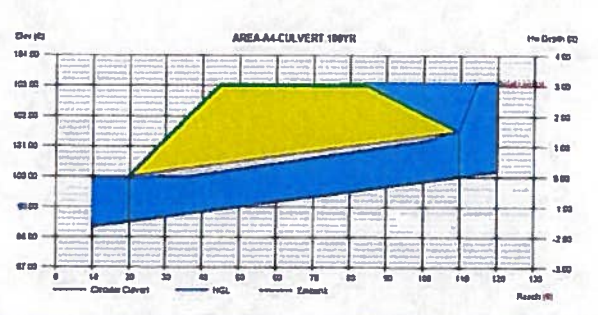


Culvert Report

HydraFlow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. — Thursday, Feb 3 2022

AREA-A4-CULVERT-100YR

Invert Elev Dn (ft)	= 98.50	**Calculations**	
Pipe Length (ft)	= 88.58	Qmin (cfs)	= 23.70
Slope (%)	= 1.67	Qmax (cfs)	= 23.70
Invert Elev Up (ft)	= 100.00	Tailwater Elev (ft)	= (dc+D)/2
Rise (in)	= 18.0		
Shape	= Circular	**Highlighted**	
Span (in)	= 18.0	Qtotal (cfs)	= 23.70
No. Barrels	= 1	Qpipe (cfs)	= 12.91
n-Value	= 0.012	Qovertop (cfs)	= 10.79
Culvert Type	= Circular Concrete	Veloc Dn (ft/s)	= 7.45
Culvert Entrance	= Square edge w/headwall (C)	Veloc Up (ft/s)	= 7.72
Coeff. K,M,c,Y,k	= 0.0098, 2, 0.0398, 0.67, 0.5	HGL Dn (ft)	= 99.82
		HGL Up (ft)	= 101.35
Embankment		Hw Elev (ft)	= 103.12
Top Elevation (ft)	= 103.00	Hw/D (ft)	= 2.08
Top Width (ft)	= 40.00	Flow Regime	= Inlet Control
Crest Width (ft)	= 100.00		



NOTE:
1. PROPOSED DRIVEWAY CULVERTS CROSSING ROADSIDE CHANNELS ARE TO BE 12"DIA RCP WITH SAFETY END TREATMENTS REFER TO TXDOT DETAIL PSET-SP-21

REVISIONS

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