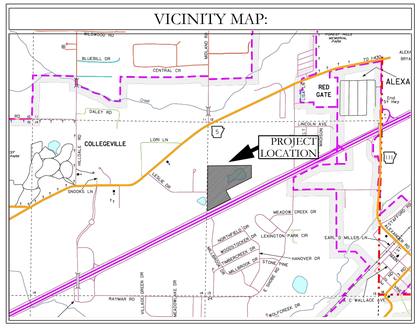
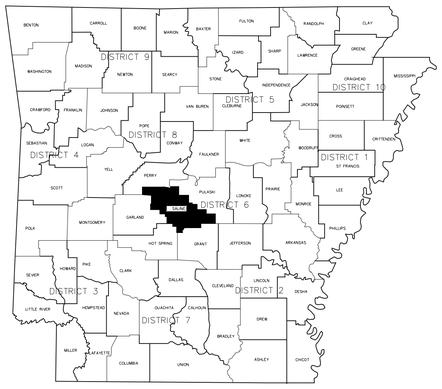
CONSTRUCTION PLANS
ARKANSAS STORAGE CENTER

BRYANT, AR

VICINITY MAP:



N



PREPARED BY:

HOPE CONSULTING
ENGINEERS - SURVEYORS

129 North Main St,
Benton, Arkansas 72015
PH. (501)315-2626
FAX (501) 315-0024
www.hopeconsulting.com

CIVIL ENGINEER
HOPE CONSULTING INC
129 NORTH MAIN STREET
BENTON, AR 72015

DRAWING INDEX

SHEET NO.	TITLE
	PRELIMINARY PLOT
C-1.0	SITE PLAN
C-2.0	ROAD PLAN & PROFILE
C-2.1	FENCE DETAILS
C-3.0	UTILITY PLAN
C-3.1	UTILITY SPECS
C-4.0	GRADING PLAN
C-5.0	DRAINAGE PLAN
C-5.1	DRAINAGE PLAN & PROFILE
C-5.2	DRAINAGE PLAN & PROFILE
C-5.3	DRAINAGE PLAN & PROFILE
C-5.4	RETENTION PLAN
C-5.5	PRE-DEV CALCULATIONS
C-5.6	POST-DEV CALCULATIONS
C-5.7	POST-DEV CALCULATIONS
C-6.0	LANDSCAPE PLAN
C-7.0	EROSION CONTROL PLAN

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FOR USE AND BENEFIT OF:
STUART FINLEY

ARKANSAS STORAGE CENTER
BRYANT, SALINE COUNTY, ARKANSAS

DATE:	01/24/2024	C.A.D. BY:	DRAWING NUMBER:
REVISED:		CHECKED BY:	23-0024
SHEET:		SCALE:	

K:\LAND PROJECTS-2004\SUBDIVISIONS\2023\23-0800 STUART FINLEY\1 DESIGN\CIVIL\DWG\FINAL PROJECT\23-0800 - ARKANSAS STORAGE CENTER - TITLE (09-10-2024).DWG

Know what's below. Call before you dig.

SW 1/4 SW 1/4 SECTION 12 T-1-S R-14-W

ARKANSAS STATE HIGWAY NO. 5 (APPARENT 60' R/W)

FND. 1/2" REBAR, NW CORNER, LOT 77, EAST RIDGE SUBD., PH1

N66°25'13"E 152.88'

N66°31'07"E 164.56'

GAP IN TITLE LINES OF SUBJECT PROPERTY AND EAST RIDGE SUBDIVISION, PHASE 1

COMPUTED LOCATION FROM EAST RIDGE SUBDIVISION NE CORNER, NE1/4, NE1/4, SEC. 14, T-1-S, R-14-W

MIDLAND ROAD

FND. 2" PIPE

N65°24'25"E 115.83'

25' BUILDING SETBACK LINE

WEST LINE, EAST RIDGE SUBDIVISION, PHASE 1

INT. OF EAST LINE, NE1/4, NE1/4, AND SOUTH R/W OF ARK. HWY. 5 FND. 1/2" REBAR (PS 1664)

N2°11'32"E 149.59'

SE 1/4 SE 1/4 SECTION 11 T-1-S R-14-W

N63°29'03"E 139.43'

EXISTING DWELLING

S02°13'34"W 386.25'

FND. 1/2" REBAR P.L.S. 1664

N59°48'07"E 258.04'

N88°16'25"W 53.10'

10' BUILDING SETBACK LINE

FND. 5/8" REBAR (PS 128)

EAST LINE, NE1/4, NE1/4

FND. 1" PIPE NW CORNER, LOT 68, EAST RIDGE SUBD., PH1 (BEARS S6°35'26"E 14.32')

FND. 1" PIPE (BEARS N62°53'12"W 12.96')

FND. 1/2" REBAR P.L.S. 1664

N56°17'39"E 187.00'

GAP AREA 0.19 AC 8201.7 SF

N2°11'32"E 390.00'

FND. 1/2" REBAR P.L.S. 1664

HENRY AVE.

N52°36'30"E 269.91'

25' BUILDING SETBACK LINE

WEST LINE, EAST RIDGE SUBDIVISION, PHASE 1

10' BUILDING SETBACK LINE

N52°34'41"E 14.32'

FND. 1/2" REBAR P.L.S. 1467

FND. 1/2" REBAR P.L.S. 1664

EAST RIDGE SUBDIVISION PHASE I ZONING R-1

EXISTING PRIVATE ACCESS ROAD

NE 1/4 NE 1/4 SECTION 14 T-1-S R-14-W

LOT 3
18.82 ACRES
819894 Sq. Ft.

NW 1/4 NW 1/4 SECTION 12 T-1-S R-14-W

N2°43'40"E 673.83'

PRIVATE ACCESS RD

N2°11'32"E 547.38'

S02°43'40"W 1045.67'

N32°51'44"W 436.06'

10' BUILDING SETBACK LINE

ONE LIFE CHURCH INC 840-11660-040 ZONING C-2

FND. 1/2" REBAR P.L.S. 1467

FND. 1/2" REBAR P.L.S. 1467

N41°42'20"W 211.36'

FND. 1/2" REBAR P.L.S. 568

N88°05'03"W 115.16'

N88°43'01"W 138.08'

FND. 1/2" REBAR P.L.S. 1467

FND. 1/2" REBAR

96.88'

94.55'

N88°04'08"W 191.43'

FND. 1/2" REBAR P.L.S. 568

FND. 1/2" REBAR P.L.S. 1664

S88°04'08"E 145.03'

N68°44'33"E 334.66'

N02°11'32"E 245.95'

EXISTING GRAVEL

EXISTING ASPHALT DRIVE

LOT 2
3.95 ACRES
171998 Sq. Ft.

S2°43'40"W 371.84'

FND. 5/8" REBAR P.L.S. 0128

EAST RIDGE SUBDIVISION PHASE I ZONING R-1

COMPUTED LOCATION FROM EAST RIDGE SUBDIVISION SE CORNER, NE1/4, NE1/4, SEC. 14, T-1-S, R-14-W

N88°49'30"W 448.64'

EXISTING DWELLING

S87°51'51"E 267.64'

S89°05'22"E 297.60'

S89°16'26"E 291.29'

FND. AXLE

189.88'

S68°25'37"W 490.93'

75' BUILDING SETBACK LINE

25' BUILDING SETBACK LINE

TENNISON ALFRED A III & TONYA N 840-11660-500 ZONING R-E

SE 1/4 NE 1/4 SECTION 14 T-1-S R-14-W

28.63'

X 20.00'

25.00'

PROPOSED 20' INGRESS/EGRESS EASEMENT

PARCEL NO. 840-11660-450 ZONING R-E

POND

SW 1/4 NW 1/4 SECTION 13 T-1-S R-14-W

LOT 1
24.23 ACRES
1055487 Sq. Ft.

N02°24'48"E 1324.05'

N02°24'48"E 1134.17'

PARCEL NO. 840-11660-651 ZONING R-E

75' BUILDING SETBACK LINE

CITY OF BRYANT 20' UTILITY EASEMENT BOOK 98, 6876

EXISTING TREE BUFFER

25' BUILDING SETBACK LINE

S65°09'57"W 848.81'

ZONING C-3 PARCEL NO. 840-11640-241

ZONING C-3 PARCEL NO. 840-11640-236

N2°21'59"E 367.80'

84.33'

ZONING C-3 PARCEL NO. 840-11640-240

S24°50'41"E 327.00'

AIR EASEMENT

N65°10'33"E 680.63'

CITY OF BRYANT 25' SEWER EASEMENT

25.00'

20.00'

20' WATER LINE EASEMENT

FND. 1/2" REBAR

PARCEL NO. 840-11660-400

PROPOSED 20' INGRESS/EGRESS EASEMENT

27.50'

AIR EASEMENT

75' BUILDING SETBACK LINE

BILLBOARD SIGN EASEMENT

20.00'

25.00'

S65°09'57"W 711.59'

CENTERLINE I-30 SERVICE ROAD (INTERSTATE 30)

POINT OF BEGINNING
FND. 5/8" REBAR ACCEPTED AS SW CORNER, SW1/4, NW1/4, SEC. 13, T1S, R14W

S00°11'32"W 50.01'

PARCEL NO. 840-11676-000 ZONING C-3

FND. 5/8" REBAR P.L.S. 0128

FND. 1/2" REBAR (BEARS N70°21'E 0.41')

N88°43'09"W 67.64'

BASIS OF BEARING: GRID NORTH, ARKANSAS COORDINATE SYSTEM, SOUTH ZONE BY GPS OBSERVATION

100' 50' 0 100'

OVERALL BOUNDARY PROPERTY DESCRIPTION FROM SURVEY

A PART OF THE SOUTHWEST QUARTER (SW1/4) OF THE SOUTHWEST QUARTER (SW1/4) OF SECTION 12; A PART OF THE NORTHWEST QUARTER (NW1/4) OF THE NORTHWEST QUARTER (NW1/4) AND THE SOUTHWEST QUARTER (SW1/4) OF THE NORTHWEST QUARTER (NW1/4) OF SECTION 13; AND A PART OF THE NORTHEAST QUARTER (NE1/4) OF THE NORTHEAST QUARTER (NE1/4) OF SECTION 14; ALL IN TOWNSHIP 1 SOUTH, RANGE 14 WEST, SALINE COUNTY, ARKANSAS; MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A 5/8" REBAR ACCEPTED AS THE SOUTHWEST CORNER OF SAID SW1/4, NW1/4, SECTION 13;
THENCE ALONG THE WEST LINE THEREOF NORTH 02°24'48" EAST, A DISTANCE OF 1,324.05 FEET, TO THE NORTHWEST CORNER OF SAID SW1/4, NW1/4 OF SECTION 13;
THENCE ALONG THE WEST LINE OF SAID NW1/4, NW1/4 OF SECTION 13 NORTH 02°11'32" EAST, A DISTANCE OF 245.95 FEET, TO A 1/2" REBAR AND CAP (PS 1664);
THENCE LEAVING SAID WEST LINE NORTH 88°04'08" WEST, A DISTANCE OF 191.43 FEET, TO A 1/2" REBAR AND CAP (PS 1467);
THENCE NORTH 41°42'20" WEST, A DISTANCE OF 211.36 FEET, TO A 1/2" REBAR AND CAP (PS 1467);
THENCE NORTH 32°51'44" WEST, A DISTANCE OF 436.06 FEET, TO A 1/2" REBAR AND CAP (PS 1467) TO THE SOUTHERLY RIGHT-OF-WAY OF ARKANSAS HIGHWAY 5;
THENCE ALONG SAID SOUTHERLY RIGHT-OF-WAY THE FOLLOWING EIGHT CALLS: NORTH 52°34'41" EAST, A DISTANCE OF 14.32 FEET, TO A 1/2" REBAR AND CAP (PS 1664);
THENCE NORTH 52°36'30" EAST, A DISTANCE OF 269.91 FEET, TO A 1/2" REBAR AND CAP (PS 1664);
THENCE NORTH 56°17'39" EAST, A DISTANCE OF 187.00 FEET, TO A 1/2" REBAR AND CAP (PS 1664);
THENCE NORTH 59°48'07" EAST, A DISTANCE OF 258.04 FEET, TO A 1/2" REBAR AND CAP (PS 1664);
THENCE NORTH 63°29'03" EAST, A DISTANCE OF 139.43 FEET, TO A 1/2" REBAR AND CAP (PS 1664);
THENCE NORTH 65°24'25" EAST, A DISTANCE OF 115.83 FEET, TO A 1/2" REBAR AND CAP (PS 1664);
THENCE NORTH 66°31'07" EAST, A DISTANCE OF 164.56 FEET, TO A 1/2" REBAR AND CAP (PS 1664);
THENCE NORTH 66°25'13" EAST, A DISTANCE OF 152.88 FEET, TO A 1/2" REBAR AND CAP (PS 1664) BEING THE NORTHEAST CORNER OF LANDS DESCRIBED IN WARRANTY DED DATED MARCH 30, 1963 AND FILED IN SALINE COUNTY DEED RECORD BOOK 112 AT PAGE 404;
THENCE LEAVING SAID SOUTHERLY RIGHT-OF-WAY OF HIGHWAY 5 ALONG THE EAST LINE OF SAID LANDS DESCRIBED IN SAID WARRANTY DEED SOUTH 02°13'34" WEST, A DISTANCE OF 386.25 FEET, TO A 1/2" REBAR AND CAP (PS 1664) AT THE SOUTHEAST CORNER OF SAID LANDS DESCRIBED IN SAID WARRANTY DEED;
THENCE NORTH 88°16'25" WEST, A DISTANCE OF 53.10 FEET, TO A 5/8" REBAR AND CAP (PS 128) ON THE EAST LINE OF LANDS DESCRIBED IN WARRANTY DEED DATED SEPTEMBER 21, 1951 AND FILED IN SALINE COUNTY DEED RECORD BOOK 64 AT PAGE 45;
THENCE SOUTH 02°43'40" WEST, A DISTANCE OF 1,045.67 FEET, TO A 5/8" REBAR AND CAP (PS 128) ON THE NORTH LINE OF SAID SW1/4, NW1/4 OF SECTION 13; SAID POINT BEING SOUTH 88°49'30" WEST, A DISTANCE OF 448.64 FEET FROM THE NORTHWEST CORNER OF SAID SW1/4, NW1/4 OF SECTION 13;
THENCE SOUTH 87°51'51" EAST, A DISTANCE OF 267.64 FEET, TO A POINT SHOWN ON THE SOUTH LINE OF EAST RIDGE SUBDIVISION, PHASE 1, AS FILED AS SALINE COUNTY DOCUMENT 2007-061442;
THENCE ALONG SAID SOUTH LINE SOUTH 89°05'22" EAST, A DISTANCE OF 297.60 FEET, TO A POINT SHOWN ON SAID SOUTH LINE OF EAST RIDGE SUBDIVISION, PHASE 1;
THENCE ALONG SAID SOUTH LINE SOUTH 89°16'26" EAST, A DISTANCE OF 291.29 FEET, TO AN AXLE AT THE NORTHEAST CORNER OF SAID SW1/4, NW1/4 OF SECTION 13;
THENCE ALONG THE EAST LINE THEREOF SOUTH 02°21'59" WEST, A DISTANCE OF 344.99 FEET, TO A 1/2" REBAR AND CAP (PS 1664);
THENCE LEAVING SAID EAST LINE SOUTH 65°09'57" WEST, A DISTANCE OF 848.81 FEET, TO A 1/2" REBAR AND CAP (PS 1664);
THENCE SOUTH 24°50'41" EAST, A DISTANCE OF 327.00 FEET, TO A 1/2" REBAR ON THE NORTHERLY RIGHT-OF-WAY OF U.S. INTERSTATE 30;
THENCE ALONG SAID NORTHERLY RIGHT-OF-WAY SOUTH 65°09'57" WEST, A DISTANCE OF 711.59 FEET, TO A 5/8" REBAR AND CAP (PS 128) AT THE INTERSECTION OF SAID NORTHERLY RIGHT-OF-WAY AND THE SOUTH LINE OF SAID SW1/4, NW1/4 OF SECTION 13;
THENCE ALONG SAID SOUTH LINE NORTH 88°43'09" WEST, A DISTANCE OF 67.64 FEET, TO A THE POINT OF BEGINNING; CONTAINING 47.00 ACRES (2,047,380.21 SQUARE FEET), MORE OR LESS.

REGISTERED PROFESSIONAL LAND SURVEYOR — STATE OF ARKANSAS NO. 1762 — SIGNATURE — JONATHAN L. HOPE

STATE OF ARKANSAS — LICENSED PROFESSIONAL ENGINEER — NO. 20876 — KAZI TAMZIDUL ISLAM

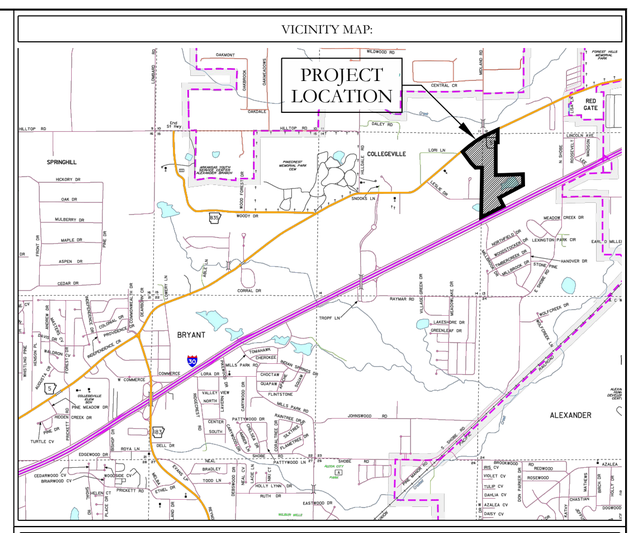
By affixing my seal and signature, I Jonathan L. Hope PLS No, 1762, hereby certify that this drawing correctly depicts a survey compiled under my supervision.

NOTE: This survey was based on legal descriptions and title work furnished by others and does not represent a title search.

No portion of the property described hereon lies within the 100 year floodplain, according to the Federal Insurance Rate Map, panel #05125C0365e, Dated: 06/05/2020 .

LEGEND
- Computed point
- Found monument
- Set Iron Pipe
(M) - Measured
(R) - Record
(D) - Deed

VICINITY MAP:



CERTIFICATIONS:

OWNER:
Name: ARKANSAS STORAGE XIV, LLC
Address: PO BOX 10
BRYANT, AR 72022

DEVELOPER:
Name: ARKANSAS STORAGE XIV, LLC
Address: PO BOX 10
BRYANT, AR 72022

CERTIFICATE OF OWNER:

We, the undersigned, owners of the real estate shown and described herein do hereby certify that we have laid off, platted and subdivided, and do hereby lay off, plat and subdivide said real estate in accordance with the within plat.

Source of Title: 2023-015797, 2023-015796, 2023-010005, 2023-017298

Date of Execution _____ Name: _____

CERTIFICATE OF PRELIMINARY SURVEYING ACCURACY:

I, Jonathan L. Hope, hereby certify that this proposed preliminary plat correctly represents a survey completed by me, or under my supervision on _____, 2023; that the boundary lines shown hereon correspond with the description in the deeds cited in the above Source Title; and that all monuments which were found or placed on the property are correctly described and located..

Date of Execution

Signed: _____
Jonathan L. Hope
Registered Professional
Land Surveyor No. 1762 Arkansas

CERTIFICATE OF PRELIMINARY ENGINEERING ACCURACY:

I, Kazi Tamzidul Islam, hereby certify that this plat correctly represents a survey and a plan made by me or under my supervision; that all monuments shown hereon actually exist and their location, size, type and material are correctly shown; and that all requirements of the City of Bryant Subdivision Rules and Regulations have been fully complied with.

Date of Execution

Kazi Tamzidual Islam
Registered Professional
Engineer, No. 20876 Arkansas

CERTIFICATE OF PRELIMINARY PLAT APPROVAL:

All requirements of the City of Bryant Subdivision Rules and Regulations relative to the preparation and submittal of a Preliminary Plat having been fulfilled, approval of this plat is hereby granted, subject of further provisions of said Rules and Regulations.

Date of Execution

Signed: _____
Rick Johnson, Chairman
Bryant Planning Commission

PROPERTY SPECIFICATIONS:

OWNER: ARKANSAS STORAGE XIV, LLC, PO BOX 10, BRYANT, AR 72022

DEVELOPER/: SUBDIVIDER: ARKANSAS STORAGE XIV, LLC, PO BOX 10, BRYANT, AR 72022

ENGINEERS: HOPE CONSULTING INC., 129 N. MAIN STREET, BENTON, AR 72015

NAME OF SUBDIVISION:

ZONING CLASSIFICATION: C-2

SOURCE OF TITLE: SALINE COUNTY DOCUMENT 2023-015797, 2023-015796, 2023-010005, 2023-017298

NUMBER OF LOTS: 3

SOURCE OF WATER: CITY OF BRYANT
SOURCE OF SEWER: CITY OF BRYANT
SOURCE OF ELECTRIC: FIRST ELECTRIC COOP
SOURCE OF GAS: CENTERPOINT ENERGY

BUILDING SETBACKS:
FRONT - AS SHOWN
REAR - OR AS SHOWN
SIDE - OR AS SHOWN

EASEMENTS: UTILITY & DRAINAGE (D.E. & U.E.)
FRONT - AS SHOWN
REAR - AS SHOWN
SIDE - AS SHOWN

LOT CORNERS: SET 1/2" REBAR WITH CAP

HOPE CONSULTING ENGINEERS - SURVEYORS
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FOR USE AND BENEFIT OF:

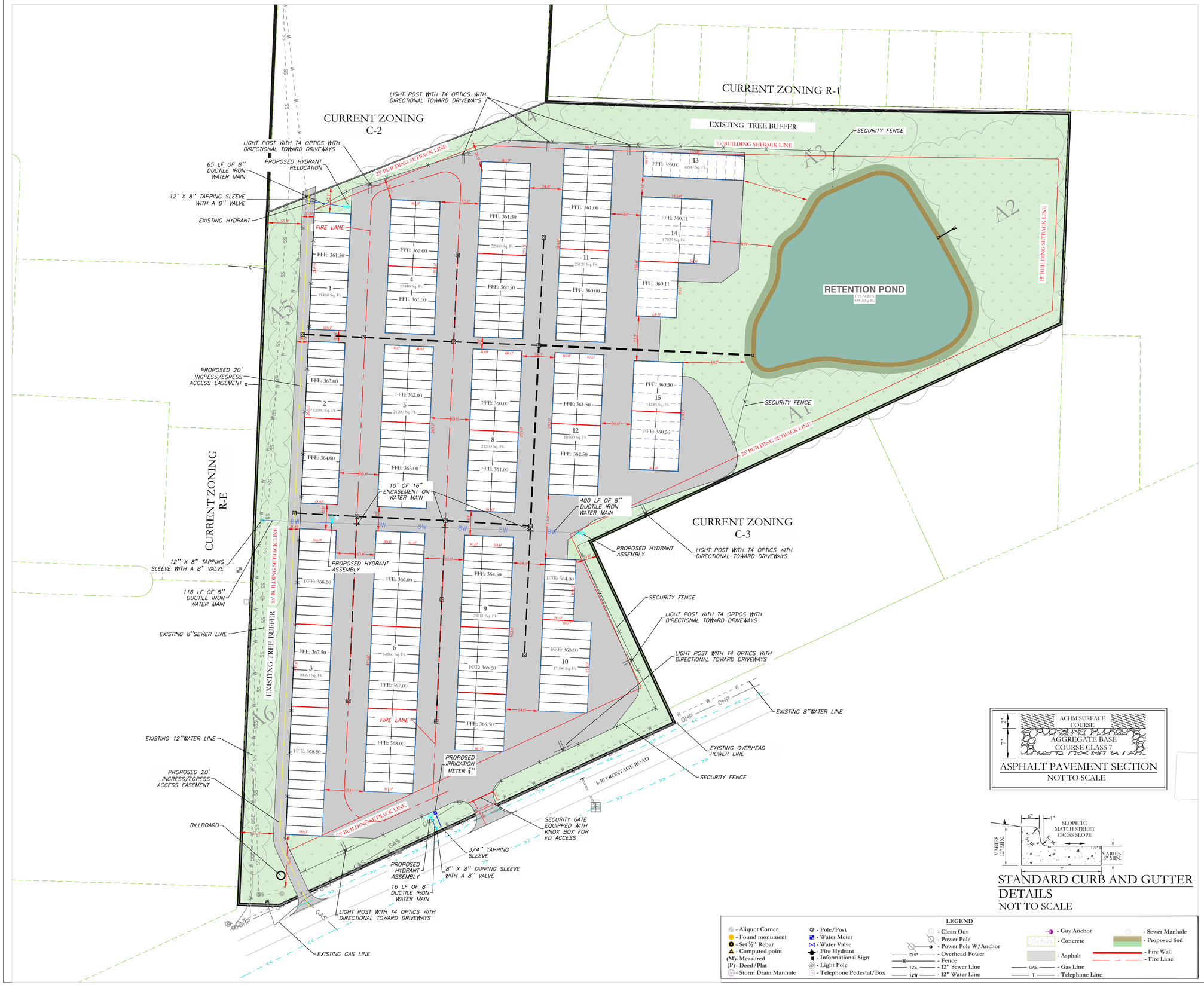
ARKANSAS STORAGE XIV, LLC

PRELIMINARY PLAT
FINLEY BUSINESS PARK
A SUBDIVISION IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS.

DATE: 01/19/2024	C.A.D. BY: BJOHNSON	DRAWING NUMBER: 22-0800	
REVISED:	CHECKED BY:		
SHEET:	SCALE: 1" = 100'		

500	01S	14W	0	14	110	62	1762
500	01S	14W	0	13	400	62	1762

K:\Land Projects\2044 Subdivisions\2022\22-0800 Stuart Finley 5 Duebes\22-0800-Preliminary Plat-01-11-2023- reconvey.dwg



SITE DATA	
TOTAL SITE AREA	24.26 ACRES
TOTAL DEVELOPMENT AREA	14.79 ACRES
GROSS BUILDING AREA	TOTAL BUILDING AREA 303,129 SF
BUILDING HEIGHTS	20'
BUILDING COVERAGE PERCENTAGE	303,129/1056967.51=0.29=29.0%
BUSINESS TYPE	MINI STORAGE

NOTES:

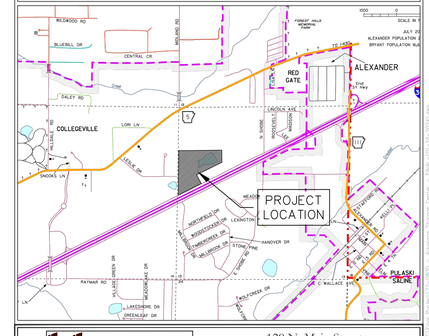
1. ALL FIRE LINE WILL BE PRIVATE.
2. NO SEWER SERVICE IS PROPOSED.
3. GATE POST MUST BE CONSTRUCTED NO CLOSER THAN 7.5' OF UTILITY LINES.

CIVIL ENGINEER
HOPE CONSULTING INC
129 N. MAIN STREET
BENTON, AR 72015
CONTACT: KAZI TAMZIDUL ISLAM
PHONE: 504-315-2626
EMAIL: kazi@hopeconsulting.com

BASIS OF BEARING:
GRID NORTH, ARKANSAS
COORDINATE SYSTEM, SOUTH ZONE
BY GPS OBSERVATION

70' 35' 0 70'

VICINITY MAP:



ASPHALT PAVEMENT SECTION
NOT TO SCALE

STANDARD CURB AND GUTTER DETAILS
NOT TO SCALE

LEGEND

- Aliquot Corner	- Pole/Post	- Clean Out	- Guy Anchor
- Found monument	- Water Meter	- Power Pole	- Concrete
- Set ½" Rebar	- Water Valve	- Power Pole W/Anchor	- Sewer Manhole
- Computed point	- Fire Hydrant	- Overhead Power	- Proposed Sod
(M)- Measured	- Informational Sign	- Fence	- Asphalt
(P) - Deed/Plat	- Light Pole	- 12" Sewer Line	- Fire Wall
- Storm Drain Manhole	- Telephone Pedestal/Box	- 12" Water Line	- Fire Lane
		- Gas Line	
		- Telephone Line	

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FOR USE AND BENEFIT OF:
STUART FINLEY

ARKANSAS STORAGE CENTER

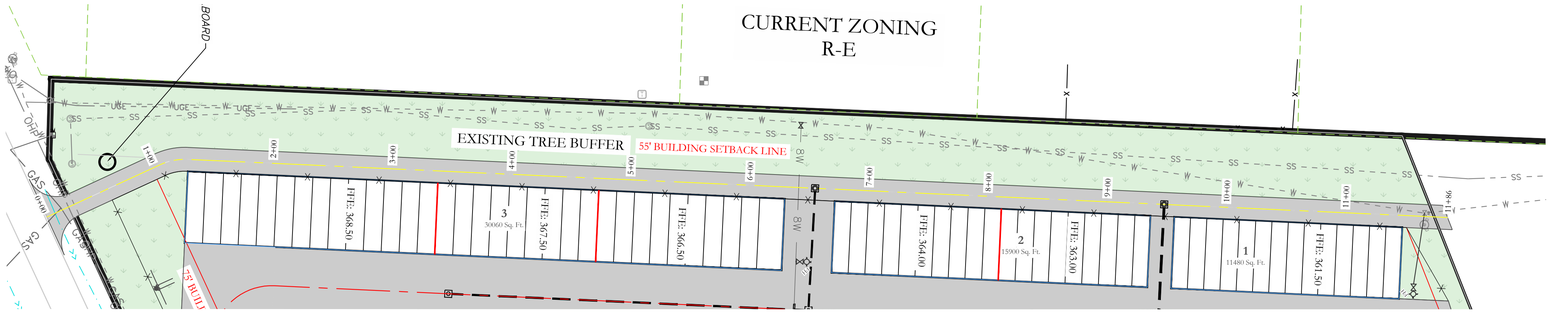
SITE PLAN

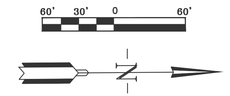
BRYANT, SALINE COUNTY, ARKANSAS

DATE: 01-24-2024	C.A.D. BY:	DRAWING NUMBER:	
REVISED:	CHECKED BY:	22-0800	
SHEET: C-1.0	SCALE: 1" = 70'		

500	01S	14W	0	21	300	62	1762

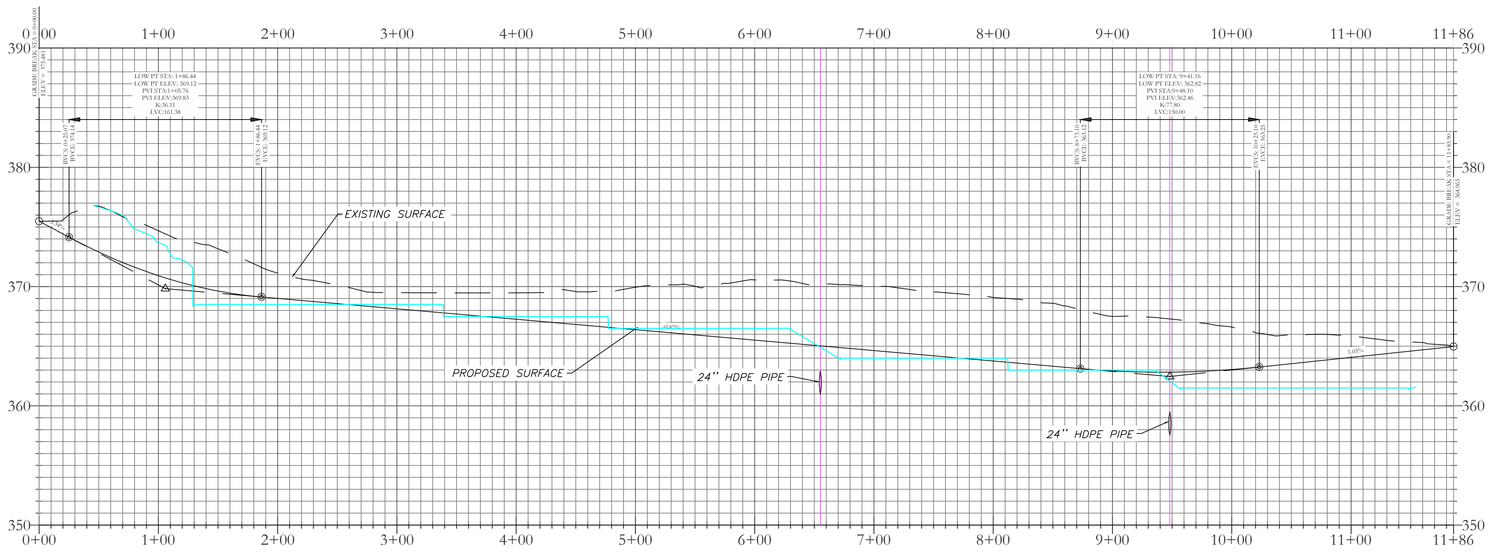
THIS DRAWING AND THE DESIGN AND INFORMATION CONTAINED HEREIN ARE THE PROPERTY OF HOPE CONSULTING AND SHALL NOT BE USED IN WHOLE OR IN PART FOR ANY PURPOSE WITHOUT THE WRITTEN PERMISSION OF HOPE CONSULTING.

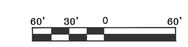




BASIS OF BEARING:
GRID NORTH, ARKANSAS
COORDINATE SYSTEM, SOUTH ZONE
BY GPS OBSERVATION

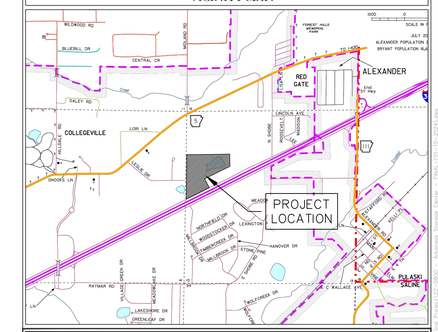
Private Road #2 PROFILE





CERTIFICATE OF AUTHORIZATION
HOPE CONSULTING, INC.
No. 1931
ARKANSAS

VICINITY MAP:



HOPE CONSULTING
ENGINEERS - SURVEYORS
129 N. Main Street,
Benton, Arkansas 72015
PH. (501)315-2626
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FOR USE AND BENEFIT OF:
STUART FINLEY

ARKANSAS STORAGE CENTER

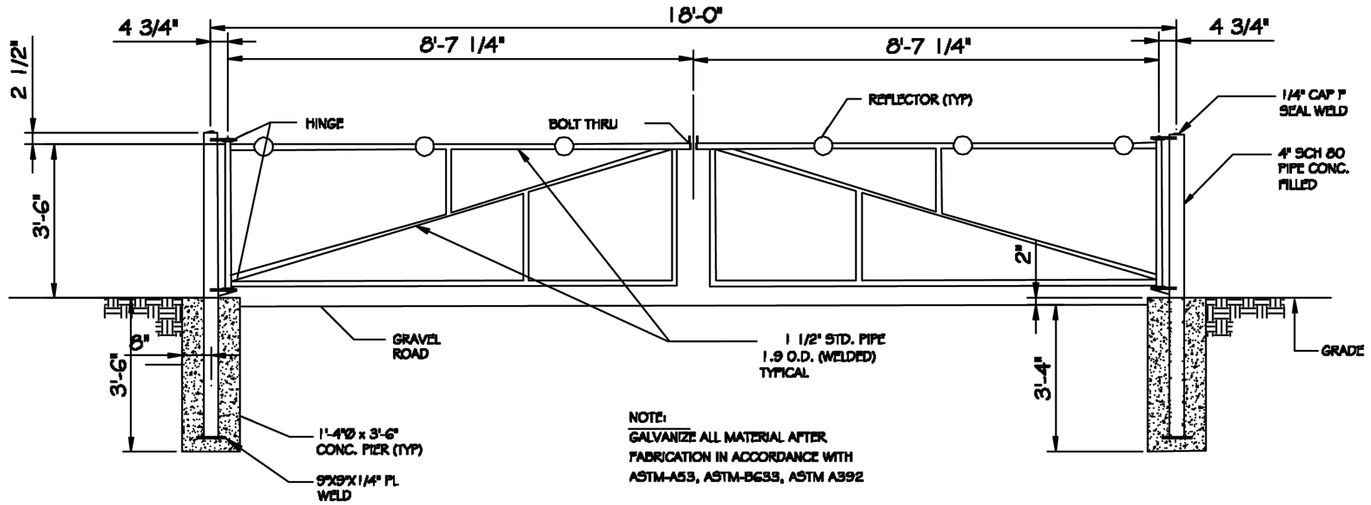
PRIVATE ROAD PLAN & PROFILE

BRYANT, SALINE COUNTY, ARKANSAS

DATE: 01-24-2024	C.A.D. BY:		DRAWING NUMBER:
REVISED:	CHECKED BY:		22-0800
SHEET: C-2.0	SCALE: 1" = 60'		

500	01S	14W	0	21	300	62	1762

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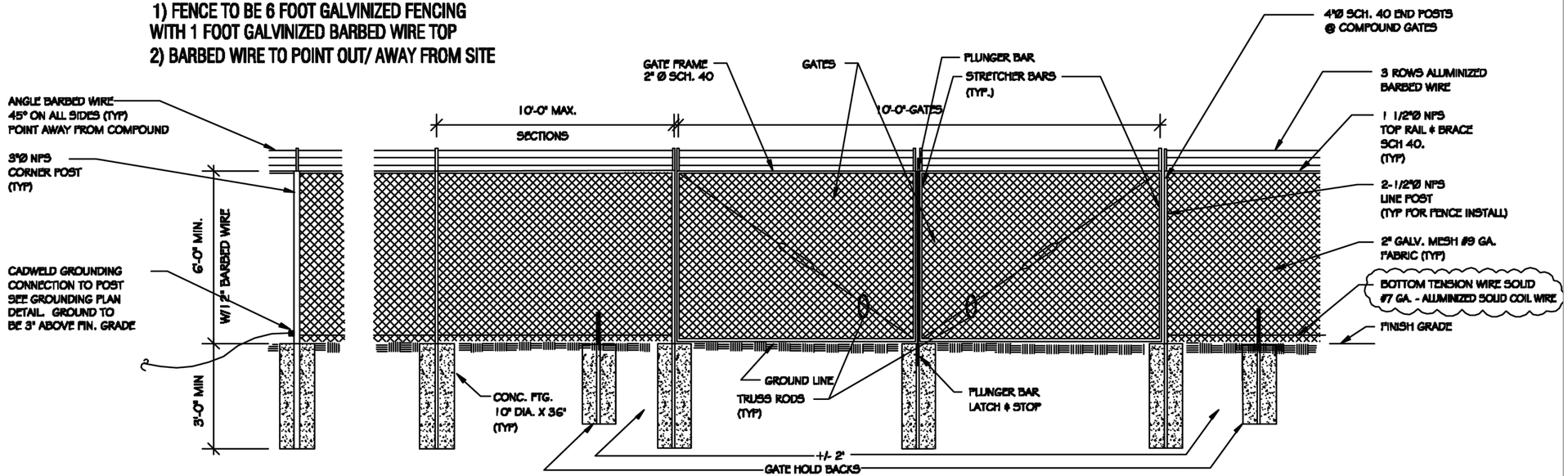


ROAD ACCESS GATE

NO SCALE

NOTES

1) FENCE TO BE 6 FOOT GALVINIZED FENCING WITH 1 FOOT GALVINIZED BARBED WIRE TOP
2) BARBED WIRE TO POINT OUT/ AWAY FROM SITE



TYPICAL FENCE SECTION

NO SCALE

HOPE CONSULTING
ENGINEERS - SURVEYORS
129 N. Main Street,
Benton, Arkansas 72015
PH. (501)315-2626
FAX (501) 315-0024
www.hopeconsulting.com

FOR USE AND BENEFIT OF:
STUART FINLEY

ARKANSAS STORAGE CENTER
FENCE DETAILS
BRYANT, SALINE COUNTY, ARKANSAS

DATE: 01-24-2024	C.A.D. BY:	DRAWING NUMBER:	
REVISED:	CHECKED BY:	22-0800	
SHEET: C-2.1	SCALE:		

500 | 01S | 14W | 0 | 21 | 300 | 62 | 1762

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CURRENT ZONING R-1

CURRENT ZONING C-2

CURRENT ZONING R-E

CURRENT ZONING C-3

LIGHT POST WITH T4 OPTICS WITH DIRECTIONAL TOWARD DRIVEWAYS

EXISTING TREE BUFFER

SECURITY FENCE

75' BUILDING SETBACK LINE

25' BUILDING SETBACK LINE

15' BUILDING SETBACK LINE

55' BUILDING SETBACK LINE

65 LF OF 8" DUCTILE IRON WATER MAIN

PROPOSED HYDRANT RELOCATION

12' X 8" TAPPING SLEEVE WITH A 8" VALVE

EXISTING HYDRANT

FIRE LANE

PROPOSED 20' INGRESS/EGRESS ACCESS EASEMENT

10' OF 16" ENCASEMENT ON WATER MAIN

400 LF OF 8" DUCTILE IRON WATER MAIN

PROPOSED HYDRANT ASSEMBLY

116 LF OF 8" DUCTILE IRON WATER MAIN

EXISTING 8"SEWER LINE

EXISTING 12"WATER LINE

BILLBOARD

RETENTION POND
1.95 ACRES
84815 Sq. Ft.

13 — FFE: 359.00 — 6600 Sq. Ft.
14 — FFE: 360.11 / FFE: 360.11 — 17925 Sq. Ft.
15 — FFE: 360.50 / FFE: 360.50 — 14243 Sq. Ft.
1 — FFE: 361.50 — 11480 Sq. Ft.
2 — FFE: 363.00 / FFE: 364.00 — 15900 Sq. Ft.
3 — FFE: 367.50 / FFE: 368.50 — 30060 Sq. Ft.
4 — FFE: 362.00 / FFE: 361.00 — 17440 Sq. Ft.
5 — FFE: 362.00 / FFE: 363.00 — 21200 Sq. Ft.
6 — FFE: 366.00 / FFE: 367.00 — 34160 Sq. Ft.
7 — FFE: 361.50 / FFE: 360.50 — 22960 Sq. Ft.
8 — FFE: 360.00 / FFE: 361.00 — 21200 Sq. Ft.
9 — FFE: 364.50 / FFE: 365.50 — 28160 Sq. Ft.
10 — FFE: 365.00 / FFE: 366.50 — 17000 Sq. Ft.
11 — FFE: 361.00 / FFE: 360.00 — 25120 Sq. Ft.
12 — FFE: 361.50 / FFE: 362.50 — 18560 Sq. Ft.

PROPOSED IRRIGATION METER ¾"

3/4" TAPPING SLEEVE

8" X 8" TAPPING SLEEVE WITH A 8" VALVE

16 LF OF 8" DUCTILE IRON WATER MAIN

PROPOSED HYDRANT ASSEMBLY

LIGHT POST WITH T4 OPTICS WITH DIRECTIONAL TOWARD DRIVEWAYS

SECURITY GATE EQUIPPED WITH KNOX BOX FOR FD ACCESS

I-30 FRONTAGE ROAD

EXISTING 8"WATER LINE

EXISTING OVERHEAD POWER LINE

EXISTING GAS LINE

NOTES:

1. ALL FIRE LINE WILL BE PRIVATE.
2. NO SEWER SERVICE IS PROPOSED.
3. GATE POST MUST BE CONSTRUCTED NO CLOSER THAN 7.5' OF UTILITY LINES.

WATER UTILITY NOTES:

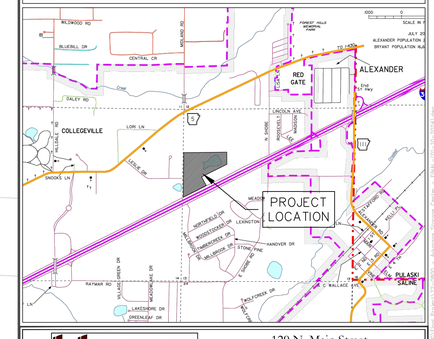
1. ALL NEW 8-INCH WATER MAINS TO BE DUCTILE IRON.
2. ALL WATER INSTALLATION TO BE IN ACCORDANCE WITH THE CITY OF BRYANT "STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF WATER LINES AND SEWER LINES, 2015 EDITION".
3. WATER LINES UNDER CULVERTS, CREEKS, CONCRETE CHANNELS, RETAINING WALLS, OR OTHER DIFFICULT AND /OR DANGEROUS TO MAINTAIN AREAS SHALL BE ENCASED IN A SMOOTH STEEL ENCASEMENT PIPE. THE STEEL ENCASEMENT SHALL EXTEND FIVE FEET EITHER SIDE OF THE AREA.
4. EACH WATER SERVICE METER MUST HAVE ITS OWN SERVICE LINE CONNECTION TO THE MAIN (INCLUDES DOUBLE METERS DISPLAYED AS ONE SERVICE LINE ON THE PLAT.
5. CASING SPACERS: SHALL BE STAINLESS STEEL, CASCADE MODEL CCS AS MANUFACTURED BY CASCADE WATER MFG. CO., OR APPROVED EQUAL.

HOPE CONSULTING, INC. No. 1931 — CERTIFICATE OF AUTHORIZATION — ARKANSAS

BASIS OF BEARING: GRID NORTH, ARKANSAS COORDINATE SYSTEM, SOUTH ZONE BY GPS OBSERVATION

70' 35' 0 70'

VICINITY MAP:



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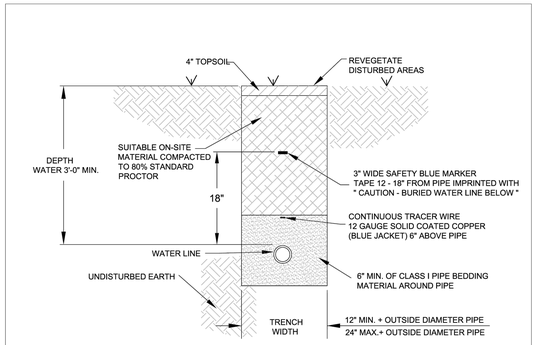
ARKANSAS STORAGE CENTER

UTILITY PLAN

BRYANT, SALINE COUNTY, ARKANSAS

DATE:	01-24-2024	C.A.D. BY:	DRAWING NUMBER:
REVISED:		CHECKED BY:	22-0800
SHEET:	C-3.0	SCALE: 1" = 70'	

500	01S	14W	0	21	300	62	1762



NOTES:

1. ALL VALVES, BENDS, ETC. SHALL BE RESTRAINED.
2. THE CONTRACTOR SHALL PROVIDE ALL ITEMS NECESSARY TO CONNECT WITH ANY PART OF THE EXISTING WATER SYSTEM THAT WILL REMAIN IN ORDER TO ESTABLISH A SATISFACTORY AND ACCEPTABLE WATER SYSTEM.
3. CONTRACTOR TO CONSTRUCT ALL TRENCH EXCAVATION IN ACCORDANCE WITH ALL OSHA REGULATIONS (29 CFR CH.XVII, SUBPART B)
4. TRENCH SHALL BE EXCAVATED BELOW GRADE REQUIRED TO PROVIDE A MINIMUM 36" OF PIPE COVER.
5. MAXIMUM PIPE COVER SHALL BE 60" UNDER NORMAL CONDITIONS. COVER GREATER THAN 60" MAY BE ALLOWED FOR SHORT DISTANCES WHERE REQUIRED BY FIELD CONDITIONS. NO HYDRANT SHALL BE ALLOWED WHERE LINES ARE GREATER THAN 60" DEEP.

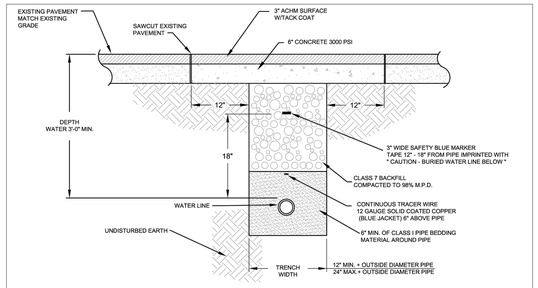
WATER MAIN TRENCH

(NON-PAVED AREA)

4/16/2015 11:47:53 AM

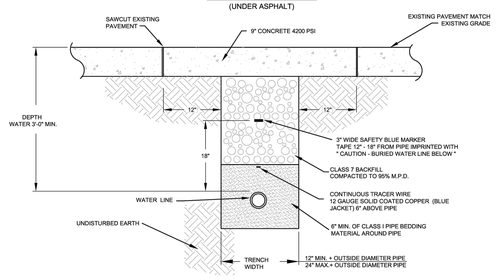
CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0468

TITLE:	WATER DETAILS	DATE: APRIL 2015	SHEET:
DESCRIPTION:	WATER MAIN TRENCH (NON-PAVED AREA)	REVISED ---- ---- ---- ----	W1
DRAWN BY:	CHECKED BY:	FILE: W1-Water Trench (Non-Paved Area).dwg	----



WATER MAIN TRENCH

(UNDER ASPHALT)



NOTES:

1. ALL VALVES, BENDS, ETC. SHALL BE RESTRAINED.
2. THE CONTRACTOR SHALL PROVIDE ALL ITEMS NECESSARY TO CONNECT WITH ANY PART OF THE EXISTING WATER SYSTEM THAT WILL REMAIN IN ORDER TO ESTABLISH A SATISFACTORY AND ACCEPTABLE WATER SYSTEM.
3. CONTRACTOR TO CONSTRUCT ALL TRENCH EXCAVATION IN ACCORDANCE WITH ALL OSHA REGULATIONS (29 CFR CH.XVII, SUBPART B)
4. TRENCH SHALL BE EXCAVATED BELOW GRADE REQUIRED TO PROVIDE A MINIMUM 36" OF PIPE COVER.
5. MAXIMUM PIPE COVER SHALL BE 60" UNDER NORMAL CONDITIONS. COVER GREATER THAN 60" MAY BE ALLOWED FOR SHORT DISTANCES WHERE REQUIRED BY FIELD CONDITIONS. NO HYDRANT SHALL BE ALLOWED WHERE LINES ARE GREATER THAN 60" DEEP.

WATER MAIN TRENCH

(UNDER CONCRETE)

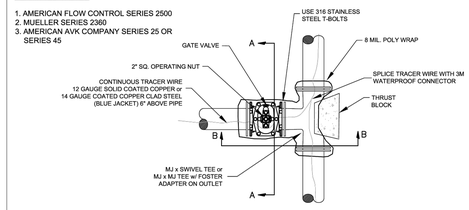
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CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0468

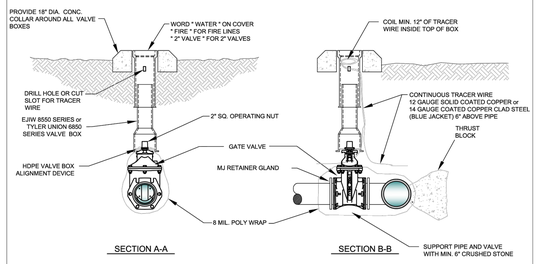
TITLE:	WATER DETAILS	DATE: APRIL 2015	SHEET:
DESCRIPTION:	WATER MAIN TRENCH (UNDER PAVEMENT)	REVISED ---- ---- ---- ----	W2
DRAWN BY:	CHECKED BY:	FILE: W2-Water Trench (Under Pavement).dwg	----

PERMITTED VALVES

1. AMERICAN FLOW CONTROL SERIES 2500
2. MUELLER SERIES 2360
3. AMERICAN AVK COMPANY SERIES 25 OR SERIES 45



PLAN



NOTES:

1. ALL VALVES SHALL BE SECURELY ANCHORED TO THE TEE.
2. ALL HARDWARE SHALL BE 316 STAINLESS STEEL.
3. IF DEPTH OF BURY EXCEEDS 4 FT., A VALVE STEM EXTENSION SHALL BE REQUIRED. THE VALVE STEM EXTENSION NUT SHALL BE WITHIN 24-INCHES TO 12-INCHES OF THE FINISHED SURFACE.

GATE VALVE DETAIL

2" - 12"

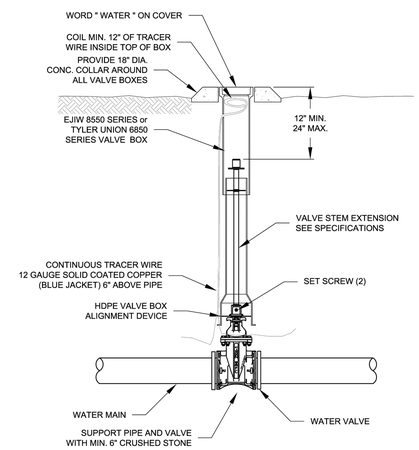
4/16/2015 11:47:53 AM

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210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0468

TITLE:	WATER DETAILS	DATE: APRIL 2015	SHEET:
DESCRIPTION:	GATE VALVE	REVISED ---- ---- ---- ----	W4
DRAWN BY:	CHECKED BY:	FILE: W4-Gate Valve.dwg	----

NOTES:

1. OPERATING NUT EXTENSIONS SHALL BE USED WHEN THE TOP OF THE OPERATING NUT IS GREATER THAN 4 FEET FROM THE TOP OF FINISHED SURFACE.
2. THE STEM EXTENSION SHALL BE OF ADEQUATE LENGTH TO REACH FROM THE VALVE OPERATING NUT TO A POINT WITHIN 24-INCHES TO 12-INCHES OF THE FINISHED SURFACE.

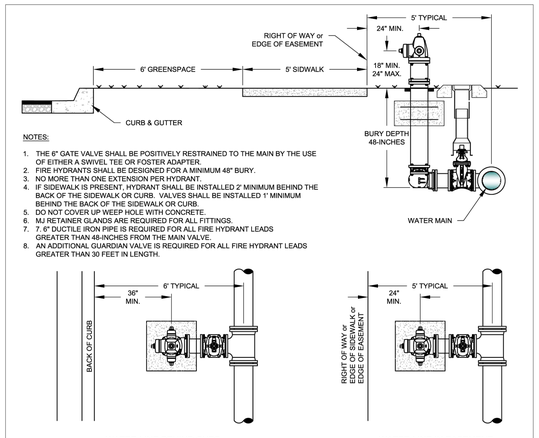


VALVE WITH STEM EXTENSION

4/16/2015 11:47:58 AM

CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0468

TITLE:	WATER DETAILS	DATE: APRIL 2015	SHEET:
DESCRIPTION:	VALVE STEM EXTENSION	REVISED ---- ---- ---- ----	W7
DRAWN BY:	CHECKED BY:	FILE: W7-Valve Stem Extension.dwg	----

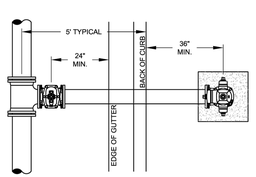


NOTES:

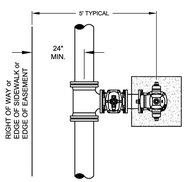
1. THE 6" GATE VALVE SHALL BE POSITIVELY RESTRAINED TO THE MAIN BY THE USE OF EITHER A SWIVEL TEE OR FOSTER ADAPTER.
2. FIRE HYDRANTS SHALL BE DESIGNED FOR A MINIMUM 48" BURY.
3. NO MORE THAN ONE EXTENSION PER HYDRANT.
4. IF SIDEWALK IS PRESENT, HYDRANT SHALL BE INSTALLED 2' MINIMUM BEHIND THE BACK OF THE SIDEWALK OR CURB. VALVES SHALL BE INSTALLED 1' MINIMUM BEHIND THE BACK OF THE SIDEWALK OR CURB.
5. DO NOT COVER UP WEEP HOLE WITH CONCRETE.
6. MJ RETAINER GLANDS ARE REQUIRED FOR ALL FITTINGS.
7. 7. 6" DUCTILE IRON PIPE IS REQUIRED FOR ALL FIRE HYDRANT LEADS GREATER THAN 48-INCHES FROM THE MAIN VALVE.
8. AN ADDITIONAL GUARDIAN VALVE IS REQUIRED FOR ALL FIRE HYDRANT LEADS GREATER THAN 30 FEET IN LENGTH.

WATER LINE BEHIND CURB
INSIDE ROW

WATER LINE IN EASEMENT
OUTSIDE ROW



WATER LINE IN STREET
INSIDE ROW



WATER LINE IN EASEMENT
OUTSIDE ROW

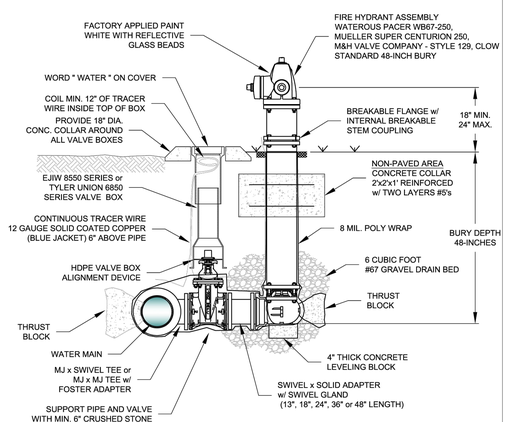
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CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0468

TITLE:	WATER DETAILS	DATE: APRIL 2015	SHEET:
DESCRIPTION:	FIRE HYDRANT PLACEMENT	REVISED ---- ---- ---- ----	W9
DRAWN BY:	CHECKED BY:	FILE: W9-Fire Hydrant Placement.dwg	----

NOTES:

1. THE 6" GATE VALVE SHALL BE POSITIVELY RESTRAINED TO THE MAIN BY THE USE OF EITHER A SWIVEL TEE OR FOSTER ADAPTER.
2. FIRE HYDRANTS SHALL BE DESIGNED FOR A MINIMUM 48" BURY.
3. BURY LINE OF HYDRANT SHALL BE NO LESS THAN THE PROPOSED FINISHED ELEVATION OF BACK OF CURB, OR SIDEWALK, WHICHEVER IS GREATER.
4. NO MORE THAN ONE EXTENSION PER HYDRANT.
5. IF SIDEWALK IS PRESENT, HYDRANT SHALL BE INSTALLED 2' MINIMUM BEHIND THE BACK OF THE SIDEWALK OR CURB. VALVES SHALL BE INSTALLED 1' MINIMUM BEHIND THE BACK OF THE SIDEWALK OR CURB.
6. DO NOT COVER UP WEEP HOLE WITH CONCRETE.
7. MJ RETAINER GLANDS ARE REQUIRED FOR ALL FITTINGS.
8. 7. 6" DUCTILE IRON PIPE IS REQUIRED FOR ALL FIRE HYDRANT LEADS GREATER THAN 48-INCHES FROM THE MAIN VALVE.
9. AN ADDITIONAL GUARDIAN VALVE IS REQUIRED FOR ALL FIRE HYDRANT LEADS GREATER THAN 30 FEET IN LENGTH.



FIRE HYDRANT & VALVE CONNECTION

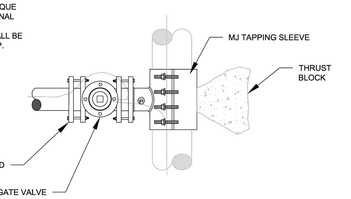
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CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0468

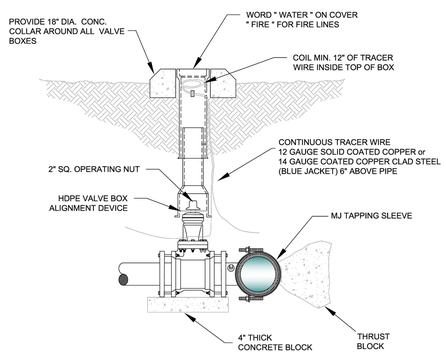
TITLE:	WATER DETAILS	DATE: APRIL 2015	SHEET:
DESCRIPTION:	FIRE HYDRANT AND VALVE CONNECTION	REVISED ---- ---- ---- ----	W8
DRAWN BY:	CHECKED BY:	FILE: W8-Fire Hydrant and Valve.dwg	----

NOTES:

1. TAPPING SLEEVE SHALL BE SMITH-BLAIR 662 OR FORD FAST.
2. AFTER THE TAP IS MADE, RE-TORQUE BOLTS ON SLEEVE TO SEAL TO FINAL SHAPE OF PIPE.
3. TAPPING SLEEVE AND VALVE SHALL BE WRAPPED WITH 8 MIL POLY WRAP.



PLAN VIEW



PROFILE VIEW

4/16/2015 11:48:08 AM

CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 943-0468

TITLE:	WATER DETAILS	DATE: APRIL 2015	SHEET:
DESCRIPTION:	TAPPING SLEEVE AND VALVE	REVISED ---- ---- ---- ----	W13
DRAWN BY:	CHECKED BY:	FILE: W13-Tapping Sleeve and Valve.dwg	----

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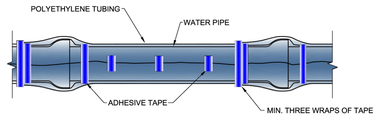
UTILITY SPECS

BRYANT, SALINE COUNTY, ARKANSAS

DATE:	01-24-2024	C.A.D. BY:	DRAWING NUMBER:
REVISED:		CHECKED BY:	22-0800
SHEET:	C-3.1	SCALE:	

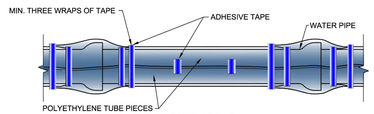
500	01S	14W	0	21	300	62	1762

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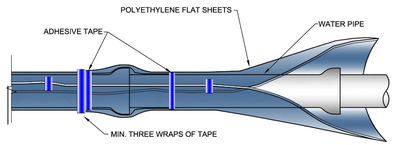
METHOD 'A'

METHOD 'A' USES ONE LENGTH OF POLYETHYLENE TUBE, OVERLAPPED AT THE JOINTS A MINIMUM OF 2 FEET.



METHOD 'B'

METHOD 'B' USES SEPARATE PIECES OF POLYETHYLENE TUBE FOR THE BARREL OF THE PIPE AND THE JOINTS. SHORT PIECES SHALL BE APPROXIMATELY 6" LONG AND OVERLAP BARREL SECTION BY A MINIMUM OF 2 FEET.



METHOD 'C'

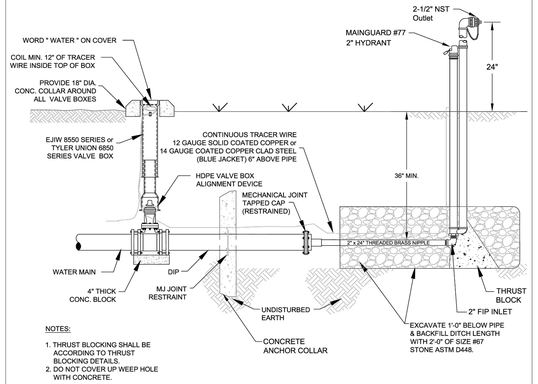
METHOD 'C' - USED FOR PIPE-SHAPED AND ODD- SHAPED APPURTENANCES SUCH AS BENDS, REDUCERS, OFFSETS, VALVES, TEES, ETC.

ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE POLY WRAPPED.

THE ANSI/AWWA C105/A21.5 STANDARD OUTLINES THREE METHODS OF INSTALLING POLYETHYLENE ENCASEMENT/ SLEEVING.

CITY OF BRYANT, AR WATER UTILITIES 210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 943-0468	TITLE: **WATER DETAILS**	DATE: APRIL 2015 / REVISED	SHEET: **W14**
	DESCRIPTION: **POLYETHYLENE PROTECTION MATERIAL**	----	
	DRAWN BY: / CHECKED BY: / FILE: W14-Poly Wrap.dwg	----	

4/26/2023 11:48:29 AM



NOTES:

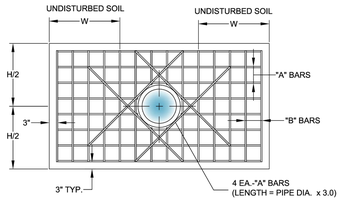
1. THRUST BLOCKING SHALL BE ACCORDING TO THRUST BLOCKING DETAILS.
2. DO NOT COVER UP WEEP HOLE WITH CONCRETE.

BLOW-OFF ASSEMBLY

CITY OF BRYANT, AR WATER UTILITIES 210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 943-0468	TITLE: **WATER DETAILS**	DATE: APRIL 2015 / REVISED	SHEET: **W19**
	DESCRIPTION: **BLOW-OFF ASSEMBLY**	----	
	DRAWN BY: / CHECKED BY: / FILE: W19--Blow-off Assembly.dwg	----	

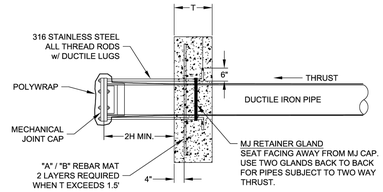
4/26/2023 11:47:58 AM

ANCHOR COLLAR SCHEDULE					
PIPE SIZE	MINIMUM DIMENSIONS			REINFORCING BARS	
	W	H	T	"A" BARS	"B" BARS
6"	1.5'	2.0'	1.0'	#6 @ 6"	#6 @ 6"
8"	2.0'	2.5'	1.0'	#6 @ 6"	#6 @ 6"
12"	2.5'	4.0'	1.5'	#6 @ 6"	#6 @ 6"
16"	3.5'	5.0'	1.5'	#6 @ 6"	#6 @ 6"
20"	5.0'	5.5'	2.0'	#6 @ 6"	#6 @ 6"
24"	6.5'	6.0'	2.0'	#7 @ 6"	#7 @ 10"



NOTES:

1. DESIGN PRESSURE IS 200 PSI PLUS 100 PSI SURGE AND 2,000 PSI SOIL BEARING.
2. ALL DIMENSIONS ARE MINIMUM REQUIREMENTS. ACTUAL FIELD CONDITIONS MAY REQUIRE LARGER DIMENSIONS.
3. ALL RETAINER GLANDS SHALL BE MEGA-LUG BY EBAA IRON.

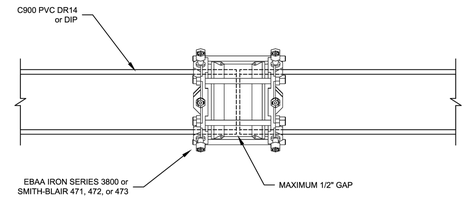


CITY OF BRYANT, AR WATER UTILITIES 210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 943-0468	TITLE: **WATER DETAILS**	DATE: APRIL 2015 / REVISED	SHEET: **W18**
	DESCRIPTION: **ANCHOR COLLAR**	----	
	DRAWN BY: / CHECKED BY: / FILE: W18--Anchor Collar.dwg	----	

4/26/2023 11:47:32 AM

NOTE:

RESTRAINED COUPLINGS SHALL BE USED WHEN JOINING TWO CUT PIECES OF PIPE, GENERALLY WHEN CUTTING IN VALVES AND TEES.



RESTRAINED COUPLING

CITY OF BRYANT, AR WATER UTILITIES 210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 943-0468	TITLE: **WATER DETAILS**	DATE: APRIL 2015 / REVISED	SHEET: **W26**
	DESCRIPTION: **RESTRAINED COUPLING**	----	
	DRAWN BY: / CHECKED BY: / FILE: W26--Restrained Coupling.dwg	----	

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City of Bryant - Water System Material Specifications - Short Form

Water System Material	City of Bryant Specification
PVC Pipe - Less than 4"	SDR-13.5
PVC Pipe - 4" through 8"	SDR-14 or C900
Ductile Iron Pipe - 10" and larger	250 PSI Pressure Class
Joint Restraint	Megalug Series 1100 by EBAA
Tracer Wire Splice Caps	Carsonite Model LCTSI508
Tracer Wire Splice Poles	Carsonite Model CTP307201
Marking Tape	Terra Tape "Extra Stretch" Rhino Marking and Protection Systems Harris Industries, Inc.
Water Line Marker Signs	Carsonite International
Gate Valves	Mueller Series 2360 American Flow Control Series 2500 Clow Corporation
Valve Boxes	East Jordan Iron Works 8550 Series Mueller Tyler Union 6850 Series
Butterfly Valves	Pratt HP250II Dezurik BAW
Tapping Sleeves	Smith-Blair 662 Style FAST by Ford Meter Box Company
Fire Hydrants	M&H Valve Company - Style 129 Mueller Super Centurion 250 American Flow Control 5-1/4" Waterous Pacer WB67-250 Clow
Blow-Off Hydrants	Mainguard No. 77
Air Relief Valves (1" & 2")	A.R.I. Model D-040
Air Relief Valves (3" to 10")	A.R.I. Model D-060-C HF
Combination Air Valve (2" & larger)	A.R.I. D-050
Meter Box	DFW Plastics Polymer Body
Meter Box Lid	DFW Plastics Polymer Lid - Bryant
Meter Setter	A.Y. McDonald NL 726-207WX2D 33
Tapping Saddle	A.Y. McDonald Hinged Saddle 3891 Romac 101 NS
Corp Stop	A.Y. McDonald NL Plug Style 74701-22 Ford FB1000-4-Q-NL Mueller B25008N
Service Tubing	SDR 9 HDPE Tubing

C. Brass for meter materials shall be manufactured by Ford Meter Box Company, Inc. or Mueller Company. Equivalent cross referencing for corporation stops and meter setters shall be permitted as approved by the City of Bryant. Materials for standard meter sets 5/8", 1", 1-1/2", and 2" are as follows:

Single Meter Set

main diameter x 1" saddle	Romac 101NS
	A.Y. McDonald Hinged Saddle 3891
1" corporation	Ford FB1000-4-Q-NL
	Mueller B25008N
1" SDR 9 HDPE pipe w/ inserts	
5/8" x 3/4" x 12" meter yolk	Ford VB72-12W-44-43-SQ-NL
	Mueller 238B2567-R--93N
	A.Y. McDonald NL 726-207WX2D 33
1/2" x 16" SCH 40 PVC brace	
3/4" SDR 9 tail piece w/ insert, 4' long	
18" diameter x 18" deep polymer meter box	DFW Plastics DFW1818TEX-AF1EQA MINET BRY
18" solid black polymer meter lid	DFW Plastics, w/ Bryant logo

Double Meter Set

main diameter x 1" saddle	Romac 101NS
	A.Y. McDonald Hinged Saddle 3891
1" corporation stop	Ford FB1000-4-Q-NL
	Mueller B25008N
	A.Y. McDonald NL Plug Style 74701-22
1" SDR 9 HDPE pipe w/ inserts	
1" x 7.5" x 3/4" U branch	Ford U48-43-7.5-Q-NL
	Ford multipurpose end C31-23-NL (x2)
	Mueller H15363N (1" compression inlet)
	Mueller end connection H14222N (x2)
5/8" x 3/4" x 12" meter yolk	Ford VB72-12W-14-33-Q-NL
	Mueller 238B2567-RN
	A.Y. McDonald NL 726-207WX2D 33
1/2" x 16" SCH"40 PVC brace	
3/4" SDR 9 tail piece w/ insert, 4' long	
24" diameter x 18" deep polymer meter box	DFW Plastics DFW 2418F-AF1EQA MINET BRY
20" solid black polymer meter lid	DFW Plastics, w/ Bryant logo

HOPE CONSULTING
ENGINEERS - SURVEYORS
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FOR USE AND BENEFIT OF:
STUART FINLEY

ARKANSAS STORAGE CENTER

UTILITY SPECS

BRYANT, SALINE COUNTY, ARKANSAS

DATE:	01-24-2024	C.A.D. BY:	DRAWING NUMBER: 22-0800
REVISED:		CHECKED BY:	
SHEET:	C-3.2	SCALE:	

500	01S	14W	0	21	300	62	1762

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Hope Consulting Engineers - Surveyors - Benton, AR - (501) 315-2626

CURRENT ZONING R-1

CURRENT ZONING C-2

CURRENT ZONING R-E

CURRENT ZONING C-3

EXISTING TREE BUFFER

25' BUILDING SETBACK LINE

15' BUILDING SETBACK LINE

RETENTION POND
1.95 ACRES
84853 Sq. Ft.

1 — 11480 Sq. Ft. — FFE: 361.50
2 — 15900 Sq. Ft. — FFE: 363.00 / FFE: 364.00
3 — 30060 Sq. Ft. — FFE: 367.50 / FFE: 368.50
4 — 17440 Sq. Ft. — FFE: 362.00 / FFE: 361.00
5 — 21200 Sq. Ft. — FFE: 362.00 / FFE: 363.00
6 — 34160 Sq. Ft. — FFE: 366.00 / FFE: 367.00 / FFE: 368.00
7 — 22960 Sq. Ft. — FFE: 361.50 / FFE: 360.50
8 — 21200 Sq. Ft. — FFE: 360.00 / FFE: 361.00
9 — 28160 Sq. Ft. — FFE: 364.30 / FFE: 366.50
10 — 17000 Sq. Ft. — FFE: 364.00 / FFE: 365.00
11 — 25120 Sq. Ft. — FFE: 361.00 / FFE: 360.00
12 — 18560 Sq. Ft. — FFE: 361.50 / FFE: 362.50
13 — 6600 Sq. Ft. — FFE: 359.00
14 — 17925 Sq. Ft. — FFE: 360.11 / FFE: 360.11
15 — 14243 Sq. Ft. — FFE: 360.50 / FFE: 360.50

11+86
11+00
10+00
9+00
8+00
7+00
6+00
5+00
4+00
3+00
2+00
1+00
0+00

BILLBOARD

I-30 FRONTAGE ROAD

OHP

CAS

SS

W

SW

DGE

X

LEGEND

EXISTING CONTOUR LINE — 363 —
PROPOSED CONTOUR LINE — 363 —
PROPOSED HDPE STORM PIPE
PROPOSED RCP STORM PIPE

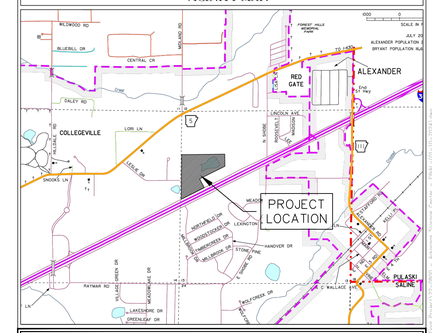
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BASIS OF BEARING:
GRID NORTH ARKANSAS
COORDINATE SYSTEM, SOUTH ZONE
BY GPS OBSERVATION

70' 35' 0 70'

CERTIFICATE OF AUTHORIZATION
HOPE CONSULTING, INC.
No. 1931
ARKANSAS

VICINITY MAP:



HOPE CONSULTING
ENGINEERS - SURVEYORS

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FOR USE AND BENEFIT OF:
STUART FINLEY

ARKANSAS STORAGE CENTER

GRADING PLAN

BRYANT, SALINE COUNTY, ARKANSAS

DATE: 01-24-2024	C.A.D. BY:		DRAWING NUMBER:
REVISED:	CHECKED BY:		22-0800
SHEET: C-4.0	SCALE: 1" = 70'		

500	01S	14W	0	21	300	62	1762

CURRENT ZONING R-1

CURRENT ZONING C-2

CURRENT ZONING R-E

CURRENT ZONING C-3

EXISTING TREE BUFFER

25' BUILDING SETBACK LINE

15' BUILDING SETBACK LINE

55' BUFFER

EXISTING TREE BUFFER

RETENTION POND
1.55 ACRES
68015 Sq. Ft.

TOP OF LEVEE

10' WIDE LEVEE

SPILLWAY ELEV. 355.30'
SPILLWAY (5' WIDE)

RIP-RAP

FLOW ELEV.= 353.5'

20' OF 18" RCP @ 0.50%

FLOW ELEV.= 351.4'

1 — FFE: 361.50 — 15000 Sq. Ft.
2 — FFE: 363.00 — 15000 Sq. Ft.
3 — FFE: 367.50 — 30000 Sq. Ft.
4 — FFE: 362.00 — 17440 Sq. Ft.
5 — FFE: 362.00 — 21200 Sq. Ft.
6 — FFE: 366.00 — 34160 Sq. Ft.
7 — FFE: 361.50 — 22960 Sq. Ft.
8 — FFE: 360.00 — 21200 Sq. Ft.
9 — FFE: 365.50 — 28160 Sq. Ft.
10 — FFE: 365.00 — 17000 Sq. Ft.
11 — FFE: 360.00 — 25120 Sq. Ft.
12 — FFE: 361.50 — 18560 Sq. Ft.
13 — FFE: 359.00 — 6600 Sq. Ft.
14 — FFE: 360.11 — 17925 Sq. Ft.
15 — FFE: 360.50 — 14243 Sq. Ft.

CB-(1) STA:0+00.00 OFF:0.00 RIM:359.91 INV.OUT:355.41 12"

CB-(2) STA:1+12.00 OFF:0.00 RIM:360.78 INV.IN:355.87 24" INV.OUT:355.62 24"

CB-(3) STA:3+02.23 OFF:-31.25L RIM:362.82 INV.OUT:357.42 24"

CB-(4) STA:0+00.00 OFF:0.00 RIM:360.09 INV.OUT:355.50 18"

CB-(5) STA:8+82.63 OFF:-0.03L RIM:359.31 INV.IN:353.75 30" INV.IN:353.86 24" INV.IN:354.62 18" INV.OUT:353.51 30"

CB-(6) STA:2+59.50 OFF:0.00 RIM:359.50 INV.IN:354.70 18" INV.IN:354.56 24" INV.OUT:354.56 24"

CB-(7) STA:3+02.23 OFF:-0.03L RIM:363.75 INV.IN:359.99 18" INV.IN:359.49 24" INV.OUT:359.49 24"

CB-(8) STA:3+02.23 OFF:-102.56L RIM:365.90 INV.OUT:361.66 24"

CB-(9) STA:0+00.00 OFF:0.00 RIM:364.00 INV.IN:359.50 18" INV.OUT:359.50 18"

CB-(10) STA:0+00.00 OFF:0.00 RIM:366.00 INV.OUT:361.50 18"

CB-(11) STA:4+47.19 OFF:0.00 RIM:362.99 INV.IN:358.00 24" INV.IN:358.50 18" INV.OUT:357.90 24"

CB-(12) STA:5+86.74 OFF:0.00 RIM:361.40 INV.IN:356.40 24" INV.IN:356.40 18" INV.OUT:355.90 30"

CB-(13) STA:0+00.00 OFF:0.00 RIM:365.00 INV.OUT:360.50 18"

CB-(14) STA:0+00.00 OFF:0.00 RIM:364.00 INV.OUT:359.50 18"

CB-(15) STA:1+43.00 OFF:0.00 RIM:366.50 INV.OUT:361.50 18"

CB-(16) STA:0+00.00 OFF:0.00 RIM:366.78 INV.OUT:361.50 18"

107' OF 24" HDPE @ 1.76%
148' OF 24" HDPE @ 0.89%
159' OF 24" HDPE @ 0.80%
142' OF 18" HDPE @ 0.50%
177' OF 18" HDPE @ 0.50%
347' OF 36" HDPE @ 0.51%
296' OF 30" HDPE @ 0.75%
102' OF 24" HDPE @ 1.53%
145' OF 24" HDPE @ 1.03%
140' OF 24" HDPE @ 1.07%
132' OF 18" HDPE @ 1.07%
30' OF 18" HDPE @ 0.50%
21' OF 18" HDPE @ 0.47%
260' OF 18" HDPE @ 1.00%

24" RCP PIPE
ELEV. 366.23'

18" HDPE PIPE
ELEV. 369.51'

GRATE INLET
ELEV. 368.25'
INVERT. 3.15'

I-30 FRONTAGE ROAD

BILLBOARD

LEGEND

PROPOSED CONTOUR LINE — 363 —
PROPOSED HDPE STORM PIPE
PROPOSED RCP STORM PIPE

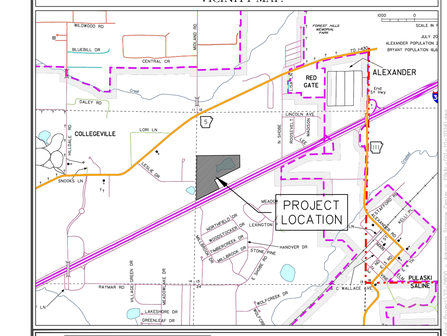
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BASIS OF BEARING:
GRID NORTH, ARKANSAS
COORDINATE SYSTEM, SOUTH ZONE
BY GPS OBSERVATION

70' 35' 0 70'

CERTIFICATE OF AUTHORIZATION
HOPE CONSULTING, INC.
No. 1931
ARKANSAS

VICINITY MAP:



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FOR USE AND BENEFIT OF:
STUART FINLEY

ARKANSAS STORAGE CENTER
DRAINAGE PLAN
BRYANT, SALINE COUNTY, ARKANSAS

DATE:	01-24-2024	C.A.D. BY:	DRAWING NUMBER:
REVISED:		CHECKED BY:	22-0800
SHEET:	C-5.0	SCALE: 1" = 70'	

500	01S	14W	0	21	300	62	1762

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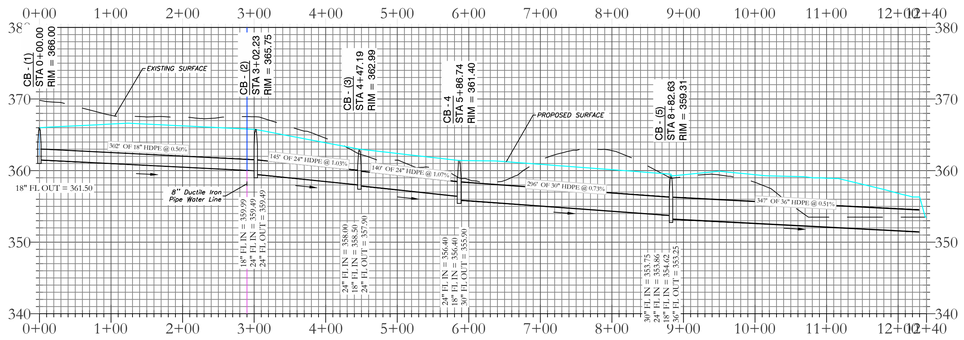
EXISTING CONTOUR LINE 363

PROPOSED CONTOUR LINE 363

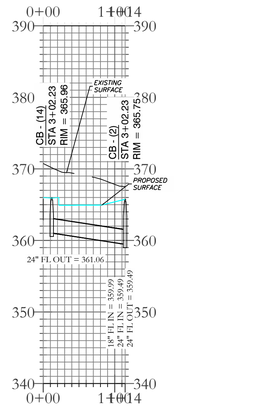
PROPOSED HDPE STORM PIPE

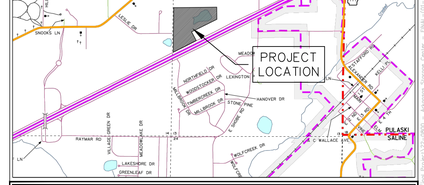
PROPOSED RCP STORM PIPE

STORM WATER LINE 1 PROFILE



STORM WATER LINE 7 PROFILE





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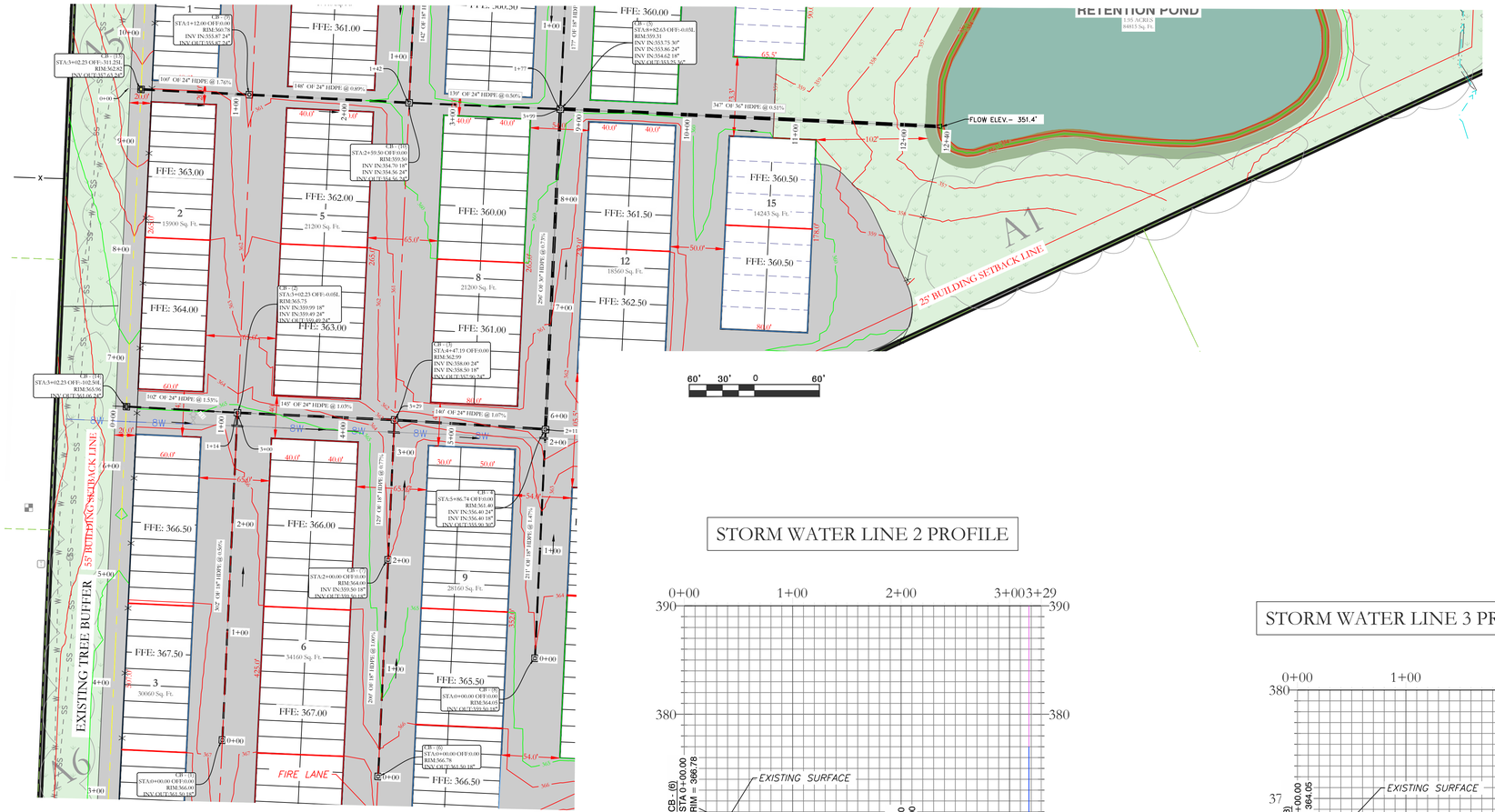
DRAINAGE PLAN

BRYANT, SALINE COUNTY, ARKANSAS

DATE: 01-24-2024	C.A.D. BY:		DRAWING NUMBER:
REVISED:	CHECKED BY:		22-0800
SHEET: C-5.1	SCALE:		

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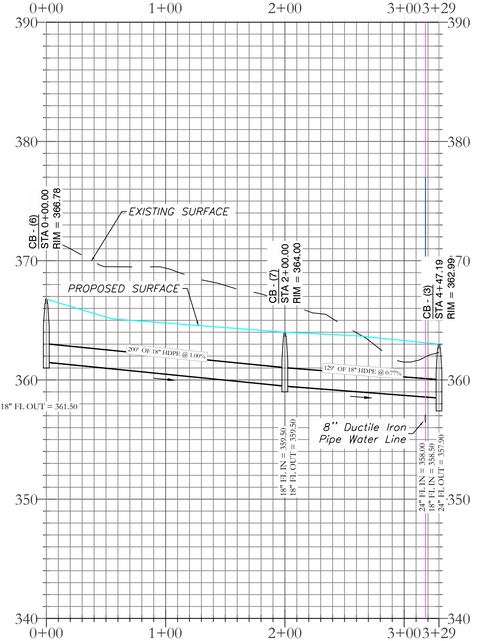
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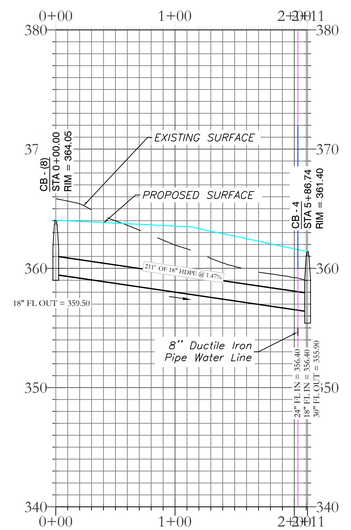
EXISTING CONTOUR LINE — — 363 — —
PROPOSED CONTOUR LINE 363
PROPOSED HDPE STORM PIPE
PROPOSED RCP STORM PIPE

STORM WATER LINE 2 PROFILE



60' 30' 0 60'

STORM WATER LINE 3 PROFILE



60' 30' 0 60'

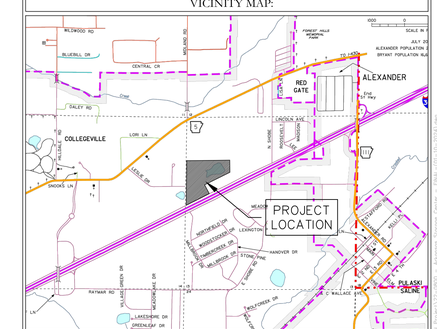
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BASIS OF BEARING
GRID NORTH, ARKANSAS
COORDINATE SYSTEM, SOUTH ZONE
BY GPS OBSERVATION

60' 30' 0 60'

VICINITY MAP:



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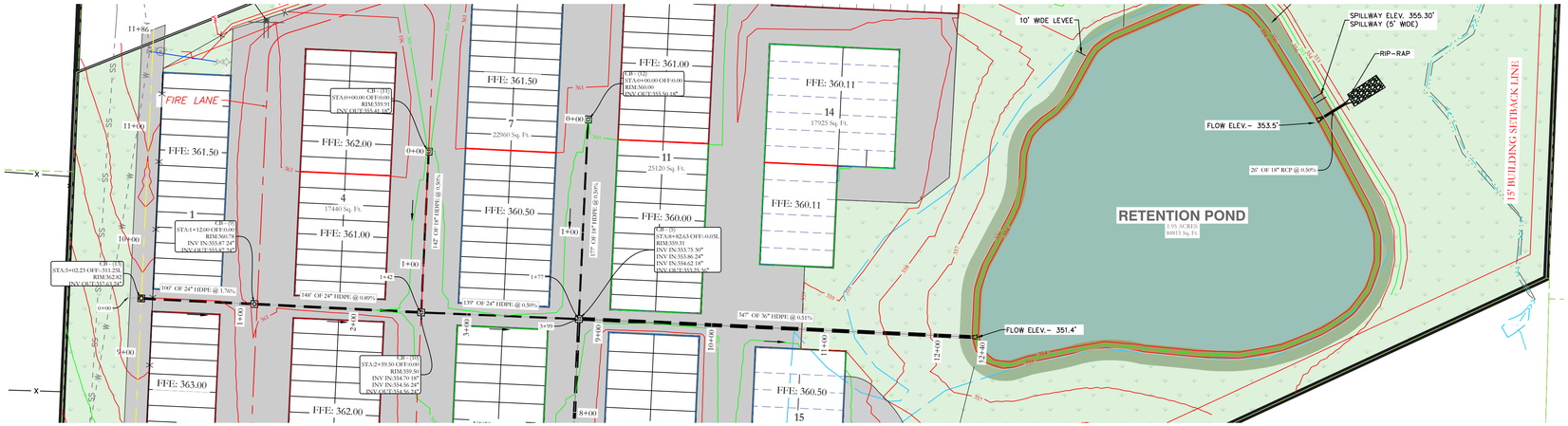
DRAINAGE PLAN

BRYANT, SALINE COUNTY, ARKANSAS

DATE:	01-24-2023	C.A.D. BY:	DRAWING NUMBER:
REVISED:		CHECKED BY:	22-0800
SHEET:	C-5.2	SCALE:	

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LEGEND

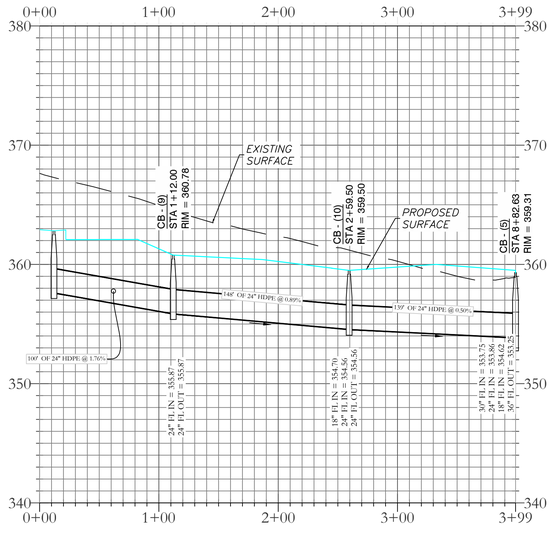
EXISTING CONTOUR LINE — 363

PROPOSED CONTOUR LINE — 363

PROPOSED HDPE STORM PIPE

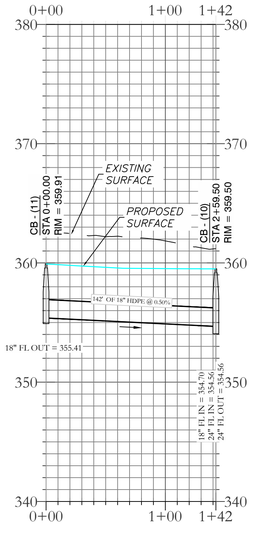
PROPOSED RCP STORM PIPE

STORM WATER LINE 4 PROFILE



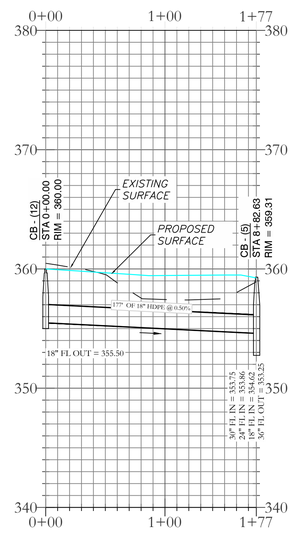
60' 30' 0 60'

STORM WATER LINE 5 PROFILE



60' 30' 0 60'

STORM WATER LINE 6 PROFILE



60' 30' 0 60'

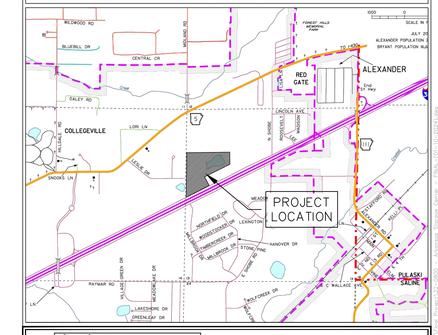
CERTIFICATE OF AUTHORIZATION
HOPE CONSULTING, INC.
No. 1931
ARKANSAS

N

BASIS OF BEARING:
GRID NORTH, ARKANSAS
COORDINATE SYSTEM, SOUTH ZONE
BY GPS OBSERVATION

60' 30' 0 60'

VICINITY MAP:



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STUART FINLEY

ARKANSAS STORAGE CENTER

DRAINAGE PLAN

BRYANT, SALINE COUNTY, ARKANSAS

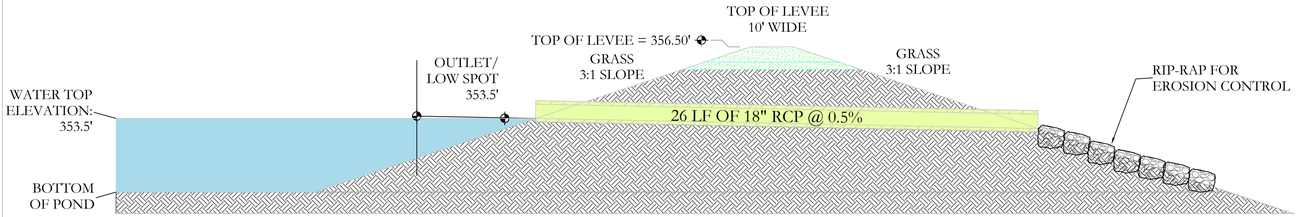
DATE:	01-24-2024	C.A.D. BY:	DRAWING NUMBER:
REVISED:		CHECKED BY:	22-0800
SHEET:	C-5.3	SCALE:	

500	01S	14W	0	21	300	62	1762

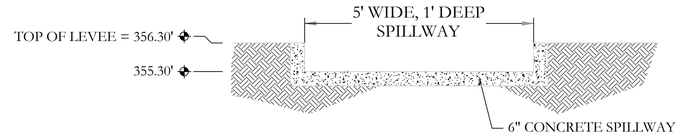


BASIS OF BEARINGS:
GRID NORTH, ARKANSAS
COORDINATE SYSTEM, SOUTH ZONE
BY GPS OBSERVATION

WET POND OUTLET SECTION
NTS



SPILLWAY END VIEW
NTS



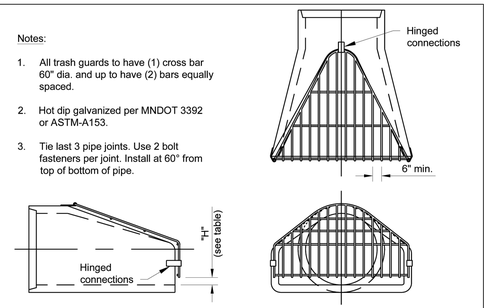
LEGEND

EXISTING CONTOUR LINE — 363 —
PROPOSED CONTOUR LINE — 363 —
PROPOSED HDPE STORM PIPE
PROPOSED RCP STORM PIPE

FLARED END SECTION TRASH RACK
NTS

Notes:

1. All trash guards to have (1) cross bar 60" dia. and up to have (2) bars equally spaced.
2. Hot dip galvanized per MNDOT 3392 or ASTM-A153.
3. Tie last 3 pipe joints. Use 2 bolt fasteners per joint. Install at 60° from top of bottom of pipe.



BAR SIZES									
	STANDARD DESIGN					HEAVY DESIGN			
	PIPE SIZE	HOLE DIA. REQ'D	BOLT DIA.	BAR SIZE		PIPE SIZE	HOLE DIA. REQ'D	BOLT DIA.	BAR SIZE
ROUND	12"-24"	3/4"	5/8"	5/8"	ROUND	12"-18"	3/4"	5/8"	3/4"
	27"-48"	7/8"	3/4"	3/4"		21"-42"	7/8"	3/4"	1"
	54"-90"	1 1/8"	1"	1"		48"-90"	1 1/8"	1"	1 1/4"
ARCH	22"-29"	3/4"	5/8"	5/8"	ARCH	22"	3/4"	5/8"	3/4"
	36"-59"	7/8"	3/4"	3/4"		29"-51"	7/8"	3/4"	1"
	65"-88"	1 1/8"	1"	1"		59"-88"	1 1/8"	1"	1 1/4"
BOLT LG. = PIPEWALL THICKNESS + 2 1/2"									

VALUES FOR "H"			
ROUND PIPE		ARCH PIPE	
PIPE SIZE	H	PIPE SIZE	H
12"	2 1/2"	22"-29"	4"
15"	3"	36"-44"	5"
18"-24"	4"	51"-55"	6"
27"-36"	5"	73"-88"	7"
42"-54"	6"		
60"-72"	7"		
78"-90"	8"		

DETENTION POND MAINTENANCE PLAN

Background
There will be one retention pond in this project.The retention pond is located at the North-East of the subject property. It is designed to temporarily detain stormwater to meet water quantity criteria before discharging off the property.

Routine Maintenance
The property owners association will maintain the drainage easements. Routine maintenance will include but not be limited to:
-Mowing of the bank slopes and area around the pond on a monthly basis during the growing season and as needed during the cooler months.

-The outlet pipe from the pond and other areas will be inspected monthly for debris which could inhibit the proper flow of discharge. Any debris will be removed immediately and disposed of or placed in a location to prevent future maintenance and to not cause impact up or downstream of the structure.

-Trash will be removed from around the pond to prevent entering the pond. Generally, the site should be kept free of loose trash which could be carried off site by wind or rain.

-Inspect the pond and outlet pipe for non-routine maintenance need.

Periodic or Non-Routine Maintenance
The routine inspection of the pond area and discharge pipe will identify needed repairs and non-routine maintenance. These items may include but not be limited to:

-Re-growth of trees on or around the pond bank. These should be cut and removed from the pond area.

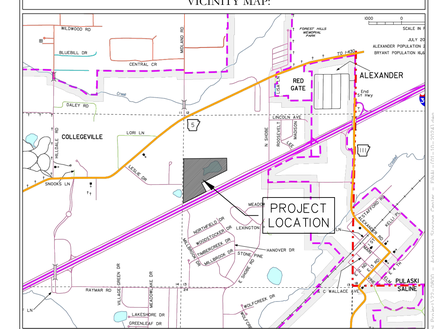
-Sediment from the site may accumulate in the pond bottom and reduce the pond to below design volume requirements. The pond should be excavated if the pond bottom elevation reached a level that allows excessive aquatic growth or reduces the pond efficiency such, that the sediments are passing the discharge structure and release off site.

-Stabilization or re-grading of side slopes may be required periodically or after excessive rain events. Any disturbance of slopes should be reseeded or may require installation of erosion control materials until seeding can reestablish adequate grasses to prevent future erosion.

-Any other maintenance or repairs which would minimize other maintenance to the pond or outfall structures.

CERTIFICATE OF AUTHORIZATION
HOPE CONSULTING, INC.
No. 1931
ARKANSAS

VICINITY MAP:



HOPE CONSULTING
ENGINEERS - SURVEYORS
129 N. Main Street,
Benton, Arkansas 72015
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www.hopeconsulting.com

FOR USE AND BENEFIT OF:
STUART FINLEY

ARKANSAS STORAGE CENTER
RETENTION POND PLAN
BRYANT, SALINE COUNTY, ARKANSAS

DATE:	01-24-2023	C.A.D. BY:	DRAWING NUMBER:
REVISED:		CHECKED BY:	22-0800
SHEET:	C-5.4	SCALE:	

500 | 01S | 14W | 0 | 21 | 300 | 62 | 1762

THESE PLANS ARE THE PROPERTY OF HOPE CONSULTING, INC. AND ARE NOT TO BE USED IN ANY WAY WITHOUT THE WRITTEN PERMISSION OF HOPE CONSULTING, INC.

• Pre-Development Time of Concentration

#22-0800
1/23/24

* (A-B) Overland Flow, toc:

- $t_i = \frac{0.93[NL]^{0.467}}{S^{0.5}}$

$t_i = \frac{0.93[0.4(58.4)]^{0.467}}{(0.047)^{0.5}}$

t_i = 16.7 min

- N = 0.40 (Pasture, average, grass cover)
- L = 58 ft
- S = 0.047

*(B-C) Shallow Concentrated Flow, toc:

- V_k unpaved = $16.1345(S)^{0.5}$

V_k unpaved = $16.1345(0.021)^{0.5}$

V_k unpaved = 2.34 ft/s

- $t_{sh} = \frac{L}{60(V_k)} = \frac{409\ ft}{60(2.34\ ft/s)}$

t_{sh} = 2.92 min

- L = 409 ft
- S = 0.021
- $V_{unp} = 16.1345(S)^{0.5}$
- V_{unp} = 2.34 ft/s

1/5

• Pre-Development time of Concentration

1/23/24

* (C-D) Open Channel Flow #1, toc:

- $V_c = \frac{1.49}{n}(R)^{2/3}(S)^{1/2}$

$V_c = \frac{1.49}{0.019}(0.36)^{2/3}(0.033)^{0.5}$

V_c = 7.21 ft/s

- $t_t = \frac{L}{60(V)} = \frac{77\ ft}{60(7.21\ ft/s)}$

t_t = 0.18 min

- n = 0.019
- L = 77 ft
- S = 0.033
- r = 0.36

* (D-E) Open Channel Flow #2, toc:

- $V_c = \frac{1.49}{n}(R)^{2/3}(S)^{1/2}$

$V_c = \frac{1.49}{0.019}(0.70)^{2/3}(0.030)^{1/2}$

V_c = 10.72 ft/s

- $t_c = \frac{L}{60(V)} = \frac{208\ ft}{60(10.72\ ft/s)}$

t_t = 0.32 min

- n = 0.019
- L = 208 ft
- S = 0.030
- r = 0.70

3/5

• Pre-Development time of Concentration

#22-0800
1/23/24

* Open Channel Flow #3, toc:

- $V_c = \frac{1.49}{n}(R)^{2/3}(S)^{1/2}$

$V_c = \frac{1.49}{0.019}(0.495)^{2/3}(0.030)^{1/2}$

V_c = 6.53 ft/s

- $t_t = \frac{L}{(60)(V)} = \frac{172\ ft}{(60)(6.53\ ft/s)} = 0.44$ min

- n = 0.019
- L = 172 ft
- S = 0.030
- R = 0.45

*Open Channel Flow #4, toc

- $V_c = \frac{1.49}{n}(R)^{2/3}(S)^{1/2}$

$V_c = \frac{1.49}{0.019}(0.49)^{2/3}(0.010)^{1/2}$

V_c = 4.84 ft/s

- $t_t = \frac{L}{60(V)} = \frac{361\ ft}{60(4.84\ ft/s)} = 1.24$ min

- n = 0.019
- L = 361 ft
- S = 0.010
- R = 0.49

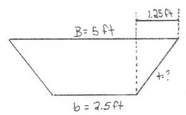
∴ Pre-Dev. TOC = 16.7 min + 2.92 min + 0.18 min + 0.32 min + 0.44 min + 1.24 min

= 21.8 min

3/5

① Open Channel Cross Sectional Area #1:

#22-0800
1/23/24



- Area = (b + ty)(y)
= (2.5 + (2.5)(0.5))(0.5)
= 1.88 ft²

- $R = \frac{A}{P} = \frac{1.88\ ft^2}{5.19\ ft} = 0.36$

$y = \frac{1.25\ ft}{t}$

$t = \frac{1.25\ ft}{0.5\ ft}$

t = 2.5

- Wetted Perimeter (P) = b + 2yw

$w = (1 + t^2)^{0.5}$

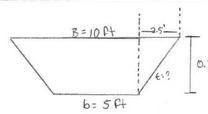
$w = (1 + (2.5)^2)^{0.5}$

w = 2.69

- P = 2.5' + 2(0.5')(2.69)

P = 5.19 ft

② Open Channel Flow Cross Sectional Area #2:



- Area = (b + ty)(y)
= (5 + (2.5')(0.97))(0.97)
= 7.28 ft²

- $R = \frac{A}{P} = \frac{7.28\ ft^2}{10.37\ ft} = 0.70$

$y = 2.5\ ft$

$t = \frac{2.5\ ft}{0.97}$

t = 2.58 ft

- Wetted Perimeter (P) = b + 2yw

$w = (1 + t^2)^{0.5}$

$w = (1 + (2.58)^2)^{0.5}$

w = 2.77

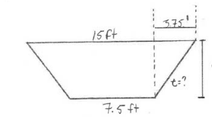
- P = 5 + 2(0.97')(2.77)

P = 10.37 ft

4/5

③ Open Channel Flow Cross Sectional Area #3:

#22-0800
1/23/24



- Area = (b + ty)(y)
= (7.5 + (6.2)(0.61))(0.61)
= 6.88 ft²

- $R = \frac{A}{P} = \frac{6.88\ ft^2}{15.16} = 0.45$

$y = \frac{3.75\ ft}{t}$

$t = \frac{3.75\ ft}{0.61\ ft}$

t = 6.2

- Wetted Perimeter (P) = b + 2yw

$w = (1 + t^2)^{0.5}$

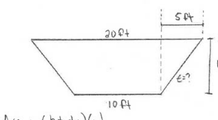
$w = (1 + (6.2)^2)^{0.5}$

w = 6.28

- P = 7.5 + 2(0.61)(6.28)

P = 15.16 ft

④ Open Channel Flow Cross Sectional Area #4



- Area = (b + ty)(y)
= (10 + (7.69)(0.65))(0.65)
= 9.75 ft²

- $R = \frac{A}{P} = \frac{9.75\ ft^2}{20.08\ ft} = 0.49$

$V = \frac{5\ ft}{t}$

$t = \frac{5\ ft}{0.65\ ft}$

t = 7.69

- Wetted Perimeter: P = b + 2yw

$w = (1 + t^2)^{0.5}$

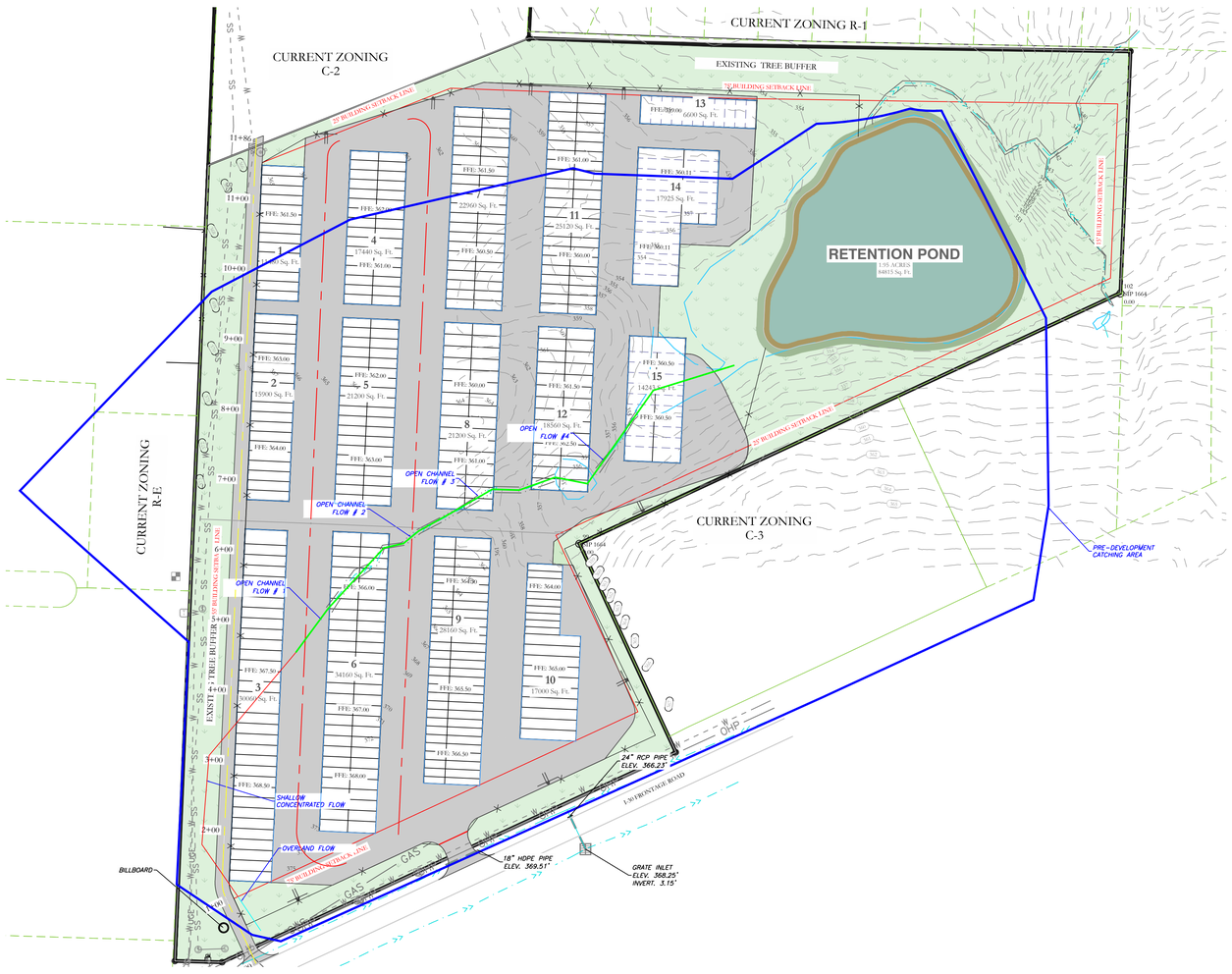
$w = (1 + (7.69)^2)^{0.5}$

w = 7.75

- P = 10 + 2(0.65)(7.75)

P = 20.08 ft

1/5



Pre-Development Time of Concentration Summary									
Reach	Description of Flow	n	Length (ft)	Slope (ft/ft)	Cross. Area (sqft)	Welted Perimeter (ft)	Hydraulic Radius	Velocity (Ft/s)	Travel Time (min)
A-B	Overland	0.4	58.40	0.047					16.68
B-C	Shallow Flow		409.00	0.021				2.34	2.92
C-D	Open Channel #1	0.019	77.00	0.033	1.88	5.19	0.36	7.21	0.18
D-E	Open Channel #2	0.019	208.00	0.030	7.28	10.37	0.70	10.72	0.32
E-F	Open Channel #3	0.019	172.00	0.020	6.88	15.16	0.45	6.53	0.44
F-G	Open Channel #4	0.019	361.00	0.010	9.75	20.08	0.49	4.84	1.24
								Total Time	21.77

Pre Development Drainage Calculations

Total Area, A= 26.06 ac
Impervious area (gravel)= 4.65 ac
Landscape (forest/woodland)= 21.4 ac

For 25 years,
Runoff Coefficient , C=0.50 (gravel)
=0.40(forest/woodland)
Composite Co-efficient,C = 0.42
Time of Concentration,t=21.8 min=22 min

For 100 years,
Runoff Coefficient , C=0.65 (gravel)
=0.47 (forest/woodland)
Composite Co-efficient,C =0.50
Time of Concentration,t=21.8min=22 min

LEGEND

EXISTING CONTOUR LINE — — 363 — —
PROPOSED CONTOUR LINE —— 363 ——
PROPOSED HDPE STORM PIPE
PROPOSED RCP STORM PIPE

LEGEND

POST DEVELOPMENT AREA
PRE DEVELOPMENT AREA
CHANNELIZED FLOW TOC LENGTH
SHALLOW CONCENTRATED FLOW TOC LENGTH
OVERLAND FLOW TOC LENGTH

CERTIFICATE OF AUTHORIZATION
HOPE CONSULTING, INC.
No. 1931
ARKANSAS

N

BASIS OF BEARING:
GRID NORTH, ARKANSAS
COORDINATE SYSTEM, SOUTH ZONE
BY GPS OBSERVATION

100' 50' 0 100'

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FOR USE AND BENEFIT OF:
STUART FINLEY

ARKANSAS STORAGE CENTER
PRE-DEVELOPMENT CALCULATIONS
BRYANT, SALINE COUNTY, ARKANSAS

DATE:	1-24-2024	C.A.D. BY:	DRAWING NUMBER:
REVISED:		CHECKED BY:	22-0800
SHEET:	C-5.5	SCALE: 1" = 100'	

500 | 01S | 14W | 0 | 21 | 300 | 62 | 1762

· Post-Development time of Concentration

#22-0800
1/23/2024

*(A-B) Overland flow, toc:

$t_i = \frac{0.83\,[NL]^{0.467}}{S^{0.5}}$

$t_i = \frac{0.83\,[(0.02)(51.3)]^{0.467}}{(0.045)^{0.5}}$

$t_i = 3.96$ min

· W = 0.02 (smooth & Impervious Surfaces)
· L = 51.3 ft
· S = 0.045

*(B-C) Shallow Concentrated Flow, toc:

$V_{paved} = 20.328(S)^{0.5}$

$V_{pav} = 20.328(0.02)^{0.5}$

$V_{pav} = 2.87$ ft/s

$t_i = \frac{L}{60(V)}$

$t_i = \frac{256\text{ ft}}{60(2.87\text{ ft/s})}$

$t_i = 1.48$ min

· L = 256 ft
· S = 0.02

WG 1/3

· Post-Development time of Concentration

#22-0800
1/23/24

*(C-D) 18" HDPE Pipe Channeled Flow, toc:

· $V_c = \frac{1.49}{n}(R)^{2/3}(S)^{1/2}$

$V_c = \frac{1.49}{0.012}(0.38)^{2/3}(0.005)^{1/2}$

$V_c = 4.55$ ft/s

· $t_t = \frac{L}{60(V)} = \frac{302\text{ ft}}{60(4.55\text{ ft/s})} = 1.11$ min

· n = 0.012 HDPE Manning's
· L = 302 ft
· Diameter = 18" = 1.5'
· $R = \frac{D}{4} = \frac{1.5'}{4} = 0.38$
· S = 0.005

*(D-E) 24" HDPE Pipe Channeled Flow, toc:

· $V_c = \frac{1.49}{n}(R)^{2/3}(S)^{1/2}$

$V_c = \frac{1.49}{0.012}(0.50)^{2/3}(0.010)^{1/2}$

$V_c = 7.92$ ft/s

· $t_i = \frac{L}{60(V)} = \frac{145\text{ ft}}{60(7.92\text{ ft/s})} = 0.31$ min

· n = 0.012 HDPE Manning's
· L = 145 ft
· Diameter = 24" → 2'
· $R = \frac{D}{4} = \frac{2}{4} = 0.50$
· S = 0.010

*(E-F) 24" HDPE Pipe Channeled Flow, toc:

· $V_c = \frac{1.49}{n}(R)^{2/3}(S)^{1/2}$

$V_c = \frac{1.49}{0.012}(0.5)^{2/3}(0.011)^{1/2}$

$V_c = 8.18$ ft/s

· $t_i = \frac{L}{60(V)} = \frac{140\text{ ft}}{60(8.18\text{ ft/s})} = 0.29$ min

· n = 0.012
· L = 140 ft
· Diameter = 24" → 2'
· $R = \frac{D}{4} = \frac{2}{4} = 0.5$
· S = 0.011

WG 2/3

· Post-Development time of Concentration

#22-0800
1/23/24

*(F-G) 30" HDPE Pipe Channeled Flow

· $V_c = \frac{1.49}{n}(R)^{2/3}(S)^{1/2}$

$V_c = \frac{1.49}{0.012}(0.63)^{2/3}(0.007)^{1/2}$

$V_c = 7.74$ ft/s

· $t_t = \frac{L}{60(V)} = \frac{296\text{ ft}}{60(7.74\text{ ft/s})} = 0.64$ min

· n = 0.012 HDPE Manning's
· L = 296 ft
· Diameter = 30" → 2.5'
· $R = \frac{D}{4} \rightarrow \frac{2.5}{4} = 0.63$
· S = 0.007

*(G-H) HDPE Pipe Channeled Flow

· $V_c = \frac{1.49}{n}(R)^{2/3}(S)^{1/2}$

$V_c = \frac{1.49}{0.012}(0.75)^{2/3}(0.005)^{1/2}$

$V_c = 7.24$ ft/s

· $t_t = \frac{L}{60(V)} = \frac{347\text{ ft}}{60(7.24\text{ ft/s})} = 0.80$ min

· n = 0.012 HDPE Manning's
· L = 347 ft
· Diameter = 36" = 3'
· $R = \frac{D}{4} = \frac{3}{4} = 0.75$
· S = 0.005

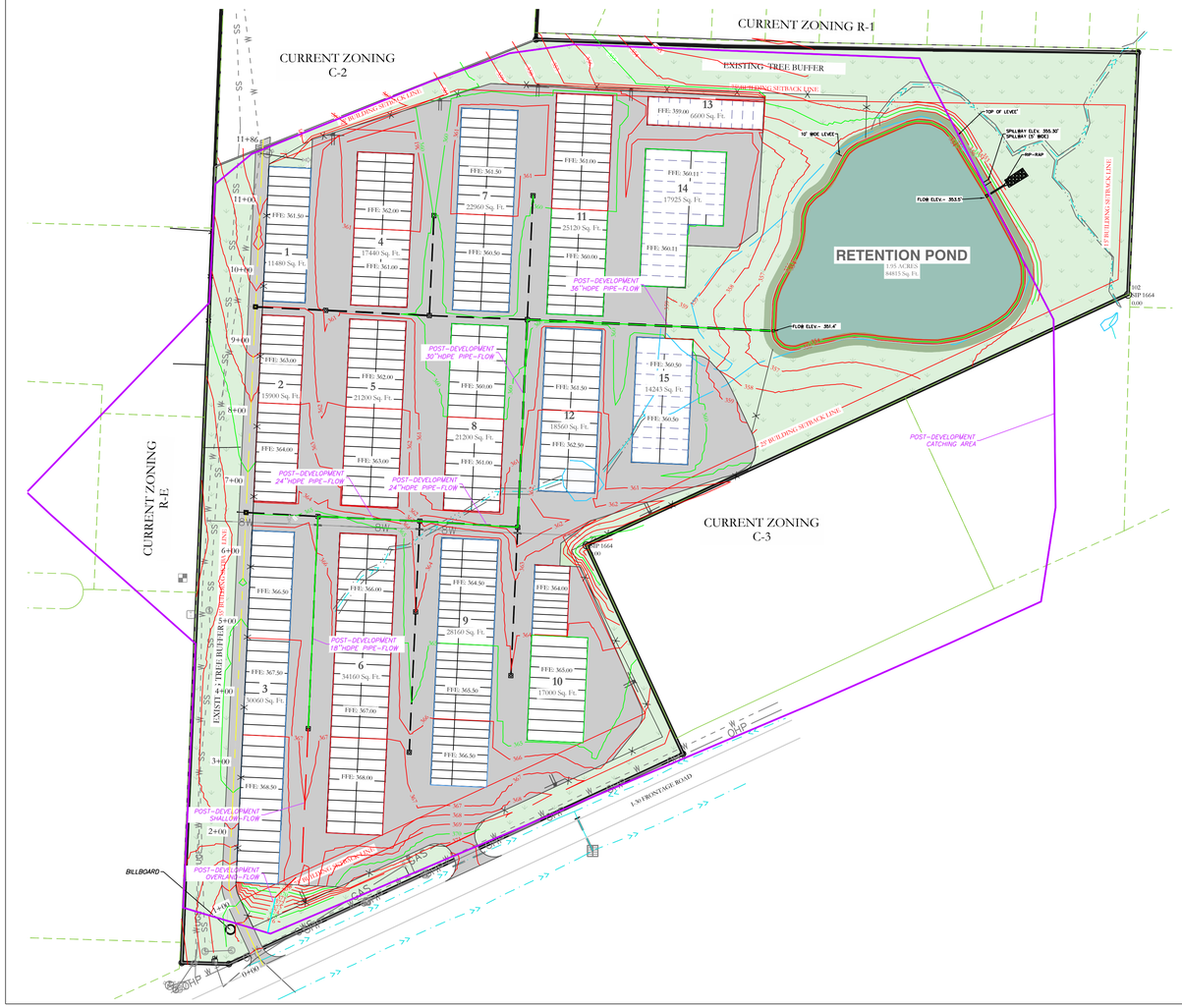
∴ Total TOC = 3.96 min + 1.48 min + 1.11 min + 0.31 min + 0.29 min + 0.64 min + 0.80 min

= 8.59 min

WG 3/3

Post-Development Time of Concentration Summary

Reach	Description of Flow	n	Length (ft)	Slope (ft/ft)	Diameter (ft)	Hydraulic Radius	Velocity (Ft/s)	Travel Time (min)
A-B	Overland	0.02	51.30	0.045				3.96
B-C	Shallow Flow		256.00	0.020			2.87	1.48
C-D	18" HDPE Pipe	0.012	302.00	0.005	1.50	0.38	4.55	1.11
D-E	24" HDPE Pipe	0.012	145.00	0.010	2.00	0.50	7.92	0.31
E-F	24" HDPE Pipe	0.012	140.00	0.011	2.00	0.50	8.18	0.29
F-G	30" HDPE Pipe	0.012	296.00	0.007	2.50	0.63	7.74	0.64
G-H	36" HDPE Pipe	0.012	347.00	0.005	3.00	0.75	7.24	0.80
							Total Time	**8.58**



Post Development Drainage Calculations

Total Area, A= 28.53 ac
Impervious area (gravel)= 4.65 ac
Landscape (forest/woodland)= 23.88 ac

For 25 years,
Runoff Coefficient , C=0.50 (gravel)
=0.88(asphalt)
Composite Co-efficient,C = 0.82
Time of Concentration,t=8.58 min=8.6 min

For 100 years,
Runoff Coefficient , C=0.65 (gravel)
=0.97 (asphalt)
Composite Co-efficient,C = 0.92
Time of Concentration,t=8.58min=8.6 min

LEGEND

EXISTING CONTOUR LINE — — 363 — —
PROPOSED CONTOUR LINE ——— 363 ———
PROPOSED HDPE STORM PIPE
PROPOSED RCP STORM PIPE

LEGEND

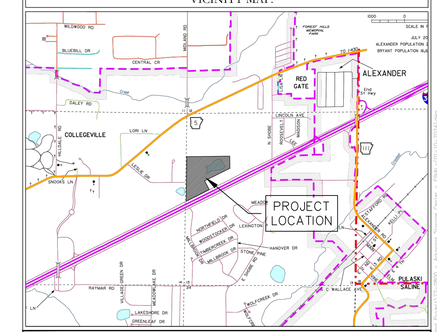
POST DEVELOPMENT AREA
PRE DEVELOPMENT AREA
CHANNELIZED FLOW TOC LENGTH
SHALLOW CONCENTRATED FLOW TOC LENGTH
OVERLAND FLOW TOC LENGTH

CERTIFICATE OF AUTHORIZATION
HOPE CONSULTING, INC.
No. 1931
ARKANSAS

BASIS OF BEARING:
GRID NORTH, ARKANSAS
COORDINATE SYSTEM, SOUTH ZONE
BY GPS OBSERVATION

100' 50' 0 100'

VICINITY MAP:



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FOR USE AND BENEFIT OF:
STUART FINLEY

ARKANSAS STORAGE CENTER

POST-DEVELOPMENT FLOW

BRYANT, SALINE COUNTY, ARKANSAS

DATE: 01-24-2024	C.A.D. BY:		DRAWING NUMBER:
REVISED:	CHECKED BY:		22-0800
SHEET: C-5.6	SCALE: 1" = 100'		

500	01S	14W	0	21	300	62	1762

INLET SIZE CALCULATIONS:

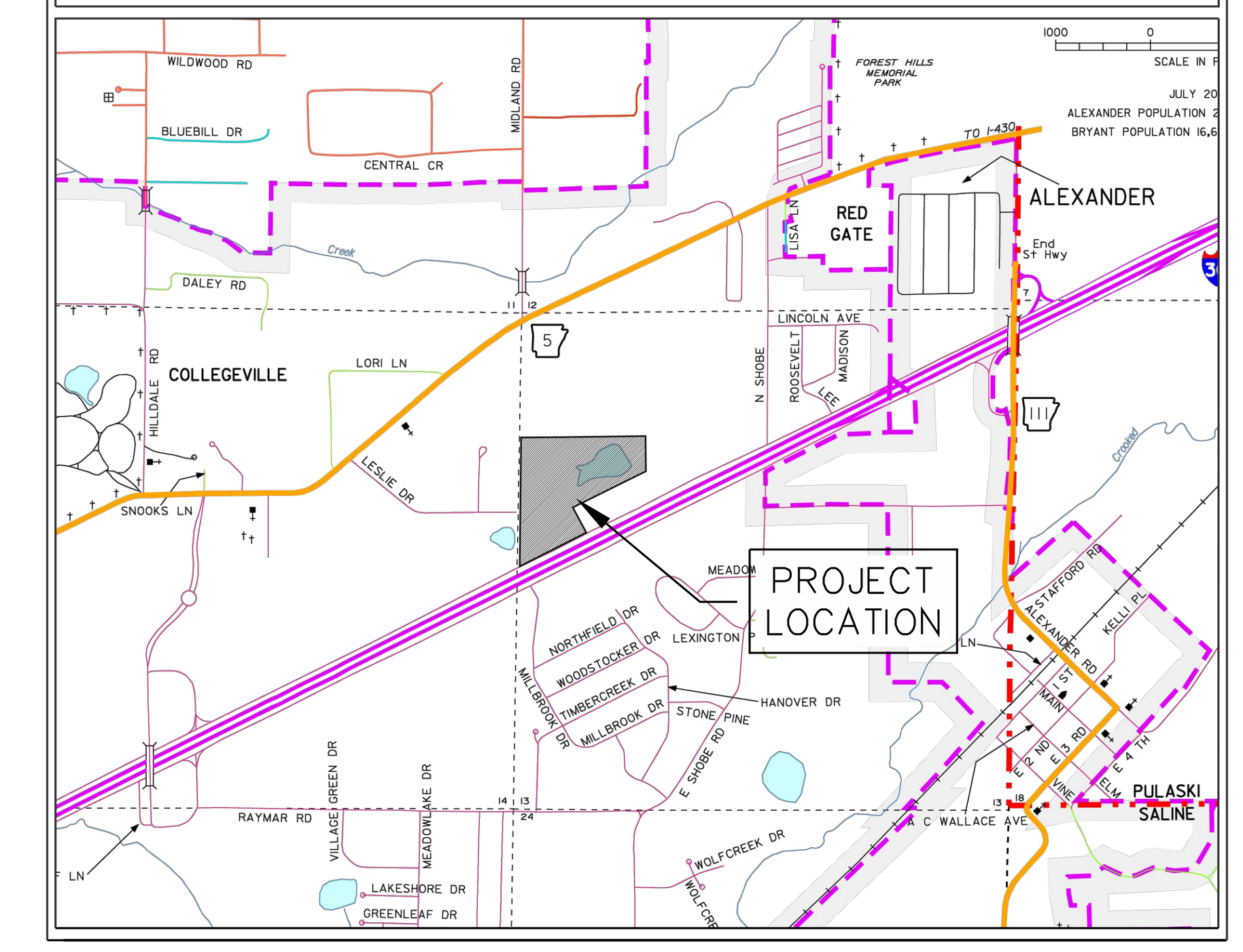
For 25 yr:

SN	Element ID	X Coordinate	Y Coordinate	Description	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Max (Rim) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft²)	Grate Clogging Factor (%)	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (inches)	Median Ditch Longitudinal Slope (ft/ft)	Median Ditch Bottom Width (ft)	Median Ditch Left Side Slope (V:H)	Median Ditch Right Side Slope (V:H)	Median Ditch Manning's Roughness	Peak Flow (cfs)	Peak Lateral Inflow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)	Max Gutter Water Depth during Peak Flow (ft)	Time of Maximum Depth Occurrence (days hh:mm)	Total Flooded Volume (ac-inches)	Total Time Flooded (minutes)
1	CB - (1)	1173461.18	2029030.25		FHWA HEC-22 GENERIC	N/A	On Sag	1	361.50	366.00	4.50	361.50	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	366.13	0.13	0 00:00	0.00	0.00
2	CB - (10)	1173633.39	2029618.03		FHWA HEC-22 GENERIC	N/A	On Sag	1	354.56	359.50	4.94	354.56	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	359.63	0.13	0 00:00	0.00	0.00
3	CB - (11)	1173635.69	2029760.23		FHWA HEC-22 GENERIC	N/A	On Sag	1	355.41	359.91	4.50	355.41	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	360.04	0.13	0 00:00	0.00	0.00
4	CB - (12)	1173780.89	2029788.60		FHWA HEC-22 GENERIC	N/A	On Sag	1	355.50	360.00	4.50	355.50	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	360.13	0.13	0 00:00	0.00	0.00
5	CB - (13)	1173386.20	2029630.46		FHWA HEC-22 GENERIC	N/A	On Sag	1	357.63	362.82	5.19	357.63	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	362.95	0.13	0 00:00	0.00	0.00
6	CB - (14)	1173372.72	2029337.75		FHWA HEC-22 GENERIC	N/A	On Sag	1	361.06	365.96	4.91	361.06	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.50	366.10	0.14	0 00:00	0.00	0.00
7	CB - (2)	1173475.03	2029332.17		FHWA HEC-22 GENERIC	N/A	On Sag	1	359.49	365.75	6.26	359.49	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	365.87	0.13	0 00:00	0.00	0.00
8	CB - (3)	1173619.88	2029325.53		FHWA HEC-22 GENERIC	N/A	On Sag	1	357.90	362.99	5.09	357.90	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	363.11	0.13	0 00:00	0.00	0.00
9	CB - (4)	1173759.15	2029316.66		FHWA HEC-22 GENERIC	N/A	On Sag	1	355.90	361.40	5.50	355.90	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	361.53	0.13	0 00:00	0.00	0.00
10	CB - (5)	1173772.77	2029612.26		FHWA HEC-22 GENERIC	N/A	On Sag	1	353.25	359.31	6.06	353.25	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	359.44	0.13	0 00:00	0.00	0.00
11	CB - (6)	1173604.77	2028996.64		FHWA HEC-22 GENERIC	N/A	On Sag	1	361.50	366.78	5.28	361.50	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	366.90	0.13	0 00:00	0.00	0.00
12	CB - (7)	1173613.96	2029196.43		FHWA HEC-22 GENERIC	N/A	On Sag	1	359.50	364.00	4.50	359.50	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	364.13	0.13	0 00:00	0.00	0.00
13	CB - (8)	1173749.43	2029105.75		FHWA HEC-22 GENERIC	N/A	On Sag	1	359.50	364.05	4.55	359.50	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	364.17	0.13	0 00:00	0.00	0.00
14	CB - (9)	1173486.08	2029625.44		FHWA HEC-22 GENERIC	N/A	On Sag	1	355.87	360.78	4.91	355.87	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	360.91	0.13	0 00:00	0.00	0.00

For 100 yr:

SN	Element ID	X Coordinate	Y Coordinate	Description	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Max (Rim) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft²)	Grate Clogging Factor (%)	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (inches)	Median Ditch Longitudinal Slope (ft/ft)	Median Ditch Bottom Width (ft)	Median Ditch Left Side Slope (V:H)	Median Ditch Right Side Slope (V:H)	Median Ditch Manning's Roughness	Peak Flow (cfs)	Peak Lateral Inflow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)	Max Gutter Water Depth during Peak Flow (ft)	Time of Maximum Depth Occurrence (days hh:mm)	Total Flooded Volume (ac-inches)	Total Time Flooded (minutes)
1	CB - (1)	1173461.18	2029030.25		FHWA HEC-22 GENERIC	N/A	On Sag	1	361.50	366.00	4.50	361.50	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	366.13	0.13	0 00:00	0.00	0.00
2	CB - (10)	1173633.39	2029618.03		FHWA HEC-22 GENERIC	N/A	On Sag	1	354.56	359.50	4.94	354.56	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	359.63	0.13	0 00:00	0.00	0.00
3	CB - (11)	1173635.69	2029760.23		FHWA HEC-22 GENERIC	N/A	On Sag	1	355.41	359.91	4.50	355.41	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	360.04	0.13	0 00:00	0.00	0.00
4	CB - (12)	1173780.89	2029788.60		FHWA HEC-22 GENERIC	N/A	On Sag	1	355.50	360.00	4.50	355.50	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	360.13	0.13	0 00:00	0.00	0.00
5	CB - (13)	1173386.20	2029630.46		FHWA HEC-22 GENERIC	N/A	On Sag	1	357.63	362.82	5.19	357.63	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	362.95	0.13	0 00:00	0.00	0.00
6	CB - (14)	1173372.72	2029337.75		FHWA HEC-22 GENERIC	N/A	On Sag	1	361.06	365.96	4.91	361.06	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.50	366.10	0.14	0 00:00	0.00	0.00
7	CB - (2)	1173475.03	2029332.17		FHWA HEC-22 GENERIC	N/A	On Sag	1	359.49	365.75	6.26	359.49	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	365.87	0.13	0 00:00	0.00	0.00
8	CB - (3)	1173619.88	2029325.53		FHWA HEC-22 GENERIC	N/A	On Sag	1	357.90	362.99	5.09	357.90	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	363.11	0.13	0 00:00	0.00	0.00
9	CB - (4)	1173759.15	2029316.66		FHWA HEC-22 GENERIC	N/A	On Sag	1	355.90	361.40	5.50	355.90	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	361.53	0.13	0 00:00	0.00	0.00
10	CB - (5)	1173772.77	2029612.26		FHWA HEC-22 GENERIC	N/A	On Sag	1	353.25	359.31	6.06	353.25	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	359.44	0.13	0 00:00	0.00	0.00
11	CB - (6)	1173604.77	2028996.64		FHWA HEC-22 GENERIC	N/A	On Sag	1	361.50	366.78	5.28	361.50	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	366.90	0.13	0 00:00	0.00	0.00
12	CB - (7)	1173613.96	2029196.43		FHWA HEC-22 GENERIC	N/A	On Sag	1	359.50	364.00	4.50	359.50	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	364.13	0.13	0 00:00	0.00	0.00
13	CB - (8)	1173749.43	2029105.75		FHWA HEC-22 GENERIC	N/A	On Sag	1	359.50	364.05	4.55	359.50	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	364.17	0.13	0 00:00	0.00	0.00
14	CB - (9)	1173486.08	2029625.44		FHWA HEC-22 GENERIC	N/A	On Sag	1	355.87	360.78	4.91	355.87	0.00	0.00	0.00	N/A	0.0200	0.0160	0.0620	2.00	2.0000	45.0000	45.0000	64	64	45.0000	0.00	0.00	N/A	N/A	N/A	7.00	1.00	360.91	0.13	0 00:00	0.00	0.00

VICINITY MAP:





PIPE SIZE CALCULATIONS:

For 25 yr:

SN	Element ID	Description	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (inches)	Pipe Width (inches)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	Lengthening Factor	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Max Flow Velocity (ft/sec)	Travel Time (min)	Design Flow Capacity (cfs)	Max Flow/Design Flow Ratio	Max Flow Depth/Total Depth Ratio	Total Time Surcharged (min)	Max Flow Depth (ft)	Reported Condition
1	Pipe - (10)		CB - (5)	Out-1Pipe - (10)	346.75	353.25	0.00	351.47	0.00	1.78	0.5100	CIRCULAR	36.000	36.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		51.84	0.00	0.00	0.00	0.00	Calculated
2	Pipe - (11)		CB - (6)	CB - (7)	200.00	361.50	0.00	359.50	0.00	2.00	1.0000	CIRCULAR	18.000	18.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		11.38	0.00	0.00	0.00	0.00	Calculated
3	Pipe - (12)		CB - (7)	CB - (3)	129.24	359.50	0.00	358.50	0.60	1.00	0.7700	CIRCULAR	18.000	18.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		10.01	0.00	0.00	0.00	0.00	Calculated
4	Pipe - (13)		CB - (8)	CB - (4)	211.13	359.50	0.00	356.40	0.50	3.10	1.4700	CIRCULAR	18.000	18.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		13.79	0.00	0.00	0.00	0.00	Calculated
5	Pipe - (14)		CB - (9)	CB - (10)	147.50	355.87	0.00	354.56	0.00	1.31	0.8900	CIRCULAR	24.000	24.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		23.11	0.00	0.00	0.00	0.00	Calculated
6	Pipe - (15)		CB - (10)	CB - (5)	139.49	354.56	0.00	353.86	0.61	0.70	0.5000	CIRCULAR	24.000	24.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		17.33	0.00	0.00	0.00	0.00	Calculated
7	Pipe - (16)		CB - (11)	CB - (10)	142.34	355.41	0.00	354.70	0.14	0.71	0.5000	CIRCULAR	18.000	18.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		8.05	0.00	0.00	0.00	0.00	Calculated
8	Pipe - (17)		CB - (12)	CB - (5)	176.53	355.50	0.00	354.62	1.37	0.88	0.5000	CIRCULAR	18.000	18.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		8.05	0.00	0.00	0.00	0.00	Calculated
9	Pipe - (18)		CB - (14)	CB - (2)	102.45	361.06	0.00	359.49	0.00	1.57	1.5300	CIRCULAR	24.000	24.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		30.31	0.00	0.00	0.00	0.00	Calculated
10	Pipe - (19)		CB - (13)	CB - (9)	100.00	357.63	0.00	355.87	0.00	1.76	1.7600	CIRCULAR	24.000	24.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		32.52	0.00	0.00	0.00	0.00	Calculated
11	Pipe - (6)		CB - (1)	CB - (2)	302.23	361.50	0.00	359.99	0.50	1.51	0.5000	CIRCULAR	18.000	18.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		8.05	0.00	0.00	0.00	0.00	Calculated
12	Pipe - (7)		CB - (2)	CB - (3)	145.01	359.49	0.00	358.00	0.10	1.49	1.0300	CIRCULAR	24.000	24.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		24.83	0.00	0.00	0.00	0.00	Calculated
13	Pipe - (8)		CB - (3)	CB - (4)	139.55	357.90	0.00	356.40	0.50	1.50	1.0700	CIRCULAR	24.000	24.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		25.39	0.00	0.00	0.00	0.00	Calculated
14	Pipe - (9)		CB - (4)	CB - (5)	295.92	355.90	0.00	353.75	0.50	2.15	0.7300	CIRCULAR	30.000	30.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		37.89	0.00	0.00	0.00	0.00	Calculated

For 100 yr:

SN	Element ID	Description	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (inches)	Pipe Width (inches)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	Lengthening Factor	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Max Flow Velocity (ft/sec)	Travel Time (min)	Design Flow Capacity (cfs)	Max Flow/Design Flow Ratio	Max Flow Depth/Total Depth Ratio	Total Time Surcharged (min)	Max Flow Depth (ft)	Reported Condition
1	Pipe - (10)		CB - (5)	Out-1Pipe - (10)	346.75	353.25	0.00	351.47	0.00	1.78	0.5100	CIRCULAR	36.000	36.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		51.84	0.00	0.00	0.00	0.00	Calculated
2	Pipe - (11)		CB - (6)	CB - (7)	200.00	361.50	0.00	359.50	0.00	2.00	1.0000	CIRCULAR	18.000	18.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		11.38	0.00	0.00	0.00	0.00	Calculated
3	Pipe - (12)		CB - (7)	CB - (3)	129.24	359.50	0.00	358.50	0.60	1.00	0.7700	CIRCULAR	18.000	18.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		10.01	0.00	0.00	0.00	0.00	Calculated
4	Pipe - (13)		CB - (8)	CB - (4)	211.13	359.50	0.00	356.40	0.50	3.10	1.4700	CIRCULAR	18.000	18.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		13.79	0.00	0.00	0.00	0.00	Calculated
5	Pipe - (14)		CB - (9)	CB - (10)	147.50	355.87	0.00	354.56	0.00	1.31	0.8900	CIRCULAR	24.000	24.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		23.11	0.00	0.00	0.00	0.00	Calculated
6	Pipe - (15)		CB - (10)	CB - (5)	139.49	354.56	0.00	353.86	0.61	0.70	0.5000	CIRCULAR	24.000	24.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		17.33	0.00	0.00	0.00	0.00	Calculated
7	Pipe - (16)		CB - (11)	CB - (10)	142.34	355.41	0.00	354.70	0.14	0.71	0.5000	CIRCULAR	18.000	18.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		8.05	0.00	0.00	0.00	0.00	Calculated
8	Pipe - (17)		CB - (12)	CB - (5)	176.53	355.50	0.00	354.62	1.37	0.88	0.5000	CIRCULAR	18.000	18.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		8.05	0.00	0.00	0.00	0.00	Calculated
9	Pipe - (18)		CB - (14)	CB - (2)	102.45	361.06	0.00	359.49	0.00	1.57	1.5300	CIRCULAR	24.000	24.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		30.31	0.00	0.00	0.00	0.00	Calculated
10	Pipe - (19)		CB - (13)	CB - (9)	100.00	357.63	0.00	355.87	0.00	1.76	1.7600	CIRCULAR	24.000	24.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		32.52	0.00	0.00	0.00	0.00	Calculated
11	Pipe - (6)		CB - (1)	CB - (2)	302.23	361.50	0.00	359.99	0.50	1.51	0.5000	CIRCULAR	18.000	18.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		8.05	0.00	0.00	0.00	0.00	Calculated
12	Pipe - (7)		CB - (2)	CB - (3)	145.01	359.49	0.00	358.00	0.10	1.49	1.0300	CIRCULAR	24.000	24.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		24.83	0.00	0.00	0.00	0.00	Calculated
13	Pipe - (8)		CB - (3)	CB - (4)	139.55	357.90	0.00	356.40	0.50	1.50	1.0700	CIRCULAR	24.000	24.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		25.39	0.00	0.00	0.00	0.00	Calculated
14	Pipe - (9)		CB - (4)	CB - (5)	295.92	355.90	0.00	353.75	0.50	2.15	0.7300	CIRCULAR	30.000	30.00	0.0120	0.5000	0.5000	0.0000	0.00	NO	1.00	0.00	0 00:00	0.00		37.89	0.00	0.00	0.00	0.00	Calculated

LEGEND

EXISTING CONTOUR LINE — — 363 — —
PROPOSED CONTOUR LINE —— 363 ——
PROPOSED HDPE STORM PIPE — — — —
PROPOSED RCP STORM PIPE ————

CERTIFICATE OF AUTHORIZATION
HOPE CONSULTING, INC.
No. 1931
ARKANSAS

N

BASIS OF BEARING:
GRID NORTH, ARKANSAS
COORDINATE SYSTEM, SOUTH ZONE
BY GPS OBSERVATION

100' 50' 0 100'

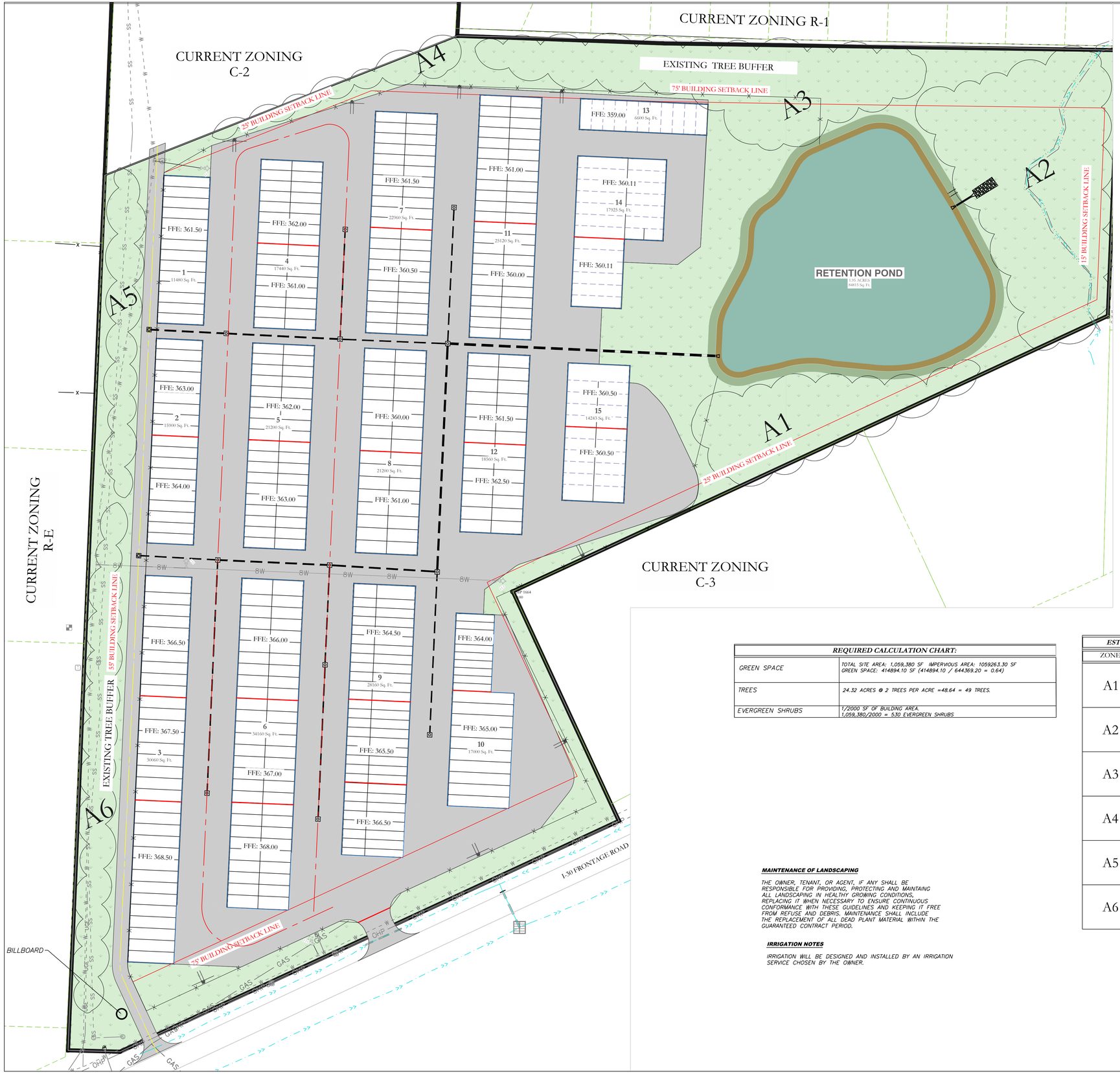
HOPE CONSULTING
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www.hopeconsulting.com

FOR USE AND BENEFIT OF:
STUART FINLEY

ARKANSAS STORAGE CENTER
POST-DEVELOPMENT CALCULATIONS
BRYANT, SALINE COUNTY, ARKANSAS

DATE: 01-24-2024	C.A.D. BY:	DRAWING NUMBER:	
REVISED:	CHECKED BY:	22-0800	
SHEET: C-5.7	SCALE: 1" = 100'		

500	01S	14W	0	21	300	62	1762



REQUIRED CALCULATION CHART:	
GREEN SPACE	TOTAL SITE AREA: 1,059,380 SF IMPERVIOUS AREA: 1059263.30 SF GREEN SPACE: 414894.10 SF (414894.10 / 644369.20 = 0.64)
TREES	24.32 ACRES @ 2 TREES PER ACRE =48.64 = 49 TREES.
EVERGREEN SHRUBS	1/2000 SF OF BUILDING AREA. 1,059,380/2000 = 530 EVERGREEN SHRUBS

MAINTENANCE OF LANDSCAPING

THE OWNER, TENANT, OR AGENT, IF ANY SHALL BE RESPONSIBLE FOR PROVIDING, PROTECTING AND MAINTAINING ALL LANDSCAPING IN HEALTHY GROWING CONDITIONS, REPLACING IT WHEN NECESSARY TO ENSURE CONTINUOUS CONFORMANCE WITH THESE GUIDELINES AND KEEPING IT FREE FROM REFUSE AND DEBRIS. MAINTENANCE SHALL INCLUDE THE REPLACEMENT OF ALL DEAD PLANT MATERIAL WITHIN THE GUARANTEED CONTRACT PERIOD.

IRRIGATION NOTES

IRRIGATION WILL BE DESIGNED AND INSTALLED BY AN IRRIGATION SERVICE CHOSEN BY THE OWNER.

ESTIMATED EXISTING TREES ON SITE PER AREA			
ZONE	CONDITION	DENSITY	SIZE
A1	GOOD	THICK	24"-36" - 130
A2	GOOD	THICK	24"-36" -89
A3	MIXED	MODERATE	24"-36" - 45
A4	GOOD	SPARSE	24"-36" - 25
A5	GOOD	MODERATE	15"-30" -20
A6	GOOD	SPARSE	15"-30" - 40

CIVIL ENGINEER
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129 N. MAIN STREET
BENTON, AR 72015
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PHONE: 504-315-2626
EMAIL: kazi@hopeconsulting.com

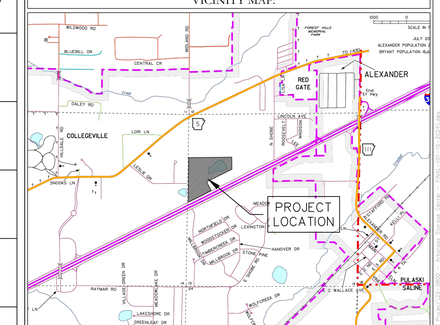
N

BASIS OF BEARING:
GRID NORTH, ARKANSAS
ORDINATE SYSTEM, SOUTH ZONE
BY GPS OBSERVATION

60' 30' 0 60'

CERTIFICATE OF AUTHORIZATION
HOPE CONSULTING, INC.
No. 1931
ARKANSAS

VICINITY MAP:



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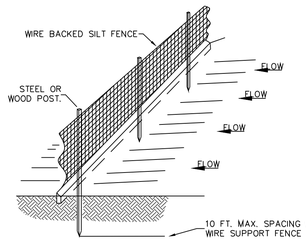
ARKANSAS STORAGE CENTER

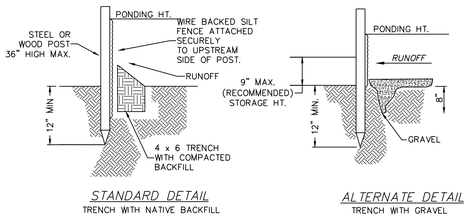
LANDSCAPE PLAN

BRYANT, SALINE COUNTY, ARKANSAS

DATE:	01-24-2024	C.A.D. BY:	DRAWING NUMBER:
REVISED:		CHECKED BY:	22-0800
SHEET:	C-6.0	SCALE: 1" = 60'	

500	01S	14W	0	21	300	62	1762





STANDARD DETAIL
TRENCH WITH NATIVE BACKFILL

ALTERNATE DETAIL
TRENCH WITH GRAVEL

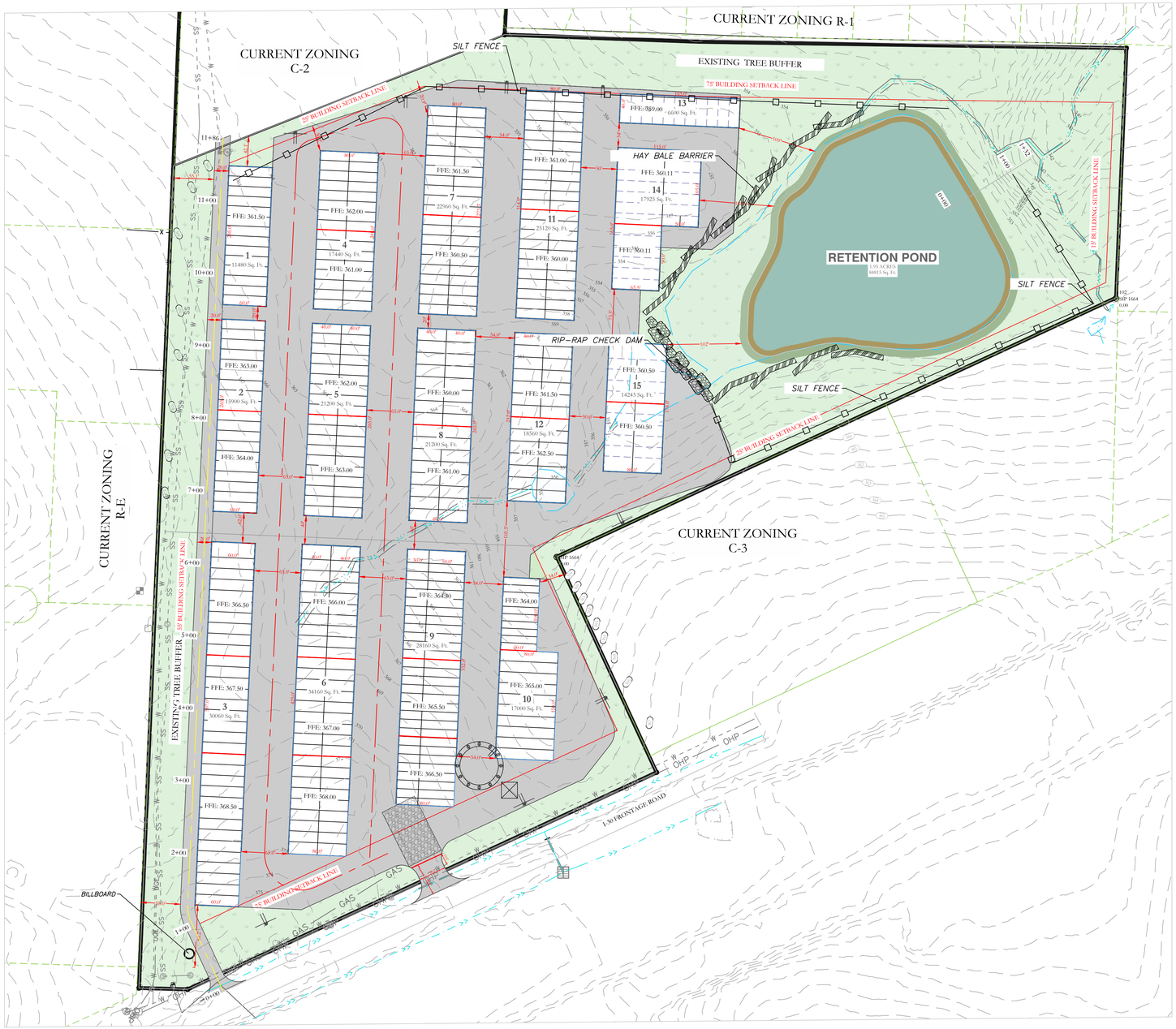
NOTE:
1.) INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.

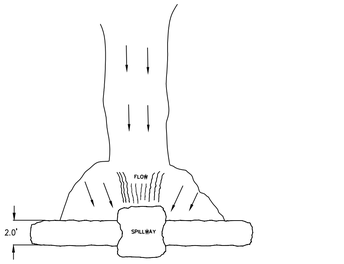
2.) REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

3.) SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

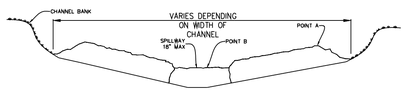
4.) USE ONLY WIRE BACKED SILT FENCE.

SILT FENCE





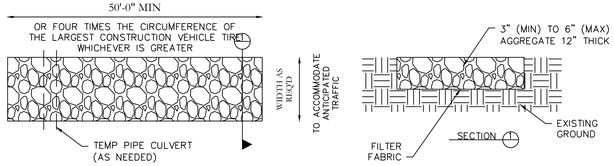
PLAN



VIEW LOOKING UPSTREAM

NOTES:
1.) POINT "A" MUST BE HIGHER THAN POINT "B" (SPILLWAY HEIGHT)
2.) PLACE RIP-RAP BARRIER PERPENDICULAR TO THE FLOW WITH TIGHT GROUPING. USE STRAW, ROCKS, OR FILTER FABRIC TO FILL ANY GAPS AND TAMP BACKFILL MATERIAL TO PREVENT EROSION OR FLOW AROUND THE DAM.
3.) SPILLWAY HEIGHT SHALL NOT EXEED 18"-24"
4.) INSPECT AFTER EACH SIGNIFICANT STORM, MAINTAIN AND REPAIR PROMPTLY.

RIP-RAP CHECK DAM



STABILIZED CONSTRUCTION ENTRANCE
N.T.S

EROSION CONTROL NOTES

SOD DETENTION AREA POST-CONSTRUCTION IS REQUIRED

MAXIMUM SLOPE OF 3H:1V ON DETENTION POND LEVEES

CONTRACTOR MUST HAVE INLET PROTECTION MEASURES INSTALLED IMMEDIATELY AFTER CONSTRUCTION OF DRAINAGE INLETS/STRUCTURES IS COMPLETE. SEDIMENT BARRIERS SHALL BE MAINTAINED THROUGHOUT AND INSPECTED THROUGHOUT CONSTRUCTION PROCESS UNTIL PROJECT IS COMPLETE

RIP RAP SEDIMENT BARRIERS SHALL BE USED AT ALL STORMWATER DISCHARGE POINTS SHOWN ON PLANS ASAP

CONTRACTOR SHOULD WORK WITH ENGINEER TO ESTABLISH EFFECTIVE AND EFFICIENT PLAN TO PREVENT SEDIMENT RUNOFF BY DETERMINING WHERE SILT FENCING OR OTHER TYPES OF CONTROLS ARE NECESSARY

SOME EROSION CONTROL MEASURES, WIRE BACKED SILT FENCING, OR CHECK DAMS MAY NOT BE NECESSARY DURING INITIAL ROW CLEARING BUT MAY BE NEEDED ONCE LOT CLEARING AND COMMERCIAL BUILDING BEGINS

EXISTING VEGETATION WILL ONLY BE REMOVED INSIDE ROW AND WITHIN BUILDING FOOTPRINTS AS THEY ARE CONSTRUCTED. ADDITIONAL SILT FENCING WILL BE ADDED TO INDIVIDUAL LOTS AS COMMERCIAL CONSTRUCTION TAKES PLACE.

ERC LEGEND

SITE POSTING

DISTURBED AREA

CONC. WASHOUT DETENTION AREA

SILT FENCE

RIP RAP CHECK DAM

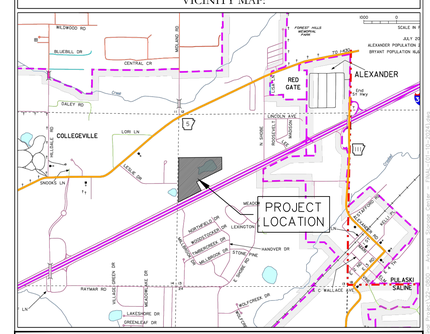
CONSTRUCTION ENTRANCE

BASIS OF BEARINGS: GRID NORTH AS COORDINATED WITH THE NAD83 ARKANSAS SOUTH ZONE BY GPS OBSERVATION

80' 40' 0 80'

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BENTON, AR 72015
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VICINITY MAP:



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FOR USE AND BENEFIT OF:
STUART FINLEY

ARKANSAS STORAGE CENTER

EROSION CONTROL PLAN

BRYANT, SALINE COUNTY, ARKANSAS

DATE:	01-24-2024	C.A.D. BY:	DRAWING NUMBER:
REVISED:		CHECKED BY:	22-0800
SHEET:	C-7.0	SCALE: 1" = 80'	

500	01S	14W	0	21	300	62	1762