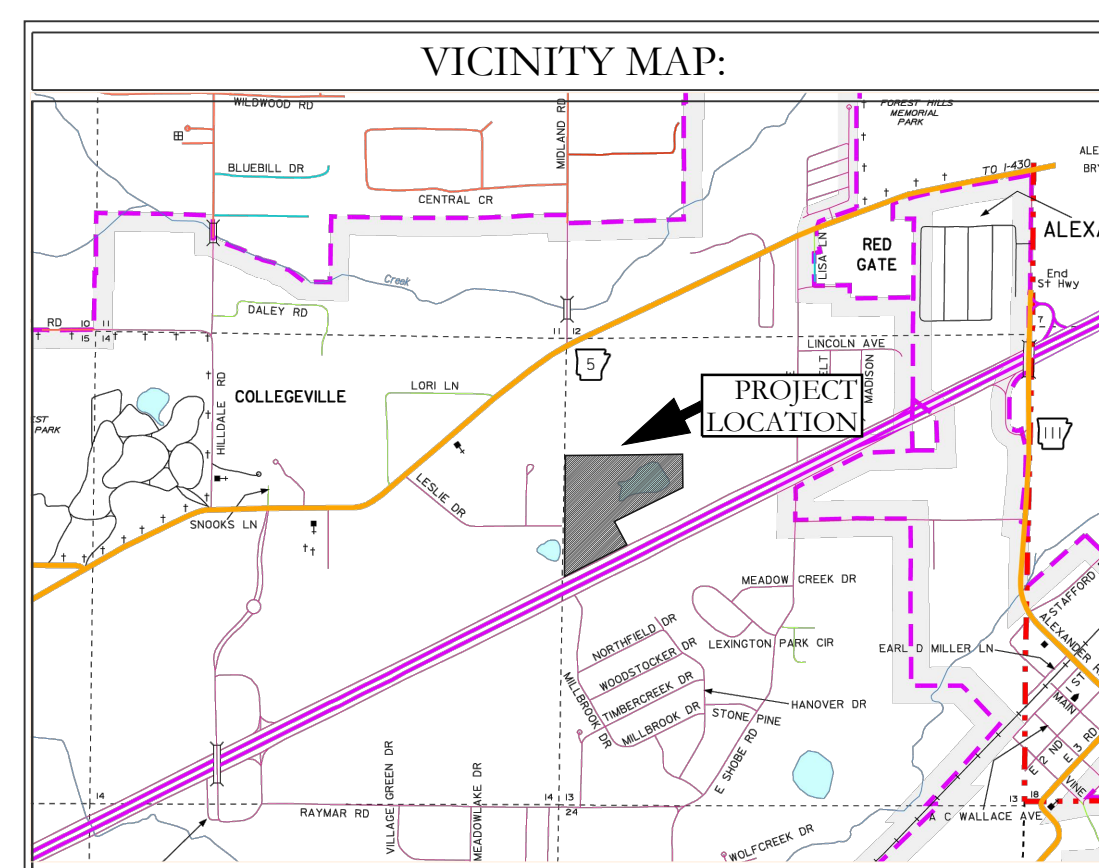


CONSTRUCTION PLANS ARKANSAS STORAGE CENTER BRYANT, AR



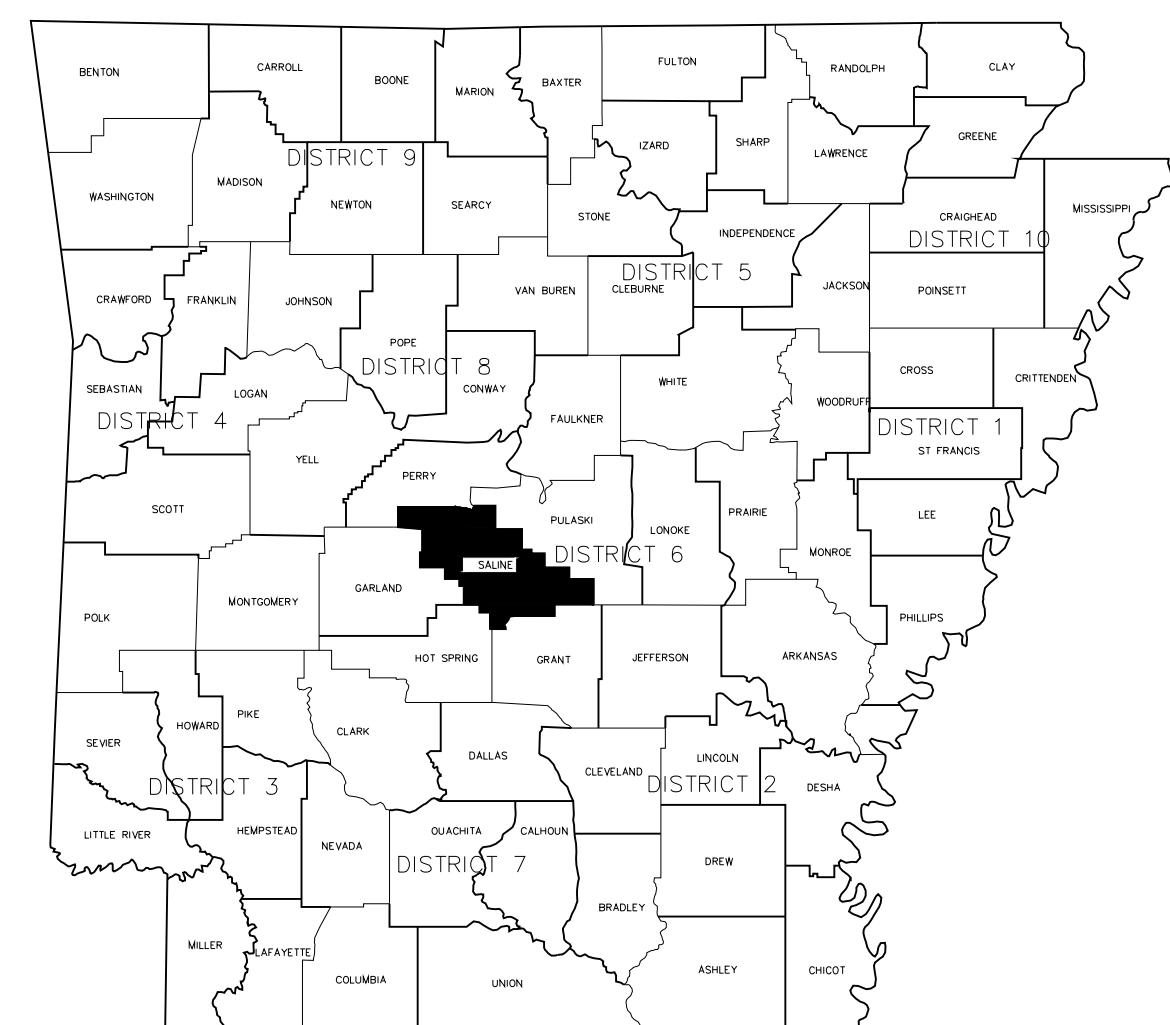
PREPARED BY:



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

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



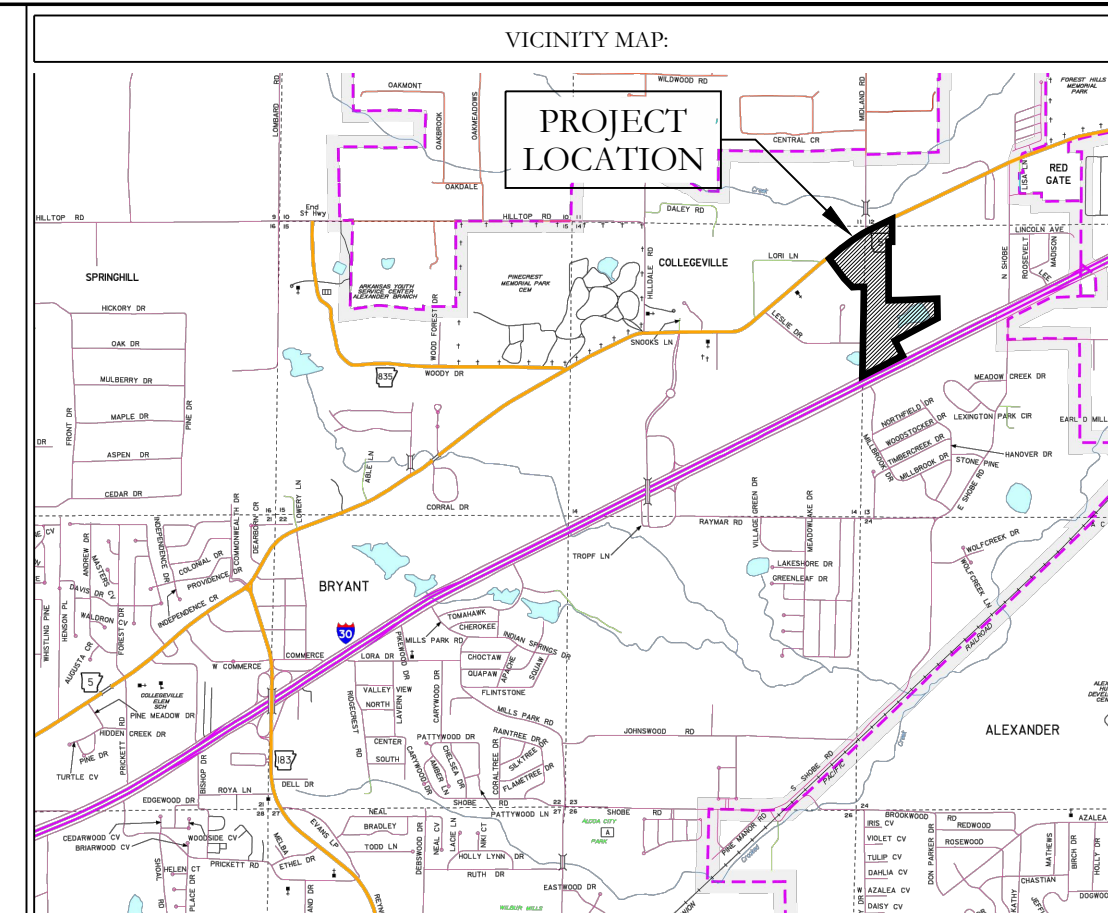
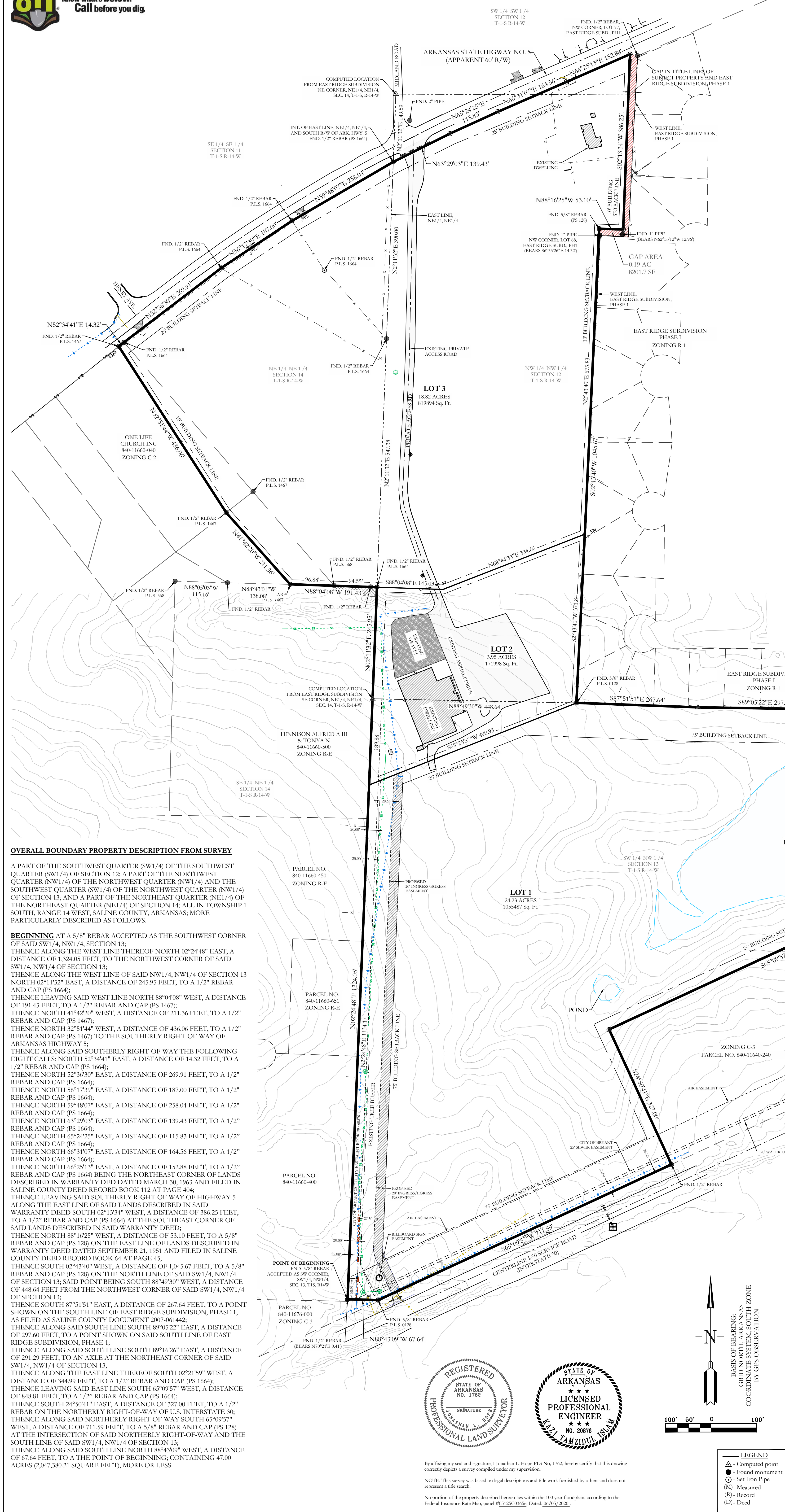
CIVIL ENGINEER
HOPE CONSULTING INC
129 NORTH MAIN STREET
BENTON, AR 72015

HOPE CONSULTING
ENGINEERS - SURVEYORS

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

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\204\SUBDIVISIONS\2023\23-0024\STUART FINLEY\DWG\FINAL\DWG\FINAL PROJECT\23-0024 - ARKANSAS STORAGE CENTER - FINAL-01-20-2024.DWG



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 had off, plotted 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 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 _____ Signed: Kazi Tamzidul 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

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°25'15" 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 DEED DATED MARCH 30, 1963 AND FILED IN SALINE COUNTY DEED RECORD BOOK 112 AT PAGE 404; AND FILED IN SALINE COUNTY DEED RECORD BOOK 64 AT PAGE 45;

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 2007-461442;

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;

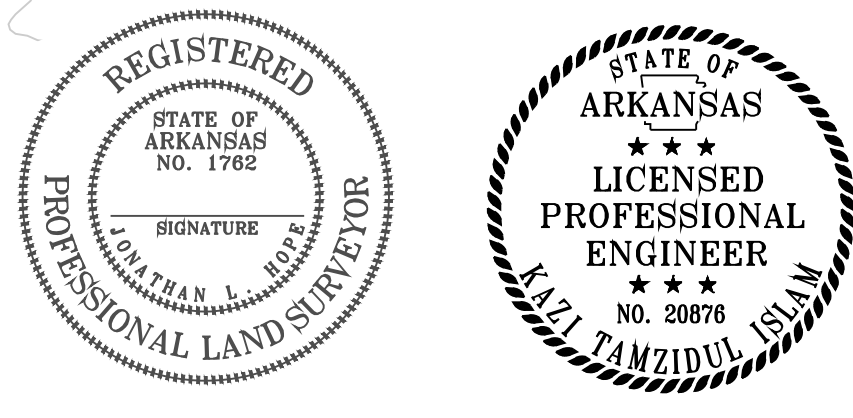
THENCE ALONG THE EAST LINE THEREOF SOUTH 02°21'59" WEST, A DISTANCE OF 344.99 FEET, TO A 1/2" REBAR AND CAP (PS 1664);

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;

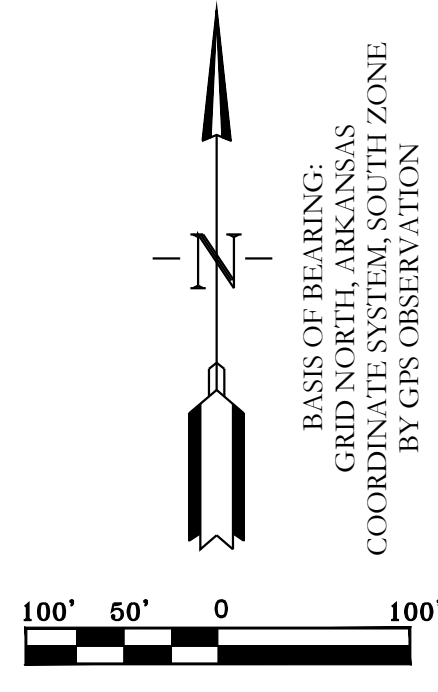
THENCE ALONG SAID SOUTH LINE NORTH 88°43'09" WEST, A DISTANCE OF 67.64 FEET, TO A POINT OF BEGINNING; CONTAINING 47.00 ACRES (2,047,380.21 SQUARE FEET), MORE OR LESS.



By affixing my seal and signature, I Jonathan L. Hope PLS No. 1762, hereby certify that this drawing correctly depicts a survey completed 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: 06/08/2020.



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

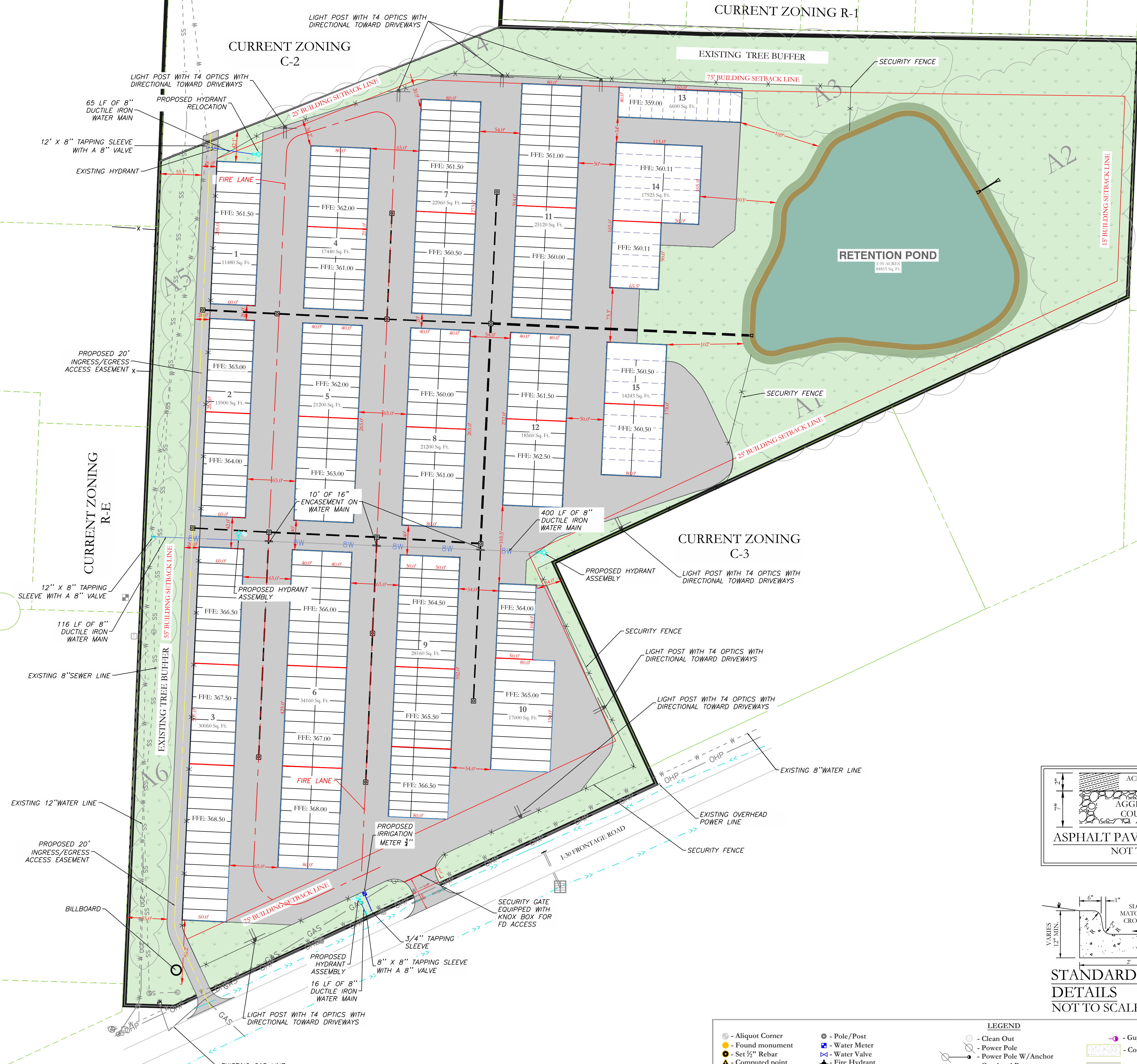
PROPERTY SPECIFICATIONS:	
OWNER: ARKANSAS STORAGE XIV, LLC PO BOX 10 BRYANT, AR 72022	NUMBER OF LOTS: 3
DEVELOPER/SUBDIVIDER: ARKANSAS STORAGE XIV, LLC PO BOX 10 BRYANT, AR 72022	SOURCE OF WATER: CITY OF BRYANT SOURCE OF SEWER: CITY OF BRYANT SOURCE OF ELECTRIC: FIRST ELECTRIC COOP SOURCE OF GAS: CENTERPOINT ENERGY
ENGINEERS: HOPE CONSULTING INC. 129 N. MAIN STREET BENTON, AR 72015	BUILDING SETBACKS: FRONT - AS SHOWN REAR - OR AS SHOWN SIDE - OR AS SHOWN
NAME OF SUBDIVISION: ZONING CLASSIFICATION: C-2	EASEMENTS, UTILITY & DRAINAGE (D.E. & U.E): FRONT - AS SHOWN REAR - AS SHOWN SIDE - AS SHOWN
SOURCE OF TITLE: SALINE COUNTY DOCUMENT 2023-015797 2023-015796 2023-010005 2023-017298	LOT CORNERS: SET 1/2" REBAR WITH CAP

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:
ARKANSAS STORAGE XIV, LLC

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

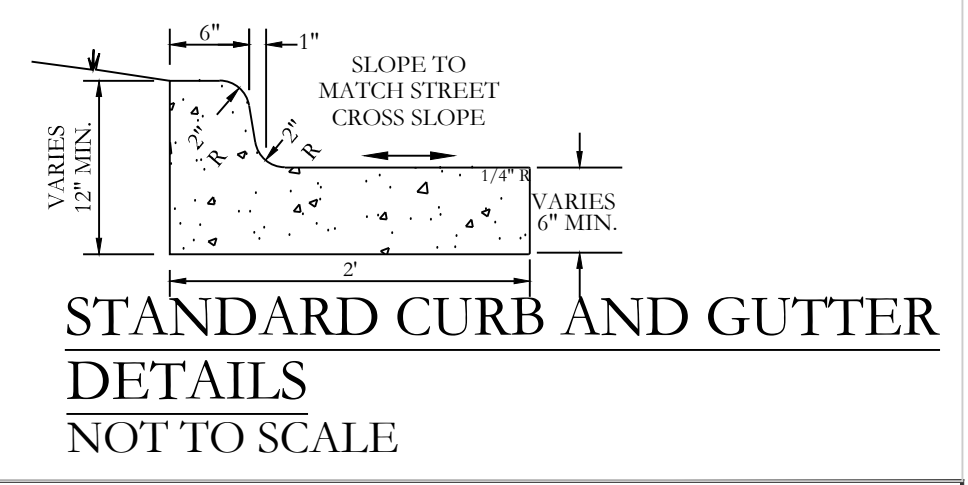
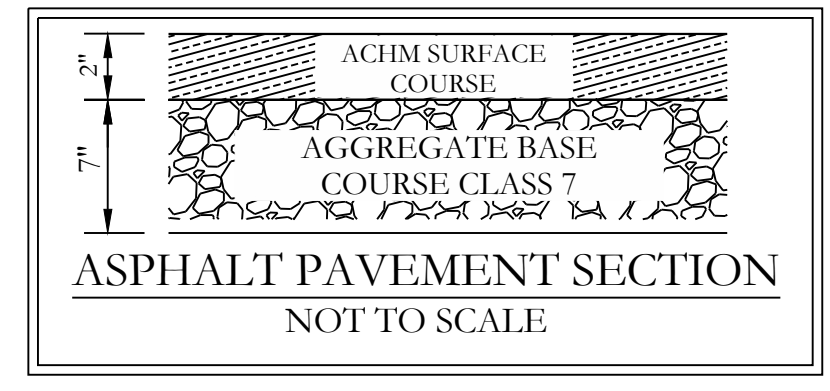
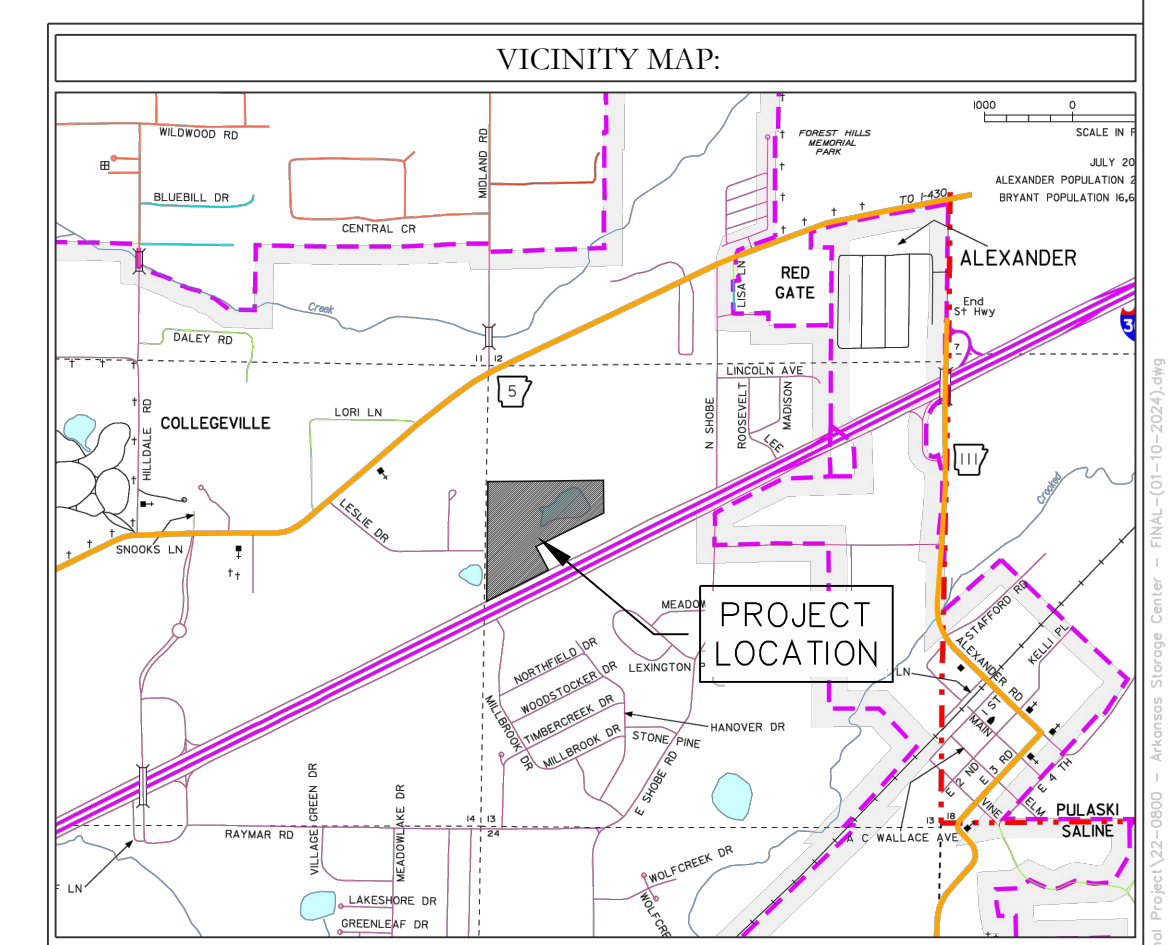
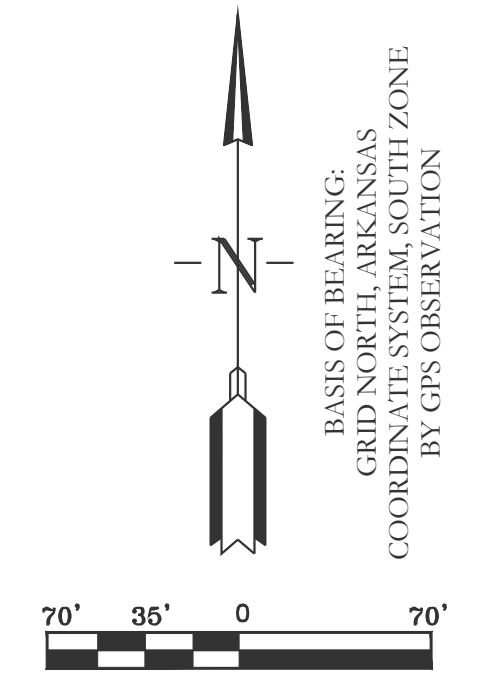
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REVISED:	CHECKED BY:	22-0800
SHEET:	SCALE: 1" = 100'	
500 01S 14W 0 14 110 62 1762		
500 01S 14W 0 13 400 62 1762		



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	$303,129 / 1,056,967.51 = 0.29 = 29.0\%$
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



LEGEND	
● - Aliquot Corner	○ - Pole/Post
● - Found monument	○ - Water Meter
● - Set 1/2" Rebar	○ - Water Valve
▲ - Computed point	○ - Fire Hydrant
(M) - Measured	○ - Informational Sign
(P) - Deed/Plat	○ - Light Pole
○ - Storm Drain Manhole	○ - Telephone Pedestal/Box
○ - Clean Out	○ - Guy Anchor
○ - Power Pole	○ - Concrete
○ - Power Pole W/Anchor	○ - Asphalt
○ - Overhead Power	○ - Gas Line
○ - Fence	○ - Gas Line
○ - 12S - 12" Sewer Line	○ - Telephone Line
○ - 12W - 12" Water Line	○ - Sewer Manhole
	○ - Proposed Sod
	○ - Fire Wall
	○ - Fire Lane

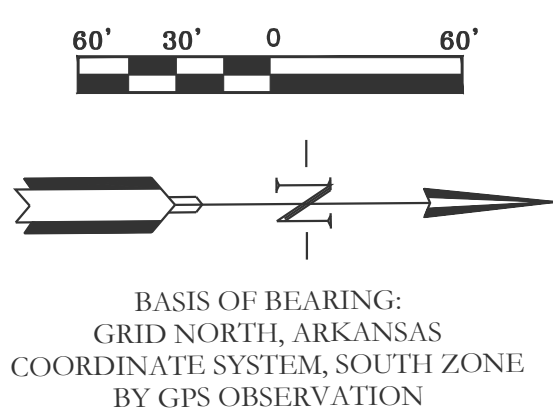
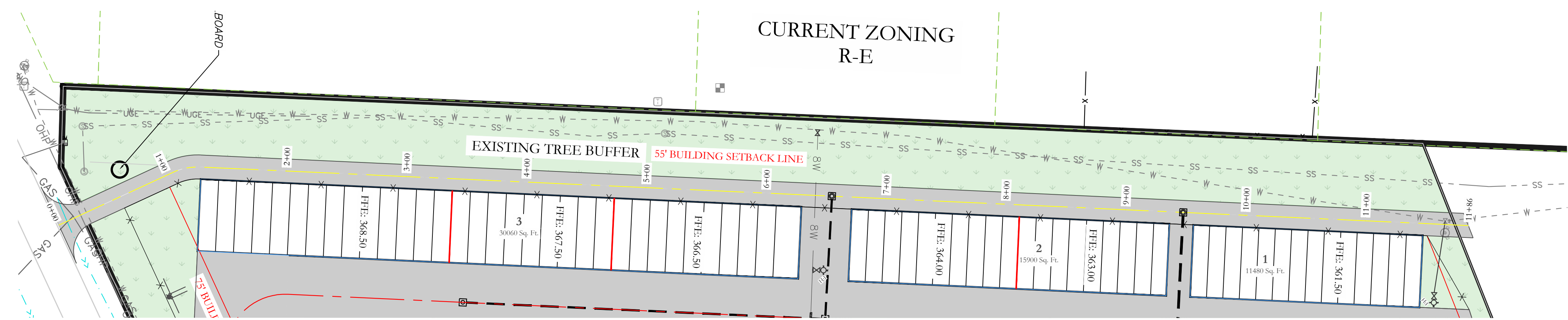
HOPE CONSULTING
 ENGINEERS - SURVEYORS

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

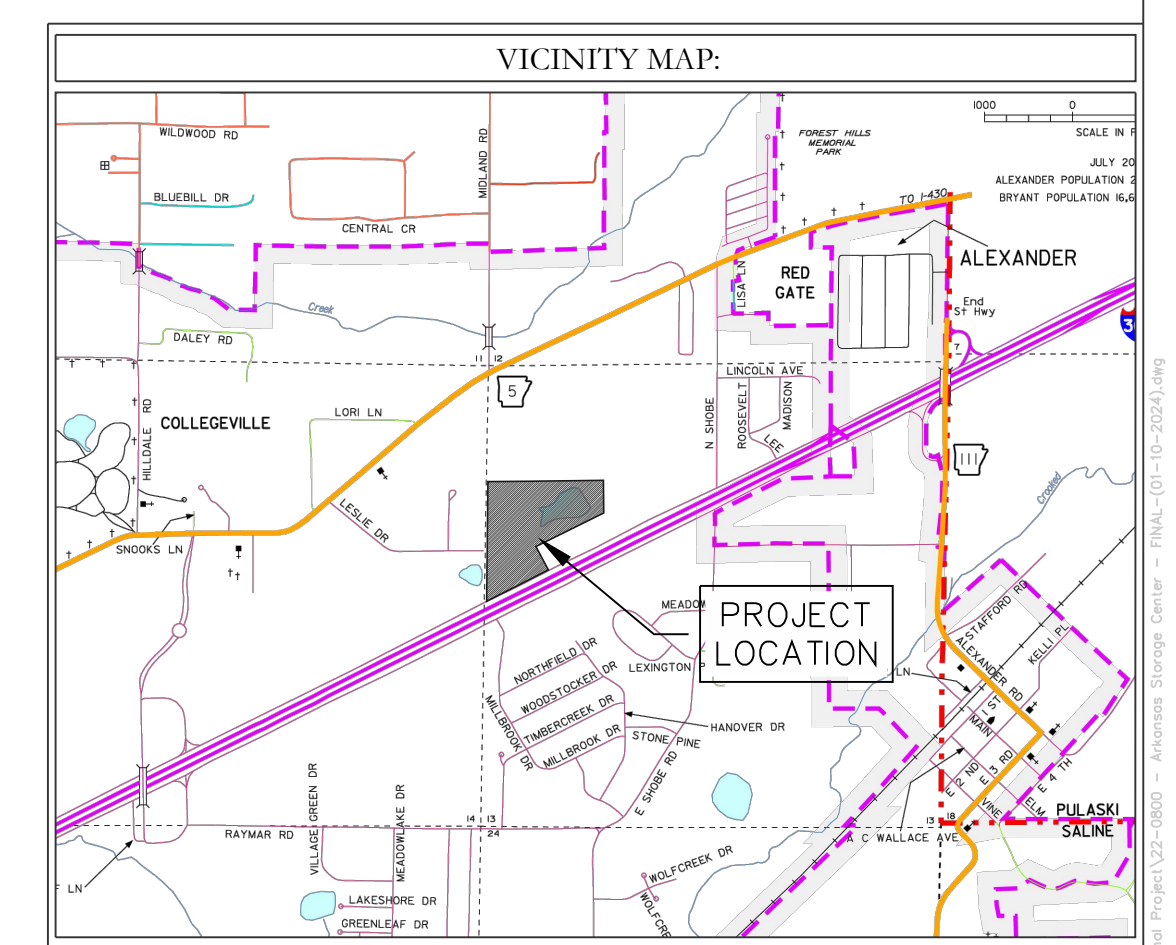
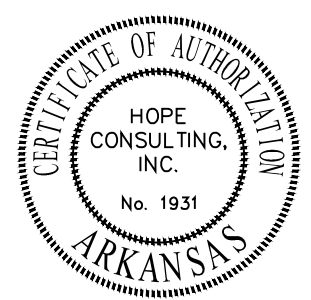
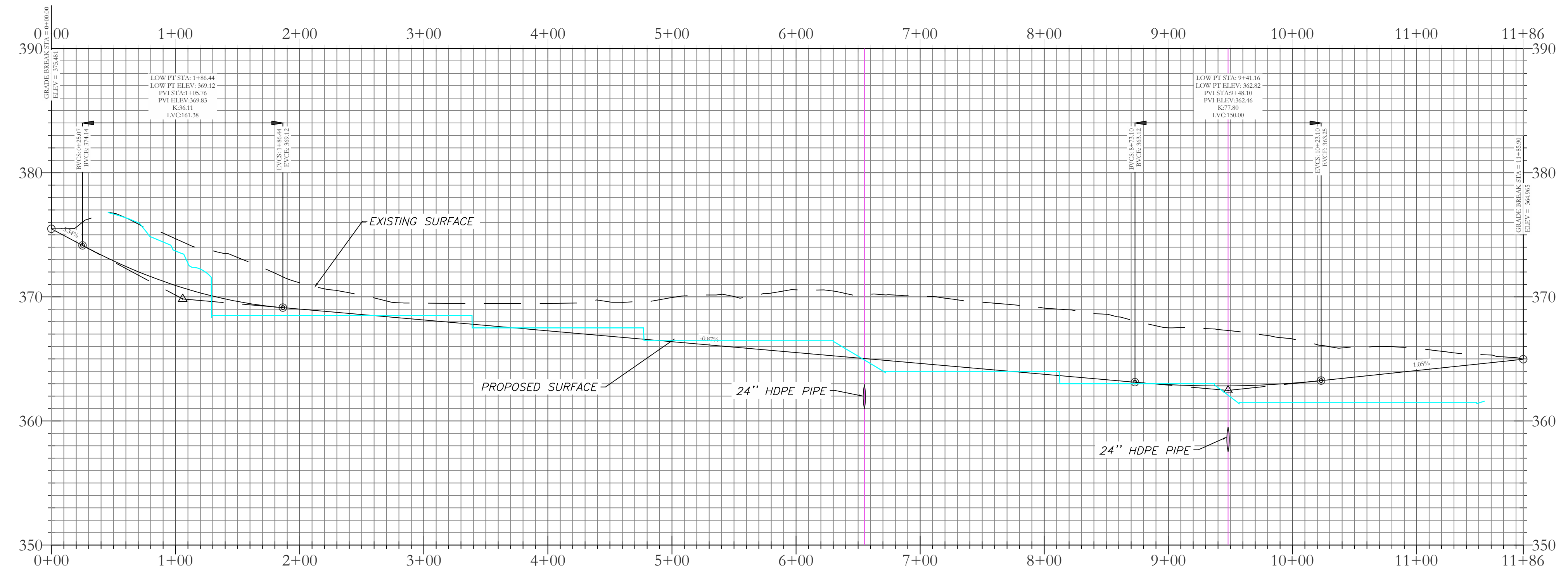
FOR USE AND BENEFIT OF:
STUART FINLEY

ARKANSAS STORAGE CENTER
 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



Private Road #2 PROFILE



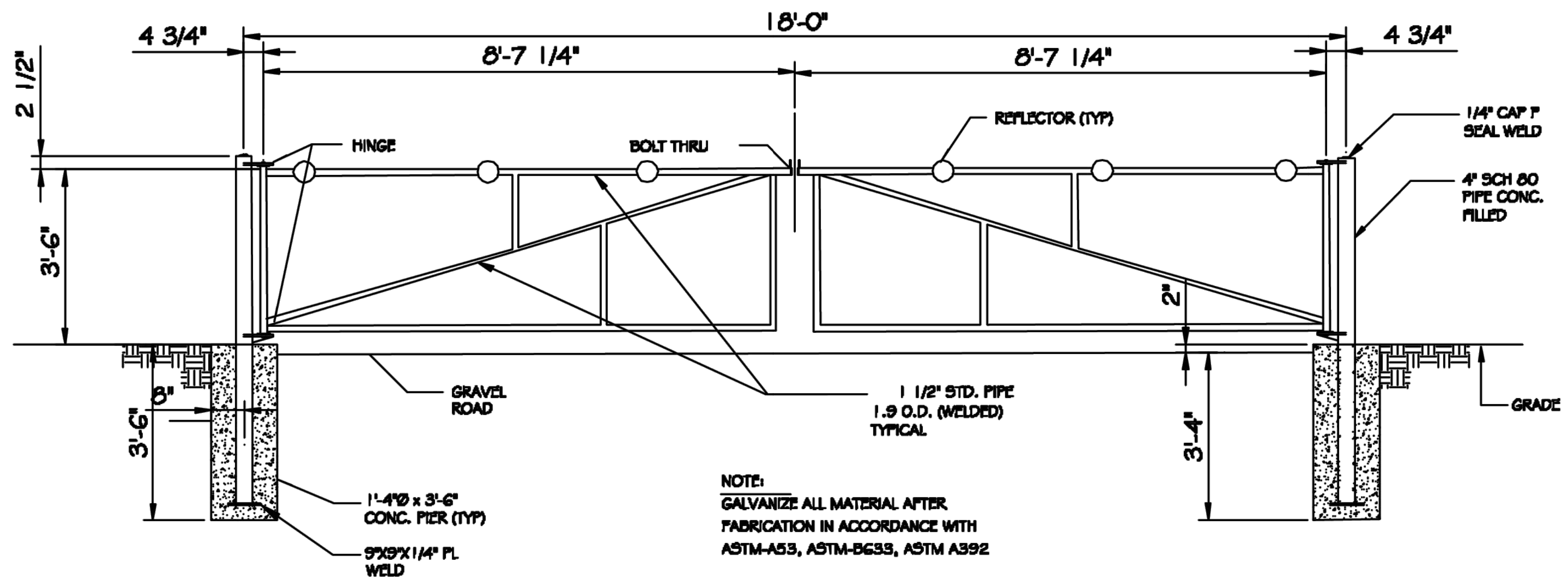
HOPE CONSULTING
ENGINEERS - SURVEYORS

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
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'	
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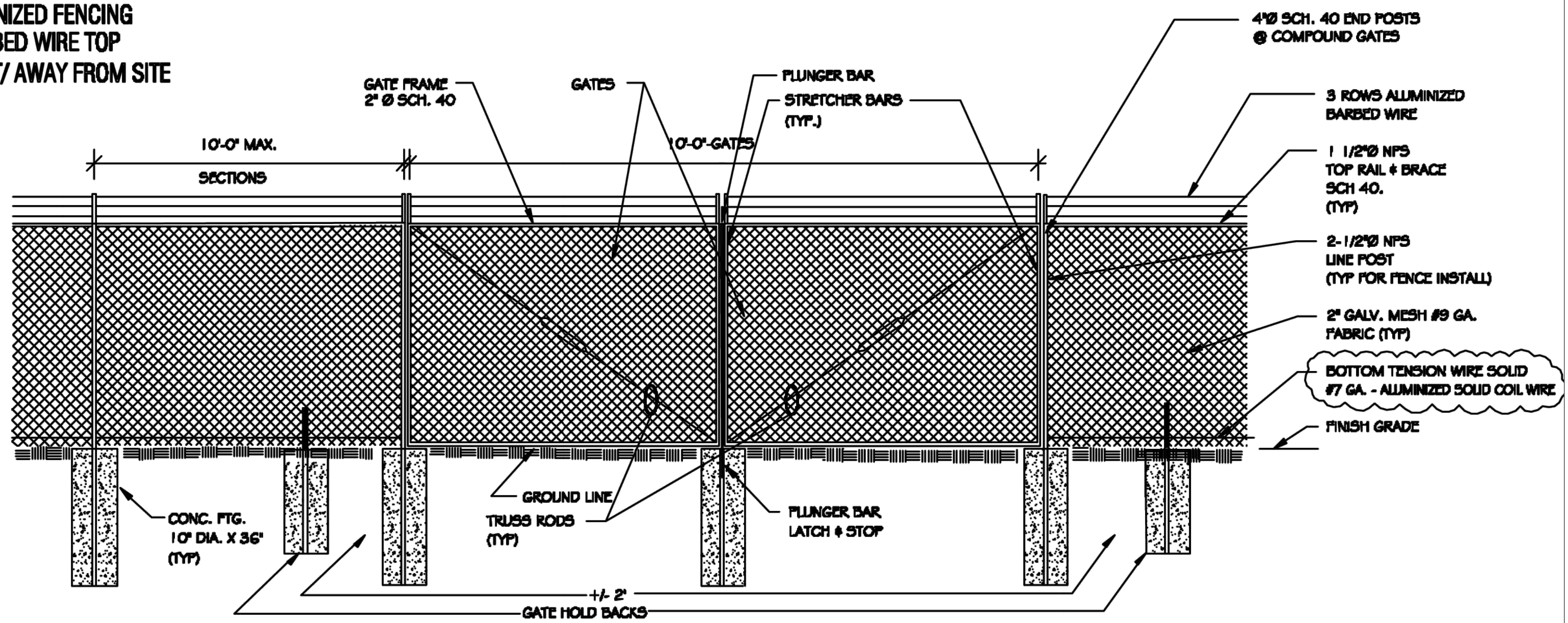
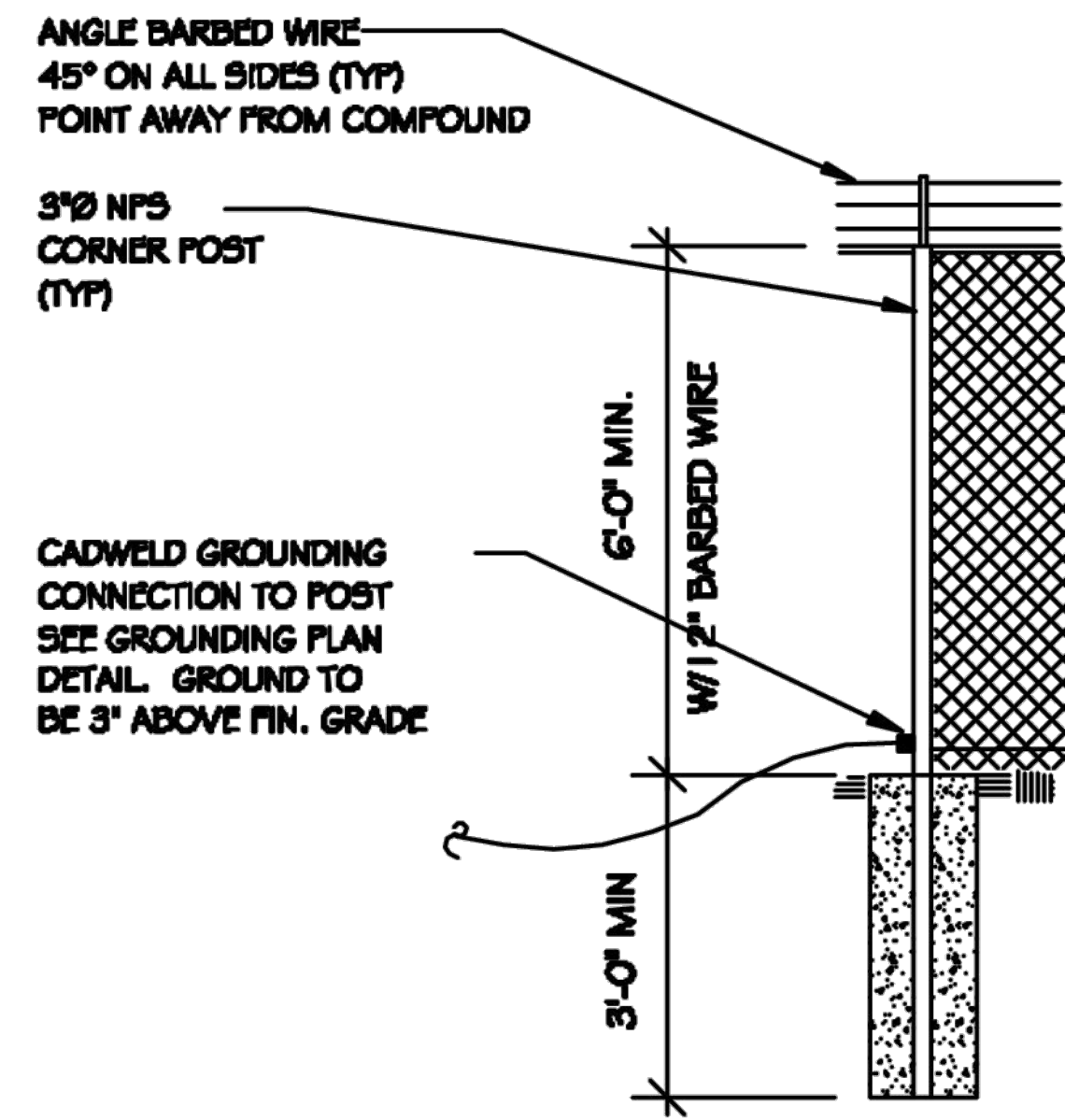


NOTE:
GALVANIZE ALL MATERIAL AFTER
FABRICATION IN ACCORDANCE WITH
ASTM-A53, ASTM-B633, ASTM A392

ROAD ACCESS GATE
NO SCALE

NOTES

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



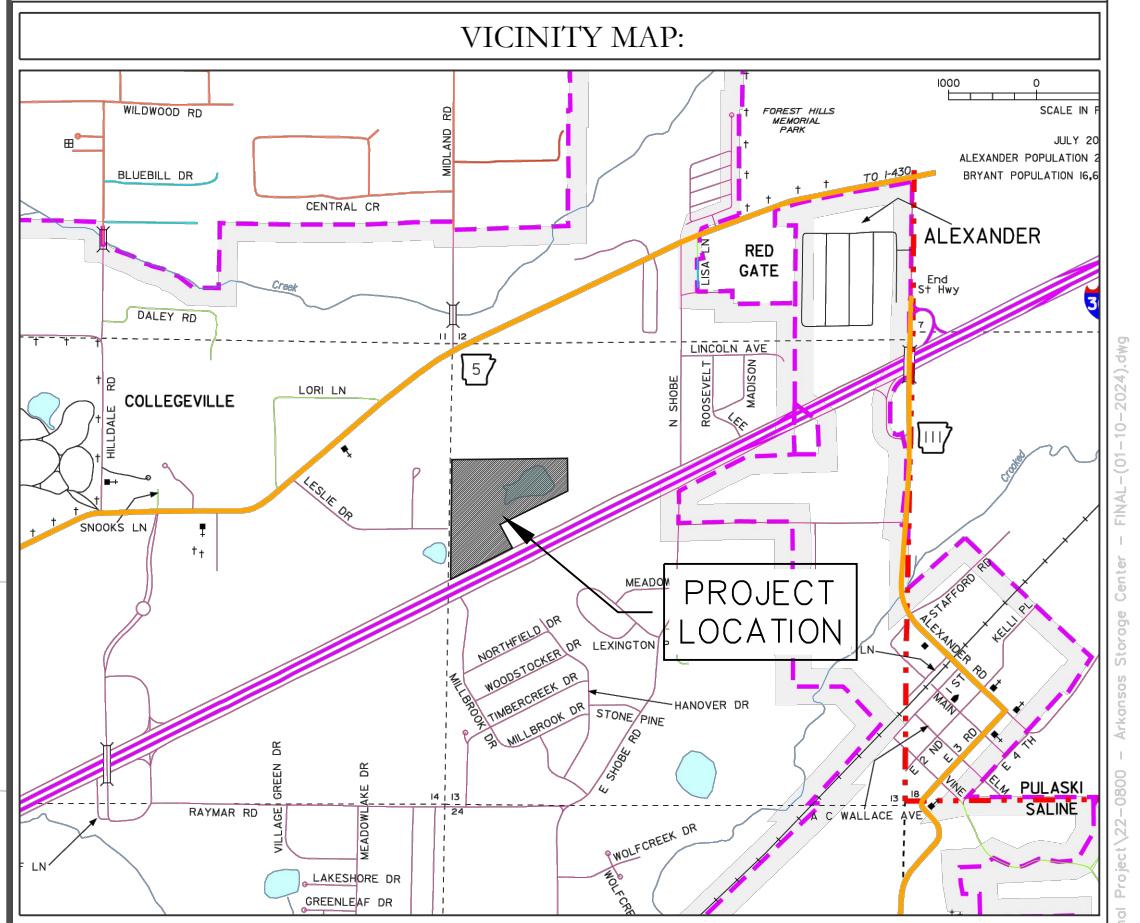
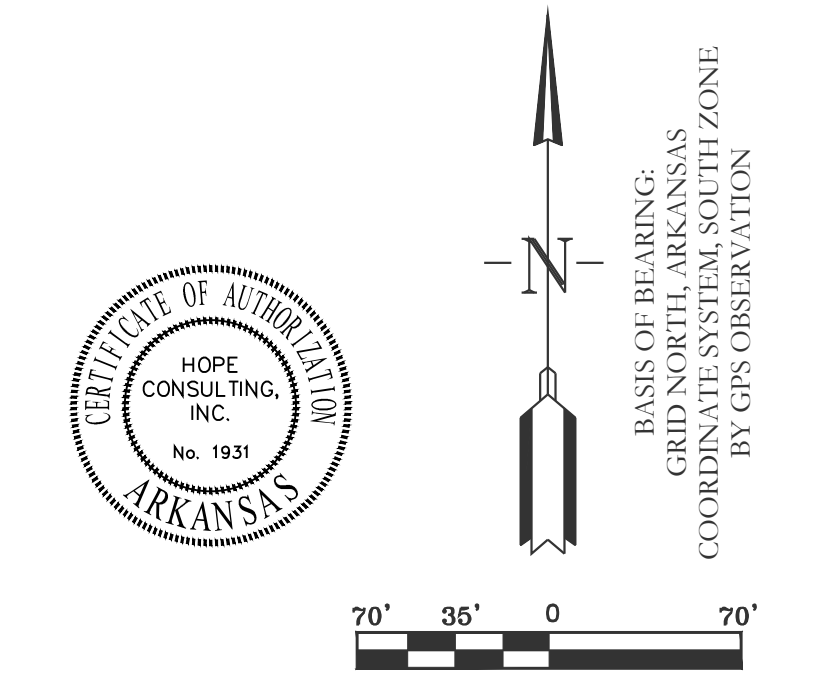
TYPICAL FENCE SECTION
NO SCALE

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



- 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 ENCASUREMENT PIPE. THE STEEL ENCASUREMENT 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 PLAN).
 5. CASING SPACERS SHALL BE STAINLESS STEEL, CASCADE MODEL CCS AS MANUFACTURED BY CASCADE WATER MFG. CO., OR APPROVED EQUAL.



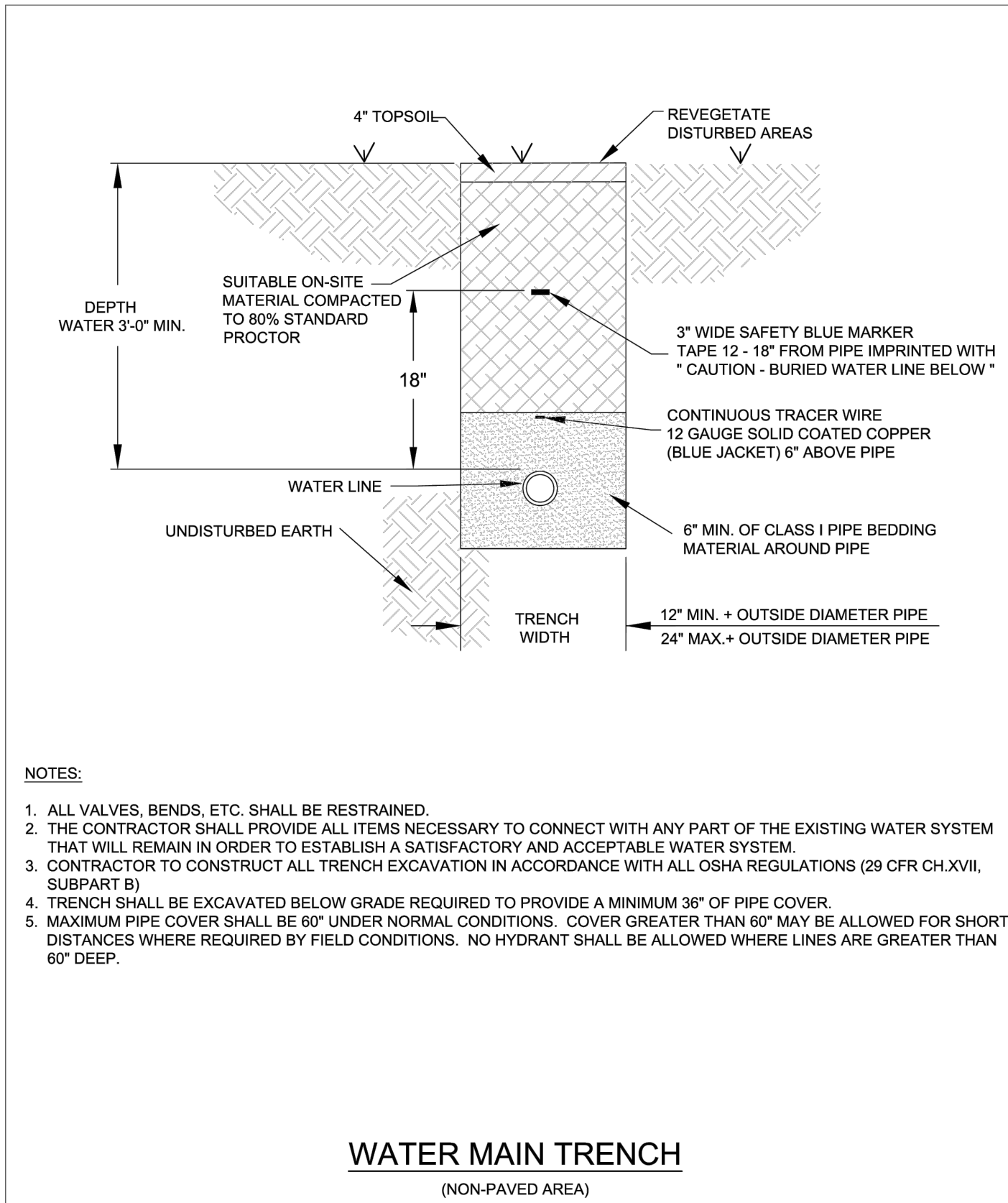
HOPE CONSULTING
ENGINEERS - SURVEYORS

129 N. Main Street,
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PH. (501)315-2626
FAX (501) 315-0024
www.hopeconsulting.com

FOR USE AND BENEFIT OF:
STUART FINLEY

ARKANSAS STORAGE CENTER
UTILITY PLAN
BRYANT, SALINE COUNTY, ARKANSAS

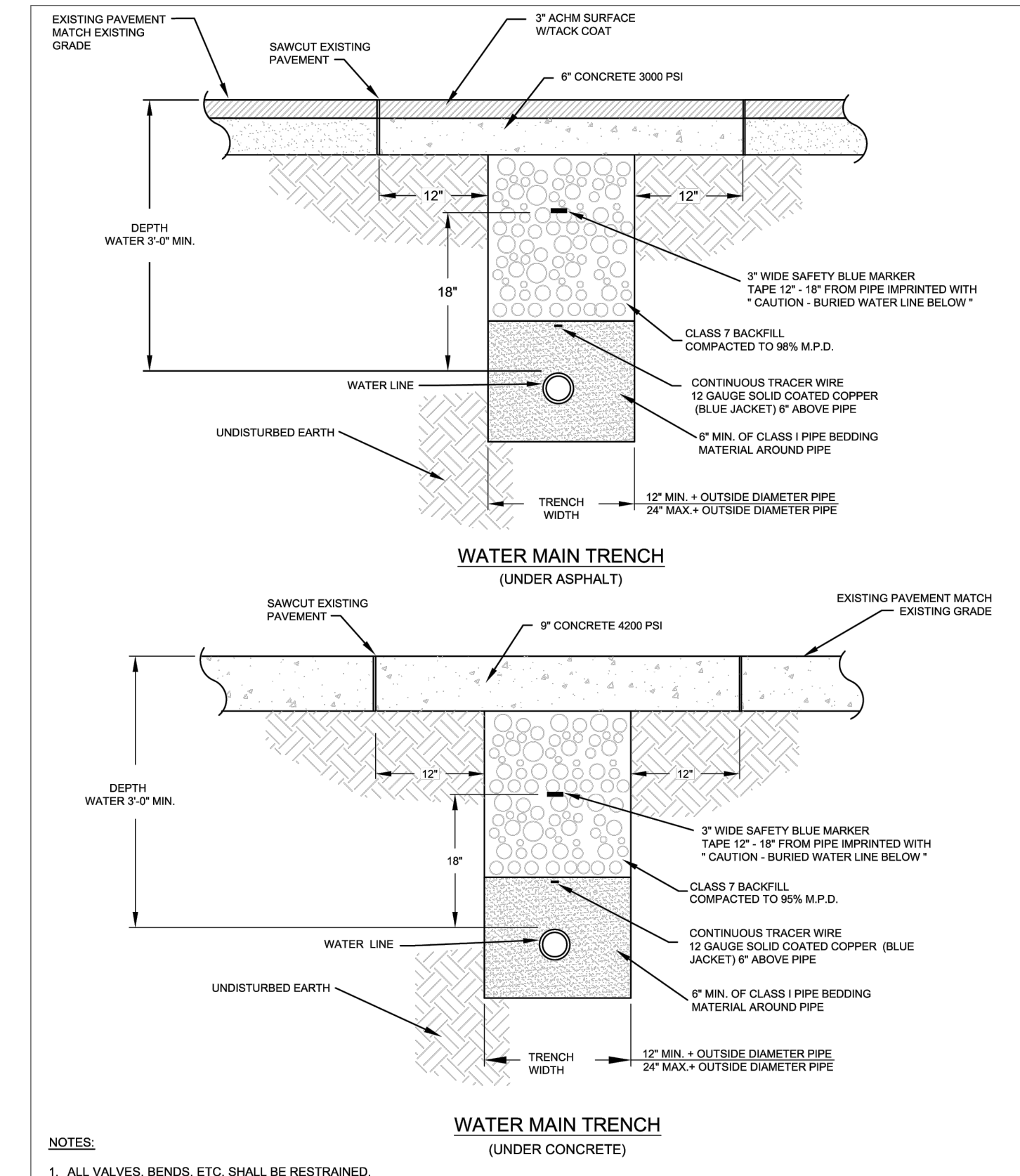
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REVISIONS:	CHECKED BY:	22-0800
SHEET: C-3.0	SCALE: 1" = 70'	
500	01S	14W 0 21 300 62 1762



- 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 30" 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.

CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 844-0468

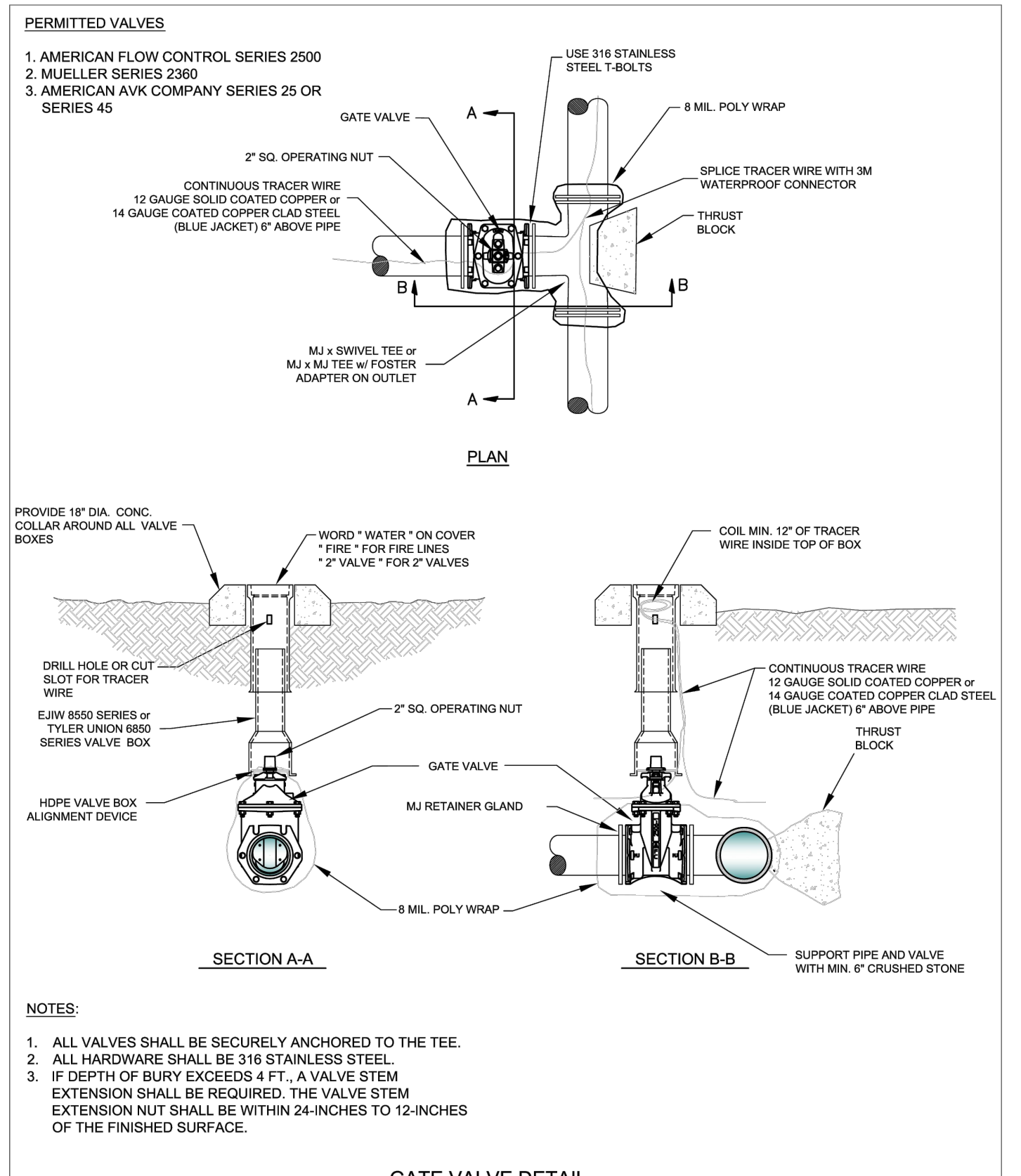
WATER DETAILS
DESCRIPTION: WATER MAIN TRENCH (NON-PAVED AREA)
DATE: APRIL 2015
SHEET: W1
DRAWN BY: []
CHECKED BY: []
FILE: W1-Water Trench (Non-Paved Area).dwg



- 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 30" 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.

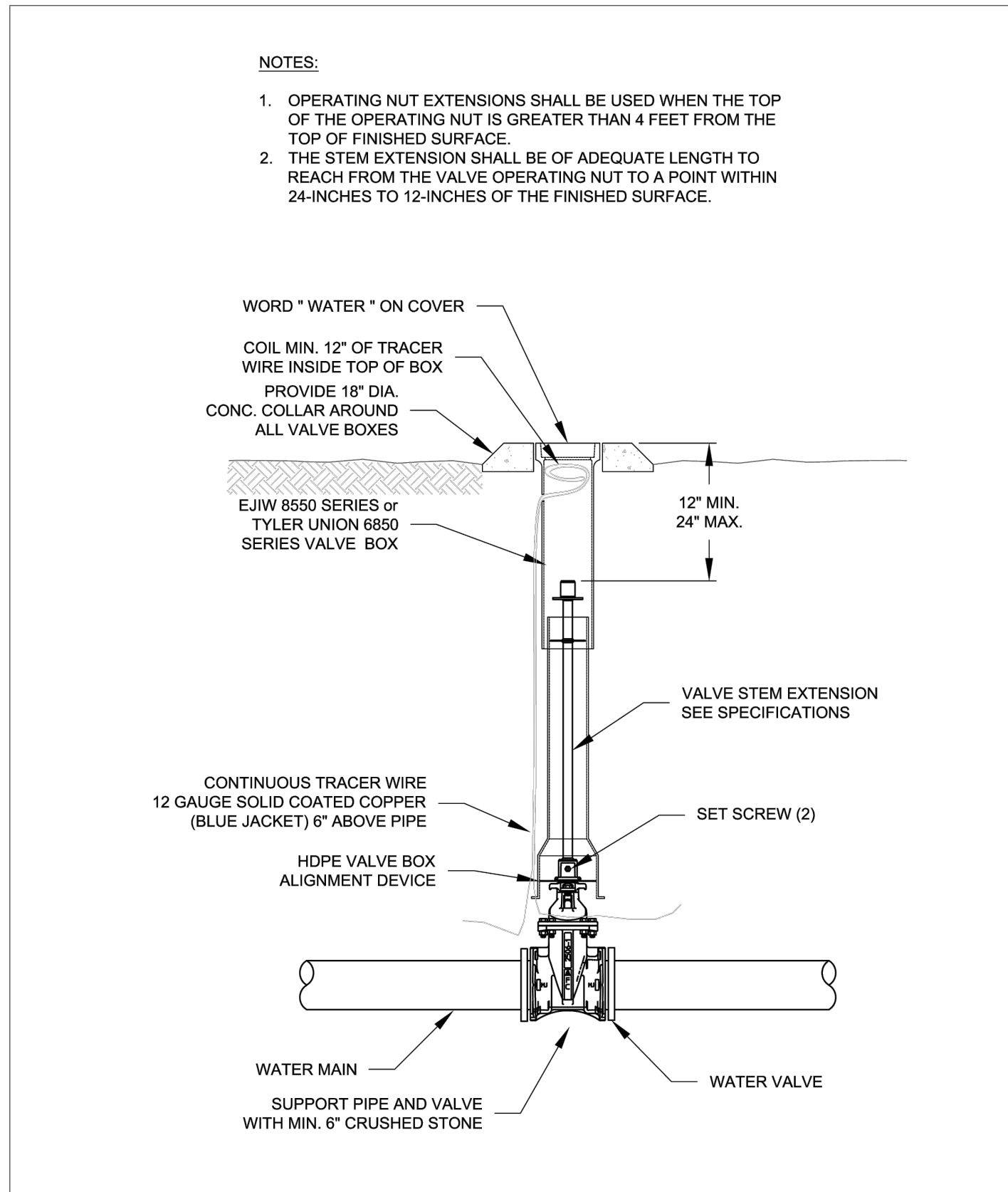
CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 844-0468

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



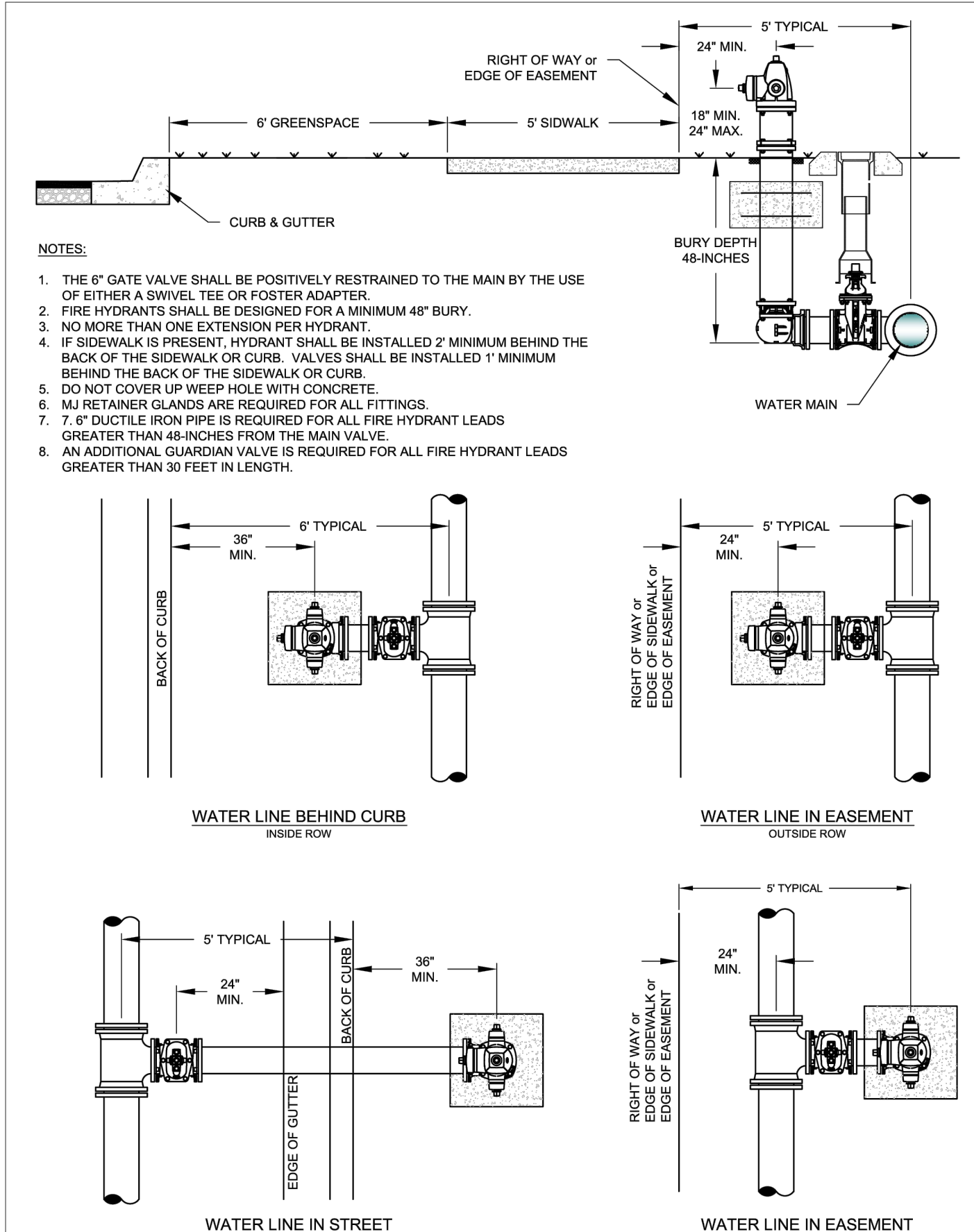
CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 844-0468

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



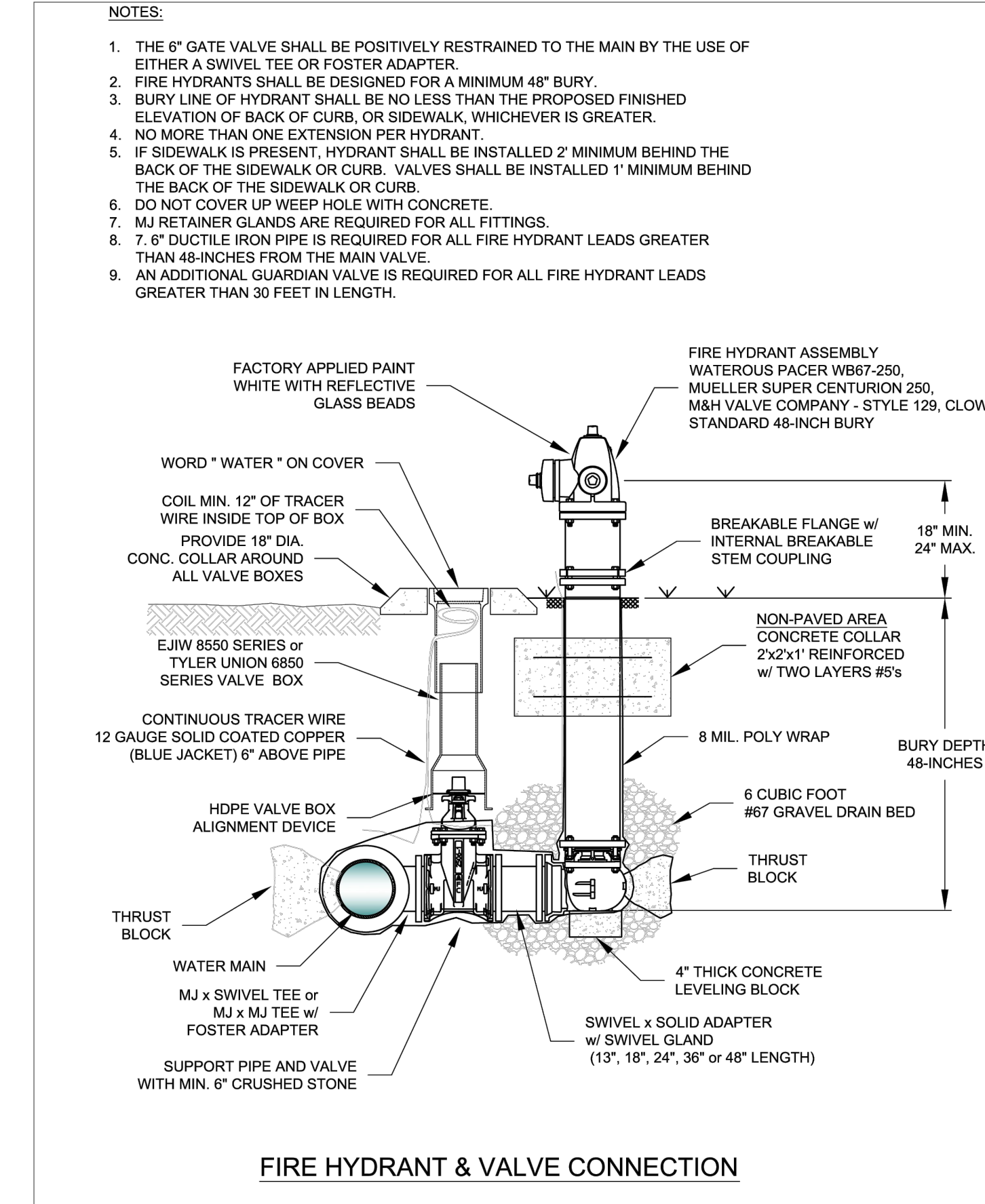
CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 844-0468

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



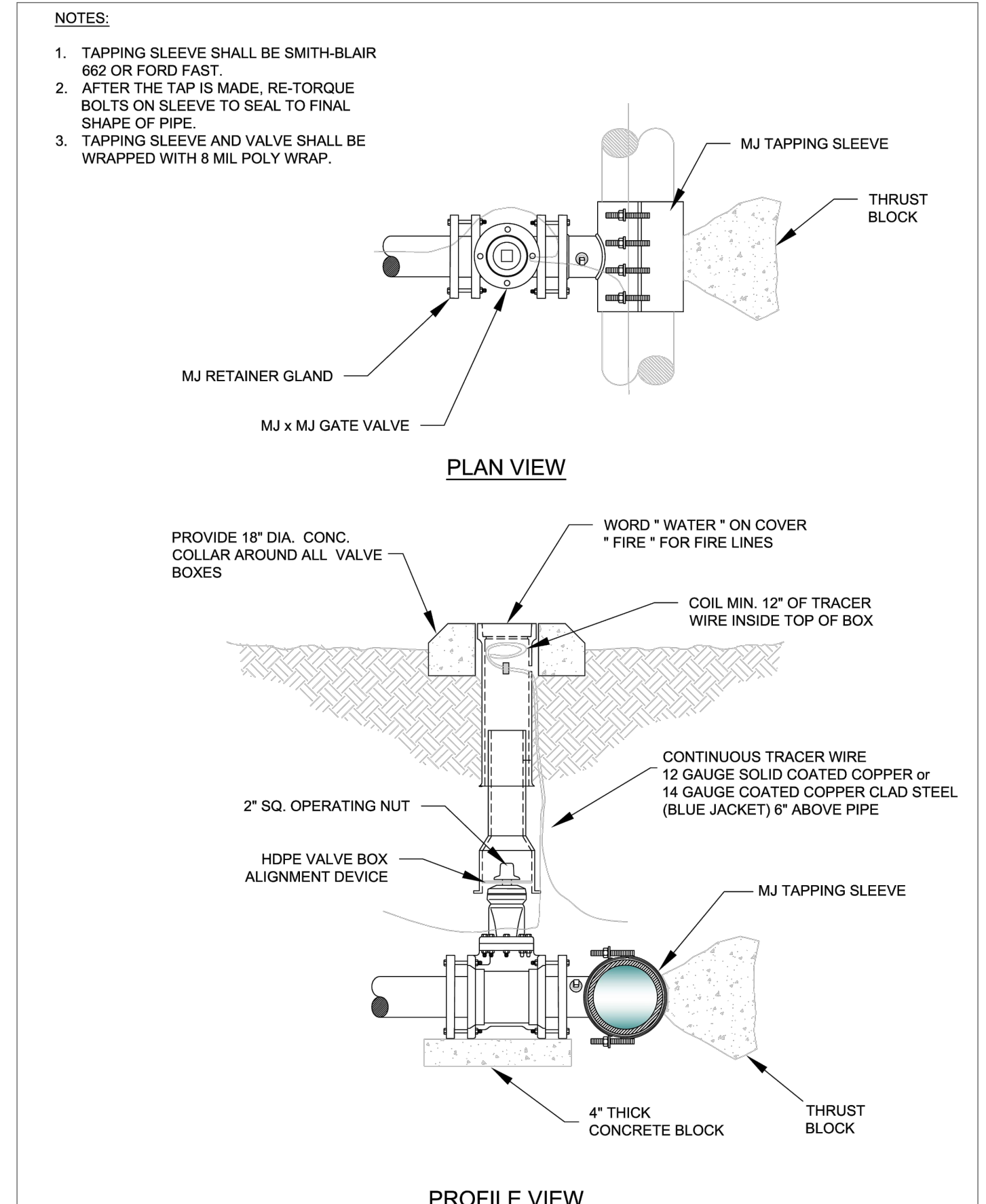
CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 844-0468

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



CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 844-0468

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



CITY OF BRYANT, AR
WATER UTILITIES
210 S.W. 3rd. STREET
BRYANT, AR
PHONE: (501) 844-0468

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

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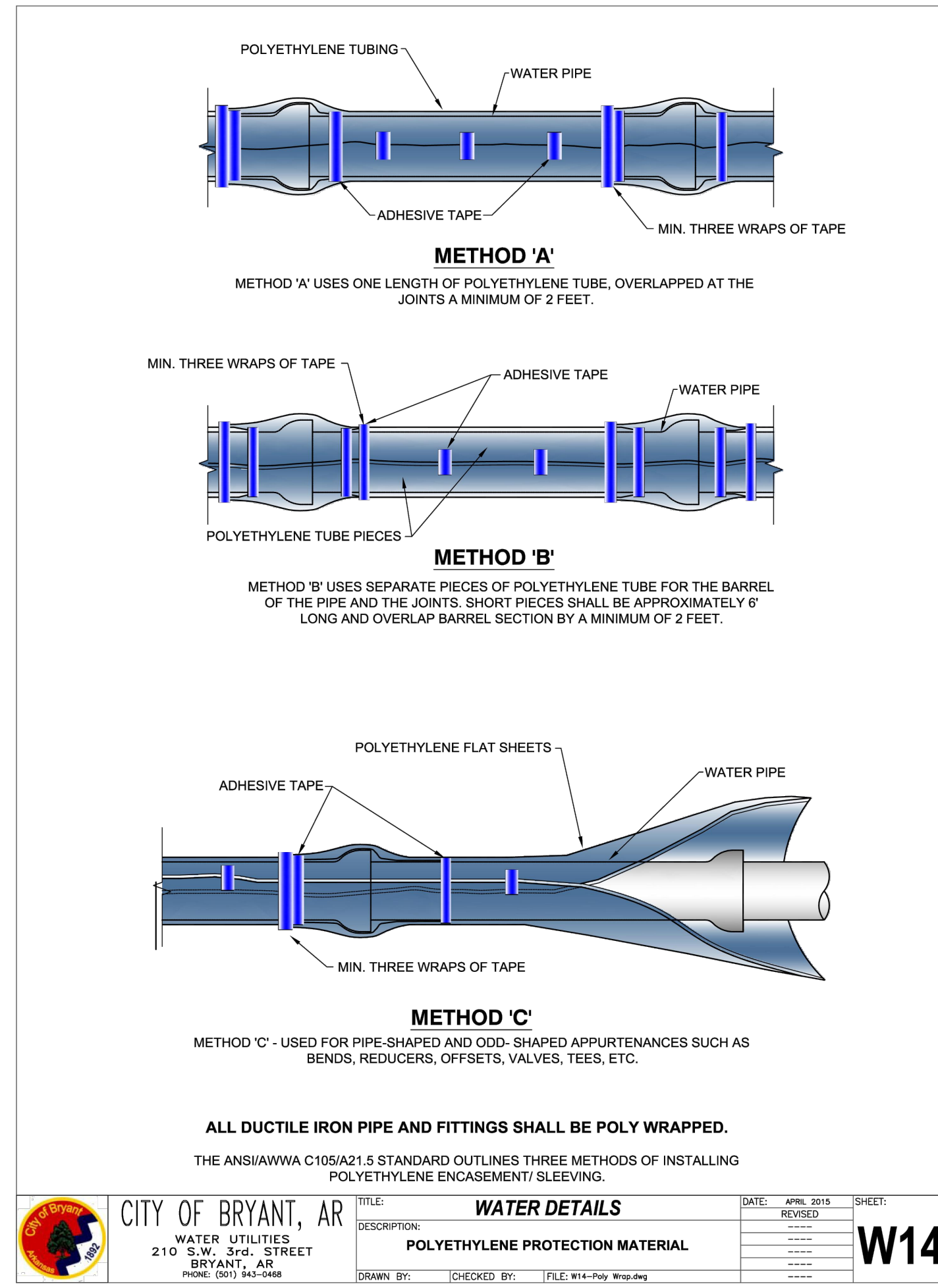
ARKANSAS STORAGE CENTER
UTILITY SPECS
BRYANT, SALINE COUNTY, ARKANSAS

DATE: 01-24-2024
REVISIONS:
SHEET: C-3.1

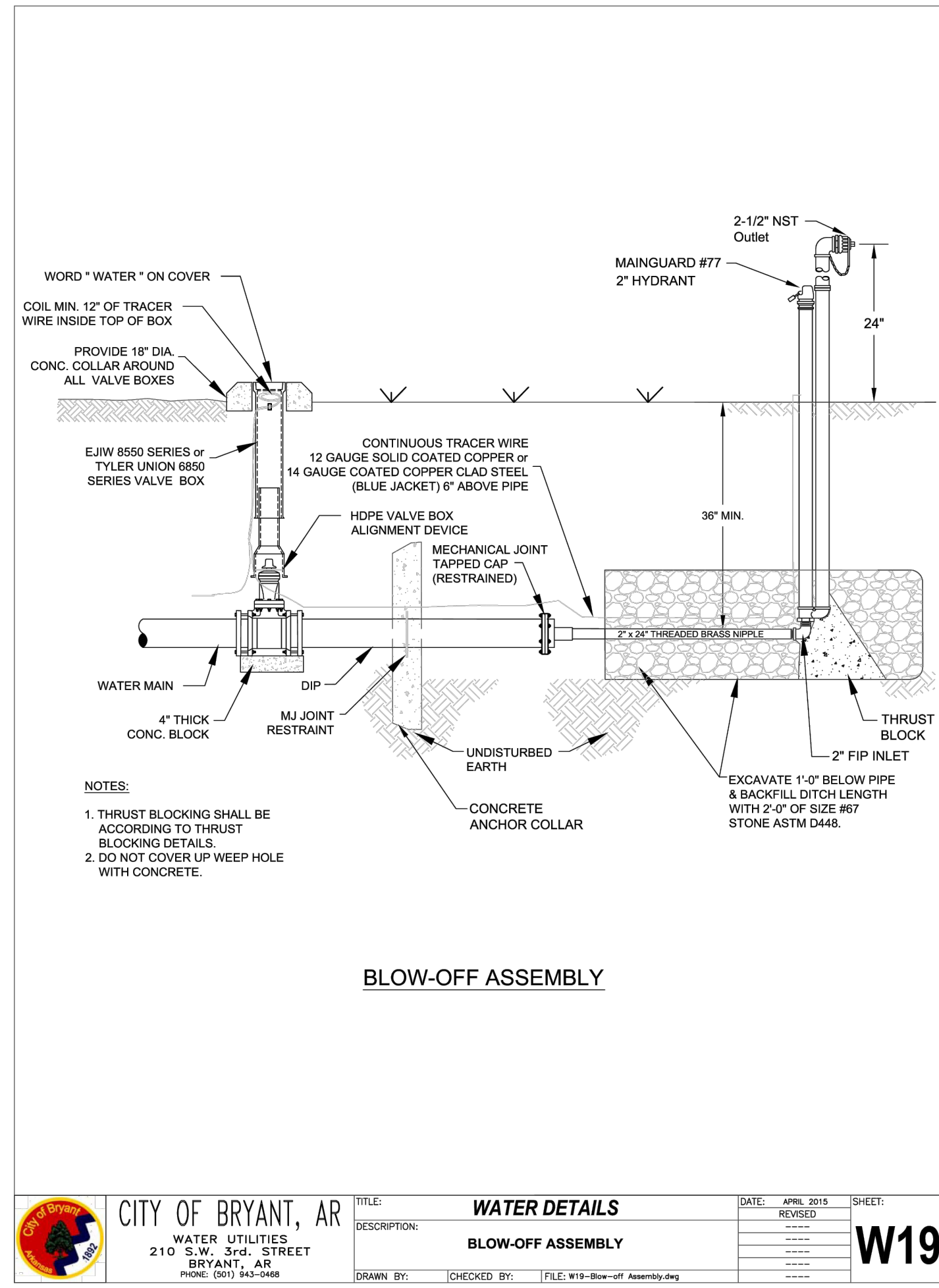
C.A.D. BY:
CHECKED BY:
SCALE:

DRAWING NUMBER:
22-0800

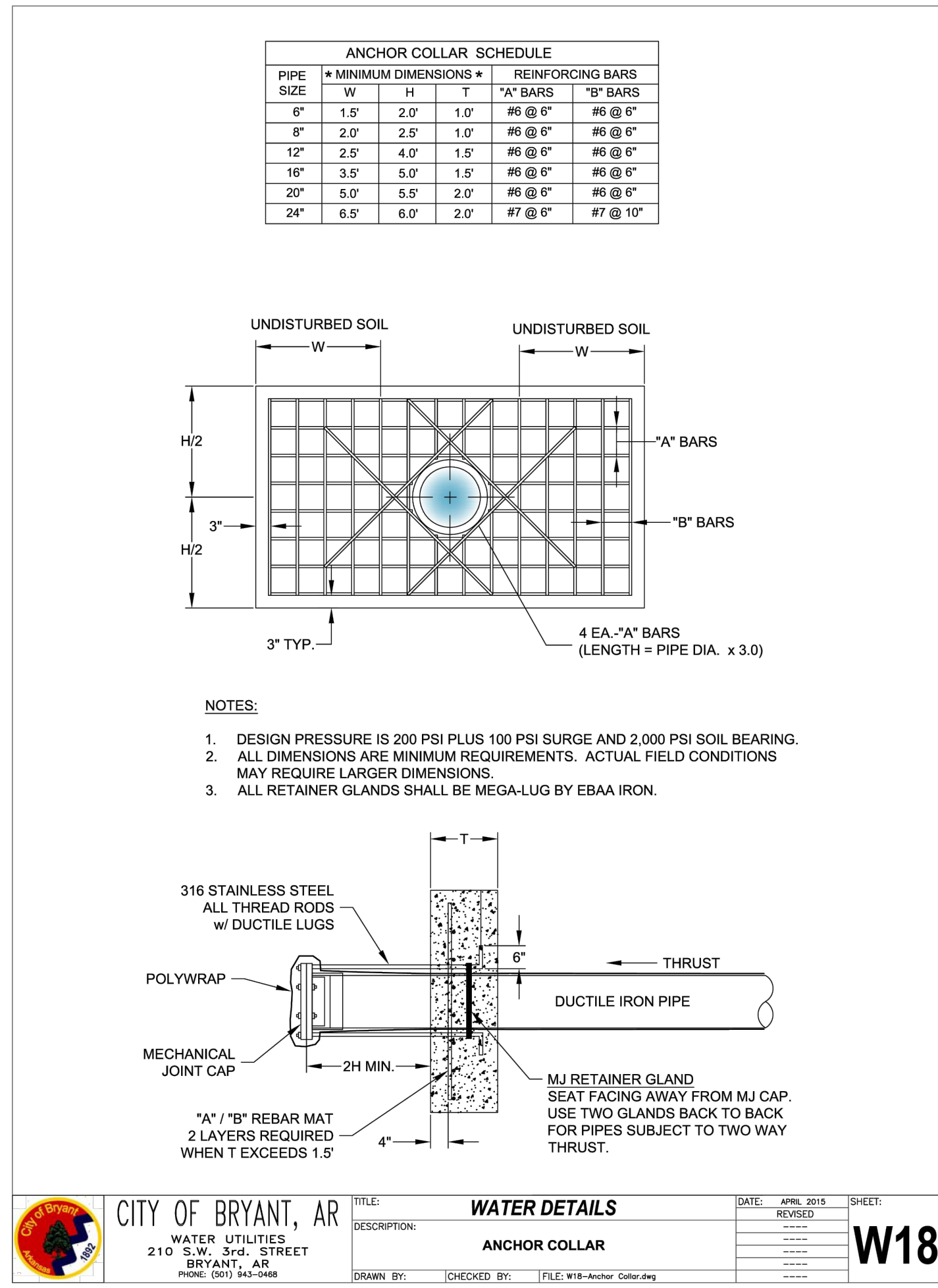
500 01S 14W 0 21 300 62 1762



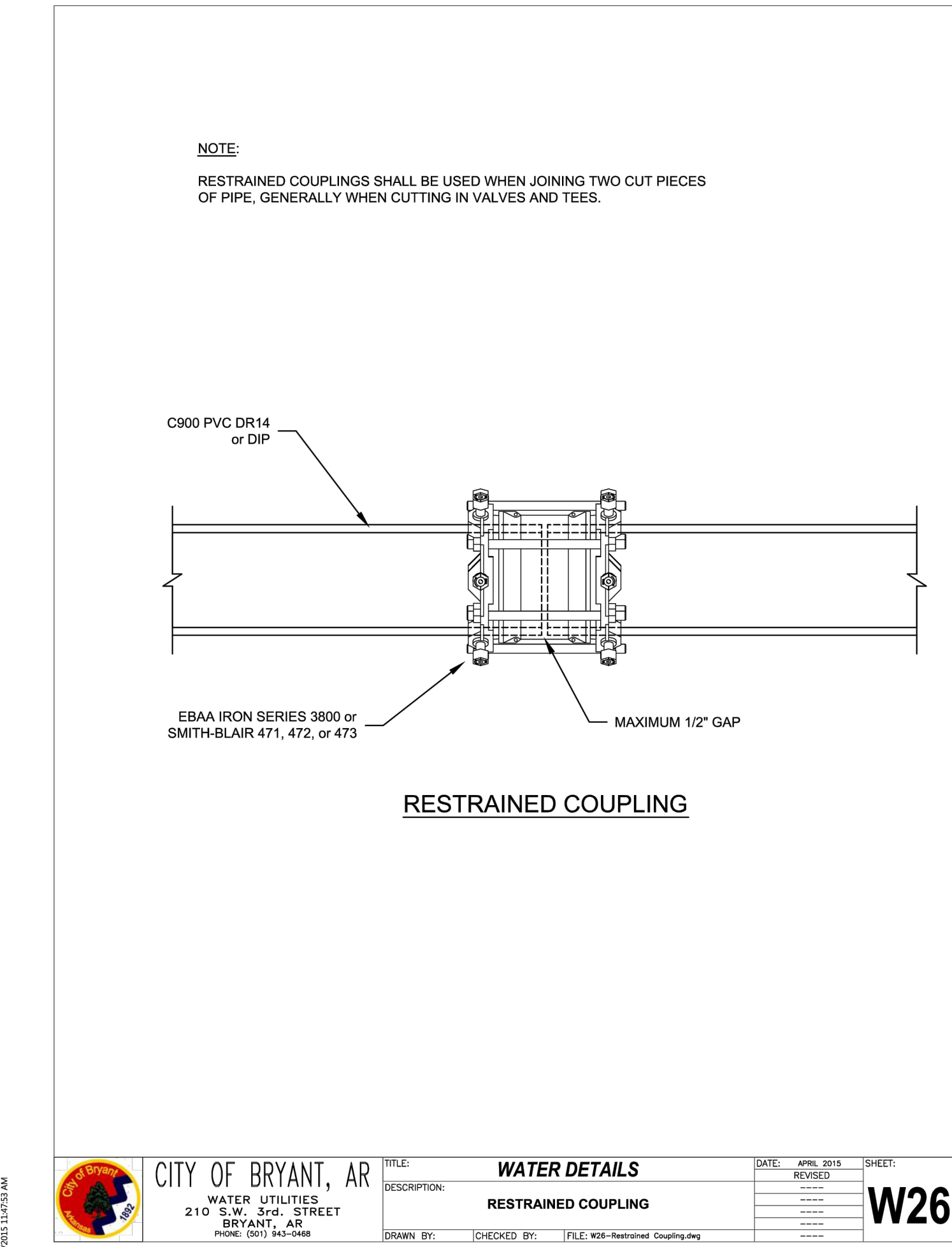
CITY OF BRYANT, AR WATER UTILITIES 210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 843-3468	TITLE: WATER DETAILS	DATE: APRIL 2015	SHEET: W14
	DESCRIPTION: POLYETHYLENE PROTECTION MATERIAL	REVISIONS:	



CITY OF BRYANT, AR WATER UTILITIES 210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 843-3468	TITLE: WATER DETAILS	DATE: APRIL 2015	SHEET: W19
	DESCRIPTION: BLOW-OFF ASSEMBLY	REVISIONS:	



CITY OF BRYANT, AR WATER UTILITIES 210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 843-3468	TITLE: WATER DETAILS	DATE: APRIL 2015	SHEET: W18
	DESCRIPTION: ANCHOR COLLAR	REVISIONS:	



CITY OF BRYANT, AR WATER UTILITIES 210 S.W. 3rd. STREET BRYANT, AR PHONE: (501) 843-3468	TITLE: WATER DETAILS	DATE: APRIL 2015	SHEET: W26
	DESCRIPTION: RESTRAINED COUPLING	REVISIONS:	

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 LCT51508
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 A.Y. McDonald NL Plug Style 74701-22
Corp Stop	Ford FB1000-4-Q-NL Mueller B25008N
Service Tubing	SDR 9 HDPE Tubing

2015 Edition

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 Ford FB1000-4-Q-NL Mueller B25008N
1" corporation	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 Ford FB1000-4-Q-NL Mueller B25008N
1" corporation stop	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

City of Bryant, AR
Water and Sewer Specifications
4000 - 12
Water Pipe, Fittings, and Materials
July 31, 2015

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STUART FINLEY

ARKANSAS STORAGE CENTER
UTILITY SPECS
BRYANT, SALINE COUNTY, ARKANSAS

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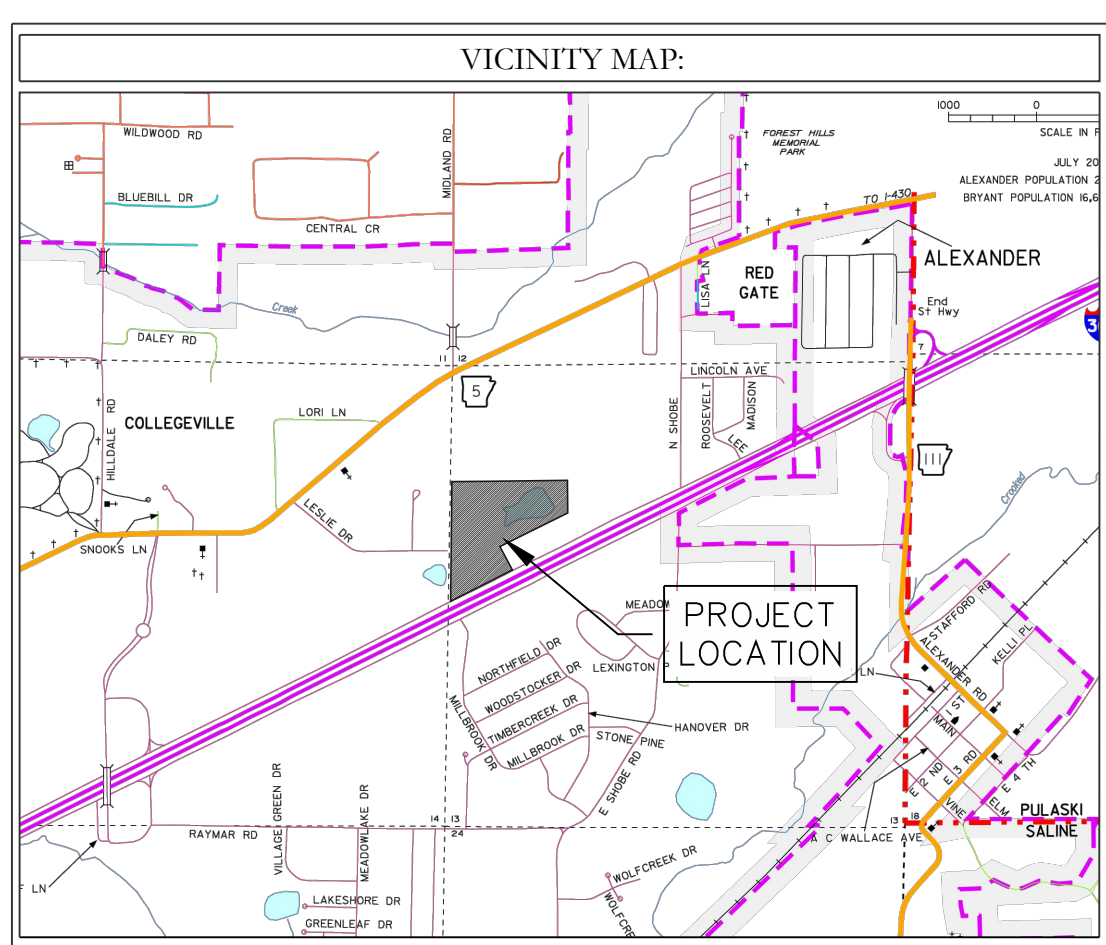
LEGEND

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

70' 35' 0 70'

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



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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'	
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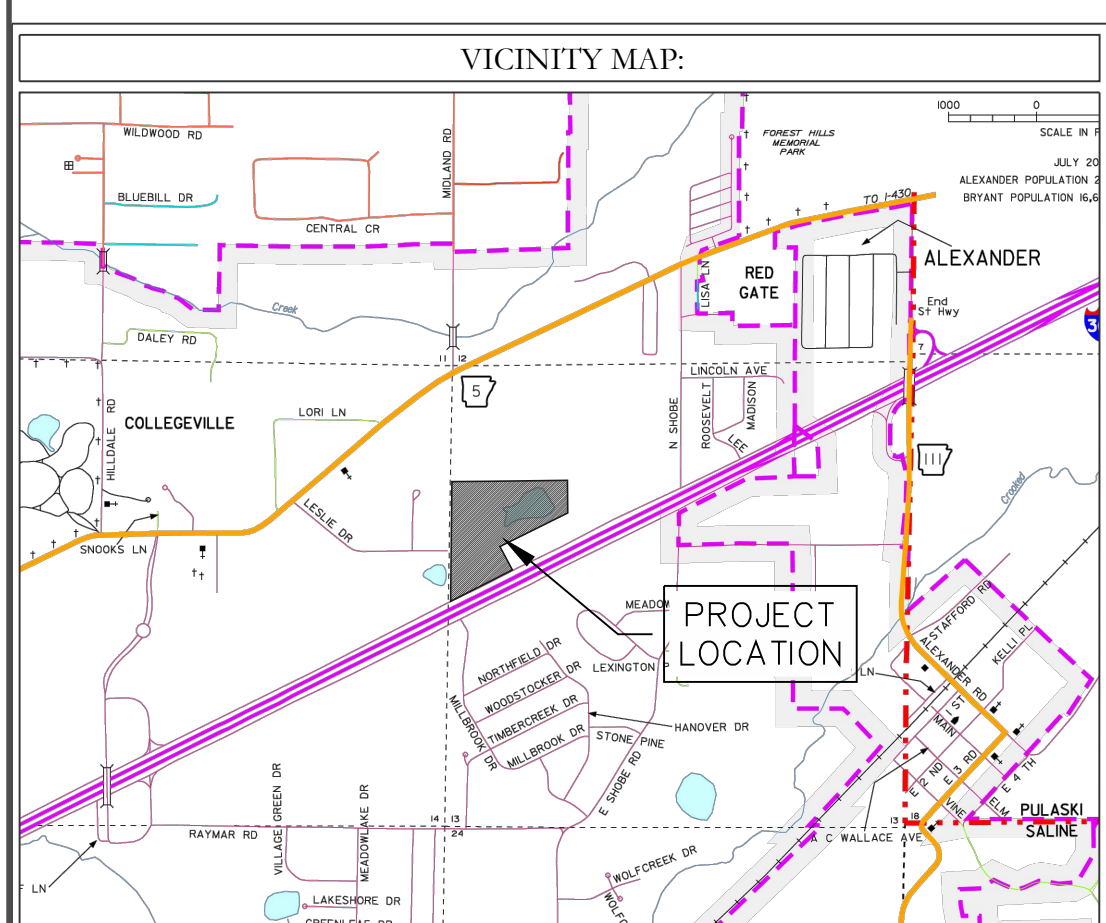
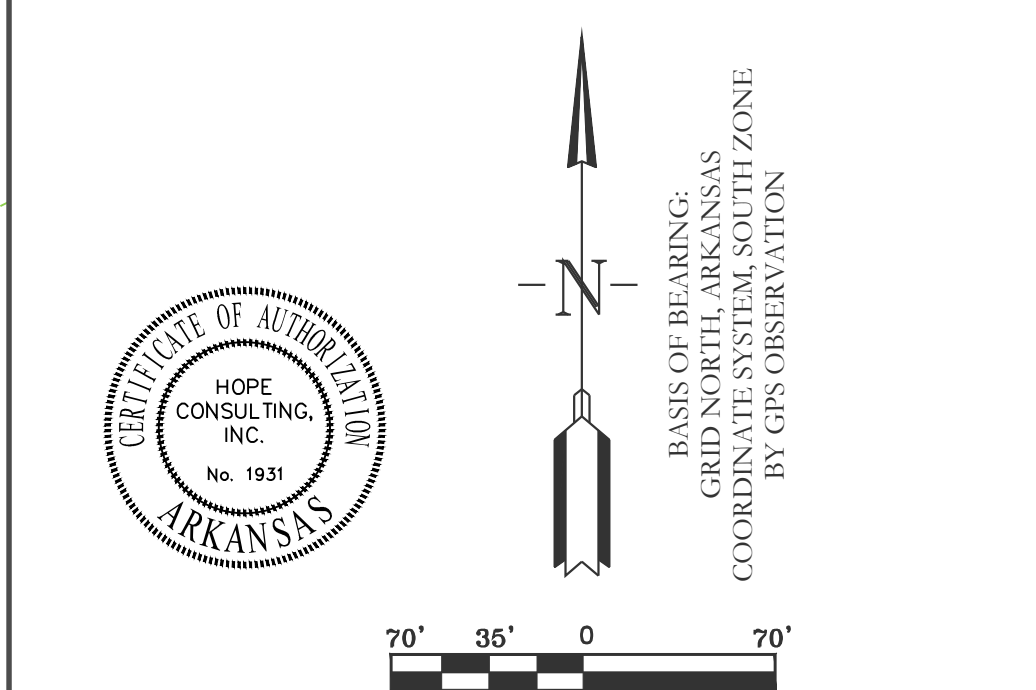


LEGEND

PROPOSED CONTOUR LINE ——— 363 ———

PROPOSED HDPE STORM PIPE ————

PROPOSED RCP STORM PIPE ————



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ARKANSAS STORAGE CENTER
DRAINAGE PLAN
BRYANT, SALINE COUNTY, ARKANSAS

DATE: 01-24-2024	C.A.D. BY:	DRAWING NUMBER:
REVISED:	CHECKED BY:	22-0800
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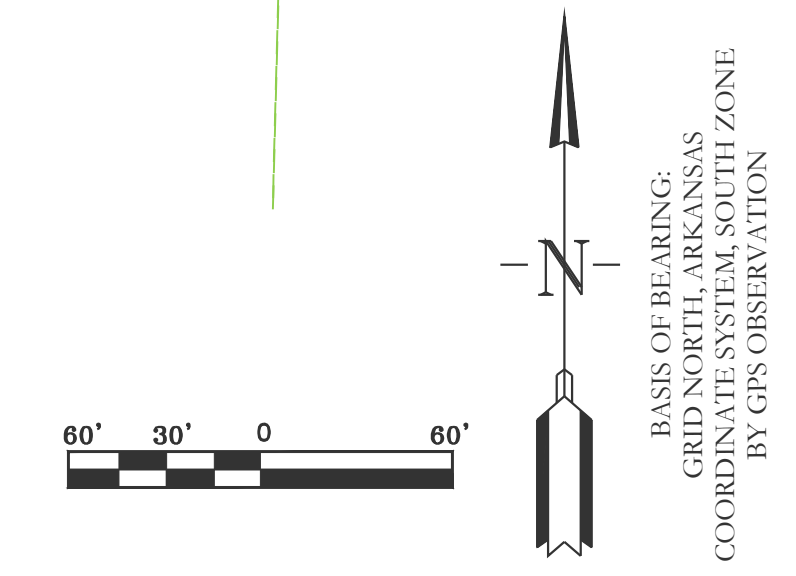
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PROPOSED CONTOUR LINE --- 363 ---

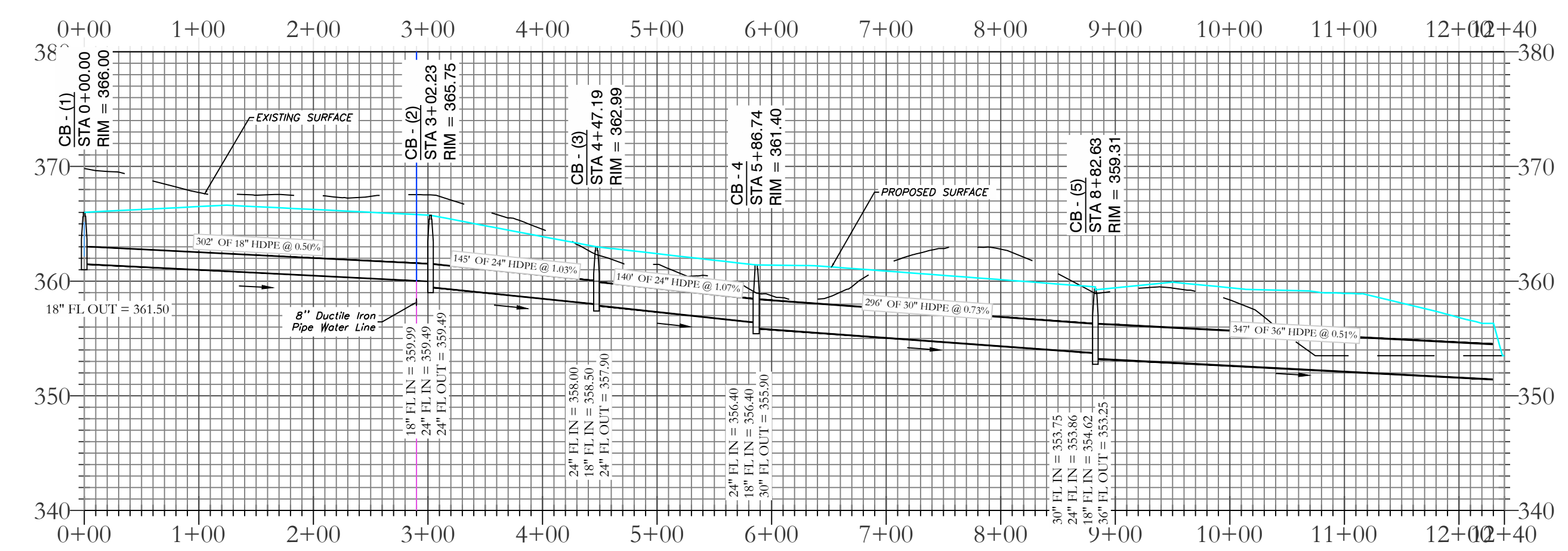
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PROPOSED RCP STORM PIPE ————

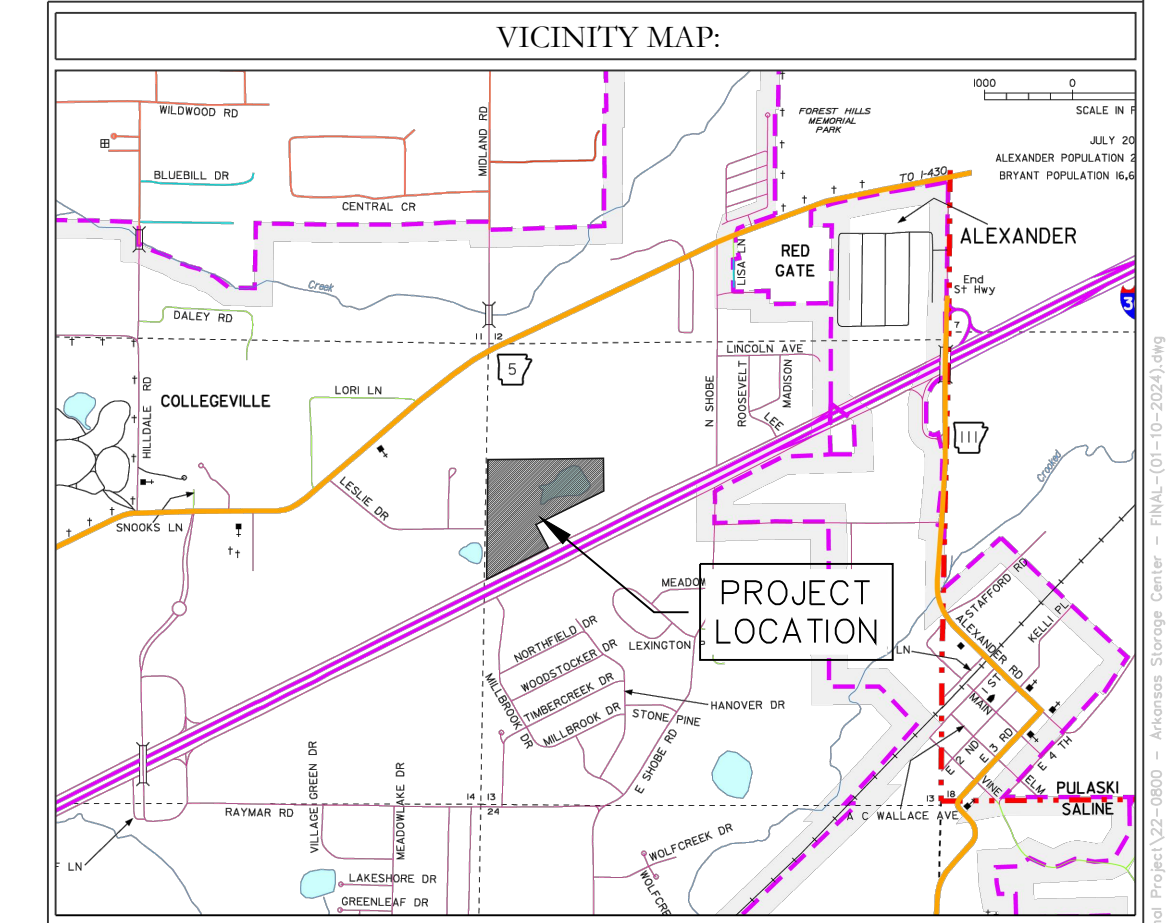
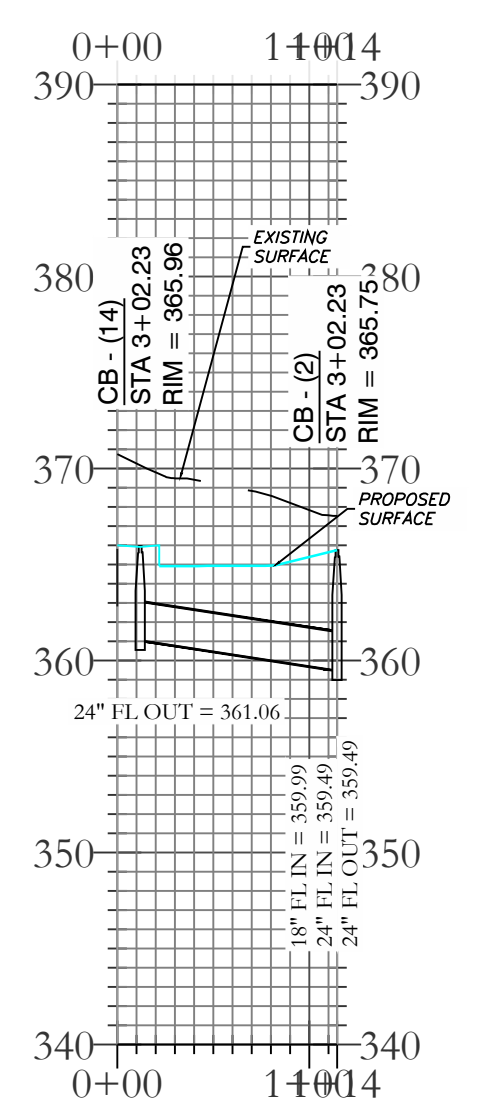


BASIS OF BEARING:
GRID NORTH, ARKANSAS
COORDINATE SYSTEM, SOUTH ZONE
BY GPS OBSERVATION

STORM WATER LINE 1 PROFILE



STORM WATER LINE 7 PROFILE



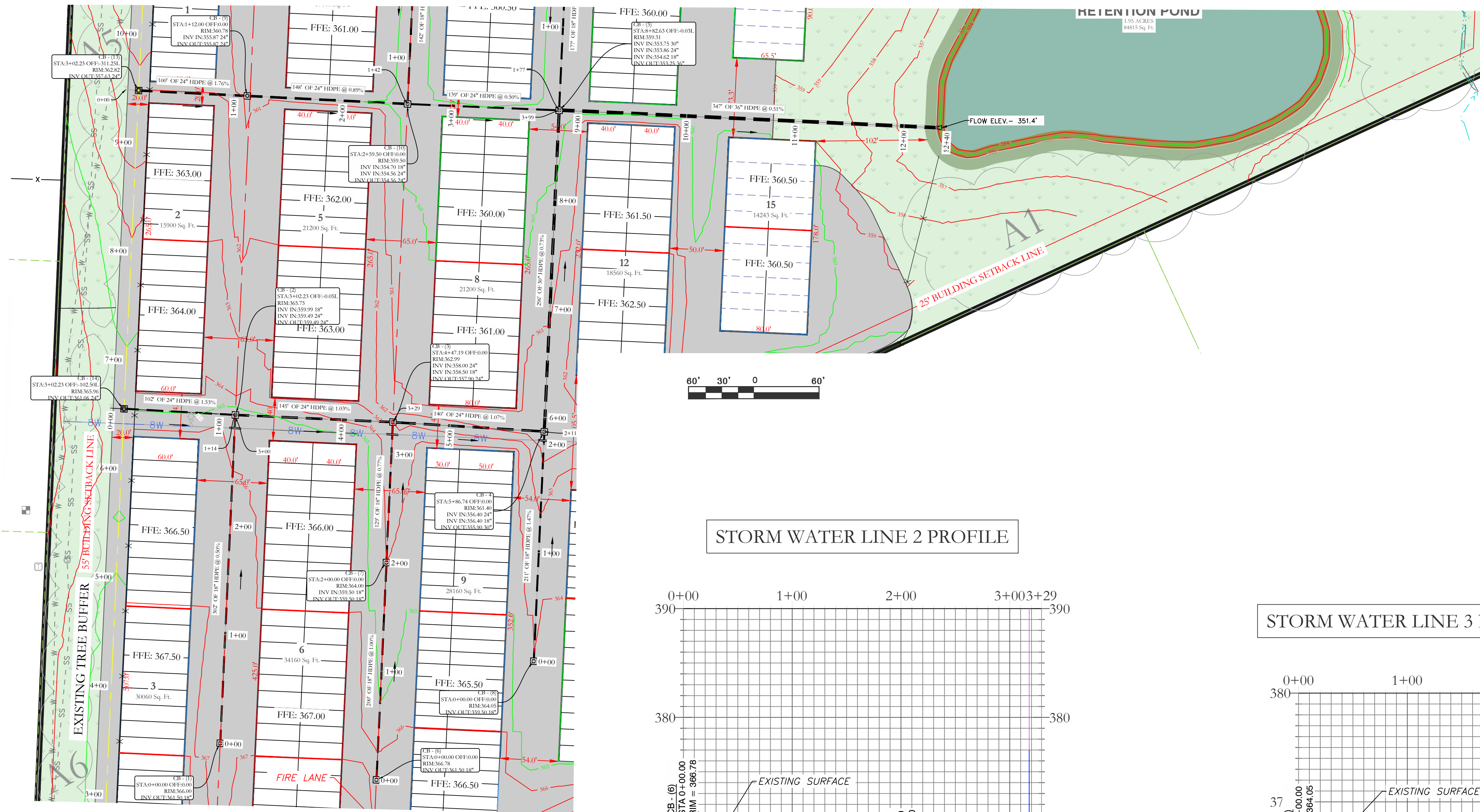
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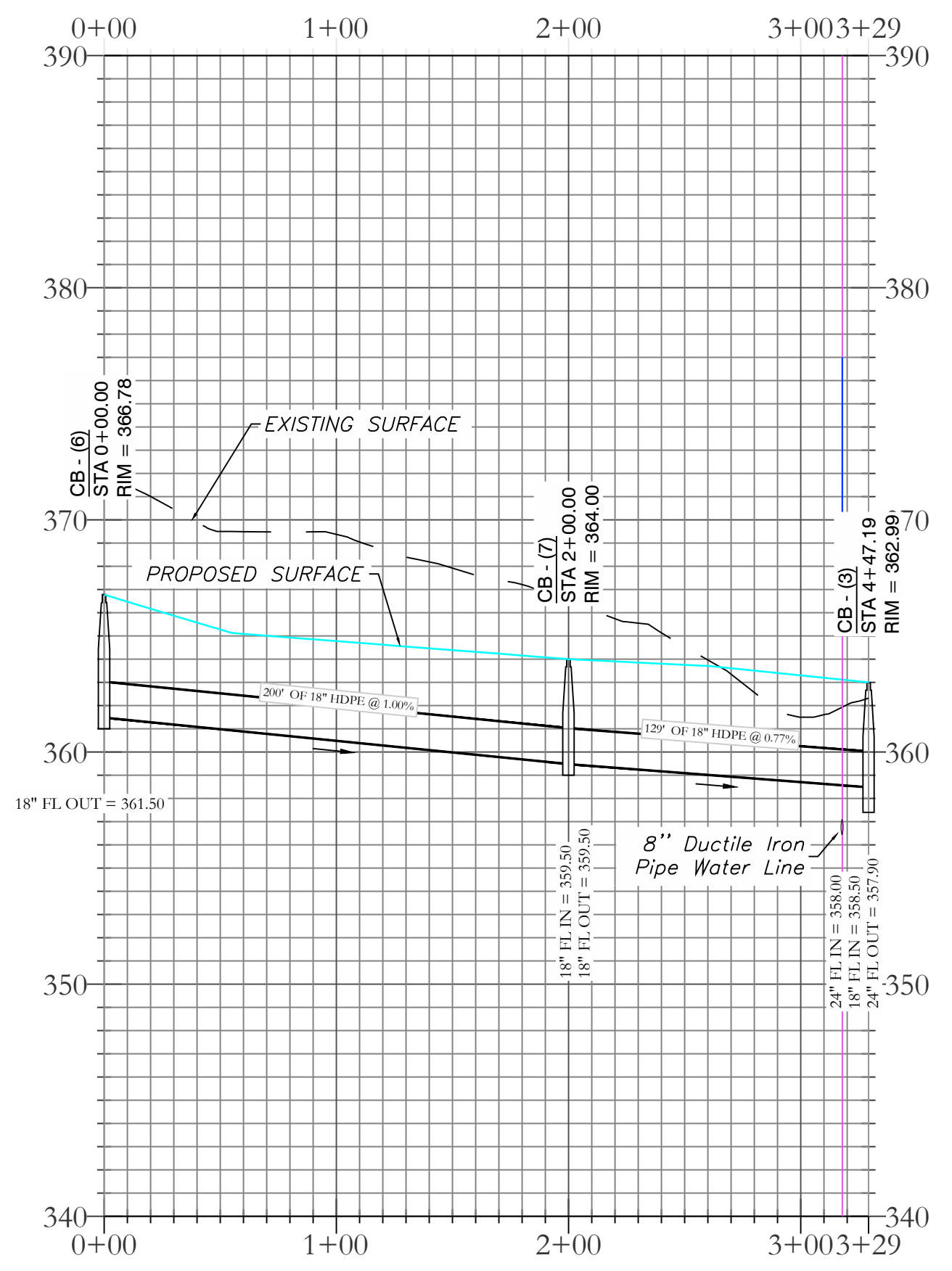
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DRAINAGE PLAN
BRYANT, SALINE COUNTY, ARKANSAS

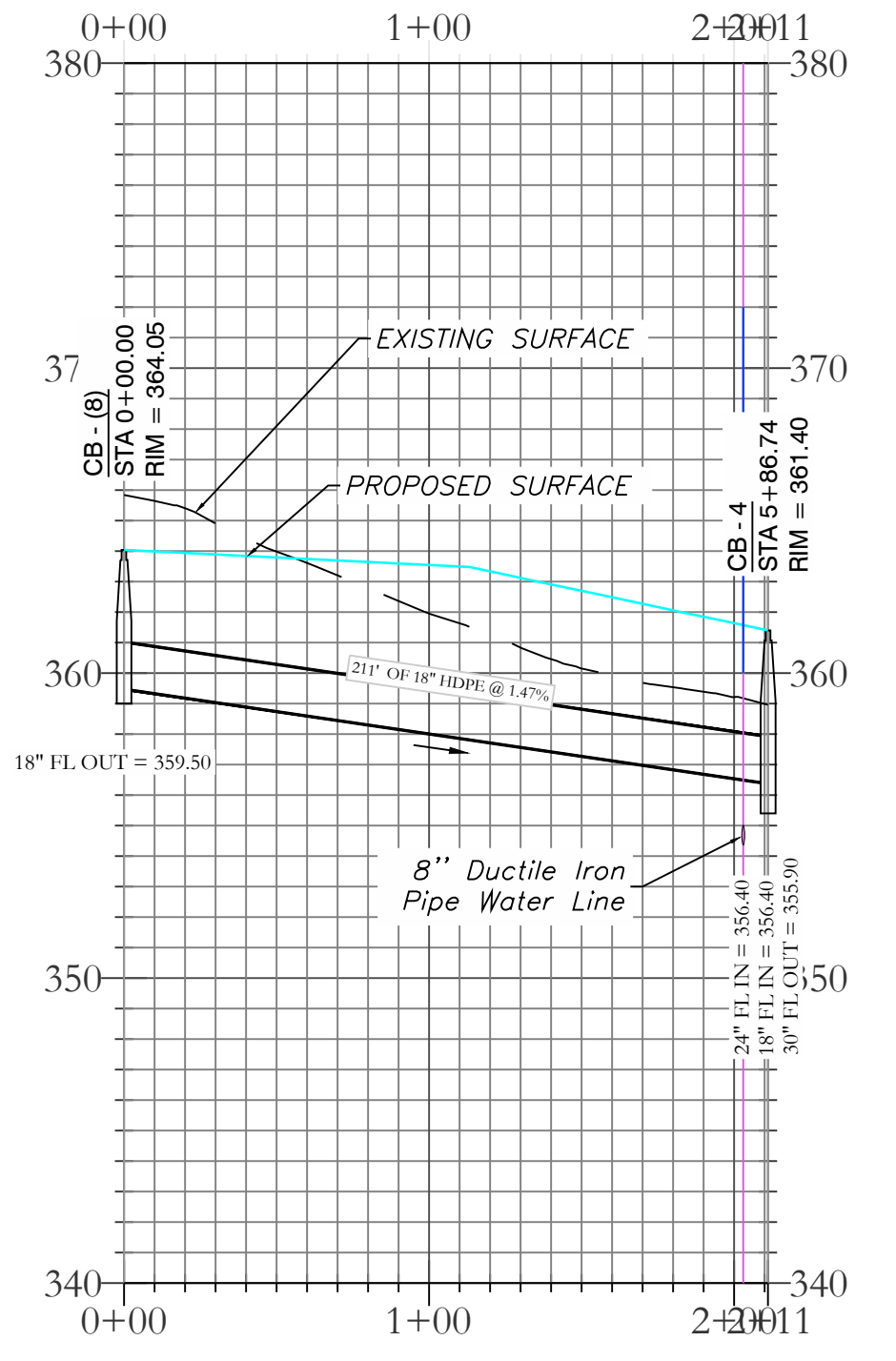
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REVISED:	CHECKED BY:	22-0800
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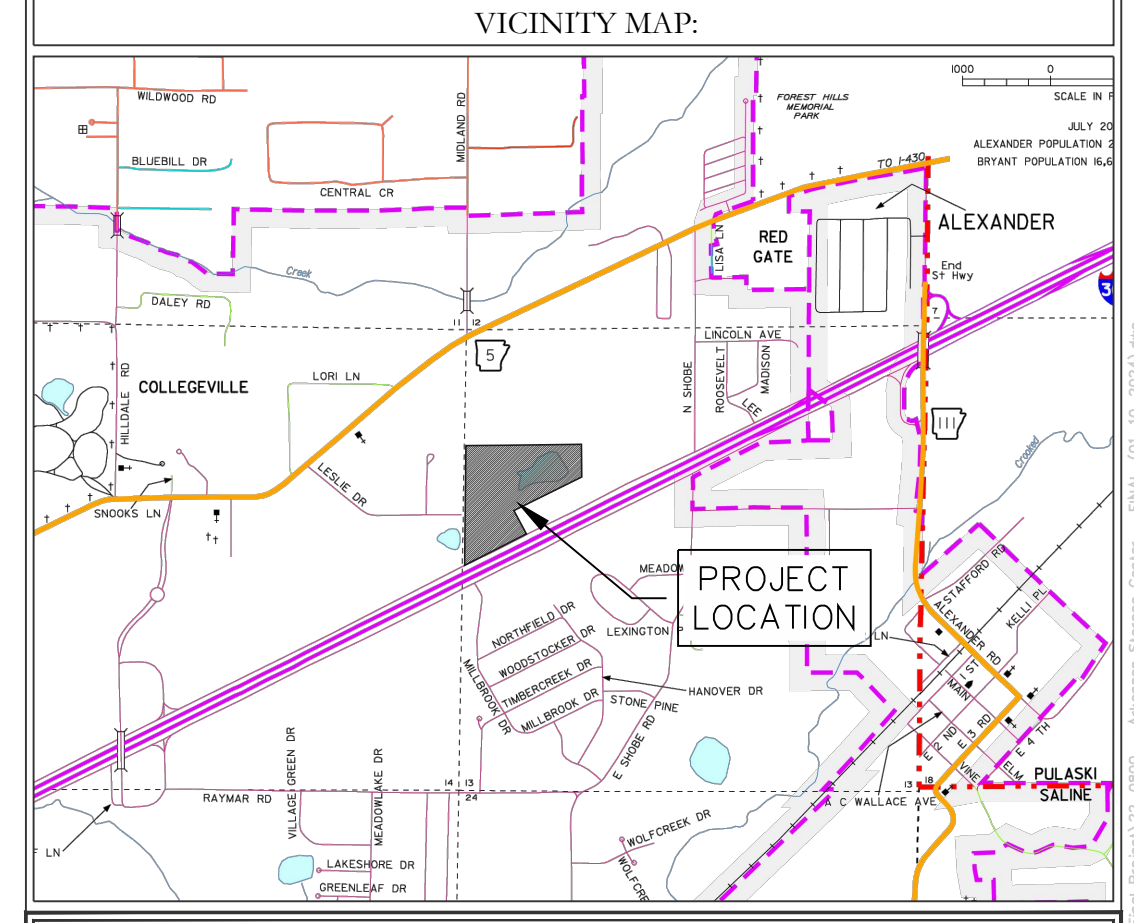
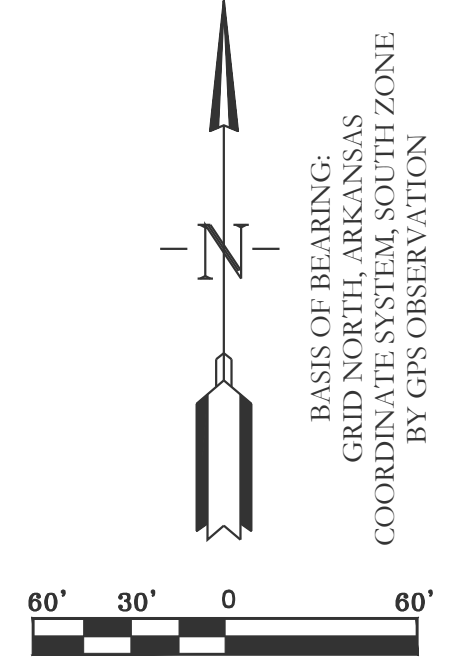
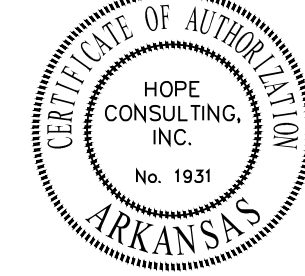
STORM WATER LINE 2 PROFILE



STORM WATER LINE 3 PROFILE



- LEGEND**
- EXISTING CONTOUR LINE --- 363 ---
 - PROPOSED CONTOUR LINE --- 363 ---
 - PROPOSED HDPE STORM PIPE - - - - -
 - PROPOSED RCP STORM PIPE ————



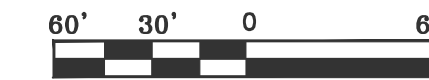
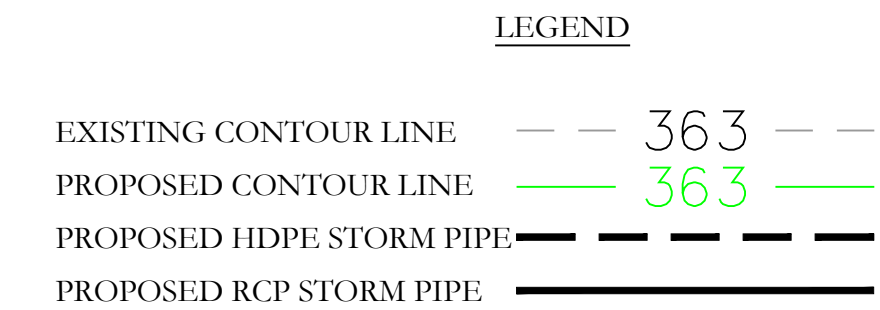
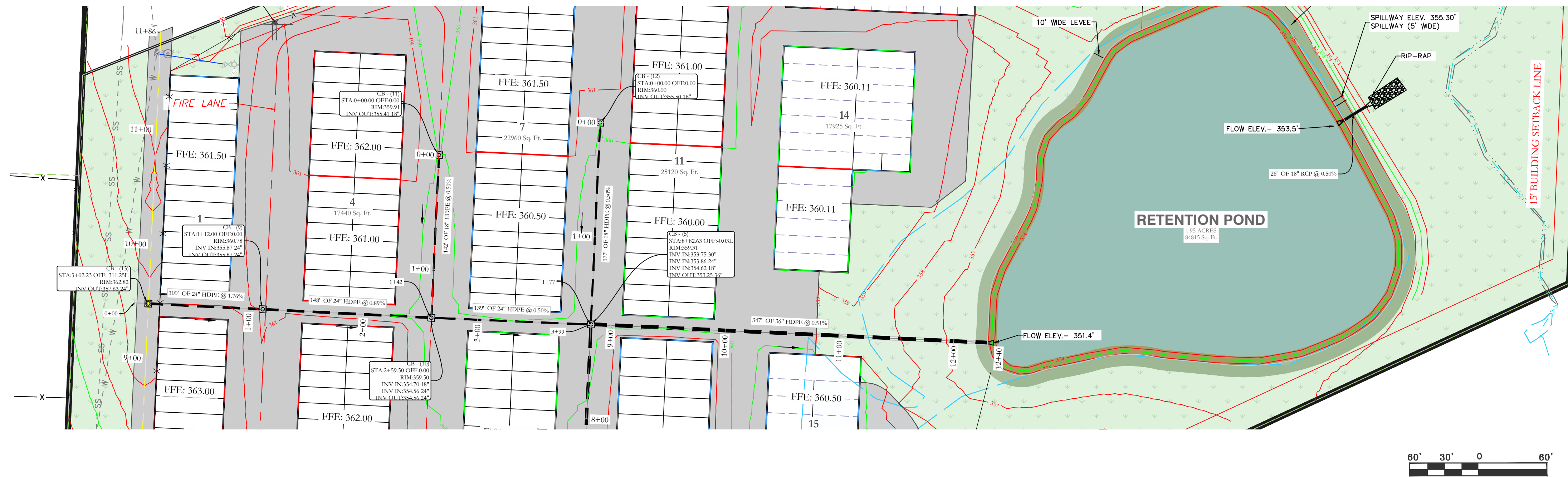
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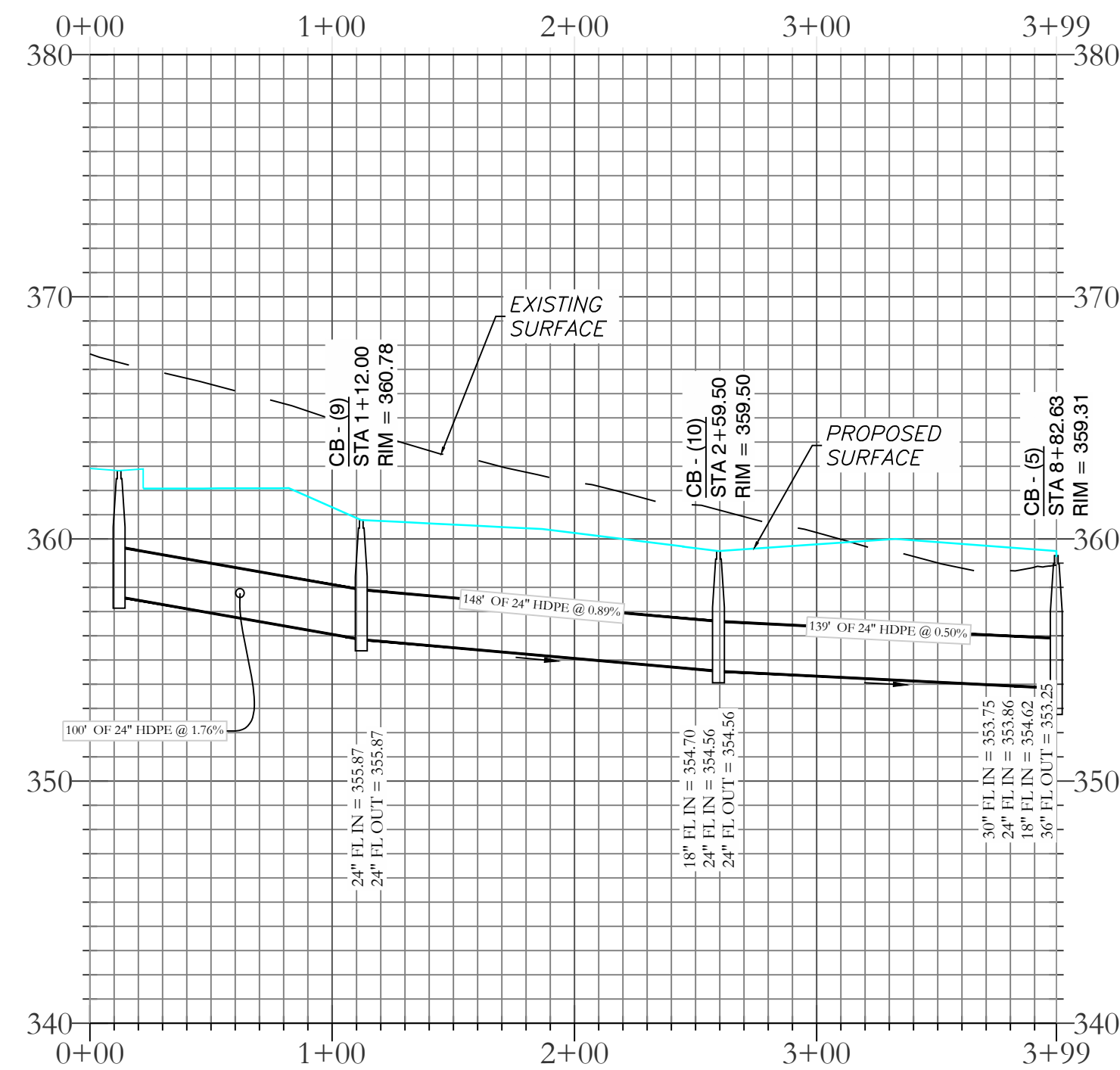
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DRAINAGE PLAN
BRYANT, SALINE COUNTY, ARKANSAS

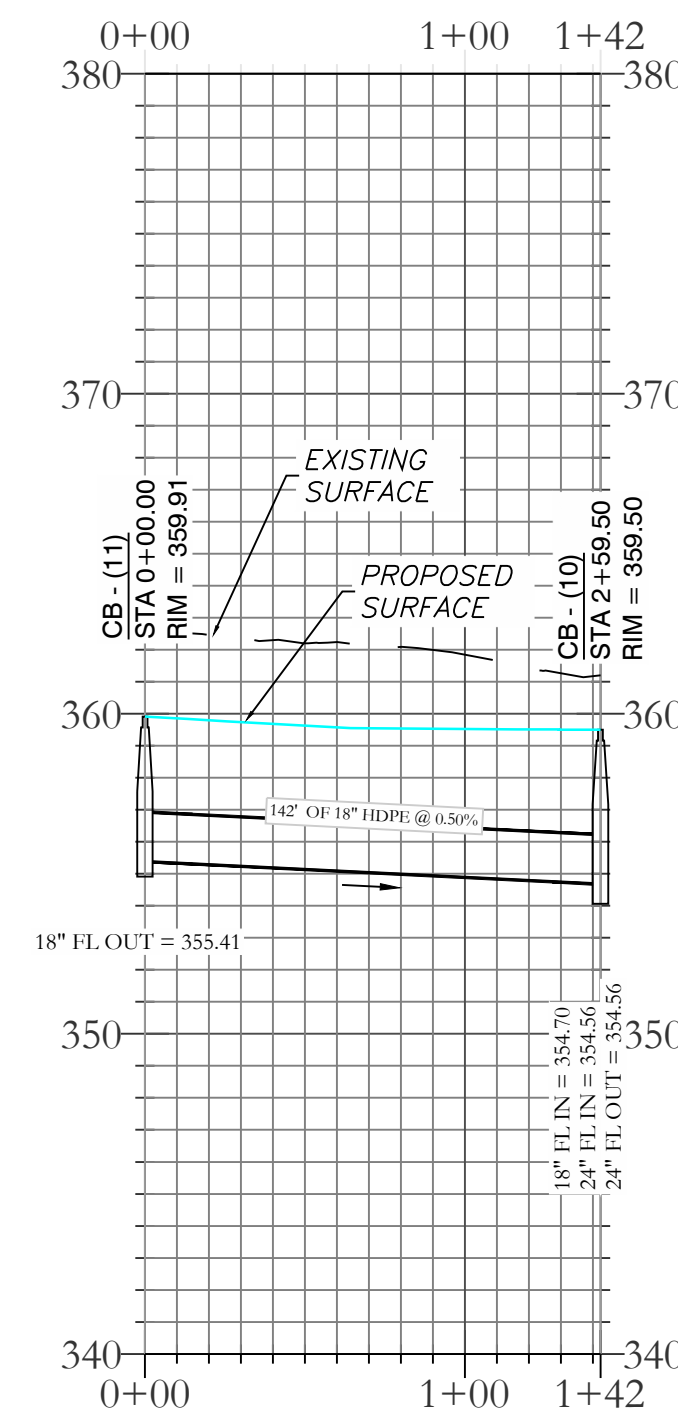
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REVISED:	CHECKED BY:	22-0800
SHEET: C-5.2	SCALE:	
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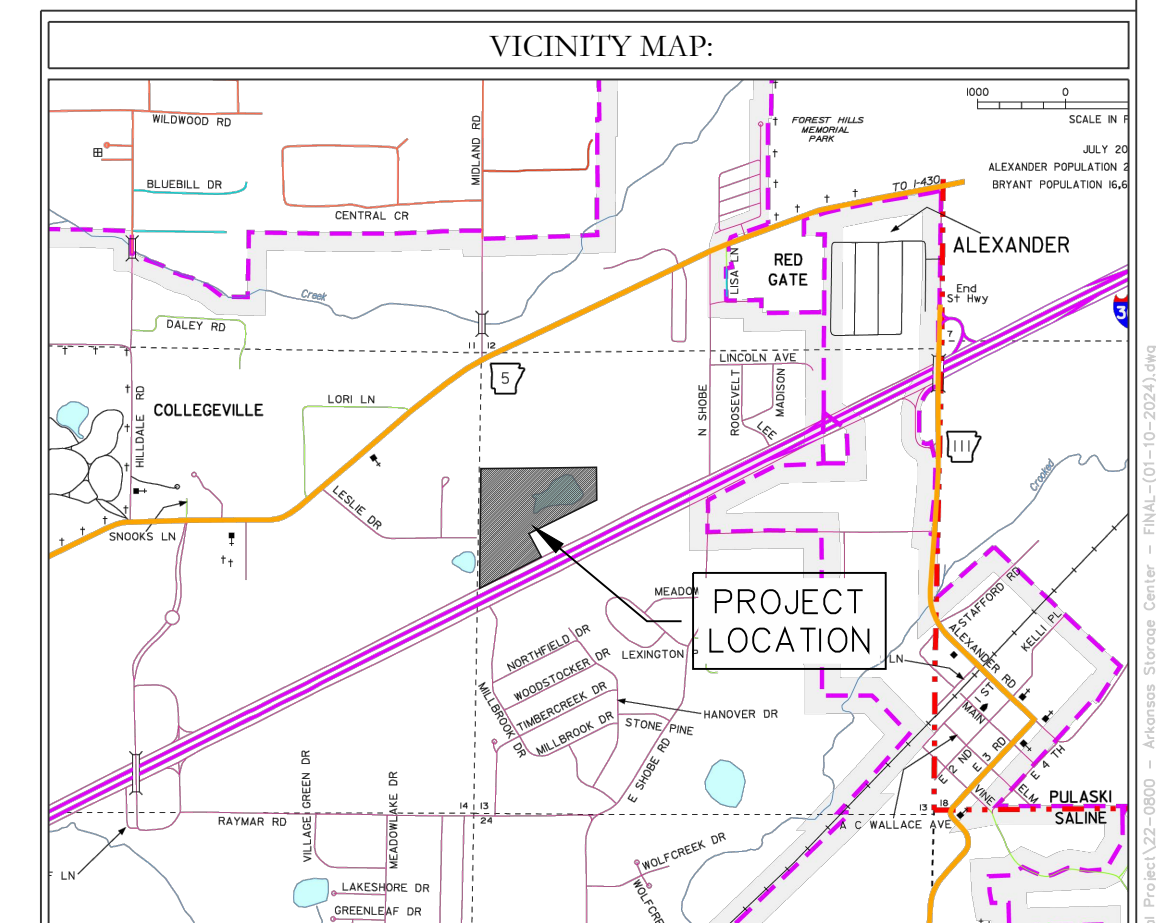
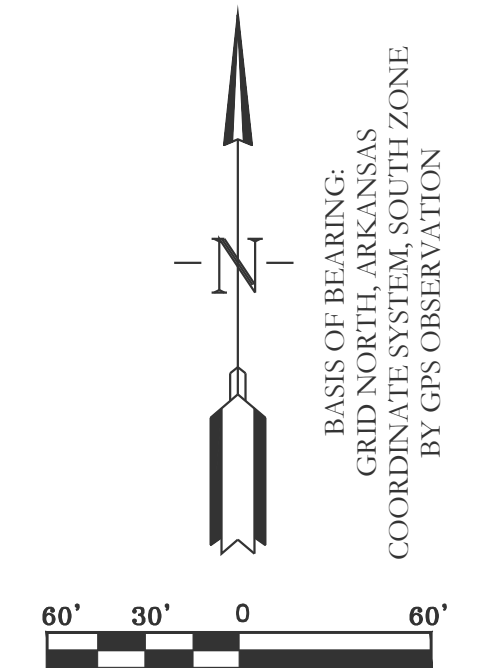
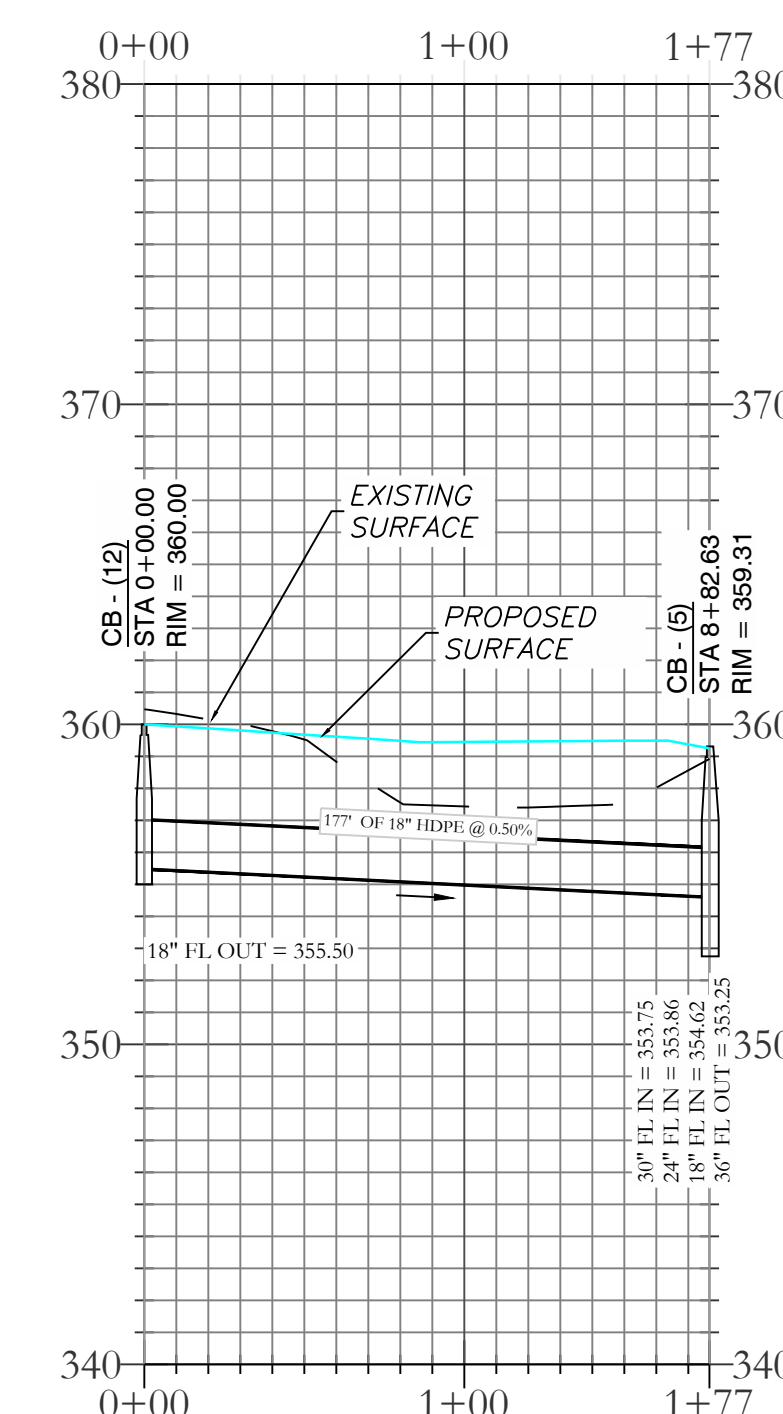
STORM WATER LINE 4 PROFILE



STORM WATER LINE 5 PROFILE



STORM WATER LINE 6 PROFILE



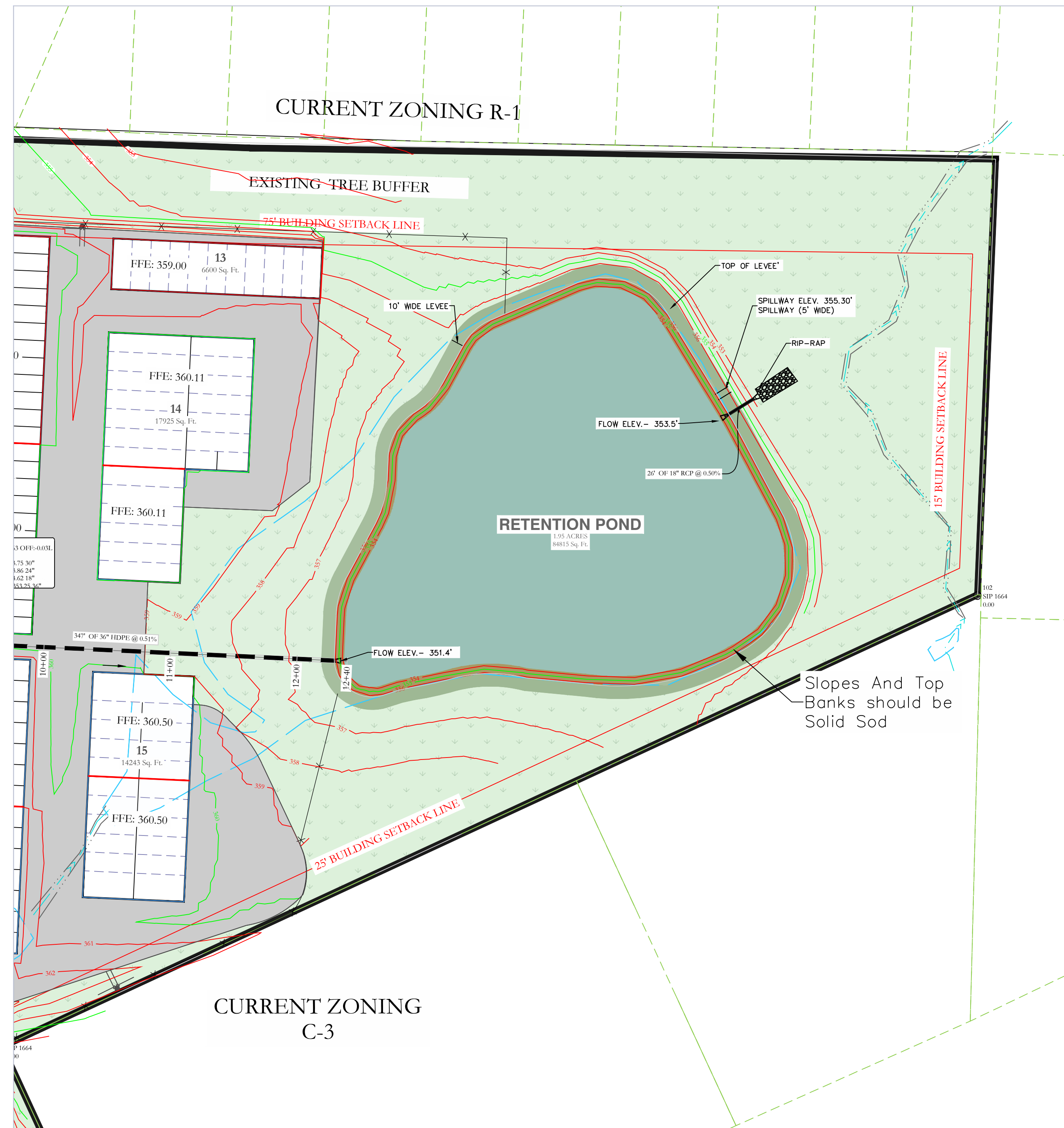
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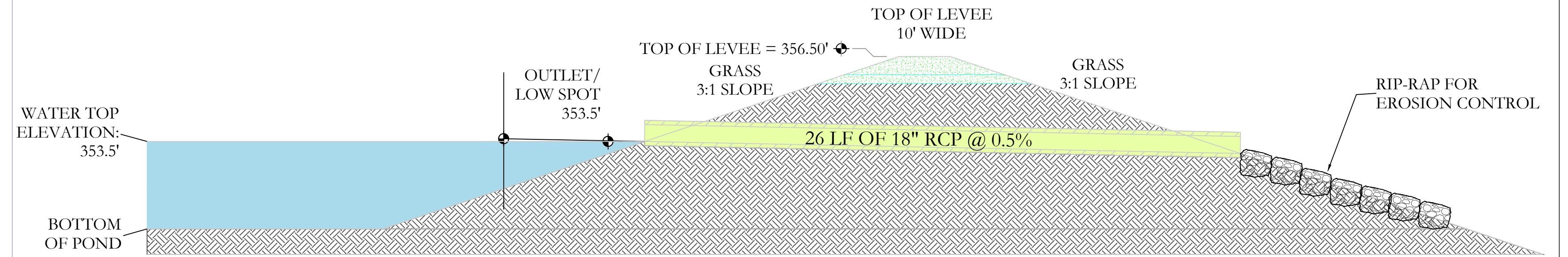
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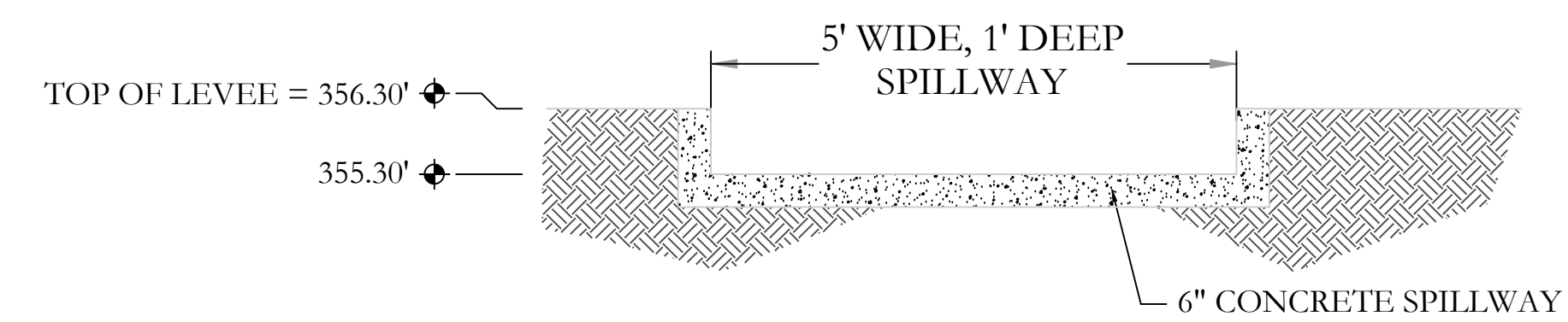
BASIS OF BEARING:
 CURVED SETBACKS
 COORDINATE SYSTEM SOUTH ZONE
 BY GPS OBSERVATION



WET POND OUTLET SECTION NTS



SPILLWAY END VIEW NTS



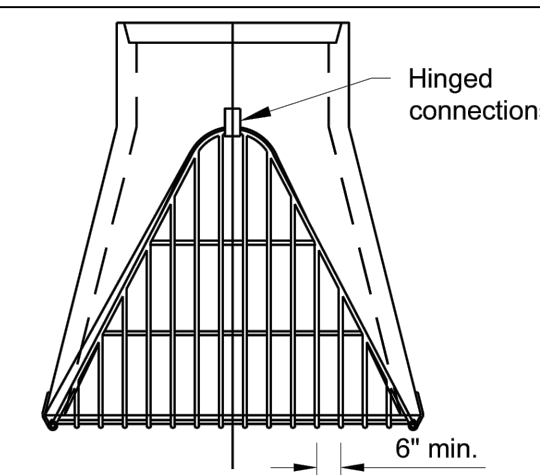
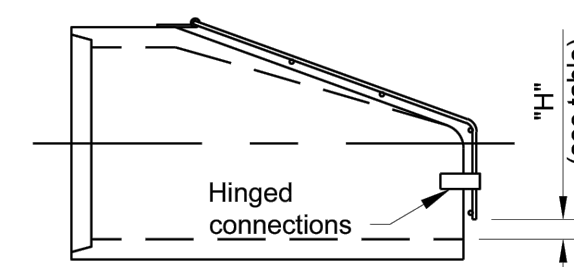
LEGEND

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

FLARED END SECTION TRASH RACK NTS

Notes:

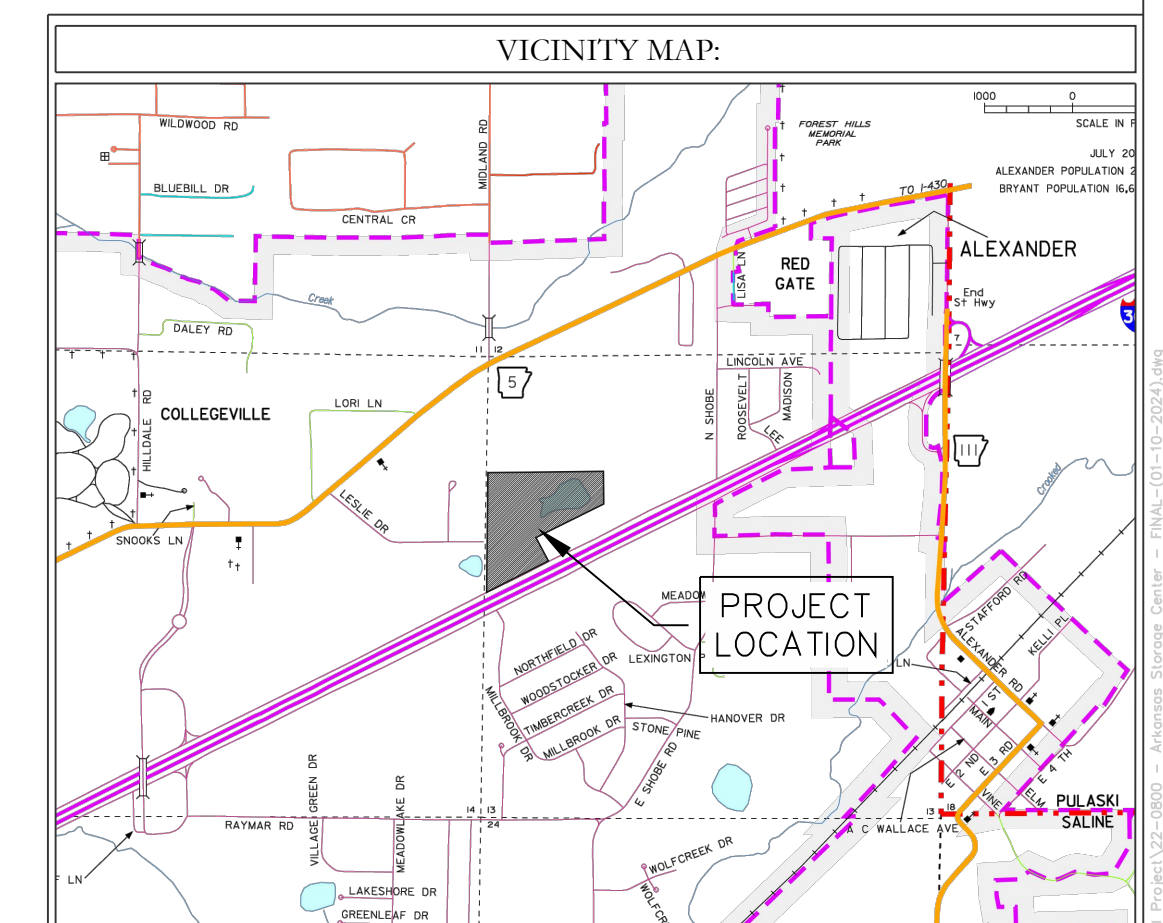
- All trash guards to have (1) cross bar 60" dia. and up to have (2) bars equally spaced.
- Hot dip galvanized per MNDOT 3392 or ASTM-A153.
- Tie last 3 pipe joints. Use 2 bolt fasteners per joint. Install at 60" from top of bottom of pipe.



	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"	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"	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"			
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.

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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

Pre-Development time of Concentration

* (A-B) Overland Flow, t_{oc} :

$$t_i = \frac{0.93[NL]^{0.447}}{S^{0.77}}$$

$$t_i = \frac{0.93[0.4(58.4)]^{0.447}}{(0.047)^{0.77}}$$

$$t_i = 16.7 \text{ min}$$

$n = 0.040$
(Positive average, grass cover)
 $L = 58 \text{ ft}$
 $S = 0.047$

* (B-C) Shallow Concentrated Flow, t_{oc} :

$$V_{c \text{ unpaired}} = 16.1345 (S)^{0.5}$$

$$V_{c \text{ unpaired}} = 16.1345 (0.021)^{0.5}$$

$$V_{c \text{ unpaired}} = 2.34 \text{ ft/s}$$

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

$$t_{sh} = 2.92 \text{ min}$$

$L = 409 \text{ ft}$
 $S = 0.021$
 $V_{c \text{ unpaired}} = 16.1345 (0.021)^{0.5}$
 $V_{c \text{ unpaired}} = 2.34 \text{ ft/s}$



Pre-Development time of Concentration

* (C-D) Open channel flow #1, t_{oc} :

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

$$V_c = \frac{1.49 (0.36)^{2/3} (0.033)^{1/2}}{0.019}$$

$$V_c = 7.21 \text{ ft/s}$$

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

$$T_c = 0.18 \text{ min}$$

$n = 0.019$
 $L = 77 \text{ ft}$
 $S = 0.033$
 $r = 0.36$

* (D-E) Open channel flow #2, t_{oc} :

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

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

$$V_c = 10.72 \text{ ft/s}$$

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

$$T_c = 0.32 \text{ min}$$

$n = 0.019$
 $L = 208 \text{ ft}$
 $S = 0.030$
 $r = 0.70$

Pre-Development time of Concentration

* Open Channel Flow #3, t_{oc} :

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

$$V_c = \frac{1.49 (0.45)^{2/3} (0.020)^{1/2}}{0.009}$$

$$V_c = 6.53 \text{ ft/s}$$

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

$n = 0.019$
 $L = 172 \text{ ft}$
 $S = 0.020$
 $R = 0.45$

* Open Channel Flow #4, t_{oc} :

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

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

$$V_c = 4.84 \text{ ft/s}$$

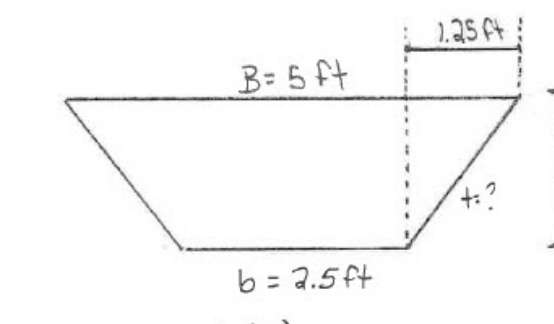
$$T_c = \frac{L}{60(V)} = \frac{361 \text{ ft}}{60(4.84 \text{ ft/s})} = 1.24 \text{ min}$$

$n = 0.019$
 $L = 361 \text{ ft}$
 $S = 0.010$
 $R = 0.49$

∴ Pre-Dev. TOC = 16.7 min + 2.92 min + 0.18 min + 0.32 min + 0.44 min + 1.24 min = 21.8 min

Pre-Development time of Concentration

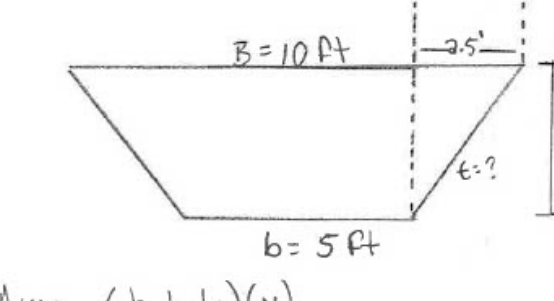
Open Channel Cross Sectional Area #1:



$$\text{Area} = (b + ty)(y) = (2.5 + (2.5)(0.5))(0.5) = 1.88 \text{ ft}^2$$

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

Open Channel Flow Cross Sectional Area #2:

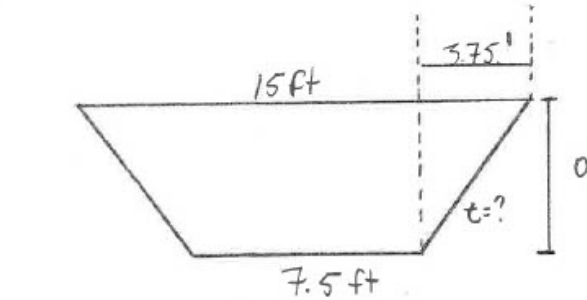


$$\text{Area} = (b + ty)(y) = (5 + (2.5)(0.97))(0.97) = 7.28 \text{ ft}^2$$

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

Pre-Development time of Concentration

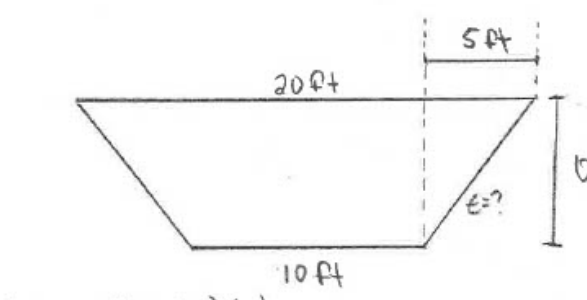
Open Channel Flow Cross Sectional Area #3:



$$\text{Area} = (b + ty)(y) = (7.5 + (4.2)(0.61))(0.61) = 6.88 \text{ ft}^2$$

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

Open channel flow Cross Sectional Area #4:



$$\text{Area} = (b + ty)(y) = (10 + (7.69)(0.65))(0.65) = 9.75 \text{ ft}^2$$

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

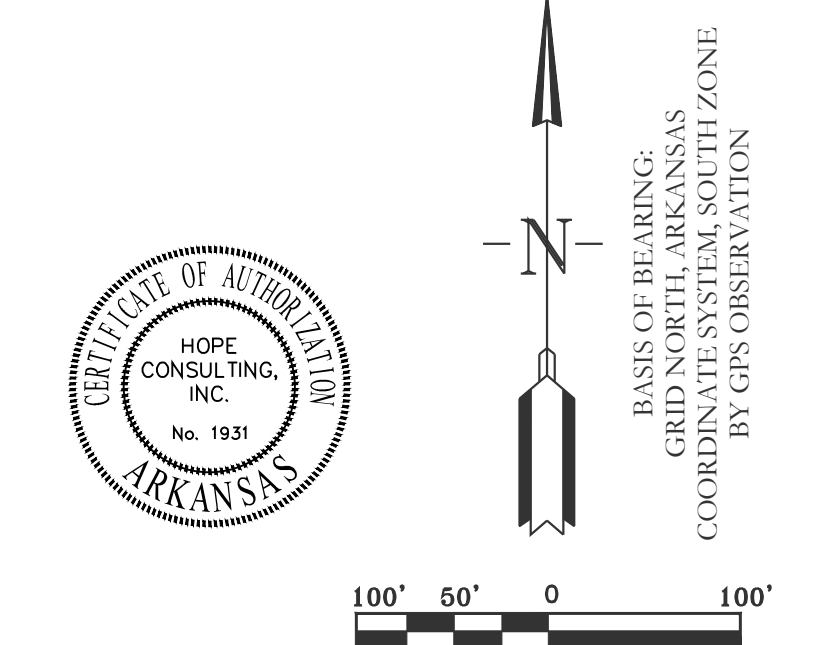
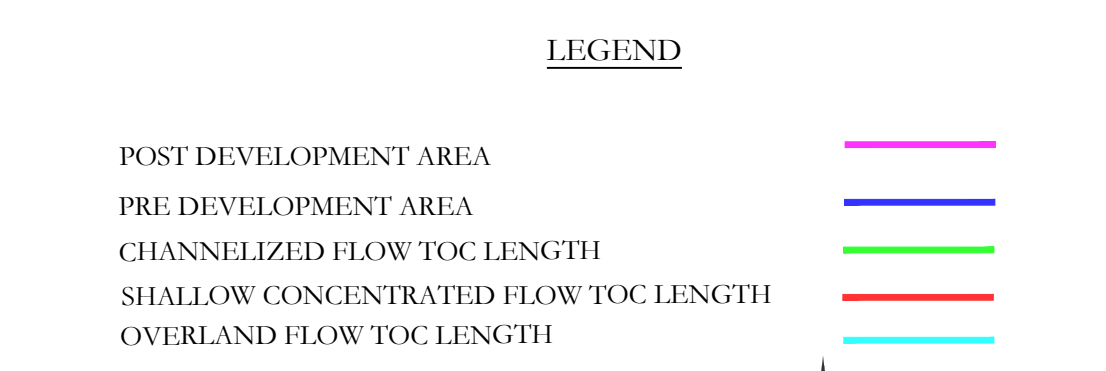
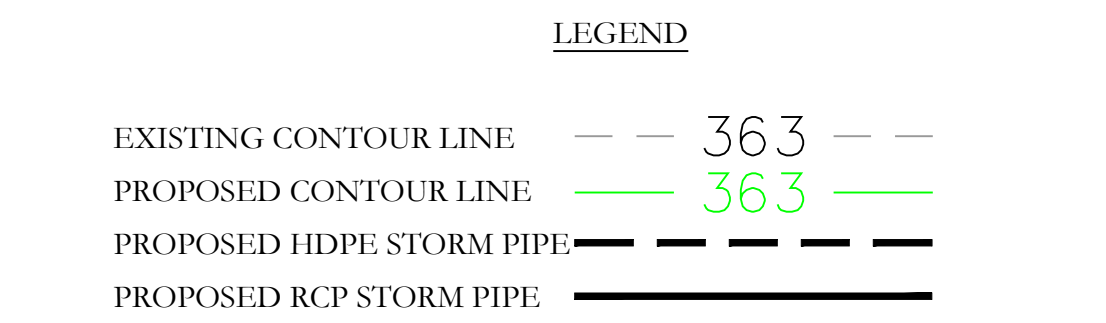
Reach	Description of Flow	n	Length (ft)	Slope (ft/ft)	Cross. Area (sqft)	Wetted Perimeter (ft)	Hydraulic Radius	Velocity (ft/s)	Travel Time (min)
A-B	Overland	0.4	58.40	0.047				2.34	16.68
B-C	Shallow Flow		409.00	0.021				7.21	2.92
C-D	Open Channel #1	0.019	77.00	0.033	1.88	5.19	0.36	7.21	0.18
D-E	Open 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=21.8 min=22 min



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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" = 10'	
500	01S	14W 0 21 300 62 1762

Post-Development Time of Concentration

#22-0900
1/23/2024

Post-Development Time of Concentration

#22-0900
1/23/24

Post-Development Time of Concentration

#22-0900
1/23/24

*(A-B) Overland Flow, t_{oc} :

$$t_i = \frac{0.85 \left[\frac{NL}{S^{0.5}} \right]^{0.47}}{S^{0.5}}$$

$$t_i = \frac{0.85 \left[\frac{(0.02)(51.3)}{(0.045)^{0.5}} \right]^{0.47}}{(0.045)^{0.5}}$$

$$t_i = 3.96 \text{ min}$$

$n = 0.02$
(Smooth & Impervious)
 $L = 51.3 \text{ ft}$
 $S = 0.045$

*(B-C) Shallow Concentrated Flow, t_{oc} :

$$V_{paved} = 20.3282 (S)^{0.5}$$

$$V_{ps} = 20.3282 (0.02)^{0.5}$$

$$V_{paved} = 2.87 \text{ ft/s}$$

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

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

$$t_i = 1.48 \text{ min}$$

$L = 256 \text{ ft}$
 $S = 0.02$

*(C-D) 18" HDPE Pipe Channelled Flow, t_{oc} :

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

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

$$V_c = 4.55 \text{ ft/s}$$

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

$$t_i = \frac{302 \text{ ft}}{60(4.55 \text{ ft/s})} = 1.11 \text{ min}$$

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

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

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

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

$$V_c = 7.74 \text{ ft/s}$$

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

$$t_i = \frac{296 \text{ ft}}{60(7.74 \text{ ft/s})} = 0.64 \text{ min}$$

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

*(D-E) 24" HDPE Pipe Channelled Flow, t_{oc} :

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

$$V_c = \frac{1.49 (0.5)^{2/3} (0.010)^{1/2}}{0.012}$$

$$V_c = 7.92 \text{ ft/s}$$

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

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

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

*(E-F) 24" HDPE Pipe Channelled Flow, t_{oc} :

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

$$V_c = \frac{1.49 (0.5)^{2/3} (0.004)^{1/2}}{0.012}$$

$$V_c = 8.18 \text{ ft/s}$$

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

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

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

*(G-H) HDPE Pipe Channelled Flow

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

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

$$V_c = 7.24 \text{ ft/s}$$

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

$$t_i = \frac{347 \text{ ft}}{60(7.24 \text{ ft/s})} = 0.80 \text{ min}$$

$n = 0.012$
HDPE Manning's
 $L = 347 \text{ ft}$
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

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

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

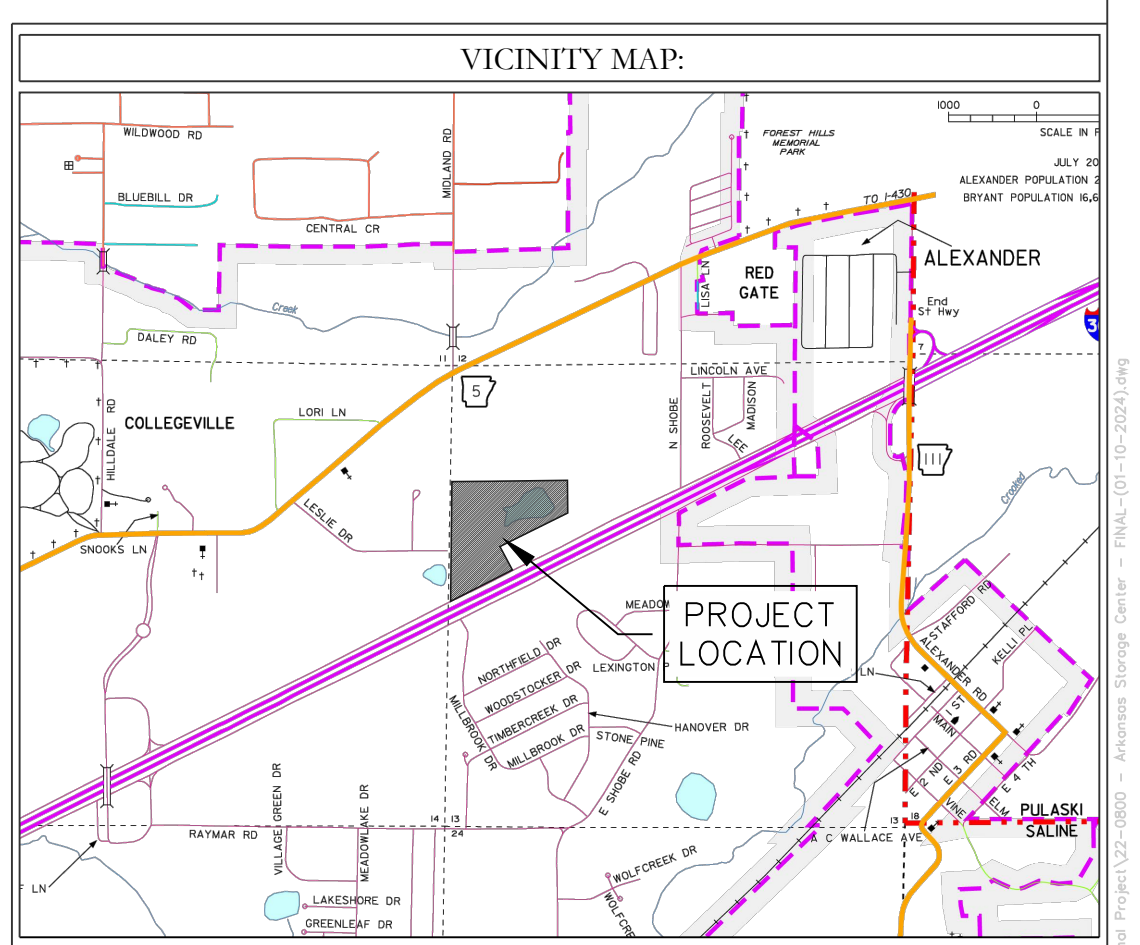
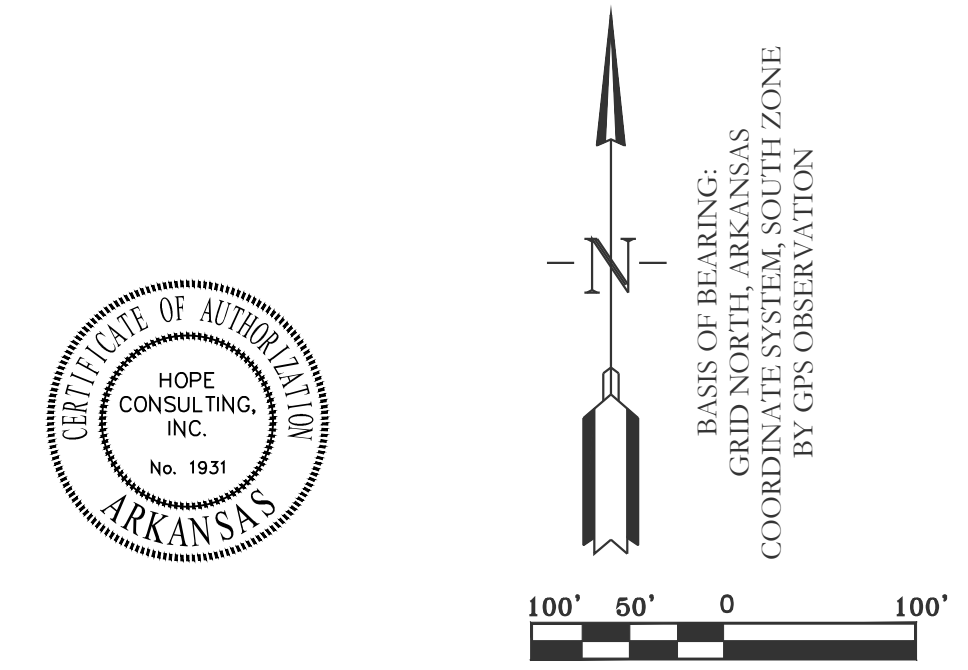


Post Development Drainage Calculations

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 = 8.58 min = 8.6 min



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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

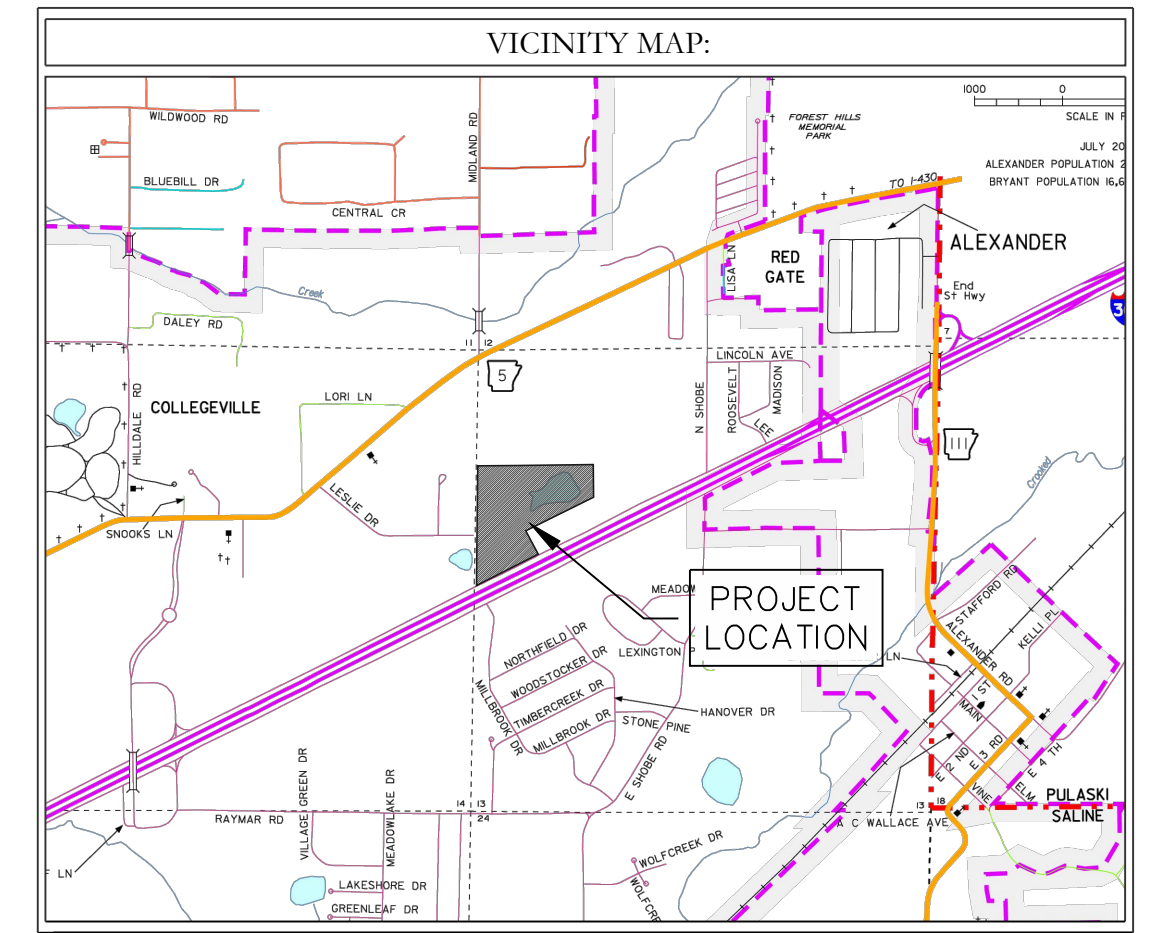
INLET SIZE CALCULATIONS:

For 25 yr:

SN	Element ID	Description	Inlet Manufacturer	Inlet Part	Inlet Location	Inlet Number	Catchbasin Invert	Max (Rim) Elevation	Max (Rim) Offset	Initial Water Elevation	Initial Water Depth	Ponded Area	Grate Clogging Factor	Roadway Longitudinal Slope	Roadway Cross Slope	Roadway Manning's	Gutter Cross Slope	Gutter Width	Gutter Depression	Median Ditch Longitudinal Slope	Median Ditch Bottom Width	Median Ditch Left Side Slope	Median Ditch Right Side Slope	Median Ditch Manning's	Median Ditch Peak Inflow	Peak Lateral Inflow	Peak Interceptor by Inlet	Peak Flow Efficiency	Inlet Spread during	Allowable Spread	Max Gutter during	Max Gutter Water Elev. during	Max Gutter Water Depth during	Time of Maximum Occurrence	Total Flooded Volume	Total Time Flooded
1	CB-(1)	1173461.18 2029030.25	FHWAHEC-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	7.00	1.00	366.13	0.13	0.00:00	0.00	0.00
14	CB-(9)	1173486.08 2029625.44	FHWAHEC-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	7.00	1.00	360.91	0.13	0.00:00	0.00	0.00

For 100 yr:

SN	Element ID	Description	Inlet Manufacturer	Inlet Part	Inlet Location	Inlet Number	Catchbasin Invert	Max (Rim) Elevation	Max (Rim) Offset	Initial Water Elevation	Initial Water Depth	Ponded Area	Grate Clogging Factor	Roadway Longitudinal Slope	Roadway Cross Slope	Roadway Manning's	Gutter Cross Slope	Gutter Width	Gutter Depression	Median Ditch Longitudinal Slope	Median Ditch Bottom Width	Median Ditch Left Side Slope	Median Ditch Right Side Slope	Median Ditch Manning's	Median Ditch Peak Inflow	Peak Lateral Inflow	Peak Interceptor by Inlet	Peak Flow Efficiency	Inlet Spread during	Allowable Spread	Max Gutter during	Max Gutter Water Elev. during	Max Gutter Water Depth during	Time of Maximum Occurrence	Total Flooded Volume	Total Time Flooded
1	CB-(1)	1173461.18 2029030.25	FHWAHEC-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	7.00	1.00	366.13	0.13	0.00:00	0.00	0.00
14	CB-(9)	1173486.08 2029625.44	FHWAHEC-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	7.00	1.00	360.91	0.13	0.00:00	0.00	0.00



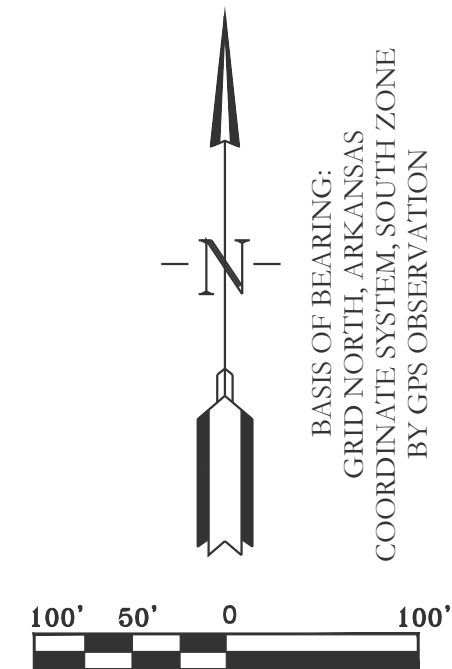
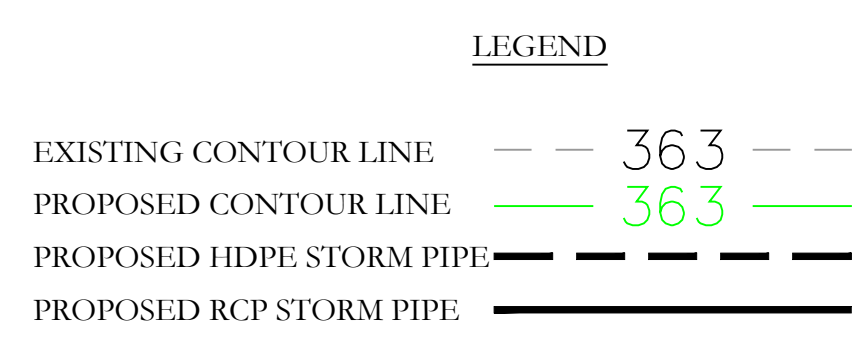
PIPE SIZE CALCULATIONS:

For 25 yr:

SN	Element ID	Description	From (Inlet Node)	To (Outlet Node)	Length	Inlet Invert Elevation	Inlet Invert Offset	Outlet Invert Elevation	Outlet Invert Offset	Total Invert Drop	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (inches)	Pipe Width	Manning's	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow	Flap Gate	Lengthening Factor	Peak Flow (cfs)	Time of Peak Flow Occurrence (days:h:mm)	Max Travel Time (min)	Design Capacity (cfs)	Max Flow/Design Ratio	Max Flow/Design Ratio	Max Total Depth (ft)	Max Surcharge (ft)	Total Time (min)	Max Reported Depth (ft)	Condition	
1	Pipe-(10)	CB-(5)	Out-1	Pipe-(10)	346.75	353.25	0.00	351.47	0.00	1.78	0.5100	CIRCULAR	36.00	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	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	30.00	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	0.00	0.00	0.00	0.00	Calculated

For 100 yr:

SN	Element ID	Description	From (Inlet Node)	To (Outlet Node)	Length	Inlet Invert Elevation	Inlet Invert Offset	Outlet Invert Elevation	Outlet Invert Offset	Total Invert Drop	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (inches)	Pipe Width	Manning's	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow	Flap Gate	Lengthening Factor	Peak Flow (cfs)	Time of Peak Flow Occurrence (days:h:mm)	Max Travel Time (min)	Design Capacity (cfs)	Max Flow/Design Ratio	Max Flow/Design Ratio	Max Total Depth (ft)	Max Surcharge (ft)	Total Time (min)	Max Reported Depth (ft)	Condition		
1	Pipe-(10)	CB-(5)	Out-1	Pipe-(10)	346.75	353.25	0.00	351.47	0.00	1.78	0.5100	CIRCULAR	36.00	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	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	30.00	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	0.00	0.00	0.00	0.00	0.00	Calculated



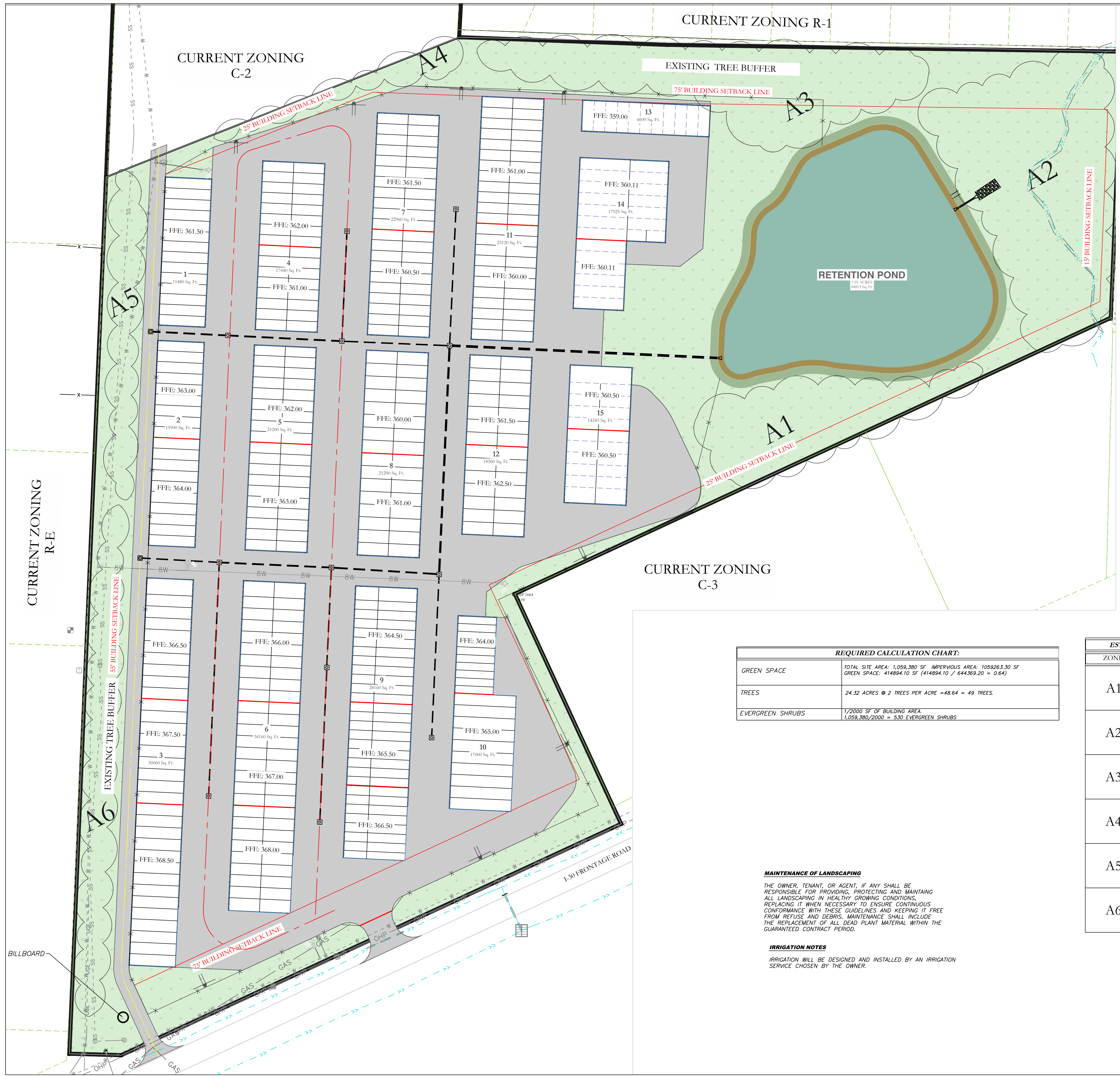
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FOR USE AND BENEFIT OF:
STUART FINLEY

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" = 10'	
500	01S	14W 0 21 300 62 1762



CURRENT ZONING R-1

CURRENT ZONING C-2

CURRENT ZONING C-3

CURRENT ZONING R-E

EXISTING TREE BUFFER

75' BUILDING SETBACK LINE

15' BUILDING SETBACK LINE

25' BUILDING SETBACK LINE

55' BUILDING SETBACK LINE

25' BUILDING SETBACK LINE

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

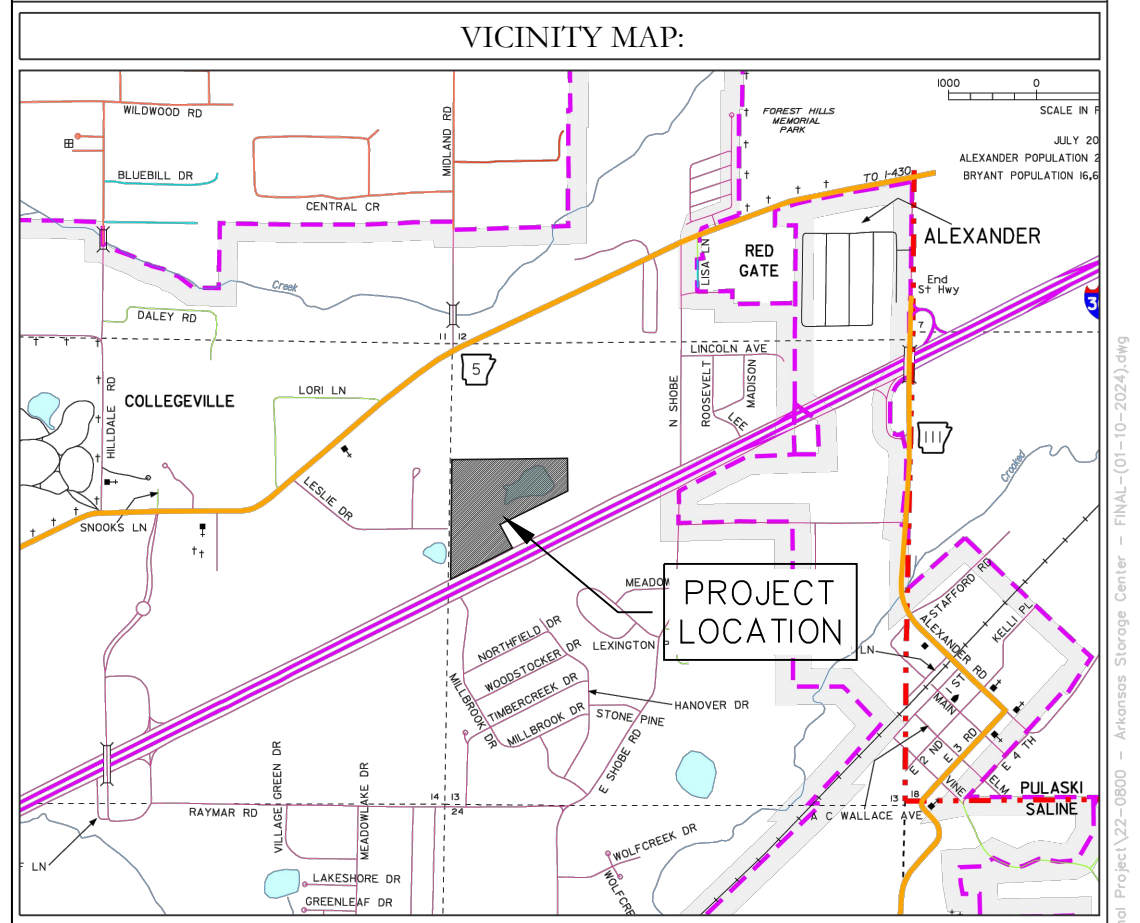
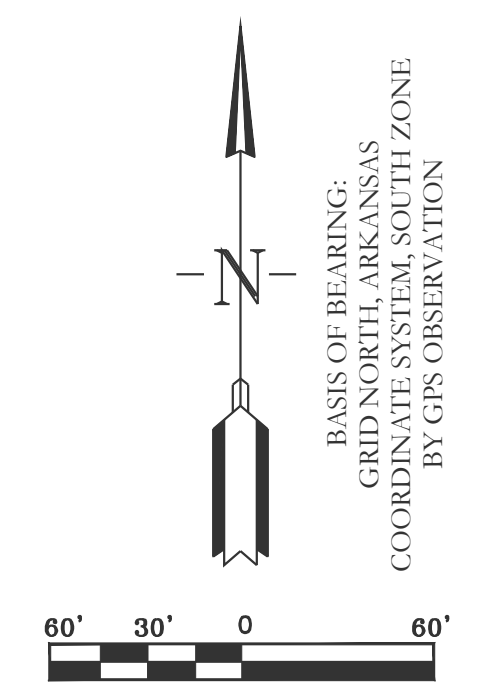
THE OWNER, TENANT, OR AGENT, IF ANY SHALL BE RESPONSIBLE FOR PROVIDING, PROTECTING AND MAINTAINING ALL LANDSCAPING IN HEALTHY GROWING CONDITIONS. REPLACING IT WHEN NECESSARY TO ENSURE CONTINUOUS CONFORMANCE WITH THESE GUIDELINES AND KEEPING IT FREE FROM REFUSE AND DEBRIS. MAINTENANCE SHALL INCLUDE THE 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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BENTON, AR 72015
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EMAIL: kazi@hopeconsulting.com

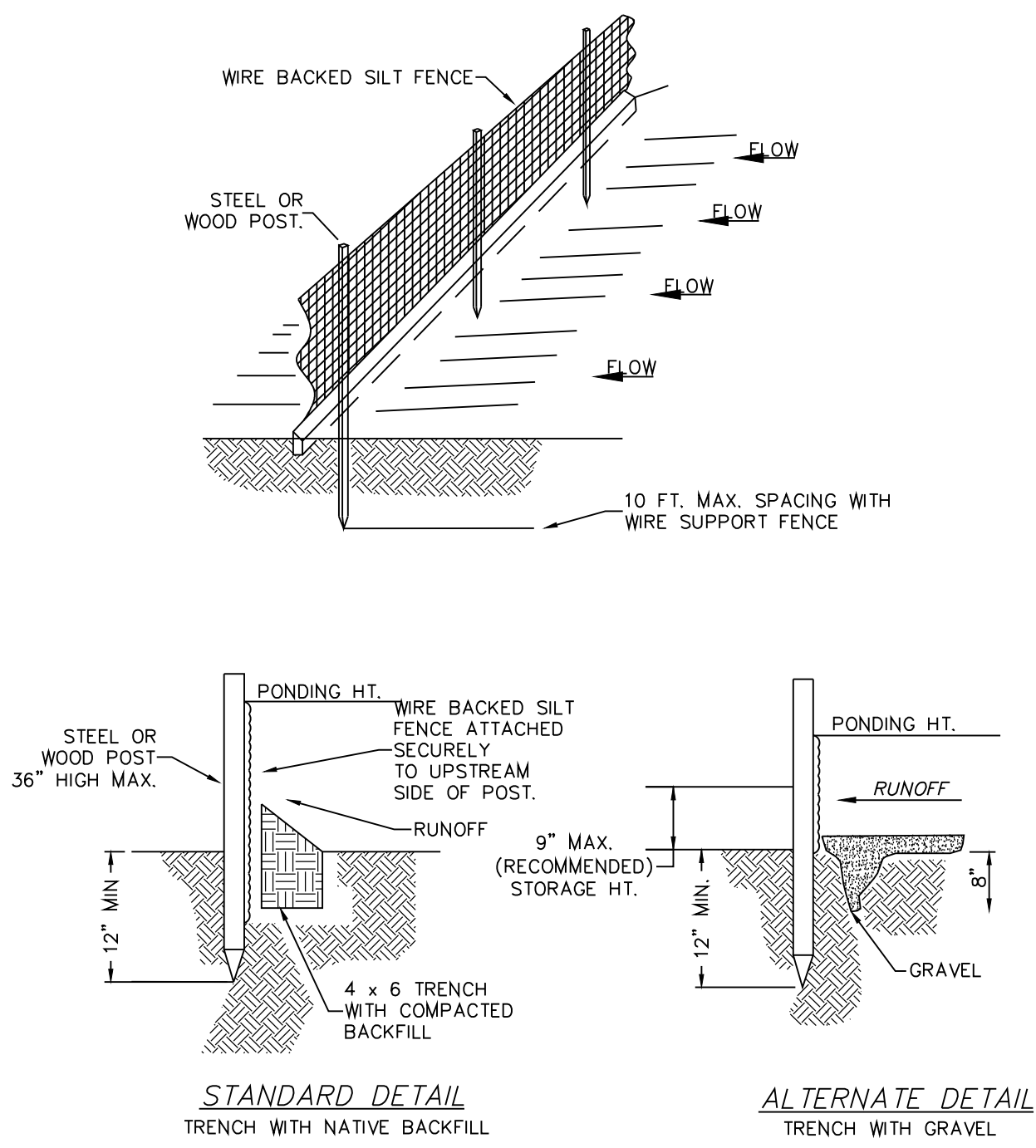


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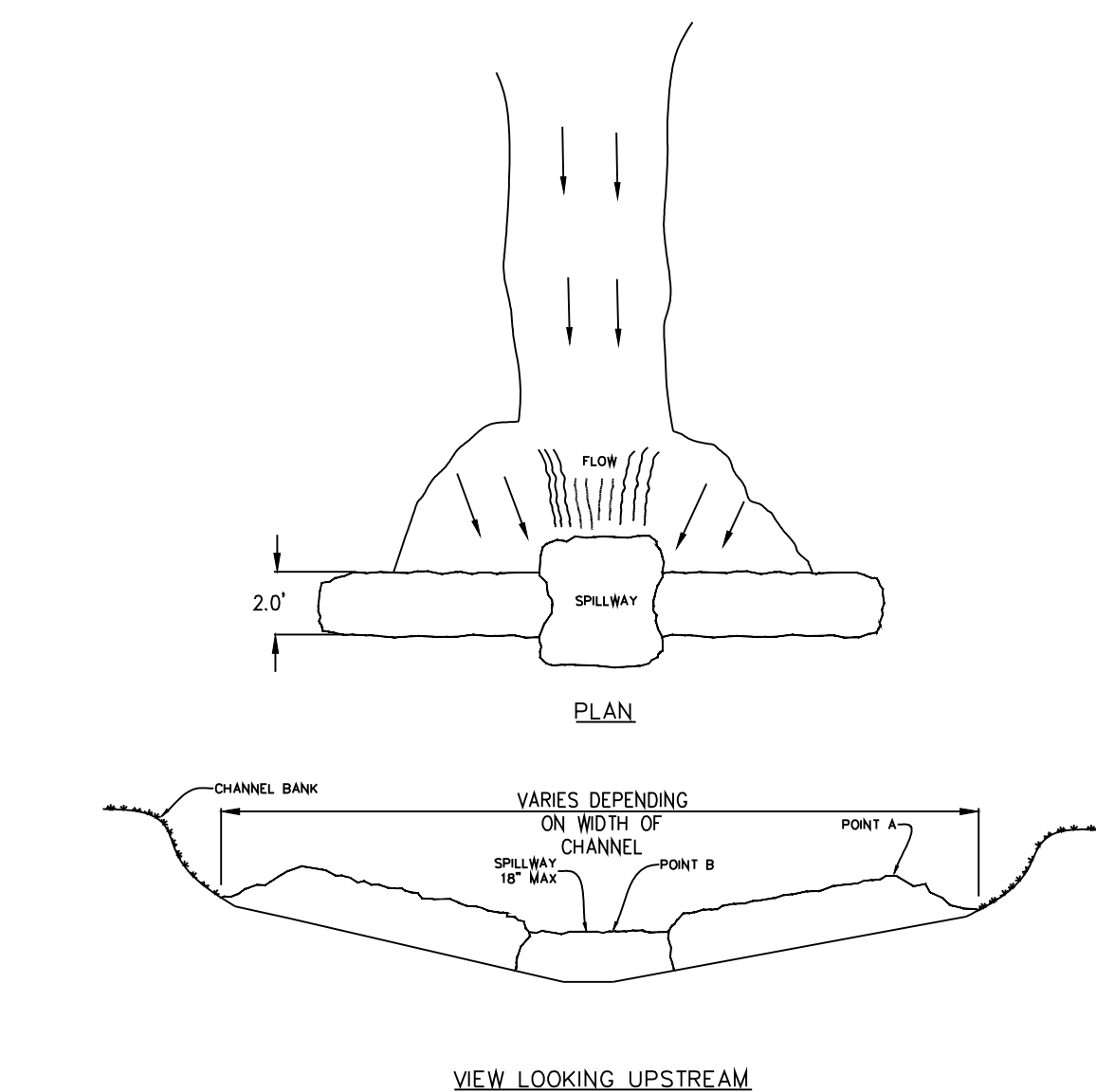
FOR USE AND BENEFIT OF:
STUART FINLEY
ARKANSAS STORAGE CENTER
LANDSCAPE PLAN
BRYANT, SALINE COUNTY, ARKANSAS

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



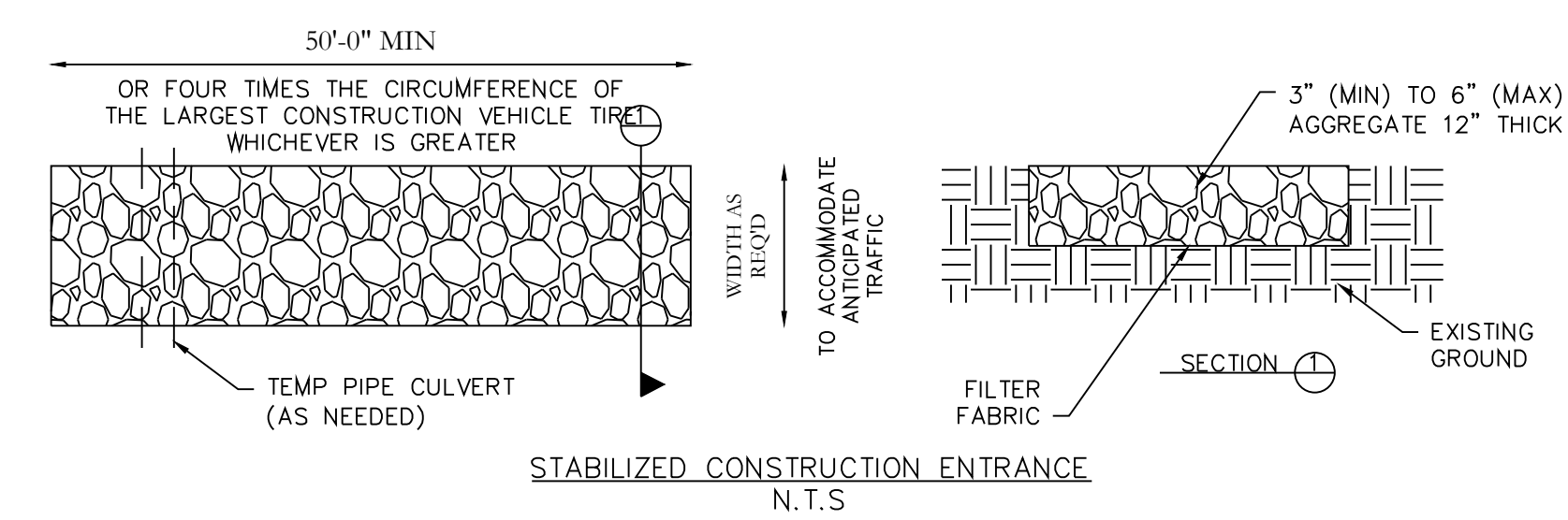
- NOTE:
- 1.) INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
 - 2.) REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
 - 3.) SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
 - 4.) USE ONLY WIRE BACKED SILT FENCE.

SILT FENCE



- NOTE:
- 1.) POINT 'A' MUST BE HIGHER THAN POINT 'B' (SPILLWAY HEIGHT)
 - 2.) PLACE RIP-RAP BARRIERS PERPENDICULAR TO THE FLOW WITH RIGHT GROUPING. USE STRAIN, ROCKS, OR FIBER FABRIC TO THE FLOW SIDE OF THE DAM. SPECIFY MATERIAL TO PREVENT EROSION ON FLOW SIDE OF THE DAM.
 - 3.) SPILLWAY HEIGHT SHALL NOT EXCEED 18"-24".
 - 4.) INSPECT AFTER EACH SIGNIFICANT STORM, MAINTAIN AND REPAIR PROMPTLY.

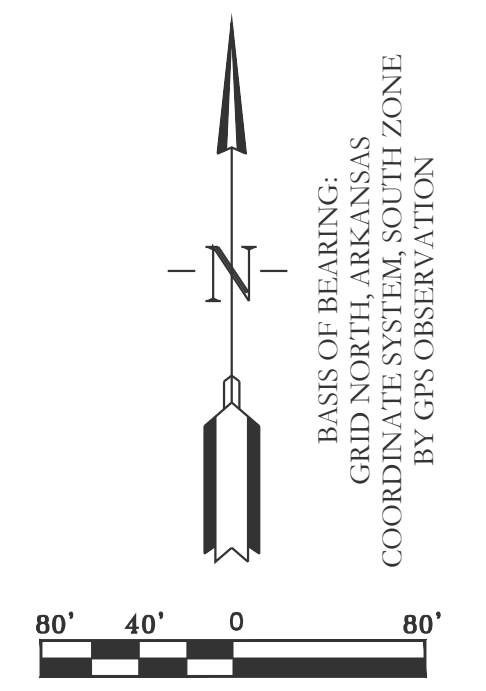
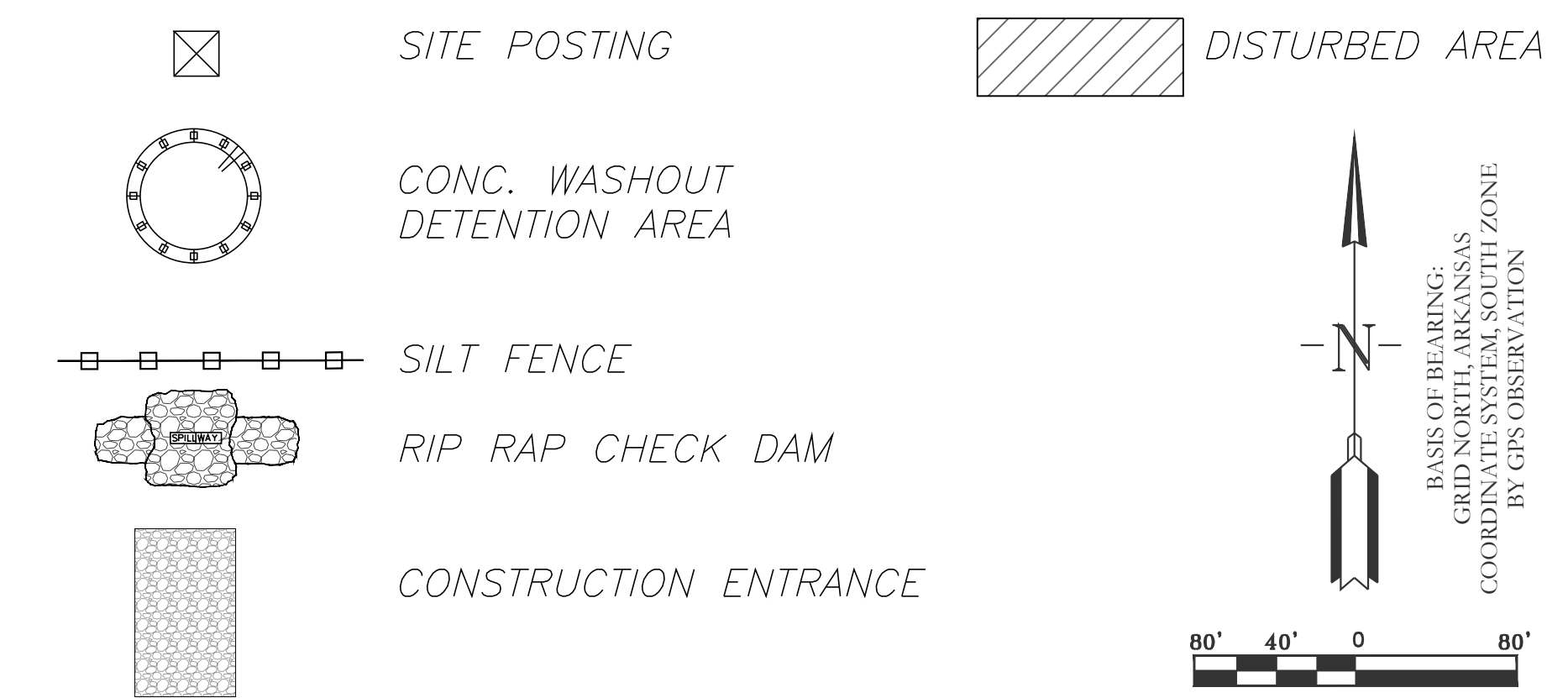
RIP-RAP CHECK DAM



STABILIZED CONSTRUCTION ENTRANCE
N.T.S.



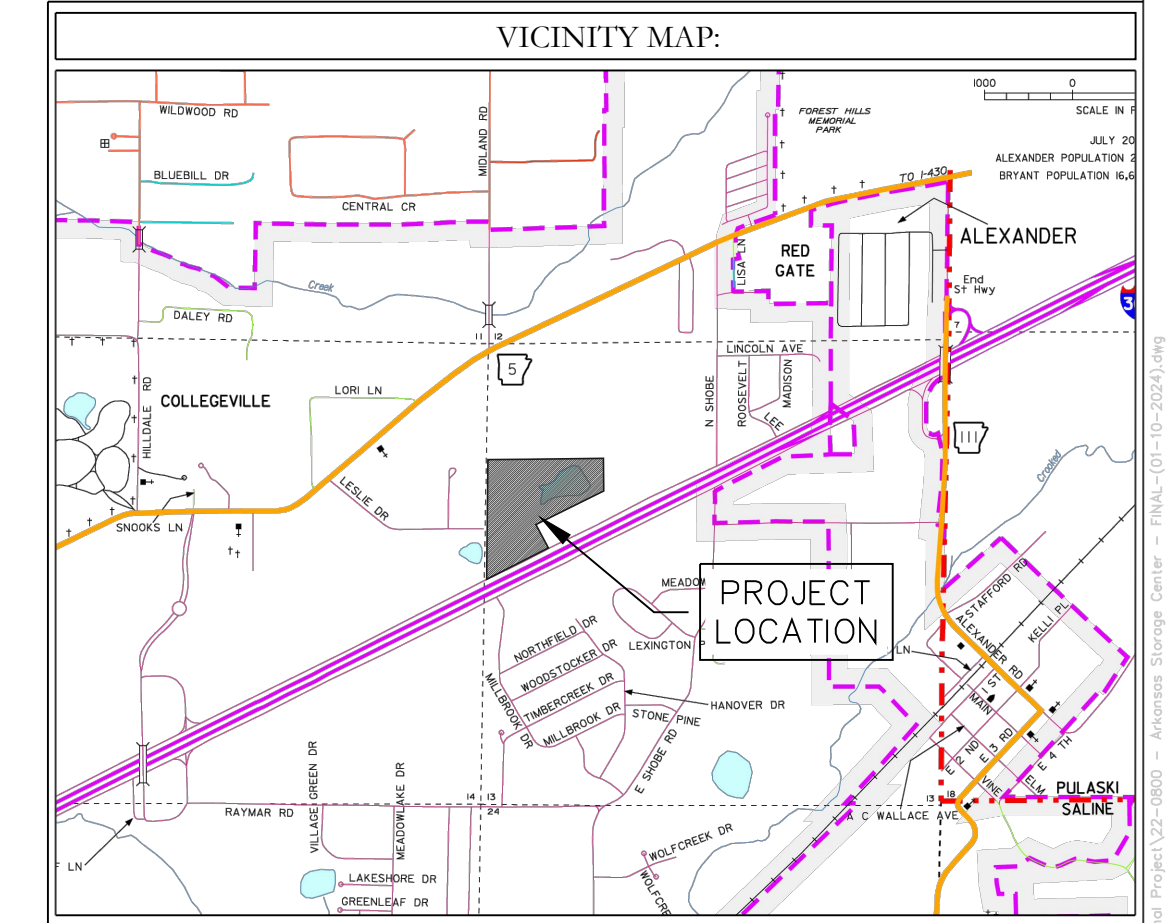
ERC LEGEND



EROSION CONTROL NOTES

SOD DETENTION AREA POST-CONSTRUCTION IS REQUIRED
 MAXIMUM SLOPE OF 3H:1V ON DETENTION POND LEVES
 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.

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FOR USE AND BENEFIT OF: STUART FINLEY			
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