

Bryant Development and Review Committee Meeting

 $Boswell\ Municipal\ Complex\ -\ City\ Hall\ Conference\ Room$

210 SW 3rd Street

Date: April 27, 2023 - **Time:** 9:11 AM

Call to Order

Old Business

New Business

1. Boutique and Eyelash Salon - 2112 Brandon Road - Site Plan

Michael Bolin - Requesting Site Plan Approval

- 0706-PLN-02.pdf
- 0706-APP-01.pdf

2. Hilldale Crossing PH 2 - Final Plat

Hope Consulting - Requesting Recommendation for Final Plat Approval

- 0689-APP-01.pdf
- · 0689-SWB-01.pdf
- <u>0689-ASB-02.pdf</u>
- <u>0689-ADH-01.pdf</u>
- <u>0689-ASB-01.pdf</u>
- <u>0689-PLT-01.pdf</u>
- 0689-LTR-01.pdf

3. Cypress Valley PH 2 - Final Plat

Hope Consulting - Requesting Recommendation for Final Plat Approval

- 0658-AHD-01.pdf
- 0658-PLN-03.pdf
- <u>0658-ASB-01.pdf</u>
- 0658-BOA-01.pdf
- <u>0658-LTR-01.pdf</u>
- 0658-MTN-01.pdf
- <u>0658-BND-01.pdf</u>

4. Midland Road Estates - Preliminary Plat

Hope Consulting - Requesting Recommendation for Preliminary Plat Approval

- <u>0691-RSP-01.pdf</u>
- 0691-SWP-02.pdf
- 0691-DRN-02.pdf
- · 0691-PLN-02.pdf
- <u>0691-GTR-01.pdf</u>

- 0691-SWB-01.pdf
- 0691-MTN-01.pdf
- · 0691-LTR-01.pdf

5. Hilltop Landing Subdivision - Preliminary Plat

Hope Consulting - Requesting Recommendation for Preliminary Plat Approval

- · 0690-SWB-01.pdf
- 0690-MTN-01.pdf
- · 0690-DRN-02.pdf
- <u>0690-SWP-01.pdf</u>
- 0690-PLN-02.pdf
- <u>0690-RSP-01.pdf</u>
- <u>0690-DRN-01.pdf</u>
- 0690-LTR-01.pdf

6. Farr Subdivision - Johnswood Road

Hope Consulting - Requesting Recommendation for Subdivision Plat Approval

• 0715-PLN-01.pdf

7. Coral Ridge Subdivision - Setback Variances - Lots 1, 7, 11, 15, 16, 24, 28

Hope Consulting - Requesting Recommendation for Approval of Variances on Setbacks

- LOT 15 VAR-PACKET CORAL RIDGE (1).pdf
- LOT 1 VAR-PACKET CORAL RIDGE.pdf
- LOT 7 VAR-PACKET CORAL RIDGE.pdf
- LOT 11 VAR-PACKET CORAL RIDGE.pdf
- LOT 16 VAR-PACKET CORAL RIDGE.pdf
- LOT 24 VAR- PACKET CORAL RIDGE.pdf
- LOT 28 VAR-PACKET CORAL RIDGE.pdf

8. Starbucks - 20701 I-30 - Remodel

WD Partners - Requesting Site Plan Approval for Remodel

• 0716-PLN-01.pdf

Staff Approved

9. Cynergy Kids Pediatric Therapy - 3417 Market Place Ave - Sign Permit

L Graphics - Requesting Sign Permit Approval - STAFF APPROVED

• <u>0712-APP-01.pdf</u>

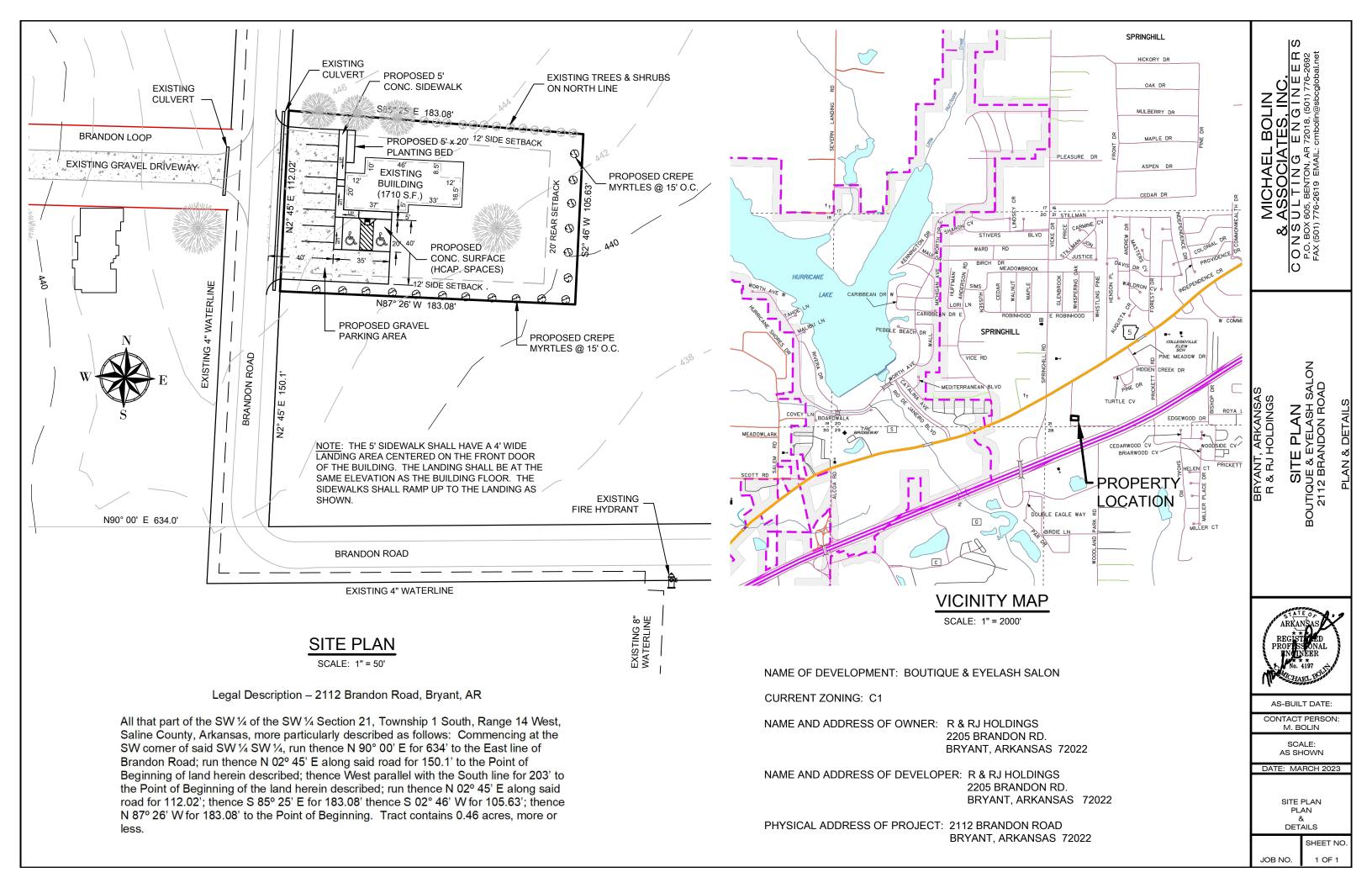
10. Farmers Union Insurance - 3417 Market Place Ave - Sign Permit

 $L\ Graphics - Requesting\ Sign\ Permit\ Approval - STAFF\ APPROVED$

• 0711-APP-01.pdf

Permit Report

Adjournments





SMALL SCALE DEVELOPMENT COMMERCIAL BUILDING CHECKLIST

CITY OF BRYANT 210 SW 3RD STREET BRYANT, AR 72022 501-943-0309

PC MEETING DATE:

THURSDAY OF EACH WEEK

TIME:

9:00 A.M.

PLACE:

ADMINISTRATION CONFERENCE ROOM-BRYANT OFFICE

COMPLEX

AGENDA DEADLINE:

5:00 P.M. FRIDAY PRIOR TO SCHEDULED MEETING DATE

REQUIREMENTS FOR SUBMISSION

- 1. COMPLETED CHECKLIST (SUBDIVISION OR BUILDING)
- 2. ADA/ABA FORM COMPLETED
- 3. Two full sets of Building Plans
- 4. 12 FOLDED COPIES OF SITE PLAN (MINIMUM SIZE 17" X 34") THAT INCLUDES THE FOLLOWING:
 - A. VICINITY MAP
 - B. LEGAL DESCRIPTION
 - C. LANDSCAPING PLAN
- 5.' 12 FOLDED COPIES OF FLOOR PLAN
- 6. 12 COPIES OF FRONT AND REAR BUILDING ELEVATIONS
- 7. A CD IN .PDF FORMAT
- 8. COPY OF ADEQ STORMWATER POLLUTION PREVENTION PLAN FOR PROPERTY PARCEL CONTAINING ONE ACRE OR LARGER.
- 9. 2 COPIES OF STORMWATER DETENTION PLAN
- 10. \$250.00 FOR STORMWATER DETENTION AND DRAINAGE PLAN REVIEW

ALL REQUIREMENTS LISTED ABOVE MUST BE COMPLETED AND ATTACHED BEFORE SUBMITTING APPLICATION TO BE PLACED ON THE PLANNING COMMISSION AGENDA.

NOTE: When MAKING CHANGES TO AN APPROVED SITE PLAN, A REVISED SITE PLAN MUST BE SUBMITTED TO THE BRYANT PLANNING COMMISSION FOR APPROVAL. THIS MUST BE DONE PRIOR TO IMPLEMENTATION. FAILURE TO COMPLY WILL RESULT IN PENALTIES/FINES BEING IMPOSED IN ACCORDANCE WITH CITY ORDINANCES.

I HAVE COMPLIED WITH THE REQUIREMENTS LISTED ABOVE AND HAVE CHECKED ALL OF THE BOXES ON THE CHECKLIST WHICH APPLY TO THIS PROJECT SUBMITTAL.

SIGNATURE

DATE

City of Bryant Commercial Building Checklist

Site Loca	ation 2-112 BRANDON ROAD Current zoning C-1
Owner_	Phone
I. BASIC	INFORMATION NEEDED ON THE SITE PLAN
1.	Name of Development
2.	Current zoning
3.	Name and Address of owner of Record
4.	Name and address of the architect, landscape architect, engineer, surveyor, or other person involved in the preparation of the plan
5.	Date of preparation of the plan
6.	Vicinity map locating streets, highways, section lines, railroad, schools, & parks within $\frac{1}{2}$ mile
7.	Legal description of the property with exact boundary lines
8.	North arrow & Scale
9.	Identification of any land areas within the 100 year floodplain and within the 100 year floodwa
10.	Lot area in square feet
<u>⊯</u> ∫11.	Show scale (not less than 1" = 100') (paper size minimum 17" X 34")
12.	Existing streams, drainage channels, and other bodies of water
13.	Drainage easements for stormwater run-off and detention shown & labeled
14.	Location and name of existing streets
15 .	Show source of water supply
16.	Show location of waste water connection to municipal system & sanitary sewer layout
★ 17.	Fire Hydrant placement
18.	Proposed location of buildings and other structures, parking areas, drives, loading areas, service areas, alleys, walks, screening, and public streets
19.	other elements of the plan
20.	Extent and character of proposed landscaping. Common and/or Botanical plant names and size new vegetation must be clearly indicated.
	Location, massing and pattern of existing vegetation to be retained
22.	Existing structures on the site
23 .	Pedestrian and vehicular access points, sidewalks, crosswalks, etc.
1/1 24.	Pedestrian and vehicular access points, sidewalks, crosswalks, etc. Typical building elevations depicting the style, size and exterior construction materials of the buildings proposed. Where several building types are proposed on the plan, such as apartments commercial buildings, a separate sketch shall be prepared for each type. The elevations shall be drawn at a minimum scale of 1/16" to a foot and must show adjoining context. Any variance approvals
n 🔺 25.	Any variance approvals

Apprilonal Incornation Meeden Put Not On The Site Bland								
ADDITIONAL INFORMATION NEEDED, BUT NOT ON THE SITE PLAN COMMERCIAL BUILDING WORKSHEET								
Site is compatible with Master Street Plan	Yes							
Proposed improvement is within building line setbacks Frontft. Sideft. CNR Side/Aft. Backft.								
Parking requirements can be satisfied								
Floor Space 17/0 sq.ft. divided by 300 = 5.7 (no. of parking spaces required)	//							
Improvement is outside 100 year flood plain (if answer is no - Provide 404 Permit for site)								
Lowest building floor level and all mechanical equipment are above FEMA 100 year flood elevation	V							
Will there be a dumpster located on the site?		/						
Will there be a construction site office?		1						
Have you made "One Call"?		/						
Structure and site complies with ADA (Americans with Disability Act) and ABA (Architectural Barriers Act) Accessibility Guidelines								
Design complies with Arkansas Plumbing Code and National Electric Code requirements								
Foundation and structure meet earthquake requirements for Zone 1.								
Structure meets Arkansas Energy Code for specified use.								
Complies with Arkansas Fire Prevention Code								
Complies with International Code Council regulations	V							
Will a Site Clearance Permit be required? (City Ordinance 2002-03)		V						
Are you granted any variances by the Board of Adjustment?		V						
If you have been granted a variance please explain in detail:								
	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,							
LANDSCAPING COMPLIANCE WITH REQUIREMENTS								
	<u>(ES</u>	<u>NO</u>						
No planting within 5 feet of a fire hydrant Spacing will be 40' between trees								
Spacing will be 40' between trees Tree must be a minimum 3" in diameter at the base and 12' + tall								
Existing trees meeting the minimum size can be counted to meet above criteria	-							
No trees can be planted within 30 feet of a property corner or driveway	7	***************************************						
Shrubs along street right-of-way lines cannot exceed 30 inches in height								

	OR YOUR CONVENIENCE WE HAVE LISTED THE THREE COMMERCIAL ZONING SITE COVERAG IOOSE THE ZONING FOR THIS PROJECT AND COMPLETE ONLY THAT SECTION)	E KEQUIKEM	(EN12 -
Cr	DOSE THE ZONING FOR THIS PROJECT AND COMPLETE ONLY THAT SECTION)	YES	NO
1.	C-1 Zoning - Neighborhood Commercial	*************	-
	Lot area: minimum of 2,500 square feet; maximum 16,000 square feet		
	Front Yard: none required		***************************************
	Side Yard: minimum of 5 feet each side		
	Rear Yard: minimum of 55 feet		***************************************
	Maximum lot coverage of 70% of the total area of the site for all principal, accessory buildings, parking lots, sidewalks, private streets, or drives.		***************************************
	Parking: one space per each 200 sq. ft. of commercial use		- 24400000000000000000000000000000000000
	Loading areas: physically separated from all streets with 10 ft grassy area		-
	When abuts a residential district, a minimum 6' high wood, rock, or masonry fence is required with a landscape screen	NIA	***************************************
2.	C-2 Zoning - Lots fronting along roadways designated as Interstate 30 ar frontage roads, State Highway 5 and 183	nd	
	Front Yard: not less than 50 feet from front property line	**********	-
	Side Yard: not required, except where they abut a street or a residential lot line then a minimum of 25 feet is required	· passioni desenti	
	Rear Yard: minimum of 15 feet, except where they abut residential area then a minimum of 55 feet is required	2	
	A maximum lot coverage of 35% of the total area of the site for all principal and accessory buildings	F	
	Parking: one space per each 300 sq. ft. of occupied space		
	When abuts a residential district, a minimum 6' high wood, rock, or masonry fence is required with a landscape screen	***************************************	
	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	
3.	C-2 Zoning - Lots fronting along roadways designated as interior local.		
	Front Yard: none required		
	Side Yard: not required, except where they abut a street or a residential lot line then a minimum of 25 percent of lot dimension		·
	Rear Yard: minimum of 15 feet, except where they abut residential area then a minimum of 55 feet is required		*************
	A maximum lot coverage of 85% of the total area of the site for all principal, accessory buildings and parking		
	Parking: one space per each 300 sq. ft. of occupied space		ALTROCKO LIBERTON
	When abuts a residential district, a minimum 6' high wood, rock, or masonry fence is required with a landscape screen	*	<i>y</i>

IV. SITE COVERAGE COMPLIANCE WITH REQUIREMENTS

V. SITE PLAN ATTACHMENTS (APPLICATION WILL NOT BE ACCEPTED UNTIL ALL ATTACHMENT REQUIREMENTS ARE MET)					
26. Letter to Planning Commission stating your request 27. Completed Checklist 28. Completed ADA/ABA Form 29. Two full sets of Building Plans 30. 20 copies of Site Plan (folded to no larger than 8 ½ X 14 size) that includes vicinity map and landscaping plan (minimum size 17" X 34" paper) 31. 20 copies of Landscaping Plan (folded to no larger than 8 ½ X 14 size) 32. 20 copies of building floor plan (folded to no larger than 8 ½ X 14 size) 33. Copy of Stormwater Detention approval 34. Copy of ADEQ Stormwater Pollution Prevention Plan for property containing one acre or larger. 35. IBM compatible diskette or CD with data in PDF format. 36. Receipt for \$250.00 for Stormwater Detention and Drainage Plan review					
I CERTIFY that the design of Bourgos & Salaw in the City of Bryant, Arkansas complies with the above regulations, laws and codes. Rowner Engineer/Architect 22 05 BRANDON ROAD Mailing Address Phone # BRYANT, AR 72072 City Date					
CITY USE Action Taken:					
Special Conditions:					
Permit Issued: Date Sq.Ft Amount \$					
Construction Completed Certified For Occupancy: Date:					

Inspector:____

Permit No.	
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BUILDING PERMIT

ADA/ABA ACCESSIBILITY STANDARDS

The Americans with Disability Act and Architectural Barriers Act Accessibility Guidelines were prepared by the U.S. Access Board and mandated by the U.S. Department of Justice regulations implementing Title III as the official ADA/ABA accessibility guidelines. All new construction, remodeling, and modifications must conform to these building standards for places of public accommodation and commercial facilities. Residential is exempt.

The ADA/ABA accessibility guidelines contain general design standards for building and site elements, such as accessible entrances and routes, ramps, parking spaces, stairs, elevators, restrooms, signage, etc. Also included are specific standards for restaurants, medical care facilities, libraries and transportation facilities and vehicles, and places of lodging.

The guidelines also include "scoping" requirements that outline the necessary features or appropriate quantity for achieving ready access. For example, at least 50 percent of all public entrances to buildings must be accessible with an accessible path of travel. In public restrooms, at least one bathroom stall must be accessible unless there are more than six stalls, in which case the number increases.

I hereby certify that I have read and examined the above notice and will comply with all guidelines of the ADA Accessibility Guidelines. I further understand that a copy of the ADA/ABA Regulations are available for inspection during business hours of City Hall or I may obtain a copy by writing:

The Access Board
1331 F Street, NW, Suite 1000
Washington, DC 20004-1111
(202) 272-0080 (v) (202) 272-0082 (TTY) (202) 272-0081 (fax)
(800) 872-2253 (v) (800) 993-2822 (TTY)
email: info@access-board.gov

Signature of Contractor or Authorized Agent	Date
Signature of Owner Ronnie Beard (if owner-builder)	Date4-4-23
Application of Permit Approved:Commission - Chairman	Date

Bryant Water & Sewer Department

GREASE TRAP STANDARDS

The City of Bryant requires all commercial buildings comply with plumbing codes found in the Arkansas State Plumbing Code, Latest Edition. <u>All new construction, remodeling, and modifications must conform</u> to these plumbing standards for places of public accommodation and commercial facilities. These guidelines contain general design standards for construction and site elements relating to plumbing.

As of 7/27/04, the Bryant Sewer & Water Commission requires stringent specification standards for commercial or public businesses that involve any food preparation on the premise. The new standard requires calculations, and associated data to be submitted to the Bryant Water Utilities General Manager concurrent with the proposed building plumbing plans along with a grease trap calculation form. Building Permits will not be issued until this form has been received and approved by the Bryant Water Utilities General Manager.

All new buildings or strip centers containing sections designated for commercial enterprise are encouraged to provide a stub-out for a separate waste line for future grease interceptor installation. The owner of a new strip center shall consider suitable physical property space and sewer gradient that will be conducive for the installation of an exterior, in-ground grease interceptor(s) for any flex space contained within the strip center. Physical Property Restrictions and sewer gradient shall not be a defense for failure to install an exterior, in-ground grease interceptor.

I hereby certify that I have read and examined the above notice and will comply with all guidelines of the City of Bryant Water & Sewer Department. I further understand that copies of the Grease Interceptor Design and Structural Criteria regulations will be available from the Bryant Water/Wastewater Plant (501-847-8083) during business hours.

Project Name	***************************************
Signature of Contractor or Authorized Agent	Date
Signature of Owner Ronnic Beard (if owner-builder)	Date 4-4-23
Calculations Approved:	Date
Bryant Water Utilities General Manager	



Subdivision Checklist

Approved by Bryant Planning Commission 07/14/2003 Revised 6/18/2007

Instructions

The attached checklist must be completed by the owner and subdivision engineer and must be submitted along with the Preliminary Plat Plan and other specified documentation for review and approval by the Planning Commission. The owner may not begin developing the subdivision until the review of the Preliminary Plat plan is approved.

No changes or alterations can be made to the approved Preliminary Plat Plan without Planning Commission approval.

When all lots have been surveyed, the utilities and drainage measures are in place, and roads have been constructed, the owner and engineer will submit a Final Plat Plan for approval by the Commission. This Final Plat Plan will incorporate all approved changes and will be verified by the City Engineer. No lots will be sold or rights-of-way and easements conveyed until the Final Plat has been submitted and approved.

Fees due to City of Bryant upon submission of Preliminary Plat application

- \$300.00 + \$3.00 per lot for Subdivision preliminary plat review \$300+(192*\$3)=\$876
- \$250.00 or \$25.00 per lot (whichever is greater) Stormwater Detention and Drainage Plan Engineering Fee 128*\$25.00=\$4,800
- A Surety Bond or Cashier's check in the amount of 10% of the estimated development cost must be furnished within 10 days after Preliminary Plat approval.

Fees due to Bryant Water and Sewer Department upon submission of Final Plat application

- \$100 per lot Water/Sewer Impact Fee
- \$100 per Subdivision Phase Water/Sewer Flushing Fee

Fees due to City of Bryant upon submission of Final Plat application

\$25.00 + \$1.00 per lot - for Subdivision Final Plat review

Subdivision Review= \$376 Stormwater Review= \$4,800 **Total Fee Required=** \$5,176

City of Bryant Subdivision Checklist

Subdivisi	on/Project Name _	Midland Road Subdivision	1						
	Person		Phone	501-860-0467					
Communication	129 N I	Main Street Street Benton, Arkans	226						
Mailing A	ddress								
I. BASIC INFORMATION NEEDED ON THE PLAT									
√ ▲ 1.	Name of Subdivisi	on/Project							
A 2.	Current zoning	N/A Proposed R-1.S							
√ ▲ 3.	_	ss of owner of Record							
√ <u></u> 4.	Illustrate Source	of Title giving deed record book and	page number						
√ △ 5.	Name & address o								
▲ 6.	Date of Survey								
▲ 7.	Vicinity map local	ting streets, highways, section lines	, railroad, schoo	ols, & parks within ½ mile					
√ ▲ 8.		of the property with exact boundary							
√ <u>▲</u> 9.	Acreage of proper	ty		,					
√ ▲ 10.	Number of Lots								
√ ▲ 11.	Lot area in square	e feet							
▲ 12.	Lot lines with app	ropriate dimensions							
	Building setback l								
1		eering certificate seal and signature	on each page						
√ ▲ 15.	Certificate of Eng	ineering Accuracy							
▲ 16.	Certificate of Own	ner							
▲ 17.	Certificate of Fina	al Plat Approval							
▲ 18.	Certificate of Rec	ording							
▲ 19.	Show scale (not le	ess than 1" = 100')							
A 20.	North Arrow								
▲ 21.	Show Title block								
A 22.	Show adjoining pr	operty owners							
A 23.	Layout of all prop	osed streets including traffic contro	ol devices (stop s	signs, speed limit, etc.)					
24.	Layout of all subd	ivision entrance street upgrades							
	Layout of all prop								
A CONTRACTOR OF THE CONTRACTOR		osed sidewalk systems							
▲ 27.	_	any FEMA flood plain and flood way ingineers 404 Permit if required)	property within	the 100-year flood elevation.					
A 28.	Drainage easemen	ts for stormwater run-off and deter	ntion giving dime	ensions, locations, and purpose					
29.	Layout accommod	ates Master Street Plan segments w	rithin the bound	aries					
A 30.	Street layout ties	to existing adjoining subdivision stu	ib-out streets ar	nd provides stub-out streets for					
	future adjoining so								
		ight-of-way properly shown for eac							
△ 32.		showing angles of deflection, inter-	section, radii, le	ength oftangents and arcs, and					
	-	re with basis of curve data							
V	Typical cross secti								
V		e of existing streets	at name -						
V		that are not similar to existing stre	et names						
V	Show street lights								
<u> 3/</u>	Show Fire Hydrant	placement							

- ▲ 38. Show and label all permanent & proposed easements
- ▲ 39. Any proposed open space must be shown
- ▲ 40. Show the direction and flow of all water courses entering the tract
- ▲ 41. Show the direction and flow of all water courses leaving the tract
- ▲ 42. The drainage area of all water courses above the points of entry.
- ▲ 43. The downstream drainage channel and drainage structures substantially impacted by the subdivision/project.
- ▲ 44. Show source of water supply
- ▲ 45. Show location of waste water connection to municipal main & sanitary sewer layout
- ▲ 46. A phasing plan outlining the boundaries for each phase

II. ADDITIONAL INFORMATION NEEDED, BUT NOT NECESSARILY ON THE PLAT

- ▲ 47. Natural features within the proposed subdivision including drainage channels, bodies of water, wooded areas, and other significant features
- ▲ 48. Existing streets, buildings, water courses, railroads. Culverts, utilities and easement on and adjacent to the tract.
- ▲ 49. Where method of disposal of wastewater is other than connection to a public waste water system, detailed information shall accompany the plat.
- ▲ 50. Calculations and field notes, including drainage calculations along with support drawing
 - 51. Stormwater detention plan approval from City Engineer (attach copy of approval)
- ▲ 52. The Certificate of Preliminary Engineering Accuracy on each set of street and drainage plans.
 - ▲ 53. ADA Accessibility Standard Form completed (and attached)
 - ▲ 54. A Bill of Assurance has been prepared for this subdivision (and attached)
 - ▲ 55. All lots comply with minimum square footage area and minimum lot width at the front building line
 - ▲ 56. Street pavement design will be as specified by City or AHTD design procedures, approved by the City Engineer.
- ▲ 57. Made the "One Call" prior to site clearance or other excavation activity

III. PRELIMINARY PLAT ATTACHMENTS

(APPLICATION WILL NOT BE ACCEPTED UNTIL ALL ATTACHMENT REQUIREMENTS ARE MET)

- ▲ 58. Letter to Planning Commission stating your request
- ▲ 59. Completed Checklist

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- ▲ 60. Completed agreement to provide performance assurance
- ▲ 61. Subdivider Performance Bond or Cashier's Check for infrastructure installation
- ▲ 62. Landscaping plan of any proposed common open space
- ▲ 63. **Draft of Bill of Assurance** proposed for the subdivision (if applicable)
- ▲ 64. **20 copies of Preliminary Plat Plan (folded)** that includes vicinity map (minimum size 17" X 34" paper)
- ▲ 65. <u>Two</u> (2) IBM compatible diskettes or CDR's with pertinent data and Plat in CAD compatible .DXF electronic file format
- ▲ 66. Copy of Stormwater Detention approval
- ▲ 67. 2 copies Plan and profile of all streets
- ▲ 68. Receipt for \$300.00 + \$3.00 per lot for preliminary Subdivision fee
- ▲ 69. Receipt for \$250.00 or \$25.00 per lot (whichever is greater) for Stormwater Detention and Drainage Plan review
- ▲ 70. Copy of ADEQ Stormwater Pollution Prevention Plan for property parcel containing one acre or larger.

III. FINAL PLAT ATTACHMENTS

(APPLICATION WILL NOT BE ACCEPTED UNTIL ALL ATTACHMENT REQUIREMENTS ARE MET)

- ▲ 71. Letter to Planning Commission stating your request
- ▲ 72. Completed Checklist
- ▲ 73. 20 copies of Final Plat Plan (folded) that includes vicinity map (minimum size 17" X 34" paper)
- ▲ 74. <u>Two</u> (2) IBM compatible diskettes or CDR's with pertinent data and Plat in CAD compatible .DXF electronic file format
- ▲ 75. Bill of Assurance including provisions set out in Title 15 Subdivision Regulations 15.16.01
- ▲ 76. Copy of Water & Sewer Commission approval or....
- 77. State Health Department approval of any new water supply and/or sewage system.
- ▲ 78. Letter submitted by a Registered Professional Engineer, certifying that all infrastructure improvements and installations have been installed in accordance with the submitted construction plans and drawings and the standards established by the City of Bryant and are functioning properly.
- ▲ 79. Infrastructure Maintenance Bond or Cashier's check.
- ▲ 80. Check for \$25.00 + \$1.00 per lot for final Subdivision fee
- ▲ 81. Check for Water Sewer impact fees (\$100.00 Flushing Fee and \$100.00 impact fee per lot)

Midland Road Subdivision	Jonathan Hope				
Name of Subdivision	Surveyor				
I HAVE COMPLIED WITH THE REQUIREMENTS CHECKLIST WHICH APPLY TO THIS PROJECT S Owner Signature	Kazi Islam				
	CITY USE				
Preliminary Plat Approved					
Planning Commission Date					
Final Plat Approved Planning Commission Date					
Proof of Recording - County					



City of Bryant Stormwater Department

1019 SW 2nd St. Bryant, Arkansas 72022 Office (501) 943-0453; Fax (501) 943-0851

WARRANTY BOND PROCEDURES

For Stormwater Infrastructure Public & Private

These procedures are applicable to Stormwater Infrastructure that is to be dedicated to the public and maintained by the City of Bryant and for Private Stormwater Infrastructure that will be connected to overall City of Bryant Stormwater Infrastructure.

In accordance with Ordinance No. 2019-32 Article V., The City of Bryant Stormwater Department will require a Maintenance Warranty Bond as part of the process for approving Stormwater Infrastructure. The purpose of the bond is to cover the cost of correcting deficiencies not addressed by the developer during the warranty period and to insure no adverse effects will occur to the overall function of the City of Bryant Stormwater Infrastructure.

ORDINANCE 2019-32 ARTICLE V. STORMWATER INFRASTRUCTURE WARRANTY BOND.

- 1. Stormwater Infrastructure Warranty Bond. A one year maintenance bond against defects in workmanship shall be required by the Administrative Authority for any portion of the stormwater management facilities privately owned or stormwater management improvements dedicated to the city, said maintenance bond is to be provide by cashier's check, irrevocable letter of credit or acceptable surety authorized to do business in the State of Arkansas. All forms of maintenance bonds shall be subject to approval by the Administrative Authority. The value of the bond shall be an amount equal to 100% of the value of the privately owned stormwater management facilities or stormwater system improvements being privately owned or dedicated to the city. A cost list must be provide to prove and verify the amount of the maintenance bond. The cost list shall include cost of stormwater infrastructure construction and components (piping, weirs, spillway structures, junction boxes, trickle channels, inlets, grates, riprap and site stabilization).
- 2. Procedurals. These procedures are applicable to Stormwater Infrastructure that is to be dedicated to the public and maintained by the City of Bryant and for Private Stormwater Infrastructure that will be connected to overall City of Bryant Stormwater Infrastructure.
 - In accordance with Ordinance No. 2019-32 Article V., City of Bryant Stormwater Department will require a Maintenance Warranty Bond as part of the process for approving Stormwater Infrastructure. The bond will be equal to 100% of the cost of construction of the Stormwater Infrastructure System at the time of completion of the Stormwater Infrastructure System. The purpose of the bond is to cover the cost of correcting deficiencies not addressed by the developer during the warranty period and to insure no adverse effects will occur to the overall function of the City of Bryant Stormwater Infrastructure.
- **Determining the Maintenance Warranty Bond Amount.** During the final inspection process, the City of Bryant Stormwater Department will verify and approve the Warranty Bond estimate for all Stormwater Infrastructure within the proposed unit using:

- (a) The Warranty Bond cost list estimate shall be presented to the City of Bryant Stormwater Department by formal letter. The formal letter shall include project name, developer contact information and "Cost List for Construction of Stormwater Infrastructure Components" including but not limited to piping, weirs, spillway structures, junction boxes, trickle channels, riprap, inlets, grates, weirs and site stabilization;
- (b) The Bond amount will need to be re-evaluated if more than 18 months have passed from the time of the estimate review to the time of providing the bond to the City of Bryant Stormwater Department;
- 4. Submitting the bond to the city. After requesting a final inspection of the Stormwater Infrastructure and approval of completion by the City of Bryant Stormwater Department, the developer must provide the City of Bryant Stormwater Department with a bond equal to amount determined in Article V. Section 3. of this document. The Bond must be for a period of 12 months and be a financial guarantee in the form of a bond, letter of credit, or trust agreement executed by a surety company authorized to do business in the State of Arkansas. The Bond must be payable to the City of Bryant Public Works Department, conditioned that the developer will maintain the Stormwater Infrastructure in accordance with the Stormwater Management Manual Ordinance No. 2019-31 and the Stormwater Management Ordinance No. 2019-32.
- 5. Warranty period. After the Stormwater Infrastructure construction passes the final inspection—and the one year warranty bond is received, the one year maintenance warranty period will begin. The one-year warranty period will start on the date the Maintenance Warranty Bond is received and accepted. There shall be no separate warranty period start dates for Stormwater Infrastructure within a single unit.
- 6. Follow-up inspection. The City of Bryant Stormwater Department will conduct a follow-up inspection within the tenth month of the warranty period but in no event any later than two months prior to the bond expiring. The City of Bryant Stormwater Department will issue a punch list of deficiencies that will be sent to the developer or contractor for the unit. If no deficiencies are found and camera video passes inspection, release of the bond will proceed as set out and as listed in Article V. Section 10 of this document.
- 7. Correcting Deficiencies and Camera Video. The developer must contact the City of Bryant Stormwater Department at least 24 hours before correcting any decencies or performing camera video. The developer shall also camera all stormwater infrastructure to ensure that there is no sediment laden infrastructure. Upon notification by the developer that all deficiencies have been corrected and camera video has been completed, the City of Bryant Stormwater Department will re-inspect to verify compliance with correction of deficiencies and reviewing the camera video to assure the stormwater infrastructure is not sediment laden or defective.
- 8. Calling in the bond. If the developer does not contact the City of Bryant Stormwater Department, deficiencies have not been corrected and the stormwater infrastructures has not been camera videoed by the end of the 11th month or one (1) month prior to the expiration of the Bond, the City of Bryant Stormwater Department will prepare an estimate and list of work to be done to bring the stormwater infrastructure into compliance. The City of Bryant Stormwater Department will contact the bonding agency to submit the cost estimates for correcting the deficiencies.
- 9. Requesting Acceptance. Once all deficiencies have been corrected, the City of Bryant Stormwater Department will prepare the paperwork for the Stormwater Infrastructure within the unit accepted for maintenance by the City of Bryant 'if dedicated', or paperwork will be prepared to release the bond if infrastructure is a private unit.

10. Bond Release. The Bond will be released once the City of Bryant has accepted the Stormwater Infrastructure for maintenance 'if dedicated', and an acceptance letter has been written by the City of Bryant Public Works. If all compliance has been met with a private Stormwater Infrastructure Unit(s) then the City of Bryant Stormwater Department shall contact the developer by formal letter and release the bond. No partial release of the Bond will be allowed at any time.

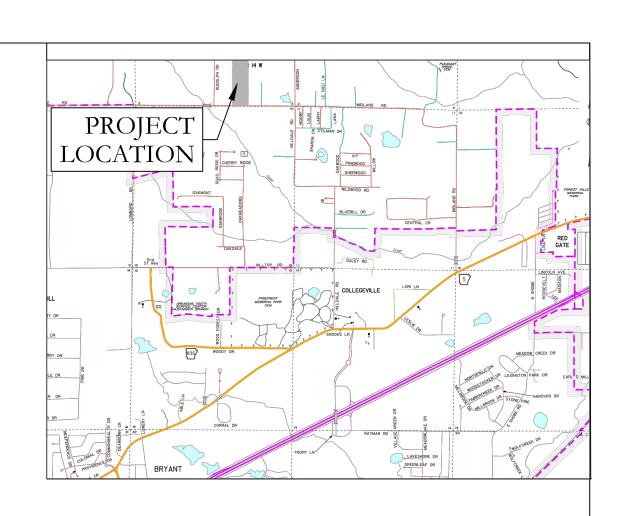
ATTENTION: DO NOT FILL OUT INFORMATION BELOW UNTIL YOU ARE PRESENT WITH A NOTARY PUBLIC. (THIS DOCUMENT MUST BE NOTARIZED)

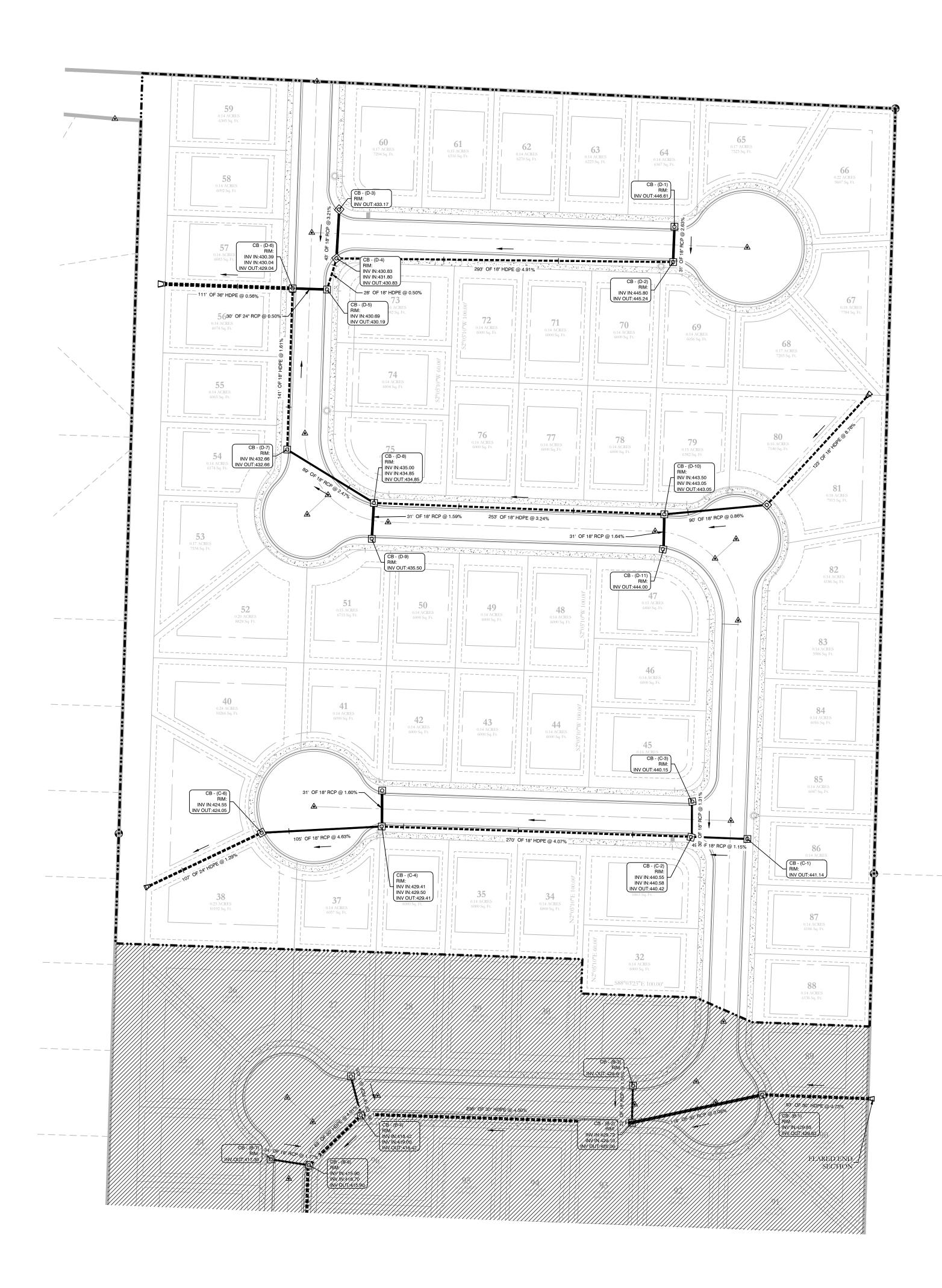
By filling out the information below, signing and dating, you are hereby acknowledging that you have read, understand and agree to adhere to the Stormwater Infrastructure Warranty Bond Procedures and Processes listed in this document. You the applicant are hereby responsible for upholding, without limitation, the Stormwater Infrastructure Warranty Bond Procedures.

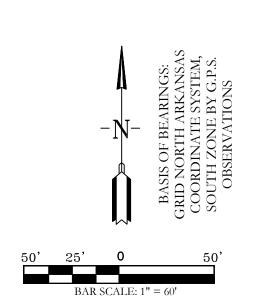
Hilldale C	rossing					
Name of Project Site/Addition						
Todd Havens	D000-					
Applicant Name	Applicant Name					
(Print)	(Signature)					
Haven's Development, LLC	2615 N Prickett Road Bryant, Arkasna					
Applicant Business Name	Applicant Mailing Address					
	ptarization					
State of Askansas County of Saline						
Subscribed and sworn before nie, a Notary Public, on	this 18 day of April , 2023.					
The feet	Nov. 5, 2030					
Signature of Notary	My commission expires:					
Notary Seal Stamp Here:						

MELANIE A. GENTRY MY COMMISSION # 12379607 EXPIRES: November 5, 2030 Saline County









DRAINAGE AS-BUILTS HILLDALE CROSSING PHASE 2

A SUBDIVISION IN SALINE COUNTY, ARKANSAS





FOR USE AND BENEFIT OF: HAVENS DEVELOPMENT, LLC

DRAINAGE AS-BUILTS PLAN HILLDALE CROSSING PHASE 2 A SUBDIVISION IN SALINE COUNTY, ARKANSAS

DATE:	C.A.D. BY: B.JOHNSON			DRAWING NUMBER:						
REVISED:			CHECKED BY:					20-0169		
			SCAL	E: 1"	=50'					
500	018	1,	1 \ \\	Ω	03	330		62	1762	



Arkansas Department of Health

4815 West Markham Street • Little Rock, Arkansas 72205-3867 • Telephone (501) 661-2000 Governor Asa Hutchinson José R. Romero MD, Secretary of Health

Engineering Section, Slot 37 Ph (501) 661-2623 Fax (501) 661-2032 www.healthy.arkansas.gov/eng After Hours Emergency (501) 661-2136

September 14, 2020

William McFadden PE Hope Consulting 117 South Market Street Benton, Arkansas 72015

RE: WATER AND SEWER EXTENSION

Sam's Hill Subdivision (Lots 1- 128) | Project #20-0169 Salem Water Users (PWS 492), Bryant, Saline County

Reference: ADH Project No. 62280

ADH Project No. 112190

Dear Mr. McFadden:

The plans for the above-captioned project dated 8-28-19, and submitted to the Engineering Section on 9-4-20, have been reviewed and are hereby approved with the following conditions:

- 1. The Engineering Section relied upon the statements and representations made in the engineer's report, plans and specifications. In case any statement or representation in the aforementioned documents is found to be incorrect, this Approval may be revoked.
- 2. There shall be no deviation from the plans and specifications unless revised plans and specifications have been first submitted for review and written consent given.
- 3. The review and approval of the plans and specifications were for functional and sanitary features and in no way constitute an analysis of the structural design.
- 4. If construction on this project is not started within one year of the date affixed hereto, this Letter of Approval is void.
- 5. Construction shall be performed according to the Salem Water Users and Bryant Sewer standard specifications and details.
- 6. Construction inspection for this project shall be the responsibility of William McFadden PE (Hope Consulting).
- 7. All materials and components installed after January 3, 2014 in drinking water systems are required to comply with the federal definition of "lead free" contained in Public Law 111-380.

One set of the plans is being retained for our files and a copy is being returned to you. When submitting correspondence pertaining to this project, please include our reference number 112190.

Sincerely,

Stephen M. Youngblood, P.E.

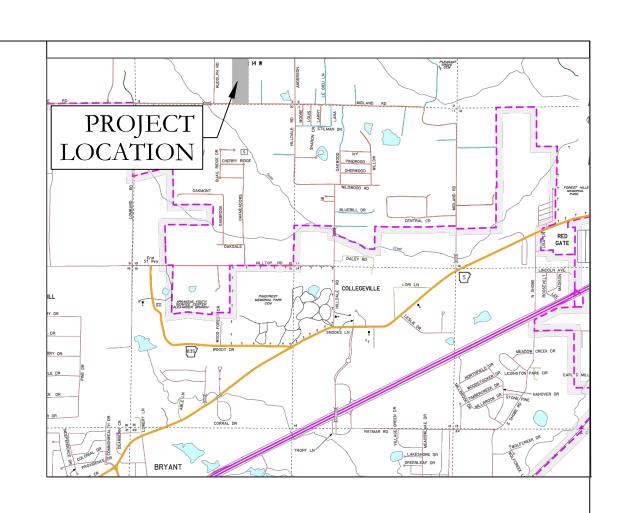
Engineer Supervisor Engineering Section

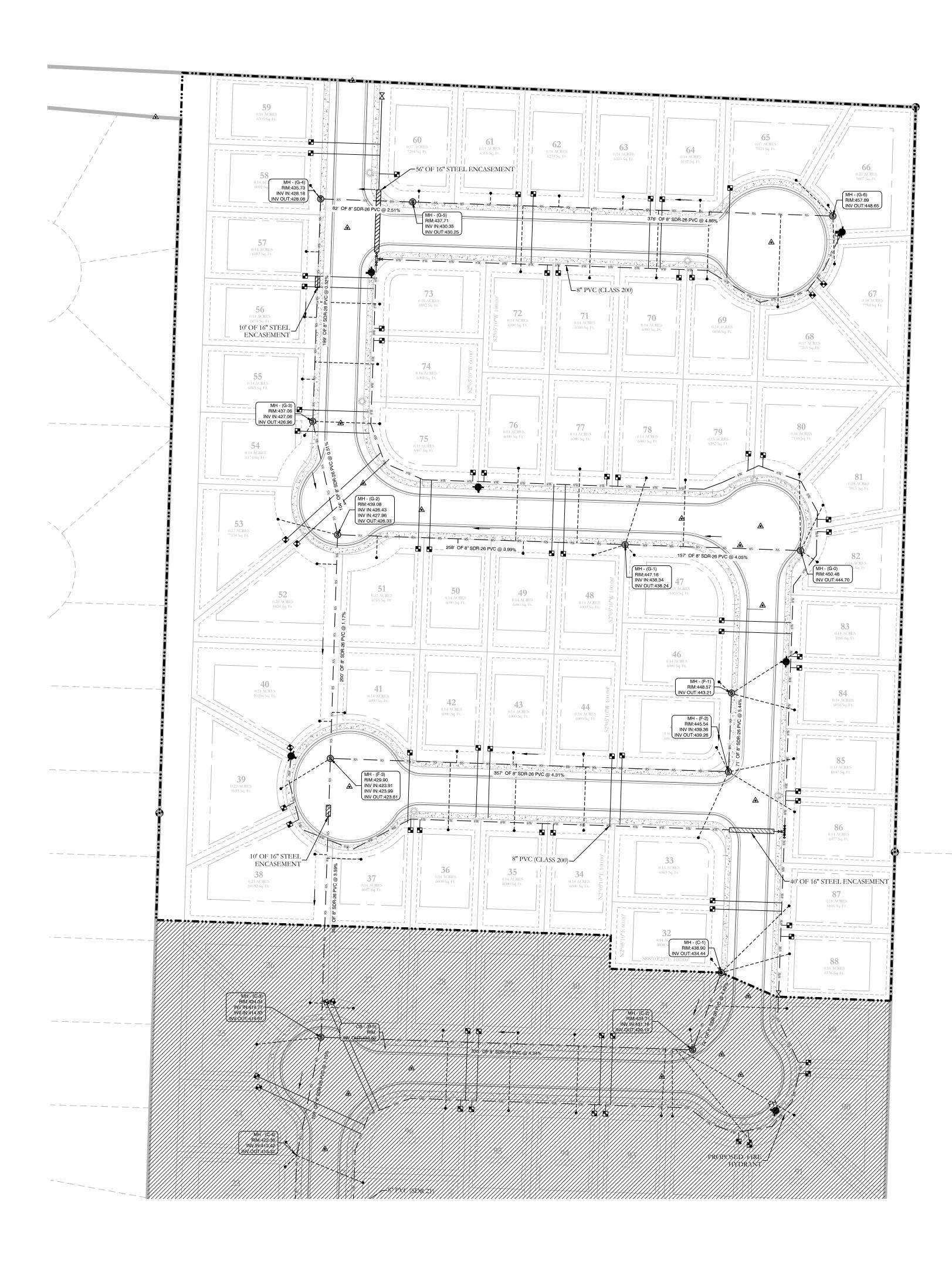
SMY: SGB: sgb

cc: Salem Water Association (PWS 492)

Bryant Wastewater (PSS S78)

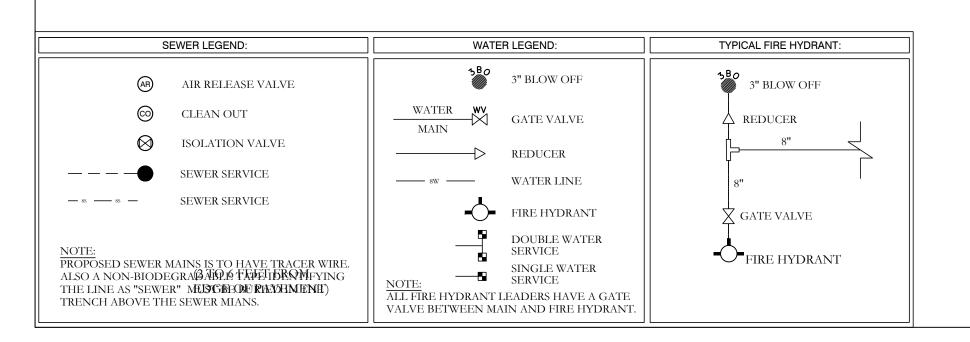




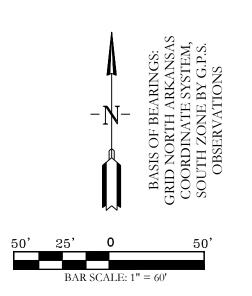


SANITARY SEWER AND WATER AS-BUILTS HILLDALE CROSSING PHASE 2

A SUBDIVISION IN SALINE COUNTY, ARKANSAS





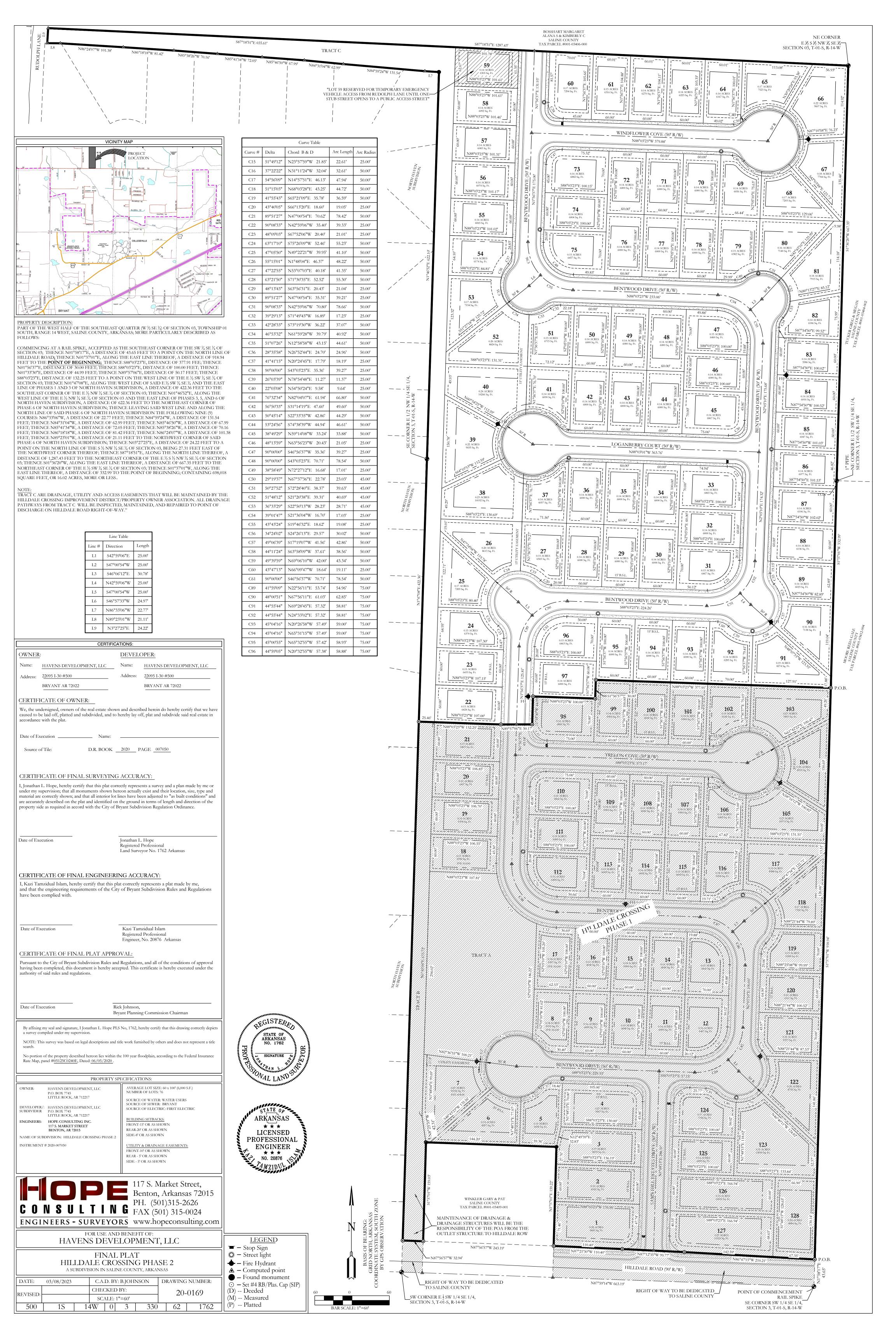




FOR USE AND BENEFIT OF: HAVENS DEVELOPMENT, LLC

WATER & SEWER AS-BUILTS PLAN
HILLDALE CROSSING PHASE 2
A SUBDIVISION IN SALINE COUNTY, ARKANSAS

ı										
DATE: 12/20/2021			C.A.D. BY: B.JOHNSON				DRAWING NUMBER:			
REVISED:			CHEC	CKED BY:			20-0169			
			SCAL	E: 1"	=50'					
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March 6, 2023

Truett Smith City of Bryant 210 Southwest Third St., Bryant, AR 72022

RE: Hilldale Crossing-Hilldale Final Plat Phase 2

Dear Truett:

On behalf of the property owner, Hope Consulting is requesting the final review of this residential subdivision project located in the Bryant ETJ. This subdivision development consists of sewer provided by Bryant, Water provided by Water Users, and Electric provided by First Electric. We are submitting to start the review for the Final plat. It is the desire of our client to be on the April Planning Commission agenda.

The developer of this project is Todd and Callie Havens of Havens Development.

Todd Havens: todd@havensdev.com Callie Havens: callie@havensdev.com

Please feel free to contact me with any questions or concerns or if I can be of any further assistance.

Sincerely,

Jonathan Hope



Arkansas Department of Health

4815 West Markham Street ● Little Rock, Arkansas 72205-3867 ● Telephone (501) 661-2000 Governor Asa Hutchinson

José R. Romero, MD, Secretary of Health

Engineering Section, Slot 37 www.healthy.arkansas.gov/eng

Ph (501) 661-2623 Fax (501) 661-2032 After Hours Emergency (501) 661-2136

April 5, 2022

Hope Consulting Engineers Surveyors Mr. William McFadden P.E. 117 S. Market St. Benton, AR 72015

RE:

SUBDIVISION WATER AND SEWER IMPROVEMENTS ENGINEERING PLAN APPROVAL

Cypress Valley Subdivision Ph. 2 (25 Lots) Water and Gravity Sewer Improvements Lots 24-38, Lots 45, 47-49, Lots 56-60, Lot 124, and Detention Areas Tract A and Tract B

Springwood Circle, Bryant, Saline County (Outside City Limits)

Hope Job Number: 21-0421

ADH Related: 55535 (Under "Magnolia Village Phase II")

ADH Reference No. 118352

Mr. McFadden,

The resubmittal for the project referenced above, received by the ADH Engineering Section online plan submission portal on March 15, 2022, has been reviewed and is hereby approved with the following conditions:

- The Engineering Section relied upon the statements and representations made in the plans and specifications.
 In case any statement or representation in the aforementioned documents is found to be incorrect, this Approval may be revoked.
- 2. There shall be no deviation from the plans and specifications unless revised plans and specifications have been first submitted for review and written consent given.
- 3. The review and approval of the drawings and specifications were for functional and sanitary features and in no way constitute an analysis of the structural or plumbing design.
- 4. If construction on this project is not started within one year of the date affixed hereto, this Letter of Approval is void.
- 5. Construction inspection for this project shall be the responsibility of Hope Consulting Engineers Surveyors.
- 6. Materials and construction shall be in accordance with the latest edition of the standard specifications and details of the City of Bryant Water and Sewer Utilities.
- 7. All materials and components installed after January 3, 2014 in drinking water systems are required to comply with the federal definition of "lead free" contained in Public Law 111-380.

When submitting correspondence pertaining to this project, please include the ADH reference number 118352.

Sinceret.

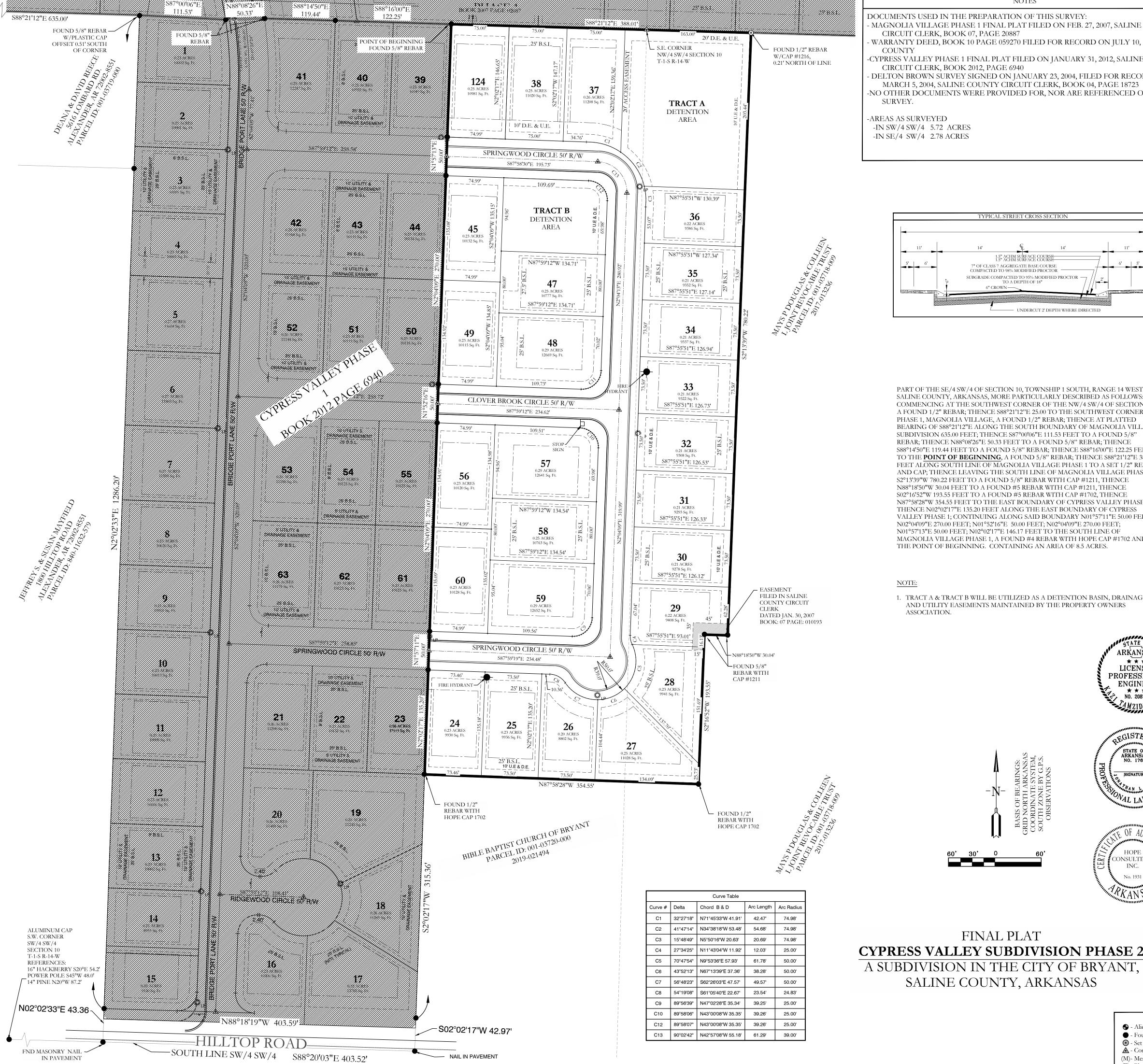
Stephen M. Youngblood, P.E. Engineer Supervisor

ADH Engineering Section

SMY: SMR: smr

CC:

City of Bryant Utilities (PWS 486)



FOUND 1/2" REBAR

- S88°21'12"E 25.00'

W/CAP #128

– POINT OF COMMENCEMENT

1/2" REBAR N78°51'49"E 14.43'

4.1' EAST OF PAVEMENT EDGE

FND 1/2" REBAR W/CAP

NW/4 SW/4 SECTION 10

POWER POLE S65°E 18.0'

S.W. CORNER

T-1-S R-14-W

REFERENCES:

NOTES

DOCUMENTS USED IN THE PREPARATION OF THIS SURVEY:

- MAGNOLIA VILLAGE PHASE 1 FINAL PLAT FILED ON FEB. 27. 2007. SALINE COUNTY

CIRCUIT CLERK, BOOK 07, PAGE 20887 WARRANTY DEED, BOOK 10 PAGE 059270 FILED FOR RECORD ON JULY 10, 2010 SALINE

-CYPRESS VALLEY PHASE 1 FINAL PLAT FILED ON JANUARY 31, 2012, SALINE COUNTY CIRCUIT CLERK, BOOK 2012, PAGE 6940

1.5" ACHM SURFACE COURSE 1.5" ACHM SURFACE COURSE

SUBGRADE COMPACTED TO 95% MODIFIED PROCTOR —

PART OF THE SE/4 SW/4 OF SECTION 10, TOWNSHIP 1 SOUTH, RANGE 14 WEST, IN

COMMENCING AT THE SOUTHWEST CORNER OF THE NW/4 SW/4 OF SECTION 10,

A FOUND 1/2" REBAR; THENCE S88°21'12"E 25.00 TO THE SOUTHWEST CORNER OF PHASE 1, MAGNOLIA VILLAGE, A FOUND 1/2" REBAR; THENCE AT PLATTED

BEARING OF S88°21'12"E ALONG THE SOUTH BOUNDARY OF MAGNOLIA VILLAGE

S88°14'50"E 119.44 FEET TO A FOUND 5/8" REBAR; THENCE S88°16'00"E 122.25 FEET

TO THE **POINT OF BEGINNING**, A FOUND 5/8" REBAR; THENCE S88°21'12"E 388.01

FEET ALONG SOUTH LINE OF MAGNOLIA VILLAGE PHASE 1 TO A SET 1/2" REBAR

AND CAP; THENCE LEAVING THE SOUTH LINE OF MAGNOLIA VILLAGE PHASE 1

N87°58'28"W 354.55 FEET TO THE EAST BOUNDARY OF CYPRESS VALLEY PHASE 1; THENCE N02°02'17"E 135.20 FEET ALONG THE EAST BOUNDARY OF CYPRESS

VALLEY PHASE 1; CONTINUING ALONG SAID BOUNDARY N01°57′11″E 50.00 FEET;

MAGNOLIA VILLAGE PHASE 1, A FOUND #4 REBAR WITH HOPE CAP #1702 AND

1. TRACT A & TRACT B WILL BE UTILIZED AS A DETENTION BASIN, DRAINAGE

AND UTILITY EASEMENTS MAINTAINED BY THE PROPERTY OWNERS

SUBDIVISION 635.00 FEET; THENCE S87°00'06"E 111.53 FEET TO A FOUND 5/8"

REBAR; THENCE N88°08'26"E 50.33 FEET TO A FOUND 5/8" REBAR; THENCE

S2°13'39"W 780.22 FEET TO A FOUND 5/8" REBAR WITH CAP #1211, THENCE

N88°18'50"W 30.04 FEET TO A FOUND #5 REBAR WITH CAP #1211, THENCE

S02°16'52"W 193.55 FEET TO A FOUND #5 REBAR WITH CAP #1702, THENCE

N02°04'09"E 270.00 FEET; N01°52'16"E 50.00 FEET; N02°04'09"E 270.00 FEET; N01°57'13"E 50.00 FEET; N02°02'17"E 146.17 FEET TO THE SOUTH LINE OF

THE POINT OF BEGINNING. CONTAINING AN AREA OF 8.5 ACRES.

FINAL PLAT

SALINE COUNTY, ARKANSAS

SALINE COUNTY, ARKANSAS, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

- UNDERCUT 2' DEPTH WHERE DIRECTED

7" OF CLASS 7 AGGREGATE BASE COURSE

COMPACTED TO 98% MODIFIED PROCTOR

- DELTON BROWN SURVEY SIGNED ON JANUARY 23, 2004, FILED FOR RECORD ON MARCH 5, 2004, SALINE COUNTY CIRCUIT CLERK, BOOK 04, PAGE 18723 -NO OTHER DOCUMENTS WERE PROVIDED FOR, NOR ARE REFERENCED ON THIS

-AREAS AS SURVEYED -IN SW/4 SW/4 5.72 ACRES

NOTE:

ASSOCIATION.

LOCATION MAPLE DR

VICINITY MAP:

Kennedy Development, LLC Address: 1229 Hot Springs Hwy Benton, AR 72089

OWNER

DEVELOPER:

Name: Kennedy Development, LLC 1229 Hot Springs Hwy Benton, AR 72089

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.

Date of Execution

Source of Title: 2021-010792

CERTIFICATE OF SURVEYING ACCURACY:

I, Jonathan L. Hope, 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 interior lot lines have been adjusted to "as built conditions" and are accurately described on the plat and identified on the ground in terms of length and direction of the property side as required in accord with the City of Bryant Subdivision Regulation Ordinance.

Date of Execution

Jonathan L. Hope Registered Professional Land Surveyor No. 1762

CERTIFICATE OF FINAL ENGINEERING ACCURACY

I, Kazi Islam, hereby certify that this plat correctly represents a plat made by me, and that the engineering requirements of the City of Bryant Subdivision Rules and Regulations have been

Date of Execution

Kazi Islam Registered Professional Engineer, No. 20876

CERTIFICATE OF FINAL APPROVAL

Pursuant to the City of Bryant Subdivision Rules and Regulations, this document was given approval by the Bryant Planning Commission at a meeting held ______, 20 _____. All of the document is hereby accepted, and this certificate executed under the authority of said rules and regulations.

Date of Execution

OWNER:

Rick Jordan, Bryant Planning Commission

SOURCE OF WATER: CITY OF BRYANT

SOURCE OF ELECTRIC: ENTERGY

SOURCE OF GAS: CENTERPOINT

PROPERTY SPECIFICATIONS: KENNEDY DEVELOPMENT LLC 1229 HOT SPRINGS HWY SOURCE OF SEWER: CITY OF BRYANT

BENTON, AR 72015 DEVELOPER/: KENNEDY DEVELOPMENT LLC SUBDIVIDER 1229 HOT SPRINGS HWY BENTON, AR 72015

ENGINEERS: HOPE CONSULTING INC BUILDING SETBACKS: 129 N. MAIN STREET FRONT-25' OR AS SHOWN REAR-25' OR AS SHOWN NAME OF SUBDIVISION: CYPRESS VALLEY PHASE 2

SOURCE OF TITLE: DEED BOOK 2021, PAGE 10792 CONING: PROPOSED R-2

SIDE-8' OR AS SHOWN I'ILITY & DRAINAGE EASEMENTS FRONT-10' OR AS SHOWN

REAR - 5' OR AS SHOWN

SIDE - 5' OR AS SHOWN

By affixing my seal and signature, I Jonathan L. Hope, Arkansas PLS No, 1762, hereby certify that this drawing correctly depicts a survey compiled by me or under my direct 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 Flood Insurance Rate Map, panel # 05125C0240E , Dated: 06/05/2020



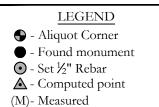
129 N. Main Street, Benton, Arkansas 72015 PH. (501)315-2626 FAX (501) 315-0024 www.hopeconsulting.com

FOR USE AND BENEFIT OF: KENNEDY DEVELOPMENT, LLC

FINAL PLAT

CYPRESS VALLEY SUBDIVISION PHASE 2 A SUBDIVISION IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS

01/13/2023 C.A.D. BY: DRAWING NUMBER: CHECKED BY: 21-0421 SCALE: 1"= 60' 500 01S 14W | 0 | 10 | 300 | 62



(P) - Plat/Deed

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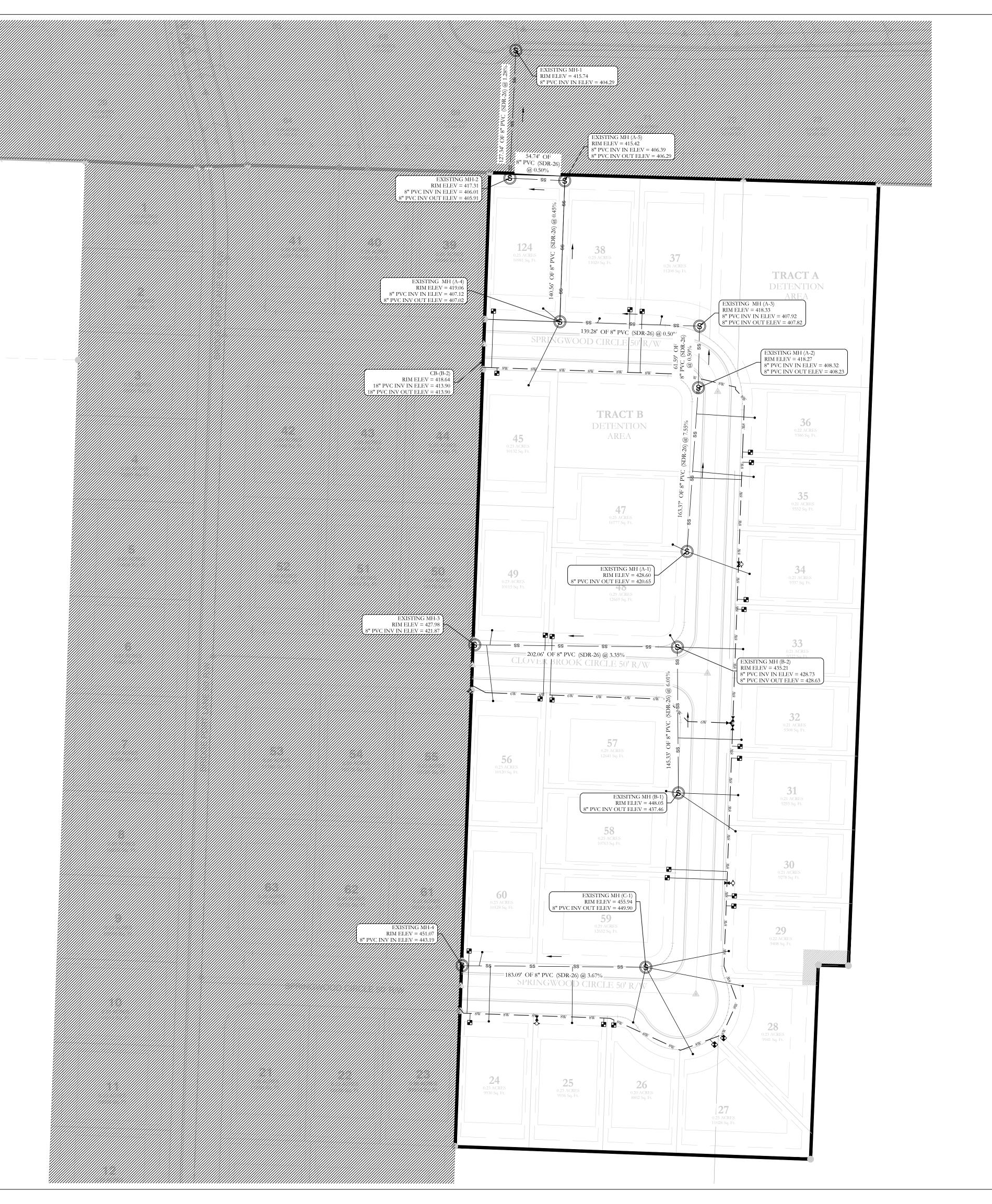
LICENSED PROFESSIONAL

ENGINEER NO. 20876

HOPE

CONSULTING INC.





SEWER CONSTRUCTION NOTES:

- ALL SEWER INSTALLATION TO BE IN ACCORDANCE WITH THE CITY OF BRYANT " STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF WATER LINES AND SEWER LINES, 2015
- ALL SEWER LINES CROSSING UNDER ALL CONCRETE STORM DRAINS OR ANY STORM DRAIN 30-INCH DIAMETER AND LARGER, OR ALL STORM DRAINS WITH MULTIPLE PIPE RUNS, SHALL BE STEEL ENCASED A MINIMUM OF 5 FEET EITHER SIDE OF THE STORM DRAIN. FORCE MAIN WILL BE TESTED IN ACCORDANCE WITH BRYANT WATER/WASTEWATER
- SPECIFICATION SECTION 5200-1.03.A.4 SANITARY SEWER FORCE MAIN SHALL BE INSTALLED IN ACCORDANCE WITH BRYANT WATER/WASTEWATER SPECIFICATIONS.
- CONNECTING MANHOLE FROM FORCE MAIN SHALL BE REQUIRED TO BE COATED WITH AN EPOXY COATING ACCORDANCE WITH BRYANT WATER/WASTEWATER SPECIFICATION SECTION

WATER UTILITY NOTES:

ALL NEW 8-INCH AND 6-INCH WATER MAINS TO BE C900 DR 14 PVC

ALL WATER AND SEWER INSTALLATION TO BE IN ACCORDANCE WITH THE CITY OF BRYANT "STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF WATER LINES AND SEWER LINES, 2015 EDITION"

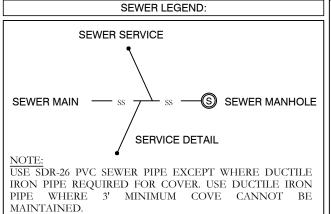
DIFFICULT AND/OR DANGEROUS TO MAINTAIN AREAS SHALL BE ENCASED IN A SMOOTH STEEL ENCASEMENT PIPE. THE STEEL ENCASEMENT SHALL EXTEND FIVE FEET EITHER SIDE OF THE AREA.

WATER LINES UNDER CULVERTS, CREEKS, CONCRETE CHANNELS, RETAINING WALLS, OR OTHER

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). THE SEWER/WATER MAIN CROSSINGS THAT REQUIRE ENCASEMENT REQUIRE TEN (10) LINEAR FEET

OF PIPE ON EITHER SIDE OF THE CROSSING. ADH RULES PERTAINING TO PUBLIC WATER SYSTEMS NOTES REGARDING CROSS-CONNECTIONS

AND SEPARATIONS OF WATER AND SEWER- WATER AND SEWER WILL BE 10 FEET APART IN PARALLEL AND IN THE CASE OF WATER CROSSING SEWER WATER LINE SHOULD BE MINIMUM 18" ABOVE SEWER LINE. AT THE EVENT OF WATER CROSSING BELOW SWER EITHER ONE OF THE PIPE WILL NEED TO BE ENCASED.



ENGINEER
No. 20876 CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL BURIED UTILITIES PRIOR TO CONSTRUCTION.



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

ARKANSAS

LICENSED

PROFESSIONAL

FOR USE AND BENEFIT OF: CYPRESS VALLEY

P P DUAL WATER METERS

SINGLE WATER METER

WATER LEGEND:

▼ GATE VALVE

45º FITTING ♦ 90º FITTING

- FIRE HYDRANT

CROSS FITTING

WATER & SEWER ASBUILTS CYPRESS VALLY, PHASE 2 A SUBDIVISION IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS

| DATE: 04/18/2023 | C.A.D. BY: JPP | DRAWING NUMBER: CHECKED BY: 21-0421 SCALE: 1"= 50' 500 01S 14W 0 10 300 62 1762

DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS OF CYPRESS VALLEY



A PLANNED DEVELOPMENT

PART A. PREAMBLE

WHEREAS, B&C EXCAVATING, INC., are the owners of the following described land situated in Saline County, Arkansas, to-wit:

SEE EXHIBIT "A" ATTACHED AND MADE A PART HEREOF

WHEREAS, B&C Excavating, Inc., Inc. took title to said land in Warranty Deed filed as Instrument No. 10 044484 of the records of Saline County, Arkansas.

WHEREAS, B&C Excavating, Inc., have caused said land to be surveyed and a plat thereof made, dividing said land into lots and streets, as shown on said plat and showing the dimensions of each lot and the width of the streets as shown on said plat for the purpose of making said land an Addition to the City of Bryant, Saline County, Arkansas, known as Cypress Valley.

NOW, THEREFORE, in consideration of the purposes herein stated, B&C Excavating, Inc., does hereby designate said land above described as shown by said plat, which is hereto attached and to be forever known as Cypress Valley, Phase I, an addition to the City of Bryant, Saline County, Arkansas, and that hereafter ay conveyance by owners of said land by lot and phase number shall forever be held to be a good and legal description and the streets on said plat in said addition are hereby dedicated as public streets for the use and benefit of the public as such. The use of the land in said Addition is subject to the following Protective and Restrictive Covenants, which shall also be known as the Bill of Assurance.

PART B. PROTECTIVE AND RESTRICTIVE COVENANTS – BILL OF ASSURANCE

B-1 LAND USE AND BUILDING TYPE. All lots shall be used for residential purposes only. No business of any nature or kind shall at any time be conducted in any building located on any of said lots except for real estate sales and marketing of lots and homes during the construction phase. No building shall be erected, altered, placed, or permitted to remain on any lot the other than one detached single-family dwelling not to exceed two storesi in height, excluding basement area. Carports or single car garages are not allowed. All must have at least a two-car garage. Garages may not be enclosed at a later date without the approval of the Architectural Control Committee and the construction of another two-car garage.

B-2 FENCING USE AND TYPE. If any builder or homeowner wishes to erect a fence only wood privacy fences shall be allowed. Also, no fence shall extend forward from the actual structure or the lot building line, whichever is further back from the street, except that a house erected on a corner lot may have a side fence no closer than 15 feet to the street on the side of a corner lot, such fence to begin at least 15 feet behind the front property line. All perimeter boundaries may follow the lot line. All fencing so placed shall have the finished side towards the streets where applicable. When fencing is installed, the finished side must face out unless the Architectural Control Committee allows otherwise. All fencing must be constructed 3 inches above finish grade to allow for proper drainage.

B-3 ARCHITECTURAL CONTROL. No dwelling or structure shall be erected, placed or altered on any lot until the construction plans and specifications and a plan showing the location of the structure have been approved by the Architectural Control Committee as to quality of workmanship and materials, harmony and integrity of external grade elevation, and intended objectives for Architectural Control Committee to achieve a subdivision that accomplishes the desired architectural design in the structures and subdivision aesthetics. The roof pitch shall be at least 8/12. All shingles shall be of architectural design. All above grade foundations shall be covered with brick or rock. Masonite is strictly prohibited in the construction of any structure.

The term "structure" is defined to include any and all types of fences, antennas, basketball goals, swimming pools, and television satellite dishes, which to no event shall be placed in front of dwellings, or be visible from the street. All satellite dishes and antennas must be approved by the Architectural Control Committee. Approval shall be provided in Part D below.

No basketball goals are allowed in front yards, on lots with side-load garages, or on corner lots, basketball goals are allowed in back yard only.

All gutters must be the "seamless" type, match the color of the house, and be shaped to be ion contact with e fascia, soffit, and walls at all times.

B-4 DWELLING COST, QUALITY AND SIZE. No dwelling shall be permitted on any lot at a cost of less than \$60.00 per square foot of heated space, based upon cost levels prevalent on the date these covenants are recorded, it being the intention and purpose of the covenants to assure that all dwellings shall be of a quality of workmanship and materials substantially the same or better than that which can be produced on the date these covenants are recorded, at the minimum cost stated herein for the minimum permitted dwelling size. The floor area of the main structure, exclusive one-story open floor area of the main structure shall be not less than 1,450 square feet of heated space. A dwelling of more than one story, the ground floor area of the main structure shall be not less than 1,100 square feet and with the second floor area would provide a total floor area equal to or great than 1,800 square feet, exclusive of basements.

- B-5 DWELLING LOCATION. No dwelling shall be located on any lot nearer to any street line than the minimum building set back lines as shown on the recorded plat. In any event, no dwelling shall be located on any lot nearer than 25 feet to a front lot line or nearer than 25 feet to the rear lot line. Further, no dwelling shall be located on any interior lot nearer than 7 feet to the interior lot line. For the purposes of this covenant, eaves, steps, and open porches shall not be considered as part of the dwelling. No lot shall be subdivided and no more than one dwelling shall be permitted on any one lot.
- **B-6** LOT AREA AND WIDTH. No dwelling shall be erected or placed on any lot having a width of less than 50 feet at the minimum set back line as shown by said plat.
- **B-7 EASEMENTS.** Easements for installation and maintenance of utilities and drainage facilities are reserved as shown on the recorded plat.
- B-8 NUISANCES. No noxious or offensive activities shall be carried out upon any lot, nor shall anything be done or kept thereon which may be or may become an annoyance or nuisance to the neighborhood, or may adversely affect the value of other dwellings.
- B-9 TEMPORARY STRUCTURES. No structures of a temporary character, motor home, trailer, travel trailer, basement, tent, shack, garage, barn, or other out building shall be used on any lot at any time as a residence either temporarily or permanently.
- B-10 OUT BUILDINGS. One building for storage shall be permitted, provided, however, that it shall not be more than eight and one half feet from the ground where it should be permanently anchored. Further, prior to the construction and/or installation of any such storage building, a privacy fence shall be erected as shown in B-2, above. All out buildings must be approved by the Architectural Control Committee, may not be located on easements, and must meet all requirements of the City of Bryant.
- **B-11 SIGNS.** No sign of any kind shall be displayed to the public view on any lot, except one professional sign of not more than 1.5 square feet, or signs used by a builder/developer to advertise the property during the construction and sales period.
- B-12 OWNER AND BUILDING/CONTRACTOR RESPONSIBILITY. Any property owner or building/contractor shall ensure that any contractor performing services for the property owner shall comply with the provisions of this Bill of Assurance, and shall be responsible for the actions of contractors to the contrary. No person shall damage in any way the utilities or streets in any manner, and any damage so inflicted shall become the responsibility of the person who creates the damage. It is the responsibility of the building contractors on each lot to install all sidewalks required by the City of Bryant.
- B-13 LIVESTOCK AND POULTRY. No animals, livestock, or poultry of any kind shall be raised, bred, or kept on any lot, except that dogs and cats may be kept on

any lot provided that they are not kept, bred, or maintained for any commercial purpose, and provided that facilities for maintenance of the same are installed, and that the keeping of the same does not constitute a nuisance. Hunting dogs are expressly prohibited.

- B-14 GARBAGE AND REFUSE DISPOSAL. No lot or easement shall be used or maintained as a dumping ground for rubbish. Trash, garbage, and other waste shall not be kept except in sanitary containers. All incinerators or other equipment for the storage or disposal of such material shall be kept in a clean and sanitary condition, and not be permitted at any time or location which is visible from the front of the lot.
- B-15 OIL AND MINING OPERATIONS. No oil drilling, development operation, refining, quarrying, or mining operations of any kind shall be permitted upon or in any lot, nor shall oil wells, tanks, tunnels, mineral excavations, or shafts be permitted upon or in any lot. No derrick or structure designed for use in boring for oil or natural gas shall be erected, maintained, or permitted upon any lot.
- **B-16 WATER SUPPLY.** No individual water supply systems shall be permitted on any lot. The same shall be served by the City Water Department of the City of Bryant, Arkansas.
- **B-17 SEWAGE DISPOSAL.** No individual sewage disposal system shall be permitted on any lot. Sewage connections must be made with the City Sewage System of the City of Bryant, Arkansas.
- B-18 SIGHT DISTANCE AT INTERSECTIONS. No fence, wall, hedge, or shrub planting which obstructs sight lines at elevations between 2 and 6 feet above the roadways shall be placed or permitted to remain on any lot corner within the triangular area formed by the street property lines and the line connecting them at points 25 feet from the intersection of street right-of-way lines, or in the case of a rounded property corner, from the intersection of the street property lines extended. The same sight line limitations shall apply on any lot within 10 feet from the intersection of the street property line with the edge of a driveway. No tree shall be permitted to remain within such distances of such intersections unless the foliage line is maintained at sufficient height to prevent obstruction of such sight lines.
- B-19 LAND NEAR WATER COURSES. No building shall be placed nor shall any material or refuse be placed or stored on any lot within 20 feet of the property line of any part or edge of any water course, except that clean fill may be placed nearer, provided that the natural water course is not altered or blocked by such fill.
- B-20 BUILDERS. All building must be performed by competent builders. The Architectural Control Committee reserves the right to submit for approval the name of any contractor selected by a property owner to an architect of the choosing of the Architectural Control Committee.

- B-21 LOT, YARD, AND HOME MAINTENANCE. All property owners, including builders, shall keep all grounds and yards mowed, trimmed and clean, and all houses painted or stained. All lawnmowers, trash containers, ladders, children's toys, bicycles, exercise equipment, and similar items must be stored where they are not visible from the street, such as behind a wood privacy fence or inside a garage.
- B-22 COMMENCEMENT OF CONSTRUCTION. A property owner must start construction of an approved dwelling within a period of one (1) year from the date of purchase, defined as the closing date. The owners reserve the option to repurchase any lot for the amount of original purchase price if construction is not commenced within such period of time. This option shall be exercised in writing within a period of 30 days after the one-year period.
- **B-23 COMPLETION OF CONSTRUCTION.** Any dwelling must be completed in its entirety within a period of one (1) year from date such construction is commenced.
- B-24 CURB CUTS. Curb cuts should not be necessary due to the rolled curb. Any curb cuts must be approved in writing by Time Square Properties, Inc. Violation will result in removal and replacement at the cost to the property owner. No material may be placed in the rain gutter in front of the curb.
- B-25 MOTOR VEHICLE PARKING. Abandoned or unused motor vehicles shall not be parked or permitted to remain on any lot or within the dedicated street. No cars may be parked in front yards. All vehicles must have a current registration and license. Work trucks shall be parked inside garages and shall not be parked in driveways on a regular basis. Boats, recreational vehicles, tractors, commercial vehicles, and trailers cannot be parked at the front or side of any dwelling or in the dedicated street, and must be parked in back of the dwelling and/or behind such privacy fence as defined in B-2 above. In any case, none of the above shall be allowed unless the privacy fence mentioned in B-2 above is installed. Owners or permanent residents are prohibited from parking in the street.
- B-26 MINIMUM FLOOR LEVEL ELEVATION. The Architectural Control Committee reserves the right to proscribe a minimum floor elevation for any lot they deem such a minimum should be required.
- **B-27 MAILBOXES.** Mailboxes shall be of the design and construction described by the Architectural Control Committee.
- B-28 EXTERIOR LIGHTING. No night watcher lights shall be permitted. All exterior lighting other than normal landscape lighting must be approved by the Architectural Control Committee.
- B-29 PROPERTY OWNERS ASSOCIATION. At such time as a valid Property Owners Association is established in Cypress Valley Subdivision, the

developer/owner shall deed to and otherwise turn over to and relinquish control of all "common areas" including "fence and sign easements" within said subdivision plat and/or any subsequent phases which may be developed. Until such time occurs, the developer/owner shall retain control of and maintenance of such areas

B-30 SIDEWALKS. The owner of a lot is responsible for installation of a four foot side sidewalk in front of his lot four feet from back of curb. The sidewalk shall run from property line to property line extended, parallel to the street and may be interrupted by the driveway. The sidewalk is to be constructed of 3000 psi normal weight concrete with tooled or sawed control joints, four feet on center and ¾ inch expansion joint at each neighboring sidewalk connection. The sidewalk is to be normal concrete color and shall receive a broom finish.

PART C. ARCHITECTURAL CONTROL COMMITTEE

The owners will cause to be formed an Architectural Control Committee of 2 to 7 persons for the purpose of reviewing all construction plans to assure aesthetic harmony and beauty within the subdivision of Cypress Valley Subdivision. In this regard, no building, fence, wall, or other structure shall be commenced, erected, or maintained upon any lot, nor shall any exterior addition to, or change or alteration therein be made, nor shall any landscaping of any lot be undertaken, until the plans and specifications showing the nature, kind, shape, height, materials, and location of the same shall have been submitted to and approved in writing by the Architectural Control Committee as to the harmony of external design and location in relation to surrounding structures and topography. In the event that any plans and specifications are submitted to the Committee for architectural review as provided herein, and the Committee shall fail either to approve or reject such plans and specifications for a period of 30 days following such submission, such failure shall be deemed to be an approval by the Committee for all purposes. The owners may elect to turn this function entirely over to residents of the subdivision at such time as it sees fit.

In any case, the members of this Committee shall in no event be held personally liable or responsible to any owner in this Addition for their actions, or lack thereof.

PART D. NPDES STORMWATER DISCHARGE PERMIT

D-1 PERMIT. The purchaser of each lot acknowledges that B&C Excavating, Inc., is the developer of the subdivision and therefore, holds a NPDES Stormwater Discharge Permit for the entire development. Purchaser also acknowledges that it must receive an individual permit from the Arkansas Department of Environmental Quality before construction on said lot may begin and also agrees that any violation of seller's existing permit after the date of the sale of the above lot by reason of purchaser's construction shall be the sole responsibility of purchaser. Purchaser further agrees to be responsible for any fines which may be assessed to seller by reason of Purchaser's actions.

PART E. GENERAL PROVISIONS

- **E-1 TERM.** These covenants are to run with the land and shall be binding on all parties and all persons claiming under them for a period of 25 years from the date these covenants are recorded, after which time said covenants shall be automatically extended for successive periods of 10 years, subject to the express provision that these covenants may be amended at any time after the date of execution by the owner or owners of the majority of the lots herein platted.
- E-2 ENFORCEMENT. Enforcement shall be by proceedings at law in equity against any person or person violating or attempting to violate or attempting to violate any covenant either to restrain violation or to recover damages.
- E-3 SEVERABILITY. Invalidation of any one of these covenants by judgments or court order shall in no way affect any of the other provisions which shall remain in full force and effect.
- **E-4 AMENDMENTS.** These restrictions and covenants may be amended at any time by a majority of the lot owner or owners, including the developers. The majority of lots are calculated as being over 50% of the total number of lots.

In compliance with Title 15, SUBDIVISION REGULATIONS, of the City of Bryant, Arkansas, the following is included here under article E-4:

That any amendment to the Bill of Assurance reducing the size of the buildings to be placed on lots must be approved by the Bryant Planning Commission.

E-5 CONFLICTS. If there is a conflict within different paragraphs of this document, within a single paragraph, or between this document and the plat, then the more restrictive language or interpretation will apply.

WITNESS our hands on this 26^{4} day of $\sqrt{\text{gausy}}$, 20/2.

B&C EXCAVATING, INC.

Thomas J. Canninghai

Travis Paul Bull, Vice President/Secretary

STATE OF ARKANSAS)
)
COUNTY OF SALINE)

BE IT REMEMBERED, that on this day came before me, the undersigned, a Notary Public within and for the County aforesaid, duly commissioned and acting Thomas J. Cunningham, Jr., President, and Travis Paul Bull, Vice President/Secretary, of B&C Excavating, Inc., to me well known as the grantors in the foregoing document, and stated that they had executed the same for the consideration and purposes therein mentioned and set forth.

WITNESS my hand and seal as Notary Public on this 26 day of day of

Constana M. Bull

My Commission Expires:

7-21-18

CONSTANCE M. BULL MY COMMISSION # 12366926 EXPIRES: July 21, 2018 Saline County

EXHIBIT "A"

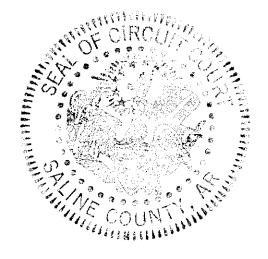
PART OF THE SW1/4 SW1/4 OF SECTION 10, TOWNSHIP 1 SOUTH, RANGE 14 WEST, IN SALINE COUNTY, ARKANSAS, MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTHEAST CORNER OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER (SE1/4 SW1/4) OF THE SAID SECTION 10, A FOUND 1/4" REBAR; THENCE NORTH 88° 21' 12" WEST 1541.88 FEET; THENCE NORTH 88° 16' 00" WEST 27.36 FEET TO THE POINT OF BEGINNING, A FOUND 5/8" REBAR; THENCE SOUTH 02° 02' 17" WEST 146.17 FEET TO A SET #4 REBAR; THENCE SOUTH 01° 57' 13" WEST 50.00 FEET TO A SET #4 REBAR; THENCE SOUTH 02° 04' 09" WEST 270.00 FEET TO A SET #4 REBAR; THENCE SOUTH 01° 52' 16" WEST 50.00 FEET TO A SET #4 REBAR; THENCE SOUTH 02° 04' 09" WEST 270.00 FEET TO A SET #4 REBAR; THENCE SOUTH 01° 57' 11" WEST 50.00 FEET TO A SET #4 REBAR; THENCE SOUTH 02° 02' 17" WEST 135.20 FEET TO A FOUND #5 REBAR; THENCE SOUTH 02° 02' 17" WEST 315.36 FEET TO A FOUND 5/8" REBAR WITH CAP #128 ON THE NORTH RIGHT-OF-WAY OF HILLTOP ROAD; THENCE NORTH 88° 18' 19" WEST, ALONG SAID RIGHT-OF-WAY, 403.59 FEET TO A FOUND 5/8" REBAR WITH CAP #128; THENCE NORTH 020 02, 33" EAST, DEPARTING FROM SAID RIGHT-OF-WAY, 1286.20 FEET to A FOUND 5/8" REBAR WITH CAP; THENCE SOUTH 87° 00' 06" EAST 111.53 FEET TO A FOUND #5 REBAR; THENCE NORTH 88° 08' 26" EAST 50.33 FEET TO A FOUND #5 REBAR; THENCE SOUTH 88° 14' 50" EAST 119.44 FEET; THENCE SOUTH 88° 16' 00" EAST 122.25 FEET TO THE POINT OF BEGINNING. CONTAINING AN AREA OF 12.03 ACRES

FILED FOR RECORD

In DC Book 2012 Page 693

JAN 3 1 2012

at 10: 11 o'clock A M
DENNIS MILLIGAN, CIRCUIT CLERK
BY OND DC





January 25, 2023

Truett Smith City of Bryant 210 Southwest Third St., Bryant, AR 72022

RE: Cypress Valley Phase 2 Final Plat

Dear Truett:

On behalf of the property owner, Hope Consulting is requesting the review of the Final Plat and As-Builts of Cypress Valley Phase 2.

The developer of this project is Gary Kennedy of Kennedy Development, LLC.

Gary Kennedy braggconstruction@yahoo.com 501-626-6202

Please feel free to contact me with any questions or concerns or if I can be of any further assistance.

Sincerely,

Ionathan Hope

129N. MAIN ST. BENTON, ARKANSAS 72015 501-315-2626 WWW.HOPECONSULTING.COM



Stormwater Infrastructure Maintenance Plan Agreement

Gary Kennedy Kennedy Development, LLC braggconstruction@yahoo.com 501-626-6202

Cypress Valley Phase 2

All maintenance basin maintenance plans shall contain or uphold, without limitation, the following provisions:

- (1) A description of the property on which the stormwater management facility is located and all easements from the site to the facility;
- (2) Size and configuration of the facility;
- (3) A statement that properties which will be served by the facility are granted rights to construct, use, reconstruct, repair and maintain access to the facility;
- (4) A statement that each lot served by the facility is responsible for repairs and maintenance of the facility and any unpaid ad valorem taxes, public assessments for improvements, and unsafe building and public nuisance abatement liens charged against the facility, including all interest charges together with attorney fees, costs, and expenses of collection. If an association is delegated these responsibilities, then membership into the association shall be mandatory for each parcel served by the facility and any successive buyer. The association shall have the power to levy assessments for these obligations, and all that unpaid assessments levied by the association shall become a lien on the individual parcel;
- (5) All stormwater facilities must be designed to minimize the need for maintenance, to provide easy vehicle and personal access for maintenance purpose, and be structurally sound. It shall be the responsibility of the applicant to obtain any necessary easements or other property interested to allow access to the facilities for inspection or maintenance;
- (6) Detention/retention areas, earthen berms, intake structures, piping, discharge structures, trickle channels, spillways, pipe flares, weirs and fencing shall be regularly inspected, maintained and repaired to ensure their proper operation and to prevent the creation of any hazards or nuisances;
- (7) Major deposits of sediment shall be removed from the detention/retention area on an annual basis or after any extreme storm event. Excavated materials shall be properly disposed of off-site. Every five years the detention area(s) shall be

surveyed to confirm that the original as-constructed contours have been maintained;

- (8) Every three months piping and outlet structures shall be inspected and cleared of any accumulated debris;
- (9) Erosion in detention/retention areas shall be promptly repaired and stabilized with appropriate Best Management Practices (BMP's);
- (10) Detention/retention area shall be mowed during the growing season May through September to maintain the turf height of 6-inches or less. Any brush or trees that may grow within the detention areas bottom, slopes or banks shall be removed;
- (11) Litter and foreign materials shall be removed from the detention area(s) weekly. Large or noxious pieces of litter shall be removed immediately. The area(s) shall be inspected visually after rainfall events in excess of 1" in 24 hours;
- (12) Inspections of overall detention/retention area(s) and detention/retention components shall occur monthly with their conditions noted on an inspection form. If any remedial action is required, it should be noted and corrected;
- (13) All inspection forms must be retained on-site, including the "As-Built" drawings and photographs of the improvements in their original condition;
- (14) Items 1-13 shall be listed on the Stormwater Infrastructure Maintenance Plan Agreement.

(15) Inspection forms for Stormwater Infrastructure components are required. (An

example of inspection forms are attached.)		
Gary Kennedy	 signature	
, ,	5.g. aca. c	

date



City of Bryant Stormwater Department

1019 SW 2nd St.

Bryant, Arkansas 72022 Office (501) 943-0453; Fax (501) 943-0851

WARRANTY BOND PROCEDURES

For Stormwater Infrastructure Public & Private

These procedures are applicable to Stormwater Infrastructure that is to be dedicated to the public and maintained by the City of Bryant and for Private Stormwater Infrastructure that will be connected to overall City of Bryant Stormwater Infrastructure.

In accordance with Ordinance No. 2019-32 Article V., The City of Bryant Stormwater Department will require a Maintenance Warranty Bond as part of the process for approving Stormwater Infrastructure. The purpose of the bond is to cover the cost of correcting deficiencies not addressed by the developer during the warranty period and to insure no adverse effects will occur to the overall function of the City of Bryant Stormwater Infrastructure.

ORDINANCE 2019-32 ARTICLE V. STORMWATER INFRASTRUCTURE WARRANTY BOND.

- 1. Stormwater Infrastructure Warranty Bond. A one year maintenance bond against defects in workmanship shall be required by the Administrative Authority for any portion of the stormwater management facilities privately owned or stormwater management improvements dedicated to the city, said maintenance bond is to be provide by cashier's check, irrevocable letter of credit or acceptable surety authorized to do business in the State of Arkansas. All forms of maintenance bonds shall be subject to approval by the Administrative Authority. The value of the bond shall be an amount equal to 100% of the value of the privately owned stormwater management facilities or stormwater system improvements being privately owned or dedicated to the city. A cost list must be provide to prove and verify the amount of the maintenance bond. The cost list shall include cost of stormwater infrastructure construction and components (piping, weirs, spillway structures, junction boxes, trickle channels, inlets, grates, riprap and site stabilization).
- 2. Procedurals. These procedures are applicable to Stormwater Infrastructure that is to be dedicated to the public and maintained by the City of Bryant and for Private Stormwater Infrastructure that will be connected to overall City of Bryant Stormwater Infrastructure.
 - In accordance with Ordinance No. 2019-32 Article V., City of Bryant Stormwater Department will require a Maintenance Warranty Bond as part of the process for approving Stormwater Infrastructure. The bond will be equal to 100% of the cost of construction of the Stormwater Infrastructure System at the time of completion of the Stormwater Infrastructure System. The purpose of the bond is to cover the cost of correcting deficiencies not addressed by the developer during the warranty period and to insure no adverse effects will occur to the overall function of the City of Bryant Stormwater Infrastructure.
- 3. Determining the Maintenance Warranty Bond Amount. During the final inspection process, the City of Bryant Stormwater Department will verify and approve the Warranty Bond estimate for all Stormwater Infrastructure within the proposed unit using:

- (a) The Warranty Bond cost list estimate shall be presented to the City of Bryant Stormwater Department by formal letter. The formal letter shall include project name, developer contact information and "Cost List for Construction of Stormwater Infrastructure Components" including but not limited to piping, weirs, spillway structures, junction boxes, trickle channels, riprap, inlets, grates, weirs and site stabilization;
- (b) The Bond amount will need to be re-evaluated if more than 18 months have passed from the time of the estimate review to the time of providing the bond to the City of Bryant Stormwater Department;
- 4. Submitting the bond to the city. After requesting a final inspection of the Stormwater Infrastructure and approval of completion by the City of Bryant Stormwater Department, the developer must provide the City of Bryant Stormwater Department with a bond equal to amount determined in Article V. Section 3. of this document. The Bond must be for a period of 12 months and be a financial guarantee in the form of a bond, letter of credit, or trust agreement executed by a surety company authorized to do business in the State of Arkansas. The Bond must be payable to the City of Bryant Public Works Department, conditioned that the developer will maintain the Stormwater Infrastructure in accordance with the Stormwater Management Manual Ordinance No. 2019-31 and the Stormwater Management Ordinance No. 2019-32.
- 5. Warranty period. After the Stormwater Infrastructure construction passes the final inspection—and the one year warranty bond is received, the one year maintenance warranty period will begin. The one-year warranty period will start on the date the Maintenance Warranty Bond is received and accepted. There shall be no separate warranty period start dates for Stormwater Infrastructure within a single unit.
- 6. Follow-up inspection. The City of Bryant Stormwater Department will conduct a follow-up inspection within the tenth month of the warranty period but in no event any later than two months prior to the bond expiring. The City of Bryant Stormwater Department will issue a punch list of deficiencies that will be sent to the developer or contractor for the unit. If no deficiencies are found and camera video passes inspection, release of the bond will proceed as set out and as listed in Article V. Section 10 of this document.
- 7. Correcting Deficiencies and Camera Video. The developer must contact the City of Bryant Stormwater Department at least 24 hours before correcting any decencies or performing camera video. The developer shall also camera all stormwater infrastructure to ensure that there is no sediment laden infrastructure. Upon notification by the developer that all deficiencies have been corrected and camera video has been completed, the City of Bryant Stormwater Department will re-inspect to verify compliance with correction of deficiencies and reviewing the camera video to assure the stormwater infrastructure is not sediment laden or defective.
- 8. Calling in the bond. If the developer does not contact the City of Bryant Stormwater Department, deficiencies have not been corrected and the stormwater infrastructures has not been camera videoed by the end of the 11th month or one (1) month prior to the expiration of the Bond, the City of Bryant Stormwater Department will prepare an estimate and list of work to be done to bring the stormwater infrastructure into compliance. The City of Bryant Stormwater Department will contact the bonding agency to submit the cost estimates for correcting the deficiencies.
- **9. Requesting Acceptance.** Once all deficiencies have been corrected, the City of Bryant Stormwater Department will prepare the paperwork for the Stormwater Infrastructure within the unit accepted for maintenance by the City of Bryant 'if dedicated', or paperwork will be prepared to release the bond if infrastructure is a private unit.

10. Bond Release. The Bond will be released once the City of Bryant has accepted the Stormwater Infrastructure for maintenance 'if dedicated', and an acceptance letter has been written by the City of Bryant Public Works. If all compliance has been met with a private Stormwater Infrastructure Unit(s) then the City of Bryant Stormwater Department shall contact the developer by formal letter and release the bond. No partial release of the Bond will be allowed at any time.

ATTENTION: DO NOT FILL OUT INFORMATION BELOW UNTIL YOU ARE PRESENT WITH A NOTARY PUBLIC. (THIS DOCUMENT MUST BE NOTARIZED)

By filling out the information below, signing and dating, you are hereby acknowledging that you have read, understand and agree to adhere to the Stormwater Infrastructure Warranty Bond Procedures and Processes listed in this document. You the applicant are hereby responsible for upholding, without limitation, the Stormwater Infrastructure Warranty Bond Procedures.

CYPRES	S VALLEY PHASE 2
Name of	Project Site/Addition
GARY KENNEDY	
Applicant Name (Print)	Applicant Name (Signature)
NNEDY DEVELOPMENT, LLC	1229 HOT SPRINGS HWY BENTON ,AR
Applicant Business Name	Applicant Mailing Address
	Notarization
State of	
County of	
Subscribed and sworn before me, a Notary Public,	on this day of

Comment Responses for Midland Road Estates Subdivision

Public Works

Comment no.1- Site will require ADEQ Large Scale Development permit.

Response- ACEQ Large Scale Development permit has been provided with the submission.

Comment no.2- Site will require a Stormwater Detention Maintenance Plan.

Response- Storm Detention Maintenance Plan it has been provided.

Comment no.3- Developer will be required to submit signed and notarized Stormwater Infrastructure Warranty Bond SOP per Ordinance 2019-32.

Response- Stormwater Infrastructure Warranty Bond SOP has been submitted.

Comment no.4- Discuss placement of spillway' on detention/retention ponds.

Response- Spillway locations have been provided. See (C-6.16).

Comment no.5- Ensure that the pond to the eastside of the south detention pond is not a federally protected wetland.

Response- The comment has been addressed.

Comment no.6- Geotech report from Midland Rd. per Street Specs.

Response- Geotech report from Midland Rd. Street Specifications have been provided.

Comment no.7- Lot counts

Response- Lot counts have been corrected.

Comment no.8- Provide design drawing Corp creek crossing road

Response- Design drawing for Corp Creek has been provided. See (C-6.17).

Comment no.9- Describe management of water from site to the North (pond)

Response- The comment has been addressed.

Comment no.10- Is lot 8 in Corp creek

Response- Lot 8 has resized to keep distance from the Corp creek. See (C-1.0)

Comment no.11- Discuss access to lot 193 and road maintenance.

Response- The comment has been addressed.

Comment no.12- Provide entire Corp creek that crosses development

Response- Entire Corp creek crossing the development site has been provided.

Comment no.13- Discuss encasement Corp creek crossing Road D.

Response- Encasement for Corp creek on Road (D) has been provided. See (C-6.17)

Comment no.14- Discuss drainage easements

Response- The comment has been addressed.

Comment no.15- Will sites require multiple variances for lots?

Response- We do not expect multiple variances.

Comment no.16- Discuss improvement district

Response- The subdivision will be an improvement district.

Comment no.17- Discuss drainage at rear of lots

Response- Drainage plan for rear lots has been provided.

Engineering

Comment no.1- Provide Utility plans, drainage plans and drainage calculations. Provided

Comment no.2- Discuss Sanitary Sewer Impact of Subdivision on Trunk line to Lift Station 25. Not provided

Response- Sanitary sewer impact of Subdivision on Trunk line to Lift Station 25 has been provided.

Comment no.3- Discuss Sanitary Sewer routing through adjacent neighborhoods (Wildwood Terrace and Centark Ranchette).

Response- Sanitary sewer routing has been provided.

Comment no.4- Discuss access management to existing street (Willow). Provided

Comment no.5- Show 30' dedicated gravity sewer easement between lots 13 and 14 and entire length line per section 1200-7-1.08.

Response- Dedicated gravity sewer has been provided.

Comment no.6- Proposed 2" Force Main and 11 grinder pumps to remain private.

Response- 2" Main and 22 grinder pumps have been provided to remain private. See (C-3.7)

Planning

Comment no.1- Annexation Procedures

Response- We will follow standard procedures.

Comment no.2- Discuss Master Transportation Plan Road – Collector

Response- Master Transportation Plan Road has been considered.

Comment no.3- Is lot 119 6,000 SF? Lots 33-35, 47-49, 185, Are under 6,000SF

Response- Lots 119, 33-35, and 47-49 are over 6000 SF.

Comment no.4 Lot 193 and Rear entrance are located within an existing subdivision, Wildwood Terrace.

Response- Lot 193 has been reviewed and discussed with title company.

Comment no.5- Street Cross Section is incorrect - 5ft sidewalk, 7 ft greenspace is typical local street.

Response- Comment has been addressed.

Comment no.6- Sheet C-5.0 shows sidewalk width "4ft or 5ft" in width. City specs are 5ft.

Response- Sheet C-5.0 has been corrected.

Comment no.7- No updated plat has been provided.

Response- Plats have been updated.

Fire

Comment no.1- Need fire hydrant locations listed on plans.

Response- Fire hydrants have been listed on utilities plans.

Stormwater Pollution Prevention Plan (SWPPP) for Construction Activity for Large Construction Sites

National Pollutant Discharge Elimination System (NPDES) General Permit # ARR150000

Prepared for: HAVEN'S DEVELOPMENT, LLC

MIDLAND ROAD

Proposed Subdivision

MIDLAND ROAD Subdivison
Saline County

Date:

19 April 2023

Prepared by:



Project Name and Location: <u>Midland Road Subdivision</u>, <u>NW across from the intersection of Midland</u>
Rd. and Creekside Dr., Bryant, Saline County

Property Parcel Number (<i>(</i>	Optional):	<u>d 001-03744-000</u>
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Owner: Todd Haven - Haven's Development 501-891-2289;

2909 N. University Ave., Little Rock, AR 72207 todd@havensdev.com

Developer/Contractor/Operator: <u>Todd Haven – Haven's Development - 501-891-2289</u>,

2909 N. University Ave., Little Rock, AR 72207

grahamsmithcompanies.com

- A. Site Description
 - a. Project description, intended use after NOI is filed: 165 Lot subdivision
 - Sequence of major activities which disturb soils: <u>Construction entrance</u>, <u>ROW clearing</u>, <u>silt fence</u>, <u>drainage channels</u>, <u>trenching for utilities</u>, <u>rock ckeck dams</u>, <u>grading</u>, <u>road construction</u>, <u>lot clearing</u>, <u>home construction</u>. <u>Detention will be temp sediment pond</u>, (<u>see</u> erosion control plan).
 - c. Total Area¹: Disturbed Area²: 49.09 Ac± 43.76 Ac±
 - d. Soils Information:
 - i. Runoff Coefficient Pre-Construction (See Appendix A): **0.47**
 - ii. Runoff Coefficient Post-Construction (See Appendix A): 0.65
 - iii. Describe the soil or the quality of any discharge from the site: **OK**
- B. Responsible Parties

Be sure to assign all SWPPP related activities to an individual or position; even if the specific individual is not yet known (i.e. contractor has not been chosen).

Individual/Company	Phone Number	Service Provided for SWPPP (i.e., Inspector, SWPPP revisions, Stabilization Activities, BMP Maintenance, etc.)
Hope Consulting	501-315-2626	SWPPP Revisions
Todd Haven – Haven's	501-891-2289	Inspection, Stabilization
Development LLC- Operator		Activities, BMP Maintenance

C. Receiving Waters

a. The following waterbody (or waterbodies) receives stormwater from this construction site: <u>unnamed Tributary, thence Owen Creek, thence Foueche Creek, thence Arkansas River</u>

	tnence Arkansas River	
b.	Is the project located within the jurisd	iction of an MS4? ⊠Yes ⊡No
	i. If yes, Name of MS4: Bryant	
c.	Ultimate Receiving Water:	
	Red River	⊠Arkansas River
	Ouachita River	White River

ARR150000	onation revention rian for ea	and detroit Activity	1 486 2
☐St.	Francis River	Mississippi River	
submitted to ADE	Q.	ge request, an updated SWPPP and a \$200 modification fee to be conal acreage request and an updated SWPPP to be submitted to	
D. Docur	nentation of Permit Eligibili	ty Related to the 303(d) list and Total Maximum	Daily
Loads	(TMDL) (https://www.adeq.s	state.ar.us/water/planning/)	
a.	Does the stormwater entermoter TMDL? Yes No	er a waterbody on the 303(d) list or with an appr	oved
b.	If yes:		
	i. Waterbody identif	ied on 303(d) list:_	
		ed on 303(d) list or TMDL:	
	is identified on 303	ct ,or generally construction activity i.e. surface ϵ (d) list or associated assumptions and allocation MDL for the discharge: \square Yes \square No s implemented: $\underline{}$.	
F A44-1-	on and a f Water Overlite Chan	ada ada Aftan Arathanizatian	
	ment of Water Quality Star		
a.	•	t, install, implement, and maintain BMPs at the	moot
		imize pollutants in the discharge as necessary to	
		tandards. In general, except in situations explain ped, implemented, and updated to be considere	
		ensure that the discharges do not cause or contr	
		applicable water quality standard.	ibute
h		ation, the Department may determine that the	
δ.	•	ay cause, have reasonable potential to cause, or	
	_	n above any applicable water quality standard. If	such a
		ne Department will require the permittee to:	
		nental BMP action plan describing SWPPP modifi	ications
	to address adequa	tely the identified water quality concerns and su	ıbmit
	valid and verifiable	e data and information that are representative o	f
	ambient condition	s and indicate that the receiving water is attaining	ng
	water quality stand	dards; or	
	ii. Cease discharges o	of pollutants from construction activity and subm	nit an
	individual permit a	application.	
I unde	erstand and agree to follow	the above text regarding the attainment of water	er
quality	y standards after authorizat	ion. XYes No	

- F. Site Map Requirements (Attach Site Map):
 - a. Pre-construction topographic view;
 - Direction of stormwater flow (i.e., use arrows to show which direction stormwater will flow) and approximate slopes anticipated after grading activities;
 - c. Delineate on the site map areas of soil disturbance and areas that will not be disturbed under the coverage of this permit;
 - d. Location of major structural and nonstructural controls identified in the plan;
 - e. Location of main construction entrance and exit;
 - f. Location where stabilization practices are expected to occur;
 - g. Locations of off-site materials, waste, borrow area, or equipment storage area;
 - h. Location of areas used for concrete wash-out;
 - i. Location of all surface water bodies (including wetlands) with associated natural buffer boundary lines. Identify floodplain and floodway boundaries, if available;
 - Locations where stormwater is discharged to a surface water and/or municipal separate storm sewer system if applicable,
 - k. Locations where stormwater is discharged off-site (should be continuously updated);
 - I. Areas where final stabilization has been accomplished and no further construction phase permit requirements apply;
 - A legend that identifies any erosion and sediment control measure symbols/labels used in the site map and/or detail sheet; and
 - n. Locations of any storm drain inlets on the site and in the immediate vicinity of the site.

G. Stormwater Controls

- a. Initial Site Stabilization, Erosion and Sediment Controls, and Best Management Practices:
 - Initial Site Stabilization: <u>existing vegetation</u>, <u>silt fencing on toe of slopes and along major drainage pathways</u>. <u>All silt fencing may not be necessary initially</u>, <u>but rather as construction progresses</u>.
 - ii. Erosion and Sediment Controls: Rip rap check dams, additional silt fencing (as needed),

iii.	If periodic inspections or other information indicates a control has been
	used inappropriately or incorrectly, the operator will replace or modify
	the control for site situations: XYes No
	If No, explain:

	iv.	Off-site accumulations of sediment will be removed at a frequency sufficient to minimize off-site impacts: Yes No
		If No, explain:
	V.	Sediment will be removed from sediment traps or sedimentation ponds when design capacity has been reduced by 50%: Yes No If No, explain:
	vi.	Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges: Yes No If No, explain:
	vii.	Off-site material storage areas used solely by the permitted project are being covered by this SWPPP: Yes No If Yes, explain additional BMPs implemented at off-site material storage area:
b.	Stabili	zation Practices
	i.	Description and Schedule: Final stabilization will be concrete, stone, sod, landscape. Permit will be closed when all exposed areas are 100% covered with 80% density.
	ii.	Are buffer areas required? Yes No If Yes, are buffer areas being used? Yes No
		If Yes, describe natural buffer areas: Natural buffer area will be undisturbed along unnamed tributary.
		If No, explain why not:
	iii.	A record of the dates when grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated shall be included with the plan.
	iv.	Deadlines for stabilization: Stabilization procedures will be initiated 14 days after construction activity temporarily ceases on a portion of the site. Yes No If No, explain:

- v. Deadlines for stabilization:
 - 1. Stabilization procedures will be initiated immediately after construction activity temporarily ceases on a portion of the site.
 - 2. Stabilization procedures will be initiated immediately in portions of the site where construction activities have permanently ceased.

_	Structura	D:
\boldsymbol{r}	\tri\ctilra	I Dractica:
c.	Juluctura	rracuces

c. Structural Practices
i. Describe any structural practices to divert flows from exposed soils, store
flows, or otherwise limit runoff and the discharge of pollutants from
exposed areas of the site: <u>silt fencing, check dams</u>
ii. Describe Velocity Dissipation Devices: rip rap check dams as needed
iii. Sediment Basins:
Are 10 or more acres draining to a common point? ⊠Yes ☐No
Is a sediment basin included in the project? ☐Yes ☒No
If Yes, what is the designed capacity for the storage?
3600 cubic feet per acre = : _
or
\sum 10 year, 24 hour storm =
: 62335
Other criteria were used to design basin:
If No, explain why no sedimentation basin was included and
describe required natural buffer areas and other controls
implemented instead: Each lot will have plenty of buffer space
around the perimeter
H. Other Controls
a. Solid materials, including building materials, shall be prevented from being
discharged to Waters of the State: ⊠Yes ☐No
b. Off-site vehicle tracking of sediments and the generation of dust shall be
minimized through the use of:
A stabilized construction entrance and exit
☐Vehicle tire washing
Other controls, describe: Street needs to be swept if needed.

c. Temporary Sanitary Facilities: Contractor to provide and maintain facitilities.

	d.	Concrete Waste Area Provided:
		⊠Yes
		No. Concrete is used on the site, but no concrete washout is provided.
		Explain why:
		,
		N/A, no concrete will be used with this project
	e.	Fuel Storage Areas, Hazardous Waste Storage, and Truck Wash Areas: <u>No</u>
		hazardous waste will be produced as a result of this project. Fuel storage areas will
		not be used and truck wash areas will not be needed.
I.	Non-S	tormwater Discharges
	a.	The following allowable non-stormwater discharges comingled with stormwater
		are present or anticipated at the site:
		Fire-fighting activities;
		Fire hydrant flushings;
		Water used to wash vehicles (where detergents or other chemicals are
		not used) or control dust in accordance with Part II.A.4.H.2;
		Potable water sources including uncontaminated waterline flushings;
		Landscape Irrigation;
		Routine external building wash down which does not use detergents or
		other chemicals;
		Pavement wash waters where spills or leaks of toxic or hazardous
		materials have not occurred (unless all spilled materials have been removed)
		and where detergents or other chemicals are not used;
		Uncontaminated air conditioning, compressor condensate (See Part I.B.13.C of the permit);
		Uncontaminated springs, excavation dewatering and groundwater (See
		Part I.B.13.C of the permit);
		Foundation or footing drains where flows are not contaminated with
		process materials such as solvents (See Part I.B.13.C of the permit);
	b.	Describe any controls associated with non-stormwater discharges present at the
		site: There are no non storm water discharges that warrant extra controls. The
		activities which will be non storm water discharges will be not be regularly occuring
		and will be monitored.
J.	Perma	nent Controls for Post-Construction Stormwater Management:
٠.		scribe measures installed during the construction process to control pollutants in
		ormwater discharges that will occur after construction operations have been
		mpleted: Project area will be stabilized before SWPPP is terminated. Yards will be
		Ided/seeded and/or landscaped.
	Per	mit won't be closed until obtain 100% coverage and 80% density

K.	Applicable State or Local Programs: The SWPPP will be updated as necessary to reflect
	any revisions to applicable federal, state, or local requirements that affect the
	stormwater controls implemented at the site. XYes No

L. Inspections

a. Inspection frequency	1 .	Inspection	trequenc
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Every 7 calendar days and within 24 hours of the end of a storm event 0.5 inches or greater (a rain gauge must be maintained on-site)

b. Inspections:

Completed inspection forms will be kept with the SWPPP.
△ADEQ's inspection form will be used (See Appendix B)
or
A form other than ADEQ's inspection form will be used and is attached
(See inspection form requirements Part II.A.4.L.2)

- c. Inspection records will be retained as part of the SWPPP for at least 3 years from the date of termination.
- d. It is understood that the following sections describe waivers of site inspection requirements. All applicable documentation requirements will be followed in accordance with the referenced sections.
 - i. Winter Conditions (Part II.A.4.L.4)
 - ii. Adverse Weather Conditions (Part II.A.4.L.5)

M. Maintenance:

The following procedures to maintain vegetation, erosion and sediment control measures and other protective measures in good, effective operating condition will be followed: As homes are completed, lots will be sodded, seeded, and/or landscaped, contractors will be responsible for keeping individual lots during home construction.

Any necessary repairs will be completed, when practicable, before the next storm event, but not to exceed a period of 3 business days of discovery, or as otherwise directed by state or local officials.

N. Employee Training:

The following is a description of the training plan for personnel (including contractors and subcontractors) on this project: <u>The operator is well trained and familiar with erosion control practices</u>. Workers who are under the operator will be briefed and trained on erosion control practices and the SWPPP contents.

**Note, Formal training classes given by Universities or other third-party organizations are not required, but recommended for qualified trainers; the permittee is responsible for the content of the training being adequate for personnel to implement the requirements of the permit.

Certification

"I certify under penalty of law that this document and all attachments such as Inspection Form were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature of Responsible or Cognizant Official:	Kazi Blum			
Title: $P \cdot \mathcal{E}$.	Date:	04-15-2023		

Computation Sheet for Determining Runoff Coefficients

Appendix A

Total Site Area =	Acres	[A]
Existing Site Conditions Impervious Site Area ¹ = Impervious Site Area Runoff Coefficient ^{2, 4} =	Acres	[B] [C]
Pervious Site Area ³ =	Acres	[D]
Pervious Site Area Runoff Coefficient ⁴ =		[E]
Pre-Construction Runoff Coefficient	= This is your pre-construc	tion runoff coefficient.

Proposed Site Conditions (after construction)

Impervious Site Area ¹ =	Acres	[F]
Impervious Site Area Runoff Coefficient ^{2, 4} =		[G]
Pervious Site Area ³ =	Acres	[H]
Pervious Site Area Runoff Coefficient ⁴ =		[۱]

Post-Construction Runoff Coefficient

- 1. Includes paved areas, areas covered by buildings, and other impervious surfaces.
- 2. Use 0.95 unless lower or higher runoff coefficient can be verified.
- 3. Includes areas of vegetation, most unpaved or uncovered soil surfaces, and other pervious areas.
- 4. Refer to local Hydrology Manual for typical C values.

Note: The impervious and pervious surfaces should equal the total area.

Inspector Name	2:			Date of Inspection:					
nspector Title:									
Date of Rainfall	:		Du	ration of Rainf	fall:				
	Rain Event:			nfall Since Las	t Rain Event: _	inches			
	iny Discharges Durir harges of Sediment								
	ed of Additional BM Location of Constru								
Location		Activity Begin Date	Activity Occuring Now (y/n)?	Activity Ceased Date	Stabilizatio Initiated Da				
nformation on	BMPs in Need of M	aintenance							
_ocation	In Working Order?	Maintenance : Date	Scheduled	Maintenance Date	Completed	Maintenance to be Performed By			
Changes require	ed to the SWPPP:		Rea	asons for chan	ges:				
	completed (date):								
direction or s the informat responsible f and complet	supervision in accordation submitted. Based for gathering the info	ance with a system of the control of	designed to ensible person or partition submitted	sure that qualifi ersons who ma is, to the best o	ed personnel portion of the syster of my knowledge	n were prepared under m roperly gather and evaluat m, or those persons directl te and belief, true, accurate luding the possibility of fin			
Signature of Res	sponsible or Cogniza	ant Official:				Date:			
		Title:				_			

ARR150000 Inspection Form

Appendix B

The BMPs listed here should be considered for every project. Those BMPs that are not included in the SWPPP should be checked as "Not Used" with a brief statement describing why it is not being used.

Note: Appendix C and D do not have to be submitted with the SWPPP. These attachments are for use during the development of the SWPPP.

EROSION CONTROL BMPs							
	ВМР						
	Considered				BMP Not		If not used, state
ВМР	for p	roject	BMP	Used	Used	<u> </u>	reason
EC-1 Scheduling		<u> </u>		\succeq		<u>Ц </u>	
EC-2 Preservation of Existing Vegetation				\boxtimes		<u> </u>	
EC-3 Hydraulic Mulch							
EC-4 Hydroseeding				\boxtimes			
EC-5 Soil Binders							
EC-6 Straw Mulch							
EC-7 Geotextiles & Mats							
EC-8 Wood Mulching							
EC-9 Earth Dikes & Drainage Swales				\boxtimes			
EC-10 Velocity Dissipation Devices							
EC-11 Slope Drains							
EC-12 Stream bank Stabilization				\boxtimes			
SI	EDIMEN	IT CONT	ROL BM	Ps	•		
	ВМР						
	Considered						
					BMP		If not used, state
BMP		idered roject	ВМР	Used	Used		If not used, state reason
SE-1 Silt Fence			ВМР	Used			
SE-1 Silt Fence SE-2 Sediment Basin			ВМР	Used			
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap			ВМР	Used			
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam			ВМР	Used			
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls			ВМР	Used			
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm			ВМР	Used			
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls			ВМР	Used			
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm			ВМР	Used			
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm SE-7 Street Sweeping and Vacuuming			ВМР	Used			
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm SE-7 Street Sweeping and Vacuuming SE-8 Sand Bag Barrier			ВМР	Used			
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm SE-7 Street Sweeping and Vacuuming SE-8 Sand Bag Barrier SE-9 Straw Bale Barrier			BMP	Used			
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm SE-7 Street Sweeping and Vacuuming SE-8 Sand Bag Barrier SE-9 Straw Bale Barrier SE-10 Storm Drain Inlet Protection SE-11 Chemical Treatment	for pi						
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm SE-7 Street Sweeping and Vacuuming SE-8 Sand Bag Barrier SE-9 Straw Bale Barrier SE-10 Storm Drain Inlet Protection SE-11 Chemical Treatment	for pi	Froject			Used		reason
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm SE-7 Street Sweeping and Vacuuming SE-8 Sand Bag Barrier SE-9 Straw Bale Barrier SE-10 Storm Drain Inlet Protection SE-11 Chemical Treatment WIN	ID EROS BMP Consi	roject	NTROL E	M M M BMPs	BMP	Not	If not used, state
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm SE-7 Street Sweeping and Vacuuming SE-8 Sand Bag Barrier SE-9 Straw Bale Barrier SE-10 Storm Drain Inlet Protection SE-11 Chemical Treatment	ID EROS BMP Consi	Froject		M M M BMPs	Used	Not	reason

TRACKING CONTROL BMPs										
	ВМР									
DMD	Considered		DMD Head		BMP Not		ot	If not used, state		
TD 1 Stabilized Construction Entrance/Evit	ior p	or project BMP Used		Used		1	reason			
TR-1 Stabilized Construction Entrance/Exit						<u> </u>		┢	<u> </u>	BMPs not used are
TR-2 Stabilized Construction Roadway]		┢	<u> </u>	needed
TR-3 Entrance/Outlet Tire Wash	 	TE	D 8444			T DA	De.	<u> </u>		
NON-STOP	BMP	\IE	K IVIAI	NAGEIV	IEN	I I BIVI	PS			
	Cons	ide	red			ВМЕ	BMP Not		If not used, state	
ВМР	for p			ВМР	Us	ed	Used			reason
NS-1 Water Conservation Practices	•	Ó								BMPs not used are
NS-2 Dewatering Operations								Ī		needed
NS-3 Paving and Grinding Operations								Ī		
NS-4 Temporary Stream Crossing								Ī		
NS-5 Clear Water Diversion								Ī		
NS-6 Illicit Connection/ Discharge								Ī		
NS-7 Potable Water/Irrigation					X			Ī		
NS-8 Vehicle and Equipment Cleaning									1	
NS-9 Vehicle and Equipment Fueling										
NS-10 Vehicle and Equipment Maintenance								Ī		
NS-11 Pile Driving Operations								Ī		
NS-12 Concrete Curing										
NS-13 Concrete Finishing										
NS-14 Material and Equipment Use Over Water										
NS-15 Demolition Adjacent to Water										
NS-16 Temporary Batch Plants										
WASTE MANAGEMENT	AND I	VΑ.	TERIA	LS POLI	LU1	ION (CONTR	OL	BMPs	
	ВМР									
200	Cons						BMF		ot	If not used, state
BMP	for p	roje	ect	ВМР	Us	ed	Used	<u></u>	1	reason
WM-1 Material Delivery and Storage]		┢	<u>]</u>	BMPs not used are
WM-2 Material Use						1		_	 	needed
WM-3 Stockpile Management						1		누	<u></u>	
WM-4 Spill Prevention and Control						<u> </u> 1		╁		
WM-5 Solid Waste Management						<u> </u> 		F	<u> </u>	
WM-6 Hazardous Waste Management						<u> </u> 		上	<u> </u>	
WM-7 Contaminated Soil Management] 1		<u> </u>		
WM-8 Concrete Waste Management						<u> </u> 		Ļ	<u> </u>	
WM-9 Sanitary/Septic Waste Management						<u> </u> 1		누	<u> </u>	
WM-10 Liquid Waste Management								L		

SWPPP Completion Checklist

Appendix D

Yes = Complete

No = Incomplete/Deficient

N/A = Not applicable to project

Yes	No	N/A	_A. A site description, including:	Permit Section Citation
			1. Project description, intended use after NOT	Part II.A.4.A.1
			2. Sequence of major activities	Part II.A.4.A.2
			3. Total & disturbed acreage	Part II.A.4.A.3
			4. Pre- and post-construction runoff coefficient OR soil/discharge data	Part II.A.4.A.4
	T		B. Responsible Parties: All parties dealing with the SWPPP and the areas they are	:
			responsible for on-site.	Part II.A.4.B
	1	1	C. Receiving Water.	Part II.A.4.C
	1	+	-MS4 Name	Part II.A.4.C
			-Ultimate Receiving Water	Part II.A.4.C
	1	1	D. Documentation of permit eligibility related to Impaired Water Bodies and Tota	
	-	+	1. Identify pollutant on 303(d) list or TMDL	Part II.A.4.D.1
	1		2. Is construction activity or the specific site listed as cause?	Part II.A.4.D.2
			3. Measures taken to reduce pollutants from the site.	Part II.A.4.D.3
			E. Attainment of Water Quality Standards After Authorization.	Part II.A.4.E
			F. Site Map See End of Evaluation Form	Part II.A.4.F
			G. Description of Controls:	
			Erosion and sediment controls, including:	
			a. Initial site stabilization	Part II.A.4.G.1.a
			b. Erosion and sediment controls	Part II.A.4.G.1.b
			c. Replacement of inadequate controls	Part II.A.4.G.1.c
			d. Removal of off-site accumulations	Part II.A.4.G.1.d
			e. Maintenance of sediment traps/basins @ 50% capacity	Part II.A.4.G.1.e
	1		f. Litter, construction debris and chemicals properly handled	Part II.A.4.G.1.f
			g. Off-site storage areas and controls	Part II.A.4.G.1.g
			2. Stabilization practices:	
			a. Description and schedule for stabilization	Part II.A.4.G.2.a
			b. Description of buffer areas	Part II.A.4.G.2.b
	1	+	c. Records of stabilization	Part II.A.4.G.2.c
			d. Deadlines for stabilization	Part II.A.4.G.2.d
			3. Structural Practices:	
			Describe structural processes to discret flavor store flavor or otherwise limit proof.	Part II.A.4.G.3
	1	+	-Describe structural practices to divert flows, store flows, or otherwise limit runoff a. Sediment basins	
			a. Sediment basins	Part II.A.4.G.3.a.1
			-Are more than 10 acres draining to a common point? If so, are sediment basins included?	
			-Sediment basin dimensions and capacity description and calculations	Part II.A.4.G.3.a.1
			-If a basin wasn't practicable, are other controls sufficient?	Part II.A.4.G.3.a.1
			b. Velocity dissipation devices concentrated flow from 2 or more acres	Part II.A.4.G.3.b
	_		H. Other controls including:	
			1. Solid waste control measures	Part II.A.4.H.1
			2. Vehicle off-site tracking controls	Part II.A.4.H.2
			3. Compliance with sanitary waste disposal	Part II.A.4.H.4
			4. Does the site have a concrete washout area controls?	Part II.A.4.H.5
			5. Does the site have fuel storage areas, hazardous waste storage and/or truck wash areas	
			controls?	Part II.A.4.H.6

SWPPP Completion Checklist

Appendix D

Yes	No	N/A		Permit Section Citation
			I. Identification of allowable non-storm water discharges	Part II.A.4.I
			-Appropriate controls for dewatering, if present	Part I.B.12.C
			J. Post construction stormwater management.	Part II.A.4.J
	I		K. State or local requirements incorporated into the plan.	Part II.A.4.K
•	•	•		
			L. Inspections	
			1. Inspection frequency listed?	Part II.A.4.L.1
	_		2. Inspection form	Part II.A.4.L.2
			Ours.	
			If not ours, does it contain the following items:	
			a. Inspector name and title	Part II.A.4.L.2.a
			b. Date of inspection.	Part II.A.4.L.2.b
			c. Amount of rainfall and days since last rain event (14 day only)	Part II.A.4.L.2.c
			d. Approx beginning and duration of storm event	Part II.A.4.L.2.d
			e. Description of any discharges during inspection	Part II.A.4.L.2.e
			f. Locations of discharges of sediment/other pollutants	Part II.A.4.L.2.f
			g. BMPs in need of maintenance	Part II.A.4.L.2.g
			h. BMPs in working order, if maintenance needed (scheduled and completed)	Part II.A.4.L.2.h
			i. Locations that are in need of additional controls	Part II.A.4.L.2.i
			j. Location and dates when major construction activities begin, occur or cease	Part II.A.4.L.2.j
			k. Signature of responsible/cognizant official	Part II.A.4.L.2.k
			3. Inspection Records	Part II.A.4.L.3
			4. Winter Conditions	Part II.A.4.L.4
			5. Adverse Weather Conditions	Part II.A.4.L.5
			M. Maintenance Procedures	Part II.A.4.M
			N. Employee Training	Part II.A.4.N
			Signed Plan Certification	Part II.A.5. and Part II.B.10
	·	•		
1	1	1	F. Site Map showing:	D4 H A 4 E 1
			1. Pre-construction topographic view	Part II.A.4.F.1
	-		2. Drainage flow	Part II.A.4.F.2
	+	1	3. Approximate slopes after grading activities	Part II.A.4.F.2
		_	4. Areas of soil disturbance and areas not disturbed	Part II.A.4.F.3
		_	5. Location of major structural and non-structural controls.	Part II.A.4.F.4
			6. Location of main construction entrance and exit.	Part II.A.4.F.5
			7. Areas where stabilization practices are expected to occur.	Part II.A.4.F.6
		_	8. Locations of off-site materials, waste, borrow area or storage area.	Part II.A.4.F.7
			9. Locations of areas used for concrete wash-out.	Part II.A.4.F.8
			10. Locations of surface waters on site.	Part II.A.4.F.9
	1		11. Locations where water is discharged to a surface water or MS4.	Part II.A.4.F.10
			12. Storm water discharge locations.	Part II.A.4.F.11
	1		13. Areas where final stabilization has been accomplished.	Part II.A.4.F.12
	1		14. Legend for symbols/labels used	Part II.A.4.F.13
			15. Location of storm drain inlets on site or in immediate vicinity	Part II.A.4.F.14

MIDLAND ROAD SUBDIVISION BRYANT, AR DRAINAGE REPORT

FOR
City of Bryant, Saline County, AR

April 2023

Owner & Developer: HAVEN'S DEVELOPMENT, LLC Address: 2615 N. Prickett Road, Suite 5, Bryant AR 72022

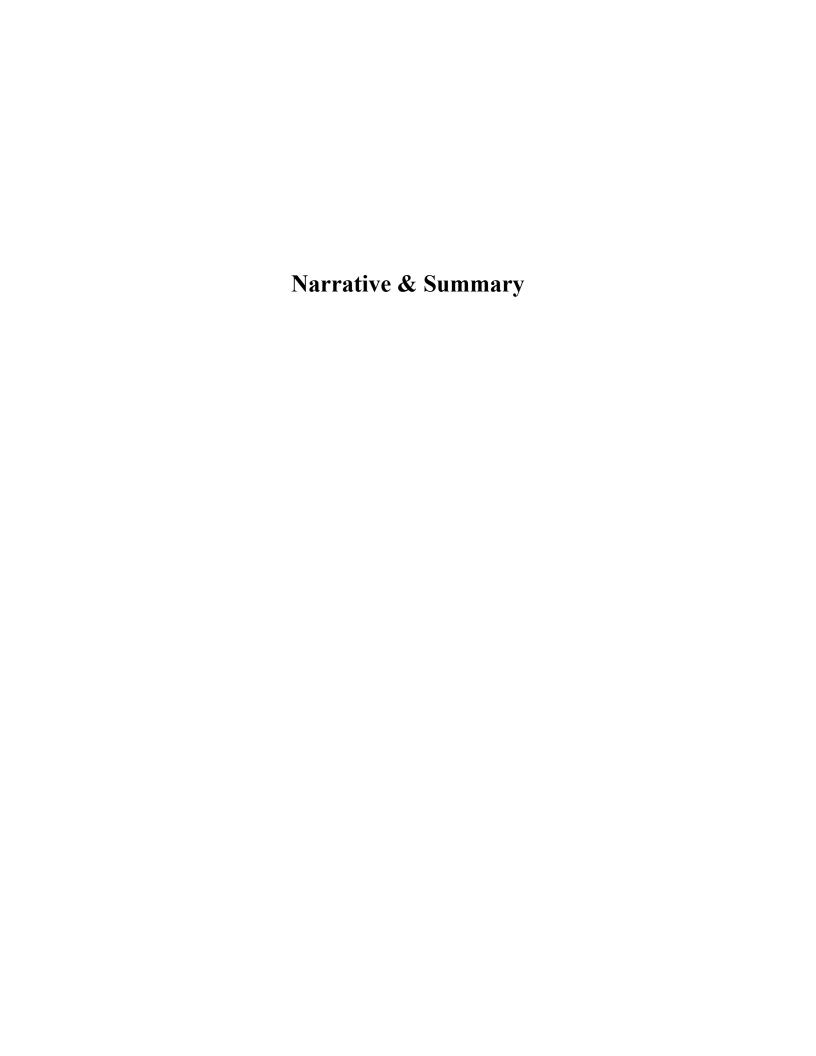
By:



TABLE OF CONTENTS

ITEM DESCRIPTION

- 1. Narrative & Summary
- 2. Hydrograph Report
- 3. Drainage Map



PROJECT TITLE

Midland Road Subdivision

PROJECT PROPERTY OWNER

Havens Development, LLC

Address: 2615 N. Prickett Road, Suite 5, Bryant AR 72022

PROJECT LOCATION

Midland Road, Bryant, AR

PROJECT DESCRIPTION

The proposed sub divisional development is on Midland Road, Bryant, AR 72002. Total development site area is 49.13 acres.

DRAINAGE ANALYSIS

On Site Drainage- Rational method was used to determine the existing and proposed flows from proposed site. There will be three detention ponds to detain water from this development. Detailed drainage calculations considering the future expected development has been conducted to determine the required detention pond and culvert dimensions. Summary of the calculations are below:

North-West Detention Pond

- Pond is situated on the north-west side of the property.
- Pre-development area 23.93 acres.
- Post-development area 29.93 acres.
- Pre-development runoff coefficient Area-1 0.47.
- Post-development runoff coefficient Area- 0.67.
- Pond has a bottom area of 0.24 acres with bottom elevation of 358.00'.
- One 36" RCP with 0.5% slope is proposed for outflow culverts.

Peak flows for Pre and post development phase of onsite area have been tabulated below-

		Post-dev. Without	
	Pre-development	detention	Post-dev. With detention
	Peak Flow (cfs)	Peak Flow (cfs)	Peak Flow (cfs)
2-Year	39.37	71.11	28.79
5-Year	43.42	79.06	32.35
10-Year	51.95	91.38	37.12
25-Year	59.77	104.47	41.61
50-Year	68.17	118.84	44.71
100-Year	72.76	126.02	46.70

South-West Detention Pond

- Pond is situated on the north-east side of the property.
- Pre-development area 15.44 acres.
- Post-development area 15.44 acres.
- Pre-development runoff coefficient 0.47.
- Post-development runoff coefficient 0.67.
- Pond has a bottom area of 0.15 acres with bottom elevation of 350.50'.
- One 24" RCP with 0.5% slope is proposed for outflow culverts.

Peak flows for Pre and post development phase of onsite area have been tabulated below-

		Post-dev. Without	
	Pre-development	detention	Post-dev. With detention
	Peak Flow (cfs)	Peak Flow (cfs)	Peak Flow (cfs)
2-Year	27.54	51.22	12.42
5-Year	30.41	57.50	13.85
10-Year	36.00	65.13	15.14
25-Year	41.33	74.24	21.08
50-Year	47.13	84.11	29.93
100-Year	50.16	89.52	33.52

South-East Detention Pond

- Pond is situated on the south-east side of the property.
- Pre-development area 23.57 acres.
- Post-development area 23.57 acres.
- Pre-development runoff coefficient 0.47.
- Post-development runoff coefficient 0.53.
- Pond has a bottom area of 0.15 acres with bottom elevation of 346.50'.
- Two 24" RCP with 0.5% slope is proposed for outflow culverts.

Peak flows for Pre and post development phase of onsite area have been tabulated below-

		Post-dev. Without	
	Pre-development	detention	Post-dev. With detention
	Peak Flow (cfs)	Peak Flow (cfs)	Peak Flow (cfs)
2-Year	36.03	40.63	31.29
5-Year	39.74	44.82	34.49
10-Year	47.96	54.08	41.03
25-Year	55.30	62.36	46.37
50-Year	63.03	71.07	50.53
100-Year	67.50	76.12	53.00

CONCLUSION

From the onsite drainage calculation, it is seen that there is decrease in flow for all storm events due to the proposed detention ponds.

Hydrograph Summary Report

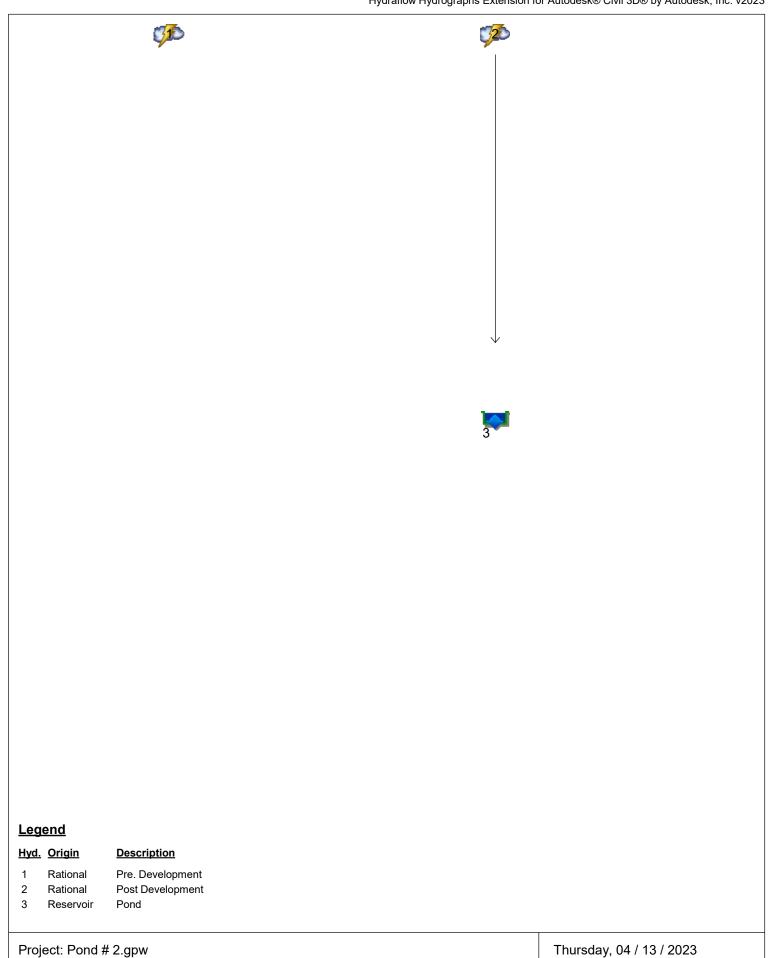
NORTHWEST POND

SOUTHWEST POND

SOUTHEAST POND

SOUTHWEST POND

Watershed Model Schematic



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

yd. o.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	27.54	1	17	28,095				Pre. Development
2	Rational	51.22	1	9	27,659				Post Development
	Reservoir	51.22	1 1	9 16	27,659 24,253	2	353.22	21,932	Post Development Pond

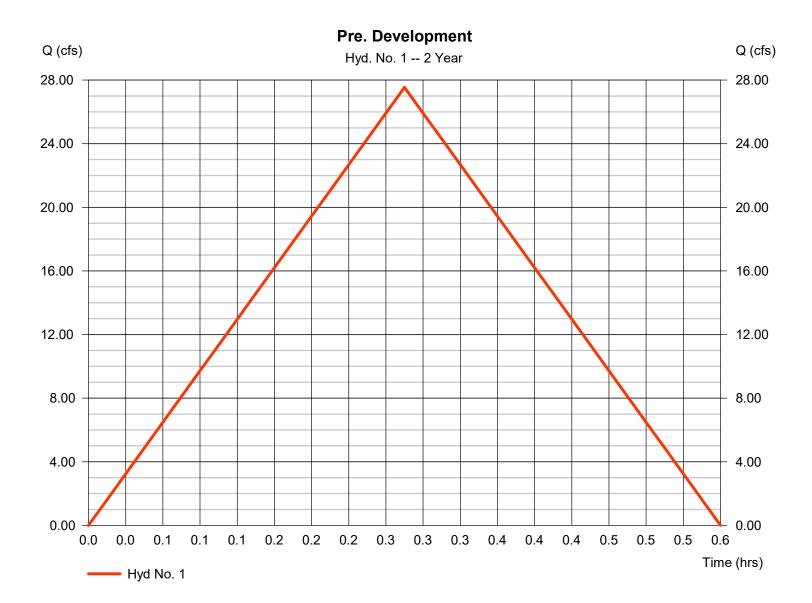
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Thursday, 04 / 13 / 2023

Hyd. No. 1

Pre. Development

Hydrograph type = Rational Peak discharge = 27.54 cfsStorm frequency = 2 yrsTime to peak = 0.28 hrsTime interval = 1 min Hyd. volume = 28,095 cuft Drainage area Runoff coeff. = 15.440 ac= 0.47Tc by User Intensity = 3.796 in/hr= 17.00 min



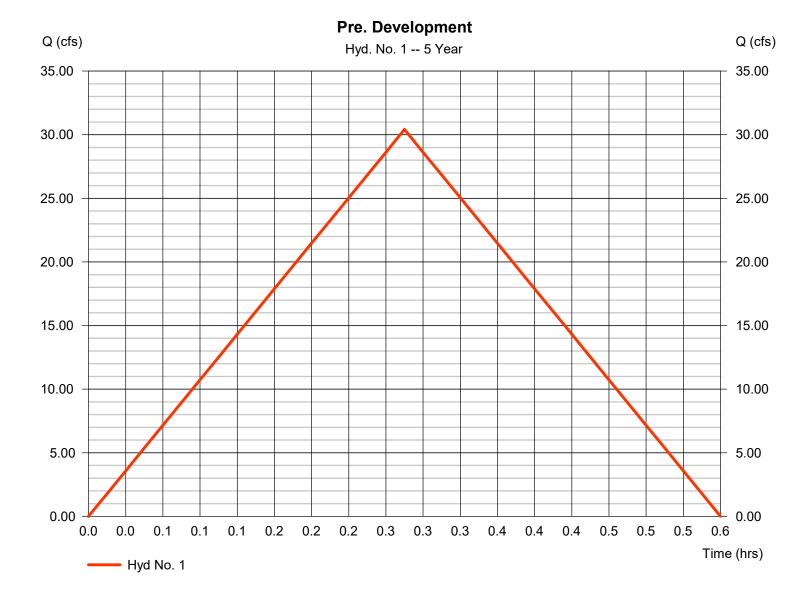
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Thursday, 04 / 13 / 2023

Hyd. No. 1

Pre. Development

Hydrograph type = Rational Peak discharge = 30.41 cfsStorm frequency Time to peak = 5 yrs= 0.28 hrsTime interval = 1 min Hyd. volume = 31,020 cuftDrainage area Runoff coeff. = 15.440 ac= 0.47Tc by User = 17.00 min Intensity = 4.191 in/hr



lyd. Io.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	36.00	1	17	36,718				Pre. Development
2	Rational	65.13	1	9	35,168				Post Development
2 3	Reservoir	65.13 15.14	1 1	9 16	35,168 31,762	2	353.79	27,663	Post Development Pond
Poi	nd # 2.gpw				Return I	Period: 10 \	Year	Thursday,	04 / 13 / 2023

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Thursday, 04 / 13 / 2023

Hyd. No. 1

Pre. Development

Hydrograph type = Rational Peak discharge = 36.00 cfsStorm frequency = 10 yrsTime to peak = 0.28 hrsTime interval = 1 min Hyd. volume = 36,718 cuft Drainage area Runoff coeff. = 15.440 ac= 0.47Tc by User = 17.00 min Intensity = 4.961 in/hr



yd. o.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	41.33	1	17	42,154				Pre. Development
2	Rational	74.24	1	9	40,091				Post Development
2 3	Reservoir	74.24 21.08	1 1	9 15	40,091 36,686	2	354.11	31,066	Post Development Pond
	nd # 2.gpw					Period: 25			04 / 13 / 2023

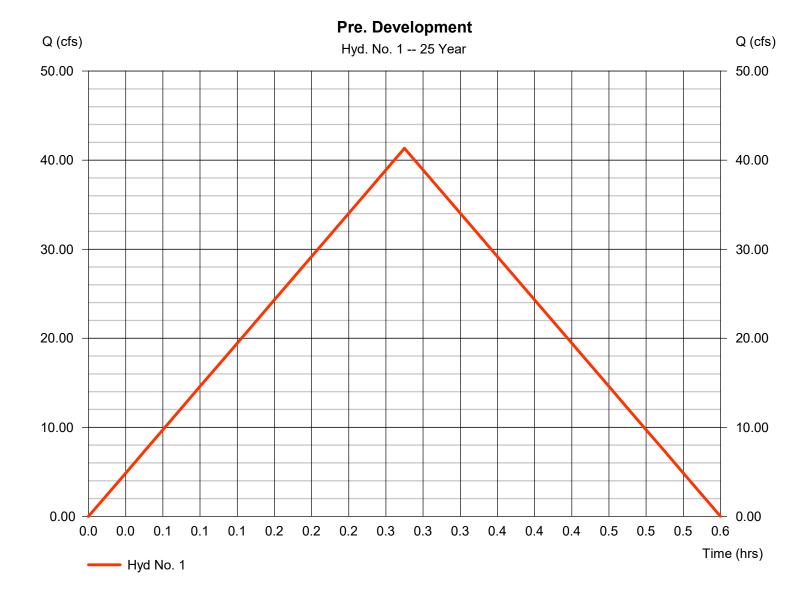
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Thursday, 04 / 13 / 2023

Hyd. No. 1

Pre. Development

Hydrograph type = Rational Peak discharge = 41.33 cfsStorm frequency = 25 yrsTime to peak = 0.28 hrsTime interval = 1 min Hyd. volume = 42,154 cuft Drainage area Runoff coeff. = 15.440 ac= 0.47Tc by User = 17.00 min Intensity = 5.695 in/hr



lyd. lo.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	47.13	1	17	48,074				Pre. Development
2	Rational	84.11	1	9	45,417				Post Development
2 3	Rational	84.11 29.93	1	9 15	45,417 42,012	2	354.34	33,670	Post Development Pond
	nd # 2.gpw				Poturo	Period: 50 \	Voor	Thursday	04 / 13 / 2023

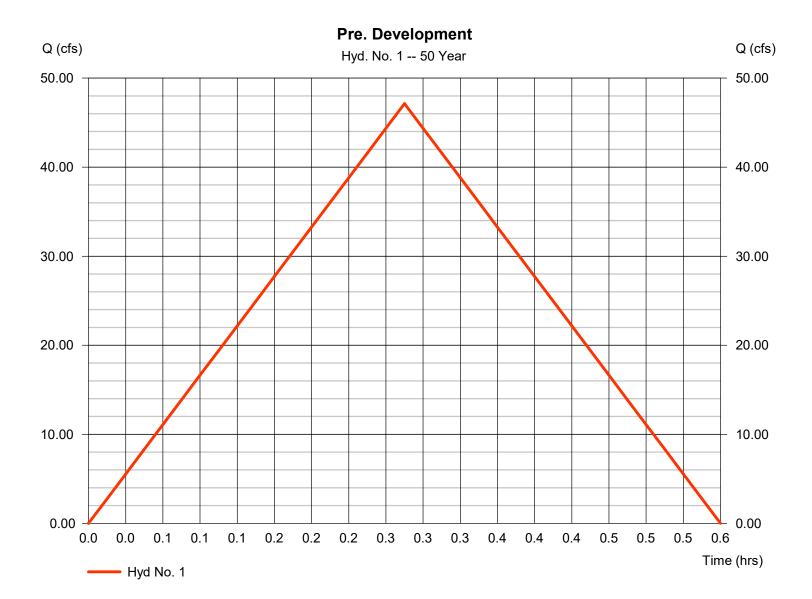
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Thursday, 04 / 13 / 2023

Hyd. No. 1

Pre. Development

Hydrograph type = Rational Peak discharge = 47.13 cfsStorm frequency = 50 yrsTime to peak = 0.28 hrsTime interval = 1 min Hyd. volume = 48,074 cuftDrainage area Runoff coeff. = 15.440 ac= 0.47Tc by User Intensity = 6.495 in/hr= 17.00 min



lyd. Io.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	50.16	1	17	51,159				Pre. Development
2	Rational	89.15	1	9	48,142				Post Development
2 3	Reservoir	89.15 33.52	1	9 15	48,142	2	354.46	34,985	Post Development Pond
 Por	nd # 2.gpw				Return	Period: 100) Year	Thursday	04 / 13 / 2023

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

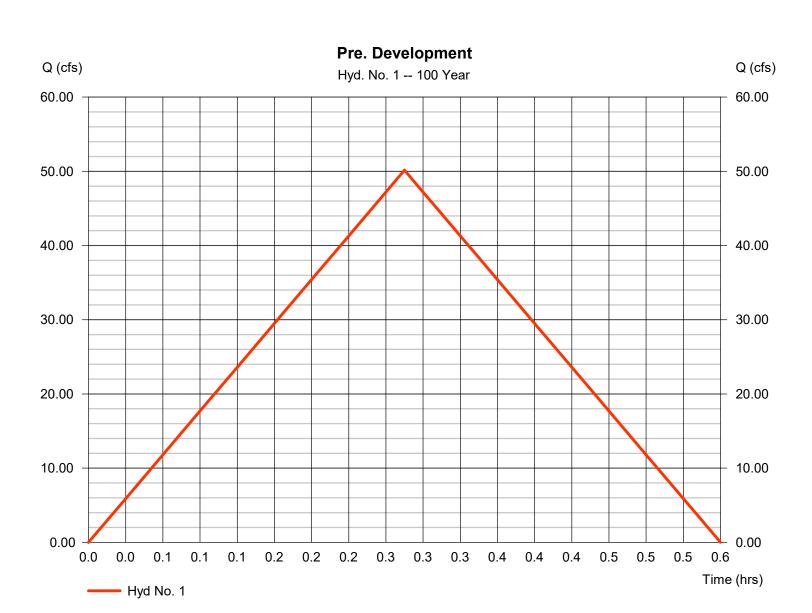
Thursday, 04 / 13 / 2023

Hyd. No. 1

Pre. Development

Hydrograph type = Rational Peak discharge = 50.16 cfsStorm frequency = 100 yrsTime to peak = 0.28 hrsTime interval = 1 min Hyd. volume = 51,159 cuft Runoff coeff. Drainage area = 15.440 ac= 0.47

Intensity = 6.912 in/hr Tc by User = 17.00 min IDF Curve = Bryant 50.IDF Asc/Rec limb fact = 1/1



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1

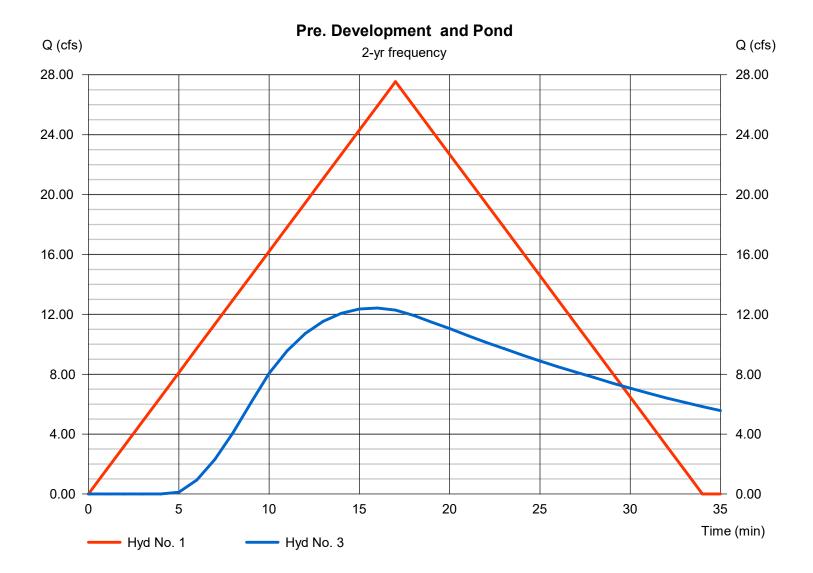
Pre. Development

Hydrograph type = Rational
Peak discharge = 27.54 cfs
Time to peak = 17 min
Hyd. Volume = 28,095 cuft

Hyd. No. 3

Pond

Hydrograph type = Reservoir
Peak discharge = 12.42 cfs
Time to peak = 16 min
Hyd. Volume = 24,253 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

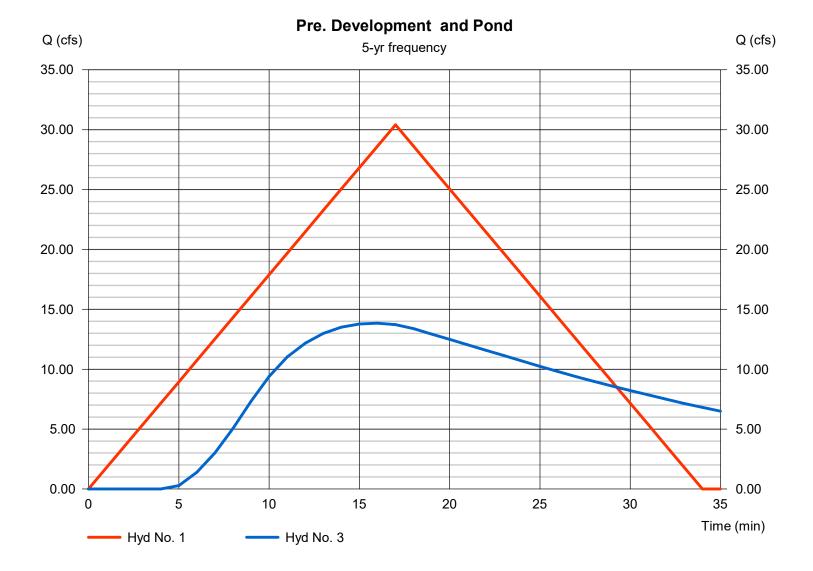
Hyd. No. 1

Pre. Development

Hydrograph type = Rational Peak discharge = 30.41 cfs Time to peak = 17 min Hyd. Volume = 31,020 cuft Hyd. No. 3

Pond

Hydrograph type = Reservoir
Peak discharge = 13.85 cfs
Time to peak = 16 min
Hyd. Volume = 27,645 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

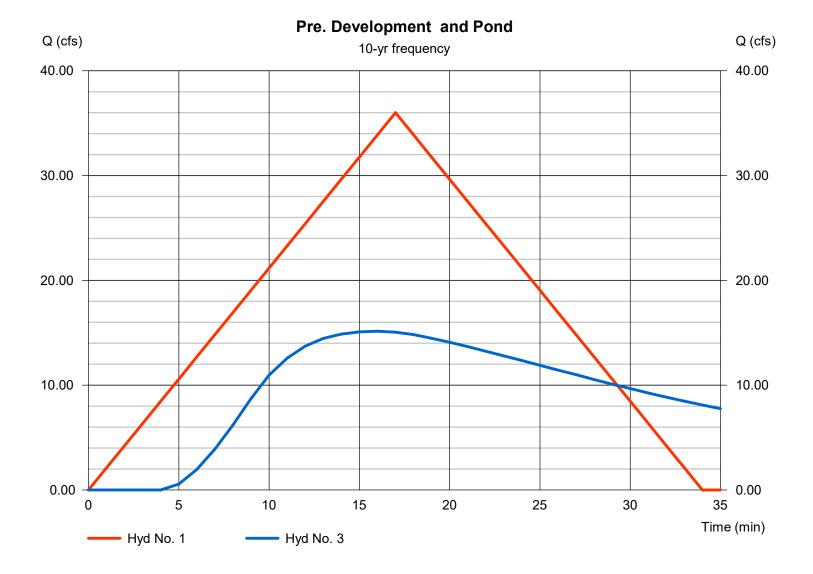
Hyd. No. 1

Pre. Development

Hydrograph type = Rational Peak discharge = 36.00 cfs Time to peak = 17 min Hyd. Volume = 36,718 cuft Hyd. No. 3

Pond

Hydrograph type = Reservoir
Peak discharge = 15.14 cfs
Time to peak = 16 min
Hyd. Volume = 31,762 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

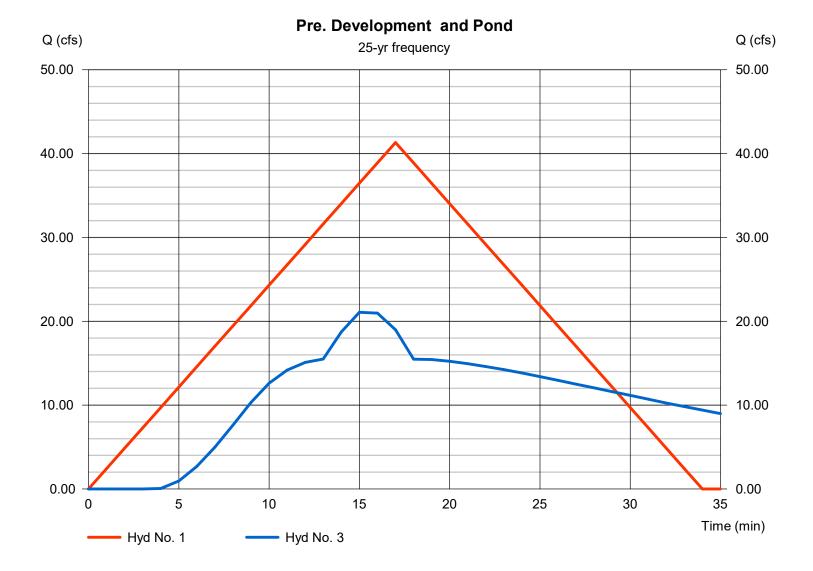
Hyd. No. 1

Pre. Development

Hydrograph type = Rational Peak discharge = 41.33 cfs Time to peak = 17 min Hyd. Volume = 42,154 cuft Hyd. No. 3

Pond

Hydrograph type = Reservoir
Peak discharge = 21.08 cfs
Time to peak = 15 min
Hyd. Volume = 36,686 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

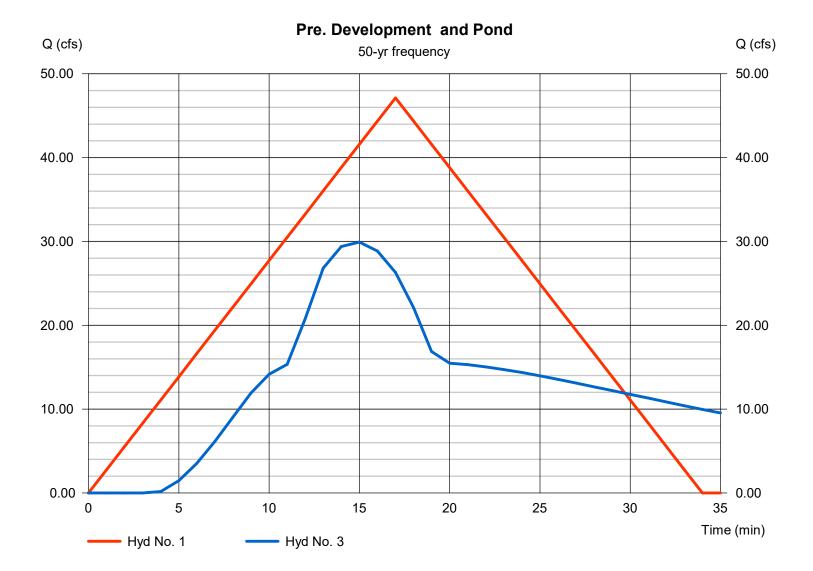
Hyd. No. 1

Pre. Development

Hydrograph type = Rational Peak discharge = 47.13 cfs Time to peak = 17 min Hyd. Volume = 48,074 cuft Hyd. No. 3

Pond

Hydrograph type = Reservoir
Peak discharge = 29.93 cfs
Time to peak = 15 min
Hyd. Volume = 42,012 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1

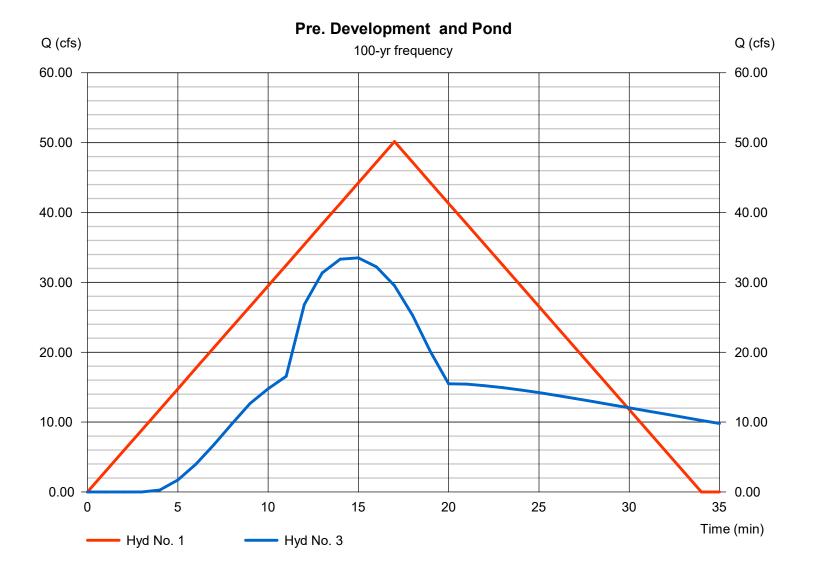
Pre. Development

Hydrograph type = Rational
Peak discharge = 50.16 cfs
Time to peak = 17 min
Hyd. Volume = 51,159 cuft

Hyd. No. 3

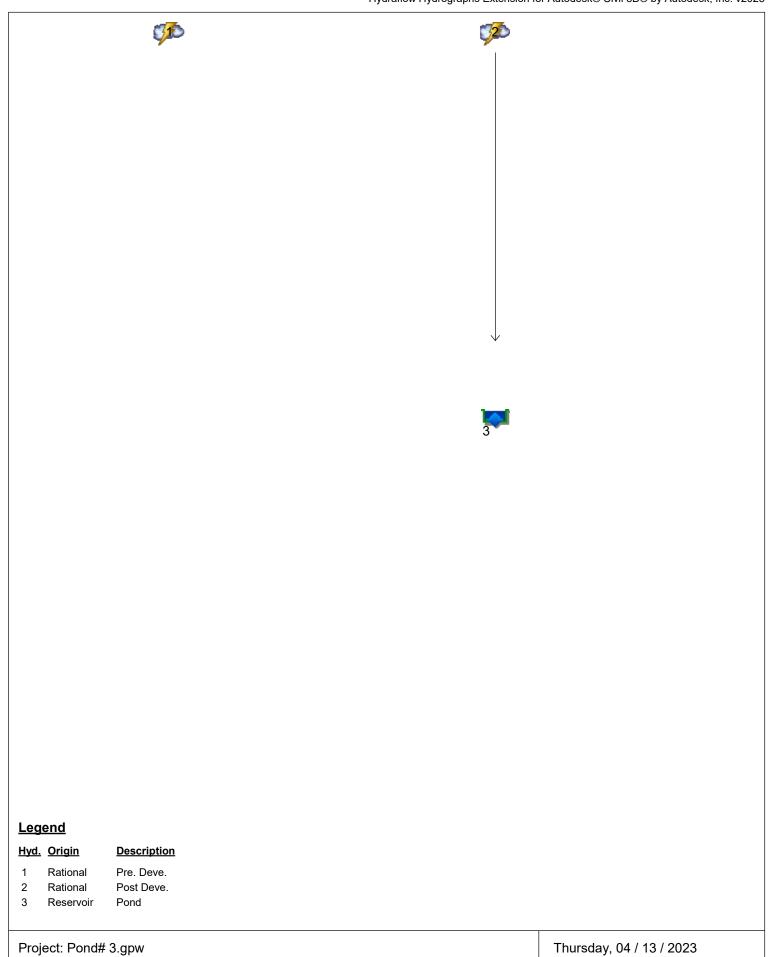
Pond

Hydrograph type = Reservoir
Peak discharge = 33.52 cfs
Time to peak = 15 min
Hyd. Volume = 44,737 cuft



SOUTHEAST POND

Watershed Model Schematic



lyd. Io.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
I	Rational	36.03	1	23	49,717				Pre. Deve.
2	Rational	40.63	1	23	56,064				Post Deve.
2 3	Rational	40.63	1 1	23 28	56,064 56,053	2	349.07	20,214	Post Deve. Pond
Poi	nd# 3.gpw				Return I	Period: 2 Yo	ear	Thursday,	04 / 13 / 2023

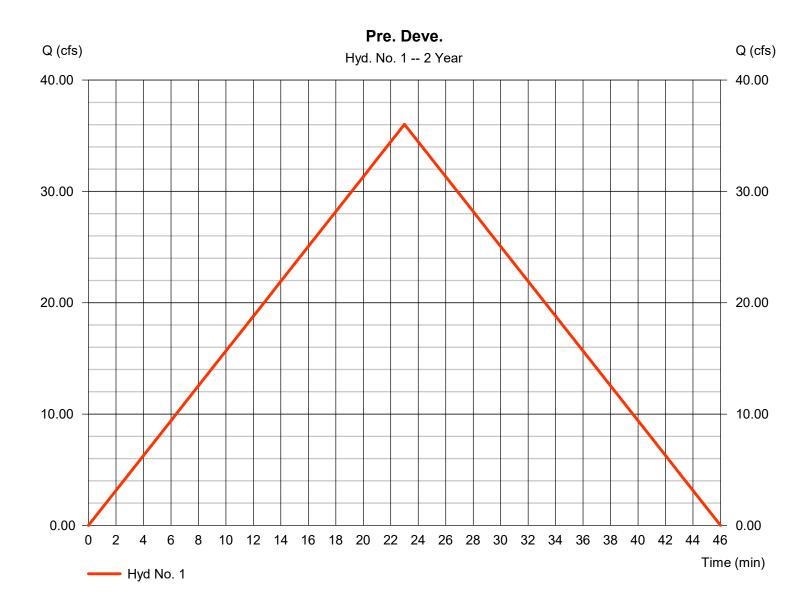
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Thursday, 04 / 13 / 2023

Hyd. No. 1

Pre. Deve.

Hydrograph type = Rational Peak discharge = 36.03 cfsStorm frequency = 2 yrsTime to peak = 23 min Time interval = 1 min Hyd. volume = 49,717 cuftDrainage area Runoff coeff. = 0.47= 23.570 acTc by User = 23.00 min Intensity = 3.252 in/hr



lyd. Io.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
	Rational	39.74	1	23	54,845				Pre. Deve.
2	Rational	44.82	1	23	61,846				Post Deve.
2 3	Rational	44.82 34.49	1	23 28	61,846 61,836	2	349.22	21,633	Post Deve. Pond
⊃ ₀₁	nd# 3.gpw				Return I	Period: 5 Yo	ear	Thursday.	04 / 13 / 2023

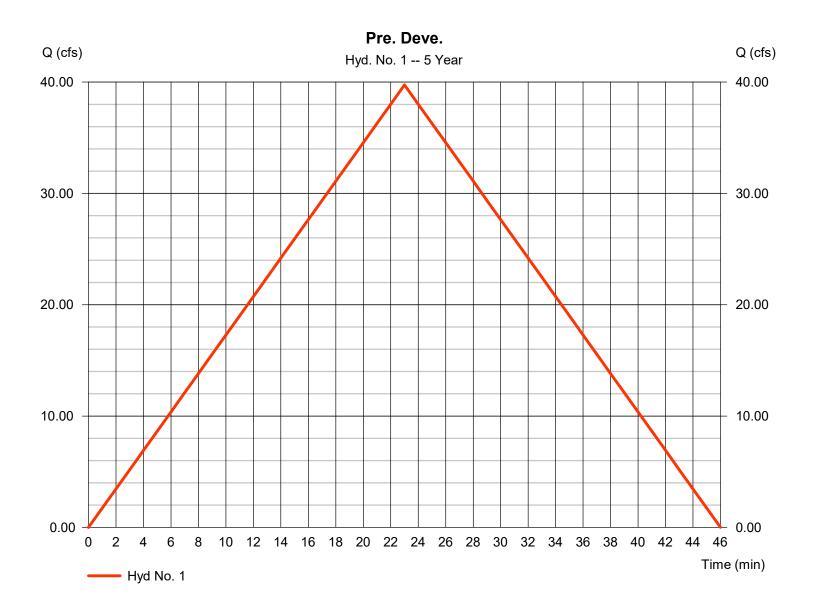
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Thursday, 04 / 13 / 2023

Hyd. No. 1

Pre. Deve.

Hydrograph type = Rational Peak discharge = 39.74 cfsStorm frequency = 5 yrsTime to peak = 23 min Time interval = 1 min Hyd. volume = 54,845 cuft Drainage area Runoff coeff. = 0.47= 23.570 acTc by User = 23.00 min Intensity = 3.588 in/hr



yd. o.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
	Rational	47.96	1	23	66,187				Pre. Deve.
2	Rational	54.08	1	23	74,637				Post Deve.
2 3	Rational	54.08 41.03	1 1	23 29	74,637 74,626	2	349.57	25,013	Post Deve. Pond
P _{O1}	nd# 3.gpw				Return	Period: 10 \	Year	Thursday	04 / 13 / 2023

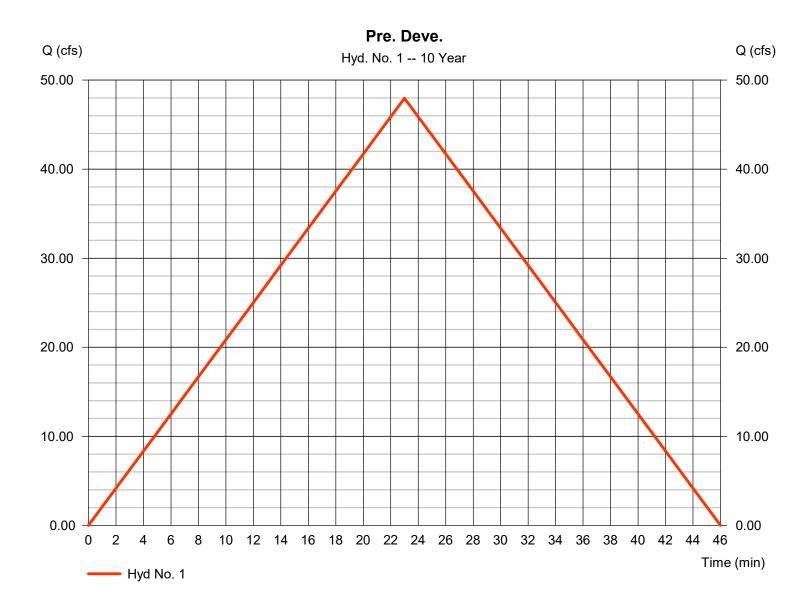
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Thursday, 04 / 13 / 2023

Hyd. No. 1

Pre. Deve.

Hydrograph type = Rational Peak discharge = 47.96 cfsStorm frequency = 10 yrsTime to peak = 23 min Time interval = 1 min Hyd. volume = 66,187 cuft Drainage area = 0.47Runoff coeff. = 23.570 acTc by User = 23.00 min Intensity = 4.330 in/hr



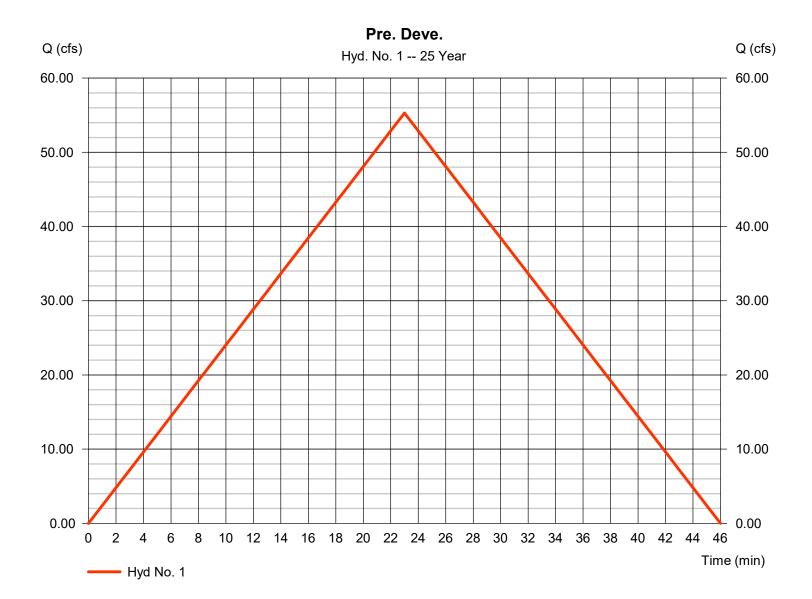
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Thursday, 04 / 13 / 2023

Hyd. No. 1

Pre. Deve.

Hydrograph type = Rational Peak discharge = 55.30 cfsStorm frequency = 25 yrsTime to peak = 23 min Time interval = 1 min Hyd. volume = 76,312 cuft = 0.47Runoff coeff. Drainage area = 23.570 acTc by User = 23.00 min Intensity = 4.992 in/hr



lyd. lo.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	63.03	1	23	86,979				Pre. Deve.
2	Rational	71.07	1	23	98,082				Post Deve.
2 3	Rational	71.07 50.53	1 1	23 30	98,082	2	350.29	32,440	Post Deve. Pond
	nd# 3.gpw				Datura I	Period: 50 \	Vear	Thursday	04 / 13 / 2023

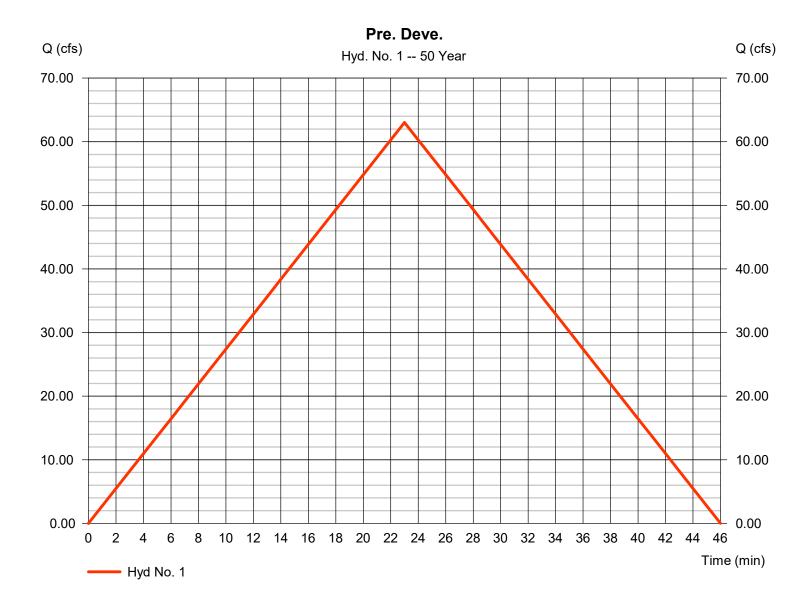
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Thursday, 04 / 13 / 2023

Hyd. No. 1

Pre. Deve.

Hydrograph type = Rational Peak discharge = 63.03 cfsStorm frequency = 50 yrsTime to peak = 23 min Time interval = 1 min Hyd. volume = 86,979 cuft Drainage area Runoff coeff. = 23.570 ac= 0.47Tc by User = 23.00 min Intensity = 5.690 in/hr



	Hydrallow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc									
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description	
1	Rational	67.50	1	23	93,152				Pre. Deve.	
2	Rational	76.12	1	23	105,043				Post Deve.	
3	Reservoir	53.00	1	30	105,033	2	350.54	35,114	Pond	
Por	Pond# 3.gpw					eriod: 100	Year	Thursday, 04 / 13 / 2023		

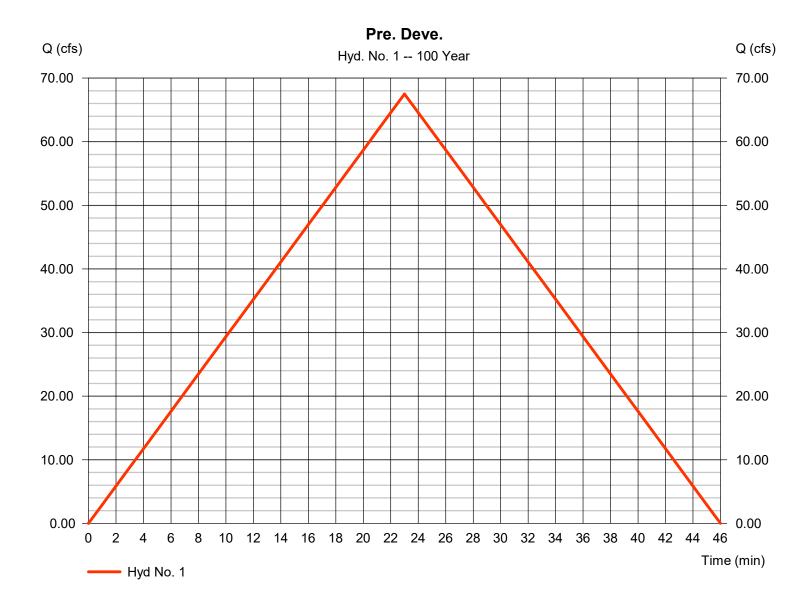
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Thursday, 04 / 13 / 2023

Hyd. No. 1

Pre. Deve.

Hydrograph type Peak discharge = 67.50 cfs= Rational Storm frequency = 100 yrsTime to peak = 23 min Time interval = 1 min Hyd. volume = 93,152 cuft Drainage area = 0.47Runoff coeff. = 23.570 acTc by User = 23.00 min Intensity = 6.093 in/hr



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

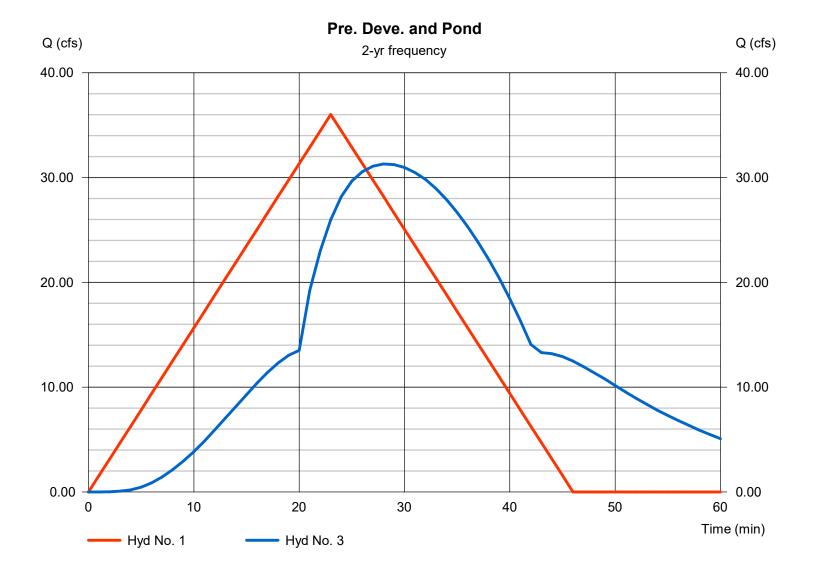
Hyd. No. 3

Hyd. No. 1

Pre. Deve.

Hydrograph type = Rational Peak discharge = 36.03 cfs Time to peak = 23 min Hyd. Volume = 49,717 cuft Pond

Hydrograph type = Reservoir
Peak discharge = 31.29 cfs
Time to peak = 28 min
Hyd. Volume = 56,053 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

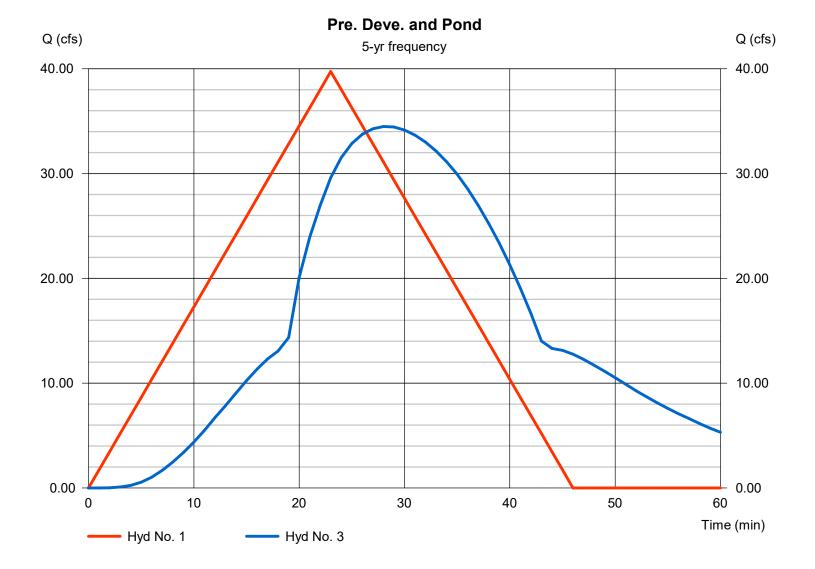
Hyd. No. 3

Pond

Hyd. No. 1

Pre. Deve.

Hydrograph type = Rational Peak discharge = 39.74 cfs Time to peak = 23 min Hyd. Volume = 54,845 cuft Hydrograph type = Reservoir
Peak discharge = 34.49 cfs
Time to peak = 28 min
Hyd. Volume = 61,836 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

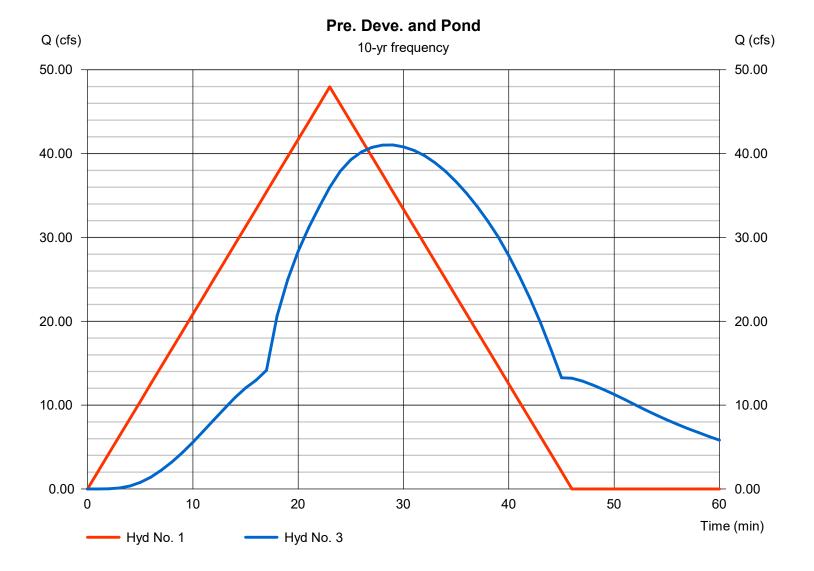
Hyd. No. 1

Pre. Deve.

Hydrograph type = Rational Peak discharge = 47.96 cfs Time to peak = 23 min Hyd. Volume = 66,187 cuft Hyd. No. 3

Pond

Hydrograph type = Reservoir
Peak discharge = 41.03 cfs
Time to peak = 29 min
Hyd. Volume = 74,626 cuft



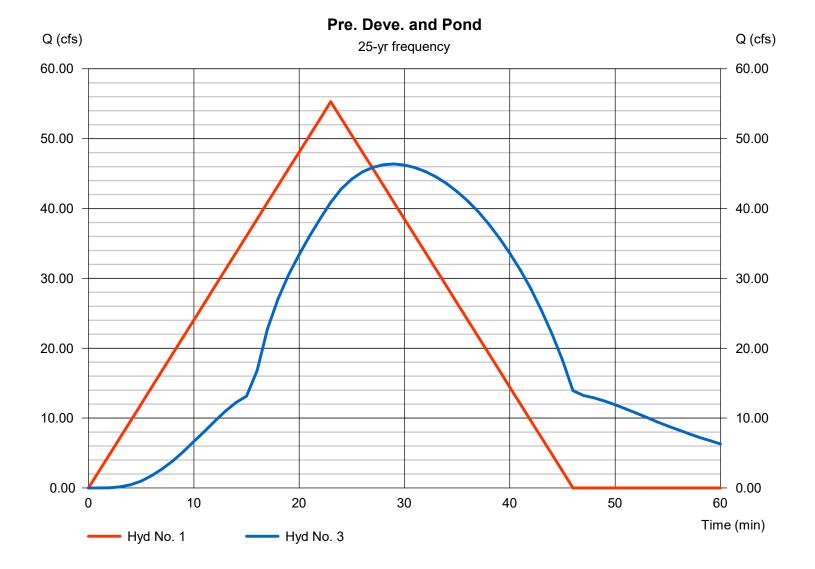
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 3

Hyd. No. 1

Pre. Deve. Pond

Hydrograph type = Rational Peak discharge = 55.30 cfs Time to peak = 23 min Hyd. Volume = 76,312 cuft Hydrograph type = Reservoir
Peak discharge = 46.37 cfs
Time to peak = 29 min
Hyd. Volume = 86,043 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1

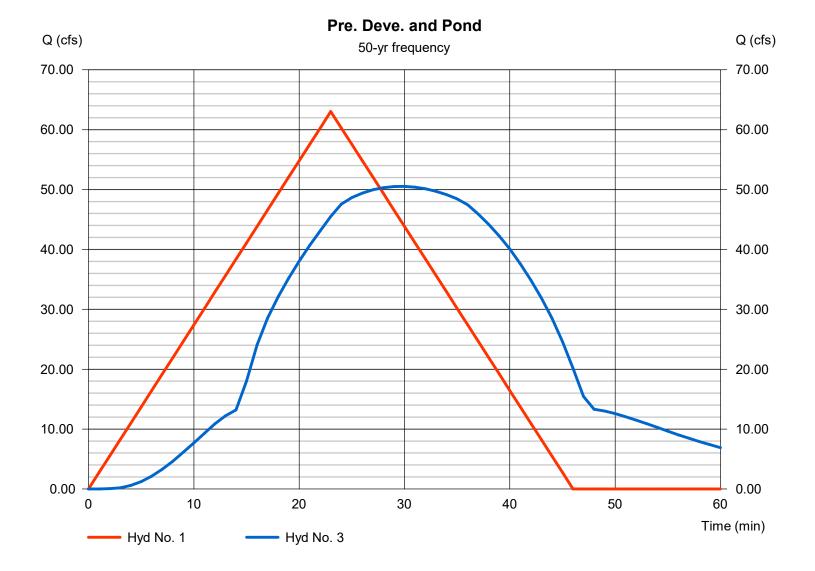
Pre. Deve.

Hydrograph type = Rational
Peak discharge = 63.03 cfs
Time to peak = 23 min
Hyd. Volume = 86,979 cuft

Hyd. No. 3

Pond

Hydrograph type = Reservoir
Peak discharge = 50.53 cfs
Time to peak = 30 min
Hyd. Volume = 98,072 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1

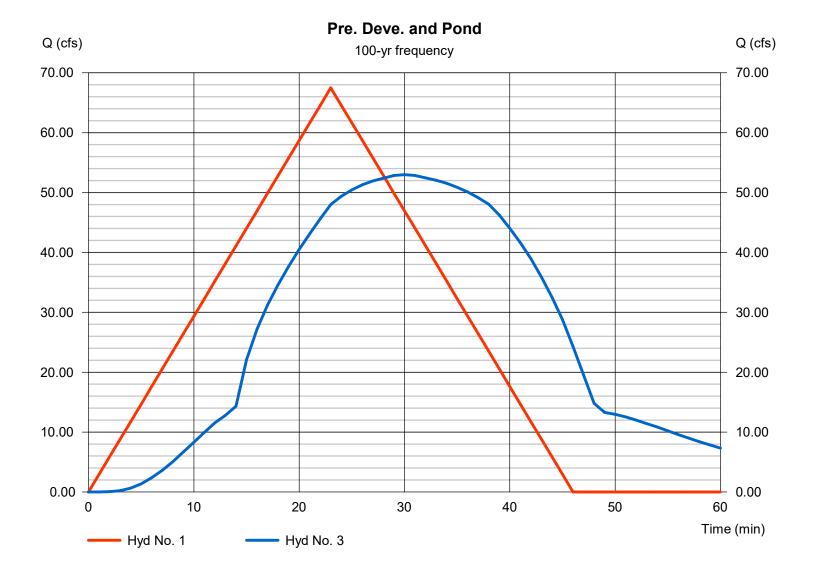
Pre. Deve.

Hydrograph type = Rational
Peak discharge = 67.50 cfs
Time to peak = 23 min
Hyd. Volume = 93,152 cuft

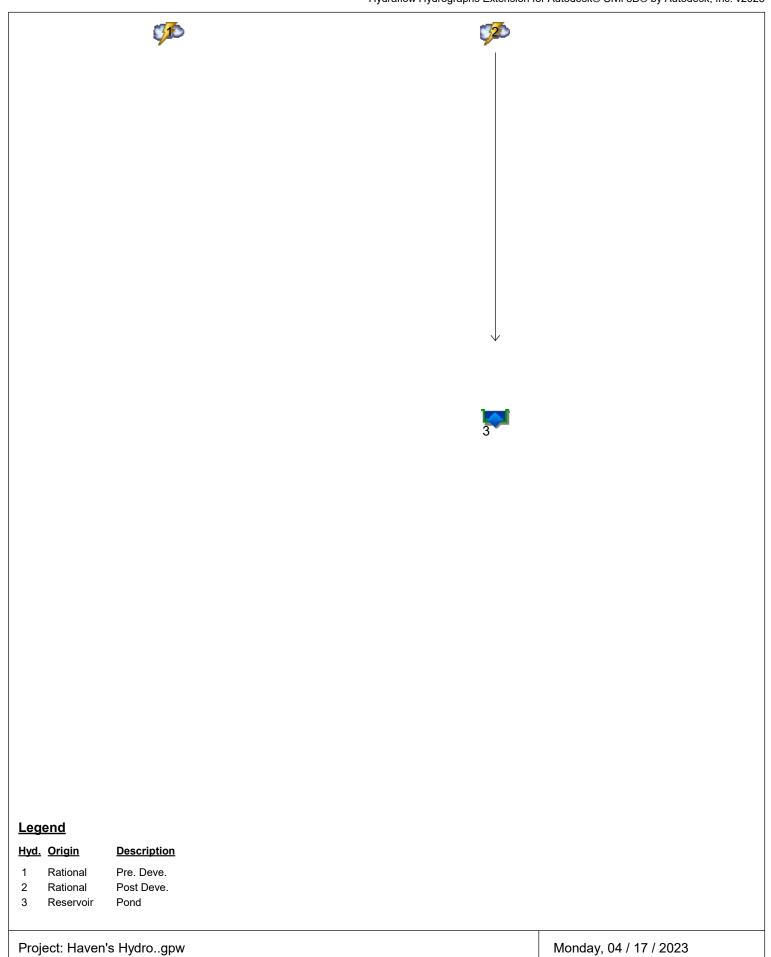
Hyd. No. 3

Pond

Hydrograph type = Reservoir
Peak discharge = 53.00 cfs
Time to peak = 30 min
Hyd. Volume = 105,033 cuft



Watershed Model Schematic



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	39.37	1	20	47,246				Pre. Deve.
2	Rational	71.11	1	12	51,201				Post Deve.
3	Reservoir	28.79	1	19	51,181	2	361.30	33,860	Pond
Ha	ven's Hydro	gpw			Return I	Period: 2 Ye	ear	Monday, 04	4 / 17 / 2023

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

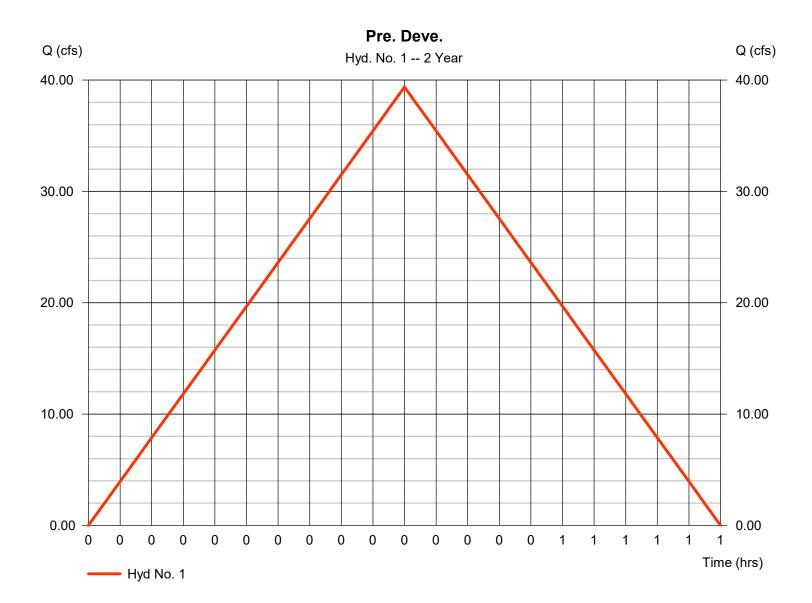
Monday, 04 / 17 / 2023

Hyd. No. 1

Pre. Deve.

Hydrograph type = Rational Peak discharge = 39.37 cfsStorm frequency = 2 yrsTime to peak $= 0.33 \, hrs$ Time interval = 1 min Hyd. volume = 47,246 cuft Drainage area = 0.47Runoff coeff. = 23.930 acTc by User = 20.00 min Intensity = 3.501 in/hr

IDF Curve = Bryant 50.IDF Asc/Rec limb fact = 1/1



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	43.42	1	20	52,106				Pre. Deve.
2	Rational	79.06	1	12	56,926				Post Deve.
2 3	Reservoir	79.06 32.35	1 1	12 19	56,926 56,907	2	361.55	37,081	Post Deve. Pond
Hav	ven's Hydro	gpw			Return I	Period: 5 Ye	ear	Monday, 04	l / 17 / 2023

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Monday, 04 / 17 / 2023

Hyd. No. 1

Pre. Deve.

Hydrograph type = Rational Peak discharge = 43.42 cfsStorm frequency = 5 yrsTime to peak $= 0.33 \, hrs$ Time interval = 1 min Hyd. volume = 52,106 cuft Drainage area Runoff coeff. = 23.930 ac= 0.47Tc by User = 20.00 min Intensity = 3.861 in/hr

IDF Curve = Bryant 50.IDF Asc/Rec limb fact = 1/1



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	51.95	1	20	62,335				Pre. Deve.
2	Rational	91.38	1	12	65,796				Post Deve.
2 3	Reservoir	91.38 37.12	1 1	12 19	65,796 65,777	2	361.95	42,289	Post Deve. Pond
Haven's Hydrogpw					Return F	Period: 10 \	⁄ear	Monday, 04	l / 17 / 2023

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Monday, 04 / 17 / 2023

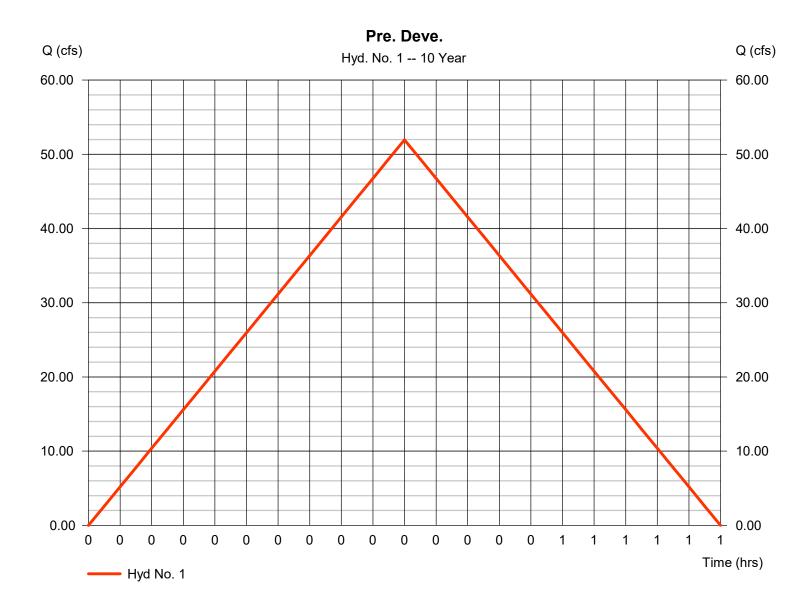
Hyd. No. 1

Pre. Deve.

Hydrograph type = Rational Peak discharge = 51.95 cfsStorm frequency = 10 yrsTime to peak $= 0.33 \, hrs$ Time interval = 1 min Hyd. volume = 62,335 cuft Drainage area Runoff coeff. = 23.930 ac= 0.47

Intensity = 4.619 in/hr Tc by User = 20.00 min

IDF Curve = Bryant 50.IDF Asc/Rec limb fact = 1/1



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

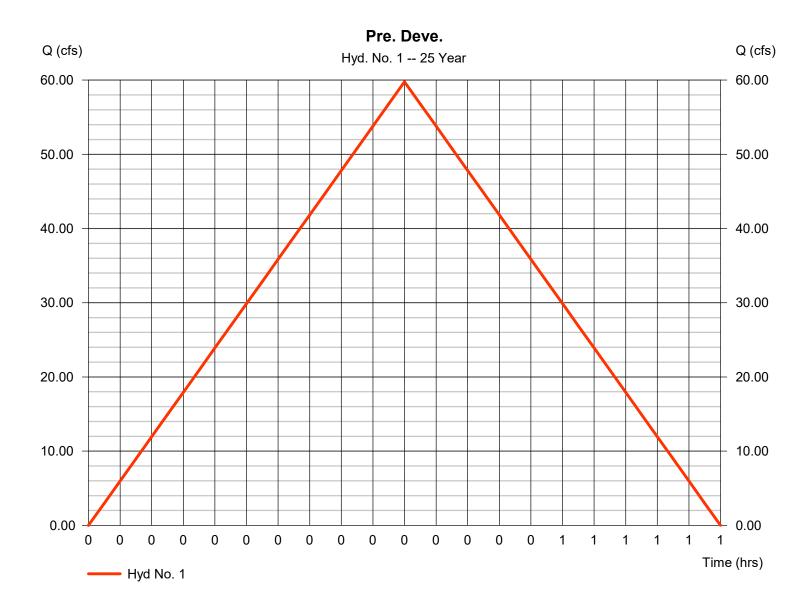
Monday, 04 / 17 / 2023

Hyd. No. 1

Pre. Deve.

Hydrograph type = Rational Peak discharge = 59.77 cfsStorm frequency = 25 yrsTime to peak $= 0.33 \, hrs$ Time interval = 1 min Hyd. volume = 71,722 cuft Drainage area Runoff coeff. = 23.930 ac= 0.47Tc by User $= 20.00 \, \text{min}$ Intensity = 5.314 in/hr

IDF Curve = Bryant 50.IDF Asc/Rec limb fact = 1/1



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

						пуціан	ow riyulograpiis	Extension for Au	lodesk® Civii 3D® by Autodesk, Inc. v202
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	68.17	1	20	81,798				Pre. Deve.
2	Rational	118.84	1	12	85,564				Post Deve.
3	Reservoir	44.71	1	19	85,545	2	362.83	54,763	Pond
Hav	ven's Hydrog	рw			Return F	Period: 50 Y	′ear	Monday, 04	/ 17 / 2023
					1			T.	

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

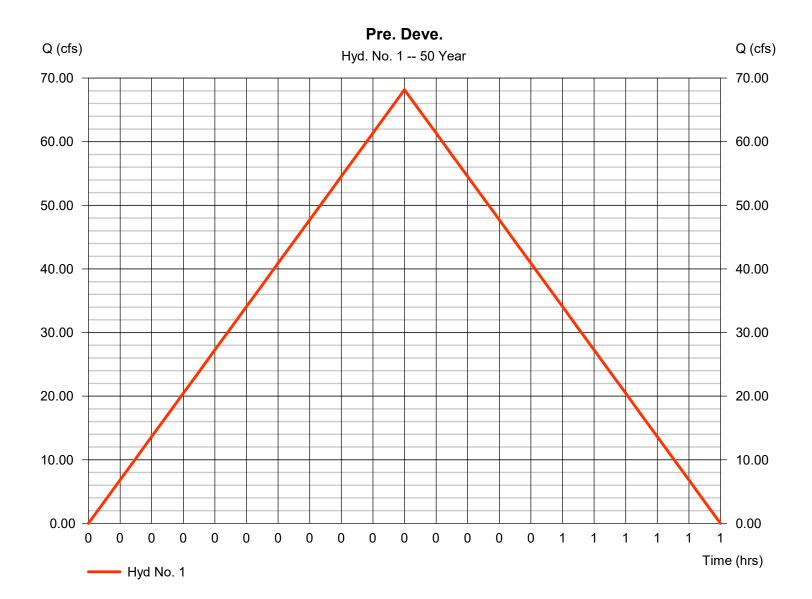
Monday, 04 / 17 / 2023

Hyd. No. 1

Pre. Deve.

Hydrograph type = Rational Peak discharge = 68.17 cfsStorm frequency = 50 yrsTime to peak $= 0.33 \, hrs$ Time interval = 1 min Hyd. volume = 81,798 cuft Drainage area Runoff coeff. = 23.930 ac= 0.47Tc by User $= 20.00 \, \text{min}$ Intensity = 6.061 in/hr

IDF Curve = Bryant 50.IDF Asc/Rec limb fact = 1/1



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

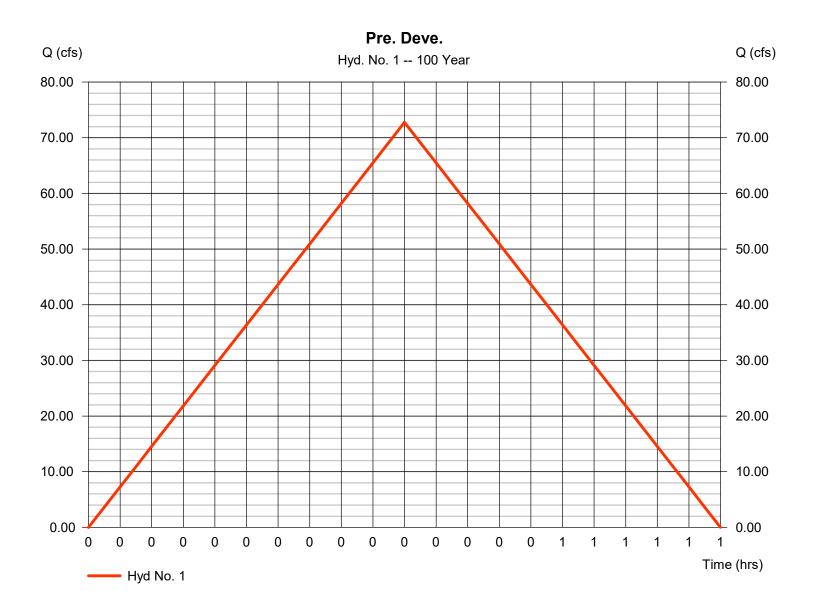
Monday, 04 / 17 / 2023

Hyd. No. 1

Pre. Deve.

= Rational Hydrograph type Peak discharge = 72.76 cfsStorm frequency = 100 yrsTime to peak $= 0.33 \, hrs$ Time interval = 1 min Hyd. volume = 87,311 cuft Drainage area Runoff coeff. = 23.930 ac= 0.47Tc by User $= 20.00 \, \text{min}$ Intensity = 6.469 in/hr

IDF Curve = Bryant 50.IDF Asc/Rec limb fact = 1/1



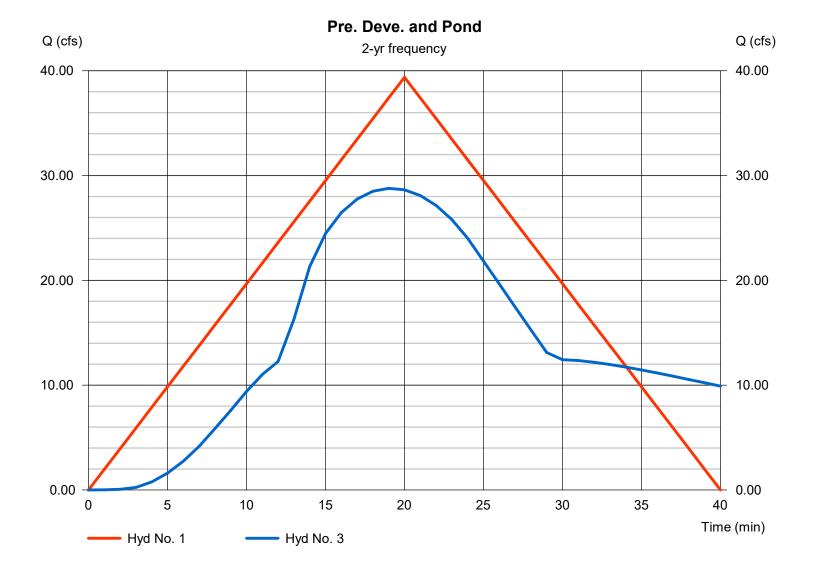
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 3

Hyd. No. 1

Pre. Deve. Pond

Hydrograph type = Rational Peak discharge = 39.37 cfs Time to peak = 20 min Hyd. Volume = 47,246 cuft Hydrograph type = Reservoir
Peak discharge = 28.79 cfs
Time to peak = 19 min
Hyd. Volume = 51,181 cuft



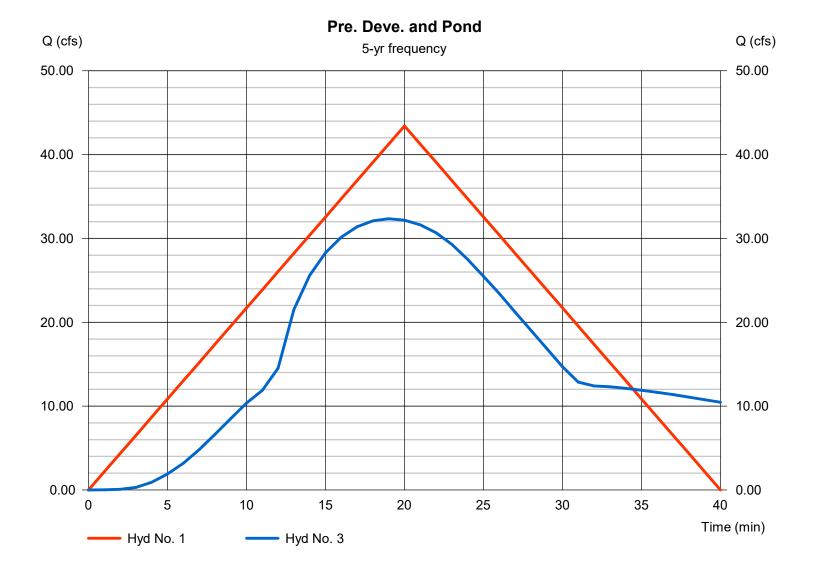
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 3

Hyd. No. 1

Pre. Deve. Pond

Hydrograph type = Rational Peak discharge = 43.42 cfs Time to peak = 20 min Hyd. Volume = 52,106 cuft Hydrograph type = Reservoir
Peak discharge = 32.35 cfs
Time to peak = 19 min
Hyd. Volume = 56,907 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

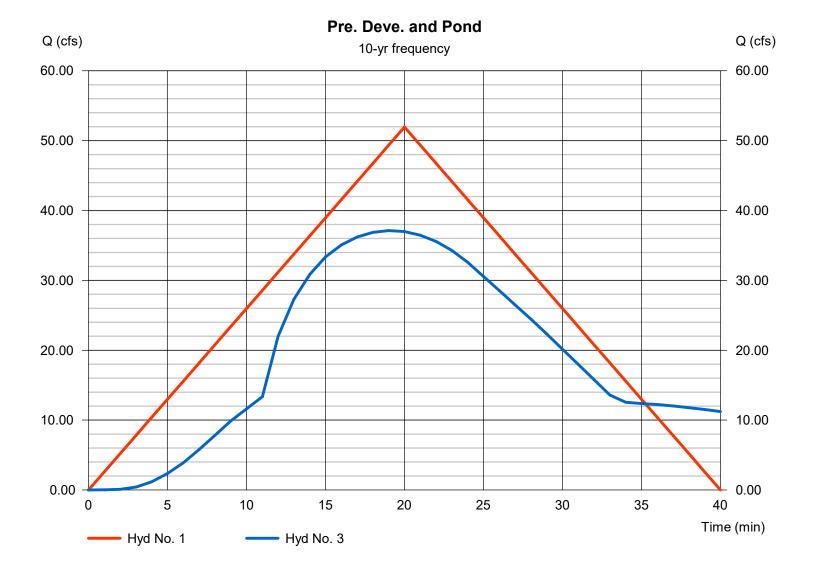
Hyd. No. 3

Pond

Hyd. No. 1

Pre. Deve.

Hydrograph type = Rational Peak discharge = 51.95 cfs Time to peak = 20 min Hyd. Volume = 62,335 cuft Hydrograph type = Reservoir
Peak discharge = 37.12 cfs
Time to peak = 19 min
Hyd. Volume = 65,777 cuft



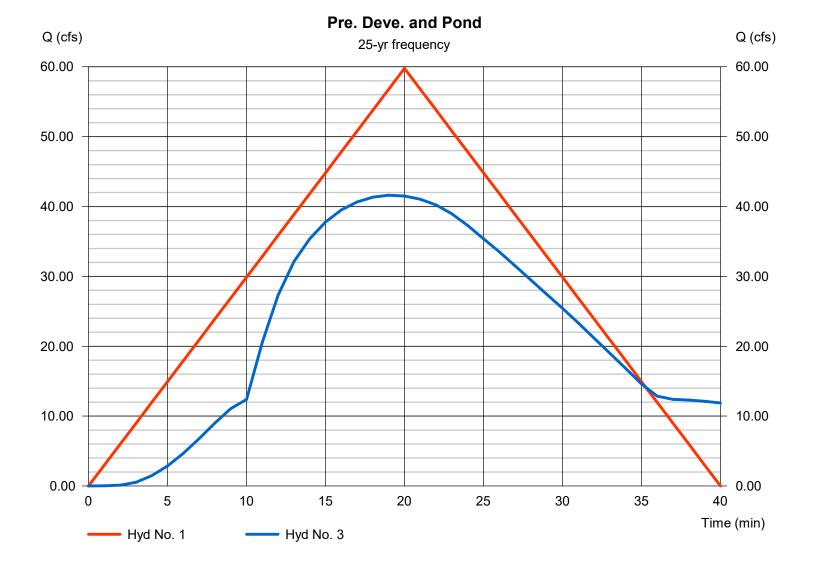
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 3

Hyd. No. 1

Pre. Deve. Pond

Hydrograph type = Rational Peak discharge = 59.77 cfs Time to peak = 20 min Hyd. Volume = 71,722 cuft Hydrograph type = Reservoir
Peak discharge = 41.61 cfs
Time to peak = 19 min
Hyd. Volume = 75,202 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

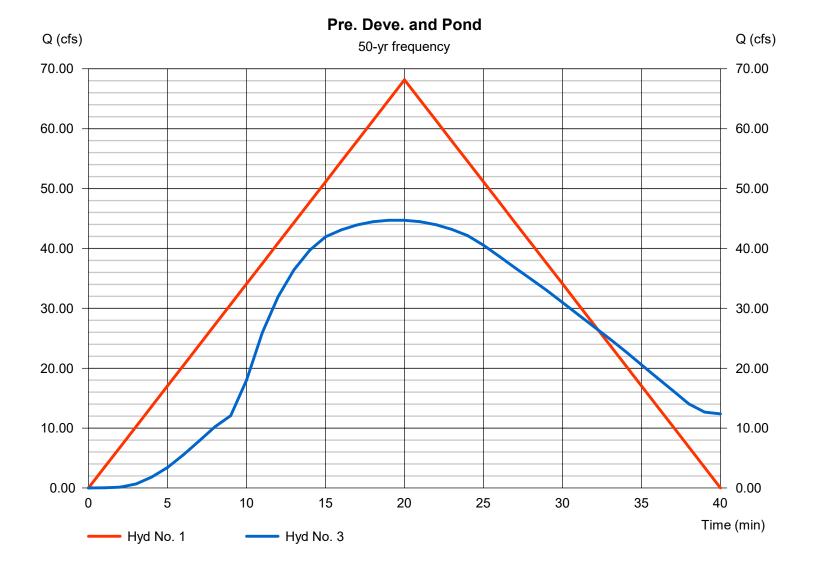
Hyd. No. 1

Pre. Deve.

Hydrograph type = Rational Peak discharge = 68.17 cfs Time to peak = 20 min Hyd. Volume = 81,798 cuft Hyd. No. 3

Pond

Hydrograph type = Reservoir
Peak discharge = 44.71 cfs
Time to peak = 19 min
Hyd. Volume = 85,545 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1

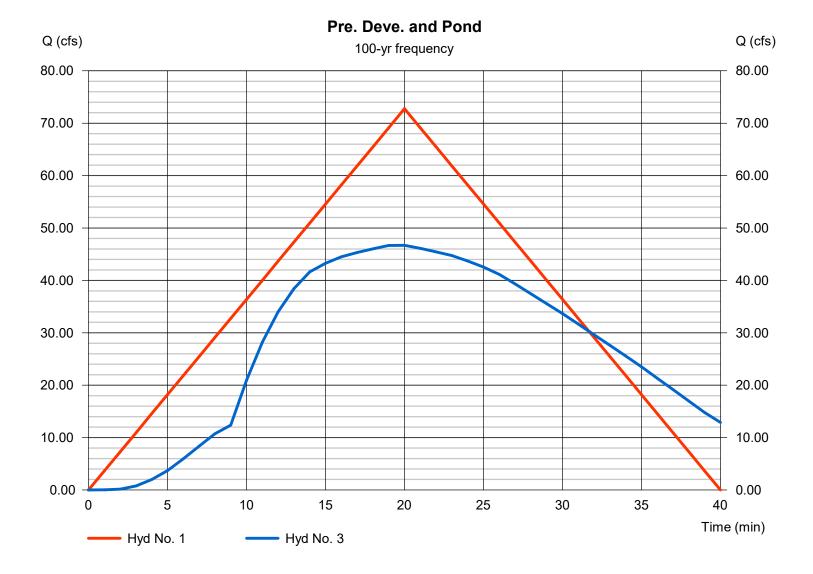
Pre. Deve.

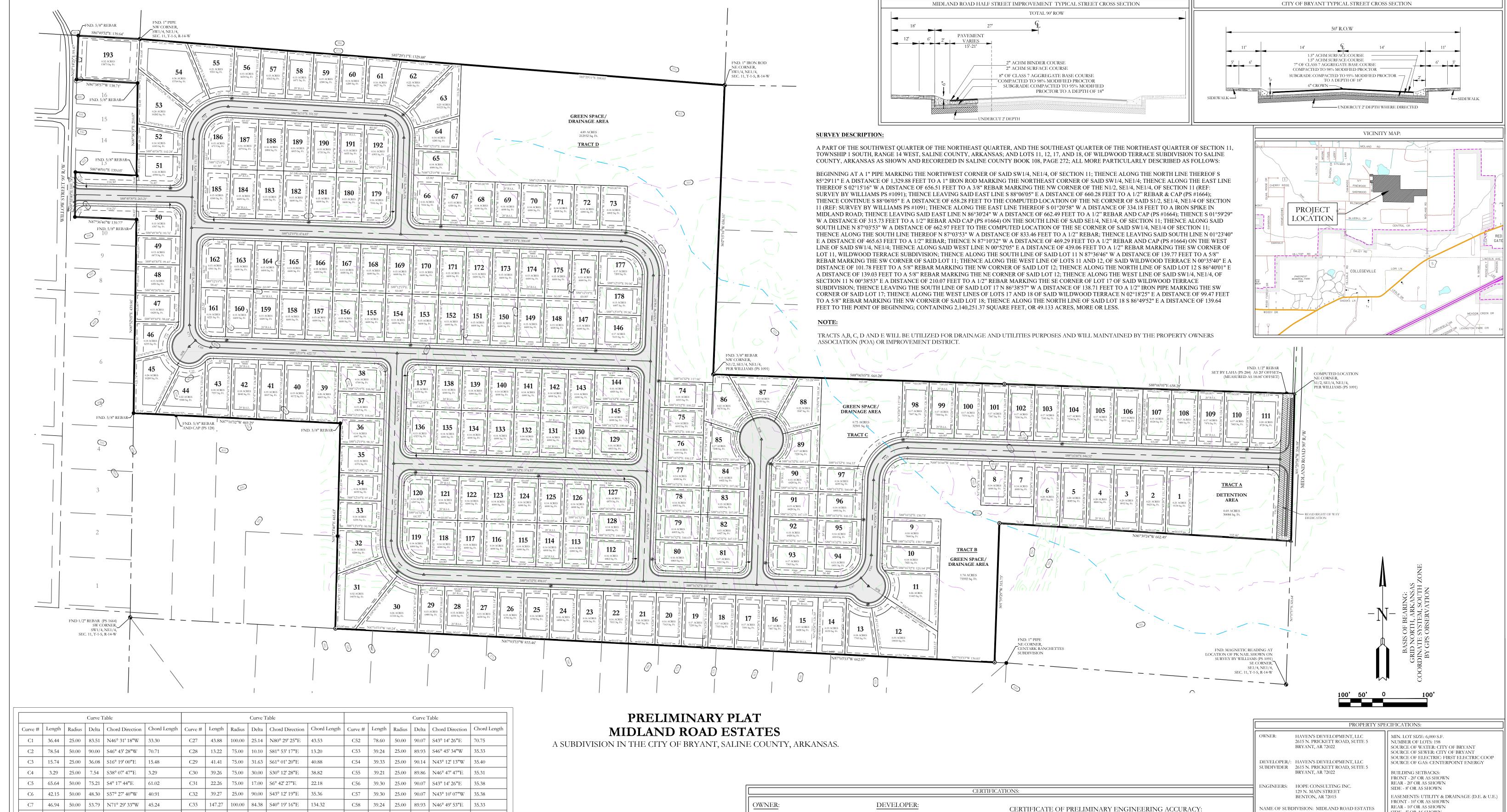
Hydrograph type = Rational
Peak discharge = 72.76 cfs
Time to peak = 20 min
Hyd. Volume = 87,311 cuft

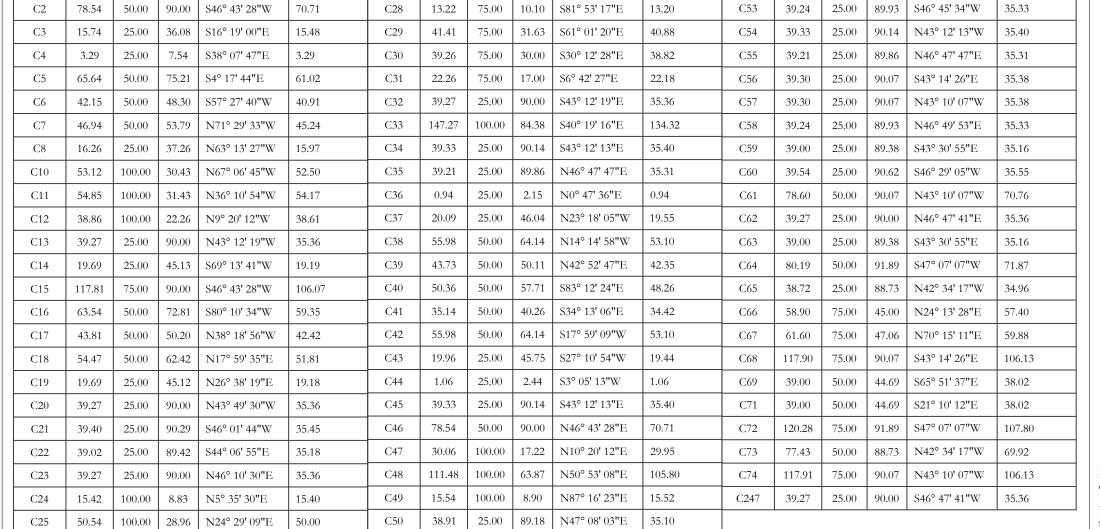
Hyd. No. 3

Pond

Hydrograph type = Reservoir
Peak discharge = 46.70 cfs
Time to peak = 20 min
Hyd. Volume = 90,716 cuft







C51 | 39.21 | 25.00 | 89.86 | N46° 47' 47"E | 35.31

C26 | 50.54 | 100.00 | 28.96 | N53° 26' 27"E | 50.00



ARKANSAS

By affixing my seal and signature, I Wiillaim Cobitt R. Shoffner 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 t

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.

N ★★★	
\$ LICENSED	
PROFESSIONAL	
ENGINEER .	

NO. 20876	
MZIDUL	

CERTIFICATE OF PRELIMINARY SURVEYING ACCURACY:

Name: HAVEN'S DEVELOPMENT, LLC

BRYANT, AR 72022

CERTIFICATE OF OWNER:

with the within plat.

Source of Tile: <u>2021-009870</u>

Address: 2615 N. PRICKETT ROAD, SUITE 5

I, Corbitt R. Shoffner, 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..

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

HAVEN'S DEVELOPMENT, LLC

BRYANT, AR 72022

2615 N. PRICKETT ROAD, SUITE 5

Jonathan L. Hope Date of Execution Registered Professional Land Surveyor No. 1762 Arkansas

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.

CERTIFICATE OF PRELIMINARY PLAT APPROVAL:

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

Kazi Tamzidual Islam

Registered Professional

Engineer, No. 20876 Arkansas

Rick Johnson, Chairman

Bryant Planning Commission

Regulations have been fully complied with.

Date of Execution

Date of Execution

NAME OF SUBDIVISION: MIDLAND ROAD ESTATES

ZONING CLASSIFICATION: PROPOSED R-1S SOURCE OF TITLE: SALINE COUNTY DOCUMENT

> 129 N. Main Street, Benton, Arkansas 72015 PH. (501)315-2626

SIDE - 5' OR AS SHOWN



FAX (501) 315-0024 www.hopeconsulting.com

STREET RIGHT OF WAYS: 50' OR AS SHOWN

LOT CORNERS: SET 1/2" REBAR WITH CAP

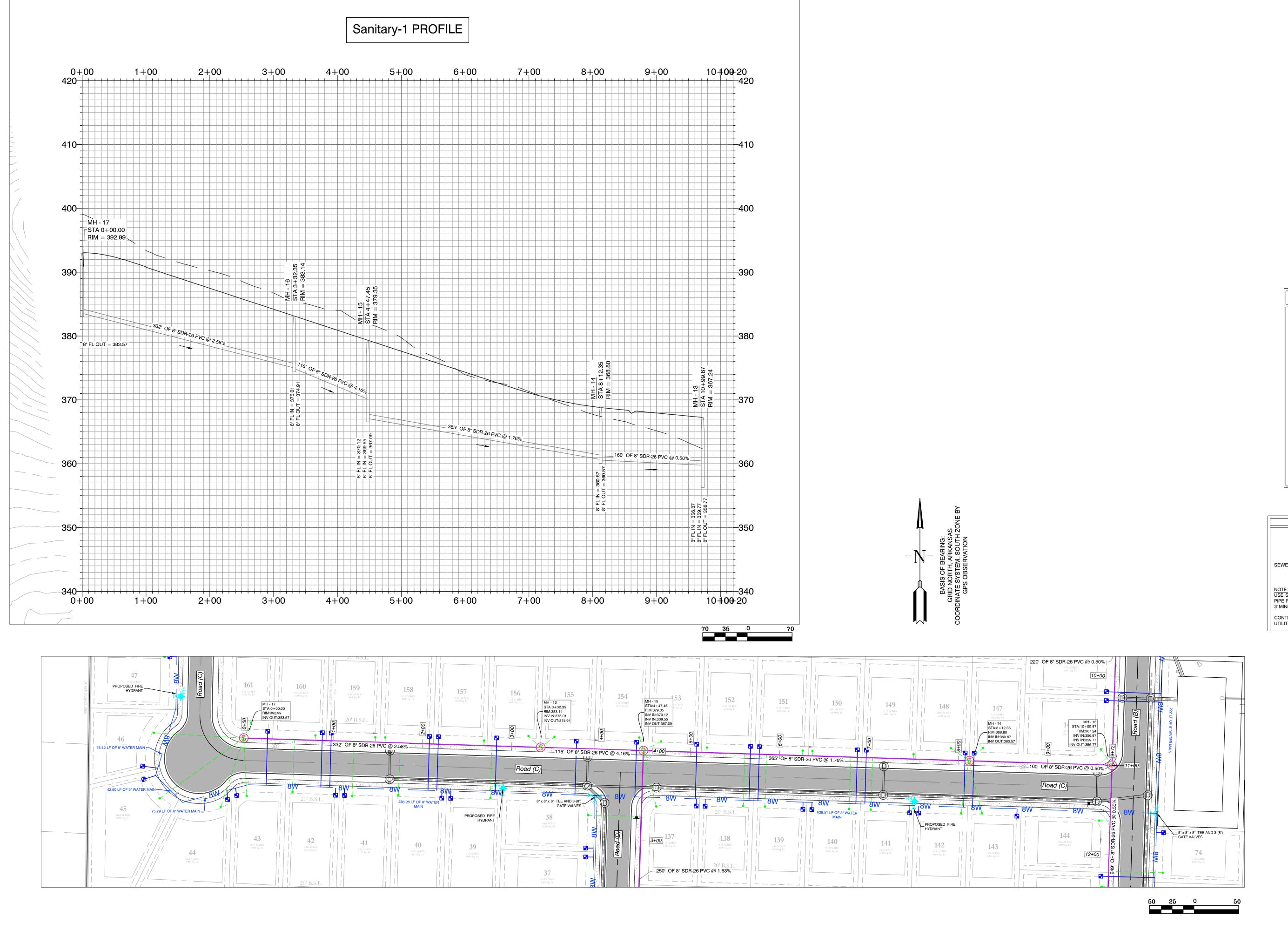
STREET WIDTH: 28' BOC TO BOC

FOR USE AND BENEFIT OF:

HAVEN'S DEVELOPMENT, LLC

PRELIMINARY PLAT MIDLAND ROAD ESTATES A SUBDIVISION IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS.

DATE:	03/08/2023	C.A.D. BY: B.JOHNSON	DRAWING NUMBER:		
REVISED:		CHECKED BY:	22 0024		
SHEET:		SCALE: 1" = 100'	7 23-0024		
500		0			



MIDLAND ROAD SUBDIVISION SEWER PLAN & PROFILES

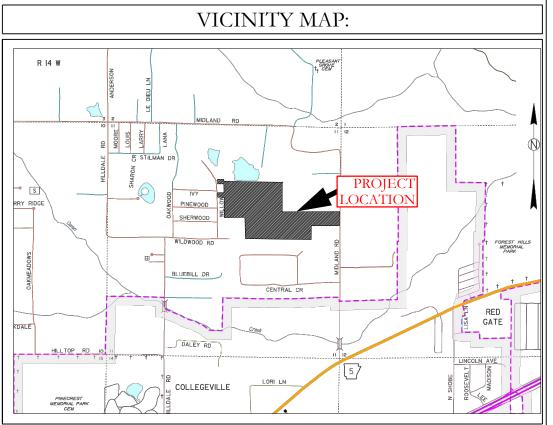
WATER & SEWER UTILITY NOTES:

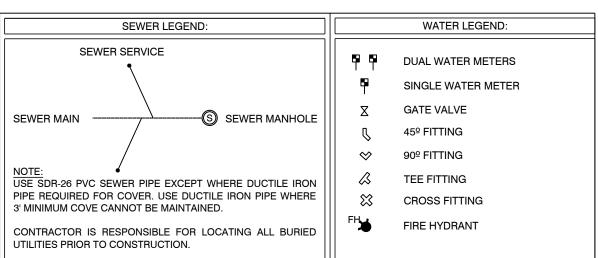
- 1. ALL NEW 8-INCH WATER MAINS TO BE CLASS 900.
- 2. ALL WATER MAINS LARGER THAN 8" DIAMETER SHALL BE DUCTILE IRON (250 PSI PRESSURE
- 3. ALL WATER AND SEWER INSTALLATION TO BE IN ACCORDANCE WITH THE CITY OF BRYANT
- OTHER DIFFICULT AND /OR DANGEROUS TO MAINTAIN AREAS SHALL BE ENCASED IN A SMOOTH STEEL ENCASEMENT PIPE. THE STEEL ENCASEMENT SHALL EXTEND FIVE FEET EITHER SIDE OF
- 5. 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.
- 6. CASING SPACERS: SHALL BE STAINLESS STEEL, CASCADE MODEL CCS AS MANUFACTURED BY CASCADE WATER MFG. CO., OR APPROVED EQUAL.

SEWER CONSTRUCTION NOTES:

- 1. ALL SEWER INSTALLATION TO BE IN ACCORDANCE WITH THE CITY OF BRYANT " STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF WATER LINES AND SEWER LINES, 2015
- 2. ALL SEWER LINES CROSSING UNDER ALL CONCRETE STORM DRAINS OR ANY STORM DRAIN 30-INCH DIAMETER AND LARGER, OR ALL STORM DRAINS WITH MULTIPLE PIPE RUNS, SHALL BE
- STEEL ENCASED A MINIMUM OF 5 FEET EITHER SIDE OF THE STORM DRAIN. 3. CASING SPACERS: SHALL BE STAINLESS STEEL, CASCADE MODEL CCS AS MANUFACTURED BY CASCADE WATER MFG. CO., OR APPROVED EQUAL.







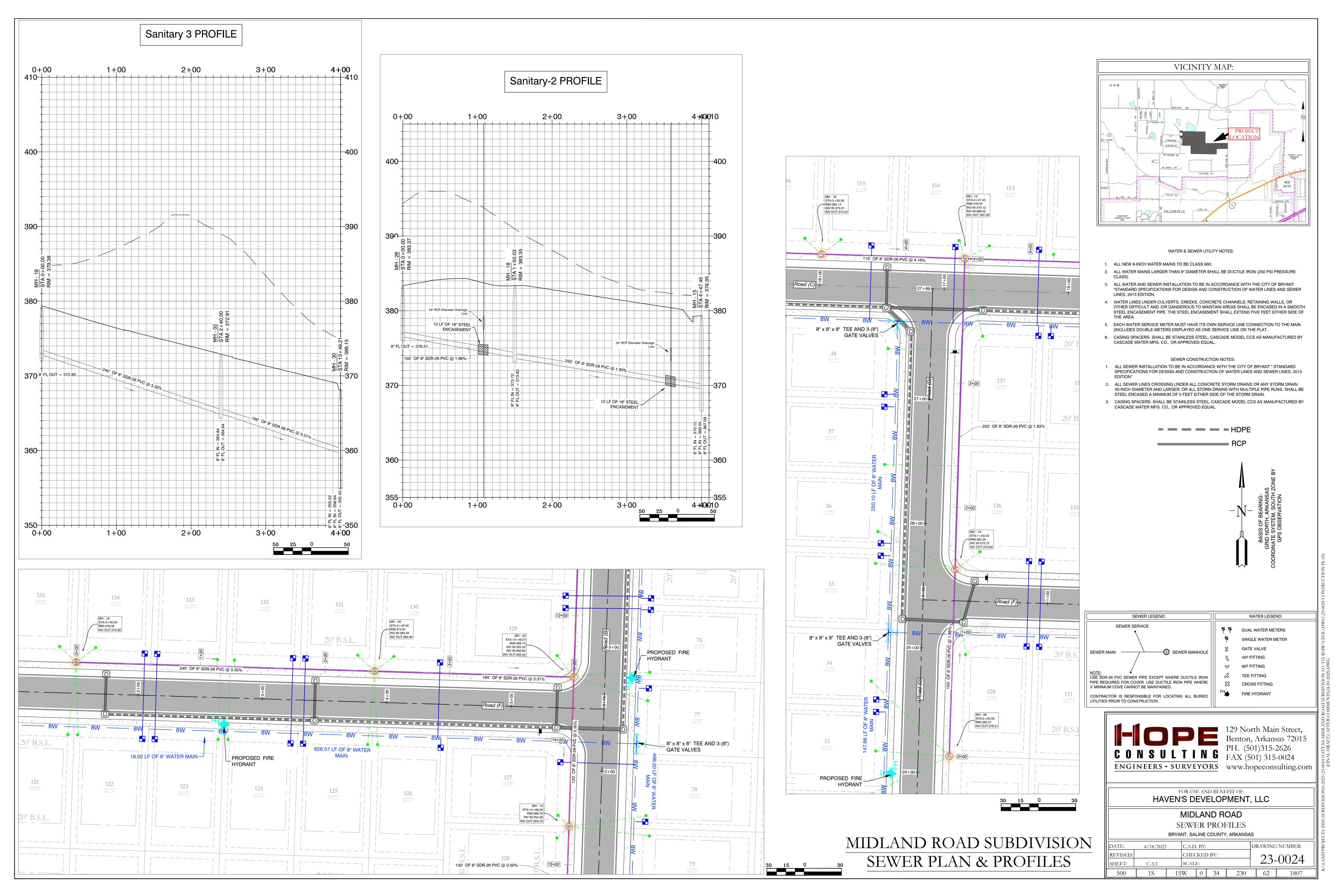


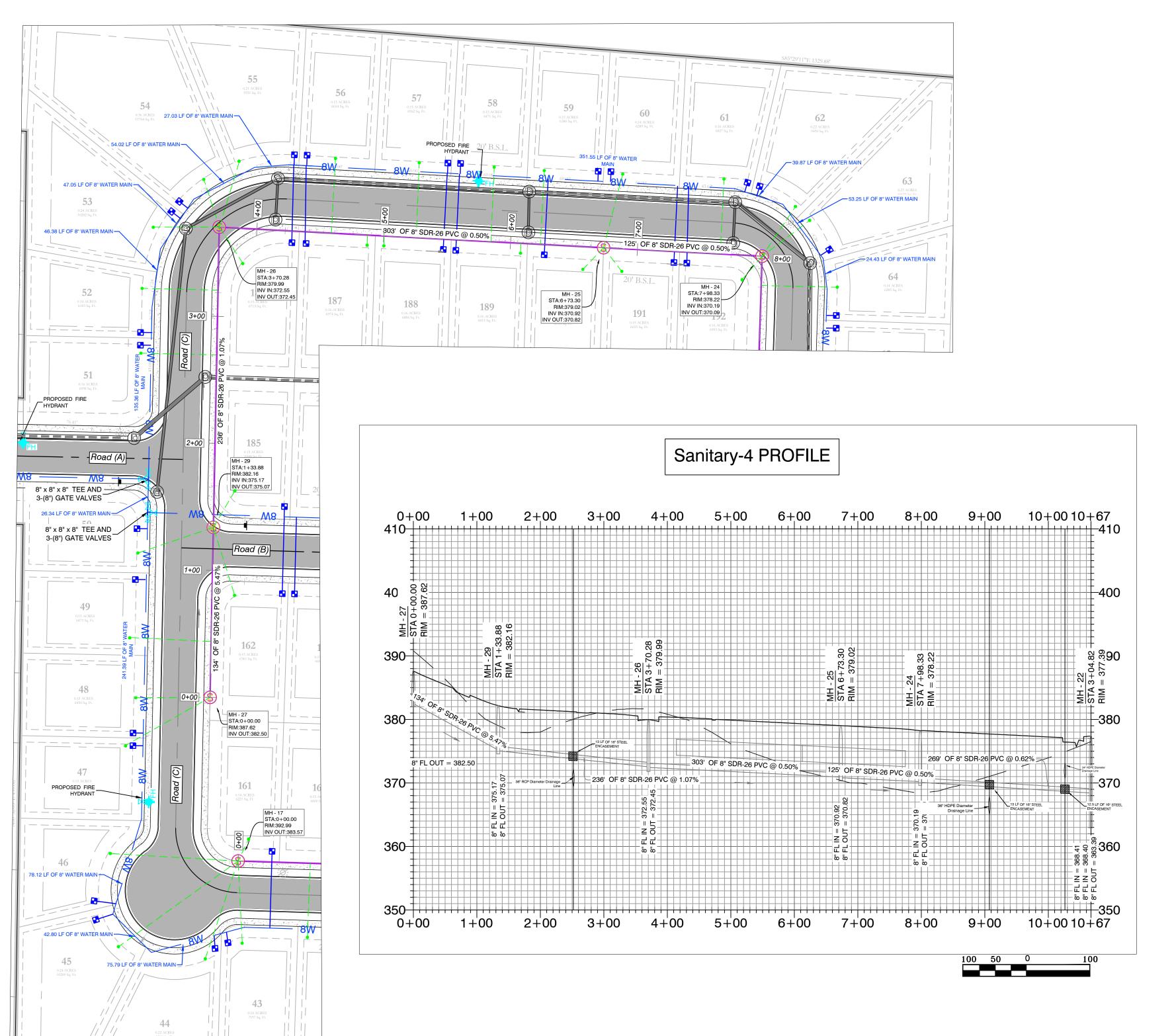
FOR USE AND BENEFIT OF: HAVEN'S DEVELOPMENT, LLC

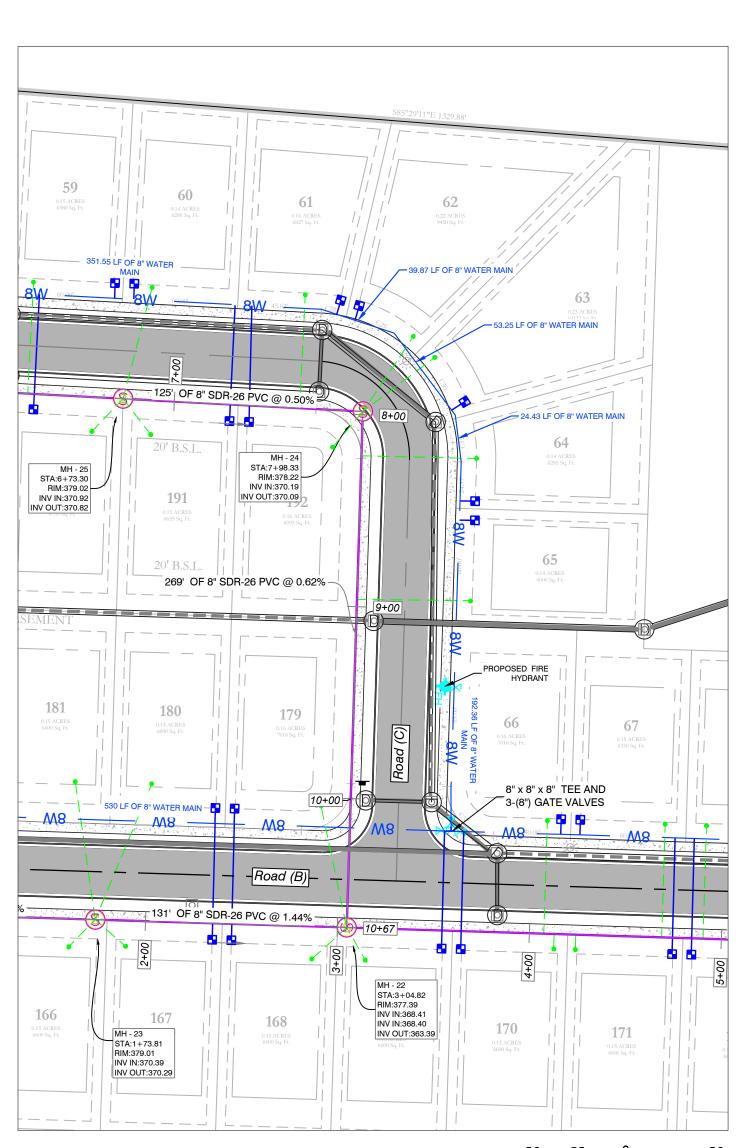
MIDLAND ROAD

SEWER PROFILES BRYANT, SALINE COUNTY, ARKANSAS

DRAWING NUMBER: REVISED: 23-0024 SHEET: C-3.2 15W 0 34 230





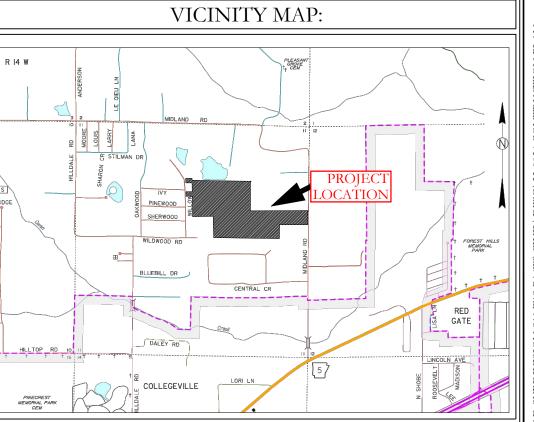


WATER & SEWER UTILITY NOTES:

- 1. ALL NEW 8-INCH WATER MAINS TO BE CLASS 900.
- 2. ALL WATER MAINS LARGER THAN 8" DIAMETER SHALL BE DUCTILE IRON (250 PSI PRESSURE
- 3. ALL WATER AND SEWER INSTALLATION TO BE IN ACCORDANCE WITH THE CITY OF BRYANT "STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF WATER LINES AND SEWER
- 4. 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
- 5. 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.
- 6. CASING SPACERS: SHALL BE STAINLESS STEEL, CASCADE MODEL CCS AS MANUFACTURED BY CASCADE WATER MFG. CO., OR APPROVED EQUAL.

SEWER CONSTRUCTION NOTES:

- 1. ALL SEWER INSTALLATION TO BE IN ACCORDANCE WITH THE CITY OF BRYANT " STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF WATER LINES AND SEWER LINES, 2015
- 2. ALL SEWER LINES CROSSING UNDER ALL CONCRETE STORM DRAINS OR ANY STORM DRAIN 30-INCH DIAMETER AND LARGER, OR ALL STORM DRAINS WITH MULTIPLE PIPE RUNS, SHALL BE STEEL ENCASED A MINIMUM OF 5 FEET EITHER SIDE OF THE STORM DRAIN.
- 3. CASING SPACERS: SHALL BE STAINLESS STEEL, CASCADE MODEL CCS AS MANUFACTURED BY CASCADE WATER MFG. CO., OR APPROVED EQUAL.





FOR USE AND BENEFIT OF:

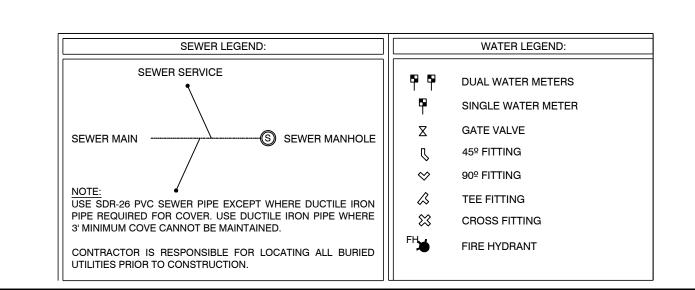
MIDLAND ROAD

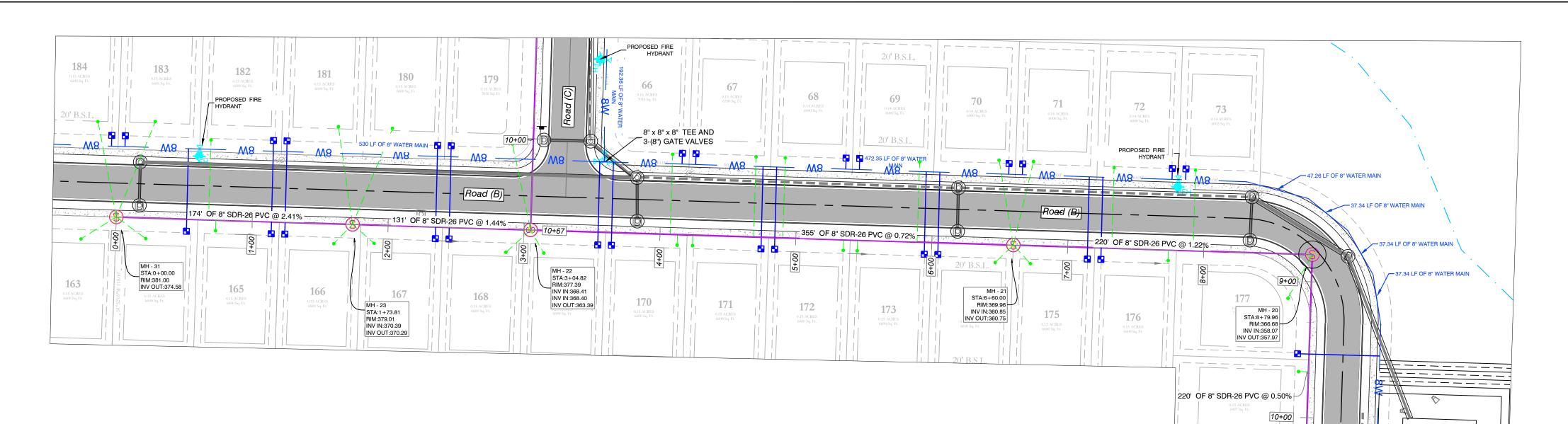
SEWER PROFILES BRYANT, SALINE COUNTY, ARKANSAS

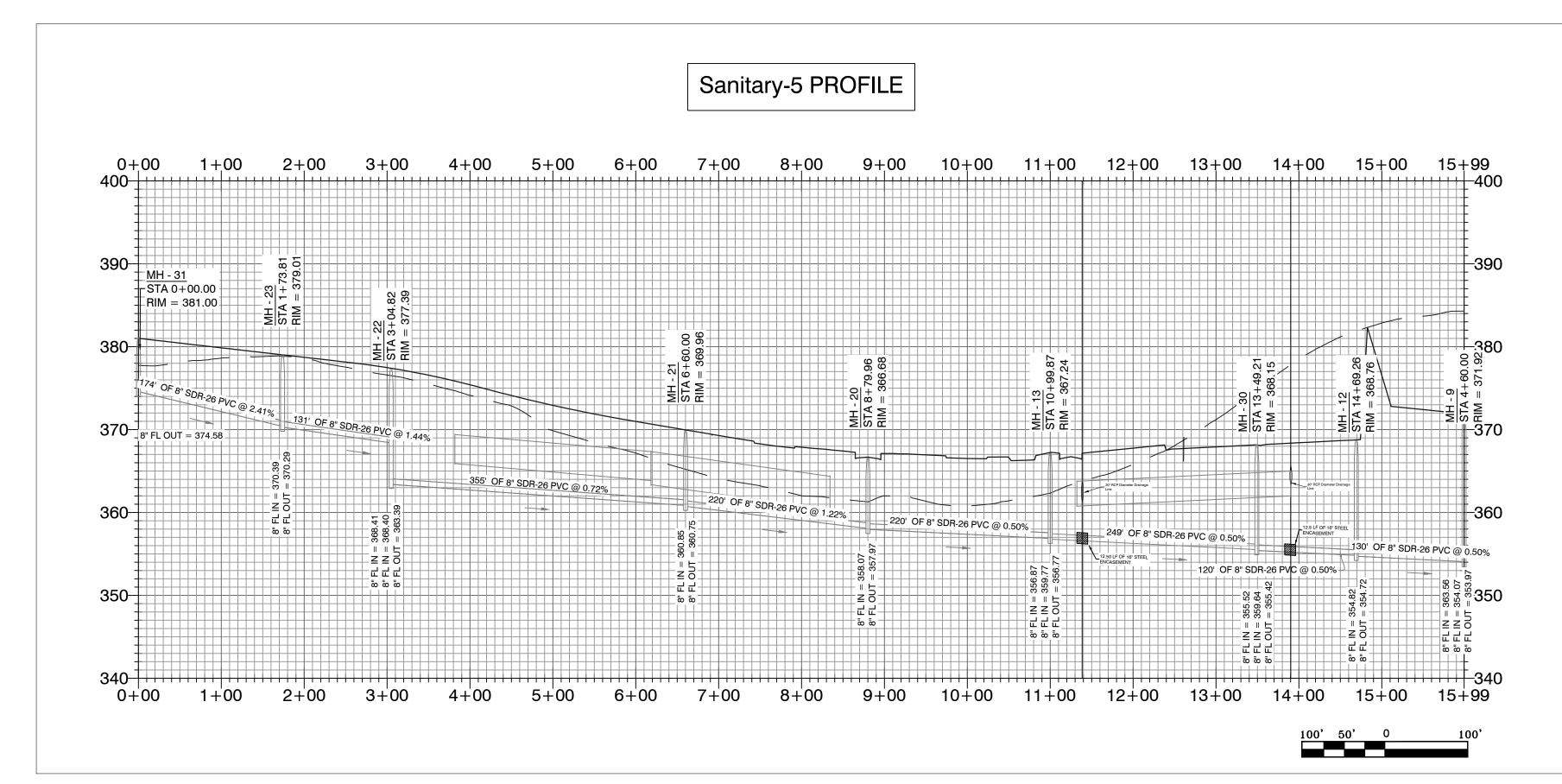
HAVEN'S DEVELOPMENT, LLC

DRAWING NUMBER: 23-0024 C-3.4 15W 0 34 230 62 1807

MIDLAND ROAD SUBDIVISION SEWER PLAN & PROFILES





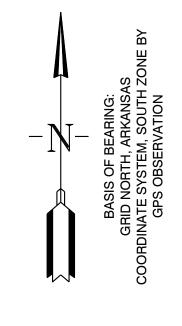


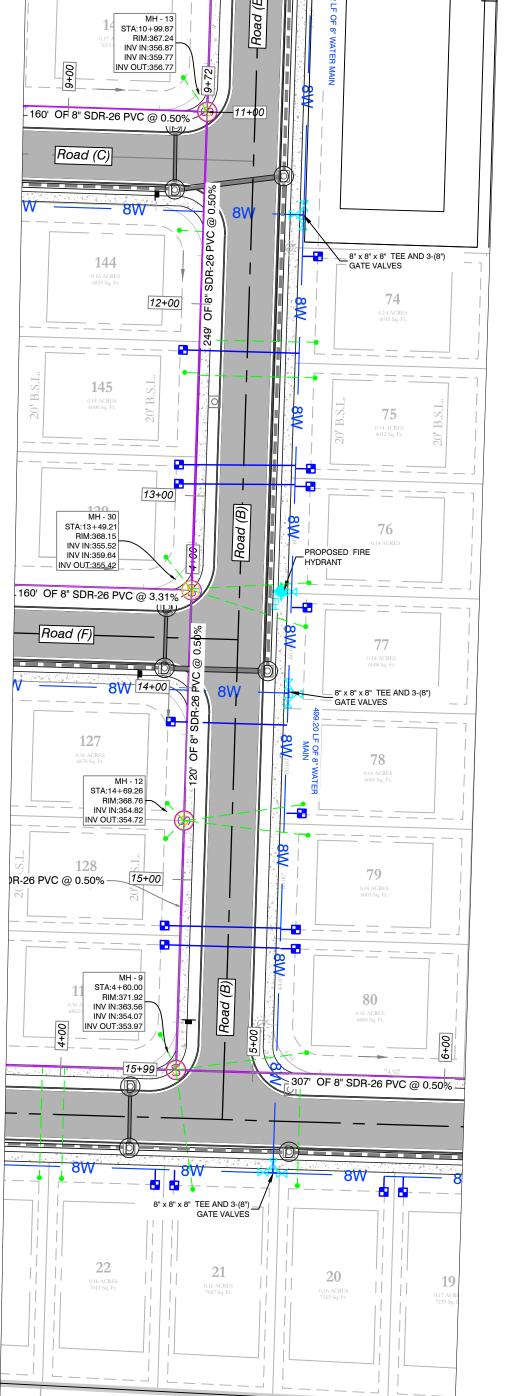


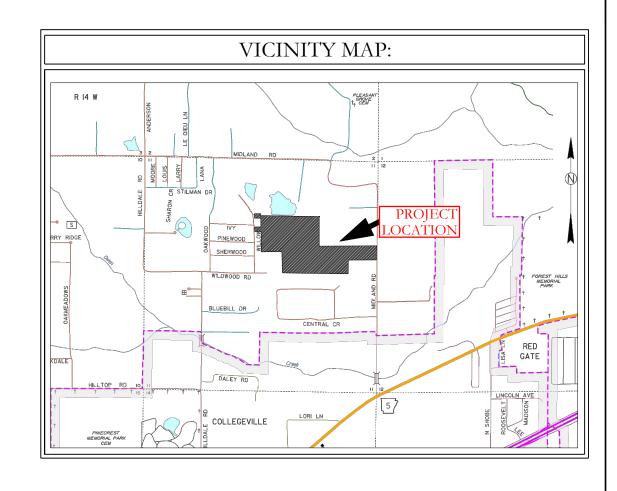
- 1. ALL NEW 8-INCH WATER MAINS TO BE CLASS 900.
- 2. ALL WATER MAINS LARGER THAN 8" DIAMETER SHALL BE DUCTILE IRON (250 PSI PRESSURE
- 3. ALL WATER AND SEWER INSTALLATION TO BE IN ACCORDANCE WITH THE CITY OF BRYANT "STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF WATER LINES AND SEWER
- 4. WATER 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
- 5. 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.
- 6. CASING SPACERS: SHALL BE STAINLESS STEEL, CASCADE MODEL CCS AS MANUFACTURED BY CASCADE WATER MFG. CO., OR APPROVED EQUAL.

SEWER CONSTRUCTION NOTES:

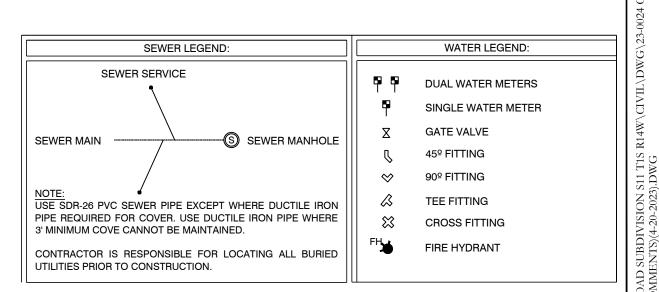
- 1. ALL SEWER INSTALLATION TO BE IN ACCORDANCE WITH THE CITY OF BRYANT "STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF WATER LINES AND SEWER LINES, 2015
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MIDLAND ROAD SUBDIVISION SEWER PLAN & PROFILES





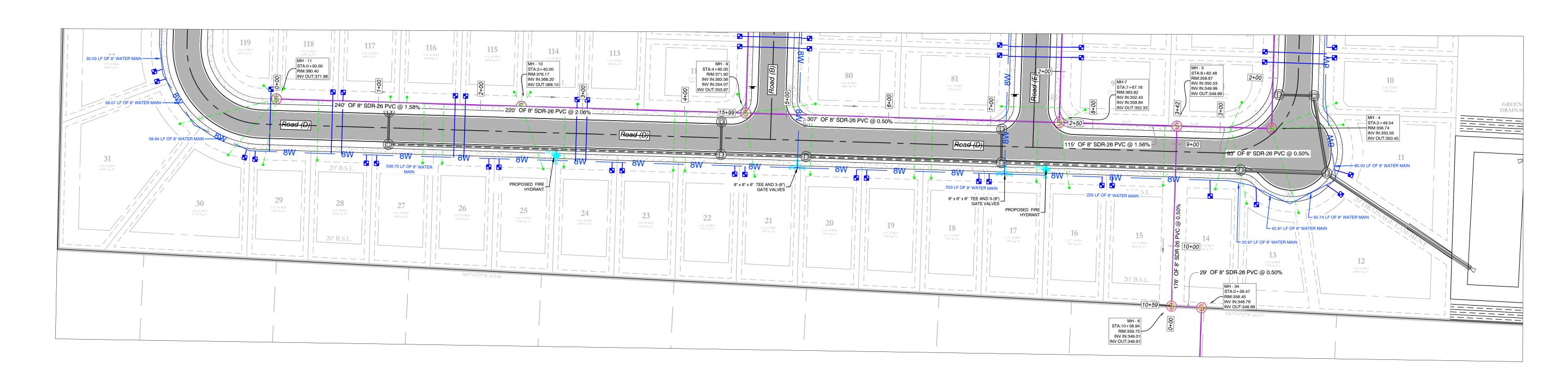
62 1807

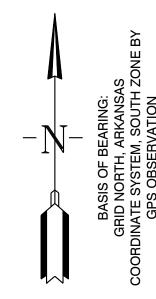
FOR USE AND BENEFIT OF: HAVEN'S DEVELOPMENT, LLC

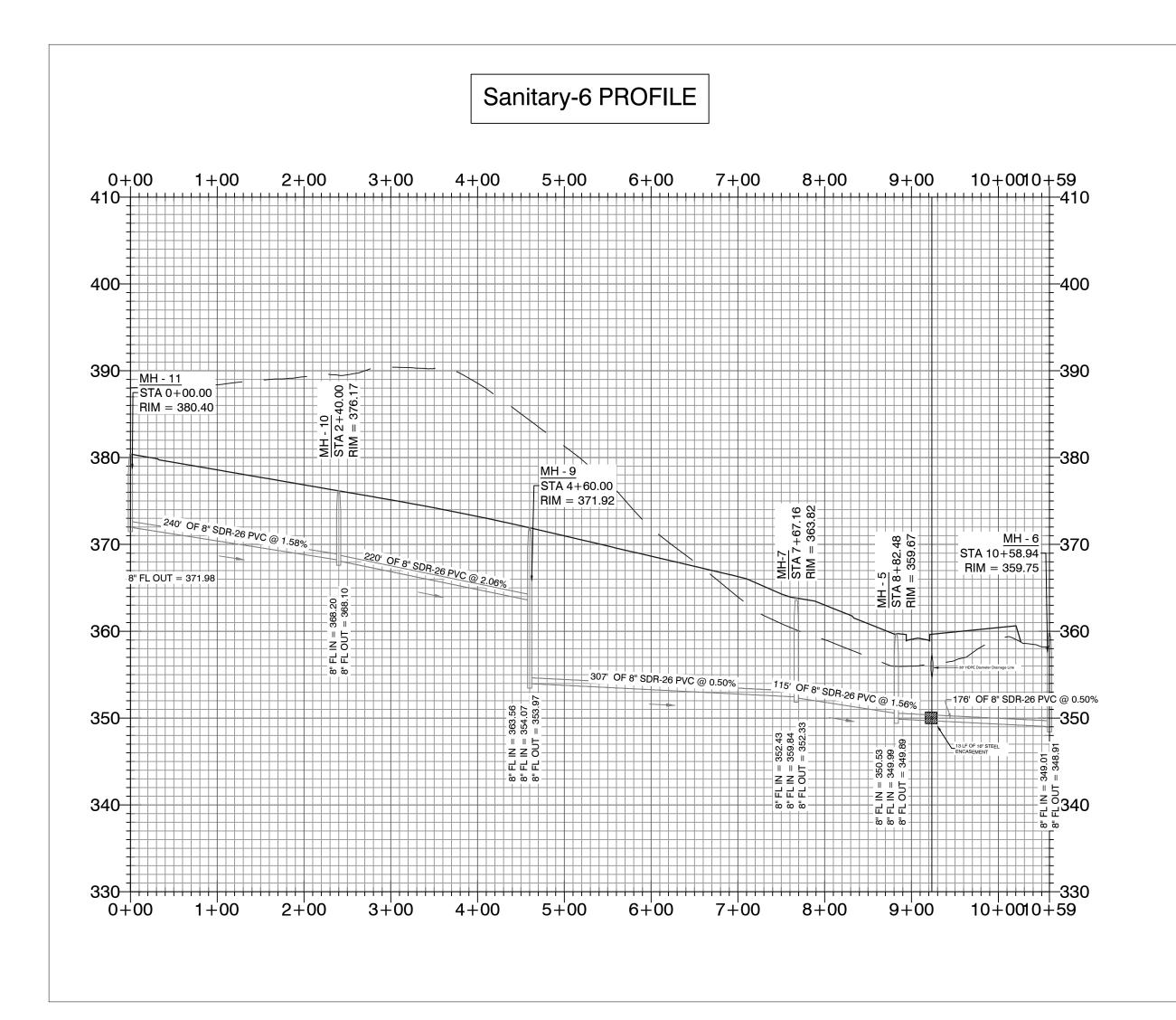
> MIDLAND ROAD SEWER PROFILES

BRYANT, SALINE COUNTY, ARKANSAS C.A.D. BY: DRAWING NUMBER: REVISED: CHECKED BY: 23-0024 SHEET: C-3.5

1S | 15W | 0 | 34 | 230







WATER & SEWER UTILITY NOTES:

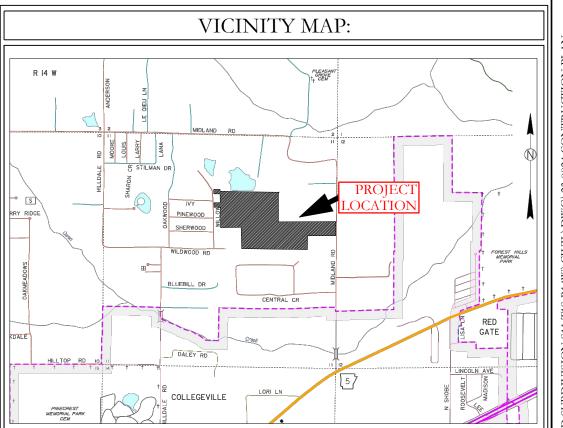
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MIDLAND ROAD SUBDIVISION SEWER PLAN & PROFILES





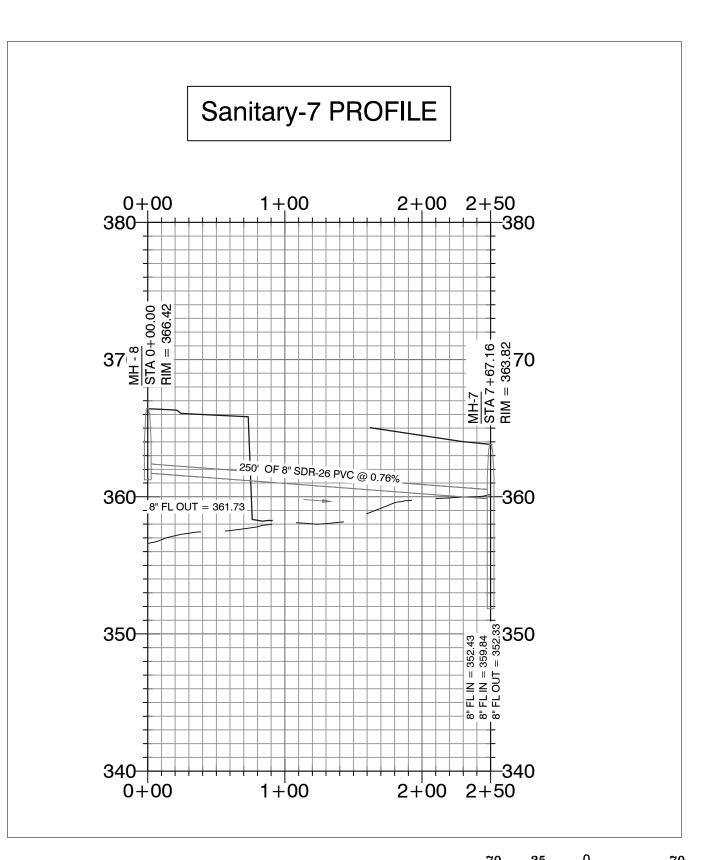
FOR USE AND BENEFIT OF: HAVEN'S DEVELOPMENT, LLC

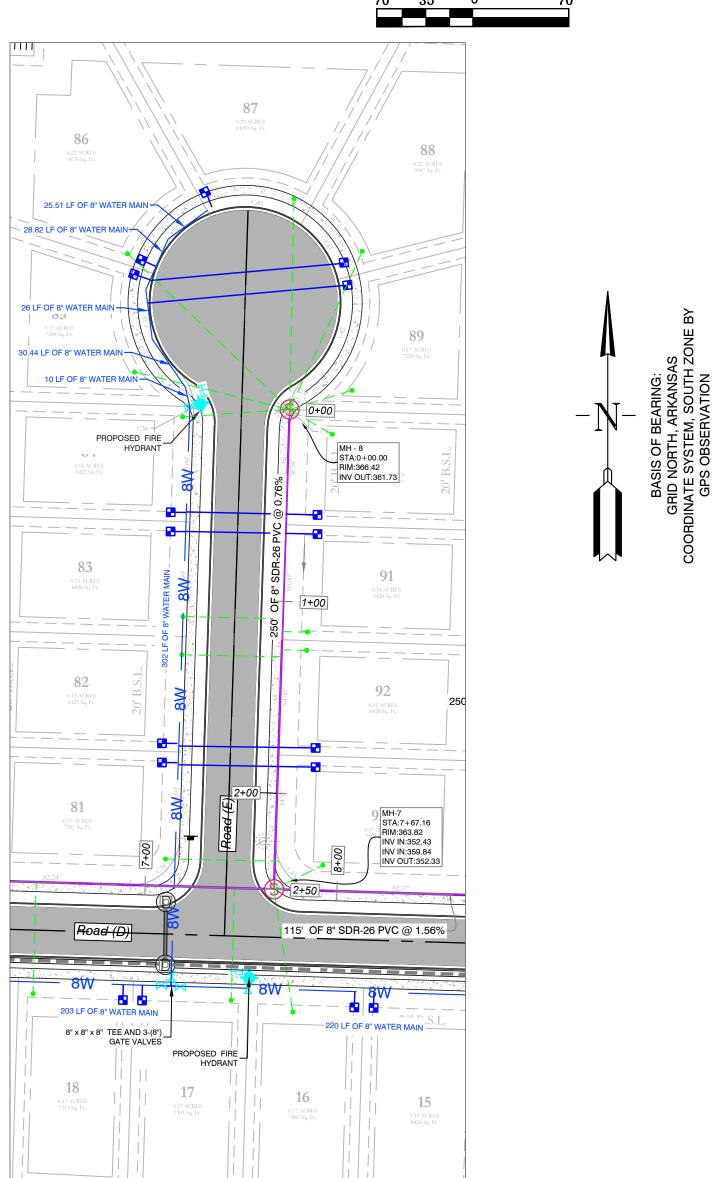
> MIDLAND ROAD SEWER PROFILES

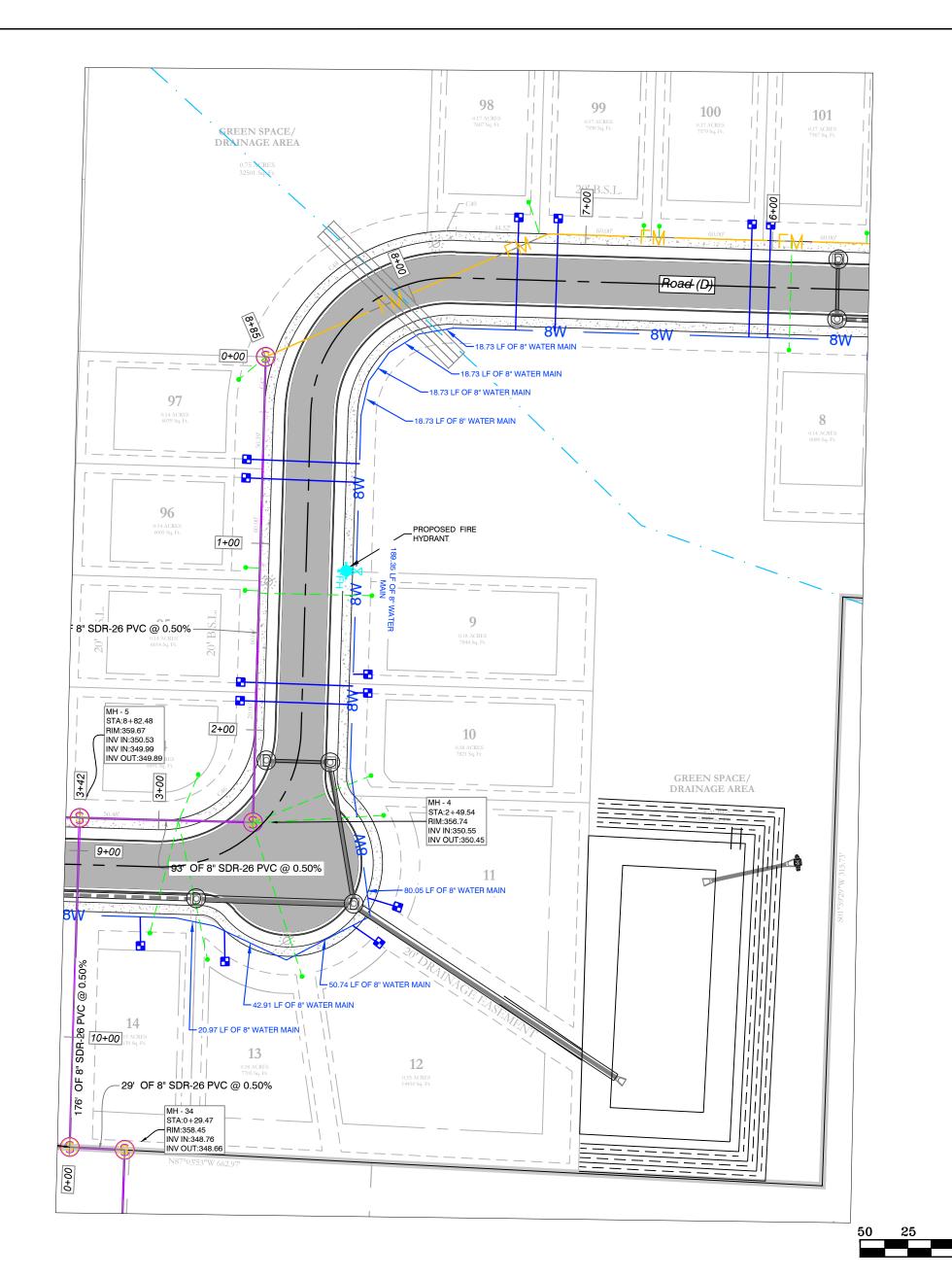
BRYANT, SALINE COUNTY, ARKANSAS DRAWING NUMBER: REVISED: CHECKED BY: 23-0024 SHEET: 15W 0 34 230

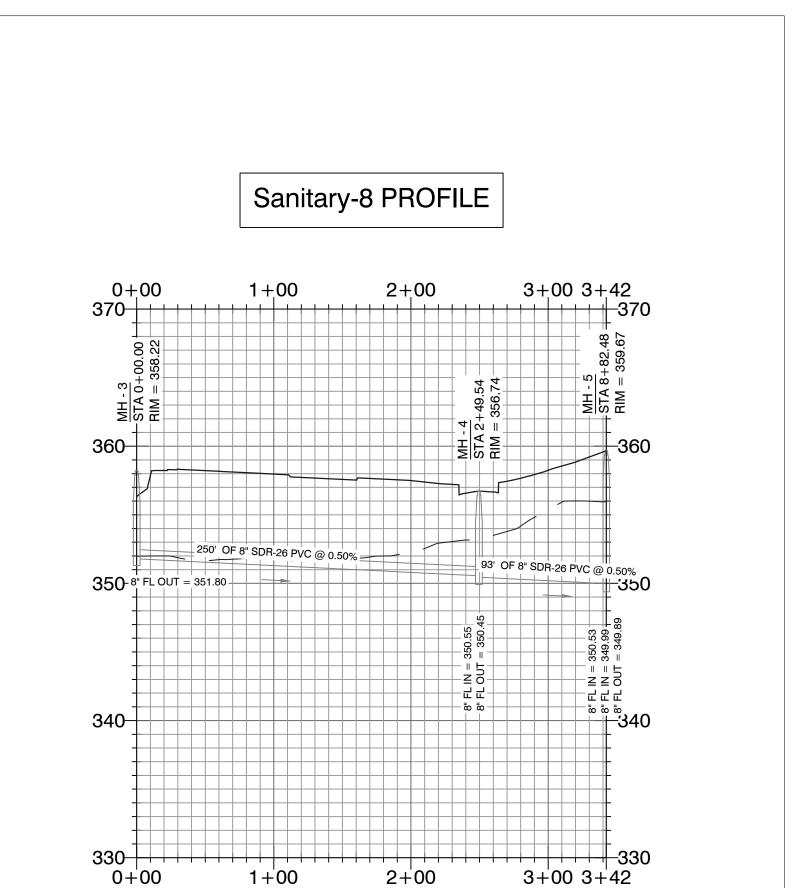
WATER LEGEND: SEWER SERVICE ₽ ₽ DUAL WATER METERS SINGLE WATER METER GATE VALVE ----- S SEWER MANHOLE 45º FITTING 90º FITTING NOTE:

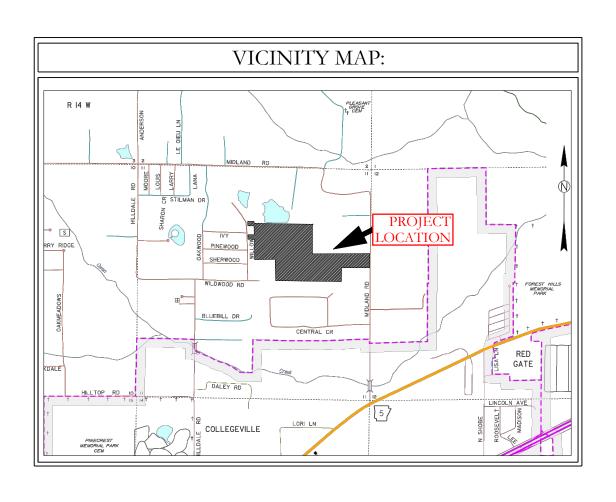
USE SDR-26 PVC SEWER PIPE EXCEPT WHERE DUCTILE IRON PIPE REQUIRED FOR COVER. USE DUCTILE IRON PIPE WHERE CROSS FITTING 3' MINIMUM COVE CANNOT BE MAINTAINED. FIRE HYDRANT CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL BURIED UTILITIES PRIOR TO CONSTRUCTION.











WATER & SEWER UTILITY NOTES:

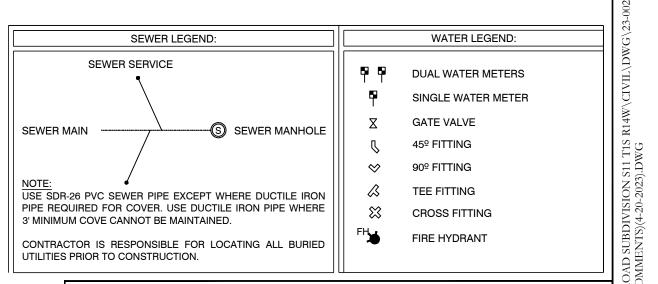
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MIDLAND ROAD SUBDIVISION

SEWER PLAN & PROFILES





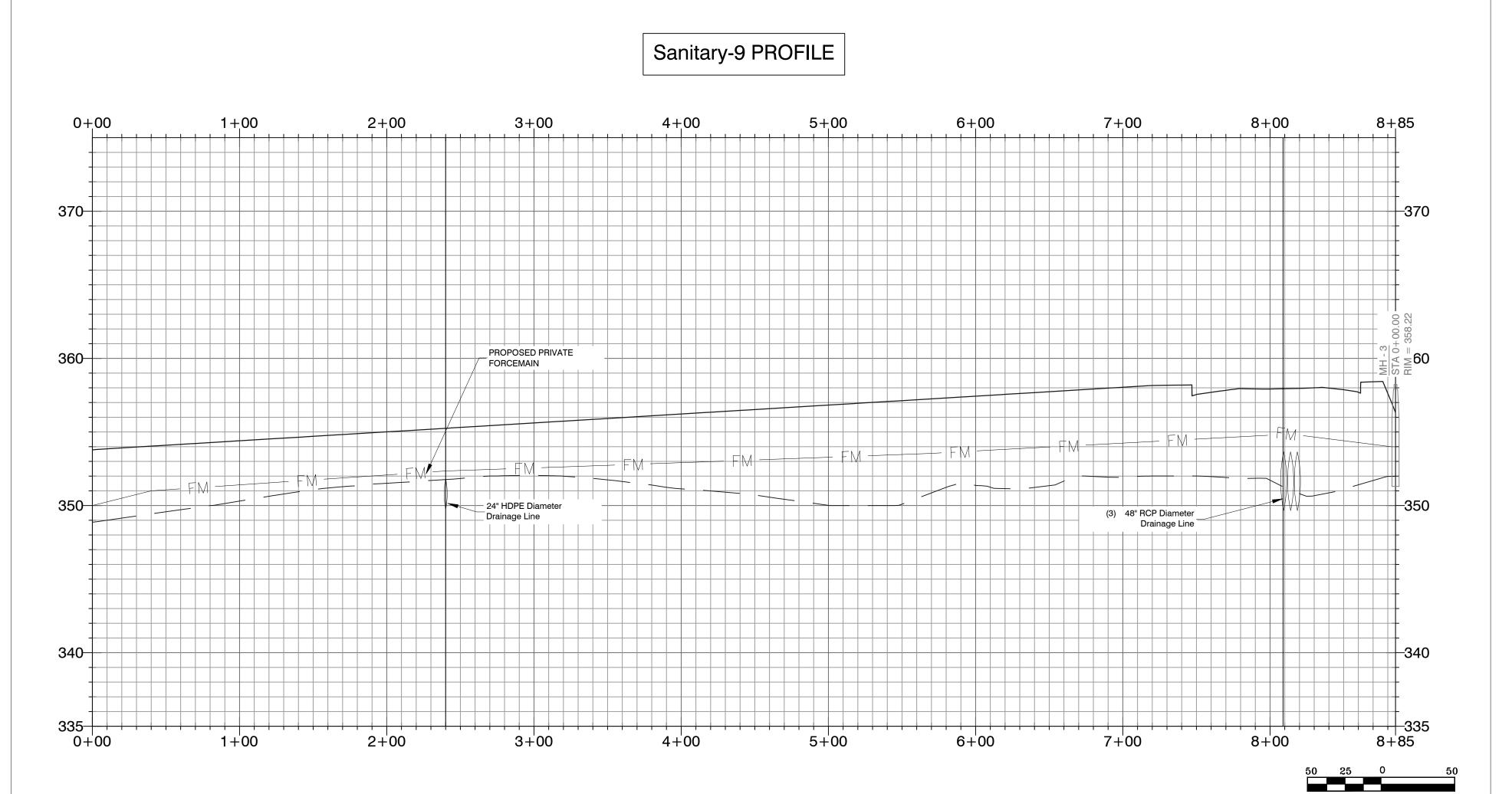
FOR USE AND BENEFIT OF: HAVEN'S DEVELOPMENT, LLC

MIDLAND ROAD

SEWER PROFILES BRYANT, SALINE COUNTY, ARKANSAS

DRAWING NUMBER: REVISED: 23-0024 C-3.7 15W 0 34 230





Sanitary-9 Profile Note:

MIDLAND ROAD SUBDIVISION

SEWER PLAN & PROFILES

1. Sanitary-9 pipe network is operated by 2" SDR-21pipe force main.

CONSULTING PH. (501)315-2626 FAX (501) 315-0024 ENGINEERS - SURVEYORS www.hopeconsulting.com

FOR USE AND BENEFIT OF: HAVEN'S DEVELOPMENT, LLC

> MIDLAND ROAD SEWER PROFILES BRYANT, SALINE COUNTY, ARKANSAS

DRAWING NUMBER: C.A.D. BY: REVISED: CHECKED BY: 23-0024 SCALE: SHEET: C-3.8 15W 0 34 230 62 1807

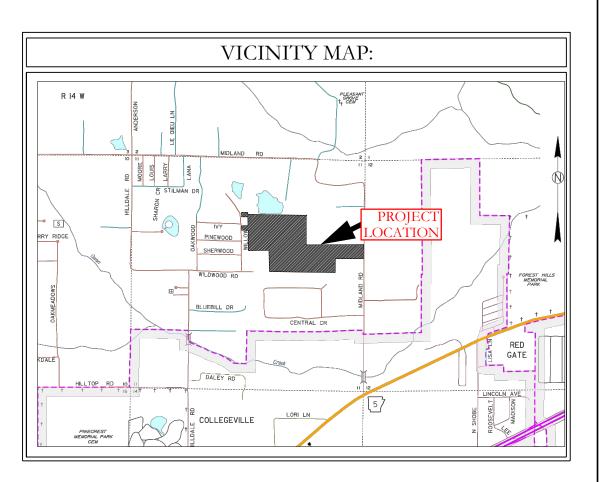
WATER & SEWER UTILITY NOTES:

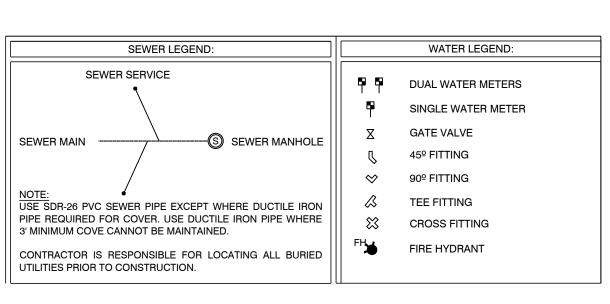
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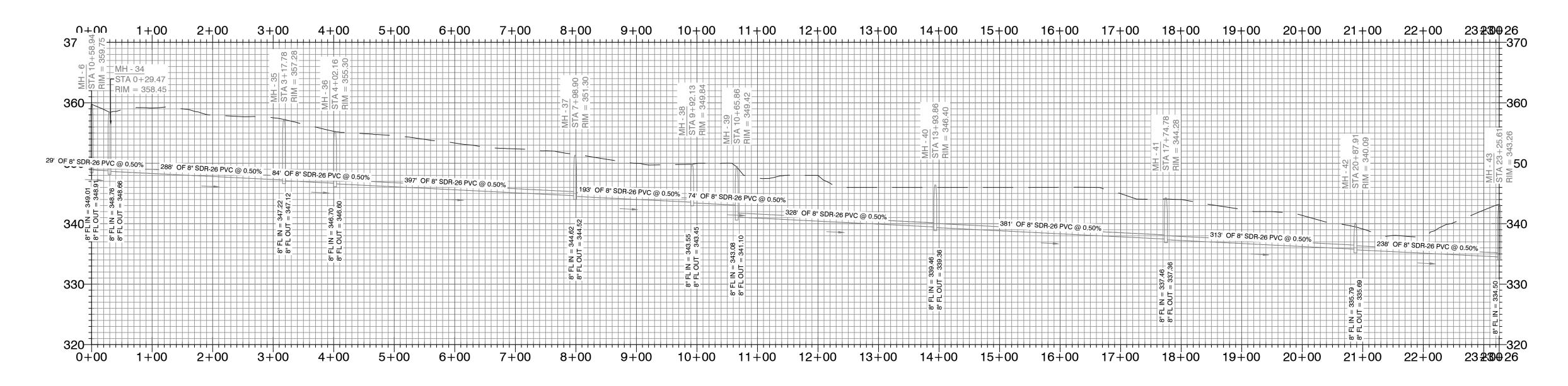
STEEL ENCASED A MINIMUM OF 5 FEET EITHER SIDE OF THE STORM DRAIN.





84' OF 8" SDR-26 PVC @ 0.50% — 6+00 MH - 37 STA:7+98.90 — RIM:351.30 INV IN:344.62 INV OUT:344.52 193' OF 8" SDR-26 PVC @ 0.50% —

Offset Sewer Line PROFILE



MIDLAND ROAD SUBDIVISION SEWER PLAN & PROFILES

WATER LEGEND: SEWER LEGEND: SEWER SERVICE DUAL WATER METERS SINGLE WATER METER GATE VALVE SEWER MAIN -------(S) SEWER MANHOLE 45º FITTING 90º FITTING USE SDR-26 PVC SEWER PIPE EXCEPT WHERE DUCTILE IRON PIPE REQUIRED FOR COVER. USE DUCTILE IRON PIPE WHERE CROSS FITTING 3' MINIMUM COVE CANNOT BE MAINTAINED. FIRE HYDRANT CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL BURIED UTILITIES PRIOR TO CONSTRUCTION.



SHEET:

62 1807

FOR USE AND BENEFIT OF: HAVEN'S DEVELOPMENT, LLC

> MIDLAND ROAD SEWER PROFILES

BRYANT, SALINE COUNTY, ARKANSAS C.A.D. BY: DRAWING NUMBER: 4/19/2023 REVISED: CHECKED BY: 23-0024 C-3.9

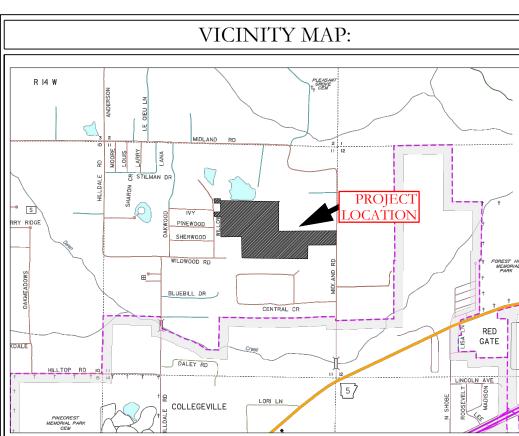
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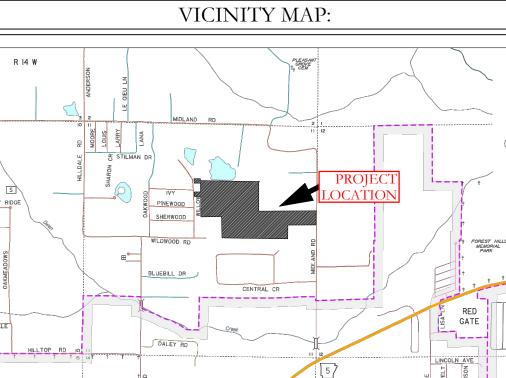
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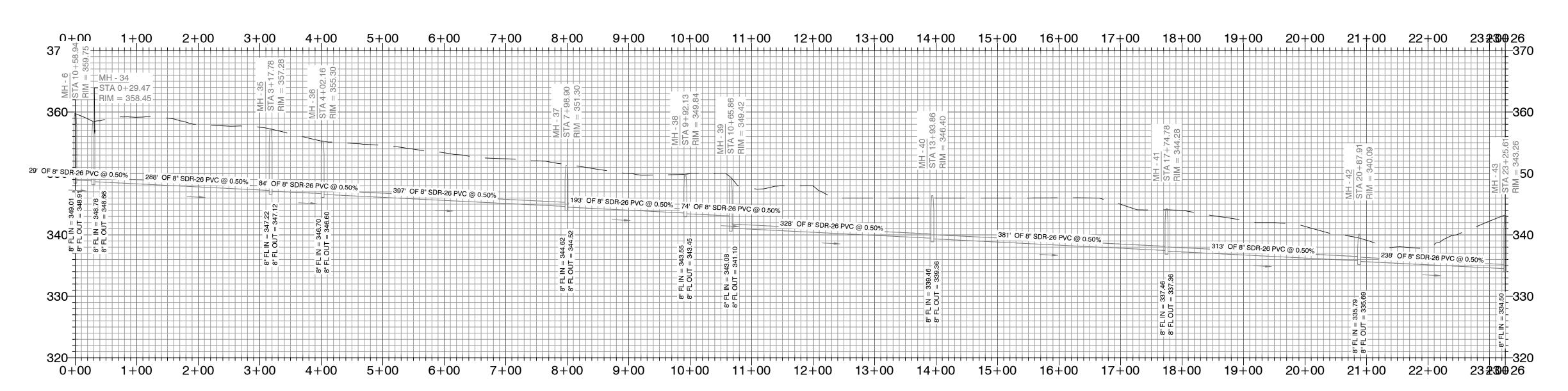
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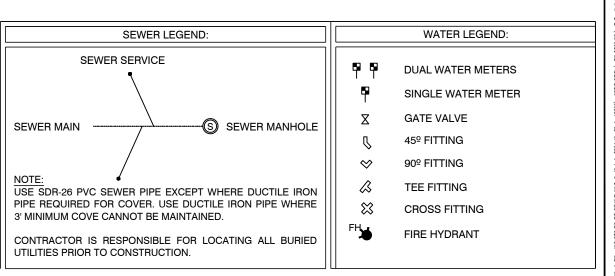
193' OF 8" SDR-26 PVC @ 0.50% -74' OF 8" SDR-26 PVC @ 0.50% -MH - 40 STA:13+93.86 RIM:346.40 INV IN:339.46 15+00 17+00

Offset Sewer Line PROFILE





MIDLAND ROAD SUBDIVISION SEWER PLAN & PROFILES





62 1807

FOR USE AND BENEFIT OF: HAVEN'S DEVELOPMENT, LLC

> MIDLAND ROAD SEWER PROFILES

BRYANT, SALINE COUNTY, ARKANSAS C.A.D. BY: DRAWING NUMBER: 4/19/2023 REVISED: CHECKED BY: 23-0024 SHEET: C-3.10

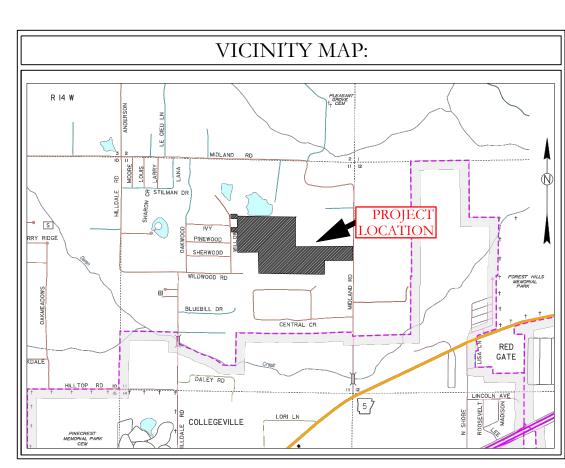
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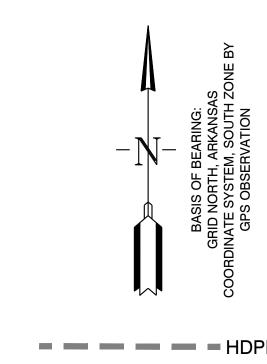
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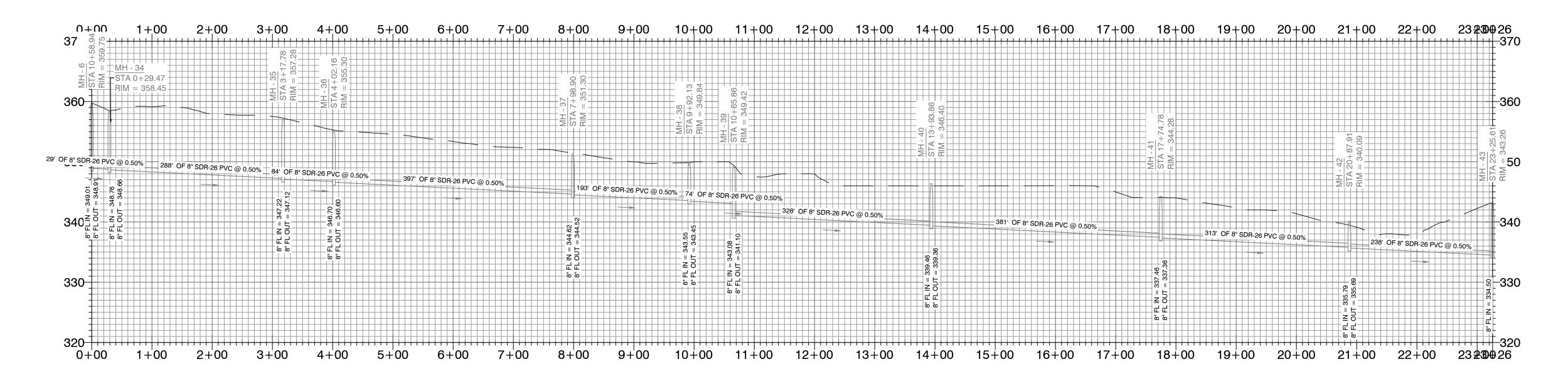
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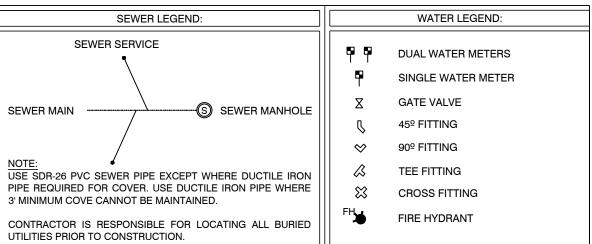
15+00 INV IN:335.79 INV OUT:335.69 238' OF 8" SDR-26 PVC @ 0.50% —

Offset Sewer Line PROFILE





MIDLAND ROAD SUBDIVISION SEWER PLAN & PROFILES





FOR USE AND BENEFIT OF:
HAVEN'S DEVELOPMENT, LLC

MIDLAND ROAD SEWER PROFILES

 BRYANT, SALINE COUNTY, ARKANSAS

 DATE:
 4/19/2023
 C.A.D. BY:
 DRAWING NUMBER:

 REVISED:
 CHECKED BY:
 23-0024

 SHEET:
 C-3.11
 SCALE:
 23-0024

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 230
 62
 1807

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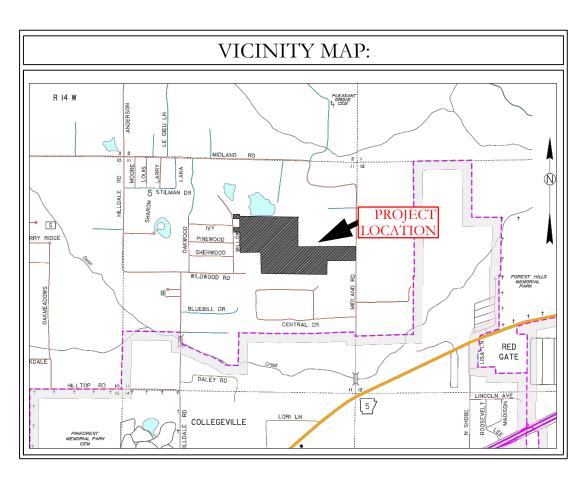
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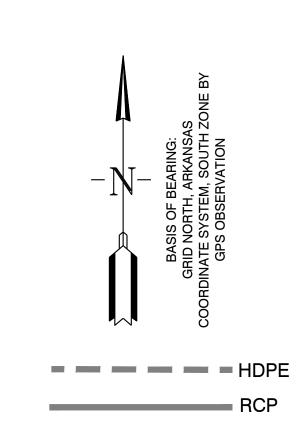
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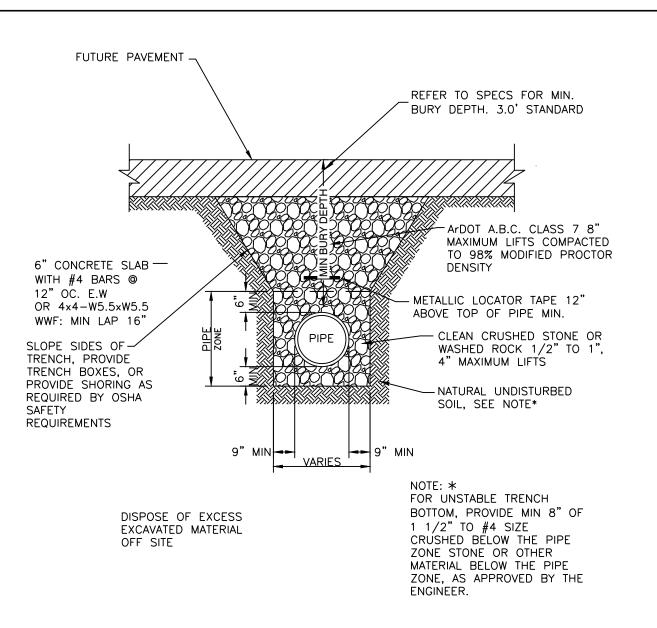
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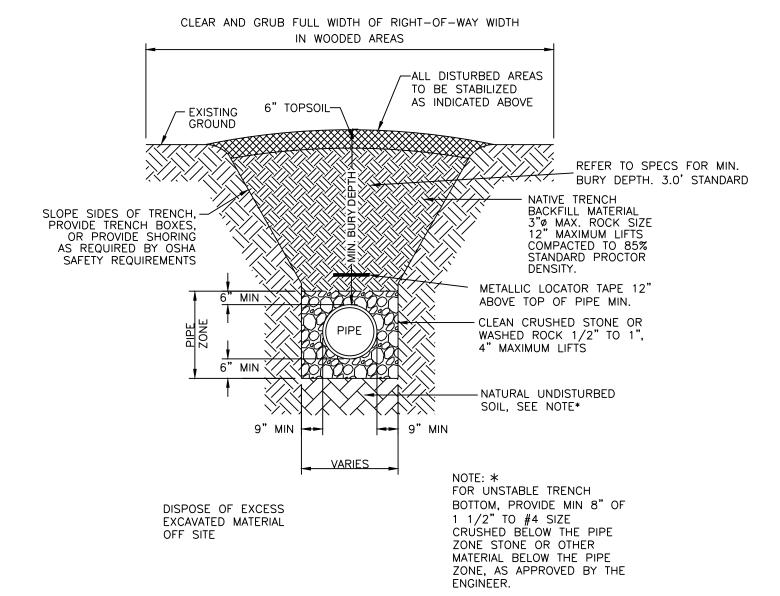






PVC SEWER TRENCH UNDER **FUTURE ASPHALT STREET**

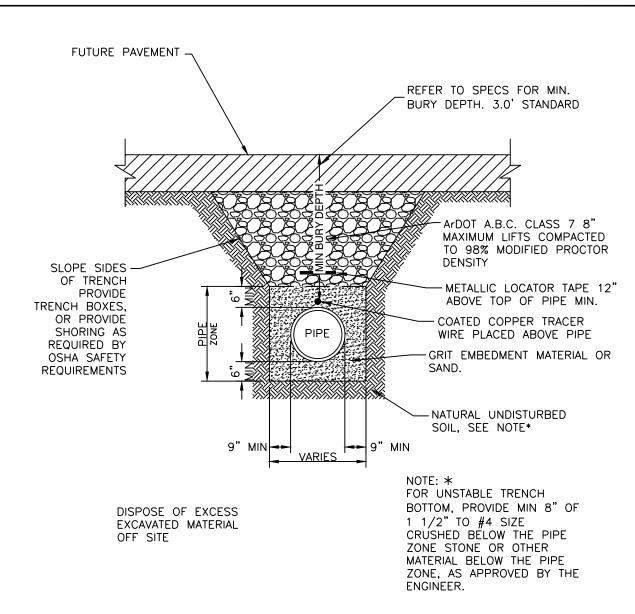
SOIL STABILIZATION REQUIREMENTS: 1. IN LAWN AREAS, DISTURBED SOIL SHALL BE STABILIZED BY PLACEMENT OF SOD TO MATCH EXISTING. 2. IN FIELDS OR WOODED AREAS, DISTURBED SOIL SHALL BE STABILIZED BY SEEDING.



PVC SEWER TRENCH IN UNPAVED AREAS

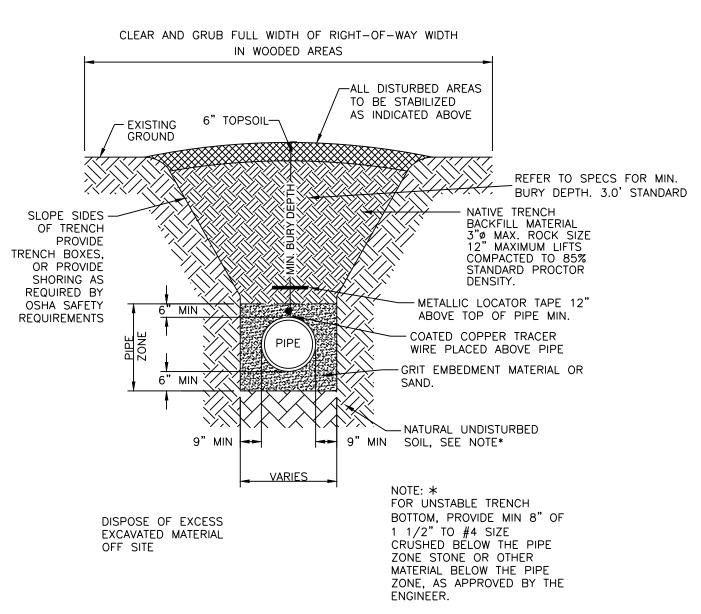
M.J. TAPPING SLEEVE -M.J. TAPPING VALVE

WATER MAIN CONNECTION DETAIL N.T.S.

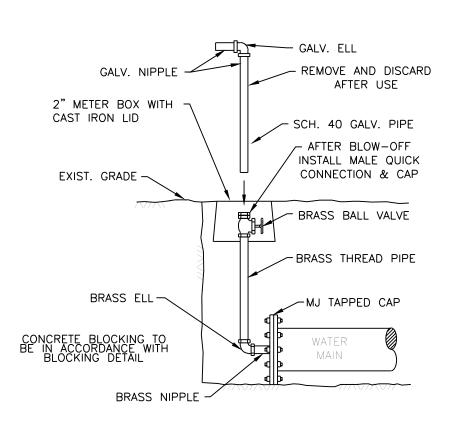


PVC WATER LINE TRENCH **UNDER FUTURE ASPHALT STREET**

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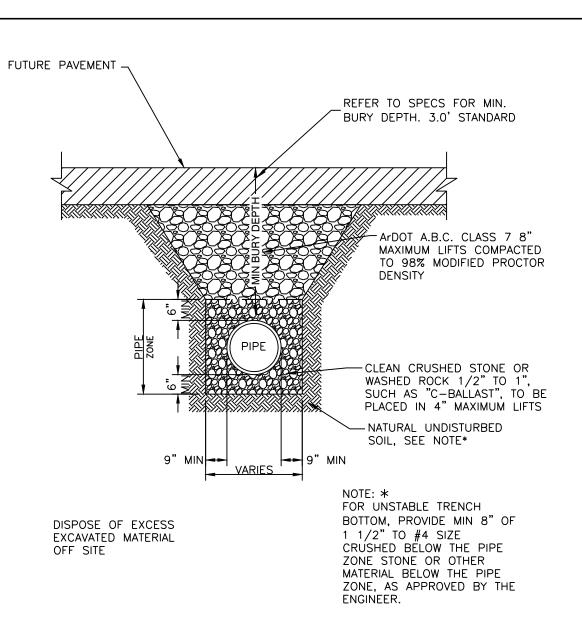


PVC WATER LINE TRENCH IN UNPAVED AREAS



2" BLOW-OFF RISER

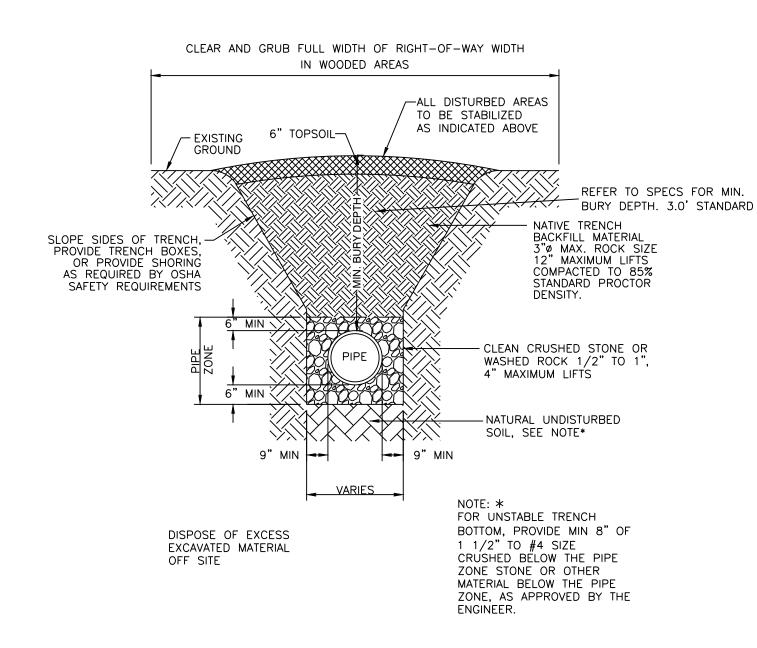
N.T.S.



DRAINAGE PIPE TRENCH UNDER **FUTURE ASPHALT STREET**

N.T.S.

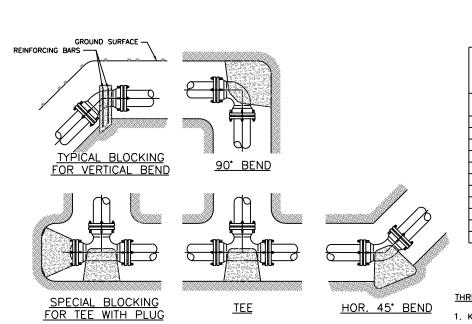
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DRAINAGE PIPES IN UNPAVED AREAS N.T.S.

2'x 2'x 4" CONCRETE CENTER IN SLAB (TYP.) PAD AROUND VALVE (TYP.) VALVE BOX LID-TO BE BOLTED DOWN. VALVE BOX (SEE SPEC'S.)

> **DETAIL-VALVE BOX** N.T.S.



CONTRACTOR TO INSTALL
ALL FIRE HYDRANTS TO

THE POSITION SHOWN.

6 CU. FT. OF -

KEEP CONCRETE -CLEAR OF FH

WEEP HOLE

SHALL BE PLACED BETWEEN CONCRETE & DUCTILE IRON

VISQUEEN LINING -

CONCRETE SUPPORT -

EQUAL TO ONE 80LB

BAG OF SAKRETE OR

0.025 CY

WASHED GRAVEL

-FIRE HYDRANT

FINISHED GRADE

M.J. GATE VALVE

- SWIVEL TEE

W/VALVE BOX

VOLUME OF THRUST BLOCK

(VERTICAL BENDS)
FOR 150 P.S.I. TEST PRESSURE

BEND ANGLE

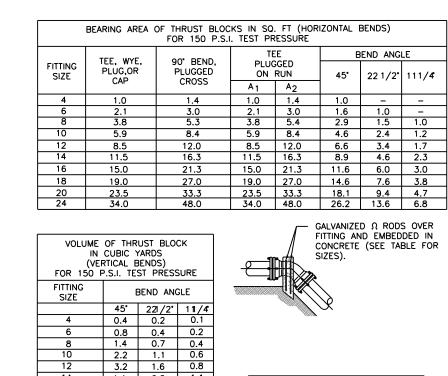
-SWIVEL ADAPTER

FIRE HYDRANT

CONNECTION

NTS

TYPICAL BLOCKING DETAILS



THRUST BLOCK NOTES: . KEEP CONCRETE CLEAR OF JOINT ACCESSORIES. 2. CONCRETE THRUST BLOCKING SHALL BE POURED AGAINST UNDISTURBED REQUIRED VOLUMES OF BEARING AREAS AT FITTINGS SHALL BE AS INDICATED IN THE TABLES PROVIDED AND ADJUSTED, IF NECESSARY, TO CONFORM TO THE TEST PRESSURE(S) STATED IN THE SPECIFICATIONS. AND ALLOWABLE SOIL BEARING STRESS(ES) I. THRUST BLOCK VOLUMES FOR VERTICAL BENDS HAVING UPWARD RESULTANT THRUSTS ARE BASED ON TEST PRESSURE OF 150 PSIG AND THE WEIGHT OF CONCRETE (4.050 LB/CY). TO COMPUTE VOLUMES FOR DIFFERENT TEST PRESSURES, USE THE FOLLOWING EQUATION: VOLUME = (TEST PRESSURE / 150) X (TABLE BEARING AREAS FOR HORIZONTAL BEND THRUST BLOCKS ARE BASED ON TEST PRESSURE OF 150 PSIG AND AN ALLOWABLE SOIL BEARING STRESS OF 2,000 LB/SF TO COMPUTE BEARING STRESSES, USE THE FOLLOWING EQUATION: BEARING AREA - (TEST PRESSURE / 150) X (2,000 / SOIL BEARING STRESS) X (TABLE VALUE). 6. THRUST BLOCKS FOR VERTICAL BENDS

HAVING DOWNWARD RESULTANT THRUST SHALL BE THE SAME AS FOR HORIZONTAL BENDS. 7. BEARING AREAS, VOLUMES, AND SPECIAL BLOCKING DETAILS SHOWN ON PLANS TAKE PRECEDENCE OVER THIS BEARING AREA OF THRUST BLOCK SHALL NOT BE LESS THAN 1.0 SF. VERTICAL BENDS THAT REQUIRE A THRUST BLOCK VOLUME EXCEEDING 5 CY REQUIRE SPECIAL BLOCKING DETAILS. SEE PLANS.

TYPICAL BLOCKING DETAILS

N.T.S.

FITTING ROD SIZES EMBEDMENT

2" AND LESS #6'S



129 North Main Street, Benton, Arkansas 72015 PH. (501)315-2626

FOR USE AND BENEFIT OF: HAVEN'S DEVELOPMENT, LLC

> MIDLAND ROAD TRENCH DETAILS

DRAWING NUMBER: 4/19/2023 C.A.D. BY: REVISED: CHECKED BY: 23-0024 SHEET: 15W 0 34 230 62 1807 1S

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BRYANT, SALINE COUNTY, ARKANSAS

SUBGRADE MATERIAL

- A. Subgrade soils shall be all materials used for subgrade including in-situ materials and fill materials.
- B. Subrades for pavement shall be stabilized by mechanical compaction. Stabilization methods such as fabrics and chemical stabilization may be submitted for approval when supported by engineering data and calculations to substantiate the adequacy of the stabilized procedure.
- C. Subgrade shall be compacted to 95 percent modified proctor density minimum. Moisture content shall be +/- 3% of optimum moisture unless otherwise supported by the site specific geotechnical data and approved by City.
- D. Subgrade shall be prepared in such a manner that the base course shall be placed on a firm foundation that is stable and free from soft spots, pumping, dust pockets, wheel ruts, or other defects. E. The top 24 inches of the subgrade shall be a material not susceptible to frost action unless modified with cement, lime or another method approved specifically by the City to resist frost action. Soils classified as A-4 and A-5 including sandy silts, fine silty sand or lean clays are highly susceptible to frost
- F. In-situ soils meeting the requirements outlined in these specifications may be utilized as subgrade shall be scarified to a minimum depth of 8-inches below finish subgrade, recompacted and tested as described below. Fill material for subgrade shall be placed in lifts
- G. Methods and procedures for establishing the total depth of soil replacement and/or modification shall be as specified by the design engineer and geotechnical investigations. The adequacy of in-situ soils and fill materials as pavement subgrade shall be evaluated based upon the soils classification, liquid
- H. Soils with a liquid limit greater than 40, or a plasticity index greater than 15 shall be undercut and removed from the street section or improved by a design method of stabilization approved by the City.
- I. Quality control testing shall be as specified below.

not to exceed 8-inches compacted depth.

- Undercut 24" of soil below finished street base course. Proof roll to verify stability

BASE COURSE

- A. Base course material shall be crushed stone meeting the requirements of ArDOT Class 7 aggregate base course as specified in the latest edition of ArDOT Standard Specifications.
- B. Base course shall be compacted to 98 percent modified proctor density minimum. Moisture content shall be +/- 3% of optimum moisture.

K. Backfill the undercut subgrade with Class 7 aggregate or soil meeting the requirements of this section and compact in lifts not exceeding 8".

SURFACE COURSE

A. Surface course for flexible pavement designs shall utilize plant mix bituminous base and binder courses conforming to ArDOT Standard Specifications.

CURB AND GUTTER

- A. Curb and gutter shall be Portland Cement Concrete with a minimum 28-day compressive strength of 4,000 psi. Concrete shall be air-entrained with a maximum of 4-inch slump. B. Compaction requirements under curb and gutter shall conform to the requirements for street subgrade materials. Compaction requirements shall extend to a minimum of 1 foot behond the back of curb and gutter removing all soft spots and replacing with suitable materials.
- C. Curb and gutter shall conform to the typical detail within these specifications or ArDOT Standard Roadway Drawing Details for curbing.
- D. Expansion joints shall be made with 1/2-inch preformed expansion joint filler of a non-extruding type. Expansion joints shall be placed at intervals not exceeding 195 feet, intersection radii, driveways, stationary structures, and sidewalks.
- E. Contraction joints shall be sawed or fromed at intervals not greater than 20 feet. Depth of saw-cut hall be 1 1/2-inch and have a width of 1/4-inch. Contraction joints shall be sealed in accordance with ArDOT Standard Specifications.
- F. Forms shall be made of metal or wood and shall be properly braced. The minimum length of each section of form used shall be uniform and free from undesirable bends or warps. Forms shall be of such cross section and strength and so secured as to resist the
- pressure of the impact and vibration on any equipment which they support without springing or settlement. G. Curb and gutter placed with slip form or extruding equipment will be acceptable providing it complies with all of the above requirements.
- H. After curing, the curb shall be immediately backfilled to within 4 inches of the top curb to eliminate the possibility of washing beneath the curb. The remaining 4 inches shall be topsoil.
- I. Cold weather protection shall meet the requirements of the latest edition of ArDOT Standard Specifications.

SIDEWALKS

General

- A. Sidewalks shall be Portland Cement Concrete with a minimum 28-day compressive strength of 4,000 psi.
- B. Sidewalks shall be on both sides of streets in line with sidewalks on opposite corners of roads.
- C. All sidewalks including ramps shall meet all current Federal Americans with Disabilities (ADA) design guidelines or requirements.
- D. Traverse slopes shall not exceed 2 percent.
- E. Subgrade under sidewalks shall be compacted to 90 percent modified proctor density minimum.
- F. Sidewalks shall not be placed upon grassy or organic materials.
- G. Sidewalks which extend or link existing sidewalks shall adjoin the existing sidewalks to form a continuous, even pathway.
- H. Utility poles, utility boxes, mailboxes, fire hydrants, and other similar obstructions shall not be located in sidewalks Sidewalk location may vary at the discretion of the City to avoid such obstacles.

Minimum thickness and reinforcement

- A. Sidewalks shall have a minimum thickness of 4 inches.
- B. Sidewalks shall be reinforced, at a minimum, with woven wire fabric reinforcement.

Contraction and expansion joints

- A. Contraction joints shall be provided perpendicular to the sidewalk at intervals equal to the sidewalk width.
- B. Expansion joints shall be constructed perpendicular to the sidewalk at intervals equal to five times the sidewalk width. Expansion joints shall be made with 1/2-inch preformed expansion joints shall be placed at driveways, drop inlets, and curbs.

Quality control testing and inspection by the City

- A. Subgrade and formwork for sidewalks shall be inspected by the City prior to pouring of the sidewalk.
- B. All testing of materials and construction shall be provided and paid for by the Developer/Owner.
- C. All field tests required for a project shall be witnessed by the City, contractor, or their authorized representatives.
- All testing shall be accomplished by a testing firm approved by the City and shall be performed under the supervision of a licensed Professional Engineer.
- E. Sampling and testing locations shall be subject to approval by the City.
- F. Density tests on subgrades shall be taken every 300 feet or portion thereof.
- G. The City shall be notified at least one day in advance of the need to inspect subgrade and formwork of sidewalks.

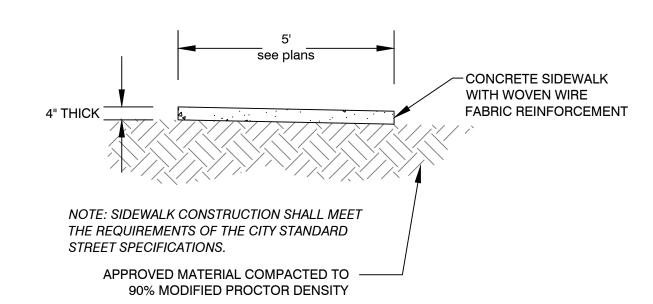
Subgrade

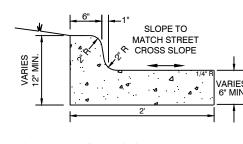
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QUALITY CONTROL TESTING AND INSPECTIONS

General

- A. Materials and construction employed in street improvements shall be subject to inspection and quality control testing. All testing of materials and construction shall be provided and paid for by the Developer/Owner.
- B. The Developer/Owner shall provide for inspections of street improvements during construction. The Engineer of Record. The Engineer of Record shall provide certification that all materials and construction conform to the approved plans and specifications and with these minimum street standards.
- C. The Engineer of Record shall furnish inspection whenever a critical construction activity is taking place. This means that a representative of the Engineer of Record must be on-site whenever a critical construction activity is taking place.
- D. All field tests required for a project shall be witnessed by the City, Engineer of Record, contractor, or other authorized representatives. E. The City shall be notified at least one day in advance of any test(s). It is the responsibility of the contractor to coordinated the scheduling of all tests with the City.





TYPICAL CURB DETAILS & NOTES

Typical Sidewalk Detail

Typical Curb & Gutter Detail

4,000 psi concrete



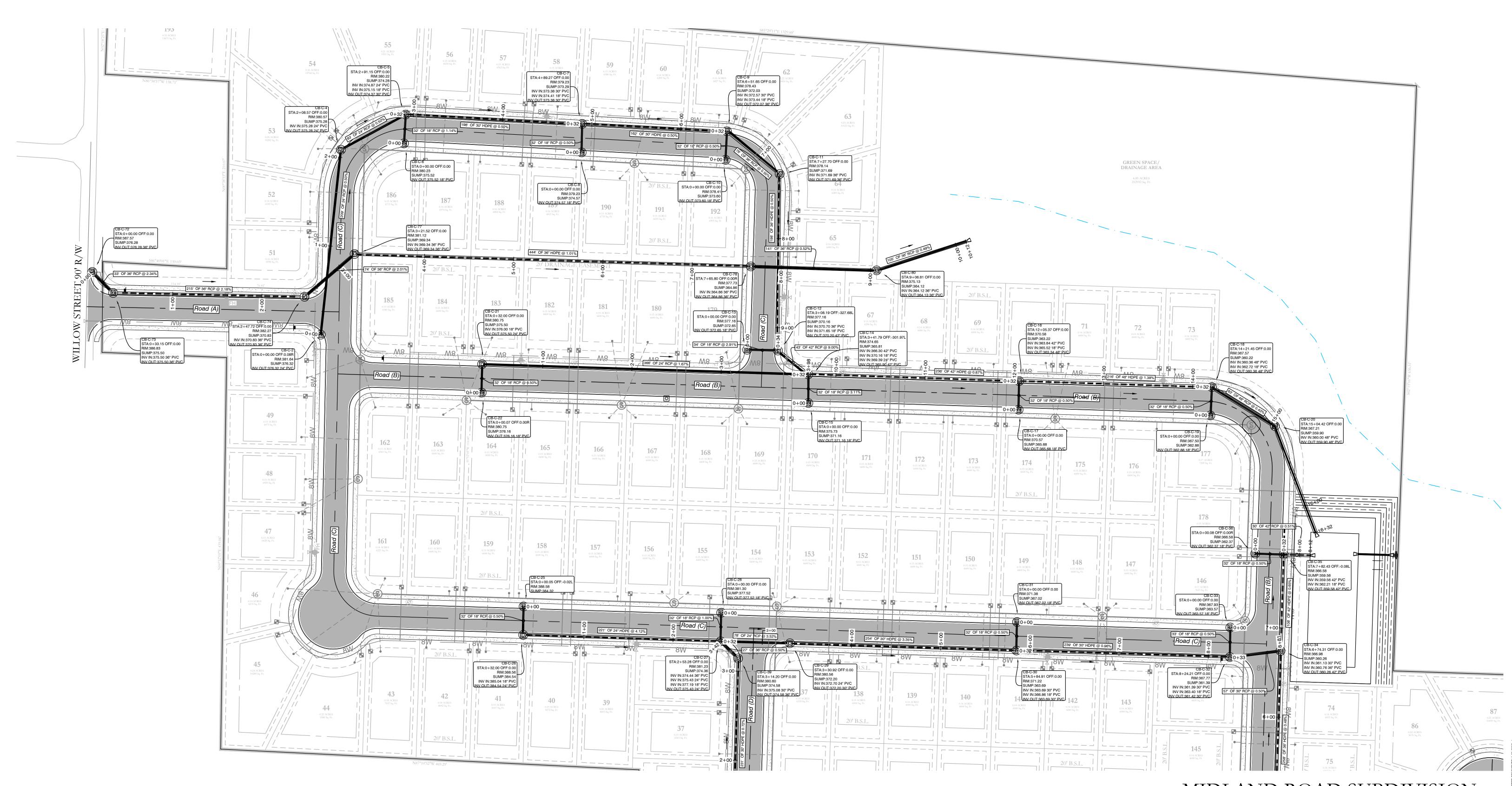
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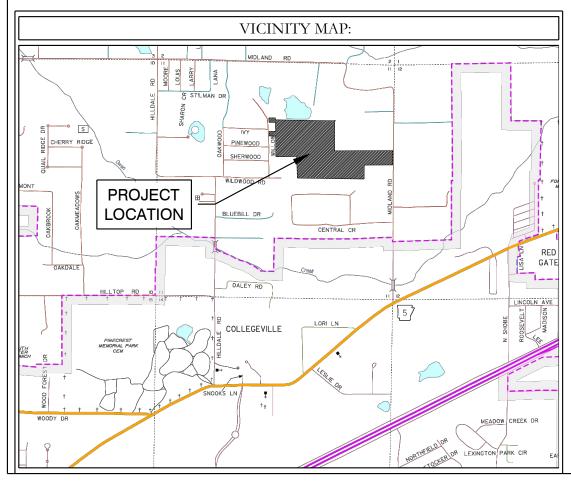
HAVEN'S DEVELOPMENT, LLC

MIDLAND ROAD CIVIL SPECS

BRYANT, SALINE COUNTY, ARKANSAS

C.A.D. BY: DRAWING NUMBER: 4/19/2023 REVISED: CHECKED BY: SHEET: C-5.0 15W 0 34 230 62





DRAINAGE NOTES

No fences, pools or permanent obstructions may be placed in any access or drainage easements.

Dead Storage of pond will be used as a sediment pond at the time of construction later it will remain as a water feature.

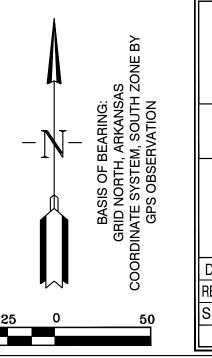
Filter fabric shall be placed under all riprap areas.

All drainage ditches and swales that are not concreted will be required to be stabilized with solid sod stabilization per the Stormwater Management Manual.

Any new drainage ditches or swales, new or that have been disturbed during construction are required to have solid sod stabilization per Section 500.7.2 of the Stormwater management Manual. (This is required to be show in detail on the plans).



MIDLAND ROAD SUBDIVISION DRAINAGE PLAN



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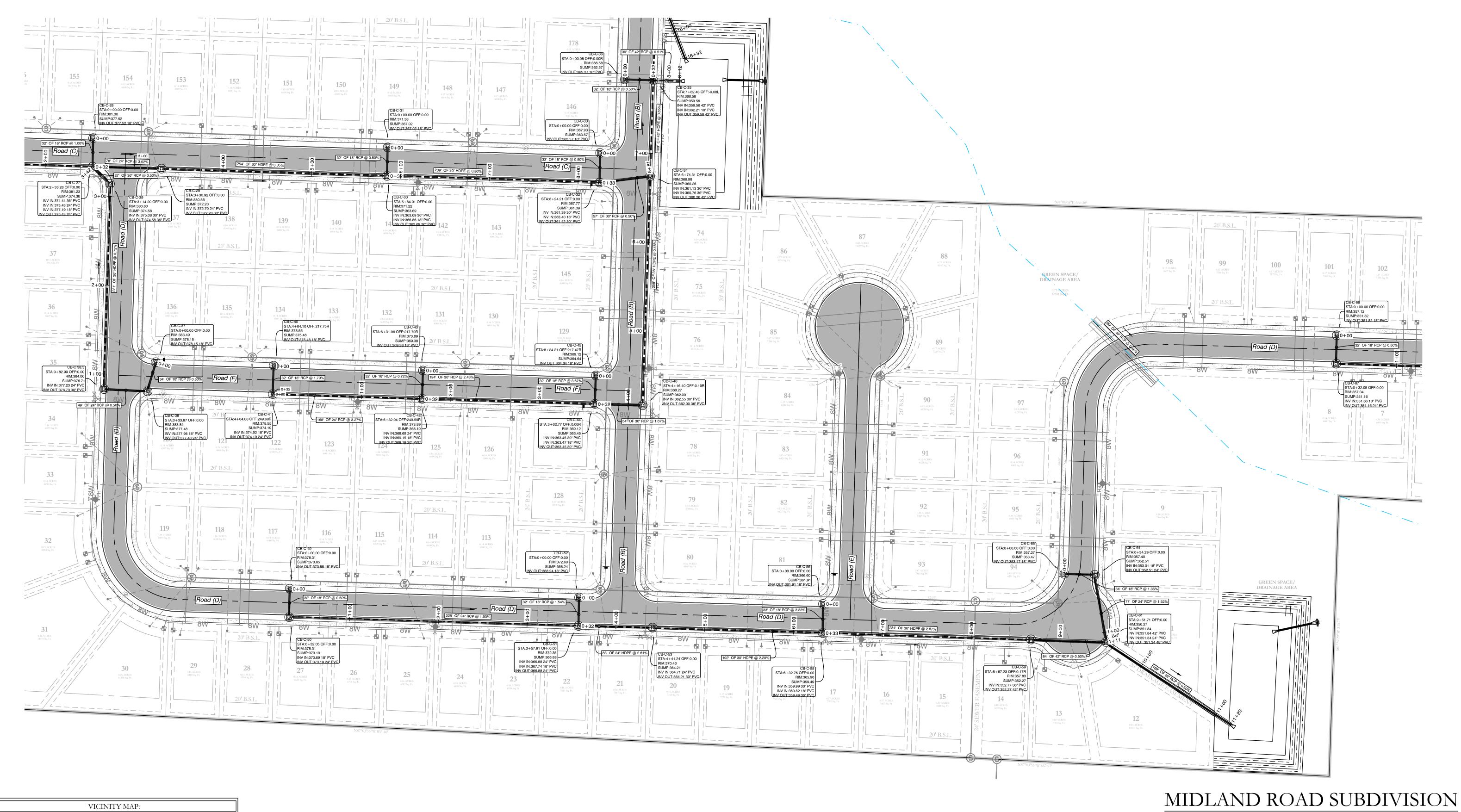
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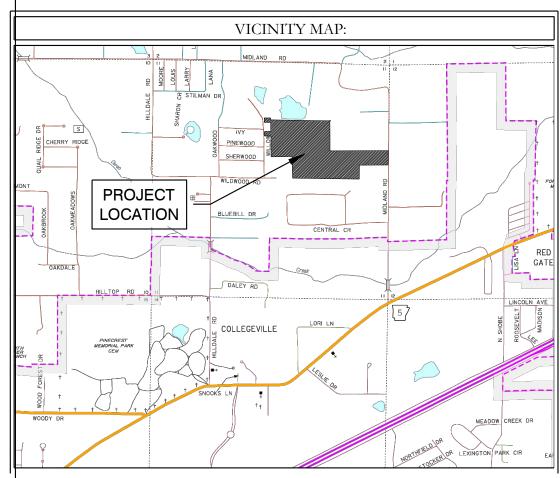
HAVEN'S DEVELOPMENT, LLC

MIDLAND ROAD

DRAINAGE PLAN
IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS

DATE:	4/19/2023	C.A.D. BY:	DRAWING NUMBER:		
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DRAINAGE NOTES

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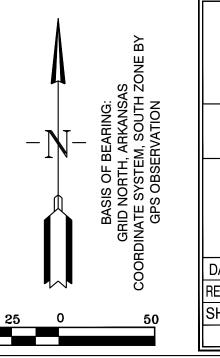
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MIDLAND ROAD SUBDIVISION DRAINAGE PLAN



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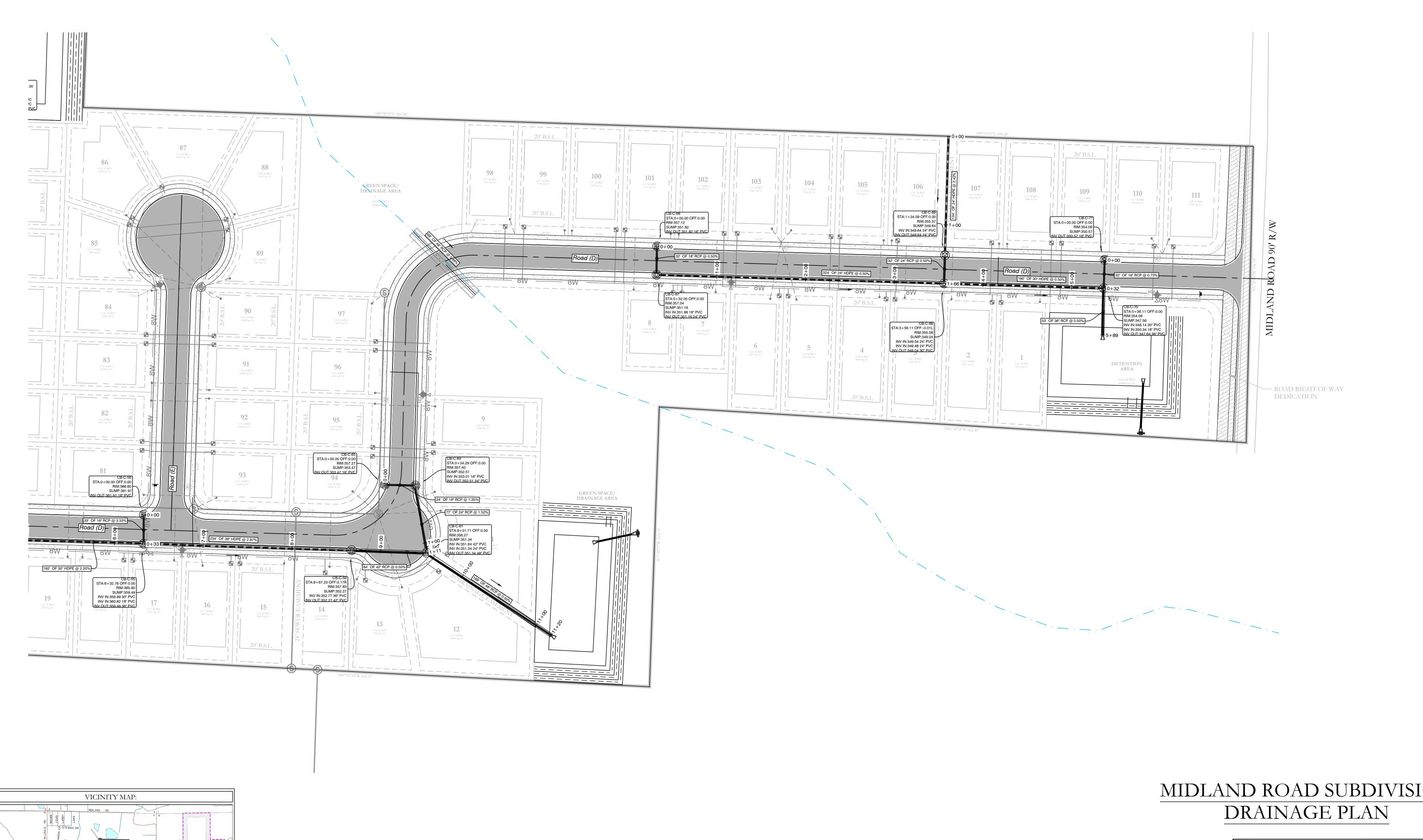
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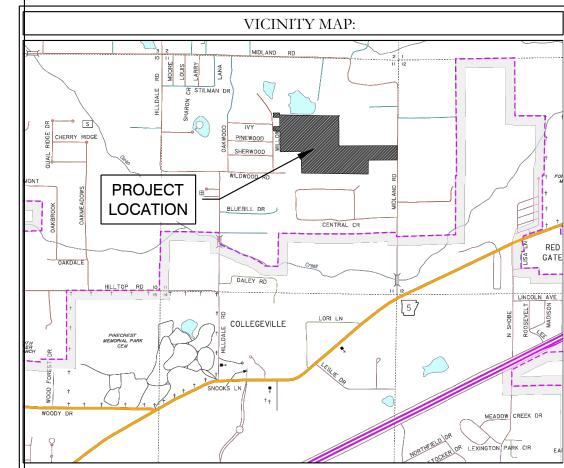
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MIDLAND ROAD DRAINAGE PLAN

DRAINAGE PLAN
IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS

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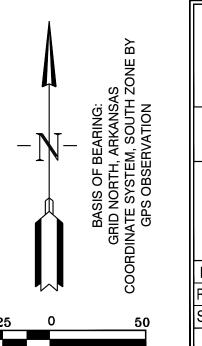
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MIDLAND ROAD SUBDIVISION



HOPE ENGINEERS + SURVEYORS

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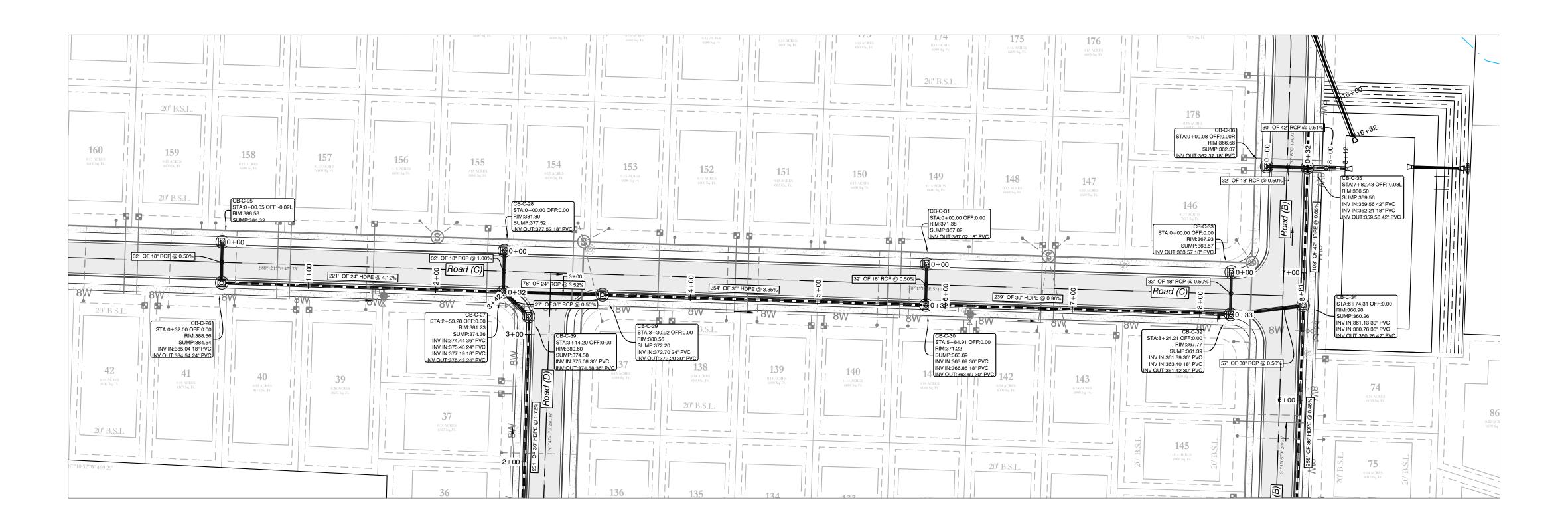
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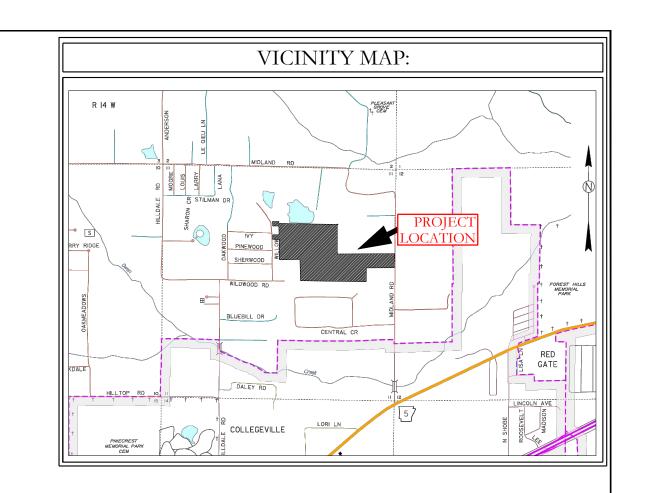
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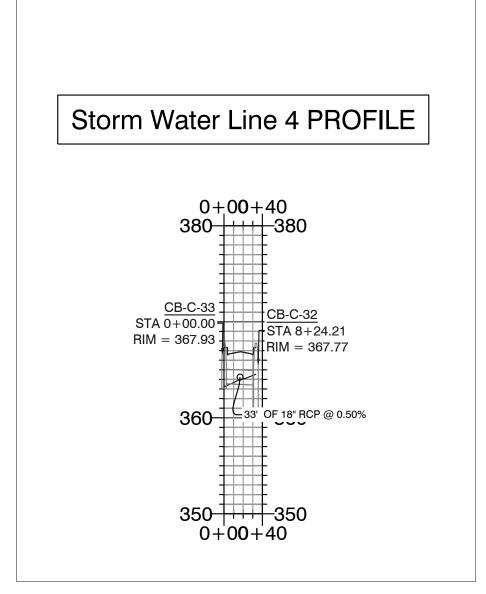
DRAINAGE PLAN

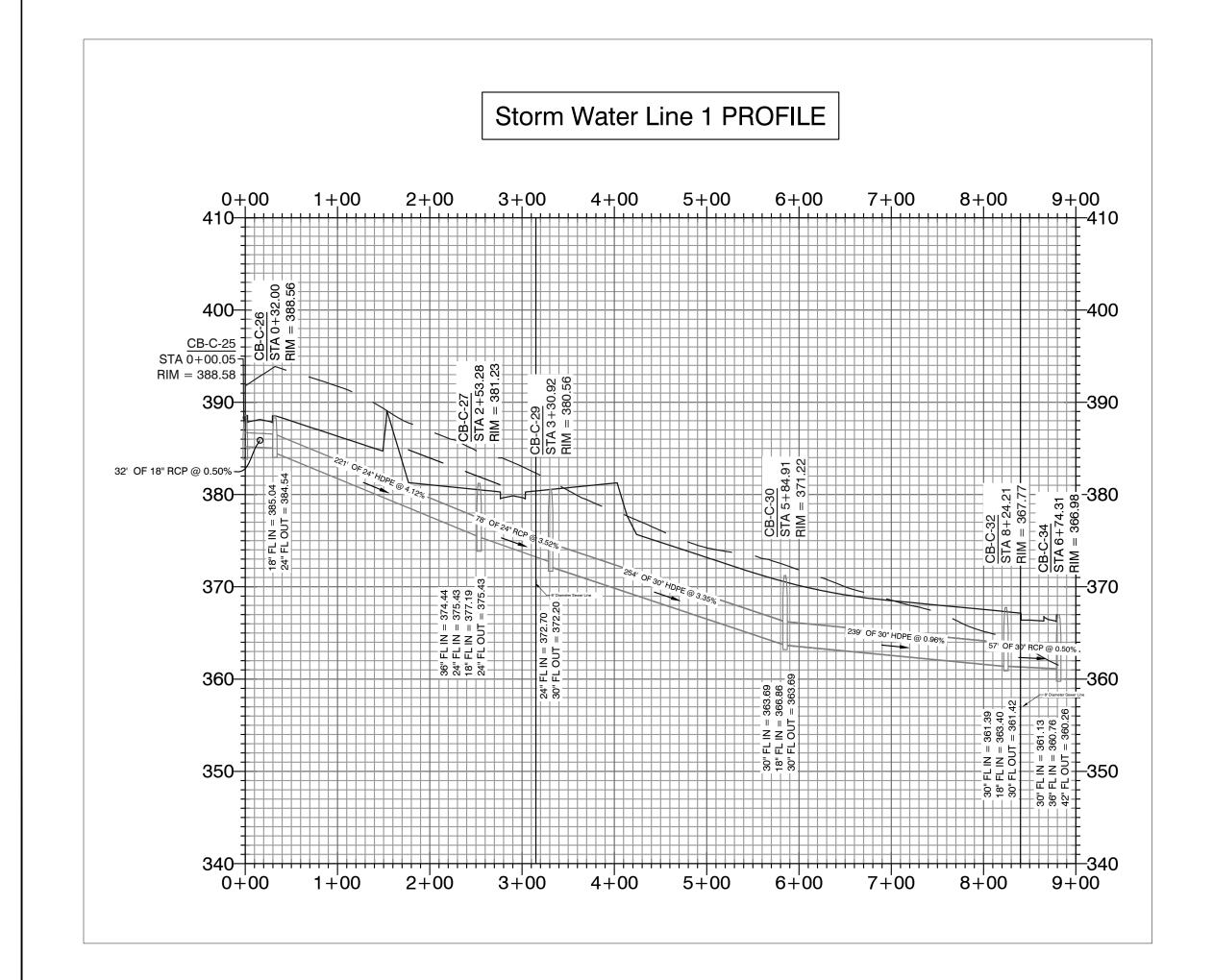
IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS

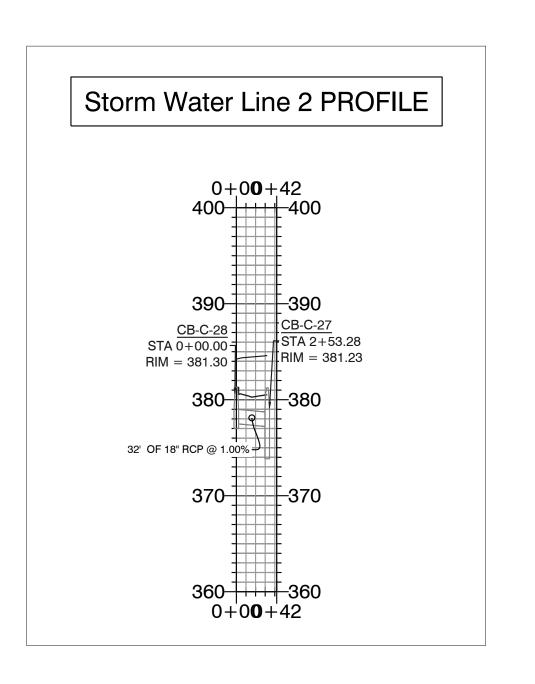
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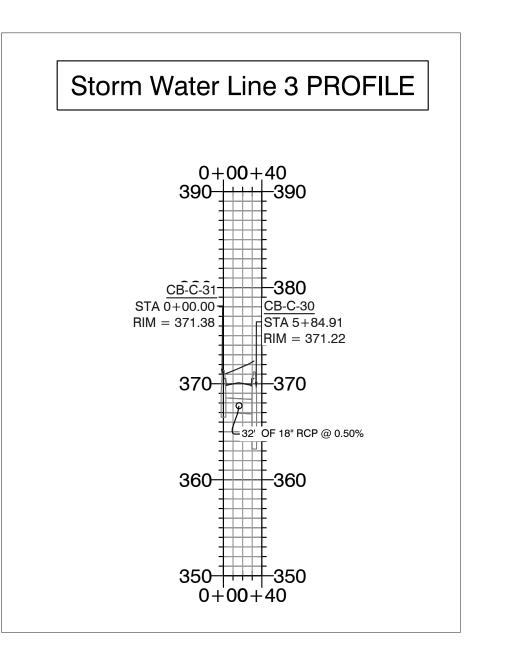


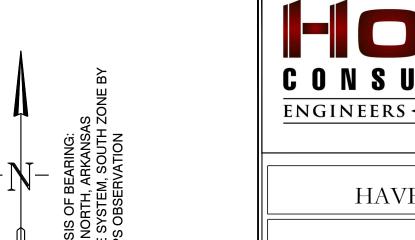






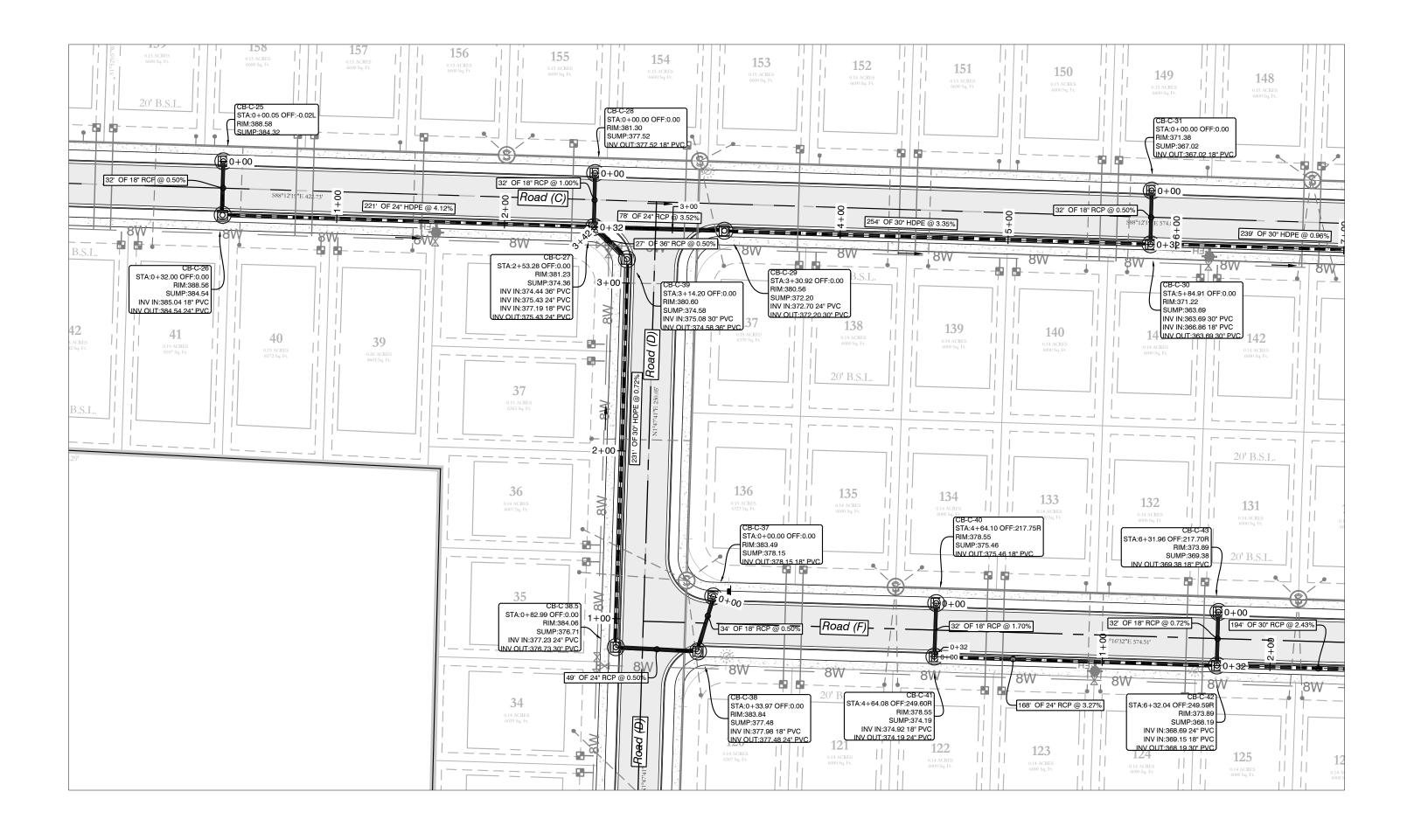








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DRAINAGE NOTES

Management Manual.

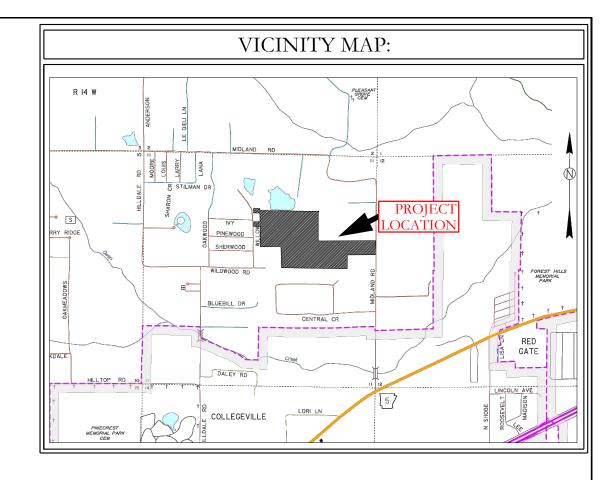
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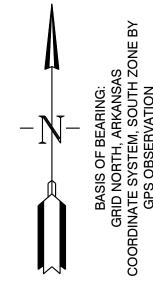
All drainage ditches and swales that are not concreted will be required to be stabilized with solid sod stabilization per the Stormwater

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Storm Water Line 5 PROFILE

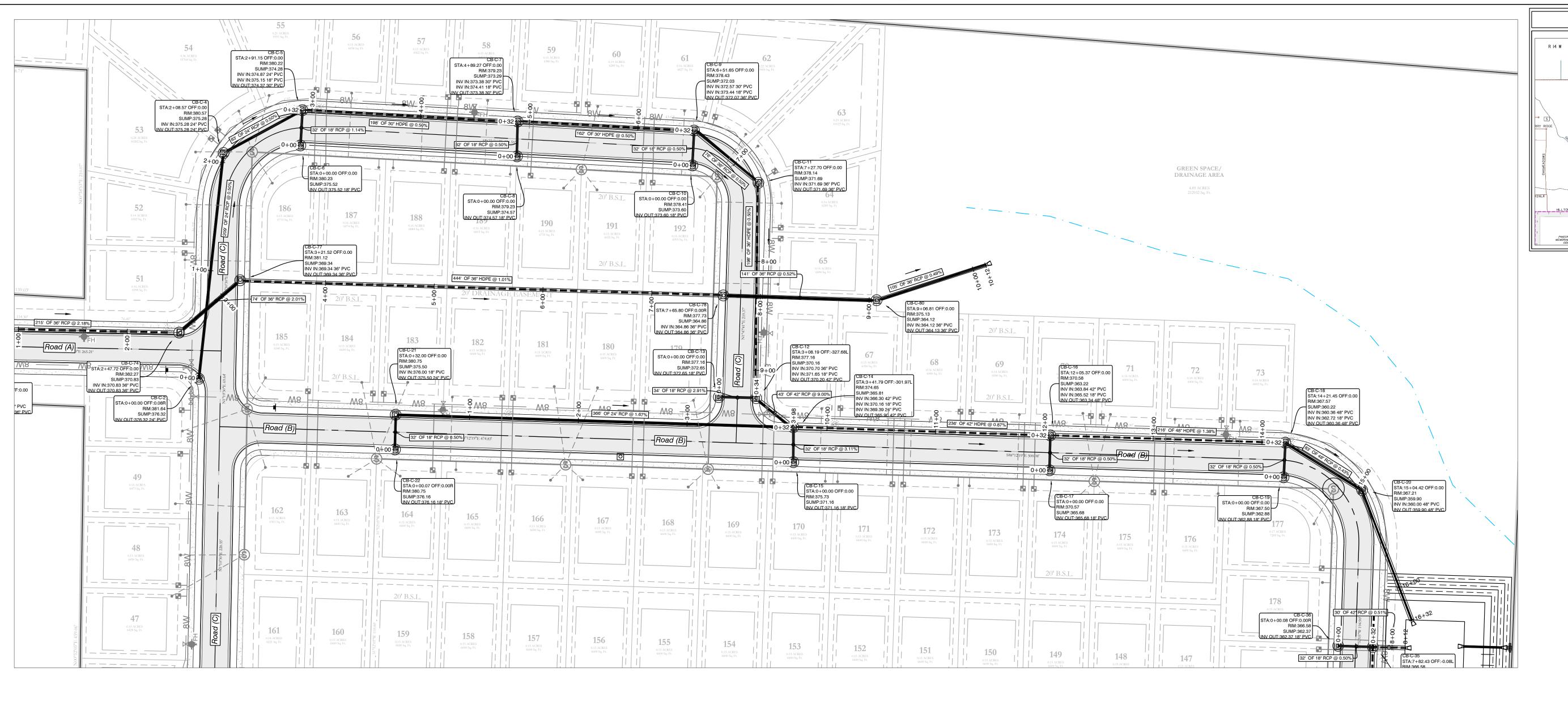
400 CB-C-37 STA 0+00.00 RIM = 383.49 CB-C 38.5 STA 0+82.99 RIM = 384.06 18" FL OUT = 378.15 34' OF 18" RCP @ 0.50% 49' OF 24" RCP @ 0.50% 27' OF 36" RCP @ 0.50% 370

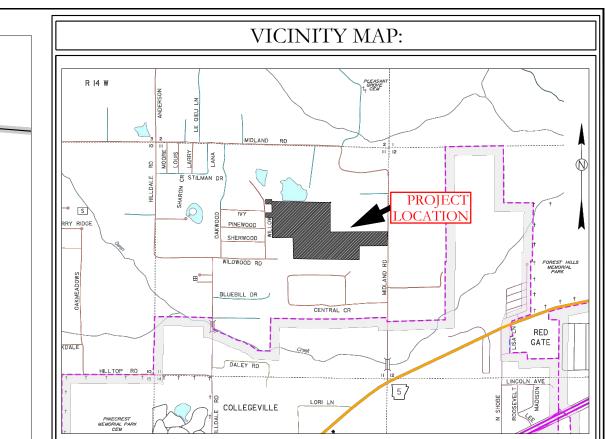


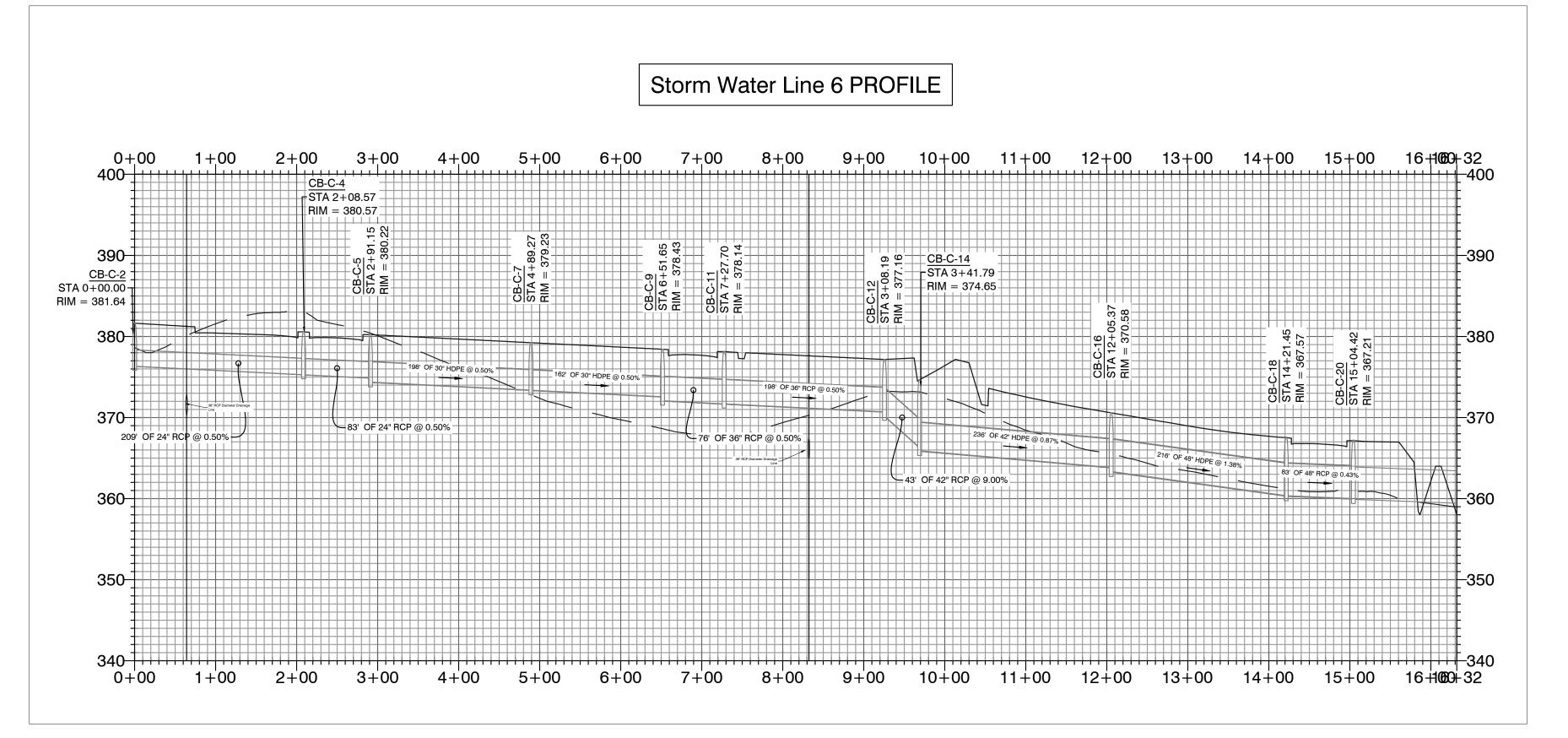


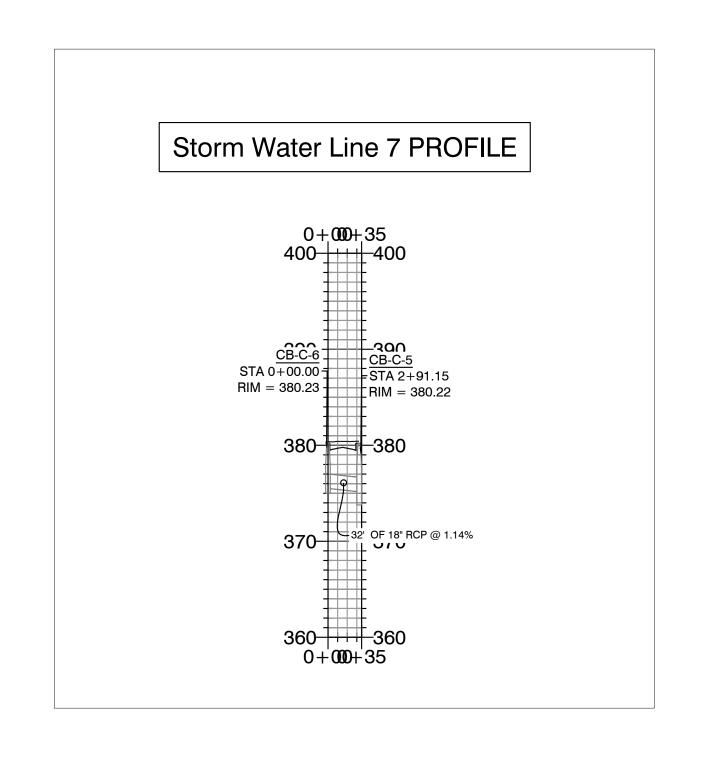
FOR USE AND BENEFIT OF: HAVEN'S DEVELOPMENT, LLC

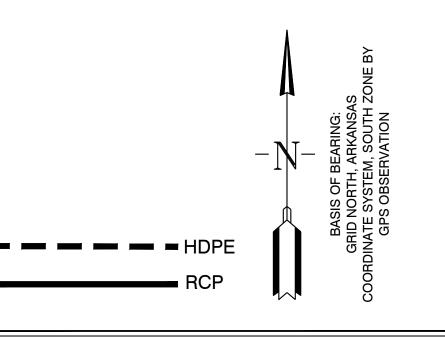
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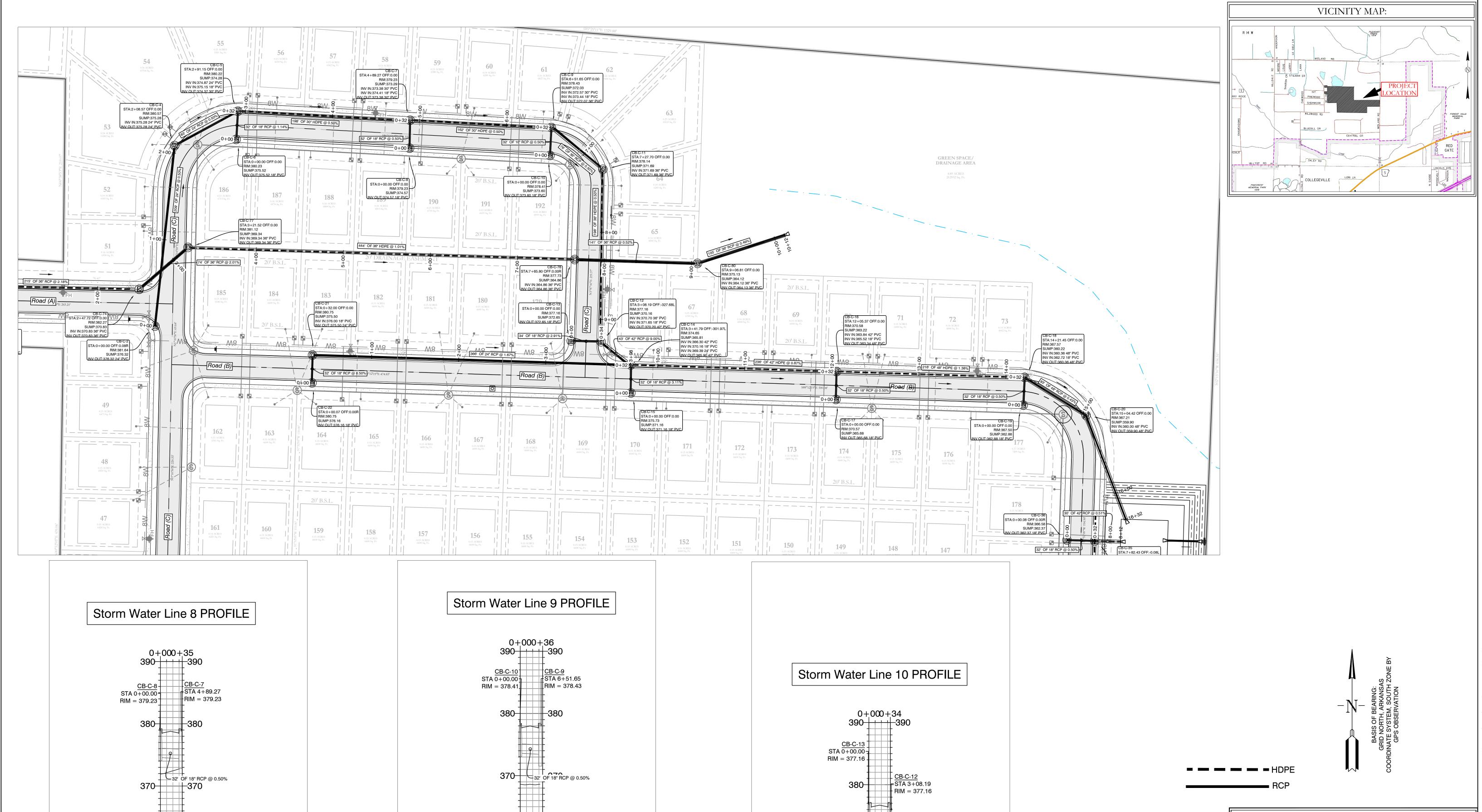








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370 34" OF 18" RCP @ 2.91%

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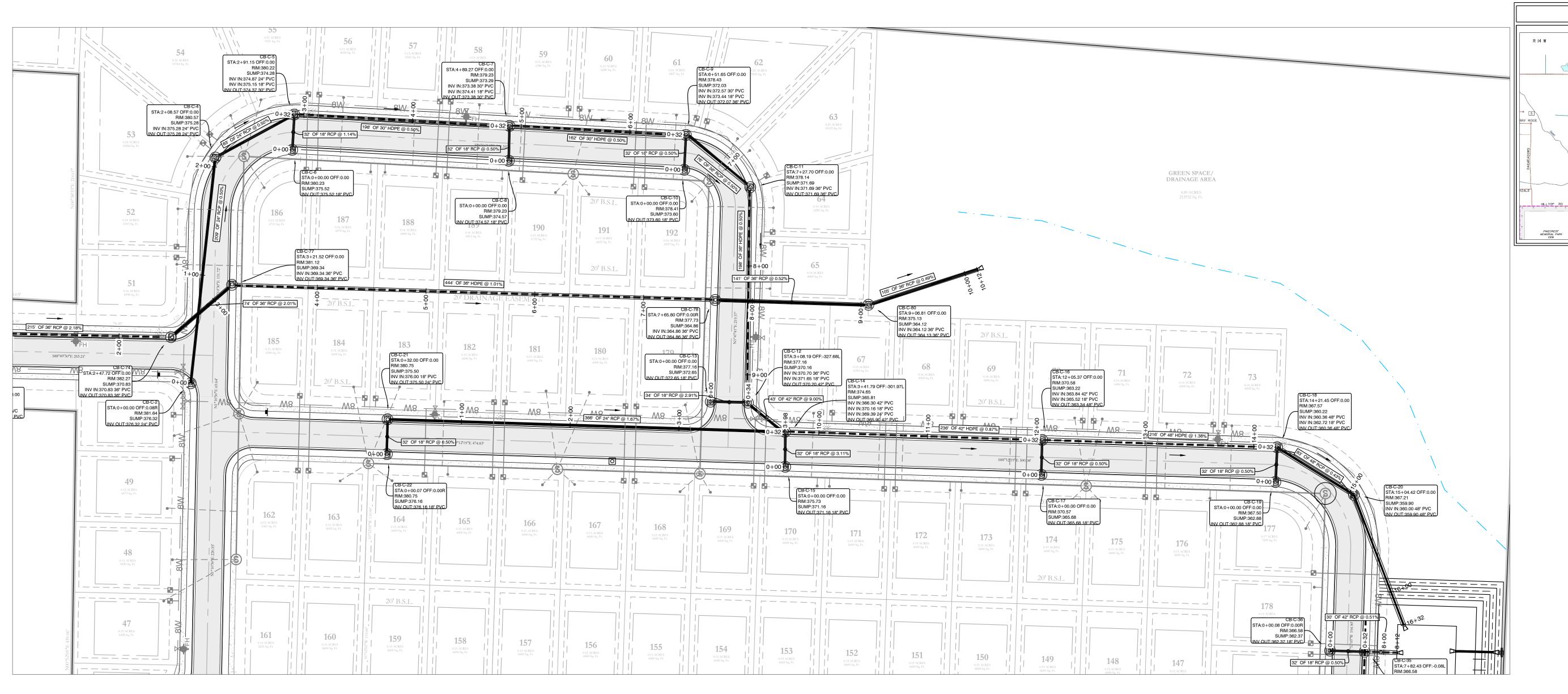
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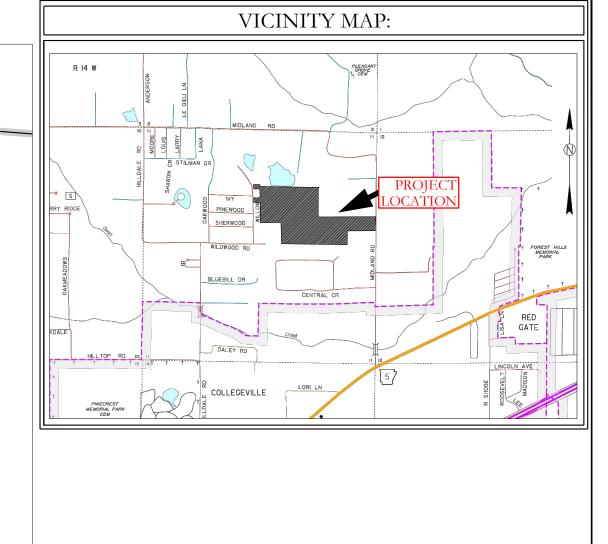
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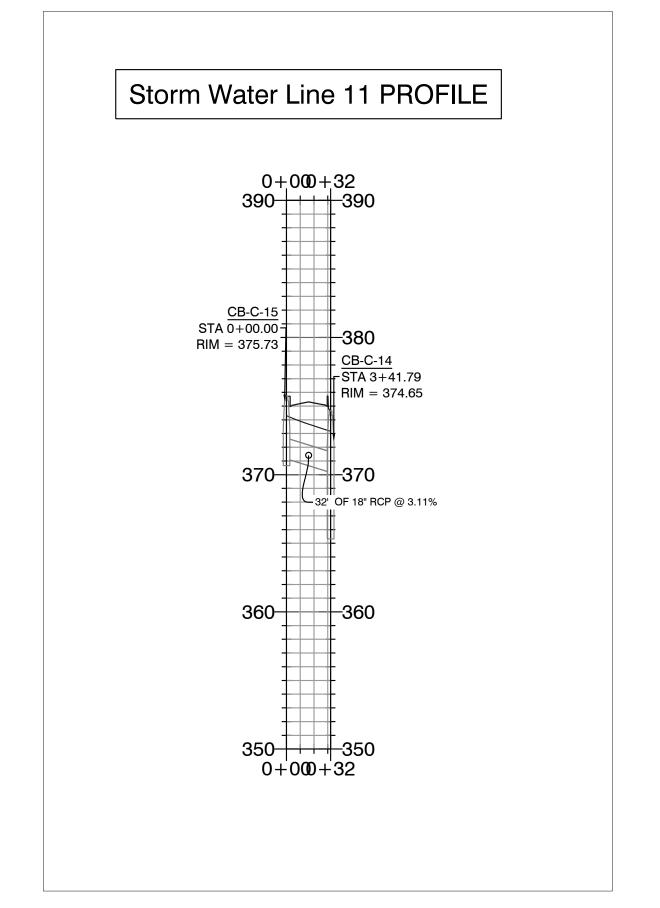


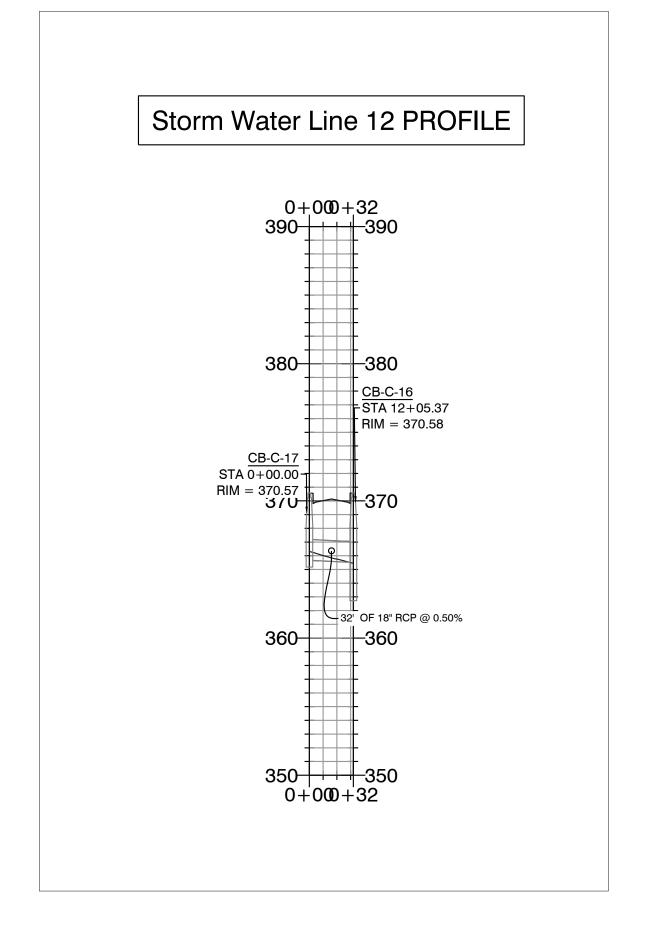
FOR USE AND BENEFIT OF:
HAVEN'S DEVELOPMENT, LLC

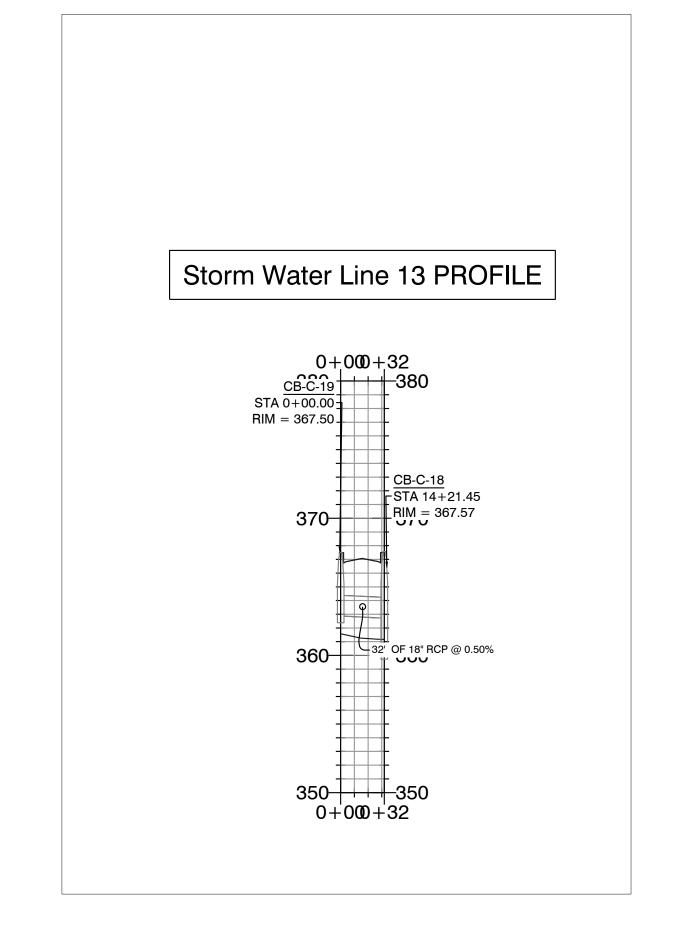
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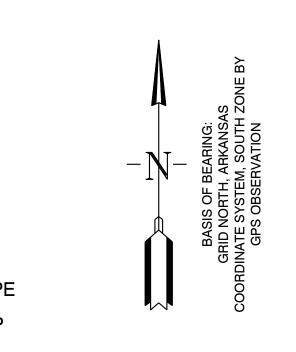






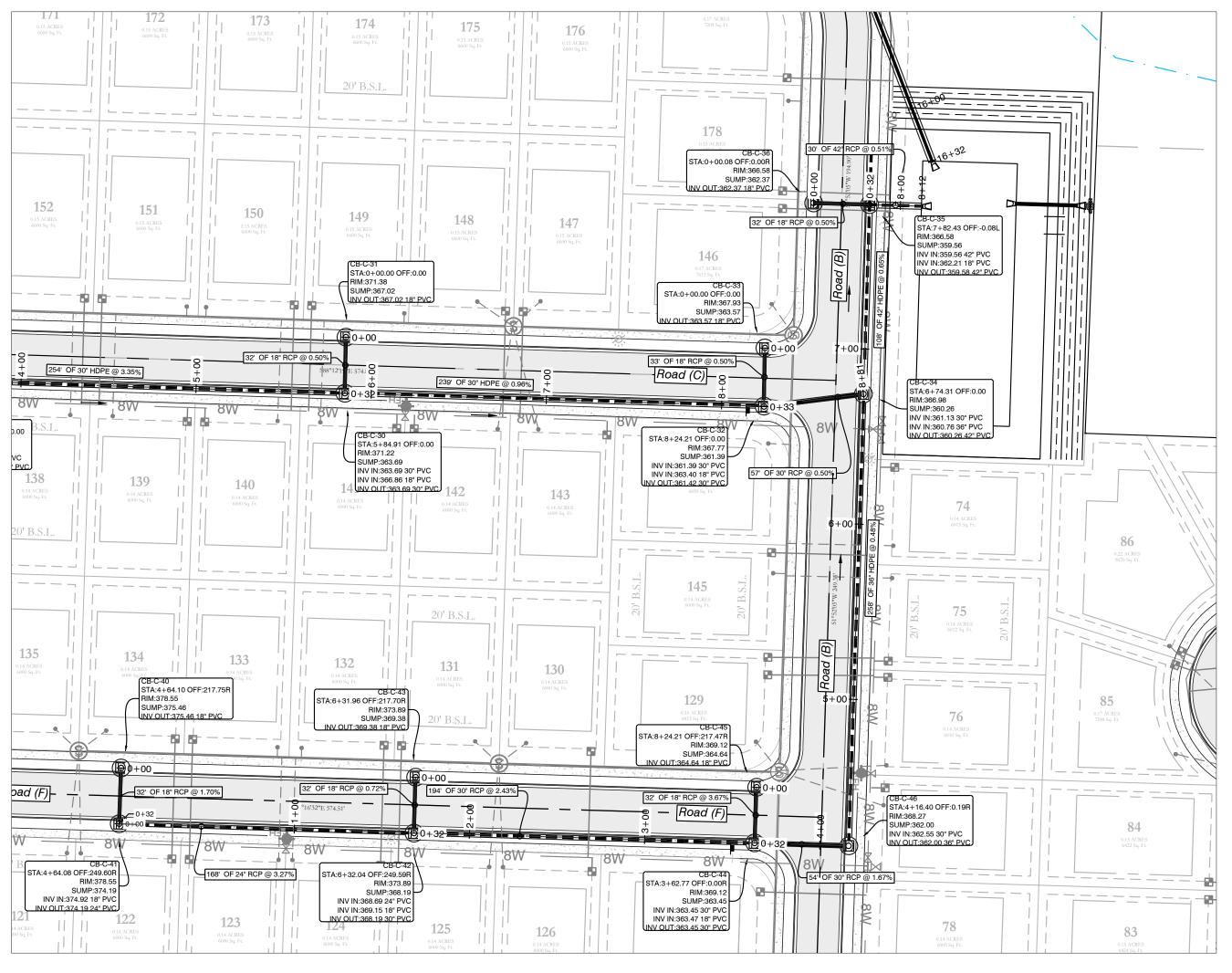


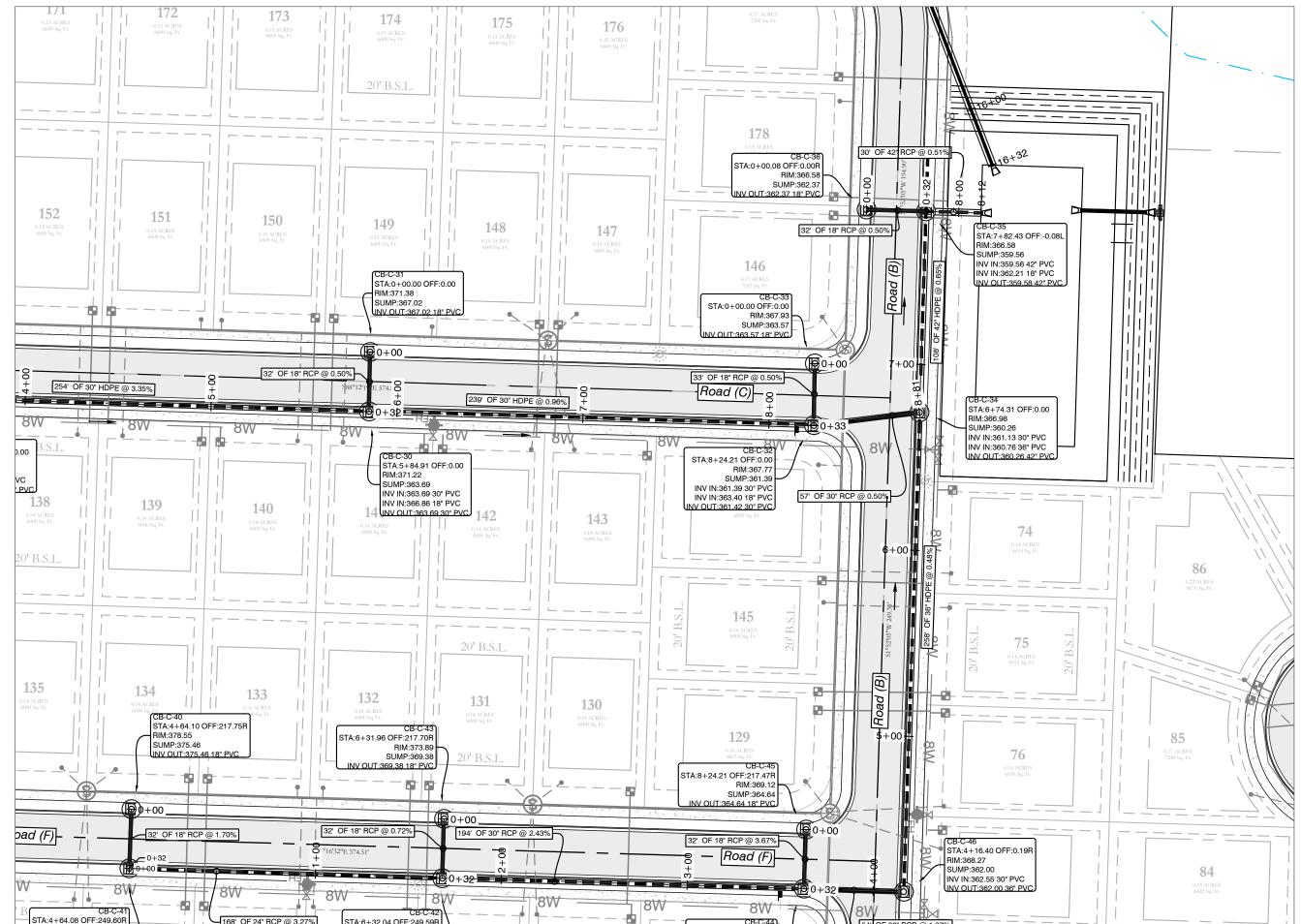


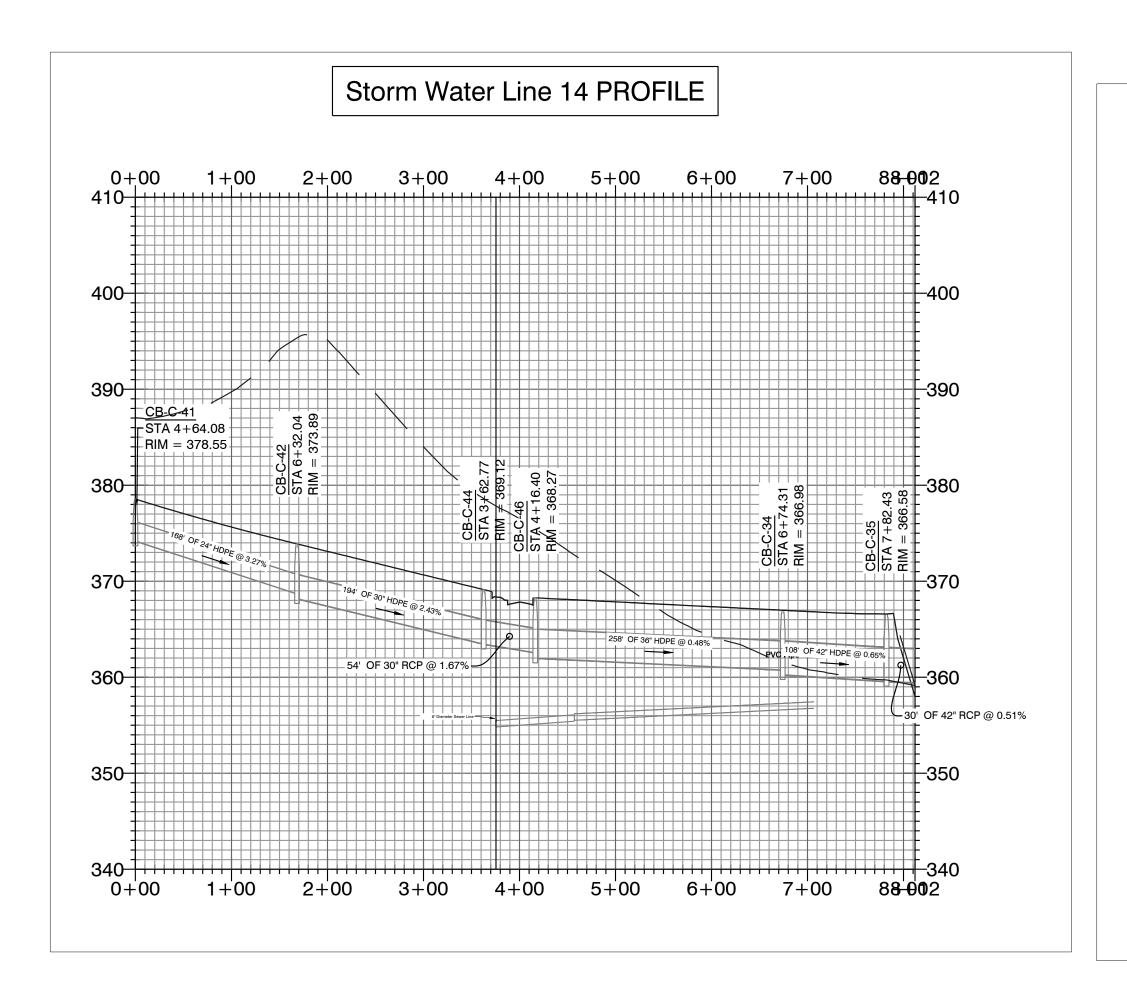


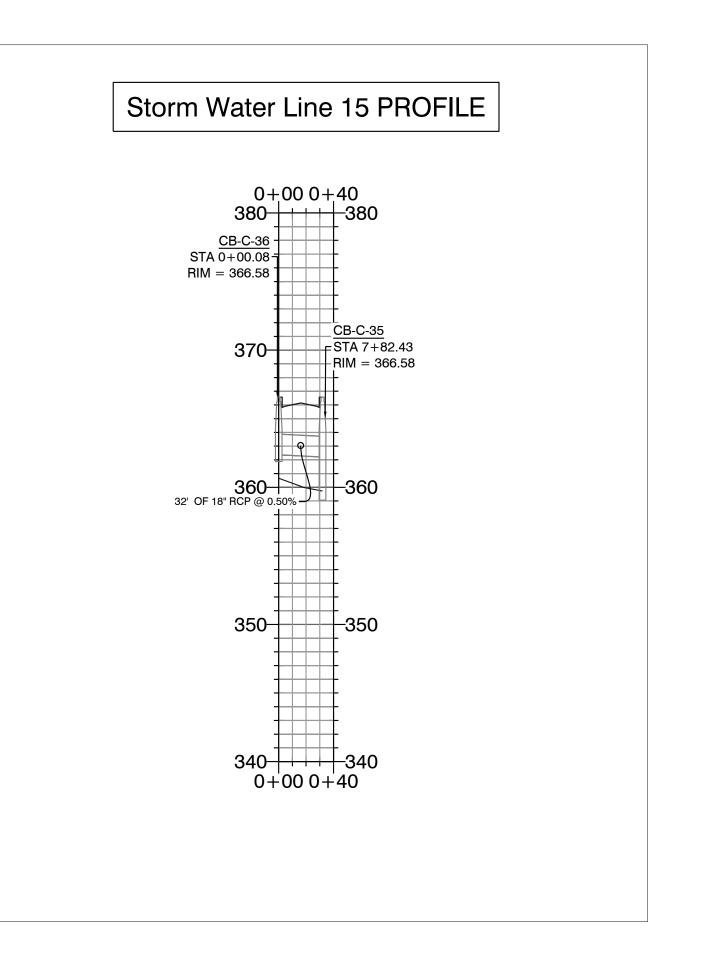


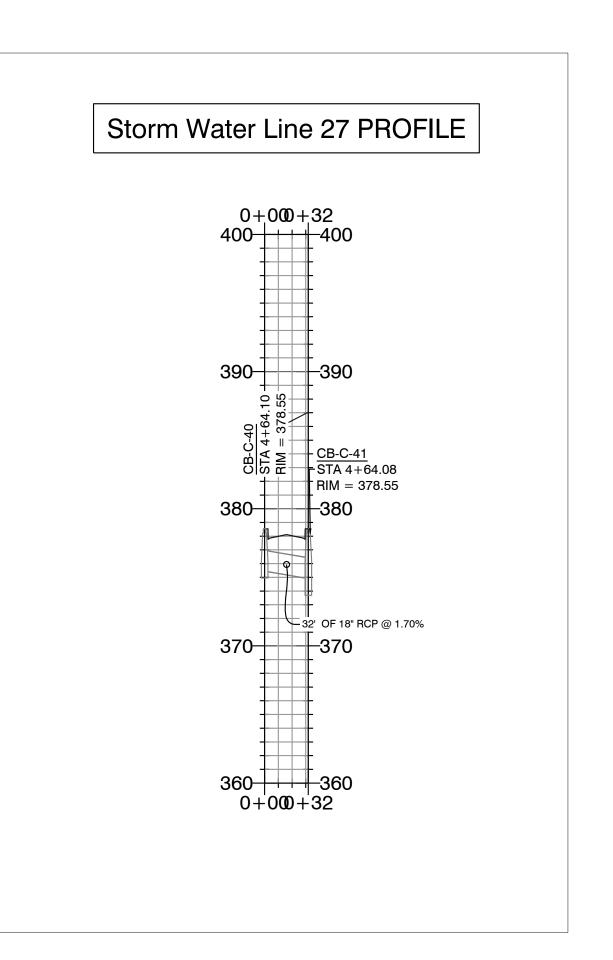
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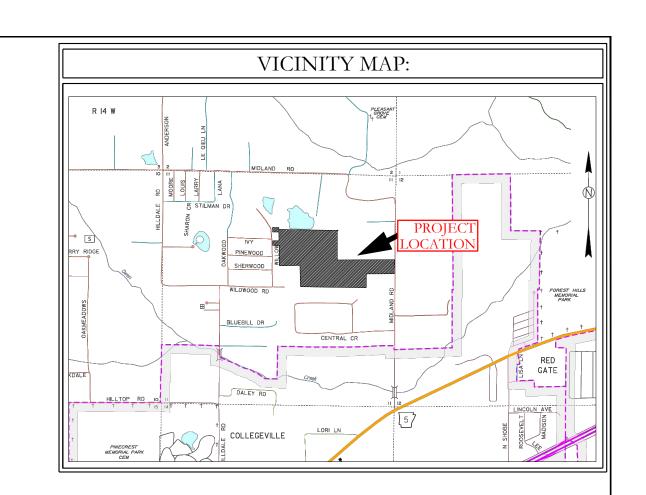


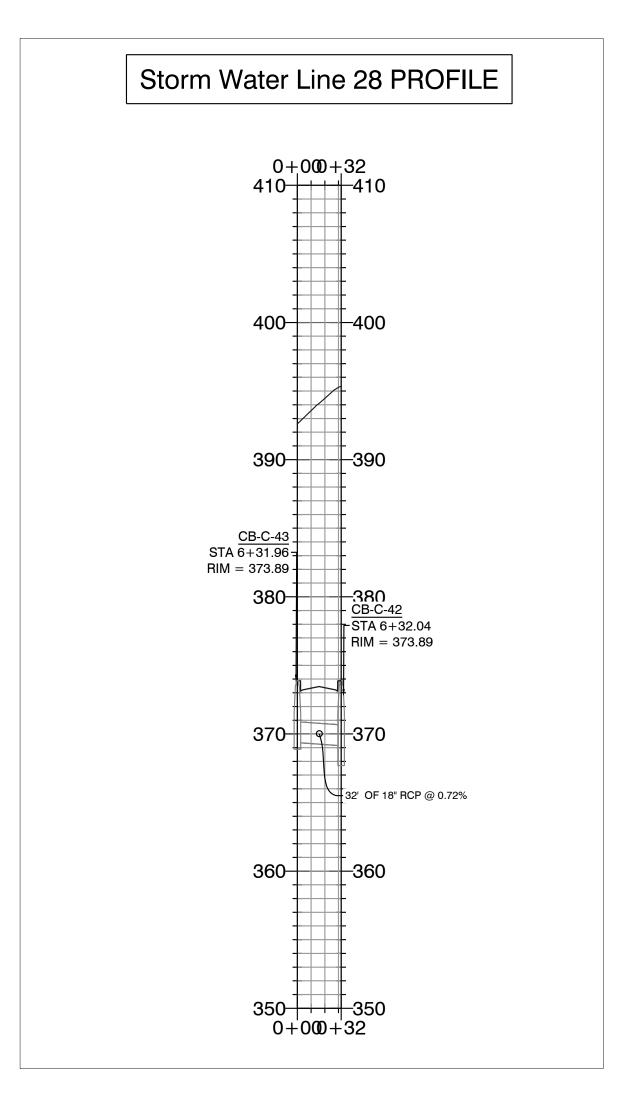






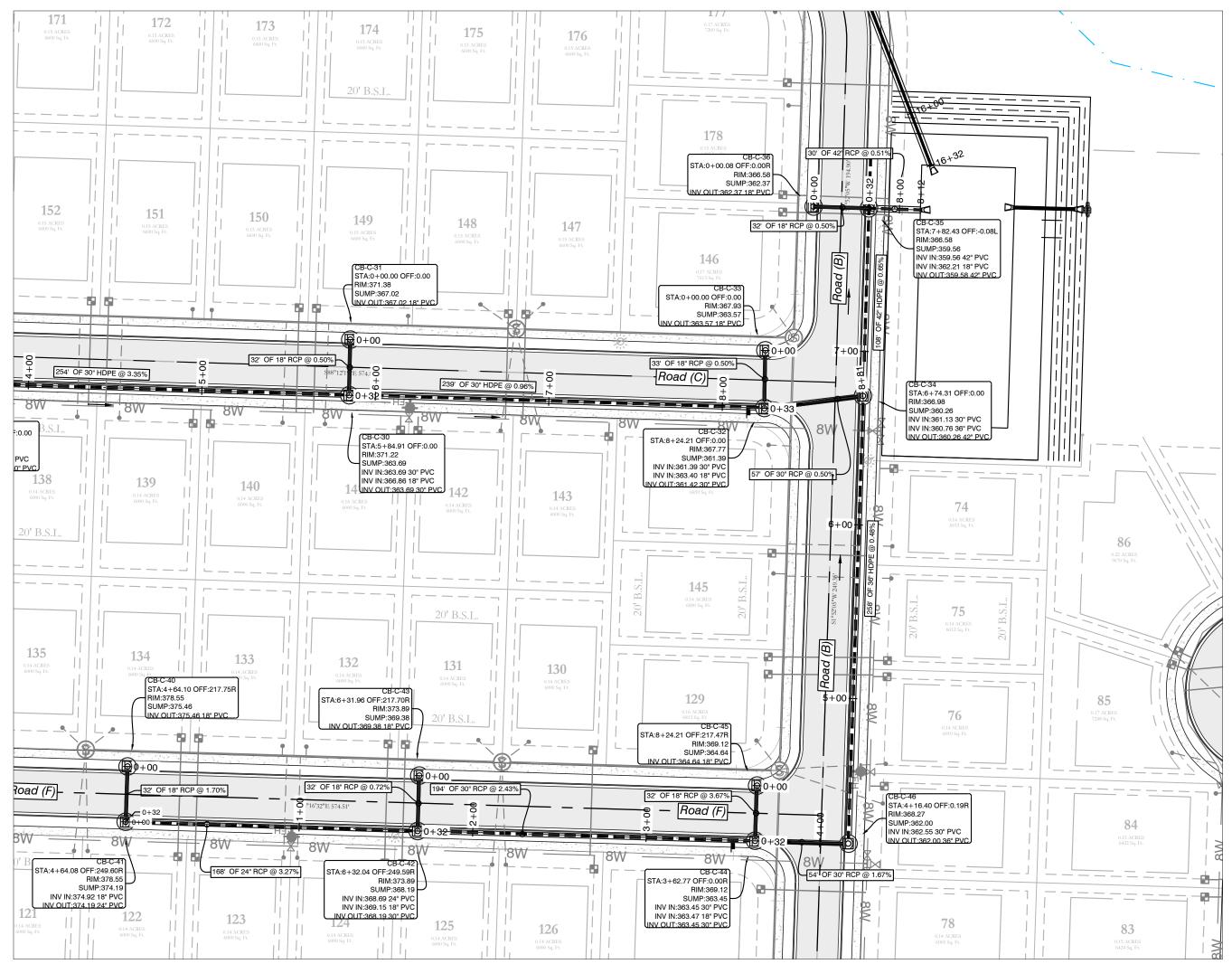


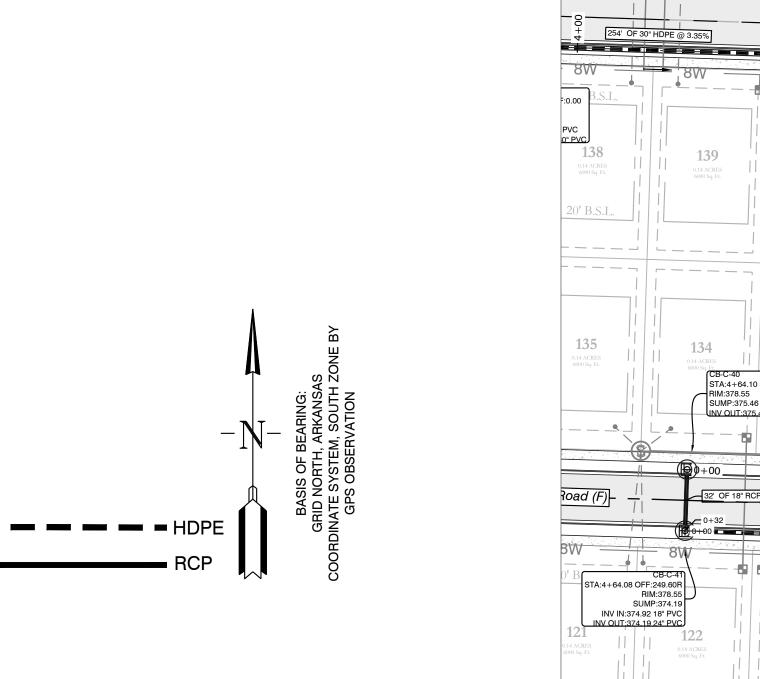


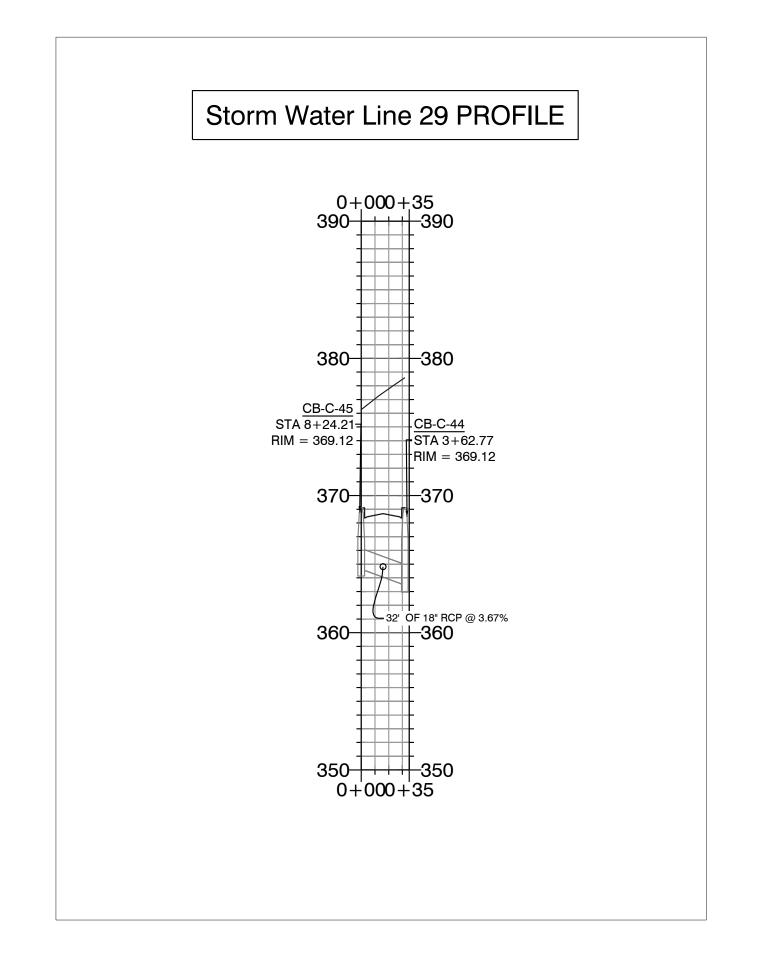


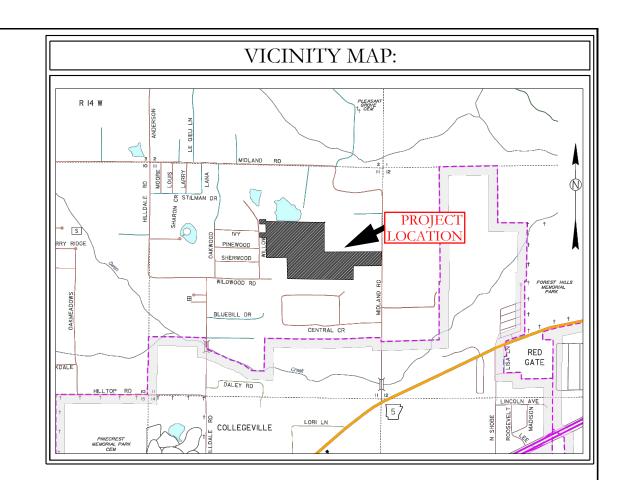


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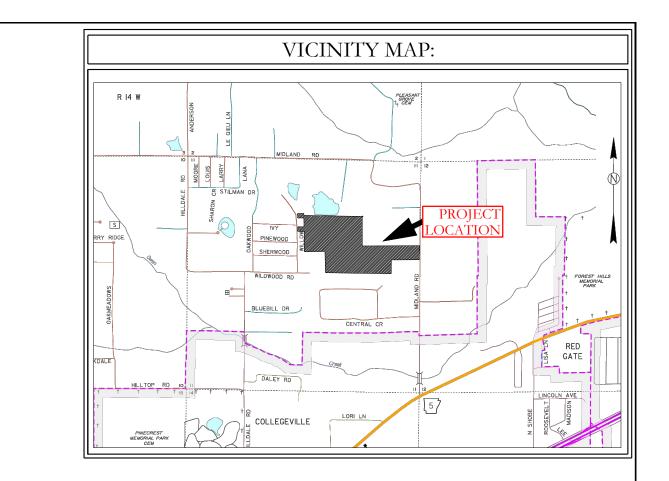


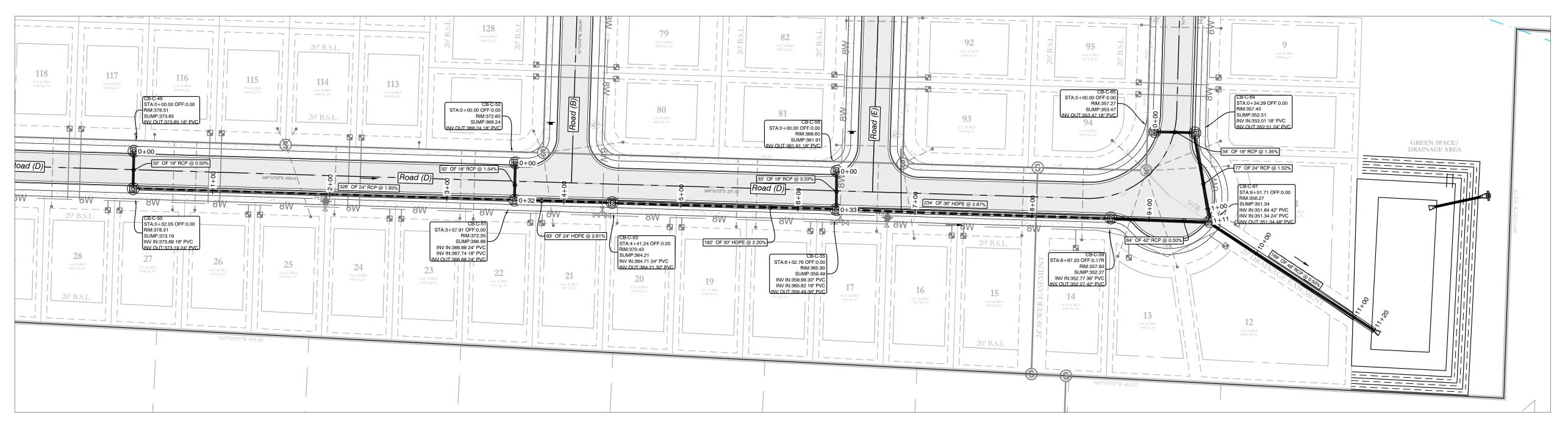


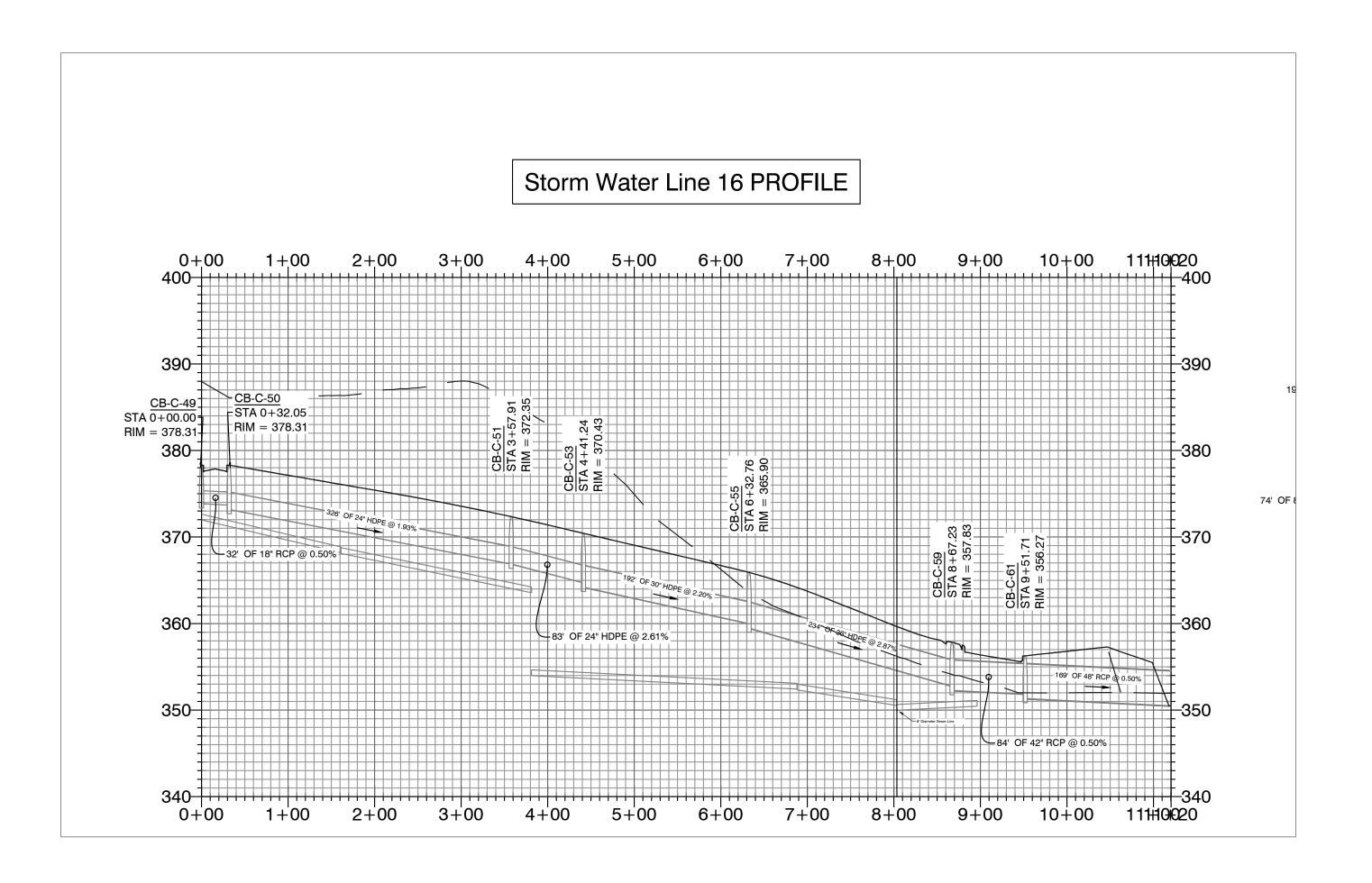
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FAX (501) 315-0024 ENGINEERS - SURVEYORS www.hopeconsulting.com

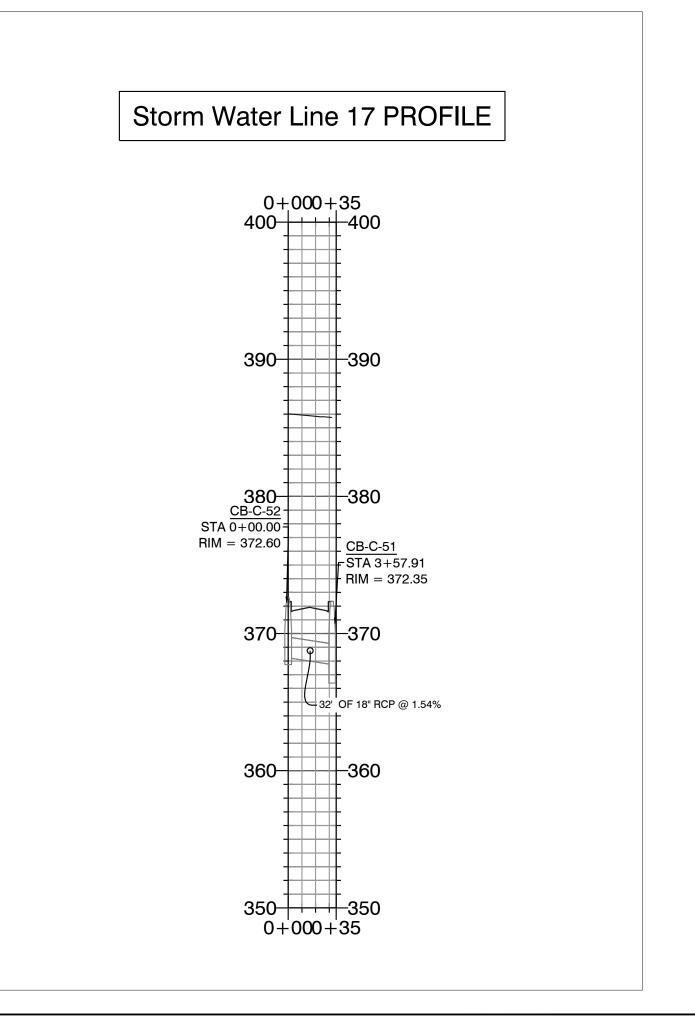
FOR USE AND BENEFIT OF: HAVEN'S DEVELOPMENT, LLC

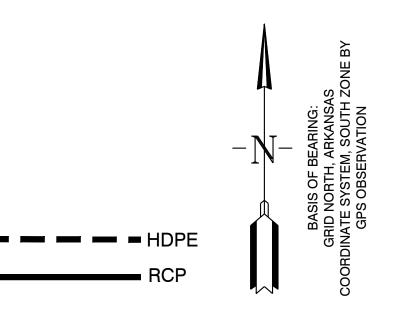
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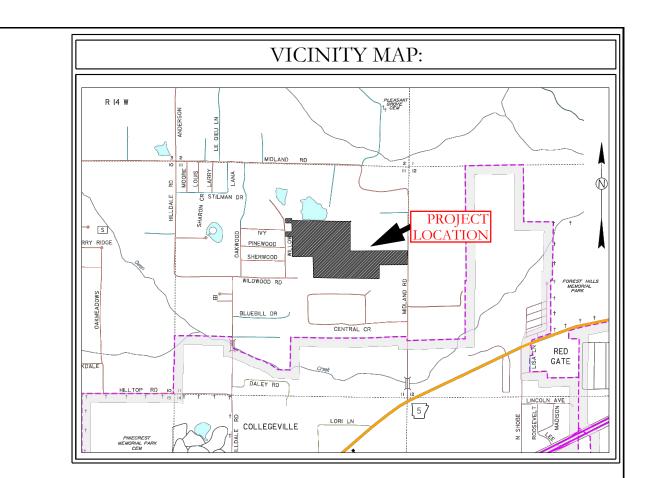


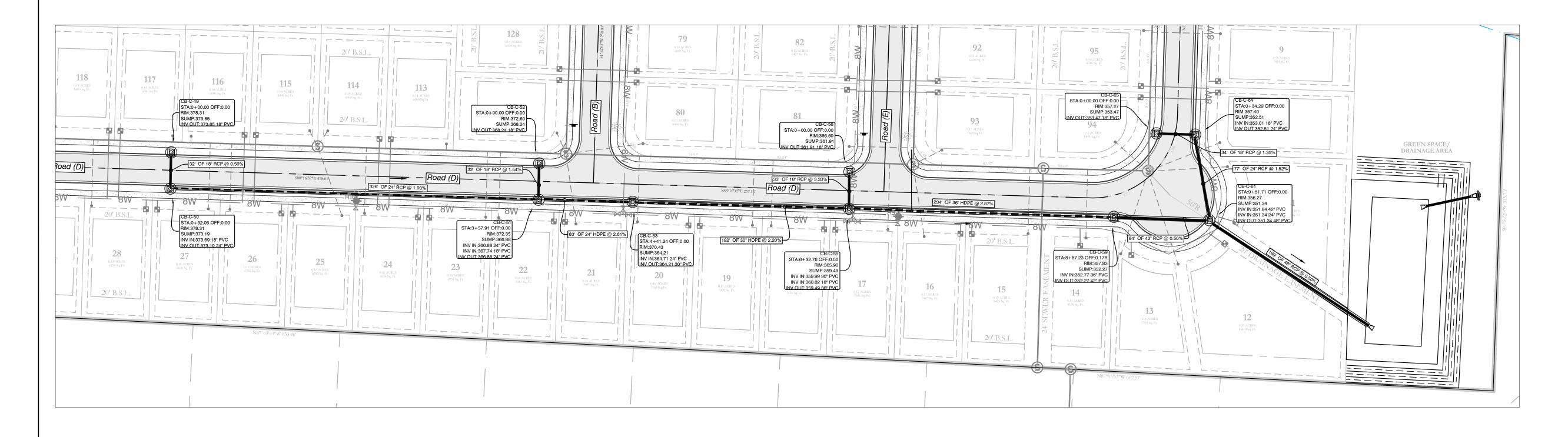


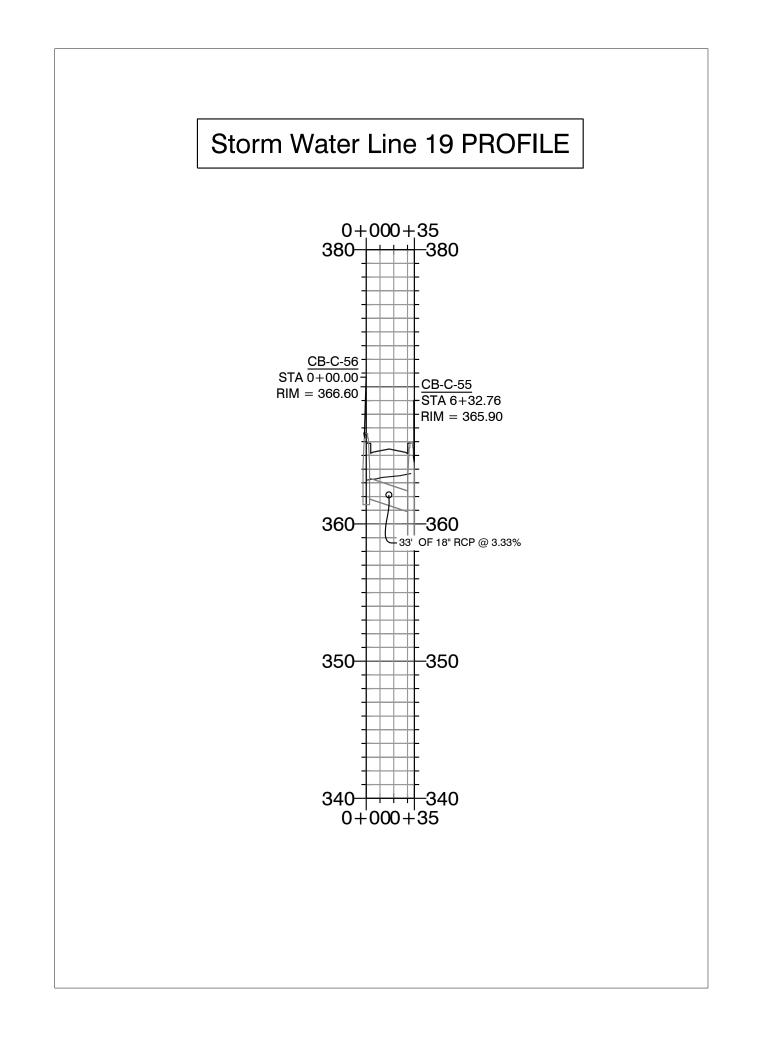


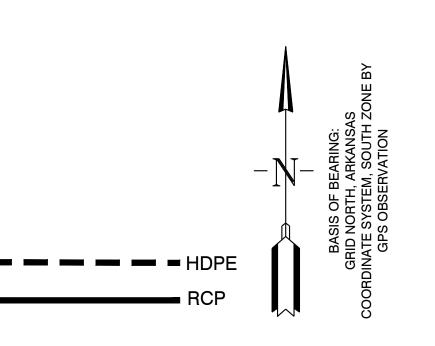


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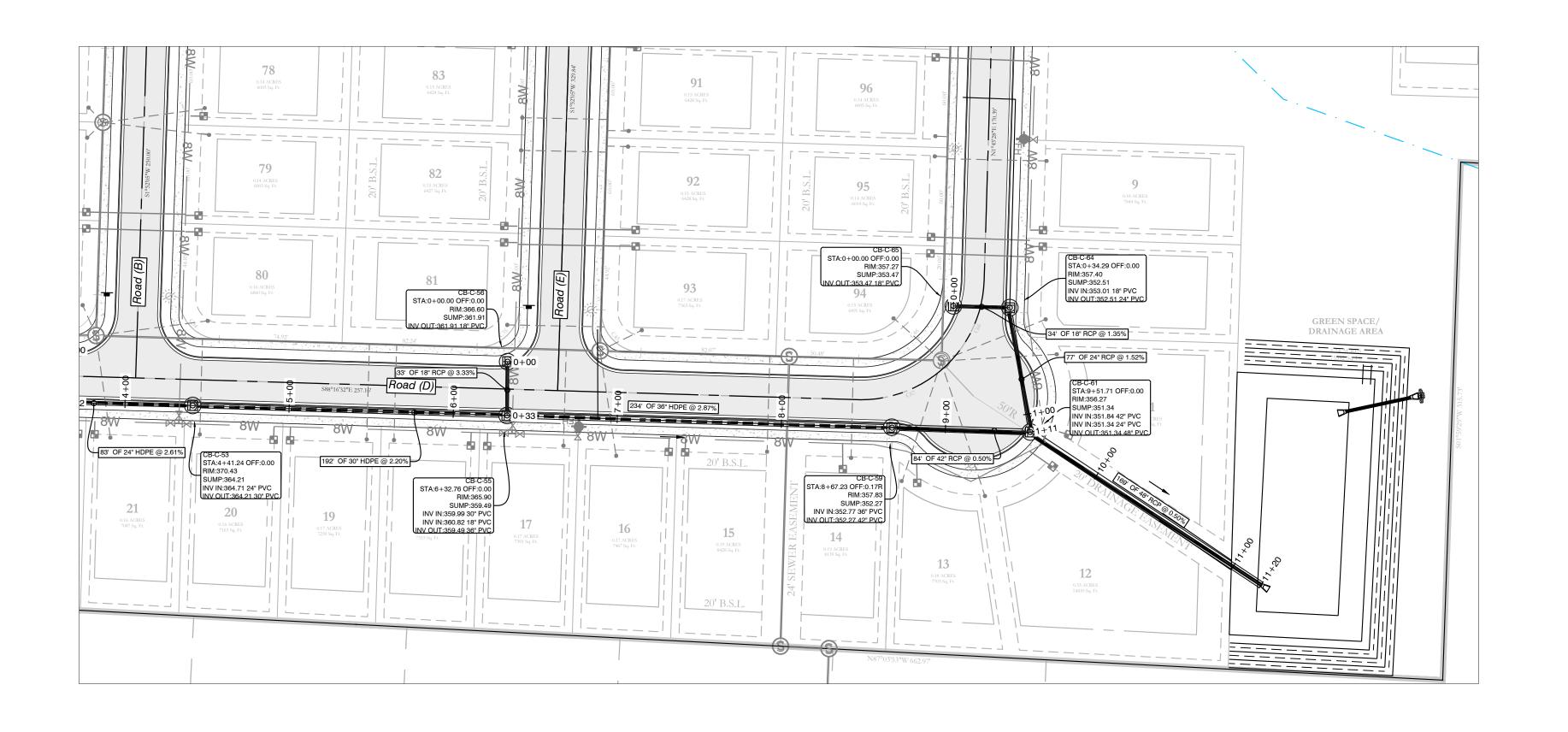


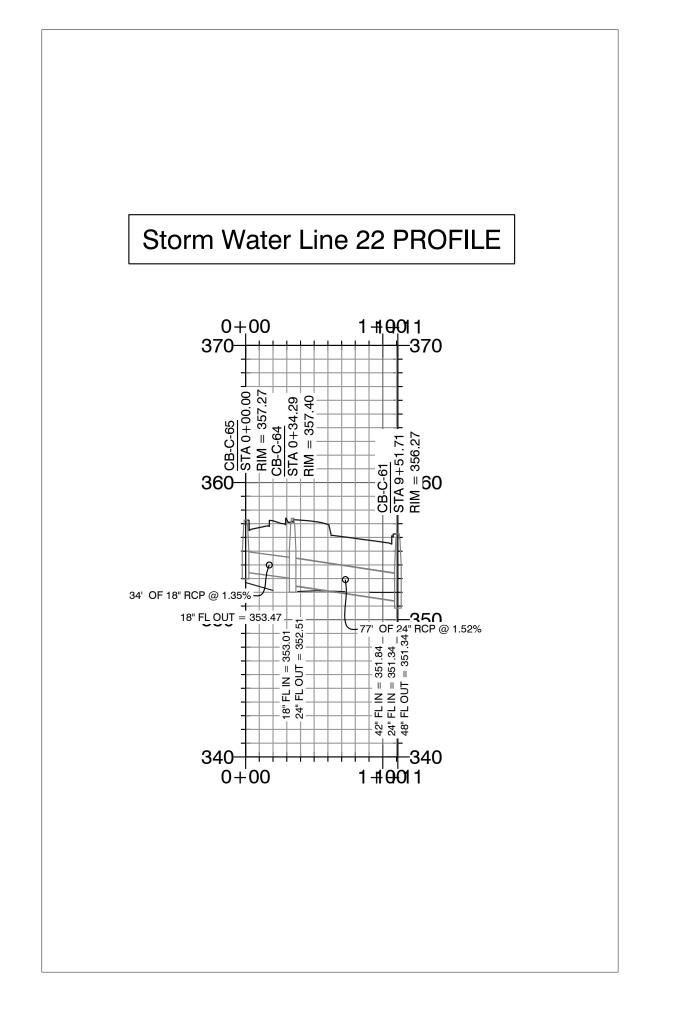


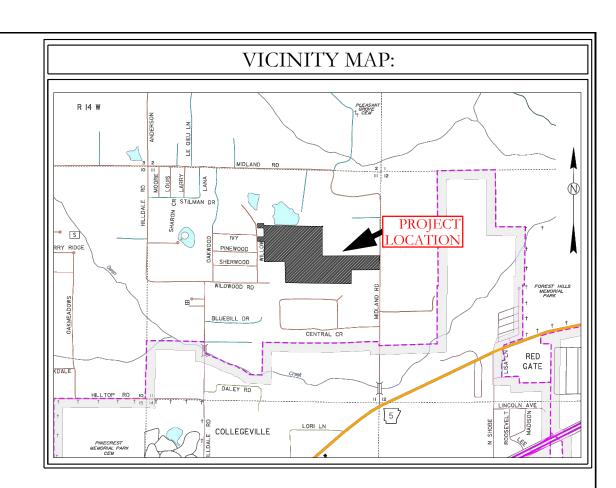


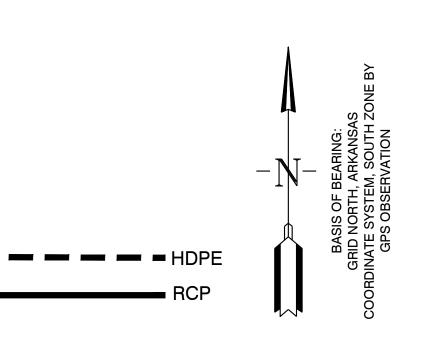


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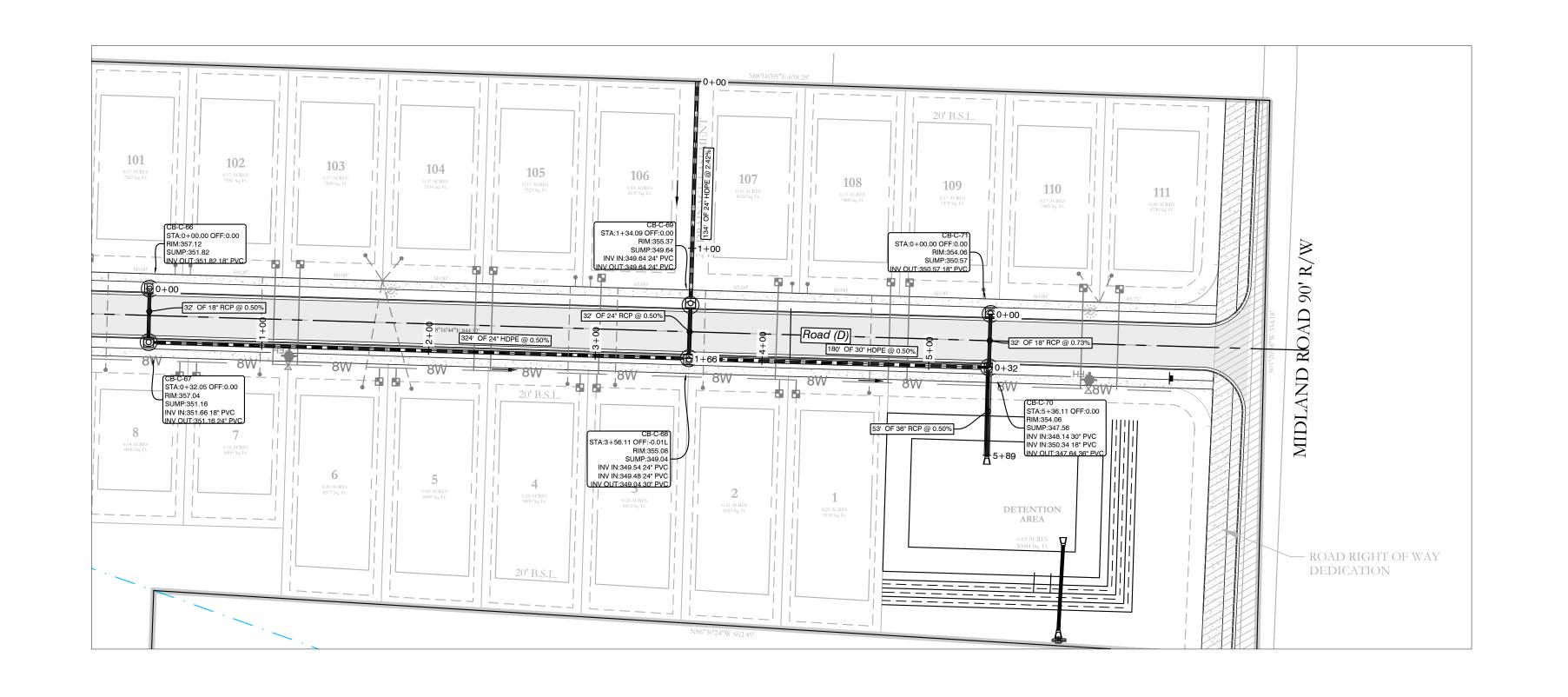


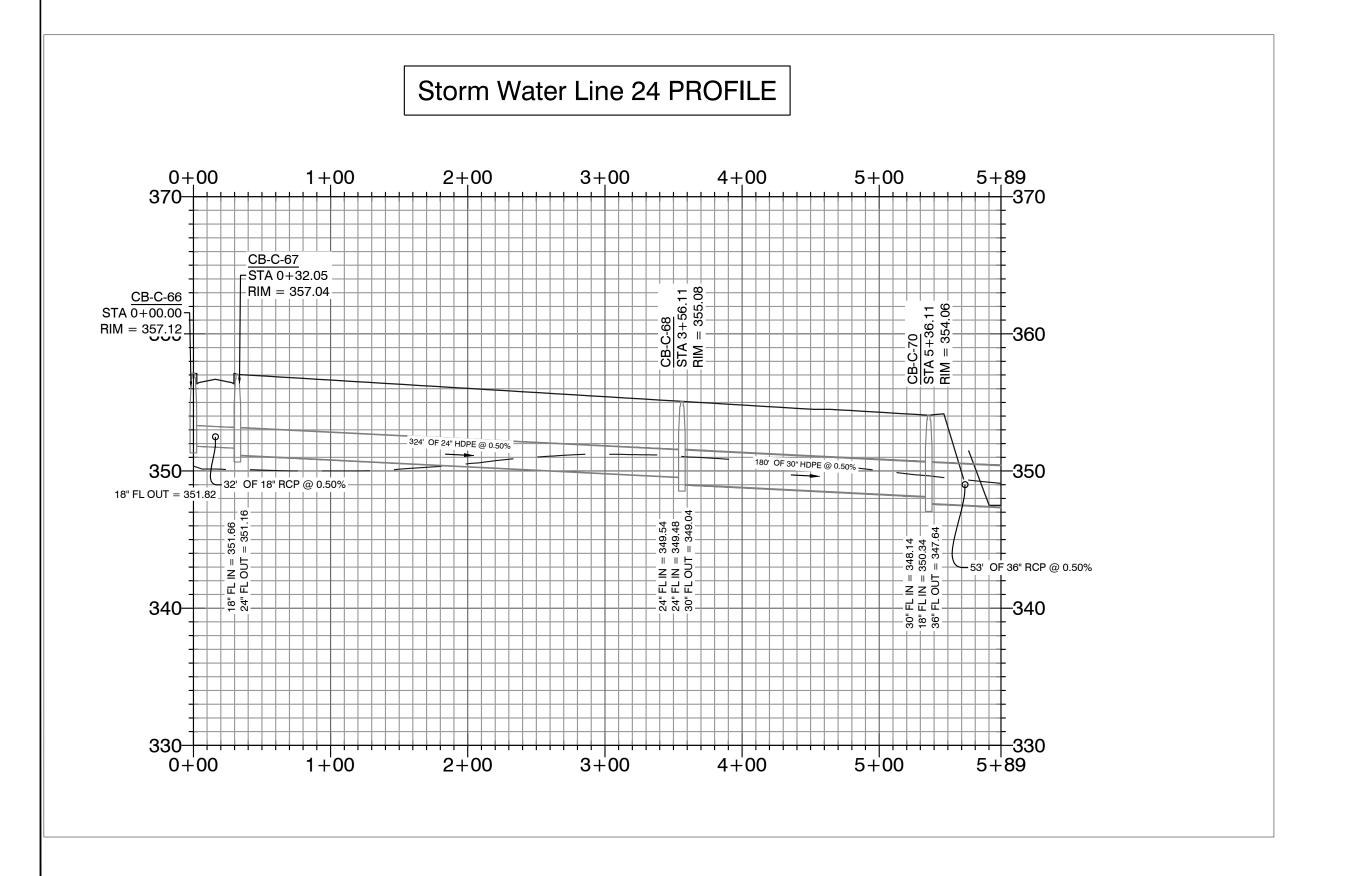


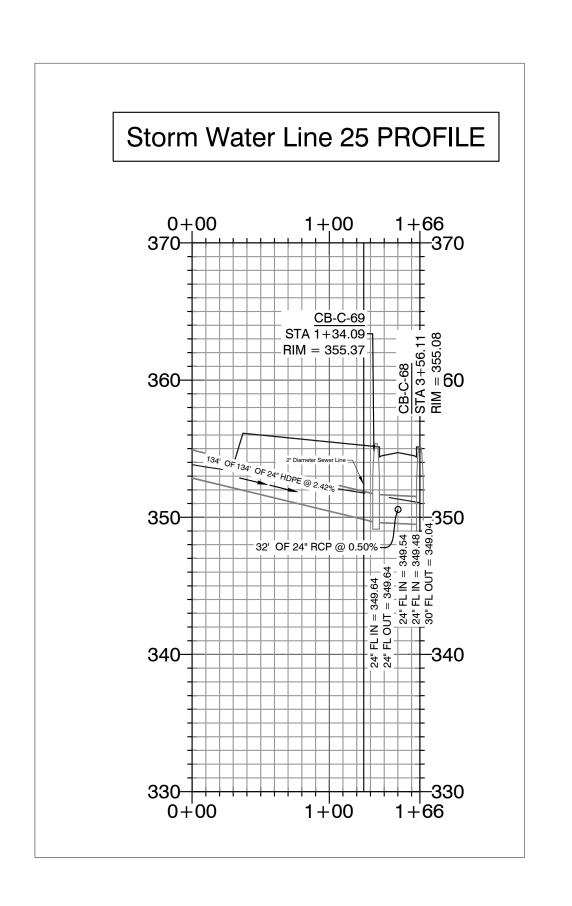


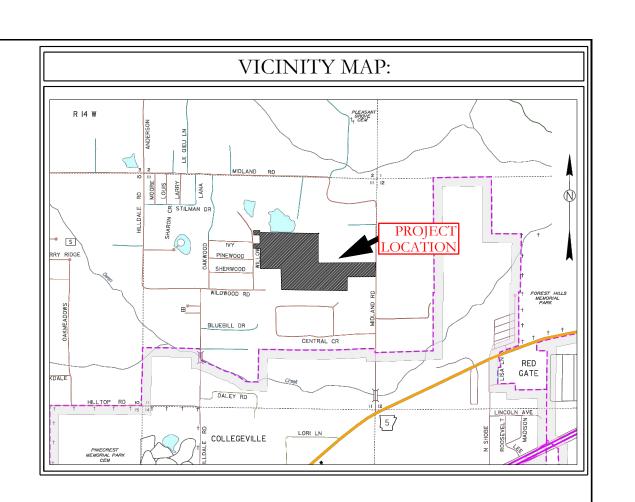


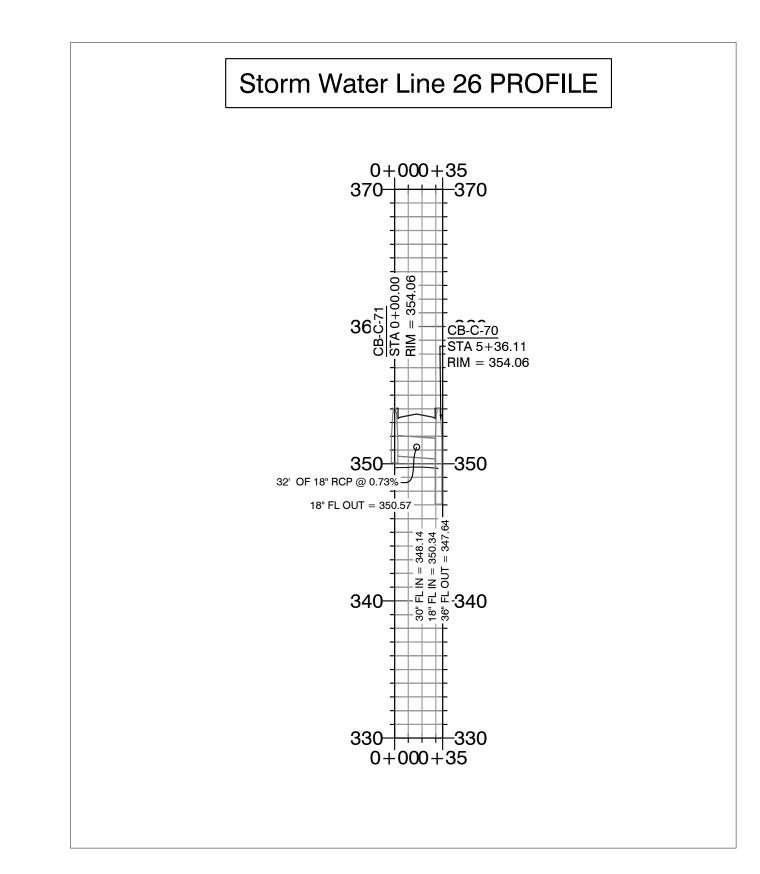
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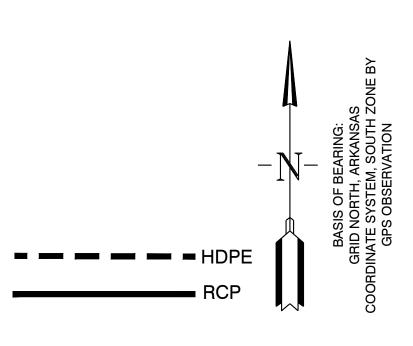






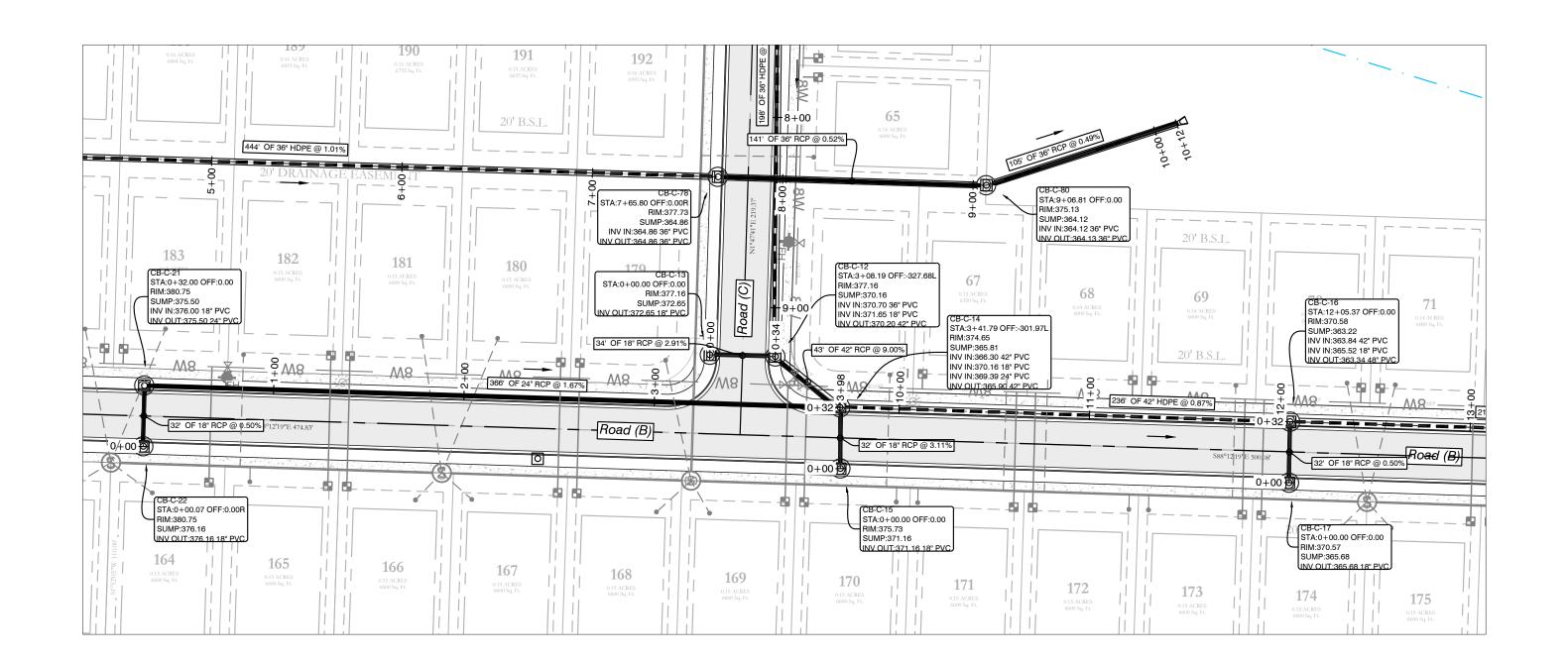


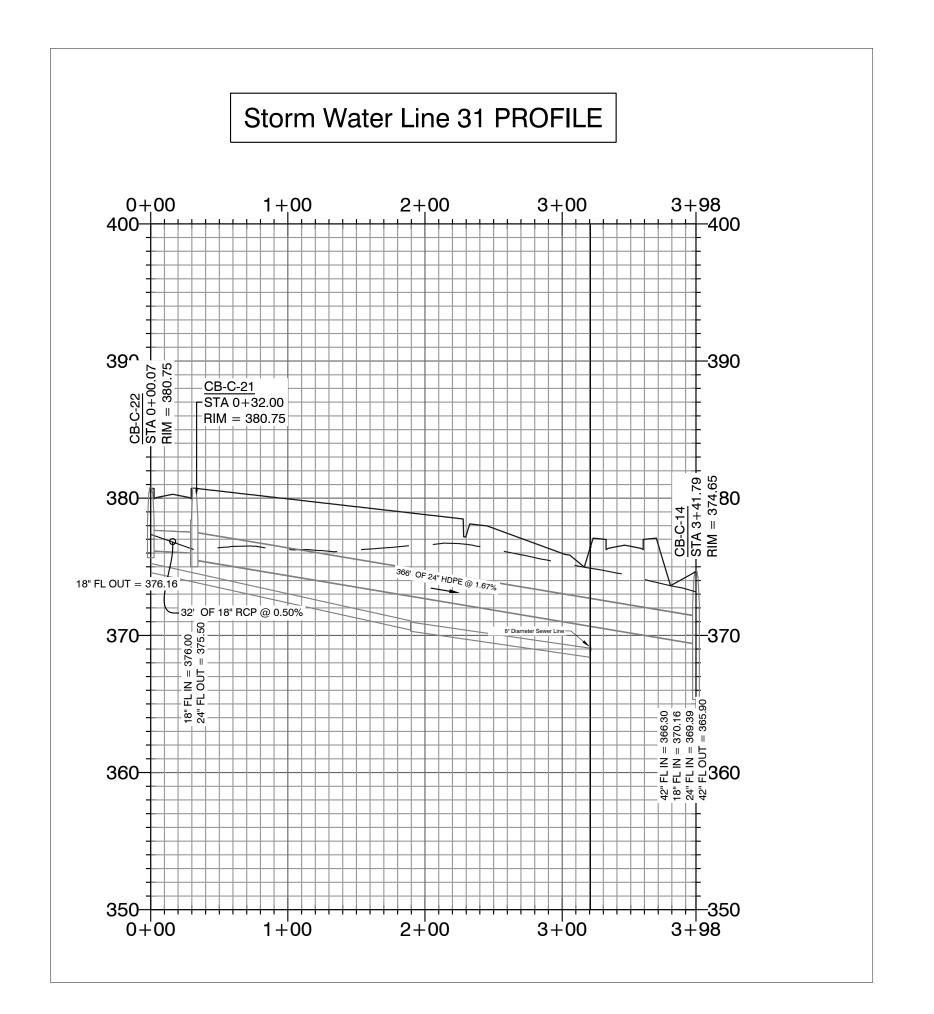


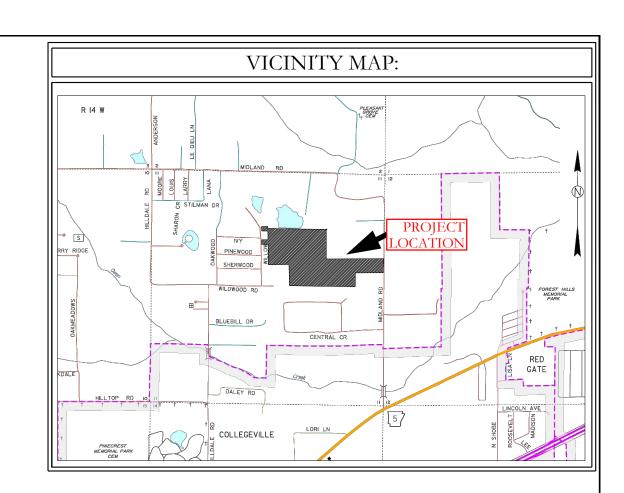


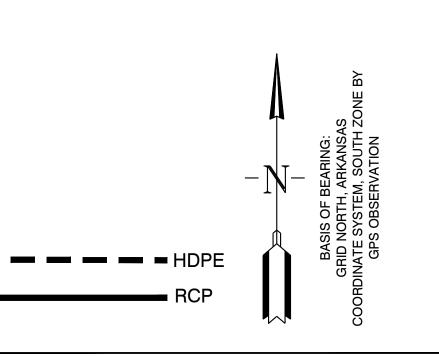


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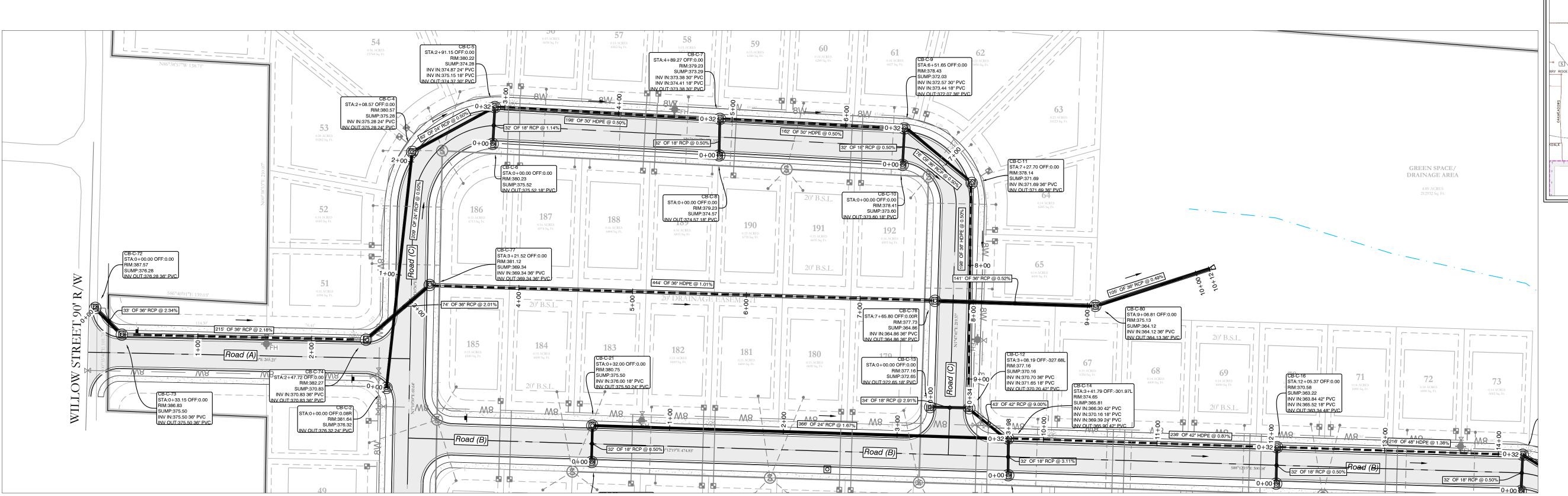


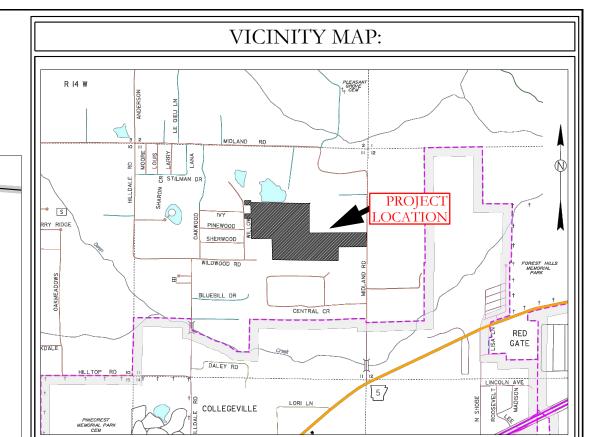


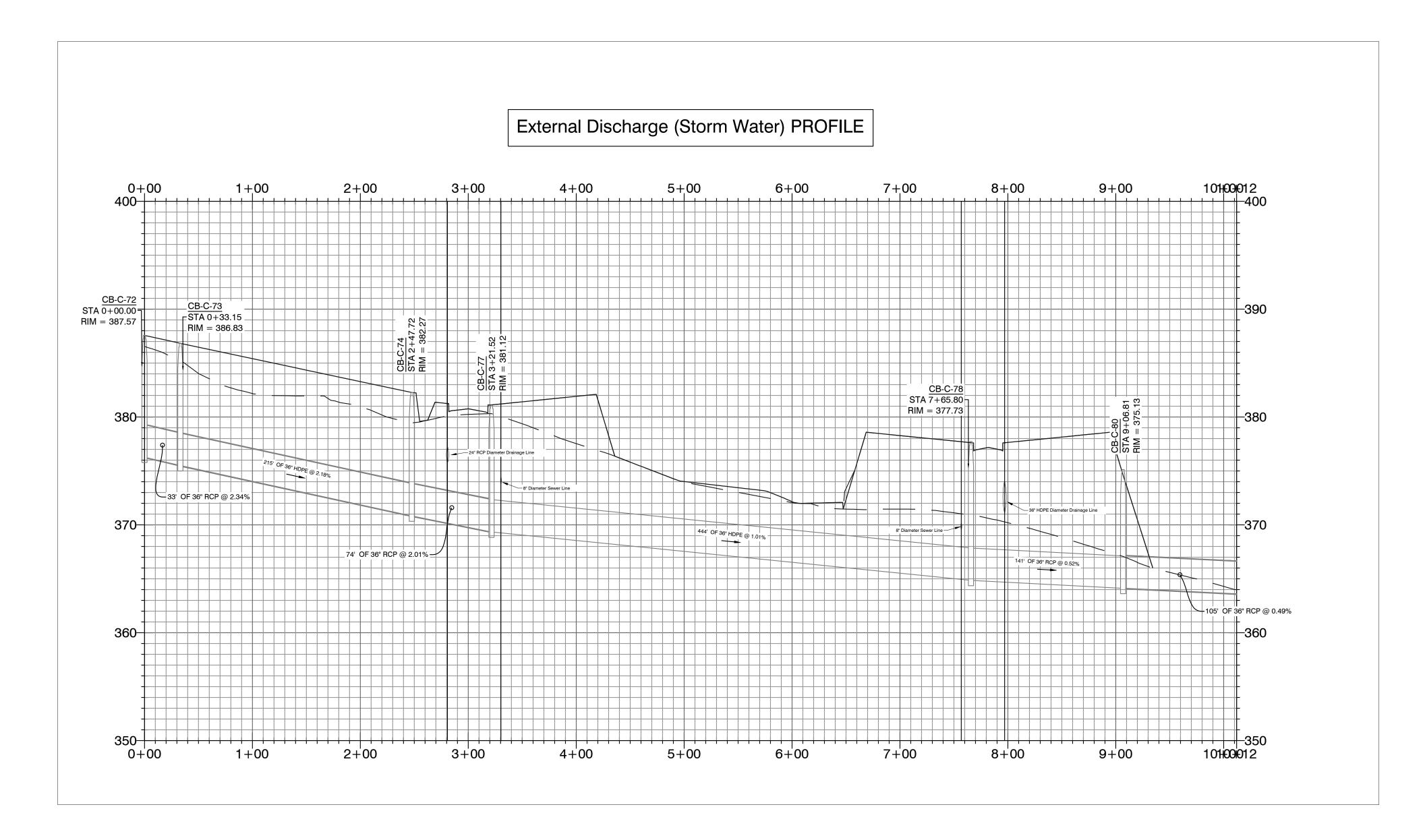


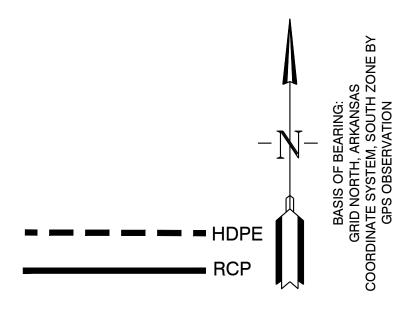


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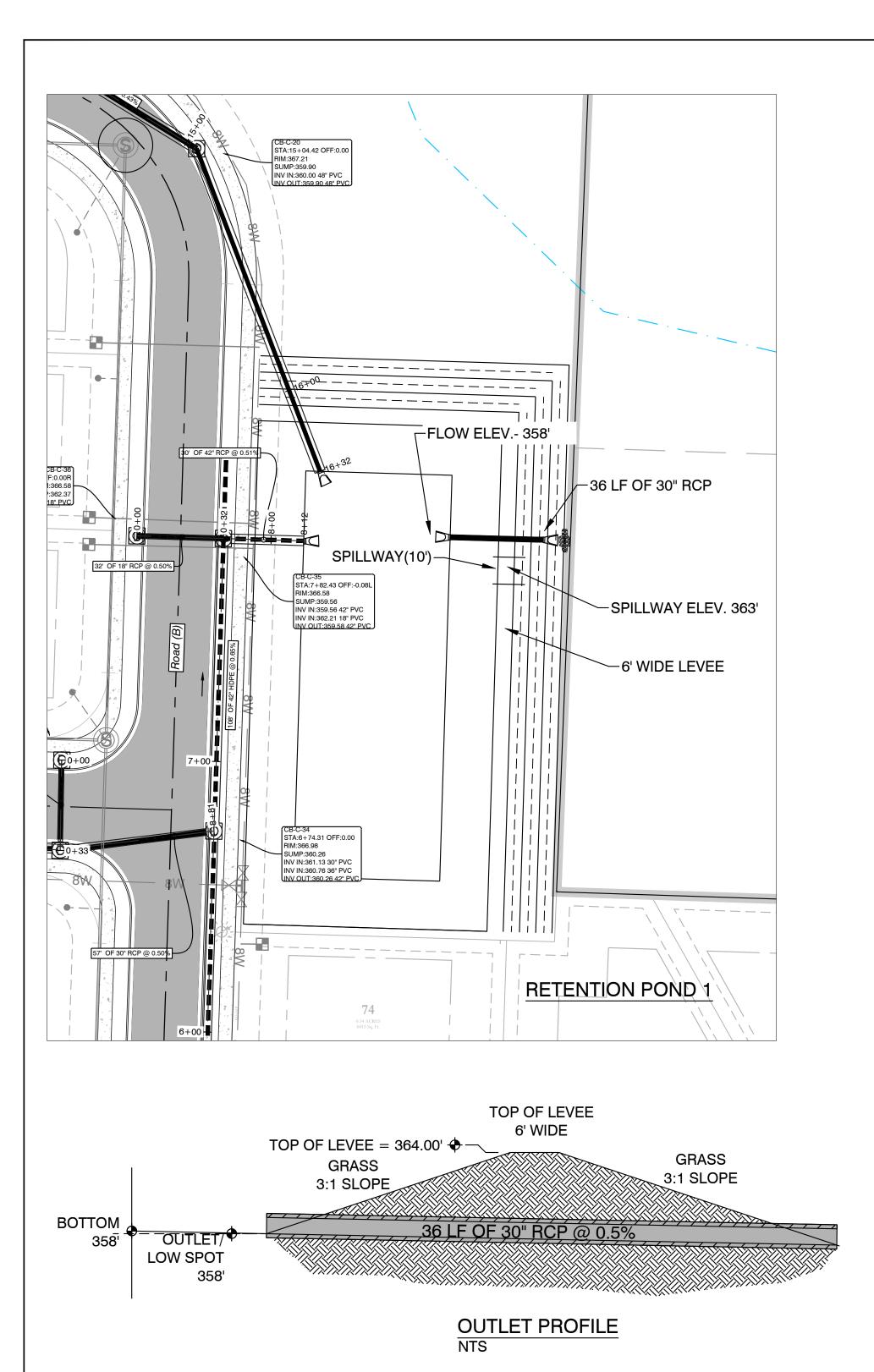


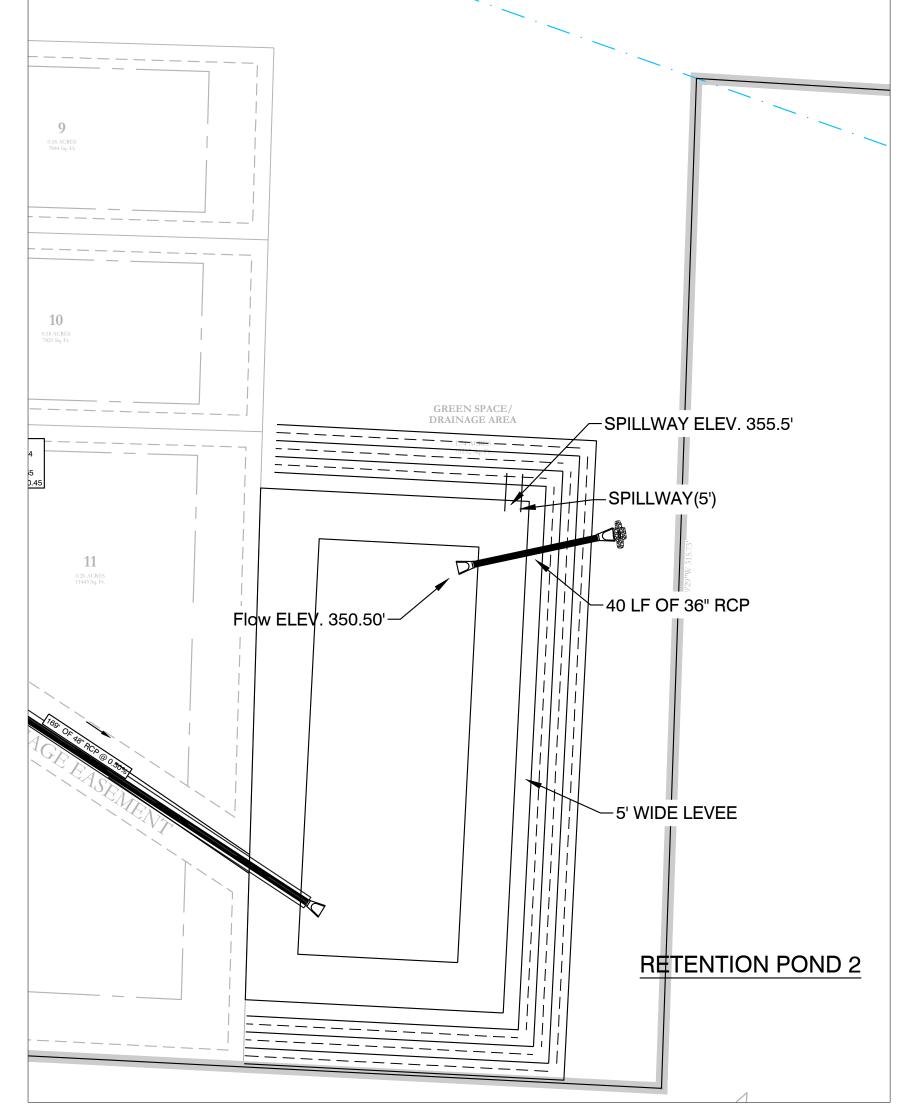


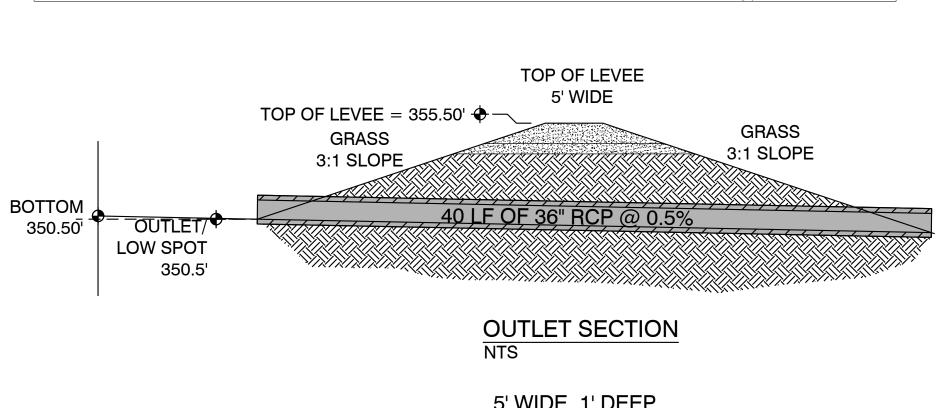


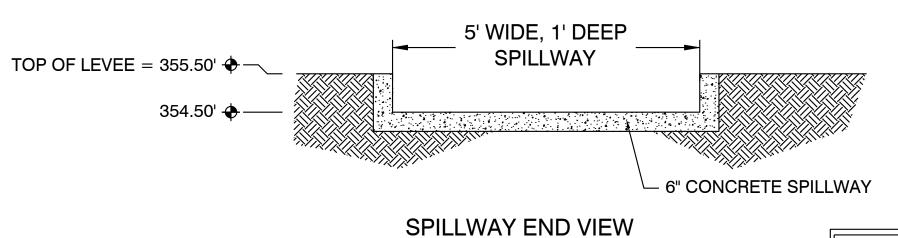


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SPILLWAY END VIEW **Periodic or Non-Routine Maintenance** The routine inspection of the pond area and discharge pipe will identify needed repairs and non-routine maintenance. These items may include but not be limited to: There will be three retention ponds in this project. The retention ponds are located at the NW Corner, SW Corner, and SE Corner of the subject property. It is designed to temporarily detain stormwater to meet water quantity criteria before discharging off the -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 The property owners association will maintain the drainage easements. Routine maintenance will include but not be limited to: pond efficiency such, that the sediments are passing the discharge structure and release off site. -Mowing of the bank slopes and area around the pond on a monthly basis during the growing season and as needed during the

-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

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

- 6" CONCRETE SPILLWAY

prevent future erosion.

-Trash will be removed from around the pond to prevent entering the pond. Generally, the site should be kept free of loose trash For questions or concerns about Tract "A", contact at 501-.

10' WIDE, 1' DEEP

SPILLWAY

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

to not cause impact up or downstream of the structure.

which could be carried off site by wind or rain.

TOP OF LEVEE = 364.00' **♦** ─

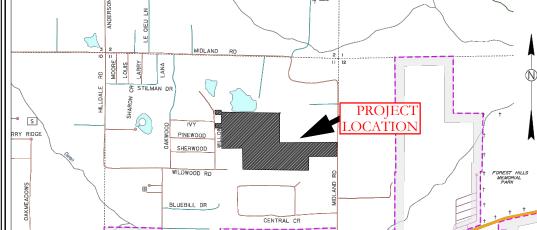
DETENTION POND MAINTENANCE PLAN

Background

cooler months.

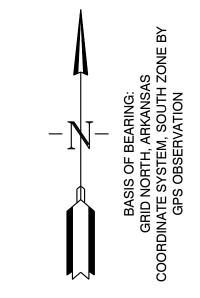
property.

363.00' +-



COLLEGEVILLE

VICINITY MAP:



TOP OF LEVEE = 351.50' ◆

GRASS

3:1 SLOPE



SPILLWAY END VIEW

TOP OF LEVEE 5' WIDE

OUTLET SECTION

10' WIDE, 1' DEEP

FOR USE AND BENEFIT OF: HAVEN'S DEVELOPMENT, LLC

- 6" CONCRETE SPILLWAY

GRASS

3:1 SLOPE

90

MIDLAND ROAD RETENTION PLAN

BRYANT, SALINE COUNTY, ARKANSAS DRAWING NUMBER: C.A.D. BY: 4/19/2023 REVISED: CHECKED BY: 23-0024 C-6.16 SCALE: SHEET:

20' B.S.L.

53' OF 36" RCP @ 0.50%

FLOW ELEV.- 346.5'

SPILLWAY(10')

RETENTION POND 3

LOW SPOT

346.5

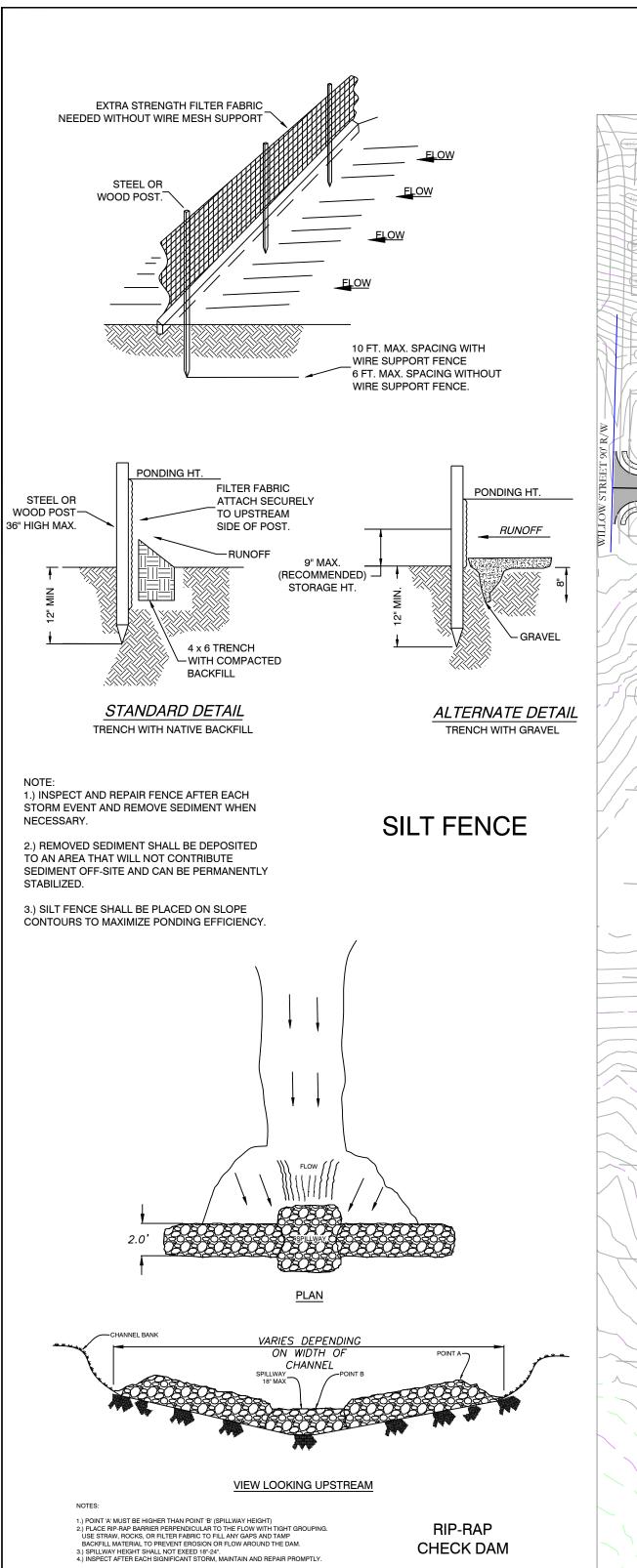
TOP OF LEVEE = 351.50' ◆ ─

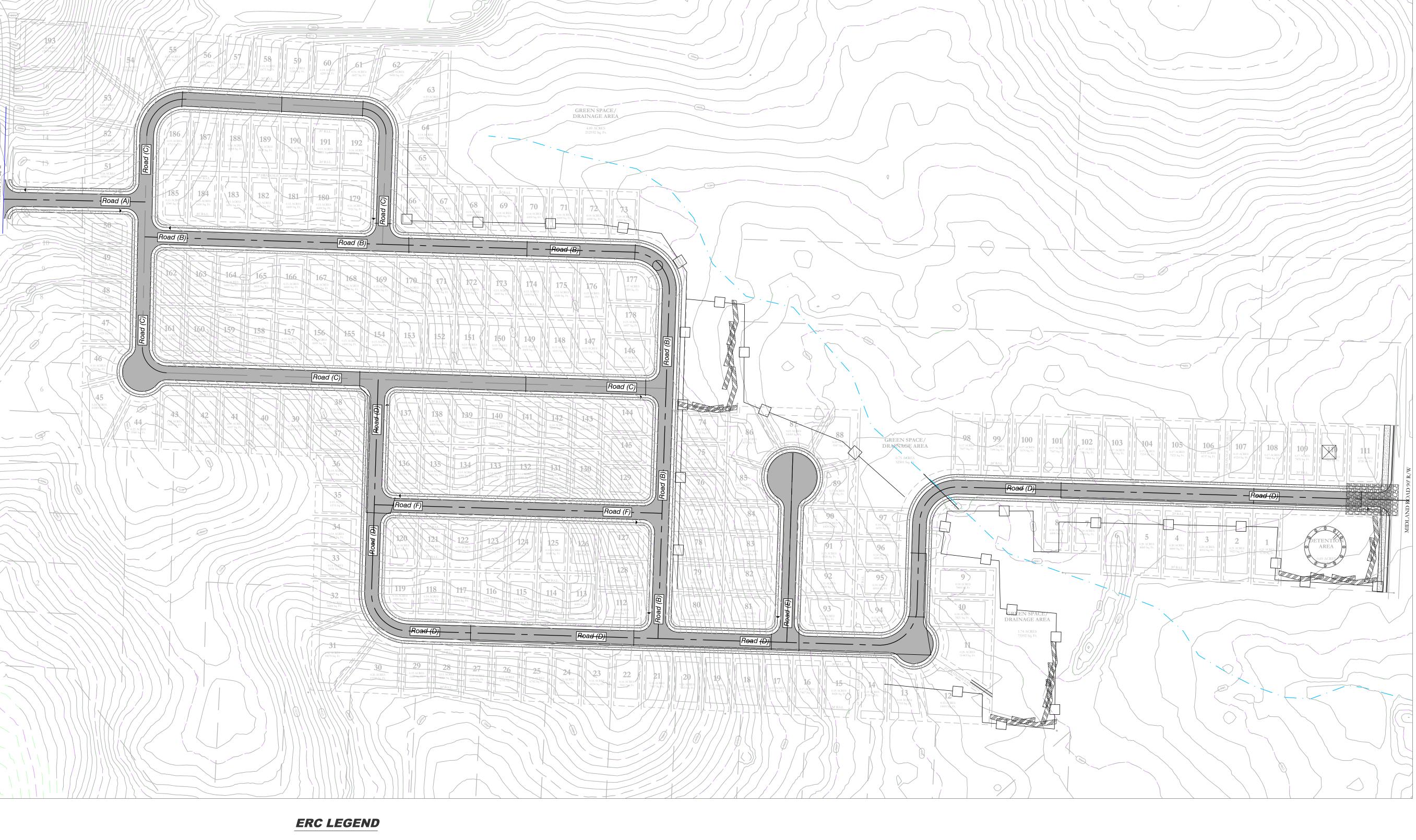
350.50' +

_____ -----

SPILLWAY ELEV. 350.5'-

BOTTOM





EROSION CONTROL NOTES

SOD OR SEED DETENTION AREA POST-CONSTRUCTION (IF *APPLICABLE)*

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

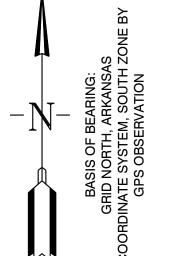
RIP RAP SEDIMENT BARRIERS SHALL BE USED AT ALL STORMWATER DISCHARGE POINTS SHOWN ON PLANS ASAP

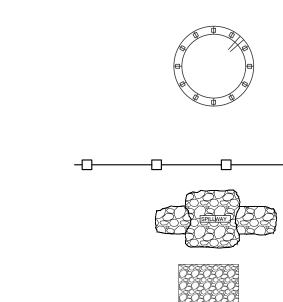
CONTRACTOR SHOULD WORK WITH ENGINEER TO ESTABLISH
EFFECTIVE AND EFFICIENT PLAN TO PREVENT SEDIMENT RUNOFF
BY DETERMINING WHEE PLAN FOR OTHER TYPES OF CONTROLS ARE NECESSARY

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

EXISTING VEGETATION WILL ONLY BE REMOVED INSIDE ROW AND WITHIN HOUSE FOOTPRINTS AS THEY ARE CONSTRUCTED.

ADDITIONAL SILT FENCING WILL BE ADDED TO INDIVIDUAL LOTS
AS HOME CONSTRUCTION TAKES PLACE.





SITE POSTING

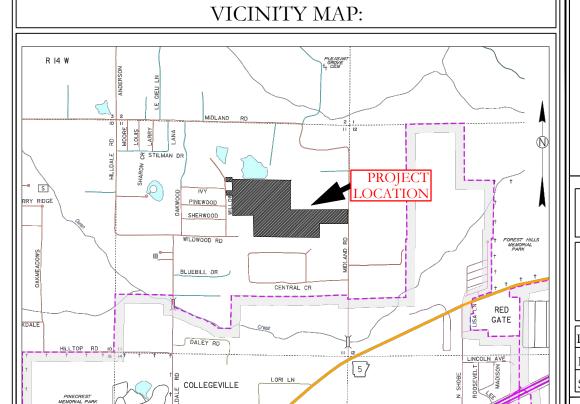




RIP RAP CHECK DAM

CONSTRUCTION ENTRANCE





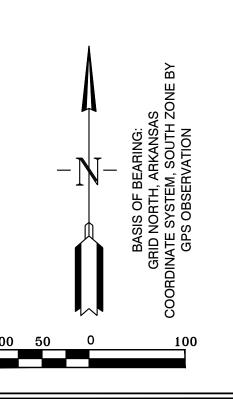


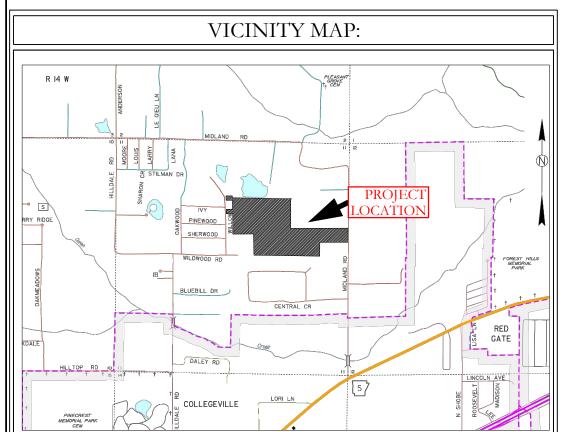
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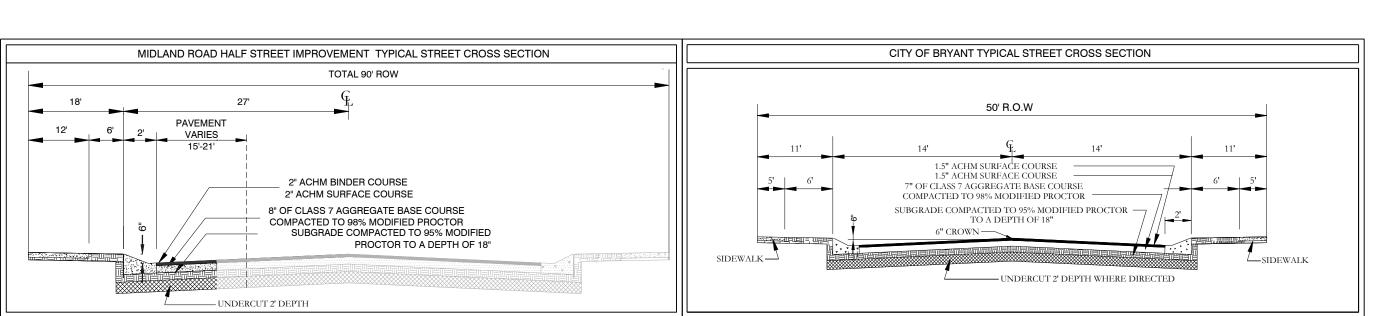
MIDLAND ROAD EROSION CONTROL PLAN

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	DATE:	4/19/23	4/19/23 C.A.D. BY:					DRAWING NUMBER:		
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MIDLAND ROAD SUBDIVISION STREET PLAN

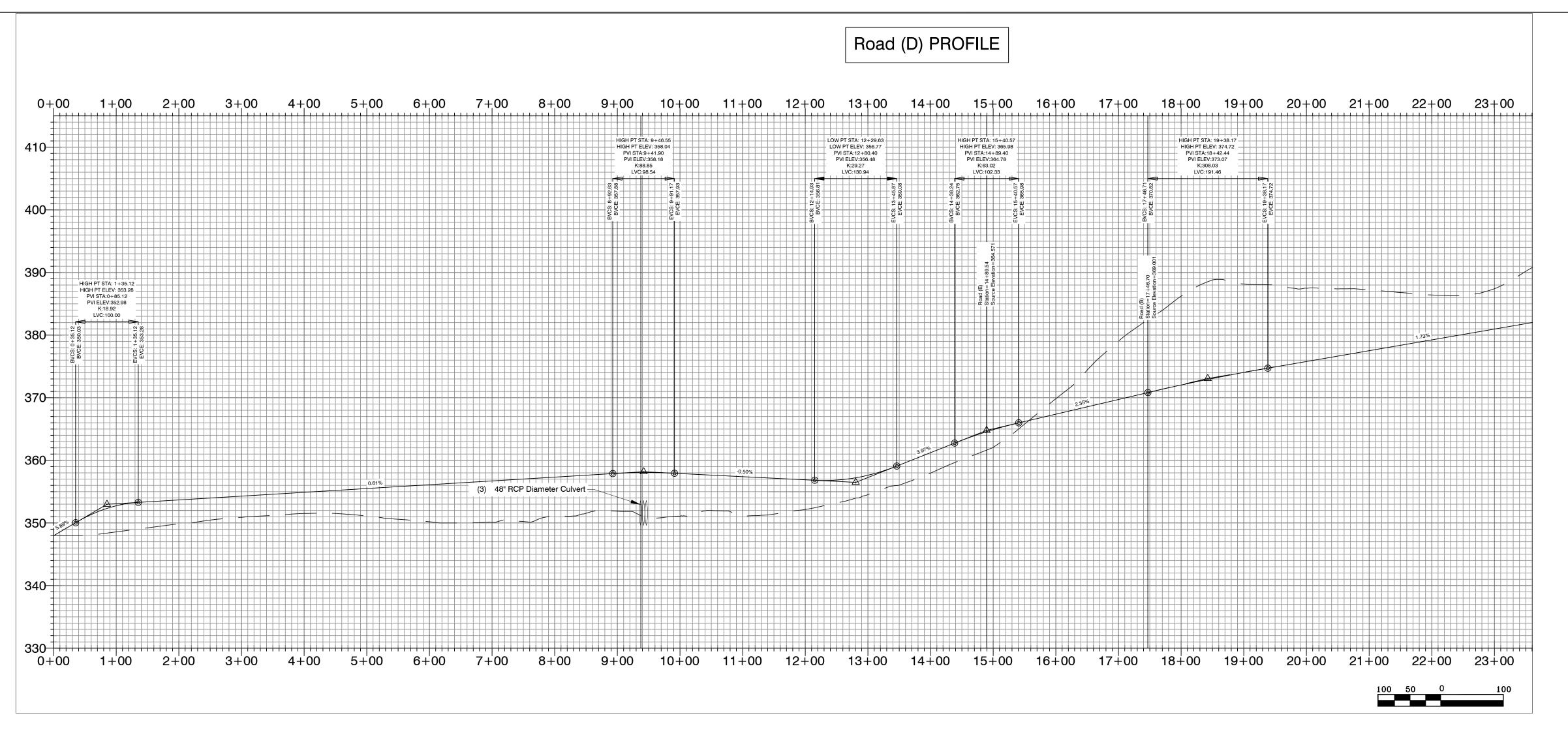


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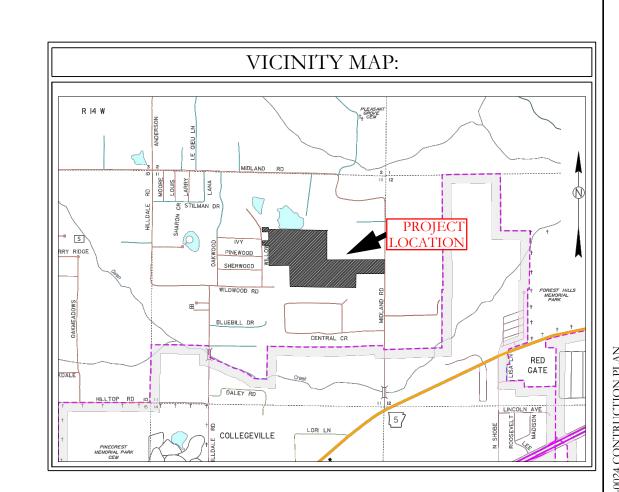
FOR USE AND BENEFIT OF: HAVEN'S DEVELOPMENT, LLC

MIDLAND ROAD STREET LAYOUT

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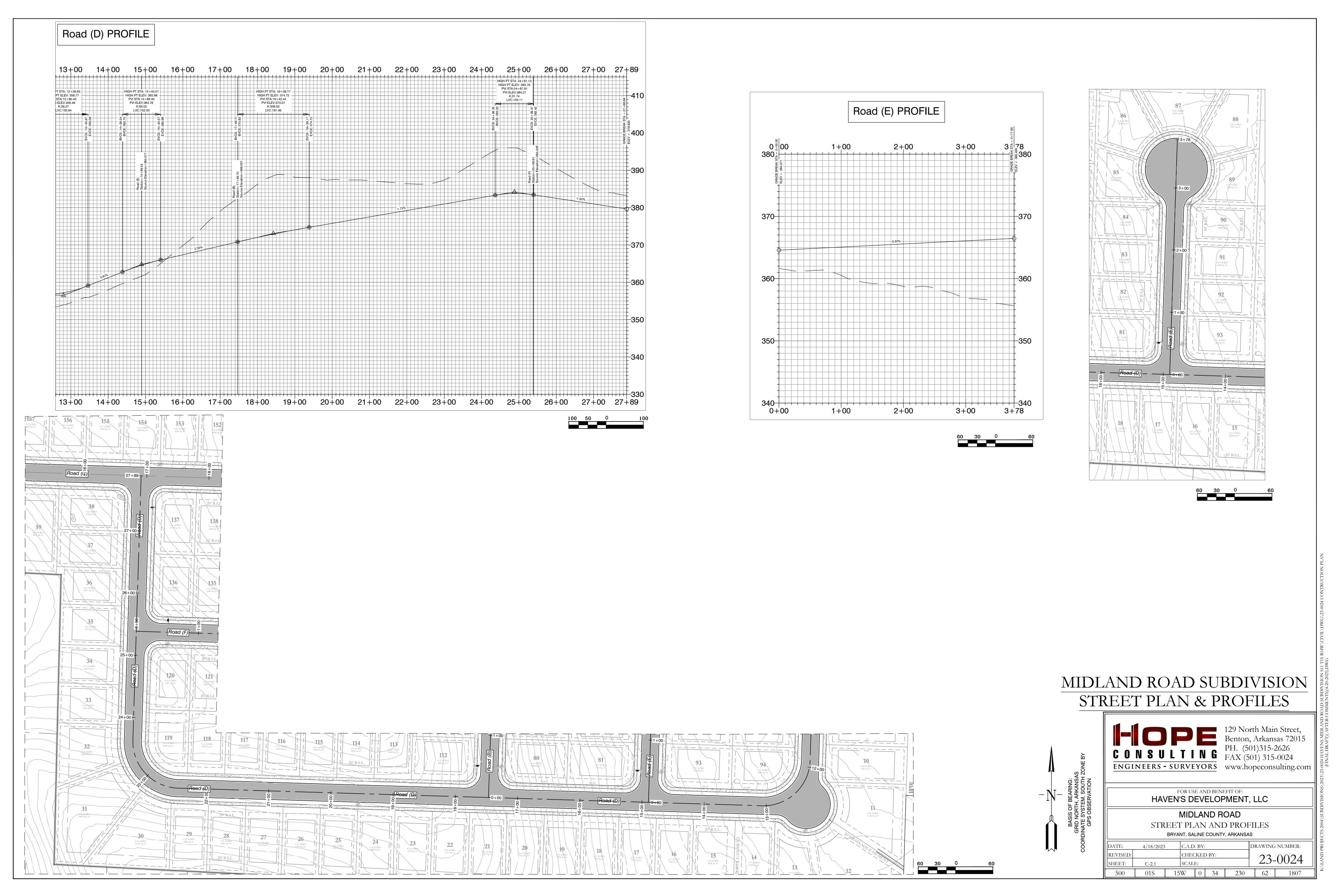


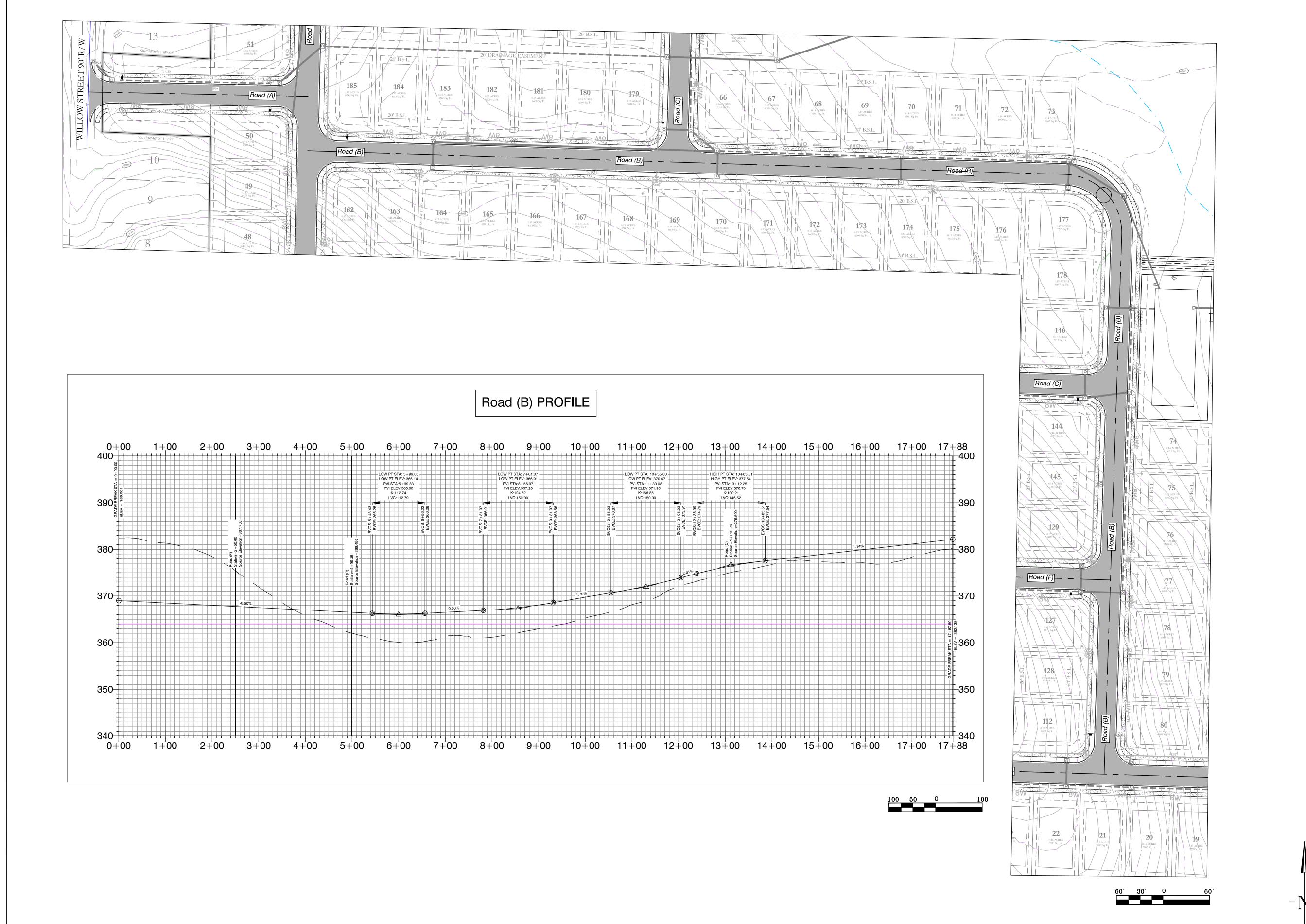
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MIDLAND ROAD STREET PLAN AND PROFILES

BRYANT, SALINE COUNTY, ARKANSAS

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VICINITY MAP:

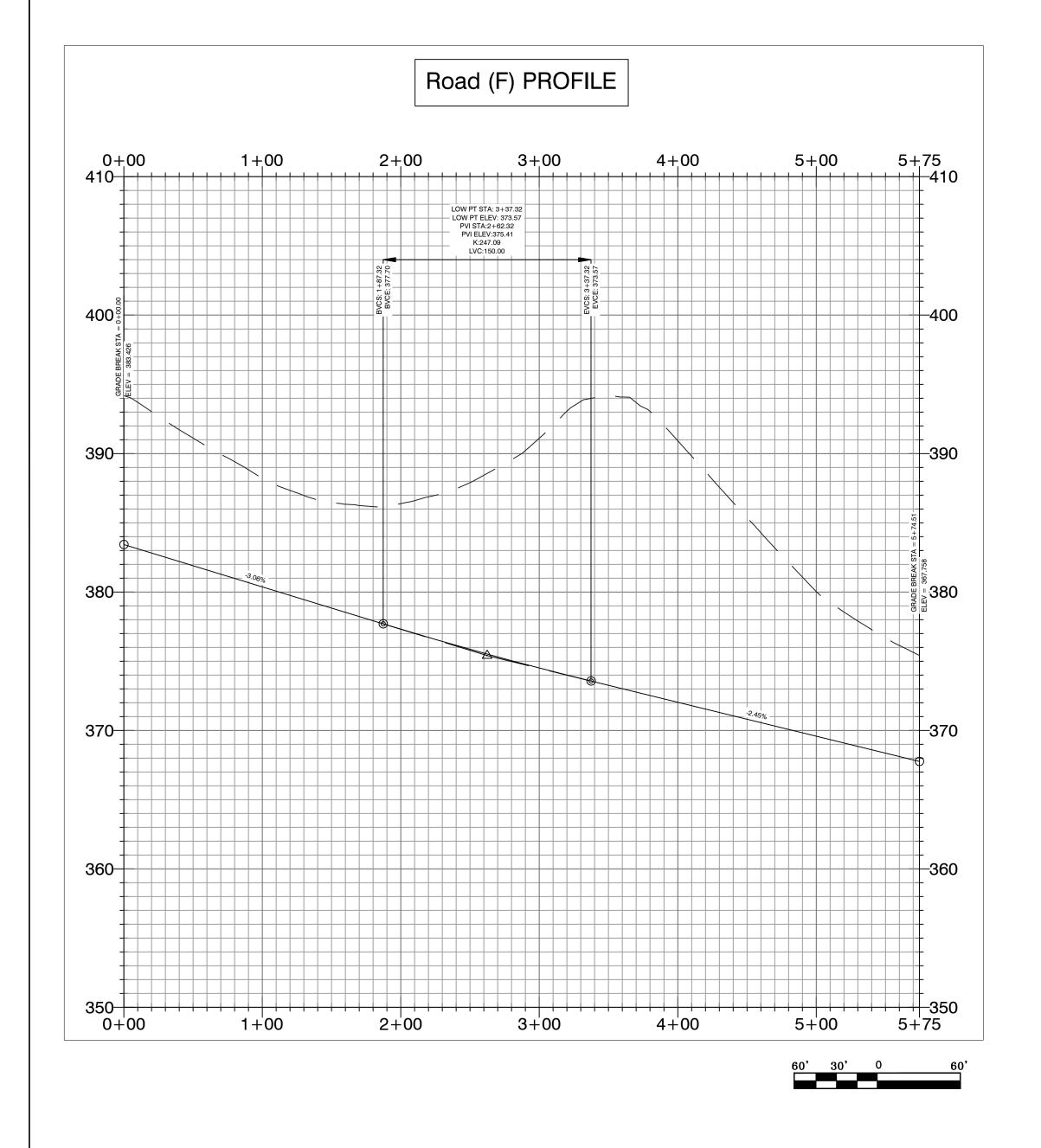
FOR USE AND BENEFIT OF: HAVEN'S DEVELOPMENT, LLC

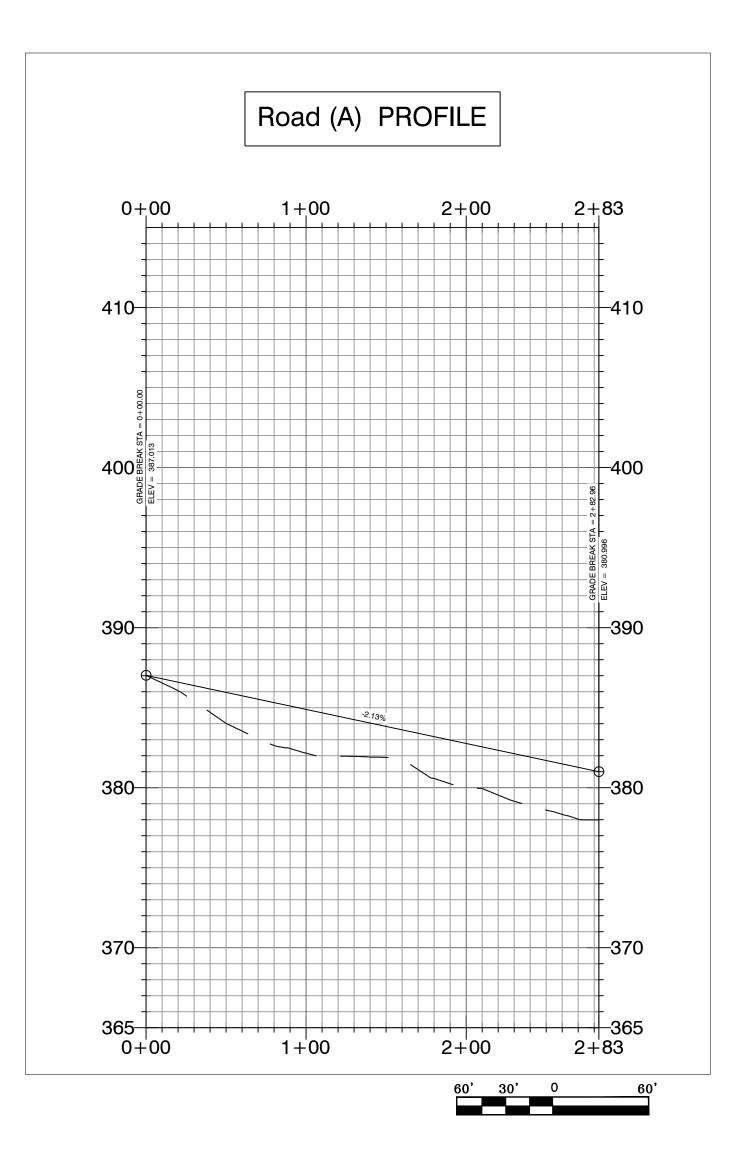
MIDLAND ROAD

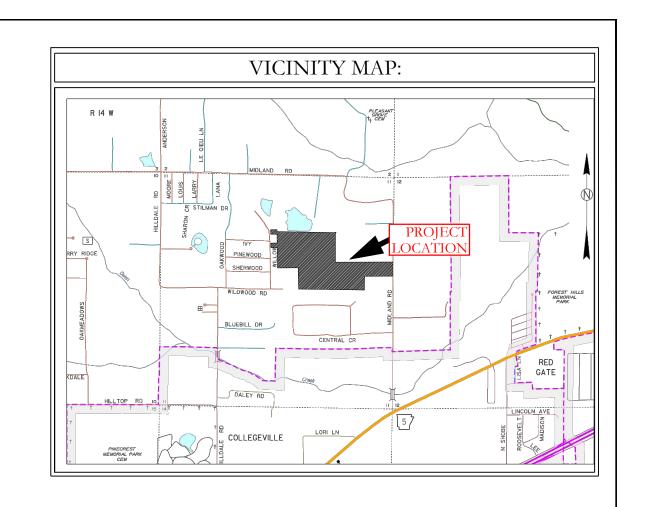
STREET PLAN AND PROFILES BRYANT, SALINE COUNTY, ARKANSAS

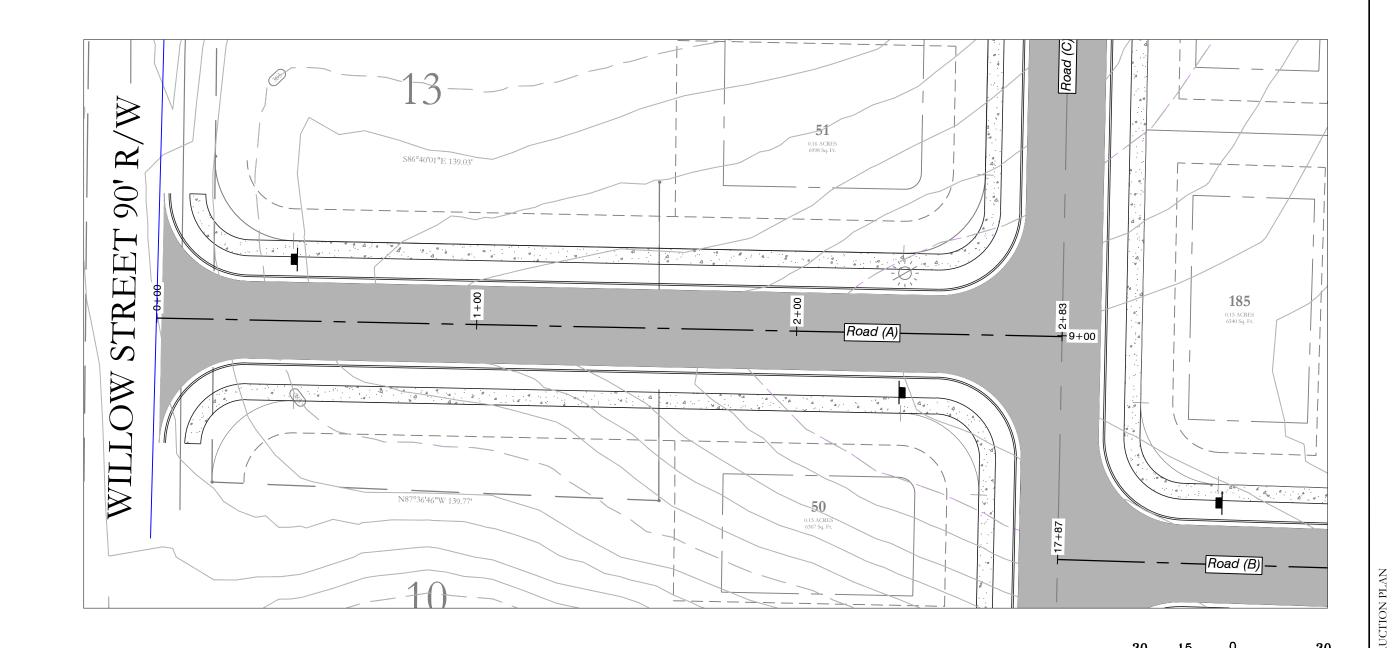
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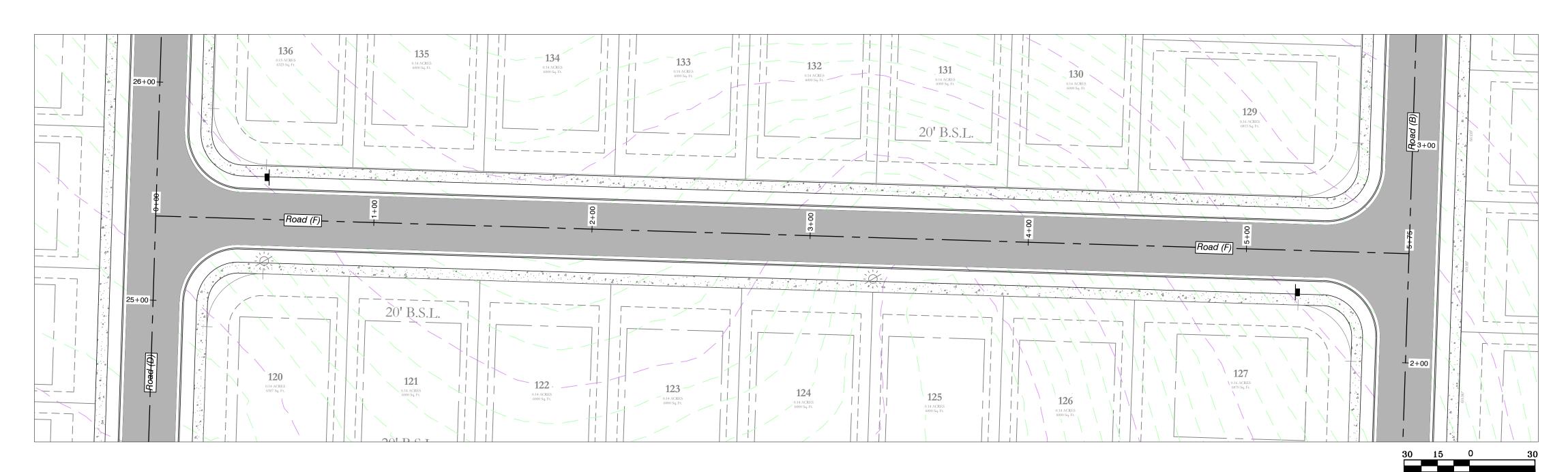
MIDLAND ROAD SUBDIVISION STREET PLAN & PROFILES

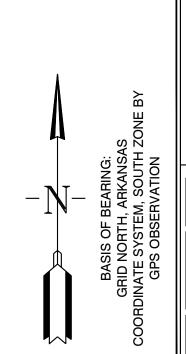










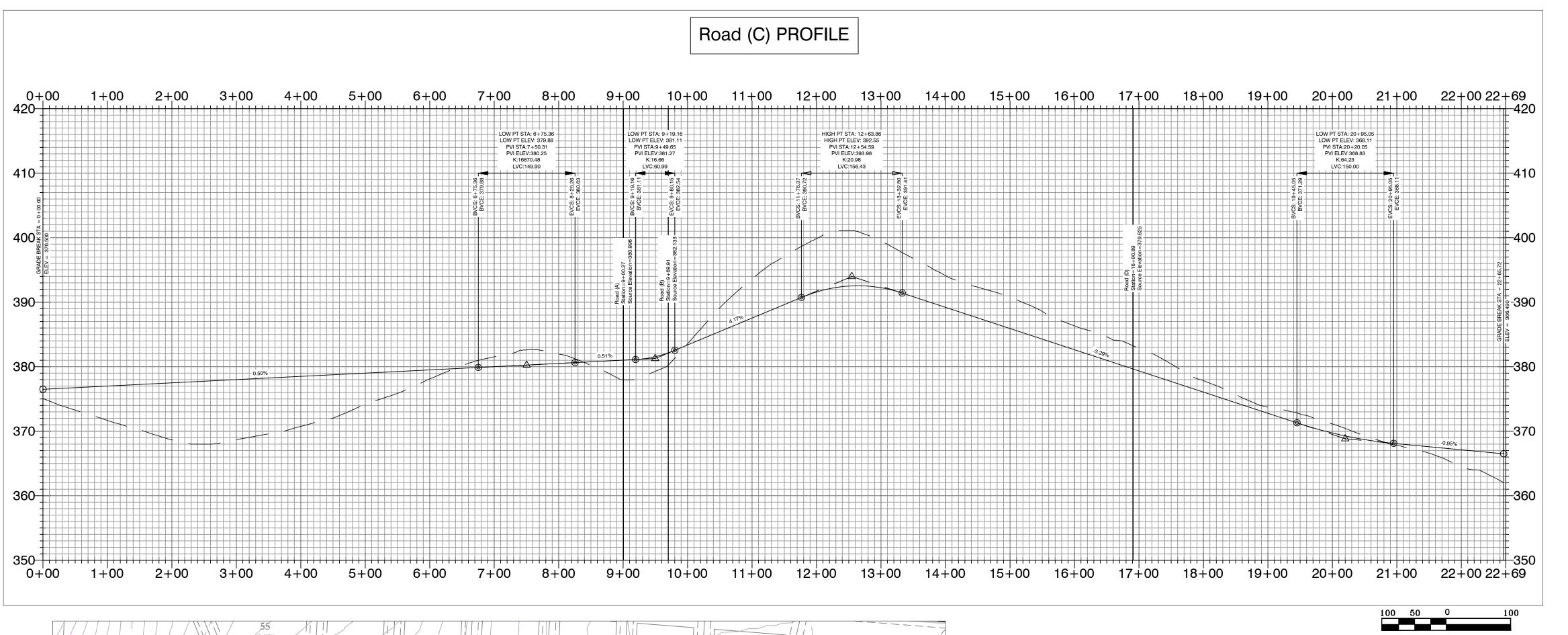




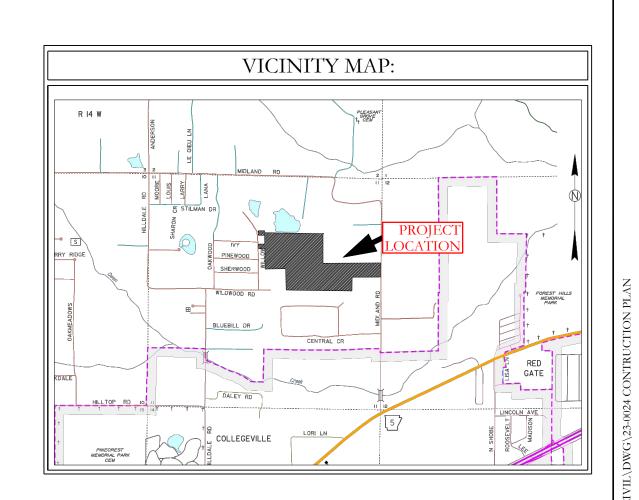
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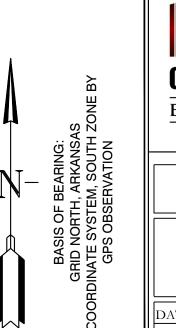
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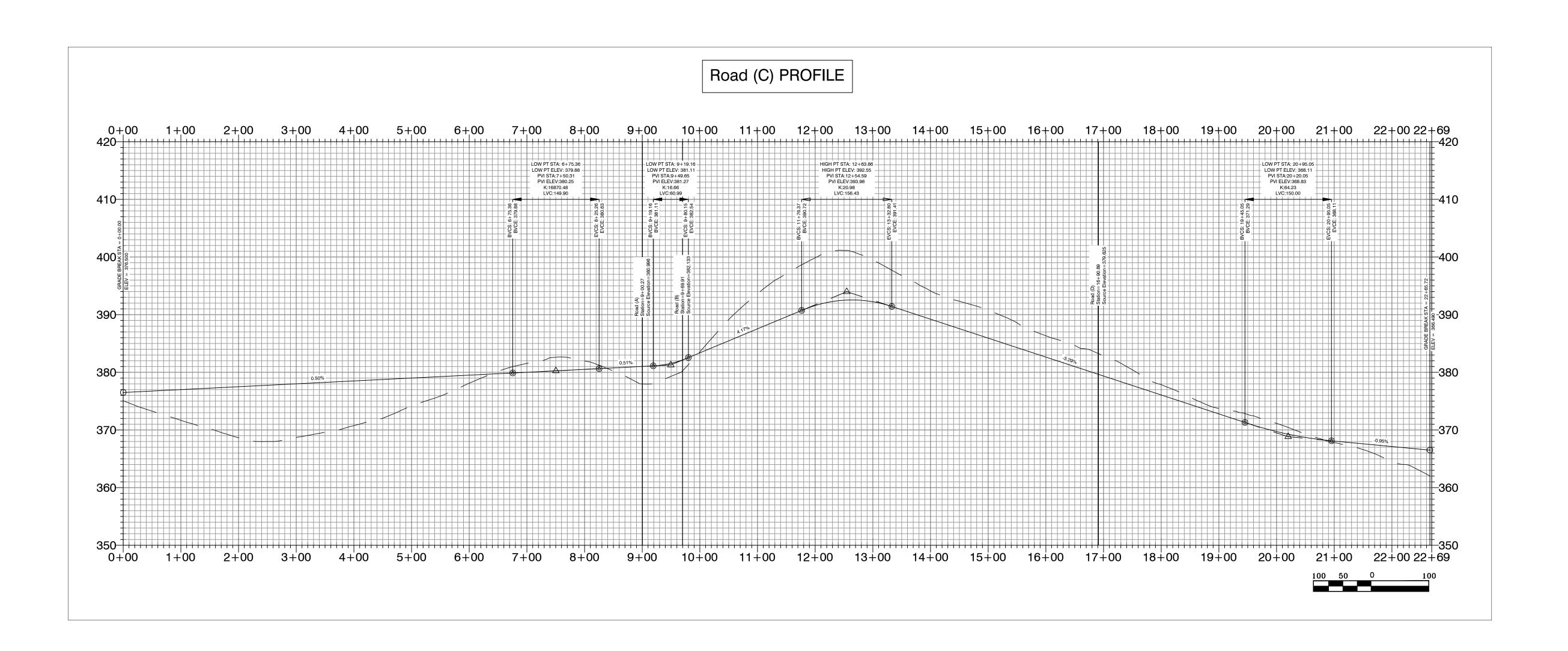


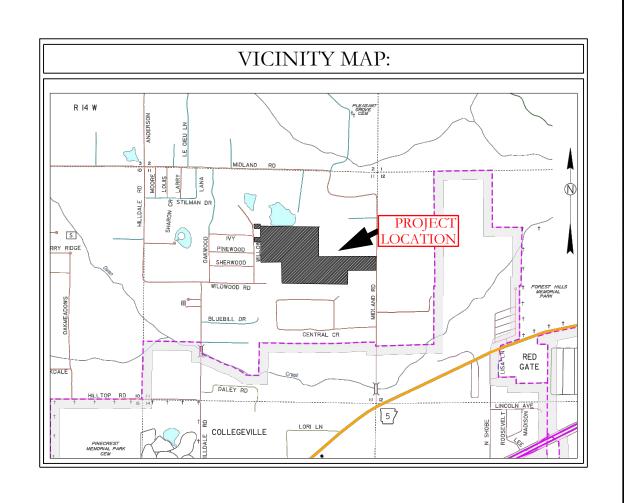


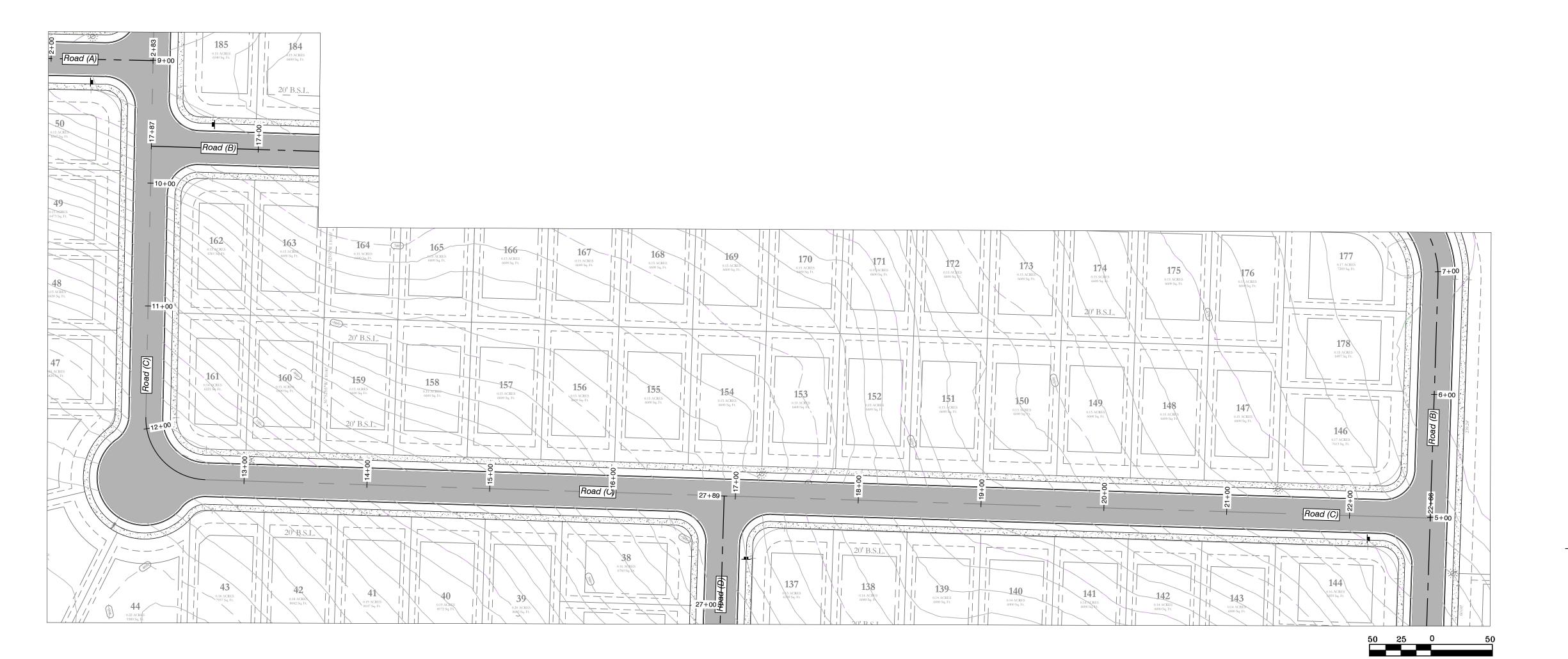
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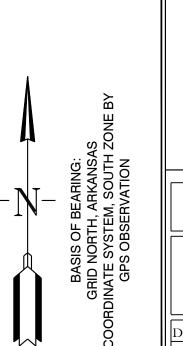
MIDLAND ROAD STREET PLAN AND PROFILES

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MIDLAND ROAD STREET PLAN AND PROFILES

 BRYANT, SALINE COUNTY, ARKANSAS

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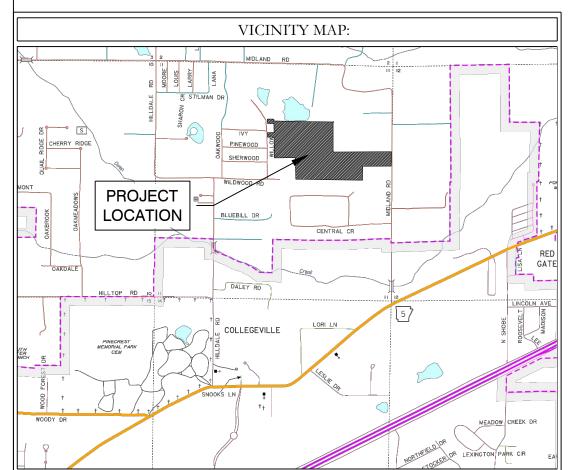
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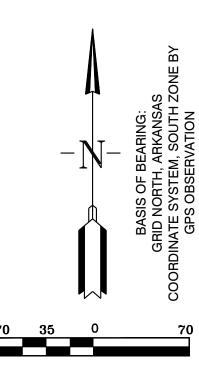
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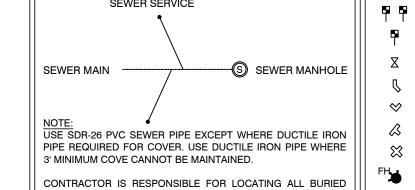




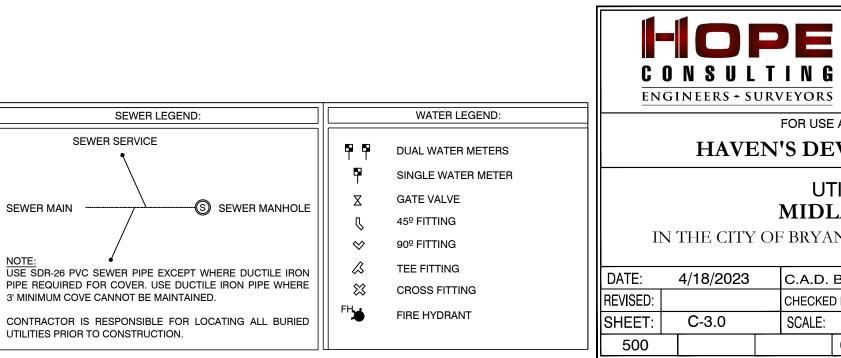
- 2. ALL WATER MAINS LARGER THAN 8" DIAMETER SHALL BE DUCTILE IRON (250 PSI PRESSURE
- 3. ALL WATER AND SEWER INSTALLATION TO BE IN ACCORDANCE WITH THE CITY OF BRYANT "STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF WATER LINES AND SEWER
- 4. WATER LINES UNDER CULVERTS, CREEKS, CONCRETE CHANNELS, 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
- 5. 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. 6. CASING SPACERS: SHALL BE STAINLESS STEEL, CASCADE MODEL CCS AS MANUFACTURED BY CASCADE WATER MFG. CO., OR APPROVED EQUAL.

SEWER CONSTRUCTION NOTES:

- 1. ALL SEWER INSTALLATION TO BE IN ACCORDANCE WITH THE CITY OF BRYANT " STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF WATER LINES AND SEWER LINES, 2015
- 2. ALL SEWER LINES CROSSING UNDER ALL CONCRETE STORM DRAINS OR ANY STORM DRAIN 30-INCH DIAMETER AND LARGER, OR ALL STORM DRAINS WITH MULTIPLE PIPE RUNS, SHALL BE STEEL ENCASED A MINIMUM OF 5 FEET EITHER SIDE OF THE STORM DRAIN. 3. CASING SPACERS: SHALL BE STAINLESS STEEL, CASCADE MODEL CCS AS MANUFACTURED BY CASCADE WATER MFG. CO., OR APPROVED EQUAL.



MIDLAND ROAD SUBDIVISION



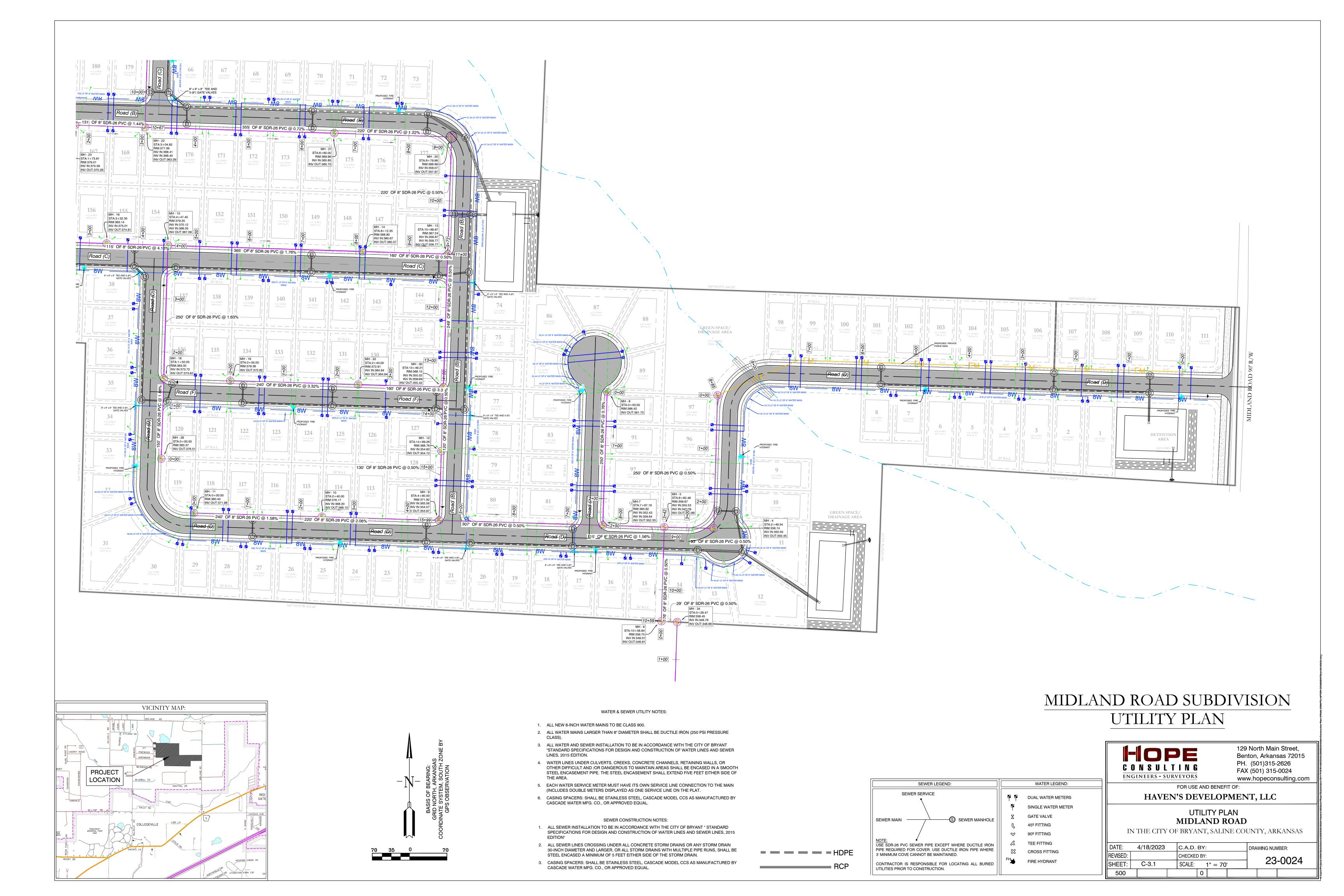
129 North Main Street, Benton, Arkansas 72015 PH. (501)315-2626 FAX (501) 315-0024 www.hopeconsulting.com

FOR USE AND BENEFIT OF:

HAVEN'S DEVELOPMENT, LLC

UTILITY PLAN MIDLAND ROAD IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS

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MTA ENGINEERS

- Geotechnical Engineering
- Materials Testing Special InspectionsDesign

mtaengineers.com

GEOTECHNICAL ENGINEERING EXPLORATION

Proposed Midland Road Subdivision Bryant, Arkansas

PREPARED FOR:

Jonathan Hope Hope Consulting 117 South Market Street Benton, AR 72015

PREPARED BY:

MTA Engineers

8001 National Drive Little Rock, AR 72209

Report of Geotechnical Engineering Exploration Proposed Midland Road Subdivision Bryant, Arkansas March 10th, 2022



March 10th, 2022

Jonathan Hope Hope Consulting 117 South Market Street Benton, AR 72015

Subject: Report of Geotechnical Engineering Exploration

Proposed Duplexes at Midland Road

Bryant, Arkansas

Mr. Hope:

MTA Engineers has completed the authorized Geotechnical Engineering Exploration for the above referred project. This work was conducted in accordance with the agreement between MTA Engineers and Hope Consulting, detailed in MTA Engineers Proposal dated February 2nd, 2023.

The purpose of our work was to review general surface and subsurface conditions within the project site area, and to gather and present data relative to the design and construction of the proposed Midland Road Subdivision located in Bryant, Arkansas. This report outlines the exploration procedures used, exhibits the data obtained, and presents our recommendations.

MTA Engineers appreciates this opportunity to provide these services and looks forward to working with you on future projects. Please contact us if you have any questions or require additional information.

Sincerely,

MTA Engineers

Kelton Price, P.E.

Project Engineer LICENSEI
Office +1 501-753-226 PROFESSION

keltonp@mtaenginee



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Report of Geotechnical Engineering Exploration Proposed Midland Road Subdivision Bryant, Arkansas March 10th, 2022



EXECUTIVE SUMMARY

The geotechnical exploration was conducted near Midland Road located in Bryant, Arkansas. The general topography of the site was varying elevations. At the time of our visit, the site was heavily wooded.

In general, the soils will consist of stiff lean clay / silty sand, dense clayey sand with gravel and medium hard to hard shale. Subsurface conditions were consistent throughout the entirety of the proposed development. The potential to find buried stumps or other organic material is low. Major soil types encountered at each boring may be summarized as follow:

SOIL TYPE

CL

Lean Clay / Sandy Clay

ML / CL-ML

Sandy Silt / Sandy Silty Clay

SC / SM

Silty / Clayey Sand

CH

Expansive clay

Shale

Weathered Shale

Table 1. Soil Types Encountered

See Table 2 General Strata Classification of Soil Logs or the individual soil logs found in Appendix B for a more detailed overview of the soils encountered on site.

Based on the nature of the existing strata encountered at the time of exploration, it is assumed that the proposed improvements will be above existing grades. The surface soils contain organics in all borings. In grass covered areas, the soils of Stratum I are stiff and will contain 6-in of topsoils. Stability of these soils will depend on soil moisture conditions at the time of construction, area of improvements may require over-excavation of 2-ft to remove silty isolated surface soils (deeper during wetter seasons). Additional over-excavation may be required in the footing trenches, depending upon weather conditions. A random presence a of CH clay was noted during exploration. Care should be taken to monitor CH when excavation and ensure no CH clay presence within 2-ft of pavement.

Based on the anticipated bearing load, it is recommended that any structure be supported on traditional shallow footings founded a minimum of 24-in below final grade, within <u>Structural fill.</u> Footings founded as recommended may be designed using a net allowable bearing capacity of 2,000-psf for continuous and individual spread footings.

The net allowable end bearing pressure is based on a factor of safety in excess of 3.0 with respect to the anticipated shear strength of the bearing stratum. Total and differential settlement is anticipated to be less than $\frac{1}{2}$ -in.



SUMMARY

Rock/Hard Dig:

- Excavation may be performed using medium to heavy duty equipment.
- Weathered Shale was encountered in all borings.

Soils:

- Soils generally consist of stiff lean clay, silty sand, dense clayey sand, expansive clay and shale.
- o Structural fill should be placed according to the "Structural Fill" section of this report.
- Stripping in the order of 6-in to remove organics.

Foundations/Slabs:

 Shallow footings founded a minimum of 24-in beneath final grade may be sized using a bearing pressure of 2,000-psf for continuous and individual spread footings.

Un-compacted Fill:

No un-compacted fill was encountered on the property during the exploration.

• Stump/Organic Findings:

o The potential to find stumps or other organic material beneath the surface is low.

Pavement:

- Recommended pavement sections are presented within this report.
- Pavement must meet the requirement of City of Bryant

Miscellaneous:

Groundwater was encountered near TP-10 & 11.

Report of Geotechnical Engineering Exploration Proposed Midland Road Subdivision Bryant, Arkansas March 10th, 2022



<u>INTRODUCTION</u>

This exploration was requested in order to evaluate existing subsurface conditions and provide geotechnical design recommendations. The results of this exploration and the geotechnical design recommendations for site construction are presented in this report.

Exploration was accomplished by:

- Excavating 14 locations up to 10-ft or refusal, to explore subsurface soil, and groundwater conditions.
- 2. Obtaining samples from each stratum, within the accessible areas, using standard geotechnical sampling technique or standard penetration test.
- 3. Performing laboratory tests on various samples to determine pertinent engineering properties of the subsurface strata.
- 4. Analyzing field and laboratory test data to develop design recommendations.

The scope of this geotechnical exploration did not include an environmental assessment to determine the presence of wetlands and/ or hazardous or toxic materials in the soil or groundwater on or near this site. If there is concern of wetlands or a hazardous/ toxic material presence, a qualified environmental assessment consultant should be contacted to perform a site investigation before construction begins.

FIELD EXPLORATION

Subsurface conditions at the site were explored by using test pits to a depth of 10-ft at 14 test pit location. The approximate excavation locations are shown on the Excavation Location Plan (see Appendix A). Test Pit logs presenting descriptions of the soil strata encountered are included in Appendix B. Laboratory testing summary of the different soil types are located in Appendix D.

Samples were obtained throughout the entirety of most locations using bulk grab methods. The recorded penetrometer reading (tons/ft²) are indicated on the Test Pit Logs in the Unconfined Compression Strength column. All soil samples encountered were removed from the field in moisture

Report of Geotechnical Engineering Exploration Proposed Midland Road Subdivision Bryant, Arkansas March 10th, 2022



tight containers and transported to our laboratory for further examination. At the lab, a visual classification was performed for each sample.

All various soil types were then analyzed for specific engineering properties.

GENERAL SITE AND SUBSURFACE CONDITIONS

The exploration for the proposed Subdivision located along Midland Road in Bryant, Arkansas. It is anticipated that proposed roads will be constructed near the existing grade. Soil as explored consisted of silty sands, lean sandy clays, and clayey sands with gravel above weathered shale. The stratigraphy encountered in the excavation locations is summarized in Table 2. Test Pit were advanced to a depth of 10-ft or refusal within the building and pavement areas using mini excavation procedures.

For a more detailed description of soils encountered while testing see the boring log sheets found in attached preliminary report.

Table2. General Strata Classification of Boring Logs

STRATA	DEPTH (ft)	SOIL CLASSIFICATION	SOIL DESCRIPTION	SIGNIFICANT PROPERTIES
STRATUM I (a)	1 P-1 9 X. 2		Silty Sand & Clayey Sand Surface Organics	Medium Dense Low Shrink Swell Potential Moderate bearing capacity
STRATUM I (b)	0 – 2 to 4	CL Except in TP-1, 2, 3 and 8	Lean Clay / Sandy Clay w/ surface Organics	Stiff to Very Stiff Moderate Bearing Low shrink swell potential
STRATUM I (c)	1 – 2 to 5	ML/ CL-ML (Except TP-4 & TP-5)	Sandy silt/ Sandy Silty Clayey	Stiff Moderate to High Bearing Capacity Moisture Sensitive
STRATUM II (a)	(Only in TP-12)		Expansive Clay	Very Stiff Moisture sensitive
STRATUM II (b)	2 to refusal	Shale In all test pits	Weathered Shale	Medium Hard to Hard Moderate Bearing Capacity

The significant properties and characteristics of the subsurface strata pertinent to design and constructions are as follows:



- A. The topography of the site and planned building location.
- B. The anticipated bearing loads.
- C. Dense Sand-Clay-Gravel encountered in the several Test Pits.
- D. Shale was encountered in all test pit excavations.
- E. The anticipated pavement loading.

LABORATORY TESTING

Description of the soils encountered in the excavation was prepared in general accordance with applicable ASTM standards. The soil stratification shown on the test pit logs represents soil conditions at the specific excavation locations. There may be some variations that occur between or beyond the excavation locations.

The stratification lines on the test pit logs represent the approximate boundaries between soil types, but the actual transitions between soil layers in the subsurface of the proposed site may be gradual. Laboratory testing was performed to verify/evaluate classification, volumetric stability, and to determine water content. The results of all testing performed are represented in Appendix D Laboratory Test Summary.

ANALYSIS AND RECOMMENDATIONS

SITE PREPARATION

Based on the requirement of the city of Bryant, the existing soils are not suitable to be within the upper 2-ft of the subgrade; therefore, 2-ft of approved fill will be required in the areas of public streets. This can be achieved through over-excavation and backfill, raising the proposed grades, or a combination of both. Prior to the addition of any fill or the construction of any improvements, areas of proposed building and parking should be stripped to remove organics and stiff isolated silty sand. Areas of vegetation and trees within the building or paved areas should be grubbed to a depth of 6-in. The roadway areas should be proof-rolled using 62,000-lbs loaded dump truck (or equivalent load) to determine area of instability. Proof-roll should be performed in the presence of MTA Engineers. Any areas of instability should be further investigated. Isolated areas of over-excavation should be

Report of Geotechnical Engineering Exploration Proposed Midland Road Subdivision Bryant, Arkansas March 10th, 2022



anticipated. MTA recommends that all excavation be performed during dry periods and that positive drainage is maintained during construction. Water ponding will affect soil stability. Areas of instability will require over-excavation. Depths of over-excavation will vary, but could extend to 3-ft. Structural fill, where needed, should be placed as recommended in the "Structural Fill" section of the report. Positive drainage should be maintained throughout this process. The addition of excessive moisture could cause a significant loss of soil stability.

Consideration should be given to backfilling storm drains with clean gravel to allow for the removal of potential ground water that may accumulate above the shale strata. Frequent French drains may be required as well. If soft soils are encountered in the area of proposed roadways, a filter may be used to maintain separation of the soft soils from the approved fill.

The building pads should be constructed above the existing grade to provide positive drainage. Some over-excavation of footings could be required depending on the soil moisture condition at the time of excavation. Soil bearing information given in the building foundations section of this report will be based on these site preparation conditions.

STRUCTURAL FILL

Structural Fill within roadways must conform to City of Bryant requirements. Fill should consist of approved materials, which are free of organic matter and debris. For approval, samples of the proposed fill material should be submitted to MTA Engineers for classification testing. Select fill consisting of low plasticity soil such as lean clay or clayey gravel classifying as SC, CL, or GC according to the Unified Soils Classification System are generally considered suitable. High plasticity clay soils (soils with a Liquid Limit above 50) should not be used as fill.

Placement of approved fill should be achieved in multiple thin lifts. Each lift should not exceed 8-in in loose thickness. Compaction of these lifts should be performed with suitable equipment to achieve the compaction requirements noted in Table 3. Care should be taken that all compaction recommendations are performed.

If cohesive soils are to be used, compaction should be performed using a kneading-type vibratory compactor, such as a vibratory sheepsfoot. The material should be broken down sufficiently to provide a dense matrix of particles.



Table 3: Compaction Requirements

Material Type and Location	Minimum Compaction (percent of ASTM D1557)	Allowable variance in moisture from optimum
Structural Fill Beneath Pavement Sections	95%	Optimum to +3 (Clay Shale) -3 to +3 (Other Approved Select Fill)
Structural Fill Beneath Buildings	95%	Optimum to +3 (Clay Shale) -3 to +3 (Other Approved Select Fill)
Utility Backfill in Building Area and Pavement	95%	-3 to +3
Miscellaneous and Green Areas	90%	-3 to +3
Aggregate Base Course	95%	-3 to +3 at time of compaction

BUILDING FOUNDATIONS

All foundations must satisfy two basic and independent design criteria. First, foundations must have acceptable factor of safety against bearing failure under maximum design loads. Secondly, movement of the foundation due to consolidation, shrinkage, and/or swelling of the supporting strata should not exceed tolerable limits for the structure.

Construction factors such as installation of foundations units, excavation procedures, and surface and groundwater conditions should also be considered. These factors and the aforementioned subsurface conditions were influential in development of the following statement.

In view of the anticipated foundation loading and subsurface conditions encountered, it is suggested that the proposed structures be supported on a foundation system designed in accordance with the following recommendations.



FOUNDATIONS/ SLABS

Shallow Foundations

Based on the nature of existing soils encountered at the time of exploration and the anticipated loading, it is recommended that all structures be supported on traditional shallow footings founded a minimum of 24-in beneath final exterior grade, within <u>Structural fill</u>. In addition, to minimize the potential for localized shear failure within the soils, a minimum footing width of 24-in is recommended.

Shallow foundations founded as accounted may be designed using a net allowable bearing pressure of 2,000-psf for continuous and individual spread footings. The net allowable end bearing pressures will be based on a factor or safety in excess of 3.0. Total and differential settlement is anticipated to be less than $\frac{1}{2}$ -in.

Slab-on-grade type construction is considered appropriate for the floor slab. We recommend that the slab be supported on 4-in of clean crushed stone or gravel (ASTM C-33 #57 or equivalent) on prepared subgrade. A Class A impervious moisture barrier with a minimum thickness of 10-mils, specified according to ASTM E-1745, should be provided between slab and the granular fill due to the potential for perched water to develop during the wetter seasons.

PAVEMENT DESIGN

Paved parking and drives will be constructed as part of the project. Design traffic volumes and loadings have not been determined. However, we anticipate that the drives will be subject to light vehicles and weekly service trucks. We anticipate that the drives will be placed at/or above the existing elevation. The following design criteria were used to develop the recommended pavement sections in conjunction with the AASHTO Design Guide 1996:

Table 3. Pavement Design Assumption Values

PAVEMENT DESIGN ASSUMPTION VALUES						
CBR	5					
R-VALUE	15					
SOIL SUPPORT VALUE (S)	5					

Report of Geotechnical Engineering Exploration Proposed Midland Road Subdivision Bryant, Arkansas March 10th, 2022



Based on information obtained during this study, subgrade soils in the paved areas should generally consist of proof-rolled properly compacted <u>Structural fill</u>. Due to the random presence of Ch clay, care should be taken to avoid it within 2-ft of the pavement. Structural fill should be placed as recommended in the Structural fill section of the report. It is recommended that positive site drainage should be provided during construction and be incorporated during the final design.

All pavement sections must comply with the City of Bryant minimum requirements. It should be recognized that some periodic maintenance of pavement will be required. As a minimum, this should include periodic sealing of all joints and cracks to prevent surface water infiltration.

UN-COMPACTED FILL

No uncompacted fill was encountered on the property during our exploration. The cleared area near Midland Road contains unsuitable fill that should be removed prior to construction.

STUMP/ ORGANIC FINDINGS

The proposed improvement area is covered with light grassy vegetation and trees. The potential to find stumps or other organic material below the surface is low.

SEISMIC CONSIDERATION

Based on IBC-2015, a site soil **Class B** may be used for design purposes. Liquefaction potential of the soils in <u>Stratum I(a, b & c)</u>, <u>II(a & b)</u> is negligible. Additional design information on Seismic Consideration is attached as Appendix E.

CONSTRUCTION PROCEDURES

The potential exists for increased perched water to develop during wetter seasons. Therefore, foundation excavation and any other site grading should be performed during drier periods to reduce the possibility of changes in conditions.



Subsurface conditions significantly at variance with those encountered within the borings should be brought to the attention of the engineer, and work delayed pending evaluation and/or preparation of additional recommendations, if warranted.

* * * *

The following illustrations are attached and complete this report:

Appendix A: Excavation Location Plan

Appendix B: Test Pit Logs

Appendix C: Key to terms and Symbols

Appendix D: Laboratory Test Summary

Appendix E: Seismic Design Criteria

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Appendix A: Excavation Location Plan





Appendix B: Test Pit Logs

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-			VERY STIFF, RED EXPANSIVE CLAY W/ GRAVEL	СН	24	27.2	51	27	73.2		3.5
5			MEDIUM HARD TO HARD, RED, WEATHERED SHALE REFUSAL AT 6-FT ON SHALE	SHALE							4.5
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MTA ENGINEERS a division of					E	Excavation Log Report							
T Age MATERIALS TESTING OF ARKANSAS www.mtaengineers.com						TEST PIT NO. TP-14							
								PAGE 1 OF 1 DATE: 3/1/2023					
JOB NAME: MIDLAND ROAD SUBDIVISION							TYPE OF DRILLING: EXCAVATION						
COORDINATES: NORTH: EAST:							EQUIPMENT: KUBOTA U35 LOGGED BY: CHRIS						
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Appendix C: Key to Terms

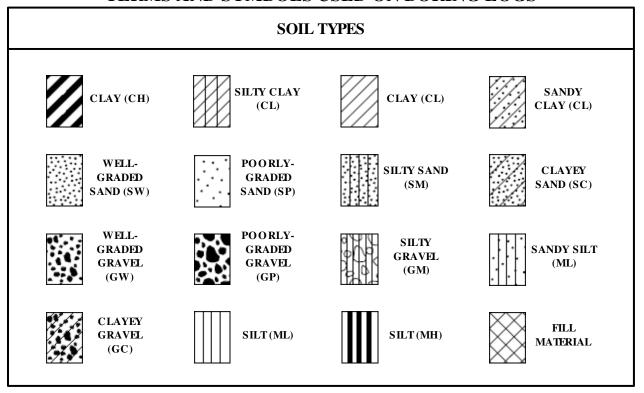


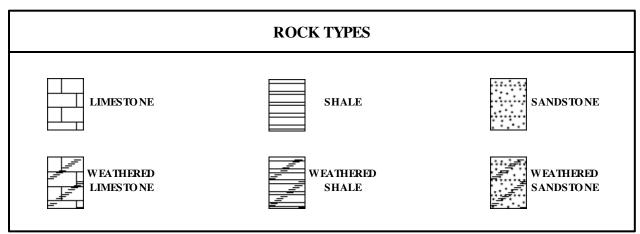
P.O. Box 23715 • Little Rock, AR 72221 Ph. 501.753.2526

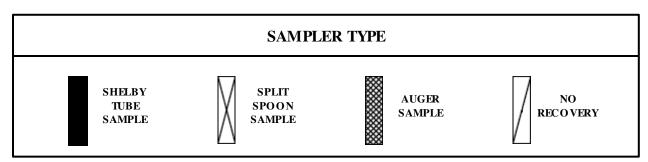
P.O. Box 688 • Springdale, AR 72765 Ph. 479.756.0061

101 S. Church Street, Box 4 • Jonesboro, AR 72401 Ph. 870.530.8380

TERMS AND SYMBOLS USED ON BORING LOGS









a division of Materials Testing of Arkansas, Inc.

LINIOONICINICD

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P.O. Box 688 • Springdale, AR 72765 Ph. 479.756.0061

101 S. Church Street, Box 4 • Jonesboro, AR 72401 Ph. 870.530.8380

SOIL GRAIN SIZE

U.S. STANDARD SIEVE								
12"	3"	3/4"	4	10	40	200		
DOLL DEDC	COBBLES	GRAVEL		SAND			CH T	CLAV
BUULDERS		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
304	76.2	19.1	4.75	2	0.42	0.074	0.002	
SOIL GRAIN SIZE IN MILIMETERS								

TERMS DESCRIBING CONSISTENCY OR CONDITION

COARSE GRAINED SOILS (major portion retained on No 200 sieve): Includes (1) clean gravels and sands, and (2) silty clayey gravels and sands condition is rated according to relative density, as determined by laboratory tests.

DESCRIPTIVE TERMS	N VALUE	RELATIVE DENSITY
VERY LOOSE	0-4	0 – 15 %
LOOSE	4-10	15 – 35 %
MEDIUM DENSE	10-30	35 – 65 %
DENSE	30-50	65 – 85 %
VERY DENSE	50 and above	85 – 100 %

FINE GRAINED SOILS (major portion passing No 200 sieve): include (1) inorganic and organic silt and clays, (2) gravelly, sandy, or silty clays, and (3) clayey silts. Consistency is rated according to shearing strength, as indicated by penetrometer reading or by unconfined compression tests.

		UNCONFINED
		COMPRESSIVE STRENGTH
DESCRIPTIVE TERMS	N VALUE	TON / SQ. FT.
VERY SOFT	0-3	less than 0.25
SOFT	3-6	0.25 - 0.50
FIRM	6-12	0.50 - 1.00
STIFF	13-20	1.00 - 2.00
VERY STIFF	20-50	2.00- 4.00
HARD	50 and above	4.00 and higher

NOTE: Slickensided and fissured clays may have lower unconfined compressive strengths than shown above because of planes of weakness or cracks in the soil. The consistency rating of such soils are based on penetrometer readings

TERMS CHARACTERIZING MOISTURE CONTENT

DRY: No water evident in sample; fines less than plastic limit.

MOIST: Sample feels damp; fines near the plastic limit.

VERY MOIST: Water visible on sample; fines greater than plastic limit and less than liquid limit.

WET: Sample bears free water; fines greater than liquid limit.

TERMS CHARACTERIZING SOIL STRUCTURE

SLICKENSIDED: Having inclined planes of weakness that are slick and glassy in appearance.

FISSURED: Containing shrinkage cracks, frequently filled with fine sand or silt; usually more or less vertical.

LAMINATED: Composed of thin layer of varying color and texture.

INTERBEDDED: Composed of alternate layers of different soil types

CALCAREOUS: Containing appreciable quantities of calcium carbonate.

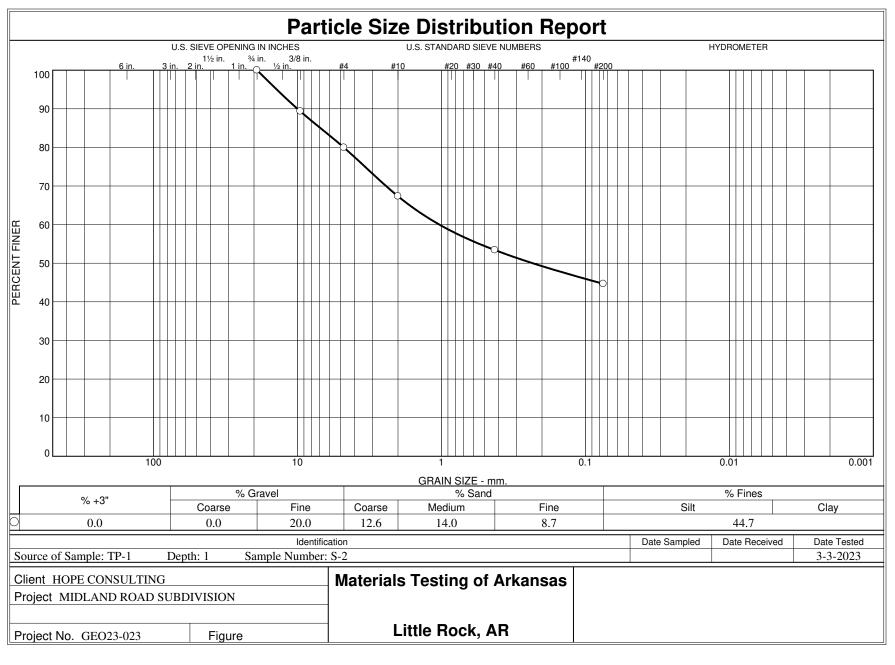
WELL GRADED: Having wide range in grain sizes and substantial amounts of all intermediate particle size.

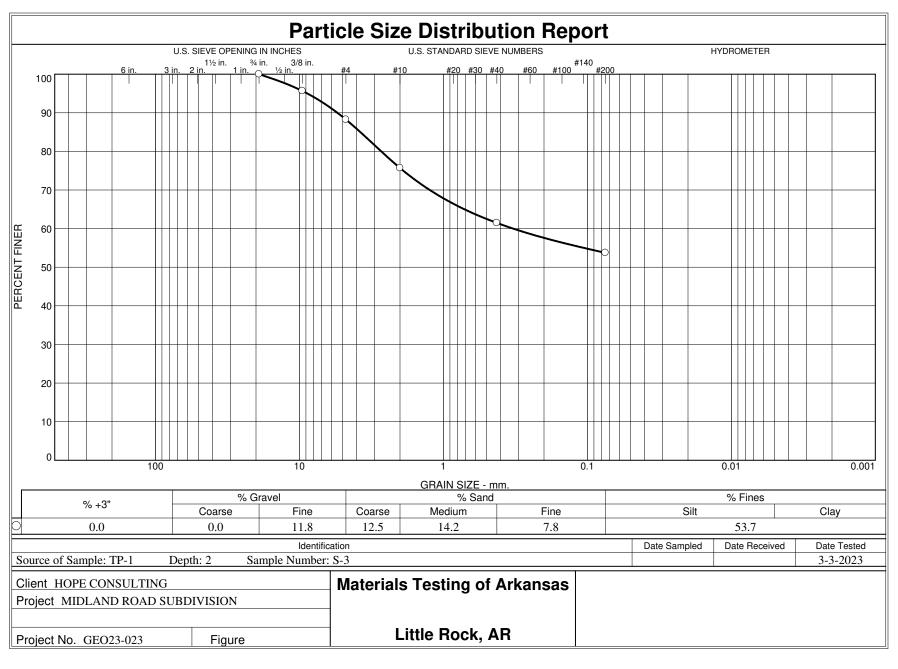
POORLY GRADED: Predominantly of one grain size, or having a range of sizes with some intermediate size missing

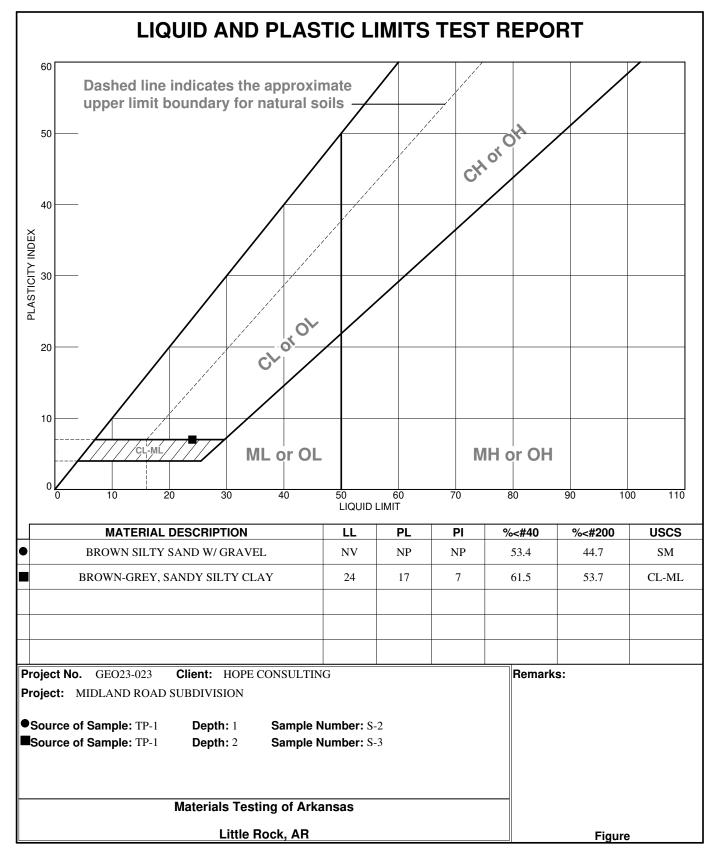
Terms used in this report for describing soils according to their texture or grain size distribution are in accordance with UNIFIED SOIL CLASSIFICATION SYSTEM as described in technical Memorandum No 3-357, Waterways Experiment Station, March 1953

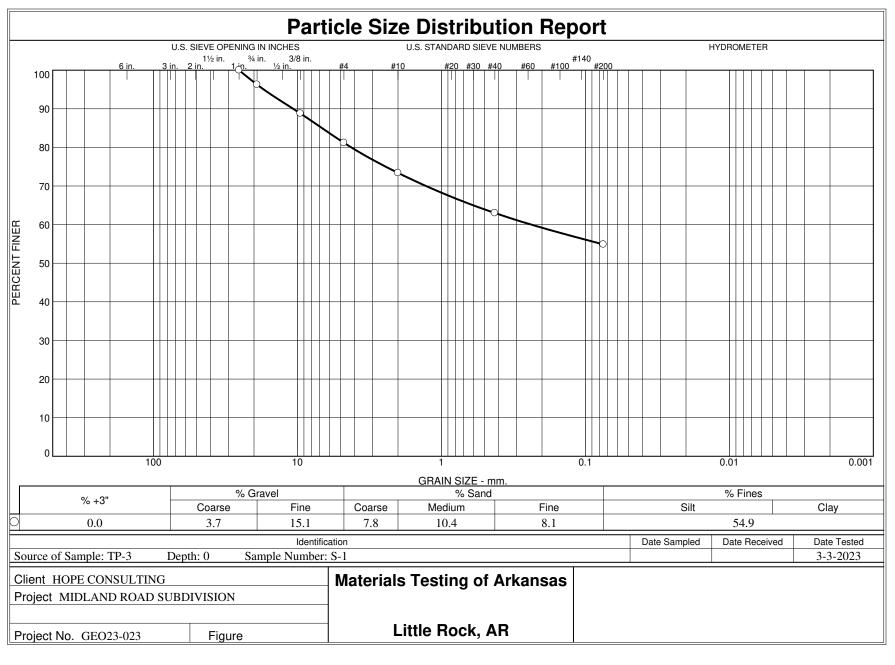


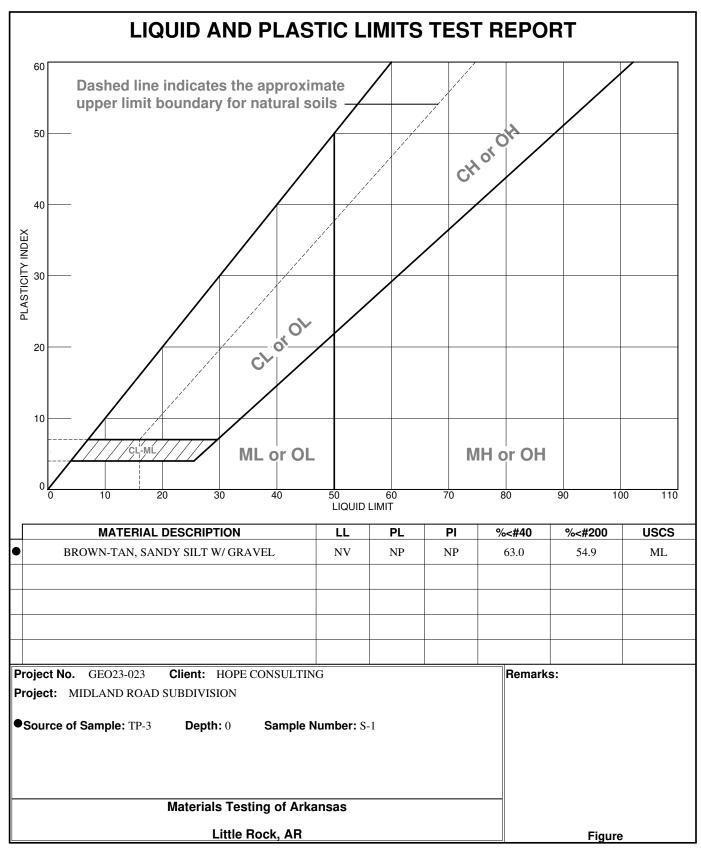
Appendix D: Laboratory Test Summary

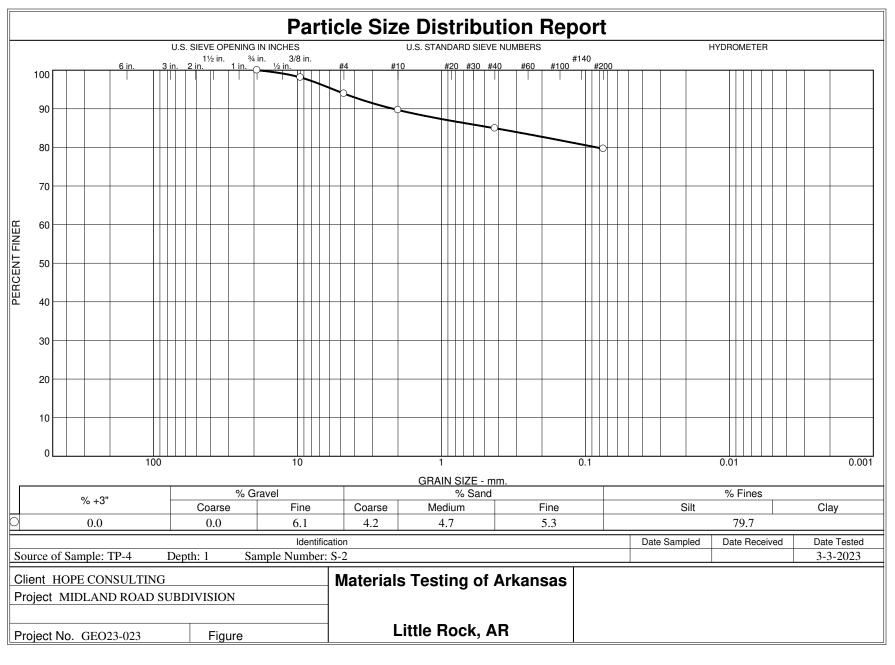


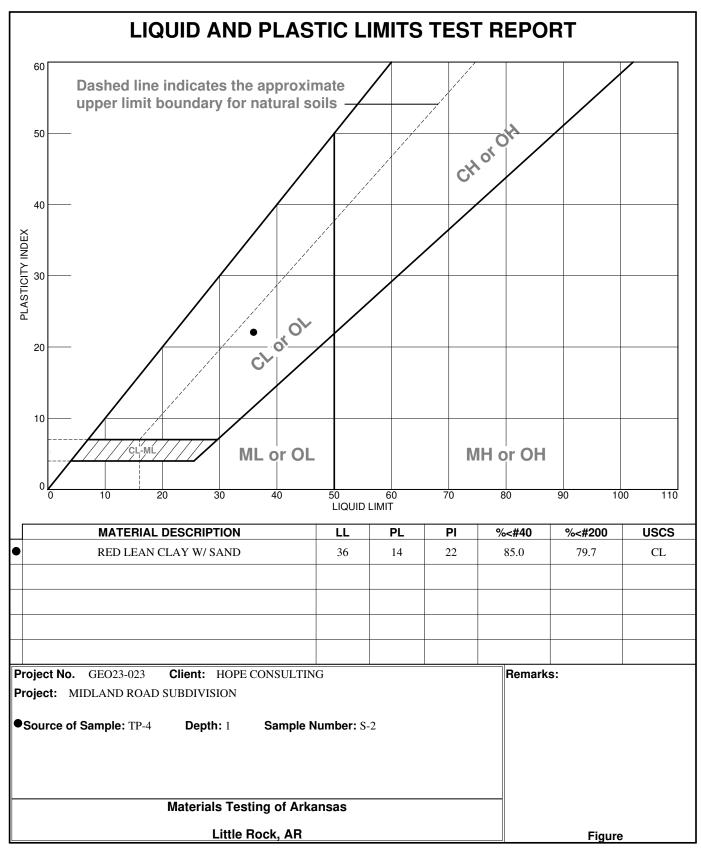


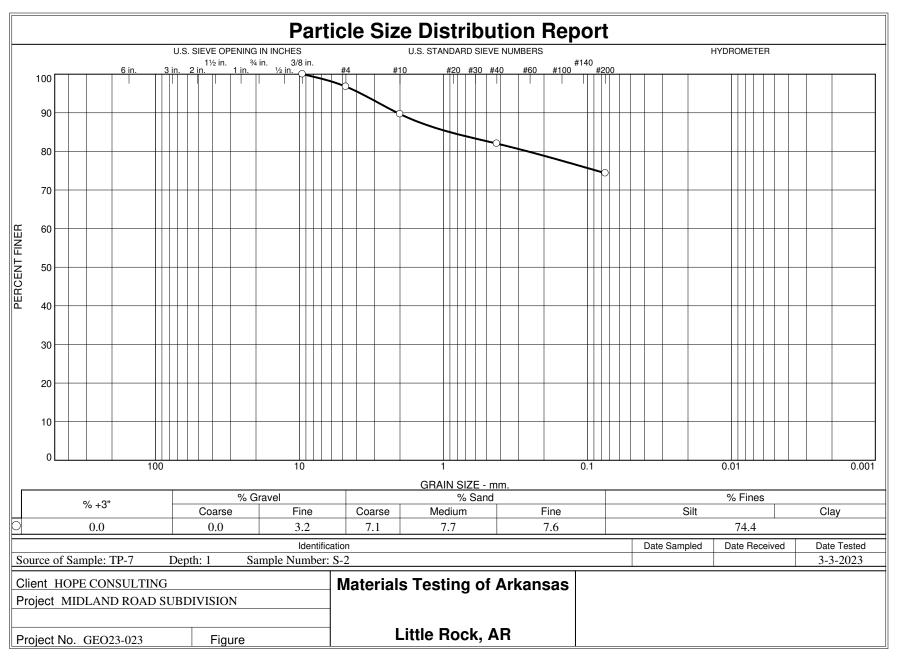


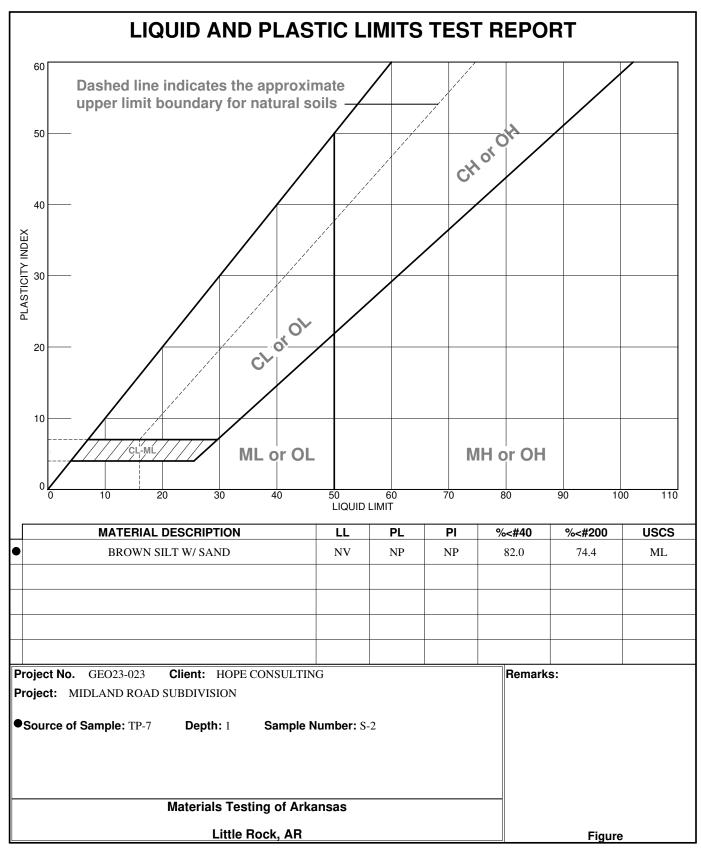


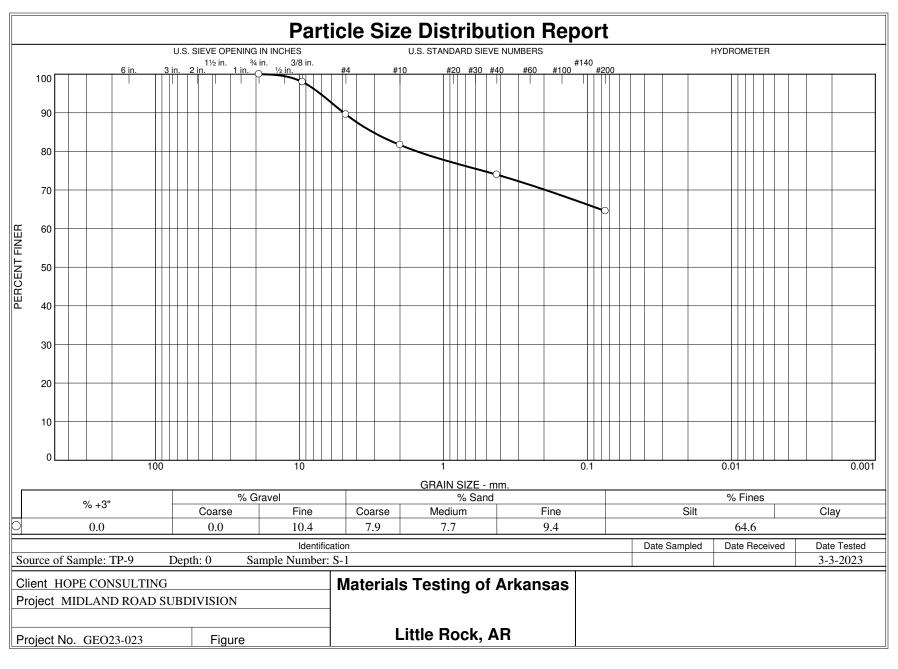


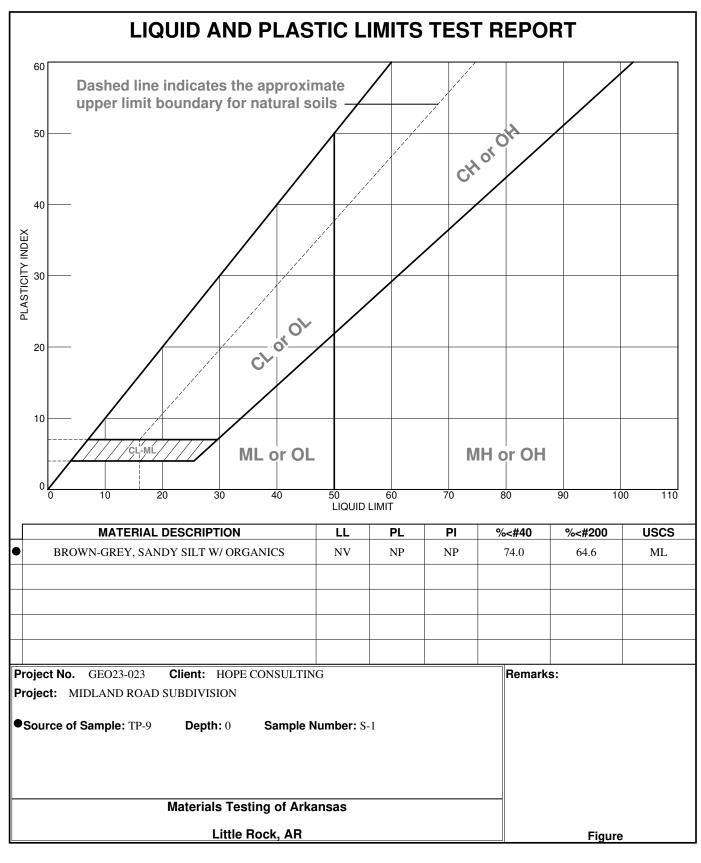


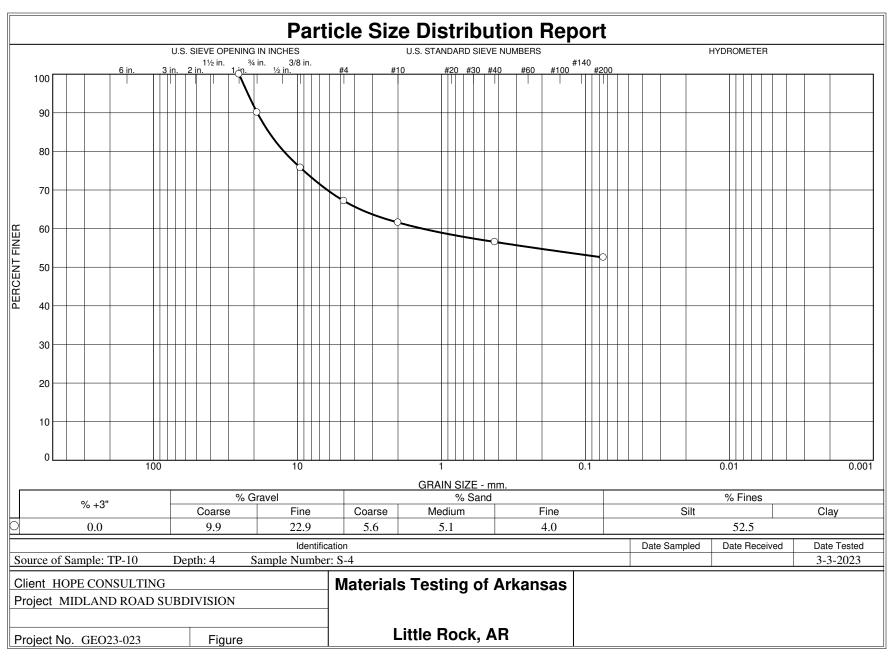


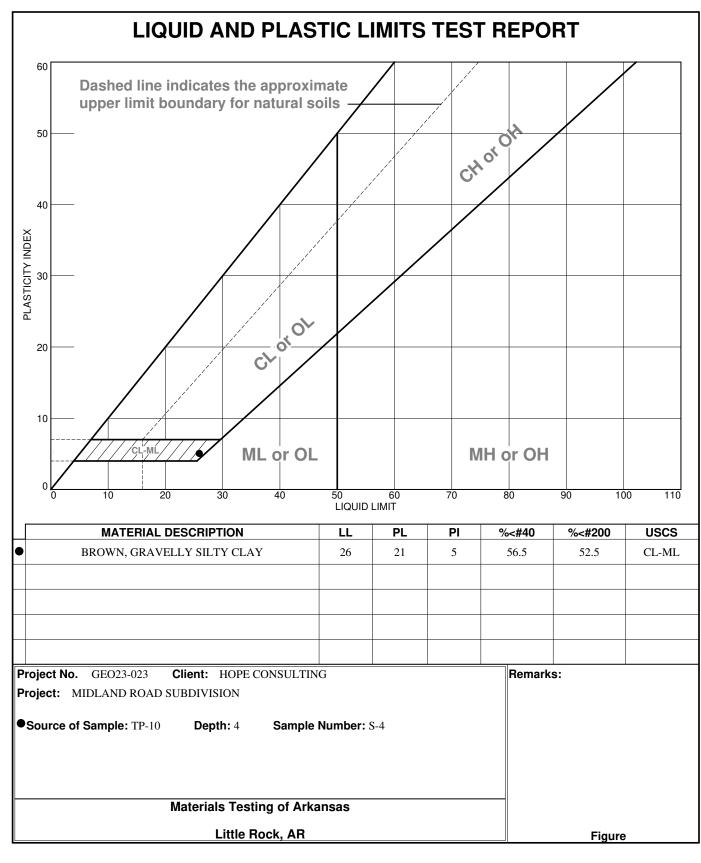


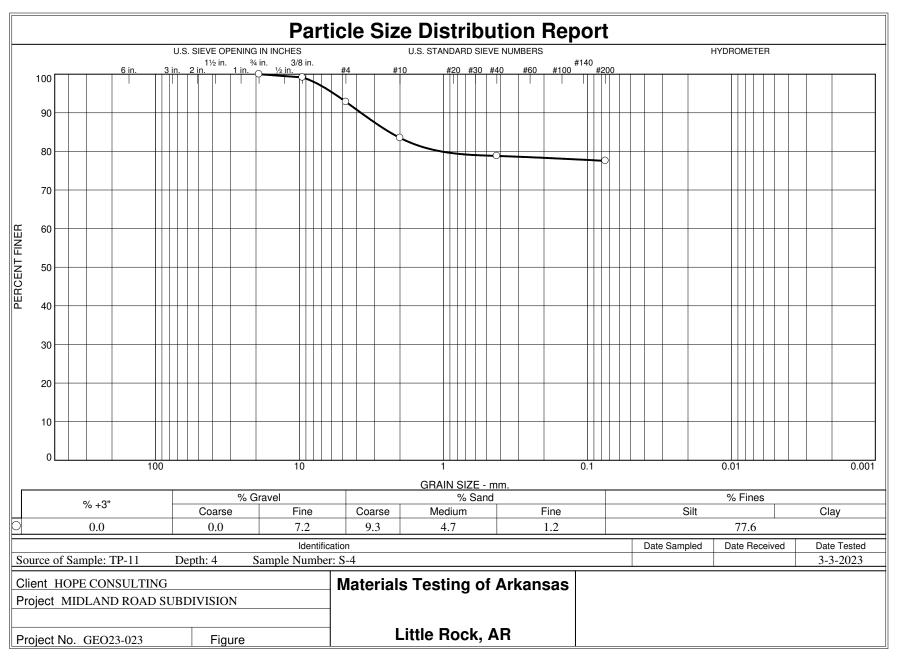


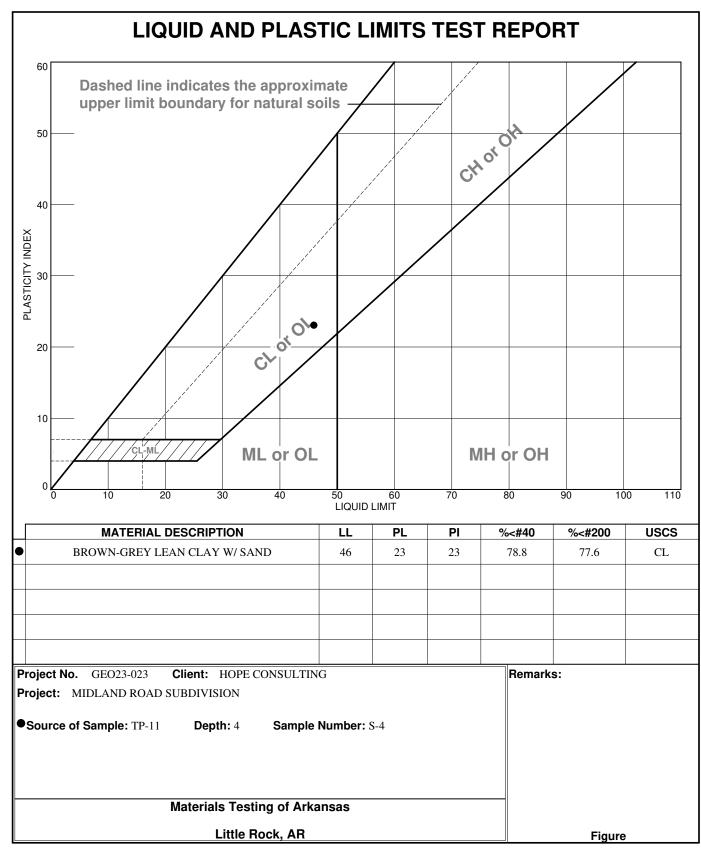


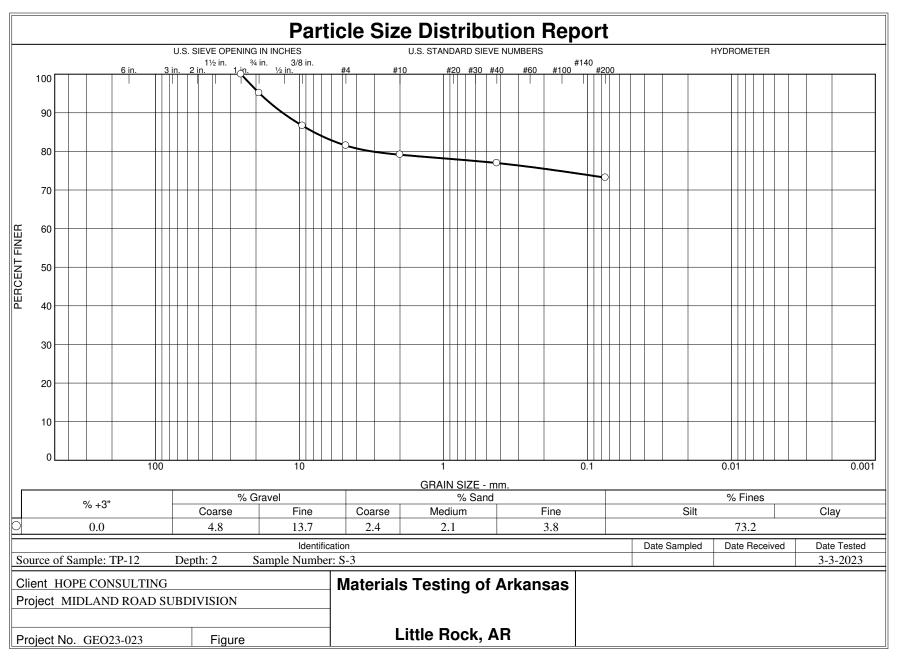




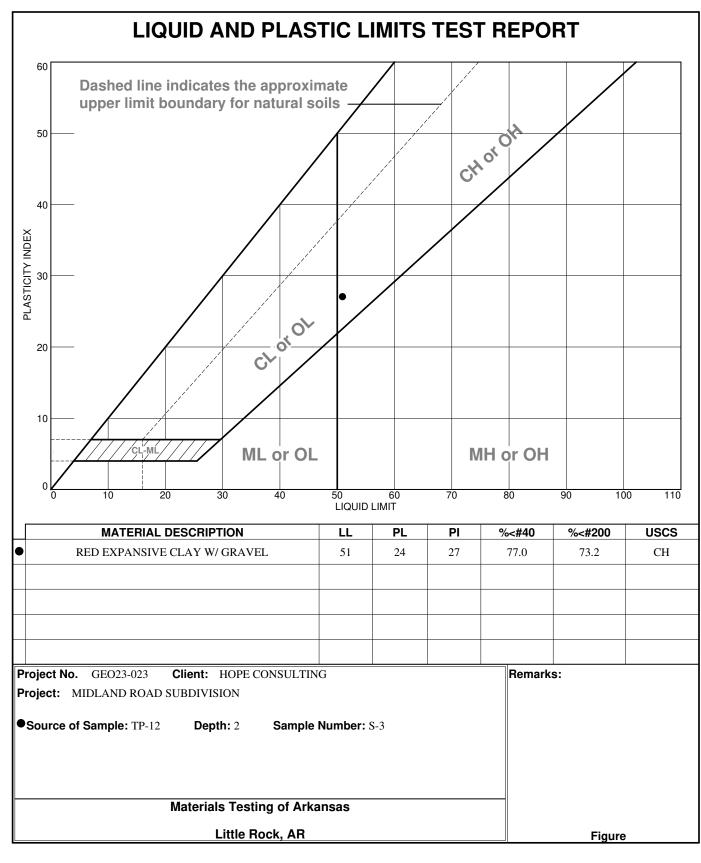








Tested By: S. PENNINGTON Checked By: F. MONDUN



Tested By: C. SHEARER Checked By: F. MONDUN

Report of Geotechnical Engineering Exploration Proposed Midland Road Subdivision Bryant, Arkansas March 10th, 2022



Appendix E: Seismic Design Criteria

1 The ATC Hazards by Location website will not be updated to support ASCE 7-22. Find out why.

ATC Hazards by Location

Search Information

34.65036519728192, -92.46651549255981 Coordinates:

Elevation:

2023-03-10T23:13:28.070Z Timestamp:

Hazard Type: Seismic IBC-2015 Reference Document:

Risk Category: Site Class: В

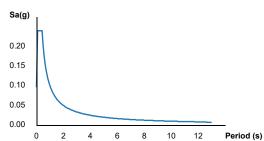


Man data ©2023 Imagery ©2023 , Maxar Technologies, Pulaski Area GIS, State of Arkansas, U.S. Geological Survey, USDA/FPAC/GEO

MCER Horizontal Response Spectrum

Sa(g) 0.30 0.20 0.10 0.00 8 10 12 Period (s)

Design Horizontal Response Spectrum



Basic Parameters

Name	Value	Description
S _S	0.359	MCE _R ground motion (period=0.2s)
S ₁	0.15	MCE _R ground motion (period=1.0s)
S _{MS}	0.359	Site-modified spectral acceleration value
S _{M1}	0.15	Site-modified spectral acceleration value
S _{DS}	0.239	Numeric seismic design value at 0.2s SA
S _{D1}	0.1	Numeric seismic design value at 1.0s SA

▼Additional Information

Name	Value	Description
SDC	В	Seismic design category
Fa	1	Site amplification factor at 0.2s
F _v	1	Site amplification factor at 1.0s
CRS	0.837	Coefficient of risk (0.2s)
CR ₁	0.813	Coefficient of risk (1.0s)
PGA	0.184	MCE _G peak ground acceleration
F _{PGA}	1	Site amplification factor at PGA
PGA _M	0.184	Site modified peak ground acceleration
T_L	12	Long-period transition period (s)
SsRT	0.359	Probabilistic risk-targeted ground motion (0.2s)
SsUH	0.429	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
SsD	1.5	Factored deterministic acceleration value (0.2s)
S1RT	0.15	Probabilistic risk-targeted ground motion (1.0s)
S1UH	0.184	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
S1D	0.6	Factored deterministic acceleration value (1.0s)

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Please note that the ATC Hazards by Location website will not be updated to support ASCE 7-22. Find out why.

Disclaimer

Hazard loads are provided by the U.S. Geological Survey Seismic Design Web Services.

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City of Bryant Stormwater Department

1019 SW 2nd St. Bryant, Arkansas 72022 Office (501) 943-0453; Fax (501) 943-0851

WARRANTY BOND PROCEDURES

For Stormwater Infrastructure Public & Private

These procedures are applicable to Stormwater Infrastructure that is to be dedicated to the public and maintained by the City of Bryant and for Private Stormwater Infrastructure that will be connected to overall City of Bryant Stormwater Infrastructure.

In accordance with Ordinance No. 2019-32 Article V., The City of Bryant Stormwater Department will require a Maintenance Warranty Bond as part of the process for approving Stormwater Infrastructure. The purpose of the bond is to cover the cost of correcting deficiencies not addressed by the developer during the warranty period and to insure no adverse effects will occur to the overall function of the City of Bryant Stormwater Infrastructure.

ORDINANCE 2019-32 ARTICLE V. STORMWATER INFRASTRUCTURE WARRANTY BOND.

- 1. Stormwater Infrastructure Warranty Bond. A one year maintenance bond against defects in workmanship shall be required by the Administrative Authority for any portion of the stormwater management facilities privately owned or stormwater management improvements dedicated to the city, said maintenance bond is to be provide by cashier's check, irrevocable letter of credit or acceptable surety authorized to do business in the State of Arkansas. All forms of maintenance bonds shall be subject to approval by the Administrative Authority. The value of the bond shall be an amount equal to 100% of the value of the privately owned stormwater management facilities or stormwater system improvements being privately owned or dedicated to the city. A cost list must be provide to prove and verify the amount of the maintenance bond. The cost list shall include cost of stormwater infrastructure construction and components (piping, weirs, spillway structures, junction boxes, trickle channels, inlets, grates, riprap and site stabilization).
- **Procedurals.** These procedures are applicable to Stormwater Infrastructure that is to be dedicated to the public and maintained by the City of Bryant and for Private Stormwater Infrastructure that will be connected to overall City of Bryant Stormwater Infrastructure.
 - In accordance with Ordinance No. 2019-32 Article V., City of Bryant Stormwater Department will require a Maintenance Warranty Bond as part of the process for approving Stormwater Infrastructure. The bond will be equal to 100% of the cost of construction of the Stormwater Infrastructure System at the time of completion of the Stormwater Infrastructure System. The purpose of the bond is to cover the cost of correcting deficiencies not addressed by the developer during the warranty period and to insure no adverse effects will occur to the overall function of the City of Bryant Stormwater Infrastructure.
- 3. Determining the Maintenance Warranty Bond Amount. During the final inspection process, the City of Bryant Stormwater Department will verify and approve the Warranty Bond estimate for all Stormwater Infrastructure within the proposed unit using:

- (a) The Warranty Bond cost list estimate shall be presented to the City of Bryant Stormwater Department by formal letter. The formal letter shall include project name, developer contact information and "Cost List for Construction of Stormwater Infrastructure Components" including but not limited to piping, weirs, spillway structures, junction boxes, trickle channels, riprap, inlets, grates, weirs and site stabilization;
- (b) The Bond amount will need to be re-evaluated if more than 18 months have passed from the time of the estimate review to the time of providing the bond to the City of Bryant Stormwater Department;
- 4. Submitting the bond to the city. After requesting a final inspection of the Stormwater Infrastructure and approval of completion by the City of Bryant Stormwater Department, the developer must provide the City of Bryant Stormwater Department with a bond equal to amount determined in Article V. Section 3. of this document. The Bond must be for a period of 12 months and be a financial guarantee in the form of a bond, letter of credit, or trust agreement executed by a surety company authorized to do business in the State of Arkansas. The Bond must be payable to the City of Bryant Public Works Department, conditioned that the developer will maintain the Stormwater Infrastructure in accordance with the Stormwater Management Manual Ordinance No. 2019-31 and the Stormwater Management Ordinance No. 2019-32.
- 5. Warranty period. After the Stormwater Infrastructure construction passes the final inspection—and the one year warranty bond is received, the one year maintenance warranty period will begin. The one-year warranty period will start on the date the Maintenance Warranty Bond is received and accepted. There shall be no separate warranty period start dates for Stormwater Infrastructure within a single unit.
- **6. Follow-up inspection.** The City of Bryant Stormwater Department will conduct a follow-up inspection within the tenth month of the warranty period but in no event any later than two months prior to the bond expiring. The City of Bryant Stormwater Department will issue a punch list of deficiencies that will be sent to the developer or contractor for the unit. If no deficiencies are found and camera video passes inspection, release of the bond will proceed as set out and as listed in Article V. Section 10 of this document.
- 7. Correcting Deficiencies and Camera Video. The developer must contact the City of Bryant Stormwater Department at least 24 hours before correcting any decencies or performing camera video. The developer shall also camera all stormwater infrastructure to ensure that there is no sediment laden infrastructure. Upon notification by the developer that all deficiencies have been corrected and camera video has been completed, the City of Bryant Stormwater Department will re-inspect to verify compliance with correction of deficiencies and reviewing the camera video to assure the stormwater infrastructure is not sediment laden or defective.
- 8. Calling in the bond. If the developer does not contact the City of Bryant Stormwater Department, deficiencies have not been corrected and the stormwater infrastructures has not been camera videoed by the end of the 11th month or one (1) month prior to the expiration of the Bond, the City of Bryant Stormwater Department will prepare an estimate and list of work to be done to bring the stormwater infrastructure into compliance. The City of Bryant Stormwater Department will contact the bonding agency to submit the cost estimates for correcting the deficiencies.
- 9. Requesting Acceptance. Once all deficiencies have been corrected, the City of Bryant Stormwater Department will prepare the paperwork for the Stormwater Infrastructure within the unit accepted for maintenance by the City of Bryant 'if dedicated', or paperwork will be prepared to release the bond if infrastructure is a private unit.

10. Bond Release. The Bond will be released once the City of Bryant has accepted the Stormwater Infrastructure for maintenance 'if dedicated', and an acceptance letter has been written by the City of Bryant Public Works. If all compliance has been met with a private Stormwater Infrastructure Unit(s) then the City of Bryant Stormwater Department shall contact the developer by formal letter and release the bond. No partial release of the Bond will be allowed at any time.

ATTENTION: DO NOT FILL OUT INFORMATION BELOW UNTIL YOU ARE PRESENT WITH A NOTARY PUBLIC. (THIS DOCUMENT MUST BE NOTARIZED)

By filling out the information below, signing and dating, you are hereby acknowledging that you have read, understand and agree to adhere to the Stormwater Infrastructure Warranty Bond Procedures and Processes listed in this document. You the applicant are hereby responsible for upholding, without limitation, the Stormwater Infrastructure Warranty Bond Procedures.

	Hilltop Landing
	Name of Project Site/Addition
Scott M. Hurley	
Applicant Name (Print)	(Signature)
New Con House H.C.	PO BOX 242146 Little
Nxt Gen Homes, LLC	19218 Summershade Dr., Bryant, AR 7202
Applicant Business Name	Applicant Mailing Address
State of	10-10-29
Signature of Notary Notary Seal Stamp Here:	My commission expires: My commission expires: PUBLIC #12373843 ONES 101/00/20 ARKENTING ARKEN



Stormwater Infrastructure Maintenance Plan Agreement

Scott m. Hurley AR Land & Realty 501.240.0049 Mobile scott@arlr.net

Hilltop Landing Subdivision - Hilltop Road and Miller Road

All maintenance basin maintenance plans shall contain or uphold, without limitation, the following provisions:

- (1) A description of the property on which the stormwater management facility is located and all easements from the site to the facility;
- (2) Size and configuration of the facility;
- (3) A statement that properties which will be served by the facility are granted rights to construct, use, reconstruct, repair and maintain access to the facility;
- (4) A statement that each lot served by the facility is responsible for repairs and maintenance of the facility and any unpaid ad valorem taxes, public assessments for improvements, and unsafe building and public nuisance abatement liens charged against the facility, including all interest charges together with attorney fees, costs, and expenses of collection. If an association is delegated these responsibilities, then membership into the association shall be mandatory for each parcel served by the facility and any successive buyer. The association shall have the power to levy assessments for these obligations, and all that unpaid assessments levied by the association shall become a lien on the individual parcel:
- (5) All stormwater facilities must be designed to minimize the need for maintenance, to provide easy vehicle and personal access for maintenance purpose, and be structurally sound. It shall be the responsibility of the applicant to obtain any necessary easements or other property interested to allow access to the facilities for inspection or maintenance;
- (6) Detention/retention areas, earthen berms, intake structures, piping, discharge structures, trickle channels, spillways, pipe flares, weirs and fencing shall be regularly inspected, maintained and repaired to ensure their proper operation and to prevent the creation of any hazards or nuisances;
- (7) Major deposits of sediment shall be removed from the detention/retention area on an annual basis or after any extreme storm event. Excavated materials shall be properly disposed of off-site. Every five years the detention area(s) shall be

surveyed to confirm that the original as-constructed contours have been maintained;

- (8) Every three months piping and outlet structures shall be inspected and cleared of any accumulated debris;
- (9) Erosion in detention/retention areas shall be promptly repaired and stabilized with appropriate Best Management Practices (BMP's);
- (10) Detention/retention area shall be mowed during the growing season May through September to maintain the turf height of 6-inches or less. Any brush or trees that may grow within the detention areas bottom, slopes or banks shall be removed;
- (11) Litter and foreign materials shall be removed from the detention area(s) weekly. Large or noxious pieces of litter shall be removed immediately. The area(s) shall be inspected visually after rainfall events in excess of 1" in 24 hours;
- (12) Inspections of overall detention/retention area(s) and detention/retention components shall occur monthly with their conditions noted on an inspection form. If any remedial action is required, it should be noted and corrected;
- (13) All inspection forms must be retained on-site, including the "As-Built" drawings and photographs of the improvements in their original condition;
- (14) Items 1-13 shall be listed on the Stormwater Infrastructure Maintenance Plan Agreement.

(15) Inspection forms for Stormwater Infrastructure components are required. (An example of inspection forms are attached.)

Scott M. Hurley

data

HILLTOP LANDING SUBDIVISION

HILLTOP ROAD & MILLER ROAD, BRYANT, AR 72022

DRAINAGE REPORT

FOR
City of Bryant, Saline County, AR

April 2023

Owner & Developer: NXT GEN HOMES LLC.

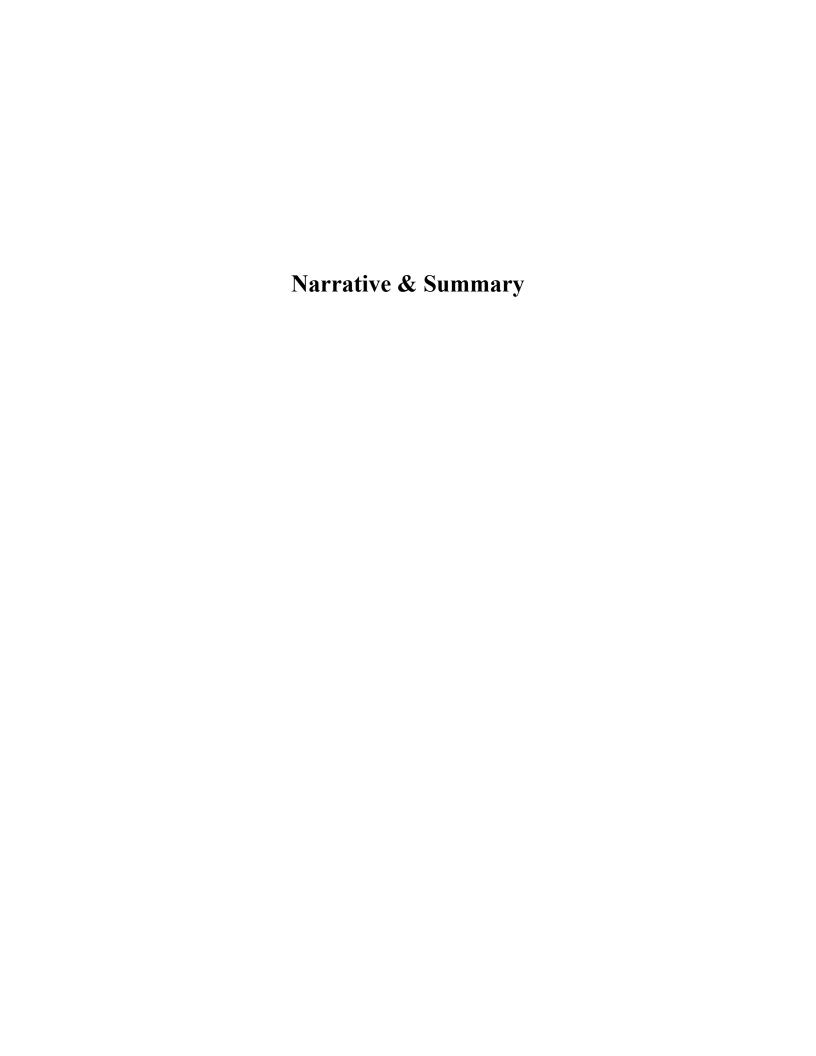
By:



TABLE OF CONTENTS

ITEM DESCRIPTION

- 1. Narrative & Summary
- 2. Hydrograph Report



PROJECT TITLE

Hilltop Landing Subdivision

PROJECT PROPERTY OWNER

Nxt Gen Homes LLC.

PROJECT LOCATION

Hilltop Road and Miller Road, Bryant, AR

PROJECT DESCRIPTION

The proposed sub divisional development is on Hilltop Road and Miller Road, Bryant, AR. Total development site area is 54.0 acres.

DRAINAGE ANALYSIS

On Site Drainage- Rational method was used to determine the existing and proposed flows from proposed site. There will be four detention ponds to detain water from this development. Detailed drainage calculations considering the future expected development has been conducted to determine the required detention ponds and culvert dimensions. Summary of the calculations are below:

Detention Pond-1

- Pond is situated on the north east side of the property.
- Pre-development area 34.50 acres.
- Post-development area 36.28 acres.
- Pre-development runoff coefficient 0.47.
- Post-development runoff cumulative coefficient 0.65
- Pond has a bottom area of 18,760 sft with bottom elevation of 437.50'.
- One 42" HDPE with 1.08% slope are proposed for outflow pipes.

Peak flows for Pre and post development phase of onsite area have been tabulated below-

Period of	Pre-development	Post-dev. Without	Post-dev. With detention
time		detention	
	Peak Flow (cfs)	Peak Flow (cfs)	Peak Flow (cfs)
2-Year	65.96	90.29	32.54
5-Year	72.96	99.87	35.52
10-Year	85.63	117.23	39.88
25-Year	98.15	134.37	45.74
50-Year	111.88	153.15	57.52
100-Year	118.85	162.70	63.55

Detention Pond-2

- Pond is situated on the South-west side of the property.
- Pre-development area 7.2 acres.
- Post-development area 4.11 acres.
- Pre-development runoff coefficient 0.40.
- Post-development runoff cumulative coefficient 0.40
- Pond has a bottom area of 18,270 sft with bottom elevation of 511.00'.
- One 12" HDPE with 9% slope are proposed for outflow pipes.

Peak flows for Pre and post development phase of onsite area have been tabulated below-

Period of	Pre-development	Post-dev. Without	Post-dev. With detention
time		detention	
	Peak Flow (cfs)	Peak Flow (cfs)	Peak Flow (cfs)
2-Year	12.77	6.629	0.387
5-Year	14.20	7.333	0.462
10-Year	16.42	8.607	0.613
25-Year	18.77	9.865	0.773
50-Year	21.35	11.24	0.959
100-Year	22.64	11.95	1.059

Detention Pond-3

- Pond is situated on the south east side of the property.
- Pre-development area 2.25 acres.
- Post-development area 3.21 acres.
- Pre-development runoff coefficient 0.47.
- Post-development runoff cumulative coefficient 0.65
- Pond has a bottom area of 5,512 sft with bottom elevation of 495.00'.
- One 18" HDPE with 12.74% slope are proposed for outflow pipes.

Peak flows for Pre and post development phase of onsite area have been tabulated below-

Period of	Pre-development	Post-dev. Without	Post-dev. With detention
time		detention	
	Peak Flow (cfs)	Peak Flow (cfs)	Peak Flow (cfs)
2-Year	5.039	9.942	2.797
5-Year	5.635	11.12	3.269
10-Year	6.430	12.69	3.910
25-Year	7.337	14.48	4.642
50-Year	8.326	16.43	5.424
100-Year	8.825	17.40	5.810

Detention Pond-4

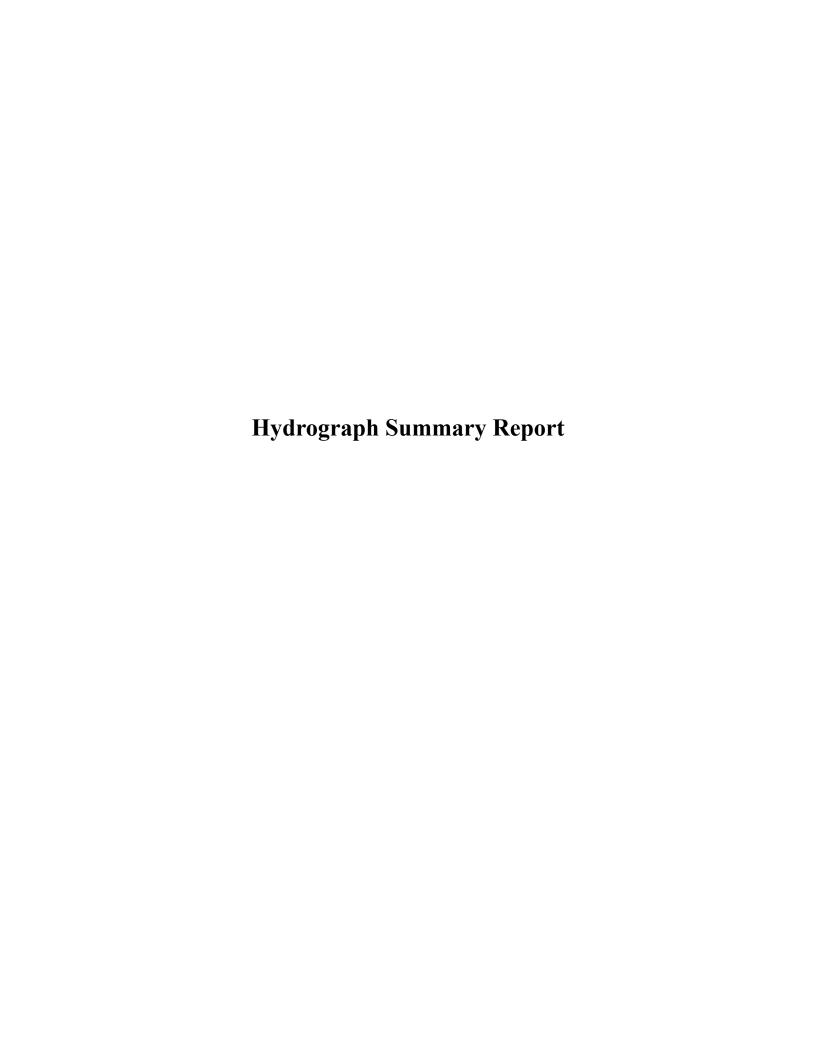
- Pond is situated on the West side of the property.
- Pre-development area 14.40 acres.
- Post-development area 13.97 acres.
- Pre-development runoff coefficient 0.47.
- Post-development runoff cumulative coefficient 0.65
- Pond has a bottom area of 7,680 sft with bottom elevation of 511.00'.
- One 36" HDPE with 9.34% slope is proposed for outflow pipes.

Peak flows for Pre and post development phase of onsite area have been tabulated below-

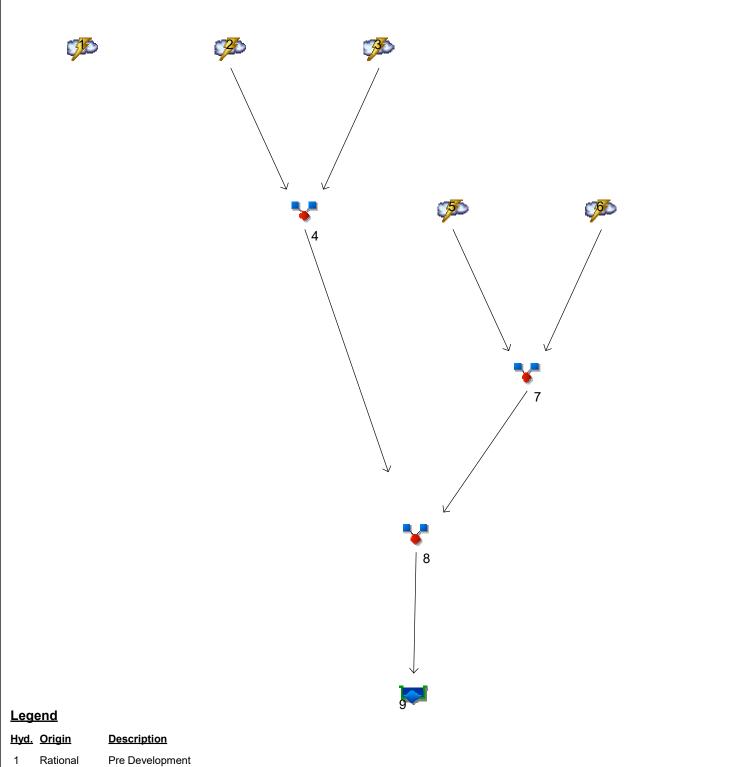
Period of	Pre-development	Post-dev. Without	Post-dev. With detention
time		detention	
	Peak Flow (cfs)	Peak Flow (cfs)	Peak Flow (cfs)
2-Year	31.09	43.27	18.44
5-Year	34.66	48.39	21.11
10-Year	39.81	55.21	24.59
25-Year	45.47	63.00	28.39
50-Year	51.67	71.49	32.15
100-Year	54.77	75.78	33.77

CONCLUSION

From the onsite drainage calculation, it is seen that there is decrease in flow for all storm events due to the proposed detention ponds.



Watershed Model Schematic



<u>Hy</u>	<u>d.</u> <u>Origin</u>	<u>Description</u>
1	Rational	Pre Development
2	Rational	Post development-1a
3	Rational	post development-1b
4	Combine	combine-1
5	Rational	post development-2a
6	Rational	post development-2b
7	Combine	combine-2
8	Combine	<no description=""></no>
9	Reservoir	detention pond 1

Project: drainage one pond_04-18-2023.gpw

Wednesday, 04 / 19 / 2023

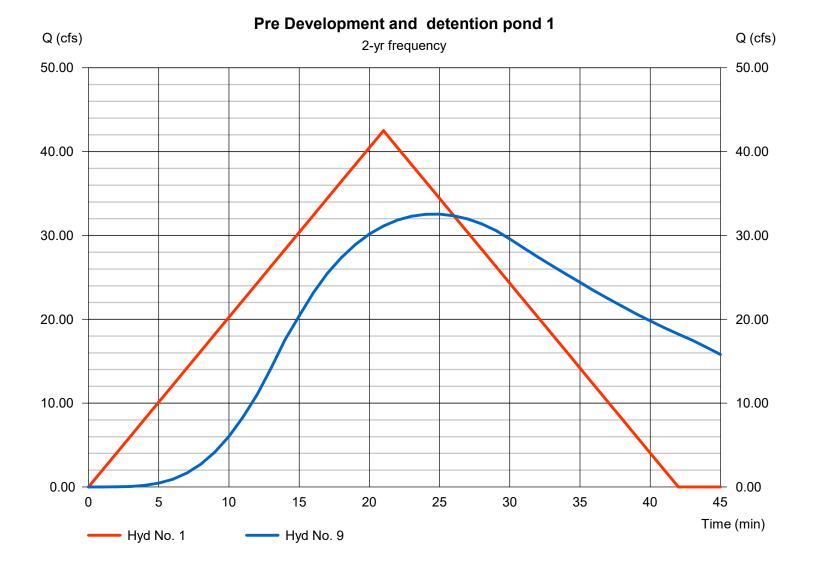
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 9

Hyd. No. 1

Pre Development detention pond 1

Hydrograph type = Rational Peak discharge = 42.51 cfs Time to peak = 21 min Hyd. Volume = 53,568 cuft Hydrograph type = Reservoir
Peak discharge = 32.54 cfs
Time to peak = 25 min
Hyd. Volume = 81,205 cuft



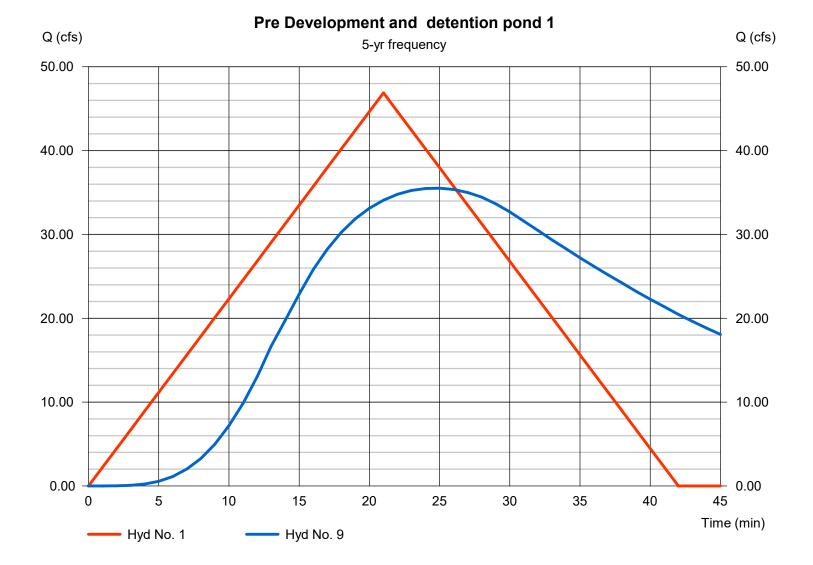
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 9

Hyd. No. 1

Pre Development detention pond 1

Hydrograph type = Rational Peak discharge = 46.89 cfs Time to peak = 21 min Hyd. Volume = 59,077 cuft Hydrograph type = Reservoir
Peak discharge = 35.52 cfs
Time to peak = 25 min
Hyd. Volume = 89,828 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1

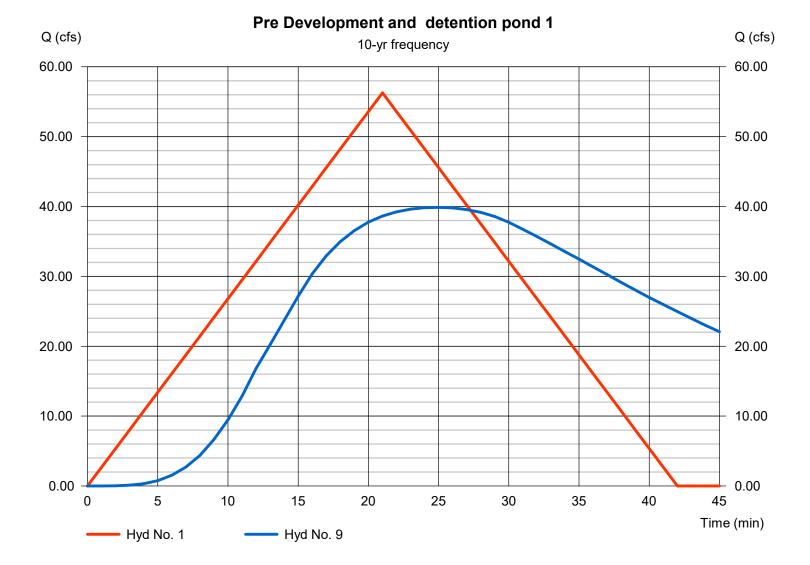
Pre Development

Hydrograph type = Rational
Peak discharge = 56.26 cfs
Time to peak = 21 min
Hyd. Volume = 70,892 cuft

Hyd. No. 9

detention pond 1

Hydrograph type = Reservoir
Peak discharge = 39.88 cfs
Time to peak = 25 min
Hyd. Volume = 105,448 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 9

Hyd. No. 1

Pre Development detention pond 1

Hydrograph type = Rational Peak discharge = 64.78 cfs Time to peak = 21 min Hyd. Volume = 81,626 cuft Hydrograph type = Reservoir
Peak discharge = 45.74 cfs
Time to peak = 25 min
Hyd. Volume = 120,872 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1

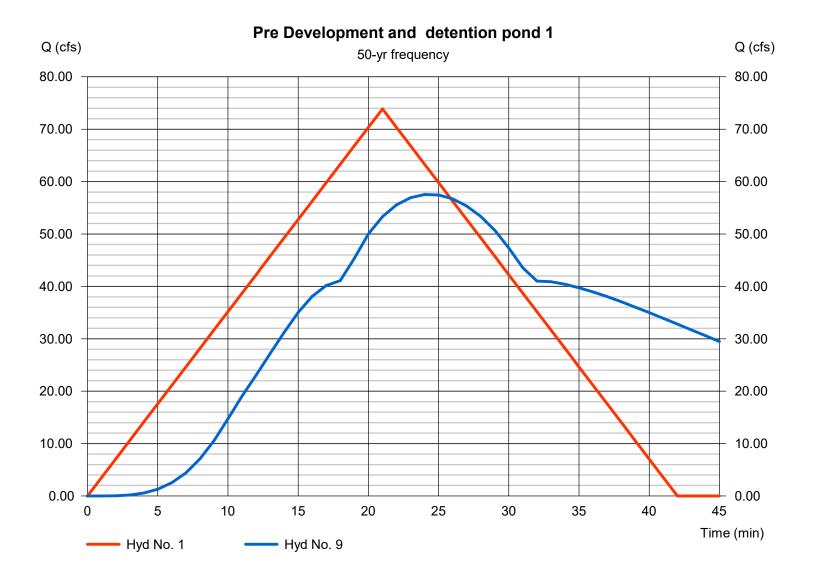
Pre Development

Hydrograph type = Rational
Peak discharge = 73.87 cfs
Time to peak = 21 min
Hyd. Volume = 93,080 cuft

Hyd. No. 9

detention pond 1

Hydrograph type = Reservoir
Peak discharge = 57.52 cfs
Time to peak = 24 min
Hyd. Volume = 137,777 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1

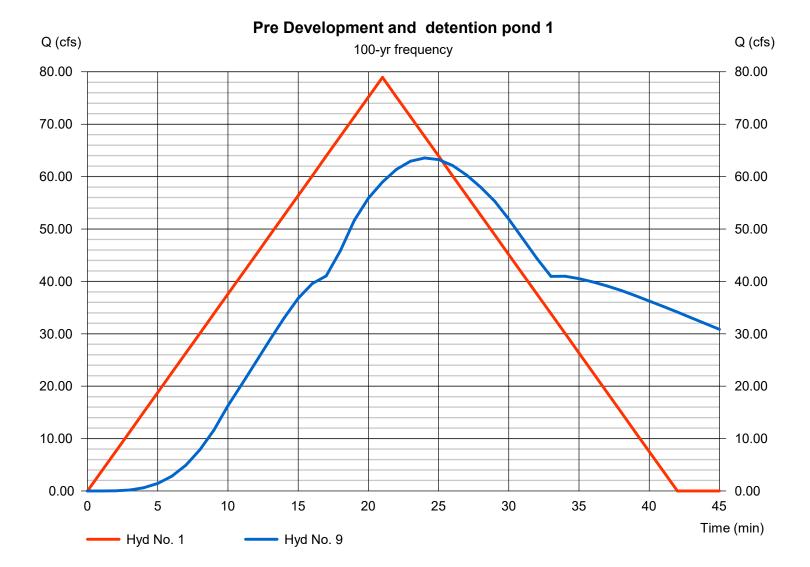
Pre Development

Hydrograph type = Rational
Peak discharge = 78.94 cfs
Time to peak = 21 min
Hyd. Volume = 99,461 cuft

Hyd. No. 9

detention pond 1

Hydrograph type = Reservoir
Peak discharge = 63.55 cfs
Time to peak = 24 min
Hyd. Volume = 146,374 cuft



Pond No. 2 - Detention Pond 1

Pond Data

Trapezoid -Bottom L x W = 268.0 x 70.0 ft, Side slope = 3.00:1, Bottom elev. = 437.50 ft, Depth = 5.00 ft

Stage / Storage Table

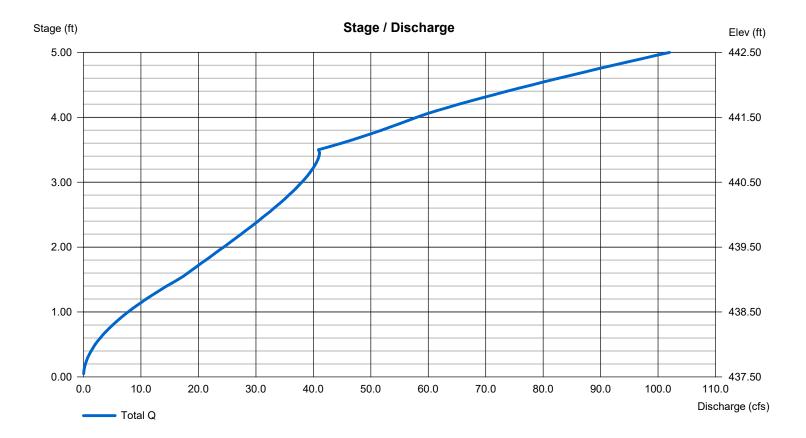
Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	437.50	18,760	0	0
0.50	438.00	19,783	9,635	9,635
1.00	438.50	20,824	10,151	19,786
1.50	439.00	21,883	10,676	30,462
2.00	439.50	22,960	11,210	41,672
2.50	440.00	24,055	11,753	53,425
3.00	440.50	25,168	12,305	65,730
3.50	441.00	26,299	12,866	78,596
4.00	441.50	27,448	13,436	92,032
4.50	442.00	28,615	14,015	106,047
5.00	442.50	29,800	14,603	120,650

Culvert / Orifice Structures

Weir Structures

	[A]	[B]	[C]	[PrfRsr]		[A]	[B]	[C]	[D]
Rise (in)	= 42.00	Inactive	Inactive	0.00	Crest Len (ft)	= 6.00	Inactive	Inactive	0.00
Span (in)	= 42.00	0.00	0.00	0.00	Crest El. (ft)	= 441.50	0.00	0.00	0.00
No. Barrels	= 1	0	0	0	Weir Coeff.	= 3.33	3.33	3.33	3.33
Invert El. (ft)	= 437.50	0.00	0.00	0.00	Weir Type	= Rect			
Length (ft)	= 46.00	0.00	0.00	0.00	Multi-Stage	= No	No	No	No
Slope (%)	= 1.08	0.00	0.00	n/a					
N-Value	= .013	.013	.013	n/a					
Orifice Coeff.	= 0.60	0.60	0.60	0.60	Exfil.(in/hr)	= 0.000 (by	Wet area)		
Multi-Stage	= n/a	No	No	No	TW Elev. (ft)	= 0.00			

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



Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	42.51	1	21	53,568				Pre Development
2	Rational	60.00	1	15	53,998				Post development-1a
3	Rational	5.960	1	15	5,364				post development-1b
4	Combine	65.96	1	15	59,362	2, 3			combine-1
5	Rational	18.19	1	15	16,367				post development-2a
6	Rational	6.149	1	15	5,534				post development-2b
7	Combine	24.33	1	15	21,901	5, 6			combine-2
8	Combine	90.29	1	15	81,262	4, 7			<no description=""></no>
9	Reservoir	32.54	1	25	81,205	8	440.05	54,740	detention pond 1
dra	inage one po	 nd_04-18	-2023.gr) W	Return F	Period: 2 Ye	 ear	Wednesda	

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	46.89	1	21	59,077				Pre Development
2	Rational	66.36	1	15	59,728				Post development-1a
3	Rational	6.592	1	15	5,933				post development-1b
4	Combine	72.96	1	15	65,661	2, 3			combine-1
5	Rational	20.11	1	15	18,103				post development-2a
6	Rational	6.801	1	15	6,121				post development-2b
7	Combine	26.92	1	15	24,225	5, 6			combine-2
8	Combine	99.87	1	15	89,885	4, 7			<no description=""></no>
dra	inage one po	nd_04-18	-2023.gp	w	Return F	Return Period: 5 Year			y, 04 / 19 / 2023

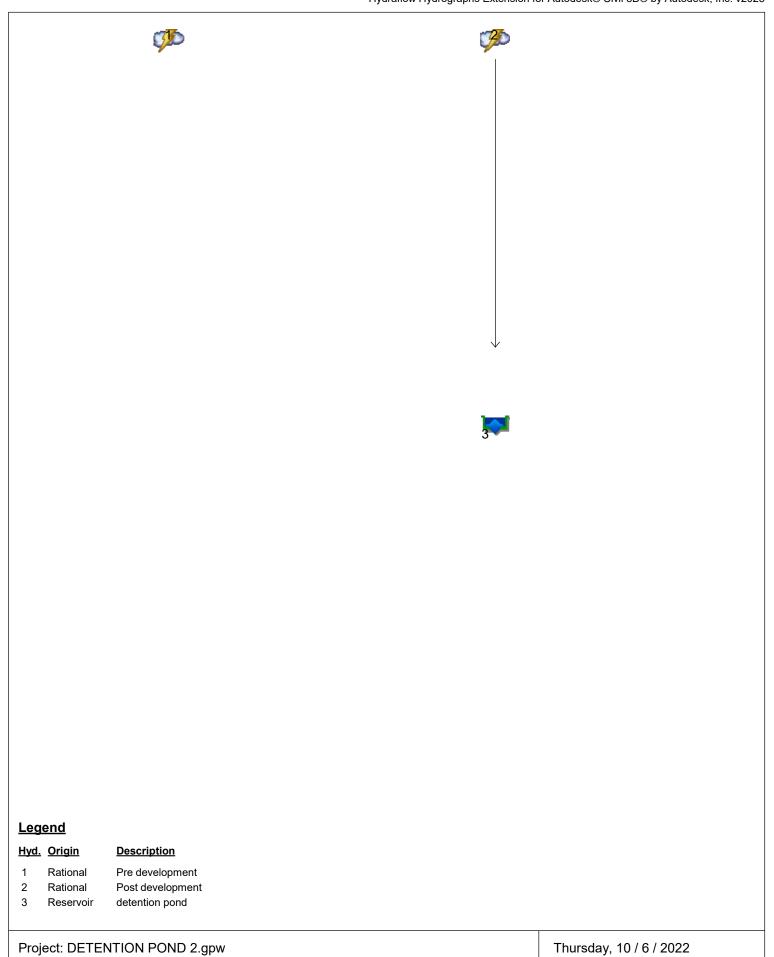
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	56.26	1	21	70,892				Pre Development
2	Rational	77.90	1	15	70,107				Post development-1a
3	Rational	7.738	1	15	6,964				post development-1b
4	Combine	85.63	1	15	77,071	2, 3			combine-1
5	Rational	23.61	1	15	21,249				post development-2a
6	Rational	7.983	1	15	7,185				post development-2b
7	Combine	31.59	1	15	28,434	5, 6			combine-2
8	Combine	117.23	1	15	105,505	4, 7			<no description=""></no>
dra	inage one po	nd_04-18	-2023.gr	ow .	Return F	Period: 10 \	⁄ear	Wednesday	y, 04 / 19 / 2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	64.78	1	21	81,626				Pre Development
2	Rational	89.29	1	15	80,357				Post development-1a
3	Rational	8.869	1	15	7,982				post development-1b
4	Combine	98.15	1	15	88,339	2, 3			combine-1
5	Rational	27.06	1	15	24,356				post development-2a
6	Rational	9.151	1	15	8,235				post development-2b
7	Combine	36.21	1	15	32,591	5, 6			combine-2
8	Combine	134.37	1	15	120,930	4, 7			<no description=""></no>
dra	inage one po	nd_04-18	-2023.gp	ow.	Return F	Period: 25 Y	⁄ear	Wednesda	y, 04 / 19 / 2023

lyd. Io.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	73.87	1	21	93,080				Pre Development
2	Rational	101.77	1	15	91,590				Post development-1a
3	Rational	10.11	1	15	9,098				post development-1b
4	Combine	111.88	1	15	100,688	2, 3			combine-1
5	Rational	30.85	1	15	27,761				post development-2a
6	Rational	10.43	1	15	9,387				post development-2b
7	Combine	41.27	1	15	37,147	5, 6			combine-2
3	Combine	153.15	1	15	137,835	4, 7			<no description=""></no>
drainage one pond_04-18-2023.gpw					Return F	Period: 50 Year Wednesday, 04 / 19 / 2023			

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	78.94	1	21	99,461				Pre Development
2	Rational	108.11	1	15	97,303				Post development-1a
3	Rational	10.74	1	15	9,665				post development-1b
4	Combine	118.85	1	15	106,968	2, 3			combine-1
5	Rational	32.77	1	15	29,492				post development-2a
6	Rational	11.08	1	15	9,972				post development-2b
7	Combine	43.85	1	15	39,464	5, 6			combine-2
8	Combine	162.70	1	15	146,433	4, 7			<no description=""></no>
9	Reservoir	63.55	1	24	146,374	8	441.66	96,403	detention pond 1
dra	inage one po	nd 04-18	-2023 an	NW.	Return F	Period: 100	Year	Wednesda	y, 04 / 19 / 2023

Watershed Model Schematic



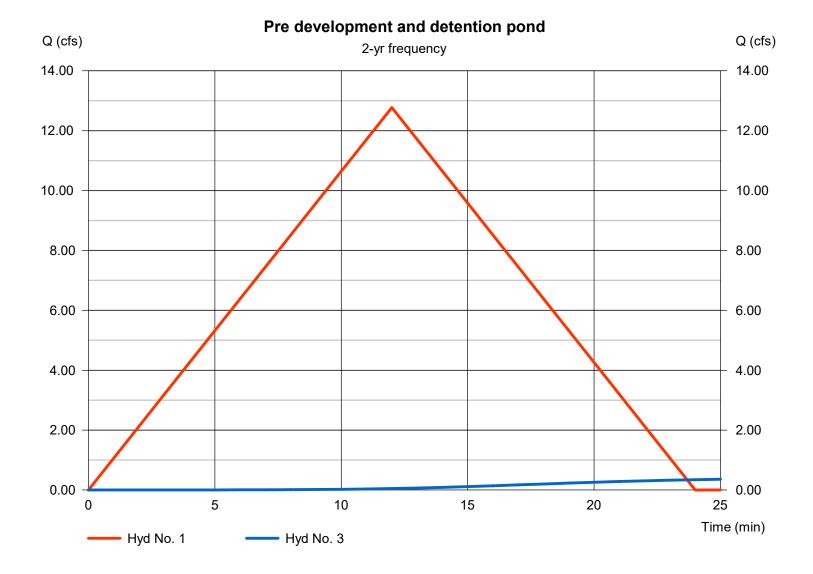
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

Pre development detention pond

Hydrograph type = Rational
Peak discharge = 12.77 cfs
Time to peak = 12 min
Hyd. Volume = 9,197 cuft

Hydrograph type = Reservoir
Peak discharge = 0.39 cfs
Time to peak = 29 min
Hyd. Volume = 5,573 cuft

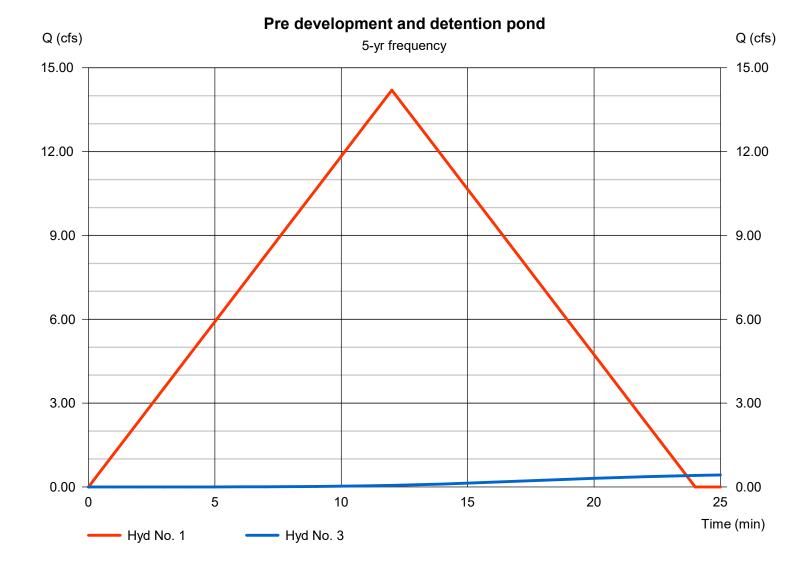


Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

Pre development detention pond

Hydrograph type = Rational Hydrograph type = Reservoir Peak discharge Peak discharge = 14.20 cfs= 0.46 cfsTime to peak = 12 min Time to peak = 29 min Hyd. Volume = 10,226 cuft Hyd. Volume = 6,203 cuft



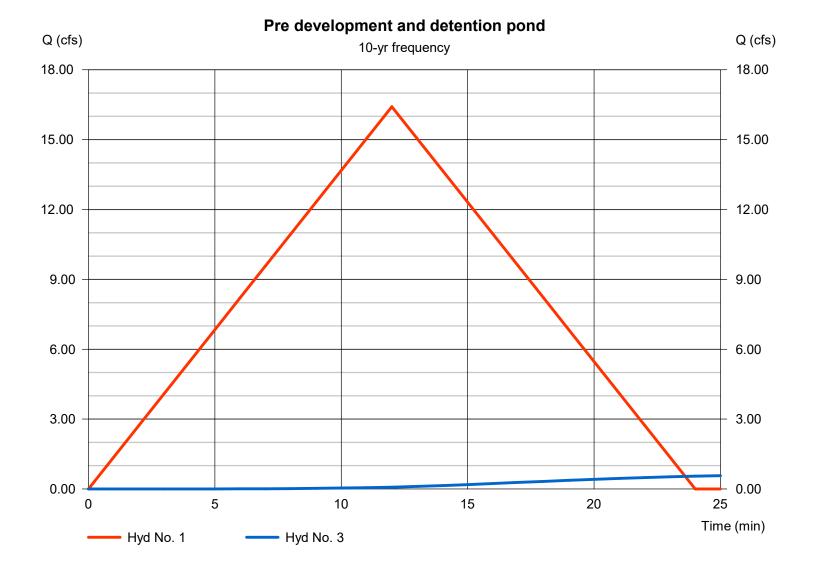
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

Pre development detention pond

Hydrograph type = Rational
Peak discharge = 16.42 cfs
Time to peak = 12 min
Hyd. Volume = 11,819 cuft

Hydrograph type = Reservoir
Peak discharge = 0.61 cfs
Time to peak = 29 min
Hyd. Volume = 7,345 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1

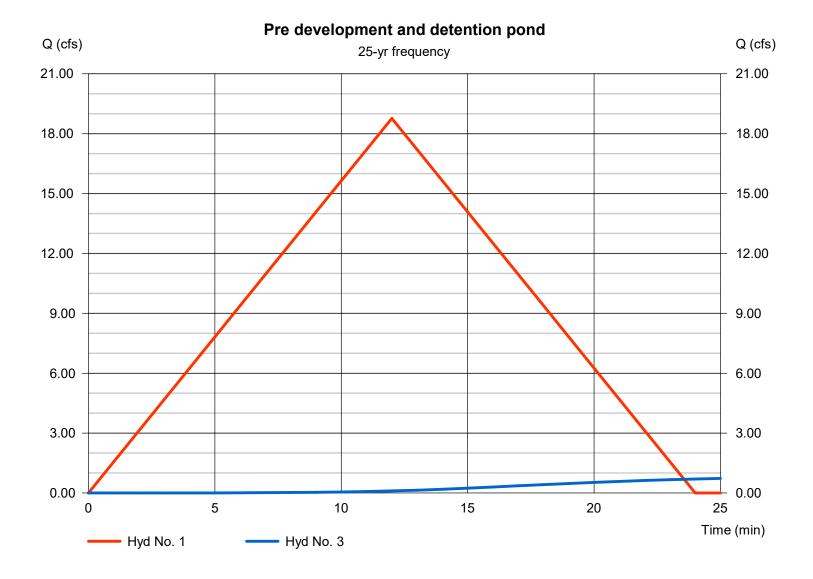
Pre development

Hydrograph type = Rational
Peak discharge = 18.77 cfs
Time to peak = 12 min
Hyd. Volume = 13,512 cuft

Hyd. No. 3

detention pond

Hydrograph type = Reservoir
Peak discharge = 0.77 cfs
Time to peak = 29 min
Hyd. Volume = 8,475 cuft

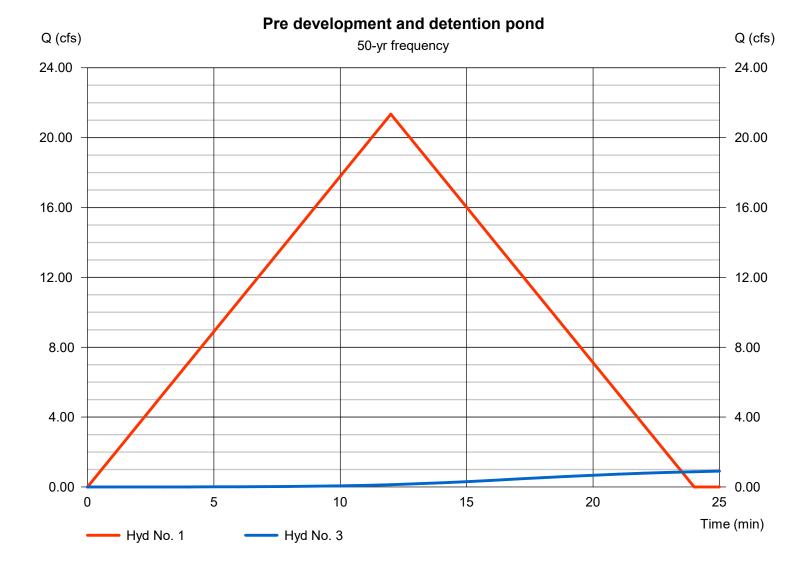


Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

Pre development detention pond

Hydrograph type = Rational Hydrograph type = Reservoir Peak discharge Peak discharge = 21.35 cfs= 0.96 cfsTime to peak = 12 min Time to peak = 29 min Hyd. Volume = 15,370 cuft Hyd. Volume = 9,713 cuft

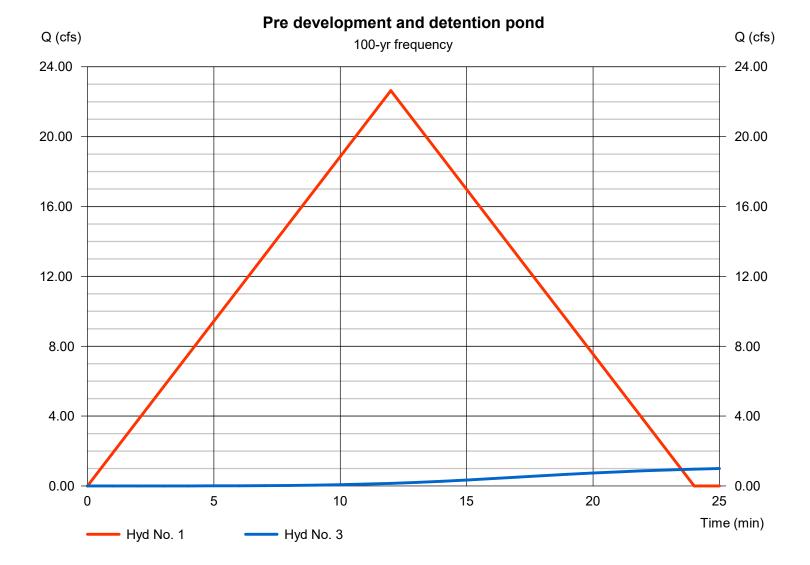


Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

Pre development detention pond

Hydrograph type = Rational Hydrograph type = Reservoir Peak discharge Peak discharge = 22.64 cfs= 1.06 cfsTime to peak = 12 min Time to peak = 29 min Hyd. Volume = 16,299 cuft Hyd. Volume = 10,343 cuft



Thursday, 10 / 6 / 2022

Pond No. 1 - Detention Pond 2

Pond Data

Trapezoid -Bottom L x W = 145.0 x 126.0 ft, Side slope = 3.00:1, Bottom elev. = 511.00 ft, Depth = 2.00 ft

Stage / Storage Table

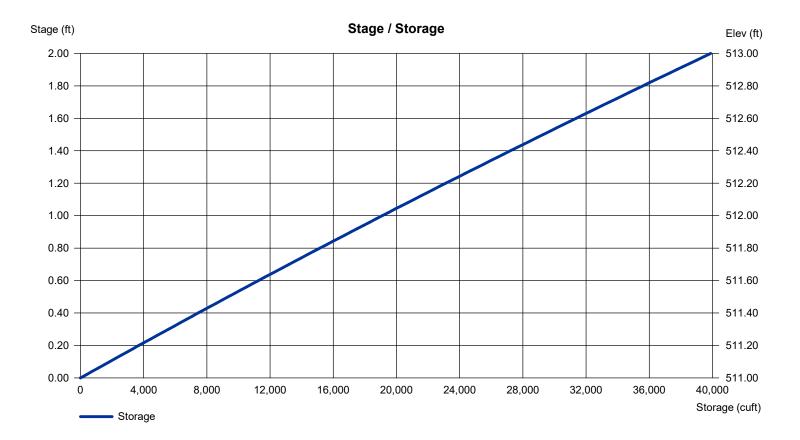
Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	511.00	18,270	0	0
0.20	511.20	18,597	3,687	3,687
0.40	511.40	18,926	3,752	7,439
0.60	511.60	19,259	3,818	11,257
0.80	511.80	19,594	3,885	15,142
1.00	512.00	19,932	3,953	19,095
1.20	512.20	20,273	4,020	23,115
1.40	512.40	20,617	4,089	27,204
1.60	512.60	20,964	4,158	31,362
1.80	512.80	21,313	4,228	35,590
2.00	513.00	21,666	4,298	39,888

Culvert / Orifice Structures

Weir Structures

	[A]	[B]	[C]	[PrfRsr]		[A]	[B]	[C]	[D]
Rise (in)	= 12.00	Inactive	Inactive	0.00	Crest Len (ft)	= 6.00	0.00	0.00	0.00
Span (in)	= 12.00	0.00	0.00	0.00	Crest El. (ft)	= 512.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0	Weir Coeff.	= 3.33	3.33	3.33	3.33
Invert El. (ft)	= 511.00	0.00	0.00	0.00	Weir Type	= Rect			
Length (ft)	= 64.00	0.00	0.00	0.00	Multi-Stage	= No	No	No	No
Slope (%)	= 9.00	0.00	0.00	n/a					
N-Value	= .013	.013	.013	n/a					
Orifice Coeff.	= 0.60	0.60	0.60	0.60	Exfil.(in/hr)	= 0.000 (by	Contour)		
Multi-Stage	= n/a	No	No	No	TW Elev. (ft)	= 0.00			

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



Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	12.77	1	12	9,197				Pre development
2	Rational	6.629	1	15	5,966				Post development
DETENTION POND 2.gpw				Return F	□ Period: 2 Ye	ear	Thursday, 1	 0 / 6 / 2022	

lo.	lydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1 F	Rational	14.20	1	12	10,226				Pre development
2 F	Rational	7.333	1	15	6,599				Post development
2 F						2	511.34	6,272	

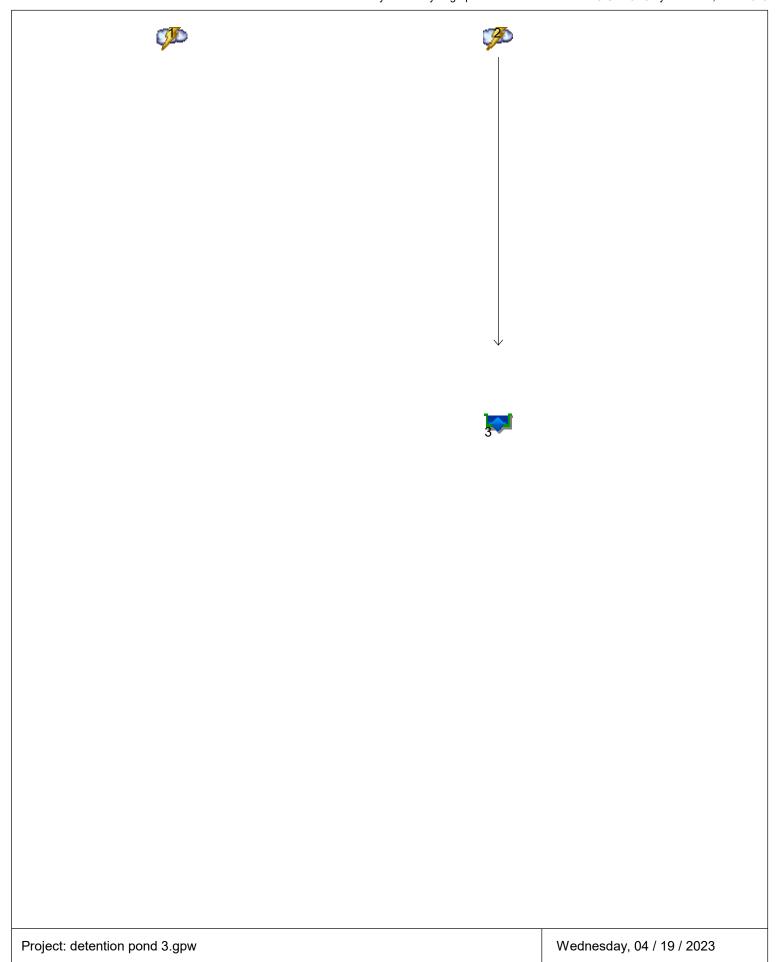
lyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	16.42	1	12	11,819				Pre development
2	Rational	8.607	1	15	7,746				Post development
3	Reservoir	0.613	1	29	7,345	2	511.39	7,310	detention pond
DETENTION POND 2.gpw					Return I	Period: 10 \	/ear	Thursday,	10 / 6 / 2022

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	18.77	1	12	13,512				Pre development
2	Rational	9.865	1	15	8,879				Post development
2 3	Rational	9.865	1 1	15 29	8,879 8,475	2	511.45	8,325	Post development detention pond

				Hydrallow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2						
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description	
1	Rational	21.35	1	12	15,370				Pre development	
2	Rational	11.24	1	15	10,120				Post development	
3	Reservoir	0.959	1	29	9,713	2	511.50	9,427	detention pond	
DE	DETENTION POND 2.gpw			Return P	eriod: 50 Y	'ear	Thursday, 10 / 6 / 2022			

lyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	22.64	1	12	16,299				Pre development
2	Rational	11.95	1	15	10,751				Post development
3	Reservoir	1.059	1	29	10,343	2	511.53	9,983	detention pond
DETENTION POND 2.gpw					Return f	Period: 100	Year	Thursday,	10 / 6 / 2022

Watershed Model Schematic



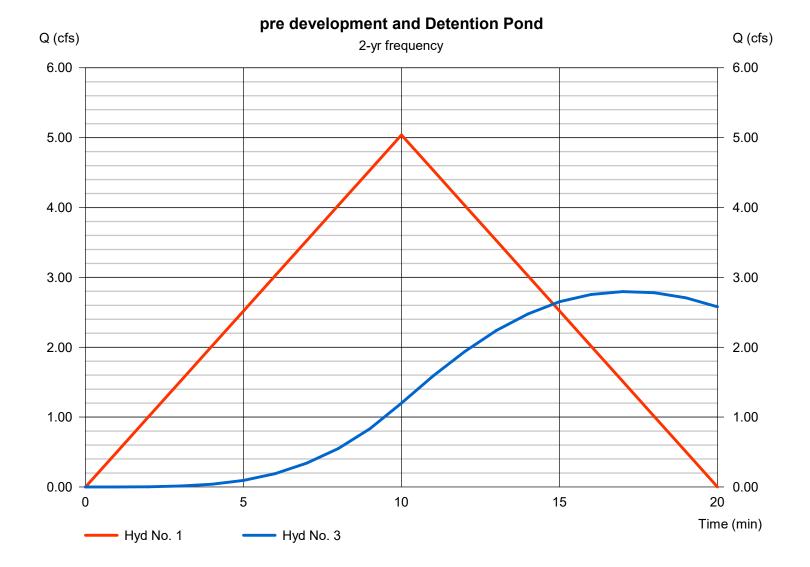
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

pre development Detention Pond

Hydrograph type = Rational
Peak discharge = 5.039 cfs
Time to peak = 10 min
Hyd. Volume = 3,023 cuft

Hydrograph type = Reservoir
Peak discharge = 2.80 cfs
Time to peak = 17 min
Hyd. Volume = 5,925 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

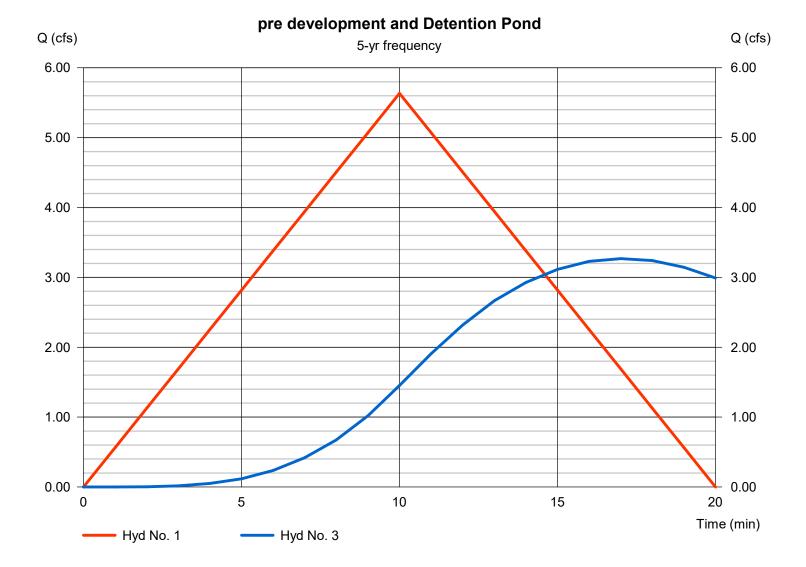
Hyd. No. 1

pre development

Hydrograph type = Rational Peak discharge = 5.635 cfs Time to peak = 10 min Hyd. Volume = 3,381 cuft Hyd. No. 3

Detention Pond

Hydrograph type = Reservoir
Peak discharge = 3.27 cfs
Time to peak = 17 min
Hyd. Volume = 6,630 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

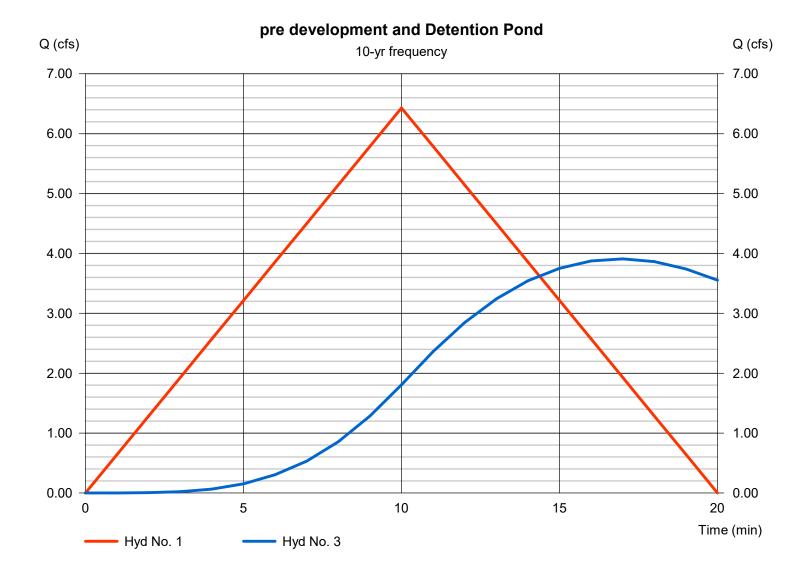
Hyd. No. 1

pre development

Hydrograph type = Rational Peak discharge = 6.430 cfs Time to peak = 10 min Hyd. Volume = 3,858 cuft Hyd. No. 3

Detention Pond

Hydrograph type = Reservoir
Peak discharge = 3.91 cfs
Time to peak = 17 min
Hyd. Volume = 7,571 cuft

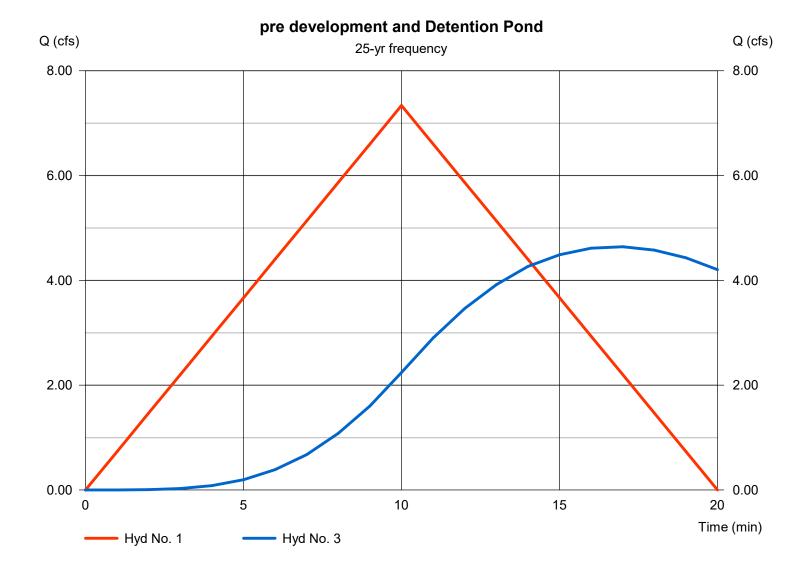


Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

pre development Detention Pond

Hydrograph type = Rational Peak discharge = 7.337 cfs Time to peak = 10 min Hyd. Volume = 4,402 cuft Hydrograph type = Reservoir
Peak discharge = 4.64 cfs
Time to peak = 17 min
Hyd. Volume = 8,645 cuft

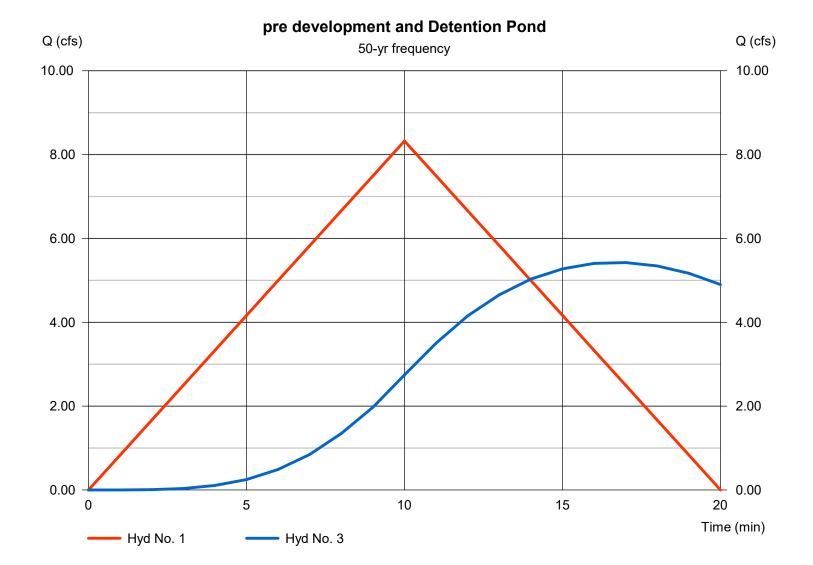


Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

pre development Detention Pond

Hydrograph type = Rational Peak discharge = 8.326 cfs Time to peak = 10 min Hyd. Volume = 4,995 cuft Hydrograph type = Reservoir
Peak discharge = 5.42 cfs
Time to peak = 17 min
Hyd. Volume = 9,816 cuft

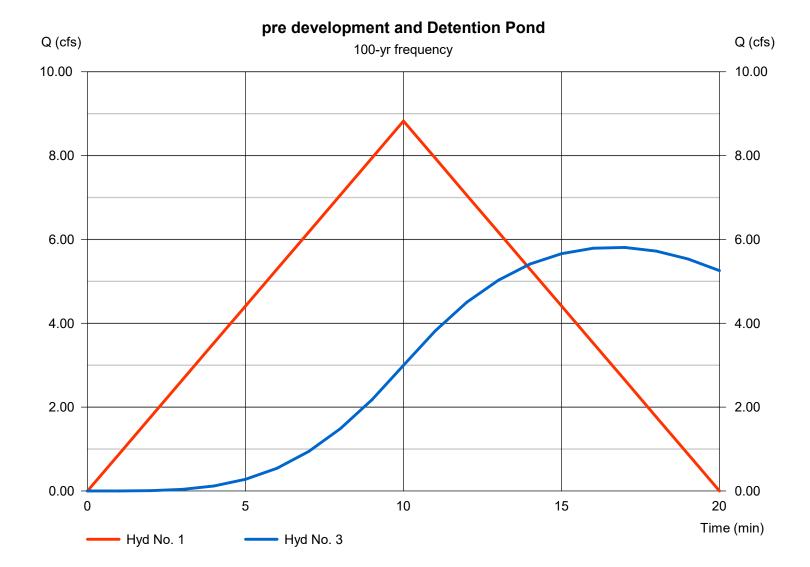


Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

pre development Detention Pond

Hydrograph type = Rational Hydrograph type = Reservoir Peak discharge Peak discharge = 8.825 cfs= 5.81 cfsTime to peak = 10 min Time to peak = 17 min Hyd. Volume = 5,295 cuft Hyd. Volume = 10,406 cuft



Pond No. 1 - Detention Pond -3

Pond Data

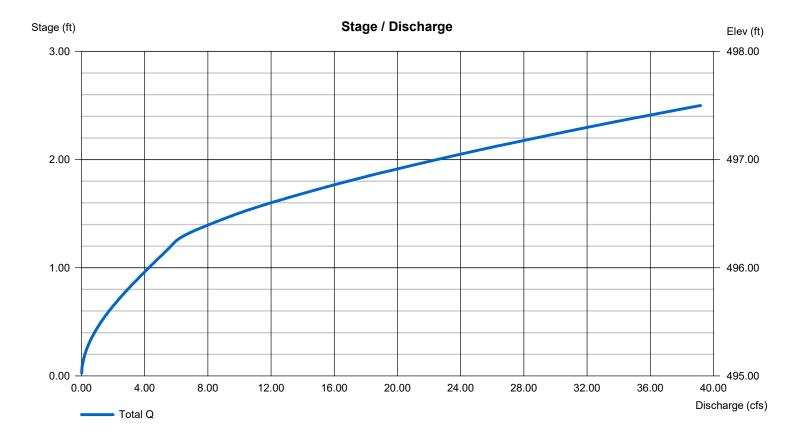
Trapezoid -Bottom L x W = 106.0 x 52.0 ft, Side slope = 3.00:1, Bottom elev. = 495.00 ft, Depth = 2.50 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	495.00	5,512	0	0
0.25	495.25	5,751	1,408	1,408
0.50	495.50	5,995	1,468	2,876
0.75	495.75	6,243	1,530	4,406
1.00	496.00	6,496	1,592	5,998
1.25	496.25	6,753	1,656	7,654
1.50	496.50	7,015	1,721	9,375
1.75	496.75	7,281	1,787	11,162
2.00	497.00	7,552	1,854	13,016
2.25	497.25	7,827	1,922	14,938
2.50	497.50	8,107	1,992	16,930

Culvert / Orifice Structures Weir Structures [B] [PrfRsr] [A] [C] [D] [A] [C] [B] = 18.00 0.00 0.00 0.00 = 6.00 0.00 0.00 0.00 Rise (in) Crest Len (ft) Span (in) = 18.000.00 0.00 0.00 Crest El. (ft) = 496.25 0.00 0.00 0.00 No. Barrels = 1 0 0 0 Weir Coeff. = 3.333.33 3.33 3.33 0.00 0.00 Weir Type Invert El. (ft) = 495.00 0.00 = Rect = 29.00 0.00 0.00 0.00 Multi-Stage = No No No No Length (ft) = 12.74 0.00 0.00 Slope (%) n/a = .013 .013 N-Value .013 n/a Orifice Coeff. = 0.600.60 0.60 0.60 Exfil.(in/hr) = 0.000 (by Wet area) = n/a No No No = 0.00Multi-Stage TW Elev. (ft)

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



Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	5.039	1	10	3,023				pre development
2	Rational	9.942	1	10	5,965				post development
3	Reservoir	2.797	1	17	5,925	2	495.78	4,598	Detention Pond
det	ention pond 3	3.gpw			Return I	Period: 2 Ye	ear	Wednesda	ıy, 04 / 19 / 2023

					Hydranow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v						
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description		
1	Rational	5.635	1	10	3,381				pre development		
2	Rational	11.12	1	10	6,671				post development		
3	Reservoir	3.269	1	17	6,630	2	495.85	5,064	Detention Pond		
detention pond 3.gpw			Return F	eriod: 5 Ye	 ear	Wednesday	/, 04 / 19 / 2023				

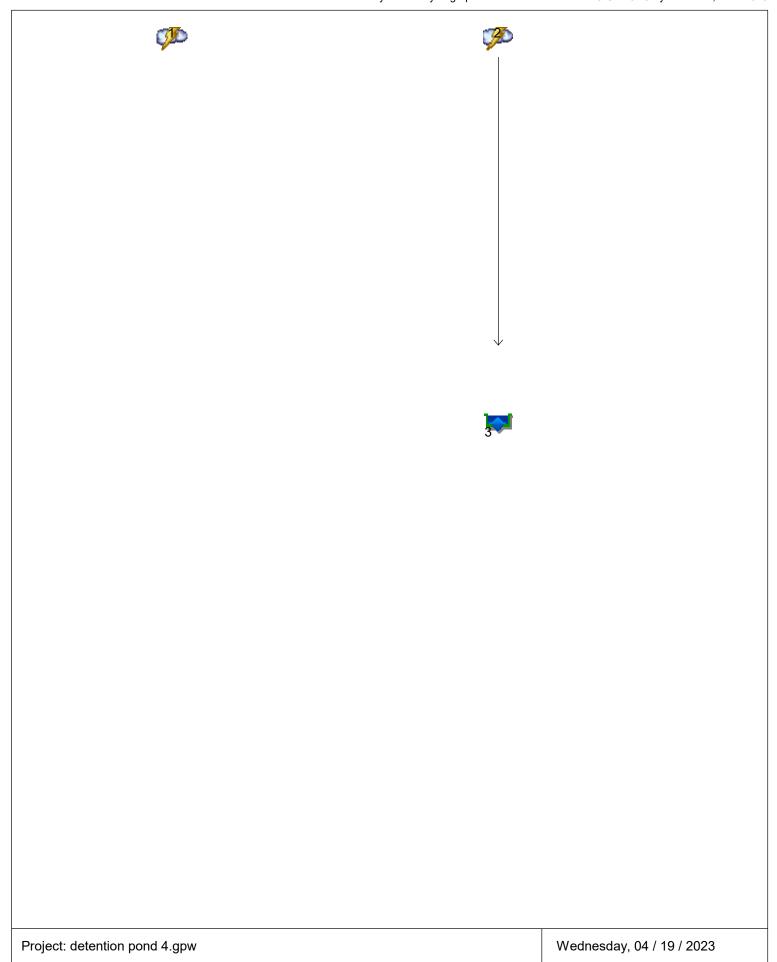
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	6.430	1	10	3,858				pre development
2	Rational	12.69	1	10	7,612				post development
det	detention pond 3.gpw				Return F	Period: 10 \	 ⁄ear	Wednesda	y, 04 / 19 / 2023

lyd. lo.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	7.337	1	10	4,402				pre development
2	Rational	14.48	1	10	8,686				post development
3	Reservoir	4.642	1	17	8,645	2	496.05	6,359	Detention Pond
det	ention pond 3	3.gpw			Return	Period: 25 `	Year	Wednesda	y, 04 / 19 / 2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	8.326	1	10	4,995				pre development
2	Rational	16.43	1	10	9,856				post development
3	Reservoir	5.424	1	17	9,836	2	496.17	7,100	Detention Pond
det	ention pond 3	3.gpw			Return f	Period: 50	∸ ∕ear	Wednesda	y, 04 / 19 / 2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	8.825	1	10	5,295				pre development
2	Rational	17.41	1	10	10,447				post development
det	ention pond 3	3.gpw	1		Return F	Period: 100	Year	Wednesda	y, 04 / 19 / 2023

Watershed Model Schematic



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1

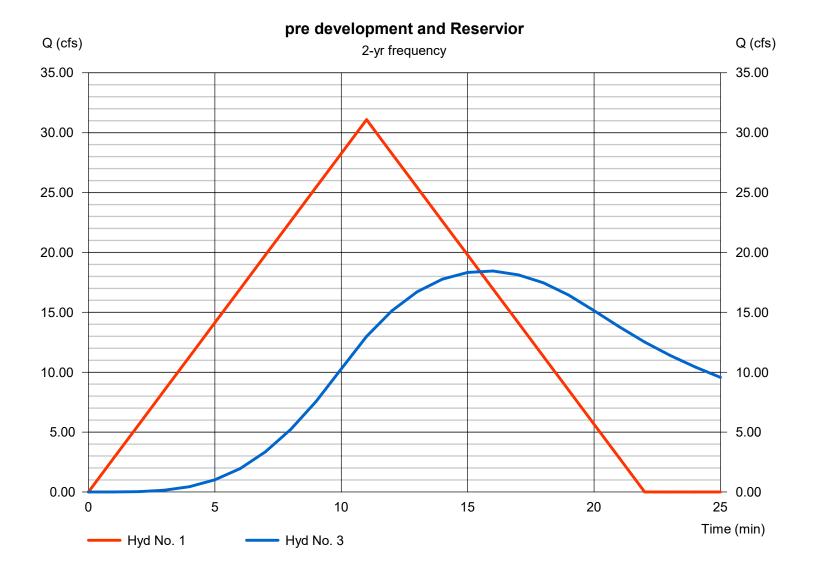
pre development

Hydrograph type = Rational
Peak discharge = 31.09 cfs
Time to peak = 11 min
Hyd. Volume = 20,519 cuft

Hyd. No. 3

Reservior

Hydrograph type = Reservoir
Peak discharge = 18.44 cfs
Time to peak = 16 min
Hyd. Volume = 25,931 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1

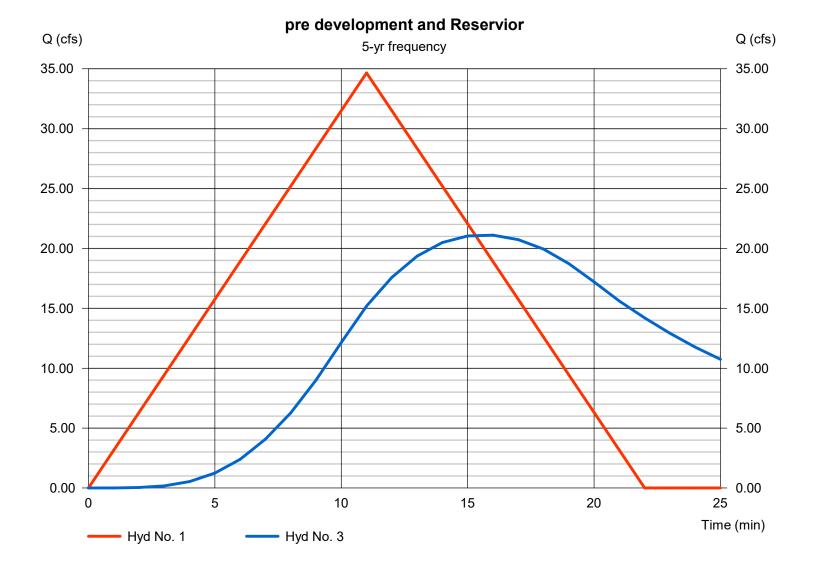
pre development

Hydrograph type = Rational
Peak discharge = 34.66 cfs
Time to peak = 11 min
Hyd. Volume = 22,873 cuft

Hyd. No. 3

Reservior

Hydrograph type = Reservoir
Peak discharge = 21.11 cfs
Time to peak = 16 min
Hyd. Volume = 29,001 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

= Reservoir

= 24.59 cfs

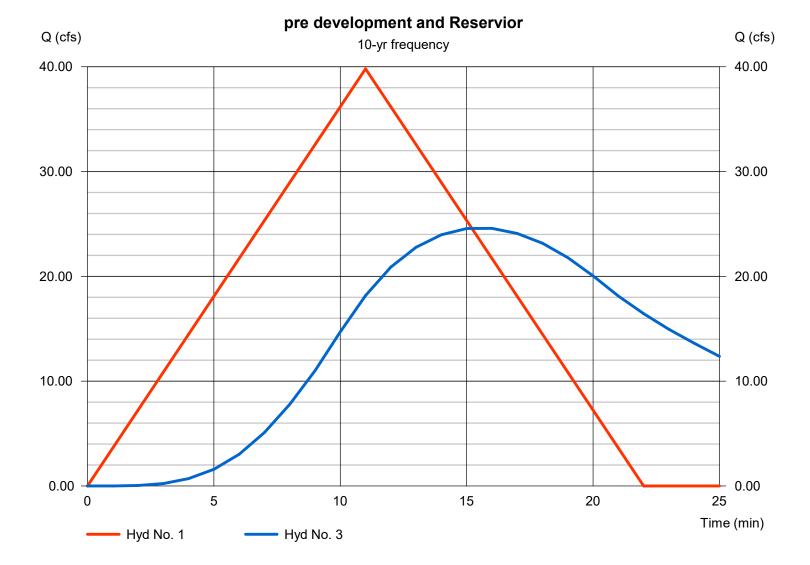
= 33,097 cuft

= 16 min

Hyd. No. 1 Hyd. No. 3

pre development Reservior

Hydrograph type= RationalHydrograph typePeak discharge= 39.81 cfsPeak dischargeTime to peak= 11 minTime to peakHyd. Volume= 26,276 cuftHyd. Volume

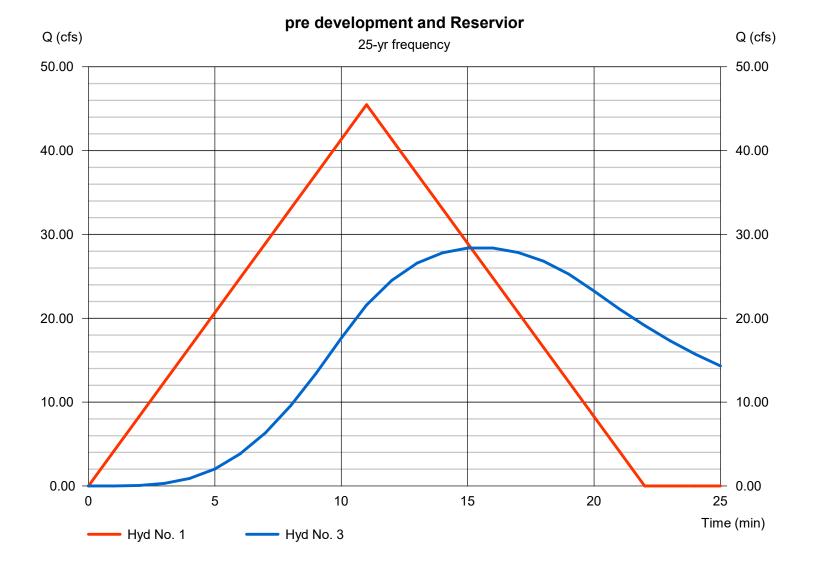


Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

pre development Reservior

Hydrograph type = Rational Hydrograph type = Reservoir Peak discharge Peak discharge = 28.39 cfs= 45.47 cfsTime to peak = 11 min Time to peak = 15 min Hyd. Volume = 30,012 cuft Hyd. Volume = 37,772 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

= Reservoir

= 32.15 cfs

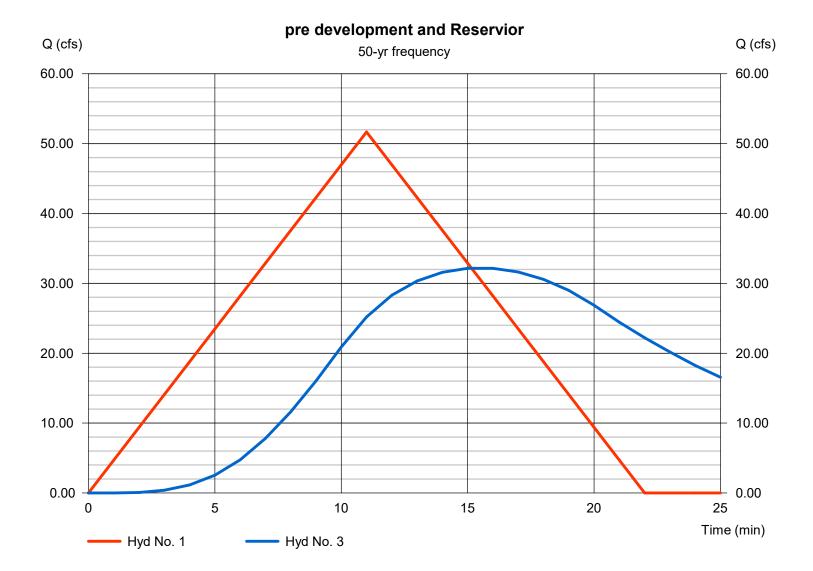
= 42,865 cuft

= 16 min

Hyd. No. 1 Hyd. No. 3

pre development Reservior

Hydrograph type= RationalHydrograph typePeak discharge= 51.67 cfsPeak dischargeTime to peak= 11 minTime to peakHyd. Volume= 34,102 cuftHyd. Volume

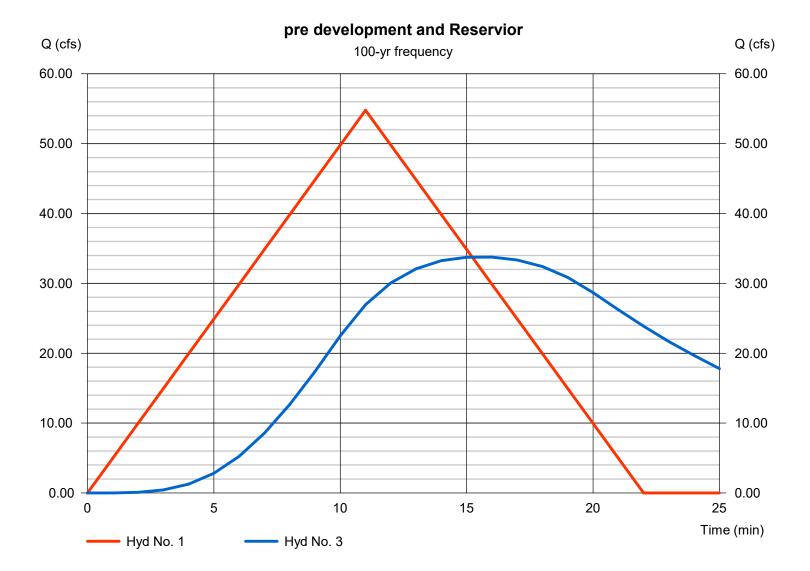


Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

pre development Reservior

Hydrograph type = Rational Hydrograph type = Reservoir Peak discharge Peak discharge = 54.77 cfs= 33.77 cfsTime to peak = 11 min Time to peak = 16 min Hyd. Volume = 36,151 cuft Hyd. Volume = 45,435 cuft



Pond No. 1 - Detention Pond -4

Pond Data

Trapezoid -Bottom L x W = 120.0 x 64.0 ft, Side slope = 3.00:1, Bottom elev. = 511.00 ft, Depth = 4.00 ft

Stage / Storage Table

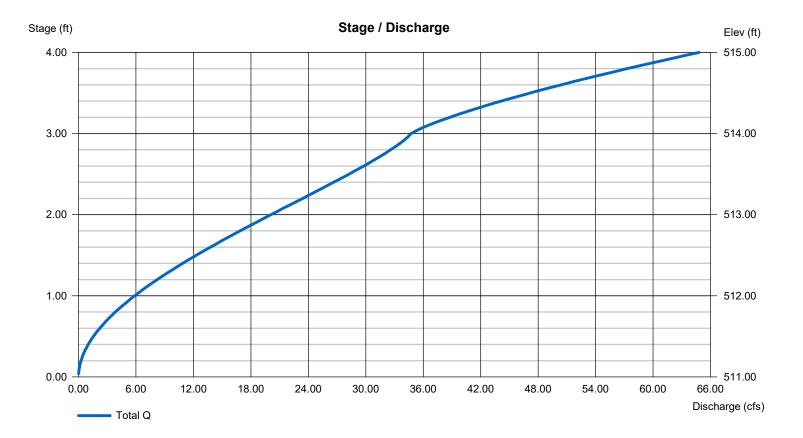
Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	511.00	7,680	0	0
0.40	511.40	8,127	3,161	3,161
0.80	511.80	8,586	3,342	6,503
1.20	512.20	9,057	3,528	10,032
1.60	512.60	9,539	3,719	13,750
2.00	513.00	10,032	3,914	17,664
2.40	513.40	10,537	4,113	21,777
2.80	513.80	11,053	4,318	26,095
3.20	514.20	11,581	4,527	30,622
3.60	514.60	12,121	4,740	35,362
4.00	515.00	12,672	4,958	40,320

Culvert / Orifice Structures

Weir Structures

	[A]	[B]	[C]	[PrfRsr]		[A]	[B]	[C]	[D]
Rise (in)	= 36.00	Inactive	Inactive	0.00	Crest Len (ft)	Inactive	6.00	Inactive	0.00
Span (in)	= 36.00	24.00	24.00	0.00	Crest El. (ft)	= 511.00	514.00	511.00	0.00
No. Barrels	= 1	1	1	0	Weir Coeff.	= 3.33	3.33	3.33	3.33
Invert El. (ft)	= 511.00	511.00	513.00	0.00	Weir Type	= Rect	Rect	Rect	
Length (ft)	= 103.00	0.50	0.00	0.00	Multi-Stage	= No	No	No	No
Slope (%)	= 9.34	0.01	0.00	n/a					
N-Value	= .013	.013	.013	n/a					
Orifice Coeff.	= 0.50	0.60	0.60	0.60	Exfil.(in/hr)	= 0.000 (by	Contour)		
Multi-Stage	= n/a	No	No	No	TW Elev. (ft)	= 0.00			

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



Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description		
1	Rational	31.09	1	11	20,519				pre development		
2	Rational	43.27	1	10	25,961				post development		
det	ention pond 4	1.gpw			Return F	Return Period: 2 Year			Wednesday, 04 / 19 / 2023		

						lodesk® Civil 3D® by Autodesk, Inc. v202			
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	34.66	1	11	22,873				pre development
2	Rational	48.39	1	10	29,031				post development
3	Reservoir	21.11	1	16	29,001	2	513.06	18,301	Reservior
detention pond 4.gpw					Return P	eriod: 5 Ye	ear	Wednesday	/, 04 / 19 / 2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	39.81	1	11	26,276				pre development
2	Rational	55.21	1	10	33,127				post development
1 2 3									
det	ention pond 4	1.gpw			Return F	Period: 10 \	⊥ ∕ear	Wednesday	y, 04 / 19 / 2023

		_		_		Tiyalali	Tydrograpiis	Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023		
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description	
1	Rational	45.47	1	11	30,012				pre development	
2	Rational	63.00	1	10	37,802				post development	
3	Reservoir	28.39	1	15	37,772	2	513.51	22,950	Reservior	
det	ention pond 4	.gpw			Return F	Period: 25 Y	ear ear	Wednesday	y, 04 / 19 / 2023	

						Tiyuran	lodesk® Civil 3D® by Autodesk, Inc. v202		
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	51.67	1	11	34,102				pre development
2	Rational	71.49	1	10	42,895				post development
3	Reservoir	71.49 32.15	1 1	10 16	42,895 42,865	2	513.77	25,730	post development Reservior
det	ention pond 4	.gpw			Return F	Period: 50 Y	/ear	Wednesday	v, 04 / 19 / 2023

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	54.77	1	11	36,151				pre development
2	Rational	75.78	1	10	45,465				post development
detention pond 4.gpw				Return F	Return Period: 100 Year Wednesday, 04 / 19 / 2023		y, 04 / 19 / 2023		

Stormwater Pollution Prevention Plan (SWPPP) for Construction Activity for Large Construction Sites

National Pollutant Discharge Elimination System (NPDES) General Permit # ARR150000

Prepared for: NXT GEN HOMES LLC

HILLTOP LANDING

Proposed Subdivision

Hilltop Landing Subdivison
Saline County

Date:

19 April 2023

Prepared by:



Project Name and Location: <u>Hilltop Landing Subdivision</u>, <u>NE corner of Miller Rd and Hilltop Rd</u>, <u>Bryant</u>, <u>Saline County</u>

Property Parcel Number (Optional): 840-11625-125

Owner: NXT GEN HOMES LLC 501-217-8400;

19218 Summershade Dr., Bryant, AR 72022 graham@grahamsmithcompanies.com

Developer/Contractor/Operator: Graham Smith – NXT GEN HOMES LLC- 501-217-8400,

19218 Summershade Dr., Bryant, AR 72022

grahamsmithcompanies.com

- A. Site Description
 - a. Project description, intended use after NOI is filed: 165 Lot subdivision
 - b. Sequence of major activities which disturb soils: <u>Construction entrance</u>, <u>ROW clearing</u>, <u>silt fence</u>, <u>drainage channels</u>, <u>trenching for utilities</u>, <u>rock ckeck dams</u>, <u>grading</u>, <u>road construction</u>, <u>lot clearing</u>, <u>home construction</u>. <u>Detention will be temp sediment pond</u>, <u>(see erosion control plan)</u>.
 - c. Total Area¹: Disturbed Area²: 54 Ac± 54 Ac±
 - d. Soils Information:
 - i. Runoff Coefficient Pre-Construction (See Appendix A): 0.36
 - ii. Runoff Coefficient Post-Construction (See Appendix A): **0.65**
 - iii. Describe the soil or the quality of any discharge from the site: **OK**
- B. Responsible Parties

Be sure to assign all SWPPP related activities to an individual or position; even if the specific individual is not yet known (i.e. contractor has not been chosen).

Individual/Company	Phone Number	Service Provided for SWPPP (i.e., Inspector, SWPPP revisions, Stabilization Activities, BMP Maintenance, etc.)	
Hope Consulting	501-315-2626	SWPPP Revisions	
Graham Smith – NXT GEN	501-217-8400	Inspection, Stabilization	
HOMES LLC- Operator		Activities, BMP Maintenance	

C. Receiving Waters

a. The following waterbody (or waterbodies) receives stormwater from this construction site: unnamed Tributary, thence Owen, thence Fourche Creek, thence Arkansas River

b.	Is the project located within the jurisdiction o	f an MS4? ⊠Yes □No
	i. If yes, Name of MS4: Bryant	
c.	Ultimate Receiving Water:	
	Red River	Ouachita River

4RR1500)00			
ſ	Wh	ite Rive	⊠Arkansas River er	St. Francis River Mississippi River
ubmitted	to ADEC	ე .		n updated SWPPP and a \$200 modification fee to be
Increases	in only	disturbed	acreage require an additional acreage i	request and an updated SWPPP to be submitted to ADEQ.
D. [Docun	nentatio	on of Permit Eligibility Related	I to the 303(d) list and Total Maximum Daily
L	_oads	(TMDL)	(https://www.adeq.state.ar.us/	<u>/water/planning/)</u>
	a.		he stormwater enter a water ?	body on the 303(d) list or with an approved
	b.	If yes:		
		•	Waterbody identified on 303	3(d) list:
		ii.	·	- · · · · -
		iii.		erally construction activity i.e. surface erosion
			is identified on 303(d) list or	associated assumptions and allocations
			identified in the TMDL for th	ie discharge: Xes No
		iv.	Additional controls impleme	nted: <u>.</u> .
F. <i>A</i>	Attain	ment of	f Water Quality Standards Aft	er Authorization
_, ,	a.		•	mplement, and maintain BMPs at the
		-		utants in the discharge as necessary to meet
			•	In general, except in situations explained
				emented, and updated to be considered as
			• • •	at the discharges do not cause or contribute
			excursion above any applicable	
	b.			Department may determine that the
		-		have reasonable potential to cause, or
				ny applicable water quality standard. If such a
				nent will require the permittee to:
			· ·	P action plan describing SWPPP modifications
				lentified water quality concerns and submit
			valid and verifiable data and	information that are representative of
			ambient conditions and indi	cate that the receiving water is attaining
			water quality standards; or	
		ii.	• •	its from construction activity and submit an
			individual permit application	•
I	unde	rstand a	and agree to follow the above	e text regarding the attainment of water

quality standards after authorization. \square Yes \square No

- F. Site Map Requirements (Attach Site Map):
 - a. Pre-construction topographic view;
 - Direction of stormwater flow (i.e., use arrows to show which direction stormwater will flow) and approximate slopes anticipated after grading activities;
 - c. Delineate on the site map areas of soil disturbance and areas that will not be disturbed under the coverage of this permit;
 - d. Location of major structural and nonstructural controls identified in the plan;
 - e. Location of main construction entrance and exit;
 - f. Location where stabilization practices are expected to occur;
 - g. Locations of off-site materials, waste, borrow area, or equipment storage area;
 - h. Location of areas used for concrete wash-out;
 - i. Location of all surface water bodies (including wetlands) with associated natural buffer boundary lines. Identify floodplain and floodway boundaries, if available;
 - j. Locations where stormwater is discharged to a surface water and/or municipal separate storm sewer system if applicable,
 - k. Locations where stormwater is discharged off-site (should be continuously updated);
 - I. Areas where final stabilization has been accomplished and no further construction phase permit requirements apply;
 - m. A legend that identifies any erosion and sediment control measure symbols/labels used in the site map and/or detail sheet; and
 - n. Locations of any storm drain inlets on the site and in the immediate vicinity of the site.

G. Stormwater Controls

- a. Initial Site Stabilization, Erosion and Sediment Controls, and Best Management Practices:
 - Initial Site Stabilization: <u>existing vegetation</u>, <u>silt fencing on toe of slopes and along major drainage pathways</u>. <u>All silt fencing may not be necessary initially, but rather as construction progresses</u>.
 - ii. Erosion and Sediment Controls: Rip rap check dams, additional silt fencing (as needed),

	If No, explain:
iv.	Off-site accumulations of sediment will be removed at a frequency sufficient to minimize off-site impacts: Yes No If No, explain:
V.	Sediment will be removed from sediment traps or sedimentation ponds when design capacity has been reduced by 50%: Yes No If No, explain:
vi.	Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges: Yes No If No, explain:
vii.	Off-site material storage areas used solely by the permitted project are being covered by this SWPPP: Yes No If Yes, explain additional BMPs implemented at off-site material storage area:
b. Stabili	zation Practices
i.	Description and Schedule: Final stabilization will be concrete, stone, sod
	landscape. Permit will be closed when all exposed areas are 100%
	covered with 80% density.
II.	Are buffer areas required? Yes No
	If Yes, are buffer areas being used? ☑Yes ☑No
	If Yes, describe natural buffer areas:
	If No, explain why not:
iii.	A record of the dates when grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated shall be included with the plan.
iv.	Deadlines for stabilization: Stabilization procedures will be initiated 14 days after construction activity temporarily ceases on a portion of the site. Yes No If No, explain:

- v. Deadlines for stabilization:
 - 1. Stabilization procedures will be initiated immediately after construction activity temporarily ceases on a portion of the site.
 - 2. Stabilization procedures will be initiated immediately in portions of the site where construction activities have permanently ceased.

_	C1	- 1 D 1
C.	Structur	al Practices
L .	Juluctur	ai i i acticcs

c.	Struct	ural Practices
	i.	Describe any structural practices to divert flows from exposed soils, store
		flows, or otherwise limit runoff and the discharge of pollutants from
		exposed areas of the site: <u>silt fencing, check dams</u>
	ii.	Describe Velocity Dissipation Devices: rip rap check dams as needed
	iii.	Sediment Basins:
		Are 10 or more acres draining to a common point? $igtherightarrow$ Yes $igcap$ No
		Is a sediment basin included in the project? ⊠Yes ☐No
		If Yes, what is the designed capacity for the storage?
		3600 cubic feet per acre = :
		or
		\boxtimes 10 year, 24 hour storm =
		:70,892
		Other criteria were used to design basin:
		If No, explain why no sedimentation basin was included and
		describe required natural buffer areas and other controls
		implemented instead: Each lot will have plenty of buffer space
		around the perimeter
H. Other	r Control	s
a.	Solid r	naterials, including building materials, shall be prevented from being
	discha	rged to Waters of the State: Xes No
b	Off-sit	e vehicle tracking of sediments and the generation of dust shall be
	minim	ized through the use of:
		A stabilized construction entrance and exit
		Vehicle tire washing
		Other controls, describe: Street needs to be swept if needed.

c. Temporary Sanitary Facilities: Contractor to provide and maintain facitilities.

	d.	Concrete Waste Area Provided:
		⊠Yes
		No. Concrete is used on the site, but no concrete washout is provided.
		Explain why:
		,
		N/A, no concrete will be used with this project
	e.	Fuel Storage Areas, Hazardous Waste Storage, and Truck Wash Areas: <u>No</u>
		hazardous waste will be produced as a result of this project. Fuel storage areas will
		not be used and truck wash areas will not be needed.
I.	Non-S	tormwater Discharges
	a.	The following allowable non-stormwater discharges comingled with stormwater
		are present or anticipated at the site:
		Fire-fighting activities;
		Fire hydrant flushings;
		Water used to wash vehicles (where detergents or other chemicals are
		not used) or control dust in accordance with Part II.A.4.H.2;
		Potable water sources including uncontaminated waterline flushings;
		Landscape Irrigation;
		Routine external building wash down which does not use detergents or
		other chemicals;
		Pavement wash waters where spills or leaks of toxic or hazardous
		materials have not occurred (unless all spilled materials have been removed)
		and where detergents or other chemicals are not used;
		Uncontaminated air conditioning, compressor condensate (See Part I.B.13.C of the permit);
		Uncontaminated springs, excavation dewatering and groundwater (See
		Part I.B.13.C of the permit);
		Foundation or footing drains where flows are not contaminated with
		process materials such as solvents (See Part I.B.13.C of the permit);
	b.	Describe any controls associated with non-stormwater discharges present at the
		site: There are no non storm water discharges that warrant extra controls. The
		activities which will be non storm water discharges will be not be regularly occuring
		and will be monitored.
J.	Perma	nent Controls for Post-Construction Stormwater Management:
٠.		scribe measures installed during the construction process to control pollutants in
		ormwater discharges that will occur after construction operations have been
		mpleted: Project area will be stabilized before SWPPP is terminated. Yards will be
		Ided/seeded and/or landscaped.
	Per	mit won't be closed until obtain 100% coverage and 80% density

K.	Applicable State or Local Programs: The SWPPP will be updated as necessary to reflect
	any revisions to applicable federal, state, or local requirements that affect the
	stormwater controls implemented at the site. XYes No

L. Inspections

a. Inspection frequence	y
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Every 7 calendar days and within 24 hours of the end of a storm event 0.5 inches or greater (a rain gauge must be maintained on-site)

b. Inspections:

Completed inspection forms will be kept with the SWPPP.
△ADEQ's inspection form will be used (See Appendix B)
or
A form other than ADEQ's inspection form will be used and is attached
(See inspection form requirements Part II.A.4.L.2)

- c. Inspection records will be retained as part of the SWPPP for at least 3 years from the date of termination.
- d. It is understood that the following sections describe waivers of site inspection requirements. All applicable documentation requirements will be followed in accordance with the referenced sections.
 - i. Winter Conditions (Part II.A.4.L.4)
 - ii. Adverse Weather Conditions (Part II.A.4.L.5)

M. Maintenance:

The following procedures to maintain vegetation, erosion and sediment control measures and other protective measures in good, effective operating condition will be followed: As homes are completed, lots will be sodded, seeded, and/or landscaped, contractors will be responsible for keeping individual lots during home construction.

Any necessary repairs will be completed, when practicable, before the next storm event, but not to exceed a period of 3 business days of discovery, or as otherwise directed by state or local officials.

N. Employee Training:

The following is a description of the training plan for personnel (including contractors and subcontractors) on this project: <u>The operator is well trained and familiar with erosion control practices</u>. Workers who are under the operator will be briefed and trained on erosion control practices and the SWPPP contents.

**Note, Formal training classes given by Universities or other third-party organizations are not required, but recommended for qualified trainers; the permittee is responsible for the content of the training being adequate for personnel to implement the requirements of the permit.

Certification

"I certify under penalty of law that this document and all attachments such as Inspection Form were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signature of Responsible or Cognizant Official:	Kazi Blum		
Title: $P \cdot \mathcal{E}$.	Date:	04-15-2023	

Computation Sheet for Determining Runoff Coefficients

Appendix A

Total Site Area =	Acres	[A]
Existing Site Conditions Impervious Site Area ¹ = Impervious Site Area Runoff Coefficient ^{2, 4} =	Acres	[B] [C]
Pervious Site Area ³ =	Acres	[D]
Pervious Site Area Runoff Coefficient ⁴ =		[E]
Pre-Construction Runoff Coefficient	= This is your pre-construc	tion runoff coefficient.

Proposed Site Conditions (after construction)

Impervious Site Area ¹ =	Acres	[F]
Impervious Site Area Runoff Coefficient ^{2, 4} =		[G]
Pervious Site Area ³ =	Acres	[H]
Pervious Site Area Runoff Coefficient ⁴ =		[1]

Post-Construction Runoff Coefficient

- 1. Includes paved areas, areas covered by buildings, and other impervious surfaces.
- 2. Use 0.95 unless lower or higher runoff coefficient can be verified.
- 3. Includes areas of vegetation, most unpaved or uncovered soil surfaces, and other pervious areas.
- 4. Refer to local Hydrology Manual for typical C values.

Note: The impervious and pervious surfaces should equal the total area.

Inspector Name	2:			Date of Inspection:						
nspector Title:										
Date of Rainfall	:		Du	ration of Rainf	fall:					
	Rain Event:			nfall Since Las	t Rain Event: _	inches				
	iny Discharges Durir harges of Sediment									
	ed of Additional BM Location of Constru									
Location		Activity Begin Date	Activity Occuring Now (y/n)?	Activity Ceased Date	Stabilizatio Initiated Da					
nformation on	BMPs in Need of M	aintenance								
_ocation	In Working Order?	Maintenance : Date	Scheduled	Maintenance Date	Completed	Maintenance to be Performed By				
Changes require	ed to the SWPPP:		Rea	asons for chan	ges:					
	completed (date):									
direction or s the informat responsible f and complet	supervision in accordation submitted. Based for gathering the info	ance with a system of the control of	designed to ensible to	sure that qualifi ersons who ma is, to the best o	ed personnel portion of the syster of my knowledge	n were prepared under m roperly gather and evaluat m, or those persons directl te and belief, true, accurate luding the possibility of fin				
Signature of Res	sponsible or Cogniza	ant Official:				Date:				
		Title:				_				

ARR150000 Inspection Form

Revised date: 10/20/2016

Appendix B

The BMPs listed here should be considered for every project. Those BMPs that are not included in the SWPPP should be checked as "Not Used" with a brief statement describing why it is not being used.

Note: Appendix C and D do not have to be submitted with the SWPPP. These attachments are for use during the development of the SWPPP.

E	ROSIO	N CONTR	OL BMP	Ps							
BMP											
	Considered					Not	If not used, state				
ВМР	for p	for project		Used	Used	<u> </u>	reason				
EC-1 Scheduling				\boxtimes							
EC-2 Preservation of Existing Vegetation				\boxtimes							
EC-3 Hydraulic Mulch											
EC-4 Hydroseeding				\boxtimes							
EC-5 Soil Binders											
EC-6 Straw Mulch											
EC-7 Geotextiles & Mats											
EC-8 Wood Mulching											
EC-9 Earth Dikes & Drainage Swales				\boxtimes							
EC-10 Velocity Dissipation Devices											
EC-11 Slope Drains											
EC-12 Stream bank Stabilization				\boxtimes							
SEDIMENT CONTROL BMPs											
BMP BMP											
	Considered				BMP Not						
							If not used, state				
ВМР		idered roject	BMP I	Used	BMP Used		If not used, state reason				
SE-1 Silt Fence			BMP (Used			•				
			BMP (Used			•				
SE-1 Silt Fence			BMP	Used			•				
SE-1 Silt Fence SE-2 Sediment Basin			BMP I	Used							
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap			BMP	Used							
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam			BMP	Used							
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls			BMP	Used							
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm			BMP	Used							
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm SE-7 Street Sweeping and Vacuuming			BMP	Used							
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm SE-7 Street Sweeping and Vacuuming SE-8 Sand Bag Barrier			BMP	Used							
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm SE-7 Street Sweeping and Vacuuming SE-8 Sand Bag Barrier SE-9 Straw Bale Barrier				Used							
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm SE-7 Street Sweeping and Vacuuming SE-8 Sand Bag Barrier SE-9 Straw Bale Barrier SE-10 Storm Drain Inlet Protection SE-11 Chemical Treatment	for pr										
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm SE-7 Street Sweeping and Vacuuming SE-8 Sand Bag Barrier SE-9 Straw Bale Barrier SE-10 Storm Drain Inlet Protection SE-11 Chemical Treatment	D EROS	GION CON			Used		reason				
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm SE-7 Street Sweeping and Vacuuming SE-8 Sand Bag Barrier SE-9 Straw Bale Barrier SE-10 Storm Drain Inlet Protection SE-11 Chemical Treatment WIN	D EROS BMP Cons	Froject GION CON	[[[[] ITROL B	SIMPs	BMP	Not	If not used, state				
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm SE-7 Street Sweeping and Vacuuming SE-8 Sand Bag Barrier SE-9 Straw Bale Barrier SE-10 Storm Drain Inlet Protection SE-11 Chemical Treatment	D EROS BMP Cons	GION CON		SIMPs	Used	Not	reason				

TRACKING CONTROL BMPs										
	ВМР									
200		Considered					BMF		ot	If not used, state
BMP	tor p	for project			BMP Used		Used			reason
TR-1 Stabilized Construction Entrance/Exit						<u> </u> 1		<u> </u>	<u> </u> 1	BMPs not used are
TR-2 Stabilized Construction Roadway						<u> </u>			<u> </u>	needed
TR-3 Entrance/Outlet Tire Wash					<u></u>	<u> </u>				
NON-STOP	1		R MA	NAGEN	1EN	IT BN	1Ps			
	BMP		rad				DNA	BMP Not		If not used, state
ВМР	for p			ВМР	IJs	ed	Use		,,	reason
NS-1 Water Conservation Practices	10. 6			Diviii		1		_	7	BMPs not used are
NS-2 Dewatering Operations					F	<u>.</u>]		┢	1	needed
NS-3 Paving and Grinding Operations						<u>.</u>]		┢	1	necucu
NS-4 Temporary Stream Crossing		H]			1	
NS-5 Clear Water Diversion					F	<u>.</u>]		┢	1	
NS-6 Illicit Connection/ Discharge						<u>.</u>]		┢	1	
NS-7 Potable Water/Irrigation		F			\overline{X}	1		┢	1	
NS-8 Vehicle and Equipment Cleaning]		F	1	
NS-9 Vehicle and Equipment Fueling						1			1	
NS-10 Vehicle and Equipment Maintenance						1			1	
NS-11 Pile Driving Operations]		Ī	1	
NS-12 Concrete Curing										
NS-13 Concrete Finishing										
NS-14 Material and Equipment Use Over Water										
NS-15 Demolition Adjacent to Water										
NS-16 Temporary Batch Plants										
WASTE MANAGEMENT	AND	MA	TERIA	LS POL	LU	ION	CONTR	OL I	BMPs	
	ВМР	•								
2042	Cons			20.40			BMF		ot	If not used, state
BMP	for p	roje	ect	ВМР	US	ea	Used		7	reason
WM-1 Material Delivery and Storage						<u> </u> 			<u>]</u> 1	BMPs not used are
WM-2 Charles in Management						<u> </u> 		<u> </u>	<u>]</u>]	needed
WM-3 Stockpile Management]		<u> </u>	<u>]</u> 1	
WM-4 Spill Prevention and Control					H	<u> </u> 		\perp	<u>]</u> 1	
WM-5 Solid Waste Management]		_	<u>]</u> 1	
WM-6 Hazardous Waste Management		\vdash				<u>]</u>]		F	<u>]</u> 1	
WM-7 Contaminated Soil Management						<u> </u> 		\vdash	<u>]</u> 1	
WM-8 Concrete Waste Management		H]		\vdash	<u>]</u> 1	
WM-9 Sanitary/Septic Waste Management						<u>]</u>]		<u> </u>	<u>]</u> 1	
WM-10 Liquid Waste Management			l	1	1	l	1	- 1	1	

SWPPP Completion Checklist

Appendix D

Yes = Complete

No = Incomplete/Deficient

N/A = Not applicable to project

Yes	No	N/A	_A. A site description, including:	Permit Section Citation
			1. Project description, intended use after NOT	Part II.A.4.A.1
			2. Sequence of major activities	Part II.A.4.A.2
			3. Total & disturbed acreage	Part II.A.4.A.3
			4. Pre- and post-construction runoff coefficient OR soil/discharge data	Part II.A.4.A.4
			B. Responsible Parties: All parties dealing with the SWPPP and the areas they are	
			responsible for on-site.	Part II.A.4.B
			C. Receiving Water.	Part II.A.4.C
			-MS4 Name	Part II.A.4.C
			-Ultimate Receiving Water	Part II.A.4.C
			D. Documentation of permit eligibility related to Impaired Water Bodies and Tota	l Maximum Daily Loads (TMI
			1. Identify pollutant on 303(d) list or TMDL	Part II.A.4.D.1
			2. Is construction activity or the specific site listed as cause?	Part II.A.4.D.2
			3. Measures taken to reduce pollutants from the site.	Part II.A.4.D.3
			3. Wedstates taken to reduce politicalities from the site.	Turt II.71. 1.D.5
			E. Attainment of Water Quality Standards After Authorization.	Part II.A.4.E
			F. Site Map See End of Evaluation Form	Part II.A.4.F
			G. Description of Controls:	
			1. Erosion and sediment controls, including:	
			a. Initial site stabilization	Part II.A.4.G.1.a
			b. Erosion and sediment controls	Part II.A.4.G.1.b
			c. Replacement of inadequate controls	Part II.A.4.G.1.c
			d. Removal of off-site accumulations	Part II.A.4.G.1.d
			e. Maintenance of sediment traps/basins @ 50% capacity	Part II.A.4.G.1.e
			f. Litter, construction debris and chemicals properly handled	Part II.A.4.G.1.f
			g. Off-site storage areas and controls	Part II.A.4.G.1.g
			2. Stabilization practices:	
			a. Description and schedule for stabilization	Part II.A.4.G.2.a
			b. Description of buffer areas	Part II.A.4.G.2.b
			c. Records of stabilization	Part II.A.4.G.2.c
			d. Deadlines for stabilization	Part II.A.4.G.2.d
			3. Structural Practices:	
			-Describe structural practices to divert flows, store flows, or otherwise limit runoff	Part II.A.4.G.3
			a. Sediment basins	Part II.A.4.G.3.a.1
			-Are more than 10 acres draining to a common point? If so, are sediment basins included?	
			-Sediment basin dimensions and capacity description and calculations	Part II.A.4.G.3.a.1
			-If a basin wasn't practicable, are other controls sufficient?	Part II.A.4.G.3.a.1
			b. Velocity dissipation devices concentrated flow from 2 or more acres	Part II.A.4.G.3.b
			H. Other controls including:	
			Solid waste control measures	Part II.A.4.H.1
			2. Vehicle off-site tracking controls	Part II.A.4.H.2
			3. Compliance with sanitary waste disposal	Part II.A.4.H.4
			4. Does the site have a concrete washout area controls?	Part II.A.4.H.5
			5. Does the site have fuel storage areas, hazardous waste storage and/or truck wash areas	
			controls?	Part II.A.4.H.6

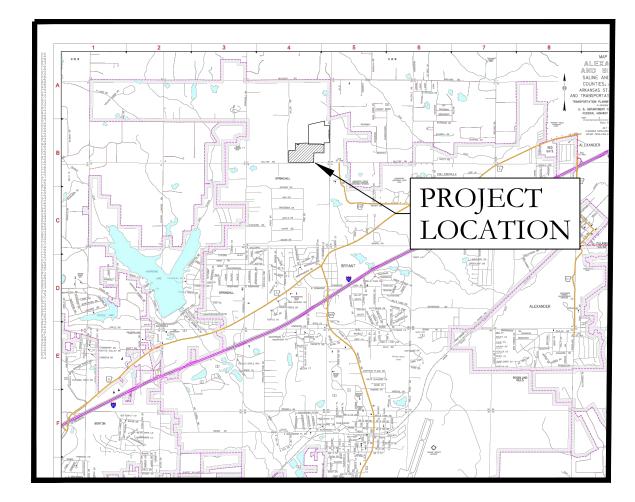
SWPPP Completion Checklist

Appendix D

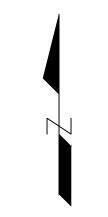
Yes	No	N/A		Permit Section Citation
			I. Identification of allowable non-storm water discharges	Part II.A.4.I
			-Appropriate controls for dewatering, if present	Part I.B.12.C
			J. Post construction stormwater management.	Part II.A.4.J
	I		K. State or local requirements incorporated into the plan.	Part II.A.4.K
•	•	•		
			L. Inspections	
			1. Inspection frequency listed?	Part II.A.4.L.1
	_		2. Inspection form	Part II.A.4.L.2
			Ours.	
			If not ours, does it contain the following items:	
			a. Inspector name and title	Part II.A.4.L.2.a
			b. Date of inspection.	Part II.A.4.L.2.b
			c. Amount of rainfall and days since last rain event (14 day only)	Part II.A.4.L.2.c
			d. Approx beginning and duration of storm event	Part II.A.4.L.2.d
			e. Description of any discharges during inspection	Part II.A.4.L.2.e
			f. Locations of discharges of sediment/other pollutants	Part II.A.4.L.2.f
			g. BMPs in need of maintenance	Part II.A.4.L.2.g
			h. BMPs in working order, if maintenance needed (scheduled and completed)	Part II.A.4.L.2.h
			i. Locations that are in need of additional controls	Part II.A.4.L.2.i
			j. Location and dates when major construction activities begin, occur or cease	Part II.A.4.L.2.j
			k. Signature of responsible/cognizant official	Part II.A.4.L.2.k
			3. Inspection Records	Part II.A.4.L.3
			4. Winter Conditions	Part II.A.4.L.4
			5. Adverse Weather Conditions	Part II.A.4.L.5
			M. Maintenance Procedures	Part II.A.4.M
			N. Employee Training	Part II.A.4.N
			Signed Plan Certification	Part II.A.5. and Part II.B.10
	·	•		
1	1	1	F. Site Map showing:	D4 H A 4 E 1
			1. Pre-construction topographic view	Part II.A.4.F.1
	-		2. Drainage flow	Part II.A.4.F.2
	+	1	3. Approximate slopes after grading activities	Part II.A.4.F.2
		_	4. Areas of soil disturbance and areas not disturbed	Part II.A.4.F.3
		_	5. Location of major structural and non-structural controls.	Part II.A.4.F.4
			6. Location of main construction entrance and exit.	Part II.A.4.F.5
			7. Areas where stabilization practices are expected to occur.	Part II.A.4.F.6
		_	8. Locations of off-site materials, waste, borrow area or storage area.	Part II.A.4.F.7
			9. Locations of areas used for concrete wash-out.	Part II.A.4.F.8
			10. Locations of surface waters on site.	Part II.A.4.F.9
	1		11. Locations where water is discharged to a surface water or MS4.	Part II.A.4.F.10
			12. Storm water discharge locations.	Part II.A.4.F.11
	1		13. Areas where final stabilization has been accomplished.	Part II.A.4.F.12
	1		14. Legend for symbols/labels used	Part II.A.4.F.13
			15. Location of storm drain inlets on site or in immediate vicinity	Part II.A.4.F.14

CONSTRUCTION PLANS HILLTOP LANDING

HILLTOP ROAD & MILLER ROAD, BRYANT, AR



VICINITY MAP



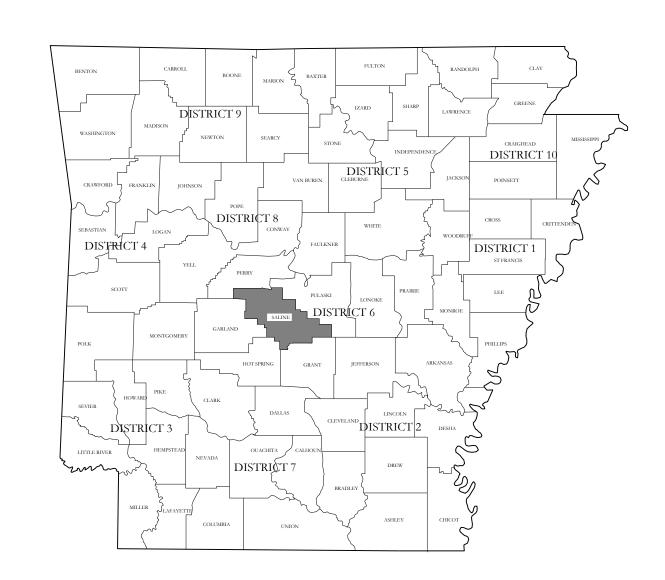
PREPARED BY:



129 N. Main Street, www.hopeconsulting.com

DRAWING INDEX

SHEET NO.	TITLE
	PLAT
C-1.0	STREET PLAN & PROFILE
C-1.1	STREET PLAN & PROFILE
C-1.2	STREET PLAN & PROFILE
C-2.0	UTILITY PLAN
C-2.1	SEWER PLAN & PROFILE
C-2.2	SEWER PLAN & PROFILE
C-2.3	SEWER PLAN & PROFILE
C-3.1	STORM PLAN & PROFILE
C-3.2	STORM PLAN & PROFILE
C-3.3	STORM PLAN & PROFILE
C-3.4	STORM PLAN & PROFILE
C-4.0	TRENCH AND SPECIAL DETAILS
C-5.0	CIVIL SPECIFICATIONS
C-6.0	DETENTION
C-6.1	DETENTION
C-7.0	EROSION CONTROL PLAN

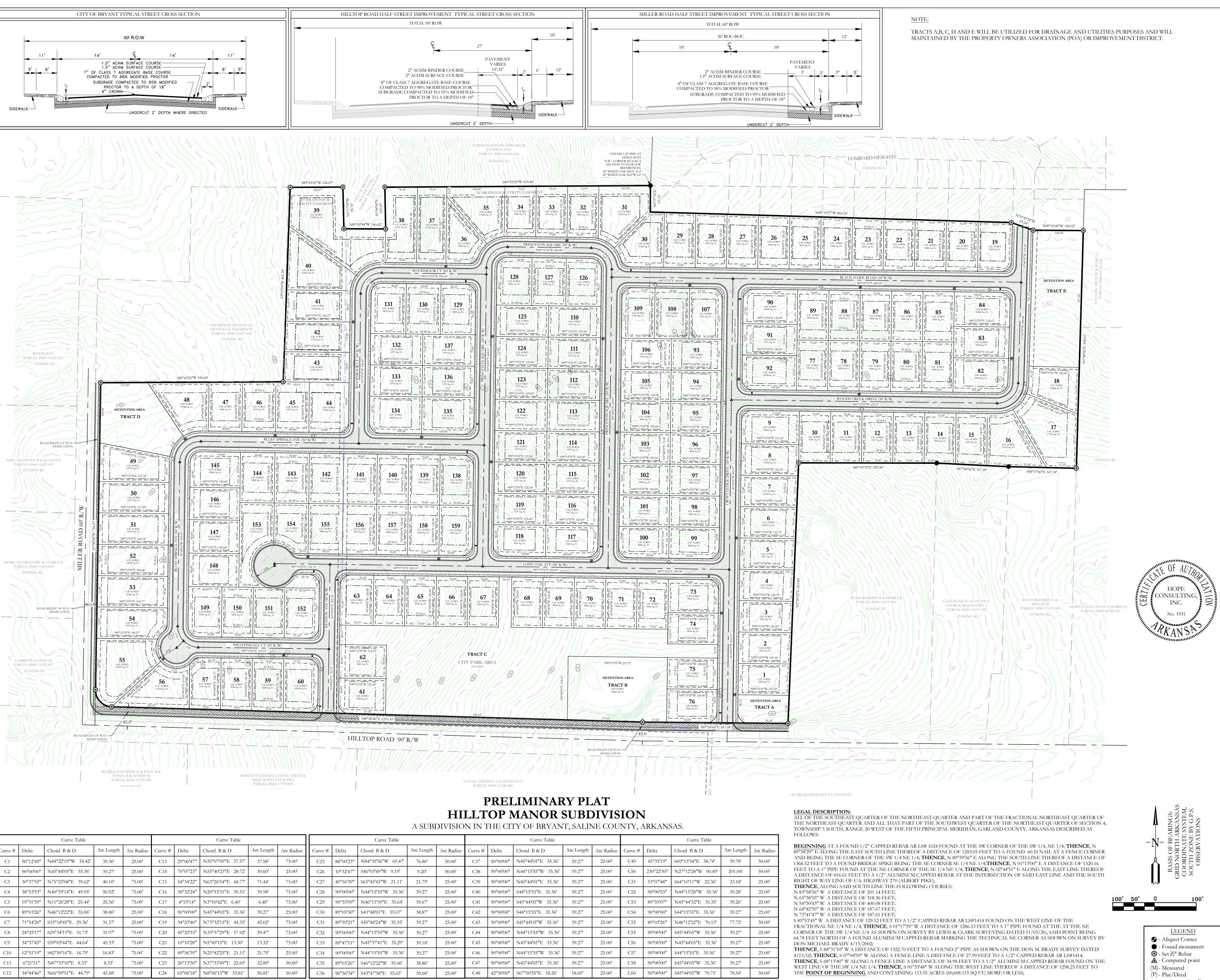




FOR USE AND BENEFIT OF: NXT GEN HOMES LLC.

HILLTOP LANDING A SUBDIVISION IN THE CITY OF BRYANT, AR HILLTOP ROAD & MILLER ROAD, BRYANT, AR

E:	02/16/202	23	C.A.D	. BY:		DRA	DRAWING NUMBER:		
ISED:	04-19-2023	4-19-2023 CHECKED BY:							1341
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VICINITY MAP: OWNER:

DEVELOPER:

Name: NXT GEN HOMES LLC 19218 SUMMERSHADE DRIVE

NXT GEN HOMES LLC 19218 SUMMERSHADE DRIVE 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.

Date of Execution ____

BRYANT, AR 72022

Source of Tile: <u>2021-009870</u>

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

Jonathan L. Hope Registered Professional Land Surveyor No. 1762

CERTIFICATE OF PRELIMINARY ENGINEERING ACCURACY

I, Kazi Tamzidual 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

Rick Johnson, Chairman

Bryant Planning Commission



ARKANSAS * * * LICENSED **PROFESSIONAL ENGINEER** $\star\star\star$ NO. 20876

By affixing my seal and signature, I Jonathan L. Hope, Arkansas PLS No, 1762, hereby certify that this drawing correctly depicts a survey compiled by me or under my direct 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 Flood Insurance Rate Map, panel # <u>05125C0225E</u>, Dated: <u>06/05/2020</u>

PROPERTY SPECIFICATIONS:

NXT GEN HOMES LLC 19218 SUMMERSHADE DRIVE BRYANT, AR 72022 SUBDIVIDER 19218 SUMMERSHADE DRIVE BRYANT, AR 72022 ENGINEERS: HOPE CONSULTING INC. BENTON, AR 72015

NAME OF SUBDIVISION: HILLTOP MANOR

ISTING ZONING: R2 PROPOSED DENSITY 3.85 HOMES PER ACRE SOURCE OF WATER: CITY OF BRYANT SOURCE OF SEWER: CITY OF BRYANT SOURCE OF ELECTRIC: ENTERGY SOURCE OF GAS: SUMMIT

BUILDING SETBACKS: FRONT-25' OR AS SHOWN REAR-25' OR AS SHOWN SIDE-8' OR AS SHOWN

UTILITY & DRAINAGE EASEMENTS: FRONT-10' OR AS SHOWN REAR - 5' OR AS SHOWN SIDE - 5' OR AS SHOWN

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:

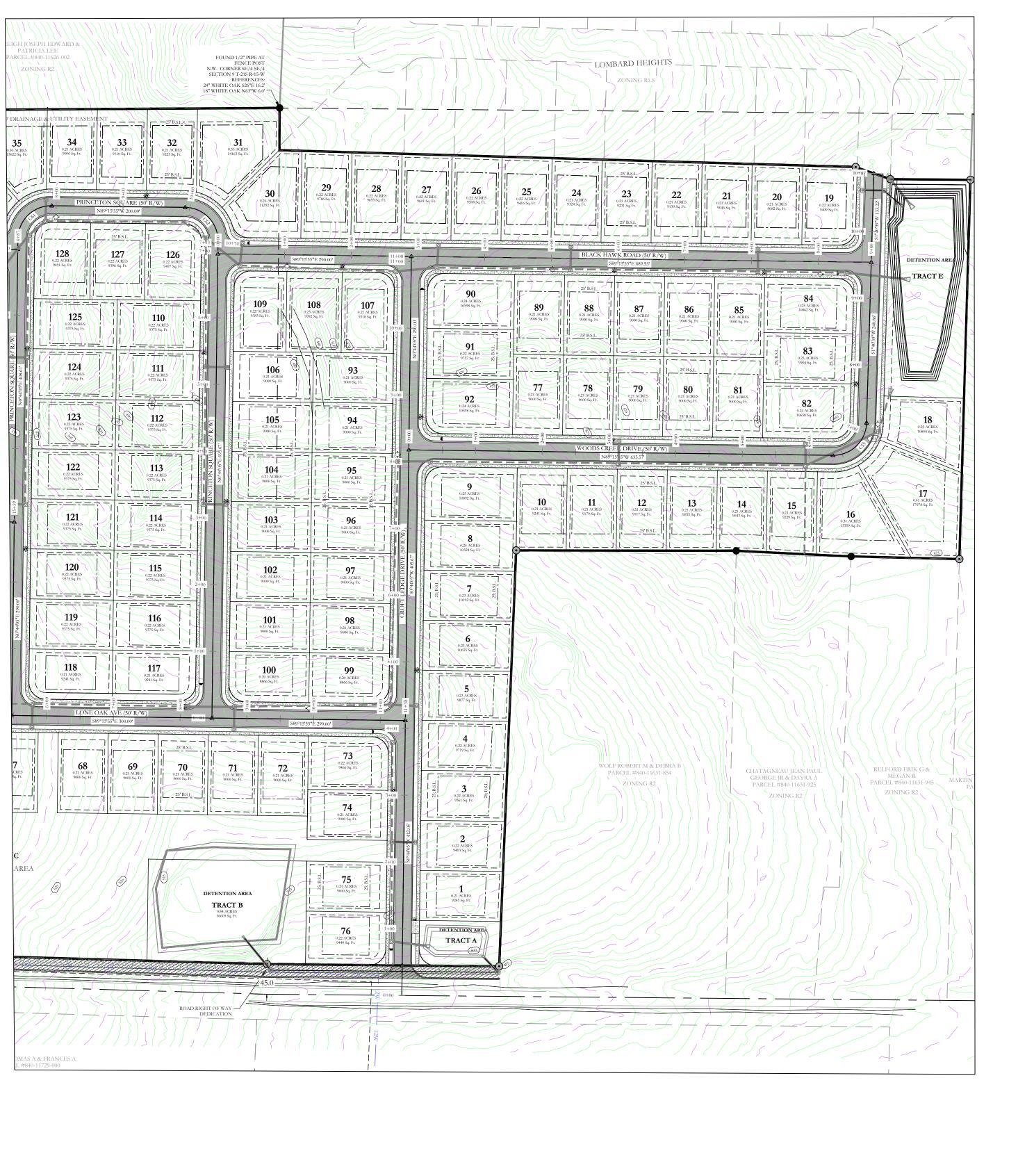
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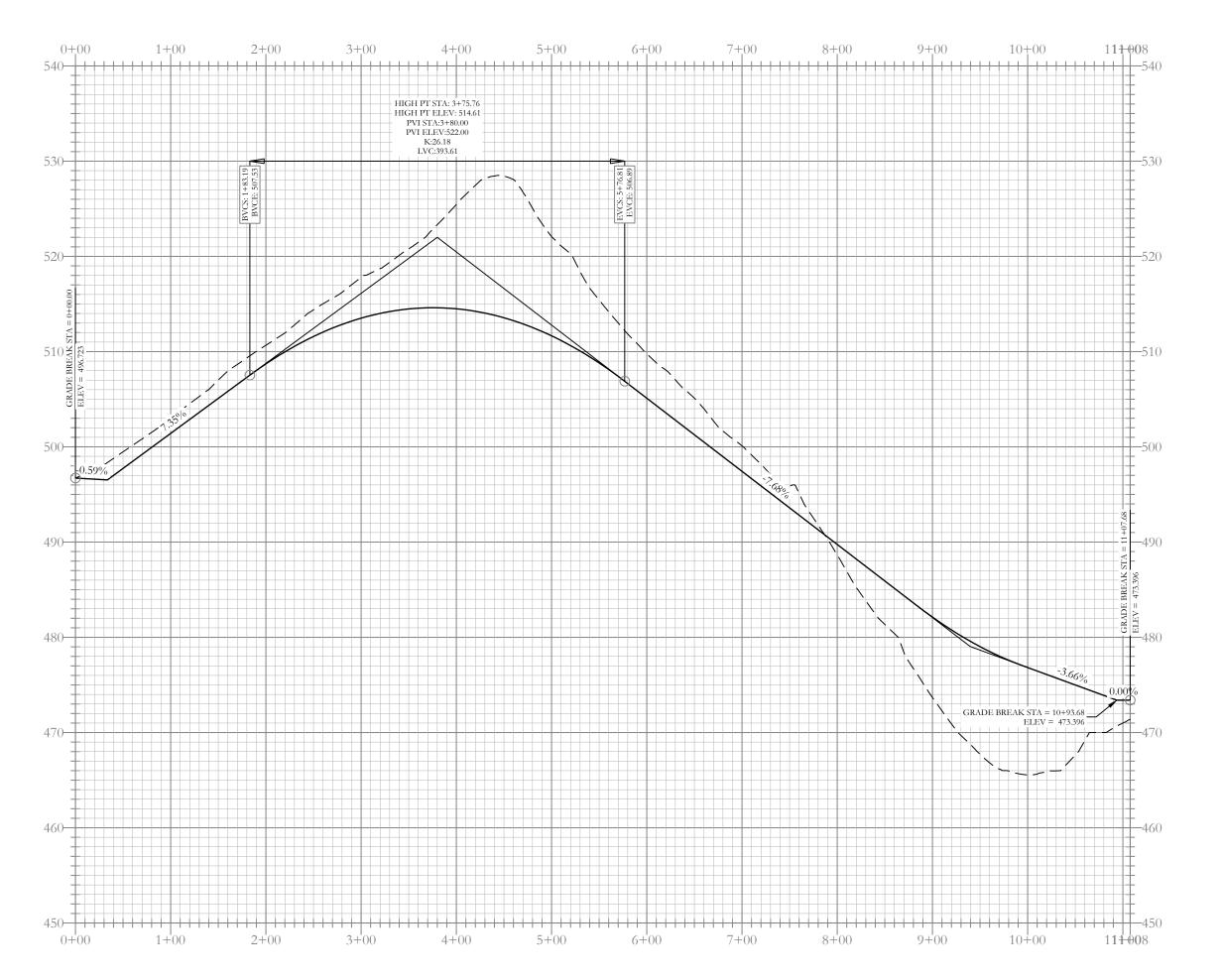
PRELIMINARY PLAT

HILLTOP MANOR SUBDIVISION

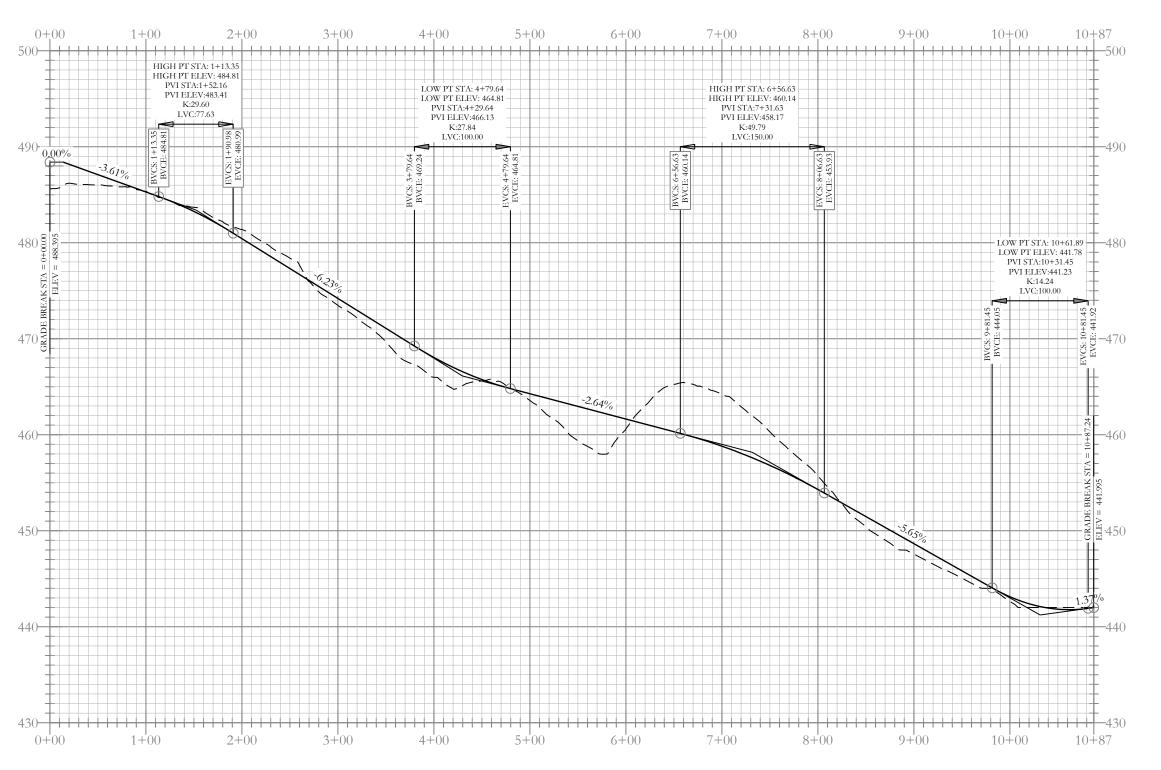
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A SUBDIVISION IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS.









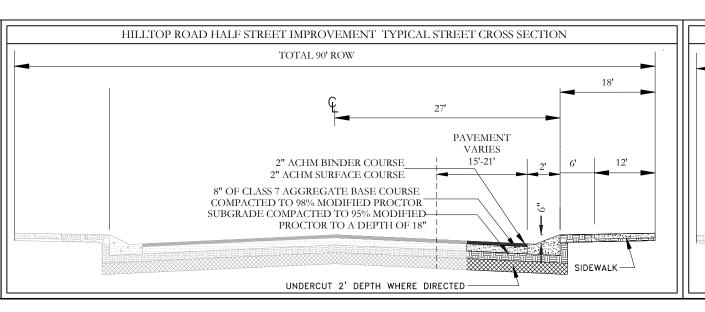


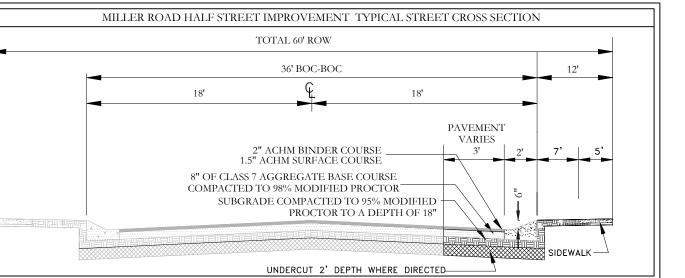




ENGINEERS - SURVEYORS www.hopeconsulting.com

CITY OF BRYANT TYPICAL STREET CROSS SECTION 50' R.O.W 7" OF CLASS 7 AGGREGATE BASE COURSE COMPACTED TO 98% MODIFIED PROCTOR SUBGRADE COMPACTED TO 95% MODIFIED-PROCTOR TO A DEPTH OF 18"





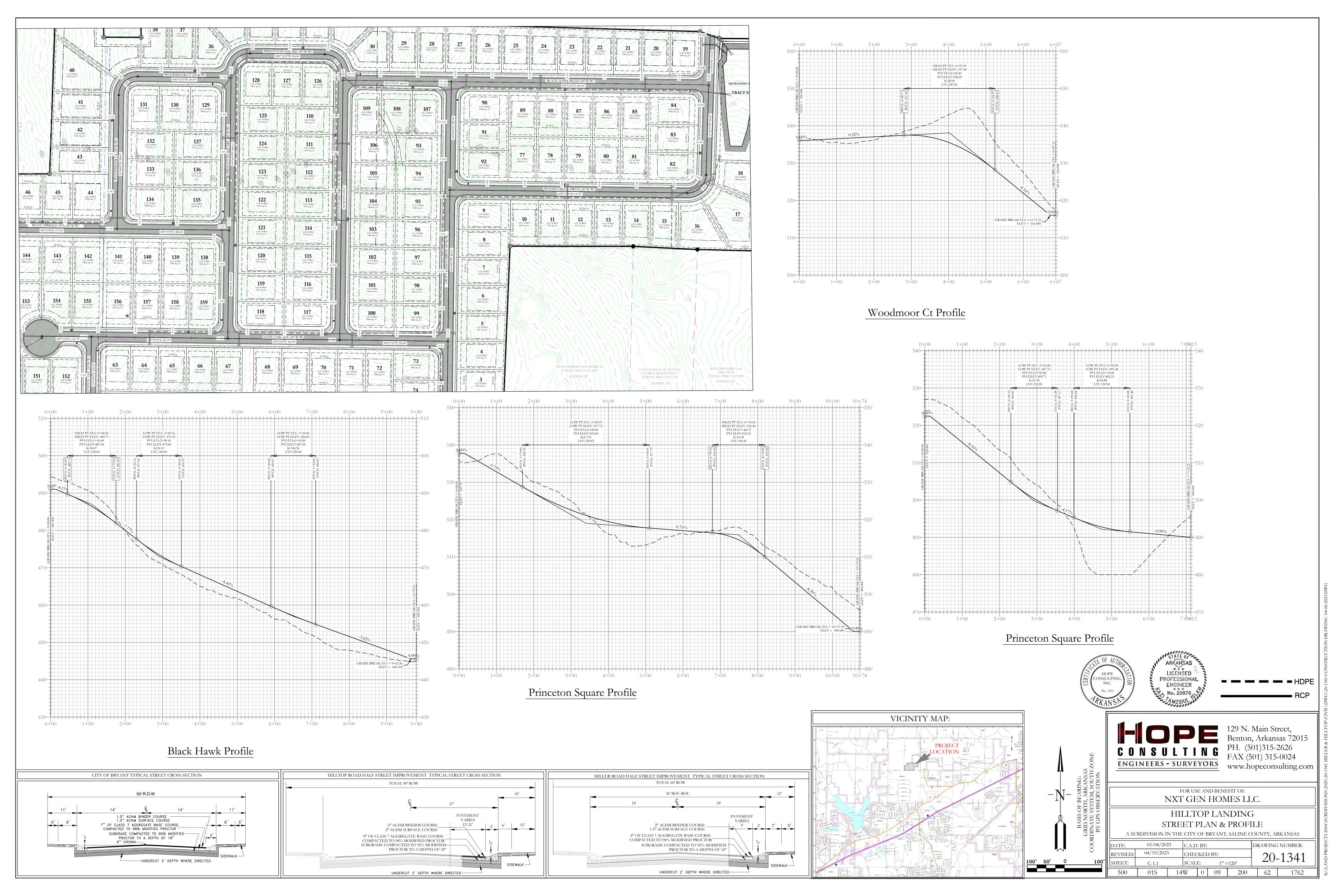
Wood Creek Drive Profile

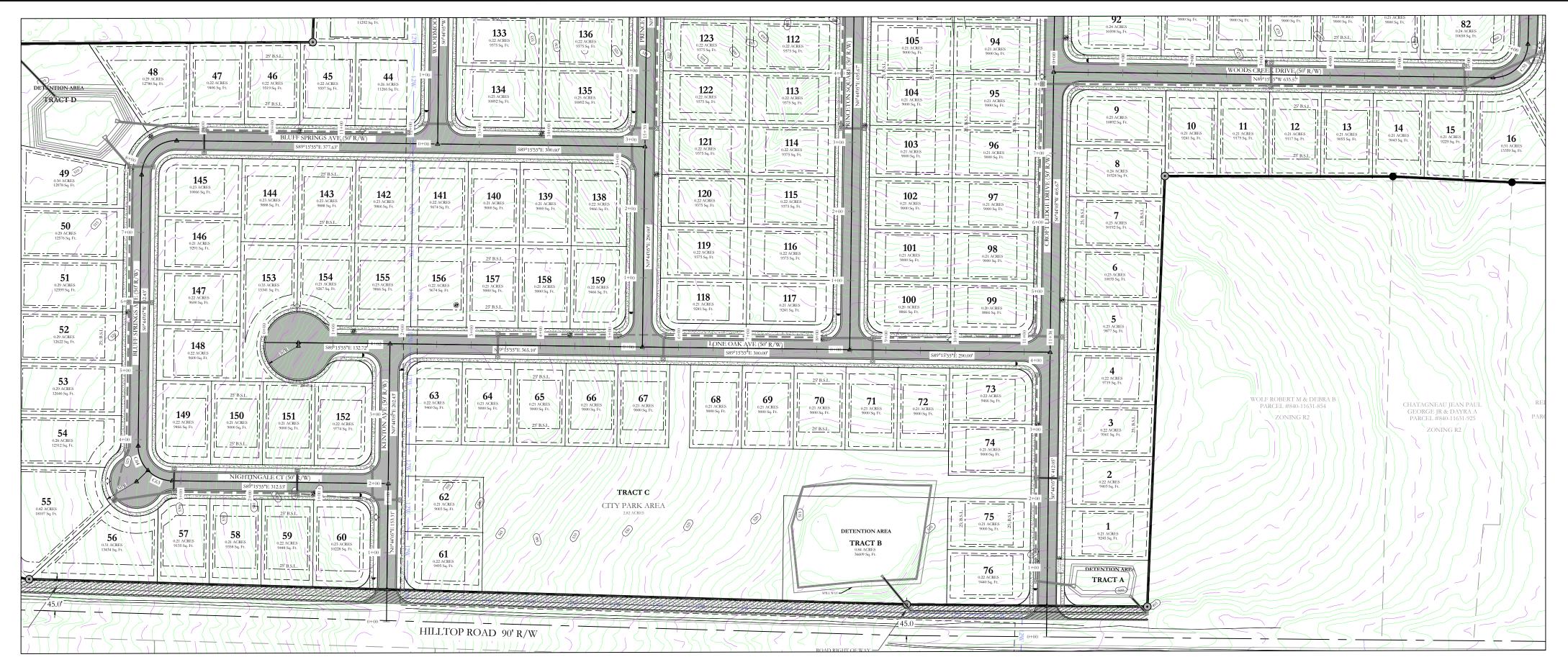
	-		BASIS OF BEARING: GRID NORTH, ARKANSA COORDINATE SYSTEM, SOUTE BY GPS OBSERVATION	
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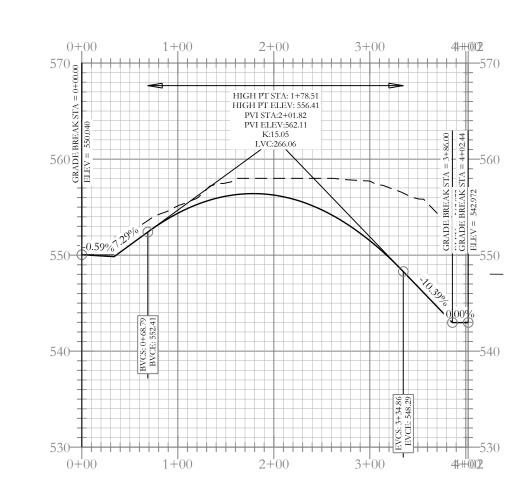
FOR USE AND BENEFIT OF: NXT GEN HOMES LLC.

HILLTOP LANDING STREET PLAN & PROFILE A SUBDIVISION IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS

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						. BY:			DRAWING	G NUMBER:
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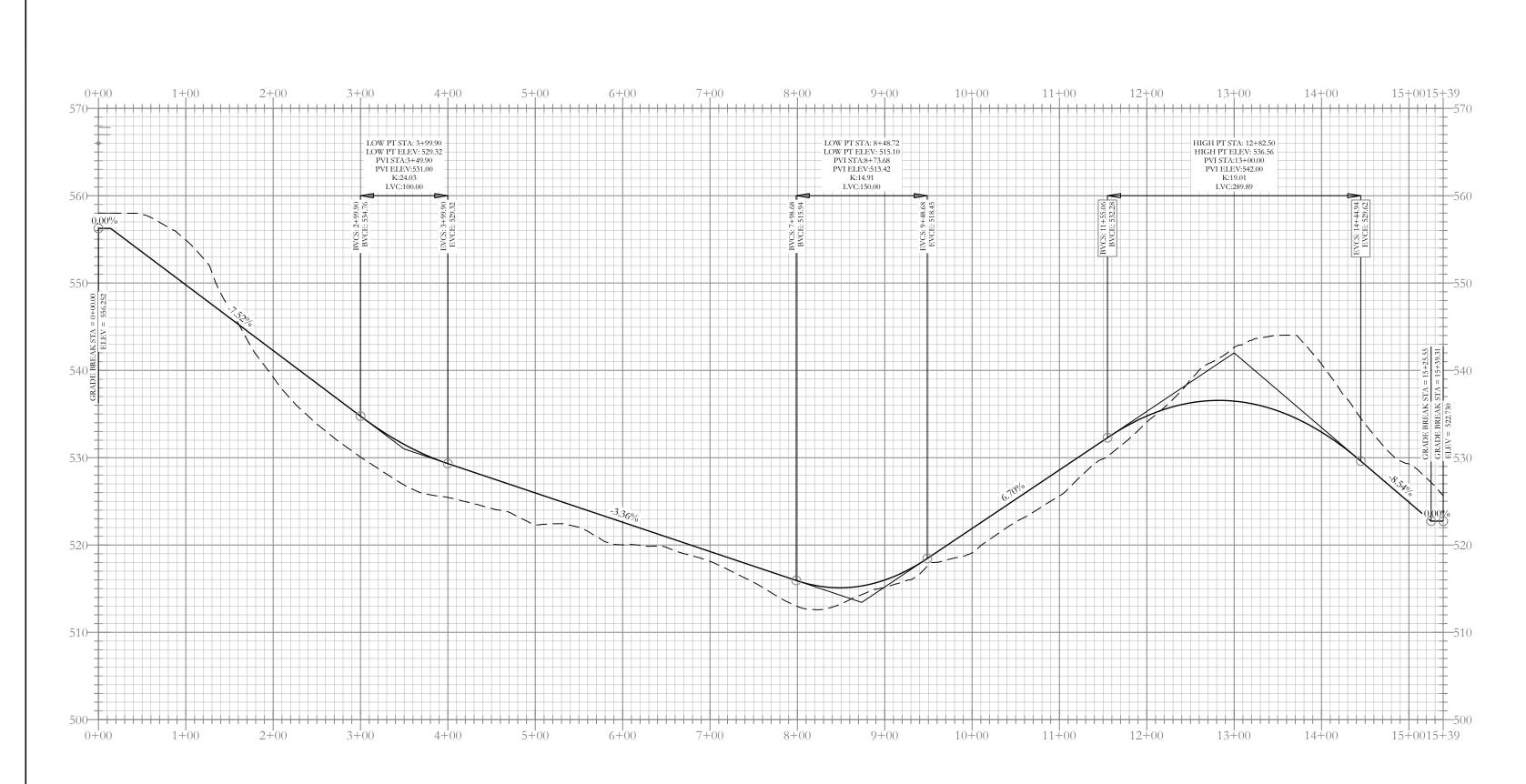


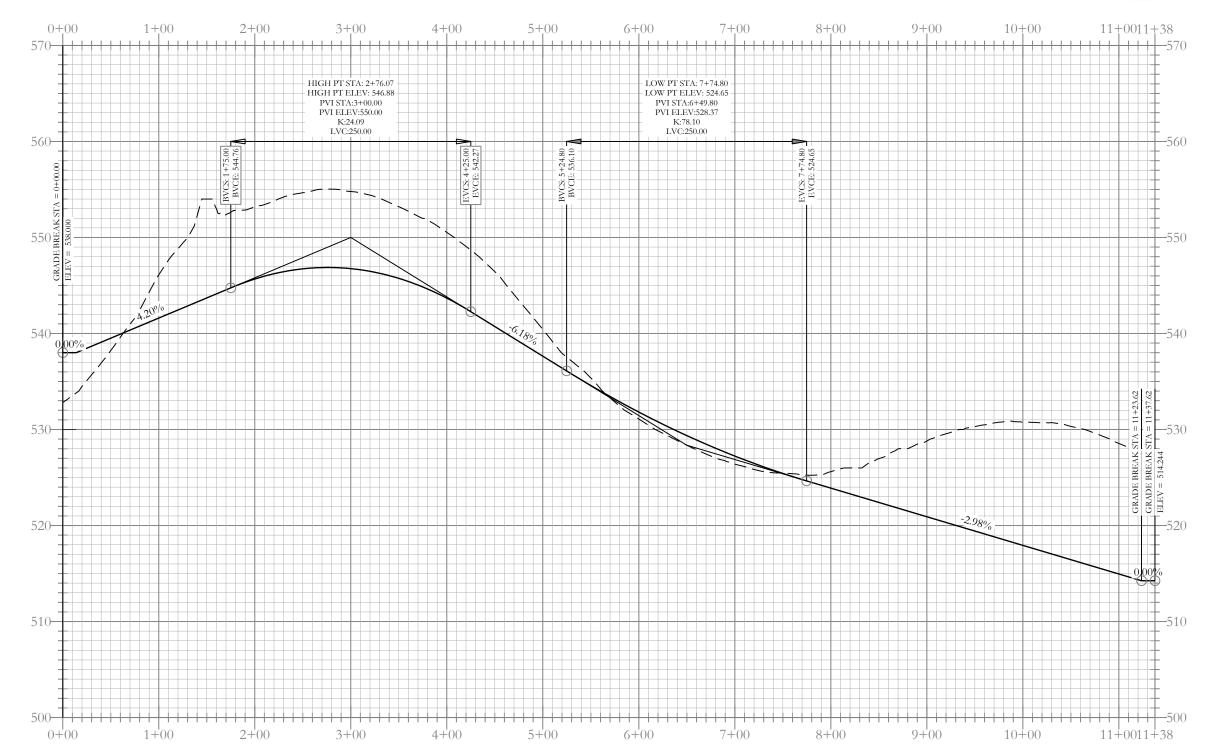


Kenton Ave Profile









Lone Oak Ave Profile

129 N. Main Street, Benton, Arkansas 72015 **CONSULTING** PH. (501)315-2626 FAX (501) 315-0024 ENGINEERS + SURVEYORS

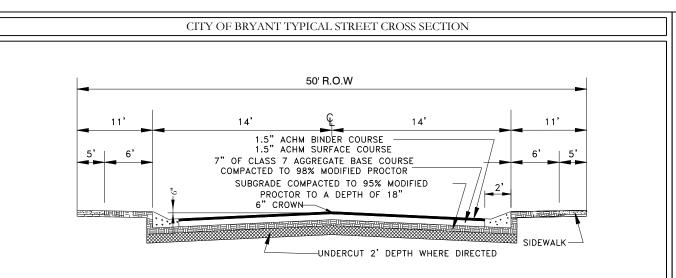
www.hopeconsulting.com

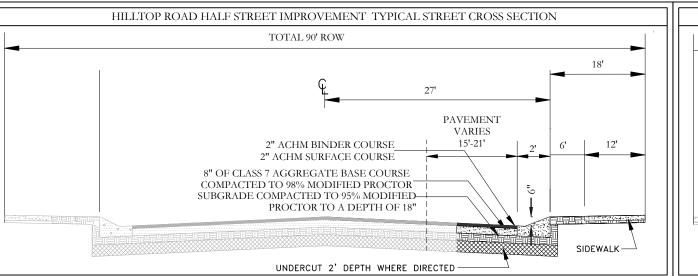
FOR USE AND BENEFIT OF: NXT GEN HOMES LLC.

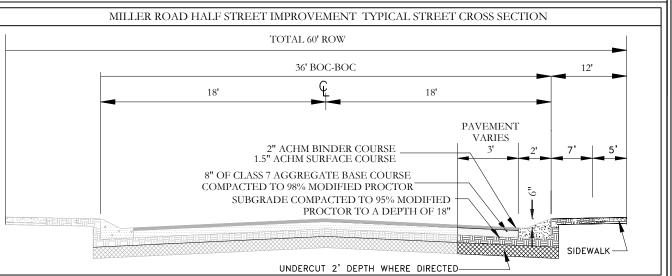
HILLTOP LANDING STREET PLAN & PROFILE

ı	A SUBDIVISION IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS										
	DATE:	03/08/202	C.A.D. BY:					DRAWING NUMBER:			
	REVISED:	04/19/2023		CHECKED BY:					20-1341		
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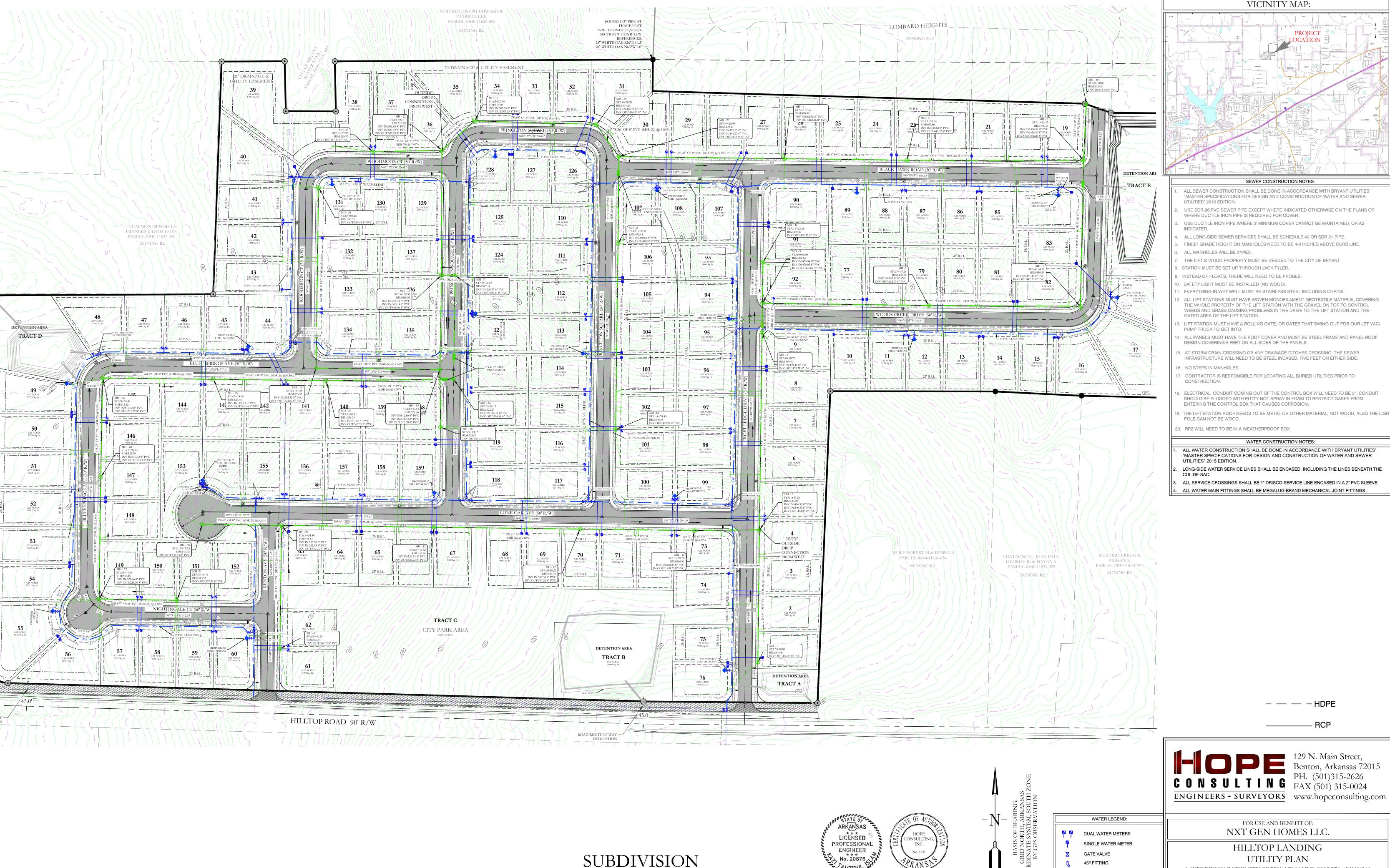
Nightingale Ct-Bluff Springs Ave Profile







VICINITY MAP:



SUBDIVISION

UTILITY PLAN

CONSULTING INC.

PROFESSIONAL ENGINEER No. 20876

P DUAL WATER METERS SINGLE WATER METER X GATE VALVE

45º FITTING 90º FITTING

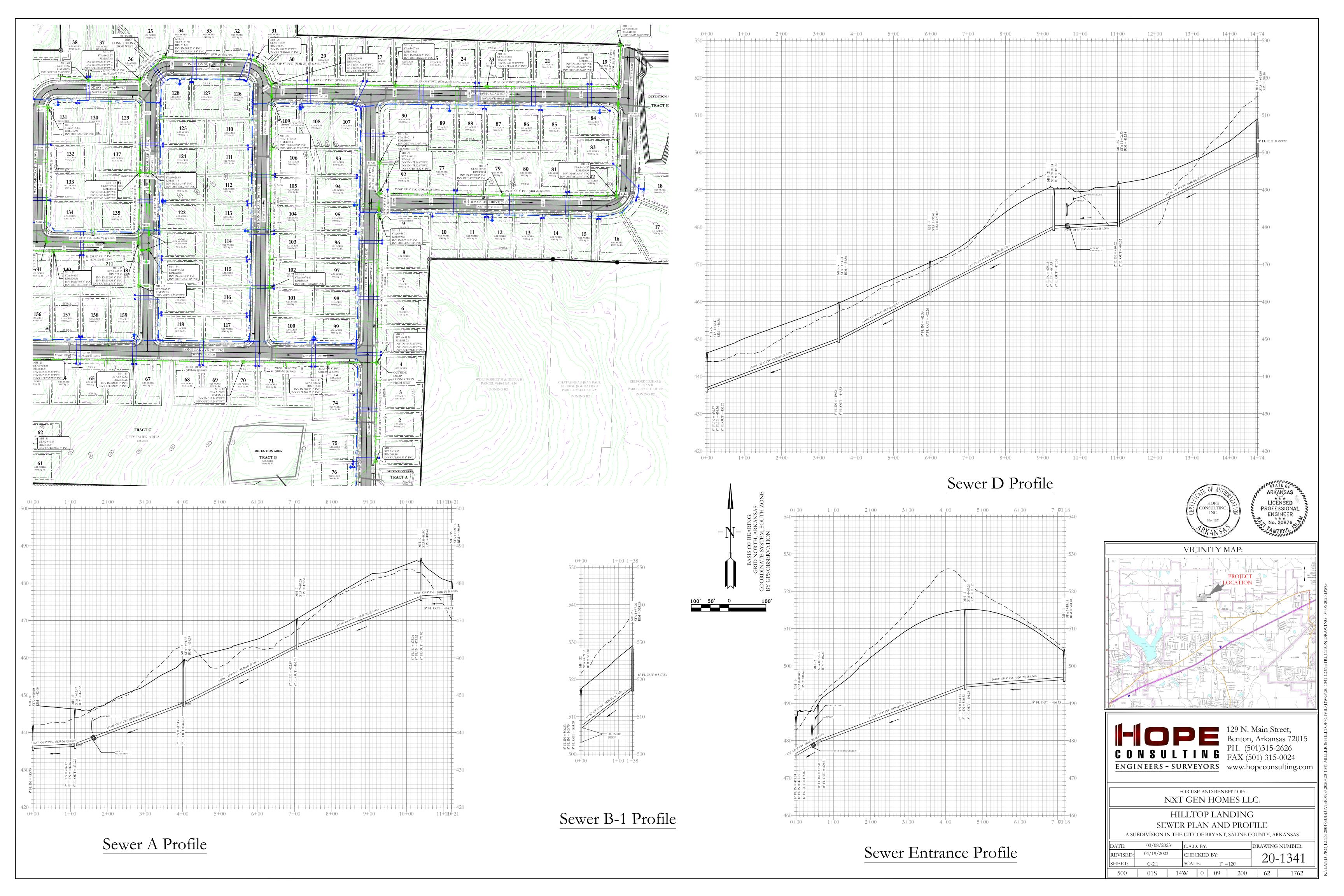
TEE FITTING CROSS FITTING

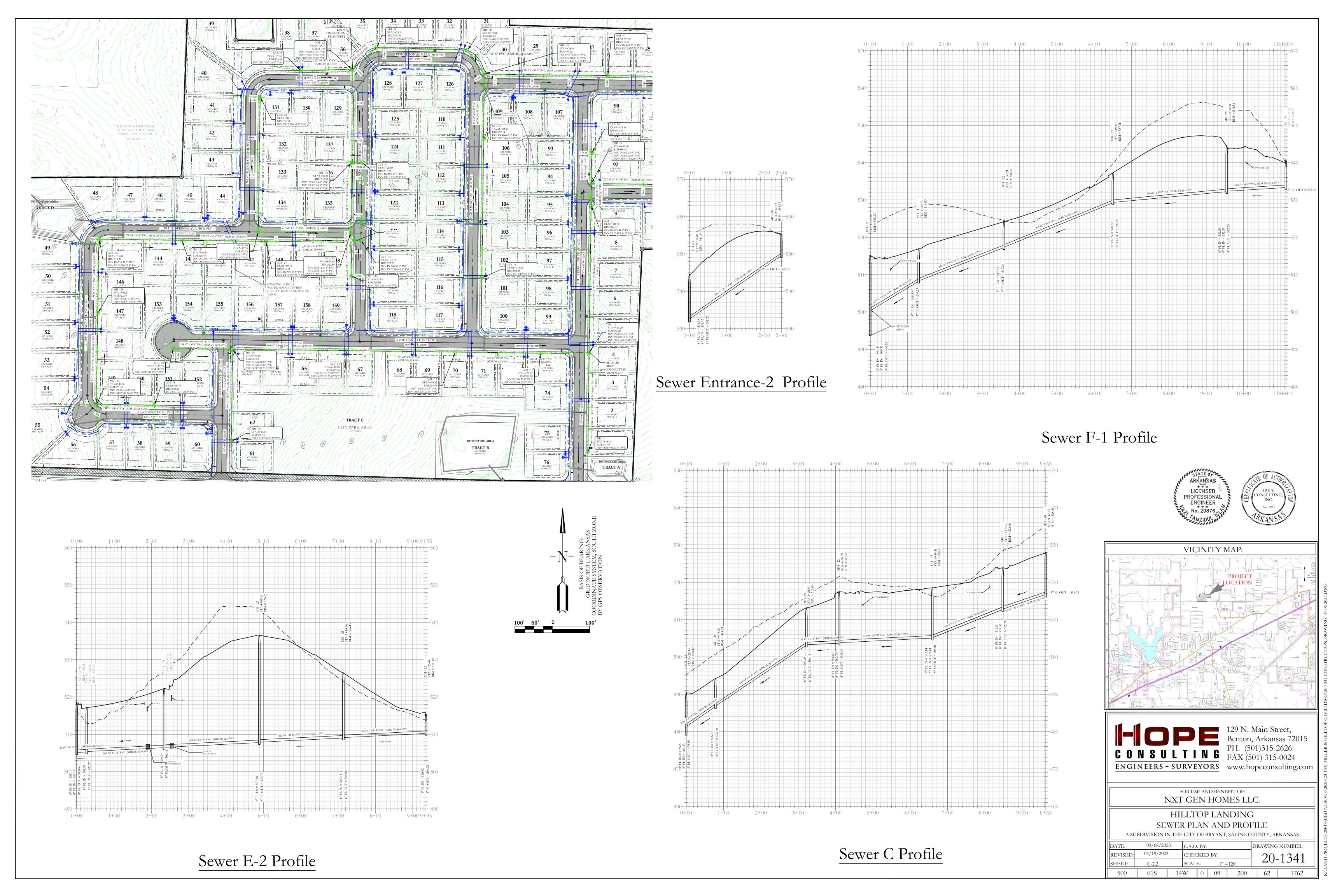
FIRE HYDRANT

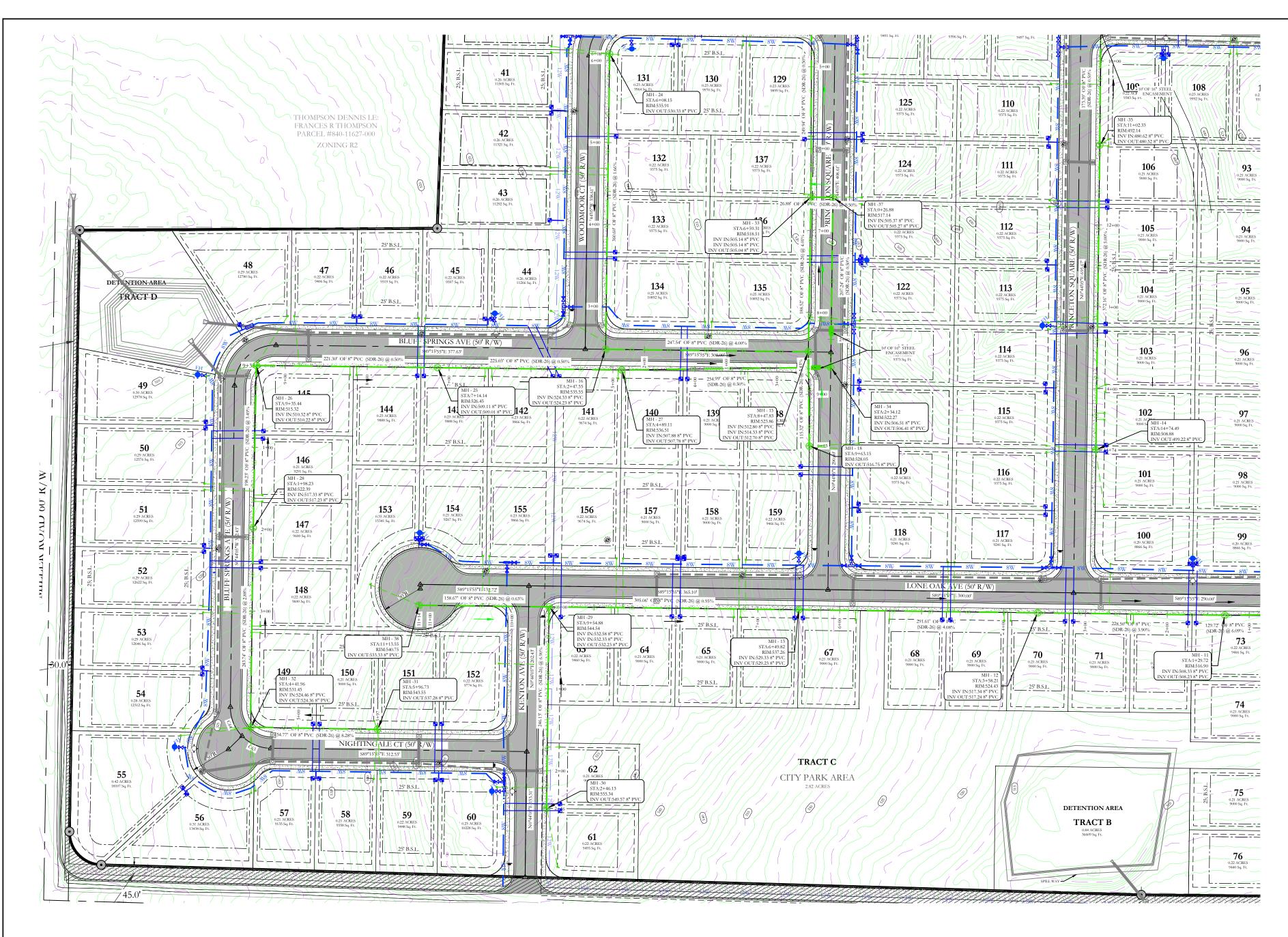
NXT GEN HOMES LLC.

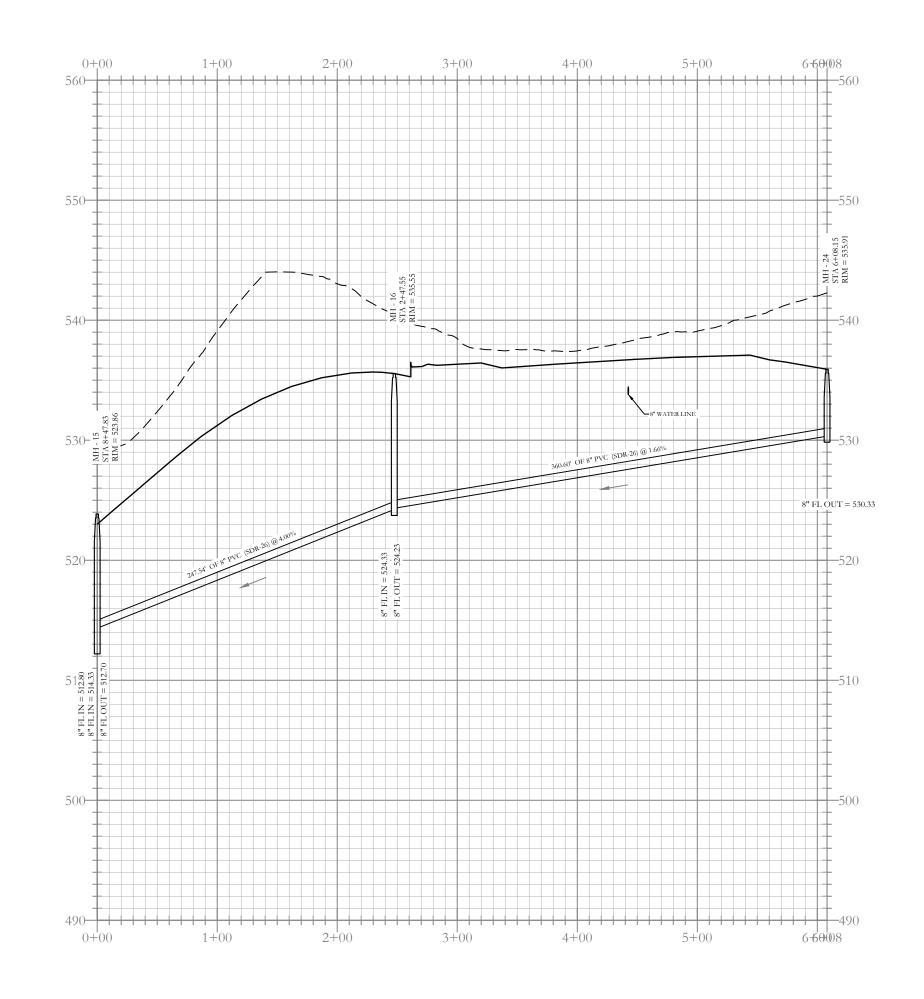
HILLTOP LANDING UTILITY PLAN

A SUBDIVISION IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS 03/08/2023 DRAWING NUMBER: REVISED: CHECKED BY: 20-1341 14W 0 09 200 62 1762 01S

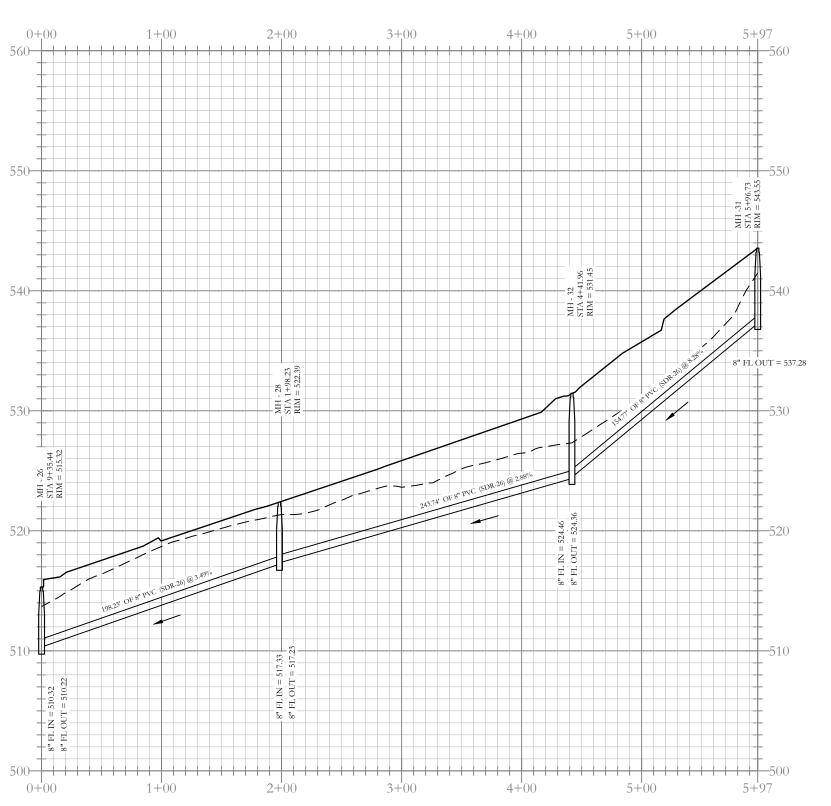




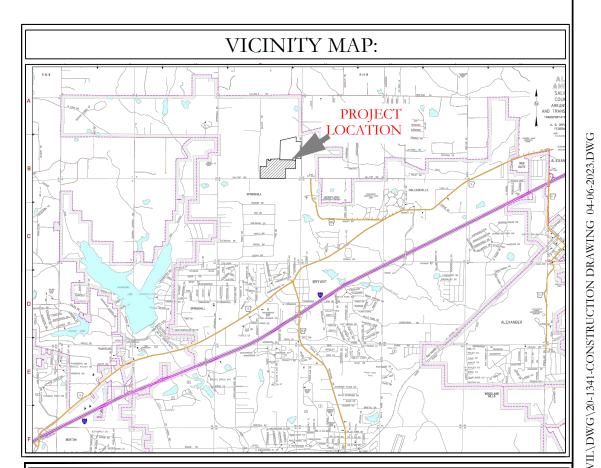




Sewer B-2 Profile



Sewer E-1 Profile





FOR USE AND BENEFIT OF:

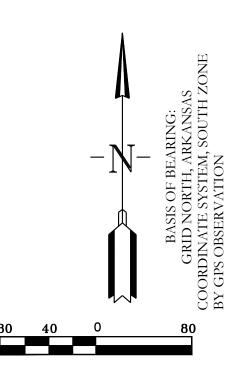
NXT GEN HOMES LLC.

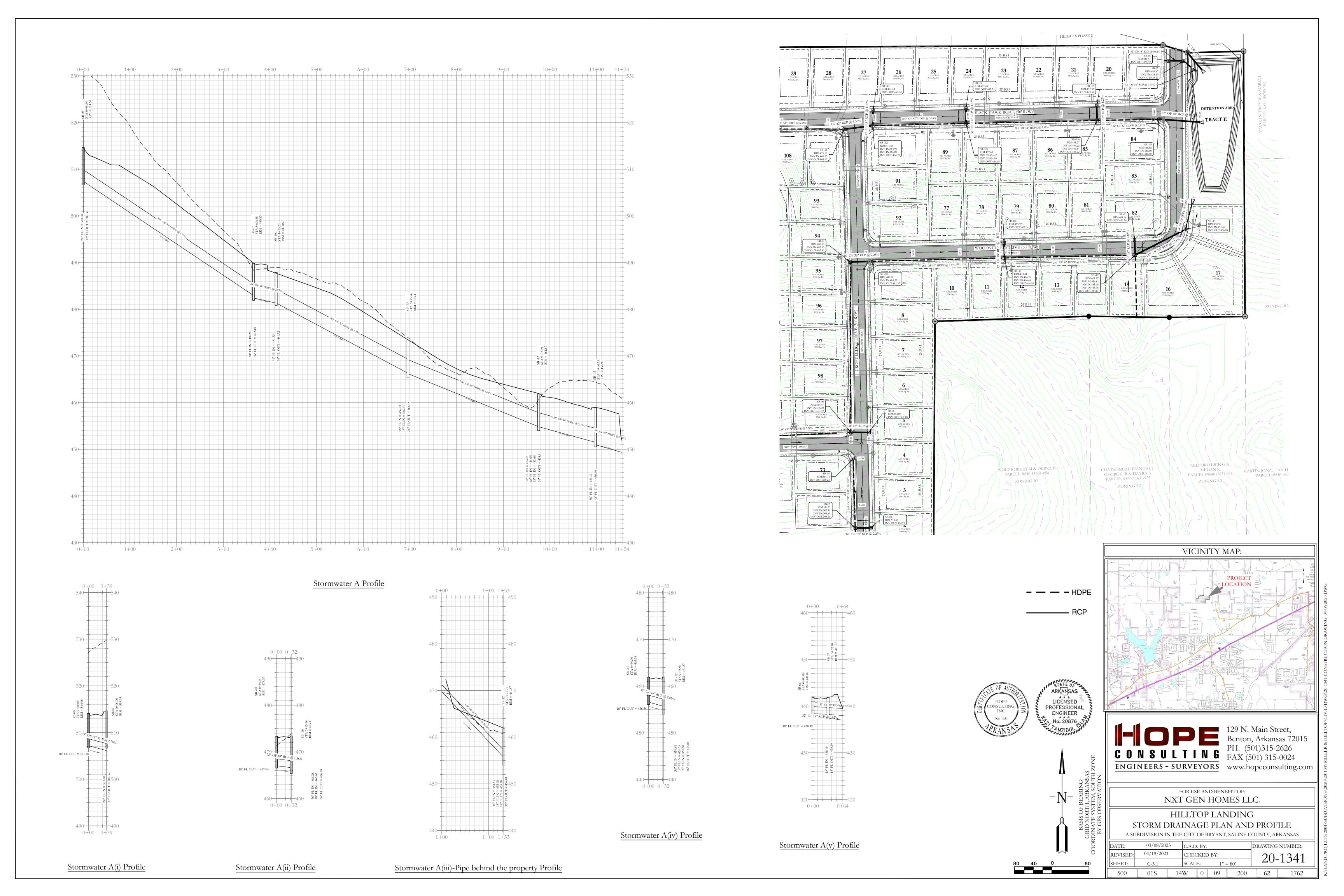
HILLTOP LANDING SEWER PLAN AND PROFILE

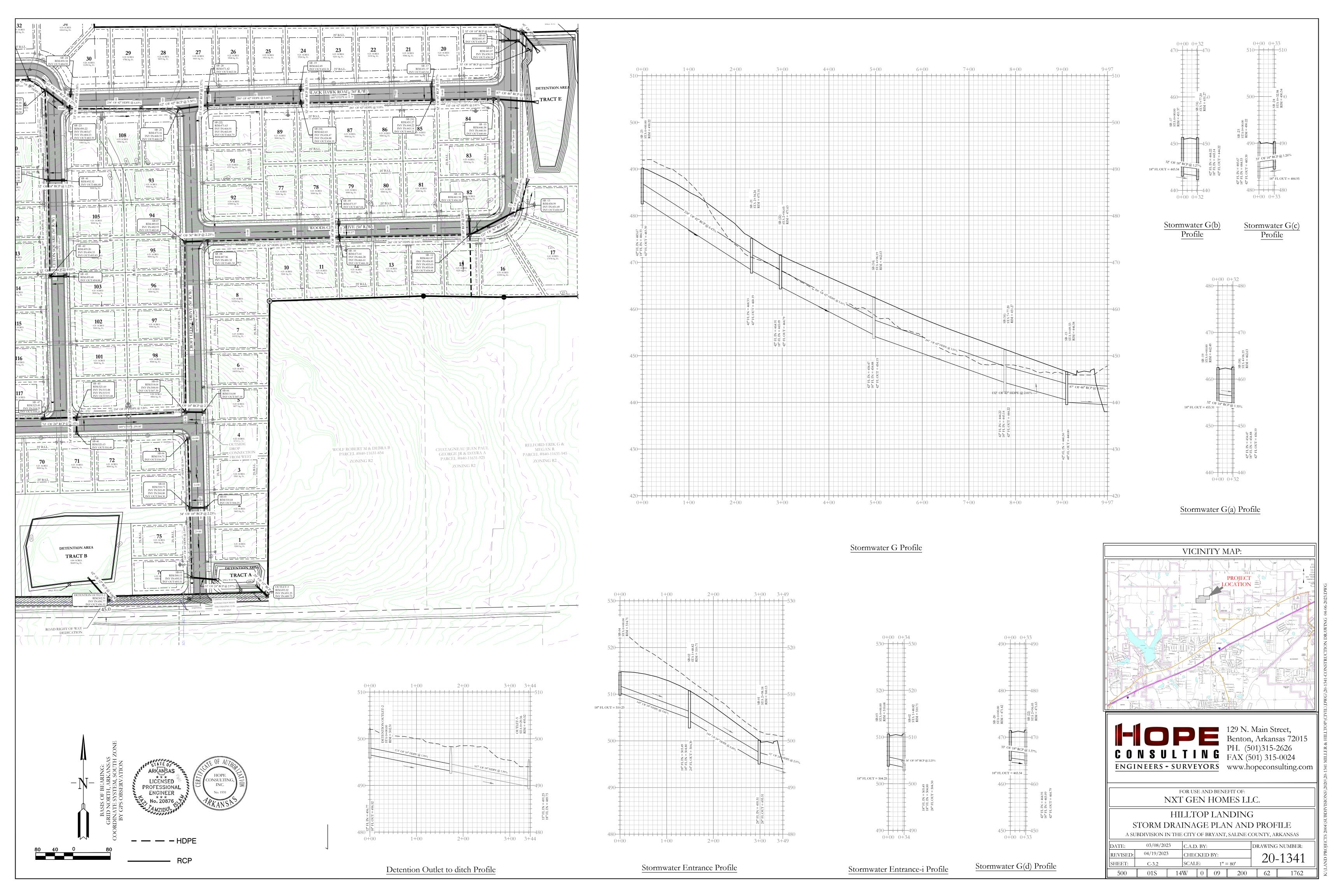
A SUBDIVISION IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS DRAWING NUMBER: 20-1341 01S 14W 0 09 200 62 1762

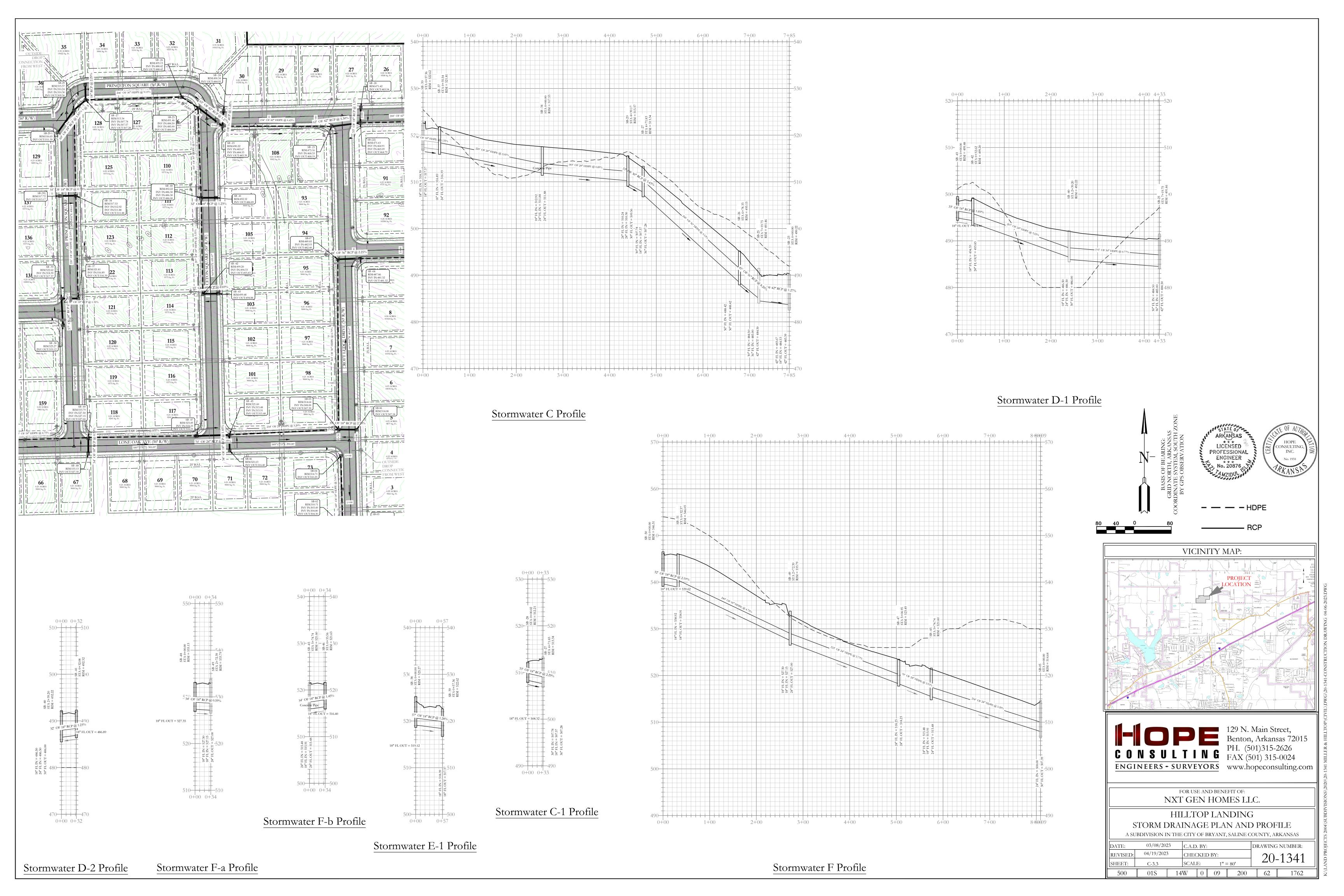


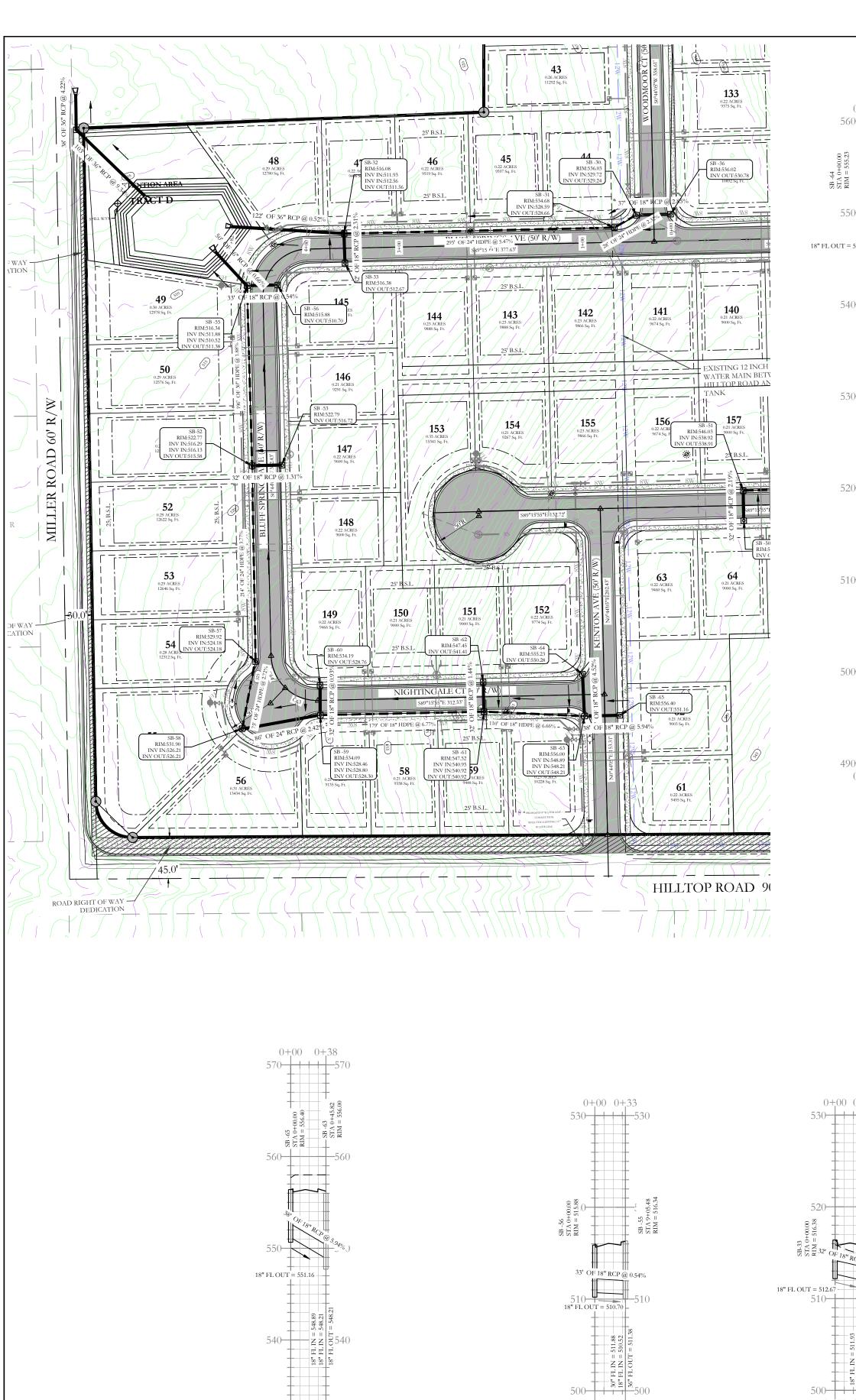




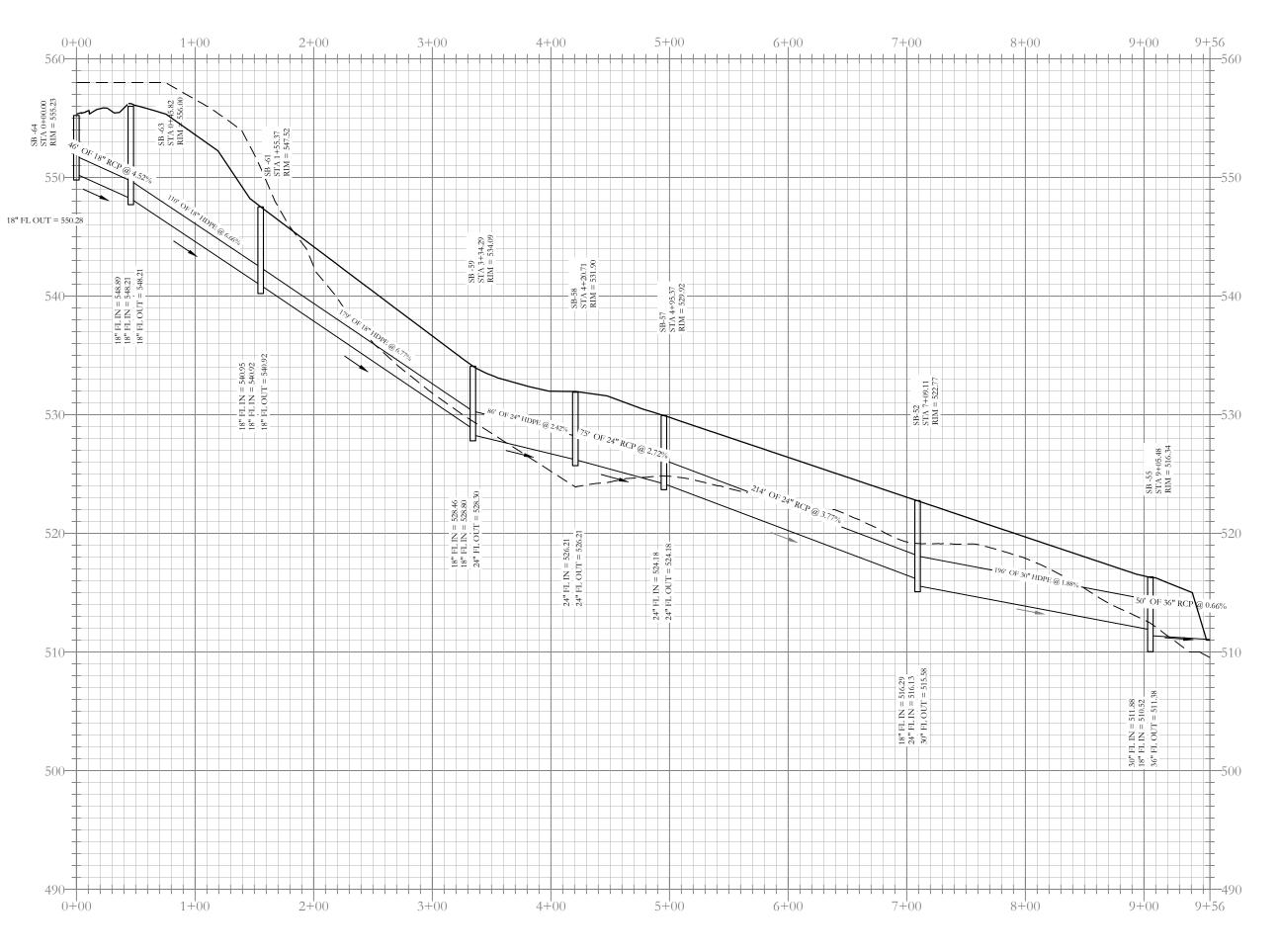


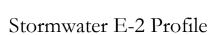


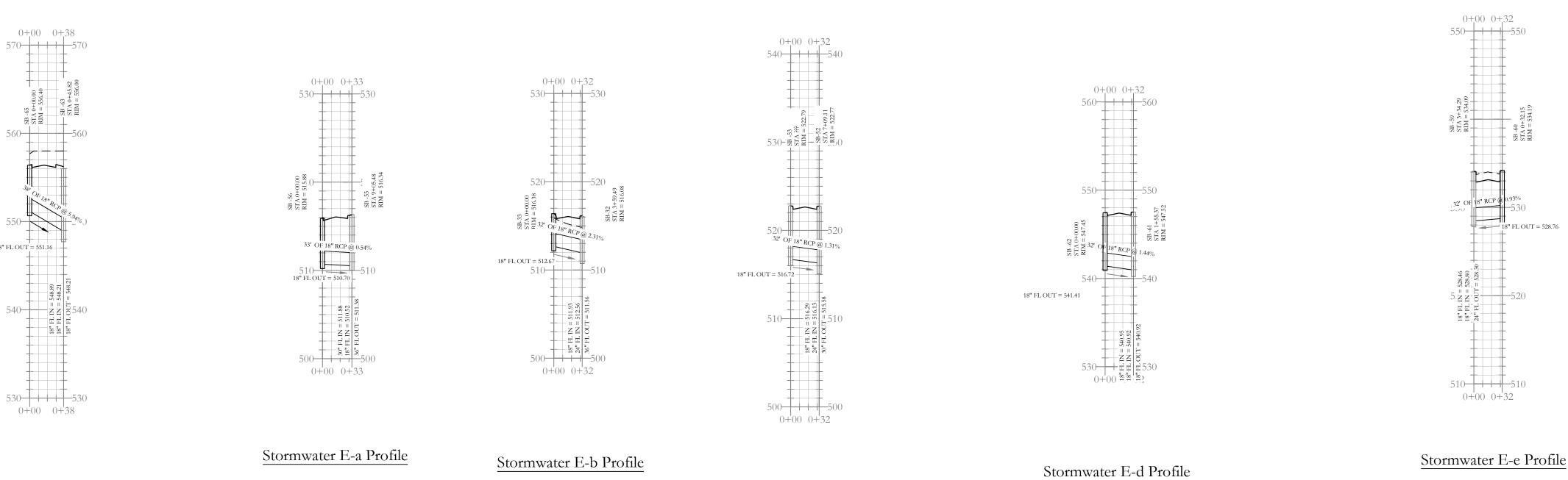




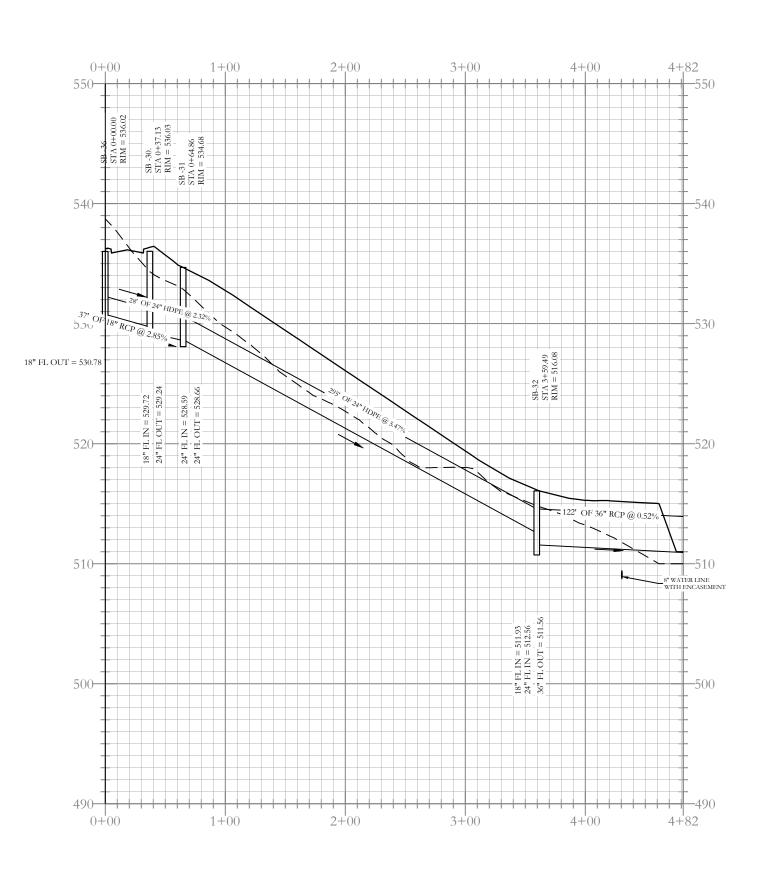
Stormwater Entrance-2 Profile







Stormwater E-c Profile



Stormwater B Profile





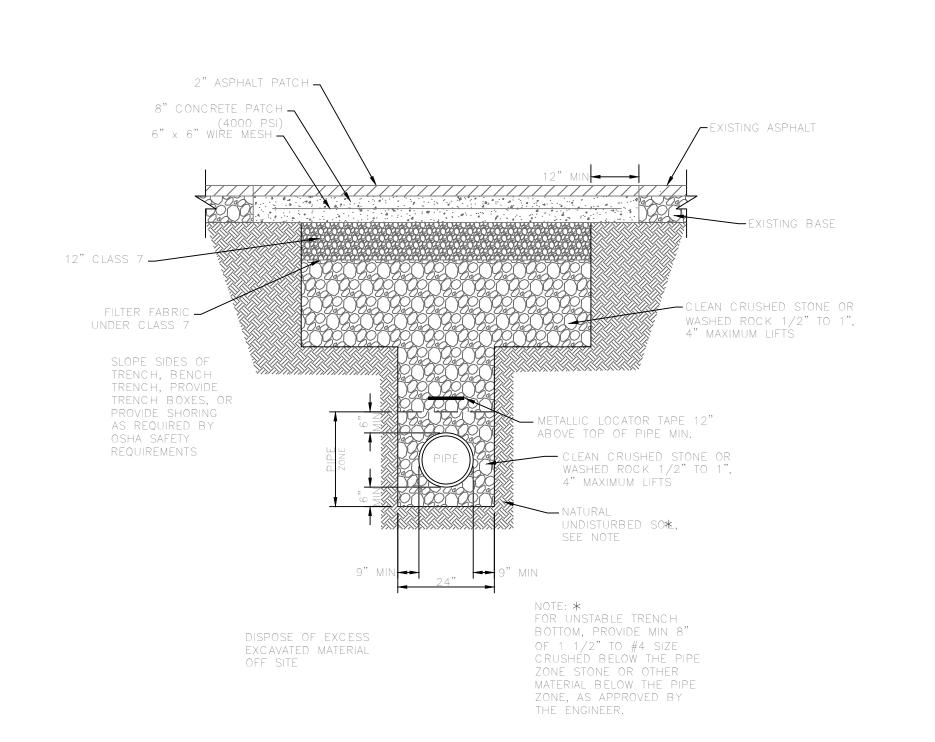
VICINITY MAP:



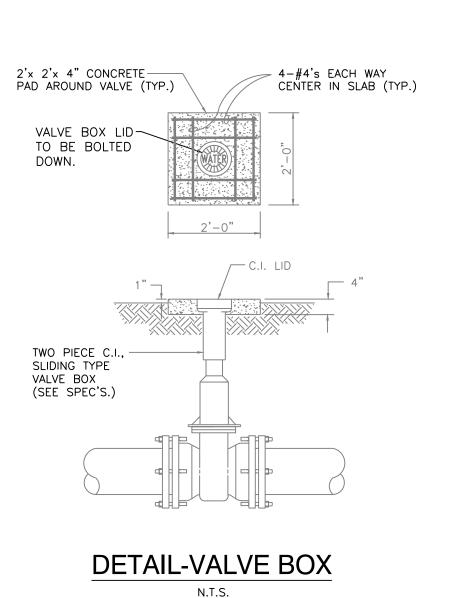
FOR USE AND BENEFIT OF: NXT GEN HOMES LLC.

HILLTOP LANDING STORM DRAINAGE PLAN AND PROFILE

A SUBDIVISION IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS 03/08/2023 DRAWING NUMBER: 04/19/2023 CHECKED BY: 20-1341 01S 14W 0 09 200 62 1762

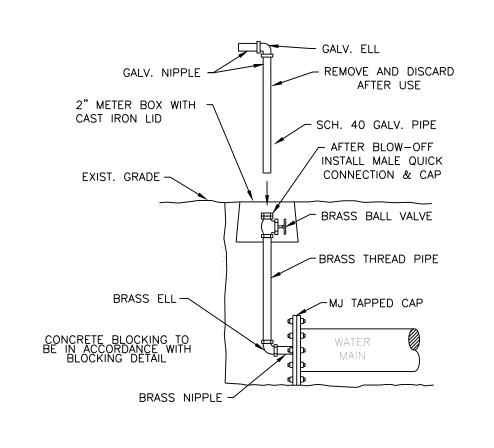


PVC SEWER TRENCH UNDER EXISTING ASPHALT STREET

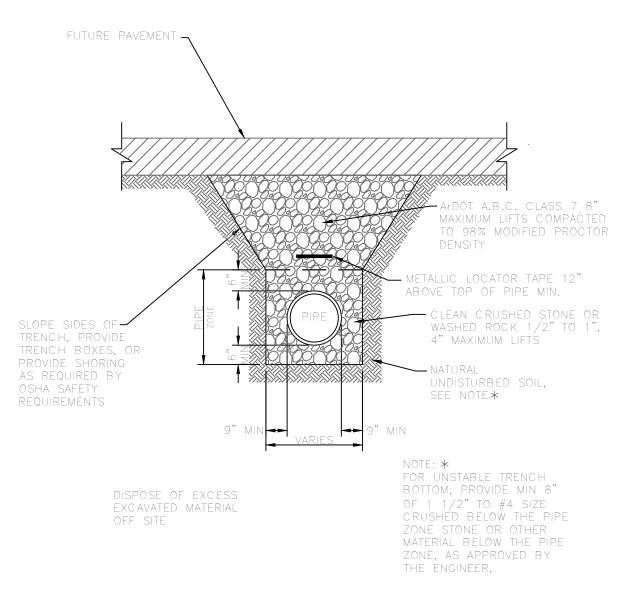


BACKFILL MATERIAL 3"Ø MAX. ROCK SIZE SLOPE SIDES OF TRENCH PROVIDE TRENCH BOXES METALLIC LOCATOR TAPE 12" ABOVE TOP OF PIPE MIN. WASHED ROCK 1/2" TO 1" 4" MAXIMUM LIFTS UNDISTURBED SOIL, SEE NOTE * BOTTOM, PROVIDE MIN 8" DISPOSE OF EXCESS

PVC SEWER TRENCH IN UNPAVED AREAS

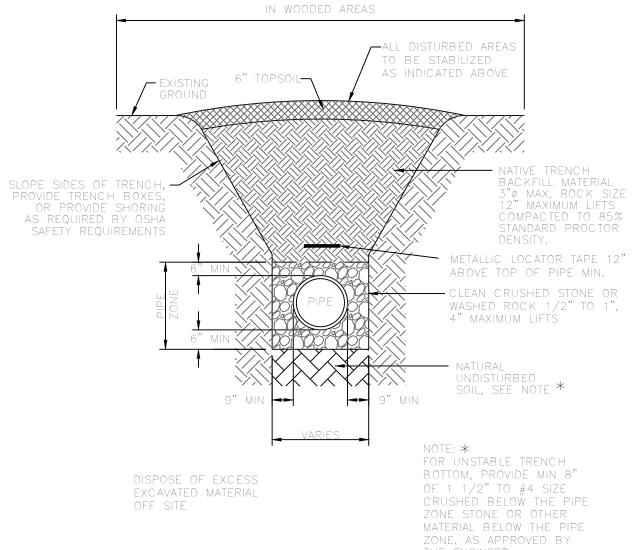


2" BLOW-OFF RISER

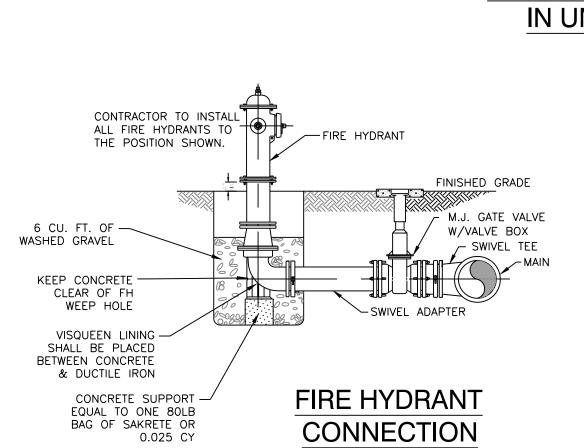


PVC SEWER TRENCH UNDER FUTURE ASPHALT STREET

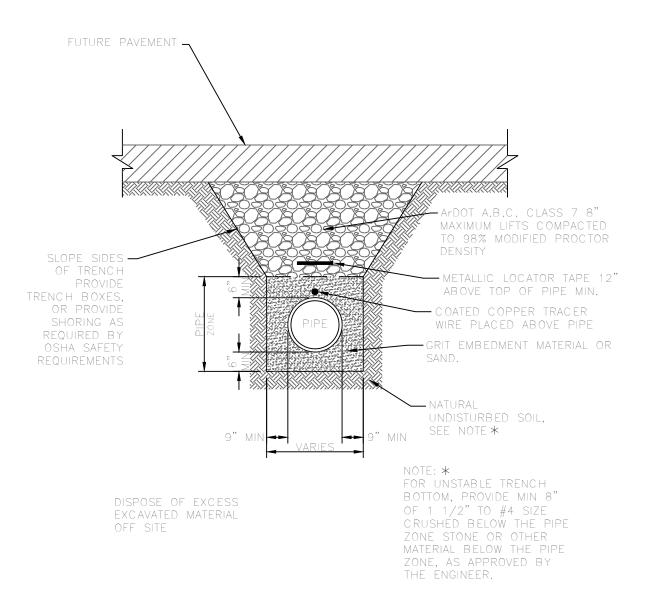
1. IN LAWN AREAS, DISTURBED SOIL SHALL BE STABILIZED BY PLACEMENT OF SOD TO MATCH EXISTING. 2. IN FIELDS OR WOODED AREAS, DISTURBED SOIL SHALL BE STABILIZED BY SEEDING.



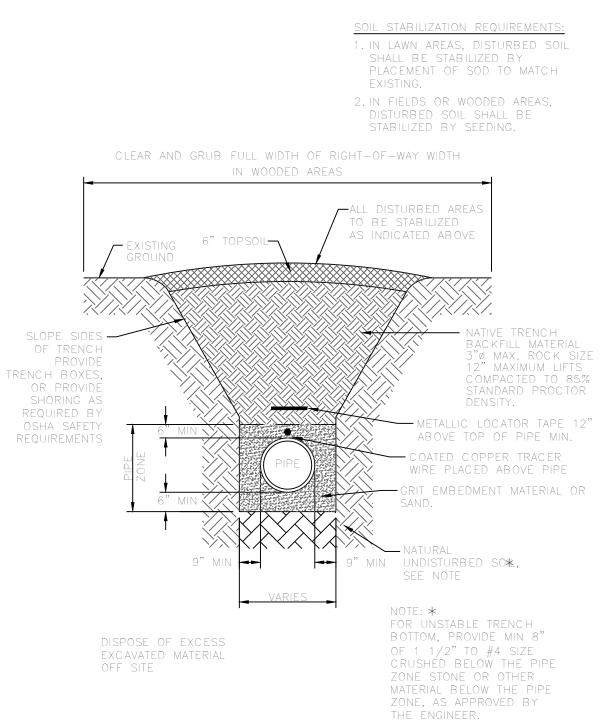
CLEAR AND GRUB FULL WIDTH OF RIGHT-OF-WAY WIDTH



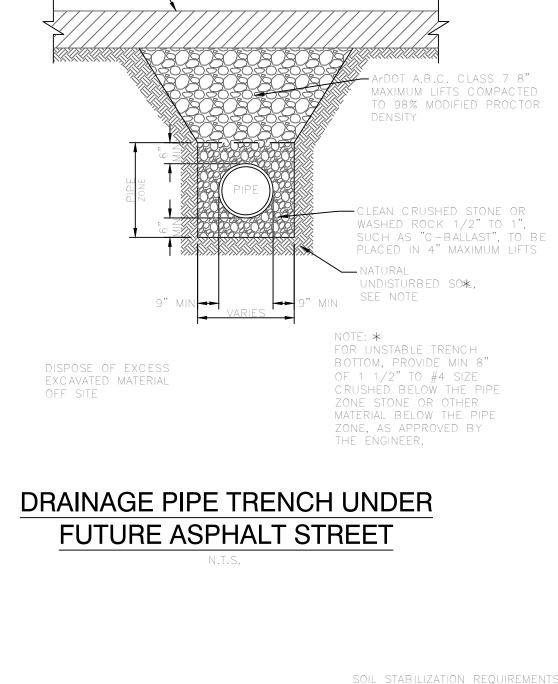
NTS



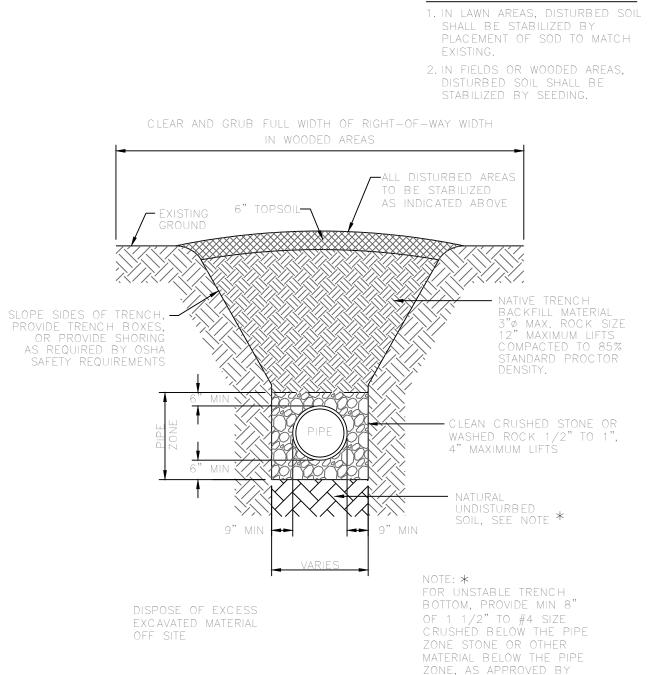
PVC WATER LINE TRENCH UNDER FUTURE ASPHALT STREET



PVC WATER LINE TRENCH IN UNPAVED AREAS



FUTURE PAVEMENT



DRAINAGE PIPES IN UNPAVED AREAS



129 N. Main Street, Benton, Arkansas 72015 PH. (501)315-2626

FOR USE AND BENEFIT OF: NXT GEN HOMES LLC.

HILLTOP LANDING

TRENCH DETAILS A SUBDIVISION IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS

1											
ı	DATE:	ATE: 03/08/2023			C.A.D. BY:				DRAWING NUMBER:		
	REVISED:	04/19/2023		CHEC	KEI	O BY:		20 13/1			
	SHEET:	C-4.0		SCALE: 1' = 20"			20"	20-1341			
	500	01S	14	14W		09	200	62	1762		

M.J. TAPPING SLEEVE -M.J. TAPPING VALVE -

WATER MAIN CONNECTION DETAIL

SPECIFICATIONS

SUBGRADE MATERIAL

- A. Subgrade soils shall be all materials used for subgrade including in-situ materials and fill materials.
- B. Subrades for pavement shall be stabilized by mechanical compaction. Stabilization may be submitted for approval when supported by engineering data and calculations to substantiate the adequacy of the stabilized procedure.
- C. Subgrade shall be compacted to 95 percent modified proctor density minimum. Moisture content shall be +/- 3% of optimum moisture unless otherwise supported by the site specific geotechnical data and approved by City. D. Subgrade shall be prepared in such a manner that the base course shall be placed on a firm foundation that is stable and free from soft spots, pumping, dust pockets, wheel ruts, or other defects.
- E. The top 24 inches of the subgrade shall be a material not susceptible to frost action unless modified with cement, lime or another method approved specifically by the City to resist frost action. Soils classified as A-4 and A-5 including sandy silts, fine silty sand or lean clays are highly susceptible to frost
- F. In-situ soils meeting the requirements outlined in these specifications may be utilized as subgrade shall be scarified to a minimum depth of 8-inches below finish subgrade, recompacted and tested as described below. Fill material for subgrade shall be placed in lifts not to exceed 8-inches compacted depth.
- G. Methods and procedures for establishing the total depth of soil replacement and/or modification shall be as specified by the design engineer and geotechnical investigations. The adequacy of in-situ soils and fill materials as pavement subgrade shall be evaluated based upon the soils classification, liquid
- H. Soils with a liquid limit greater than 40, or a plasticity index greater than 15 shall be undercut and removed from the street section or improved by a design method of stabilization approved by the City.
- I. Quality control testing shall be as specified below. Undercut 24" of soil below finished street base course. Proof roll to verify stability
- K. Backfill the undercut subgrade with Class 7 aggregate or soil meeting the requirements of this section and compact in lifts not exceeding 8".

BASE COURSE

- A. Base course material shall be crushed stone meeting the requirements of ArDOT Class 7 aggregate base course as specified in the latest edition of ArDOT Standard Specifications.
- B. Base course shall be compacted to 98 percent modified proctor density minimum. Moisture content shall be +/- 3% of optimum moisture.

SURFACE COURSE

A. Surface course for flexible pavement designs shall utilize plant mix bituminous base and binder courses conforming to ArDOT Standard Specifications.

CURB AND GUTTER

- A. Curb and gutter shall be Portland Cement Concrete with a minimum 28-day compressive strength of 4,000 psi. Concrete shall be air-entrained with a maximum of 4-inch slump.
- B. Compaction requirements under curb and gutter shall conform to the requirements for street subgrade materials. Compaction requirements shall extend to a minimum of 1 foot behond the back of curb and gutter removing all soft spots and replacing with suitable material. C. Curb and gutter shall conform to the typical detail within these specifications or ArDOT Standard Roadway Drawing Details for curbing.
- D. Expansion joints shall be made with 1/2-inch preformed expansion joint filler of a non-extruding type. Expansion joints shall be placed at intervals not exceeding 195 feet, intersection radii, driveways, stationary structures, and sidewalks.
- E. Contraction joints shall be sawed or fromed at intervals not greater than 20 feet. Depth of saw-cut hall be 1 1/2-inch and have a width of 1/4-inch. Contraction joints shall be sealed in accordance with ArDOT Standard Specifications.
- F. Forms shall be made of metal or wood and shall be properly braced. The minimum length of each section of form used shall be uniform and free from undesirable bends or warps. Forms shall be of such cross section and strength and so secured as to resist the
- pressure of the impact and vibration on any equipment which they support without springing or settlement. G. Curb and gutter placed with slip form or extruding equipment will be acceptable providing it complies with all of the above requirements.
- H. After curing, the curb shall be immediately backfilled to within 4 inches of the top curb to eliminate the possibility of washing beneath the curb. The remaining 4 inches shall be topsoil.
- I. Cold weather protection shall meet the requirements of the latest edition of ArDOT Standard Specifications.

SIDEWALKS

General

- A. Sidewalks shall be Portland Cement Concrete with a minimum 28-day compressive strength of 4,000 psi.
- B. Sidewalks shall be on both sides of streets in line with sidewalks on opposite corners of roads. C. All sidewalks including ramps shall meet all current Federal Americans with Disabilities (ADA) design guidelines or requirements.
- D. Traverse slopes shall not exceed 2 percent.
- E. Subgrade under sidewalks shall be compacted to 90 percent modified proctor density minimum.
- F. Sidewalks shall not be placed upon grassy or organic materials.
- G. Sidewalks which extend or link existing sidewalks shall adjoin the existing sidewalks to form a continuous, even pathway.
- H. Utility poles, utility boxes, mailboxes, fire hydrants, and other similar obstructions shall not be located in sidewalks Sidewalk location may vary at the discretion of the City to avoid such obstacles. I. All sidewalk ramps shall meet ADA requirements with corrugated dome ramp requirements.

Minimum thickness and reinforcement

- A. Sidewalks shall have a minimum thickness of 4 inches.
- B. Sidewalks shall be reinforced, at a minimum, with woven wire fabric reinforcement.

Contraction and expansion joints

- A. Contraction joints shall be provided perpendicular to the sidewalk at intervals equal to the sidewalk width.
- B. Expansion joints shall be constructed perpendicular to the sidewalk at intervals equal to five times the sidewalk width. Expansion joints shall be made with 1/2-inch preformed expansion joints shall be placed at driveways, drop inlets, and curbs.

Quality control testing and inspection by the City

- A. Subgrade and formwork for sidewalks shall be inspected by the City prior to pouring of the sidewalk.
- B. All testing of materials and construction shall be provided and paid for by the Developer/Owner.
- All field tests required for a project shall be witnessed by the City, contr D. All testing shall be accomplished by a testing firm approved by the City and shall be performed under the supervision of a licensed Professional Engineer.
- E. Sampling and testing locations shall be subject to approval by the City.
- F. Density tests on subgrades shall be taken every 300 feet or portion thereof. G. The City shall be notified at least one day in advance of the need to inspect subgrade and formwork of sidewalks.

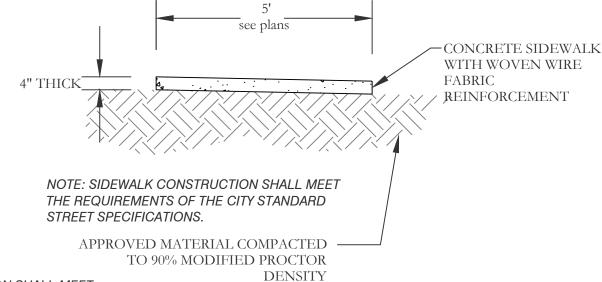
Subgrade

- A. Subgrade soils shall be all materials used for subgrade including in-situ materials and fill materials.
- B. Subgrade shall be compacted to 90 percent modified proctor desnity minimum. Moisture content shall be +/- 3% of optimum moisture unless otherwise supported by the site specific geotechnical data and approved by City.
- C. Subgrade shall be prepared in such a manner that the base course shall be placed on a firm foundation that is stable and free from soft spots, pumping, dust pockets, wheel ruts, or other defects.
- D. The top 24 inches of the subgrade shall be a material not susceptible to frost action unless modified with cement, lime or another method approved specifically by the City to resist frost action. Soils classified as A-4 and A-5 including sandy silts, fine silty sand or lean clays are highly susceptible to frost

QUALITY CONTROL TESTING AND INSPECTIONS

General

- A. Materials and construction employed in street improvements shall be subject to inspection and quality control testing. All testing of materials and construction shall be provided and paid for by the Developer/Owner.
- B. The Developer/Owner shall provide for inspections of street improvements during construction. The Engineer of Record. The Engineer of Record shall provide certification that all materials and construction conform to the approved plans and specifications and with these minimum street standards.
- C. The Engineer of Record shall furnish inspection whenever a critical construction activity is taking place. This means that a representative of the Engineer of Record must be on-site whenever a critical construction activity is taking place.
- D. All field tests required for a project shall be witnessed by the City, Engineer of Record, contractor, or other authorized representatives.
- E. The City shall be notified at least one day in advance of any test(s). It is the responsibility of the contractor to coordinated the scheduling of all tests with the City.



STANDARD CURB & GUTTER NOT TO SCALE

TYPICAL CURB DETAILS & NOTES

NOTE: SIDEWALK CONSTRUCTION SHALL MEET ADA REQUIREMENTS WITH CORRUGATED DOME RAMP REQUIREMENTS

Typical Sidewalk Detail

Typical Curb & Gutter Detail

4,000 psi concrete

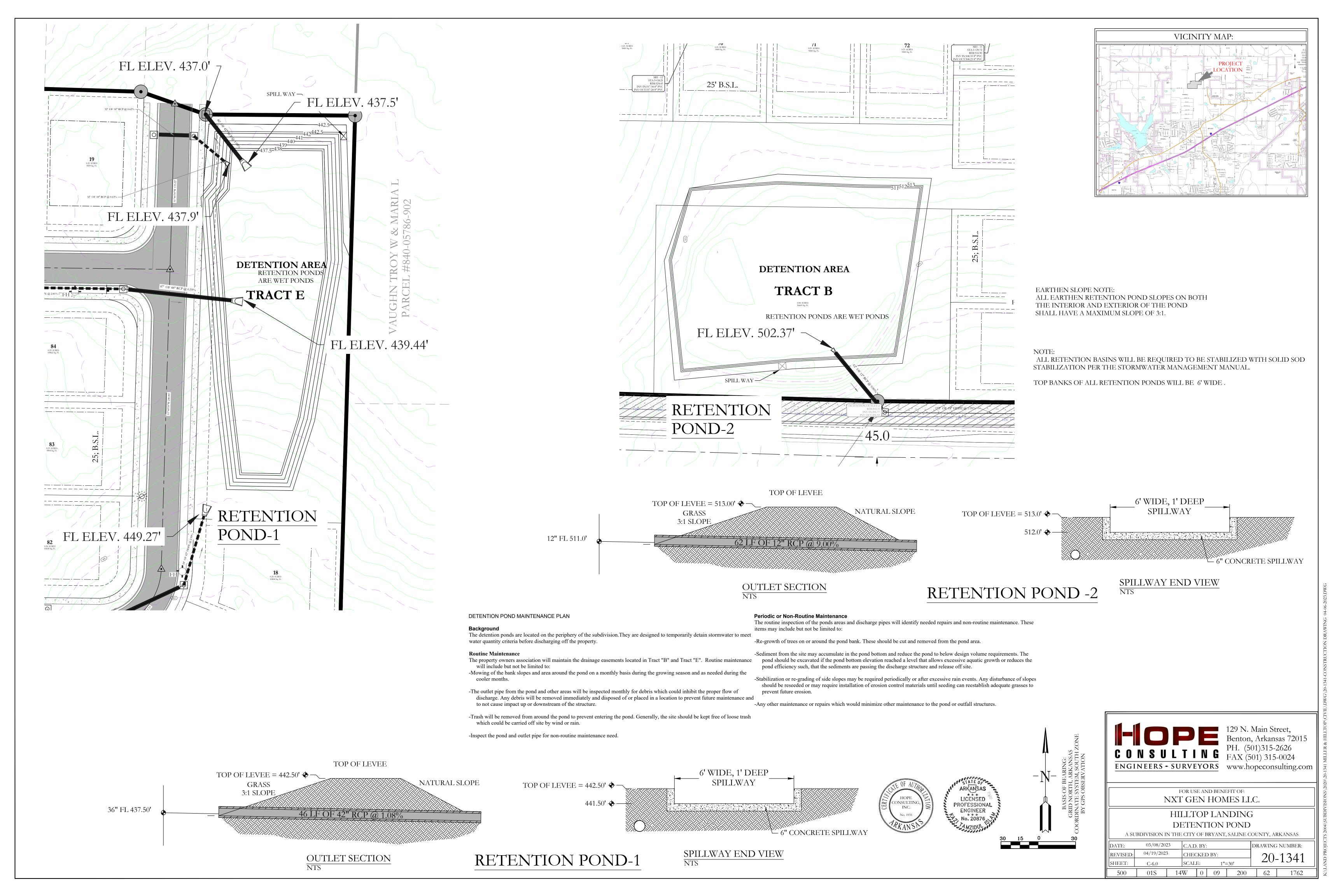


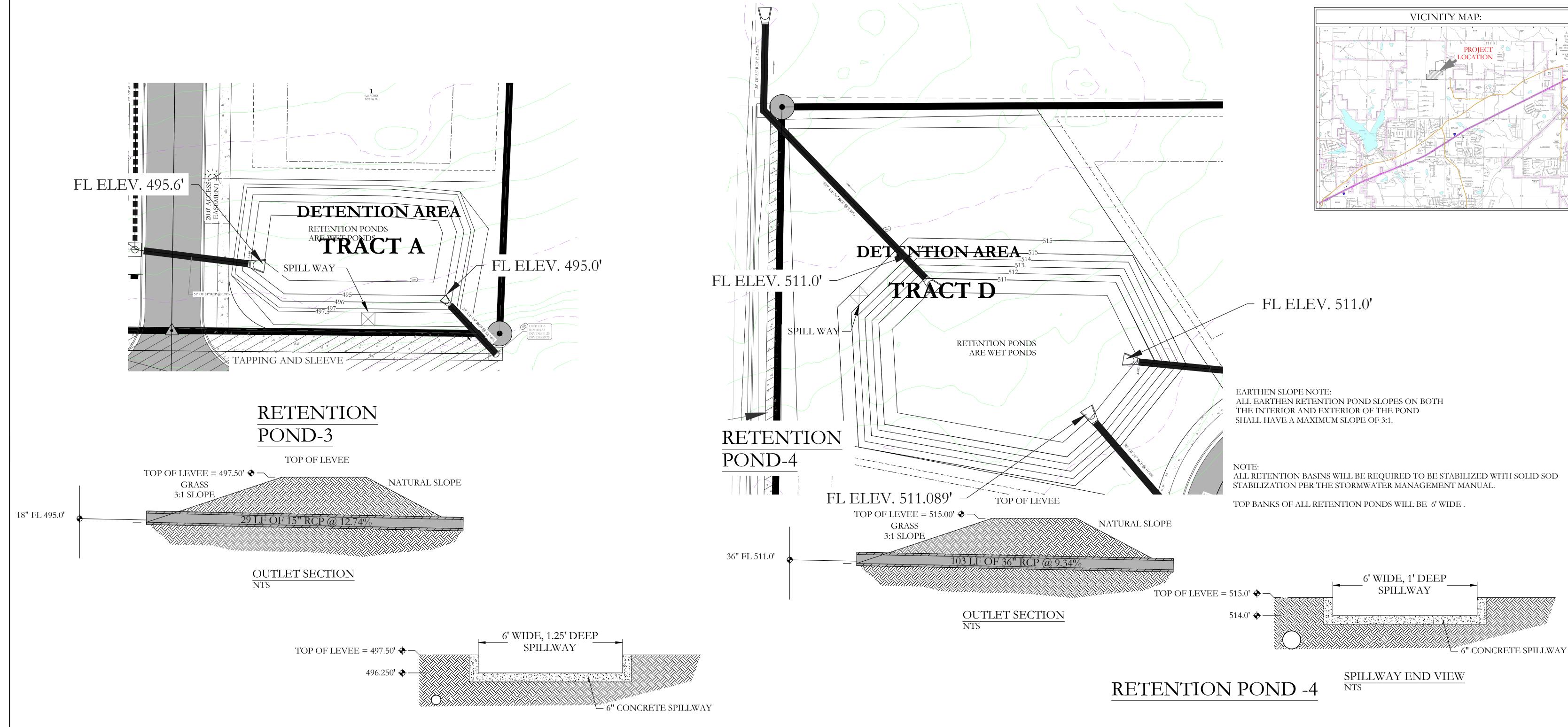
FOR USE AND BENEFIT OF:

NXT GEN HOMES LLC.

HILLTOP LANDING CIVIL SPECIFICATIONS

A SUBDIVISION IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS 03/08/2023 C.A.D. BY: DRAWING NUMBER: 04/19/2023 REVISED: CHECKED BY: 20-1341 14W 0 09 200





SPILLWAY END VIEW NTS

DETENTION POND-3

DETENTION POND MAINTENANCE PLAN

The detention ponds are located on the perphery of the subdivision. They are designed to temporarily detain stormwater to meet water quantity criteria before discharging off the property.

The property owners association will maintain the drainage easements located in Tract "A" and Tract "D". 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 pipes from the ponds 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 areas and discharge pipes 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 areas.

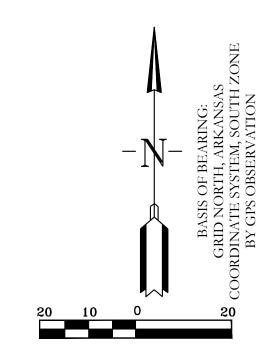
-Sediment from the site may accumulate in the pond bottom and reduce the pond to below design volume requirements. The pond should be excavated if the pond bottom elevation reached a level that allows excessive aquatic growth or reduces the pond efficiency such, that the sediments are passing the discharge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







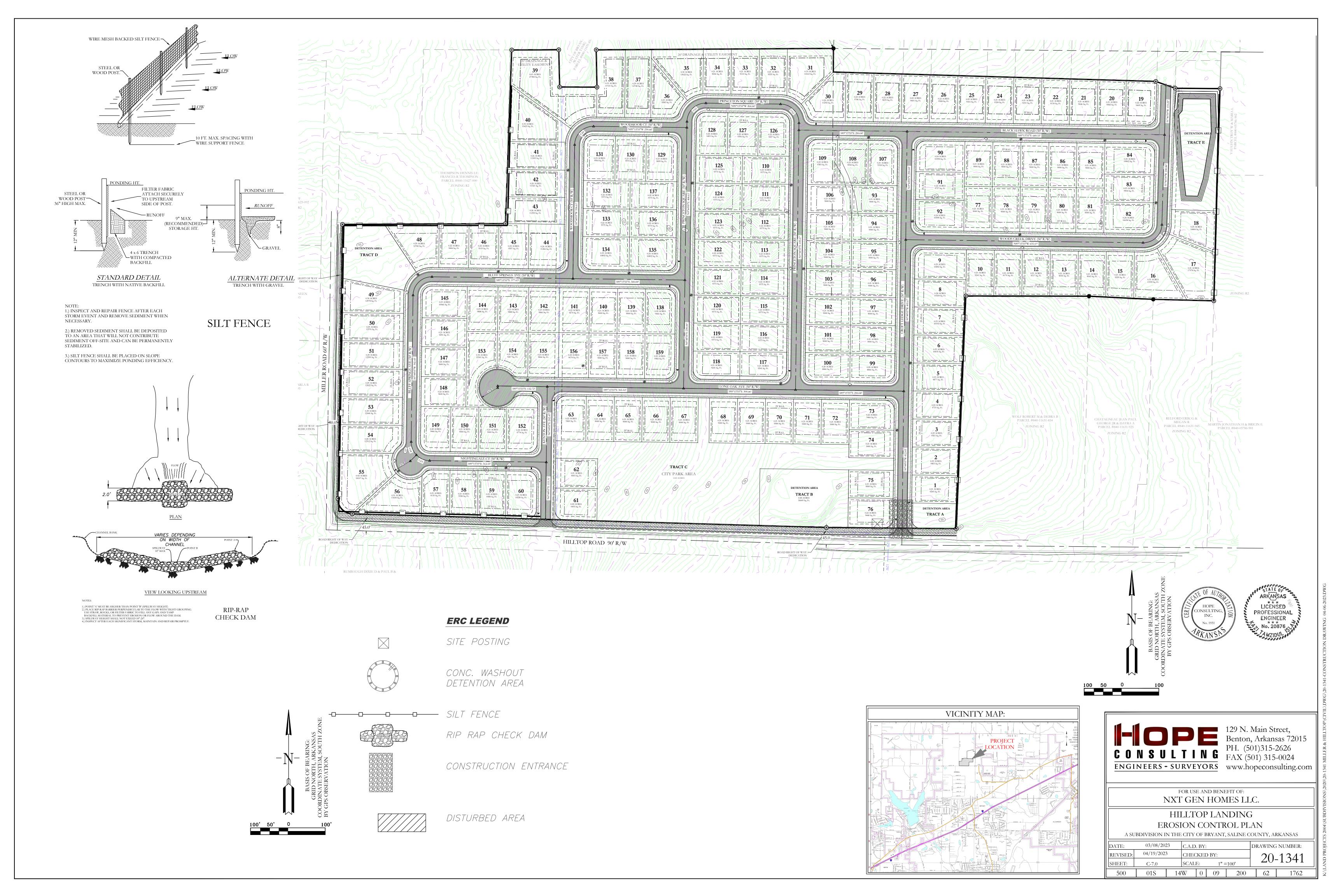


FOR USE AND BENEFIT OF: NXT GEN HOMES LLC.

HILLTOP LANDING

DETENTION POND A SUBDIVISION IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS

03/08/2023 C.A.D. BY: DRAWING NUMBER: 04/19/2023 REVISED: CHECKED BY: 20-1341 14W 0 09 200 62 1762 01S



Comment Responses for Hilltop Landing

Public Works

1. Site will require a Stormwater Detention Maintenance Plan.

Response- Stormwater Detention Maintenance Plan is provided.

2. Developer will be required to submit signed and notarized Stormwater Infrastructure Warranty Bond SOP per Ordinance 2019-32.

Response- Stormwater Infrastructure Warranty Bond SOP will be provided.

3. Site will require a ADEQ Large Scale Development Permit.

Response- ADEQ Large Scale Development Permit is provided.

4. Ponds will be required to be labeled retention ponds.

Response- The comment has been addressed.

5. Top bank of both retention ponds shall be a minimum of 5' in width, this shall be noted on plans.

Response- The comment has been addressed.

- 6. Sediment ponds will be required during construction due to development exceeding 10 acres. If development is phased a SWPP will be required for each phase: 2019-31 Stormwater Management Manual Section 1100, 1102 Control of Erosion 1102.1 and 1102.2. Response- SWPP is provided.
- 7. All sidewalk ramps shall meet ADA requirements with corrugated dome ramp requirements. (note is required on plans)

Response- The note has been added into the plans. (See Sheet C-5).

8. On Street Utility Legend (show detail for Street Lighting)
Response – Street light legend has been shown in the plat.

9. Erosion control plan will be required to be updated to show silt fencing on the interior of the subdivision.

Response- The comment has been addressed.

- 10. Erosion control plan will be required to be updated to show use of wire-backed silt fencing. Response- The comment has been addressed.
- 11. Discuss access easements to all retention ponds.

Response- All retention ponds have access to the road.

Engineering

1. Give status on rerouting of sanitary sewer in Creekside Cove (Dawson Point) to allow for capacity increase. Sanitary sewer can not be developed until sewer is rerouted around Creek side Cove.

Response- Process is under going to get easements for future sewer improvement . Downstream sewer capacity will be increased before the construction of this project.

4. Show water and sewer to be steel encased under any RCP (Culverts/Drainage) per sections 3100-9-3.18,A for sewer and 4100-13-3.19,A for water.

Response- Water and sewer will be encased under any RCP.

5. 12" Water line must be Ductile Iron.

Response- There will be no 12" proposed water line.

6. 8" Water must be C900 or SDR 14.

Response- The comment has been addressed.

8. Show sidewalk design on half street improvements on Hilltop and Miller road per street specifications section 5-4 Part 5.10.

Response- The comment has been addressed.

Planning

- 1. Rezoning Procedures (Property should already be zoned R-2 residential) Response- Rezoning procedure has been done.
- 2. Sheet C-5, Sidewalk spec needs to be corrected to show sidewalks 5ft in width. Response- The comment has been addressed.
- 3. Sidewalks not shown along Hilltop Road or Miller Road Response- The side walks have been shown along Hilltop Road or Miller Road.
- 4. Preliminary Plat Fees

Response- The fees will be provided.

HILLTOP LANDING SUBDIVISION

HILLTOP ROAD & MILLER ROAD, BRYANT, AR 72022

DRAINAGE REPORT

FOR
City of Bryant, Saline County, AR

October 2022

Owner & Developer: NXT GEN HOMES LLC.

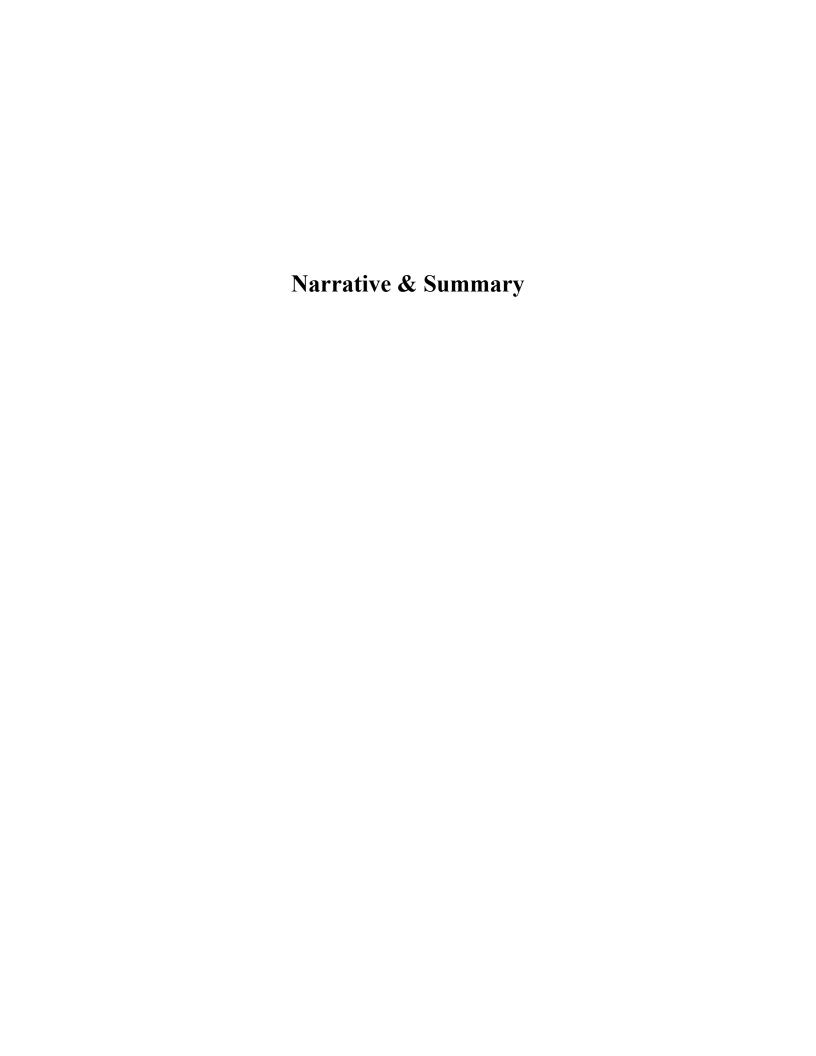
By:



TABLE OF CONTENTS

ITEM DESCRIPTION

- 1. Narrative & Summary
- 2. Hydrograph Report



PROJECT TITLE

Hilltop Landing Subdivision

PROJECT PROPERTY OWNER

Nxt Gen Homes LLC.

PROJECT LOCATION

Hilltop Road and Miller Road, Bryant, AR

PROJECT DESCRIPTION

The proposed sub divisional development is on Hilltop Road and Miller Road, Bryant, AR. Total development site area is 54.0 acres.

DRAINAGE ANALYSIS

On Site Drainage- Rational method was used to determine the existing and proposed flows from proposed site. There will be four detention ponds to detain water from this development. Detailed drainage calculations considering the future expected development has been conducted to determine the required detention ponds and culvert dimensions. Summary of the calculations are below:

Detention Pond-1

- Pond is situated on the north east side of the property.
- Pre-development area 34.50 acres.
- Post-development area 36.28 acres.
- Pre-development runoff coefficient 0.47.
- Post-development runoff cumulative coefficient 0.65
- Pond has a bottom area of 15,480 sft with bottom elevation of 439.00'.
- One 42" HDPE with 0.5% slope are proposed for outflow pipes.

Peak flows for Pre and post development phase of onsite area have been tabulated below-

Period of	Pre-development	Post-dev. Without	Post-dev. With detention
time		detention	
	Peak Flow (cfs)	Peak Flow (cfs)	Peak Flow (cfs)
2-Year	69.54	90.29	41.60
5-Year	77.15	99.87	45.13
10-Year	89.68	117.23	49.24
25-Year	102.61	134.37	54.42
50-Year	116.82	153.15	64.25
100-Year	123.94	162.70	70.54

Detention Pond-2

- Pond is situated on the South-west side of the property.
- Pre-development area 7.2 acres.
- Post-development area 4.11 acres.
- Pre-development runoff coefficient 0.40.
- Post-development runoff cumulative coefficient 0.40
- Pond has a bottom area of 18,270 sft with bottom elevation of 511.00'.
- One 12" HDPE with 9% slope are proposed for outflow pipes.

Peak flows for Pre and post development phase of onsite area have been tabulated below-

Period of	Pre-development	Post-dev. Without	Post-dev. With detention
time		detention	
	Peak Flow (cfs)	Peak Flow (cfs)	Peak Flow (cfs)
2-Year	12.77	6.629	0.387
5-Year	14.20	7.333	0.462
10-Year	16.42	8.607	0.613
25-Year	18.77	9.865	0.773
50-Year	21.35	11.24	0.959
100-Year	22.64	11.95	1.059

Detention Pond-3

- Pond is situated on the south east side of the property.
- Pre-development area 2.25 acres.
- Post-development area 3.21 acres.
- Pre-development runoff coefficient 0.47.
- Post-development runoff cumulative coefficient 0.65
- Pond has a bottom area of 5,512 sft with bottom elevation of 495.00'.
- One 18" HDPE with 7.47% slope are proposed for outflow pipes.

Peak flows for Pre and post development phase of onsite area have been tabulated below-

Period of	Pre-development	Post-dev. Without	Post-dev. With detention
time		detention	
	Peak Flow (cfs)	Peak Flow (cfs)	Peak Flow (cfs)
2-Year	5.039	9.942	2.797
5-Year	5.635	11.12	3.269
10-Year	6.430	12.69	3.910
25-Year	7.337	14.48	4.642
50-Year	8.326	16.43	5.424
100-Year	8.825	17.40	5.810

Detention Pond-4

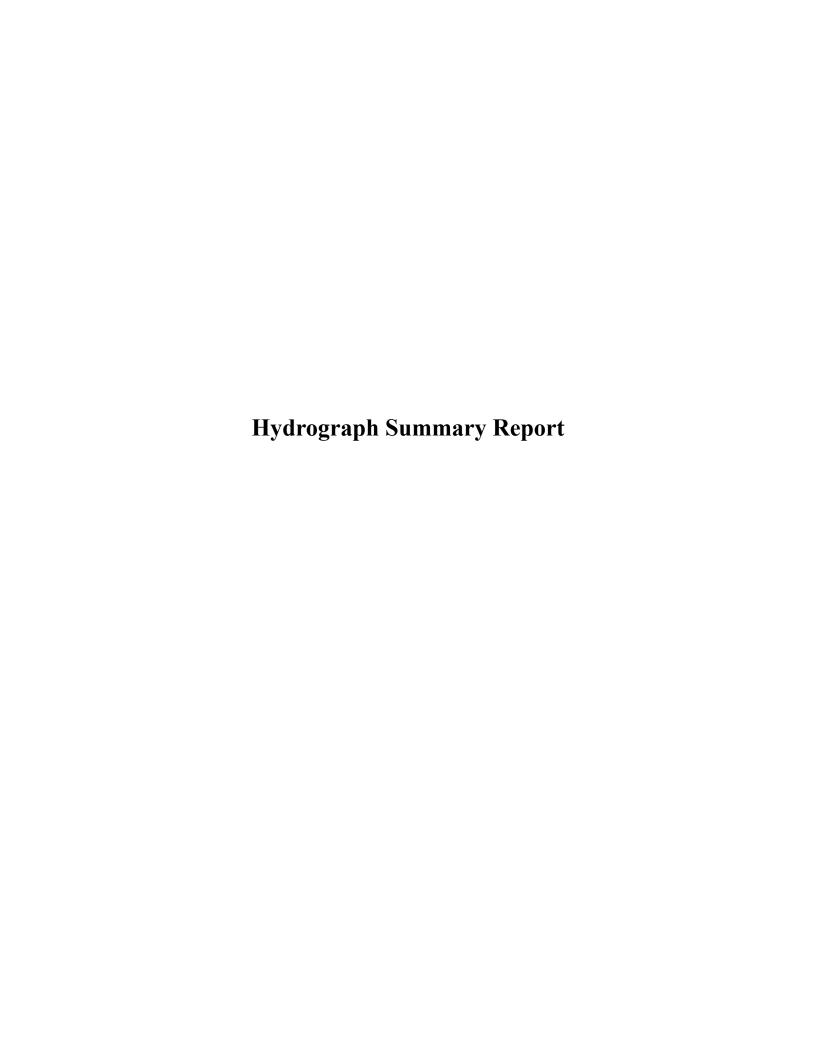
- Pond is situated on the West side of the property.
- Pre-development area 14.40 acres.
- Post-development area 13.97 acres.
- Pre-development runoff coefficient 0.47.
- Post-development runoff cumulative coefficient 0.65
- Pond has a bottom area of 3725.16 sft with bottom elevation of 508.00'.
- One 36" HDPE with 3.79% slope is proposed for outflow pipes.

Peak flows for Pre and post development phase of onsite area have been tabulated below-

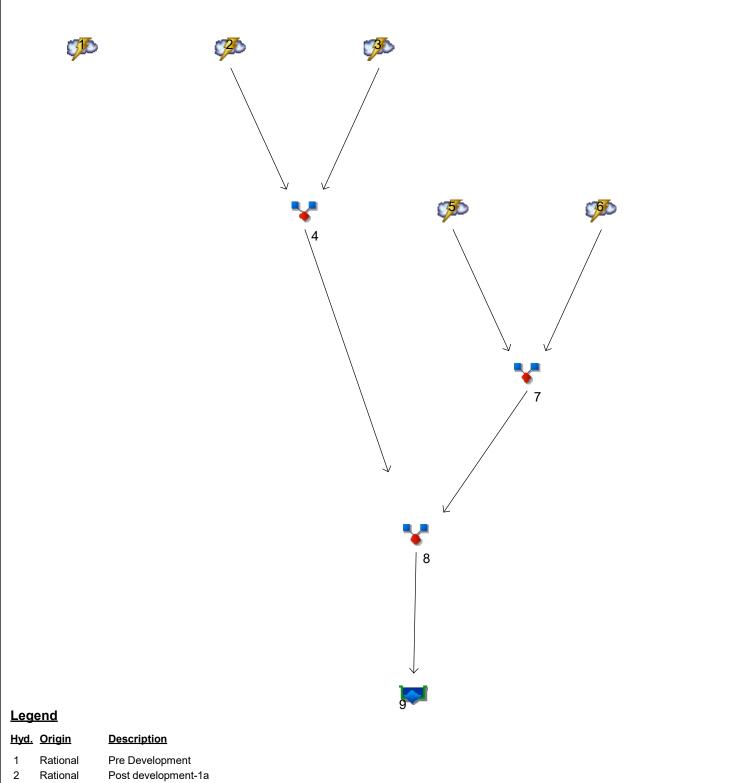
	I .		
Period of	Pre-development	Post-dev. Without	Post-dev. With detention
time		detention	
	Peak Flow (cfs)	Peak Flow (cfs)	Peak Flow (cfs)
2-Year	31.09	43.27	27.37
5-Year	34.66	48.39	30.47
10-Year	39.81	55.21	34.08
25-Year	45.47	63.00	37.59
50-Year	51.67	71.49	41.26
100-Year	54.77	75.78	42.99

CONCLUSION

From the onsite drainage calculation, it is seen that there is decrease in flow for all storm events due to the proposed detention ponds.



Watershed Model Schematic



<u>Hyd.</u>	<u>Origin</u>	<u>Description</u>
1	Rational	Pre Development
2	Rational	Post development-1a
3	Rational	post development-1b
4	Combine	combine-1
5	Rational	post development-2a
6	Rational	post development-2b
7	Combine	combine-2
8	Combine	<no description=""></no>
9	Reservoir	detention pond 1

Project: drainage one pond.gpw

Thursday, 10 / 6 / 2022

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1

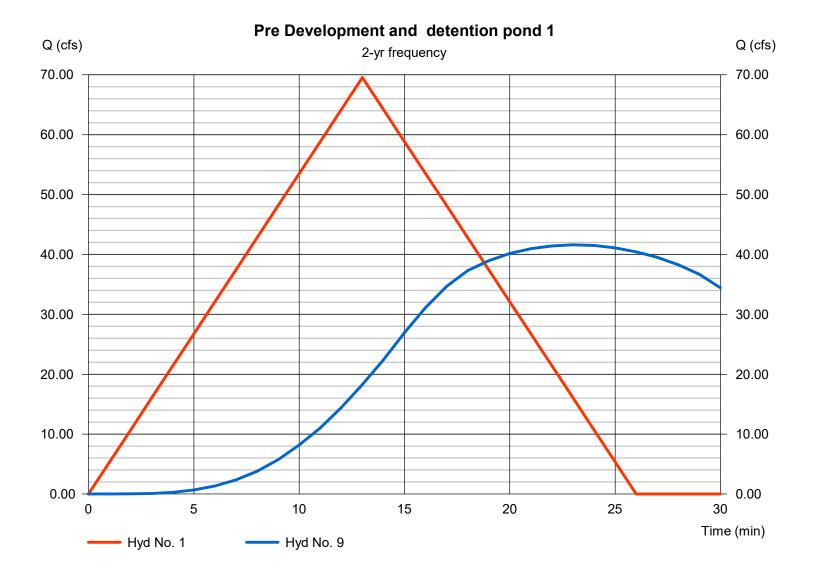
Pre Development

Hydrograph type = Rational
Peak discharge = 69.54 cfs
Time to peak = 13 min
Hyd. Volume = 54,242 cuft

Hyd. No. 9

detention pond 1

Hydrograph type = Reservoir
Peak discharge = 41.60 cfs
Time to peak = 23 min
Hyd. Volume = 81,225 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1

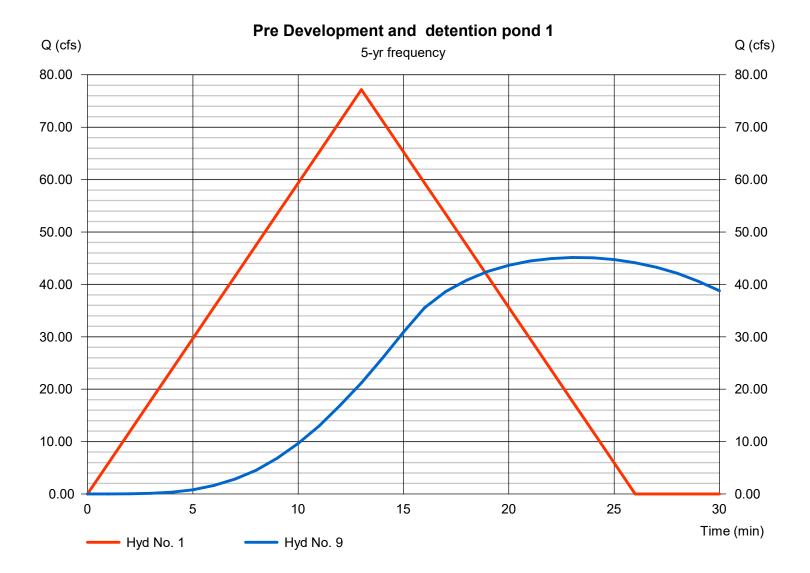
Pre Development

Hydrograph type = Rational Peak discharge = 77.15 cfs Time to peak = 13 min Hyd. Volume = 60,181 cuft

Hyd. No. 9

detention pond 1

Hydrograph type = Reservoir
Peak discharge = 45.13 cfs
Time to peak = 23 min
Hyd. Volume = 89,848 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1

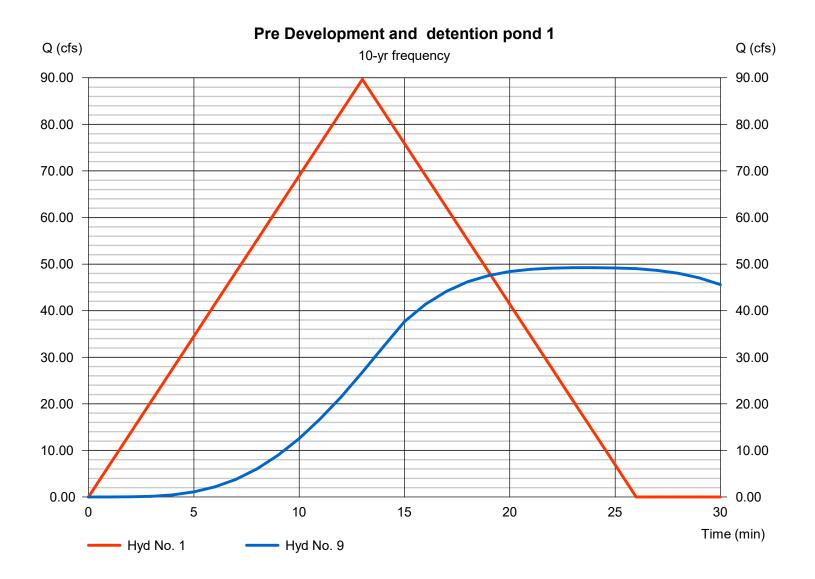
Pre Development

Hydrograph type = Rational
Peak discharge = 89.68 cfs
Time to peak = 13 min
Hyd. Volume = 69,947 cuft

Hyd. No. 9

detention pond 1

Hydrograph type = Reservoir
Peak discharge = 49.24 cfs
Time to peak = 24 min
Hyd. Volume = 105,468 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

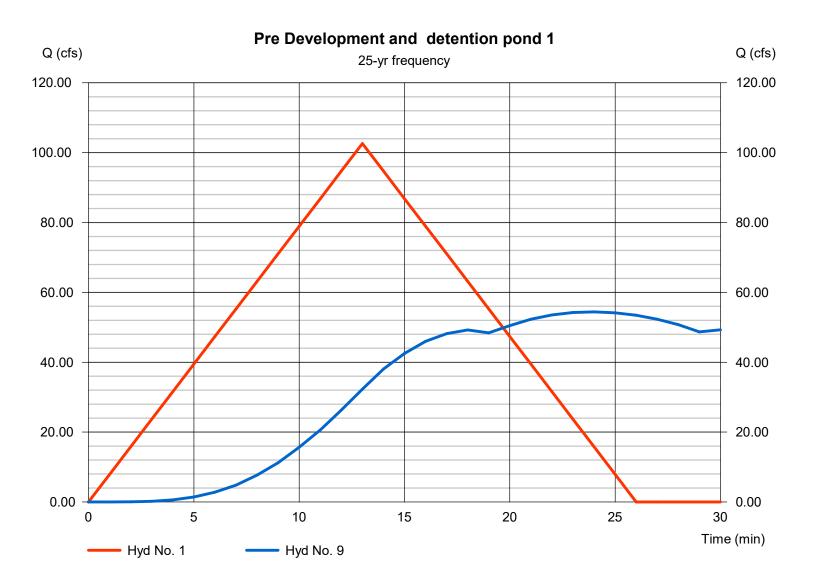
Hyd. No. 1

Pre Development

Hydrograph type = Rational Peak discharge = 102.61 cfs Time to peak = 13 min Hyd. Volume = 80,038 cuft Hyd. No. 9

detention pond 1

Hydrograph type = Reservoir
Peak discharge = 54.42 cfs
Time to peak = 24 min
Hyd. Volume = 120,893 cuft



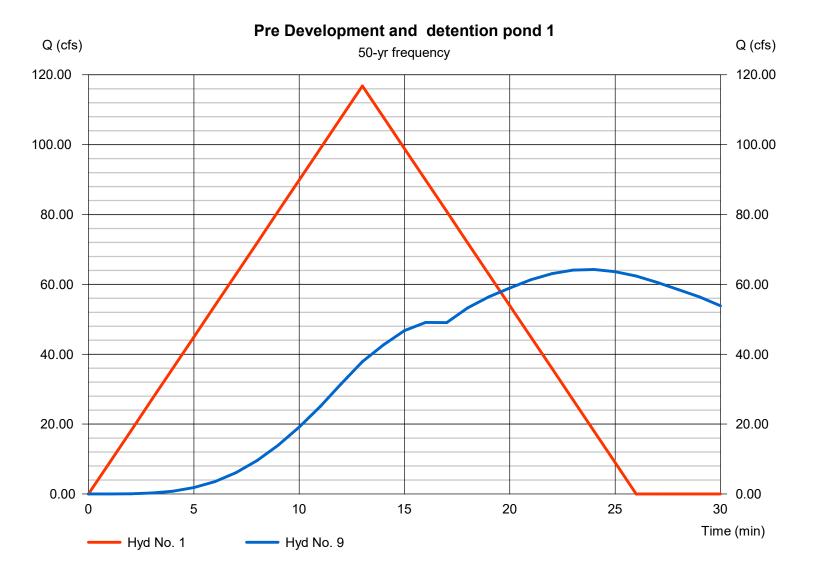
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 9

Hyd. No. 1

Pre Development detention pond 1

Hydrograph type = Rational Peak discharge = 116.82 cfs Time to peak = 13 min Hyd. Volume = 91,121 cuft Hydrograph type = Reservoir
Peak discharge = 64.25 cfs
Time to peak = 24 min
Hyd. Volume = 137,798 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

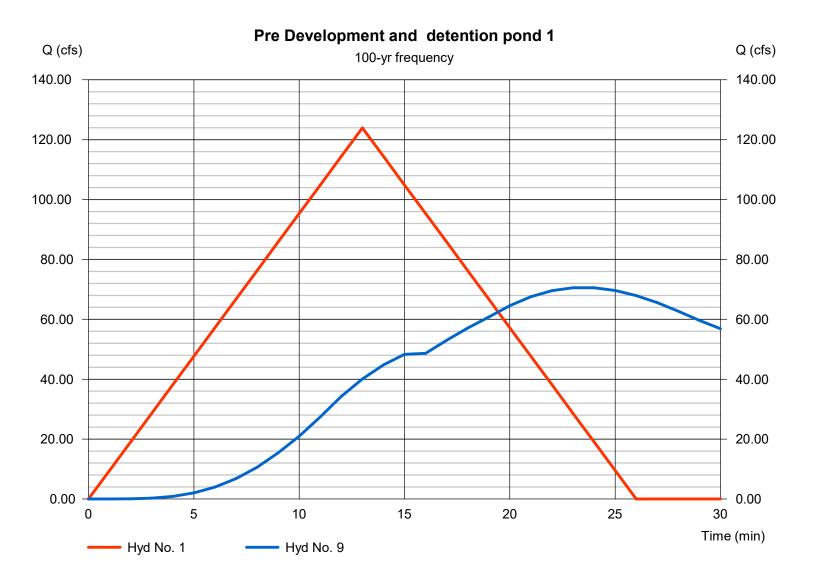
Hyd. No. 1

Pre Development

Hydrograph type = Rational Peak discharge = 123.94 cfs Time to peak = 13 min Hyd. Volume = 96,675 cuft Hyd. No. 9

detention pond 1

Hydrograph type = Reservoir
Peak discharge = 70.54 cfs
Time to peak = 23 min
Hyd. Volume = 146,395 cuft



Pond No. 2 - Detention Pond 1

Pond Data

Trapezoid -Bottom L x W = 258.0 x 60.0 ft, Side slope = 3.00:1, Bottom elev. = 439.00 ft, Depth = 5.00 ft

Stage / Storage Table

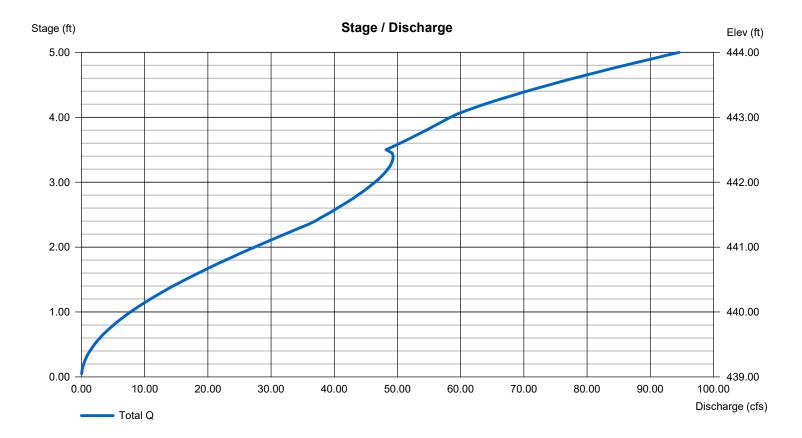
Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	439.00	15,480	0	0
0.50	439.50	16,443	7,980	7,980
1.00	440.00	17,424	8,466	16,446
1.50	440.50	18,423	8,961	25,407
2.00	441.00	19,440	9,465	34,872
2.50	441.50	20,475	9,978	44,850
3.00	442.00	21,528	10,500	55,350
3.50	442.50	22,599	11,031	66,381
4.00	443.00	23,688	11,571	77,952
4.50	443.50	24,795	12,120	90,072
5.00	444.00	25,920	12,678	102,750

Culvert / Orifice Structures

Weir Structures

	[A]	[B]	[C]	[PrfRsr]		[A]	[B]	[C]	[D]
Rise (in)	= 42.00	Inactive	Inactive	0.00	Crest Len (ft)	= 6.00	Inactive	Inactive	0.00
Span (in)	= 42.00	0.00	0.00	0.00	Crest El. (ft)	= 443.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0	Weir Coeff.	= 3.33	3.33	3.33	3.33
Invert El. (ft)	= 439.00	0.00	0.00	0.00	Weir Type	= Rect			
Length (ft)	= 215.00	0.00	0.00	0.00	Multi-Stage	= No	No	No	No
Slope (%)	= 0.50	0.00	0.00	n/a					
N-Value	= .013	.013	.013	n/a					
Orifice Coeff.	= 0.60	0.60	0.60	0.60	Exfil.(in/hr)	= 0.000 (by	Wet area)		
Multi-Stage	= n/a	No	No	No	TW Elev. (ft)	= 0.00			

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



Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	69.54	1	13	54,242				Pre Development
2	Rational	60.00	1	15	53,998				Post development-1a
3	Rational	5.960	1	15	5,364				post development-1b
4	Combine	65.96	1	15	59,362	2, 3			combine-1
5	Rational	18.19	1	15	16,367				post development-2a
6	Rational	6.149	1	15	5,534				post development-2b
7	Combine	24.33	1	15	21,901	5, 6			combine-2
8	Combine	90.29	1	15	81,262	4, 7			<no description=""></no>
9	Reservoir	41.60	1	23	81,225	8	441.67	48,360	detention pond B
dra	l inage one por	nd.gpw			Return P	eriod: 2 Ye	ear	Thursday,	 10 / 6 / 2022

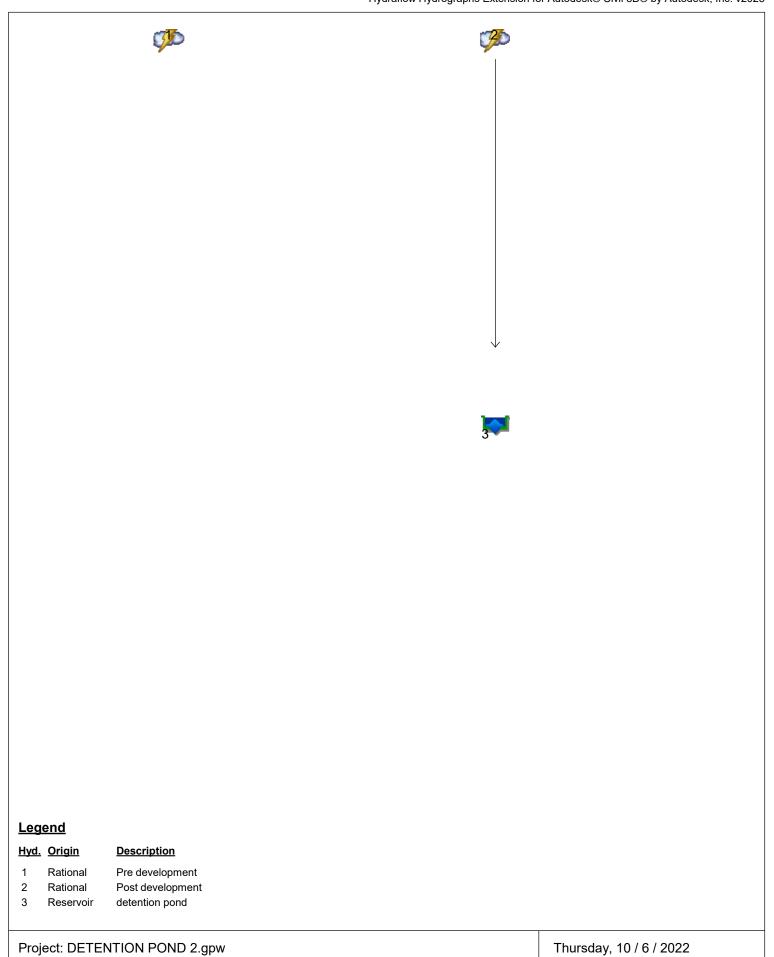
lyd. lo.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	77.15	1	13	60,181				Pre Development
2	Rational	66.36	1	15	59,728				Post development-1a
3	Rational	6.592	1	15	5,933				post development-1b
1	Combine	72.96	1	15	65,661	2, 3			combine-1
5	Rational	20.11	1	15	18,103				post development-2a
3	Rational	6.801	1	15	6,121				post development-2b
7	Combine	26.92	1	15	24,225	5, 6			combine-2
3	Combine	99.87	1	15	89,885	4, 7			<no description=""></no>
dra	inage one po	nd.gpw	1	1	Return F	Period: 5 Ye	ear	Thursday,	10 / 6 / 2022

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	102.61	1	13	80,038				Pre Development
2	Rational	89.29	1	15	80,357				Post development-1a
3	Rational	8.869	1	15	7,982				post development-1b
4	Combine	98.15	1	15	88,339	2, 3			combine-1
5	Rational	27.06	1	15	24,356				post development-2a
6	Rational	9.151	1	15	8,235				post development-2b
7	Combine	36.21	1	15	32,591	5, 6			combine-2
8	Combine	134.37	1	15	120,930	4, 7			<no description=""></no>
9	Reservoir	54.42	1	24	120,893	8	442.80	73,230	detention pond B
 dra	inage one po	and.gpw			Return F	Period: 25 \	'ear	Thursday, 1	10 / 6 / 2022

lyd. lo.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	116.82	1	13	91,121				Pre Development
2	Rational	101.77	1	15	91,590				Post development-1a
3	Rational	10.11	1	15	9,098				post development-1b
4	Combine	111.88	1	15	100,688	2, 3			combine-1
5	Rational	30.85	1	15	27,761				post development-2a
3	Rational	10.43	1	15	9,387				post development-2b
7	Combine	41.27	1	15	37,147	5, 6			combine-2
3	Combine	153.15	1	15	137,835	4, 7			<no description=""></no>
9	Reservoir	64.25	1	24	137,798	8	443.22	83,213	detention pond B
dra	inage one po	nd.gpw			Return F	Period: 50 \	/ear	Thursday,	10 / 6 / 2022

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	123.94	1	13	96,675				Pre Development
2	Rational	108.11	1	15	97,303				Post development-1a
3	Rational	10.74	1	15	9,665				post development-1b
4	Combine	118.85	1	15	106,968	2, 3			combine-1
5	Rational	32.77	1	15	29,492				post development-2a
6	Rational	11.08	1	15	9,972				post development-2b
7	Combine	43.85	1	15	39,464	5, 6			combine-2
8	Combine	162.70	1	15	146,433	4, 7			<no description=""></no>
dra	inage one po	nd.gpw			Return F	Period: 100	Year	Thursday,	10 / 6 / 2022

Watershed Model Schematic



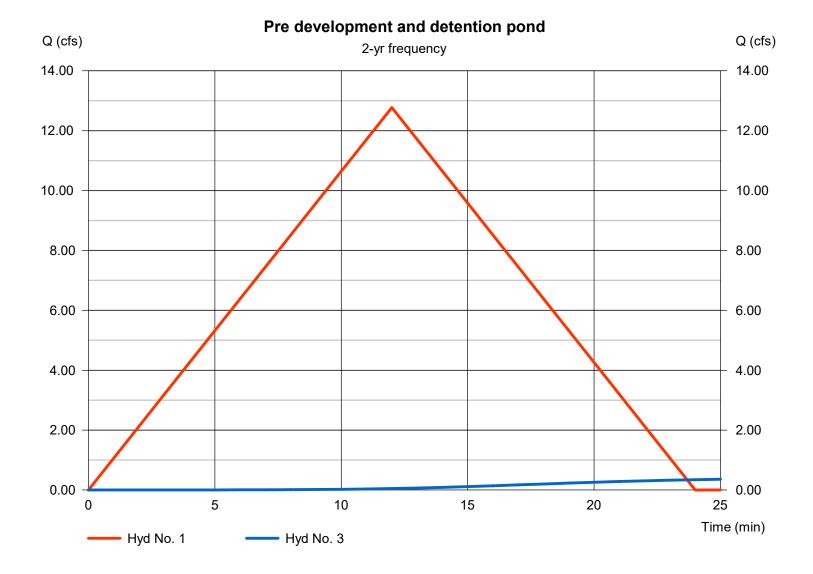
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

Pre development detention pond

Hydrograph type = Rational
Peak discharge = 12.77 cfs
Time to peak = 12 min
Hyd. Volume = 9,197 cuft

Hydrograph type = Reservoir
Peak discharge = 0.39 cfs
Time to peak = 29 min
Hyd. Volume = 5,573 cuft

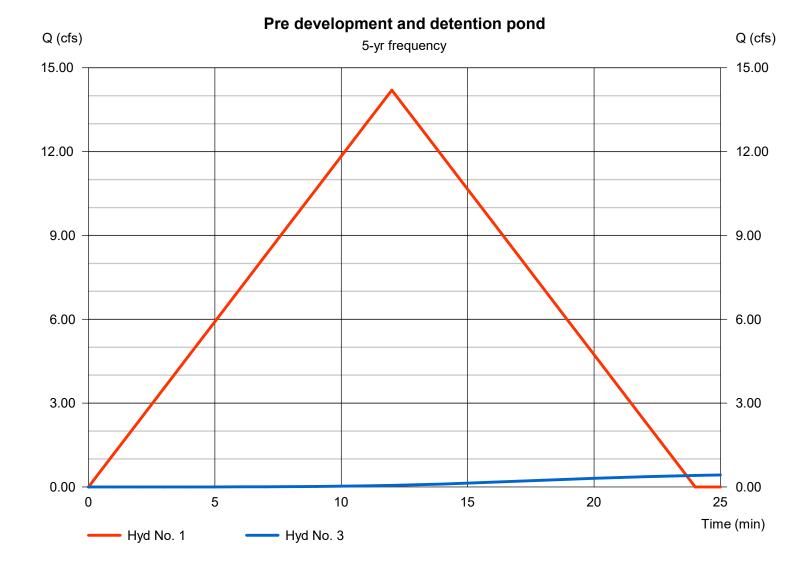


Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

Pre development detention pond

Hydrograph type = Rational Hydrograph type = Reservoir Peak discharge Peak discharge = 14.20 cfs= 0.46 cfsTime to peak = 12 min Time to peak = 29 min Hyd. Volume = 10,226 cuft Hyd. Volume = 6,203 cuft



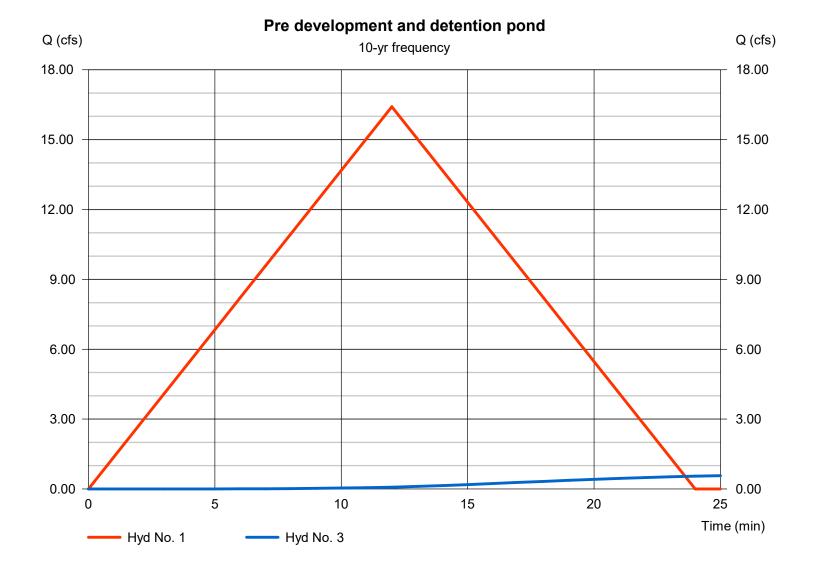
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

Pre development detention pond

Hydrograph type = Rational
Peak discharge = 16.42 cfs
Time to peak = 12 min
Hyd. Volume = 11,819 cuft

Hydrograph type = Reservoir
Peak discharge = 0.61 cfs
Time to peak = 29 min
Hyd. Volume = 7,345 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1

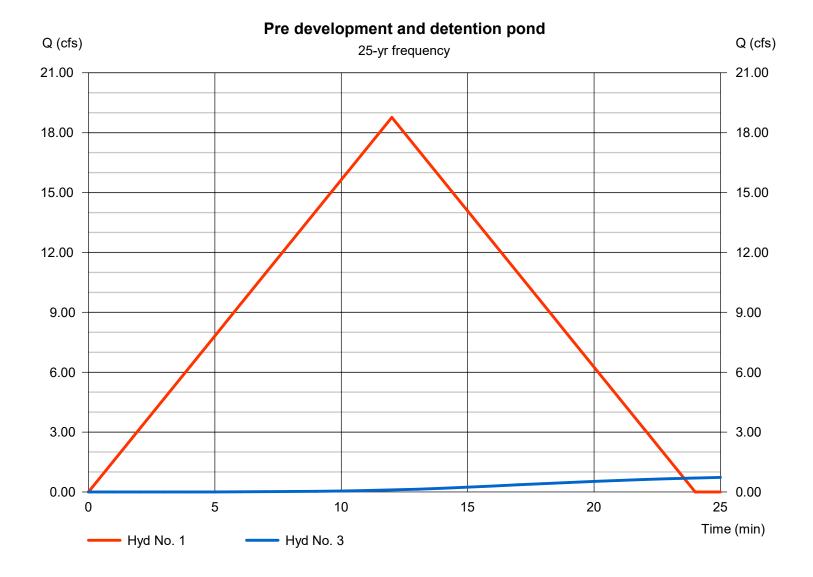
Pre development

Hydrograph type = Rational
Peak discharge = 18.77 cfs
Time to peak = 12 min
Hyd. Volume = 13,512 cuft

Hyd. No. 3

detention pond

Hydrograph type = Reservoir
Peak discharge = 0.77 cfs
Time to peak = 29 min
Hyd. Volume = 8,475 cuft

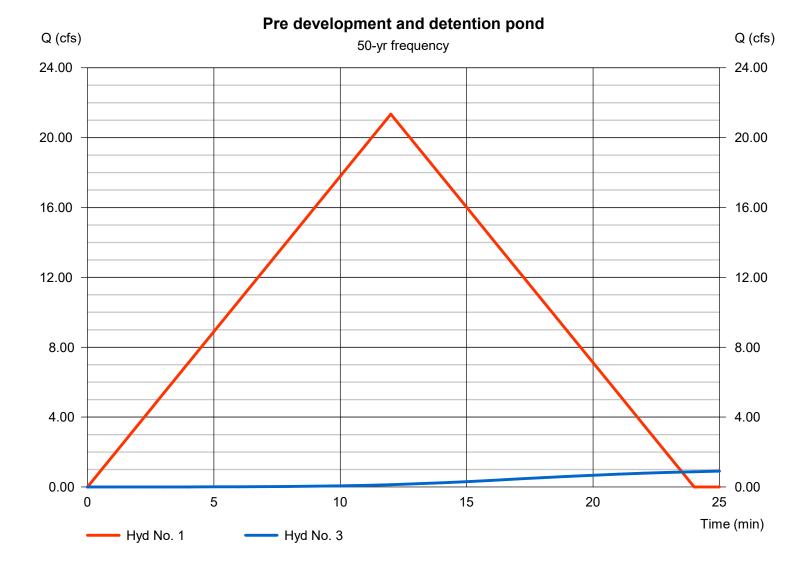


Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

Pre development detention pond

Hydrograph type = Rational Hydrograph type = Reservoir Peak discharge Peak discharge = 21.35 cfs= 0.96 cfsTime to peak = 12 min Time to peak = 29 min Hyd. Volume = 15,370 cuft Hyd. Volume = 9,713 cuft

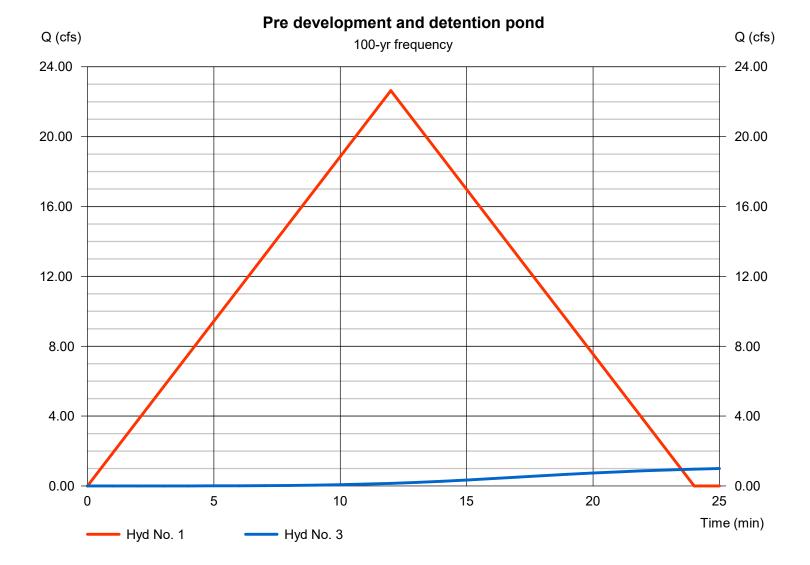


Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

Pre development detention pond

Hydrograph type = Rational Hydrograph type = Reservoir Peak discharge Peak discharge = 22.64 cfs= 1.06 cfsTime to peak = 12 min Time to peak = 29 min Hyd. Volume = 16,299 cuft Hyd. Volume = 10,343 cuft



Thursday, 10 / 6 / 2022

Pond No. 1 - Detention Pond 2

Pond Data

Trapezoid -Bottom L x W = 145.0 x 126.0 ft, Side slope = 3.00:1, Bottom elev. = 511.00 ft, Depth = 2.00 ft

Stage / Storage Table

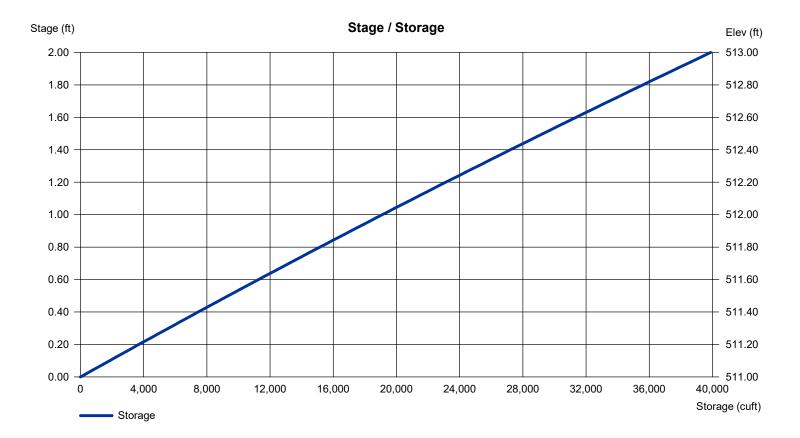
Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	511.00	18,270	0	0
0.20	511.20	18,597	3,687	3,687
0.40	511.40	18,926	3,752	7,439
0.60	511.60	19,259	3,818	11,257
0.80	511.80	19,594	3,885	15,142
1.00	512.00	19,932	3,953	19,095
1.20	512.20	20,273	4,020	23,115
1.40	512.40	20,617	4,089	27,204
1.60	512.60	20,964	4,158	31,362
1.80	512.80	21,313	4,228	35,590
2.00	513.00	21,666	4,298	39,888

Culvert / Orifice Structures

Weir Structures

	[A]	[B]	[C]	[PrfRsr]		[A]	[B]	[C]	[D]
Rise (in)	= 12.00	Inactive	Inactive	0.00	Crest Len (ft)	= 6.00	0.00	0.00	0.00
Span (in)	= 12.00	0.00	0.00	0.00	Crest El. (ft)	= 512.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0	Weir Coeff.	= 3.33	3.33	3.33	3.33
Invert El. (ft)	= 511.00	0.00	0.00	0.00	Weir Type	= Rect			
Length (ft)	= 64.00	0.00	0.00	0.00	Multi-Stage	= No	No	No	No
Slope (%)	= 9.00	0.00	0.00	n/a					
N-Value	= .013	.013	.013	n/a					
Orifice Coeff.	= 0.60	0.60	0.60	0.60	Exfil.(in/hr)	= 0.000 (by	Contour)		
Multi-Stage	= n/a	No	No	No	TW Elev. (ft)	= 0.00			

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



Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	12.77	1	12	9,197				Pre development
2	Rational	6.629	1	15	5,966				Post development
DΕ	TENTION PO	_l DND 2.gp	w		Return F	Return Period: 2 Year			 10 / 6 / 2022

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	14.20	1	12	10,226				Pre development
2	Rational	7.333	1	15	6,599				Post development
2 3	Rational	7.333	1 1	15 29	6,599 6,203	2	511.34	6,272	Post development detention pond

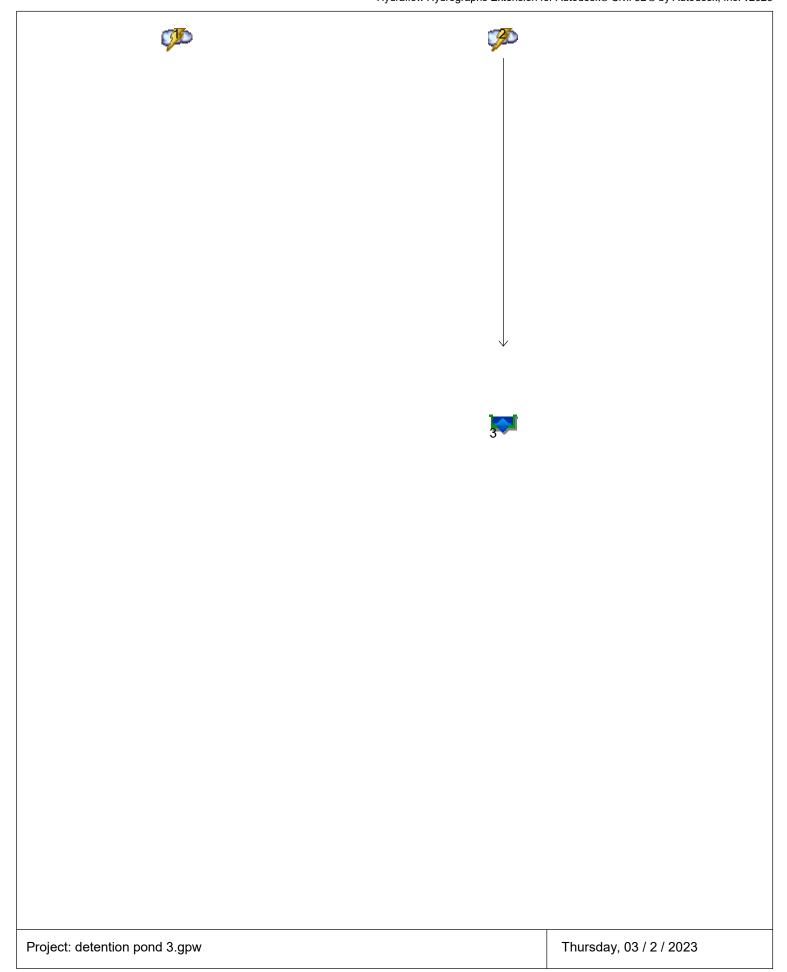
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description		
1	Rational	16.42	1	12	11,819				Pre development		
2	Rational	8.607	1	15	7,746				Post development		
3	Reservoir	0.613	1	29	7,345	2	511.39	7,310	detention pond		
DE	TENTION PO	OND 2.gp	w		Return I	Period: 10 \	/ear	Thursday,	Thursday, 10 / 6 / 2022		

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	18.77	1	12	13,512				Pre development
2	Rational	9.865	1	15	8,879				Post development
2 3	Rational	9.865 0.773	1 1	15 29	8,879 8,475	2	511.45	8,325	Post development detention pond

			Hydrallow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk								
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description		
1	Rational	21.35	1	12	15,370				Pre development		
2	Rational	11.24	1	15	10,120				Post development		
3	Reservoir	0.959	1	29	9,713	2	511.50	9,427	detention pond		
DE	DETENTION POND 2.gpw					eriod: 50 Y	'ear	Thursday, 10 / 6 / 2022			

lyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description		
1	Rational	22.64	1	12	16,299				Pre development		
2	Rational	11.95	1	15	10,751				Post development		
3	Reservoir	1.059	1	29	10,343	2	511.53	9,983	detention pond		
DE	L TENTION PO	ND 2.gp	w		Return F	Period: 100	Year	Thursday,	Thursday, 10 / 6 / 2022		

Watershed Model Schematic



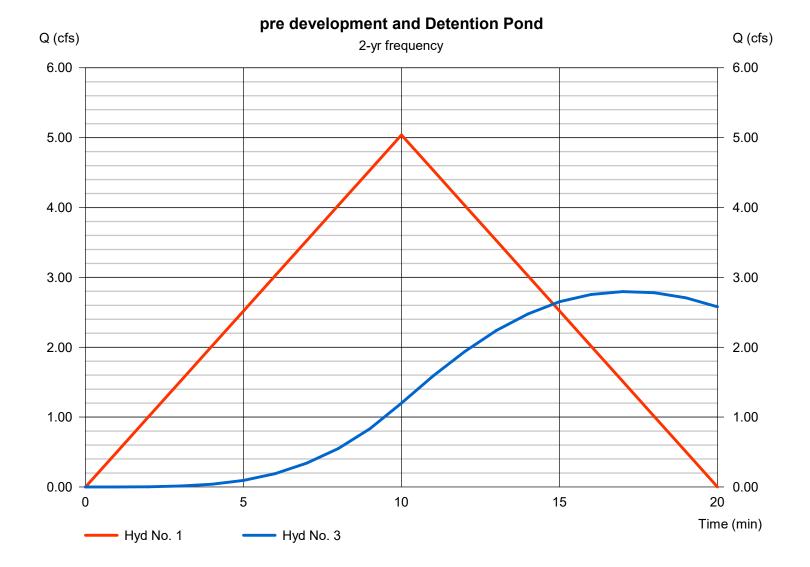
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

pre development Detention Pond

Hydrograph type = Rational
Peak discharge = 5.039 cfs
Time to peak = 10 min
Hyd. Volume = 3,023 cuft

Hydrograph type = Reservoir
Peak discharge = 2.80 cfs
Time to peak = 17 min
Hyd. Volume = 5,925 cuft

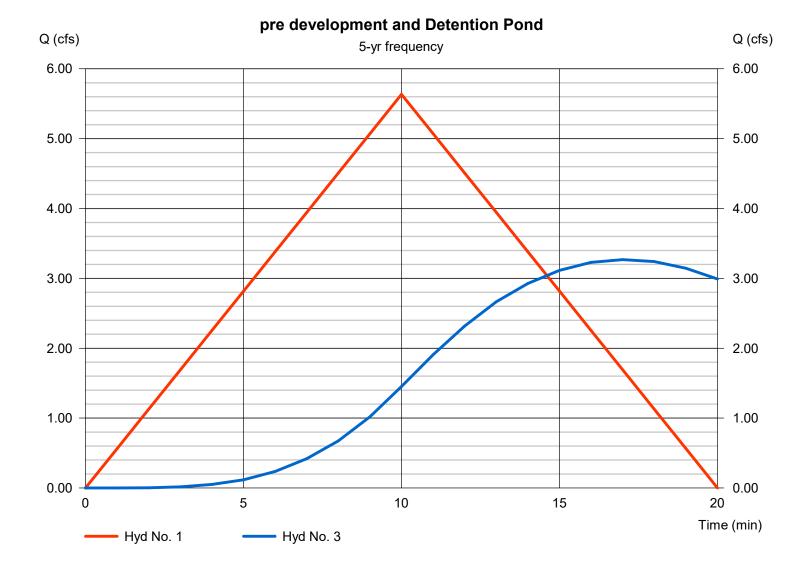


Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

pre development Detention Pond

Hydrograph type = Rational Peak discharge = 5.635 cfs Time to peak = 10 min Hyd. Volume = 3,381 cuft Hydrograph type = Reservoir
Peak discharge = 3.27 cfs
Time to peak = 17 min
Hyd. Volume = 6,630 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1

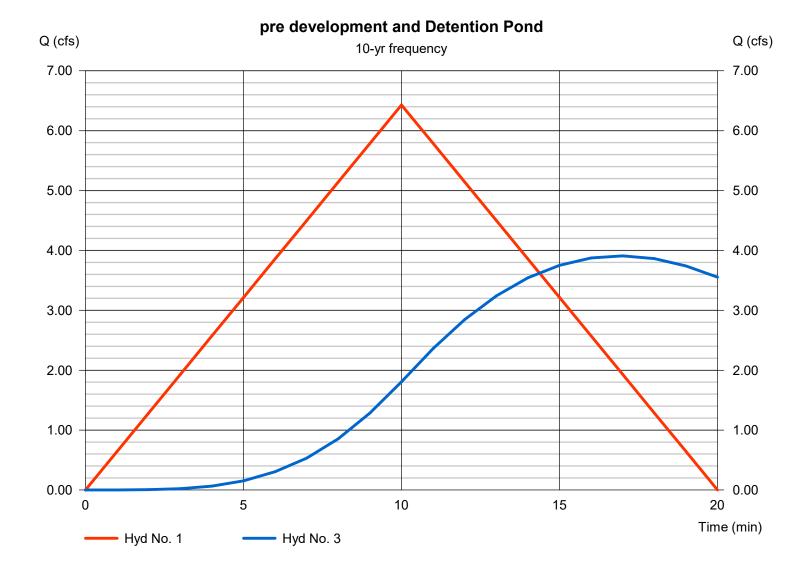
pre development

Hydrograph type = Rational Peak discharge = 6.430 cfs Time to peak = 10 min Hyd. Volume = 3,858 cuft

Hyd. No. 3

Detention Pond

Hydrograph type = Reservoir
Peak discharge = 3.91 cfs
Time to peak = 17 min
Hyd. Volume = 7,571 cuft

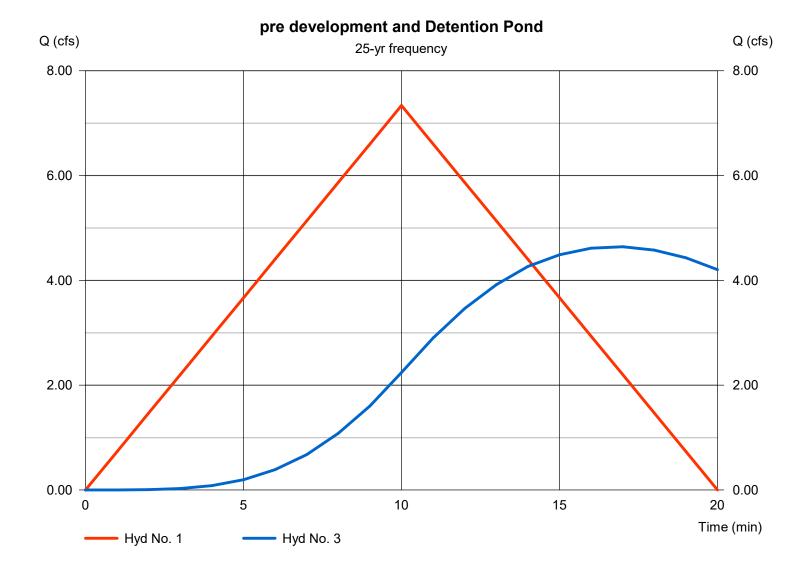


Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

pre development Detention Pond

Hydrograph type = Rational Peak discharge = 7.337 cfs Time to peak = 10 min Hyd. Volume = 4,402 cuft Hydrograph type = Reservoir
Peak discharge = 4.64 cfs
Time to peak = 17 min
Hyd. Volume = 8,645 cuft

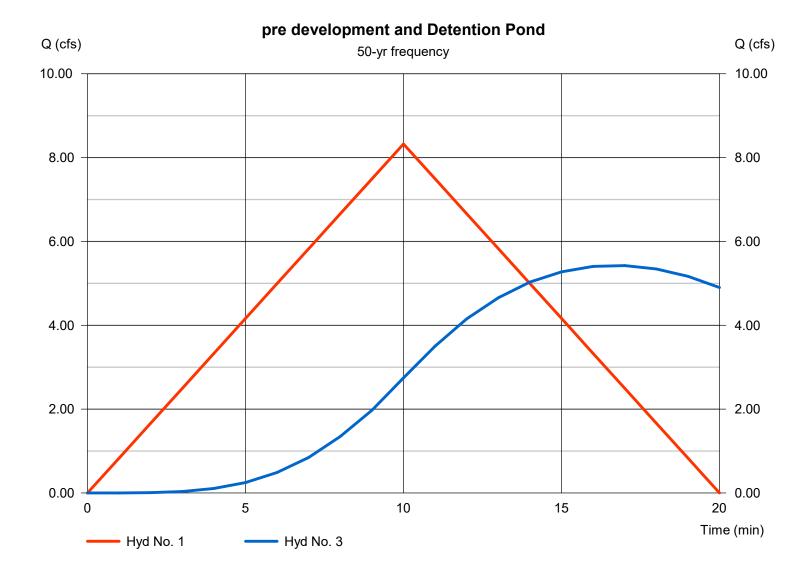


Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

pre development Detention Pond

Hydrograph type = Rational Peak discharge = 8.326 cfs Time to peak = 10 min Hyd. Volume = 4,995 cuft Hydrograph type = Reservoir
Peak discharge = 5.42 cfs
Time to peak = 17 min
Hyd. Volume = 9,816 cuft

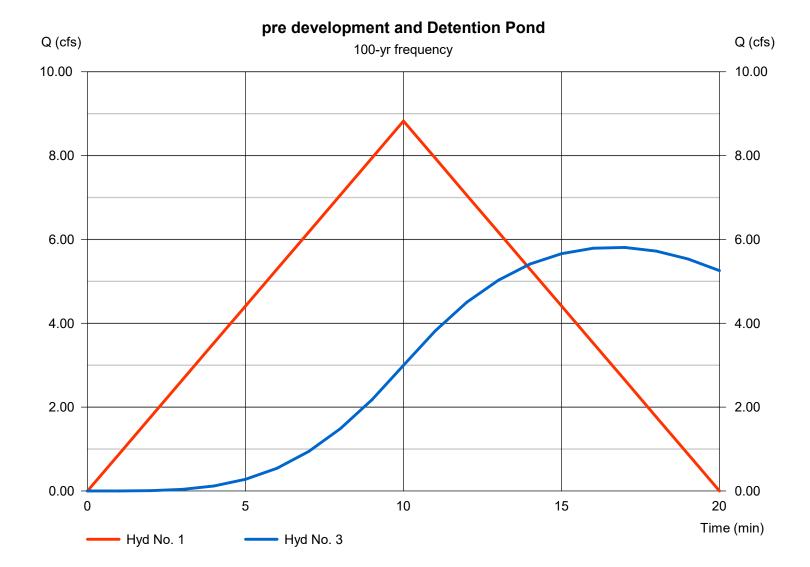


Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

pre development Detention Pond

Hydrograph type = Rational Hydrograph type = Reservoir Peak discharge Peak discharge = 8.825 cfs= 5.81 cfsTime to peak = 10 min Time to peak = 17 min Hyd. Volume = 5,295 cuft Hyd. Volume = 10,406 cuft



Thursday, 03 / 2 / 2023

Pond No. 1 - Detention Pond -3

Pond Data

Trapezoid -Bottom L x W = 106.0 x 52.0 ft, Side slope = 3.00:1, Bottom elev. = 495.00 ft, Depth = 2.50 ft

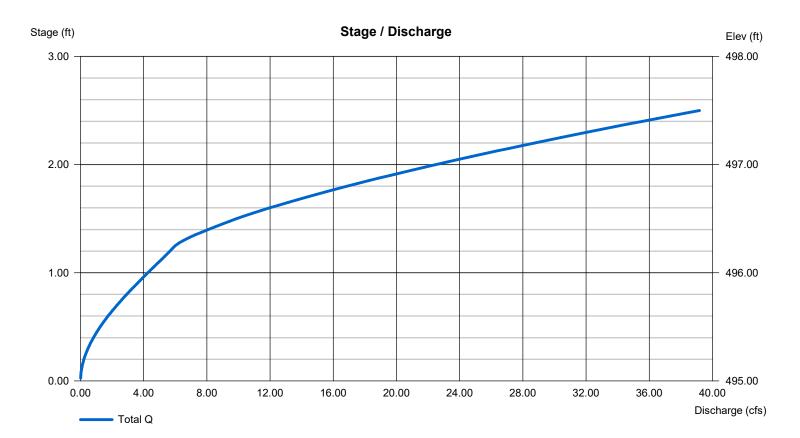
Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	495.00	5,512	0	0
0.25	495.25	5,751	1,408	1,408
0.50	495.50	5,995	1,468	2,876
0.75	495.75	6,243	1,530	4,406
1.00	496.00	6,496	1,592	5,998
1.25	496.25	6,753	1,656	7,654
1.50	496.50	7,015	1,721	9,375
1.75	496.75	7,281	1,787	11,162
2.00	497.00	7,552	1,854	13,016
2.25	497.25	7,827	1,922	14,938
2.50	497.50	8,107	1,992	16,930

Culvert / Orifice Structures Weir Structures

	[A]	[B]	[C]	[PrfRsr]		[A]	[B]	[C]	[D]
Rise (in)	= 18.00	0.00	0.00	0.00	Crest Len (ft)	= 6.00	0.00	0.00	0.00
Span (in)	= 18.00	0.00	0.00	0.00	Crest El. (ft)	= 496.25	0.00	0.00	0.00
No. Barrels	= 1	0	0	0	Weir Coeff.	= 3.33	3.33	3.33	3.33
Invert El. (ft)	= 495.00	0.00	0.00	0.00	Weir Type	= Rect			
Length (ft)	= 33.00	0.00	0.00	0.00	Multi-Stage	= No	No	No	No
Slope (%)	= 7.47	0.00	0.00	n/a					
N-Value	= .013	.013	.013	n/a					
Orifice Coeff.	= 0.60	0.60	0.60	0.60	Exfil.(in/hr)	= 0.000 (by	Wet area)		
Multi-Stage	= n/a	No	No	No	TW Elev. (ft)	= 0.00			

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



Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	5.039	1	10	3,023				pre development
2	Rational	9.942	1	10	5,965				post development
det	ention pond 3	3.gpw			Return F	Period: 2 Ye	ear	Thursday, (03 / 2 / 2023

						,			lodesk® Civil 3D® by Autodesk, Inc. v202
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	5.635	1	10	3,381				pre development
2	Rational	11.12	1	10	6,671				post development
3	Reservoir	3.269	1	17	6,630	2	495.85	5,064	Detention Pond
dete	ention pond 3	.gpw			Return F	eriod: 5 Ye	 ear	Thursday, 0	03 / 2 / 2023

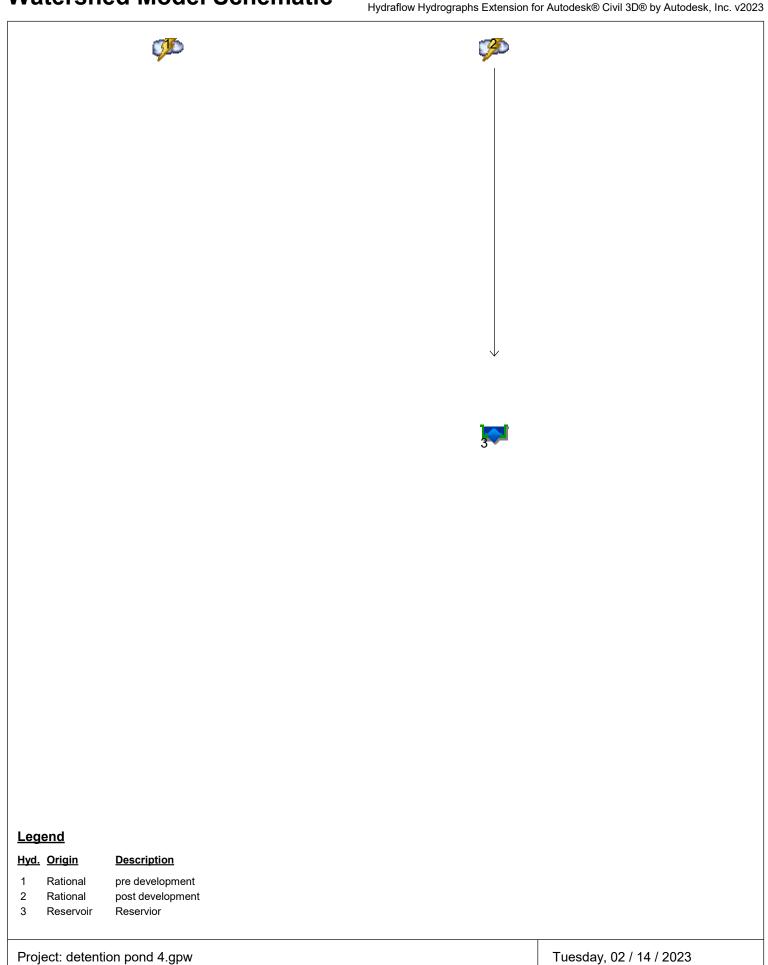
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	6.430	1	10	3,858				pre development
2	Rational	12.69	1	10	7,612				post development
det	ention pond 3	3.gpw			Return F	Period: 10 \	/ear	Thursday, (03 / 2 / 2023

1 Rational 7.337 1 10 4,402 pre development 2 Rational 14.48 1 10 8,686 post development 3 Reservoir 4.642 1 17 8,645 2 496.05 6,359 Detention Pond	
3 Reservoir 4.642 1 17 8,645 2 496.05 6,359 Detention Pond	

/d.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	8.326	1	10	4,995				pre development
2	Rational	16.43	1	10	9,856				post development
	Rational	16.43 5.424	1 1	10 17	9,856	2	496.17	7,100	post development Detention Pond

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	8.825	1	10	5,295				pre development
2	Rational	17.41	1	10	10,447				post development
2 3	Rational	17.41 5.810	1	10 17	10,447	2	496.22	7,475	post development Detention Pond

Watershed Model Schematic



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1

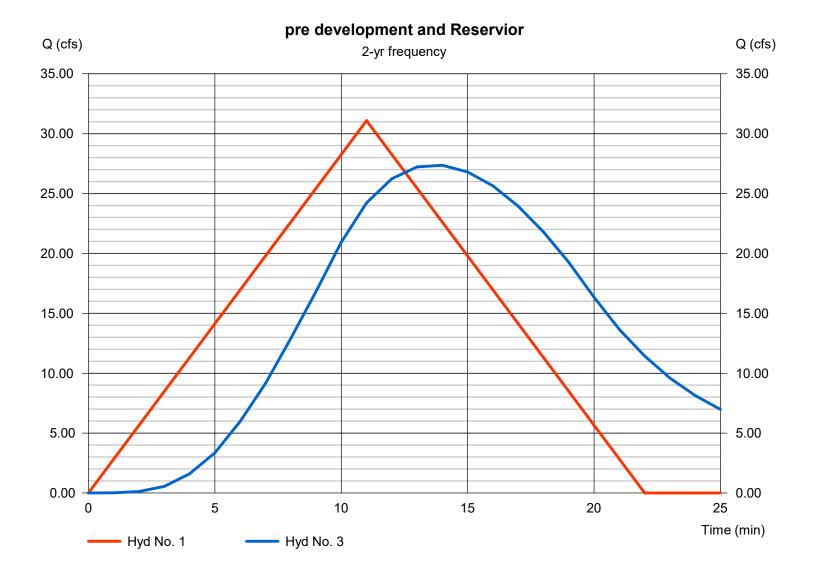
pre development

Hydrograph type = Rational
Peak discharge = 31.09 cfs
Time to peak = 11 min
Hyd. Volume = 20,519 cuft

Hyd. No. 3

Reservior

Hydrograph type = Reservoir
Peak discharge = 27.37 cfs
Time to peak = 14 min
Hyd. Volume = 25,949 cuft



Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1

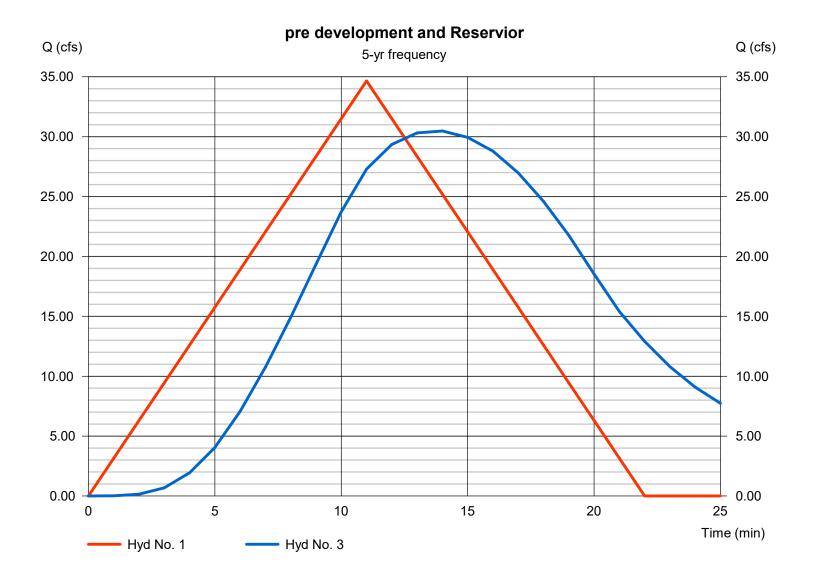
pre development

Hydrograph type = Rational
Peak discharge = 34.66 cfs
Time to peak = 11 min
Hyd. Volume = 22,873 cuft

Hyd. No. 3

Reservior

Hydrograph type = Reservoir
Peak discharge = 30.47 cfs
Time to peak = 14 min
Hyd. Volume = 29,019 cuft

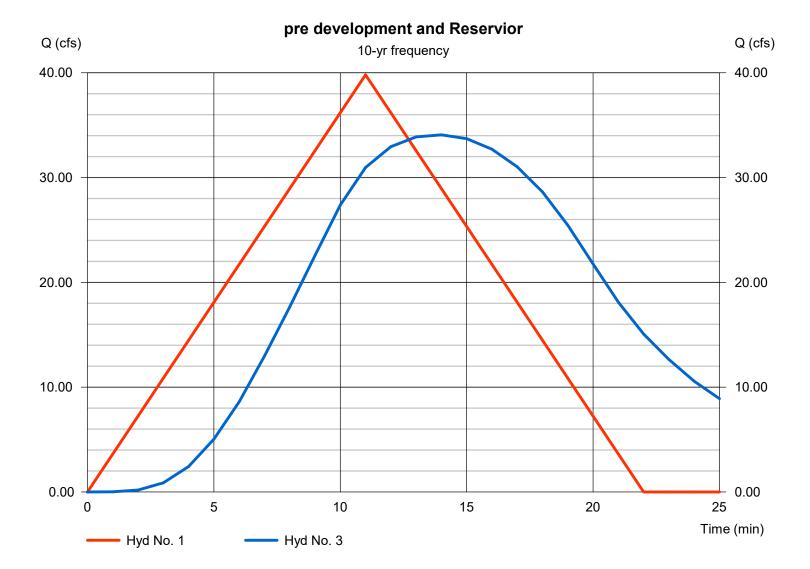


Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

pre development Reservior

Hydrograph type = Rational Hydrograph type = Reservoir Peak discharge Peak discharge = 39.81 cfs= 34.08 cfsTime to peak = 11 min Time to peak = 14 min Hyd. Volume = 26,276 cuft Hyd. Volume = 33,115 cuft

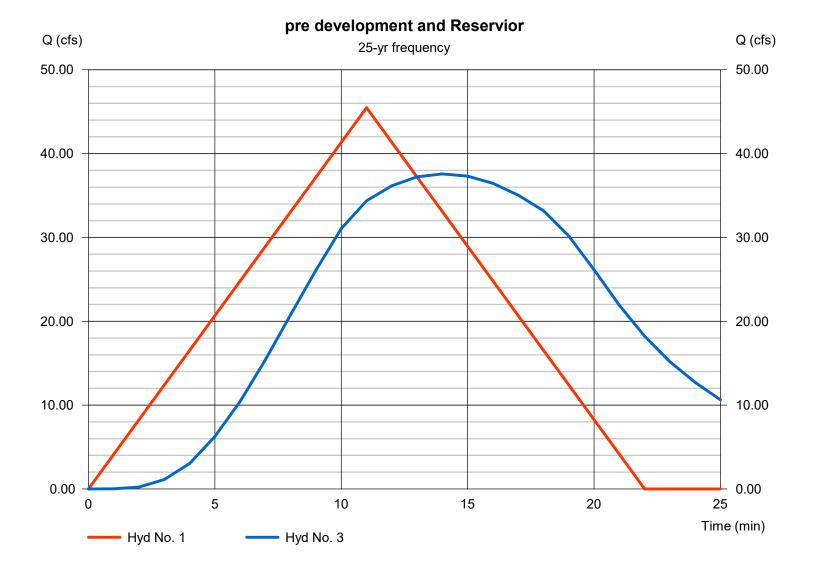


Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

pre development Reservior

Hydrograph type = Rational Hydrograph type = Reservoir Peak discharge Peak discharge = 37.59 cfs= 45.47 cfsTime to peak = 11 min Time to peak = 14 min Hyd. Volume = 30,012 cuft Hyd. Volume = 37,790 cuft

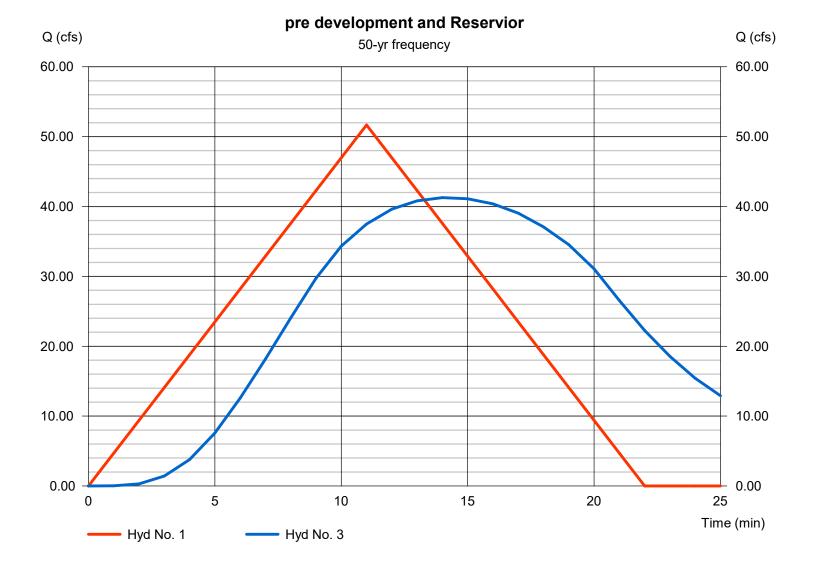


Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

pre development Reservior

Hydrograph type = Rational Hydrograph type = Reservoir Peak discharge Peak discharge = 41.26 cfs= 51.67 cfsTime to peak = 11 min Time to peak = 14 min Hyd. Volume = 34,102 cuft Hyd. Volume = 42,883 cuft

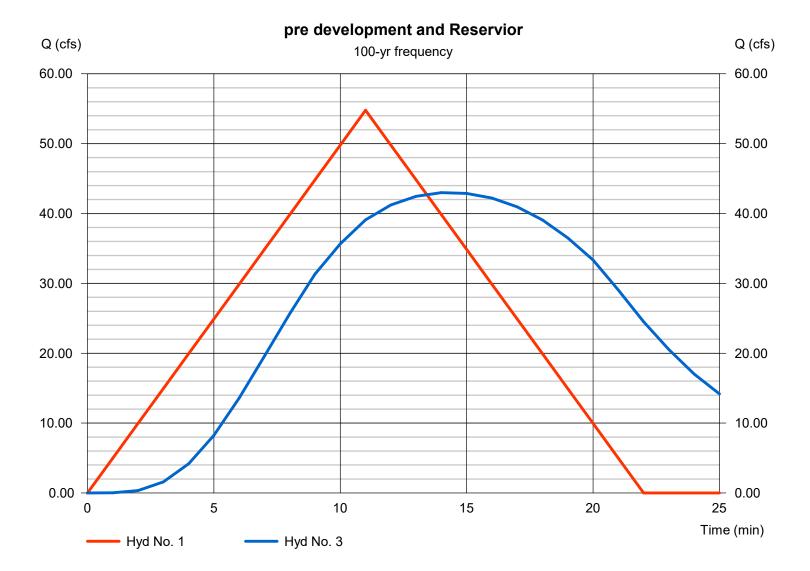


Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2023

Hyd. No. 1 Hyd. No. 3

pre development Reservior

Hydrograph type = Rational Hydrograph type = Reservoir Peak discharge Peak discharge = 42.99 cfs= 54.77 cfsTime to peak = 11 min Time to peak = 14 min Hyd. Volume = 36,151 cuft Hyd. Volume = 45,453 cuft



Tuesday, 02 / 14 / 2023

Pond No. 1 - Detention Pond -4

Pond Data

Trapezoid -Bottom L x W = 74.0 x 50.3 ft, Side slope = 3.00:1, Bottom elev. = 508.00 ft, Depth = 5.00 ft

Stage / Storage Table

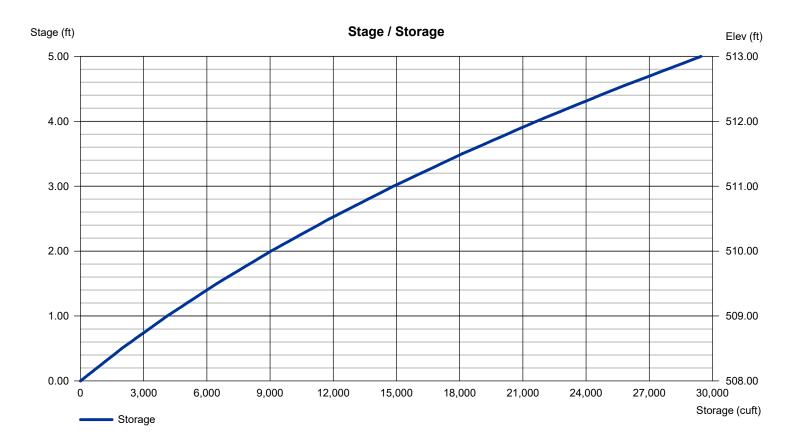
Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	508.00	3,725	0	0
0.50	508.50	4,107	1,957	1,957
1.00	509.00	4,507	2,153	4,110
1.50	509.50	4,925	2,357	6,468
2.00	510.00	5,361	2,571	9,038
2.50	510.50	5,815	2,793	11,832
3.00	511.00	6,287	3,025	14,857
3.50	511.50	6,777	3,265	18,122
4.00	512.00	7,285	3,515	21,637
4.50	512.50	7,811	3,773	25,410
5.00	513.00	8,355	4,041	29,451

Culvert / Orifice Structures

Weir Structures

	[A]	[B]	[C]	[PrfRsr]		[A]	[B]	[C]	[D]
Rise (in)	= 36.00	Inactive	Inactive	0.00	Crest Len (ft)	Inactive	5.00	Inactive	0.00
Span (in)	= 36.00	24.00	24.00	0.00	Crest El. (ft)	= 512.00	512.00	511.00	0.00
No. Barrels	= 1	1	1	0	Weir Coeff.	= 3.33	3.33	3.33	3.33
Invert El. (ft)	= 508.00	511.00	513.00	0.00	Weir Type	= Rect	Rect	Rect	
Length (ft)	= 86.00	0.50	0.00	0.00	Multi-Stage	= No	No	No	No
Slope (%)	= 3.79	0.01	0.00	n/a					
N-Value	= .013	.013	.013	n/a					
Orifice Coeff.	= 0.50	0.60	0.60	0.60	Exfil.(in/hr)	= 0.000 (by	Contour)		
Multi-Stage	= n/a	No	No	No	TW Elev. (ft)	= 0.00			

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



Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	31.09	1	11	20,519				pre development
2	Rational	43.27	1	10	25,961				post development
3	Reservoir	27.37	1	14	25,949	2	510.44	11,523	Reservior
	ention pond 4				Return				02 / 14 / 2023

lyd. lo.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	34.66	1	11	22,873				pre development
2	Rational	48.39	1	10	29,031				post development
3	Reservoir	30.47	1	14	29,019	2	510.65	12,716	Reservior
-let	ention pond 4	1 gpw			Return I	Period: 5 Yo	ear	Tuesday (02 / 14 / 2023

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	39.81	1	11	26,276				pre development
2	Rational	55.21	1	10	33,127				post development
3	Reservoir	34.08	1	14	33,115	2	510.93	14,413	Reservior
det	ention pond 4	1.gpw	-	·	Return I	Period: 10 \	⁄ear	Tuesday, 0	02 / 14 / 2023

						,	, , , , ,		lodesk® Civil 3D® by Autodesk, Inc. v202
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	45.47	1	11	30,012				pre development
2	Rational	63.00	1	10	37,802				post development
3	Reservoir	37.59	1	14	37,790	2	511.26	16,533	Reservior
	ention pond 4					Period: 25 Y			2 / 14 / 2023

lyd. lo.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	51.67	1	11	34,102				pre development
2	Rational	71.49	1	10	42,895				post development
3	Reservoir	41.26	1	14	42,883	2	511.62	18,945	Reservior
detention pond 4.gpw					Return	Period: 50 \	Year	Tuesday, 0	02 / 14 / 2023

	Hydrallow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, ind								I
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	54.77	1	11	36,151				pre development
2	Rational	75.78	1	10	45,465				post development
3	Reservoir	42.99	1	14	45,453	2	511.80	20,214	Reservior



March 6, 2022

Truett Smith City of Bryant 210 Southwest Third St., Bryant, AR 72022

RE: Request for Residential Subdivision Plat and CD Approval Parcel #: 840-11625-125

Dear Mr. Truett Smith,

I represent NXT Gen Homes LLC, in the above-captioned matter. This 54 acre piece of property is located inside the City of Bryant. This property has access to Bryant water and sewer. This development will be for single family residential homes and remain in the R-2 Zoning District.

Hilltop Manor will create a mixture of lot and home sizes in a unique neighborhood. TOur clients neighborhoods have been extremely successful in West Little Rock. They are excited to bring their unique home and neighborhood culture to Bryant.

It is our goal to be included on the April 10th, 2023 Planning Commission agenda.

Please feel free to contact me with any questions or concerns or if I can be of any further assistance.

Sincerely,

Jonathan Hope

Hope Consulting, Inc.

PROPERTY SPECIFIC NOTES:

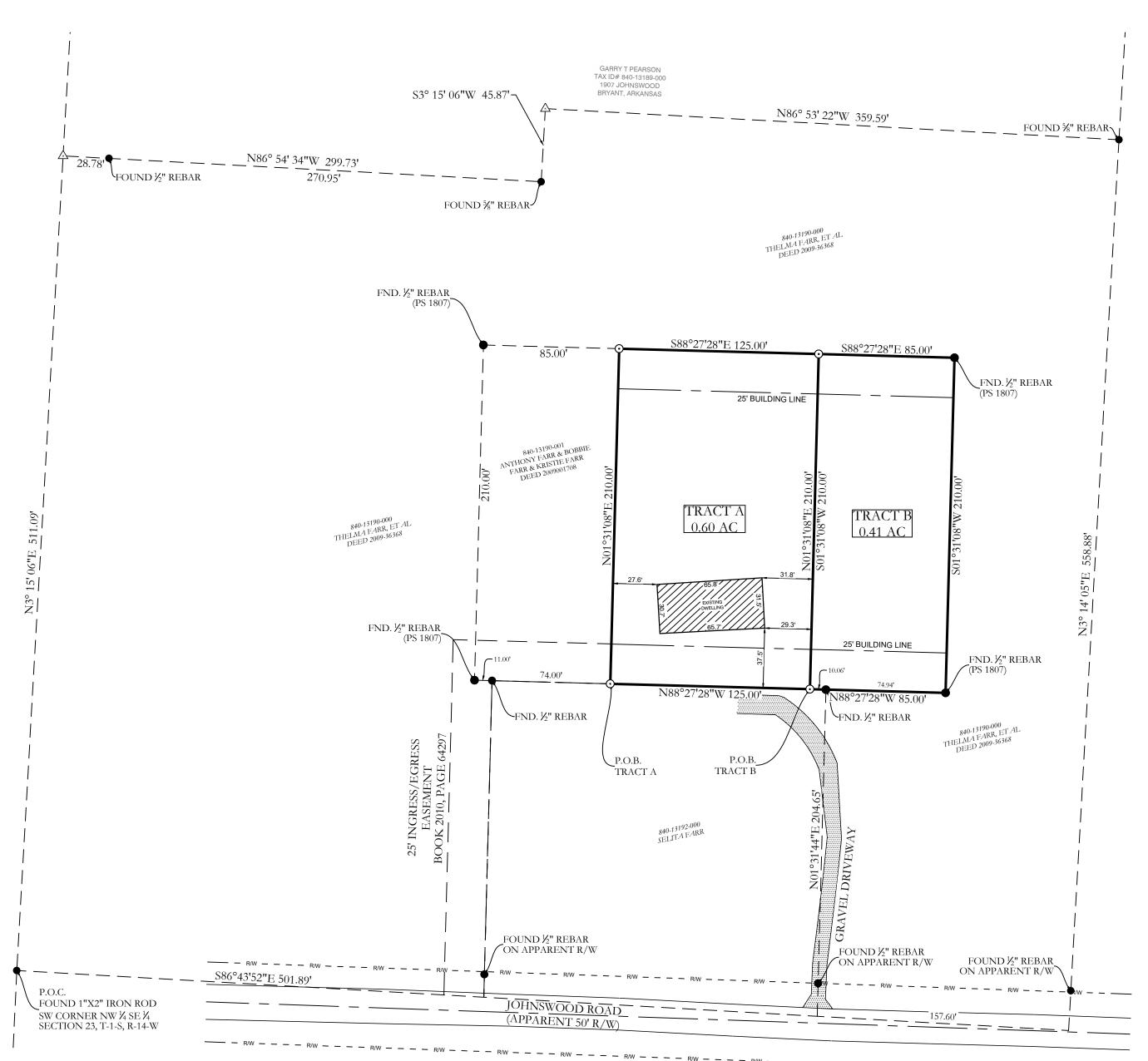
ANTHONY FARR, BOBBIE FARR, AND KRISTIE FARR PHYSICAL ADDRESS 2009 JOHNSWOOD ROAD, BRYANT, ARKANSAS 72022 COUNTY PARCEL TAX ID: 840-13190-001; 840-13193-00

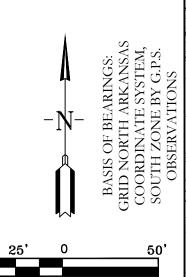
GENERAL SURVEY DISCLAIMERS:

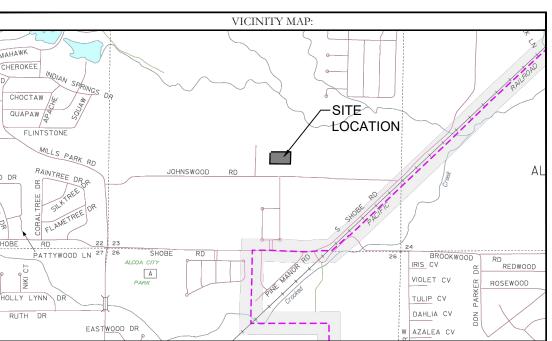
ALL DIMENSIONS LISTED ARE AS MEASURED BY THIS SURVEYOR UNLESS OTHERWISE NOTED. FOR RECORD DIMENSIONS SEE DOCUMENTS OF RECORD

OWNERSHIP INFORMATION, IF SHOWN, IS DISPLAYED AS PUBLISHED BY THE LOCAL COUNTY TAX ASSESSOR AND IS LISTED FOR REFERENCE ONLY. NO STATEMENTS OF

OWNERSHIP, RIGHTS, OR INTERESTS ARE MADE







PARENT TRACT RECORD DESCRIPTION: SALINE COUNTY DEED BOOK 2010, PAGE 64297

ALL THAT PART OF THE W1/2 OF THE NW1/4 SE1/4, SECTION 23, TOWNSHIP 1 SOUTH, RANGE 14 WEST, SALINE COUNTY, ARKANSAS, MORE FULLY DESCRIBE AS FOLLOWS: ,BEGINNING AT A POINT THAT IS 367.3 FEET EAST AND 209 FEET NORTH OF THE SOUTHWEST CORNER OF SAID W 1/4 NW1/4 SE 1/4 AND RUN THENCE WEST 85 FEET; THENCE NORTH 210 FEET; THENCE EAST 85 FEET; THENCE SOUTH 210 FEET TO THE POINT OF BEGINNING

ALL THAT PART OF THE WEST HALF OF THE NORTHWEST QUARTER OF SOUTHEAST QUARTER, SECTION 23, TOWNSHIP 1 SOUTH, RANGE 14 WEST, SALINE COUNTY, ARKANSAS, MORE FULLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT THAT IS 367.3 FEET EAST AND 209 FEET NORTH OF THE SOUTHWEST CORNER OF SAID WEST HALF OF NORTHWEST QUARTER OF SOUTHEAST QUARTER AND RUN THENCE EAST 210 FEET; THENCE NORTH 210 FEET; THENCE WEST 210 FEET; THENCE SOUTH 210 FEET TO THE POINT OF BEGINNING.

ALSO AN EASEMENT FOR ROAD PURPOSES OVER AND ACROSS THE FOLLOWING DESCRIBED PROPERTY, TO-WIT: A PART OF THE WEST ONE-FOURTH OF THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER, SECTION 23, TOWNSHIP 1 SOUTH, RANGE 14 WEST, SALINE COUNTY, ARKANSAS, DESCRIBED AS FOLLOWS: BEGINNING AT A POINT ON THE SOUTH LINE OF SAID WEST HALF OF NORTHWEST QUARTER OF SOUTHEAST QUARTER THAT IS 293.3 FEET EAST OF THE SOUTHWEST CORNER THEREOF; RUN THENCE NORTH 209 FEET; THENCE EAST 74 FEET; THENCE NORTH 25 FEET; THENCE WEST 99 FEET; THENCE SOUTH 234 FEET TO SOUTH LINE THEREOF; THENCE EAST 25 FEET TO THE POINT OF BEGINNING.

AS SURVEYED DESCRIPTIONS

A PART OF THE WEST 1/2, NORTHWEST 1/4, SOUTHEAST 1/4 OF SECTION 23, TOWNSHIP 1 SOUTH, RANGE 14 WEST, SALINE COUNTY, ARKANSAS, MORE PARTICULARLY DESCRIBED AS

COMMENCING AT A 1X2 IRON AT THE SOUTHWEST CORNER OF SAID NW1/4, SE1/4 OF SECTION 23; THENCE S86°43'52"E A DISTANCE OF 501.89 FEET TO A POINT; THENCE N01°31'44"E A DISTANCE OF 204.65 FEET TO A 1/2" REBAR; THENCE N88°27'28"W A DISTANCE OF 10.06 FEET TO A 1/2" REBAR & CAP (PS 1664) AND THE POINT OF BEGINNING; THENCE N 88°27'28" W A DISTANCE OF 125.00 FEET TO A 1/2" REBAR & CAP (PS 1664); THENCE N 01°31'08" E A DISTANCE OF 210.00 FEET TO A 1/2" REBAR & CAP (PS 1665); THENCE S 88°27'28" E A DISTANCE OF 125.00 FEET TO A 1/2" REBAR & CAP (PS 1664); THENCE S 01°31'08" W A DISTANCE OF 210.00 FEET TO THE POINT OF BEGINNING; CONTAINING 26,250.00 SQUARE FEET, OR 0.603 ACRES, MORE OR LESS.

TRACTB

A PART OF THE WEST 1/2, NORTHWEST 1/4, SOUTHEAST 1/4 OF SECTION 23, TOWNSHIP 1 SOUTH, RANGE 14 WEST, SALINE COUNTY, ARKANSAS, MORE PARTICULARLY DESCRIBED AS

COMMENCING AT A 1x2 IRON AT THE SOUTHWEST CORNER OF SAID NW1/4, SE1/4 OF SECTION 23; THENCE S86°43'52"E A DISTANCE OF 501.89 FEET TO A POINT; THENCE N01°31'44"E A DISTANCE OF 204.65 FEET TO A 1/2" REBAR; THENCE N88°27'28"W A DISTANCE OF 10.06 FEET TO A 1/2" REBAR & CAP (PS 1664) AND THE POINT OF BEGINNING; THENCE N 01°31'08" E A DISTANCE OF 210.00 FEET TO A POINT; THENCE S 88°27'28" E A DISTANCE OF 85.00 FEET TO A FND. 1/2" REBAR (PS 1807); THENCE S 01°31'08" W A DISTANCE OF 210.00 FEET TO A FND. 1/2" REBAR (PS 1807); THENCE N 88°27'28" W A DISTANCE OF 85.00 FEET TO THE POINT OF BEGINNING; CONTAINING 17,850.00 SQUARE FEET, OR 0.410 ACRES, MORE OR LESS.

By affixing my seal and signature, I Corbitt Shoffner, Arkansas PLS No, 1664, hereby certify that this drawing correctly depicts a survey compiled by me or under my direct 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 Flood Insurance Rate Map, panel # 05125C0380D Dated: 6/19/2012



117 S. Market Street, Benton, Arkansas 72015 PH. (501)315-2626 FAX (501) 315-0024 www.hopeconsulting.com

FOR USE AND BENEFIT OF:

BOBBIE FARR

PART OF THE NW 1/4, SE 1/4, SECTION 23, TOWNSHIP 1 SOUTH, RANGE 14 WEST SALINE COUNTY, ARKANSAS

	DATE:	04/05/2023			C.A.D. BY: JPAYNE					DRAWING NUMBER:		
t	REVISED:				CHECKED BY:					23-0320 (17-049)		
	SHEET:				SCALE: 1"=50'					0-002	0 (17-0-3)	
	500		01S		14W	0	23	240)	62	1807	





LEGEND ▲ - Computed point Found monument • Set ½" Rebar

(M)- Measured

(P) - Plat/Deed



Variance Application

Applicants are advised to read the Board of Adjustment and Variances section of Bryant Zoning Code prior to completing and signing this form. The Zoning Code is available at www.citvofbryant.com under the Planning and Community Development tab.

Date:	
Applicant or Designee:	Project Location:
Name JONATHAN HOPE	Property Address LOT 15 CORAL RIDGE DR
Address 129 N. MAIN ST. BENTO	N BRYANT, AR.
Phone 501-315-2626	Parcel Number <u>LOT 15</u>
Email Address: JON ATH AN @ HOPECOUSE	Fring Classification R-Z
Property Owner (If different from Applicant) Name HOMES BY IBARRA LLC Phone 501-213-5648): -
Address 3808 NORTHLAKE RD Email Address arreguin.brian10@gmail.com	
Additional Information: Legal Description (Attach description if necessar LOT 15, CORAL RIOGE	
OF BRYANT, SALI	NE COUNTY, ARICANSAS
Description of Variance Request (Attach any neo	
REDUCTION OF 1	REAR SETBACKS TO 23' AND
Proposed Use of Property R~2	



March 20, 2023

City of Bryant Board of Zoning Adjustments 210 Southwest Third St., Bryant, AR 72022

Dear Board Members,

We would like to request a variance for Lot 15, Coral Ridge Subdivision in Bryant, on behalf of the owner Brian Ibarra with Homes by Ibarra, LLC. We would like to request that the rear setbacks be reduced to 23' and 13'.

Thank you for your consideration in this matter.

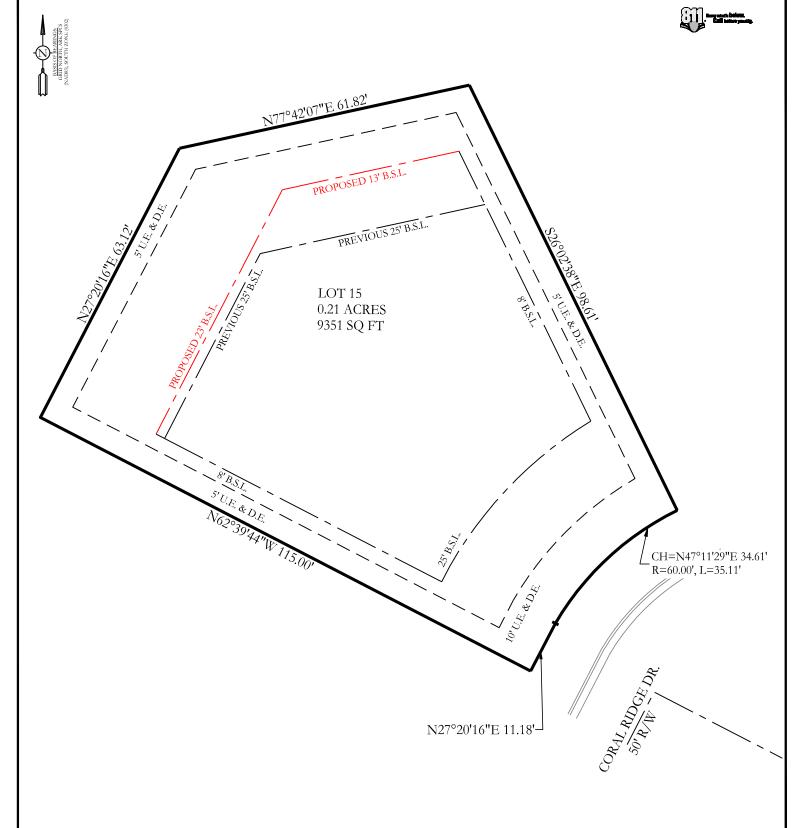
Sincerely,

Jonathan Hope



129 N. Main Street, Benton, Arkansas 72015 Ph. (501) 315-2626 Fax (501)315-0024 www.HopeConsulting.com

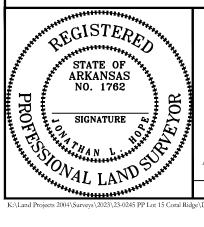
23-0245 Drawing No.





RECORD DESCRIPTION

LOT 15, CORAL RIDGE SUBDIVISION, A SUBDIVISION IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS.



By affixing my seal and signature, I, Jonathan Hope, PS No. 1762, hereby certify that this drawing correctly depicts a survey compiled under my supervision. This survey is for the exclusive use and benefit of parties shown hereon. Use or duplication

of this document by any other parties is prohibited and voids said document. 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 flood plain, according to the Flood Insurance Rate Map, panel # $\underline{05125C0225E}$, dated: $\underline{06/05/2020}$

For the Exclusive Use and Benefit of:

Address (Address Coral Ridge Dr.								
riddiess —	Bryant, AR			Date	DAT	Ε			
500	01S	14W	0	07	130	62	1664		

LEGEND

◬ - Computed Point

- Found monument

• - Set 1/2" Rebar #1664

- Measured (M)

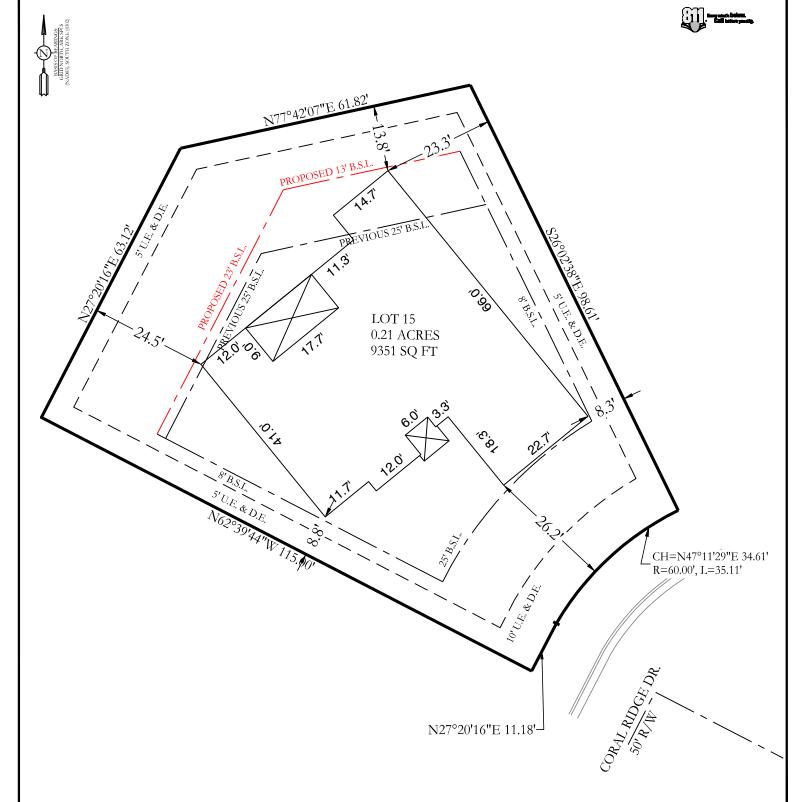
(D/P) - Record

Drawn By MD WCS Checked By



129 N. Main Street, Benton, Arkansas 72015 Ph. (501) 315-2626 Fax (501)315-0024 www.HopeConsulting.com

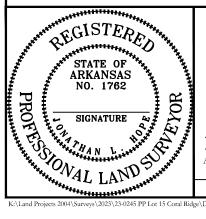
23-0245 Drawing No.





RECORD DESCRIPTION

LOT 15, CORAL RIDGE SUBDIVISION, A SUBDIVISION IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS.



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

This survey is for the exclusive use and benefit of parties shown hereon. Use or duplication

This survey is for the exclusive use and benefit of parties shown hereon. Use or duplicatio of this document by any other parties is prohibited and voids said document. 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 flood plain, according to the Flood Insurance Rate Map, panel # $\underline{05125C0225E}$, dated: $\underline{06/05/2020}$

For the Exclusive Use and Benefit of:

Address Coral Ridge Dr.

Bryant, AR

Date DATE

500 01S 14W 0 07 130 62 1664

▲ - Computed Point

Found monument

• Set 1/2" Rebar #1664

(M) - Measured(D/P) - Record

Drawn By MD
Checked By WCS



Variance Application

Applicants are advised to read the Board of Adjustment and Variances section of Bryant Zoning Code prior to completing and signing this form. The Zoning Code is available at www.cityofbryant.com under the Planning and Community Development tab.

Date: 3/21/23	
Applicant or Designee:	Project Location:
Name_JONATHAN HOPE	Property Address LOT CORAL RIDGE DR
Address 129 N. MAIN ST. BENTON	BRYANT, AR.
	Parcel NumberLoT
Email Address: JON 4TH AN @ HOPELOUSK	
Property Owner (If different from Applicant):	
Name DLTMAN'S DEVELOPMENT	I, INC.
Phone	
Address 1930 N. REYNOLDS RD.	, WUIT IP, BRYANT
Email Address TEREMIAH, OLTN	IANS @ CRYE-LEIKE, COM
Additional Information:	
Legal Description (Attach description if necessary)
LOT 1 , CORAL RIDGE	, A SUBDIVISION IN THE CITY
OF BRYANT, SALIA	LE COUNTY, ARICANSAS
Description of Variance Request (Attach any nece	
	AR SETBACK TO 22' AND
SING SETBACK T	7.
Proposed Use of Property R ~ 2	



March 20, 2023

City of Bryant Board of Zoning Adjustments 210 Southwest Third St., Bryant, AR 72022

Dear Board Members,

We would like to request a variance for Lot 1, Coral Ridge Subdivision in Bryant, on behalf of the owner Oltman's Development, Inc. We would like to request that the rear setback be reduced to 22' and the sideset back be reduced to 7'.

Thank you for your consideration in this matter.

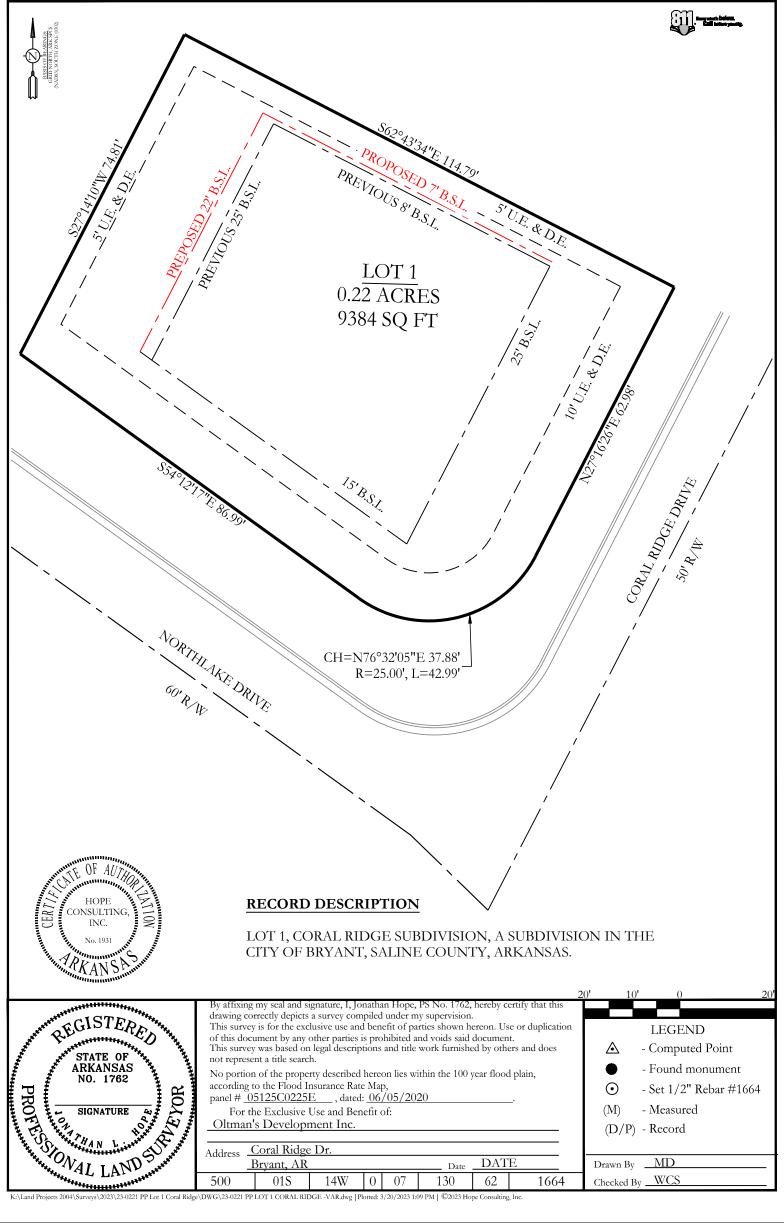
Sincerely,

Jonathan Hope



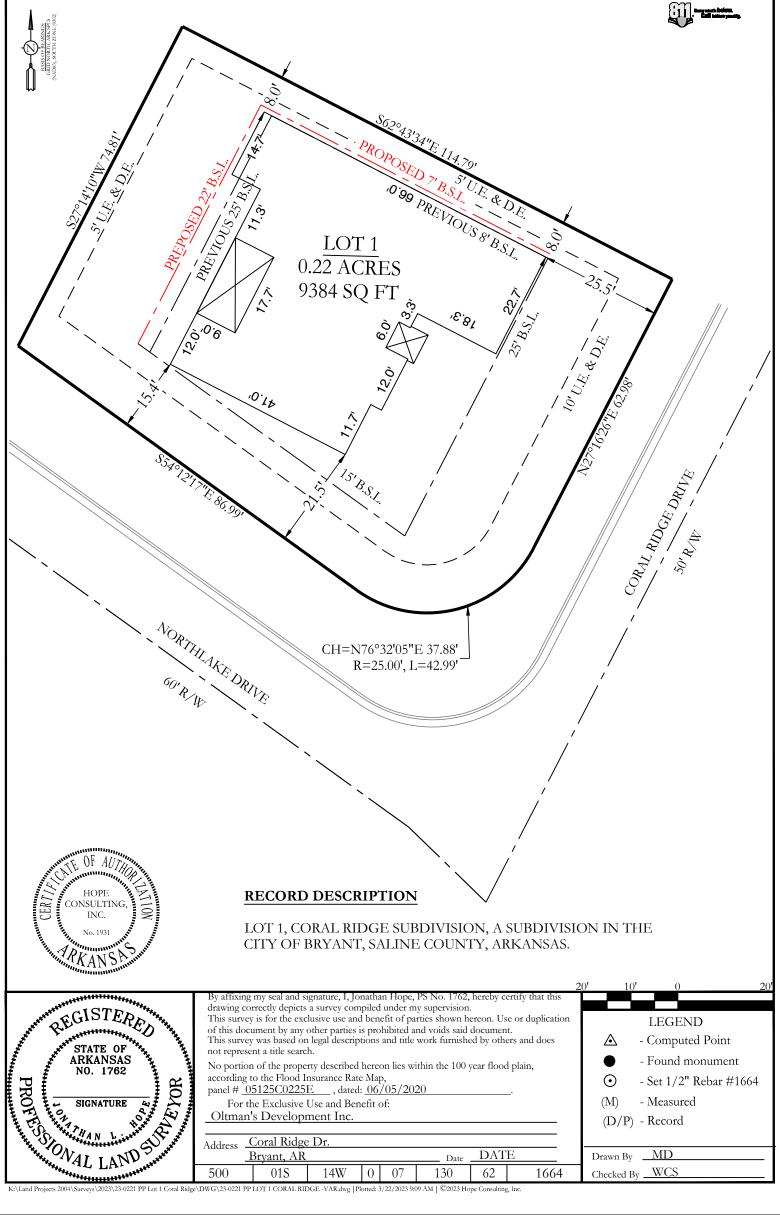
129 N. Main Street, Benton, Arkansas 72015 Ph. (501) 315-2626 Fax (501)315-0024 www.HopeConsulting.com

23-0221 Drawing No.





23-0221 Drawing No.





Variance Application

Applicants are advised to read the Board of Adjustment and Variances section of Bryant Zoning Code prior to completing and signing this form. The Zoning Code is available at www.citvofbryant.com under the Planning and Community Development tab.

Date: 3/21/23
Applicant or Designee: Project Location:
Name JONATHAN HOPE Property Address LOT 7 CORAL RIDGE DR
Address 129 N. MAIN ST. BENTON BRYANT, AR.
Phone
Email Address: JON ATH AN @ HOPECONSKI Joning Classification R-2
Property Owner (If different from Applicant):
Name OLTMAN'S DEVELOPMENT, INC.
Phone
Address 1930 N. REYNOLDS RD., UNIT IP, BRYANT
Email Address JEREMIAH. OLTMANS @ CRYE-LEIKE, COM
Additional Information:
Legal Description (Attach description if necessary)
LOT 7, CORAL RIDGE, A SUBDIVISION IN THE CITY
OF BRYANT, SALINE COUNTY, ARICANSAS
Description of Variance Request (Attach any necessary drawings or images)
REDUCTION OF REAR SETBACK TO 23'.
Proposed Use of Proporty R-2



March 20, 2023

City of Bryant Board of Zoning Adjustments 210 Southwest Third St., Bryant, AR 72022

Dear Board Members,

We would like to request a variance for Lot 7, Coral Ridge Subdivision in Bryant, on behalf of the owner Oltman's Development, Inc. We would like to request that the rear setback be reduced to 23'.

Thank you for your consideration in this matter.

Sincerely,

Jonathan Hope



23-0220 Drawing No.

- Measured

MD

WCS

(D/P) - Record

(M)

Drawn By

Checked By

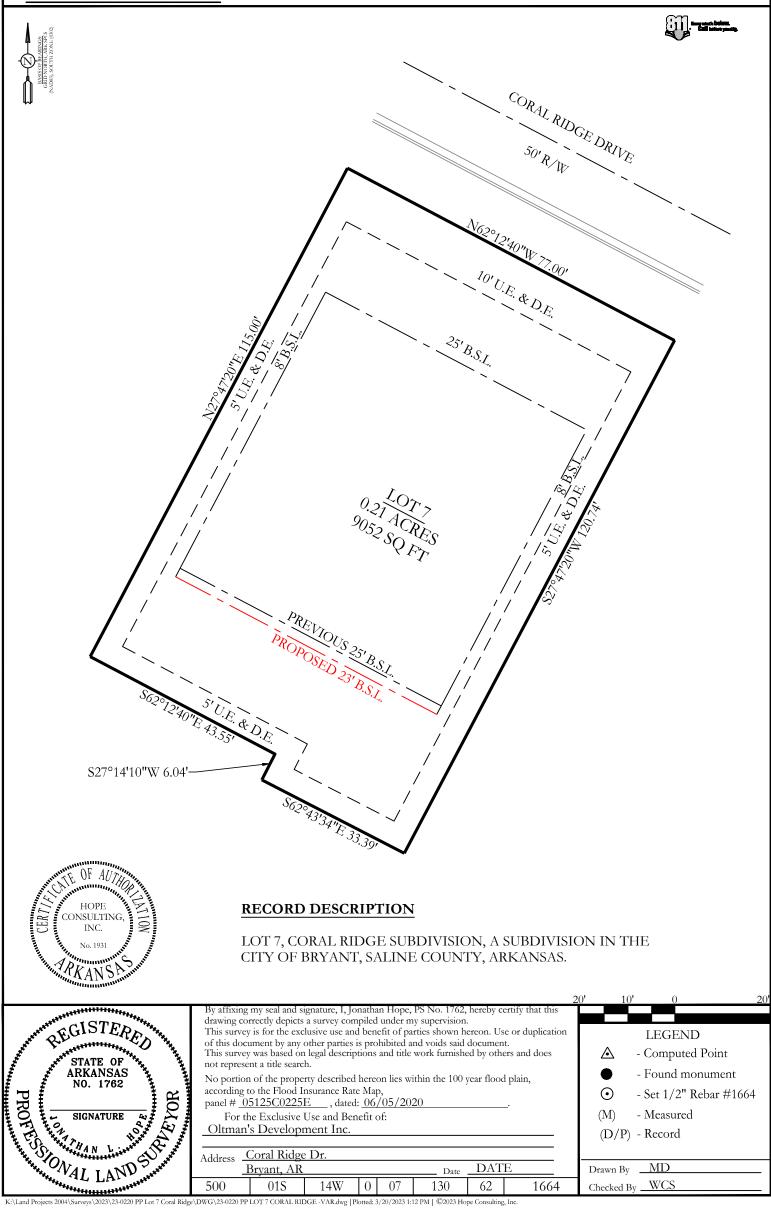
DATE

1664

62

Date

130



Address

500

For the Exclusive Use and Benefit of:

14W

0 07

Oltman's Development Inc.

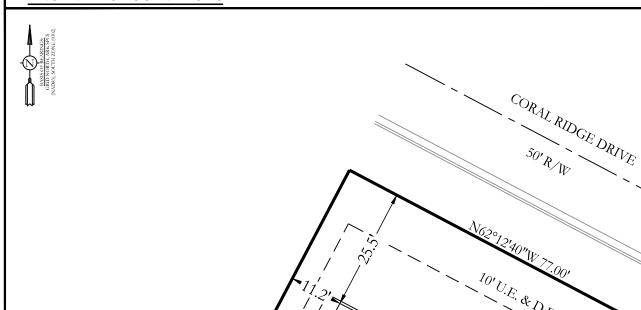
Bryant, AR

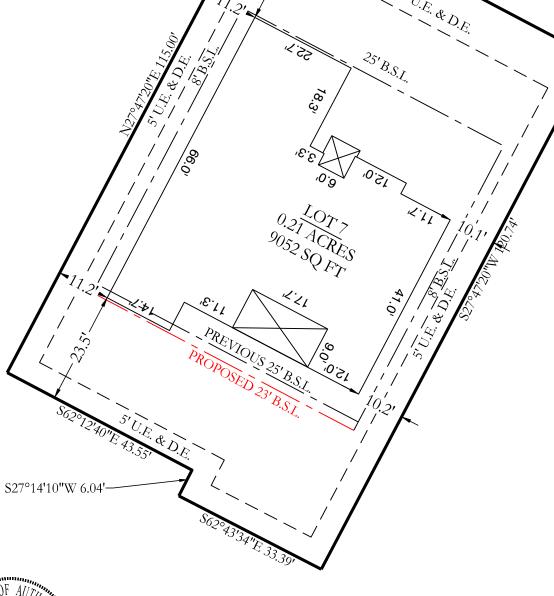
01S

Coral Ridge Dr.



23-0220 Drawing No.

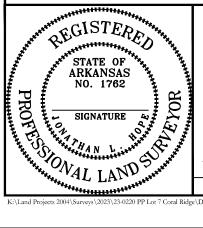






RECORD DESCRIPTION

LOT 7, CORAL RIDGE SUBDIVISION, A SUBDIVISION IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS.



By affixing my seal and signature, I, Jonathan Hope, PS No. 1762, hereby certify that this drawing correctly depicts a survey compiled under my supervision. This survey is for the exclusive use and benefit of parties shown hereon. Use or duplication

of this document by any other parties is prohibited and voids said document. 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 flood plain, according to the Flood Insurance Rate Map, panel # $\underline{05125C0225E}$, dated: $\underline{06/05/2020}$

For the Exclusive Use and Benefit of:

Oltman's Development Inc.

Address Coral Ridge Dr.							
Bryant, AR Date						DAT	E
500	01S	14W	0	07	130	62	1664
					0		

LEGEND

- Computed Point

- Found monument

• - Set 1/2" Rebar #1664

- Measured (M)

(D/P) - Record

Drawn By MD WCS Checked By



Variance Application

Applicants are advised to read the Board of Adjustment and Variances section of Bryant Zoning Code prior to completing and signing this form. The Zoning Code is available at www.cityofbryant.com under the Planning and Community Development tab.

Date: 3/21/23	
Applicant or Designee:	Project Location:
Name JONATHAN HOPE	Property Address LOT 11 CORAL RIDGE DR
Address 129 N. MAIN ST. BENTON	BRYANT, AR,
Phone 501-315-2626	Parcel Number LOT
Email Address: <u>JON 4TH AN @ HOPEC</u> OUSK	Joning Classification R - Z
Property Owner (If different from Applicant):	
Name OLTMAN'S DEVELOPMENT	INC.
Phone	
Address 1930 N. REYNOLDS RD.	, UNIT IP, BRYANT
Email Address	IANS @ CRYE-LEIKE, COM
Additional Information:	
Legal Description (Attach description if necessary)
LOT 11 , CORAL RIDGE	, A SUBDIVISION IN THE CITY
OF BRYANT, SALIN	LE COUNTY, ATICANSAS
Description of Variance Request (Attach any nece	
REDUCTION OF REAR	SET BACK to 7'
Proposed Use of Property	



March 20, 2023

City of Bryant Board of Zoning Adjustments 210 Southwest Third St., Bryant, AR 72022

Dear Board Members,

We would like to request a variance for Lot 11, Coral Ridge Subdivision in Bryant, on behalf of the owner Oltman's Development, Inc. We would like to request that the rear setback be reduced to 7'.

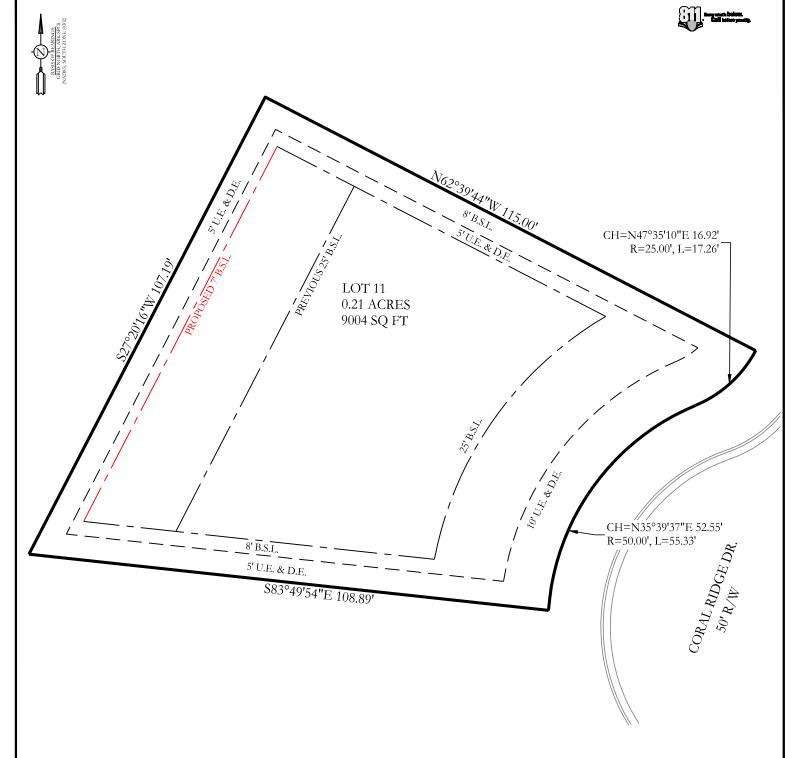
Thank you for your consideration in this matter.

Sincerely,

Jonathan Hope



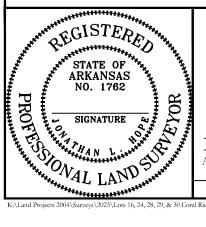
LOT 11CR Drawing No.





RECORD DESCRIPTION

LOT 11, CORAL RIDGE SUBDIVISION, A SUBDIVISION IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS.



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For the Exclusive Use and Benefit of: Oltman's Development Inc.

Address .	Coral Ridge	e Dr.					
Bryant, AR Date							E
500	01S	14W	0	07	130	62	1664
	. 1			. ((_

LEGEND

- Computed Point

- Found monument

• - Set 1/2" Rebar #1664

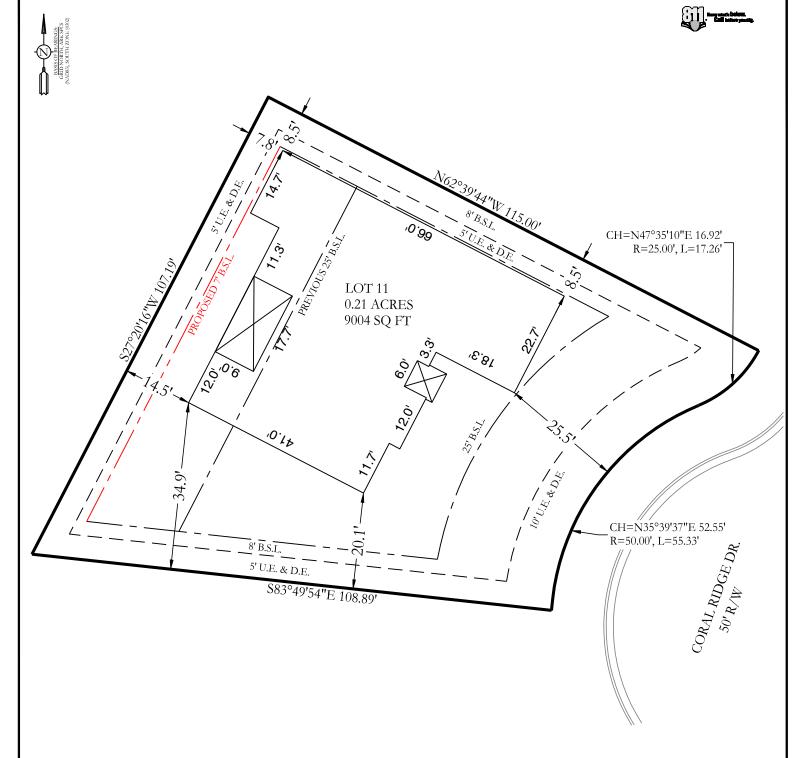
- Measured (M)

(D/P) - Record

MD Drawn By WCS Checked By



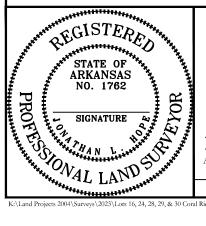
LOT 11CR Drawing No.





RECORD DESCRIPTION

LOT 11, CORAL RIDGE SUBDIVISION, A SUBDIVISION IN THE CITY OF BRYANT, SALINE COUNTY, ARKANSAS.



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

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No portion of the property described hereon lies within the 100 year flood plain, according to the Flood Insurance Rate Map, panel # $\underline{05125C0225E}$, dated: $\underline{06/05/2020}$

For the Exclusive Use and Benefit of: Oltman's Development Inc.

Address Coral Ridge Dr.								
1 14442	Bryant, AR				Date	DAT	Έ	
500	01S	14W	0	07	130	62	1664	

LEGEND

◬ - Computed Point

- Found monument

• - Set 1/2" Rebar #1664

- Measured (M) (D/P) - Record

Checked By .

Drawn By MD WCS

K:\Land Projects 2004\Surveys\2023\Lots 16, 24, 28, 29, & 30 Coral Ridge Proposed Var\Proposed var lot 11 coral ridge.dwg | Plotted: 3/22/2023 9:38 AM | ©2023 Hope Consulting, Inc



Variance Application

Applicants are advised to read the Board of Adjustment and Variances section of Bryant Zoning Code prior to completing and signing this form. The Zoning Code is available at www.citvofbrvant.com under the Planning and Community Development tab.

Date: 3/21/23	
Applicant or Designee:	Project Location:
Name_JONATHAN HOPE	Property Address LOT 16 CORAL RIDER DR
Address 129 N. MAIN ST. BENTON	BRYANT, AR.
Phone <u>501-315-2626</u>	Parcel Number LOT ,6
Email Address: JON ATHAN @ HOPECOUSK	Zoning Classification R-Z
Property Owner (If different from Applicant):	
Name OLTMAN'S DEVELOPMENT	E, INC.
Phone	
Address 1930 N. REYNOLDS RD.	LINIT IP, BRYANT
Email Address TEREMIAH, OLTN	IANS @ CRYE-LEIKE, COM
Additional Information:	
Legal Description (Attach description if necessary)
LOT 16, CORAL RIOGE	, A SUBDIVISION IN THE CITY
OF BRYANT, SALIA	LE COUNTY, ATICANSAS
ŕ	•
Description of Variance Request (Attach any nece	
REDUCTION OF R	EAR SETBACK TO 5'.
Branasad Usa of Branasty R-2	



March 20, 2023

City of Bryant Board of Zoning Adjustments 210 Southwest Third St., Bryant, AR 72022

Dear Board Members,

We would like to request a variance for Lot 16, Coral Ridge Subdivision in Bryant, on behalf of the owner Oltman's Development, Inc. We would like to request that the rear setback be reduced to 5'.

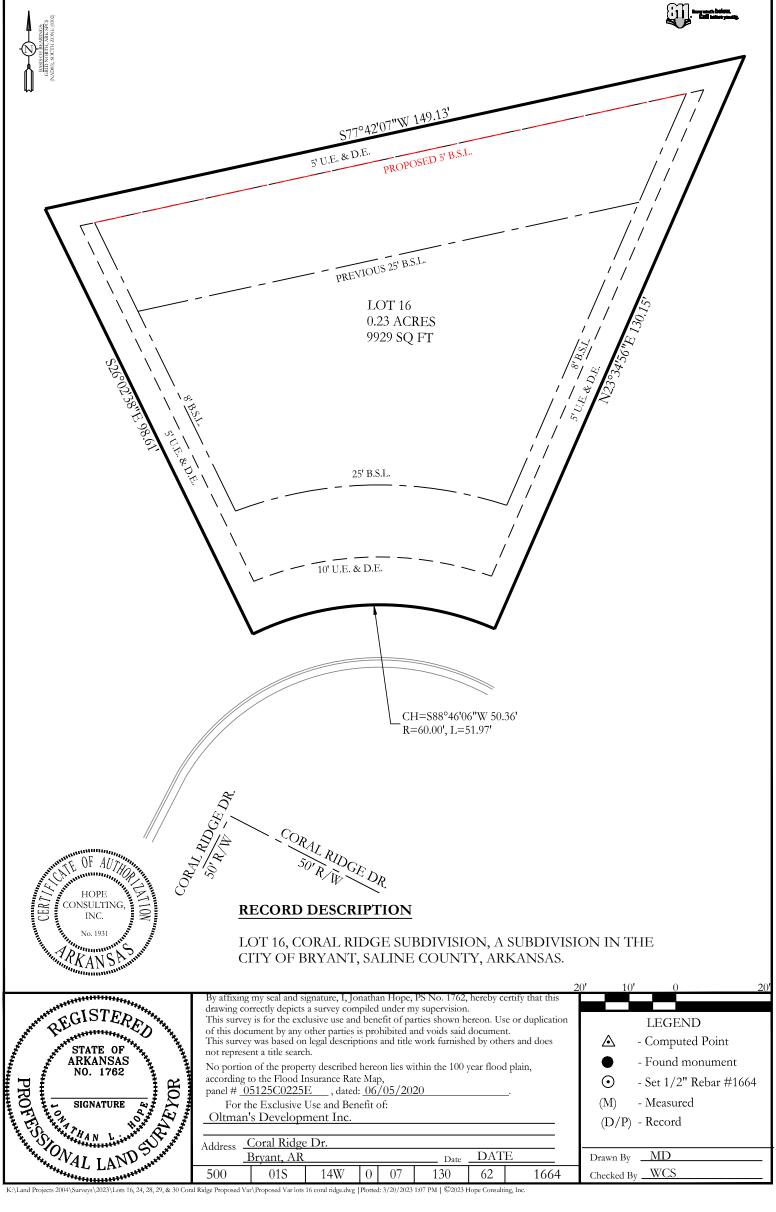
Thank you for your consideration in this matter.

Sincerely,

Jonathan Hope

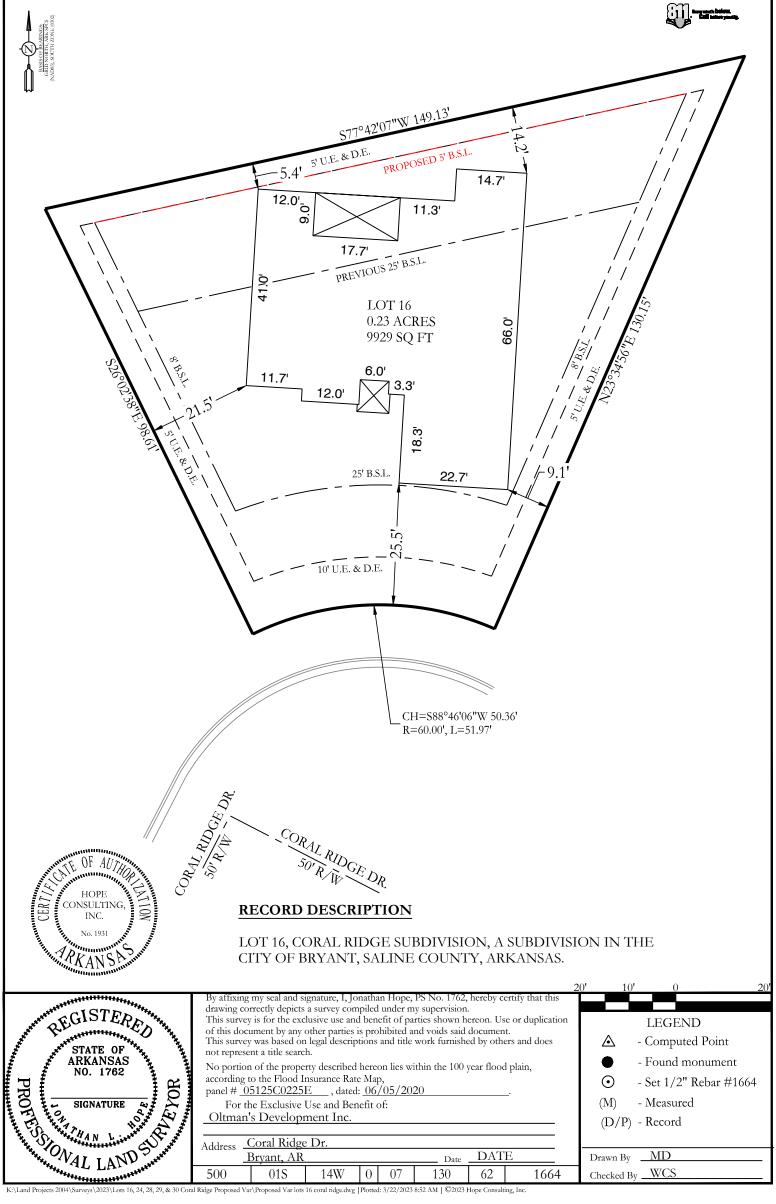


LOT 16CR Drawing No.





LOT 16CR Drawing No.





Variance Application

Applicants are advised to read the Board of Adjustment and Variances section of Bryant Zoning Code prior to completing and signing this form. The Zoning Code is available at www.cityofbryant.com under the Planning and Community Development tab.

Date: 3/2//23	
Applicant or Designee:	Project Location:
Name_JONATHAN 110PE	Property Address LOT 24 CORAL RIDGE DR.
Address 129 N. MAIN ST., BENTON	Parcel Number LOT 24
Phone 501-315-2626	Parcel Number <u>LOT</u> 24
Email Address: JONATHAN@ HOPE CON SULT	Zoning Classification <u>R-2</u>
Property Owner (If different from Applicant):	
Name OLT MAN'S DEVELOP MENT	, INC
Phone	
Address 1930 N. REYNOLD'S R	D. , UNIT IP, BRYANT
Email Address	,
Additional Information:	
Legal Description (Attach description if necessary)
LOT 24, CORAL RID	GE, A SUBDIVISION IN THE
CITY OF BRYANT,	SALINE COUNTY, ARICANSAS
	· A
Description of Variance Request (Attach any nece	
REDUCTION OF RE	AR SETBACK TO 9.5%.
Proposed Use of Property R-2	



March 20, 2023

City of Bryant Board of Zoning Adjustments 210 Southwest Third St., Bryant, AR 72022

Dear Board Members,

We would like to request a variance for Lot 24, Coral Ridge Subdivision in Bryant, on behalf of the owner Oltman's Development, Inc. We would like to request that the rear setback be reduced to 9.5'.

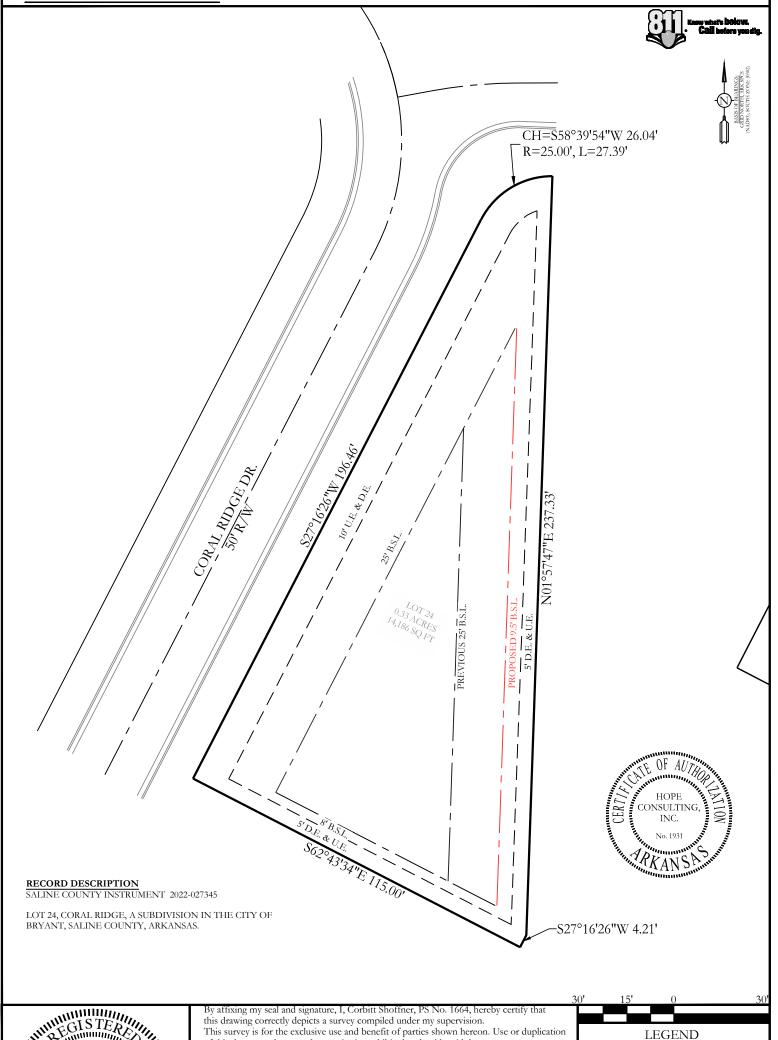
Thank you for your consideration in this matter.

Sincerely,

Jonathan Hope



22-LOT24RE Drawing No.





By althing thy sear and signature, I, Coront Shoffner, PS No. 1004, hereby certify that this drawing correctly depicts a survey compiled under my supervision. This survey is for the exclusive use and benefit of parties shown hereon. Use or duplication of this document by any other parties is prohibited and voids said document. 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 flood plain, according to the Flood Insurance Rate Map, panel # $\underline{05125C0225E}$, dated: $\underline{06/05/2022}$.

For the Exclusive Use and Benefit of:

Oltmar	Oltman's Development, Inc.							
Address Lot 24 Coral Ridge Dr.								
Bryant, AR					Date	12/21	1/2022	
500	01S	14W	0	07	130	62.	1664	

- Computed Point

- Found monument

• - Set 1/2" Rebar #1664

- Measured (M)

(D/P) - Record

Drawn By MD WCS Checked By



City of Bryant, Arkansas

Community Development 210 SW 3rd Street Bryant, AR 72022 501-943-0943

Variance Application

Applicants are advised to read the Board of Adjustment and Variances section of Bryant Zoning Code prior to completing and signing this form. The Zoning Code is available at www.citvoforvant.com under the Planning and Community Development tab.

Date: 3/21/23	
Applicant or Designee:	Project Location:
Name JONATHAN HUPE	Property Address LOT 28 CORAL RIDGE DR
Address 129 N. MAIN ST. BENTO	N BRYANT, AR.
Phone <u>501-315-2626</u>	Parcel NumberLoT_28
Email Address: JON 9711 AN @ HOPECOUSH	
Property Owner (If different from Applicant)):
Name OLTMAN'S DEVELOPMEN	I, INC.
Phone	
Address 1930 N. REYNOLDS RD.	, UNIT IP, BRYANT
Email Address TEREMIAH. OLT	MANS @ CRYE-LEIKE, COM
Additional Information:	
Legal Description (Attach description if necessar	y)
LOT 28, CORAL RIDGE	A SUBDIVISION IN THE CITY
OF BRYANT, SALI	NE COUNTY, ARICANSAS
Description of Variance Request (Attach any nec	•
KEDUCTION OF RE	AR SETBACK TO 8'.
Proposed Use of Property	



March 20, 2023

City of Bryant Board of Zoning Adjustments 210 Southwest Third St., Bryant, AR 72022

Dear Board Members,

We would like to request a variance for Lot 28, Coral Ridge Subdivision in Bryant, on behalf of the owner Oltman's Development, Inc. We would like to request that the rear setback be reduced to 8'.

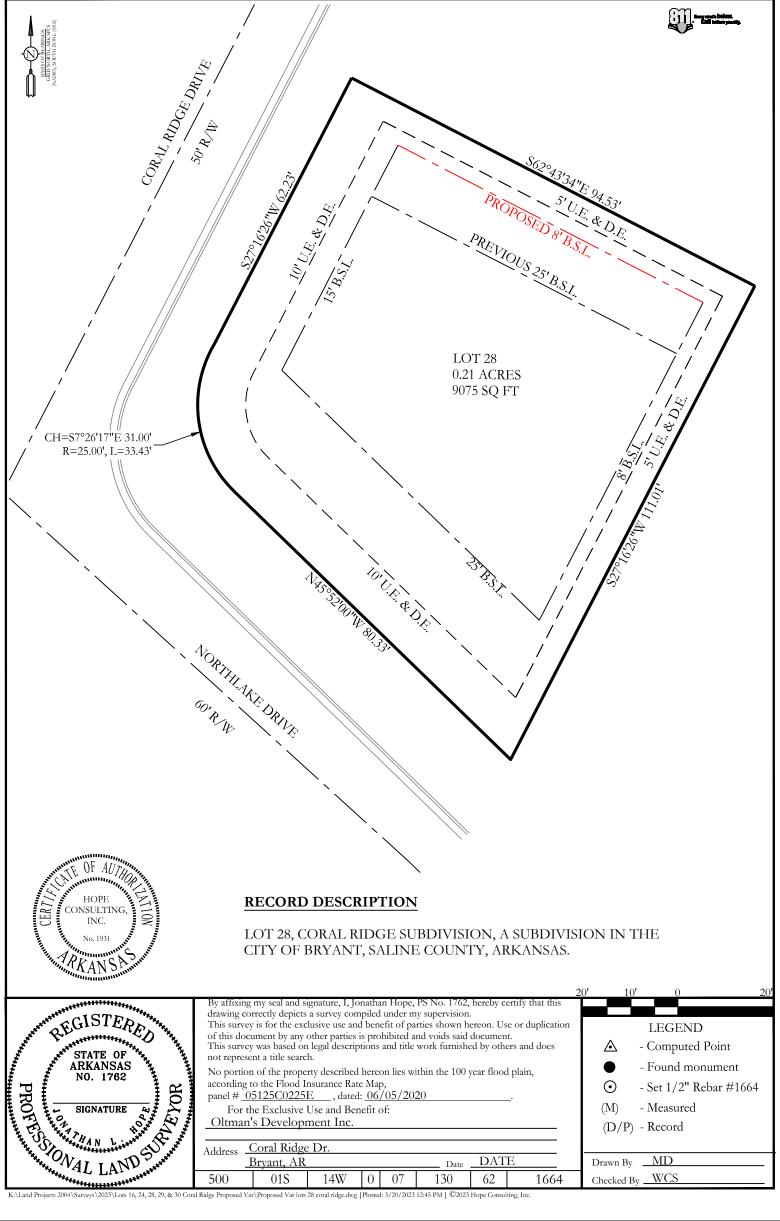
Thank you for your consideration in this matter.

Sincerely,

Jonathan Hope

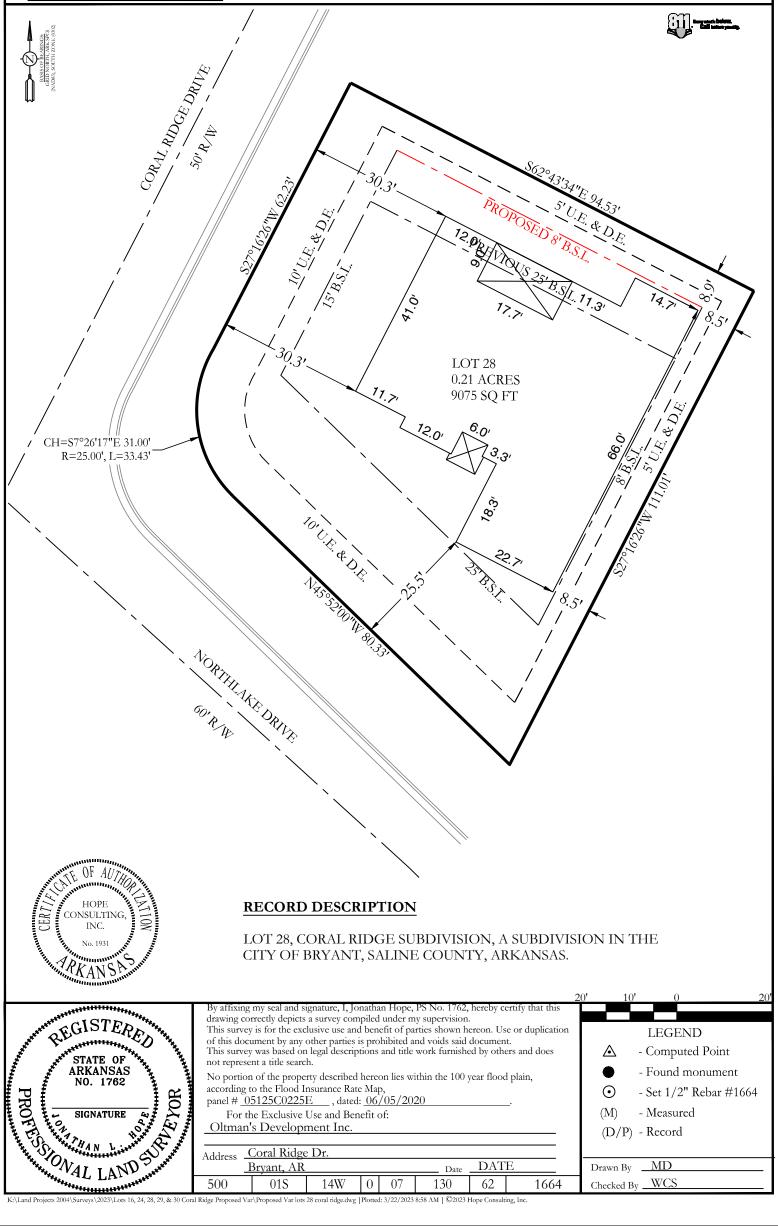


LOT28 CR Drawing No.





LOT28 CR Drawing No.





City of Bryant, Arkansas

Community Development 210 SW 3rd Street Bryant, AR 72022 501-943-0943

SIGN PERMIT APPLICATION

Applicants are advised to read the Sign Ordinance prior to completing and signing this form.

The Sign Ordinance is available at www.cityofbryant.com under the Planning and Community

Development tab.

real of the second of the seco	
Date: 4/7/2023	Note: Electrical Permits may be Required, Please contact the Community Development Office for more information.
Sign Co. or Sign Owner	Property Owner
Name L. Graphics (Joelan) Address 701 N. Reynolds Rd City, State, Zip Bryant, AR72022 Phone (501) 653-4444 Alternate Phone 501-773-0544	Name East Furguson Address 3417 Market Pl Ave City, State, Zip Bryant, AR72022 Phone (501) 840 - 2282 Alternate Phone
GENERAL INFORMATION	
Name of Business Cynergy kips	Thorapy pediatric Therapy
Address/Location of sign 3417 Market place	- Ave Ste 400
Zoning Classification	
Please use following page to provide details on the provided on this application, a Site Plan showing plan property is required to be submitted. Renderings or required to be submitted with the application. A the collected at the time of permit issuance. According special sign permit request shall be one hundred do required by Sign Administrator.	acement of sign(s) and any existing sign(s) on the fithe sign(s) showing the correct dimensions is also irty-five dollar (\$35) per sign payment will be to the Sign Ordinance a fee for and sign variance or
READ CAREFULLY BEFORE SIGNING	
I	rdless of approval. I further certify that the proposed sign is

that no sign may be placed in public right of way. I understand that I must comply with all Building and Electrical Codes and that it is my responsibility to obtain all necessary permits.

Use table below to enter information regarding each sign for approval. Please use each letter to reference each sign rendering.

SIGN	Type (Façade, Pole, Monument, other)	Dimensions (Height, Length, Width)	Sqft (Measured in whole as rectangle)	Height of Sign (Measured from lot surface)		Column for Admin Certifying Approval
				Top of	Bottom of	
				Sign	Sign	
Α	Wall mount	42" × 112"	116	15 Feet	11/6"	
В						
С						
E		VIEWANIEURUM			Annual Allino Studies Studies Strategy Company Company Company Company Company Company Company Company Company	
F	***************************************					
G	A del Add Add Add Add Add Add Add Add Add Ad					

3417 Marketplace Ave ste 400 Bryand, IAR 72023 Kimberly Hunt 501-951-5728





SIGN PERMIT APPLICATION

Applicants are advised to read the Sign Ordinance prior to completing and signing this form.

The Sign Ordinance is available at www.cityofbryant.com under the Planning and Community

Development tab.

Date: 4/7/2023	Note: Electrical Permits may be Required, Please contact the Community Development Office for more information.
Sign Co. or Sign Owner	Property Owner
Name L. Graphics (Joclan) Address 701 N. Ruynoldk Rd City, State, Zip Bryant, AR72022 Phone (SOI) 653-4444 Alternate Phone (501) 773-0544	Name Bart Furcuson Address 3417 Market face sve City, State, Zip Boyant AP72022 Phone (501) 840 - 2282 Alternate Phone
GENERAL INFORMATION Name of Business Farmer Union INS Address/Location of sign 3 447 Marked P Zoning Classification	
Please use following page to provide details on the provided on this application, a Site Plan showing pla property is required to be submitted. Renderings of required to be submitted with the application. A thin collected at the time of permit issuance. According to special sign permit request shall be one hundred doll required by Sign Administrator.	cement of sign(s) and any existing sign(s) on the the sign(s) showing the correct dimensions is also ty-five dollar (\$35) per sign payment will be the Sign Ordinance a fee for and sign variance or
READ CAREFULLY BEFORE SIGNING	
and correct. I fully understand that the terms of the Sign Ordinance regards must fully comply with all terms of the Sign Ordinance regards authorized by the owner of the property and that I am authorized	dless of approval. I further certify that the proposed sign is

that no sign may be placed in public right of way. I understand that I must comply with all Building and Electrical Codes and that it is my responsibility to obtain all necessary permits.

Use table below to enter information regarding each sign for approval. Please use each letter to reference each sign rendering.

SIGN		Dimensions (Height, Length, Width)	Sqft (Measured in whole as rectangle)	Height of Sign (Measured from lot surface)		Column for Admin Certifying Approval
				Top of Sign	Bottom of Sign	
Α	wallmount	60" × 135"	58	16 Feet	11 Feet	
В						
С		**************************************				
E	A STATE OF THE STA	A STATE OF THE STA				
F						
G						

3417 Market place Ave Ste 200-300 Bigant, AR 72022 48 feet 50 701-663-3419 Kevis Ressler 135 in