Bryant Development and Review Committee Meeting

Boswell Municipal Complex - City Hall Conference Room

210 SW 3rd Street

Date: January 18, 2024 - **Time:** 9:00 AM

Call to Order

Old Business

New Business

1. Lot 31 & 32 Replat - Pikewood Subdivision - 2903 Pikewood Dr

Veer Investment Properties - Requesting Recommendation for Approval of Replat

- 0827-PLT-01.pdf
- 0827-RPLT-01.pdf

2. 3903 Pikewood Dr - Lot 31A - Conditional Use Permit

Veer Investment Properties - Requesting Recommendation for Approval of CUP for Duplex

- 0828-APP-01.pdf

3. 3903 Pikewood Dr - Lot 31B - Conditional Use Permit

Veer Investment Properties - Requesting Recommendation for Approval of CUP for Duplex

- 0829-APP-01.pdf

4. Casa De Campo - Lot 23 - Ward Dr - Conditional Use Permit

Hester Home Solutions - Requesting Recommendation for Approval of CUP for Duplex

- 0831-APP-01.pdf

5. Casa De Campo - Lot 21 - Ward Dr - Conditional Use Permit

Sean Laisure Construction - Requesting Recommendation for Approval of CUP for Duplex

- 0832-APP-01.pdf

6. Kensignton Place Ph. 3 - Final Plat

GarNat Engineering - Requesting Recommendation for Approval of Final Plat

- 0825-ASB-01.pdf
- 0825-PLT-01.pdf
- 0825-BOA-01.pdf
- 0825-APP-01.pdf
- 0825-LTR-02.pdf
- 0825-LTR-01.pdf

7. Summerwood Sports Complex Gym 3 - Revised Plans - Hwy 5 and Bryant Parkway

Phillip Lewis Engineering - Requesting Approval for Revised Site Plan

- 0824-CMT-01.pdf
- 0824-PLN-02.pdf
- 0824-LTR-01.pdf
- 0824-ELV-01.pdf
- 0824-DRN-01.pdf
- 0824-PLN-01.pdf

8. ACA - Storm Shelter - 21815 I-30

Perry Black - Requesting Site Plan Approval for New Storm Shelter

- 0826-PLN-01.pdf

9. Request to Add: 908 Woodland Park - Lot Development Discussion

Dumont Construction

Staff Approved

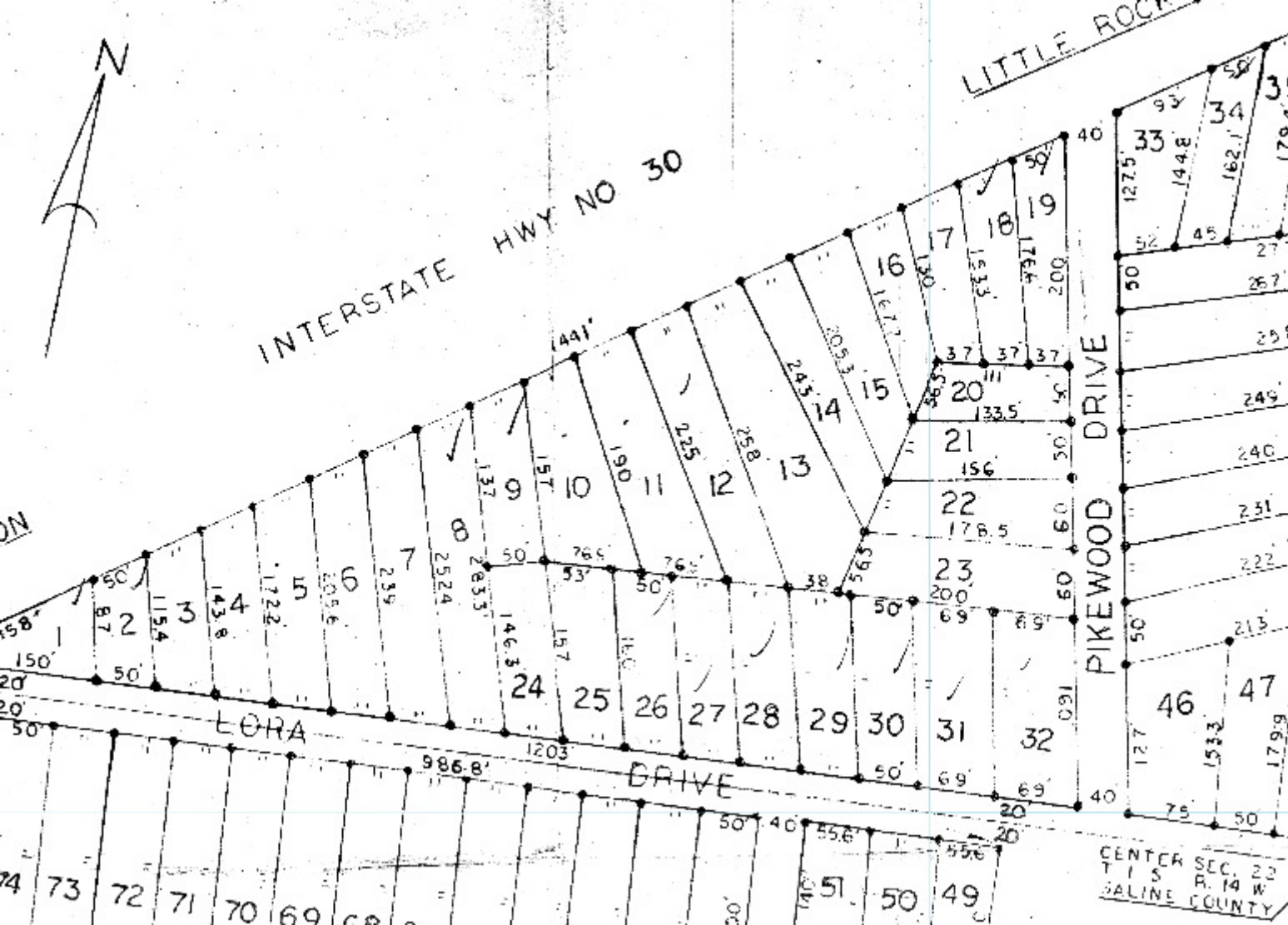
10. Sharks - 5309 HWY 5 - Sign Permit

Aero Signs - Requesting Sign Permit Approval - STAFF APPROVED

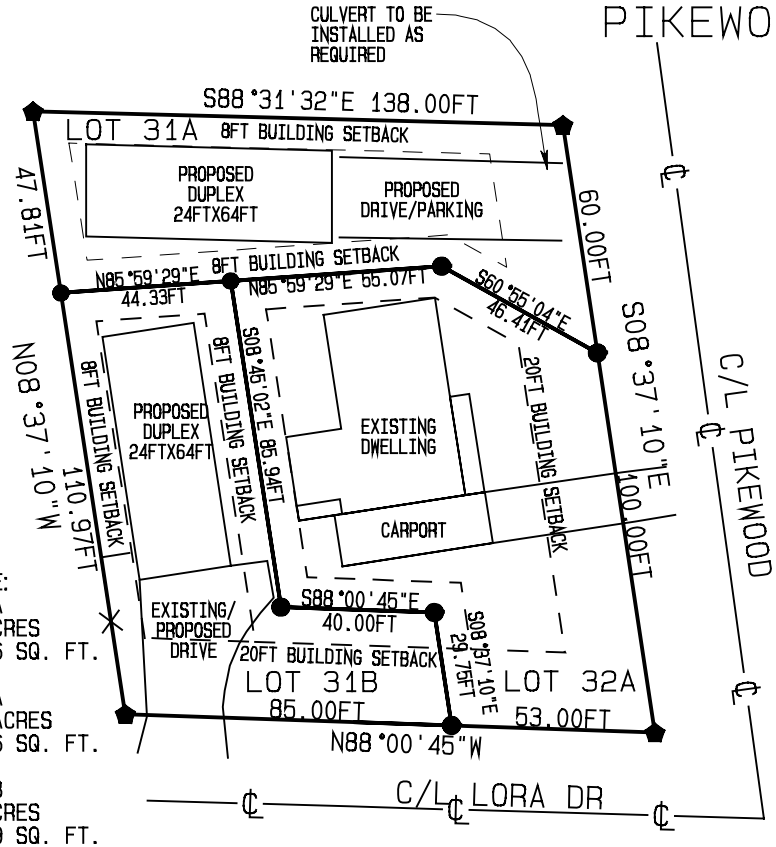
- 0822-APP-02.jpg

Permit Report

Adjournments


N
INTERSTATE HWY NO 30
LITTLE ROCK
PIKEWOOD DRIVE
LORA DRIVE
CENTER SEC. 22
T 1 S R. 14 W.
SALINE COUNTY

LOTS 31A 31B AND 32A
BEING A REPLAT OF LOTS 31 AND 32
PIKEWOOD SUBDIVISION



LEGAL DESCRIPTION:
All that part of Lots 31 and 32, Pikewood Subdivision to Saline County, Arkansas, more particularly described as follows: Beginning at the Northeast corner of said Lot 32, thence South 08 deg. 37 min. 10 sec. East a distance of 160.00 feet to the Southeast corner of said Lot 32; thence North 88 deg. 00 min. 45 sec. West a distance of 138.00 feet to the Southwest corner of said Lot 31; thence North 08 deg. 37 min. 10 sec. West a distance of 158.78 feet to the Northwest corner of said Lot 31; thence South 88 deg. 31 min. 32 sec. East a distance of 138.00 feet to the Point of Beginning, containing 0.50 acres, more or less

CERTIFICATE OF FINAL PLAT 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 _____, 2024. All of the Document is hereby accepted, and this certificate executed under the authority of said Rules and Regulations

_____
Bryant Planning Commission

_____
Date of Execution

CERTIFICATE OF OWNER

We, the undersigned, owners of the Real Estate, shown and described herein, do hereby certify that we caused to be laid off, platted, and subdivided, and do hereby layoff, plat, and subdivide said Real Estate in accordance with the Plat

_____
Date of Execution

_____
President: Maunish Shah
Owner/Developer:
Veer Investment Properties LLC
12 Longwell Loop
Little Rock AR 72211

ACREAGE:
LOT 31A
0.14 ACRES
6061.76 SQ. FT.

LOT 32A
0..22 ACRES
9391.76 SQ. FT.

LOT 31B
0.14 ACRES
6181.69 SQ. FT.

I hereby certify that the hereon plat and described survey was completed under my supervision to the best of my professional knowledge and ability.

Brian J Watson
BRIAN J. WATSON
P.L.S. #1864
No investigation or other search was performed for easements or other records that an accurate and current title search may disclose
SOURCE OF TITLE
SALINE COUNTY DOCUMENT#
2023/007396

DATE: 3 JAN. 2024
JOB#23-64
SCALE: 1IN.=50FT.
DRAWN BY: BW

LICENSED PROFESSIONAL SURVEYOR
STATE OF ARKANSAS
No. 1864
Brian J Watson
SIGNATURE
01-03-24
BRIAN J WATSON

CERTIFICATE OF AUTHORIZATION
WATSON SURVEYING LLC
No. 3955
ARKANSAS

N
W E
S

BEARINGS BASED ON GRID NORTH BY GPS OBSERVATION

SCALE 1"=50'
0 50 100

Symbol	Description
▲	COMPUTED
⬟	REBAR
●	SET REBAR
——℄——	CENTER LINE
——×——	FENCE (X) LINE
————	PROPERTY LINE

WATSON LAND SURVEYING
501-529-1940
10700 HWY. 35N SHERIDAN, AR.

FOR THE USE AND BENEFIT OF
VEER INVESTMENT PROPERTIES LLC

City of Bryant, Arkansas
Community Development
210 SW 3rd Street Bryant, AR 72022
501-943-0943

Conditional Use Permit Application

Applicants are advised to read the Conditional Use Permit 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: 1/8/2024

Applicant or Designee:

Name VEER investment Properties LLC

Address 12 Longwell Loop, LR, AR 72211

Phone 501 766 9090

Email Address: Veersuite@gmail.com

Project Location:

Property Address 2903 Pikewood Dr, Lot 31A Bryant, AR 72022

Parcel Number _____

Zoning Classification R-M

Property Owner (If different from Applicant):

Name _____

Phone _____

Address _____

Email Address _____

Additional Information:

Legal Description (Attach description if necessary)

Pikewood Subdivision Lots 31 + 32

Description of Conditional Use Request (Attach any necessary drawings or images)

Proposed/Current Use of Property Duplexes, current use Single Family Home

Application Checklist

Requirements for Submission

- ☐ Letter stating request of Conditional Use and reasoning for request
- ☐ Completed Conditional Use Permit Application
- ☐ Submit Conditional Use Permit Application Fee ($125)
- ☐ Submit Copy of completed Public Notice
- ☐ Publication: Public Notice shall be published at least one (1) time fifteen (15) days prior to the public hearing at which the variance will be heard. Once published please provide a proof of publication to the Community Development office.
- ☐ Posting of Property: The city shall provide a sign to post on the property involved for the fifteen (15) consecutive days leading up to Public hearing. One (1) sign is required for every two hundred (200) feet of street frontage.
- ☐ Submit eight (8) Copies of the Development Plan (Site Plan) showing:
  - Location, size, and use of buildings/signs/land or improvements
  - Location, size, and arrangement of driveways and parking. Ingress/Egress
  - Existing topography and proposed grading
  - Proposed and existing lighting
  - Proposed landscaping and screening
  - Use of adjacent properties
  - Scale, North Arrow, Vicinity Map
  - Additional information that may be requested by the administrative official due to unique conditions of the site.

Once the application is received, the material will be reviewed to make sure all the required information is provided. The applicant will be notified if additional information is required. The application will then go before the Development and Review Committee (DRC) for a recommendation to the Planning Commission. A public hearing will be held at this meeting for comments on the Conditional Use. After the public hearing, the Planning Commission will make a decision on the use.

Note: that this is not an exhaustive guideline regarding the Conditional Use Permit Process. Additional information is available in the Bryant Zoning Ordinance.

READ CAREFULLY BEFORE SIGNING

I _____, do hereby certify that all information contained within this application is true and correct. I further certify that the owner of the property authorizes this proposed application. I understand that I must comply with all City Codes and that it is my responsibility to obtain all necessary permits required.

NOTICE OF PUBLIC HEARING

A public hearing will be held on Monday, February 12th, 2024 at 6:00 P.M. at the Bryant City Office Complex, 210 Southwest 3rd Street, City of Bryant, Saline County, for the purpose of public comment on a conditional use request at the site of 2903 Pikewood Dr, Lot 31A + Lot 31B (address).

A legal description of this property can be obtained by contacting the Bryant Department of Community Development.

Rick Johnson
Chairman Board of Zoning Adjustment
City of Bryant

This notice is to be run in the legal notices section of the Saline Courier no less than 15 days prior to the public hearing.

City of Bryant, Arkansas
Community Development
210 SW 3rd Street Bryant, AR 72022
501-943-0943

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Date: 1/8/2024

Applicant or Designee:

Name VEER investment Properties LLC
Address 12 Longwell Loop, LR AR 72211
Phone 5017669090
Email Address: Veersuite@gmail.com

Project Location:

Property Address 2903 Pikewood, Lot 31B Bryant, AR 72022
Parcel Number _____
Zoning Classification R-M

Property Owner (If different from Applicant):

Name _____
Phone _____
Address _____
Email Address _____

Additional Information:

Legal Description (Attach description if necessary)

Pikewood Subdivision Lots 31+32

Description of Conditional Use Request (Attach any necessary drawings or images)

Proposed/Current Use of Property Duplexes, Current use Single Family Home

DRC Jan. 18th (Brian OR Heather)

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  - Use of adjacent properties
  - Scale, North Arrow, Vicinity Map
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Feb 12th Planning Com Meeting

Selma Courier 18th to 28th Run 1 times

→ email publication to Colton

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Community Development
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Date: 1/10/24

Applicant or Designee:

Name Joshua Hester Hester Home Solutions
Address [redacted] 7513 Hunt Rd, Benton, AR 72019
Phone 501-912-8667
Email Address: Joshhester28@gmail.com

Project Location:

Property Address Ward Dr, Bryant, AR 72022
Parcel Number 840-03588-065
Zoning Classification _____

Property Owner (If different from Applicant):

Name Nathan Brady
Phone 501-672-1557
Address 10432 Reed Rd, Alexander, AR 72002
Email Address gnbrady71@gmail.com

Additional Information:

Legal Description (Attach description if necessary)
Casa De Campo, Lot 23

Description of Conditional Use Request (Attach any necessary drawings or images)
Duplex

Proposed/Current Use of Property Duplex / currently undeveloped

Application Checklist

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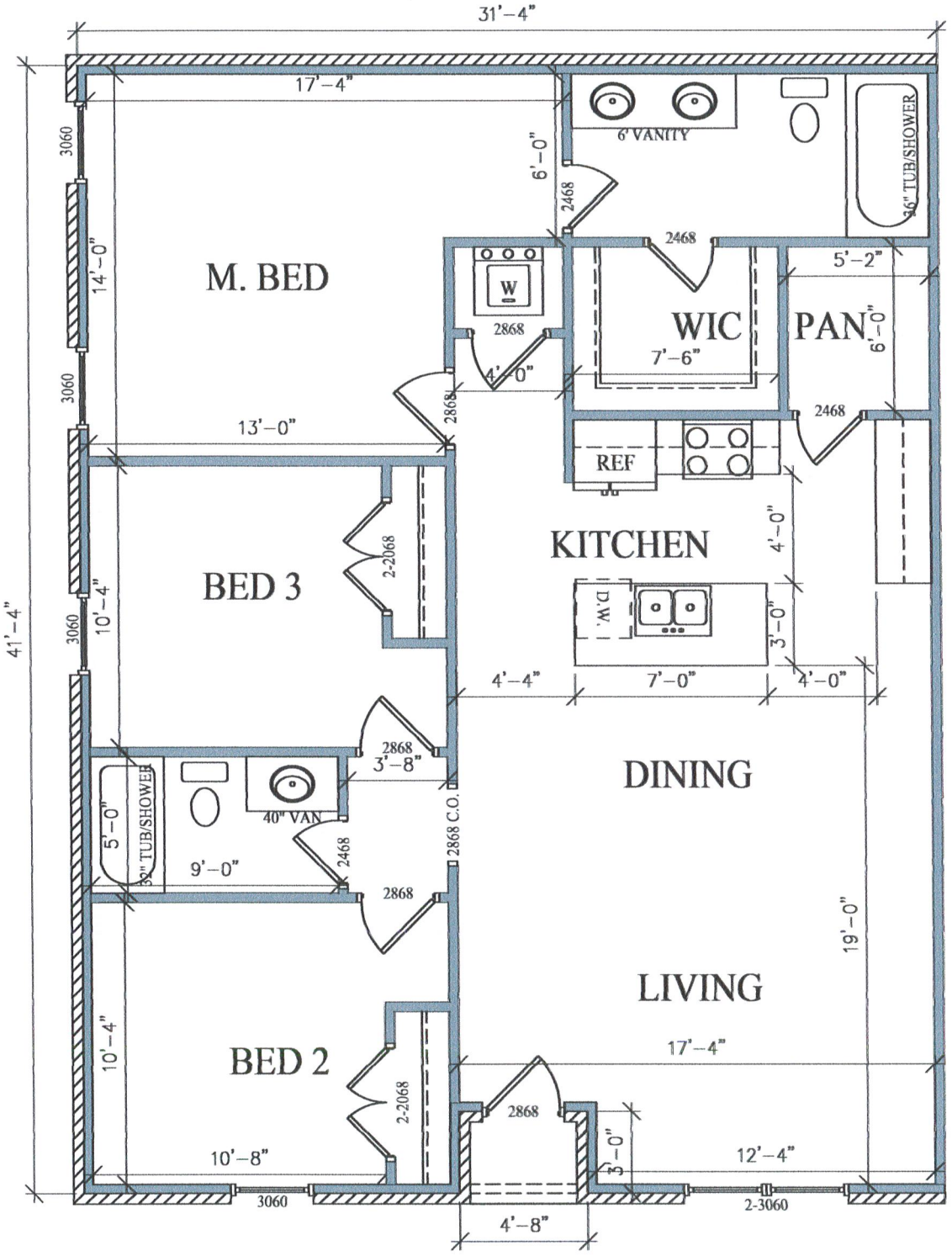

BY: MW

my PLAN STORE .com
New Construction & Remodel

01/04/2024

M24-002 SEAN LAISURE OPT B
1324 SQ FT HEAT/COOL BRICK:

City of Bryant, Arkansas
Community Development
210 SW 3rd Street Bryant, AR 72022
501-943-0943

Conditional Use Permit Application

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Date: 1-10-24

Applicant or Designee:

Jeffrey Sean Laisure
Name Sean Laisure Construction LLC
Address 1131 Brookhaven Ct. Alexander 72002
Phone 501-831-7336
Email Address: Seanlaisure@Gmail.com

Project Location:

Property Address Ward Dr. Bryant AR. 72022
Parcel Number 840-03588-063
Zoning Classification _____

Property Owner (If different from Applicant):

Name Nathan Brady
Phone 501-672-1557
Address 10432 Reed Rd. Alexander AR 72002
Email Address qnbrady71@Gmail.com

Additional Information:

Legal Description (Attach description if necessary)
Casa De Campo, 21

Description of Conditional Use Request (Attach any necessary drawings or images)
Duplex

Proposed/Current Use of Property Duplex / currently undeveloped

Application Checklist

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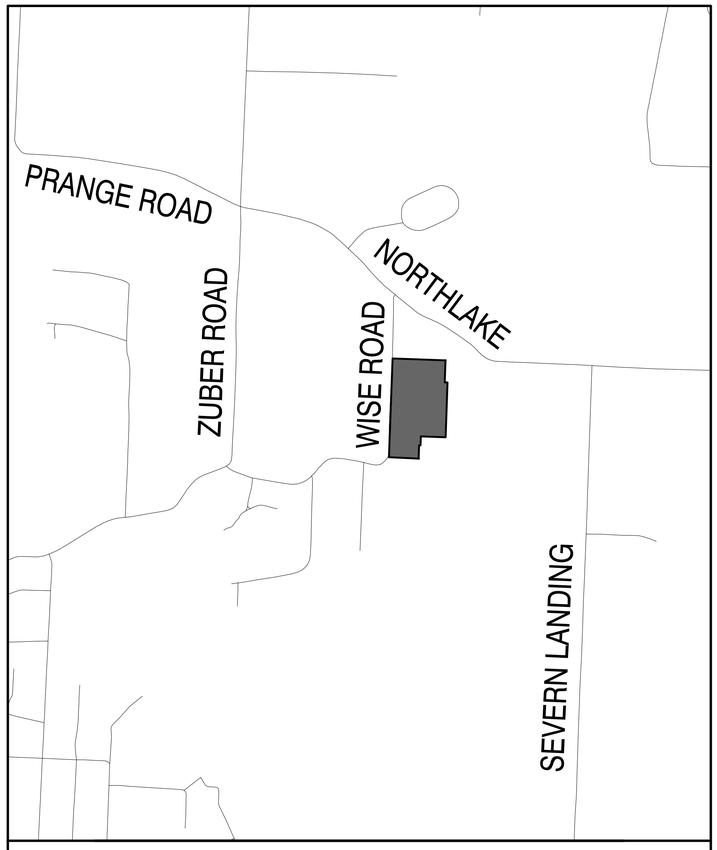
KENSINGTON PLACE SUBDIVISION
PHASE 3
BRYANT, ARKANSAS



VICINITY MAP - SALINE COUNTY, AR

Prepared by:

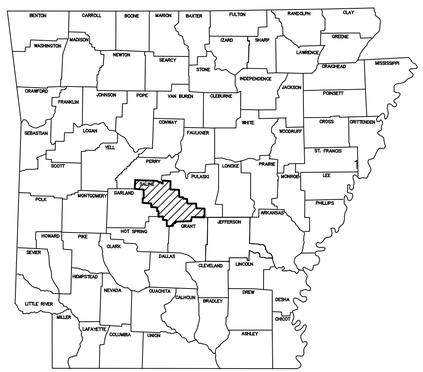
GarNat Engineering, LLC

Designing our client's success

www.garnatengineering.com

P.O. Box 116
Benton, AR 72018
Ph (501) 408-4650

3825 Mt Carmel Road
Bryant, AR 72022
Fx (888) 900-3068



ARKANSAS

DRAWING INDEX:

N

STATE OF ARKANSAS
Vernon J. Williams
REGISTERED PROFESSIONAL ENGINEER
NO. 9551
VERNON J. WILLIAMS
12-02-2020

CERTIFICATE OF AUTHORIZATION
GarNat Engineering, LLC
No. 2174
ARKANSAS

PROPERTY DESCRIPTION:

PROPERTY DESCRIPTION: (PHASE 3 KENSINGTON PLACE)

PART OF TRACT 2A LOCATED IN THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER (NW/4 SE/4) OF SECTION 7, TOWNSHIP 1 SOUTH, RANGE 14 WEST, DEED BOOK 2017 PAGE 024362 OF THE SALINE COUNTY, ARKANSAS CIRCUIT CLERK'S RECORDS MORE PRECISELY DESCRIBED AS FOLLOWS: COMMENCING AT A FOUND 5/8" REBAR AT THE SOUTHEAST CORNER OF SAID NW/4 SE/4 OF SECTION 7; THENCE N87°12'45"W, ALONG THE SOUTH LINE OF SAID NW/4 SE/4, A DISTANCE OF 925.95 FEET TO A SET 1/2" REBAR WITH CAP #1573 FOR THE POINT OF BEGINNING; THENCE N87°12'45"W, CONTINUING ALONG SAID SOUTH LINE, A DISTANCE OF 391.80 FEET TO A FOUND 1/2" REBAR WITH CAP AT THE SOUTHWEST CORNER OF THE SAID NW/4 SE/4 OF SECTION 7; THENCE N2°03'22"E, ALONG THE WEST LINE OF SAID NW/4 SE/4, A DISTANCE OF 653.35 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE S87°57'40"E, LEAVING SAID WEST LINE, 737.45 FEET TO A FOUND 1/2" REBAR WITH CAP AT THE NORTHWEST CORNER OF LOT 14 OF KENSINGTON PLACE PHASE 1; THENCE S2°02'20"W, ALONG THE WEST LINE OF KENSINGTON PLACE PHASE 1 AND PHASE 2, A DISTANCE OF 363.35 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE N87°57'42"W, CONTINUING ALONG SAID KENSINGTON PLACE PHASE 2 BOUNDARY, 327.50 FEET TO A SET 1/2" REBAR WITH CAP #1573 LOCATED AT THE NORTHWEST CORNER OF LOT 69 OF KENSINGTON PLACE PHASE 2; THENCE S2°02'21"W, ALONG WEST LINE OF SAID LOT 69, A DISTANCE OF 120.00 FEET TO A SET 1/2" REBAR LOCATED ON THE NORTH RIGHT OF WAY OF MERIDIAN DRIVE AT THE SOUTHWEST CORNER OF SAID LOT 69; THENCE N87°57'40"W, ALONG SAID NORTH RIGHT OF WAY, A DISTANCE OF 18.38 FEET TO A POINT; THENCE S2°02'20"W, LEAVING SAID RIGHT OF WAY, A DISTANCE OF 175.12 FEET TO THE POINT OF BEGINNING AND CONTAINING 8.83 ACRES, OR 384,781 SQUARE FEET, MORE OR LESS.

ALL OF TRACT 2B LOCATED IN THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER (NW/4 SE/4) OF SECTION 7, TOWNSHIP 1 SOUTH, RANGE 14 WEST, DEED BOOK 2018 PAGE 003206 OF THE SALINE COUNTY, ARKANSAS CIRCUIT CLERK'S RECORDS MORE PRECISELY DESCRIBED AS FOLLOWS: BEGINNING AT A FOUND RAILROAD SPIKE AT THE NORTHWEST CORNER OF SAID NW/4 SE/4 OF SECTION 7; THENCE S87°57'40"E A DISTANCE OF 699.75 FEET TO A FOUND 1/2" REBAR WITH CAP; THENCE, LEAVING SAID NORTH LINE OF SAID NW/4 SE/4, S2°02'20"W A DISTANCE OF 290.00 FEET TO A FOUND 1/2" REBAR WITH CAP; THENCE S87°57'40"E A DISTANCE OF 37.50 FEET TO A FOUND 1/2" REBAR WITH CAP; THENCE S2°02'20"W A DISTANCE OF 360.00 FEET TO A FOUND 1/2" REBAR WITH CAP; THENCE N87°57'40"W A DISTANCE OF 737.45 FEET TO A FOUND 1/2" REBAR WITH CAP; THENCE N2°03'22"E A DISTANCE OF 650.00 FEET TO THE POINT OF BEGINNING. CONTAINING 10.75 ACRES, OR 468,404 SQUARE FEET, MORE OR LESS.

RIGHT OF WAY DEDICATION DESCRIPTION:

RIGHT OF WAY DEDICATION DESCRIPTION: (PHASE 3 KENSINGTON PLACE)

PART OF TRACT 2A AND TRACT 2B LOCATED IN THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER (NW/4 SE/4) OF SECTION 7, TOWNSHIP 1 SOUTH, RANGE 14 WEST, DEED BOOK 2017 PAGE 024362 AND DEED BOOK 2018 PAGE 003206 OF THE SALINE COUNTY, ARKANSAS CIRCUIT CLERK'S RECORDS MORE PRECISELY DESCRIBED AS FOLLOWS:

BEGINNING AT A FOUND RAILROAD SPIKE AT THE NORTHWEST CORNER OF SAID NW/4 SE/4 OF SECTION 7; THENCE S87°57'40"E, ALONG NORTH LINE OF SAID NW/4 SE/4, A DISTANCE OF 17.48 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE, LEAVING SAID NORTH LINE OF SAID NW/4 SE/4, S2°47'45"W A DISTANCE OF 325.42 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE S2°14'28"W A DISTANCE OF 349.71 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE S1°45'25"W A DISTANCE OF 274.04 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE S0°30'42"W A DISTANCE OF 285.71 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE ALONG A CURVE TO THE RIGHT WITH A RADIUS OF 170.69 FEET AND AN ARC LENGTH OF 70.34 FEET, WHOSE CHORD BEARS S12°19'02"W FOR A DISTANCE OF 69.84 FEET TO A SET 1/2" REBAR WITH CAP #1573 LOCATED ON THE SOUTH LINE OF SAID NW/4 SE/4; THENCE N87°12'45"W, ALONG SOUTH LINE OF SAID NW/4 SE/4, 8.84 FEET TO A FOUND 1/2" REBAR AND CAP LOCATED AT THE SOUTHWEST CORNER OF SAID NW/4 SE/4; THENCE N2°03'22"E, ALONG WEST LINE OF SAID NW/4 SE/4, 1303.35 FEET TO THE POINT OF BEGINNING. CONTAINING 0.44 ACRES, OR 19,163 SQUARE FEET, MORE OR LESS.

PROPERTY SPECIFICATIONS:

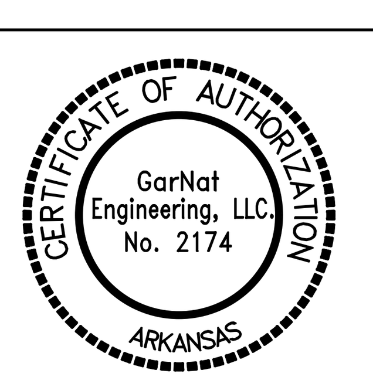
ZONING CLASSIFICATION: R-1.S

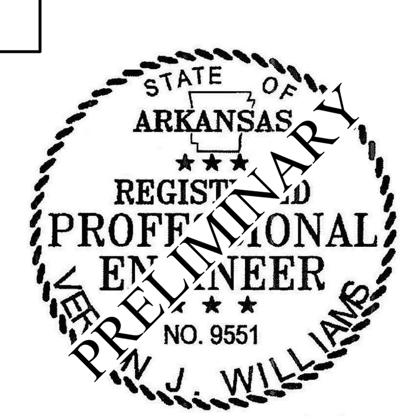
MIN. LOT SIZE: 8,640 S.F.
NUMBER OF LOTS: 75
SOURCE OF WATER: SALEM WATER
SOURCE OF SEWER: CITY OF BRYANT

BUILDING MINIMUM SETBACKS:
FRONT - 20' OR AS SHOWN
REAR - 20' OR AS SHOWN
SIDE - 8' OR AS SHOWN
CORNER - 15' OR AS SHOWN

EASEMENTS (MINIMUM): UTILITY & DRAINAGE (D.E. & U.E.)
FRONT - 10' OR AS SHOWN
REAR - 10' OR AS SHOWN
SIDE - 5' OR AS SHOWN
STREET RIGHT OF WAYS: 50' OR AS SHOWN
STREET WIDTH: 28' BOC TO BOC
LOT CORNERS: SET #4 REBAR WITH CAP

TRACT E WILL BE OWNED & MAINTAINED BY PROPERTY OWNERS ASSOCIATION.





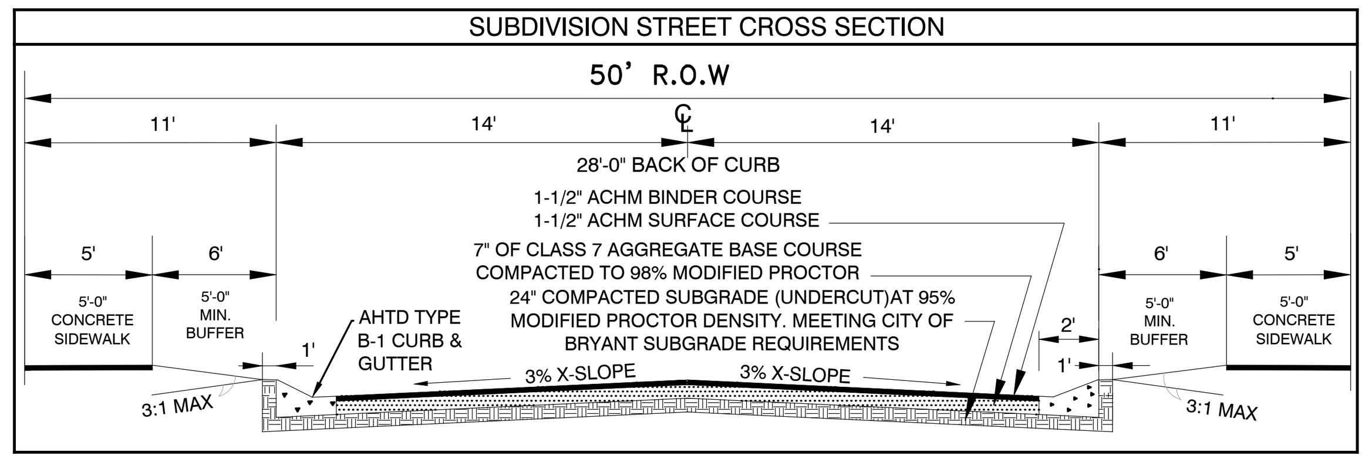
SURVEY LEGEND

△ - Computed point
● - Found monument
◎ - Set #4 RB/Plas. Cap
(M)-Measured
(R)-Record
(P)-Platted

SURVEY PLAT CODE:
500-01S-14W-0-07-240-62-1573

60' 30' 0 60'

SUBDIVISION STREET CROSS SECTION



GENERAL NOTES:

1. ALL STREETS & DRAINAGE TO MEET CITY OF BRYANT STANDARD SPECIFICATIONS & DETAILS.
2. ALL TRAFFIC CONTROL DEVICES SHALL MEET THE REQUIREMENTS OF CITY OF BRYANT STANDARD SPECIFICATIONS PER PART 4.9

KENSINGTON PLACE SUBDIVISION, PHASE 3, CITY OF BRYANT, SALINE COUNTY, ARKANSAS

Curve Table

Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C85	39.94'	25.00'	91°32'	S46°16'46"W	35.83'
C40	39.27'	25.00'	90°00'	N42°57'40"W	35.36'
C87	39.27'	25.00'	90°00'	S42°57'40"E	35.36'
C41	39.27'	25.00'	90°00'	N47°02'20"E	35.36'
C89	39.27'	25.00'	90°00'	N47°02'20"E	35.36'
C19	38.61'	25.00'	88°28'	S43°43'44"E	34.88'
C23	39.27'	25.00'	90°00'	N47°02'20"E	35.36'
C36	39.27'	25.00'	90°00'	N42°57'40"W	35.36'
C39	38.94'	25.00'	89°15'	S47°25'03"W	35.12'
C84	39.52'	25.00'	90°34'	N42°40'27"W	35.53'
C88	70.34'	170.69'	23°37'	N12°19'02"E	69.84'

BASIS OF BEARINGS:

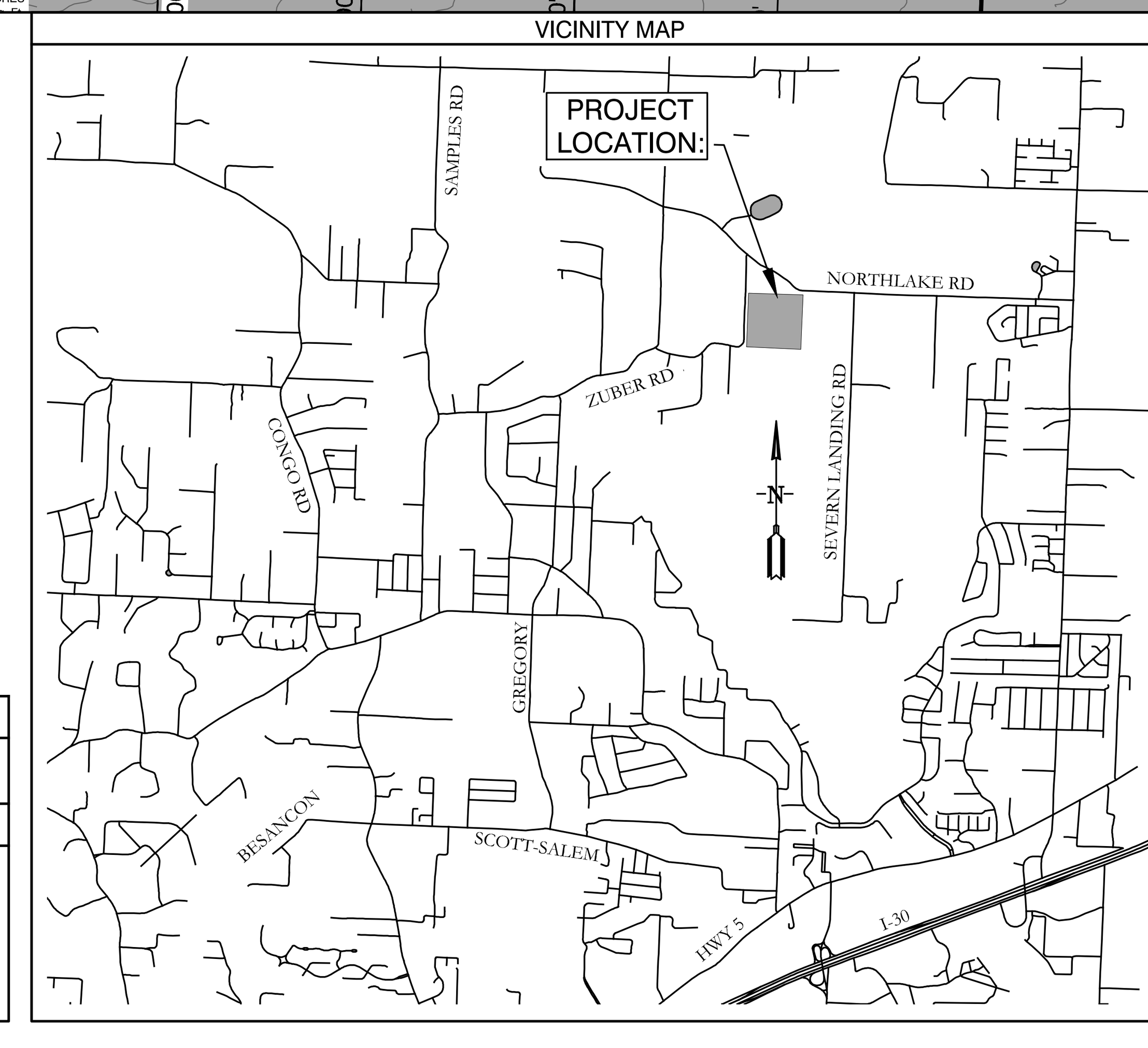
NAD 83 ARKANSAS GRID SOUTH ZONE (GPS)

CERTIFICATIONS:

By affixing my seal and signature, I George P. Wooden, PLS No. 1573, hereby certify that this drawing correctly depicts a survey compiled under my supervision dated 8/18/2020.

According the the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for Saline County unincorporated areas, panel # 05125C0225E dated 6/5/2020 , no portion , dated of the property described hereon does lie within the 100 year flood hazard boundary.

VICINITY MAP



PLAT CERTIFICATES:

OWNER:
Name: Thomas D.B. Collins, LTD
Address: 39 Walnut Valley Drive, Little Rock, AR 72211

DEVELOPER:
Name: Thomas D.B. Collins, LTD
Address: 39 Walnut Valley Drive, Little Rock, AR 72211

CERTIFICATE OF RECORDING:

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: ____________ Signed: ____________
Phillip Pengelly
39 Walnut Valley Dr., Little Rock, AR 72211

Source of Title: SALINE COUNTY, ARKANSAS
Saline County Document# 2017-024362 2018-003206

CERTIFICATE OF PRELIMINARY ENGINEERING ACCURACY:
I, Vernon J. Williams, 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 locations, 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: ____________ Signed: ____________
Vernon J. Williams
Registered Professional Engineer
No. 9551, Arkansas

CERTIFICATE OF PRELIMINARY SURVEYING ACCURACY:
I, George P. Wooden, hereby certify that this proposed preliminary plat correctly represents a boundary survey made by me or under my supervision on 8/18/2020; that the boundary lines shown hereon correspond with the description in the deeds cited in the above Source of Title;and that all monuments which were found or placed on the property are correctly described and located.

Date: ____________ Signed: ____________
George P. Wooden
Registered Land Surveyor
No. 1573, Arkansas

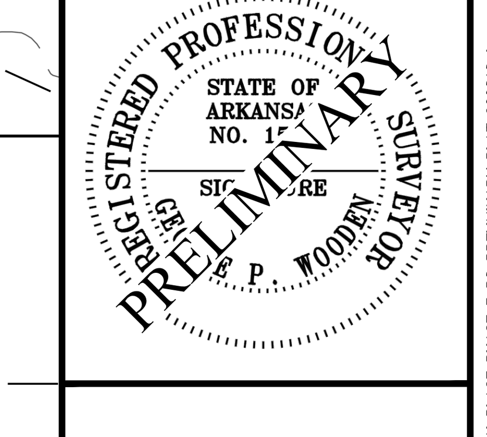
CERTIFICATE OF PRELIMINARY PLAT APPROVAL:
All requirements of the City of Bryant Subdivision Rules and Regulations relative to the preparation and submittal of a Preliminary Plat having been fulfilled, approval of this plat is hereby granted, subject to further provisions of said Rules and Regulations.

Date: ____________ Signed: ____________
Rick Johnson, Chairman
Bryant Planning Commission

REVISION	DATE	BY
REVISED PER CITY OF BRYANT	9/22/2021	GPW

GNE Designing our client's success
GarNat Engineering, LLC
P.O. Box 116, Benton, Arkansas 72018
3825 Mt Carmel Road, Bryant, Arkansas 72022
Ph (501) 408-4650
garnatengineering@gmail.com

KENSINGTON PLACE SUBDIVISION, PHASE 3, CITY OF BRYANT, SALINE COUNTY, ARKANSAS



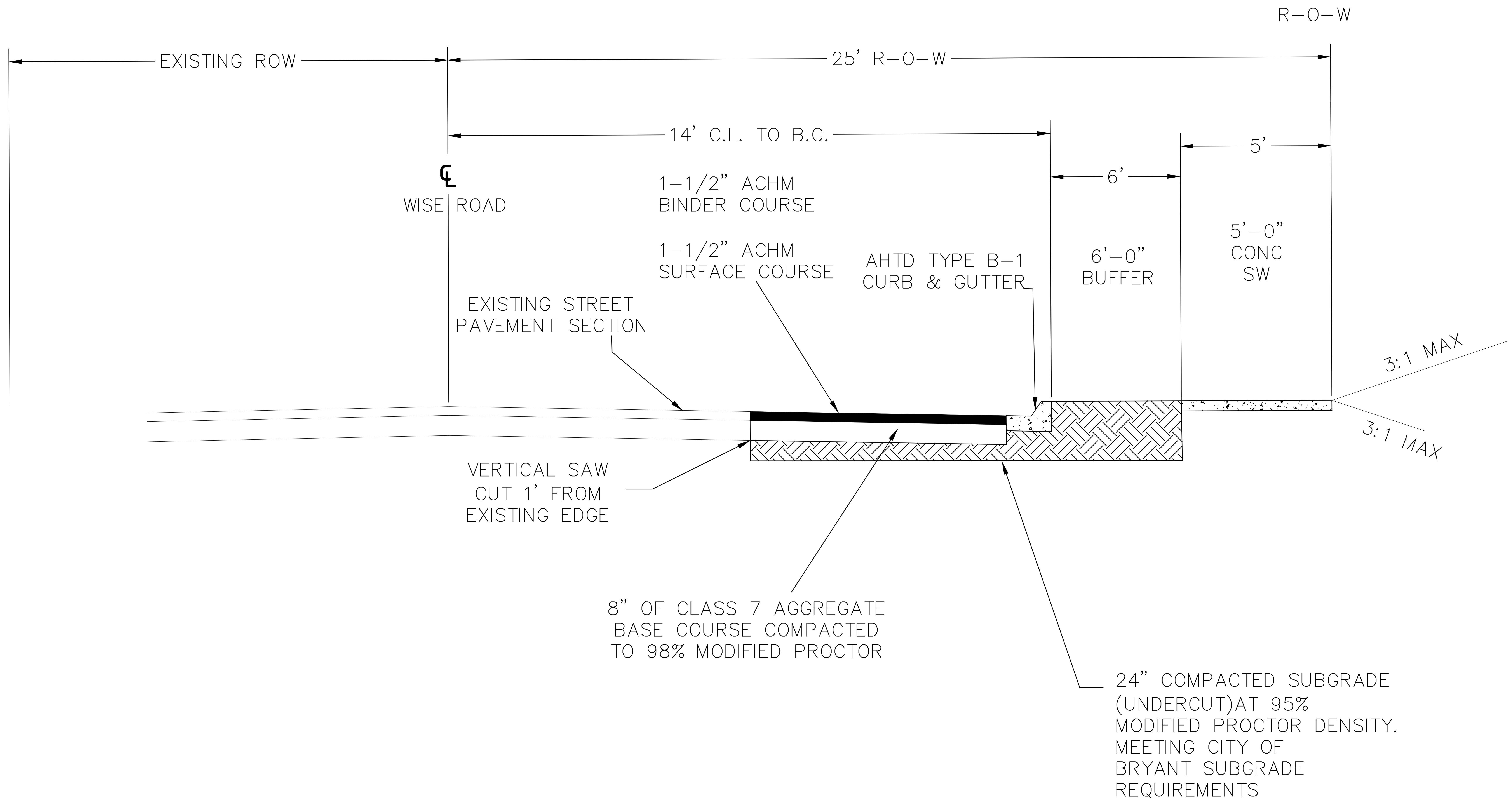
CONTENTS: PRELIMINARY PLAT

PROJECT NO: 16044

DATE: AUGUST 2021

SHEET NO: 1

J:\Projects\2016 Projects\16044 Kensington Place Subdivision Lee Pengelly\Drawings\DWG\Phase 3\Design\KENSINGTON PLACE PHASE 3 R8 PRELIMINARY PLAT 200818.dwg



HALF-WIDENING CROSS SECTION -WISE ROAD
N.T.S.

WISE ROAD NOTES:

1. IN AREAS TO RECEIVE BITUMINOUS PAVING, CONCRETE DRIVEWAYS OR CURB AND GUTTER, SUBGRADE SHALL BE COMPACTED TO A DENSITY OF NOT LESS THAN 95% OF MAXIMUM MODIFIED DENSITY OBTAINED AT OPTIMUM MOISTURE CONTENT.
2. FOR AREAS OF SUBGRADE PREPARATION TO RECEIVE CONCRETE SIDEWALKS, SUBGRADE SHALL BE COMPACTED TO A DENSITY OF 90% MAXIMUM MODIFIED DENSITY.
3. CRUSHED STONE - MATERIAL IN EACH COURSE SHALL BE COMPACTED TO A DENSITY OF 98% MAXIMUM MODIFIED DENSITY.
4. CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI.

BY	REVISION	DATE

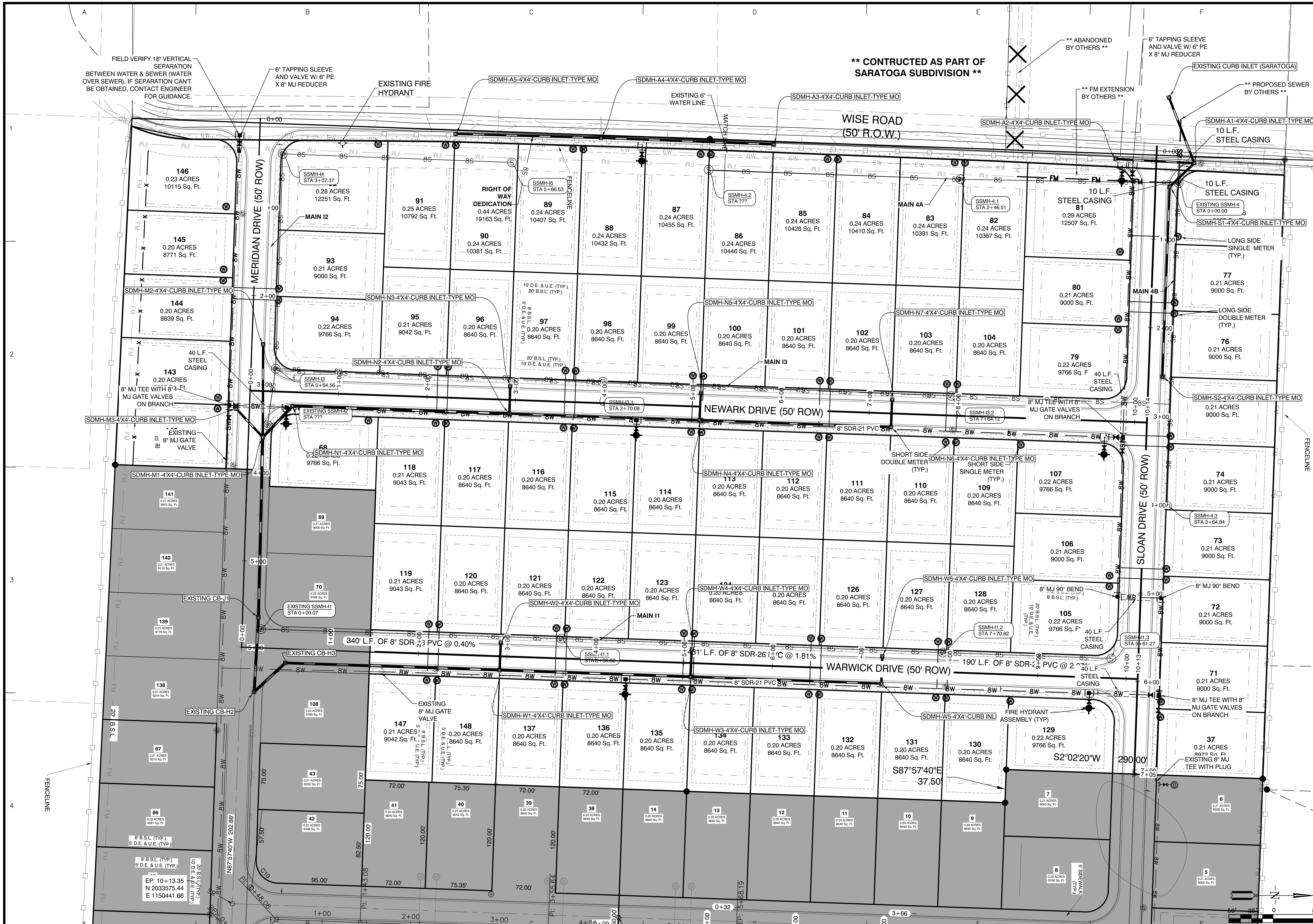
GNE Designing our client's success
GarNat Engineering, LLC
P.O. Box 116
Benton, AR 72018
Ph (501) 408-4650
3825 Mt Carmel Rd
Bryant, AR 72022
garnatengineering@gmail.com

KENSINGTON PLACE SUBDIVISION
PHASE 3
CITY OF BRYANT
SALINE COUNTY, ARKANSAS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER NO. 9551 VERNON J. WILLIAMS
8-22-2020

CONTENTS:
HALF STREET IMPROVEMENTS-WISE ROAD

PROJECT NO: 16044
DATE: 08/20/20
SHEET NO: 2



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Bryant, AR 72022
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KENSINGTON PLACE SUBDIVISION PHASE 3
CITY OF BRYANT
SALINE COUNTY, ARKANSAS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER VERNON J. WILLIAMS NO. 9551
8-22-2020

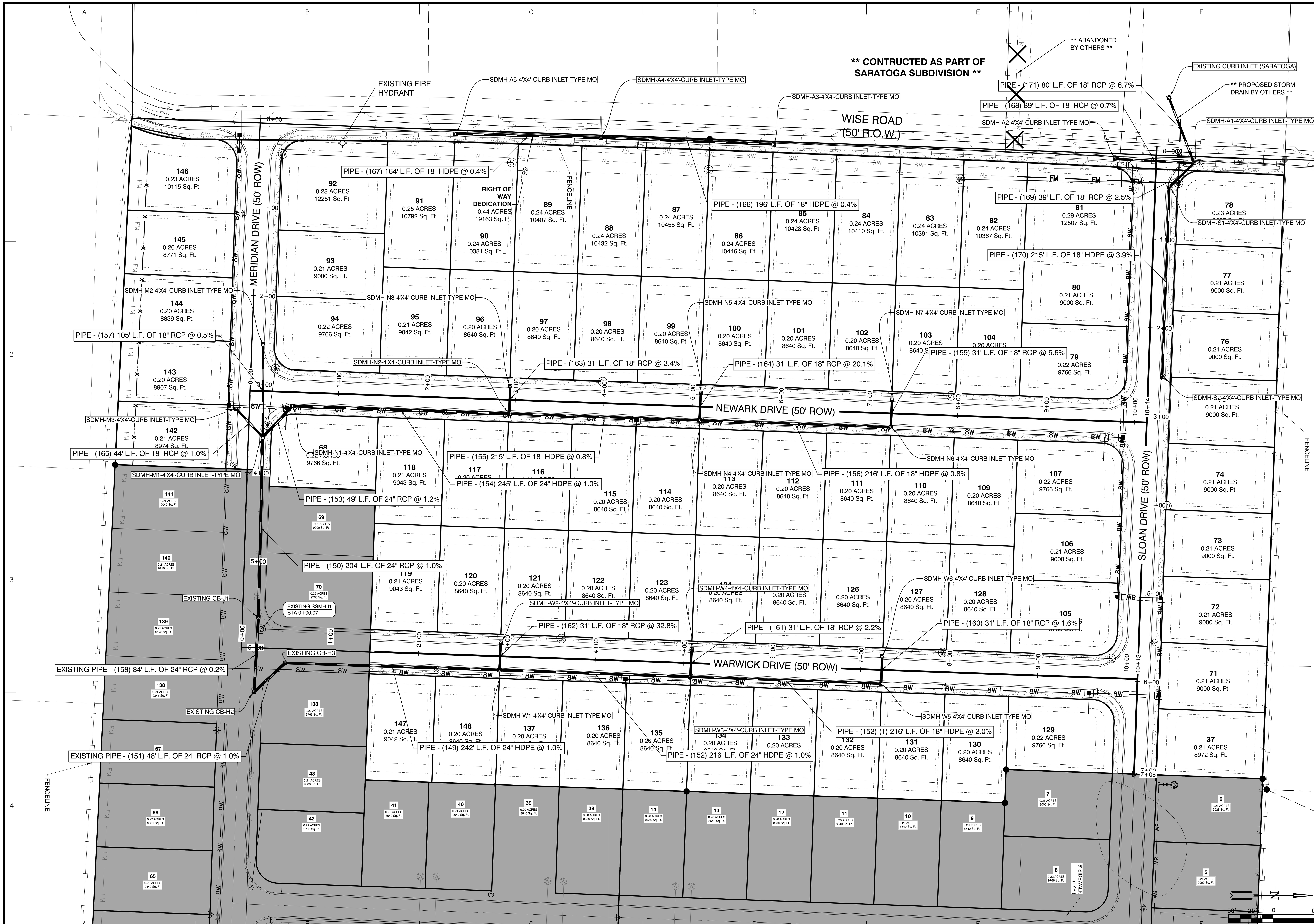
CONTENTS:

OVERALL WATER AND SEWER PLAN

PROJECT NO: 16044

DATE: 08/20/20

SHEET NO: 3



DATE	REVISION	BY
9/22/2021	REVISED PER CITY OF BRYANT	SM

GNE Designing our client's success

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Bryant, AR 72022
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KENSINGTON PLACE SUBDIVISION
PHASE 3
CITY OF BRYANT
SALINE COUNTY, ARKANSAS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER NO. 9551 VERNON J. WILLIAMS

8-22-2020

CONTENTS:

STREET & DRAINAGE PLAN

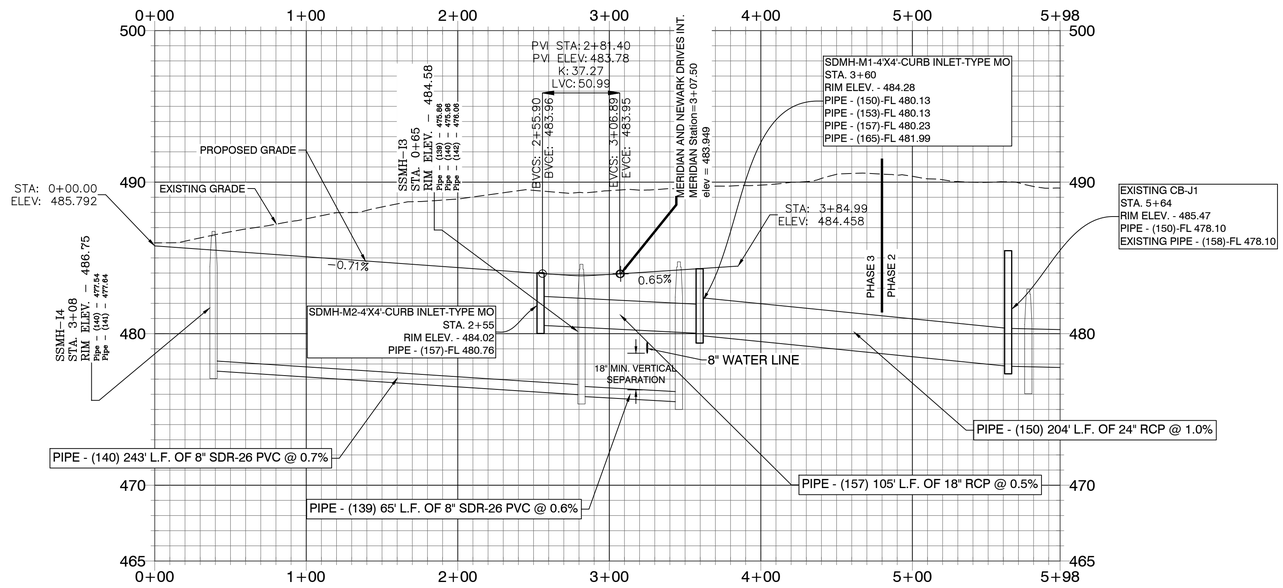
PROJECT NO: 16044

DATE: 08/20/20

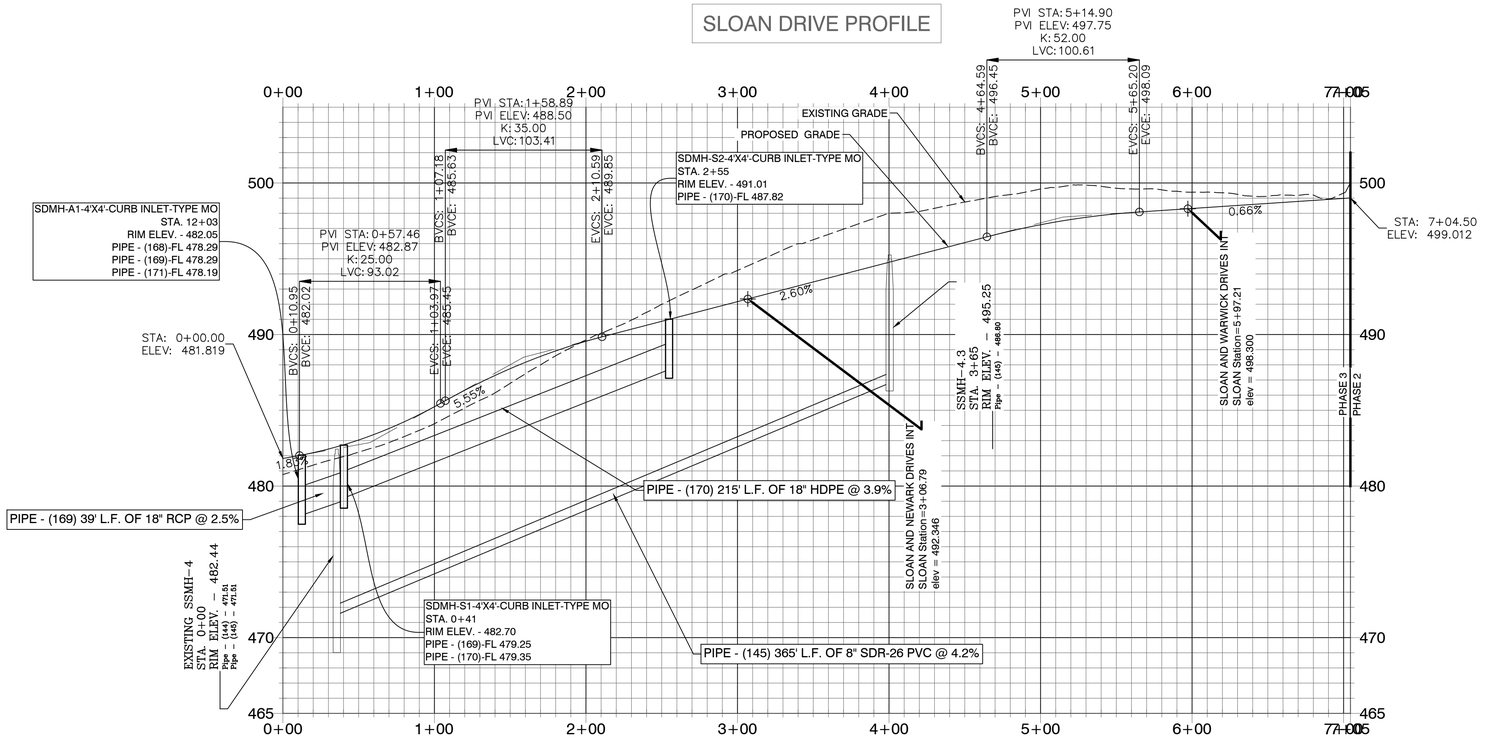
SHEET NO: 4

J:\Projects\2016 Projects\16044 Kensington Place Subdivision Lee Pengelly\Drawings\DWG\Phase 3\Design\KENSINGTON PLACE PHASE 3 DRAINAGE – R2.dwg

MERIDIAN DRIVE PROFILE



SLOAN DRIVE PROFILE



BY	REVISION	DATE
SM	REVISED PER CITY OF BRYANT	9/22/2021

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KENSINGTON PLACE SUBDIVISION
PHASE 3
CITY OF BRYANT
SALINE COUNTY, ARKANSAS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 9551
VERNON J. WILLIAMS
8-22-2020

CONTENTS:
PROFILES FOR MERIDIAN AND SLOAN DRIVES

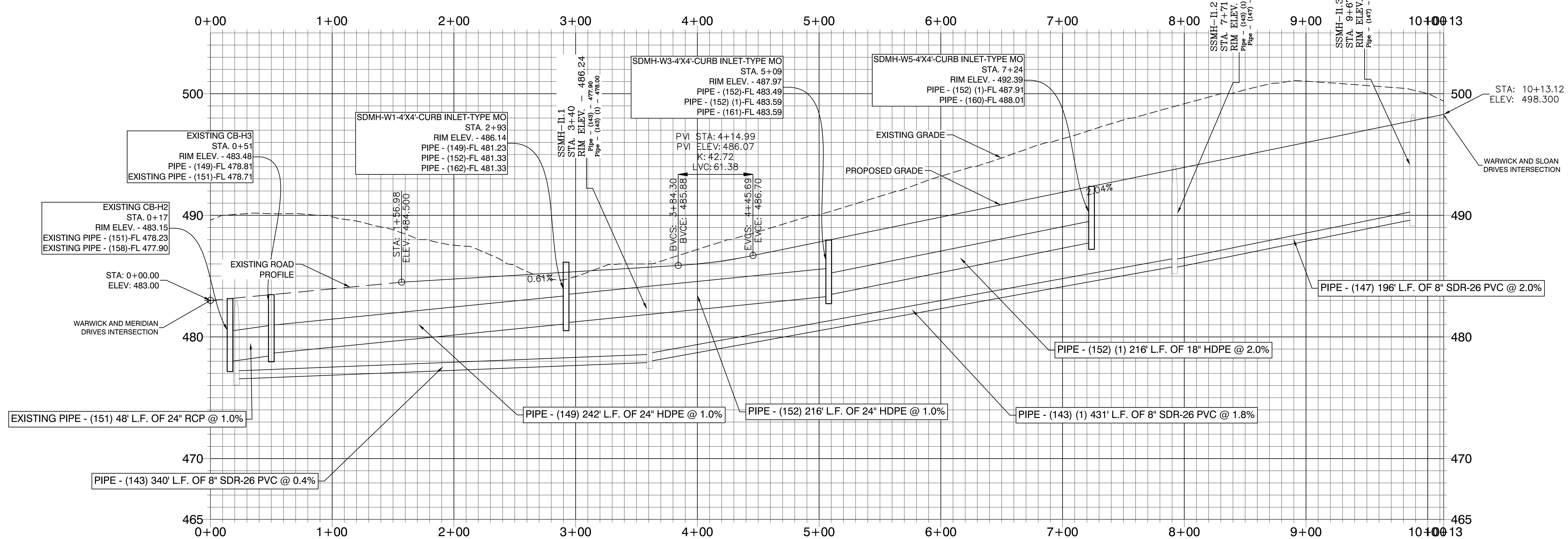
PROJECT NO: 16044

DATE: 08/20/20

SHEET NO: 5

J:\Projects\2016 Projects\16044 Kensington Place Subdivision Lee Property\Drawings\DWG\Phase 3\Design\KENSINGTON PLACE PHASE 3 DRAINAGE — R2.dwg

WARWICK DRIVE PROFILE



50' 25' 0 50'

BY	REVISION	DATE

GNE Designing our client's success

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Benton, AR 72018
Ph (501) 408-4650

3825 Mt Carmel Rd
Bryant, AR 72022
garnatengineering@gmail.com

KENSINGTON PLACE SUBDIVISION PHASE 3
CITY OF BRYANT
SALINE COUNTY, ARKANSAS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 9551
VERNON J. WILLIAMS

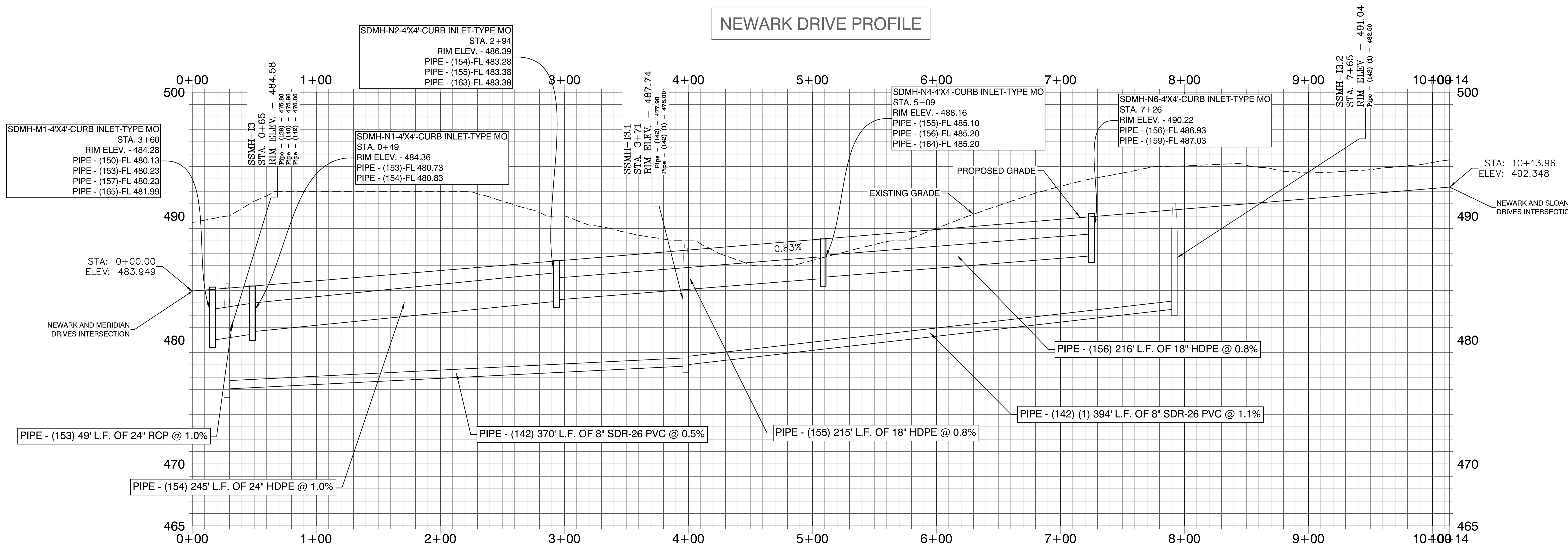
8-22-2020

CONTENTS:
WARWICK DRIVE PROFILE

PROJECT NO: 16044

DATE: 08/20/20

SHEET NO: 6



BY	REVISION	DATE

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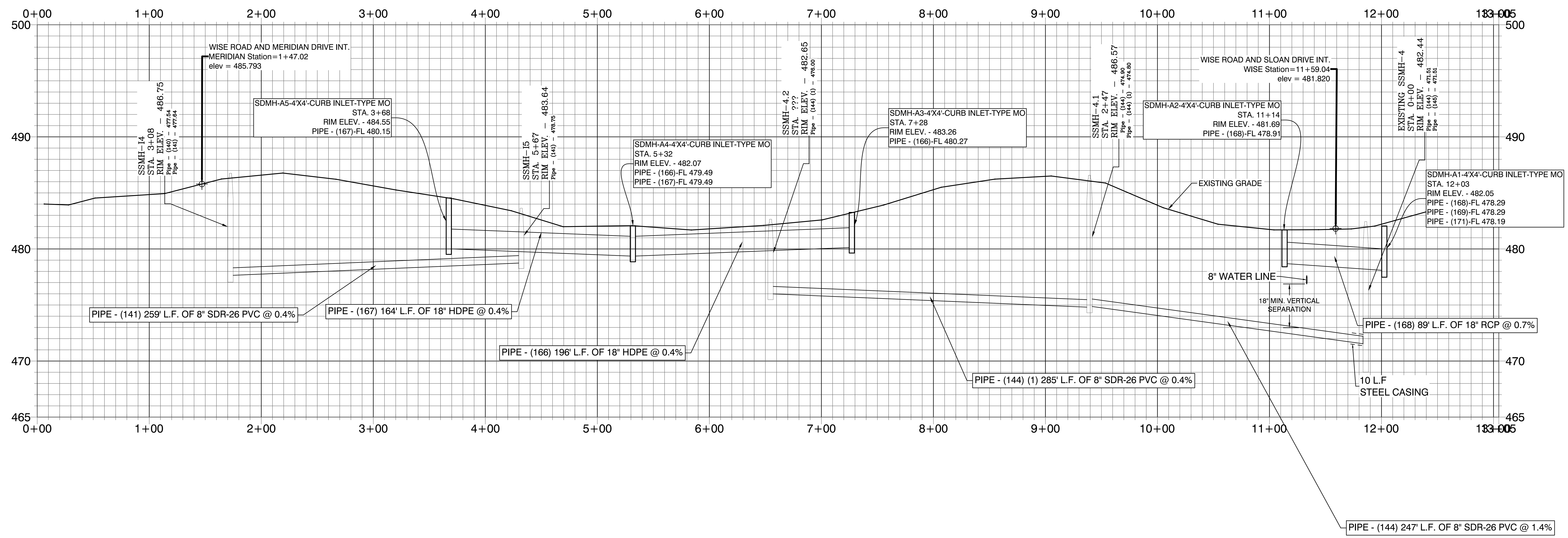
KENSINGTON PLACE SUBDIVISION
PHASE 3
CITY OF BRYANT
SALINE COUNTY, ARKANSAS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
NO. 9551
VERNON J. WILLIAMS
8-22-2020

CONTENTS:
NEWARK DRIVE PROFILE

PROJECT NO: 16044
DATE: 08/20/20
SHEET NO: 7

WISE ROAD PROFILE



DATE	REVISION	BY
9/22/2021	REVISED PER CITY OF BRYANT	SM

GNE Designing our client's success

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P.O. Box 116
Benton, AR 72018
3825 Mt Carmel Rd
Bryant, AR 72022
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KENSINGTON PLACE SUBDIVISION PHASE 3 CITY OF BRYANT SALINE COUNTY, ARKANSAS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER NO. 9551 VERNON J. WILLIAMS

8-22-2020

CONTENTS:

WISE ROAD PROFILE

PROJECT NO: 16044

DATE: 08/20/20

SHEET NO: 8

PROPERTY DESCRIPTION:

PROPERTY DESCRIPTION: (KENSINGTON PLACE PHASE 3)

PART OF TRACT 2A LOCATED IN THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER (NW/4 SE/4) OF SECTION 7, TOWNSHIP 1 SOUTH, RANGE 14 WEST, DEED BOOK 2017 PAGE 024362 OF THE SALINE COUNTY, ARKANSAS CIRCUIT CLERK'S RECORDS MORE PRECISELY DESCRIBED AS FOLLOWS: **COMMENCING** AT A FOUND 5/8" REBAR AT THE SOUTHEAST CORNER OF SAID NW/4 SE/4 OF SECTION 7; THENCE N87°12'45"W, ALONG THE SOUTH LINE OF SAID NW/4 SE/4, A DISTANCE OF 925.95 FEET TO A SET 1/2" REBAR WITH CAP #1573 FOR THE **POINT OF BEGINNING**; THENCE N87°12'45"W, CONTINUING ALONG SAID SOUTH LINE, A DISTANCE OF 391.80 FEET TO A FOUND 1/2" REBAR WITH CAP AT THE SOUTHWEST CORNER OF THE SAID NW/4 SE/4 OF SECTION 7; THENCE N2°03'22"E, ALONG THE WEST LINE OF SAID NW/4 SE/4, A DISTANCE OF 653.35 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE S87°57'40"E, LEAVING SAID WEST LINE, 737.45 FEET TO A FOUND 1/2" REBAR WITH CAP AT THE NORTHWEST CORNER OF LOT 14 OF KENSINGTON PLACE PHASE 1; THENCE S2°02'20"W, ALONG THE WEST LINE OF KENSINGTON PLACE PHASE 1 AND PHASE 2, A DISTANCE OF 363.35 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE N87°57'42"W, CONTINUING ALONG SAID KENSINGTON PLACE PHASE 2 BOUNDARY, 327.50 FEET TO A SET 1/2" REBAR WITH CAP #1573 LOCATED AT THE NORTHWEST CORNER OF LOT 69 OF KENSINGTON PLACE PHASE 2; THENCE S2°02'21"W, ALONG WEST LINE OF SAID LOT 69, A DISTANCE OF 120.00 FEET TO A SET 1/2" REBAR LOCATED ON THE NORTH RIGHT OF WAY OF MERIDIAN DRIVE AT THE SOUTHWEST CORNER OF SAID LOT 69; THENCE N87°57'40"W, ALONG SAID NORTH RIGHT OF WAY, A DISTANCE OF 18.38 FEET TO A POINT; THENCE S2°02'20"W, LEAVING SAID RIGHT OF WAY, A DISTANCE OF 175.12 FEET TO THE **POINT OF BEGINNING** AND CONTAINING 8.83 ACRES, OR 384,781 SQUARE FEET, MORE OR LESS.

ALL OF TRACT 2B LOCATED IN THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER (NW/4 SE/4) OF SECTION 7, TOWNSHIP 1 SOUTH, RANGE 14 WEST, DEED BOOK 2018 PAGE 003206 OF THE SALINE COUNTY, ARKANSAS CIRCUIT CLERK'S RECORDS MORE PRECISELY DESCRIBED AS FOLLOWS: **BEGINNING** AT A FOUND RAILROAD SPIKE AT THE NORTHWEST CORNER OF SAID NW/4 SE/4 OF SECTION 7; THENCE S87°57'40"E A DISTANCE OF 699.75 FEET TO A FOUND 1/2" REBAR WITH CAP; THENCE, LEAVING SAID NORTH LINE OF SAID NW/4 SE/4, S2°02'20"W A DISTANCE OF 290.00 FEET TO A FOUND 1/2" REBAR WITH CAP; THENCE S87°57'40"E A DISTANCE OF 37.50 FEET TO A FOUND 1/2" REBAR WITH CAP; THENCE S2°02'20"W A DISTANCE OF 360.00 FEET TO A FOUND 1/2" REBAR WITH CAP; THENCE N87°57'40"W A DISTANCE OF 737.45 FEET TO A FOUND 1/2" REBAR WITH CAP; THENCE N2°03'22"E A DISTANCE OF 650.00 FEET TO THE **POINT OF BEGINNING**. CONTAINING 10.75 ACRES, OR 468,404 SQUARE FEET, MORE OR LESS.

RIGHT OF WAY DEDICATION DESCRIPTION: (KENSINGTON PLACE PHASE 3)

PART OF TRACT 2A AND TRACT 2B LOCATED IN THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER (NW/4 SE/4) OF SECTION 7, TOWNSHIP 1 SOUTH, RANGE 14 WEST, DEED BOOK 2017 PAGE 024362 AND DEED BOOK 2018 PAGE 003206 OF THE SALINE COUNTY, ARKANSAS CIRCUIT CLERK'S RECORDS MORE PRECISELY DESCRIBED AS FOLLOWS:

BEGINNING AT A FOUND RAILROAD SPIKE AT THE NORTHWEST CORNER OF SAID NW/4 SE/4 OF SECTION 7; THENCE S87°57'40"E, ALONG NORTH LINE OF SAID NW/4 SE/4, A DISTANCE OF 17.48 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE, LEAVING SAID NORTH LINE OF SAID NW/4 SE/4, S2°47'45"W A DISTANCE OF 325.42 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE S2°14'28"W A DISTANCE OF 349.71 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE S1°45'25"W A DISTANCE OF 274.04 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE S0°30'42"W A DISTANCE OF 285.71 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE ALONG A CURVE TO THE RIGHT WITH A RADIUS OF 170.69 FEET AND AN ARC LENGTH OF 70.34 FEET, WHOSE CHORD BEARS S12°19'02"W FOR A DISTANCE OF 69.84 FEET TO A SET 1/2" REBAR WITH CAP #1573 LOCATED ON THE SOUTH LINE OF SAID NW/4 SE/4; THENCE N87°12'45"W, ALONG SOUTH LINE OF SAID NW/4 SE/4, 8.84 FEET TO A FOUND 1/2" REBAR AND CAP LOCATED AT THE SOUTHWEST CORNER OF SAID NW/4 SE/4; THENCE N2°03'22"E, ALONG WEST LINE OF SAID NW/4 SE/4, 1303.35 FEET TO THE **POINT OF BEGINNING**. CONTAINING 0.44 ACRES, OR 19,163 SQUARE FEET, MORE OR LESS.

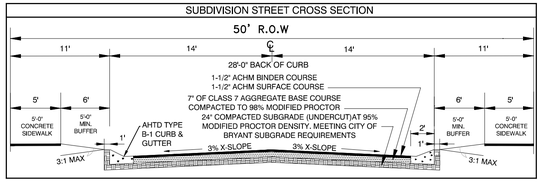
SURVEY LEGEND
- △ - Computed point
- ● - Found monument
- ○ - Set #4 RB/Plas. Cap
- (M)-Measured
- (R)-Record
- (P)-Platted

CERTIFICATE OF AUTHORIZATION — GarNat Engineering, LLC — No. 2174 — ARKANSAS

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — NO. 9551 — VERNON J. WILLIAMS

SURVEY PLAT CODE:
500-01S-14W-0-07-240-62-1573

SUBDIVISION STREET CROSS SECTION



Curve Table

Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C84	39.52'	25.00'	90°34'	N42°40'27"W	35.53'
C88	70.34'	170.69'	23°37'	N12°19'02"E	69.84'
C85	39.94'	25.00'	91°32'	S46°16'46"W	35.83'
C40	39.27'	25.00'	90°00'	N42°57'40"W	35.36'
C87	39.27'	25.00'	90°00'	S42°57'40"E	35.36'
C41	39.27'	25.00'	90°00'	N47°02'20"E	35.36'
C89	39.27'	25.00'	90°00'	N47°02'20"E	35.36'
C19	38.61'	25.00'	88°28'	S43°43'44"E	34.88'
C23	39.27'	25.00'	90°00'	N47°02'20"E	35.36'
C36	39.27'	25.00'	90°00'	N42°57'40"W	35.36'
C39	38.94'	25.00'	89°15'	S47°25'03"W	35.12'

KENSINGTON PLACE SUBDIVISION, PHASE 3, CITY OF BRYANT, SALINE COUNTY, ARKANSAS

BASIS OF BEARINGS:

NAD 83 ARKANSAS GRID SOUTH ZONE (GPS)

CERTIFICATIONS:

By affixing my seal and signature, I George P. Wooden, PLS No. 1573, hereby certify that this drawing correctly depicts a survey compiled under my supervision dated 8/18/2020.

According the the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for Saline County unincorporated areas, panel # 05125C0225E dated 6/5/2020 , no portion , dated of the property described hereon does lie within the 100 year flood hazard boundary.

PROPERTY SPECIFICATIONS:

ZONING CLASSIFICATION: R-1.S

MIN. LOT SIZE: 8,640 S.F.
NUMBER OF LOTS: 75
SOURCE OF WATER: SALEM WATER
SOURCE OF SEWER: CITY OF BRYANT

BUILDING MINIMUM SETBACKS:
FRONT - 20' OR AS SHOWN
REAR - 20' OR AS SHOWN
SIDE - 5' OR AS SHOWN
CORNER - 15' OR AS SHOWN

EASEMENTS (MINIMUM): UTILITY & DRAINAGE (D.E. & U.E.)
FRONT - 10' OR AS SHOWN
REAR - 10' OR AS SHOWN
SIDE - 5' OR AS SHOWN
STREET RIGHT OF WAYS: 50' OR AS SHOWN
STREET WIDTH: 28' BOC TO BOC
LOT CORNERS: SET #4 REBAR WITH CAP

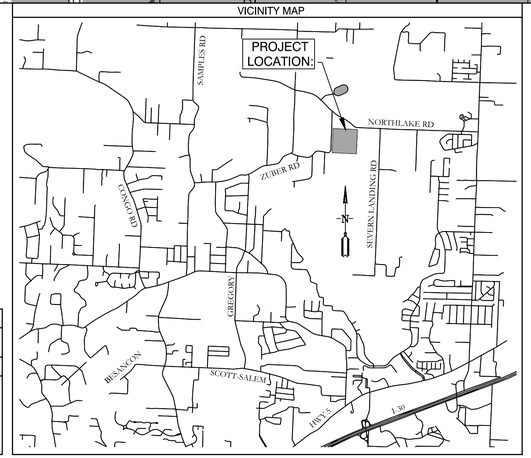
TRACT E WILL BE OWNED & MAINTAINED BY PROPERTY OWNERS ASSOCIATION.

60' 30' 0 60'

GENERAL NOTES:

1. ALL STREETS & DRAINAGE TO MEET CITY OF BRYANT STANDARD SPECIFICATIONS & DETAILS.
2. ALL TRAFFIC CONTROL DEVICES SHALL MEET THE REQUIREMENTS OF CITY OF BRYANT STANDARD SPECIFICATIONS PER PART 4.9

VICINITY MAP



PLAT CERTIFICATES:

OWNER:
Name: Thomas D.B. Collins LTD
Address: 9360 Gilbert Road, Benton, AR 72019

DEVELOPER:
Name: Thomas D.B. Collins LTD
Address: 9360 Gilbert Road, Benton, AR 72019

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: _____ Signed: _____
Name: Phillip Pengelly
Address: 9360 Gilbert Road, Benton, Arkansas 72019

Source of Title Saline County: Quitclaim Deeds 2017-024362, 2018-003206

CERTIFICATE OF ENGINEERING ACCURACY:

I, Vernon J. Williams, 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 locations, 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: _____ Signed: _____
Vernon J. Williams
Registered Professional Engineer
No. 9551, Arkansas

CERTIFICATE OF RECORDING: _____

CERTIFICATE OF SURVEYING ACCURACY:

I, George P. Wooden, hereby certify that this plat correctly represents a boundary survey made by me or under my supervision on August 18, 2020; that the boundary lines shown hereon correspond with the description in the deeds cited in the above Source of Title; and that all monuments which were found or placed on the property are correctly described and located.

Date: _____ Signed: _____
George P. Wooden
Registered Land Surveyor
No. 1573, Arkansas

CERTIFICATE OF FINAL PLAT 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 December 11, 2023. All of the document is hereby accepted, and this certificate executed under the authority of said rules and regulations.

Date: _____ Signed: _____
Rick Johnson, Chairman
Bryant Planning Commission

GNE Designing our client's success
GarNat Engineering, LLC
P.O. Box 116
Benton, Arkansas 72018
Ph (501) 408-4650
3825 Mt Carmel Road
Bryant, Arkansas 72022
garnatengineering@gmail.com

BY | REVISION | DATE

KENSINGTON PLACE SUBDIVISION, PHASE 3, CITY OF BRYANT, SALINE COUNTY, ARKANSAS

REGISTERED PROFESSIONAL SURVEYOR — STATE OF ARKANSAS NO. 1573 — SIGNATURE — GEORGE P. WOODEN

CONTENTS:
FINAL PLAT

PROJECT NO: 16044

DATE: NOV. 2023

SHEET NO: 1

J:\Projects\2016 Projects\16044 Kensington Place Subdivision Lee Pengelly\Drawings\GNE\Phase 3\Dwgs\KENSINGTON PLACE PHASE 3 RB FINAL PLAT 100223.dwg

BILL OF ASSURANCE
KENSINGTON PLACE SUBDIVISION
PHASE 2 AND PHASE 3

PART A. PREAMBLE

WHEREAS, THOMAS D.B. COLLINS, LTD. is the Owner, by virtue of Instrument 2016-017259 and 2017-023009, of the following land situated in Saline County, Arkansas, to wit:

PART OF TRACT 2A LOCATED IN THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER (NW/4 SE/4) OF SECTION 7, TOWNSHIP 1 SOUTH, RANGE 14 WEST, DEED BOOK 2017 PAGE 024362 OF THE SALINE COUNTY, ARKANSAS CIRCUIT CLERK'S RECORDS MORE PRECISELY DESCRIBED AS FOLLOWS: COMMENCING AT A FOUND 5/8" REBAR AT THE SOUTHEAST CORNER OF SAID NW/4 SE/4 OF SECTION 7; THENCE N87°12'45"W, ALONG THE SOUTH LINE OF SAID NW/4 SE/4, A DISTANCE OF 925.95 FEET TO A SET 1/2" REBAR WITH CAP #1573 FOR THE POINT OF BEGINNING; THENCE N87°12'45"W, CONTINUING ALONG SAID SOUTH LINE, A DISTANCE OF 391.80 FEET TO A FOUND 1/2" REBAR WITH CAP AT THE SOUTHWEST CORNER OF THE SAID NW/4 SE/4 OF SECTION 7; THENCE N2°03'22"E, ALONG THE WEST LINE OF SAID NW/4 SE/4, A DISTANCE OF 653.35 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE S87°57'40"E, LEAVING SAID WEST LINE, 737.45 FEET TO A FOUND 1/2" REBAR WITH CAP AT THE NORTHWEST CORNER OF LOT 14 OF KENSINGTON PLACE PHASE 1; THENCE S2°02'20"W, ALONG THE WEST LINE OF KENSINGTON PLACE PHASE 1 AND PHASE 2, A DISTANCE OF 363.35 FEET TO A SET 1/2" REBAR WITH CAP #1573; THENCE N87°57'42"W, CONTINUING ALONG SAID KENSINGTON PLACE PHASE 2 BOUNDARY, 327.50 FEET TO A SET 1/2" REBAR WITH CAP #1573 LOCATED AT THE NORTHWEST CORNER OF LOT 69 OF KENSINGTON PLACE PHASE 2; THENCE S2°02'21"W, ALONG WEST LINE OF SAID LOT 69, A DISTANCE OF 120.00 FEET TO A SET 1/2" REBAR LOCATED ON THE NORTH RIGHT OF WAY OF MERIDIAN DRIVE AT THE SOUTHWEST CORNER OF SAID LOT 69; THENCE N87°57'40"W, ALONG SAID NORTH RIGHT OF WAY, A DISTANCE OF 18.38 FEET TO A POINT; THENCE S2°02'20"W, LEAVING SAID RIGHT OF WAY, A DISTANCE OF 175.12 FEET TO THE POINT OF BEGINNING AND CONTAINING 8.83 ACRES, OR 384,781 SQUARE FEET, MORE OR LESS.

ALL OF TRACT 2B LOCATED IN THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER (NW/4 SE/4) OF SECTION 7, TOWNSHIP 1 SOUTH, RANGE 14 WEST, DEED BOOK 2018 PAGE 003206 OF THE SALINE COUNTY, ARKANSAS CIRCUIT CLERK'S RECORDS MORE PRECISELY DESCRIBED AS FOLLOWS: BEGINNING AT A FOUND RAILROAD SPIKE AT THE NORTHWEST CORNER OF SAID NW/4 SE/4 OF SECTION 7; THENCE S87°57'40"E A DISTANCE OF 699.75 FEET TO A FOUND 1/2" REBAR WITH CAP; THENCE, LEAVING SAID NORTH LINE OF SAID NW/4 SE/4, S2°02'20"W A DISTANCE OF 290.00 FEET TO A FOUND 1/2" REBAR WITH CAP; THENCE S87°57'40"E A DISTANCE OF 37.50 FEET TO A FOUND 1/2" REBAR WITH CAP; THENCE S2°02'20"W A DISTANCE OF 360.00 FEET TO A FOUND 1/2" REBAR WITH CAP;

THENCE N87°57'40"W A DISTANCE OF 737.45 FEET TO A FOUND 1/2" REBAR WITH CAP; THENCE N2°03'22"E A DISTANCE OF 650.00 FEET TO THE POINT OF BEGINNING. CONTAINING 10.75 ACRES, OR 468,404 SQUARE FEET, MORE OR LESS.

WHEREAS, Owner has caused said land to be surveyed and a plat thereof made, dividing said land into lots as shown on said plat and showing the dimensions of each lot and the width of the streets as known as KENSINGTON PLACE SUBDIVISION, PHASE 2 AND PHASE 3, Saline County, Arkansas.

WHEREAS, the Saline County Real Estate Assessor and Office of Emergency Services have approved said Subdivision and road names.

NOW THEREFORE, Thomas D.B. Collins, Ltd., in consideration of the purposes herein stated, does hereby designate said land and make part hereof to be known as KENSINGTON

PLACE SUBDIVISION, PHASE 2 AND PHASE 3, to the City of Bryant, Saline County, Arkansas, and that hereafter any conveyance by the Owners of said land by lot number shall forever be held to be good and legal description and the streets shown on said plat in said Subdivision are hereby and will become a public road to be accepted by Saline County for maintenance. The property owners of KENSINGTON PLACE SUBDIVISION are subject to and are joined as members of the KENSINGTON PLACE Property Owner's Association for the purpose of maintaining and ownership of common areas and appurtenants belonging thereto. The use of the land in said Subdivision being subject to the following Protective and Restrictive Covenants:

PART B. AREA OF APPLICATION

B-1 FULLY PROTECTED RESIDENTIAL AREA. The residential area covenants in Part C in their entirety shall apply to the entire Subdivision.

PART C: RESIDENTIAL AREA COVENANTS:

C-1 LAND USE AND BUILDING TYPE. No lot shall be used except for residential purposes. Not business of any nature or kind shall at any time be conducted in any building located on any of the lots. No building shall be erected, altered, placed or allowed to remain on any lot other than one detached, single-family dwelling not to exceed two stories in height, excluding basement area. No lot can be subdivided for any purpose without the prior approval from the Saline County Planning Board and the consent of 51 % of the voting members of the Property owners associations.

C-2 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, including landscaping, have been approved by the architectural control committee as to quality of workmanship and materials, harmony of external design with existing structures, and as to location with respect to topography and finish grade elevation, and intended objectives of

the Architectural Control Committee to achieve a subdivision that accomplishes the desired architectural design in the structure and subdivision ascetics. No fence or wall shall be erected, placed or altered on any lot nearer than the setbacks as shown on the Plat. The term structure is defined to include any and all types of fences, antennas, decks, basketball goals, swimming pools and television satellite dishes, which in no event shall be placed in front of dwellings. Each property owner requesting approval shall submit to the Architectural Control Committee at least two weeks prior to the time approval is needed, a complete set of house plans and completed material and specifications list. Approval shall be a provided in Part D.

C-3 DWELLING COST, QUALITY AND SIZE. No dwelling shall be permitted on any lot unless the dwelling has at least 1,800 square feet, 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 for the minimum permitted dwelling size. Each dwelling shall have a minimum of a two car garage. No open carports are allowed. No manufactured houses are allowed, site built homes only.

C-4 BUILDING LOCATION. No building shall be located on any lot, nearer to the side street line, than the minimum building set back lines as shown on the recorded plat. For the purposes of this covenant, eaves and steps shall not be considered as part of the building. No lot shall be subdivided and no more than one dwelling shall be permitted on any one lot.

C-5 BUILDING REQUIREMENTS. All buildings shall have roof pitch of no less than 6/12. A 2 car enclosed garage, No chain link fences shall be allowed, and all fences shall be of a wood type approved by the Architectural control committee.

C-6 EASEMENTS. Easements for installation and maintenance of utilities and drainage facilities, and construction, repair and maintenance of adequate walls, roofs and eaves are reserved as shown on recorded plat.

C-7 NUISANCES. No noxious or offensive trade or activities shall be carried on, nor shall anything be done thereon which may be or become a nuisance to the neighborhood.

C-8 TEMPORARY STRUCTURES. No structure of a temporary character, basement, tent, shack, garage, barn or other out building shall be used on any tract at any time as a residence either temporarily or permanently; except that the developer may have a temporary construction and/or sales office.

C-9 OUTBUILDINGS. One outbuilding for storage shall be permitted, if approved by the Architectural Control Committee and shall conform to the same architectural design and construction of the dwelling. Above ground swimming pools are prohibited.

C-10 SIGNS. No sign of any kind shall be displayed to the public view on any lot, except, one professional sign of not more than one square foot; one sign of not more than five square feet advertising the property for sale or rent or any signs used by a builder to advertise the property during the construction and sales period.

C-11 OWNER RESPONSIBILITY. Any property owner shall insure that any contractor performing services for the property owner shall comply with the provisions of this Bill of Assurance.

C-12 CONTRACTOR RESPONSIBILITY. No contractor shall damage in any way the utilities or streets in any manner.

C-13 OIL AND MINING OPERATIONS. No oil drilling, oil development operations, oil 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 structures designated for us in boring for oil or natural gas shall be erected, maintained or permitted upon any lot.

C-14 LIVESTOCK AND POULTRY. No animals, livestock or poultry of any kind may be raised, bred or kept on any tract, except that dogs or 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 same are approved by the Architectural Control Committee and that the keeping of same does not constitute a nuisance.

C-15 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. There shall be no burning of trash, rubbish, leaves or yard waste.

C-16 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 comer which the triangular area formed by the street property lines and the line connecting them at points 15 feet from the intersection of street right of way lines, or in the case of a rounded property comer, from the intersection of the street property line 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 pavement. No tree shall be permitted to remain within such distances or such intersections unless the foliage line is maintained at sufficient height to prevent obstruction of such sight lines.

C-17 LOT, YARD AND HOME MAINTENANCE. All property owners, after acquisition of any lot, shall keep all grounds and yards mowed, trimmed and clean. All houses shall be painted and stained. No deviation from the original plans shall be permitted without approval of the Architectural Control Committee.

C-18 COMMENCEMENT OF CONSTRUCTION. A property owner must start construction of an approved dwelling within_ a period of one (1) year from date of purchase. The developer reserves the option to repurchase any lot for the amount of the original purchase price if construction is not commenced within such period of time. This option shall be exercised in writing within a period of thirty (30) days after the one (1) year period.

C-19 COMPLETION OF CONSTRUCTION. Any dwelling must be completed in its entirety within a period of one year from date such construction is commenced.

C-20 MOTOR VEHICLE PARKING. Abandoned or unused motor vehicles shall not be parked or permitted to remain on any lot or within the dedicated street. Boats, recreational 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. Owners or permanent residents are prohibited from parking in the street. There shall be no non-functioning vehicles kept on the lot or in view of the public. There shall be no repair work done outside of the garage.

C-21 MINIMUM FLOOR LEVEL ELEVATIONS. The Architectural Control Committee reserves the right to prescribe the minimum floor elevations for lots. All homes shall have a minimum floor elevation of one foot above the back of the curb unless waived in writing by the Architectural Control Committee.

C-22 SEWER SERVICE. No Septic systems shall be allowed on individual lots.

PART D. ARCHITECTURAL CONTROL COMMITTEE:

D-1 MEMBERSHIP. The Architectural Control Committee shall be composed of Jody Petty, Kelsey Kehrees and Mark Kehrees. A majority of the committee may designate a representative to act for it. In the event of death or resignation of any member of the committee, the remaining members shall have full authority to designate a successor. Neither the members of the committee nor its designated representative shall be entitled to any compensation for thence services performed pursuant to this covenant.

D-2 PROCEDURE. The committee's approval or disapproval as required in these covenants shall be in writing and in the form hereto attached marked Exhibit "A" which, when executed, should be retained by the owner/builder as proof of the Committee's approval. In the event the committee or its designated representative fails to approve or disapprove within 30 days after plans and specification have been submitted to it or in the event no suit to enjoin the construction or compliance with these covenants has been commenced within 180 days after the completion thereof will not be required and the related covenants shall be deemed to have been fully complied with. The Committee will with Buyer's will with Buyer's permission and at the expense of the Buyer refer Buyer's plan to an architect for revisions and changes to comply with the Bill of Assurance.

PART E. PROPERTY OWNERS ASSOCIATION

E-1 OWNERS EASEMENTS OF ENJOYMENT. Every owner shall have a right and easement of enjoyment in and to the common area which shall be appurtenant to and shall pass with the title to every tract. Subject to the following provision:

(a) The right of the Association to charge reasonable fees for maintenance of the

common area;

E-2 MEMBERSHIP AND VOTING RIGHTS

SECTION 1: Every owner of a tract which is subject of assessment shall be a memberof the Association. Membership shall be appurtenant to and may not be separated from ownership of any tract which is subject to assessment.

SECTION 2: The Association shall have two classes of voting membership:

Class A: Class A members shall be all owners, with the exception of the Declarant, and shall be entitled to one vote for each tract owned, which may be voted at such time as all tracts are sold by the Declarant. When more than one person holds an interest in any tract, all such persons shall be members. The vote for such tract shall be exercised as they determine, but in no event shall more than one vote be cast with respect to any Tract.

Class B: The Class B member(s) shall be the Declarant and shall be entitled to ten votes per tract owned. The Class B membership shall cease on the happening of the following events.

(a) when all tracts are sold by declarant.

E-3 COVENANT FOR MAINTENANCE ASSESSMENTS

SECTION 1: Creation of the Lien and Personal Obligation of Assessments: The Declarant, for each tract owned within the properties, hereby covenants, and each owner of any tract by acceptance of a deed therefore, whether or not it shall be so expressed in such deed, is deemed to covenant and agree to pay to the Association annual assessment or charges, such assessments to be established and collected as hereinafter provided. The annual assessments, together with interest, costs and reasonable attorneys' fees, shall be a charge on the land and shall be a continuing lien upon the property against which each such assessment is made. Each such assessment, together with interest, costs, and reasonable attorneys' foes, shall also be the personal obligation of the person who is the owner of such property at the time when the assessment fell due. The personal obligation for delinquent assessments shall not pass to his successors in title unless expressly assumed by them.

SECTION 2: Purpose of Assessment: The assessments levied by the Association shall be used as follows:

(a) For the maintenance and upkeep of all common areas

(b) For any other purposes deemed in the best interest of the property owners by the Association

SECTION 3: Annual Assessment: Commencing on the date of filing of this Bill of Assurance, the property owners association will assume total responsibility for operation and maintenance of amenities and common areas and assess each property owner and annual assessment of $100.00, which shall commence as to all Lots on the first day of January following the date of recordation of this instrument and then effective per annually thereafter. The fees may be adjusted after January 1 of the year immediately following the conveyance of the Lot to an Owner. The sole intent and purpose of these fees are for operation, maintenance, and improvements of the green space, street lights and other amenities in a manner determined by the association membership.

SECTION 4: Notice and Quorum for Any Action Authorized Under Section 3: Written Notice of any meeting called for the purpose of taking any action authorized under Section 3 shall be sent to all members not less than 10 days in advance of the meeting. At the first such meeting called, the presence of member or proxies entitled to cast 60% of all votes shall constitute a quorum. If the required quorum is not present, another meeting may be called subject to the same notice requirement, and the required quorum at the preceding meeting shall be one-half (1/2) of the required quorum at the preceding meeting. No such subsequent meeting shall be held more than 60 days following the preceding meeting. Each tract as conveyed by Declarant shall have one vote.

SECTION 5: Uniform Rate of Assessment: Both annual and special assessments must be fixed at a uniform rate and may be collect on a semi-annual or annual basis.

SECTION 6: Date of Commencement of Annual Assessments: Due Dates: The annual assessments provided for herein shall commence as to all Lots on the first day of January following the date of recordation of this instrument. The Board of Directors shall fix the amount of the annual assessment against each Lot at least thirty (30) day in advance of each annual assessment period. Written notice of the annual assessment shall be sent to every Owner subject thereto. The due date shall be established by the Board of Directors. The Association shall, upon demand, and for a reasonable charge, furnish a certificate signed by an officer of the Association setting forth whether the assessments on a specified Lot have been paid. A properly executed certificate of the Association as to the status of assessments on a Lot is binding upon the Association as of the date of its issuance.

SECTION 7: Effect of Nonpayment of Assessments: Remedies of the Association: Any assessment not paid within thirty (30) days after the due date shall bear interest from the due date at the rate of ten percent per annum. The Association may bring an action at law against the owner personally obligated to pay the same, or foreclose the lien against the property. No owner may waive or otherwise escape liability for the assessments provided for herein by non-use of the common area or abandonment of the property.

SECTION 8: Subordination of the Lien to Mortgages: The lien of the assessments provided for herein shall be subordinate to the lien of any first mortgage. Sale or transfer of any tract shall not affect the assessment lien. However, the sale or transfer of any tract pursuant to

mortgage foreclosure or any proceeding in lieu thereof, shall extinguish the lien of such assessments as to payments which became due prior to such sale or transfer. No sale or transfer shall relieve such tract from liability for any assessments thereafter becoming due or from the lien thereon.

SECTION 9: Special Assessments for Capital Improvements: In addition to the annual assessments authorized above, the members may levy, in any assessment year, a special assessment applicable to that year only for the purpose of defraying, in whole or in part, the cost of any construction, reconstruction, repair or replacement of a capital improvement upon the common areas, provided that such assessment shall have the assent of two-thirds (2/3) of the votes of the members who are voting in person or by proxy at a meeting duly called for this purpose.

PART F. GENERAL PROVISIONS:

F-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 twenty-five years from the date these covenants are recorded after which time, said covenants shall be automatically extended for successive period of ten years, subject to the express provision that these covenants may be amended at any time after the date of execution hereby by an instrument signed by the members of the Architectural Control Committee and the owner or owners of a majority of the lots herein platted

are recorded after which time, said covenants shall be automatically extended for successive period of ten years, subject to the express provision that these covenants may be amended at any time after the date of execution hereby by an instrument signed by the members of the Architectural Control Committee and the owner or owners of a majority of the lots herein platted.

F-2 ENFORCEMENT. Enforcement shall be by proceedings at law or in equity against any person or persons violating or attempting to violate any covenant either to restrain violations or to recover damages.

F-3 SEVERABILITY Invalidation of any one of these covenants by judgment or court order shall in no way affect any of the other provisions which shall remain in full force and effect.

IN WITNESS WHEREOF, the name of Owner is hereby affixed by its Members this 6th day of Aug., 2020.

THOMAS D.B.COLLINS, LTD

BY: _____
Phillip Pengelly

ACKNOWLEDGEMENT

STATE OF ARKANSAS)
)ss
COUNTY OF SALINE)

On this day appeared before me, a Notary Public, Phillip Pengelly, known to me to be the President of THOMAS D.B. COLLINS, LTD. and acknowledged that he was authorized to execute the foregoing on its behalf and that they had executed same for the consideration and purpose therein mentions and set forth.

Witness my hand and seal this 6th day of Aug, 2020.

_____
Notary Public

My Commission Expires: 6-18-2029

BENJAMIN LEWIS WELLS
Notary Public-Arkansas
Saline County
My Commission Expires 06-18-2029
Commission # 12707853

KENSINGTON PLACE PHASE 3

Bryant Planning Commission

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
- $250.00 or $25.00 per lot (**whichever is greater**) - Stormwater Detention and Drainage Plan Engineering Fee
- 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

City of Bryant Subdivision Checklist

Subdivision/Project Name KENSINGTON PLACE PHASE 3

Contact Person VERNON WILLIAMS Phone (501) 408-4650

Mailing Address 3825 MT CARMEL ROAD, BRYANT, AR 72022

I. Basic Information Needed On The Plat

- ▲ 1. Name of Subdivision/Project
- ▲ 2. Current zoning R-1.5
- ▲ 3. Name and Address of owner of Record
- ▲ 4. Illustrate Source of Title giving deed record book and page number
- ▲ 5. Name & address of the sub-divider
- ▲ 6. Date of Survey
- ▲ 7. Vicinity map locating streets, highways, section lines, railroad, schools, & parks within ½ mile
- ▲ 8. Legal description of the property with exact boundary lines
- ▲ 9. Acreage of property
- ▲ 10. Number of Lots
- ▲ 11. Lot area in square feet
- ▲ 12. Lot lines with appropriate dimensions
- ▲ 13. Building setback lines
- ▲ 14. Preliminary Engineering certificate seal and signature on each page
- ▲ 15. Certificate of Engineering Accuracy
- ▲ 16. Certificate of Owner
- ▲ 17. Certificate of Final Plat Approval
- ▲ 18. Certificate of Recording
- ▲ 19. Show scale (not less than 1" = 100')
- ▲ 20. North Arrow
- ▲ 21. Show Title block
- ▲ 22. Show adjoining property owners
- ▲ 23. Layout of all proposed streets including traffic control devices (stop signs, speed limit, etc.)
- 24. Layout of all subdivision entrance street upgrades
- ▲ 25. Layout of all proposed alleys
- ▲ 26. Layout of all proposed sidewalk systems
- ▲ 27. Layout identifies any FEMA flood plain and flood way property within the 100-year flood elevation. (Provide Corp of Engineers 404 Permit if required)
- ▲ 28. Drainage easements for stormwater run-off and detention giving dimensions, locations, and purpose
- ▲ 29. Layout accommodates Master Street Plan segments within the boundaries
- ▲ 30. Street layout ties to existing adjoining subdivision stub-out streets and provides stub-out streets for future adjoining subdivisions.
- ▲ 31. Street width and right-of-way properly shown for each functional classification
- ▲ 32. Street centerlines showing angles of deflection, intersection, radii, length oftangents and arcs, and degree of curvature with basis of curve data
- ▲ 33. Typical cross section of streets
- ▲ 34. Location and name of existing streets
- ▲ 35. New street names that are not similar to existing street names
- ▲ 36. Show street lights
- ▲ 37. 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**
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. **Two (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. **Two (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)**

KENSINGTON PLACE PHASE 3
Name of Subdivision

George Wooden
Surveyor

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

Owner Signature

Vernon J Williams
Engineer Signature

CITY USE

Preliminary Plat Approved _____

Planning Commission Date _____

Final Plat Approved _____

Planning Commission Date _____

Proof of Recording - County _____

County Clerk _____ Date _____

GNE

3825 Mt Carmel Rd.
Bryant, AR 72022

GarNat Engineering, LLC

P.O. Box 116
Benton, AR 72018

November 14, 2023

Truett Smith
Planning & Community Development
210 S.W. 3rd Street
Bryant, AR 72022

Re: Final Plat Certification
Kensington Place Subdivision Phase 3

Dear Mr. Smith:

Please allow this letter to serve as the certification for the referenced project required by Paragraph 15.12.05.a of the City of Bryant Subdivision Regulations. To that end, we certify that all improvements and installation to the subdivision required for its approval under the terms of the City of Bryant Subdivision Rules and Regulations have been made, added, or installed. Furthermore, these improvements were constructed in accordance with the approved plans and specifications.

If you have questions or need any additional information, please do not hesitate to contact us.

Sincerely,
GarNat Engineering, LLC

Vernon J. Williams

Vernon J. Williams, P.E., President

Thomas D.B. Collins

Phillip Pengelly

GNE

3825 Mt Carmel Rd.
Bryant, AR 72022

GarNat Engineering, LLC

P.O. Box 116
Benton, AR 72018

January 2, 2024

Mr. Truett Smith
Bryant Planning Coordinator/Planning Commission Secretary
210 SW 3rd Street
Bryant, AR 72022

Re: Final Plat – Kensington Place Subdivision, Phase 3

Dear Mr. Smith:

Please allow this letter and following list of enclosures to serve as my application for approval of the referenced final plat. It is my desire that this matter be included on the agenda for your February 12, 2024 City of Bryant Planning Commission meeting. The developer for the project is Thomas D.B. Collins, Ltd, 9360 Gilbert Road, Benton, Arkansas, 72019 owencreek@comcast.net (501) 680-0970.

List of Enclosures

- Final Plat
- As Builts
- Bryant Subdivision Checklist
- Certification letter signed by developer and professional engineer

If you have questions or need any additional information, please do not hesitate to contact me.

Sincerely,
GarNat Engineering, LLC

Vernon J. Williams

Vernon J. Williams, P.E., President

PHILLIP LEWIS ENGINEERING
Structural + Civil Consultants
23620 Interstate 30 | Bryant, AR
PH: 501-350-9840

December 10, 2023

Truett Smith
Community Development
Community development Director
tsmith@cityofbryant.com

RE: SUMMERWOOD SPORTS GYM #3 REVISED SITE PLAN

To whom it may concern:
Please find below our responses to each planning/engineering review comment. Design plans with comments attached have been revised and re-submitted along with this letter.

Review Comments:

1. 2" meter service to be installed in green space not in asphalt.
   - Revised meter setting location to be installed in island.
2. Field verify location and depth of existing 8" water main running east and west and add to plans
   - Added existing 8" water main location to plans.
3. Possible conflict with dumpster pad area and existing 8" water main.
   - After verifying location of existing 8" water main, the dumpster pad doesn't conflict with water main.
4. How is existing pond to be re-established.
   - The rim elevations will be brought back up to 400' elevation. The bottom of the pond will be re-graded A trickle channel will be added to allow all the water to reach the outlet structure.
5. Possible conflict with exiting 8" water main.
   - The storm pipe is existing pipe ran from the past project. We are dropping new inlets to the existing pipe.
6. Fire line to remain private from demarcation valve and to be 8" ductile iron per specification 1100-1-1.03 and 1100-2-1.05.
   - Added demarcation valve and 8" DI pipe to plans.
7. Will this sidewalk have an ADA ramp to allow access through parking lot and into building?
   - Yes, this will have an ADA ramp to allow access. Shown on plans.
8. Submit drainage calculations for pond.
   - Please see the attached stormwater drainage report attached with this letter.
9. Saw cut, match existing elevation and grade, and provide smooth transition???
   - Added notes to plans.
10. Street Name???
    - Added street name to plans.

11. How is pedestrian trail transitioned into drive?
- The drive will come up to the existing pedestrian trail and match elevations. Detailed on plans.

12. Show that grades are to meet ADA requirements.
- Added slope to plans.

13. Transition to handicap access?
- The parking spaces will be flush with the sidewalk. No curb will be installed at this location.

14. Submit drainage calculations for site which meet City of Bryant stormwater requirements.
- Please see the attached stormwater drainage report attached with this letter.

15. Provide calculations for depth of flow in parking spaces.
- Please see the attached stormwater drainage report attached with this letter.

16. How is water managed at this low point?
- Adjusted gutter elevations so water will flow east from this point.

17. Demonstrate that existing pond has a sufficient outfall control structure to meet the city requirements for detention ponds.
- Please see the attached stormwater drainage report attached with this letter.

18. How is the stormwater managed in this area?
- This will bypass the pond. Rip rap will be installed at end of road for erosion control.

19. How is this graded? This water does not appear to go to the detention pond.
- This will bypass the pond.

20. Verify grades here. Is this a discharge point? If so, submit drainage calculations to demonstrate that this opening is sufficient for new design flows.
- This will be a discharge point. This will also bypass the pond.

21. Provide stormwater calculations which reflect capacity and also hydraulic grade of stormwater through boxes and pipes.
- Please see the attached stormwater drainage report attached with this letter.

22. Show inlet calculations.
- Please see the attached stormwater drainage report attached with this letter.

23. Fire hydrants not listed on plans. FDC shall be equipped with 5” storz connection. fire hydrant shall be within 100’ of FDC.
- Added fire hydrant to plans.

24. Where is this pipe going to?
- This pipe is going to the detention pond.

25. Show drainage arrows in direction of flow.
- Added to plans.

26. Are there roof drains? Where do they discharge?
- Yes, there will be roof drains on the back of the building. These will be collected in a 12” HDPE pipe and discharged into the detention pond.

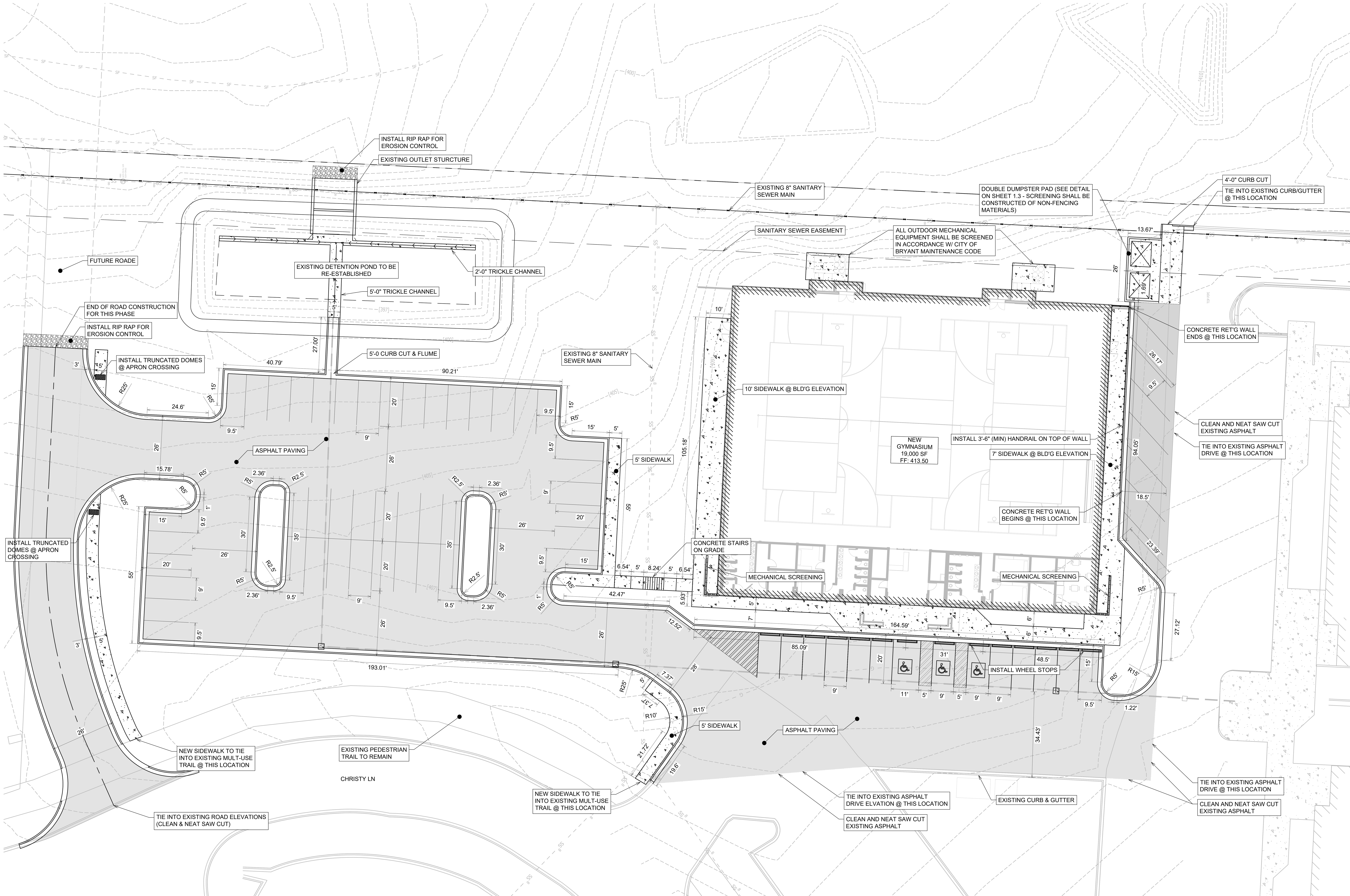
27. Please clarify how the drainage basins were determined.

- Drainage basins have been revised after field verifying the grades. The existing southwest building, the west half of the building water shed is flowing into the storm sewer that leads to the larger pond on the northwest of the property. A portion of both buildings water shed is flowing into the existing storm water pipe that we are using to tie-in the new area inlets. The existing southeast building, the east half of the building water shed ultimately flows to the curb cut by the new dumpster pad. Drainage Basin D3 is collected by the area inlet A2 by the ADA parking spaces. Drainage Basin D4 is collected by the area inlet A3. Drainage Basin D5 is collected by the 4'-0" flume that leads into the detention pond. Drainage Basin D6 is collected by downspouts leading into the detention pond. Drainage Basin D7 is bypassing the pond.

28. Are the arrows based upon the proposed or existing grades?

- These arrows are based on existing grades.

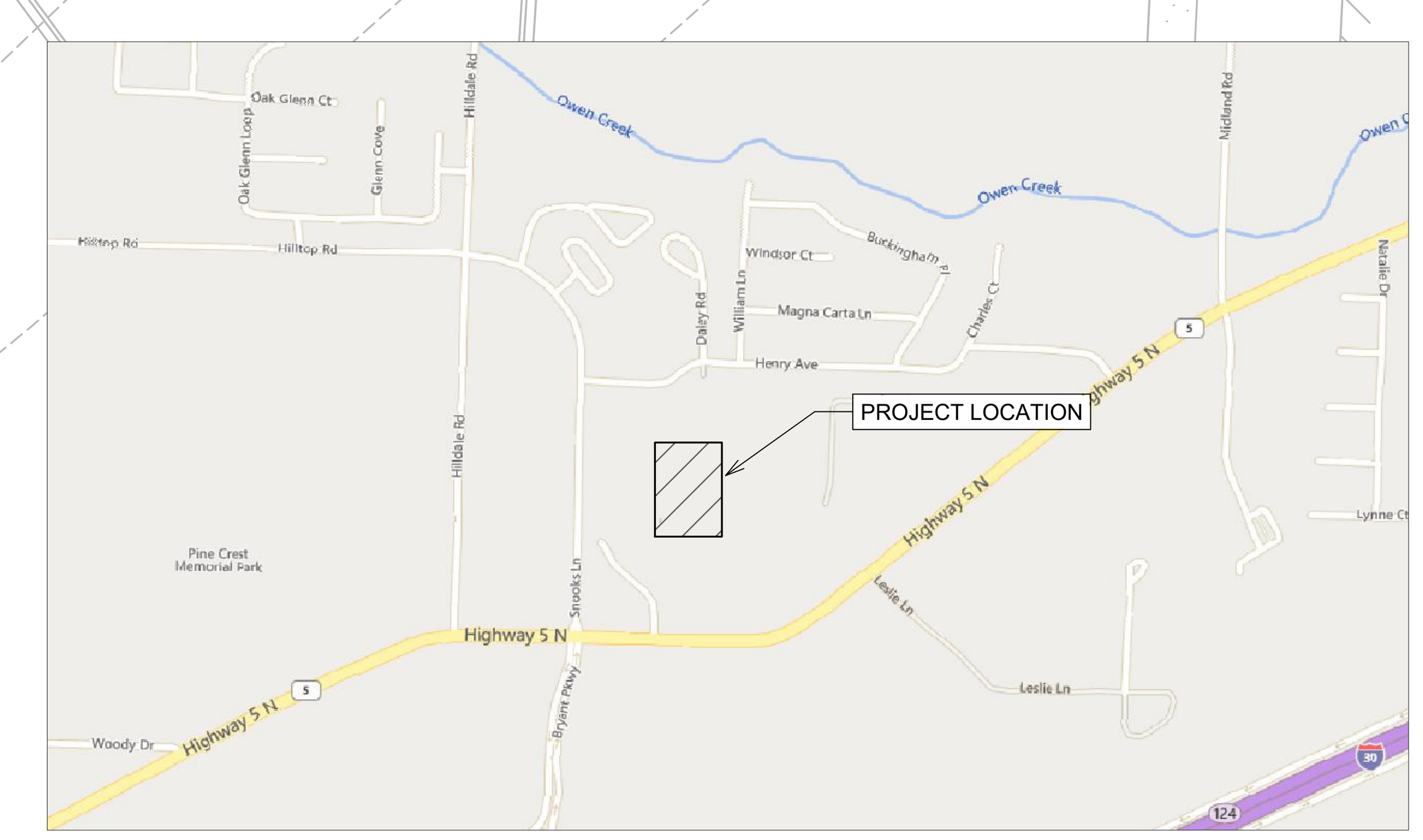
If you have any questions, please give me a call.
Sincerely,
Phillip Lewis, P.E.
501-350-9840



SITE PLAN

SCALE 1" = 20'

1. 64 PARKING SPACES PROVIDED INCLUDING 3 ADA ACCESSIBLE PARKING SPACES
2. ALL DIMENSIONS ARE TO THE BACK OF CURB AND/OR EDGE OF PAVEMENT
3. DAMAGE TO PUBLIC AND PRIVATE PROPERTY DUE TO HAULING OPERATIONS OR OPERATIONS OF CONSTRUCTION RELATED EQUIPMENT FROM A CONSTRUCTION SITE SHALL BE REPAIRED BY THE THE RESPONSIBLE PARTY PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
4. REPAIR, REPLACE, OR EXTEND EXISTING DAMAGED OR MISSING CURB AND GUTTER, SIDEWALK OR RAMPS WITHIN THE PUBLIC RIGHT OF WAY.
5. ALL SIGNAGE, PAVEMENT MARKING AND PARKING LOT STRIPING SHALL CONFORM TO REQUIREMENTS GIVEN IN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). MUTCD REQUIRES THAT PARKING SPACES BE MARKED IN WHITE.



VICINITY MAP

SCALE 1" = 1000'

GENERAL CONSTRUCTION NOTES

A. THE CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR DAMAGES OCCURRING TO ANY PROPERTY DURING THE CONSTRUCTION OF THIS PROJECT. SAID CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT PROPERTY DAMAGE.

B. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL SOLELY AND COMPLETELY BE RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND WILL NOT BE LIMITED TO NORMAL WORKING HOURS.

C. THE DUTY OF BRYANT UTILITIES TO CONDUCT CONSTRUCTION INSPECTION REVIEWS OF THE CONTRACTOR'S PERFORMANCE IS NOT AN INSPECTION OR REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES IN, ON, OR NEAR THE CONSTRUCTION SITE.

D. ALL WATER AND SEWER IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST REVISION TO THE CITY OF BRYANT'S WATER AND WASTEWATER (SANITARY SEWER) STANDARD SPECIFICATIONS.

E. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF ALL UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH PROPOSED IMPROVEMENTS SHOWN ON THE PLAN.

F. CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL DEBRIS, RUBBISH, AND OTHER MATERIALS RESULTING FROM PREVIOUS AND CURRENT DEMOLITION OPERATIONS. DISPOSAL WILL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND/OR FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.

G. PRIOR TO INSTALLATION OF ANY UTILITIES, THE CONTRACTOR IS TO EXCAVATE, VERIFY AND CALCULATE ALL CROSSINGS AND INFORM ANY AND ALL UTILITIES OF ANY CONFLICTS PRIOR TO CONSTRUCTION.

H. CONSTRUCTION SHALL NOT START ON ANY WATER UTILITY TIE-INS UNTIL APPROVAL IS GIVEN BY BRYANT UTILITIES. SAID CONTRACTOR SHALL NOT OPERATE ANY VALVE, HYDRANT, OR WATER UTILITY APPURTENANCE NOR SHALL HE ATTACH TO OR TAP ANY WATER UTILITY MAIN WITHOUT APPROVAL. THE CONTRACTOR SHALL BEAR THE COST AND CONSEQUENCE OF ANY DISRUPTION OF UTILITY OPERATION CAUSED BY CONSTRUCTION.

I. FIBER OPTIC CABLE ON AND/OR ADJACENT TO THIS SITE WERE NOT LOCATED BY THE SURVEY AND ARE NOT SHOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ANY FIBER OPTIC CABLES ASSOCIATED WITH THIS SITE AND TAKE ALL NECESSARY AND REQUIRED PRECAUTIONS TO PROTECT ANY EXISTING FIBER OPTIC CABLES. CONTRACTORS SHALL COORDINATE ALL EFFORTS WITH OWNER OF FIBER OPTIC CABLES OR THEIR DESIGNATED REPRESENTATIVE.

J. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING "ONECALL" SERVICE TO MARK ALL UTILITIES PRIOR TO ANY DEMOLITION, EARTHWORK, OR UTILITY WORK ON THIS SITE.

PHILLIP LEWIS ENGINEERING, INC.
Structural + Civil Consultants
23620 Interstate 30 | Bryant, Arkansas
PH: 501-350-9840

REVISION:

SUMMERWOOD SPORTS GYMNASIUM #3
7817 Hwy 5 N
Bryant, Arkansas

CERTIFICATE OF AUTHORIZATION — PHILLIP LEWIS ENGINEERING, INC. No. 566 — ARKANSAS—ENGINEER

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 9540 PHILLIP A. LEWIS

1" = 20'-0"

PROJECT NUMBER:

SHEET ISSUE DATE: 1/10/2024

PAGE TITLE: SITE PLAN

SHEET NUMBER: C1.1

GENERAL CONSTRUCTION NOTES

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NEW GYMNASIUM 19,000 SF FF: 413.50

INSTALL HANDRAIL ON TOP OF WALL

TRENCH DRAIN

RIM EL: 400.00

CHRISTY LN

GRADING PLAN

SCALE 1" = 20'

G = GUTTER ELEVATION

TP = TOP OF PAVEMENT ELEVATION

TOC = TOP OF CONCRETE ELEVATION

FG = FINAL GRADE ELEVATION (NON PAVED AREAS)

TC = TOP OF CURB ELEVATION

TOW = TOP OF WALL

CONCRETE RAMP/STAIRS

SCALE 1" = 10'

ADA PARKING

SCALE 1" = 10'

PHILLIP LEWIS ENGINEERING, INC.
Structural + Civil Consultants
23620 Interstate 30 | Bryant, Arkansas
PH: 501-350-9840

REVISION:

SUMMERWOOD SPORTS GYMNASIUM #3
7817 Hwy 5 N
Bryant, Arkansas

CERTIFICATE OF AUTHORIZATION — PHILLIP LEWIS ENGINEERING, INC. — No. 566 — ARKANSAS ENGINEERING

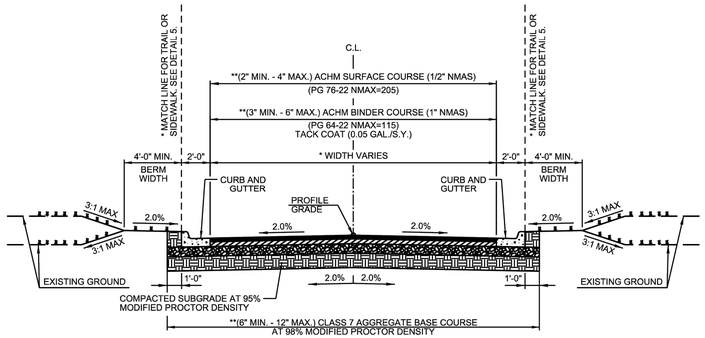
STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 9540 — PHILLIP A. LEWIS

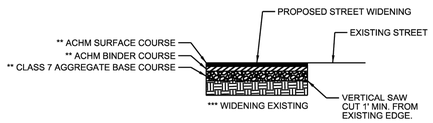
PROJECT NUMBER:

SHEET ISSUE DATE: 1/10/2024

PAGE TITLE: GRADING PLAN

SHEET NUMBER: C1.2





GENERAL NOTES

1. IN AREAS TO RECEIVE BITUMINOUS PAVING, CONCRETE DRIVEWAYS OR CURB AND GUTTER, SUBGRADE SHALL BE COMPACTED TO A DENSITY NOT LESS THAN 95% OF MAXIMUM MODIFIED DENSITY OBTAINED AT OPTIMUM MOISTURE CONTENT.
2. FOR AREAS OF SUBGRADE PREPARATION TO RECEIVE CONCRETE SIDEWALKS, SUBGRADE SHALL BE COMPACTED TO DENSITY OF 90% MAXIMUM MODIFIED DENSITY.
3. CRUSHED STONE - MATERIAL IN EACH COURSE SHALL BE COMPACTED TO A DENSITY OF 98% MAXIMUM MODIFIED DENSITY.
4. ACHM BASE COURSE (4" MIN. - 12" MAX) (1 1/2" NMAS) MAY BE USED IF INCLUDED IN AN APPROVED PAVEMENT DESIGN.

* CROSS SECTIONS AND RIGHT-OF-WAY SHALL ADHERE TO THE MINIMUM WIDTH REQUIREMENTS SHOWN IN THE CITY OF BRYANT MASTER TRANSPORTATION PLAN. THE DEVELOPMENT REVIEW COMMITTEE SHALL DETERMINE WHICH VERSION OF STREET CLASSIFICATION AND WHAT WIDTHS WILL BE REQUIRED.

** THICKNESS TO BE DETERMINED BY PAVEMENT DESIGN IN ACCORDANCE WITH SECTION 5.0 OF THE MINIMUM STANDARD SPECIFICATIONS FOR STREETS.

*** PAVEMENT RECONSTRUCTION TO CENTERLINE IS REQUIRED WHEN EXISTING STREET DOES NOT MEET THESE STANDARDS.

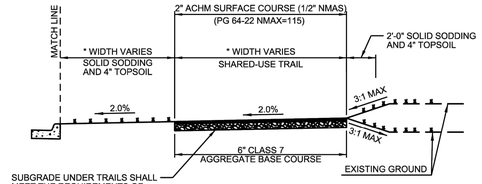
CITY OF BRYANT

TYPICAL SECTION MINOR ARTERIAL

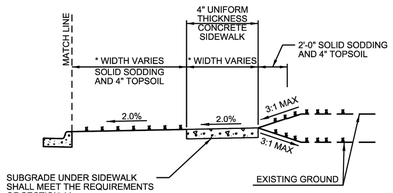
ISSUE DATE: AUGUST 2021

DETAIL 1

REVISION DATE:



SHARED-USE TRAIL END CONDITION



SIDEWALK END CONDITION

* WIDTH SHALL ADHERE TO THE MINIMUM WIDTH REQUIREMENTS SHOWN IN THE CITY OF BRYANT MASTER TRANSPORTATION PLAN. THE DEVELOPMENT REVIEW COMMITTEE SHALL DETERMINE WHICH VERSION OF STREET CLASSIFICATION AND WHAT WIDTHS WILL BE REQUIRED.

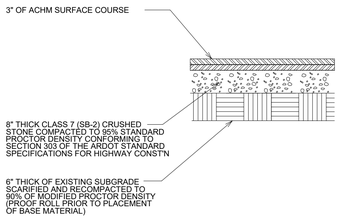
CITY OF BRYANT

TYPICAL SECTION END CONDITIONS

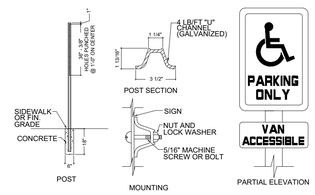
ISSUE DATE: AUGUST 2021

DETAIL 5

REVISION DATE:

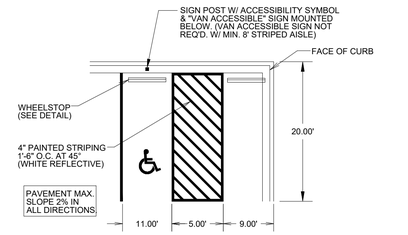


HMAC ASPHALT SURFACE COURSE MEDIUM DUTY — NOT TO SCALE

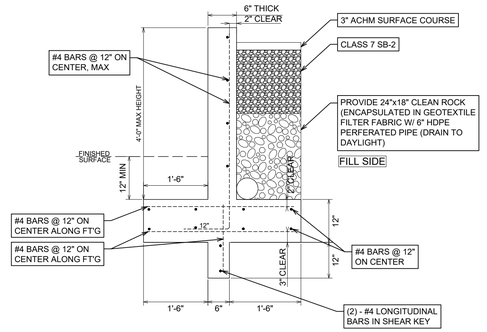


HANDICAP SIGN DETAIL — NOT TO SCALE

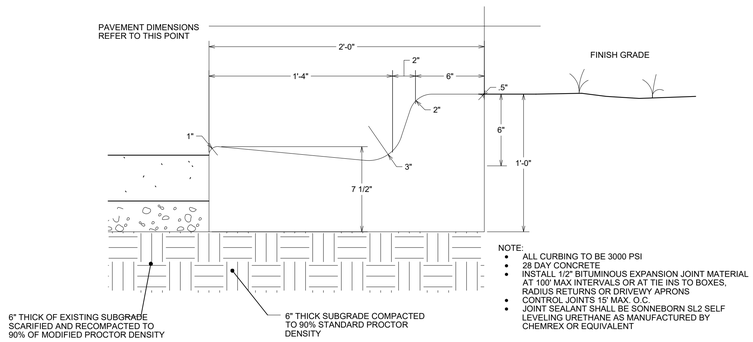
NOTE:
HANDICAP SIGNAGE SHALL BE IN STRICT COMPLIANCE WITH CURRENT FEDERAL AND LOCAL LAW REQUIREMENTS



TYPICAL ACCESSIBLE PARKING STALLS

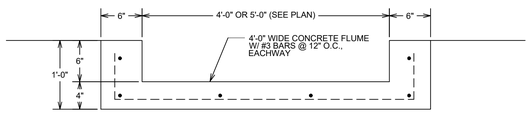


RETAINING WALL — NOT TO SCALE

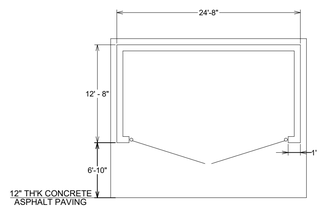


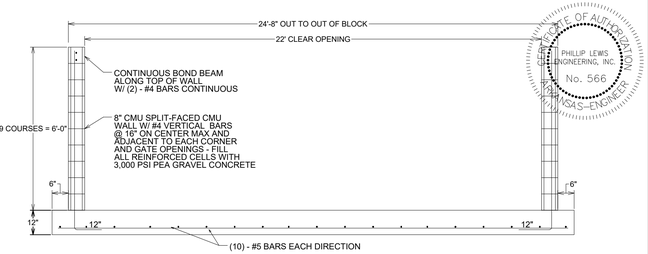
NOTE:
- ALL CURBING TO BE 3000 PSI
- 28 DAY CONCRETE
- INSTALL 1/2" BITUMINOUS EXPANSION JOINT MATERIAL AT 100' MAX INTERVALS OR AT TIE INS TO BOXES, RADIUS RETURNS OR DRIVEWY APRONS
- CONTROL JOINTS 15' MAX. O.C.
- JOINT SEALANT SHALL BE SONNEBORN SL2 SELF LEVELING URETHANE AS MANUFACTURED BY CHEMREX OR EQUIVALENT

2'-0" CONCRETE CURB & GUTTER — NOT TO SCALE



CONCRETE FLUME DETAIL — NOT TO SCALE





DUMPSTER PAD/ENCLOSURE DETAIL — NOT TO SCALE

PHILLIP LEWIS ENGINEERING, INC.
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REVISION:

SUMMERWOOD SPORTS GYMNASIUM #3
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STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 566 — PHILLIP O. LEWIS — CERTIFICATE OF AUTHORIZATION — PHILLIP LEWIS ENGINEERING, INC. — ARKANSAS ENGINEER

PROJECT NUMBER:

SHEET ISSUE DATE: 1/10/2024

PAGE TITLE: SITE DETAILS

SHEET NUMBER: C1.3

105 LF of 12" HDPE
DOWNSPOUT COLLECTOR PIPE

150 LF of 12" HDPE
DOWNSPOUT COLLECTOR PIPE

TIE TRENCH DRAIN RELEASE
INTO COLLECTOR PIPE

INSTALL NDS DURA
SLOPE CHANNEL DRAIN

NEW
GYMNASIUM
19,000 SF
FF: 413.50

INLINE DRAIN TO BE SPLICED
INTO EXISTING 18" HDPE PIPE

JB-A4
JUNCTION BOX
STA: 3+46.29
RIM 409.52
SUMP: 401.03
INV IN: 401.13 18" EXISTING HDPE FROM JB-A3
INV OUT: 401.10 18 EXISTING HDPE TO DETENTION POND

JB-A3
NYLOPLAST INLINE DRAINS
W/ 2'x2' GRATE
STA: 2+28.01
RIM: 409.38
SUMP: 404.56
INV IN: 404.56 18" EXISTING HDPE FROM JB-A2
INV OUT: 404.56 18" EXISTING HDPE TO JB-A4

JB-A2
NYLOPLAST INLINE DRAIN
W/ 2'x2' GRATE
STA: 0+51.09
RIM: 412.25
SUMP: 406.95
INV IN: 406.95 18" EXISTING HDPE FROM
INV OUT: 406.95 18" EXISTING HDPE TO JB-A3

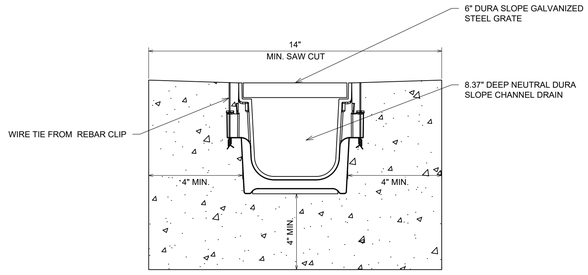
AI-A1
STA: 0+00.00
SUMP: 411.18
INV OUT: 411.18 18" HDPE PIPE

CHRISTY LN

CHRISTY LN

STORMWATER PLAN

SCALE 1" = 20'



NOTES:
1. CHANNELS TO BE INSTALLED WITH GRATE. GRATE TO BE PROTECTED FROM CONCRETE POUR.
2. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

NDS DURA SLOPE CHANNEL DRAIN SYSTEM

TYPICAL CHANNEL DRAIN DETAIL. INSTALL SPECIFIED DRAIN SERIES OR SIMILAR LOAD RATING SERIES.

GENERAL CONSTRUCTION NOTES

A. THE CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR DAMAGES OCCURRING TO ANY PROPERTY DURING THE CONSTRUCTION OF THIS PROJECT. SAID CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT PROPERTY DAMAGE.

B. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL SOLELY AND COMPLETELY BE RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND WILL NOT BE LIMITED TO NORMAL WORKING HOURS.

C. THE DUTY OF BRYANT UTILITIES TO CONDUCT CONSTRUCTION INSPECTION REVIEWS OF THE CONTRACTOR'S PERFORMANCE IS NOT AN INSPECTION OR REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES IN, ON, OR NEAR THE CONSTRUCTION SITE.

D. ALL WATER AND SEWER IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST REVISION TO THE CITY OF BRYANT'S WATER AND WASTEWATER (SANITARY SEWER) STANDARD SPECIFICATIONS.

E. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF ALL UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH PROPOSED IMPROVEMENTS SHOWN ON THE PLAN.

F. CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL DEBRIS, RUBBISH, AND OTHER MATERIALS RESULTING FROM PREVIOUS AND CURRENT DEMOLITION OPERATIONS. DISPOSAL WILL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND/OR FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.

G. PRIOR TO INSTALLATION OF ANY UTILITIES, THE CONTRACTOR IS TO EXCAVATE, VERIFY AND CALCULATE ALL CROSSINGS AND INFORM ANY AND ALL UTILITIES OF ANY CONFLICTS PRIOR TO CONSTRUCTION.

H. CONSTRUCTION SHALL NOT START ON ANY WATER UTILITY TIE-INS UNTIL APPROVAL IS GIVEN BY BRYANT UTILITIES. SAID CONTRACTOR SHALL NOT OPERATE ANY VALVE, HYDRANT, OR WATER UTILITY APPURTENANCE NOR SHALL HE ATTACH TO OR TAP ANY WATER UTILITY MAIN WITHOUT APPROVAL. THE CONTRACTOR SHALL BEAR THE COST AND CONSEQUENCE OF ANY DISRUPTION OF UTILITY OPERATION CAUSED BY CONSTRUCTION.

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J. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING "ONECALL" SERVICE TO MARK ALL UTILITIES PRIOR TO ANY DEMOLITION, EARTHWORK, OR UTILITY WORK ON THIS SITE.

PHILLIP LEWIS ENGINEERING, INC.
Structural + Civil Consultants
23620 Interstate 30 | Bryant, Arkansas
PH: 501-350-9840

REVISION:

SUMMERWOOD SPORTS GYMNASIUM #3
7817 Hwy 5 N
Bryant, Arkansas

STATE OF ARKANSAS
PHILLIP A. LEWIS
REGISTERED PROFESSIONAL ENGINEER
No. 9540

CERTIFICATE OF AUTHORIZATION
PHILLIP LEWIS ENGINEERING, INC.
No. 566
ARKANSAS ENGINEER

PROJECT NUMBER:

SHEET ISSUE DATE:
1/10/2024

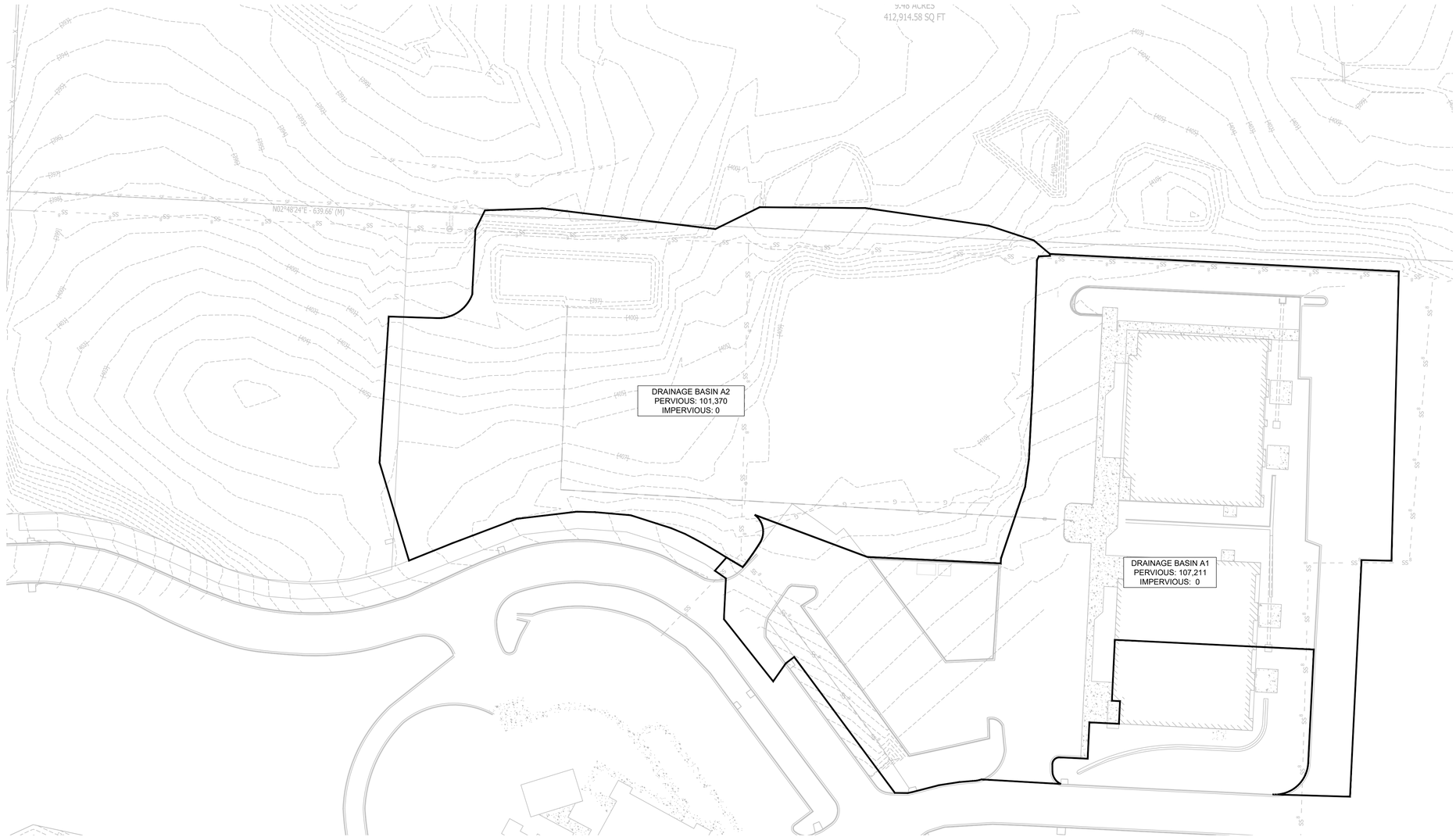
PAGE TITLE:
STORMWATER PLAN

SHEET NUMBER:
C1.4

N

0 20'

1" = 20'-0"



PRE-DEV DRAINAGE MAP

SCALE 1" = 40'

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PH: 501-350-9840

REVISION:

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PHILLIP LEWIS ENGINEERING, INC.
No. 566
ARKANSAS ENGINEERING

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9540
PHILLIP A. LEWIS

PROJECT NUMBER:

SHEET ISSUE DATE:
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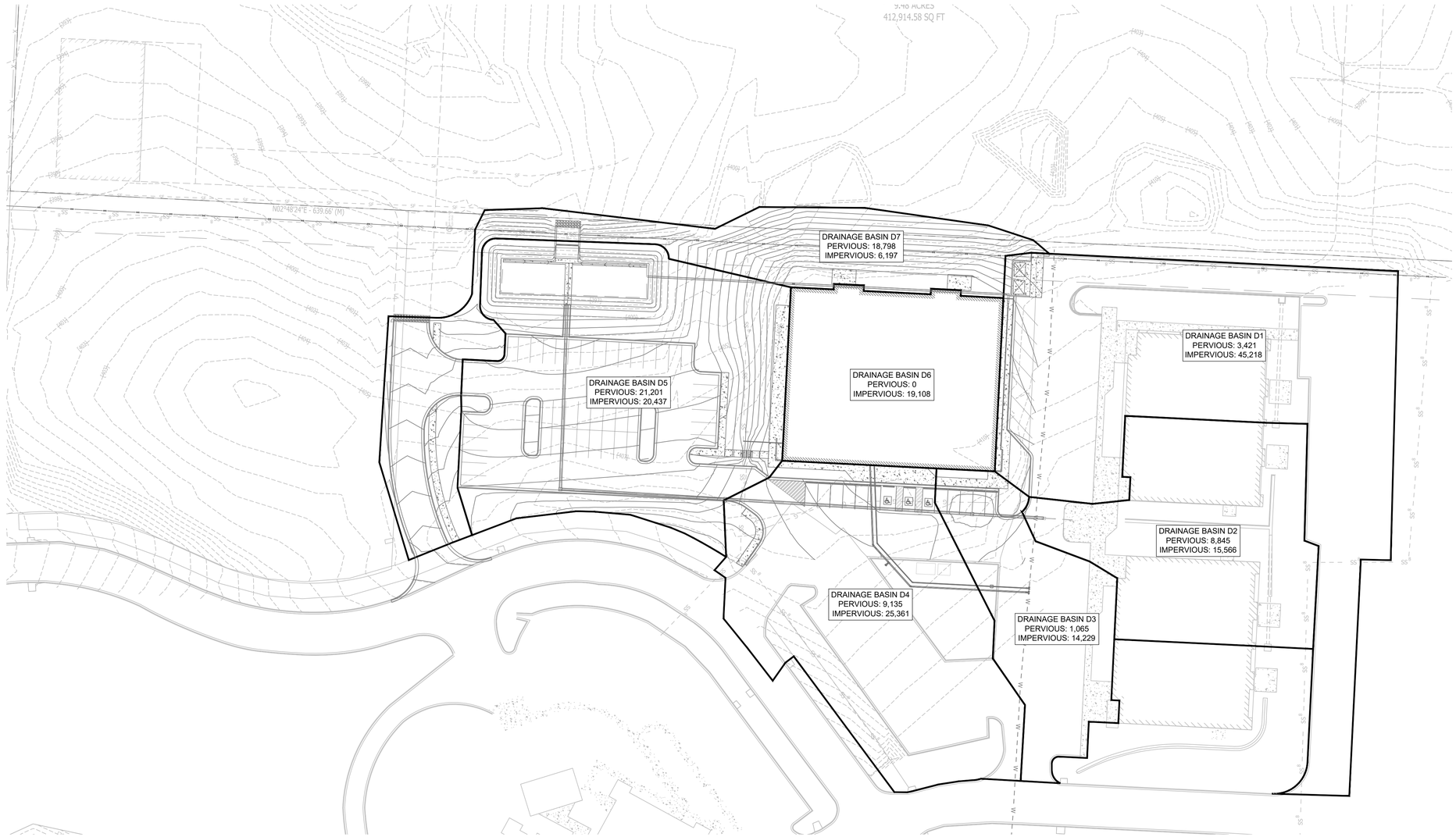
PAGE TITLE:
PRE-DEV DRAINAGE MAP

SHEET NUMBER:
C1.5

N

0 40'
1" = 40'-0"



POST-DEV DRAINAGE MAP

SCALE 1" = 40'

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ARKANSAS ENGINEERING

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9540
PHILLIP A. LEWIS

PROJECT NUMBER:

SHEET ISSUE DATE:
1/10/2024

PAGE TITLE:
POST-DEV DRAINAGE MAP

SHEET NUMBER:
C1.6

N

0 40'
1" = 40'-0"

UTILITY PLAN

SCALE 1" = 20'

GENERAL CONSTRUCTION NOTES

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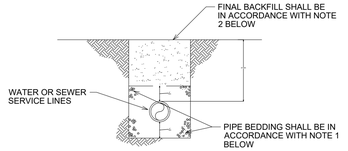

WATER AND SEWER LINES BEDDING DETAIL

NOT TO SCALE

NOTES:
1. BEDDING SHALL BE "GRIT" PER ASTM 2774 OR ASTM D448 SIZE 67 A MINIMUM OF 6" ALL AROUND PIPE.
2. INITIAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS III COMPACTED TO 90% STANDARD PROCTOR. ALL BACKFILL UNDER PAVED AREAS SHALL BE CLASS 7 CRUSHED STONE (SB-2) COMPACTED TO 95% STANDARD PROCTOR DENSITY.
3. ALL MATERIALS ARE CLASSIFIED IN ACCORDANCE WITH ASTM D2321-89.
4. ALL MATERIALS SHALL BE INSTALLED IN MAXIMUM 8" LIFTS IN ACCORDANCE WITH ASTM D698. CLASS III AND IV-A MATERIALS SHALL BE COMPACTED TO NEAR OPTIMUM MOISTURE CONTENT.
6. FILL SALVAGED FROM EXCAVATION SHALL BE FREE OF DEBRIS, ORGANICS, AND ROCKS LARGER THAN 3".
7. ALL TRENCH EXCAVATIONS SHALL BE SLOPED, SHORED, SHEETED, BRACED, OR OTHERWISE SUPPORTED IN COMPLIANCE WITH OSHA REGULATIONS AND LOCAL ORDINANCES.

N

0 20'

1" = 20'-0"

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REVISION:

SUMMERWOOD SPORTS GYMNASIUM #3

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Bryant, Arkansas

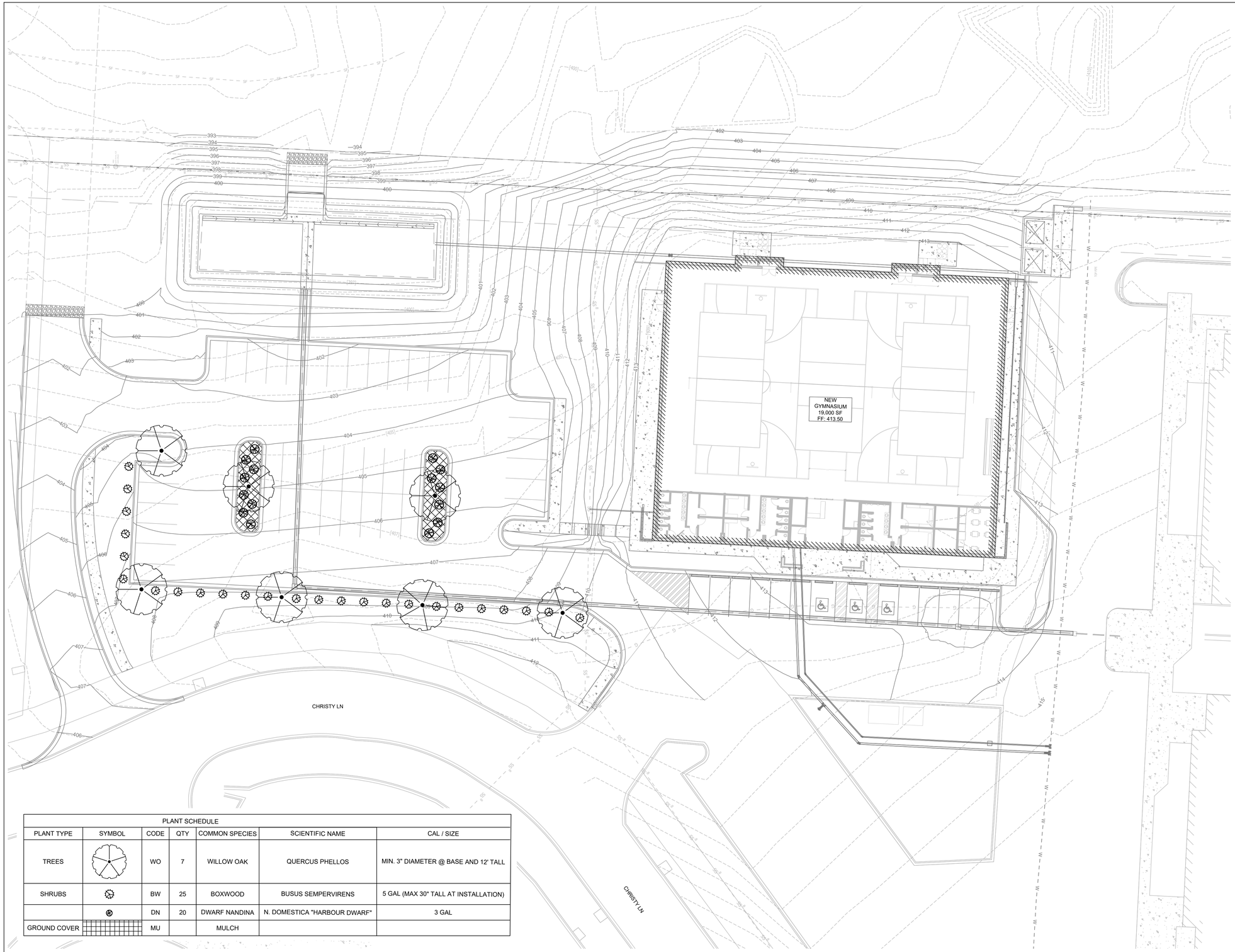
PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT NUMBER:

SHEET ISSUE DATE:
1/10/2024

PAGE TITLE:
UTILITY PLAN

SHEET NUMBER:
C1.7



PLANT SCHEDULE						
PLANT TYPE	SYMBOL	CODE	QTY	COMMON SPECIES	SCIENTIFIC NAME	CAL / SIZE
TREES		WO	7	WILLOW OAK	QUERCUS PHELLOS	MIN. 3" DIAMETER @ BASE AND 12' TALL
SHRUBS		BW	25	BOXWOOD	BUSUS SEMPERVIRENS	5 GAL (MAX 30" TALL AT INSTALLATION)
		DN	20	DWARF NANDINA	N. DOMESTICA "HARBOUR DWARF"	3 GAL
GROUND COVER		MU		MULCH		

LANDSCAPING PLAN

SCALE 1" = 20'

THE ABOVE SPECIES IS OPTIONAL IF OWNER WANTS TO GO WITH THE SAME SPECIES AS ADJACENT PROPERTY

N

0 20'

1" = 20'-0"

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CERTIFICATE OF AUTHORIZATION
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No. 566
ARKANSAS-ENGINEER

STATE OF ARKANSAS
PHILLIP A. LEWIS
REGISTERED PROFESSIONAL ENGINEER
No. 9540
PHILLIP A. LEWIS

PROJECT NUMBER:

SHEET ISSUE DATE:
1/10/2024

PAGE TITLE:
LANDSCAPING PLAN

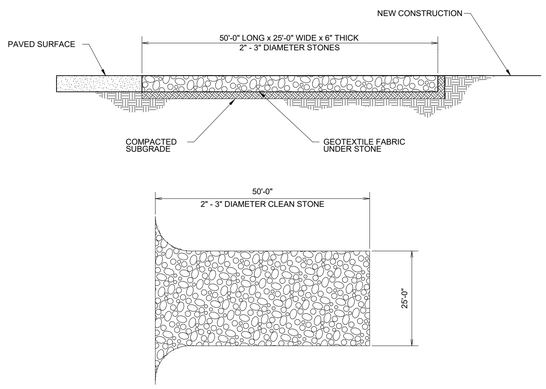
SHEET NUMBER:
C1.8

SWPPP PH. 1

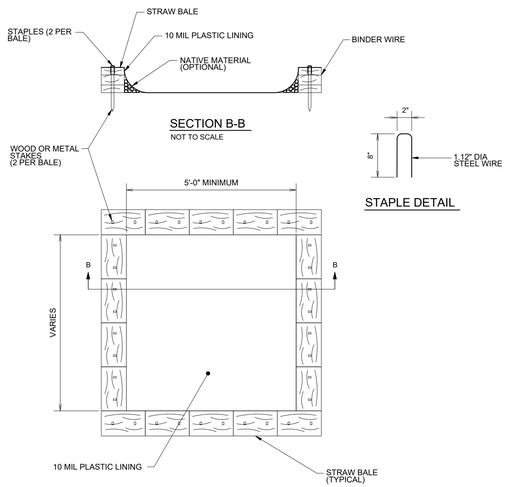
SCALE 1" = 50'

LEGEND

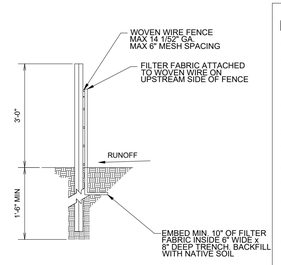
- DISTURBED AREA
- UNDISTURBED AREA
- GRASS SEED
- SEDIMENT FENCE WITH WIRE BACKING
- DRAINAGE DIRECTION



CONSTRUCTION ENTRANCE NOT TO SCALE



CONCRETE WASHOUT NOT TO SCALE



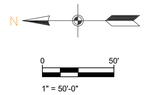
SILT FENCE NOT TO SCALE

NOTES AND SPECIFICATIONS:

1. POSTS SHALL BE A MINIMUM OF 36 INCHES CONSTRUCTED OF EITHER OF THE FOLLOWING MATERIALS: STEEL "T" OR "U" TYPE, OR 2" x 2" HARDWOOD.
2. WOVEN WIRE USED AS ADDITIONAL FENCE SUPPORT SHALL BE MINIMUM 14.5 GA. WITH 6" MAXIMUM SPACING.
3. WOVEN WIRE SHALL BE PLACED ALONG THE UPHILL SIDE OF THE FENCE AND FASTENED WITH WIRE TIES OR 1" STAPLES ALONG THE UPHILL SIDE OF THE POSTS.
4. FILTER FABRIC SHALL BE FASTENED TO WOVEN WIRE ACCORDING TO MANUFACTURER'S RECOMMENDATION, OR WITH TIES EVERY 24" AT THE TOP AND MID-SECTIONS.
5. WHERE TWO PIECES OF FILTER FABRIC ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 6 INCHES AND FOLDED TOGETHER.
6. WHERE TWO POSTS MEET TO JOIN FENCE SECTIONS, THE TOPS OF THE POSTS SHALL BE SECURED TOGETHER WITH WIRE.
7. THE FENCE SHALL BE CONSTRUCTED ALONG THE CONTOUR AS MUCH AS POSSIBLE.
8. ENDS OF FENCES SHALL BE EXTENDED UP THE SLOPE TO PRVENT RUNOFF FROM MIGRATING AROUND THE END OF THE FENCE.
9. INSPECTION OF THE FENCE SHALL BE PERFORMED WEEKLY, OR IMMEDIATELY AFTER A RAIN EVENT, OR WHEN BULGES APPEAR IN THE FENCE. ACCUMALTED SILT SHALL NOT BE ALLOWED TO EXCEED HALF THE HEIGHT OF THE FABRIC. REPAIR AND OR REPLACMENT OF DAMAGED FENCE SHALL BE COMPLETED PROMPTLY.
10. ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED SITE IN SUCH A MANNER THAT IT WILL NOT CONTRIBUTE TO OFF-SITE SILTATION.
11. ALL FENCING SHALL BE REMOVED WITH THE CONSTRUCTION SITE IS FULLY STABLIZED SO AS TO NOT IMPEDE STORM FLOW OR DRAINAGE.
12. PRE-FRABRICATED UNITS DO NOT REQUIRE THE USE OF WOVEN WIRE FENCE.

NOTES (GENERAL):

1. SEE EROSION CONTROL DETAILS IN SWPPP FOR EROSION CONTROL FACILITIES.
2. SEE SWPPP FOR INSTALLATION, MAINTENANCE, INSPECTION, AND RECORD KEEPING REQUIREMENTS.
3. CONTRACTOR SHALL SHOW EROSION CONTROL MEASURE ON SITE MAP.
4. EROSION AND SEDIMENT CONTROL STRUCTURES TO MEET SWPPP DETAILS - APPENDIX D
5. INSTALL ROCK DITCH, CHECK, OR SAND BAG CHECKS AS NECESSARY TO PREVENT SCOUR UNTIL LANDSCAPING IS ESTABLISHED.
6. CONTRACTOR MUST PLACE SEDIMENT BASIN WITH SEDIMENT FENCE OUTLET FOR ANY SEDIMENT CONTAMINATED DEWATERING DISCHARGE.
7. FINAL SLOPE WILL BE SAME DIRECTION AS EXISTING SLOPE.



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REVISION:

SUMMERWOOD SPORTS GYMNASIUM #3
7817 Hwy 5 N
Bryant, Arkansas

CERTIFICATE OF AUTHORIZATION
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No. 566
ARKANSAS-ENGINEER

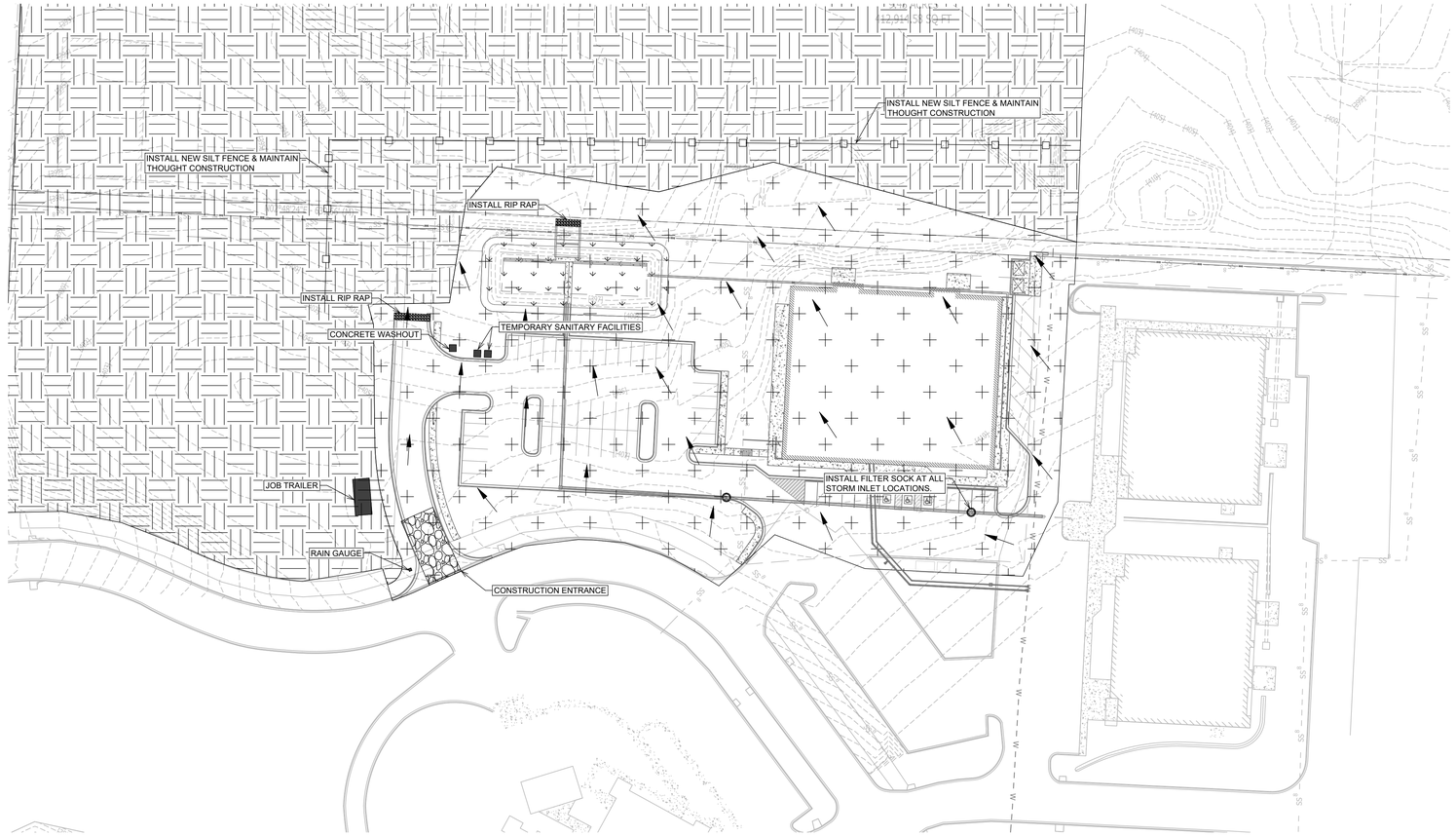
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19540
PHILLIP A. LEWIS

PROJECT NUMBER:

SHEET ISSUE DATE:
1/10/2024

PAGE TITLE:
SWPPP PH. 1

SHEET NUMBER:
C1.9



SWPPP PH. 2

SCALE 1" = 50'

LEGEND

- DISTURBED AREA
- UNDISTURBED AREA
- GRASS SEED
- SEDIMENT FENCE WITH WIRE BACKING
- DRAINAGE DIRECTION

NOTES (GENERAL):

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N

0 50'

1" = 50'-0"

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REVISION:

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No. 565
ARKANSAS ENGINEER

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9540
PHILLIP A. LEWIS

PROJECT NUMBER:

SHEET ISSUE DATE:
1/10/2024

PAGE TITLE:
SWPPP PH. 2

SHEET NUMBER:
C1.10

PHILLIP LEWIS ENGINEERING
Structural + Civil Consultants
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PH: 501-350-9840

January 10, 2023

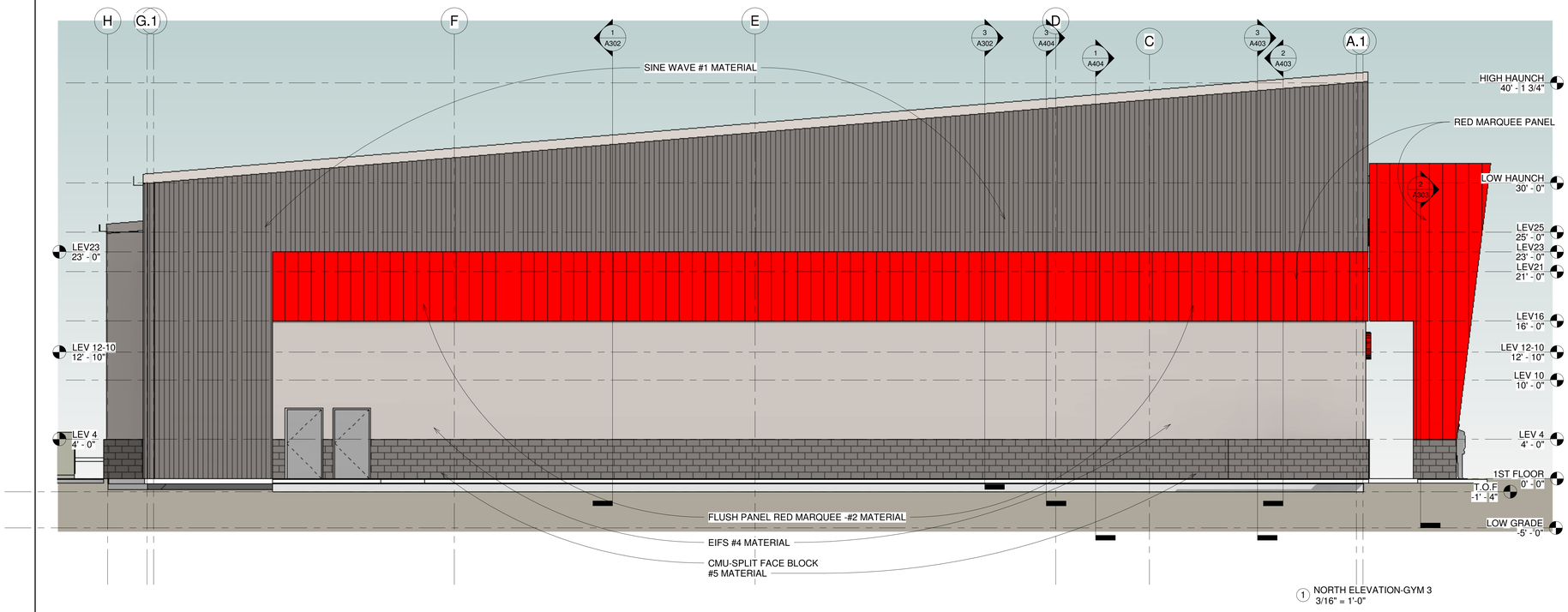
Colton Leonard
City Planner
City of Bryant
210 SW 3rd St.
Bryant, AR 72022

To whom it may concern,

This is a formal request to be placed on the upcoming Design Review Committee agenda for a Small Scale Development application pertaining to the Summerwood Sports Gymnasium #3 project. The is the third gym installment of the Summerwood Sports complex located along Hwy 5 and Bryant Parkway. The civil and architectural plans accompany this letter.

If you have any questions, please give me a call.

Sincerely,
Phillip Lewis, P.E.
501-350-9840



1 NORTH ELEVATION-GYM 3
3/16" = 1'-0"

FRONT ELEVATION-% OF AREA MATERIALS LISTED

1. TOP-CHARCOAL COLOR -METAL PANELS WITH SINE WAVE=2,336 SF
2. RED COLOR -FLUSH METAL PANELS =1,394 SF
3. BLUE COLOR- GLASS AND DOORS=308 SF
4. DARK GRAY COLOR - EIFS TYPE STUCCO=1,472 SF
5. BASE-CHARCOAL COLOR -SPLIT FACE BLOCK=544 SF

TOTAL SF FRONT ELEVATION=6,054 SF
CHARCOAL COLOR SINE WAVE METAL =38.5% OF AREA
RED COLOR FLUSH METAL PANEL= 23% OF AREA
GLASS= 5.0% OF AREA

SIDE ELEVATIONS -% OF AREA MATERIALS LISTED
EAST AND WEST ELEVATIONS ARE IDENTICAL BUT MIRRORED

1. TOP-CHARCOAL COLOR -METAL PANELS WITH SINE WAVE=1,771 SF
2. RED COLOR -FLUSH METAL PANELS = 1,020 SF
3. LIGHT GRAY COLOR - EIFS TYPE STUCCO= 1,326 SF
4. BASE-CHARCOAL COLOR -SPLIT FACE BLOCK= 452 SF

TOTAL SF SIDE ELEVATION=4,569 SF
TOP-CHARCOAL SINE WAVE METAL =38% OF AREA
RED COLOR FLUSH METAL PANEL = 22.3% OF AREA

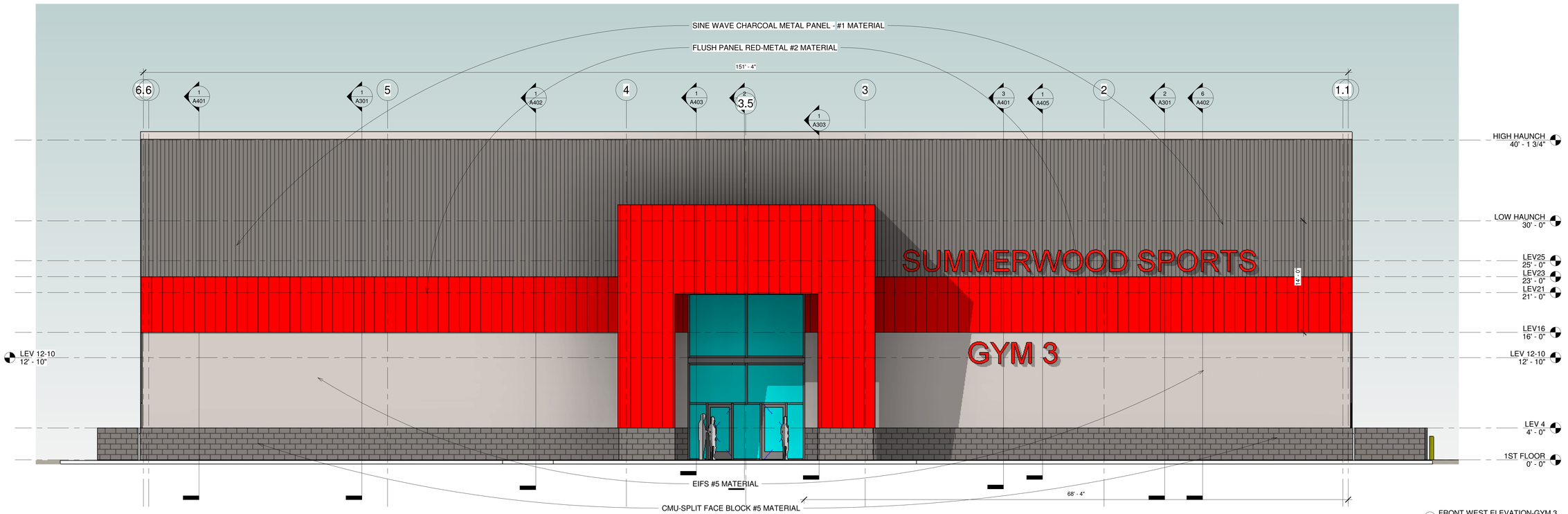
EXTERIOR MATERIALS LISTED FROM TOP OF BUILDING TO FLOOR-ALL METAL SIDING HAS CONCEALED FASTENERS

1. TOP-CHARCOAL COLOR -METAL PANELS WITH SINE WAVE AND W/CONCEALED FASTENERS AT TOP OF WALL
2. RED COLOR WALL STRIPE -FLUSH METAL PANELS W/CONCEALED FASTENERS AT 16' TO 23' ABOVE FLR.
3. RED COLOR AT COVERED ENTRY FEATURES-FLUSH METAL PANELS W/CONCEALED FASTENERS
4. BLUE COLOR=INSULATED GLASS AND STOREFRONT TYPE DOORS
5. LIGHT GRAY COLOR - EIFS TYPE STUCCO-FROM 4'-0" TO 16' ABOVE FLR.
6. BASE-CHARCOAL COLOR -SPLIT FACE BLOCK AT BASE OF WALL TO 4'-0" ABOVE FLR.
7. LIGHT GRAY COLOR-PAINTED METAL EXIT DOORS

REAR ELEVATION -% OF AREA MATERIALS LISTED
RECESSED MATERIALS ARE COUNTED AS SF- SEE OTHER SHEET FOR REAR ELEVATION

1. TOP-CHARCOAL COLOR -METAL PANELS WITH SINE WAVE= 2,013 SF
2. DARK GRAY COLOR - EIFS TYPE STUCCO= 2,098 SF
3. BASE-CHARCOAL COLOR -SPLIT FACE BLOCK= 456 SF

TOTAL SF REAR ELEVATION=4,567 SF
TOP-CHARCOAL SINE WAVE METAL =44 % OF WALL AREA



2 FRONT WEST ELEVATION-GYM 3
3/16" = 1'-0"

ARCHITECT OF RECORD
ANDREW F. HICKS

GYM #3
FOR SUMMERWOOD PARTNERS
VERNIA OFFICE PARK, BRYANT PARKWAY
BRYANT, ARKANSAS

andrew hicks | architect AHA
600 N Mission Blvd
Fayetteville, AR 72201
m- 501-690-0789
o- 479-332-5050
ww.andrewhicksarchitect.com

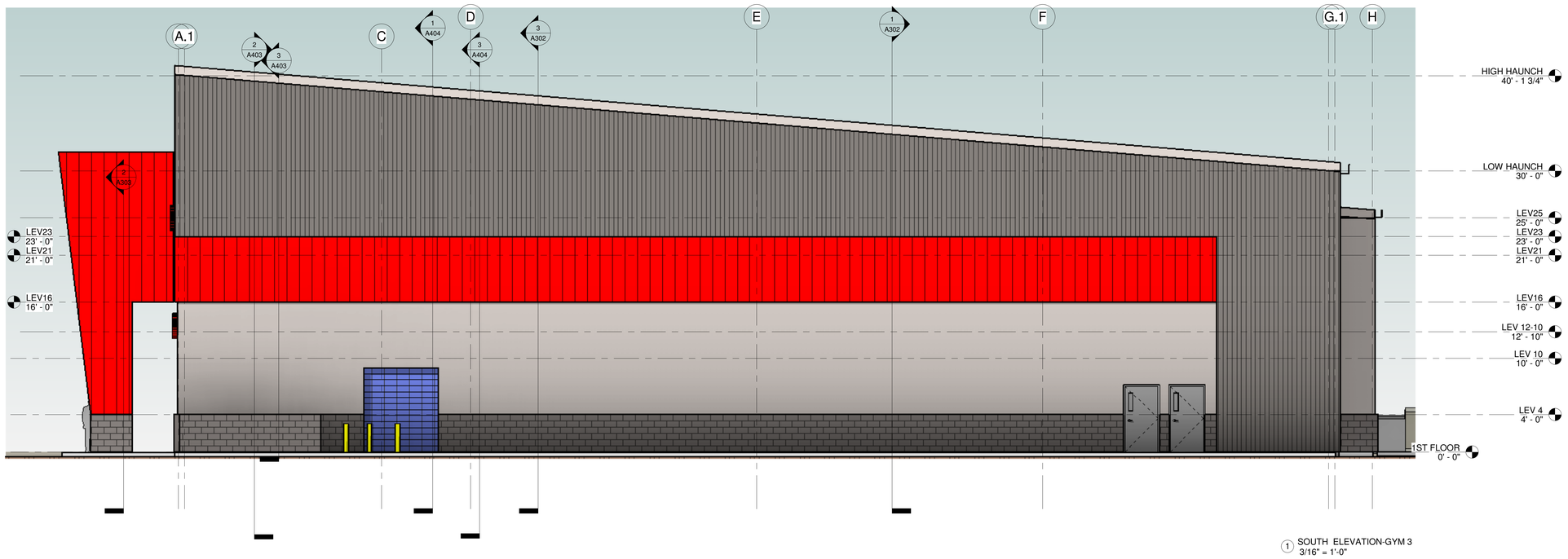
ISSUE DATE: 1/8/2024

REVISIONS

NO.	DATE
NO.	
NO.	
NO.	
NO.	
NO.	
NO.	

ELEVATIONS-GYM 3

A200



1 SOUTH ELEVATION-GYM 3
3/16" = 1'-0"

EXTERIOR MATERIALS LISTED FROM TOP OF BUILDING TO FLOOR-ALL METAL SIDING HAS CONCEALED FASTENERS

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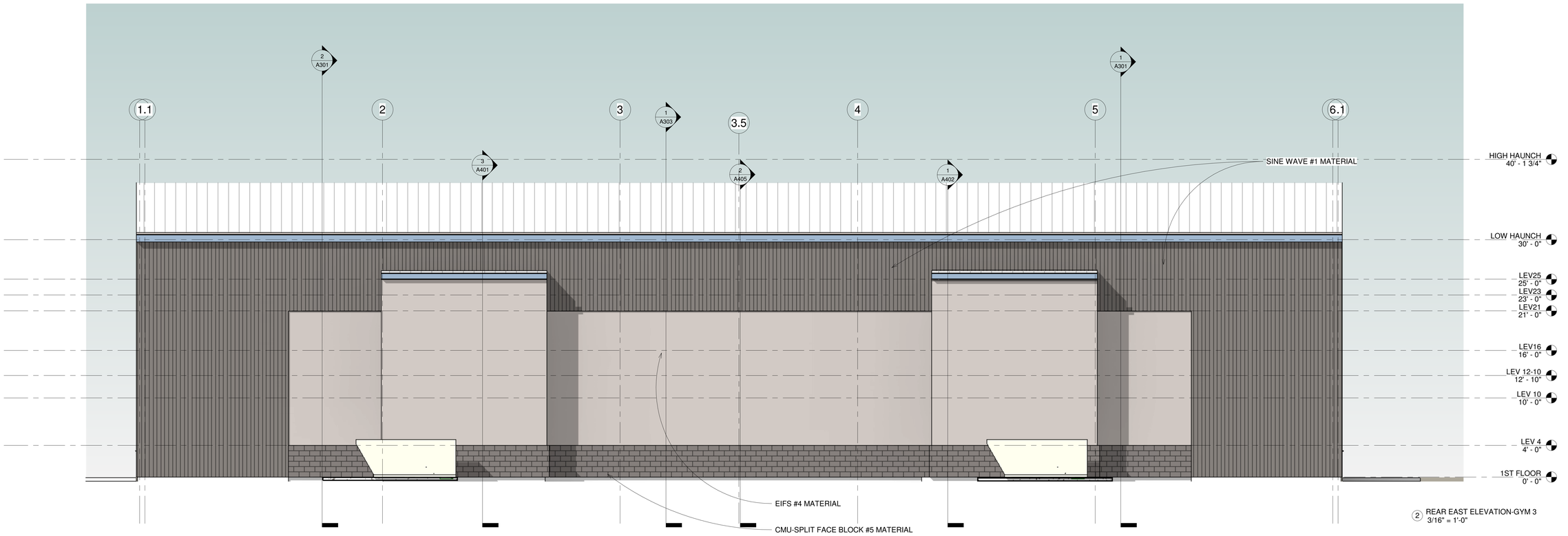
4. BLUE COLOR=INSULATED GLASS AND STOREFRONT TYPE DOORS
5. LIGHT GRAY COLOR - EIFS TYPE STUCCO-FROM 4'-0" TO 16' ABOVE FLR.
6. BASE-CHARCOAL COLOR -SPLIT FACE BLOCK AT BASE OF WALL TO 4'-0" ABOVE FLR.
7. LIGHT GRAY COLOR-PAINTED METAL EXIT DOORS

REAR ELEVATION -% OF AREA MATERIALS LISTED
RECESSED MATERIALS ARE COUNTED AS SF

1. TOP-CHARCOAL COLOR -METAL PANELS WITH SINE WAVE= 2,013 SF
2. DARK GRAY COLOR - EIFS TYPE STUCCO= 2,098 SF
3. BASE-CHARCOAL COLOR -SPLIT FACE BLOCK= 456 SF

TOTAL SF REAR ELEVATION=4,567 SF
TOP-CHARCOAL SINE WAVE METAL =44 % OF WALL AREA



2 REAR EAST ELEVATION-GYM 3
3/16" = 1'-0"

ARCHITECT OF RECORD
ANDREW F. HICKS

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Fayetteville, AR 72201
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GYM #3
FOR SUMMERWOOD PARTNERS
VERNIA OFFICE PARK, BRYANT PARKWAY
BRYANT, ARKANSAS

ISSUE DATE: 1/8/2024

REVISIONS

NO.	DATE
NO.	
NO.	
NO.	
NO.	
NO.	

ELEVATIONS-GYM 3

A201

SUMMERWOOD SPORTS GYM #3

DRAINAGE REPORT

Date: **01-10-2024**

Located in: **Bryant, Arkansas**

Prepared for:
City of Bryant, Arkansas

Prepared by:

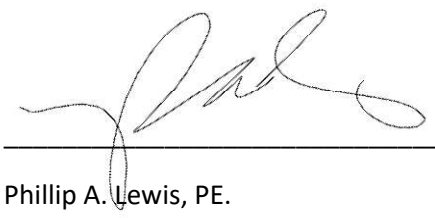
PHILLIP LEWIS ENGINEERING

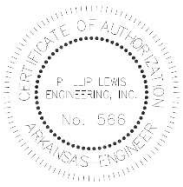
Structural + Civil Consultants

23620 Interstate 30 | Bryant, AR
PH: 501-350-9840

CERTIFICATION

I hereby state that this Final Drainage has been prepared by me or under my supervision and meets the standard of care and expertise which is usual and customary in this community of professional engineers. The analysis has been prepared utilizing procedures and practices by the City of Bryant and within the standard accepted practices.





DATE: 01-10-2024

Phillip A. Lewis, PE.

PROJECT LOCATION MAP

DESCRIPTION OF PROPERTY

The proposed project is for the consruction of the third gymnasium of the Summerwood Sports Complex located along Bryant Parkway and Hwy 5. The proposed development is a 19,000 sq. ft. building and parking lot.

The intent of this drainage analysis is to reevaluate the previous drainage design and ensure that the completetion of this development still meets the design intent and capacity of the previous constructed onsite detention facilities.

The existing ground coverage for the entire development drainage basin consisted of and partially still consists of natural vegetation (3%-8% slope), hydrologic soil group C/D (C = 0.50).

According to FEMA Flood Insurance Rate Map, Panel 05125C0240E, this property lies within Zone X, areas determined to be outside the 0.2% annual chance floodplain. A copy of the map can be found in the appendix.

DRAINAGE CRITERIA

In accordance with the requirements of the City of Bryant, the proposed developments drainage plan and this drainage report were developed with the criteria established in the Bryant Stormwater Management & Drainage Manual provided on cityofbryant.com.

All drainage calculations were performed using HydroCAD software to determine and analyze the changes in stormrunoff volume, flow rates, and design the outlet release structure. Hydraflow Express software was used to appropriately design and size all storm sewer inlets, pipes and channels.

Calculations were performed using the Rational Method, using NOAA rainfall data, and the pond volume and outlet structure was determined by the 100-year storm event while

the outlet structure is designed to match or reduce pre-development flow rates for all storm events: 2-yr, 10-yr, 25-yr, and 100-yr storms.

Detention Basin Design Specifications:

- *3:1 maximum side slopes*
- *Outlet structures designed to reduce flow rate to match or reduce the pre-development runoff rates for the 2-yr, 5-yr, 10-yr, 25-yr and 100-yr storms.*
- *The pond bottom and side is to be solid sod to prevent erosion*
- *The basins are located and designed to allow access for continued maintenance after construction is completed*

DESCRIPTION OF PREVIOUS DETENTION FACILITIES

Phillip Lewis Engineering has evaluated the previously supplied drainage analysis and made site investigations to fully understand the current drainage situation.

The previous drainage analysis studied the pre vs. post scenarios as a single 6 acre node. Post development was studied as one node routing through the detention pond that is now constructed on the site. Due to the nature of how phase one construction evolved, some areas were not routed to this detention pond. Some of these areas ultimately discharge to other detention facilities located elsewhere on the site, and some are freely discharged to the adjacent eastern parcel.

This drainage study is intended to account for these descrepencies and ensure that the detention basin is throttling appropriately to offset the free discharges from the previous phase and this new proposed phase.

PROPOSED DRAINAGE SYSTEM

This develompent is designed to capture the majority of runoff within the parking lot curb and gutter, collecting stormwater with “Nyloplast” area inlets, and downspout collector pipes. The existing storm sewer network will remain, with the addition of two area grates along the frontage of gym #3. The existing detention basin that was constructed for the first two gymnasiums will remain as planned previously with the development of gym 1 and 2. This drainage analysis will provide supporting evidence to validate the previously constructed detention basin’s functionality.

While the pond footprint will remain as constructed, current design plans detail for this pond rim to be reestablished at the intended 400.00’ elevation, and for adequate trickle channels to be constructed within the pond bottom (per city of Bryant Requirements).

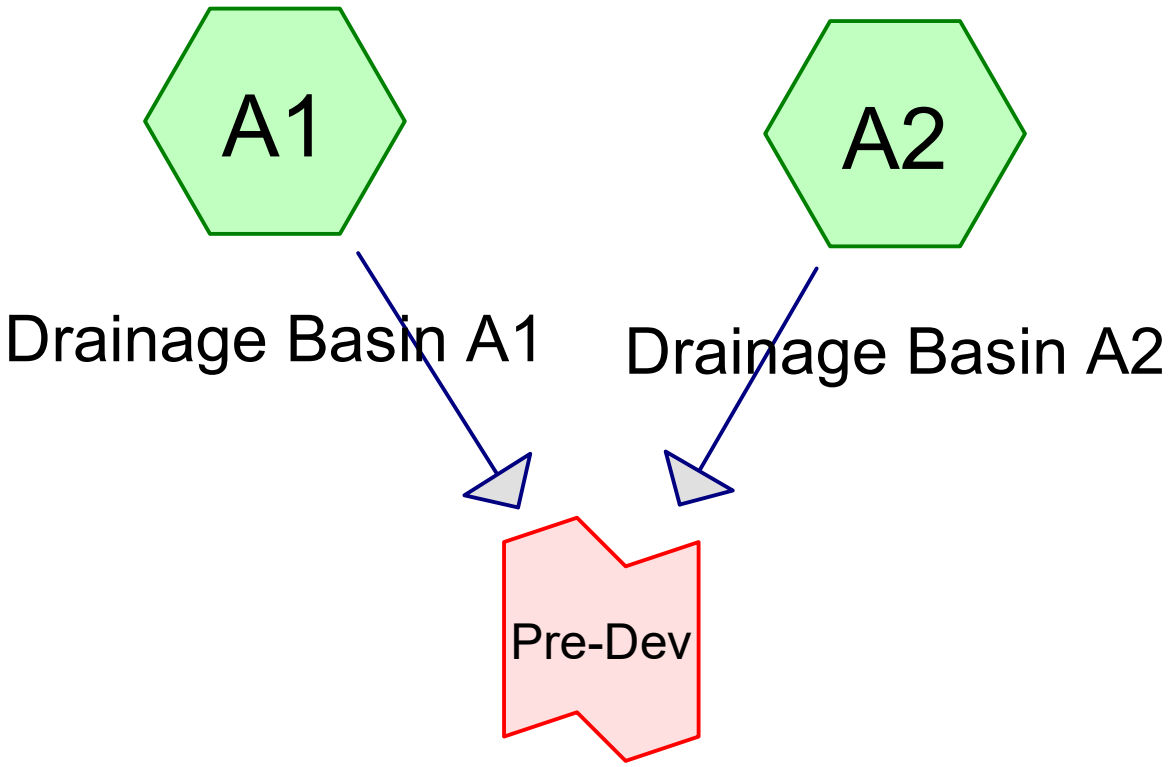
The detention pond was designed to detain stromwater volumes based off the 100-yr storm events with a concrete overflow spillway to release water if a rainfall event were to exceed the 100-yr storm event. The outlet control structures are detailed within this report.

Overall Pre-development and Post-development runoff/discharge rates are compared below:

Storm Event	Pre-development Discharge (cfs)	Post-development Discharge (cfs)
2-yr	10.33	10.14
5-yr	12.27	12.27
10-yr	13.82	13.74
25-yr	15.94	15.69
100-yr	18.93	18.25

Overall pre development and post development discharge rates are displayed in the following hydrographs. A final discharge link has been added to each to show one comparable discharge number. This final discharge will verify that the design detention basin should offset any bypassing watershed within the development.

PRE DEVELOPMENT HYDROGRAPHS



Pre Dev Runoff

Subcat Reach Pond Link

Routing Diagram for Summerwood Gym 3
Prepared by Phillip Lewis Engineering, Printed 1/11/2024

Summary for Subcatchment A1: Drainage Basin A1

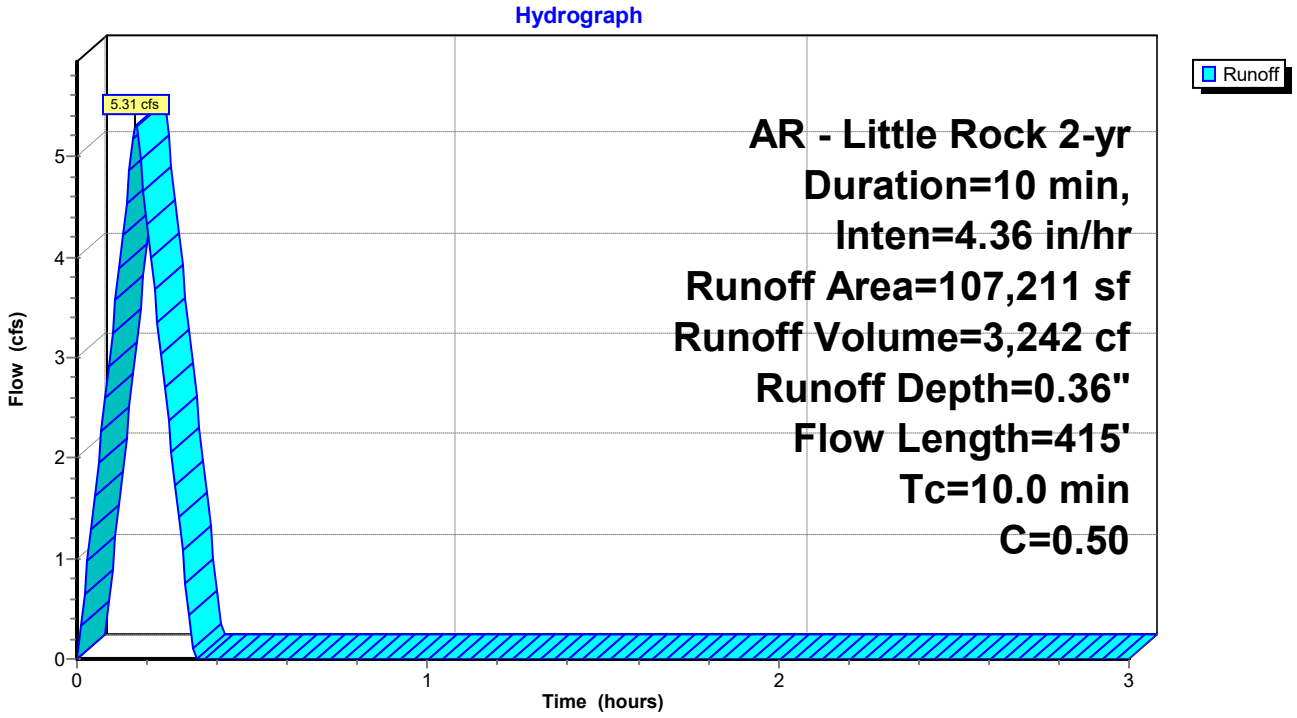
Runoff = 5.31 cfs @ 0.17 hrs, Volume= 3,242 cf, Depth= 0.36"
Routed to Link Pre-Dev : Pre Dev Runoff

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 2-yr Duration=10 min, Inten=4.36 in/hr

Area (sf)	C	Description
107,211	0.50	Existing Natural Vegeation
107,211		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	415		0.69		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment A1: Drainage Basin A1



Summary for Subcatchment A2: Drainage Basin A2

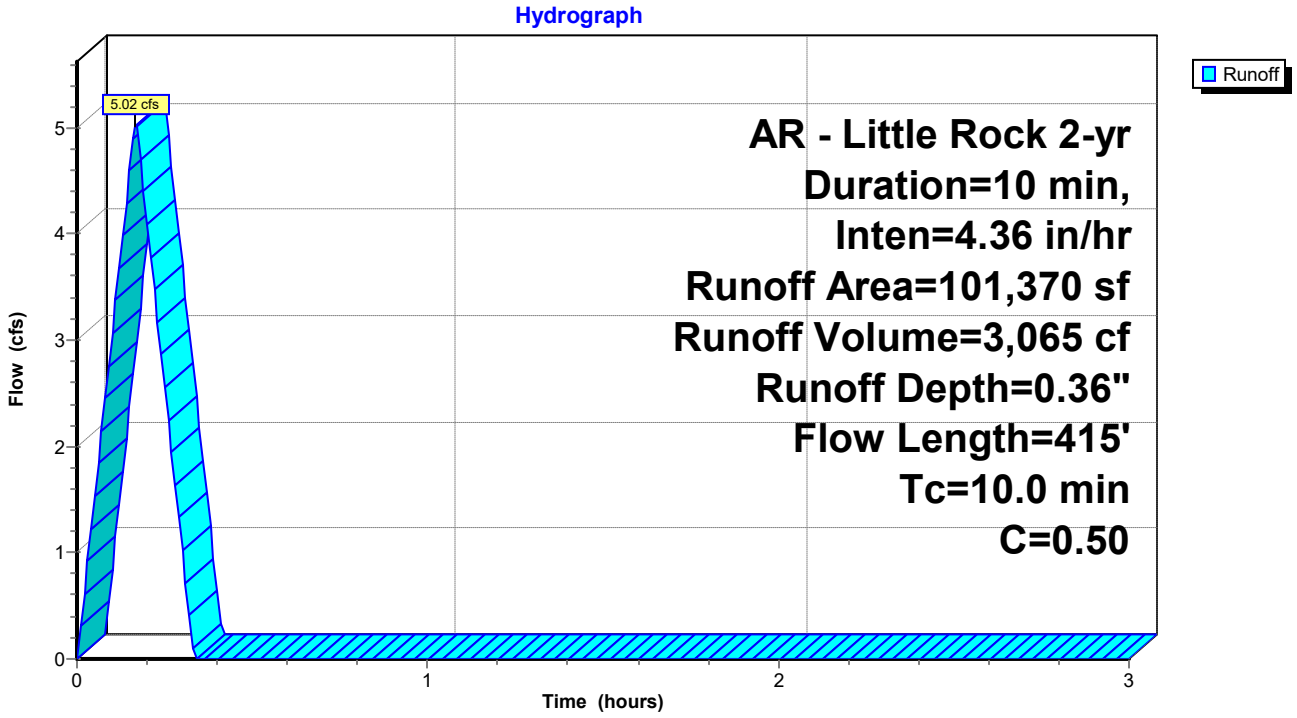
Runoff = 5.02 cfs @ 0.17 hrs, Volume= 3,065 cf, Depth= 0.36"
Routed to Link Pre-Dev : Pre Dev Runoff

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 2-yr Duration=10 min, Inten=4.36 in/hr

Area (sf)	C	Description
101,370	0.50	Existing Natural Vegetation
101,370		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	415		0.69		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment A2: Drainage Basin A2

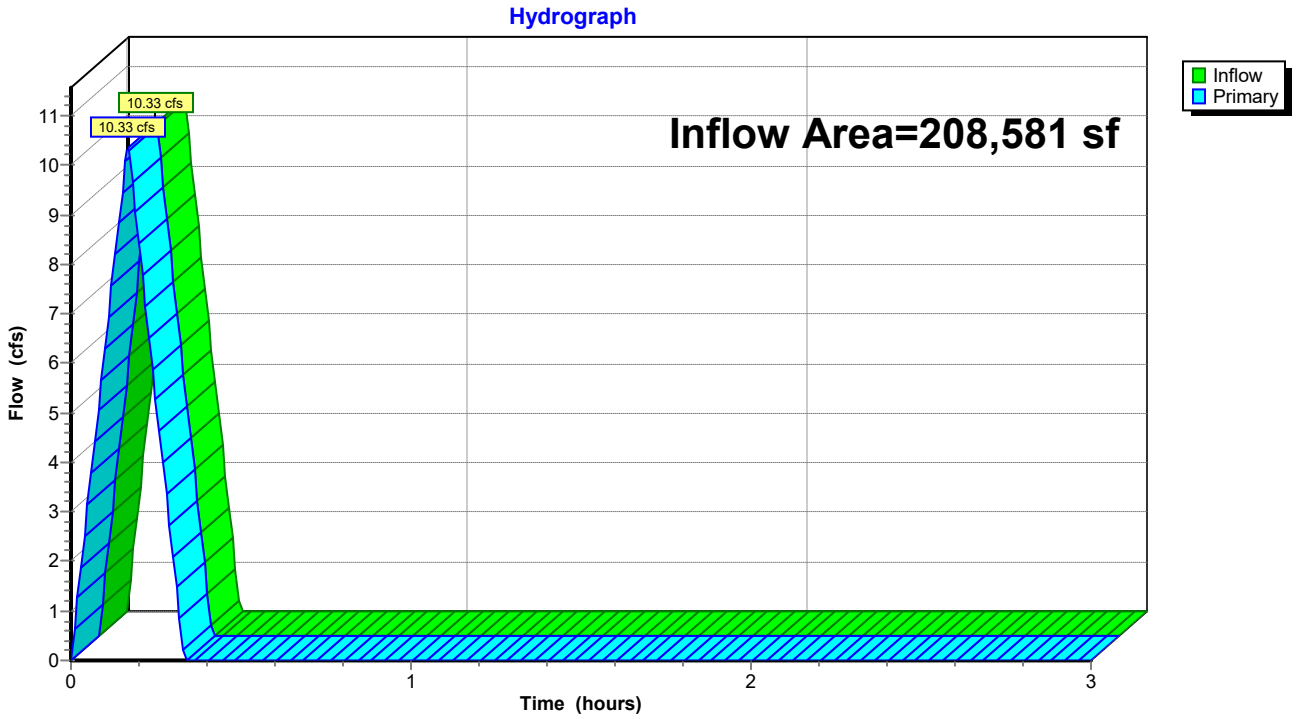


Summary for Link Pre-Dev: Pre Dev Runoff

Inflow Area = 208,581 sf, 0.00% Impervious, Inflow Depth = 0.36" for 2-yr event
Inflow = 10.33 cfs @ 0.17 hrs, Volume= 6,307 cf
Primary = 10.33 cfs @ 0.17 hrs, Volume= 6,307 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Link Pre-Dev: Pre Dev Runoff



Summary for Subcatchment A1: Drainage Basin A1

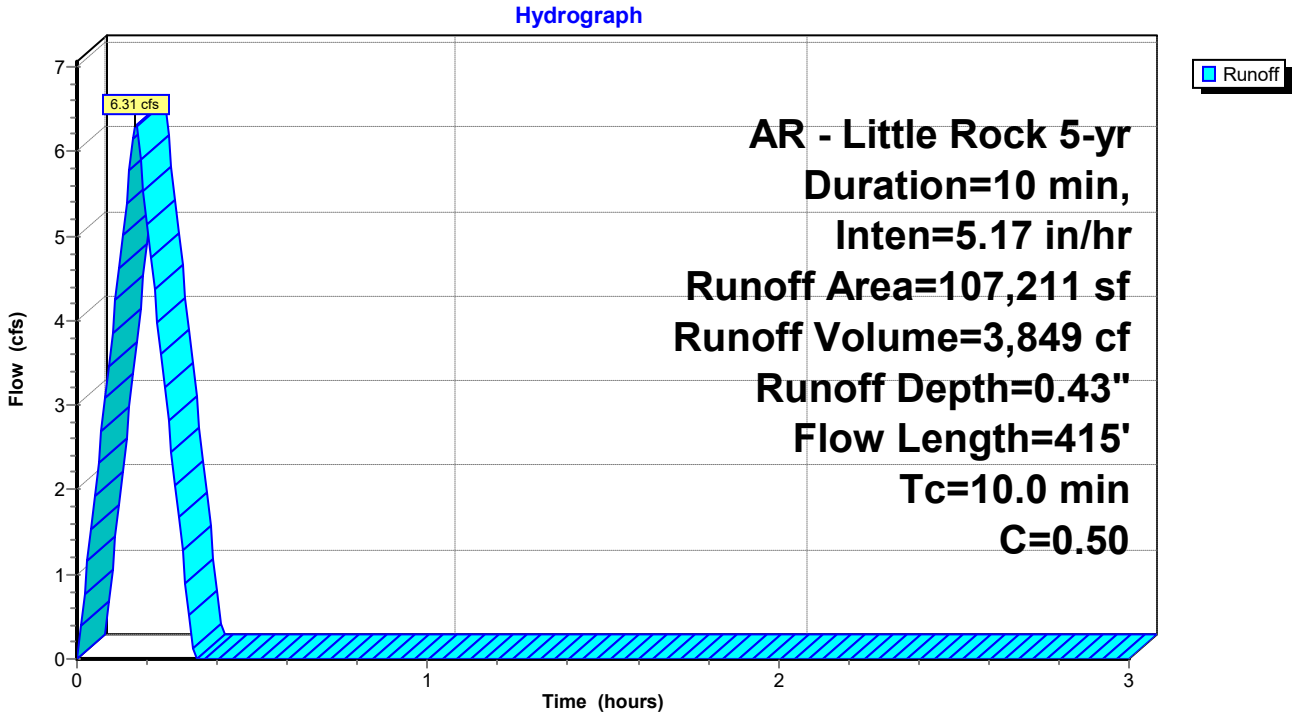
Runoff = 6.31 cfs @ 0.17 hrs, Volume= 3,849 cf, Depth= 0.43"
Routed to Link Pre-Dev : Pre Dev Runoff

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 5-yr Duration=10 min, Inten=5.17 in/hr

Area (sf)	C	Description
107,211	0.50	Existing Natural Vegeation
107,211		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	415		0.69		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment A1: Drainage Basin A1



Summary for Subcatchment A2: Drainage Basin A2

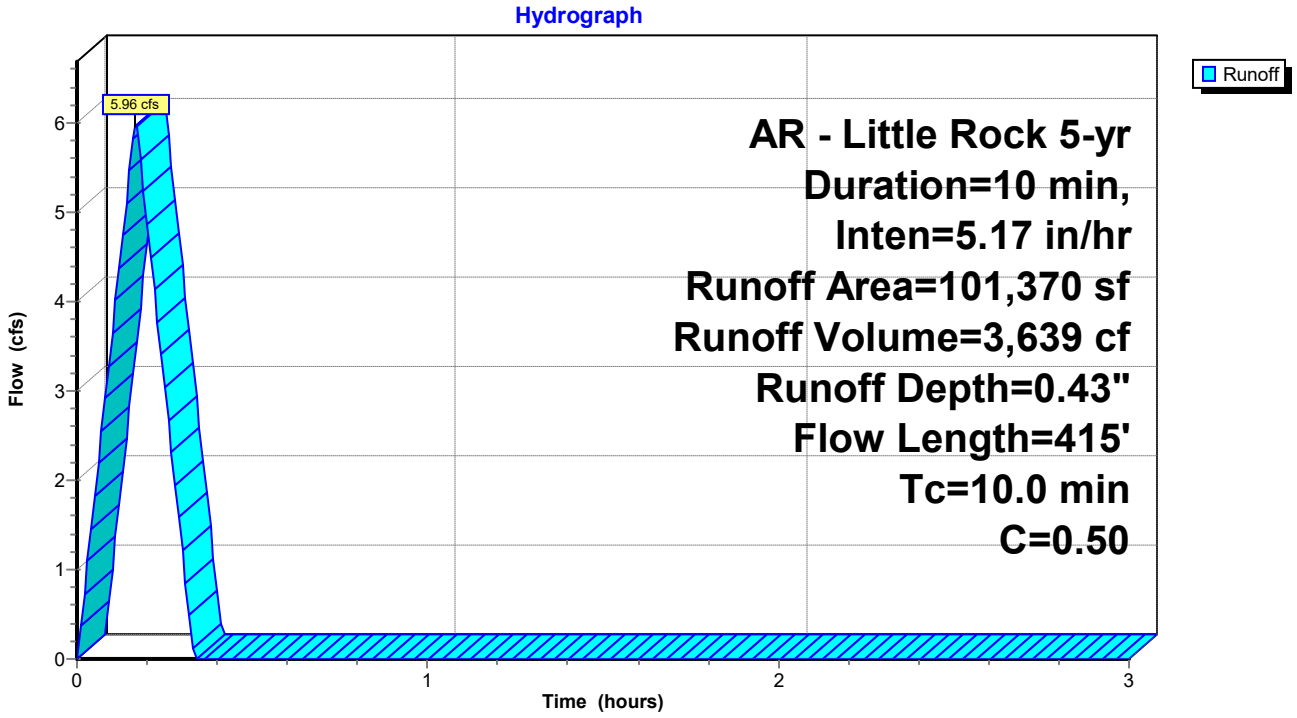
Runoff = 5.96 cfs @ 0.17 hrs, Volume= 3,639 cf, Depth= 0.43"
Routed to Link Pre-Dev : Pre Dev Runoff

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 5-yr Duration=10 min, Inten=5.17 in/hr

Area (sf)	C	Description
101,370	0.50	Existing Natural Vegetation
101,370		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	415		0.69		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment A2: Drainage Basin A2

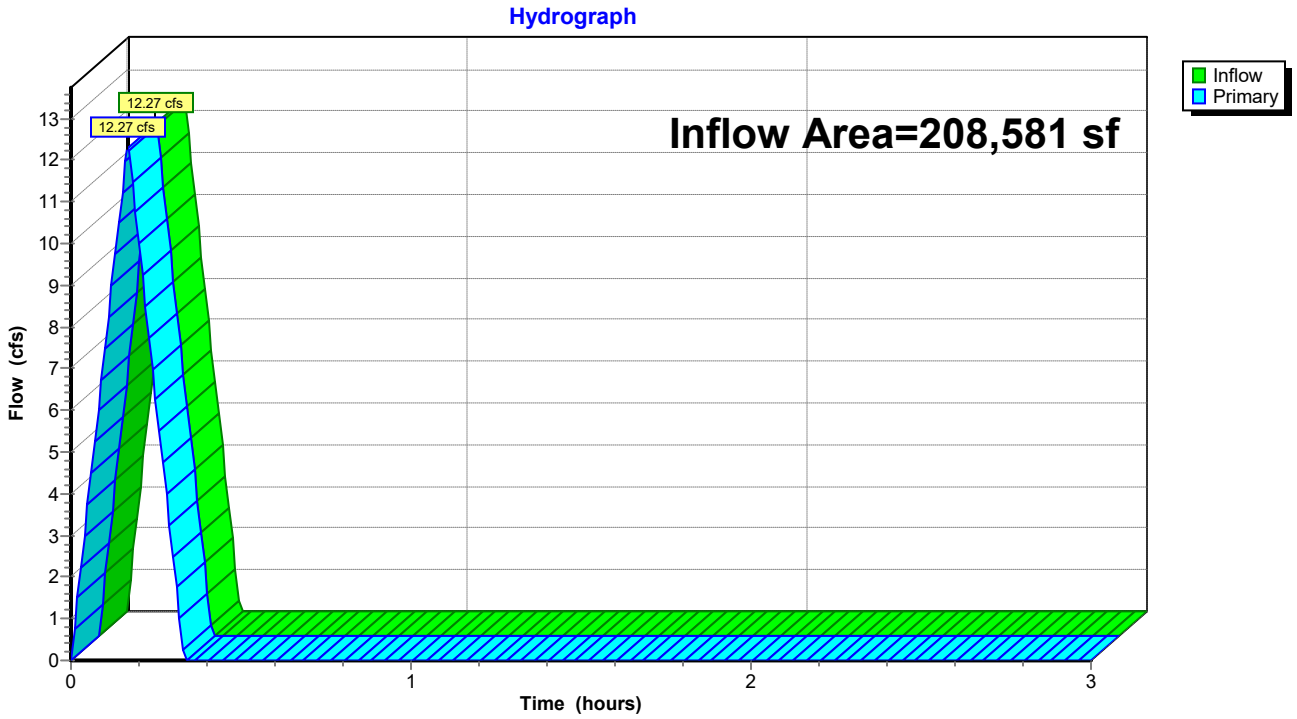


Summary for Link Pre-Dev: Pre Dev Runoff

Inflow Area = 208,581 sf, 0.00% Impervious, Inflow Depth = 0.43" for 5-yr event
Inflow = 12.27 cfs @ 0.17 hrs, Volume= 7,489 cf
Primary = 12.27 cfs @ 0.17 hrs, Volume= 7,489 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Link Pre-Dev: Pre Dev Runoff



Summary for Subcatchment A1: Drainage Basin A1

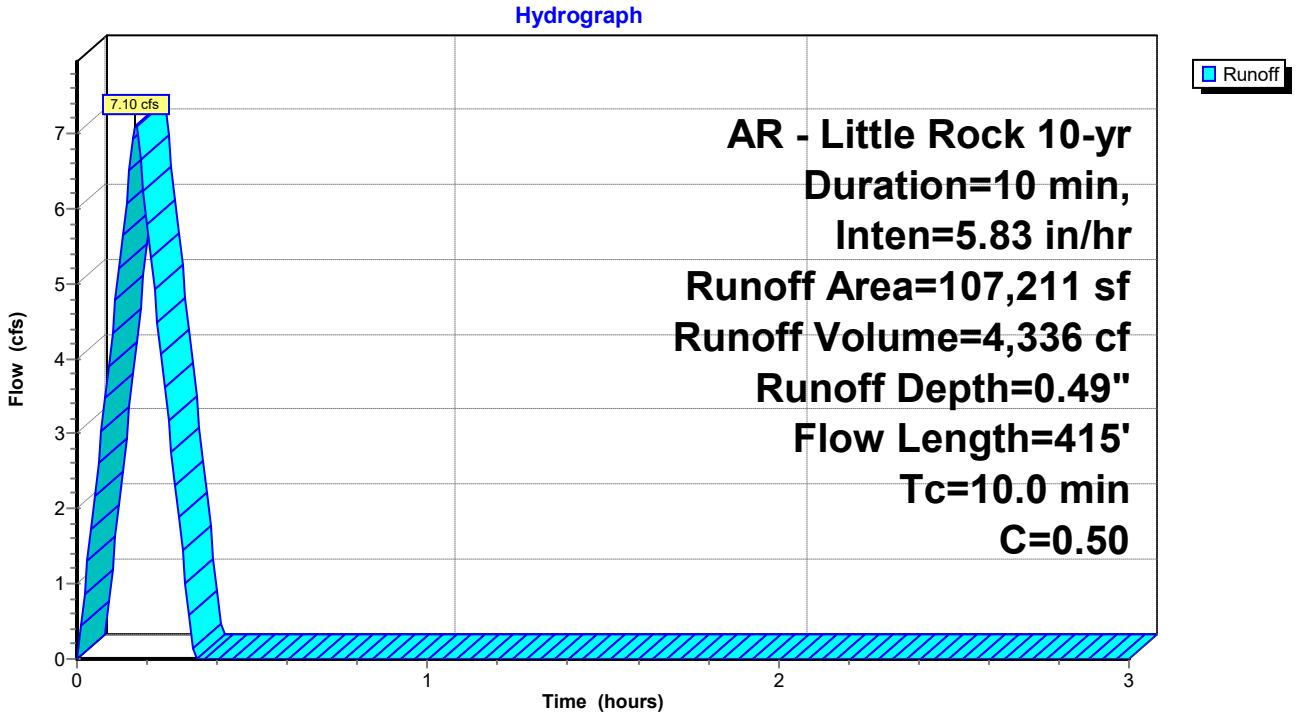
Runoff = 7.10 cfs @ 0.17 hrs, Volume= 4,336 cf, Depth= 0.49"
Routed to Link Pre-Dev : Pre Dev Runoff

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 10-yr Duration=10 min, Inten=5.83 in/hr

Area (sf)	C	Description
107,211	0.50	Existing Natural Vegeation
107,211		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	415		0.69		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment A1: Drainage Basin A1



Summary for Subcatchment A2: Drainage Basin A2

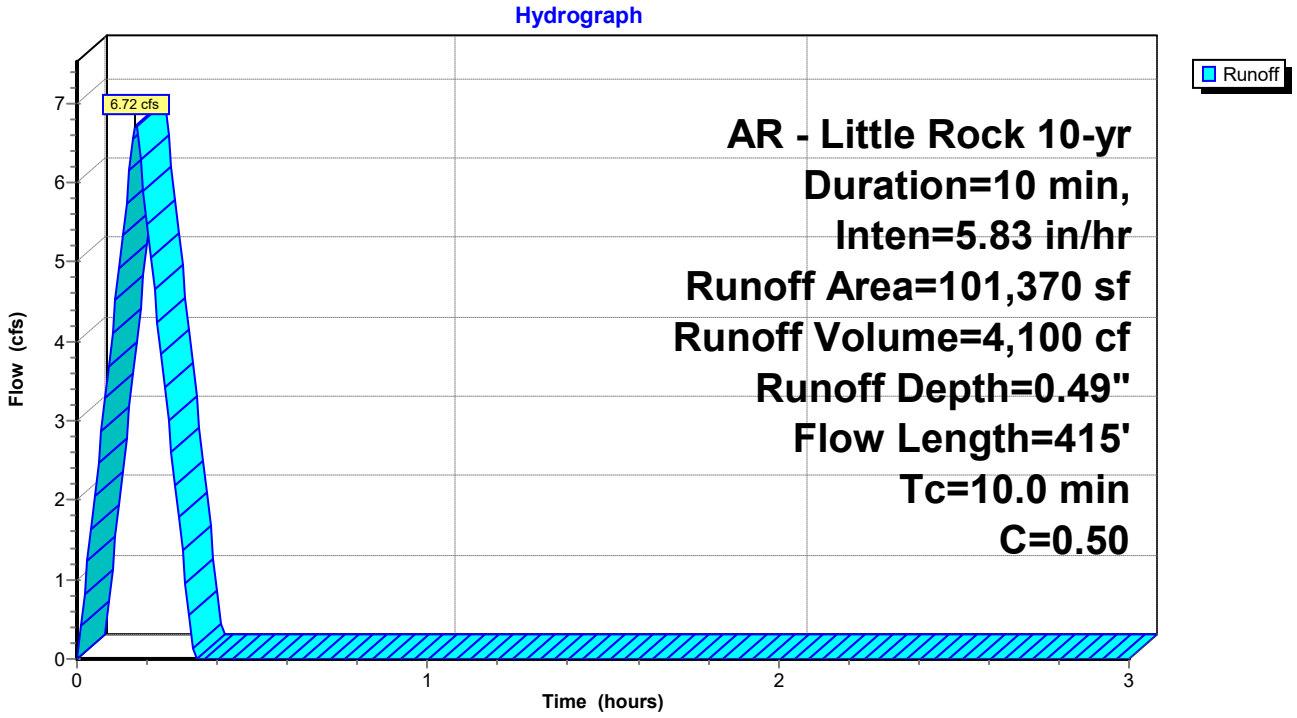
Runoff = 6.72 cfs @ 0.17 hrs, Volume= 4,100 cf, Depth= 0.49"
Routed to Link Pre-Dev : Pre Dev Runoff

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 10-yr Duration=10 min, Inten=5.83 in/hr

Area (sf)	C	Description
101,370	0.50	Existing Natural Vegetation
101,370		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	415		0.69		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment A2: Drainage Basin A2

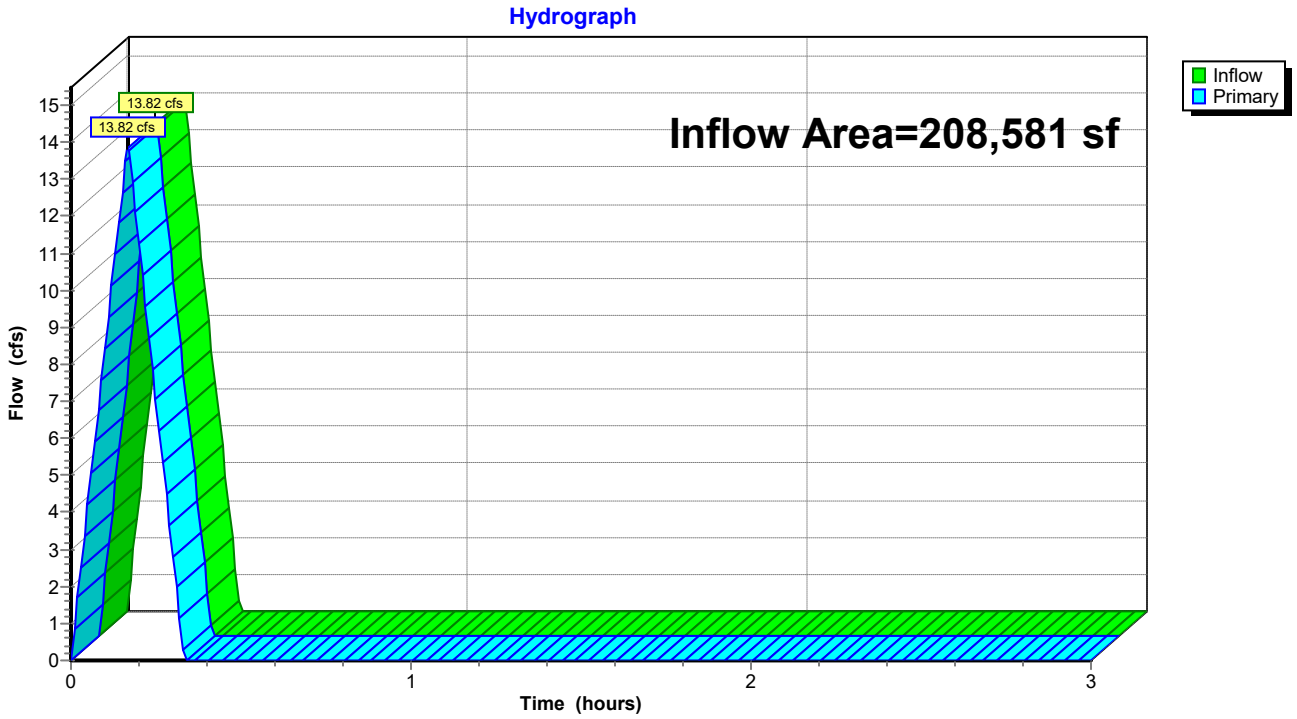


Summary for Link Pre-Dev: Pre Dev Runoff

Inflow Area = 208,581 sf, 0.00% Impervious, Inflow Depth = 0.49" for 10-yr event
Inflow = 13.82 cfs @ 0.17 hrs, Volume= 8,435 cf
Primary = 13.82 cfs @ 0.17 hrs, Volume= 8,435 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Link Pre-Dev: Pre Dev Runoff



Summary for Subcatchment A1: Drainage Basin A1

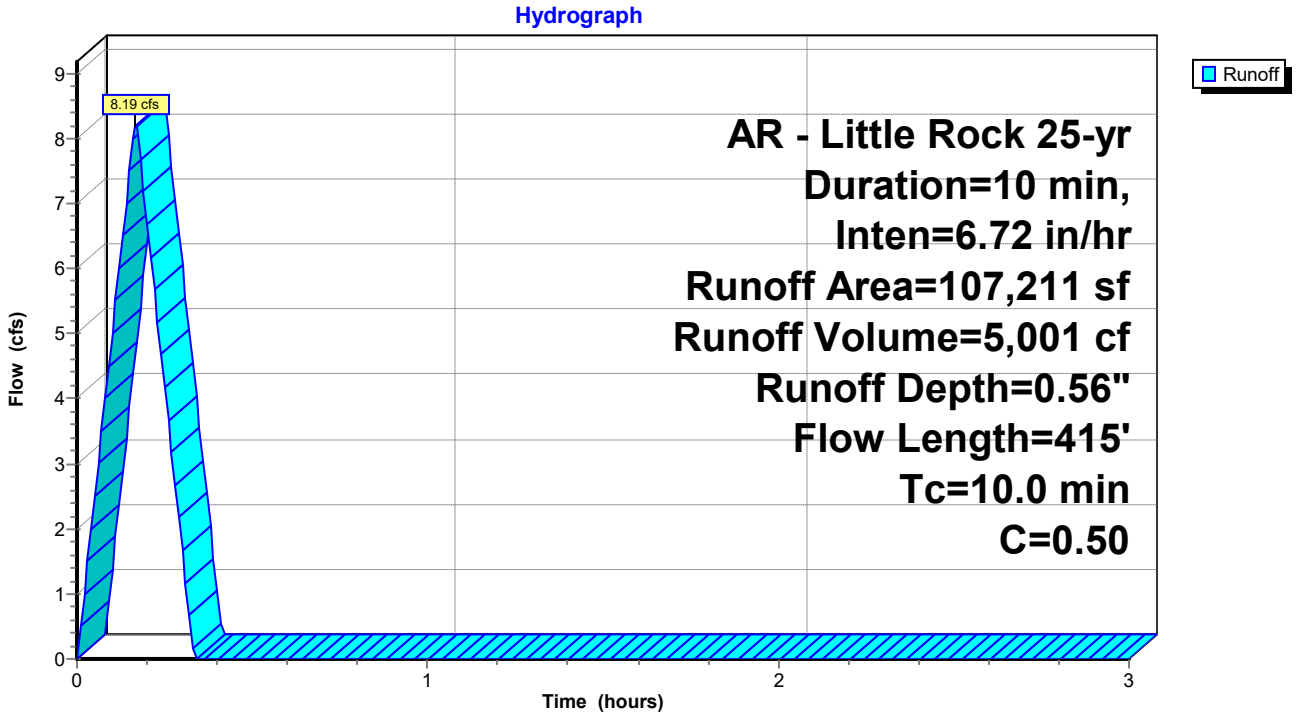
Runoff = 8.19 cfs @ 0.17 hrs, Volume= 5,001 cf, Depth= 0.56"
Routed to Link Pre-Dev : Pre Dev Runoff

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 25-yr Duration=10 min, Inten=6.72 in/hr

Area (sf)	C	Description
107,211	0.50	Existing Natural Vegeation
107,211		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	415		0.69		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment A1: Drainage Basin A1



Summary for Subcatchment A2: Drainage Basin A2

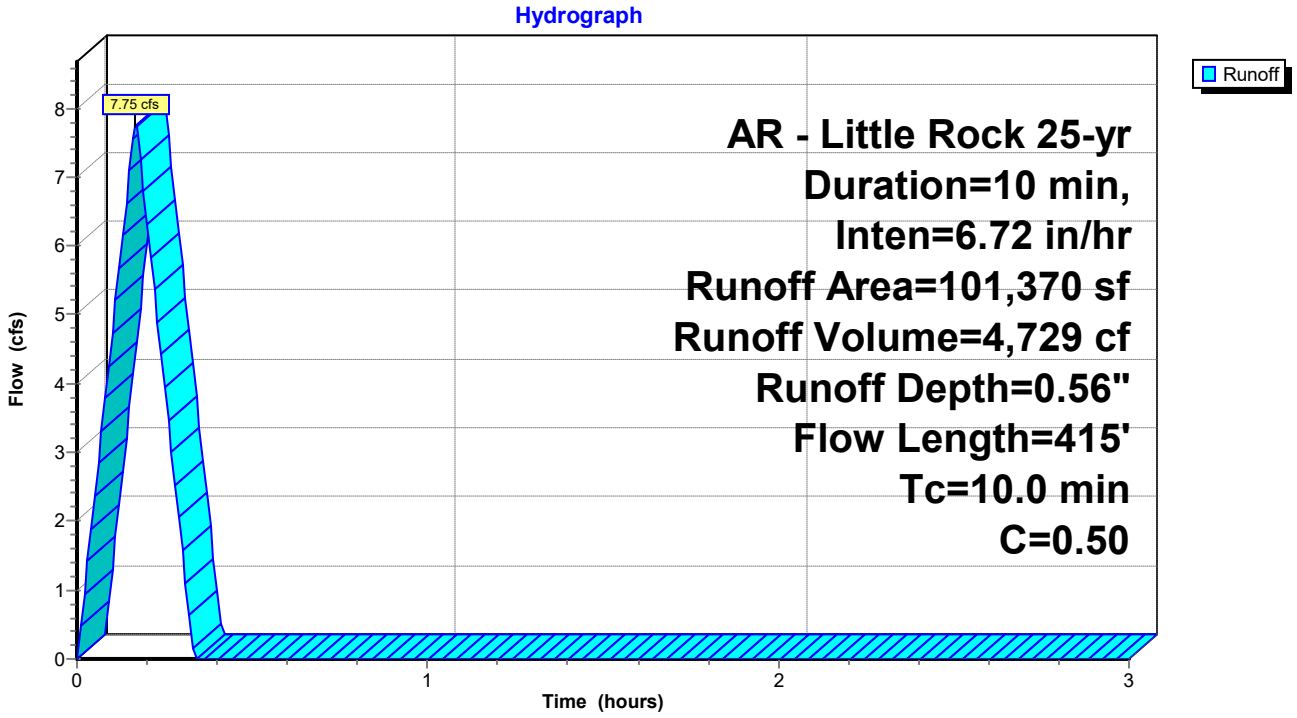
Runoff = 7.75 cfs @ 0.17 hrs, Volume= 4,729 cf, Depth= 0.56"
Routed to Link Pre-Dev : Pre Dev Runoff

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 25-yr Duration=10 min, Inten=6.72 in/hr

Area (sf)	C	Description
101,370	0.50	Existing Natural Vegetation
101,370		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	415		0.69		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment A2: Drainage Basin A2

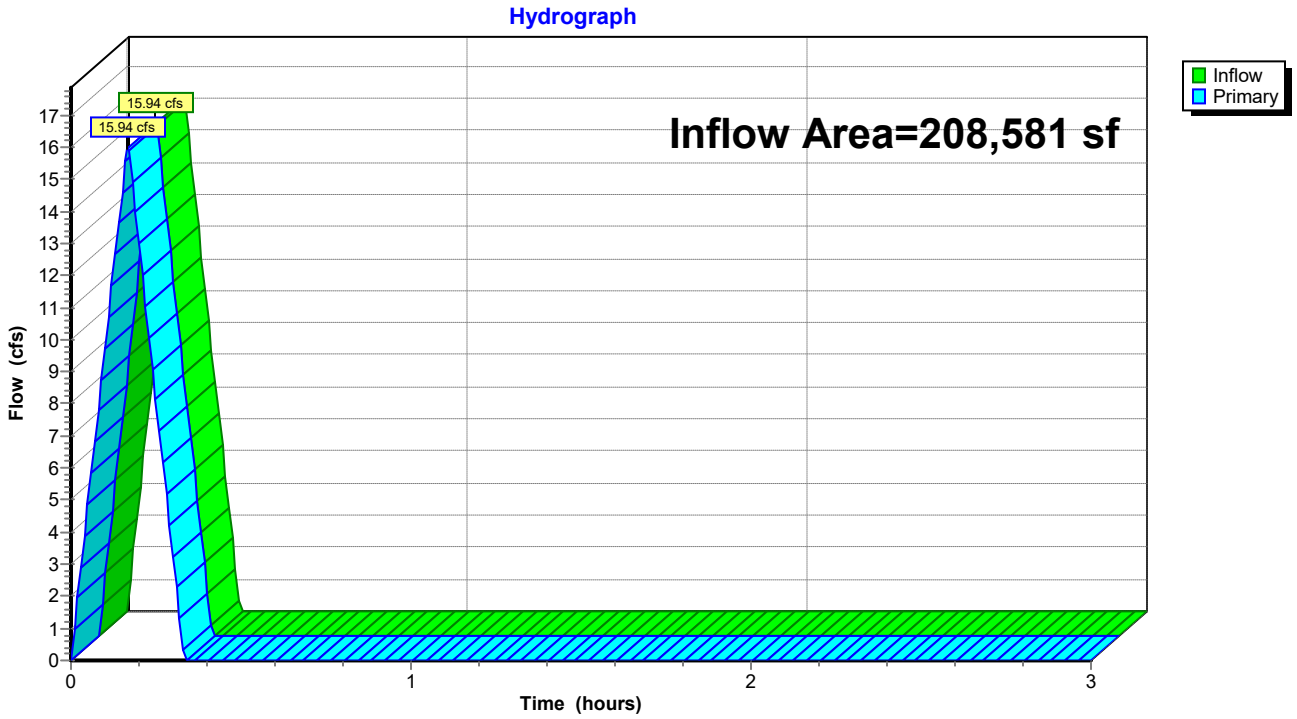


Summary for Link Pre-Dev: Pre Dev Runoff

Inflow Area = 208,581 sf, 0.00% Impervious, Inflow Depth = 0.56" for 25-yr event
Inflow = 15.94 cfs @ 0.17 hrs, Volume= 9,730 cf
Primary = 15.94 cfs @ 0.17 hrs, Volume= 9,730 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Link Pre-Dev: Pre Dev Runoff



Summary for Subcatchment A1: Drainage Basin A1

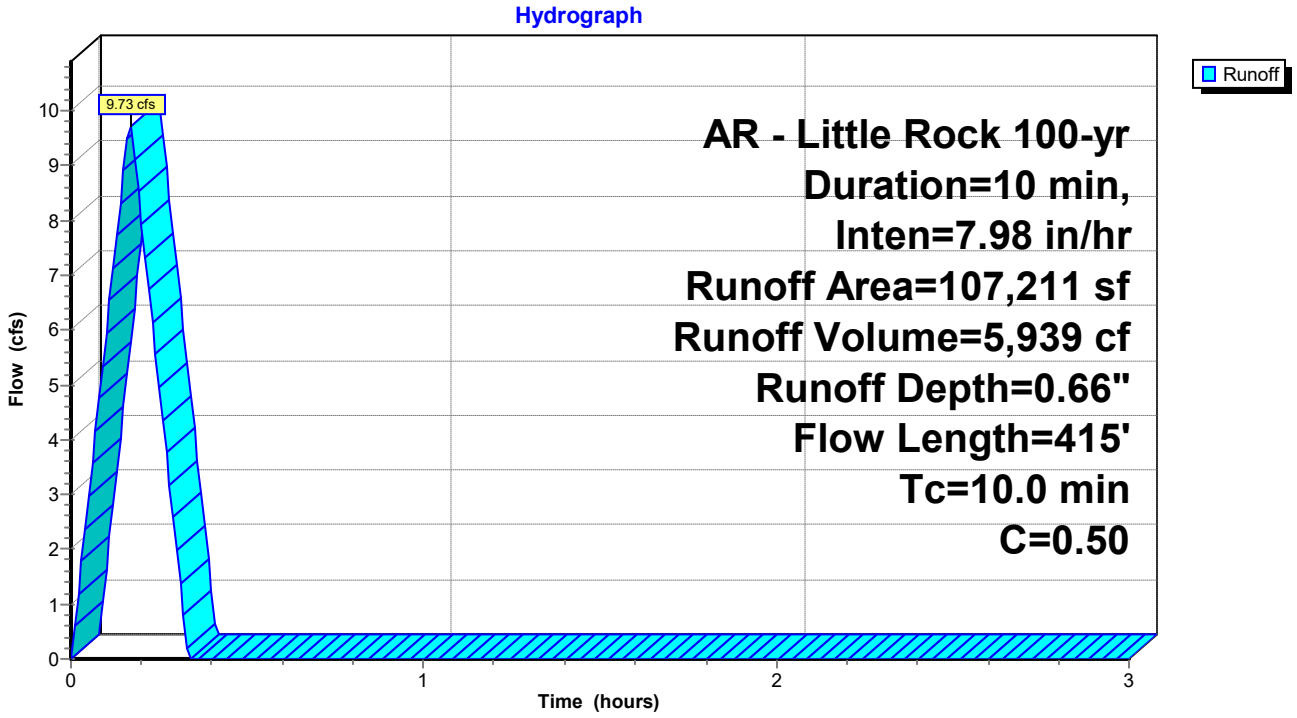
Runoff = 9.73 cfs @ 0.17 hrs, Volume= 5,939 cf, Depth= 0.66"
Routed to Link Pre-Dev : Pre Dev Runoff

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 100-yr Duration=10 min, Inten=7.98 in/hr

Area (sf)	C	Description
107,211	0.50	Existing Natural Vegeation
107,211		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	415		0.69		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment A1: Drainage Basin A1



Summary for Subcatchment A2: Drainage Basin A2

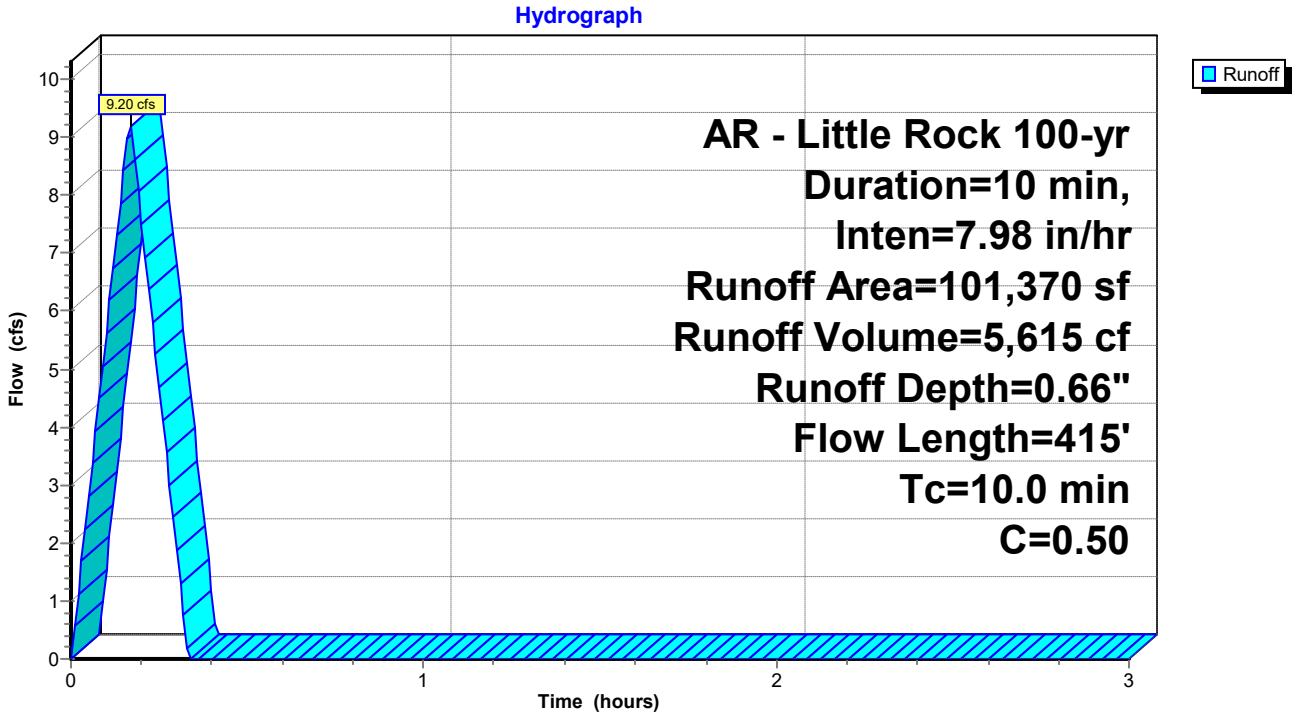
Runoff = 9.20 cfs @ 0.17 hrs, Volume= 5,615 cf, Depth= 0.66"
Routed to Link Pre-Dev : Pre Dev Runoff

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 100-yr Duration=10 min, Inten=7.98 in/hr

Area (sf)	C	Description
101,370	0.50	Existing Natural Vegetation
101,370		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	415		0.69		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment A2: Drainage Basin A2

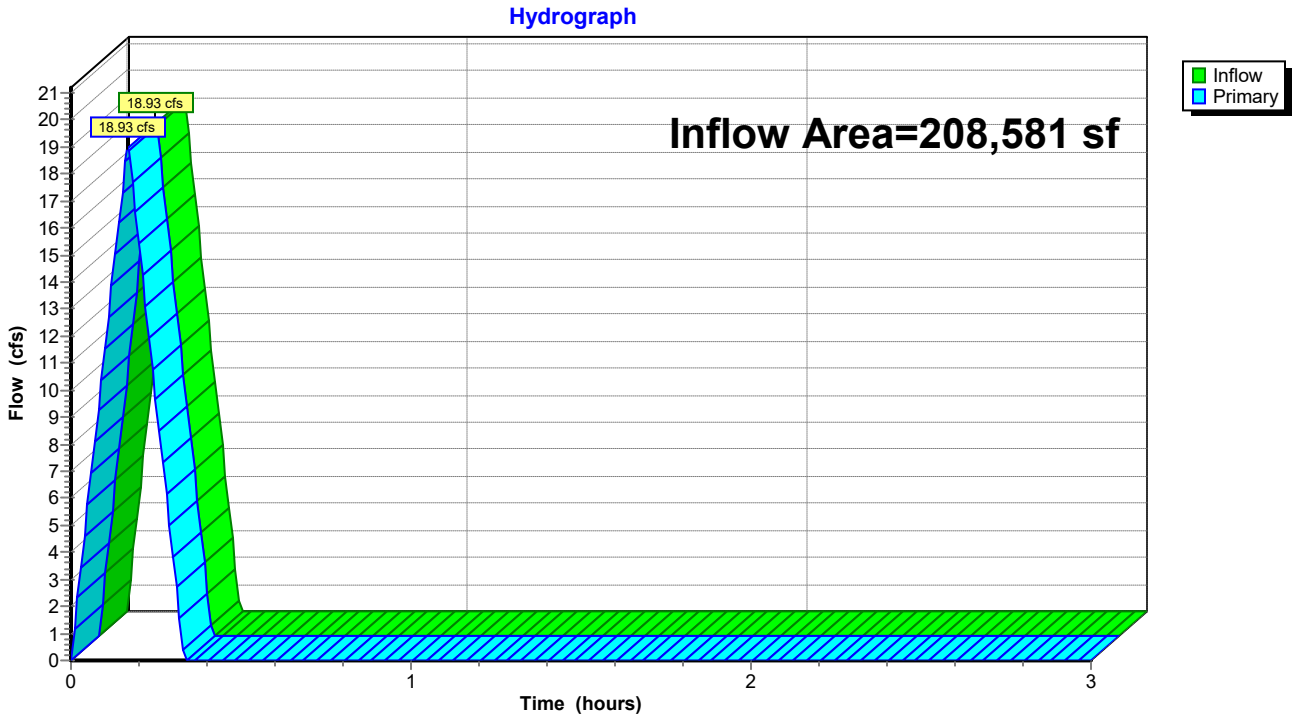


Summary for Link Pre-Dev: Pre Dev Runoff

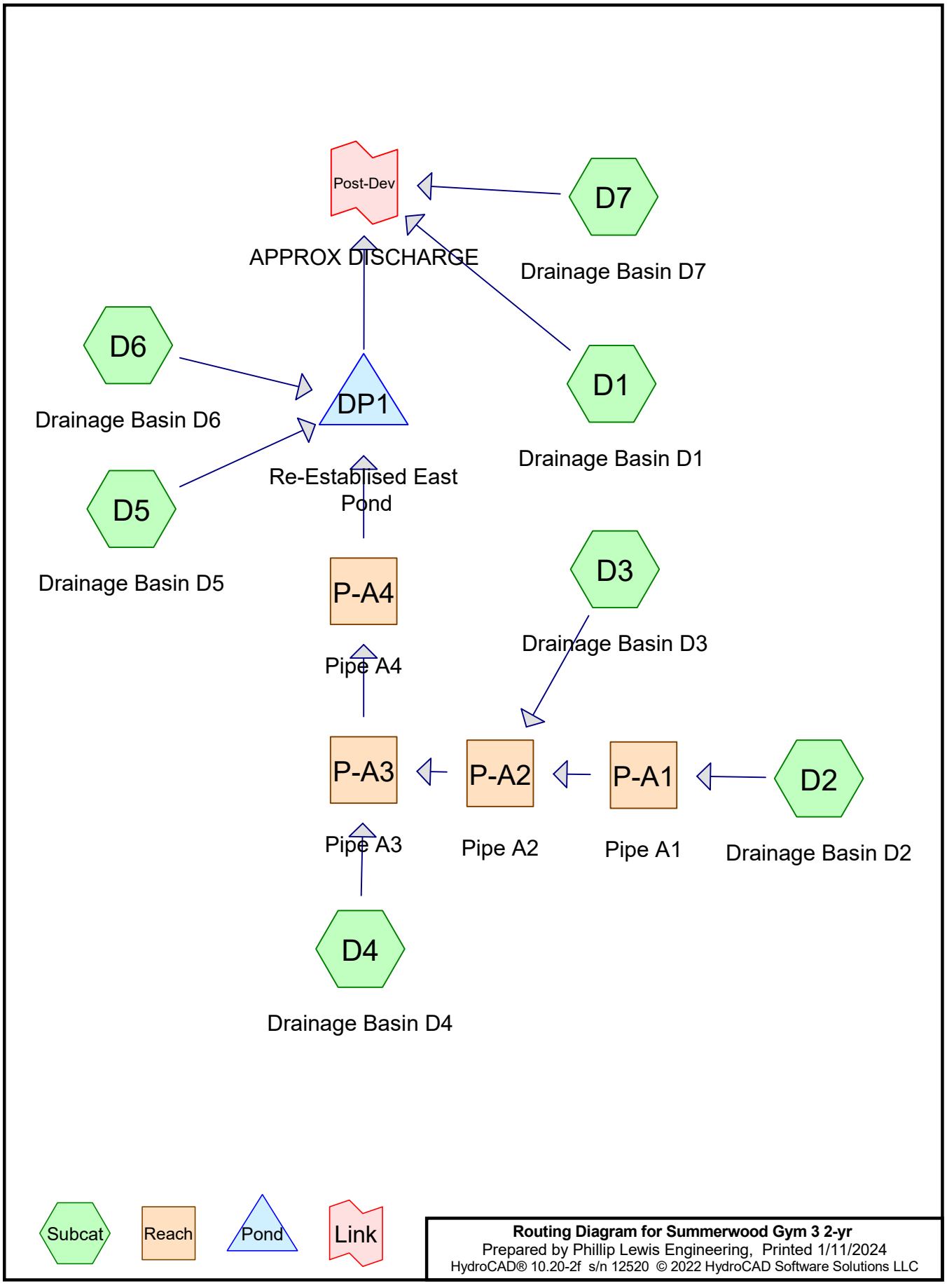
Inflow Area = 208,581 sf, 0.00% Impervious, Inflow Depth = 0.66" for 100-yr event
Inflow = 18.93 cfs @ 0.17 hrs, Volume= 11,554 cf
Primary = 18.93 cfs @ 0.17 hrs, Volume= 11,554 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Link Pre-Dev: Pre Dev Runoff



POST DEVELOPMENT HYDROGRAPHS



Routing Diagram for Summerwood Gym 3 2-yr
Prepared by Phillip Lewis Engineering, Printed 1/11/2024

Summary for Subcatchment D1: Drainage Basin D1

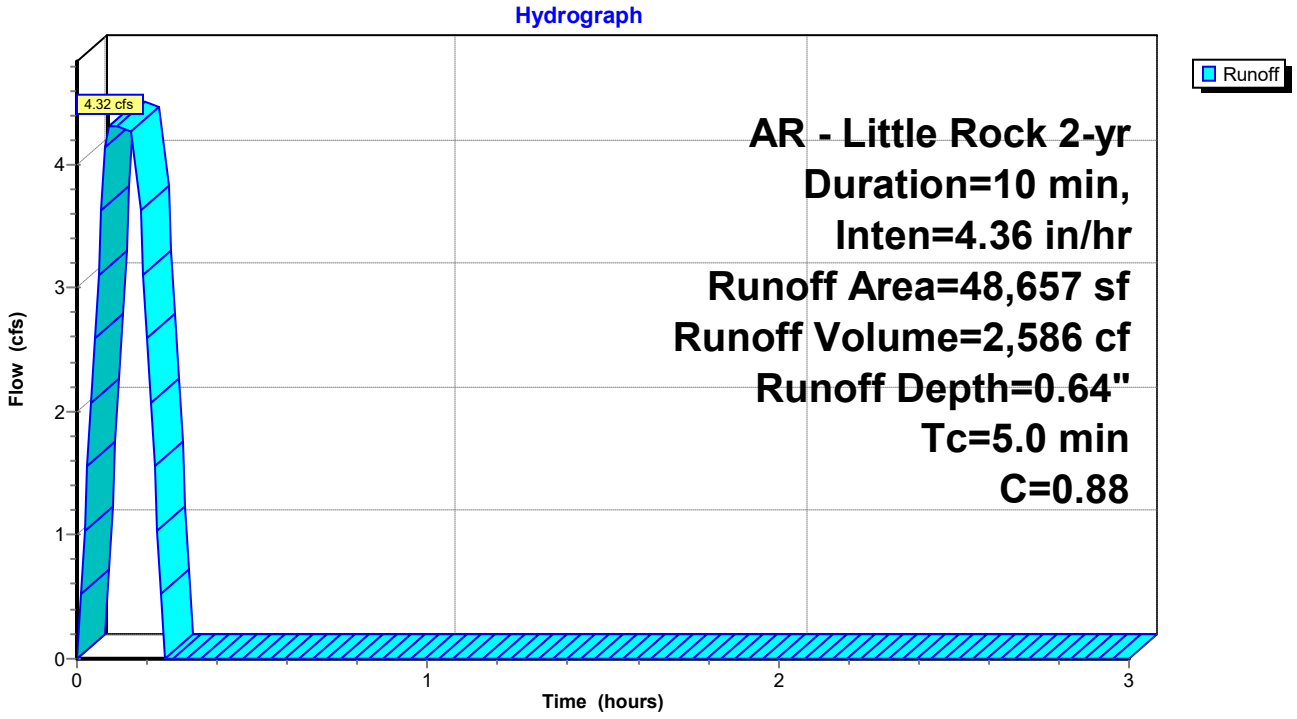
Runoff = 4.32 cfs @ 0.09 hrs, Volume= 2,586 cf, Depth= 0.64"
Routed to Link Post-Dev : APPROX DISCHARGE

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 2-yr Duration=10 min, Inten=4.36 in/hr

Area (sf)	C	Description
3,421	0.40	Sod Yard
45,236	0.92	Rood, Drives, Sidewalks
48,657	0.88	Weighted Average
48,657		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D1: Drainage Basin D1



Summary for Subcatchment D2: Drainage Basin D2

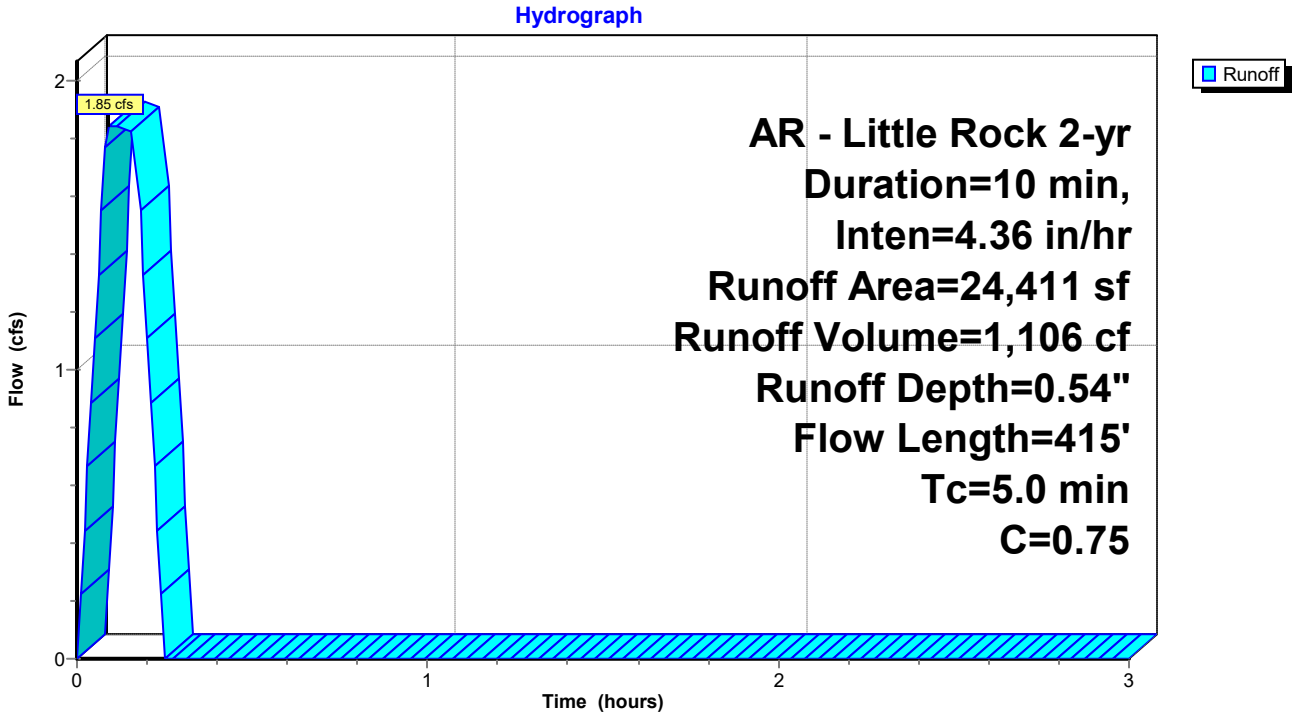
Runoff = 1.85 cfs @ 0.09 hrs, Volume= 1,106 cf, Depth= 0.54"
Routed to Reach P-A1 : Pipe A1

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 2-yr Duration=10 min, Inten=4.36 in/hr

Area (sf)	C	Description
8,845	0.45	Rip Rap Embankment
15,566	0.92	Roof, Drives, Sidewalks
24,411	0.75	Weighted Average
24,411		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	415		1.38		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D2: Drainage Basin D2



Summary for Subcatchment D3: Drainage Basin D3

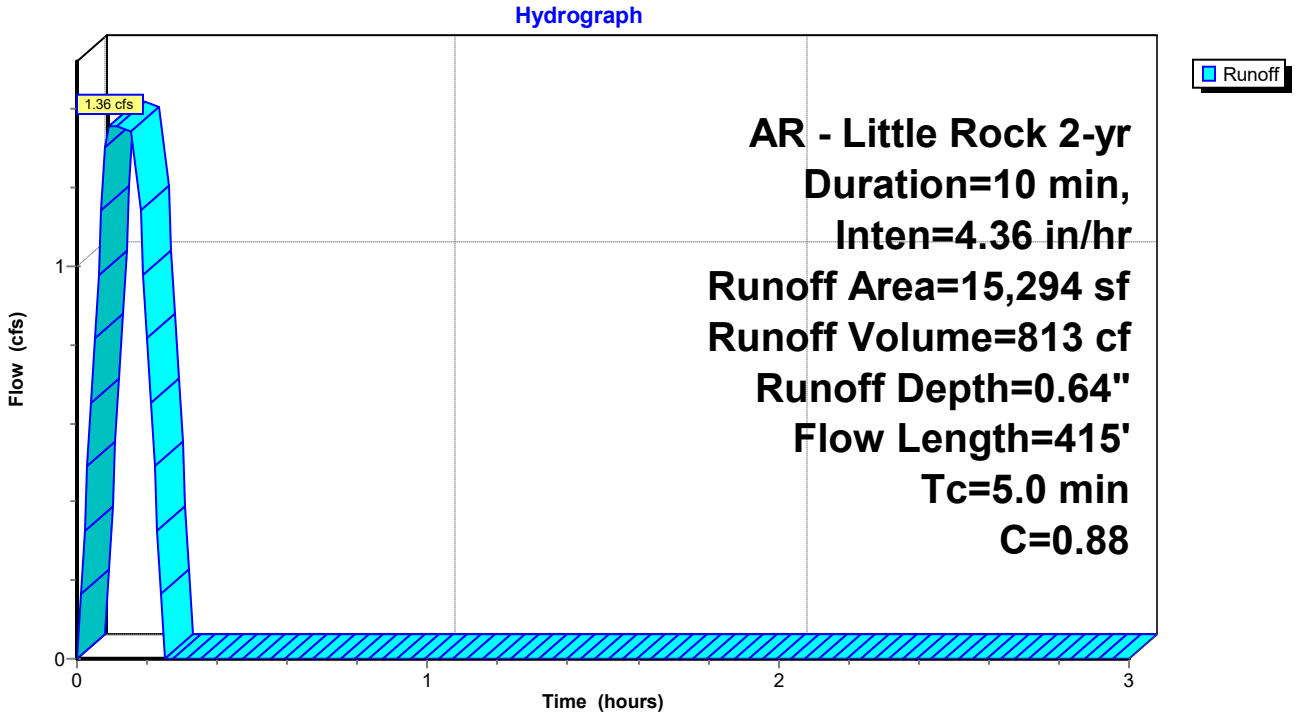
Runoff = 1.36 cfs @ 0.09 hrs, Volume= 813 cf, Depth= 0.64"
Routed to Reach P-A2 : Pipe A2

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 2-yr Duration=10 min, Inten=4.36 in/hr

Area (sf)	C	Description
1,065	0.40	Sod Yard
14,229	0.92	Paving, Sidewalks
15,294	0.88	Weighted Average
15,294		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	415		1.38		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D3: Drainage Basin D3



Summary for Subcatchment D4: Drainage Basin D4

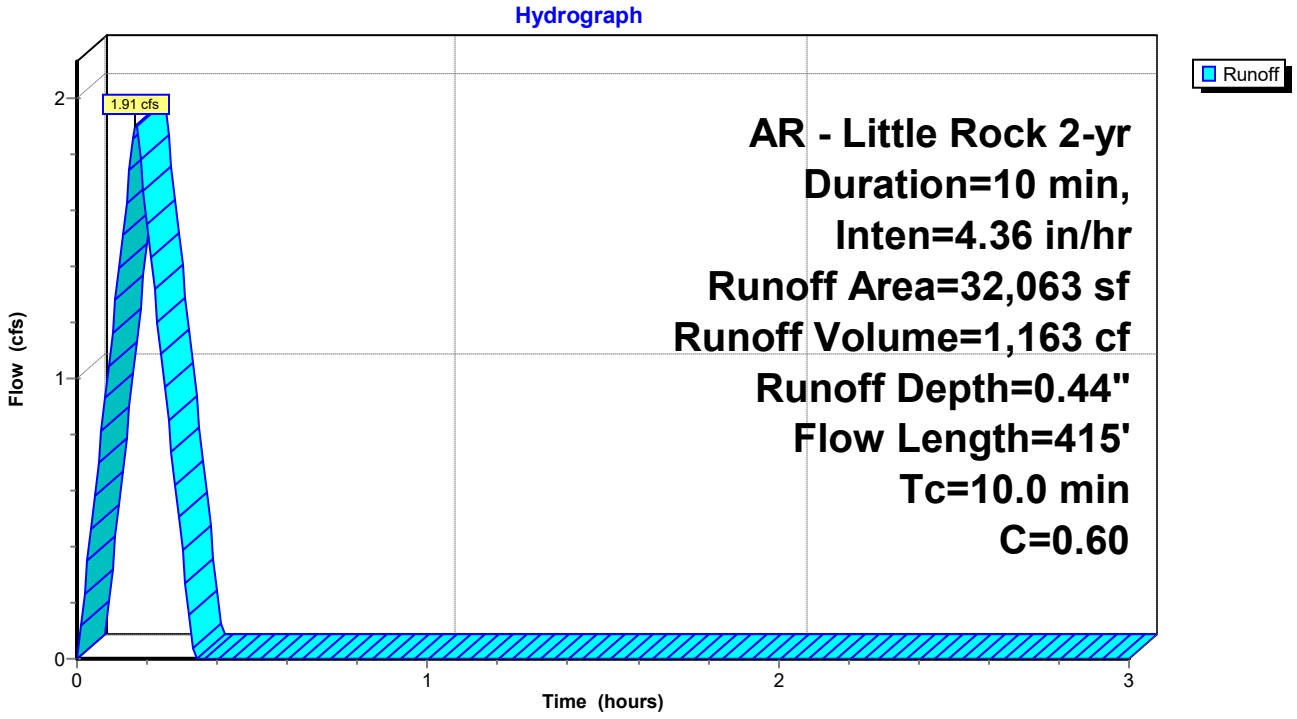
Runoff = 1.91 cfs @ 0.17 hrs, Volume= 1,163 cf, Depth= 0.44"
Routed to Reach P-A3 : Pipe A3

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 2-yr Duration=10 min, Inten=4.36 in/hr

Area (sf)	C	Description
20,032	0.40	
12,031	0.92	
32,063	0.60	Weighted Average
32,063		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	415		0.69		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D4: Drainage Basin D4



Summary for Subcatchment D5: Drainage Basin D5

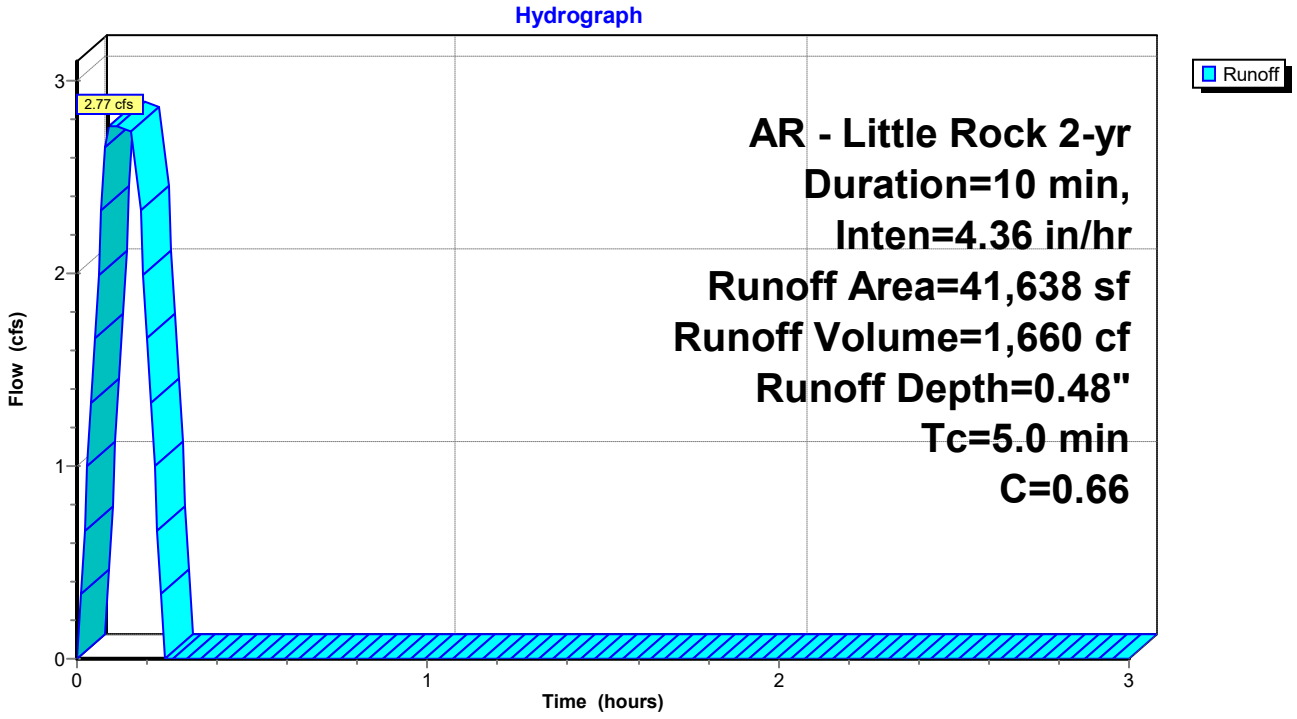
Runoff = 2.77 cfs @ 0.09 hrs, Volume= 1,660 cf, Depth= 0.48"
Routed to Pond DP1 : Re-Establised East Pond

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 2-yr Duration=10 min, Inten=4.36 in/hr

Area (sf)	C	Description
21,201	0.40	Sod Yard, Natural Vegetation
20,437	0.92	Paving, Sidewalks
41,638	0.66	Weighted Average
41,638		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D5: Drainage Basin D5



Summary for Subcatchment D6: Drainage Basin D6

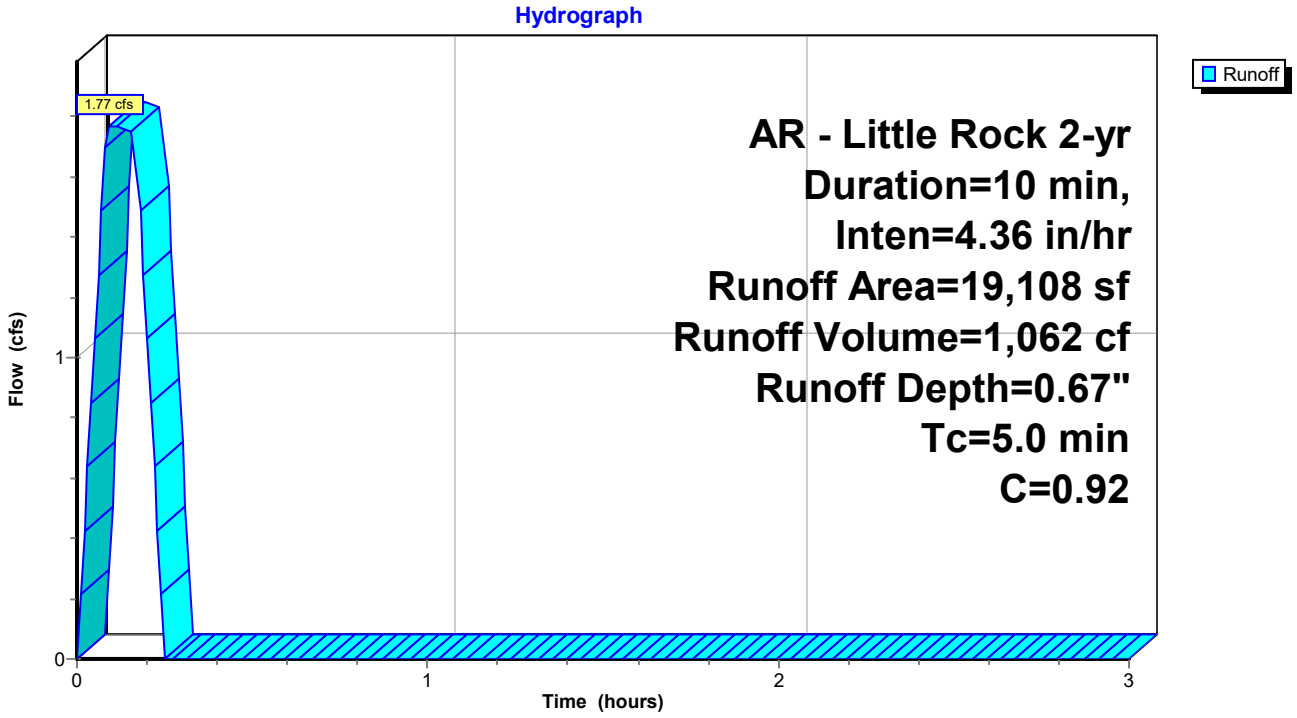
Runoff = 1.77 cfs @ 0.09 hrs, Volume= 1,062 cf, Depth= 0.67"
Routed to Pond DP1 : Re-Establised East Pond

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 2-yr Duration=10 min, Inten=4.36 in/hr

Area (sf)	C	Description
19,108	0.92	Roof
19,108		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D6: Drainage Basin D6



Summary for Subcatchment D7: Drainage Basin D7

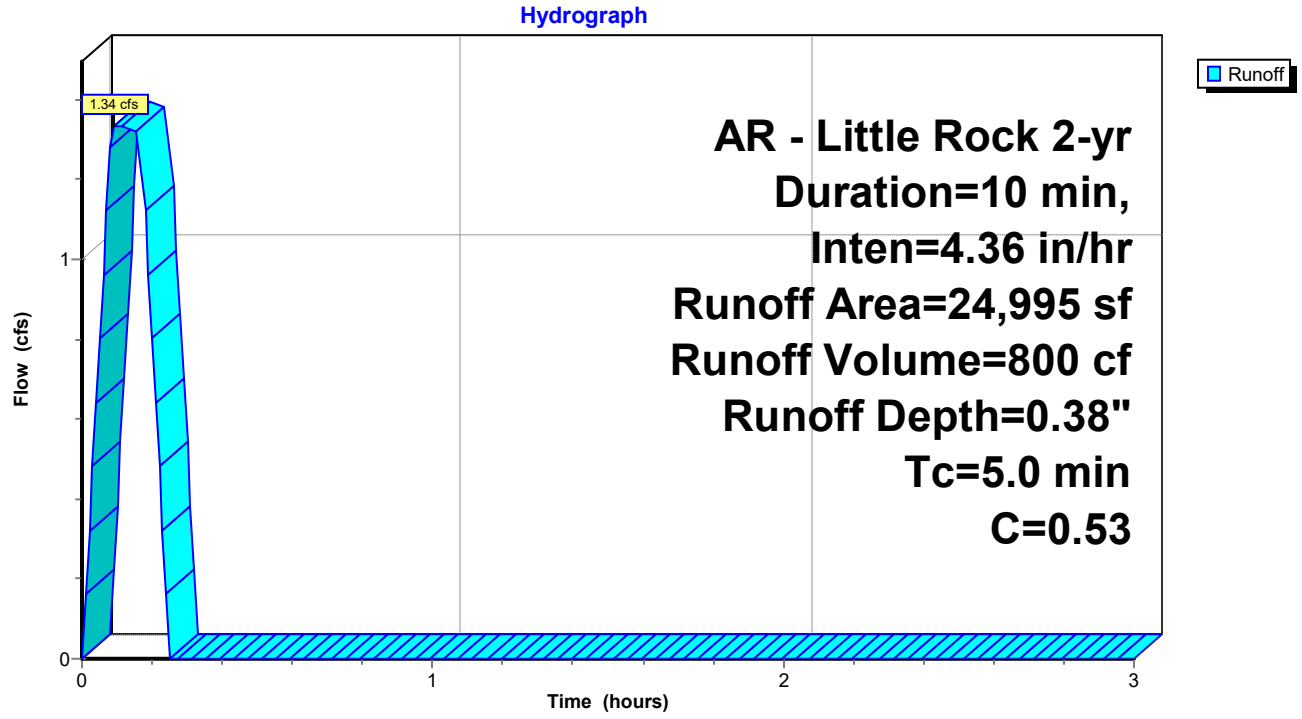
Runoff = 1.34 cfs @ 0.09 hrs, Volume= 800 cf, Depth= 0.38"
Routed to Link Post-Dev : APPROX DISCHARGE

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 2-yr Duration=10 min, Inten=4.36 in/hr

Area (sf)	C	Description
18,798	0.40	Sod Yard, Natural Vegetation
6,197	0.92	Paving, Sidewalks
24,995	0.53	Weighted Average
24,995		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D7: Drainage Basin D7



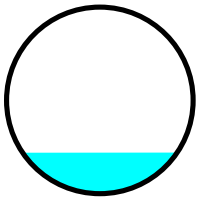
Summary for Reach P-A1: Pipe A1

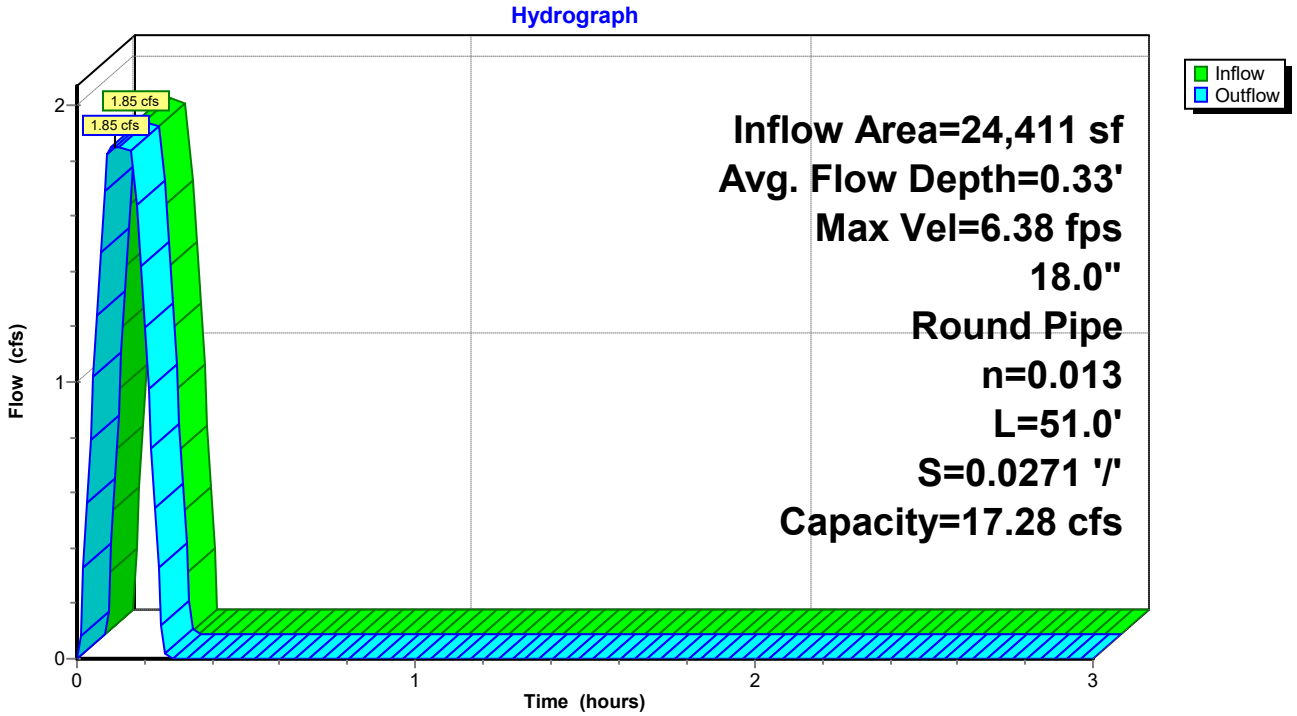
Inflow Area = 24,411 sf, 0.00% Impervious, Inflow Depth = 0.54" for 2-yr event
Inflow = 1.85 cfs @ 0.09 hrs, Volume= 1,106 cf
Outflow = 1.85 cfs @ 0.11 hrs, Volume= 1,106 cf, Atten= 0%, Lag= 1.2 min
Routed to Reach P-A2 : Pipe A2

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.38 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 4.53 fps, Avg. Travel Time= 0.2 min

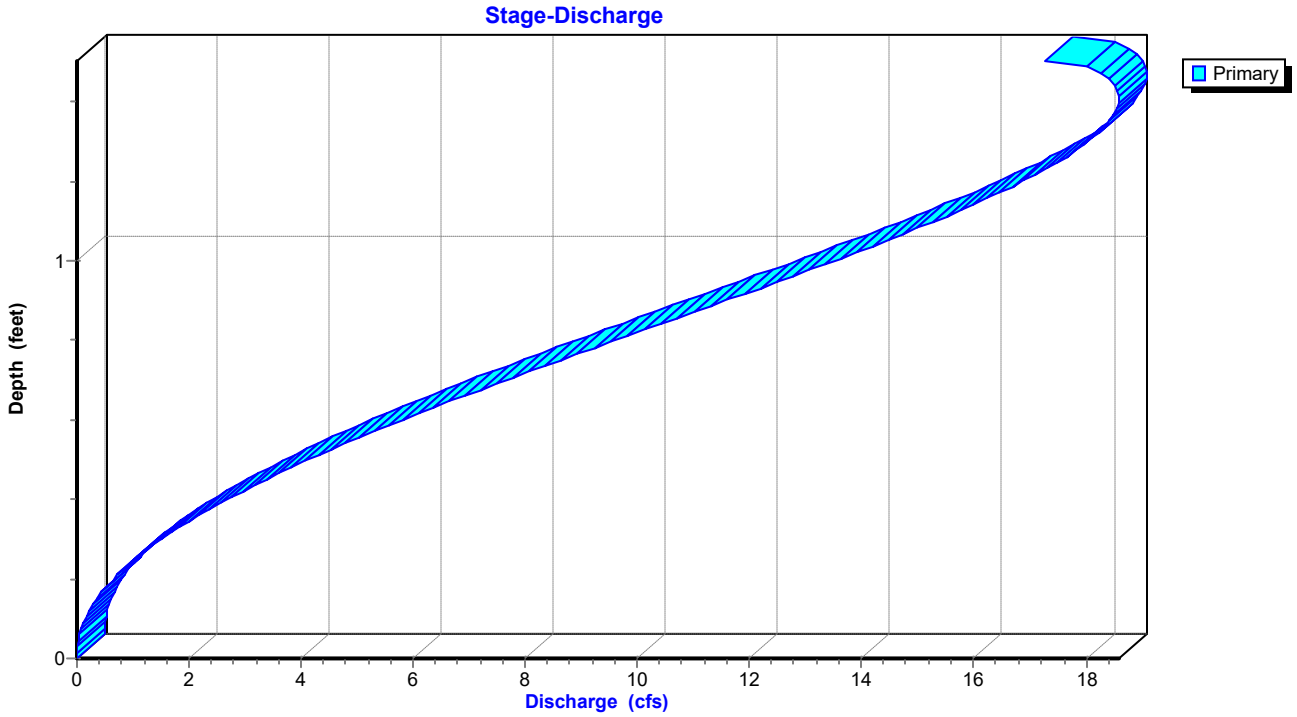
Peak Storage= 15 cf @ 0.09 hrs
Average Depth at Peak Storage= 0.33' , Surface Width= 1.24'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.28 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 51.0' Slope= 0.0271 '/'
Inlet Invert= 408.33', Outlet Invert= 406.95'





Reach P-A1: Pipe A1



Stage-Area-Storage for Reach P-A1: Pipe A1

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
408.33	0.0	0
408.35	0.0	0
408.37	0.0	1
408.39	0.0	1
408.41	0.0	2
408.43	0.1	3
408.45	0.1	3
408.47	0.1	4
408.49	0.1	5
408.51	0.1	6
408.53	0.1	7
408.55	0.2	8
408.57	0.2	9
408.59	0.2	10
408.61	0.2	12
408.63	0.3	13
408.65	0.3	14
408.67	0.3	15
408.69	0.3	17
408.71	0.4	18
408.73	0.4	19
408.75	0.4	21
408.77	0.4	22
408.79	0.5	23
408.81	0.5	25
408.83	0.5	26
408.85	0.5	28
408.87	0.6	29
408.89	0.6	31
408.91	0.6	32
408.93	0.7	34
408.95	0.7	35
408.97	0.7	37
408.99	0.7	38
409.01	0.8	40
409.03	0.8	41
409.05	0.8	43
409.07	0.9	44
409.09	0.9	46
409.11	0.9	47
409.13	1.0	49
409.15	1.0	50
409.17	1.0	52
409.19	1.0	53
409.21	1.1	55
409.23	1.1	56
409.25	1.1	58
409.27	1.2	59
409.29	1.2	61
409.31	1.2	62
409.33	1.3	64
409.35	1.3	65
409.37	1.3	67
409.39	1.3	68
409.41	1.4	69
409.43	1.4	71
409.45	1.4	72
409.47	1.4	73
409.49	1.5	75
409.51	1.5	76
409.53	1.5	77
409.55	1.5	78
409.57	1.6	80
409.59	1.6	81
409.61	1.6	82
409.63	1.6	83
409.65	1.6	84
409.67	1.7	85
409.69	1.7	86
409.71	1.7	87
409.73	1.7	88
409.75	1.7	88
409.77	1.7	89
409.79	1.8	89
409.81	1.8	90
409.83	**1.8**	**90**

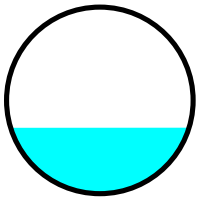
Summary for Reach P-A2: Pipe A2

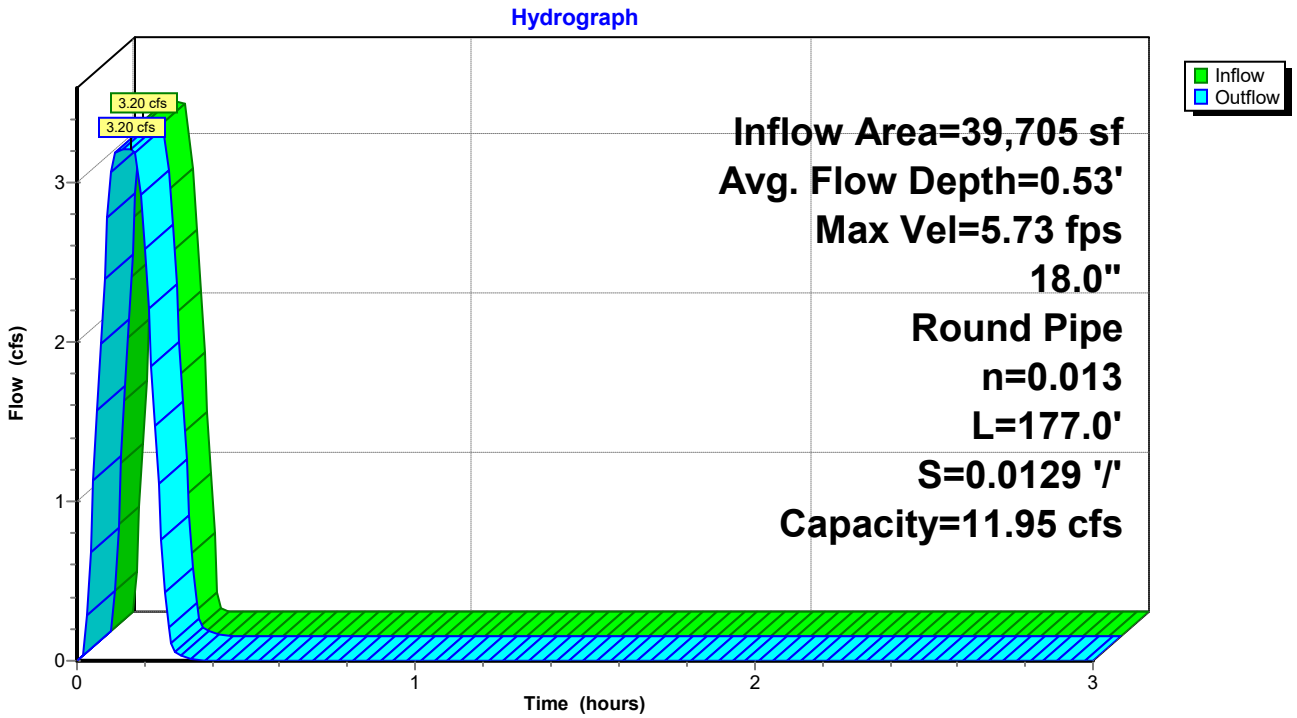
Inflow Area = 39,705 sf, 0.00% Impervious, Inflow Depth = 0.58" for 2-yr event
Inflow = 3.20 cfs @ 0.11 hrs, Volume= 1,919 cf
Outflow = 3.20 cfs @ 0.16 hrs, Volume= 1,919 cf, Atten= 0%, Lag= 3.0 min
Routed to Reach P-A3 : Pipe A3

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.73 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 2.32 fps, Avg. Travel Time= 1.3 min

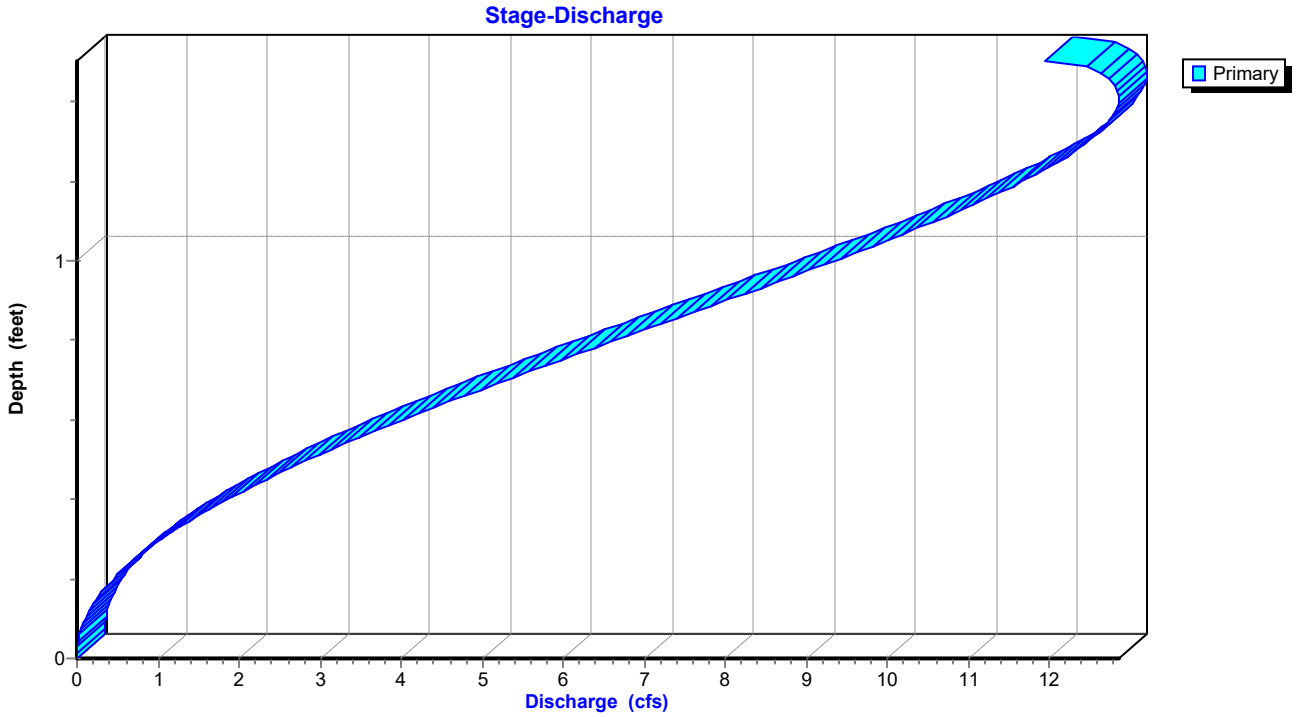
Peak Storage= 99 cf @ 0.16 hrs
Average Depth at Peak Storage= 0.53' , Surface Width= 1.43'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 11.95 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 177.0' Slope= 0.0129 '/'
Inlet Invert= 406.85', Outlet Invert= 404.56'





Reach P-A2: Pipe A2



Stage-Area-Storage for Reach P-A2: Pipe A2

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
406.85	0.0	0
406.87	0.0	1
406.89	0.0	2
406.91	0.0	4
406.93	0.0	6
406.95	0.1	9
406.97	0.1	12
406.99	0.1	15
407.01	0.1	18
407.03	0.1	21
407.05	0.1	25
407.07	0.2	28
407.09	0.2	32
407.11	0.2	36
407.13	0.2	40
407.15	0.3	45
407.17	0.3	49
407.19	0.3	53
407.21	0.3	58
407.23	0.4	62
407.25	0.4	67
407.27	0.4	72
407.29	0.4	76
407.31	0.5	81
407.33	0.5	86
407.35	0.5	91
407.37	0.5	96
407.39	0.6	101
407.41	0.6	106
407.43	0.6	112
407.45	0.7	117
407.47	0.7	122
407.49	0.7	127
407.51	0.7	133
407.53	0.8	138
407.55	0.8	143
407.57	0.8	148
407.59	0.9	154
407.61	0.9	159
407.63	0.9	164
407.65	1.0	170
407.67	1.0	175
407.69	1.0	180
407.71	1.0	185
407.73	1.1	191
407.75	1.1	196
407.77	1.1	201
407.79	1.2	206
407.81	1.2	211
407.83	1.2	216
407.85	1.3	222
407.87	1.3	226
407.89	1.3	231
407.91	1.3	236
407.93	1.4	241
407.95	1.4	246
407.97	1.4	250
407.99	1.4	255
408.01	1.5	260
408.03	1.5	264
408.05	1.5	268
408.07	1.5	272
408.09	1.6	277
408.11	1.6	280
408.13	1.6	284
408.15	1.6	288
408.17	1.6	292
408.19	1.7	295
408.21	1.7	298
408.23	1.7	301
408.25	1.7	304
408.27	1.7	306
408.29	1.7	309
408.31	1.8	310
408.33	1.8	312
408.35	**1.8**	**313**

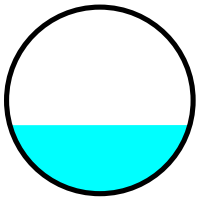
Summary for Reach P-A3: Pipe A3

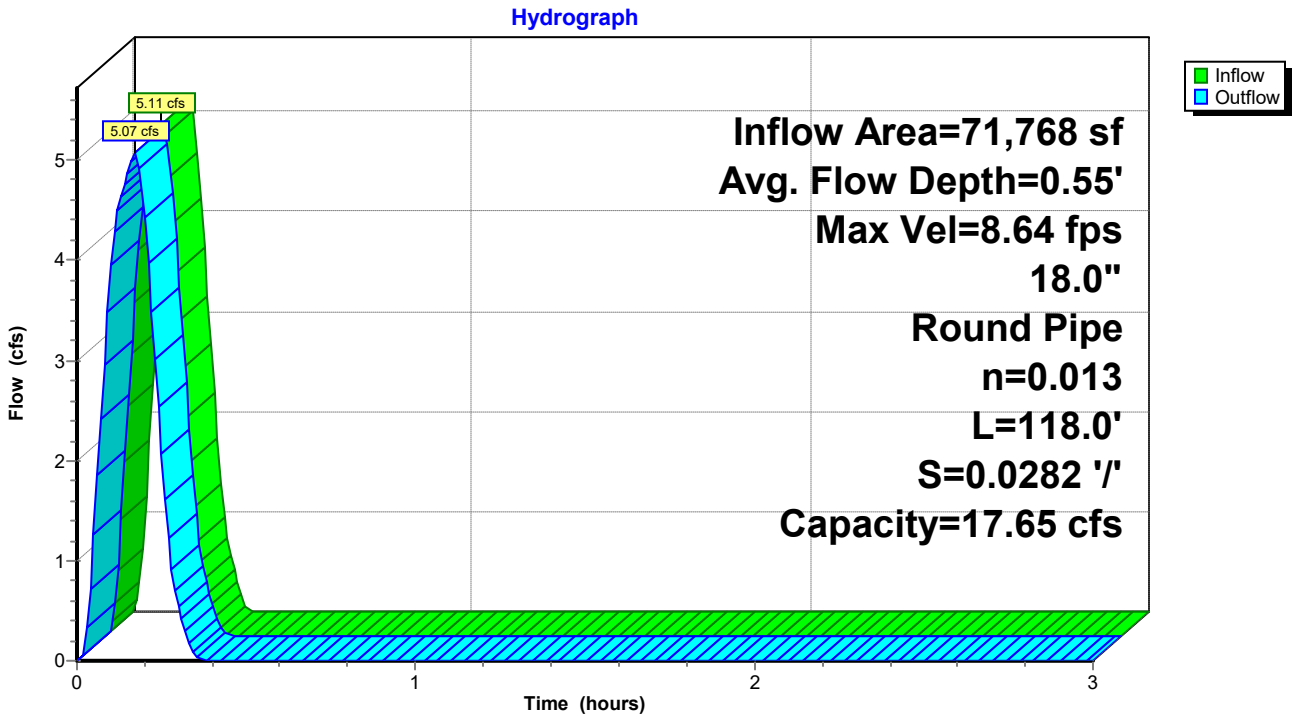
Inflow Area = 71,768 sf, 0.00% Impervious, Inflow Depth = 0.52" for 2-yr event
Inflow = 5.11 cfs @ 0.17 hrs, Volume= 3,082 cf
Outflow = 5.07 cfs @ 0.17 hrs, Volume= 3,082 cf, Atten= 1%, Lag= 0.3 min
Routed to Reach P-A4 : Pipe A4

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Max. Velocity= 8.64 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 3.61 fps, Avg. Travel Time= 0.5 min

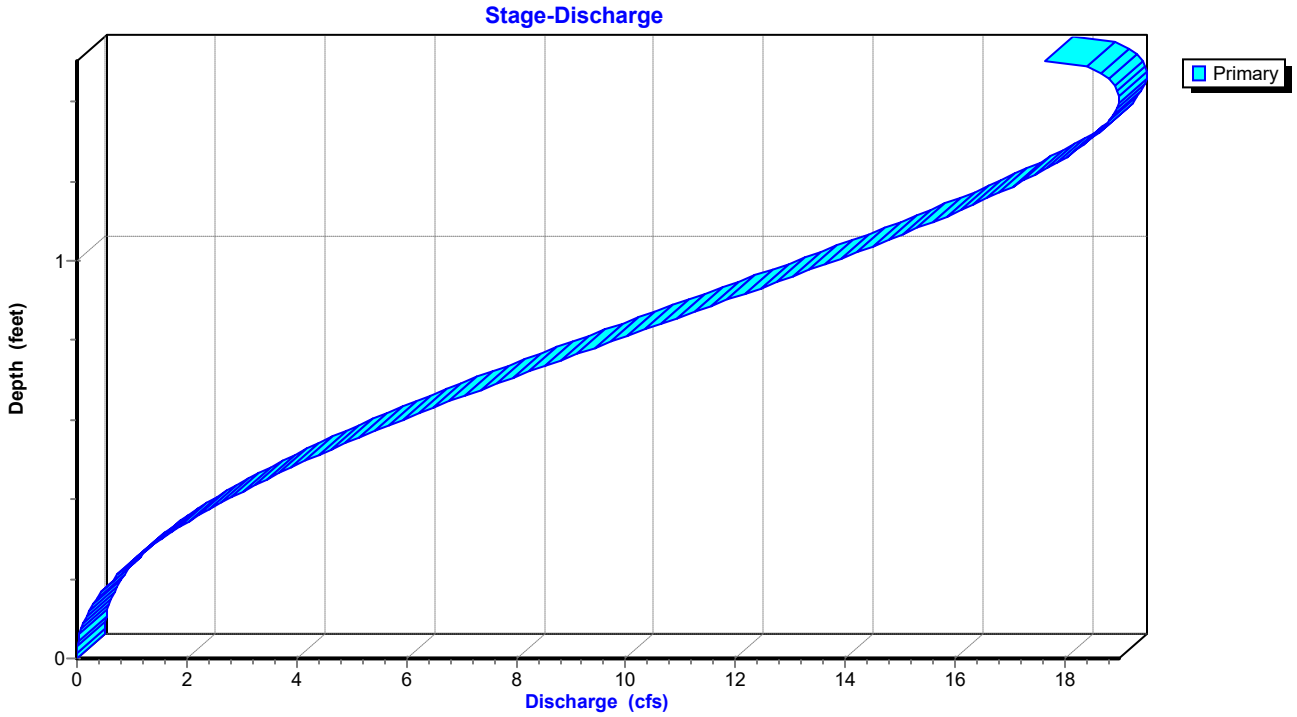
Peak Storage= 70 cf @ 0.17 hrs
Average Depth at Peak Storage= 0.55' , Surface Width= 1.45'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.65 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 118.0' Slope= 0.0282 '/'
Inlet Invert= 404.46', Outlet Invert= 401.13'





Reach P-A3: Pipe A3



Stage-Area-Storage for Reach P-A3: Pipe A3

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
404.46	0.0	0
404.48	0.0	1
404.50	0.0	2
404.52	0.0	3
404.54	0.0	4
404.56	0.1	6
404.58	0.1	8
404.60	0.1	10
404.62	0.1	12
404.64	0.1	14
404.66	0.1	17
404.68	0.2	19
404.70	0.2	22
404.72	0.2	24
404.74	0.2	27
404.76	0.3	30
404.78	0.3	33
404.80	0.3	35
404.82	0.3	38
404.84	0.4	42
404.86	0.4	45
404.88	0.4	48
404.90	0.4	51
404.92	0.5	54
404.94	0.5	58
404.96	0.5	61
404.98	0.5	64
405.00	0.6	68
405.02	0.6	71
405.04	0.6	74
405.06	0.7	78
405.08	0.7	81
405.10	0.7	85
405.12	0.7	88
405.14	0.8	92
405.16	0.8	95
405.18	0.8	99
405.20	0.9	102
405.22	0.9	106
405.24	0.9	110
405.26	1.0	113
405.28	1.0	117
405.30	1.0	120
405.32	1.0	124
405.34	1.1	127
405.36	1.1	131
405.38	1.1	134
405.40	1.2	138
405.42	1.2	141
405.44	1.2	144
405.46	1.3	148
405.48	1.3	151
405.50	1.3	154
405.52	1.3	158
405.54	1.4	161
405.56	1.4	164
405.58	1.4	167
405.60	1.4	170
405.62	1.5	173
405.64	1.5	176
405.66	1.5	179
405.68	1.5	182
405.70	1.6	184
405.72	1.6	187
405.74	1.6	190
405.76	1.6	192
405.78	1.6	194
405.80	1.7	197
405.82	1.7	199
405.84	1.7	201
405.86	1.7	203
405.88	1.7	204
405.90	1.7	206
405.92	1.8	207
405.94	1.8	208
405.96	**1.8**	**209**

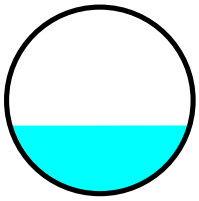
Summary for Reach P-A4: Pipe A4

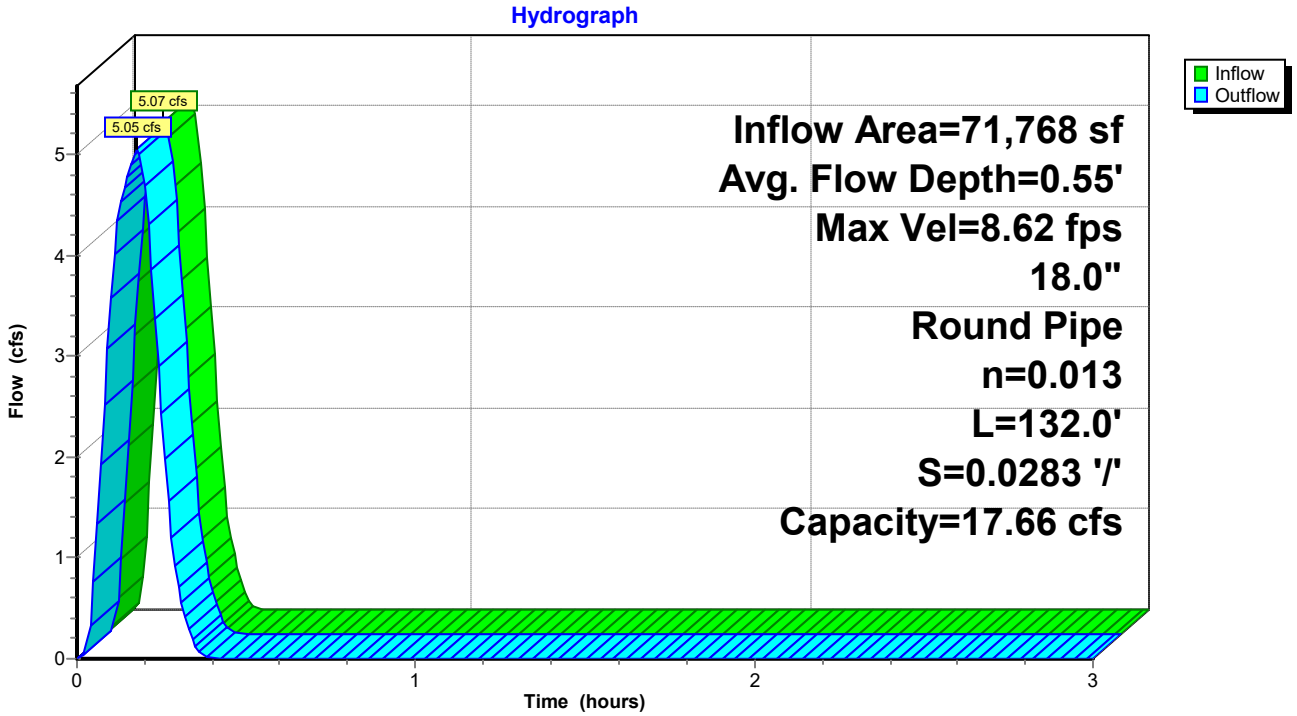
Inflow Area = 71,768 sf, 0.00% Impervious, Inflow Depth = 0.52" for 2-yr event
Inflow = 5.07 cfs @ 0.17 hrs, Volume= 3,082 cf
Outflow = 5.05 cfs @ 0.18 hrs, Volume= 3,082 cf, Atten= 0%, Lag= 0.4 min
Routed to Pond DP1 : Re-Establised East Pond

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Max. Velocity= 8.62 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 3.43 fps, Avg. Travel Time= 0.6 min

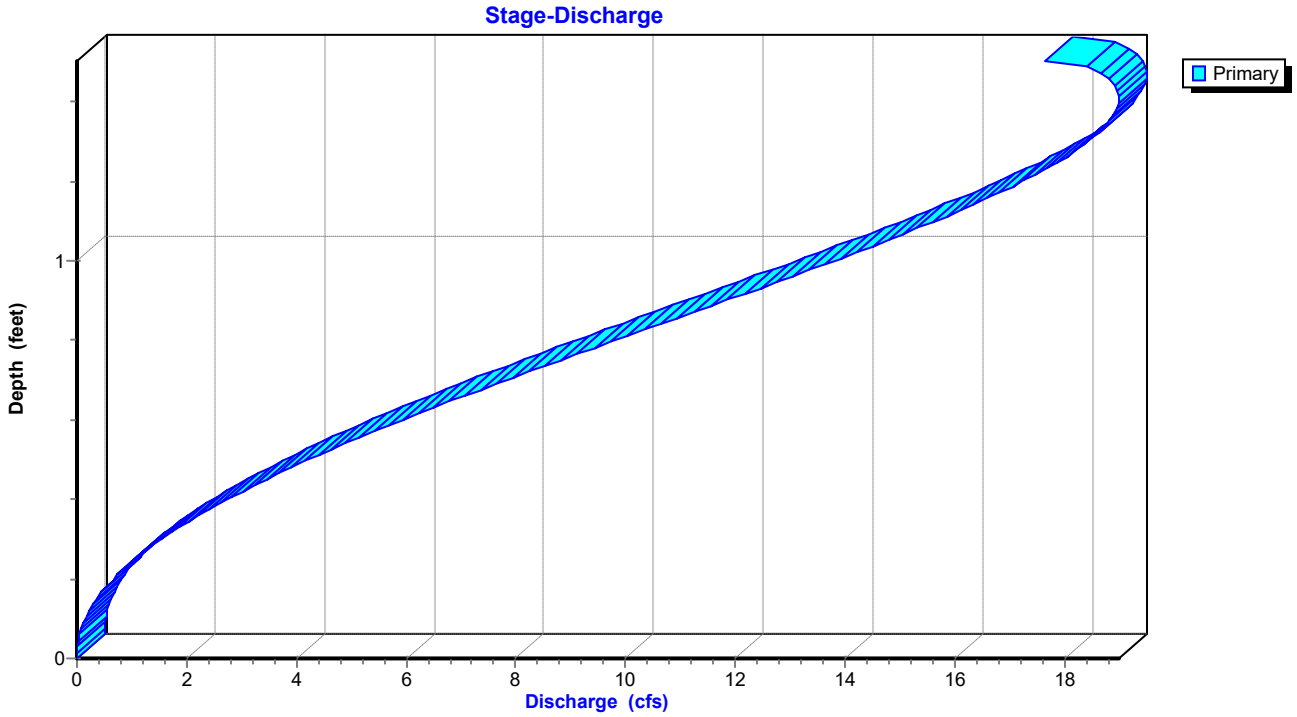
Peak Storage= 77 cf @ 0.17 hrs
Average Depth at Peak Storage= 0.55' , Surface Width= 1.45'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.66 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 132.0' Slope= 0.0283 '/'
Inlet Invert= 401.03', Outlet Invert= 397.30'





Reach P-A4: Pipe A4



Stage-Area-Storage for Reach P-A4: Pipe A4

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
401.03	0.0	0
401.05	0.0	1
401.07	0.0	2
401.09	0.0	3
401.11	0.0	5
401.13	0.1	7
401.15	0.1	9
401.17	0.1	11
401.19	0.1	13
401.21	0.1	16
401.23	0.1	18
401.25	0.2	21
401.27	0.2	24
401.29	0.2	27
401.31	0.2	30
401.33	0.3	33
401.35	0.3	36
401.37	0.3	40
401.39	0.3	43
401.41	0.4	46
401.43	0.4	50
401.45	0.4	53
401.47	0.4	57
401.49	0.5	61
401.51	0.5	64
401.53	0.5	68
401.55	0.5	72
401.57	0.6	76
401.59	0.6	79
401.61	0.6	83
401.63	0.7	87
401.65	0.7	91
401.67	0.7	95
401.69	0.7	99
401.71	0.8	103
401.73	0.8	107
401.75	0.8	111
401.77	0.9	115
401.79	0.9	119
401.81	0.9	123
401.83	1.0	127
401.85	1.0	130
401.87	1.0	134
401.89	1.0	138
401.91	1.1	142
401.93	1.1	146
401.95	1.1	150
401.97	1.2	154
401.99	1.2	158
402.01	1.2	161
402.03	1.3	165
402.05	1.3	169
402.07	1.3	173
402.09	1.3	176
402.11	1.4	180
402.13	1.4	183
402.15	1.4	187
402.17	1.4	190
402.19	1.5	194
402.21	1.5	197
402.23	1.5	200
402.25	1.5	203
402.27	1.6	206
402.29	1.6	209
402.31	1.6	212
402.33	1.6	215
402.35	1.6	217
402.37	1.7	220
402.39	1.7	222
402.41	1.7	225
402.43	1.7	227
402.45	1.7	228
402.47	1.7	230
402.49	1.8	232
402.51	1.8	233
402.53	**1.8**	**233**

Summary for Pond DP1: Re-Establised East Pond

Inflow Area = 132,514 sf, 0.00% Impervious, Inflow Depth = 0.53" for 2-yr event
Inflow = 9.45 cfs @ 0.16 hrs, Volume= 5,804 cf
Outflow = 5.39 cfs @ 0.22 hrs, Volume= 5,804 cf, Atten= 43%, Lag= 3.6 min
Primary = 5.39 cfs @ 0.22 hrs, Volume= 5,804 cf
Routed to Link Post-Dev : APPROX DISCHARGE

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Peak Elev= 397.63' @ 0.22 hrs Storage= 2,855 cf

Plug-Flow detention time= 7.8 min calculated for 5,804 cf (100% of inflow)
Center-of-Mass det. time= 7.7 min (16.7 - 9.0)

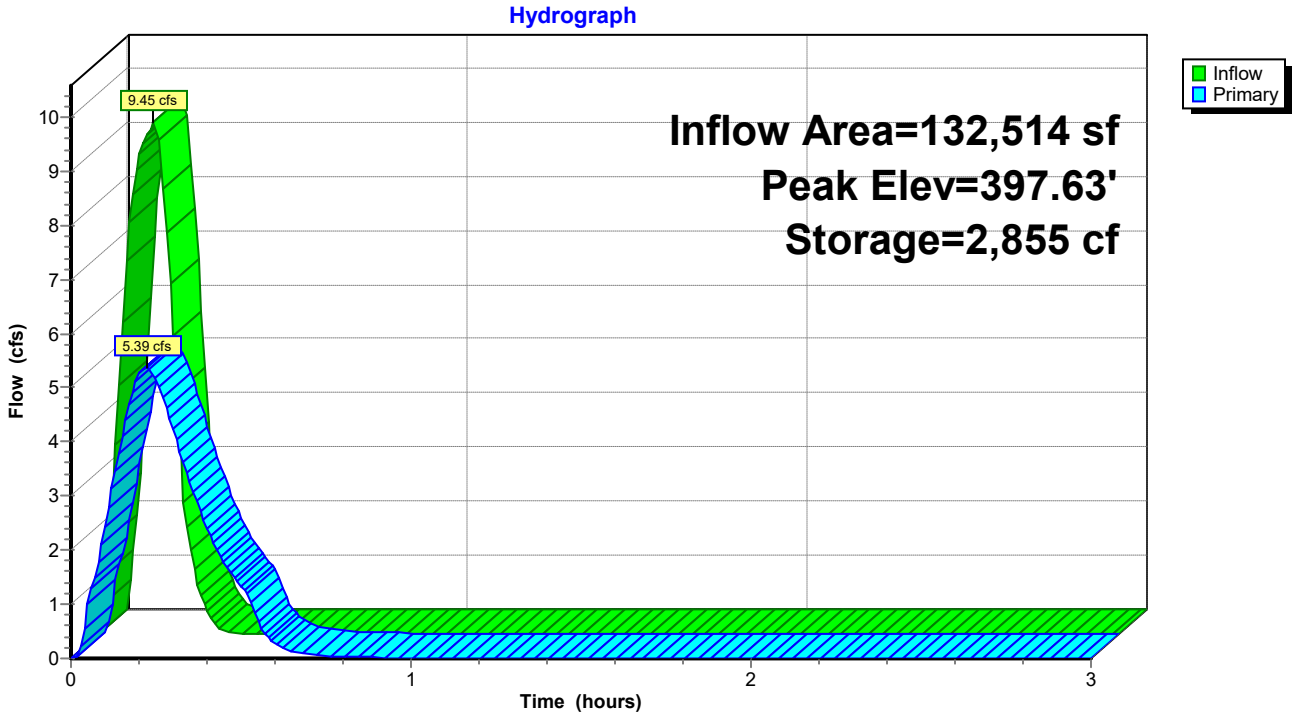
Volume	Invert	Avail.Storage	Storage Description
#1	396.00'	8,557 cf	**Custom Stage Data** Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
396.00	0	0
396.50	250	250
397.00	1,092	1,342
398.00	2,387	3,729
399.00	2,405	6,134
400.00	2,423	8,557

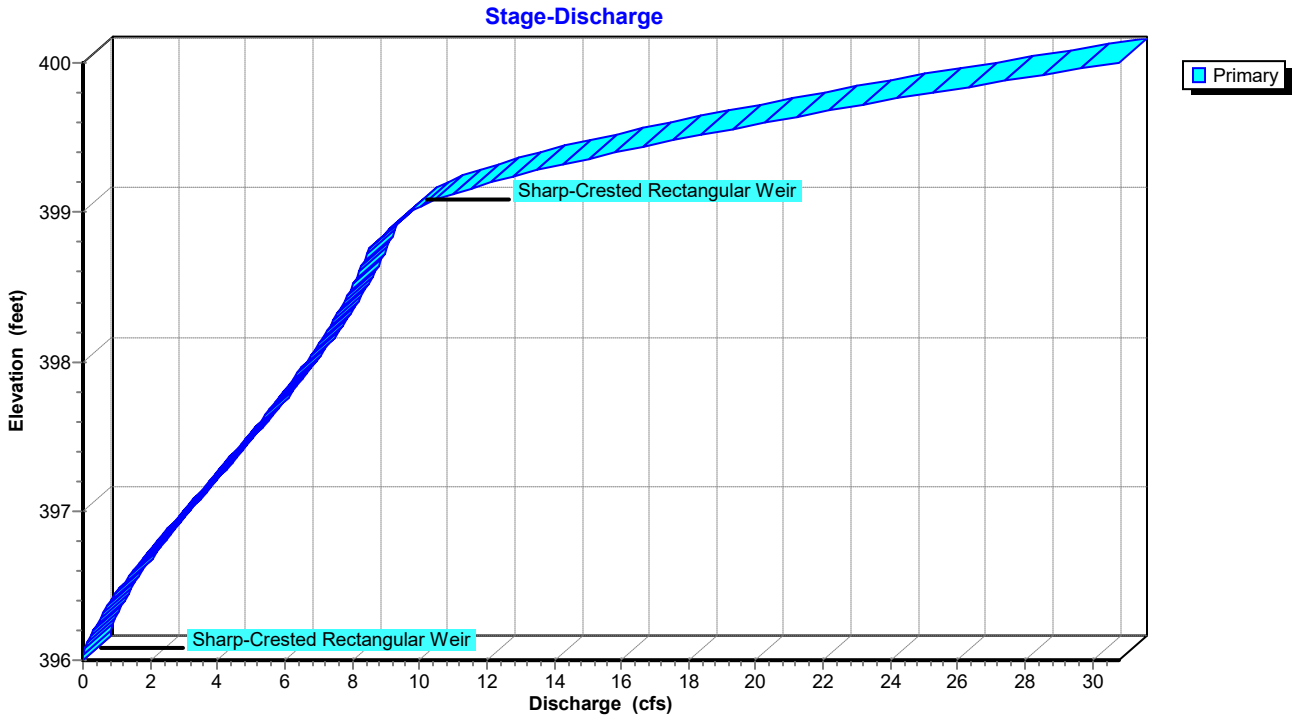
Device	Routing	Invert	Outlet Devices
#1	Primary	399.00'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	396.00'	**1.1' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 10.0' Crest Height

Primary OutFlow Max=5.38 cfs @ 0.22 hrs HW=397.63' (Free Discharge)
1=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)
2=Sharp-Crested Rectangular Weir (Weir Controls 5.38 cfs @ 4.26 fps)

Pond DP1: Re-Establised East Pond



Pond DP1: Re-Establised East Pond



Stage-Area-Storage for Pond DP1: Re-Establised East Pond

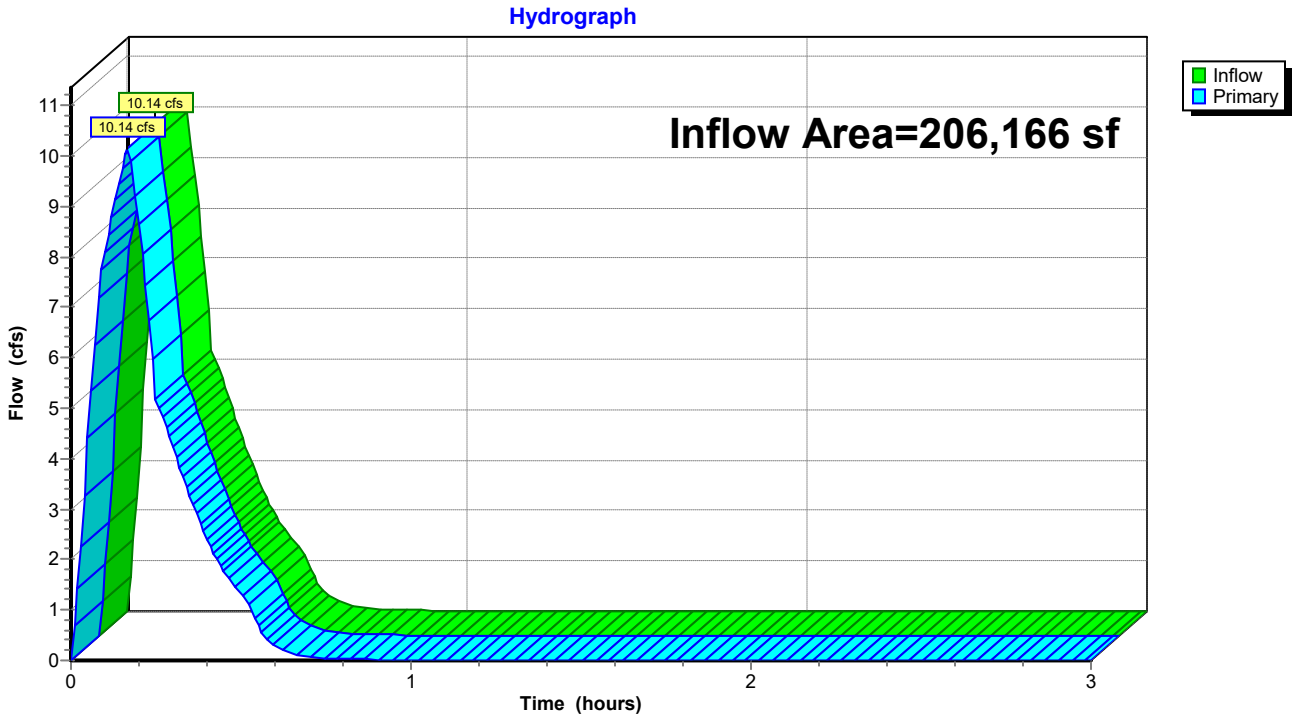
Elevation (feet)	Storage (cubic-feet)
396.00	0
396.05	25
396.10	50
396.15	75
396.20	100
396.25	125
396.30	150
396.35	175
396.40	200
396.45	225
396.50	250
396.55	359
396.60	468
396.65	578
396.70	687
396.75	796
396.80	905
396.85	1,014
396.90	1,124
396.95	1,233
397.00	1,342
397.05	1,461
397.10	1,581
397.15	1,700
397.20	1,819
397.25	1,939
397.30	2,058
397.35	2,177
397.40	2,297
397.45	2,416
397.50	2,536
397.55	2,655
397.60	2,774
397.65	2,894
397.70	3,013
397.75	3,132
397.80	3,252
397.85	3,371
397.90	3,490
397.95	3,610
398.00	3,729
398.05	3,849
398.10	3,970
398.15	4,090
398.20	4,210
398.25	4,330
398.30	4,451
398.35	4,571
398.40	4,691
398.45	4,811
398.50	4,932
398.55	5,052
398.60	5,172
398.65	5,292
398.70	5,412
398.75	5,533
398.80	5,653
398.85	5,773
398.90	5,893
398.95	6,014
399.00	6,134
399.05	6,255
399.10	6,376
399.15	6,497
399.20	6,619
399.25	6,740
399.30	6,861
399.35	6,982
399.40	7,103
399.45	7,224
399.50	7,346
399.55	7,467
399.60	7,588
399.65	7,709
399.70	7,830
399.75	7,951
399.80	8,072
399.85	8,194
399.90	8,315
399.95	8,436
400.00	**8,557**

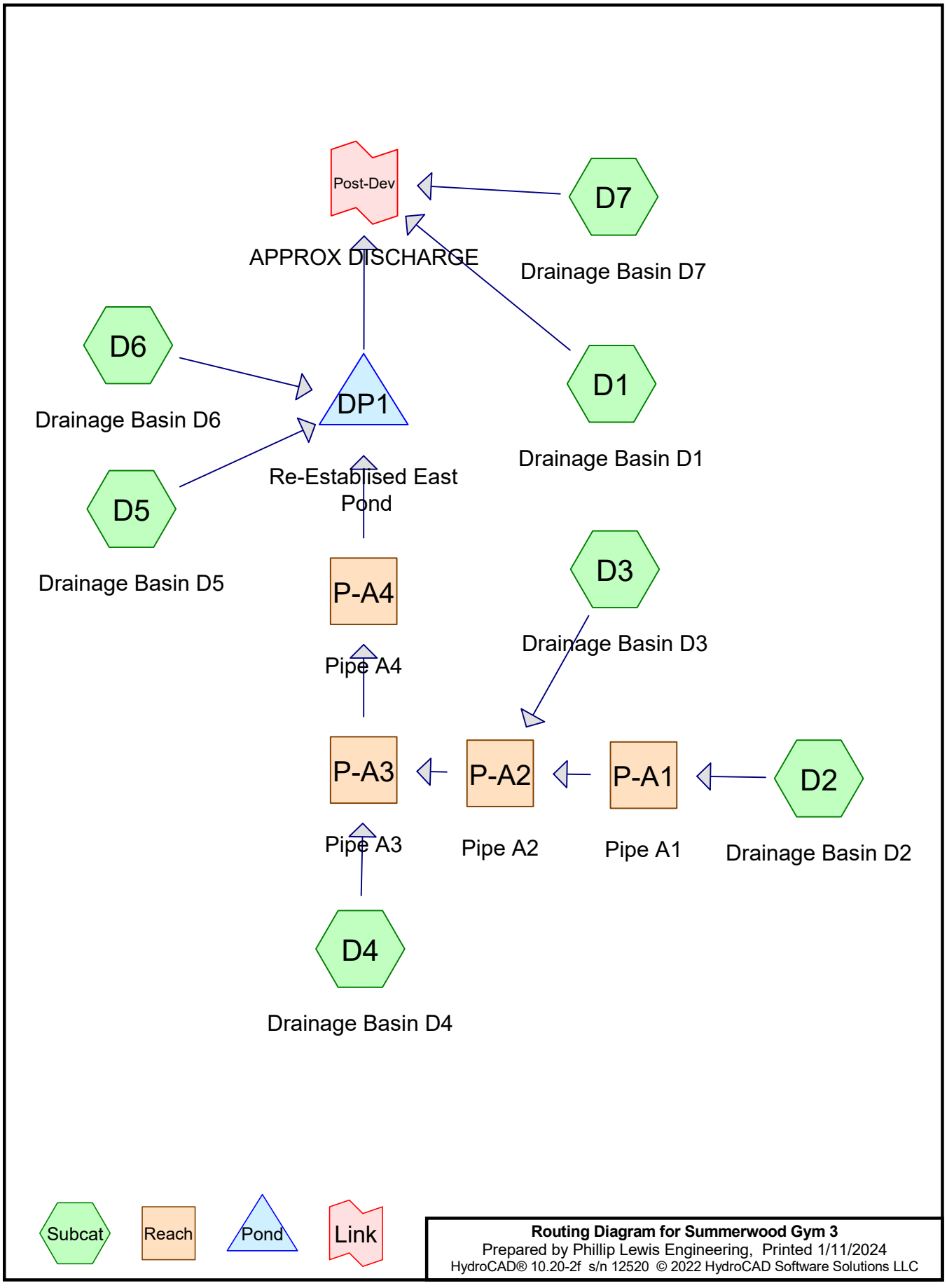
Summary for Link Post-Dev: APPROX DISCHARGE

Inflow Area = 206,166 sf, 0.00% Impervious, Inflow Depth = 0.53" for 2-yr event
Inflow = 10.14 cfs @ 0.17 hrs, Volume= 9,191 cf
Primary = 10.14 cfs @ 0.17 hrs, Volume= 9,191 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Link Post-Dev: APPROX DISCHARGE





Routing Diagram for Summerwood Gym 3
Prepared by Phillip Lewis Engineering, Printed 1/11/2024

Summary for Subcatchment D1: Drainage Basin D1

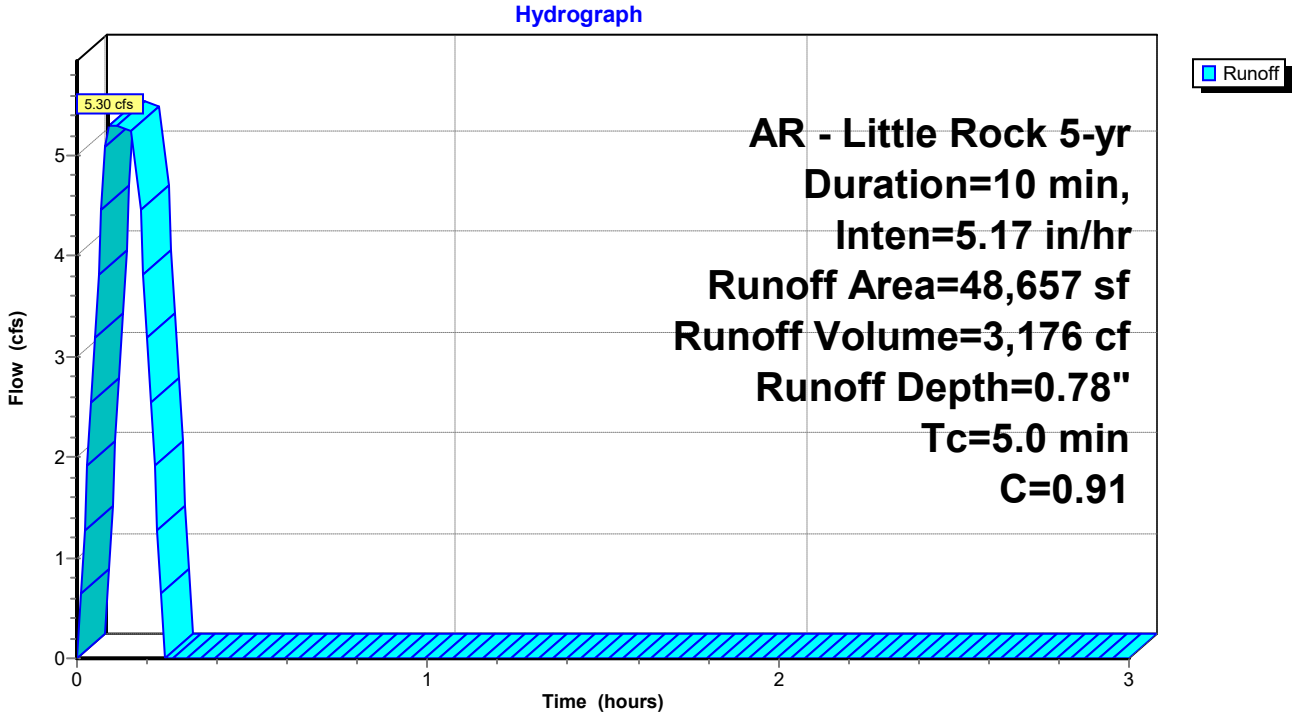
Runoff = 5.30 cfs @ 0.09 hrs, Volume= 3,176 cf, Depth= 0.78"
Routed to Link Post-Dev : APPROX DISCHARGE

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 5-yr Duration=10 min, Inten=5.17 in/hr

Area (sf)	C	Description
3,421	0.40	Sod Yard
45,236	0.95	Rood, Drives, Sidewalks
48,657	0.91	Weighted Average
3,421		7.03% Pervious Area
45,236		92.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D1: Drainage Basin D1



Summary for Subcatchment D2: Drainage Basin D2

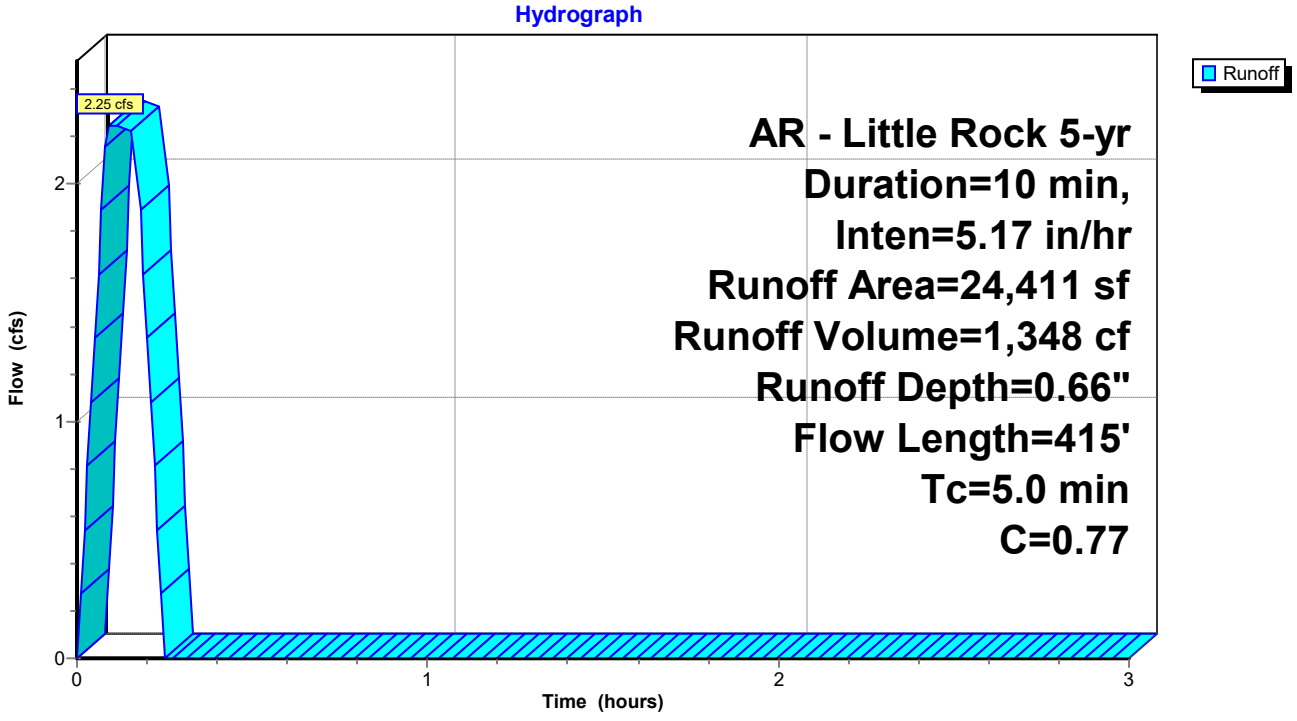
Runoff = 2.25 cfs @ 0.09 hrs, Volume= 1,348 cf, Depth= 0.66"
Routed to Reach P-A1 : Pipe A1

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 5-yr Duration=10 min, Inten=5.17 in/hr

Area (sf)	C	Description
8,845	0.45	Rip Rap Embankment
15,566	0.95	Roof, Drives, Sidewalks
24,411	0.77	Weighted Average
8,845		36.23% Pervious Area
15,566		63.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	415		1.38		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D2: Drainage Basin D2



Summary for Subcatchment D3: Drainage Basin D3

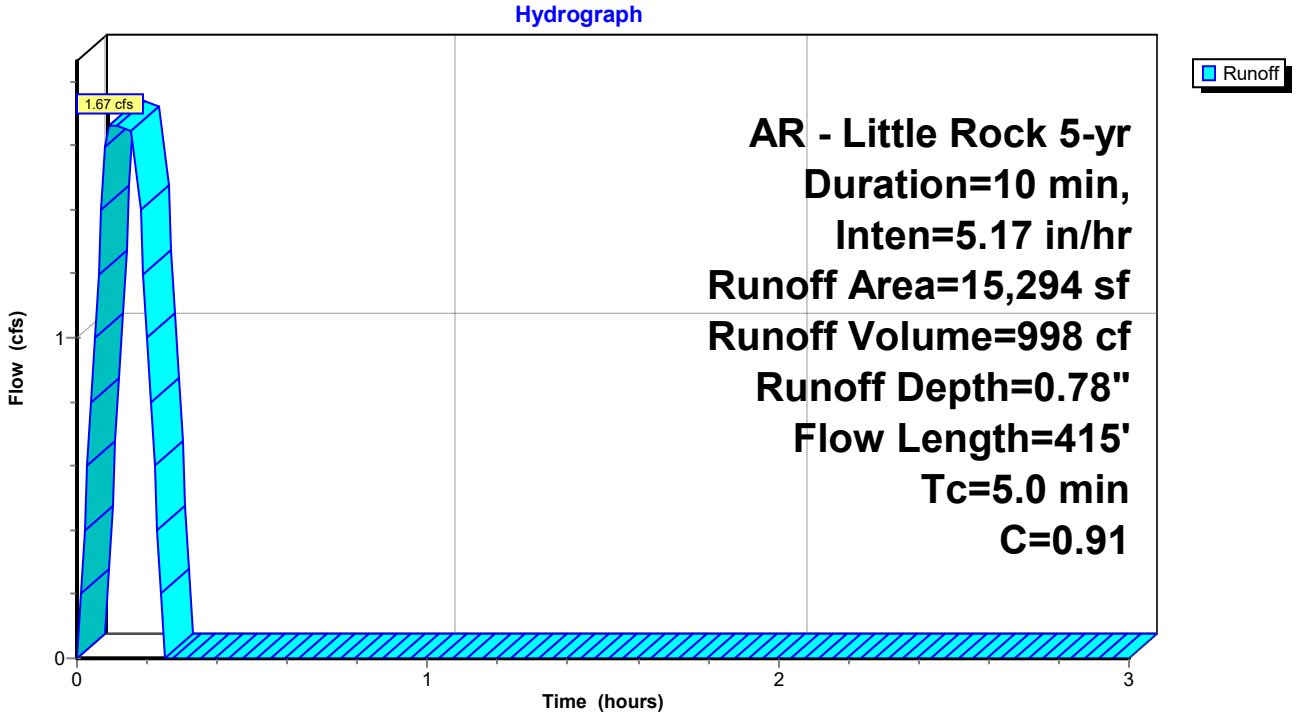
Runoff = 1.67 cfs @ 0.09 hrs, Volume= 998 cf, Depth= 0.78"
Routed to Reach P-A2 : Pipe A2

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 5-yr Duration=10 min, Inten=5.17 in/hr

Area (sf)	C	Description
1,065	0.40	Sod Yard
14,229	0.95	Paving, Sidewalks
15,294	0.91	Weighted Average
1,065		6.96% Pervious Area
14,229		93.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	415		1.38		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D3: Drainage Basin D3



Summary for Subcatchment D4: Drainage Basin D4

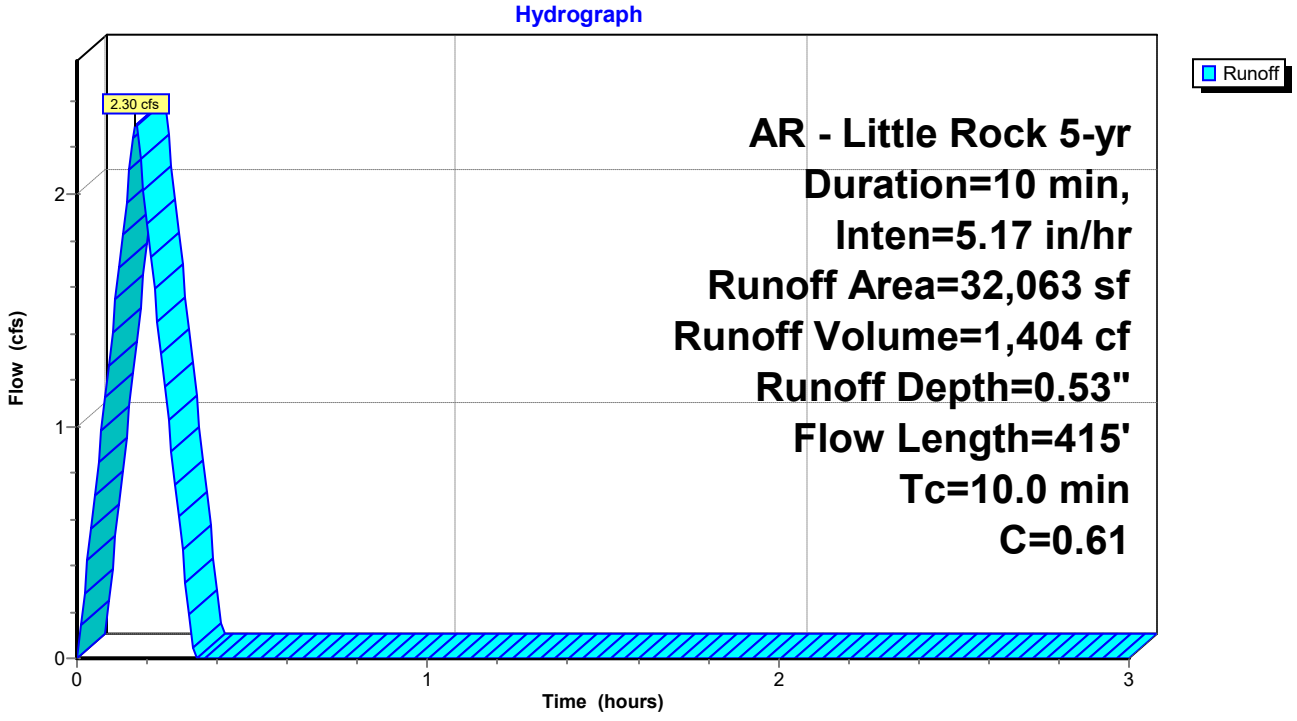
Runoff = 2.30 cfs @ 0.17 hrs, Volume= 1,404 cf, Depth= 0.53"
Routed to Reach P-A3 : Pipe A3

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 5-yr Duration=10 min, Inten=5.17 in/hr

Area (sf)	C	Description
20,032	0.40	
12,031	0.95	
32,063	0.61	Weighted Average
20,032		62.48% Pervious Area
12,031		37.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	415		0.69		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D4: Drainage Basin D4



Summary for Subcatchment D5: Drainage Basin D5

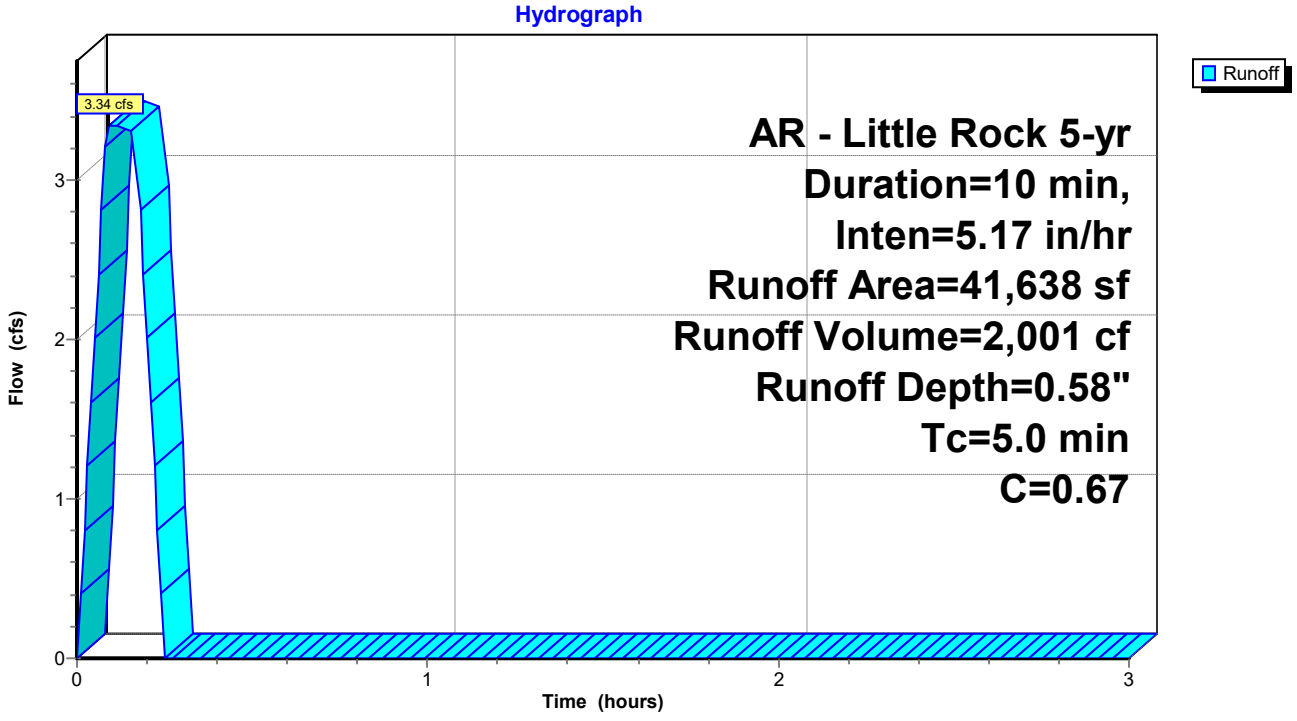
Runoff = 3.34 cfs @ 0.09 hrs, Volume= 2,001 cf, Depth= 0.58"
Routed to Pond DP1 : Re-Establised East Pond

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 5-yr Duration=10 min, Inten=5.17 in/hr

Area (sf)	C	Description
21,201	0.40	Sod Yard, Natural Vegetation
20,437	0.95	Paving, Sidewalks
41,638	0.67	Weighted Average
21,201		50.92% Pervious Area
20,437		49.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D5: Drainage Basin D5



Summary for Subcatchment D6: Drainage Basin D6

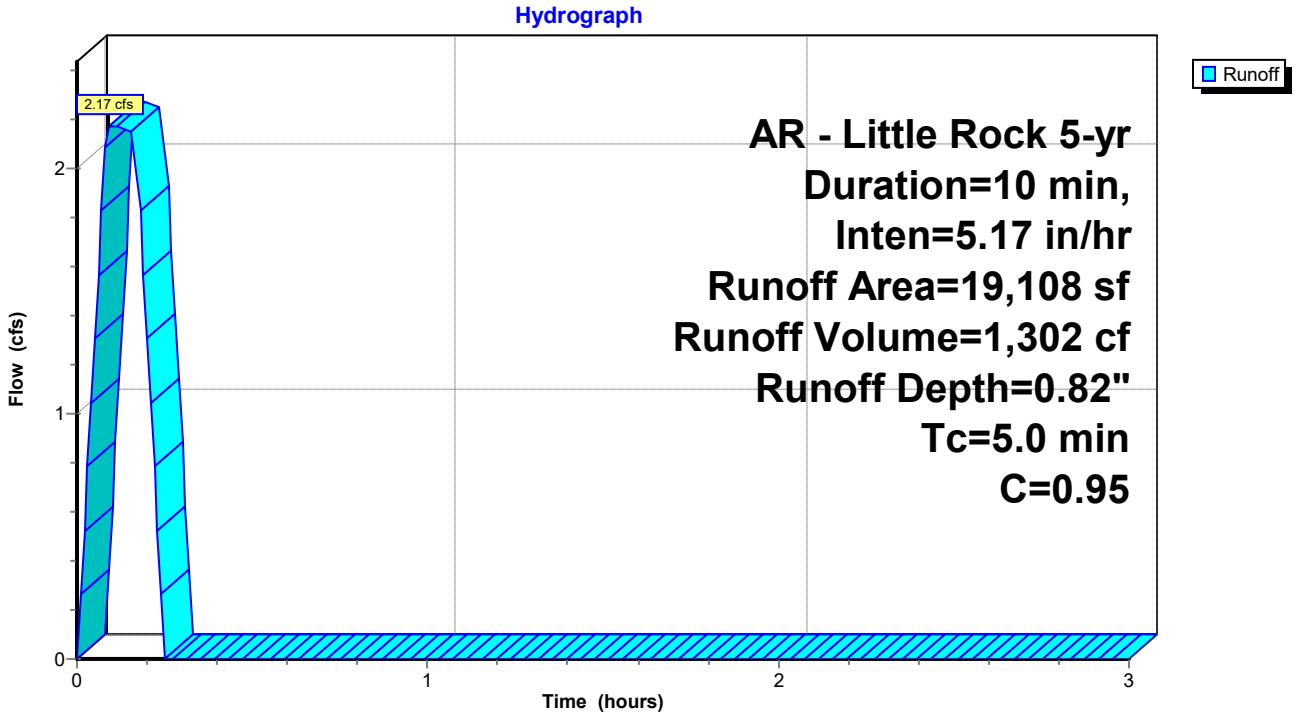
Runoff = 2.17 cfs @ 0.09 hrs, Volume= 1,302 cf, Depth= 0.82"
Routed to Pond DP1 : Re-Establised East Pond

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 5-yr Duration=10 min, Inten=5.17 in/hr

Area (sf)	C	Description
19,108	0.95	Roof
19,108		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D6: Drainage Basin D6



Summary for Subcatchment D7: Drainage Basin D7

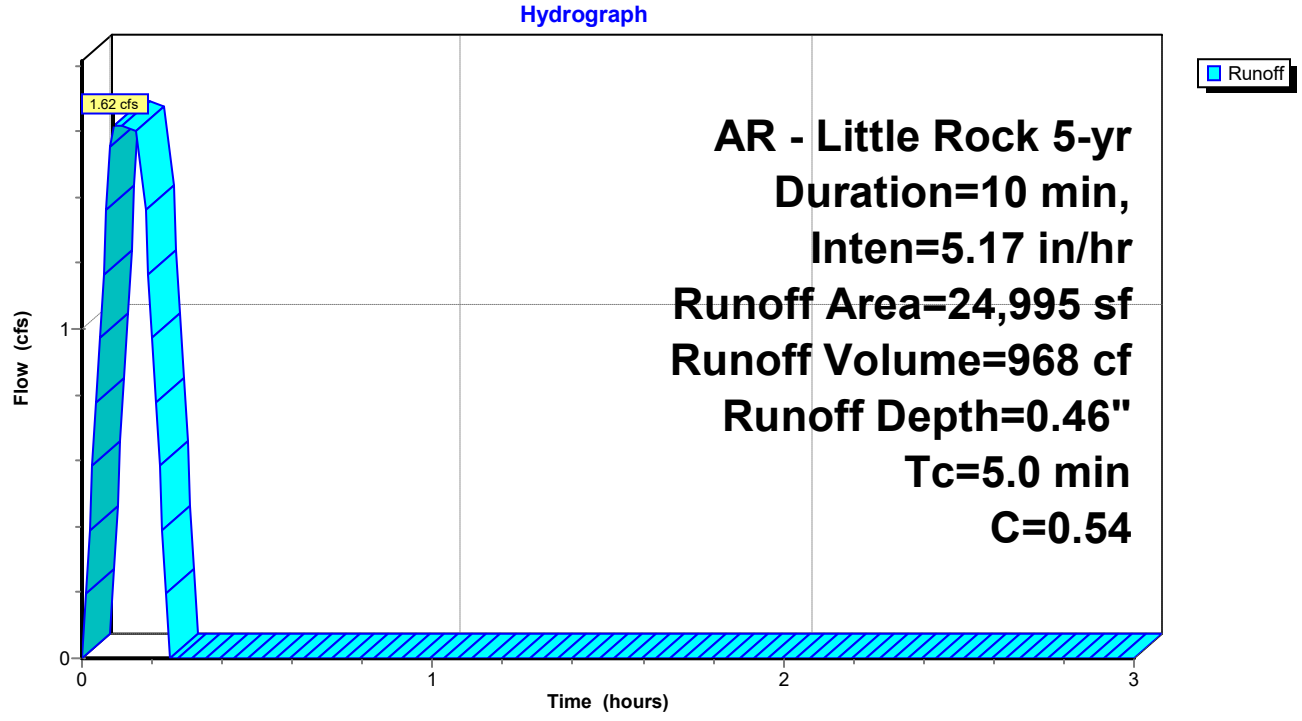
Runoff = 1.62 cfs @ 0.09 hrs, Volume= 968 cf, Depth= 0.46"
Routed to Link Post-Dev : APPROX DISCHARGE

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 5-yr Duration=10 min, Inten=5.17 in/hr

Area (sf)	C	Description
18,798	0.40	Sod Yard, Natural Vegetation
6,197	0.95	Paving, Sidewalks
24,995	0.54	Weighted Average
18,798		75.21% Pervious Area
6,197		24.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D7: Drainage Basin D7



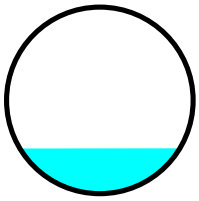
Summary for Reach P-A1: Pipe A1

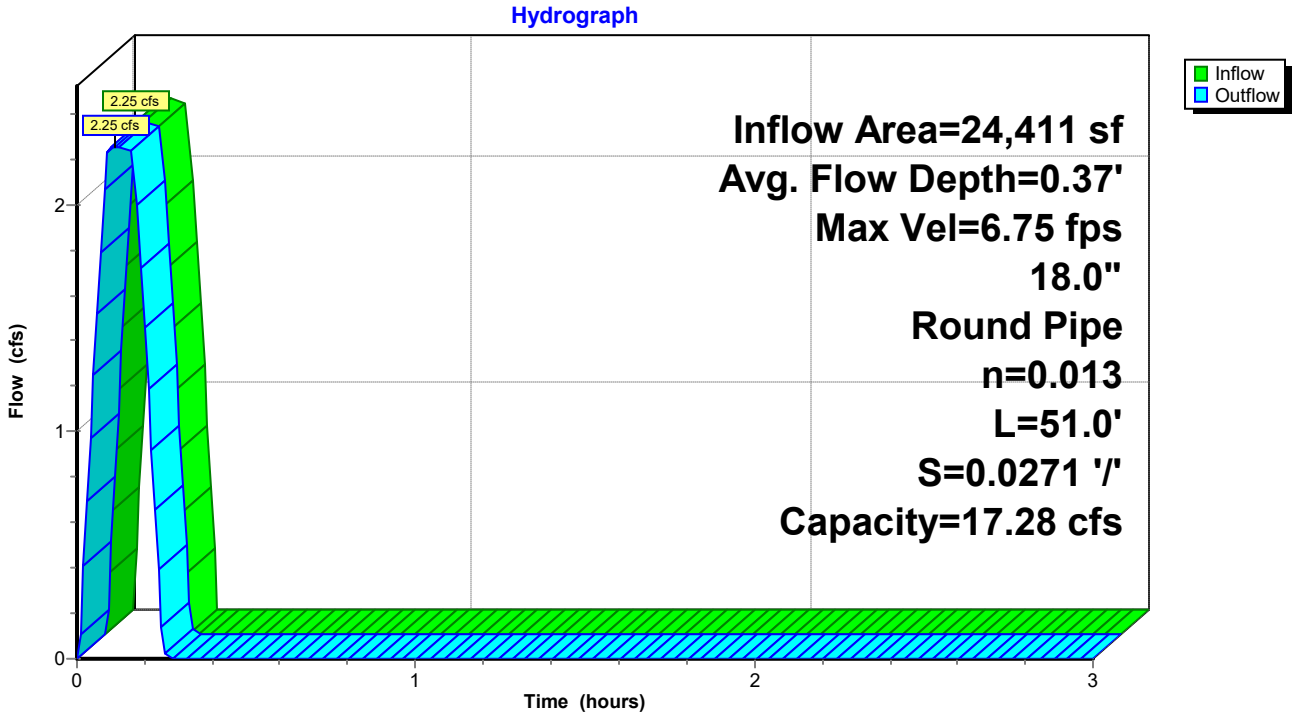
Inflow Area = 24,411 sf, 63.77% Impervious, Inflow Depth = 0.66" for 5-yr event
Inflow = 2.25 cfs @ 0.09 hrs, Volume= 1,348 cf
Outflow = 2.25 cfs @ 0.11 hrs, Volume= 1,348 cf, Atten= 0%, Lag= 1.2 min
Routed to Reach P-A2 : Pipe A2

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.75 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 4.79 fps, Avg. Travel Time= 0.2 min

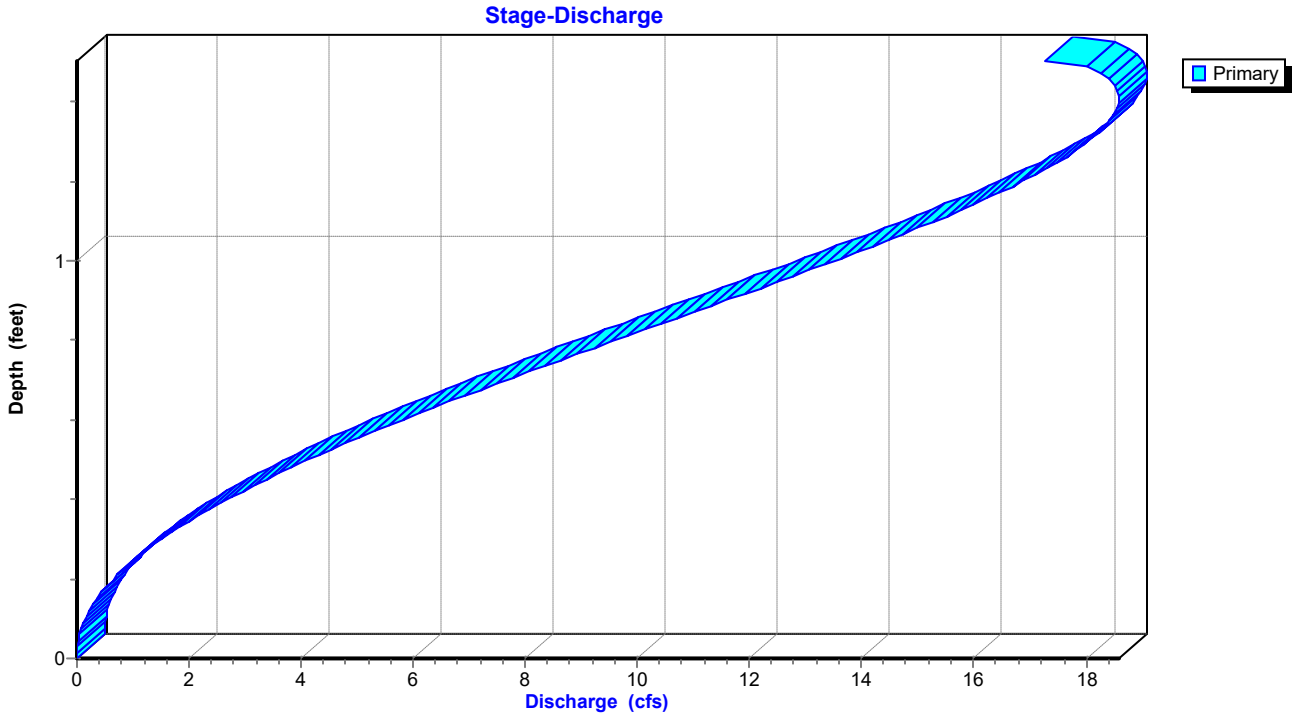
Peak Storage= 17 cf @ 0.09 hrs
Average Depth at Peak Storage= 0.37' , Surface Width= 1.29'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.28 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 51.0' Slope= 0.0271 '/'
Inlet Invert= 408.33', Outlet Invert= 406.95'





Reach P-A1: Pipe A1



Stage-Area-Storage for Reach P-A1: Pipe A1

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
408.33	0.0	0
408.35	0.0	0
408.37	0.0	1
408.39	0.0	1
408.41	0.0	2
408.43	0.1	3
408.45	0.1	3
408.47	0.1	4
408.49	0.1	5
408.51	0.1	6
408.53	0.1	7
408.55	0.2	8
408.57	0.2	9
408.59	0.2	10
408.61	0.2	12
408.63	0.3	13
408.65	0.3	14
408.67	0.3	15
408.69	0.3	17
408.71	0.4	18
408.73	0.4	19
408.75	0.4	21
408.77	0.4	22
408.79	0.5	23
408.81	0.5	25
408.83	0.5	26
408.85	0.5	28
408.87	0.6	29
408.89	0.6	31
408.91	0.6	32
408.93	0.7	34
408.95	0.7	35
408.97	0.7	37
408.99	0.7	38
409.01	0.8	40
409.03	0.8	41
409.05	0.8	43
409.07	0.9	44
409.09	0.9	46
409.11	0.9	47
409.13	1.0	49
409.15	1.0	50
409.17	1.0	52
409.19	1.0	53
409.21	1.1	55
409.23	1.1	56
409.25	1.1	58
409.27	1.2	59
409.29	1.2	61
409.31	1.2	62
409.33	1.3	64
409.35	1.3	65
409.37	1.3	67
409.39	1.3	68
409.41	1.4	69
409.43	1.4	71
409.45	1.4	72
409.47	1.4	73
409.49	1.5	75
409.51	1.5	76
409.53	1.5	77
409.55	1.5	78
409.57	1.6	80
409.59	1.6	81
409.61	1.6	82
409.63	1.6	83
409.65	1.6	84
409.67	1.7	85
409.69	1.7	86
409.71	1.7	87
409.73	1.7	88
409.75	1.7	88
409.77	1.7	89
409.79	1.8	89
409.81	1.8	90
409.83	**1.8**	**90**

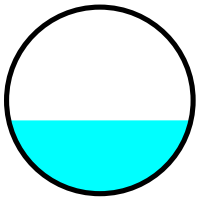
Summary for Reach P-A2: Pipe A2

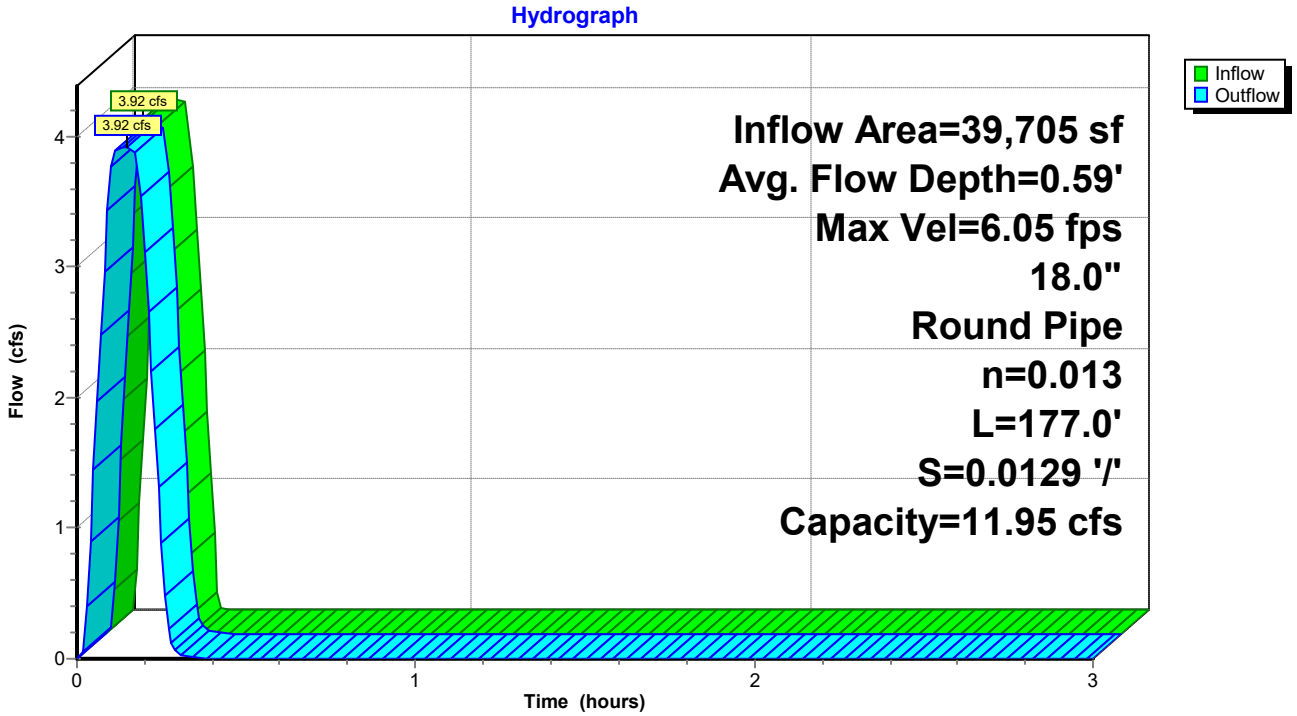
Inflow Area = 39,705 sf, 75.04% Impervious, Inflow Depth = 0.71" for 5-yr event
Inflow = 3.92 cfs @ 0.11 hrs, Volume= 2,346 cf
Outflow = 3.92 cfs @ 0.15 hrs, Volume= 2,346 cf, Atten= 0%, Lag= 2.4 min
Routed to Reach P-A3 : Pipe A3

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.05 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 2.43 fps, Avg. Travel Time= 1.2 min

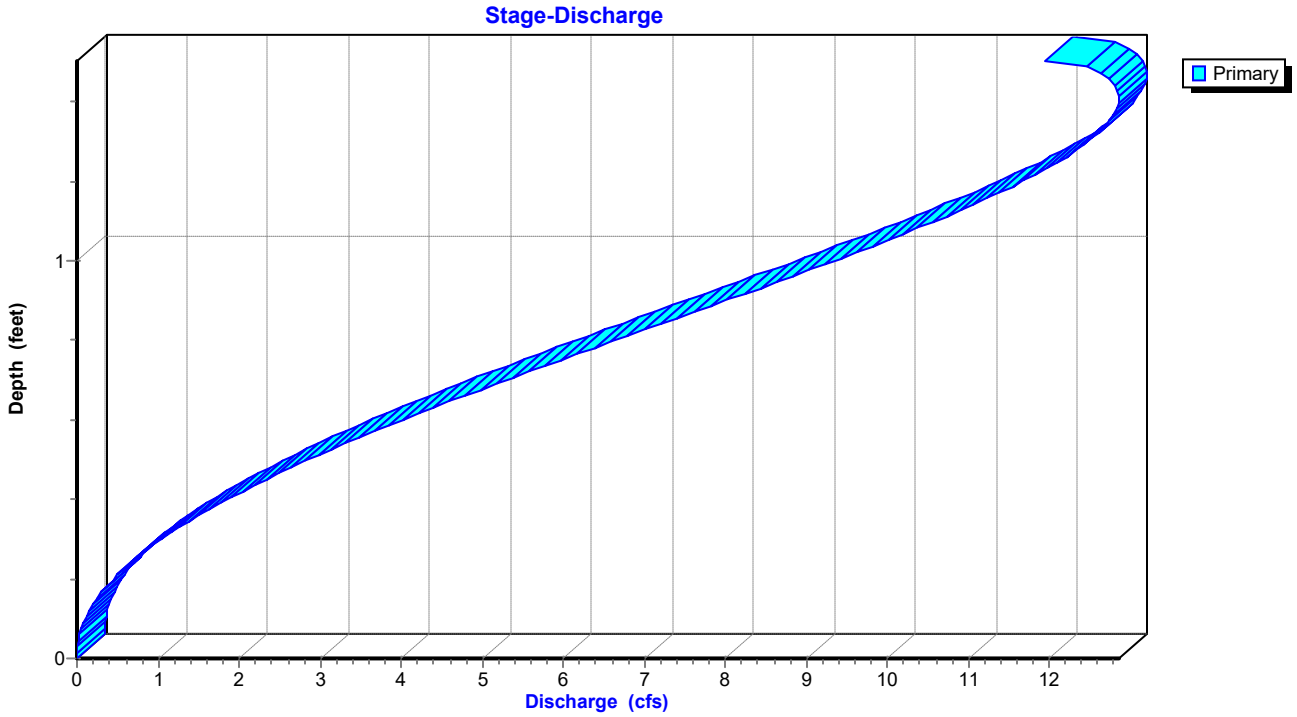
Peak Storage= 114 cf @ 0.14 hrs
Average Depth at Peak Storage= 0.59' , Surface Width= 1.47'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 11.95 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 177.0' Slope= 0.0129 '/'
Inlet Invert= 406.85', Outlet Invert= 404.56'





Reach P-A2: Pipe A2



Stage-Area-Storage for Reach P-A2: Pipe A2

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
406.85	0.0	0
406.87	0.0	1
406.89	0.0	2
406.91	0.0	4
406.93	0.0	6
406.95	0.1	9
406.97	0.1	12
406.99	0.1	15
407.01	0.1	18
407.03	0.1	21
407.05	0.1	25
407.07	0.2	28
407.09	0.2	32
407.11	0.2	36
407.13	0.2	40
407.15	0.3	45
407.17	0.3	49
407.19	0.3	53
407.21	0.3	58
407.23	0.4	62
407.25	0.4	67
407.27	0.4	72
407.29	0.4	76
407.31	0.5	81
407.33	0.5	86
407.35	0.5	91
407.37	0.5	96
407.39	0.6	101
407.41	0.6	106
407.43	0.6	112
407.45	0.7	117
407.47	0.7	122
407.49	0.7	127
407.51	0.7	133
407.53	0.8	138
407.55	0.8	143
407.57	0.8	148
407.59	0.9	154
407.61	0.9	159
407.63	0.9	164
407.65	1.0	170
407.67	1.0	175
407.69	1.0	180
407.71	1.0	185
407.73	1.1	191
407.75	1.1	196
407.77	1.1	201
407.79	1.2	206
407.81	1.2	211
407.83	1.2	216
407.85	1.3	222
407.87	1.3	226
407.89	1.3	231
407.91	1.3	236
407.93	1.4	241
407.95	1.4	246
407.97	1.4	250
407.99	1.4	255
408.01	1.5	260
408.03	1.5	264
408.05	1.5	268
408.07	1.5	272
408.09	1.6	277
408.11	1.6	280
408.13	1.6	284
408.15	1.6	288
408.17	1.6	292
408.19	1.7	295
408.21	1.7	298
408.23	1.7	301
408.25	1.7	304
408.27	1.7	306
408.29	1.7	309
408.31	1.8	310
408.33	1.8	312
408.35	**1.8**	**313**

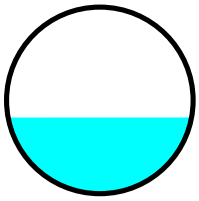
Summary for Reach P-A3: Pipe A3

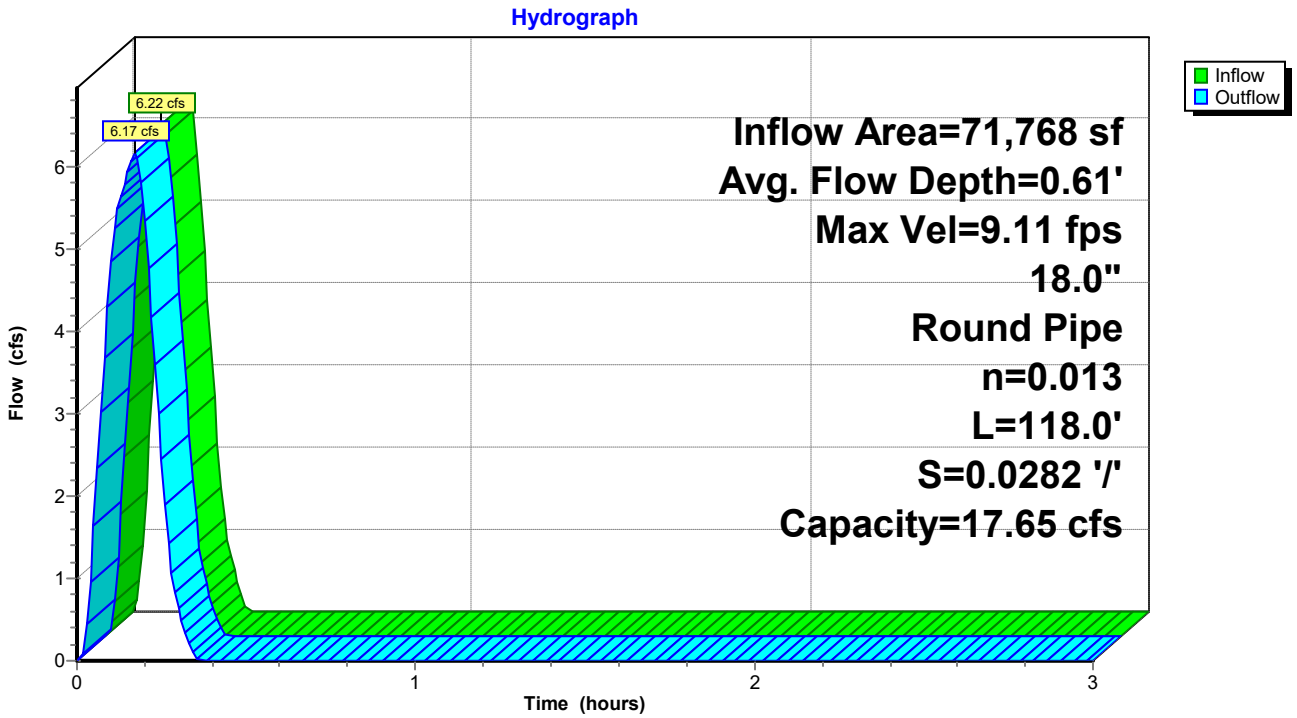
Inflow Area = 71,768 sf, 58.28% Impervious, Inflow Depth = 0.63" for 5-yr event
Inflow = 6.22 cfs @ 0.17 hrs, Volume= 3,751 cf
Outflow = 6.17 cfs @ 0.17 hrs, Volume= 3,751 cf, Atten= 1%, Lag= 0.3 min
Routed to Reach P-A4 : Pipe A4

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Max. Velocity= 9.11 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 3.79 fps, Avg. Travel Time= 0.5 min

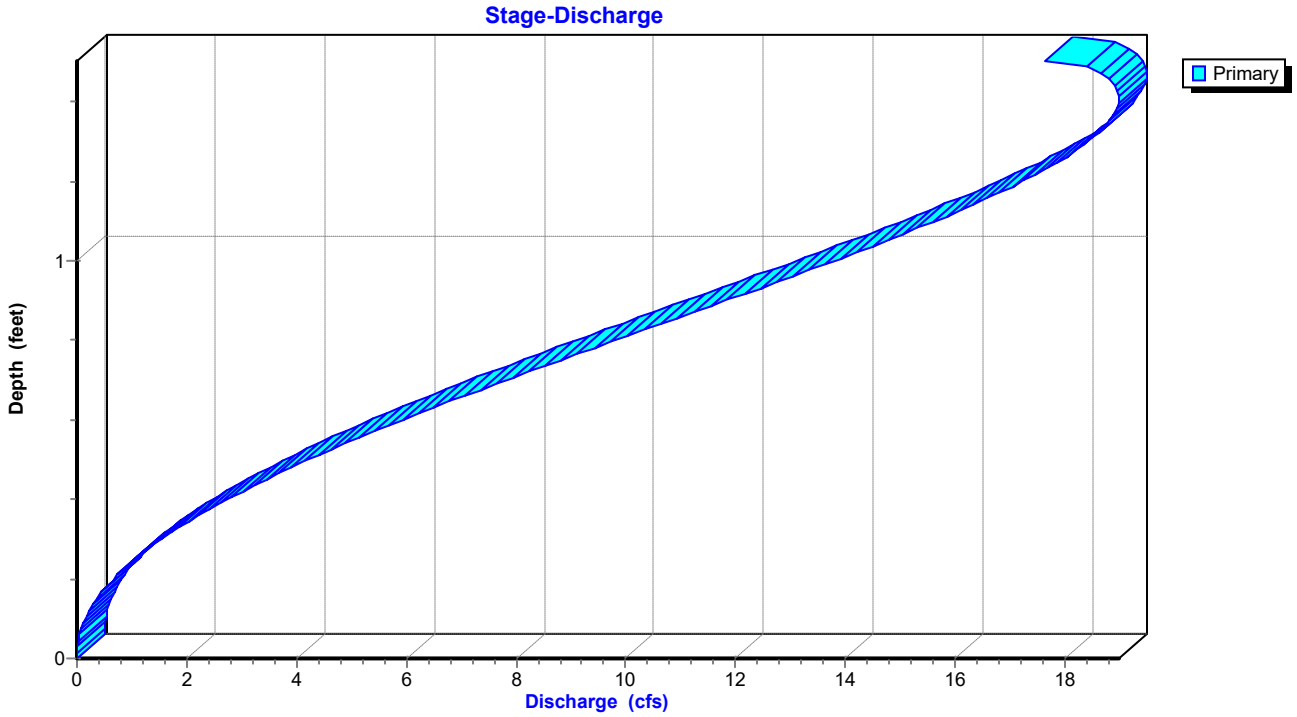
Peak Storage= 80 cf @ 0.17 hrs
Average Depth at Peak Storage= 0.61' , Surface Width= 1.48'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.65 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 118.0' Slope= 0.0282 '/'
Inlet Invert= 404.46', Outlet Invert= 401.13'





Reach P-A3: Pipe A3



Stage-Area-Storage for Reach P-A3: Pipe A3

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
404.46	0.0	0
404.48	0.0	1
404.50	0.0	2
404.52	0.0	3
404.54	0.0	4
404.56	0.1	6
404.58	0.1	8
404.60	0.1	10
404.62	0.1	12
404.64	0.1	14
404.66	0.1	17
404.68	0.2	19
404.70	0.2	22
404.72	0.2	24
404.74	0.2	27
404.76	0.3	30
404.78	0.3	33
404.80	0.3	35
404.82	0.3	38
404.84	0.4	42
404.86	0.4	45
404.88	0.4	48
404.90	0.4	51
404.92	0.5	54
404.94	0.5	58
404.96	0.5	61
404.98	0.5	64
405.00	0.6	68
405.02	0.6	71
405.04	0.6	74
405.06	0.7	78
405.08	0.7	81
405.10	0.7	85
405.12	0.7	88
405.14	0.8	92
405.16	0.8	95
405.18	0.8	99
405.20	0.9	102
405.22	0.9	106
405.24	0.9	110
405.26	1.0	113
405.28	1.0	117
405.30	1.0	120
405.32	1.0	124
405.34	1.1	127
405.36	1.1	131
405.38	1.1	134
405.40	1.2	138
405.42	1.2	141
405.44	1.2	144
405.46	1.3	148
405.48	1.3	151
405.50	1.3	154
405.52	1.3	158
405.54	1.4	161
405.56	1.4	164
405.58	1.4	167
405.60	1.4	170
405.62	1.5	173
405.64	1.5	176
405.66	1.5	179
405.68	1.5	182
405.70	1.6	184
405.72	1.6	187
405.74	1.6	190
405.76	1.6	192
405.78	1.6	194
405.80	1.7	197
405.82	1.7	199
405.84	1.7	201
405.86	1.7	203
405.88	1.7	204
405.90	1.7	206
405.92	1.8	207
405.94	1.8	208
405.96	**1.8**	**209**

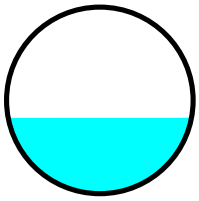
Summary for Reach P-A4: Pipe A4

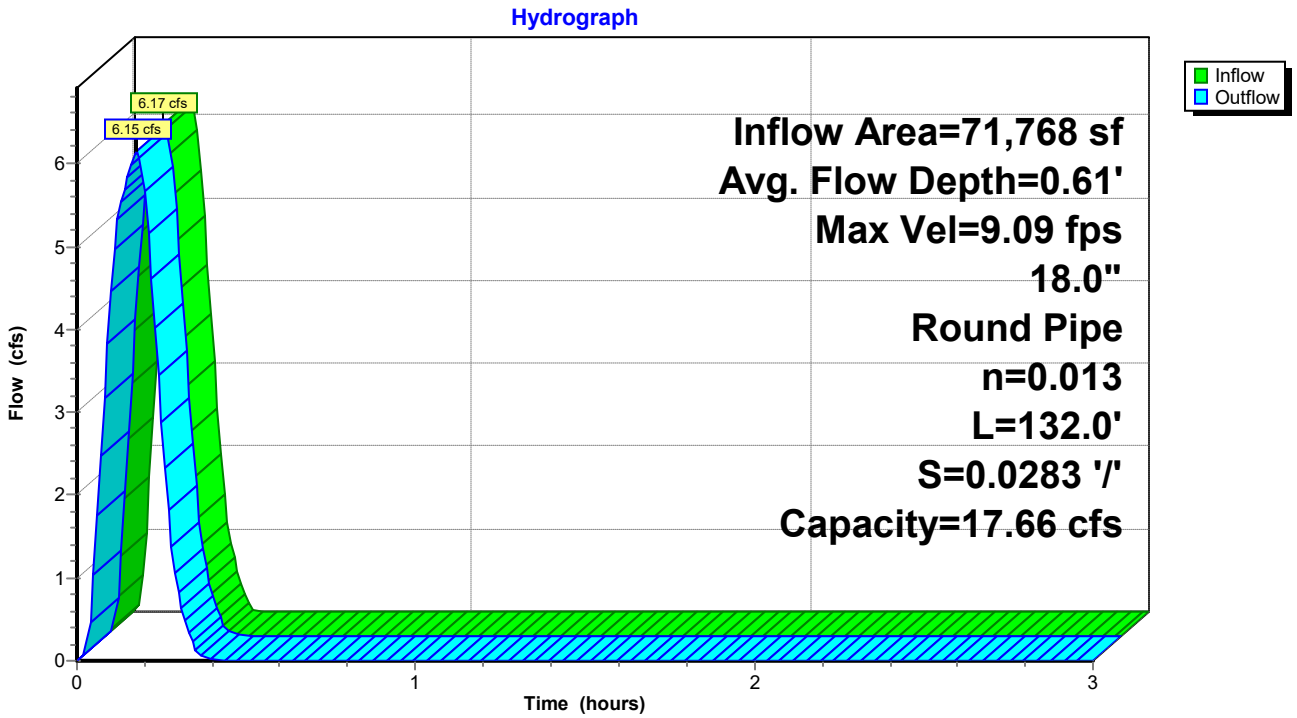
Inflow Area = 71,768 sf, 58.28% Impervious, Inflow Depth = 0.63" for 5-yr event
Inflow = 6.17 cfs @ 0.17 hrs, Volume= 3,751 cf
Outflow = 6.15 cfs @ 0.18 hrs, Volume= 3,751 cf, Atten= 0%, Lag= 0.4 min
Routed to Pond DP1 : Re-Establised East Pond

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Max. Velocity= 9.09 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 3.60 fps, Avg. Travel Time= 0.6 min

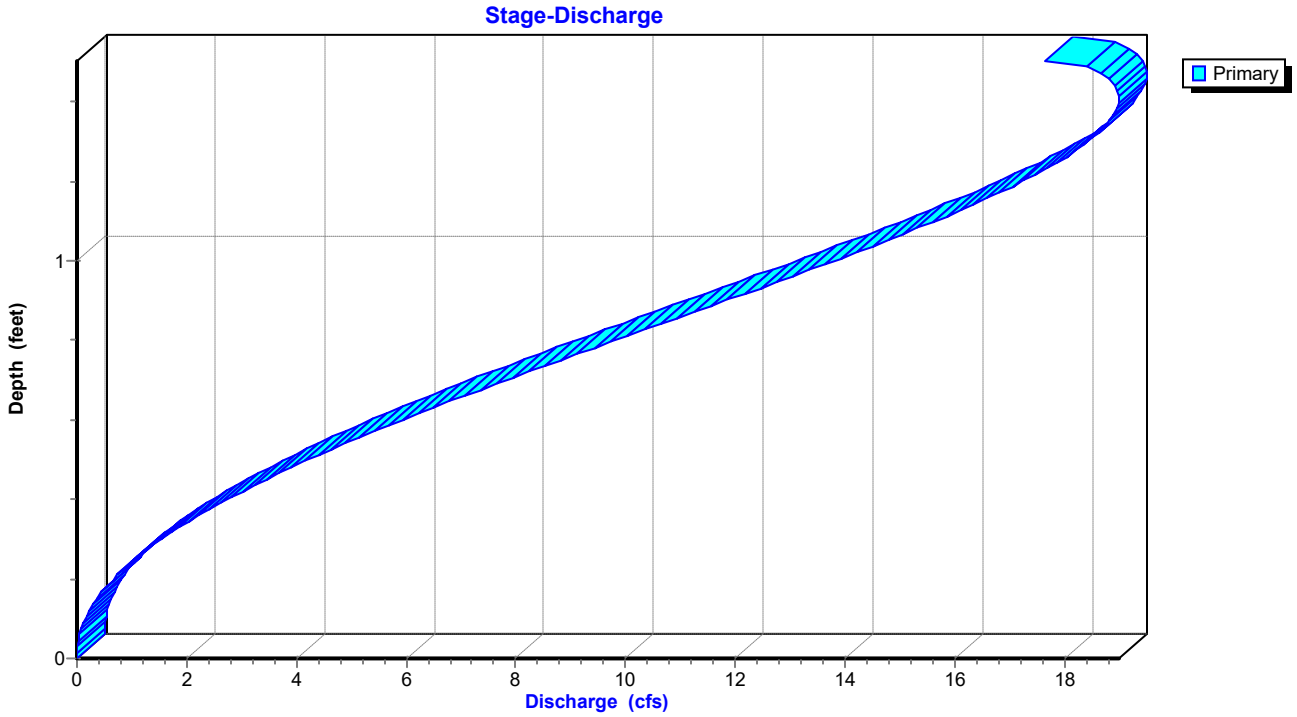
Peak Storage= 89 cf @ 0.17 hrs
Average Depth at Peak Storage= 0.61' , Surface Width= 1.47'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.66 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 132.0' Slope= 0.0283 '/'
Inlet Invert= 401.03', Outlet Invert= 397.30'





Reach P-A4: Pipe A4



Stage-Area-Storage for Reach P-A4: Pipe A4

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
401.03	0.0	0
401.05	0.0	1
401.07	0.0	2
401.09	0.0	3
401.11	0.0	5
401.13	0.1	7
401.15	0.1	9
401.17	0.1	11
401.19	0.1	13
401.21	0.1	16
401.23	0.1	18
401.25	0.2	21
401.27	0.2	24
401.29	0.2	27
401.31	0.2	30
401.33	0.3	33
401.35	0.3	36
401.37	0.3	40
401.39	0.3	43
401.41	0.4	46
401.43	0.4	50
401.45	0.4	53
401.47	0.4	57
401.49	0.5	61
401.51	0.5	64
401.53	0.5	68
401.55	0.5	72
401.57	0.6	76
401.59	0.6	79
401.61	0.6	83
401.63	0.7	87
401.65	0.7	91
401.67	0.7	95
401.69	0.7	99
401.71	0.8	103
401.73	0.8	107
401.75	0.8	111
401.77	0.9	115
401.79	0.9	119
401.81	0.9	123
401.83	1.0	127
401.85	1.0	130
401.87	1.0	134
401.89	1.0	138
401.91	1.1	142
401.93	1.1	146
401.95	1.1	150
401.97	1.2	154
401.99	1.2	158
402.01	1.2	161
402.03	1.3	165
402.05	1.3	169
402.07	1.3	173
402.09	1.3	176
402.11	1.4	180
402.13	1.4	183
402.15	1.4	187
402.17	1.4	190
402.19	1.5	194
402.21	1.5	197
402.23	1.5	200
402.25	1.5	203
402.27	1.6	206
402.29	1.6	209
402.31	1.6	212
402.33	1.6	215
402.35	1.6	217
402.37	1.7	220
402.39	1.7	222
402.41	1.7	225
402.43	1.7	227
402.45	1.7	228
402.47	1.7	230
402.49	1.8	232
402.51	1.8	233
402.53	**1.8**	**233**

Summary for Pond DP1: Re-Establised East Pond

Inflow Area = 132,514 sf, 61.41% Impervious, Inflow Depth = 0.64" for 5-yr event
Inflow = 11.49 cfs @ 0.16 hrs, Volume= 7,053 cf
Outflow = 6.40 cfs @ 0.22 hrs, Volume= 7,053 cf, Atten= 44%, Lag= 3.6 min
Primary = 6.40 cfs @ 0.22 hrs, Volume= 7,053 cf
Routed to Link Post-Dev : APPROX DISCHARGE

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Peak Elev= 397.93' @ 0.22 hrs Storage= 3,558 cf

Plug-Flow detention time= 8.2 min calculated for 7,053 cf (100% of inflow)
Center-of-Mass det. time= 8.1 min (17.0 - 8.9)

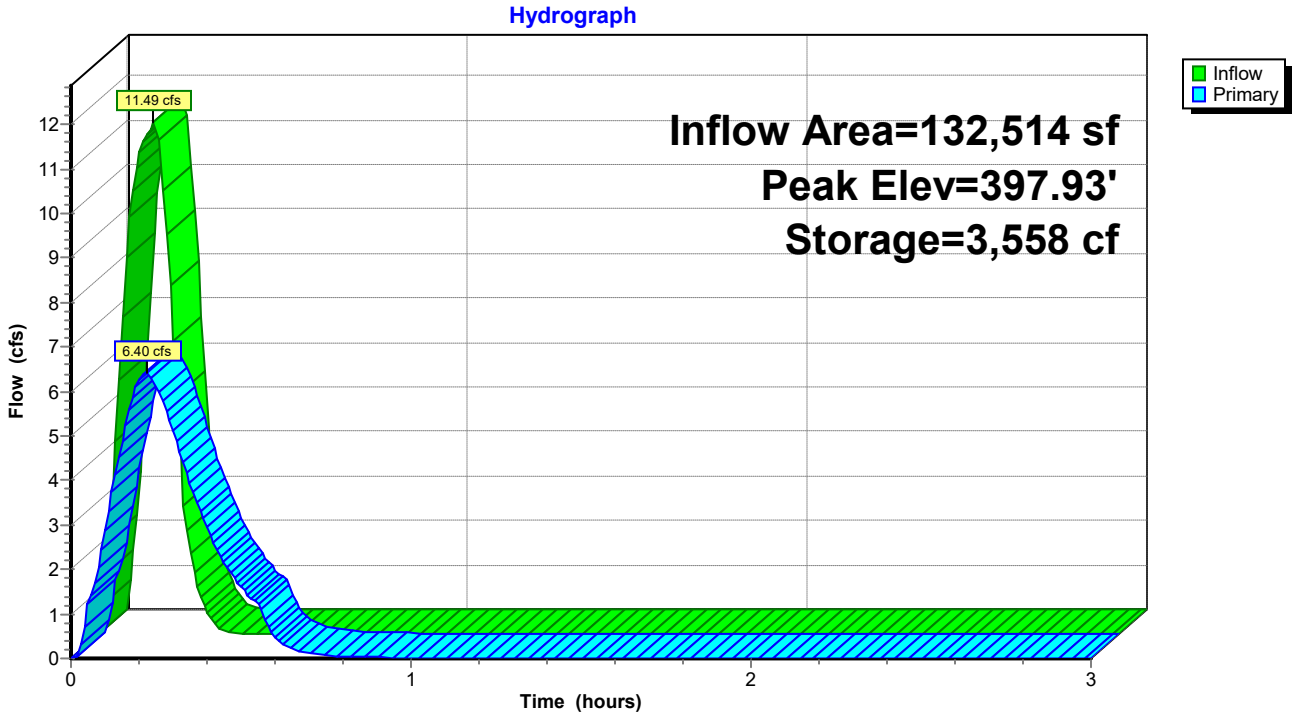
Volume	Invert	Avail.Storage	Storage Description
#1	396.00'	8,557 cf	**Custom Stage Data** Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
396.00	0	0
396.50	250	250
397.00	1,092	1,342
398.00	2,387	3,729
399.00	2,405	6,134
400.00	2,423	8,557

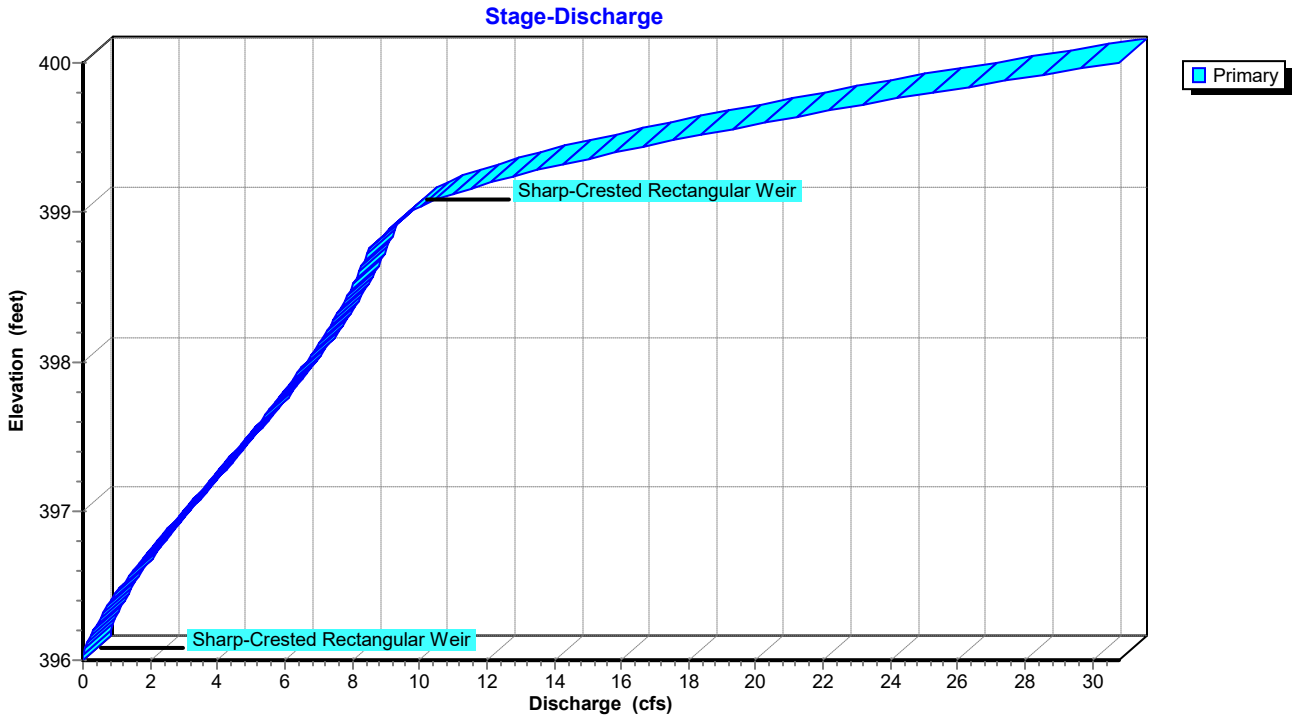
Device	Routing	Invert	Outlet Devices
#1	Primary	399.00'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	396.00'	**1.1' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 10.0' Crest Height

Primary OutFlow Max=6.40 cfs @ 0.22 hrs HW=397.93' (Free Discharge)
1=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)
2=Sharp-Crested Rectangular Weir (Weir Controls 6.40 cfs @ 4.65 fps)

Pond DP1: Re-Establised East Pond



Pond DP1: Re-Establised East Pond



Stage-Area-Storage for Pond DP1: Re-Establised East Pond

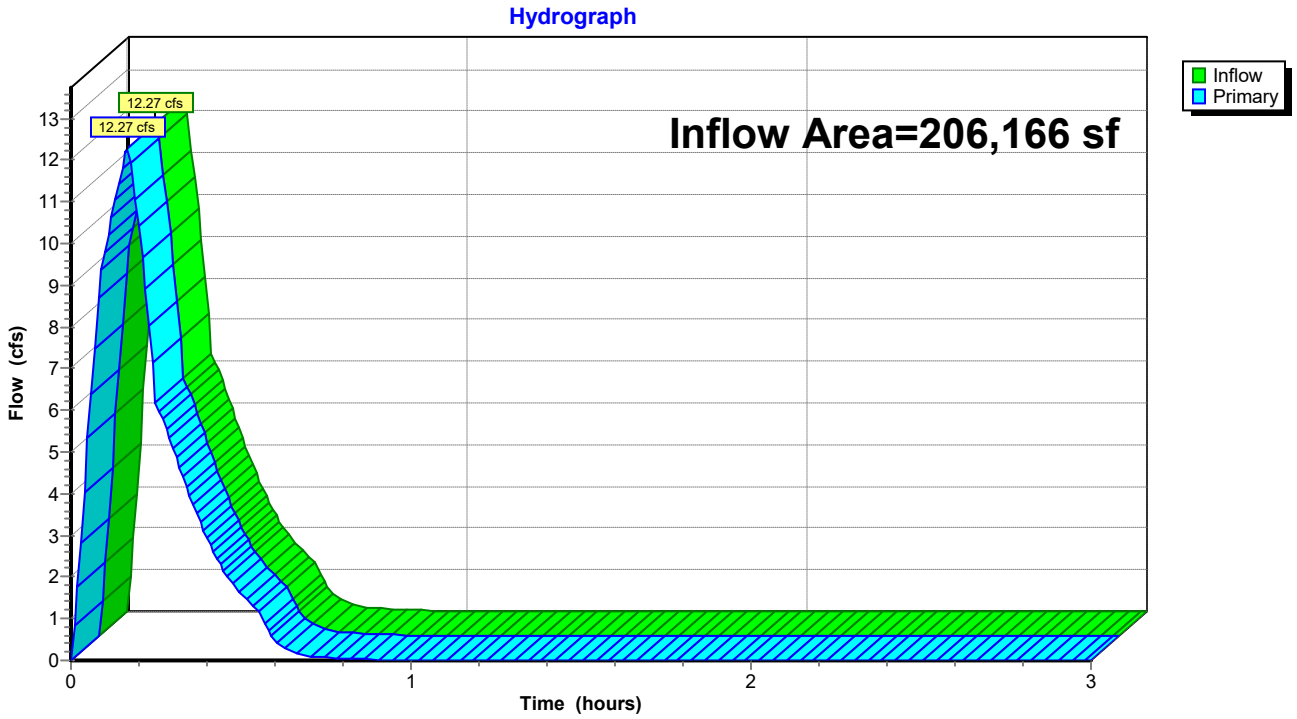
Elevation (feet)	Storage (cubic-feet)
396.00	0
396.05	25
396.10	50
396.15	75
396.20	100
396.25	125
396.30	150
396.35	175
396.40	200
396.45	225
396.50	250
396.55	359
396.60	468
396.65	578
396.70	687
396.75	796
396.80	905
396.85	1,014
396.90	1,124
396.95	1,233
397.00	1,342
397.05	1,461
397.10	1,581
397.15	1,700
397.20	1,819
397.25	1,939
397.30	2,058
397.35	2,177
397.40	2,297
397.45	2,416
397.50	2,536
397.55	2,655
397.60	2,774
397.65	2,894
397.70	3,013
397.75	3,132
397.80	3,252
397.85	3,371
397.90	3,490
397.95	3,610
398.00	3,729
398.05	3,849
398.10	3,970
398.15	4,090
398.20	4,210
398.25	4,330
398.30	4,451
398.35	4,571
398.40	4,691
398.45	4,811
398.50	4,932
398.55	5,052
398.60	5,172
398.65	5,292
398.70	5,412
398.75	5,533
398.80	5,653
398.85	5,773
398.90	5,893
398.95	6,014
399.00	6,134
399.05	6,255
399.10	6,376
399.15	6,497
399.20	6,619
399.25	6,740
399.30	6,861
399.35	6,982
399.40	7,103
399.45	7,224
399.50	7,346
399.55	7,467
399.60	7,588
399.65	7,709
399.70	7,830
399.75	7,951
399.80	8,072
399.85	8,194
399.90	8,315
399.95	8,436
400.00	**8,557**

Summary for Link Post-Dev: APPROX DISCHARGE

Inflow Area = 206,166 sf, 64.42% Impervious, Inflow Depth = 0.65" for 5-yr event
Inflow = 12.27 cfs @ 0.17 hrs, Volume= 11,197 cf
Primary = 12.27 cfs @ 0.17 hrs, Volume= 11,197 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Link Post-Dev: APPROX DISCHARGE



Summary for Subcatchment D1: Drainage Basin D1

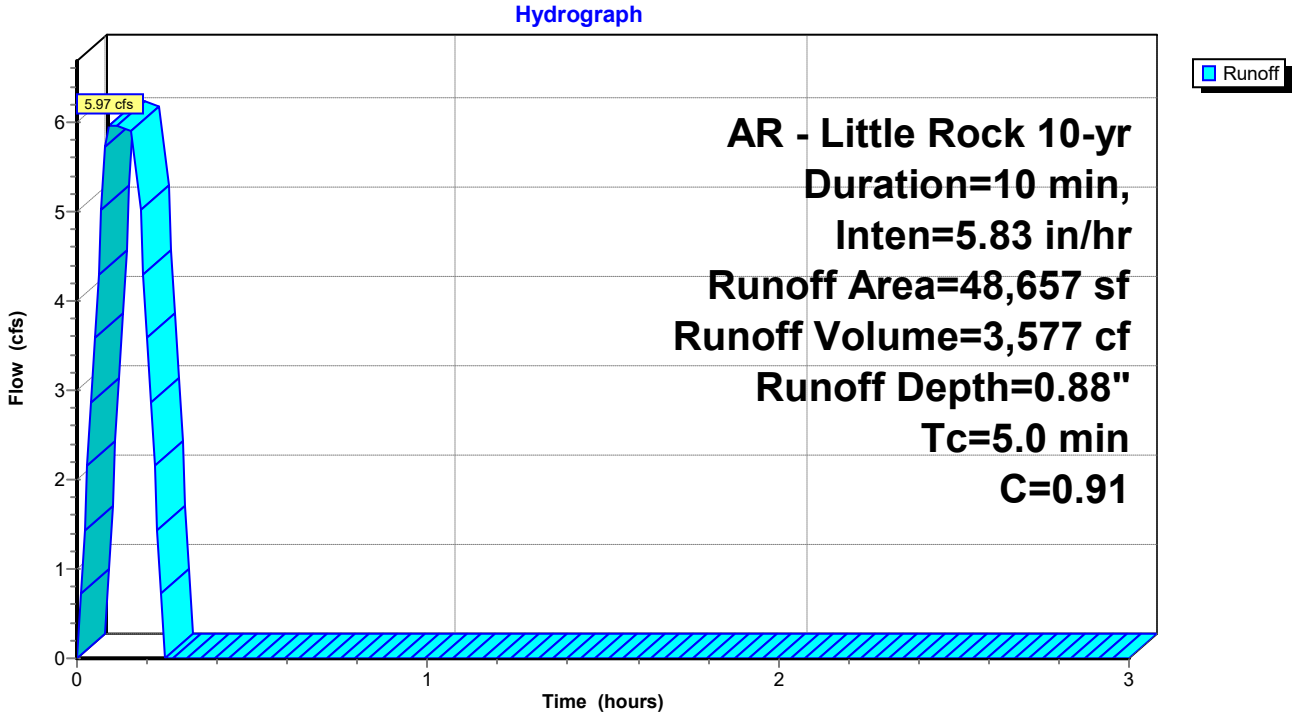
Runoff = 5.97 cfs @ 0.09 hrs, Volume= 3,577 cf, Depth= 0.88"
Routed to Link Post-Dev : APPROX DISCHARGE

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 10-yr Duration=10 min, Inten=5.83 in/hr

Area (sf)	C	Description
3,421	0.40	Sod Yard
45,236	0.95	Rood, Drives, Sidewalks
48,657	0.91	Weighted Average
3,421		7.03% Pervious Area
45,236		92.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D1: Drainage Basin D1



Summary for Subcatchment D2: Drainage Basin D2

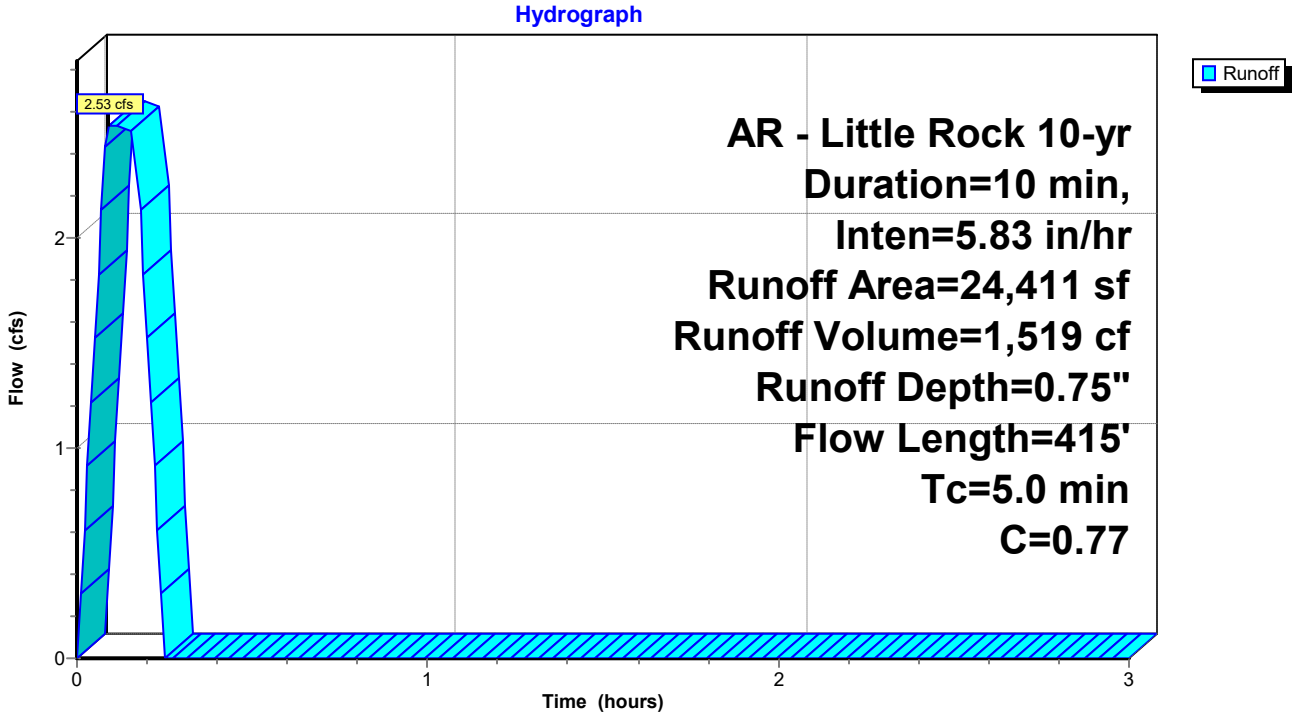
Runoff = 2.53 cfs @ 0.09 hrs, Volume= 1,519 cf, Depth= 0.75"
Routed to Reach P-A1 : Pipe A1

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 10-yr Duration=10 min, Inten=5.83 in/hr

Area (sf)	C	Description
8,845	0.45	Rip Rap Embankment
15,566	0.95	Roof, Drives, Sidewalks
24,411	0.77	Weighted Average
8,845		36.23% Pervious Area
15,566		63.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	415		1.38		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D2: Drainage Basin D2



Summary for Subcatchment D3: Drainage Basin D3

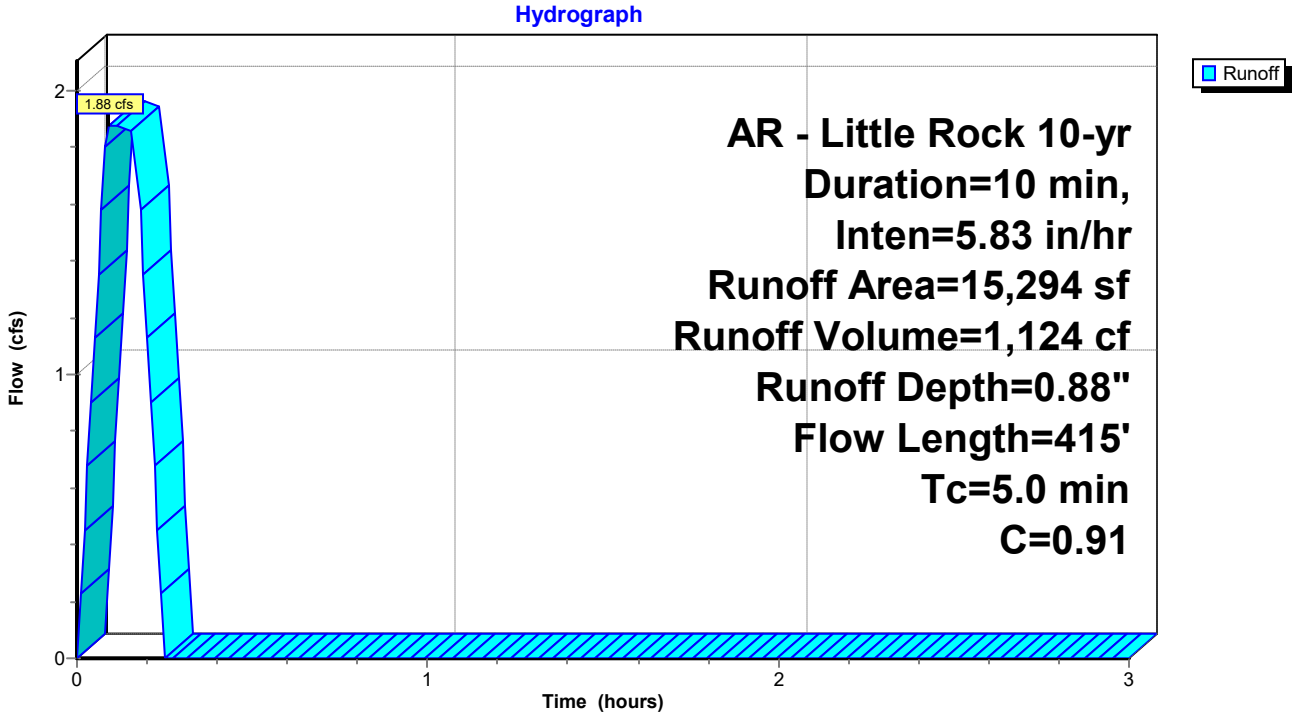
Runoff = 1.88 cfs @ 0.09 hrs, Volume= 1,124 cf, Depth= 0.88"
Routed to Reach P-A2 : Pipe A2

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 10-yr Duration=10 min, Inten=5.83 in/hr

Area (sf)	C	Description
1,065	0.40	Sod Yard
14,229	0.95	Paving, Sidewalks
15,294	0.91	Weighted Average
1,065		6.96% Pervious Area
14,229		93.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	415		1.38		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D3: Drainage Basin D3



Summary for Subcatchment D4: Drainage Basin D4

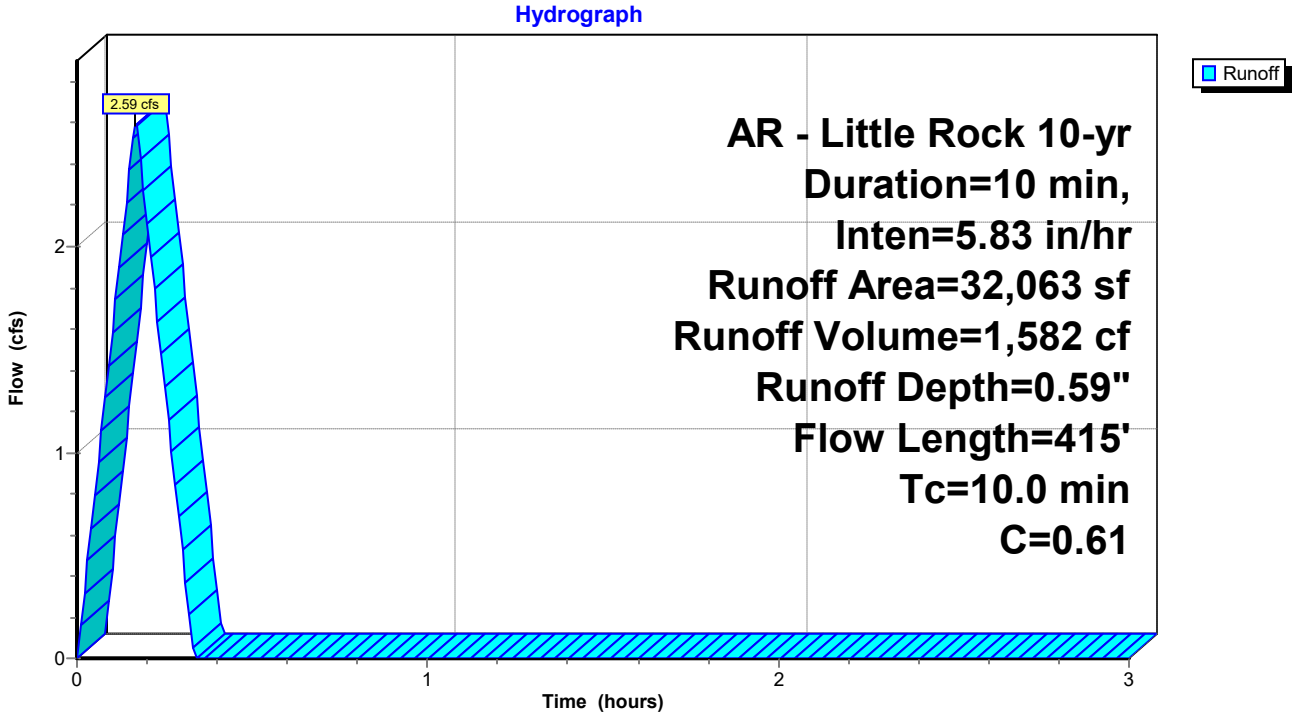
Runoff = 2.59 cfs @ 0.17 hrs, Volume= 1,582 cf, Depth= 0.59"
Routed to Reach P-A3 : Pipe A3

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 10-yr Duration=10 min, Inten=5.83 in/hr

Area (sf)	C	Description
20,032	0.40	
12,031	0.95	
32,063	0.61	Weighted Average
20,032		62.48% Pervious Area
12,031		37.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	415		0.69		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D4: Drainage Basin D4



Summary for Subcatchment D5: Drainage Basin D5

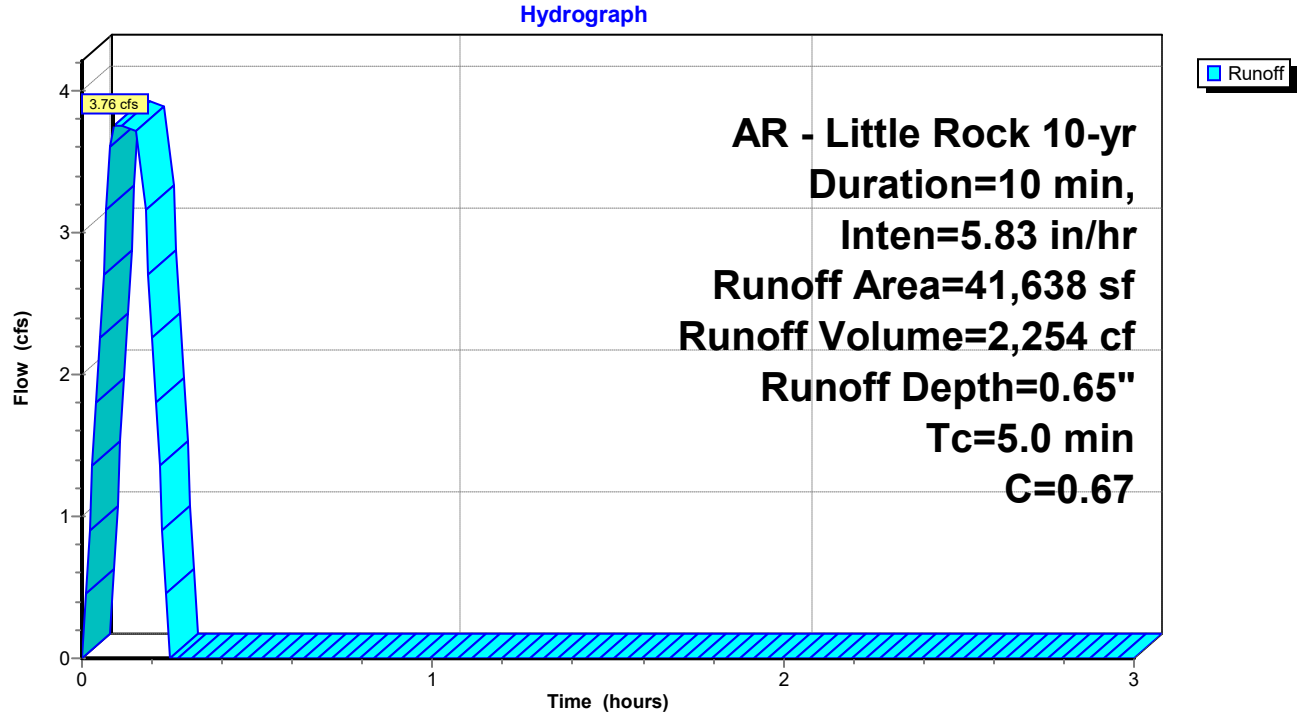
Runoff = 3.76 cfs @ 0.09 hrs, Volume= 2,254 cf, Depth= 0.65"
Routed to Pond DP1 : Re-Establised East Pond

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 10-yr Duration=10 min, Inten=5.83 in/hr

Area (sf)	C	Description
21,201	0.40	Sod Yard, Natural Vegetation
20,437	0.95	Paving, Sidewalks
41,638	0.67	Weighted Average
21,201		50.92% Pervious Area
20,437		49.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D5: Drainage Basin D5



Summary for Subcatchment D6: Drainage Basin D6

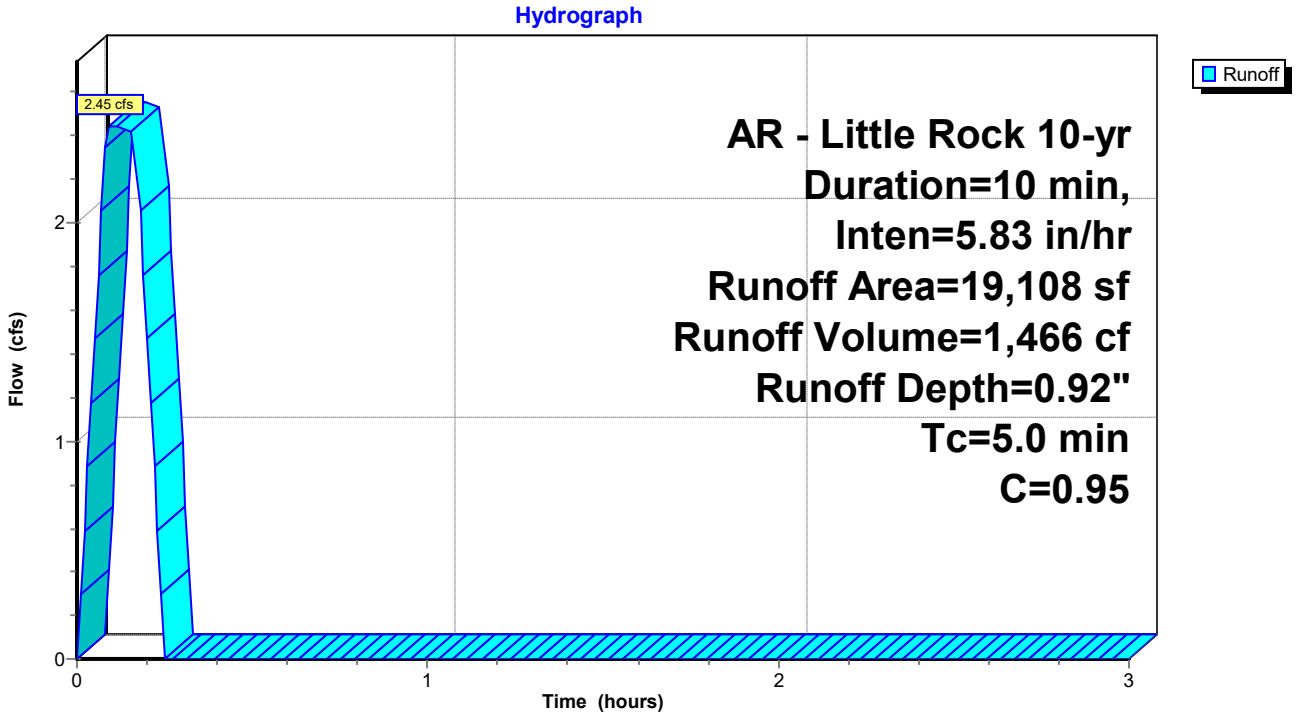
Runoff = 2.45 cfs @ 0.09 hrs, Volume= 1,466 cf, Depth= 0.92"
Routed to Pond DP1 : Re-Establised East Pond

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 10-yr Duration=10 min, Inten=5.83 in/hr

Area (sf)	C	Description
19,108	0.95	Roof
19,108		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D6: Drainage Basin D6



Summary for Subcatchment D7: Drainage Basin D7

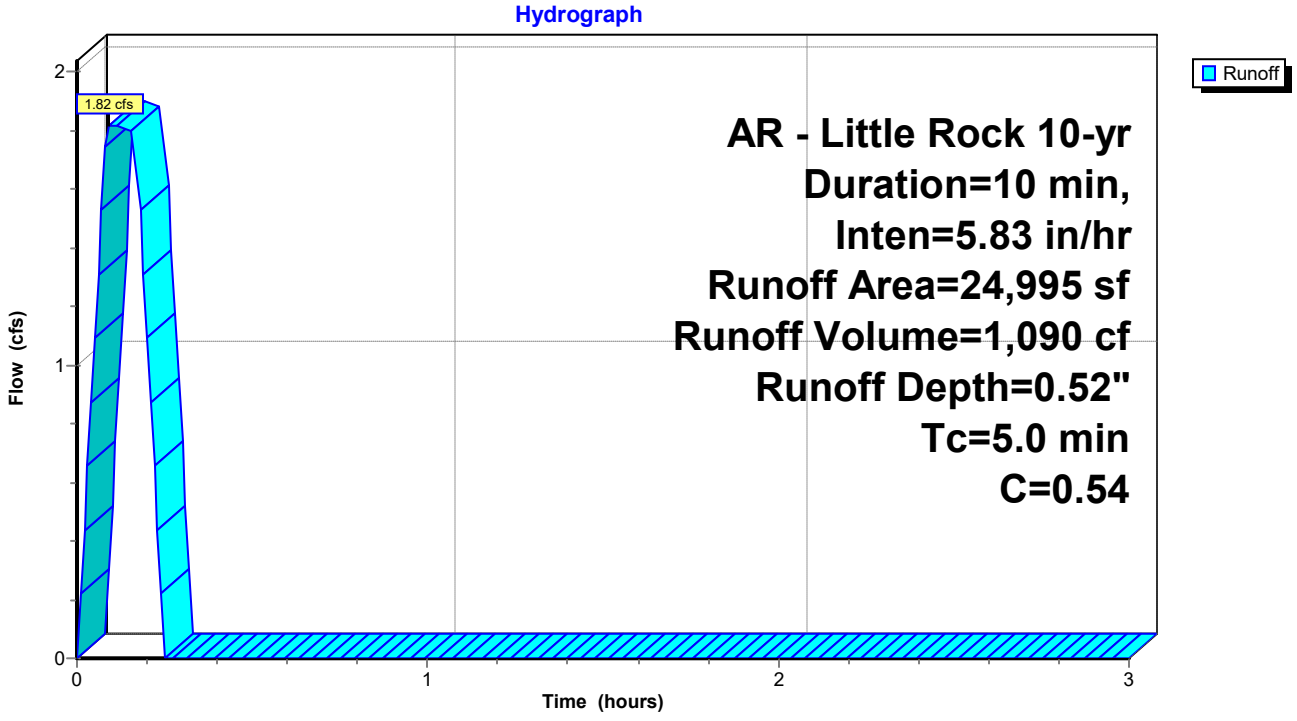
Runoff = 1.82 cfs @ 0.09 hrs, Volume= 1,090 cf, Depth= 0.52"
Routed to Link Post-Dev : APPROX DISCHARGE

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 10-yr Duration=10 min, Inten=5.83 in/hr

Area (sf)	C	Description
18,798	0.40	Sod Yard, Natural Vegetation
6,197	0.95	Paving, Sidewalks
24,995	0.54	Weighted Average
18,798		75.21% Pervious Area
6,197		24.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D7: Drainage Basin D7



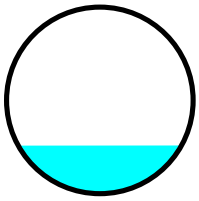
Summary for Reach P-A1: Pipe A1

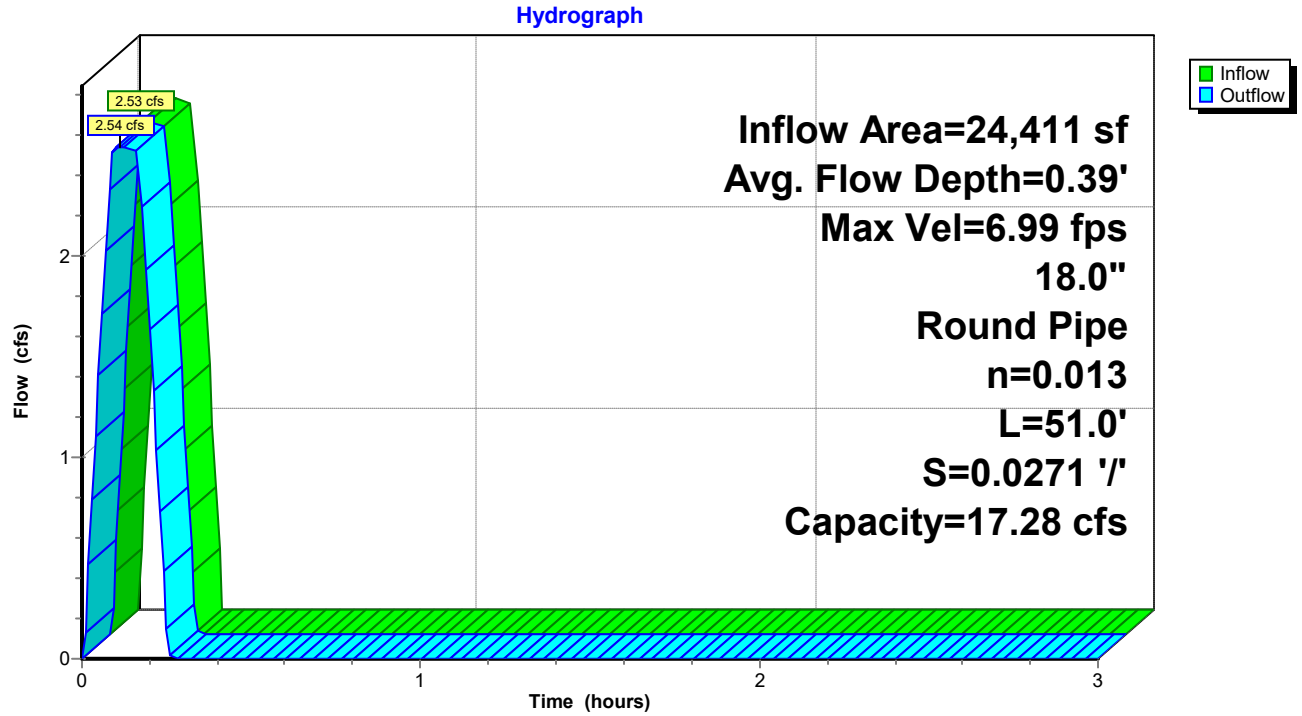
Inflow Area = 24,411 sf, 63.77% Impervious, Inflow Depth = 0.75" for 10-yr event
Inflow = 2.53 cfs @ 0.09 hrs, Volume= 1,519 cf
Outflow = 2.54 cfs @ 0.11 hrs, Volume= 1,519 cf, Atten= 0%, Lag= 1.2 min
Routed to Reach P-A2 : Pipe A2

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.99 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 5.09 fps, Avg. Travel Time= 0.2 min

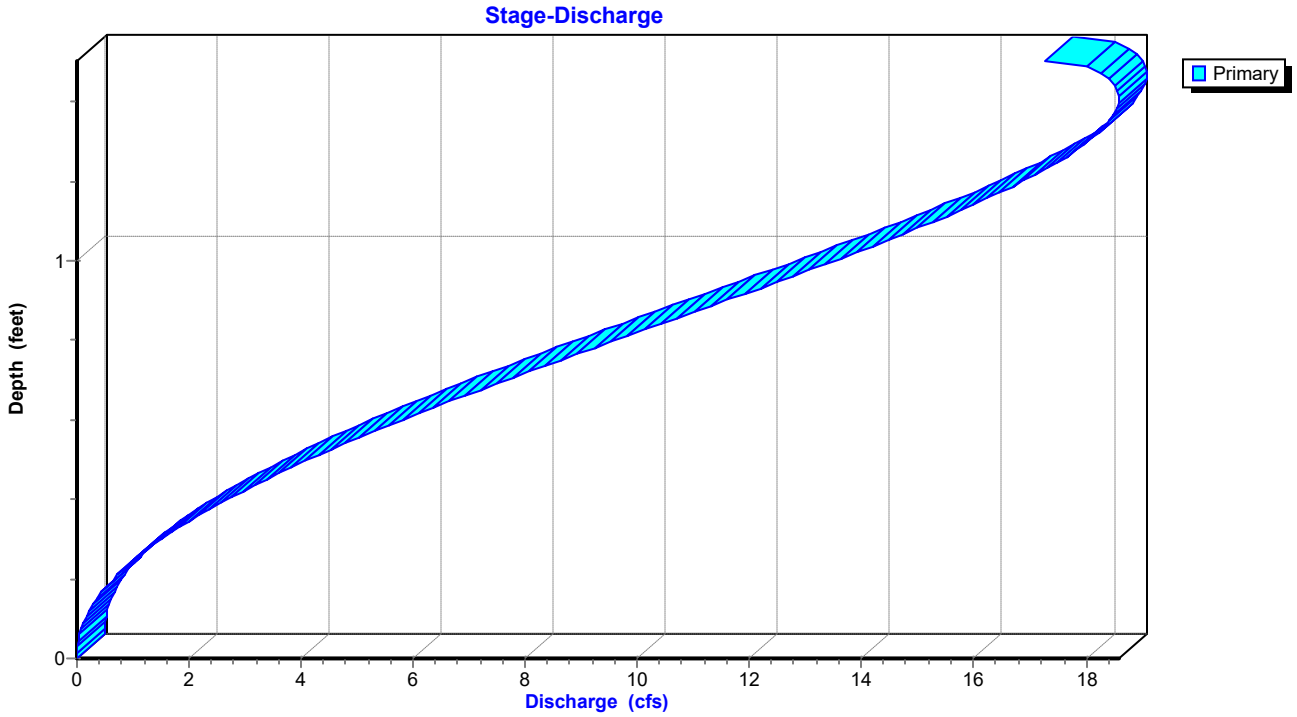
Peak Storage= 19 cf @ 0.09 hrs
Average Depth at Peak Storage= 0.39' , Surface Width= 1.31'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.28 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 51.0' Slope= 0.0271 '/'
Inlet Invert= 408.33', Outlet Invert= 406.95'





Reach P-A1: Pipe A1



Stage-Area-Storage for Reach P-A1: Pipe A1

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
408.33	0.0	0
408.35	0.0	0
408.37	0.0	1
408.39	0.0	1
408.41	0.0	2
408.43	0.1	3
408.45	0.1	3
408.47	0.1	4
408.49	0.1	5
408.51	0.1	6
408.53	0.1	7
408.55	0.2	8
408.57	0.2	9
408.59	0.2	10
408.61	0.2	12
408.63	0.3	13
408.65	0.3	14
408.67	0.3	15
408.69	0.3	17
408.71	0.4	18
408.73	0.4	19
408.75	0.4	21
408.77	0.4	22
408.79	0.5	23
408.81	0.5	25
408.83	0.5	26
408.85	0.5	28
408.87	0.6	29
408.89	0.6	31
408.91	0.6	32
408.93	0.7	34
408.95	0.7	35
408.97	0.7	37
408.99	0.7	38
409.01	0.8	40
409.03	0.8	41
409.05	0.8	43
409.07	0.9	44
409.09	0.9	46
409.11	0.9	47
409.13	1.0	49
409.15	1.0	50
409.17	1.0	52
409.19	1.0	53
409.21	1.1	55
409.23	1.1	56
409.25	1.1	58
409.27	1.2	59
409.29	1.2	61
409.31	1.2	62
409.33	1.3	64
409.35	1.3	65
409.37	1.3	67
409.39	1.3	68
409.41	1.4	69
409.43	1.4	71
409.45	1.4	72
409.47	1.4	73
409.49	1.5	75
409.51	1.5	76
409.53	1.5	77
409.55	1.5	78
409.57	1.6	80
409.59	1.6	81
409.61	1.6	82
409.63	1.6	83
409.65	1.6	84
409.67	1.7	85
409.69	1.7	86
409.71	1.7	87
409.73	1.7	88
409.75	1.7	88
409.77	1.7	89
409.79	1.8	89
409.81	1.8	90
409.83	**1.8**	**90**

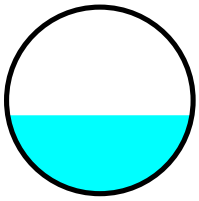
Summary for Reach P-A2: Pipe A2

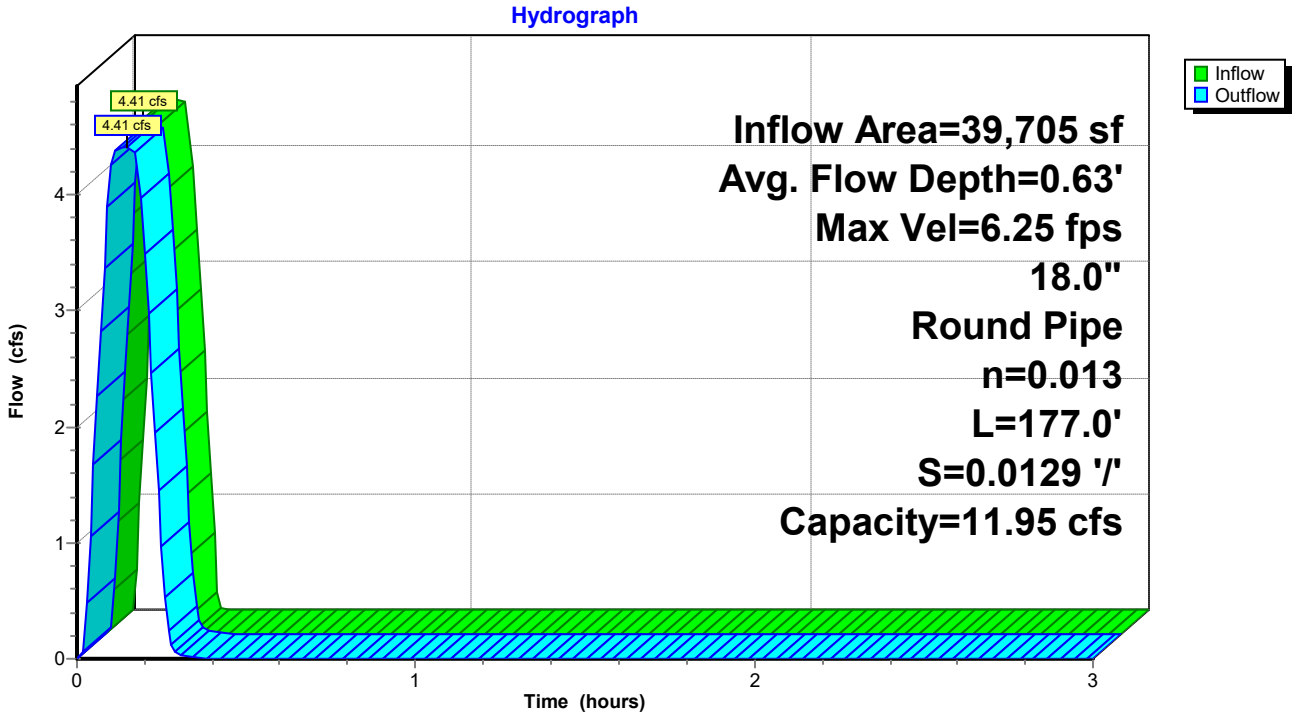
Inflow Area = 39,705 sf, 75.04% Impervious, Inflow Depth = 0.80" for 10-yr event
Inflow = 4.41 cfs @ 0.11 hrs, Volume= 2,643 cf
Outflow = 4.41 cfs @ 0.15 hrs, Volume= 2,643 cf, Atten= 0%, Lag= 2.4 min
Routed to Reach P-A3 : Pipe A3

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.25 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 2.50 fps, Avg. Travel Time= 1.2 min

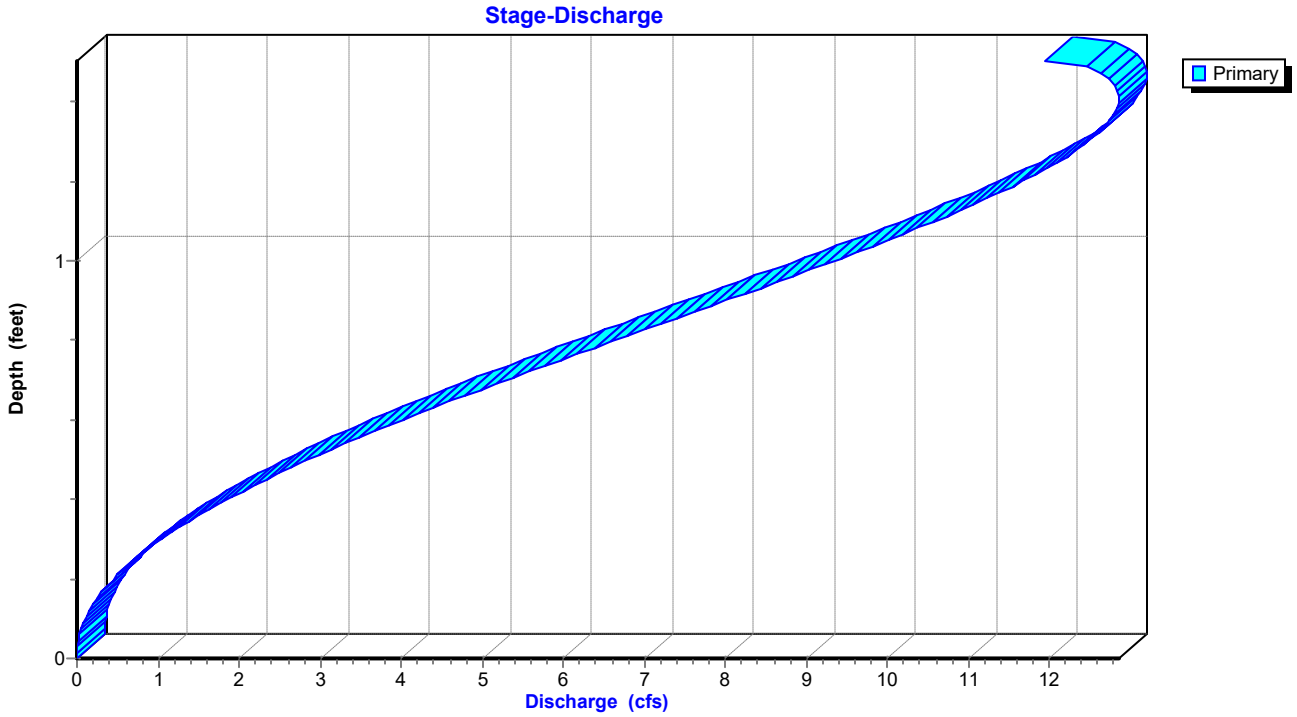
Peak Storage= 125 cf @ 0.14 hrs
Average Depth at Peak Storage= 0.63' , Surface Width= 1.48'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 11.95 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 177.0' Slope= 0.0129 '/'
Inlet Invert= 406.85', Outlet Invert= 404.56'





Reach P-A2: Pipe A2



Stage-Area-Storage for Reach P-A2: Pipe A2

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
406.85	0.0	0
406.87	0.0	1
406.89	0.0	2
406.91	0.0	4
406.93	0.0	6
406.95	0.1	9
406.97	0.1	12
406.99	0.1	15
407.01	0.1	18
407.03	0.1	21
407.05	0.1	25
407.07	0.2	28
407.09	0.2	32
407.11	0.2	36
407.13	0.2	40
407.15	0.3	45
407.17	0.3	49
407.19	0.3	53
407.21	0.3	58
407.23	0.4	62
407.25	0.4	67
407.27	0.4	72
407.29	0.4	76
407.31	0.5	81
407.33	0.5	86
407.35	0.5	91
407.37	0.5	96
407.39	0.6	101
407.41	0.6	106
407.43	0.6	112
407.45	0.7	117
407.47	0.7	122
407.49	0.7	127
407.51	0.7	133
407.53	0.8	138
407.55	0.8	143
407.57	0.8	148
407.59	0.9	154
407.61	0.9	159
407.63	0.9	164
407.65	1.0	170
407.67	1.0	175
407.69	1.0	180
407.71	1.0	185
407.73	1.1	191
407.75	1.1	196
407.77	1.1	201
407.79	1.2	206
407.81	1.2	211
407.83	1.2	216
407.85	1.3	222
407.87	1.3	226
407.89	1.3	231
407.91	1.3	236
407.93	1.4	241
407.95	1.4	246
407.97	1.4	250
407.99	1.4	255
408.01	1.5	260
408.03	1.5	264
408.05	1.5	268
408.07	1.5	272
408.09	1.6	277
408.11	1.6	280
408.13	1.6	284
408.15	1.6	288
408.17	1.6	292
408.19	1.7	295
408.21	1.7	298
408.23	1.7	301
408.25	1.7	304
408.27	1.7	306
408.29	1.7	309
408.31	1.8	310
408.33	1.8	312
408.35	**1.8**	**313**

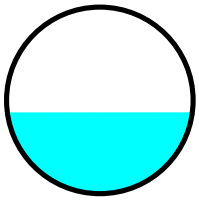
Summary for Reach P-A3: Pipe A3

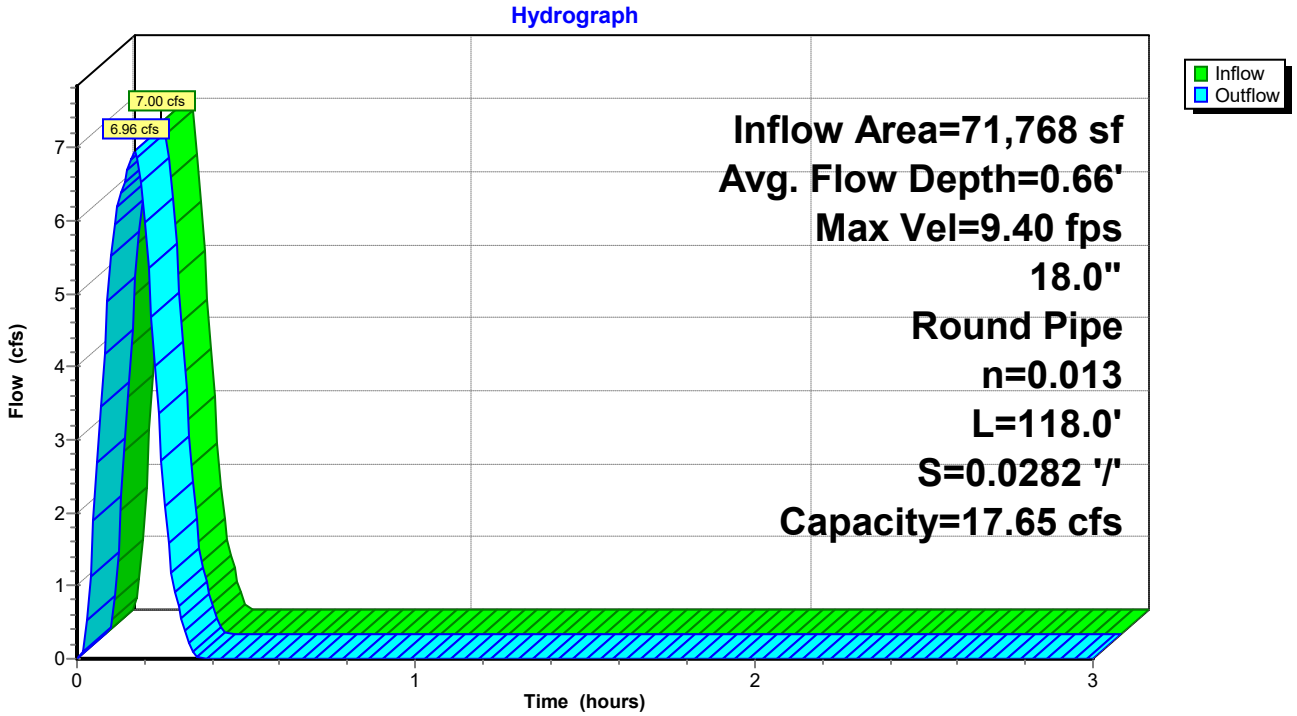
Inflow Area = 71,768 sf, 58.28% Impervious, Inflow Depth = 0.71" for 10-yr event
Inflow = 7.00 cfs @ 0.17 hrs, Volume= 4,225 cf
Outflow = 6.96 cfs @ 0.17 hrs, Volume= 4,225 cf, Atten= 1%, Lag= 0.3 min
Routed to Reach P-A4 : Pipe A4

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Max. Velocity= 9.40 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 3.90 fps, Avg. Travel Time= 0.5 min

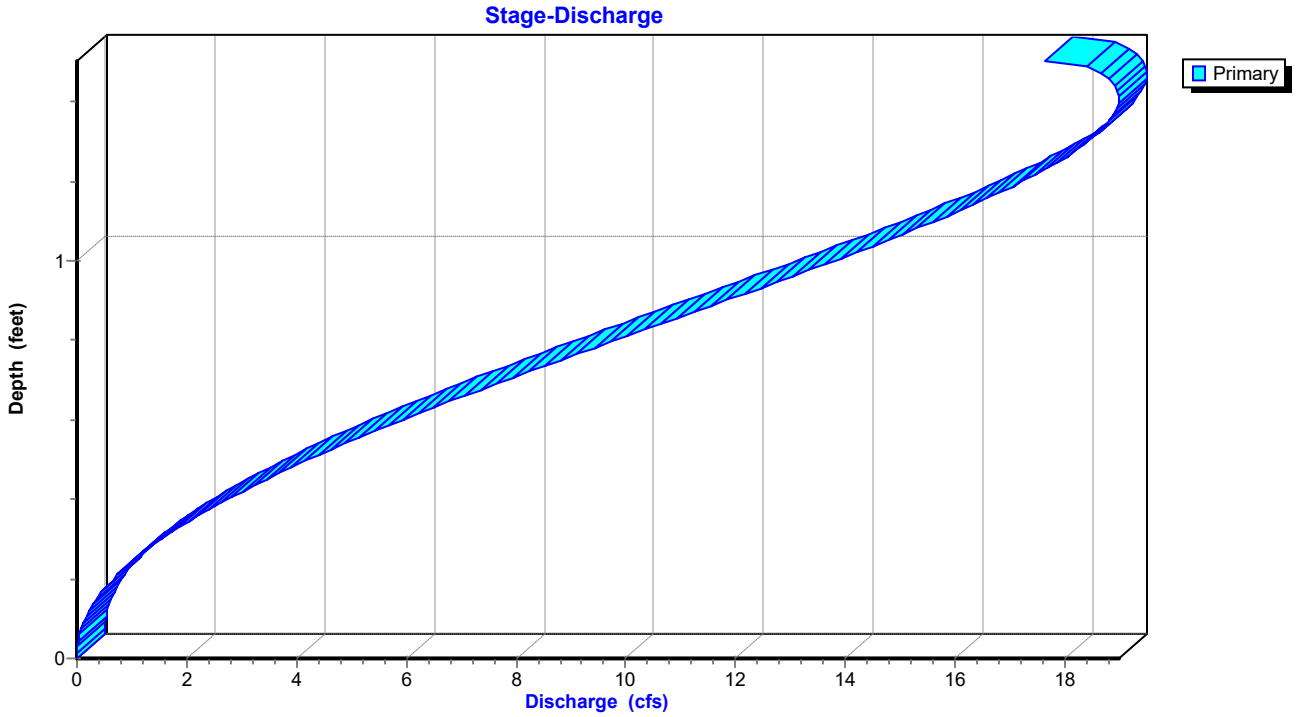
Peak Storage= 88 cf @ 0.17 hrs
Average Depth at Peak Storage= 0.66' , Surface Width= 1.49'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.65 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 118.0' Slope= 0.0282 '/'
Inlet Invert= 404.46', Outlet Invert= 401.13'





Reach P-A3: Pipe A3



Stage-Area-Storage for Reach P-A3: Pipe A3

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
404.46	0.0	0
404.48	0.0	1
404.50	0.0	2
404.52	0.0	3
404.54	0.0	4
404.56	0.1	6
404.58	0.1	8
404.60	0.1	10
404.62	0.1	12
404.64	0.1	14
404.66	0.1	17
404.68	0.2	19
404.70	0.2	22
404.72	0.2	24
404.74	0.2	27
404.76	0.3	30
404.78	0.3	33
404.80	0.3	35
404.82	0.3	38
404.84	0.4	42
404.86	0.4	45
404.88	0.4	48
404.90	0.4	51
404.92	0.5	54
404.94	0.5	58
404.96	0.5	61
404.98	0.5	64
405.00	0.6	68
405.02	0.6	71
405.04	0.6	74
405.06	0.7	78
405.08	0.7	81
405.10	0.7	85
405.12	0.7	88
405.14	0.8	92
405.16	0.8	95
405.18	0.8	99
405.20	0.9	102
405.22	0.9	106
405.24	0.9	110
405.26	1.0	113
405.28	1.0	117
405.30	1.0	120
405.32	1.0	124
405.34	1.1	127
405.36	1.1	131
405.38	1.1	134
405.40	1.2	138
405.42	1.2	141
405.44	1.2	144
405.46	1.3	148
405.48	1.3	151
405.50	1.3	154
405.52	1.3	158
405.54	1.4	161
405.56	1.4	164
405.58	1.4	167
405.60	1.4	170
405.62	1.5	173
405.64	1.5	176
405.66	1.5	179
405.68	1.5	182
405.70	1.6	184
405.72	1.6	187
405.74	1.6	190
405.76	1.6	192
405.78	1.6	194
405.80	1.7	197
405.82	1.7	199
405.84	1.7	201
405.86	1.7	203
405.88	1.7	204
405.90	1.7	206
405.92	1.8	207
405.94	1.8	208
405.96	**1.8**	**209**

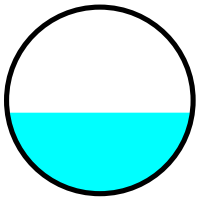
Summary for Reach P-A4: Pipe A4

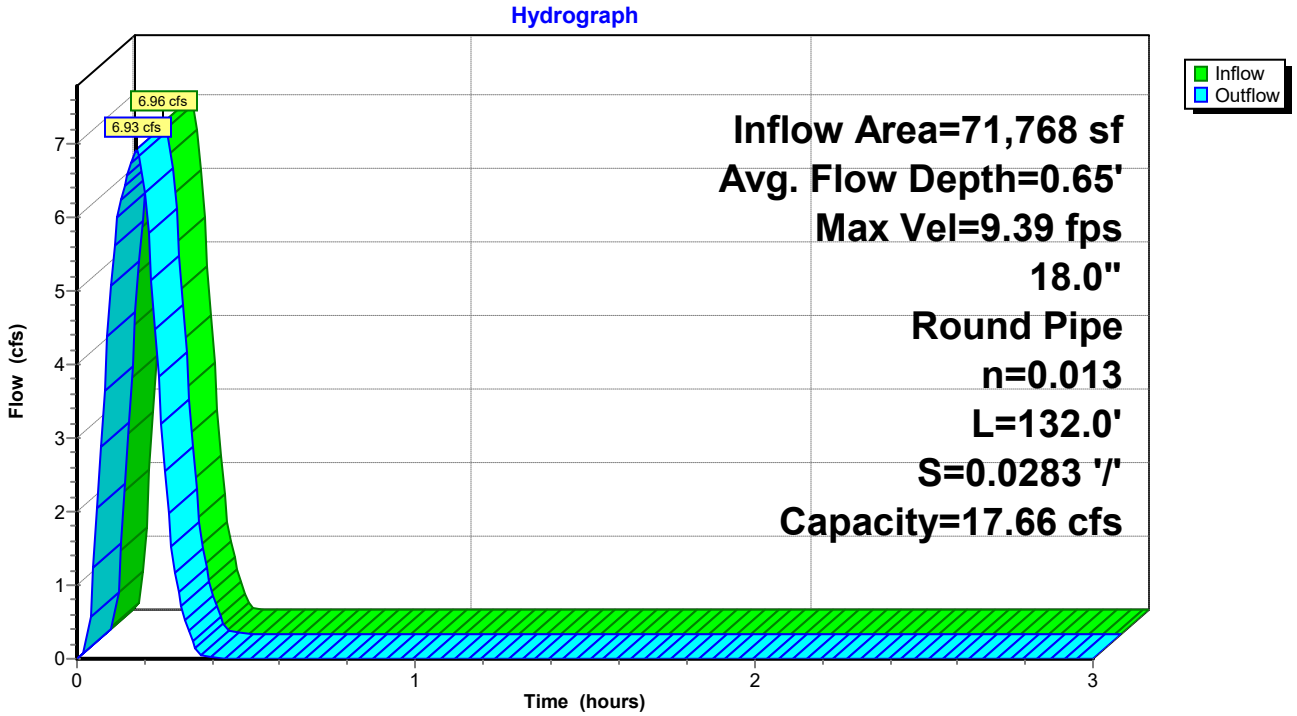
Inflow Area = 71,768 sf, 58.28% Impervious, Inflow Depth = 0.71" for 10-yr event
Inflow = 6.96 cfs @ 0.17 hrs, Volume= 4,225 cf
Outflow = 6.93 cfs @ 0.18 hrs, Volume= 4,225 cf, Atten= 0%, Lag= 0.4 min
Routed to Pond DP1 : Re-Establised East Pond

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Max. Velocity= 9.39 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 3.71 fps, Avg. Travel Time= 0.6 min

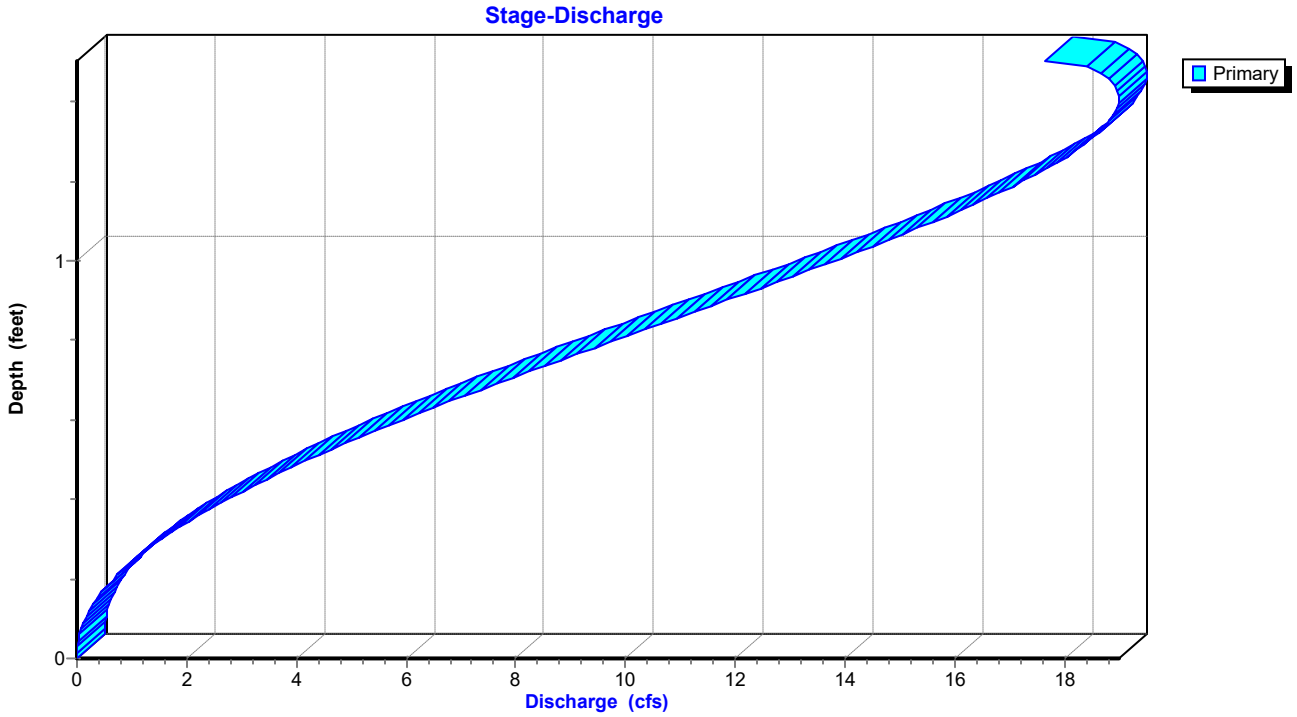
Peak Storage= 98 cf @ 0.17 hrs
Average Depth at Peak Storage= 0.65' , Surface Width= 1.49'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.66 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 132.0' Slope= 0.0283 '/'
Inlet Invert= 401.03', Outlet Invert= 397.30'





Reach P-A4: Pipe A4



Stage-Area-Storage for Reach P-A4: Pipe A4

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
401.03	0.0	0
401.05	0.0	1
401.07	0.0	2
401.09	0.0	3
401.11	0.0	5
401.13	0.1	7
401.15	0.1	9
401.17	0.1	11
401.19	0.1	13
401.21	0.1	16
401.23	0.1	18
401.25	0.2	21
401.27	0.2	24
401.29	0.2	27
401.31	0.2	30
401.33	0.3	33
401.35	0.3	36
401.37	0.3	40
401.39	0.3	43
401.41	0.4	46
401.43	0.4	50
401.45	0.4	53
401.47	0.4	57
401.49	0.5	61
401.51	0.5	64
401.53	0.5	68
401.55	0.5	72
401.57	0.6	76
401.59	0.6	79
401.61	0.6	83
401.63	0.7	87
401.65	0.7	91
401.67	0.7	95
401.69	0.7	99
401.71	0.8	103
401.73	0.8	107
401.75	0.8	111
401.77	0.9	115
401.79	0.9	119
401.81	0.9	123
401.83	1.0	127
401.85	1.0	130
401.87	1.0	134
401.89	1.0	138
401.91	1.1	142
401.93	1.1	146
401.95	1.1	150
401.97	1.2	154
401.99	1.2	158
402.01	1.2	161
402.03	1.3	165
402.05	1.3	169
402.07	1.3	173
402.09	1.3	176
402.11	1.4	180
402.13	1.4	183
402.15	1.4	187
402.17	1.4	190
402.19	1.5	194
402.21	1.5	197
402.23	1.5	200
402.25	1.5	203
402.27	1.6	206
402.29	1.6	209
402.31	1.6	212
402.33	1.6	215
402.35	1.6	217
402.37	1.7	220
402.39	1.7	222
402.41	1.7	225
402.43	1.7	227
402.45	1.7	228
402.47	1.7	230
402.49	1.8	232
402.51	1.8	233
402.53	**1.8**	**233**

Summary for Pond DP1: Re-Establised East Pond

Inflow Area = 132,514 sf, 61.41% Impervious, Inflow Depth = 0.72" for 10-yr event
Inflow = 12.95 cfs @ 0.16 hrs, Volume= 7,945 cf
Outflow = 7.07 cfs @ 0.22 hrs, Volume= 7,945 cf, Atten= 45%, Lag= 3.7 min
Primary = 7.07 cfs @ 0.22 hrs, Volume= 7,945 cf
Routed to Link Post-Dev : APPROX DISCHARGE

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Peak Elev= 398.14' @ 0.22 hrs Storage= 4,074 cf

Plug-Flow detention time= 8.2 min calculated for 7,919 cf (100% of inflow)
Center-of-Mass det. time= 8.3 min (17.2 - 8.9)

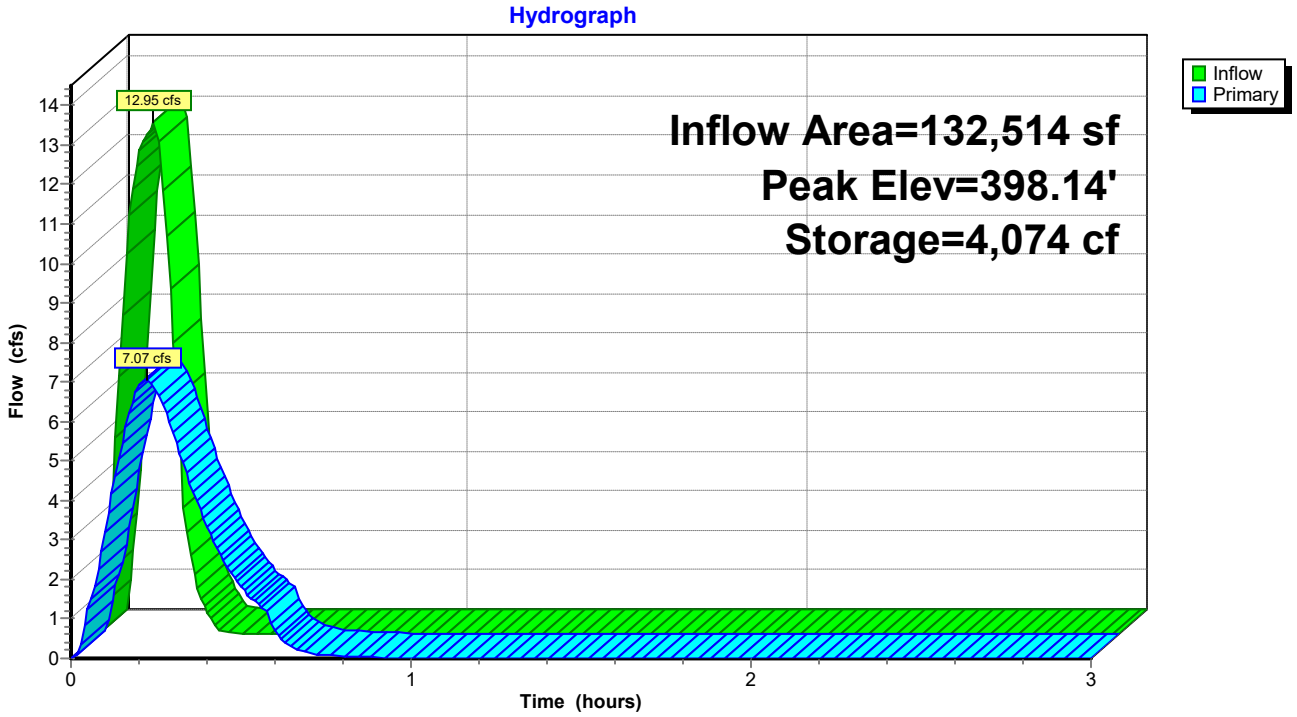
Volume	Invert	Avail.Storage	Storage Description
#1	396.00'	8,557 cf	**Custom Stage Data** Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
396.00	0	0
396.50	250	250
397.00	1,092	1,342
398.00	2,387	3,729
399.00	2,405	6,134
400.00	2,423	8,557

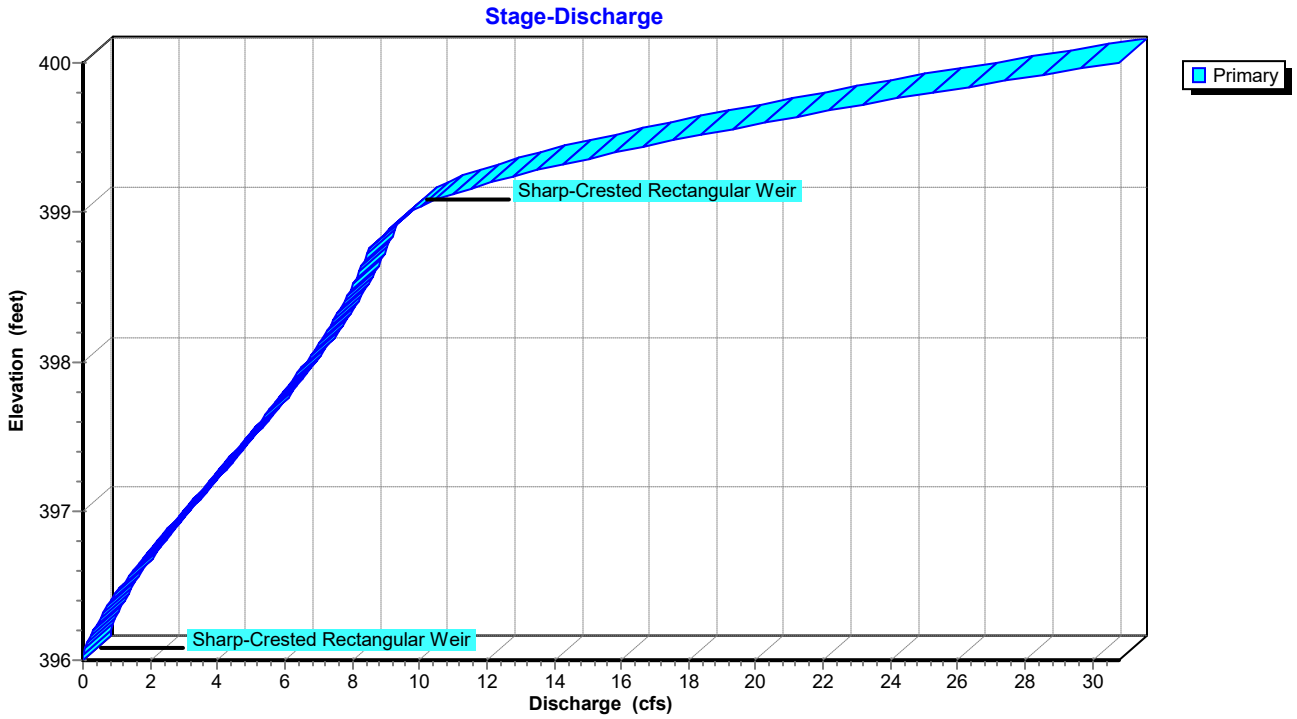
Device	Routing	Invert	Outlet Devices
#1	Primary	399.00'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	396.00'	**1.1' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 10.0' Crest Height

Primary OutFlow Max=7.06 cfs @ 0.22 hrs HW=398.14' (Free Discharge)
1=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)
2=Sharp-Crested Rectangular Weir (Weir Controls 7.06 cfs @ 4.91 fps)

Pond DP1: Re-Establised East Pond



Pond DP1: Re-Establised East Pond



Stage-Area-Storage for Pond DP1: Re-Establised East Pond

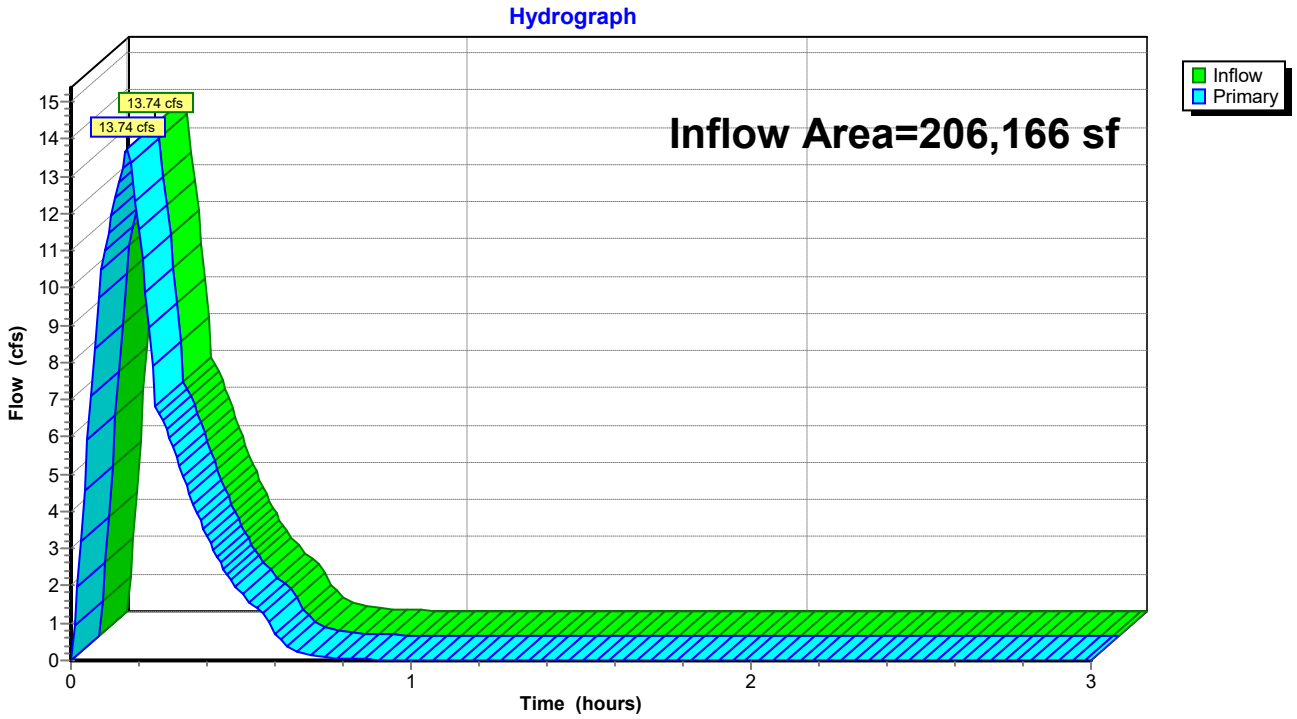
Elevation (feet)	Storage (cubic-feet)
396.00	0
396.05	25
396.10	50
396.15	75
396.20	100
396.25	125
396.30	150
396.35	175
396.40	200
396.45	225
396.50	250
396.55	359
396.60	468
396.65	578
396.70	687
396.75	796
396.80	905
396.85	1,014
396.90	1,124
396.95	1,233
397.00	1,342
397.05	1,461
397.10	1,581
397.15	1,700
397.20	1,819
397.25	1,939
397.30	2,058
397.35	2,177
397.40	2,297
397.45	2,416
397.50	2,536
397.55	2,655
397.60	2,774
397.65	2,894
397.70	3,013
397.75	3,132
397.80	3,252
397.85	3,371
397.90	3,490
397.95	3,610
398.00	3,729
398.05	3,849
398.10	3,970
398.15	4,090
398.20	4,210
398.25	4,330
398.30	4,451
398.35	4,571
398.40	4,691
398.45	4,811
398.50	4,932
398.55	5,052
398.60	5,172
398.65	5,292
398.70	5,412
398.75	5,533
398.80	5,653
398.85	5,773
398.90	5,893
398.95	6,014
399.00	6,134
399.05	6,255
399.10	6,376
399.15	6,497
399.20	6,619
399.25	6,740
399.30	6,861
399.35	6,982
399.40	7,103
399.45	7,224
399.50	7,346
399.55	7,467
399.60	7,588
399.65	7,709
399.70	7,830
399.75	7,951
399.80	8,072
399.85	8,194
399.90	8,315
399.95	8,436
400.00	**8,557**

Summary for Link Post-Dev: APPROX DISCHARGE

Inflow Area = 206,166 sf, 64.42% Impervious, Inflow Depth = 0.73" for 10-yr event
Inflow = 13.74 cfs @ 0.17 hrs, Volume= 12,613 cf
Primary = 13.74 cfs @ 0.17 hrs, Volume= 12,613 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Link Post-Dev: APPROX DISCHARGE



Summary for Subcatchment D1: Drainage Basin D1

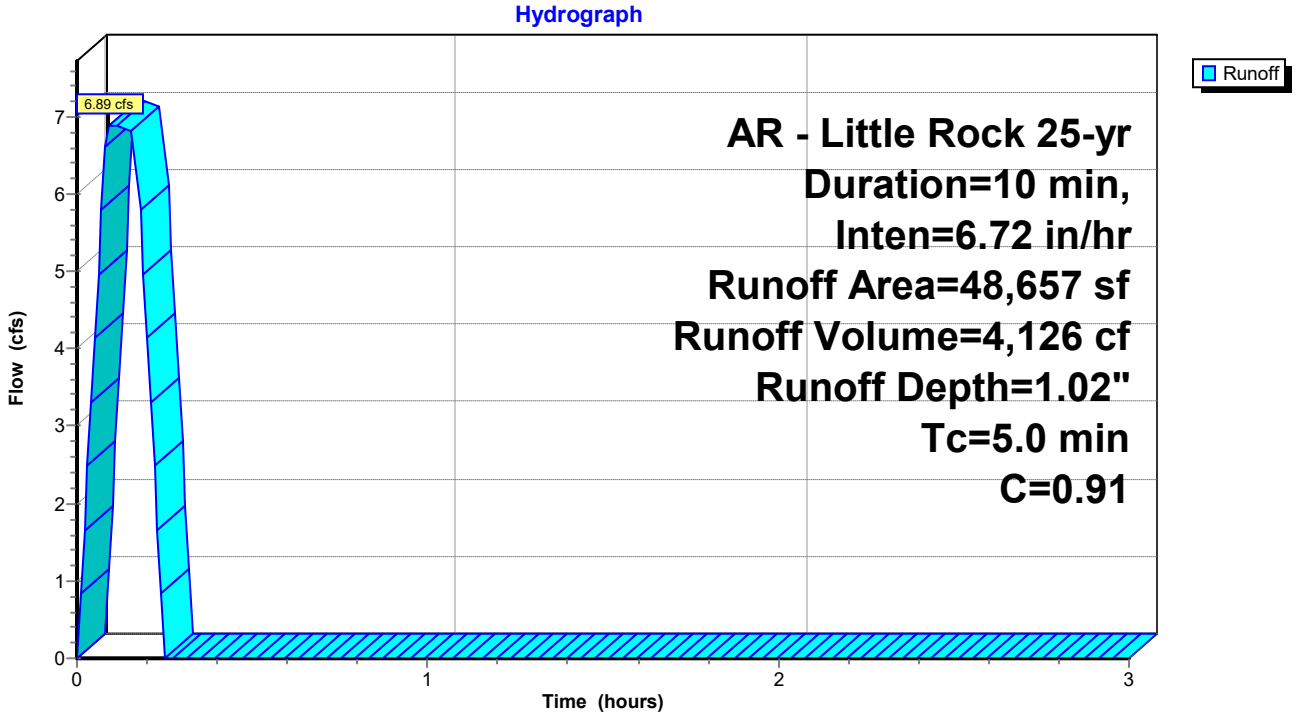
Runoff = 6.89 cfs @ 0.09 hrs, Volume= 4,126 cf, Depth= 1.02"
Routed to Link Post-Dev : APPROX DISCHARGE

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 25-yr Duration=10 min, Inten=6.72 in/hr

Area (sf)	C	Description
3,421	0.40	Sod Yard
45,236	0.95	Rood, Drives, Sidewalks
48,657	0.91	Weighted Average
3,421		7.03% Pervious Area
45,236		92.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D1: Drainage Basin D1



Summary for Subcatchment D2: Drainage Basin D2

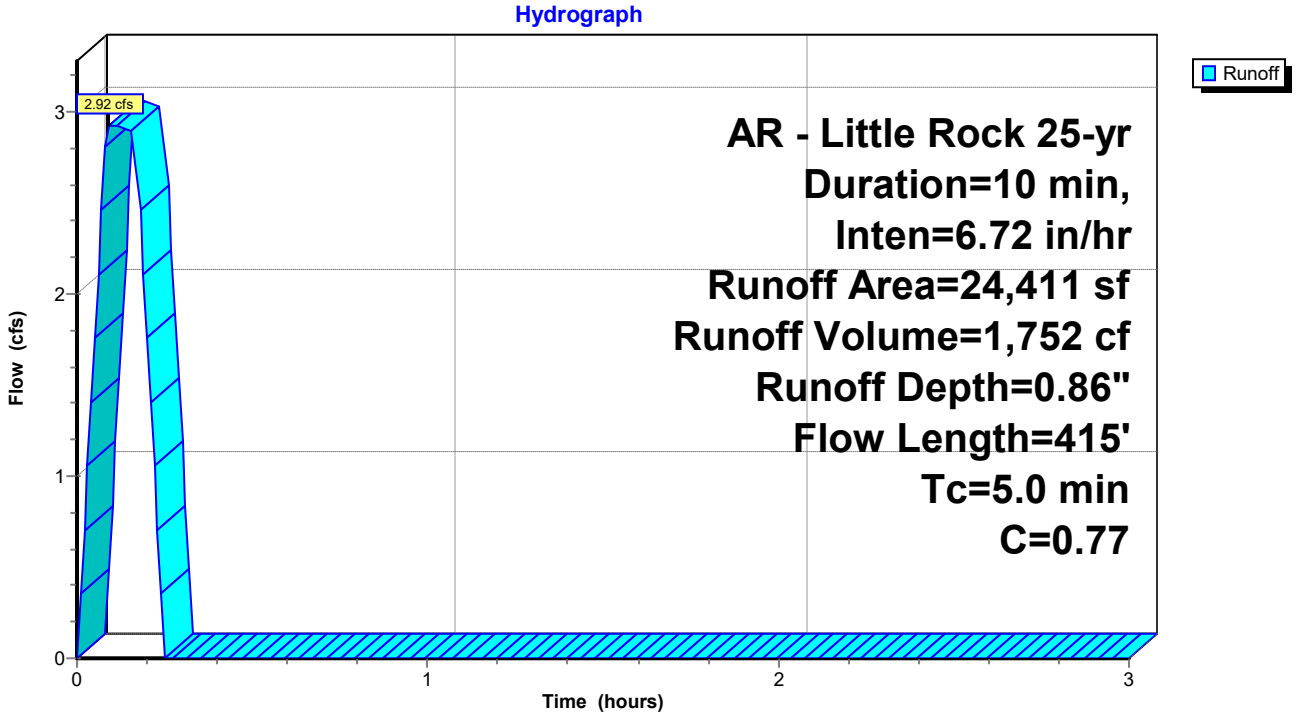
Runoff = 2.92 cfs @ 0.09 hrs, Volume= 1,752 cf, Depth= 0.86"
Routed to Reach P-A1 : Pipe A1

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 25-yr Duration=10 min, Inten=6.72 in/hr

Area (sf)	C	Description
8,845	0.45	Rip Rap Embankment
15,566	0.95	Roof, Drives, Sidewalks
24,411	0.77	Weighted Average
8,845		36.23% Pervious Area
15,566		63.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	415		1.38		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D2: Drainage Basin D2



Summary for Subcatchment D3: Drainage Basin D3

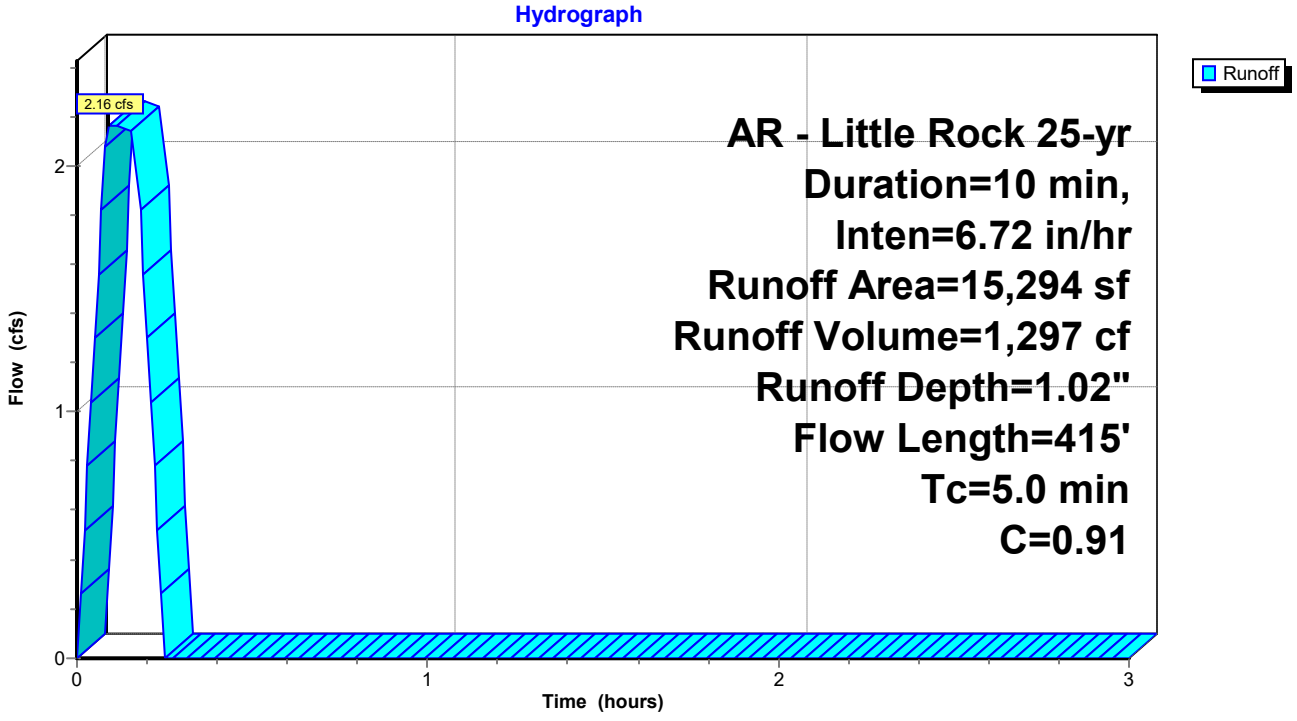
Runoff = 2.16 cfs @ 0.09 hrs, Volume= 1,297 cf, Depth= 1.02"
Routed to Reach P-A2 : Pipe A2

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 25-yr Duration=10 min, Inten=6.72 in/hr

Area (sf)	C	Description
1,065	0.40	Sod Yard
14,229	0.95	Paving, Sidewalks
15,294	0.91	Weighted Average
1,065		6.96% Pervious Area
14,229		93.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	415		1.38		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D3: Drainage Basin D3



Summary for Subcatchment D4: Drainage Basin D4

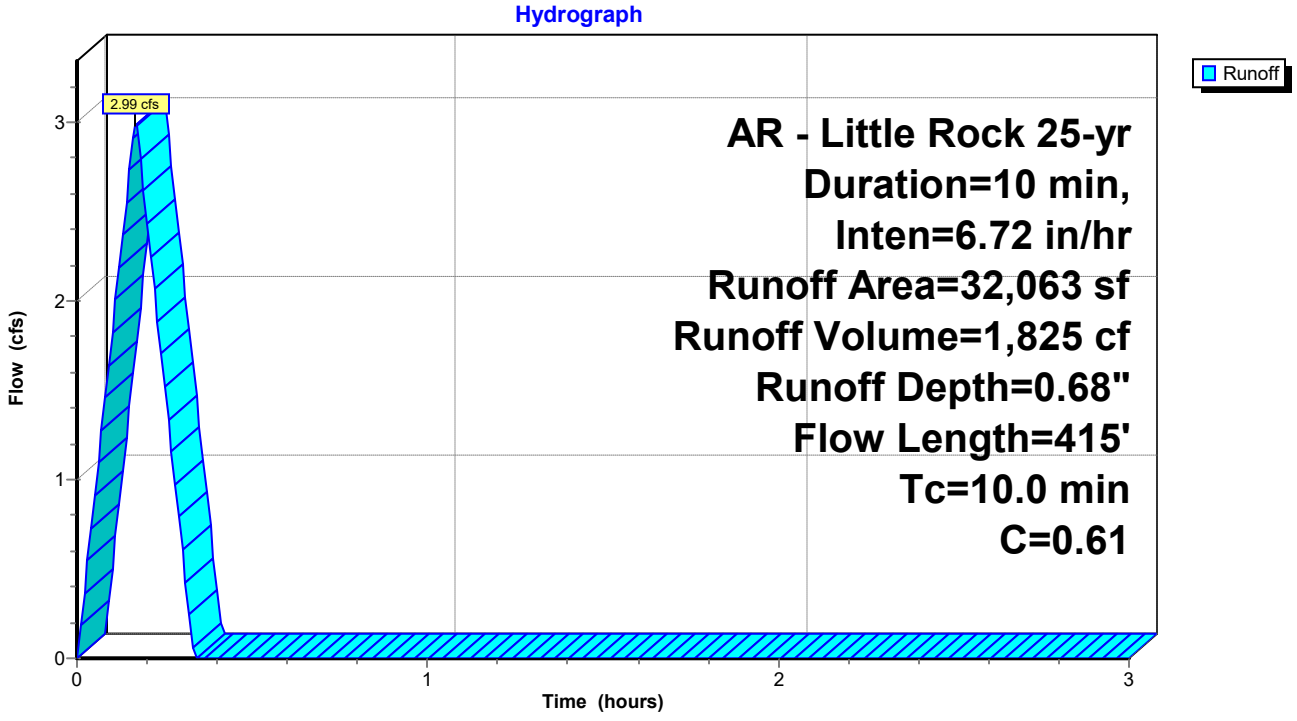
Runoff = 2.99 cfs @ 0.17 hrs, Volume= 1,825 cf, Depth= 0.68"
Routed to Reach P-A3 : Pipe A3

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 25-yr Duration=10 min, Inten=6.72 in/hr

Area (sf)	C	Description
20,032	0.40	
12,031	0.95	
32,063	0.61	Weighted Average
20,032		62.48% Pervious Area
12,031		37.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	415		0.69		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D4: Drainage Basin D4



Summary for Subcatchment D5: Drainage Basin D5

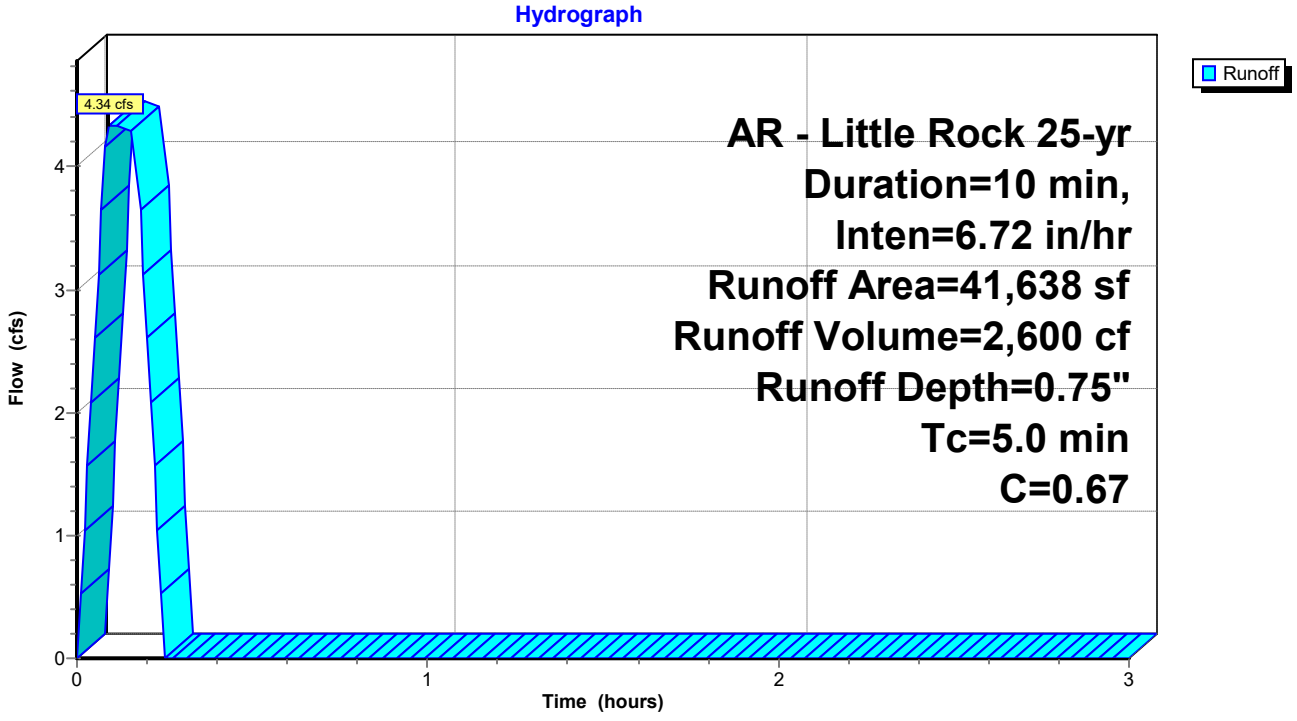
Runoff = 4.34 cfs @ 0.09 hrs, Volume= 2,600 cf, Depth= 0.75"
Routed to Pond DP1 : Re-Establised East Pond

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 25-yr Duration=10 min, Inten=6.72 in/hr

Area (sf)	C	Description
21,201	0.40	Sod Yard, Natural Vegetation
20,437	0.95	Paving, Sidewalks
41,638	0.67	Weighted Average
21,201		50.92% Pervious Area
20,437		49.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D5: Drainage Basin D5



Summary for Subcatchment D6: Drainage Basin D6

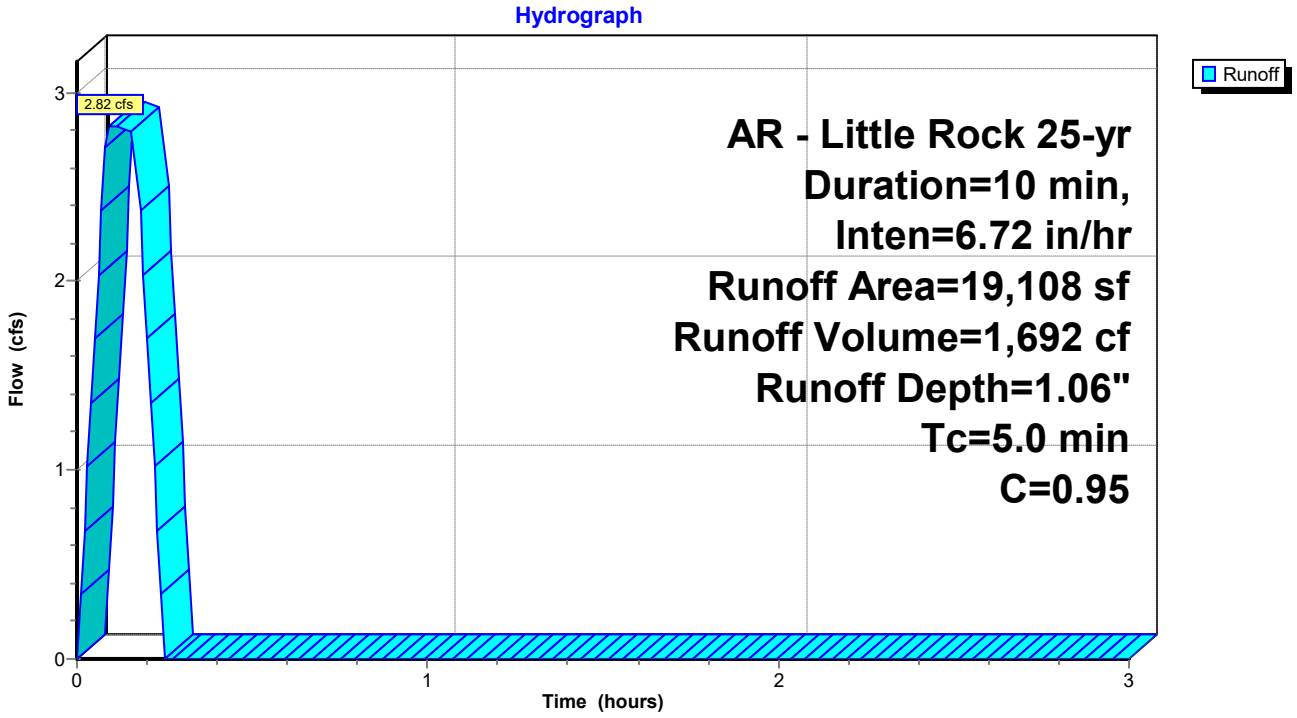
Runoff = 2.82 cfs @ 0.09 hrs, Volume= 1,692 cf, Depth= 1.06"
Routed to Pond DP1 : Re-Establised East Pond

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 25-yr Duration=10 min, Inten=6.72 in/hr

Area (sf)	C	Description
19,108	0.95	Roof
19,108		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D6: Drainage Basin D6



Summary for Subcatchment D7: Drainage Basin D7

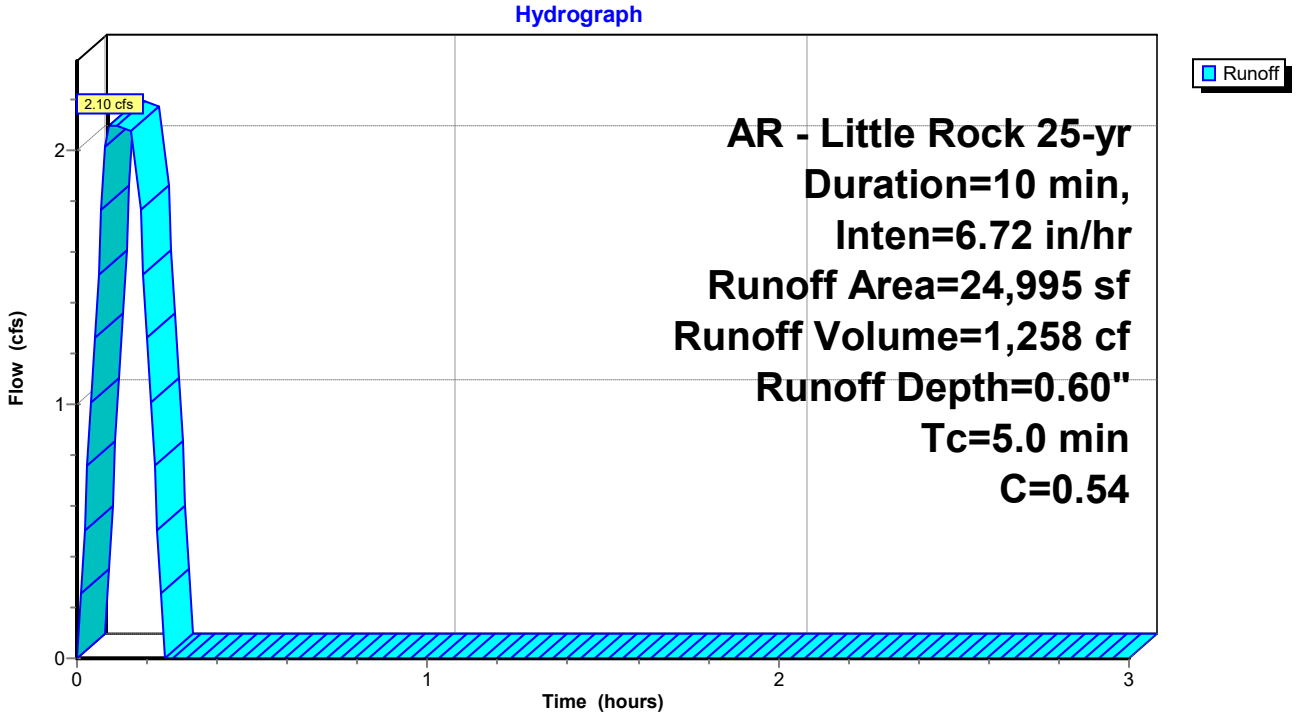
Runoff = 2.10 cfs @ 0.09 hrs, Volume= 1,258 cf, Depth= 0.60"
Routed to Link Post-Dev : APPROX DISCHARGE

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 25-yr Duration=10 min, Inten=6.72 in/hr

Area (sf)	C	Description
18,798	0.40	Sod Yard, Natural Vegetation
6,197	0.95	Paving, Sidewalks
24,995	0.54	Weighted Average
18,798		75.21% Pervious Area
6,197		24.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D7: Drainage Basin D7



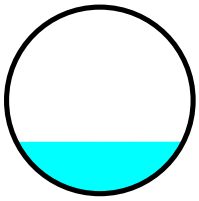
Summary for Reach P-A1: Pipe A1

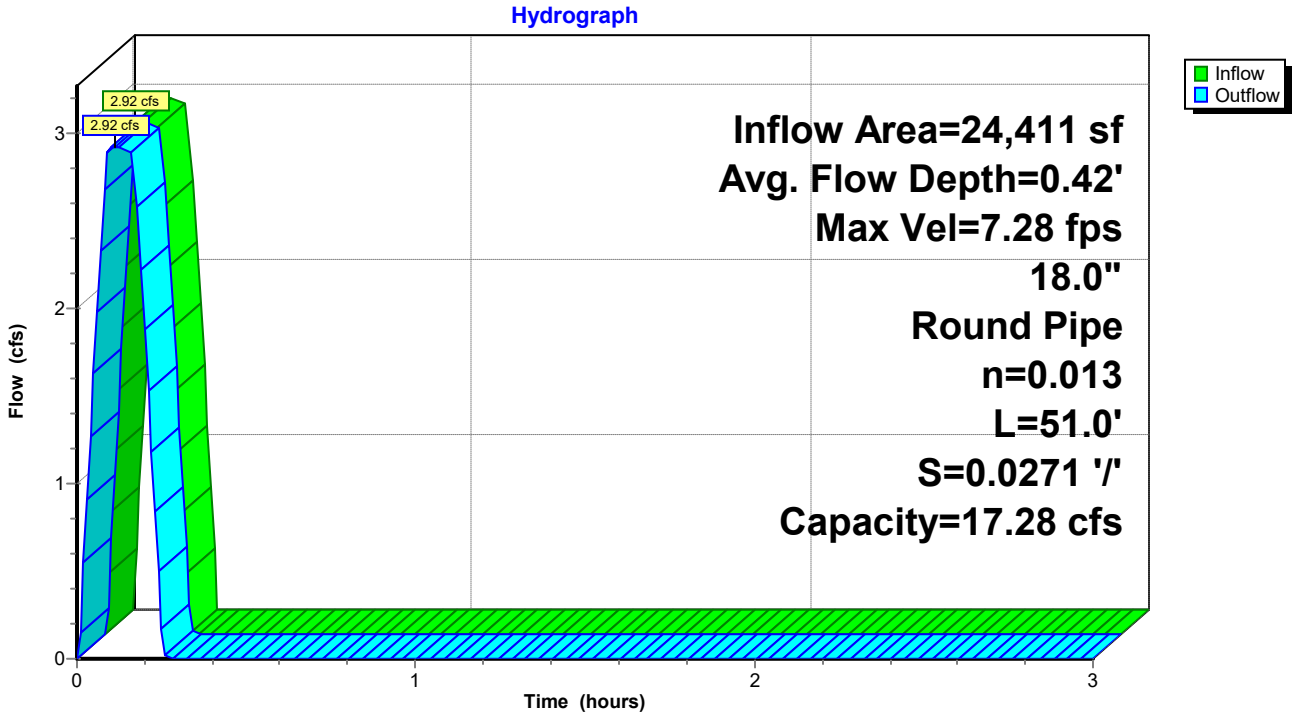
Inflow Area = 24,411 sf, 63.77% Impervious, Inflow Depth = 0.86" for 25-yr event
Inflow = 2.92 cfs @ 0.09 hrs, Volume= 1,752 cf
Outflow = 2.92 cfs @ 0.11 hrs, Volume= 1,752 cf, Atten= 0%, Lag= 1.2 min
Routed to Reach P-A2 : Pipe A2

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Max. Velocity= 7.28 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 5.29 fps, Avg. Travel Time= 0.2 min

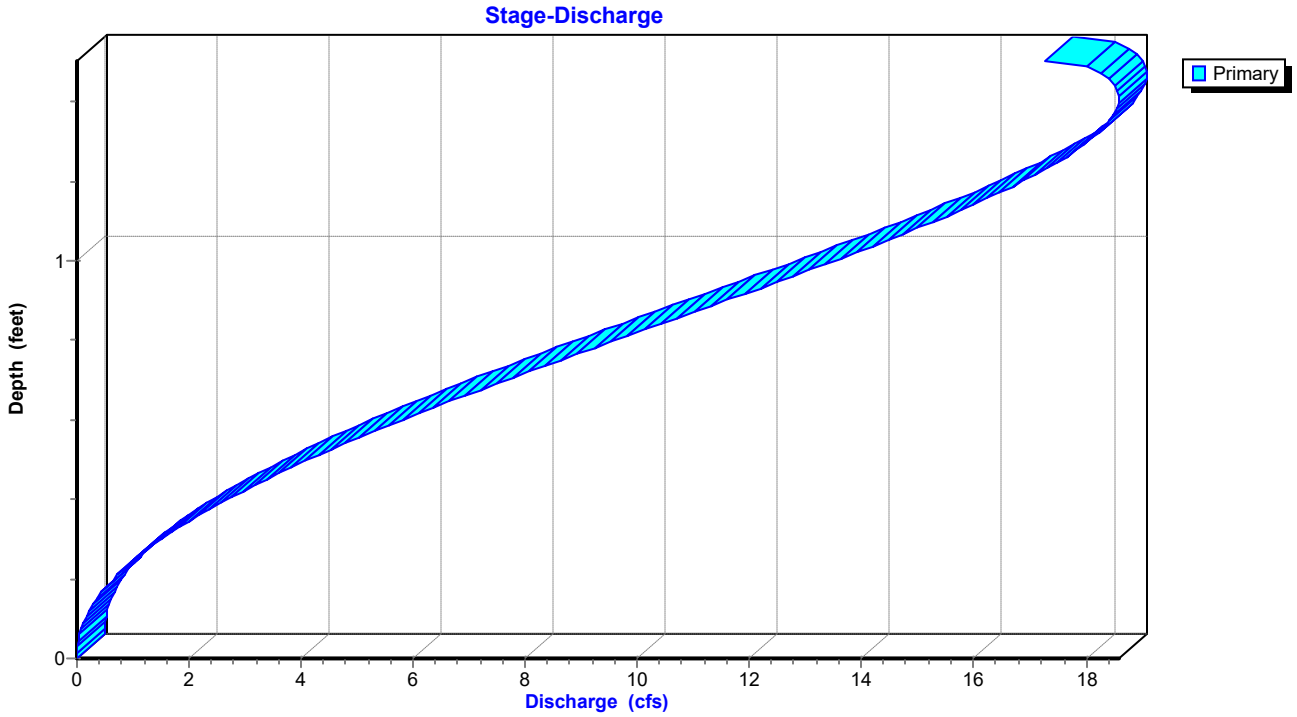
Peak Storage= 20 cf @ 0.09 hrs
Average Depth at Peak Storage= 0.42' , Surface Width= 1.34'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.28 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 51.0' Slope= 0.0271 '/'
Inlet Invert= 408.33', Outlet Invert= 406.95'





Reach P-A1: Pipe A1



Stage-Area-Storage for Reach P-A1: Pipe A1

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
408.33	0.0	0
408.35	0.0	0
408.37	0.0	1
408.39	0.0	1
408.41	0.0	2
408.43	0.1	3
408.45	0.1	3
408.47	0.1	4
408.49	0.1	5
408.51	0.1	6
408.53	0.1	7
408.55	0.2	8
408.57	0.2	9
408.59	0.2	10
408.61	0.2	12
408.63	0.3	13
408.65	0.3	14
408.67	0.3	15
408.69	0.3	17
408.71	0.4	18
408.73	0.4	19
408.75	0.4	21
408.77	0.4	22
408.79	0.5	23
408.81	0.5	25
408.83	0.5	26
408.85	0.5	28
408.87	0.6	29
408.89	0.6	31
408.91	0.6	32
408.93	0.7	34
408.95	0.7	35
408.97	0.7	37
408.99	0.7	38
409.01	0.8	40
409.03	0.8	41
409.05	0.8	43
409.07	0.9	44
409.09	0.9	46
409.11	0.9	47
409.13	1.0	49
409.15	1.0	50
409.17	1.0	52
409.19	1.0	53
409.21	1.1	55
409.23	1.1	56
409.25	1.1	58
409.27	1.2	59
409.29	1.2	61
409.31	1.2	62
409.33	1.3	64
409.35	1.3	65
409.37	1.3	67
409.39	1.3	68
409.41	1.4	69
409.43	1.4	71
409.45	1.4	72
409.47	1.4	73
409.49	1.5	75
409.51	1.5	76
409.53	1.5	77
409.55	1.5	78
409.57	1.6	80
409.59	1.6	81
409.61	1.6	82
409.63	1.6	83
409.65	1.6	84
409.67	1.7	85
409.69	1.7	86
409.71	1.7	87
409.73	1.7	88
409.75	1.7	88
409.77	1.7	89
409.79	1.8	89
409.81	1.8	90
409.83	**1.8**	**90**

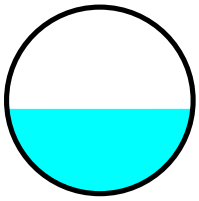
Summary for Reach P-A2: Pipe A2

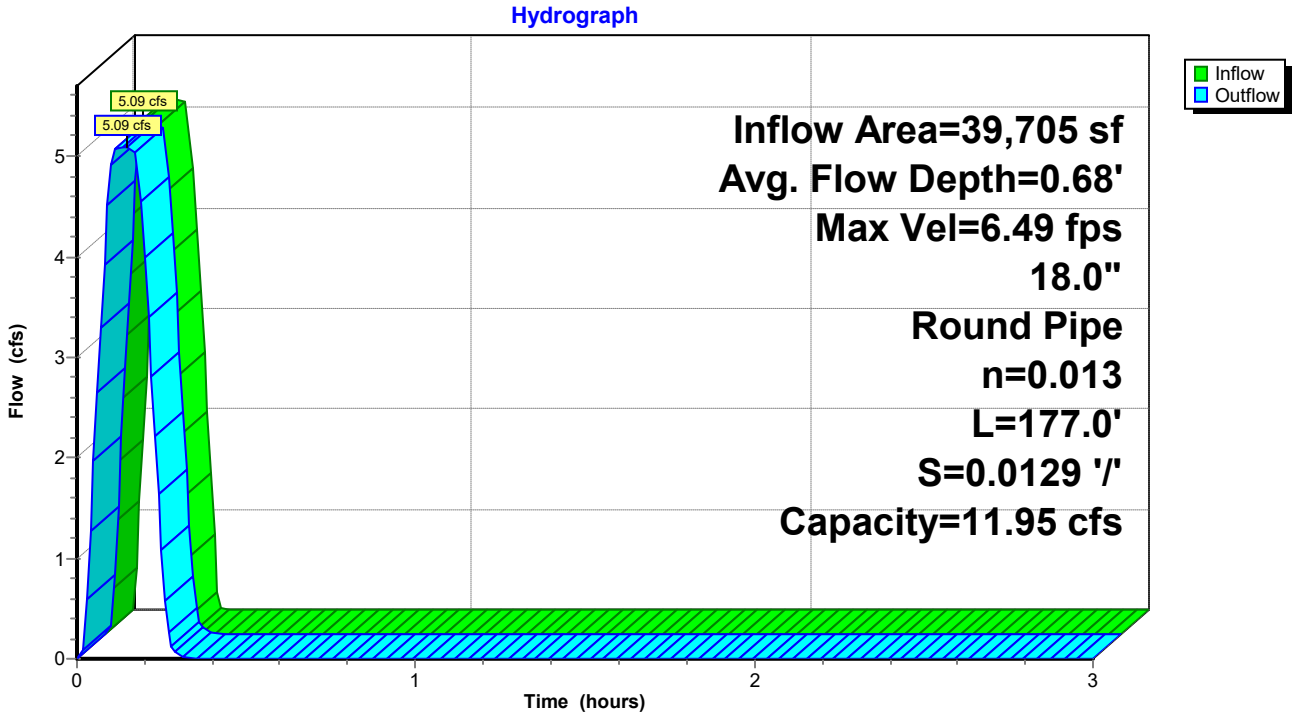
Inflow Area = 39,705 sf, 75.04% Impervious, Inflow Depth = 0.92" for 25-yr event
Inflow = 5.09 cfs @ 0.11 hrs, Volume= 3,048 cf
Outflow = 5.09 cfs @ 0.15 hrs, Volume= 3,048 cf, Atten= 0%, Lag= 2.4 min
Routed to Reach P-A3 : Pipe A3

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.49 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 2.58 fps, Avg. Travel Time= 1.1 min

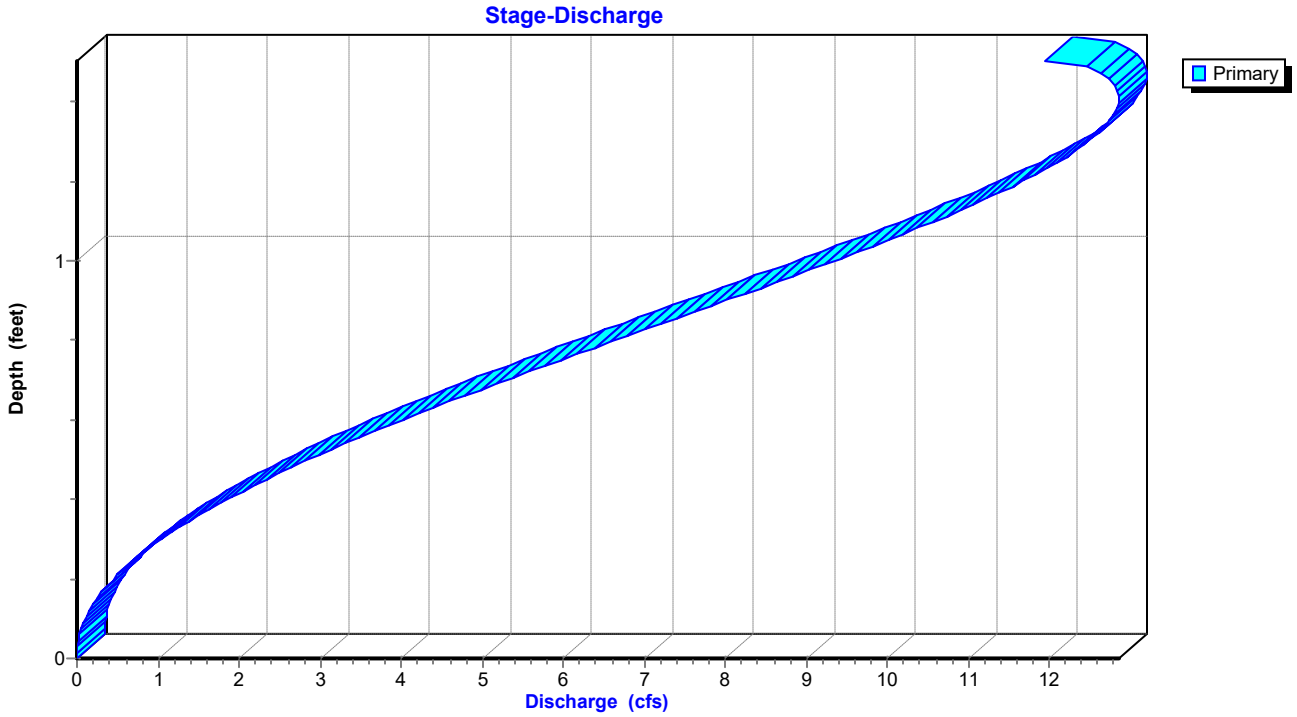
Peak Storage= 139 cf @ 0.14 hrs
Average Depth at Peak Storage= 0.68' , Surface Width= 1.49'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 11.95 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 177.0' Slope= 0.0129 '/'
Inlet Invert= 406.85', Outlet Invert= 404.56'





Reach P-A2: Pipe A2



Stage-Area-Storage for Reach P-A2: Pipe A2

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
406.85	0.0	0
406.87	0.0	1
406.89	0.0	2
406.91	0.0	4
406.93	0.0	6
406.95	0.1	9
406.97	0.1	12
406.99	0.1	15
407.01	0.1	18
407.03	0.1	21
407.05	0.1	25
407.07	0.2	28
407.09	0.2	32
407.11	0.2	36
407.13	0.2	40
407.15	0.3	45
407.17	0.3	49
407.19	0.3	53
407.21	0.3	58
407.23	0.4	62
407.25	0.4	67
407.27	0.4	72
407.29	0.4	76
407.31	0.5	81
407.33	0.5	86
407.35	0.5	91
407.37	0.5	96
407.39	0.6	101
407.41	0.6	106
407.43	0.6	112
407.45	0.7	117
407.47	0.7	122
407.49	0.7	127
407.51	0.7	133
407.53	0.8	138
407.55	0.8	143
407.57	0.8	148
407.59	0.9	154
407.61	0.9	159
407.63	0.9	164
407.65	1.0	170
407.67	1.0	175
407.69	1.0	180
407.71	1.0	185
407.73	1.1	191
407.75	1.1	196
407.77	1.1	201
407.79	1.2	206
407.81	1.2	211
407.83	1.2	216
407.85	1.3	222
407.87	1.3	226
407.89	1.3	231
407.91	1.3	236
407.93	1.4	241
407.95	1.4	246
407.97	1.4	250
407.99	1.4	255
408.01	1.5	260
408.03	1.5	264
408.05	1.5	268
408.07	1.5	272
408.09	1.6	277
408.11	1.6	280
408.13	1.6	284
408.15	1.6	288
408.17	1.6	292
408.19	1.7	295
408.21	1.7	298
408.23	1.7	301
408.25	1.7	304
408.27	1.7	306
408.29	1.7	309
408.31	1.8	310
408.33	1.8	312
408.35	**1.8**	**313**

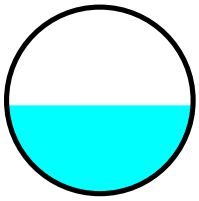
Summary for Reach P-A3: Pipe A3

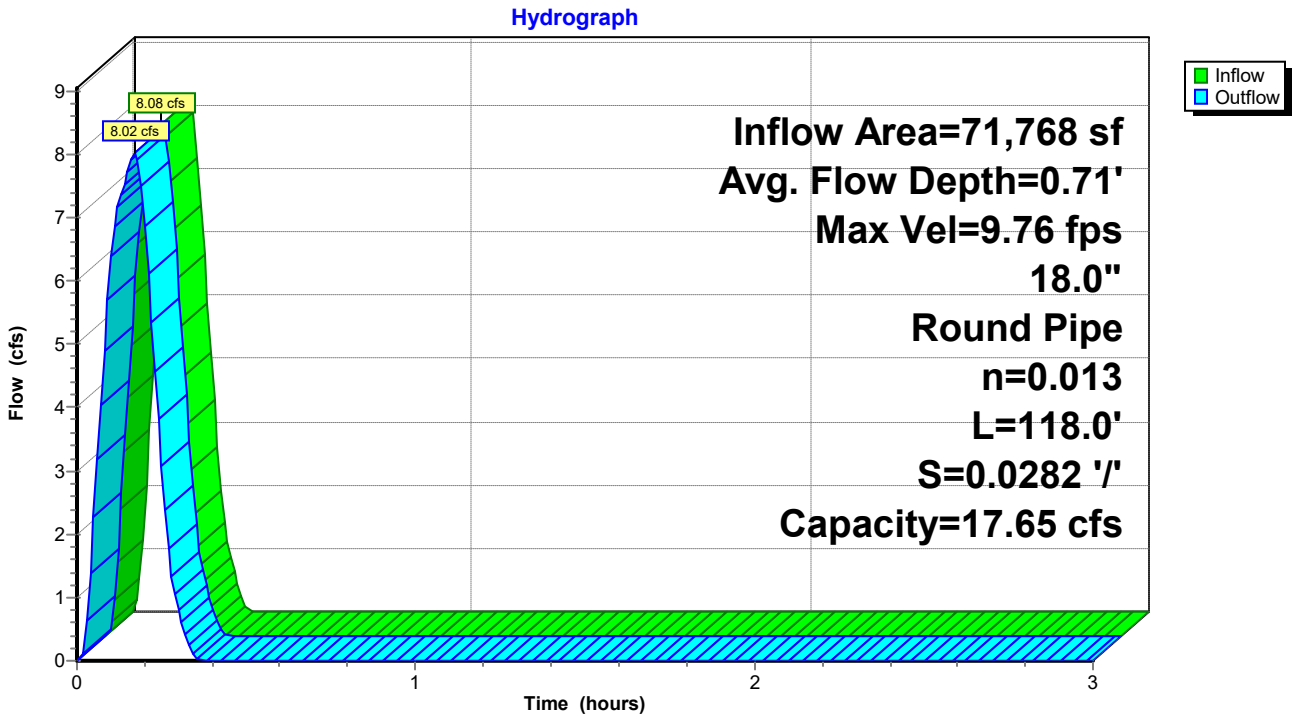
Inflow Area = 71,768 sf, 58.28% Impervious, Inflow Depth = 0.81" for 25-yr event
Inflow = 8.08 cfs @ 0.17 hrs, Volume= 4,873 cf
Outflow = 8.02 cfs @ 0.17 hrs, Volume= 4,873 cf, Atten= 1%, Lag= 0.2 min
Routed to Reach P-A4 : Pipe A4

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Max. Velocity= 9.76 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 4.04 fps, Avg. Travel Time= 0.5 min

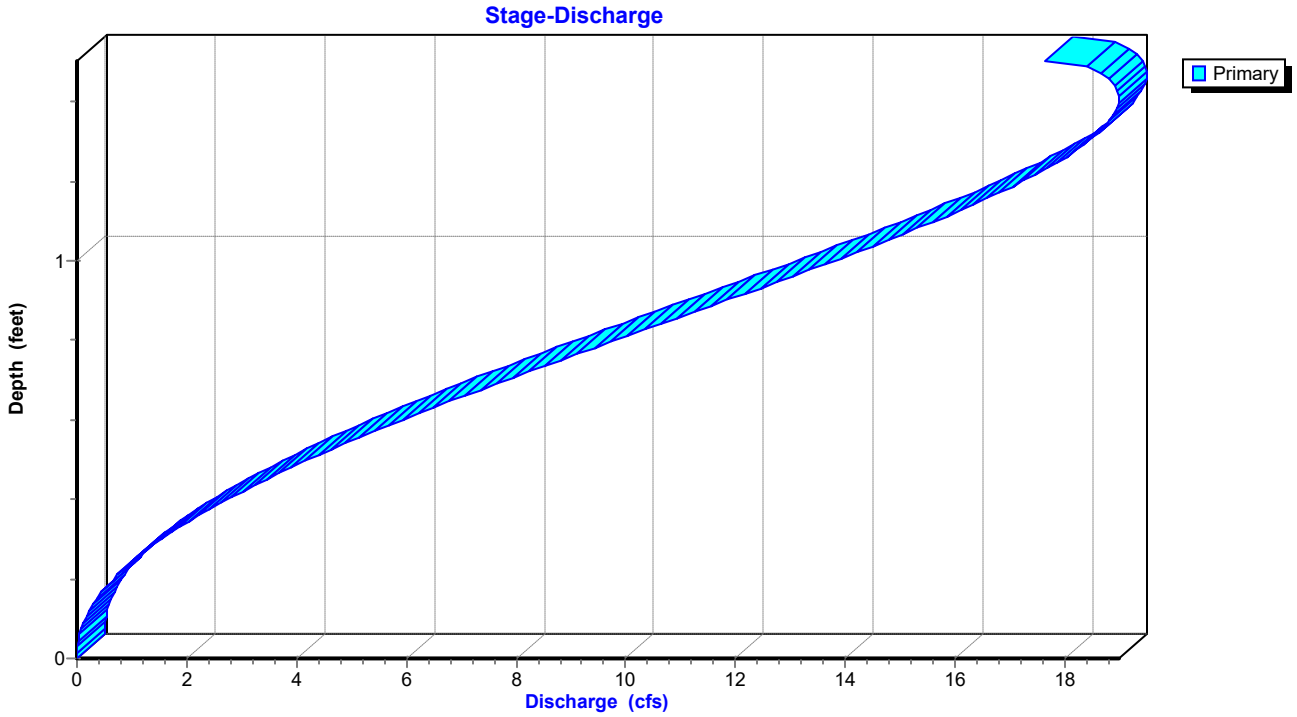
Peak Storage= 97 cf @ 0.17 hrs
Average Depth at Peak Storage= 0.71' , Surface Width= 1.50'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.65 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 118.0' Slope= 0.0282 '/'
Inlet Invert= 404.46', Outlet Invert= 401.13'





Reach P-A3: Pipe A3



Stage-Area-Storage for Reach P-A3: Pipe A3

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
404.46	0.0	0
404.48	0.0	1
404.50	0.0	2
404.52	0.0	3
404.54	0.0	4
404.56	0.1	6
404.58	0.1	8
404.60	0.1	10
404.62	0.1	12
404.64	0.1	14
404.66	0.1	17
404.68	0.2	19
404.70	0.2	22
404.72	0.2	24
404.74	0.2	27
404.76	0.3	30
404.78	0.3	33
404.80	0.3	35
404.82	0.3	38
404.84	0.4	42
404.86	0.4	45
404.88	0.4	48
404.90	0.4	51
404.92	0.5	54
404.94	0.5	58
404.96	0.5	61
404.98	0.5	64
405.00	0.6	68
405.02	0.6	71
405.04	0.6	74
405.06	0.7	78
405.08	0.7	81
405.10	0.7	85
405.12	0.7	88
405.14	0.8	92
405.16	0.8	95
405.18	0.8	99
405.20	0.9	102
405.22	0.9	106
405.24	0.9	110
405.26	1.0	113
405.28	1.0	117
405.30	1.0	120
405.32	1.0	124
405.34	1.1	127
405.36	1.1	131
405.38	1.1	134
405.40	1.2	138
405.42	1.2	141
405.44	1.2	144
405.46	1.3	148
405.48	1.3	151
405.50	1.3	154
405.52	1.3	158
405.54	1.4	161
405.56	1.4	164
405.58	1.4	167
405.60	1.4	170
405.62	1.5	173
405.64	1.5	176
405.66	1.5	179
405.68	1.5	182
405.70	1.6	184
405.72	1.6	187
405.74	1.6	190
405.76	1.6	192
405.78	1.6	194
405.80	1.7	197
405.82	1.7	199
405.84	1.7	201
405.86	1.7	203
405.88	1.7	204
405.90	1.7	206
405.92	1.8	207
405.94	1.8	208
405.96	**1.8**	**209**

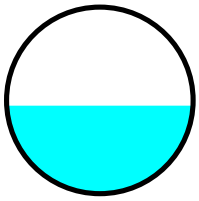
Summary for Reach P-A4: Pipe A4

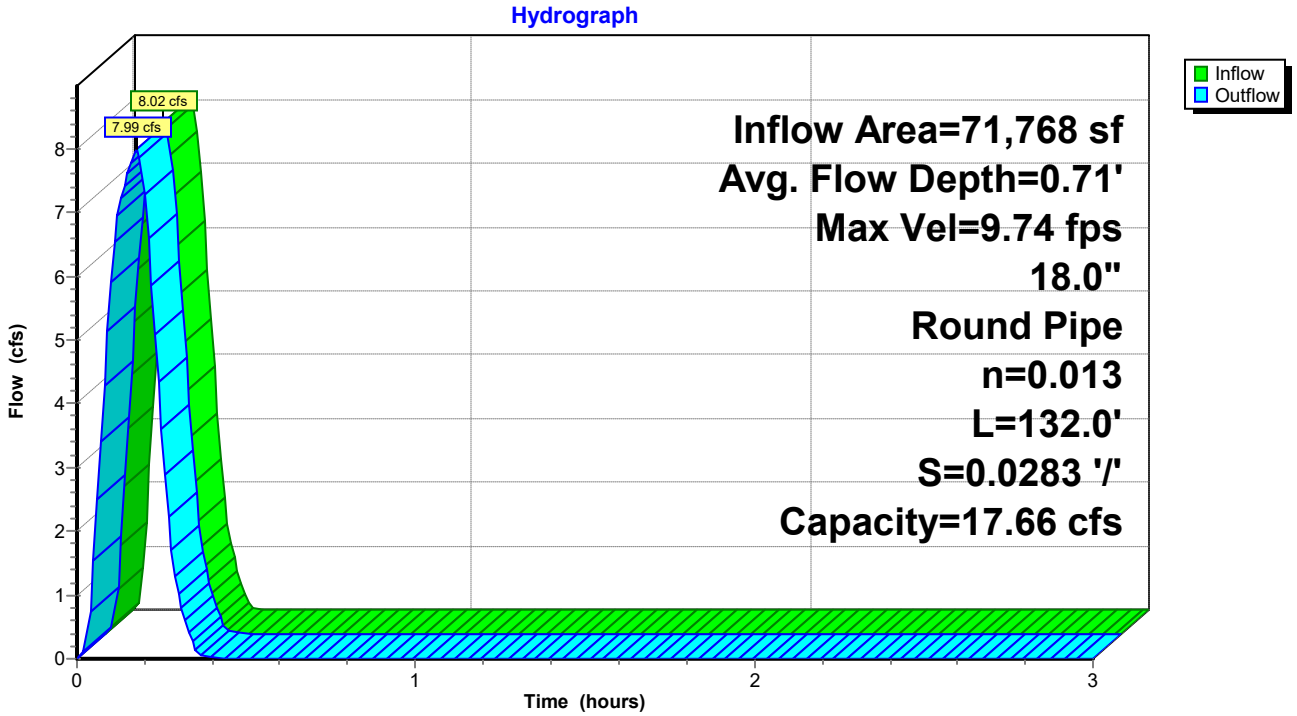
Inflow Area = 71,768 sf, 58.28% Impervious, Inflow Depth = 0.81" for 25-yr event
Inflow = 8.02 cfs @ 0.17 hrs, Volume= 4,873 cf
Outflow = 7.99 cfs @ 0.18 hrs, Volume= 4,873 cf, Atten= 0%, Lag= 0.4 min
Routed to Pond DP1 : Re-Establised East Pond

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Max. Velocity= 9.74 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 3.84 fps, Avg. Travel Time= 0.6 min

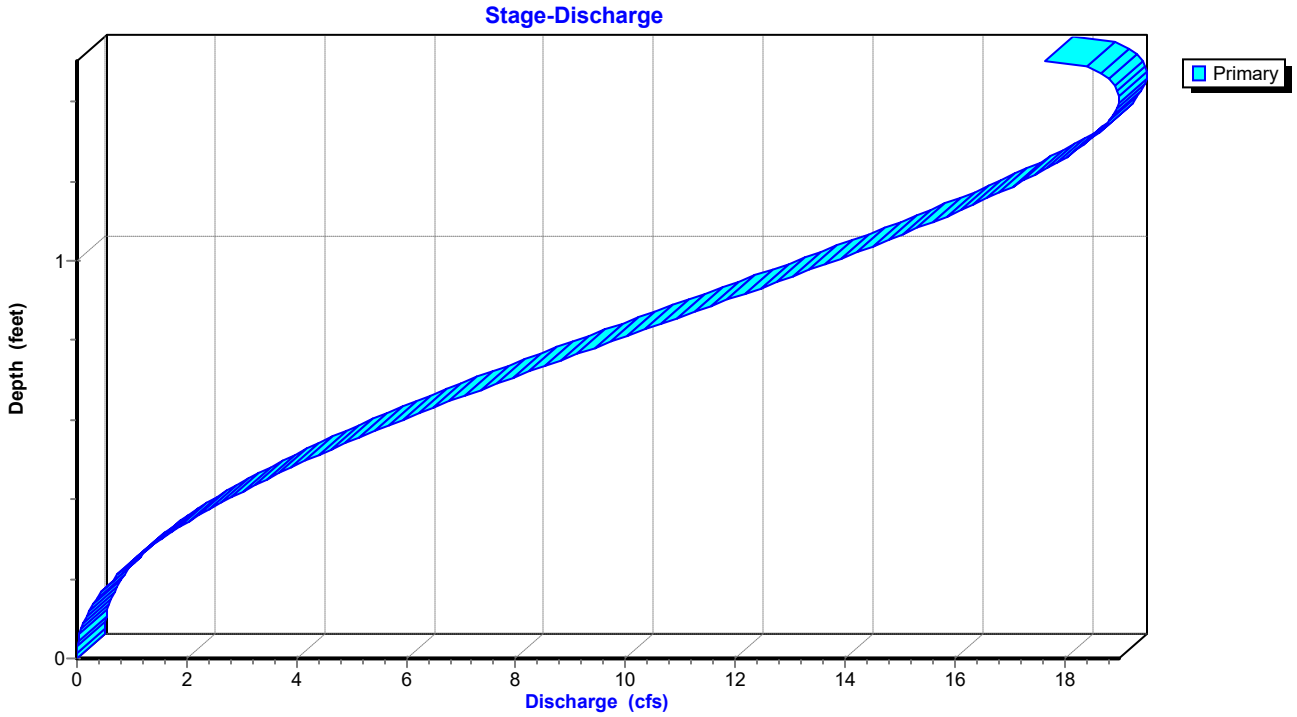
Peak Storage= 108 cf @ 0.17 hrs
Average Depth at Peak Storage= 0.71' , Surface Width= 1.50'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.66 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 132.0' Slope= 0.0283 '/'
Inlet Invert= 401.03', Outlet Invert= 397.30'





Reach P-A4: Pipe A4



Stage-Area-Storage for Reach P-A4: Pipe A4

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
401.03	0.0	0
401.05	0.0	1
401.07	0.0	2
401.09	0.0	3
401.11	0.0	5
401.13	0.1	7
401.15	0.1	9
401.17	0.1	11
401.19	0.1	13
401.21	0.1	16
401.23	0.1	18
401.25	0.2	21
401.27	0.2	24
401.29	0.2	27
401.31	0.2	30
401.33	0.3	33
401.35	0.3	36
401.37	0.3	40
401.39	0.3	43
401.41	0.4	46
401.43	0.4	50
401.45	0.4	53
401.47	0.4	57
401.49	0.5	61
401.51	0.5	64
401.53	0.5	68
401.55	0.5	72
401.57	0.6	76
401.59	0.6	79
401.61	0.6	83
401.63	0.7	87
401.65	0.7	91
401.67	0.7	95
401.69	0.7	99
401.71	0.8	103
401.73	0.8	107
401.75	0.8	111
401.77	0.9	115
401.79	0.9	119
401.81	0.9	123
401.83	1.0	127
401.85	1.0	130
401.87	1.0	134
401.89	1.0	138
401.91	1.1	142
401.93	1.1	146
401.95	1.1	150
401.97	1.2	154
401.99	1.2	158
402.01	1.2	161
402.03	1.3	165
402.05	1.3	169
402.07	1.3	173
402.09	1.3	176
402.11	1.4	180
402.13	1.4	183
402.15	1.4	187
402.17	1.4	190
402.19	1.5	194
402.21	1.5	197
402.23	1.5	200
402.25	1.5	203
402.27	1.6	206
402.29	1.6	209
402.31	1.6	212
402.33	1.6	215
402.35	1.6	217
402.37	1.7	220
402.39	1.7	222
402.41	1.7	225
402.43	1.7	227
402.45	1.7	228
402.47	1.7	230
402.49	1.8	232
402.51	1.8	233
402.53	**1.8**	**233**

Summary for Pond DP1: Re-Establised East Pond

Inflow Area = 132,514 sf, 61.41% Impervious, Inflow Depth = 0.83" for 25-yr event
Inflow = 14.95 cfs @ 0.16 hrs, Volume= 9,164 cf
Outflow = 7.87 cfs @ 0.22 hrs, Volume= 9,164 cf, Atten= 47%, Lag= 3.8 min
Primary = 7.87 cfs @ 0.22 hrs, Volume= 9,164 cf
Routed to Link Post-Dev : APPROX DISCHARGE

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Peak Elev= 398.45' @ 0.22 hrs Storage= 4,803 cf

Plug-Flow detention time= 8.8 min calculated for 9,164 cf (100% of inflow)
Center-of-Mass det. time= 8.7 min (17.5 - 8.8)

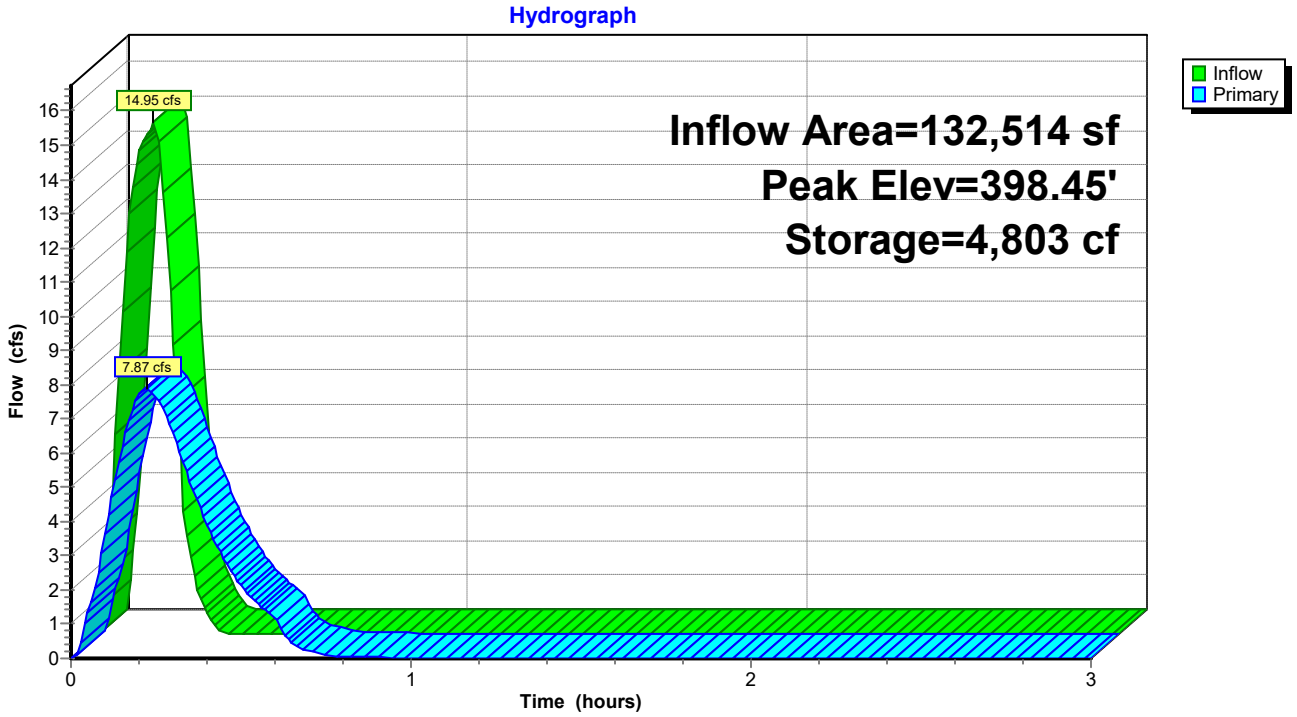
Volume	Invert	Avail.Storage	Storage Description
#1	396.00'	8,557 cf	**Custom Stage Data** Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
396.00	0	0
396.50	250	250
397.00	1,092	1,342
398.00	2,387	3,729
399.00	2,405	6,134
400.00	2,423	8,557

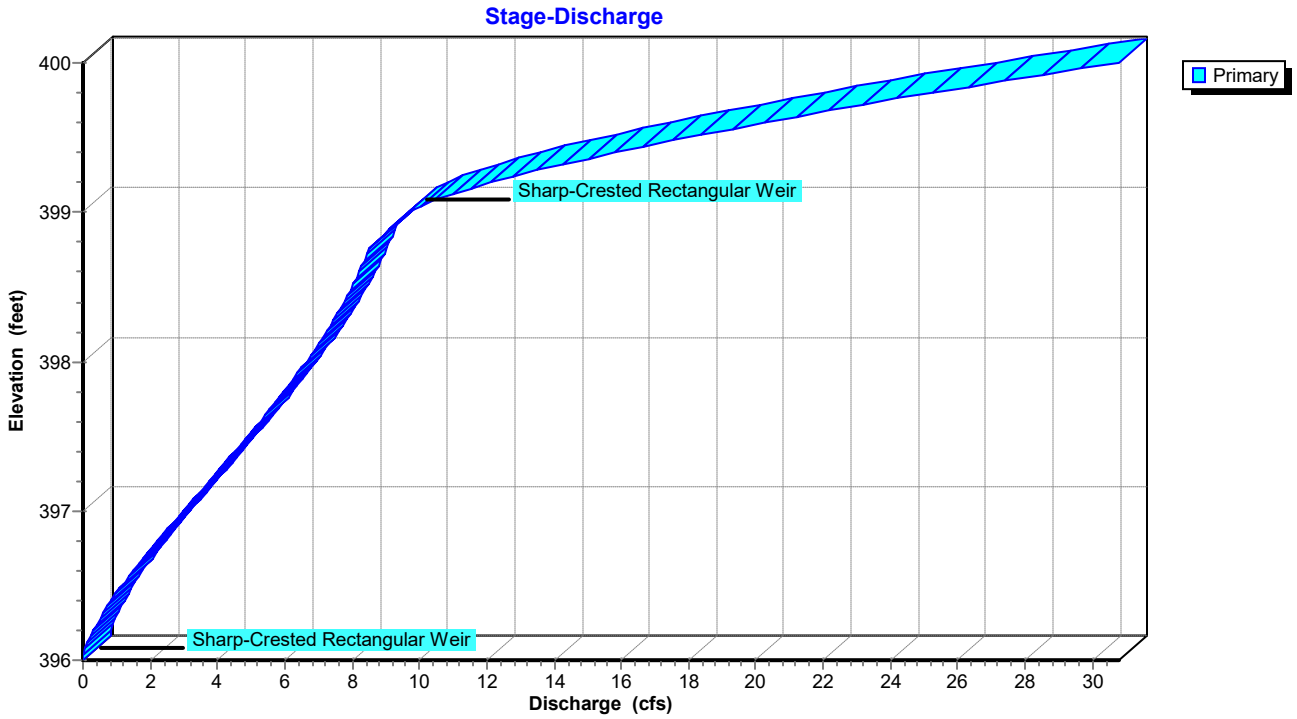
Device	Routing	Invert	Outlet Devices
#1	Primary	399.00'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	396.00'	**1.1' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 10.0' Crest Height

Primary OutFlow Max=7.86 cfs @ 0.22 hrs HW=398.44' (Free Discharge)
1=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)
2=Sharp-Crested Rectangular Weir (Weir Controls 7.86 cfs @ 5.26 fps)

Pond DP1: Re-Establised East Pond



Pond DP1: Re-Establised East Pond



Stage-Area-Storage for Pond DP1: Re-Establised East Pond

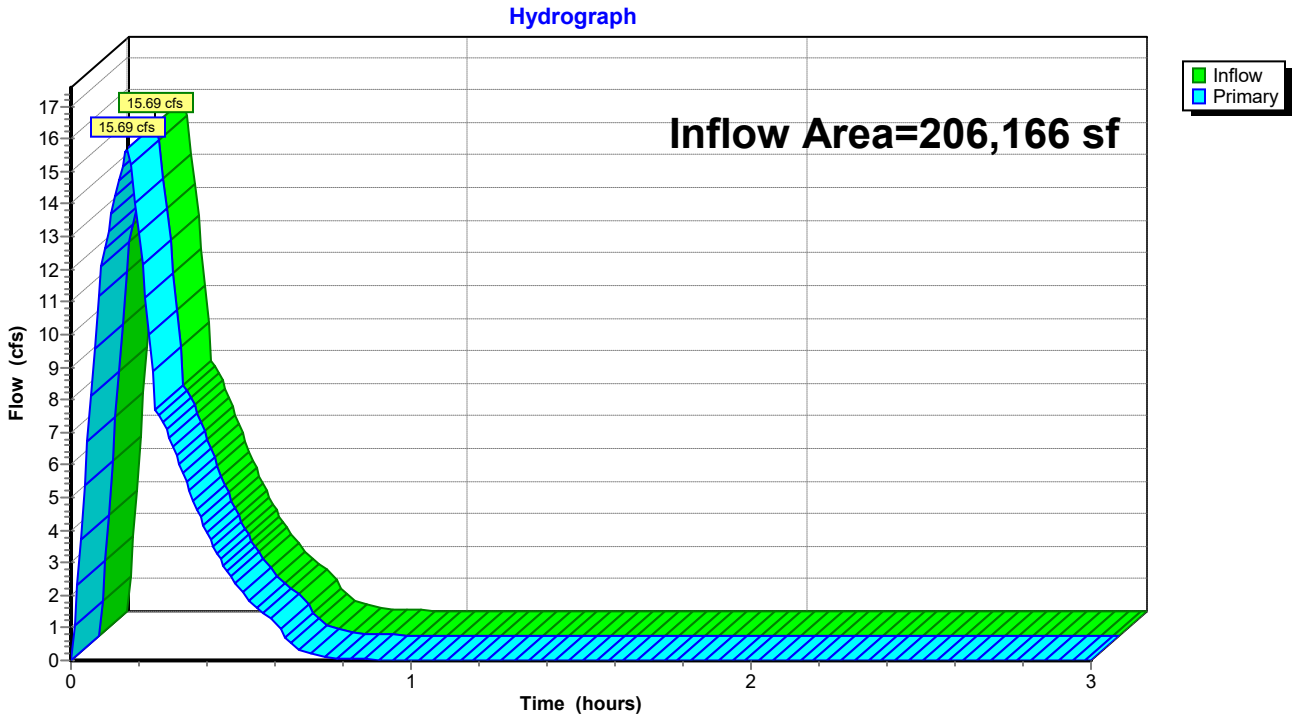
Elevation (feet)	Storage (cubic-feet)
396.00	0
396.05	25
396.10	50
396.15	75
396.20	100
396.25	125
396.30	150
396.35	175
396.40	200
396.45	225
396.50	250
396.55	359
396.60	468
396.65	578
396.70	687
396.75	796
396.80	905
396.85	1,014
396.90	1,124
396.95	1,233
397.00	1,342
397.05	1,461
397.10	1,581
397.15	1,700
397.20	1,819
397.25	1,939
397.30	2,058
397.35	2,177
397.40	2,297
397.45	2,416
397.50	2,536
397.55	2,655
397.60	2,774
397.65	2,894
397.70	3,013
397.75	3,132
397.80	3,252
397.85	3,371
397.90	3,490
397.95	3,610
398.00	3,729
398.05	3,849
398.10	3,970
398.15	4,090
398.20	4,210
398.25	4,330
398.30	4,451
398.35	4,571
398.40	4,691
398.45	4,811
398.50	4,932
398.55	5,052
398.60	5,172
398.65	5,292
398.70	5,412
398.75	5,533
398.80	5,653
398.85	5,773
398.90	5,893
398.95	6,014
399.00	6,134
399.05	6,255
399.10	6,376
399.15	6,497
399.20	6,619
399.25	6,740
399.30	6,861
399.35	6,982
399.40	7,103
399.45	7,224
399.50	7,346
399.55	7,467
399.60	7,588
399.65	7,709
399.70	7,830
399.75	7,951
399.80	8,072
399.85	8,194
399.90	8,315
399.95	8,436
400.00	**8,557**

Summary for Link Post-Dev: APPROX DISCHARGE

Inflow Area = 206,166 sf, 64.42% Impervious, Inflow Depth = 0.85" for 25-yr event
Inflow = 15.69 cfs @ 0.17 hrs, Volume= 14,548 cf
Primary = 15.69 cfs @ 0.17 hrs, Volume= 14,548 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Link Post-Dev: APPROX DISCHARGE



Summary for Subcatchment D1: Drainage Basin D1

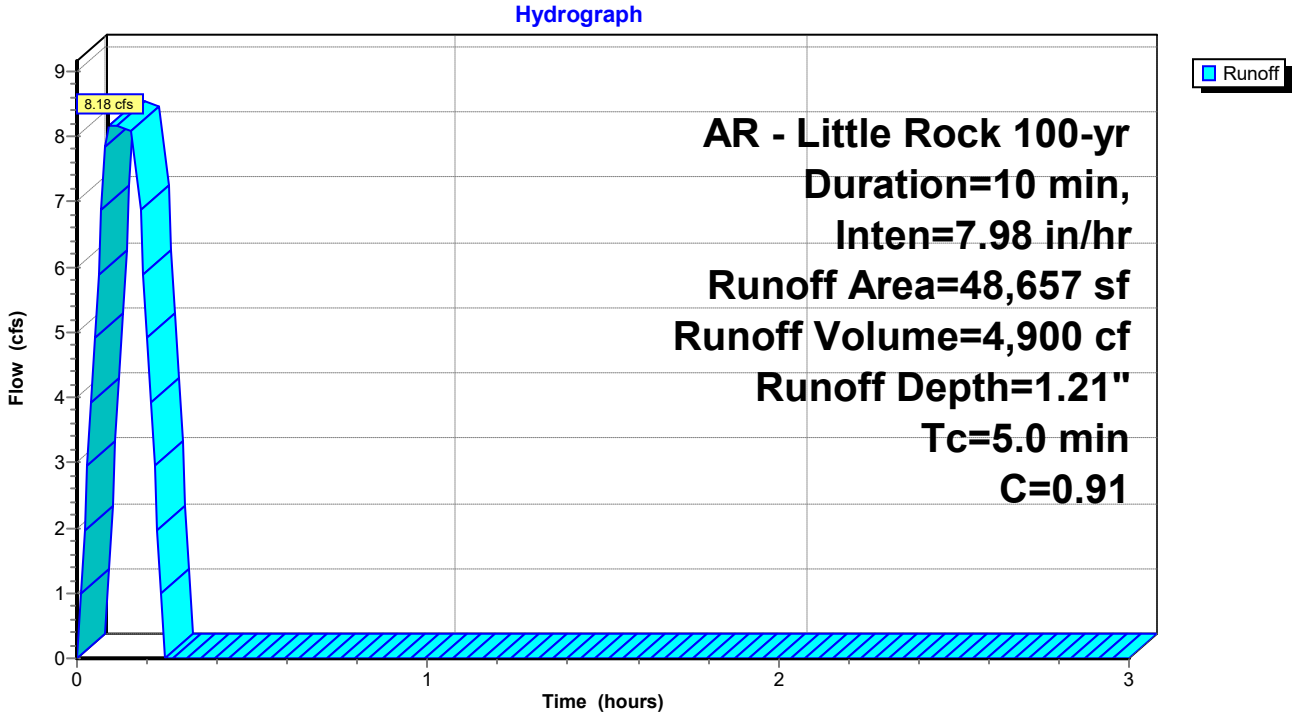
Runoff = 8.18 cfs @ 0.09 hrs, Volume= 4,900 cf, Depth= 1.21"
Routed to Link Post-Dev : APPROX DISCHARGE

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 100-yr Duration=10 min, Inten=7.98 in/hr

Area (sf)	C	Description
3,421	0.40	Sod Yard
45,236	0.95	Rood, Drives, Sidewalks
48,657	0.91	Weighted Average
3,421		7.03% Pervious Area
45,236		92.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D1: Drainage Basin D1



Summary for Subcatchment D2: Drainage Basin D2

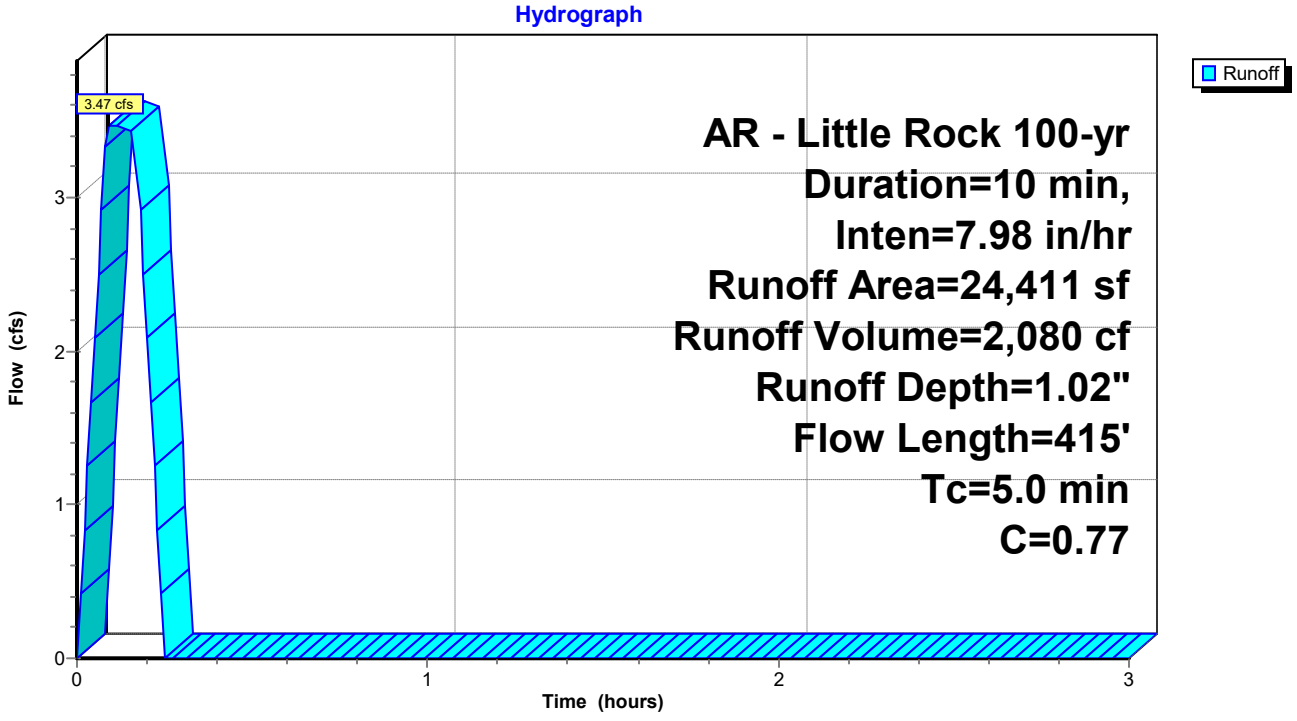
Runoff = 3.47 cfs @ 0.09 hrs, Volume= 2,080 cf, Depth= 1.02"
Routed to Reach P-A1 : Pipe A1

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 100-yr Duration=10 min, Inten=7.98 in/hr

Area (sf)	C	Description
8,845	0.45	Rip Rap Embankment
15,566	0.95	Roof, Drives, Sidewalks
24,411	0.77	Weighted Average
8,845		36.23% Pervious Area
15,566		63.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	415		1.38		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D2: Drainage Basin D2



Summary for Subcatchment D3: Drainage Basin D3

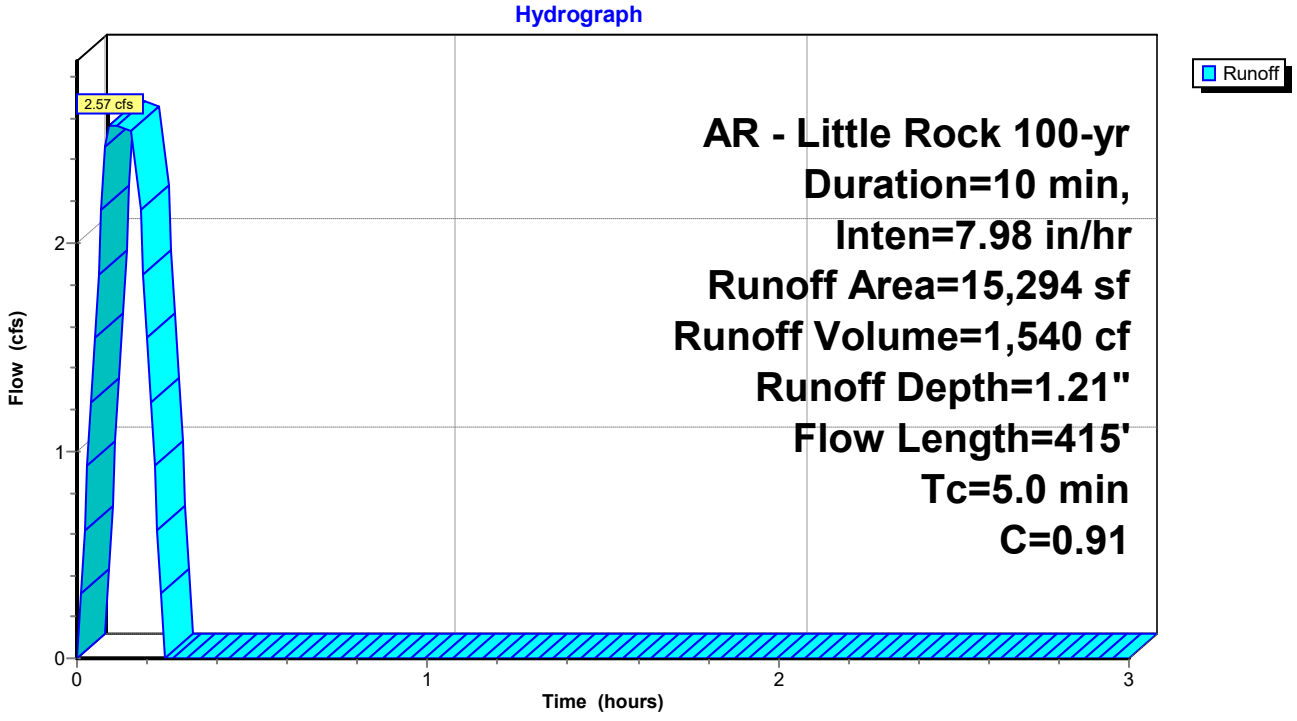
Runoff = 2.57 cfs @ 0.09 hrs, Volume= 1,540 cf, Depth= 1.21"
Routed to Reach P-A2 : Pipe A2

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 100-yr Duration=10 min, Inten=7.98 in/hr

Area (sf)	C	Description
1,065	0.40	Sod Yard
14,229	0.95	Paving, Sidewalks
15,294	0.91	Weighted Average
1,065		6.96% Pervious Area
14,229		93.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	415		1.38		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D3: Drainage Basin D3



Summary for Subcatchment D4: Drainage Basin D4

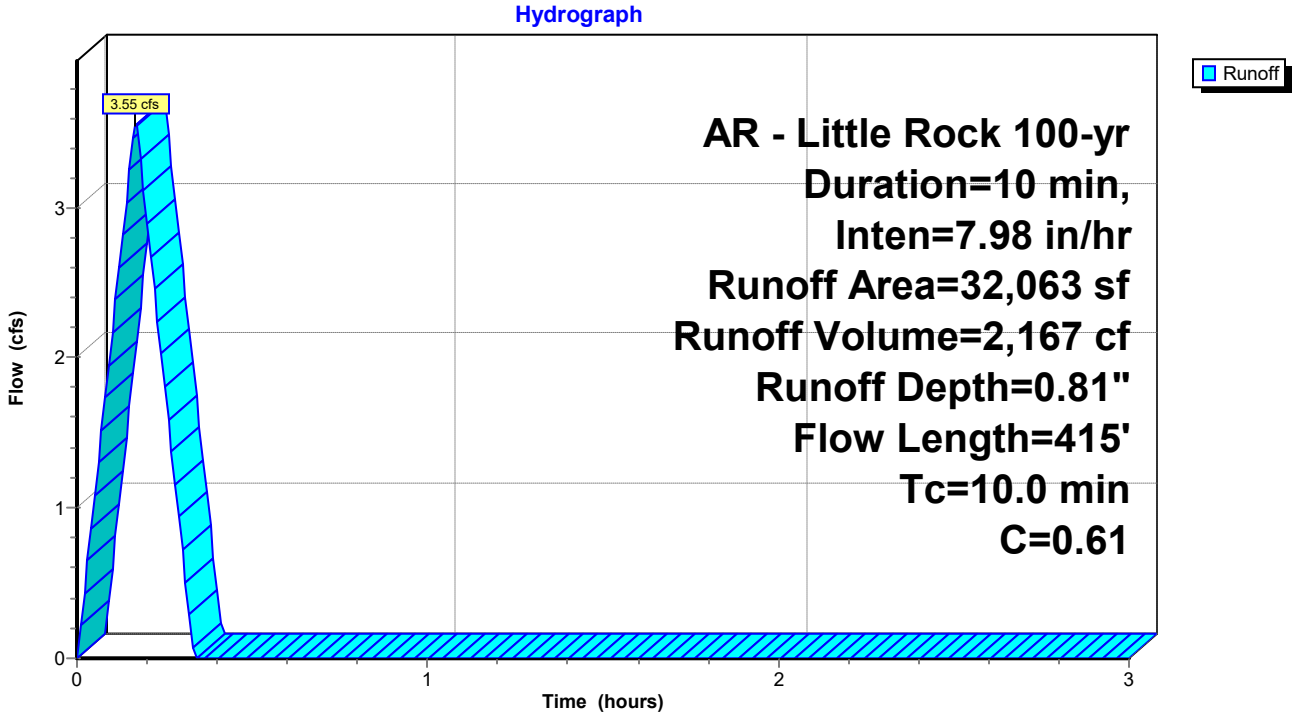
Runoff = 3.55 cfs @ 0.17 hrs, Volume= 2,167 cf, Depth= 0.81"
Routed to Reach P-A3 : Pipe A3

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 100-yr Duration=10 min, Inten=7.98 in/hr

Area (sf)	C	Description
20,032	0.40	
12,031	0.95	
32,063	0.61	Weighted Average
20,032		62.48% Pervious Area
12,031		37.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	415		0.69		**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D4: Drainage Basin D4



Summary for Subcatchment D5: Drainage Basin D5

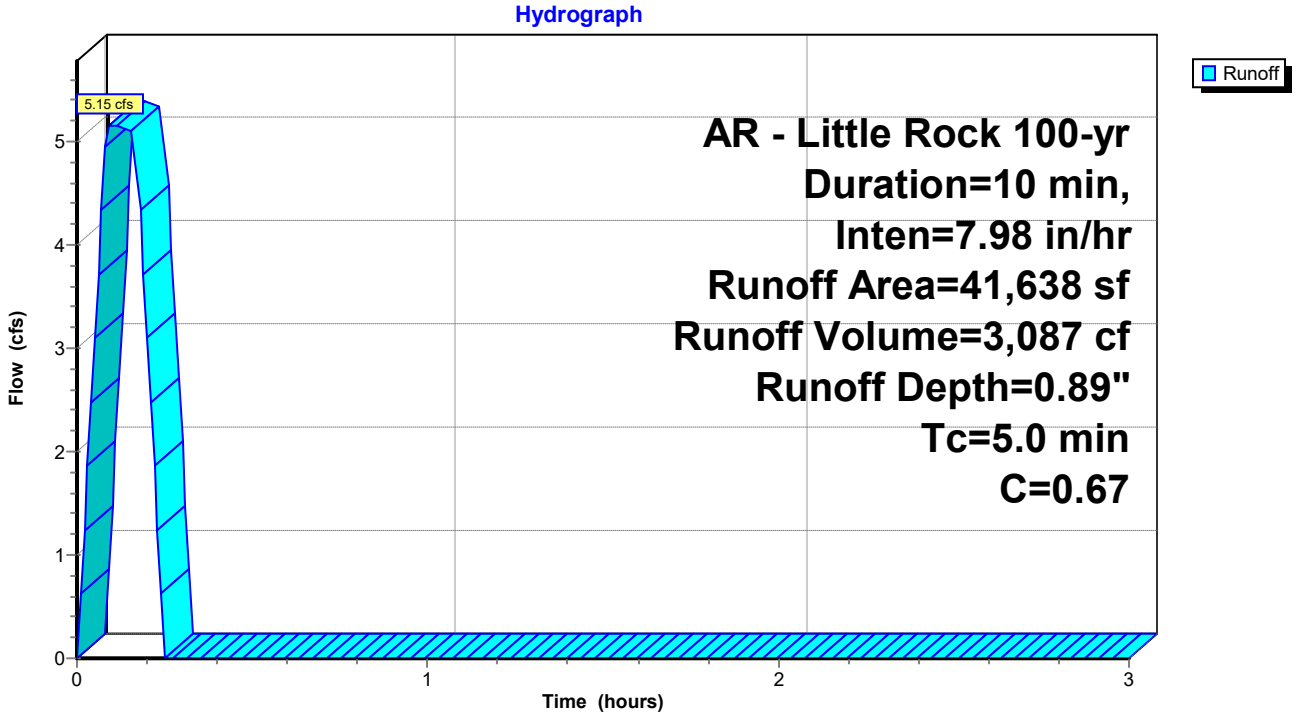
Runoff = 5.15 cfs @ 0.09 hrs, Volume= 3,087 cf, Depth= 0.89"
Routed to Pond DP1 : Re-Establised East Pond

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 100-yr Duration=10 min, Inten=7.98 in/hr

Area (sf)	C	Description
21,201	0.40	Sod Yard, Natural Vegetation
20,437	0.95	Paving, Sidewalks
41,638	0.67	Weighted Average
21,201		50.92% Pervious Area
20,437		49.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D5: Drainage Basin D5



Summary for Subcatchment D6: Drainage Basin D6

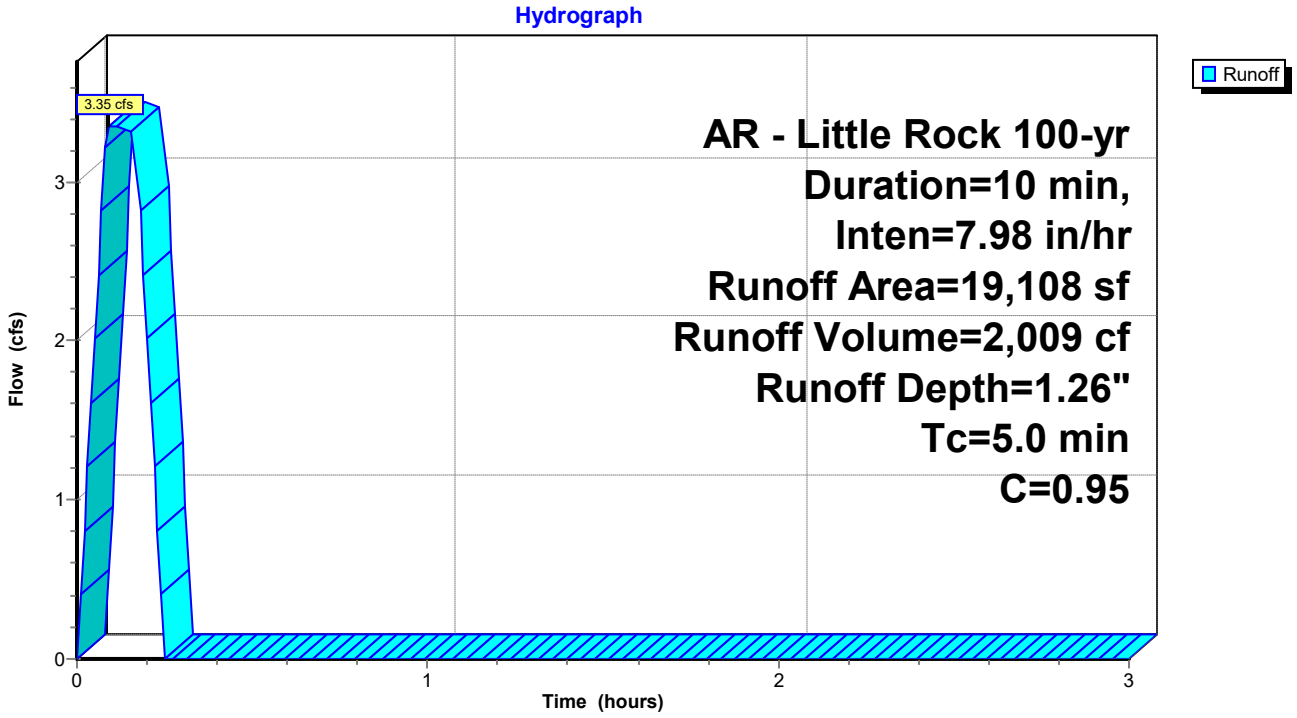
Runoff = 3.35 cfs @ 0.09 hrs, Volume= 2,009 cf, Depth= 1.26"
Routed to Pond DP1 : Re-Establised East Pond

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 100-yr Duration=10 min, Inten=7.98 in/hr

Area (sf)	C	Description
19,108	0.95	Roof
19,108		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D6: Drainage Basin D6



Summary for Subcatchment D7: Drainage Basin D7

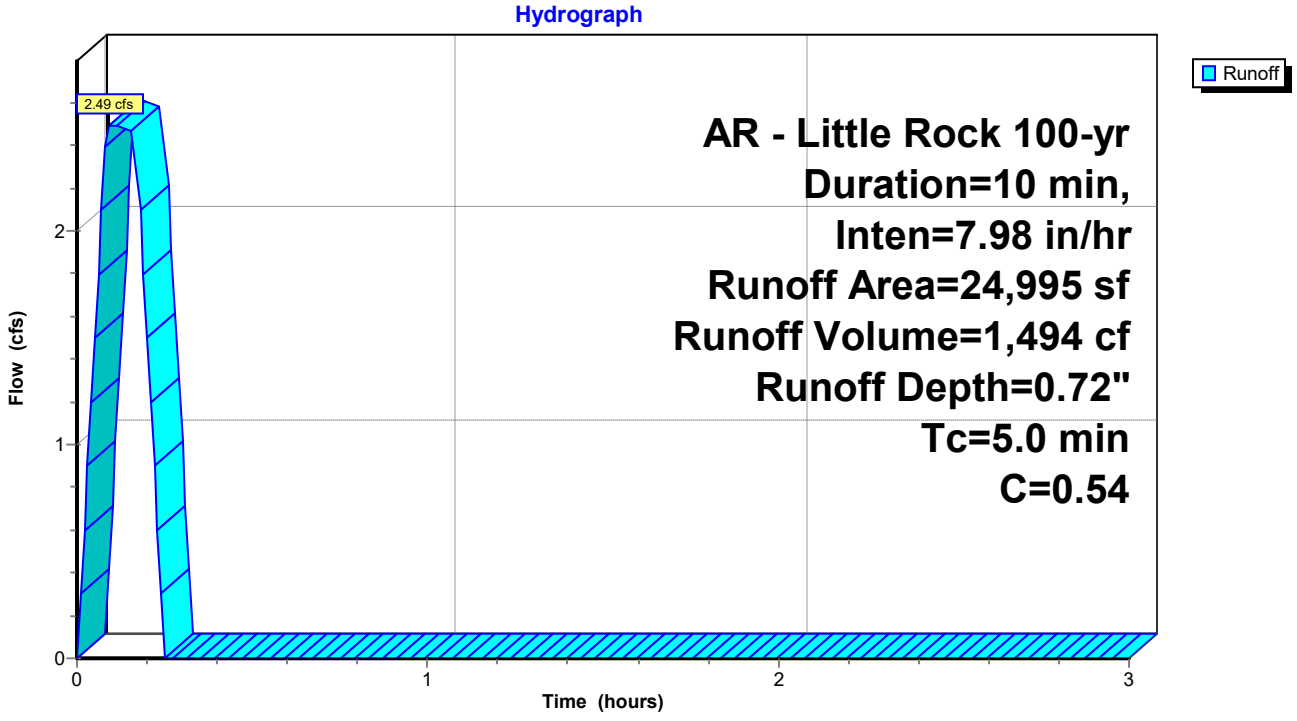
Runoff = 2.49 cfs @ 0.09 hrs, Volume= 1,494 cf, Depth= 0.72"
Routed to Link Post-Dev : APPROX DISCHARGE

Runoff by Rational method, Rise/Fall=1.0/1.0 xTc, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
AR - Little Rock 100-yr Duration=10 min, Inten=7.98 in/hr

Area (sf)	C	Description
18,798	0.40	Sod Yard, Natural Vegetation
6,197	0.95	Paving, Sidewalks
24,995	0.54	Weighted Average
18,798		75.21% Pervious Area
6,197		24.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Overland Concentrated Flow (Min)**

Subcatchment D7: Drainage Basin D7



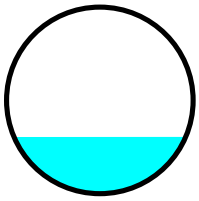
Summary for Reach P-A1: Pipe A1

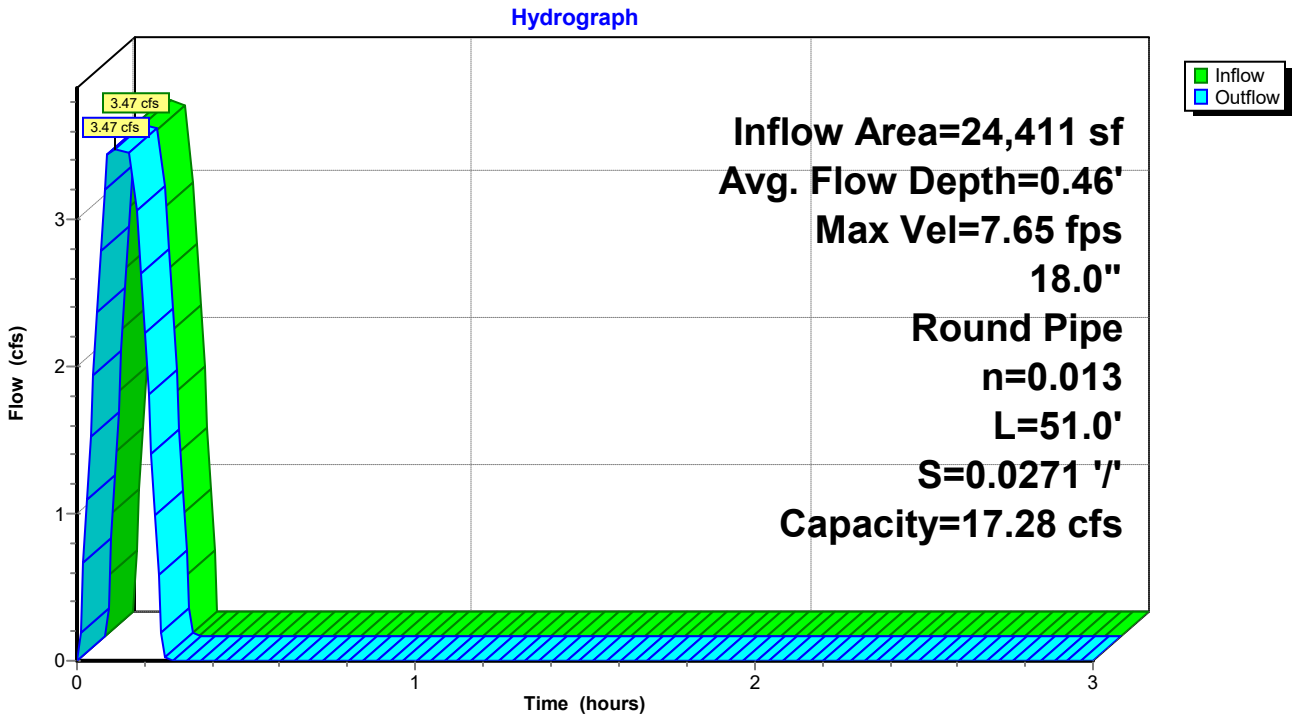
Inflow Area = 24,411 sf, 63.77% Impervious, Inflow Depth = 1.02" for 100-yr event
Inflow = 3.47 cfs @ 0.09 hrs, Volume= 2,080 cf
Outflow = 3.47 cfs @ 0.11 hrs, Volume= 2,080 cf, Atten= 0%, Lag= 1.2 min
Routed to Reach P-A2 : Pipe A2

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Max. Velocity= 7.65 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 6.08 fps, Avg. Travel Time= 0.1 min

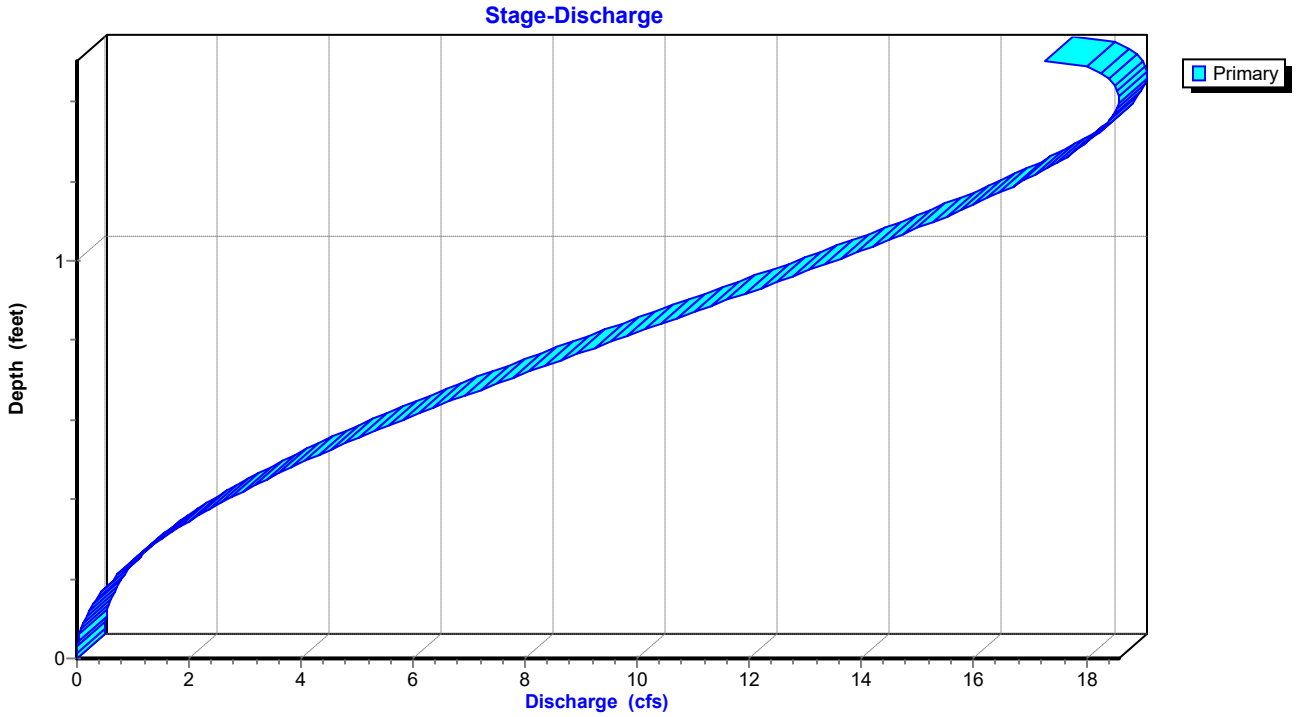
Peak Storage= 23 cf @ 0.09 hrs
Average Depth at Peak Storage= 0.46' , Surface Width= 1.38'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.28 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 51.0' Slope= 0.0271 '/'
Inlet Invert= 408.33', Outlet Invert= 406.95'





Reach P-A1: Pipe A1



Stage-Area-Storage for Reach P-A1: Pipe A1

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
408.33	0.0	0
408.35	0.0	0
408.37	0.0	1
408.39	0.0	1
408.41	0.0	2
408.43	0.1	3
408.45	0.1	3
408.47	0.1	4
408.49	0.1	5
408.51	0.1	6
408.53	0.1	7
408.55	0.2	8
408.57	0.2	9
408.59	0.2	10
408.61	0.2	12
408.63	0.3	13
408.65	0.3	14
408.67	0.3	15
408.69	0.3	17
408.71	0.4	18
408.73	0.4	19
408.75	0.4	21
408.77	0.4	22
408.79	0.5	23
408.81	0.5	25
408.83	0.5	26
408.85	0.5	28
408.87	0.6	29
408.89	0.6	31
408.91	0.6	32
408.93	0.7	34
408.95	0.7	35
408.97	0.7	37
408.99	0.7	38
409.01	0.8	40
409.03	0.8	41
409.05	0.8	43
409.07	0.9	44
409.09	0.9	46
409.11	0.9	47
409.13	1.0	49
409.15	1.0	50
409.17	1.0	52
409.19	1.0	53
409.21	1.1	55
409.23	1.1	56
409.25	1.1	58
409.27	1.2	59
409.29	1.2	61
409.31	1.2	62
409.33	1.3	64
409.35	1.3	65
409.37	1.3	67
409.39	1.3	68
409.41	1.4	69
409.43	1.4	71
409.45	1.4	72
409.47	1.4	73
409.49	1.5	75
409.51	1.5	76
409.53	1.5	77
409.55	1.5	78
409.57	1.6	80
409.59	1.6	81
409.61	1.6	82
409.63	1.6	83
409.65	1.6	84
409.67	1.7	85
409.69	1.7	86
409.71	1.7	87
409.73	1.7	88
409.75	1.7	88
409.77	1.7	89
409.79	1.8	89
409.81	1.8	90
409.83	**1.8**	**90**

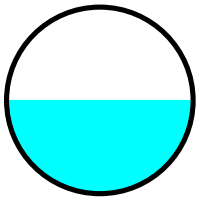
Summary for Reach P-A2: Pipe A2

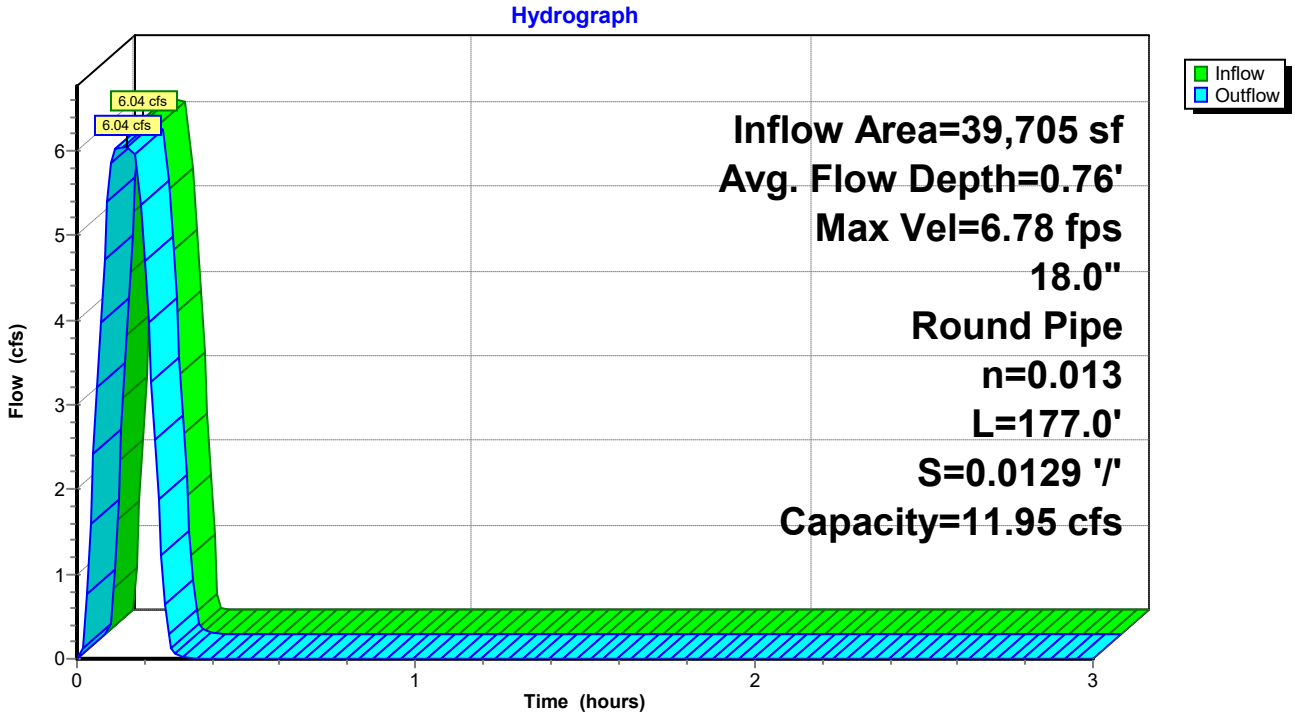
Inflow Area = 39,705 sf, 75.04% Impervious, Inflow Depth = 1.09" for 100-yr event
Inflow = 6.04 cfs @ 0.11 hrs, Volume= 3,620 cf
Outflow = 6.04 cfs @ 0.15 hrs, Volume= 3,620 cf, Atten= 0%, Lag= 2.4 min
Routed to Reach P-A3 : Pipe A3

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Max. Velocity= 6.78 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 2.68 fps, Avg. Travel Time= 1.1 min

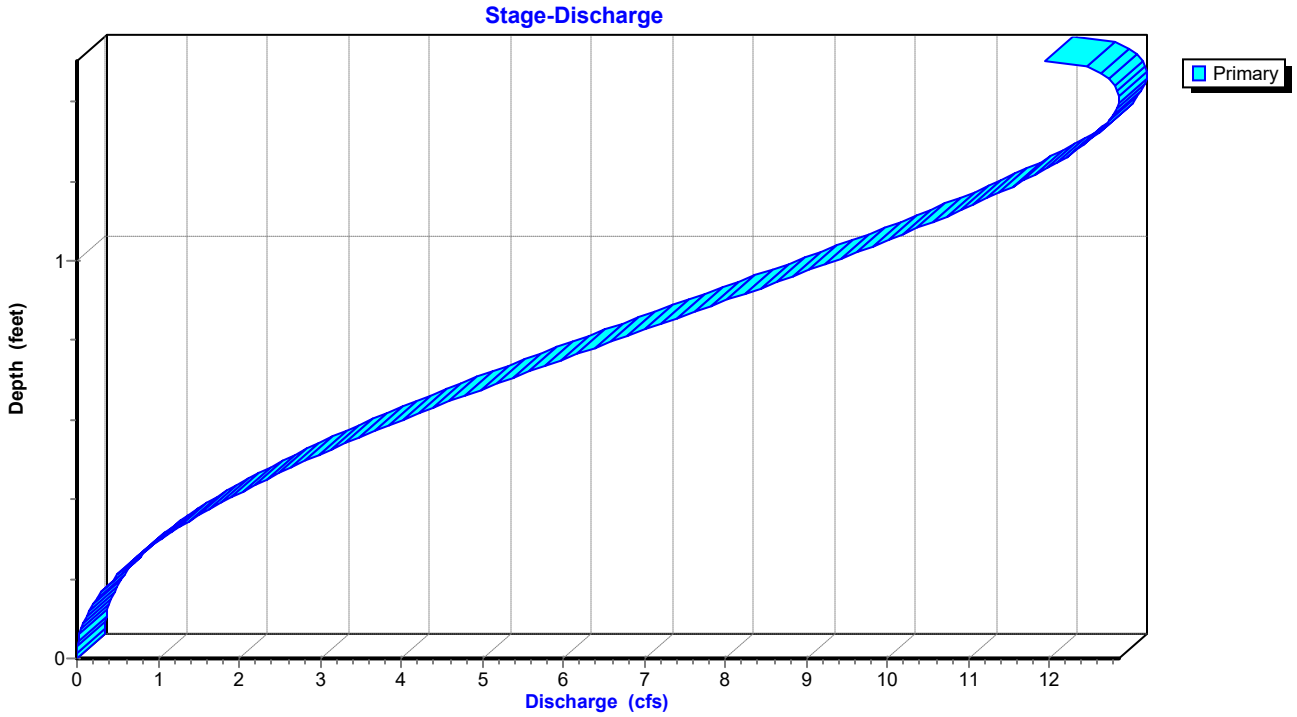
Peak Storage= 158 cf @ 0.12 hrs
Average Depth at Peak Storage= 0.76' , Surface Width= 1.50'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 11.95 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 177.0' Slope= 0.0129 '/'
Inlet Invert= 406.85', Outlet Invert= 404.56'





Reach P-A2: Pipe A2



Stage-Area-Storage for Reach P-A2: Pipe A2

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
406.85	0.0	0
406.87	0.0	1
406.89	0.0	2
406.91	0.0	4
406.93	0.0	6
406.95	0.1	9
406.97	0.1	12
406.99	0.1	15
407.01	0.1	18
407.03	0.1	21
407.05	0.1	25
407.07	0.2	28
407.09	0.2	32
407.11	0.2	36
407.13	0.2	40
407.15	0.3	45
407.17	0.3	49
407.19	0.3	53
407.21	0.3	58
407.23	0.4	62
407.25	0.4	67
407.27	0.4	72
407.29	0.4	76
407.31	0.5	81
407.33	0.5	86
407.35	0.5	91
407.37	0.5	96
407.39	0.6	101
407.41	0.6	106
407.43	0.6	112
407.45	0.7	117
407.47	0.7	122
407.49	0.7	127
407.51	0.7	133
407.53	0.8	138
407.55	0.8	143
407.57	0.8	148
407.59	0.9	154
407.61	0.9	159
407.63	0.9	164
407.65	1.0	170
407.67	1.0	175
407.69	1.0	180
407.71	1.0	185
407.73	1.1	191
407.75	1.1	196
407.77	1.1	201
407.79	1.2	206
407.81	1.2	211
407.83	1.2	216
407.85	1.3	222
407.87	1.3	226
407.89	1.3	231
407.91	1.3	236
407.93	1.4	241
407.95	1.4	246
407.97	1.4	250
407.99	1.4	255
408.01	1.5	260
408.03	1.5	264
408.05	1.5	268
408.07	1.5	272
408.09	1.6	277
408.11	1.6	280
408.13	1.6	284
408.15	1.6	288
408.17	1.6	292
408.19	1.7	295
408.21	1.7	298
408.23	1.7	301
408.25	1.7	304
408.27	1.7	306
408.29	1.7	309
408.31	1.8	310
408.33	1.8	312
408.35	**1.8**	**313**

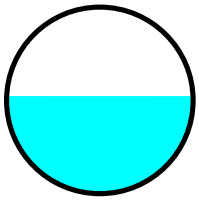
Summary for Reach P-A3: Pipe A3

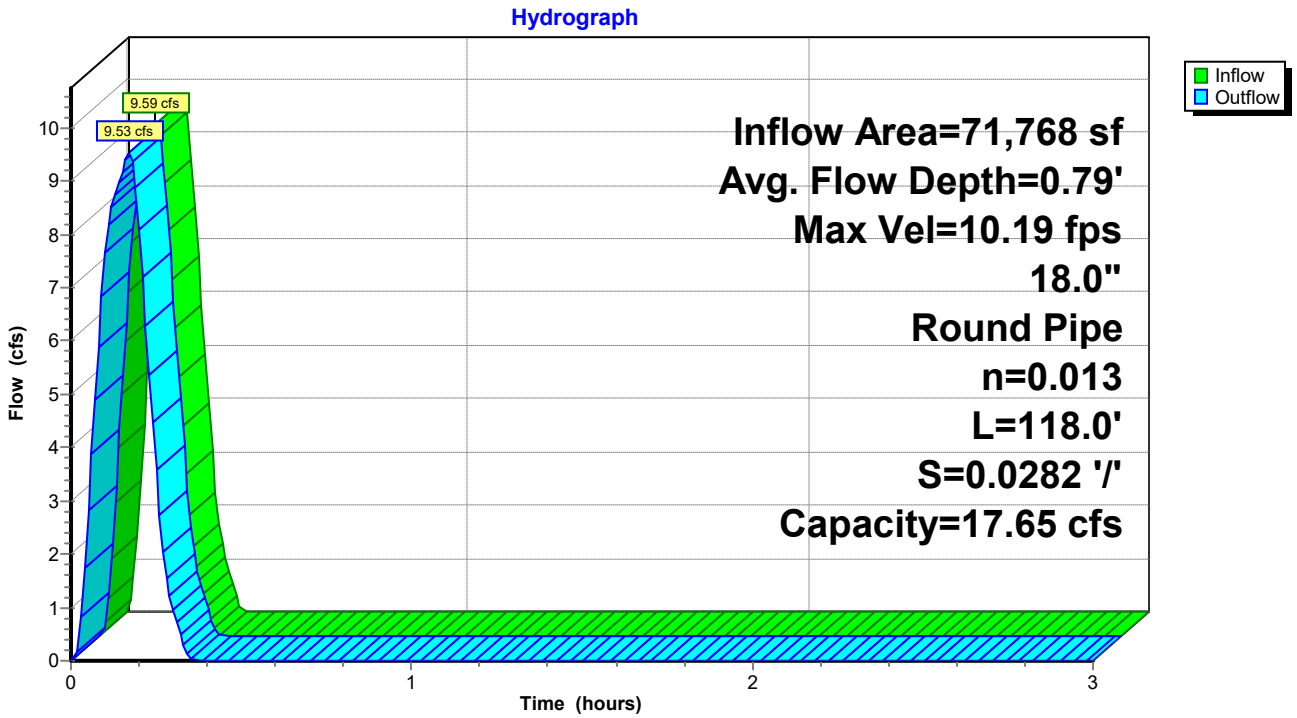
Inflow Area = 71,768 sf, 58.28% Impervious, Inflow Depth = 0.97" for 100-yr event
Inflow = 9.59 cfs @ 0.17 hrs, Volume= 5,787 cf
Outflow = 9.53 cfs @ 0.17 hrs, Volume= 5,787 cf, Atten= 1%, Lag= 0.2 min
Routed to Reach P-A4 : Pipe A4

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Max. Velocity= 10.19 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 4.21 fps, Avg. Travel Time= 0.5 min

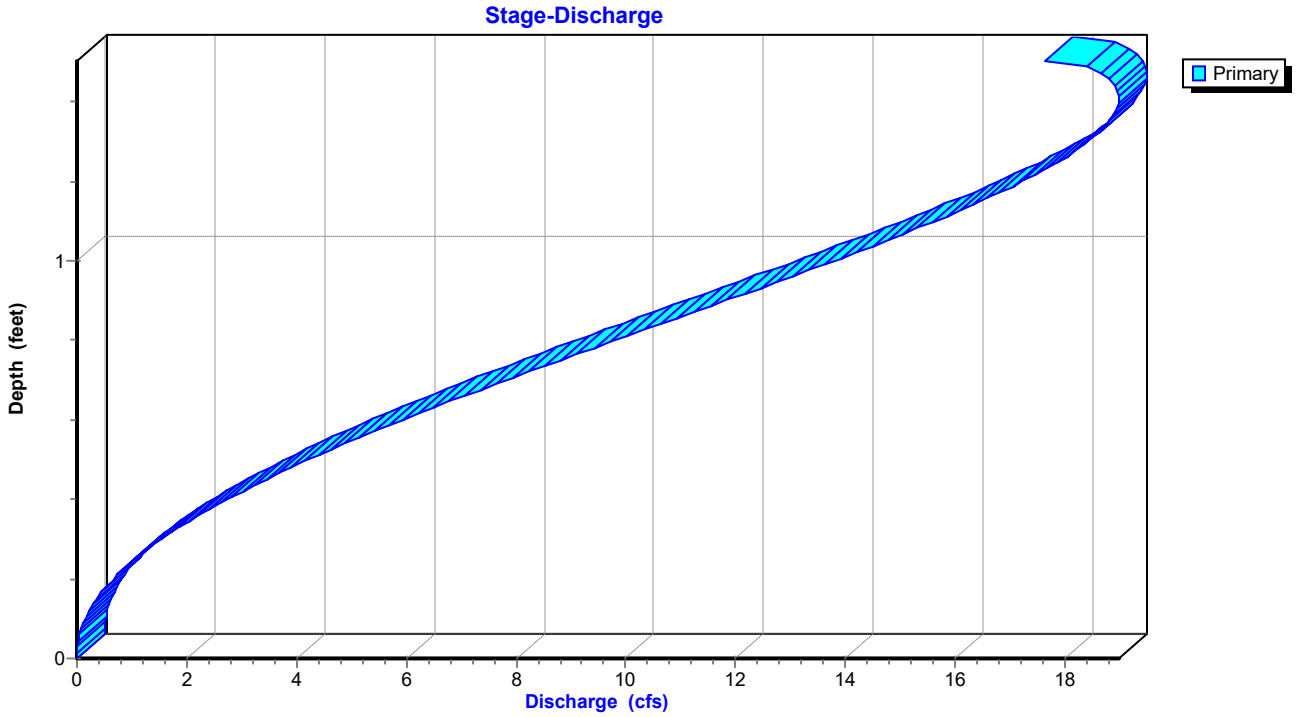
Peak Storage= 111 cf @ 0.17 hrs
Average Depth at Peak Storage= 0.79' , Surface Width= 1.50'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.65 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 118.0' Slope= 0.0282 '/'
Inlet Invert= 404.46', Outlet Invert= 401.13'





Reach P-A3: Pipe A3



Stage-Area-Storage for Reach P-A3: Pipe A3

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
404.46	0.0	0
404.48	0.0	1
404.50	0.0	2
404.52	0.0	3
404.54	0.0	4
404.56	0.1	6
404.58	0.1	8
404.60	0.1	10
404.62	0.1	12
404.64	0.1	14
404.66	0.1	17
404.68	0.2	19
404.70	0.2	22
404.72	0.2	24
404.74	0.2	27
404.76	0.3	30
404.78	0.3	33
404.80	0.3	35
404.82	0.3	38
404.84	0.4	42
404.86	0.4	45
404.88	0.4	48
404.90	0.4	51
404.92	0.5	54
404.94	0.5	58
404.96	0.5	61
404.98	0.5	64
405.00	0.6	68
405.02	0.6	71
405.04	0.6	74
405.06	0.7	78
405.08	0.7	81
405.10	0.7	85
405.12	0.7	88
405.14	0.8	92
405.16	0.8	95
405.18	0.8	99
405.20	0.9	102
405.22	0.9	106
405.24	0.9	110
405.26	1.0	113
405.28	1.0	117
405.30	1.0	120
405.32	1.0	124
405.34	1.1	127
405.36	1.1	131
405.38	1.1	134
405.40	1.2	138
405.42	1.2	141
405.44	1.2	144
405.46	1.3	148
405.48	1.3	151
405.50	1.3	154
405.52	1.3	158
405.54	1.4	161
405.56	1.4	164
405.58	1.4	167
405.60	1.4	170
405.62	1.5	173
405.64	1.5	176
405.66	1.5	179
405.68	1.5	182
405.70	1.6	184
405.72	1.6	187
405.74	1.6	190
405.76	1.6	192
405.78	1.6	194
405.80	1.7	197
405.82	1.7	199
405.84	1.7	201
405.86	1.7	203
405.88	1.7	204
405.90	1.7	206
405.92	1.8	207
405.94	1.8	208
405.96	**1.8**	**209**

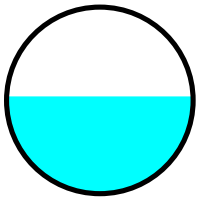
Summary for Reach P-A4: Pipe A4

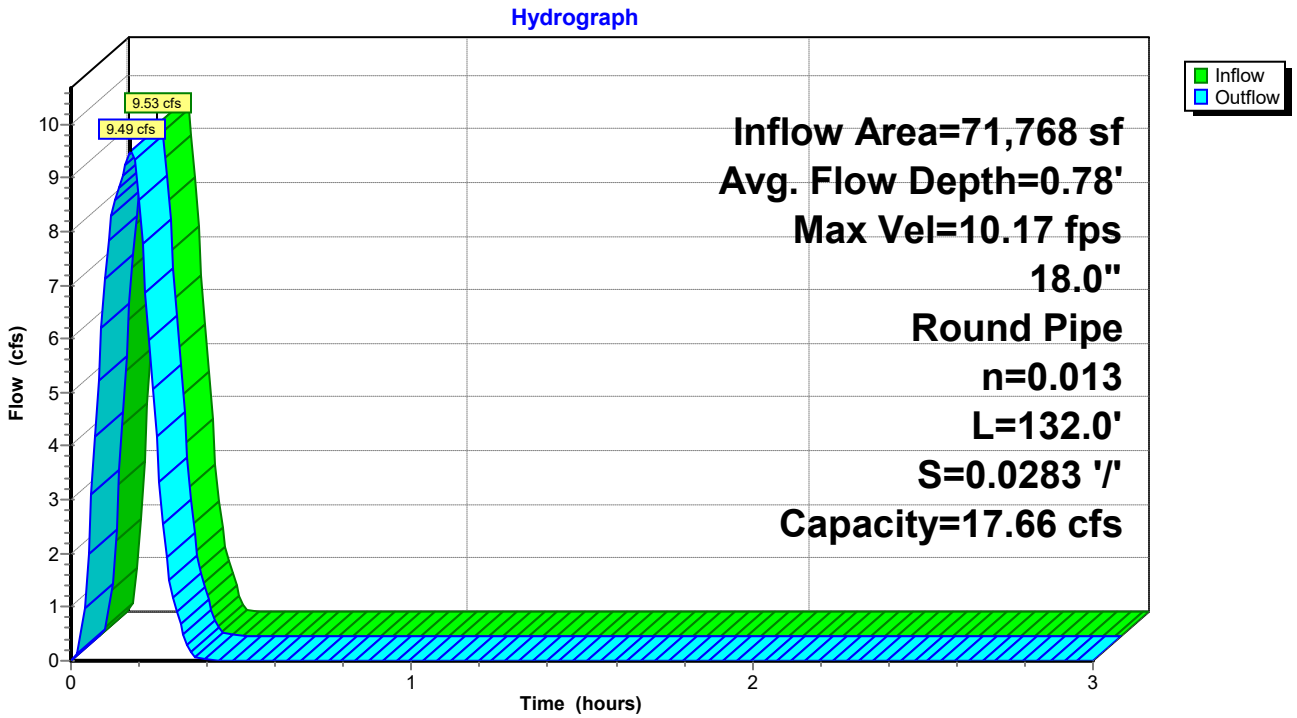
Inflow Area = 71,768 sf, 58.28% Impervious, Inflow Depth = 0.97" for 100-yr event
Inflow = 9.53 cfs @ 0.17 hrs, Volume= 5,787 cf
Outflow = 9.49 cfs @ 0.18 hrs, Volume= 5,787 cf, Atten= 0%, Lag= 0.4 min
Routed to Pond DP1 : Re-Establised East Pond

Routing by Stor-Ind+Trans method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Max. Velocity= 10.17 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 4.00 fps, Avg. Travel Time= 0.6 min

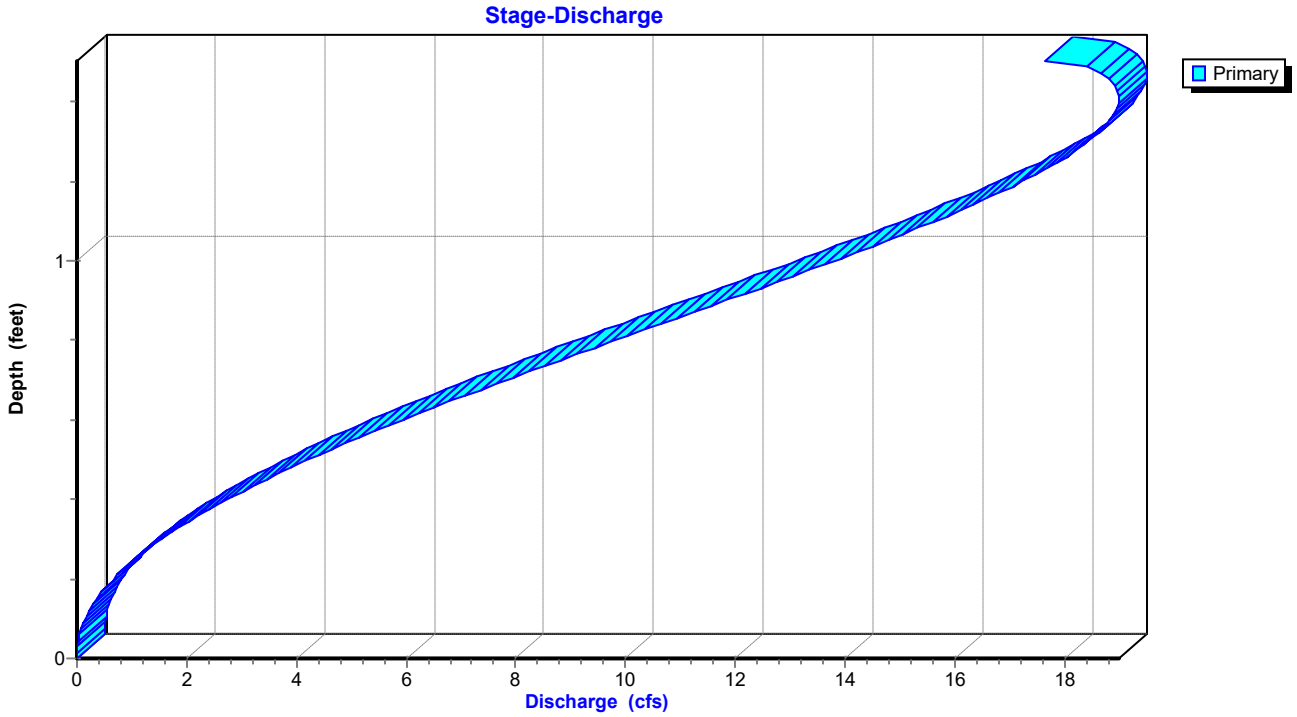
Peak Storage= 123 cf @ 0.17 hrs
Average Depth at Peak Storage= 0.78' , Surface Width= 1.50'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.66 cfs

18.0" Round Pipe
n= 0.013 Corrugated PE, smooth interior
Length= 132.0' Slope= 0.0283 '/'
Inlet Invert= 401.03', Outlet Invert= 397.30'





Reach P-A4: Pipe A4



Stage-Area-Storage for Reach P-A4: Pipe A4

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
401.03	0.0	0
401.05	0.0	1
401.07	0.0	2
401.09	0.0	3
401.11	0.0	5
401.13	0.1	7
401.15	0.1	9
401.17	0.1	11
401.19	0.1	13
401.21	0.1	16
401.23	0.1	18
401.25	0.2	21
401.27	0.2	24
401.29	0.2	27
401.31	0.2	30
401.33	0.3	33
401.35	0.3	36
401.37	0.3	40
401.39	0.3	43
401.41	0.4	46
401.43	0.4	50
401.45	0.4	53
401.47	0.4	57
401.49	0.5	61
401.51	0.5	64
401.53	0.5	68
401.55	0.5	72
401.57	0.6	76
401.59	0.6	79
401.61	0.6	83
401.63	0.7	87
401.65	0.7	91
401.67	0.7	95
401.69	0.7	99
401.71	0.8	103
401.73	0.8	107
401.75	0.8	111
401.77	0.9	115
401.79	0.9	119
401.81	0.9	123
401.83	1.0	127
401.85	1.0	130
401.87	1.0	134
401.89	1.0	138
401.91	1.1	142
401.93	1.1	146
401.95	1.1	150
401.97	1.2	154
401.99	1.2	158
402.01	1.2	161
402.03	1.3	165
402.05	1.3	169
402.07	1.3	173
402.09	1.3	176
402.11	1.4	180
402.13	1.4	183
402.15	1.4	187
402.17	1.4	190
402.19	1.5	194
402.21	1.5	197
402.23	1.5	200
402.25	1.5	203
402.27	1.6	206
402.29	1.6	209
402.31	1.6	212
402.33	1.6	215
402.35	1.6	217
402.37	1.7	220
402.39	1.7	222
402.41	1.7	225
402.43	1.7	227
402.45	1.7	228
402.47	1.7	230
402.49	1.8	232
402.51	1.8	233
402.53	**1.8**	**233**

Summary for Pond DP1: Re-Establised East Pond

Inflow Area = 132,514 sf, 61.41% Impervious, Inflow Depth = 0.99" for 100-yr event
Inflow = 17.76 cfs @ 0.16 hrs, Volume= 10,883 cf
Outflow = 9.14 cfs @ 0.22 hrs, Volume= 10,883 cf, Atten= 49%, Lag= 3.8 min
Primary = 9.14 cfs @ 0.22 hrs, Volume= 10,883 cf
Routed to Link Post-Dev : APPROX DISCHARGE

Routing by Stor-Ind method, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs
Peak Elev= 398.89' @ 0.22 hrs Storage= 5,867 cf

Plug-Flow detention time= 9.3 min calculated for 10,883 cf (100% of inflow)
Center-of-Mass det. time= 9.1 min (18.0 - 8.8)

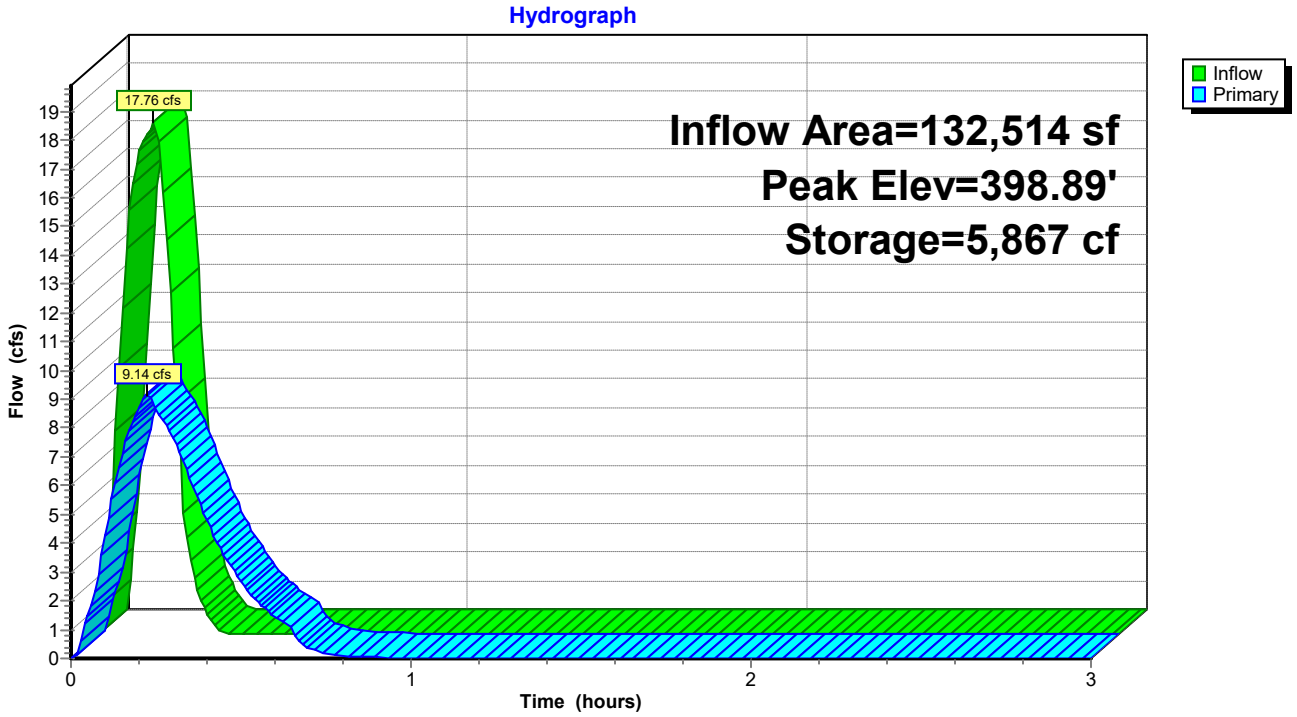
Volume	Invert	Avail.Storage	Storage Description
#1	396.00'	8,557 cf	**Custom Stage Data** Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
396.00	0	0
396.50	250	250
397.00	1,092	1,342
398.00	2,387	3,729
399.00	2,405	6,134
400.00	2,423	8,557

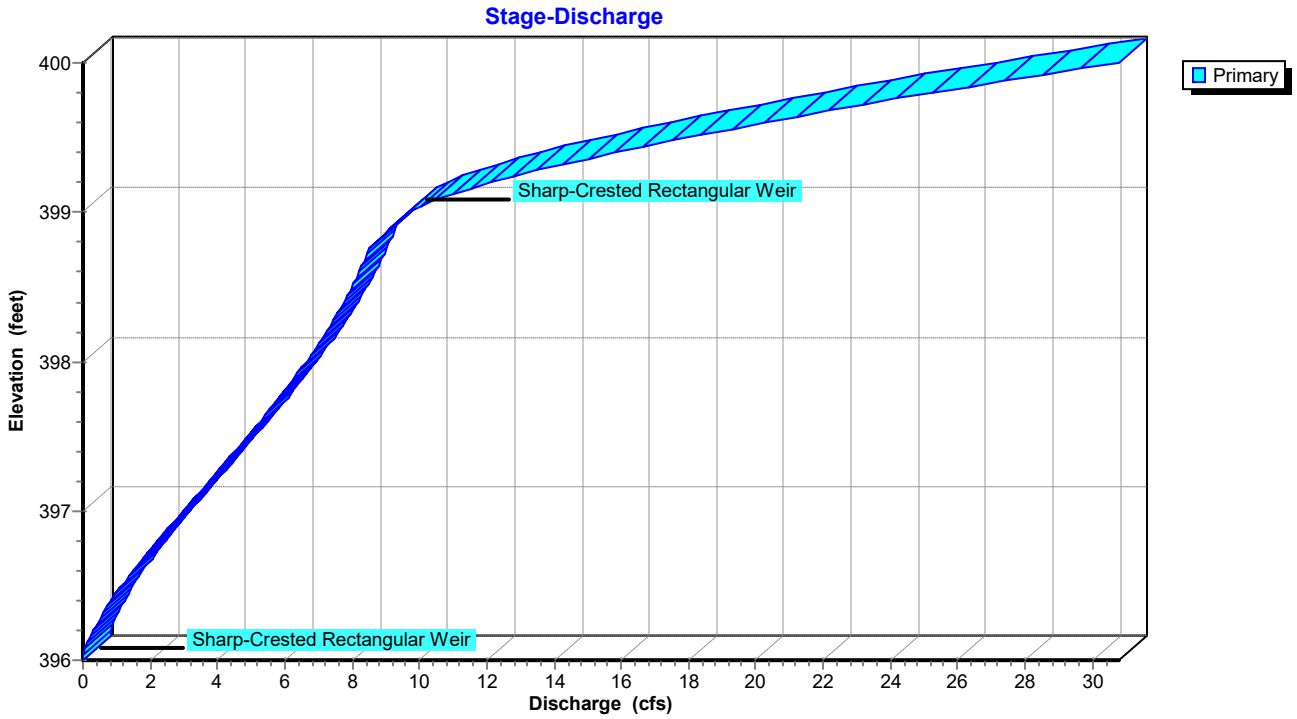
Device	Routing	Invert	Outlet Devices
#1	Primary	399.00'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	396.00'	**1.1' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 10.0' Crest Height

Primary OutFlow Max=9.13 cfs @ 0.22 hrs HW=398.89' (Free Discharge)
1=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)
2=Sharp-Crested Rectangular Weir (Weir Controls 9.13 cfs @ 5.75 fps)

Pond DP1: Re-Establised East Pond



Pond DP1: Re-Establised East Pond



Stage-Area-Storage for Pond DP1: Re-Establised East Pond

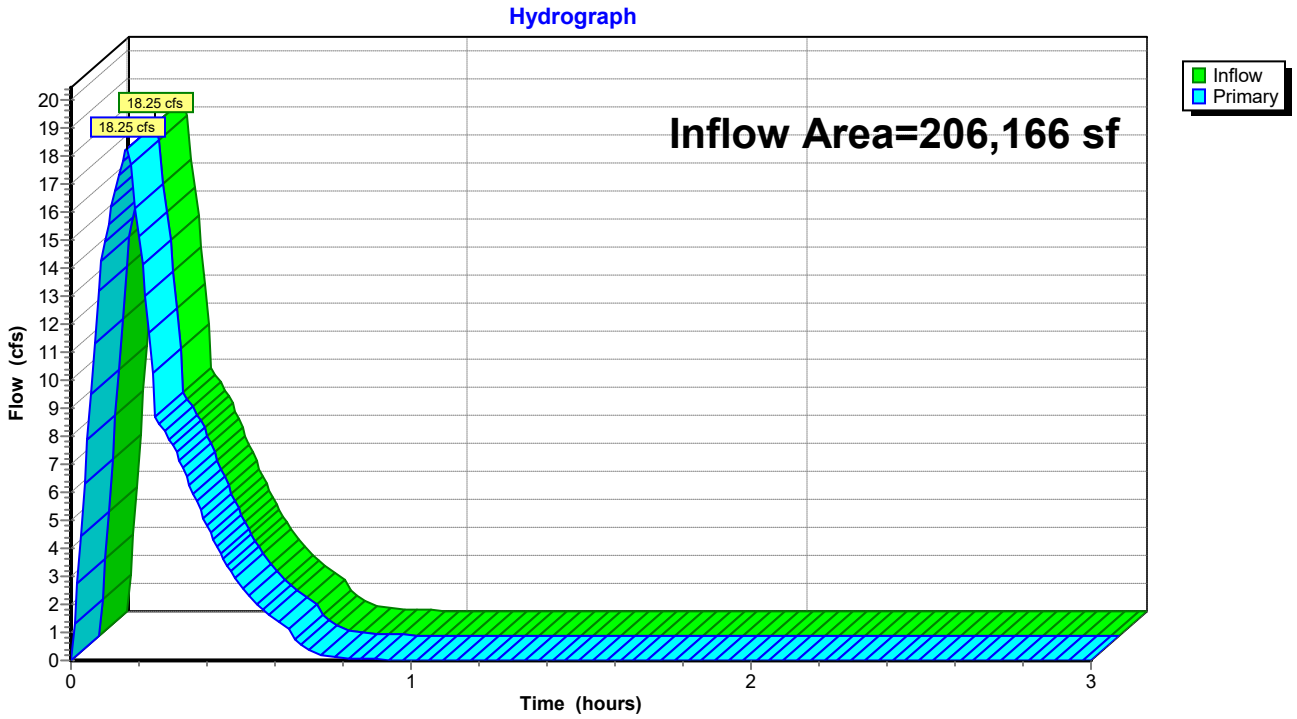
Elevation (feet)	Storage (cubic-feet)
396.00	0
396.05	25
396.10	50
396.15	75
396.20	100
396.25	125
396.30	150
396.35	175
396.40	200
396.45	225
396.50	250
396.55	359
396.60	468
396.65	578
396.70	687
396.75	796
396.80	905
396.85	1,014
396.90	1,124
396.95	1,233
397.00	1,342
397.05	1,461
397.10	1,581
397.15	1,700
397.20	1,819
397.25	1,939
397.30	2,058
397.35	2,177
397.40	2,297
397.45	2,416
397.50	2,536
397.55	2,655
397.60	2,774
397.65	2,894
397.70	3,013
397.75	3,132
397.80	3,252
397.85	3,371
397.90	3,490
397.95	3,610
398.00	3,729
398.05	3,849
398.10	3,970
398.15	4,090
398.20	4,210
398.25	4,330
398.30	4,451
398.35	4,571
398.40	4,691
398.45	4,811
398.50	4,932
398.55	5,052
398.60	5,172
398.65	5,292
398.70	5,412
398.75	5,533
398.80	5,653
398.85	5,773
398.90	5,893
398.95	6,014
399.00	6,134
399.05	6,255
399.10	6,376
399.15	6,497
399.20	6,619
399.25	6,740
399.30	6,861
399.35	6,982
399.40	7,103
399.45	7,224
399.50	7,346
399.55	7,467
399.60	7,588
399.65	7,709
399.70	7,830
399.75	7,951
399.80	8,072
399.85	8,194
399.90	8,315
399.95	8,436
400.00	**8,557**

Summary for Link Post-Dev: APPROX DISCHARGE

Inflow Area = 206,166 sf, 64.42% Impervious, Inflow Depth = 1.01" for 100-yr event
Inflow = 18.25 cfs @ 0.16 hrs, Volume= 17,276 cf
Primary = 18.25 cfs @ 0.16 hrs, Volume= 17,276 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-3.00 hrs, dt= 0.01 hrs

Link Post-Dev: APPROX DISCHARGE



STROM SEWER SIZING

Inlet Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Wednesday, Jan 10 2024

AI-A2

Drop Grate Inlet

Location	= Sag
Curb Length (ft)	= -0-
Throat Height (in)	= -0-
Grate Area (sqft)	= 2.00
Grate Width (ft)	= 2.00
Grate Length (ft)	= 2.00

Gutter

Slope, Sw (ft/ft)	= 0.050
Slope, Sx (ft/ft)	= 0.050
Local Depr (in)	= -0-
Gutter Width (ft)	= 2.00
Gutter Slope (%)	= -0-
Gutter n-value	= -0-

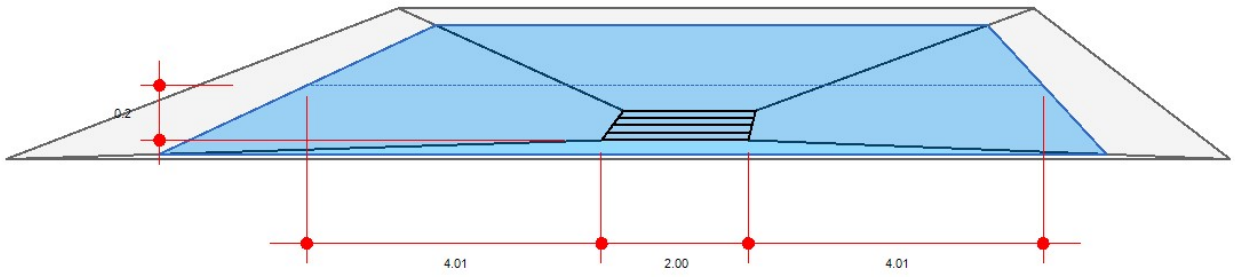
Calculations

Compute by:	Known Q
Q (cfs)	= 2.16

Highlighted

Q Total (cfs)	= 2.16
Q Capt (cfs)	= 2.16
Q Bypass (cfs)	= -0-
Depth at Inlet (in)	= 2.41
Efficiency (%)	= 100
Gutter Spread (ft)	= 10.03
Gutter Vel (ft/s)	= -0-
Bypass Spread (ft)	= -0-
Bypass Depth (in)	= -0-

All dimensions in feet



Inlet Report

AI-A3

Drop Grate Inlet

Location	= Sag
Curb Length (ft)	= -0-
Throat Height (in)	= -0-
Grate Area (sqft)	= 2.00
Grate Width (ft)	= 2.00
Grate Length (ft)	= 2.00

Gutter

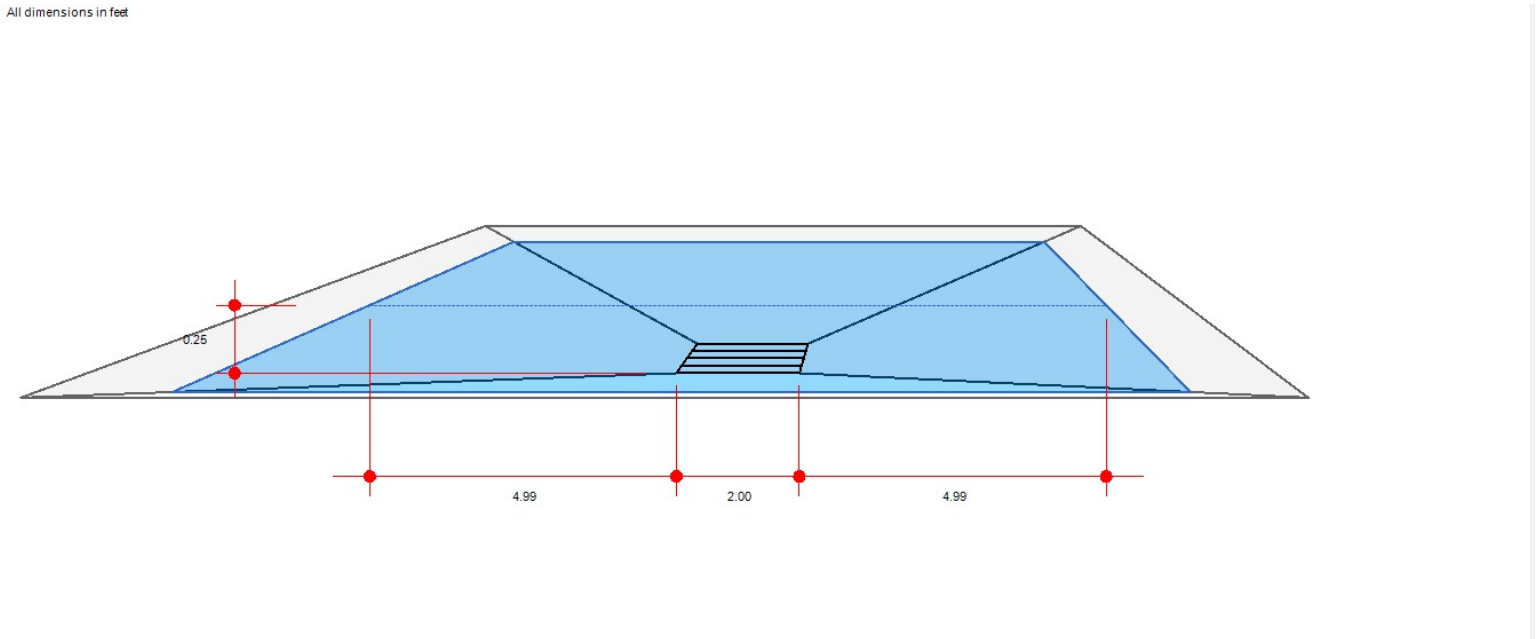
Slope, Sw (ft/ft)	= 0.050
Slope, Sx (ft/ft)	= 0.050
Local Depr (in)	= -0-
Gutter Width (ft)	= 2.00
Gutter Slope (%)	= -0-
Gutter n-value	= -0-

Calculations

Compute by:	Known Q
Q (cfs)	= 2.99

Highlighted

Q Total (cfs)	= 2.99
Q Capt (cfs)	= 2.99
Q Bypass (cfs)	= -0-
Depth at Inlet (in)	= 2.99
Efficiency (%)	= 100
Gutter Spread (ft)	= 11.97
Gutter Vel (ft/s)	= -0-
Bypass Spread (ft)	= -0-
Bypass Depth (in)	= -0-



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Jan 11 2024

Pipe A1

Circular

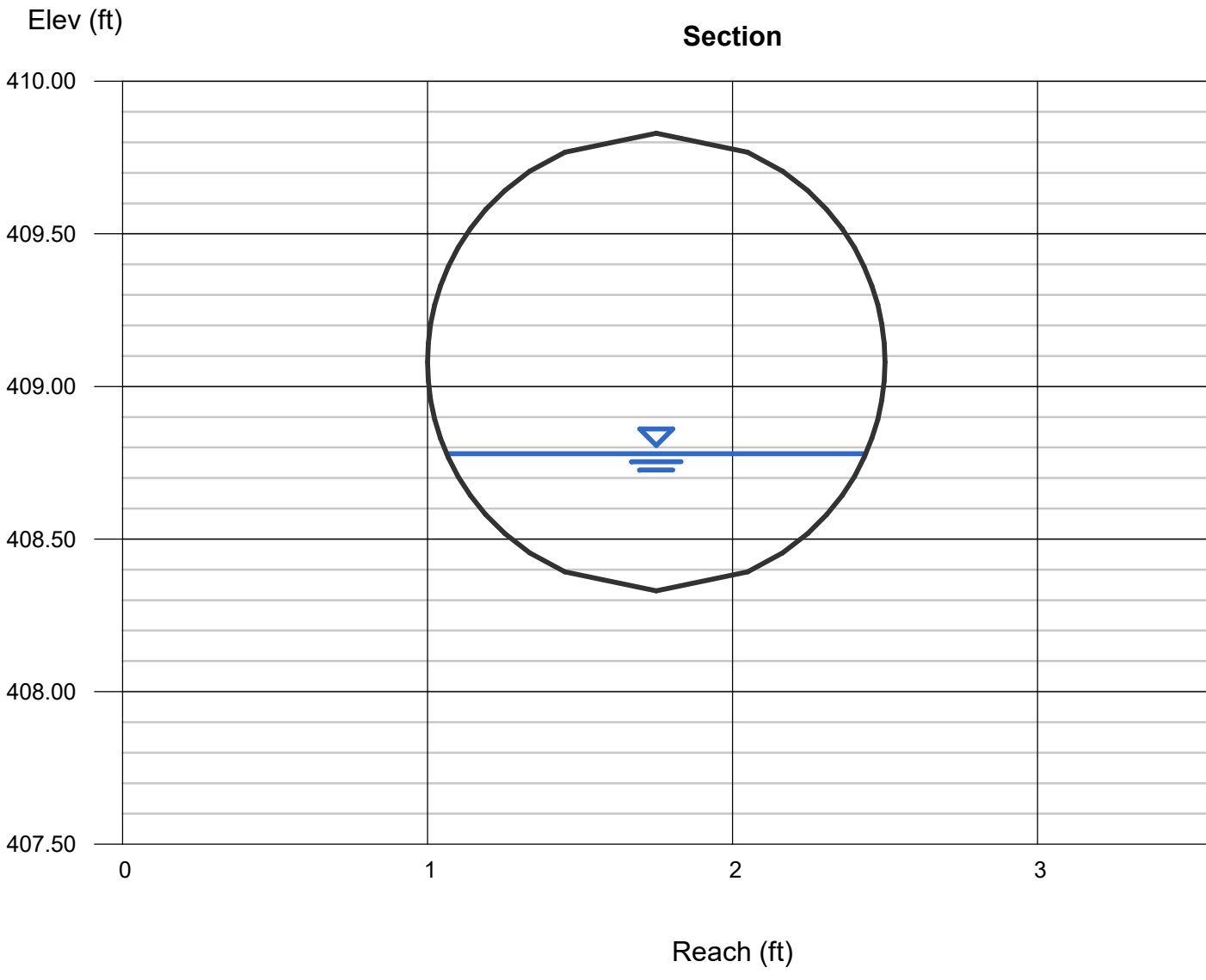
Diameter (ft)	= 1.50
Invert Elev (ft)	= 408.33
Slope (%)	= 2.70
N-Value	= 0.015

Calculations

Compute by:	Known Q
Known Q (cfs)	= 2.92

Highlighted

Depth (ft)	= 0.45
Q (cfs)	= 2.920
Area (sqft)	= 0.45
Velocity (ft/s)	= 6.54
Wetted Perim (ft)	= 1.74
Crit Depth, Yc (ft)	= 0.65
Top Width (ft)	= 1.38
EGL (ft)	= 1.11



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Jan 11 2024

Pipe A2

Circular

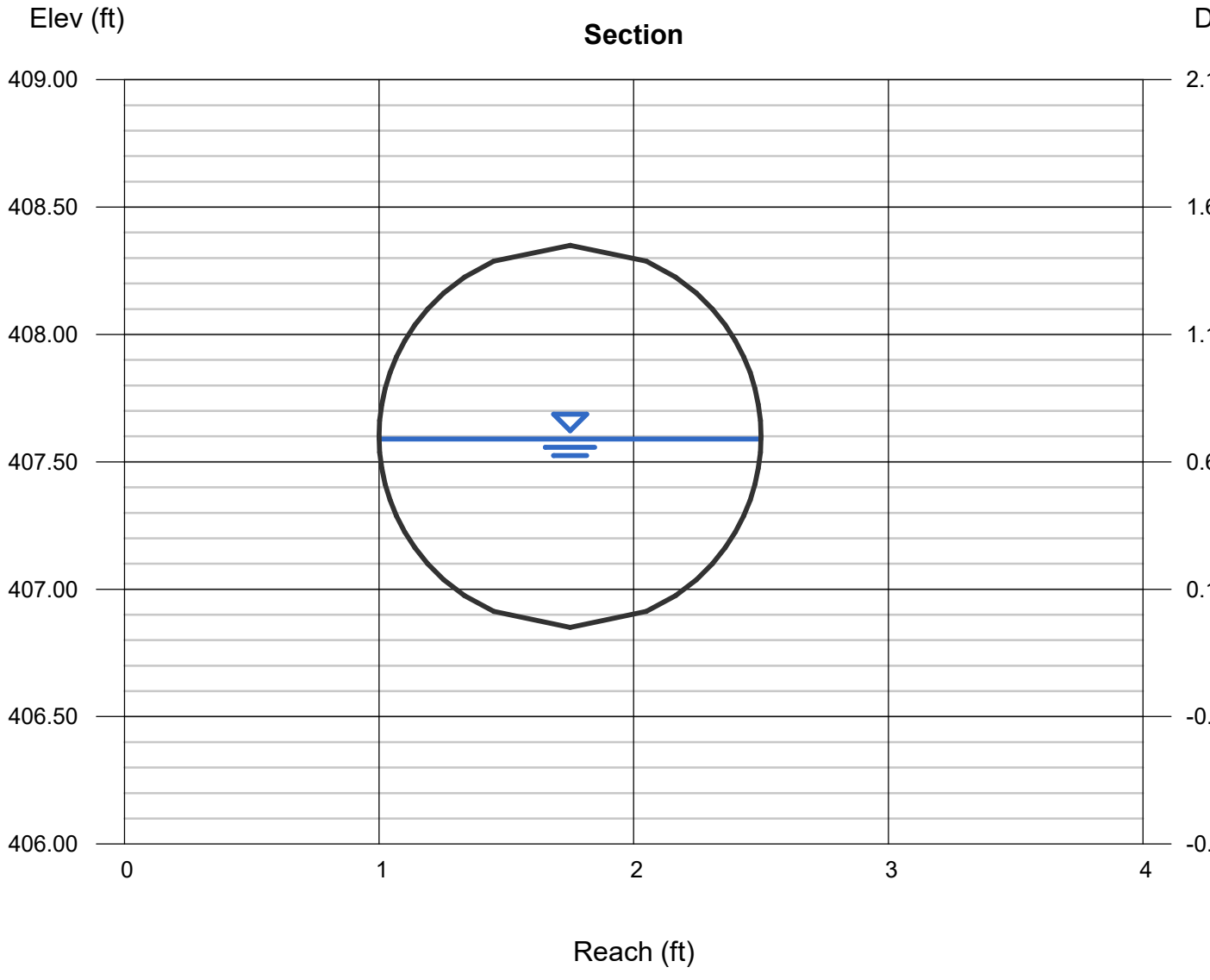
Diameter (ft)	= 1.50
Invert Elev (ft)	= 406.85
Slope (%)	= 1.30
N-Value	= 0.015

Calculations

Compute by:	Known Q
Known Q (cfs)	= 5.09

Highlighted

Depth (ft)	= 0.74
Q (cfs)	= 5.090
Area (sqft)	= 0.87
Velocity (ft/s)	= 5.84
Wetted Perim (ft)	= 2.34
Crit Depth, Yc (ft)	= 0.87
Top Width (ft)	= 1.50
EGL (ft)	= 1.27



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Jan 11 2024

Pipe A3

Circular

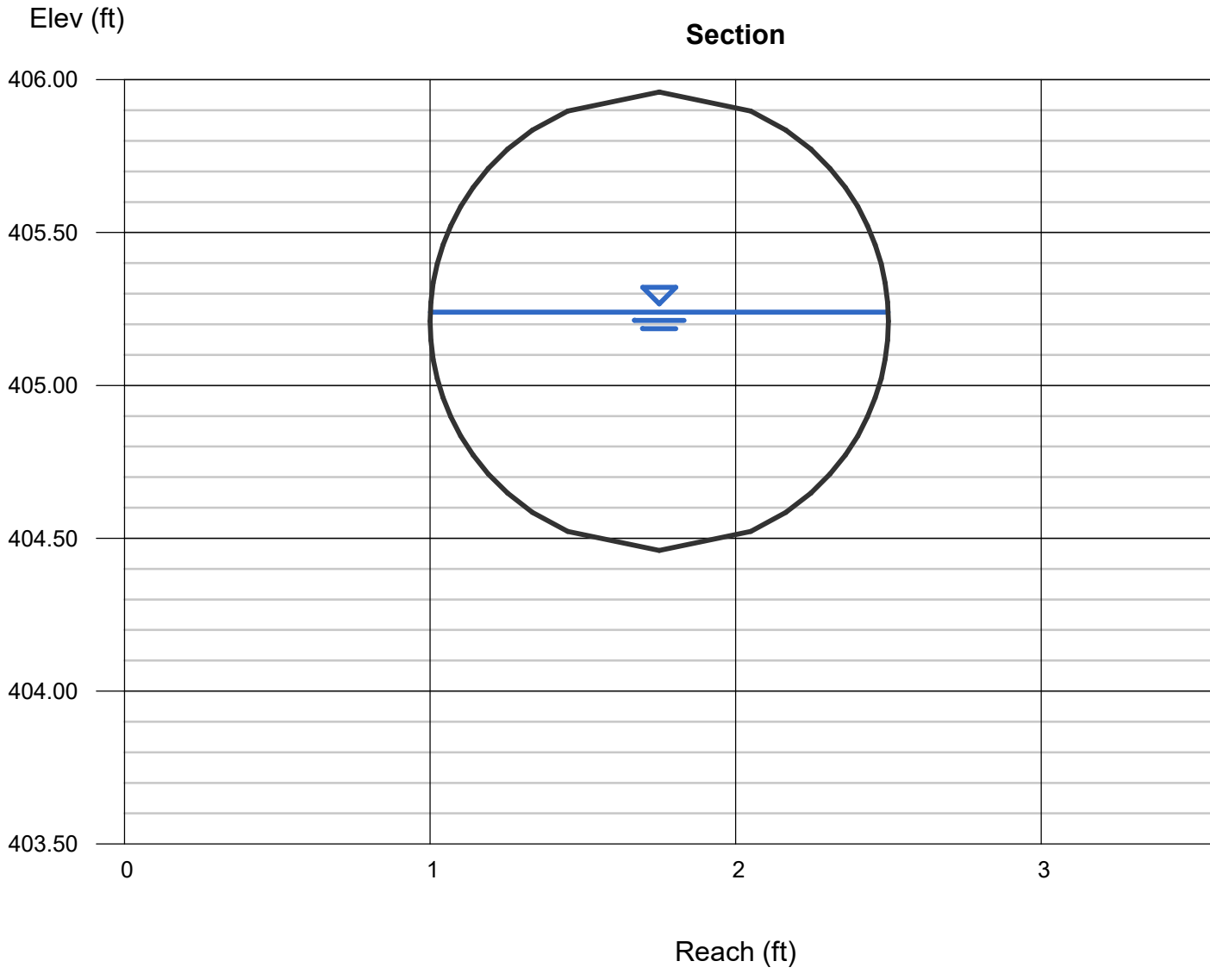
Diameter (ft)	= 1.50
Invert Elev (ft)	= 404.46
Slope (%)	= 2.80
N-Value	= 0.015

Calculations

Compute by:	Known Q
Known Q (cfs)	= 8.02

Highlighted

Depth (ft)	= 0.78
Q (cfs)	= 8.020
Area (sqft)	= 0.93
Velocity (ft/s)	= 8.59
Wetted Perim (ft)	= 2.42
Crit Depth, Yc (ft)	= 1.10
Top Width (ft)	= 1.50
EGL (ft)	= 1.93



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Wednesday, Jan 10 2024

Pipe A4

Circular

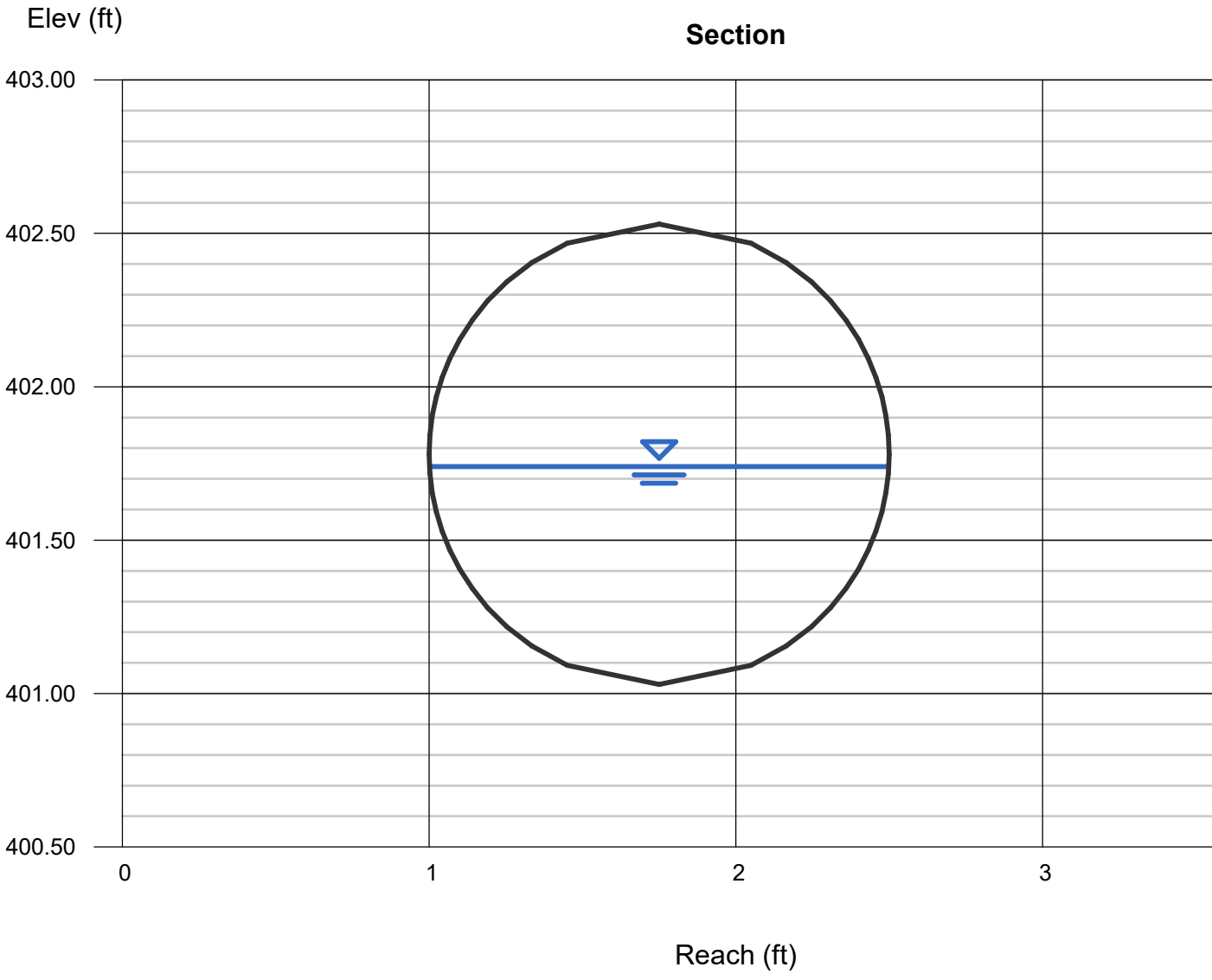
Diameter (ft)	= 1.50
Invert Elev (ft)	= 401.03
Slope (%)	= 2.83
N-Value	= 0.013

Calculations

Compute by:	Known Q
Known Q (cfs)	= 8.02

Highlighted

Depth (ft)	= 0.71
Q (cfs)	= 8.020
Area (sqft)	= 0.83
Velocity (ft/s)	= 9.70
Wetted Perim (ft)	= 2.28
Crit Depth, Yc (ft)	= 1.10
Top Width (ft)	= 1.50
EGL (ft)	= 2.17



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Wednesday, Jan 10 2024

5' Curb Cut & Flume to Pond

Rectangular

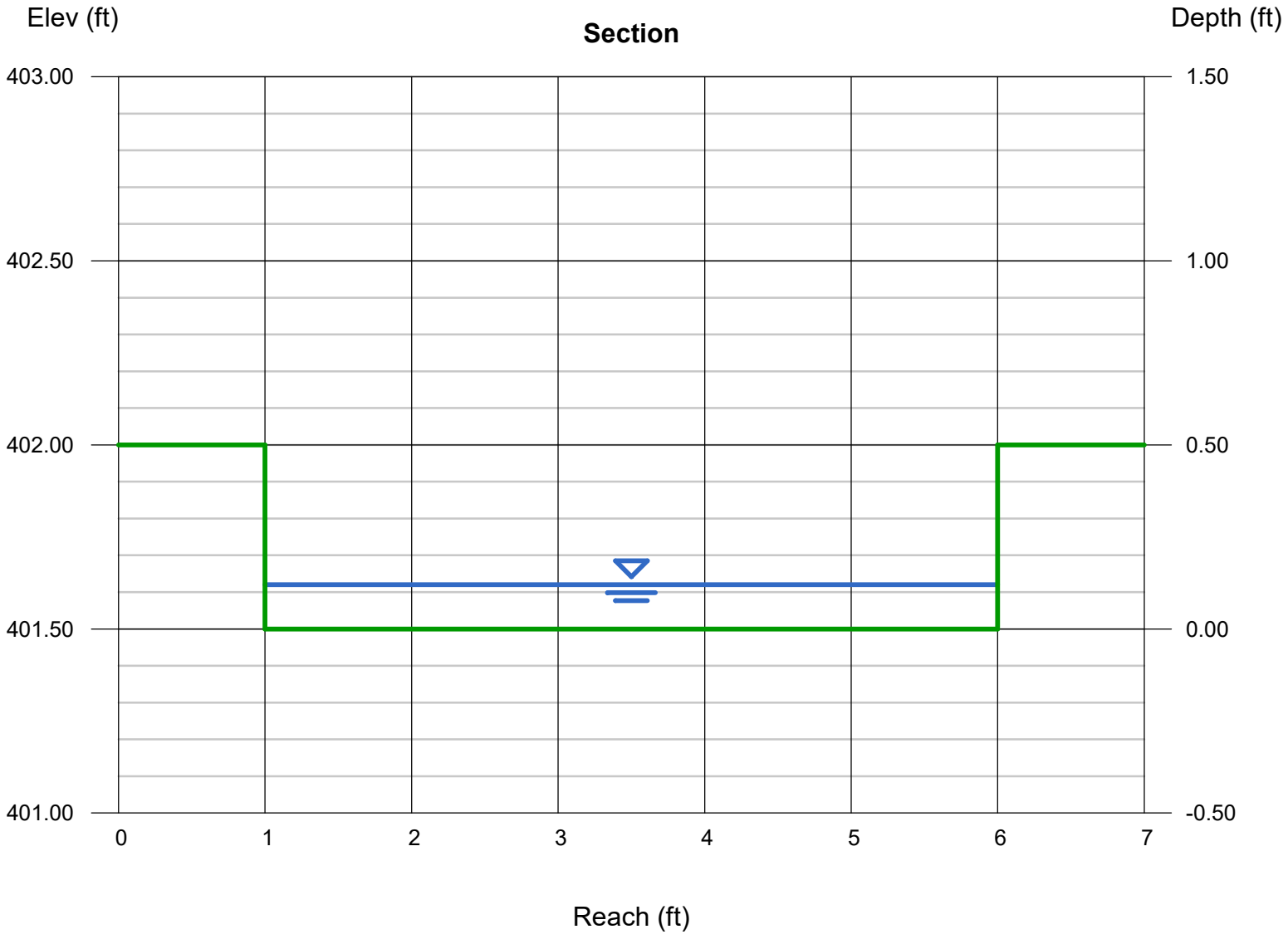
Bottom Width (ft)	= 5.00
Total Depth (ft)	= 0.50
Invert Elev (ft)	= 401.50
Slope (%)	= 15.00
N-Value	= 0.015

Calculations

Compute by:	Known Q
Known Q (cfs)	= 5.15

Highlighted

Depth (ft)	= 0.12
Q (cfs)	= 5.150
Area (sqft)	= 0.60
Velocity (ft/s)	= 8.58
Wetted Perim (ft)	= 5.24
Crit Depth, Yc (ft)	= 0.33
Top Width (ft)	= 5.00
EGL (ft)	= 1.27



Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Wednesday, Jan 10 2024

Curb Cut by Dumpster Pad

Rectangular

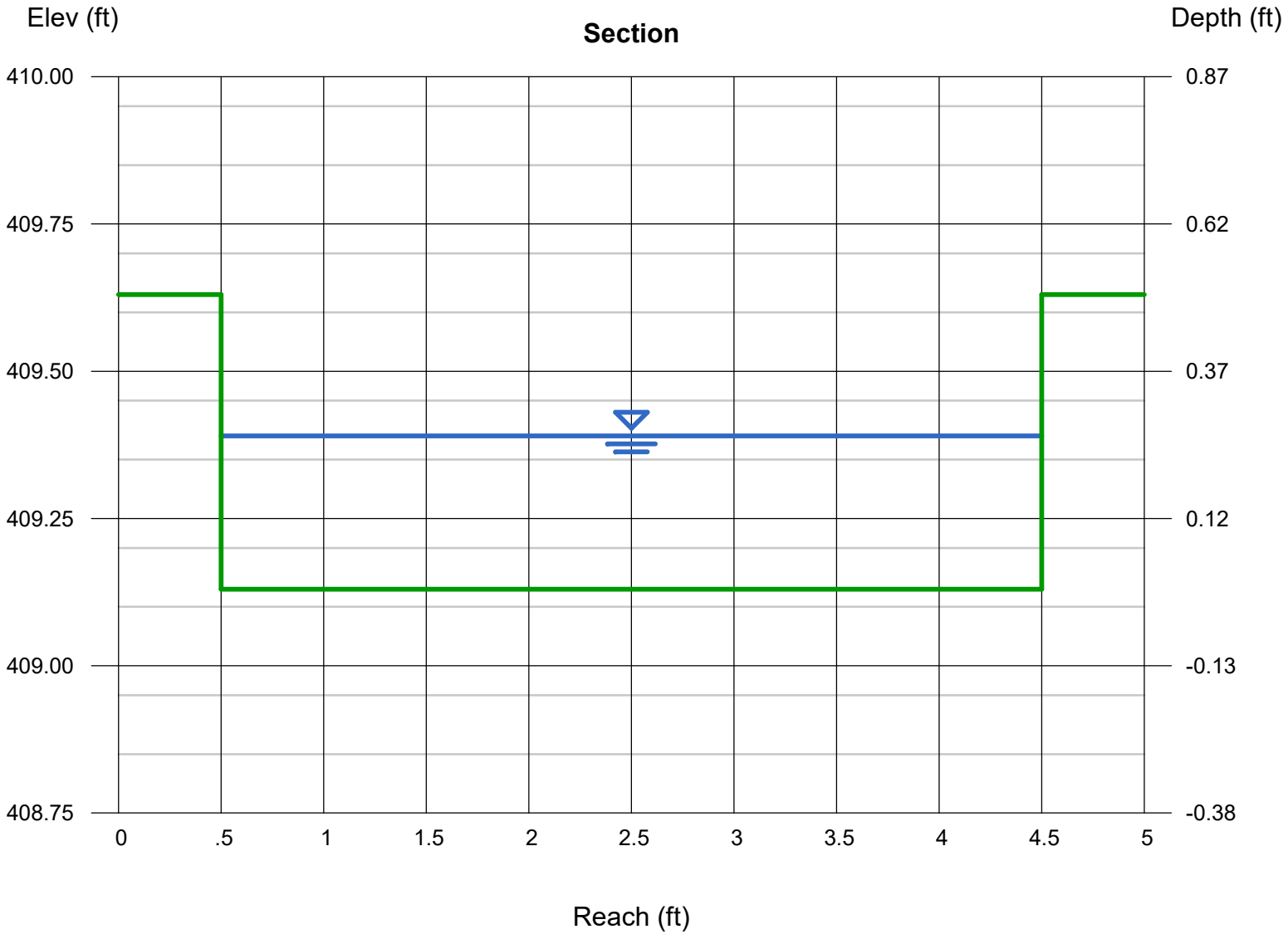
Bottom Width (ft)	= 4.00
Total Depth (ft)	= 0.50
Invert Elev (ft)	= 409.13
Slope (%)	= 5.00
N-Value	= 0.015

Calculations

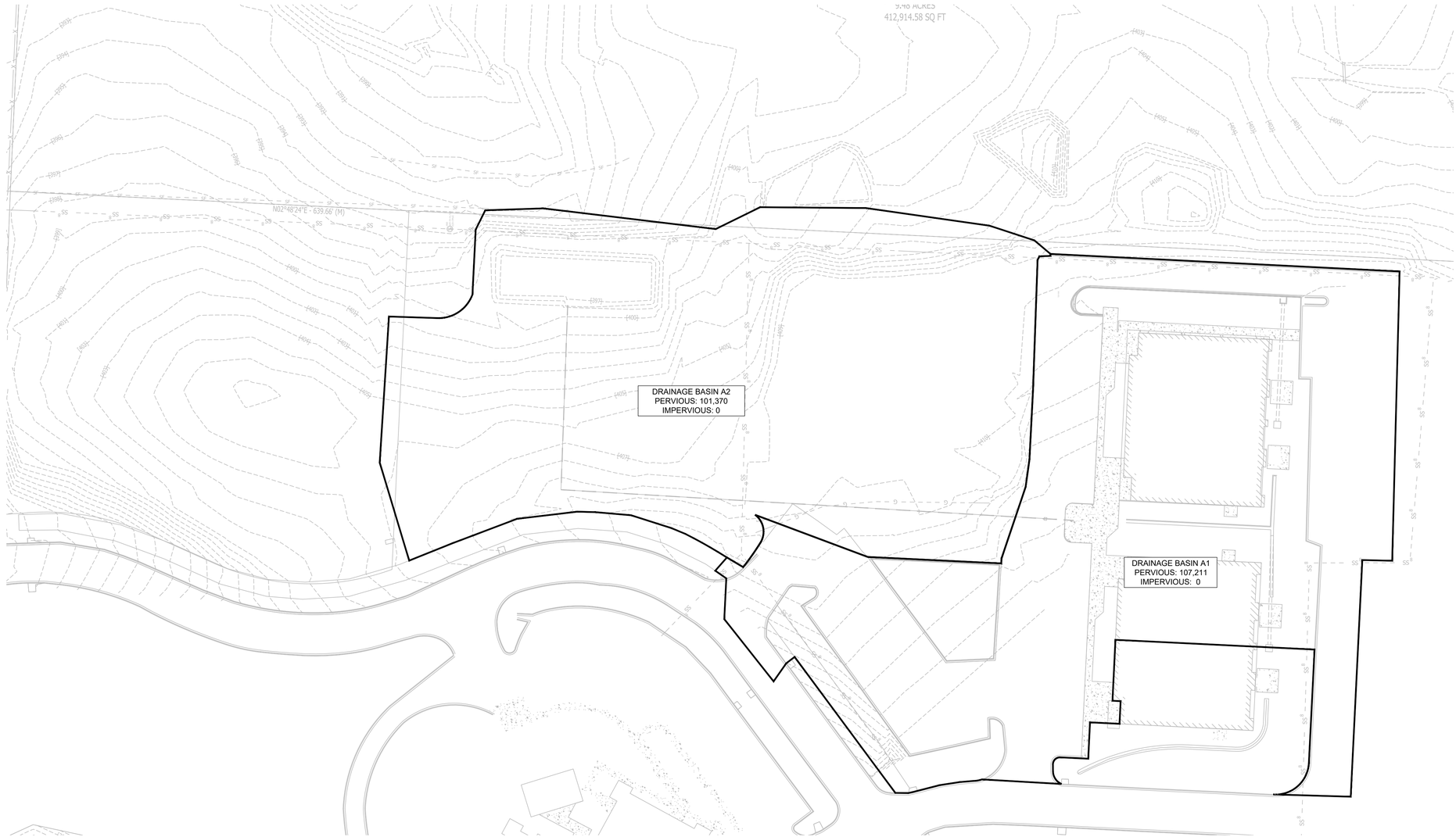
Compute by:	Known Q
Known Q (cfs)	= 8.18

Highlighted

Depth (ft)	= 0.26
Q (cfs)	= 8.180
Area (sqft)	= 1.04
Velocity (ft/s)	= 7.87
Wetted Perim (ft)	= 4.52
Crit Depth, Yc (ft)	= 0.50
Top Width (ft)	= 4.00
EGL (ft)	= 1.22



DRAINAGE BASIN MAPS



PRE DRAINAGE MAP

SCALE 1" = 40'

PHILLIP LEWIS ENGINEERING, INC.
Structural + Civil Consultants
23620 Interstate 30 | Bryant, Arkansas
PH: 501-350-9840

REVISION:

SUMMERWOOD SPORTS GYMNASIUM #3
7817 Hwy 5 N
Bryant, Arkansas

CERTIFICATE OF AUTHORIZATION
PHILLIP LEWIS ENGINEERING, INC.
ARKANSAS-ENGINEERS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9540
PHILLIP A. LEWIS

PROJECT NUMBER:

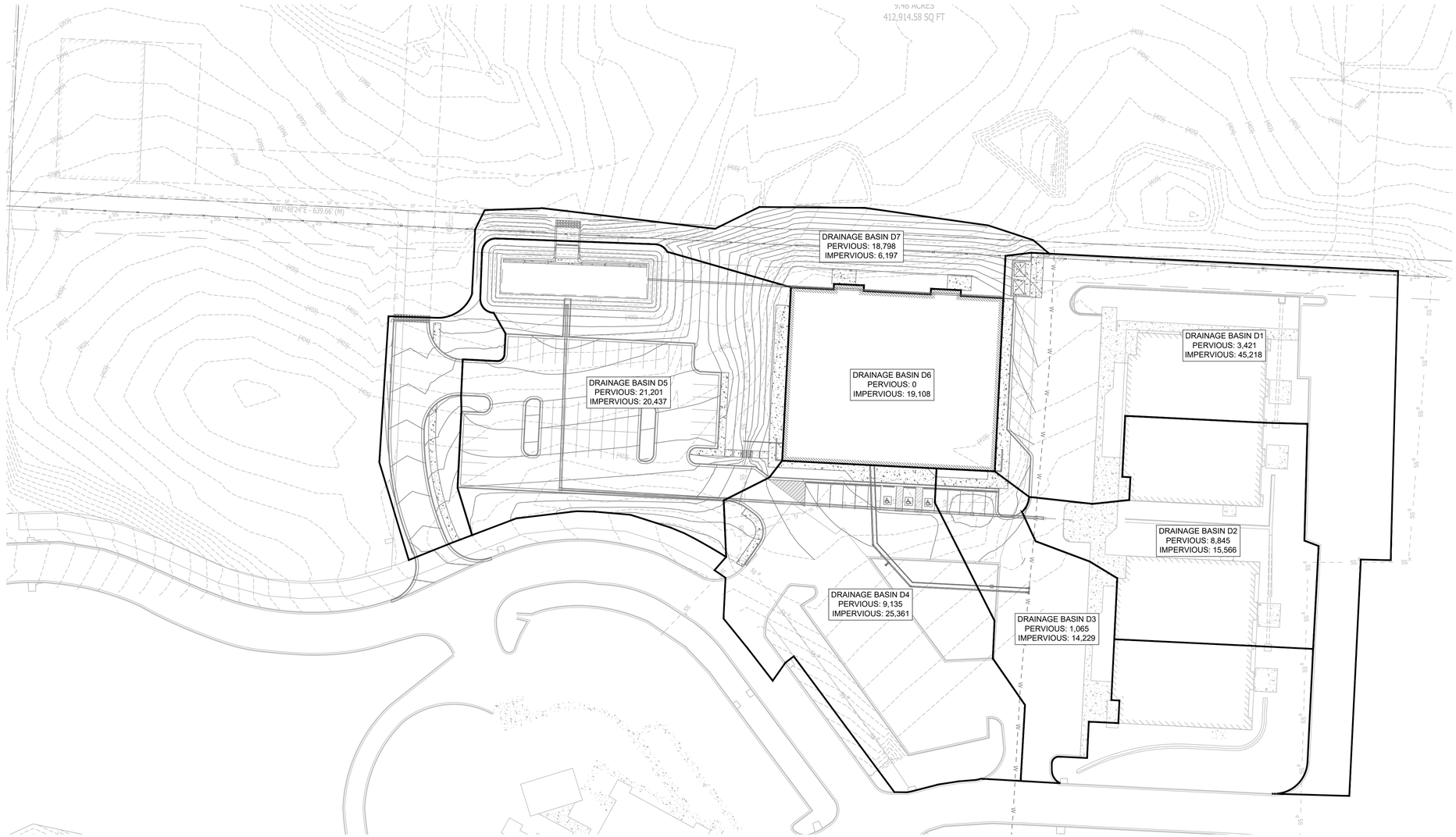
SHEET ISSUE DATE:
1/10/2024

PAGE TITLE:
PRE DRAINAGE MAP

SHEET NUMBER:
C1.5

N

0 40'
1" = 40'-0"



POST DRAINAGE MAP

SCALE 1" = 40'

N

0 40'

1" = 40'-0"

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Structural + Civil Consultants
23620 Interstate 30 | Bryant, Arkansas
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PHILLIP A. LEWIS

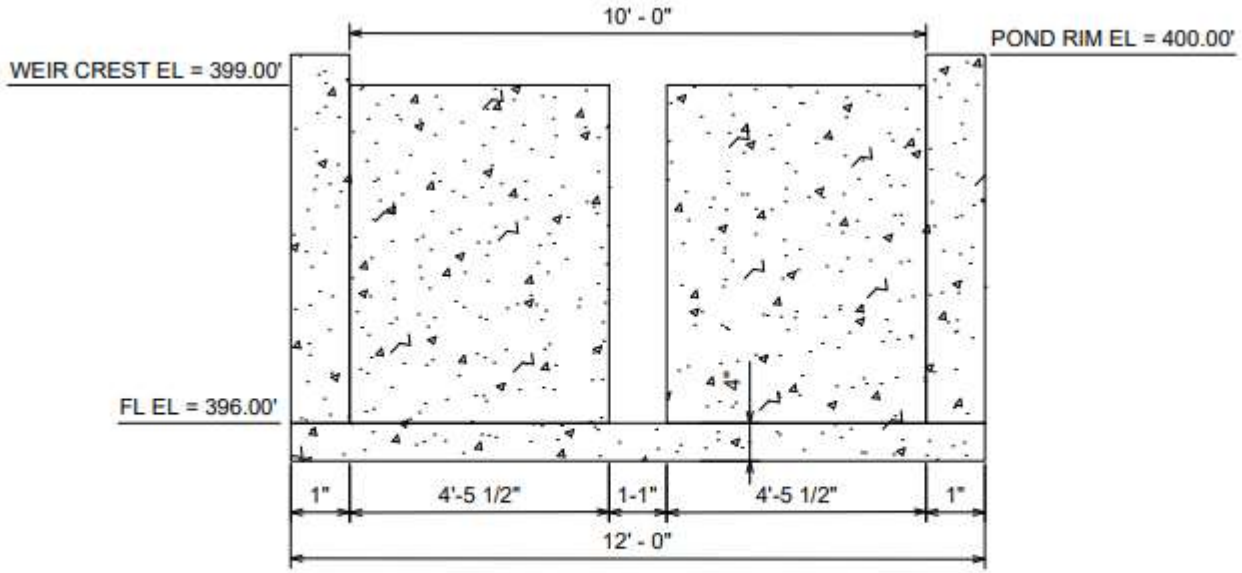
PROJECT NUMBER:

SHEET ISSUE DATE:
1/10/2024

PAGE TITLE:
POST DRAINAGE MAP

SHEET NUMBER:
C1.6

DETENTION BASIN OUTLET STRUCTURES



EXISTING DETENTION POND OUTLET STRUCTURE DETAIL NOT TO SCALE

SOIL CLASSIFICATION MAPS

Custom Soil Resource Report
Soil Map

Map Scale: 1:2,250 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 30 60 120 180

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

Saline County, Arkansas

29—Tiak silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: m06q
Elevation: 70 to 570 feet
Mean annual precipitation: 44 to 61 inches
Mean annual air temperature: 49 to 74 degrees F
Frost-free period: 185 to 230 days
Farmland classification: Not prime farmland

Map Unit Composition

Tiak and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tiak

Setting

Landform: Interfluves
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy and clayey marine deposits

Typical profile

A - 0 to 7 inches: silt loam
E - 7 to 9 inches: loam
Bt1 - 9 to 32 inches: clay
Bt2 - 32 to 72 inches: clay

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C/D
Ecological site: F133BY002TX - Seasonally Wet Upland
Hydric soil rating: No

FEMA FLOOD INSURANCE RATE MAP

National Flood Hazard Layer FIRMette

FEMA

92°28'37"W 34°38'34"N

92°28'W 34°38'4"N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/10/2024 at 5:31 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

GENERAL CONSTRUCTION NOTES

A. THE CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR DAMAGES OCCURRING TO ANY PROPERTY DURING THE CONSTRUCTION OF THIS PROJECT. SAID CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT PROPERTY DAMAGE.

B. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL SOLELY AND COMPLETELY BE RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND WILL NOT BE LIMITED TO NORMAL WORKING HOURS.

C. THE DUTY OF BRYANT UTILITIES TO CONDUCT CONSTRUCTION INSPECTION REVIEWS OF THE CONTRACTOR'S PERFORMANCE IS NOT AN INSPECTION OR REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES IN, ON, OR NEAR THE CONSTRUCTION SITE.

D. ALL WATER AND SEWER IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST REVISION TO THE CITY OF BRYANT'S WATER AND WASTEWATER (SANITARY SEWER) STANDARD SPECIFICATIONS.

E. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF ALL UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH PROPOSED IMPROVEMENTS SHOWN ON THE PLAN.

F. CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL DEBRIS, RUBBISH, AND OTHER MATERIALS RESULTING FROM PREVIOUS AND CURRENT DEMOLITION OPERATIONS. DISPOSAL WILL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND/OR FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.

G. PRIOR TO INSTALLATION OF ANY UTILITIES, THE CONTRACTOR IS TO EXCAVATE, VERIFY AND CALCULATE ALL CROSSINGS AND INFORM ANY AND ALL UTILITIES OF ANY CONFLICTS PRIOR TO CONSTRUCTION.

H. CONSTRUCTION SHALL NOT START ON ANY WATER UTILITY TIE-INS UNTIL APPROVAL IS GIVEN BY BRYANT UTILITIES. SAID CONTRACTOR SHALL NOT OPERATE ANY VALVE, HYDRANT, OR WATER UTILITY APPURTENANCE NOR SHALL HE ATTACH TO OR TAP ANY WATER UTILITY MAIN WITHOUT APPROVAL. THE CONTRACTOR SHALL BEAR THE COST AND CONSEQUENCE OF ANY DISRUPTION OF UTILITY OPERATION CAUSED BY CONSTRUCTION.

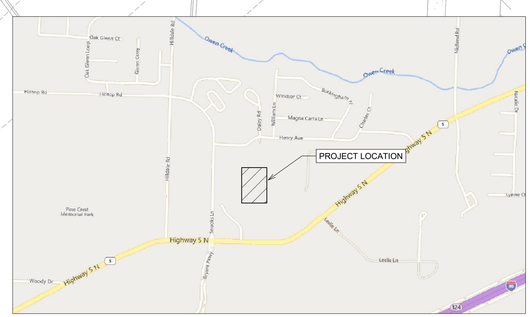
I. FIBER OPTIC CABLE ON AND/OR ADJACENT TO THIS SITE WERE NOT LOCATED BY THE SURVEY AND ARE NOT SHOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ANY FIBER OPTIC CABLES ASSOCIATED WITH THIS SITE AND TAKE ALL NECESSARY AND REQUIRED PRECAUTIONS TO PROTECT ANY EXISTING FIBER OPTIC CABLES. CONTRACTORS SHALL COORDINATE ALL EFFORTS WITH OWNER OF FIBER OPTIC CABLES OR THEIR DESIGNATED REPRESENTATIVE.

J. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING "ONECALL" SERVICE TO MARK ALL UTILITIES PRIOR TO ANY DEMOLITION, EARTHWORK, OR UTILITY WORK ON THIS SITE.

SITE PLAN

SCALE 1" = 20'

1. 64 PARKING SPACES PROVIDED INCLUDING 3 ADA ACCESSIBLE PARKING SPACES
2. ALL DIMENSIONS ARE TO THE BACK OF CURB AND/OR EDGE OF PAVEMENT
3. DAMAGE TO PUBLIC AND PRIVATE PROPERTY DUE TO HAULING OPERATIONS OR OPERATIONS OF CONSTRUCTION RELATED EQUIPMENT FROM A CONSTRUCTION SITE SHALL BE REPAIRED BY THE THE RESPONSIBLE PARTY PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY.
4. REPAIR, REPLACE, OR EXTEND EXISTING DAMAGED OR MISSING CURB AND GUTTER, SIDEWALK OR RAMPS WITHIN THE PUBLIC RIGHT OF WAY.
5. ALL SIGNAGE, PAVEMENT MARKING AND PARKING LOT STRIPING SHALL CONFORM TO REQUIREMENTS GIVEN IN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). MUTCD REQUIRES THAT PARKING SPACES BE MARKED IN WHITE.



VICINITY MAP

SCALE 1" = 1000'

N

0 20'

1" = 20'-0"

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23620 Interstate 30 | Bryant, Arkansas
PH: 501-350-9840

REVISION:

SUMMERWOOD SPORTS GYMNASIUM #3
7817 Hwy 5 N
Bryant, Arkansas

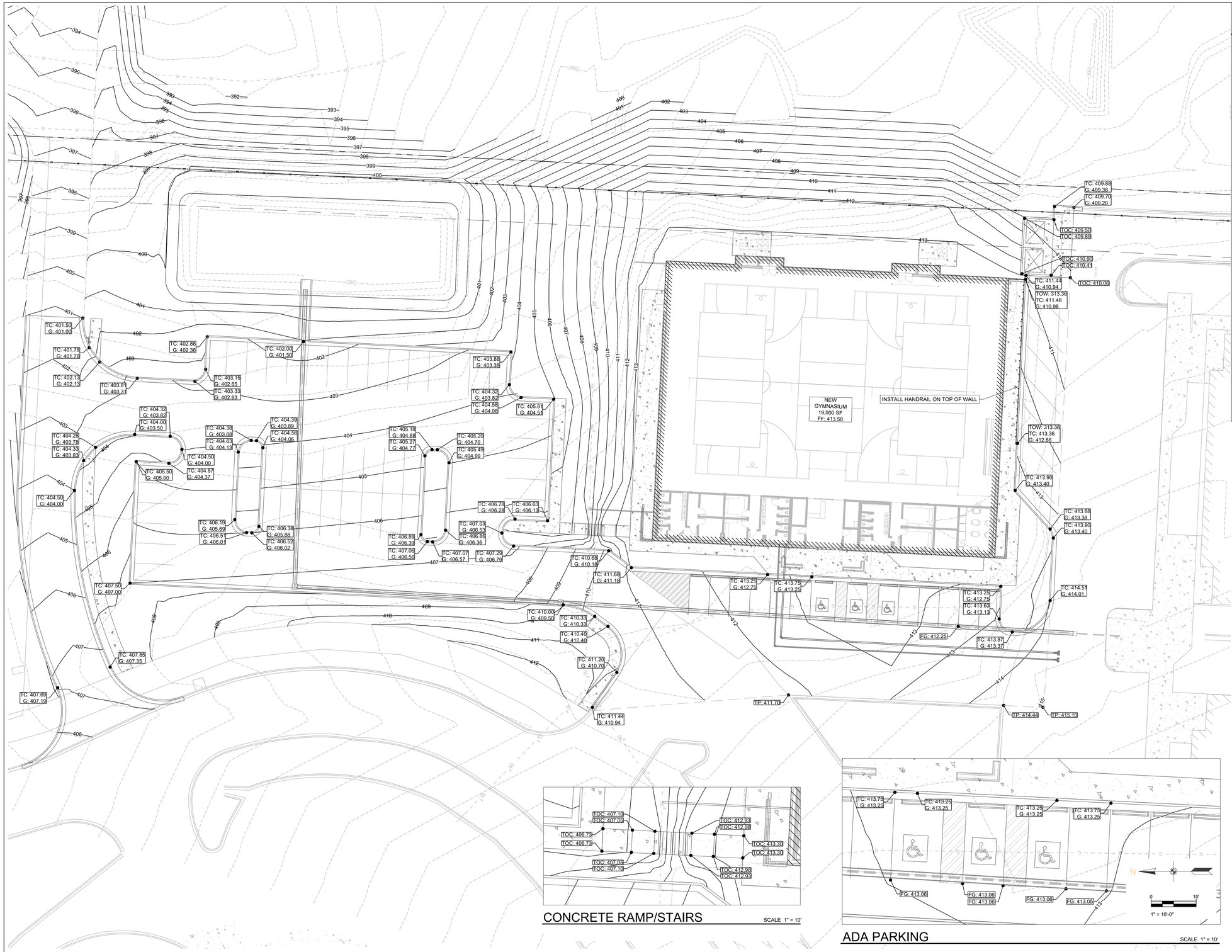
PRELIMINARY NOT FOR CONSTRUCTION

PROJECT NUMBER:

SHEET ISSUE DATE: 12/12/2023

PAGE TITLE: SITE PLAN

SHEET NUMBER: C1.1



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J. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING "ONECALL" SERVICE TO MARK ALL UTILITIES PRIOR TO ANY DEMOLITION, EARTHWORK, OR UTILITY WORK ON THIS SITE.

GRADING PLAN

SCALE 1" = 20'

G = GUTTER ELEVATION

TP = TOP OF PAVEMENT ELEVATION

TOC = TOP OF CONCRETE ELEVATION

FG = FINAL GRADE ELEVATION (NON PAVED AREAS)

TC = TOP OF CURB ELEVATION

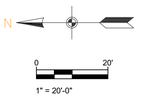
TOW = TOP OF WALL

CONCRETE RAMP/STAIRS

SCALE 1" = 10'

ADA PARKING

SCALE 1" = 10'



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23620 Interstate 30 | Bryant, Arkansas
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REVISION:

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Bryant, Arkansas

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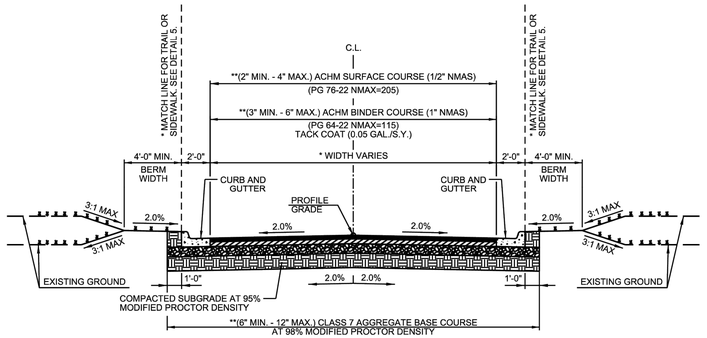
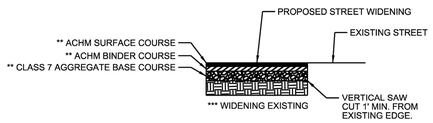
PROJECT NUMBER:

SHEET ISSUE DATE: 12/12/2023

PAGE TITLE: GRADING PLAN

SHEET NUMBER: C1.2





GENERAL NOTES

1. IN AREAS TO RECEIVE BITUMINOUS PAVING, CONCRETE DRIVEWAYS OR CURB AND GUTTER, SUBGRADE SHALL BE COMPACTED TO A DENSITY NOT LESS THAN 95% OF MAXIMUM MODIFIED DENSITY OBTAINED AT OPTIMUM MOISTURE CONTENT.
2. FOR AREAS OF SUBGRADE PREPARATION TO RECEIVE CONCRETE SIDEWALKS, SUBGRADE SHALL BE COMPACTED TO DENSITY OF 90% MAXIMUM MODIFIED DENSITY.
3. CRUSHED STONE - MATERIAL IN EACH COURSE SHALL BE COMPACTED TO A DENSITY OF 98% MAXIMUM MODIFIED DENSITY.
4. ACHM BASE COURSE (4" MIN. - 12" MAX) (1 1/2" NMAS) MAY BE USED IF INCLUDED IN AN APPROVED PAVEMENT DESIGN.

* CROSS SECTIONS AND RIGHT-OF-WAY SHALL ADHERE TO THE MINIMUM WIDTH REQUIREMENTS SHOWN IN THE CITY OF BRYANT MASTER TRANSPORTATION PLAN. THE DEVELOPMENT REVIEW COMMITTEE SHALL DETERMINE WHICH VERSION OF STREET CLASSIFICATION AND WHAT WIDTHS WILL BE REQUIRED.

** THICKNESS TO BE DETERMINED BY PAVEMENT DESIGN IN ACCORDANCE WITH SECTION 5.0 OF THE MINIMUM STANDARD SPECIFICATIONS FOR STREETS.

*** PAVEMENT RECONSTRUCTION TO CENTERLINE IS REQUIRED WHEN EXISTING STREET DOES NOT MEET THESE STANDARDS.

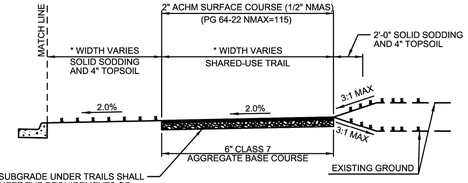
CITY OF BRYANT

TYPICAL SECTION MINOR ARTERIAL

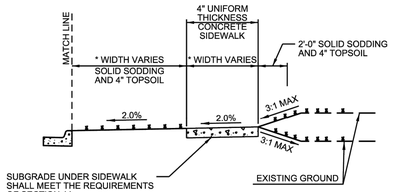
ISSUE DATE: AUGUST 2021

DETAIL 1

REVISION DATE:



SHARED-USE TRAIL END CONDITION



SIDEWALK END CONDITION

* WIDTH SHALL ADHERE TO THE MINIMUM WIDTH REQUIREMENTS SHOWN IN THE CITY OF BRYANT MASTER TRANSPORTATION PLAN. THE DEVELOPMENT REVIEW COMMITTEE SHALL DETERMINE WHICH VERSION OF STREET CLASSIFICATION AND WHAT WIDTHS WILL BE REQUIRED.

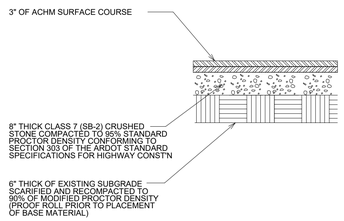
CITY OF BRYANT

TYPICAL SECTION END CONDITIONS

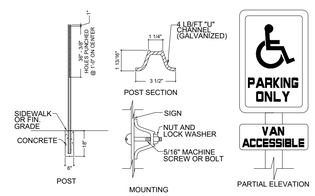
ISSUE DATE: AUGUST 2021

DETAIL 5

REVISION DATE:

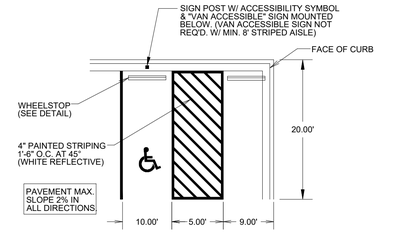


HMAC ASPHALT SURFACE COURSE MEDIUM DUTY — NOT TO SCALE

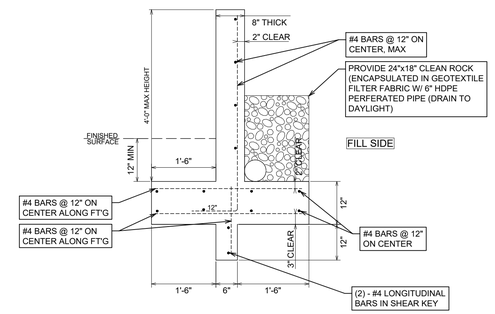


HANDICAP SIGN DETAIL — NOT TO SCALE

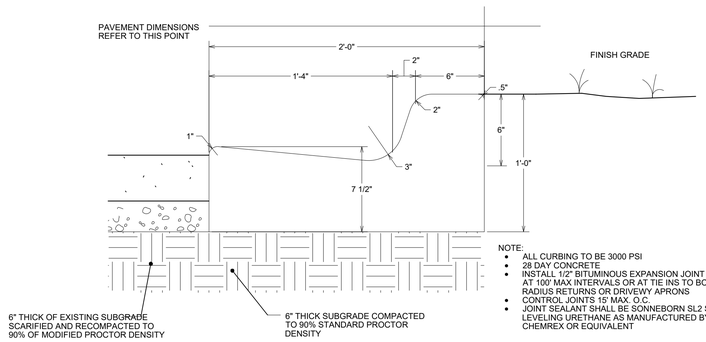
NOTE:
HANDICAP SIGNAGE SHALL BE IN STRICT COMPLIANCE WITH CURRENT FEDERAL AND LOCAL LAW REQUIREMENTS



TYPICAL ACCESSIBLE PARKING STALLS

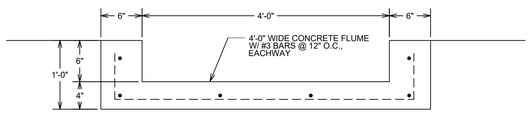


RETAINING WALL — NOT TO SCALE

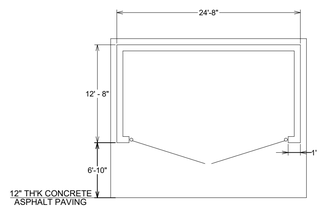


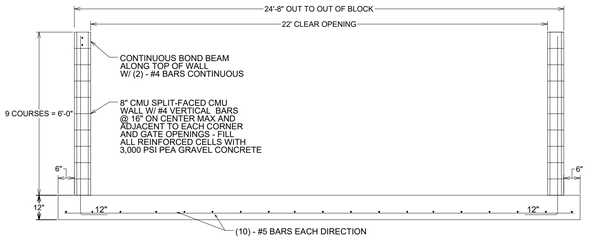
NOTE:
- ALL CURBING TO BE 3000 PSI
- 28 DAY CONCRETE
- INSTALL 1/2" BITUMINOUS EXPANSION JOINT MATERIAL AT 100' MAX INTERVALS OR AT TIE INS TO BOXES, RADIUS RETURNS OR DRIVEWY APRONS
- CONTROL JOINTS 15' MAX. O.C.
- JOINT SEALANT SHALL BE SONNEBORN SL2 SELF LEVELING URETHANE AS MANUFACTURED BY CHEMREX OR EQUIVALENT

2'-0" CONCRETE CURB & GUTTER — NOT TO SCALE



CONCRETE FLUME DETAIL — NOT TO SCALE





DUMPSTER PAD/ENCLOSURE DETAIL — NOT TO SCALE

PHILLIP LEWIS ENGINEERING, INC.
Structural + Civil Consultants
23620 Interstate 30 | Bryant, Arkansas
PH: 501-350-9840

REVISION:

SUMMERWOOD SPORTS GYMNASIUM #3
7817 Hwy 5 N
Bryant, Arkansas

PRELIMINARY NOT FOR CONSTRUCTION

PROJECT NUMBER:

SHEET ISSUE DATE: 12/12/2023

PAGE TITLE: SITE DETAILS

SHEET NUMBER: C1.3

NEW
GYMNASIUM
19,000 SF
FF: 413.50

JB-A4
JUNCTION BOX
W/ VIEWPORT
STA: 3+46.28
RIM: 402.76
SUMP: 401.10
INV IN: 401.13 18" EXISTING HDPE FROM JB-A3
INV OUT: 401.10 18" EXISTING HDPE TO

JB-A3
NYLOPLAST INLINE DRAIN
W/ 2'x2' GRATE
STA: 2+28.01
RIM: 409.38
SUMP: 404.56
INV IN: 404.56 18" EXISTING HDPE FROM JB-A2
INV OUT: 404.56 18" EXISTING HDPE TO JB-A4

JB-A2
NYLOPLAST INLINE DRAIN
W/ 2'x2' GRATE
STA: 0+51.09
RIM: 412.25
SUMP: 406.95
INV IN: 406.95 18" EXISTING HDPE FROM
INV OUT: 406.95 18" EXISTING HDPE TO JB-A3

JB-A1
STA: 0+00.00
SUMP: 411.18
INV OUT: 411.18 18" HDPE PIPE

STORMWATER PLAN

SCALE 1" = 30'

N

0 30'

1" = 30'-0"

GENERAL CONSTRUCTION NOTES

A. THE CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR DAMAGES OCCURRING TO ANY PROPERTY DURING THE CONSTRUCTION OF THIS PROJECT. SAID CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT PROPERTY DAMAGE.

B. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL SOLELY AND COMPLETELY BE RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND WILL NOT BE LIMITED TO NORMAL WORKING HOURS.

C. THE DUTY OF BRYANT UTILITIES TO CONDUCT CONSTRUCTION INSPECTION REVIEWS OF THE CONTRACTOR'S PERFORMANCE IS NOT AN INSPECTION OR REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES IN, ON, OR NEAR THE CONSTRUCTION SITE.

D. ALL WATER AND SEWER IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST REVISION TO THE CITY OF BRYANT'S WATER AND WASTEWATER (SANITARY SEWER) STANDARD SPECIFICATIONS.

E. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF ALL UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH PROPOSED IMPROVEMENTS SHOWN ON THE PLAN.

F. CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL DEBRIS, RUBBISH, AND OTHER MATERIALS RESULTING FROM PREVIOUS AND CURRENT DEMOLITION OPERATIONS. DISPOSAL WILL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND/OR FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.

G. PRIOR TO INSTALLATION OF ANY UTILITIES, THE CONTRACTOR IS TO EXCAVATE, VERIFY AND CALCULATE ALL CROSSINGS AND INFORM ANY AND ALL UTILITIES OF ANY CONFLICTS PRIOR TO CONSTRUCTION.

H. CONSTRUCTION SHALL NOT START ON ANY WATER UTILITY TIE-INS UNTIL APPROVAL IS GIVEN BY BRYANT UTILITIES. SAID CONTRACTOR SHALL NOT OPERATE ANY VALVE, HYDRANT, OR WATER UTILITY APPURTENANCE NOR SHALL HE ATTACH TO OR TAP ANY WATER UTILITY MAIN WITHOUT APPROVAL. THE CONTRACTOR SHALL BEAR THE COST AND CONSEQUENCE OF ANY DISRUPTION OF UTILITY OPERATION CAUSED BY CONSTRUCTION.

I. FIBER OPTIC CABLE ON AND/OR ADJACENT TO THIS SITE WERE NOT LOCATED BY THE SURVEY AND ARE NOT SHOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ANY FIBER OPTIC CABLES ASSOCIATED WITH THIS SITE AND TAKE ALL NECESSARY AND REQUIRED PRECAUTIONS TO PROTECT ANY EXISTING FIBER OPTIC CABLES. CONTRACTORS SHALL COORDINATE ALL EFFORTS WITH OWNER OF FIBER OPTIC CABLES OR THEIR DESIGNATED REPRESENTATIVE.

J. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING "ONECALL" SERVICE TO MARK ALL UTILITIES PRIOR TO ANY DEMOLITION, EARTHWORK, OR UTILITY WORK ON THIS SITE.

PHILLIP LEWIS ENGINEERING, INC.
Structural + Civil Consultants
23620 Interstate 30 | Bryant, Arkansas
PH: 501-350-9840

REVISION:

SUMMERWOOD SPORTS GYMNASIUM #3
7817 Hwy 5 N
Bryant, Arkansas

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT NUMBER:

SHEET ISSUE DATE:
12/12/2023

PAGE TITLE:
STORMWATER PLAN

SHEET NUMBER:
C1.4

PRE DRAINAGE MAP

SCALE 1" = 40'

N

0 40'

1" = 40'-0"

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7817 Hwy 5 N
Bryant, Arkansas

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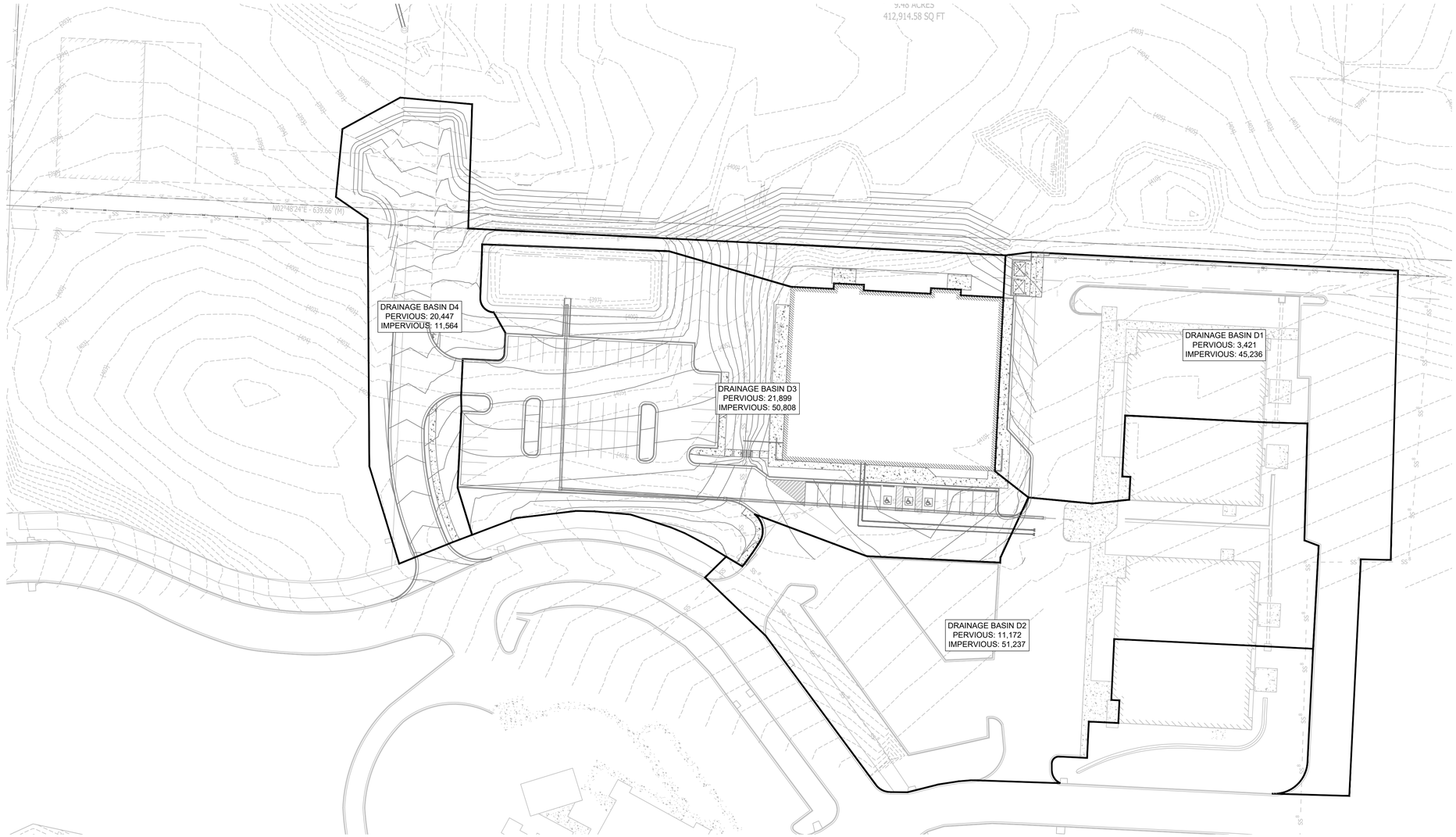
NOT FOR CONSTRUCTION

PROJECT NUMBER:

SHEET ISSUE DATE:
12/12/2023

PAGE TITLE:
PRE DRAINAGE MAP

SHEET NUMBER:
C1.5



POST DRAINAGE MAP

SCALE 1" = 40'

N

0 40'

1" = 40'-0"

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SUMMERWOOD SPORTS GYMNASIUM #3
7817 Hwy 5 N
Bryant, Arkansas

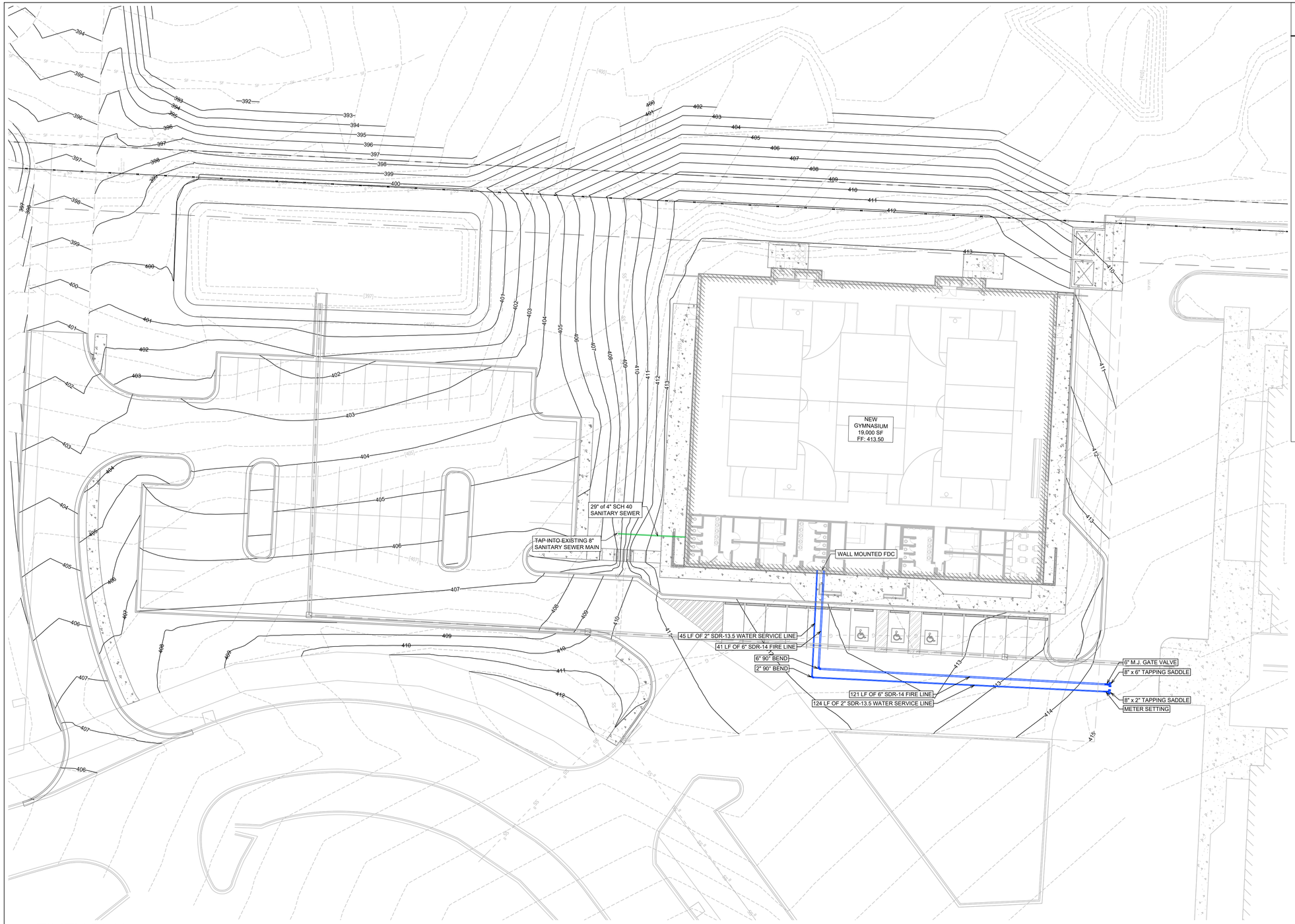
PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT NUMBER:

SHEET ISSUE DATE:
12/12/2023

PAGE TITLE:
POST DRAINAGE MAP

SHEET NUMBER:
C1.6



UTILITY PLAN

SCALE 1" = 20'

GENERAL CONSTRUCTION NOTES

A. THE CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR DAMAGES OCCURRING TO ANY PROPERTY DURING THE CONSTRUCTION OF THIS PROJECT. SAID CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT PROPERTY DAMAGE.

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H. CONSTRUCTION SHALL NOT START ON ANY WATER UTILITY TIE-INS UNTIL APPROVAL IS GIVEN BY BRYANT UTILITIES. SAID CONTRACTOR SHALL NOT OPERATE ANY VALVE, HYDRANT, OR WATER UTILITY APPURTENANCE NOR SHALL HE ATTACH TO OR TAP ANY WATER UTILITY MAIN WITHOUT APPROVAL. THE CONTRACTOR SHALL BEAR THE COST AND CONSEQUENCE OF ANY DISRUPTION OF UTILITY OPERATION CAUSED BY CONSTRUCTION.

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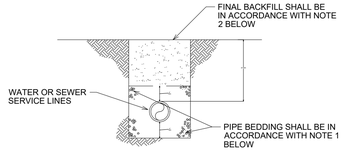

WATER AND SEWER LINES BEDDING DETAIL

NOT TO SCALE

NOTES:
1. BEDDING SHALL BE "GRIT" PER ASTM 2774 OR ASTM D448 SIZE 67 A MINIMUM OF 6" ALL AROUND PIPE.
2. INITIAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS III COMPACTED TO 90% STANDARD PROCTOR. ALL BACKFILL UNDER PAVED AREAS SHALL BE CLASS 7 CRUSHED STONE (SB-2) COMPACTED TO 95% STANDARD PROCTOR DENSITY.
3. ALL MATERIALS ARE CLASSIFIED IN ACCORDANCE WITH ASTM D2321-89.
4. ALL MATERIALS SHALL BE INSTALLED IN MAXIMUM 8" LIFTS IN ACCORDANCE WITH ASTM D698. CLASS III AND IV-A MATERIALS SHALL BE COMPACTED TO NEAR OPTIMUM MOISTURE CONTENT.
6. FILL SALVAGED FROM EXCAVATION SHALL BE FREE OF DEBRIS, ORGANICS, AND ROCKS LARGER THAN 3".
7. ALL TRENCH EXCAVATIONS SHALL BE SLOPED, SHORED, SHEETED, BRACED, OR OTHERWISE SUPPORTED IN COMPLIANCE WITH OSHA REGULATIONS AND LOCAL ORDINANCES.

N

0 20'

1" = 20'-0"

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REVISION:

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7817 Hwy 5 N
Bryant, Arkansas

PRELIMINARY
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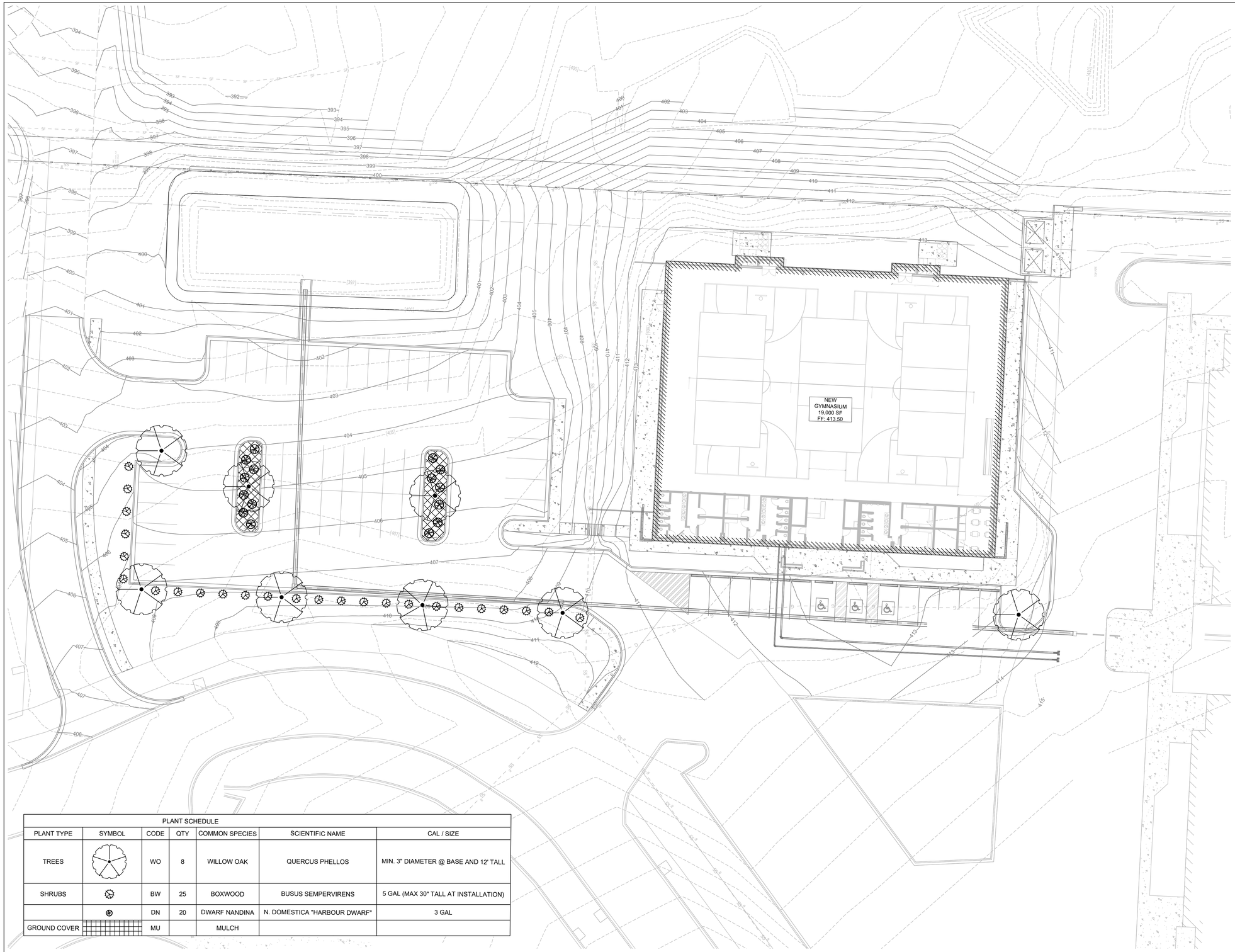
PROJECT NUMBER:

SHEET ISSUE DATE:
12/12/2023

PAGE TITLE:
UTILITY PLAN

SHEET NUMBER:
C1.7



PLANT SCHEDULE						
PLANT TYPE	SYMBOL	CODE	QTY	COMMON SPECIES	SCIENTIFIC NAME	CAL / SIZE
TREES		WO	8	WILLOW OAK	QUERCUS PHELLOS	MIN. 3" DIAMETER @ BASE AND 12' TALL
SHRUBS		BW	25	BOXWOOD	BUSUS SEMPERVIRENS	5 GAL (MAX 30" TALL AT INSTALLATION)
		DN	20	DWARF NANDINA	N. DOMESTICA "HARBOUR DWARF"	3 GAL
GROUND COVER		MU		MULCH		

LANDSCAPING PLAN

SCALE 1" = 20'

THE ABOVE SPECIES IS OPTIONAL IF OWNER WANTS TO GO WITH THE SAME SPECIES AS ADJACENT PROPERTY

N

0 20'

1" = 20'-0"

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PROJECT NUMBER:

SHEET ISSUE DATE:
12/12/2023

PAGE TITLE:
LANDSCAPING PLAN

SHEET NUMBER:
C1.8

SWPPP PH. 1

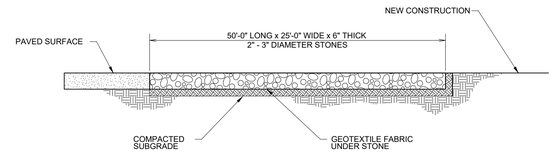
SCALE 1" = 50'

LEGEND

- DISTURBED AREA
- UNDISTURBED AREA
- GRASS SEED
- SEDIMENT FENCE WITH WIRE BACKING
- DRAINAGE DIRECTION

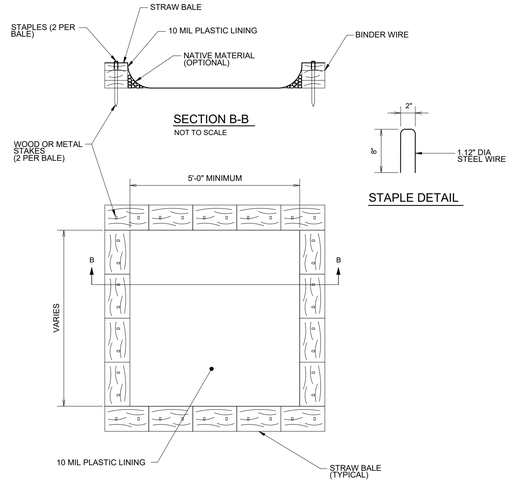
NOTES (GENERAL):

1. SEE EROSION CONTROL DETAILS IN SWPPP FOR EROSION CONTROL FACILITIES.
2. SEE SWPPP FOR INSTALLATION, MAINTENANCE, INSPECTION, AND RECORD KEEPING REQUIREMENTS.
3. CONTRACTOR SHALL SHOW EROSION CONTROL MEASURE ON SITE MAP.
4. EROSION AND SEDIMENT CONTROL STRUCTURES TO MEET SWPPP DETAILS - APPENDIX D
5. INSTALL ROCK DITCH, CHECK, OR SAND BAG CHECKS AS NECESSARY TO PREVENT SCOUR UNTIL LANDSCAPING IS ESTABLISHED.
6. CONTRACTOR MUST PLACE SEDIMENT BASIN WITH SEDIMENT FENCE OUTLET FOR ANY SEDIMENT CONTAMINATED DEWATERING DISCHARGE.
7. FINAL SLOPE WILL BE SAME DIRECTION AS EXISTING SLOPE.



CONSTRUCTION ENTRANCE

NOT TO SCALE



CONCRETE WASHOUT

NOT TO SCALE

N

0 50'

1" = 50'-0"

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7817 Hwy 5 N
Bryant, Arkansas

PRELIMINARY NOT FOR CONSTRUCTION

PROJECT NUMBER:

SHEET ISSUE DATE:
12/12/2023

PAGE TITLE:
SWPPP PH. 1

SHEET NUMBER:
C1.9

SWPPP PH. 2

SCALE 1" = 50'

LEGEND

- DISTURBED AREA
- UNDISTURBED AREA
- GRASS SEED
- SEDIMENT FENCE WITH WIRE BACKING
- DRAINAGE DIRECTION

NOTES (GENERAL):

1. SEE EROSION CONTROL DETAILS IN SWPPP FOR EROSION CONTROL FACILITIES.
2. SEE SWPPP FOR INSTALLATION, MAINTENANCE, INSPECTION, AND RECORD KEEPING REQUIREMENTS.
3. CONTRACTOR SHALL SHOW EROSION CONTROL MEASURE ON SITE MAP.
4. EROSION AND SEDIMENT CONTROL STRUCTURES TO MEET SWPPP DETAILS - APPENDIX D
5. INSTALL ROCK DITCH, CHECK, OR SAND BAG CHECKS AS NECESSARY TO PREVENT SCOUR UNTIL LANDSCAPING IS ESTABLISHED.
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N

0 50'

1" = 50'-0"

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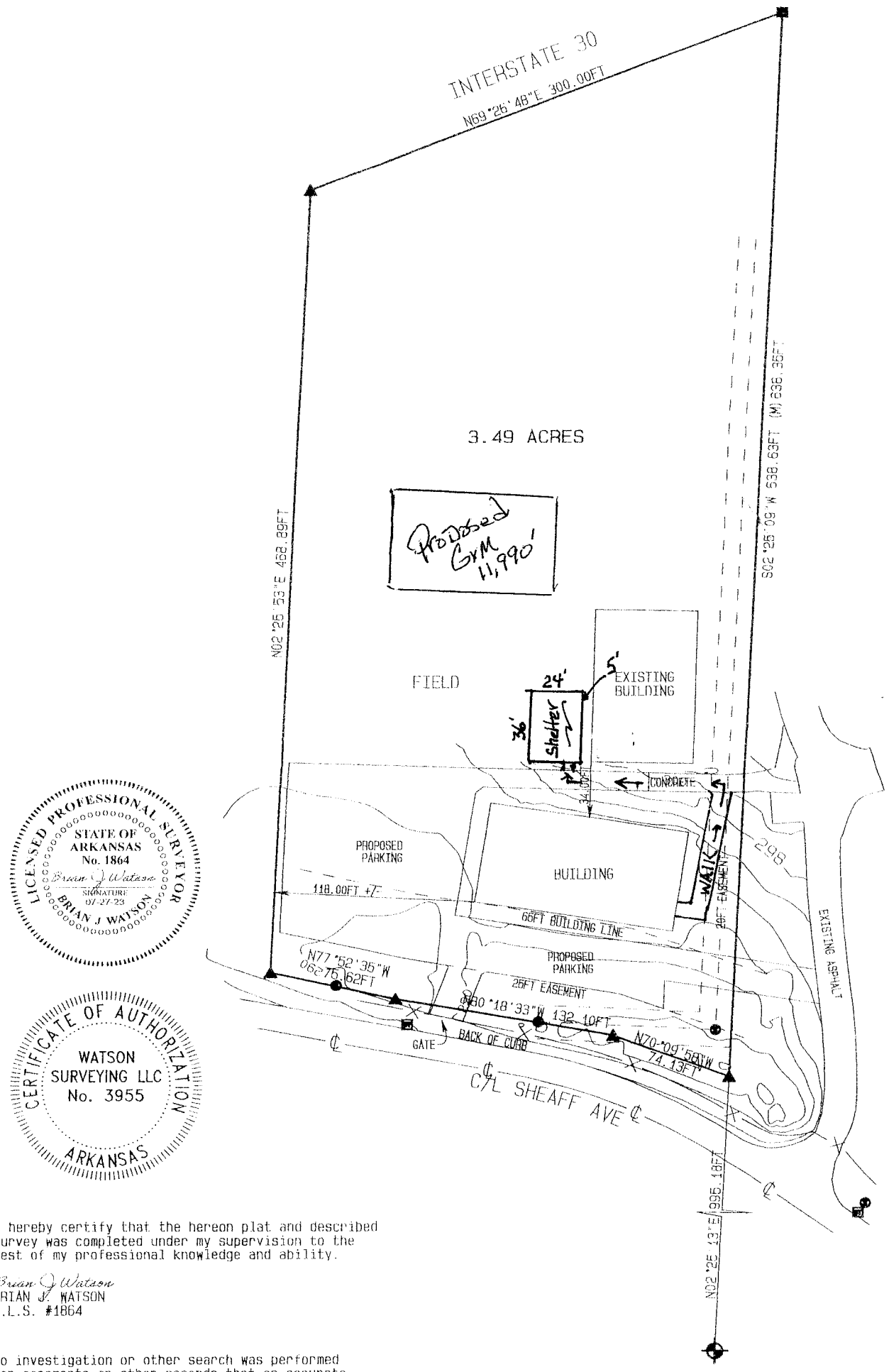
12/12/2023

PAGE TITLE:
SWPPP PH. 2

SHEET NUMBER:
C1.10

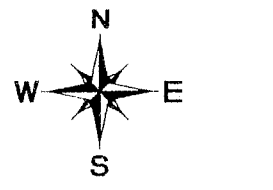
DEEDED LEGAL DESCRIPTION:
Part of the Southeast Quarter of the Northeast Quarter and part of the Northeast Quarter of the Northeast Quarter of Section 29, Township 1 South, Range 14 West, City of Bryant, Saline County, Arkansas, more particularly described as follows: Commencing at the Southeast corner of said Southeast Quarter Northeast Quarter; thence North 02 deg. 25 min. 15 sec. East along the East line thereof for 996.18 feet to the Point of Beginning being on the North right-of-way line of the Springhill Overpass extension road; thence North 70 deg. 09 min. 58 sec. West for 74.13 feet; thence North 80 deg. 18 min. 33 sec. West for 132.10 feet; thence North 77 deg. 52 min. 35 sec. West for 75.62 feet; thence North 02 deg. 25 min. 53 sec. East for 468.89 feet to the South right-of-way line of Interstate #30; thence North 69 deg. 26 min. 48 sec. East for 300.00 feet to the East line of said Northeast Quarter Northeast Quarter; thence South 02 deg. 25 min. 09 sec. West for 637.63 feet to the Point of Beginning, containing 3.49 acres, more or less



I hereby certify that the hereon plat and described survey was completed under my supervision to the best of my professional knowledge and ability.

Brian J. Watson
BRIAN J. WATSON
P.L.S. #1864

No investigation or other search was performed for easements or other records that an accurate and current title search may disclose

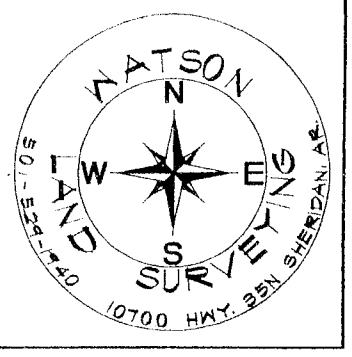


BEARINGS BASED ON EAST LINE FROM ORIGINAL DEED

SCALE 1"=70'

0 70 140

Symbol	Description
ST	STORM DRAIN
S	SEWER
▲	COMPUTED
■	REBAR
——X——	FENCE (X) LINE
——℄——	CENTER LINE
————	PROPERTY LINE



DATE: 27 JULY 2023
SCALE: 1IN.=70FT.
JOB#23-134
DRAWN BY: BW

PLOT PLAN
FOR THE USE AND BENEFIT OF
DESTINED TO WIN

Building Code Requirements

2012 International Building Code (IBC)

OCCUPANCY TYPES: TYPE E

BUILDING CONSTRUCTION:
CONSTRUCTION: TYPE IIB UNSPRINKLERED

ALLOWABLE SQ FT: 14,500 SQ FT

ACTUAL BUILDING SQ FT: 864 SQ FT

NET AREA: 748 SQ FT

ALLOWABLE HEIGHT: 2 STORIES, 55'-0"

ACTUAL HEIGHT: 1 STORY, 14'-8"

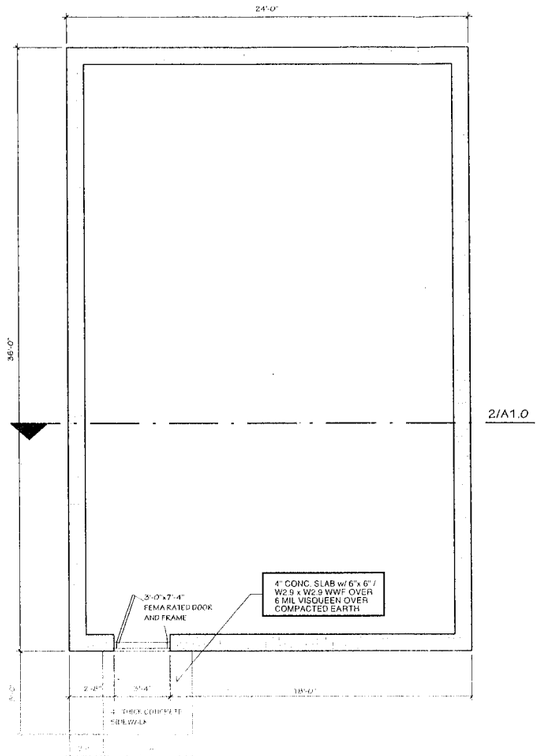
EGRESS:
TRAVEL DISTANCE: (UNSPRINKLERED) 200
ACTUAL DISTANCE: 38

0.2 WIDTH REQUIRED PER OCCUPANT: 30"
1 - 3'-0" DOOR REQUIRED. ACTUAL WIDTH 34"

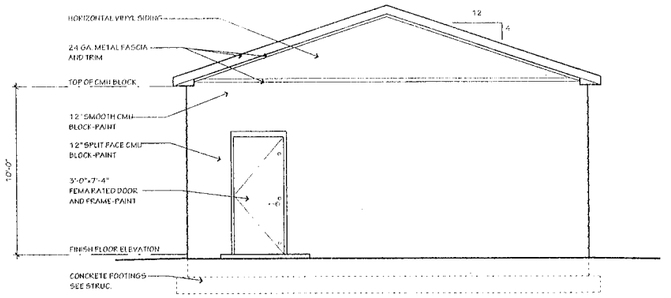
FIRE EXTINGUISHERS REQUIRED: 1

OCCUPANTS ALLOWED: 5 PER NET SF
748 NET SF 150 OCCUPANTS

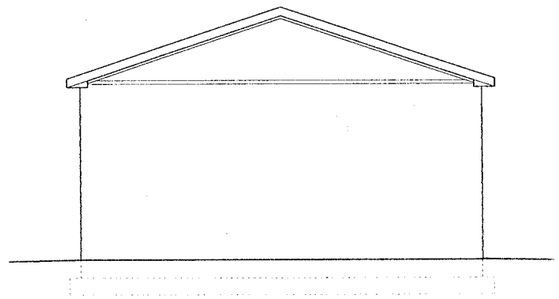
DRAWING INDEX



SHELTER FLOOR PLAN TOTAL SQUARE FEET 664 SF

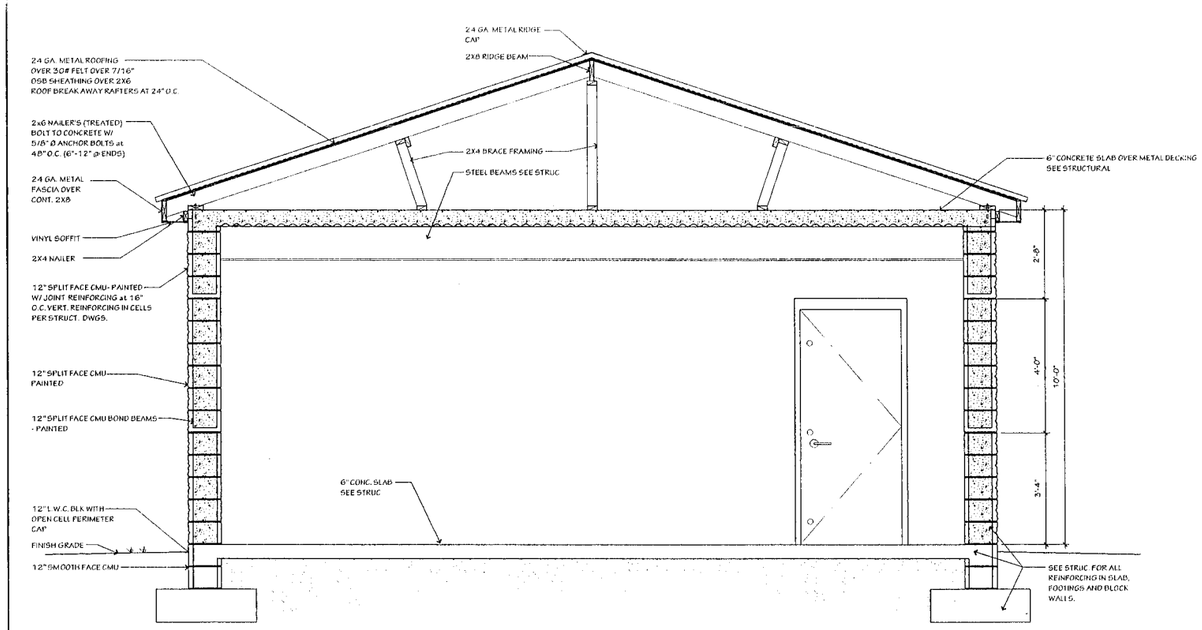


3 FRONT ELEVATION
SCALE: 1/4" = 1'-0"

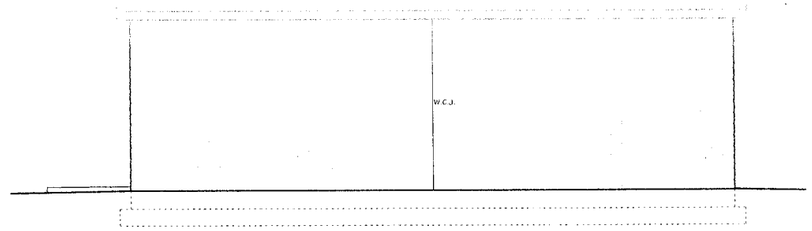


4 REAR ELEVATION
SCALE: 1/4" = 1'-0"

SEE NOTES ON ELEVATION #3

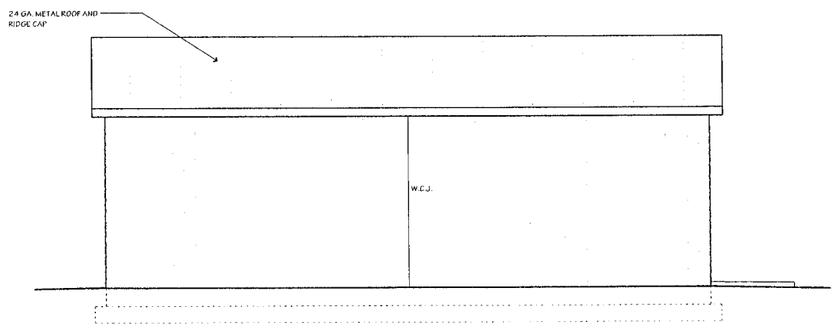


2 BUILDING SECTION
SCALE: 1/2" = 1'-0"



5 SIDE ELEVATIONS
SCALE: 1/4" = 1'-0"

SEE NOTES ON ELEVATION #3



6 SIDE ELEVATIONS
SCALE: 1/4" = 1'-0"

SEE NOTES ON ELEVATION #3

HUGHES ARCHITECTURAL DESIGNS
1202 N STATE LINE AVE
SUITE #102
TEXARKANA, AR 71854
501-627-2448
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New Storm Shelter Facility for
Arkansas Christian Academy
Bryant, Arkansas

Revisions:

Professional Stamps:

Sheet Title:
Floor Plan, Exterior Elev's & Bldg Section

Date: 12-04-2023
Sheet Number:
A1.0

GENERAL NOTES

In case of conflict between the General Notes below and the Specifications, the more rigid requirement shall govern unless amended in writing by the Structural Engineer of Record.

DESIGN DATA

1. Design Codes – (All latest editions unless noted otherwise.)
   - International Building Codes (IBC 2021)
   - Arkansas Fire Prevention Code 2007 Edition (IBC 2012) with Amendments.
   - American Society of Civil Engineers (ASCE 7-16) Minimum Design Loads for Buildings and Other Structures
   - American Concrete Institute (ACI)
   - American Institute of Steel Construction (AISC)
   - American Welding Society (AWS)
   - American Iron and Steel Institute Specifications for the Design of Cold Formed Steel Structural Members (AISI)
   - National Design Specification for Wood Construction (ANSI/AF&PA NDS-2018)
   - Steel Deck Institute (SDI)
   - Standard for the Design and Construction of Storm Shelters (2020 ICC 500)
   - Safe Rooms for Tornadoes and Hurricanes (2021 FEMA P-361)
2. Design Loads (IBC & ASCE7)

– Dead Load Design Data	
– Roof	15 psf
– Floor	65 psf
– Exterior CMU Wall	127 psf of wall area
– Live Load Design Data	
– Floor Distributed	
– Lobby (1st Floor)	100 psf (Not reducible)
– Floor Concentrated	
– Office	2000 lbs
– Partition Load	20 psf of wall area (Reducible per code)
– Slab-On-Grade	100 psf
– Live Roof Load Design Data	
– Roof (Sloped)	100 psf
– Roof (Flat)	100 psf
– Wind Design Data	
– Risk Category	IV
– Velocity	250mph
– Wind Exposure Category	C
– Internal Pressure Coefficient, GC_{pi}	0.55±
– Snow Design Data	
– Importance Factor for Snow, I_s	1.2
– Ground Snow Load, P_g	10 psf
– Exposure Coefficient C_e	1.0
– Thermal Factor C_t	1.0
– Roof Slope Factor, C_s	1.0
– Flat Roof Snow Load P_f	9.1 psf (Use min 11 psf w/ Rain on Snow Surcharge)
– Seismic Criteria	
– Risk Category	IV
– Seismic Importance Factor, I_E	5.0
– Site Soil Class	D
– Mapped Spectral Response Coefficients	S_s = 0.313 / S_1 = 0.133 S_{ds} = 0.323 / S_{d1} = 0.207
– Seismic Design Category	D
– Basic Seismic Force Resisting System	A.7 Specially Reinforced Masonry Shear Walls
– Design Base Shear	0.097W
– Seismic Response Coefficient, C_s	0.097
– Response Modifications Factor, R	5.0
– Analysis Procedure	Equivalent Lateral Force
– Flood Design Data	
– Flood Design Class	4
– Flood Zone	X
Deflection and Drift Limitations	
– Roof/Floor Members	
– Cast-In-Place Concrete	
– Concrete Reinforcing – Bar (Typical)	ASTM A615, GR 60
– Concrete Reinforcing – Bar (Weldable)	ASTM A706, GR 60
– Concrete Reinforcing – Welded Wire Fabric	ASTM A185, (Plain) ASTM A497, (Defromed)
– Cement	ASTM C150
– Aggregate	ASTM C33, ASTM C330

Concrete Mix Criteria

Class Use	Category F	S	W	C	F'c, PSI	WT, PCF	AGG, IN	AE. %
I. FTG/FDN/PC	0	0	0	0	3500	145	¾"	NA
II. Interior Slab	0	0	0	0	4000	145	¾"	NA
III. Exterior Slab	1	0	0	0	4000	145	¾"	5+ 1
V. All Other	0	0	0	0	4000	145	¾.	NA

Reference ACI 318 Chapter 4 For Additional Information Regarding Durability Category And Class Requirement

Concrete Mix Design Shall Be Submitted For Each Class In Accordence With The Procedure Outlined in ACI 301, Standard Specification For Structural Concrete. Documentation Submitted Shall Include The Mix Data. For Additional Submittal Requirements, Reference ACI 301. For Requirements On The Use Of Admixtures And Limits On The Water/Cementitious Materials Ratio For Durability, Reference The Project Manual/Specifications And ACI 318, Building Code Requirements For Structural Concrete.

Structural Masonry

– Design Compressive Strength (F'm= 2000 PSI)	
– Concrete Masonry Units	ASTM C90, NORMAL WT
– Reinforcing Steel (UNO):	
– Bar Reinforcing (Typical)	ASTM A615, GR 60
– Bar Reinforcing (Weldable)	ASTM A706, GR 60
– Joint Reinforcement	ASTM A951
– Grout (F'c= 3000 PSI, 8"-11" Slump)	ASTM C476 ASTM C1019
– Mortar, Type S	ASTM C270 or ASTM C780
– Non-Shrink Grout Under Plates (F'c=8000 PSI)	ASTM C1107, GR A

Structural Steel

Structural Shapes (UNO)	
– Wide Flange	ASTM A992 or ASTM A572
– Channels, Angles and Plates	ASTM A36 or ASTM A572
Hollow Structural Sections	
– HSS, (Fy = 46 KSI)	ASTM A500, GR C
– Pipe, (Fy = 35 KSI)	ASTM A53, GR C
– Bolts And Fasteners (UNO)	ASTM A325
– Structural/Anchor Rods	ASTM F1554, Grade 55 (Weldable)
– Headed Shear Studs	ASTM A108, AWS D1.1, Type B

3. Design Soil Bearing Pressures
   - Footings on natural soils or compacted structural fill are designed for a minimum soil bearing pressure of 1,800 psf.
   - If the soil at the footing bearing elevations shown is of questionable bearing value, the Engineer or Architect shall be notified immediately.
   - After footing excavations are completed and before placing concrete, the excavated areas shall be inspected and approved by the Owner selected independent testing laboratory.

GENERAL INFORMATION

1. All columns shall be centered on grid lines unless noted otherwise.
2. All column footings shall be centered on columns unless noted otherwise.
3. All wall footings shall be centered on walls unless noted otherwise.
4. Unless otherwise noted or detailed, concrete pads for mechanical equipment shall be 4" thick (minimum) and reinforced with #3 @ 12" oc each way centered.
5. Substitution of expansion anchors for embedded anchors shall not be permitted.
6. Weights of mechanical equipment shown on the structural plans are for units specified by the Mechanical Engineer. Contractor shall verify weights and any substitutions that result in increased weight shall be approved by the Structural Engineer.
7. Backfill both sides of all foundation and retaining walls equally until low side is up to finish grade. Do not backfill any walls until concrete has reached its specified 28-day compressive strength.
8. Permanent stability of the building and components is not provided until the erection is completed as shown on the contract drawings. "Temporary supports, such as temporary guys, braces, falsework, cribbing or other elements required for the erection operation will be determined, furnished and installed by the erector."
9. The contractor shall insure that no construction load exceeds the design live loads indicated on the structural drawings and that these loads are not put on the structural members prior to the time that all framing members and their connections are in place.
10. The Contractor shall be responsible for Verifying all existing conditions. The Contractor shall be responsible for coordinating architectural., structural, mechanical, and electrical details and dimensions. Any Discrepancies between such details and dimensions shall be reported to the EOR prior to proceeding with the work.
11. The Contractor shall be responsible for erection procedure and sequence to insure the integrity of the building and it's component parts during construction.

SUBMITTALS

1. Review of shop drawings and other submittals by the Structural Engineer does not relieve the Contractor of the responsibility to review and check shop drawings before submitting to the Structural Engineer. The Contractor remains solely responsible for errors and omissions associated with the preparation of shop drawings as they pertain to member sizes, details, and dimensions specified in the Contract Documents. All shop drawings must be stamped by the Contractor prior to submittal.
2. Shop Drawings: The Contractor shall submit for Structural Engineer review shop drawings for the following items. Items marked (*) shall have shop drawings sealed by a Professional Engineer registered in the state in which the project is located. Items marked (#) shall be submitted for Structural Engineer's record only.
   A. Structural Steel (*)
   B. Steel Deck
   C. Concrete Mix Designs
   D. CMU Reinforcing Steel

FOUNDATIONS

1. All soil preparation shall be in accordance with the recommendations given in the referenced Geotechnical Report.
2. Strip area of all gravel, surface vegetation, topsoil, and any debris. Remove all existing structures, foundations, and below grade site features. After stripping and making required cuts, exposed subgrade should be compacted. Overexcavate and stabilize any soft or unstable areas discovered by proof rolling.
3. The Geotechnical Engineer shall be present during proof rolling and shall inspect the subgrade prior to any fill operations. All compacted fill shall be continuously inspected by the Owner's selected independent testing laboratory.
4. If the soil at the bearing elevations shown is of questionable bearing value the Structural Engineer of Record or Architect shall be notified immediately.
5. All fill material under structure shall comply with requirements stated in Geotechnical Report unless specifically noted otherwise.
   After footing excavations are completed and before placing concrete, the excavated areas shall be inspected and approved by the Owner selected independent testing laboratory.

CAST-IN-PLACE CONCRETE

1. Arrangement and bending of reinforcing steel shall be in accordance with ACI Detailing Manual, latest edition.
2. Reinforcing steel shall be new and all bars shall be deformed.
3. Reinforcing Bars: ASTM A615 Grade 60 and ASTM A706 Grade 60 for weldable reinforcing.
4. Unless noted otherwise, bar laps shall be Class B tension laps and shall be lapped with minimum lengths as shown in Typical Details, where splices are required in reinforcing. Shorter laps may be acceptable if specific locations of alternate laps are shown on the reinforcement placement drawings and calculations are submitted by a Registered Professional Engineer, licensed to practice in the state in which the project is located, justifying the alternate lap lengths.
5. Provide suitable wire spacers, chairs, ties, etc. for supporting reinforcing steel in the proper position while placing concrete. Do not "wet stick" dowels.
6. All Welded Wire Fabric (WWF): ASTM A185. Minimum lap and embedment to be the greater of one cross wire spacing plus 2" or 6".
7. Minimum concrete protective covering for reinforcement at surfaces not exposed directly to the ground shall be ¾" for slabs, joists, and walls and 1½" for beam stirrups, column ties, or spirals unless noted otherwise.
8. Before placing concrete, clean reinforcement for foreign particles or coatings. Place, support, and secure reinforcement against displacement. For cast-in-place concrete, provide cover as shown below, unless noted otherwise on drawings, and as specified in ACI 318, building code requirements for structural concrete.

Application/condition	Required cover, Inches
Cast against and permanently exposed to earth	3"
Exposed to earth or weather:	
No.6 through No. 19 bars	2"
No.5 bar, W31 or D31 wire, and smaller	1½"
Not exposed to weather or in contact with ground:	
Slab, walls, joints:	
No. 14 and No. 18 bars	1½"
No. 11 bar and smaller	¾"
Beam, columns:	
Primary reinforcements, ties, stirrups, spirals	1½"
Shells, folded plate members:	
No.6 bar and larger	¾"
No.5 bar, W31 or D31 wire, and smaller	½"

9. Locations and sizes of openings, sleeves, etc. required for other trades must be verified by these trades before placing concrete.
10. All slots, sleeves, trenches, and other embedded items shall be set and secured against movement before the concrete is placed. See Architectural, Electrical, Mechanical, Plumbing, and Vendor drawings for sizes and locations. Coordinate locations, spacings, and sizes with the Structural Engineer of Record prior to pouring concrete.
11. Conduits and pipes embedded in concrete slabs may be no larger than ⅓ of the slab thickness (based on the maximum outside diameter) and shall have a center-to-center spacing no less than three (3) conduit diameters. Regardless of diameter, the minimum clear spacing between conduits or reinforcing shall be one (1) inch.
12. No more than four conduits may be placed adjacent to each other without prior approval in writing from the Structural Engineer of Record.
13. No aluminum conduits, devices, or fixtures may be embedded into the concrete so that the aluminum is in direct contact with the concrete.
14. Corner bars shall be provided for all horizontal reinforcing bars at the intersections and corners of all strip footings, beams, and walls unless noted otherwise. Corner bars shall be of the same size and grade as the horizontal reinforcing they connect. Minimum lap lengths shall be as indicated with the Typical Details unless noted otherwise.
15. For slabs-on-grade, provide saw-cut control joints at intervals of 15'-0" oc max across the width of the slab. Refer to the Structural Drawings for typical control joint layout and details.
16. [illegible]
17. Reinforcing steel shown in sections and details [illegible] reinforcing exists. See schedules, section notes and General Notes for actual reinforcing required.
18. Detail reinforcement in accordance with ACI 315. Reinforcement shall not be welded unless noted or approved by the Structural Engineer.
19. Pedestal, Column and Wall Vertical Reinforcing: Dowel to foundation with hooked bars of same size and spacing as vertical reinforcing, terminate top of reinforcement with hooked bar of same size and spacing as vertical reinforcing.
20. Beam Horizontal Reinforcing: Terminate each end with standard.
21. Closed Tie and Stirrup Reinforcing: Terminate each end with standard hook.
22. Concrete design and detailing shall conform to the requirements of ACI 318 and ACI 301, latest editions.
23. Contractor shall provide reinforcing shop drawings which adequately depict the reinforcing bar sizes and placement. Written description of reinforcement without adequate sections, elevations and details is not acceptable.
24. Submit written reports of each proposed mix design for each class of concrete with concrete cylinder test results at least 15 days prior to start of work.
25. All concrete that will be exposed to the weather shall have air entrainment.
26. All structural concrete exposed to view to be smooth formed finished with ¾" chamfers at all exposed edges.

ACI lap splice length (inches)

BAR SIZE	F'C = 3000 PSI TOP BARS CASE 1	CASE 2	OTHER BARS CASE 1	CASE 2	F'C = 3500 PSI TOP BARS CASE 1	CASE 2	OTHER BARS CASE 1	CASE 2	F'C = 4000 PSI TOP BARS CASE 1	CASE 2	OTHER BARS CASE 1	CASE 2
#3	28	42	22	32	26	39	21	30	24	36	19	28
#4	37	56	29	43	35	52	27	40	32	48	25	37
#5	47	70	36	54	44	65	34	51	40	60	31	47
#6	56	84	43	64	52	78	40	60	48	72	37	56
#7	81	122	63	19	76	114	59	88	70	106	54	81
#8	93	139	72	107	87	130	67	100	80	121	62	93
#9	105	157	81	121	89	147	76	113	91	136	70	105
#10	118	177	91	136	110	165	85	127	102	153	79	118
#11	131	196	101	151	122	183	94	141	113	170	87	131

BAR SIZE	F'C = 4500 PSI TOP BARS CASE 1	CASE 2	OTHER BARS CASE 1	CASE 2	F'C = 5000 PSI TOP BARS CASE 1	CASE 2	OTHER BARS CASE 1	CASE 2	F'C = 6000 PSI TOP BARS CASE 1	CASE 2	OTHER BARS CASE 1	CASE 2
#3	23	35	18	27	22	33	17	25	20	30	16	23
#4	31	46	24	35	29	43	22	33	26	40	20	31
#5	38	57	30	45	36	54	28	42	33	49	25	38
#6	46	69	35	53	43	64	33	50	40	59	31	46
#7	67	100	52	77	63	94	49	73	58	86	44	66
#8	76	115	59	88	72	108	55	83	66	98	51	76
#9	86	129	67	100	81	122	63	94	74	111	57	85
#10	97	145	75	112	91	137	70	105	83	125	64	96
#11	107	161	83	124	101	152	78	117	93	139	71	107

CAST-IN-PLACE CONCRETE CONT.

NOTES:

1. Tabulated values are based on grade 60 bars and normal weight concrete.
2. Cases 1 and 2, which depend on the type of structural element, concrete cover, and the center-to-center spacing of the bars, are defined as:
   Beams or columns:
   Case 1: Cover at lease 1.0 db and C.C. spacing of at least 2.0 db.
   Case 2: Cover less than 1.0 db and C.C. spacing less than 2.0 db.
   All others:
   Case 1: Cover at lease 1.0 db and C.C. spacing of at least 3.0 db.
   Case 2: Cover less than 1.0 db and C.C. spacing less than 3.0 db.
3. Top bars are horizontal beam and slab bars with more than 12" of concrete below the bars.
4. For lightweight aggregate concrete, multiply the tabulated values by 1.3.
5. For epoxy-coated bars, multiply the tabulated values by one of the following factors:

Concrete cover and spacing	Top bars	Other bars
Cover < 3.0 DB or C.C. spacing < 7.0 DB	1.7/1.3 = 1.31	1.50
Cover > 3.0 DB or C.C. spacing > 7.0 DB	1.20	1.20

6. Bar development length = lap spliced length/ 1.3.
7. Wire mesh lap
   Lap all wire mesh cross wires one cross wire spacing plus 2", typical.

CONCRETE MASONRY

1. For product material specifications, reference the structural notes, material & component design criteria and the project specification.
2. Submit documentation demonstrating compliance with the specified strength of masonry, F'm, in accordance with the (prism test method or the unit strength method) as outlined in the TMS 402/602-16, Building Code Requirements for Masonry Structures, and the applicable building code. Submit product and test data as specified for level 1 quality assurance. This shall include verification of F'm both prior to construction and during as well as verification of materials and proportions for concrete masonry units, mortar and grout construction for every 5000 square feet of masonry placed.
3. Submit reinforcing shop drawings showing placement of all reinforcement and embedments and the reinforcing fabrication dimensions and details.
4. Place concrete units such that the vertical cells to be grouted are aligned and provided unobstructed openings for grout placement. Face shells of bed joints shall be fully mortared. webs shall be fully mortared in all courses of piers, columns and pilasters, in the starting course on foundations, when necessary to confine grout or loose-fill insulation and when otherwise noted. Head joints are to be mortared a minimum distance from each face equal to the face shell thickness of the unit. Unless otherwise required, solidly fill collar joints less than 3/4" wide with mortar as the work progresses.
5. Place reinforcement and embedments in accordance with the drawings. Maintain a clear distance between the reinforcing bars and any face of masonry unit or formed surface of not less than 1/2" unless noted otherwise. Where reinforcing bar are spliced, provide a minimum lap as shown in chart below or a mechanical splice that provides 125% of the bar capacity. Tolerances for placement of reinforcing bars shall be +/- 1/2 inch perpendicular to the face of the masonry unit and within 2-inches along the length of the wall unless note otherwise. Reinforcement shall be tied in place or otherwise supported to prevent displacement during grouting.
6. Place grout within 1 1/2 hours from introducing water in the mixture and prior to initial set. Grout pour height shall conform to the requirements as outlined in TMS 402/602-16, Specification for Masonry Structures, for grout type and grout space dimensions. In no case shall grout lift exceed 4 feet in height. Consolidate pours by mechanical vibration and reconsolidate by mechanical vibration after initial water loss and settlement has occurred.
7. Provide joint reinforcement in every bed joint (8-inch on center) for stack bond and every other joint (16-inch on center) for running bond masonry placement. Place such that longitudinal wires overlap 6-inches and are embedded in mortar with a minimum cover of 5/8".
8. As a minimum, control joints in masonry walls shall be provided [illegible] each change of wall height or thickness [illegible] feet unless noted otherwise on drawings.
9. [illegible] masonry shall be reinforced as specified [illegible] containing reinforcing shall be fully grouted [illegible] match for vertical reinforcing.
10. Provide a bond beam with 2-#5 continuous bars where shown on the drawings and, at a minimum, at the tops of all masonry walls and at all slab or beam bearing locations where the wall is not already grouted solid below the bearing. Extend the bond beam a minimum of 2-feet beyond the end of the bearing condition.
11. Provide jamb reinforcing for every masonry opening shown on drawings, as a minimum, for steel lintel beams provide 1-#5 vertical in first cell adjacent to the bearing location form the top of footing for the full height of the wall. For masonry lintels, provide 1-#5 vertical in the first cell adjacent to the opening, from the top of the footing for the full height of the wall.
12. At beam bearing locations, reinforce each cell below the bearing plate with typical vertical reinforcing to the top of the footing unless noted otherwise.

CONCRETE MASONRY CONT.

13. At masonry control joints, reinforce the first cell either side of the joint with the typical wall reinforcing specified on the drawings. Also, at ends of walls, reinforce the last cell with the typical wall reinforcing specified. Horizontal joint reinforcing shall be discontinuous at control joints. Bond beam reinforcing shall be discontinuous at control joints. Bond beam reinforcing shall be discontinuous across control joints.
14. All cells containing reinforcing bars shall be fully grouted.
15. All expansion bolts placed in masonry are to be Hilti Kwik Bolt III or approved equal are to be installed in grouted cells in accordance with the manufacturer's recommendations and inspected by the special inspector. All post-installed anchors shall be installed in the presence of the special inspector.
16. All post installed dowels placed in masonry are to be set in Hilti HIT-HY 70 adhesive or approved equal are to bed installed in accordance with the manufacturer's recommendations and inspected by the special inspector. All post-installed anchors shall be installed in the presence of the special inspector.
17. All mechanical anchors shall be installed in accordance with the product manufacturer's recommendations and the installation shall be inspected by the special inspector. Individual products shall be submitted to the architect/engineer for approval prior to installation. All post-installed anchors shall be installed in the presence of the special inspector.
18. When the ambient temperature falls below 40F or the temperature of the masonry units is below 40F, comply with the provisions of TMS 602, Section 1.8C, Specification for Masonry Structures, for cold weather construction.
19. When the ambient temperature exceeds 90F, comply with the provisions of TMS 602, Section 1.8D, Specification for Masonry Structures, for hot weather construction.
20. Brick Ties: (for stud backup)

    There shall be a minimum of one brick tie for every 2.67 sq. ft. of wall area. These shall be spaced at a maximum of 18-inches on center. Ties shall be of a minimum 9 GA. corrosion resistant wire and shall be of an adjustable type such as DUR-O-WALL adjustable D/A 213 or equal. Corrugated galvanized sheet ties are not acceptable. All ties must be attached through the sheathing to the studs per manufacturer's recommendations.
21. Brick Ties: (for masonry backup)

    There shall be a minimum of one brick tie for every 2.67 sq. ft. of wall area. These shall be spaced at a maximum of 18-inches vertical. Ties shall be a minimum of 3/16" diameter corrosion resistant wire. Corrugated galvanized sheet ties are not acceptable.

CMU Lap Splice Lengths
Reinforcement Off-Centered
2 Bar Per Core

MINIMUM LAP SPLICE LENGTH (INCHES)

BAR SIZE	8" CMU	10" CMU	12" CMU	16" CMU
#3	19	19	19	19
#4	34	34	34	34
#5	45	45	45	45
#6	54	54	54	54
#7	63	63	63	63
#8	N/P	72	72	72
#9	N/P	N/P	82	82

Note:
N/P Not Permitted

COMPOSITE BEAMS

1. Shear studs shall be [illegible] diameter in length.
2. Studs shall be automatically end welded through the metal deck [illegible] centerline of beams per manufacturer's recommendation.
3. Headed stud connectors, after installation, shall extend not less than 1½" above the top of steel deck and not more than ½" below the finished surface of the concrete. Headed stud shear connectors shall be ¾"ϕx5⅜" long (before welding) at spacing designated (18" oc max) unless noted otherwise.
4. Shear connectors shall have at least one inch of lateral concrete cover except for connectors installed in the ribs of formed steel deck. Minimum distance from the base of the rib to the base of the stud shall be ½" in ribbed, formed steel deck unless noted otherwise.
5. The minimum center-to-center spacing of stud connectors shall be six times the stud diameter along the longitudinal axis of the beam and four times the stud diameter transverse to the longitudinal axis of the beam. In formed steel decks oriented perpendicular to the longitudinal axis of the beam, the minimum center-to-center spacing shall be four times the stud diameter in any direction.
6. Studs may not be installed on the flanges of beams that are less than 0.4 times the stud diameter unless they are directly over the web. Should deck layout and stud spacing cause a conflict with this requirement, contact the Structural Engineer of Record for a resolution prior to installation of the shear studs.

HUGHES ARCHITECTURAL DESIGNS
1202 N STATE LINE AVE
SUITE #102
TEXARKANA, AR 71854
501-827-2448

New Storm Shelter Facility for:
Arkansas Christian Academy
Bryant, Arkansas

Revisions:

Professional stamp:
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 10449
PATRICK M. PLOURDE
DATE SIGNED: 12-04-2023
FOR 3rd PARTY REVIEW
NOT FOR CONSTRUCTION

Sheet Title:
General Notes

Date:
Sheet Number:
S0.0

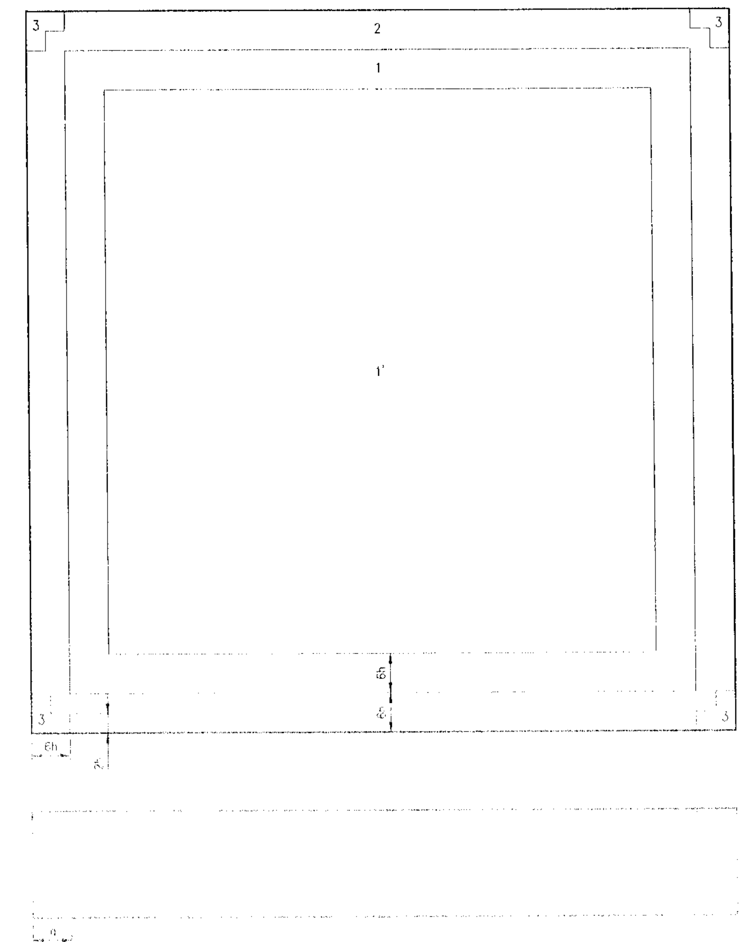
CERTIFICATE OF AUTHORIZATION
LIVE OAK ENGINEERING, INC.
No. 1872
ARKANSAS ENGINEER
LIVE OAK ENGINEERING
2509 7TH AVENUE SOUTH
BIRMINGHAM, AL 35233
205.637.3115
LOC# 256-1

STEEL DECK

1. All deck shall be furnished and installed per the requirements of the Steel Deck Institute (SDI). The Contractor shall follow all recommended practices in the SDI manual.
2. Steel Deck, galvanized steel deck unless noted otherwise on the drawings.
3. Where steel deck is part of a rated assembly, supply all deck and components, which comply with requirements of Underwriters Laboratories (UL) for each type of assembly specified, reference plans and specifications. Where deck is to receive spray fireproofing, finishes shall be compatible with fireproofing material and comply with UL assembly requirements. Before the fireproofing material is applied, the deck surface to be treated shall be free of rust, scale, oil, or other contaminants or elements which will impair bond.
4. The deck shall be fastened to supporting steel as shown on the drawing.
5. Alternate fastening options using mechanical fasteners, powder-actuated, or screws may be considered, if submitted by the Contractor. Alternate systems and documentation certifying that the proposed system provides at least the same uplift and diaphragm shear resistance as the system and pattern specified must be submitted to the Engineer.
6. Provide a 2" minimum bearing and a 4" lap at the splice point of all pieces of deck.
7. Where possible, all decking shall be 3-span continuous, minimum. Decking specified on this project assumes a 3-span condition unless noted otherwise. The Contractor shall provide heavier gauge deck, as required, for one or two span conditions to meet equivalent load capacity of the specified deck under a 3-span condition.
8. Steel roof deck shall not be used to support load from plumbing HVAC ducts, light fixtures, architectural elements, or equipment of any kind unless specifically noted.
9. Hanging any loads directly from steel roof deck shall be avoided whenever possible. Nevertheless, normal suspended acoustical ceilings with a total weight per wire not exceeding 50 lbs may be hung from the steel roof deck in cases where hanging loads from the deck cannot be avoided. If possible, the attachment should be staggered to further distribute the load. If load is directly supported by the deck, tabs or other build-in devices should be provided for hanging referenced loads.
10. Where deck ribs are cut at penetrations, provide deck support angles or deck stiffeners as required.
11. Supply 8" wide, minimum, plates matching deck gauge or heavier for all ridge, valley, and change in deck direction locations, which do not fall over a supporting member at least 4" wide.

ABBREVIATIONS

AB	– Anchor bolt(s)	LT WT	– Lightweight
ADDL	– Additional	MAS	– Masonry
AFF	– Above finish floor	MATL	– Material
ALT	– Alternate	MAX	– Maximum
ARCH	– Architect, Architectural	MECH	– Mechanical
B/	– Back of	MFR	– Manufacturer
BLDG	– Building(s)	MIN	– Minimum
BLK	– Block(s)	MISC	– Miscellaneous
BM	– Beam(s)	MO	– Masonry opening
BOF	– Bottom of footing elevation	MPH	– Miles per hour
BOT	– Bottom	MTL	– Metal
BRDG	– Bridging	N	– North
BRNG	– Bearing	NIC	– Not-in-contract
BRK	– Brick(s)	NOM	– Nominal
BTWN	– Between	NS	– Near side
BUR	– Built-up roof	NSG	– Non-shrink grout
CJ	– Control joint, Contraction joint, Construction joint	NTS	– Not-to-scale
		NUM	– Number
CL	– Centerline	OC	– On-center
CLG	– Ceiling	OD	– Outside diameter, Outside dimension
CLR	– Clear		
CMU	– Concrete masonry unit(s)	OH	– Opposite hand, Overhead
COL	– Column(s)	OPNG	– Opening(s)
CONC	– Concrete	OPP	– Opposite
CONN	– Connection(s)	PAR	– Parallel
CONST	– Construction	PC	– Precast, Precast concrete
CONT	– Continue, Continuous	PDF	– Power driven fastener
CTRD	– Centered	PL	– Plate, Property line
DBA	– Dowel bar anchor, Deformed bar anchor	PLF	– Pounds per linear foot
		PLYWD	– Plywood
DBL	– Double	PNL	– Panel
DIA	– Diameter	PROJ	– Project, Projection
DIAG	– Diagonal	PSF	– Pounds per square foot
DIM	– Dimension	PSI	– Pounds per square inch
DWG	– Drawing	PTD	– Painted
DWGS	– Drawings	PVMT	– Pavement
DWL	– Dowel(s)	QTY	– Quantity
E/	– Edge of, End of	R	– Radius
EA	– Each	RAD	– Radius
EB	– Expansion bolt(s)	RD	– Roof drain
EBC	– Extended bottom chord	REBAR	– Reinforcing bar
EF	– Each face	REF	– Reference
EIFS	– Exterior insulated finish system	REINF	– Reinforce, Reinforcing, Reinforcement
EJ	– Expansion joint		
EL	– Elevation	REQD	– Required
ELEC	– Electrical	REV	– Revise, Revision
ELEV	– Elevator	RH	– Right hand
ENG	– Engineer(ed)	RO	– Rough opening
EQ	– Equal	S	– South
EXP	– Expansion	SC	– Slotted connection, Slip connection
EQMT	– Equipment		
EW	– Each way	SCH	Schedule
EWIJ	– Engineered wood I-joist	SECT	Section
EXST	– Existing	SF	– Square feet
[illegible]	Exterior	[illegible]	Sheet
[illegible]	– Face of	[illegible]	Sheathing
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Footing	[illegible]	Square
GA	– Gage, Gauge	SS	Stainless steel
GALV	– Galvanized	SSL	– Short slotted hole
GLB	– Glue-laminated beam	STD	– Standard
GR BM	– Grade beam	STF	– Stiffener
GR	– Grade	STL	– Steel
GYP BD	– Gypsum board	STR	– Straight
HD	– Headed, Heavy duty	STRUCT	– Structural
HDR	– Header	SYM	– Symmetrical
HI	– High	T&B	– Top & bottom
HK	– Hook	T&G	– Tongue & groove
HORIZ	– Horizontal	THK	– Thick, Thickness
HP	– High point	THRD	– Threaded
HR	– Handrail	THRU	– Through
HS	– Headed stud	TM	– Top-of-masonry elevation
HSS	– Hollow steel section	TOB	– Top-of-beam elevation
HVAC	– Heating, ventilation, & air conditioning	TOC	– Top-of-concrete elevation
		TOF	– Top-of-footing elevation
ID	– Inside diameter	TOS	– Top-of-steel elevation
IN	– Inch, Inches	TP	– Top-of-parapet elevation
INSUL	– Insulate, Insulation	TW	– Top-of wall elevation
INT	– Interior	TYP	– Typical
INV	– Invert	UNO	– Unless noted otherwise
JBE	– Joist bearing elevation	VERT	– Vertical
JST	– Joist(s)	W/	– With
JT	– Joint	W/O	– Without
K	– Kip(s) (1,000 pounds)	WB	– Wind bracing
LF	– Linear foot, Linear feet	WCJ	– CMU wall control joint
LG	– Light Gauge	WD	– Wood
LLH	– Long leg horizontal	WP	– Working point
LLO	– Long leg outstanding	WPR	– Waterproofing
LLV	– Long leg vertical	WS	– Waterstop
LO	– Low	WWF	– Welded wire fabric
LP	– Low point		
LT	– Left, Light		



1 / S001 SHELTER C & C PLAN
NTS

ULT. ROOF WIND PRESSURE (PSF)								
AREA	ZONE 1'		ZONE 1		ZONE 2		ZONE 3	
	+	–	+	–	+	–	+	–
10SF	115.6	–197.2	115.6	–306.0	115.6	–387.6	115.6	–510.0
20SF	108.8	–197.2	108.8	–292.4	108.8	–367.2	108.8	–469.2
50SF	103.4	–197.2	103.4	–265.2	103.4	–340.0	103.4	–414.8
100SF	102.0	–197.2	102.0	–251.6	102.0	–312.8	102.0	–360.4
200SF	102.0	–176.8	102.0	–238.0	102.0	–292.4	102.0	–319.6
500SF	102.0	–149.6	102.0	–210.8	102.0	–265.2	102.0	–265.2
1000SF	–	–	–	–	–	–	–	–

a= 5.6ft
0.2h= 3.33ft
0.6h= 10ft

ULT. OVERHANG WIND PRESSURE (PSF)				
AREA	ZONE 1'	ZONE 1	ZONE 2	ZONE 3
TOP & BOTTOM SURFACES COMBINED				
10SF	–306.0	–306.0	–387.6	–510.0
20SF	–302.0	–302.0	–360.4	–462.4
50SF	–295.8	–295.8	–319.6	–387.6
100SF	–292.4	–292.4	–292.4	–340.0
200SF	–251.6	–251.6	–258.4	–292.4
500SF	–210.8	–210.8	–224.4	–224.4

ULT. WALL WIND PRESSURE (PSF)					ULT. PARAPET WIND PRESSURE (PSF)							
WIND AREA	ZONE 4		ZONE 5		ZONE 4&2e		ZONE 4&2n		ZONE 4&3r		ZONE 5&3e	
	WIN	LEE	WIN	LEE	WIN	LEE	WIN	LEE	WIN	LEE	WIN	LEE
10SF	189.8	–202.0	189.8	–238.7	434.6	–324.4	557.0	–324.4	630.4	–324.4	557.0	–361.1
20SF	183.6	–195.9	183.6	–225.3	428.4	–310.9	498.2	–310.9	557.0	–310.9	498.2	–341.5
50SF	175.1	–187.3	175.1	–208.1	314.6	–293.8	419.9	–293.8	461.5	–293.8	419.9	–315.8
100SF	167.7	–180.0	167.7	–195.9	228.9	–281.6	359.9	–281.6	388.0	–281.6	359.9	–296.2
200SF	161.6	–173.8	161.6	–182.4	222.8	–268.1	301.1	–268.1	381.9	–268.1	301.1	–276.7
500SF	153.0	–165.3	153.0	–165.3	214.2	–250.9	275.4	–250.9	275.4	–250.9	275.4	–251.0

FOR WALLS: WIN IS WINDWARD FACE
LEE IS LEEWARD FACE

FOR PARAPETS: WIN IS CASE A = p1+p2
LEE IS CASE B = p3+p4

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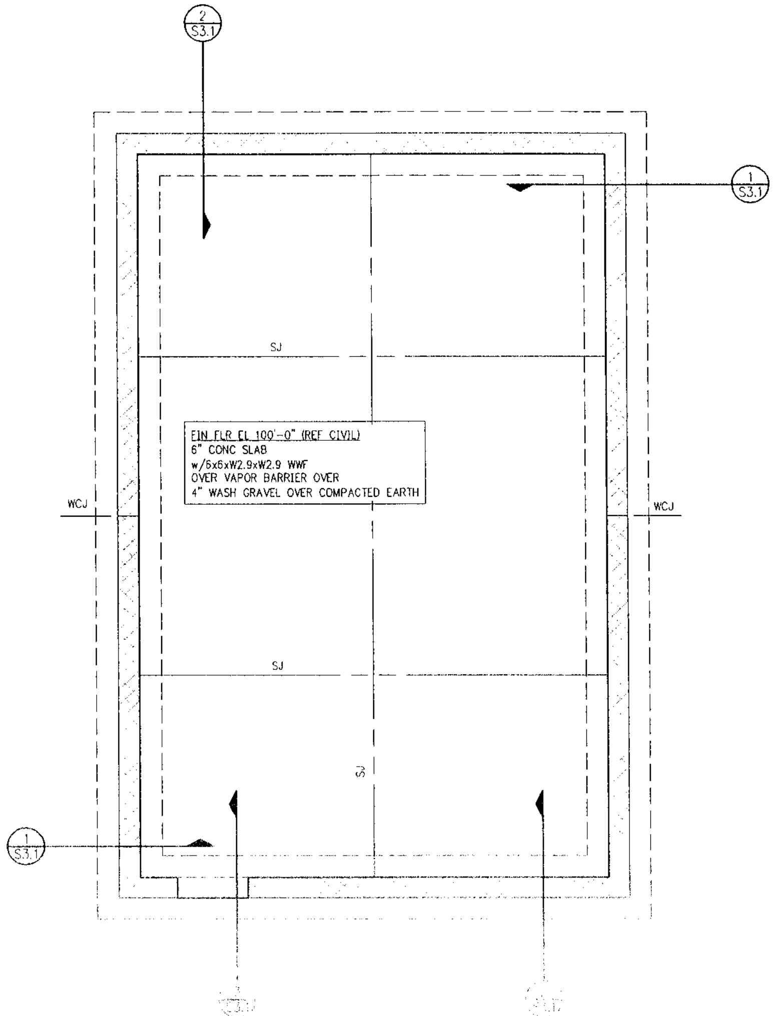
Sheet Title: General Notes Continued

Date:
Sheet Number: S0.1



LEGEND:

SJ – SAW JOINT, SEE 1/S2.1
WCJ – MASONRY WALL CONTROL JOINT, SEE 7/S2.1
– DECK SPAN DIRECTION

MASONRY WALL NOTES:

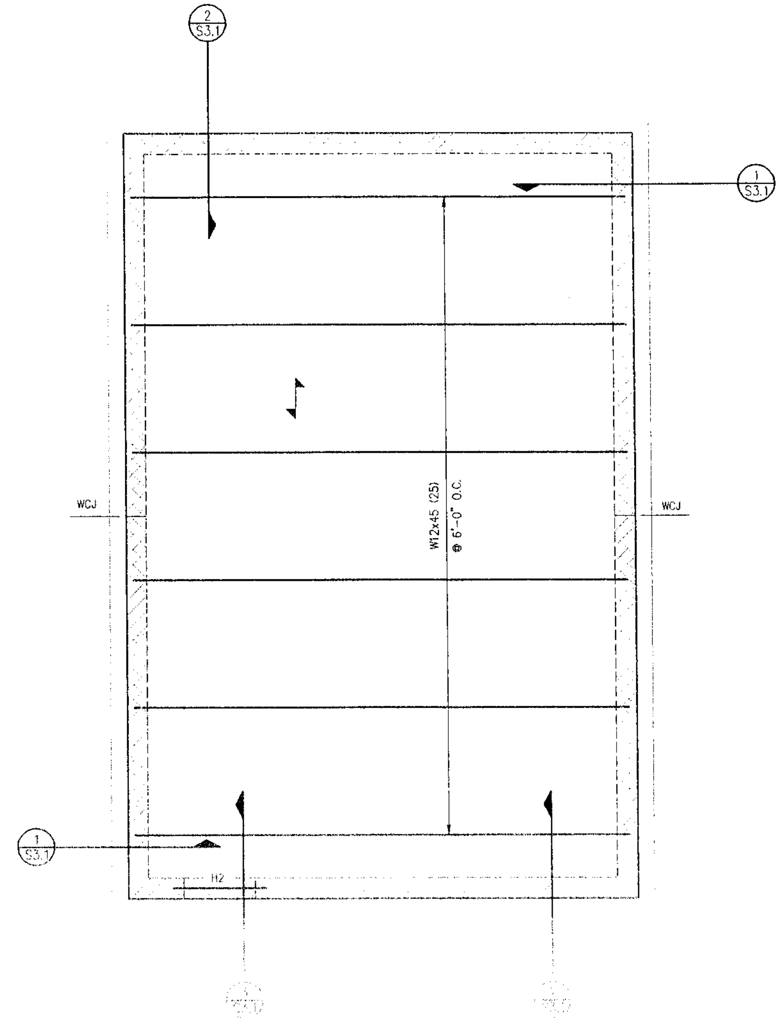
1. STRUCTURAL CONCRETE MASONRY WALLS TO BE NOMINALLY 12" THICK AND REINFORCED FROM FOOTING TO TOP OF WALL UNO. GROUT REINFORCED CELLS SOLID. REINFORCE AND GROUT SOLID CELLS AT CORNERS, OPENING, AND JAMBS AND END OF WALLS. SEE S2.2 FOR TYPICAL DETAILS.
2. DOWEL SPACING TO MATCH VERTICAL REINFORCEMENTS.
3. MASONRY CONTROL JOINT SHALL BE SPACED AT 24' O.C.
4. REINFORCEMENTS DISCONTINUOUS ACROSS CONTROL JOINTS.
5. FOR 12" WALL 2-#5 @ 16" O.C.
6. FOR 12" WALL CORNERS USE 2-#5 THREE CELLS.
7. FOR 12" WALL CONTROL JOINT USE 2-#5 ONE CELL EA SIDE.
8. PROVIDE CONT BOND BEAM AT 4'-0" VERTICAL ALL MASONRY WALL, BOND BEAMS TO BE REINFORCED WITH 2-#5 CONT.
9. PROVIDE STANDARD HOOK AT THE TOP OF ALL VERTICAL REINFORCEMENT BARS.
10. GROUT SOLID ALL MASONRY BELOW GRADE.

FOUNDATION PLAN NOTES:

1. ALL DIMENSIONS ARE TO BE VERIFIED WITH ARCHITECTURAL DRAWING BEFORE CONSTRUCTION IS TO BEGIN. SEE ARCHITECTURAL DRAWING FOR DIMENSIONS NOT SHOWN.
2. SEE 1/S2.1 FOR SLAB ON GRADE CONSTRUCTION JOINT, CONTROL JOINT, CONTROL JOINT PATTERN TO BE MAXIMUM 15'X15'.
3. PILASTER OR PIERS SHOWN WITHIN CMU WALLS ARE TO EXTEND FROM BEAM/GIRDER BEARING TO TOP OF FTG OR FOUNDATION WALL PILASTER.
4. GENERAL CONTRACTOR TO COORDINATE WITH (MEP) MECHANICAL, ELECTRICAL, AND PLUMBING CONTRACTORS FOR ANY AND ALL LOCATIONS OF SLEEVED OPENINGS IN FOUNDATION WALLS.
5. WHERE SLAB IS SAWCUT FOR INSTALLATION OF NEW PLUMBING/ELECTRICAL WORK PATCH PER DETAIL 4/S2.1.
6. DO NOT BEGIN DEMOLITION OR EXCAVATION WORK UNTIL EXISTING STRUCTURE HAS BEEN ADEQUATELY SHORED TO SUPPORT EVERY LEVEL. SHORING SHALL REMAIN IN PLACE UNTIL ALL NEW STRUCTURAL ELEMENTS SHOWN HAVE BEEN INSTALLED. REFER TO "EXISTING CONSTRUCTION" NOTES ON S0.0 FOR ADDITIONAL REQUIREMENTS.

A / S1.1 FOUNDATION PLAN

1/4"=1'-0"

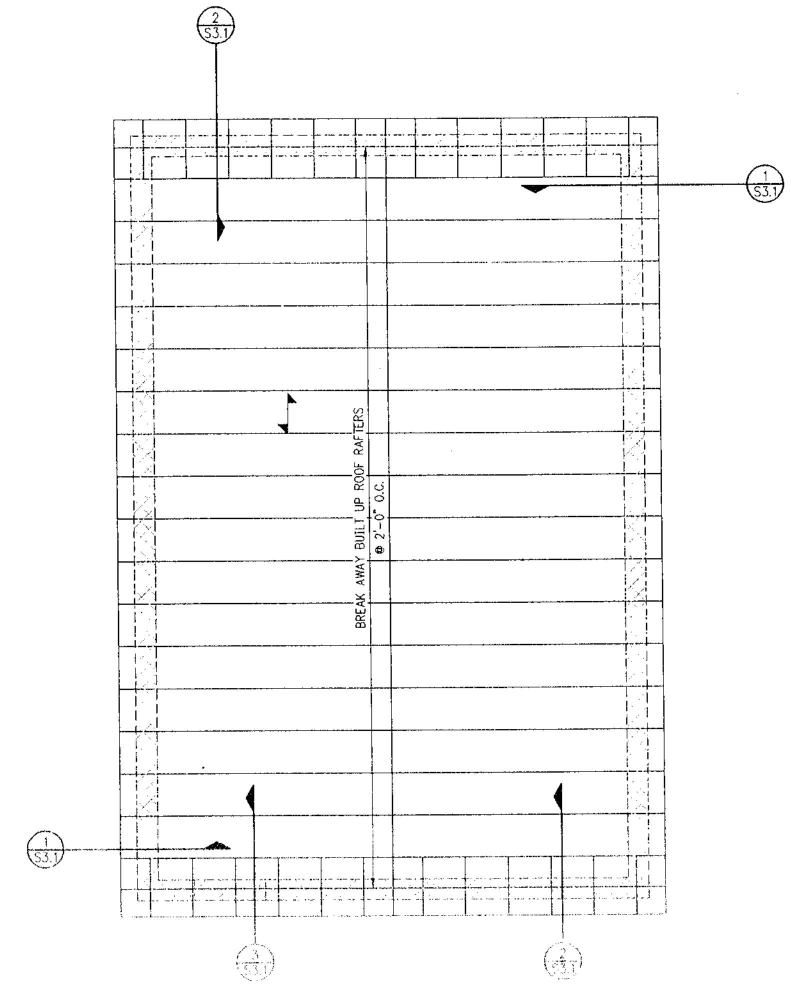


6" COMPOSITE DECK
1.5 VLI DECK w/4.5" CONCRETE (6" TOTAL)
REINFORCE WITH 6x6xW2.9xW2.9 WWF

DECK FASTENING SHALL BE AS FOLLOWS: ATTACH TO SUPPORTING MEMBER USING #12 TEK SCREWS IN A 36/4 PATTERN.
SIDE LAP SEAMS TO BE FASTENED WITH #12 TEK SCREWS AT 12" O.C.
PERIMETER SUPPORTS TO BE FASTENED TO STRUCTURE WITH #12 TEK SCREWS @ 12"O.C. ALONG THE FULL LENGTH OF PANEL AND AROUND PERIMETER OF OPENINGS UNLESS NOTED OTHERWISE.

B / S1.1 CONC LID FRAMING PLAN

1/4"=1'-0"



NOTE:
1. METAL DECK SPANS PERPENDICULAR TO SUPPORTS
2. COORDINATE MECHANICAL OPENING SUPPORT WITH ARCHITECT/JOISTS SUPPLIER
3. JOIST SUPPLIER SPECIFY ADDITIONAL BRACING/BRIDGING.
4. JOISTS MANUFACTURE SHALL DESIGN JOISTS FOR UPLIFT, SEE COMPONENT AND CLADDING S001.
5. DO NOT BEGIN DEMOLITION OR EXCAVATION WORK UNTIL EXISTING STRUCTURE HAS BEEN ADEQUATELY SHORED TO SUPPORT EVERY LEVEL. SHORING SHALL REMAIN IN PLACE UNTIL ALL NEW STRUCTURAL ELEMENTS SHOWN HAVE BEEN INSTALLED. REFER TO "EXISTING CONSTRUCTION" NOTES ON S0.0 FOR ADDITIONAL REQUIREMENTS.

LEGEND:

H? – MASONRY HEADER, SEE 3/S2.2
WCJ – MASONRY WALL CONTROL JOINT, SEE 7/S2.1
– DECK SPAN DIRECTION

C / S1.1 ROOF FRAMING PLAN

1/4"=1'-0"

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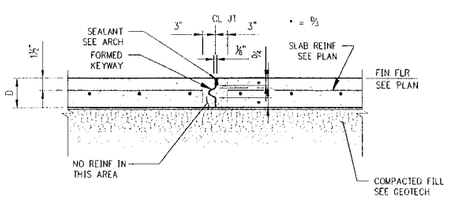
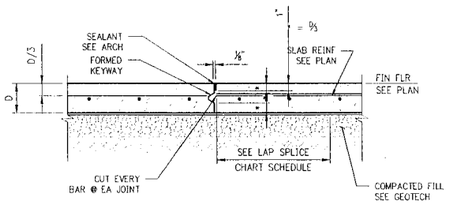
Sheet Title: Foundation & Framing Plans

Date:

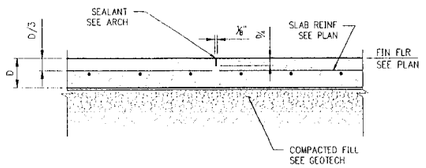
Sheet Number: S1.1



EXPANSION JOINT



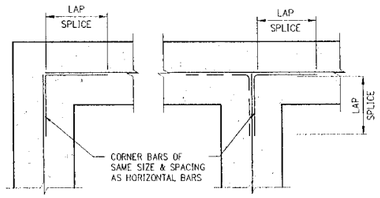
CONSTRUCTION JOINT



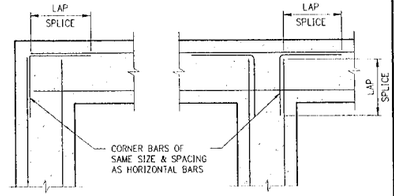
NOTES:
1. SEE FOUNDATION PLAN(S) FOR SLAB THICKNESS AND REINF.
2. CUT EVERY BAR @ EA JOINT.
3. THE SAWCUTTING SHALL BE DONE WITHIN 8 HOURS OF PLACEMENT OR AS SOON AS THE CONCRETE HAS SUFFICIENTLY CURED TO PERMIT CUTTING WITHOUT CHIPPING, SPALLING OR TEARING.

SAWCUT CONTROL JOINT

1 S2.1 DETAIL–TYP SLAB JOINTS
NTS



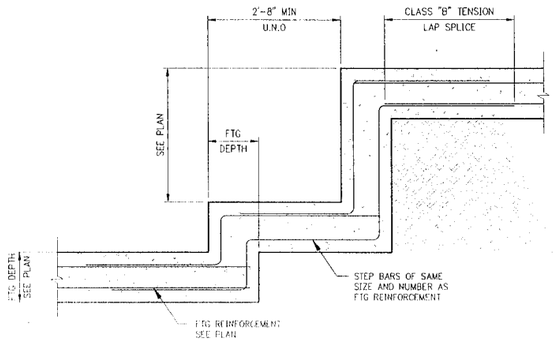
SINGLE LAYER REINFORCEMENT



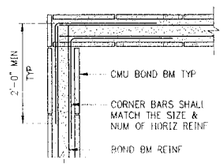
DOUBLE LAYER REINFORCEMENT

NOTE:
ALL LAP SPLICES CLASS "B" TENSION

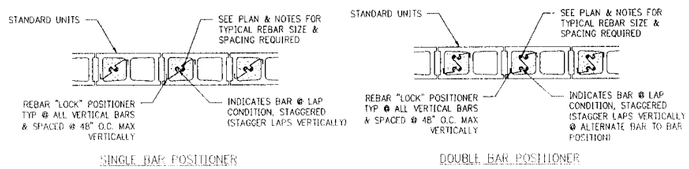
2 S2.1 DETAIL – REINFORCING AT CORNERS & INTERSECTIONS
NTS



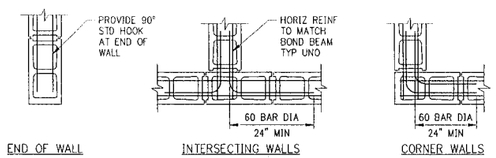
3 S2.1 DETAIL–STEPPED FOOTING



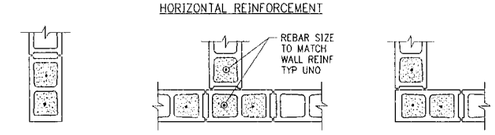
4 S2.1 DETAIL–TYP BOND BM CORNER REINF



5 S2.1 DETAIL–TYP MASONRY WALL REINFORCEMENT POSITIONERS



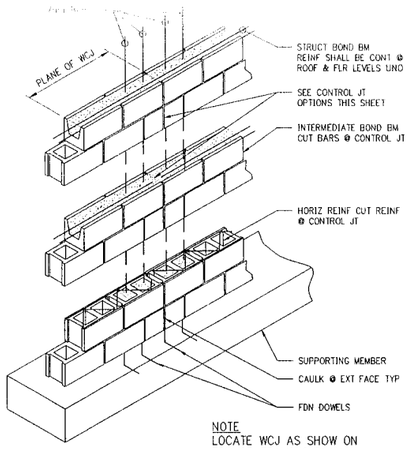
HORIZONTAL REINFORCEMENT



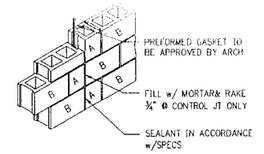
VERTICAL REINFORCEMENT

NOTES
1. REINFORCEMENT SHOWN IS IN ADDITION TO MINIMUM WALL REINFORCEMENT SHOWN IN FOUNDATION DETAILS.
2. REINFORCING TO BE CONTINUOUS FROM FOOTING TO TOP OF WALL. FILL CORES SOLID WITH GROUT AS NOTED IN THE SPECIFICATIONS OR GENERAL NOTES.

6 S2.1 DETAIL–TYP CMU WALL INTERSECTIONS
NTS



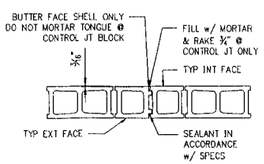
NOTE
LOCATE WCJ AS SHOW ON FDN OR FRAMING PLAN
MAX 24'-0" SPACING UNO



LEGEND
A = 8" CMU LENGTH
B = 16" CMU LENGTH

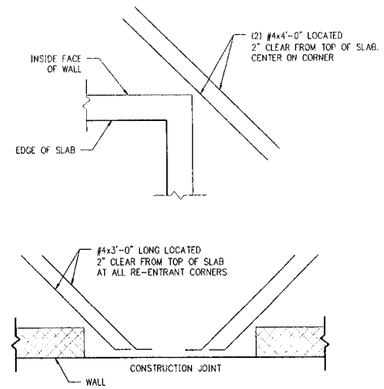
NOTE
USE CMU LENGTHS ABOVE @ INTERIOR PARTITIONS WHEN THEY WORK w/ BLDG DIMENSIONS

TYP WALL CONTROL JOINT–OPTION 1
2–HOUR



TYP WALL CONTROL JOINT–OPTION 2
4–HOUR

7 S2.1 DETAIL–TYP CMU WALL CONTROL JOINT (WCJ)
3/4"=1'-0"



8 S2.1 DETAIL–TYP RE–ENTRANT CORNER REINF
NTS

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Typical Details

Date:
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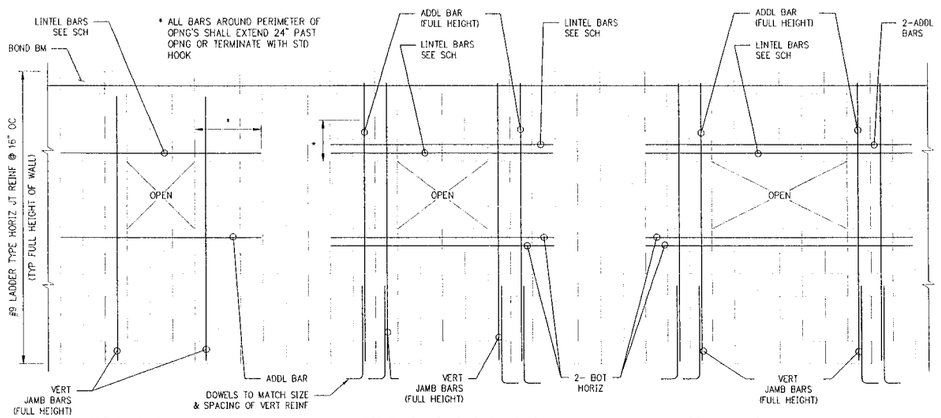
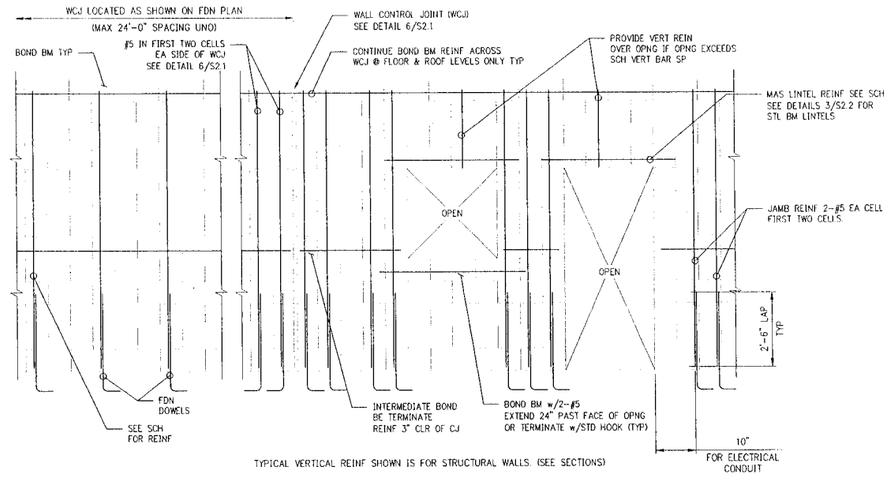


OPENINGS UP TO 3'-0"
FOR OPNGS UP TO 3'-0" OR LESS IN EITHER DIRECTION IN STRUCT PARTITIONS OR EXT WALLS

OPENINGS > 3'-0" BUT < 8'-0"
FOR OPNGS WHICH EXCEED 3'-0" BUT NOT MORE THAN 8'-0" IN EITHER DIRECTION THE ADDL VERT BARS SHALL BE FULL-HEIGHT & DOWELED TO FDN

OPENINGS > 8'-0"
FOR OPNG WHICH EXCEED 8'-0" IN EITHER DIRECTION THE ADDL VERT BARS SHALL BE FULL HEIGHT & DOWELED TO FDN

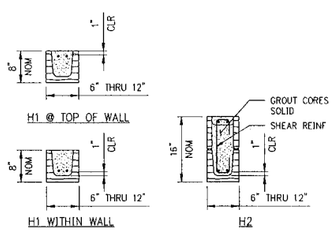
1/S2.2 DETAIL-TYP ADDL REINF AROUND WALL OPNGS
NTS



TYPICAL VERTICAL REINF SHOWN IS FOR STRUCTURAL WALLS. (SEE SECTIONS)

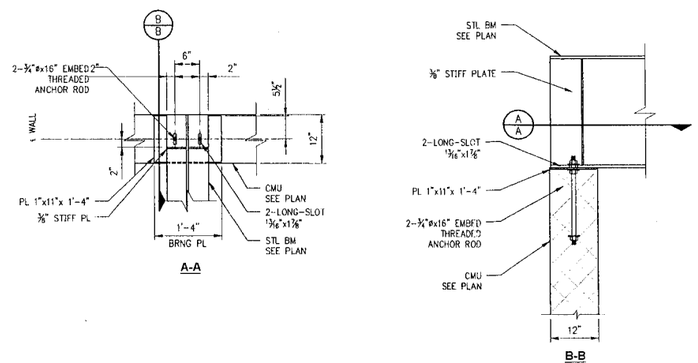
2/S2.2 DETAIL-TYP BOND BM, CONTROL JT & WALL REINF
NTS

HEADER SCHEDULE				
MARK	WALL	REINFORCEMENT	SHEAR REINFORCEMENT	REMARKS
H1	8"	2-#5 CONT	N/A	-
	12"	2-#5 CONT	-	-
H2	8"	2-#5 CONT T&B	-	-
	12"	2-#5 CONT T&B	-	-



NOTE
1. SEE STRUCT DWGS FOR GENERAL LOCATION OF HEADERS - SEE ARCH FOR SPECIFIC LOCATION & CLEAR SPAN.
2. LINTELS SHALL SPAN CONT BTWN BRNGS EACH SIDE.
3. PROVIDE 8"(MIN) BRNG FOR CLEAR SPAN 8'-0" OR LESS, 16"(MIN) BRNG FOR CLEAR SPAN GREATER THAN 8'-0".
4. EXTEND BOT REINF TO END OF BRNG EACH SIDE - EXTEND TOP REINF WHERE POSSIBLE - BASIC DEVELOPMENT LENGTH - TERMINATE TOP REINF w/STD HOOK AT CONTROL JTS OR FREE EDGES.
5. PROVIDE SOLID GROUTED OF SOLID MAS JAMB UNDER LINTEL EA SIDE OF OPNG FOR CLEAR SPAN GREATER THAN 6'-0".

3/S2.2 DETAIL-MASONRY LINTELS
3/4"=1'-0"



4/S2.2 EXTERIOR CORRIDOR BEARING PLATE
3/4" = 1'-0"

HUGHES ARCHITECTURAL DESIGNS
1202 N STATE LINE AVE
SUITE #102
TEXARKANA, AR 71854
501-827-2448
michaelhughes722477@gmail.com

New Storm Shelter Facility for:
Arkansas Christian Academy
Bryant, Arkansas

Revisions:

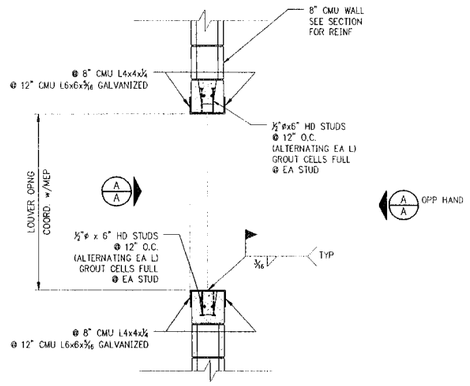
Professional stamp:
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No.10449
PATRICK M. PLOURDE
DATE SIGNED: 12-04-2023
FOR 3rd PARTY REVIEW
NOT FOR CONSTRUCTION

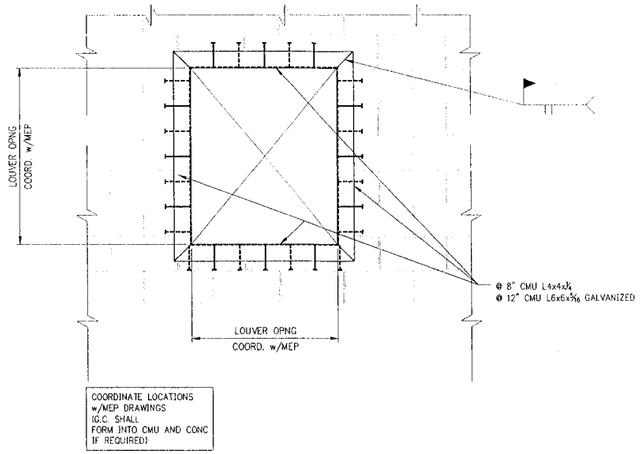
Sheet Title:
Typical Details

Date:

Sheet Number:
S2.2

CERTIFICATE OF AUTHORIZATION
LIVE OAK ENGINEERING, INC. No. 1872
ARKANSAS ENGINEER
LIVE OAK ENGINEERING
2509 7TH AVENUE SOUTH
BIRMINGHAM, AL 35233
205.637.3115
LOE# 258-1

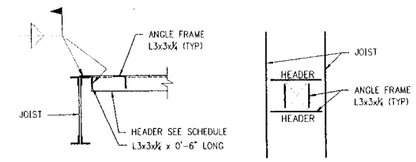




COORDINATE LOCATIONS
w/MEP DRAWINGS
G.C. SHALL
FORM INTO CMU AND CONC
IF REQUIRED

1 S2.3 DETAIL-OPNG IN MASONRY TORNADO SHELTER WALL
NTS

HEADER SCHEDULE	
JOIST SPACING	SIZE
UP TO 4'-6"	L2½x2½x¼
4'-6" TO 6'-6"	L3½x3x¼-LLV
6'-7" TO 8'-0"	L4x3x5/16-LLV



SECTION **PLAN**

NOTES
VERIFY EXACT NUMBER, SIZE & LOCATION OF OPENINGS W/ ARCHITECTURAL & MECHANICAL.

STEEL JOIST FRAMING

2 S2.3 DETAIL-TYPICAL OPENING THRU ROOF DECK
3/4" = 1'-0"

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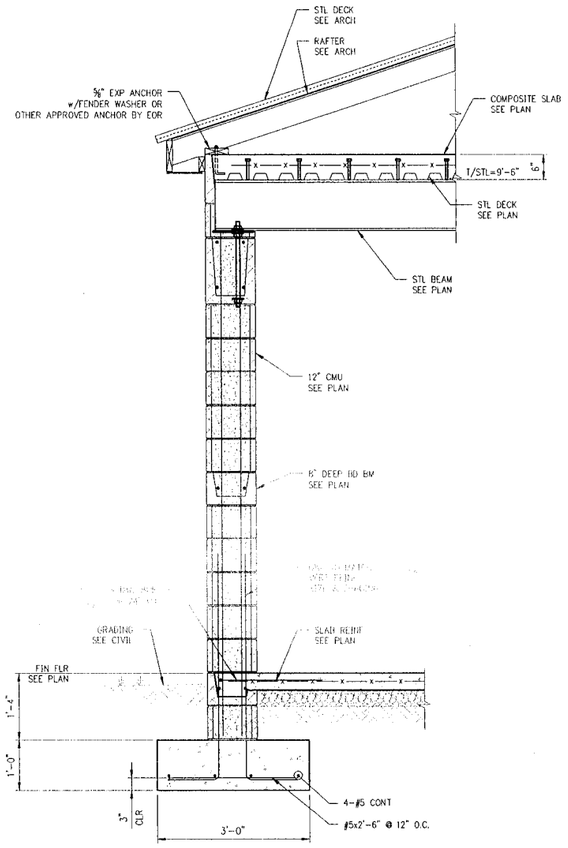
Sheet Title: Typical Details

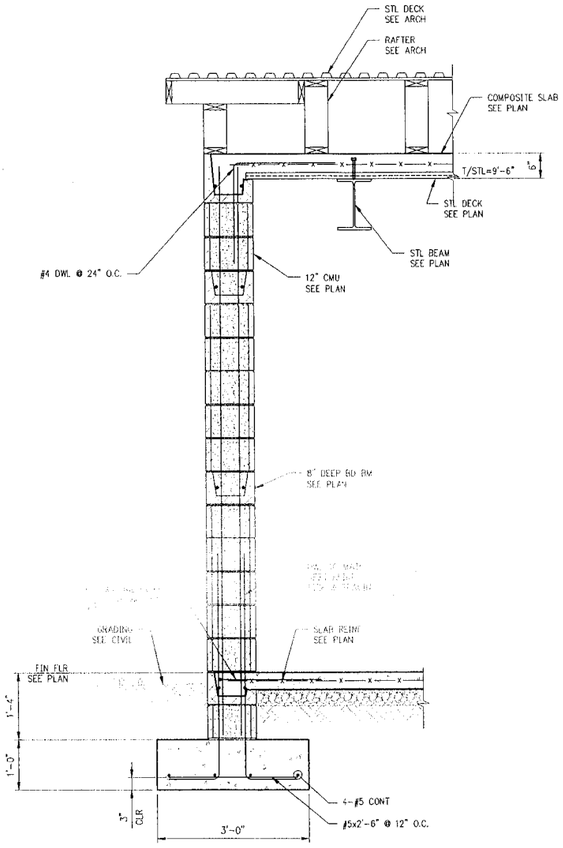
Date:

Sheet Number: **S2.3**

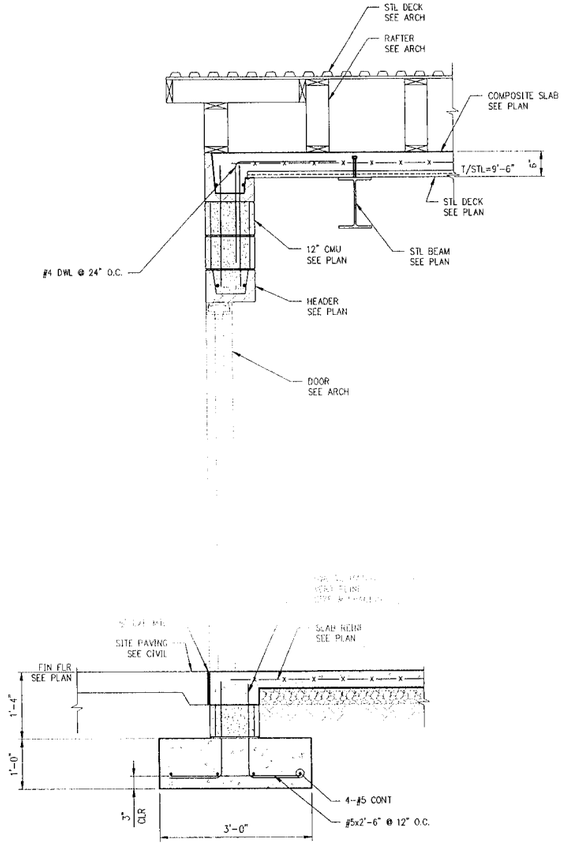
CERTIFICATE OF AUTHORIZATION
LIVE OAK ENGINEERING, INC. No. 1672
ARKANSAS ENGINEER
LIVE OAK ENGINEERING
2509 7TH AVENUE SOUTH
BIRMINGHAM, AL 35233
205.837.3115
LOE# 258-1



1 S3.1 SECTION
3/4"=1'-0"



2 S3.1 SECTION
3/4"=1'-0"



3 S3.1 SECTION
3/4"=1'-0"

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Sheet Title:
Framing Sections

Date:

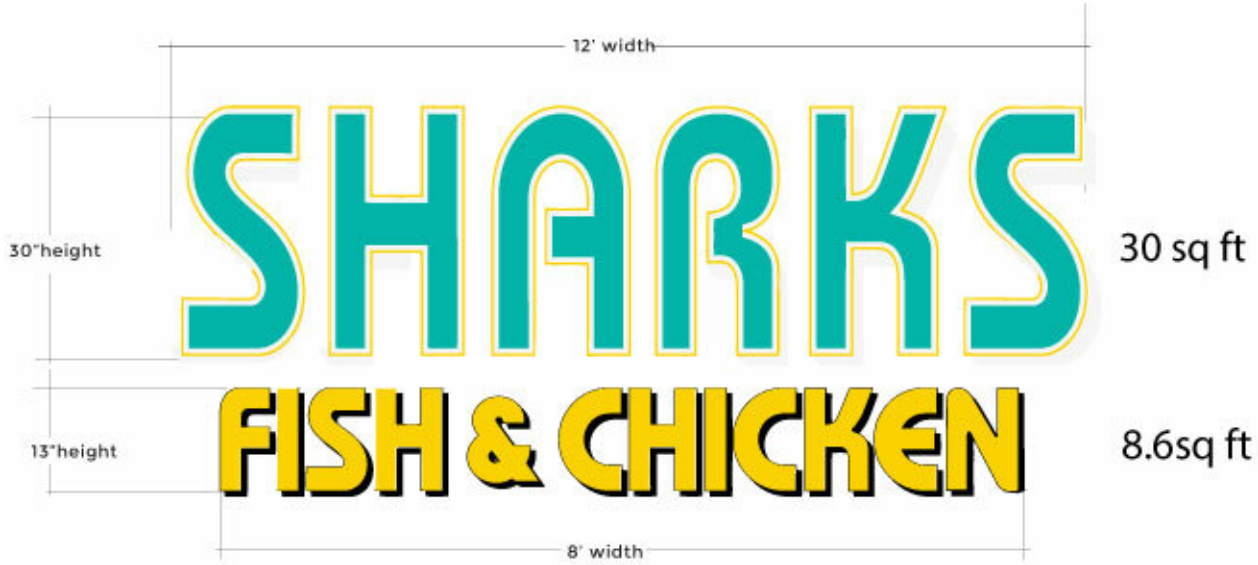
Sheet Number:
S3.1

CERTIFICATE OF AUTHORIZATION
LIVE OAK ENGINEERING, INC. No. 1672
ARKANSAS ENGINEER

LIVE OAK
ENGINEERING
2509 7TH AVENUE SOUTH
BIRMINGHAM, AL 35233
205.637.3115
LOE# 258-1

PROJECT INFO: sharks		RENDERING: channel letters	
PROJECT MANAGER Mike V	SITE ADDRESS 5309-5313 Highway 5 N bryant AR		
CONTACT PERSON		DESIGNER M, Vazquez	DATE: 12 / 14 / 2023

AERO SIGNS
3308 pike ave
N. Little Rock, AR 72118
501.246.4952



SPECIFICATION & MATERIALS

ahannel letters led lit:

- Color Painted First Surface
- .040" Alum. Returns And
- .060" acyrlic Faces

DETAIL DESCRIPTION

38.6 SQ ft

- white L.E.D. Illumination
- 120v Mod-60 Power Supplies
- Aluinmuin Frame

Side view