Bryant Planning Commission Meeting

Boswell Municipal Complex - City Hall Court Room

210 SW 3rd Street

YouTube: https://www.youtube.com/c/bryantarkansas

Date: February 12, 2024 - **Time:** 6:00 PM

Call to Order

Approval of Minutes

1. Planning Commission Meeting Minutes 1/11/2024

- 2024-01-11 Planning Commision Minutes.pdf

Announcements

Director's Report

DRC Report

2. 2903 Pikewood Dr - Lot 31A and 31B - Conditional Use Permit

Veer Investment Properties - Requesting Approval of CUPs for a Duplex on each lot - RECOMMENDED APPROVAL, based on completed application.

3. 2714 Lavern - Short Term Rental - Conditional Use Permit

Vanessa Guerra - Requesting Approval of CUP for Short Term Rental - RECOMMENDED APPROVAL, Based on completed application. Contingent upon all public hearing requirements being met.

4. Lot 31 and 32 Replat - Pikewood Subdivision - 2903 Pikewood Drive

Veer Investment Properties - Requesting Approval for Replat - RECOMMENDED APPROVAL, Contingent upon DRC comments being met.

5. AR Storage Center - I-30 Storage - 253000 I-30

Hope Consulting - Requesting Site Plan Approval - RECOMMENDED APPROVAL, Contingent upon remaining comments being addressed.

6. Summerwood Sports Complex Gym 3 - Revised Plans - HWY 5 and Brynat Parkway

Phillip Lewis Engineering - Requesting Approval for Revised Site Plan - APPROVED - Contingent upon remaining engineering comments being addressed.

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

7. Elrod Law Firm - 400 N Reynolds Road - Sign Permit

Ace Sign Company - Requesting Sign Permit Approval - APPROVED

- 0833-APP-01.pdf

8. Sharks - 5309 Hwy 5 - Sign Permit

Aero Signs - Requesting Sign Permit Approval - STAFF APPROVED

- 0822-APP-02.jpg

9. Sandy's Nails and Spa - 3411 Main Street Ste 4 - Sign Permit

Requesting Sign Permit Approval - STAFF APPROVED

- 0834-APP-01.pdf

10. Boutiques and Suites - 107 Progress Way - Sign Permit

L. Graphics - Requesting Sign Permit Approval - STAFF APPROVED

- 0835-APP-01.pdf

Public Hearing

11. 2714 Lavern - Short Term Rental - Conditional Use Permit

Vanessa Guerra - Requesting Approval of CUP for Short Term Rental

- 0820-HTC-01.pdf
- 0820-LTR-01.pdf
- 0820-APP-01.pdf

12. 3903 Pikewood Drive - Lot 31A - Conditional Use Permit

Veer Investment Properties - Requesting Approval of CUP for Duplex

- 0828-PUB-01.pdf
- 0828-APP-01.pdf

13. 3903 Pikewood Drive - Lot 31B - Conditional Use Permit

Veer Investment Properties - Requesting Approval of CUP for Duplex

- 0829-PUB-01.pdf
- 0829-APP-01.pdf

Old Business

New Business

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

Veer Investment Properties - Requesting Approval for Replat

- 0827-RPLT-03.pdf
- 0827-PLT-02.pdf

15. AR Storage Center - I-30 Storage - 253000 I-30

Hope Consulting - Requesting Site Plan and Commercial Plat Approval

- 0768-PLN-05.pdf
- 0768-PLT-02.pdf
- 0768-DRN-04.pdf

Adjournments

Bryant Planning Commission Meeting Minutes

Monday, January 11, 2024
Boswell Municipal Complex – City Hall Courtroom
6:00 PM

Agenda

CALL TO ORDER

- Chairman Lance Penfield calls the meeting to order.
- Commissioners Present: Statton, Burgess, Johnson, Penfield, Hooten, Edwards, Erwin, Speed
- Commissioners Absent: None

ANNOUNCEMENTS

None

APPROVAL OF MINUTES

1. **Planning Commission Meeting Minutes 12/11/2023**

   Motion to Approve Minutes made by Commissioner Statton, Seconded by Commissioner Edwards. Voice Vote, 8 Yays, 0 nays. 0 Absent.

Vice-Chairman Hooten read the DRC Report.

DRC REPORT

2. **Five Star Fireworks - Temporary Business Permit**
   Mark Bradford - Requesting Approval for Temporary Business Permits for Firework stands at: (1) 23395 I-30, (2) 5407 HWY 5 APPROVED

3. **The Corner Office - 207 Progress Way -** Sign Permit
   L Graphics - Requesting Approval for Sign Permit - STAFF APPROVED

4. **Nail Studio - 5309 Hwy 5, STE 130**- Sign Permit
   Aero Signs - Requesting Sign Permit Approval - STAFF APPROVED

OLD BUSINESS

5. **Changes to Floodplain Ordinance 2020-04**

   Daran Robertson - Requesting Recommendation on Changes to Existing Floodplain Ordinance

   Darren Robertson explained the reasoning behind the request to change the ordinance. After discussion, the Commission recommended that some of the changes be revised to allow for a variance in specific situations for the purpose of allowing roadway or access. Roll call vote to recommend the ordinance changes to City Council contingent upon the revisions being added. 8 yays, 0 nays, 0 absent.

NEW BUSINESS

6. **Lombard Heights Ph. 2** - Changing of Street Name

   Requesting Approval for Changing of Street Name from Midway Dr. to Midway Ave. Letter of map revision requested.

   After brief discussion on the item, Chairman Penfield Called for a roll call vote to approve. 8 yays, 0 nays, 0 Absent.

DIRECTOR'S REPORT

Truett Smith let the Commission know about a google calendar created that lists all of the Planning Commission and DRC meeting dates. He told the commissioners that if they were interested in having it shared with them to let him know.

ADJOURNMENT

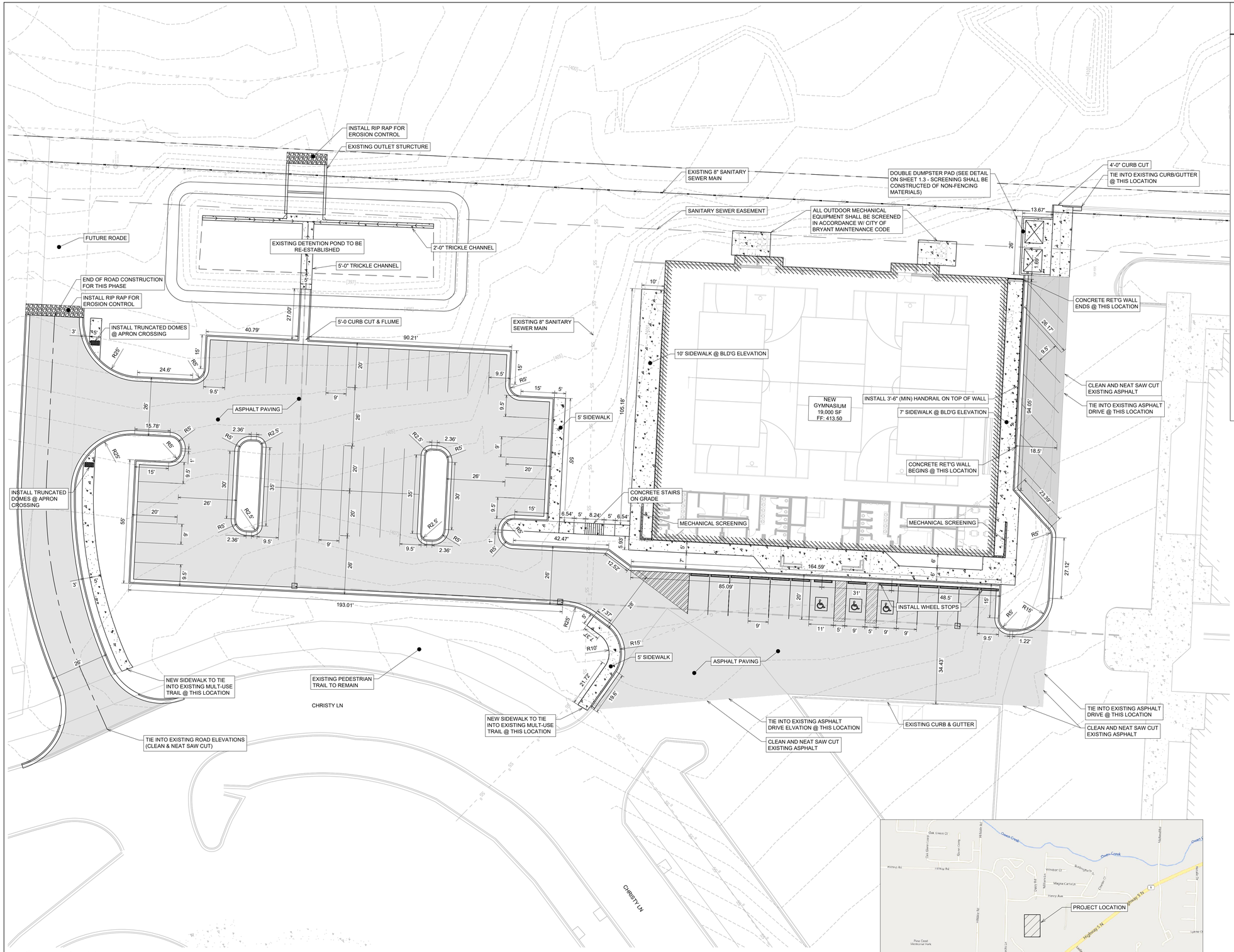
Motion to Adjourn made by Commissioner Statton, Seconded by Commissioner Burgess. Voice Vote, 8 Yays, 0 nays. 0 Absent. Meeting was adjourned.

_____ _____

Chairman, Lance Penfield *Date*

_____ _____

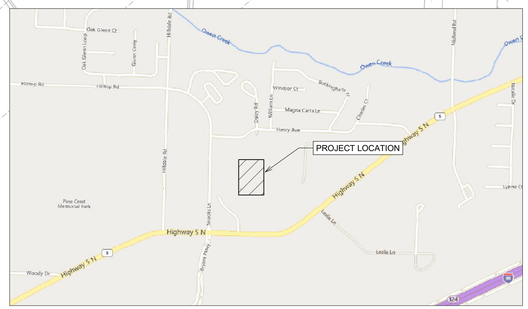
Secretary, Tracy Picanco *Date*



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"

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

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.

REVISION:

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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9540
PHILLIP A. LEWIS
PHILLIP LEWIS ENGINEERING, INC.
No. 566
CERTIFICATE OF AUTHORIZATION
ARKANSAS ENGINEER

PROJECT NUMBER:

SHEET ISSUE DATE:
1/10/2024

PAGE TITLE:
SITE PLAN

SHEET NUMBER:
C1.1

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.

GRADING PLAN

SCALE 1" = 20'

G = GUTTER ELEVATION

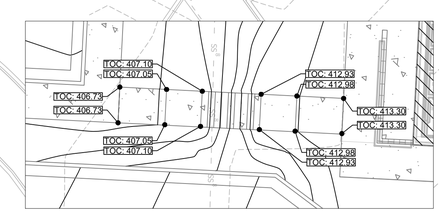
TP = TOP OF PAVEMENT ELEVATION

TOC = TOP OF CONCRETE ELEVATION

FG = FINAL GRADE ELEVATION (NON PAVED AREAS)

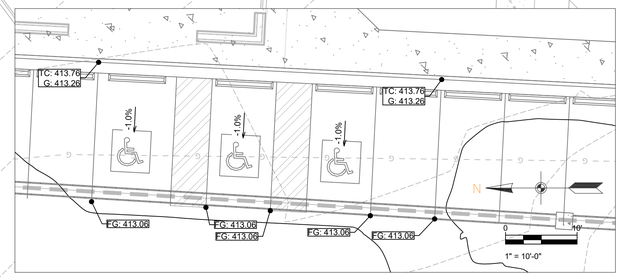
TC = TOP OF CURB ELEVATION

TOW = TOP OF WALL



CONCRETE RAMP/STAIRS

SCALE 1" = 10'



ADA PARKING

SCALE 1" = 10'

N

0 20'

1" = 20'-0"

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 W. LEWIS

PROJECT NUMBER:

SHEET ISSUE DATE: 1/10/2024

PAGE TITLE: GRADING PLAN

SHEET NUMBER: C1.2

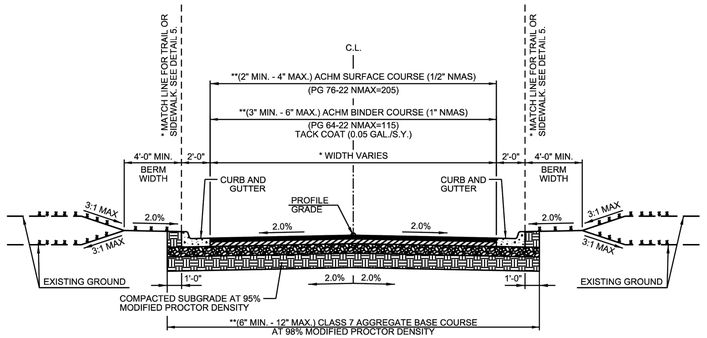
CITY OF BRYANT

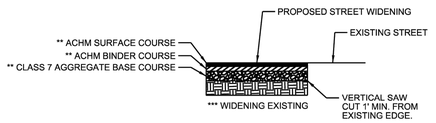
TYPICAL SECTION
MINOR ARTERIAL

ISSUE DATE
AUGUST 2021

DETAIL 1

REVISION DATE





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.

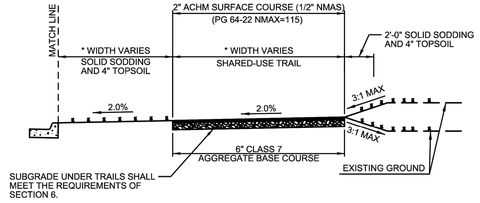
CITY OF BRYANT

TYPICAL SECTION
END CONDITIONS

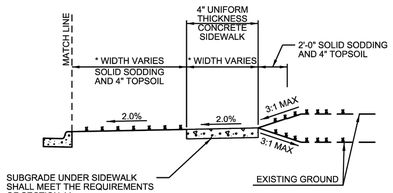
ISSUE DATE
AUGUST 2021

DETAIL 5

REVISION DATE

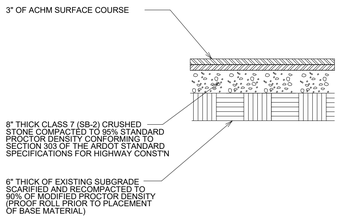


SHARED-USE TRAIL END CONDITION

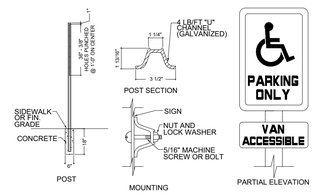


SIDEWALK END CONDITION

* 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.

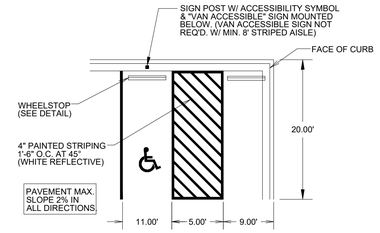


HMAC ASPHALT SURFACE COURSE
MEDIUM DUTY — NOT TO SCALE

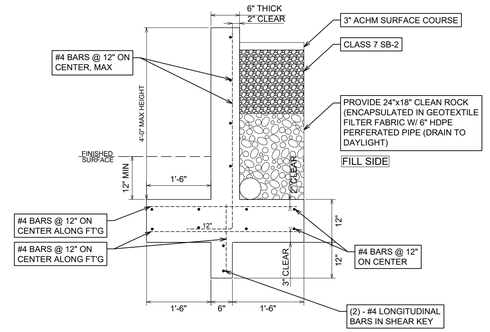


HANDICAP SIGN DETAIL — NOT TO SCALE

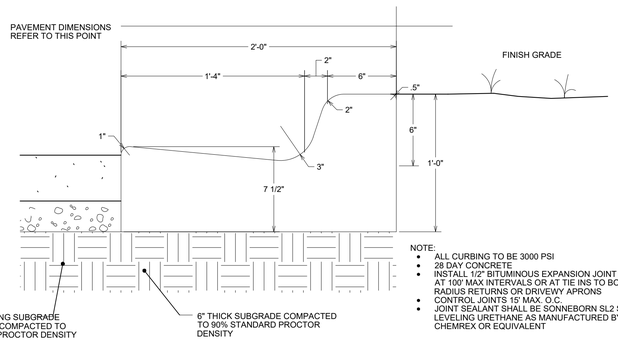
NOTE:
HANDICAP SIGNAGE SHALL BE IN STRICT COMPLIANCE WITH CURRENT FEDERAL AND LOCAL LAW REQUIREMENTS



TYPICAL ACCESSIBLE PARKING STALLS

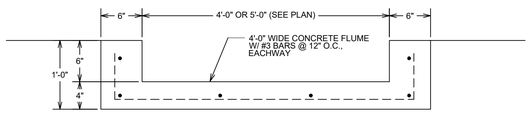


RETAINING WALL — NOT TO SCALE

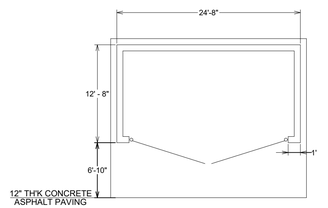


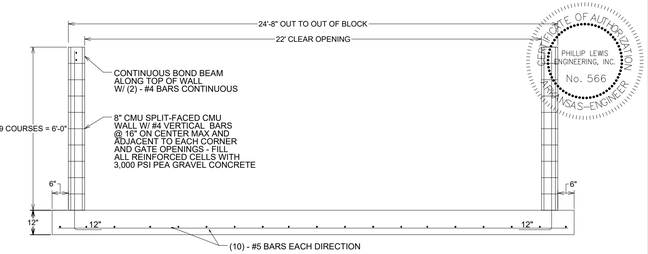
NOTE:
- ALL CURBING TO BE 3000 PSI
- 28 DAY CONCRETE
- INSTALL 1/2" BITUMINOUS EXPANSION JOINT MATERIAL AT 100' MAX INTERVALS OR AT TIE INS TO BOXES, RADIUS RETURNS OR DRIVEWY APRONS
- CONTROL JOINTS 15' MAX. O.C.
- JOINT SEALANT SHALL BE SONNEBORN SL2 SELF LEVELING URETHANE AS MANUFACTURED BY CHEMREX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

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 566
PHILLIP 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

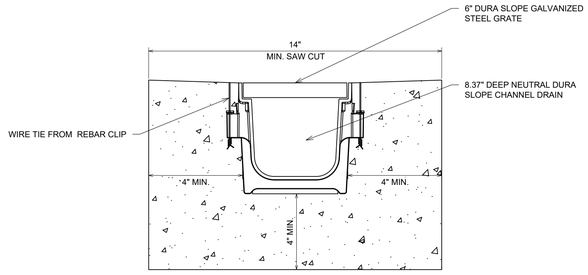
AI-A1
STA: 0+00.00
SUMP: 411.18
INV OUT: 411.18 18" HDPE PIPE

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.

N

0 20'

1" = 20'-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

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

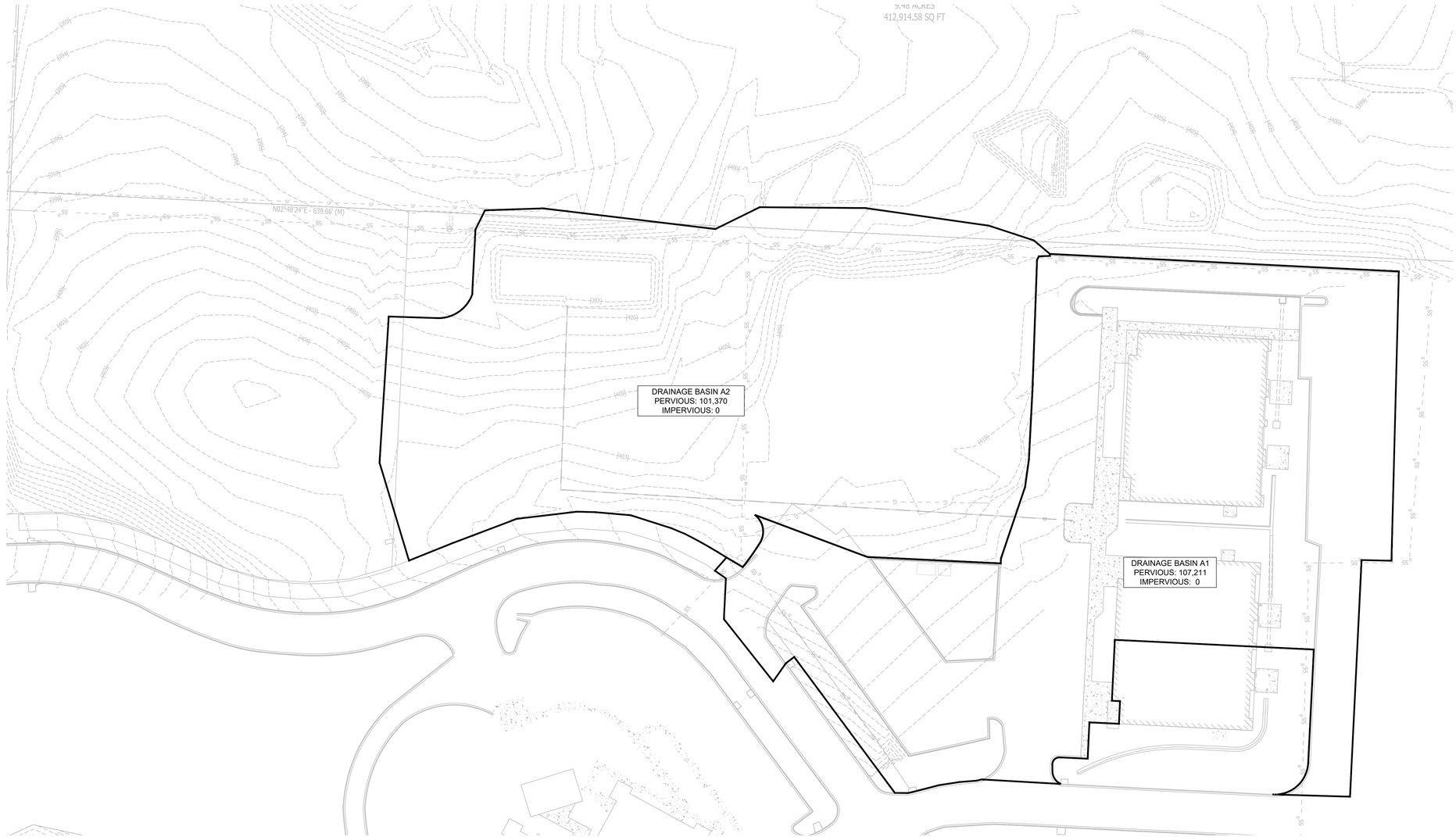
STATE OF ARKANSAS
PHILLIP A. LEWIS
REGISTERED PROFESSIONAL ENGINEER
No. 9540

PROJECT NUMBER:

SHEET ISSUE DATE:
1/10/2024

PAGE TITLE:
STORMWATER PLAN

SHEET NUMBER:
C1.4



PRE-DEV 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:

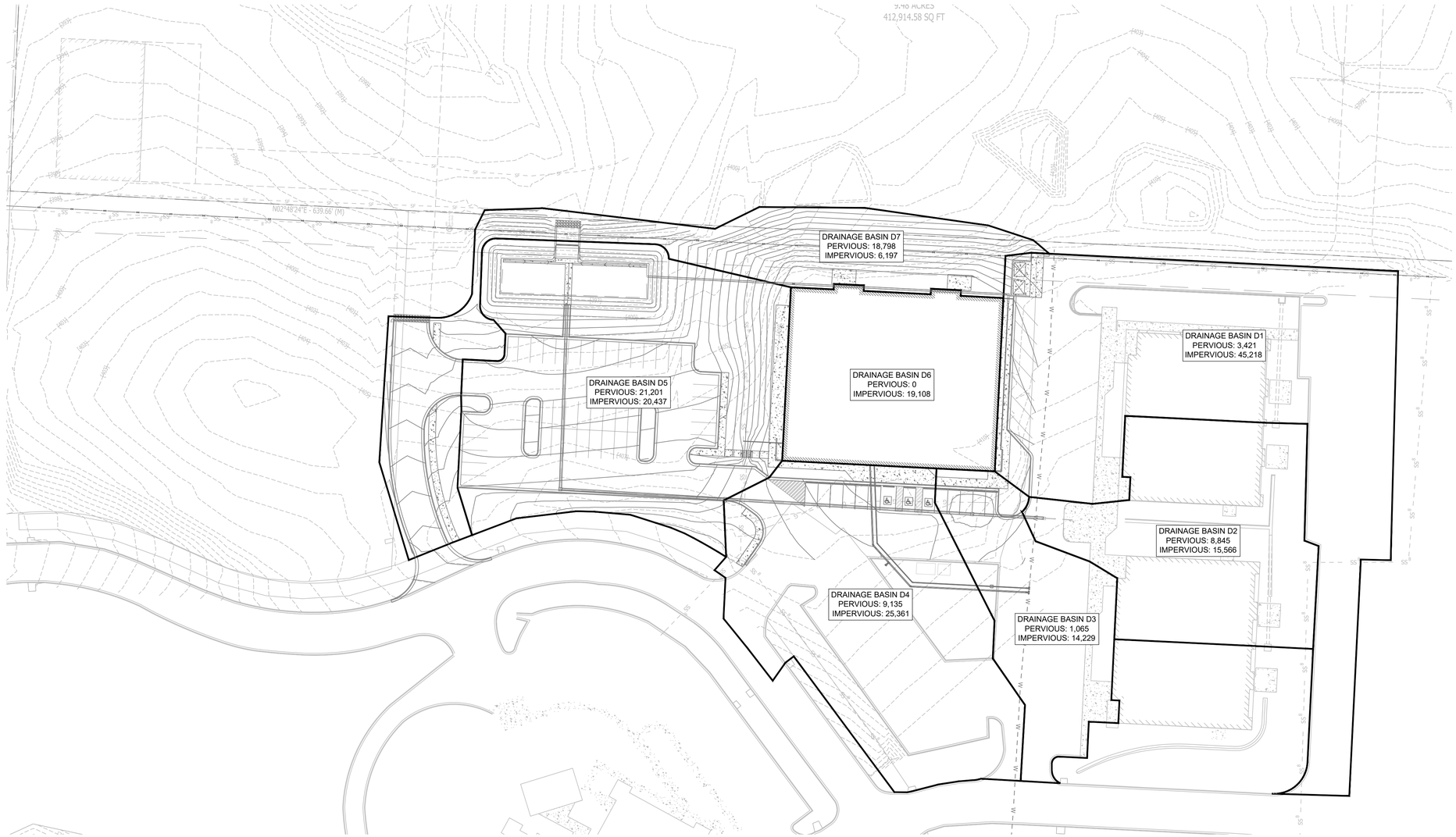
SHEET ISSUE DATE:
1/10/2024

PAGE TITLE:
PRE-DEV DRAINAGE MAP

SHEET NUMBER:
C1.5

N

0 40'
1" = 40'-0"



POST-DEV 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.
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:
POST-DEV DRAINAGE MAP

SHEET NUMBER:
C1.6

N

0 40'
1" = 40'-0"

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.

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.

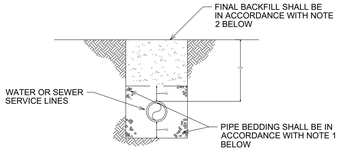
F. CONTRACTOR IS TO REMOVE AND DISPOSE OF ALL DEBRIS, RUBBISH, AND OTHER MATERIALS RESULTING FROM PREVIOUS AND CURRENT DEMOLITION OPERATIONS. DISPOSAL WILL BE IN ACCORDANCE WITH ALL LOCAL, STATE AND/OR FEDERAL REGULATIONS GOVERNING SUCH OPERATIONS.

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.



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"

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

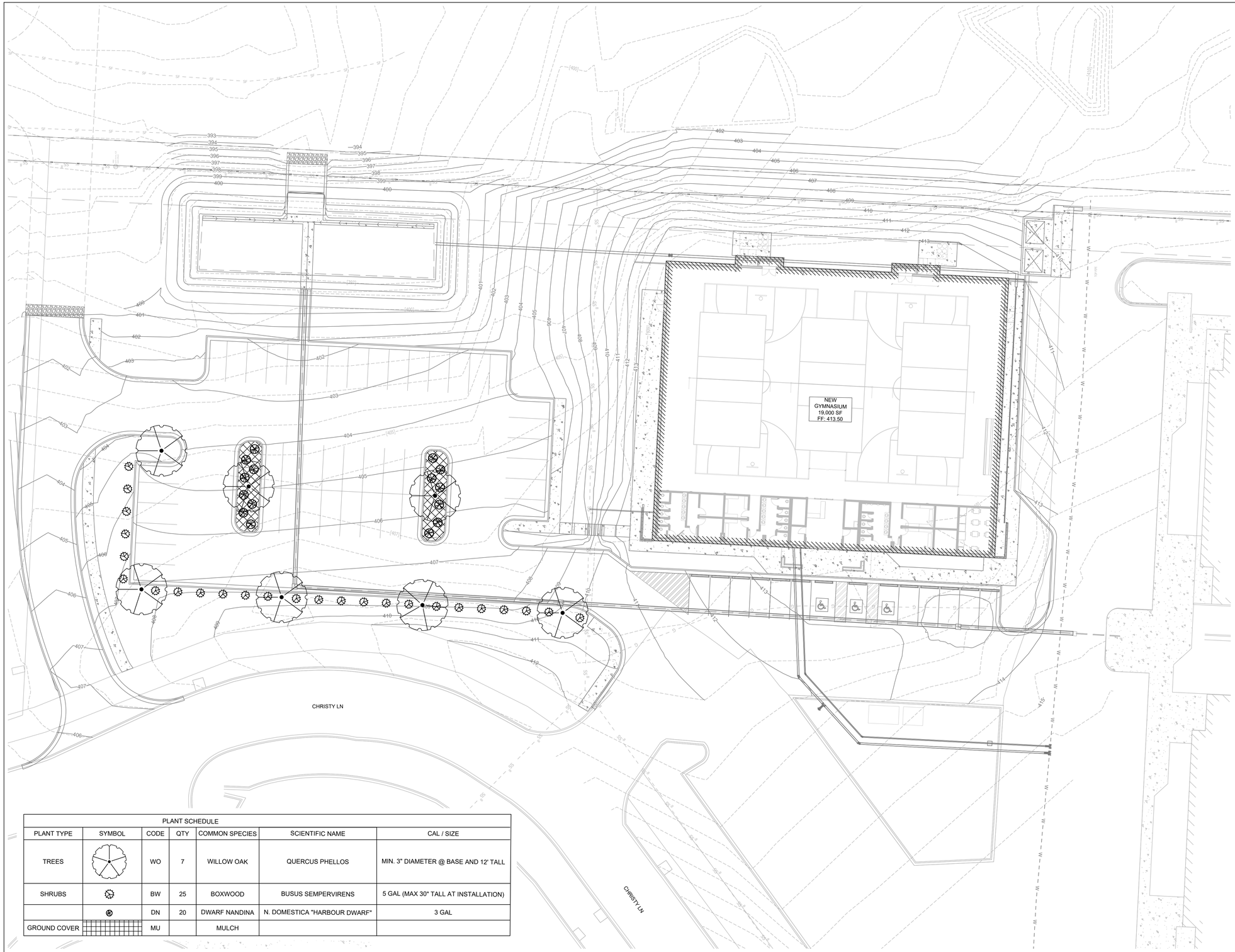
PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT NUMBER:

SHEET ISSUE DATE:
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"

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
PHILLIP A. LEWIS
REGISTERED PROFESSIONAL ENGINEER
No. 9540
PHILLIP A. LEWIS

PROJECT NUMBER:

SHEET ISSUE DATE:
1/10/2024

PAGE TITLE:
LANDSCAPING PLAN

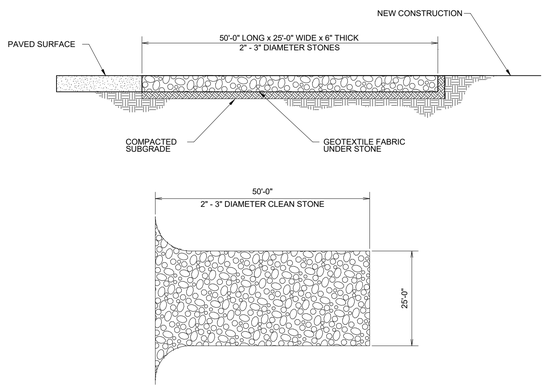
SHEET NUMBER:
C1.8

SWPPP PH. 1

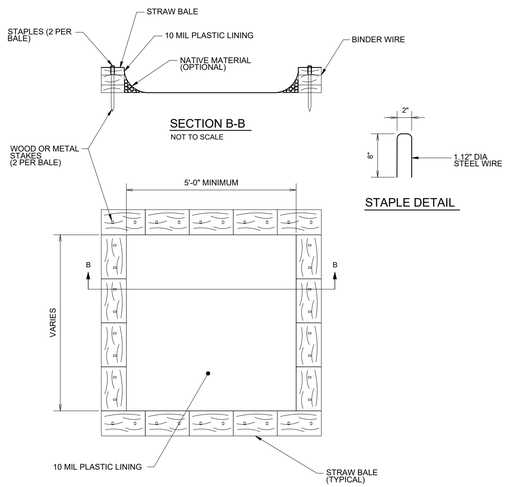
SCALE 1" = 50'

LEGEND

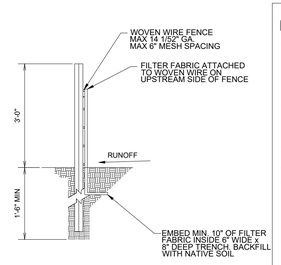
- DISTURBED AREA
- UNDISTURBED AREA
- GRASS SEED
- SEDIMENT FENCE WITH WIRE BACKING
- DRAINAGE DIRECTION



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.

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
REGISTERED PROFESSIONAL ENGINEER
No. 9540
PHILLIP A. LEWIS

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

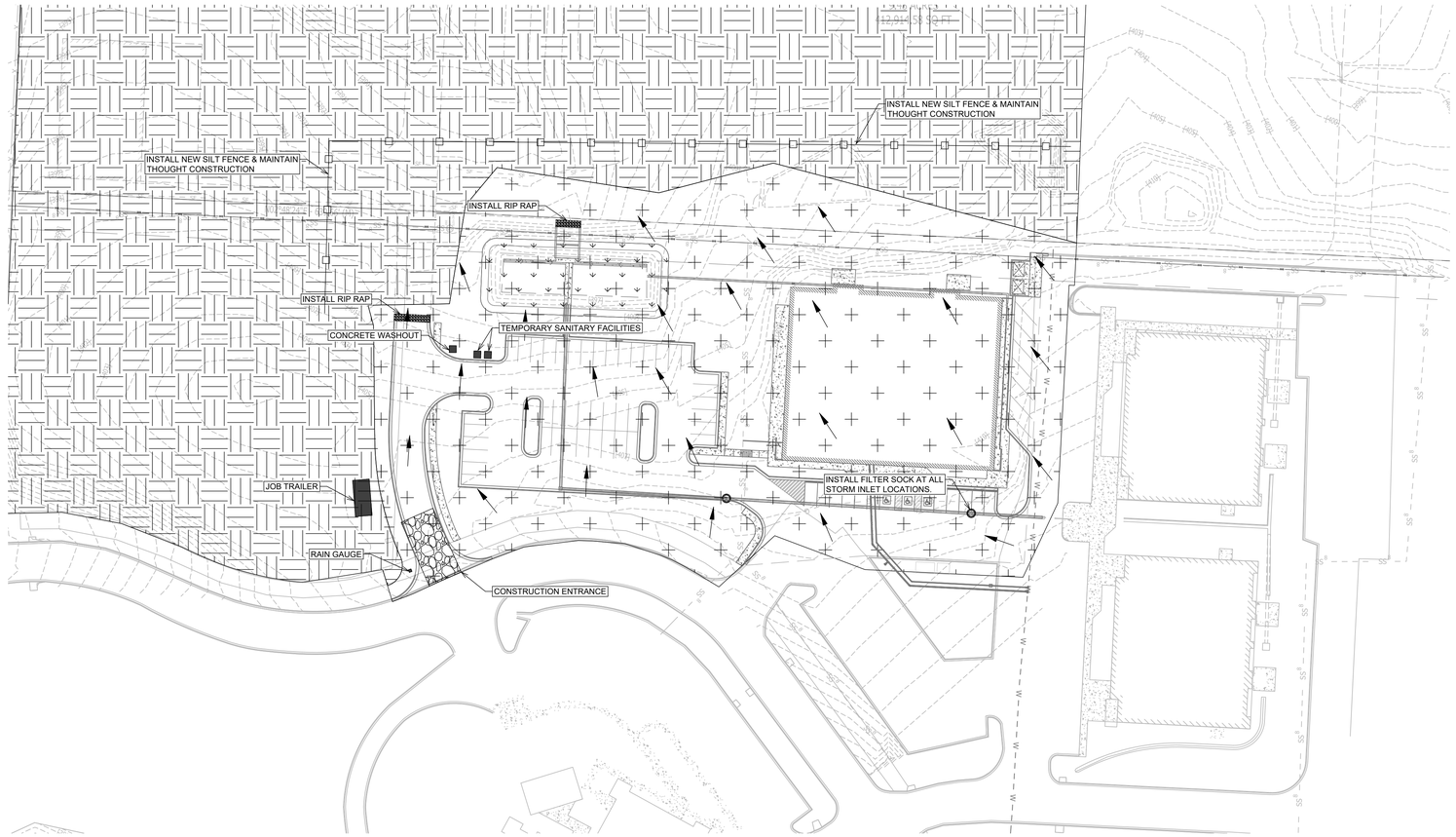
PROJECT NUMBER:

SHEET ISSUE DATE:
1/10/2024

PAGE TITLE:
SWPPP PH. 1

SHEET NUMBER:
C1.9

N
0 50'
1" = 50'-0"



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.
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.

N

0 50'

1" = 50'-0"

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

January 10, 2023

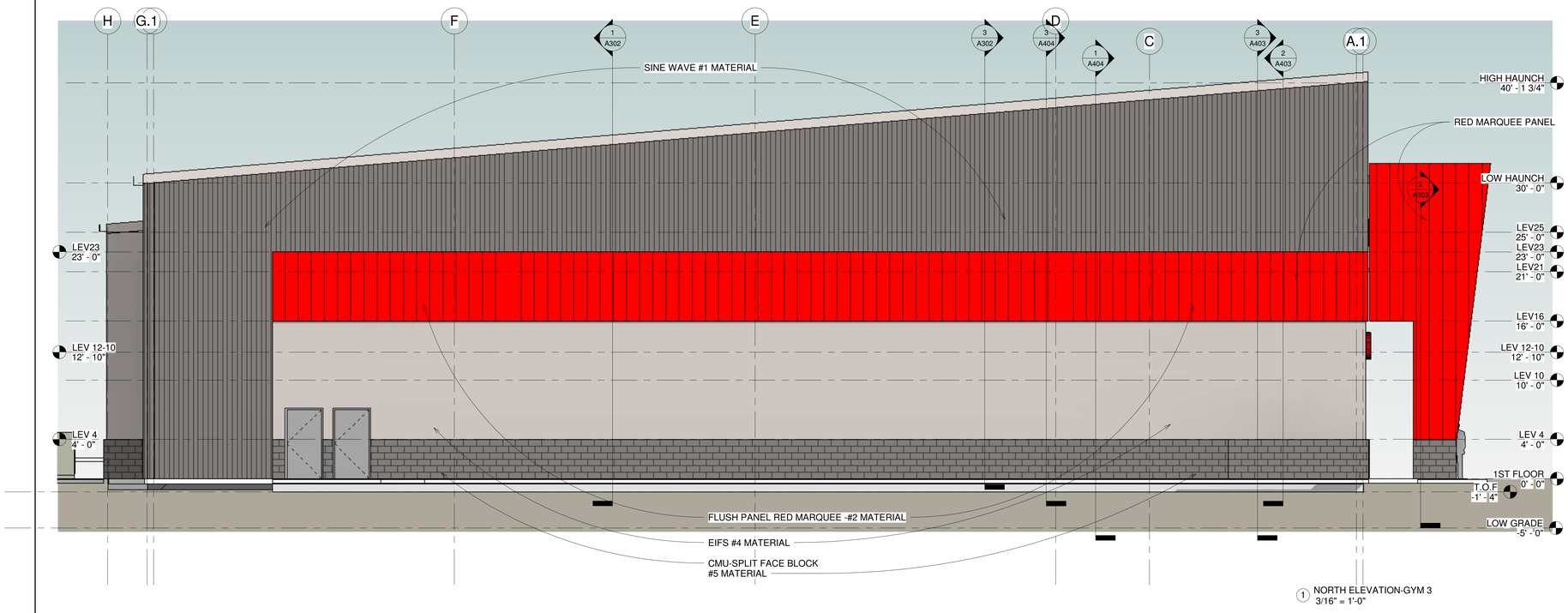
Colton Leonard
City Planner
City of Bryant
210 SW 3rd St.
Bryant, AR 72022

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

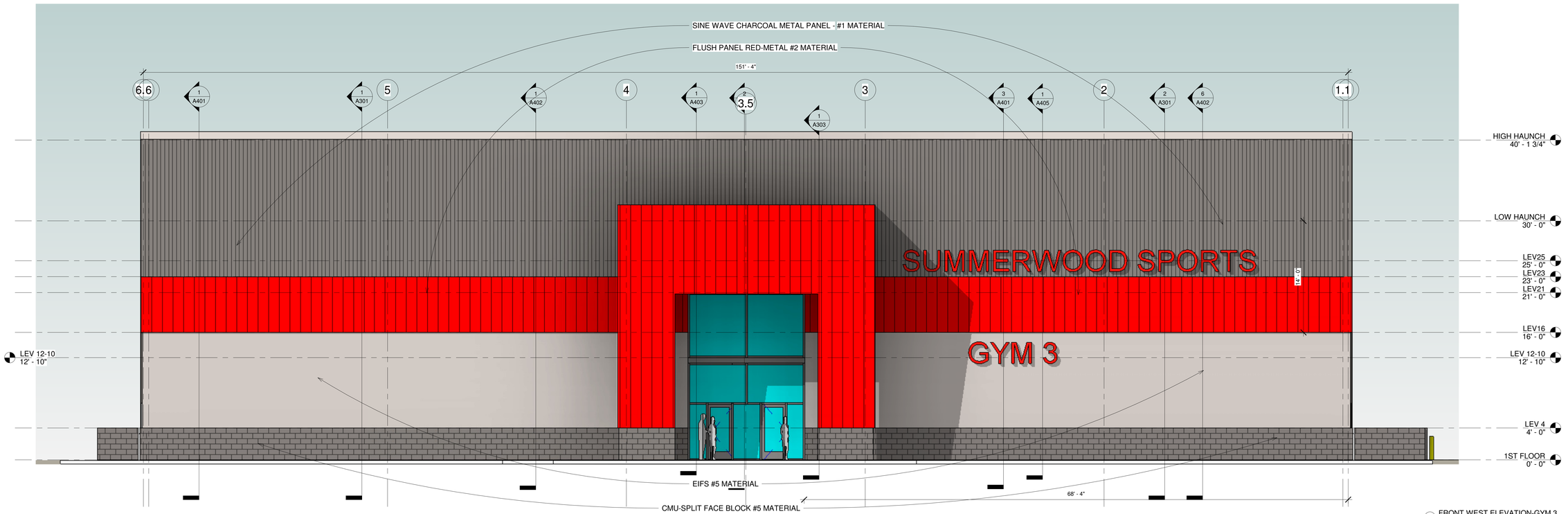
EXTERIOR MATERIALS LISTED FROM TOP OF BUILDING TO FLOOR-ALL METAL SIDING HAS CONCEALED FASTENERS

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

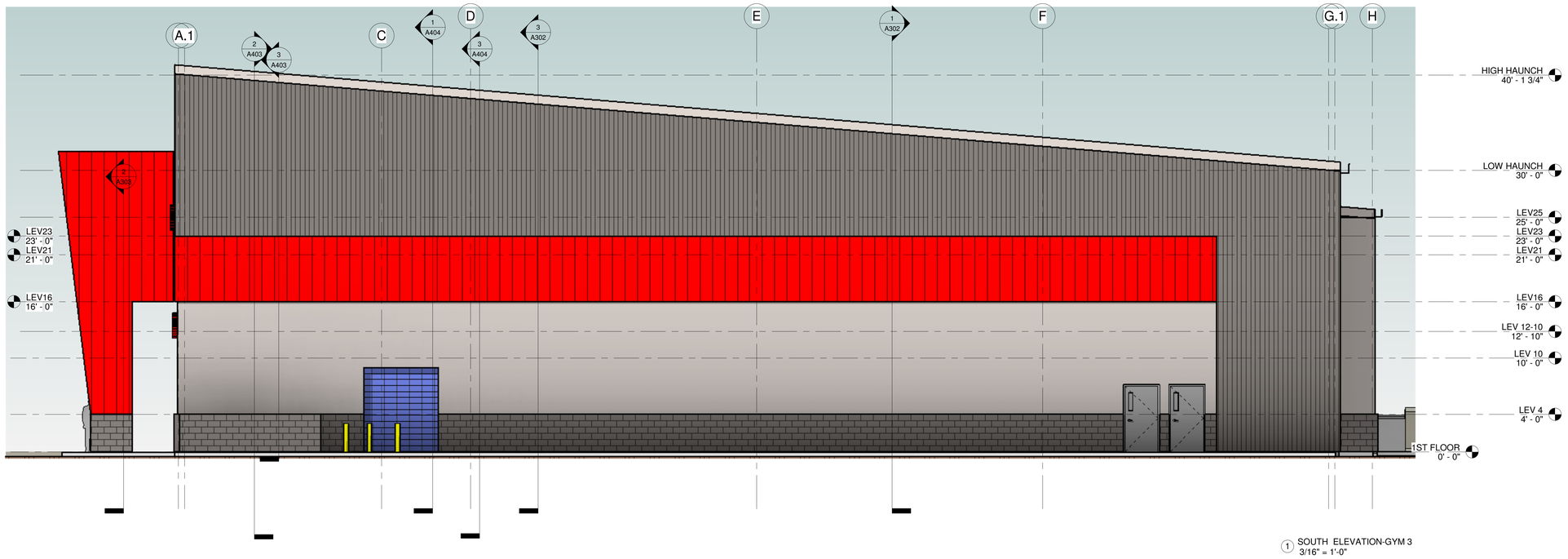
ISSUE DATE: 1/8/2024

REVISIONS

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

ELEVATIONS-GYM 3

A200



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

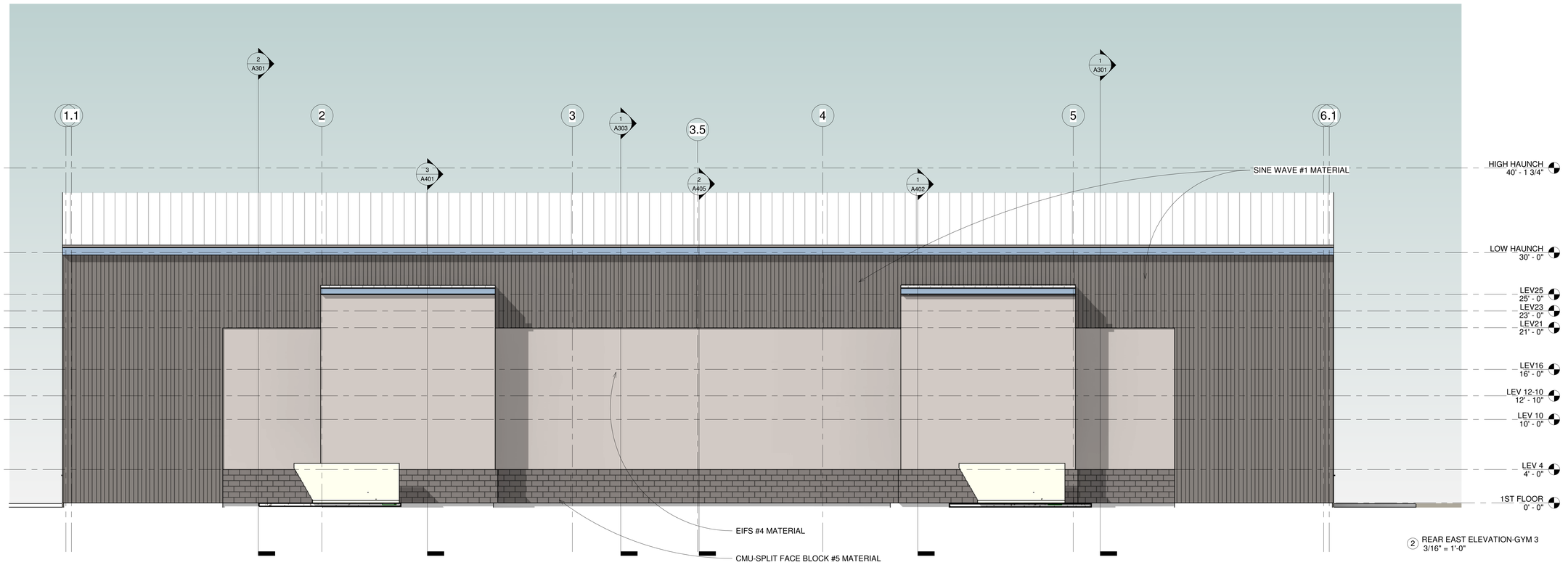
EXTERIOR MATERIALS LISTED FROM TOP OF BUILDING TO FLOOR-ALL METAL SIDING HAS CONCEALED FASTENERS

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

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

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

A201

SUMMERWOOD SPORTS GYM #3

DRAINAGE REPORT

Date: **01-10-2024**

Located in: **Bryant, Arkansas**

Prepared for:
City of Bryant, Arkansas

Prepared by:

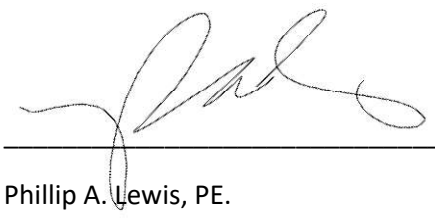
PHILLIP LEWIS ENGINEERING

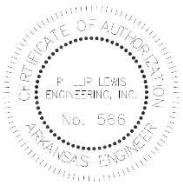
Structural + Civil Consultants

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).

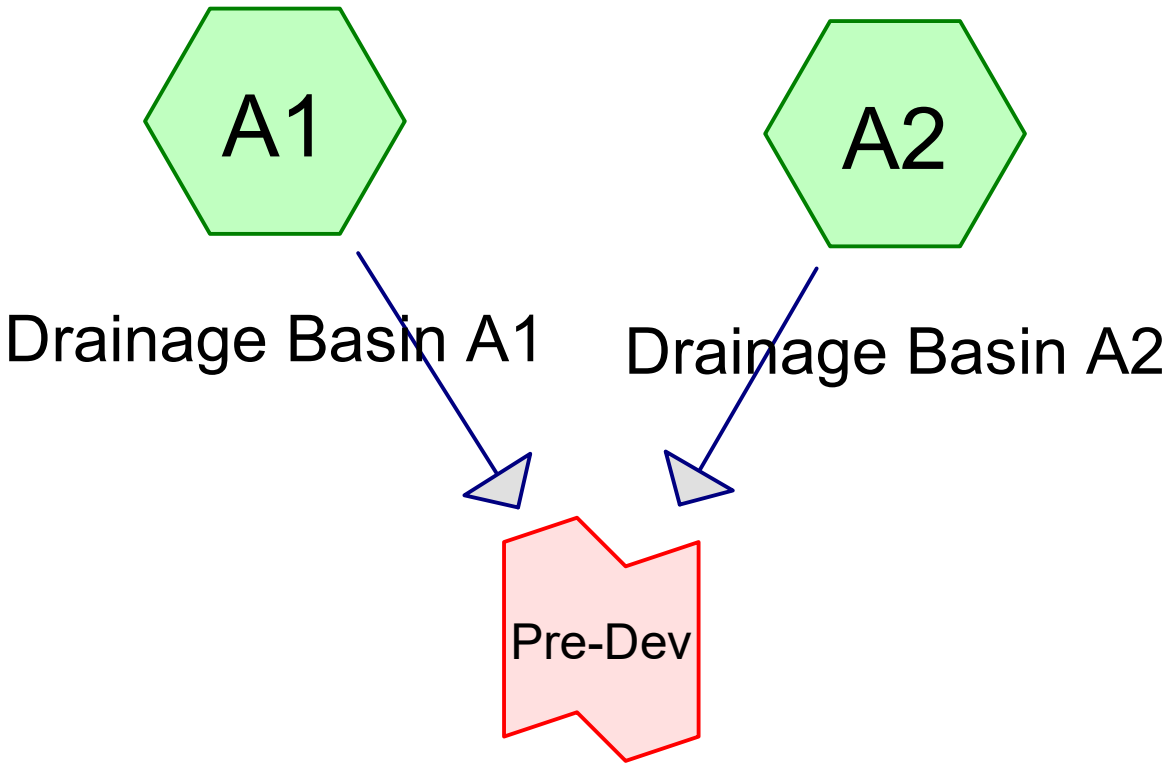
The detention pond was designed to detain stromwater volumes based off the 100-yr storm events with a concrete overflow spillway to release water if a rainfall event were to exceed the 100-yr storm event. The outlet control structures are detailed within this report.

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

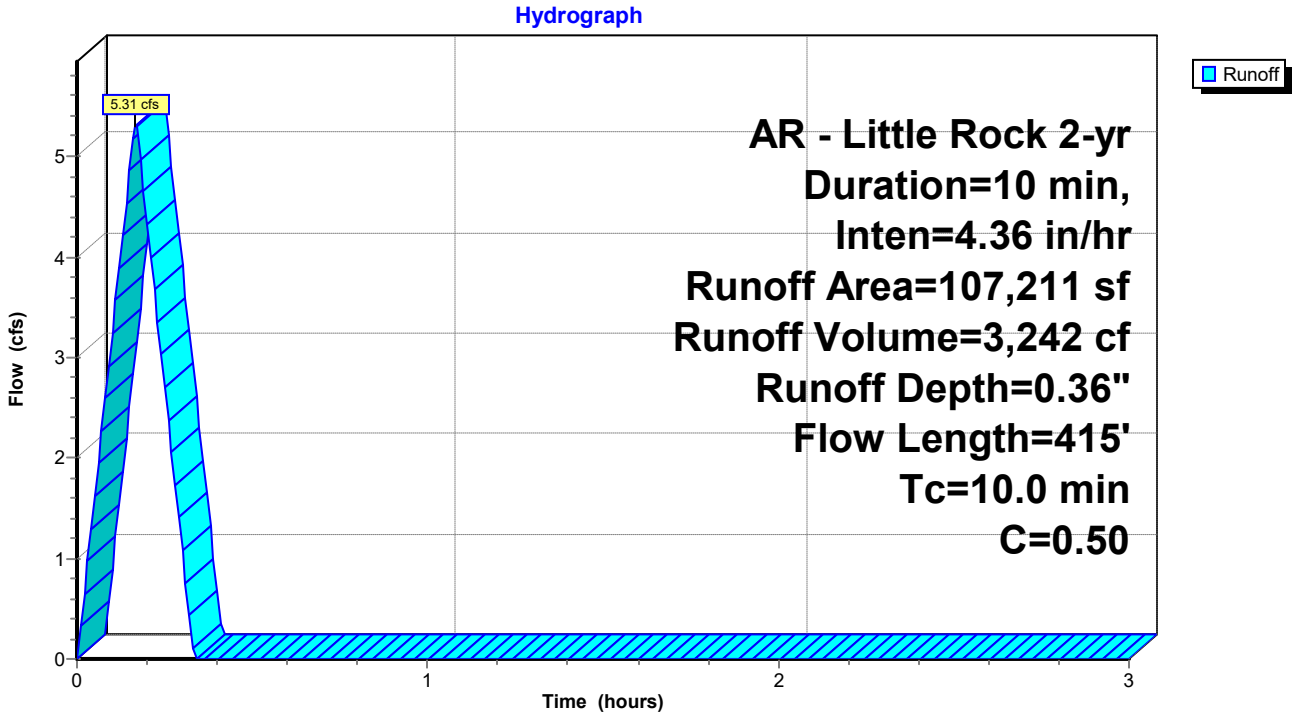
Runoff = 5.31 cfs @ 0.17 hrs, Volume= 3,242 cf, Depth= 0.36"
Routed to Link Pre-Dev : Pre Dev Runoff

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

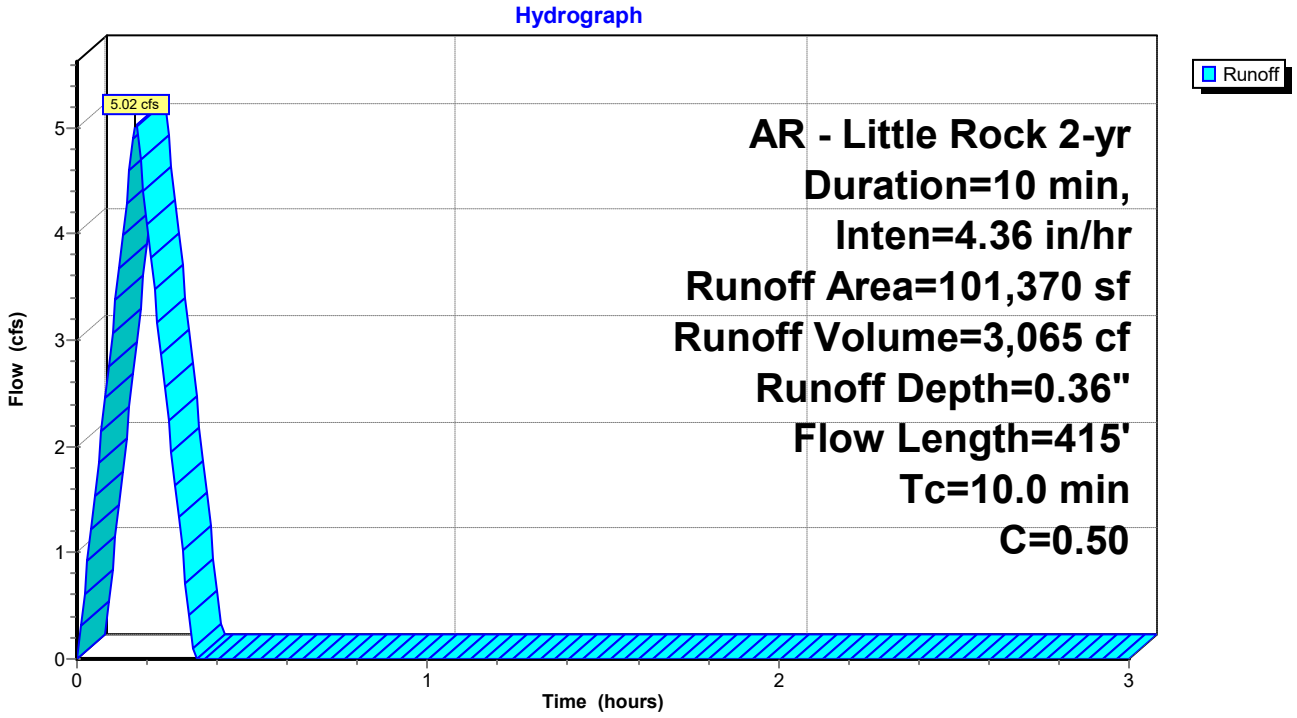
Runoff = 5.02 cfs @ 0.17 hrs, Volume= 3,065 cf, Depth= 0.36"
Routed to Link Pre-Dev : Pre Dev Runoff

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

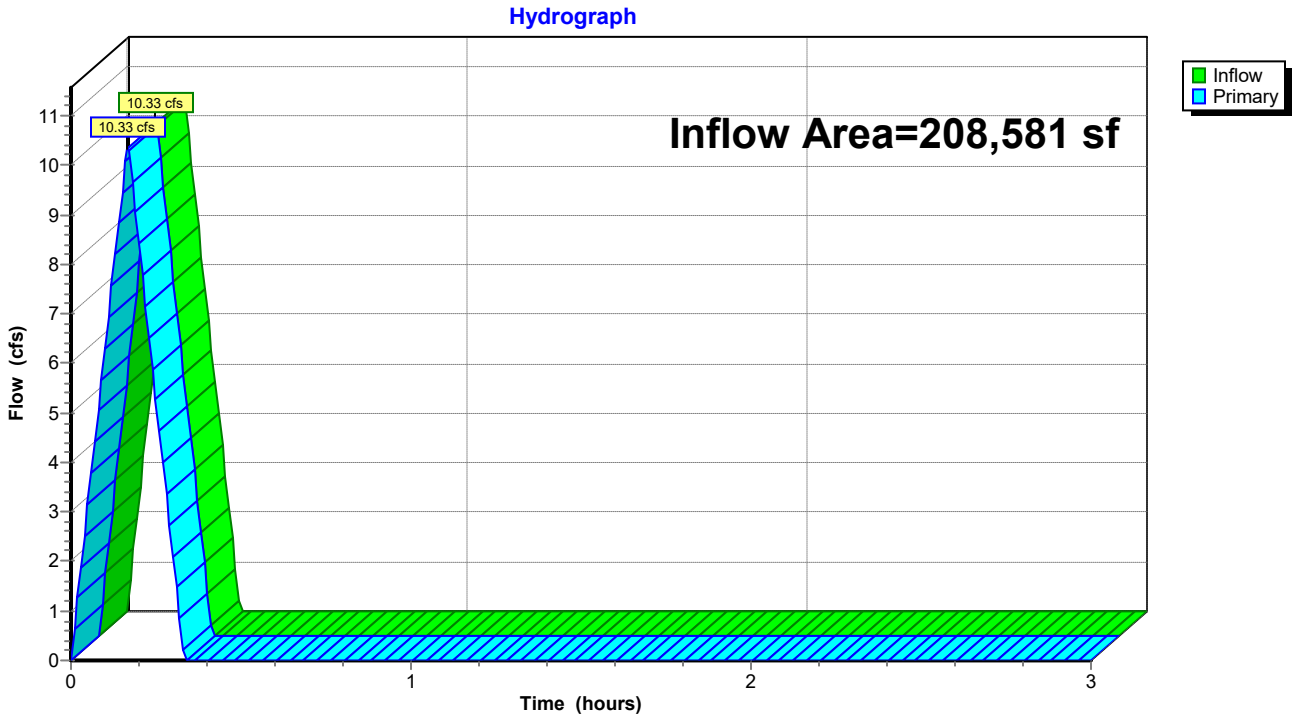


Summary for Link Pre-Dev: Pre Dev Runoff

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

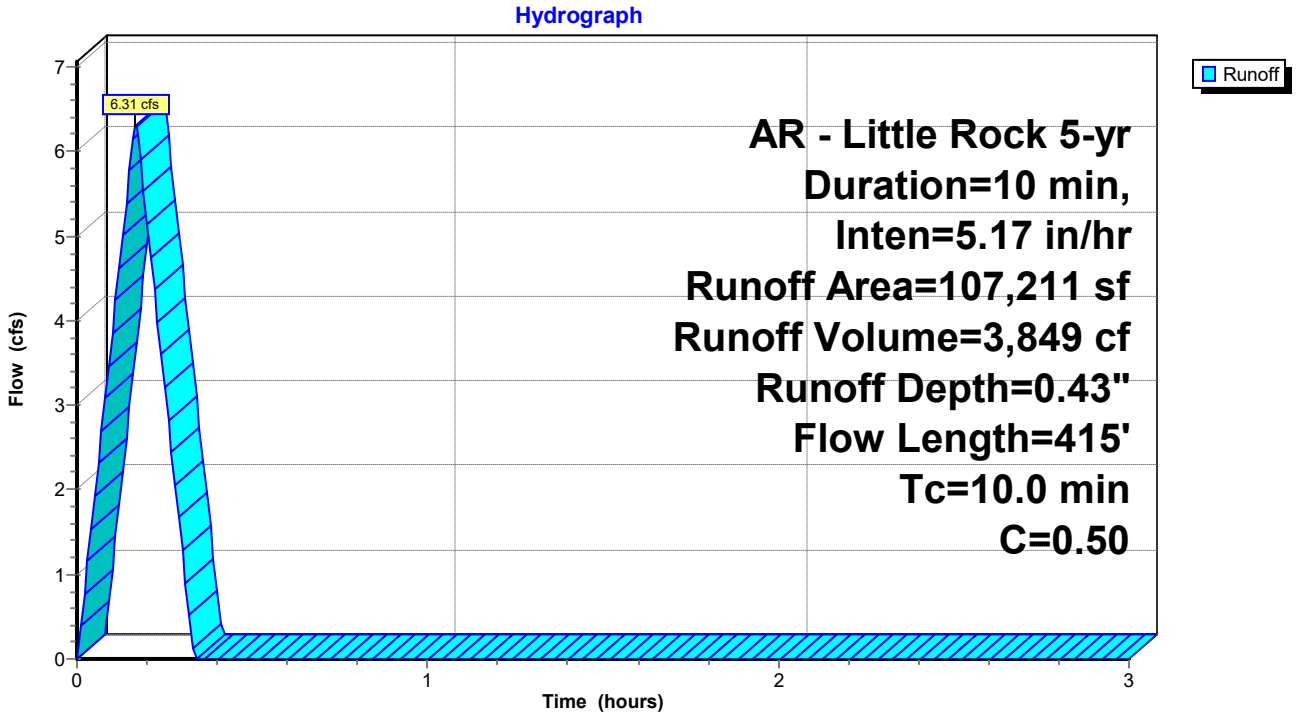
Runoff = 6.31 cfs @ 0.17 hrs, Volume= 3,849 cf, Depth= 0.43"
Routed to Link Pre-Dev : Pre Dev Runoff

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

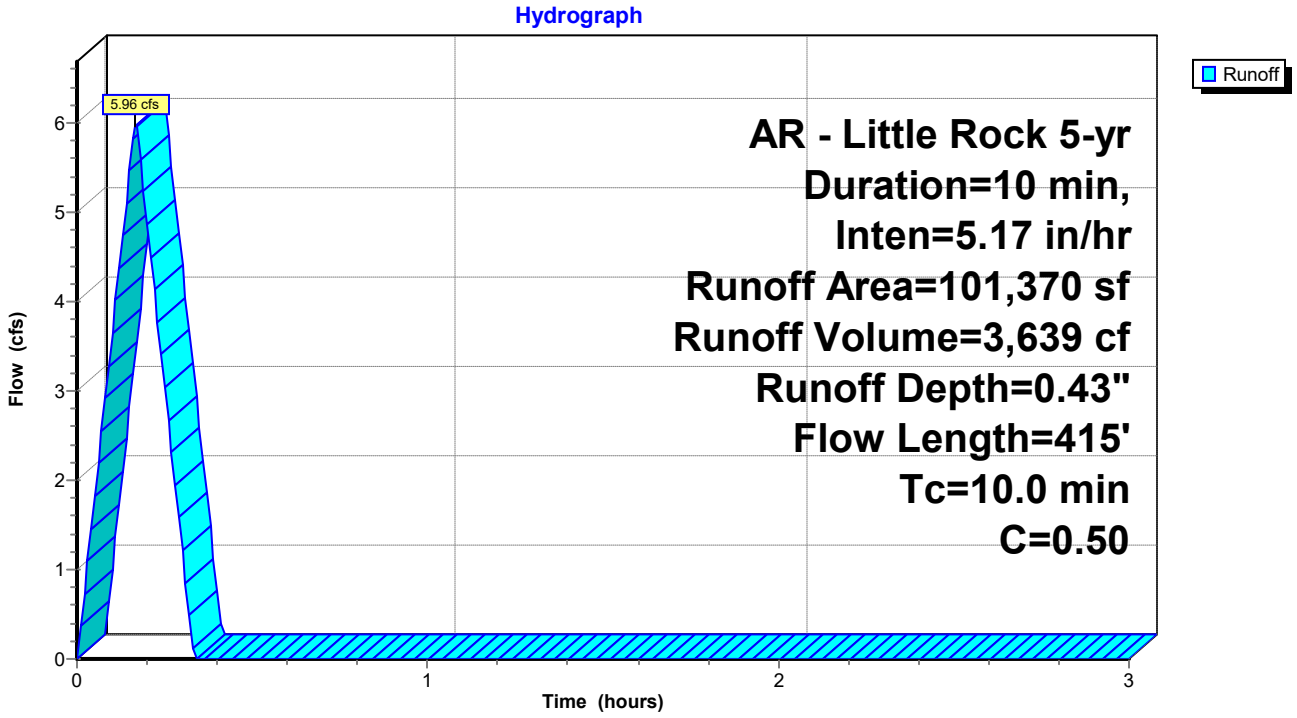
Runoff = 5.96 cfs @ 0.17 hrs, Volume= 3,639 cf, Depth= 0.43"
Routed to Link Pre-Dev : Pre Dev Runoff

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

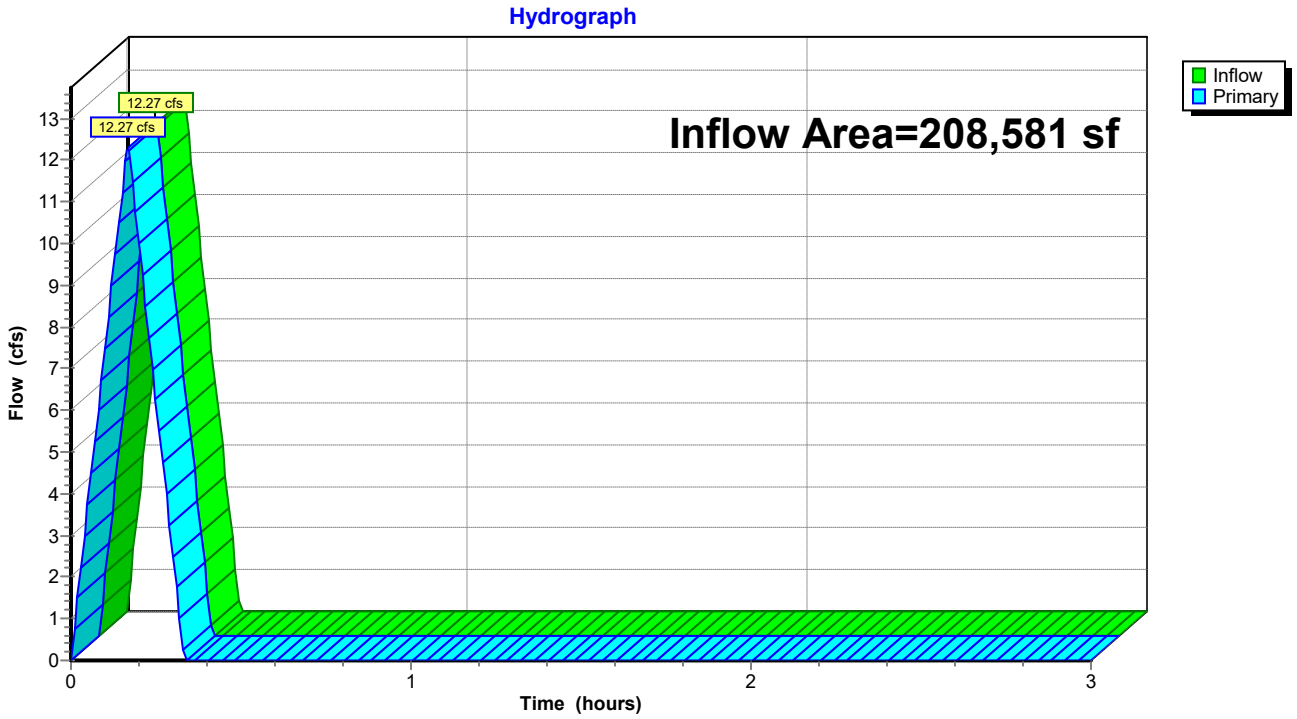


Summary for Link Pre-Dev: Pre Dev Runoff

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

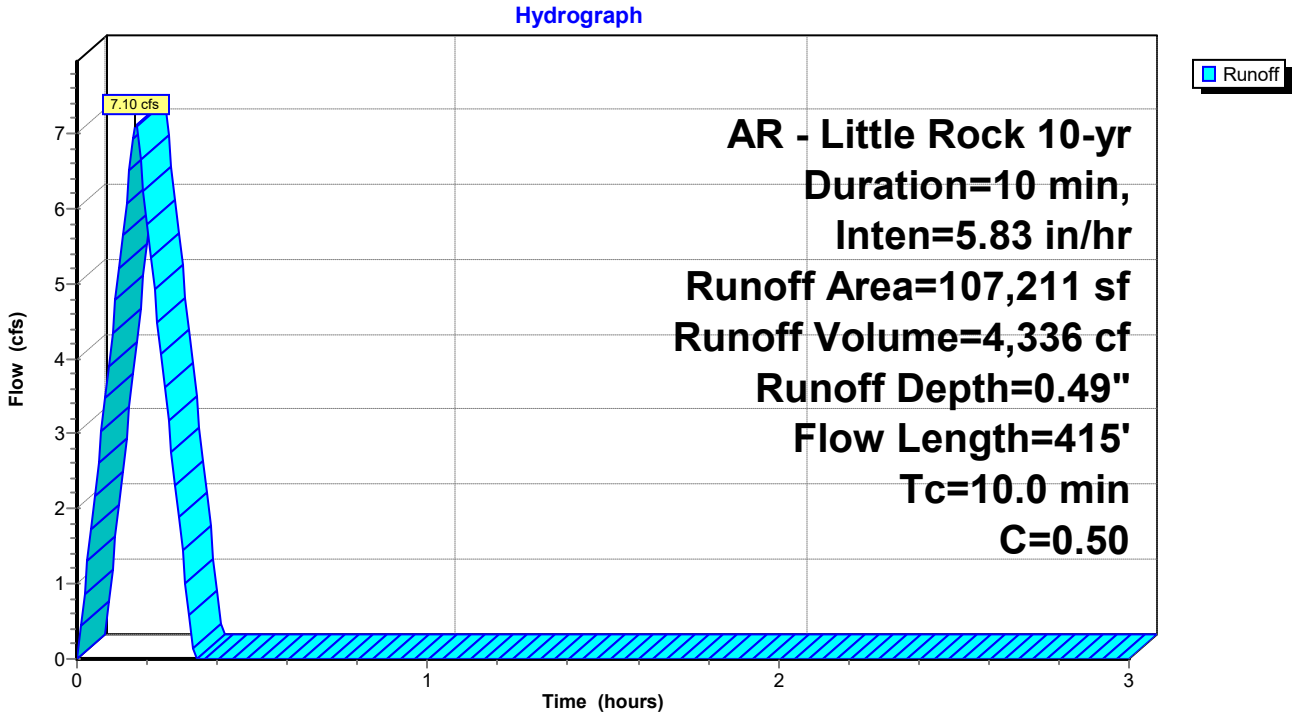
Runoff = 7.10 cfs @ 0.17 hrs, Volume= 4,336 cf, Depth= 0.49"
Routed to Link Pre-Dev : Pre Dev Runoff

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

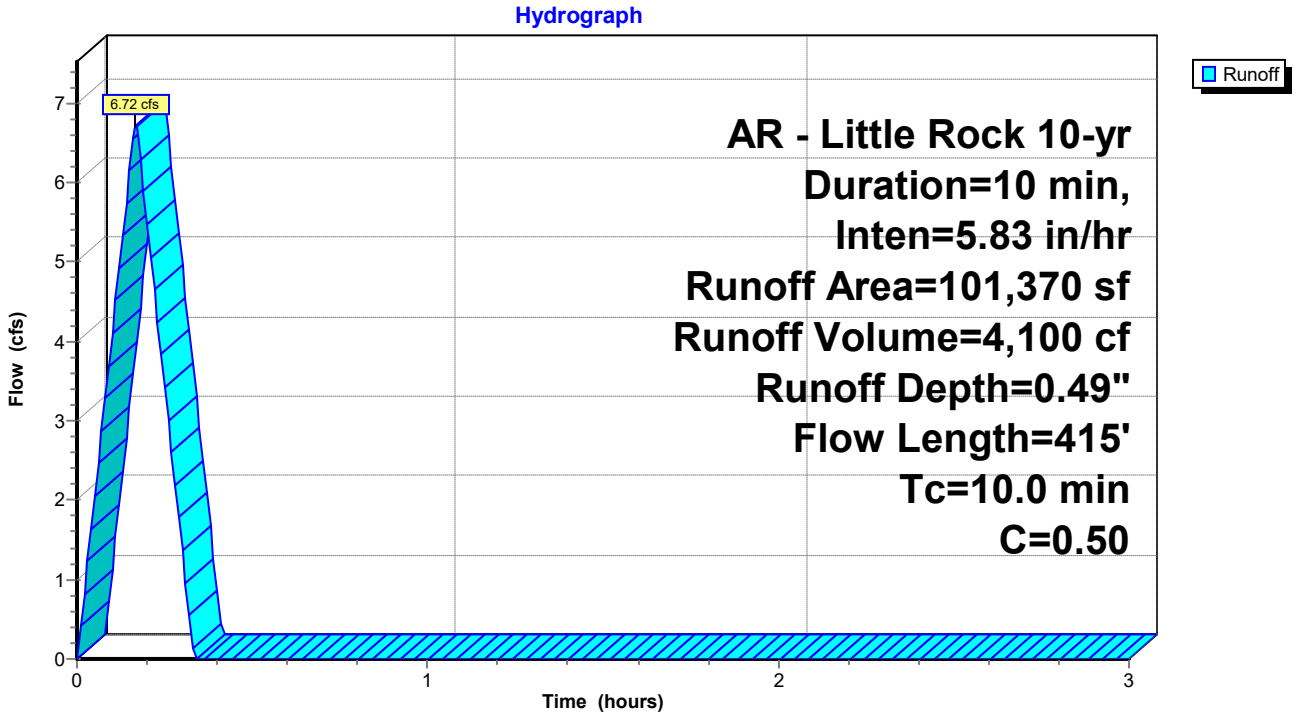
Runoff = 6.72 cfs @ 0.17 hrs, Volume= 4,100 cf, Depth= 0.49"
Routed to Link Pre-Dev : Pre Dev Runoff

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

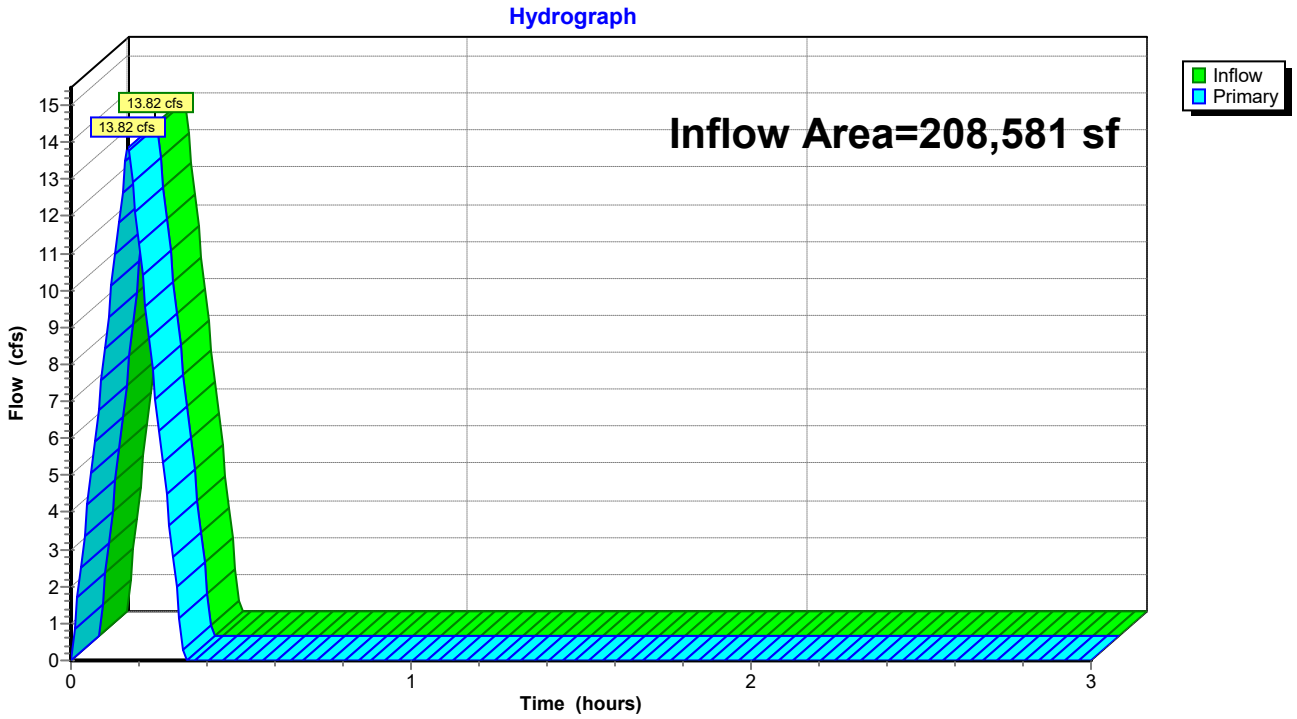


Summary for Link Pre-Dev: Pre Dev Runoff

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

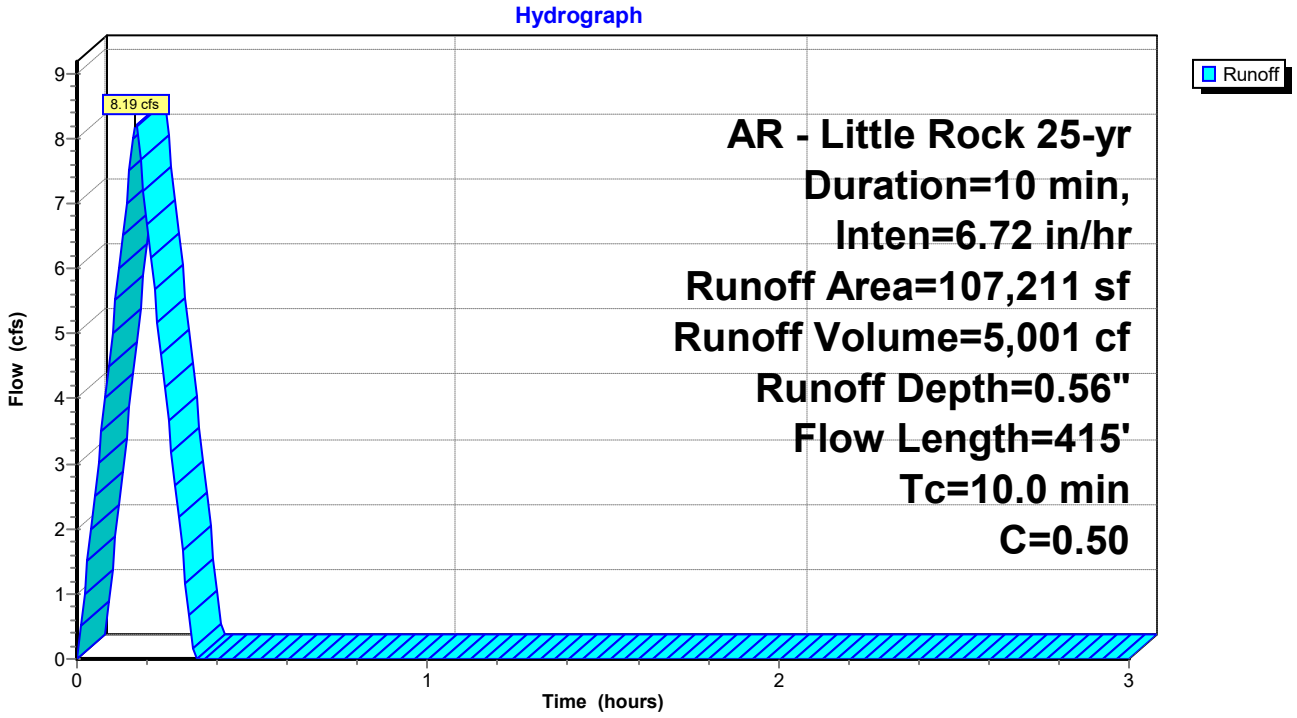
Runoff = 8.19 cfs @ 0.17 hrs, Volume= 5,001 cf, Depth= 0.56"
Routed to Link Pre-Dev : Pre Dev Runoff

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

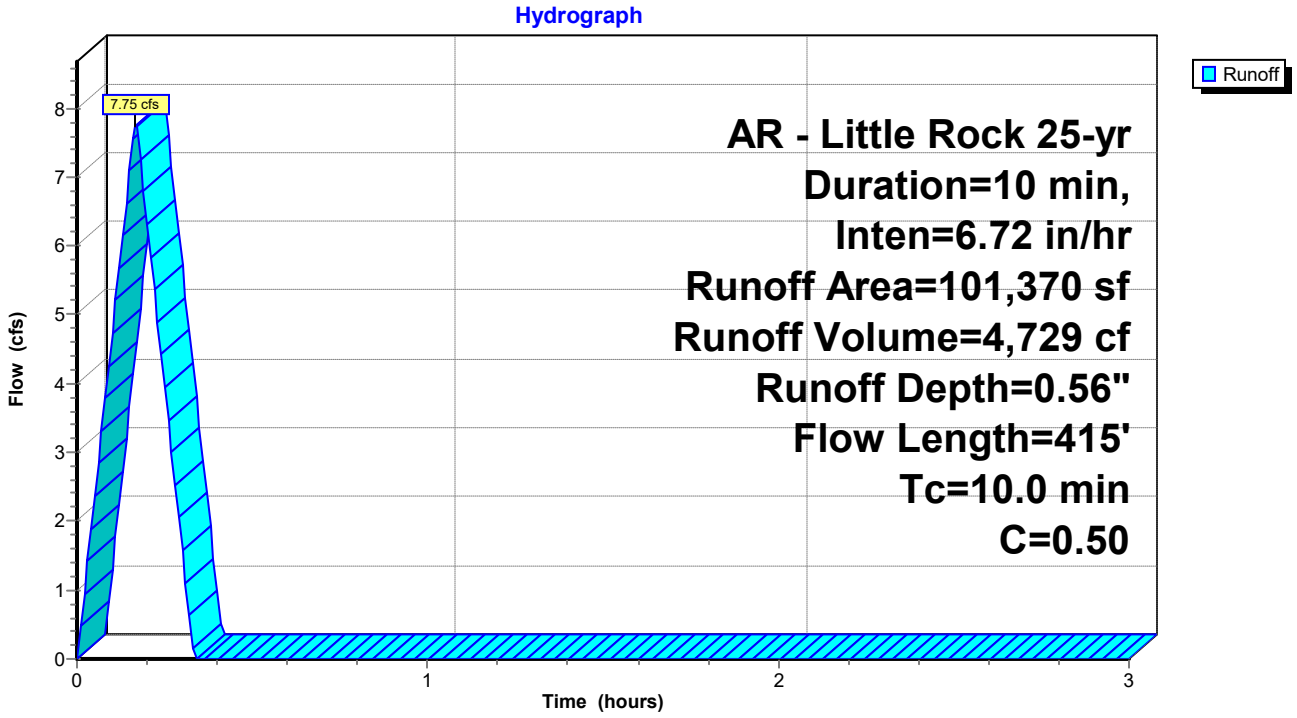
Runoff = 7.75 cfs @ 0.17 hrs, Volume= 4,729 cf, Depth= 0.56"
Routed to Link Pre-Dev : Pre Dev Runoff

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

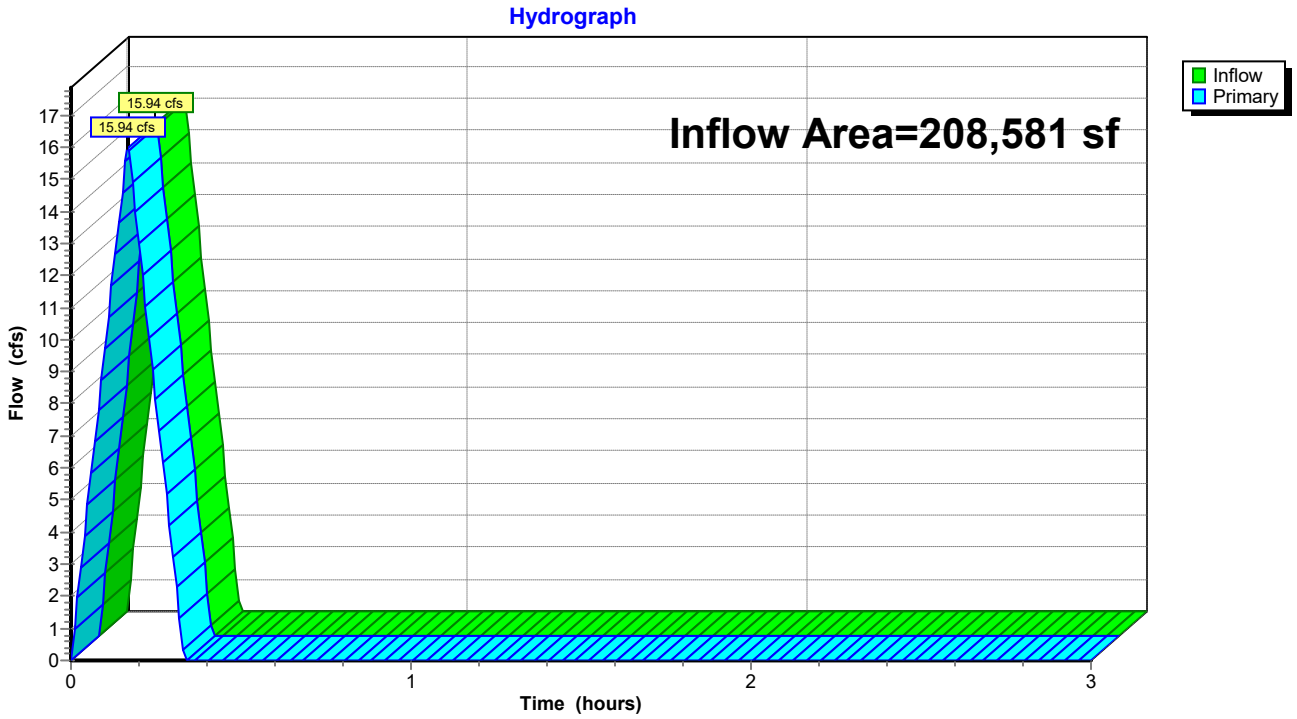


Summary for Link Pre-Dev: Pre Dev Runoff

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

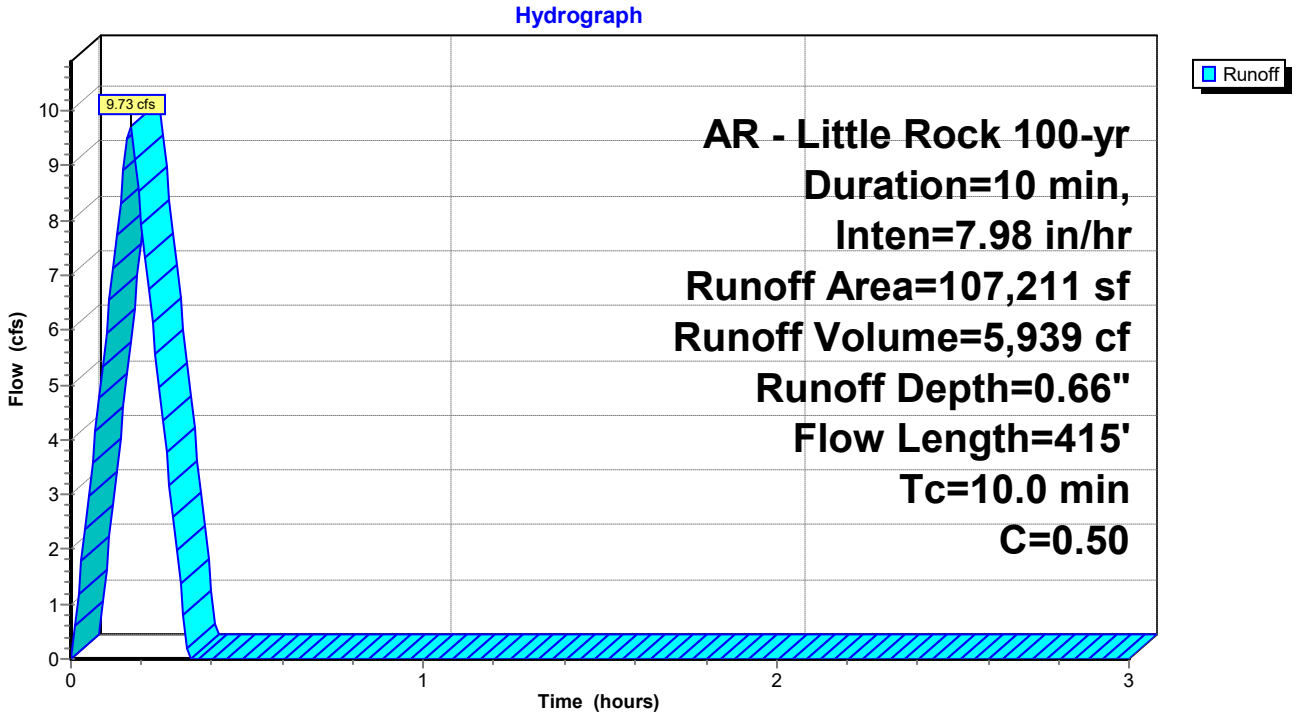
Runoff = 9.73 cfs @ 0.17 hrs, Volume= 5,939 cf, Depth= 0.66"
Routed to Link Pre-Dev : Pre Dev Runoff

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

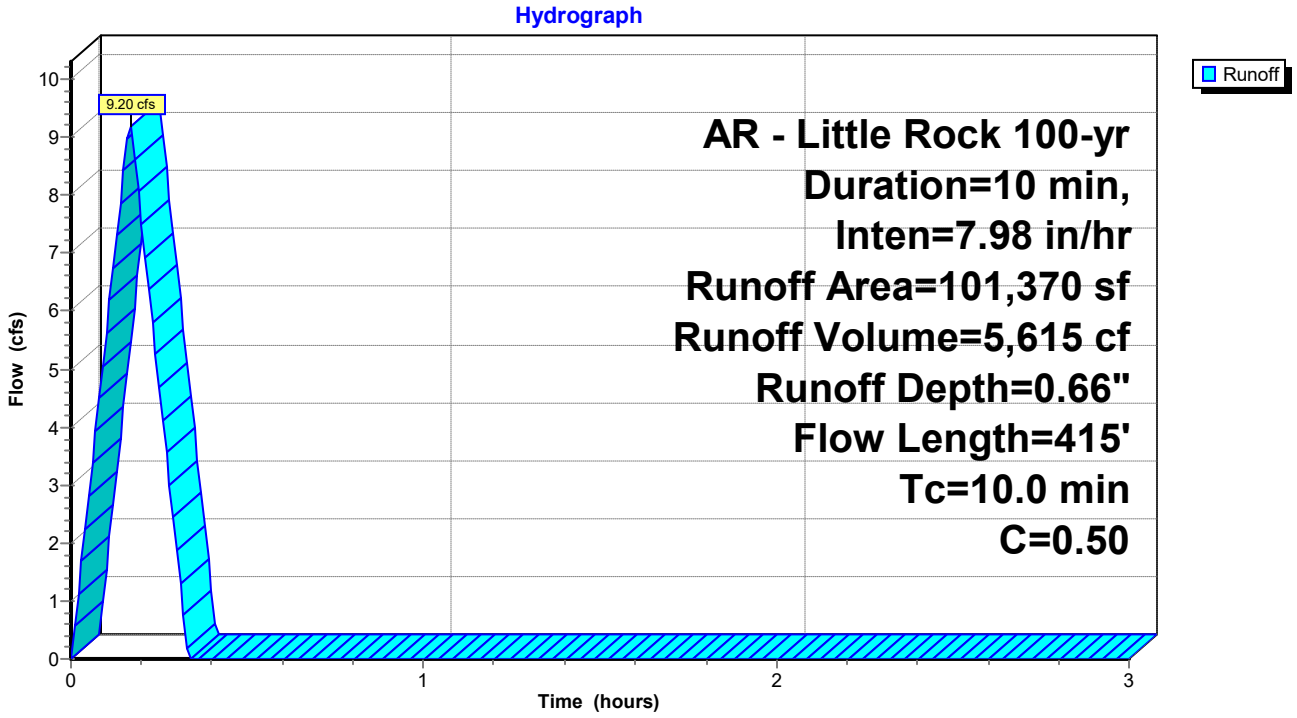
Runoff = 9.20 cfs @ 0.17 hrs, Volume= 5,615 cf, Depth= 0.66"
Routed to Link Pre-Dev : Pre Dev Runoff

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

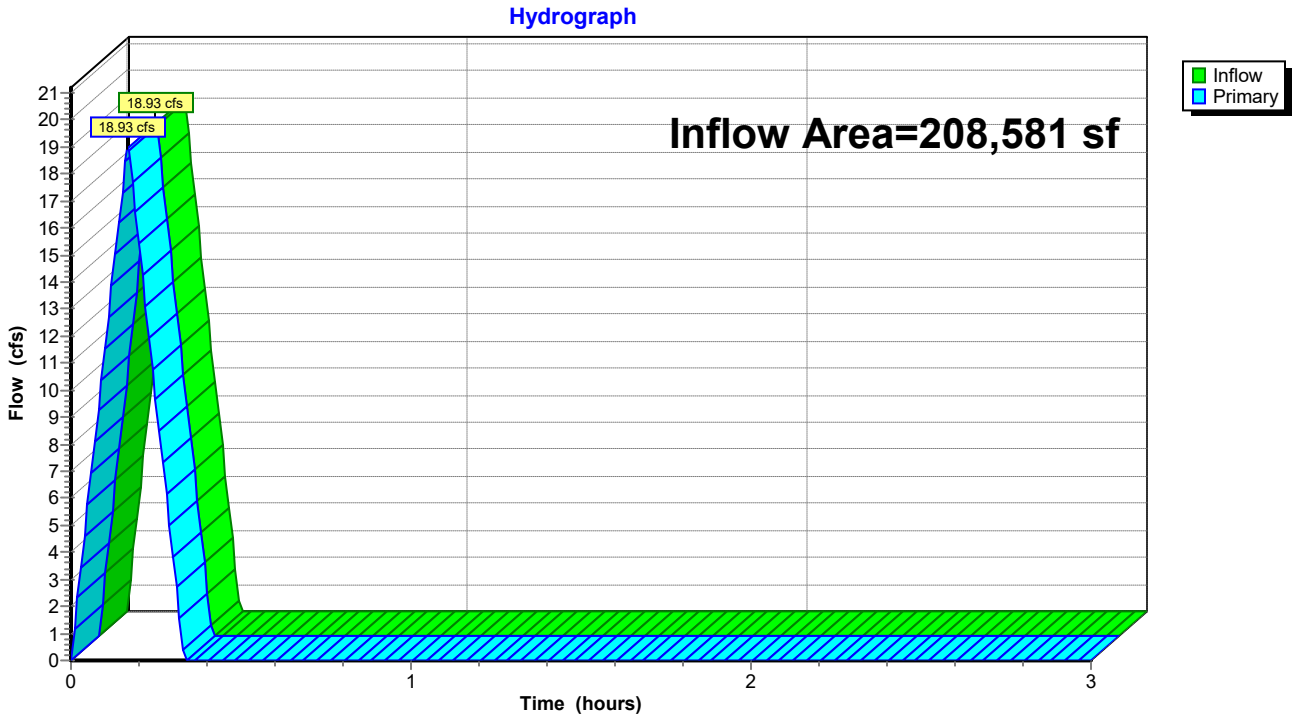


Summary for Link Pre-Dev: Pre Dev Runoff

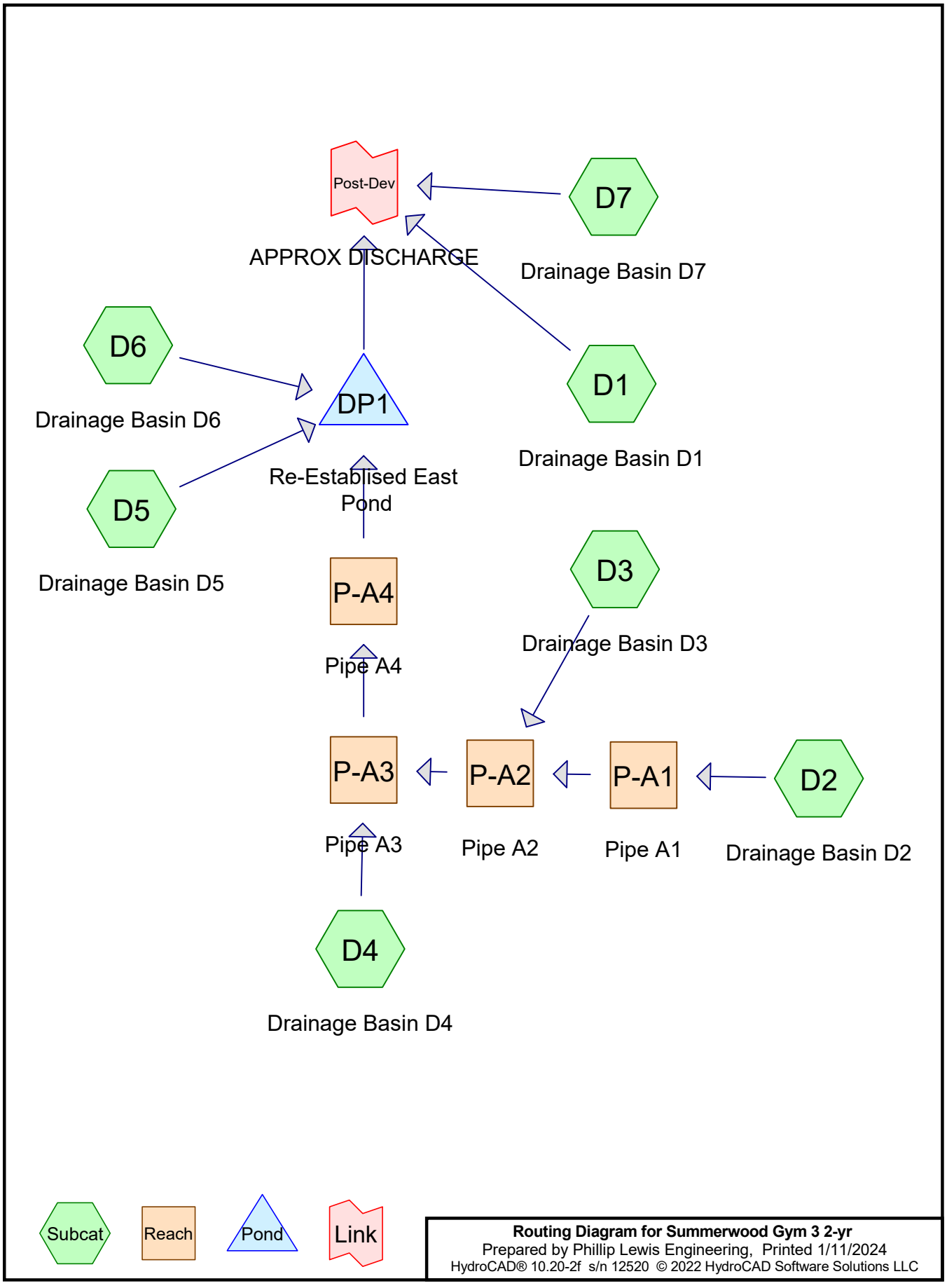
Inflow Area = 208,581 sf, 0.00% Impervious, Inflow Depth = 0.66" for 100-yr event
Inflow = 18.93 cfs @ 0.17 hrs, Volume= 11,554 cf
Primary = 18.93 cfs @ 0.17 hrs, Volume= 11,554 cf, Atten= 0%, Lag= 0.0 min

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

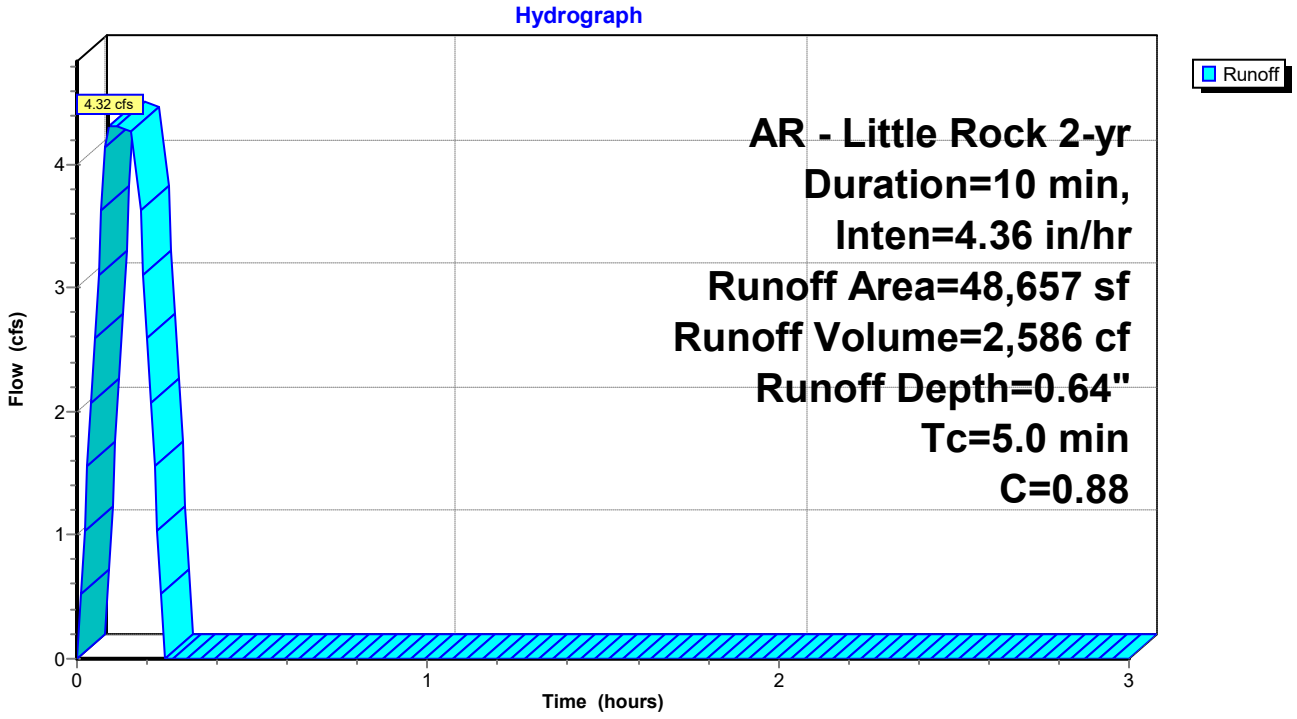
Runoff = 4.32 cfs @ 0.09 hrs, Volume= 2,586 cf, Depth= 0.64"
Routed to Link Post-Dev : APPROX DISCHARGE

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

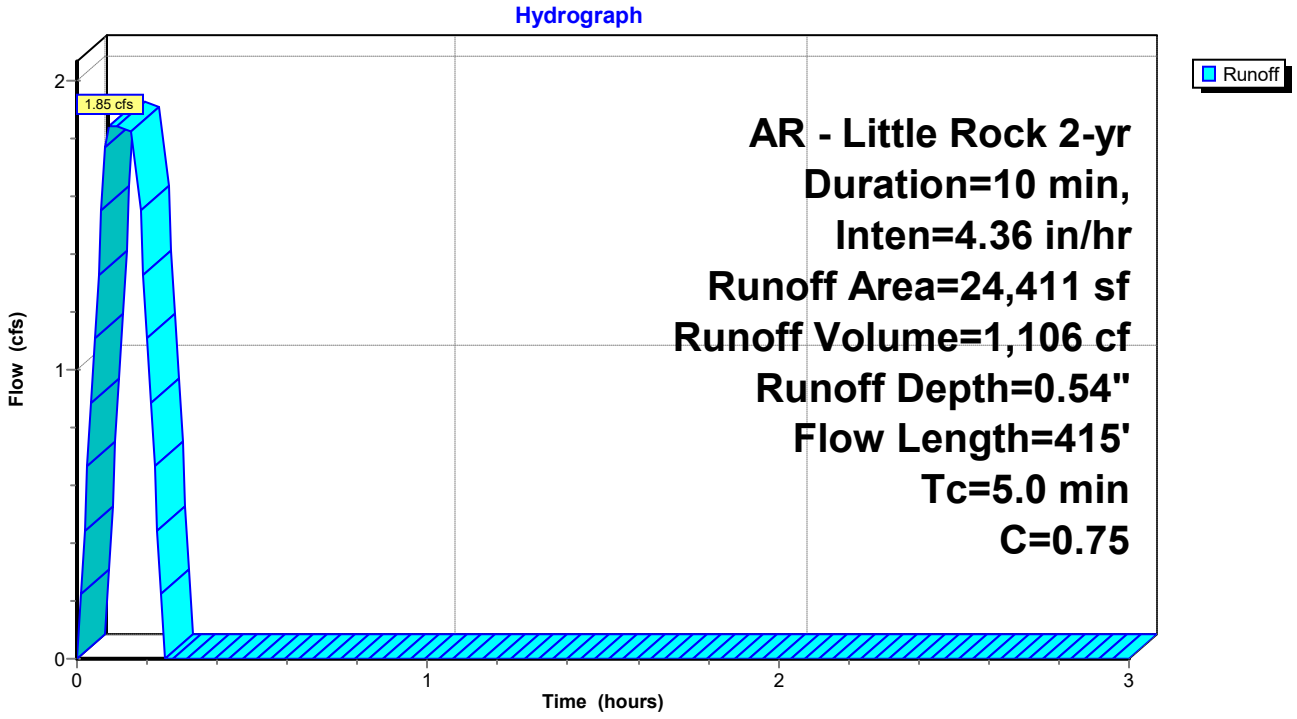
Runoff = 1.85 cfs @ 0.09 hrs, Volume= 1,106 cf, Depth= 0.54"
Routed to Reach P-A1 : Pipe A1

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

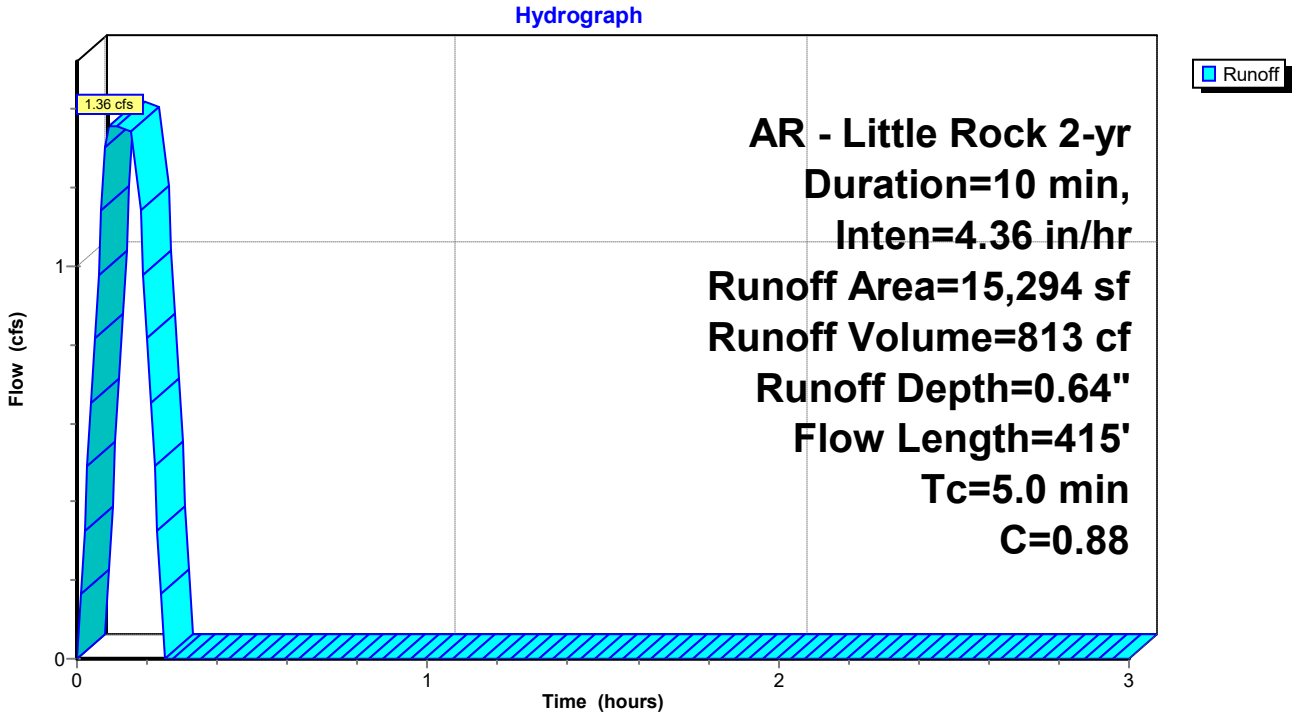
Runoff = 1.36 cfs @ 0.09 hrs, Volume= 813 cf, Depth= 0.64"
Routed to Reach P-A2 : Pipe A2

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

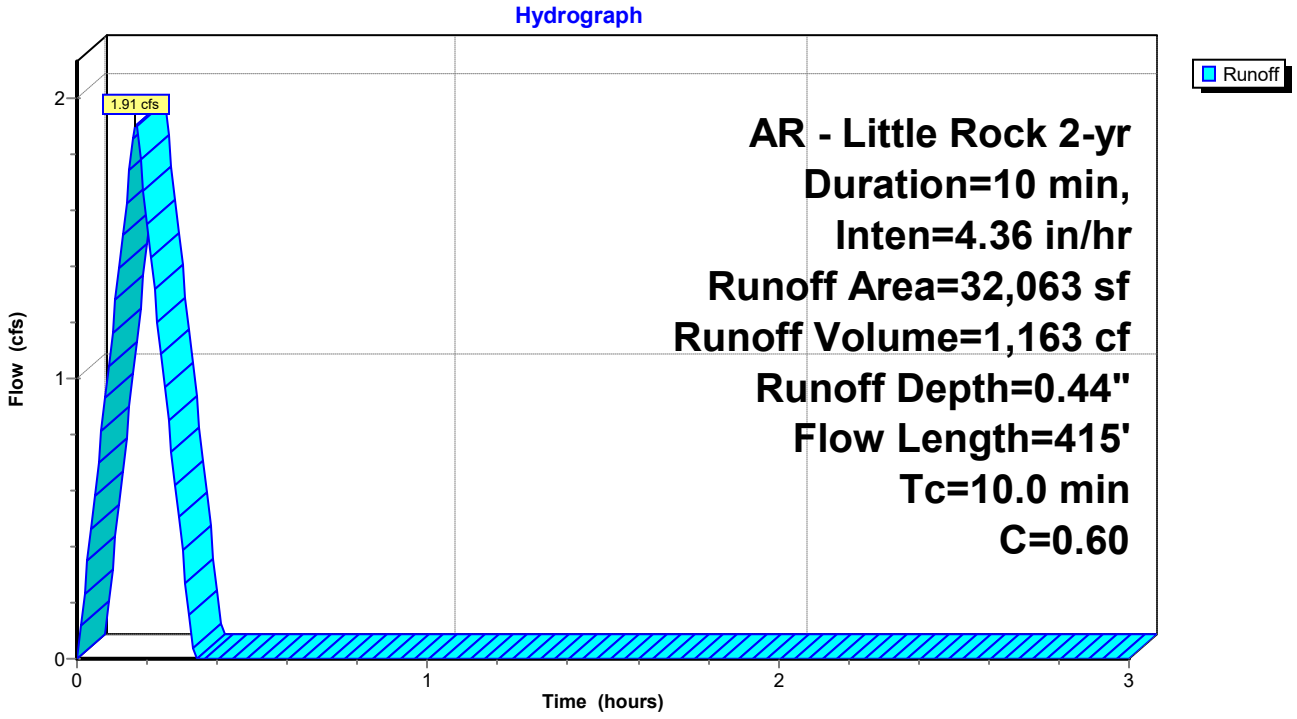
Runoff = 1.91 cfs @ 0.17 hrs, Volume= 1,163 cf, Depth= 0.44"
Routed to Reach P-A3 : Pipe A3

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

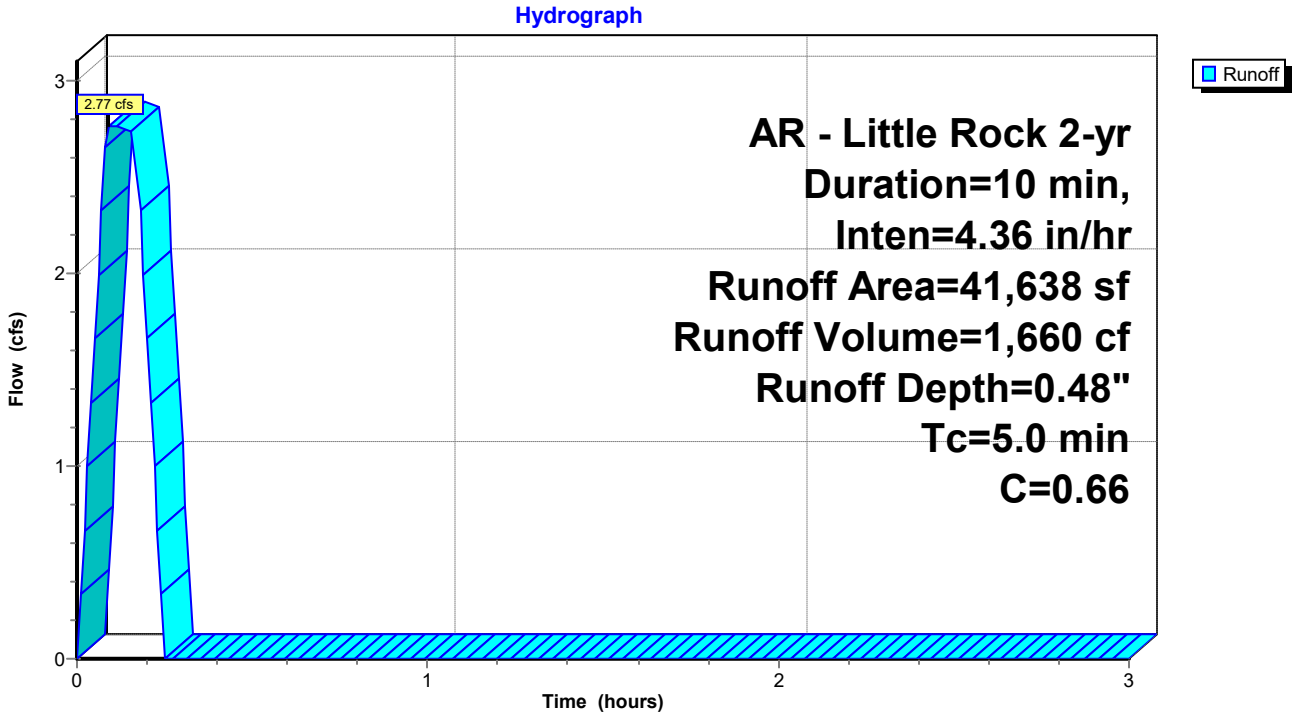
Runoff = 2.77 cfs @ 0.09 hrs, Volume= 1,660 cf, Depth= 0.48"
Routed to Pond DP1 : Re-Establised East Pond

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

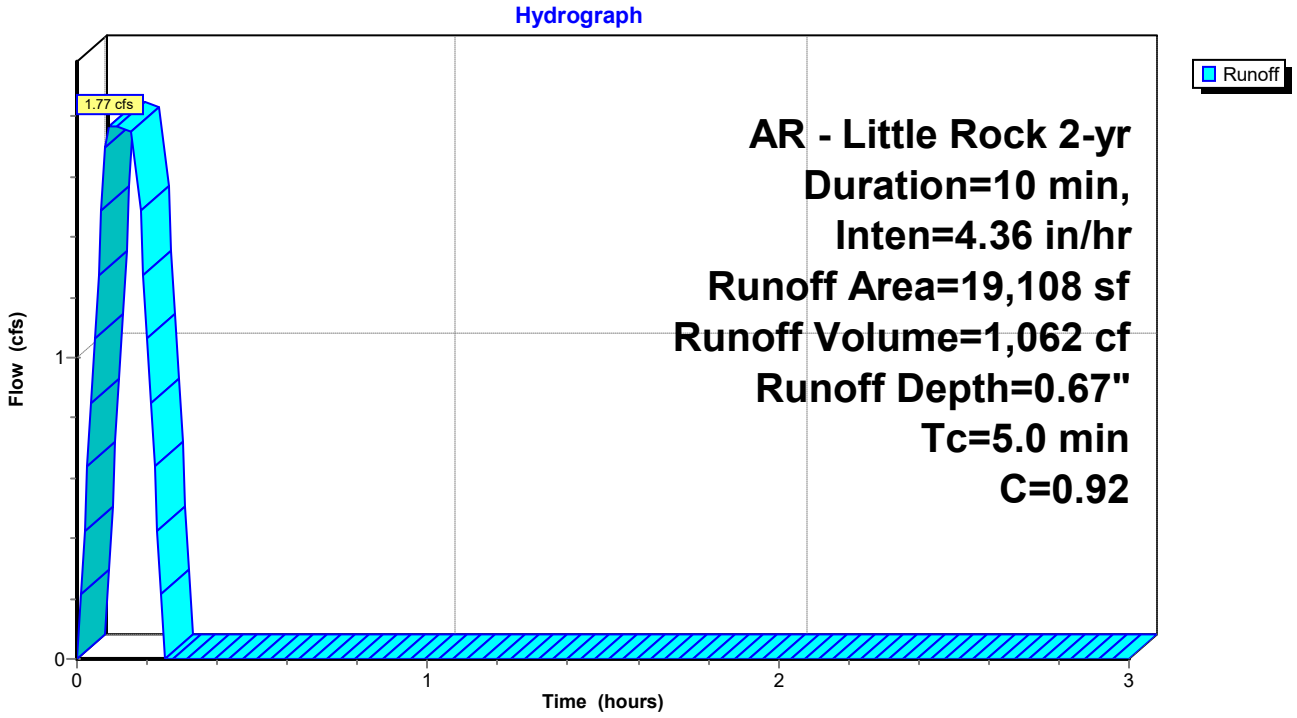
Runoff = 1.77 cfs @ 0.09 hrs, Volume= 1,062 cf, Depth= 0.67"
Routed to Pond DP1 : Re-Establised East Pond

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

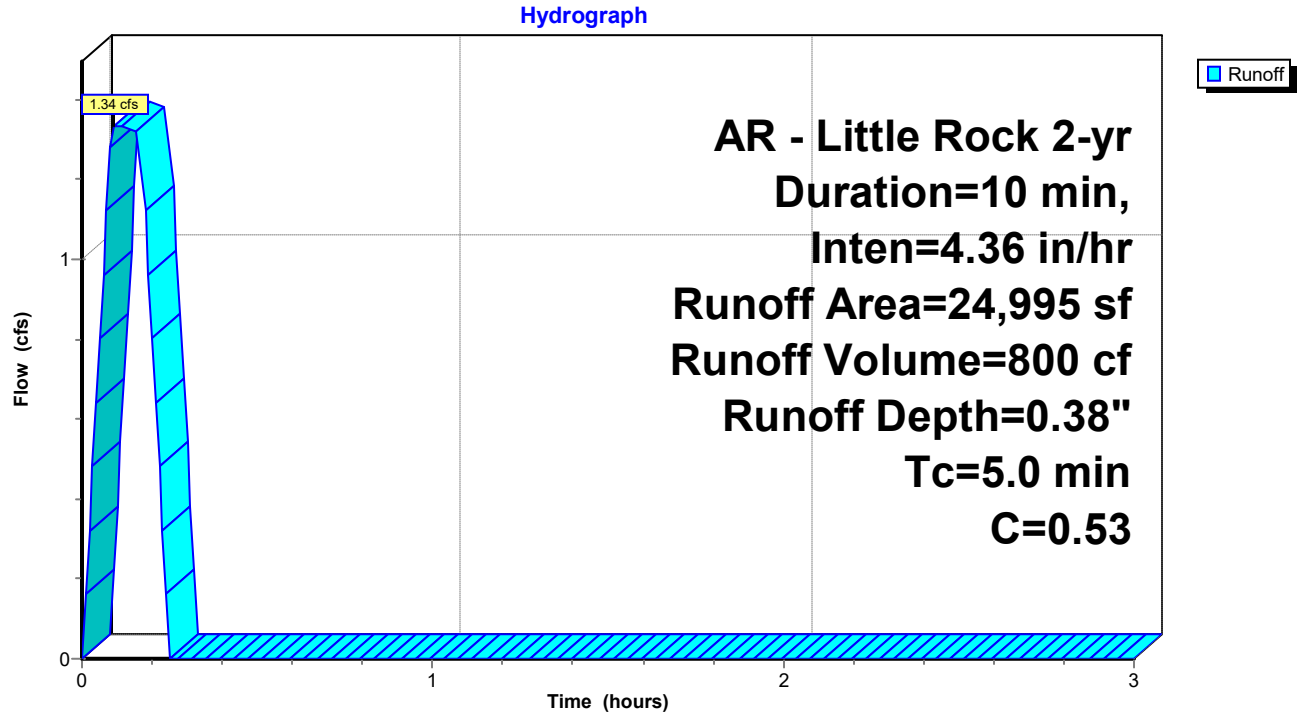
Runoff = 1.34 cfs @ 0.09 hrs, Volume= 800 cf, Depth= 0.38"
Routed to Link Post-Dev : APPROX DISCHARGE

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



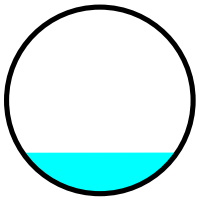
Summary for Reach P-A1: Pipe A1

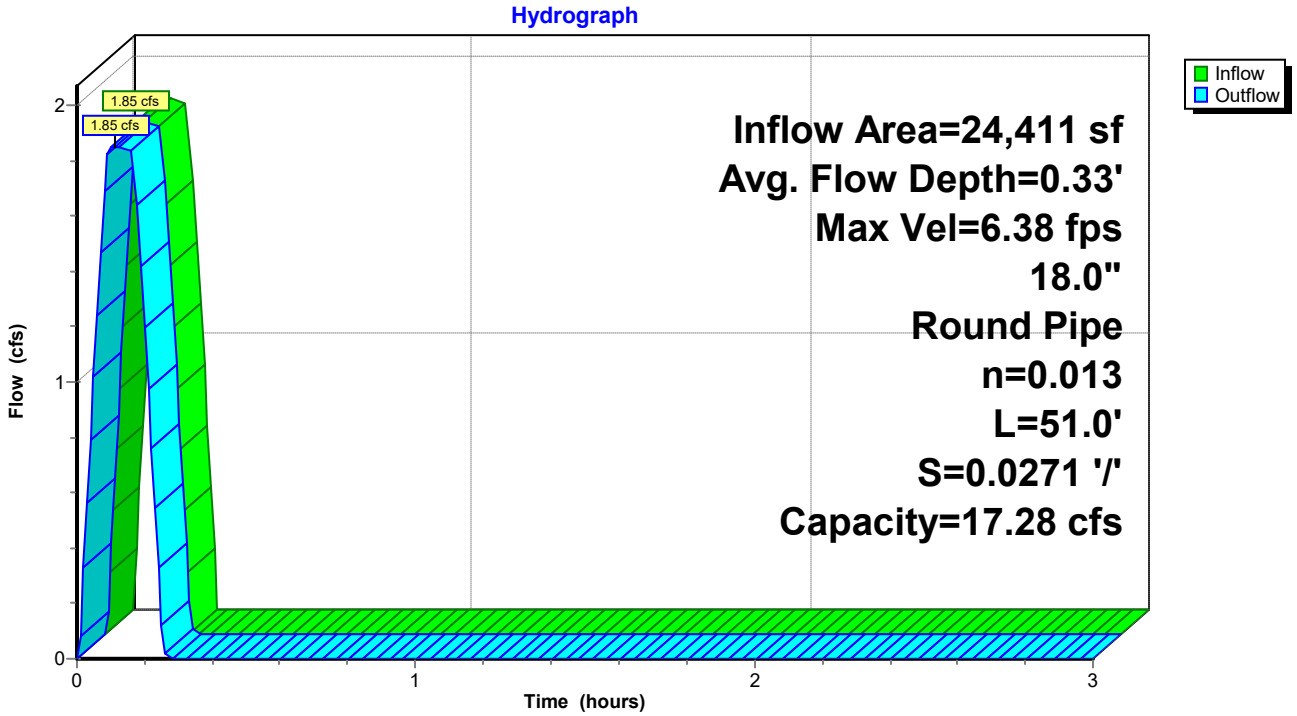
Inflow Area = 24,411 sf, 0.00% Impervious, Inflow Depth = 0.54" for 2-yr event
Inflow = 1.85 cfs @ 0.09 hrs, Volume= 1,106 cf
Outflow = 1.85 cfs @ 0.11 hrs, Volume= 1,106 cf, Atten= 0%, Lag= 1.2 min
Routed to Reach P-A2 : Pipe A2

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

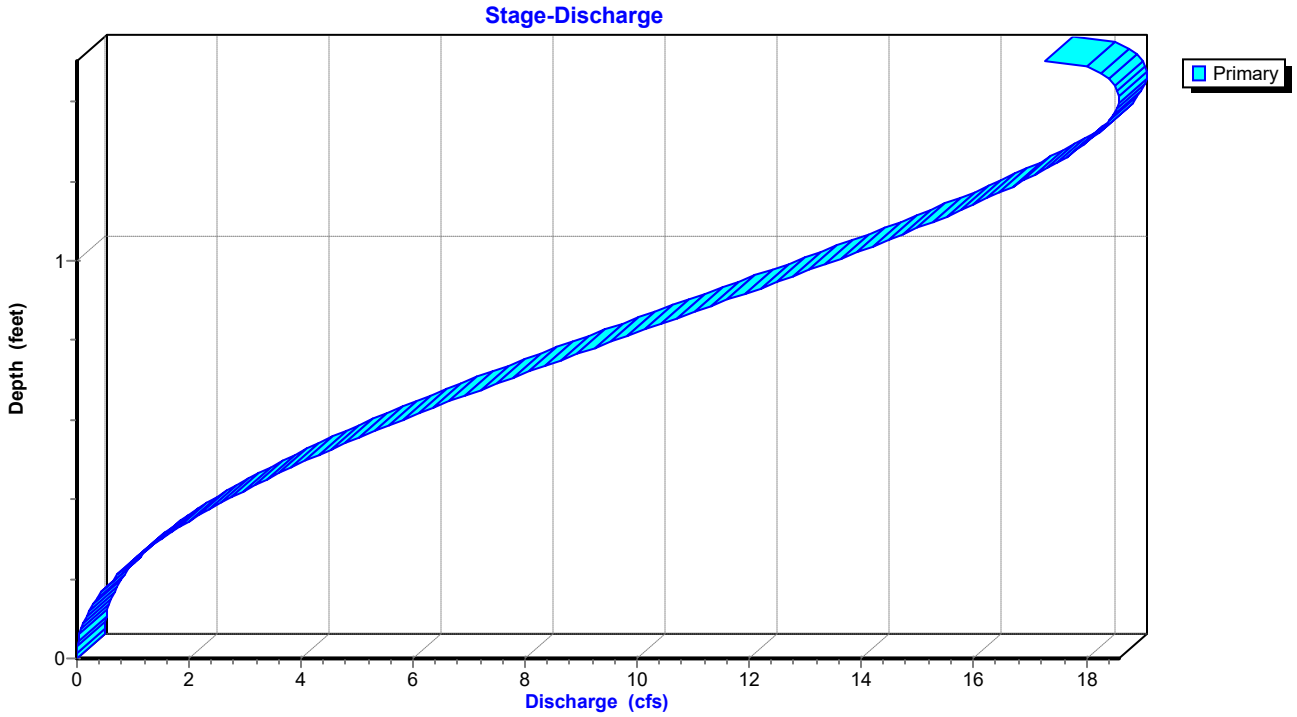
Peak Storage= 15 cf @ 0.09 hrs
Average Depth at Peak Storage= 0.33' , Surface Width= 1.24'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.28 cfs

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**

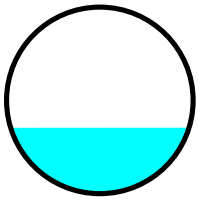
Summary for Reach P-A2: Pipe A2

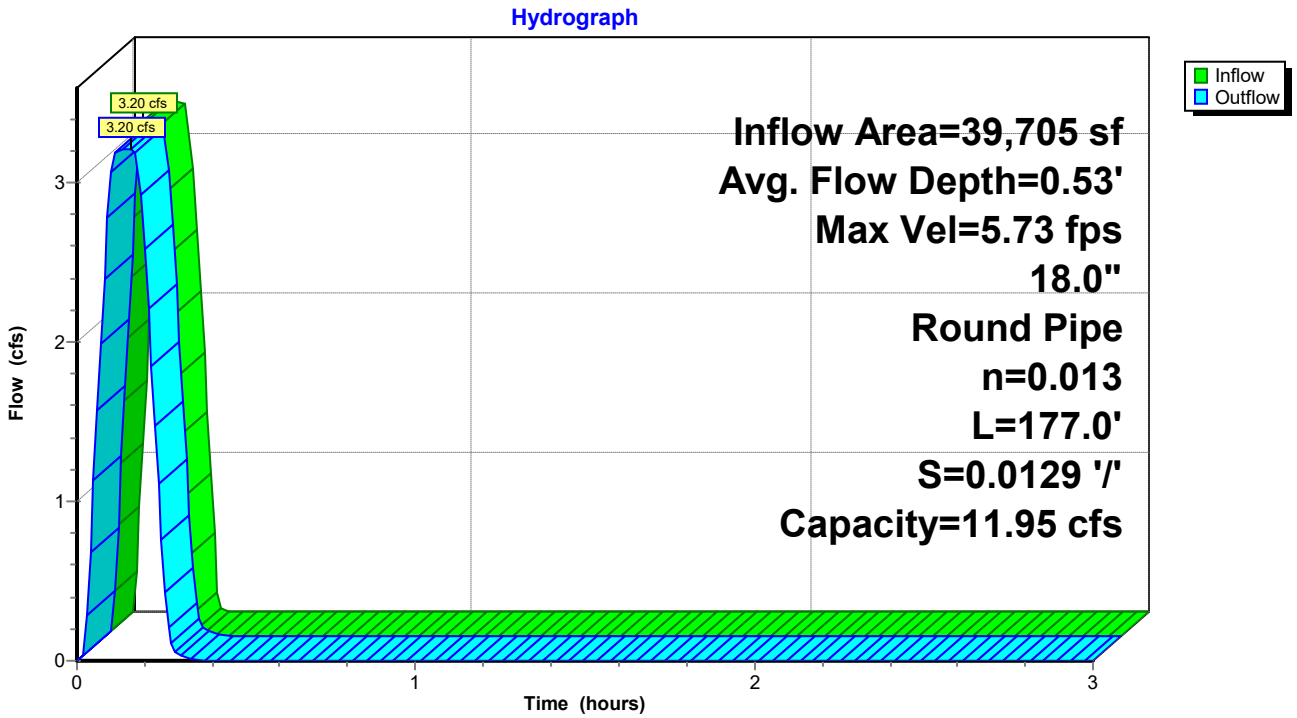
Inflow Area = 39,705 sf, 0.00% Impervious, Inflow Depth = 0.58" for 2-yr event
Inflow = 3.20 cfs @ 0.11 hrs, Volume= 1,919 cf
Outflow = 3.20 cfs @ 0.16 hrs, Volume= 1,919 cf, Atten= 0%, Lag= 3.0 min
Routed to Reach P-A3 : Pipe A3

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

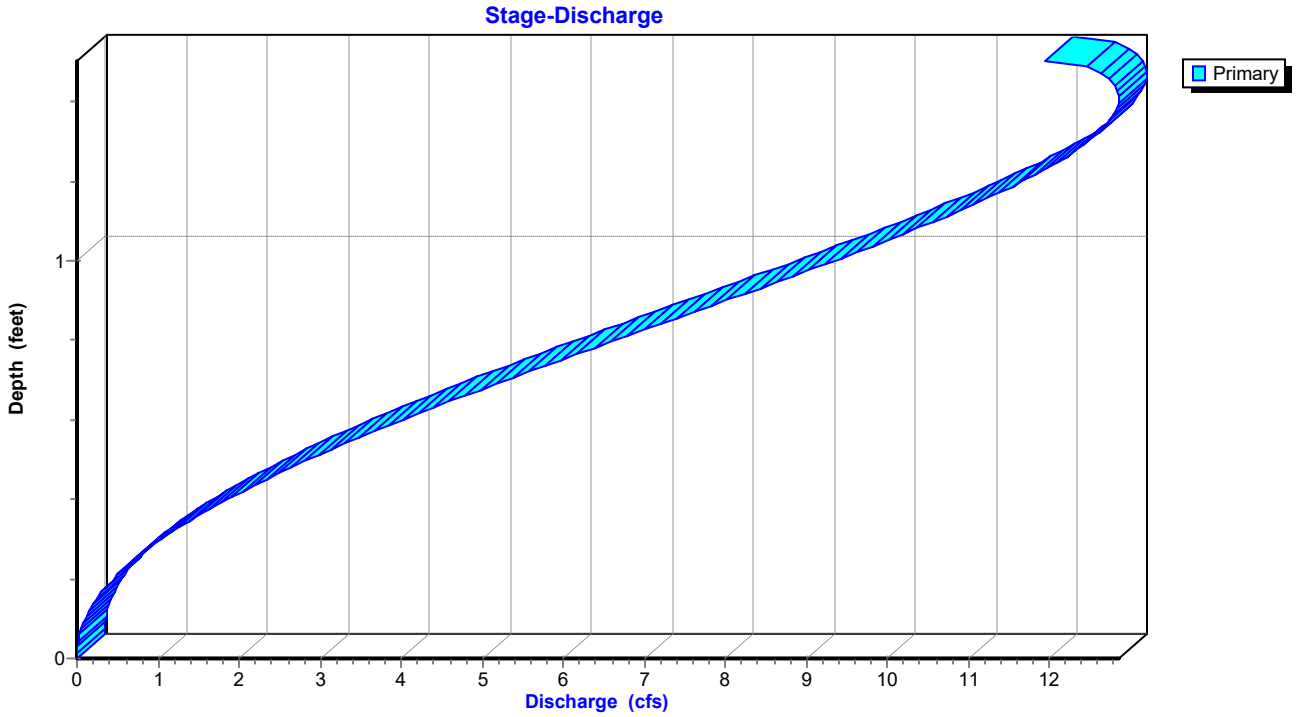
Peak Storage= 99 cf @ 0.16 hrs
Average Depth at Peak Storage= 0.53' , Surface Width= 1.43'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 11.95 cfs

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**

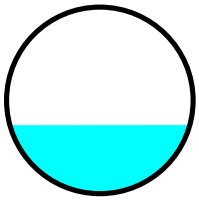
Summary for Reach P-A3: Pipe A3

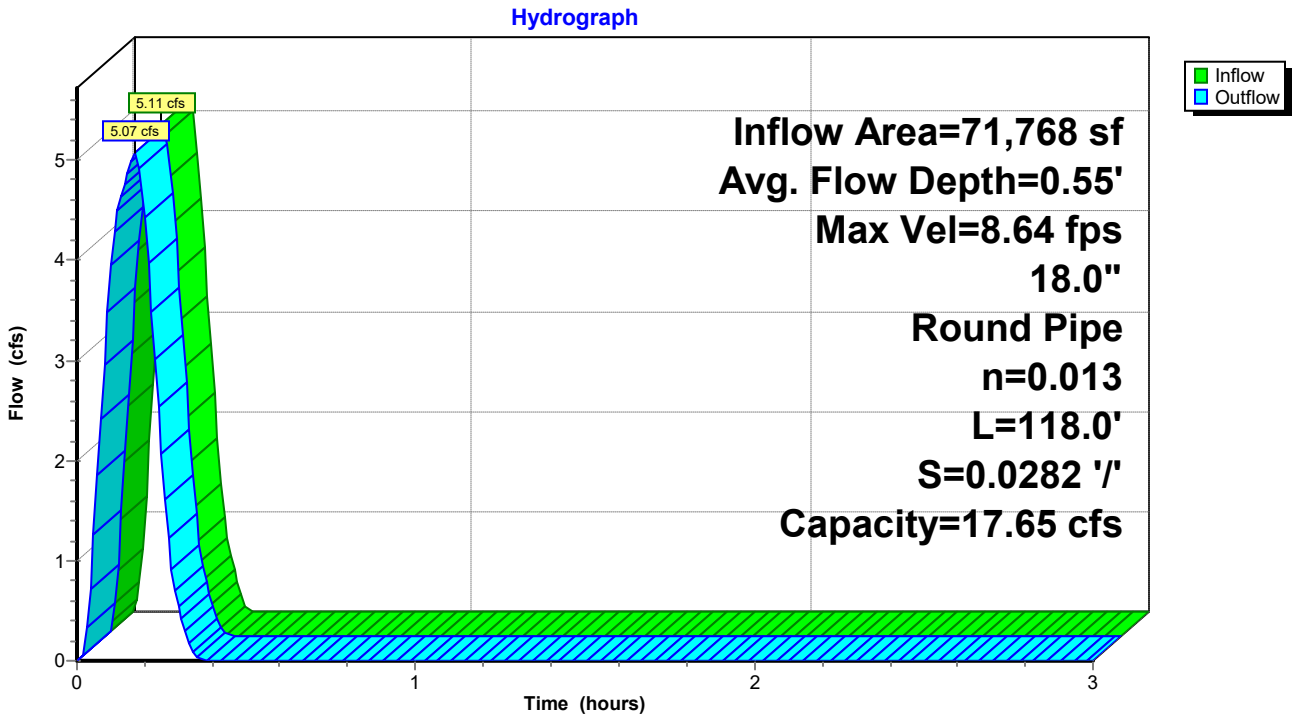
Inflow Area = 71,768 sf, 0.00% Impervious, Inflow Depth = 0.52" for 2-yr event
Inflow = 5.11 cfs @ 0.17 hrs, Volume= 3,082 cf
Outflow = 5.07 cfs @ 0.17 hrs, Volume= 3,082 cf, Atten= 1%, Lag= 0.3 min
Routed to Reach P-A4 : Pipe A4

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

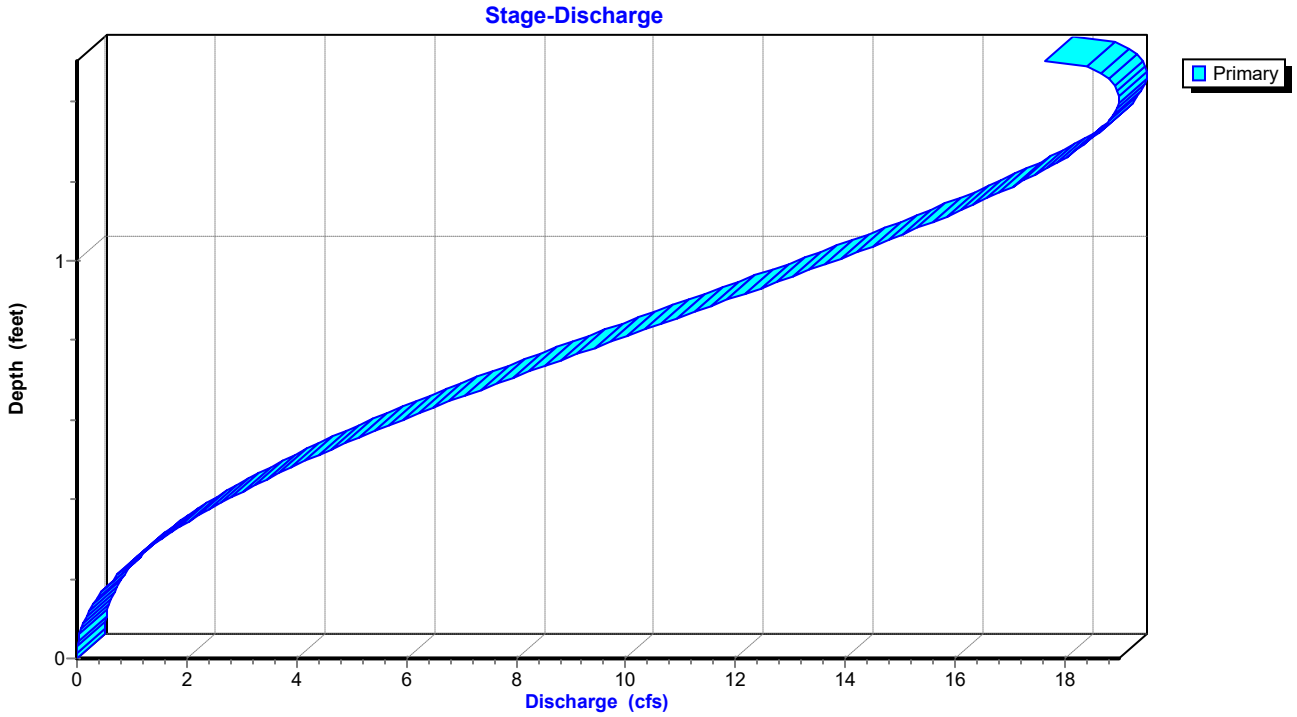
Peak Storage= 70 cf @ 0.17 hrs
Average Depth at Peak Storage= 0.55' , Surface Width= 1.45'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.65 cfs

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**

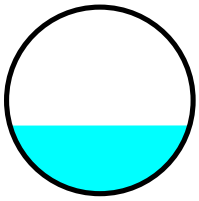
Summary for Reach P-A4: Pipe A4

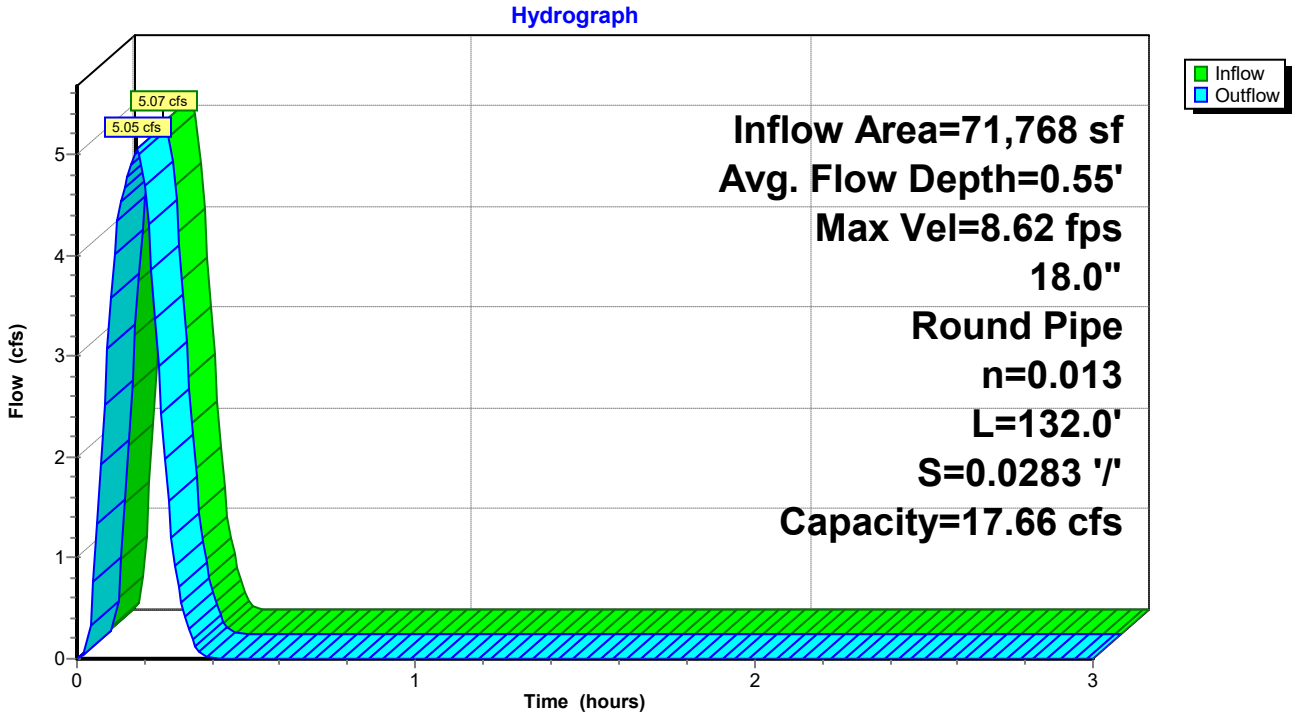
Inflow Area = 71,768 sf, 0.00% Impervious, Inflow Depth = 0.52" for 2-yr event
Inflow = 5.07 cfs @ 0.17 hrs, Volume= 3,082 cf
Outflow = 5.05 cfs @ 0.18 hrs, Volume= 3,082 cf, Atten= 0%, Lag= 0.4 min
Routed to Pond DP1 : Re-Establised East Pond

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

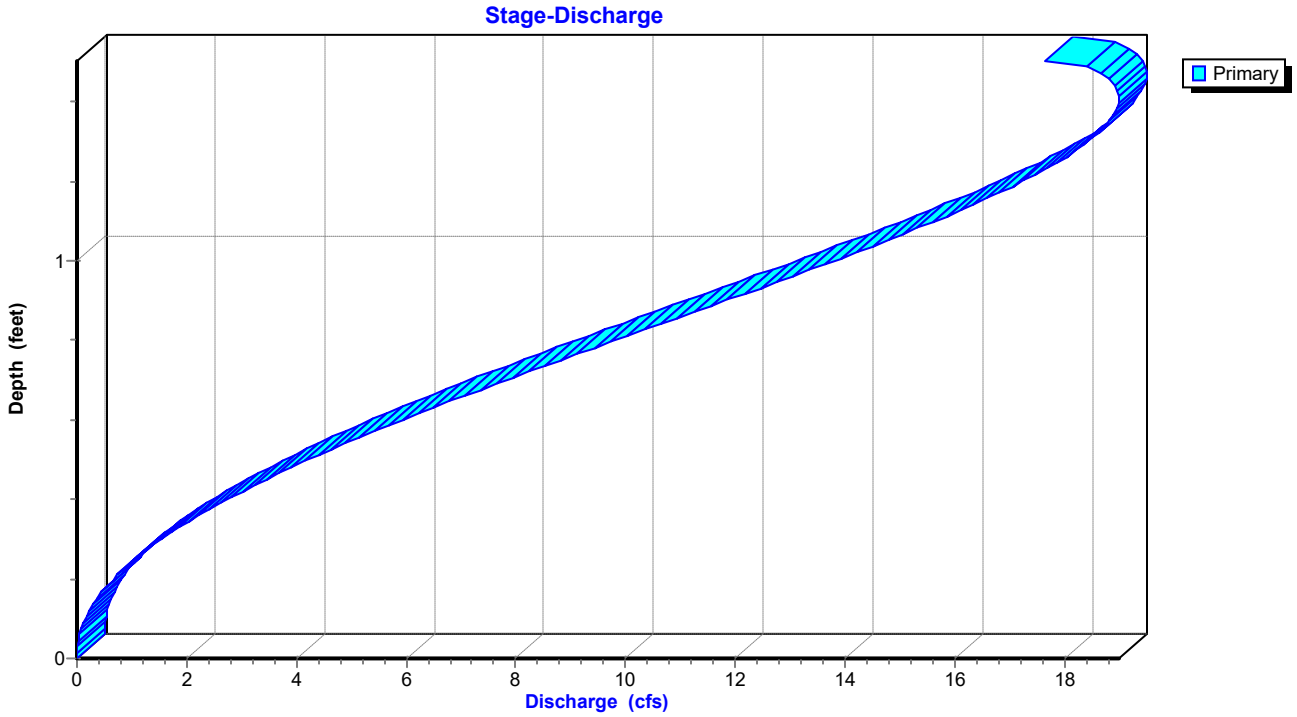
Peak Storage= 77 cf @ 0.17 hrs
Average Depth at Peak Storage= 0.55' , Surface Width= 1.45'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.66 cfs

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)

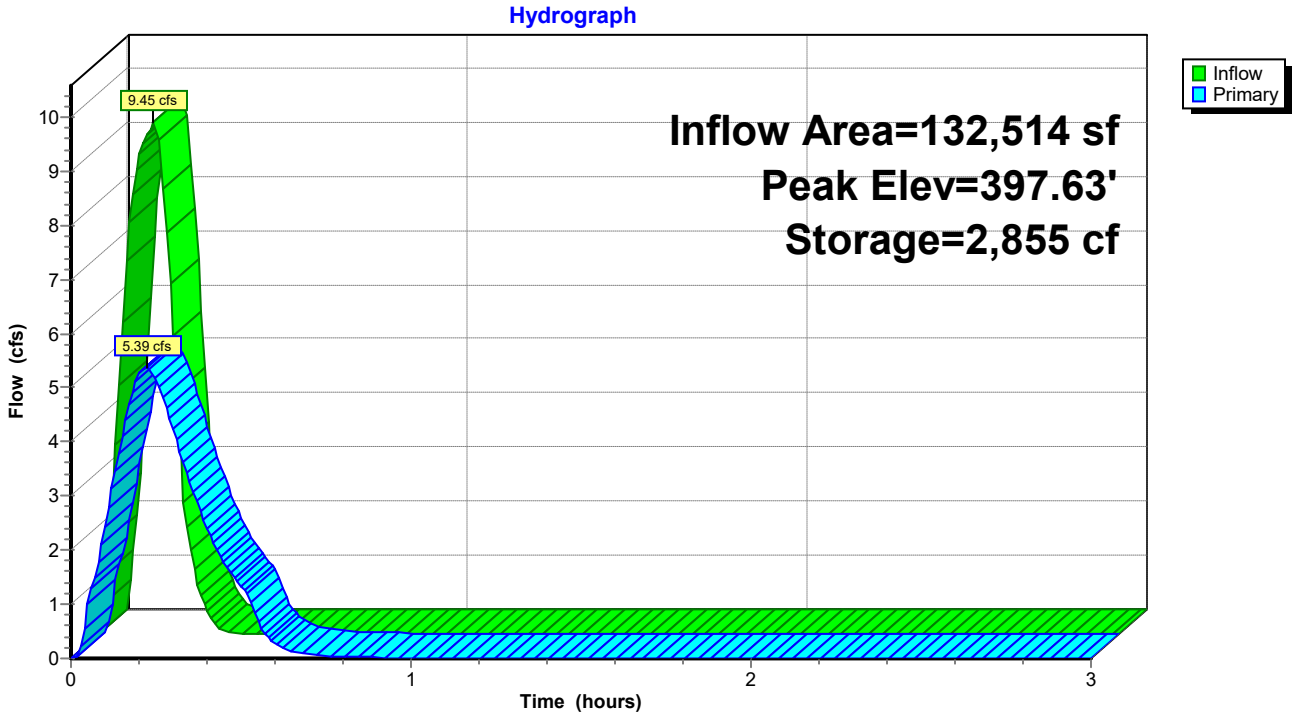
Volume	Invert	Avail.Storage	Storage Description
#1	396.00'	8,557 cf	**Custom Stage Data** Listed below

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

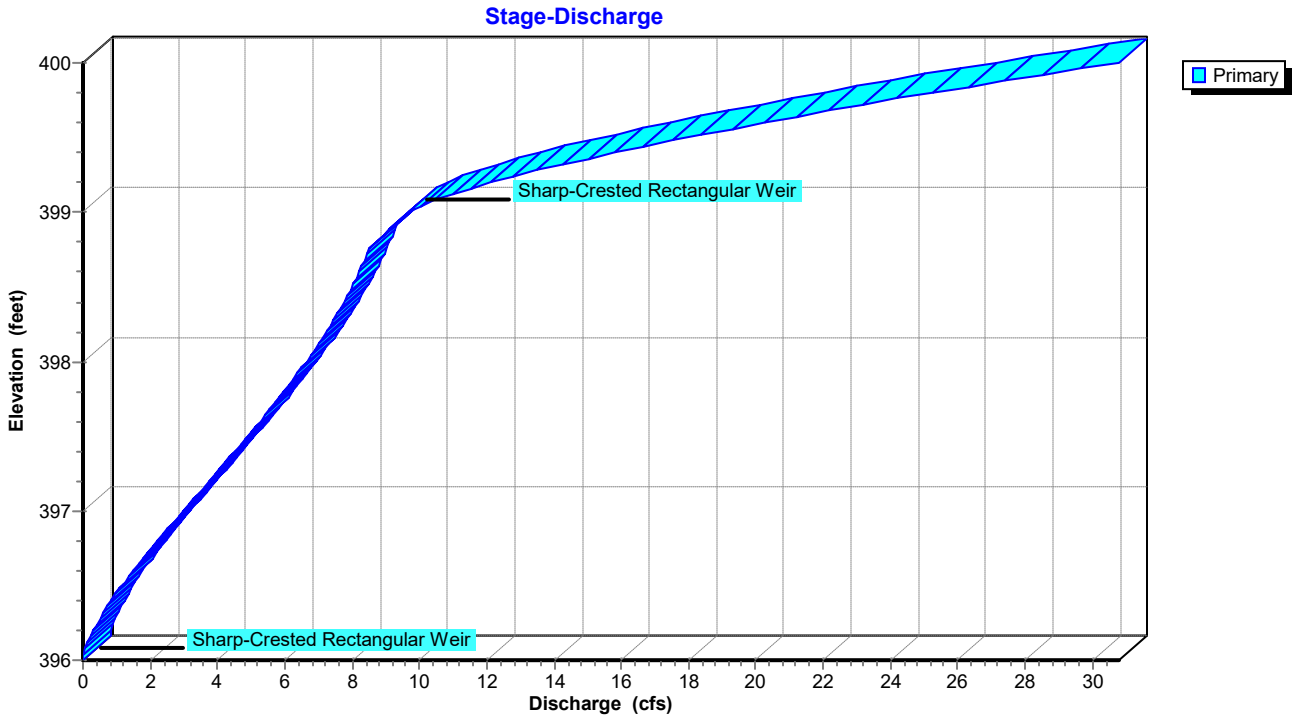
Device	Routing	Invert	Outlet Devices
#1	Primary	399.00'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	396.00'	**1.1' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 10.0' Crest Height

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

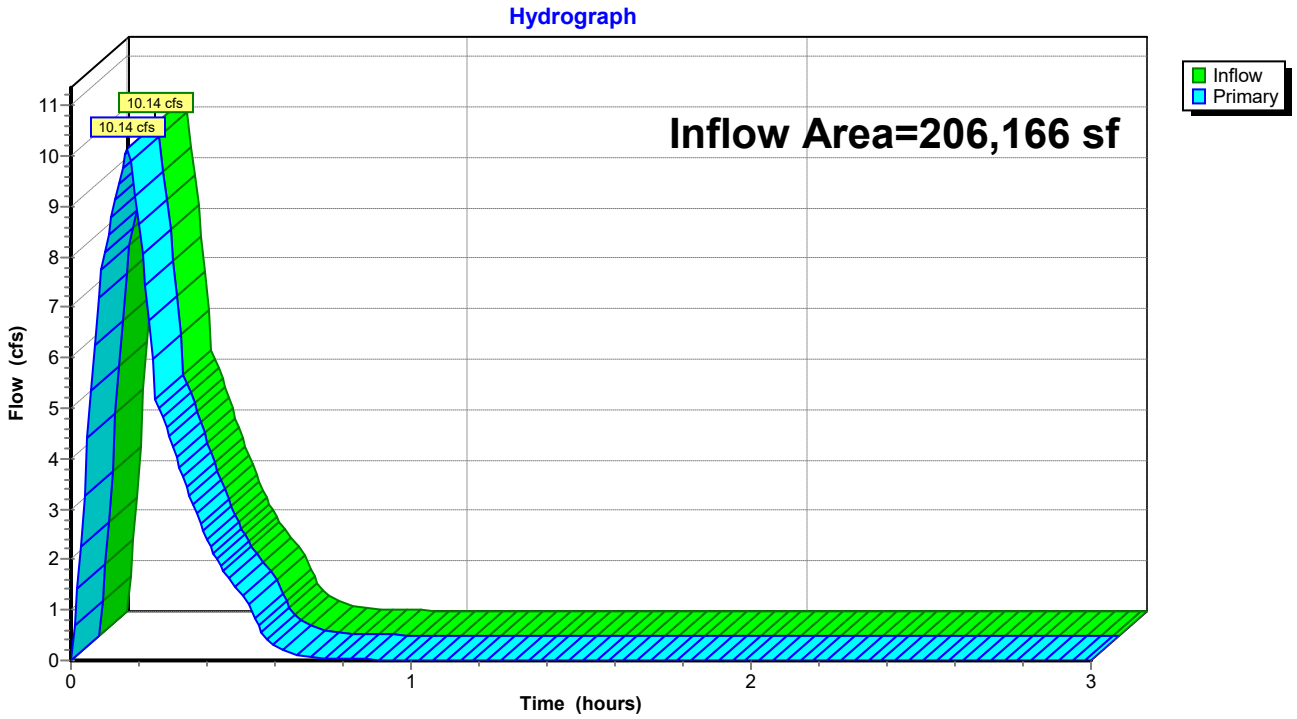
Elevation (feet)	Storage (cubic-feet)
396.00	0
396.05	25
396.10	50
396.15	75
396.20	100
396.25	125
396.30	150
396.35	175
396.40	200
396.45	225
396.50	250
396.55	359
396.60	468
396.65	578
396.70	687
396.75	796
396.80	905
396.85	1,014
396.90	1,124
396.95	1,233
397.00	1,342
397.05	1,461
397.10	1,581
397.15	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**

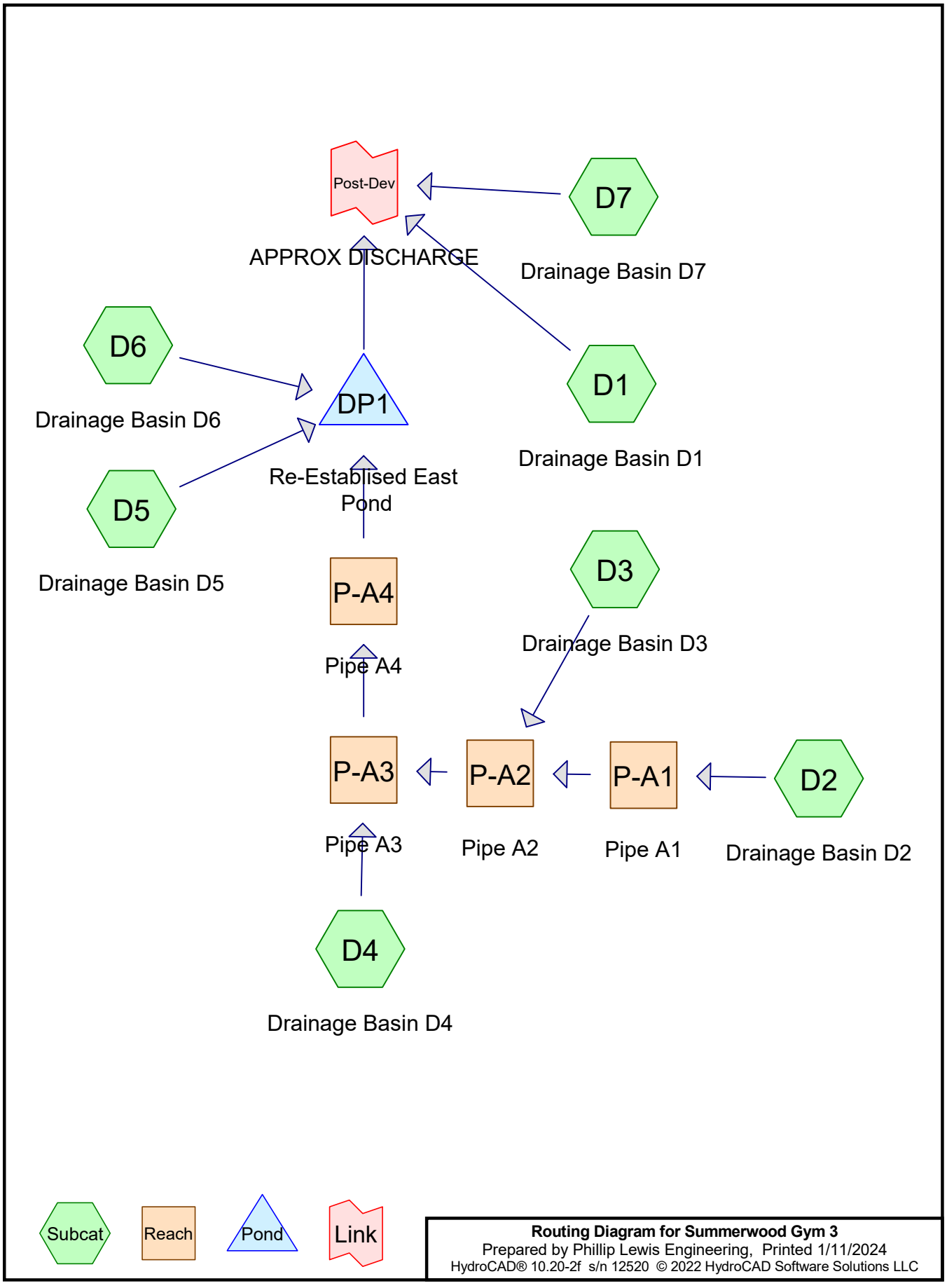
Summary for Link Post-Dev: APPROX DISCHARGE

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

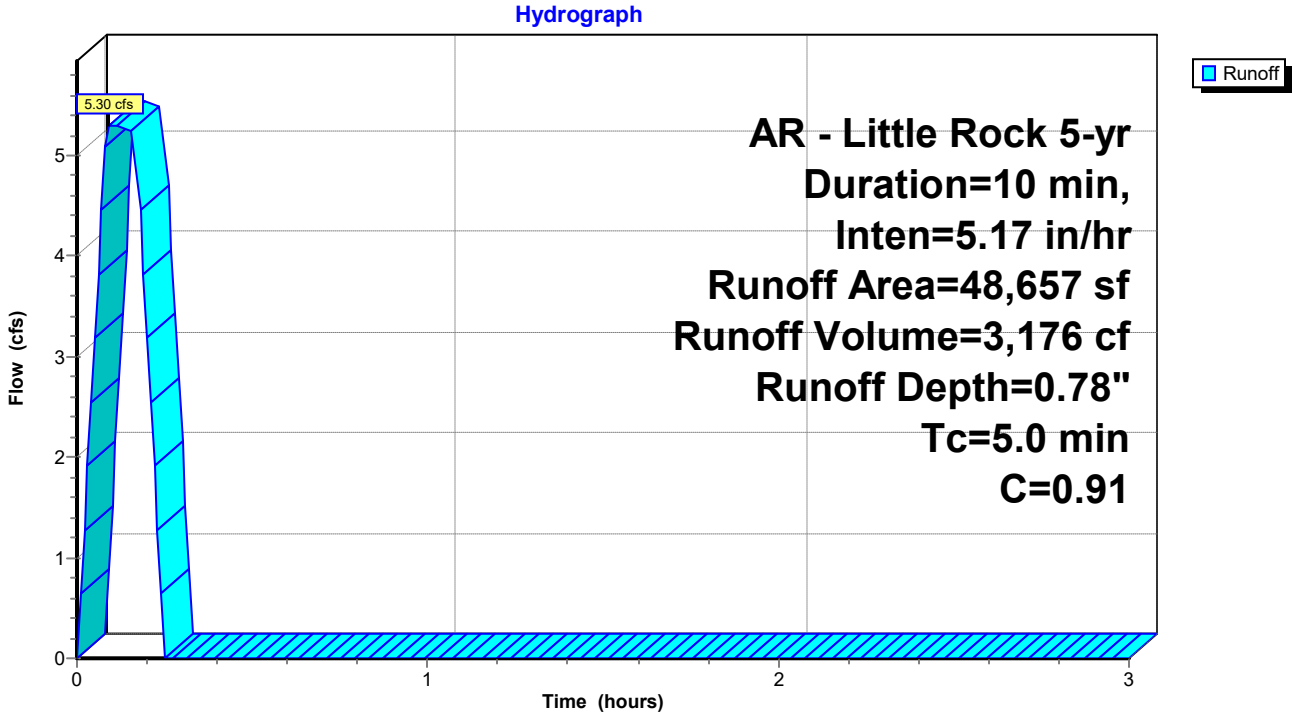
Runoff = 5.30 cfs @ 0.09 hrs, Volume= 3,176 cf, Depth= 0.78"
Routed to Link Post-Dev : APPROX DISCHARGE

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

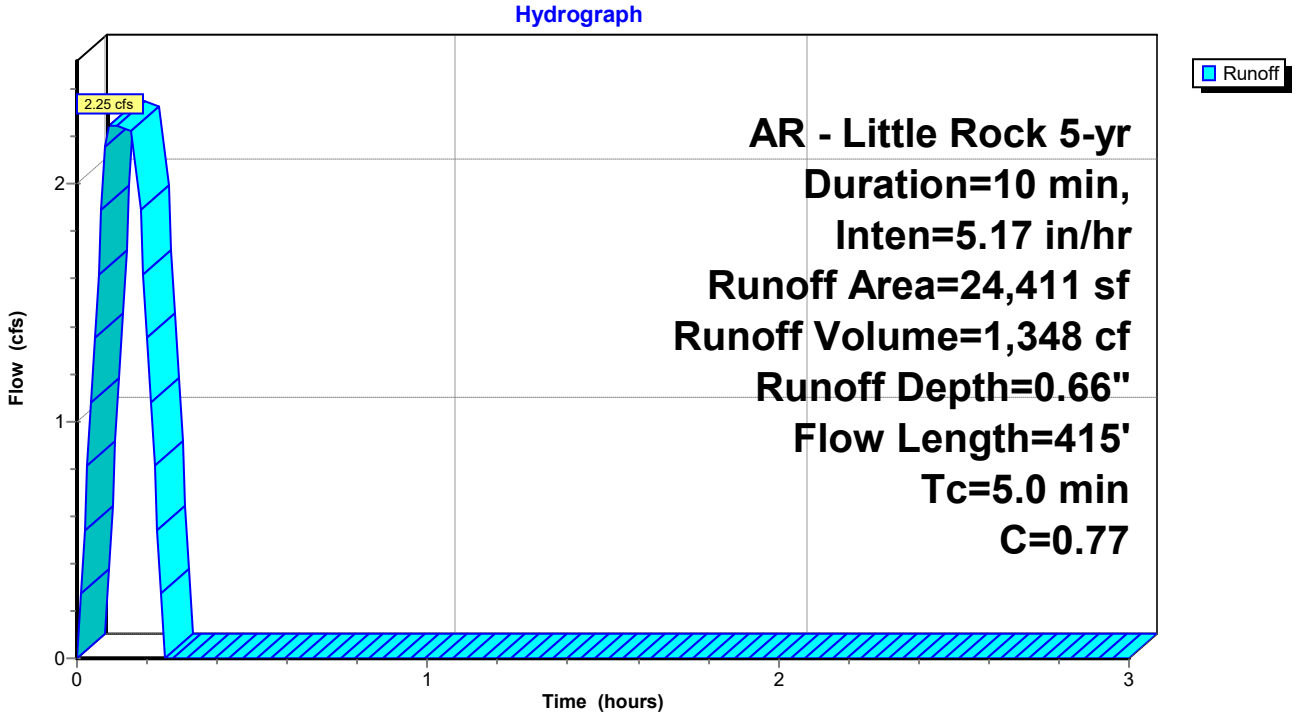
Runoff = 2.25 cfs @ 0.09 hrs, Volume= 1,348 cf, Depth= 0.66"
Routed to Reach P-A1 : Pipe A1

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

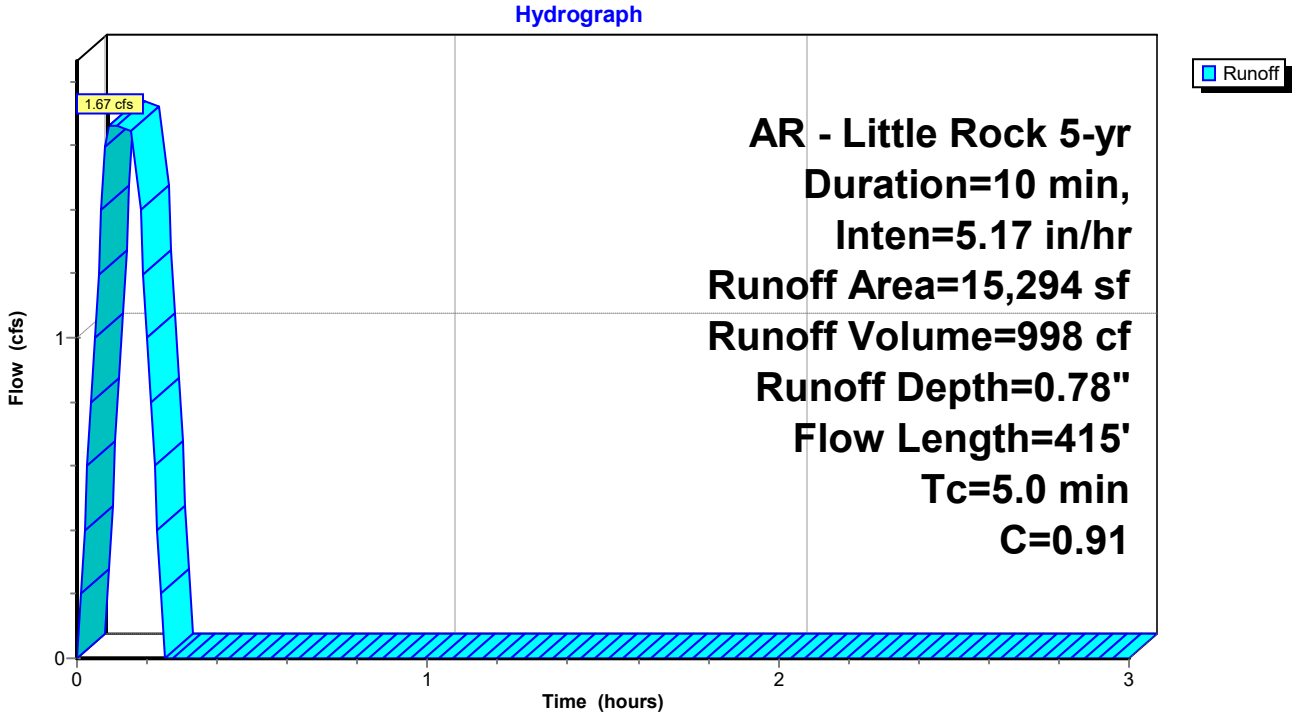
Runoff = 1.67 cfs @ 0.09 hrs, Volume= 998 cf, Depth= 0.78"
Routed to Reach P-A2 : Pipe A2

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

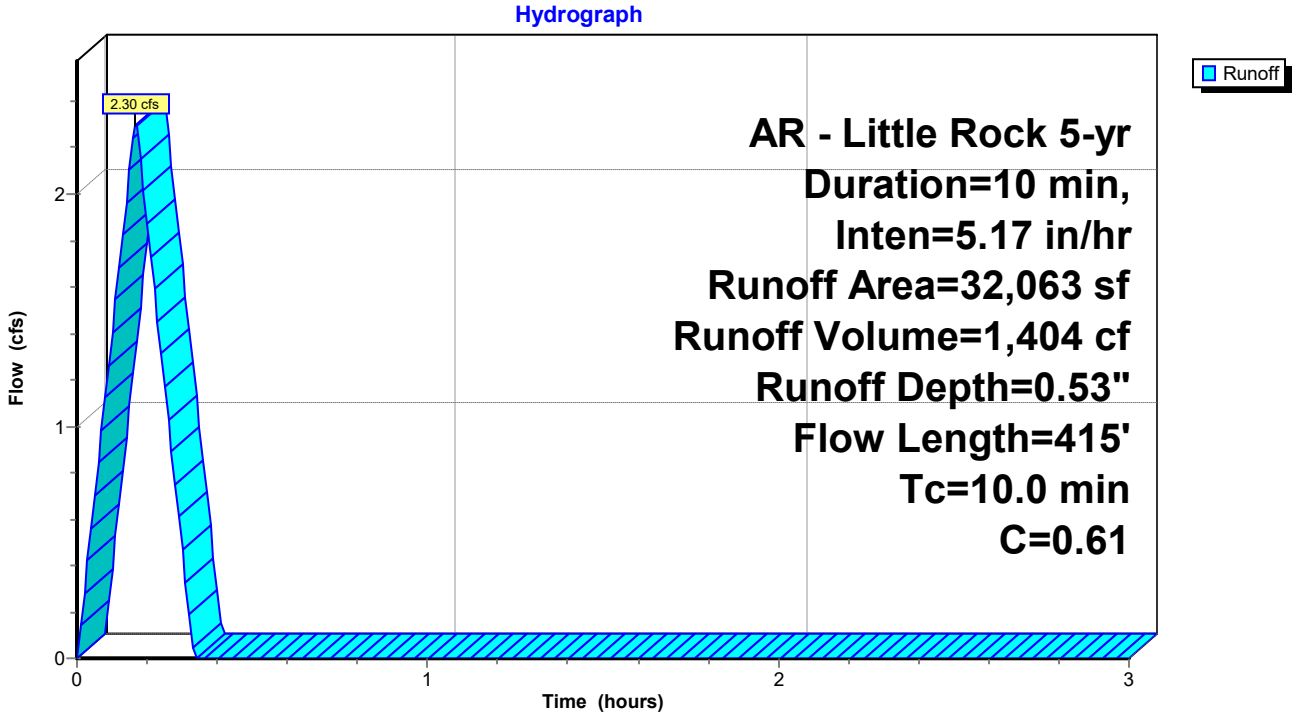
Runoff = 2.30 cfs @ 0.17 hrs, Volume= 1,404 cf, Depth= 0.53"
Routed to Reach P-A3 : Pipe A3

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

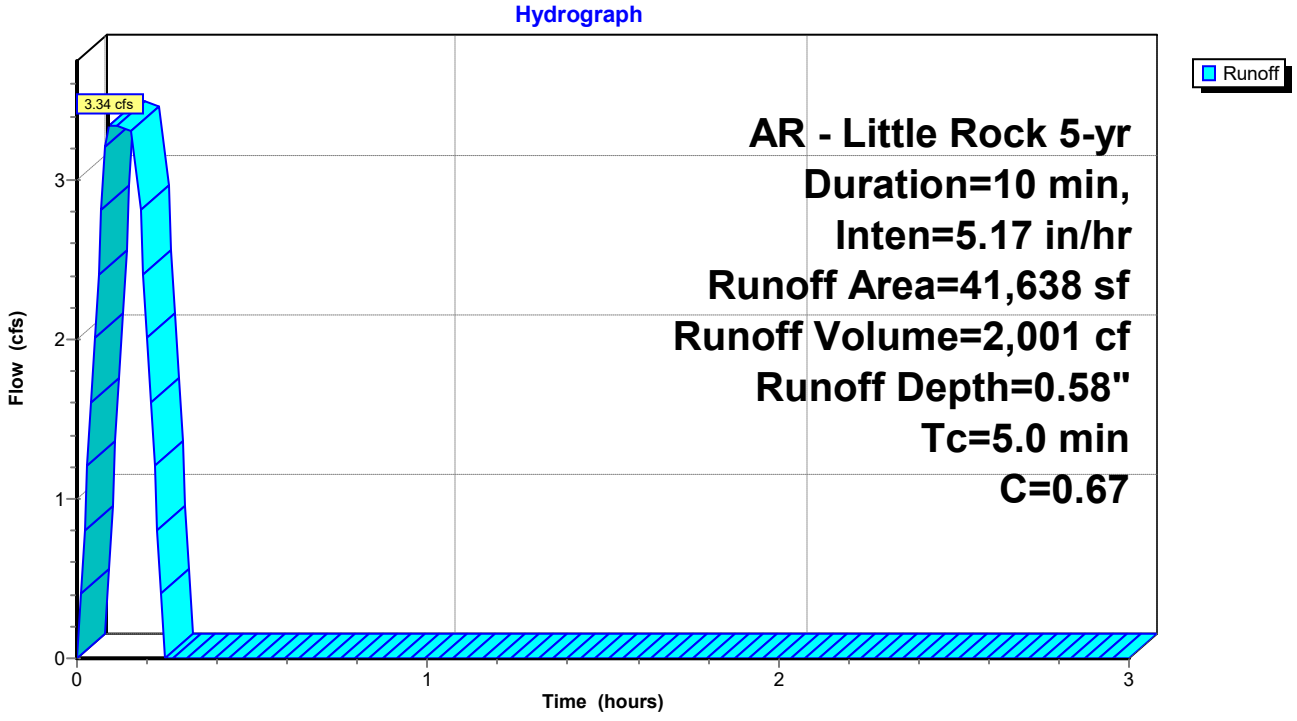
Runoff = 3.34 cfs @ 0.09 hrs, Volume= 2,001 cf, Depth= 0.58"
Routed to Pond DP1 : Re-Establised East Pond

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

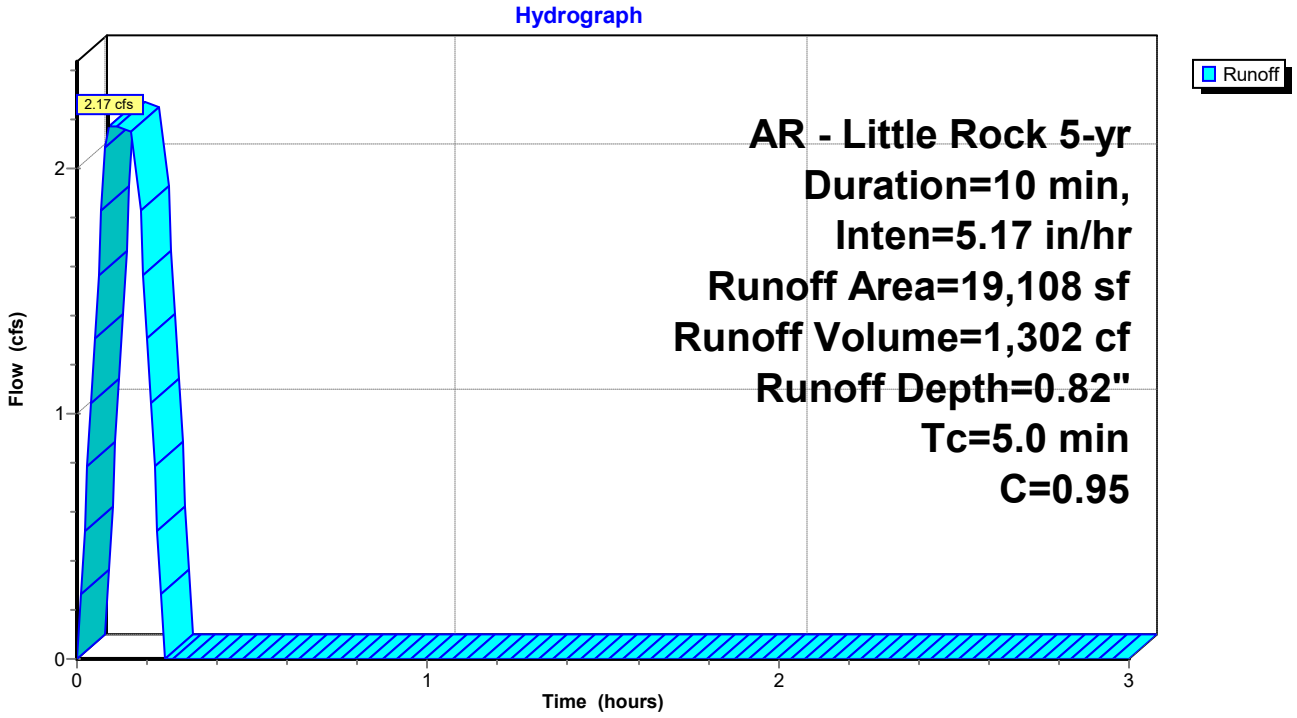
Runoff = 2.17 cfs @ 0.09 hrs, Volume= 1,302 cf, Depth= 0.82"
Routed to Pond DP1 : Re-Establised East Pond

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

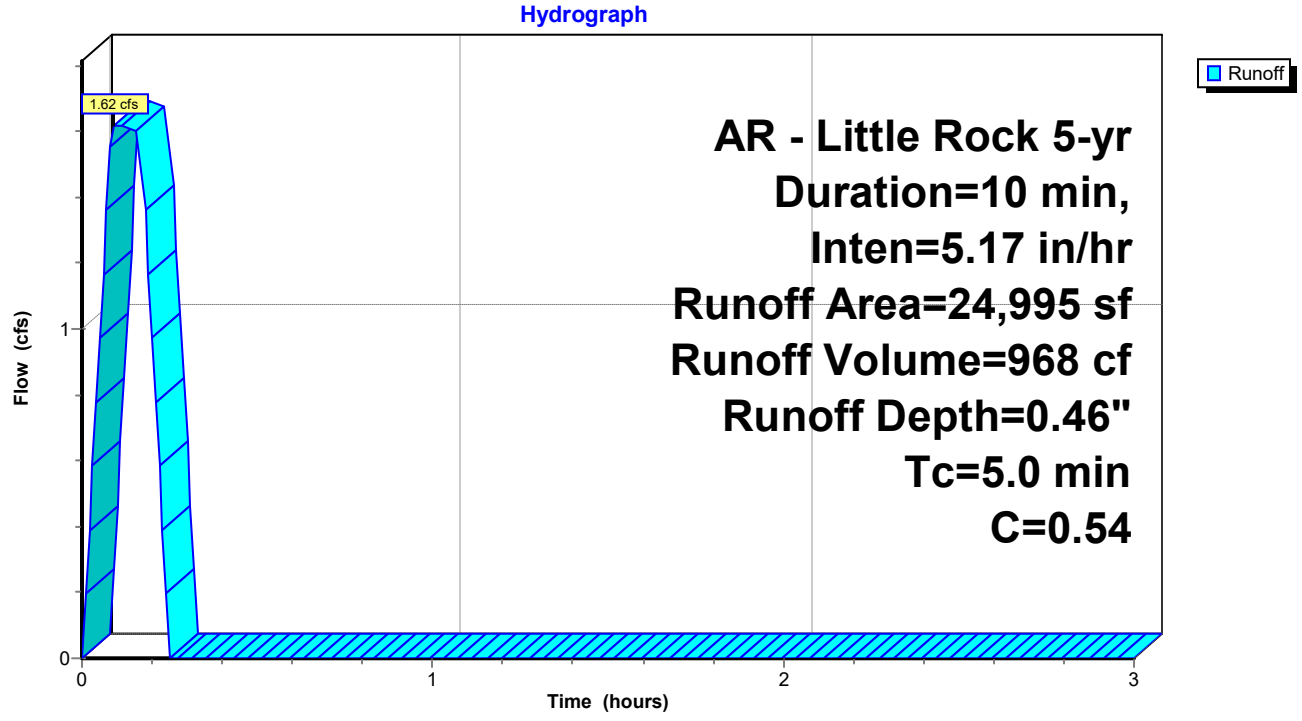
Runoff = 1.62 cfs @ 0.09 hrs, Volume= 968 cf, Depth= 0.46"
Routed to Link Post-Dev : APPROX DISCHARGE

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



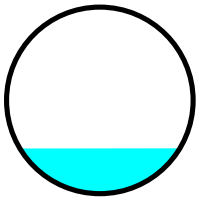
Summary for Reach P-A1: Pipe A1

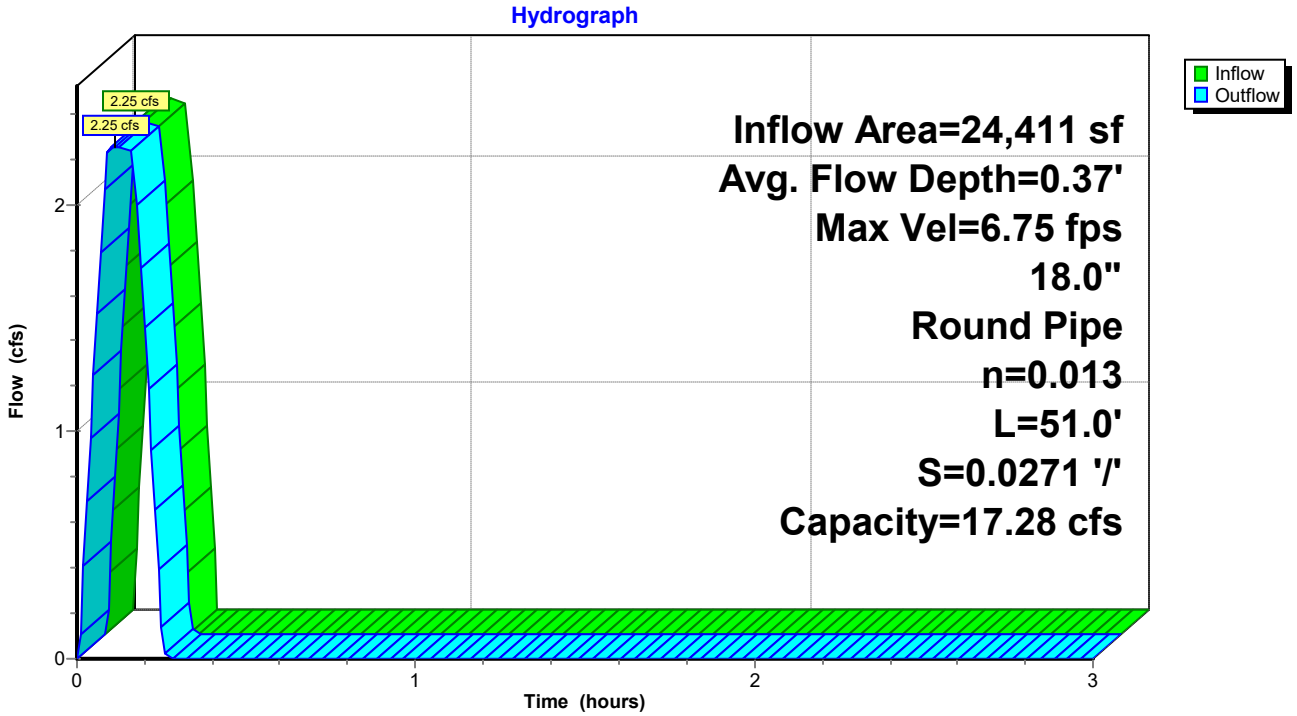
Inflow Area = 24,411 sf, 63.77% Impervious, Inflow Depth = 0.66" for 5-yr event
Inflow = 2.25 cfs @ 0.09 hrs, Volume= 1,348 cf
Outflow = 2.25 cfs @ 0.11 hrs, Volume= 1,348 cf, Atten= 0%, Lag= 1.2 min
Routed to Reach P-A2 : Pipe A2

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

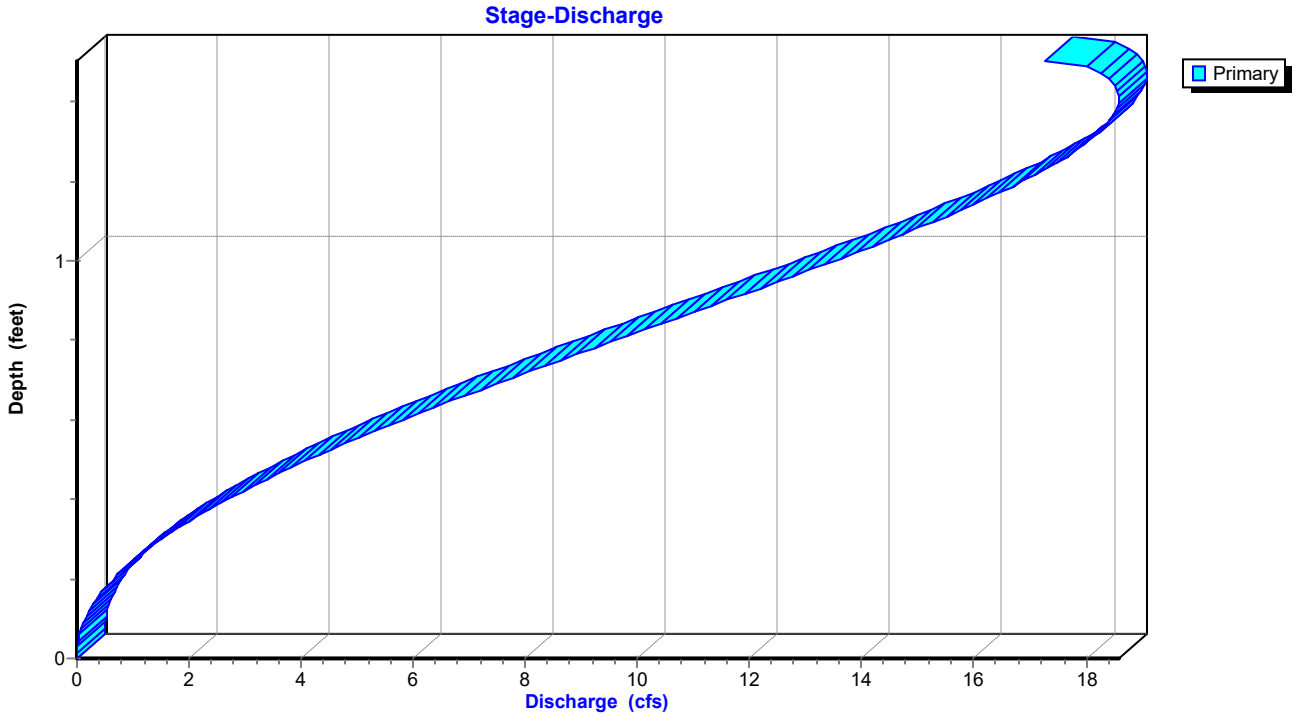
Peak Storage= 17 cf @ 0.09 hrs
Average Depth at Peak Storage= 0.37' , Surface Width= 1.29'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.28 cfs

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**

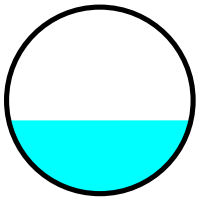
Summary for Reach P-A2: Pipe A2

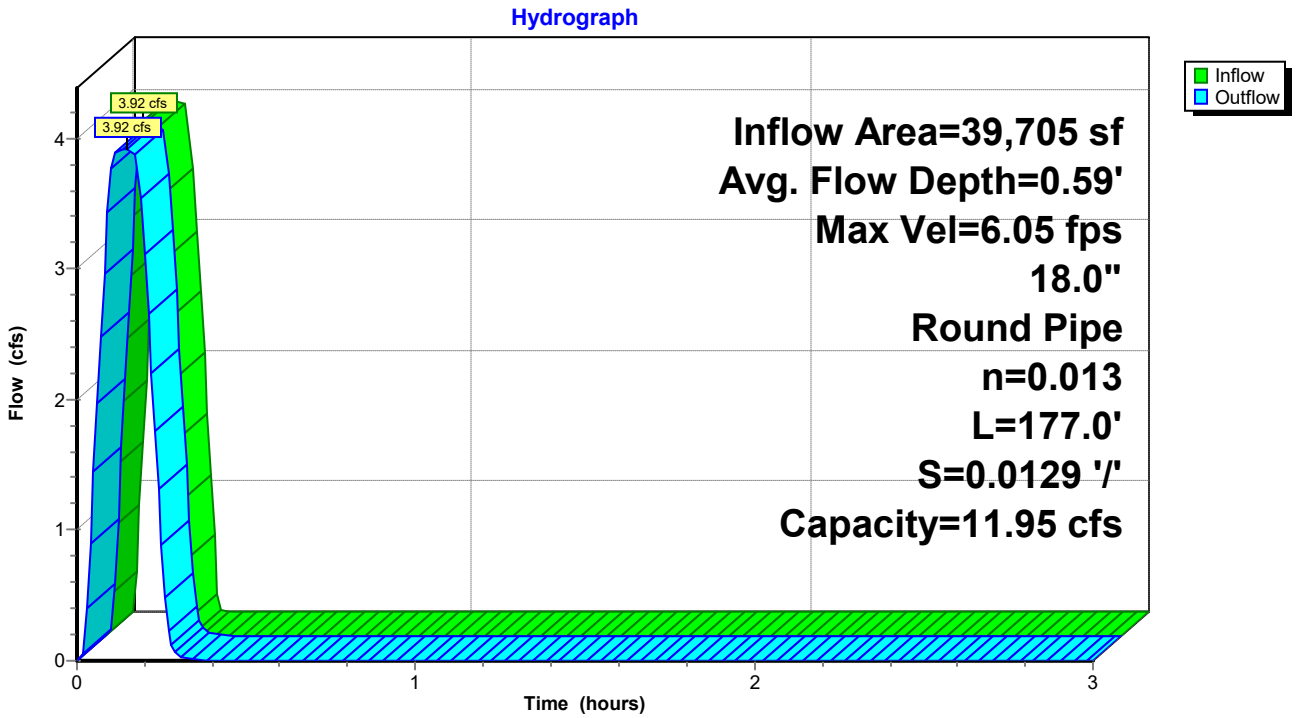
Inflow Area = 39,705 sf, 75.04% Impervious, Inflow Depth = 0.71" for 5-yr event
Inflow = 3.92 cfs @ 0.11 hrs, Volume= 2,346 cf
Outflow = 3.92 cfs @ 0.15 hrs, Volume= 2,346 cf, Atten= 0%, Lag= 2.4 min
Routed to Reach P-A3 : Pipe A3

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

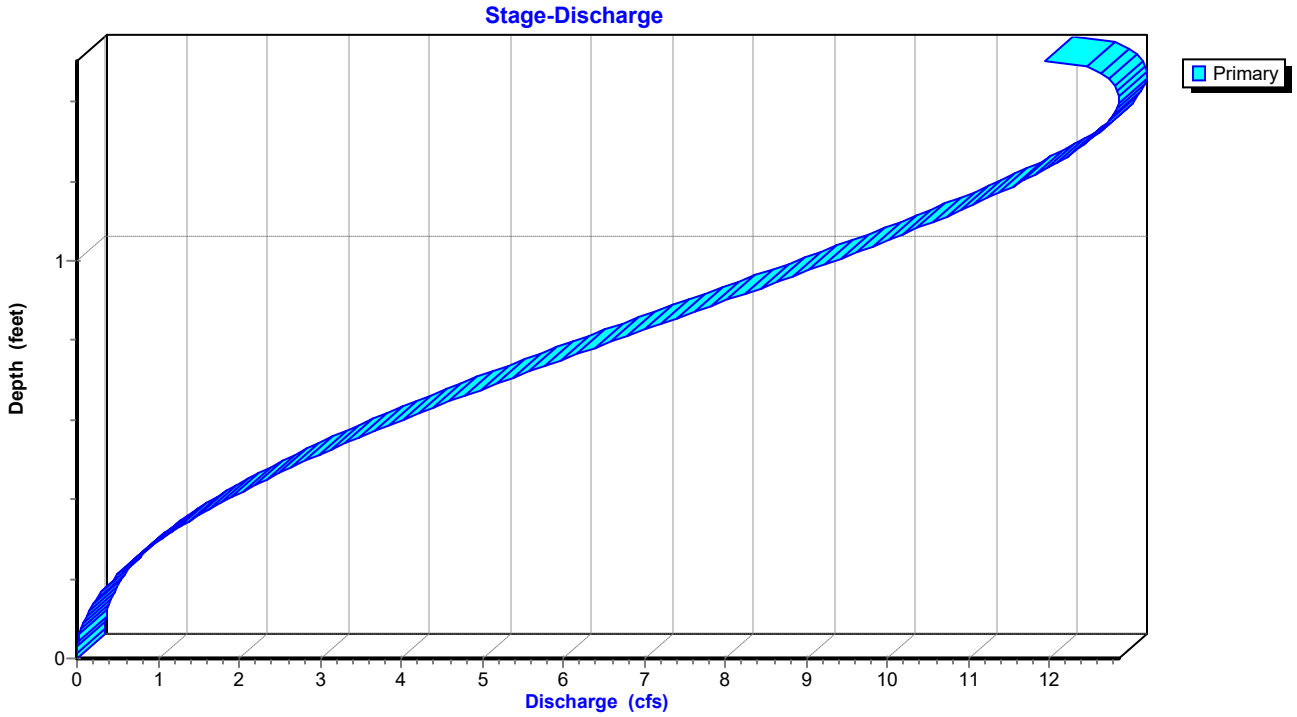
Peak Storage= 114 cf @ 0.14 hrs
Average Depth at Peak Storage= 0.59' , Surface Width= 1.47'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 11.95 cfs

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**

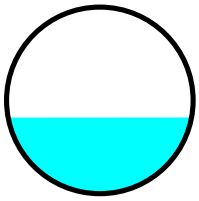
Summary for Reach P-A3: Pipe A3

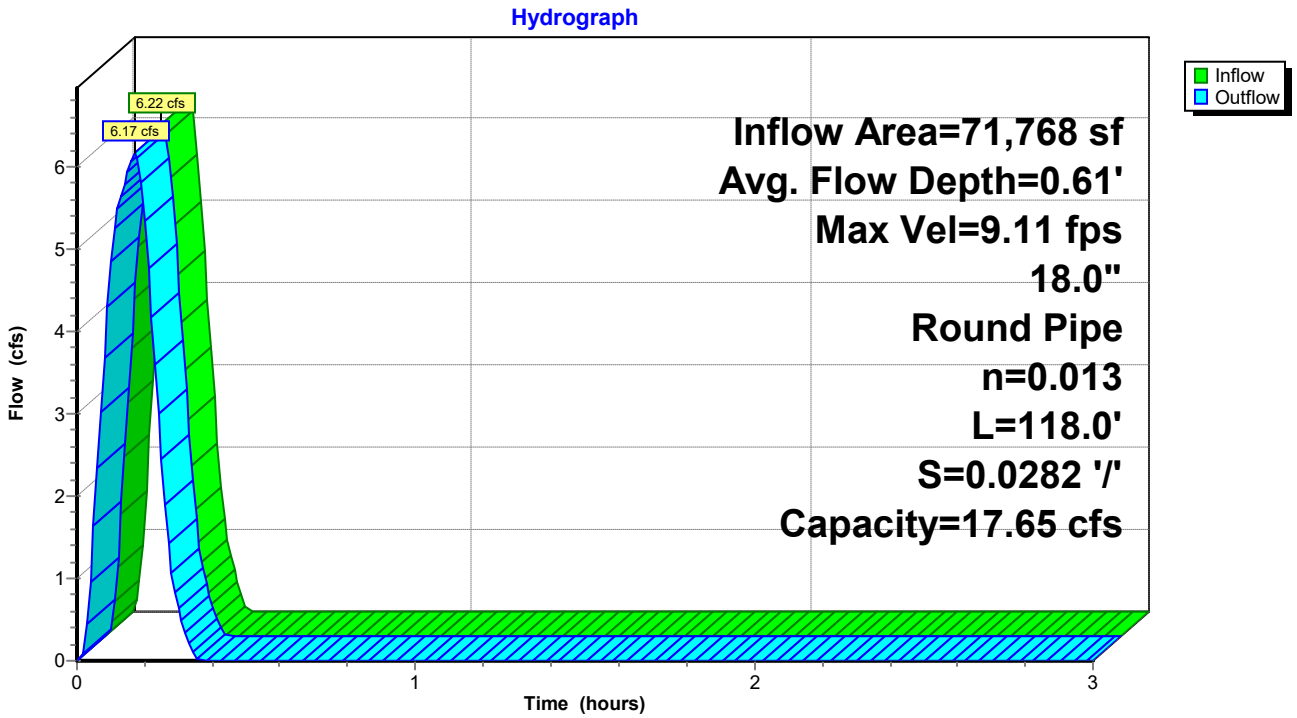
Inflow Area = 71,768 sf, 58.28% Impervious, Inflow Depth = 0.63" for 5-yr event
Inflow = 6.22 cfs @ 0.17 hrs, Volume= 3,751 cf
Outflow = 6.17 cfs @ 0.17 hrs, Volume= 3,751 cf, Atten= 1%, Lag= 0.3 min
Routed to Reach P-A4 : Pipe A4

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

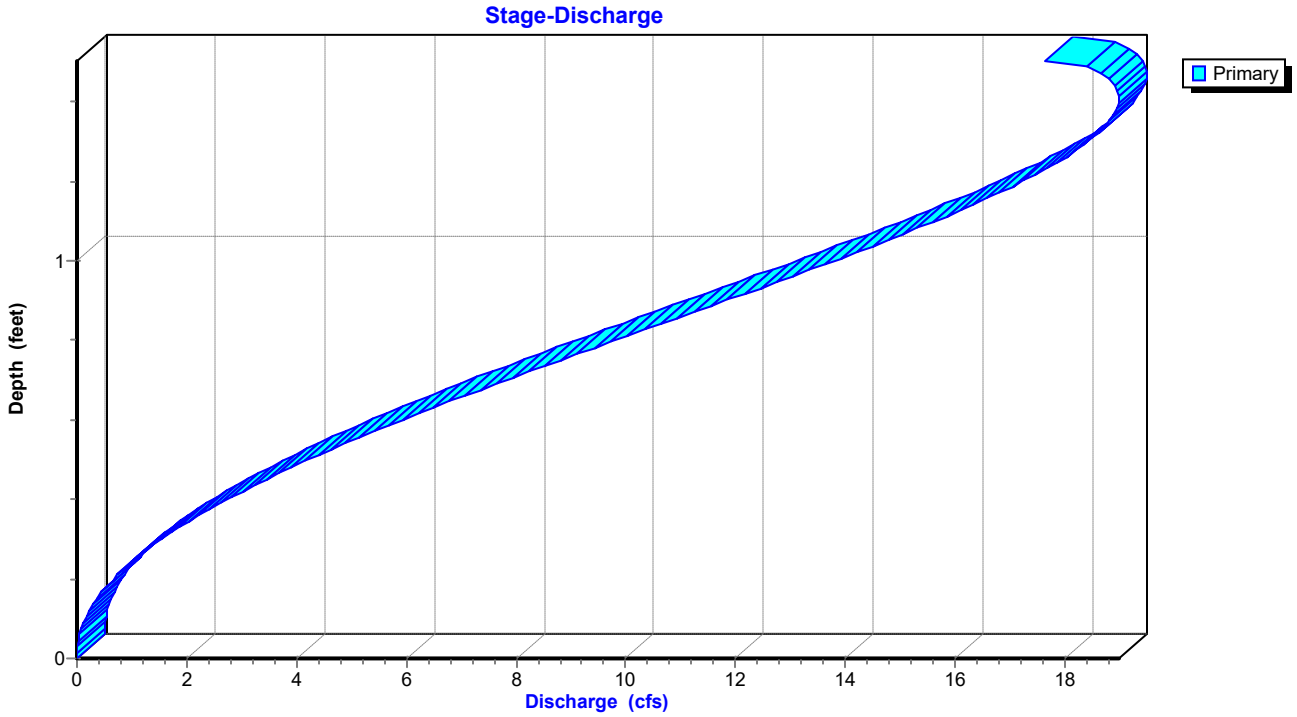
Peak Storage= 80 cf @ 0.17 hrs
Average Depth at Peak Storage= 0.61' , Surface Width= 1.48'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.65 cfs

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**

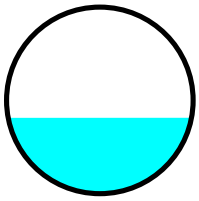
Summary for Reach P-A4: Pipe A4

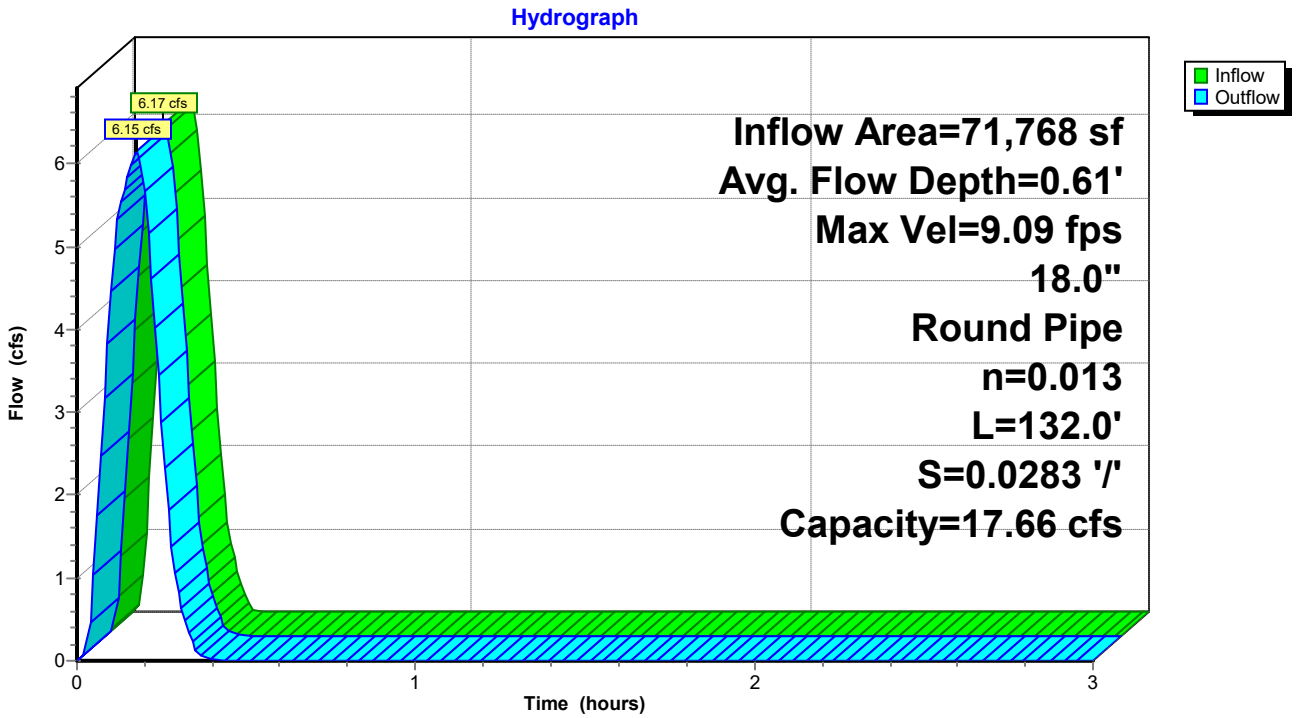
Inflow Area = 71,768 sf, 58.28% Impervious, Inflow Depth = 0.63" for 5-yr event
Inflow = 6.17 cfs @ 0.17 hrs, Volume= 3,751 cf
Outflow = 6.15 cfs @ 0.18 hrs, Volume= 3,751 cf, Atten= 0%, Lag= 0.4 min
Routed to Pond DP1 : Re-Establised East Pond

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

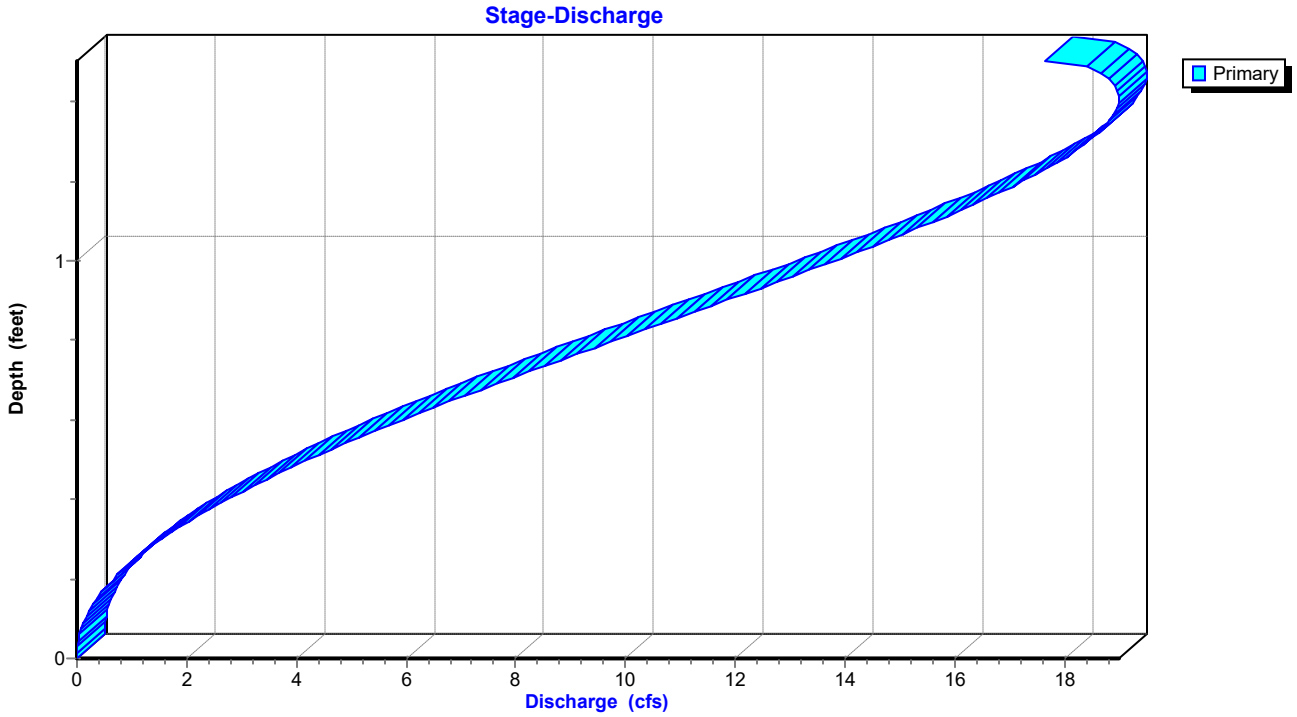
Peak Storage= 89 cf @ 0.17 hrs
Average Depth at Peak Storage= 0.61' , Surface Width= 1.47'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.66 cfs

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)

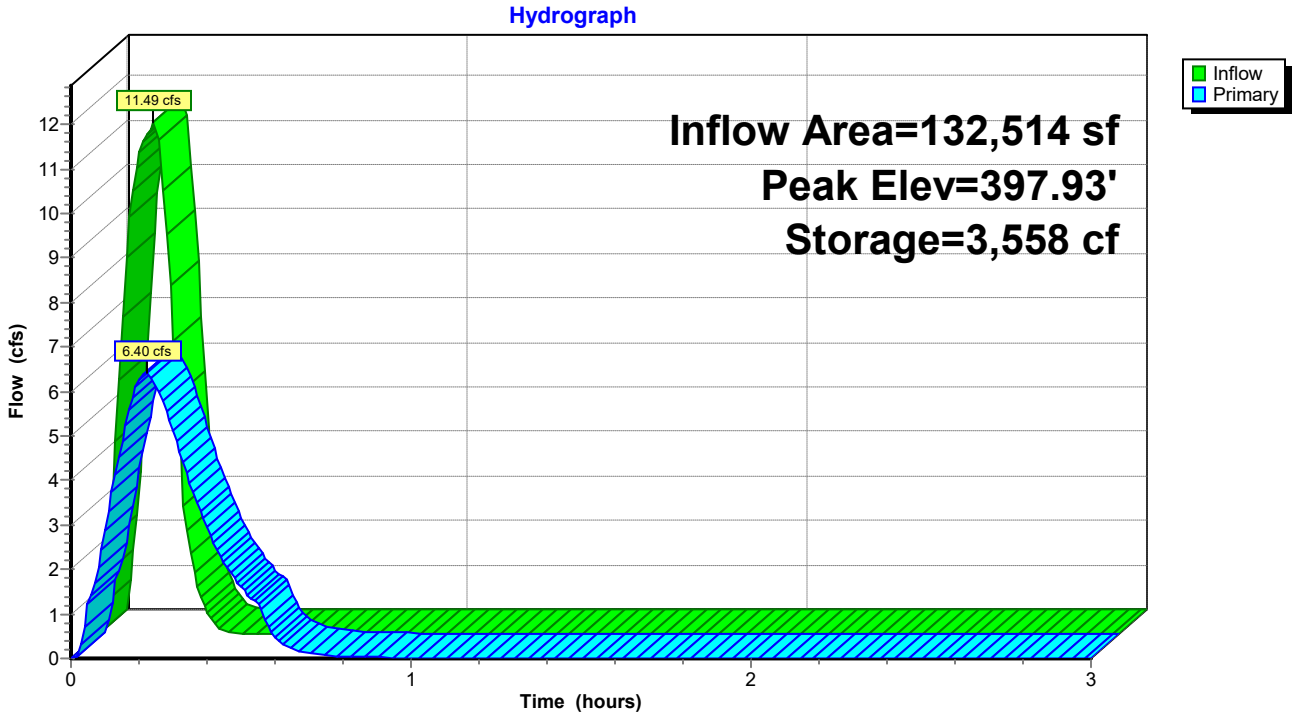
Volume	Invert	Avail.Storage	Storage Description
#1	396.00'	8,557 cf	**Custom Stage Data** Listed below

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

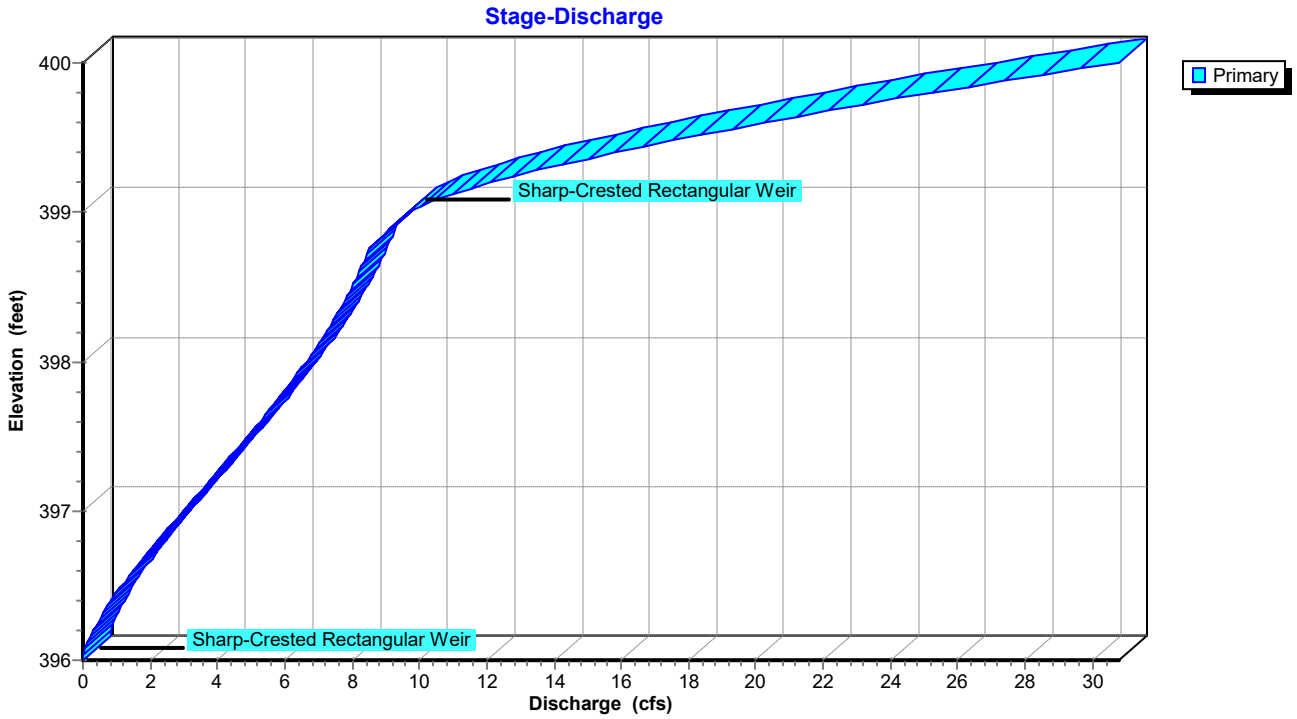
Device	Routing	Invert	Outlet Devices
#1	Primary	399.00'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	396.00'	**1.1' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 10.0' Crest Height

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

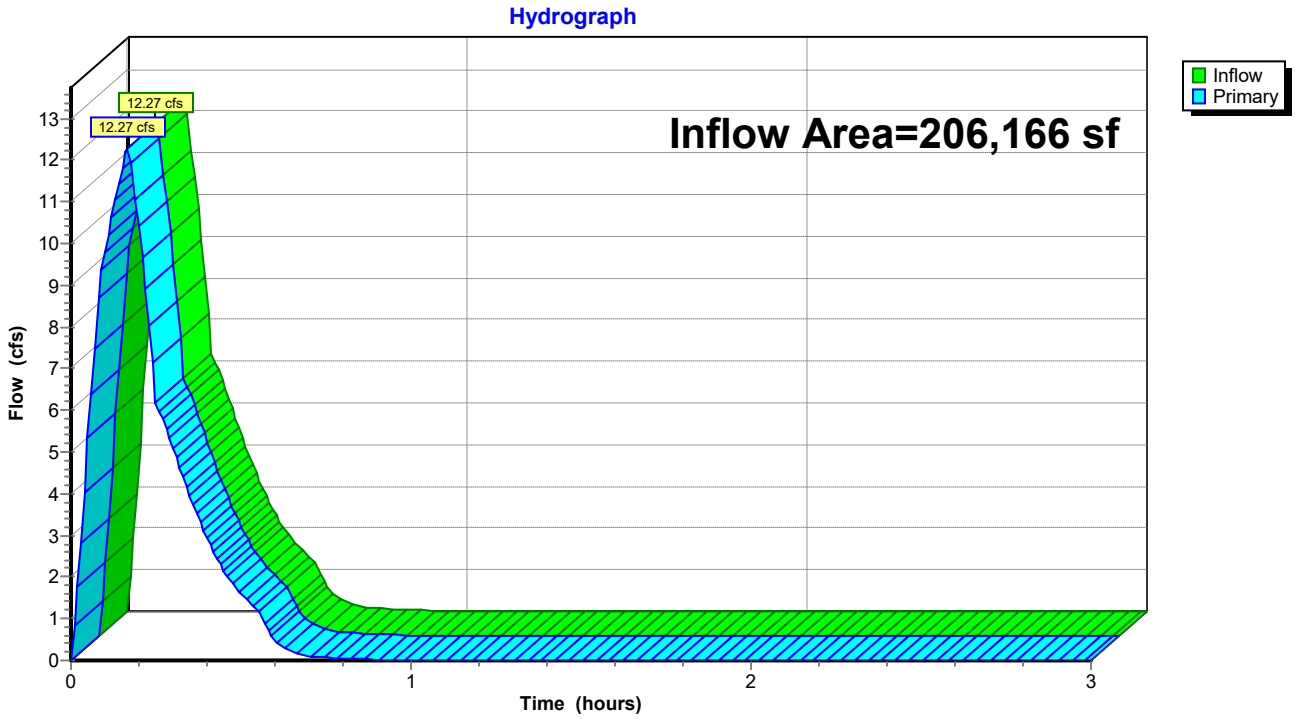
Elevation (feet)	Storage (cubic-feet)
396.00	0
396.05	25
396.10	50
396.15	75
396.20	100
396.25	125
396.30	150
396.35	175
396.40	200
396.45	225
396.50	250
396.55	359
396.60	468
396.65	578
396.70	687
396.75	796
396.80	905
396.85	1,014
396.90	1,124
396.95	1,233
397.00	1,342
397.05	1,461
397.10	1,581
397.15	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

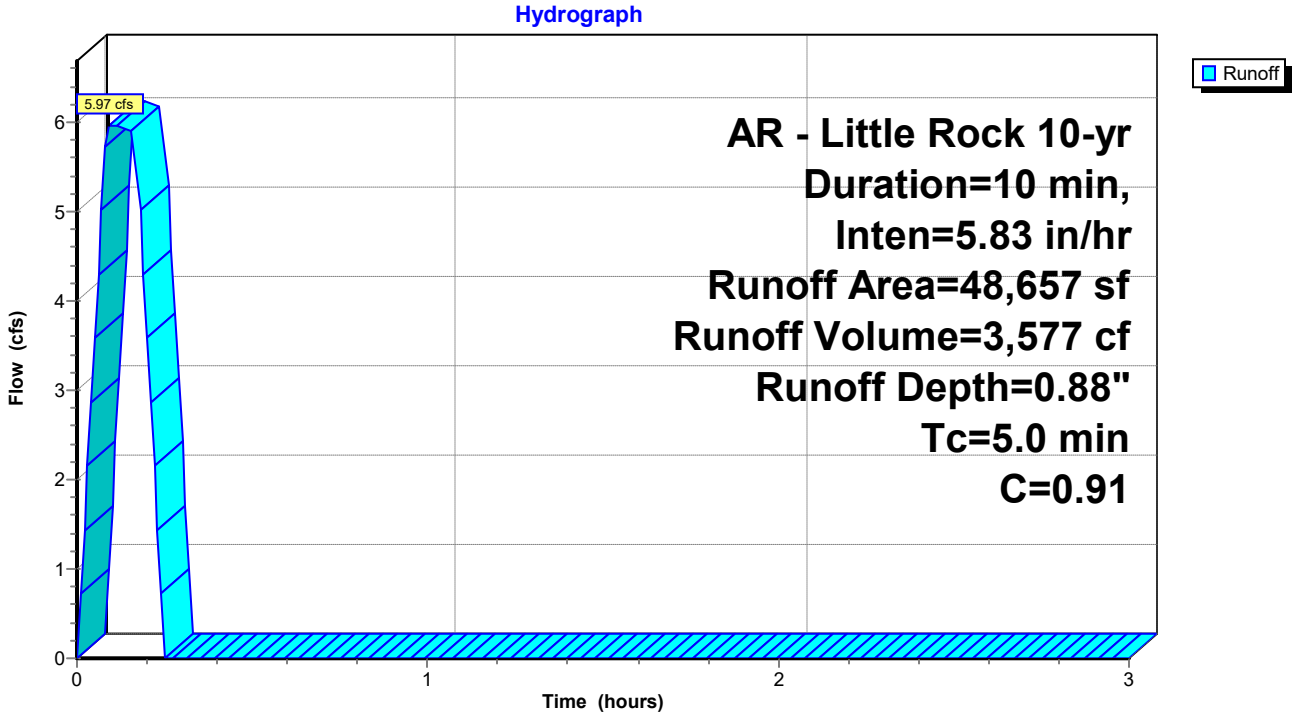
Runoff = 5.97 cfs @ 0.09 hrs, Volume= 3,577 cf, Depth= 0.88"
Routed to Link Post-Dev : APPROX DISCHARGE

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

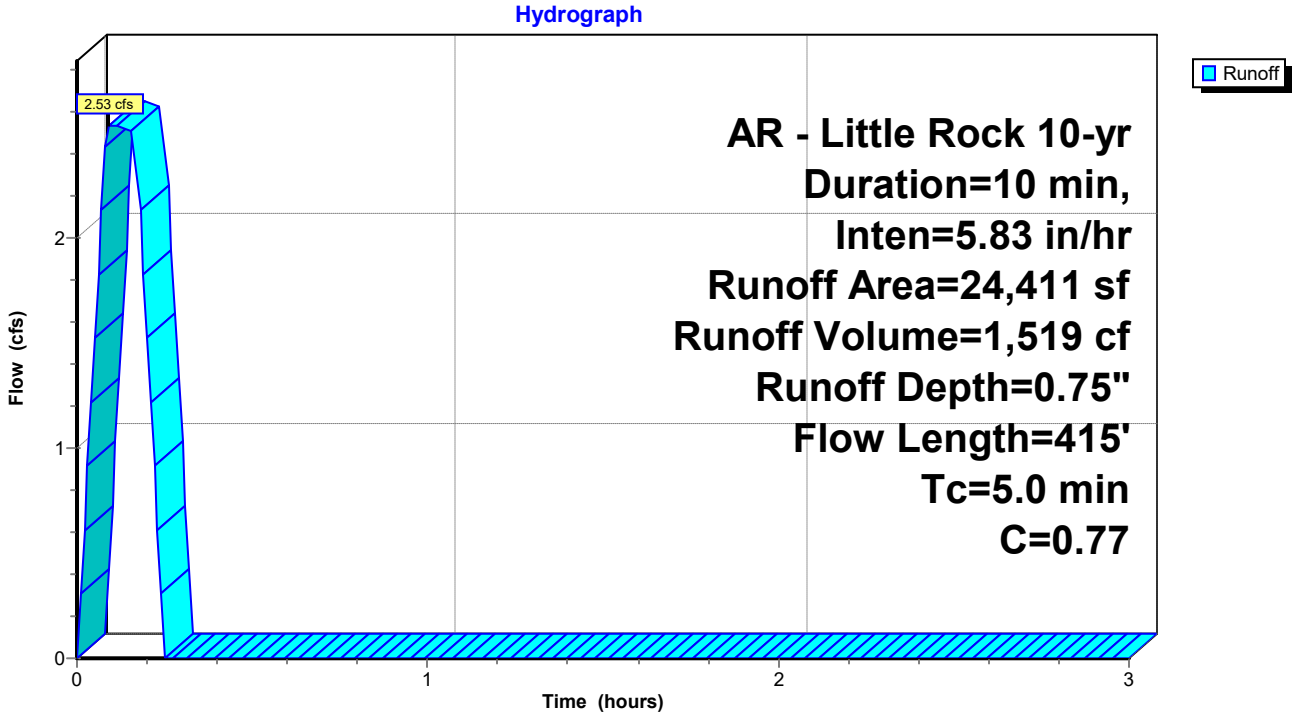
Runoff = 2.53 cfs @ 0.09 hrs, Volume= 1,519 cf, Depth= 0.75"
Routed to Reach P-A1 : Pipe A1

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

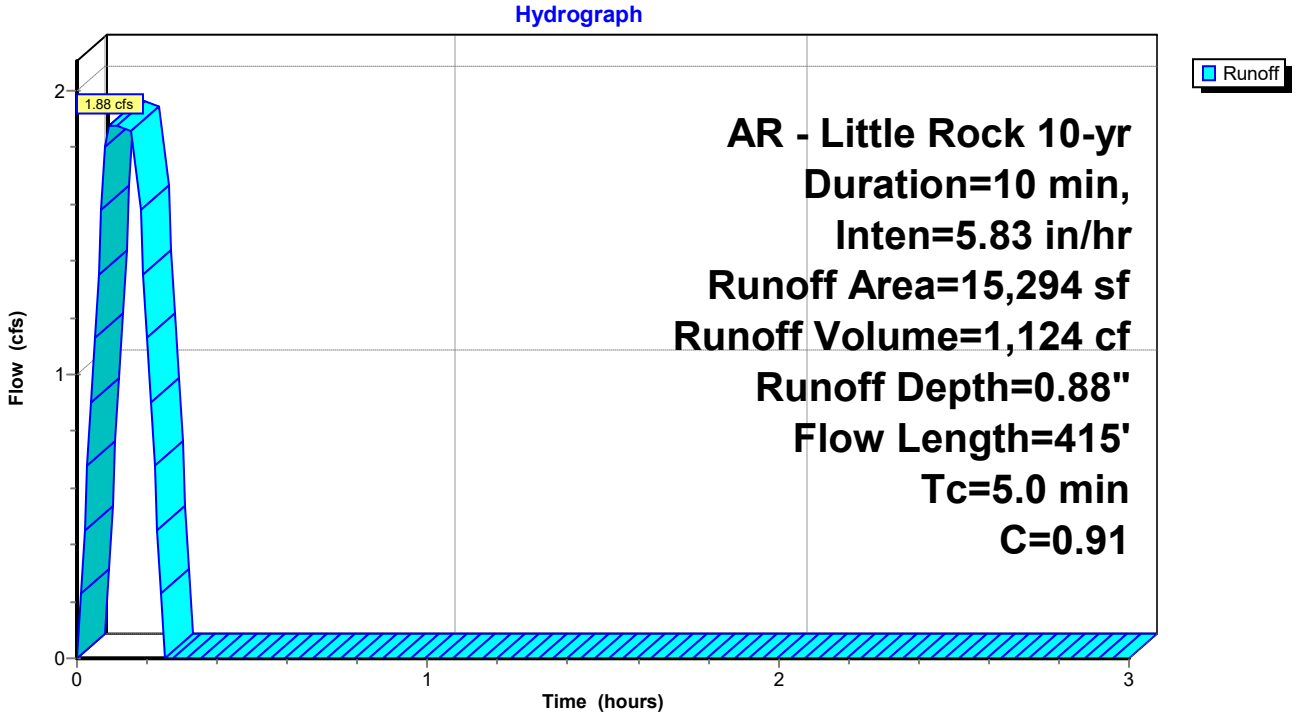
Runoff = 1.88 cfs @ 0.09 hrs, Volume= 1,124 cf, Depth= 0.88"
Routed to Reach P-A2 : Pipe A2

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

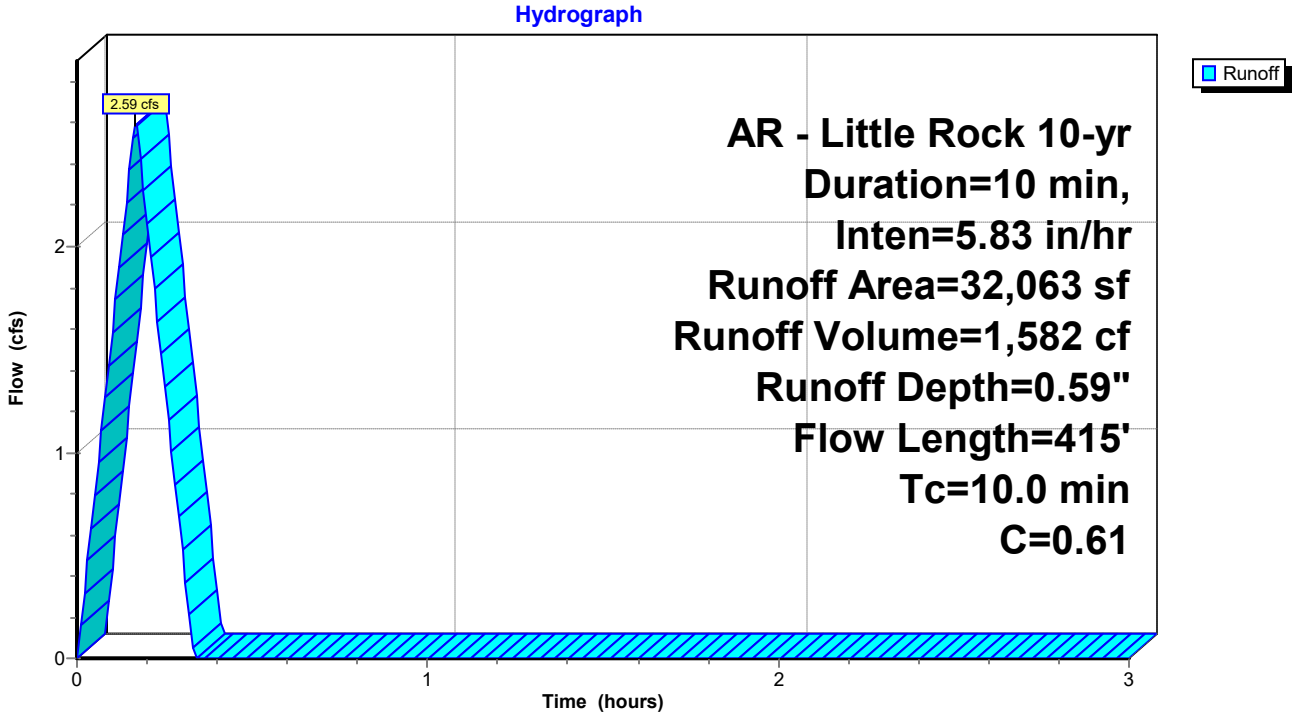
Runoff = 2.59 cfs @ 0.17 hrs, Volume= 1,582 cf, Depth= 0.59"
Routed to Reach P-A3 : Pipe A3

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

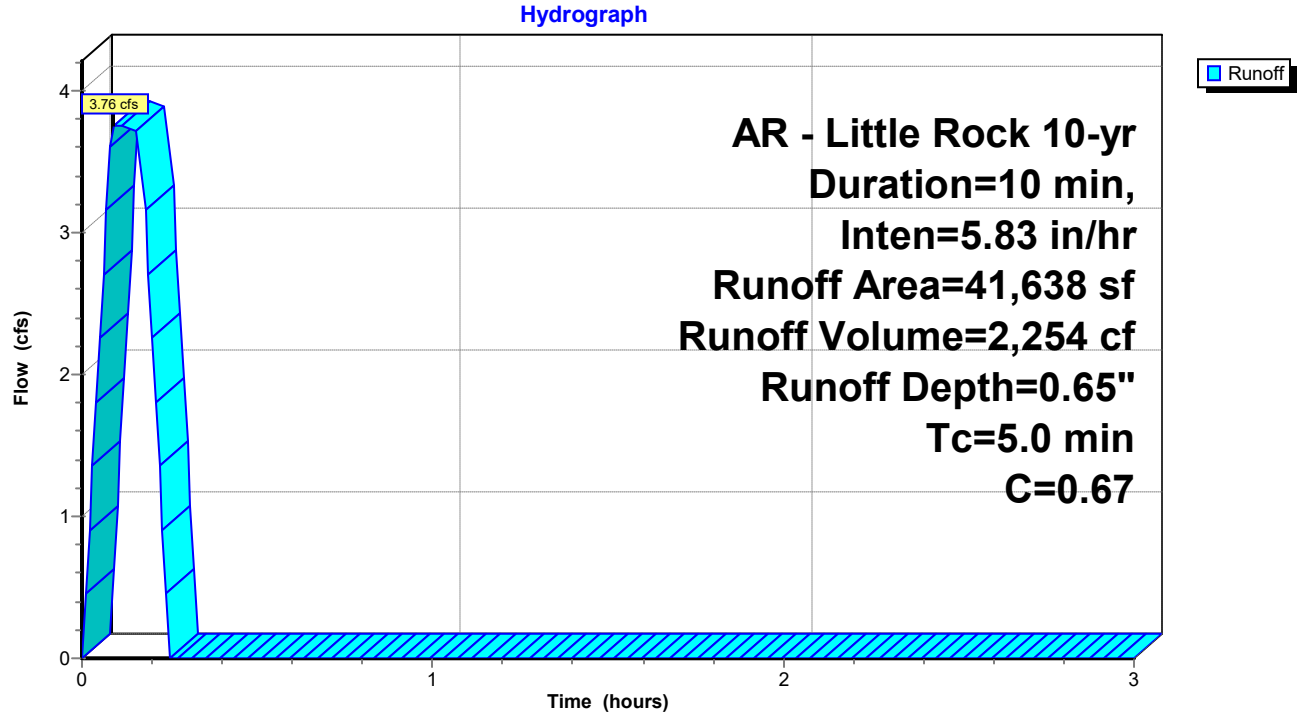
Runoff = 3.76 cfs @ 0.09 hrs, Volume= 2,254 cf, Depth= 0.65"
Routed to Pond DP1 : Re-Establised East Pond

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

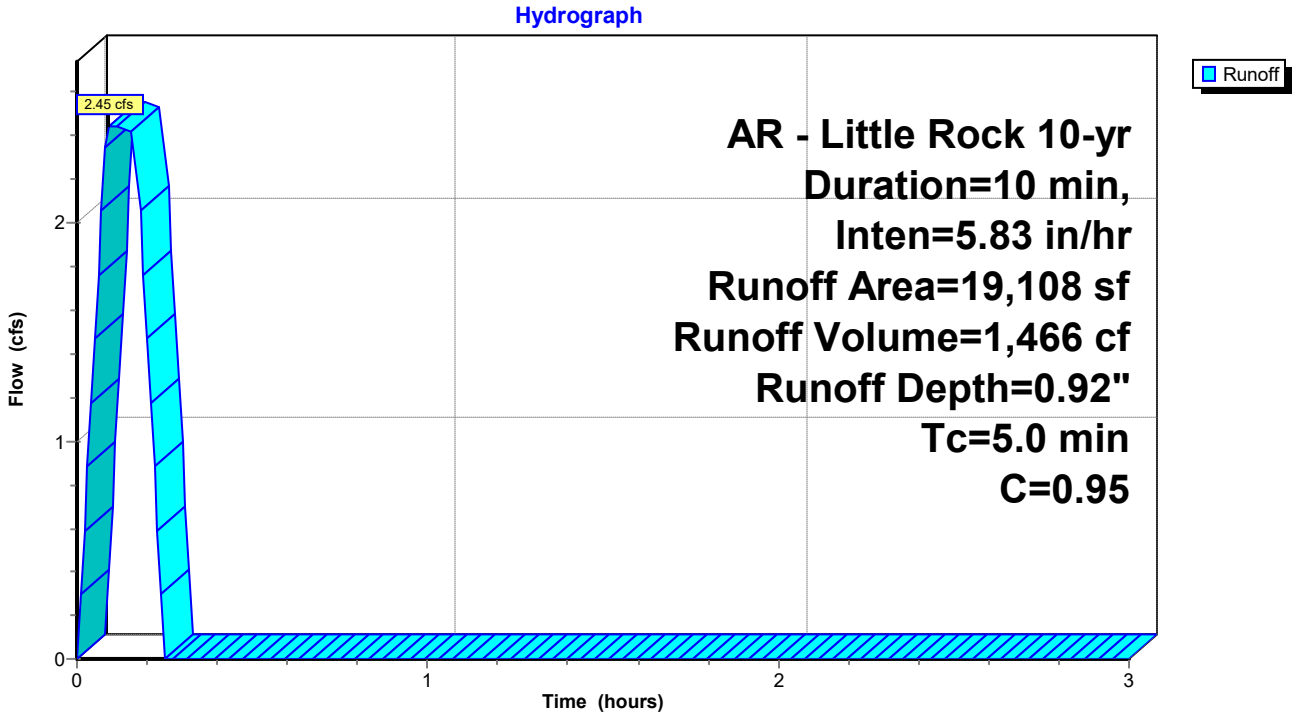
Runoff = 2.45 cfs @ 0.09 hrs, Volume= 1,466 cf, Depth= 0.92"
Routed to Pond DP1 : Re-Establised East Pond

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

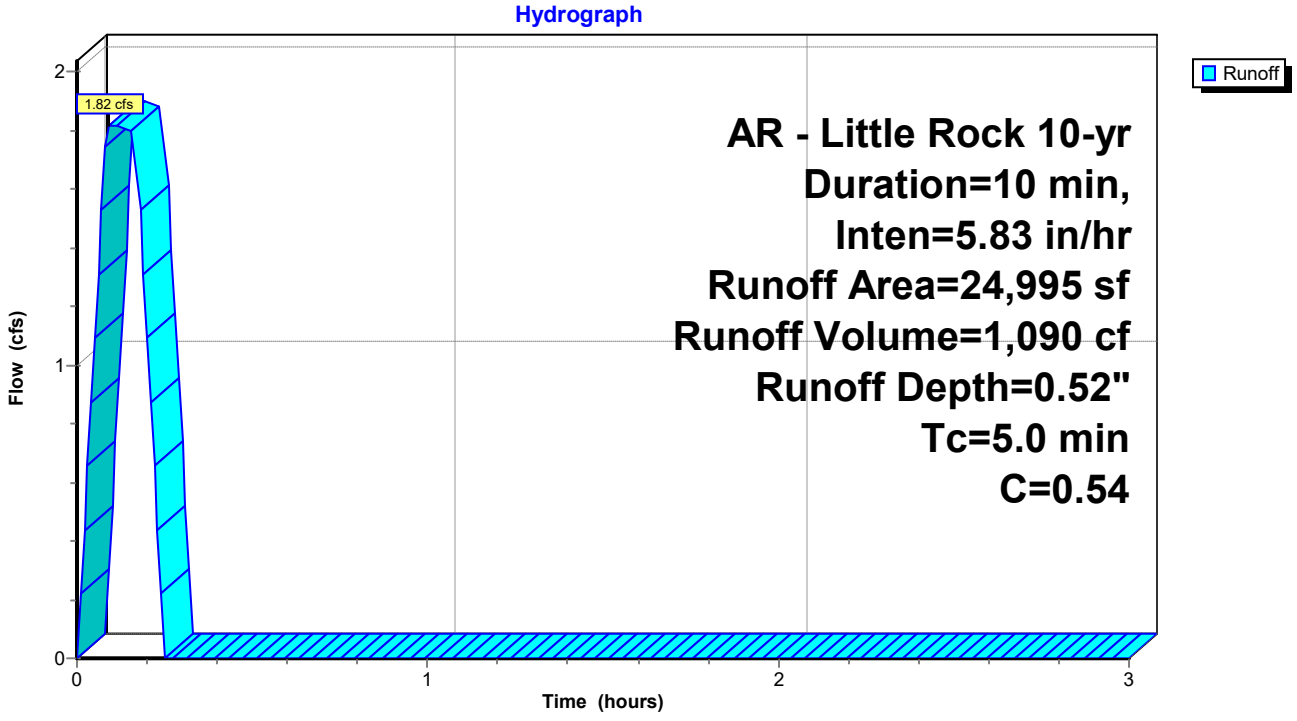
Runoff = 1.82 cfs @ 0.09 hrs, Volume= 1,090 cf, Depth= 0.52"
Routed to Link Post-Dev : APPROX DISCHARGE

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



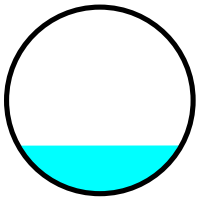
Summary for Reach P-A1: Pipe A1

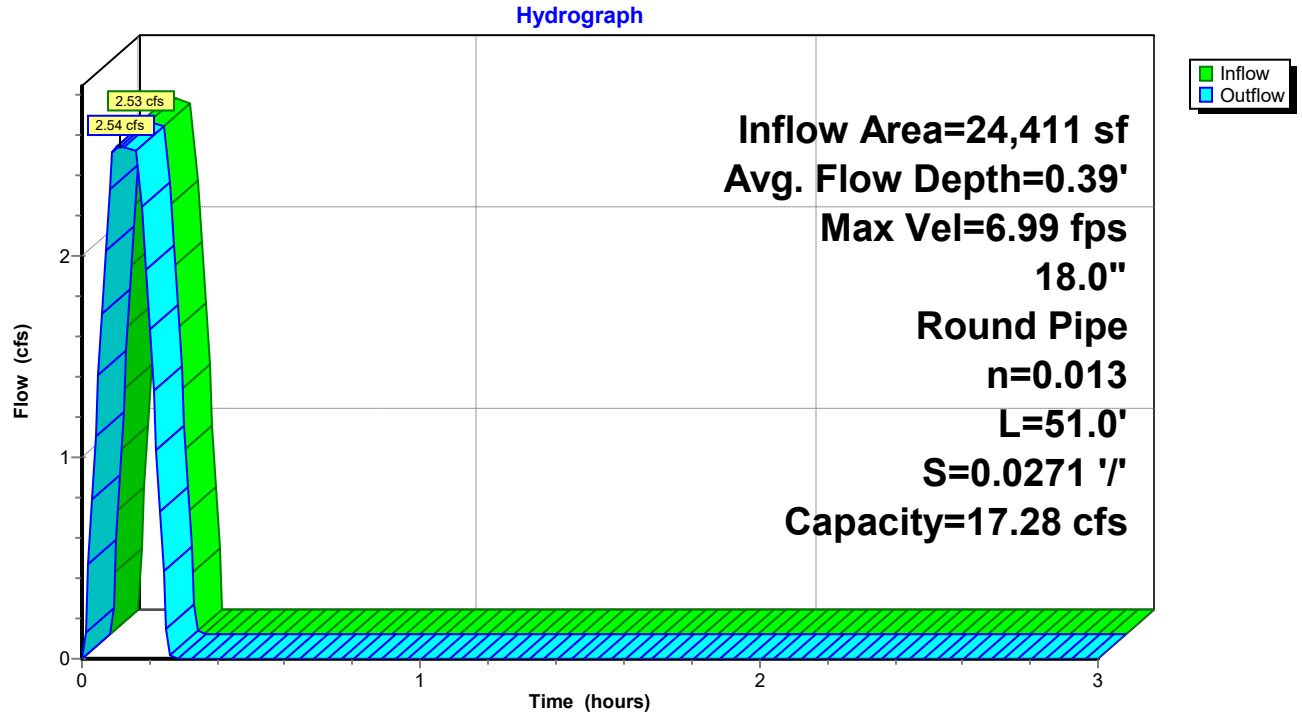
Inflow Area = 24,411 sf, 63.77% Impervious, Inflow Depth = 0.75" for 10-yr event
Inflow = 2.53 cfs @ 0.09 hrs, Volume= 1,519 cf
Outflow = 2.54 cfs @ 0.11 hrs, Volume= 1,519 cf, Atten= 0%, Lag= 1.2 min
Routed to Reach P-A2 : Pipe A2

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

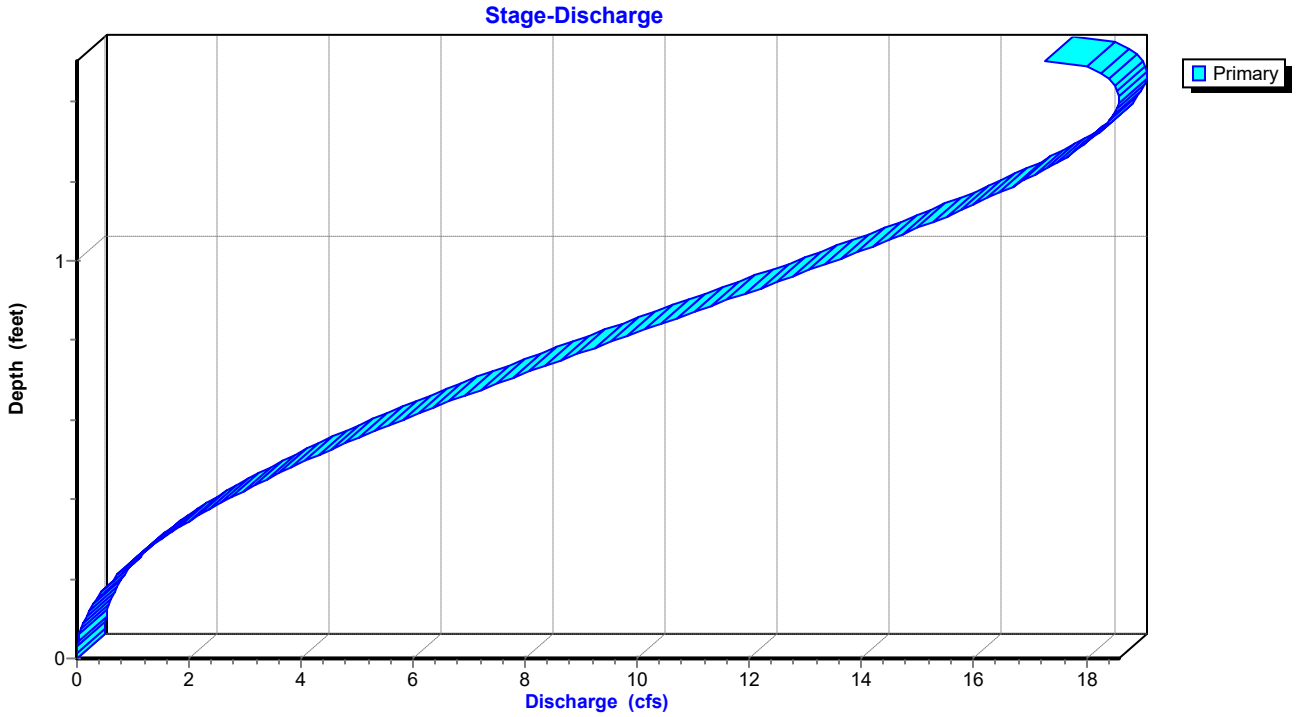
Peak Storage= 19 cf @ 0.09 hrs
Average Depth at Peak Storage= 0.39' , Surface Width= 1.31'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.28 cfs

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**

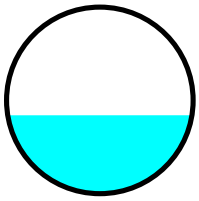
Summary for Reach P-A2: Pipe A2

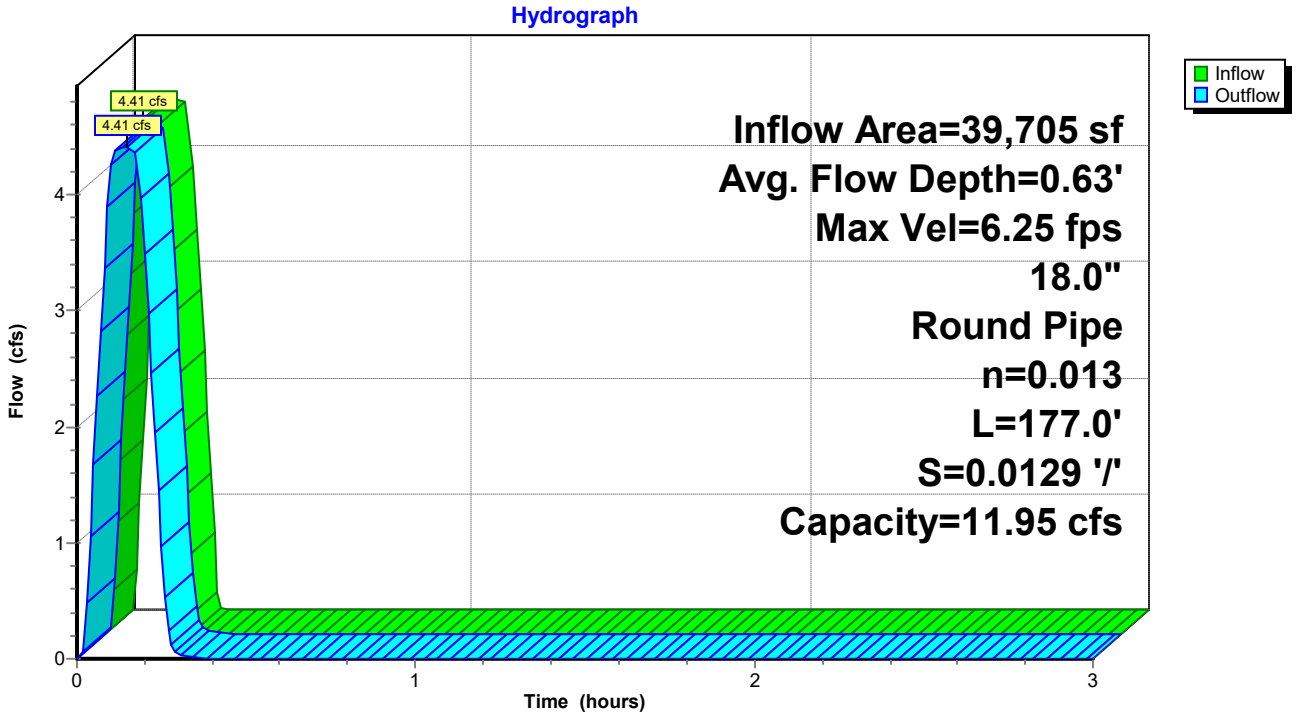
Inflow Area = 39,705 sf, 75.04% Impervious, Inflow Depth = 0.80" for 10-yr event
Inflow = 4.41 cfs @ 0.11 hrs, Volume= 2,643 cf
Outflow = 4.41 cfs @ 0.15 hrs, Volume= 2,643 cf, Atten= 0%, Lag= 2.4 min
Routed to Reach P-A3 : Pipe A3

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

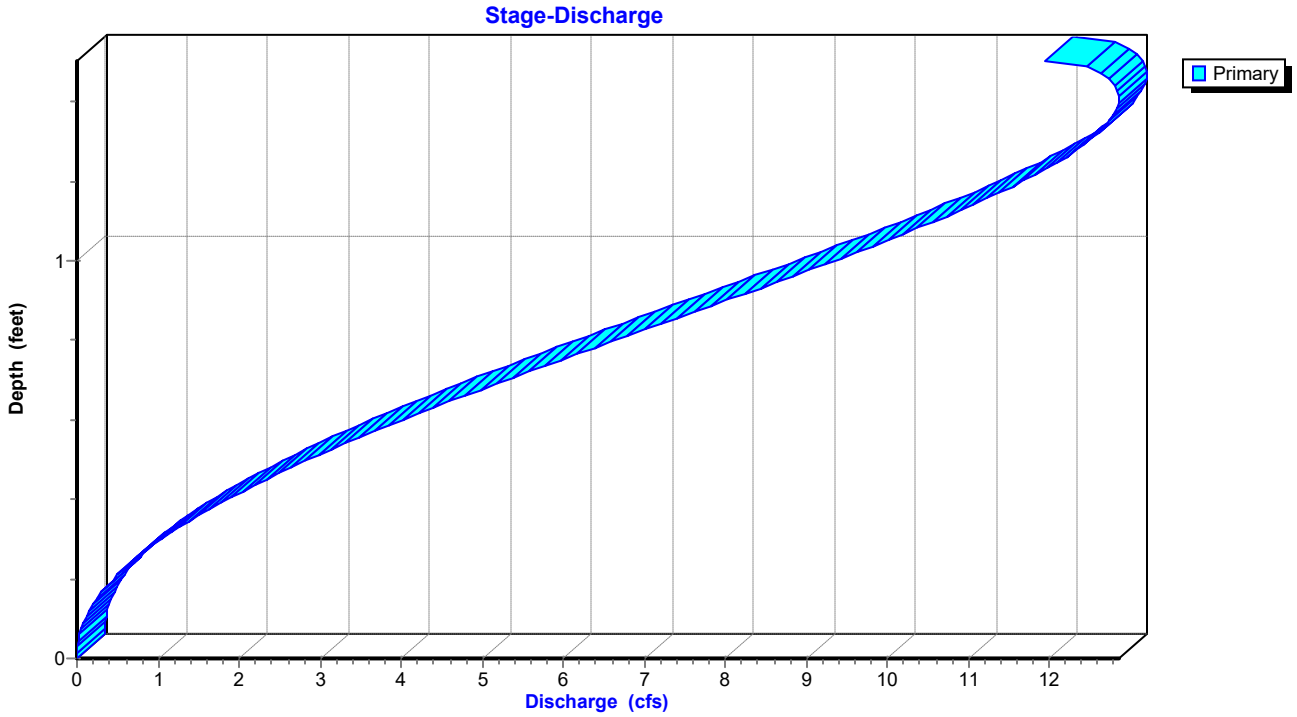
Peak Storage= 125 cf @ 0.14 hrs
Average Depth at Peak Storage= 0.63' , Surface Width= 1.48'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 11.95 cfs

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**

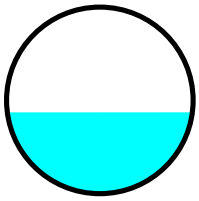
Summary for Reach P-A3: Pipe A3

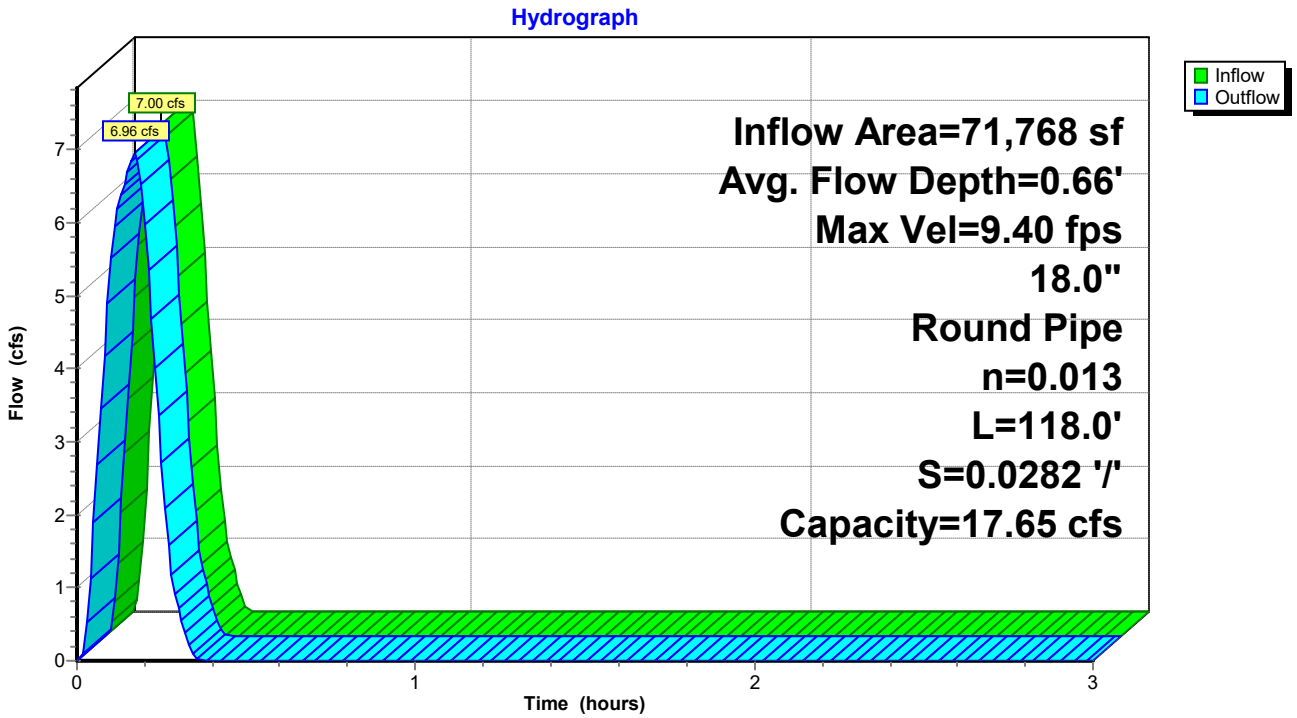
Inflow Area = 71,768 sf, 58.28% Impervious, Inflow Depth = 0.71" for 10-yr event
Inflow = 7.00 cfs @ 0.17 hrs, Volume= 4,225 cf
Outflow = 6.96 cfs @ 0.17 hrs, Volume= 4,225 cf, Atten= 1%, Lag= 0.3 min
Routed to Reach P-A4 : Pipe A4

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

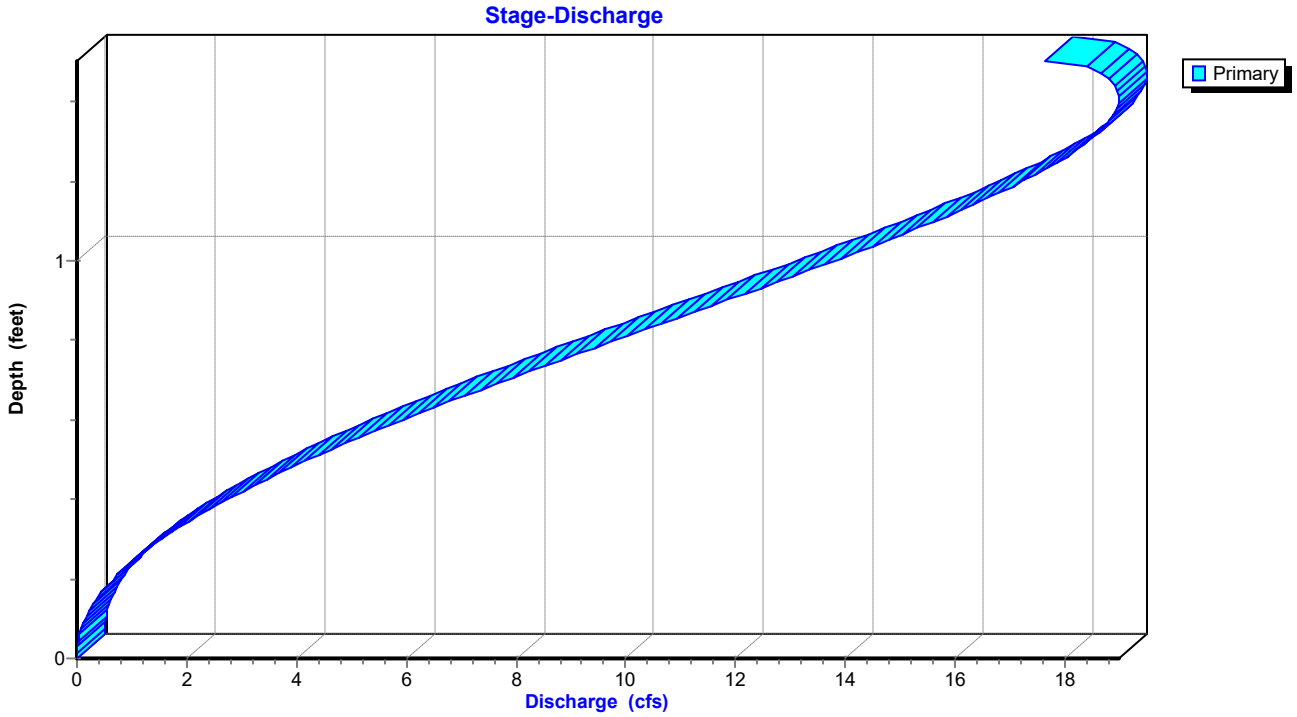
Peak Storage= 88 cf @ 0.17 hrs
Average Depth at Peak Storage= 0.66' , Surface Width= 1.49'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.65 cfs

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**

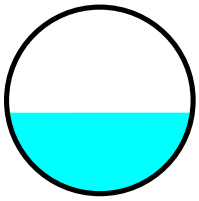
Summary for Reach P-A4: Pipe A4

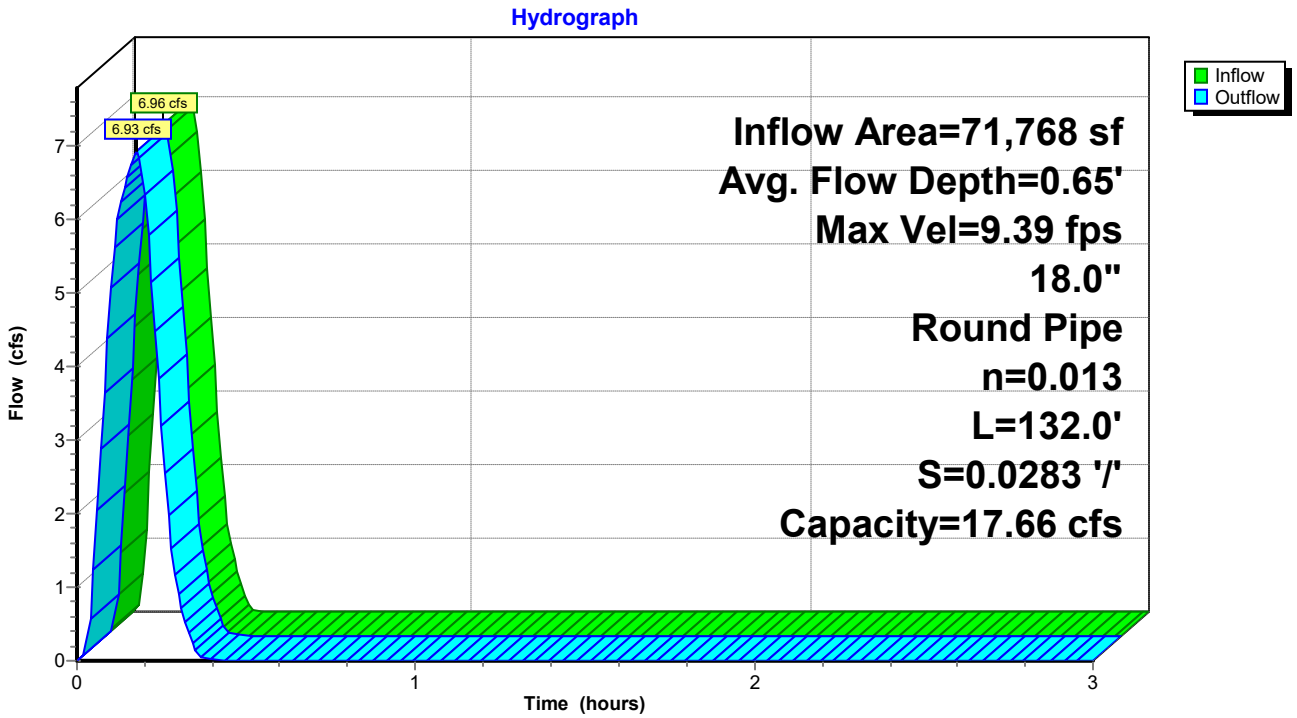
Inflow Area = 71,768 sf, 58.28% Impervious, Inflow Depth = 0.71" for 10-yr event
Inflow = 6.96 cfs @ 0.17 hrs, Volume= 4,225 cf
Outflow = 6.93 cfs @ 0.18 hrs, Volume= 4,225 cf, Atten= 0%, Lag= 0.4 min
Routed to Pond DP1 : Re-Establised East Pond

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

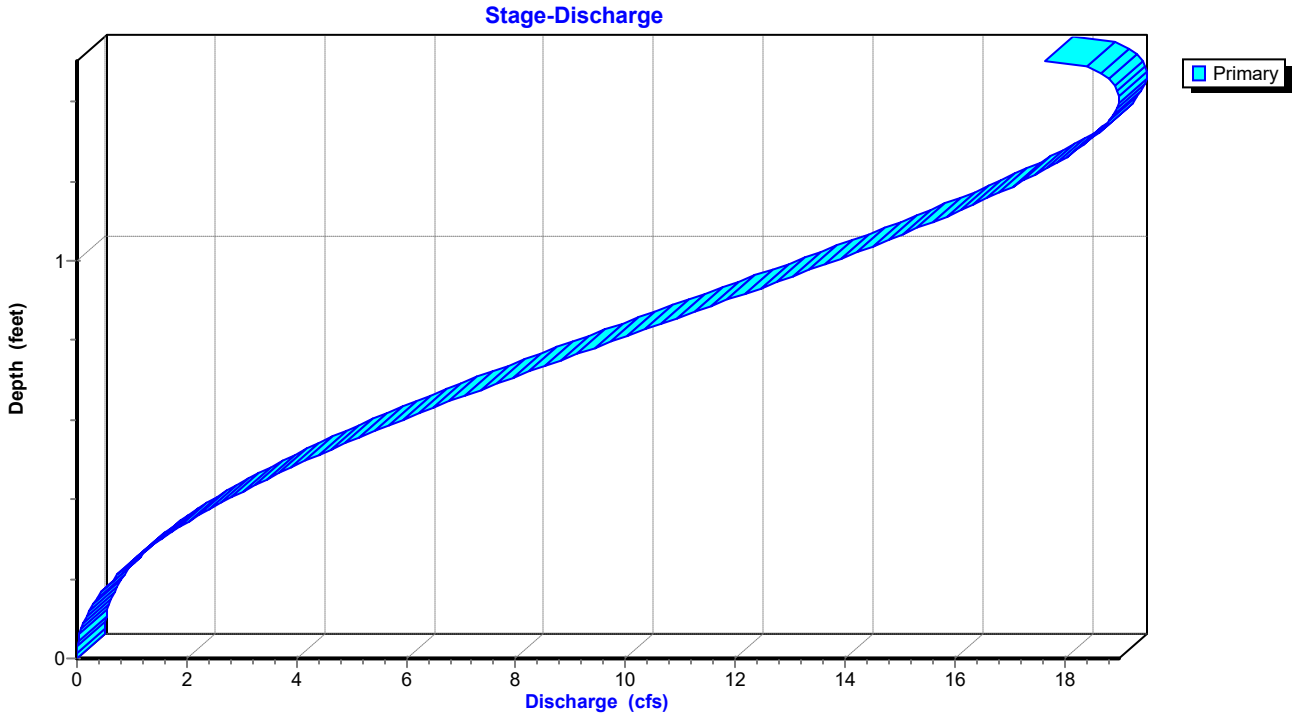
Peak Storage= 98 cf @ 0.17 hrs
Average Depth at Peak Storage= 0.65' , Surface Width= 1.49'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.66 cfs

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)

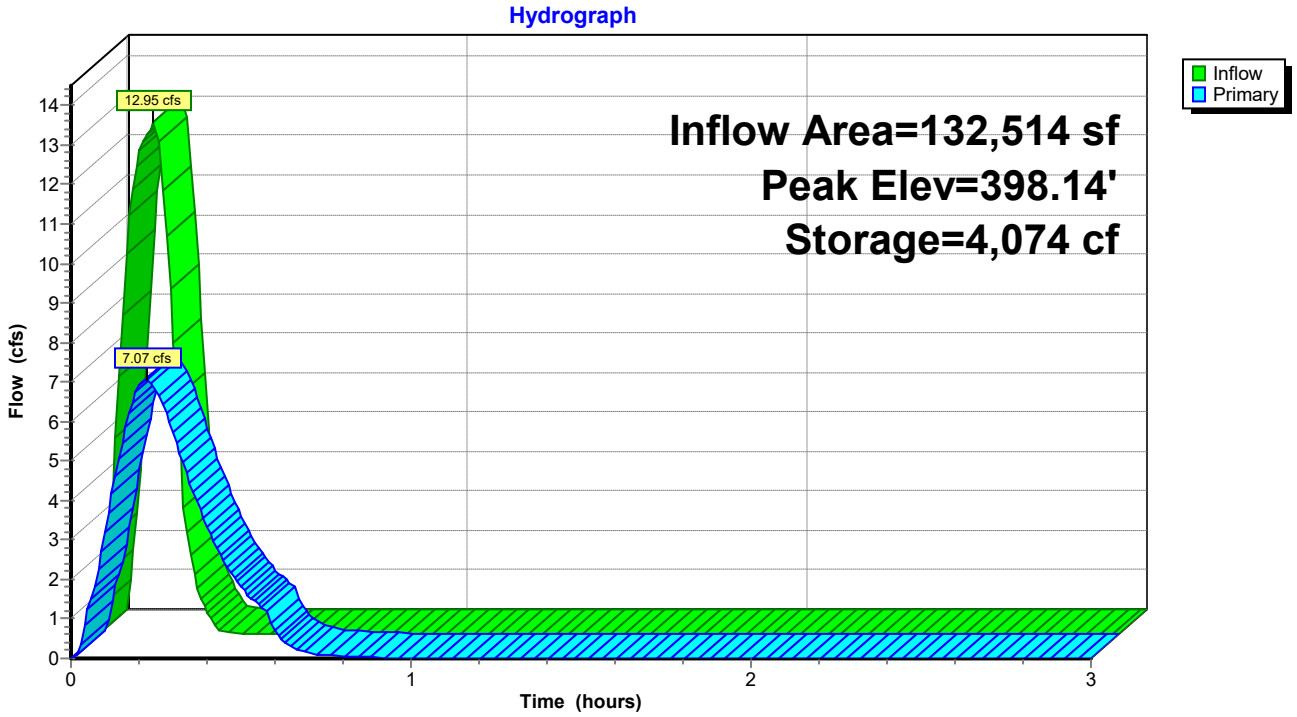
Volume	Invert	Avail.Storage	Storage Description
#1	396.00'	8,557 cf	**Custom Stage Data** Listed below

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

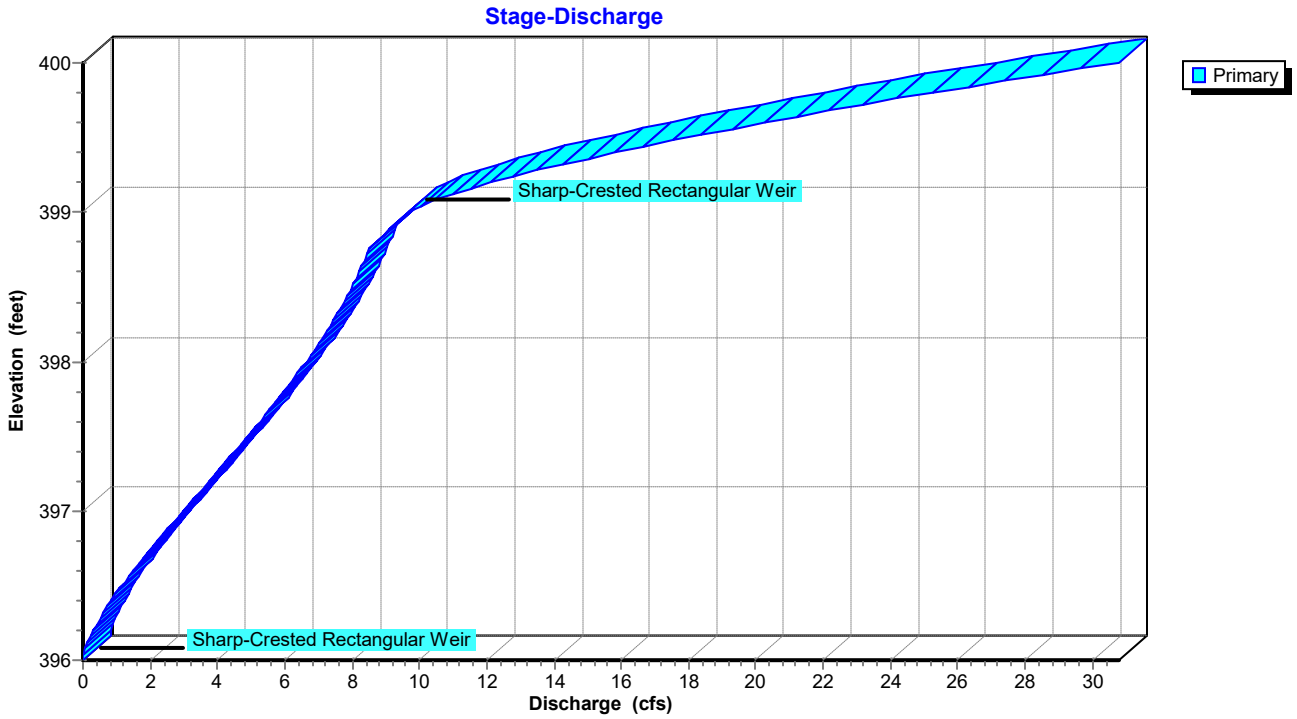
Device	Routing	Invert	Outlet Devices
#1	Primary	399.00'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	396.00'	**1.1' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 10.0' Crest Height

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

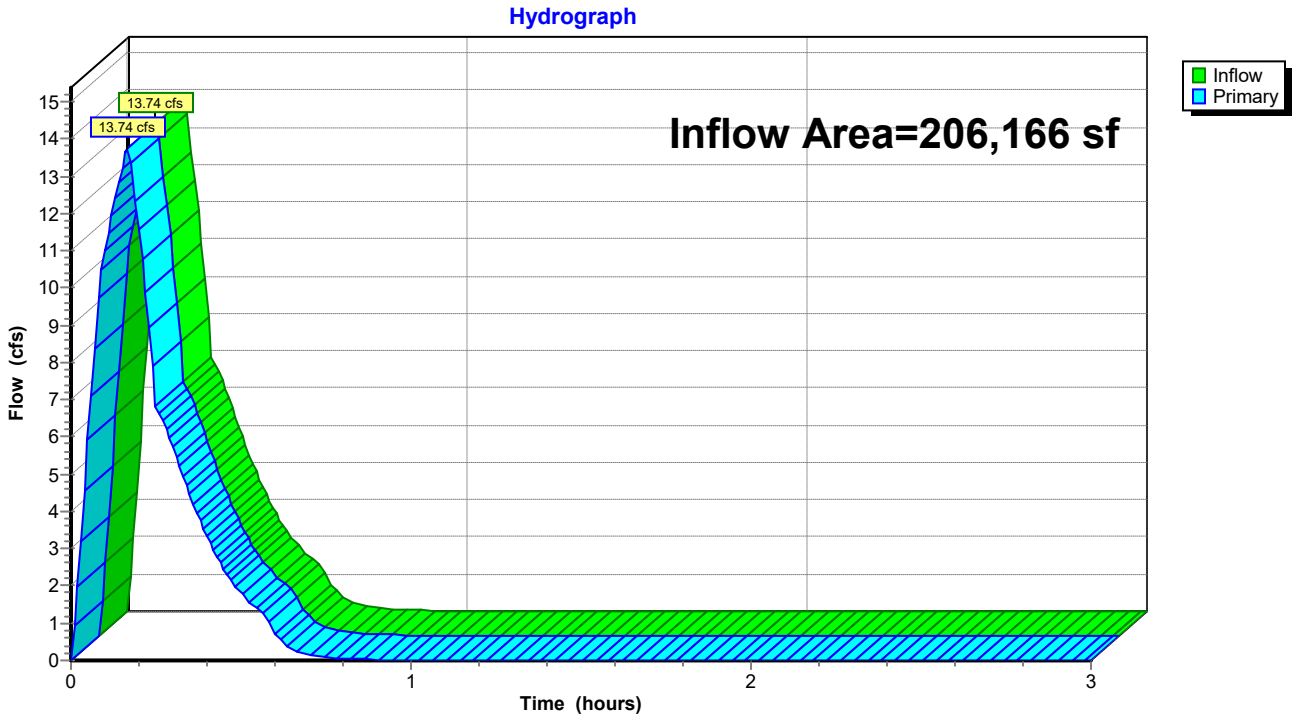
Elevation (feet)	Storage (cubic-feet)
396.00	0
396.05	25
396.10	50
396.15	75
396.20	100
396.25	125
396.30	150
396.35	175
396.40	200
396.45	225
396.50	250
396.55	359
396.60	468
396.65	578
396.70	687
396.75	796
396.80	905
396.85	1,014
396.90	1,124
396.95	1,233
397.00	1,342
397.05	1,461
397.10	1,581
397.15	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

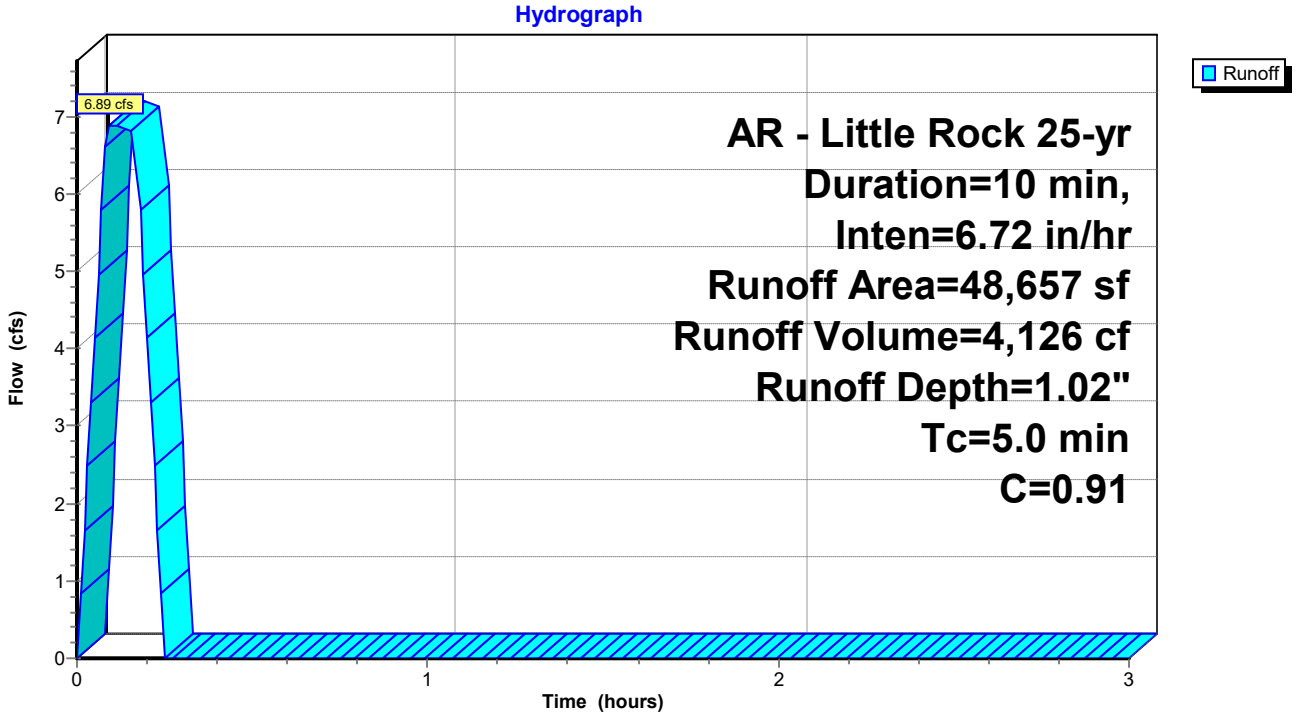
Runoff = 6.89 cfs @ 0.09 hrs, Volume= 4,126 cf, Depth= 1.02"
Routed to Link Post-Dev : APPROX DISCHARGE

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

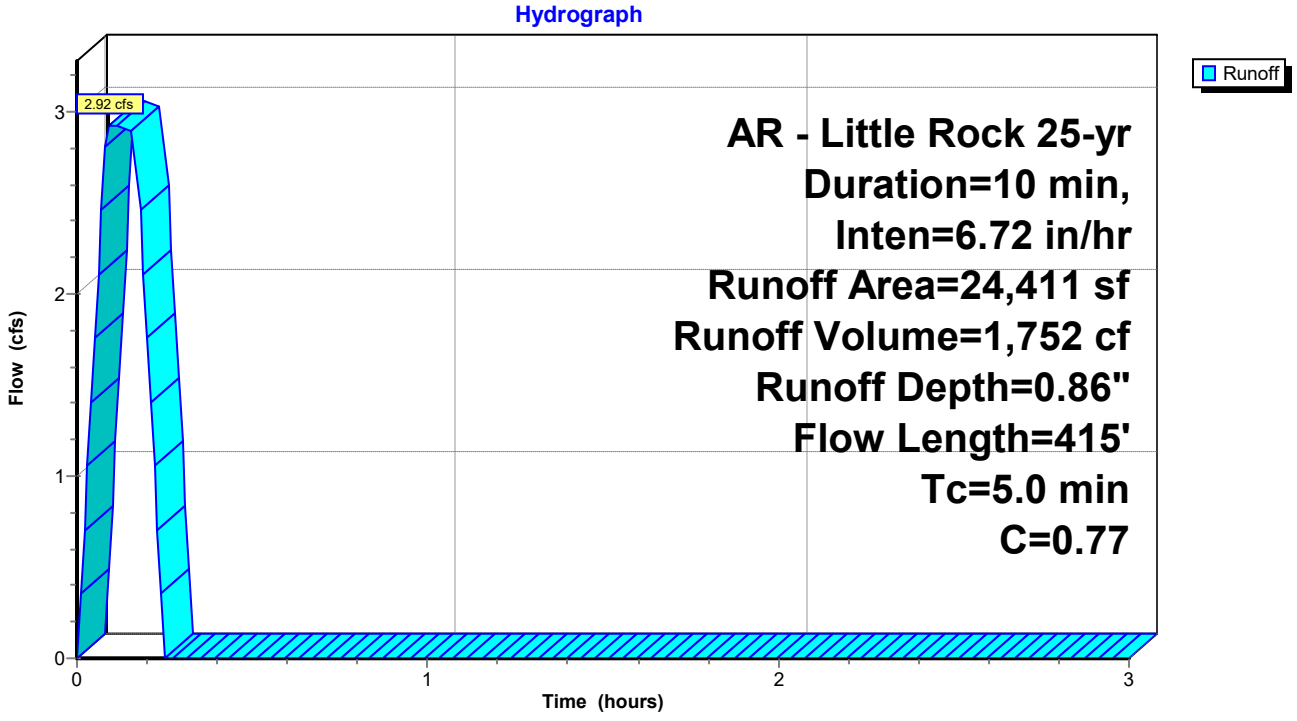
Runoff = 2.92 cfs @ 0.09 hrs, Volume= 1,752 cf, Depth= 0.86"
Routed to Reach P-A1 : Pipe A1

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

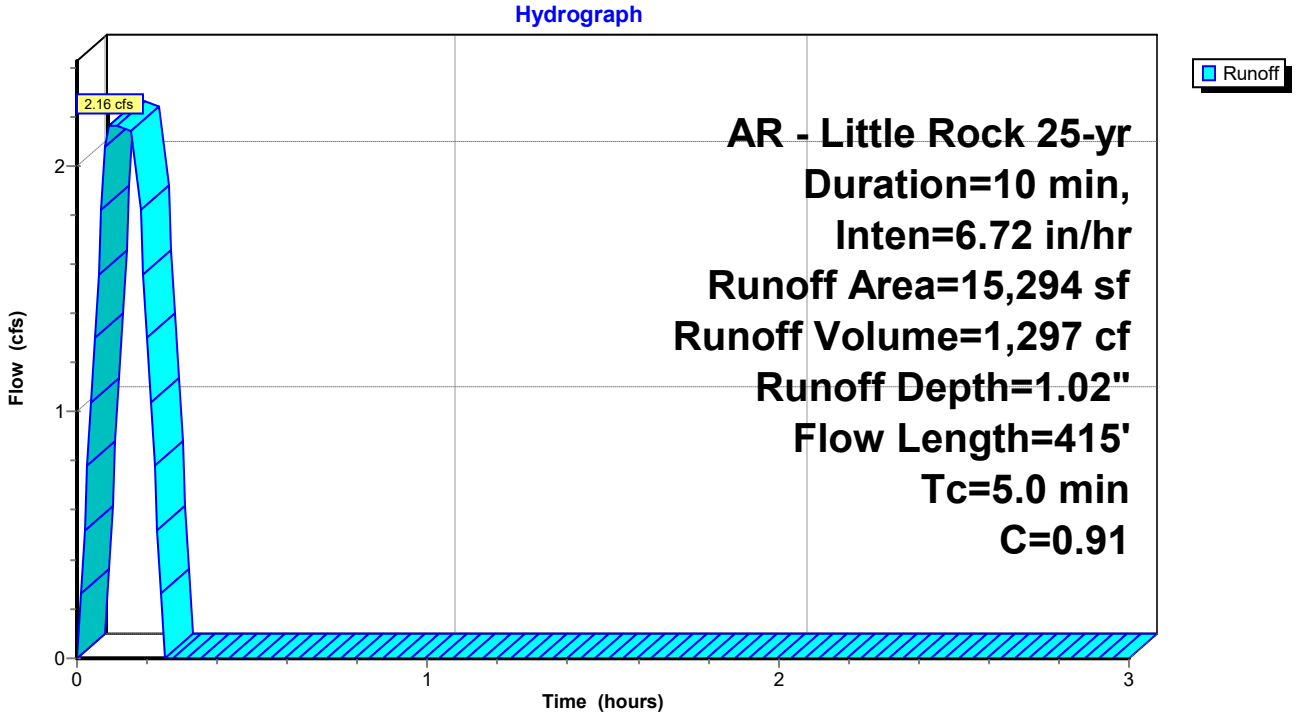
Runoff = 2.16 cfs @ 0.09 hrs, Volume= 1,297 cf, Depth= 1.02"
Routed to Reach P-A2 : Pipe A2

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

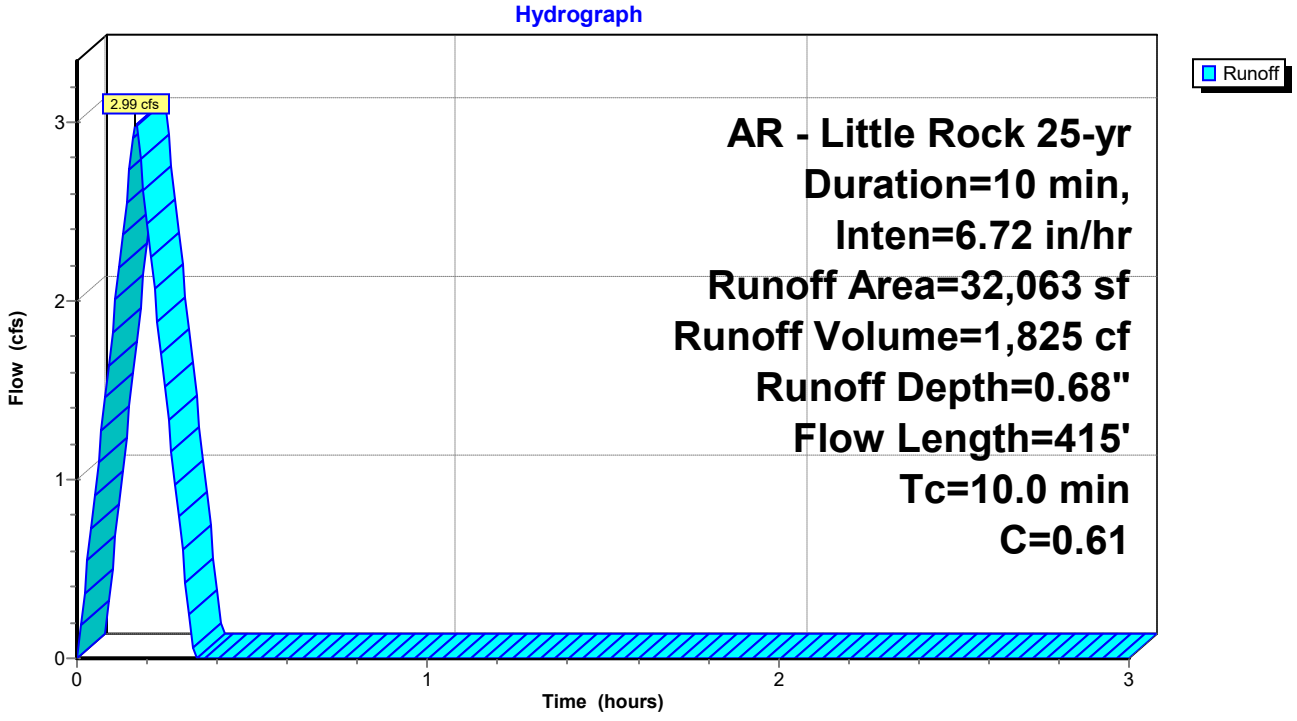
Runoff = 2.99 cfs @ 0.17 hrs, Volume= 1,825 cf, Depth= 0.68"
Routed to Reach P-A3 : Pipe A3

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

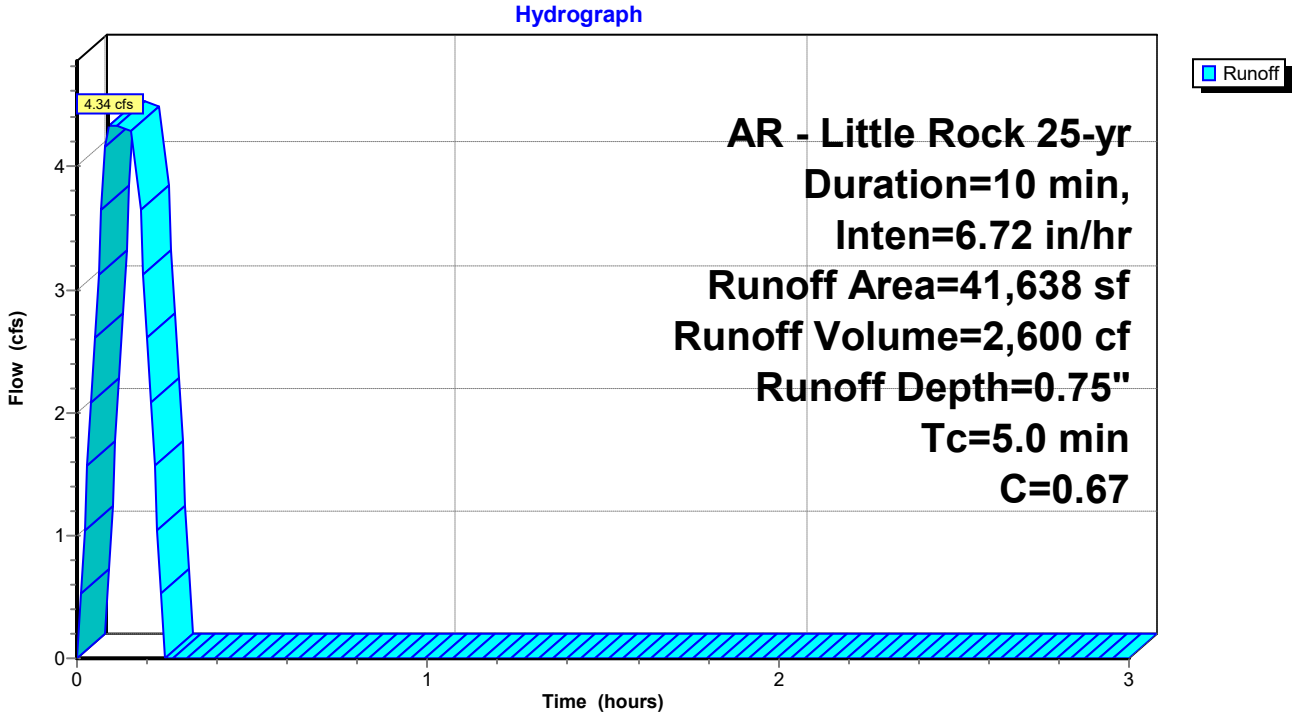
Runoff = 4.34 cfs @ 0.09 hrs, Volume= 2,600 cf, Depth= 0.75"
Routed to Pond DP1 : Re-Establised East Pond

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

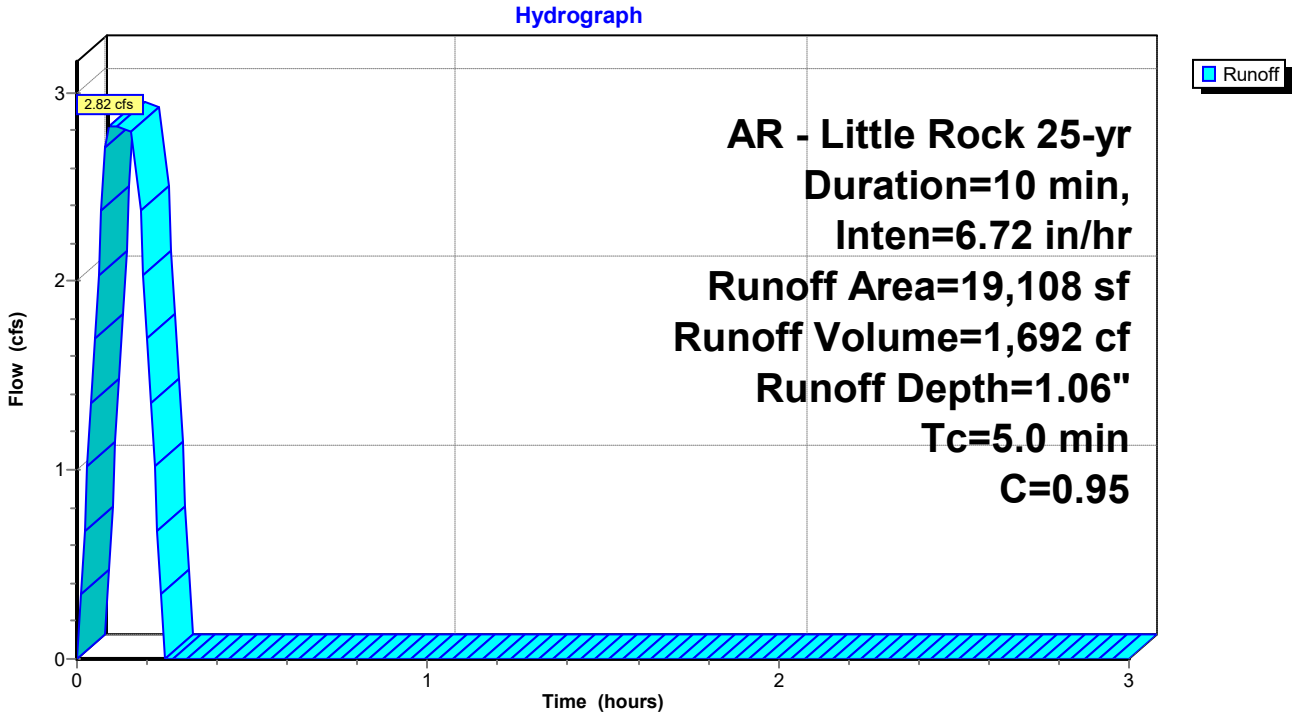
Runoff = 2.82 cfs @ 0.09 hrs, Volume= 1,692 cf, Depth= 1.06"
Routed to Pond DP1 : Re-Establised East Pond

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

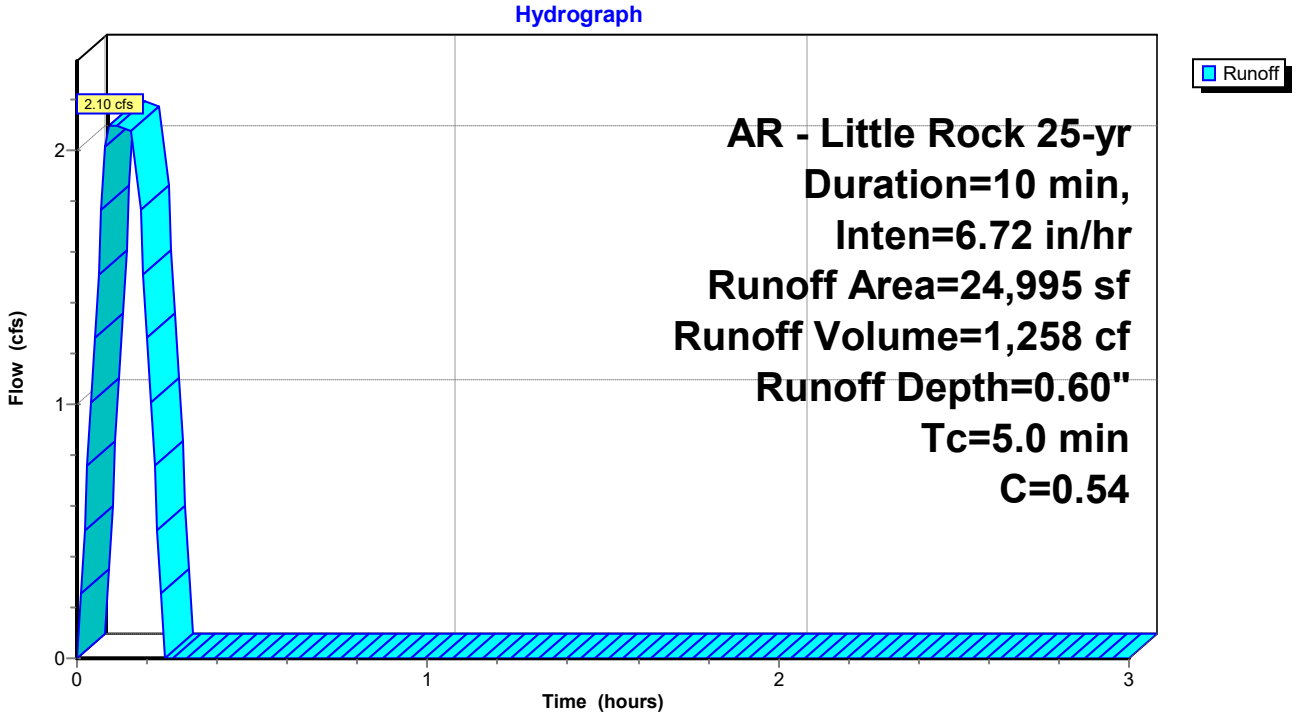
Runoff = 2.10 cfs @ 0.09 hrs, Volume= 1,258 cf, Depth= 0.60"
Routed to Link Post-Dev : APPROX DISCHARGE

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



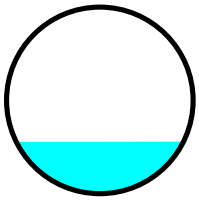
Summary for Reach P-A1: Pipe A1

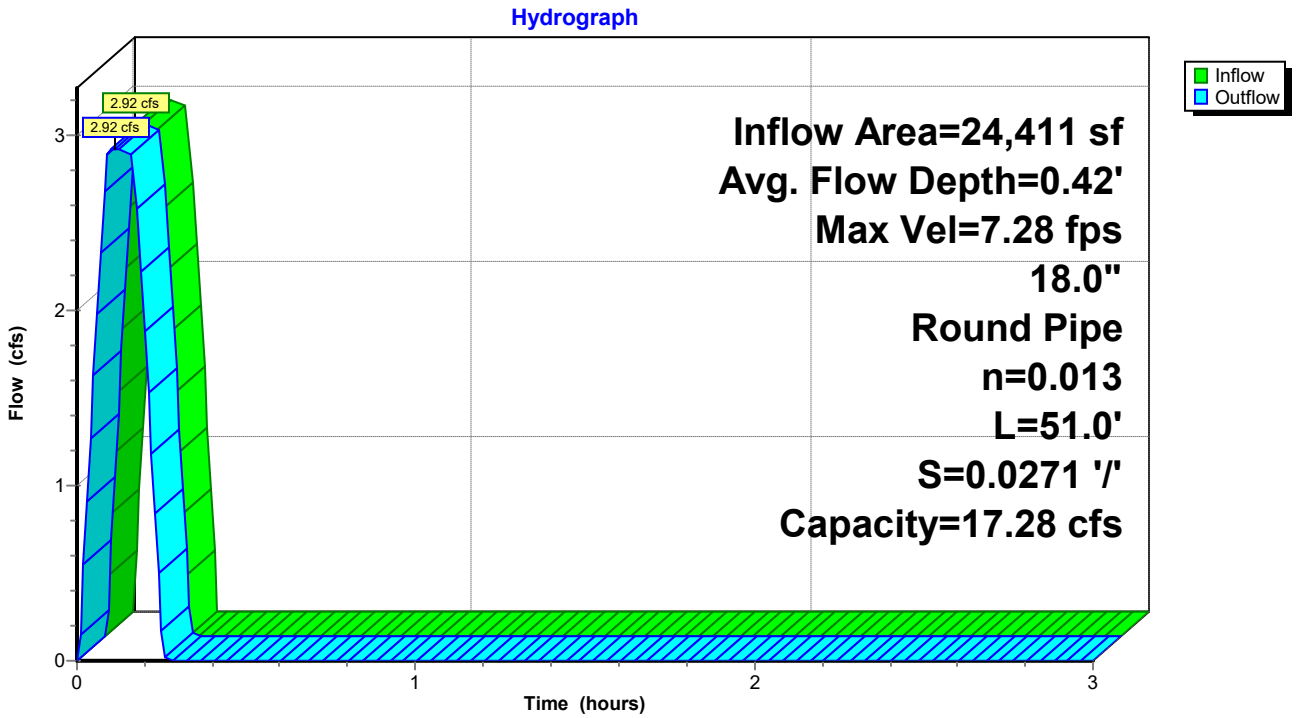
Inflow Area = 24,411 sf, 63.77% Impervious, Inflow Depth = 0.86" for 25-yr event
Inflow = 2.92 cfs @ 0.09 hrs, Volume= 1,752 cf
Outflow = 2.92 cfs @ 0.11 hrs, Volume= 1,752 cf, Atten= 0%, Lag= 1.2 min
Routed to Reach P-A2 : Pipe A2

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

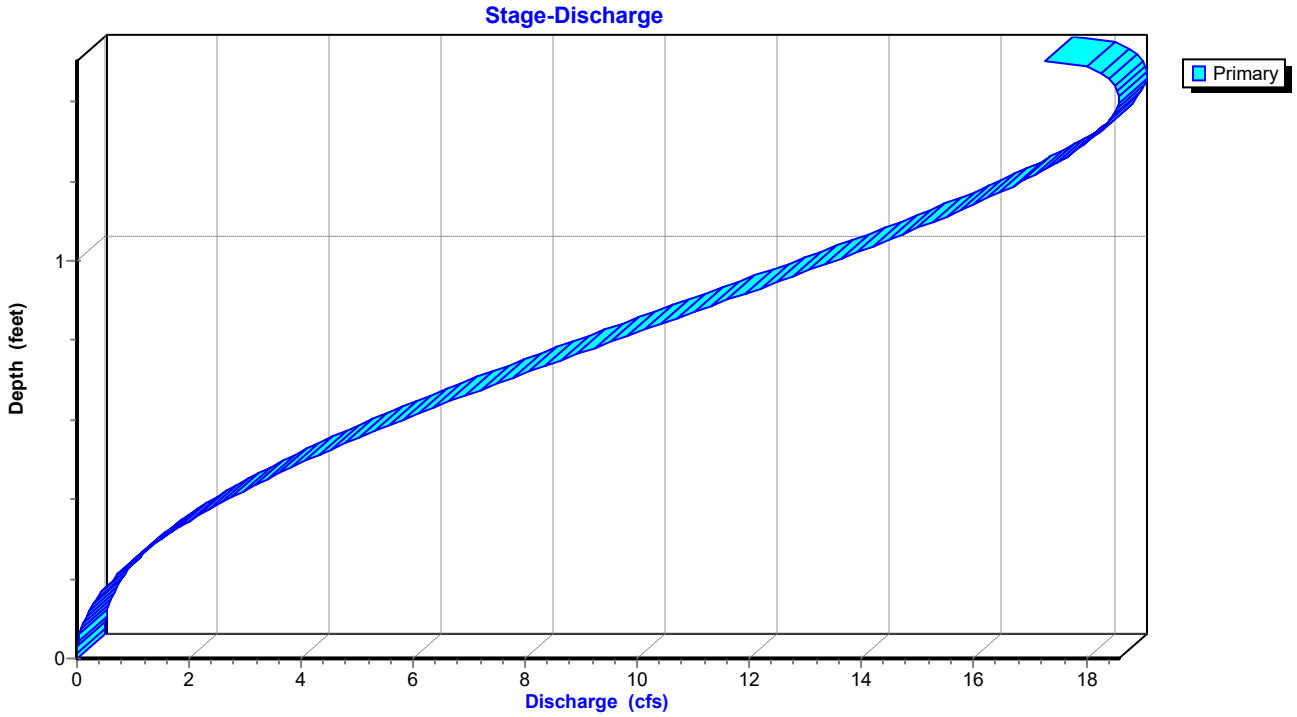
Peak Storage= 20 cf @ 0.09 hrs
Average Depth at Peak Storage= 0.42' , Surface Width= 1.34'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.28 cfs

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**

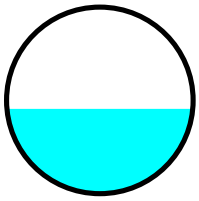
Summary for Reach P-A2: Pipe A2

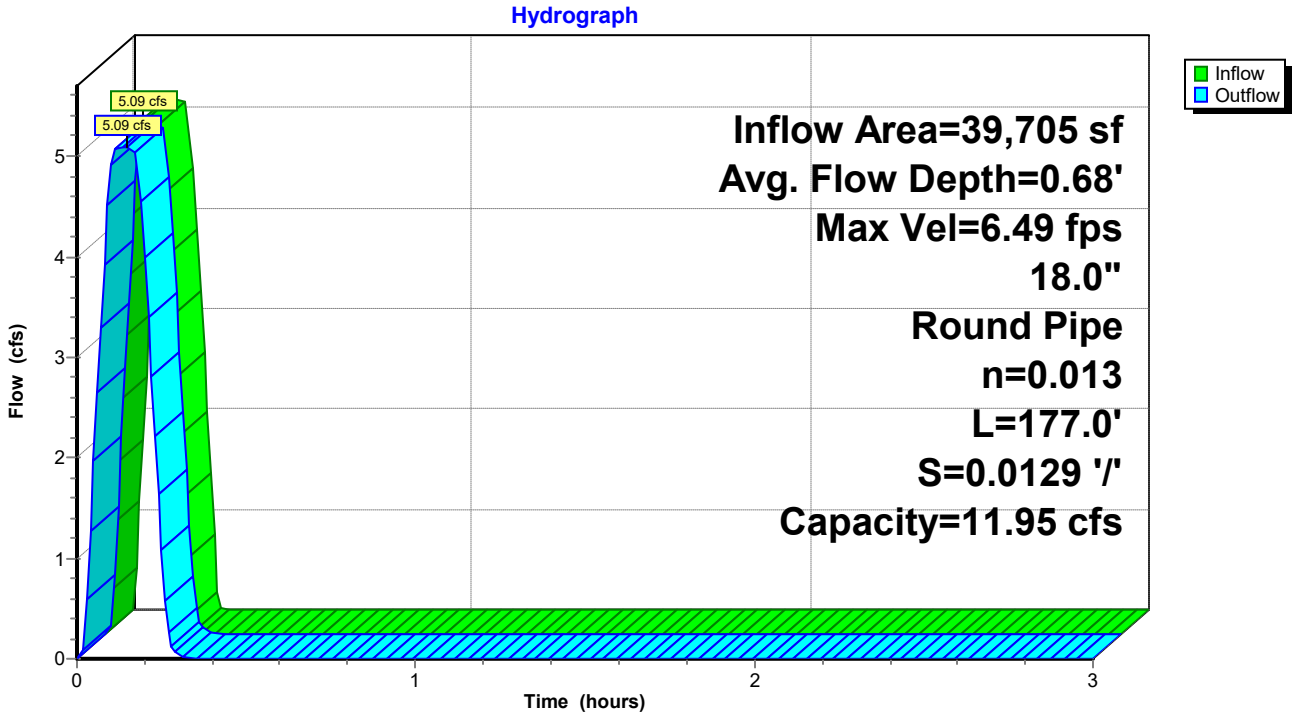
Inflow Area = 39,705 sf, 75.04% Impervious, Inflow Depth = 0.92" for 25-yr event
Inflow = 5.09 cfs @ 0.11 hrs, Volume= 3,048 cf
Outflow = 5.09 cfs @ 0.15 hrs, Volume= 3,048 cf, Atten= 0%, Lag= 2.4 min
Routed to Reach P-A3 : Pipe A3

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

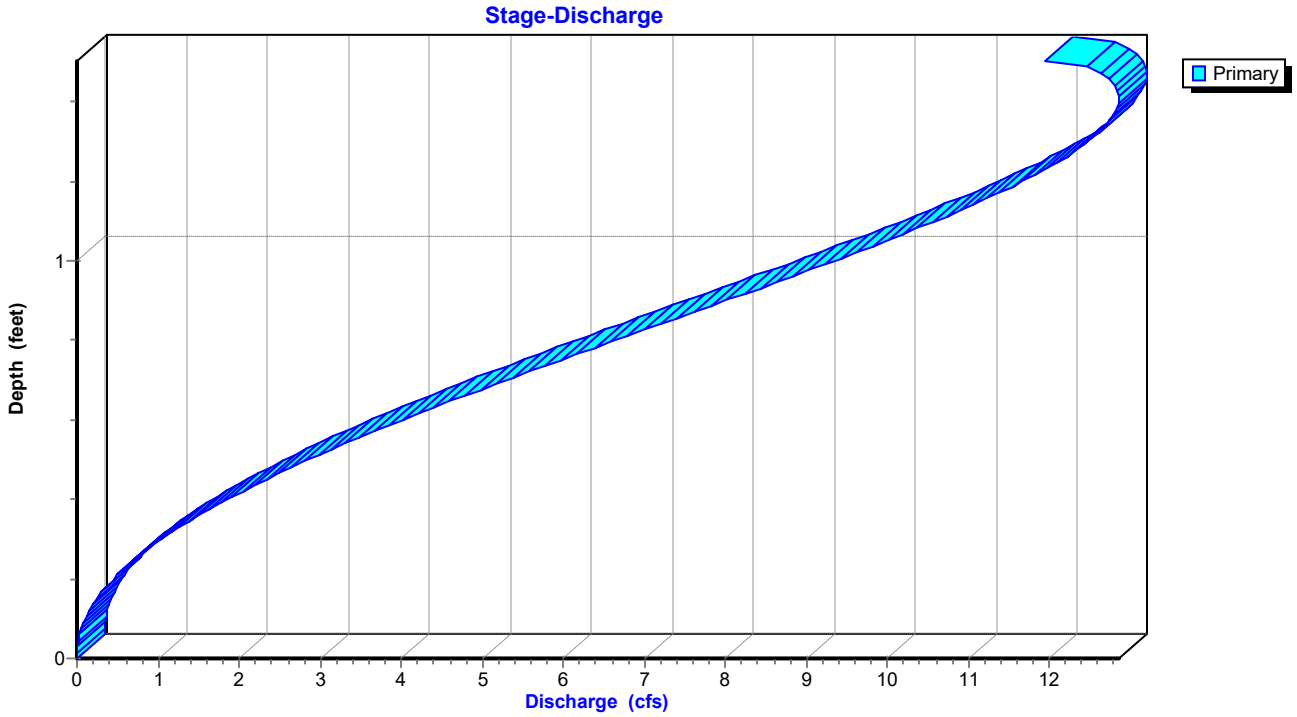
Peak Storage= 139 cf @ 0.14 hrs
Average Depth at Peak Storage= 0.68' , Surface Width= 1.49'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 11.95 cfs

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**

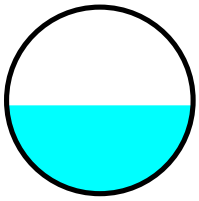
Summary for Reach P-A3: Pipe A3

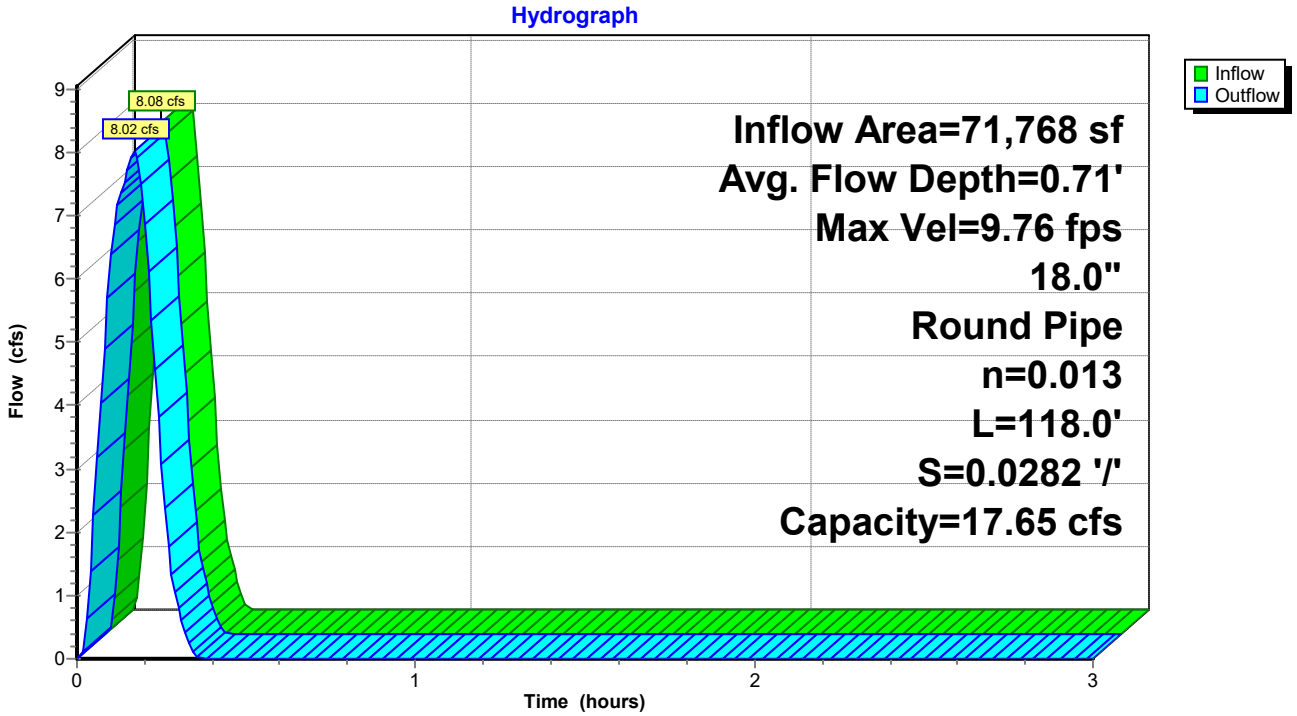
Inflow Area = 71,768 sf, 58.28% Impervious, Inflow Depth = 0.81" for 25-yr event
Inflow = 8.08 cfs @ 0.17 hrs, Volume= 4,873 cf
Outflow = 8.02 cfs @ 0.17 hrs, Volume= 4,873 cf, Atten= 1%, Lag= 0.2 min
Routed to Reach P-A4 : Pipe A4

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

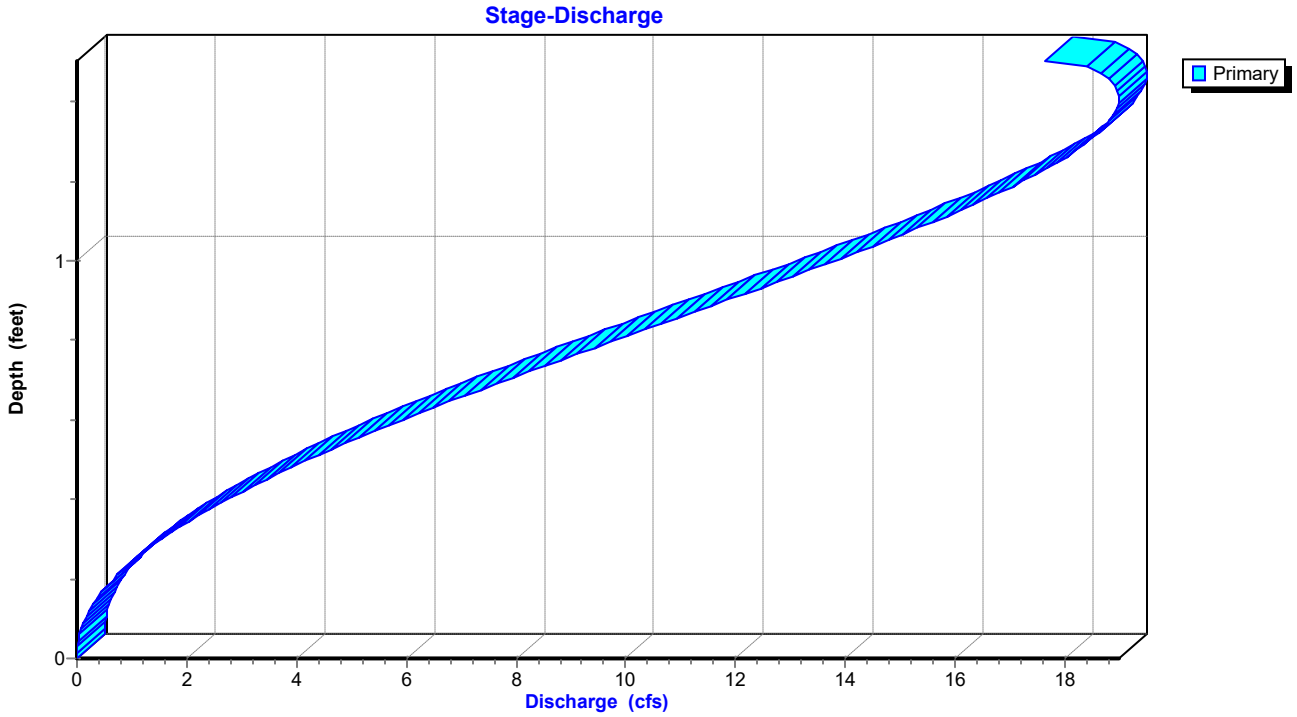
Peak Storage= 97 cf @ 0.17 hrs
Average Depth at Peak Storage= 0.71' , Surface Width= 1.50'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.65 cfs

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**

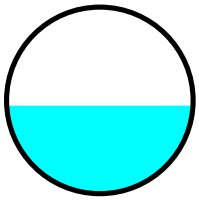
Summary for Reach P-A4: Pipe A4

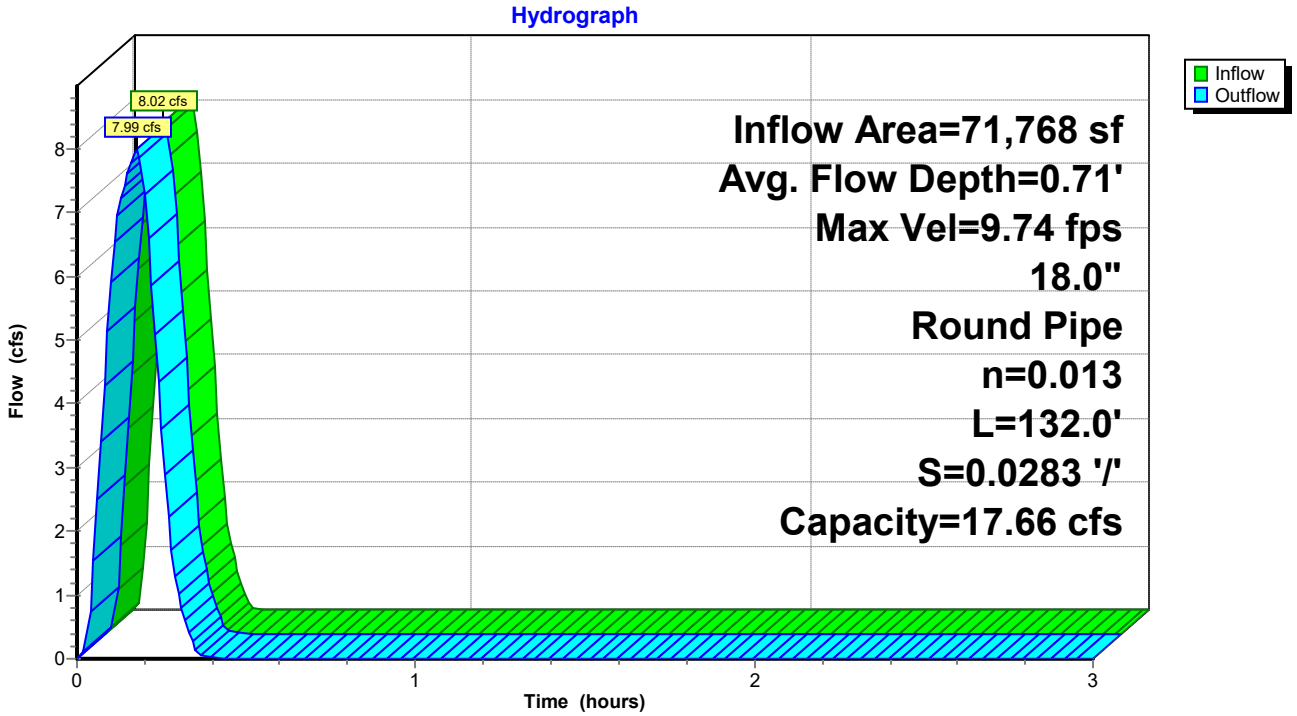
Inflow Area = 71,768 sf, 58.28% Impervious, Inflow Depth = 0.81" for 25-yr event
Inflow = 8.02 cfs @ 0.17 hrs, Volume= 4,873 cf
Outflow = 7.99 cfs @ 0.18 hrs, Volume= 4,873 cf, Atten= 0%, Lag= 0.4 min
Routed to Pond DP1 : Re-Establised East Pond

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

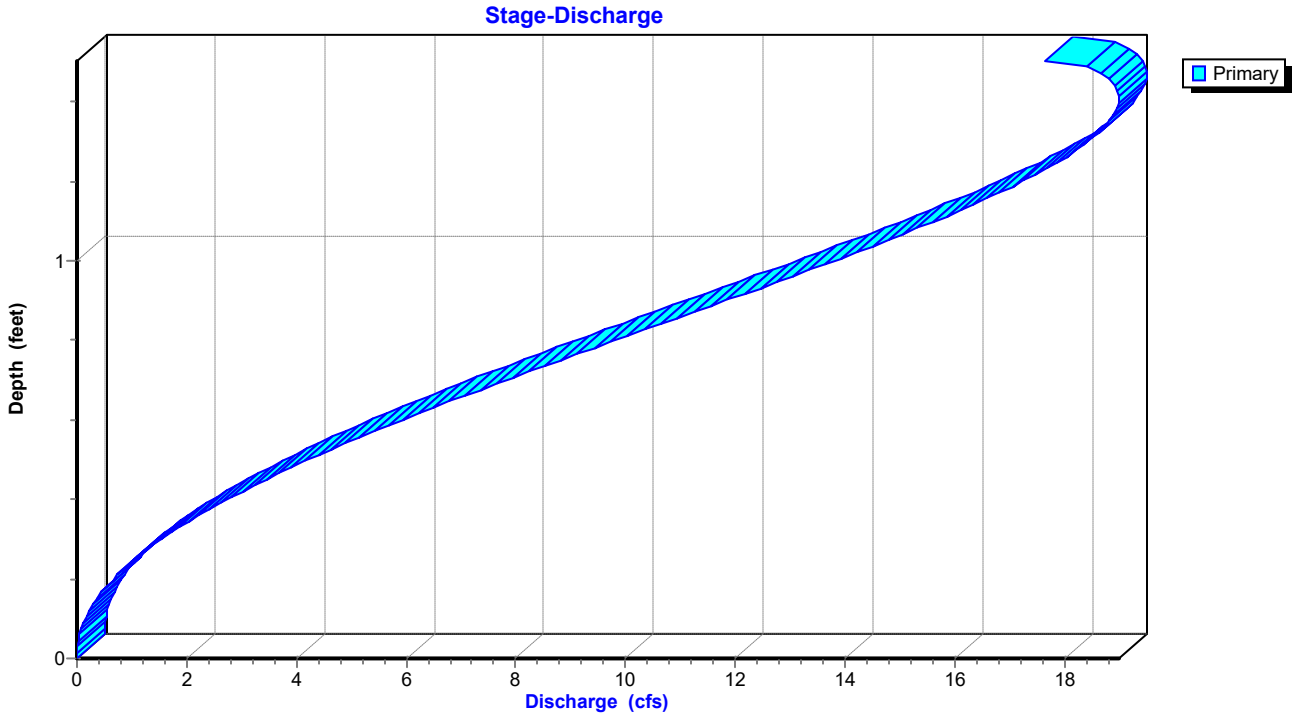
Peak Storage= 108 cf @ 0.17 hrs
Average Depth at Peak Storage= 0.71' , Surface Width= 1.50'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.66 cfs

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)

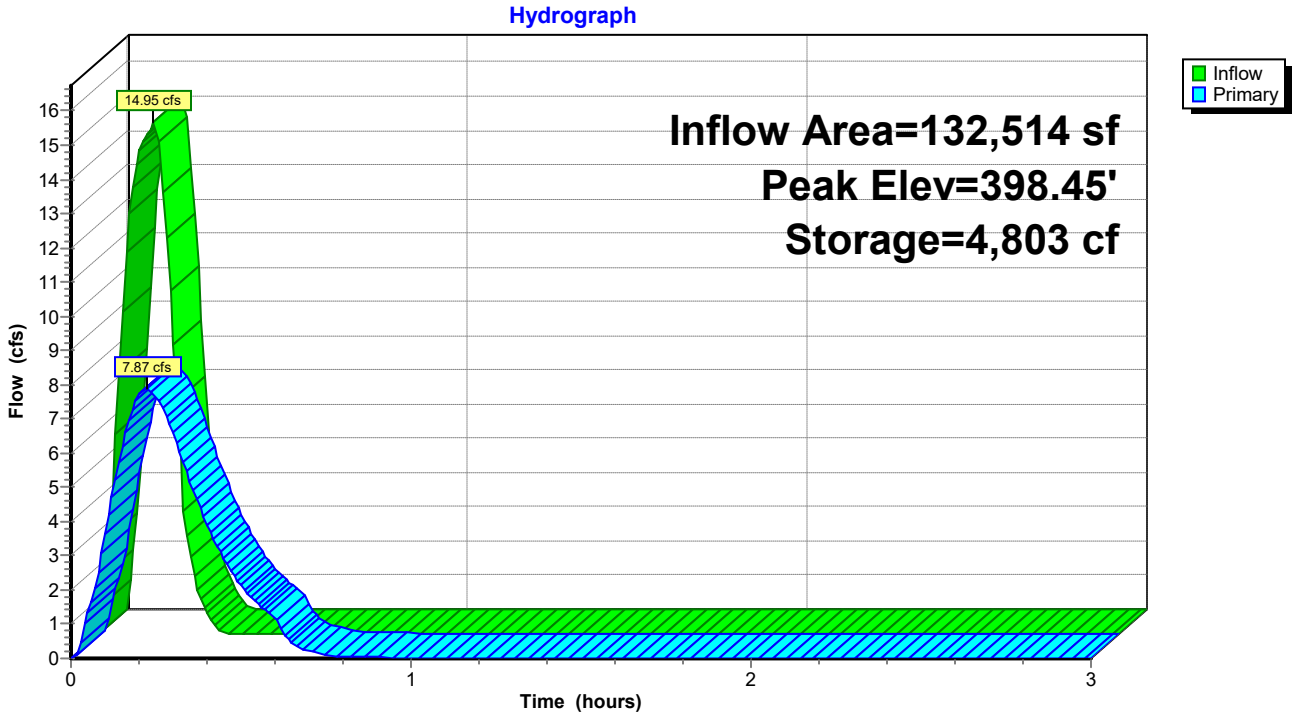
Volume	Invert	Avail.Storage	Storage Description
#1	396.00'	8,557 cf	**Custom Stage Data** Listed below

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

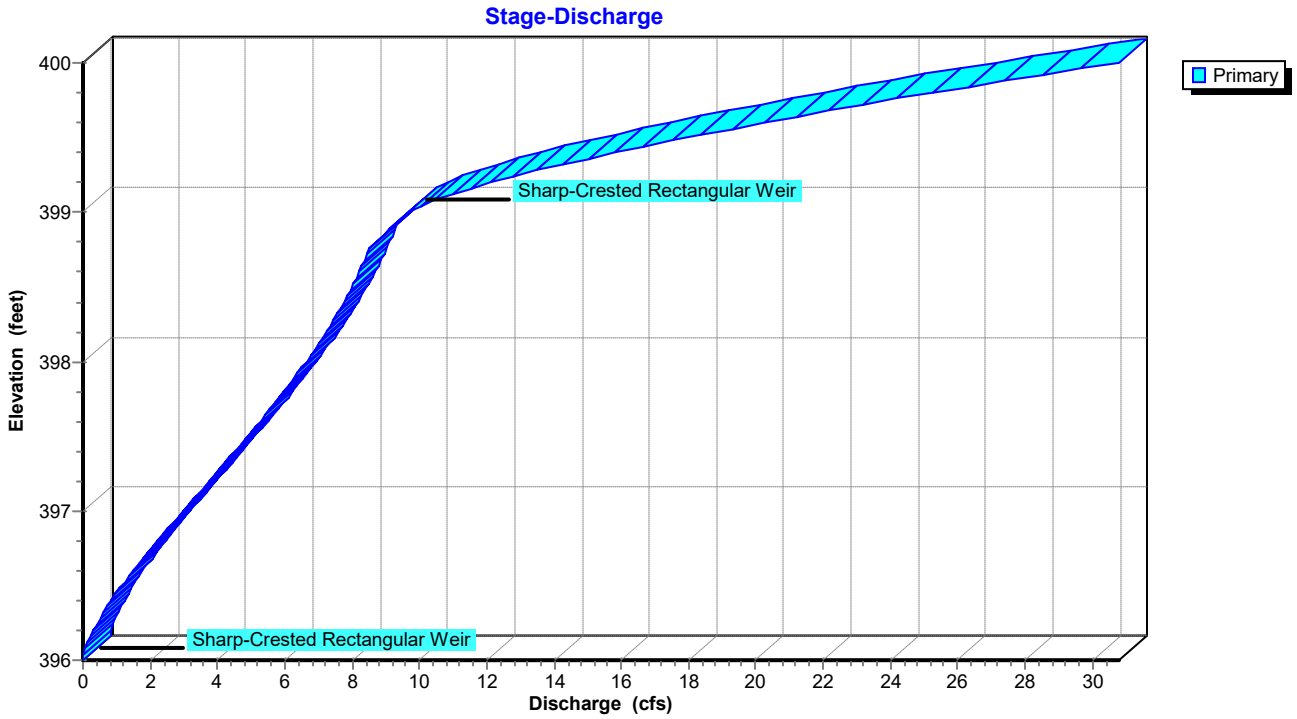
Device	Routing	Invert	Outlet Devices
#1	Primary	399.00'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	396.00'	**1.1' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 10.0' Crest Height

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

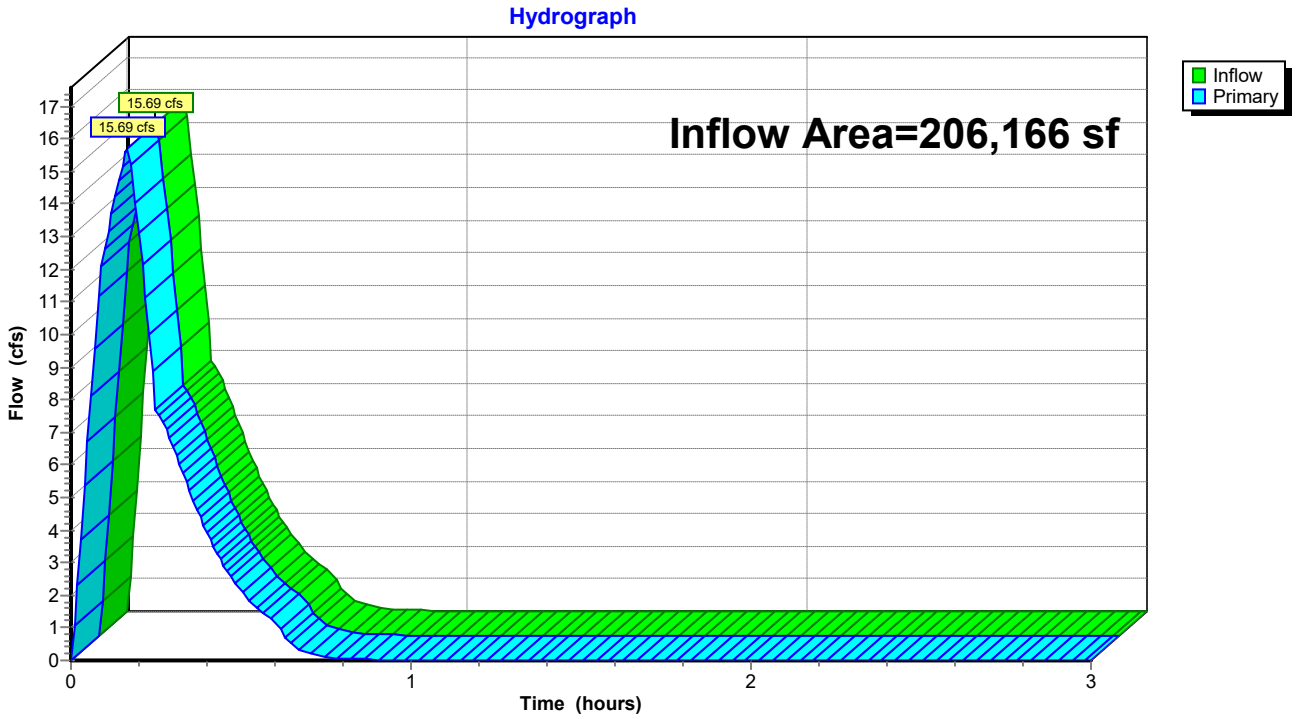
Elevation (feet)	Storage (cubic-feet)
396.00	0
396.05	25
396.10	50
396.15	75
396.20	100
396.25	125
396.30	150
396.35	175
396.40	200
396.45	225
396.50	250
396.55	359
396.60	468
396.65	578
396.70	687
396.75	796
396.80	905
396.85	1,014
396.90	1,124
396.95	1,233
397.00	1,342
397.05	1,461
397.10	1,581
397.15	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

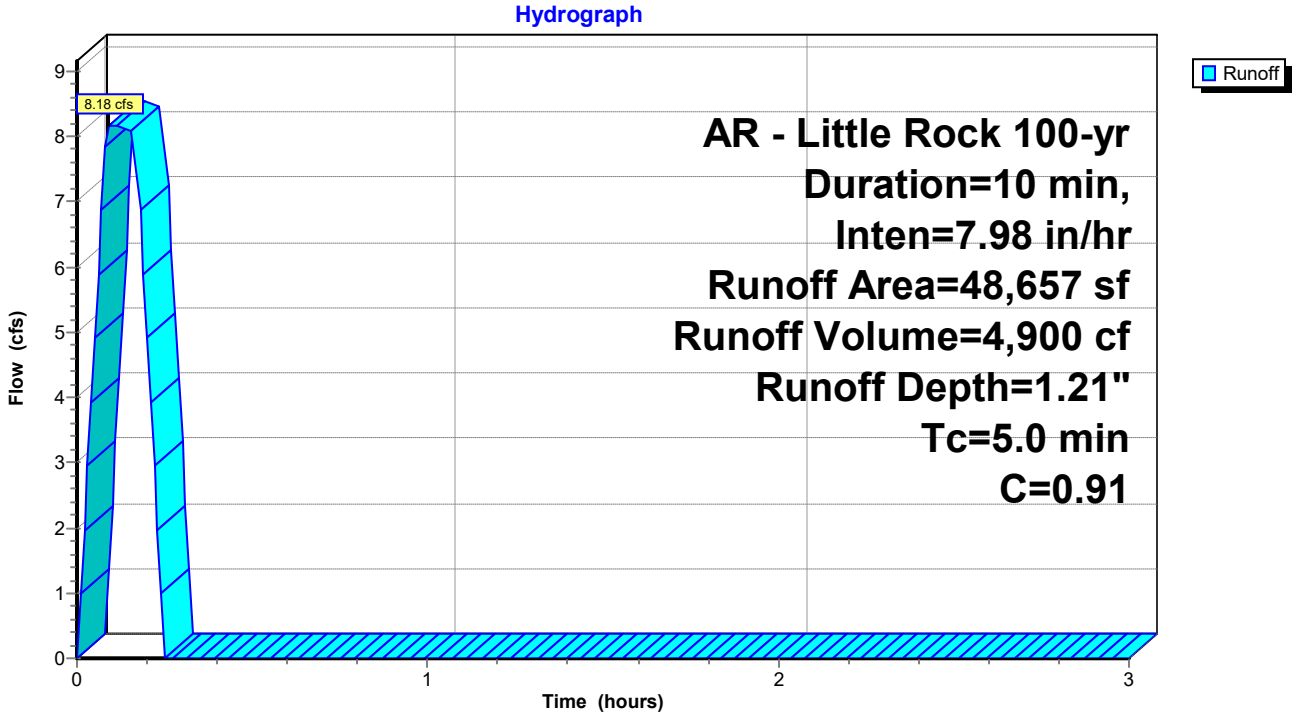
Runoff = 8.18 cfs @ 0.09 hrs, Volume= 4,900 cf, Depth= 1.21"
Routed to Link Post-Dev : APPROX DISCHARGE

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

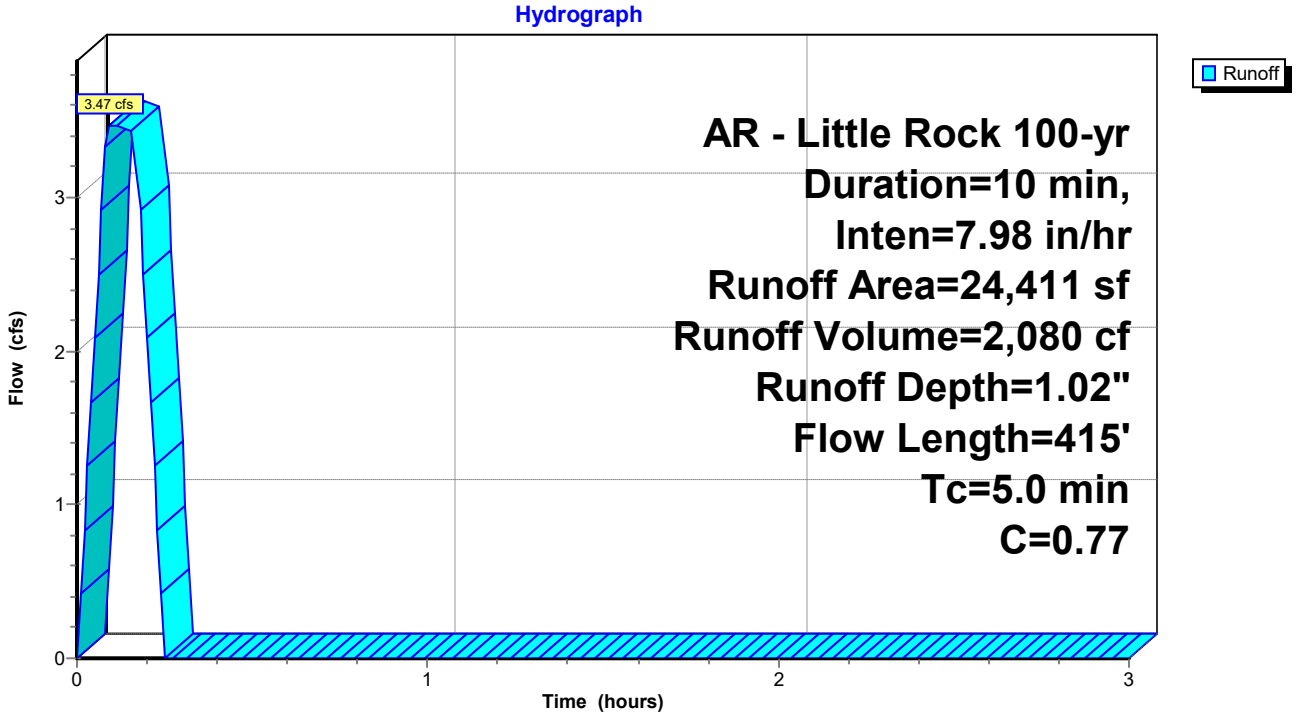
Runoff = 3.47 cfs @ 0.09 hrs, Volume= 2,080 cf, Depth= 1.02"
Routed to Reach P-A1 : Pipe A1

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

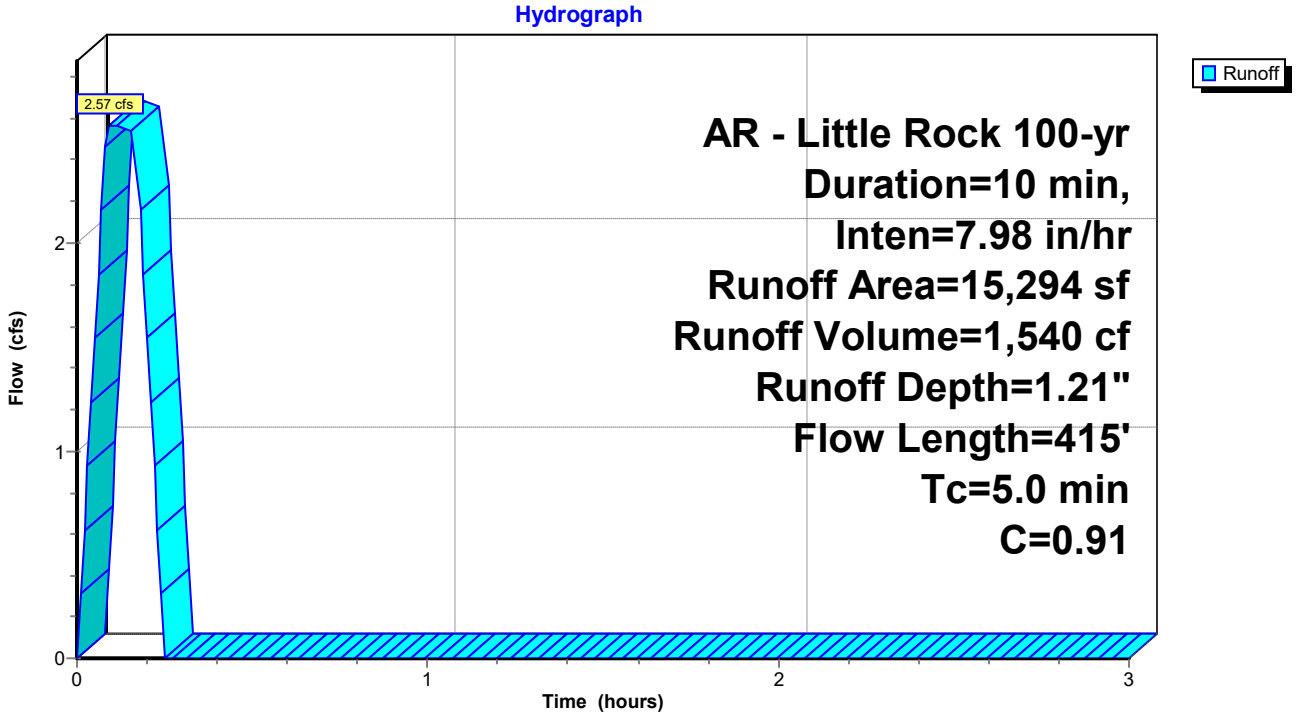
Runoff = 2.57 cfs @ 0.09 hrs, Volume= 1,540 cf, Depth= 1.21"
Routed to Reach P-A2 : Pipe A2

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

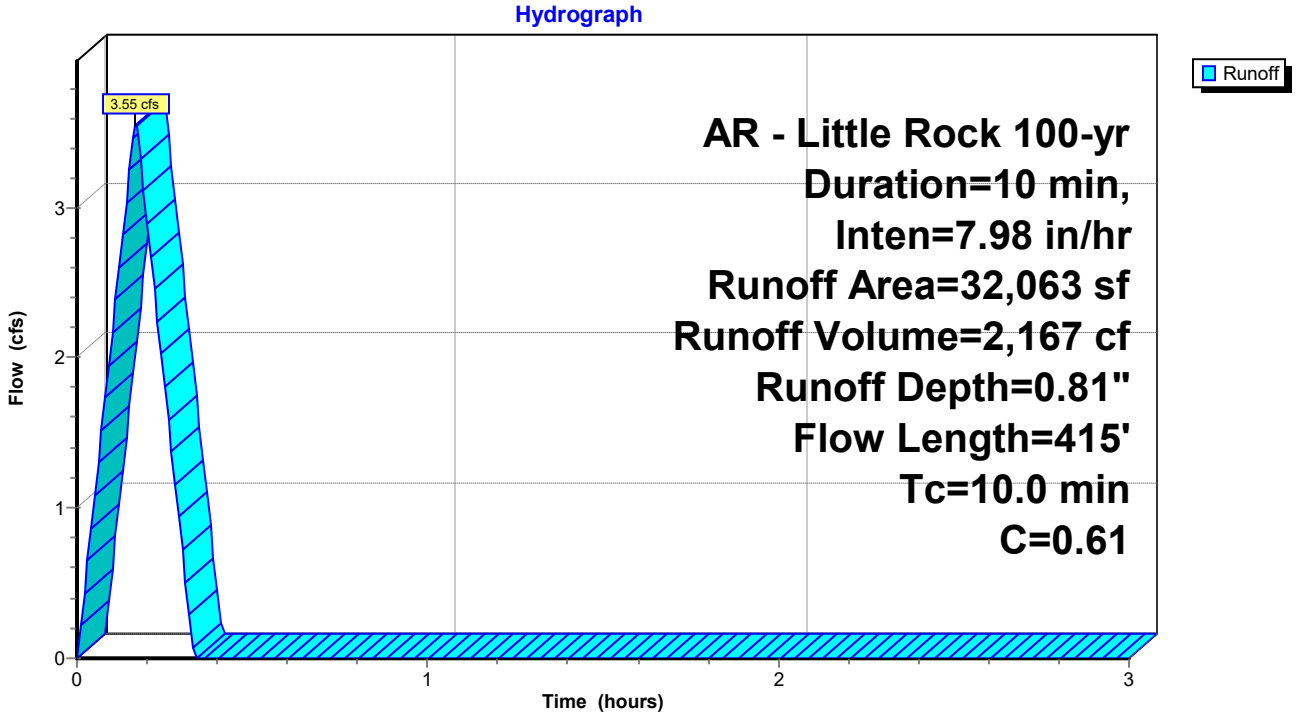
Runoff = 3.55 cfs @ 0.17 hrs, Volume= 2,167 cf, Depth= 0.81"
Routed to Reach P-A3 : Pipe A3

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

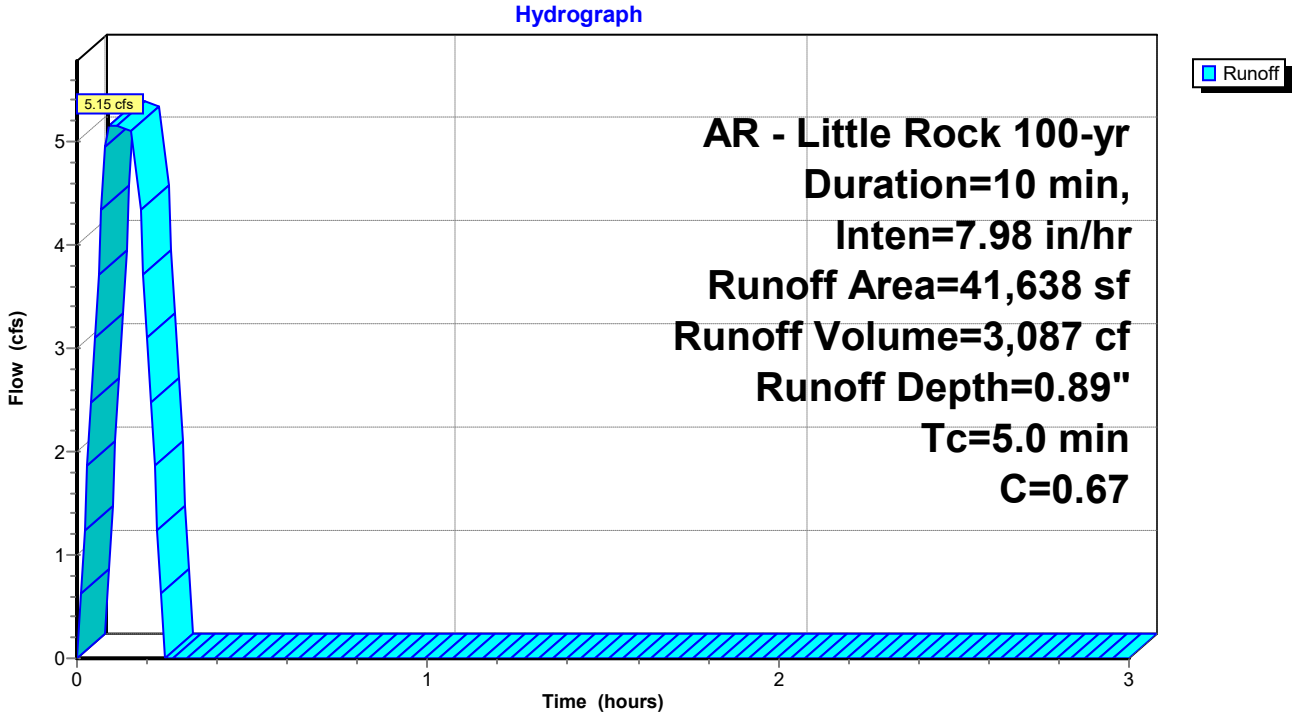
Runoff = 5.15 cfs @ 0.09 hrs, Volume= 3,087 cf, Depth= 0.89"
Routed to Pond DP1 : Re-Establised East Pond

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

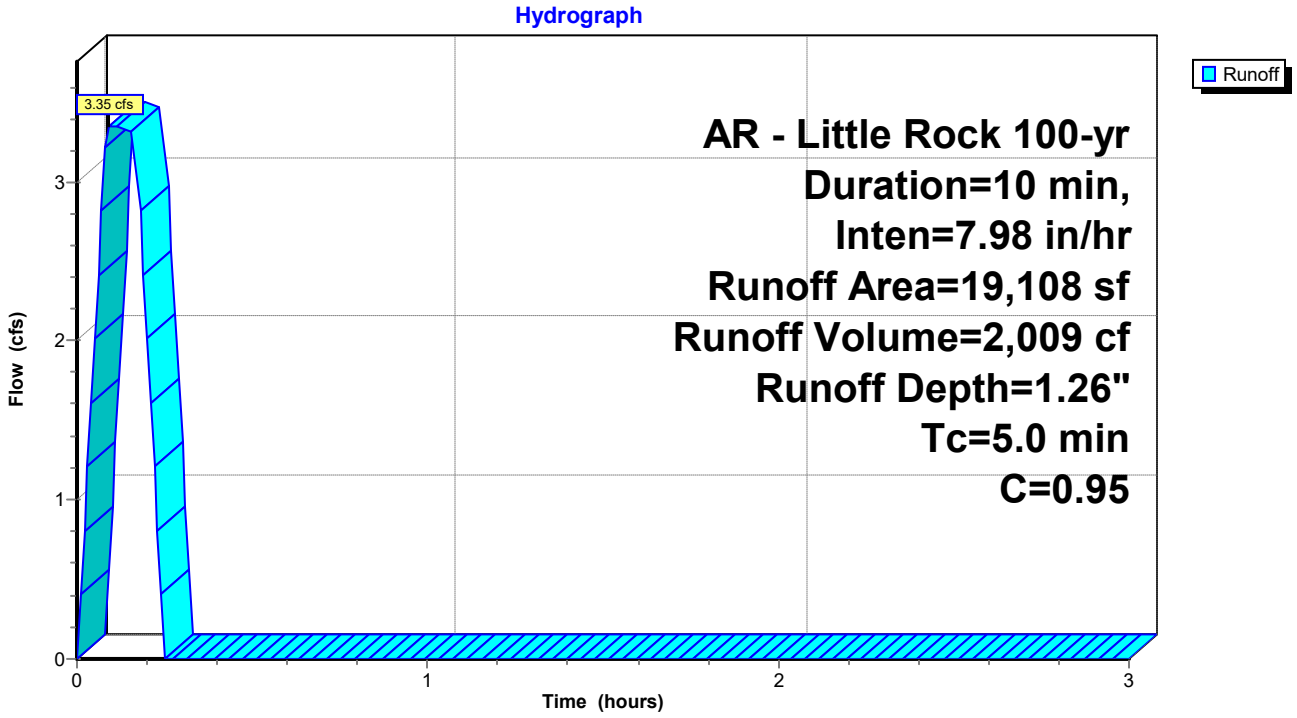
Runoff = 3.35 cfs @ 0.09 hrs, Volume= 2,009 cf, Depth= 1.26"
Routed to Pond DP1 : Re-Establised East Pond

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

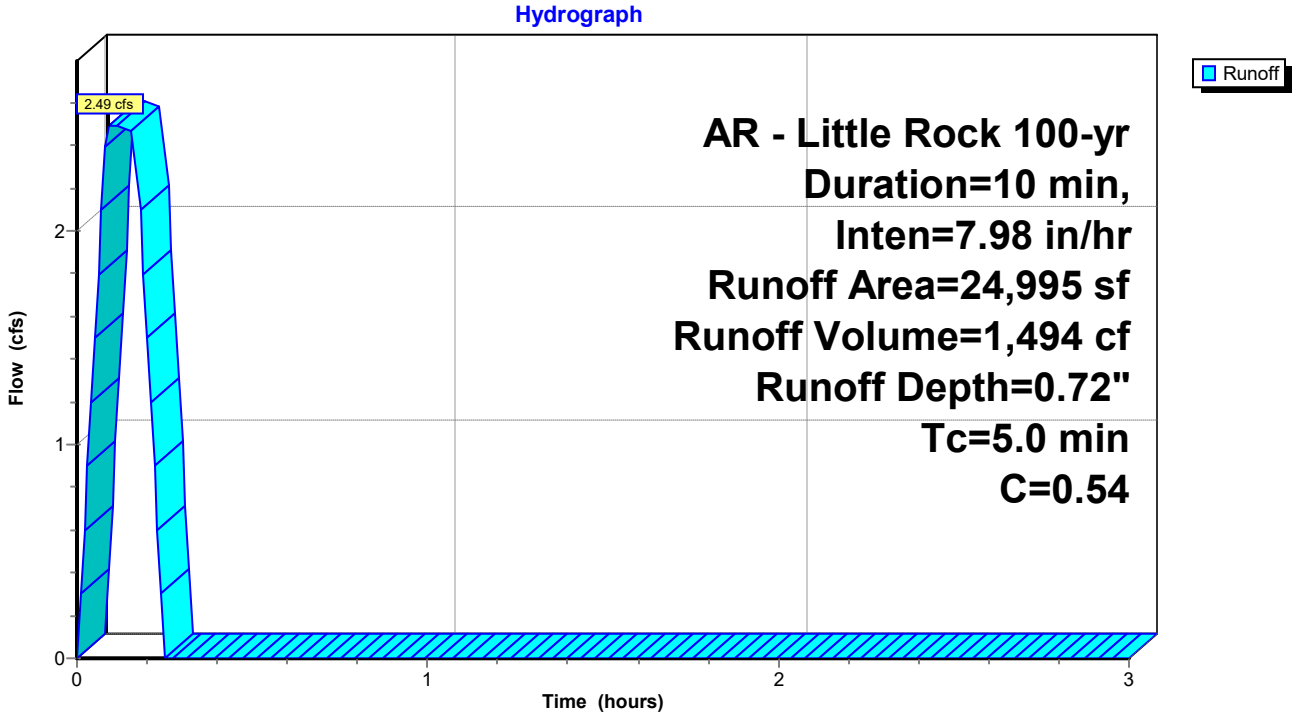
Runoff = 2.49 cfs @ 0.09 hrs, Volume= 1,494 cf, Depth= 0.72"
Routed to Link Post-Dev : APPROX DISCHARGE

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



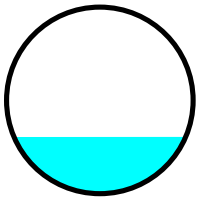
Summary for Reach P-A1: Pipe A1

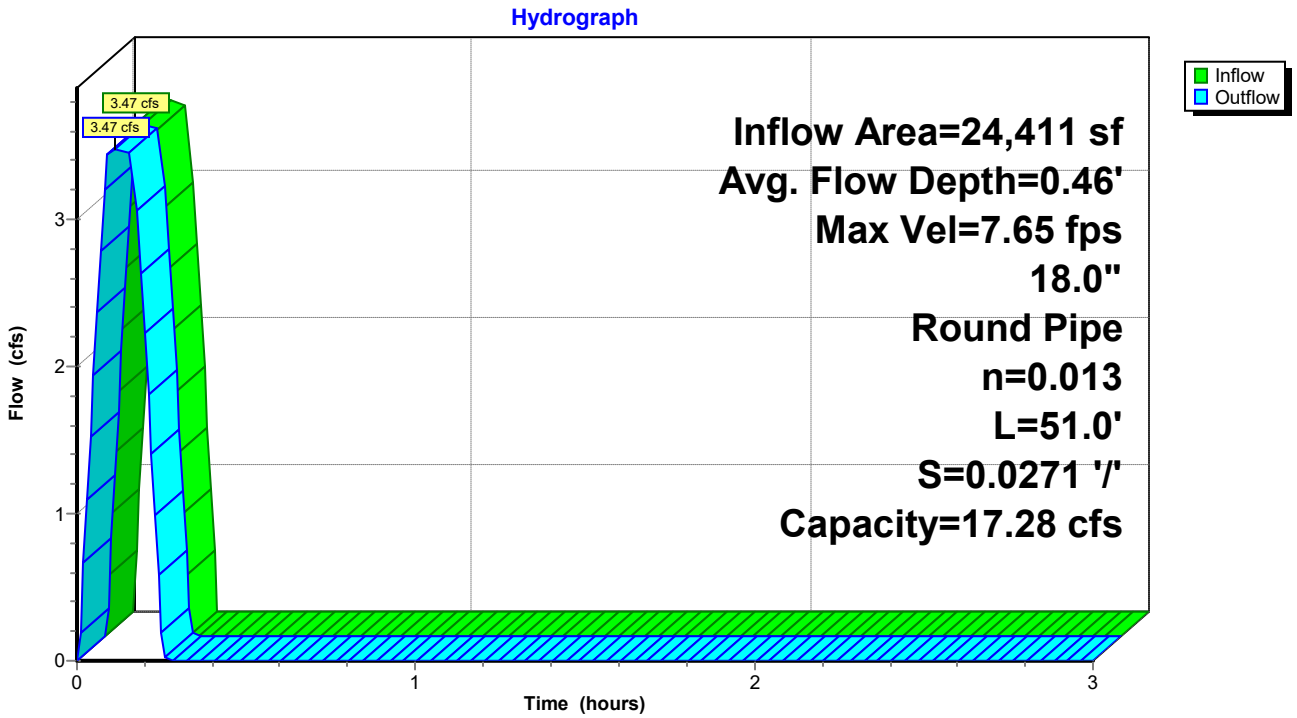
Inflow Area = 24,411 sf, 63.77% Impervious, Inflow Depth = 1.02" for 100-yr event
Inflow = 3.47 cfs @ 0.09 hrs, Volume= 2,080 cf
Outflow = 3.47 cfs @ 0.11 hrs, Volume= 2,080 cf, Atten= 0%, Lag= 1.2 min
Routed to Reach P-A2 : Pipe A2

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

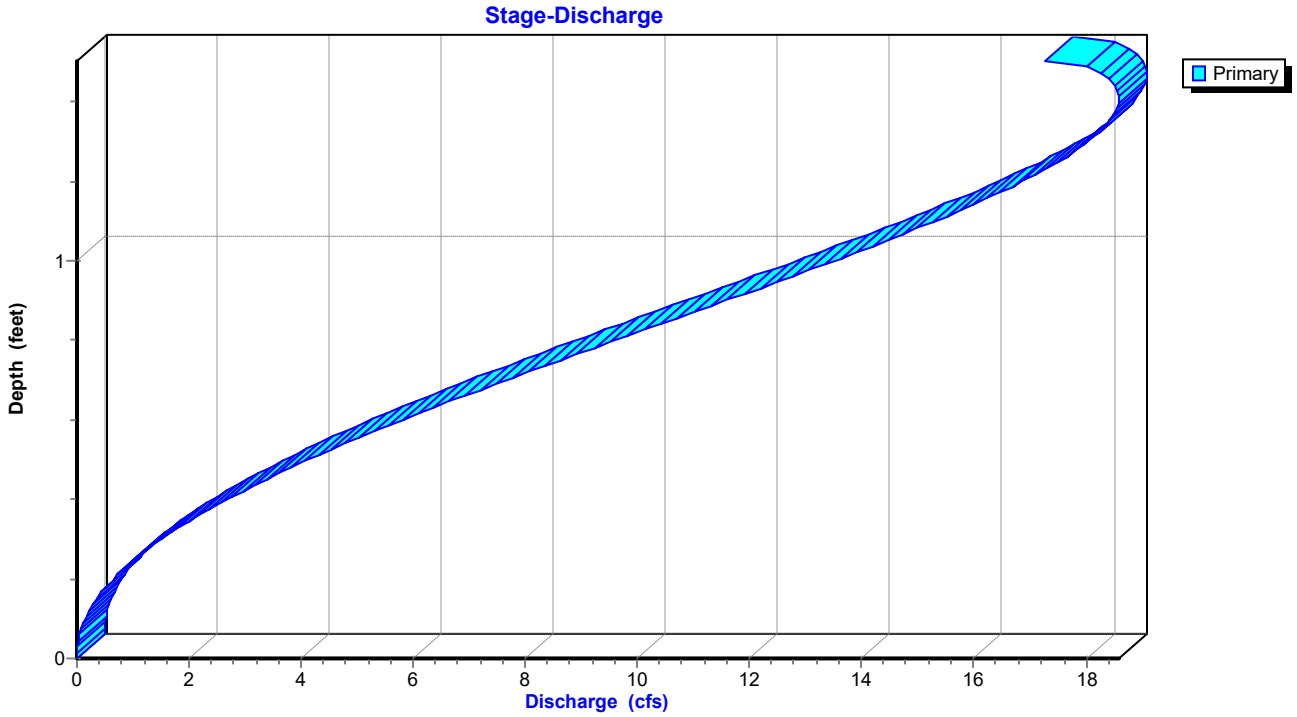
Peak Storage= 23 cf @ 0.09 hrs
Average Depth at Peak Storage= 0.46' , Surface Width= 1.38'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.28 cfs

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**

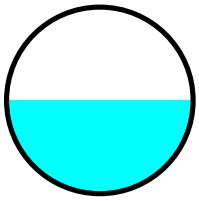
Summary for Reach P-A2: Pipe A2

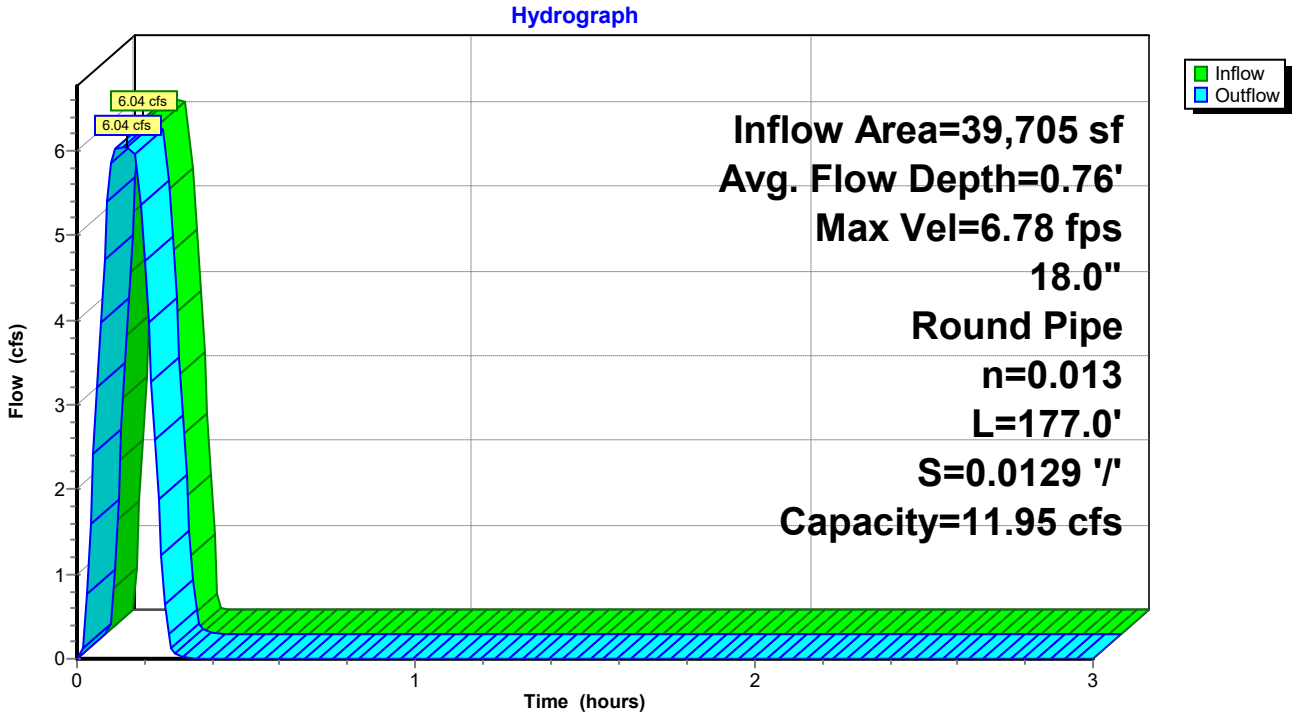
Inflow Area = 39,705 sf, 75.04% Impervious, Inflow Depth = 1.09" for 100-yr event
Inflow = 6.04 cfs @ 0.11 hrs, Volume= 3,620 cf
Outflow = 6.04 cfs @ 0.15 hrs, Volume= 3,620 cf, Atten= 0%, Lag= 2.4 min
Routed to Reach P-A3 : Pipe A3

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

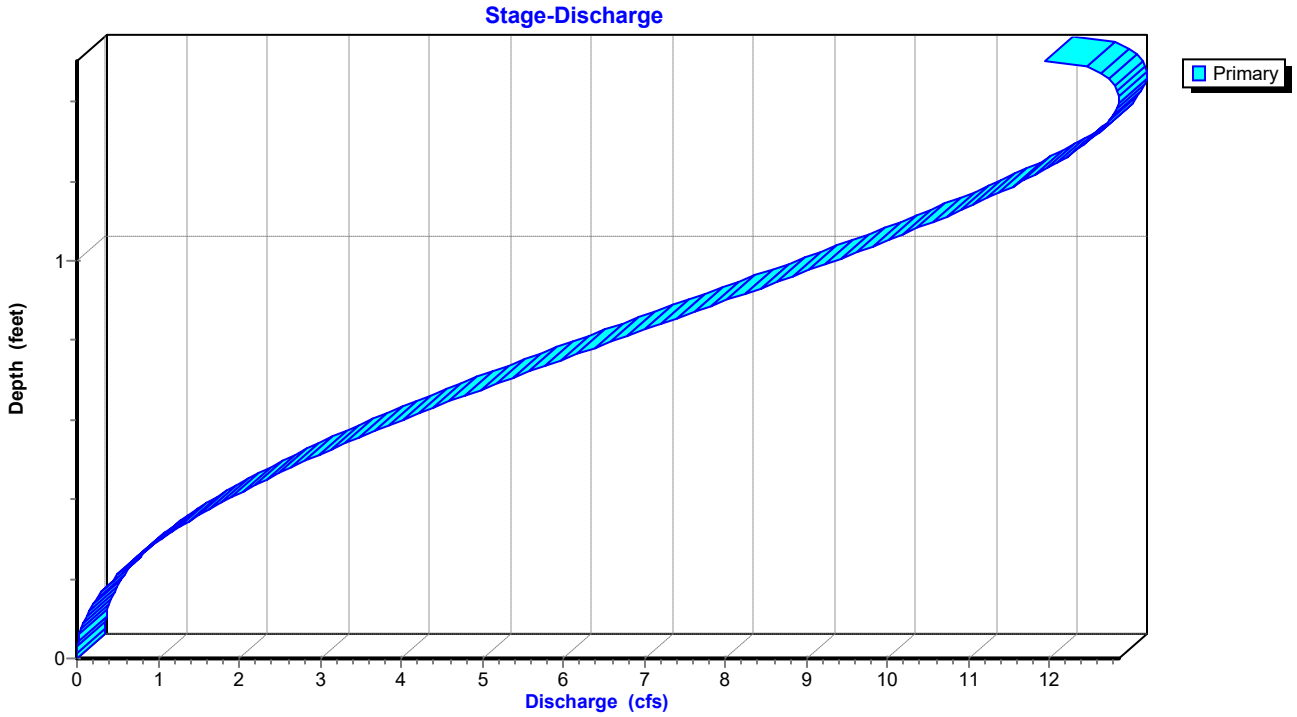
Peak Storage= 158 cf @ 0.12 hrs
Average Depth at Peak Storage= 0.76' , Surface Width= 1.50'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 11.95 cfs

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**

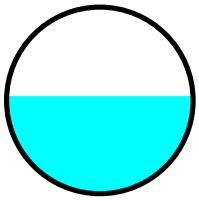
Summary for Reach P-A3: Pipe A3

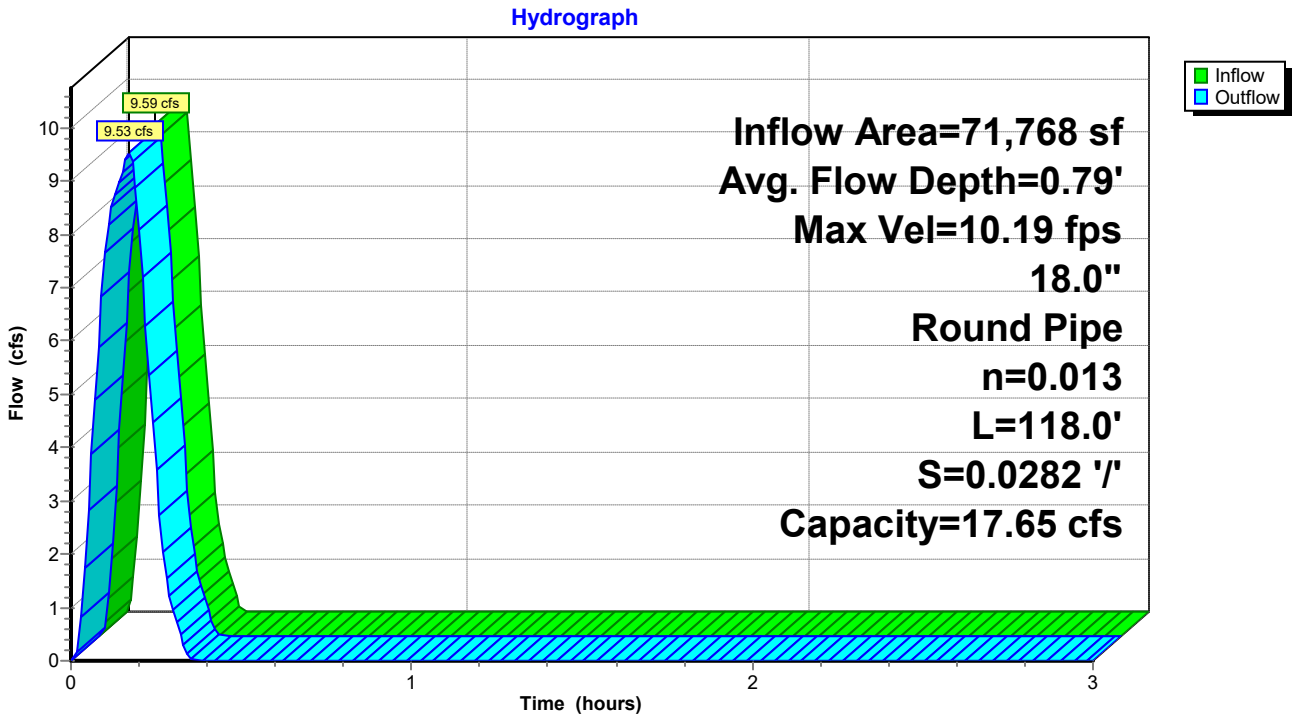
Inflow Area = 71,768 sf, 58.28% Impervious, Inflow Depth = 0.97" for 100-yr event
Inflow = 9.59 cfs @ 0.17 hrs, Volume= 5,787 cf
Outflow = 9.53 cfs @ 0.17 hrs, Volume= 5,787 cf, Atten= 1%, Lag= 0.2 min
Routed to Reach P-A4 : Pipe A4

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

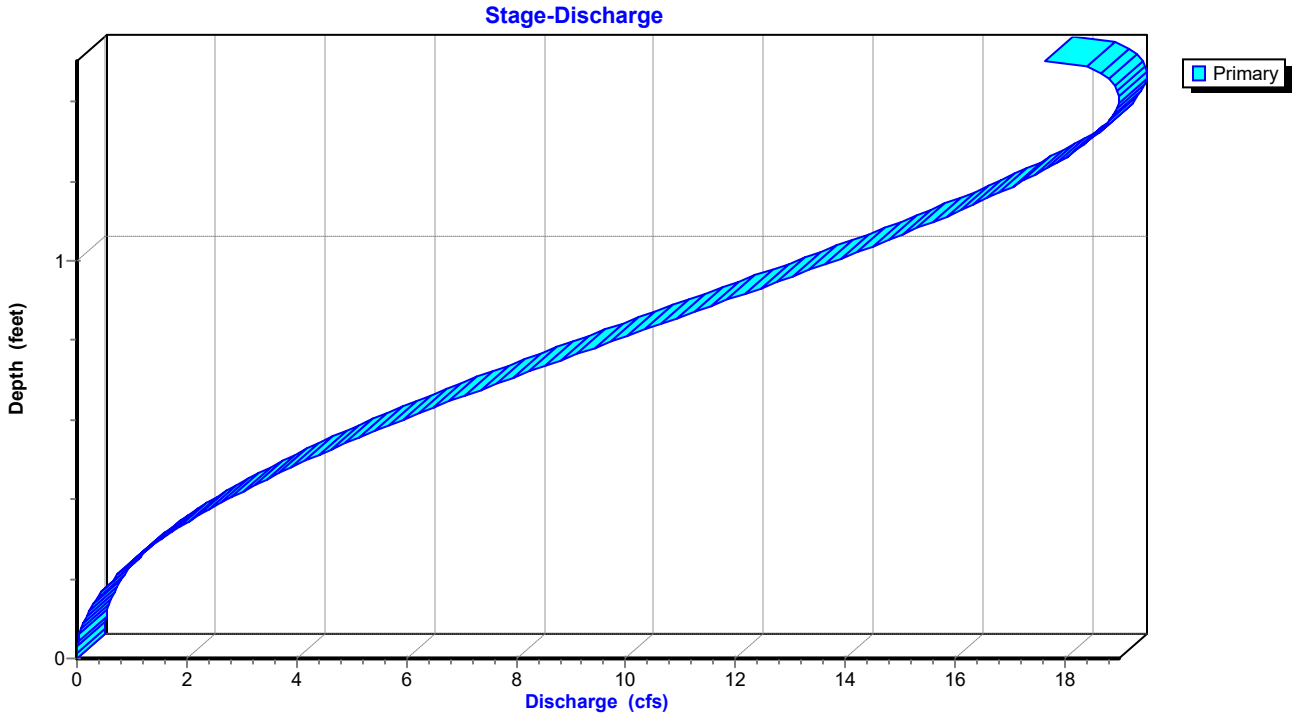
Peak Storage= 111 cf @ 0.17 hrs
Average Depth at Peak Storage= 0.79' , Surface Width= 1.50'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.65 cfs

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**

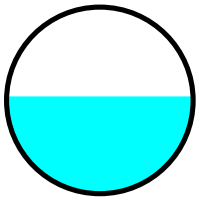
Summary for Reach P-A4: Pipe A4

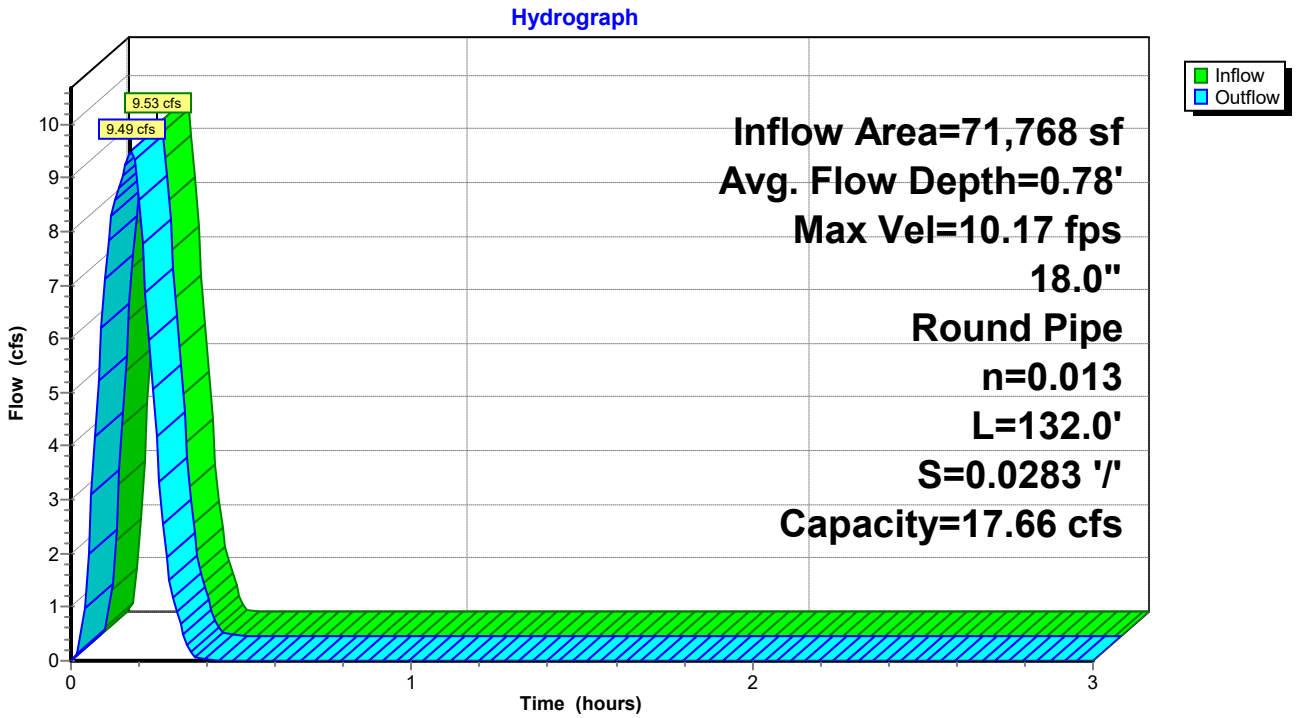
Inflow Area = 71,768 sf, 58.28% Impervious, Inflow Depth = 0.97" for 100-yr event
Inflow = 9.53 cfs @ 0.17 hrs, Volume= 5,787 cf
Outflow = 9.49 cfs @ 0.18 hrs, Volume= 5,787 cf, Atten= 0%, Lag= 0.4 min
Routed to Pond DP1 : Re-Establised East Pond

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

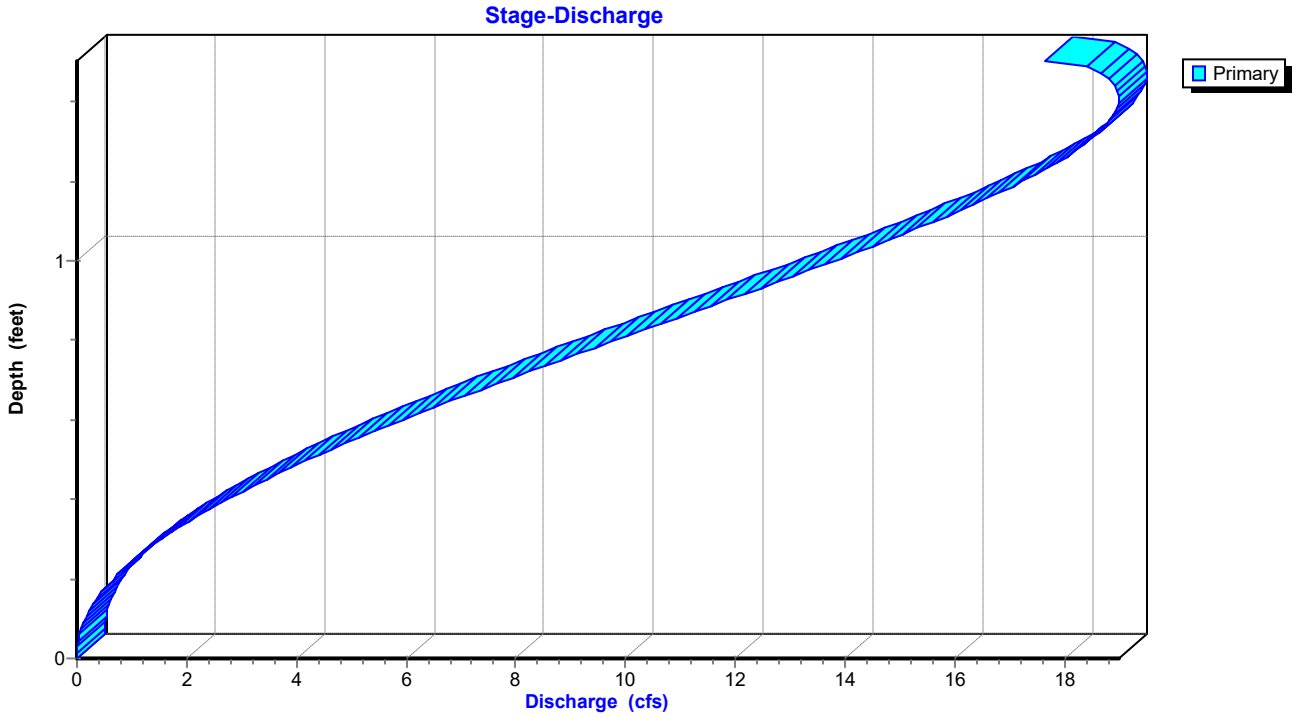
Peak Storage= 123 cf @ 0.17 hrs
Average Depth at Peak Storage= 0.78' , Surface Width= 1.50'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.66 cfs

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)

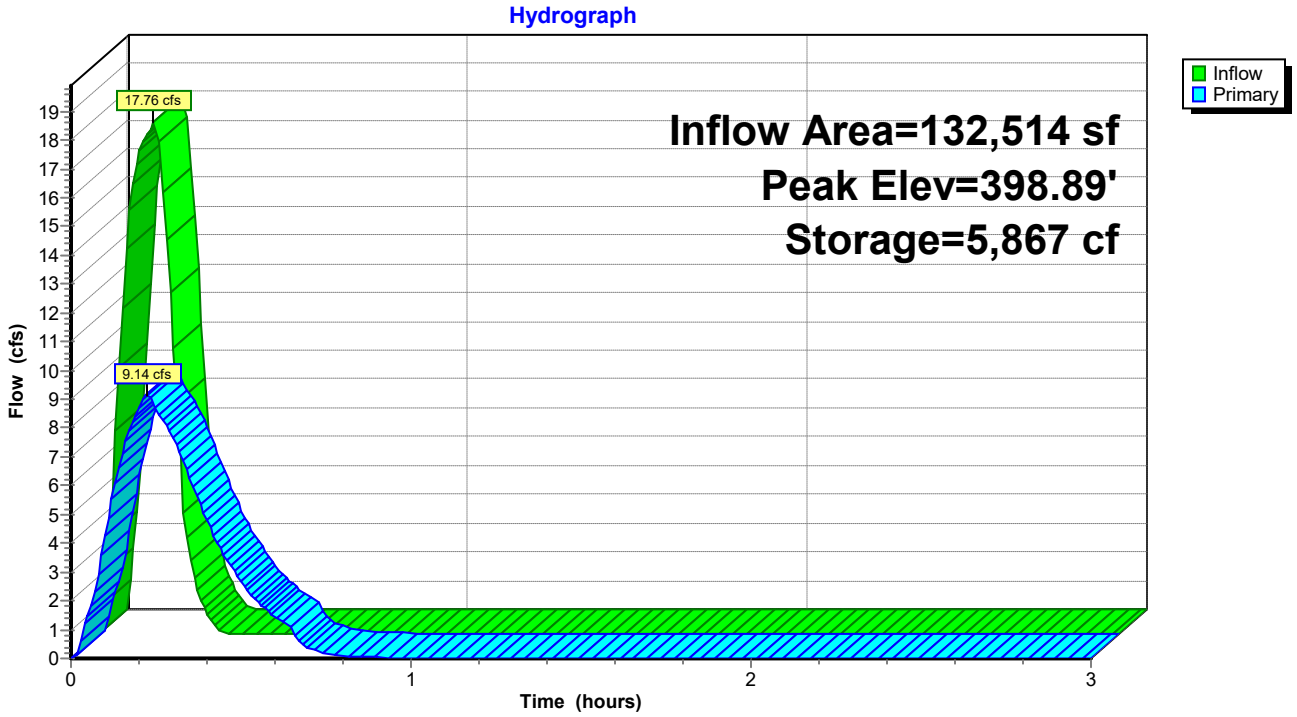
Volume	Invert	Avail.Storage	Storage Description
#1	396.00'	8,557 cf	**Custom Stage Data** Listed below

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

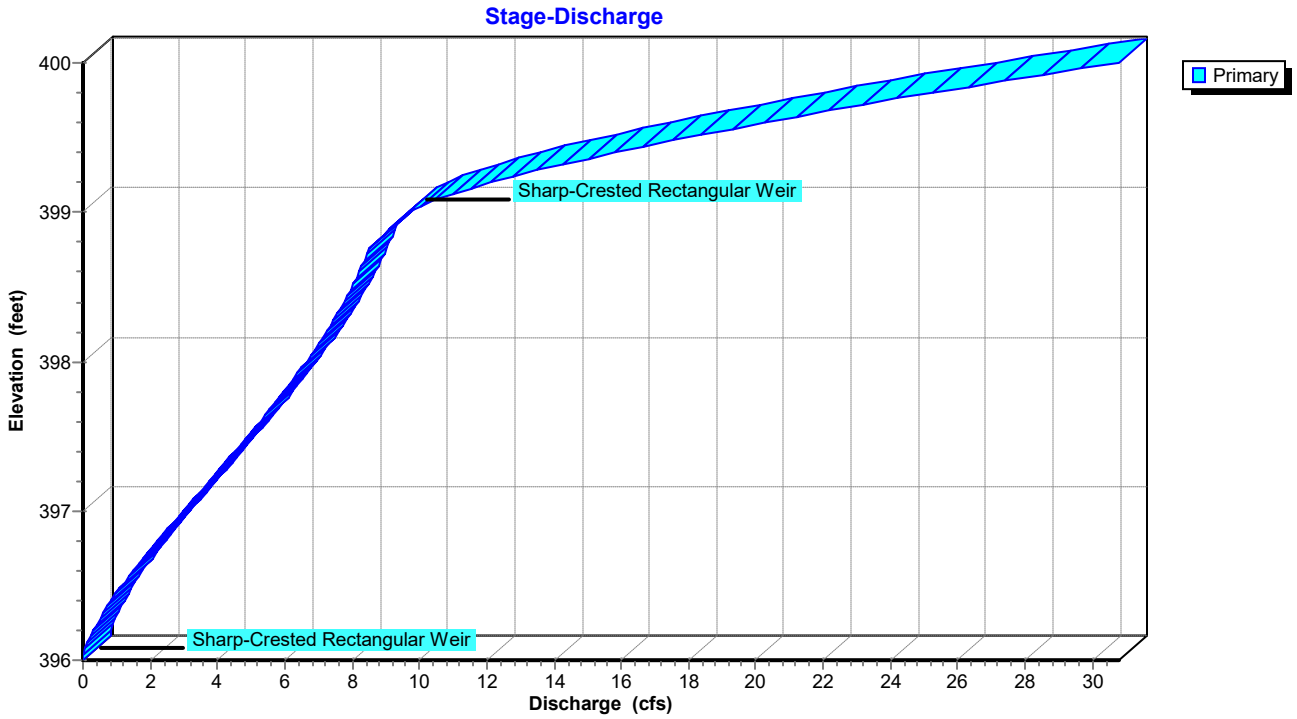
Device	Routing	Invert	Outlet Devices
#1	Primary	399.00'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#2	Primary	396.00'	**1.1' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 10.0' Crest Height

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

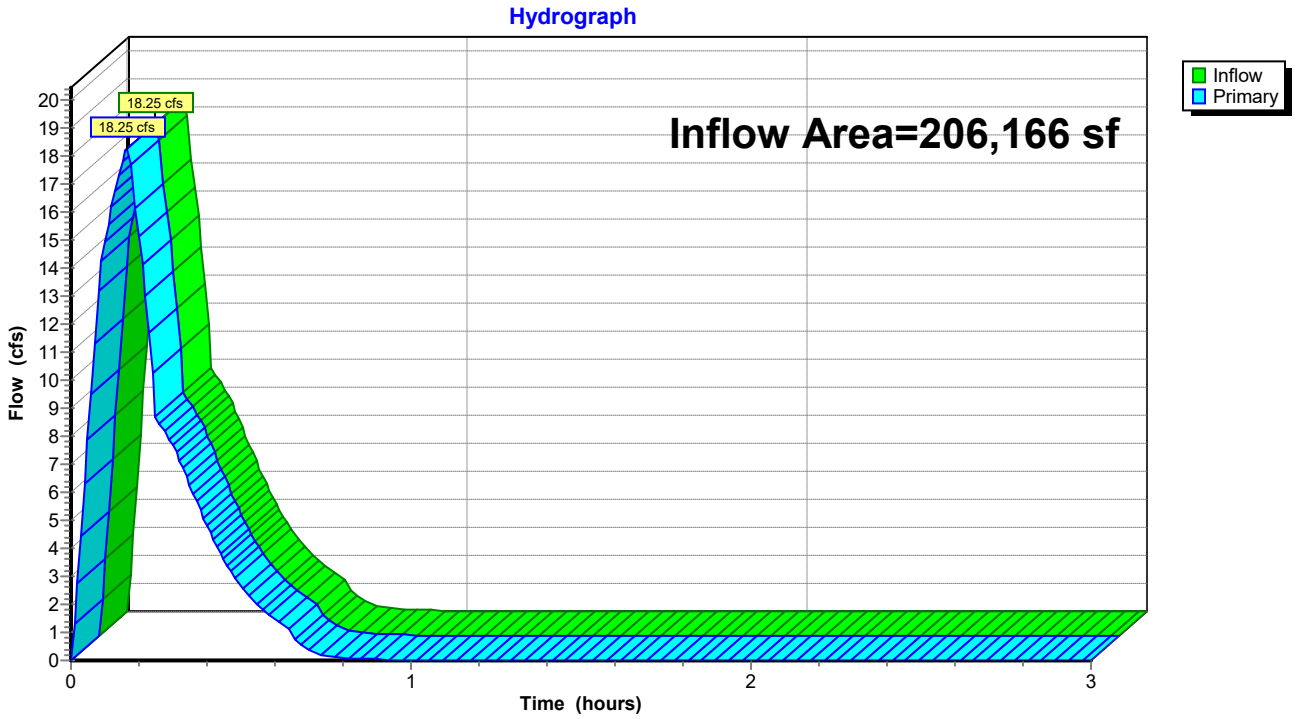
Elevation (feet)	Storage (cubic-feet)
396.00	0
396.05	25
396.10	50
396.15	75
396.20	100
396.25	125
396.30	150
396.35	175
396.40	200
396.45	225
396.50	250
396.55	359
396.60	468
396.65	578
396.70	687
396.75	796
396.80	905
396.85	1,014
396.90	1,124
396.95	1,233
397.00	1,342
397.05	1,461
397.10	1,581
397.15	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-

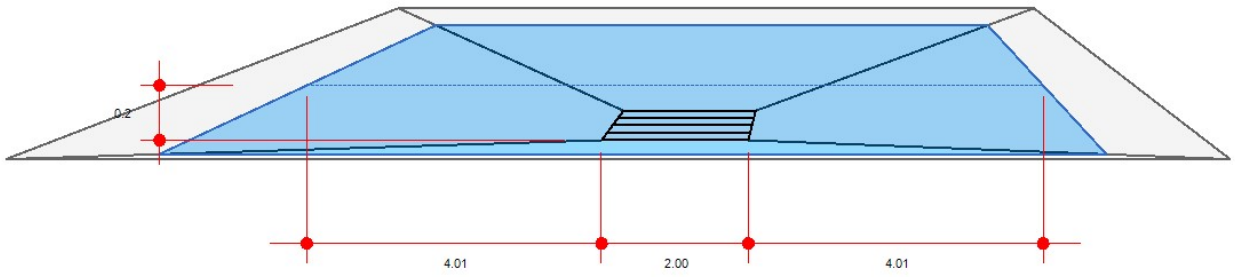
Calculations

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

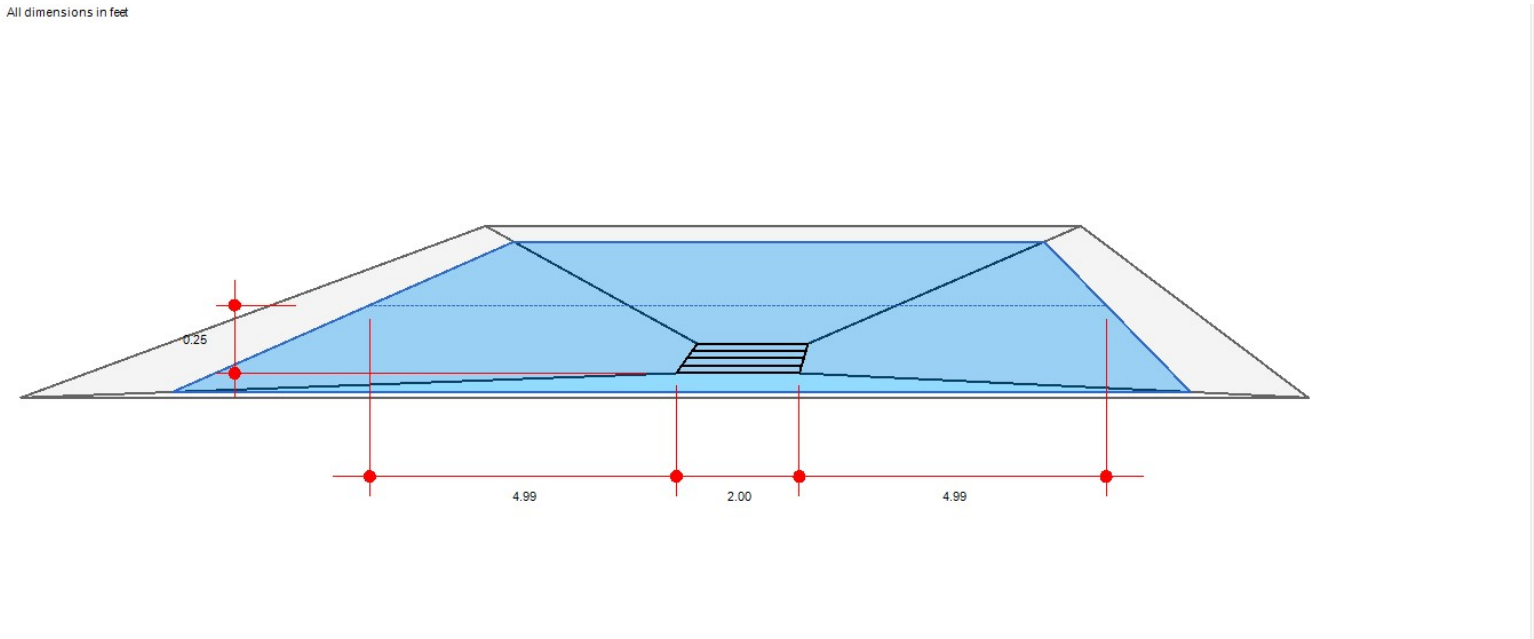
Slope, Sw (ft/ft)	= 0.050
Slope, Sx (ft/ft)	= 0.050
Local Depr (in)	= -0-
Gutter Width (ft)	= 2.00
Gutter Slope (%)	= -0-
Gutter n-value	= -0-

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

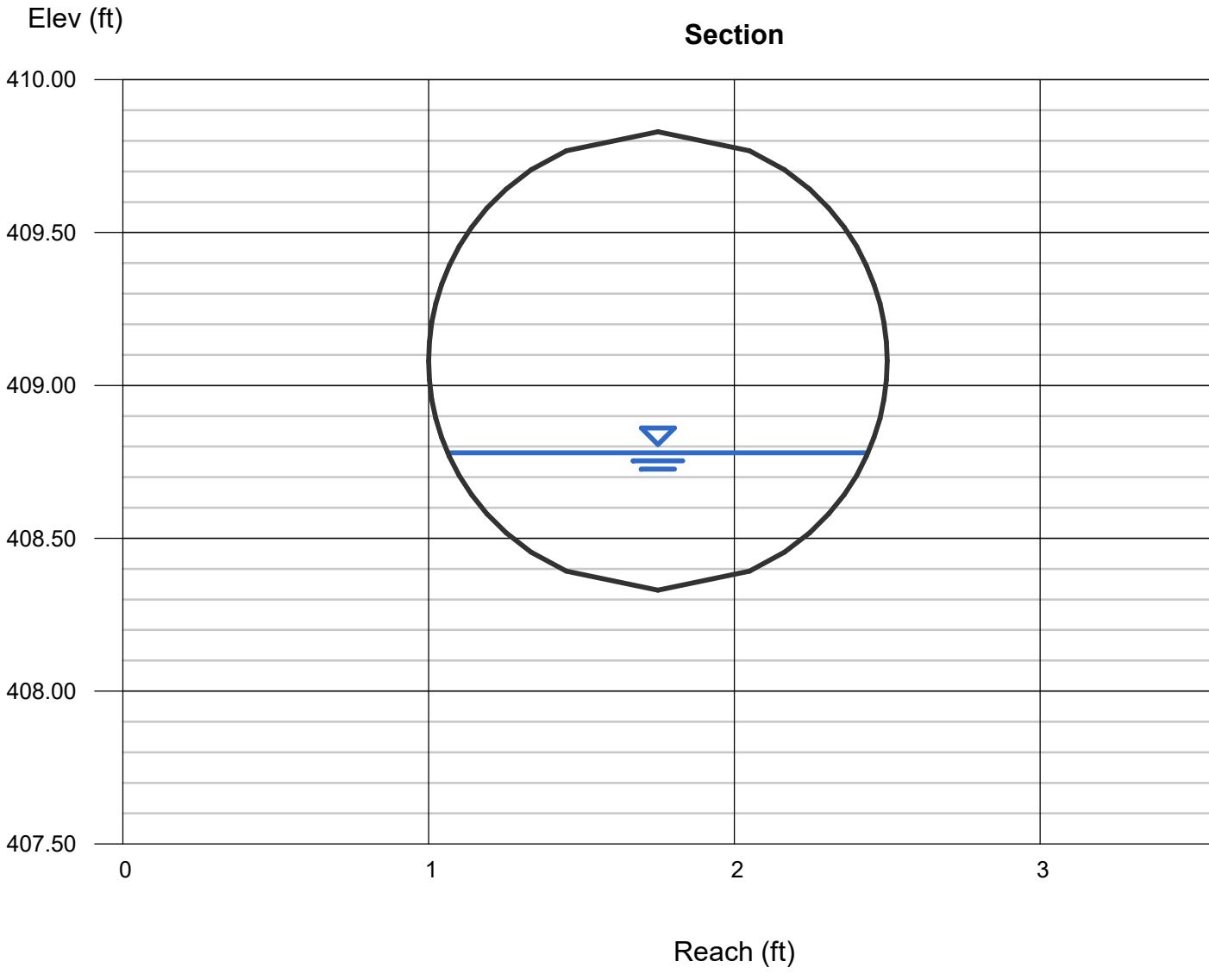
Diameter (ft)	= 1.50
Invert Elev (ft)	= 408.33
Slope (%)	= 2.70
N-Value	= 0.015

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

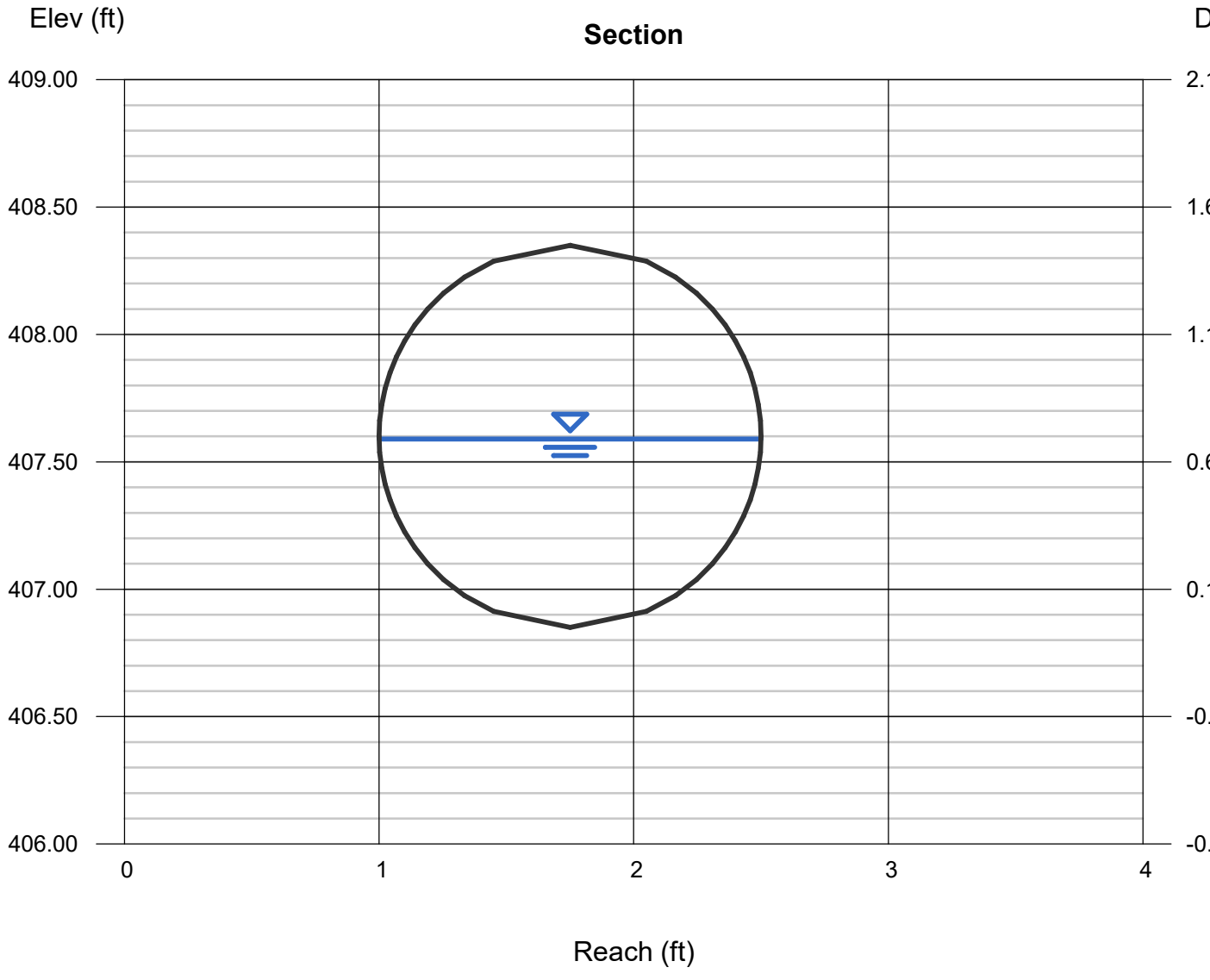
Diameter (ft)	= 1.50
Invert Elev (ft)	= 406.85
Slope (%)	= 1.30
N-Value	= 0.015

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

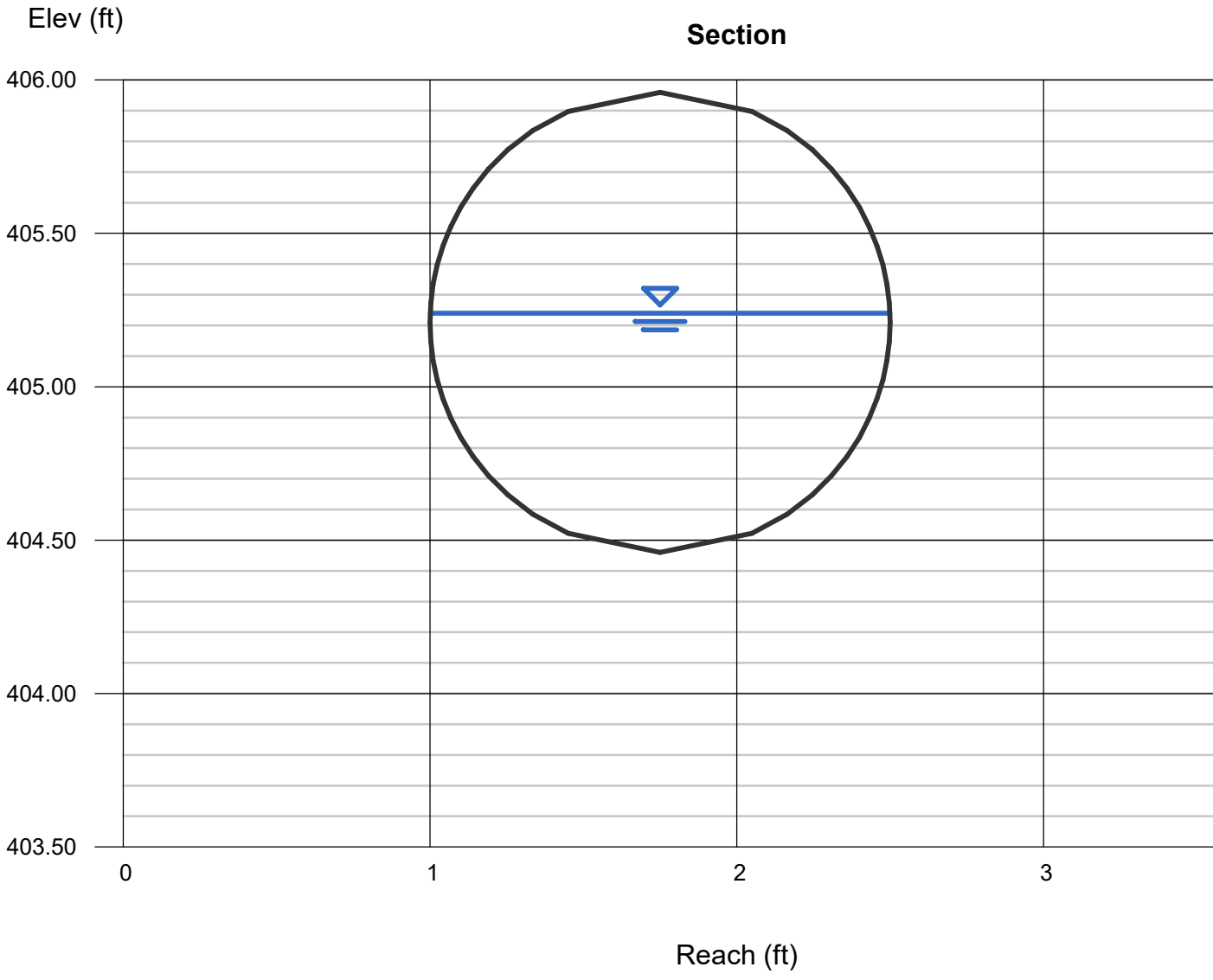
Diameter (ft)	= 1.50
Invert Elev (ft)	= 404.46
Slope (%)	= 2.80
N-Value	= 0.015

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

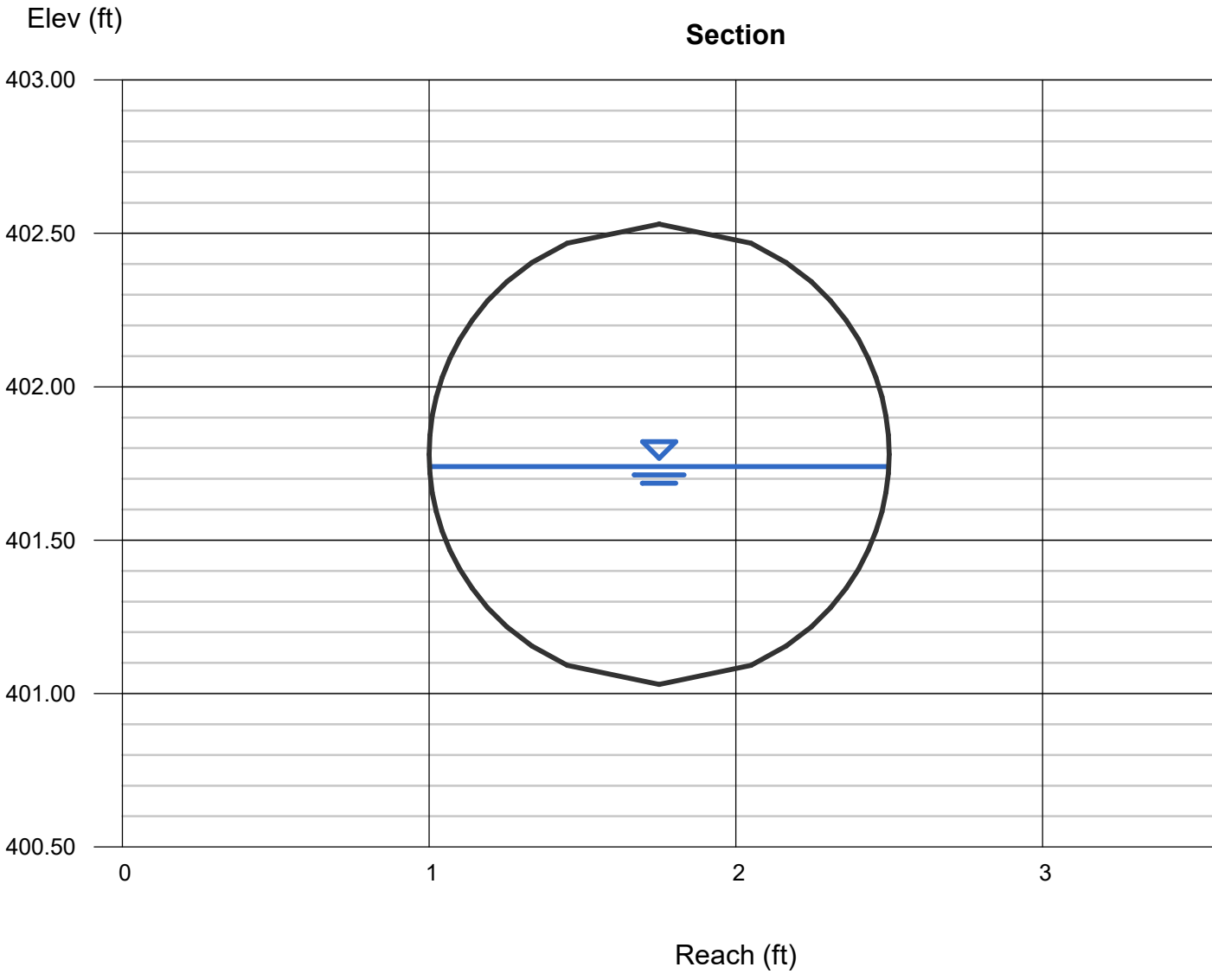
Diameter (ft)	= 1.50
Invert Elev (ft)	= 401.03
Slope (%)	= 2.83
N-Value	= 0.013

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

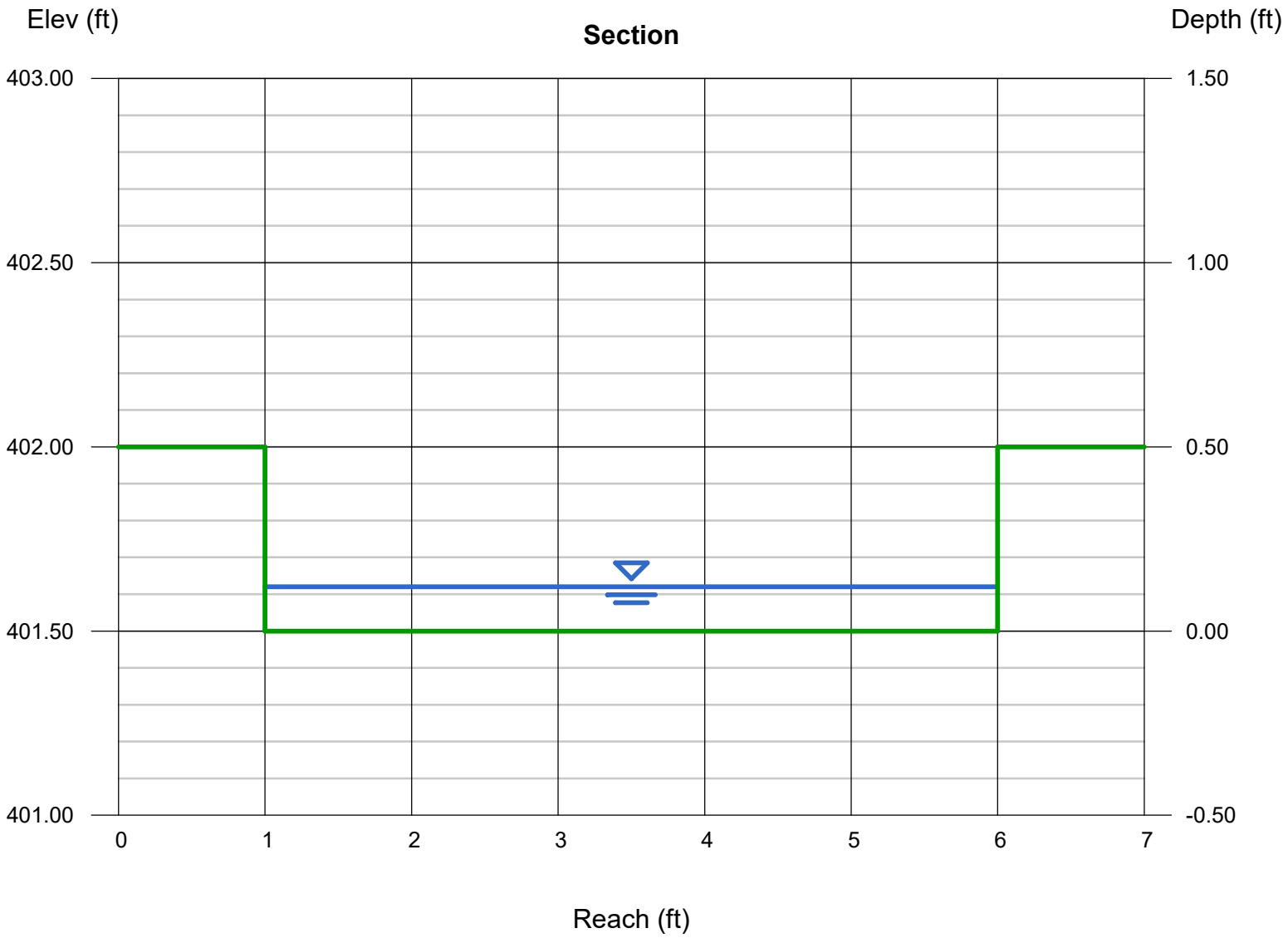
Bottom Width (ft)	= 5.00
Total Depth (ft)	= 0.50
Invert Elev (ft)	= 401.50
Slope (%)	= 15.00
N-Value	= 0.015

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

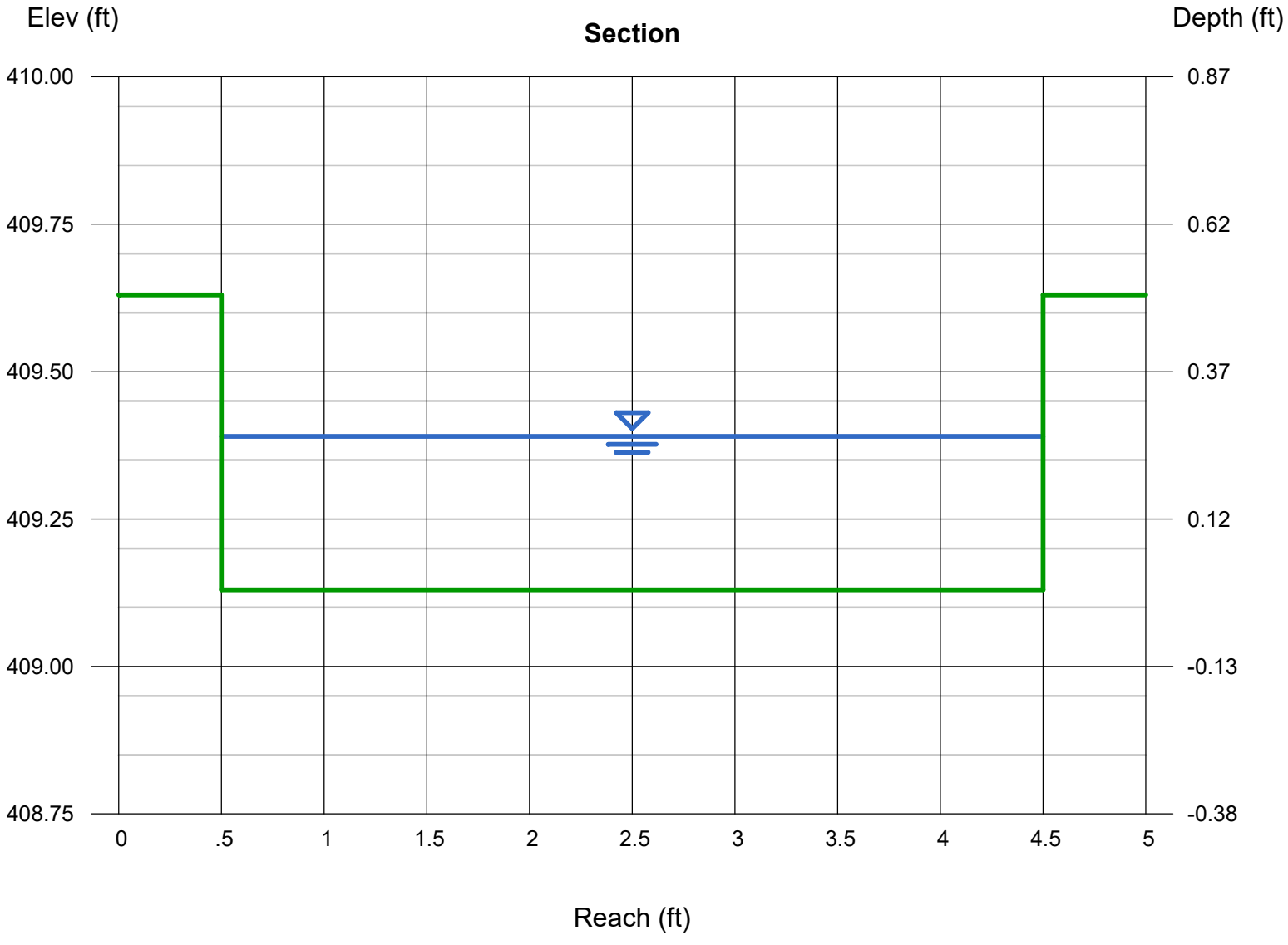
Bottom Width (ft)	= 4.00
Total Depth (ft)	= 0.50
Invert Elev (ft)	= 409.13
Slope (%)	= 5.00
N-Value	= 0.015

Calculations

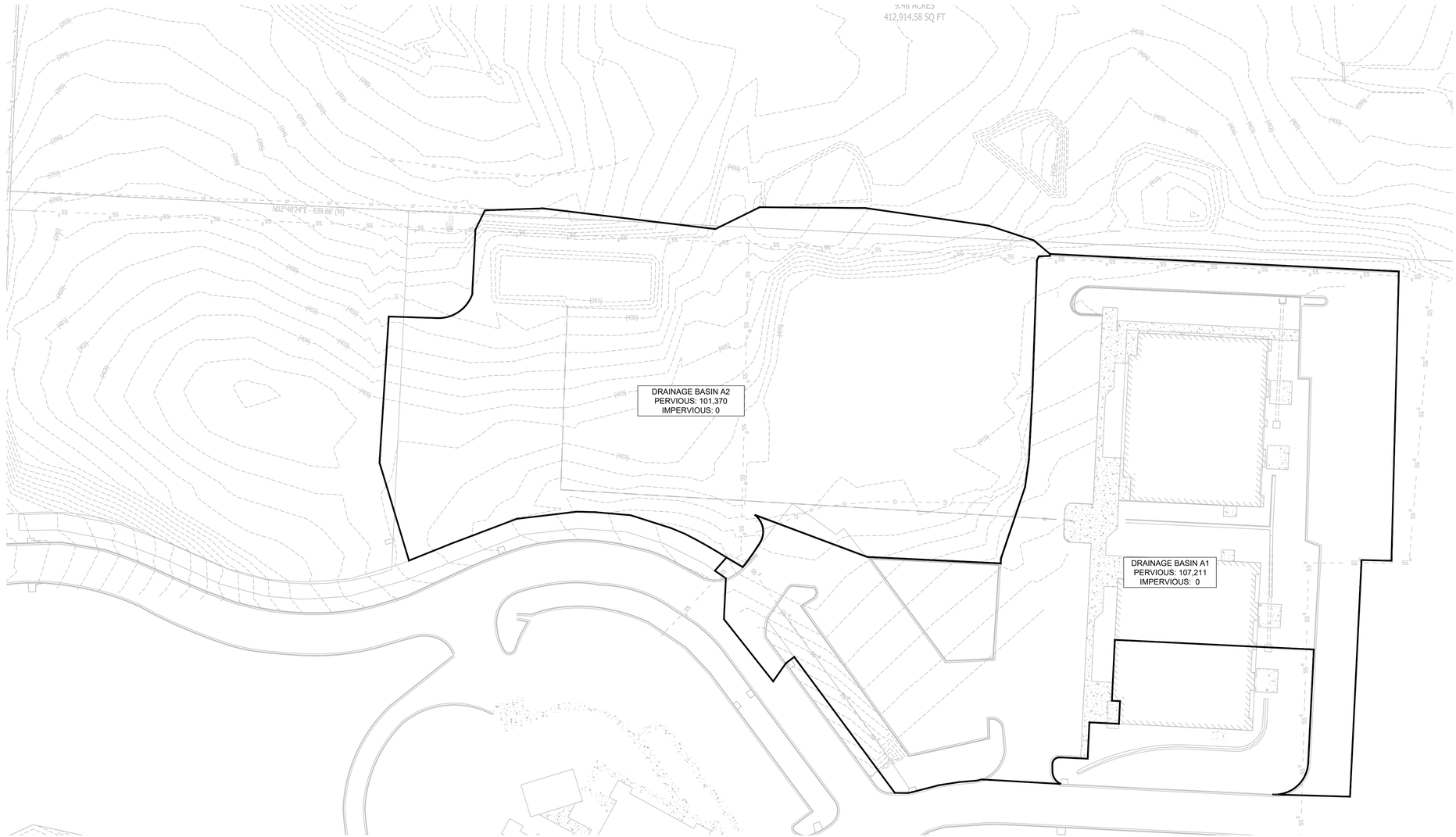
Compute by:	Known Q
Known Q (cfs)	= 8.18

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:

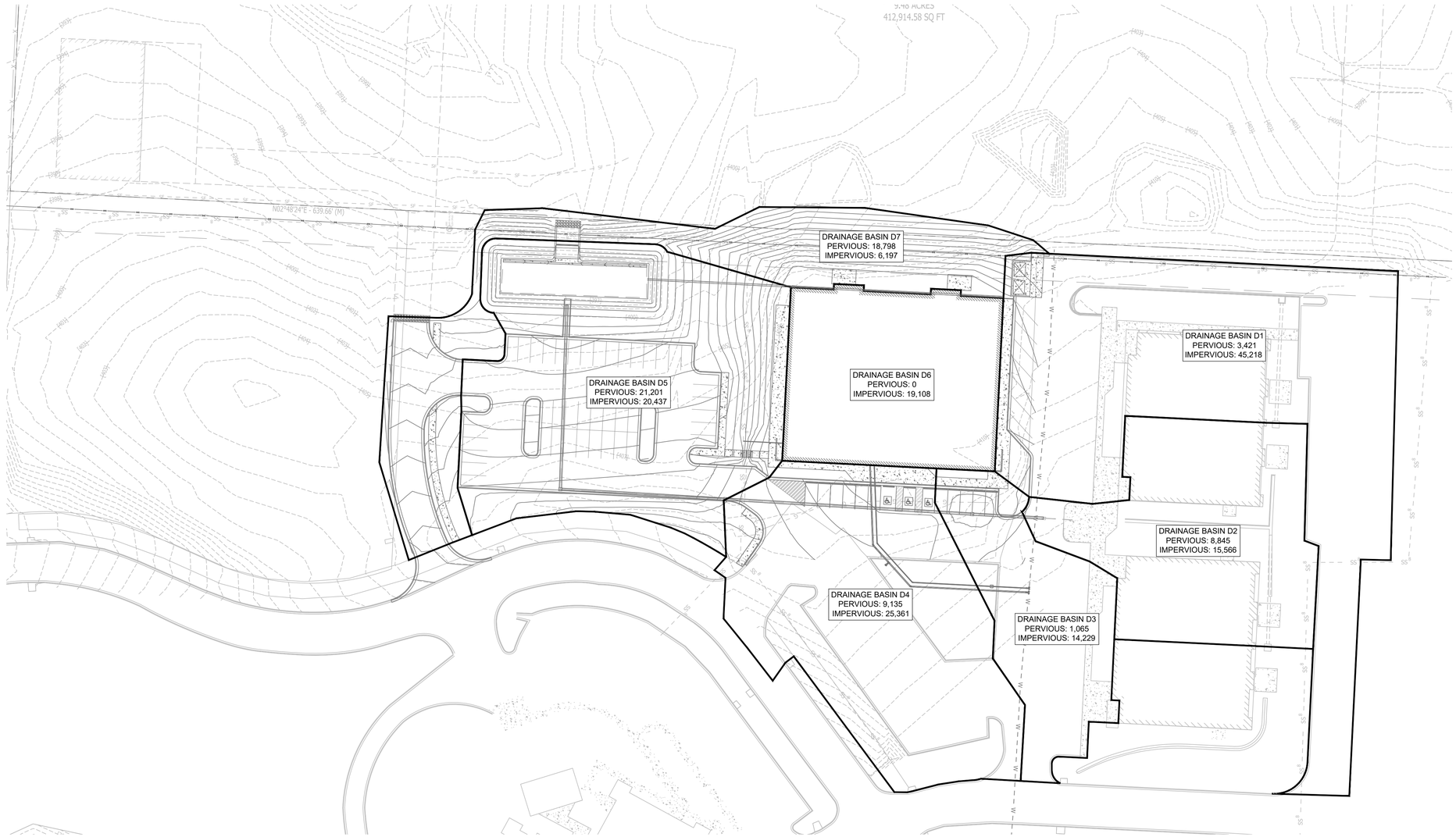
SHEET ISSUE DATE:
1/10/2024

PAGE TITLE:
PRE DRAINAGE MAP

SHEET NUMBER:
C1.5

N

0 40'
1" = 40'-0"



POST DRAINAGE MAP

SCALE 1" = 40'

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

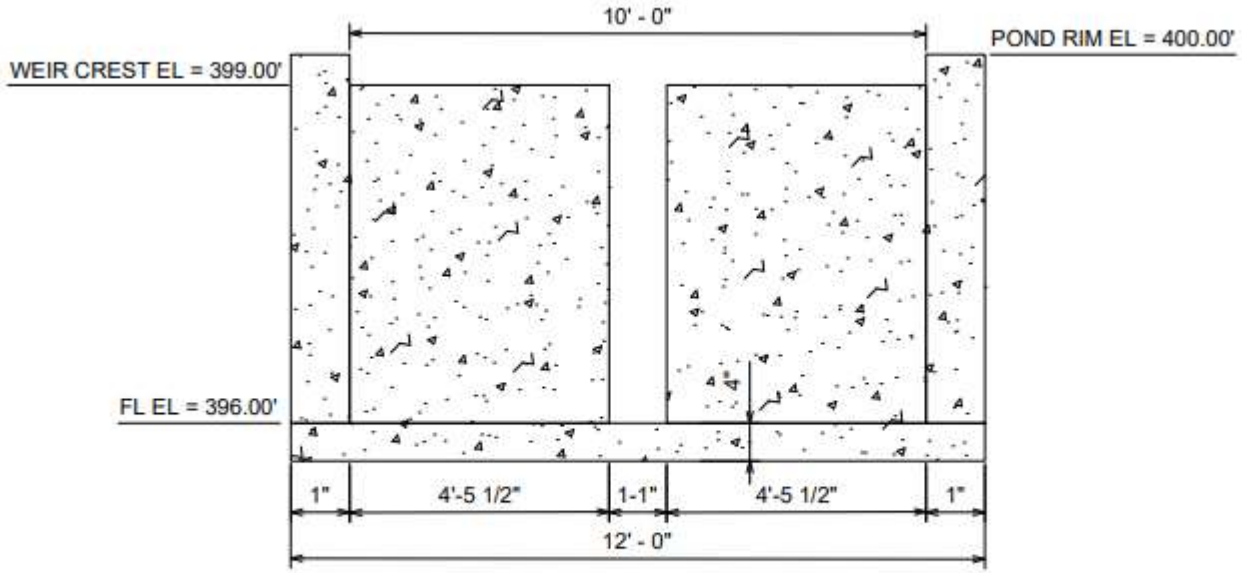
PAGE TITLE:
POST DRAINAGE MAP

SHEET NUMBER:
C1.6

N

0 40'
1" = 40'-0"

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

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

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 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 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.

THE ELROD FIRM

ACE SIGNS

PROPERTY BRAND/EXTENSION:
The Elrod Firm

PROPERTY LOCATION:
400 Reynolds Road Bryant, AR 72022

PROPERTY CODE:
TBD

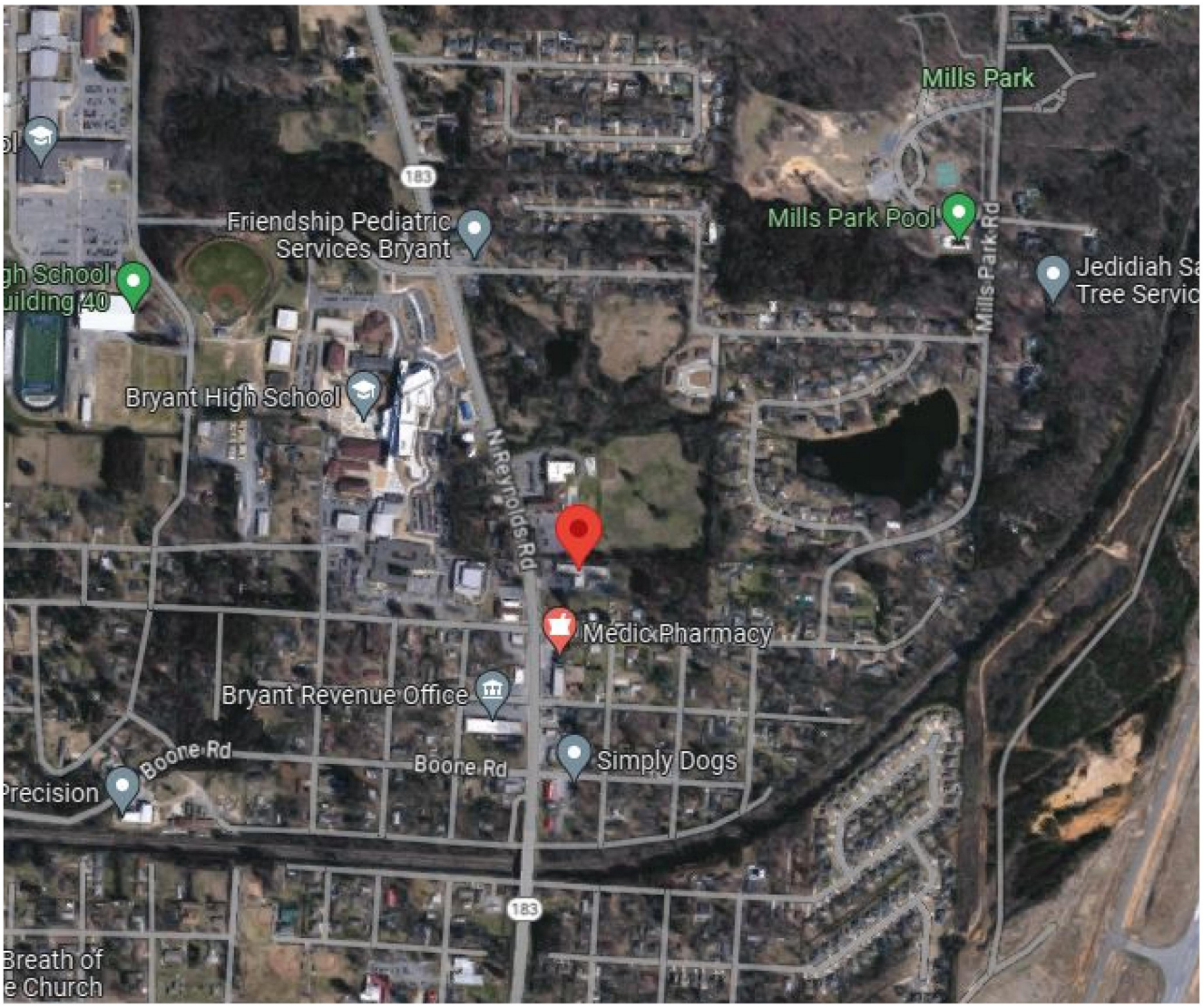
DATE:
11/09/2023

SALES REP:
Dale Fisher

PREPARED BY:
Victoria Phan

INITIALS: _____

LOCATION MAP



ACE SIGNS

PROPERTY BRAND/EXTENSION:	PROPERTY LOCATION:	PROPERTY CODE:
The Elrod Firm	400 Reynolds Road Bryant, AR 72022	TBD

DATE:	SALES REP:	PREPARED BY:
11/09/2023	Dale Fisher	Victoria Phan

INITIALS: _____

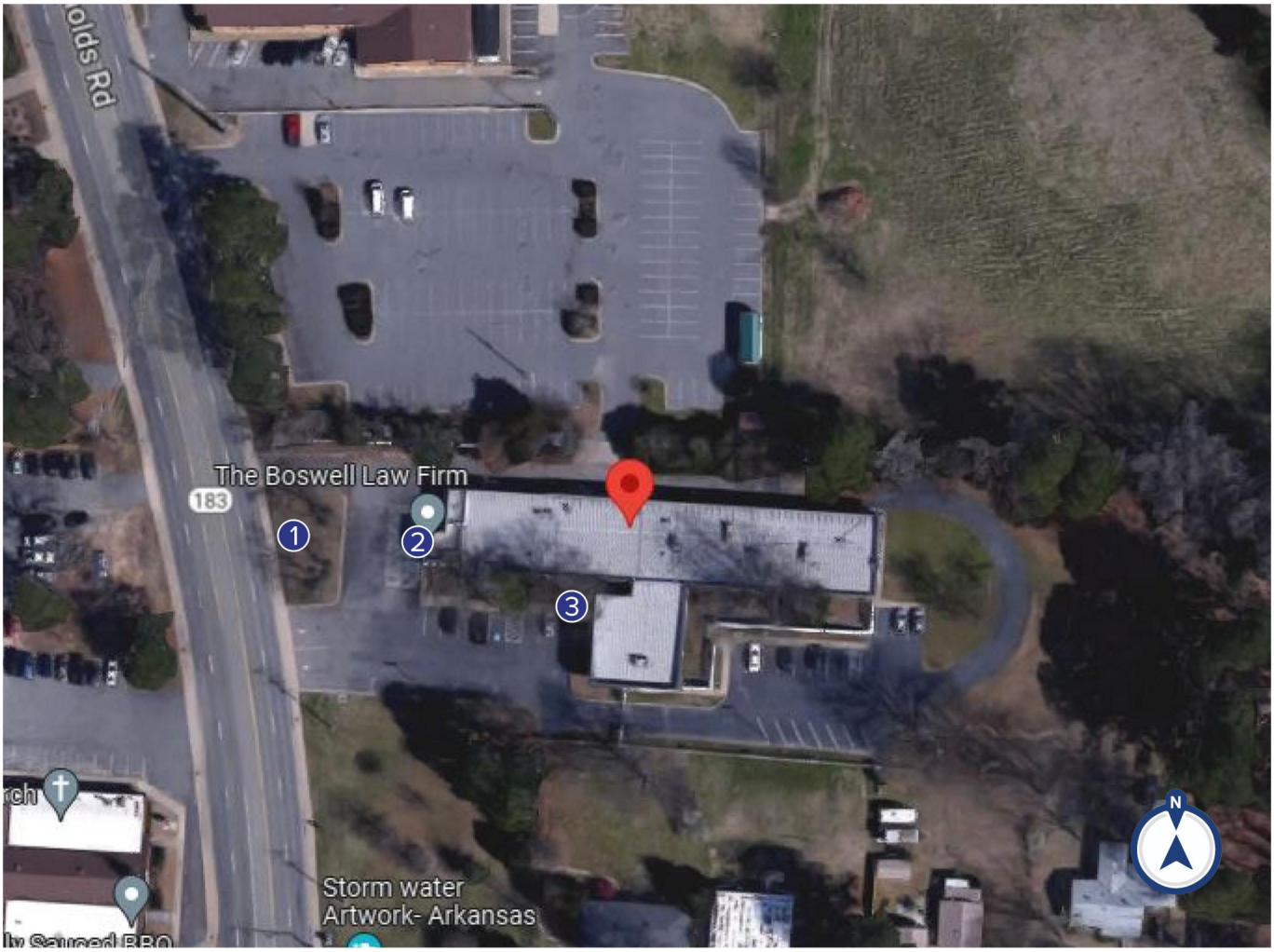
SITE PLAN

PROPOSED SIGNS:

1. MONUMENT
2. WALL CABINET
3. POST AND PANEL

EXISTING SIGNS:

1. NO SIGN
2. WALL CABINET
3. NO SIGN



ACE SIGNS

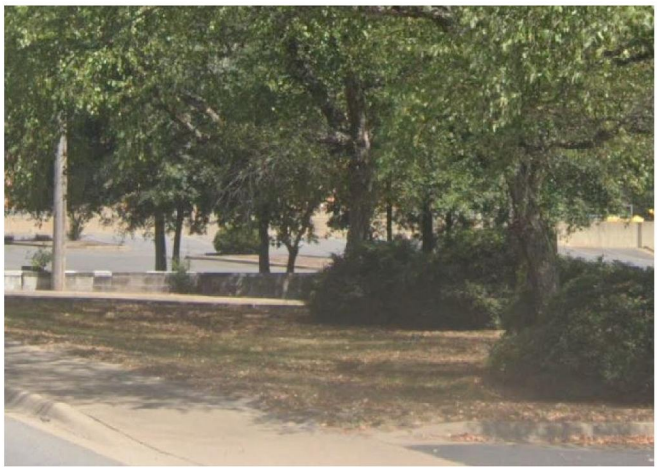
PROPERTY BRAND/EXTENSION:	PROPERTY LOCATION:	PROPERTY CODE:
The Elrod Firm	400 Reynolds Road Bryant, AR 72022	TBD

DATE:	SALES REP:	PREPARED BY:
11/09/2023	Dale Fisher	Victoria Phan

INITIALS: _____

1 MONUMENT

EXISTING



PROPOSED

RENDERINGS NOT TO SCALE

H10' x W8' custom monument

HEX #122940

HEX #F1BA53

TO BE DETERMINED

ACE SIGNS

PROPERTY BRAND/EXTENSION: The Elrod Firm

PROPERTY LOCATION: 400 Reynolds Road Bryant, AR 72022

PROPERTY CODE: TBD

DATE: 11/09/2023

SALES REP: Dale Fisher

PREPARED BY: Kayla Haydar

INITIALS: _____

2 WALL SIGN

EXISTING

PROPOSED

RENDERINGS NOT TO SCALE

H2'-11" x W11' non-lit cabinet
H7 1/2" x W10' dimensional letters
Retainer: 4"

TO BE DETERMINED

METALLIC GOLD (TO BE DETERMINED)

ACE SIGNS

PROPERTY BRAND/EXTENSION: The Elrod Firm

PROPERTY LOCATION: 400 Reynolds Road Bryant, AR 72022

PROPERTY CODE: TBD

DATE: 11/20/2023

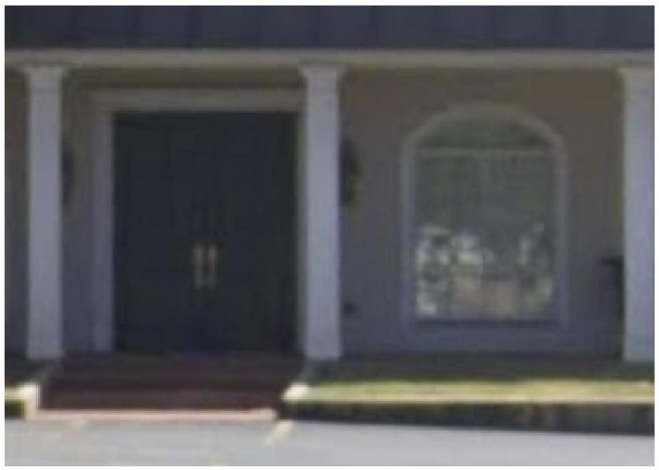
SALES REP: Dale Fisher

PREPARED BY: Victoria Phan

INITIALS: _____

3 POST AND PANEL

EXISTING



PROPOSED

RENDERINGS NOT TO SCALE

H1'-3" x W5' panel with applied graphics
(2) H4' posts

HEX #122940

HEX #F1BA53

BRONZE (TO BE DETERMINED)

ACE SIGNS

PROPERTY BRAND/EXTENSION: The Elrod Firm

PROPERTY LOCATION: 400 Reynolds Road Bryant, AR 72022

PROPERTY CODE: TBD

DATE: 11/20/2023

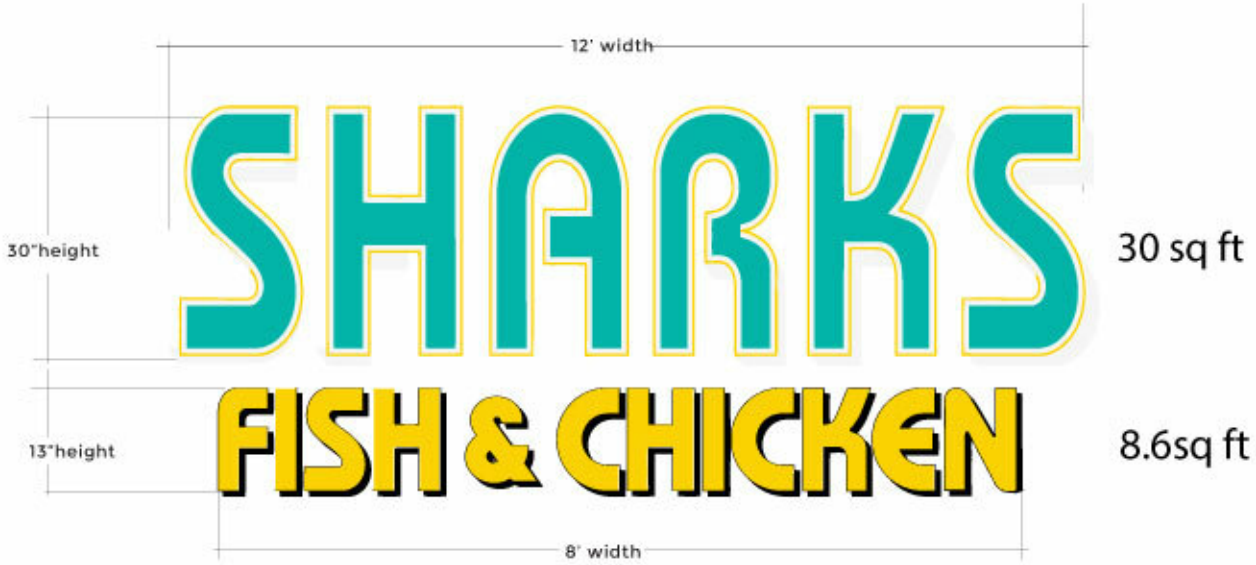
SALES REP: Dale Fisher

PREPARED BY: Victoria Phan

INITIALS: _____

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:

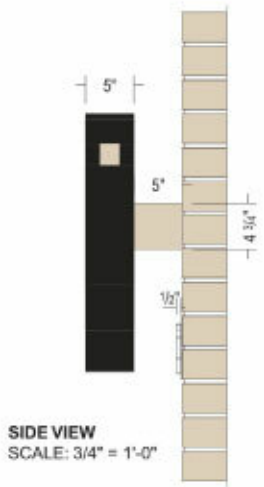
- Color Painted First Surface
- .040" Alum. Returns And
- .060" acyrlic Faces

DETAIL DESCRIPTION

38.6 SQ ft

- white L.E.D. Illumination
- 120v Mod-60 Power Supplies
- Aluinmuin Frame

Side view



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

SIGN PERMIT APPLICATION

Applicants are advised to read the Sign Ordinance prior to completing and signing this form. The Sign Ordinance is available at www.cityofbryant.com under the Planning and Community Development tab.

Note: Electrical Permits may be Required, Please contact the Community Development Office for more information.

Date: 1/22/24

Sign Co. or Sign Owner

Name JOE The Sign Guy
Address Existing Sign
City, State, Zip Photo Attached
Phone (501) 653-4444
Email Address N/A

Property Owner

Name Michelle Finney
Address P.O. BOX 435
City, State, Zip Bryant, AR 72089
Phone (501) 529-3282
Email Address N/A

GENERAL INFORMATION

Name of Business Sandy's Nails and Spa
Address/Location of sign 3411 Main St. Ste 4, Bryant, AR 72089
Zoning Classification C

Please use following page to provide details on the signs requesting approval. Along with information provided on this application, **a Site Plan showing placement of sign(s) and any existing sign(s) on the property is required** to be submitted. **Renderings of the sign(s) showing the correct dimensions is also required** to be submitted with the application. A thirty-five dollar ($35) per sign payment will be collected at the time of permit issuance. According to the Sign Ordinance a fee for and sign variance or special sign permit request shall be one hundred dollars ($100). Additional documentation may be required by Sign Administrator.

READ CAREFULLY BEFORE SIGNING

I Sandy Beeay, do hereby certify that all information contained within this application is true and correct. I fully understand that the terms of the Sign Ordinance supersede the Sign Administrator's approval and that all signs must fully comply with all terms of the Sign Ordinance regardless of approval. I further certify that the proposed sign is authorized by the owner of the property and that I am authorized by the property owner to make this application. I understand

that no sign may be placed in public right of way. I understand that I must comply with all Building and Electrical Codes and that it is my responsibility to obtain all necessary permits.

Use table below to enter information regarding each sign for approval. Please use each letter to reference each sign rendering.

SIGN	**Type** (Façade, Pole, Monument, other)	**Dimensions** (Height, Length, Width)	**Sqft** (Measured in whole as rectangle)	**Height of Sign** (Measured from lot surface)		Column for Admin Certifying Approval
				Top of Sign	Bottom of Sign	
A	Existing Façade	1'6" x 6'8" + 12" x 12" + 1'6" x 13'3"	39.5SF			
B						
C						
E						
F						
G						

Photo of Sign Attached, Requesting Permission to move From Suite 8 to Suite 4 on the Same Building.


Sandy's
NAILS & SPA

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

SIGN PERMIT APPLICATION

Applicants are advised to read the Sign Ordinance prior to completing and signing this form. The Sign Ordinance is available at www.cityofbryant.com under the Planning and Community Development tab.

Note: Electrical Permits may be Required, Please contact the Community Development Office for more information.

Date: 1/24/2024

Sign Co. or Sign Owner

Name L.Graphics
Address 701 N. Reynolds Rd
City, State, Zip Bryant, AR 72022
Phone (501) 653-4464
Alternate Phone 501-773-0544

Property Owner

Name Bart Furguson
Address 107 progress wy Ste 500
City, State, Zip Bryant, AR 72022
Phone (501) 840-2282
Alternate Phone _____

GENERAL INFORMATION

Name of Business BOUTIQUES & SUITES
Address/Location of sign 107 Progress wy Ste 500
Zoning Classification _____

Please use following page to provide details on the signs requesting approval. Along with information provided on this application, **a Site Plan showing placement of sign(s) and any existing sign(s) on the property is required** to be submitted. **Renderings of the sign(s) showing the correct dimensions is also required** to be submitted with the application. A thirty-five dollar ($35) per sign payment will be collected at the time of permit issuance. According to the Sign Ordinance a fee for and sign variance or special sign permit request shall be one hundred dollars ($100). Additional documentation may be required by Sign Administrator.

READ CAREFULLY BEFORE SIGNING

I Joe Lam, do hereby certify that all information contained within this application is true and correct. I fully understand that the terms of the Sign Ordinance supersede the Sign Administrator's approval and that all signs must fully comply with all terms of the Sign Ordinance regardless of approval. I further certify that the proposed sign is authorized by the owner of the property and that I am authorized by the property owner to make this application. I understand

that no sign may be placed in public right of way. I understand that I must comply with all Building and Electrical Codes and that it is my responsibility to obtain all necessary permits.

Use table below to enter information regarding each sign for approval. Please use each letter to reference each sign rendering.

SIGN	**Type** (Façade, Pole, Monument, other)	**Dimensions** (Height, Length, Width)	**Sqft** (Measured in whole as rectangle)	**Height of Sign** (Measured from lot surface)		Column for Admin Certifying Approval
				Top of Sign	Bottom of Sign	
A	Channel letters	54" x 150"	56	13	17.6"	
B						
C						
E						
F						
G						

107 Progress wy ste. ~~507~~ 500

GUERRA-OCHOA DELIA VANESSA

2714 LAVERN DR
BRYANT, AR 72022

Basic | Land | Sales | Valuation | Taxes | Receipts | Improvements | Parcel Boundary

Basic Info

Parcel Number:	840-07238-000
County Name:	Saline County
Property Address:	GUERRA-OCHOA DELIA VANESSA 2714 LAVERN DR BRYANT, AR 72022 **Map This Address**
Mailing Address:	GUERRA-OCHOA DELIA VANESSA 2714 LAVERN DR BRYANT AR 72022
Collector's Mailing Address:	CORELOGIC *MTG* ATTN: REFUNDS DEPT - CL 3001 HACKBERRY RD IRVING, TX 75063
Total Acres:	0.00
Timber Acres:	0.00
Sec-Twp-Rng:	22-01S-14W
Lot/Block:	55,56/
Subdivision:	PIKEWOOD I
Legal Description:	2019-008836
School District:	253 BRYANT/BRYANT
Homestead Parcel?:	Yes
Tax Status:	Taxable
Over 65?:	No

Colton Leonard <cleonard@cityofbryant.com>

Conditional Use Permit for Short Term Rental

Vanessa <deliaguerrar@gmail.com> Fri, Dec 15, 2023 at 10:14 AM
To: Colton Leonard <cleonard@cityofbryant.com>

Good morning!!

I would like to request a conditional use permit for the property on 2714 Lavern St, Bryant, AR 72022; this is my home, me and my son live here.
In order to support my family i decided to separate the living room from the rest of the house creating some type of “studio” that i would like to use as short term rental.

I appreciate your time on this matter.

Kind regards,

Delia Vanessa Guerra Ochoa
[Quoted text hidden]

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: 12/06/2023

Applicant or Designee:

Name Delia Vanessa Guerra-Ochoa
Address 2714 Lavern St, Bryant AR 72022
Phone 501 283 4058
Email Address: deliaguerrar@gmail.com

Project Location:

Property Address 2714 Lavern St
Bryant AR 72022
Parcel Number _____
Zoning Classification _____ sub 2.

Property Owner (If different from Applicant):

Name Delia Vanessa Guerra-Ochoa
Phone 501-283-4058
Address 2714 Lavern, St, Bryant, AR, 72022
Email Address deliaguerrar@gmail.com.

Additional Information:

Legal Description (Attach description if necessary)
Pikewood sub. 2 Lot

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

Proposed/Current Use of Property Residential → Short term rental

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.

  Saline Courier Downtown Benton
- ☐ 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, January 8th, 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 2714 Lavern St, Bryant, AR 72022 (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.

AFFP
NOTICE OF PUBLIC HEARING A pub

Affidavit of Publication

STATE OF ARKANSAS } SS
COUNTY OF SALINE }

, being duly sworn, says:

That she is Lisa McElrath of the The Saline Courier, a daily newspaper of general circulation, printed and published in Benton, Saline County, Arkansas; that the publication, a copy of which is attached hereto, was published in the said newspaper on the following dates:

January 18, 2024

That said newspaper was regularly issued and circulated on those dates.

SIGNED:

Lisa McElrath

Subscribed to and sworn to me this 18th day of January 2024.

Rhonda Overbey, Notary, Saline County, Arkansas

My commission expires: January 29, 2033

RHONDA OVERBEY
Notary Public - Arkansas
Saline County
Commission # 12721758
My Commission Expires Jan 29, 2033

01121617 00169754

Maunish Shah (28)
12 Longwell Loop
Little Rock, AR 72211

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 Drive, Tract 31A & 31B, Bryant, AR 72211. 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

Today in History: January 18, Captain Cook reaches Hawaii

Associated Press

Today is Thursday, Jan. 18, the 18th day of 2024. There are 348 days left in the year.

Today's Highlight in History: On Jan. 18, 1778, English navigator Captain James Cook reached the present-day Hawaiian Islands, which he named the "Sandwich Islands."

On this date:

In 1911, the first landing of an aircraft on a ship took place as pilot Eugene B. Ely brought his Curtiss biplane in for a safe landing on the deck of the armored cruiser USS Pennsylvania in San Francisco Harbor.

In 1913, entertainer Danny Kaye was born David Daniel Kaminsky in New York City.

In 1943, during World War II, Jewish insurgents in the Warsaw Ghetto launched their initial armed resistance against Nazi troops, who eventually succeeded in crushing the rebellion.

In 1975, the situation comedy "The Jeffersons," a spin-off from "All in the Family," premiered on CBS-TV.

In 1990, a jury in Los Angeles acquitted former preschool operators Raymond Buckey and his mother, Peggy McMartin Buckey, of 52 child molestation charges.

In 1991, financially strapped Eastern Airlines shut down after more than six decades in business.

In 1993, the Martin Luther King Jr. holiday was observed in all 50 states for the first time.

In 2005, the world's largest commercial jet, the Airbus A380 "superjumbo" capable of flying up to 800 passengers, was unveiled in Toulouse, France.

In 2012, President Barack Obama rejected the Keystone XL project, a Canadian company's plan to build a 1,700-mile pipeline to carry oil across six U.S. states to Texas refineries.

In 2013, former Democratic New Orleans Mayor Ray Nagin was indicted on charges that he'd used his office for personal gain, accepting payoffs, free trips and gratuities from contractors while the city was struggling to recover from the devastation of Hurricane Katrina. (Nagin was later convicted and released from prison in 2020.)

In 2019, Jason Van Dyke, the white Chicago police officer who gunned down Black teenager Laquan McDonald in 2014, was sentenced to nearly seven years in prison.

In 2020, ahead of opening statements in the first Senate impeachment trial of President Donald Trump, House prosecutors wrote that Trump had "used his official powers to pressure a foreign government to interfere in a United States election for his personal political gain," while Trump's legal team denounced what it called a "brazen and unlawful attempt to overturn the results of the 2016 election."

In 2023, a helicopter carrying Ukraine's interior minister crashed into a kindergarten in a foggy residential suburb of Kyiv, killing him and about a dozen other people, including a child on the ground.

Today's birthdays: Movie director John Boorman is 91. Former Sen. Paul Kirk, D-Mass., is 86. Singer-songwriter Bobby Goldsboro is 83. Comedian-singer-musician Brett Hudson is 71. Actor-director Kevin Costner is 69. Country singer-actor Mark Collie is 68. Actor Mark Rylance is 64. Actor Alison Arngrim (TV: "Little House on the Prairie") is 62. Former Maryland Gov. Martin O'Malley is 61. Actor Jane Horrocks is 60. Comedian Dave Attell (uh-TEHL') is 59. Actor Jesse L. Martin is 55. Rapper DJ Quik is 54. Rock singer Jonathan Davis (Korn) is 53. Former NAACP President and CEO Benjamin Todd Jealous is 51. Singer Christian Burns (BBMak) is 50. Actor Derek Richardson is 48. Actor Jason Segel is 44. Actor Samantha Mumba is 41. Country singer Kristy Lee Cook (TV: "American Idol") is 40. Actor Devin Kelley is 38. Actor Ashleigh Murray (TV: "Riverdale") is 36.

COURIER CLASSIFIEDS

PLACE AN AD

To get your ad in the Courier, call 501-315-8228 Monday through Friday 8 a.m. – 5 p.m., online at bentoncourier.com, come by the office at 321 N. Market St. in Benton or mail to: PO Box 207, Benton, AR 72018. We accept Visa, MasterCard, Discover, and American Express.

WHAT IT COSTS

4 lines – 3 days – $18.68*
4 lines – 7 days – $29.28*
4 lines – 14 days – $45.44*
Extra lines available

YARD SALES

4 lines – 2 days – $15.64*
4 lines – 3 days – $18.48*
Extra lines available

*Price doesn't include charge for graphic, TMC rate, or internet. Price is subject to change.

WHEN TO CALL

FOR ADS APPEARING	CALL BEFORE
Tuesday	Mon Noon
Wednesday	Tues. Noon
Thursday	Wed. Noon
Friday	Thurs. Noon
Saturday	Thurs. Noon
Sunday	Fri. 10 a.m.

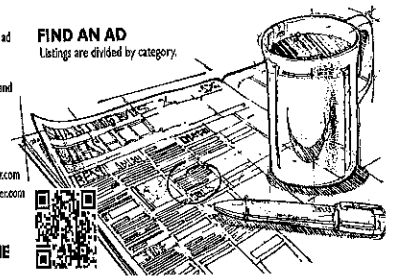
You can place your ad on our website.... bentoncourier.com Just go to website and follow the steps.

Email us at: class@bentoncourier.com class2@bentoncourier.com

GET ONLINE

FIND AN AD

Listings are divided by category.



Auction

Want to invest in Timberland? Or just looking for the great outdoors? TAKE A HIKE through our new and existing listings at United Country Neeley Forestry, at the website below - OR CALL for more information!! UCNeeleyForestry.com (870) 836-598

Let the Courier Classifieds work for you.

to place your Classified Ad. Mon.-Fri. 8am-5pm 315-8228 or come by 321 N. Market St.

Want to Downsize Your Gas Guzzler? Sell it in the Courier Classifieds. Call to place your ad today! 315-8228

Auction

SEEK AND YOU SHALL FIND

Great deals in the Courier Classifieds. Yard Sales, Jobs, Homes for Sale or Rent. Check them out daily. Call to subscribe at 315-8228.

Looking for love in all the wrong places???? Check out the Freebie section in today's classifieds. You will find unconditional love there FREE! Furry & Free!!

Ready to graduate from particle board? 1000's of Courier Classifieds will read your ad daily. Call place your ad today!

Time to get your own place? Check out the Rental Section in today's Classifieds...

Auction

Ready to take the Real Estate Plunge? Check out the Homes for Sale in the Classifieds daily.

Using the Courier Classifieds is just a smart thing to do! Subscribe Today!!!

Looking for a good deal? Search the Courier Classifieds!!

Buy • Sell • Trade in the Classifieds

Classifieds Work!

Let the Courier Classifieds work for you.

to place your Classified Ad. Mon.-Fri. 8am-5pm 315-8228 or come by 321 N. Market St.

Classifieds Work!

Auction

AUCTION - Estate of Dennis & Kristi Rood., Sat Jan. 20th 10am, 462 County Rd 2320 Clarksville AR - amazing collection of items including antiques, collectibles, motors, household items, crafts, paintings and even a 1956 Pontiac Star Chief completely restored in mint condition, Corvette engine; Whittle bit and miss engine; International Harvester hit and miss engine, LGB complete train set w/tracks, power controller, cars, etc., (in mint condition, still in boxes); electric GATARAC 1900 washing machine and other antique appliances; antique sewing machines and grandfather clock., vintage appliances and tools, furnishings, Kristi's and other paintings.....SO much more it's impossible to list!! Visit www.readingauctionservice.com to see the FULL listing and more pictures!!! 10% Buyer's Premium, READING AUCTION SERVICES, Kent - 479-518-3737 AR LIC 2086, Marc - 479-970-4567 AR LIC 2765

Auction

REAL ESTATE PLUS CONTENTS AT AUCTION - JAN. 27, 2024, 2301 E. Broadway, NLR, AR 72114 - 8,000 SF building on 2 large lots. Would work for a convenience or retail store, Zoned C4. 1,000s of cars go by each day. Plus, all contents inside. Was a pawn shop, Deep fryers, double door coolers, commercial large jewelry cases, 2 Pool Tables, washers & dryers, guitars elec. drum set, auto stereo equip., weed eaters, blowers, MORE, list updated as we get inside for photos. DETAILS & PHOTOS AT AUCTIONZIP.COM USER ID 17452. TERMS: Real estate 5% Buyer's premium to determine contract price, $25,000 down date of sale. If offer accepted. Personal Property: : Cash, checks or credit card (5% added to all cards) All items sold AS IS, WHERE IS. Concession on site. PUCKETT AUCTIONEERS 1199, 501-310-8151

Looking for a good deal? Search the Courier Classifieds!!

Services

DIRECTV. New 2-Year Price Guarantee. The most live MLB games this season, 200+ channels and over 45,000 on-demand titles. $84.99/mo for 24 months with CHOICE Package. Some restrictions apply. Call DIRECTV 1-855-400-3297

NOW OPEN!! THAI TRADITIONAL THERAPEUTIC MASSAGE - 10% off first walk-in visit!! 4608 JFK Blvd, NLR. (Next to Papa Johns) 501-813-4585. Ask for Gina or Ruth.

Prepare for power outages today with a GENERAC home standby generator $0 Money Down + Low Monthly Payment Options, Request a FREE Quote – Call now before the next power outage: 1-877-319-0598

SEEK AND YOU SHALL FIND

Great deals in the Courier Classifieds. Yard Sales, Jobs, Homes for Sale or Rent. Check them out daily. Call to subscribe at 315-8228.

Classifieds Work!

Help Wanted

HIRING EVENT - NURSING, CNA's, and MORE positions avail.!!! Tuesday, January 30, 2024 1-5 pm. Seeking a fulfilling career doing meaningful work with amazing children, and people who care? Pediatric Complex Care of Ar., 4100 Heritage Dr. NLR, AR 72117. www.pccar.org, 501-945-3177

Opportunities for RNs and LPNs at UAMS in Little Rock - * Hotel Lodging Program for nurses traveling 45+ miles to LR * Sign-On Bonuses (RNs $25K/LPNs $18K) *Tuition Discount 50% at any UA campus (40% spouse/children) *Up to 10% Retirement Match * In-House Agency (Med./Surg.) for 13 Weeks, Check website for eligibility. Nurses.uams.edu Apply at jobs.uams.edu

Looking for love in all the wrong places???? Check out the Freebie section in today's classifieds. You will find unconditional love there FREE! Furry & Free!!

For Sale

When veterinary care is unavailable or unaffordable, ask for Happy Jack®, your dog would! Results overnight. Distributed by K&K Vet Supply (479-361-1516)

Ready to graduate from particle board? 1000's of Courier Classifieds will read your ad daily. Call place your ad today!

Want to Downsize Your Gas Guzzler? Sell it in the Courier Classifieds. Call to place your ad today! 315-8228

Ready to take the Real Estate Plunge? Check out the Homes for Sale in the Classifieds daily.

Time to get your own place? Check out the Rental Section in today's Classifieds...

Using the Courier Classifieds is just a smart thing to do! Subscribe Today!!!

Buy • Sell • Trade in the Classifieds

Looking for a good deal? Search the Courier Classifieds!!

Legal Notices

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 Drive, Tract 31A & 31B, Bryant, AR 72211. 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

Business & Service Directory

Carpentry

EXPERIENCED CARPENTER - OUT OF WORK - REMODELER & HOME MAINT. PLEASE CALL TIM! 501-778-5171

Painting

SUPERIOR PAINTING. Interior & Exterior. Drywall Repair • Texture. Pressure Washing. FREE ESTIMATES. KELLY HILL 501-840-1470

Conceal Carry

CONCEALED HANDGUN CLASSES. Course completed in one day. All paperwork provided. Tim Bragg, Instructor #85-055 501-776-7419

Gutters

WILLIS & SON ROOFING • Seamless Gutters. 501-617-9215. Find us on Facebook

Power Washing

Royal Flush Chimney Cleaning. Insured for Your Protection. Rusty "Rooster" Pelton - Owner. Servicing Central Arkansas since 1988. 316-1536

Roofing

WILLIS & SON ROOFING. FREE Inspection. 501-617-9215. Find us on Facebook

Tree Service

MOORE AFFORDABLE TREE SERVICE. 35-Years Experience. Licensed and Insured. *Take Downs *Trimming *Pruning *Stump Grinding *Storm Cleanup. 501-778-8071 501-860-5911

Tree Service

CRITES & TACKETT TREE SERVICE. ~ Free Estimates ~ Workmen's Comp & Liability Insured. *Stump Removal. 501-337-1565 501-337-9094

Call Today 501-315-8228 to place your business or service ad

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.

AFFP
NOTICE OF PUBLIC HEARING A pub

Affidavit of Publication

STATE OF ARKANSAS } SS
COUNTY OF SALINE }

, being duly sworn, says:

That she is Lisa McElrath of the The Saline Courier, a daily newspaper of general circulation, printed and published in Benton, Saline County, Arkansas; that the publication, a copy of which is attached hereto, was published in the said newspaper on the following dates:

January 18, 2024

That said newspaper was regularly issued and circulated on those dates.

SIGNED:

Lisa McElrath

Subscribed to and sworn to me this 18th day of January 2024.

Rhonda Overbey, Notary, Saline County, Arkansas

My commission expires: January 29, 2033

RHONDA OVERBEY
Notary Public - Arkansas
Saline County
Commission # 12721758
My Commission Expires Jan 29, 2033

01121617 00169754

Maunish Shah (28)
12 Longwell Loop
Little Rock, AR 72211

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 Drive, Tract 31A & 31B, Bryant, AR 72211. 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

Today in History: January 18, Captain Cook reaches Hawaii

Associated Press

Today is Thursday, Jan. 18, the 18th day of 2024. There are 348 days left in the year.

Today's Highlight in History: On Jan. 18, 1778, English navigator Captain James Cook reached the present-day Hawaiian Islands, which he named the "Sandwich Islands."

On this date:

In 1911, the first landing of an aircraft on a ship took place as pilot Eugene B. Ely brought his Curtiss biplane in for a safe landing on the deck of the armored cruiser USS Pennsylvania in San Francisco Harbor.

In 1913, entertainer Danny Kaye was born David Daniel Kaminsky in New York City.

In 1943, during World War II, Jewish insurgents in the Warsaw Ghetto launched their initial armed resistance against Nazi troops, who eventually succeeded in crushing the rebellion.

In 1975, the situation comedy "The Jeffersons," a spin-off from "All in the Family," premiered on CBS-TV.

In 1990, a jury in Los Angeles acquitted former preschool operators Raymond Buckey and his mother, Peggy McMartin Buckey, of 52 child molestation charges.

In 1991, financially strapped Eastern Airlines shut down after more than six decades in business.

In 1993, the Martin Luther King Jr. holiday was observed in all 50 states for the first time.

In 2005, the world's largest commercial jet, the Airbus A380 "superjumbo" capable of flying up to 800 passengers, was unveiled in Toulouse, France.

In 2012, President Barack Obama rejected the Keystone XL project, a Canadian company's plan to build a 1,700-mile pipeline to carry oil across six U.S. states to Texas refineries.

In 2013, former Democratic New Orleans Mayor Ray Nagin was indicted on charges that he'd used his office for personal gain, accepting payoffs, free trips and gratuities from contractors while the city was struggling to recover from the devastation of Hurricane Katrina. (Nagin was later convicted and released from prison in 2020.)

In 2019, Jason Van Dyke, the white Chicago police officer who gunned down Black teenager Laquan McDonald in 2014, was sentenced to nearly seven years in prison.

In 2020, ahead of opening statements in the first Senate impeachment trial of President Donald Trump, House prosecutors wrote that Trump had "used his official powers to pressure a foreign government to interfere in a United States election for his personal political gain," while Trump's legal team denounced what it called a "brazen and unlawful attempt to overturn the results of the 2016 election."

In 2023, a helicopter carrying Ukraine's interior minister crashed into a kindergarten in a foggy residential suburb of Kyiv, killing him and about a dozen other people, including a child on the ground.

Today's birthdays: Movie director John Boorman is 91. Former Sen. Paul Kirk, D-Mass., is 86. Singer-songwriter Bobby Goldsboro is 83. Comedian-singer-musician Brett Hudson is 71. Actor-director Kevin Costner is 69. Country singer-actor Mark Collie is 68. Actor Mark Rylance is 64. Actor Alison Arngrim (TV: "Little House on the Prairie") is 62. Former Maryland Gov. Martin O'Malley is 61. Actor Jane Horrocks is 60. Comedian Dave Attell (uh-TEHL') is 59. Actor Jesse L. Martin is 55. Rapper DJ Quik is 54. Rock singer Jonathan Davis (Korn) is 53. Former NAACP President and CEO Benjamin Todd Jealous is 51. Singer Christian Burns (BBMak) is 50. Actor Derek Richardson is 48. Actor Jason Segel is 44. Actor Samantha Mumba is 41. Country singer Kristy Lee Cook (TV: "American Idol") is 40. Actor Devin Kelley is 38. Actor Ashleigh Murray (TV: "Riverdale") is 36.

COURIER CLASSIFIEDS

PLACE AN AD

To get your ad in the Courier, call 501-315-8228 Monday through Friday 8 a.m. – 5 p.m., online at bentoncourier.com, come by the office at 321 N. Market St. in Benton or mail to: PO Box 207, Benton, AR 72018. We accept Visa, MasterCard, Discover, and American Express.

WHAT IT COSTS

4 lines – 3 days – $18.68*
4 lines – 7 days – $29.28*
4 lines – 14 days – $45.44*
Extra lines available

YARD SALES

4 lines – 2 days – $15.64*
4 lines – 3 days – $18.48*
Extra lines available

*Price doesn't include charge for graphic, TMC rate, or internet. Price is subject to change.

WHEN TO CALL

FOR ADS APPEARING	CALL BEFORE
Tuesday	Mon Noon
Wednesday	Tues. Noon
Thursday	Wed. Noon
Friday	Thurs. Noon
Saturday	Thurs. Noon
Sunday	Fri. 10 a.m.

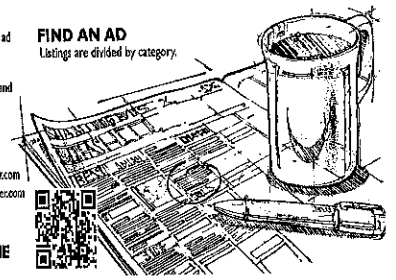
You can place your ad on our website.... bentoncourier.com Just go to website and follow the steps.

Email us at: class@bentoncourier.com class2@bentoncourier.com

GET ONLINE

FIND AN AD

Listings are divided by category.



Auction

Want to invest in Timberland? Or just looking for the great outdoors? TAKE A HIKE through our new and existing listings at United Country Neeley Forestry, at the website below - OR CALL for more information!! UCNeeleyForestry.com (870) 836-598

Let the Courier Classifieds work for you.

to place your Classified Ad. Mon.-Fri. 8am-5pm 315-8228 or come by 321 N. Market St.

Want to Downsize Your Gas Guzzler? Sell it in the Courier Classifieds. Call to place your ad today! 315-8228

Auction

SEEK AND YOU SHALL FIND

Great deals in the Courier Classifieds. Yard Sales, Jobs, Homes for Sale or Rent. Check them out daily. Call to subscribe at 315-8228.

Looking for love in all the wrong places???? Check out the Freebie section in today's classifieds. You will find unconditional love there FREE! Furry & Free!!

Ready to graduate from particle board? 1000's of Courier Classifieds will read your ad daily. Call place your ad today!

Time to get your own place? Check out the Rental Section in today's Classifieds...

Auction

Ready to take the Real Estate Plunge? Check out the Homes for Sale in the Classifieds daily.

Using the Courier Classifieds is just a smart thing to do! Subscribe Today!!!

Looking for a good deal? Search the Courier Classifieds!!

Buy • Sell • Trade in the Classifieds

Classifieds Work!

Let the Courier Classifieds work for you.

to place your Classified Ad. Mon.-Fri. 8am-5pm 315-8228 or come by 321 N. Market St.

Classifieds Work!

Auction

AUCTION - Estate of Dennis & Kristi Rood., Sat Jan. 20th 10am, 462 County Rd 2320 Clarksville AR - amazing collection of items including antiques, collectibles, motors, household items, crafts, paintings and even a 1956 Pontiac Star Chief completely restored in mint condition, Corvette engine; Whittle bit and miss engine; International Harvester hit and miss engine, LGB complete train set w/tracks, power controller, cars, etc., (in mint condition, still in boxes); electric GATARAC 1900 washing machine and other antique appliances; antique sewing machines and grandfather clock., vintage appliances and tools, furnishings, Kristi's and other paintings.....SO much more it's impossible to list!! Visit www.readingauctionservice.com to see the FULL listing and more pictures!!! 10% Buyer's Premium, READING AUCTION SERVICES, Kent - 479-518-3737 AR LIC 2086, Marc - 479-970-4567 AR LIC 2765

Auction

REAL ESTATE PLUS CONTENTS AT AUCTION - JAN. 27, 2024, 2301 E. Broadway, NLR, AR 72114 - 8,000 SF building on 2 large lots. Would work for a convenience or retail store, Zoned C4. 1,000s of cars go by each day. Plus, all contents inside. Was a pawn shop, Deep fryers, double door coolers, commercial large jewelry cases, 2 Pool Tables, washers & dryers, guitars elec. drum set, auto stereo equip., weed eaters, blowers, MORE, list updated as we get inside for photos. DETAILS & PHOTOS AT AUCTIONZIP.COM USER ID 17452. TERMS: Real estate 5% Buyer's premium to determine contract price, $25,000 down date of sale. If offer accepted. Personal Property: : Cash, checks or credit card (5% added to all cards) All items sold AS IS, WHERE IS. Concession on site. PUCKETT AUCTIONEERS 1199, 501-310-8151

Looking for a good deal? Search the Courier Classifieds!!

Services

DIRECTV. New 2-Year Price Guarantee. The most live MLB games this season, 200+ channels and over 45,000 on-demand titles. $84.99/mo for 24 months with CHOICE Package. Some restrictions apply. Call DIRECTV 1-855-400-3297

NOW OPEN!! THAI TRADITIONAL THERAPEUTIC MASSAGE - 10% off first walk-in visit!! 4608 JFK Blvd, NLR. (Next to Papa Johns) 501-813-4585. Ask for Gina or Ruth.

Prepare for power outages today with a GENERAC home standby generator $0 Money Down + Low Monthly Payment Options, Request a FREE Quote – Call now before the next power outage: 1-877-319-0598

SEEK AND YOU SHALL FIND

Great deals in the Courier Classifieds. Yard Sales, Jobs, Homes for Sale or Rent. Check them out daily. Call to subscribe at 315-8228.

Classifieds Work!

Help Wanted

HIRING EVENT - NURSING, CNA's, and MORE positions avail.!!! Tuesday, January 30, 2024 1-5 pm. Seeking a fulfilling career doing meaningful work with amazing children, and people who care? Pediatric Complex Care of Ar., 4100 Heritage Dr. NLR, AR 72117. www.pccar.org, 501-945-3177

Opportunities for RNs and LPNs at UAMS in Little Rock - * Hotel Lodging Program for nurses traveling 45+ miles to LR * Sign-On Bonuses (RNs $25K/LPNs $18K) *Tuition Discount 50% at any UA campus (40% spouse/children) *Up to 10% Retirement Match * In-House Agency (Med./Surg.) for 13 Weeks, Check website for eligibility. Nurses.uams.edu Apply at jobs.uams.edu

Looking for love in all the wrong places???? Check out the Freebie section in today's classifieds. You will find unconditional love there FREE! Furry & Free!!

For Sale

When veterinary care is unavailable or unaffordable, ask for Happy Jack®, your dog would! Results overnight. Distributed by K&K Vet Supply (479-361-1516)

Ready to graduate from particle board? 1000's of Courier Classifieds will read your ad daily. Call place your ad today!

Want to Downsize Your Gas Guzzler? Sell it in the Courier Classifieds. Call to place your ad today! 315-8228

Ready to take the Real Estate Plunge? Check out the Homes for Sale in the Classifieds daily.

Time to get your own place? Check out the Rental Section in today's Classifieds...

Using the Courier Classifieds is just a smart thing to do! Subscribe Today!!!

Buy • Sell • Trade in the Classifieds

Looking for a good deal? Search the Courier Classifieds!!

Legal Notices

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 Drive, Tract 31A & 31B, Bryant, AR 72211. 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

Business & Service Directory

Carpentry

EXPERIENCED CARPENTER - OUT OF WORK - REMODELER & HOME MAINT. PLEASE CALL TIM! 501-778-5171

Painting

SUPERIOR PAINTING. Interior & Exterior. Drywall Repair • Texture. Pressure Washing. FREE ESTIMATES. KELLY HILL 501-840-1470

Conceal Carry

CONCEALED HANDGUN CLASSES. Course completed in one day. All paperwork provided. Tim Bragg, Instructor #85-055 501-776-7419

Gutters

WILLIS & SON ROOFING • Seamless Gutters. 501-617-9215. Find us on Facebook

Power Washing

Royal Flush Chimney Cleaning. Insured for Your Protection. Rusty "Rooster" Pelton - Owner. Servicing Central Arkansas since 1988. 316-1536

Roofing

WILLIS & SON ROOFING. FREE Inspection. 501-617-9215. Find us on Facebook

Tree Service

MOORE AFFORDABLE TREE SERVICE. 35-Years Experience. Licensed and Insured. *Take Downs *Trimming *Pruning *Stump Grinding *Storm Cleanup. 501-778-8071 501-860-5911

Tree Service

CRITES & TACKETT TREE SERVICE. ~ Free Estimates ~ Workmen's Comp & Liability Insured. *Stump Removal. 501-337-1565 501-337-9094

Call Today 501-315-8228 to place your business or service ad

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 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)

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

Feb 12th Planning Com Meeting

- ☐ 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.

Selin. Courier 18th to 28th Run 1 times → email publication to Colton

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

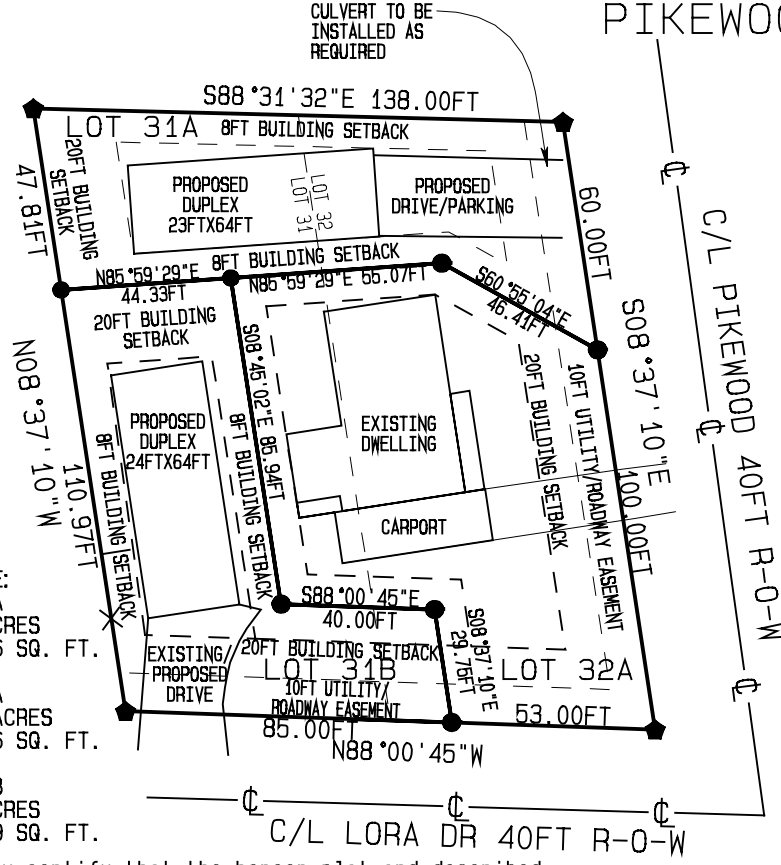
A public hearing will be held on Monday, February 12th, 2024 at 6:00 P.M. at the Bryant City Office Complex, 210 Southwest 3rd Street, City of Bryant, Saline County, for the purpose of public comment on a conditional use request at the site of 2903 Pikewood Dr, Lot 31A + Lot 31B (address).

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.

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

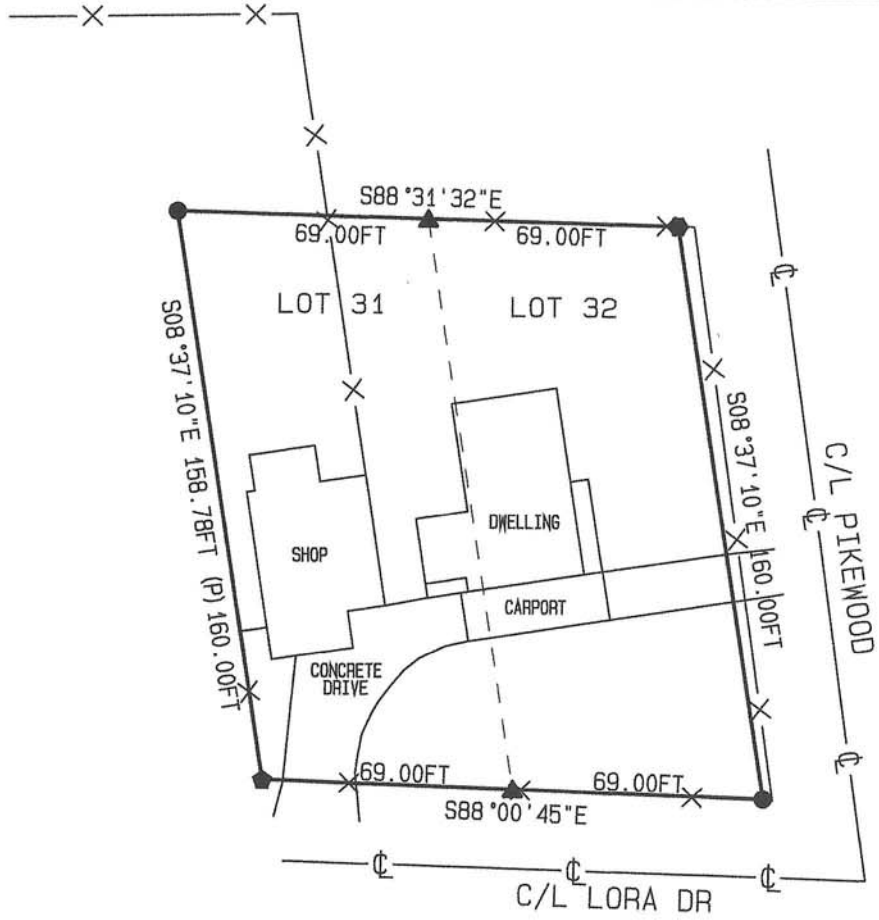
N
W E
S

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



LEGAL DESCRIPTION:
Lot 31 and 32 of Pikewood Subdivision
to Saline County, Arkansas

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

LICENSED PROFESSIONAL SURVEYOR
STATE OF ARKANSAS
No. 1864
Brian J Watson
SIGNATURE
04-18-23
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
⬟	FENCE POST
⬢	FOUND REBAR
●	SET REBAR
——℄——	CENTER LINE
——×——	FENCE (X) LINE
————	PROPERTY LINE

WATSON LAND SURVEYING
N W E S
501-529-1940
10700 HWY. 89N SHERIDAN, AR.

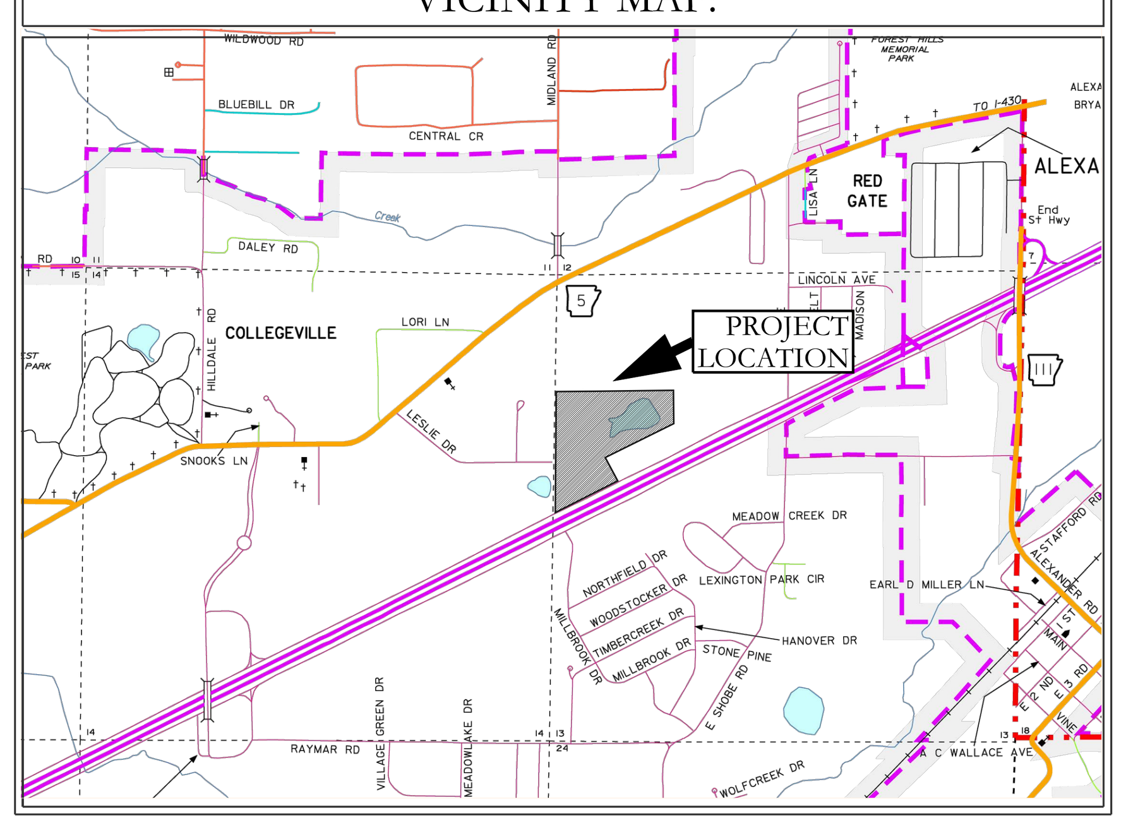
PROPERTY ADDRESS
2903 PIKEWOOD DR
BRYANT AR 72022
DATE: 18 APRIL 2023
JOB#23-64
SCALE: 1IN.=50FT.
DRAWN BY: BW

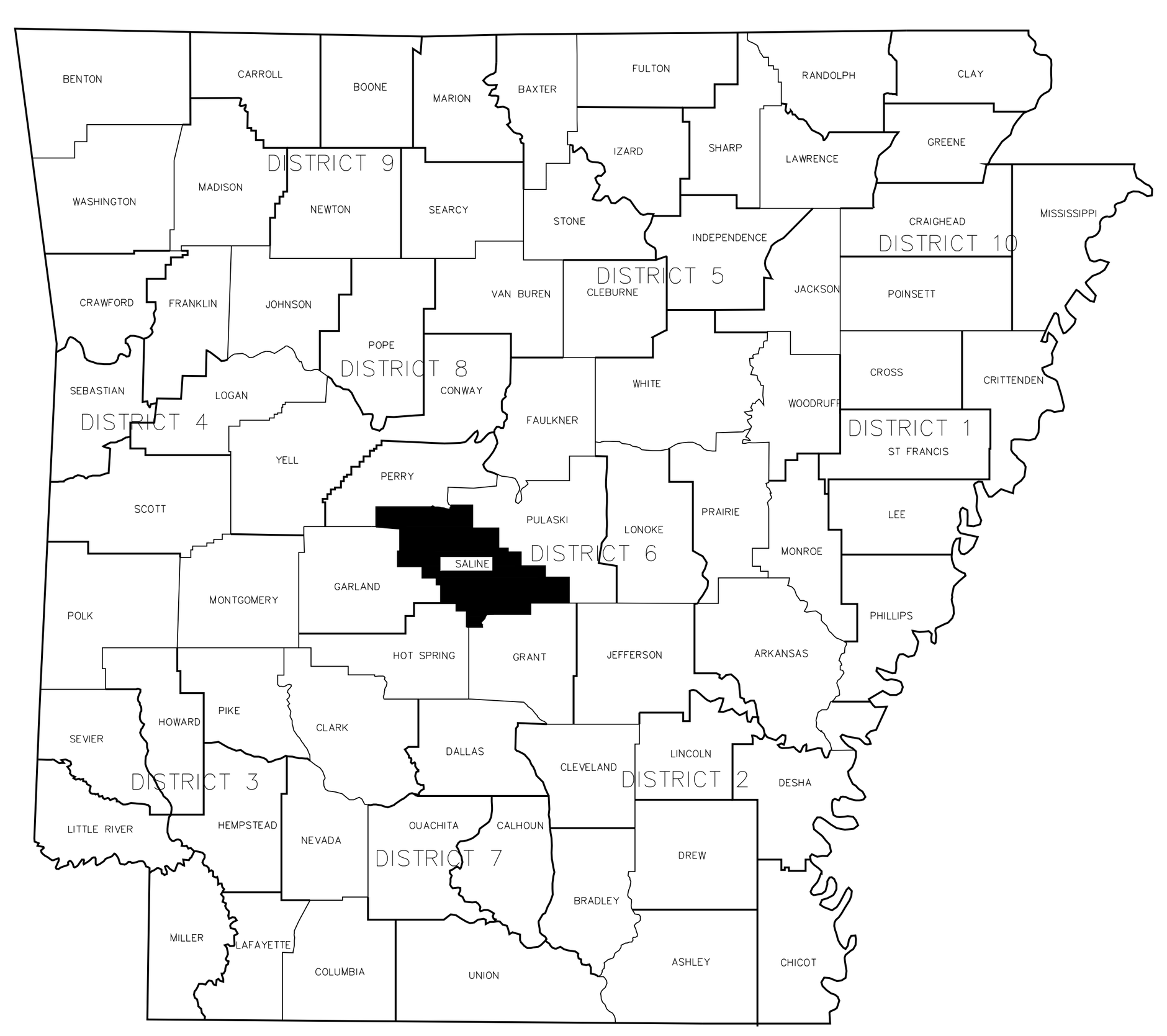
FOR THE USE AND BENEFIT OF
VEER INVESTMENT PROPERTIES LLC
FIRST NATIONAL TITLE COMPANY
CHICAGO TITLE INSURANCE COMPANY

CONSTRUCTION PLANS
ARKANSAS STORAGE CENTER

BRYANT, AR

VICINITY MAP:





PREPARED BY:

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

DRAWING INDEX

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

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

FOR USE AND BENEFIT OF:
STUART FINLEY

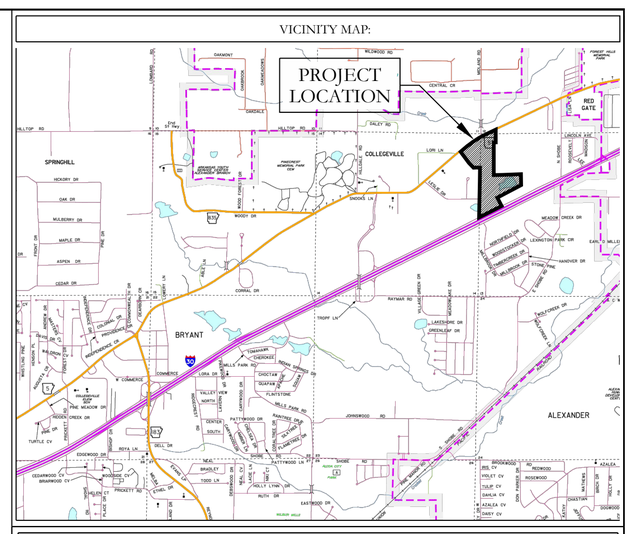
ARKANSAS STORAGE CENTER
BRYANT, SALINE COUNTY, ARKANSAS

DATE:	02/05/2024	C.A.D. BY:		DRAWING NUMBER:
REVISED:		CHECKED BY:		23-0024
SHEET:		SCALE:		

K:\LAND PROJECTS 2004\SUBDIVISIONS\2022\22-0800 STUART FINLEY HWY 5 DUPLEX\CIVIL\DWG\FINAL PROJECT\22-0800 - ARKANSAS STORAGE CENTER - FINAL-(01-10-2024).DWG

Know what's **below.**
Call before you dig.

VICINITY MAP:



CERTIFICATIONS:

OWNER:

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

DEVELOPER:

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

CERTIFICATE OF OWNER:

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

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

Date of Execution _____ Name: _____

CERTIFICATE OF PRELIMINARY SURVEYING ACCURACY:

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

Date of Execution

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

CERTIFICATE OF PRELIMINARY ENGINEERING ACCURACY:

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

Date of Execution

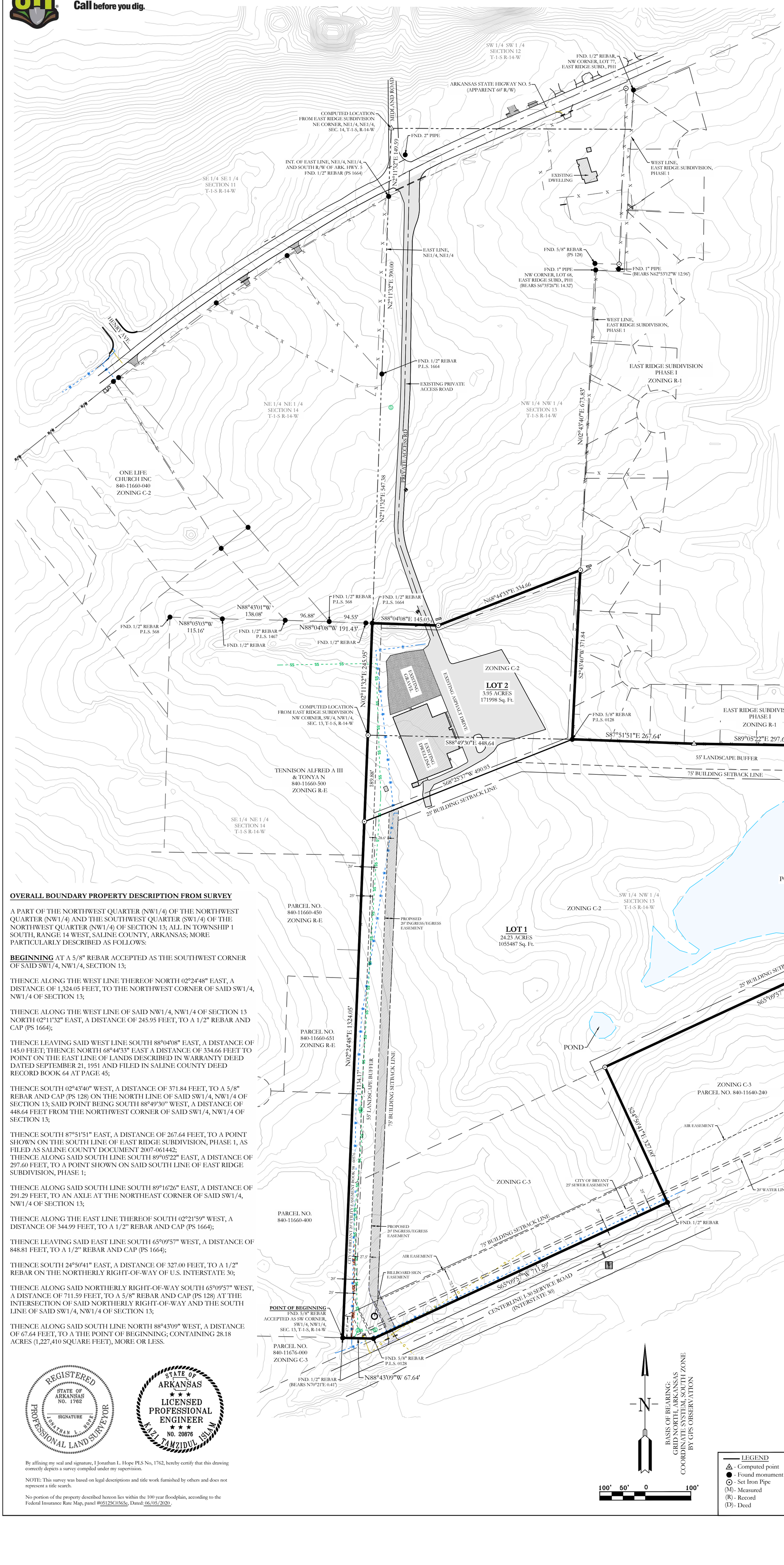
Kazi Tamzidual Islam
Registered Professional
Engineer, No. 20876 Arkansas

CERTIFICATE OF PRELIMINARY PLAT APPROVAL:

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

Date of Execution

Signed: _____
Lance Penfield, Chairman
Bryant Planning Commission



OVERALL BOUNDARY PROPERTY DESCRIPTION FROM SURVEY

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

BEGINNING AT A 5/8" REBAR ACCEPTED AS THE SOUTHWEST CORNER OF SAID SW1/4, NW1/4, SECTION 13;

THENCE ALONG THE WEST LINE THEREOF NORTH 02°24'48" EAST, A DISTANCE OF 1,324.05 FEET, TO THE NORTHWEST CORNER OF SAID SW1/4, NW1/4 OF SECTION 13;

THENCE ALONG THE WEST LINE OF SAID NW1/4, NW1/4 OF SECTION 13 NORTH 02°11'32" EAST, A DISTANCE OF 245.95 FEET, TO A 1/2" REBAR AND CAP (PS 1664);

THENCE LEAVING SAID WEST LINE SOUTH 88°04'08" EAST, A DISTANCE OF 145.0 FEET; THENCE NORTH 68°44'33" EAST A DISTANCE OF 334.66 FEET TO POINT ON THE EAST LINE OF LANDS DESCRIBED IN WARRANTY DEED DATED SEPTEMBER 21, 1951 AND FILED IN SALINE COUNTY DEED RECORD BOOK 64 AT PAGE 45;

THENCE SOUTH 02°43'40" WEST, A DISTANCE OF 371.84 FEET, TO A 5/8" REBAR AND CAP (PS 128) ON THE NORTH LINE OF SAID SW1/4, NW1/4 OF SECTION 13; SAID POINT BEING SOUTH 88°49'30" WEST, A DISTANCE OF 448.64 FEET FROM THE NORTHWEST CORNER OF SAID SW1/4, NW1/4 OF SECTION 13;

THENCE SOUTH 87°51'51" EAST, A DISTANCE OF 267.64 FEET, TO A POINT SHOWN ON THE SOUTH LINE OF EAST RIDGE SUBDIVISION, PHASE 1, AS FILED AS SALINE COUNTY DOCUMENT 2007-061442;
THENCE ALONG SAID SOUTH LINE SOUTH 89°05'22" EAST, A DISTANCE OF 297.60 FEET, TO A POINT SHOWN ON SAID SOUTH LINE OF EAST RIDGE SUBDIVISION, PHASE 1;

THENCE ALONG SAID SOUTH LINE SOUTH 89°16'26" EAST, A DISTANCE OF 291.29 FEET, TO AN AXLE AT THE NORTHEAST CORNER OF SAID SW1/4, NW1/4 OF SECTION 13;

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

THENCE LEAVING SAID EAST LINE SOUTH 65°09'57" WEST, A DISTANCE OF 848.81 FEET, TO A 1/2" REBAR AND CAP (PS 1664);

THENCE SOUTH 24°50'41" EAST, A DISTANCE OF 327.00 FEET, TO A 1/2" REBAR ON THE NORTHERLY RIGHT-OF-WAY OF U.S. INTERSTATE 30;

THENCE ALONG SAID NORTHERLY RIGHT-OF-WAY SOUTH 65°09'57" WEST, A DISTANCE OF 711.59 FEET, TO A 5/8" REBAR AND CAP (PS 128) AT THE INTERSECTION OF SAID NORTHERLY RIGHT-OF-WAY AND THE SOUTH LINE OF SAID SW1/4, NW1/4 OF SECTION 13;

THENCE ALONG SAID SOUTH LINE NORTH 88°43'09" WEST, A DISTANCE OF 67.64 FEET, TO A THE POINT OF BEGINNING; CONTAINING 28.18 ACRES (1,227,410 SQUARE FEET), MORE OR LESS.

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

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

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

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

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

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

PROPERTY SPECIFICATIONS:

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

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

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

NAME OF SUBDIVISION:

ZONING CLASSIFICATION: C-2 AND C3

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

NUMBER OF LOTS: 2

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

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

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

LOT CORNERS: SET 1/2" REBAR WITH CAP

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

FOR USE AND BENEFIT OF:

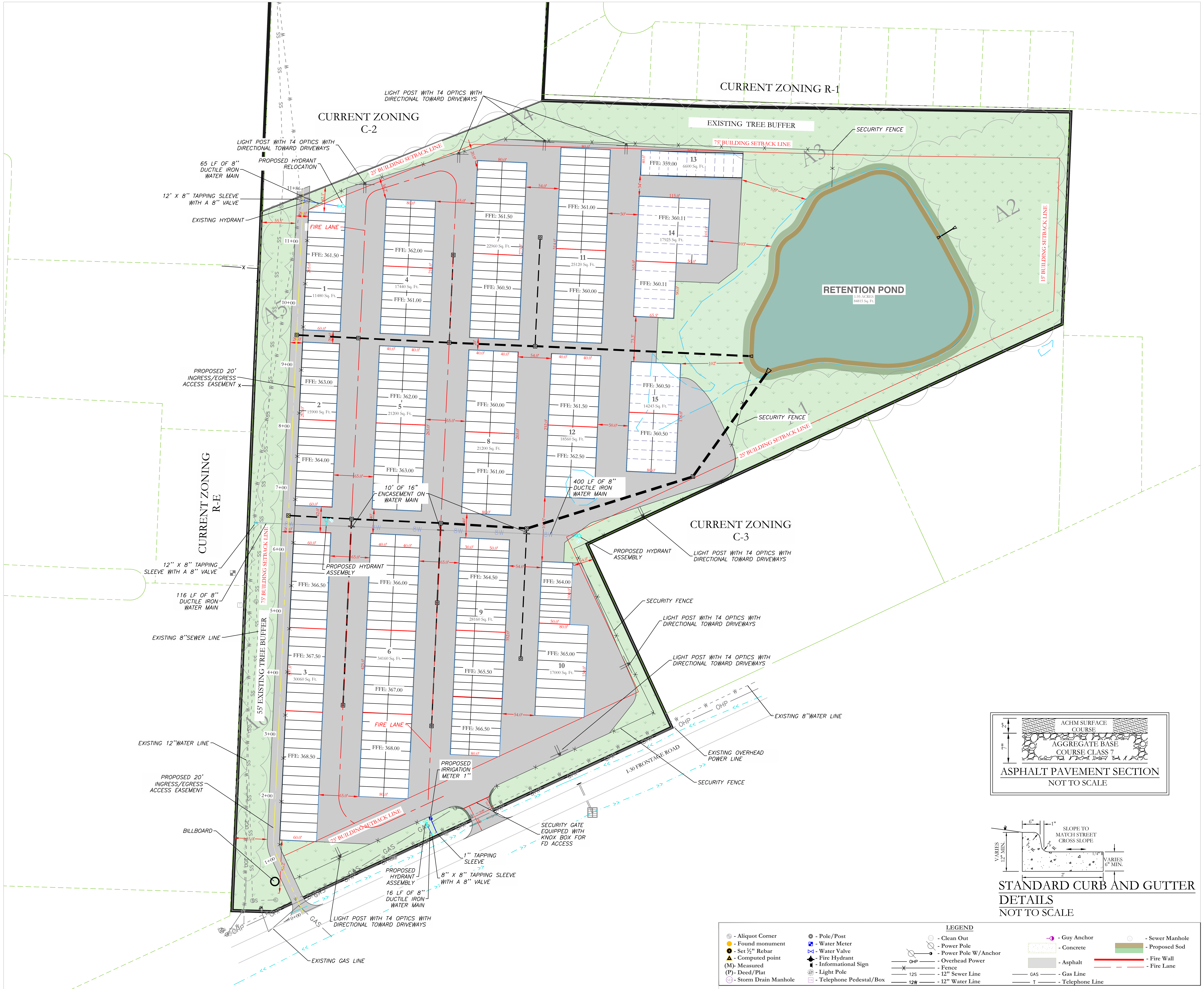
ARKANSAS STORAGE XIV, LLC

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

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

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

K:\Land Projects 2024\Subdivisions 2022\22-0800\Stuart Finley\Dwgs\22-0800-Preliminary Plat 02-05-2025.dwg

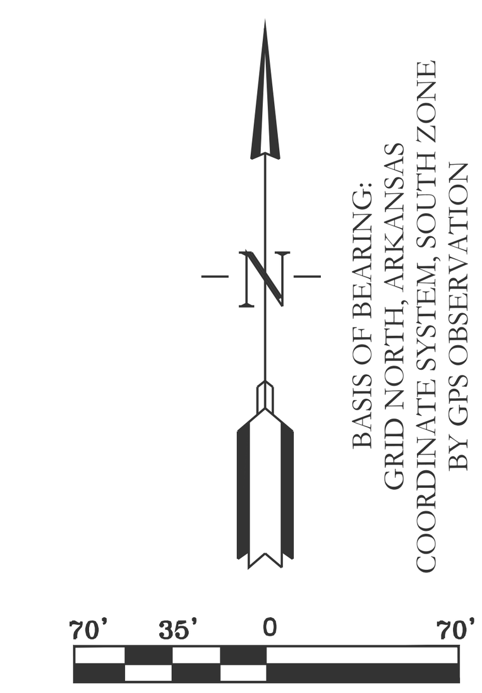


SITE DATA	
TOTAL SITE AREA	24.26 ACRES
TOTAL DEVELOPMENT AREA	14.79 ACRES
GROSS BUILDING AREA	TOTAL BUILDING AREA 303,129 SF
BUILDING HEIGHTS	20'
BUILDING COVERAGE PERCENTAGE	303,129/1056967.51=0.29=29.0%
BUSINESS TYPE	MINI STORAGE

NOTES:

1. ORNAMENTAL FENCE IS PROPOSED FOR THE FRONT SIDE OF THE DEVELOPMENT.
2. ALL FIRE LINE WILL BE PRIVATE.
3. NO SEWER SERVICE IS PROPOSED.
4. GATE POST MUST BE CONSTRUCTED NO CLOSER THAN 7.5' OF UTILITY LINES.

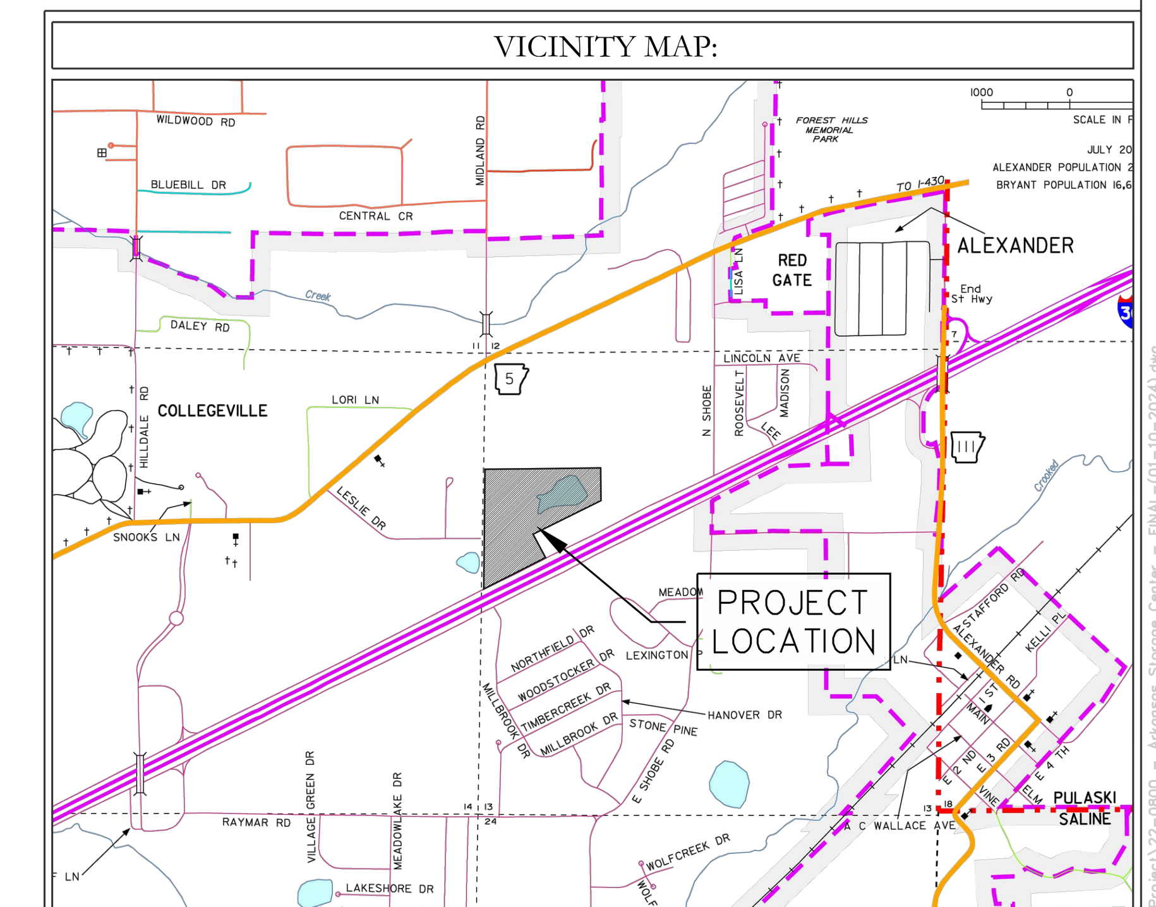
CIVIL ENGINEER
HOPE CONSULTING INC
129 N. MAIN STREET
BENTON, AR 72015
CONTACT: KAZI TAMZIDUL ISLAM
PHONE: 504-315-2626
EMAIL: kazi@hopeconsulting.com



ASPHALT PAVEMENT SECTION
NOT TO SCALE

STANDARD CURB AND GUTTER DETAILS
NOT TO SCALE

VICINITY MAP:



LEGEND

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

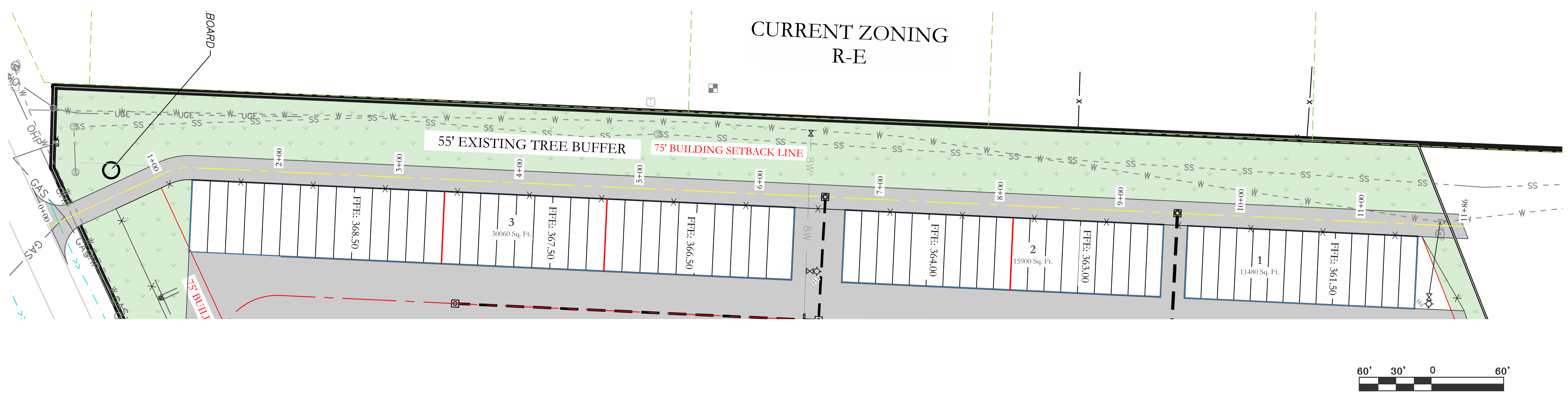
HOPE CONSULTING
ENGINEERS - SURVEYORS
129 N. Main Street,
Benton, Arkansas 72015
PH. (501)315-2626
FAX (501) 315-0024
www.hopeconsulting.com

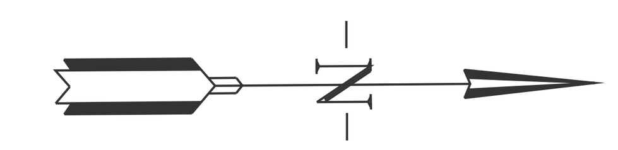
FOR USE AND BENEFIT OF:
STUART FINLEY

ARKANSAS STORAGE CENTER
SITE PLAN
BRYANT, SALINE COUNTY, ARKANSAS

DATE: 02-06-2024	C.A.D. BY:	DRAWING NUMBER: 22-0800	
REVISED:	CHECKED BY:		
SHEET: C-1.0	SCALE: 1" = 70'		

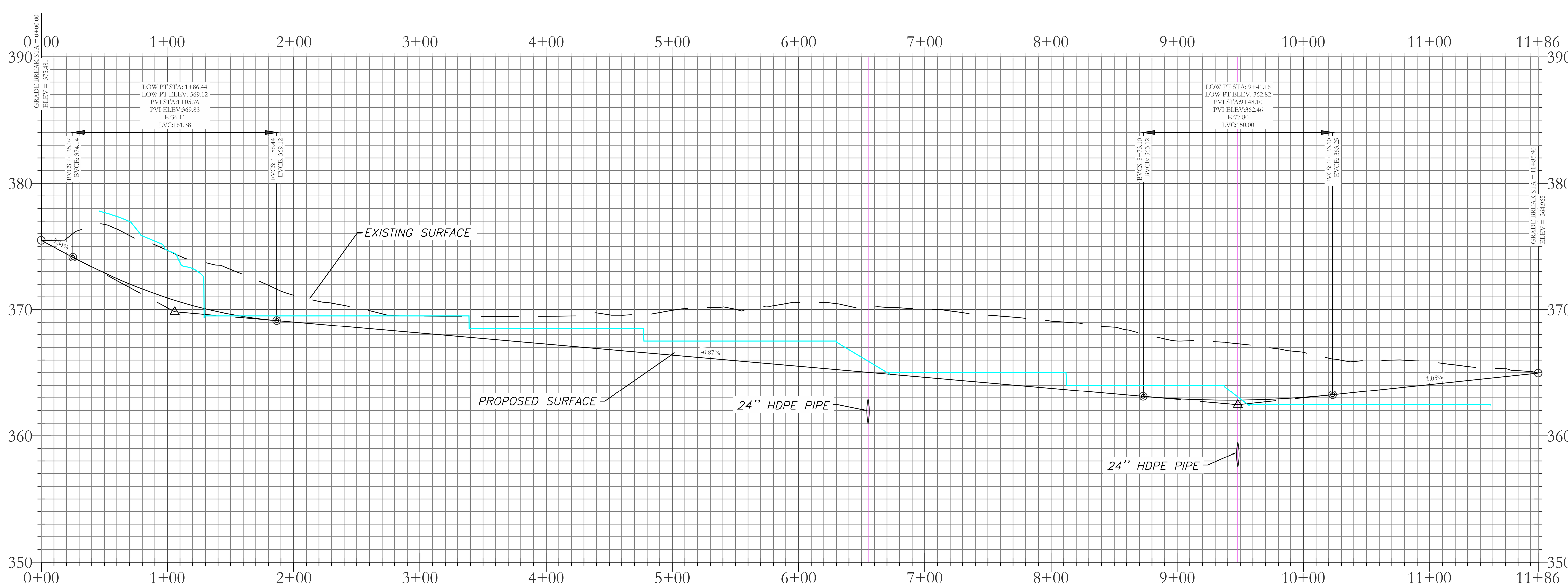
500	01S	14W	0	21	300	62	1762

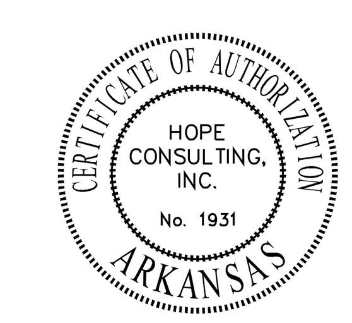




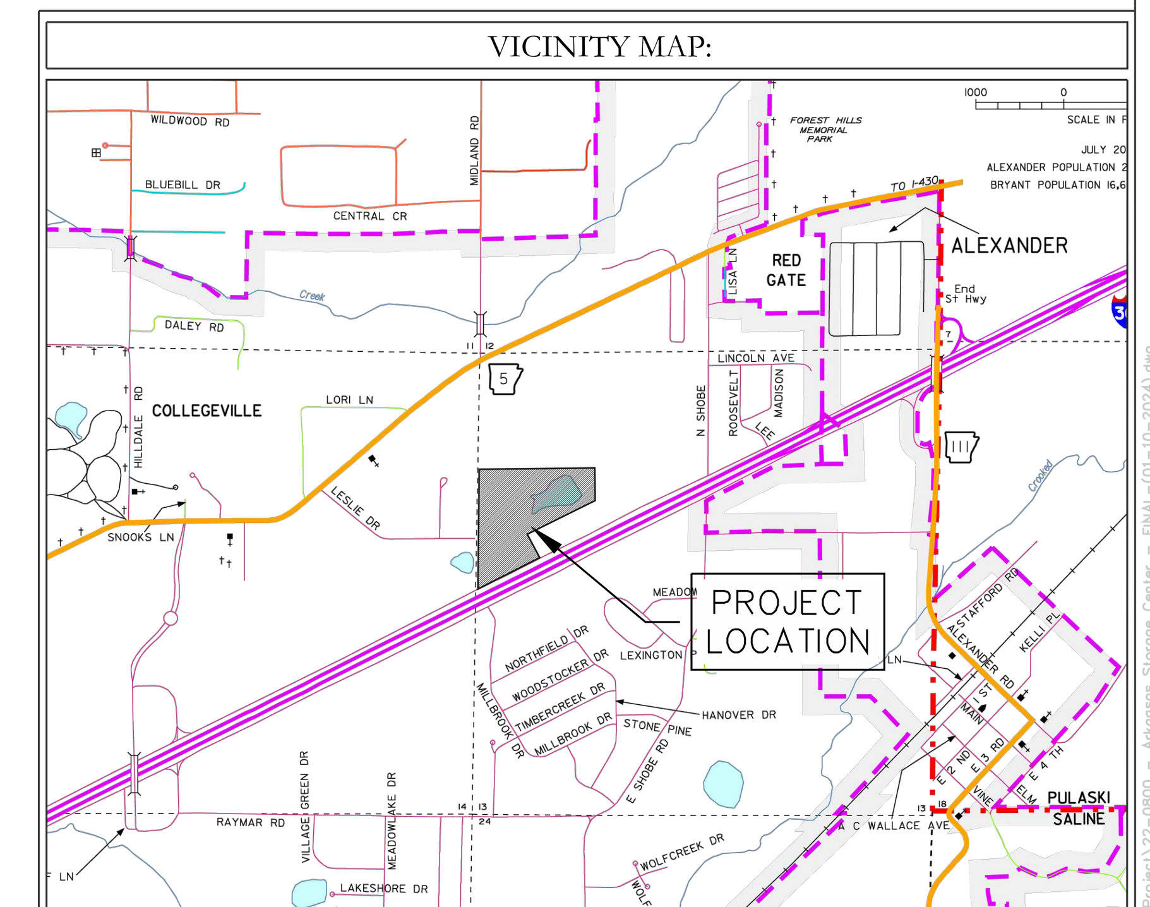
BASIS OF BEARING:
GRID NORTH, ARKANSAS
COORDINATE SYSTEM, SOUTH ZONE
BY GPS OBSERVATION

Private Road #2 PROFILE





VICINITY MAP:



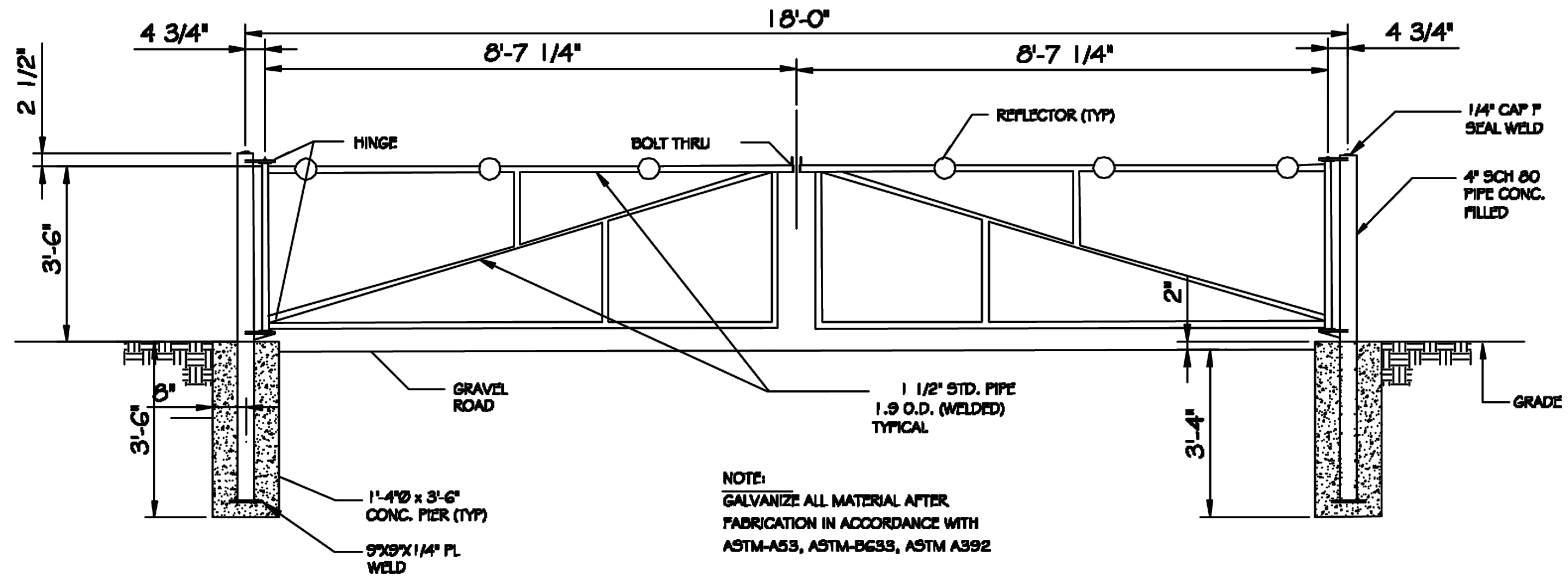
HOPE CONSULTING
ENGINEERS - SURVEYORS

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

FOR USE AND BENEFIT OF:
STUART FINLEY

ARKANSAS STORAGE CENTER
PRIVATE ROAD PLAN & PROFILE
BRYANT, SALINE COUNTY, ARKANSAS

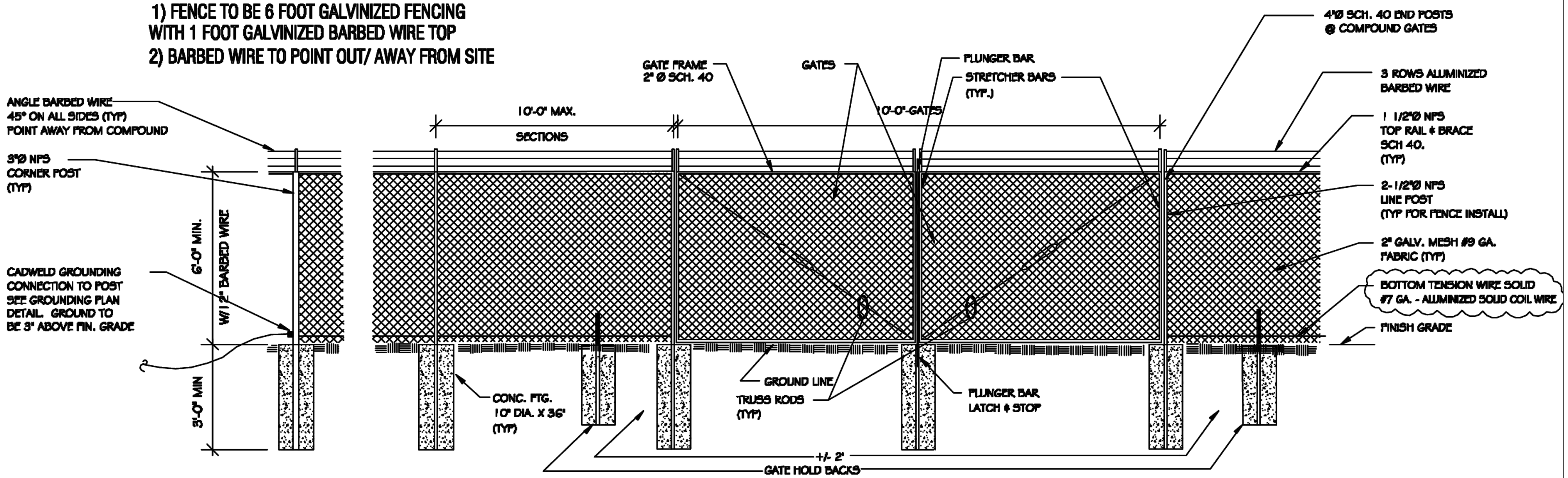
DATE:	02-06-2024	C.A.D. BY:			DRAWING NUMBER:		
REVISED:		CHECKED BY:			22-0800		
SHEET:	C-2.0	SCALE: 1" = 60'					
500	01S	14W	0	21	300	62	1762



ROAD ACCESS GATE
NO SCALE

NOTES

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



TYPICAL FENCE SECTION
NO SCALE

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

FOR USE AND BENEFIT OF:
STUART FINLEY

ARKANSAS STORAGE CENTER
FENCE DETAILS
BRYANT, SALINE COUNTY, ARKANSAS

DATE:	02-06-2024	C.A.D. BY:		DRAWING NUMBER:
REVISED:		CHECKED BY:		22-0800
SHEET:	C-2.1	SCALE:		

500	01S	14W	0	21	300	62	1762

CURRENT ZONING R-1

CURRENT ZONING C-2

CURRENT ZONING R-E

CURRENT ZONING C-3

EXISTING TREE BUFFER

55' EXISTING TREE BUFFER

LIGHT POST WITH T4 OPTICS WITH DIRECTIONAL TOWARD DRIVEWAYS

SECURITY FENCE

75' BUILDING SETBACK LINE

25' BUILDING SETBACK LINE

15' BUILDING SETBACK LINE

RETENTION POND
1.95 ACRES
84815 Sq. Ft.

65 LF OF 8" DUCTILE IRON WATER MAIN

PROPOSED HYDRANT RELOCATION

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

EXISTING HYDRANT

FIRE LANE

PROPOSED 20' INGRESS/EGRESS ACCESS EASEMENT

10' OF 16" ENCASEMENT ON WATER MAIN

400 LF OF 8" DUCTILE IRON WATER MAIN

PROPOSED HYDRANT ASSEMBLY

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

116 LF OF 8" DUCTILE IRON WATER MAIN

EXISTING 8"SEWER LINE

EXISTING 12"WATER LINE

EXISTING 8"WATER LINE

EXISTING OVERHEAD POWER LINE

L30 FRONTAGE ROAD

PROPOSED IRRIGATION METER 1"

SECURITY GATE EQUIPPED WITH KNOX BOX FOR FD ACCESS

1" TAPPING SLEEVE

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

16 LF OF 8" DUCTILE IRON WATER MAIN

EXISTING GAS LINE

BILLBOARD

	FFE	Sq. Ft.
1	361.50	11480
2	364.00	15900
3	367.50	30060
4	362.00 / 361.00	17440
5	362.00 / 363.00	21200
6	366.00 / 367.00	34160
7	361.50 / 360.50	22960
8	360.00 / 361.00	21200
9	364.50	28160
10	365.00	17300
11	361.00 / 360.00	25120
12	361.50 / 362.50	18360
13	359.00	6600
14	360.11	17925
15	360.50	14243

NOTES:

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

WATER UTILITY NOTES:

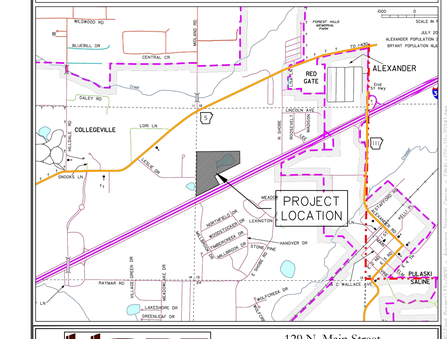
1. ALL NEW 8-INCH WATER MAINS TO BE DUCTILE IRON.
2. ALL WATER INSTALLATION TO BE IN ACCORDANCE WITH THE CITY OF BRYANT "STANDARD SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OF WATER LINES AND SEWER LINES, 2015 EDITION".
3. WATER LINES UNDER CULVERTS, CREEKS, CONCRETE CHANNELS, RETAINING WALLS, OR OTHER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

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

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

70' 35' 0 70'

VICINITY MAP:



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

FOR USE AND BENEFIT OF:
STUART FINLEY

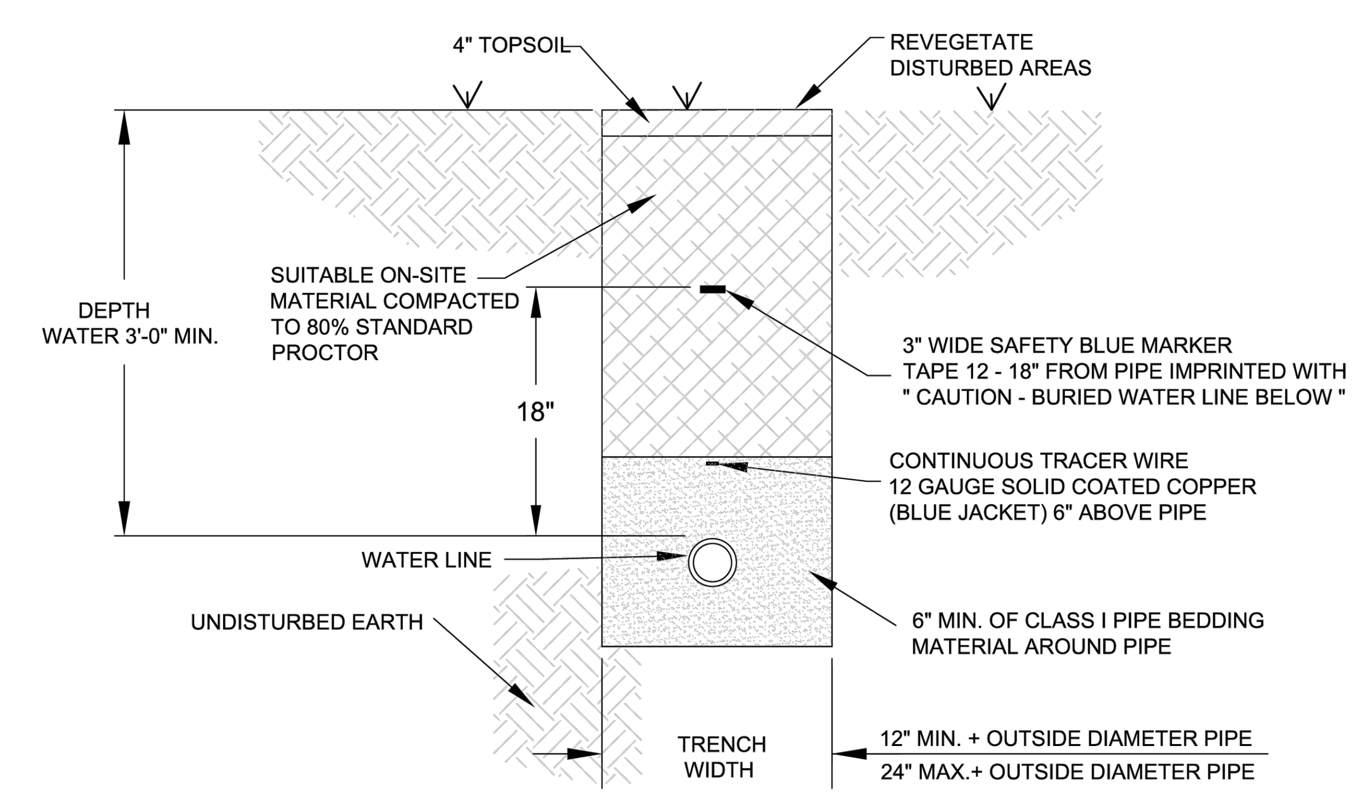
ARKANSAS STORAGE CENTER

UTILITY PLAN

BRYANT, SALINE COUNTY, ARKANSAS

DATE:	02-06-2024	C.A.D. BY:	DRAWING NUMBER:
REVISED:		CHECKED BY:	22-0800
SHEET:	C-3.0	SCALE:	1" = 70'

500	01S	14W	0	21	300	62	1762



NOTES:

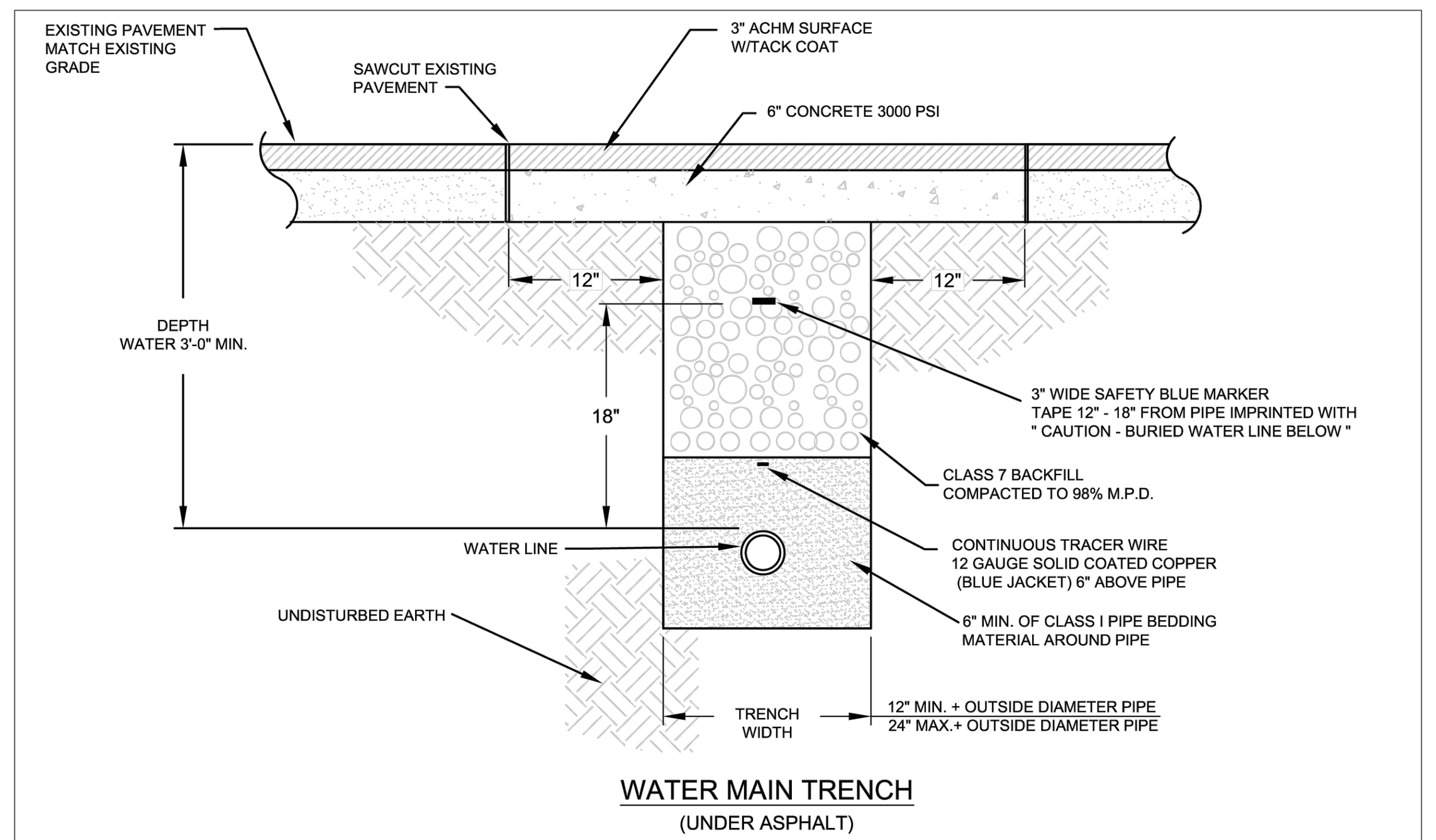
1. ALL VALVES, BENDS, ETC. SHALL BE RESTRAINED.
2. THE CONTRACTOR SHALL PROVIDE ALL ITEMS NECESSARY TO CONNECT WITH ANY PART OF THE EXISTING WATER SYSTEM THAT WILL REMAIN IN ORDER TO ESTABLISH A SATISFACTORY AND ACCEPTABLE WATER SYSTEM.
3. CONTRACTOR TO CONSTRUCT ALL TRENCH EXCAVATION IN ACCORDANCE WITH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

WATER MAIN TRENCH

(NON-PAVED AREA)

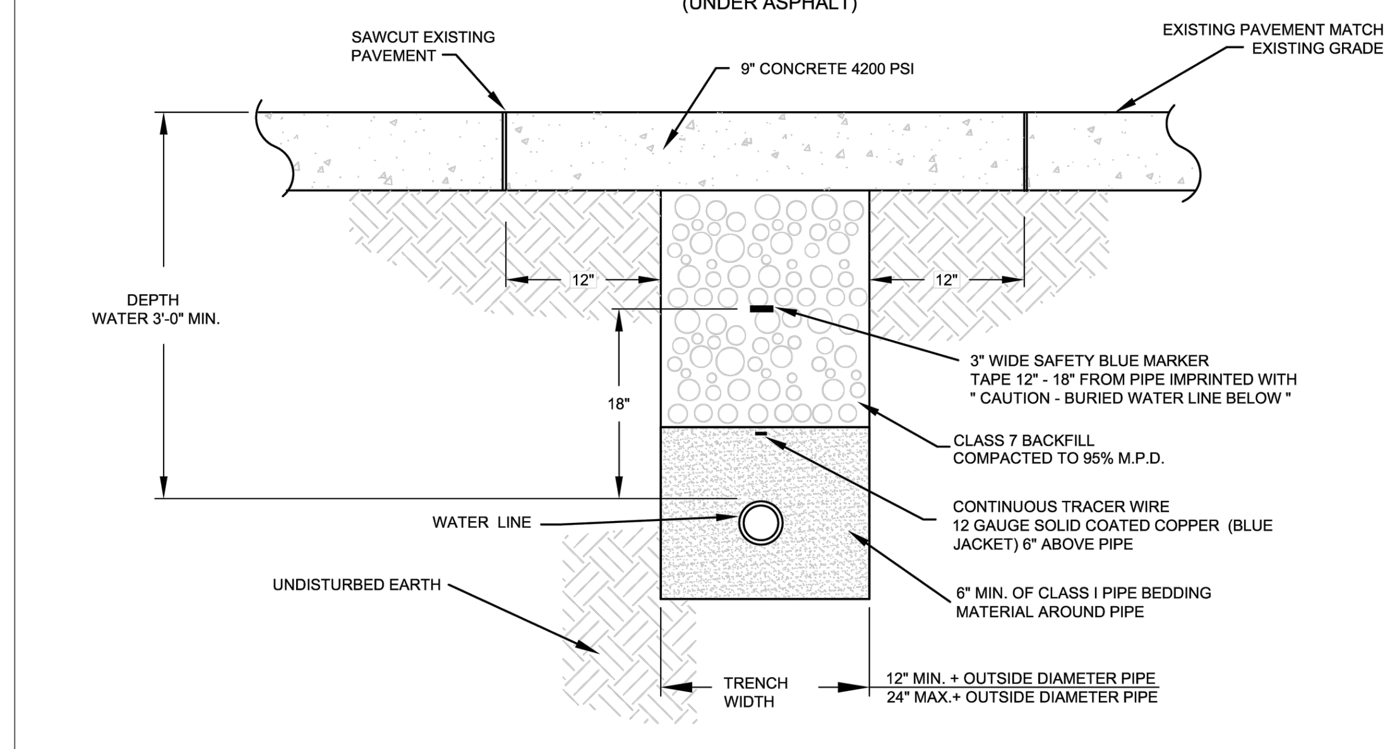
CITY OF BRYANT, AR — WATER UTILITIES, 210 S.W. 3rd. STREET, BRYANT, AR, PHONE: (501) 943-0468

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



WATER MAIN TRENCH

(UNDER ASPHALT)



WATER MAIN TRENCH

(UNDER CONCRETE)

NOTES:

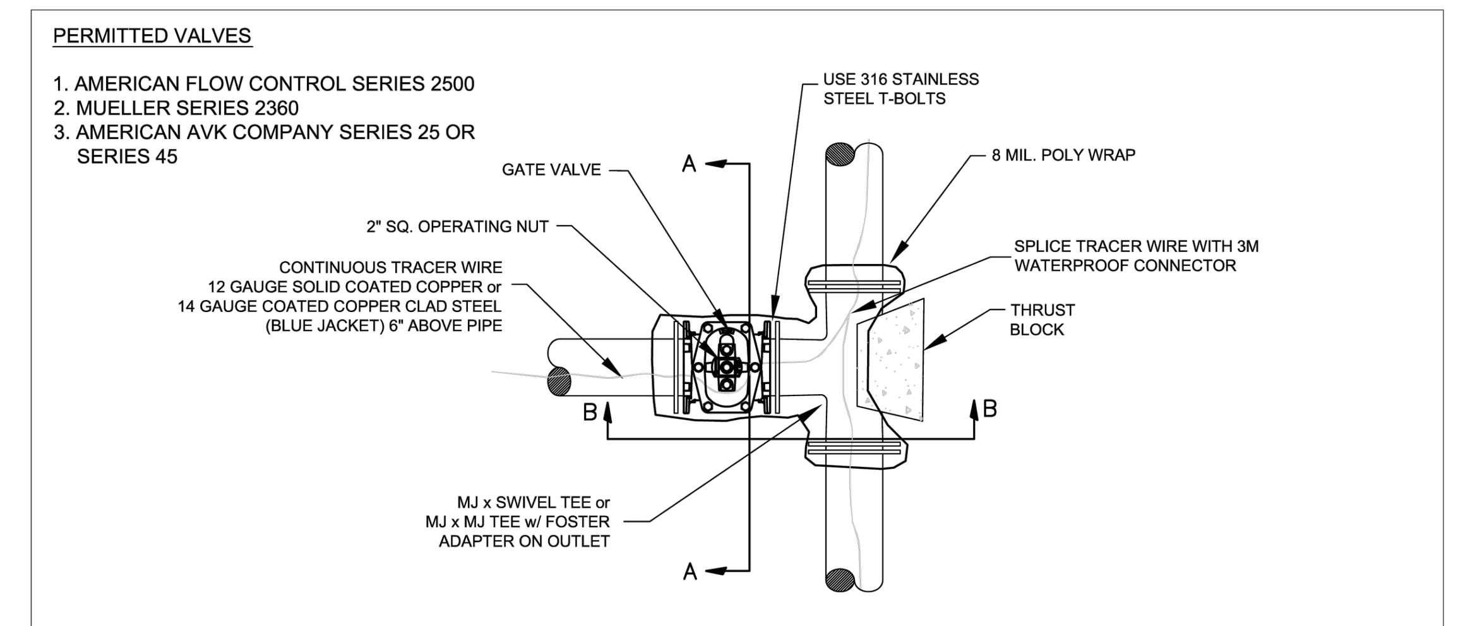
1. ALL VALVES, BENDS, ETC. SHALL BE RESTRAINED.
2. THE CONTRACTOR SHALL PROVIDE ALL ITEMS NECESSARY TO CONNECT WITH ANY PART OF THE EXISTING WATER SYSTEM THAT WILL REMAIN IN ORDER TO ESTABLISH A SATISFACTORY AND ACCEPTABLE WATER SYSTEM.
3. CONTRACTOR TO CONSTRUCT ALL TRENCH EXCAVATION IN ACCORDANCE WITH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

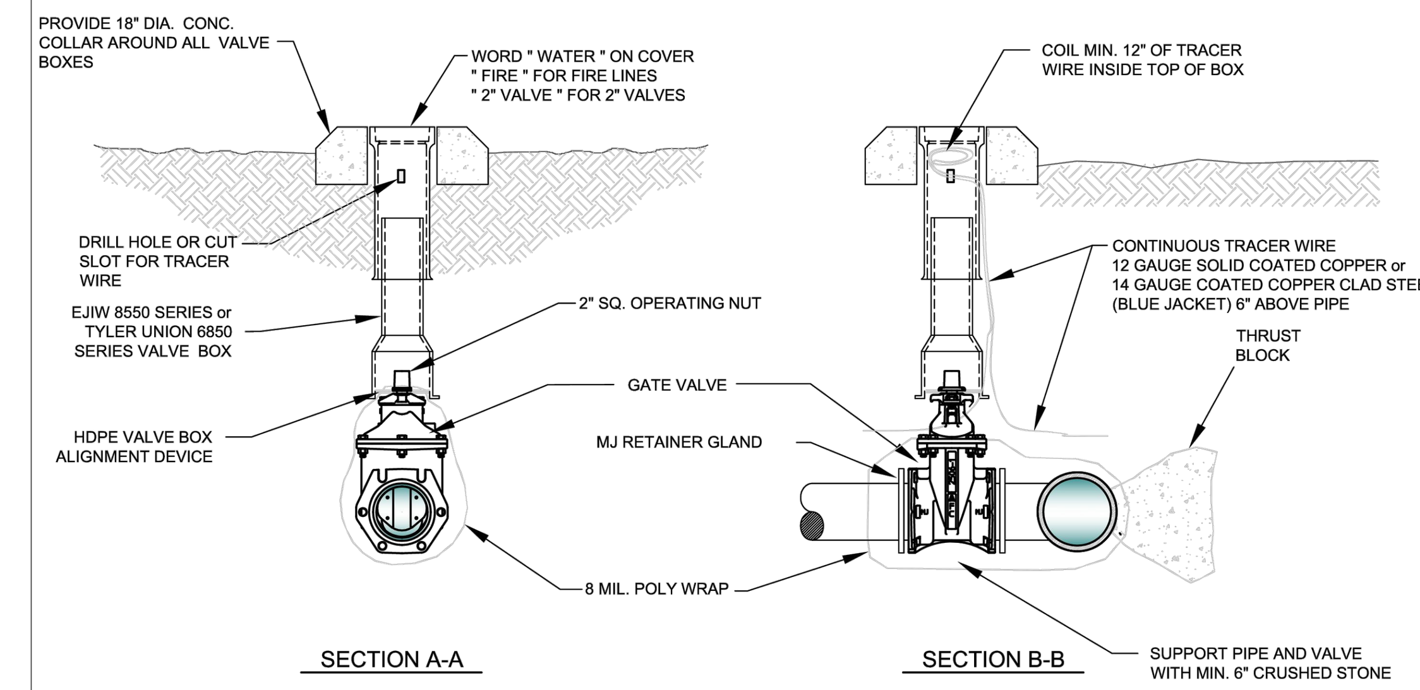
CITY OF BRYANT, AR — WATER UTILITIES, 210 S.W. 3rd. STREET, BRYANT, AR, PHONE: (501) 943-0468

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

PERMITTED VALVES

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





NOTES:

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

GATE VALVE DETAIL

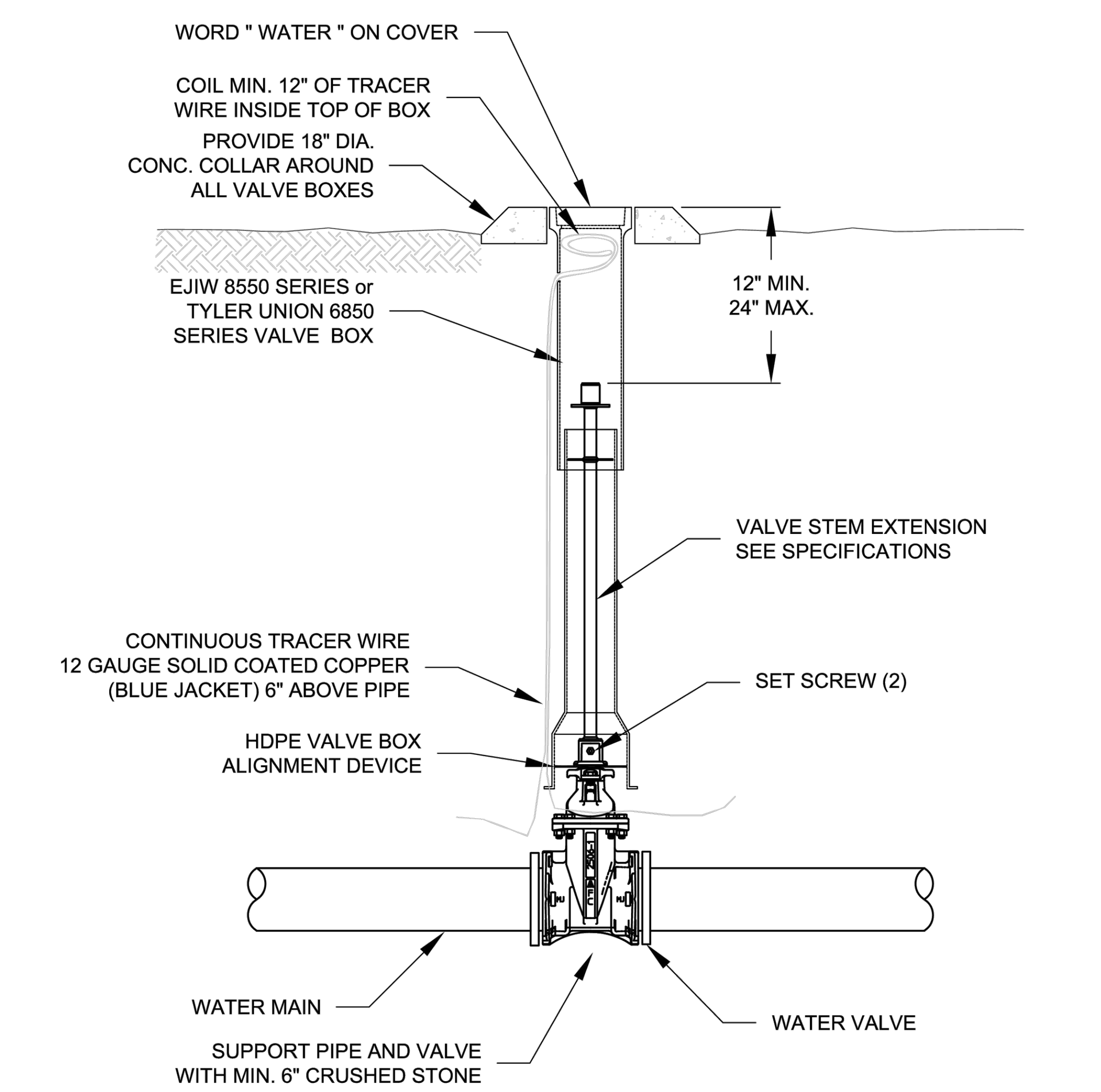
2" - 12"

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

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

NOTES:

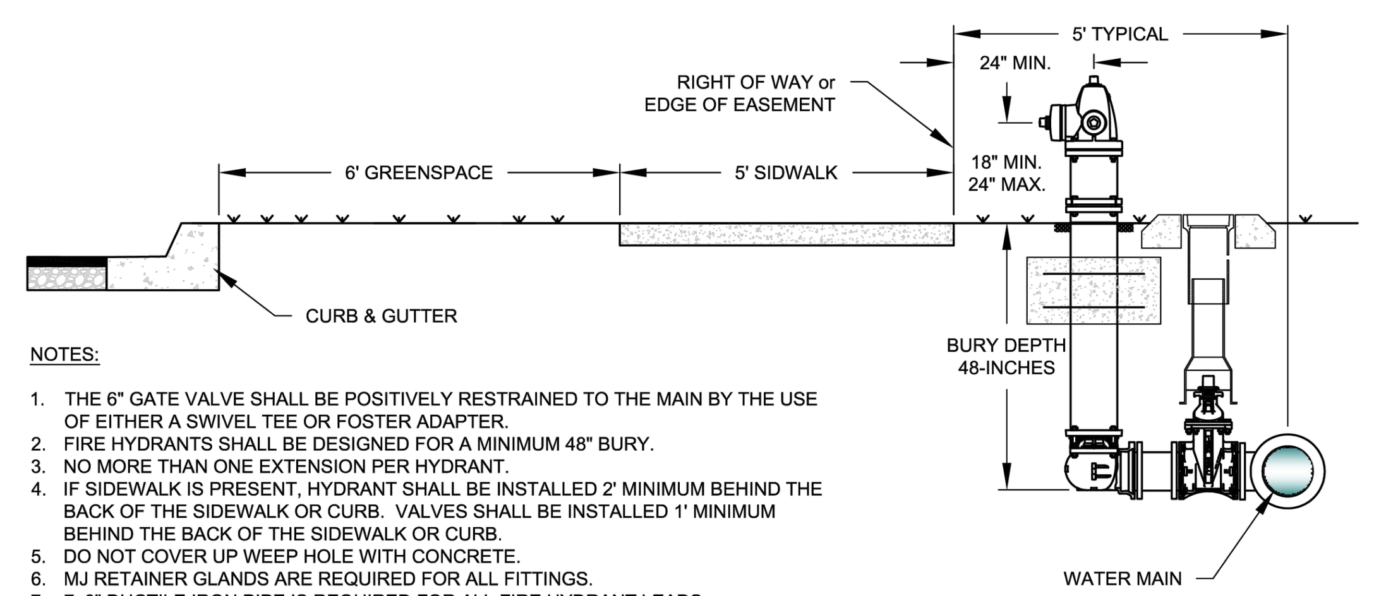
1. OPERATING NUT EXTENSIONS SHALL BE USED WHEN THE TOP OF THE OPERATING NUT IS GREATER THAN 4 FEET FROM THE TOP OF FINISHED SURFACE.
2. THE STEM EXTENSION SHALL BE OF ADEQUATE LENGTH TO REACH FROM THE VALVE OPERATING NUT TO A POINT WITHIN 24-INCHES TO 12-INCHES OF THE FINISHED SURFACE.



VALVE WITH STEM EXTENSION

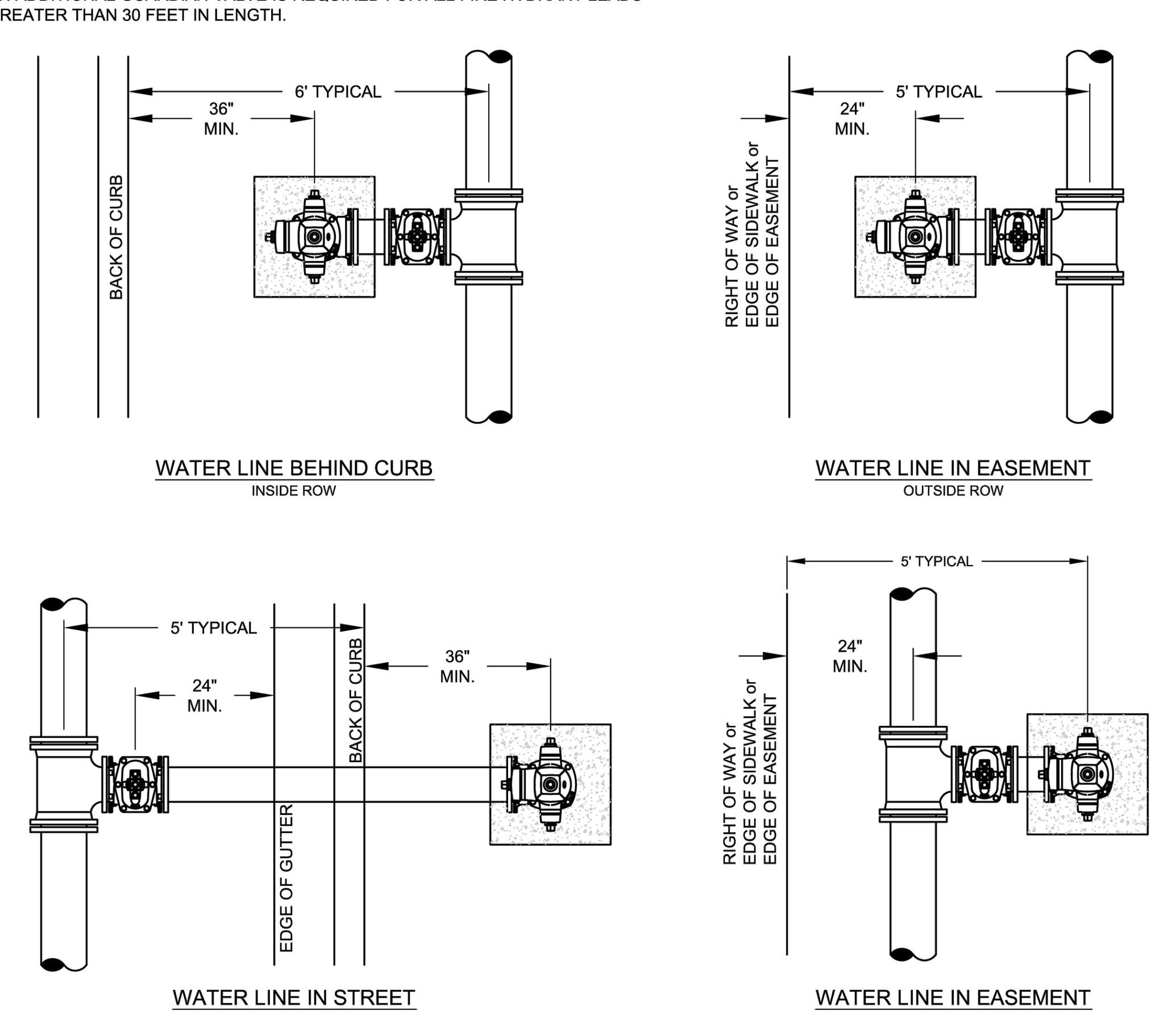
CITY OF BRYANT, AR — WATER UTILITIES, 210 S.W. 3rd. STREET, BRYANT, AR, PHONE: (501) 943-0468

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



NOTES:

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

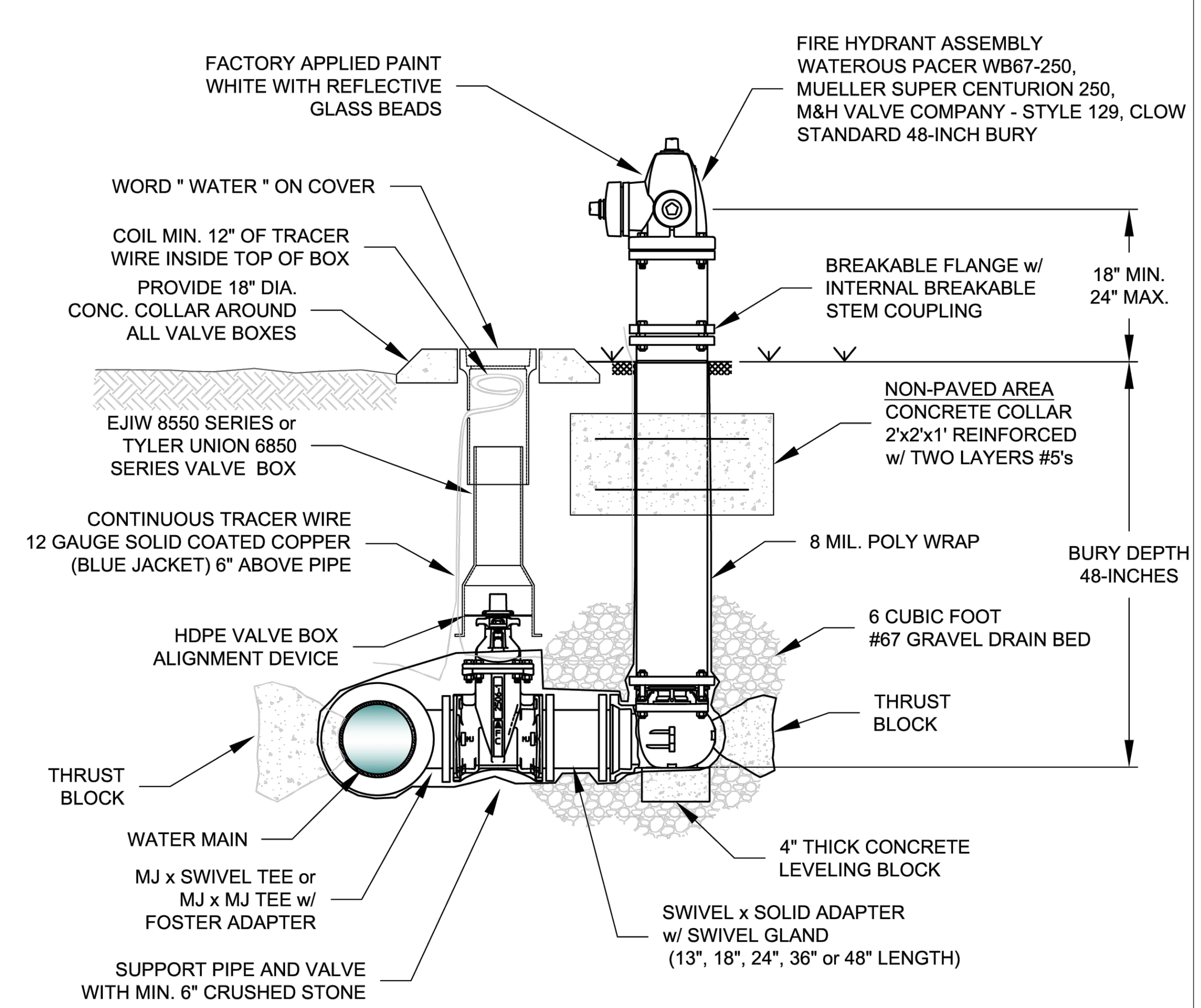


CITY OF BRYANT, AR — WATER UTILITIES, 210 S.W. 3rd. STREET, BRYANT, AR, PHONE: (501) 943-0468

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

NOTES:

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



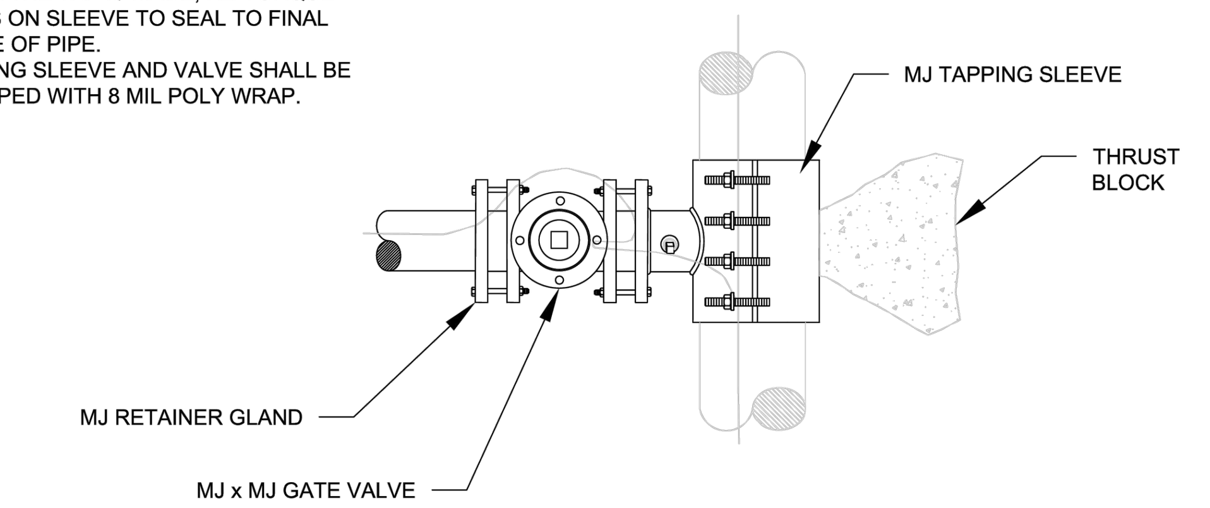
FIRE HYDRANT & VALVE CONNECTION

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

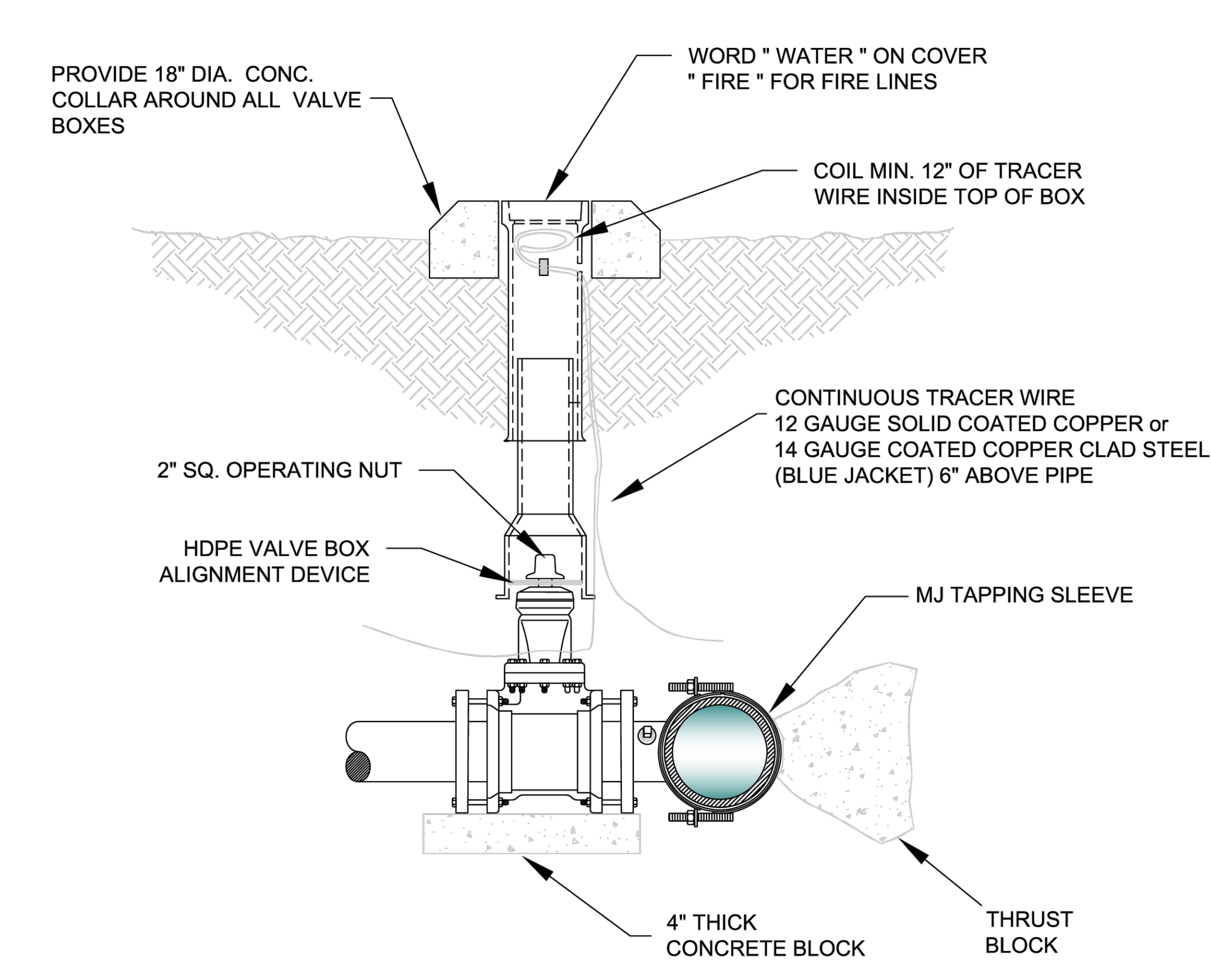
TITLE: WATER DETAILS	DATE: APRIL 2015	SHEET:
DESCRIPTION: FIRE HYDRANT AND VALVE CONNECTION	REVISED	W8
DRAWN BY: / CHECKED BY: / FILE: W8-Fire Hydrant and Valve.dwg	----	

NOTES:

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



PLAN VIEW



PROFILE VIEW

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

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

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

FOR USE AND BENEFIT OF:

STUART FINLEY

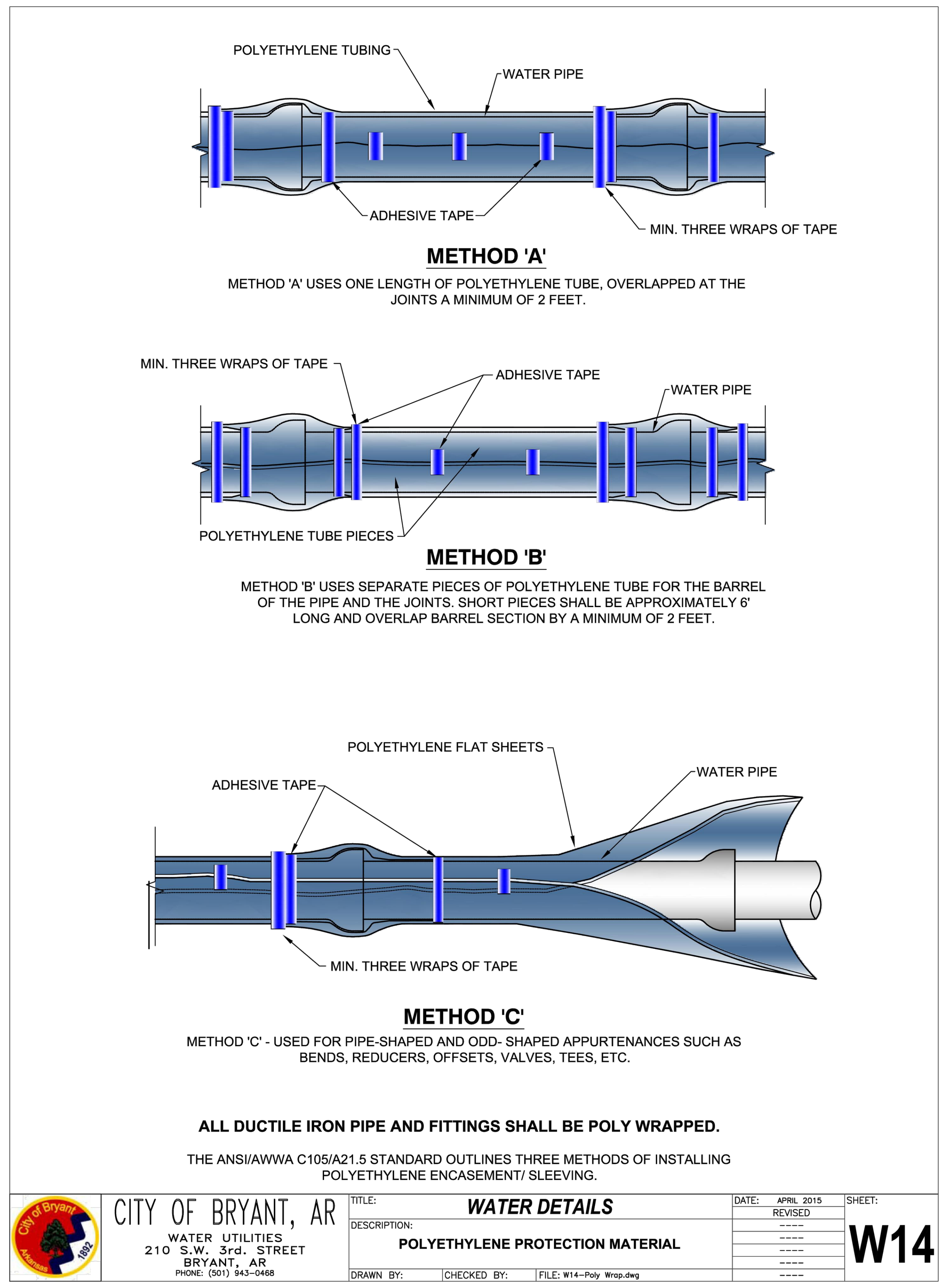
ARKANSAS STORAGE CENTER

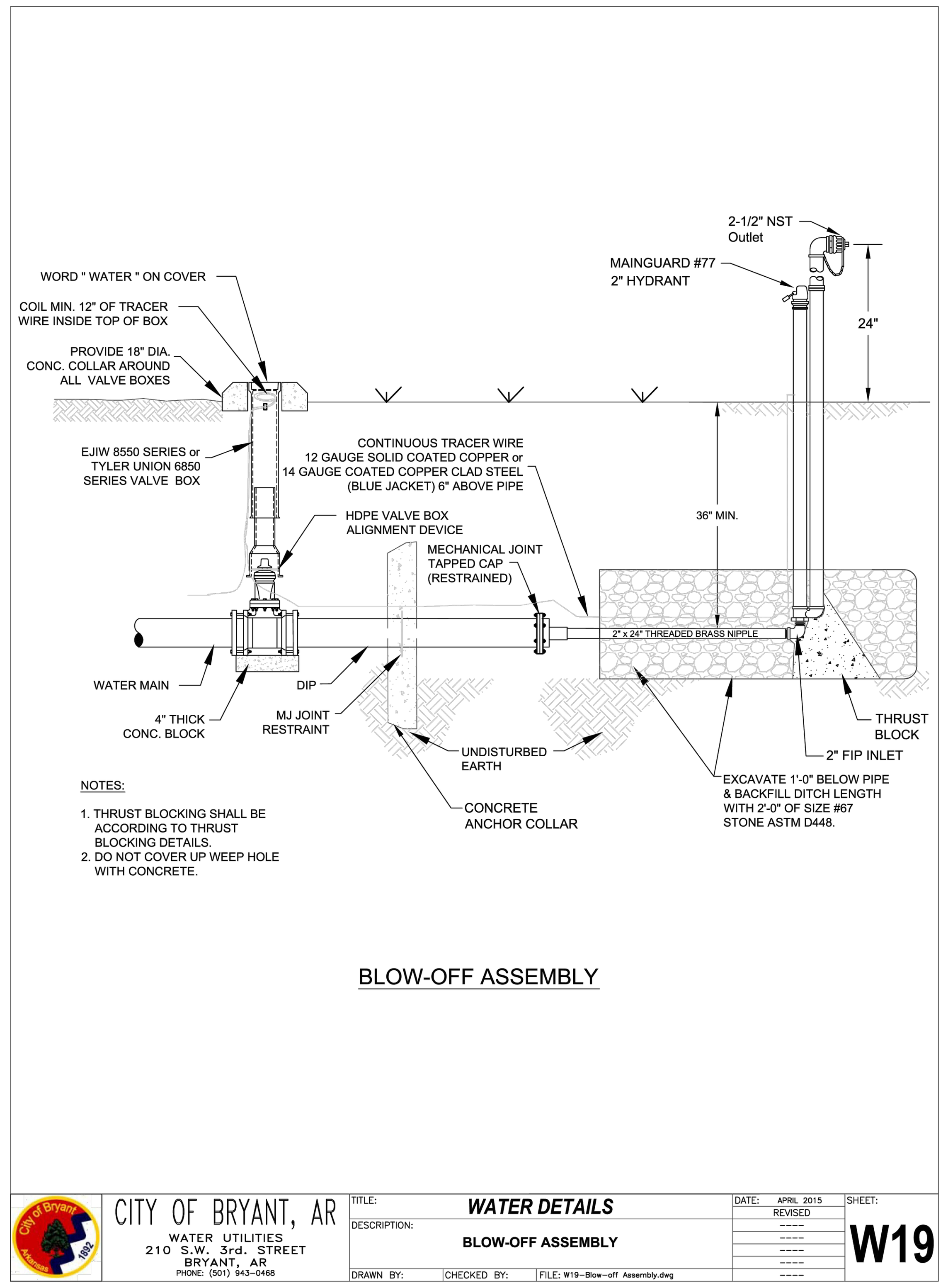
UTILITY SPECS

BRYANT, SALINE COUNTY, ARKANSAS

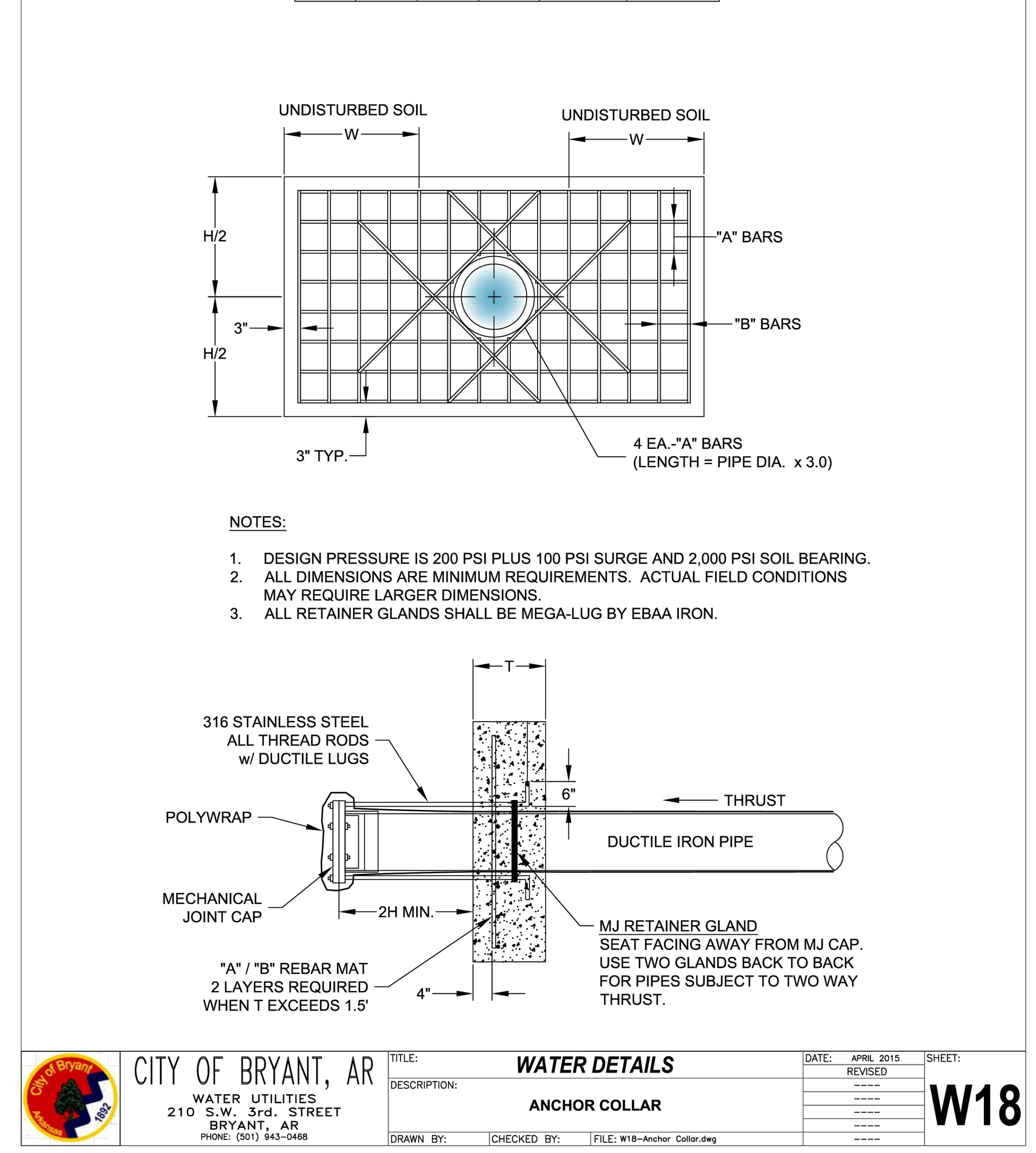
DATE:	02-06-2024	C.A.D. BY:	DRAWING NUMBER:
REVISED:		CHECKED BY:	22-0800
SHEET:	C-3.1	SCALE:	

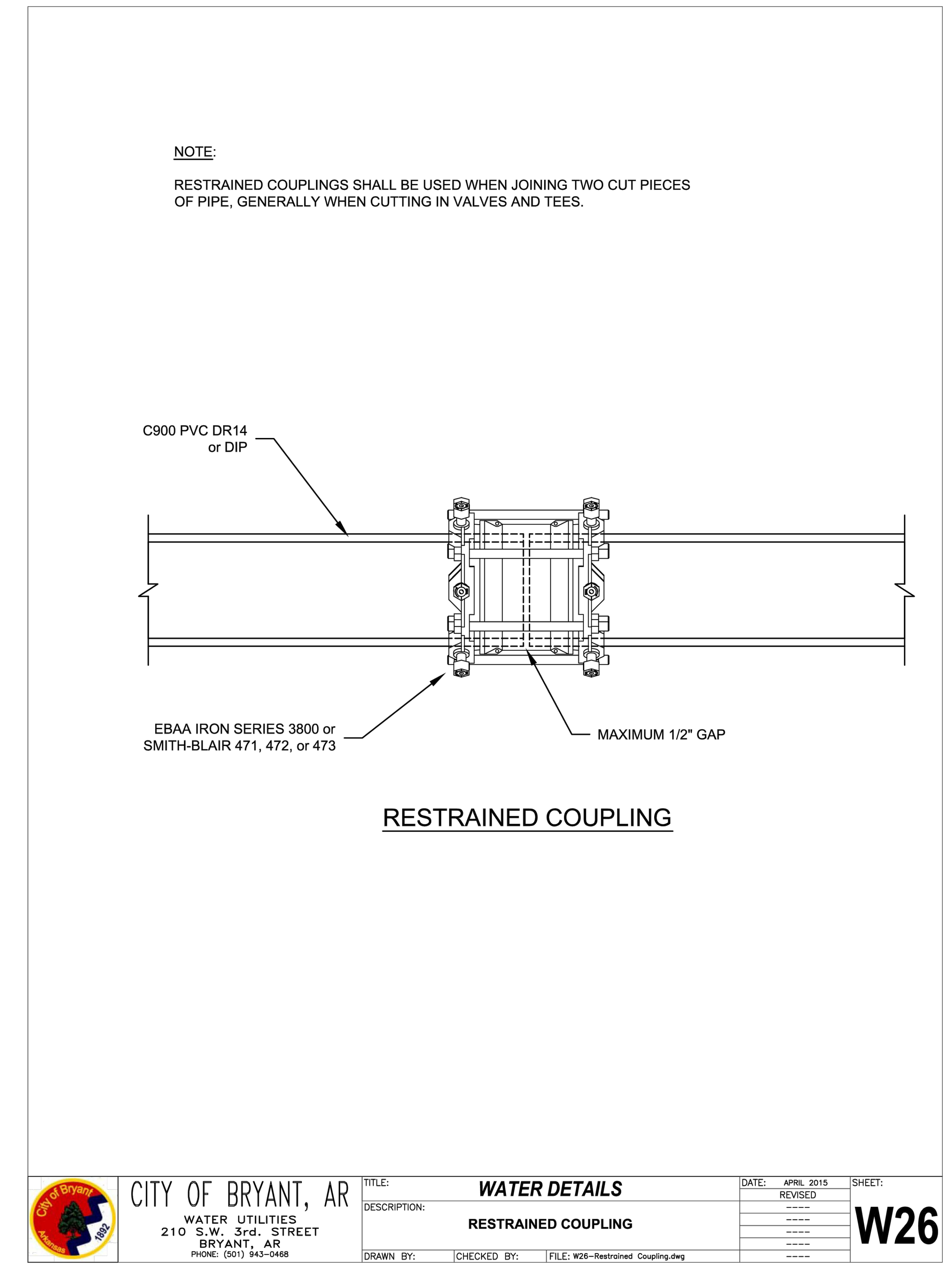
500	01S	14W	0	21	300	62	1762





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





City of Bryant - Water System Material Specifications - Short Form

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

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

Single Meter Set

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

Double Meter Set

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

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

FOR USE AND BENEFIT OF:
STUART FINLEY

ARKANSAS STORAGE CENTER
UTILITY SPECS
BRYANT, SALINE COUNTY, ARKANSAS

DATE:	02-06-2024	C.A.D. BY:						DRAWING NUMBER:	
REVISED:		CHECKED BY:						22-0800	
SHEET:	C-3.2	SCALE:							
500	01S	14W	0	21	300	62	1762		

CURRENT ZONING R-1

CURRENT ZONING C-2

EXISTING TREE BUFFER

25' BUILDING SETBACK LINE

15' BUILDING SETBACK LINE

RETENTION POND
1.95 ACRES
84853 Sq. Ft.

CURRENT ZONING R-E

CURRENT ZONING C-3

55' EXISTING TREE BUFFER

7' BUILDING SETBACK LINE

I-30 FRONTAGE ROAD

BILLBOARD

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

LEGEND

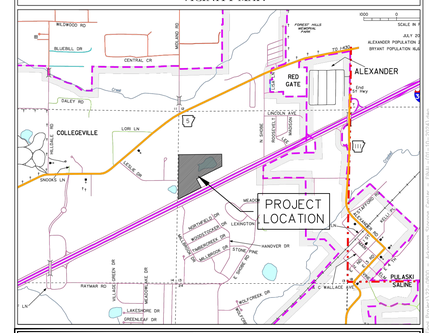
EXISTING CONTOUR LINE 363
PROPOSED CONTOUR LINE 363
PROPOSED HDPE STORM PIPE
PROPOSED RCP STORM PIPE

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

70' 35' 0 70'

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

VICINITY MAP:



HOPE CONSULTING
ENGINEERS - SURVEYORS

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

FOR USE AND BENEFIT OF:
STUART FINLEY

ARKANSAS STORAGE CENTER

GRADING PLAN

BRYANT, SALINE COUNTY, ARKANSAS

DATE:	02-06-2024	C.A.D. BY:	DRAWING NUMBER:
REVISED:		CHECKED BY:	22-0800
SHEET:	C-4.0	SCALE: 1" = 70'	

500	01S	14W	0	21	300	62	1762

LEGEND

PROPOSED CONTOUR LINE 363

PROPOSED HDPE STORM PIPE

PROPOSED RCP STORM PIPE

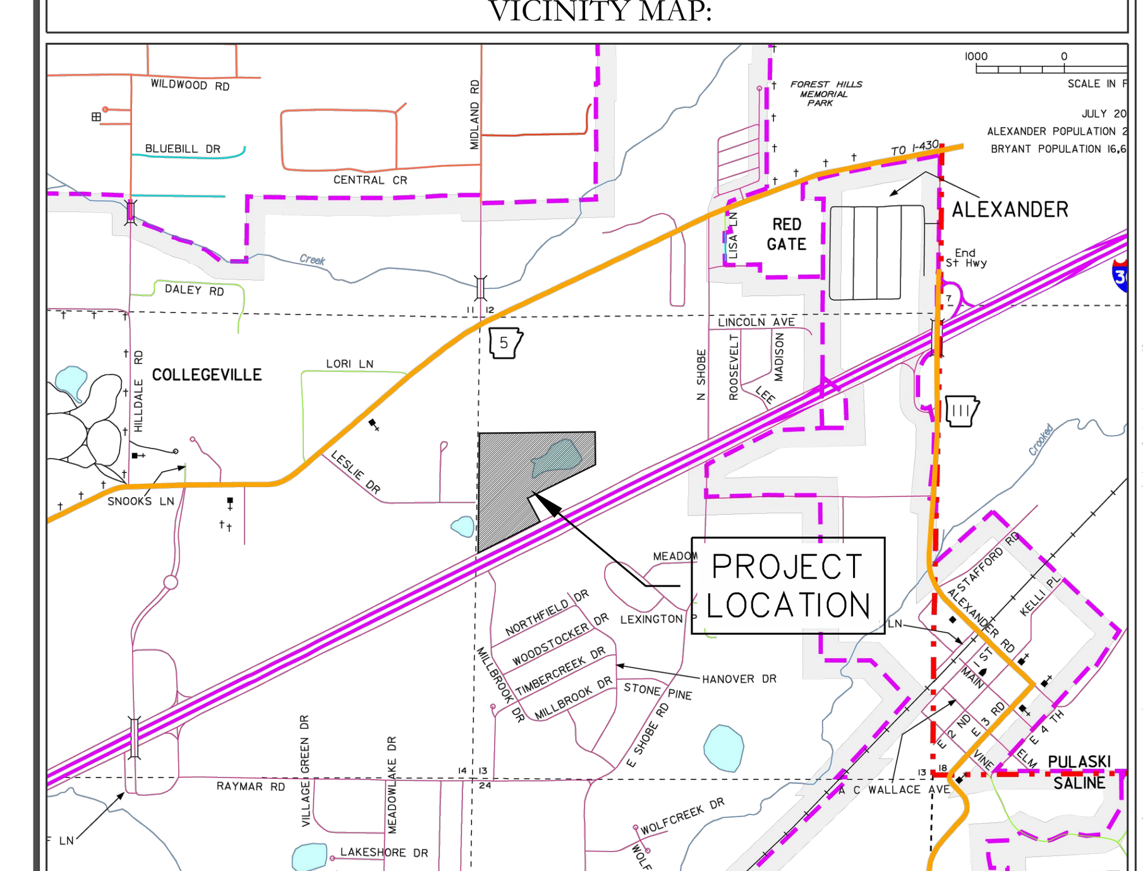
CERTIFICATE OF AUTHORIZATION ARKANSAS HOPE CONSULTING, INC. No. 1931

N

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

70' 35' 0 70'

VICINITY MAP:



HOPE CONSULTING ENGINEERS • SURVEYORS

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

FOR USE AND BENEFIT OF:

STUART FINLEY

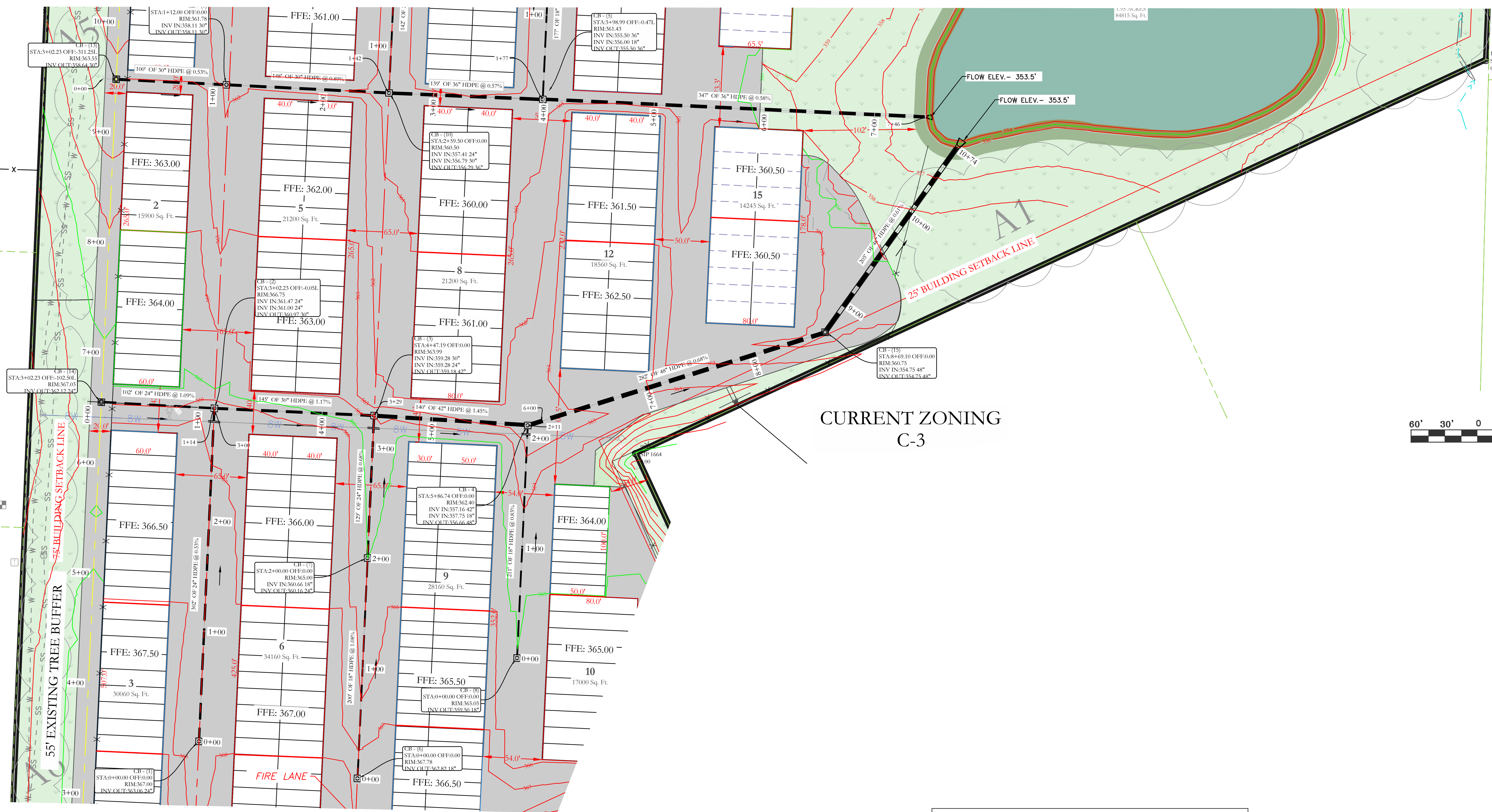
ARKANSAS STORAGE CENTER

DRAINAGE PLAN

BRYANT, SALINE COUNTY, ARKANSAS

DATE: 02-06-2024	C.A.D. BY:		DRAWING NUMBER:
REVISED:	CHECKED BY:		22-0800
SHEET: C-5.0	SCALE: 1" = 70'		

500	01S	14W	0	21	300	62	1762

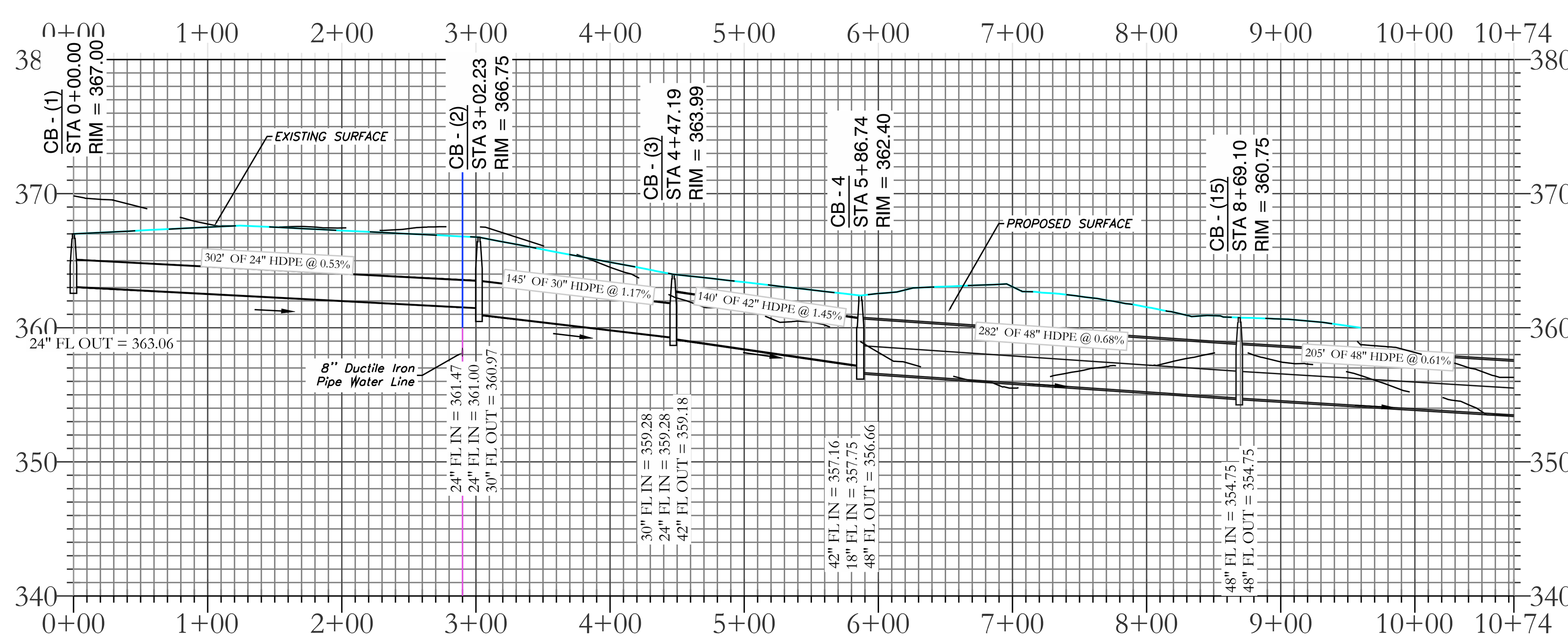


LEGEND

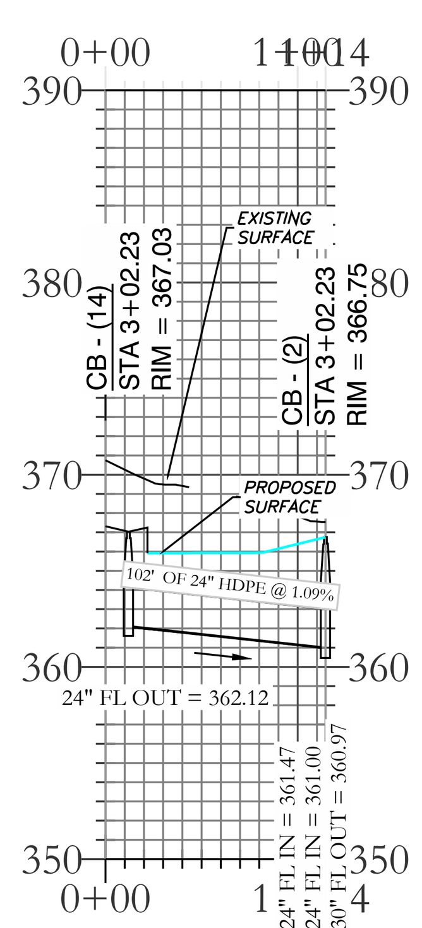
EXISTING CONTOUR LINE	363
PROPOSED CONTOUR LINE	363
PROPOSED HDPE STORM PIPE	
PROPOSED RCP STORM PIPE	

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

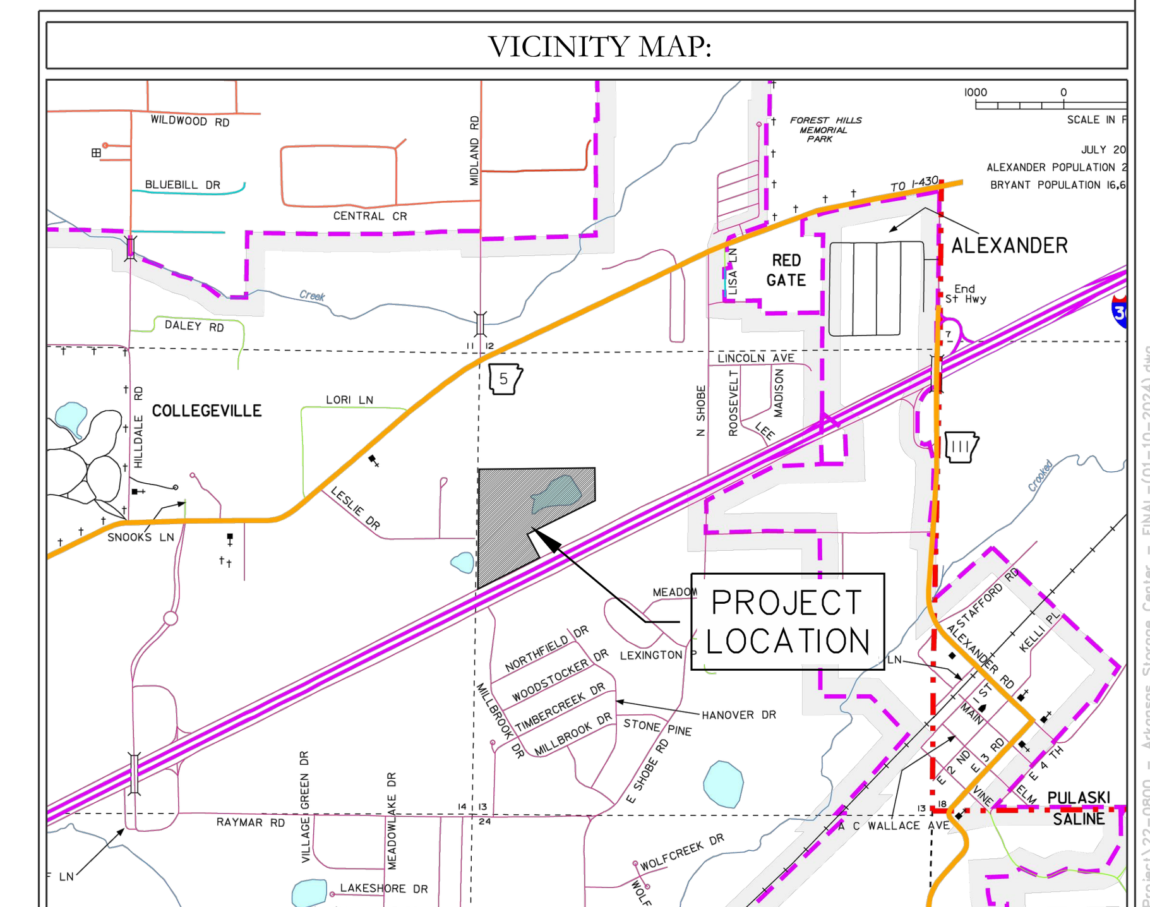
STORM WATER LINE 1 PROFILE



STORM WATER LINE 7 PROFILE



VICINITY MAP:



HOPE CONSULTING
ENGINEERS • SURVEYORS

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

FOR USE AND BENEFIT OF:
STUART FINLEY

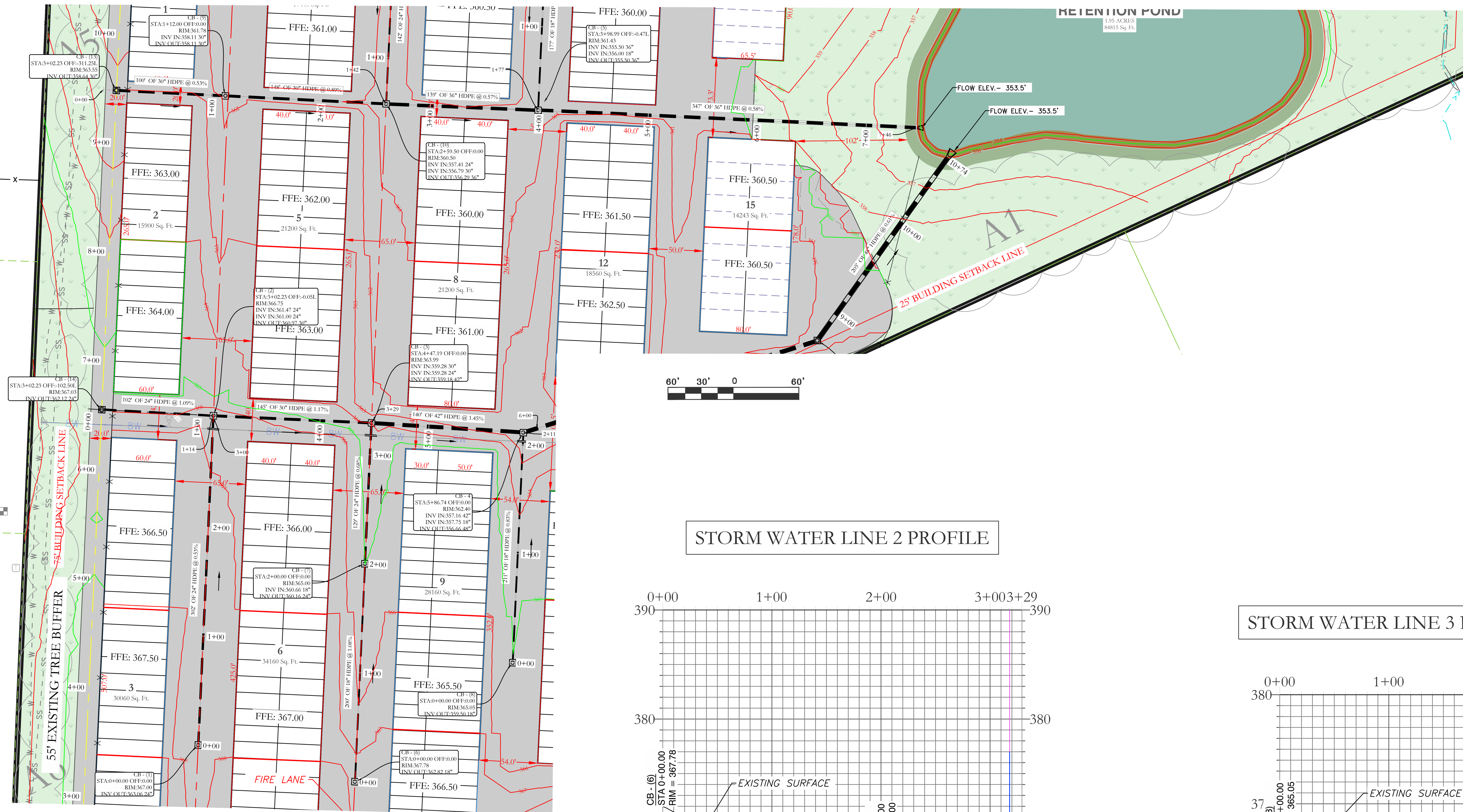
ARKANSAS STORAGE CENTER

DRAINAGE PLAN

BRYANT, SALINE COUNTY, ARKANSAS

DATE:	02-06-2024	C.A.D. BY:	DRAWING NUMBER:
REVISED:		CHECKED BY:	
SHEET:	C-5.1	SCALE:	22-0800

500	01S	14W	0	21	300	62	1762

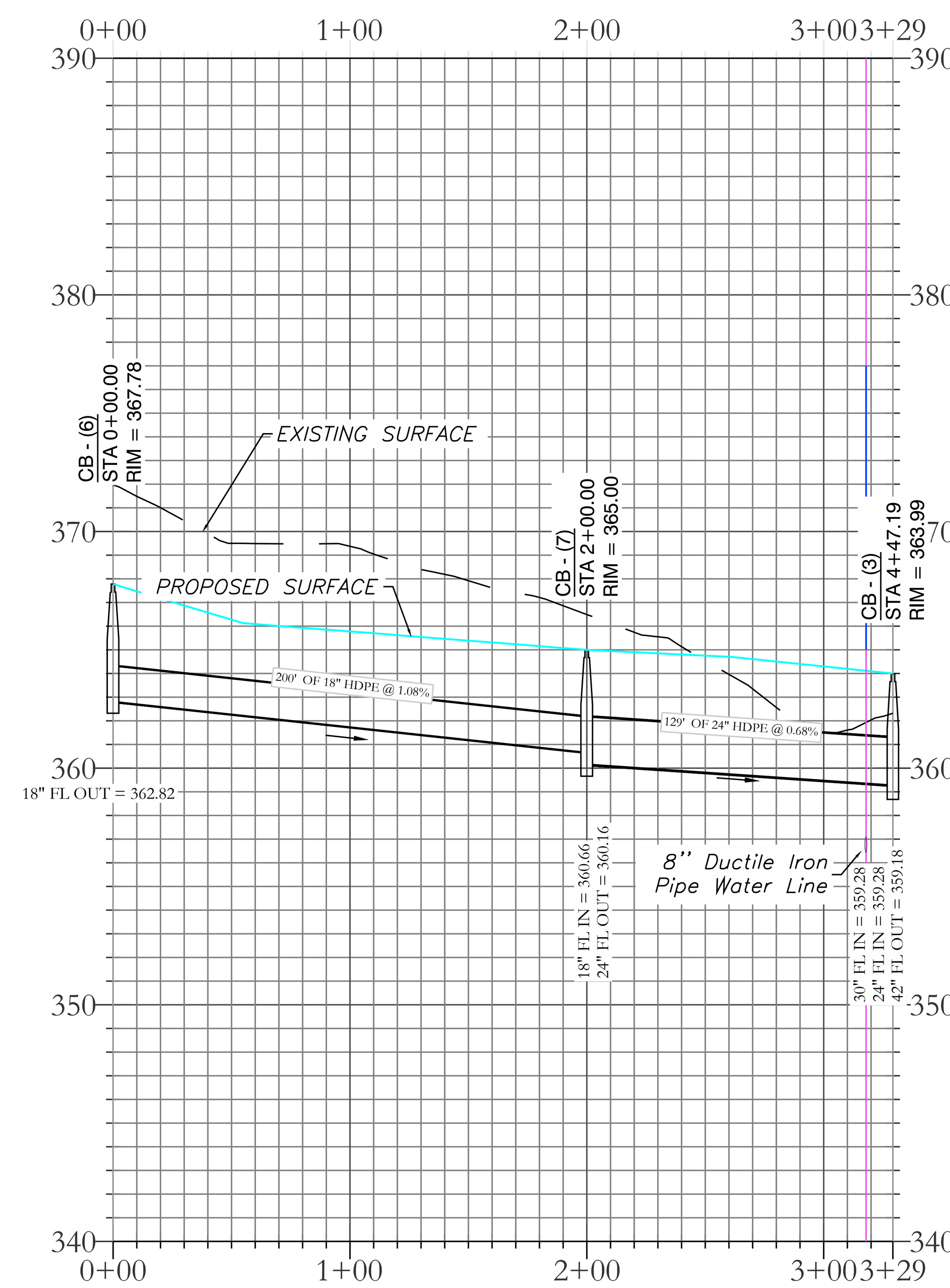


60' 30' 0 60'

LEGEND

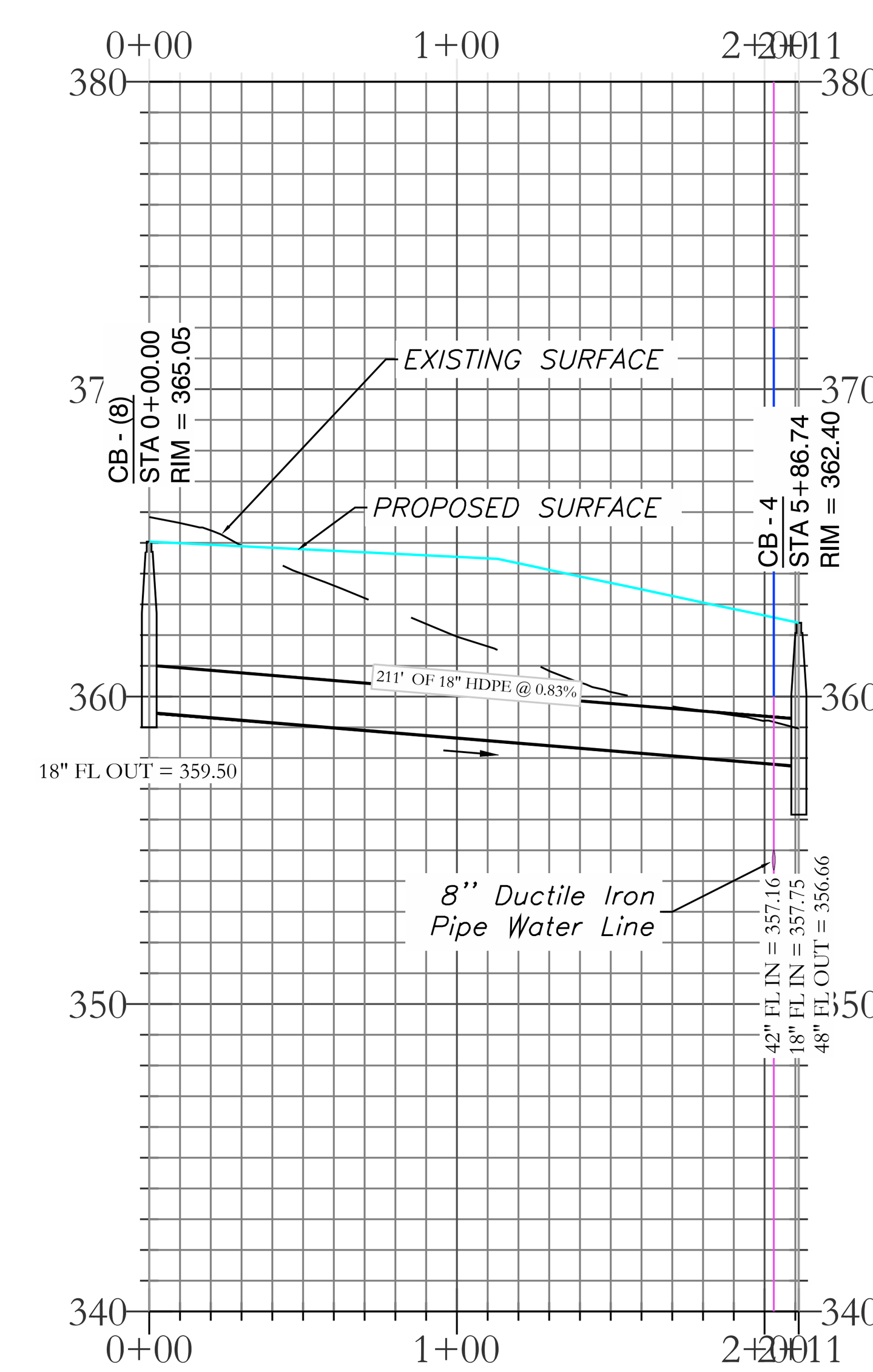
EXISTING CONTOUR LINE — 363
PROPOSED CONTOUR LINE — 363
PROPOSED HDPE STORM PIPE
PROPOSED RCP STORM PIPE

STORM WATER LINE 2 PROFILE

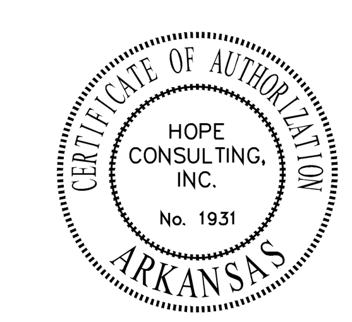


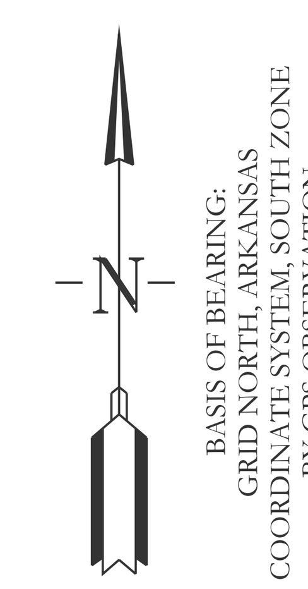
60' 30' 0 60'

STORM WATER LINE 3 PROFILE



60' 30' 0 60'

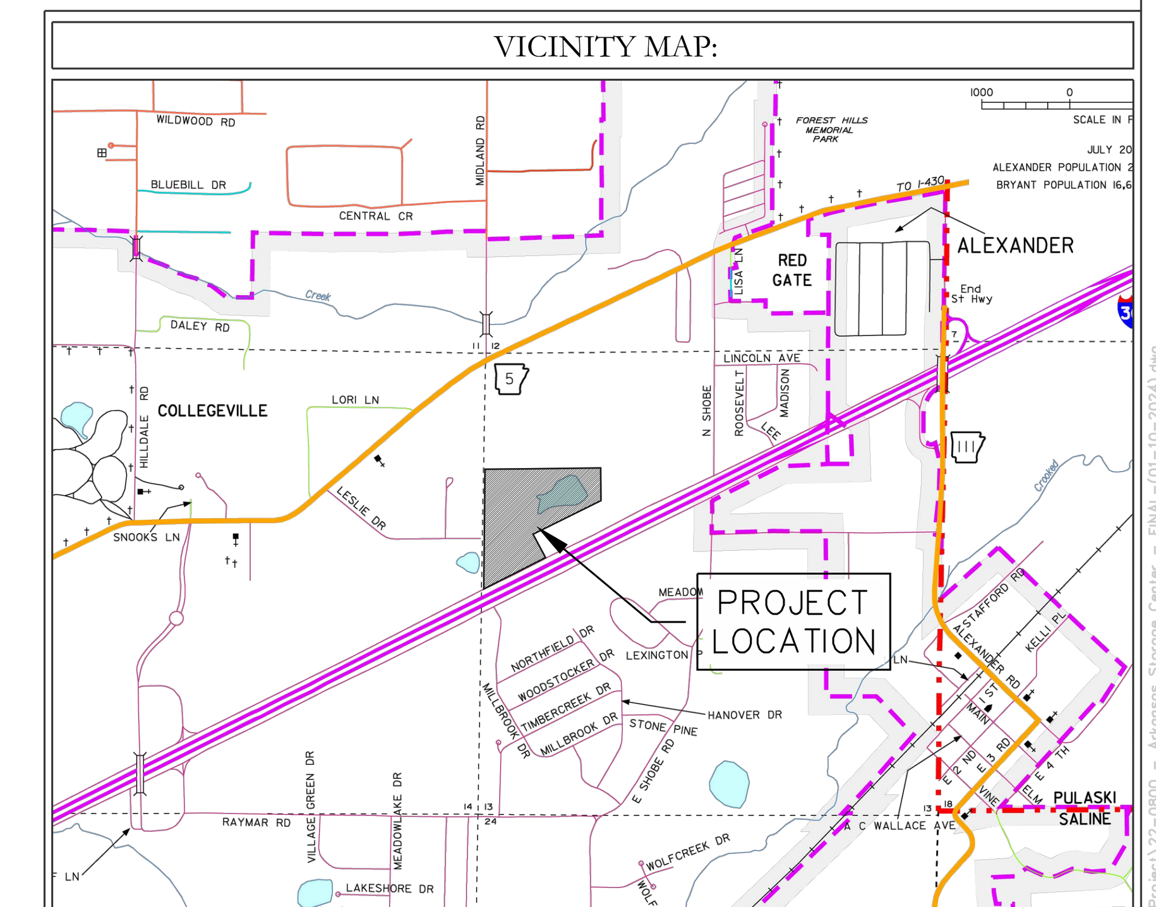




BASIS OF BEARING:
GRID NORTH, ARKANSAS
COORDINATE SYSTEM, SOUTH ZONE
BY GPS OBSERVATION

60' 30' 0 60'

VICINITY MAP:



HOPE CONSULTING
ENGINEERS • SURVEYORS

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

FOR USE AND BENEFIT OF:
STUART FINLEY

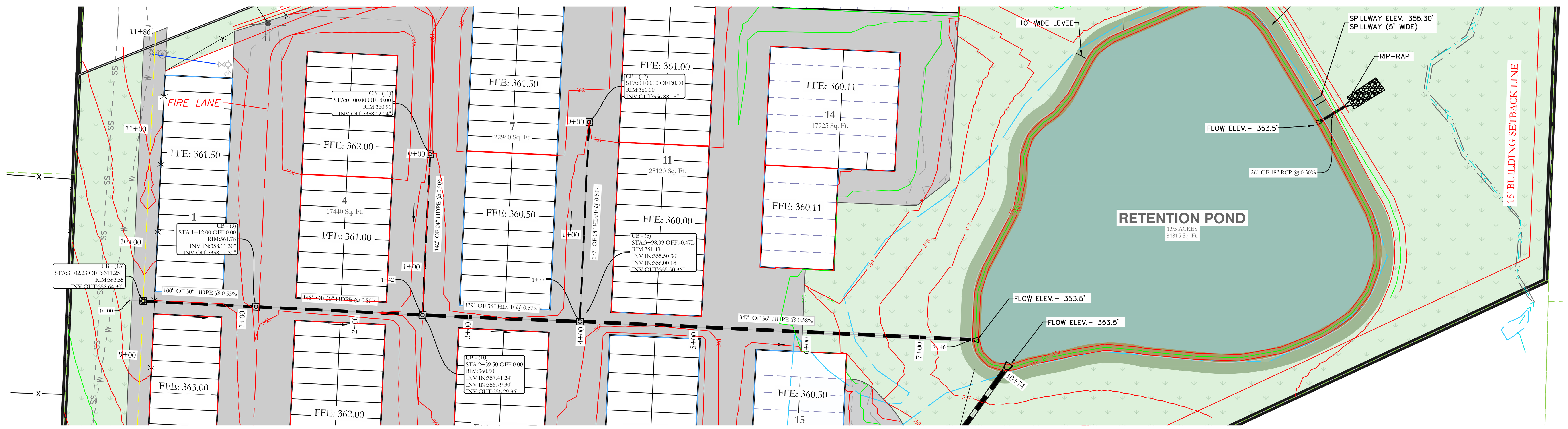
ARKANSAS STORAGE CENTER

DRAINAGE PLAN

BRYANT, SALINE COUNTY, ARKANSAS

DATE: 02-06-2024	C.A.D. BY:	DRAWING NUMBER:
REVISED:	CHECKED BY:	22-0800
SHEET: C-5.2	SCALE:	

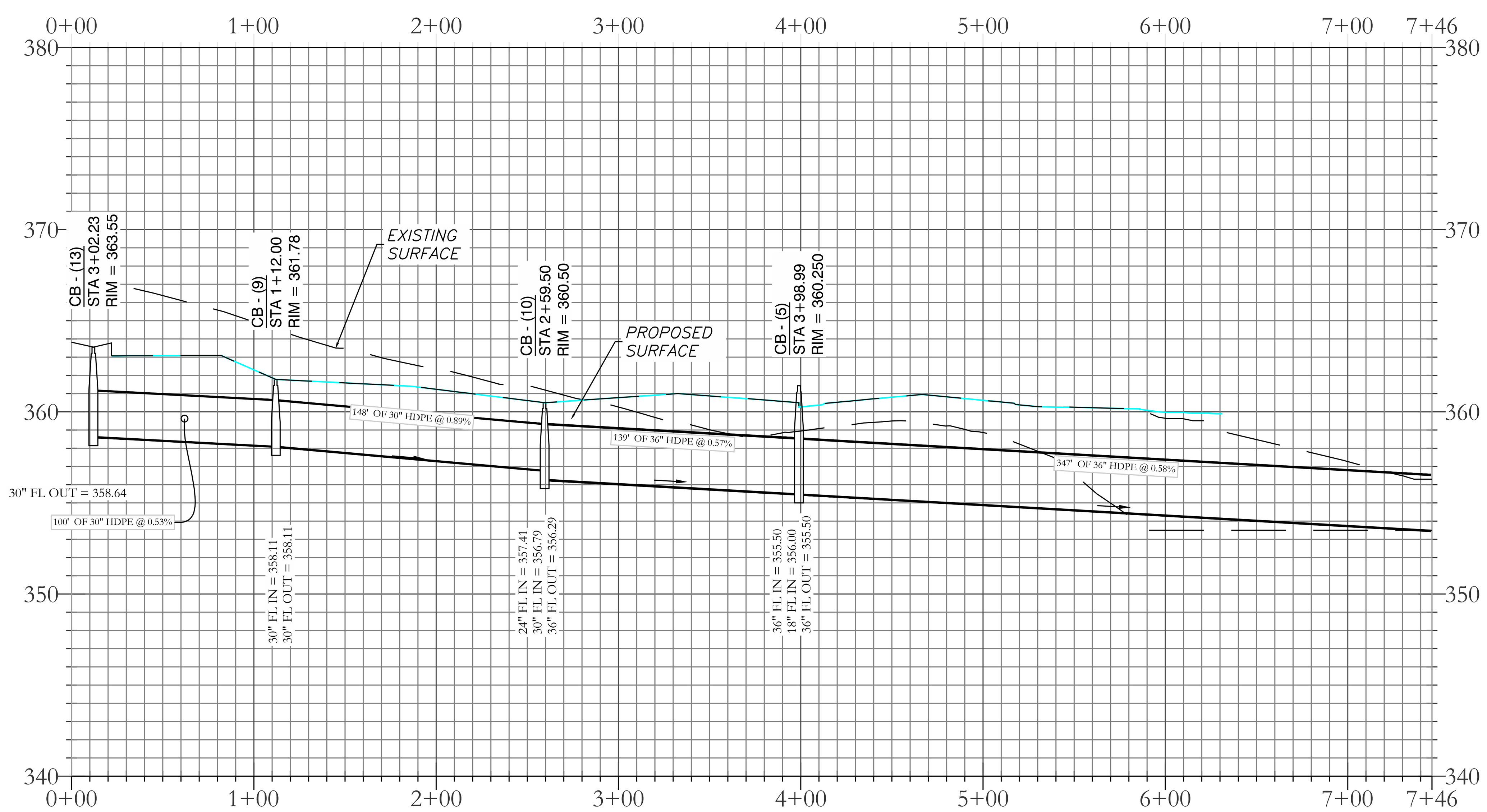
500	01S	14W	0	21	300	62	1762



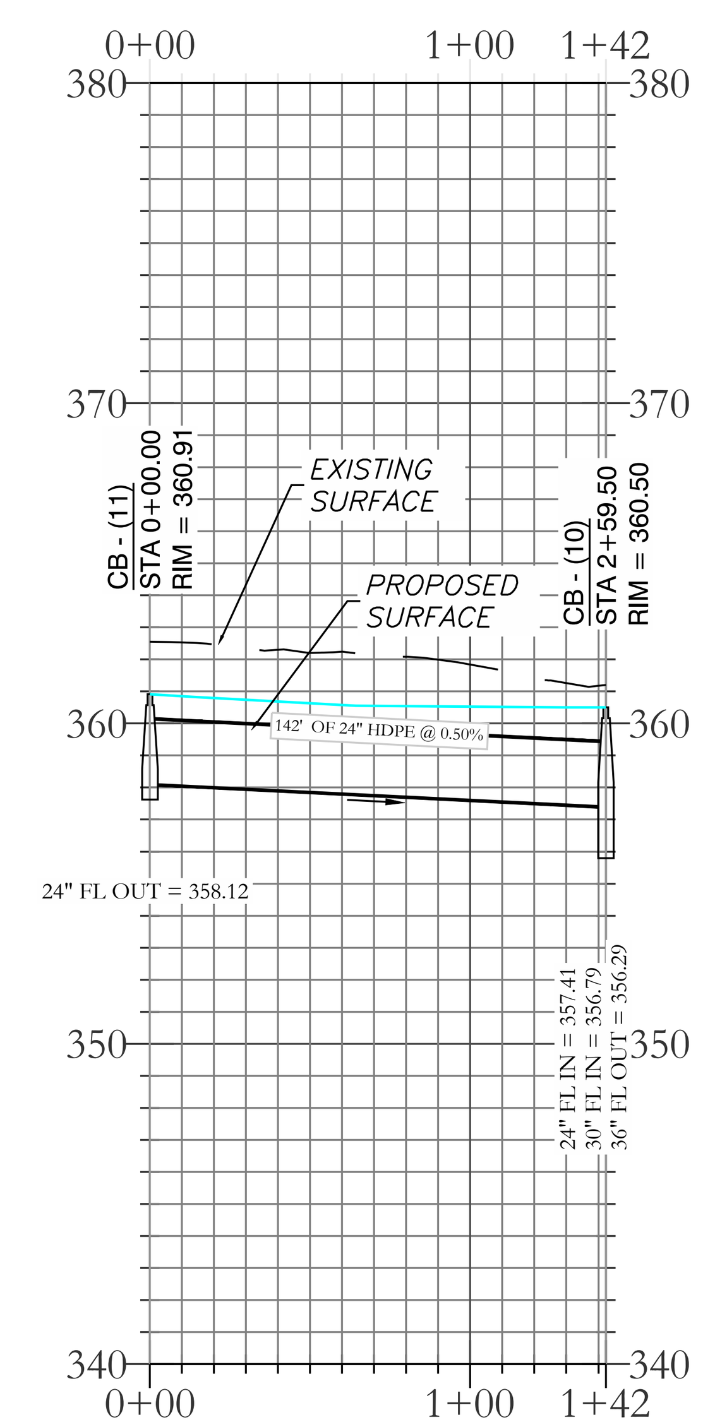
LEGEND

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

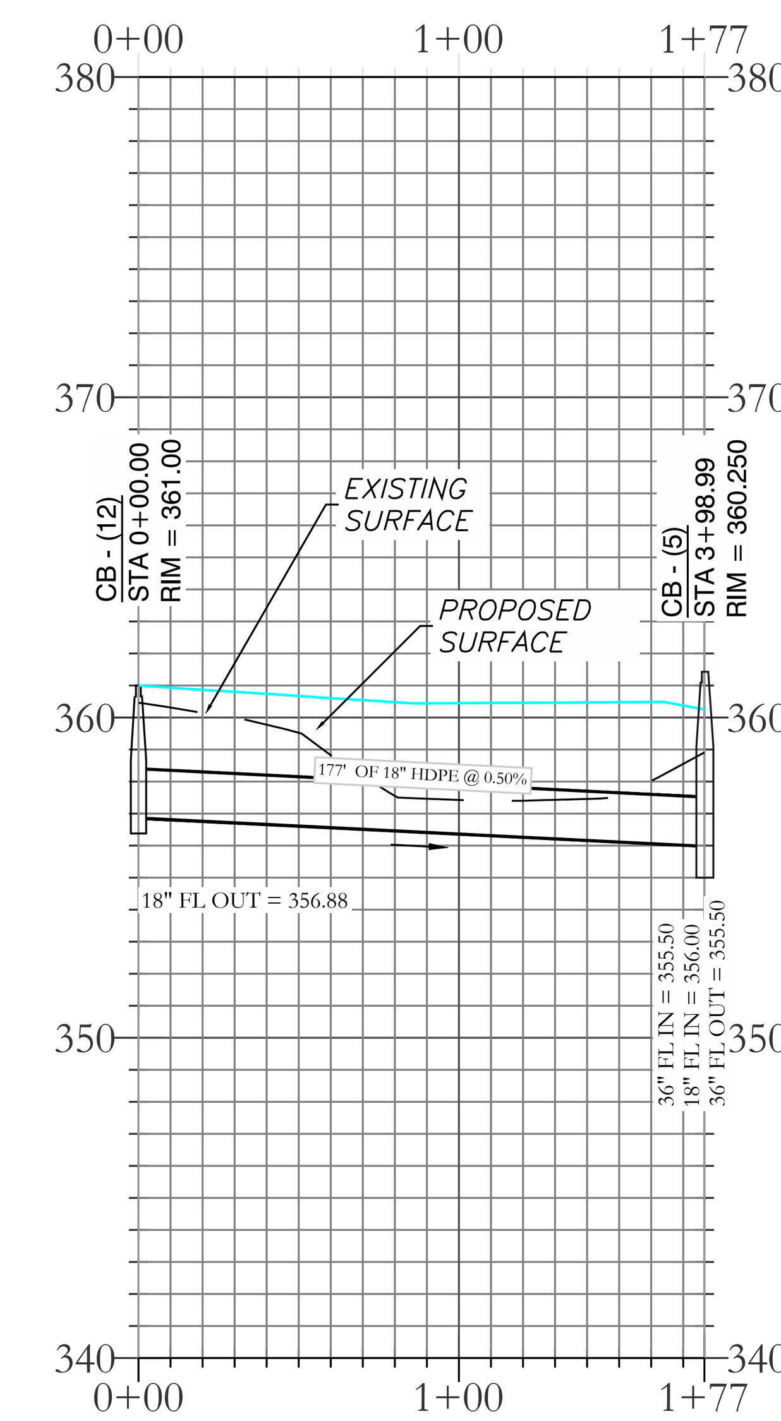
STORM WATER LINE 4 PROFILE



STORM WATER LINE 5 PROFILE



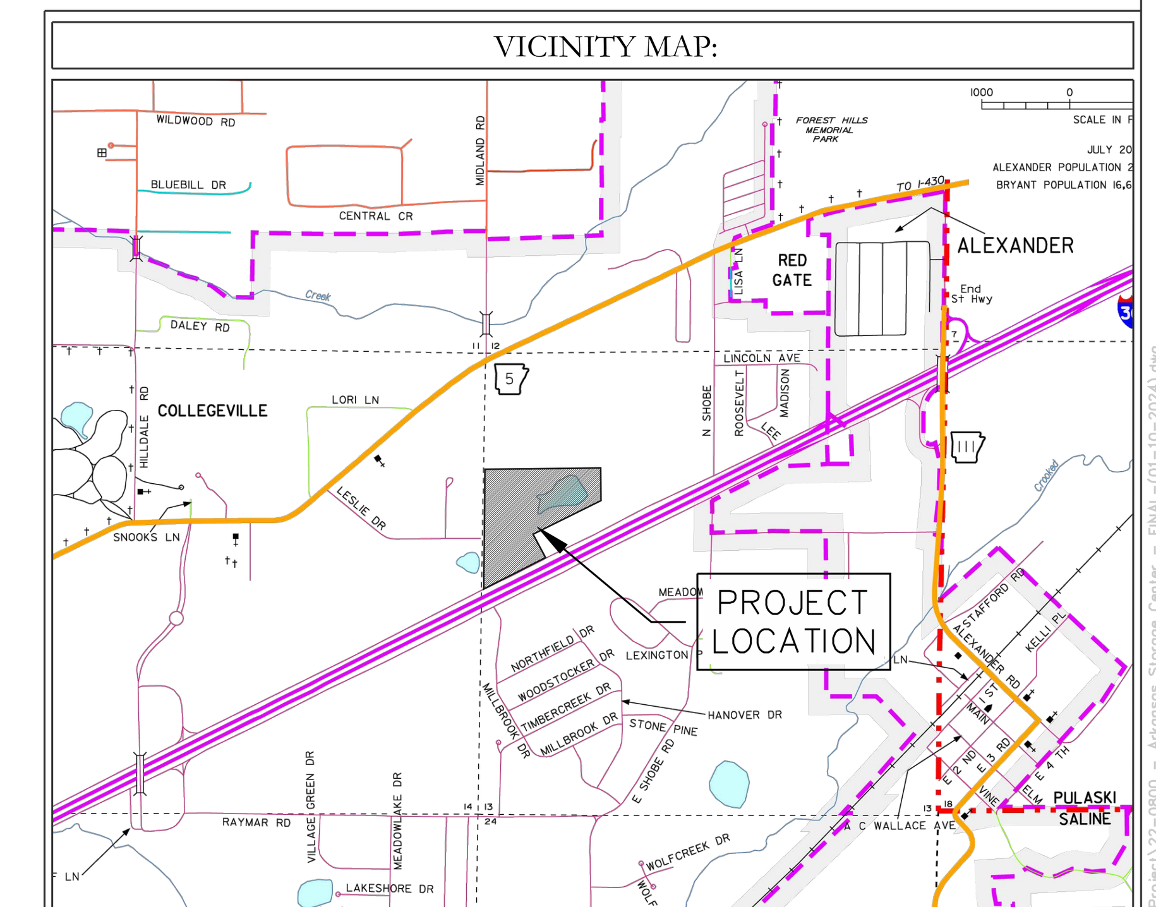
STORM WATER LINE 6 PROFILE



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

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

VICINITY MAP:



HOPE CONSULTING
ENGINEERS • SURVEYORS

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

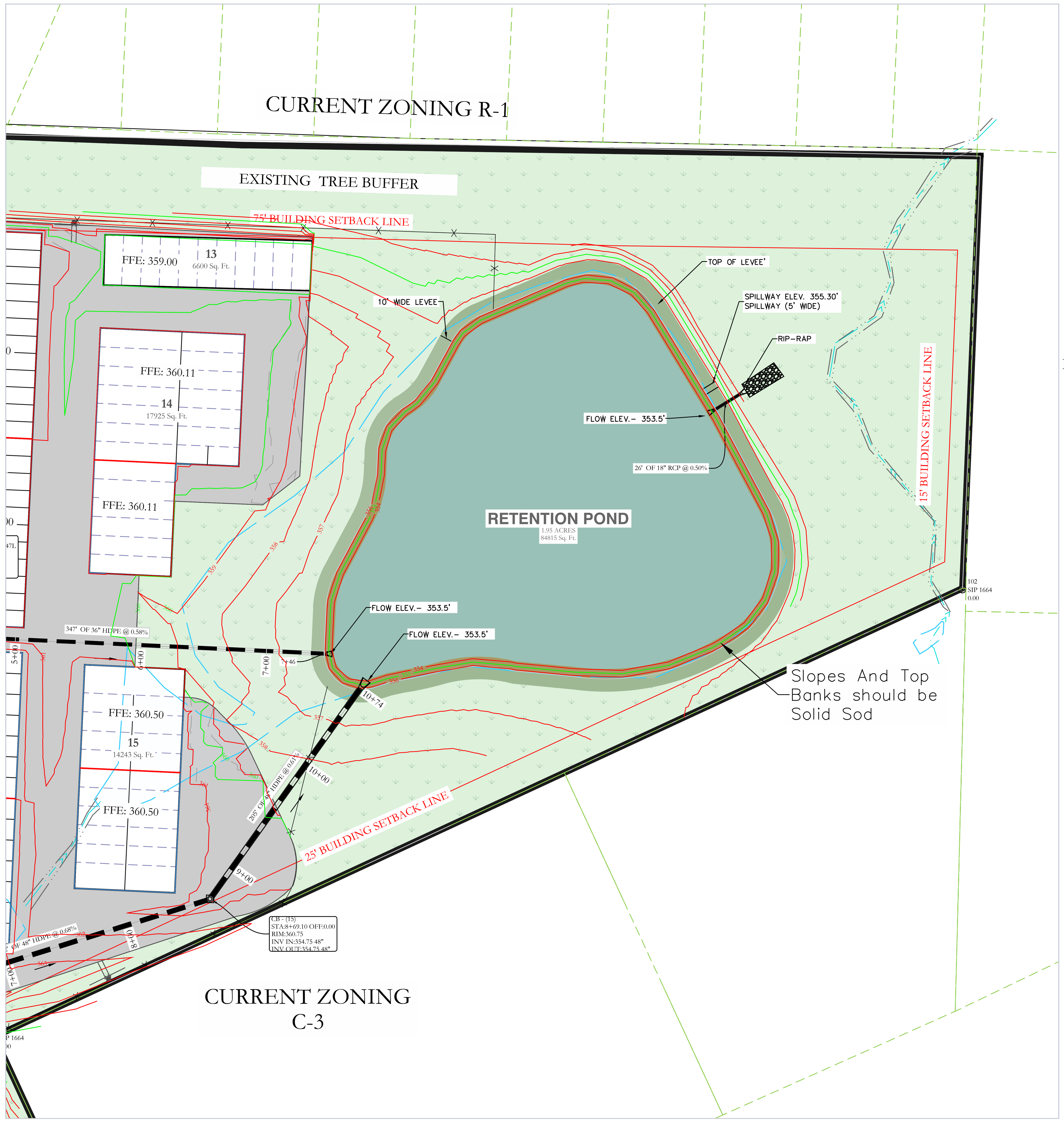
FOR USE AND BENEFIT OF:
STUART FINLEY

ARKANSAS STORAGE CENTER
DRAINAGE PLAN
BRYANT, SALINE COUNTY, ARKANSAS

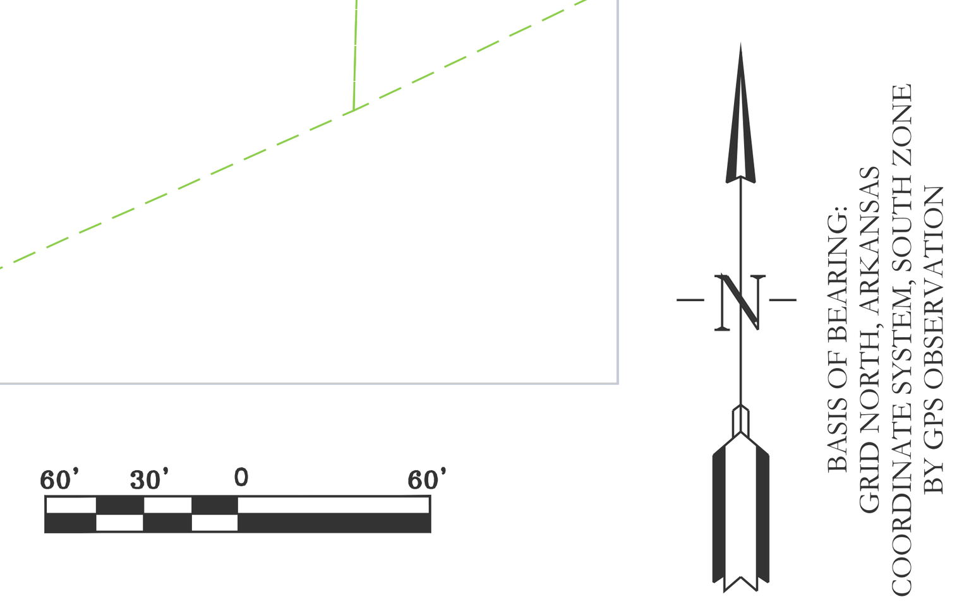
DATE: 02-06-2024	C.A.D. BY:	DRAWING NUMBER:	
REVISED:	CHECKED BY:	22-0800	
SHEET: C-5.3	SCALE:		

500	01S	14W	0	21	300	62	1762

CURRENT ZONING R-1

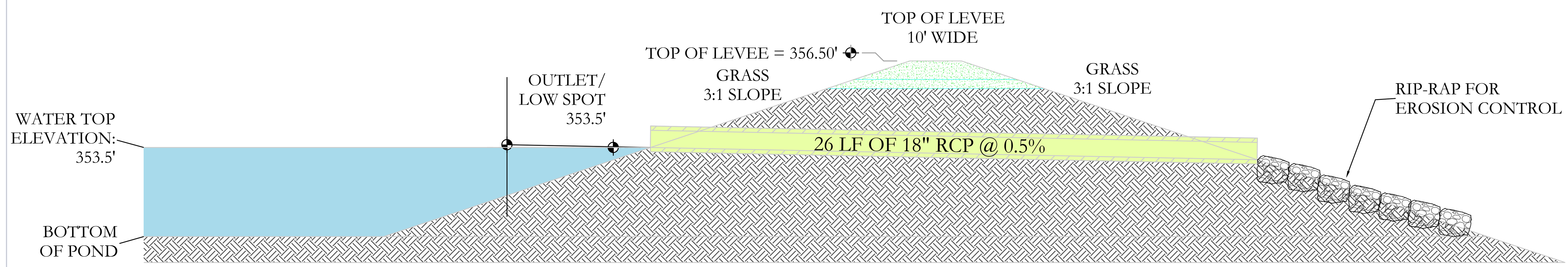


CURRENT ZONING C-3



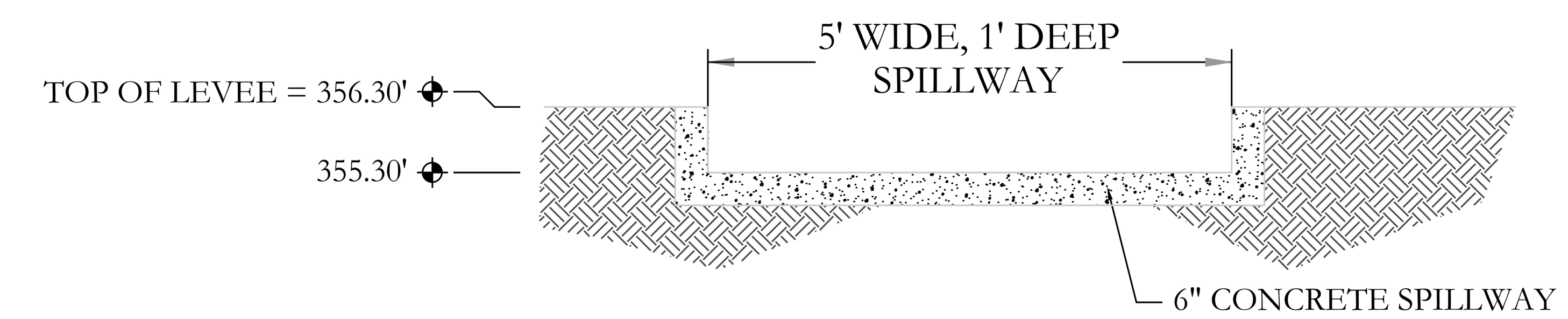
WET POND OUTLET SECTION

NTS



SPILLWAY END VIEW

NTS



LEGEND

EXISTING CONTOUR LINE — 363 —

PROPOSED CONTOUR LINE — 363 —

PROPOSED HDPE STORM PIPE

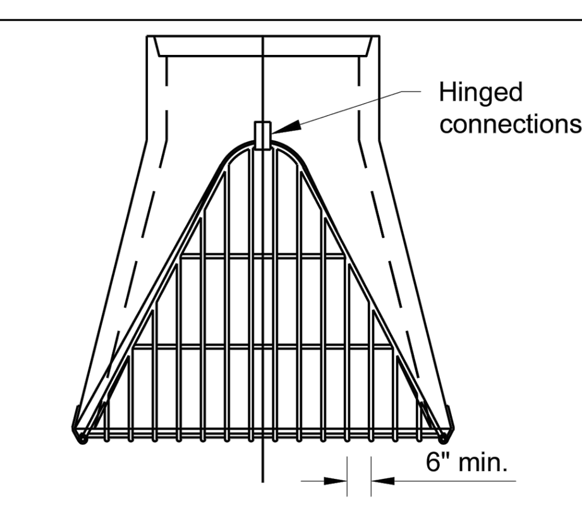
PROPOSED RCP STORM PIPE

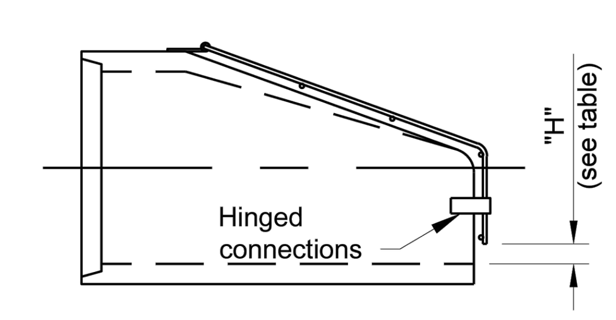
FLARED END SECTION TRASH RACK

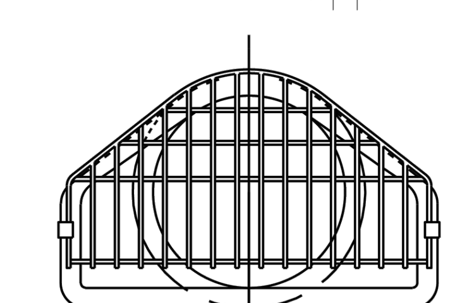
NTS

Notes:

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







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

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

DETENTION POND MAINTENANCE PLAN

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

Routine Maintenance
The property owners will maintain the drainage easements. Routine maintenance will include but not be limited to:

-Mowing of the bank slopes and area around the pond on a monthly basis during the growing season and as needed during the cooler months.

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

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

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

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

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

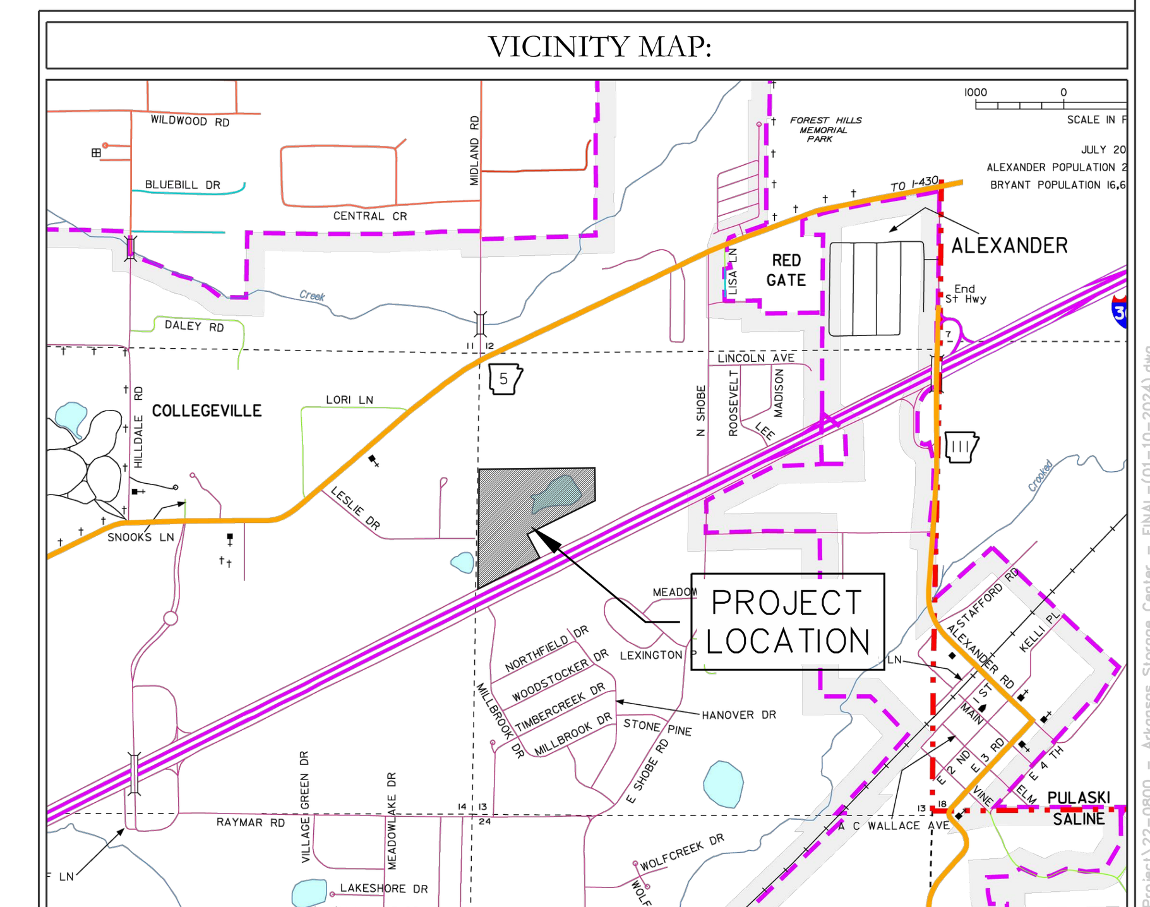
-Sediment from the site may accumulate in the pond bottom and reduce the pond to below design volume requirements. The pond should be excavated if the pond bottom elevation reached a level that allows excessive aquatic growth or reduces the pond efficiency such, that the sediments are passing the discharge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

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

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

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

VICINITY MAP:



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

FOR USE AND BENEFIT OF:
STUART FINLEY

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

DATE: 02-06-2024		C.A.D. BY:			DRAWING NUMBER:		
REVISED:		CHECKED BY:			22-0800		
SHEET: C-5.4		SCALE:					
500	01S	14W	0	21	300	62	1762

• Pre-Development time of Concentration

#22-0800
1/23/24

*(A-B) Overland flow, toc:

- $t_i = \frac{0.93[NL]^{0.467}}{S^{0.2}}$

$t_i = \frac{0.93[0.4(58.4)]^{0.467}}{(0.047)^{0.2}}$

t_i = 16.7 min

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

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

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

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

Vc unpaved = 2.34 ft/s

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

t_{sh} = 2.92 min

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

1/5

• Pre-Development time of Concentration

1/23/24

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

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

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

V_c = 7.21 ft/s

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

t_t = 0.18 min

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

*(D-E) Open channel flow #2, toc:

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

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

V_c = 10.72 ft/s

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

t_t = 0.32 min

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

3/5

• Pre-Development time of Concentration

#22-0800
1/23/24

* Open Channel flow #3, toc:

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

$V_c = \frac{1.49}{0.019}(0.45)^{2/3}(0.020)^{1/2}$

V_c = 6.53 ft/s

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

- n = 0.019
- L = 172 ft
- S = 0.020
- R = 0.45

*Open Channel flow #4, toc

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

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

V_c = 4.84 ft/s

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

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

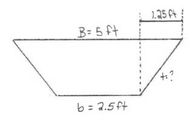
∴ Pre-Dev. TOC = 16.7 min + 2.92 min + 0.18 min + 0.32 min + 0.44 min + 1.24 min

= 21.8 min

3/5

#22-0800
1/23/24

① Open Channel Cross Sectional Area #1:



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

- R = A/P = 1.88 ft² / 5.19 ft = 0.36

y = 1.25 ft / t

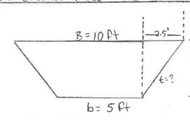
t = 1.25 ft / 0.5 ft

t = 2.5

- Wetted Perimeter (P) = b + 2yw
w = (1 + t²)^0.5
w = (1 + (2.5)²)^0.5
w = 2.69

- P = 2.5' + 2(0.5)(2.69)
P = 5.19 ft

② Open Channel Flow Cross Sectional Area #2:



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

- R = A/P = 7.28 ft² / 10.37 ft = 0.70

y = 2.5 ft

t = 2.5 ft / 0.97

t = 2.58 ft

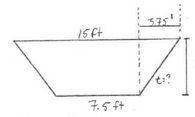
- Wetted Perimeter (P) = b + 2yw
w = (1 + t²)^0.5
w = (1 + (2.58)²)^0.5
w = 2.77

- P = 5 + 2(0.97)(2.77)
P = 10.37 ft

4/5

#22-0800
1/23/24

③ Open Channel Flow Cross Sectional Area #3:



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

- R = A/P = 6.88 ft² / 15.16 = 0.45

y = 3.75 ft / t

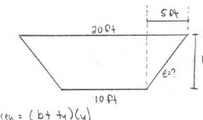
t = 3.75 ft / 0.61 ft

t = 6.2

- Wetted Perimeter (P) = b + 2yw
w = (1 + t²)^0.5
w = (1 + (6.2)²)^0.5
w = 6.28

- P = 7.5 + 2(0.61)(6.28)
P = 15.16 ft

④ Open channel Flow Cross Sectional Area #4



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

- R = A/P = 9.75 ft² / 20.08 ft = 0.49

y = 5 ft / t

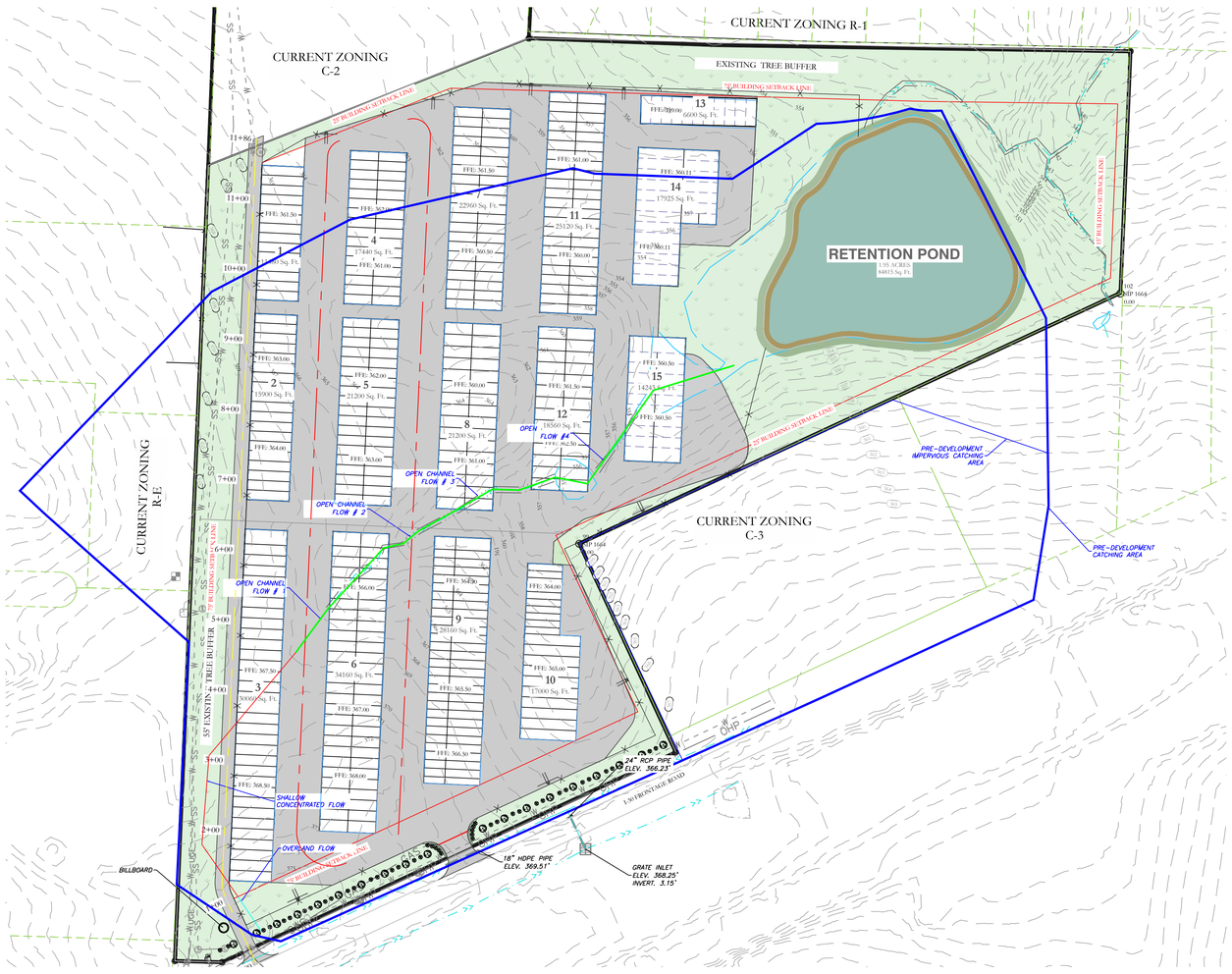
t = 5 ft / 0.65 ft

t = 7.69

- Wetted Perimeter: P = b + 2yw
w = (1 + t²)^0.5
w = (1 + (7.69)²)^0.5
w = 7.75

- P = 10 + 2(0.65)(7.75)
P = 20.08 ft

1/5



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

Pre Development Drainage Calculations

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

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

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

LEGEND

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

LEGEND

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

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

N

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

100' 50' 0 100'

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

FOR USE AND BENEFIT OF:
STUART FINLEY

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

DATE:	02-06-2024	C.A.D. BY:	DRAWING NUMBER:
REVISED:		CHECKED BY:	22-0800
SHEET:	C-5.5	SCALE: 1" = 100'	

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

· Post-Development time of Concentration

#22-0800
1/23/2024

*(A-B) Overland Flow, toc:

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

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

$t_i = 3.96$ min

· N = 0.02 (Smooth & Impervious Surfaces)
· L = 51.5 ft
· S = 0.045

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

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

$V_{fs} = 20.3282\,(0.02)^{0.5}$

$V_{paved} = 2.87$ ft/s

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

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

$t_i = 1.48$ min

· L = 256 ft
· S = 0.02

WG 1/3

· Post-Development time of Concentration

#22-0800
1/23/24

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

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

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

$V_c = 4.55$ ft/s

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

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

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

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

$V_c = \frac{1.49}{0.012}(0.50)^{2/3}(0.010)^{0.5}$

$V_c = 7.92$ ft/s

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

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

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

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

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

$V_c = 8.18$ ft/s

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

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

WG 2/3

· Post-Development time of Concentration

#22-0800
1/23/24

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

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

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

$V_c = 7.74$ ft/s

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

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

*(G-H) HDPE Pipe Channeled Flow

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

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

$V_c = 7.24$ ft/s

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

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

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

= 8.59 min

WG 3/3

Post-Development Time of Concentration Summary

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

Post Development Drainage Calculations

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

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

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

LEGEND

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

LEGEND

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

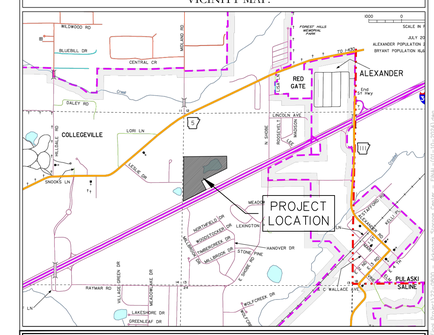
CERTIFICATE OF AUTHORIZATION
HOPE CONSULTING, INC.
No. 1931
ARKANSAS

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

N

100' 50' 0 100'

VICINITY MAP:



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

FOR USE AND BENEFIT OF:
STUART FINLEY

ARKANSAS STORAGE CENTER

POST-DEVELOPMENT FLOW

BRYANT, SALINE COUNTY, ARKANSAS

DATE: 02-06-2024	C.A.D. BY:		DRAWING NUMBER:
REVISED:	CHECKED BY:		22-0800
SHEET: C-5.6	SCALE: 1" = 100'		

500	01S	14W	0	21	300	62	1762

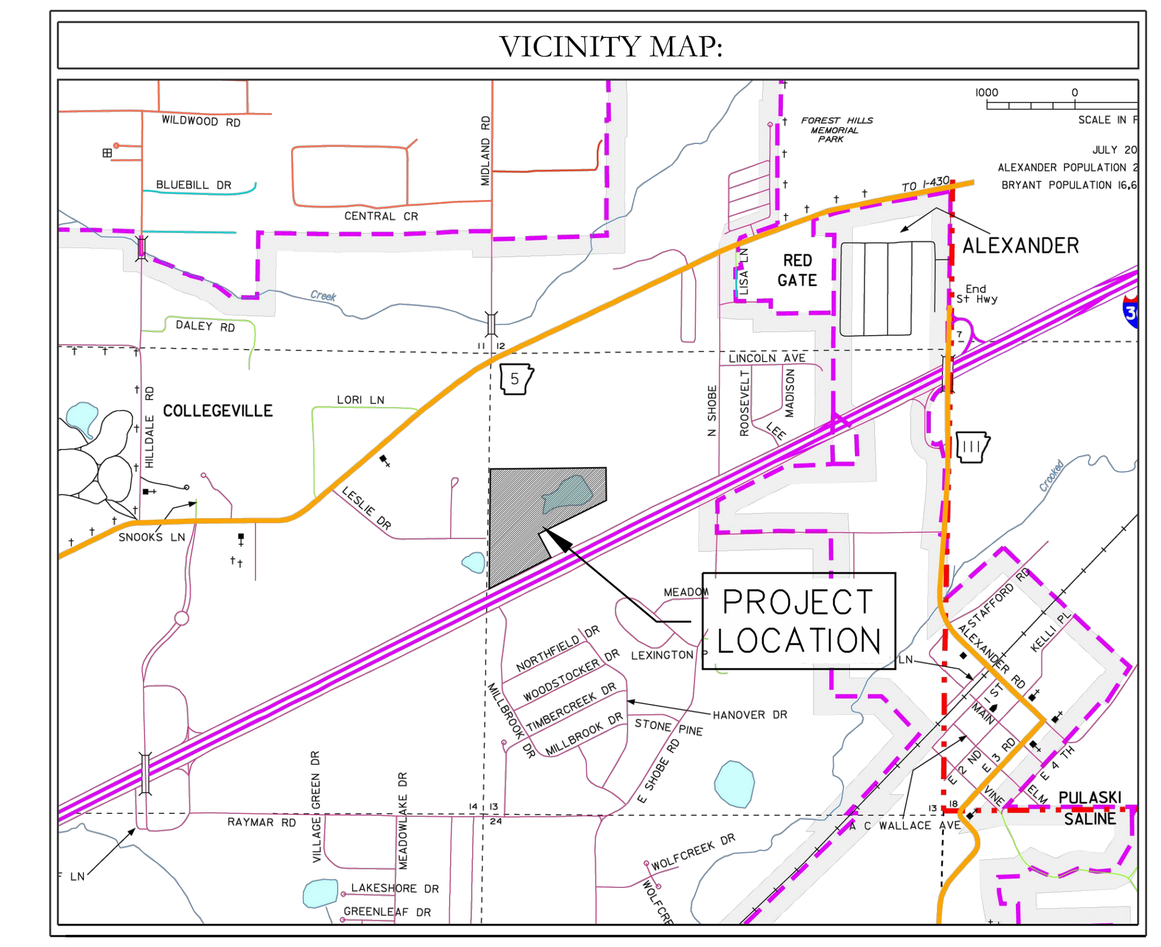
INLET SIZE CALCULATIONS:

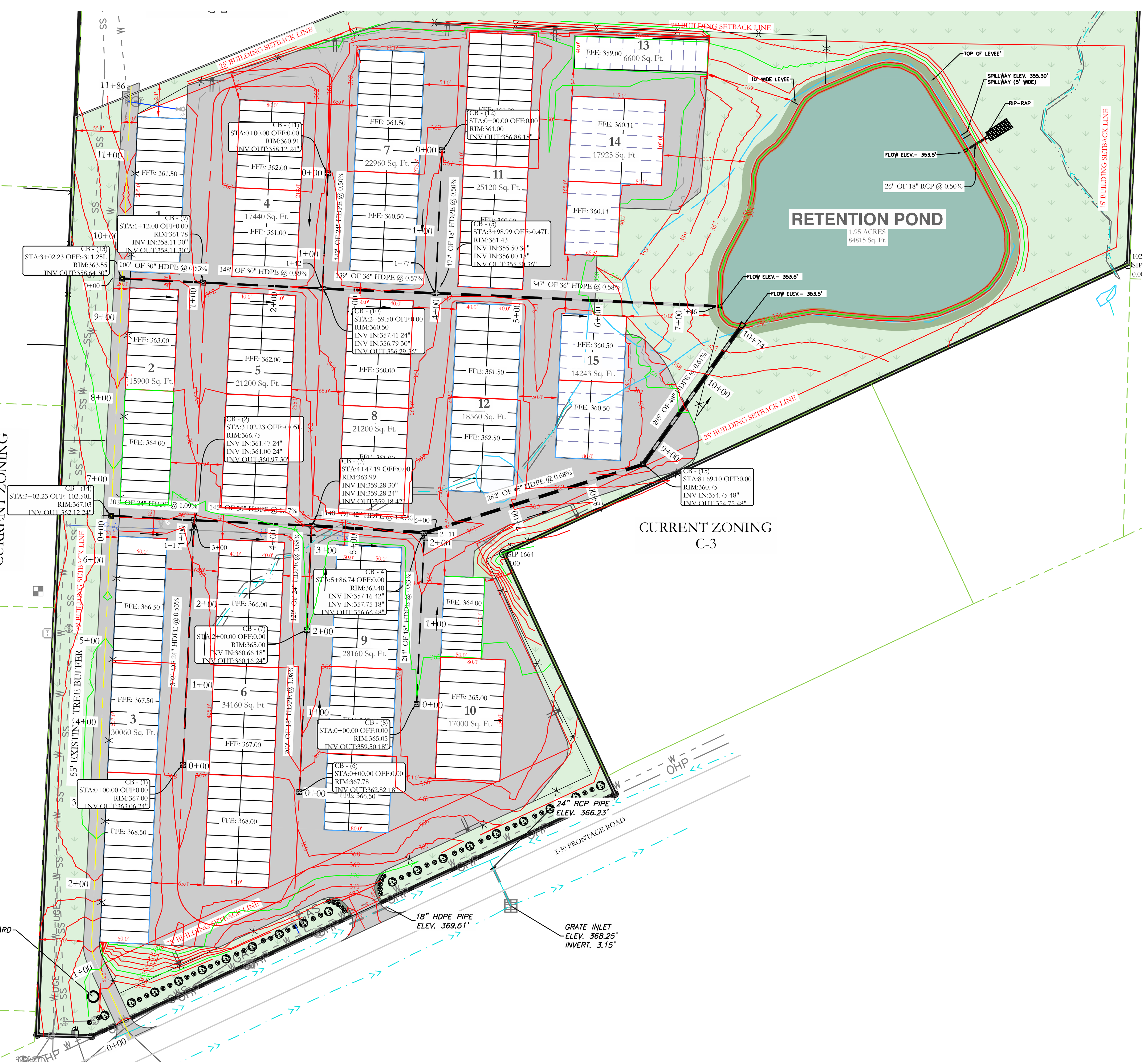
For 25 yr:

SN	Element ID	Inlet Manufacturer	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Max (Rim) Offset (ft)	Initial Water Elevation (ft)	Grate Clogging Factor (%)	Peak Flow (cfs)	Peak Lateral Inflow (cfs)	Max Gutter Water Elev. during Peak Flow (ft)	Max Gutter Water Depth during Peak Flow (ft)	Time of Maximum Depth Occurrence (days hh:mm)	Total Flooded Volume (ac-inches)	Total Time Flooded (minutes)
1	CB - (1)	FHWA HEC-22 GENERIC	1	361.50	366.00	4.50	361.50	25.00	7.97	7.97	366.65	0.65	0 00:00	0.00	0.00
2	CB - (10)	FHWA HEC-22 GENERIC	1	356.29	359.50	3.21	359.29	50.00	9.41	9.41	362.36	2.86	0 00:00	0.00	0.00
3	CB - (11)	FHWA HEC-22 GENERIC	1	358.12	359.91	1.79	358.11	25.00	4.22	4.22	360.36	0.45	0 00:00	0.00	0.00
4	CB - (12)	FHWA HEC-22 GENERIC	1	356.88	360.00	3.12	356.88	25.00	3.74	3.74	360.42	0.42	0 00:00	0.00	0.00
5	CB - (13)	FHWA HEC-22 GENERIC	1	357.63	362.82	5.19	357.63	50.00	12.60	12.60	367.88	5.06	0 00:05	0.00	0.00
6	CB - (14)	FHWA HEC-22 GENERIC	1	361.06	365.96	4.91	361.06	50.00	11.76	11.76	366.73	0.76	0 00:00	0.00	0.00
7	CB - (2)	FHWA HEC-22 GENERIC	1	359.49	365.75	6.26	359.49	50.00	6.47	6.47	366.36	0.62	0 00:00	0.00	0.00
8	CB - (3)	FHWA HEC-22 GENERIC	1	357.90	362.99	5.09	357.90	50.00	3.41	3.41	363.42	0.43	0 00:05	0.00	0.00
9	CB - (4)	FHWA HEC-22 GENERIC	1	355.90	361.40	5.50	355.90	50.00	5.08	5.08	361.94	0.54	0 00:00	0.00	0.00
10	CB - (5)	FHWA HEC-22 GENERIC	1	355.50	359.31	3.81	355.50	50.00	10.09	10.09	362.59	3.28	0 00:00	0.00	0.00
11	CB - (6)	FHWA HEC-22 GENERIC	1	361.50	366.78	5.28	361.50	25.00	5.08	5.08	367.28	0.50	0 00:05	0.00	0.00
12	CB - (7)	FHWA HEC-22 GENERIC	1	359.50	364.00	4.50	359.50	25.00	5.01	5.01	364.50	0.50	0 00:05	0.00	0.00
13	CB - (8)	FHWA HEC-22 GENERIC	1	359.50	364.05	4.55	359.50	25.00	6.53	6.53	364.62	0.58	0 00:00	0.00	0.00
14	CB - (9)	FHWA HEC-22 GENERIC	1	358.11	360.78	2.67	358.11	50.00	15.78	15.78	368.68	7.90	0 00:05	0.00	0.00
15	CB - (15)	FHWA HEC-22 GENERIC	1	354.40	359.84	5.44	359.84	50.00	0.00	0.00	359.97	0.13	0 00:00	0.00	0.00

For 100 yr:

SN	Element ID	Inlet Manufacturer	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Max (Rim) Offset (ft)	Initial Water Elevation (ft)	Grate Clogging Factor (%)	Peak Flow (cfs)	Peak Lateral Inflow (cfs)	Max Gutter Water Elev. during Peak Flow (ft)	Max Gutter Water Depth during Peak Flow (ft)	Time of Maximum Depth Occurrence (days hh:mm)	Total Flooded Volume (ac-inches)	Total Time Flooded (minutes)
1	CB - (1)	FHWA HEC-22 GENERIC	1	361.50	366.00	4.50	361.50	25.00	9.50	9.50	366.72	0.72	0 00:00	0.00	0.00
2	CB - (10)	FHWA HEC-22 GENERIC	1	356.29	359.50	3.21	359.29	50.00	11.22	11.22	363.53	0.51	0 00:00	0.00	0.00
3	CB - (11)	FHWA HEC-22 GENERIC	1	358.12	359.91	1.79	358.11	25.00	5.03	5.03	360.41	0.50	0 00:00	0.00	0.00
4	CB - (12)	FHWA HEC-22 GENERIC	1	356.88	360.00	3.12	356.88	25.00	4.46	4.46	360.47	0.47	0 00:00	0.00	0.00
5	CB - (13)	FHWA HEC-22 GENERIC	1	357.63	362.82	5.19	357.63	50.00	15.02	15.02	369.98	0.54	0 00:05	0.00	0.00
6	CB - (14)	FHWA HEC-22 GENERIC	1	361.06	365.96	4.91	361.06	50.00	14.02	14.02	366.81	0.84	0 00:00	0.00	0.00
7	CB - (2)	FHWA HEC-22 GENERIC	1	359.49	365.75	6.26	359.49	50.00	7.72	7.72	366.43	0.69	0 00:00	0.00	0.00
8	CB - (3)	FHWA HEC-22 GENERIC	1	357.90	362.99	5.09	357.90	50.00	4.07	4.07	363.46	0.48	0 00:06	0.00	0.00
9	CB - (4)	FHWA HEC-22 GENERIC	1	355.90	361.40	5.50	355.90	50.00	6.06	6.06	362.00	0.60	0 00:00	0.00	0.00
10	CB - (5)	FHWA HEC-22 GENERIC	1	355.50	359.31	3.81	355.50	50.00	12.03	12.03	363.94	0.62	0 00:00	0.00	0.00
11	CB - (6)	FHWA HEC-22 GENERIC	1	361.50	366.78	5.28	361.50	25.00	6.06	6.06	367.33	0.55	0 00:05	0.00	0.00
12	CB - (7)	FHWA HEC-22 GENERIC	1	359.50	364.00	4.50	359.50	25.00	5.97	5.97	364.55	0.55	0 00:05	0.00	0.00
13	CB - (8)	FHWA HEC-22 GENERIC	1	359.50	364.05	4.55	359.50	25.00	7.78	7.78	364.68	0.64	0 00:00	0.00	0.00
14	CB - (9)	FHWA HEC-22 GENERIC	1	358.11	360.78	2.67	358.11	50.00	18.82	18.82	371.97	0.75	0 00:05	0.00	0.00
15	64	FHWA HEC-22 GENERIC	1	354.40	359.84	5.44	359.84	50.00	0.00	0.00	359.97	0.13	0 00:00	0.00	0.00





PIPE SIZE CALCULATIONS:

For 25 yr:

SN	Element ID	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (inches)	Pipe Width (inches)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Max Flow Velocity (ft/sec)	Travel Time (min)	Design Flow Capacity (cfs)	Max Flow / Design Flow Ratio	Max Flow Depth / Total Depth Ratio	Total Time Surcharged (min)	Max Flow Depth (ft)	Reported Condition
9	Pipe - (10)	CB - (5)	Out-1Pipe - (10)	346.75	355.50	353.50	0.5800	CIRCULAR	42.000	42.00	0.0120	0.5000	0.5000	71.63	0 00:06	10.05	0.58	82.78	0.87	0.72	0.00	2.50	Calculated
10	Pipe - (11)	CB - (6)	CB - (7)	200.00	361.50	359.50	1.0000	CIRCULAR	18.000	18.00	0.0120	0.5000	0.5000	9.91	0 00:05	10.64	0.31	11.38	0.87	0.72	0.00	1.08	Calculated
11	Pipe - (12)	CB - (7)	CB - (3)	129.24	359.50	358.50	0.7700	CIRCULAR	24.000	24.00	0.0120	0.5000	0.5000	23.32	0 00:05	8.07	0.27	21.56	1.08	0.91	0.00	1.83	> CAPACITY
12	Pipe - (13)	CB - (8)	CB - (4)	211.13	359.50	356.40	1.4700	CIRCULAR	18.000	18.00	0.0120	0.5000	0.5000	12.75	0 00:05	12.22	0.29	13.79	0.92	0.76	0.00	1.13	Calculated
13	Pipe - (14)	CB - (9)	CB - (10)	147.50	358.11	356.79	0.8900	CIRCULAR	30.000	30.00	0.0120	0.5000	0.5000	34.55	0 00:05	9.66	0.25	42.04	0.82	0.69	0.00	1.72	Calculated
14	Pipe - (15)	CB - (10)	CB - (5)	139.49	356.29	355.50	0.5700	CIRCULAR	36.000	36.00	0.0120	0.5000	0.5000	53.88	0 00:05	8.99	0.26	54.38	0.99	0.81	0.00	2.43	Calculated
15	Pipe - (16)	CB - (11)	CB - (10)	142.34	358.12	357.41	0.5000	CIRCULAR	24.000	24.00	0.0120	0.5000	0.5000	8.20	0 00:05	7.66	0.31	17.31	0.47	0.48	0.00	0.97	Calculated
16	Pipe - (17)	CB - (12)	CB - (5)	176.53	356.88	356.00	0.5000	CIRCULAR	18.000	18.00	0.0120	0.5000	0.5000	7.25	0 00:05	7.96	0.37	8.03	0.90	0.74	0.00	1.11	Calculated
17	Pipe - (18)	CB - (14)	CB - (2)	102.45	362.12	361.00	1.0900	CIRCULAR	24.000	24.00	0.0120	0.5000	0.5000	23.26	0 00:05	9.43	0.18	25.62	0.91	0.75	0.00	1.49	Calculated
18	Pipe - (19)	CB - (13)	CB - (9)	100.00	358.64	358.11	0.5300	CIRCULAR	30.000	30.00	0.0120	0.5000	0.5000	19.55	0 00:05	6.94	0.24	32.35	0.60	0.56	0.00	1.40	Calculated
19	Pipe - (6)	CB - (1)	CB - (2)	302.23	363.06	361.47	0.5300	CIRCULAR	24.000	24.00	0.0120	0.5000	0.5000	15.24	0 00:05	10.65	0.47	17.78	0.86	0.71	0.00	1.41	Calculated
20	Pipe - (7)	CB - (2)	CB - (3)	145.01	360.97	359.02	1.3400	CIRCULAR	30.000	30.00	0.0120	0.5000	0.5000	47.76	0 00:05	12.01	0.20	51.53	0.93	0.76	0.00	1.90	Calculated
21	Pipe - (8)	CB - (3)	CB - (4)	139.55	358.28	357.16	0.8000	CIRCULAR	42.000	42.00	0.0120	0.5000	0.5000	81.36	0 00:05	11.44	0.20	97.64	0.83	0.70	0.00	2.44	Calculated
22	Pipe - (9)	CB - (4)	64	295.92	356.66	354.75	0.6500	CIRCULAR	48.000	48.00	0.0120	0.5000	0.5000	101.58	0 00:06	11.29	0.44	125.02	0.81	0.68	0.00	2.73	Calculated

For 100 yr:

SN	Element ID	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (inches)	Pipe Width (inches)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Max Flow Velocity (ft/sec)	Travel Time (min)	Design Flow Capacity (cfs)	Max Flow / Design Flow Ratio	Max Flow Depth / Total Depth Ratio	Total Time Surcharged (min)	Max Flow Depth (ft)	Reported Condition
9	Pipe - (10)	CB - (5)	Out-1Pipe - (10)	346.75	355.50	353.50	0.5800	CIRCULAR	42.000	42.00	0.0120	0.5000	0.5000	80.04	0 00:05	10.31	0.56	82.78	0.97	0.78	0.00	2.73	Calculated
10	Pipe - (11)	CB - (6)	CB - (7)	200.00	361.50	359.50	1.0000	CIRCULAR	18.000	18.00	0.0120	0.5000	0.5000	12.26	0 00:05	10.86	0.31	11.38	1.08	0.91	0.00	1.36	> CAPACITY
11	Pipe - (12)	CB - (7)	CB - (3)	129.24	359.50	358.50	0.7700	CIRCULAR	24.000	24.00	0.0120	0.5000	0.5000	23.32	0 00:06	8.26	0.26	21.56	1.08	1.00	1.00	2.00	SURCHARGED
12	Pipe - (13)	CB - (8)	CB - (4)	211.13	359.50	356.40	1.4700	CIRCULAR	18.000	18.00	0.0120	0.5000	0.5000	14.92	0 00:05	12.73	0.28	13.79	1.08	0.93	0.00	1.40	> CAPACITY
13	Pipe - (14)	CB - (9)	CB - (10)	147.50	358.11	356.79	0.8900	CIRCULAR	30.000	30.00	0.0120	0.5000	0.5000	41.22	0 00:05	9.92	0.25	42.04	0.98	0.80	0.00	2.00	Calculated
14	Pipe - (15)	CB - (10)	CB - (5)	139.49	356.29	355.50	0.5700	CIRCULAR	36.000	36.00	0.0120	0.5000	0.5000	58.84	0 00:05	9.28	0.25	54.38	1.08	1.00	1.00	3.00	SURCHARGED
15	Pipe - (16)	CB - (11)	CB - (10)	142.34	358.12	357.41	0.5000	CIRCULAR	24.000	24.00	0.0120	0.5000	0.5000	9.79	0 00:05	7.88	0.30	17.31	0.57	0.54	0.00	1.07	Calculated
16	Pipe - (17)	CB - (12)	CB - (5)	176.53	356.88	356.00	0.5000	CIRCULAR	18.000	18.00	0.0120	0.5000	0.5000	8.69	0 00:05	8.31	0.35	8.03	1.08	0.92	0.00	1.38	> CAPACITY
17	Pipe - (18)	CB - (14)	CB - (2)	102.45	362.12	361.00	1.0900	CIRCULAR	24.000	24.00	0.0120	0.5000	0.5000	27.69	0 00:05	9.85	0.17	25.62	1.08	0.93	0.00	1.86	> CAPACITY
18	Pipe - (19)	CB - (13)	CB - (9)	100.00	358.64	358.11	0.5300	CIRCULAR	30.000	30.00	0.0120	0.5000	0.5000	23.41	0 00:05	7.23	0.23	32.35	0.72	0.63	0.00	1.57	Calculated
19	Pipe - (6)	CB - (1)	CB - (2)	302.23	363.06	361.47	0.5300	CIRCULAR	24.000	24.00	0.0120	0.5000	0.5000	18.67	0 00:05	10.94	0.46	17.78	1.05	0.89	0.00	1.77	> CAPACITY
20	Pipe - (7)	CB - (2)	CB - (3)	145.01	360.97	359.02	1.3400	CIRCULAR	30.000	30.00	0.0120	0.5000	0.5000	55.69	0 00:06	12.35	0.20	51.53	1.08	0.94	0.00	2.35	> CAPACITY
21	Pipe - (8)	CB - (3)	CB - (4)	139.55	358.28	357.16	0.8000	CIRCULAR	42.000	42.00	0.0120	0.5000	0.5000	87.80	0 00:05	11.77	0.20	97.64	0.90	0.74	0.00	2.59	Calculated
22	Pipe - (9)	CB - (4)	64	295.92	356.66	354.75	0.6500	CIRCULAR	48.000	48.00	0.0120	0.5000	0.5000	113.44	0 00:06	11.50	0.43	125.02	0.91	0.74	0.00	2.96	Calculated

LEGEND

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

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

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

N

100' 50' 0 100'

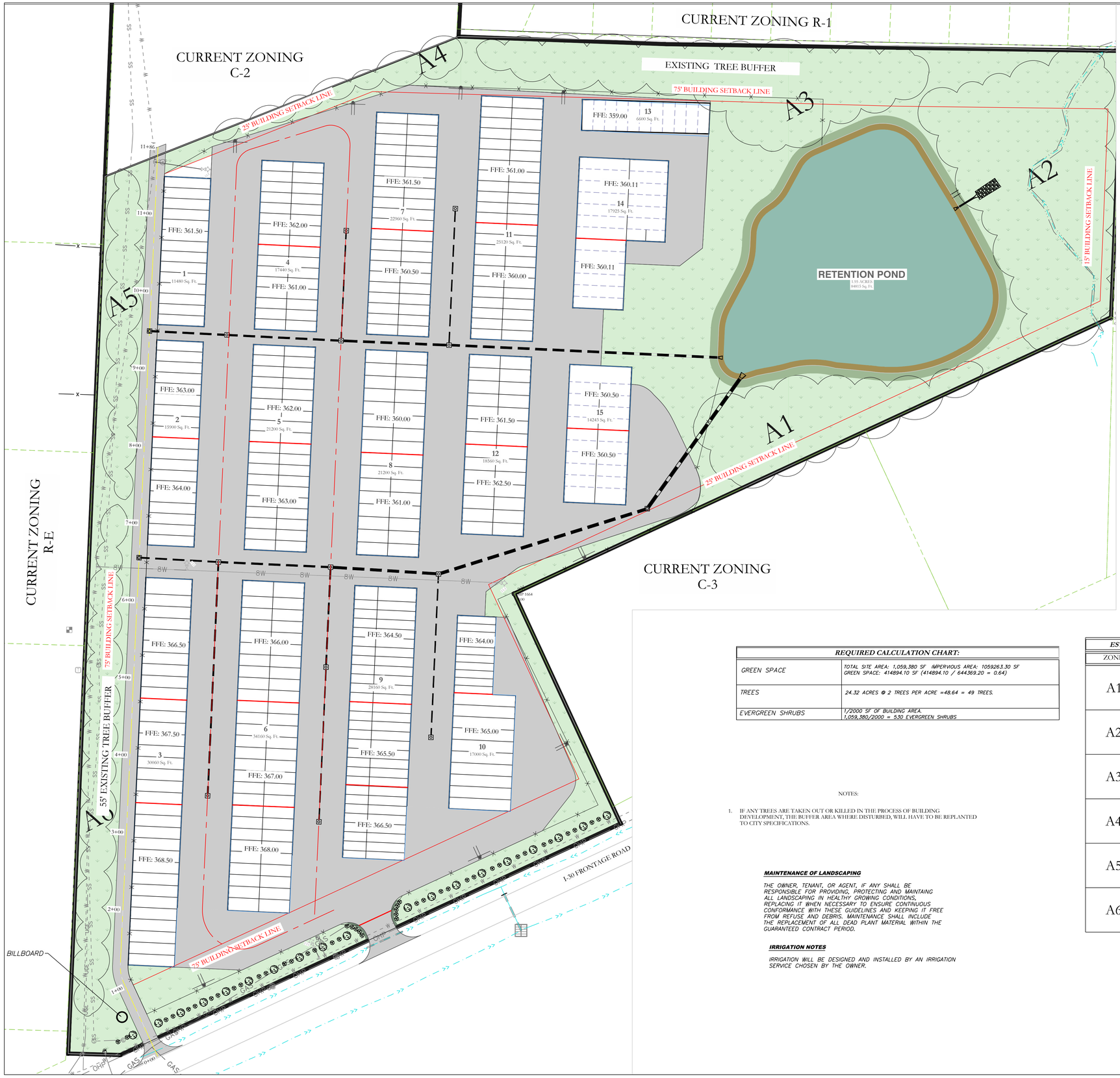
HOPE CONSULTING
ENGINEERS - SURVEYORS
129 N. Main Street,
Benton, Arkansas 72015
PH. (501)315-2626
FAX (501) 315-0024
www.hopeconsulting.com

FOR USE AND BENEFIT OF:
STUART FINLEY

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

DATE: 02-06-2024	C.A.D. BY:	DRAWING NUMBER:
REVISED:	CHECKED BY:	
SHEET: C-5.7	SCALE: 1" = 100'	22-0800

500	01S	14W	0	21	300	62	1762



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

NOTES:

1. IF ANY TREES ARE TAKEN OUT OR KILLED IN THE PROCESS OF BUILDING DEVELOPMENT, THE BUFFER AREA WHERE DISTURBED, WILL HAVE TO BE REPLANTED TO CITY SPECIFICATIONS.

MAINTENANCE OF LANDSCAPING

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

IRRIGATION NOTES

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

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

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

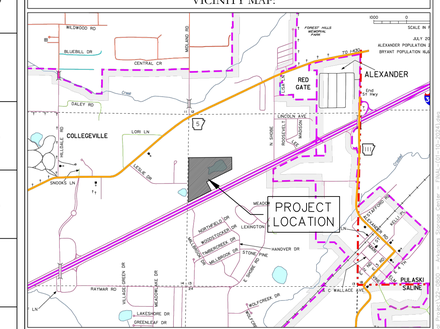
N

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

60' 30' 0 60'

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

VICINITY MAP:



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

FOR USE AND BENEFIT OF:
STUART FINLEY

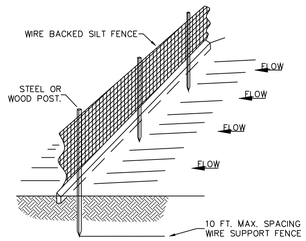
ARKANSAS STORAGE CENTER

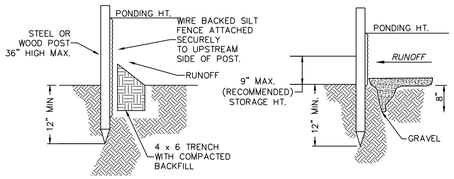
LANDSCAPE PLAN

BRYANT, SALINE COUNTY, ARKANSAS

DATE: 02-06-2024	C.A.D. BY:	DRAWING NUMBER:	
REVISED:	CHECKED BY:	22-0800	
SHEET: C-6.0	SCALE: 1" = 60'		

500	01S	14W	0	21	300	62	1762





STANDARD DETAIL
TRENCH WITH NATIVE BACKFILL

ALTERNATE DETAIL
TRENCH WITH GRAVEL

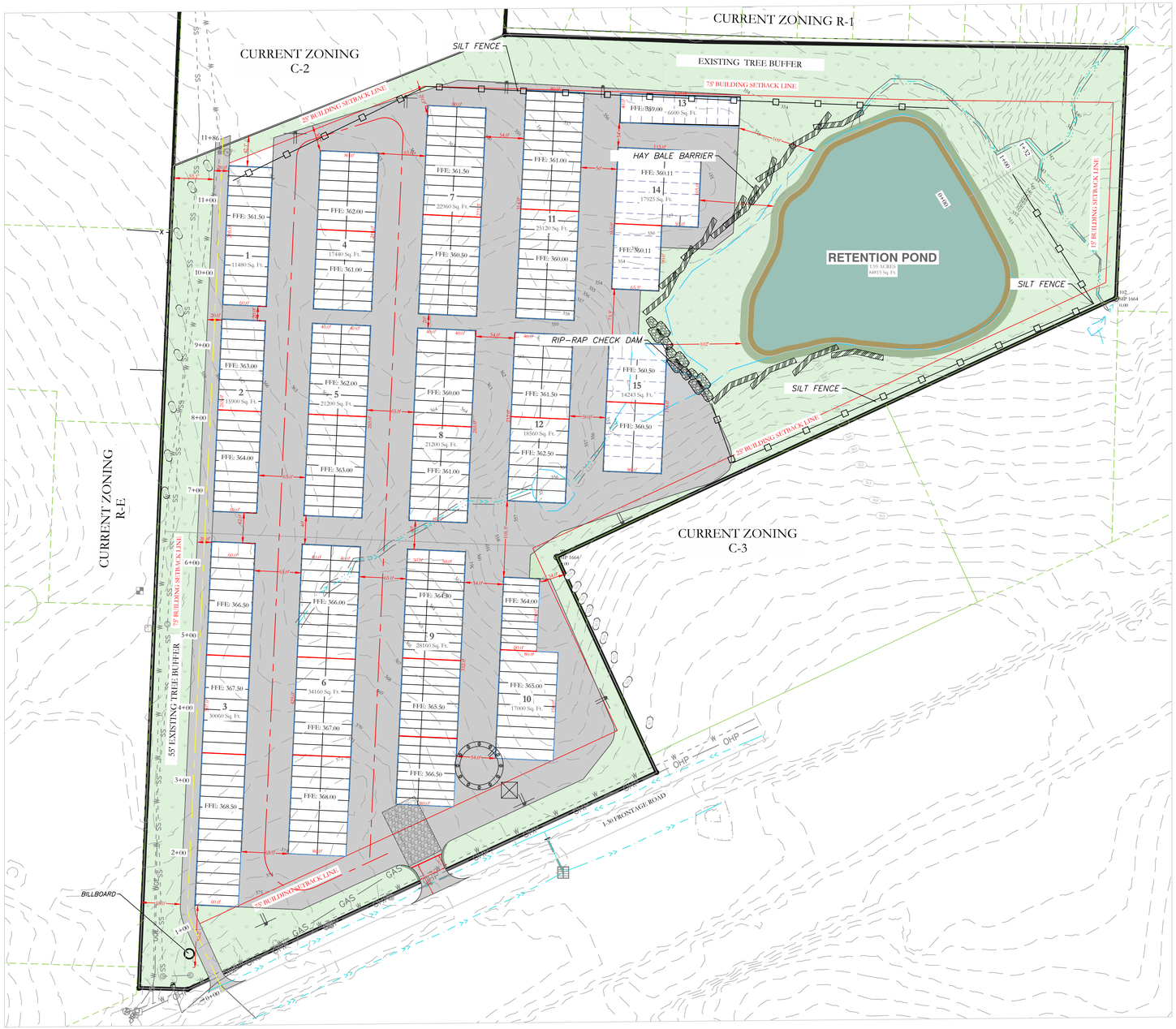
NOTE:
1.) INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.

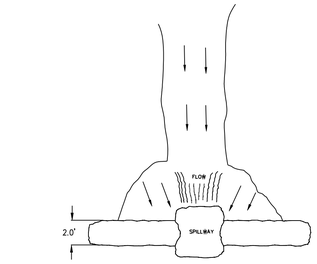
2.) REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

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

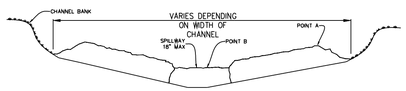
4.) USE ONLY WIRE BACKED SILT FENCE.

SILT FENCE





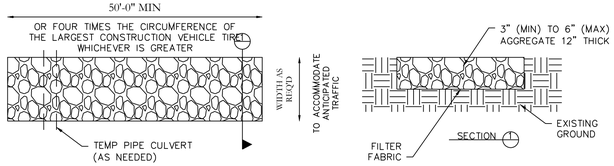
PLAN



VIEW LOOKING UPSTREAM

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

RIP-RAP CHECK DAM



STABILIZED CONSTRUCTION ENTRANCE
N.T.S

EROSION CONTROL NOTES

SOD DETENTION AREA POST-CONSTRUCTION IS REQUIRED

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

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

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

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

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

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

ERC LEGEND

SITE POSTING

DISTURBED AREA

CONC. WASHOUT DETENTION AREA

SILT FENCE

RIP RAP CHECK DAM

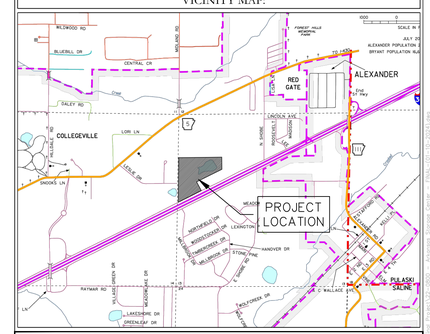
CONSTRUCTION ENTRANCE

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

80' 40' 0 80'

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

VICINITY MAP:



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

FOR USE AND BENEFIT OF:
STUART FINLEY

ARKANSAS STORAGE CENTER

EROSION CONTROL PLAN

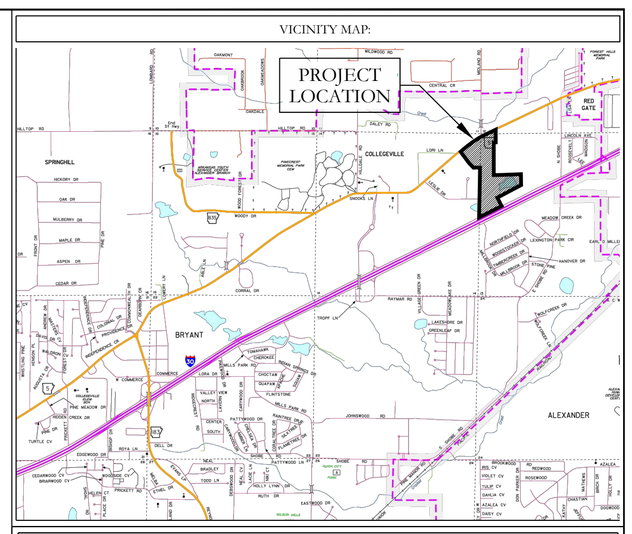
BRYANT, SALINE COUNTY, ARKANSAS

DATE:	02-06-2024	C.A.D. BY:	DRAWING NUMBER:
REVISED:		CHECKED BY:	22-0800
SHEET:	C-7.0	SCALE: 1" = 80'	

500	01S	14W	0	21	300	62	1762

Know what's **below.**
Call before you dig.

VICINITY MAP:



CERTIFICATIONS:

OWNER:

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

DEVELOPER:

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

CERTIFICATE OF OWNER:

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

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

Date of Execution _____ Name: _____

CERTIFICATE OF PRELIMINARY SURVEYING ACCURACY:

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

Date of Execution

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

CERTIFICATE OF PRELIMINARY ENGINEERING ACCURACY:

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

Date of Execution

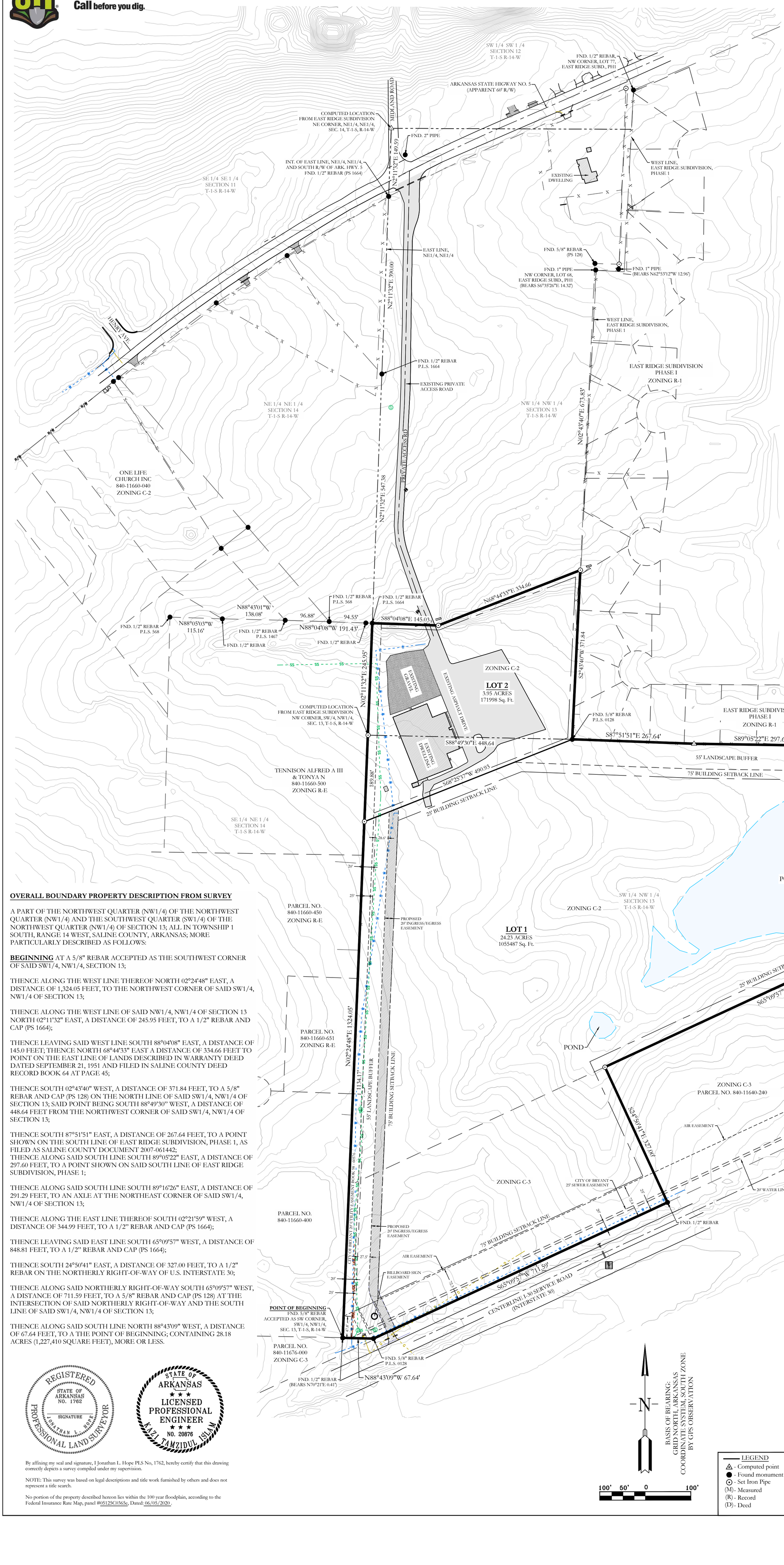
Kazi Tamzidual Islam
Registered Professional
Engineer, No. 20876 Arkansas

CERTIFICATE OF PRELIMINARY PLAT APPROVAL:

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

Date of Execution

Signed: _____
Lance Penfield, Chairman
Bryant Planning Commission



OVERALL BOUNDARY PROPERTY DESCRIPTION FROM SURVEY

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

BEGINNING AT A 5/8" REBAR ACCEPTED AS THE SOUTHWEST CORNER OF SAID SW1/4, NW1/4, SECTION 13;

THENCE ALONG THE WEST LINE THEREOF NORTH 02°24'48" EAST, A DISTANCE OF 1,324.05 FEET, TO THE NORTHWEST CORNER OF SAID SW1/4, NW1/4 OF SECTION 13;

THENCE ALONG THE WEST LINE OF SAID NW1/4, NW1/4 OF SECTION 13 NORTH 02°11'32" EAST, A DISTANCE OF 245.95 FEET, TO A 1/2" REBAR AND CAP (PS 1664);

THENCE LEAVING SAID WEST LINE SOUTH 88°04'08" EAST, A DISTANCE OF 145.0 FEET; THENCE NORTH 68°44'33" EAST A DISTANCE OF 334.66 FEET TO POINT ON THE EAST LINE OF LANDS DESCRIBED IN WARRANTY DEED DATED SEPTEMBER 21, 1951 AND FILED IN SALINE COUNTY DEED RECORD BOOK 64 AT PAGE 45;

THENCE SOUTH 02°43'40" WEST, A DISTANCE OF 371.84 FEET, TO A 5/8" REBAR AND CAP (PS 128) ON THE NORTH LINE OF SAID SW1/4, NW1/4 OF SECTION 13; SAID POINT BEING SOUTH 88°49'30" WEST, A DISTANCE OF 448.64 FEET FROM THE NORTHWEST CORNER OF SAID SW1/4, NW1/4 OF SECTION 13;

THENCE SOUTH 87°51'51" EAST, A DISTANCE OF 267.64 FEET, TO A POINT SHOWN ON THE SOUTH LINE OF EAST RIDGE SUBDIVISION, PHASE 1, AS FILED AS SALINE COUNTY DOCUMENT 2007-061442;
THENCE ALONG SAID SOUTH LINE SOUTH 89°05'22" EAST, A DISTANCE OF 297.60 FEET, TO A POINT SHOWN ON SAID SOUTH LINE OF EAST RIDGE SUBDIVISION, PHASE 1;

THENCE ALONG SAID SOUTH LINE SOUTH 89°16'26" EAST, A DISTANCE OF 291.29 FEET, TO AN AXLE AT THE NORTHEAST CORNER OF SAID SW1/4, NW1/4 OF SECTION 13;

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

THENCE LEAVING SAID EAST LINE SOUTH 65°09'57" WEST, A DISTANCE OF 848.81 FEET, TO A 1/2" REBAR AND CAP (PS 1664);

THENCE SOUTH 24°50'41" EAST, A DISTANCE OF 327.00 FEET, TO A 1/2" REBAR ON THE NORTHERLY RIGHT-OF-WAY OF U.S. INTERSTATE 30;

THENCE ALONG SAID NORTHERLY RIGHT-OF-WAY SOUTH 65°09'57" WEST, A DISTANCE OF 711.59 FEET, TO A 5/8" REBAR AND CAP (PS 128) AT THE INTERSECTION OF SAID NORTHERLY RIGHT-OF-WAY AND THE SOUTH LINE OF SAID SW1/4, NW1/4 OF SECTION 13;

THENCE ALONG SAID SOUTH LINE NORTH 88°43'09" WEST, A DISTANCE OF 67.64 FEET, TO A THE POINT OF BEGINNING; CONTAINING 28.18 ACRES (1,227,410 SQUARE FEET), MORE OR LESS.

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

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

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

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

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

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

PROPERTY SPECIFICATIONS:

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

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

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

NAME OF SUBDIVISION:

ZONING CLASSIFICATION: C-2 AND C3

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

NUMBER OF LOTS: 2

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

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

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

LOT CORNERS: SET 1/2" REBAR WITH CAP

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

FOR USE AND BENEFIT OF:

ARKANSAS STORAGE XIV, LLC

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

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

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

K:\Land Projects 2024\Subdivisions 2022\22-0800\Stuart Finley\Dwgs\22-0800-Preliminary Plat 02-05-2025.dwg

ARKANSAS STORAGE CENTER

BRYANT, AR

DRAINAGE REPORT

FOR
City of Bryant, Saline County, AR

January 2024

Owner & Developer: STUART FINLEY
Address: P.O Box 10, Bryant, AR. 72089

By:

HOPE
CONSULTING
ENGINEERS • SURVEYORS

PROJECT TITLE

ARKANSAS STORAGE CENTER

PROJECT PROPERTY OWNER

STUART FINLEY

PROJECT LOCATION

25300 I-30 North, Bryant, AR

PROJECT DESCRIPTION

The proposed self-storage facility development is located on High-way I-30 in the city of Bryant, Arkansas. The total development area is 24.31 acres.

DRAINAGE ANALYSIS

On Site Drainage- Rational method was used to determine the existing and proposed flows from proposed site. Detailed drainage calculations considering the future expected development have been conducted. Summary of the calculations are below:

Drainage Calculations for 100 yrs Return Period

- Pre-development total area: 26.06 acres.
    - Impervious area (gravel) = 4.65 ac
    - Landscape area (forest/woodland) = 21.4 ac
- Post-development area: 28.53 acres.
    - Impervious area (gravel) = 4.65 ac
    - Landscape area (forest/woodland) = 23.88 ac
- Pre-development composite runoff coefficient: 0.50
- Post-development composite runoff coefficient: 0.88
- Time of Concentration for Pre-development Area: 22 min
- Time of Concentration for Post-development Area: 8.6 min
- 5 ft wide rectangular weir
- Spillway elev. 255.30
- Pond top elev. 356.30
- 10 ft wide top of the levee
- One 18'' RCP with 0.5% slope is proposed for outflow culvert with an elevation of 353.5'

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

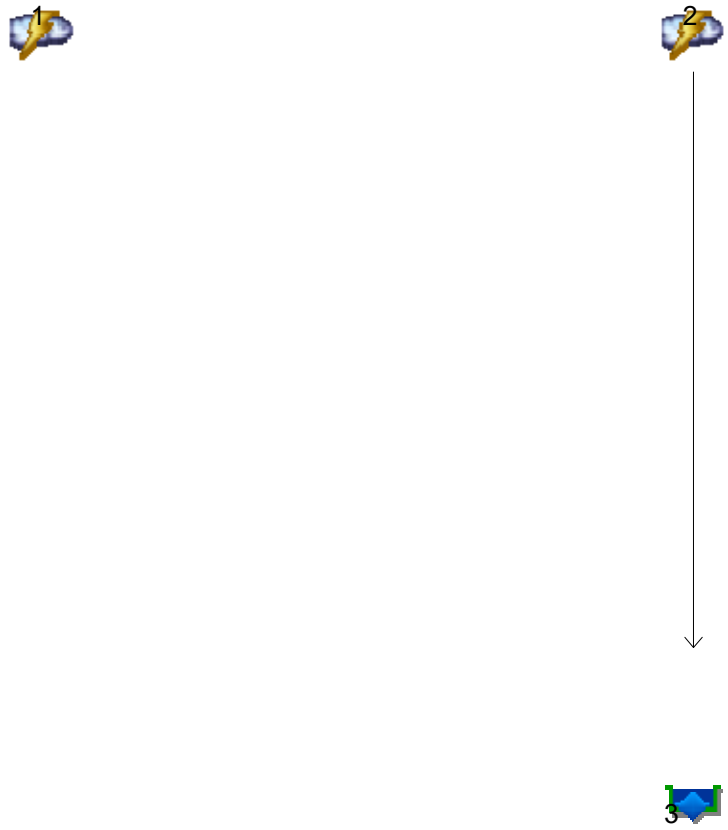
100- Years Storm Calculations

	Pre-Development	Post-Development without Retention	Post-Development with Retention
	Peak Flow (cfs)	Peak Flow (cfs)	Peak Flow (cfs)
2-Year	36.44	120.57	2.976
5-Year	40.19	134.40	3.359
10-Year	48.37	154.40	3.830
25-Year	55.73	176.35	4.413
50-Year	63.54	200.38	5.378
100-Year	67.97	212.42	6.129
TOC	**22 min**	**8.6 min**	

CONCLUSION

The onsite drainage calculation for pre and post condition has been provided.

Watershed Model Schematic



Legend

Hyd.	Origin	Description
1	Rational	Pre-development
2	Rational	Post-Dev-No-Retention Pond
3	Reservoir	Post-Dev-RetentionPond

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	36.44	1	22	48,099	------	------	------	Pre-development
2	Rational	120.57	1	11	79,576	------	------	------	Post-Dev-No-Retention Pond
3	Reservoir	2.976	1	22	73,450	2	354.50	77,825	Post-Dev-RetentionPond

Hydrograph Report

Hyd. No. 1

Pre-development

Hydrograph type	=	Rational	Peak discharge	=	36.44 cfs
Storm frequency	=	2 yrs	Time to peak	=	22 min
Time interval	=	1 min	Hyd. volume	=	48,099 cuft
Drainage area	=	26.050 ac	Runoff coeff.	=	0.42
Intensity	=	3.330 in/hr	Tc by User	=	22.00 min
IDF Curve	=	Bryant 50.IDF	Asc/Rec limb fact	=	1/1

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

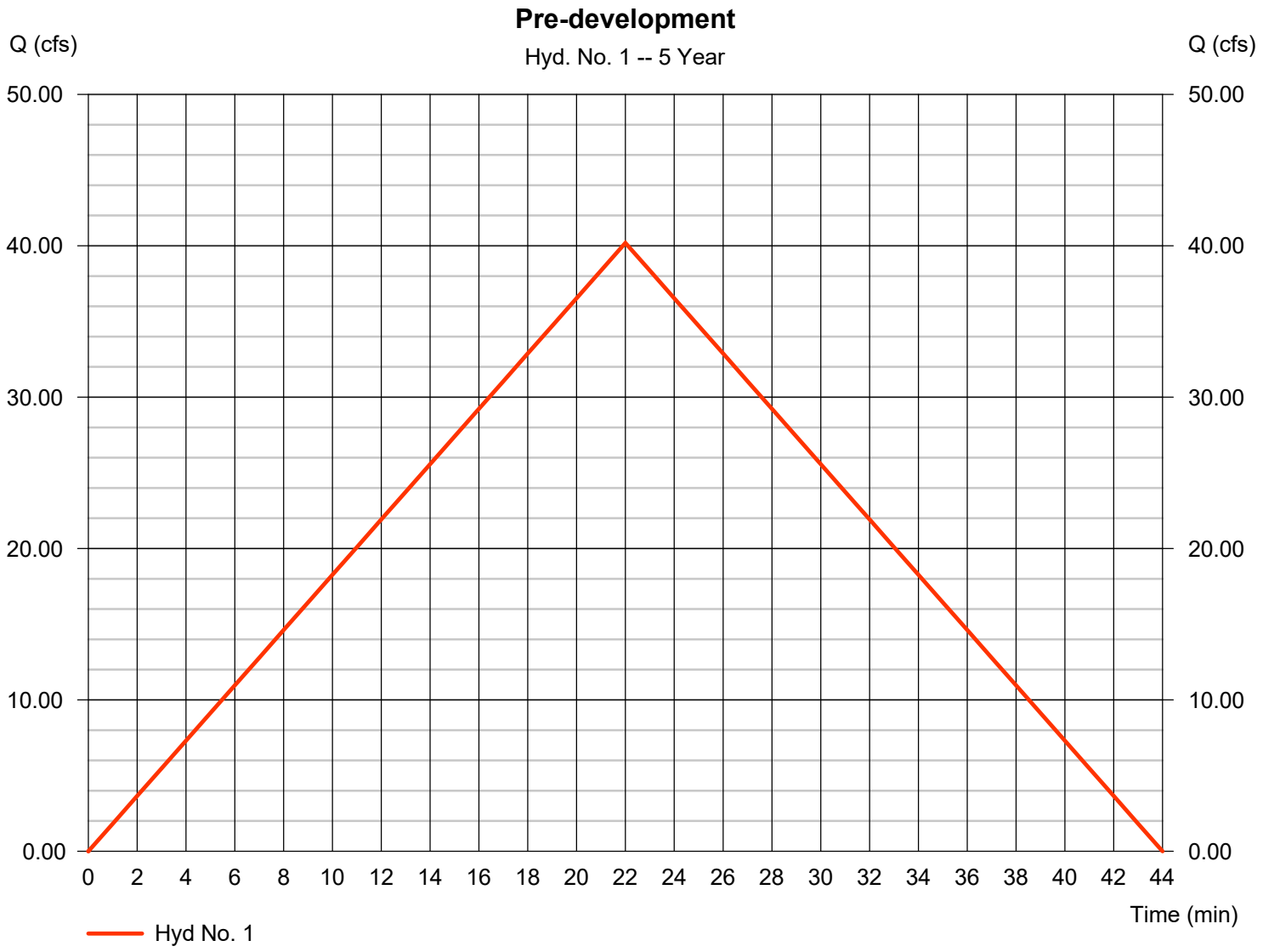
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	40.19	1	22	53,050	------	------	------	Pre-development
2	Rational	134.40	1	11	88,705	------	------	------	Post-Dev-No-Retention Pond
3	Reservoir	3.359	1	22	82,478	2	354.61	86,693	Post-Dev-RetentionPond

Hydrograph Report

Hyd. No. 1

Pre-development

Hydrograph type	=	Rational	Peak discharge	=	40.19 cfs
Storm frequency	=	5 yrs	Time to peak	=	22 min
Time interval	=	1 min	Hyd. volume	=	53,050 cuft
Drainage area	=	26.050 ac	Runoff coeff.	=	0.42
Intensity	=	3.673 in/hr	Tc by User	=	22.00 min
IDF Curve	=	Bryant 50.IDF	Asc/Rec limb fact	=	1/1



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

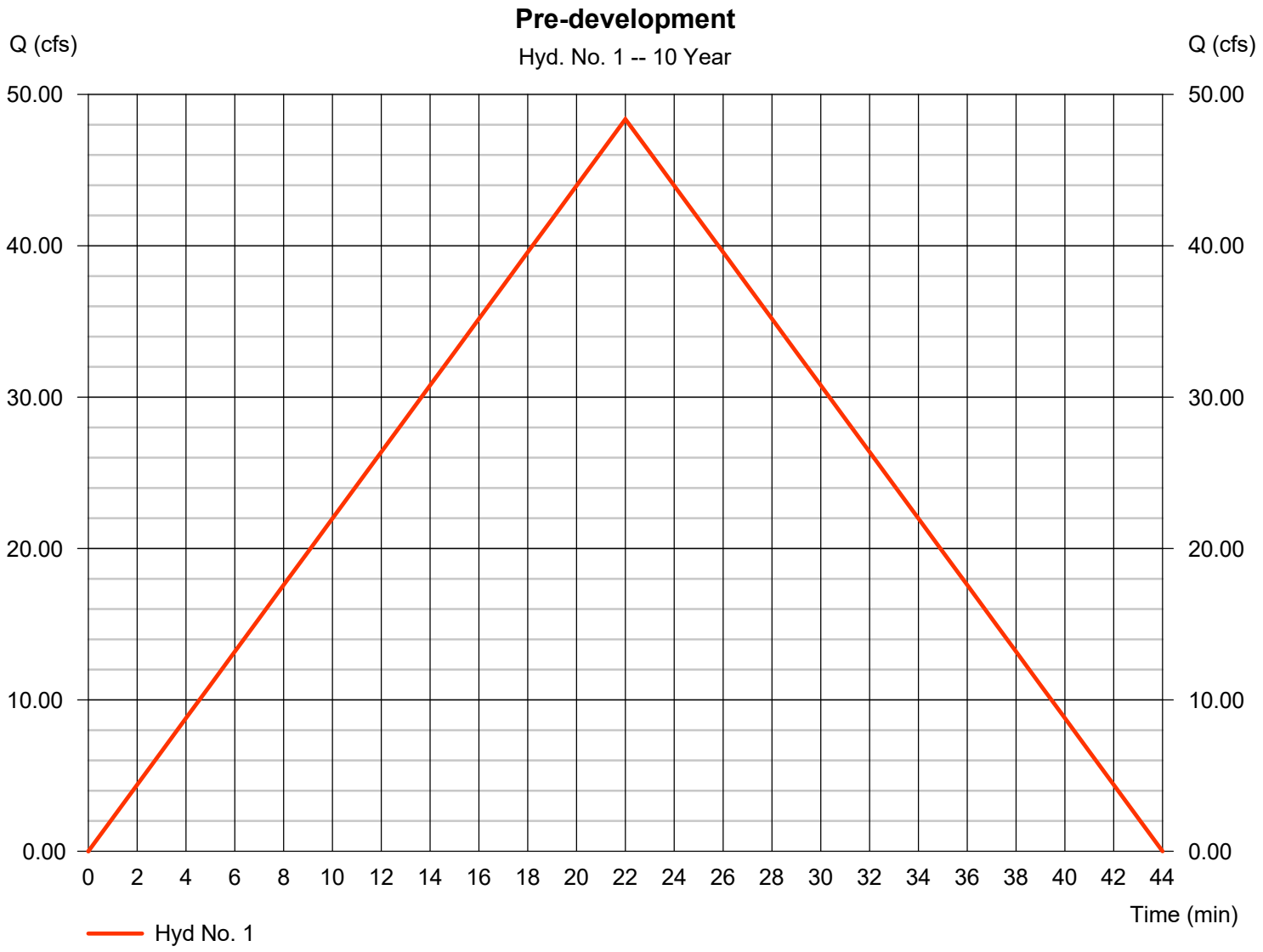
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	48.37	1	22	63,846	------	------	------	Pre-development
2	Rational	154.40	1	11	101,902	------	------	------	Post-Dev-No-Retention Pond
3	Reservoir	3.830	1	22	95,542	2	354.77	99,536	Post-Dev-RetentionPond

Hydrograph Report

Hyd. No. 1

Pre-development

Hydrograph type	=	Rational	Peak discharge	=	48.37 cfs
Storm frequency	=	10 yrs	Time to peak	=	22 min
Time interval	=	1 min	Hyd. volume	=	63,846 cuft
Drainage area	=	26.050 ac	Runoff coeff.	=	0.42
Intensity	=	4.421 in/hr	Tc by User	=	22.00 min
IDF Curve	=	Bryant 50.IDF	Asc/Rec limb fact	=	1/1



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	55.73	1	22	73,563	------	------	------	Pre-development
2	Rational	176.35	1	11	116,393	------	------	------	Post-Dev-No-Retention Pond
3	Reservoir	4.143	1	22	109,897	2	354.94	113,699	Post-Dev-RetentionPond

Hydrograph Report

Hyd. No. 1

Pre-development

Hydrograph type	=	Rational	Peak discharge	=	55.73 cfs
Storm frequency	=	25 yrs	Time to peak	=	22 min
Time interval	=	1 min	Hyd. volume	=	73,563 cuft
Drainage area	=	26.050 ac	Runoff coeff.	=	0.42
Intensity	=	5.094 in/hr	Tc by User	=	22.00 min
IDF Curve	=	Bryant 50.IDF	Asc/Rec limb fact	=	1/1

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

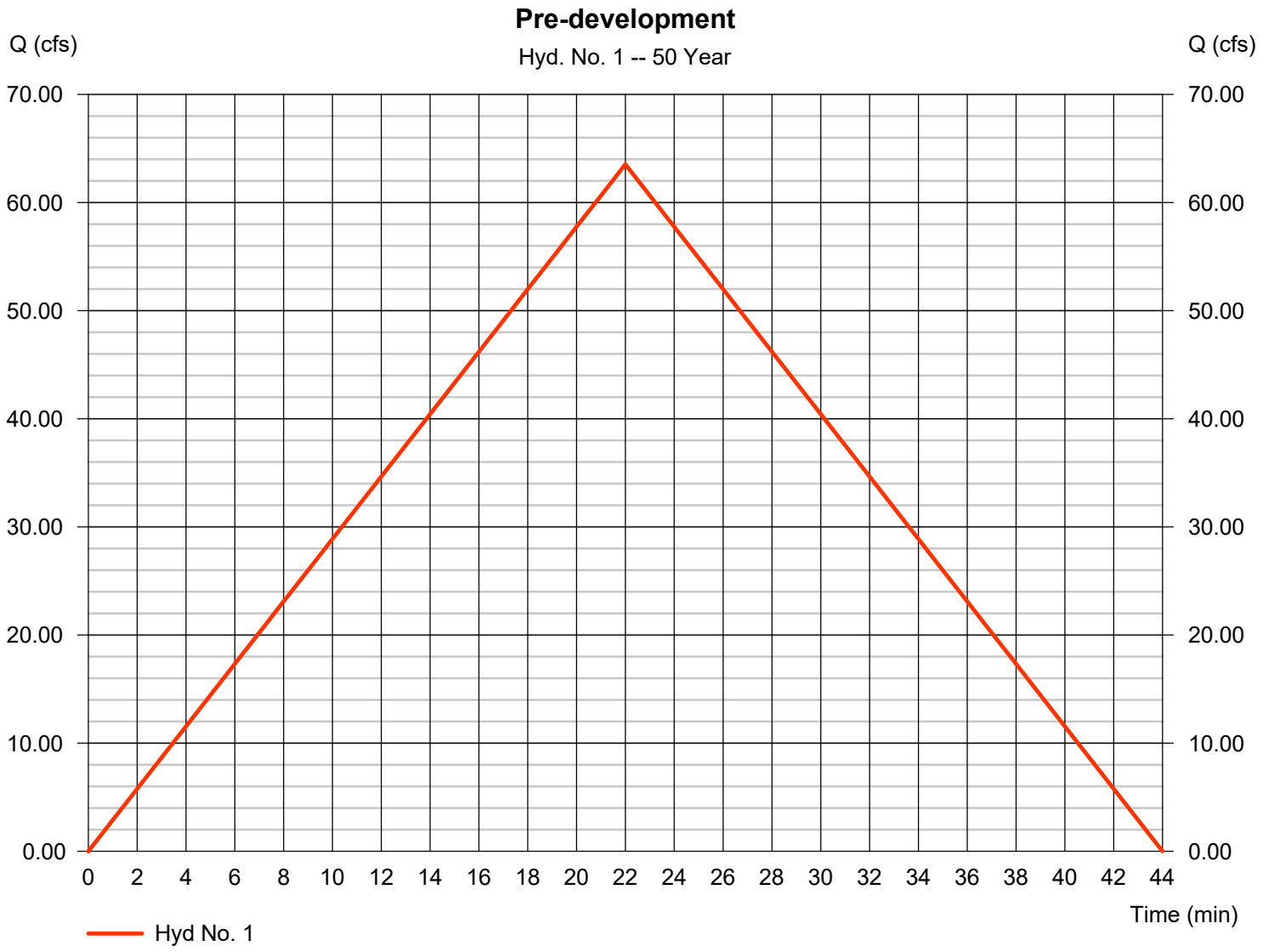
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	63.54	1	22	83,868	------	------	------	Pre-development
2	Rational	200.38	1	11	132,253	------	------	------	Post-Dev-No-Retention Pond
3	Reservoir	5.378	1	22	125,621	2	355.13	129,086	Post-Dev-RetentionPond

Hydrograph Report

Hyd. No. 1

Pre-development

Hydrograph type	=	Rational	Peak discharge	=	63.54 cfs
Storm frequency	=	50 yrs	Time to peak	=	22 min
Time interval	=	1 min	Hyd. volume	=	83,868 cuft
Drainage area	=	26.050 ac	Runoff coeff.	=	0.42
Intensity	=	5.807 in/hr	Tc by User	=	22.00 min
IDF Curve	=	Bryant 50.IDF	Asc/Rec limb fact	=	1/1



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2024

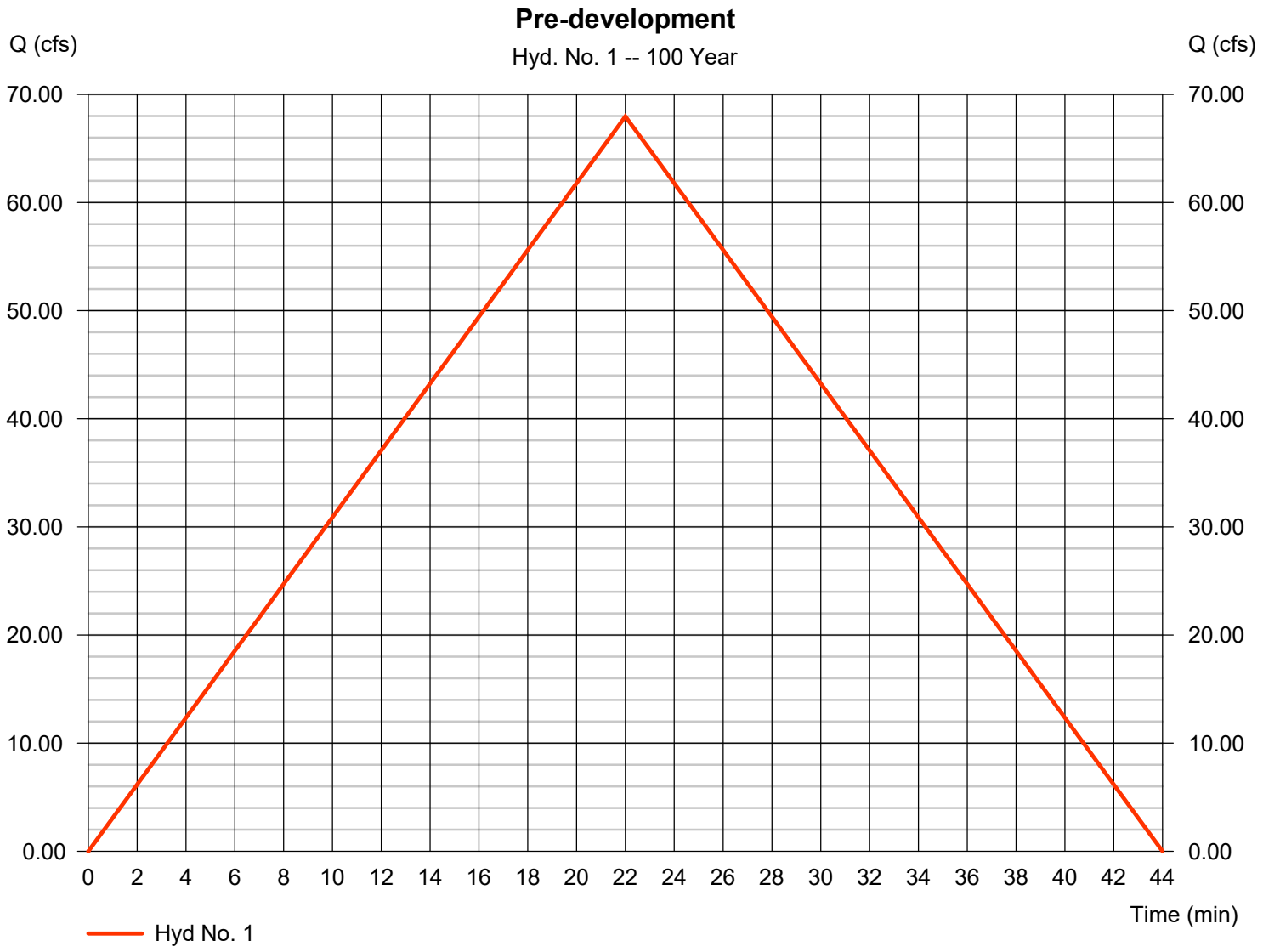
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	67.97	1	22	89,717	------	------	------	Pre-development
2	Rational	212.42	1	11	140,200	------	------	------	Post-Dev-No-Retention Pond
3	Reservoir	6.129	1	22	133,512	2	355.22	136,691	Post-Dev-RetentionPond

Hydrograph Report

Hyd. No. 1

Pre-development

Hydrograph type	=	Rational	Peak discharge	=	67.97 cfs
Storm frequency	=	100 yrs	Time to peak	=	22 min
Time interval	=	1 min	Hyd. volume	=	89,717 cuft
Drainage area	=	26.050 ac	Runoff coeff.	=	0.42
Intensity	=	6.212 in/hr	Tc by User	=	22.00 min
IDF Curve	=	Bryant 50.IDF	Asc/Rec limb fact	=	1/1



Multi-Hydrograph Plot

Hyd. No. 1

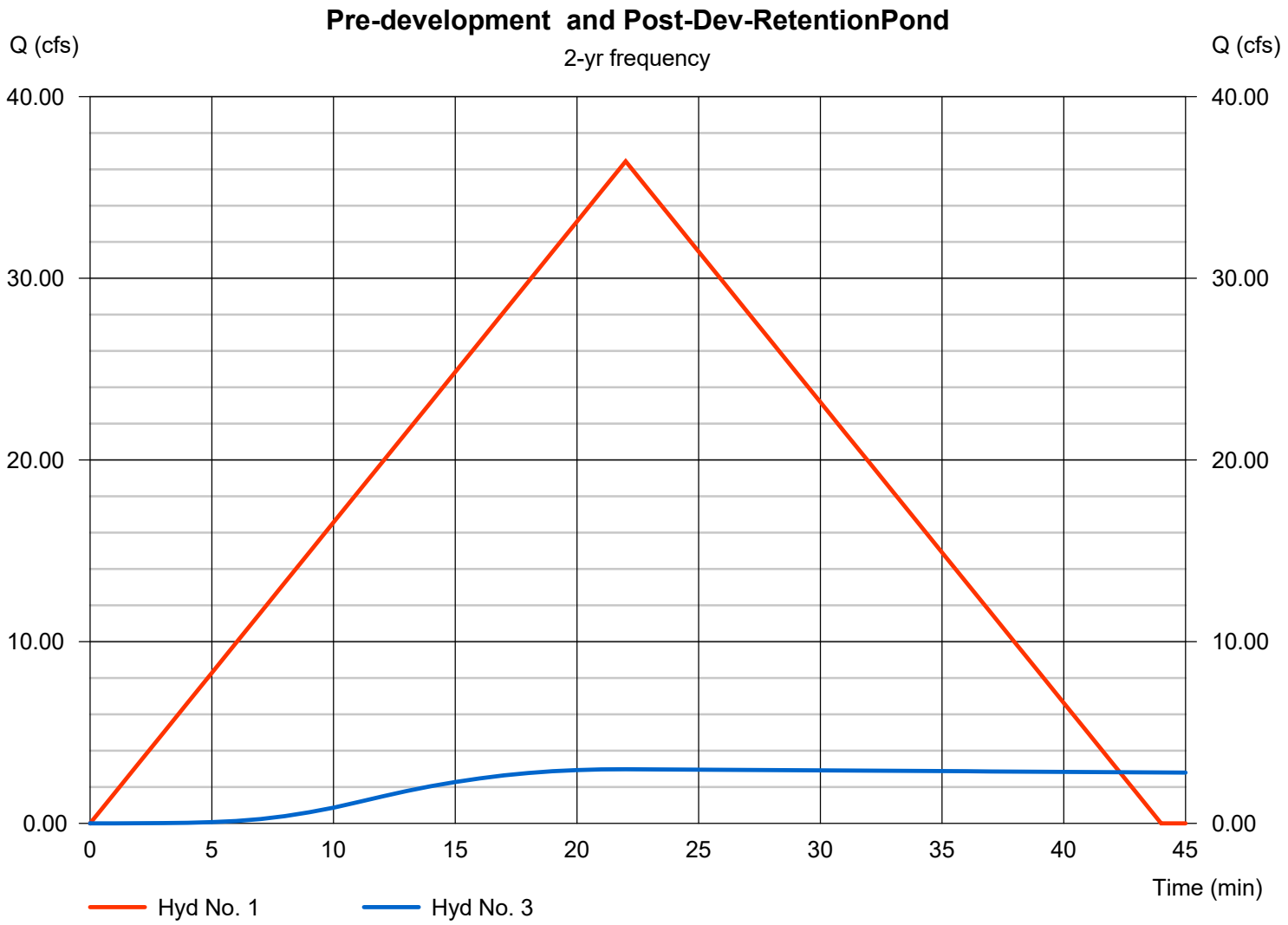
Pre-development

Hydrograph type	=	Rational
Peak discharge	=	36.44 cfs
Time to peak	=	22 min
Hyd. Volume	=	48,099 cuft

Hyd. No. 3

Post-Dev-RetentionPond

Hydrograph type	=	Reservoir
Peak discharge	=	2.98 cfs
Time to peak	=	22 min
Hyd. Volume	=	73,450 cuft



Multi-Hydrograph Plot

Hyd. No. 1

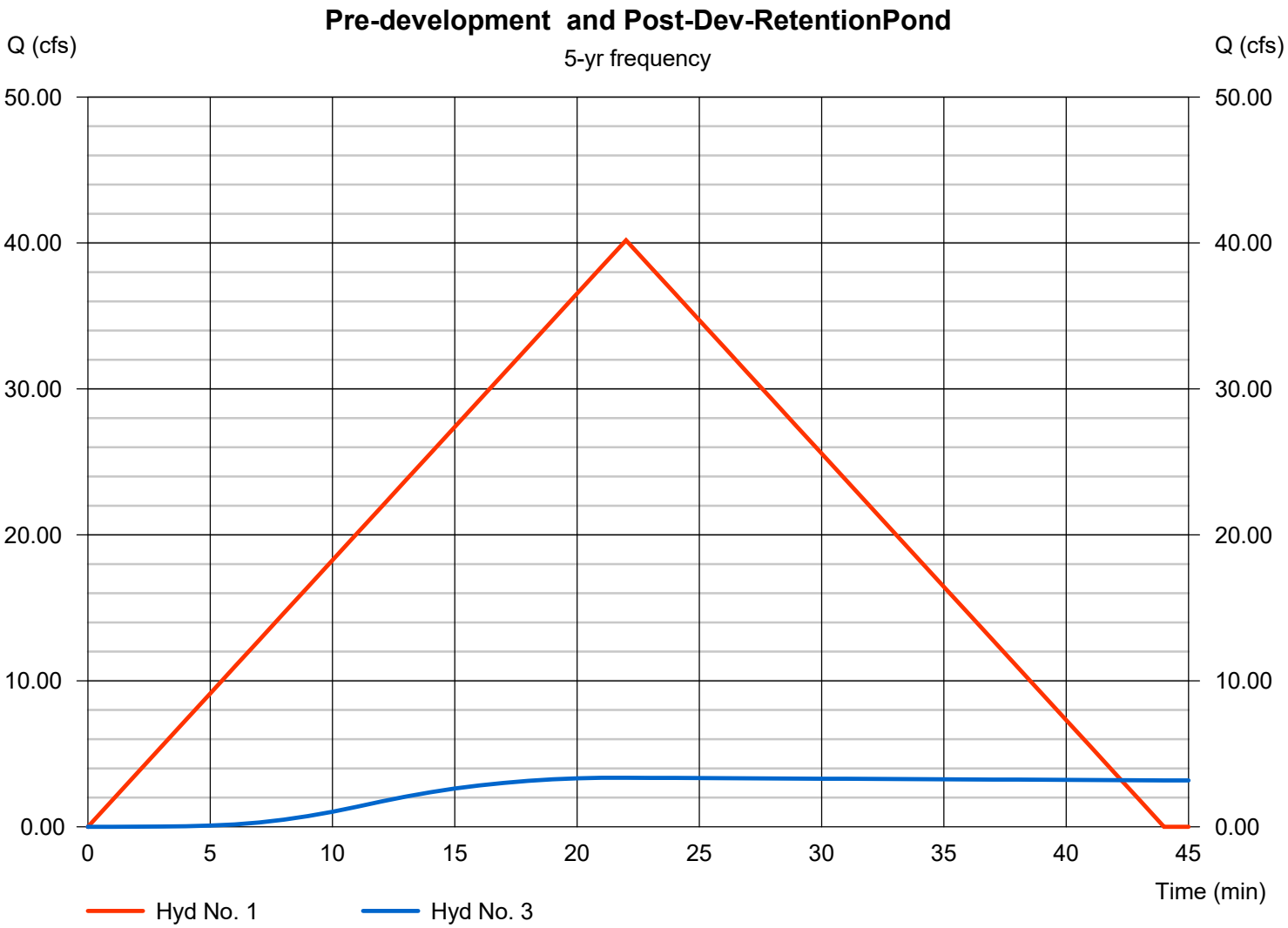
Pre-development

Hydrograph type	=	Rational
Peak discharge	=	40.19 cfs
Time to peak	=	22 min
Hyd. Volume	=	53,050 cuft

Hyd. No. 3

Post-Dev-RetentionPond

Hydrograph type	=	Reservoir
Peak discharge	=	3.36 cfs
Time to peak	=	22 min
Hyd. Volume	=	82,478 cuft



Multi-Hydrograph Plot

Hyd. No. 1

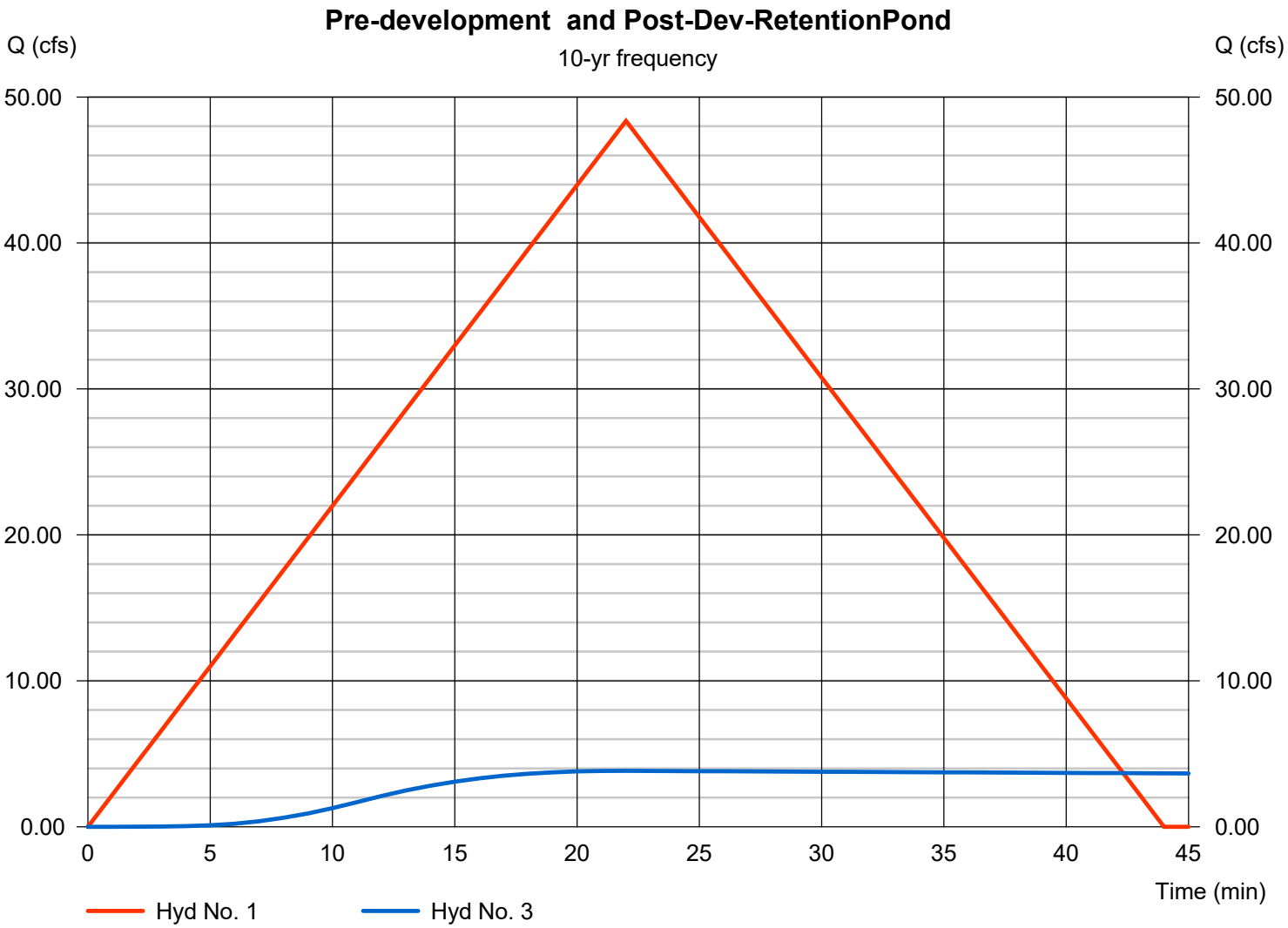
Pre-development

Hydrograph type	=	Rational
Peak discharge	=	48.37 cfs
Time to peak	=	22 min
Hyd. Volume	=	63,846 cuft

Hyd. No. 3

Post-Dev-RetentionPond

Hydrograph type	=	Reservoir
Peak discharge	=	3.83 cfs
Time to peak	=	22 min
Hyd. Volume	=	95,542 cuft



Multi-Hydrograph Plot

Hyd. No. 1

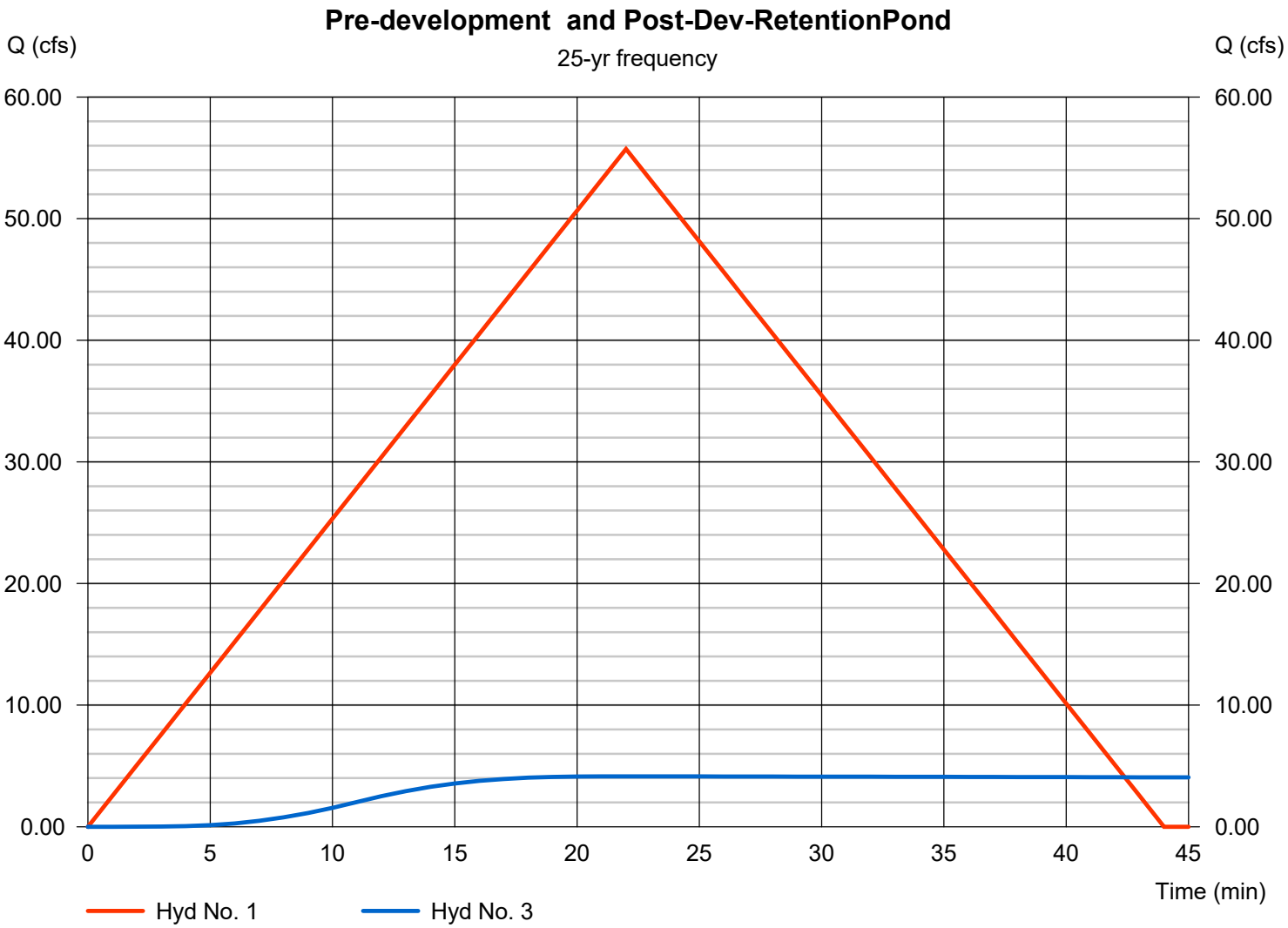
Pre-development

Hydrograph type	=	Rational
Peak discharge	=	55.73 cfs
Time to peak	=	22 min
Hyd. Volume	=	73,563 cuft

Hyd. No. 3

Post-Dev-RetentionPond

Hydrograph type	=	Reservoir
Peak discharge	=	4.14 cfs
Time to peak	=	22 min
Hyd. Volume	=	109,897 cuft



Multi-Hydrograph Plot

Hyd. No. 1

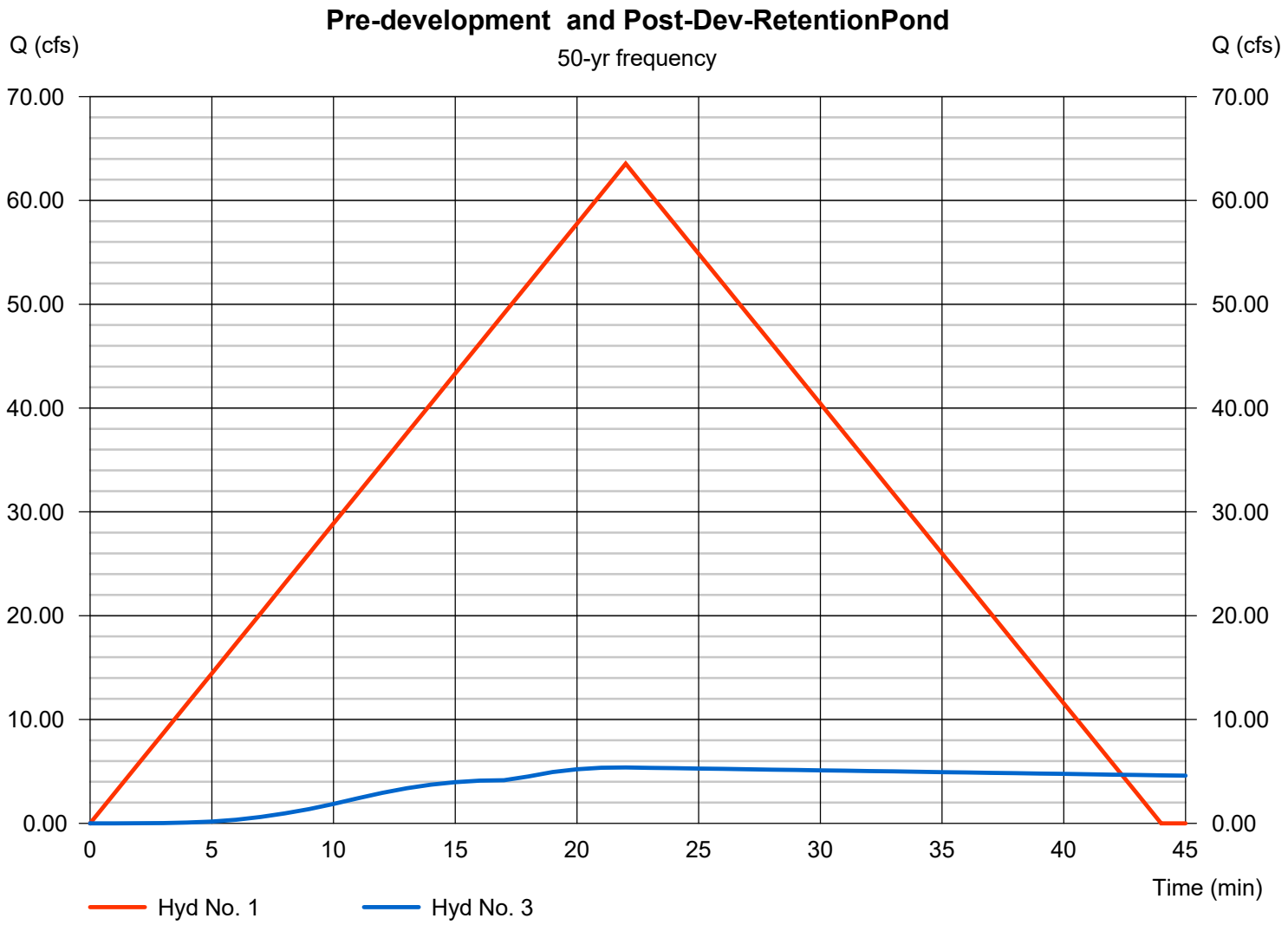
Pre-development

Hydrograph type	=	Rational
Peak discharge	=	63.54 cfs
Time to peak	=	22 min
Hyd. Volume	=	83,868 cuft

Hyd. No. 3

Post-Dev-RetentionPond

Hydrograph type	=	Reservoir
Peak discharge	=	5.38 cfs
Time to peak	=	22 min
Hyd. Volume	=	125,621 cuft



Multi-Hydrograph Plot

Hyd. No. 1

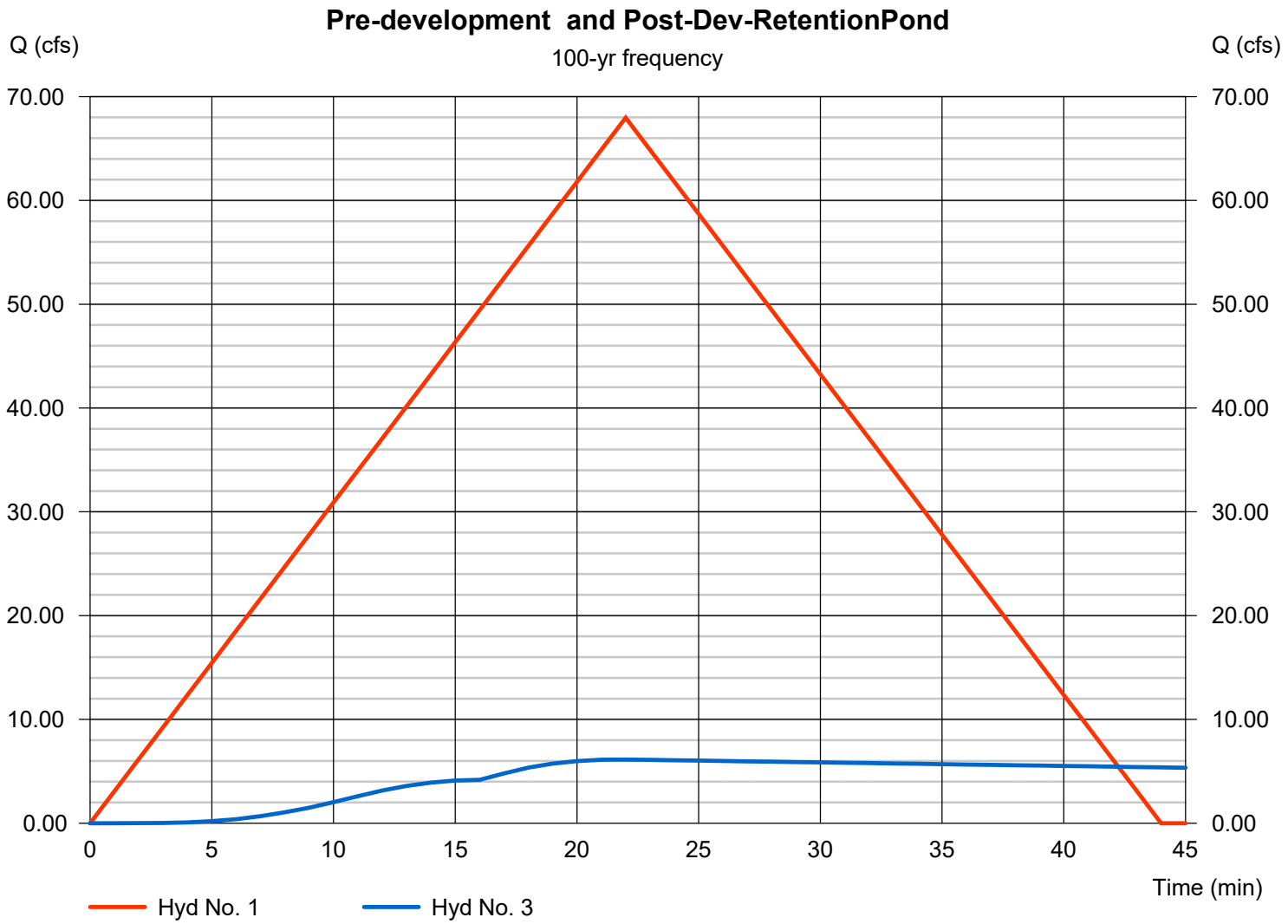
Pre-development

Hydrograph type	=	Rational
Peak discharge	=	67.97 cfs
Time to peak	=	22 min
Hyd. Volume	=	89,717 cuft

Hyd. No. 3

Post-Dev-RetentionPond

Hydrograph type	=	Reservoir
Peak discharge	=	6.13 cfs
Time to peak	=	22 min
Hyd. Volume	=	133,512 cuft



Pond Report

Pond No. 1 - <New Pond>

Pond Data

Trapezoid -Bottom L x W = 254.9 x 300.0 ft, Side slope = 3.00:1, Bottom elev. = 353.50 ft, Depth = 2.80 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	353.50	76,470	0	0
0.28	353.78	77,405	21,542	21,542
0.56	354.06	78,346	21,805	43,347
0.84	354.34	79,292	22,069	65,417
1.12	354.62	80,244	22,335	87,751
1.40	354.90	81,202	22,602	110,354
1.68	355.18	82,165	22,871	133,225
1.96	355.46	83,134	23,142	156,367
2.24	355.74	84,108	23,414	179,781
2.52	356.02	85,089	23,688	203,468
2.80	356.30	86,075	23,963	227,431

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 18.00	Inactive	Inactive	0.00
Span (in)	= 18.00	0.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 353.50	0.00	0.00	0.00
Length (ft)	= 26.00	0.00	0.00	0.00
Slope (%)	= 0.50	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

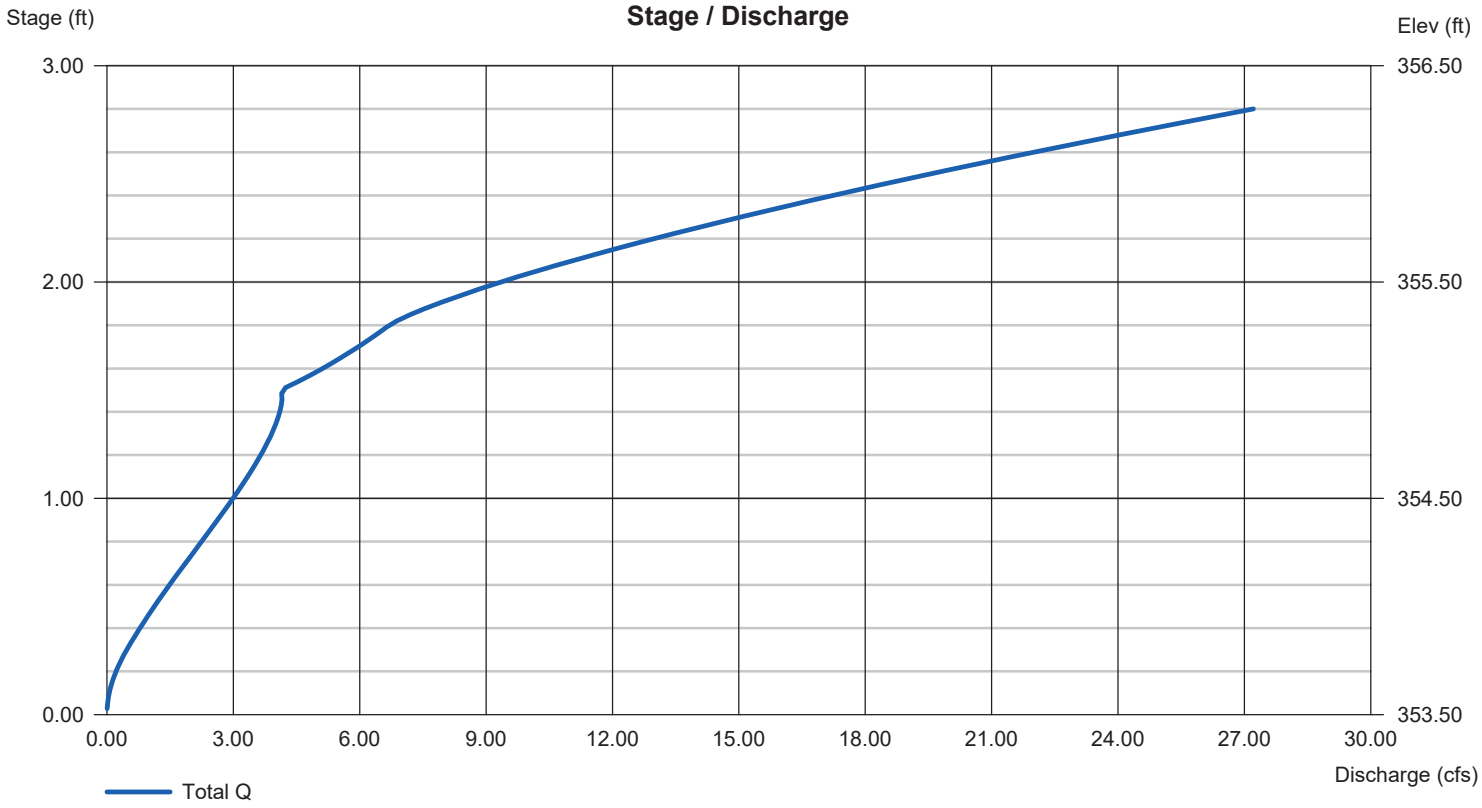
Weir Structures

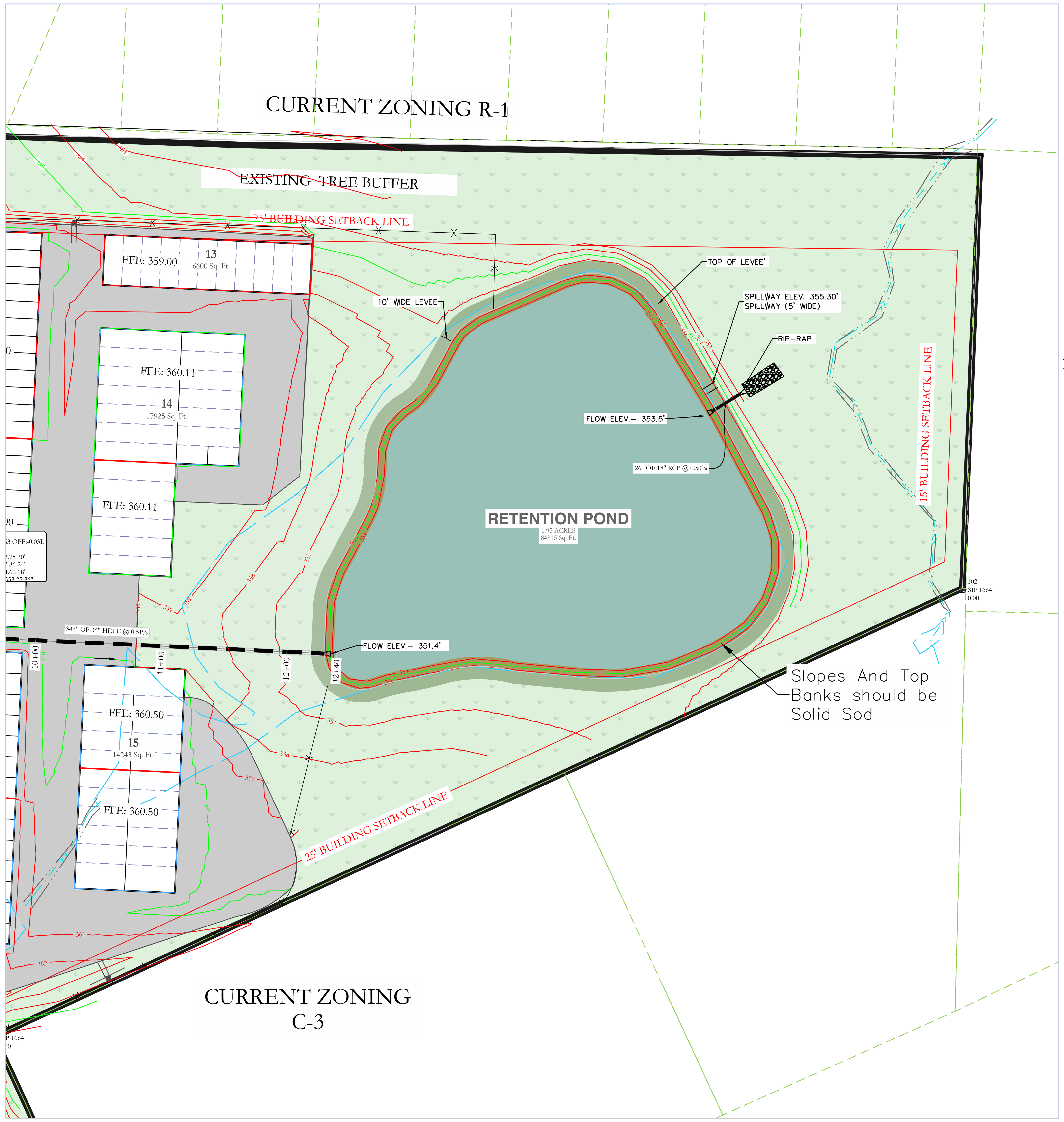
	[A]	[B]	[C]	[D]
Crest Len (ft)	= 5.00	0.00	0.00	0.00
Crest El. (ft)	= 355.30	0.00	0.00	0.00
Weir Coeff.	= 3.09	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 0.00

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



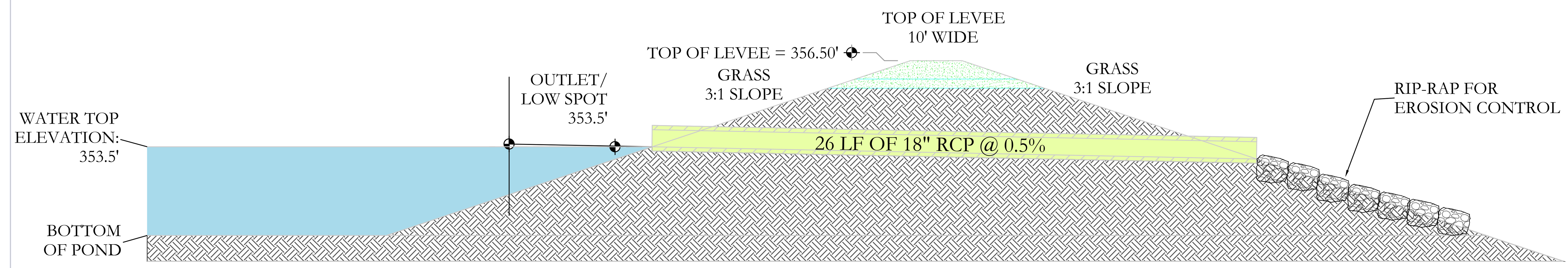


60' 30' 0 60'

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

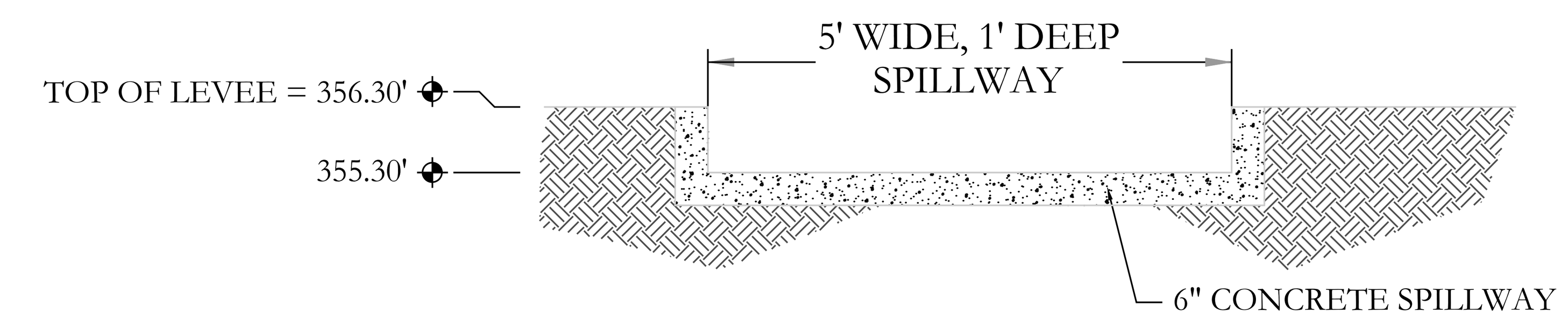
WET POND OUTLET SECTION

NTS



SPILLWAY END VIEW

NTS



LEGEND

EXISTING CONTOUR LINE — — 363 — —

PROPOSED CONTOUR LINE —— 363 ——

PROPOSED HDPE STORM PIPE

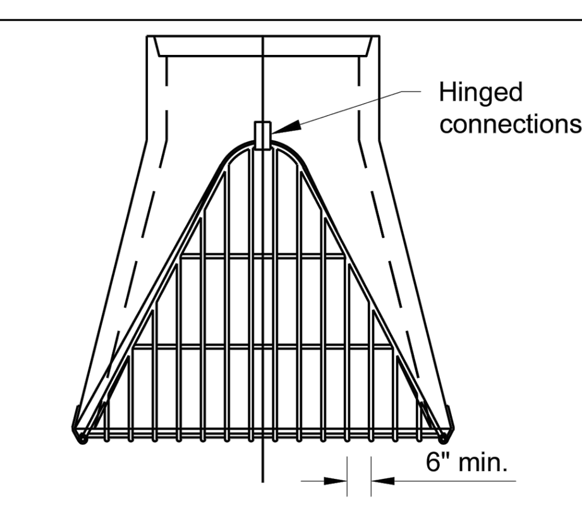
PROPOSED RCP STORM PIPE

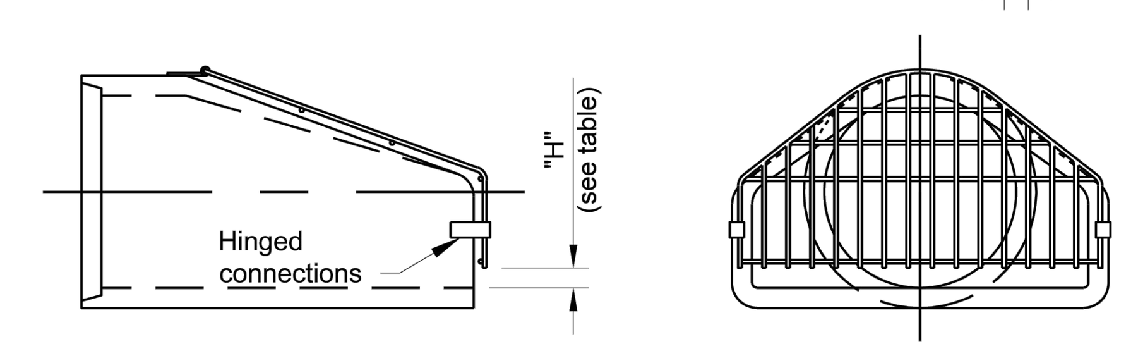
FLARED END SECTION TRASH RACK

NTS

Notes:

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





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

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

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

DETENTION POND MAINTENANCE PLAN

Background

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

Routine Maintenance

The property owners association will maintain the drainage easements. Routine maintenance will include but not be limited to:

-Mowing of the bank slopes and area around the pond on a monthly basis during the growing season and as needed during the cooler months.

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

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

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

Periodic or Non-Routine Maintenance

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

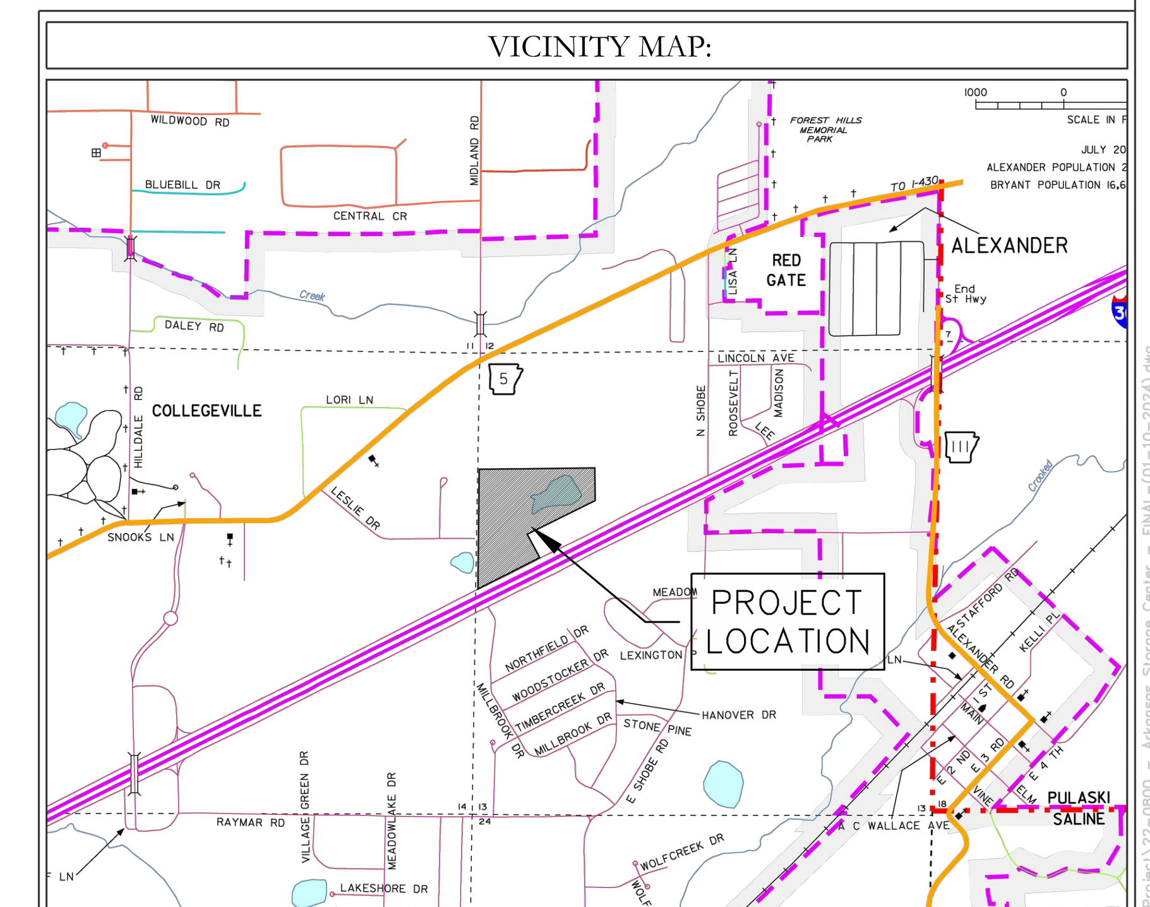
-Re-growth of trees on or around the pond bank. These should be cut and removed from the pond area.

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

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

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

VICINITY MAP:



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

FOR USE AND BENEFIT OF:

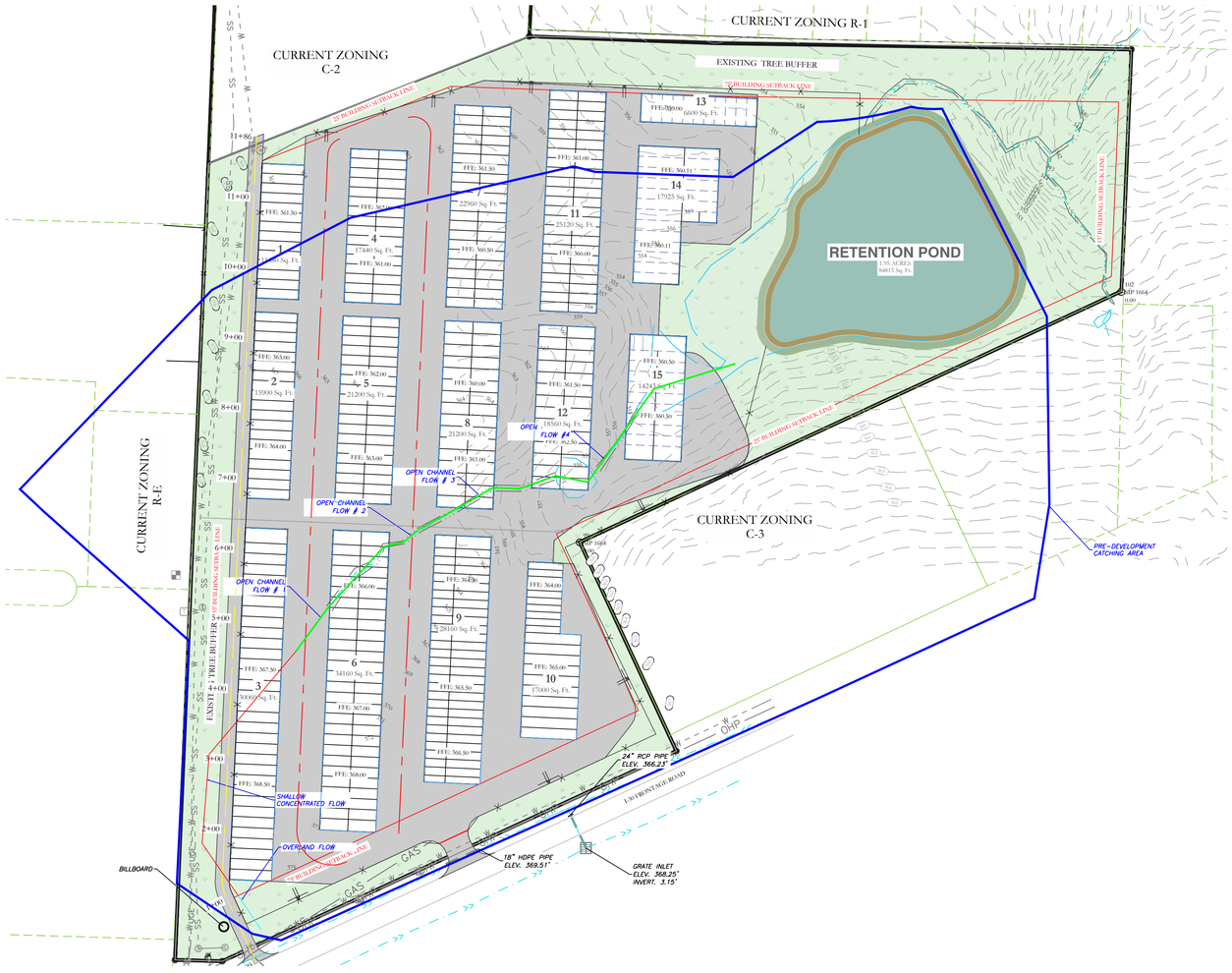
STUART FINLEY

ARKANSAS STORAGE CENTER

RETENTION POND PLAN

BRYANT, SALINE COUNTY, ARKANSAS

DATE:	01-24-2023	C.A.D. BY:		DRAWING NUMBER:			
REVISED:		CHECKED BY:		22-0800			
SHEET:	C-5.4	SCALE:					
500	01S	14W	0	21	300	62	1762



· Pre-Development time of Concentration

#22-0800
1/23/24

* (A-B) Overland flow, toc:

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

$$t_i = \frac{0.83[0.4(58.4)]^{0.467}}{(0.047)^{0.5}}$$

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

· N = 0.40
(Pasture average ; grass cover)
· L = 58 ft
· S = 0.047

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

$$\cdot\ V_{c\ \text{unpaved}} = 16.1345(s)^{0.5}$$

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

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

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

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

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

1/5

· Pre-Development time of Concentration

1/23/24

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

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

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

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

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

$$t_t = \underline{\underline{0.18\ \text{min}}}$$

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

* (D-E) Open channel flow #2, toc:

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

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

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

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

$$\underline{\underline{t_t = 0.32\ \text{min}}}$$

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

2/5

· Pre-Development time of Concentration

#22-0800
1/23/24

* Open Channel Flow #3, toc:

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

$$V_c = \frac{1.49}{0.0019}(0.45)^{2/3}(0.020)^{1/2}$$

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

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

· n = 0.019
· L = 172 ft
· S = 0.020
· R = 0.45

* Open Channel Flow #4, toc

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

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

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

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

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

$$\therefore \text{Pre-Dev. TOC} = 16.7\ \text{min} + 2.92\ \text{min} + 0.18\ \text{min} + 0.32\ \text{min} + 0.44\ \text{min} + 1.24\ \text{min}$$

$$\underline{\underline{= 21.8\ \text{min}}}$$

3/5

#22-0800
1/23/24

① Open Channel Cross Sectional Area #1:

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

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

$\underline{t = 2.5}$

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

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

· Welted Perimeter (P) = b + 2yw

$$w = (1 + t^2)^{0.5}$$
$$w = (1 + (2.5)^2)^{0.5}$$
$$\underline{w = 2.69}$$

$$\cdot\ P = 2.5' + 2(0.5')(2.69)$$
$$\underline{\underline{P = 5.19\ ft}}$$

② Open Channel flow Cross Sectional Area #2:

y = 2.5 ft

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

$\underline{t = 2.58\ ft}$

$$\cdot\ \text{Area} = (b + ty)(y)$$
$$= (5 + (2.58)(0.97))(0.97)$$
$$\underline{\underline{= 7.28\ ft^2}}$$

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

· Welted Perimeter (P) = b + 2yw

$$w = (1 + t^2)^{0.5}$$
$$w = (1 + (2.58)^2)^{0.5}$$
$$w = 2.77$$

$$\cdot\ P = 5 + 2(0.97')(2.77)$$
$$\underline{\underline{P = 10.37\ ft}}$$

4/5

---

③ Open Channel flow Cross Sectional Area #3:

#22-0800
1/23/24

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

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

$\underline{t = 6.2}$

$$\cdot\ \text{Area} = (b + ty)(y)$$
$$= (7.5 + (6.2)(0.61))(0.61)$$
$$\underline{\underline{= 6.88\ ft^2}}$$

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

· Welted Perimeter (P) = b + 2yw

$$w = (1 + t^2)^{0.5}$$
$$w = (1 + (6.2)^2)^{0.5}$$
$$\underline{w = 6.28}$$

$$\cdot\ P = 7.5 + 2(0.61)(6.28)$$
$$\underline{\underline{P = 15.16\ ft}}$$

④ Open channel flow Cross Sectional Area. #4

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

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

$\underline{t = 7.69}$

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

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

· Welted Perimeter: P = b + 2yw

$$w = (1 + t^2)^{0.5}$$
$$w = (1 + (7.69)^2)^{0.5}$$
$$\underline{w = 7.75}$$

$$\cdot\ P = 10 + 2(0.65')(7.75)$$
$$\underline{\underline{P = 20.08\ ft}}$$

1/5

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

Pre Development Drainage Calculations

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

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

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

LEGEND

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

LEGEND

POST DEVELOPMENT AREA	🟪
PRE DEVELOPMENT AREA	🟦
CHANNELIZED FLOW TOC LENGTH	🟩
SHALLOW CONCENTRATED FLOW TOC LENGTH	🟥
OVERLAND FLOW TOC LENGTH	🟦

HOPE CONSULTING, INC.
No. 1931

N

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

100' 50' 0 100'

HOPE CONSULTING
ENGINEERS - SURVEYORS

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

FOR USE AND BENEFIT OF:
STUART FINLEY

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

DATE:	1-24-2024	C.A.D. BY:			DRAWING NUMBER:		
REVISED:		CHECKED BY:			22-0800		
SHEET:	C-5.5	SCALE: 1" = 100'					
500	01S	14W	0	21	300	62	1762

K:\Land Projects 2004\Subdivisions\2022\22-0800 Stuart Finley Hwy 5 Duplex\Civil\DWG\Final Project\22-0800 – Arkansas Storage Center – FINAL –(01-10-2024).dwg

· Post-Development time of Concentration

#22-0800
1/23/2024

*(A-B) Overland flow, toc:

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

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

$t_i = 3.96$ min

·N = 0.02 (smooth & Impervious Surfaces)
· L = 51.5 ft
· S = 0.045

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

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

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

$V_{pav} = 2.87$ ft/s

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

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

$t_i = 1.48$ min

· L = 256 ft
· S = 0.02

WG 1/3

· Post-Development Time of Concentration

#22-0800
1/23/24

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

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

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

$V_c = 4.55$ ft/s

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

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

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

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

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

$V_c = 7.92$ ft/s

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

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

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

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

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

$V_c = 8.18$ ft/s

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

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

WG 2/3

· Post-Development Time of Concentration

#22-0800
1/23/24

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

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

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

$V_c = 7.74$ ft/s

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

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

*(G-H) HDPE Pipe Channeled Flow

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

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

$V_c = 7.24$ ft/s

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

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

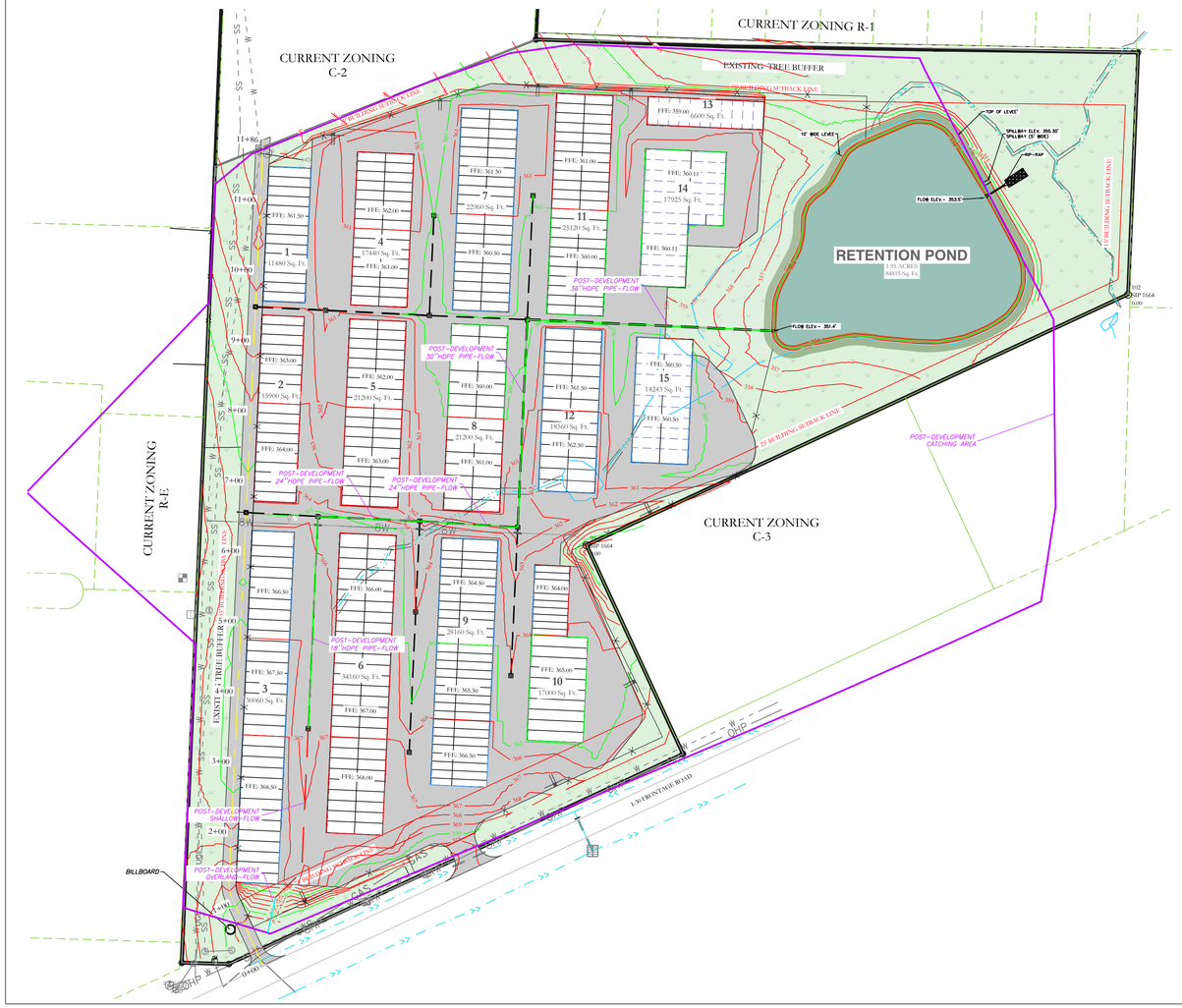
∴ Total TOC = 3.96 min + 1.48 min + 1.11 min + 0.31 min + 0.29 min + 0.64 min + 0.80 min

= 8.59 min

WG 3/3

Post-Development Time of Concentration Summary

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



Post Development Drainage Calculations

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

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

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

LEGEND

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

LEGEND

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

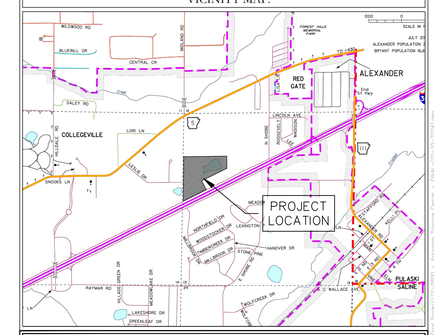
CERTIFICATE OF AUTHORIZATION
HOPE CONSULTING, INC.
No. 1931
ARKANSAS

N

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

100' 50' 0 100'

VICINITY MAP:



HOPE CONSULTING
ENGINEERS - SURVEYORS

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

FOR USE AND BENEFIT OF:
STUART FINLEY

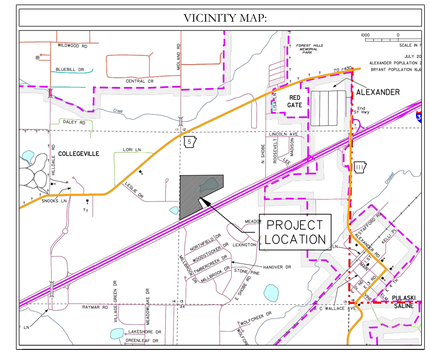
ARKANSAS STORAGE CENTER

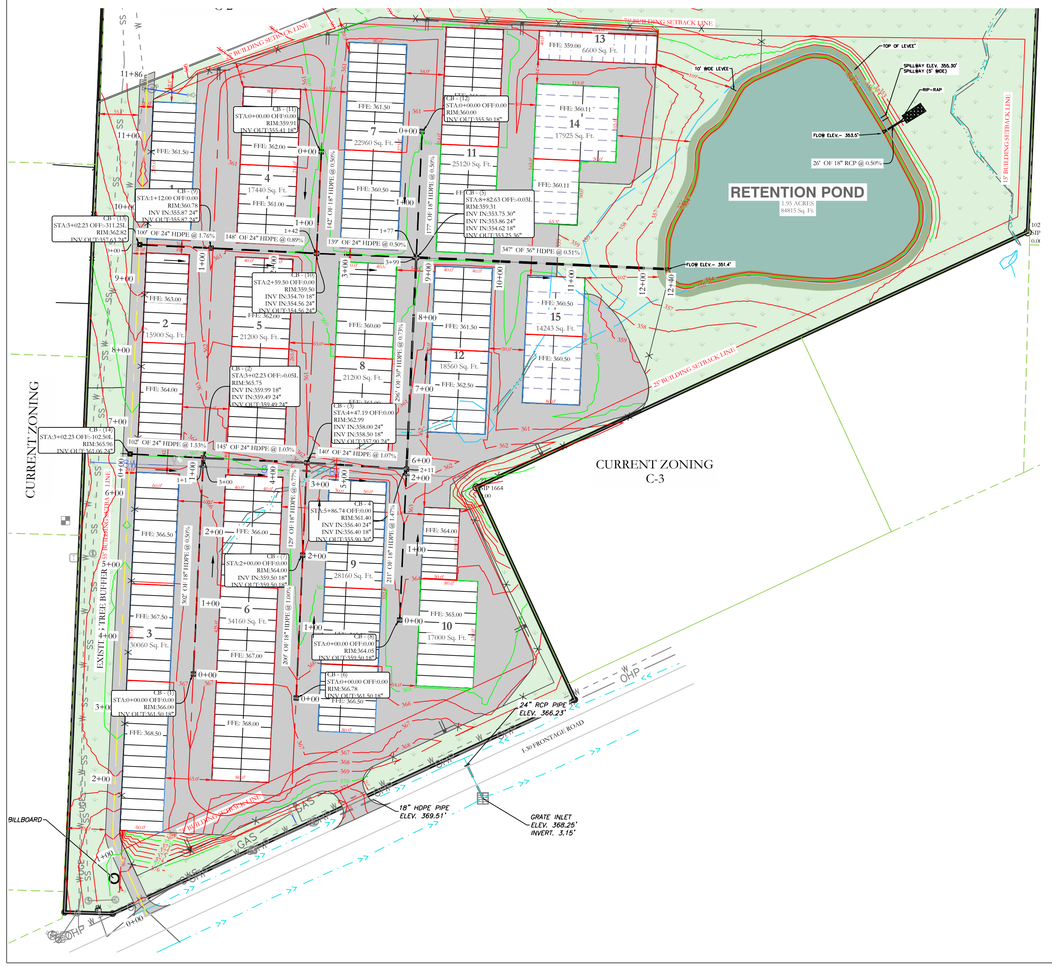
POST-DEVELOPMENT FLOW

BRYANT, SALINE COUNTY, ARKANSAS

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

500	01S	14W	0	21	300	62	1762





INLET SIZE CALCULATIONS:

For 25 yr:

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

For 100 yr:

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

VICINITY MAP:

PIPE SIZE CALCULATIONS:

For 25 yr:

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

For 100 yr:

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

LEGEND

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

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

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

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

FOR USE AND BENEFIT OF:
STUART FINLEY

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

DATE:	01-24-2024	C.A.D. BY:				DRAWING NUMBER:	
REVISED:		CHECKED BY:				22-0800	
SHEET:	C-5.7	SCALE: 1" = 100'					
500	01S	14W	0	21	300	62	1762

K:\Land Projects 2004\Subdivisions\2022\22-0800 Stuart Finley Hwy 5 Duplex\Civil\DWG\Final Project\22-0800 - Arkansas Storage Center - FINAL-(01-10-2024).dwg