

### **Bryant Development and Review Committee Meeting**

Boswell Municipal Complex - City Hall Conference Room 210 SW 3rd Street

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

#### Call to Order

#### **Old Business**

#### **New Business**

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

Veer Investment Properties - Requesting Recommendation for Approval of Replat

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

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

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

0828-APP-01.pdf

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

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

• 0829-APP-01.pdf

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

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

• <u>0831-APP-01.pdf</u>

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

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

0832-APP-01.pdf

#### 6. Kensignton Place Ph. 3 - Final Plat

GarNat Engineering - Requesting Recommendation for Approval of Final Plat

- <u>0825-ASB-01.pdf</u>
- 0825-PLT-01.pdf
- 0825-BOA-01.pdf
- 0825-APP-01.pdf
- 0825-LTR-02.pdf
- 0825-LTR-01.pdf

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

Phillip Lewis Engineering - Requesting Approval for Revised Site Plan

- 0824-CMT-01.pdf
- <u>0824-PLN-02.pdf</u>
- 0824-LTR-01.pdf
- 0824-ELV-01.pdf
- <u>0824-DRN-01.pdf</u>
- 0824-PLN-01.pdf

#### **8. ACA - Storm Shelter -** 21815 I-30

Perry Black - Requesting Site Plan Approval for New Storm Shelter

• <u>0826-PLN-01.pdf</u>

#### **Staff Approved**

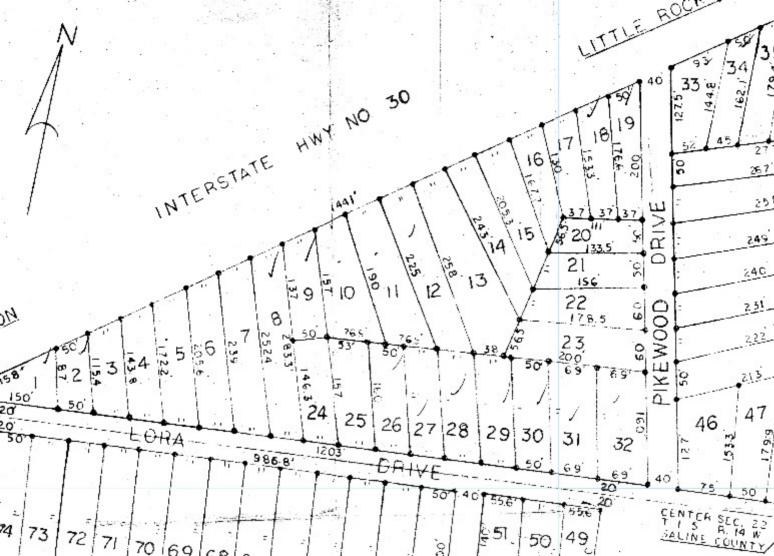
#### 9. Sharks - 5309 HWY 5 - Sign Permit

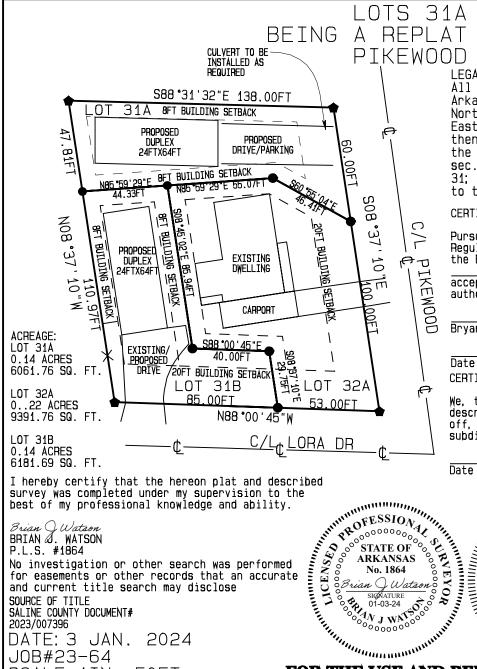
Aero Signs - Requesting Sign Permit Approval - STAFF APPROVED

• 0822-APP-02.jpg

#### **Permit Report**

#### **Adjournments**





PIKEWOOD SUBDIVISION

LEGAL DESCRIPTION:

0F

31B AND

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

32A

LOTS 31 AND 32

Bryant Planning Commission

WILLIAM OF ALLAND

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

NORTH	BY	GPS OF	BSERVATION 1"=50
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REARTNES BASED ON GRID

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Symbol	Description		
<b>A</b>	COMPUTED		
•	REBAR		
•	SET REBAR		
¢.	CENTER LINE		
×_	FENCE (X) LINE		
	PROPERTY LINE		

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

J0B#23-64

SCALE: 1IN. =50FT.

DRAWN BY: BW

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VEER INVESTMENT PROPERTIES LLC



## 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 <a href="https://www.cityofbryant.com">www.cityofbryant.com</a> under the Planning and Community Development tab.

Date: 1/8/2024
Applicant or Designee: Project Location:
Name VEER Investment Property Address 2903 Pikewood Dr. Lot 31A
Name VEER Investment Property Address 2903 Pikewood Dr. Lot 31A  Address 12 Longwell Loop, LR, AR72211 Bryant, AR 72022
Phone
Email Address: Veey Suite @ gmail. Com 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.
<ul> <li>Submit eight (8) Copies of the Development Plan (Site Plan) showing:</li> <li>Location, size, and use of buildings/signs/land or improvements</li> <li>Location, size, and arrangement of driveways and parking. Ingress/Egress</li> <li>Existing topography and proposed grading</li> <li>Proposed and existing lighting</li> <li>Proposed landscaping and screening</li> <li>Use of adjacent properties</li> <li>Scale, North Arrow, Vicinity Map</li> <li>Additional information that may be requested by the administrative official due to unique conditions of the site.</li> </ul>
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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**

[	, do hereby certify that all information contained within this application is
true a	nd correct. I further certify that the owner of the property authorizes this proposed application. I understand that I must
comp	ly 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 3 <sup>rd</sup> Street, City of Bryant, Sal	line
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 De	epartment
of Community Development.	

-Rick Johnson

City of Bryant

-Chairman Board of Zoning Adjustment

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.



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Date: 1/8/2024
Applicant or Designee: Project Location:
Name VEER investment Properties Property Address 2903 Pikewood, Lot 31B
Address 12 Longwell Loop, LRAR72211 Bryant, AR 72022
Phone 5017669090 Parcel Number
Email Address: Veeysuite Ognail an Zoning Classification R-M
Property Owner (If different from Applicant):
Name
Phone
Address
Email Address
Additional Information:
Legal Description (Attach description if necessary)
tikewood 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

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Sor Bron of

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Use of adjacent properties Scale, North Arrow, Vicinity Map

to unique conditions of the site.

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true and correct. I further certify that the owner of the property authorizes this proposed application. I understand that	l must
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Date:
Applicant or Designee:  Toshing Hester Name Hester Home Solvtions  Address (100) 7513 Hart Rd, Benton, AR Phone Sol-912 - 8667  Parcel Number 840-03588-065  Email Address: Tashhester 28 at grail. com  Zoning Classification
Property Owner (If different from Applicant):
Name Nathan Brady
Phone 501-672-1557
Address 10432 Beed Rd, Alexander, AR 72002
Email Address gabray 1 at grail.com
Additional Information:  Legal Description (Attach description if necessary)  Losa De Campo, Lot 23
Description of Conditional Use Request (Attach any necessary drawings or images)
Proposed/Current Use of Property Urplex / currently undercloped

#### **Application Checklist**

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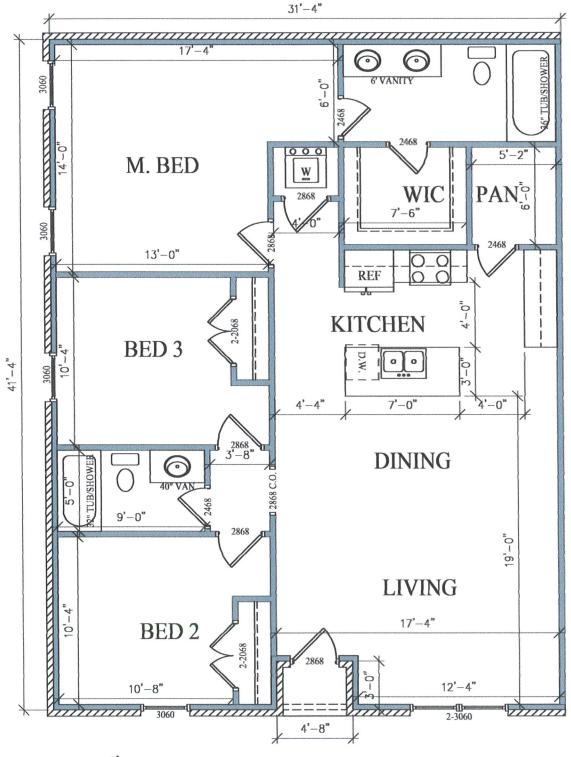
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01/04/2024

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





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Date: 1-10-24	
Applicant or Designee: Percy Sean Laisure Name Sean Laisure Construction LLC	Project Location:  Property Address Ward Dr. Bryant AR. 72022
Phone 501.831-7336  Email Address: Seanlaisure Gmail.com	Parcel Number 840 - 03588-063
Property Owner (If different from Applicant):  Name Nathan Brady  Phone 501-677-1557  Address 10432 Reed Rd. Alexander  Email Address 9n brady 71@ Gmail.co	A12 72007
Additional Information:  Legal Description (Attach description if necessary  Casa De Campo, 21	()
Duplex	any necessary drawings or images)
Proposed/Current Use of Property Duplex /	currently undeveloped

#### **Application Checklist**

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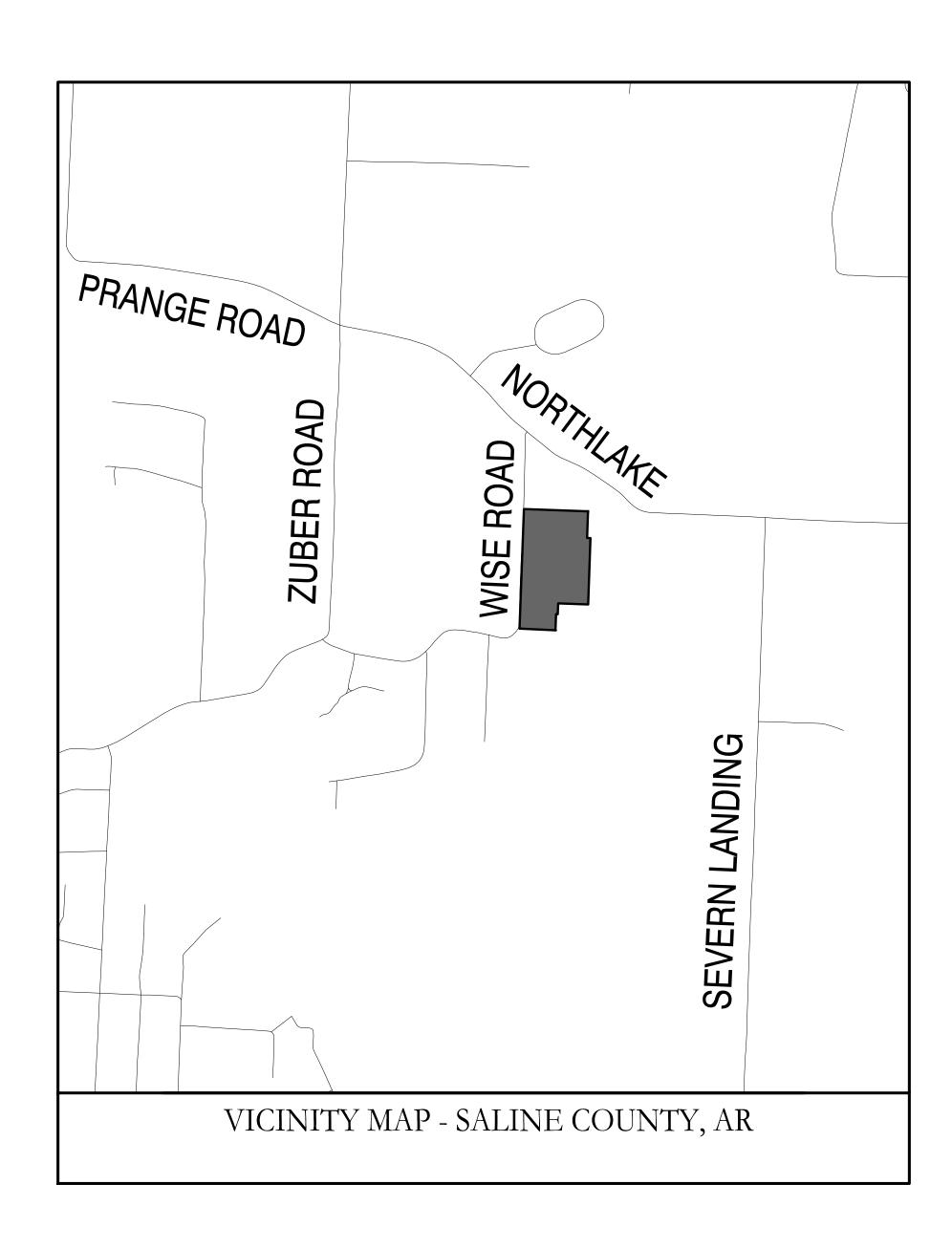
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# KENSINGTON PLACE SUBDIVISION PHASE 3 BRYANT, ARKANSAS



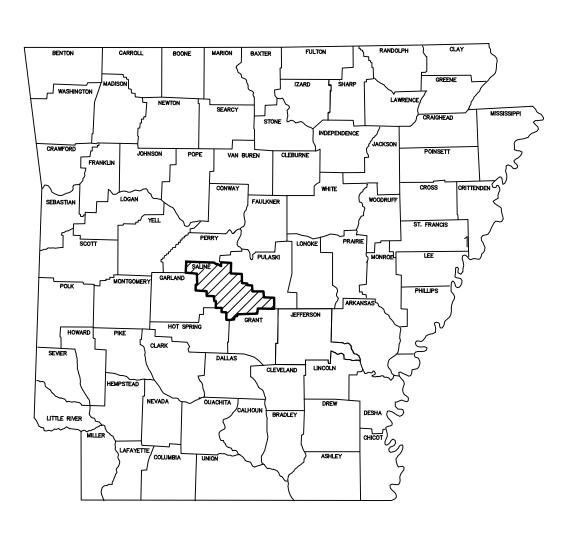
# Prepared by:

# GarNat Engineering, LLC

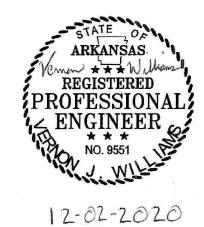
Designing our client's success www.garnatengineering.com

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

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



<u>ARKANSAS</u>

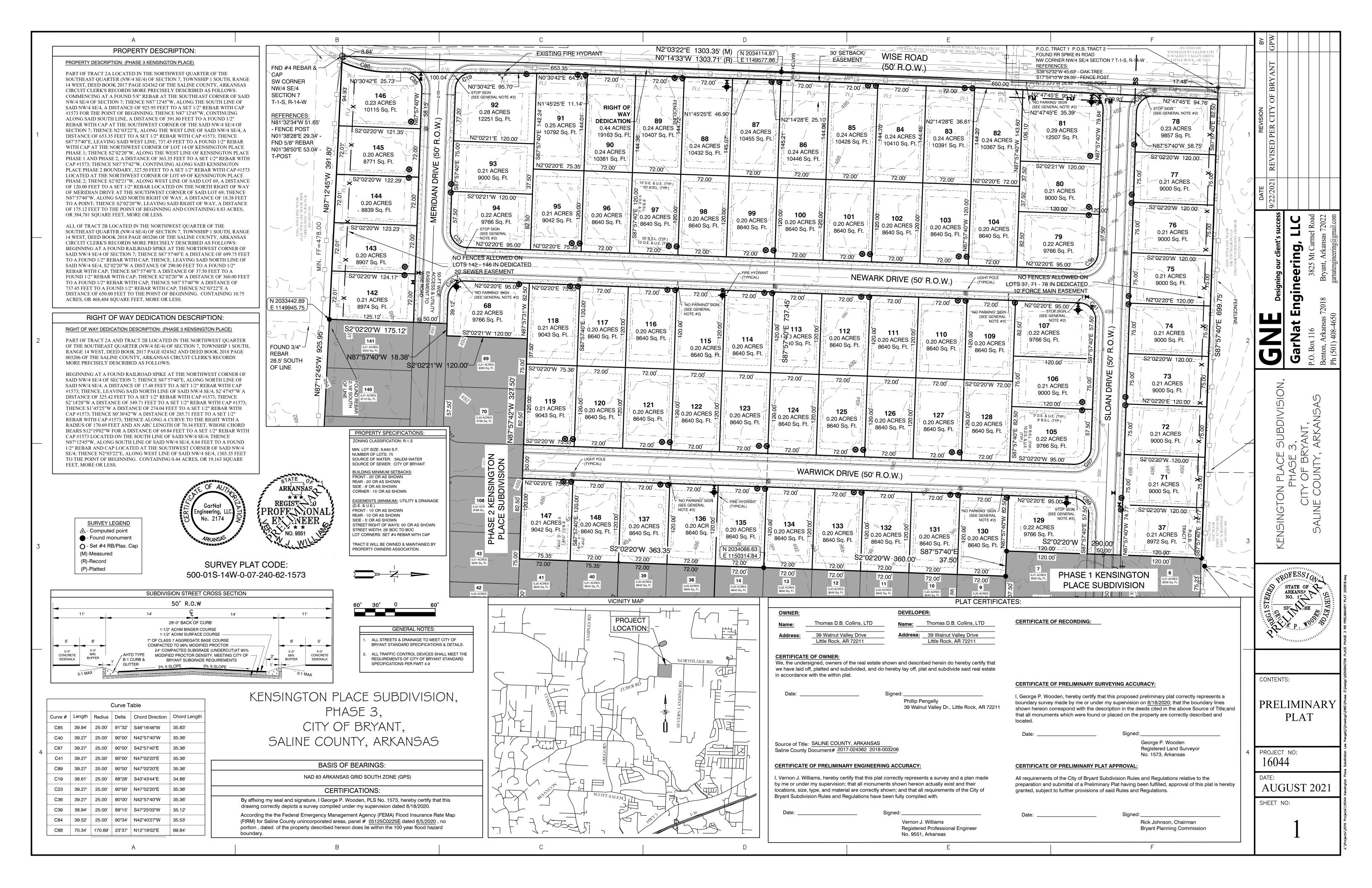


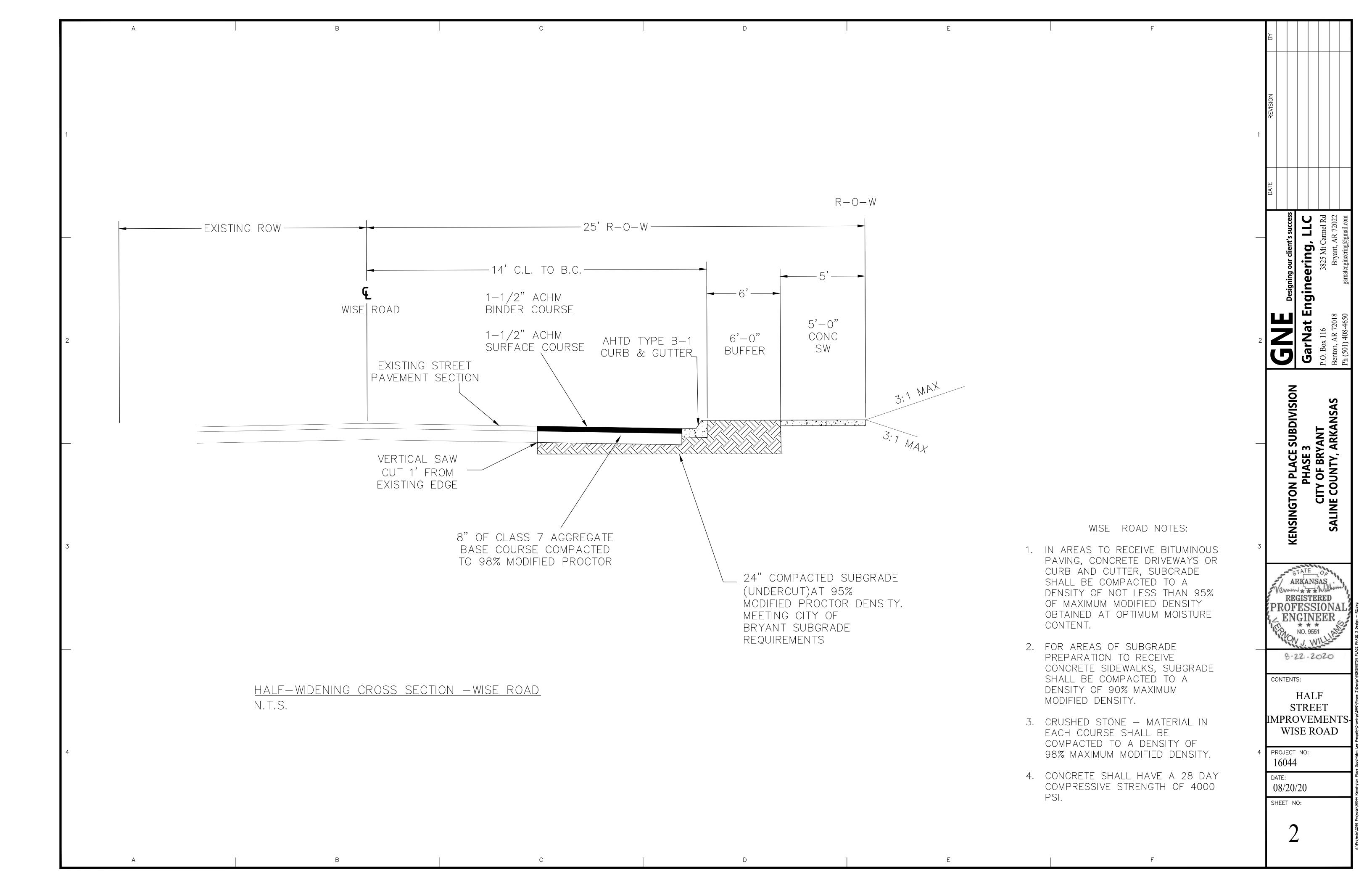


## DRAWING INDEX:

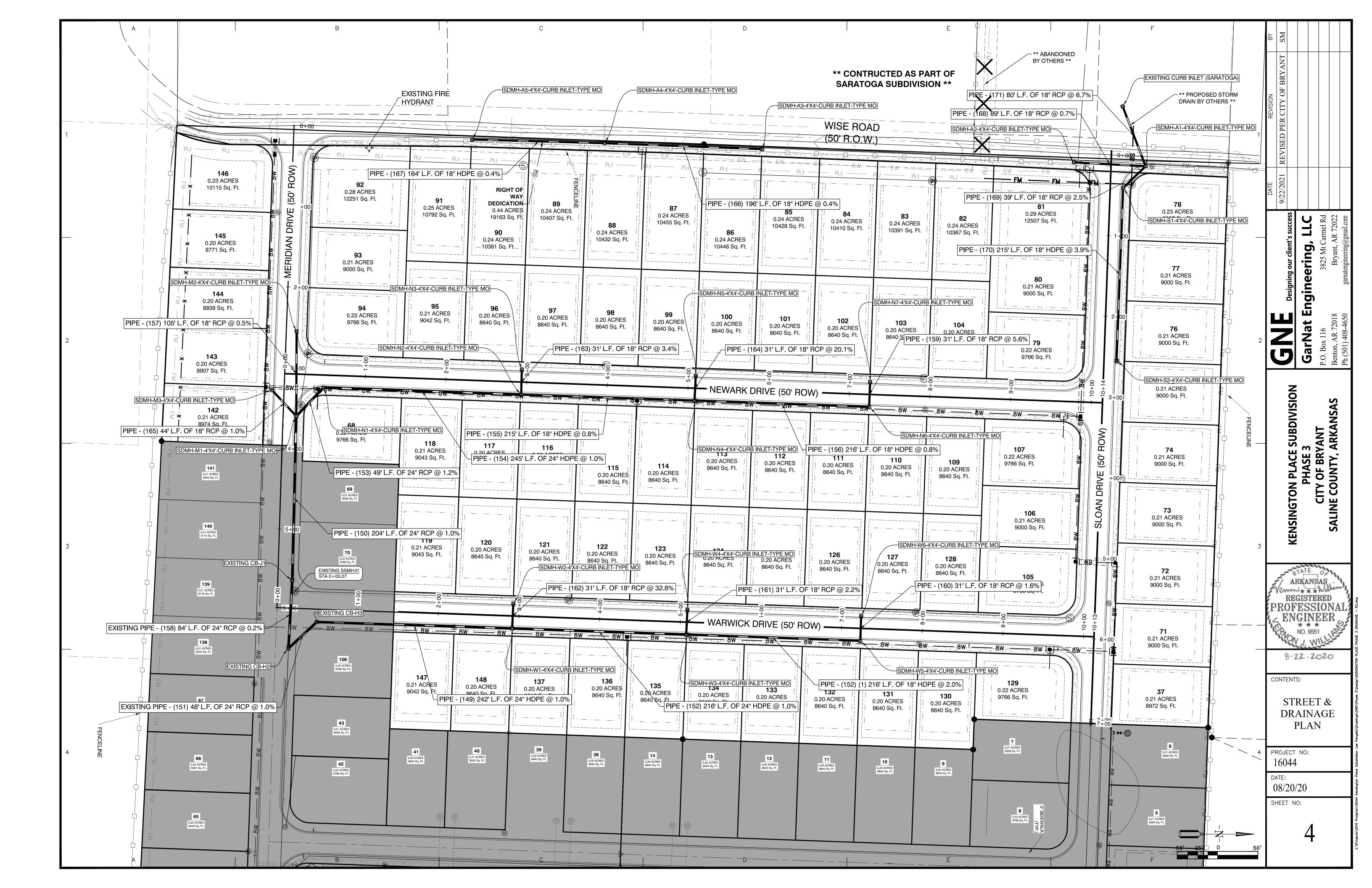
- PRELIMINARY PLAT
- 2 HALF STREET IMPROVEMENTS WISE ROAD
- 3 OVERALL WATER & SEWER PLAN
- 4 STREET & DRAINAGE PLAN
- 5 MERIDIAN & SLOAN DRIVES PROFILES
- 6 WARWICK DRIVE PROFILE
- 7 NEWARK DRIVE PROFILE
- 8 WISE ROAD PROFILE

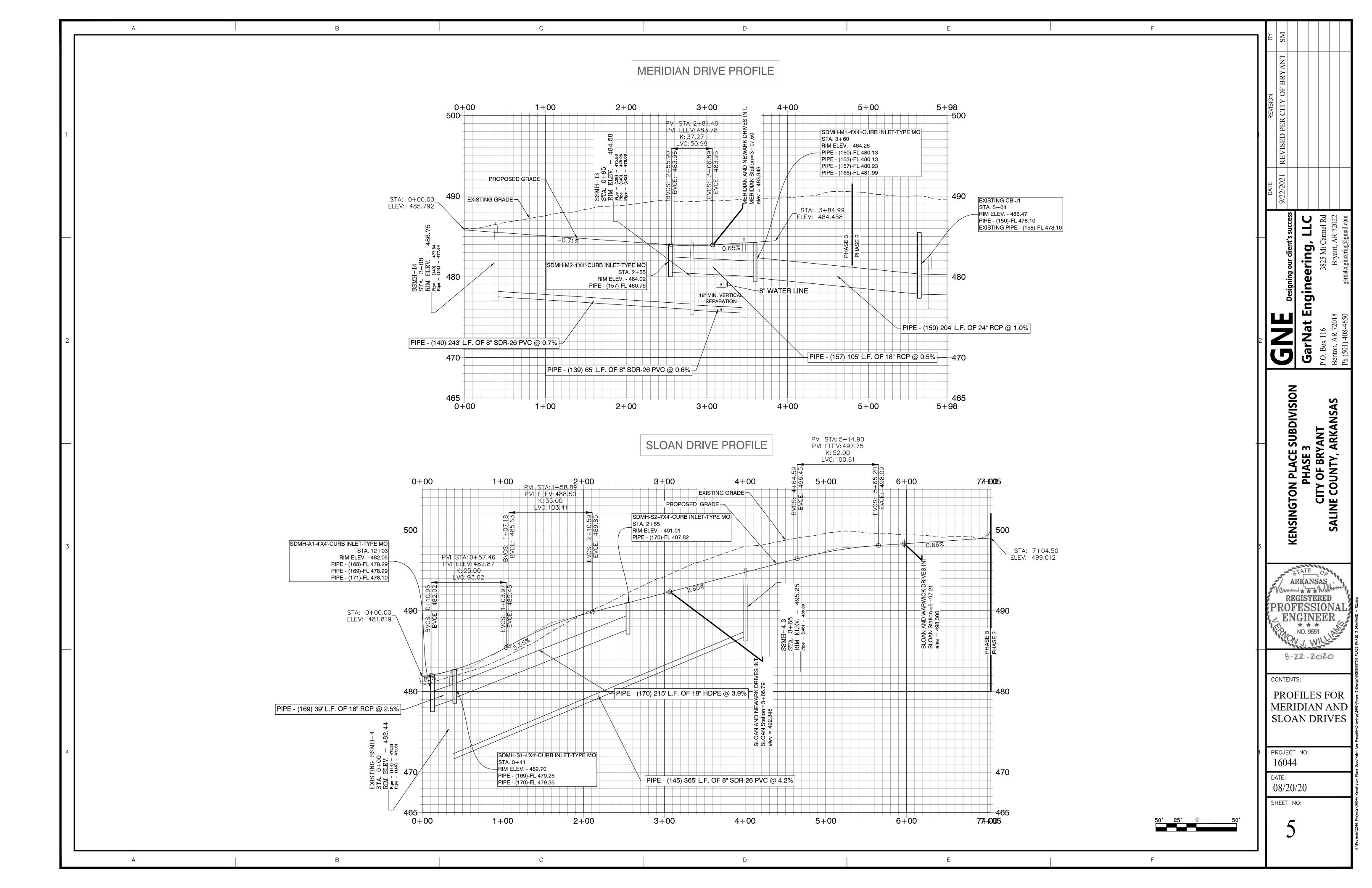


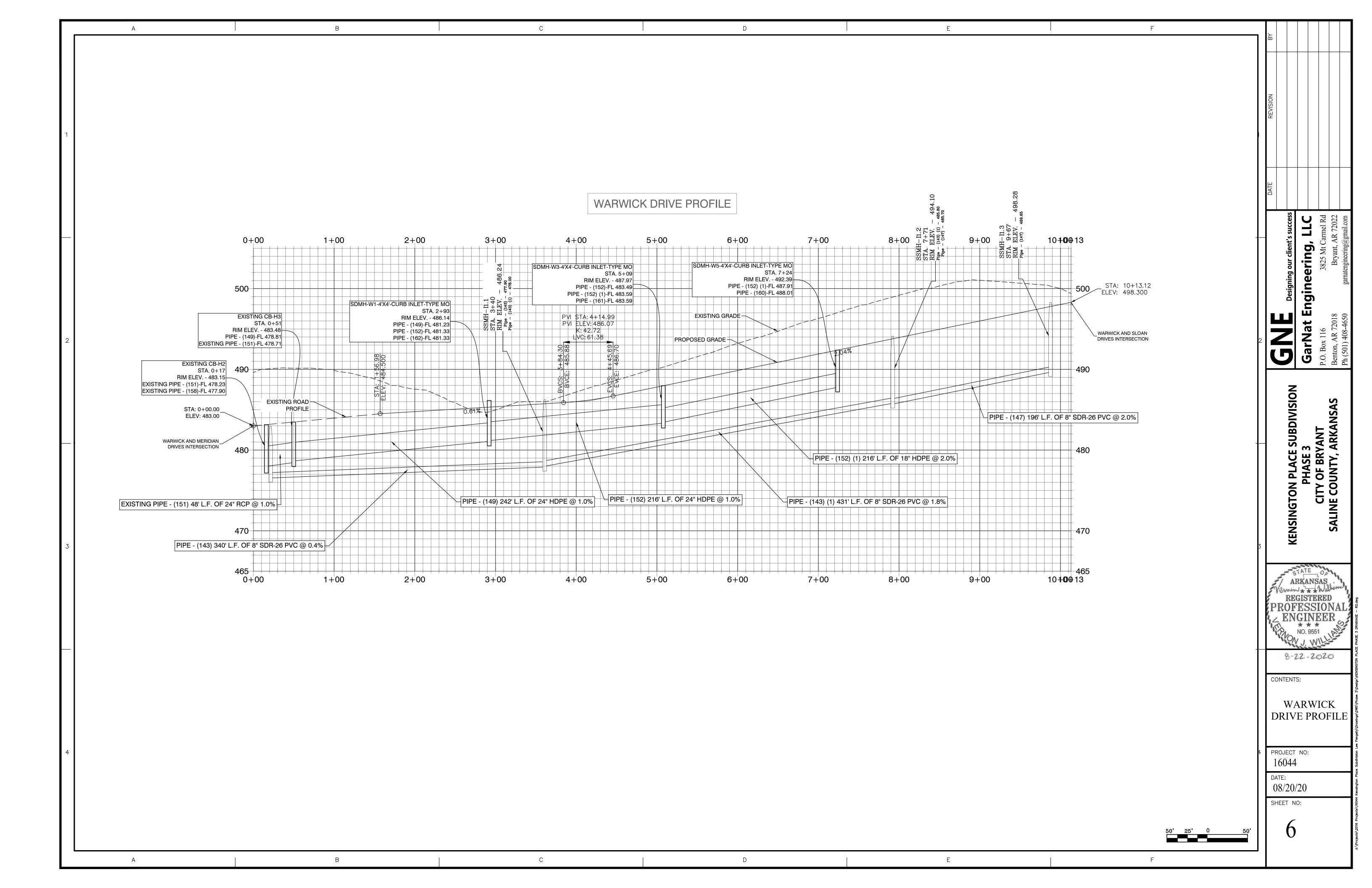


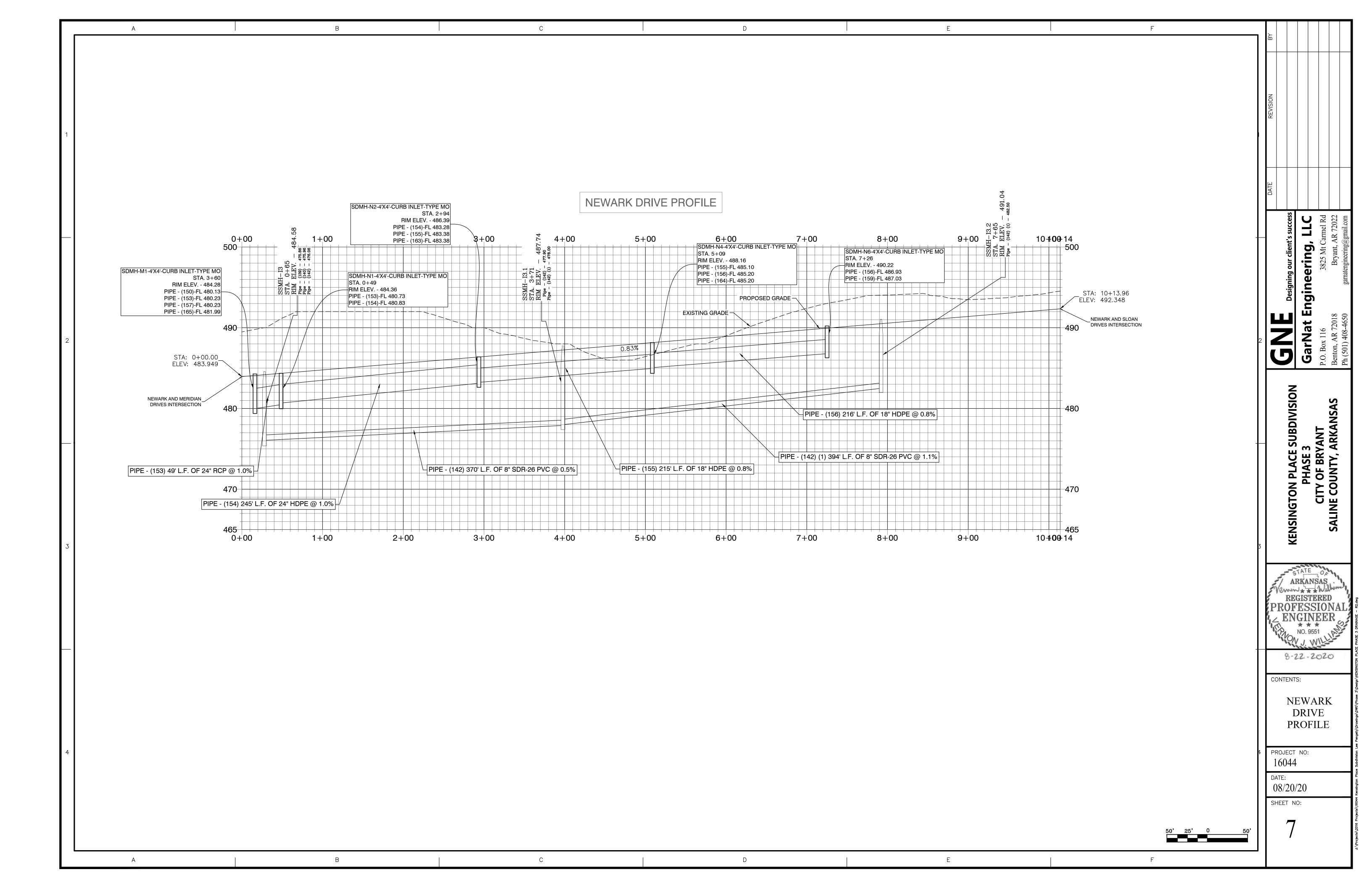


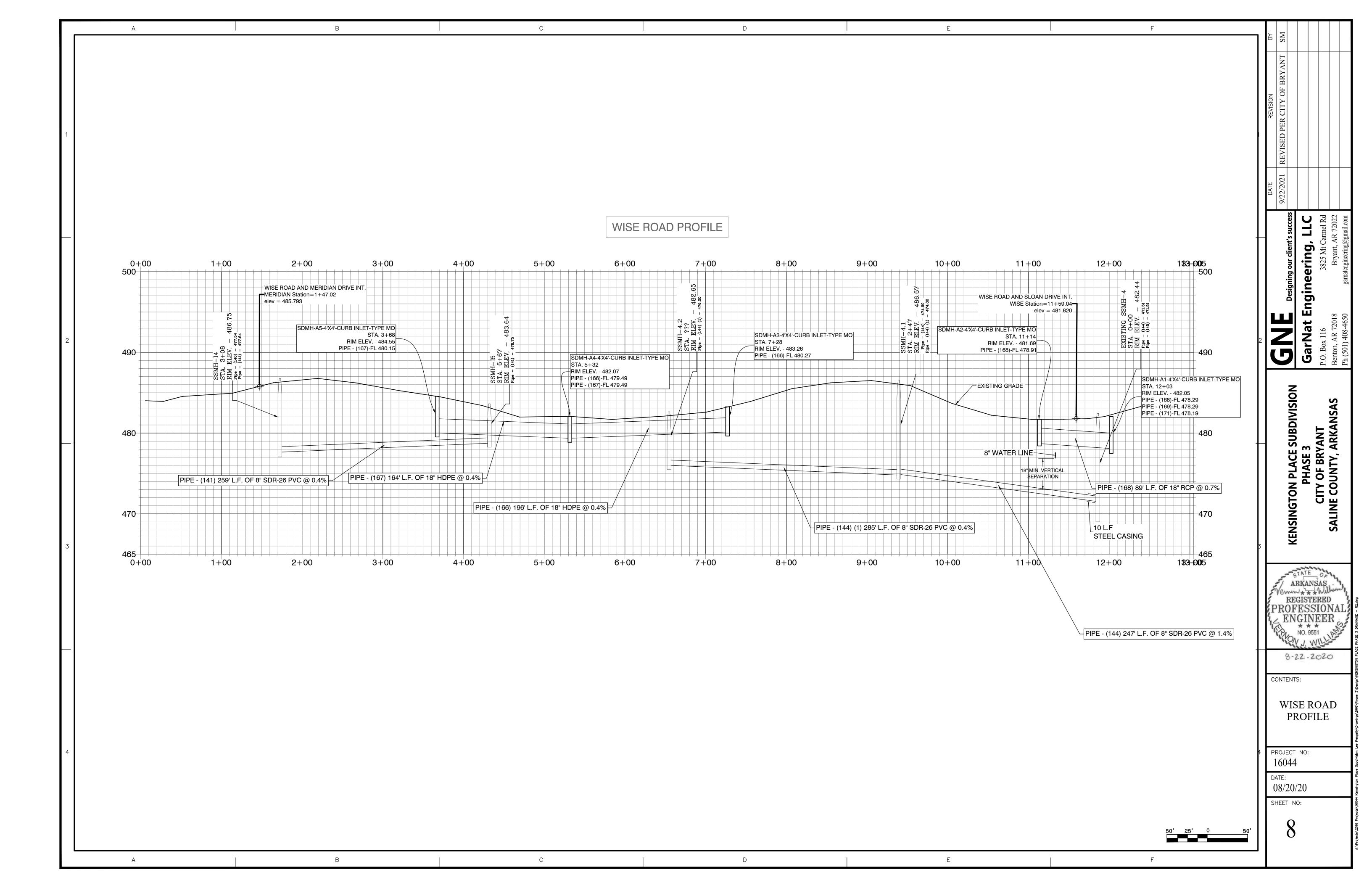


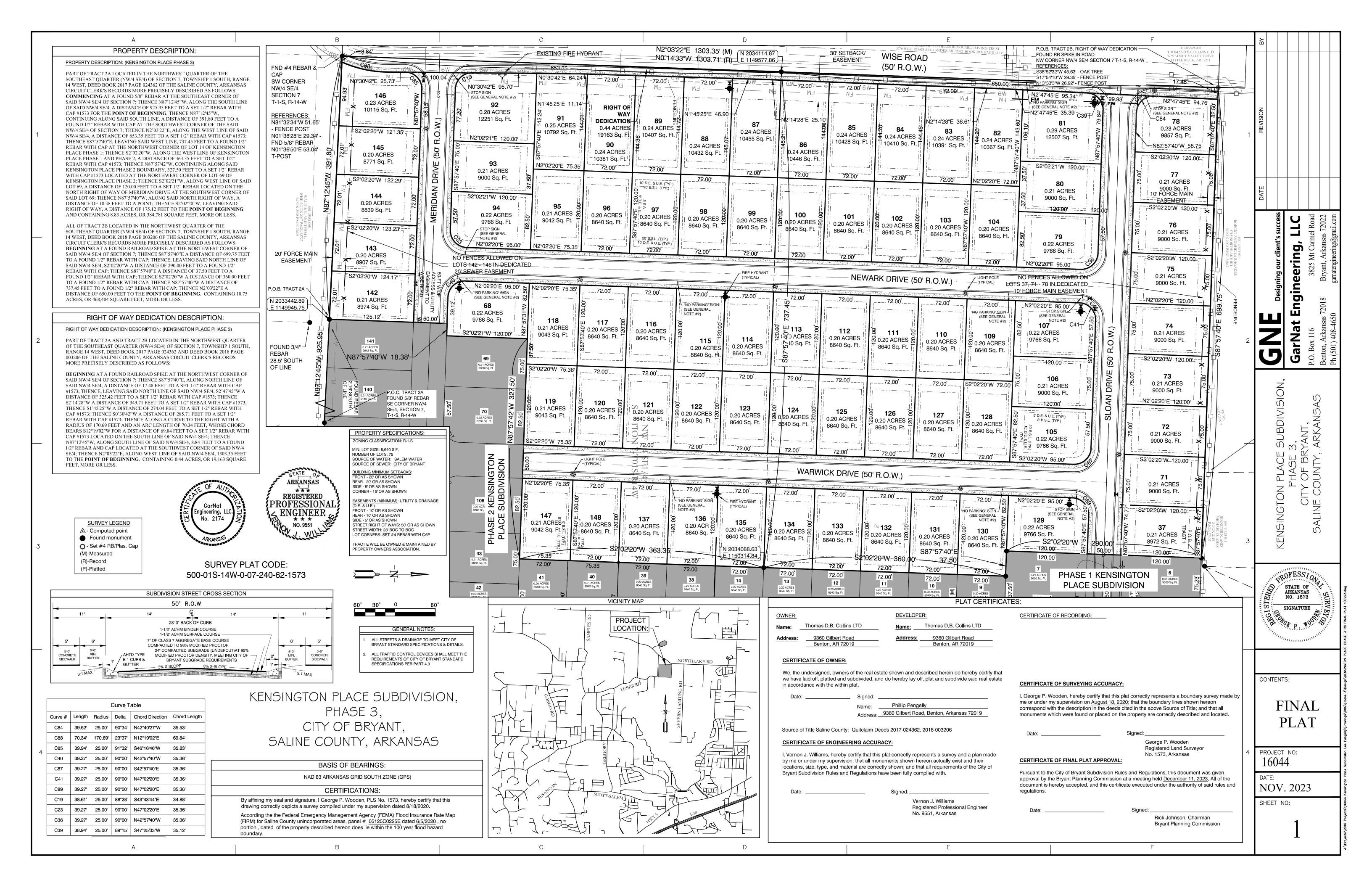












#### BILL OF ASSURANCE KENSINGTON PLACE SUBDIVISION PHASE 2 AND PHASE 3

#### PART A. PREAMBLE

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

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

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

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

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

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

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

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

#### PART B. AREA OF APPLICATION

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

#### PART C: RESIDENTIAL AREA COVENANTS:

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

C-2 ARCHITECTURAL CONTROL. No dwelling or structure shall be erected, placed or altered on any lot until the construction plans and specifications and a plan showing the location of the structure, including landscaping, have been approved by the architectural control committee as to quality of workmanship and materials, harmony of external design with existing structures, and as to location with respect to topography and finish grade elevation, and intended objectives of

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

C-3 DWELLING COST, QUALITY AND SIZE. No dwelling shall be permitted on any lot unless the dwelling has at least 1,800 square feet, it being the intention and purpose of the covenants to assure that all dwellings shall be of a quality of workmanship and materials substantially the same or better than that for the minimum permitted dwelling size. Each dwelling shall have a minimum of a two car garage. No open carports are allowed. No manufactured houses are allowed, site built homes only.

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

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

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

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

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

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

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

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

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

C-13 OIL AND MINING OPERATIONS. No oil drilling, oil development operations, oil refining, quarrying or mining operations of any kind shall be permitted upon or in any lot, nor shall oil wells, tanks, tunnels, mineral excavations or shafts be permitted upon or in any lot. No derrick or structures designated for us in boring for oil or natural gas shall be erected, maintained or permitted upon any lot.

C-14 LIVESTOCK AND POULTRY. No animals, livestock or poultry of any kind may be raised, bred or kept on any tract, except that dogs or cats may be kept, on any lot provided that they are not kept, bred or maintained for any commercial purpose and provided that facilities for

maintenance of same are approved by the Architectural Control Committee and that the keeping of same does not constitute a nuisance.

C-15 GARBAGE AND REFUSE DISPOSAL. No lot or easement shall be used or maintained as a dumping ground for rubbish. Trash, garbage and other waste shall not be kept except in sanitary containers. There shall be no burning of trash, rubbish, leaves or yard waste.

C-16 SIGHT DISTANCE AT INTERSECTIONS. No fence, wall, hedge or shrub planting which obstructs sight lines at elevations between 2 and 6 feet above the roadways shall be placed or permitted to remain on any lot comer which the triangular area formed by the street property lines and the line connecting them at points 15 feet from the intersection of street right of way lines, or in the case of a rounded property comer, from the intersection of the street property line extended. The 'same sight line limitations shall apply on any lot within 10 feet from the intersection of the street property line with the edge of a driveway pavement. No tree shall be permitted to remain within such distances or such intersections unless the foliage line is maintained at sufficient height to prevent obstruction of such sight lines.

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

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

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

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

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

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

#### PART D. ARCHITECTURAL CONTROL COMMITTEE:

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

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

#### PART E. PROPERTY OWNERS ASSOCIATION

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

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

common area;

#### E-2 MEMBERSHIP AND VOTING RIGHTS

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

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

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

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

(a) when all tracts are sold by declarant.

#### E-3 COVENANT FOR MAINTENANCE ASSESSMENTS

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

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

- (a) For the maintenance and upkeep of all common areas
- (b) For any other purposes deemed in the best interest of the property owners by the Association

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

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

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

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

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

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

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

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

#### PART F. GENERAL PROVISIONS:

F-1 TERM. These covenants are to run with the land and shall be binding on all parties and all persons claiming under them for a period of twenty-five years from the date these covenants are recorded after which time, said covenants shall be automatically extended for successive period of ten years, subject to the express provision that these covenants may be amended at any time after the date of execution hereby by an instrument signed by the members of the Architectural Control Committee and the owner or owners of a majority of the lots herein platted

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

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

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

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

THOMAS D.B.COLLINS, LTD

BY:

Phillip Pengelly

### **ACKNOWLEDGEMENT**

STATE OF ARKANSAS ) )ss COUNTY OF SALINE )

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

Witness my hand and seal this \_\_\_\_\_ day of \_\_\_\_\_\_, 2020.

Notary Public

My Commission Expires: 6-18-2029

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

# KENSINGTON PLACE PHASE 3



### **Subdivision Checklist**

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

### Instructions

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

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

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

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

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

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

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

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

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

### City of Bryant Subdivision Checklist

Subdivision/Proj	ject Name _ K	ENSINO	GTON	PLACE	PHASE	3
Contact Person	VERNO	N W	ILLIAMS	Phone (5	01)408-4	-650
Mailing Address	3825	MT	CARMEL	ROAD,	BRYANT,	AR
				/	72077	

### I. BASIC INFORMATION NEEDED ON THE PLAT

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

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

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

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

#### III. PRELIMINARY PLAT ATTACHMENTS

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

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

### III. FINAL PLAT ATTACHMENTS

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

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

	▲ 81. Check for Water Sewer impact fees (\$100.00 Flushing Fee and \$100.00 impact fee per lot)
K	Name of Subdivision  Name of Subdivision  Name of Subdivision
	HAVE COMPLIED WITH THE REQUIREMENTS LISTED ABOVE AND HAVE CHECKED ALL OF THE BOXES ON THE CHECKLIST WHICH APPLY TO THIS PROJECT SUBMITTAL.  Owner Signature  Engineer Signature
	CITY USE
	Preliminary Plat Approved
	Planning Commission Date
	Final Plat Approved
	Planning Commission Date
	Proof of Recording - County
	County Clerk Date



3825 Mt Carmel Rd. Bryant, AR 72022

## **GarNat Engineering, LLC**

P.O. Box 116 Benton, AR 72018

November 14, 2023

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

Re:

Final Plat Certification

Kensington Place Subdivision Phase 3

Dear Mr. Smith:

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

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

Sincerely,

GarNat Engineering, LLC

PH: (501)408-4650

Vernon J. Williams, P.E., President

Thomas D.B. Collins

Phillip Pengelly



3825 Mt Carmel Rd. Bryant, AR 72022

## **GarNat Engineering, LLC**

P.O. Box 116 Benton, AR 72018

January 2, 2024

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

Re: Final Plat – Kensington Place Subdivision, Phase 3

Dear Mr. Smith:

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

### List of Enclosures

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

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

Sincerely,

GarNat Engineering, LLC

Vernon J. Williams, P.E., President



**December 10, 2023** 

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

### RE: SUMMERWOOD SPORTS GYM #3 REVISED SITE PLAN

### To whom it may concern:

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

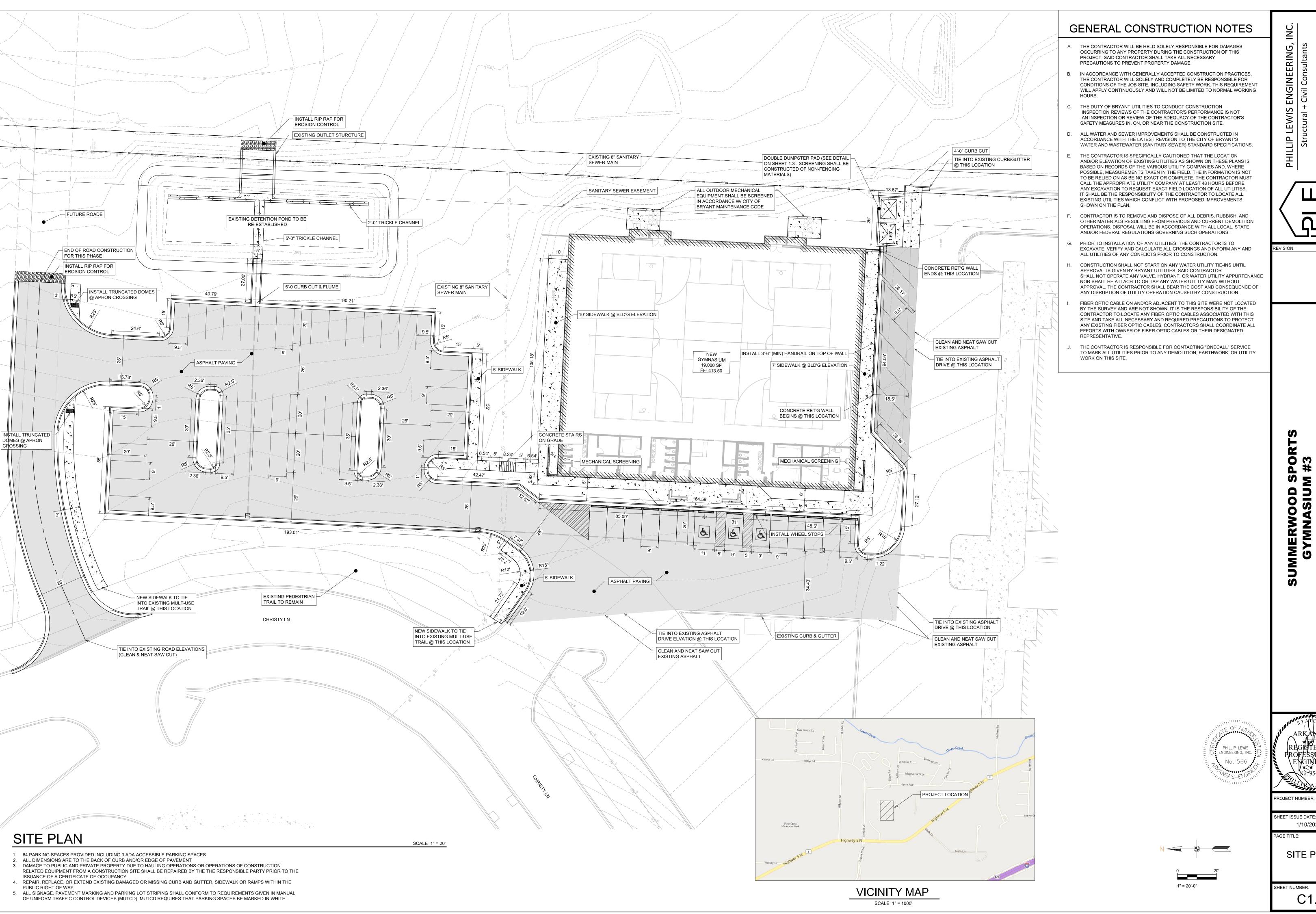
### **Review Comments:**

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

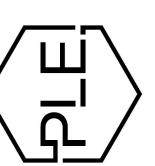
- **11.** How is pedestrian trail transitioned into drive?
  - The drive will come up to the existing pedestrian trail and match elevations. Detailed on plans.
- **12.** Show that grades are to meet ADA requirements.
  - Added slope to plans.
- **13.** Transition to handicap access?
  - The parking spaces will be flush with the sidewalk. No curb will be installed at this location.
- **14.** Submit drainage calculations for site which meet City of Bryant stormwater requirements.
  - ➤ Please see the attached stormwater drainage report attached with this letter.
- **15.** Provide calculations for depth of flow in parking spaces.
  - ➤ Please see the attached stormwater drainage report attached with this letter.
- **16.** How is water managed at this low point?
  - Adjusted gutter elevations so water will flow east from this point.
- 17. Demonstrate that existing pond has a sufficient outfall control structure to meet the city requirements for detention ponds.
  - ➤ Please see the attached stormwater drainage report attached with this letter.
- **18.** How is the stormwater managed in this area?
  - This will bypass the pond. Rip rap will be installed at end of road for erosion control.
- 19. How is this graded? This water does not appear to go to the detention pond.
  - This will bypass the pond.
- **20.** Verify grades here. Is this a discharge point? If so, submit drainage calculations to demonstrate that this opening is sufficient for new design flows.
  - This will be a discharge point. This will also bypass the pond.
- **21.** Provide stormwater calculations which reflect capacity and also hydraulic grade of stormwater through boxes and pipes.
  - Please see the attached stormwater drainage report attached with this letter.
- **22.** Show inlet calculations.
  - > Please see the attached stormwater drainage report attached with this letter.
- **23.** Fire hydrants not listed on plans. FDC shall be equipped with 5" storz connection. fire hydrant shall be within 100' of FDC.
  - Added fire hydrant to plans.
- **24.** Where is this pipe going to?
  - This pipe is going to the detention pond.
- **25.** Show drainage arrows in direction of flow.
  - Added to plans.
- **26.** Are there roof drains? Where do they discharge?
  - Yes, there will be roof drains on the back of the building. These will be collected in a 12" HDPE pipe and discharged into the detention pond.

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

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



ENGINEERING,



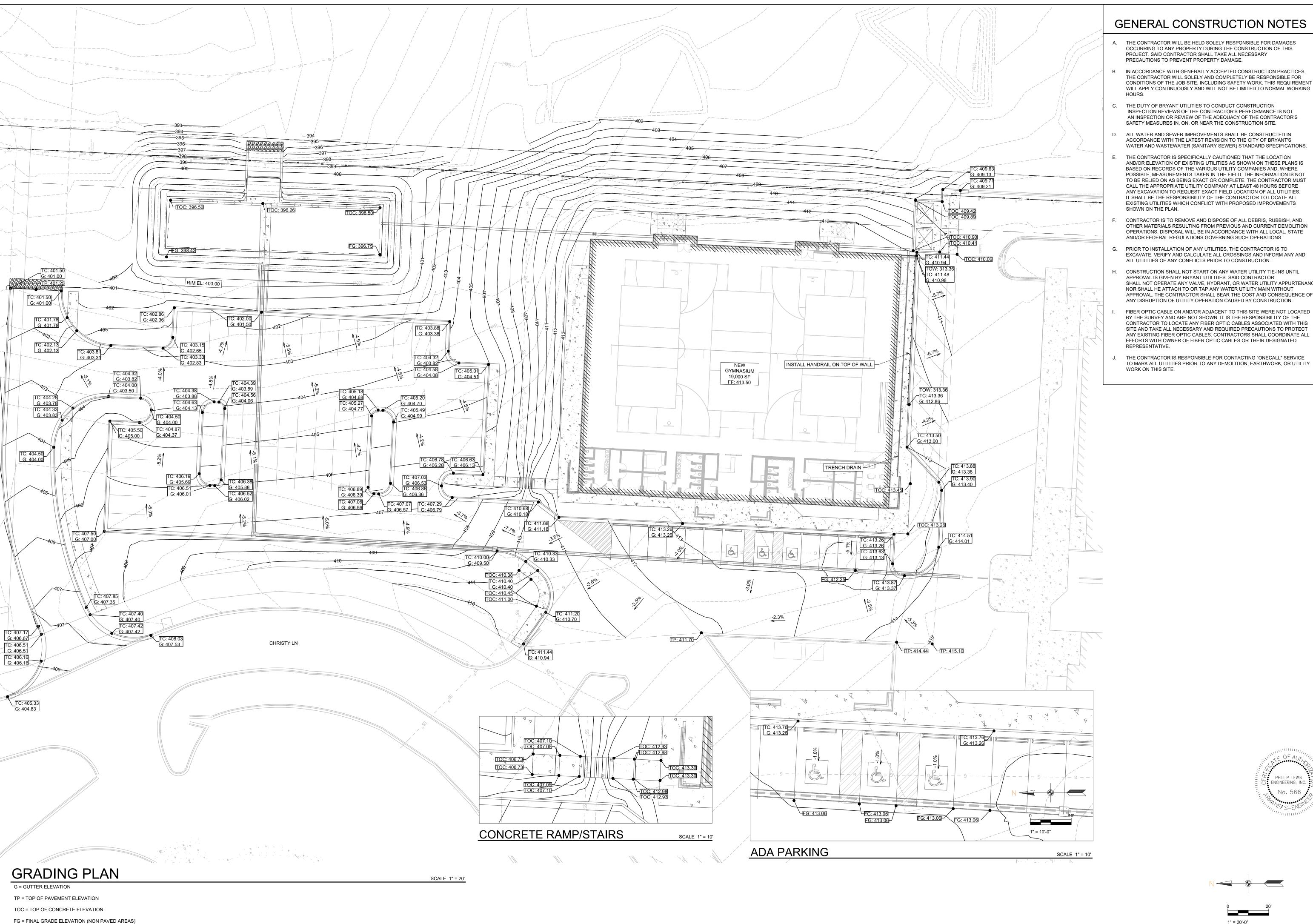
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SHEET ISSUE DATE:

1/10/2024

SITE PLAN

SHEET NUMBER: C1.



TC = TOP OF CURB ELEVATION

TOW = TOP OF WALL

# 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
  - 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

ENGINEERING,

LEWIS

PHILLIP

REVISION:

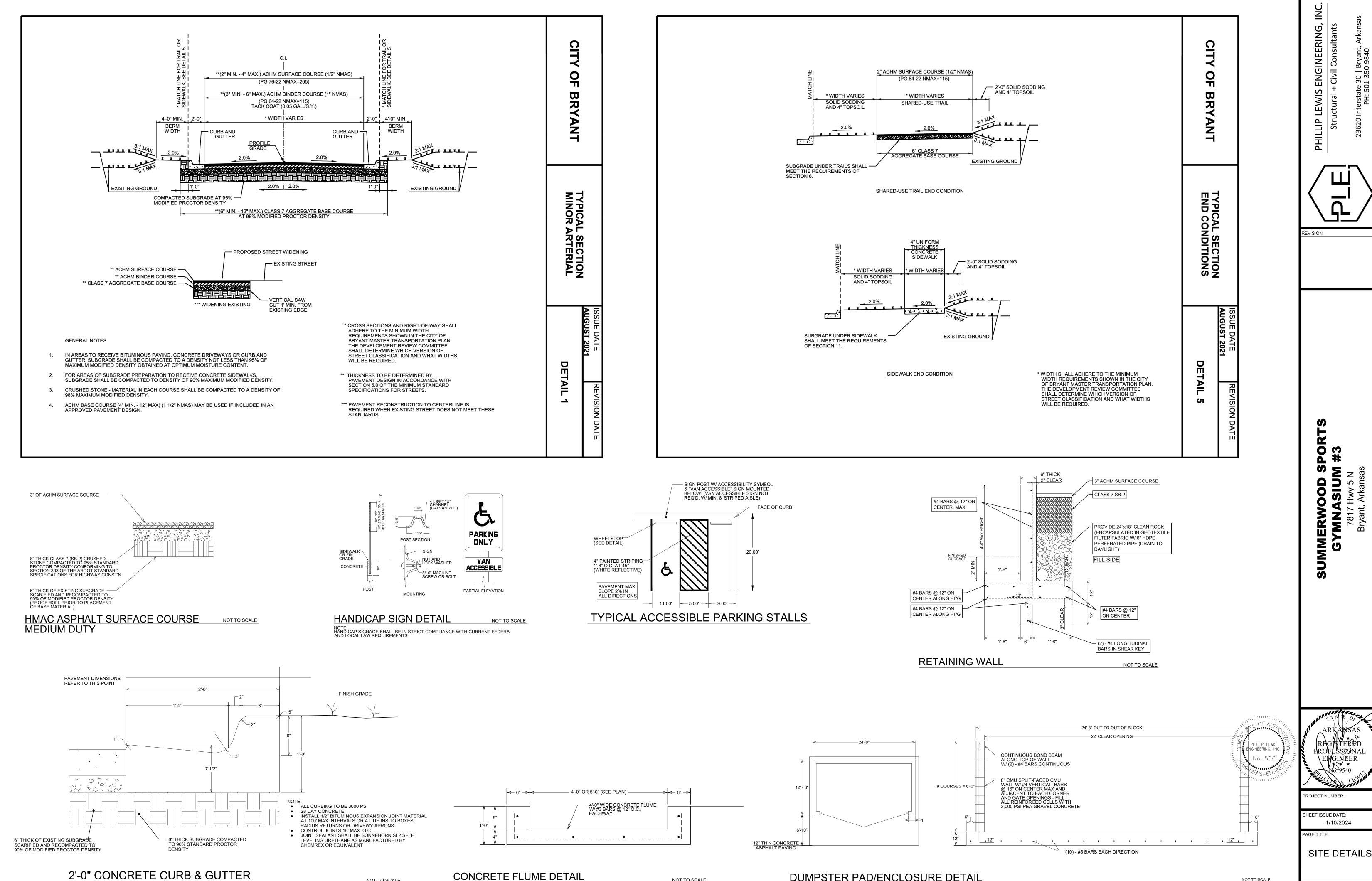
- C. THE DUTY OF BRYANT UTILITIES TO CONDUCT CONSTRUCTION INSPECTION REVIEWS OF THE CONTRACTOR'S PERFORMANCE IS NOT AN INSPECTION OR REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S
- ALL WATER AND SEWER IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST REVISION TO THE CITY OF BRYANT'S WATER AND WASTEWATER (SANITARY SEWER) STANDARD SPECIFICATIONS.
- 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
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- H. CONSTRUCTION SHALL NOT START ON ANY WATER UTILITY TIE-INS UNTIL APPROVAL IS GIVEN BY BRYANT UTILITIES. SAID CONTRACTOR SHALL NOT OPERATE ANY VALVE, HYDRANT, OR WATER UTILITY APPURTENANCE NOR SHALL HE ATTACH TO OR TAP ANY WATER UTILITY MAIN WITHOUT APPROVAL. THE CONTRACTOR SHALL BEAR THE COST AND CONSEQUENCE OF ANY DISRUPTION OF UTILITY OPERATION CAUSED BY CONSTRUCTION.
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- THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING "ONECALL" SERVICE TO MARK ALL UTILITIES PRIOR TO ANY DEMOLITION, EARTHWORK, OR UTILITY

1/10/2024

**GRADING PLAN** 

C1.2

SHEET NUMBER:



NOT TO SCALE

NOT TO SCALE

**DUMPSTER PAD/ENCLOSURE DETAIL** 

REVISION:

GYMNASIUM 7817 Hwy 5 N Bryant, Arkansas

PROFESSIONAL

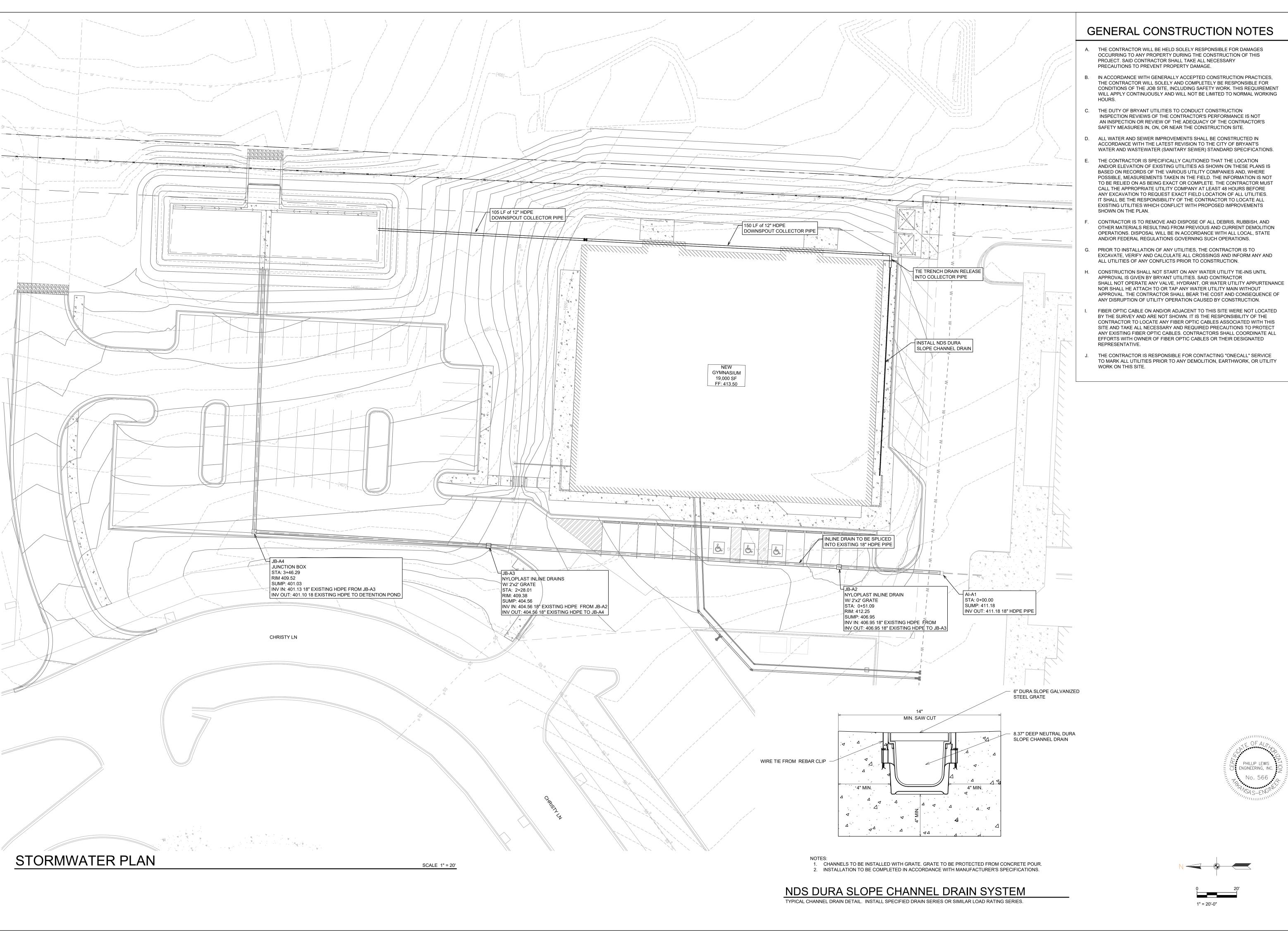
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STORMWATER PLAN

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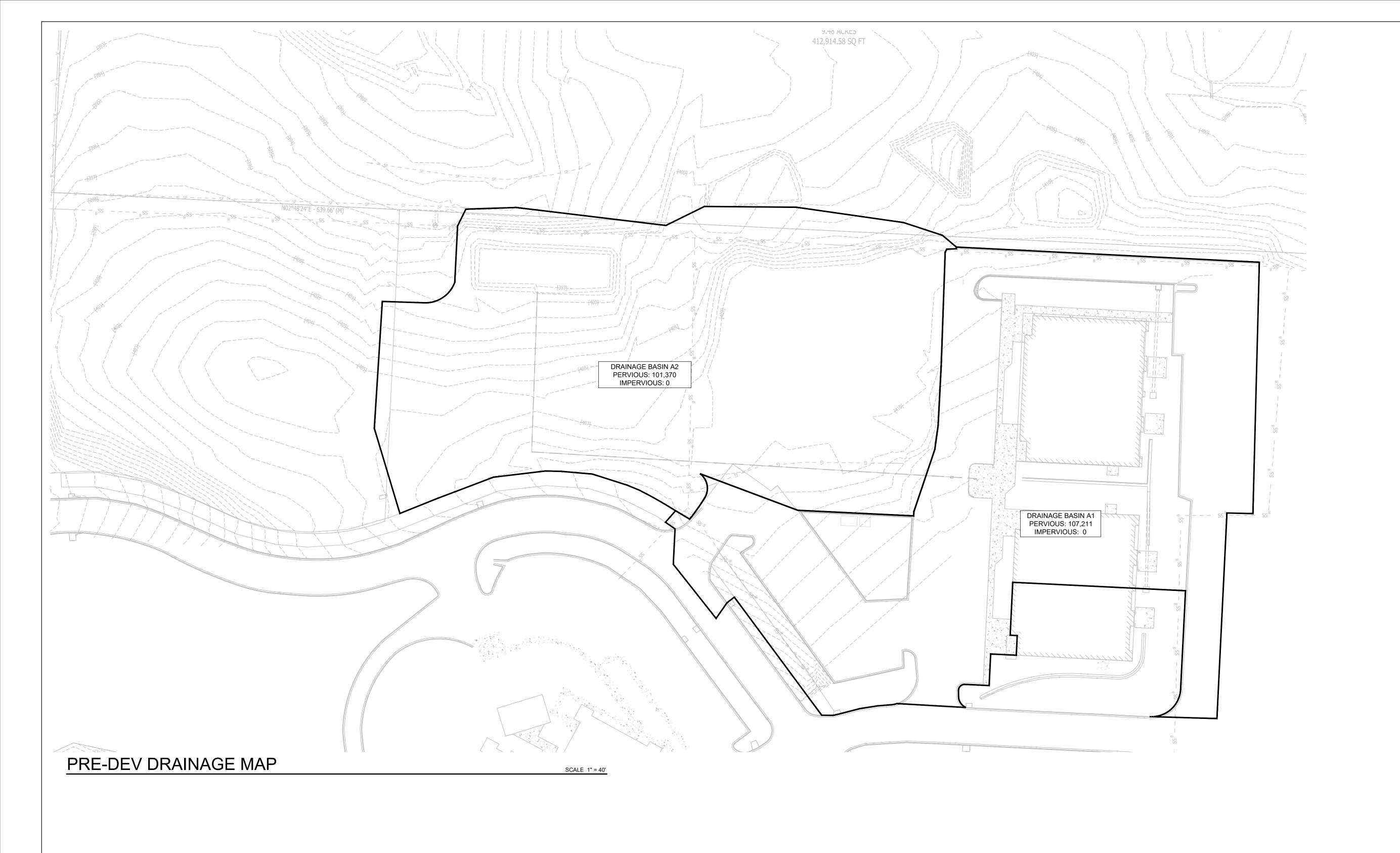
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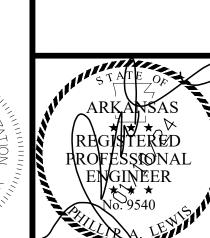
REVISION:

IASIUM #3 17 Hwy 5 N

**GYMN**7817





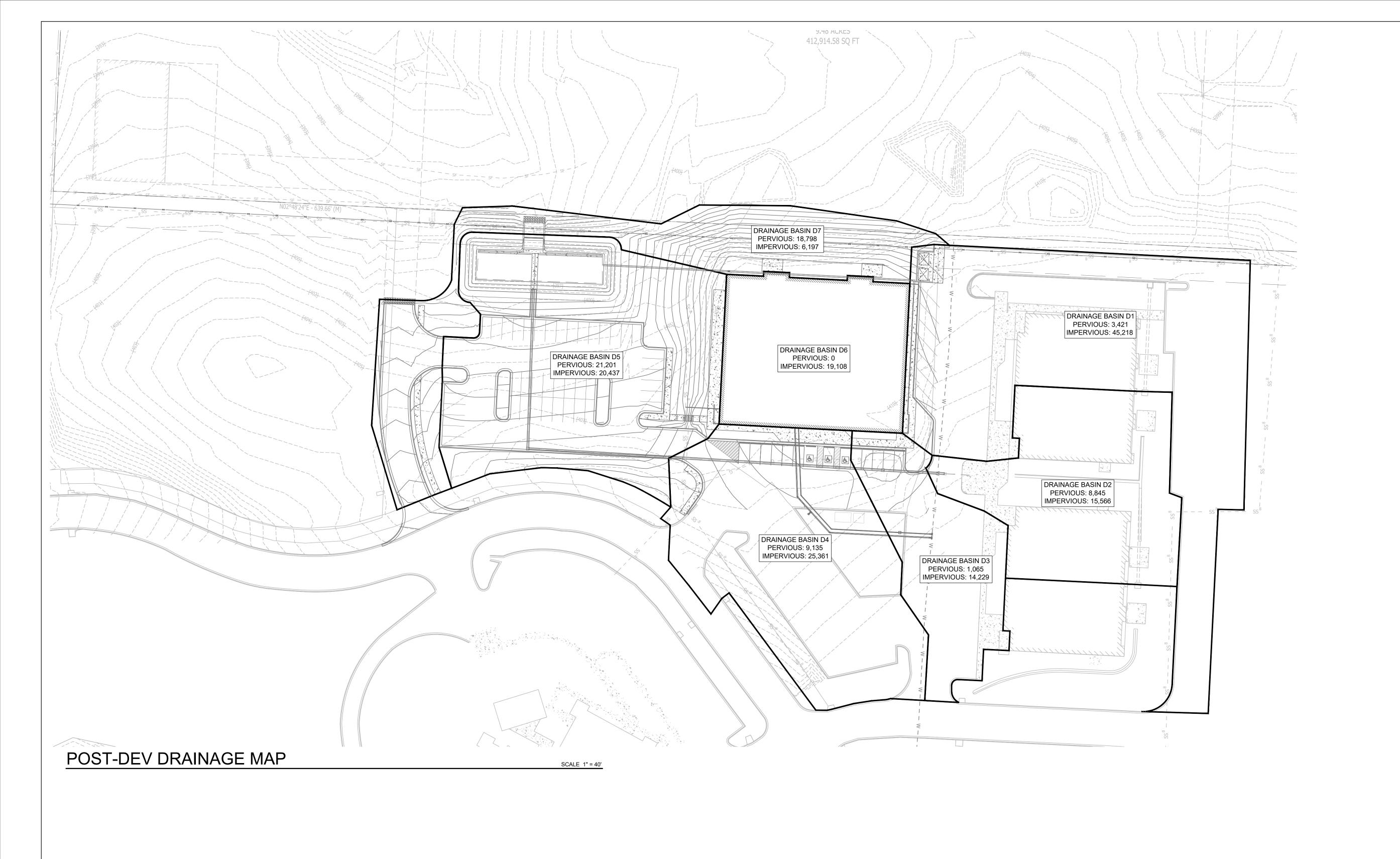


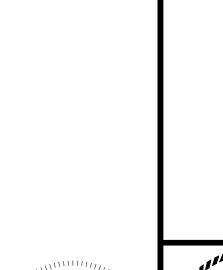
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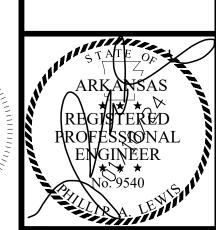
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PRE-DEV
DRAINAGE MAP

SHEET NUMBER:
C1.5



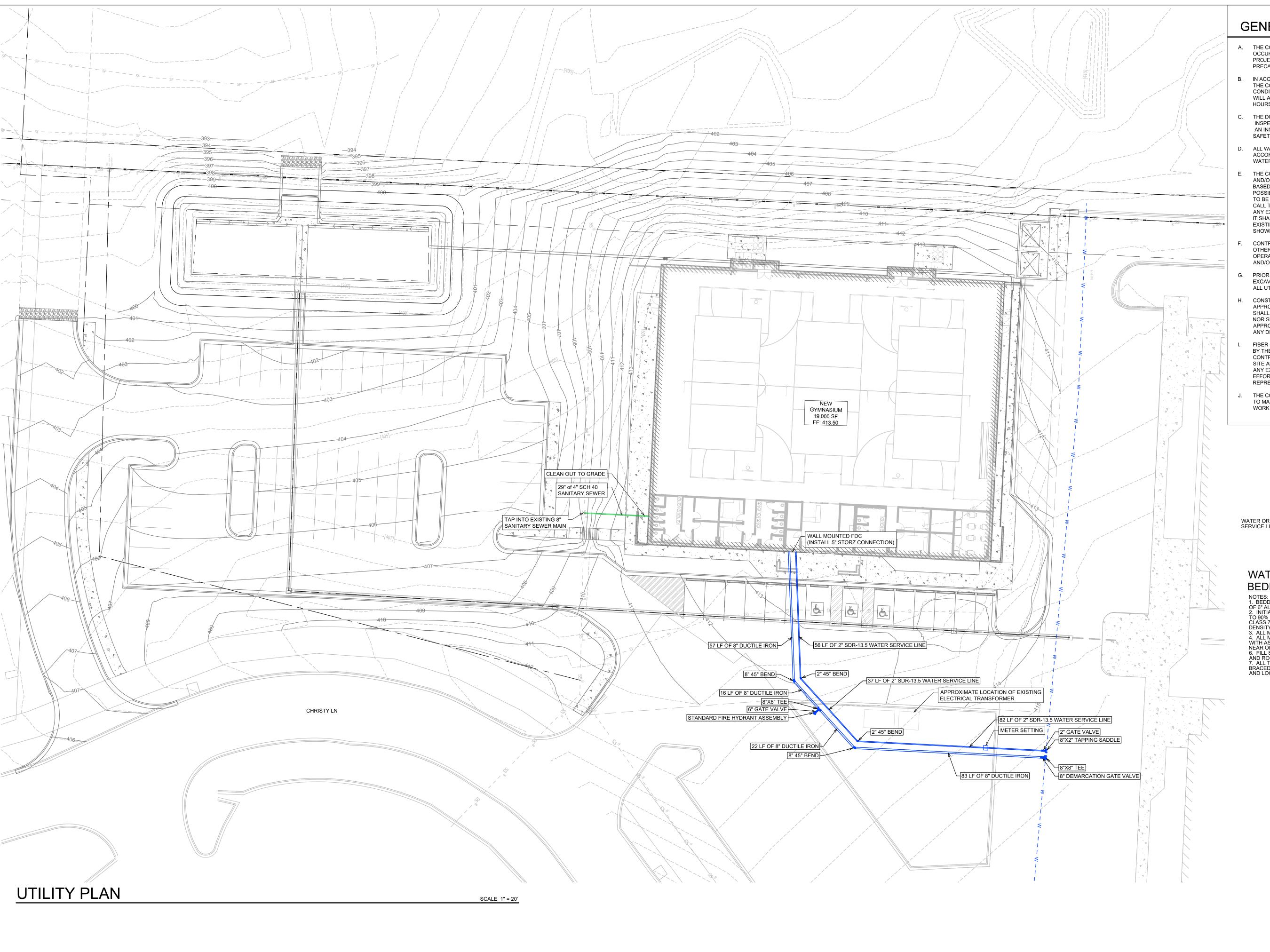




PHILLIP LEWIS ENGINEERING,
Structural + Civil Consultants

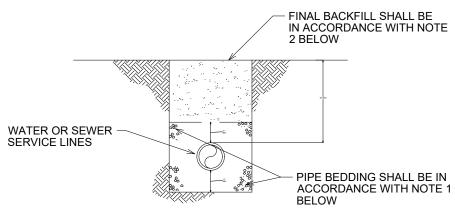
POST-DEV DRAINAGE MAP

SHEET NUMBER: C1.6



# GENERAL CONSTRUCTION NOTES

- A. THE CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR DAMAGES OCCURRING TO ANY PROPERTY DURING THE CONSTRUCTION OF THIS PROJECT. SAID CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT PROPERTY DAMAGE.
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  - 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.
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- J. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING "ONECALL" SERVICE TO MARK ALL UTILITIES PRIOR TO ANY DEMOLITION, EARTHWORK, OR UTILITY WORK ON THIS SITE.



# 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.

CLASS / 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.

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

ENGINEERING,

PHILLIP

REVISION:

PRELIMINARY DICTION

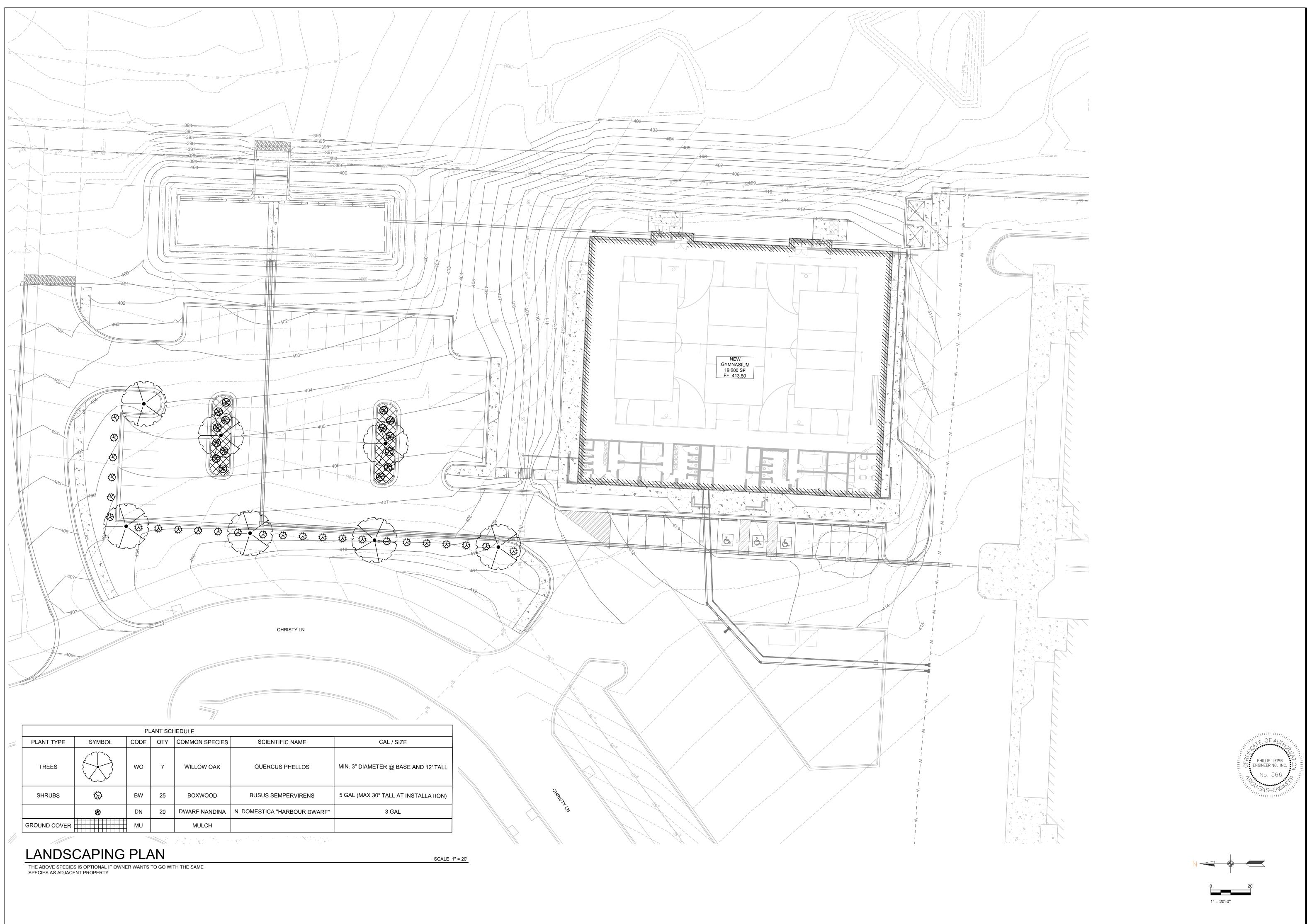
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UTILITY PLAN

SHEET NUMBER:



> LEWIS ENGINEERING, I ructural + Civil Consultants

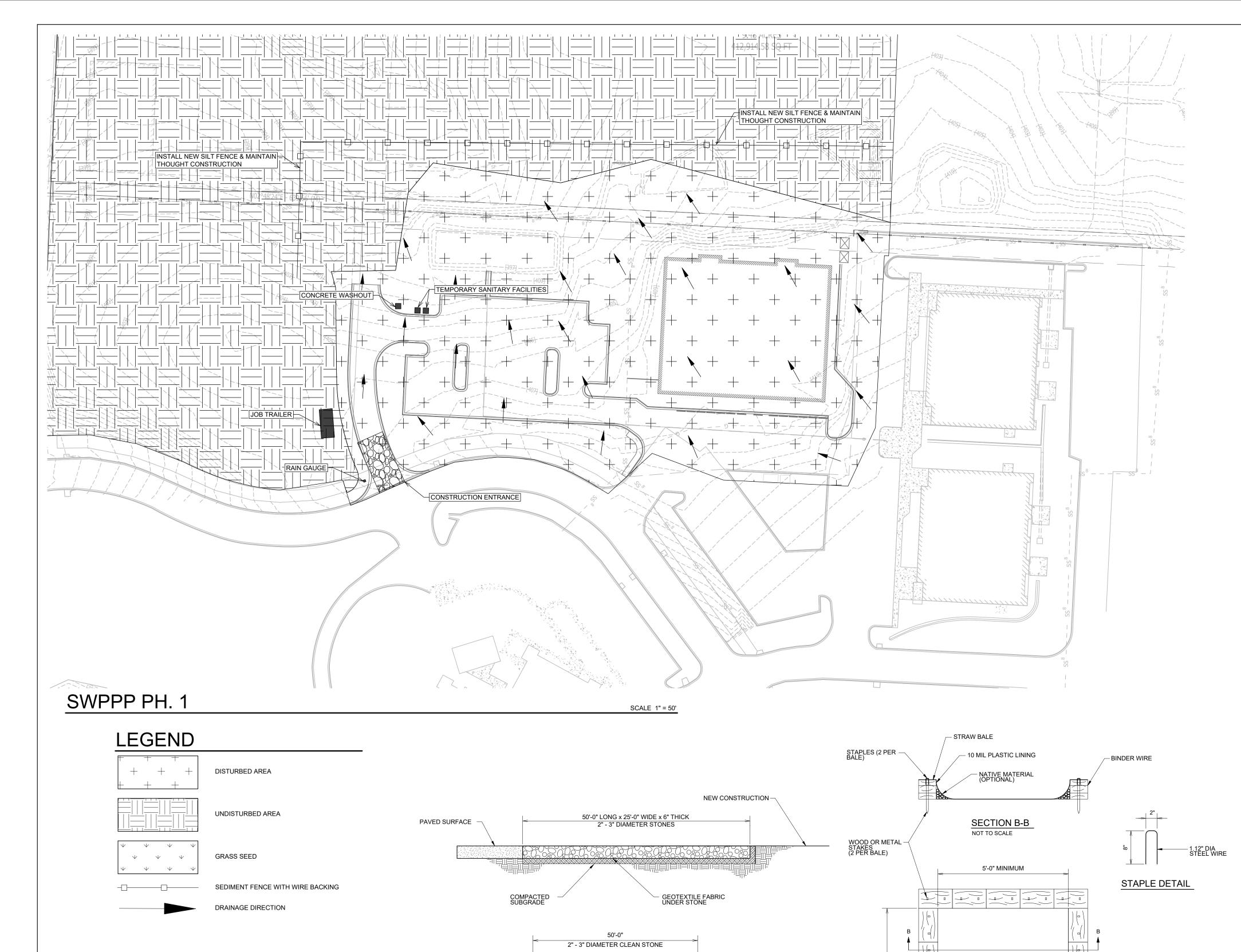
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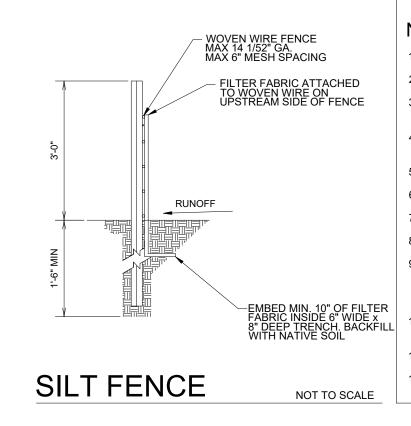
1/10/2024

LANDSCAPING PLAN

SHEET NUMBER: C1.8



**CONSTRUCTION ENTRANCE** 



NOT TO SCALE

**CONCRETE WASHOUT** 

10 MIL PLASTIC LINING

NOT TO SCALE

# NOTES AND SPECIFICATIONS:

 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.
 WOVEN HOW AND THE ASSOCIATIONAL 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 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 11. ALL FENCING SHALL BE REMOVED WITH THE CONSTRUCTION SITE IS FULLY

PROJECT NUMBER:

GYMNASIUM 7817 Hwy 5 N Bryant, Arkansas

> LEWIS ENGINEERING, I ructural + Civil Consultants

PHILLIP

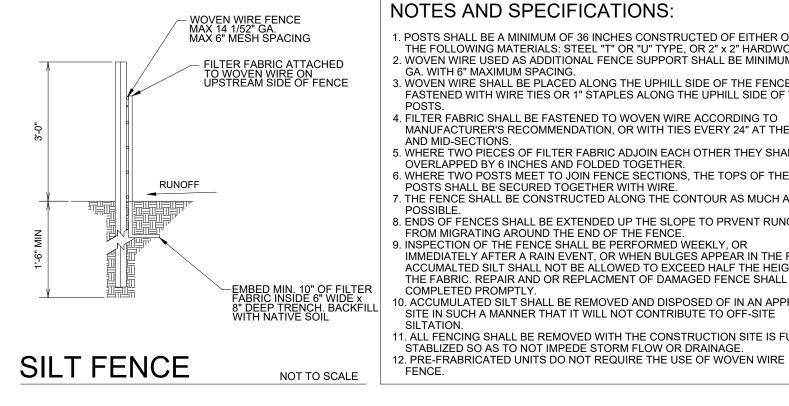
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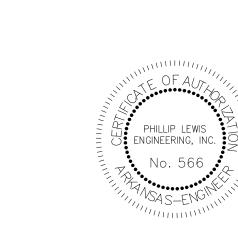
SWPPP PH.

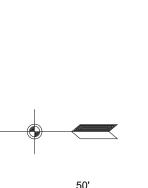
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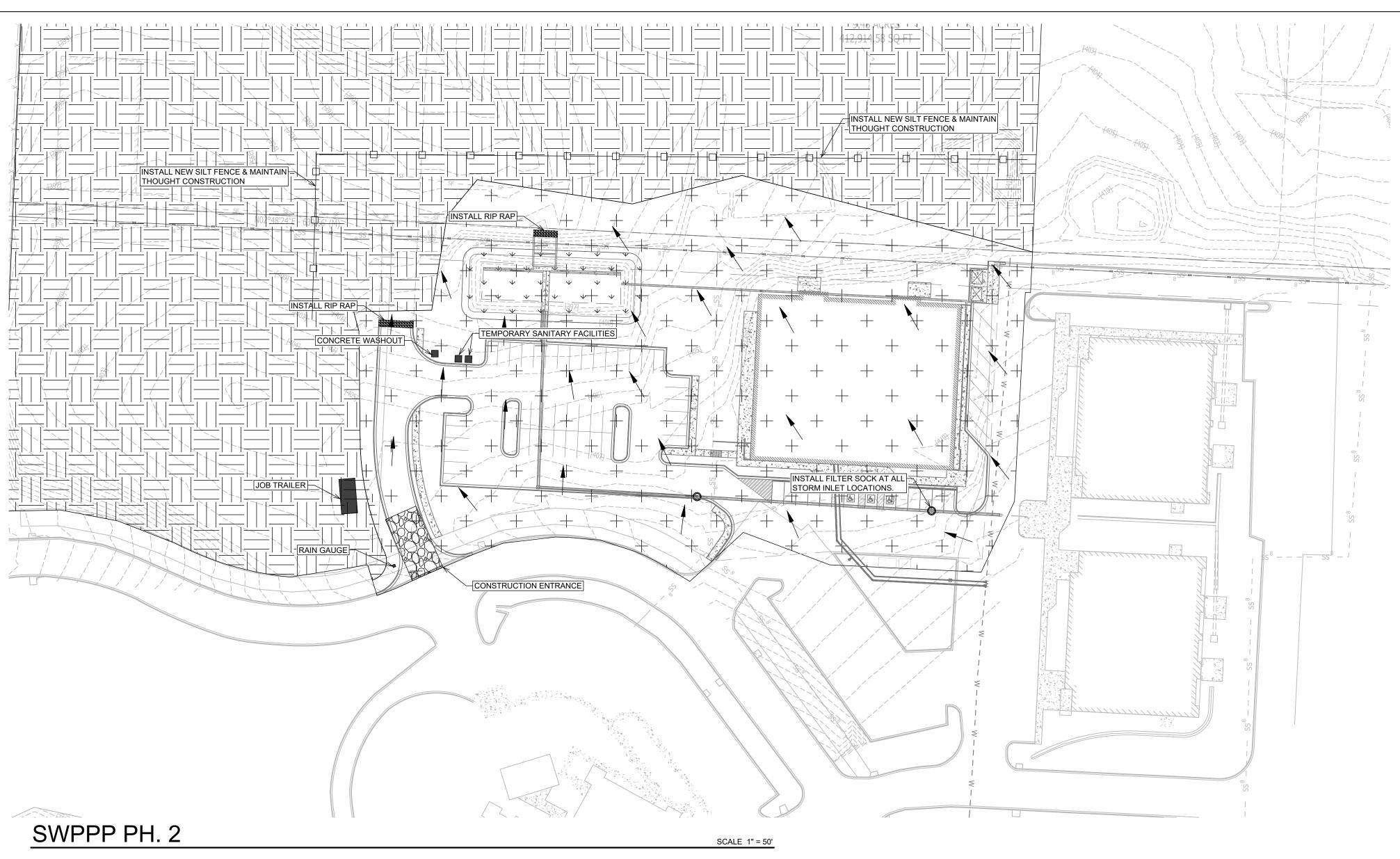
## NOTES (GENERAL): 1. SEE EROSION CONTROL DETAILS IN SWPPP FOR EROSION CONTROL FACILITIES.

- 2. SEE SWPPP FOR INSTALLATION, MAINTENANCE, INSPECTION, AND RECORD KEEPING REQUIREMENTS. 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.



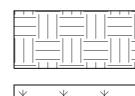




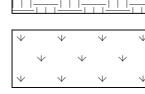


LEGEND

+ DISTURBED AREA



UNDISTURBED AREA



GRASS SEED



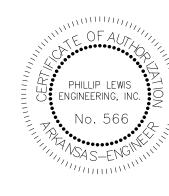
SEDIMENT FENCE WITH WIRE BACKING

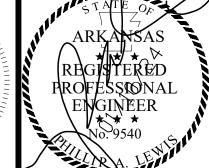
DRAINAGE DIRECTION

# NOTES (GENERAL):

- SEE EROSION CONTROL DETAILS IN SWPPP FOR EROSION CONTROL FACILITIES.
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SUMMERWOOD S GYMNASIUM 7817 Hwy 5 N Bryant, Arkansas

> LEWIS ENGINEERING, I ructural + Civil Consultants

PHILLIP

REVISION:

PROJECT NUMBER:

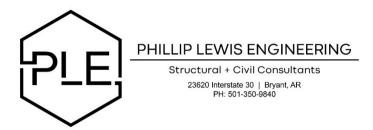
SHEET ISSUE DATE: 1/10/2024

AGE TITLE:

SWPPP PH. 2

SHEET NUMBER:
C1.10

0 50'



January 10, 2023

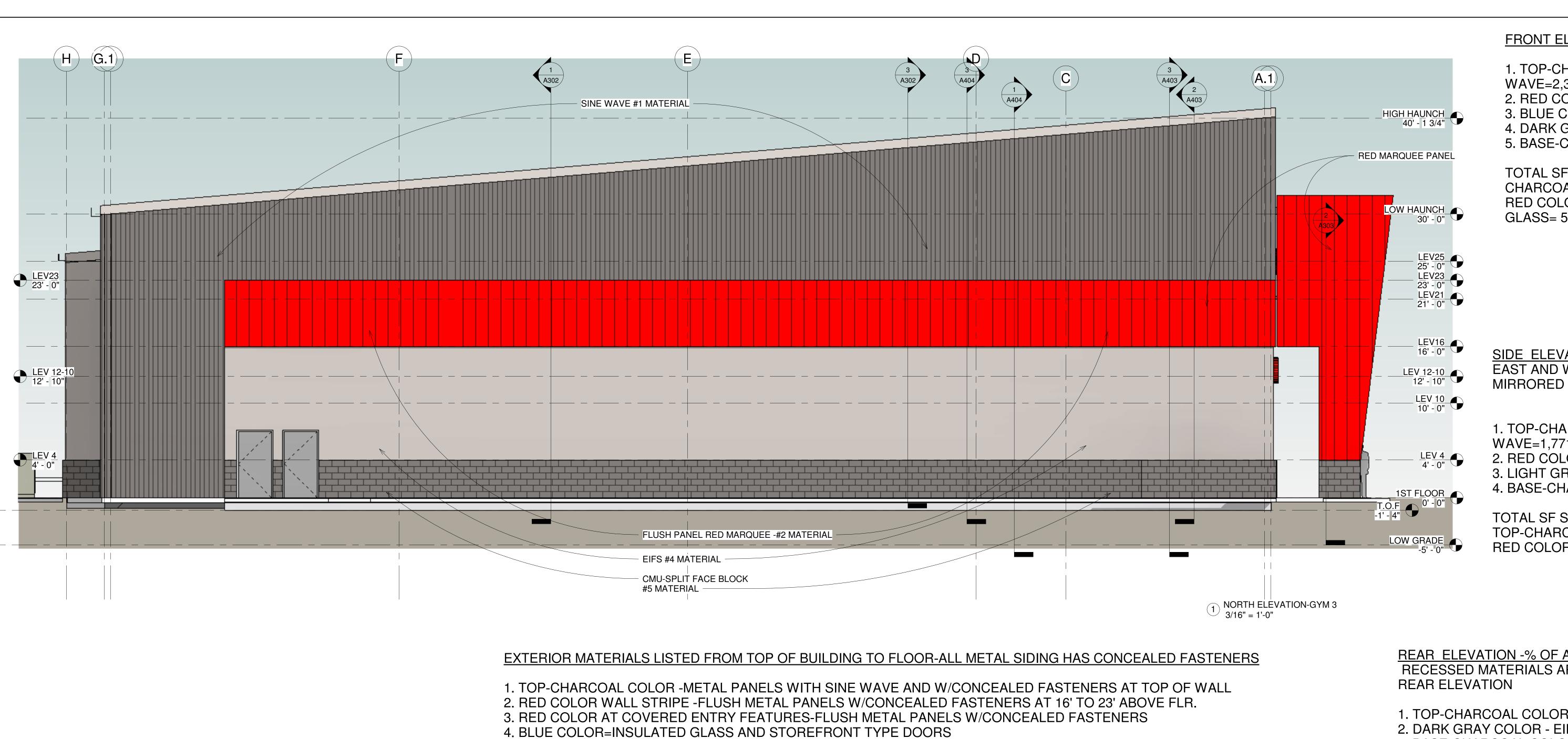
Colton Leonard City Planner City of Bryant 210 SW 3<sup>rd</sup> St. Bryant, AR 72022

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



5. LIGHT GRAY COLOR - EIFS TYPE STUCCO-FROM 4'-0" TO 16' ABOVE FLR.

7. LIGHT GRAY COLOR-PAINTED METAL EXIT DOORS

6. BASE-CHARCOAL COLOR -SPLIT FACE BLOCK AT BASE OF WALL TO 4'-0" ABOVE FLR.

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

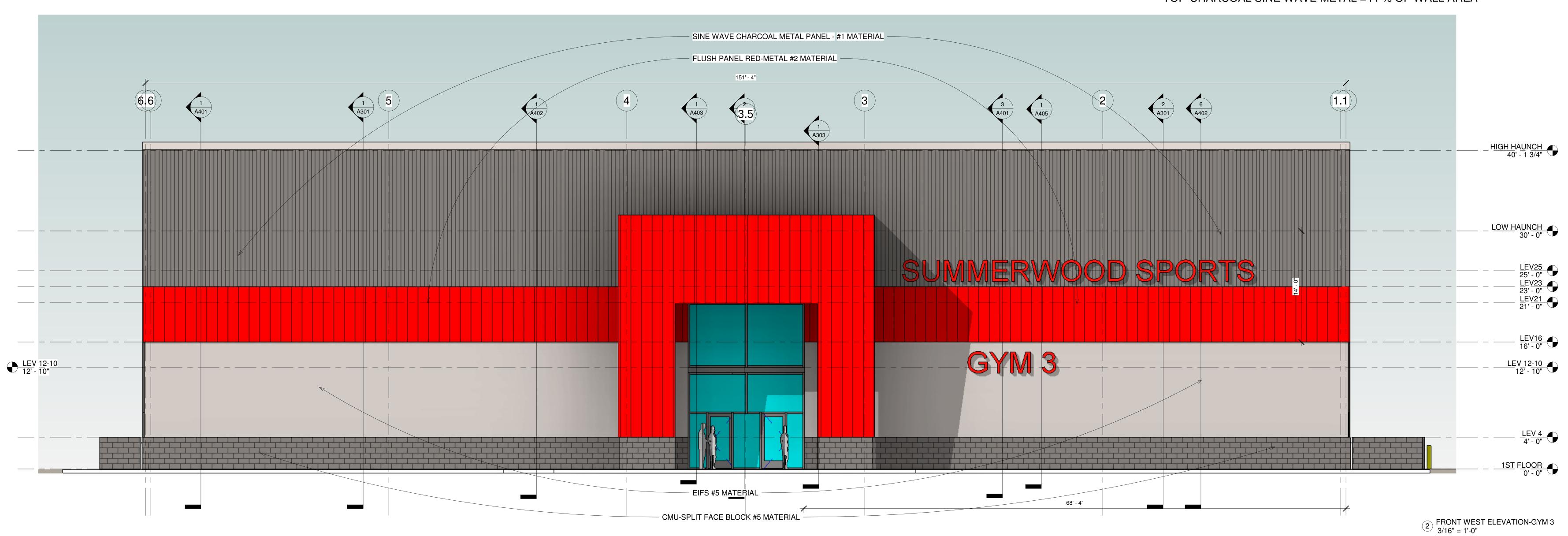
TOTAL SF SIDE ELEVATION=4,569 SF TOP-CHARCOAL SINE WAVE METAL =38% OF AREA RED COLOR FLUSH METAL PANEL = 22.3% OF AREA

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

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



REGISTEREV ARCHITECT ON NO. C-250

ARCHITECT OF RECORD ANDREW F. HICKS

TINI # 3

DR SUMMERWOOD PARTNERS

RNIA OFFICE PARK, BRYANT PARK

A Mission Blvd.

m- 501-690-0789
o- 479-332-5050

REVISIONS

NO. DATE

NO. DATE

NO.

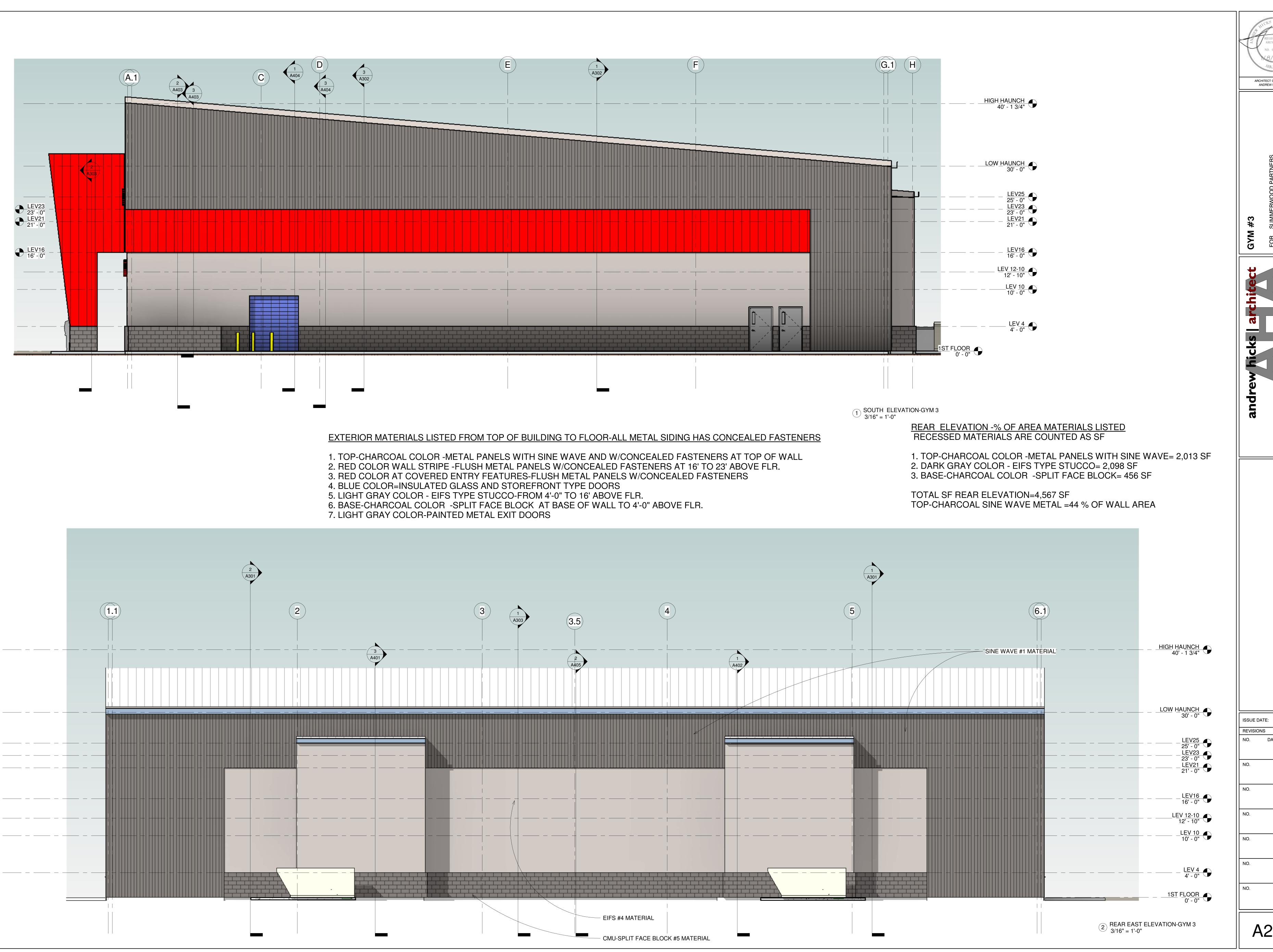
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ARCHITECT OF RECORD ANDREW F. HICKS

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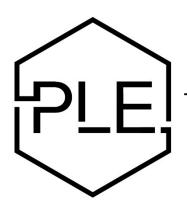
# SUMMERWOOD SPORTS GYM #3 DRAINAGE REPORT

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.

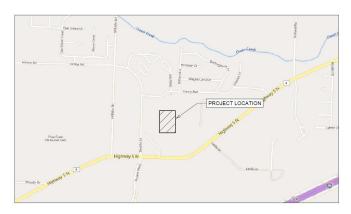
Phillip A. Lewis, PE.



RAGATERAD RAGATERAD RROFESSIONAL ENGINEER

DATE: 01-10-2024

### 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 predevelopment 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).

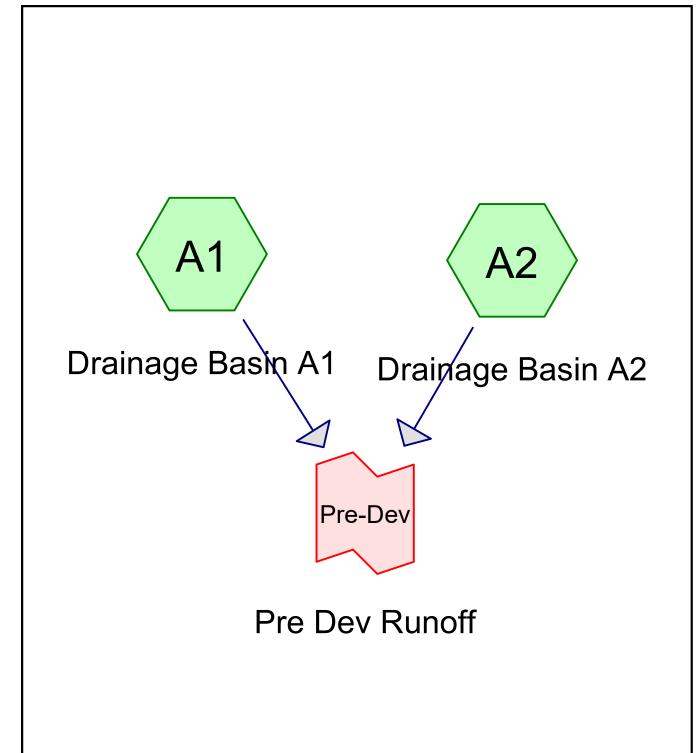
The detention pond was designed to detain stromwater volumes based off the 100-yr storm events with a concrete overflow spillway to release water if a rainfall event were to exceed the 100-yr storm event. The outlet control structures are detailed within this report.

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	<mark>10.14</mark>			
5-yr	12.27	<mark>12.27</mark>			
10-yr	13.82	<mark>13.74</mark>			
25-yr	15.94	<mark>15.69</mark>			
100-yr	18.93	<mark>18.25</mark>			

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.













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### **Summary for Subcatchment A1: Drainage Basin A1**

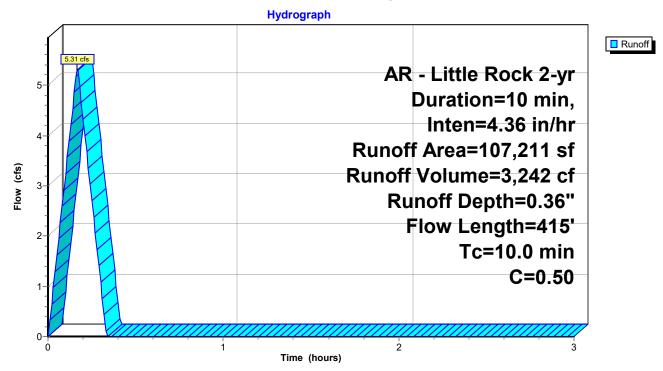
Runoff = 5.31 cfs @ 0.17 hrs, Volume= 3,242 cf, Depth= 0.36"

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

_	Α	rea (sf)	С	Description			
	1	07,211	0.50	Existing Natural Vegeation			
107,211 100.00% Pervious Are			100.00% P	ervious Are	ea		
	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



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### Summary for Subcatchment A2: Drainage Basin A2

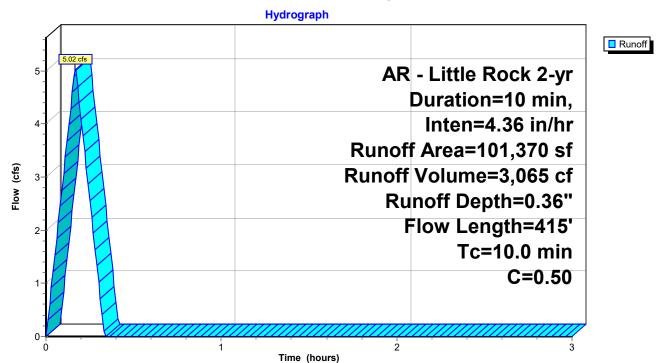
Runoff = 5.02 cfs @ 0.17 hrs, Volume= 3,065 cf, Depth= 0.36"

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

	Α	rea (sf)	С	Description				
	1	01,370	0.50	Existing Natural Vegetation				
101,370 100.00% Pervious Are			100.00% P	ervious Are	ea			
	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



### **Summerwood Gym 3**

AR - Little Rock 2-yr Duration=10 min, Inten=4.36 in/hr
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### **Summary for Link Pre-Dev: Pre Dev Runoff**

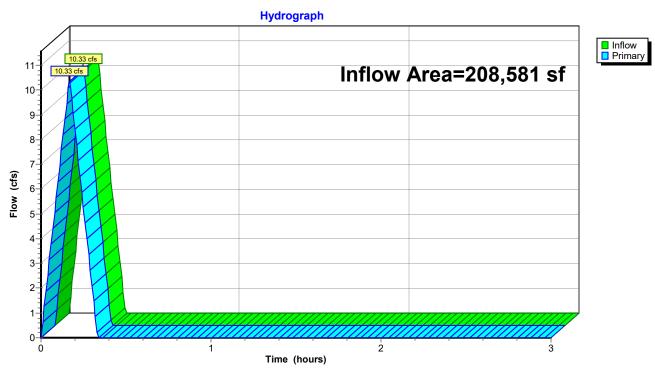
Inflow Area = 208,581 sf, 0.00% Impervious, Inflow Depth = 0.36" for 2-yr event

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



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### **Summary for Subcatchment A1: Drainage Basin A1**

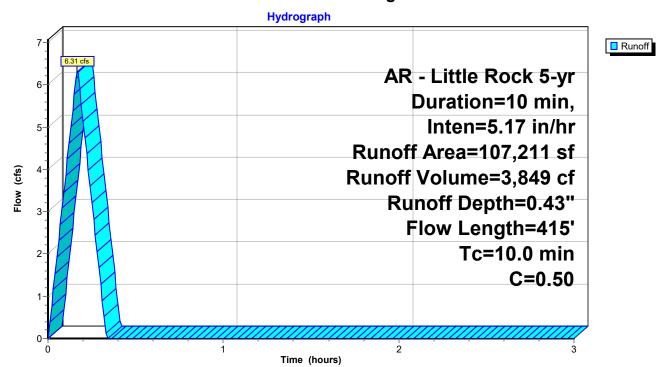
Runoff = 6.31 cfs @ 0.17 hrs, Volume= 3,849 cf, Depth= 0.43"

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

_	Α	rea (sf)	С	Description			
	1	07,211	0.50	Existing Natural Vegeation			
107,211 100.00% Pervious Area			100.00% P	ervious Are	ea		
	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



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### Summary for Subcatchment A2: Drainage Basin A2

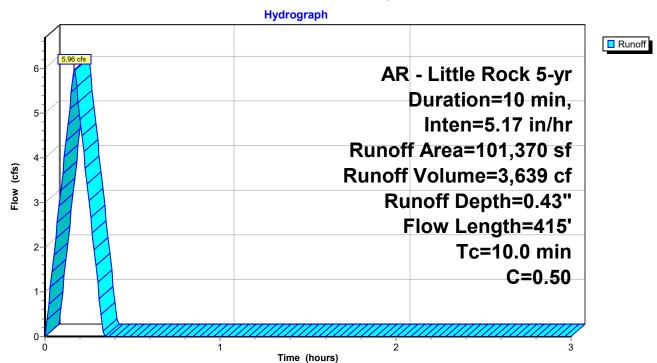
Runoff = 5.96 cfs @ 0.17 hrs, Volume= 3,639 cf, Depth= 0.43"

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

_	Α	rea (sf)	С	Description				
	1	01,370	0.50	Existing Natural Vegetation				
	1	01,370		100.00% P	ervious Are	еа		
	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



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### **Summary for Link Pre-Dev: Pre Dev Runoff**

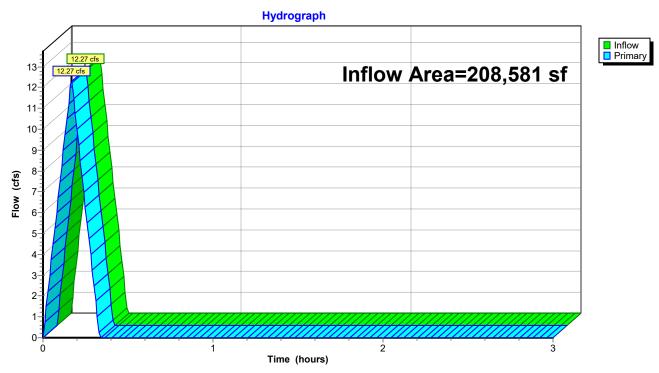
Inflow Area = 208,581 sf, 0.00% Impervious, Inflow Depth = 0.43" for 5-yr event

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



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# **Summary for Subcatchment A1: Drainage Basin A1**

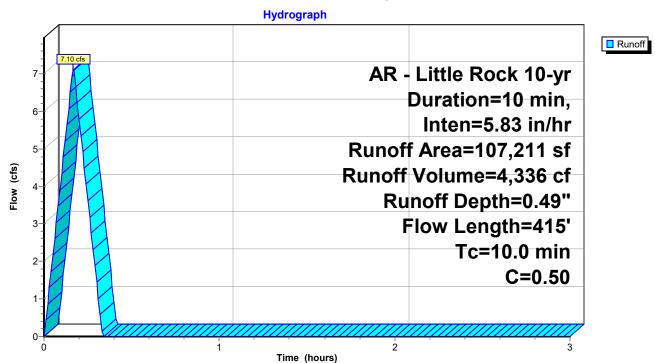
Runoff = 7.10 cfs @ 0.17 hrs, Volume= 4,336 cf, Depth= 0.49"

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

_	Α	rea (sf)	С	Description					
	1	07,211	0.50	Existing Natural Vegeation					
	1	07,211		100.00% P	ea				
	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



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# Summary for Subcatchment A2: Drainage Basin A2

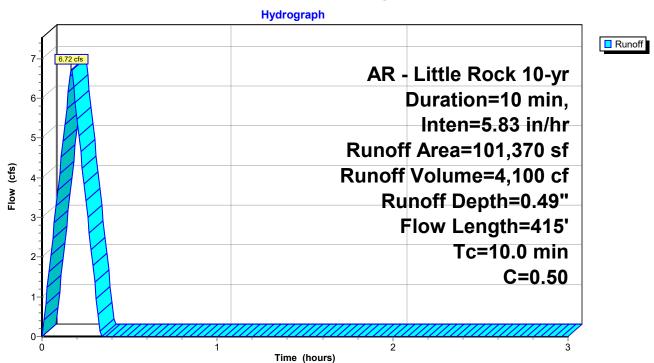
Runoff = 6.72 cfs @ 0.17 hrs, Volume= 4,100 cf, Depth= 0.49"

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

_	Α	rea (sf)	С	Description					
	1	01,370	0.50	Existing Natural Vegetation					
	1	01,370		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



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# **Summary for Link Pre-Dev: Pre Dev Runoff**

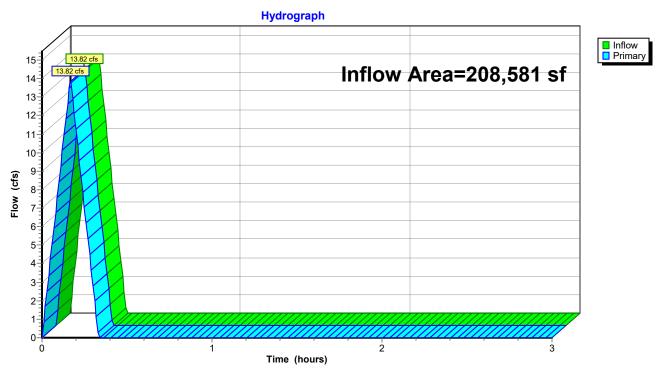
Inflow Area = 208,581 sf, 0.00% Impervious, Inflow Depth = 0.49" for 10-yr event

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



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# **Summary for Subcatchment A1: Drainage Basin A1**

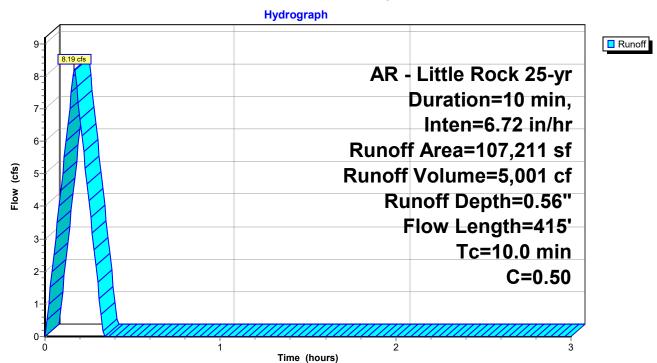
Runoff = 8.19 cfs @ 0.17 hrs, Volume= 5,001 cf, Depth= 0.56"

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

_	Α	rea (sf)	С	Description					
	1	07,211	0.50	Existing Natural Vegeation					
	1	07,211		100.00% P	ea				
	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



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# Summary for Subcatchment A2: Drainage Basin A2

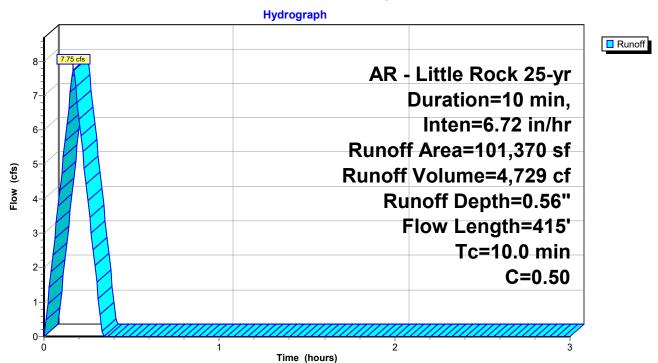
Runoff = 7.75 cfs @ 0.17 hrs, Volume= 4,729 cf, Depth= 0.56"

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

_	Α	rea (sf)	С	Description					
	1	01,370	0.50	Existing Natural Vegetation					
	1	01,370		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



## **Summerwood Gym 3**

AR - Little Rock 25-yr Duration=10 min, Inten=6.72 in/hr
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#### **Summary for Link Pre-Dev: Pre Dev Runoff**

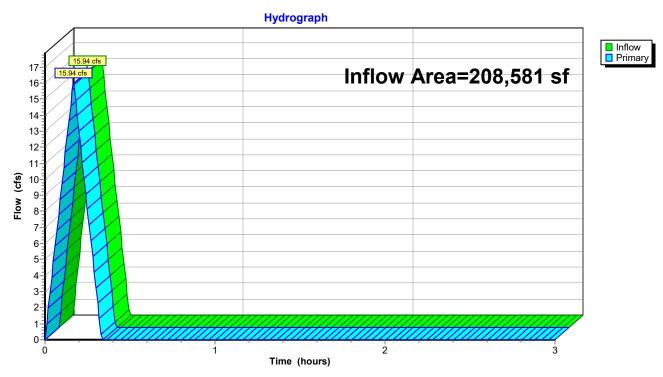
Inflow Area = 208,581 sf, 0.00% Impervious, Inflow Depth = 0.56" for 25-yr event

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



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# **Summary for Subcatchment A1: Drainage Basin A1**

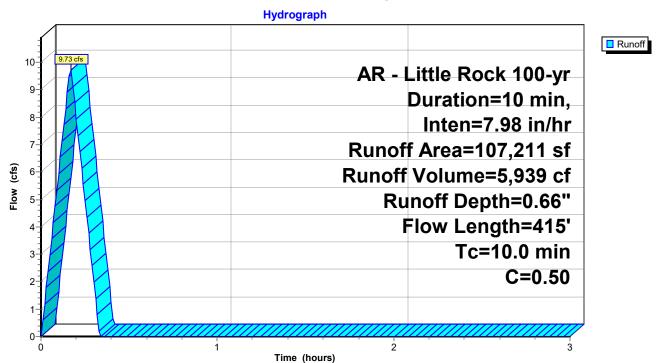
Runoff = 9.73 cfs @ 0.17 hrs, Volume= 5,939 cf, Depth= 0.66"

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

_	Α	rea (sf)	С	Description					
	1	07,211	0.50	Existing Natural Vegeation					
	1	07,211		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



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#### Summary for Subcatchment A2: Drainage Basin A2

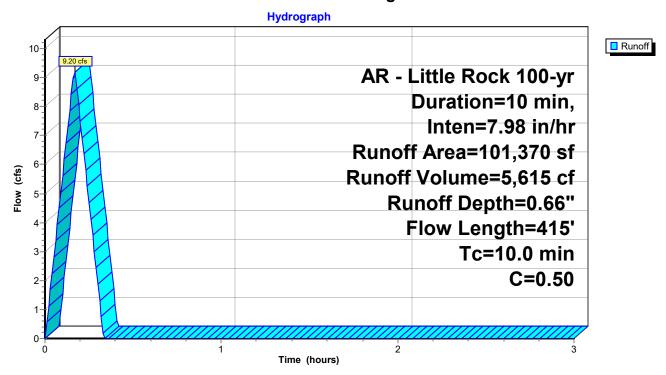
Runoff = 9.20 cfs @ 0.17 hrs, Volume= 5,615 cf, Depth= 0.66"

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

_	Α	rea (sf)	С	Description					
	1	01,370	0.50	Existing Natural Vegetation					
	1	01,370		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



## **Summerwood Gym 3**

AR - Little Rock 100-yr Duration=10 min, Inten=7.98 in/hr Printed 1/11/2024

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# **Summary for Link Pre-Dev: Pre Dev Runoff**

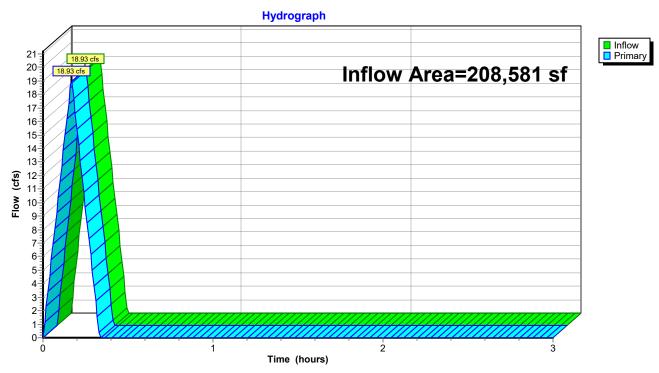
Inflow Area = 208,581 sf, 0.00% Impervious, Inflow Depth = 0.66" for 100-yr event

Inflow = 18.93 cfs @ 0.17 hrs, Volume= 11,554 cf

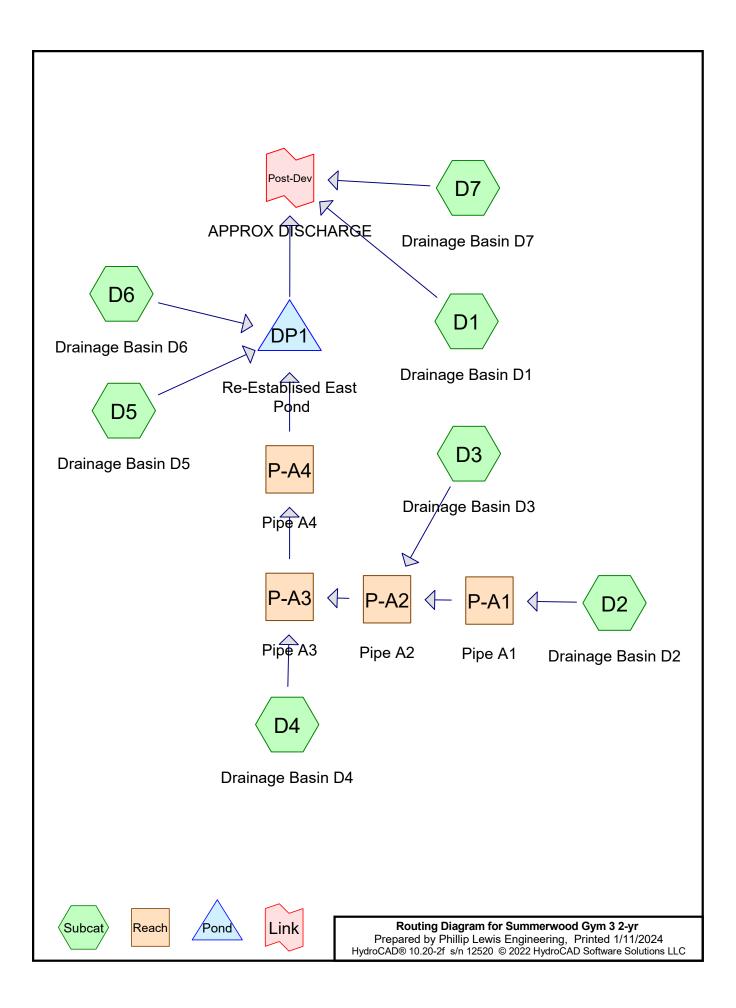
Primary = 18.93 cfs @ 0.17 hrs, Volume= 11,554 cf, Atten= 0%, Lag= 0.0 min

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

### Link Pre-Dev: Pre Dev Runoff



POST DEVELOPMENT HYDROGRAPHS



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#### Summary for Subcatchment D1: Drainage Basin D1

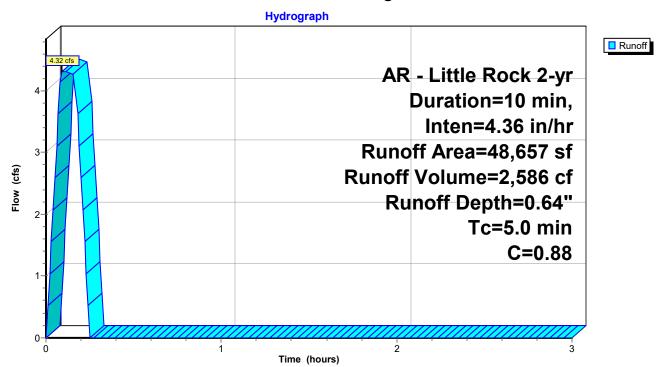
Runoff = 4.32 cfs @ 0.09 hrs, Volume= 2,586 cf, Depth= 0.64" Routed to Link Post-Dev : APPROX DISCHARGE

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)	С	Description	1					
	3,421	0.40	Sod Yard	Sod Yard					
	45,236	0.92	Rood, Drive	Rood, Drives, Sidewalks					
	48,657	0.88	Weighted A	Weighted Average					
	48,657		100.00% P	ervious Are	ea				
Tc	Length	Slope	<ul><li>Velocity</li></ul>	Capacity	Description				
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
5.0					Direct Entry, Overland Concentrated Flow (Min)				

Birect Entry, Overland Concentrated Flow

#### Subcatchment D1: Drainage Basin D1



# **Summary for Subcatchment D2: Drainage Basin D2**

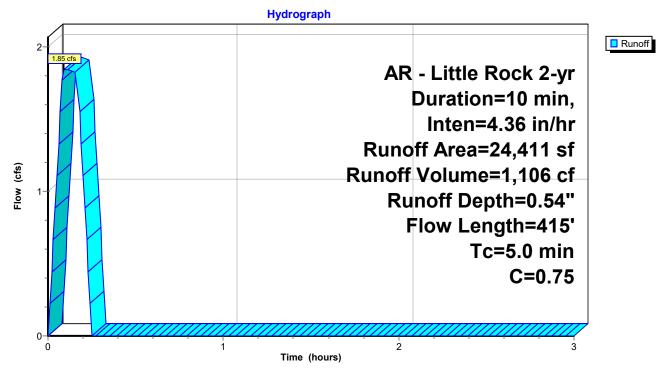
Runoff = 1.85 cfs @ 0.09 hrs, Volume= 1,106 cf, Depth= 0.54"

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)	С	Description						
	8,845	0.45	Rip Rap Embankment						
	15,566	0.92	Roof, Drive	Roof, Drives, Sidewalks					
	24,411	0.75	Weighted A	Weighted Average					
	24,411		100.00% P	ervious Are	ea				
To	Length	Slope	<ul><li>Velocity</li></ul>	Capacity	Description				
(min)	) (feet)	(ft/ft)	(ft/sec)	(cfs)					
5.0	415		1.38		Direct Entry, Overland Concentrated Flow (Min)				

# Subcatchment D2: Drainage Basin D2



# **Summary for Subcatchment D3: Drainage Basin D3**

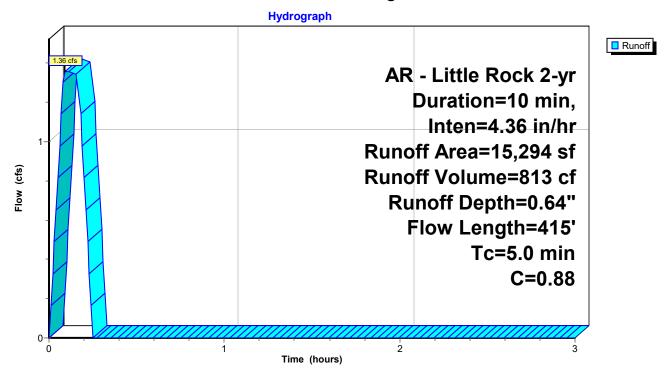
Runoff = 1.36 cfs @ 0.09 hrs, Volume= 813 cf, Depth= 0.64"

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)	С	Description	1				
	1,065	0.40	Sod Yard					
	14,229	0.92	Paving, Sic	Paving, Sidewalks				
·	15,294	0.88	Weighted A	Average				
	15,294		100.00% P	ervious Are	ea			
_		01						
To	c Length	Slope	Velocity	Capacity	Description			
(min	) (feet)	(ft/ft)	(ft/sec)	(cfs)				
5.0	) 415		1.38		Direct Entry, Overland Concentrated Flow (Min)			

#### **Subcatchment D3: Drainage Basin D3**



# **Summary for Subcatchment D4: Drainage Basin D4**

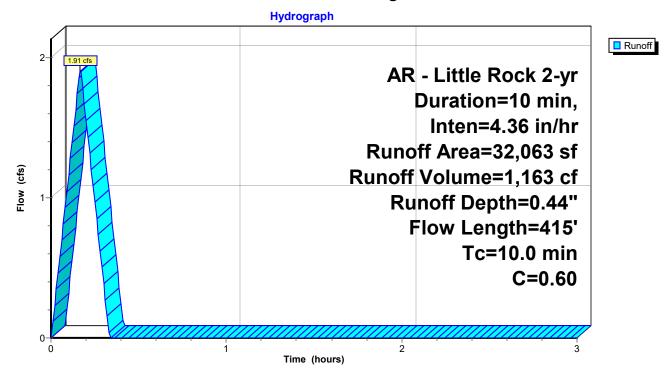
Runoff = 1.91 cfs @ 0.17 hrs, Volume= 1,163 cf, Depth= 0.44"

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

 Α	rea (sf)	С	Description	ı	
	20,032	0.40			
	12,031	0.92			
	32,063	0.60	Weighted A	Average	
	32,063		100.00% P	ervious Are	ea
_					
Тс	Length	Slope	<ul> <li>Velocity</li> </ul>	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
 10.0	415		0.69		Direct Entry, Overland Concentrated Flow (Min)

#### Subcatchment D4: Drainage Basin D4



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# **Summary for Subcatchment D5: Drainage Basin D5**

1,660 cf, Depth= 0.48" Runoff 2.77 cfs @ 0.09 hrs, Volume=

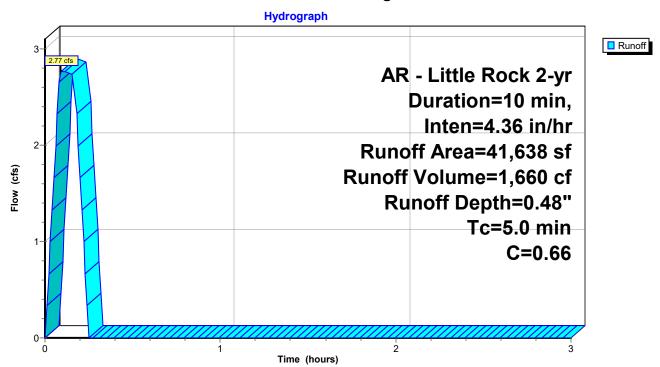
Routed to Pond DP1: Re-Establised East Pond

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

 Α	rea (sf)	С	Description	Description					
	21,201	0.40	Sod Yard,	Sod Yard, Natural Vegetation					
	20,437	0.92	Paving, Sic	Paving, Sidewalks					
	41,638	0.66	Weighted A	Veighted Average					
	41,638		100.00% Pervious Area						
Тс	Length	Slope	<ul><li>Velocity</li></ul>	Capacity	Description				
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
 5.0					Direct Entry, Overland Concentrated Flow (Min)				

**Direct Entry, Overland Concentrated Flow (Min)** 

#### Subcatchment D5: Drainage Basin D5



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# **Summary for Subcatchment D6: Drainage Basin D6**

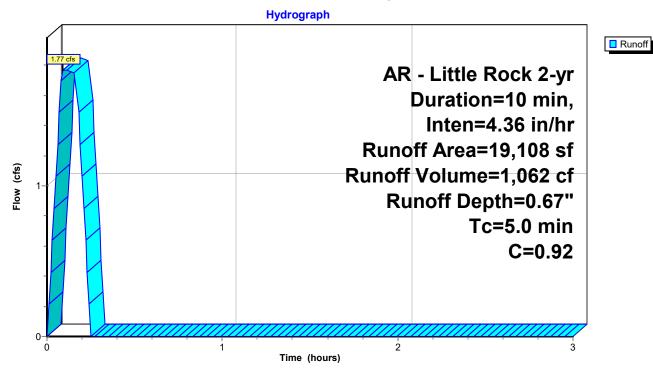
Runoff = 1.77 cfs @ 0.09 hrs, Volume= 1,062 cf, Depth= 0.67"

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

A	rea (sf)	С	Description	1	
	19,108	0.92	Roof		
	19,108		100.00% P	ervious Are	ea
Tc	Length	Slope	,		Description
(min)_	(feet)	(ft/ft)	(ft/sec)	(cfs)	
5.0					Direct Entry, Overland Concentrated Flow (Min)

### Subcatchment D6: Drainage Basin D6



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# **Summary for Subcatchment D7: Drainage Basin D7**

Runoff = 1.34 cfs @ 0.09 hrs, Volume= 800 cf, Depth= 0.38"

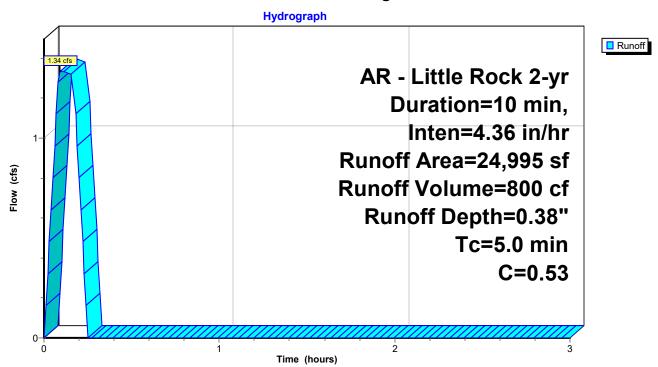
Routed to Link Post-Dev: APPROX DISCHARGE

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)	<u>C</u>	D	Description						
	18,798	0.40	S	Sod Yard, Natural Vegetation						
	6,197	0.92	P	Paving, Sidewalks						
	24,995	0.53	W	Weighted Average						
	24,995	;	10	100.00% Pervious Area						
	Tc Lengt	h Slo	ре	Velocity	Capacity	Description				
(m	in) (fee	t) (ft/	/ft)	(ft/sec)	(cfs)					
5	5.0					Direct Entry, Overland Concentrated Flow (Min)				

Direct Entry, Overland Concentrated Flow (Min)

#### Subcatchment D7: Drainage Basin D7



## Summerwood Gym 3 2-yr

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#### **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

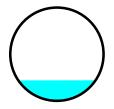
Average Depth at Peak Storage= 0.33', Surface Width= 1.24' Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.28 cfs

18.0" Round Pipe

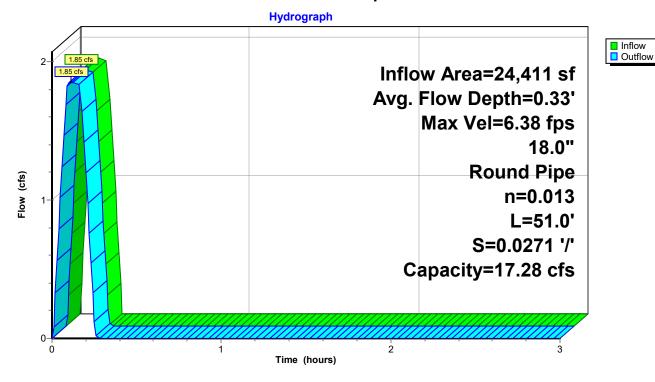
n= 0.013 Corrugated PE, smooth interior

Length= 51.0' Slope= 0.0271 '/'

Inlet Invert= 408.33', Outlet Invert= 406.95'

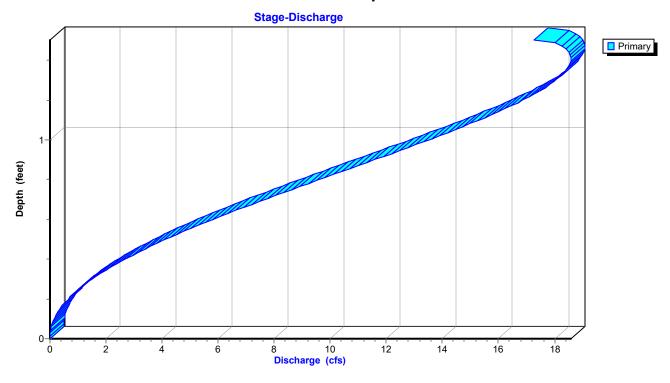


#### Reach P-A1: Pipe A1



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# Reach P-A1: Pipe A1



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

		· ·	J		•
	on End-Area	Storage		End-Area	Storage
(fee		(cubic-feet)	(feet)	(sq-ft)	(cubic-feet)
408.3		0	409.37	1.3	67
408.3		0	409.39	1.3	68
408.3		1	409.41	1.4	69
408.3	39 0.0	1	409.43	1.4	71
408.4	11 0.0	2	409.45	1.4	72
408.4	13 0.1	3	409.47	1.4	73
408.4	15 0.1	3	409.49	1.5	75
408.4	17 0.1	4	409.51	1.5	76
408.4	19 0.1	5	409.53	1.5	77
408.5		6	409.55	1.5	78
408.5		7	409.57	1.6	80
408.5		8	409.59	1.6	81
408.5		9	409.61	1.6	82
408.5		10	409.63	1.6	83
408.6		12	409.65	1.6	84
408.6		13	409.67	1.7	85
408.6		14	409.69	1.7	86
408.6		15	409.71	1.7	87
408.6		17	409.73	1.7	88
408.7		18	409.75	1.7	88
408.7		19	409.77	1.7	89
408.7		21	409.79	1.8	89
408.7		22	409.81	1.8	90
408.7		23	409.83	1.8	90
408.8	31 0.5	25			
408.8	33 0.5	26			
408.8	35 0.5	28			
408.8	37 0.6	29			
408.8	39 0.6	31			
408.9	0.6	32			
408.9		34			
408.9		35			
408.9		37			
408.9		38			
409.0		40			
409.0		41			
409.0		43			
409.0		44			
409.0		46			
409.0		47			
409. 409.		49			
409.1		50 50			
409.1		52 53			
409.1		53 55			
409.2		55			
409.2		56			
409.2		58			
409.2		59			
409.2		61			
409.3		62	1		
409.3		64			
409.3	35 1.3	65			
			1		

## Summerwood Gym 3 2-yr

Prepared by Phillip Lewis Engineering

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#### 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

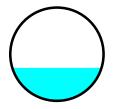
Average Depth at Peak Storage= 0.53', Surface Width= 1.43' Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 11.95 cfs

18.0" Round Pipe

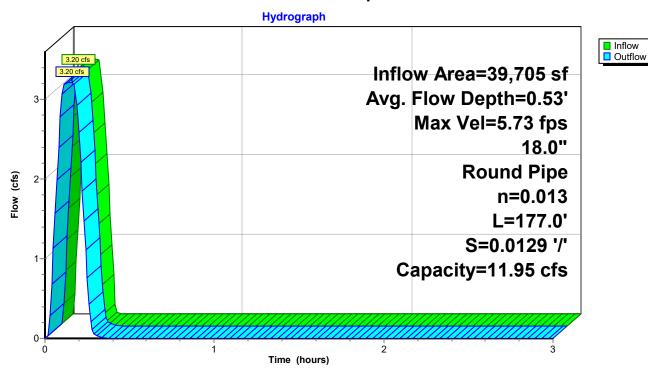
n= 0.013 Corrugated PE, smooth interior

Length= 177.0' Slope= 0.0129 '/'

Inlet Invert= 406.85', Outlet Invert= 404.56'

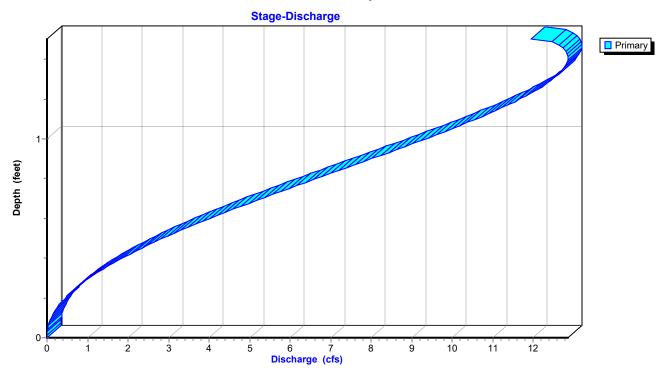


#### Reach P-A2: Pipe A2



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# Reach P-A2: Pipe A2



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

		· ·	J		•
	End-Area	Storage		End-Area	Storage
(feet)	(sq-ft)	(cubic-feet)	(feet)	(sq-ft)	(cubic-feet)
406.85	0.0	0	407.89	1.3	231
406.87	0.0	1	407.91	1.3	236
406.89	0.0	2	407.93	1.4	241
406.91	0.0	4	407.95	1.4	246
406.93	0.0	6	407.97	1.4	250
406.95	0.1	9	407.99	1.4	255
406.97	0.1	12	408.01	1.5	260
406.99	0.1	15	408.03	1.5	264
407.01	0.1	18	408.05	1.5	268
407.03	0.1	21	408.07	1.5	272
407.05	0.1	25	408.09	1.6	277
407.07	0.2	28	408.11	1.6	280
407.09	0.2	32	408.13	1.6	284
407.11	0.2	36	408.15	1.6	288
407.11	0.2	40	408.17	1.6	292
407.15	0.2	45	408.17	1.7	295
407.13	0.3	49	408.19	1.7	298
			408.23		
407.19	0.3	53		1.7	301
407.21	0.3	58	408.25	1.7	304
407.23	0.4	62	408.27	1.7	306
407.25	0.4	67	408.29	1.7	309
407.27	0.4	72	408.31	1.8	310
407.29	0.4	76	408.33	1.8	312
407.31	0.5	81	408.35	1.8	313
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			
	1.0				
407.65		170 175			
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			
			l		

#### Summerwood Gym 3 2-yr

Prepared by Phillip Lewis Engineering

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#### **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

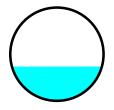
Average Depth at Peak Storage= 0.55', Surface Width= 1.45' Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.65 cfs

18.0" Round Pipe

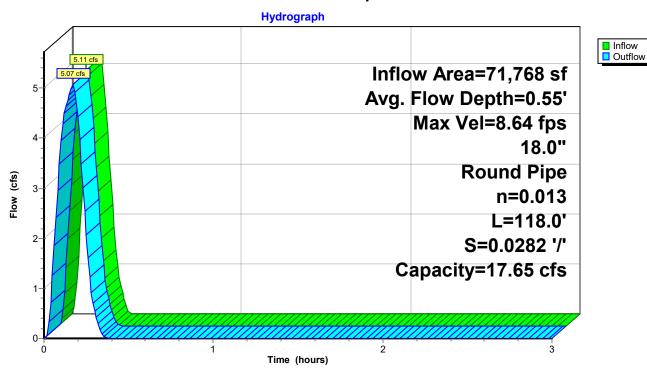
n= 0.013 Corrugated PE, smooth interior

Length= 118.0' Slope= 0.0282 '/'

Inlet Invert= 404.46', Outlet Invert= 401.13'

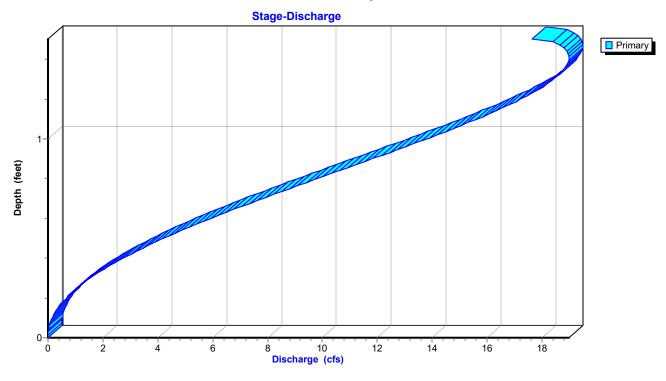


#### Reach P-A3: Pipe A3



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# Reach P-A3: Pipe A3



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

		J	•		•
Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
404.46	0.0	0	405.50	1.3	154
404.48	0.0	1	405.52	1.3	158
404.50	0.0	2	405.54	1.4	161
404.52	0.0	3	405.56	1.4	164
404.54	0.0	4	405.58	1.4	167
404.56	0.1	6	405.60	1.4	170
404.58	0.1	8	405.62	1.5	173
404.60	0.1	10	405.64	1.5	176
404.62	0.1	12	405.66	1.5	179
404.64	0.1	14	405.68	1.5	182
404.66	0.1	17	405.70	1.6	184
404.68	0.2	19	405.72	1.6	187
404.70	0.2	22	405.74	1.6	190
404.72	0.2	24	405.76	1.6	192
404.74	0.2	27	405.78	1.6	194
404.76	0.3	30	405.80	1.7	197
404.78	0.3	33	405.82	1.7	199
404.80	0.3	35	405.84	1.7	201
404.82	0.3	38	405.86	1.7	203
404.84	0.4	42	405.88	1.7	204
404.86	0.4	45	405.90	1.7	206
404.88	0.4	48	405.92	1.8	207
404.90	0.4	51	405.94	1.8	208
404.92	0.5	54	405.96	1.8	209
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	0.0	102			
405.22	0.9	106			
405.24	0.9	110			
405.24	1.0	113			
	1.0	117			
405.28					
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			

## Summerwood Gym 3 2-yr

Prepared by Phillip Lewis Engineering

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#### 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

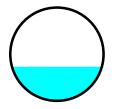
Average Depth at Peak Storage= 0.55', Surface Width= 1.45' Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.66 cfs

18.0" Round Pipe

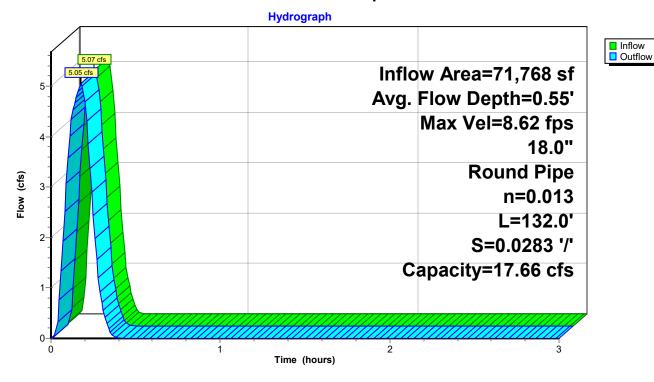
n= 0.013 Corrugated PE, smooth interior

Length= 132.0' Slope= 0.0283 '/'

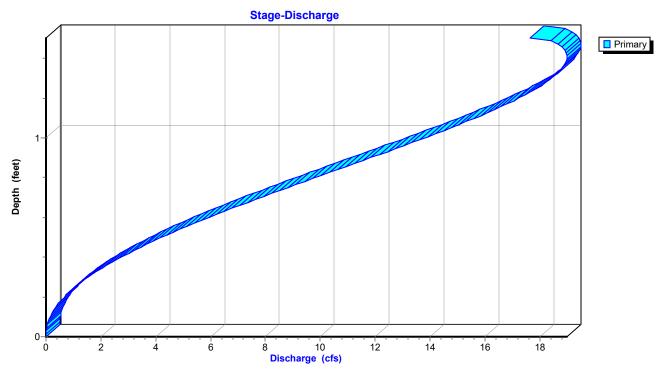
Inlet Invert= 401.03', Outlet Invert= 397.30'



#### Reach P-A4: Pipe A4



# Reach P-A4: Pipe A4



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

		J	•		•
Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
401.03	0.0	0	402.07	1.3	173
401.05	0.0	1	402.09	1.3	176
401.07	0.0	2	402.11	1.4	180
401.09	0.0	3	402.13	1.4	183
401.11	0.0	5	402.15	1.4	187
401.13	0.1	7	402.17	1.4	190
401.15	0.1	9	402.19	1.5	194
401.17	0.1	11	402.21	1.5	197
401.19	0.1	13	402.23	1.5	200
401.21	0.1	16	402.25	1.5	203
401.23	0.1	18	402.27	1.6	206
401.25	0.2	21	402.29	1.6	209
401.27	0.2	24	402.31	1.6	212
401.29	0.2	27	402.33	1.6	215
401.31	0.2	30	402.35	1.6	217
401.33	0.3	33	402.37	1.7	220
401.35	0.3	36	402.39	1.7	222
401.37	0.3	40	402.41	1.7	225
401.39	0.3	43	402.43	1.7	227
401.41	0.4	46	402.45	1.7	228
401.43	0.4	50	402.47	1.7	230
401.45	0.4	53 57	402.49	1.8	232
401.47	0.4 0.5	57 61	402.51	1.8 <b>1.8</b>	233 <b>233</b>
401.49 401.51	0.5	64	402.53	1.0	233
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	8.0	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 1.0	123			
401.83 401.85	1.0	127 130			
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			

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# 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 )

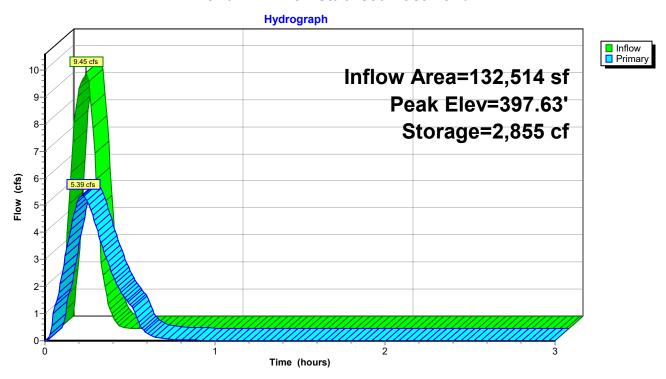
Volume	Inve	rt Avail.S	Storage	Storage Description
#1	396.00	0' 8	,557 cf	Custom Stage Data Listed below
<b>-</b> 14:	_	l Ot	0	04
Elevatio		Inc.Store	• • • • • • • • • • • • • • • • • • • •	i.Store
(fee	t) (cı	ubic-feet)	(cubic	<u>c-feet)</u>
396.0	0	0		0
396.5	0	250		250
397.0	0	1,092		1,342
398.0	0	2,387		3,729
399.0	0	2,405		6,134
400.0	0	2,423		8,557
Device	Routing	Inve	rt Outle	et Devices
#1	Primary	399.0	0' <b>5.0' l</b>	long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#2	Primary	396.0		long Sharp-Crested Rectangular Weir 2 End Contraction(s) ' Crest Height

**Primary OutFlow** Max=5.38 cfs @ 0.22 hrs HW=397.63' (Free Discharge)

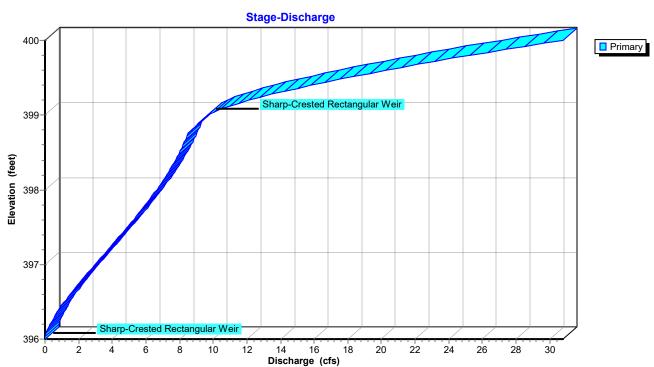
1=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

—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

	ı	•	
Elevation	Storage	Elevation	Storage
(feet)	(cubic-feet)	(feet)	(cubic-feet)
396.00	0	398.60	5,172 5,202
396.05 396.10	25 50	398.65	5,292 5,412
396.10 396.15	50 75	398.70 398.75	5,412 5,533
396.20	100	398.80	5,653
396.25	125	398.85	5,773
396.30	150	398.90	5,893
396.35	175	398.95	6,014
396.40	200	399.00	6,134
396.45	225	399.05	6,255
396.50	250	399.10	6,376
396.55	359	399.15	6,497
396.60	468	399.20	6,619
396.65	578	399.25	6,740
396.70	687	399.30	6,861
396.75 396.80	796 905	399.35 399.40	6,982 7,103
396.85	1,014	399.45	7,103 7,224
396.90	1,124	399.50	7,346
396.95	1,233	399.55	7,467
397.00	1,342	399.60	7,588
397.05	1,461	399.65	7,709
397.10	1,581	399.70	7,830
397.15	1,700	399.75	7,951
397.20	1,819	399.80	8,072
397.25	1,939	399.85	8,194
397.30	2,058	399.90	8,315
397.35 397.40	2,177 2,297	399.95 400.00	8,436 <b>8,557</b>
397.45	2,416	400.00	0,331
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		
397.95 398.00	3,610 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		
398.45 398.50	4,811 4,932		
398.55	4,932 5,052		
030.00	3,032		

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# **Summary for Link Post-Dev: APPROX DISCHARGE**

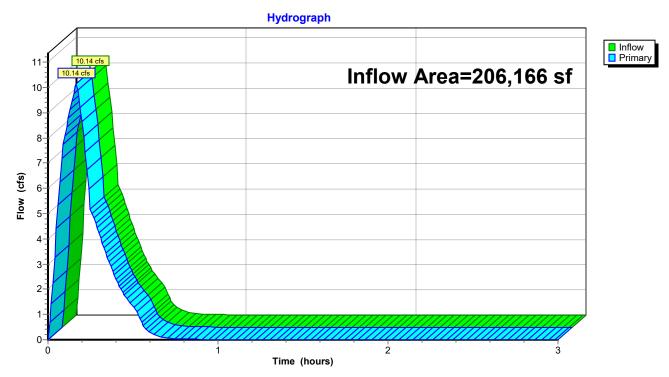
Inflow Area = 206,166 sf, 0.00% Impervious, Inflow Depth = 0.53" for 2-yr event

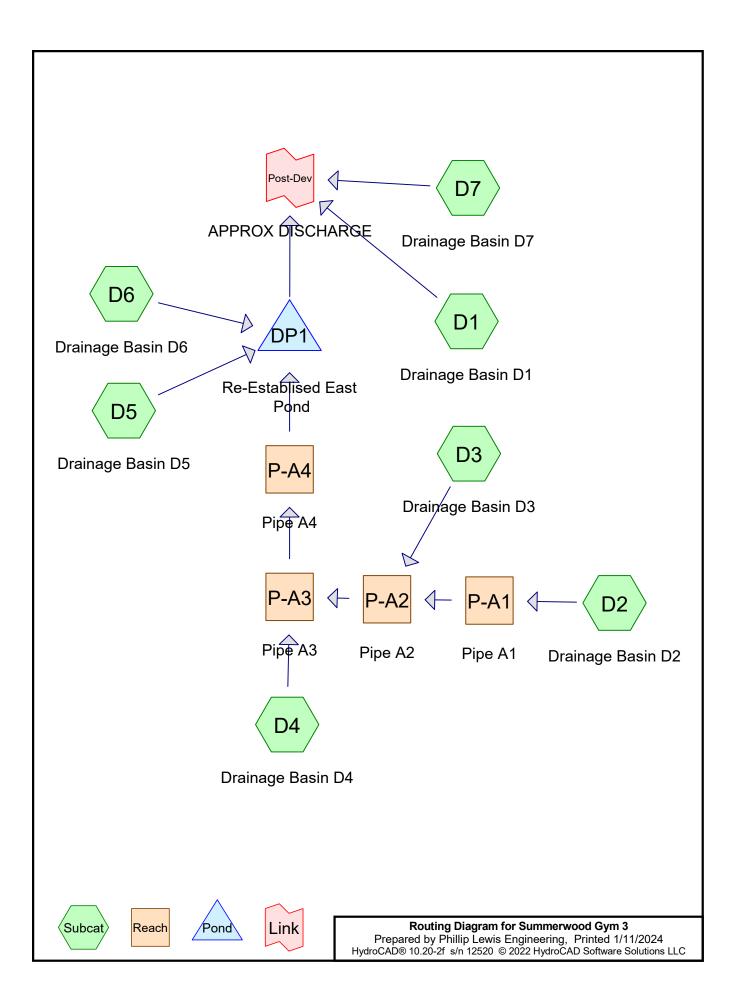
Inflow = 10.14 cfs @ 0.17 hrs, Volume= 9,191 cf

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





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# Summary for Subcatchment D1: Drainage Basin D1

3,176 cf, Depth= 0.78" Runoff 5.30 cfs @ 0.09 hrs, Volume=

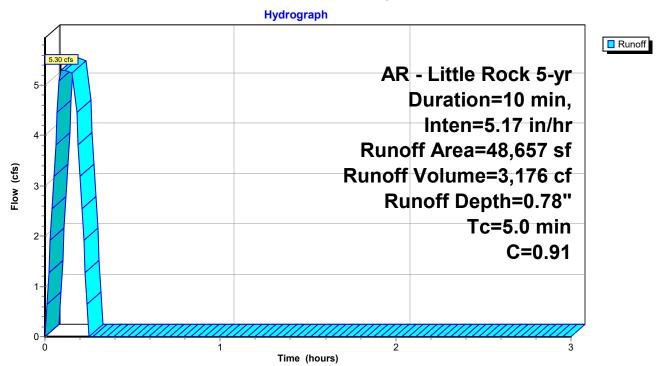
Routed to Link Post-Dev: APPROX DISCHARGE

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

	rea (sf)	С	Description						
	3,421	0.40	Sod Yard	Sod Yard					
	45,236	0.95	Rood, Drive	Rood, Drives, Sidewalks					
	48,657	0.91	Weighted Average						
	3,421		7.03% Pervious Area						
	45,236		92.97% Impervious Area						
_									
Tc	Length	Slope	,	Capacity	Description				
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
5.0					Direct Entry, Overland Concentrated Flow (Min)				

**Direct Entry, Overland Concentrated Flow (Min)** 

# Subcatchment D1: Drainage Basin D1



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# **Summary for Subcatchment D2: Drainage Basin D2**

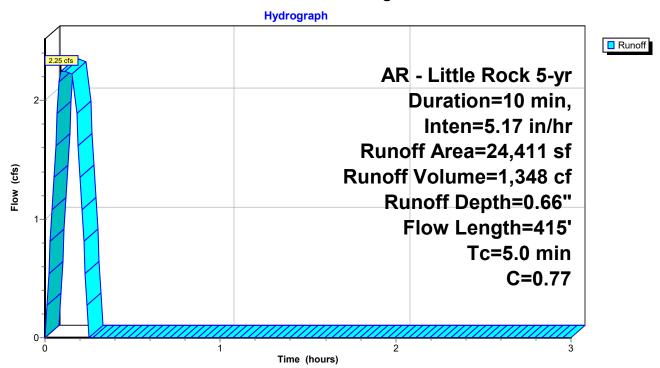
Runoff = 2.25 cfs @ 0.09 hrs, Volume= 1,348 cf, Depth= 0.66"

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)	С	Description	1	
	8,845	0.45	Rip Rap Er	nbankment	
	15,566	0.95	Roof, Drive	es, Sidewal	ks
	24,411	0.77	Weighted A	Average	
	8,845		36.23% Pe	rvious Area	a e e e e e e e e e e e e e e e e e e e
	15,566		63.77% Im	pervious Aı	rea
Tc	3	Slope	,	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
5.0	415		1.38		Direct Entry, Overland Concentrated Flow (Min)

### Subcatchment D2: Drainage Basin D2



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# **Summary for Subcatchment D3: Drainage Basin D3**

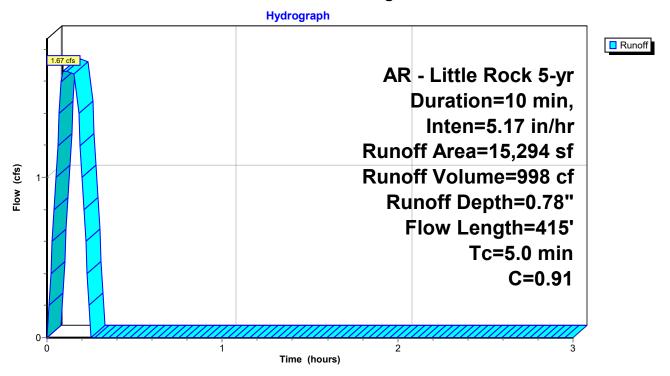
Runoff = 1.67 cfs @ 0.09 hrs, Volume= 998 cf, Depth= 0.78"

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

	rea (sf)	С	Description	1	
	1,065	0.40	Sod Yard		
	14,229	0.95	Paving, Sid	dewalks	
	15,294	0.91	Weighted A	Average	
	1,065		6.96% Per	vious Area	
	14,229		93.04% Im	pervious Aı	rea
Tc	9	Slope	,	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
5.0	415		1.38		Direct Entry, Overland Concentrated Flow (Min)

### Subcatchment D3: Drainage Basin D3



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## **Summary for Subcatchment D4: Drainage Basin D4**

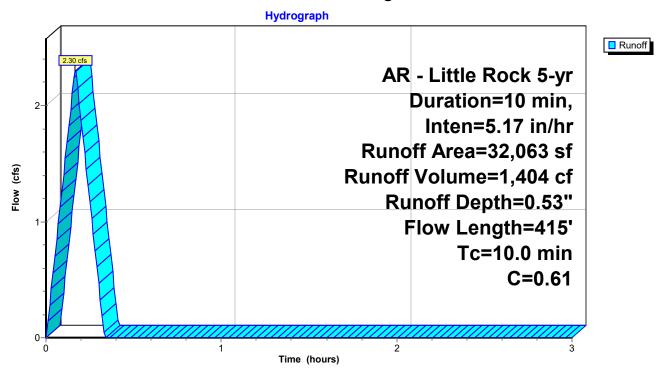
Runoff = 2.30 cfs @ 0.17 hrs, Volume= 1,404 cf, Depth= 0.53"

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)	С	Description	1	
	20,032	0.40			
	12,031	0.95			
	32,063	0.61	Weighted A	Average	
	20,032		62.48% Pe	rvious Area	a e e e e e e e e e e e e e e e e e e e
	12,031		37.52% Im	pervious Aı	rea
_					
Tc	Length	Slope	,	Capacity	Description
<u>(min)</u>	(feet)	(ft/ft)	(ft/sec)	(cfs)	
10.0	415		0.69		Direct Entry, Overland Concentrated Flow (Min)

### Subcatchment D4: Drainage Basin D4



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# **Summary for Subcatchment D5: Drainage Basin D5**

2,001 cf, Depth= 0.58" Runoff 3.34 cfs @ 0.09 hrs, Volume=

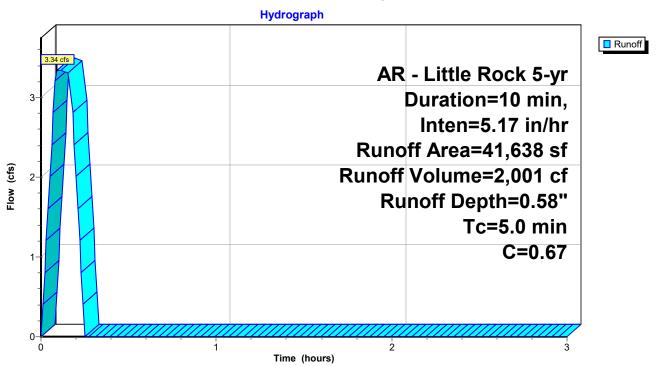
Routed to Pond DP1: Re-Establised East Pond

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

	rea (sf)	С	Description	1		
	21,201	0.40	Sod Yard,	Natural Ve	getation	
	20,437	0.95	Paving, Sic	lewalks		
	41,638	0.67	Weighted A	Average		
	21,201	1 50.92% Pervious Area				
	20,437		49.08% Im	pervious Ai	rea	
Tc	Length	Slope	,	Capacity	Description	
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)		
5.0					Direct Entry, Overland Concentrated Flow (Min)	

**Direct Entry, Overland Concentrated Flow (Min)** 

# Subcatchment D5: Drainage Basin D5



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# **Summary for Subcatchment D6: Drainage Basin D6**

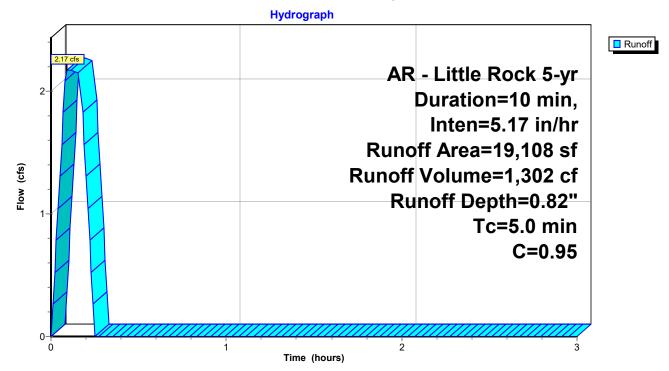
Runoff = 2.17 cfs @ 0.09 hrs, Volume= 1,302 cf, Depth= 0.82"

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

_	Α	rea (sf)	С	Description	1				
		19,108	0.95	Roof					
_		19,108		100.00% Impervious Area					
	Tc	3	Slope	,		Description			
_	(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
	5.0					Direct Entry, Overland Concentrated Flow (Min)			

## Subcatchment D6: Drainage Basin D6



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## **Summary for Subcatchment D7: Drainage Basin D7**

968 cf, Depth= 0.46" Runoff 1.62 cfs @ 0.09 hrs, Volume=

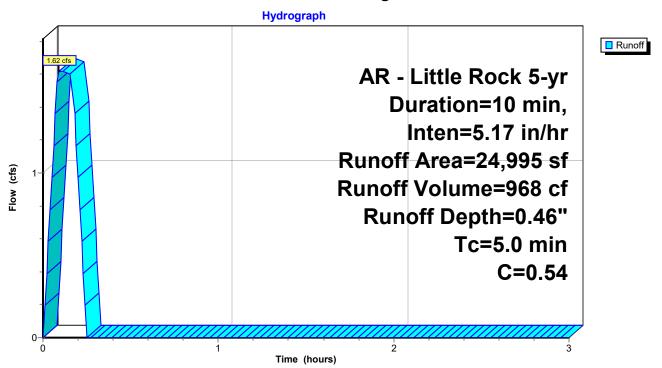
Routed to Link Post-Dev: APPROX DISCHARGE

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)	С	Description	ו				
	18,798	0.40	Sod Yard,	Natural Ve	getation			
	6,197	0.95	Paving, Sid	dewalks				
	24,995	0.54	Weighted /	Average				
	18,798		75.21% Pervious Area					
	6,197		24.79% Impervious Area					
_								
To	-	Slope	,	Capacity	Description			
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
5.0	)				Direct Entry, Overland Concentrated Flow (Min)			

**Direct Entry, Overland Concentrated Flow (Min)** 

# Subcatchment D7: Drainage Basin D7



## **Summerwood Gym 3**

Prepared by Phillip Lewis Engineering

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# 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

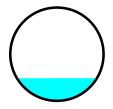
Average Depth at Peak Storage= 0.37', Surface Width= 1.29' Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.28 cfs

18.0" Round Pipe

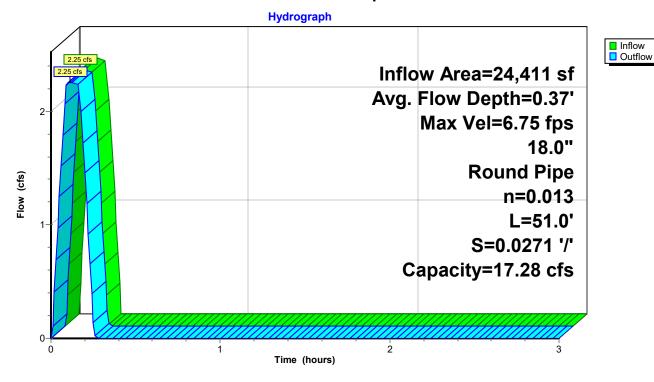
n= 0.013 Corrugated PE, smooth interior

Length= 51.0' Slope= 0.0271 '/'

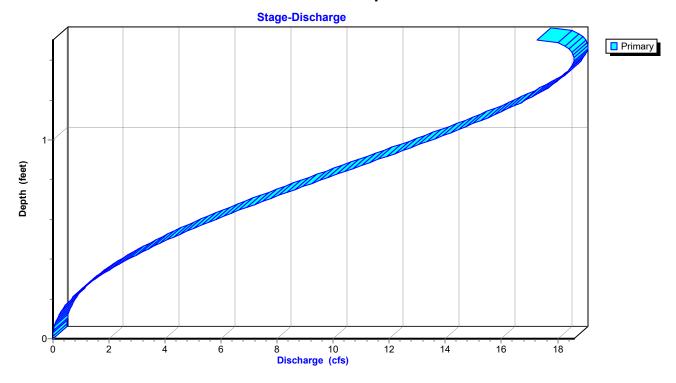
Inlet Invert= 408.33', Outlet Invert= 406.95'



### Reach P-A1: Pipe A1



# Reach P-A1: Pipe A1



Storage (cubic-feet)

67

68

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83 84

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88 88

89 89

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90

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

		· ·	J	
Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)
408.33	0.0	0	409.37	1.3
408.35	0.0	0	409.39	1.3
408.37	0.0	1	409.41	1.4
408.39	0.0	1	409.43	1.4
408.41	0.0		409.45	1.4
408.43	0.0	2 3	409.43	1.4
	0.1	3		1.4
408.45		4	409.49	
408.47	0.1		409.51	1.5
408.49	0.1	5	409.53	1.5
408.51	0.1	6	409.55	1.5
408.53	0.1	7	409.57	1.6
408.55	0.2	8	409.59	1.6
408.57	0.2	9	409.61	1.6
408.59	0.2	10	409.63	1.6
408.61	0.2	12	409.65	1.6
408.63	0.3	13	409.67	1.7
408.65	0.3	14	409.69	1.7
408.67	0.3	15	409.71	1.7
408.69	0.3	17	409.73	1.7
408.71	0.4	18	409.75	1.7
408.73	0.4	19	409.77	1.7
408.75	0.4	21	409.79	1.8
408.77	0.4	22	409.81	1.8
408.79	0.5	23	409.83	1.8
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	0.0	34		
408.95	0.7	35		
408.97	0.7	37		
408.99	0.7	38		
409.01	0.7	40		
409.01	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 53		
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		
			1	

## **Summerwood Gym 3**

Prepared by Phillip Lewis Engineering

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## 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

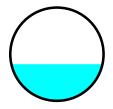
Average Depth at Peak Storage= 0.59', Surface Width= 1.47' Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 11.95 cfs

18.0" Round Pipe

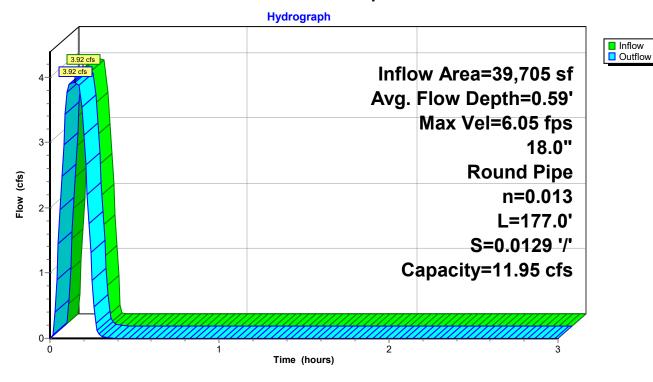
n= 0.013 Corrugated PE, smooth interior

Length= 177.0' Slope= 0.0129 '/'

Inlet Invert= 406.85', Outlet Invert= 404.56'

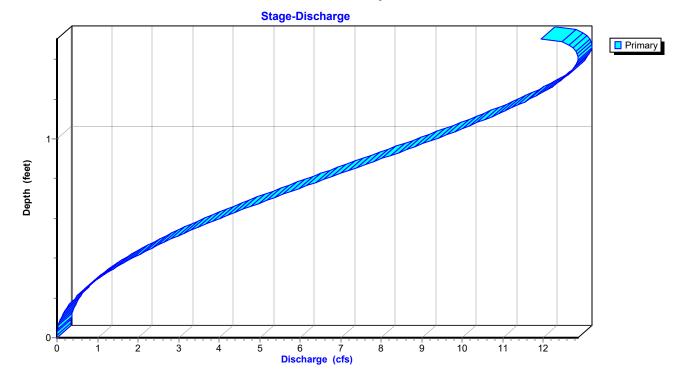


### Reach P-A2: Pipe A2



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# Reach P-A2: Pipe A2



Storage (cubic-feet)

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

		J	J	
Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)
406.85	0.0	0	407.89	1.3
406.87	0.0	1	407.91	1.3
406.89	0.0	2	407.93	1.4
406.91	0.0	4	407.95	1.4
406.93	0.0	6	407.97	1.4
406.95	0.0	9	407.99	1.4
406.97	0.1	12	408.01	1.5
406.99	0.1	15	408.03	1.5
407.01	0.1	18	408.05	1.5
407.03	0.1	21	408.07	1.5
407.05	0.1	25	408.09	1.6
407.03	0.1	28	408.03	1.6
407.07	0.2	32	408.11	1.6
407.09	0.2	36	408.15	1.6
407.11	0.2	40	408.13	1.6
	0.2	45 45		1.7
407.15			408.19	
407.17	0.3	49	408.21	1.7
407.19	0.3	53	408.23	1.7
407.21	0.3	58	408.25	1.7
407.23	0.4	62	408.27	1.7
407.25	0.4	67	408.29	1.7
407.27	0.4	72	408.31	1.8
407.29	0.4	76	408.33	1.8
407.31	0.5	81	408.35	1.8
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	8.0	148		
407.59	0.9	154 159		
407.61	0.9			
407.63	0.9	164		
407.65	1.0 1.0	170 175		
407.67 407.69				
	1.0	180 185		
407.71 407.73	1.0 1.1	185 191		
407.75	1.1	196		
407.75	1.1	201		
407.77	1.1	206		
407.79	1.2	200		
407.83	1.2	216		
407.85	1.2	216 222		
407.85	1.3	222 226		
407.07	1.3	220		

## **Summerwood Gym 3**

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## 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

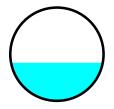
Average Depth at Peak Storage= 0.61', Surface Width= 1.48' Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.65 cfs

18.0" Round Pipe

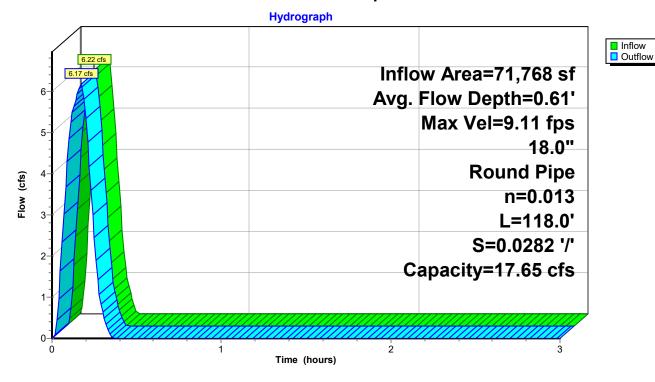
n= 0.013 Corrugated PE, smooth interior

Length= 118.0' Slope= 0.0282 '/'

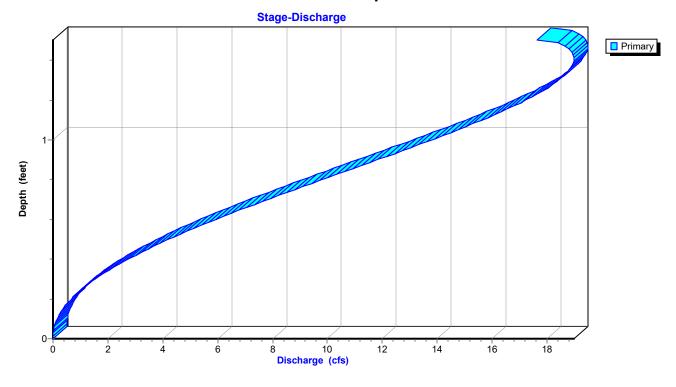
Inlet Invert= 404.46', Outlet Invert= 401.13'



### Reach P-A3: Pipe A3



# Reach P-A3: Pipe A3



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

		J	J		•
Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
404.46			405.50	1.3	<del></del>
404.48	0.0 0.0	0 1	405.50	1.3	154 158
	0.0			1.3	161
404.50		2 3	405.54		
404.52	0.0		405.56	1.4	164
404.54 404.56	0.0 0.1	4 6	405.58 405.60	1.4 1.4	167 170
404.58	0.1	8	405.60	1.4	170
404.56	0.1	10	405.62	1.5	173
404.60	0.1	12	405.66	1.5	179
404.62	0.1	14	405.68	1.5	182
404.66	0.1	17	405.00	1.6	184
404.68	0.1	19	405.70	1.6	187
404.00	0.2	22	405.72	1.6	190
404.70	0.2	24	405.74	1.6	192
404.72	0.2	24 27	405.76	1.6	194
404.74	0.2	30	405.78	1.7	197
404.78	0.3	33	405.80	1.7	199
404.76	0.3	35	405.84	1.7	201
404.82	0.3	38	405.86	1.7	203
404.84	0.3	42	405.88	1.7	204
404.86	0.4	45	405.90	1.7	206
404.88	0.4	48	405.90	1.7	207
404.90	0.4	51	405.94	1.8	208
404.92	0.5	54	405.96	1.8	<b>209</b>
404.94	0.5	58	+00.00	1.0	203
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			

## **Summerwood Gym 3**

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## 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

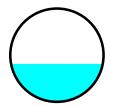
Average Depth at Peak Storage= 0.61', Surface Width= 1.47' Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.66 cfs

18.0" Round Pipe

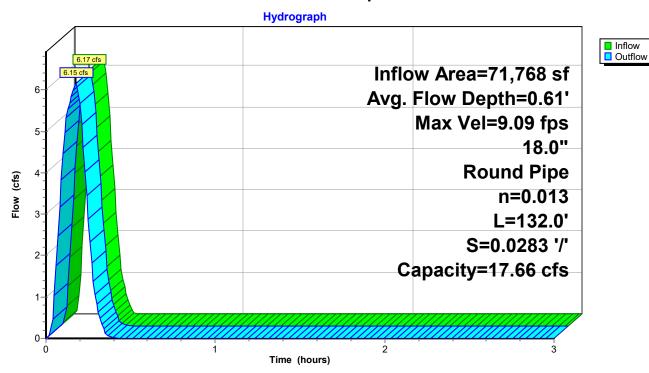
n= 0.013 Corrugated PE, smooth interior

Length= 132.0' Slope= 0.0283 '/'

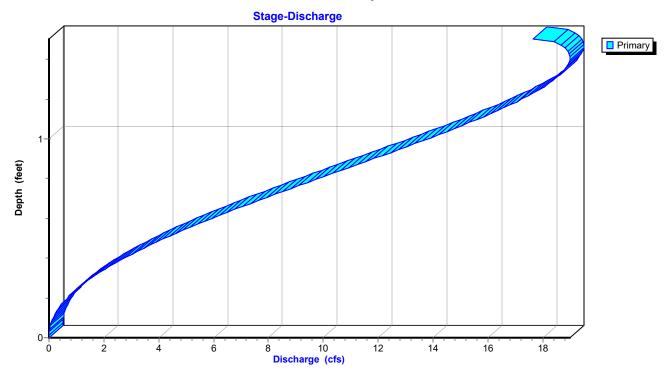
Inlet Invert= 401.03', Outlet Invert= 397.30'



### Reach P-A4: Pipe A4



# Reach P-A4: Pipe A4



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

		· ·	J		•
Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
401.03	0.0	0	402.07	1.3	173
401.05	0.0	1	402.07	1.3	176
401.03	0.0	2	402.03	1.4	180
401.07	0.0	3	402.11	1.4	183
401.09	0.0	5	402.13	1.4	187
401.11	0.0	7	402.13	1.4	190
401.15	0.1	9	402.17	1.4	194
401.13	0.1	11	402.13	1.5	197
401.17	0.1	13	402.21	1.5	200
401.13	0.1	16	402.25	1.5	203
401.23	0.1	18	402.27	1.6	206
401.25	0.1	21	402.27	1.6	209
401.27	0.2	24	402.23	1.6	212
401.29	0.2	27	402.33	1.6	215
401.23	0.2	30	402.35	1.6	217
401.33	0.3	33	402.37	1.7	220
401.35	0.3	36	402.39	1.7	222
401.37	0.3	40	402.33	1.7	225
401.39	0.3	43	402.43	1.7	227
401.41	0.4	46	402.45	1.7	228
401.43	0.4	50	402.47	1.7	230
401.45	0.4	53	402.49	1.8	232
401.47	0.4	57	402.51	1.8	233
401.49	0.5	61	402.53	1.8	233
401.51	0.5	64	402.00	1.0	200
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	8.0	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			

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# 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 )

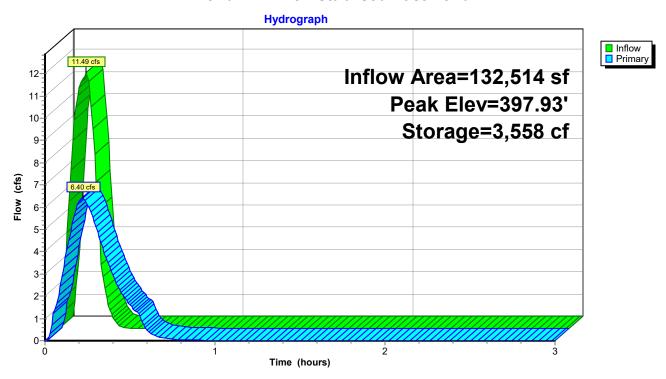
Volume	Inve	ert Avail	l.Storage	Storage Description
#1	396.0	00'	8,557 cf	Custom Stage Data Listed below
Elevatio (fee		Inc.Store cubic-feet)		n.Store ic-feet)
396.0	0	0		0
396.5	0	250		250
397.0	0	1,092		1,342
398.0	0	2,387		3,729
399.0	0	2,405		6,134
400.0	0	2,423		8,557
Device	Routing	Inv	vert Outle	let Devices
#1	Primary	399.	.00' <b>5.0'</b>	long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#2	Primary	396.	.00' <b>1.1'</b>	long Sharp-Crested Rectangular Weir 2 End Contraction(s)  O' Crest Height

**Primary OutFlow** Max=6.40 cfs @ 0.22 hrs HW=397.93' (Free Discharge)

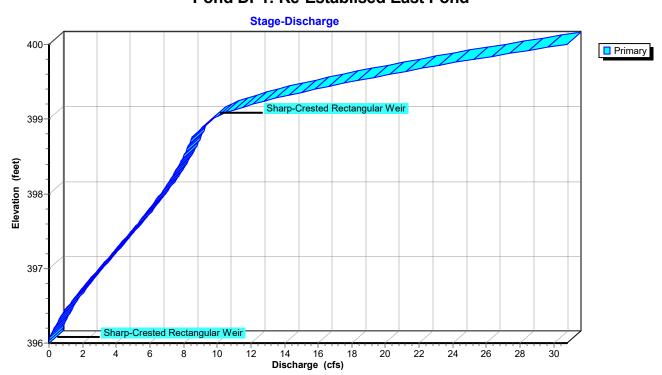
1=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

—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	Storage	Elevation	Storage
(feet)	(cubic-feet)	(feet)	(cubic-feet)
396.00	0	398.60	5,172
396.05	25	398.65	5,292
396.10	50	398.70	5,412
396.15	75	398.75	5,533
396.20	100	398.80	5,653
396.25	125	398.85	5,773
396.30	150	398.90	5,893
396.35	175	398.95	6,014
396.40	200	399.00	6,134
396.45	225	399.05	6,255
396.50	250	399.10	6,376
396.55	359	399.15	6,497
396.60	468	399.20	6,619
396.65	578	399.25	6,740
396.70	687	399.30	6,861
396.75	796	399.35	6,982
396.80	905	399.40	7,103
396.85	1,014	399.45	7,224
396.90	1,124	399.50	7,346
396.95	1,233	399.55	7,467
397.00	1,342	399.60	7,588
397.05	1,461	399.65	7,709
397.10	1,581	399.70	7,830
397.15	1,700	399.75	7,951
397.20	1,819	399.80	8,072
397.25	1,939	399.85	8,194
397.30	2,058	399.90	8,315
397.35	2,177	399.95	8,436
397.40	2,297	400.00	8,557
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		
397.90 397.95	3,490		
	3,610		
398.00 398.05	3,729 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		
000.00	0,002		

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## **Summary for Link Post-Dev: APPROX DISCHARGE**

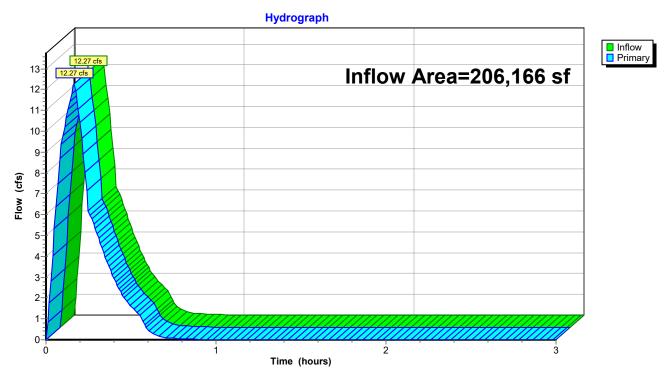
Inflow Area = 206,166 sf, 64.42% Impervious, Inflow Depth = 0.65" for 5-yr event

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



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# Summary for Subcatchment D1: Drainage Basin D1

Runoff 5.97 cfs @ 0.09 hrs, Volume= 3,577 cf, Depth= 0.88"

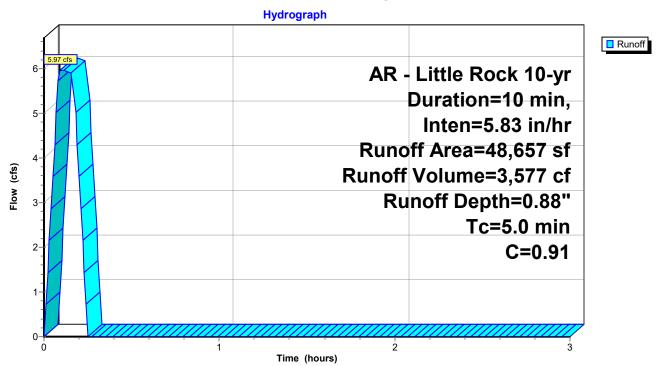
Routed to Link Post-Dev: APPROX DISCHARGE

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

	rea (sf)	С	Description	1	
	3,421	0.40	Sod Yard		
	45,236	0.95	Rood, Drive	lks	
	48,657	0.91	Weighted A	Average	
	3,421		7.03% Per	vious Area	
	45,236		92.97% Im	pervious A	rea
_					
Tc	Length	Slope	,	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
5.0					Direct Entry, Overland Concentrated Flow (Min)

**Direct Entry, Overland Concentrated Flow (Min)** 

# Subcatchment D1: Drainage Basin D1



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# **Summary for Subcatchment D2: Drainage Basin D2**

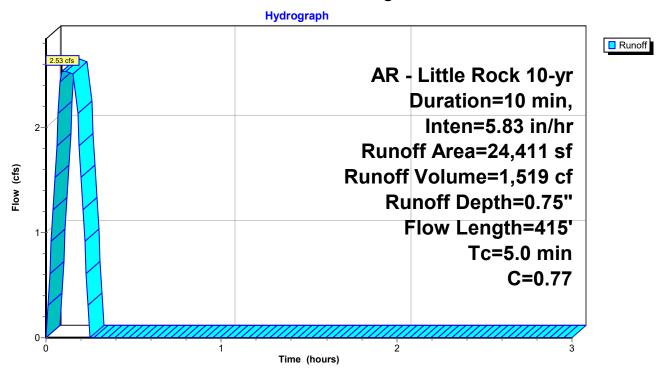
Runoff = 2.53 cfs @ 0.09 hrs, Volume= 1,519 cf, Depth= 0.75"

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)	С	Description	1	
	8,845	0.45	Rip Rap Er	nbankment	
	15,566	0.95	Roof, Drive	ks	
	24,411	0.77	Weighted A	Average	
	8,845		36.23% Pe	rvious Area	a
	15,566		63.77% Im	pervious Aı	rea
Tc	3	Slope	,	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
5.0	415		1.38		Direct Entry, Overland Concentrated Flow (Min)

### Subcatchment D2: Drainage Basin D2



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# **Summary for Subcatchment D3: Drainage Basin D3**

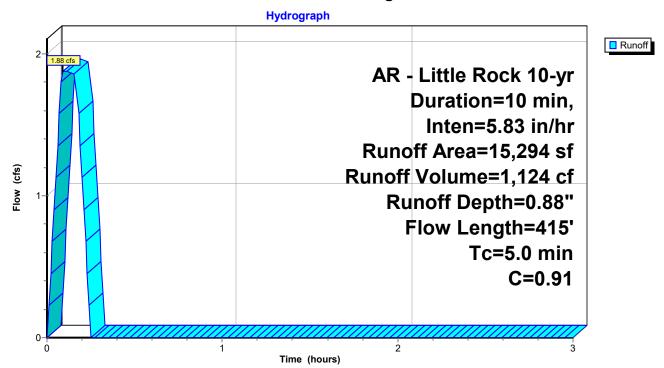
Runoff = 1.88 cfs @ 0.09 hrs, Volume= 1,124 cf, Depth= 0.88"

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)	С	Description	า	
	1,065	0.40	Sod Yard		
	14,229	0.95	Paving, Sid	dewalks	
	15,294 0.91 Weighted Average				
	1,065		6.96% Per	vious Area	
	14,229		93.04% Im	pervious A	rea
Т	c Length	Slope	,	Capacity	Description
(mir	n) (feet)	(ft/ft)	(ft/sec)	(cfs)	
5.	.0 415		1.38		Direct Entry, Overland Concentrated Flow (Min)

### Subcatchment D3: Drainage Basin D3



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## Summary for Subcatchment D4: Drainage Basin D4

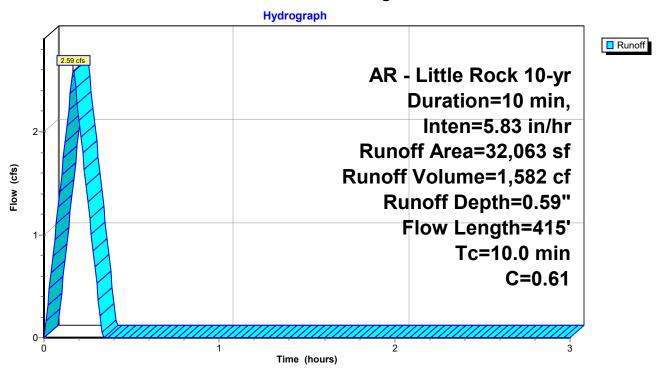
Runoff = 2.59 cfs @ 0.17 hrs, Volume= 1,582 cf, Depth= 0.59"

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

	Α	rea (sf)	С	Description	า	
		20,032	0.40			
		12,031	0.95			
		32,063	0.61	Weighted A	Average	
		20,032		62.48% Pe	rvious Area	a
		12,031		37.52% Im	pervious A	rea
	_					
	Тс	Length	Slope	,	Capacity	Description
(r	min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
•	10.0	415		0.69		Direct Entry, Overland Concentrated Flow (Min)

### Subcatchment D4: Drainage Basin D4



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# **Summary for Subcatchment D5: Drainage Basin D5**

2,254 cf, Depth= 0.65" Runoff 3.76 cfs @ 0.09 hrs, Volume=

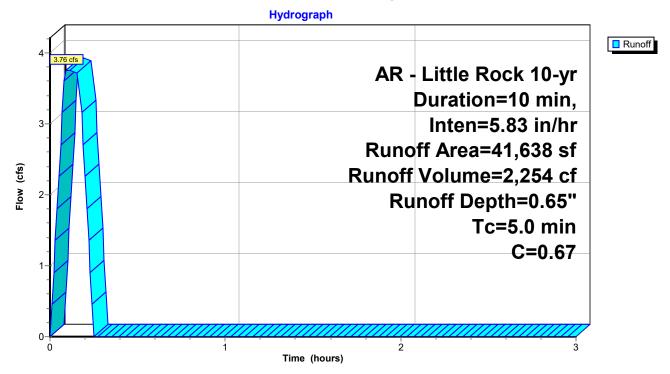
Routed to Pond DP1: Re-Establised East Pond

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

A	rea (sf)	С	Description	1					
	21,201	0.40	Sod Yard,	Sod Yard, Natural Vegetation					
	20,437	0.95	Paving, Sidewalks						
	41,638	0.67	Weighted A	Average					
	21,201		50.92% Pe	rvious Area	a				
	20,437		49.08% Im	pervious A	rea				
Tc	Length	Slope	,	Capacity	Description				
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
5.0					Direct Entry, Overland Concentrated Flow (Min)				

**Direct Entry, Overland Concentrated Flow (Min)** 

# Subcatchment D5: Drainage Basin D5



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# **Summary for Subcatchment D6: Drainage Basin D6**

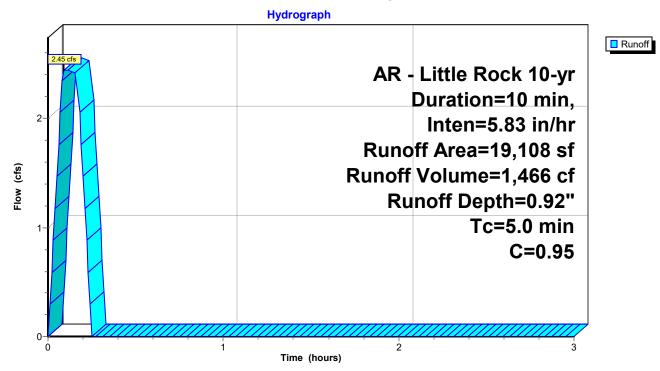
Runoff = 2.45 cfs @ 0.09 hrs, Volume= 1,466 cf, Depth= 0.92"

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

A	rea (sf)	С	Description	1	
	19,108	0.95	Roof		
	19,108 100.00% Impervious A				Area
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	(leet)	(IVIL)	(11/560)	(CIS)	Direct Entry, Overland Concentrated Flow (Min)

## Subcatchment D6: Drainage Basin D6



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## **Summary for Subcatchment D7: Drainage Basin D7**

1,090 cf, Depth= 0.52" Runoff 1.82 cfs @ 0.09 hrs, Volume=

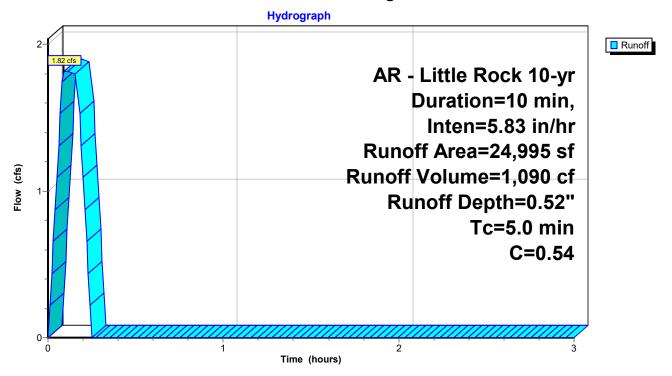
Routed to Link Post-Dev: APPROX DISCHARGE

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

A	rea (sf)	С	Description	1					
	18,798	0.40	Sod Yard, Natural Vegetation						
	6,197	0.95	Paving, Sidewalks						
	24,995	0.54	Weighted A	Average					
	18,798		75.21% Pervious Area						
	6,197		24.79% Im	pervious Aı	rea				
_		0.1							
Tc	-	Slope	,	Capacity	Description				
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)					
5.0					Direct Entry, Overland Concentrated Flow (Min)				

**Direct Entry, Overland Concentrated Flow (Min)** 

# Subcatchment D7: Drainage Basin D7



## **Summerwood Gym 3**

Prepared by Phillip Lewis Engineering

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## **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

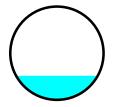
Average Depth at Peak Storage= 0.39', Surface Width= 1.31' Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.28 cfs

18.0" Round Pipe

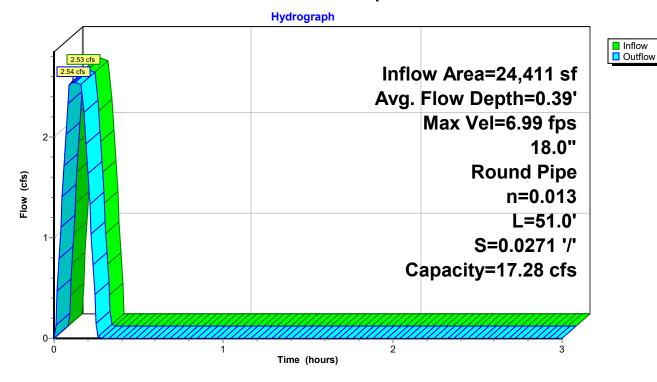
n= 0.013 Corrugated PE, smooth interior

Length= 51.0' Slope= 0.0271 '/'

Inlet Invert= 408.33', Outlet Invert= 406.95'

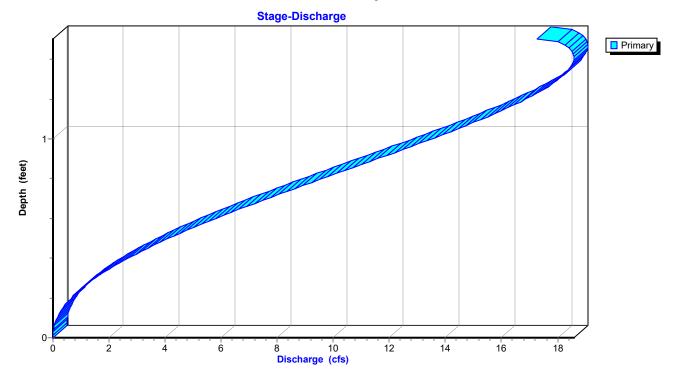


### Reach P-A1: Pipe A1



Summerwood Gym 3 AR - Little Rock 10-yr Do Prepared by Phillip Lewis Engineering HydroCAD® 10.20-2f s/n 12520 © 2022 HydroCAD Software Solutions LLC

# Reach P-A1: Pipe A1



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

		J	•		•
Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
408.33	0.0	0	409.37	1.3	67
408.35	0.0	ő	409.39	1.3	68
408.37	0.0	1	409.41	1.4	69
408.39	0.0	1	409.43	1.4	71
408.41	0.0	2	409.45	1.4	72
408.43	0.1	3	409.47	1.4	73
408.45	0.1	3	409.49	1.5	75
408.47	0.1	4	409.51	1.5	76
408.49	0.1	5	409.53	1.5	77
408.51	0.1	6	409.55	1.5	78
408.53	0.1	7	409.57	1.6	80
408.55	0.2	8	409.59	1.6	81
408.57	0.2	9	409.61	1.6	82
408.59	0.2	10	409.63	1.6	83
408.61	0.2	12	409.65	1.6	84
408.63	0.3	13	409.67	1.7	85
408.65	0.3	14	409.69	1.7	86
408.67	0.3	15	409.71	1.7	87
408.69	0.3	17	409.73	1.7	88
408.71	0.4	18	409.75	1.7	88
408.73	0.4	19	409.77	1.7	89
408.75	0.4	21	409.79	1.8	89
408.77	0.4	22	409.81	1.8	90
408.79	0.5	23	409.83	1.8	90
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	0.7	40			
409.03	0.8	41			
409.05	0.8	43			
409.07		44			
409.07	0.9 0.9	46			
		47			
409.11	0.9				
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			

## **Summerwood Gym 3**

Prepared by Phillip Lewis Engineering

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# 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

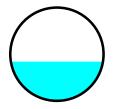
Average Depth at Peak Storage= 0.63', Surface Width= 1.48' Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 11.95 cfs

18.0" Round Pipe

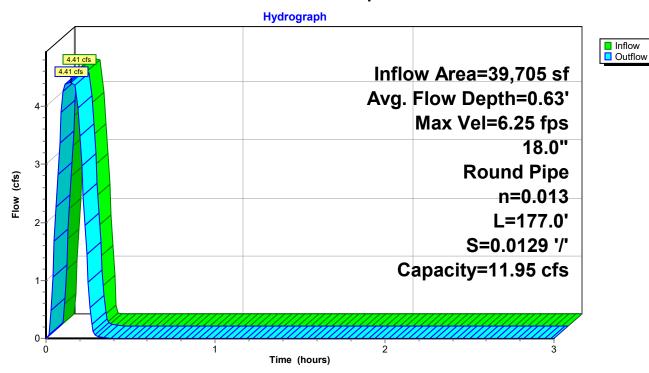
n= 0.013 Corrugated PE, smooth interior

Length= 177.0' Slope= 0.0129 '/'

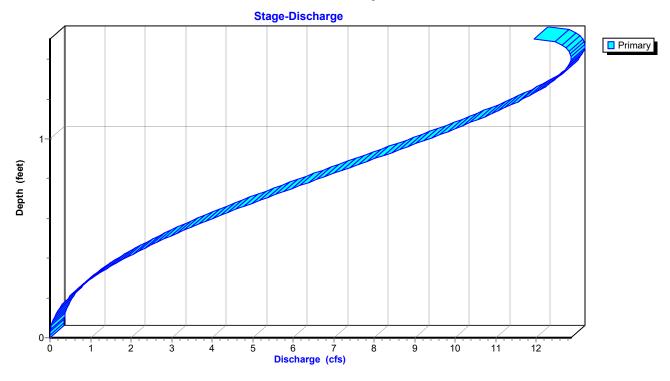
Inlet Invert= 406.85', Outlet Invert= 404.56'



### Reach P-A2: Pipe A2



# Reach P-A2: Pipe A2



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

		J	J		•
	End-Area	Storage		End-Area	Storage
(feet)	(sq-ft)	(cubic-feet)	(feet)	(sq-ft)	(cubic-feet)
406.85	0.0	0	407.89	1.3	231
406.87	0.0	1	407.91	1.3	236
406.89	0.0	2	407.93	1.4	241
406.91	0.0	4	407.95	1.4	246
406.93	0.0	6	407.97	1.4	250
406.95	0.1	9	407.99	1.4	255
406.97	0.1	12	408.01	1.5	260
406.99	0.1	15	408.03	1.5	264
407.01	0.1	18	408.05	1.5	268
407.03	0.1	21	408.07	1.5	272
407.05	0.1	25	408.09	1.6	277
407.07	0.2	28	408.11	1.6	280
407.09	0.2	32	408.13	1.6	284
407.11	0.2	36	408.15	1.6	288
407.13	0.2	40	408.17	1.6	292
407.15	0.3	45	408.19	1.7	295
407.17	0.3	49	408.21	1.7	298
407.19	0.3	53	408.23	1.7	301
407.21	0.3	58	408.25	1.7	304
407.23	0.4	62	408.27	1.7	306
407.25	0.4	67	408.29	1.7	309
407.27	0.4	72	408.31	1.8	310
407.29	0.4	76	408.33	1.8	312
407.31	0.5	81	408.35	1.8	313
407.33	0.5	86			0.0
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			
	-	•			

## **Summerwood Gym 3**

Prepared by Phillip Lewis Engineering

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## 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

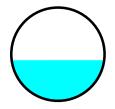
Average Depth at Peak Storage= 0.66', Surface Width= 1.49' Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.65 cfs

18.0" Round Pipe

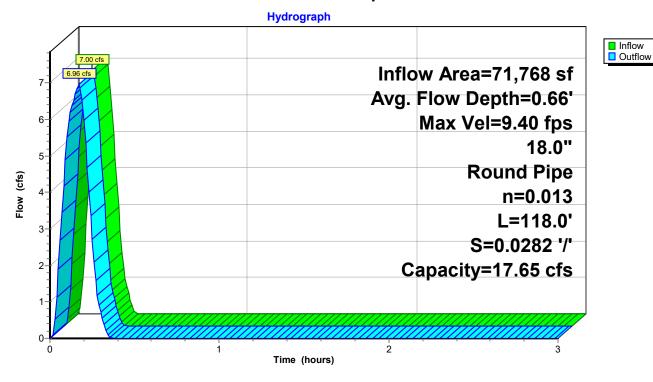
n= 0.013 Corrugated PE, smooth interior

Length= 118.0' Slope= 0.0282 '/'

Inlet Invert= 404.46', Outlet Invert= 401.13'

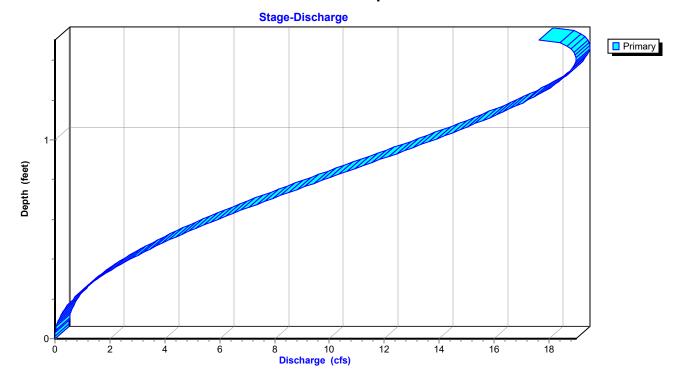


### Reach P-A3: Pipe A3



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# Reach P-A3: Pipe A3



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

	End-Area	Storage		End-Area	Storage
(feet)	(sq-ft)	(cubic-feet)	(feet)	(sq-ft)	(cubic-feet)
404.46	0.0	0	405.50	1.3	154
404.48	0.0	1	405.52	1.3	158
404.50	0.0	2	405.54	1.4	161
404.52	0.0	3	405.56	1.4	164
404.54	0.0	4	405.58	1.4	167
404.56	0.1	6	405.60	1.4	170
404.58	0.1	8	405.62	1.5	173
404.60	0.1	10	405.64	1.5	176
404.62	0.1	12	405.66	1.5	179
404.64	0.1	14	405.68	1.5	182
404.66	0.1	17	405.70	1.6	184
404.68	0.2	19	405.72	1.6	187
404.70	0.2	22	405.74	1.6	190
404.72	0.2	24	405.76	1.6	192
404.74	0.2	27	405.78	1.6	194
404.76	0.3	30	405.80	1.7	197
404.78	0.3	33	405.82	1.7	199
404.80	0.3	35	405.84	1.7	201
404.82	0.3	38	405.86	1.7	203
404.84	0.4	42	405.88	1.7	204
404.86	0.4	45	405.80	1.7	206
404.88	0.4	48	405.90	1.7	207
		51			
404.90 404.92	0.4 0.5	54	405.94	1.8 <b>1.8</b>	208 <b>209</b>
404.94	0.5	58	405.96	1.0	209
404.94	0.5	61			
404.98	0.5	64			
405.00	0.5	68			
		71			
405.02 405.04	0.6 0.6	74			
405.04	0.6	74 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			

## **Summerwood Gym 3**

Prepared by Phillip Lewis Engineering

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## 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

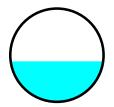
Average Depth at Peak Storage= 0.65', Surface Width= 1.49' Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.66 cfs

18.0" Round Pipe

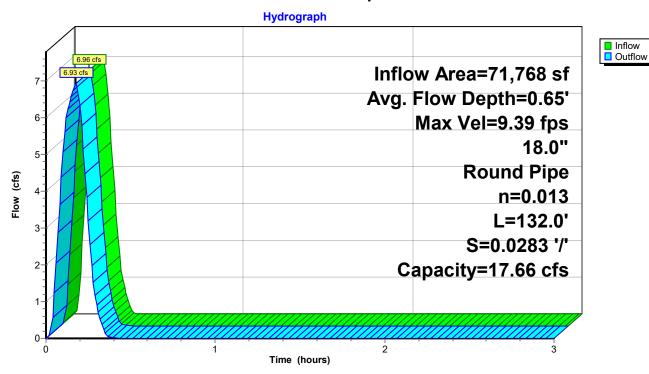
n= 0.013 Corrugated PE, smooth interior

Length= 132.0' Slope= 0.0283 '/'

Inlet Invert= 401.03', Outlet Invert= 397.30'

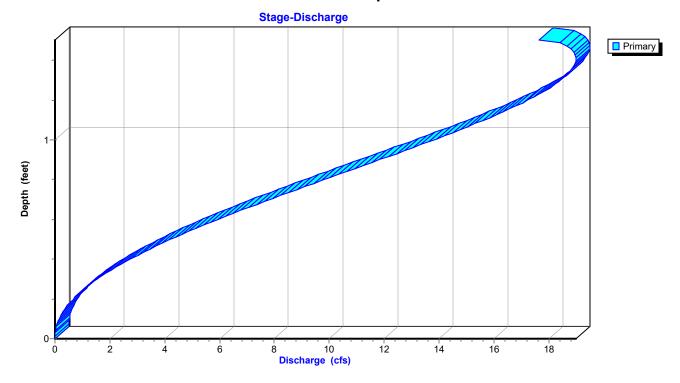


#### Reach P-A4: Pipe A4



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# Reach P-A4: Pipe A4



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

		· ·	J		•
Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
401.03	0.0	0	402.07	1.3	173
401.05	0.0	1	402.07	1.3	176
401.03	0.0	2	402.03	1.4	180
401.07	0.0	3	402.11	1.4	183
401.09	0.0	5	402.13	1.4	187
401.11	0.0	7	402.13	1.4	190
401.15	0.1	9	402.17	1.4	194
401.13	0.1	11	402.13	1.5	197
401.17	0.1	13	402.21	1.5	200
401.13	0.1	16	402.25	1.5	203
401.23	0.1	18	402.27	1.6	206
401.25	0.1	21	402.27	1.6	209
401.27	0.2	24	402.23	1.6	212
401.29	0.2	27	402.33	1.6	215
401.23	0.2	30	402.35	1.6	217
401.33	0.3	33	402.37	1.7	220
401.35	0.3	36	402.39	1.7	222
401.37	0.3	40	402.33	1.7	225
401.39	0.3	43	402.43	1.7	227
401.41	0.4	46	402.45	1.7	228
401.43	0.4	50	402.47	1.7	230
401.45	0.4	53	402.49	1.8	232
401.47	0.4	57	402.51	1.8	233
401.49	0.5	61	402.53	1.8	233
401.51	0.5	64	402.00	1.0	200
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	8.0	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			

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## 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 )

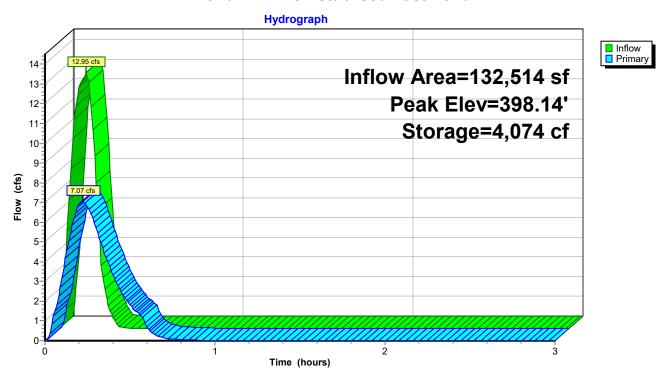
Volume	Inve	rt Avail.S	Storage	Storage Description
#1	396.00	o' 8 <sub>.</sub>	,557 cf	Custom Stage Data Listed below
<b>-</b>		. 0.	0 (	O.
Elevatio		Inc.Store	Cum.S	
(fee	t) (cı	ubic-feet)	(cubic-	-feet)
396.0	0	0		0
396.5	0	250		250
397.0	0	1,092	1	1,342
398.0	0	2,387	3	3,729
399.0	0	2,405	6	6,134
400.0	0	2,423	8	3,557
Device	Routing	Inve	rt Outlet	t Devices
#1	Primary	399.00	0' <b>5.0' l</b> c	ong Sharp-Crested Rectangular Weir 2 End Contraction(s)
#2	Primary	396.00		ong Sharp-Crested Rectangular Weir 2 End Contraction(s) Crest Height

Primary OutFlow Max=7.06 cfs @ 0.22 hrs HW=398.14' (Free Discharge)

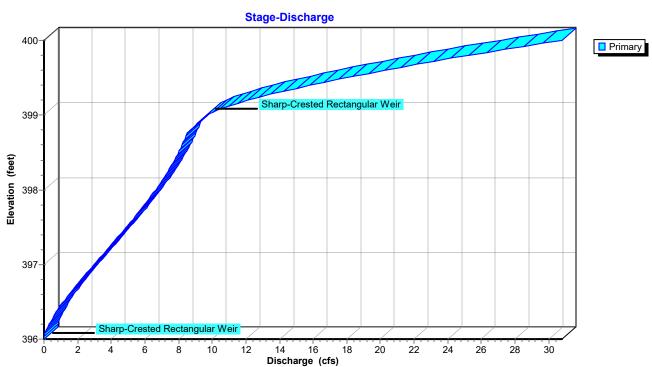
—1=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

—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



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

El	04	l =1#	04
Elevation	Storage (cubic-feet)	Elevation (fact)	Storage (cubic-feet)
(feet) 396.00	0	(feet) 398.60	5,172
396.05	25	398.65	5,292
396.10	50	398.70	5,412
396.15	75	398.75	5,533
396.20	100	398.80	5,653
396.25	125	398.85	5,773
396.30	150	398.90	5,893
396.35	175	398.95	6,014
396.40	200	399.00	6,134
396.45	225	399.05	6,255
396.50	250	399.10	6,376
396.55	359	399.15	6,497
396.60	468	399.20	6,619
396.65	578	399.25	6,740
396.70 396.75	687 796	399.30	6,861
396.80	905	399.35 399.40	6,982 7,103
396.85	1,014	399.45	7,103 7,224
396.90	1,124	399.50	7,346
396.95	1,233	399.55	7,467
397.00	1,342	399.60	7,588
397.05	1,461	399.65	7,709
397.10	1,581	399.70	7,830
397.15	1,700	399.75	7,951
397.20	1,819	399.80	8,072
397.25	1,939	399.85	8,194
397.30	2,058	399.90	8,315
397.35	2,177	399.95	8,436
397.40	2,297	400.00	8,557
397.45 397.50	2,416 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		
398.05 398.10	3,849 3,970		
398.15	4,090		
398.20	4,090 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		

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# **Summary for Link Post-Dev: APPROX DISCHARGE**

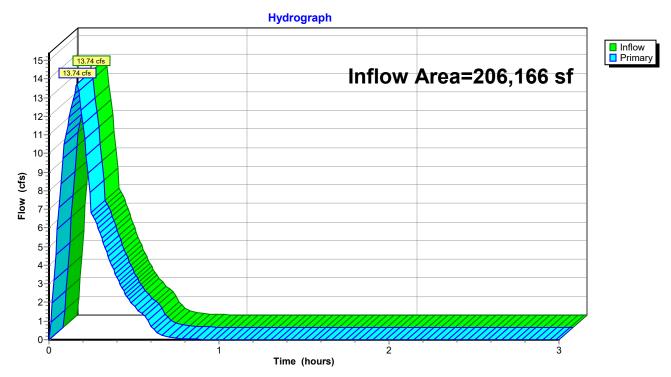
Inflow Area = 206,166 sf, 64.42% Impervious, Inflow Depth = 0.73" for 10-yr event

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



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## Summary for Subcatchment D1: Drainage Basin D1

Runoff 6.89 cfs @ 0.09 hrs, Volume= Routed to Link Post-Dev: APPROX DISCHARGE

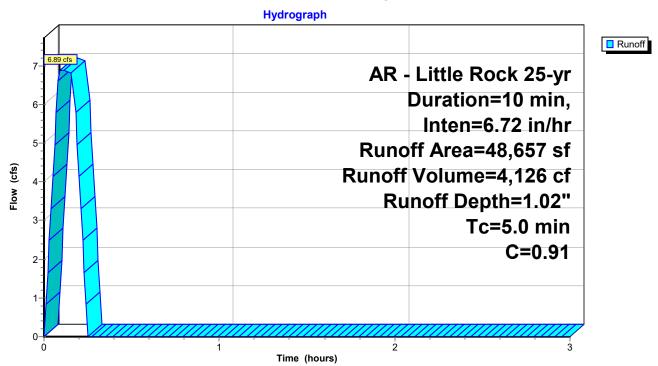
4,126 cf, Depth= 1.02"

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

	rea (sf)	С	Description	1			
	3,421	0.40	Sod Yard				
	45,236	0.95	Rood, Drive	es, Sidewa	lks		
	48,657	0.91	Weighted A	Average			
	3,421		7.03% Pervious Area				
	45,236		92.97% Im	pervious A	rea		
_							
Tc	9	Slope	,	Capacity	Description		
(min)	(feet)	(ft/ft)	) (ft/sec)	(cfs)			
5.0					Direct Entry, Overland Concentrated Flow (Min)		

**Direct Entry, Overland Concentrated Flow (Min)** 

## Subcatchment D1: Drainage Basin D1



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## **Summary for Subcatchment D2: Drainage Basin D2**

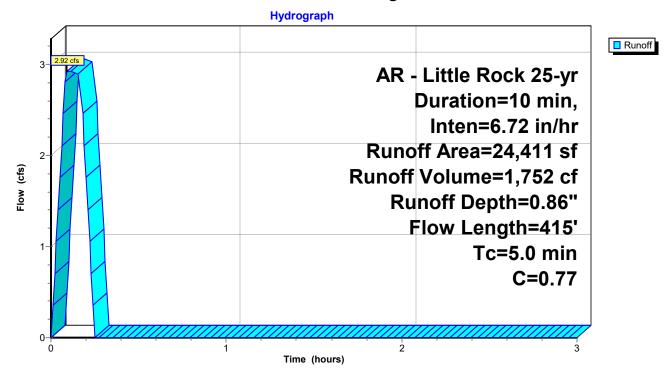
Runoff = 2.92 cfs @ 0.09 hrs, Volume= 1,752 cf, Depth= 0.86"

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)	С	Description	1	
	8,845	0.45	Rip Rap Er	nbankment	
	15,566	0.95	Roof, Drive	es, Sidewal	ks
	24,411	0.77	Weighted A	Average	
	8,845		36.23% Pe	rvious Area	a
	15,566		63.77% Im	pervious Aı	rea
Tc	3	Slope	,	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
5.0	415		1.38		Direct Entry, Overland Concentrated Flow (Min)

#### Subcatchment D2: Drainage Basin D2



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## Summary for Subcatchment D3: Drainage Basin D3

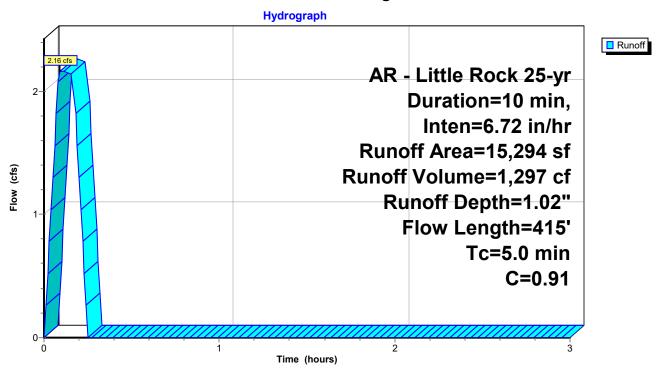
Runoff = 2.16 cfs @ 0.09 hrs, Volume= 1,297 cf, Depth= 1.02"

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

	rea (sf)	С	Description	1	
	1,065	0.40	Sod Yard		
	14,229	0.95	Paving, Sid	dewalks	
	15,294	0.91	Weighted A	Average	
	1,065		6.96% Per	vious Area	
	14,229		93.04% Im	pervious Aı	rea
Tc	9	Slope	,	Capacity	Description
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)	
5.0	415		1.38		Direct Entry, Overland Concentrated Flow (Min)

#### Subcatchment D3: Drainage Basin D3



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## Summary for Subcatchment D4: Drainage Basin D4

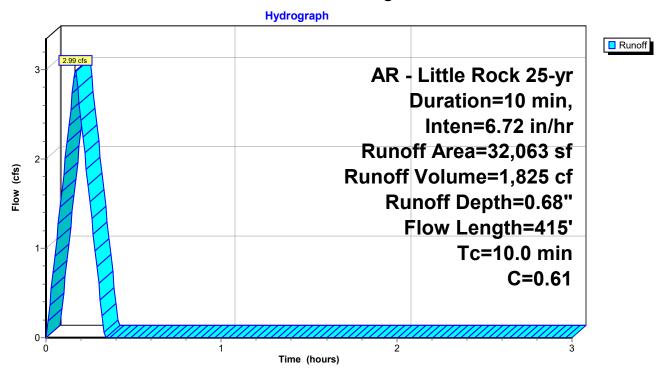
Runoff = 2.99 cfs @ 0.17 hrs, Volume= 1,825 cf, Depth= 0.68"

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)	С	Description	1	
	20,032	0.40			
	12,031	0.95			
	32,063	0.61	Weighted A	Average	
	20,032		62.48% Pe	rvious Area	a
	12,031		37.52% Im	pervious Aı	rea
_					
Tc	Length	Slope	,	Capacity	Description
<u>(min)</u>	(feet)	(ft/ft)	(ft/sec)	(cfs)	
10.0	415		0.69		Direct Entry, Overland Concentrated Flow (Min)

#### Subcatchment D4: Drainage Basin D4



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## **Summary for Subcatchment D5: Drainage Basin D5**

2,600 cf, Depth= 0.75" Runoff 4.34 cfs @ 0.09 hrs, Volume=

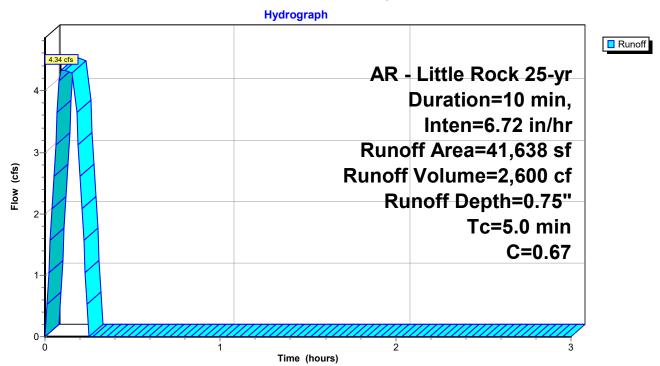
Routed to Pond DP1: Re-Establised East Pond

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

A	rea (sf)	С	Description	1				
	21,201	0.40	Sod Yard,	Natural Ve	getation			
	20,437	0.95	Paving, Sic	lewalks				
	41,638	0.67	Weighted A	Average				
	21,201		50.92% Pe	50.92% Pervious Area				
	20,437		49.08% Im	pervious A	rea			
_		٠.						
Tc	Length	Slope	,	Capacity	Description			
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
5.0					Direct Entry, Overland Concentrated Flow (Min)			

**Direct Entry, Overland Concentrated Flow (Min)** 

# Subcatchment D5: Drainage Basin D5



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## Summary for Subcatchment D6: Drainage Basin D6

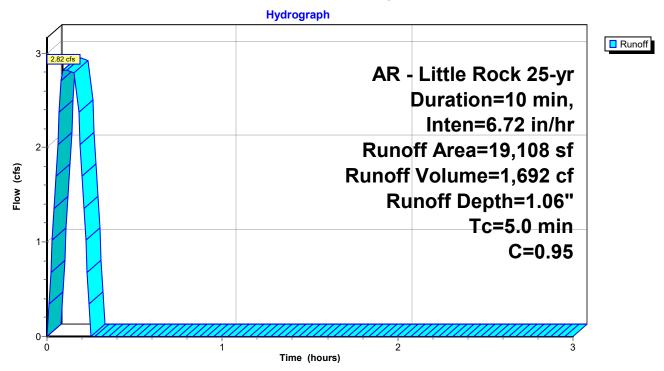
Runoff = 2.82 cfs @ 0.09 hrs, Volume= 1,692 cf, Depth= 1.06"

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

	Α	rea (sf)	С	Description	1	
		19,108	0.95	Roof		
		19,108		100.00% Ir	npervious A	Area
(m		Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	5.0					Direct Entry, Overland Concentrated Flow (Min)

### Subcatchment D6: Drainage Basin D6



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#### **Summary for Subcatchment D7: Drainage Basin D7**

1,258 cf, Depth= 0.60" Runoff 2.10 cfs @ 0.09 hrs, Volume=

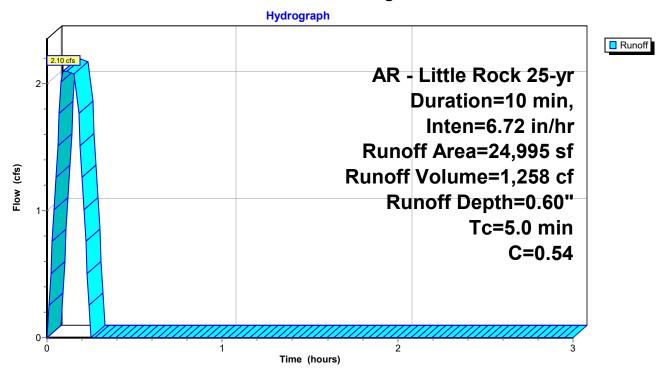
Routed to Link Post-Dev: APPROX DISCHARGE

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)	С	Description	ו			
	18,798	0.40	Sod Yard,	Natural Ve	getation		
	6,197	0.95	Paving, Sid	dewalks			
	24,995	0.54	Weighted /	Average			
	18,798		75.21% Pervious Area				
	6,197		24.79% Impervious Area				
_							
To	-	Slope	,	Capacity	Description		
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)			
5.0	)				Direct Entry, Overland Concentrated Flow (Min)		

**Direct Entry, Overland Concentrated Flow (Min)** 

## Subcatchment D7: Drainage Basin D7



## **Summerwood Gym 3**

Prepared by Phillip Lewis Engineering

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## 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

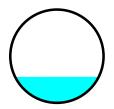
Average Depth at Peak Storage= 0.42', Surface Width= 1.34' Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.28 cfs

18.0" Round Pipe

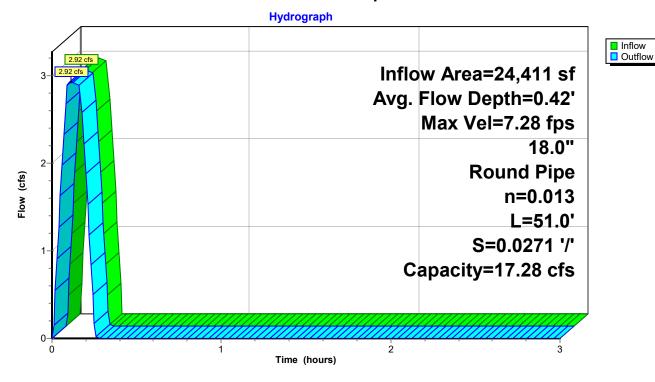
n= 0.013 Corrugated PE, smooth interior

Length= 51.0' Slope= 0.0271 '/'

Inlet Invert= 408.33', Outlet Invert= 406.95'

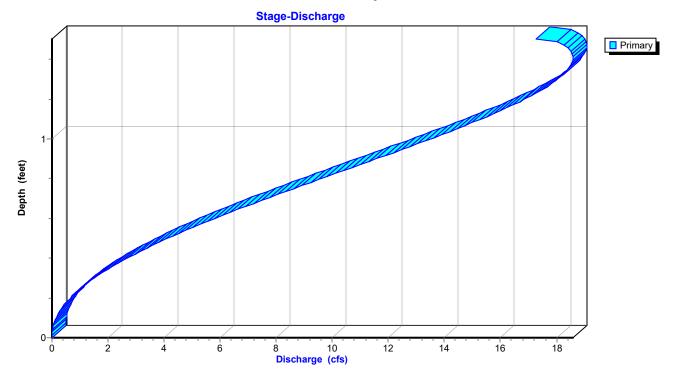


#### Reach P-A1: Pipe A1



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# Reach P-A1: Pipe A1



# **Summerwood Gym 3**

Prepared by Phillip Lewis Engineering
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## Stage-Area-Storage for Reach P-A1: Pipe A1

		ou.go r			
Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
408.33	0.0	0	409.37	1.3	67
408.35	0.0	Ö	409.39	1.3	68
408.37	0.0	1	409.41	1.4	69
408.39	0.0	1	409.43	1.4	71
	0.0			1.4	72
408.41		2 3	409.45		
408.43	0.1		409.47	1.4	73
408.45	0.1	3	409.49	1.5	75 70
408.47	0.1	4	409.51	1.5	76
408.49	0.1	5	409.53	1.5	77
408.51	0.1	6	409.55	1.5	78
408.53	0.1	7	409.57	1.6	80
408.55	0.2	8	409.59	1.6	81
408.57	0.2	9	409.61	1.6	82
408.59	0.2	10	409.63	1.6	83
408.61	0.2	12	409.65	1.6	84
408.63	0.3	13	409.67	1.7	85
408.65	0.3	14	409.69	1.7	86
408.67	0.3	15	409.71	1.7	87
408.69	0.3	17	409.73	1.7	88
408.71	0.4	18	409.75	1.7	88
408.73	0.4	19	409.77	1.7	89
408.75	0.4	21	409.79	1.8	89
408.77	0.4	22	409.81	1.8	90
408.79	0.5	23	409.83	1.8	90
408.81	0.5	25	+05.05	1.0	30
408.83	0.5	26			
408.85	0.5	28			
408.87	0.6	29			
408.89	0.6	31			
	0.6	32			
408.91					
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			
<del>-</del> 00.00	1.0	00			

## **Summerwood Gym 3**

Prepared by Phillip Lewis Engineering

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#### 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

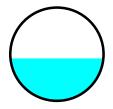
Average Depth at Peak Storage= 0.68', Surface Width= 1.49' Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 11.95 cfs

18.0" Round Pipe

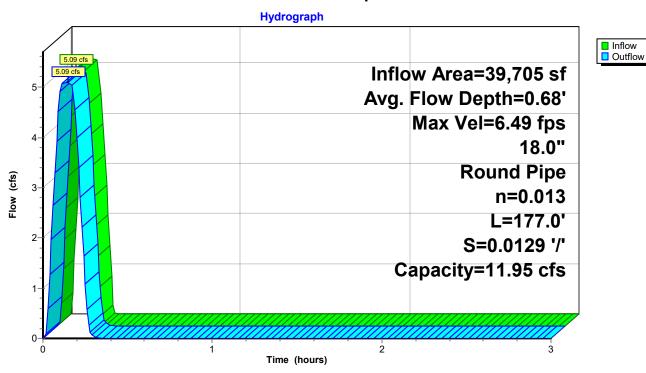
n= 0.013 Corrugated PE, smooth interior

Length= 177.0' Slope= 0.0129 '/'

Inlet Invert= 406.85', Outlet Invert= 404.56'

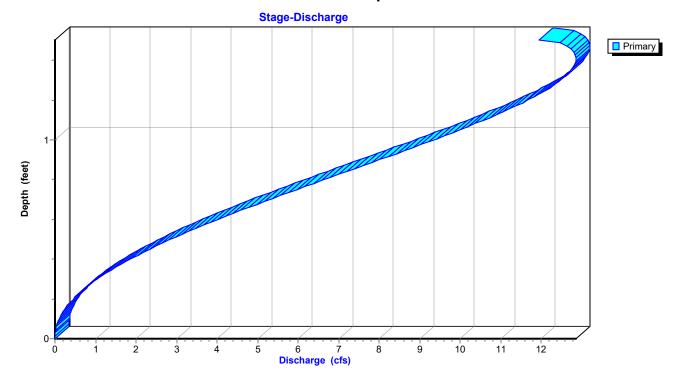


#### Reach P-A2: Pipe A2



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# Reach P-A2: Pipe A2



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

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
406.85	0.0	0	407.89	1.3	231
406.87	0.0	1	407.91	1.3	236
406.89	0.0	2	407.93	1.4	241
406.89	0.0	4	407.95	1.4	246
406.93	0.0	6	407.97	1.4	250
406.95	0.1	9	407.99	1.4	255
406.97	0.1	12	408.01	1.5	260
406.99	0.1	15	408.03	1.5	264
407.01	0.1	18	408.05	1.5	268
407.03	0.1	21	408.07	1.5	272
407.05	0.1	25	408.09	1.6	277
407.07	0.2	28	408.11	1.6	280
407.09	0.2	32	408.13	1.6	284
407.11	0.2	36	408.15	1.6	288
407.13	0.2	40	408.17	1.6	292
407.15	0.3	45	408.19	1.7	295
407.17	0.3	49	408.21	1.7	298
407.19	0.3	53	408.23	1.7	301
407.21	0.3	58	408.25	1.7	304
407.23	0.4	62	408.27	1.7	306
407.25	0.4	67	408.29	1.7	309
407.27	0.4	72	408.31	1.8	310
407.29	0.4	76	408.33	1.8	312
407.31	0.5	81	408.35	1.8	313
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			
407.71	1.0	191			
407.75	1.1	196			
407.73	1.1	201			
407.77	1.1	206			
407.79	1.2	206			
407.83	1.2	211			
407.85	1.2	222			
		222 226			
407.87	1.3	220			

## **Summerwood Gym 3**

Prepared by Phillip Lewis Engineering

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## 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

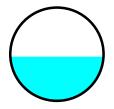
Average Depth at Peak Storage= 0.71', Surface Width= 1.50' Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.65 cfs

18.0" Round Pipe

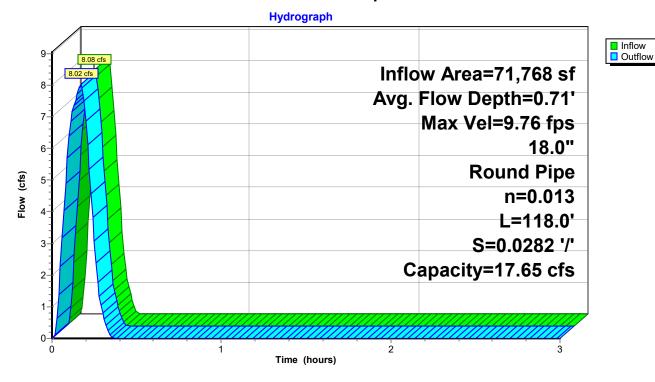
n= 0.013 Corrugated PE, smooth interior

Length= 118.0' Slope= 0.0282 '/'

Inlet Invert= 404.46', Outlet Invert= 401.13'

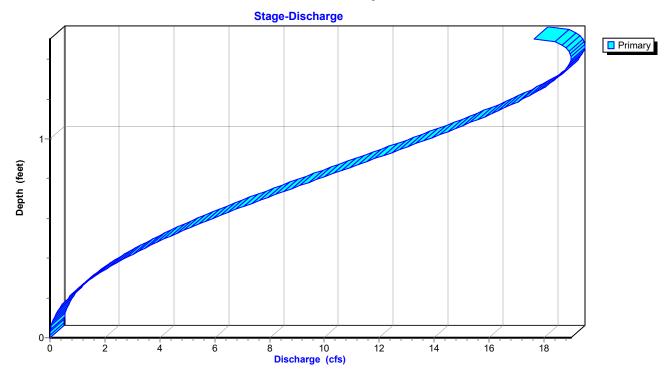


#### Reach P-A3: Pipe A3



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# Reach P-A3: Pipe A3



# **Summerwood Gym 3**

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

		ou.go r			
Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
404.46	0.0	0	405.50	1.3	154
404.48	0.0	1	405.52	1.3	158
404.50	0.0	2	405.54	1.4	161
404.52	0.0	3	405.56	1.4	164
404.54	0.0	4	405.58	1.4	167
404.56	0.0	6	405.60	1.4	170
		8		1.4	
404.58	0.1		405.62		173
404.60	0.1	10	405.64	1.5	176
404.62	0.1	12	405.66	1.5	179
404.64	0.1	14	405.68	1.5	182
404.66	0.1	17	405.70	1.6	184
404.68	0.2	19	405.72	1.6	187
404.70	0.2	22	405.74	1.6	190
404.72	0.2	24	405.76	1.6	192
404.74	0.2	27	405.78	1.6	194
404.76	0.3	30	405.80	1.7	197
404.78	0.3	33	405.82	1.7	199
404.80	0.3	35	405.84	1.7	201
404.82	0.3	38	405.86	1.7	203
404.84	0.4	42	405.88	1.7	204
404.86	0.4	45	405.90	1.7	206
404.88	0.4	48	405.92	1.8	207
404.90	0.4	51	405.94	1.8	208
404.92	0.5	54	405.96	1.8	209
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			
405.14	0.8	95			
405.18	0.8	99			
405.10	0.0	102			
405.22	0.9	106			
405.24	0.9	110			
405.24	1.0	113			
405.28	1.0	117			
405.20	1.0	120			
405.30	1.0	124			
405.32	1.0	12 <del>4</del> 127			
	1.1				
405.36	1.1	131 134			
405.38					
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			

## **Summerwood Gym 3**

Prepared by Phillip Lewis Engineering

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#### 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= 0.2 min

Peak Storage= 108 cf @ 0.17 hrs

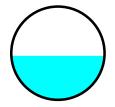
Average Depth at Peak Storage= 0.71', Surface Width= 1.50' Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.66 cfs

18.0" Round Pipe

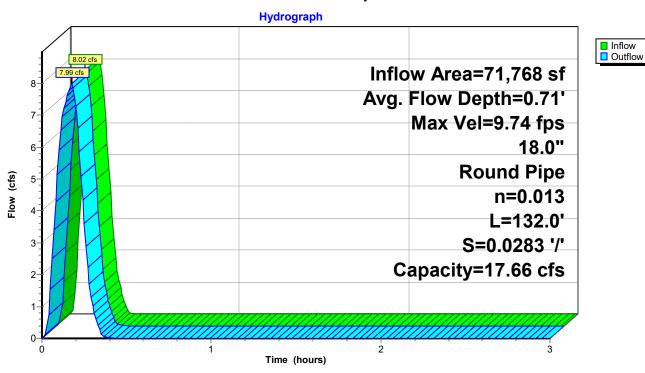
n= 0.013 Corrugated PE, smooth interior

Length= 132.0' Slope= 0.0283 '/'

Inlet Invert= 401.03', Outlet Invert= 397.30'

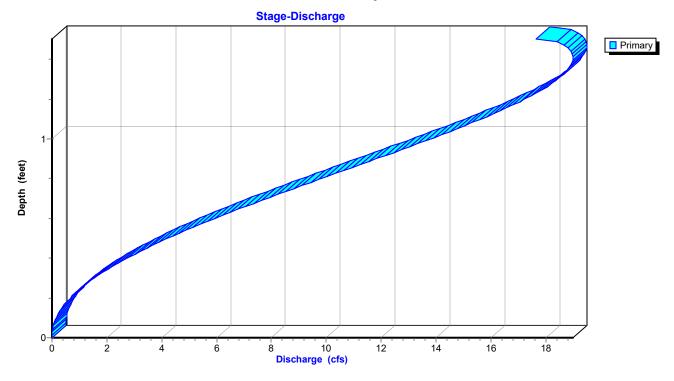


#### Reach P-A4: Pipe A4



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# Reach P-A4: Pipe A4



## **Summerwood Gym 3**

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

		J	•		•
Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
401.03	0.0	0	402.07	1.3	173
401.05	0.0	1	402.09	1.3	176
401.07	0.0	2	402.11	1.4	180
401.09	0.0	3	402.13	1.4	183
401.11	0.0	5	402.15	1.4	187
401.13	0.1	7	402.17	1.4	190
401.15	0.1	9	402.19	1.5	194
401.17	0.1	11	402.21	1.5	197
401.19	0.1	13	402.23	1.5	200
401.21	0.1	16	402.25	1.5	203
401.23	0.1	18	402.27	1.6	206
401.25	0.2	21	402.29	1.6	209
401.27	0.2	24	402.31	1.6	212
401.29	0.2	27	402.33	1.6	215
401.31	0.2	30	402.35	1.6	217
401.33	0.3	33	402.37	1.7	220
401.35	0.3	36	402.39	1.7	222
401.37	0.3	40	402.41	1.7	225
401.39	0.3	43	402.43	1.7	227
401.41	0.4	46	402.45	1.7	228
401.43	0.4	50	402.47	1.7	230
401.45	0.4	53 57	402.49	1.8	232
401.47	0.4 0.5	57 61	402.51	1.8 <b>1.8</b>	233 <b>233</b>
401.49 401.51	0.5	64	402.53	1.0	233
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	8.0	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 1.0	123			
401.83 401.85	1.0	127 130			
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			

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## 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 )

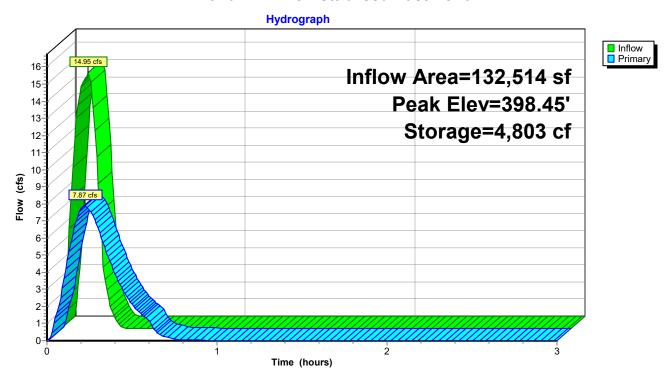
Volume	Inver	t Avail.Sto	rage Stor	age Description	
#1	396.00	' 8,5	57 cf <b>Cus</b>	tom Stage Data Listed below	
Elevatior		nc.Store	Cum.Store		
(feet	) (cu	bic-feet)	(cubic-feet		
396.00	)	0	(	)	
396.50	)	250	250	)	
397.00	)	1,092	1,342	2	
398.00	)	2,387	3,729	)	
399.00	)	2,405	6,134	l .	
400.00	)	2,423	8,557	7	
Device	Routing	Invert	Outlet De	vices	
#1	Primary	399.00'	5.0' long	Sharp-Crested Rectangular Weir	2 End Contraction(s)
#2	Primary	396.00'	_	Sharp-Crested Rectangular Weir	` ,

Primary OutFlow Max=7.86 cfs @ 0.22 hrs HW=398.44' (Free Discharge)

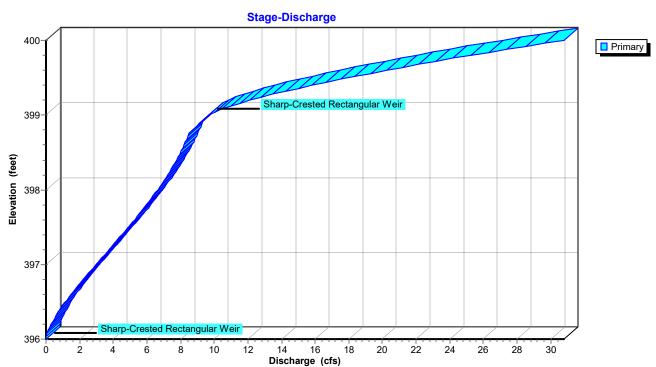
1=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

**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



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

Elevation	Storage	Elevation	Storage
(feet)	(cubic-feet)	(feet)	(cubic-feet)
396.00	0	398.60	5,172
396.05	25	398.65	5,292
396.10	50	398.70	5,412
396.15	75	398.75	5,533
396.20	100	398.80	5,653
396.25	125	398.85	5,773
396.30	150	398.90	5,893
396.35	175	398.95	6,014
396.40	200	399.00	6,134
396.45	225	399.05	6,255
396.50	250	399.10	6,376
396.55	359	399.15	6,497
396.60	468	399.20	6,619
396.65	578 697	399.25	6,740
396.70 396.75	687 796	399.30 399.35	6,861 6,982
396.80	905	399.40	7,103
396.85	1,014	399.45	7,103 7,224
396.90	1,124	399.50	7,346
396.95	1,233	399.55	7,467
397.00	1,342	399.60	7,588
397.05	1,461	399.65	7,709
397.10	1,581	399.70	7,830
397.15	1,700	399.75	7,951
397.20	1,819	399.80	8,072
397.25	1,939	399.85	8,194
397.30	2,058	399.90	8,315
397.35	2,177	399.95	8,436
397.40	2,297	400.00	8,557
397.45	2,416		
397.50	2,536		
397.55 397.60	2,655 2,774		
397.65	2,774 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		
398.30 398.35	4,451 4,571		
398.35 398.40	4,571 4,691		
398.45	4,811		
398.50	4,932		
398.55	5,052		
555.50	3,002		

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#### **Summary for Link Post-Dev: APPROX DISCHARGE**

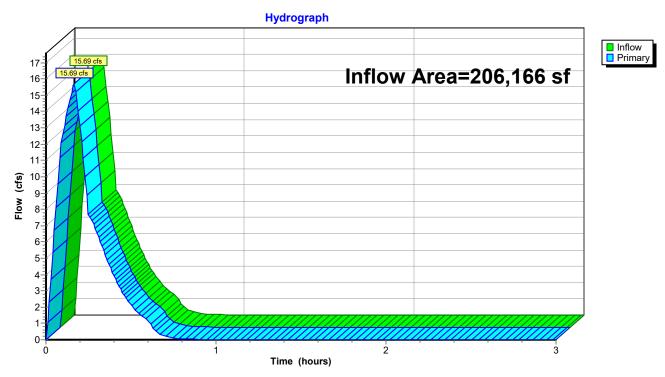
Inflow Area = 206,166 sf, 64.42% Impervious, Inflow Depth = 0.85" for 25-yr event

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



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## Summary for Subcatchment D1: Drainage Basin D1

Runoff 8.18 cfs @ 0.09 hrs, Volume= 4,900 cf, Depth= 1.21"

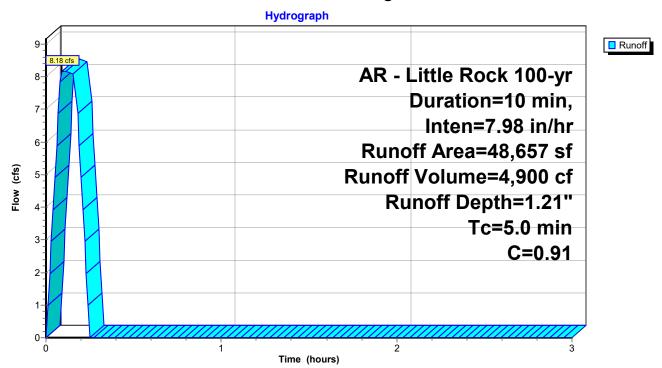
Routed to Link Post-Dev: APPROX DISCHARGE

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

	rea (sf)	С	Description	1		
	3,421	0.40	Sod Yard			
	45,236	0.95	Rood, Drive	es, Sidewa	lks	
	48,657	0.91	Weighted A	Average		
	3,421		7.03% Pervious Area			
	45,236		92.97% Im	pervious A	rea	
_						
Tc	Length	Slope	,	Capacity	Description	
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)		
5.0					Direct Entry, Overland Concentrated Flow (Min)	

**Direct Entry, Overland Concentrated Flow (Min)** 

## Subcatchment D1: Drainage Basin D1



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## Summary for Subcatchment D2: Drainage Basin D2

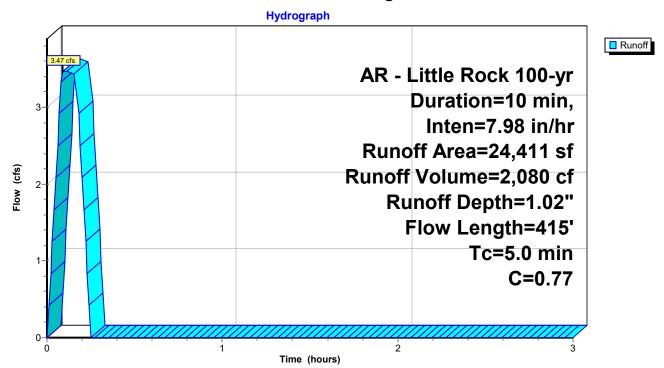
Runoff = 3.47 cfs @ 0.09 hrs, Volume= 2,080 cf, Depth= 1.02"

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)	С	Description				
	8,845	0.45	Rip Rap Er	nbankment			
	15,566	0.95	Roof, Drive	es, Sidewal	ks		
	24,411	0.77	Weighted A	Average			
	8,845		36.23% Pervious Area				
	15,566		63.77% Impervious Area				
Tc	3	Slope	,	Capacity	Description		
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)			
5.0	415		1.38		Direct Entry, Overland Concentrated Flow (Min)		

#### Subcatchment D2: Drainage Basin D2



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## Summary for Subcatchment D3: Drainage Basin D3

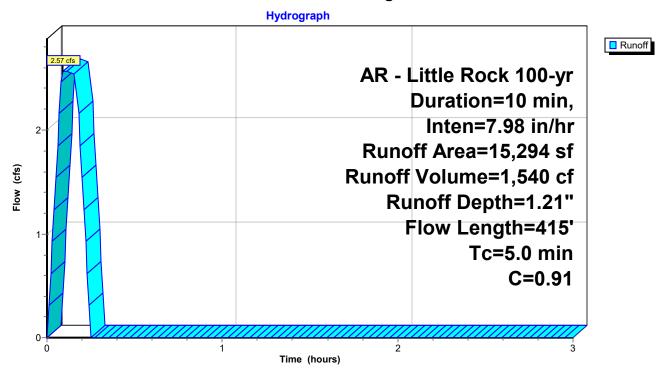
Runoff = 2.57 cfs @ 0.09 hrs, Volume= 1,540 cf, Depth= 1.21"

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

	rea (sf)	С	Description	1		
	1,065	0.40	Sod Yard			
	14,229	0.95	Paving, Sic	dewalks		
	15,294	0.91	Weighted A	Average		
	1,065		6.96% Pervious Area			
	14,229		93.04% Im	pervious Aı	rea	
Tc	Length	Slope	,	Capacity	Description	
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)		
5.0	415		1.38		Direct Entry, Overland Concentrated Flow (Min)	

#### Subcatchment D3: Drainage Basin D3



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## Summary for Subcatchment D4: Drainage Basin D4

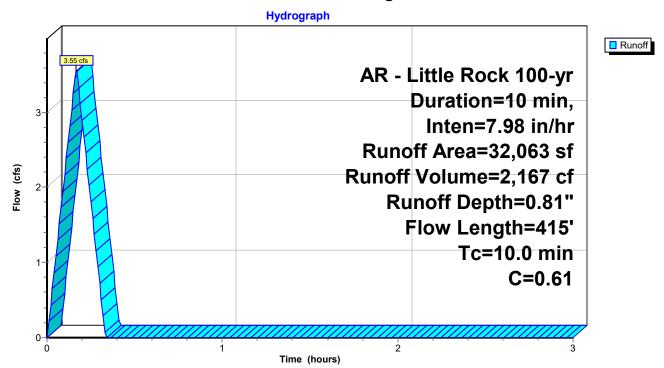
Runoff = 3.55 cfs @ 0.17 hrs, Volume= 2,167 cf, Depth= 0.81"

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

	rea (sf)	С	Description	1		
,	20,032	0.40				
	12,031	0.95				
	32,063	0.61	Weighted A	Average		
	20,032		62.48% Pervious Area			
	12,031		37.52% Im	pervious Aı	rea	
Tc	Length	Slope	,	Capacity	Description	
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)		
10.0	415		0.69		Direct Entry, Overland Concentrated Flow (Min)	

#### Subcatchment D4: Drainage Basin D4



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### **Summary for Subcatchment D5: Drainage Basin D5**

3,087 cf, Depth= 0.89" Runoff 5.15 cfs @ 0.09 hrs, Volume=

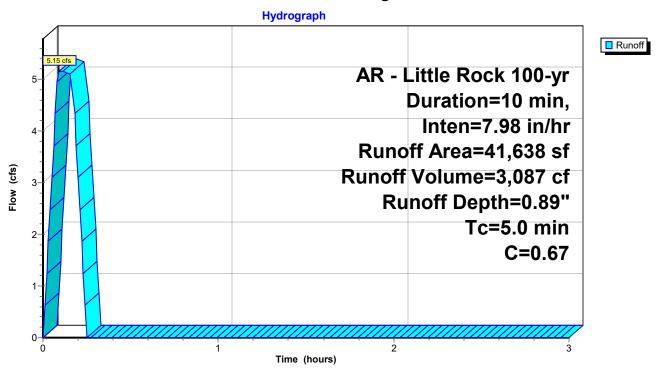
Routed to Pond DP1: Re-Establised East Pond

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

	rea (sf)	С	Description	1				
	21,201	0.40	Sod Yard,	od Yard, Natural Vegetation				
	20,437	0.95	Paving, Sic	lewalks				
	41,638	0.67	Weighted A	Average				
	21,201		50.92% Pe	rvious Area	a			
	20,437		49.08% Im	pervious Ai	rea			
Tc	Length	Slope	,	Capacity	Description			
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
5.0					Direct Entry, Overland Concentrated Flow (Min)			

**Direct Entry, Overland Concentrated Flow (Min)** 

## Subcatchment D5: Drainage Basin D5



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### Summary for Subcatchment D6: Drainage Basin D6

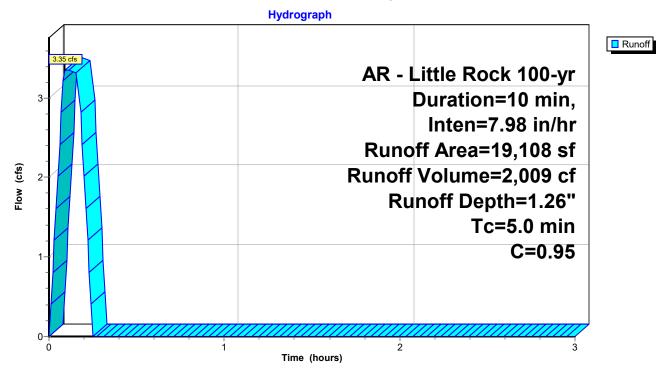
Runoff = 3.35 cfs @ 0.09 hrs, Volume= 2,009 cf, Depth= 1.26"

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

_	Α	rea (sf)	С	Description	1	
		19,108	0.95	Roof		
		19,108		100.00% Ir	npervious A	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



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### **Summary for Subcatchment D7: Drainage Basin D7**

Runoff = 2.49 cfs @ 0.09 hrs, Volume=

1,494 cf, Depth= 0.72"

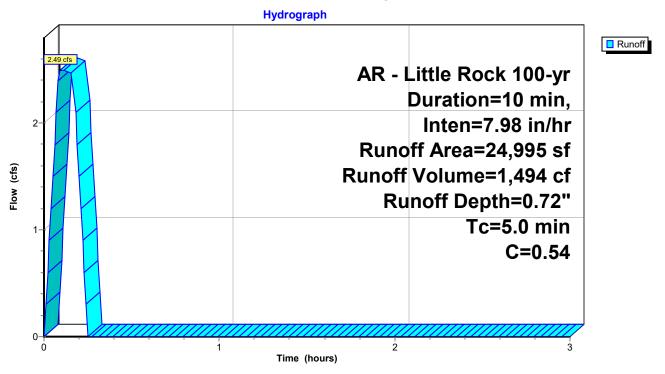
Routed to Link Post-Dev: APPROX DISCHARGE

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

A	rea (sf)	С	Description	1				
	18,798	0.40	Sod Yard,	od Yard, Natural Vegetation				
	6,197	0.95	Paving, Sic	Paving, Sidewalks				
	24,995	0.54	Weighted Average					
	18,798		75.21% Pervious Area					
	6,197		24.79% Impervious Area					
_		O.	<b>V</b> 1 ''	0 ''	D : (			
Тс	3	Slope	,	Capacity	Description			
(min)	(feet)	(ft/ft)	(ft/sec)	(cfs)				
5.0	•				Direct Entry, Overland Concentrated Flow (Min)			

•

### Subcatchment D7: Drainage Basin D7



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### **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

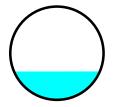
Average Depth at Peak Storage= 0.46', Surface Width= 1.38' Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.28 cfs

18.0" Round Pipe

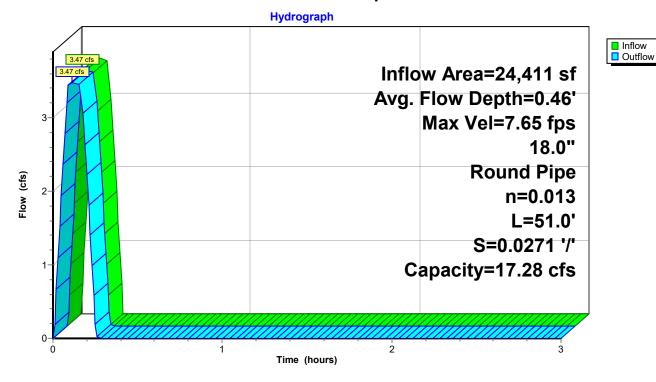
n= 0.013 Corrugated PE, smooth interior

Length= 51.0' Slope= 0.0271 '/'

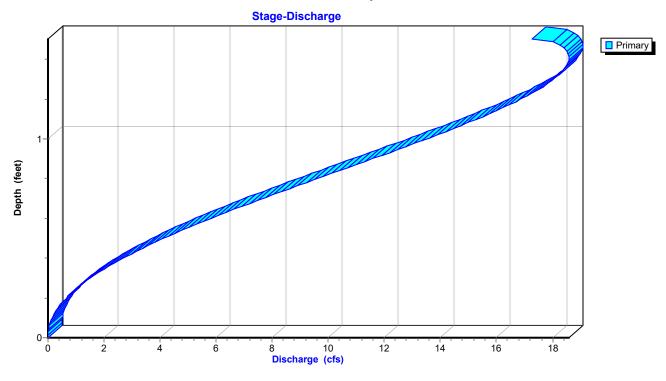
Inlet Invert= 408.33', Outlet Invert= 406.95'



### Reach P-A1: Pipe A1



## Reach P-A1: Pipe A1



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

		· ·	J		•
	on End-Area	Storage		End-Area	Storage
(fee		(cubic-feet)	(feet)	(sq-ft)	(cubic-feet)
408.3		0	409.37	1.3	67
408.3		0	409.39	1.3	68
408.3		1	409.41	1.4	69
408.3	39 0.0	1	409.43	1.4	71
408.4	11 0.0	2	409.45	1.4	72
408.4	13 0.1	3	409.47	1.4	73
408.4	15 0.1	3	409.49	1.5	75
408.4	17 0.1	4	409.51	1.5	76
408.4	19 0.1	5	409.53	1.5	77
408.5		6	409.55	1.5	78
408.5		7	409.57	1.6	80
408.5		8	409.59	1.6	81
408.5		9	409.61	1.6	82
408.5		10	409.63	1.6	83
408.6		12	409.65	1.6	84
408.6		13	409.67	1.7	85
408.6		14	409.69	1.7	86
408.6		15	409.71	1.7	87
408.6		17	409.73	1.7	88
408.7		18	409.75	1.7	88
408.7		19	409.77	1.7	89
408.7		21	409.79	1.8	89
408.7		22	409.81	1.8	90
408.7		23	409.83	1.8	90
408.8	31 0.5	25			
408.8	33 0.5	26			
408.8	35 0.5	28			
408.8	37 0.6	29			
408.8	39 0.6	31			
408.9	0.6	32			
408.9		34			
408.9		35			
408.9		37			
408.9		38			
409.0		40			
409.0		41			
409.0		43			
409.0		44			
409.0		46			
409.0		47			
409. 409.		49			
409.1		50 50			
409.1		52 53			
409.1		53 55			
409.2		55			
409.2		56			
409.2		58			
409.2		59			
409.2		61			
409.3		62	1		
409.3		64			
409.3	35 1.3	65			
			1		

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### 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

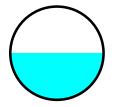
Average Depth at Peak Storage= 0.76', Surface Width= 1.50' Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 11.95 cfs

18.0" Round Pipe

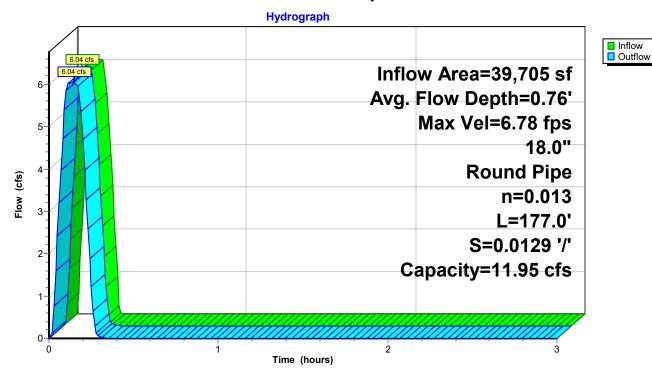
n= 0.013 Corrugated PE, smooth interior

Length= 177.0' Slope= 0.0129 '/'

Inlet Invert= 406.85', Outlet Invert= 404.56'

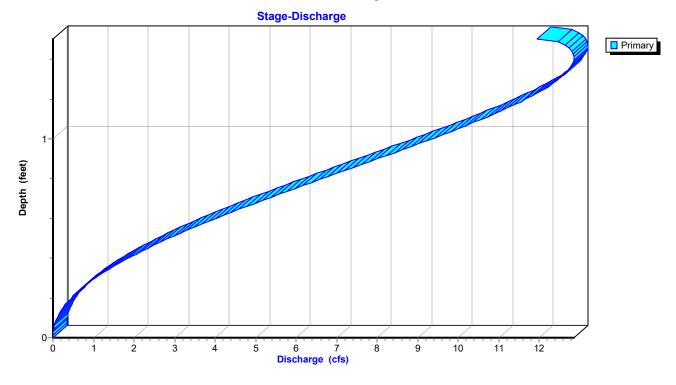


### Reach P-A2: Pipe A2



Summerwood Gym 3 AR - Little Rock 100-yr Do Prepared by Phillip Lewis Engineering HydroCAD® 10.20-2f s/n 12520 © 2022 HydroCAD Software Solutions LLC

## Reach P-A2: Pipe A2



Storage (cubic-feet)

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

Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)
406.85	0.0	0	407.89	1.3
406.87	0.0	1	407.91	1.3
406.89	0.0	2	407.93	1.4
406.91	0.0	4	407.95	1.4
406.93	0.0	6	407.97	1.4
406.95	0.1	9	407.99	1.4
406.97	0.1	12	408.01	1.5
406.99	0.1	15	408.03	1.5
407.01	0.1	18	408.05	1.5
407.03	0.1	21	408.07	1.5
407.05	0.1	25	408.09	1.6
407.07	0.2	28	408.11	1.6
407.09	0.2	32	408.13	1.6
407.11	0.2	36	408.15	1.6
407.13	0.2	40	408.17	1.6
407.15	0.3	45	408.19	1.7
407.17	0.3	49	408.21	1.7
407.19	0.3	53	408.23	1.7
407.21	0.3	58	408.25	1.7
407.23	0.4	62	408.27	1.7
407.25	0.4	67	408.29	1.7
407.27	0.4	72	408.31	1.8
407.29	0.4	76	408.33	1.8
407.31	0.5	81	408.35	1.8
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		
407.43	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		
407.83	1.3	226		
407.07	1.3	220		

InflowOutflow

Prepared by Phillip Lewis Engineering

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### 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

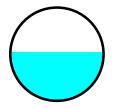
Average Depth at Peak Storage= 0.79', Surface Width= 1.50' Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.65 cfs

18.0" Round Pipe

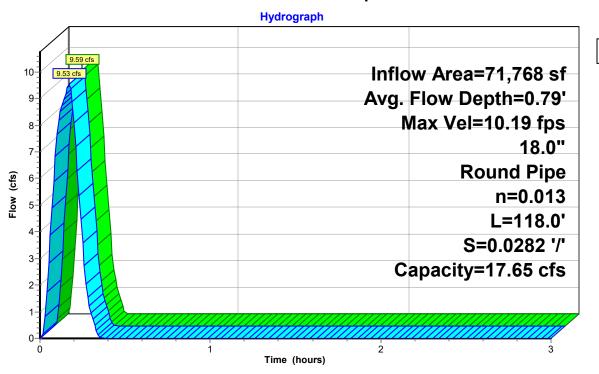
n= 0.013 Corrugated PE, smooth interior

Length= 118.0' Slope= 0.0282 '/'

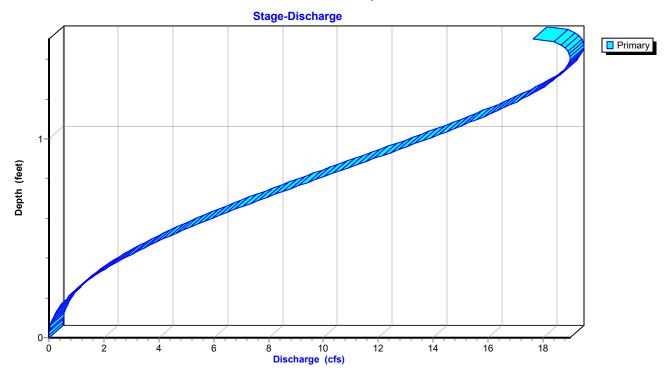
Inlet Invert= 404.46', Outlet Invert= 401.13'



### Reach P-A3: Pipe A3



## Reach P-A3: Pipe A3



Storage

(cubic-feet)

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

		- Cu.go / L		
	Ind-Area	Storage	Elevation	End-Area
(feet)	(sq-ft)	(cubic-feet)	(feet)	(sq-ft)
404.46	0.0	0	405.50	1.3
404.48	0.0	1	405.52	1.3
404.50	0.0	2	405.54	1.4
404.52	0.0	3	405.56	1.4
404.54	0.0	4	405.58	1.4
404.56	0.1	6	405.60	1.4
404.58	0.1	8	405.62	1.5
404.60	0.1	10	405.64	1.5
404.62	0.1	12	405.66	1.5
404.64	0.1	14	405.68	1.5
404.66	0.1	17	405.70	1.6
404.68	0.2	19	405.72	1.6
404.70	0.2	22	405.74	1.6
404.72	0.2	24	405.76	1.6
404.74	0.2	27	405.78	1.6
404.76	0.3	30	405.80	1.7
404.78	0.3	33	405.82	1.7
404.80	0.3	35 35	405.84	1.7
		38	405.86	
404.82	0.3			1.7
404.84	0.4	42	405.88	1.7
404.86	0.4	45 48	405.90	1.7
404.88	0.4	-	405.92	1.8
404.90	0.4	51 54	405.94	1.8
404.92	0.5	54 50	405.96	1.8
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		
			I	

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### 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

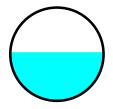
Average Depth at Peak Storage= 0.78', Surface Width= 1.50' Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 17.66 cfs

18.0" Round Pipe

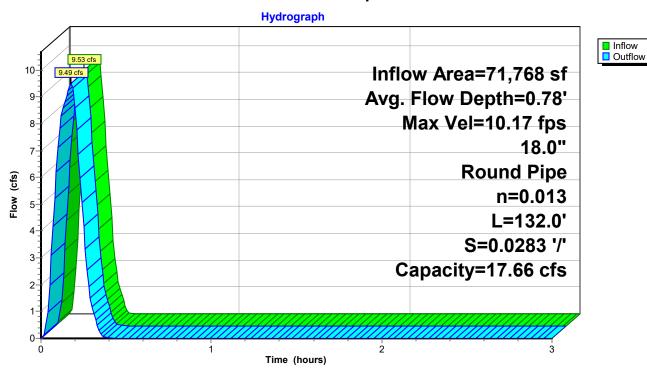
n= 0.013 Corrugated PE, smooth interior

Length= 132.0' Slope= 0.0283 '/'

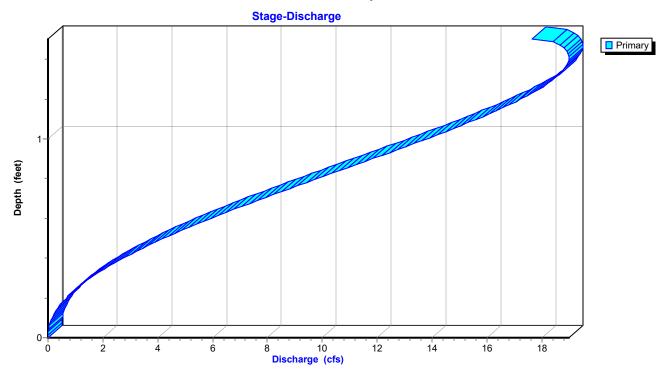
Inlet Invert= 401.03', Outlet Invert= 397.30'



### Reach P-A4: Pipe A4



## Reach P-A4: Pipe A4



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

Elevation I (feet)	End-Area (sq-ft)	Storage (cubic-feet)	Elevation (feet)	End-Area (sq-ft)	Storage (cubic-feet)
401.03	0.0	0	402.07	1.3	173
401.05	0.0	1	402.09	1.3	176
401.07	0.0	2	402.11	1.4	180
401.09	0.0	3	402.13	1.4	183
401.11	0.0	5	402.15	1.4	187
401.13	0.1	7	402.17	1.4	190
401.15	0.1	9	402.19	1.5	194
401.17	0.1	11	402.21	1.5	197
401.19	0.1	13	402.23	1.5	200
401.21	0.1	16	402.25	1.5	203
401.23	0.1	18	402.27	1.6	206
401.25	0.2	21	402.29	1.6	209
401.27	0.2	24	402.31	1.6	212
401.29	0.2	27	402.33	1.6	215
401.31	0.2	30	402.35	1.6	217
401.33	0.3	33	402.37	1.7	220
401.35	0.3	36	402.39	1.7	222
401.37	0.3	40	402.41	1.7	225
401.39	0.3	43	402.43	1.7	227
401.41	0.4	46	402.45	1.7	228
401.43	0.4	50	402.47	1.7	230
401.45	0.4	53	402.49	1.8	232
401.47	0.4	57	402.51	1.8	233
401.49	0.5	61	402.53	1.8	233
401.51	0.5	64	402.55	1.0	233
401.53	0.5	68			
401.55	0.5	72			
401.57	0.6	76			
401.57	0.6	76 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			
			1		

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### 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	Inv	ert Avai	I.Storage	Storage Description
#1	396.	00'	8,557 cf	Custom Stage Data Listed below
Elevatio	n	Inc.Store	Cum	n.Store
(fee		cubic-feet)	(cubi	ic-feet)
396.0	0	0		0
396.5	0	250		250
397.0	0	1,092		1,342
398.0	0	2,387		3,729
399.0	0	2,405		6,134
400.0	0	2,423		8,557
		_		
Device	Routing	In	vert Outl	let Devices
#1	Primary	399	.00' <b>5.0'</b>	long Sharp-Crested Rectangular Weir 2 End Contraction(s)
#2	Primary	396		long Sharp-Crested Rectangular Weir 2 End Contraction(s) D' Crest Height

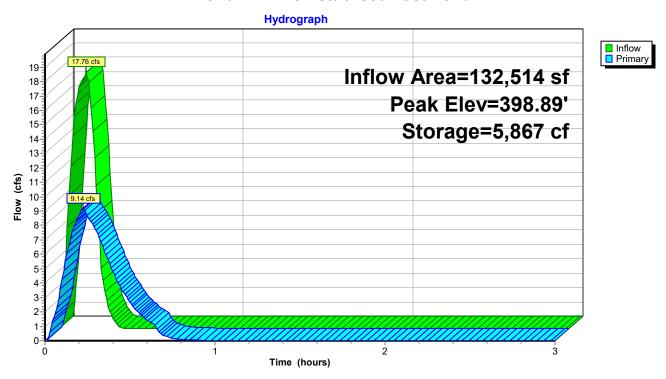
**Primary OutFlow** Max=9.13 cfs @ 0.22 hrs HW=398.89' (Free Discharge)

—1=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

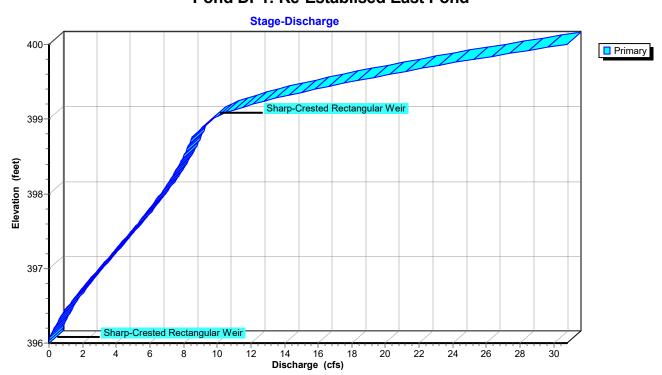
—2=Sharp-Crested Rectangular Weir (Weir Controls 9.13 cfs @ 5.75 fps)

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#### Pond DP1: Re-Establised East Pond



### Pond DP1: Re-Establised East Pond



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

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

### **Summerwood Gym 3**

AR - Little Rock 100-yr Duration=10 min, Inten=7.98 in/hr Printed 1/11/2024

Prepared by Phillip Lewis Engineering
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### **Summary for Link Post-Dev: APPROX DISCHARGE**

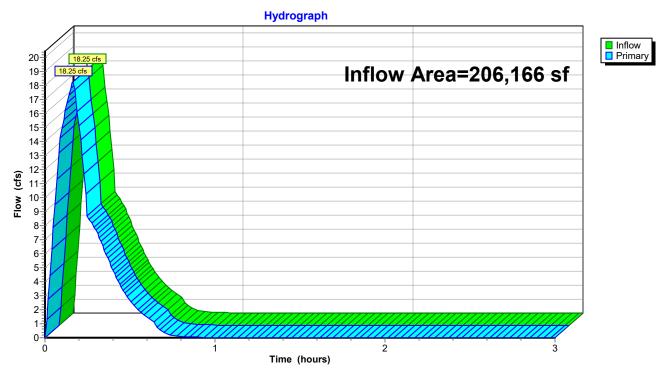
Inflow Area = 206,166 sf, 64.42% Impervious, Inflow Depth = 1.01" for 100-yr event

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





# **Inlet Report**

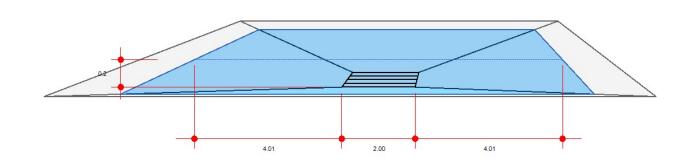
Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc.

Wednesday, Jan 10 2024

# AI-A2

Drop Grate Inlet Location	= Sag	Calculations Compute by:	Known Q
Curb Length (ft)	= -0- = -0-	Q (cfs)	= 2.16
Throat Height (in) Grate Area (sqft)	= 2.00	Highlighted	
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		<b>5 5</b>	0.40
Grate Width (ft)	= 2.00	Q Total (cfs)	= 2.16
Grate Length (ft)	= 2.00	Q Capt (cfs)	= 2.16
		Q Bypass (cfs)	= -0-
Gutter		Depth at Inlet (in)	= 2.41
Slope, Sw (ft/ft)	= 0.050	Efficiency (%)	= 100
Slope, Sx (ft/ft)	= 0.050	Gutter Spread (ft)	= 10.03
Local Depr (in)	= -0-	Gutter Vel (ft/s)	= -0-
Gutter Width (ft)	= 2.00	Bypass Spread (ft)	= -0-
Gutter Slope (%)	= -0-	Bypass Depth (in)	= -0-
Gutter n-value	= -0-		

All dimensions in feet



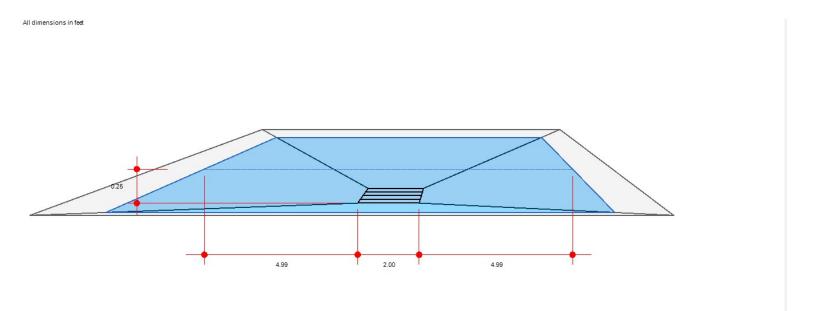
# **Inlet Report**

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Wednesday, Jan 10 2024

# AI-A3

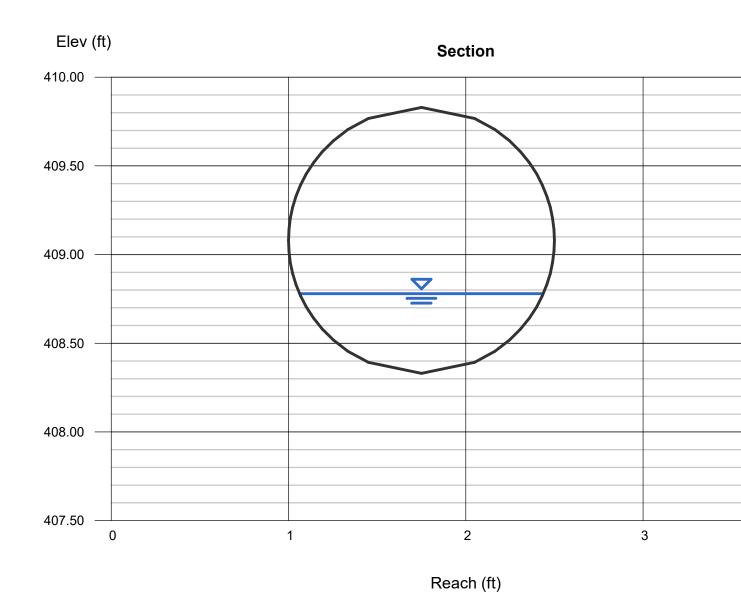
Drop Grate Inlet Location Curb Length (ft) Throat Height (in)	= Sag = -0- = -0-	Calculations Compute by: Q (cfs)	Known Q = 2.99
Grate Area (sqft)	= 2.00	Highlighted	
Grate Width (ft)	= 2.00	Q Total (cfs)	= 2.99
Grate Length (ft)	= 2.00	Q Capt (cfs)	= 2.99
		Q Bypass (cfs)	= -0-
Gutter		Depth at Inlet (in)	= 2.99
Slope, Sw (ft/ft)	= 0.050	Efficiency (%)	= 100
Slope, Sx (ft/ft)	= 0.050	Gutter Spread (ft)	= 11.97
Local Depr (in)	= -0-	Gutter Vel (ft/s)	= -0-
Gutter Width (ft)	= 2.00	Bypass Spread (ft)	= -0-
Gutter Slope (%)	= -0-	Bypass Depth (in)	= -0-
Gutter n-value	= -0-		



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Thursday, Jan 11 2024

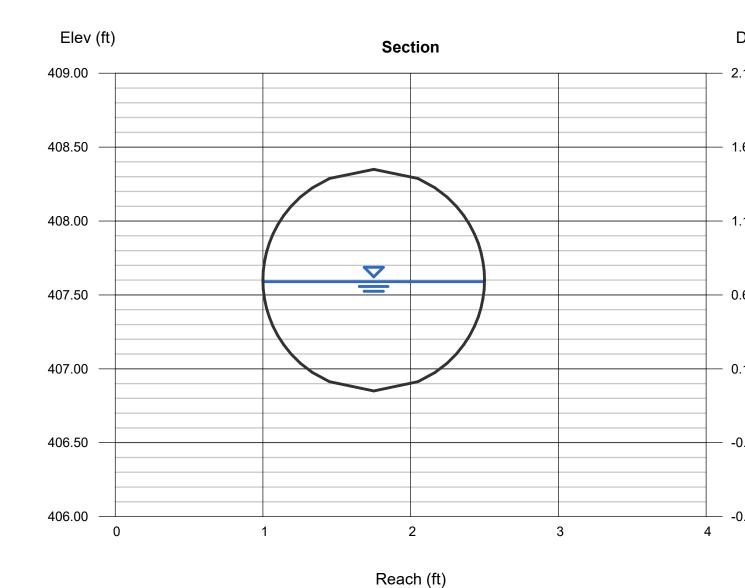
Circular		Highlighted	
Diameter (ft)	= 1.50	Depth (ft)	= 0.45
		Q (cfs)	= 2.920
		Area (sqft)	= 0.45
Invert Elev (ft)	= 408.33	Velocity (ft/s)	= 6.54
Slope (%)	= 2.70	Wetted Perim (ft)	= 1.74
N-Value	= 0.015	Crit Depth, Yc (ft)	= 0.65
		Top Width (ft)	= 1.38
Calculations		EGL (ft)	= 1.11
Compute by:	Known Q		
Known Q (cfs)	= 2.92		



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Thursday, Jan 11 2024

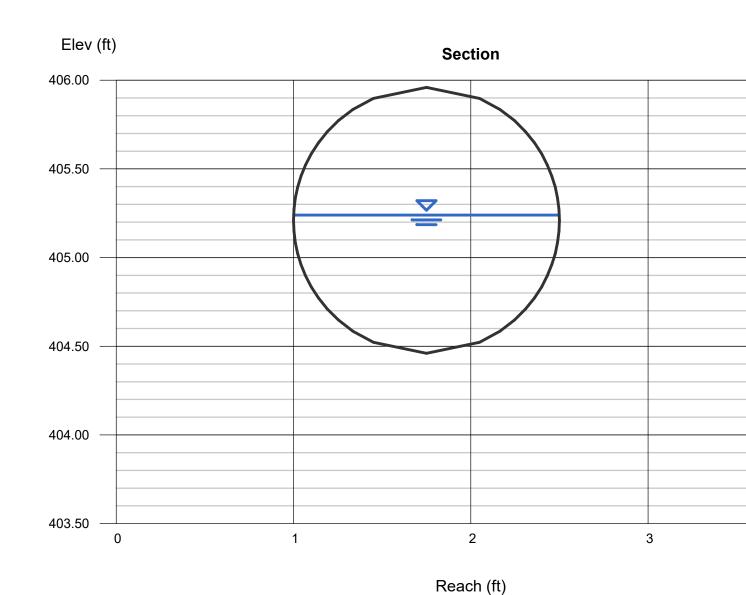
Circular		Highlighted	
Diameter (ft)	= 1.50	Depth (ft)	= 0.74
		Q (cfs)	= 5.090
		Area (sqft)	= 0.87
Invert Elev (ft)	= 406.85	Velocity (ft/s)	= 5.84
Slope (%)	= 1.30	Wetted Perim (ft)	= 2.34
N-Value	= 0.015	Crit Depth, Yc (ft)	= 0.87
		Top Width (ft)	= 1.50
Calculations		EGL (ft)	= 1.27
Compute by:	Known Q		
Known Q (cfs)	= 5.09		



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Thursday, Jan 11 2024

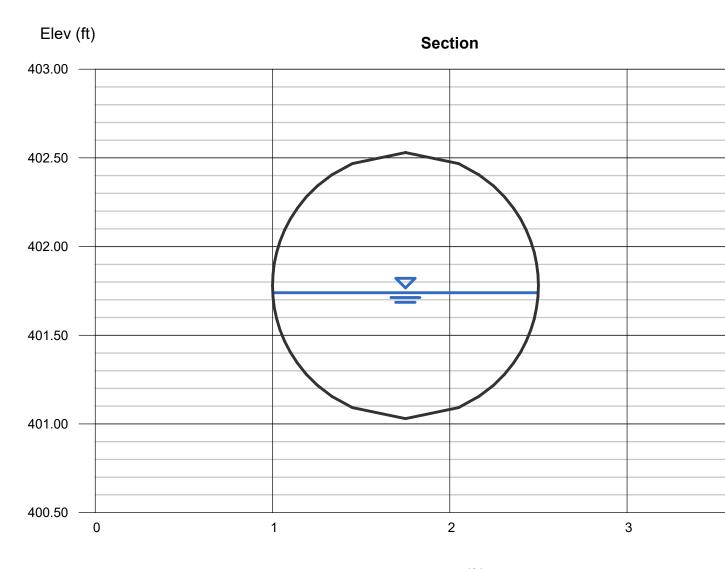
Circular		Highlighted	
Diameter (ft)	= 1.50	Depth (ft)	= 0.78
		Q (cfs)	= 8.020
		Area (sqft)	= 0.93
Invert Elev (ft)	= 404.46	Velocity (ft/s)	= 8.59
Slope (%)	= 2.80	Wetted Perim (ft)	= 2.42
N-Value	= 0.015	Crit Depth, Yc (ft)	= 1.10
		Top Width (ft)	= 1.50
Calculations		EGL (ft)	= 1.93
Compute by:	Known Q		
Known Q (cfs)	= 8.02		



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Circular		Highlighted	
Diameter (ft)	= 1.50	Depth (ft)	= 0.71
		Q (cfs)	= 8.020
		Area (sqft)	= 0.83
Invert Elev (ft)	= 401.03	Velocity (ft/s)	= 9.70
Slope (%)	= 2.83	Wetted Perim (ft)	= 2.28
N-Value	= 0.013	Crit Depth, Yc (ft)	= 1.10
		Top Width (ft)	= 1.50
Calculations		EGL (ft)	= 2.17
Compute by:	Known Q		
Known Q (cfs)	= 8.02		



Reach (ft)

Known Q (cfs)

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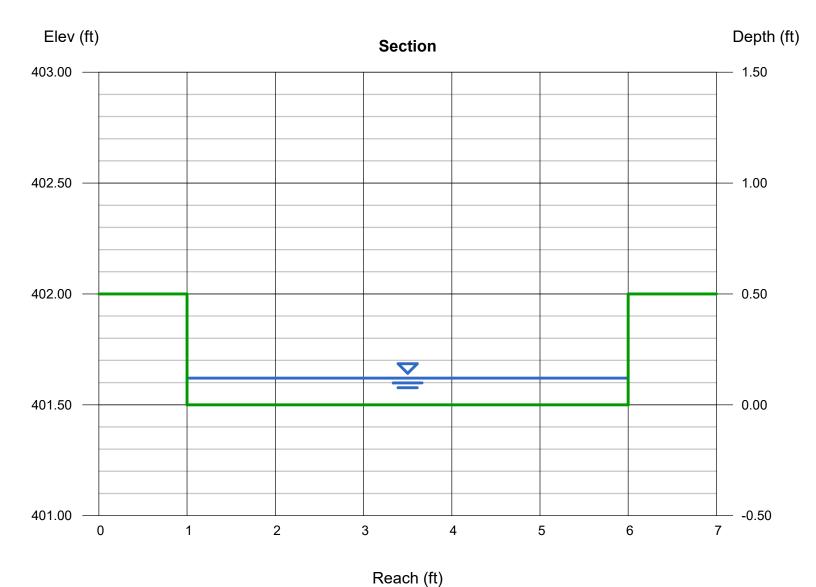
Wednesday, Jan 10 2024

### 5' Curb Cut & Flume to Pond

Rectangular Bottom Width (ft) Total Depth (ft)	= 5.00 = 0.50
Invert Elev (ft) Slope (%) N-Value	= 401.50 = 15.00 = 0.015
Calculations Compute by:	Known Q

= 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



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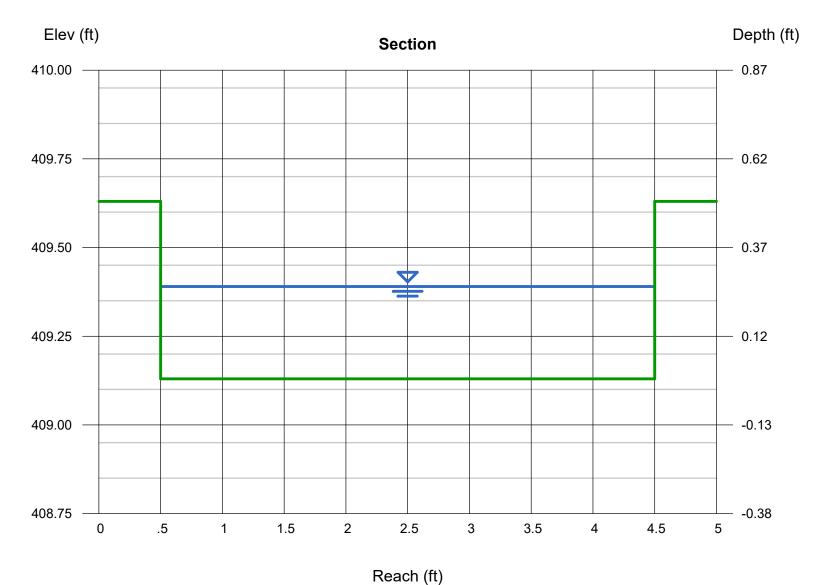
# **Curb Cut by Dumpster Pad**

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

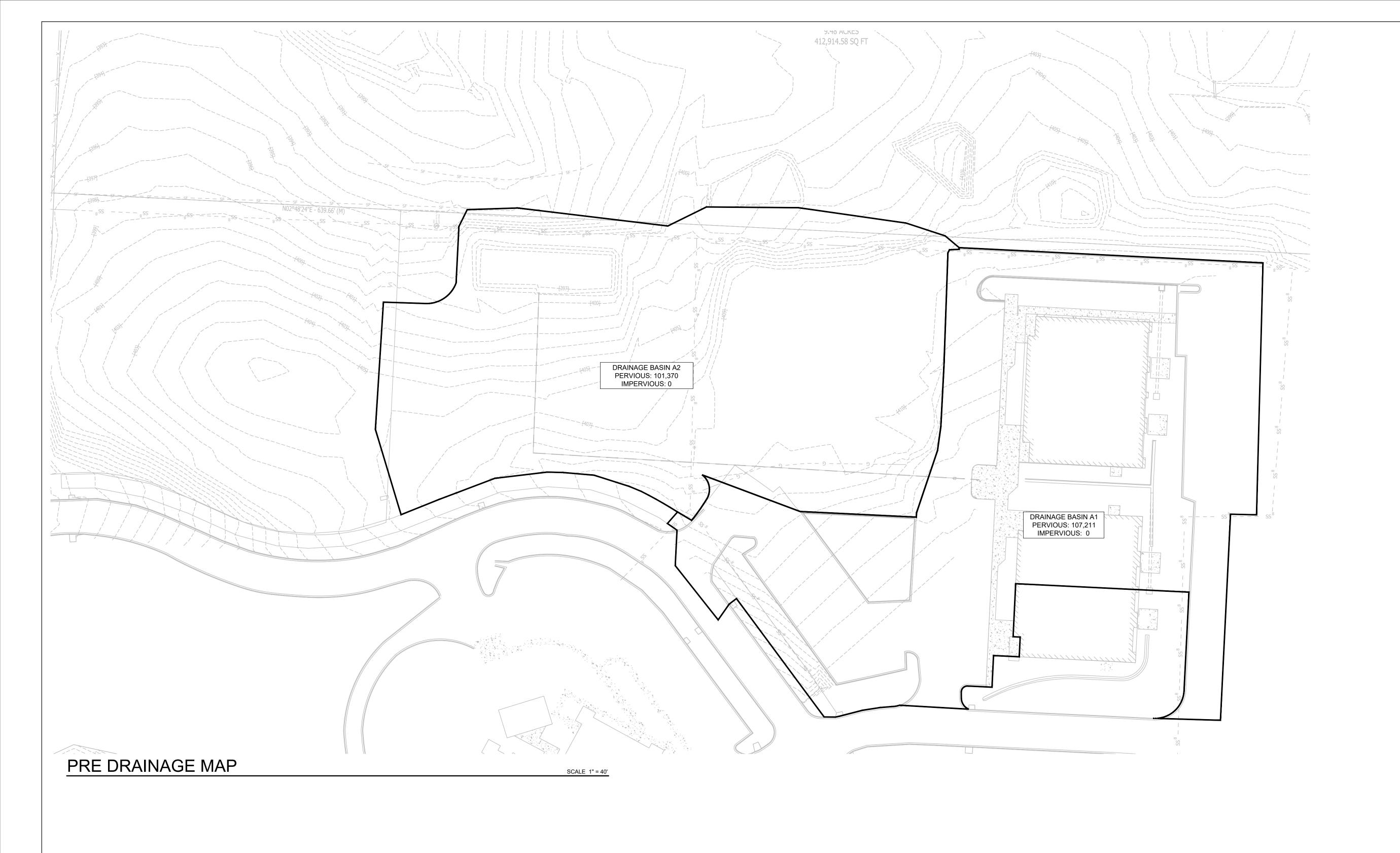
## Calculations

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

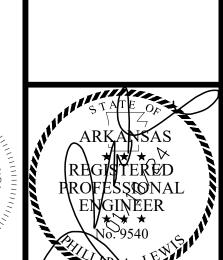
Highlighted	
Depth (ft)	= 0.26
Q (cfs)	= 8.180
Area (sqft)	= 1.04
Velocity (ft/s)	= 7.87
Wetted Perim (ft)	= 4.52
Crit Depth, Yc (ft)	= 0.50
Top Width (ft)	= 4.00
EGL (ft)	= 1.22











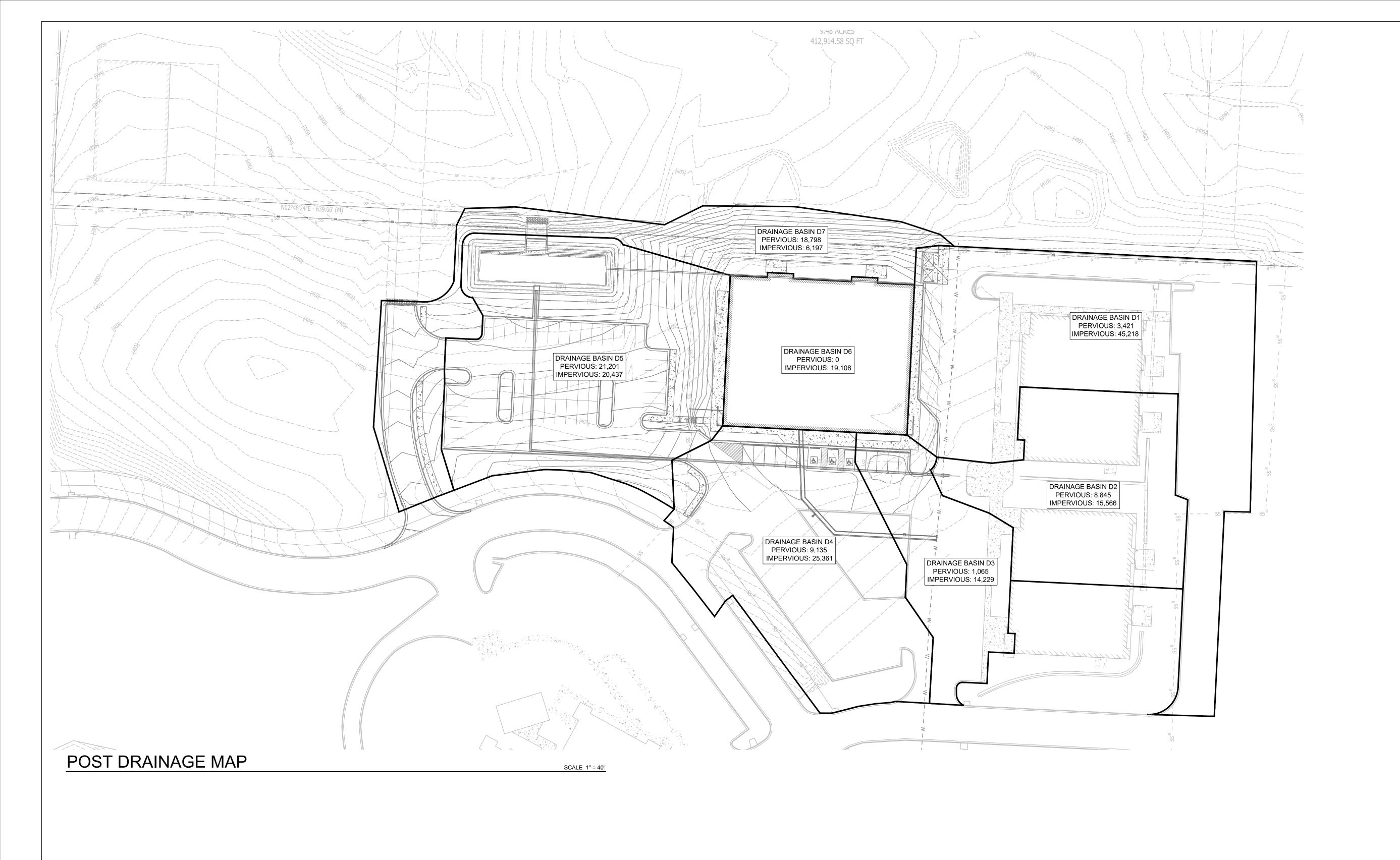


SHEET ISSUE DATE: 1/10/2024

PRE DRAINAGE

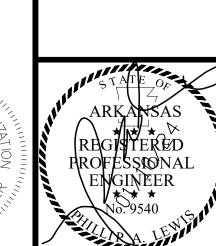
C1.5

0 40' 1" = 40'-0"



SUMMERWOOD SPORTS GYMNASIUM #3

PHILLIP LEWIS ENGINEERING,
Structural + Civil Consultants



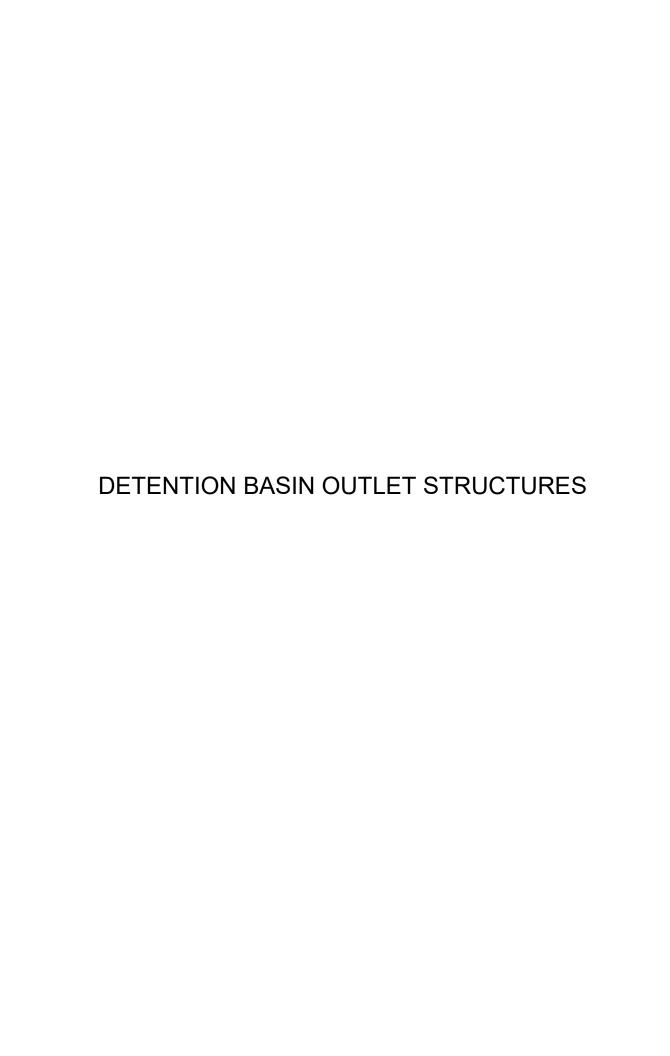
PRO JECT NI IMBER

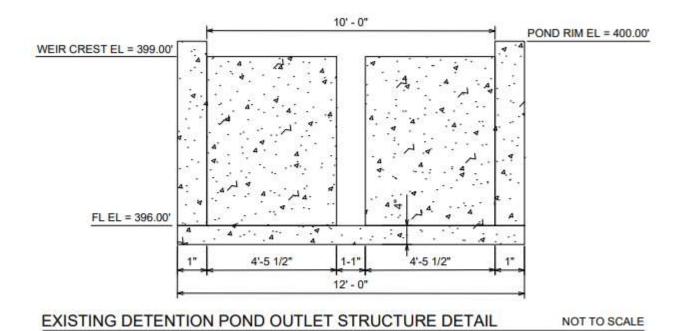
SHEET ISSUE DATE:

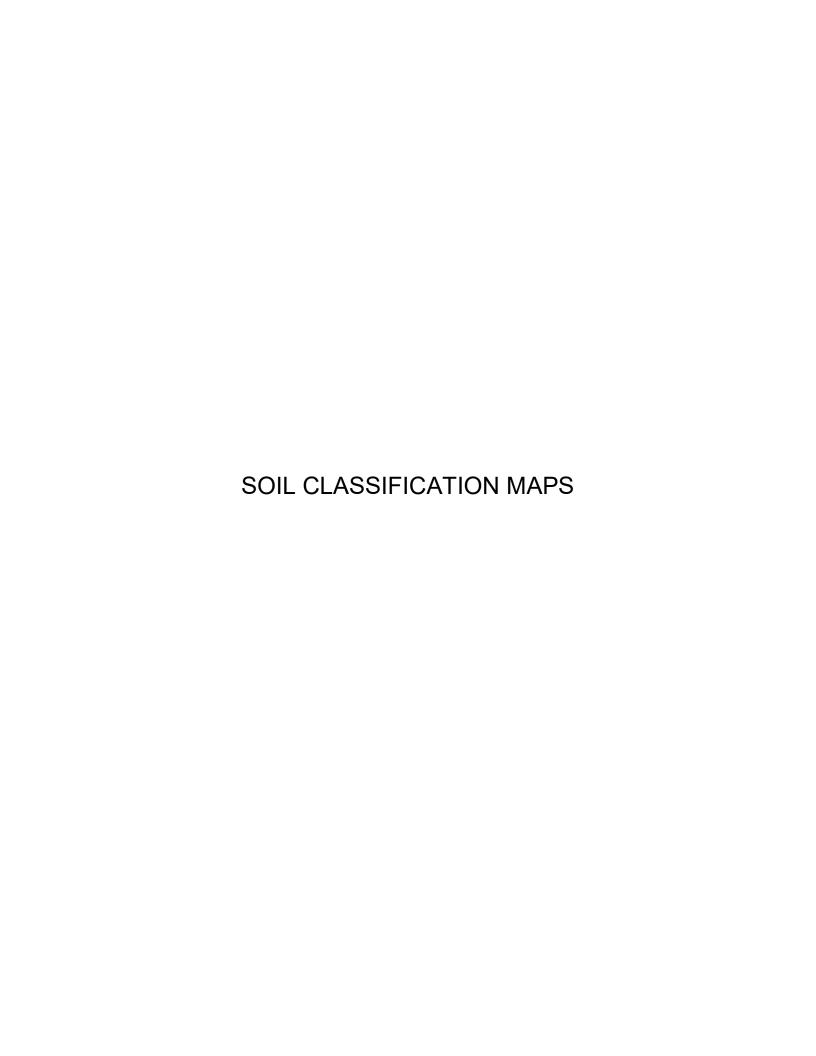
1/10/20 PAGE TITLE:

POST DRAINAGE

SHEET NUMBER:
C1.6









### 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

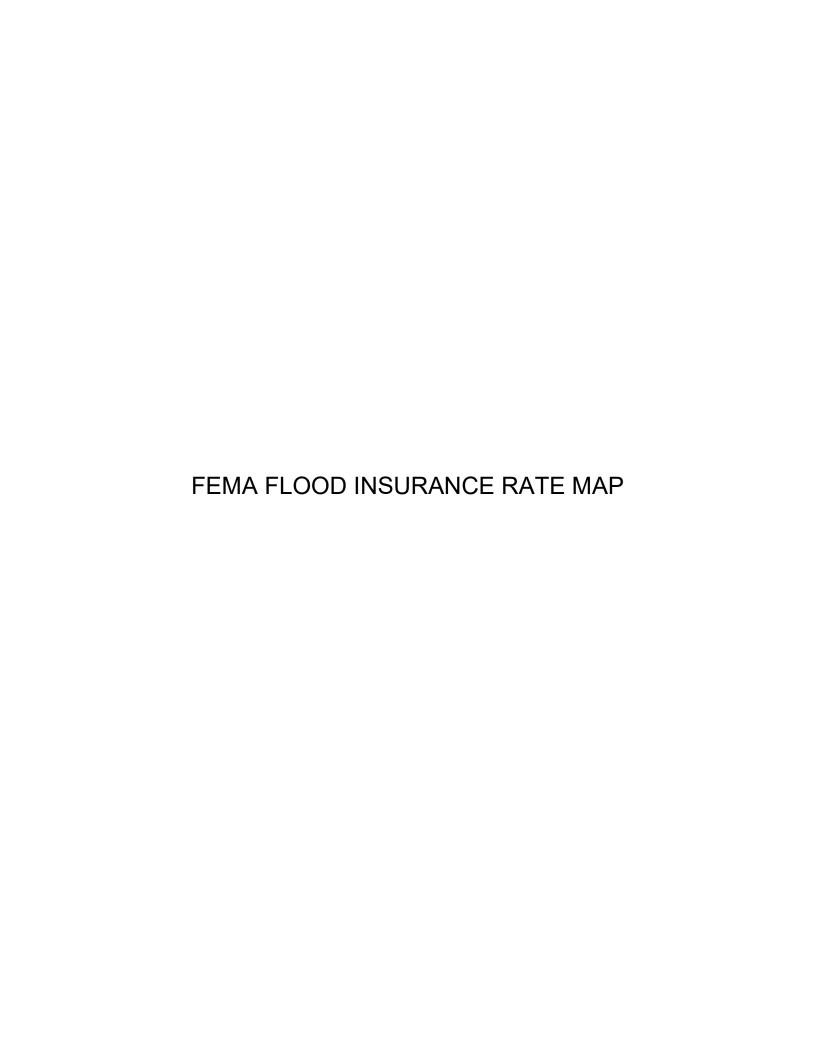
Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C/D

Ecological site: F133BY002TX - Seasonally Wet Upland

Hydric soil rating: No



# National Flood Hazard Layer FIRMette

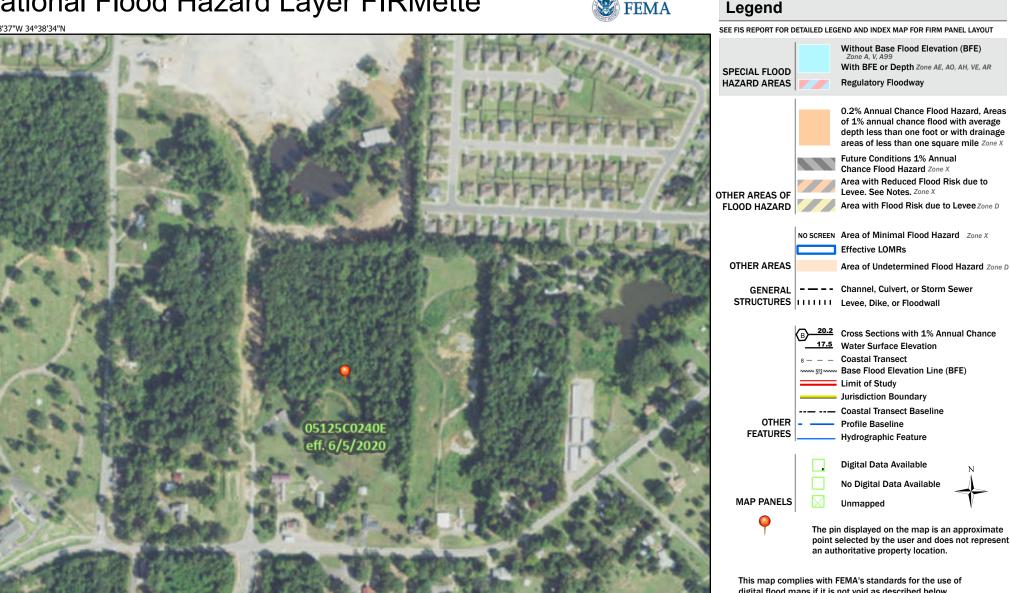
250

500

1,000

1,500





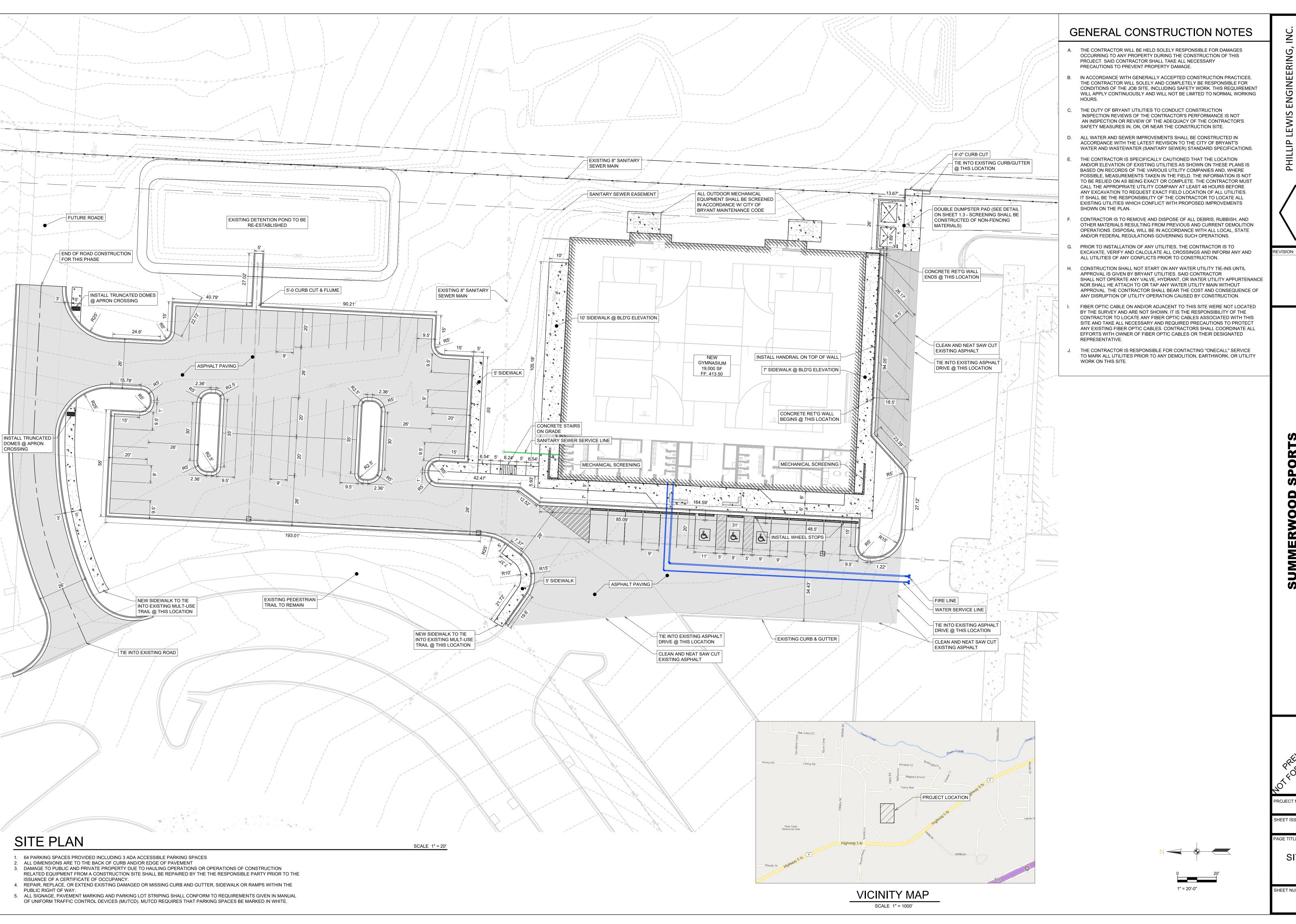
digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

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.

1:6,000

2,000

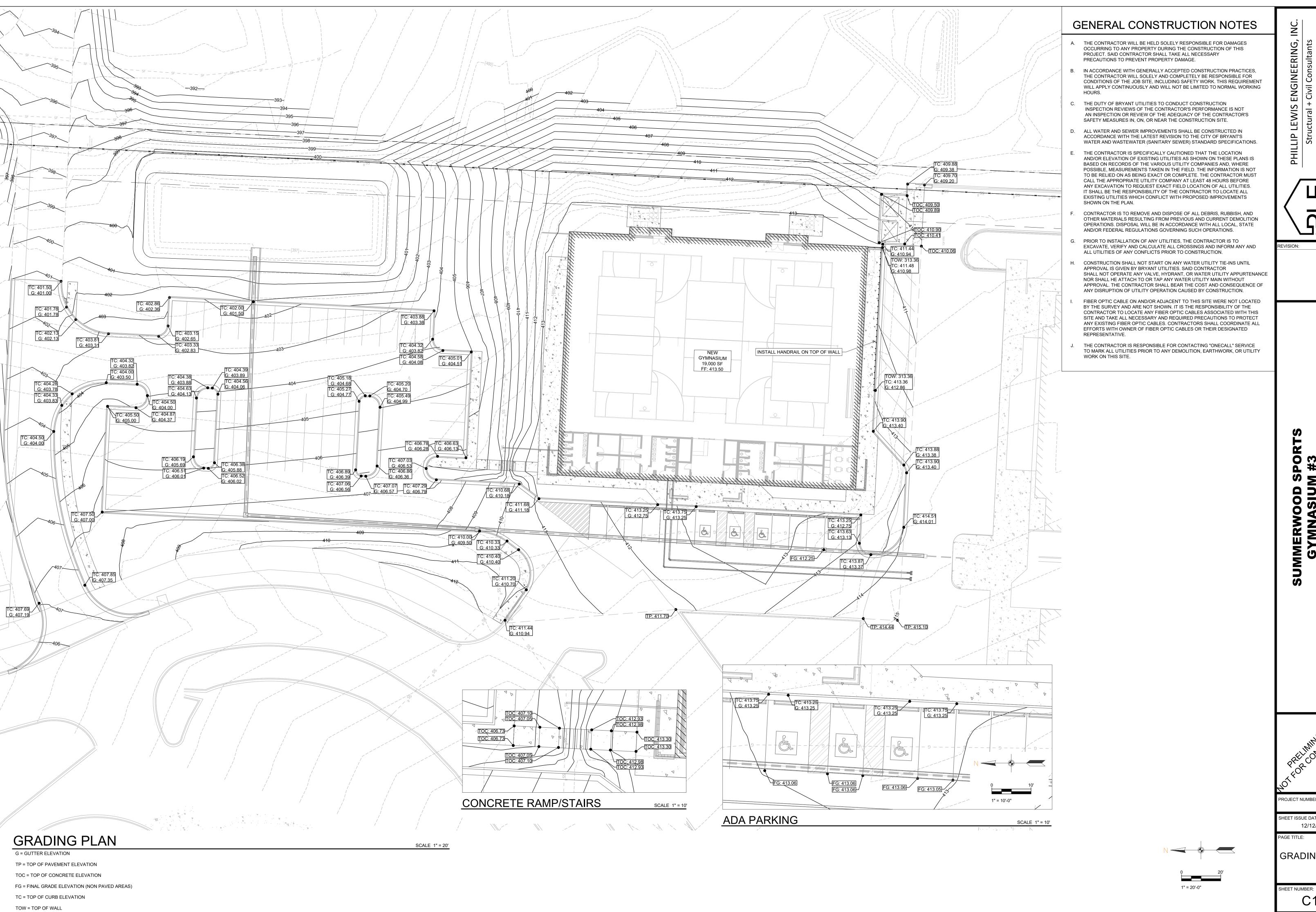


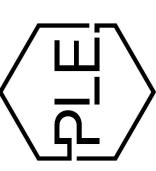
ENGINEERING,

PROJECT NUMBER:

12/12/2023

SITE PLAN



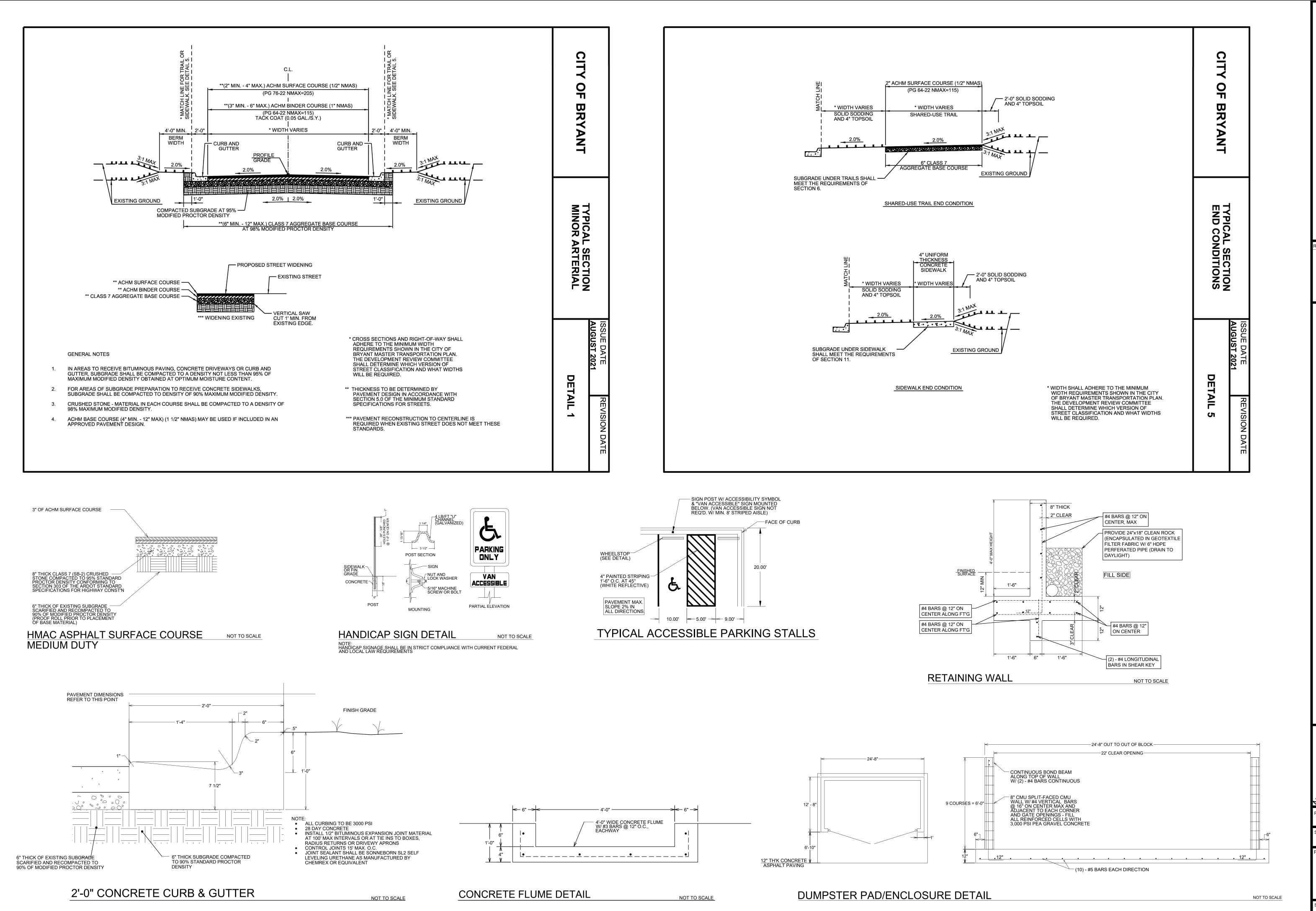


PROJECT NUMBER:

12/12/2023

**GRADING PLAN** 

C1.2



ENGINEERING, LEWIS

PHILLIP

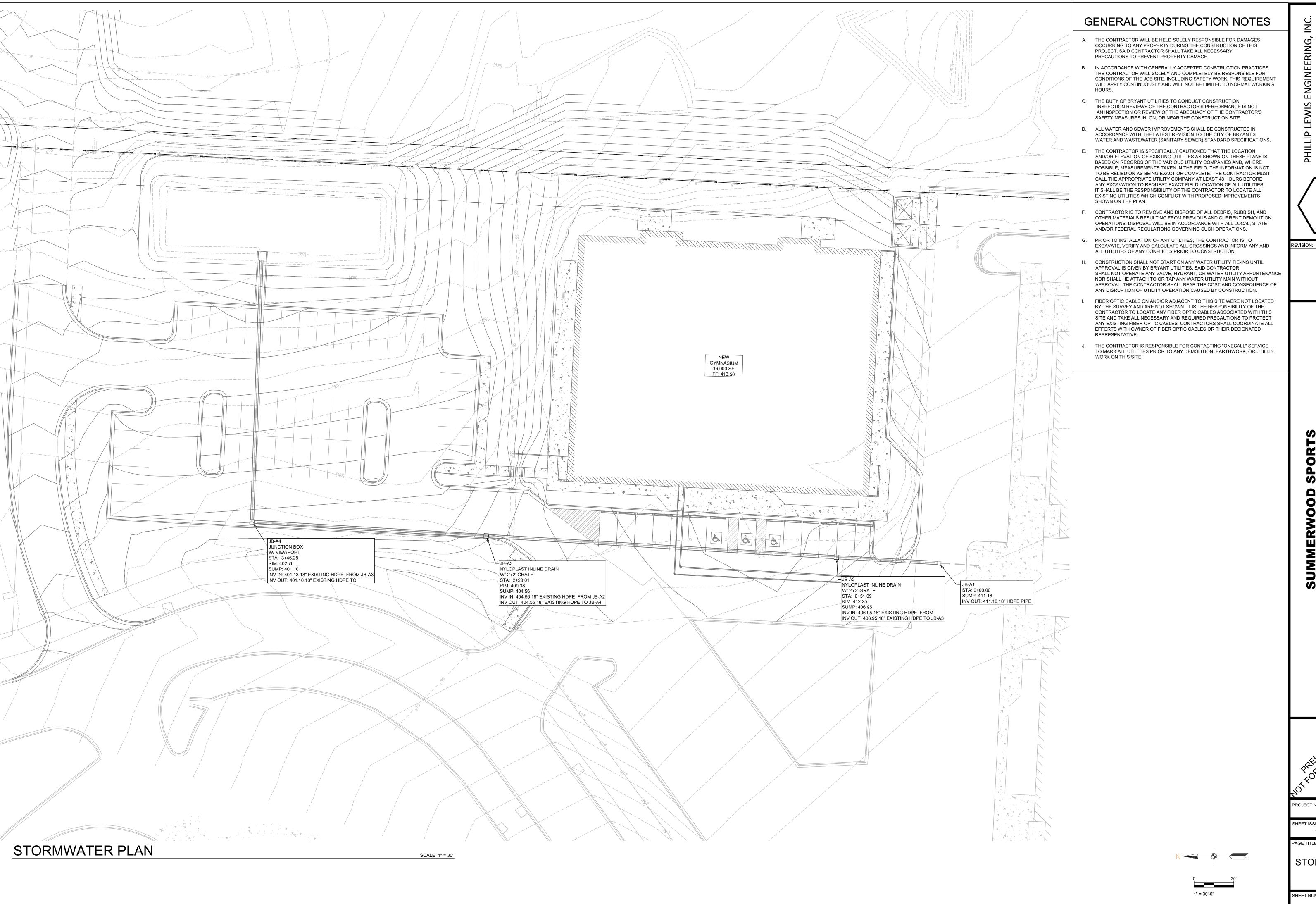
REVISION:

GYMNASIUM 7817 Hwy 5 N Bryant, Arkansas

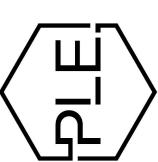
PROJECT NUMBER:

SHEET ISSUE DATE: 12/12/2023 PAGE TITLE:

SITE DETAILS



ENGINEERING, + Civil Consultants



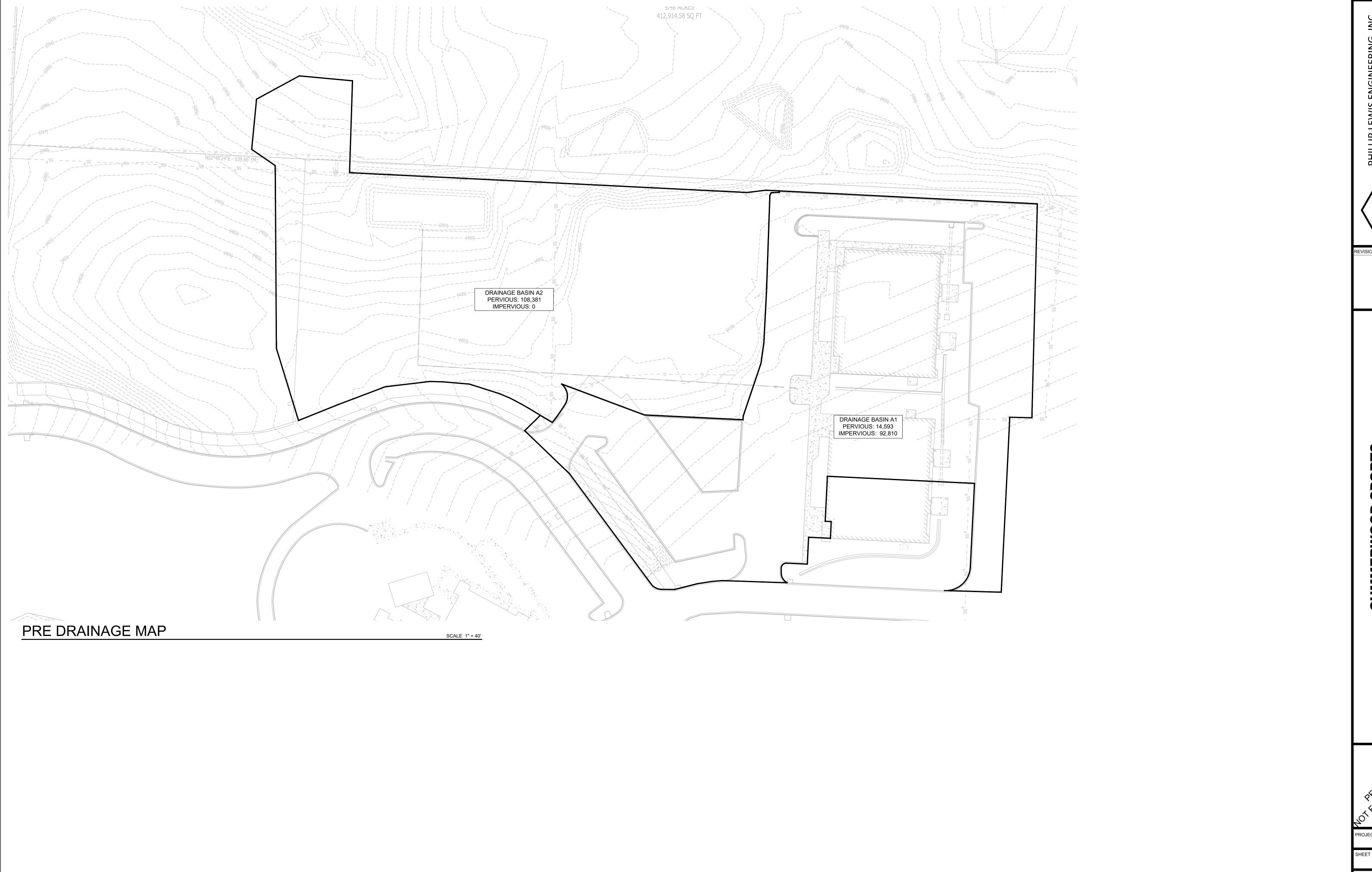
PROJECT NUMBER:

12/12/2023

STORMWATER PLAN

SHEET NUMBER:

C1.4



SUMMERWOOD SPORTS
GYMNASIUM #3

PRELIMINARY LICTION

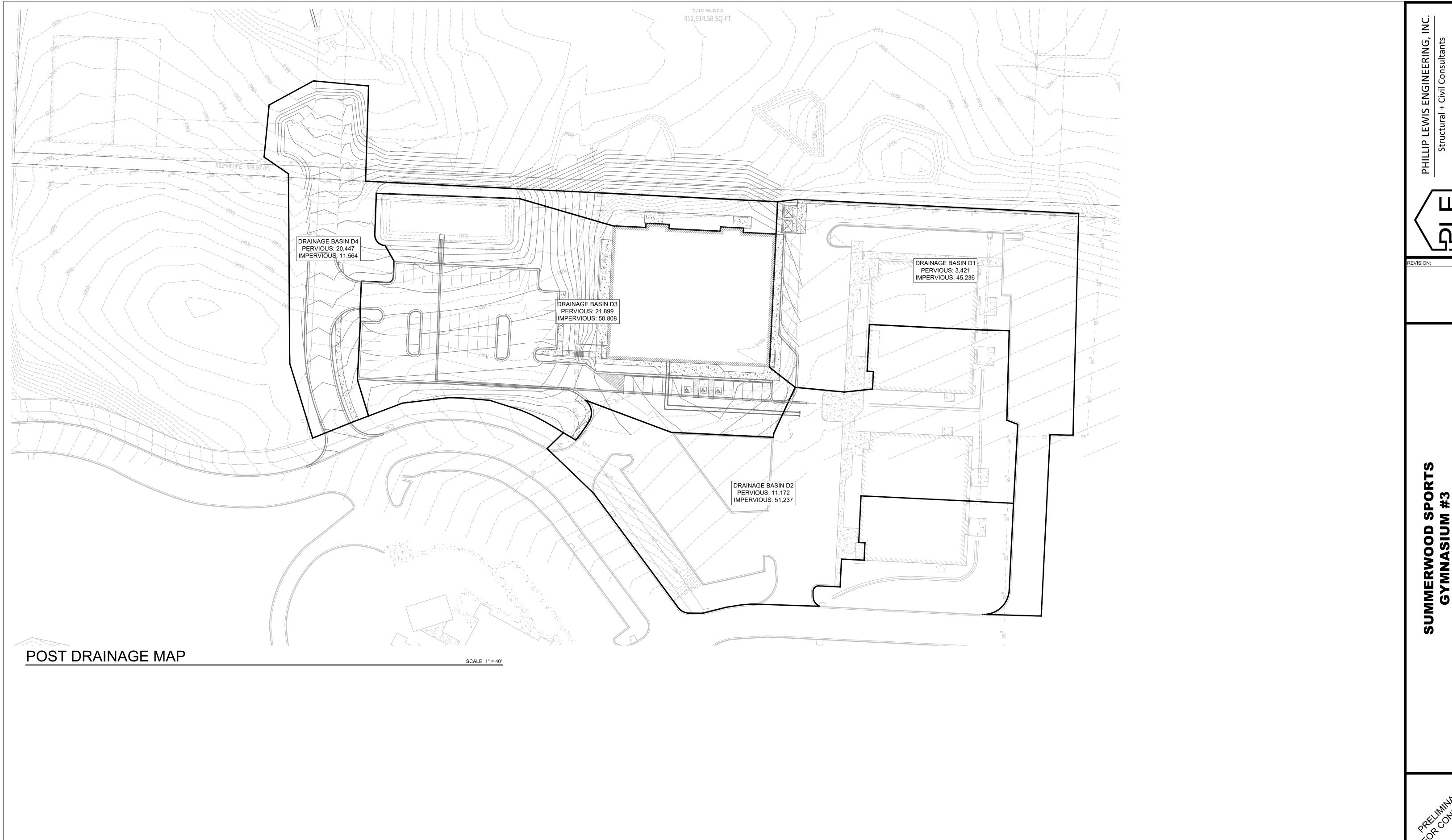
PROJECT NUMBE

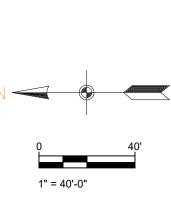
SHEET ISSUE DATE:

12/12/2 PAGE TITLE:

PRE DRAINAGE MAP

SHEET NUMBER:





POST DRAINAGE



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

ENGINEERING,

PHILLIP

REVISION:

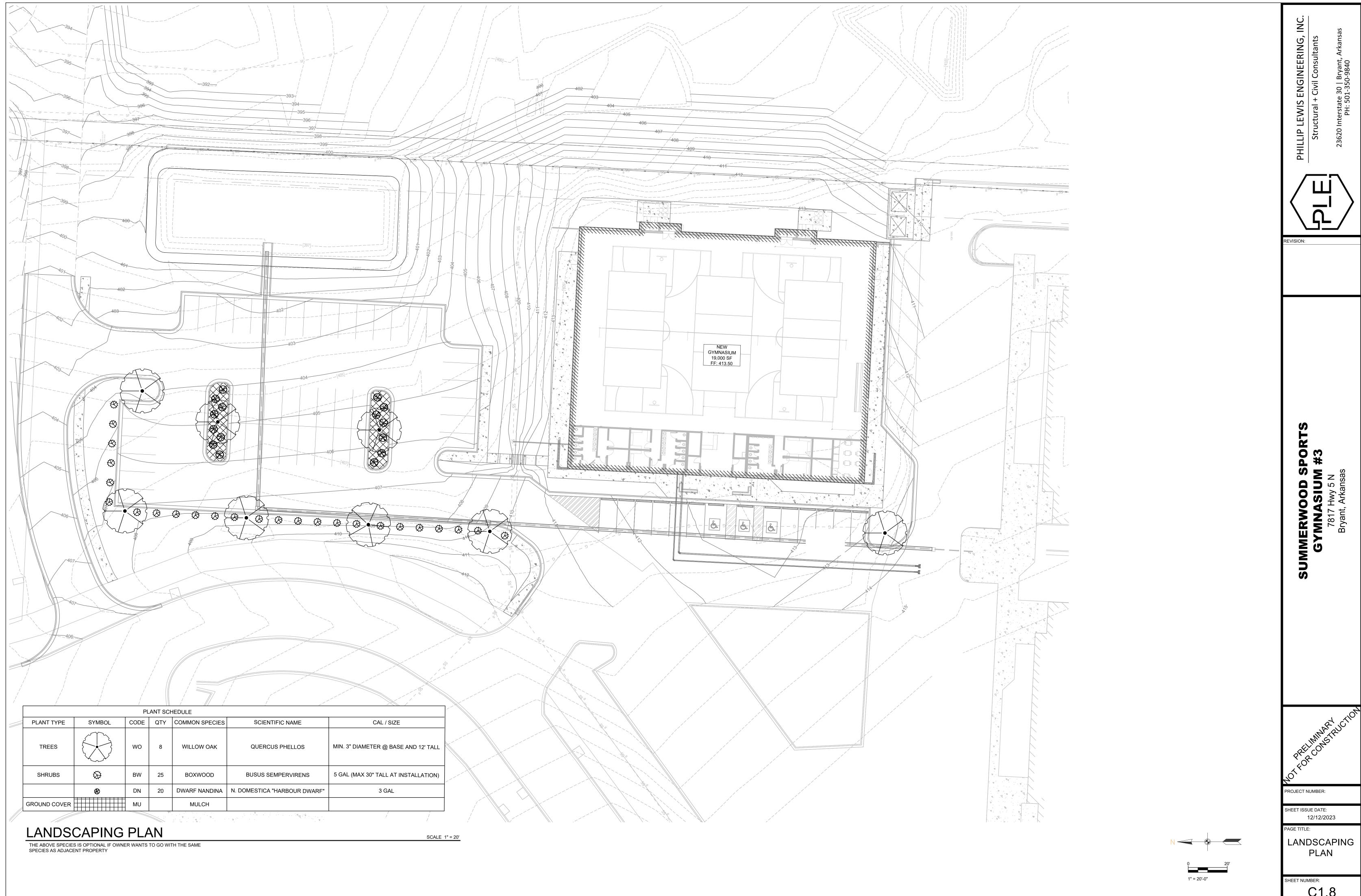
PRELIMINARY DICTION

PROJECT NUMBER:

SHEET ISSUE DATE: 12/12/2023

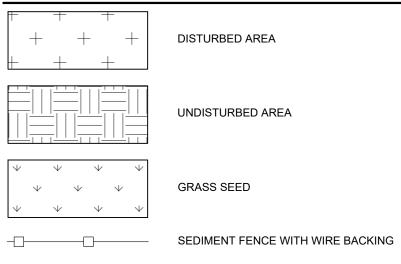
E TITLE:

UTILITY PLAN



C1.8





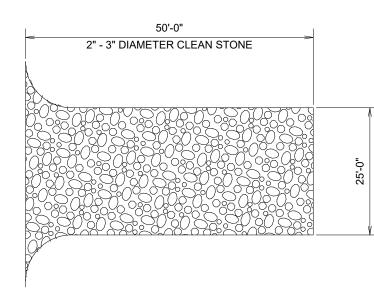
PAVED SURFACE

50'-0" LONG x 25'-0" WIDE x 6" THICK

2" - 3" DIAMETER STONES

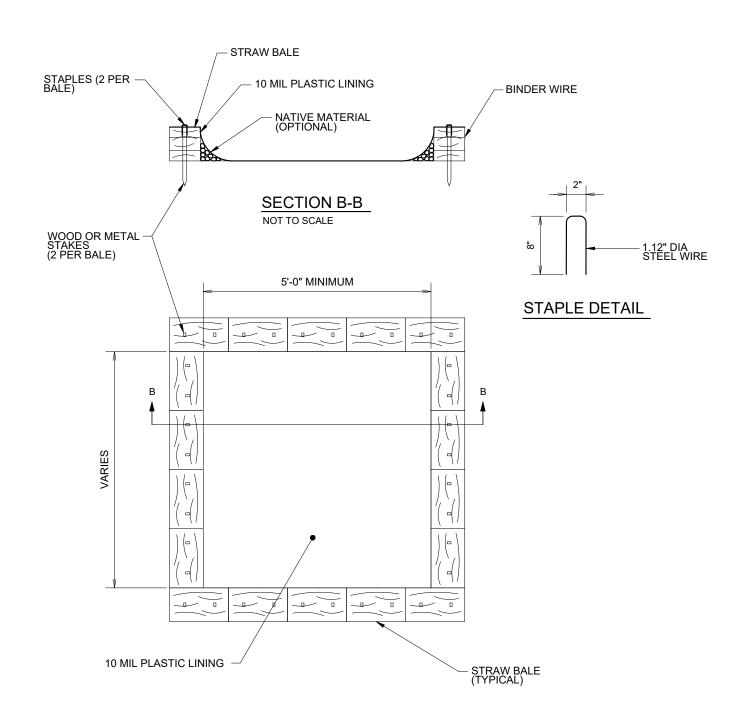
COMPACTED SUBGRADE

GEOTEXTILE FABRIC UNDER STONE



CONSTRUCTION ENTRANCE

NOT TO SCALE



CONCRETE WASHOUT

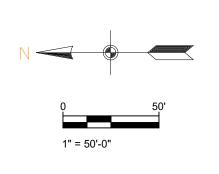
NOT TO SCALE

# NOTES (GENERAL):

- SEE EROSION CONTROL DETAILS IN SWPPP FOR EROSION CONTROL FACILITIES.
   SEE SWPPP FOR INSTALLATION, MAINTENANCE, INSPECTION, AND RECORD KEEPING REQUIREMENTS.
   CONTRACTOR SHALL SHOW EROSION CONTROL MEASURE ON SITE MAP.
- EROSION AND SEDIMENT CONTROL STRUCTURES TO MEET SWPPP DETAILS APPENDIX D
   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 DISCUARCE.
- CONTAMINATED DEWATERING DISCHARGE.

  7. FINAL SLOPE WILL BE SAME DIRECTION AS EXISTING SLOPE.



P LEWIS ENGINEERING, INctructural + Civil Consultants

20 Interstate 30 | Bryant, Arkansas



VISION:

UMMERWOOD SPORT GYMNASIUM #3 7817 Hwy 5 N

PROJECT NUMBER:

PROJECT NUMBER:

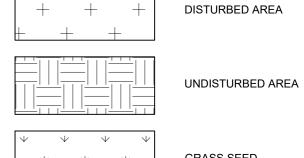
SHEET ISSUE DATE: 12/12/2023

SWPPP PH. 1

SHEET NUMBER:



LEGEND





**GRASS SEED** 

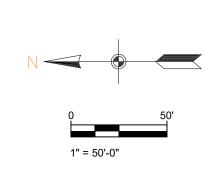


DRAINAGE DIRECTION

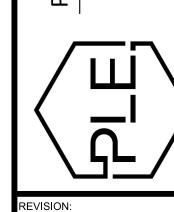
# NOTES (GENERAL):

- 1. SEE EROSION CONTROL DETAILS IN SWPPP FOR EROSION CONTROL FACILITIES. 2. SEE SWPPP FOR INSTALLATION, MAINTENANCE, INSPECTION, AND RECORD KEEPING REQUIREMENTS. 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.



P LEWIS ENGINEERING, I ructural + Civil Consultants PHILLIP



SUMMERWOOD S GYMNASIUM 7817 Hwy 5 N Bryant, Arkansas

PROJECT NUMBER:

SHEET ISSUE DATE: 12/12/2023

SWPPP PH. 2

DEEDED LEGAL DESCRIPTION: DEEDED LEGAL DESCRIPTION:
Part of the Southeast Quarter of the Northeast Quarter and part of the Northeast Quarter of the Northeast Quarter of Section 29. Township 1 South, Range 14 West, City of Bryant, Saline County, Arkansas, more particularly described as follows: Commencing at the Southeast corner of said Southeast Quarter Northeast Quarter; thence North 02 deg. 25 min. 15 sec. East along the East line thereof for 996.18 feet to the Point of Beginning being on the North right-of-way line of the Springhill Overpass extension road; thence North 70 deg. 09 min. 58 sec. West for 74.13 feet; thence North 80 deg. 18 min. 33 sec. West for 132.10 feet; thence North 77 deg. 52 min. 35 sec. West for 75.62 feet; thence North 02 deg. 25 min. 53 sec. East for 468.89 feet to the South right-of-way line of Interstate #30; thence North 69 deg. 26 min. 48 sec. East for 300.00 feet to the East line of said Northeast Quarter Northeast Quarter; thence South 02 deg. 25 min. 09 sec. West for 637.63 feet to the Point of Beginning, containing 3.49 acres, more or less INTERSTATE 30 3.49 ACRES 53"E 468.89F ζ.) Γ.) 802 11 EXISTING BUILDING FIELD RKANSAS CONSDIENT. PHOPOSED PARKING BUILDING nam J. Wataon Signature D. 07-27-23 118.00FT +7 GEFT BUILDING LIN EXISTING 25FT EASEMENT E OF AUTHO BEARINGS BASED ON EAST LINE FROM ORIGINAL DEED WATSON CH SHEAFF AVE & SCALE SURVEYING LLC No. 3955 ARKANSAS, Description Symbol STORM DRAIN 51 SEWER (3) COMPUTED I hereby certify that the hereon plat and described survey was completed under my supervision to the best of my professional knowledge and ability. REBAR FENCE (X) LINE CENTER LINE Brian J. Watson BRIAN J. WATSON PROPERTY LINE P.L.S. #1864 PTSOV No investigation or other search was performed for easements or other records that an accurate and current title search may disclose

PLOT PLAN

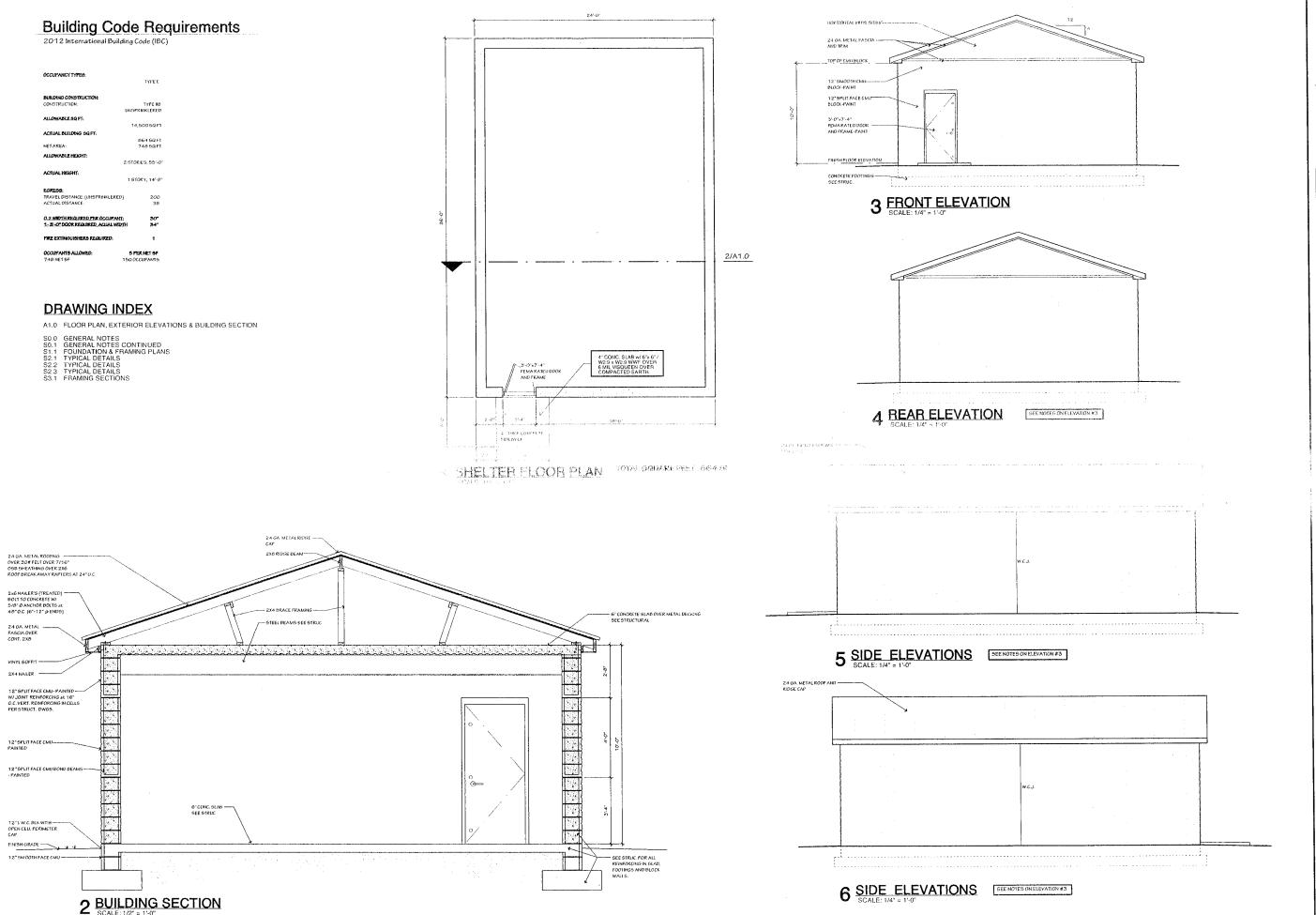
FOR THE USE AND BENEFIT OF

DESTINED TO WIN

0700 HMY. 32

DATE: 27 JULY 2023 SCALE: 1IN.=70FT. JOB#23-134

DRAWN BY: BW



HUGHES ARCHITECTURAL

> DESIGNS 1202 N STATE LINE AVE SUITE #102 TEXARKANA, AR 71864

501-827-2448

michaelhughes72s77@gmail.co

scian Academy New Storm Shelter Ransas Christones Bryant, Arkans

Floor Plan, Exterior Elevie & Bldg Section

A1.0

### **GENERAL NOTES**

n case of conflict between the General Notes below and the Specifications, the more rigid equirement shall govern unless amended in writing by the Structural Engineer of Record. DESIGN DATA

- IGN DATA sign Codes (All latest editions unless noted otherwise.) International Building Codes (IBC 2021) Arkansas Fire Prevention Code 2007 Edition (IBC 2012) with Amendments. American Society of Civil Engineers (ASCE 7–16) Minimum Design Loads for Buildings
- and Other Structures
  American Concrete Institute (ACI)
- American Institute of Steel Construction (AISC)
- American Meding Society (AWS)

  American Iron and Steel Institute Specifications for the Design of Cold Formed Steel Structural Members (AISI)

65 psf 127 psf of wall area

100 psf (Not reducible)

0.55±

2000 lbs 20 psf of wall area (Reducible per code)

9.1 psf (Use min 11 psf w/ Rain on Snow

ASIM A615. GR 60

ASTM A706, GR 60

ASTM A185 (Plain)

ASTM C33, ASTM C330

- National Design Specification for Wood Construction (ANSI/AF&PA NDS-2018) Steel Deck Institute (SDI)
- Standard for the Design and Construction of Storm Shelters (2020 ICC 500)
- Safe Rooms for Tornadoes and Hurricanes (2021 FEMA P-361
- Design Loads (IBC & ASCE7)
   Dead Load Design Data
- Floor Exterior CMU Wall

- Lobby (1st Floor)
   Floor Concentrated
   Office
   Partition Load
   Slob—On—Grade
  Live Roof (Sloped)
   Roof (Flot)
   Roof (Flot)
- Roof (Flot)
- Wind Design Data Risk Category
- Risk Category
  Velocity
  Wind Exposure Category
  Internal Pressure Coefficient, GC<sub>pt</sub>
  now Design Data
  Importance Factor for Snow, Is
  Ground Snow Load, Pg
  Exposure Coefficient Ce
  Thermal Factor C,
  Roof Slope Factor, C,
  Flat Roof Snow Load P<sub>r</sub>

- Seismic Criteria
- Seismic Design Category Basic Seismic Force Resisting System A.7 Specially Reinforced Masonry Shear
- Design Base Shear
- Jessign dase Shear

  Seismic Response Coefficient, Co
  Response Modifications Factor, Re
  Analysis Procedure
  Lood Design Data
  Plood Design Class
  Flood Zone

is Wat Getica

Concrete Reinferring - Dar Flypicall

- Concrete Reinforcing - Bar (Weldable) - Concrete Reinforcing - Welded Wire Fabric

Aggregate Concrete Mix Criteria Class Use Category F S W C

I. FTG/FDN/PC 0 0 0 0 3500 145 III. Interior Slob 1 0 0 0 4000
III. Exterior Slob 1 0 0 0 4000
V. All Other 0 0 0 0 4000 n o o o 4000 145

Reference ACI 318 Chapter 4 For Additional Information Regarding Durability Category

F'c. PSI WT, PCF AGG, IN AE. %

Concrete Mix Design Shall Be Submitted For Each Class in Accordance With The Procedure Outlined in ACI 301, Standard Specification For Structural Concrete. Documentation Submitted Shall Include The Mix Data, For Additional Submittal Requirements, Reference ACI 301, For Requirements On The Use Of Admixtures And Limits On The Water/Cementitious Materials Ratio For Durability, Reference The Project Manual/Specifications And ACI 318, Building Code Requirements For Structural Concrete

- Design Compressive Strength (F'm= 2000 PSI)
  Concrete Masonry Units
  Reinforcing Steel (UNO):
- ASTM A615, GR 60 Bar Reinforcing (Typical Bar Reinforcing (Weldable) ASTM A706, GR 60 ASTM A951
- Grout (F'c= 3000 PSI, 8"-11" Slump) - Mortar, Type S ASTM C270 or
- Non-Shrink Grout Under Plates (F'c=8000 PSI) ASTM C1107, GR A

### Structural Steel

- Structural Shapes (UNO)
- Wide Flange
   Channels, Angles and Plotes
  Hollow Structural Sections ASTM A992 or ASTM A572 ASTM A36 or ASTM A572
- HSS, (Fy = 46 KSI) Pipe, (Fy = 35 KSI) ASTM A53, GR C
- Bolts And Fasteners (UNO) ASTM A325 - Structural/Anchor Rods
  - Headed Shear Studs
  3. Design Soil Bearing Pressures ASTM F1554 Grade 55 (Weldahle
- Footings on natural soils or compocted structural fill are designed for a minimum soil bearing pressure of 1,800 psf.
- soil bearing pressure of 1,800 psf.

  If the soil at the footing bearing elevations shown is of questionable bearing value, the Engineer or Architect shall be notified immediately.

  After footing excovations are completed and before placing concrete, the excavated areas shall be inspected and approved by the Owner selected independent testing

### GENERAL INFORMATION

- All columns shall be centered on grid lines unless noted otherwise.
- All column footings shall be centered on columns unless noted otherwise.

  All wall footings shall be centered on walls unless noted otherwise.
- Unless otherwise noted or detailed, concrete pads for mechanical equipment shall be 4" thick (minimum) and reinforced with #3 @ 12" oc each way centered ubstitution of expansion anchors for embedded anchors shall not be permitted
- Weights of mechanical equipment shown on the structural plans are for units specified by the Mechanical Engineer. Contractor shall verify weights and any substitutions that result in increased weight shall be approved by the Structural
- Backfill both sides of all foundation and retaining walls equally until low side is u Bockfill both sides of all roundation and retaining wails equitily until low side to finish grade. Do not backfill any walls until concrete has reached its spe 28-day compressive strength.

   Permanent stability of the building and components is not provided until the
- erection is completed as shown on the contract drawings, "Temporary supports, such as temporary guys, braces, folsework, cribbing or other elements required for the erection operation will be determined, furnished and installed by the erector
- 10. The Contractor shall be responsible for Verifying all existing conditions. The Contractor shall be responsible for coordinating architectural,, structural, mechanical, and electrical details and dimensions. Any Discrepancies between such details and dimensions shall be reported to the EOR prior to proceeding with the work.
- The Contractor shall be responsible for erection procedure and sequence to insure the integrity of the building and it's component parts during construction.

### SUBMITTALS

- Review of shop drawings and other submittals by the Structural Engineer does not relieve the Contractor of the responsibility to review and check shop drawings before submitting to the Structural Engineer. The Contractor remains solely responsible for errors and omissions associated with the preparation of shop drawings as they pertain to member sizes, details, and dimensions specified in the Contract Documents. All shop drawings must be stamped by the Contractor prior to submittal.
- submittol.

  Shop Drawings: The Contractor shall submit for Structural Engineer review shap drawings for the following items. Items marked (\*) shall have shap drawings seeled by a Professional Engineer registered in the state in which the project is located. Items marked (#) shall be submitted for Structural Engineer's record only. A. Structural Steel (\*)
- B. Steel Deck
- Concrete Mix Design

### **FOUNDATIONS**

- All soil preparation shall be in accordance with the recommendations given in the referenced Geolechnical Report.
- Strip area of all grovel, surface vegetation, topsoil, and any debris. Remove all existing structures, foundations, and below grade site features. After stripping an making required cuts, exposed subgrade should be compacted. Overexcavate and stabilize any soft or unstable areas discovered by proof rolling.
- The Geotechnical Engineer shall be present during proof rolling and shall inspect the subgrade prior to any fill operations. All compacted fill shall be continuously inspected by the Owner's selected independent testing laboratory.
- To the soil of the bearing elevations shown is at questionable bearing value the Structural Engineer of Record or Architect shall be notified immediately. All 6th material under structure shall ecopyly with requirements stated in Geotechnical Report patricia are efficiely in 124 otherwise. After fainting excursions are completed and peture plusing concrete, the companies should be improved and companies of the Companies Spagness of Section

CAST-IN-PLACE CONCRETE

- Slab, walls, joints: No. 14 and No. 18 bars No. 11 bar and smaller Beam, columns: Primary reinforcements, ties, stirrups, spirals Shells, folded plate members: No.6 bar and larger
- No.5 bar, W31 or D31 wire, and smaller December 2. Locations and sizes of openings, sleeves, etc. required for other trades must be verified by these trades before placing concrete.

  10. All slots, sleeves, trenches, and other embedded items shall be set and secured.

Arrangement and bending of reinforcing steel shall be in accordance with ACI Detailing Manual, latest edition.

Reinforcing Bars: ASTM A615 Grade 60 and ASTM A706 Grade 60 for weldable

Unless noted otherwise, bar laps shall be Class B tension laps and shall be lapped

unless noted unterwise, our logs shall be class to tension help our distinct our product with minimum lengths as shown in Typical Details, where spikes are required in reinforcing. Shorter lops may be acceptable if appealing locations of alternate lops are shown on the reinforcement placement adwings and acclusions are submitted by a Registered Professional Engineer, licensed to practice in the state in which the project is globally alternated, justifying the alternate lop lengths.

project is necessary justifying the alternate rap lengths.

Provide suitable wire spacers, chairs, ties, etc. for supporting reinforcing steel in the proper position while placing concrete. Do not "wet stick" dowels.

All Welded Wire Fabric (WWF): ASTM A185. Minimum lap and embedment to be the

white an one cross were specing plus 2 of 6. Minimum concrete protective covering for reinforcement at surfaces not exposed directly to the ground shall be  $\frac{1}{\lambda}^{*}$  for slabs, joists, and walls and  $1\frac{1}{\lambda}^{*}$  for beam stirrups, column ties, or spirals unless noted otherwise.

Surrups, Countin Les, of Spinus autess noted orderwise. Before placing concrete, clean reinforcement for foreign particles or coatings. Place, support, and secure reinforcement against displacement. For cost-in-place concrete, provide cover as shown below, unless noted otherwise an drowings, and as specified in ACI 318, building code requirements for structural concrete.

Reinforcing steel shall be new and oil bars shall be deformed

greater of one cross wire spacing plus 2" or 6".

Application/condition

Cast against and permanently exposed to earth

Not exposed to weather or in contact with ground:

Exposed to earth or weather:

No.6 through No. 19 bors No.5 bar, W31 or D31 wire, and smaller

- and stots, steeves, territors, on other embedder terms small be set and sector against movement before the concrete is placed. See Architectural, Electrical, Mechanical, Plumbing, and Vender drowings for sizes and locations. Coordinate locations, spocings, and sizes with the Structural Engineer of Record prior to
- Conduits and pipes embedded in concrete slobs may be no larger than  $K_0$  of the slob thickness (based on the maximum outside diameter) and shall have a center-lo-center spacing no less than three (3) conduit diameters. Regardless of diameter, the minimum clear spacing between conduits or reinforcing shall be one
- 12. No more than four conduits may be placed adjacent to each other without prior approval in writing from the Structural Engineer of Record.

  13. No aluminum conduits, devices, or factures may be embedated into the concrete so that the aluminum is in direct contact with the concrete.

  14. Corner bors shall be provided for all harbonal reinforcing bors at the intersections and corners of all strip foolings, beams, and walls unless noted otherwise. Corner
- bors shall be of the same size and grade as the horizontal reinforcing they connect. Minimum lab lengths shall be as indicated with the Typical fieldie unless For stabs-con-grade, provide saw-cut control pilots on intervals of  $15^{\circ}$  of the rock
- renforcing shelf phoen in rechiber and detroit in a greenheld homeshor the einforcing exists, bee schedules, rechier ander and Gerenal Notes for actual Detail reinforcement in occordance with ACI 315. Reinforcement shall not be welded
- Betail reinforcement in accordance with ACL 315. Reinforcement shall not be well unless noted or approved by the Structural Engineer.
   Pedestal, Column and Wall Vertical Reinforcing: Dowel to foundation with hooked bars of same size and spacing as vertical reinforcing, terminale top of reinforcement with hooked bar of some size and spacing as vertical reinforcing.
   Beam Horizontal Reinforcing: Terminate each end with standard.
- Closed Tie and Stirrup Reinforcing: Terminate each end with standard hook. Concrete design and detailing shall conform to the requirements of ACI 318 and ACI 301, latest editions.
- ACI 301, latest editions.

  2. Contractor shall provide reinforcing shop drowings which adequately depict the reinforcing bor sizes and placement. Written description of reinforcement without adequate sections, elevations and details is not acceptable.

  24. Submit written reports of each proposed mix design for each class of concrete with concrete cylinder test results at least 15 days prior to start of work.
- 25. All concrete that will be exposed to the weather shall have air entrainment
- All structural concrete exposed to view to be smooth formed finished with ½" chamfers at all exposed edges.

# ACI lap splice length (inches) F'C = 3000 PSI F'C = 3500 PSI F'C = 4000 PSI TOP BARS OTHER BARS TOP BARS OTHER BARS TOP BARS OTHER BARS CASE ICASE ICA 40 | 60 | 37 | 37 | 70 | 106 | 54 | 54 | 80 | 121 | 62 | 91 | 136 | 7'

#11	131	196	101	151	122	183	94	141	113	170	87	131
240		F'C = 4	500 PS	il	F	'C = 5	000 PS	šl	F	C = 6	000 PS	1
BAR		BARS	OTHER	BARS	TOP	BARS	OTHER	BARS	TOP	BARS	OTHER	BARS
	CASE	ICASE 2	CASE 1	CASE 2								
#3	23	35	18	27	22	33	17	25	20	30	16	23
#4	31	46	24	35	29	43	22	33 .	26	40	20	31
#5	38	57	30	45	36	54	28	42	33	49	25	38
#6	46	69	35	53	43	64	33	50	40	59	31	46
#7	67	100	52	77	63	94	49	73	58	86	44	66
#8	76	115	59	88	72	108	55	83	66	98	51	76
#9	86	129	67	100	81	122	63	94	74	111	57	85
#10	97	145	75	112	91	137	70	105	83	125	64	96
#11	107	161	83	124	101	152	78	117	93	139	71	107

### CAST-IN-PLACE CONCRETE CONT.

- Tabulated values are based on grade 60 bars and normal weight concrete. Cases 1 and 2, which depend on the type of structural element, concrete cover, and the center-to-center spacing of the bars, are defined as:
- Reams or columns:

  Case 1: Cover at lease 1.0 db and C.C. spacing of at least 2.0 db.
  Case 2: Cover less than 1.0 db and C.C. spacing less than 2.0 db.
- All others:
  Case 1: Cover at lease 1.0 db and C.C. spacing of at least 3.0 db
  Case 2: Cover less than 1.0 db and C.C. spacing less than 3.0 db.
- Top bars are horizontal beam and slab bars with more than 12" of concrete below
- For lightweight aggregate concrete, multiply the tabulated values by 1.3.
- factors: Concrete cover and spacing Top bars Other Cover < 3.0 DB or C.C. spacing < 7.0 DB 1.7/1.3 = 1.31 1.50

1.20

- Cover > 3.0 DB or C.C. spacing > 7.0 DB 1.20 Bar development length = tap spliced length/ 1.3.
- Lop all wire mesh cross wires one cross wire specing plus 2", typical.

### Required cover, Inches CONCRETE MASONRY

136"

- For product material specifications, reference the structural notes, material & component design criteria and the project specification. Submit documentation demonstrating compliance with the specified strength of Submit documentation demonstrating compliance with the specified strength of missorry. Fin, in accordance with the (prism test method or the unit strength method) as autilized in the TMS 402/602-16, Building Code Requirements for Mosorry Structures, and the applicable building code. Submit product and test data as specified for level 1 quality assurance. This sholl include verification of Fin both prior to construction and during as well as verification of materials and proportions for concrete masenry units, mortar and grout construction for every 5000 square
- et of masonry placed.
- feet of masonry placed.

  Submit reinforcing shop drawings showing placement of all reinforcement and embedments and the reinforcing fabrication dimensions and details.

  Place concrete units such that the vertical cells to be grouted are aligned and provided unobstructed openings for grout placement. Face shells of bed joints shall be fully mortared, webs shall be fully mortared in all courses of piers, columns and plasters, in the starting course on foundations, when necessary to confine grout or loose-fill insulation and when otherwise noted. Head joints are to be mortared a minimum distance from each face equal to the face shell thickness of the unit. Unless otherwise required, solidly fill collar joints less than 3/4" wide with morto
- Place reinforcement and embedments in accordance with the drawings. Maintain a clear distance between the reinforcing bors and any face of masonry unit or former clear distance between the reinforcing bars and any tock of masonry unit or formed surface of not less than 1/2 unless noted otherwise. Where reinforcing bar are spliced, provide a minimum lop as shown in chart below or a mechanical splice that provides 125% of the bar capocity. Tolerances for placement of reinforcing bars shall be +/-1/2 inch perpendicular to the face of the masonry unit and within 2-inches along the length of the will unless note otherwise. Reinforcement shall be tied in place or otherwise supported to prevent displacement during grouting.
- Place grout within 1 1/2 hours from introducing water in the mixture and prior to initial set. Grout pour height shall conform to the requirements as outlined in TM initial set, frost spoir regint shall contain to the requirements by durined in Imag 402/602-16, Specification for Masonry Structures, for grout type and grout space dimensions. In no case shall grout lift exceed 4 feet in height. Consolidate pours by mechanical wibration and reconsolidate by mechanical vibration after hillfol water loss and settlement has occurred. So and settlement has occurred.
- Provide Joint reinforcement in every used joint to which on center) for stack done every other joint (66-inch on center) for running bond masonry placement. Placement, that logaridation whose reverby 6 riseless and one entherhold in mortal, eith
- a offennen, positive jords as supering edit shoulds, prevident within 4-3est norm, at cook should of each weight on tribitations on at a movement. Which feet before orders otherwise on charles. us ear mema usar ser sur mani ta Cranson y sant troomfaras a specifictor no 2 decembs 26 to 2 godinformag such cantella cramba Paulit Senera caro mentionalist a variety reinforman
- Flowde a bond beam with 7-gb continuous bers where shows on the drakings and at minimum, at the tops of all masonry walls and at all slab or beam bearing locations where the wall is not already gouted said below the bearing. Extend the band beam a minimum of 2-feet beyond the end of the bearing condition.
- Provide jamb reinforcing for every masonry opening shown on drawings, as a minimum, for steel lintel beams provide 1-#5 vertical in first cell adjacent to the minimum, for steel Intel beams provide 1-#5 vertical in first cell adjacent to the bearing location form the top of footing for the full height of the wall. For mosonry lintels, provide 1-#5 vertical in the first cell adjacent to the opening, from the top of the footing for the full height of the wall.

  At beam bearing locations, reinforce each cell below the bearing plate with typical vertical reinforcing to the top of the footing unless noted otherwise.

- CONCRETE MASONRY CONT.
- At mosonry control joints, reinforce the first cell either side of the joint with the typical wall reinforcing specified on the drawings. Also, at ends of walls, reinforce the last cell with the typical wall reinforcing specified. Horizontal joint reinforcing shall be discontinuous at control joints. Bond beam reinforcing shall be discontinuous at control joints. Bond beam reinforcing shall be discontinuous at control joints. Bond beam reinforcing shall be discontinuous at control joints.
- All cells containing reinforcing bars shall be fully grouted.
- 15. All expansion bolts placed in museury are to be Hilli Kwik Bott III or approved equal All expansion botts placed in masonry are to be Hill Kwik Bott III or approved equal are to be installed in grounded cells in accordance with the manufacturer's recommendations and inspected by the special inspector. All post-installed anchors shall be installed in the presence of the special inspector. All post installed dowed placed in masonry are to be set in Hill HIT—HY 70 adhesive or approved equal are to bed installed in accordance with the
- manufacturer's recommendations and inspected by the special inspector. All post-installed anchors shall be installed in the presence of the special inspector
- All mechanical anchors shall be installed in accordance with the product namenancial anchors shall be installed in occurrence with the product special inspector. Individual products shall be submitted to the architect/engineer for approval prior to installation. All post-installed anchors shall be installed in it presence of the special inspector.
- 18. When the ambient temperature falls below 40F or the temperature of the masonry When the ombient temperature rais below vol. the temperature or the indisonal younts is below 40°F, comply with the provisions of TMS 60°C, Section 1.8°C, Specification for Masonry Structures, for cold weather construction.
   When the ombient temperature exceeds 90°F, comply with the provisions of TMS 60°C, Section 1.8°D, Specification for Masonry Structures, for hot weather construction.
- 20. Brick Ties: (for stud bockup)

There shall be a minimum of one brick tie for every 2.67 sq. ft. of wall area. These shall be spaced at a maximum of 18-inches on center. Ties shall be of a minimum 9 GA. corrosion resistant wire and shall be of an adjustable type such as DINFO-WAIL adjustable 0/A 213 or equal. Corrugated galvanited sharet tiles are not acceptable. All ties must be attached through the sheathing to the studs per manufacturer's recommendations.

There shall be a minimum of one brick tie for every 2.67 sq. ft. of wall area. These shall be spaced at a maximum of 18--inches vertical. Ties shall be a minimum of 3/16" diameter corrosion resistant wire. Corrugated galvanized sheet ties are not acceptable.

> CMU Lap Splice Lengths Reinforcement Off-Centered 2 Bor Per Core

MINIMUM LAP SPLICE LENGTH (INCHES)					
BAR SIZE	8" CMU	10" CMU	12" CMU	16" CMU	
#3	19	19	19	19	
#4	34	34	34	34	
#5	45	45	45	45	
#6	54	54	54	54	
#7	63	63	63	63	
#8	N/P	72	72	72	
#9	N/P	N/P	82	82	

JUZP - Not Ferretten

## OMPOSITE BEAMS

- centerline of beams per manufacturer's recommendation. Headed stud connectors, ofter installation, shall extend not less than  $\mathcal{W}$  above the top of steel deck and not more than  $\mathcal{X}''$  below the finished surface of the concrete.
- Headed stud shear connectors shall be  $\frac{1}{2}$ " $\phi x 5\frac{1}{2}$ " long (before welding) at spacing designated (18" oc max) unless noted otherwise. besignized to be into billies into determining the state of the state of lateral concrete cover except for connectors installed in the ribs of formed steel deck. Minimum distance from the base of the rib to the base of the stud shall be X" in ribbed, formed steel deck
- onless noted otherwise.

  The minimum center-to-center spacing of stud connectors shall be six times the stud diameter olong the longitudinal axis of the beam and four times the stud diameter transverse to the longitudinal axis of the beam. In formed steel decks oriented perpendicular to the longitudinal axis of the beam, the minimum center-to-center spacing shall be four times the stud diameter in any direction.

6. Study may not be installed on the flanges of beams that are less than 0.4 times

the stud diameter unless they are directly over the web. Should deck loyout and stud spacing cause a conflict with this requirement, contact the Structural Engineer of Record for a resolution prior to installation of the shear studs.

(f) ä S New Storm S **Arkansas** Bryant, Arka

HUGHES

ARCHITECTURAL

DESIGNS

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SUITE #102

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ARKANSAS REGISTERED ROFESSION. ENGINEER No.10449 DATE SIGNED: OR 3rd PARTY REVIE

> Sheet Title: General Notes

Sheet Number:

**S0.0** 

LIVE OAK ENGINEERING

- STEEL DECK
   All deck shall be furnished and installed per the requirements of the Steel Deck Institute (SDI). The Contractor shall follow all recommended practices in the SDI
- manual.

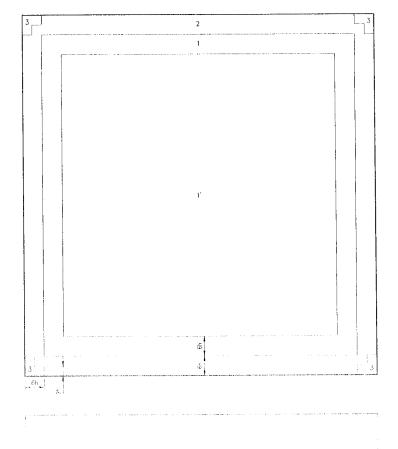
  2. Steel Deck, galvanized steel deck unless noted otherwise on the drawings.
- 3. Where steel deck is part of a roted assembly, supply all deck and components, which comply with requirements of Underwriters Laboratories (UL) for each type of assembly, specified, reference plans and specifications. Where deck is to receive sproy fireproofing, finishes shall be compatible with fireproofing material and comply with UL assembly requirements. Before the fireproofing material is applied, the deck surface to be treated shall be free of rust, scale, oil, or other contaminants or elements which will impair bond.
- 4. The deck shall be fostened to supporting steel as shown on the drawing.
- Alternate fastening options using mechanical fasteners, powder-actuated, or screws may be considered, if submitted by the Contractor. Alternate systems and documentation certifying that the proposed system provides at least the same uplift and diaphragm shear resistance as the system and pottern specified must be submitted to the Engineer.
- Provide a 2" minimum bearing and a 4" lap at the splice point of all pieces of

- Provide a 2" minimum bearing and a 4" lap at the splice point of all pieces of deck.
   Where possible, all decking shall be 3-span continuous, minimum. Decking specified on this project assumes a 3-span condition unless noted otherwise. The Contractor shall provide heavier gauge deck, as required, for one or two span conditions to meet equivalent load capacity of the specified deck under a 3-span condition.
   Steel roof deck shall not be used to support load from plumbing HVAC ducts, light fixtures, orchitectural elements, or equipment of any kind unless specifically noted.
   Honging any loads directly from steel roof deck shall be avoided whenever possible. Nevertheless, normal suspended acoustical ceilings with a lotal weight per wire not exceeding 50 lbs may be hung from the steel roof deck in cases where hanging loads from the deck cannot be avoided. If possible, the attachment should be staggered to further distribute the load. If load is directly supported by the deck, tabs or other build-in devices should be provided for hanging referenced loads.
   Where deck ribs are cut at penetrations, provide deck support angles or deck stiffeners as required.
   Supply 8" wide, minimum, lates matching deck gauge or heavier for all ridge,
- 11. Supply 8" wide, minimum, plates matching deck gauge or heavier for all ridge, valley, and change in deck direction locations, which do not fall over a supporting member at least 4" wide.

## ABBREVIATIONS AB - Anchor bolt(s) ADDL - Additional

ADDL	-	Additional	MAS	-	Masonry
		Above finish floor	MATL		Material
ALT		Alternate	MAX	-	Maximum
ARCH		Architect, Architectural	MECH		Mechanical
				-	
B/		Back of	MFR	-	Manufacturer
BLDG	-	Building(s)	MIN		Minimum
BLK	-	Block(s)	MISC	-	Miscellaneous
8M		Beam(s)	мо		Masonry opening
BOF		Bottom of footing elevation	мРН	-	Miles per hour
BOT	~	Bottom	MTL	-	Metol
BRDG	-	Bridging	N	-	North
BRNG		Bearing	NIC	_	Not-in-contract
		Brick(s)	NOM	_	Nominal
		Between	NS		Neor side
	-	Built-up roof	NSG	-	Non~shrink grout
CJ		Control joint, Contraction	NTS	-	Not-to-scale
		joint, Construction joint	NUM	_	Number
CL		Centerline	00	_	On-center
CLG		Ceiling	OD		Outside diameter, Outside
			OU	_	
CLR		Clear			dimension
	-	Concrete mosonry unit(s)	OH	m	Opposite hand, Overhead
COL	-	Column(s)	OPNG	-	Opening(s)
CONC	-	Concrete	OPP		Opposite
CONN		Connection(s)	PAR		Parollel
CONST		Construction	PC		Precast, Precast concrete
	-	Continue, Continuous	PDF	•	Power driven fastener
CTRD	_	Centered	PL.		Plate, Property line
DBA		Dowel bar anchor, Deformed	PLF	-	Pounds per linear foot
		bar anchor	PLYWD	_	Plywood
DBL		Double	PNL		
	-			-	Ponel
		Diameter	PROJ	~	Project, Projection
	-	Diagonal	PSF	-	Pounds per square fool
DIM	_	Dimension	PSI	-	Pounds per square inch
		Drawing	PTD	_	Painted
			PVMT	_	Pavement
		Drowings			
		Dowel(s)	QTY	**	Quantity
E/		Edge of, End of	R		Radius
EA		Each	RAD	-	Radius
EB	-	Expansion bolt(s)	RD		Roof drain
EBC		Extended bottom chord	REBAR	-	Reinforcing bar
EF		Each face	REF		Reference
		Exterior insulated finish system	REINF	-	
EJ		Expansion joint			Reinforcement
EL		Elevation	REQD		Required
			IVE GD		
			DIEGO		
ELEC		Electrical	REV		Revise, Revision
ELEC		Electrical Elevator	RH		Right hand
		Elevator		-	Right hand
ELEV ENG		Elevator Engineer(ed)	RH RO	-	Right hand Rough opening
ELEV ENG EO	-	Elevator Engineer(ed)	RH RO S	-	Right hand Rough opening South
ELEV ENG EO EXP	-	Elevator Engineer(ed) Equal Expansion	RH RO	-	Right hand Rough opening South Slotted connection, Siip
ELEV ENG EO EXP EOM E	-	Elevator Engineer(ed) Equal Expansion Equipment	RH RO S SC	-	Right hand Rough opening South Slotted connection, Slip connection
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ELEV ENG EXP ENG EXP ENG EXP ENG EXP		Elevator Engineerled) Equal Expansion Equipment Each way Engineerled wood injoint Existing Extensiv Face of Alexa crosh Existing Extensiv Face Existing Expansiv Existing Expansiv Existing Expansiv Expan	RH RO 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		Right hand Rough opening South Stated connection, Stip connection Schedule Section Square feet stand Square Standton Square Standton Square Stoniess sted Short stated Short stated Short stated Stoniess sted
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ELEV ENG EXP		Elevator Engineerled) Equal Expansion Equipment Each way Engineerled wood Engine Each way Engineerled wood Engine Extensive Face of Library Engineerled wood Engine Extensive Face of Library Engineerled wood Engine Engineerled wood Engine Engineerled Engineer	RH RO 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5		Right hand Rough opening South Stated connection, Stip connection Schedule Section Square feet stand Square Standton Square Standton Square Stoniess sted Short stated Short stated Short stated Stoniess sted

LT WT ~ Lightweight





ULT. ROOF WIND PRESSURE (PSF)								
	ZONE	1*	ZON	E 1	ZONE	2	ZONE	3
AREA	+	-	+	-	+	-	+	-
10SF	115.6	-197.2	115.6	-306.0	115.6	-387.6	115.6	-510.0
20SF	108.8	-197.2	108.8	-292.4	108.8	-367.2	108.8	-469.2
50SF	103.4	-197.2	103.4	-265.2	103.4	-340.0	103.4	-414.8
100SF	102.0	-197.2	102.0	-251.6	102.0	-312.8	102.0	-360.4
200SF	102.0	-176.8	102.0	-238.0	102.0	-292.4	102.0	-319.6
500SF	102.0	-149.6	102.0	-210.8	102.0	-265.2	102.0	-265.2
1000SF	-	_	-	-		-		_

AREA	ZONE 1'	ZONE 1	ZONE 2	ZONE 3
TOP &	BOTTOM	SURFACE	S COMBI	NED :
10SF	-306.0	-306.0	-387.6	-510.0
20SF	-302.0	-302.0	-360.4	-462.
50SF	-295.8	-295.8	-319.6	-387.
100SF	-292.4	-292.4	-292.4	-340.
200SF	-251.6	-251.6	-258.4	-292.
500SF	-210.8	-210.8	-224.4	-224.

ULT. OVERHANG WIND PRESSURE (PSF)

a= 5.6ft 0.2h= 3.33ft 0.6h= 10ft

ULT. WALL WIND PRESSURE (PSF)					ULT. PARAPET WIND PRESSURE (PSF)							
	ZONE	4	ZON	£5	ZONE	4&2e	ZONÊ	4&2n	ZONE	4&3r	ZONE	5&3e
WIND AREA	WIN	LEE	WIN	LEE	WIN	LEE	WIN	LEE	WIN	LEE	WIN	LEE
10SF	189.8	-202.0	189.8	-238.7	434.6	-324.4	557.0	-324.4	630.4	-324.4	557.0	- 361.1
20SF	183.6	-195.9	183.6	-225.3	428.4	-310.9	498.2	-310.9	557.0	-310.9	498.2	- 341.5
50SF	175.1	-187.3	175.1	-208.1	314.6	-293.8	419.9	-293.8	461.5	-293.8	419.9	-315.8
100SF	167.7	-180.0	167.7	-195.9	228.9	-281.6	359.9	-281.6	388.0	-281.6	359.9	
200SF	161.6	-173.8	161.6	-182.4	222.8	-268.1	301.1	-268.1	381.9	-268.1	301.1	-276.7
500SF	153.0	-165.3	153.0	-165.3	214.2	-250.9	275.4	-250.9	275.4	- 250.9	275.4	-251.0

FOR WALLS: WIN IS WINDWARD FACE

FOR PARAPETS: WIN IS CASE A = p1+p2

LEE IS CASE B = p3+p4





1202 N STATE LINE AVE SUITE #102 TEXARKANA, AR 71854 501-627-2448

michaelhughas 72977 marrad son

etter Facility for: Christian Academy

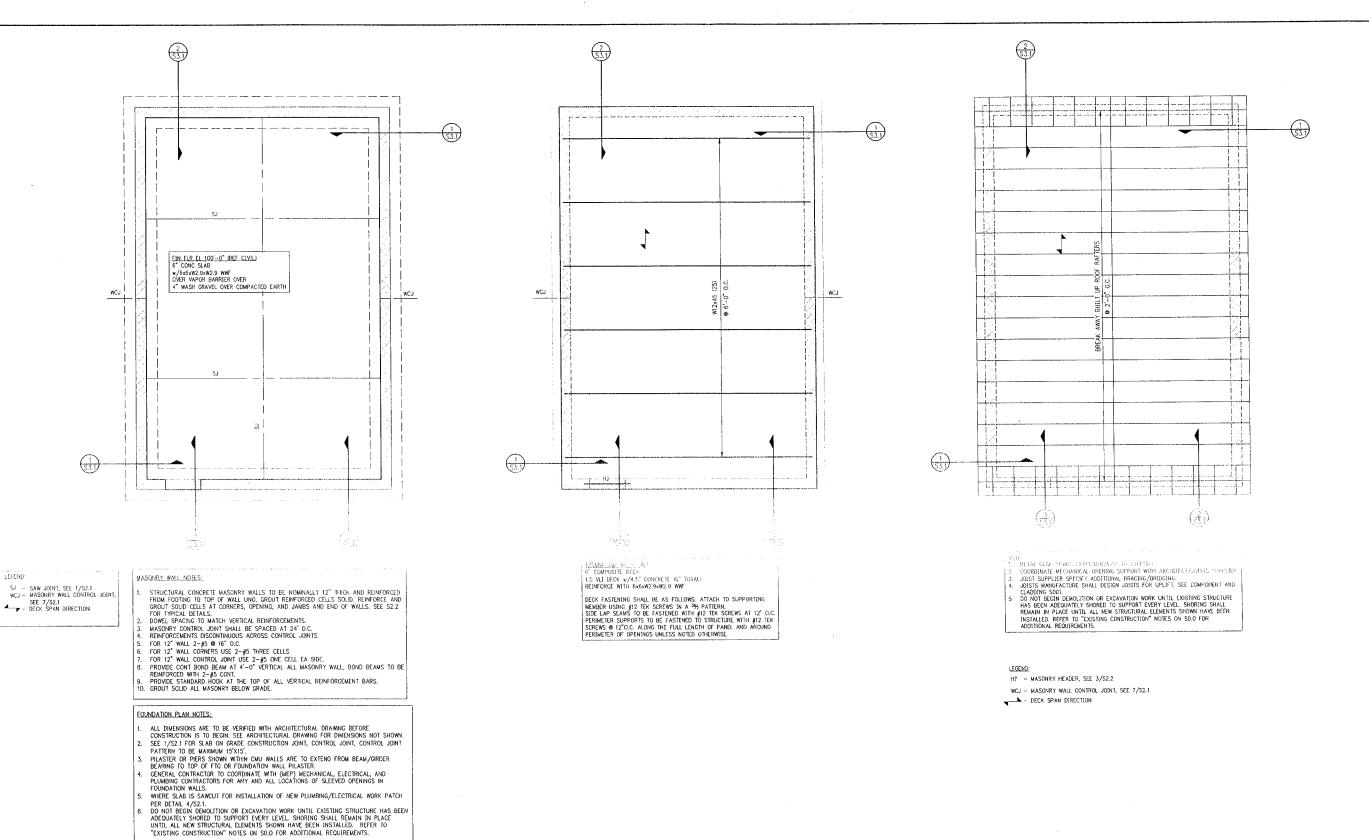
New Storm She **Arkansas** ( Bryant, Arkansa



Sheet Tide: General Notes

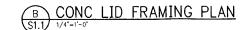
Continued

**S0.1** 



 $\underbrace{ \overbrace{\text{S1.1}}^{\text{A}} \underbrace{\text{FOUNDATION PLAN}}_{1/4^n = 1^l - 0^l} }$ 

LECEND







HUGHES ARCHITECTURAL DESIGNS

1202 N STATE LINE AVE SUITE #102 TEXARKANA, AR 71854 501-627-2448 michaelhughaa72a77@qmail.com

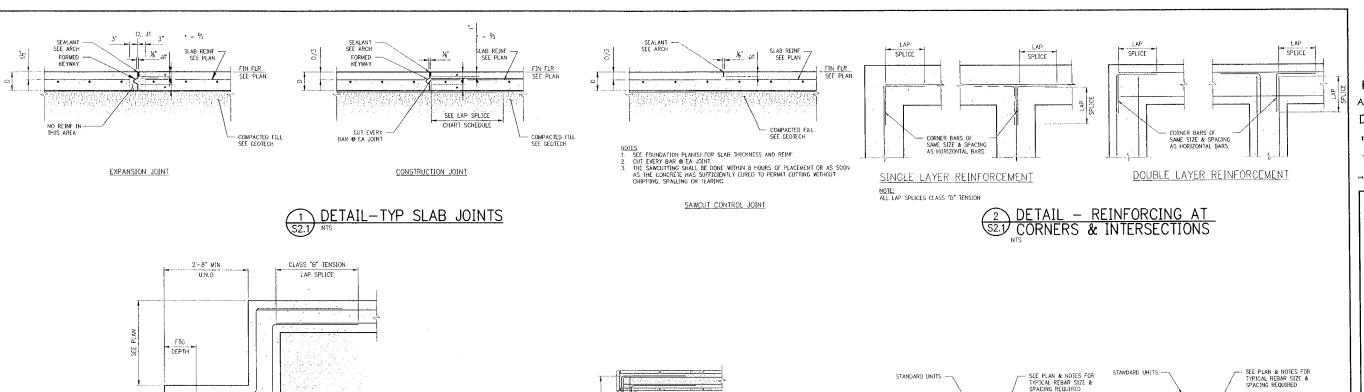
/ for: n Academy heiter Facility fo Christian New Storm Sheiter **Arkansas Ch** Bryant, Arkansas

ARKANŠAS REGISTĒRED PROFESSIONAL ENGINEER No.10449 DATE SIGNED: 12-04-2023 FOR 3rd PARTY REVIE NOT FOR CONSTRUCTI

Foundation &

Framing Plans

**S1.1** 





SIZE AND NUMBER AS FIG REINFORCEMENT

60 BAR DIA 24" MIN

CORNER WALLS

CORNER WALLS

STD HOOK AT END OF

END OF WALL

END OF WALL

60 BAR DIA

INTERSECTING WALLS

HORIZONTAL REINFORCEMENT

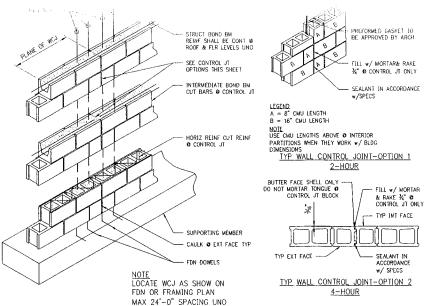
INTERSECTING WALLS

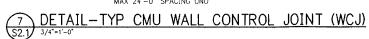
VERTICAL REINFORCEMENT

NOTES

1. REINFORCEMENT SHOWN IS IN ADDITION TO MINIMUM WALL REINFORCEMENT SHOWN IN FOUNDATION DETAILS.
2. REINFORCING TO BE CONTINUOUS FROM FOOTING TO TOP OF WALL. FILL CORES SOLID WITH GROUT AS NOTED IN THE SPECIFICATIONS OR GENERAL NOTES.

6 DETAIL-TYP CMU WALL INTERSECTIONS







REBAR "LOCK" POSITIONER TYP & ALL VERTICAL BARS & SPACED & 48" O.C. MAX VERTICALLY

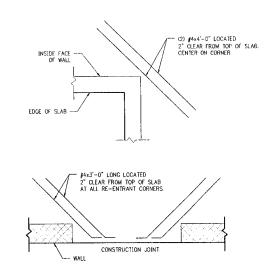
DOUBLE BAR POSITIONER

SEE PLAN & NOTES FOR TYPICAL REBAR SIZE & SPACING REQUIRED

STANDARD UNITS -

REBAR "LOCK" POSITIONER TYP & ALL VERTICAL BARS

SINGLE BAR POSITIONER



8 DETAIL-TYP RE-ENTRANT S2.1 CORNER REINF





SUITE #102 TEXARKANA, AR 71854 501-627-2448 chackughes 72577#4mail

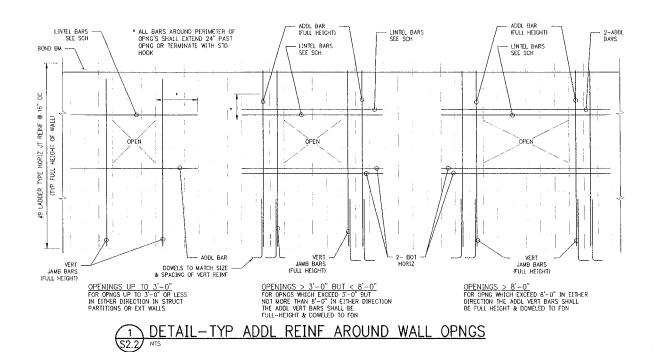
lew Storm Sheiter Facility for: **Arkansas িগণstian Academy** 3ryant, Arkansas

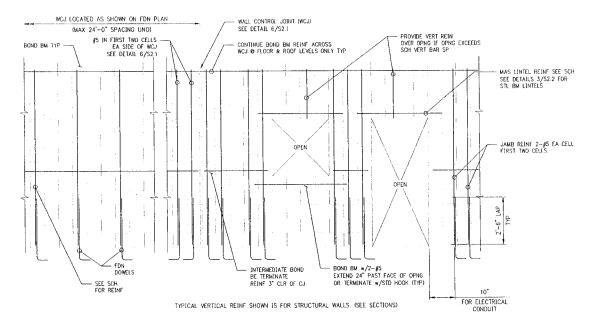
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Re	visions:	
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Sheet Title: Typical Details

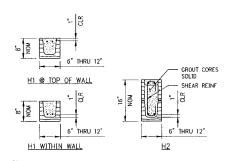
**S2.1** 





2 DETAIL-TYP BOND BM, CONTROL JT & WALL REINF

	H	EADER SCHEDULE		
MARK	WALL	REINFORCEMENT	SHEAR REINFORCEMENT	REMARKS
Hi	8"	2-#5 CONT	N/A	-
	12"	2-#5 CONT	-	-
H2	8"	2-#5 CONT T&B	-	-
	12"	2~#5 CONT T&B	-	-



NOTE

1. SEE STRUCT DWGS FOR GENERAL LOCATION OF HEADERS — SEE ARCH FOR SPECIFIC LOCATION & CLEAR SPAN.

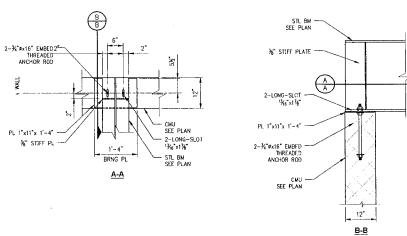
2. LINTELS SHALL SPAN CONT BTWN BRNGS EACH SIDE.

3. PROVIDE B'MINI BRNG FOR CLEAR SPAN 8'-0' OR LESS, 16'(MIN) BRNG FOR CLEAR SPAN GREATER THAN 8'-0'.

4. EXTEND BOT REINT TO END OF BRNG EACH SIDE — EXTEND TOP REINF WHERE POSSIBLE — BASIC DEVELOPMENT LENGTH — TERMINATE TOP REINF W/STD HOOK AT CONTROL JTS OR TREE EDGS.

5. PROVIDE SOLID GROUTED OF SOLID MAS JAMB UNDER LINTEL EA SIDE OF OPING FOR CLEAR SPAN GREATER THAN 6'-0'.





EXTERIOR CORRIDOR BEARING PLATE





1202 N STATE LINE AVE SUITE #102 TEXARKANA, AR 71854 501-827-2448

michaelhughes72577@amaii co

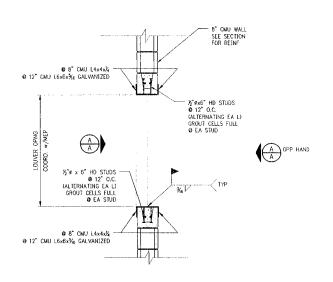
New Storm Shelter Facility for: **Arkansas Christian Academy**Bryant, Arkansas

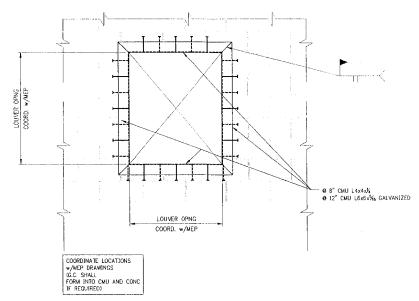


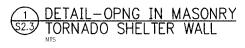
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Sheet Number

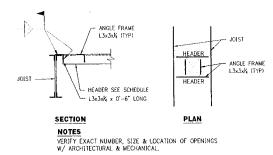
**S2.2** 







HEADER SCHEDULE				
JOIST SPACING	SIZE			
UP TO 4'-6"	L2½×2½×½			
4'-6" TO 6'-6"	L3½x3x½-LLV			
6'-7" TO 8'-0"	L4x3x5/16-LLV			



STEEL JOIST FRAMING

2 DETAIL-TYPICAL OPENING THRU ROOF DECK \$2.3) 3/4" = 1'-0"



1202 N STATE LINE AVE SUITE #102 TEXARKANA, AR 71854 501-627-2448

New Storm Shelter Facility for: **Arkansas Christian Academy**Bryant, Arkansas

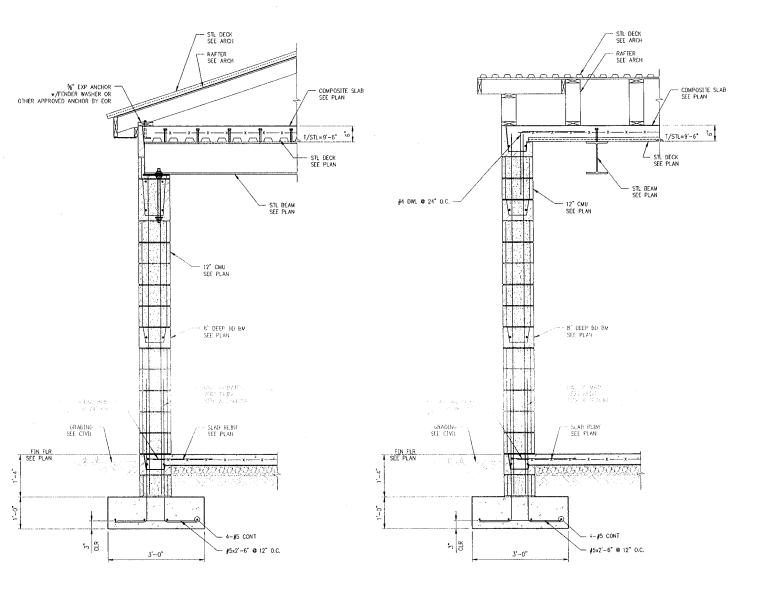


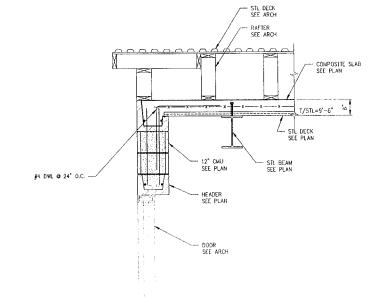
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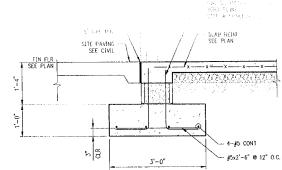
Typical Details



Sheet Number: **S2.3** 

















1202 N STATE LINE AVE SUITE #102 TEXARKANA, AR 71854 501-627-2448 michaelhughan 72 a 77 **cha**nna il co

New Storm Shelter Facility for:

Arkansas Christian Academy
Bryant, Arkansas





Framing Sections

Sheet Number: **S3.1**  PROJECT INFO: sharks

PROJECT MANAGER Mike V

RENDERING: channel letters

**AERO SIGNS** 

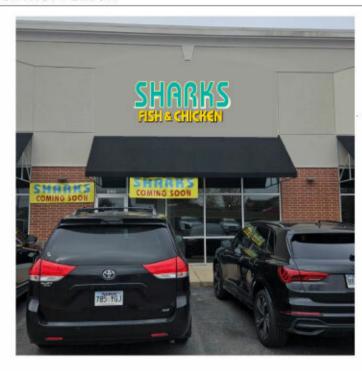
SITE ADDRESS 5309-5313 Highway 5 N bryant AR

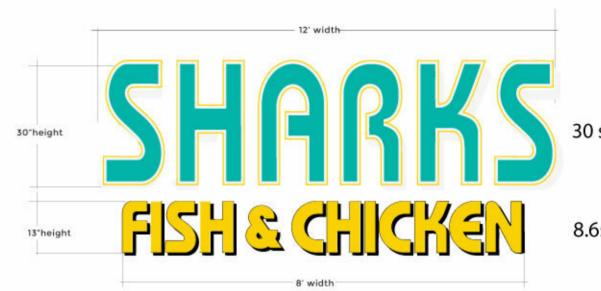
CONTACT PERSON

DESIGNER M, Vazquez

DATE: 12 / 14 / 2023

3308 pike ave N. Little Rock, AR 72118 501.246.4952





30 sq ft

8.6sq ft

### 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

