

Bryant Planning Commission Meeting

Boswell Municipal Complex - City Hall Court Room

210 SW 3rd Street

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

Date: May 12, 2025 - **Time:** 6:00 PM

Call to Order

Approval of Minutes

1. Planning Commission Meeting Minutes 4/14/2025

· 2025-04-14 Planning Commission Minutes.pdf

Announcements

DRC Report

2. Collective Church - Marketplace East Subdivision - Lot 4

Richardson Engineering - Requesting Recommendation for Site Plan Approval - Ward 2 - RECOMMENDED APPROVAL, Contingent upon remaining items being met

3. Central Arkansas Truck Outfitters - 25633 I-30 - Alternative Signage Plan

Ace Sign Company - Requesting Recommendation for Approval of Alternative Signage Plan - RECOMMENDED APPROVAL

4. State Farm - 515 N Reynolds Road - Non-standard Building

Richardson Engineering - Requesting Approval for Non-standard Building - RECOMMENDED APPROVAL

5. Fleming Electric - 320 McClanahan Dr - Site Addition

Charlie Best - Requesting Approval for a New Driveway Connection - Ward 3 - APPROVED

- 0954-PLN-01.pdf
- 0954-PLN-02.pdf

6. Serenity Vapes - 6221 Hwy 5 Ste 2 - Sign Permit

Neonics Sign - Requesting Sign Permit Approval - STAFF APPROVED

• 93580-SGNAPP-01.pdf

7. Sparklight - 3519 Market Place Ave - Sign Permit

Teamwork Inc - Requesting Sign Permit Approval - STAFF APPROVED

• 93652-SGNAPP-01.pdf

8. Coldwell Banker RPM Group - 2531 Market Place Ste 400 - Sign Permit

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

• 93694-SGNAPP-01.pdf

Old Business

New Business

9. Collective Church - Marketplace East Subdivision - Lot 4

Richardson Engineering - Requesting Site Plan Approval - Ward 2

- · 0949-PLN-04.pdf
- <u>0949-DRN-02.pdf</u>
- · 0949-SWP-01.pdf
- 0949-ELV-01.PNG
- 0949-ELV-02.PNG
- 0949-LTR-01.pdf

10. State Farm - 515 N Reynolds Road - Non-standard Building

Richardson Engineering - Requesting Approval for Non-standard Building

- 0956-WVR-01.pdf
- 0956-PLN-01.pdf

11. Central Arkansas Truck Outfitters - 25633 I-30 - Alternative Signage Plan

Ace Sign Company - Requesting Approval for Alternative Signage Plan

• 0955-PLN-01.pdf

Adjournments



Bryant Planning Commission Meeting Minutes

Monday, April 14, 2025 Boswell Municipal Complex – City Hall Courtroom 6:00 PM

Agenda

CALL TO ORDER

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

APPROVAL OF MINUTES

- 1. Planning Commission Meeting Minutes 3/10/2025
- 2. Special Planning Commission Meeting Minutes 3/24/2025

Motion to Approve both sets of Minutes made by Commissioner Edwards, Seconded by Commissioner Hooten. Voice Vote, 8 Yays, 0 Nays.

ANNOUNCEMENTS

Item #7 under New Business has been Removed from the Agenda due to items still needing completion.

Vice-Chairman Hooten read the DRC Report.

DRC REPORT

3. David's Burgers - 23140 I-30- Site Plan Additions

Ryan Rooney - Requesting Approval for New Site Plan Additions - APPROVED, Contingent upon life safety plan being approved by permitting.

4. Grant Plaza - 5401 Hwy 5, Ste 2-4- Site Addition

BJ Grant - Requesting Approval for Site Addition for Daycare Playground - APPROVED, Contingent upon showing 20ft access esmt from North to the manhole and exit gate on playground.

5. 5095 Hwy 5 - Site Plan Addition- New Driveway

Brian Dale - Requesting Site Plan Approval for New Driveway onto Sunset Meadows Dr - APPROVED, Contingent upon remaining comments being addressed including specifications on driveway.

6. Midland Estates Phase 1- Final Plat

Hope Consulting - Requesting Recommendation for Final Plat Approval - RECOMMENDED APPROVAL, Contingent upon addressing remaining comments, submitting updated plans, and on site items being finished by end of day Friday 4/11.

NEW BUSINESS

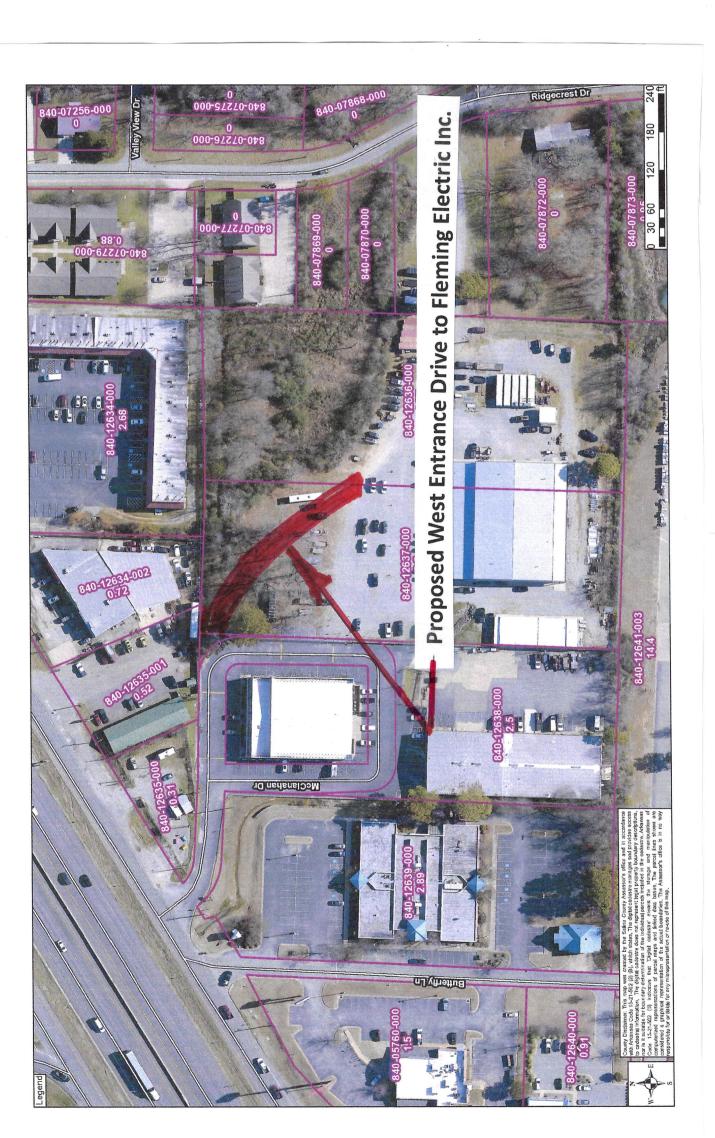
7. Midland Estates Phase 1- Final Plat - ITEM REMOVED FROM AGENDA

Hope Consulting Requesting Final Plat Approval

ADJOURNMENT

Motion to Adjourn made by Commissioner Edwards, Seconded by Vice-Chairman Hooten. Voice Vote, 8 Yays, 0 nays. Meeting was adjourned.

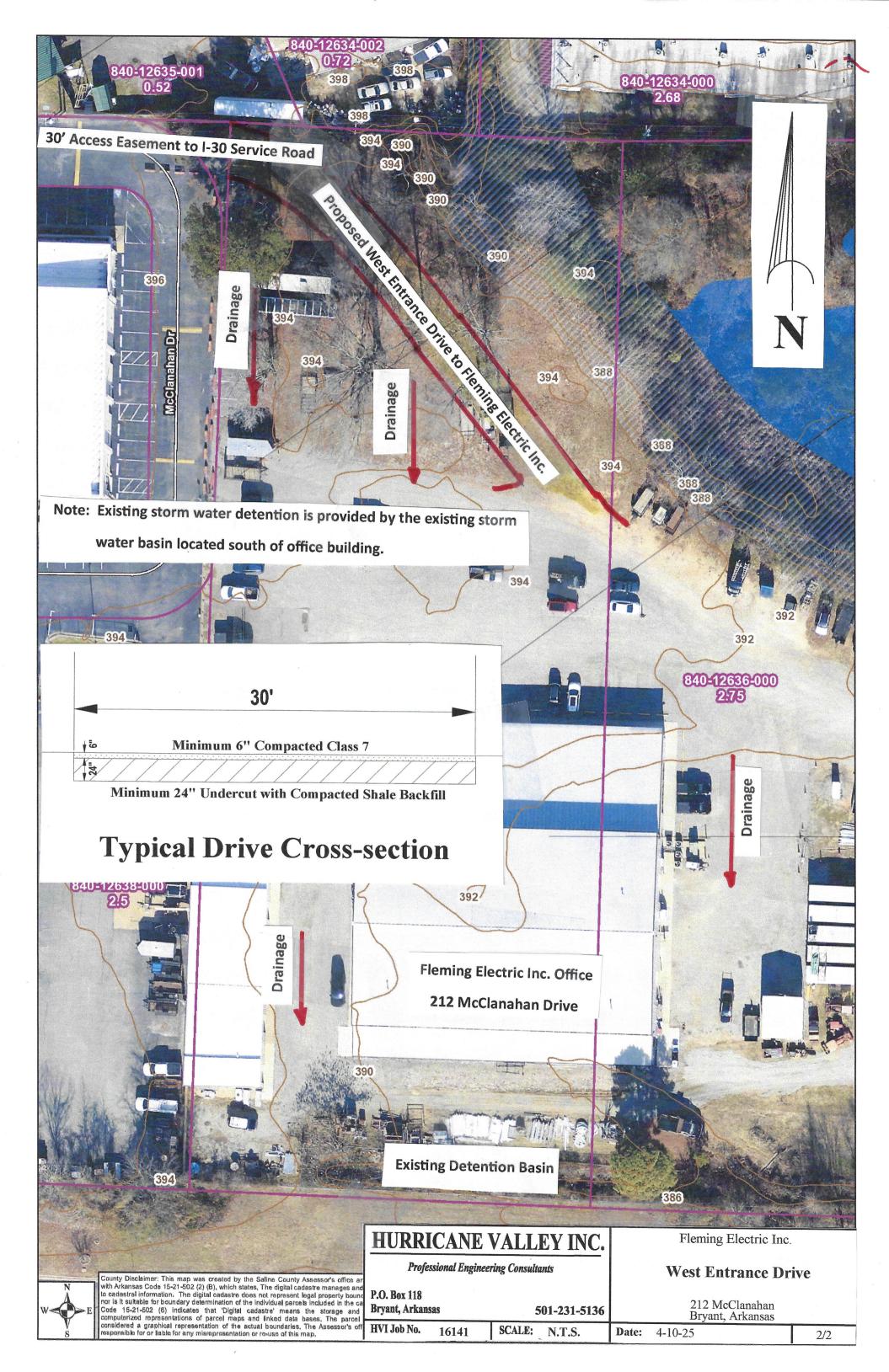
Chairman, Lance Penfield	Date	
Secretary, Colton Leonard	Date	
(Acting Secretary for This Meeting)		



Vicinity Map

HURRICANE	HURRICANE VALLEY INC.		Fleming Electric Inc.
Professional Engineering Consultants	ring Consultants		West Entrance Drive
P.O. Box 118 Bryant, Arkansas	501-231-5136		212 McClanahan Bryant, Arkansas
HVI Job No. 16141	SCALE: N.T.S.	Date:	Date: 4-10-25

1/2





City of Bryant, Arkansas

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

SIGN PERMIT APPLICATION

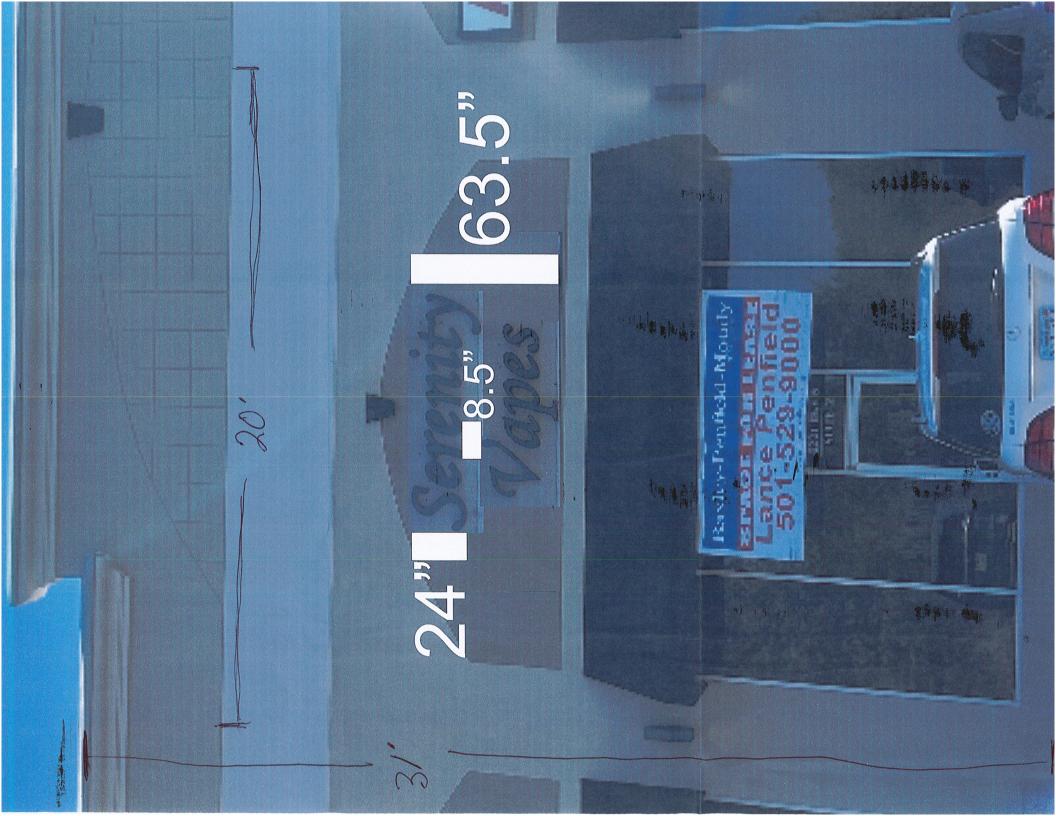
Applicants are advised to read the Sign Ordinance prior to completing and signing this form. The Sign Ordinance is available at www.cityofbryant.com under the Planning and Community Development tab.

Date: 3-16-25	Note: Electrical Permits may be Required, Please contact the Community Development Office for more information.
Sign Co. or Sign Owner	Property Owner
Name ULCONICS Sign. Address 2201 Guster Rol	Name Long Truong Address 7914 Worth Avenue Kast
City, State, Zip <i>1405/cy Ar 72065</i> Phone <i>501-425-9965</i>	City, State, Zip <i>1990000 Nr. 12019</i> Phone 501-860-8526
Email Address NEONICS Sign 2001 Con	Email Address longtoung 24 Quahoo, com
GENERAL INFORMATION	
Name of Business Serenty Vapos	10 COR
Address/Location of sign 622/ / Kury 5	Surte of Sryan 111)
Zoning Classification	

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

READ CAREFULLY BEFORE SIGNING

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

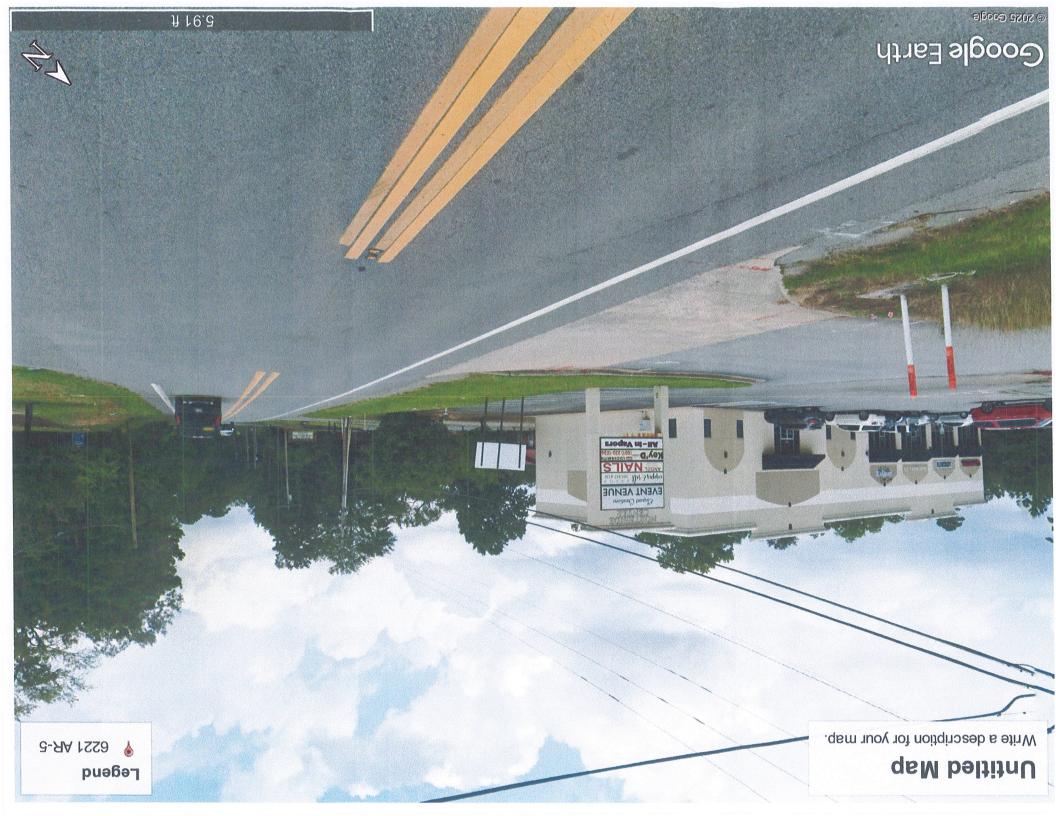


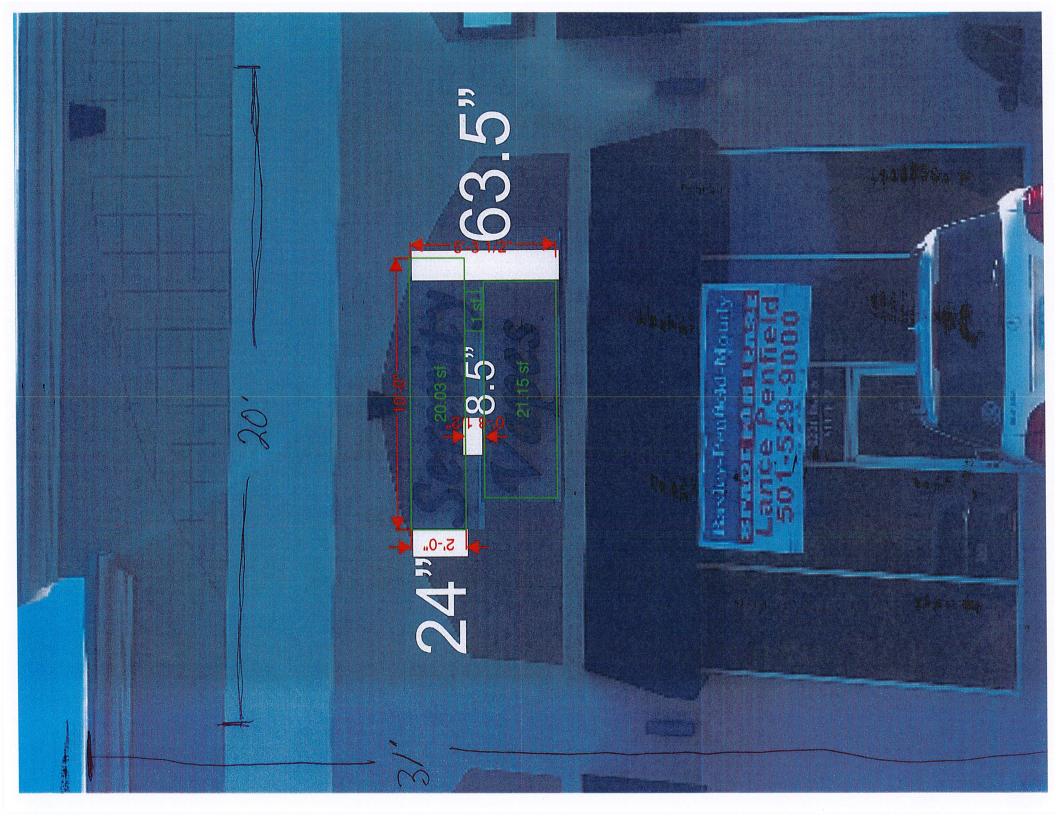
Certificate of Persons Conducting Business Under an Assumed Name

known to me (or satisfactorily executed the same in the capacity subscribed and sworn to before me this l (We) do hereby certify that I am (we are) or intend to operate a business under the following assumed as besignaged I And I (we) certify that the true and full name(s) of the person(s) with an interest in the conduction or transaction of , 2004, before me, the undersigned officer, personally appeared, This certificate being executed in compliance with the provisions of Act 11 of 1943 (A.C.A. 4-70-203 et. Seq.) therein stated and for purposes therein contained. Subscribed and sworn to before me this_ ACKNOWLEDGEMENT Mailing Address: Mailing Address: Date: Date: business under this name is (are) as follows: ALC A DO , 203M. day of County of Grant Business Address: Name of Business: State of Arkansas Signature _ Signature On this Name: Name: name:

COMM. #12722237 EXP. FEBRUARY 10, 2033 HEATHER CLARK NOTAR PUBLIC - STATE OF ARKANSAS GRANT COUNTY









SIGN PERMIT APPLICATION

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

Date: 4/9/2025	Required, Please contact the Community Development Office for more information.
Sign Co. or Sign Owner -Installer	Property Owner
Name_Teamwork, Inc	Name Bryant Realty Company LLC
Address 23 Norfolk Ave	Address 422 N Main St
City, State, Zip South Easton, MA 02375	City, State, Zip Benton, AR 72015
Phone 774-568-5438	Phone
Alternate Phone Adam- applicant 608-407-9084 adam@permit.com GENERAL INFORMATION	Alternate Phone
Name of Business Sparklight	
Address/Location of sign 3519 Market Place Av	ve space #600 Bryant, AR 72022
Zoning Classification C-2	

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

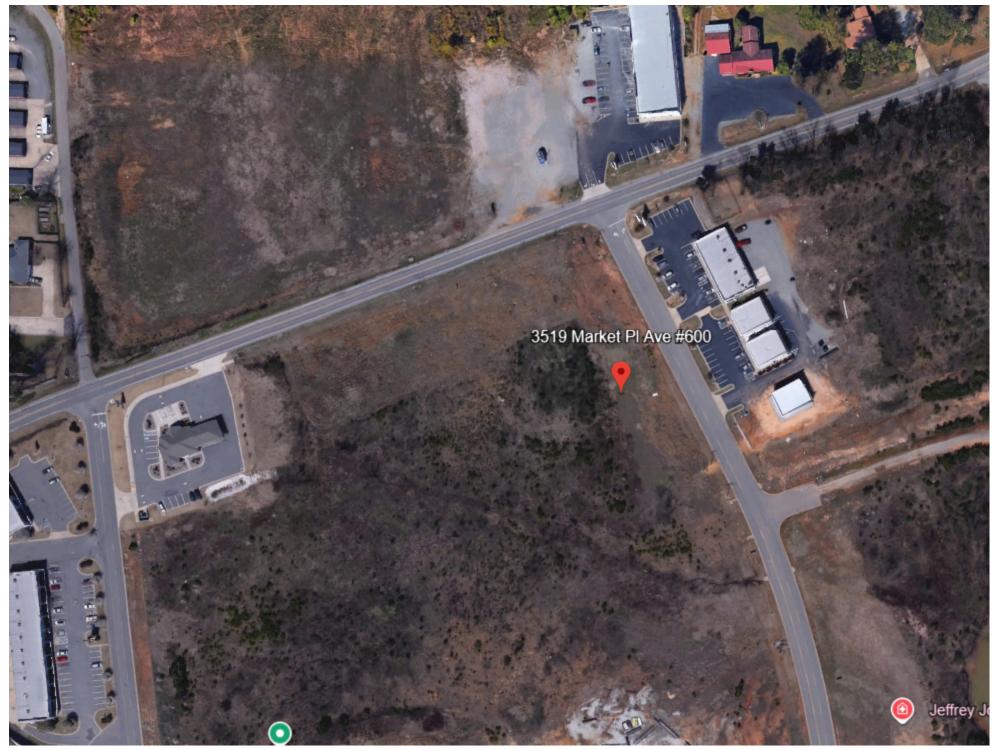
READ CAREFULLY BEFORE SIGNING

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

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

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

SIGN	Type (Façade, Pole, Monument, other)	Dimensions (Height, Length, Width)	Sqft (Measured in whole as rectangle)		t of Sign rom lot surface)	Column for Admin Certifying Approval
				Top of Sign	Bottom of Sign	
Α	Facade	37.3"x144"x4"	37.2	16'	12'7"	
В						
С						
E						
F						
G						



EXISTING



EXISTING



1 Color white Sparklight sign Sign size of 144" X 37.3" Backlight Pan Channel

PROPOSED





3519 Market Place Ave #600, Bryant, AR 72022

Mike Kahler 602-579-3454

MKahler@americanbus.com

Existing Window/Door Measurments





PRINT | PROMOTIONAL | FULFILLMENT

3519 Market Place Ave #600, Bryant, AR 72022

Mike Kahler 602-579-3454

MKahler@americanbus.com

ORDER NEEDS APPROVAL

Please reply with Approval or Changes. Order will not be Produced until Approval is received.

HR14



*Dash insert: 2447 Trans. White insert with vinyl to match PMS 7675C

*Sparklight insert: Perforated insert painted PMS Cool Gray 11C backed with 2447 Trans. White insert

RETURN DEPTH & MATERIAL: 4"d FabSTL/FaceLit

FACE FINISH: 5687 White SATIN Painted

RETURN FINISH: Same

BACKS: RECESS Removable Ptnd Stl Bk INSIDE CANS: Inside Cans NOT Painted

SPACERS: None

MOUNTING: RC2-Remov Can w/Studs

PATTERN: Yes

CUSTOM CUTOUT: Cutout Face Flat (No returns)

OUTLINE: Stnd 1/2"Outline

INSERT: See notes INSERT GLUED: Yes

Lead Wire Hole - Middle of Ltrs LED CABLE Leads - 120" long

COLOR: White LEDs

Exterior-WEEP Holes Required UL LISTED: Outside cans on TOP POWER SUPPLY: Standard Class 2

Sparklight-Face Lit

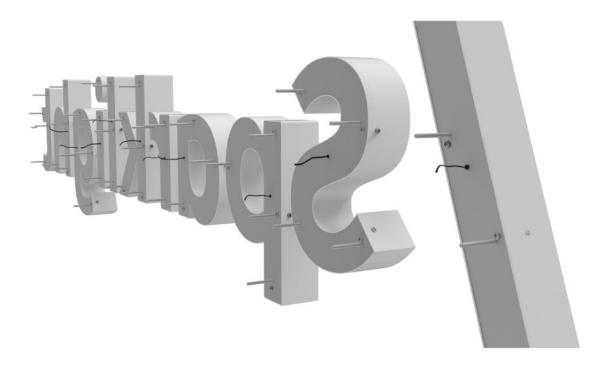
FRONT VIEW - lights on



Lights off



Backside view

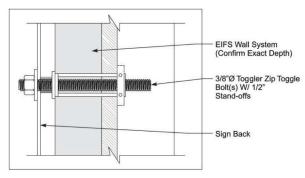


Lights On

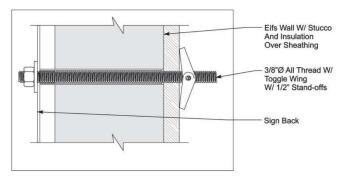


VERSION 2

8-14-2024



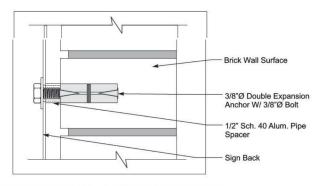
FASTENER DETAIL - STUDDED WALL SYSTEM
SCALE: NTS



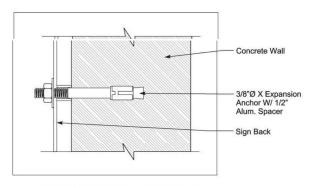
FASTENER DETAIL - STUDDED WALL SYSTEM
SCALE: NTS

INSTALLATION DIAGRAMS SHOWN ARE CHANNEL LETTER SPECIFIC ONLY

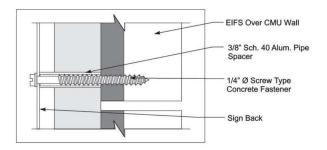
HARDWARE INSTALLATION TO FOLLOW MANUFACTURERS SPECIFIC GUIDELINES



FASTENER DETAIL - CONCRETE/BRICK/CMU SCALE: NTS

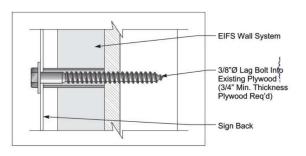


FASTENER DETAIL - CONCRETE
SCALE: NTS



FASTENER DETAIL - CONCRETE/BRICK/CMU

SCALE: NTS



FASTENER DETAIL - WOOD FASCIA/WOOD BLOCKING SCALE: NTS

Engineers Connection Note:

- All fasteners must be installed per/manufacturer's Tech Guide.
- Contact Murdoch Engineering for revision if field conditions vary.

Prepared For:

/Sparklight[®]

Sign Type:

Reverse Pan Channel

Sales Rep:

Mike Kahler American Solutions for Business

Note: This sign is intended to be installed in accordance with the requirements of Article 600 of the NFPA 2017 National Electrical Code and/or other applicable local codes. This includes proper grounding and bonding of



WIRING INSTRUCTIONS

Fabricated Metal - Lit with LEDs - 60 WATT

Warnings in English & French for Canada

F10-ULAB-A2 Rev. 11/21/22
S. Carnesi

Customer Installation/Tips/Troubleshooting Guide

Enclosed is your Fabricated lit letter/logo order.

Each individual letter/logo has been custom designed and manufactured to provide a consistent Lumen output.





Components Used

All letters/logos have been manufactured using only UL Listed and/or Recognized components. Gemini's UL EFILE #E319118 - UL & CSA approved.

LEDs (letters) to Power Supply Connections

It is recommended that all electrical connections be performed by a licensed electrical contractor. Each letter/logo is equipped with LEDs and a 2 or 3-conductor cable. If 3 conductor is supplied it is not necessary to connect the 3rd wire to the letter (white wire).

Maximum 5.0 amps, at 12VDC, to LEDs.

Standard wire connections from letter cable wires to power supply:

Power Supply (to LEDS)	<u>Letters</u>
------------------------	----------------

White (+) RED coated 18AWG wire (+) NOTE: this may be WHITE for 2-conductor supplied cable

Black (-) BLACK coated 18AWG wire (-)

WHITE Coated 18 AWG wire - Ground (not required)

When Class 2 wiring circuits pass through any wall, NEC code requires use of a conduit, or a UL Certified Class 2 cable.

When these circuits run through concealed spaces, such as a drop ceilings, many codes require use of Plenum rated cable.

Grounding of the letter on the Class 2 side is not necessary.

Power Supply (PS) to Power Source Connection

Power Supplies provided are Class 2, 12VDC output, wet location rated, max. 277VAC input.

Do NOT mount power supply directly into letters. Amperage ratings are listed on the power supply labels.

It is recommended that lead cables not exceed 10 feet long, for proper LED performance.

Each 60 watt power supply has 3 wires for input from power source.

Black is the LINE, White is NEUTRAL, and green is the GROUND.

Connect power supply to appropriate sized breaker or power cord, in accordance with National Electric Code (NEC),

Article 600, UL 48 and all local electric codes. All field wiring shall be 14 AWG stranded wire.

All orders will be supplied with a wiring diagram that details letter groupings to Power Supply channels.

Power Supply Wiring - Example

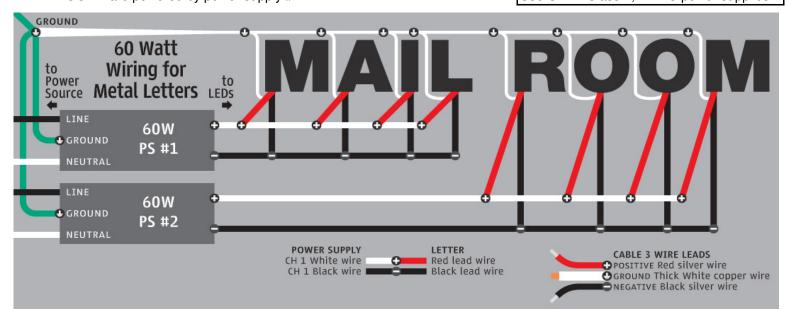
"MAIL" are powered by power supply #1.

"ROOM" are powered by power supply #2.

Caution: Plugging LEDs direct into

110VAC will destroy them.

Use ONLY Class 2,12VDC power supplies



Notes:

LED Modules

LED modules have been secured to letter backs with double faced tape. Every other module has been further secured with a plastic support blocks. Should you need to reposition any LED modules, break off the support block with pliers, reposition module and re-tape module. Then secure with silicone on sides and wires.

Grounding on the Class 2 side (Letter side) is not required

Backs

All LED lit components are supplied with required weep (drain) holes in the drops of each letter back, per UL requirements.

Weep holes are supplied to allow moisture or water to escape, as these units are not sealed.

Some install situations may require installers to further seal lit components, or field install additional weep holes - as needed. Letter Stand-Off

Halo lit letters are designed to stand-off the mounting surface by using study and spacers.

Adjusting the spacer length or stand-off from the wall will effect the halo lighting effect.

Typical stand-offs for optimal halo lighting is around 1-1/2" from the mounting surface.

Mounting Surface

When Halo (back) lighting, it is best to install on a non-glossy, lighter colored mounting surfaces.

Dark, Glossy backgrounds will absorb the LED light and will not produce a desirable halo effect.

LED Troubleshooting Guide

Blinking LEDs:

Blinking LEDs: Too many LEDs connected to a given power supply.

Reduce the number of letters or modules attached to your power supply.

LEDs in one or more letters will not light:

LEDs will not light: Too many LED modules are connected to a given power supply.

Reduce the number of letters or modules attached to your power supply.

Check letter connections. Make sure lead cables are properly wired to power supply line.

Make sure all wires are connected per wiring diagram.

Reduce length of lead cables to 10ft. Maximum lengths.

Check AC input connection and/or check circuit breaker.

One LED module is Dark (not lit):

You may have a bad module. Check lighting of letter with face covered to determine impact of one dark LED.

If the face is too dark or visible shadows exist, additional LEDs may have to be added to the letter.

I see light shadows:

Insure that all modules are secured to the Lexan backs.

If a module has come loose, press it back down and secure with additional DF tape and/or silicone.

Some LEDs appear dim:

Ensure that the overall length of the LED system does not exceed the maximum load.

Ensure that the length of supply wire is equal to or below the recommended remote distance.

Ensure that only 50 modules are connected to any one power supply channel.

Electrical Contractor Required



WARNINGS!

It is recommended that all electrical connections be performed by a licensed electrical contractor.

Always follow proper OSHA LOTO (Lockout/Tagout) and NEC practices and procedures.

RISK OF ELECTRIC SHOCK:

Turn power **OFF** before inspection, installation or removal.

- Properly ground any Power Supply enclosures.
- Shut off power at fuse box or circuit breaker before install.

Prepare Electrical Wiring (Electrical Requirements)

RISK OF FIRE:

- Use only UL approved supply wires.
- Field wiring must be min.14 AWG stranded wire.

Caution: Plugging LEDs direct

Use ONLY Class 2 Power Supplies

into 110V will destroy them.

- Follow all NEC and Local Electrical Codes.
- Use only UL approved wire for input connection. Minimum size 1.02mm

• The grounding and bonding of the LED Driver shall be done in accordance with NEC Article 600.

Always understand and follow all National Electric Codes (NEC) and local electrical codes.

Entrepreneur en électricité AVERTISSEMENTS obligatoires! Il est recommandé que toutes les connexions électriques doivent être faites

par un maître électricien.

Toujours suivre OSHA LOTO (verrouillage/étiquetage) et NEC pratiques et procédures appropriées.

RISQUE DE CHOC ÉLECTRIQUE : RISQUES D'INCENDIE :

Coupez l'alimentation avant l'inspection, l'installation ou la suppression.

- · Utilisez uniquement UL approuvé fils d'alimentation,
- Terre correctement tous les boîtiers alimentation minimum de 18 AWG.
- · Coupez l'alimentation de la boîte à fusible ou le disjoncteur avant d'installer.
- · Suivez toutes NEC et les codes électriques locaux.
- Utilisez uniquement UL fil pour l'entrée approuvé

Préparer le câblage électrique (Spécifications électriques) de connexion. Taille minimale 1,02 mm

· La mise à la terre et la liaison du conducteur de LED doivent être

effectués en conformité avec l'article NEC 600.

Toujours comprendre et suivre toutes les codes NEC (National Electric) et les codes électriques locaux.

Toutes les alimentations doivent être classé endroit humide, classe 2 avec UL lettres.



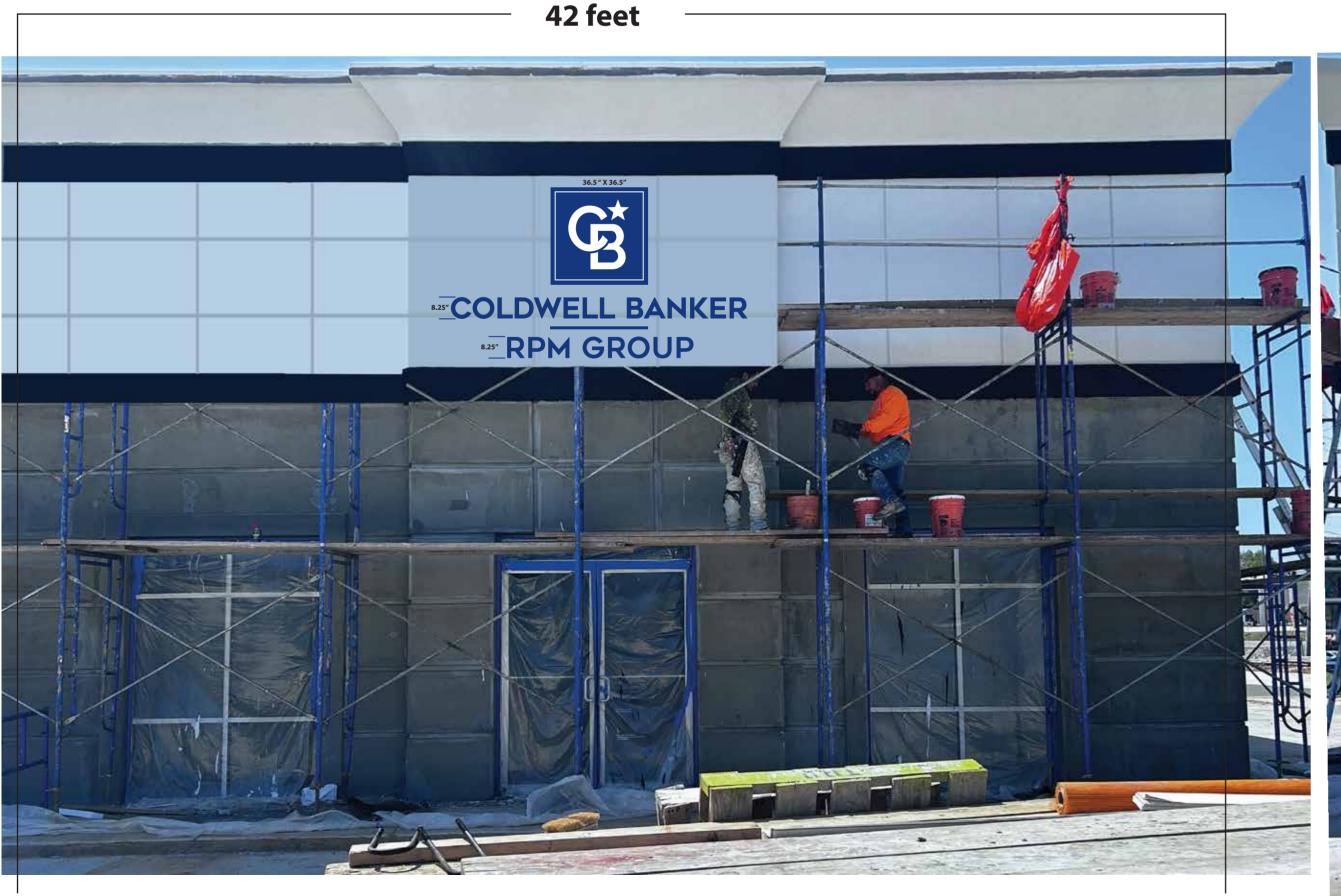
Reversed channel letter (white LED halo)

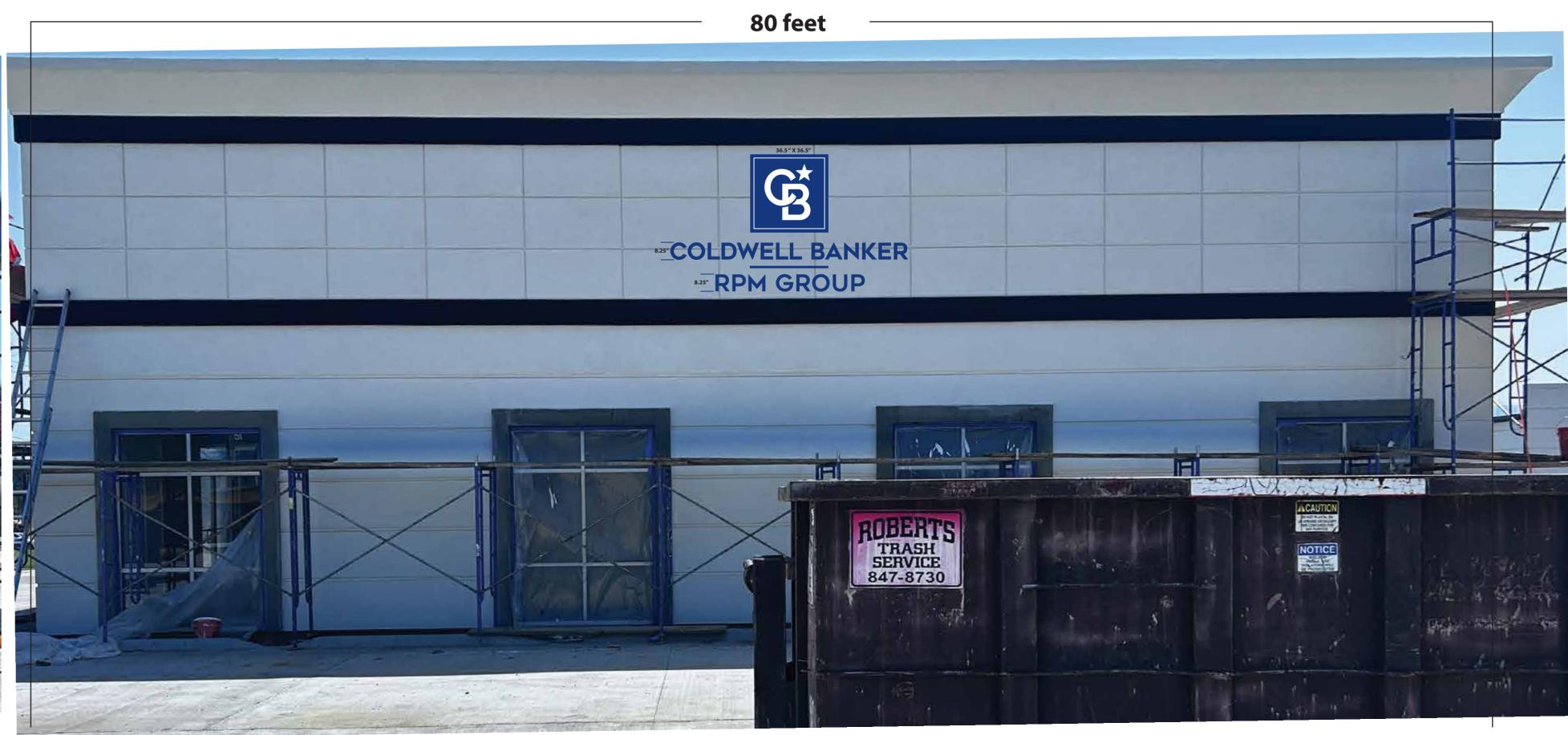
Coldwell Banker Blue CMYK: 100/85/5/22

RGB: 1/33/105

#012169 PMS 280 C







DETAILED PLANS: COLLECTIVE CHURCH

PROPOSED BUILDING & PARKING BRYANT, ARKANSAS

> LEGAL DESCRIPTION LOT 4, MARKETPLACE EAST SUBDIVISION TO THE CITY OF BRYANT, ARKANSAS

> > 4/3/2025 REV: 5/6/2025

PREPARED FOR:

COLLECTIVE CHURCH 3230 MARKET PLACE AVE, SUITE 2 BRYANT, AR 72022



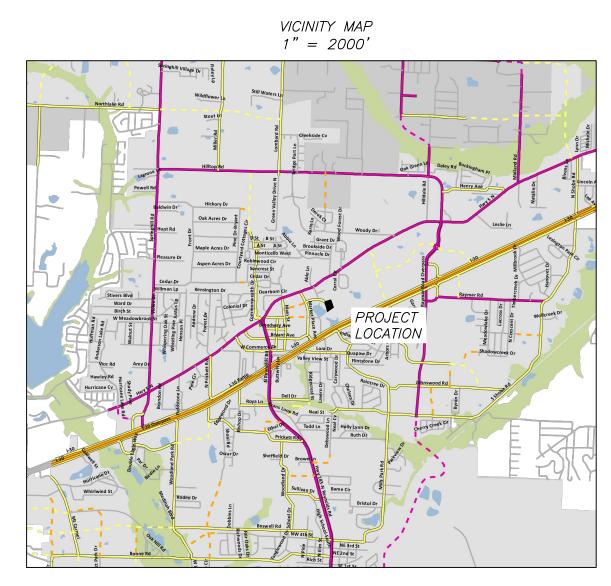
PRE-CONSTRUCTION COPY -

PLANS FOR BIDDING PURPOSES. QUANTITIES TO BE VERIFIED PRIOR TO CONSTRUCTION. CONTRACTOR TO VERIFY GRADES WITH ENGINEER PRIOR TO CONSTRUCTION.

INDEX OF SHEETS



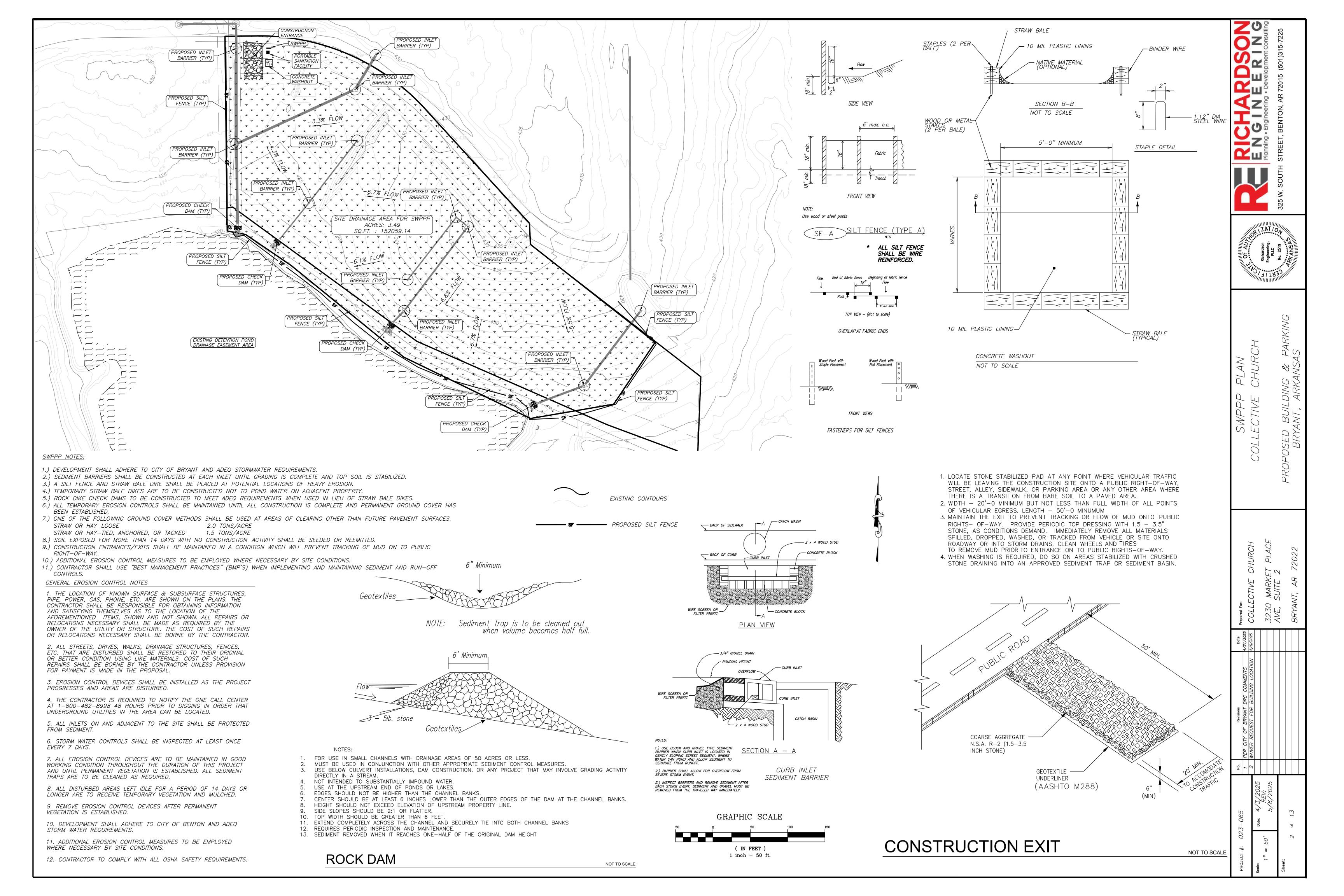
			COVER SHEET	1
			SWPPP	2
			DEMOLITION PLAN	3
		<u> </u>	SITE PLAN	4
1	Revisions PER CITY OF BRYANT DRC COMMENTS	Date 4/21/2025	SITE DIMENSION PLANS	5-6
2	WAIVER REQUEST FOR BUILDING LOCATION	5/6/2025	GRADING PLANS	7-8
			UTILITY PLAN	9
			DETAILS	10-12
			LANDSCAPE PLAN	13

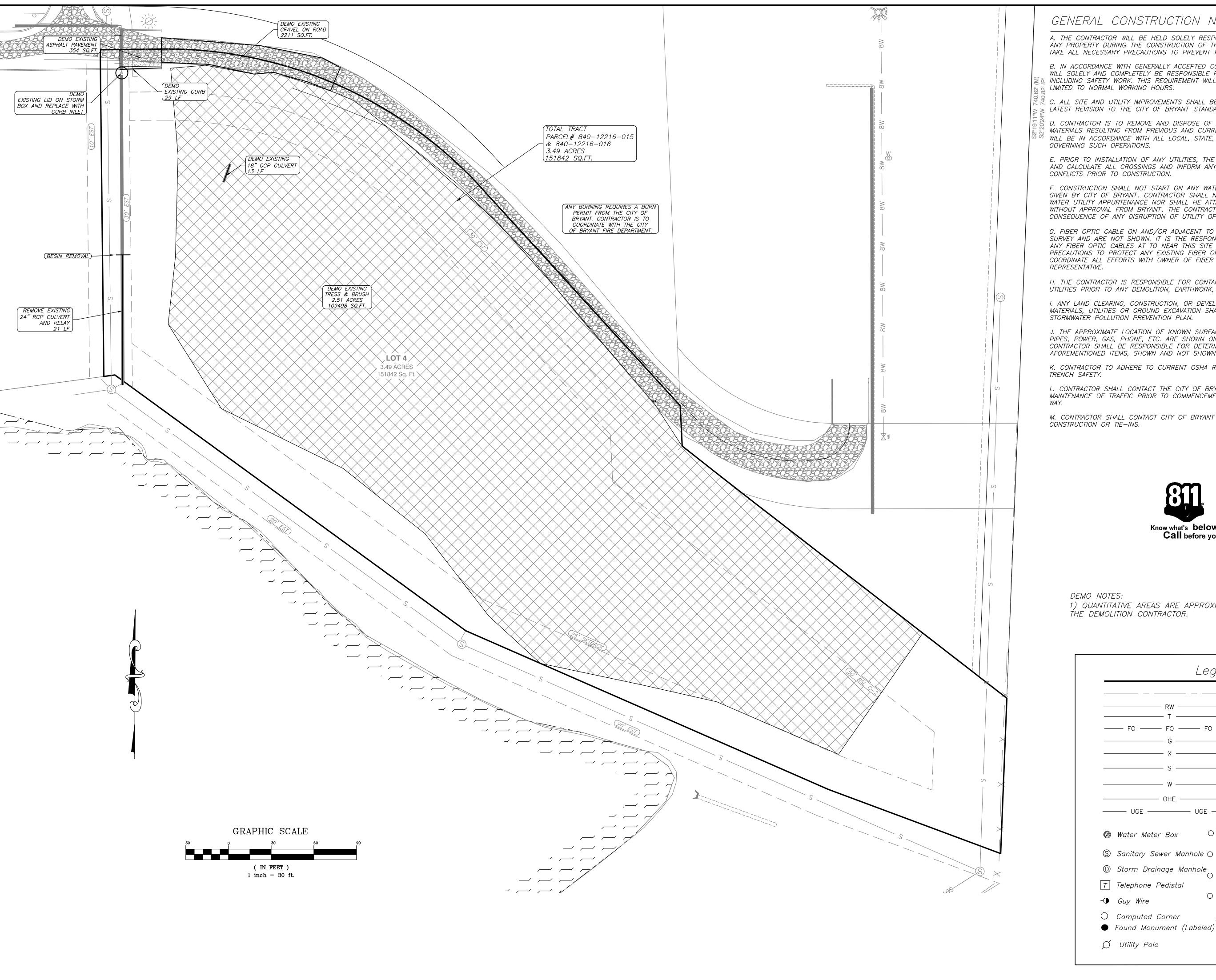


Prepared By:



325 W. SOUTH STREET, BENTON, AR 72015 (501)315-7225





GENERAL CONSTRUCTION NOTES

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

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

C. ALL SITE AND UTILITY IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST REVISION TO THE CITY OF BRYANT STANDARD SPECIFICATIONS.

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

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

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

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

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

I. ANY LAND CLEARING, CONSTRUCTION, OR DEVELOPMENT INVOLVING THE MOVEMENT OF MATERIALS, UTILITIES OR GROUND EXCAVATION SHALL BE IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN.

J. THE APPROXIMATE LOCATION OF KNOWN SURFACE AND SUBSURFACE STRUCTURES, PIPES, POWER, GAS, PHONE, ETC. ARE SHOWN ON THE DESIGN DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF THE AFOREMENTIONED ITEMS, SHOWN AND NOT SHOWN.

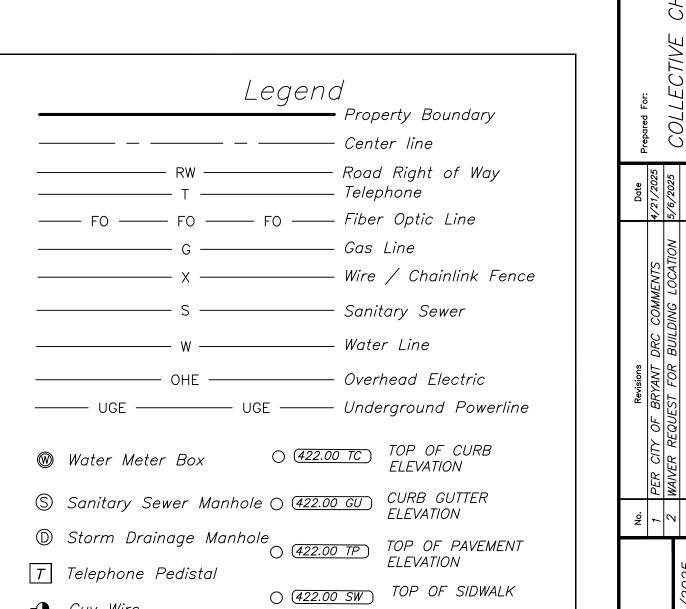
K. CONTRACTOR TO ADHERE TO CURRENT OSHA REGULATIONS, INCLUDING EXCAVATION &

L. CONTRACTOR SHALL CONTACT THE CITY OF BRYANT STREET DEPARTMENT IN REGARD TO MAINTENANCE OF TRAFFIC PRIOR TO COMMENCEMENT OF WORK WITHIN STREET RIGHT OF

M. CONTRACTOR SHALL CONTACT CITY OF BRYANT PRIOR TO COMMENCEMENT OF UTILITY



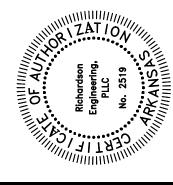
1) QUANTITATIVE AREAS ARE APPROXIMATE, TO BE VERIFIED BY THE DEMOLITION CONTRACTOR.

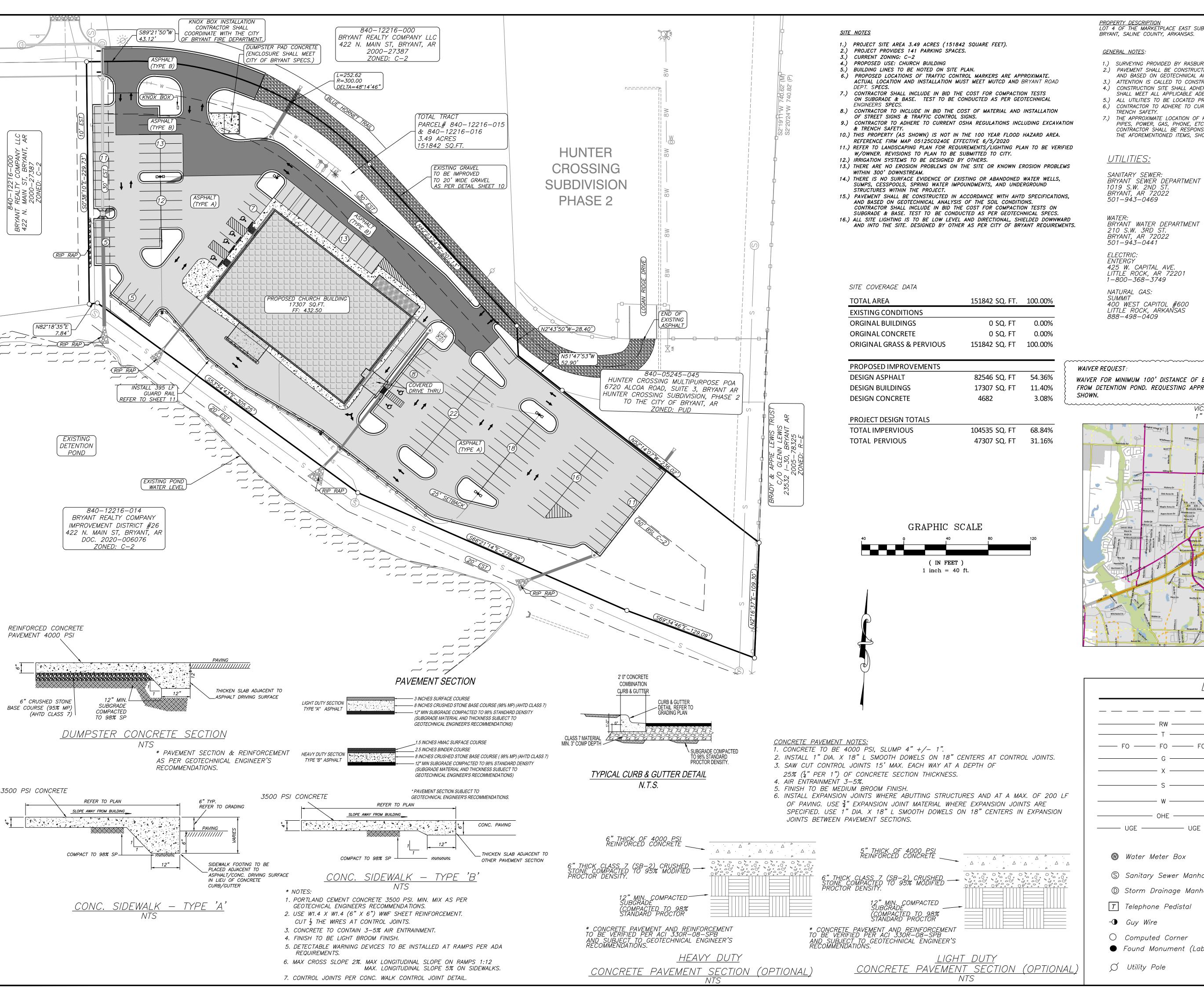


PROPOSED CONTOUR

EXISTING CONTOUR

ZATION





PROPERTY DESCRIPTION

LOT 4 OF THE MARKETPLACE EAST SUBDIVISION, PHASE 2 TO THE CITY OF

1.) SURVEYING PROVIDED BY RASBURRY SURVEYING LLC. 2.) PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THIS PLAN

AND BASED ON GEOTECHNICAL ANALYSIS OF THE SOIL CONDITIONS. 3.) ATTENTION IS CALLED TO CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.

4.) CONSTRUCTION SITE SHALL ADHERE TO BRYANT STORMWATER REQUIREMENTS. AND SHALL MEET ALL APPLICABLE ADEQ STANDARDS FOR EROSION CONTROL MEASURES.

5.) ALL UTILITIES TO BE LOCATED PRIOR TO CONSTRUCTION (ONE CALL, CITY, ETC.) 6.) CONTRACTOR TO ADHERE TO CURRENT OSHA REGULATIONS INCLUDING EXCAVATION &

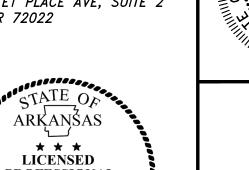
7.) THE APPROXIMATE LOCATION OF KNOWN SURFACE AND SUBSURFACE STRUCTURES, PIPES, POWER, GAS, PHONE, ETC. ARE SHOWN ON THE DESIGN DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF THE AFOREMENTIONED ITEMS, SHOWN AND NOT SHOWN.

> **ENGINEER** RICHARDSON ENGINEERING. PLLC ADDRESS: 325 W.SOUTH ST. BENTON, AR. 72015 PHONE NO. (501) 315-7225 PROJECT REPRESENTATIVE: TRISTIN PHILLIPS, P.E.

RASBURRY SURVEYING LLC 308 W. SOUTH STREET BENTON, AR 72015

(501)860-6893 **DEVELOPERS**

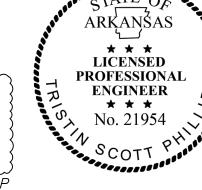
COLLECTIVE CHURCH 3230 MARKET PLACE AVE, SUITE 2 BRYANT, AR 72022

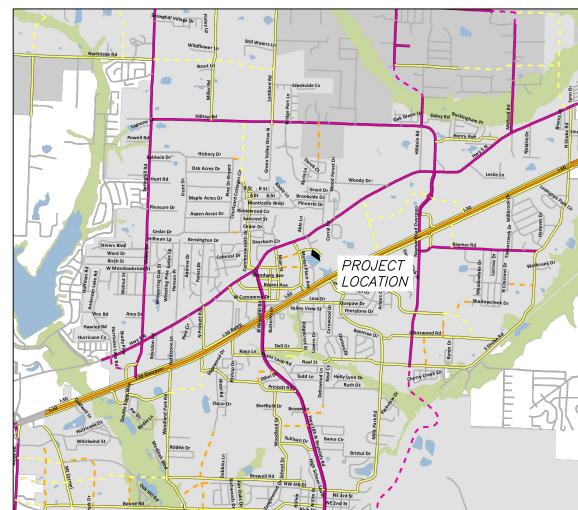


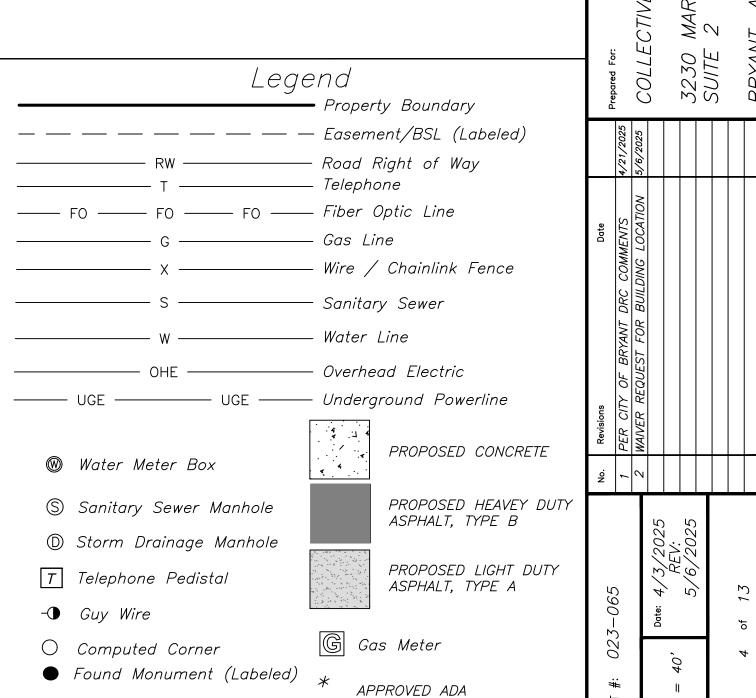
ZATIO

WAIVER FOR MINIMUM 100' DISTANCE OF BUILDING FROM DETENTION POND. REQUESTING APPROVAL AS

VICINITY MAP 1" = 2000'

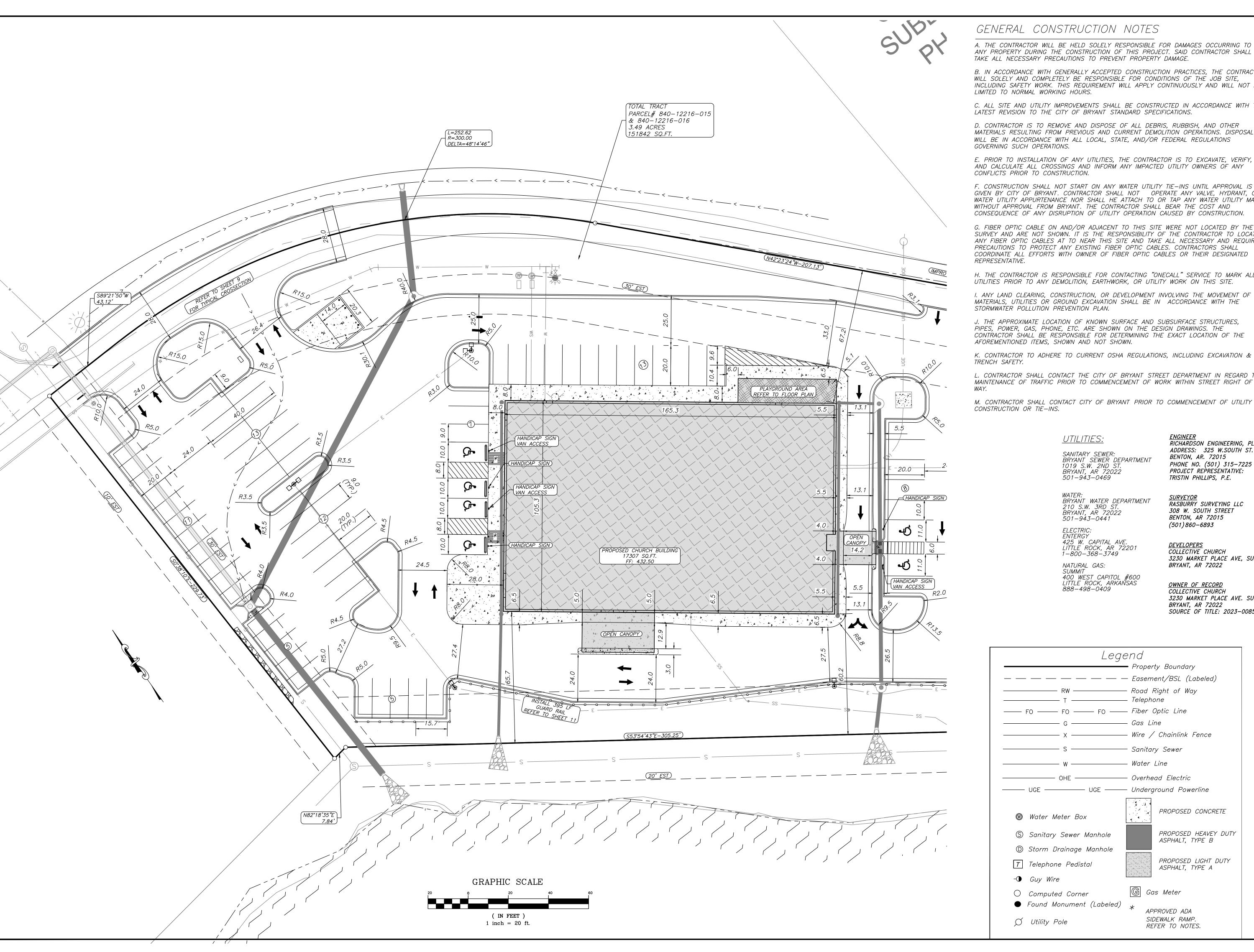






SIDEWALK RAMP.

REFER TO NOTES.



A. THE CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR DAMAGES OCCURRING TO ANY PROPERTY DURING THE CONSTRUCTION OF THIS PROJECT. SAID CONTRACTOR SHALL

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

C. ALL SITE AND UTILITY IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE

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

E. PRIOR TO INSTALLATION OF ANY UTILITIES, THE CONTRACTOR IS TO EXCAVATE, VERIFY, AND CALCULATE ALL CROSSINGS AND INFORM ANY IMPACTED UTILITY OWNERS OF ANY

F. CONSTRUCTION SHALL NOT START ON ANY WATER UTILITY TIE-INS UNTIL APPROVAL IS GIVEN BY CITY OF BRYANT. CONTRACTOR SHALL NOT OPERATE ANY VALVE, HYDRANT, OR WATER UTILITY APPURTENANCE NOR SHALL HE ATTACH TO OR TAP ANY WATER UTILITY MAIN WITHOUT APPROVAL FROM BRYANT. THE CONTRACTOR SHALL BEAR THE COST AND

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

H. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING "ONECALL" SERVICE TO MARK ALL

I. ANY LAND CLEARING, CONSTRUCTION, OR DEVELOPMENT INVOLVING THE MOVEMENT OF MATERIALS, UTILITIES OR GROUND EXCAVATION SHALL BE IN ACCORDANCE WITH THE

PIPES, POWER, GAS, PHONE, ETC. ARE SHOWN ON THE DESIGN DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF THE

L. CONTRACTOR SHALL CONTACT THE CITY OF BRYANT STREET DEPARTMENT IN REGARD TO MAINTENANCE OF TRAFFIC PRIOR TO COMMENCEMENT OF WORK WITHIN STREET RIGHT OF

M. CONTRACTOR SHALL CONTACT CITY OF BRYANT PRIOR TO COMMENCEMENT OF UTILITY

RICHARDSON ENGINEERING, PLLC ADDRESS: 325 W.SOUTH ST. BENTON, AR. 72015 PHONE NO. (501) 315-7225 PROJECT REPRESENTATIVE: TRISTIN PHILLIPS, P.E.

Sonsulting Consulting

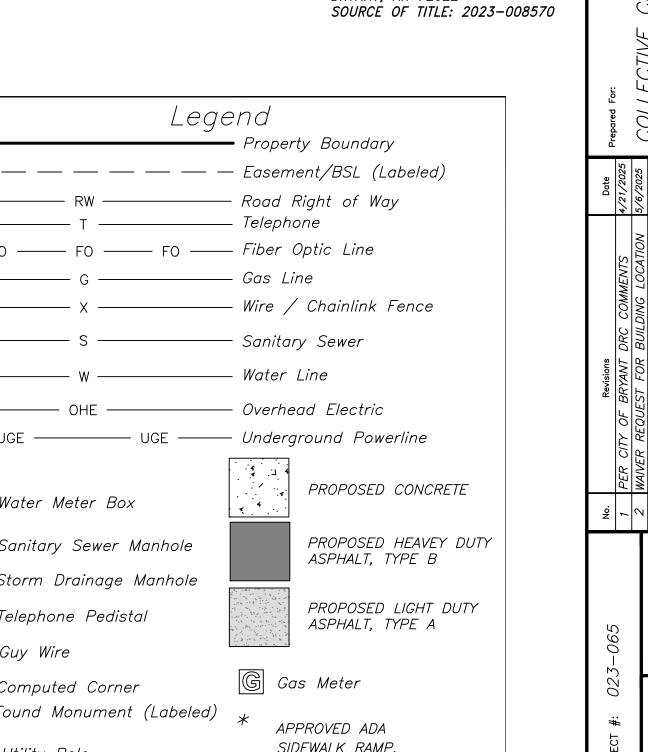
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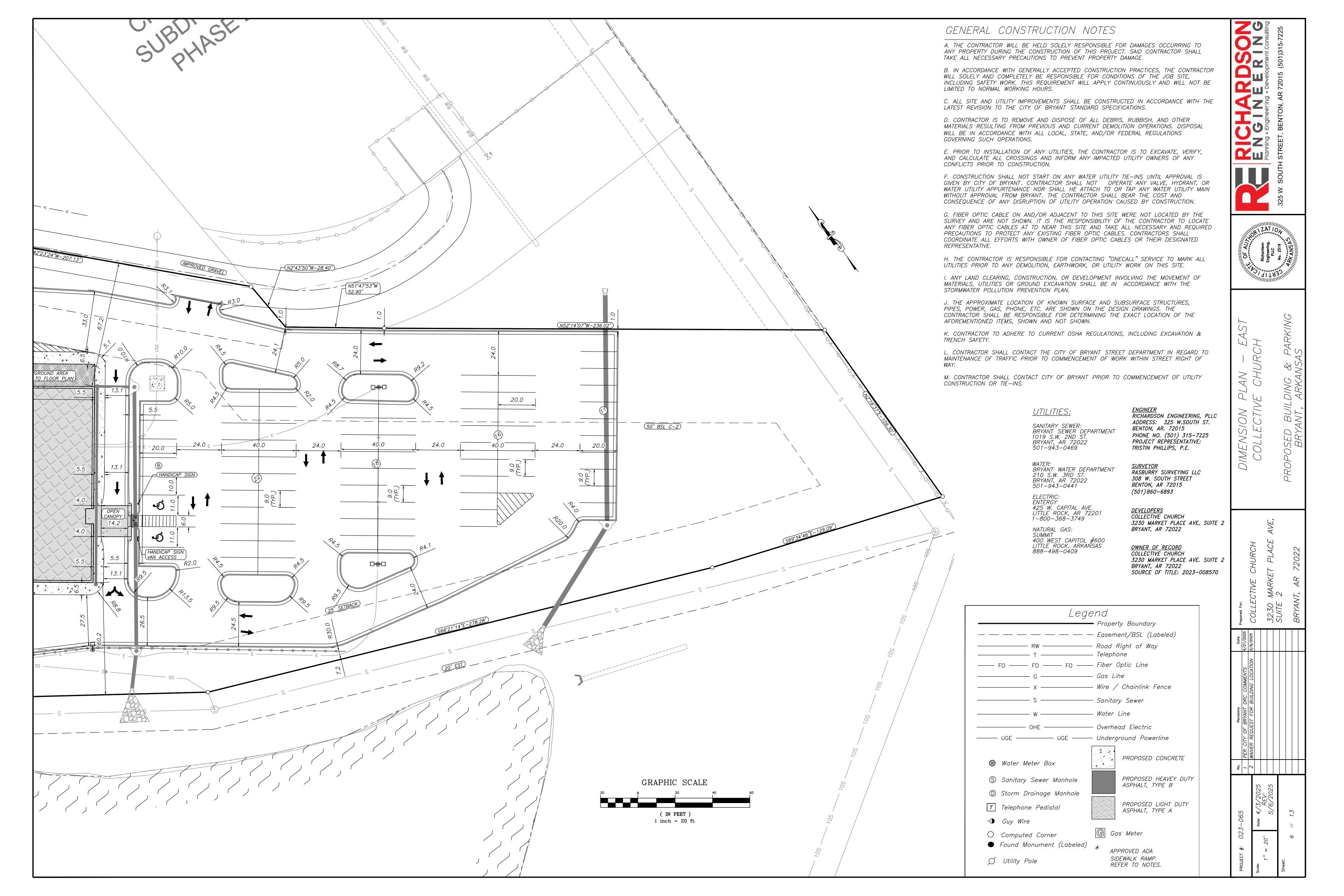
ZATION

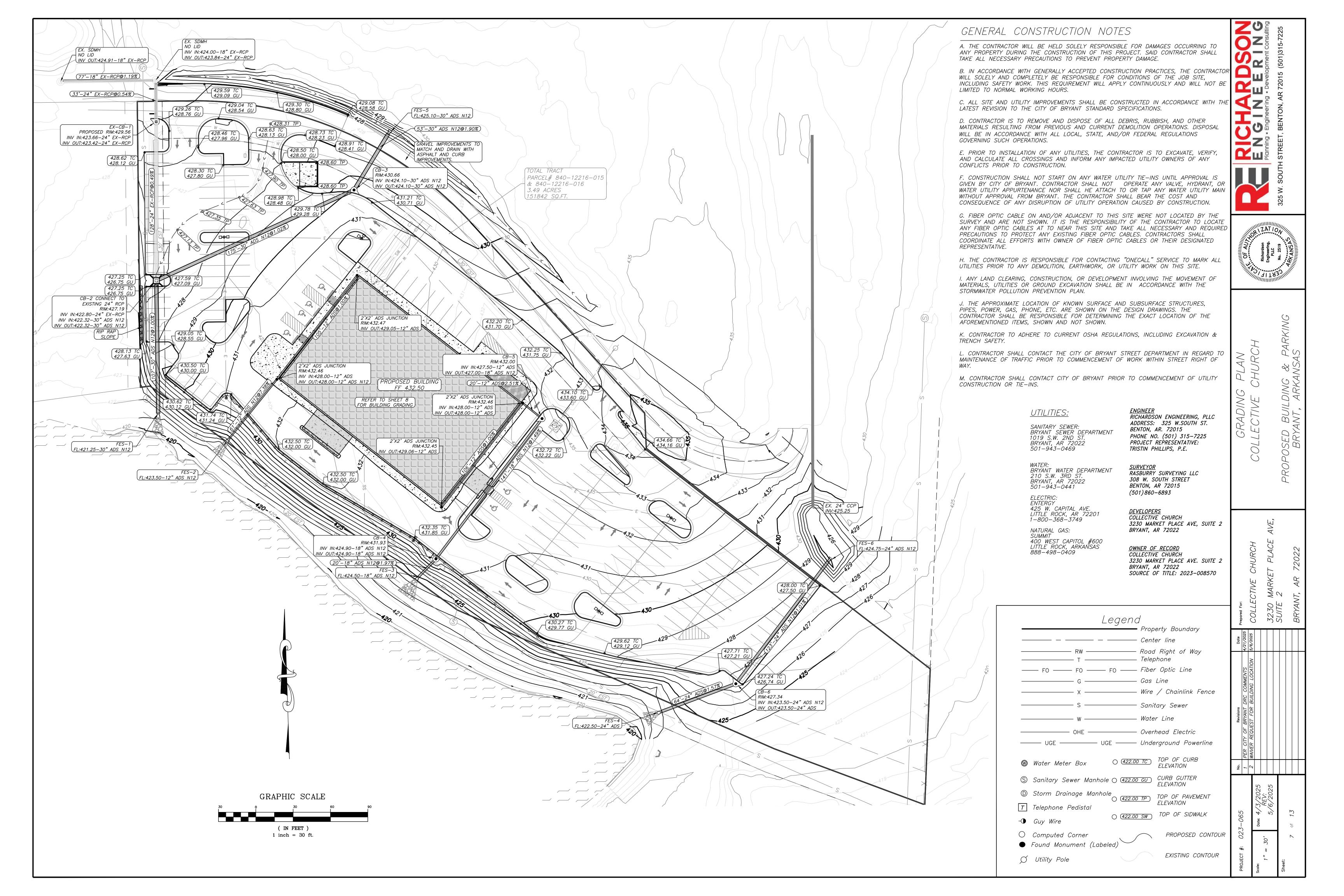
<u>SURVEYOR</u> RASBURRY SURVEYING LLC 308 W. SOUTH STREET BENTON, AR 72015 (501)860-6893

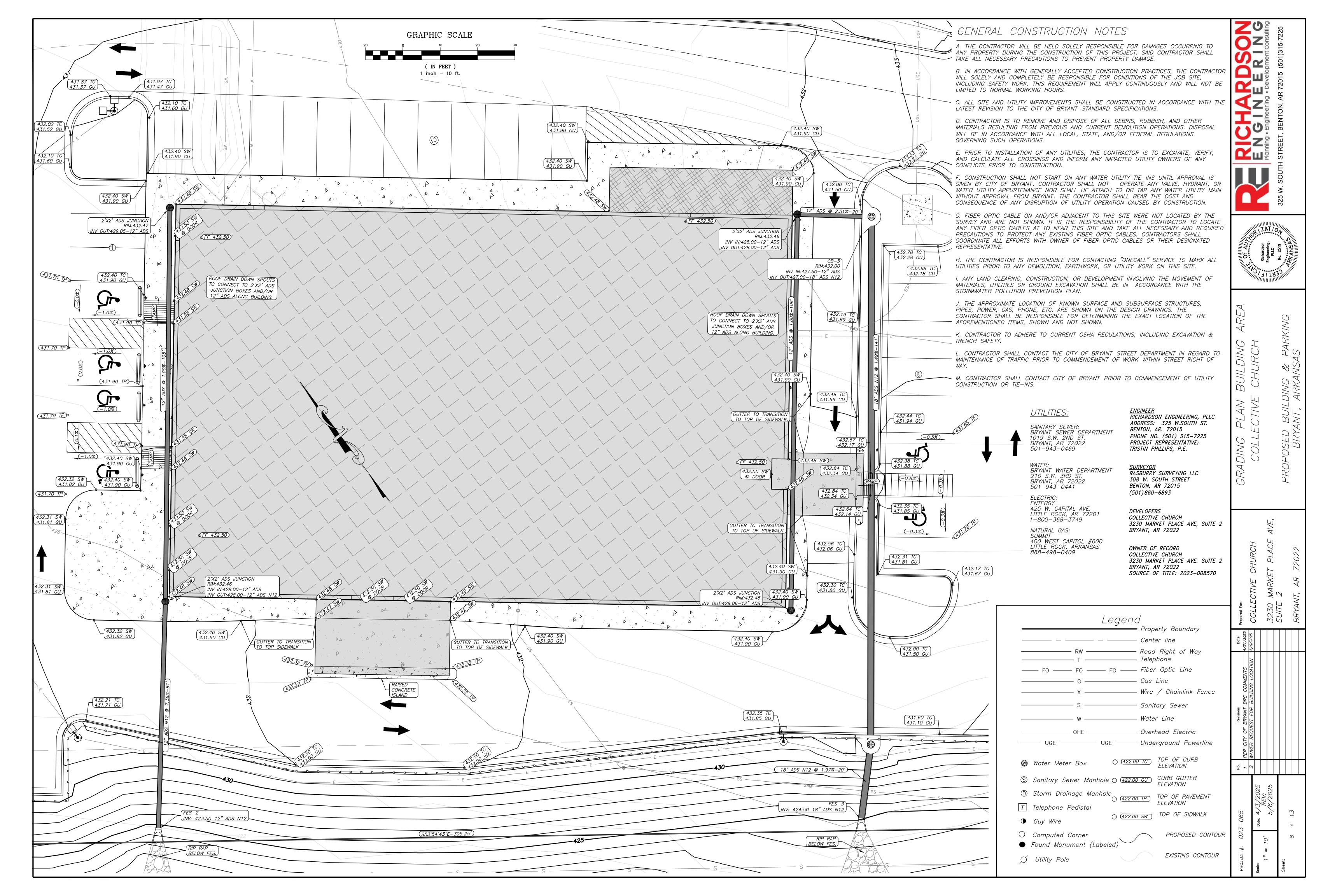
<u>DEVELOPERS</u> COLLECTIVE CHURCH 3230 MARKET PLACE AVE, SUITE 2 BRYANT, AR 72022

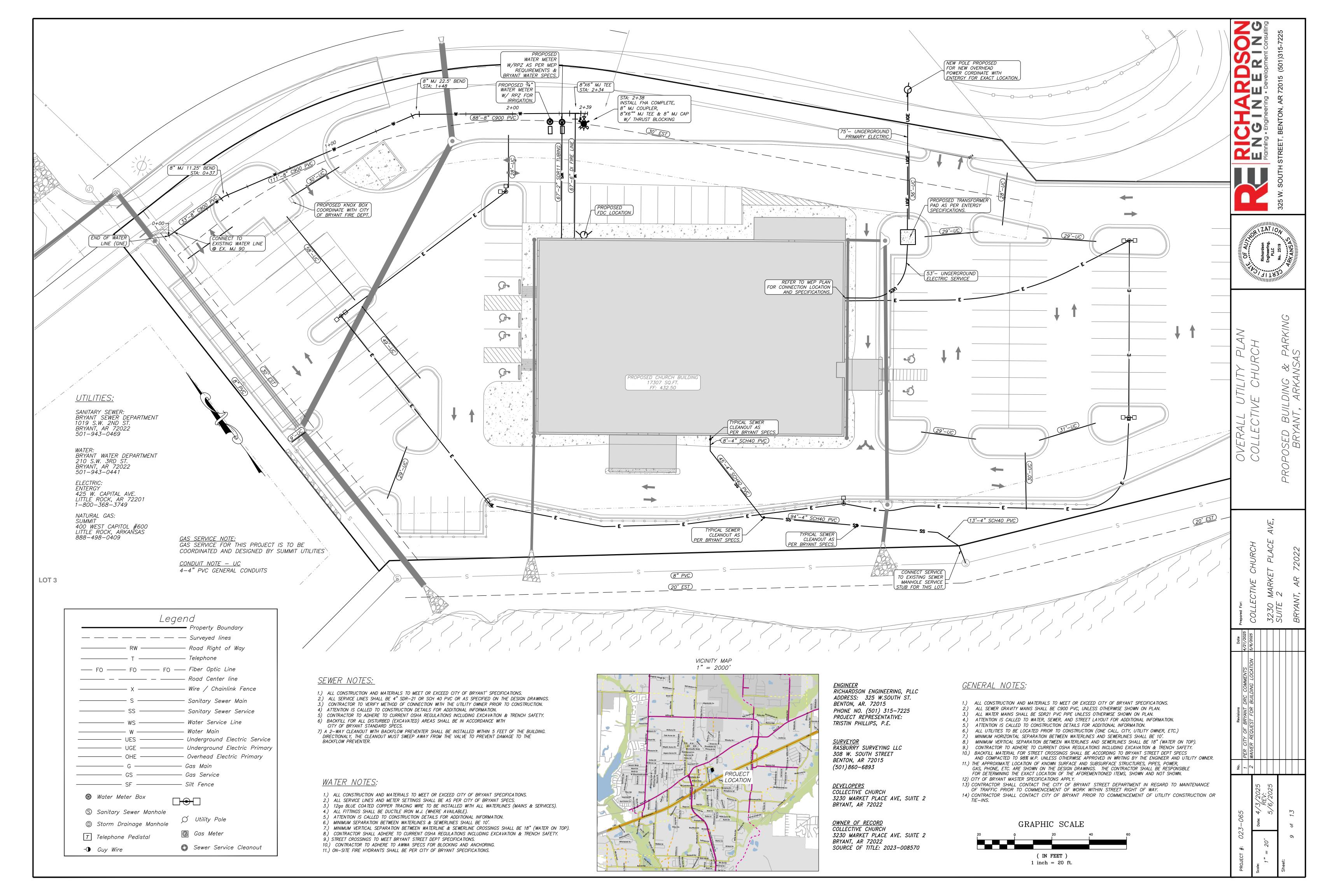
<u>OWNER OF RECORD</u> COLLECTIVE CHURCH 3230 MARKET PLACE AVE. SUITE 2 BRYANT, AR 72022

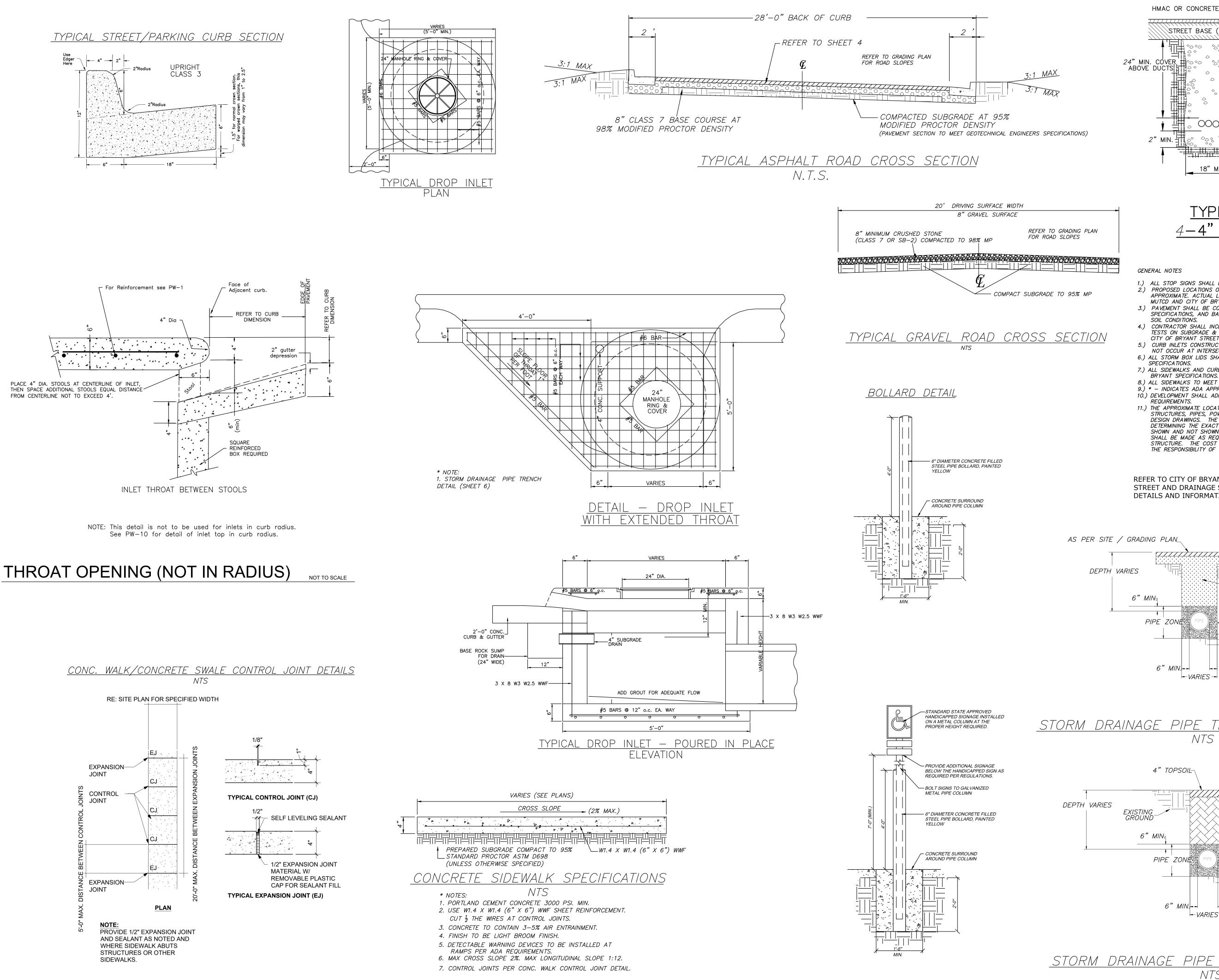


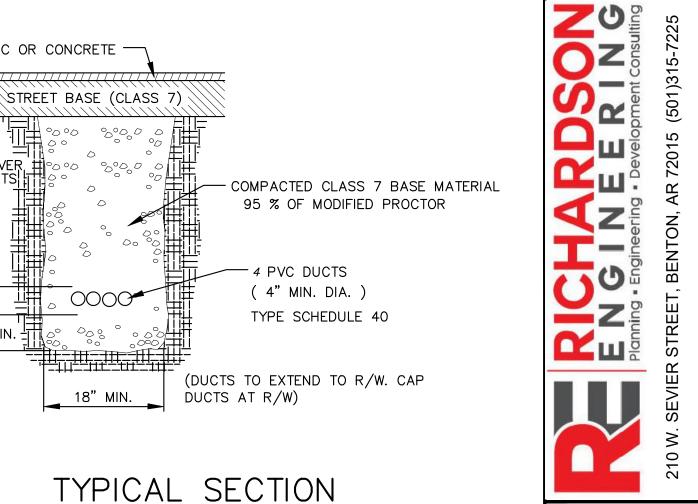










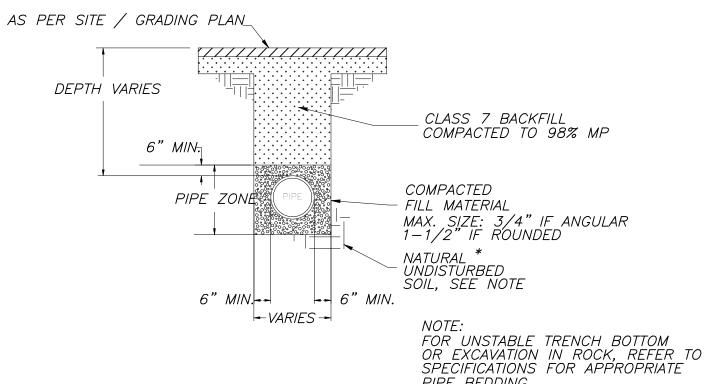


TYPICAL SECTION 4-4" UTILITY DUCTS

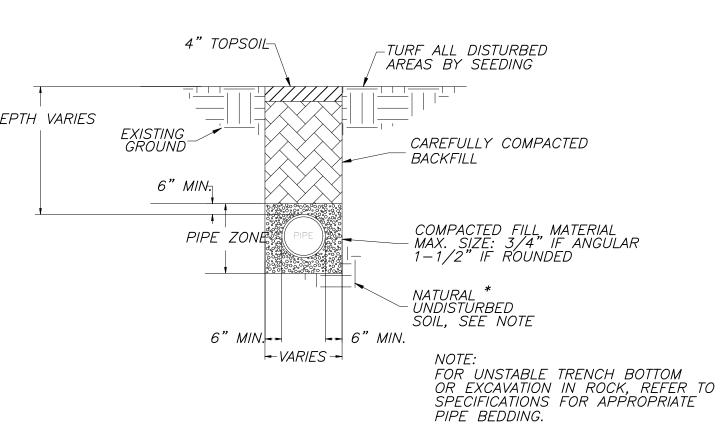
NOT TO SCALE

- 1.) ALL STOP SIGNS SHALL BE 30" X 30" 2.) PROPOSED LOCATIONS OF TRAFFIC CONTROL MARKERS ARE APPROXIMATE. ACTUAL LOCATION AND INSTALLATION MUST MEET
- MUTCD AND CITY OF BRYANT SPECS. 3.) PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH ENGINEER'S
- SPECIFICATIONS, AND BASED ON GEOTECHNICAL ANALYSIS OF THE SOIL CONDITIONS.
- 4.) CONTRACTOR SHALL INCLUDE IN BID THE COST FOR COMPACTION TESTS ON SUBGRADE & BASE. TEST TO BE CONDUCTED AS PER CITY OF BRYANT STREET DEPARTMENT SPECIFICATIONS.
- 5.) CURB INLETS CONSTRUCTED SO THAT POOLING OF WATER DOES
- NOT OCCUR AT INTERSECTIONS. 6.) ALL STORM BOX LIDS SHALL BE PER CITY OF BRYANT
- 7.) ALL SIDEWALKS AND CURB/GUTTER TO BE CONSTRUCTED PER CITY OF BRYANT SPECIFICATIONS. 8.) ALL SIDEWALKS TO MEET ADA REQUIREMENTS.
- 9.) * INDICATES ADA APPROVED HANDICAP RAMP. 10.) DEVELOPMENT SHALL ADHERE TO CITY OF BRYANT STORMWATER
- REQUIREMENTS.
- 11.) THE APPROXIMATE LOCATION OF KNOWN SURFACE AND SUBSURFACE STRUCTURES, PIPES, POWER, GAS, PHONE, ETC. ARE SHOWN ON THE DESIGN DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF THE AFOREMENTIONED ITEMS, SHOWN AND NOT SHOWN. ALL REPAIRS OR RELOCATIONS NECESSARY SHALL BE MADE AS REQUIRED BY THE UTILITY OR OWNER OF THE STRUCTURE. THE COST OF SAID REPAIRS OR RELOCATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

REFER TO CITY OF BRYANT, ARKANSAS PUBLIC WORKS STREET AND DRAINAGE STANDARD DETAILS FOR ADDITIONAL DETAILS AND INFORMATION.



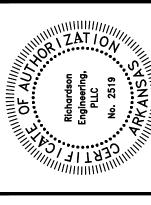


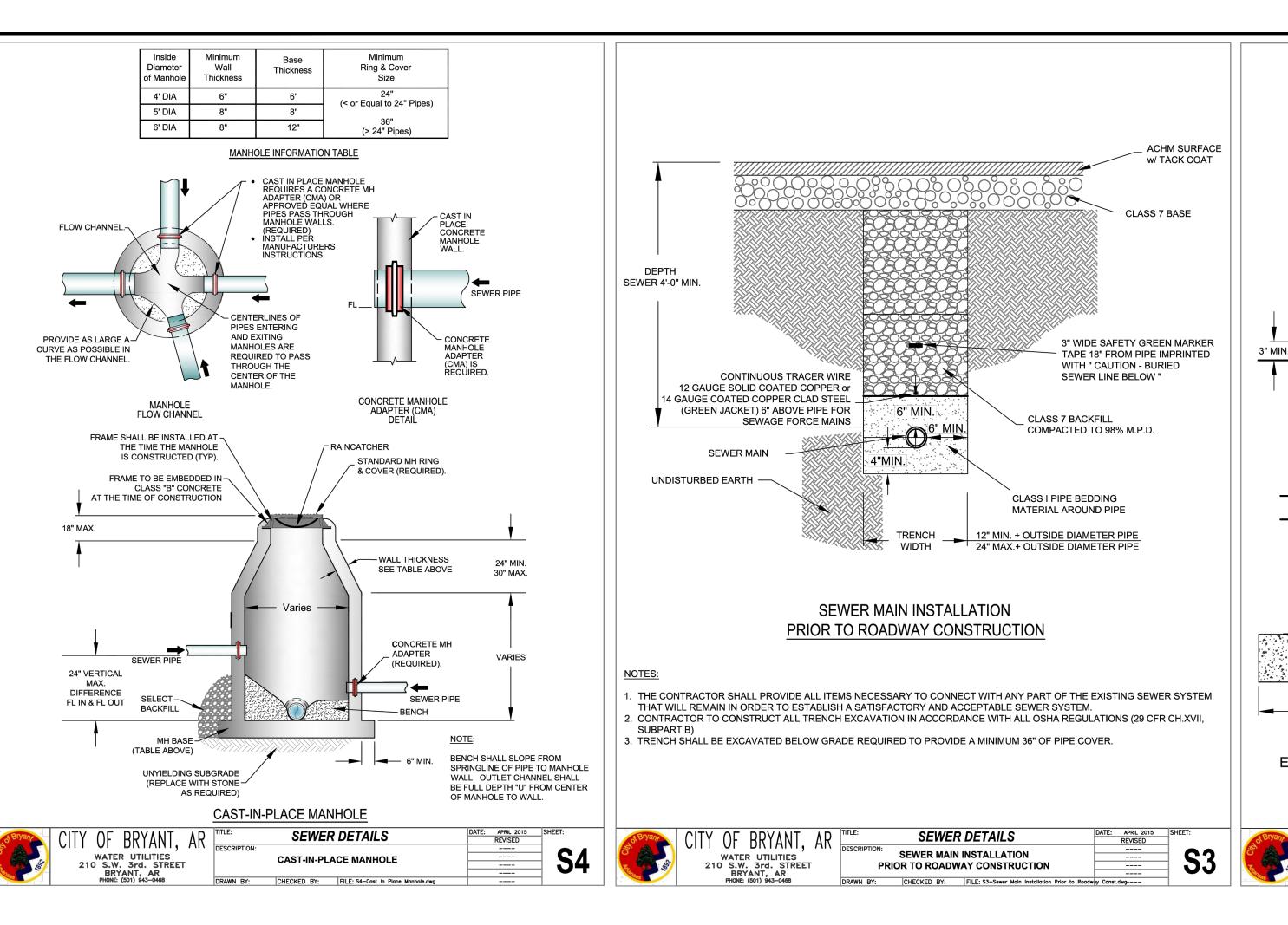


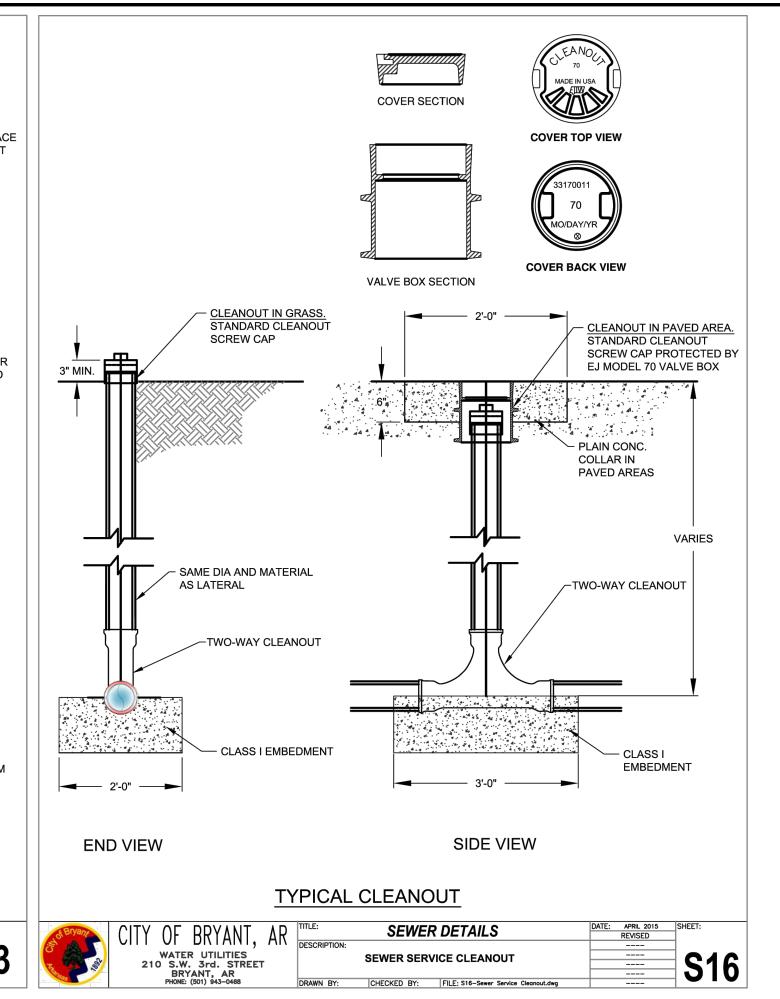
STORM DRAINAGE PIPE TRENCH (UNPAVED AREA

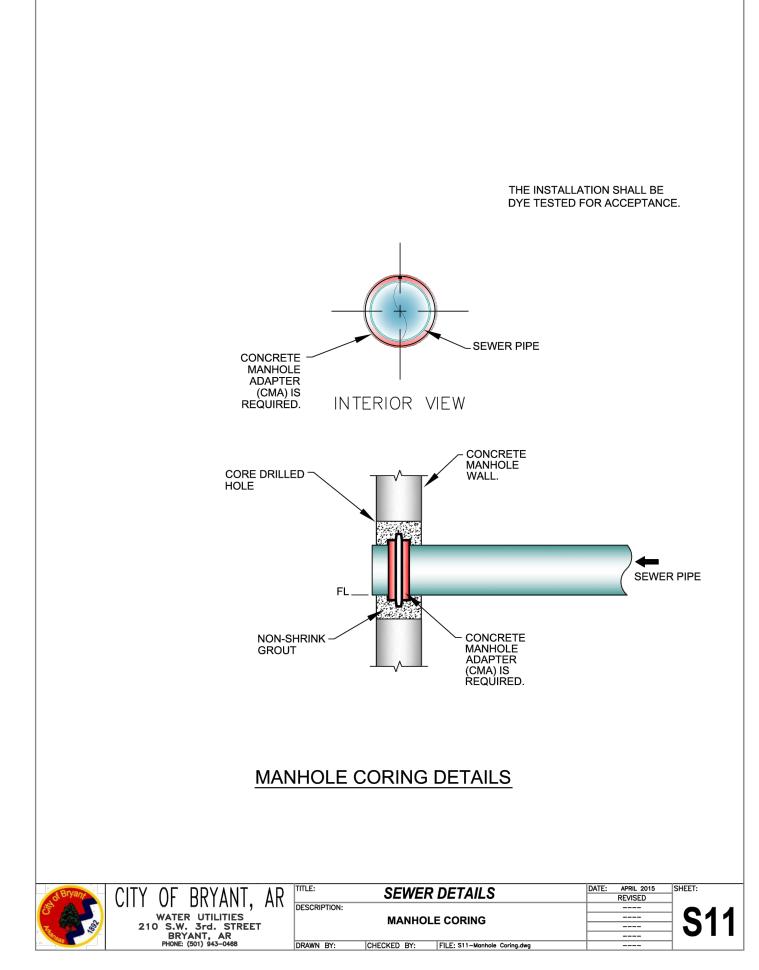
HANDICAP SIGN DETAIL

ZAT 10



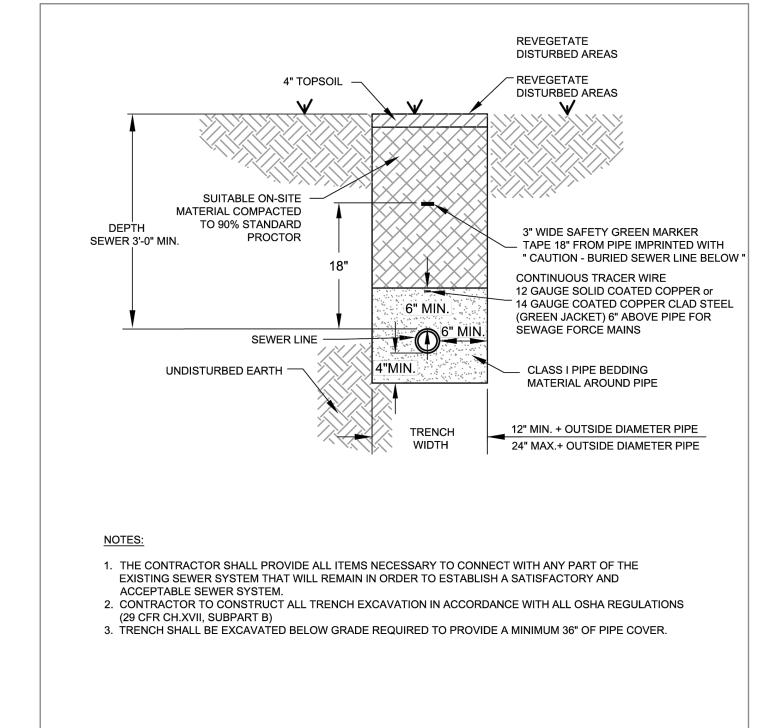






SEWER NOTES:

- 1.) ALL CONSTRUCTION AND MATERIALS TO MEET OR EXCEED CITY OF BRYANT' SPECIFICATIONS.
- 2.) ALL SERVICE LINES SHALL BE 4" SDR—21 OR SCH 40 PVC OR AS SPECIFIED ON THE DESIGN DRAWINGS. CONTRACTOR TO VERIFY METHOD OF CONNECTION WITH THE UTILITY OWNER PRIOR TO CONSTRUCTION. ATTENTION IS CALLED TO CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.
- CONTRACTOR TO ADHERE TO CURRENT OSHA REGULATIONS INCLUDING EXCAVATION & TRENCH SAFETY. 6) BACKFILL FOR ALL DISTURBED (EXCAVATED) AREAS SHALL BE IN ACCORDANCE WITH
- CITY OF BRYANT STANDARD SPECS. 7) A 2—WAY CLEANOUT WITH BACKFLOW PREVENTER SHALL BE INSTALLED WITHIN 5 FEET OF THE BUILDING.



SEWER TRENCH

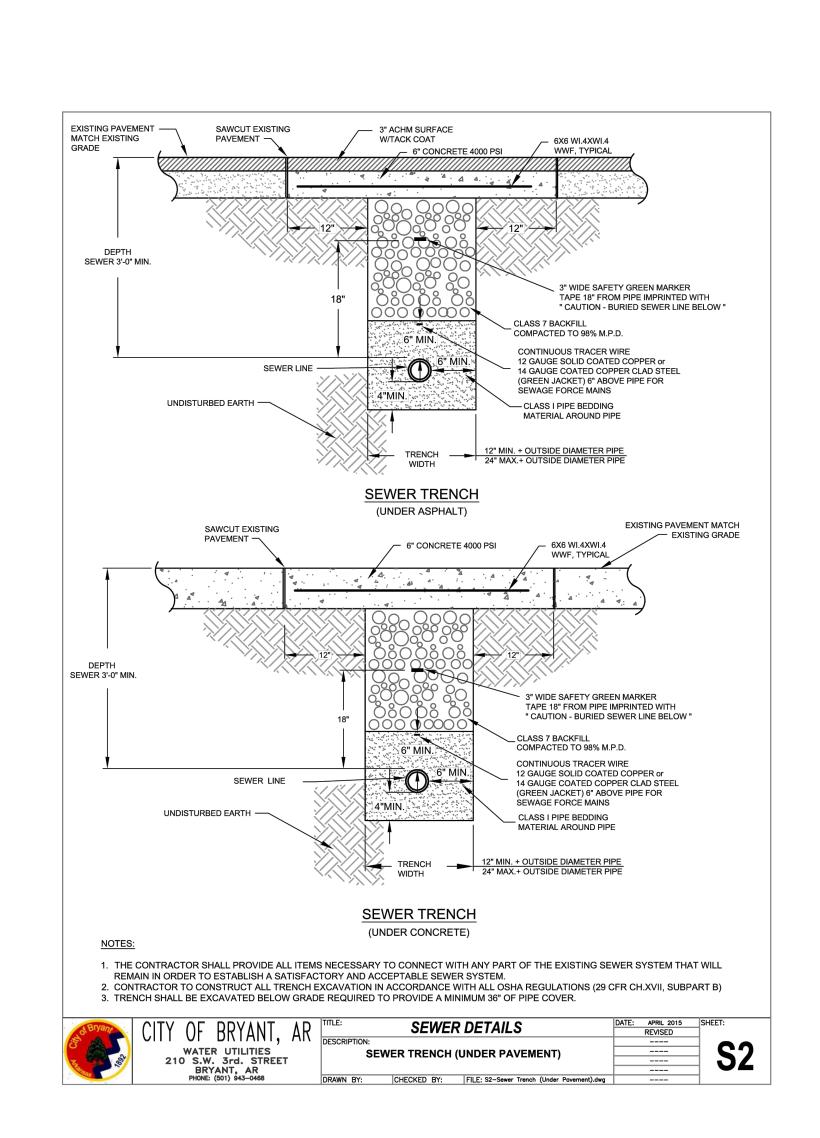
(NON-PAVED AREA)

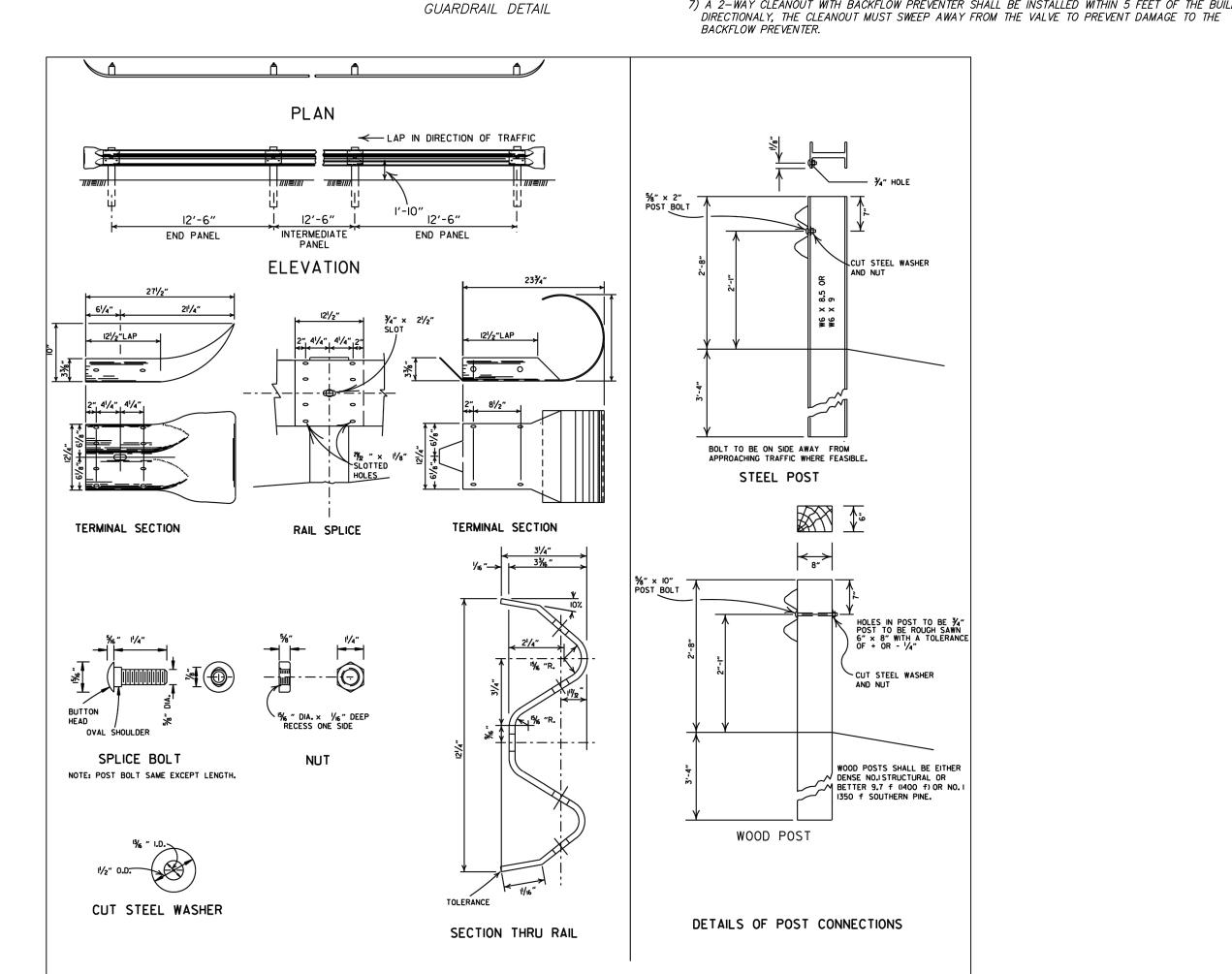
SEWER DETAILS

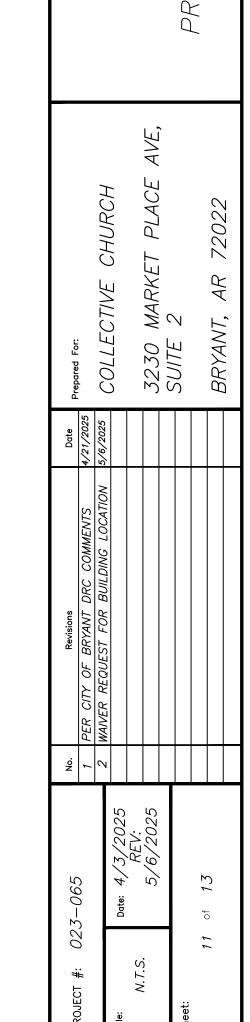
SEWER TRENCH (NON-PAVED AREA)

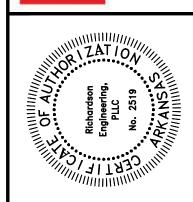
DRAWN BY: CHECKED BY: FILE: S1-Sewer Trench (Non-Paved Area).dwg

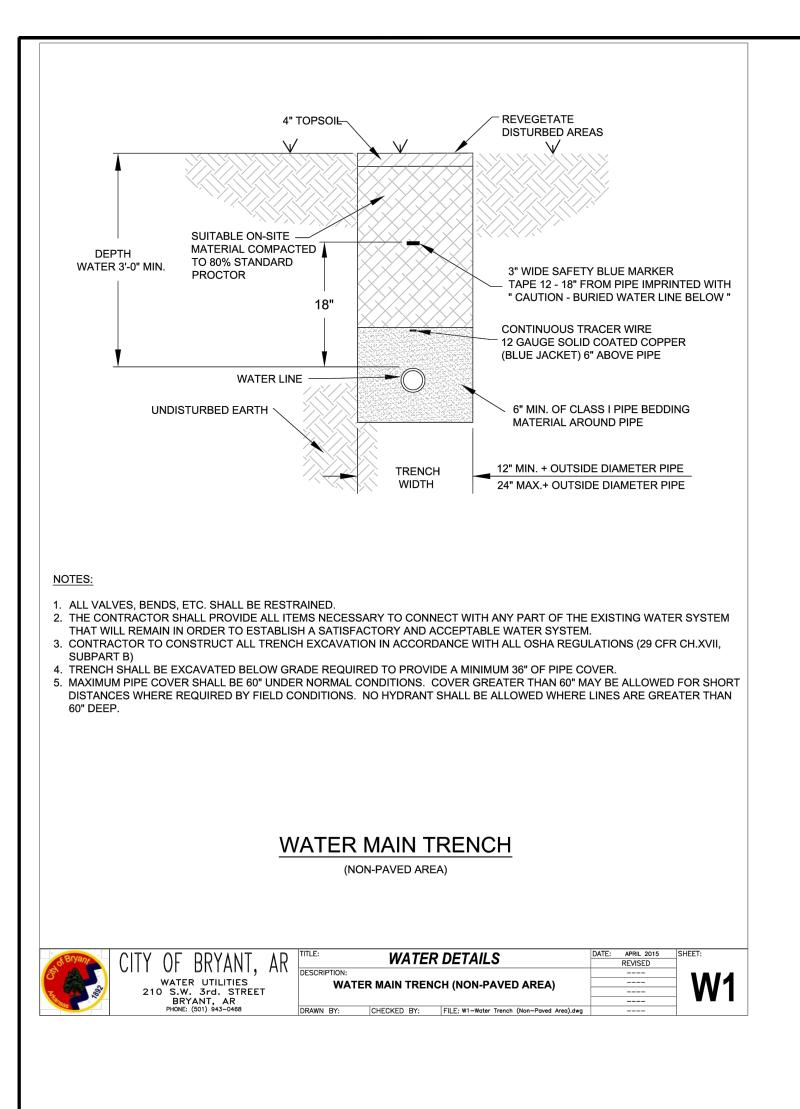
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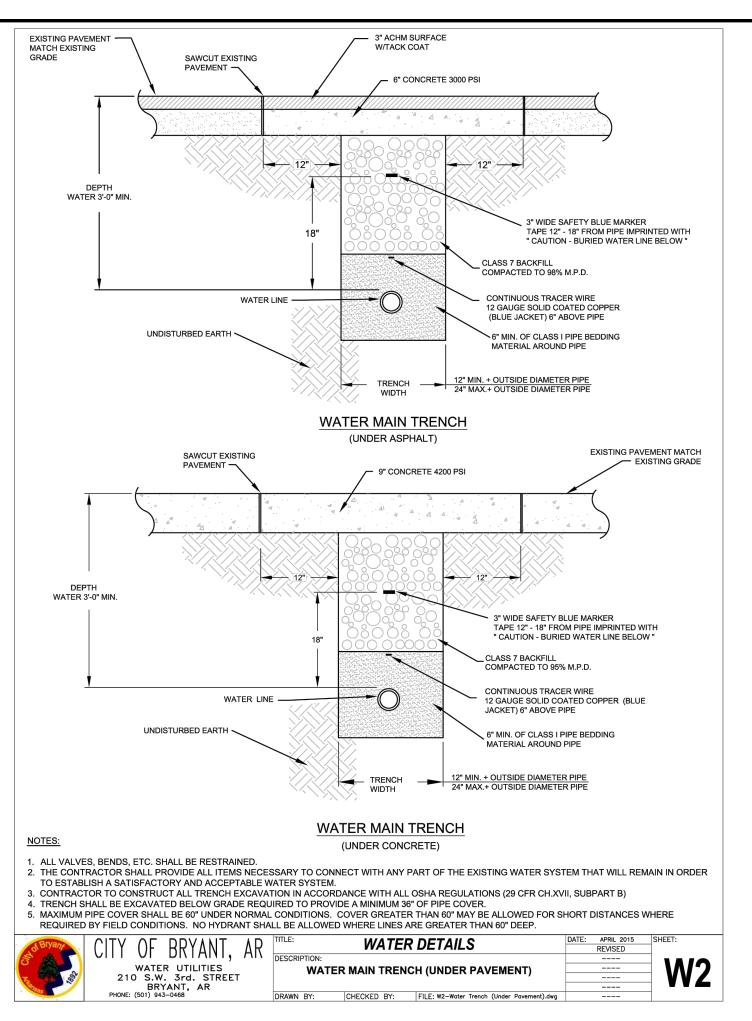


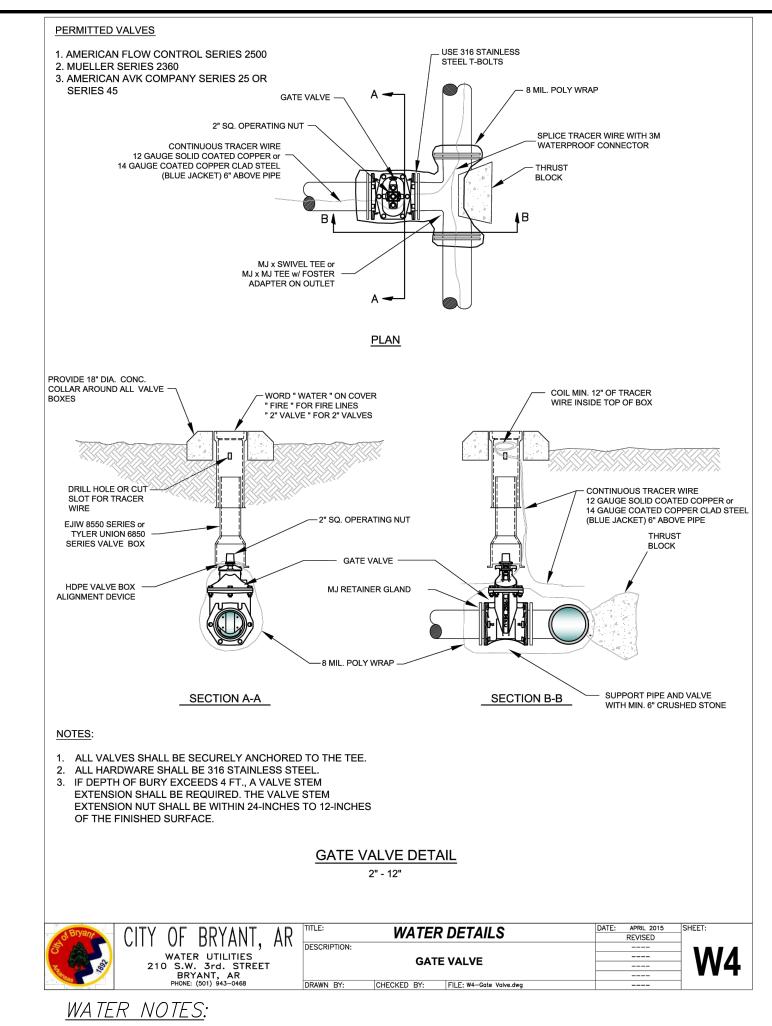












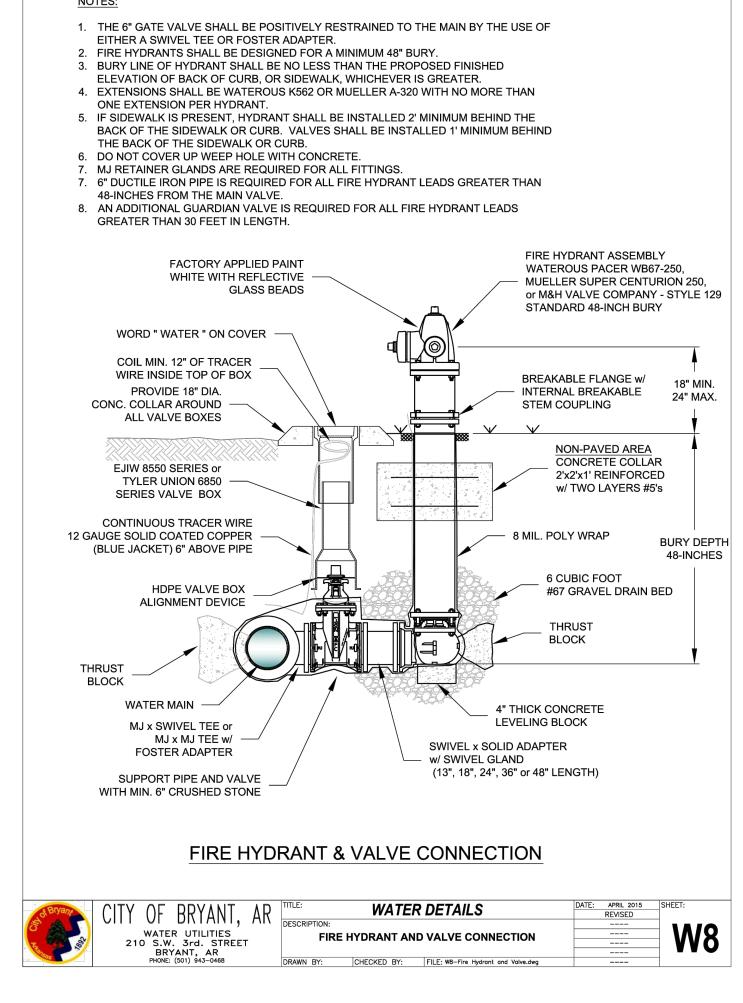
1.) ALL CONSTRUCTION AND MATERIALS TO MEET OR EXCEED CITY OF BRYANT SPECIFICATIONS.
2.) ALL SERVICE LINES AND METER SETTINGS SHALL BE AS PER CITY OF BRYANT SPECS.

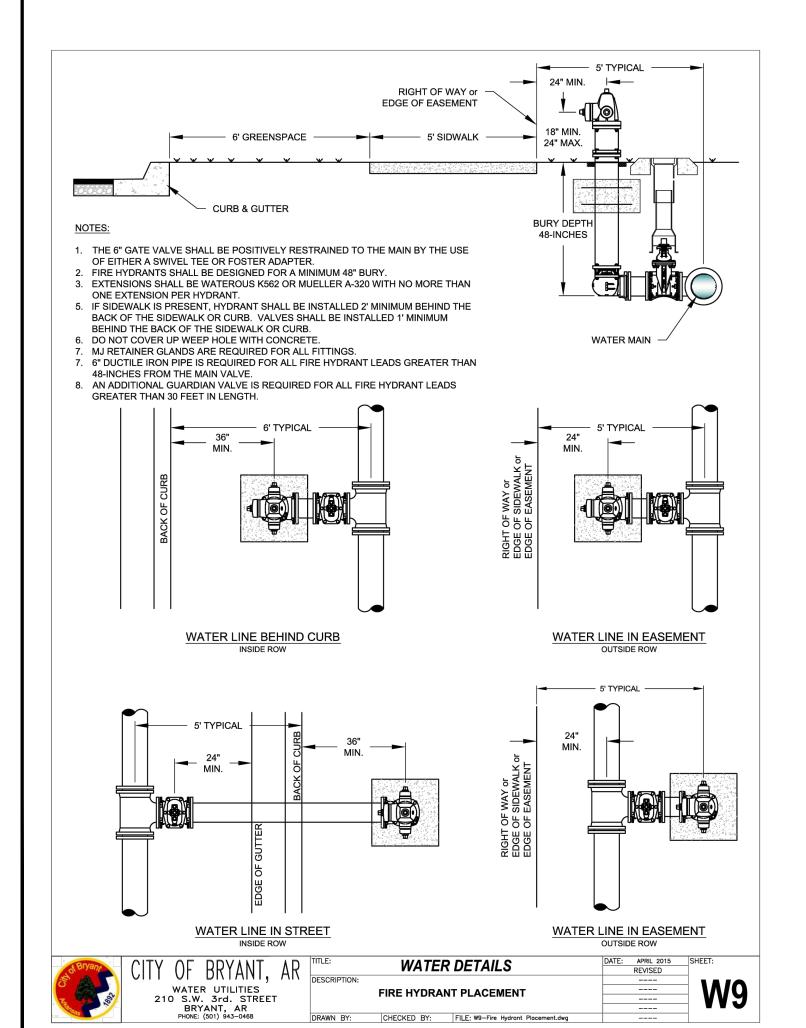
5.) ATTENTION IS CALLED TO CONSTRUCTION DETAILS FOR ADDITIONAL INFORMATION.
6.) MINIMUM SEPARATION BETWEEN WATERLINES & SEWERLINES SHALL BE 10'.

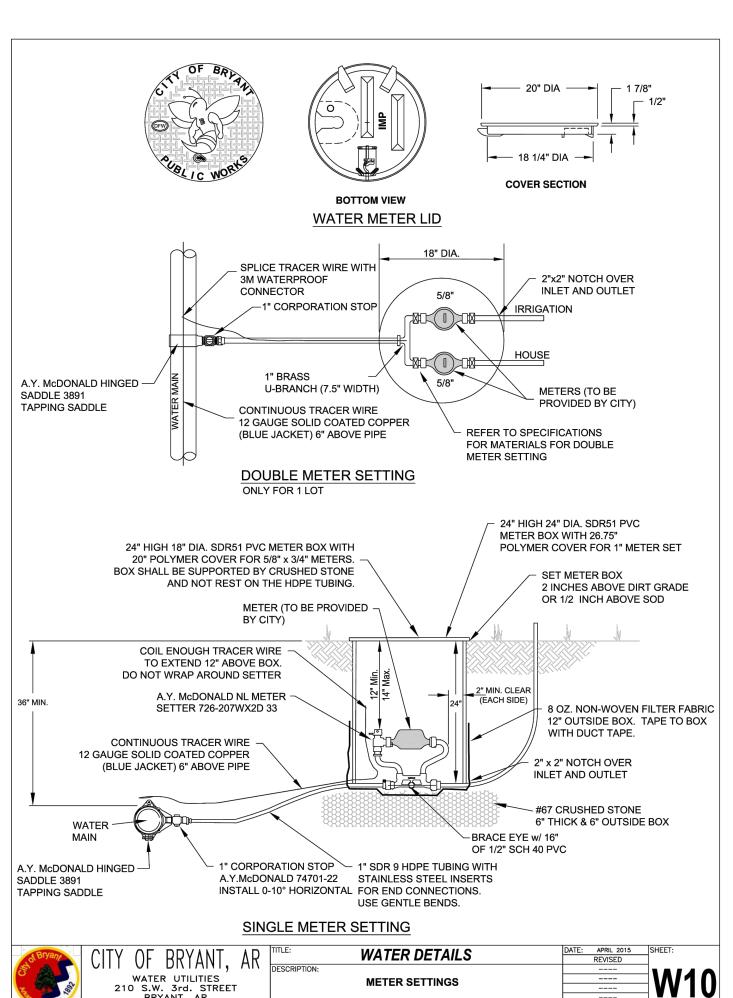
4.) ALL FITTINGS SHALL BE DUCTILE IRON M.J. (WHERE AVAILABLE).

3.) 12ga BLUE COATED COPPER TRACING WIRE TO BE INSTALLED WITH ALL WATERLINES (MAINS & SERVICES).

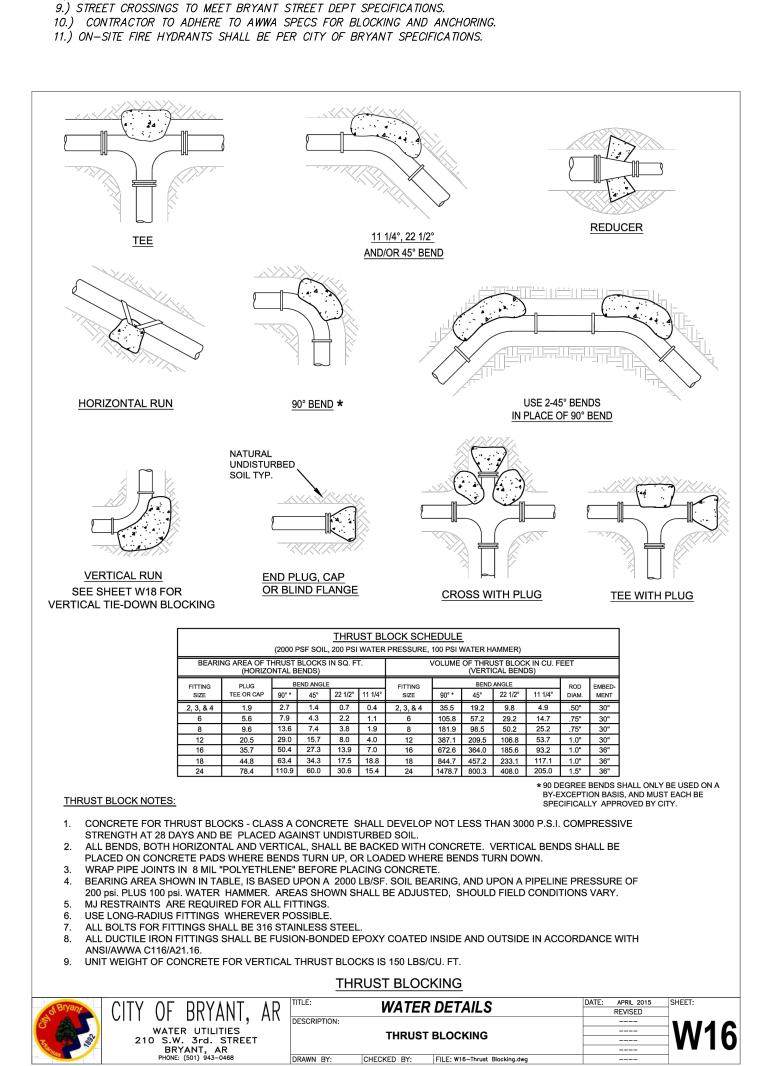
7.) MINIMUM VERTICAL SEPARATION BETWEEN WATERLINE & SEWERLINE CROSSINGS SHALL BE 18" (WATER ON TOP).
8.) CONTRACTOR SHALL ADHERE TO CURRENT OSHA REGULATIONS INCLUDING EXCAVATION & TRENCH SAFETY.

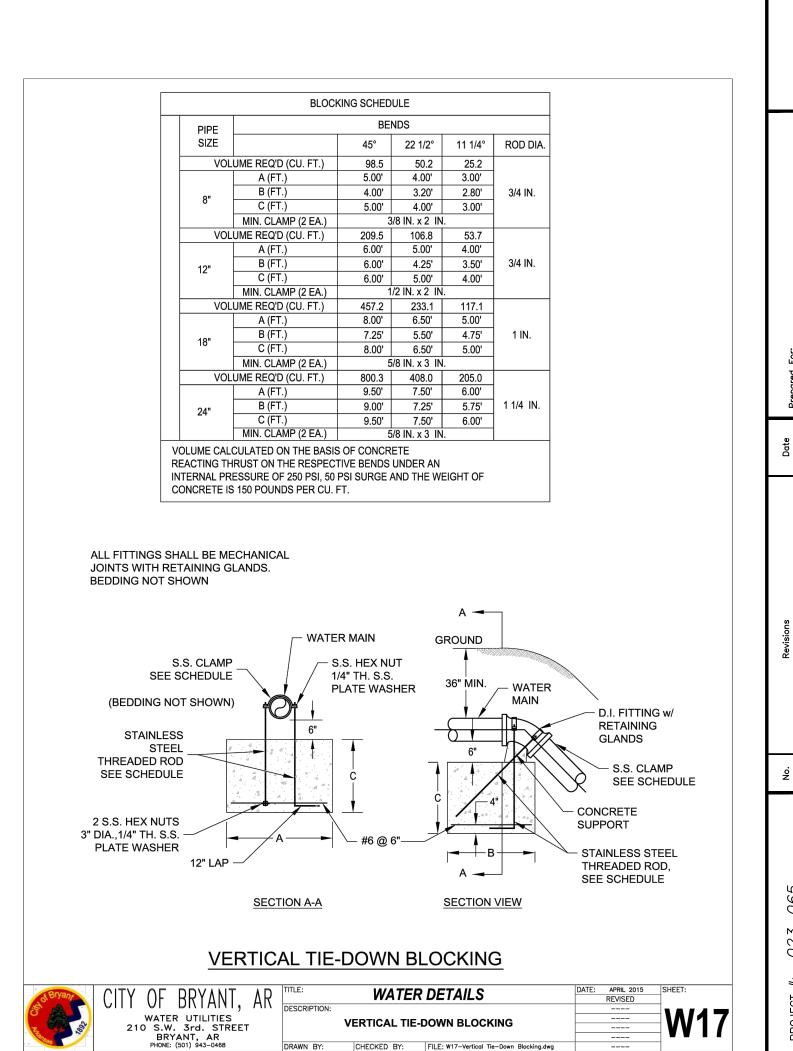


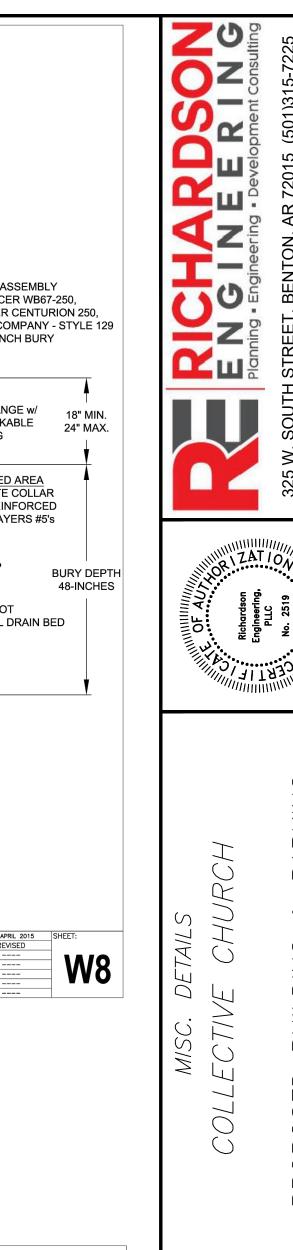


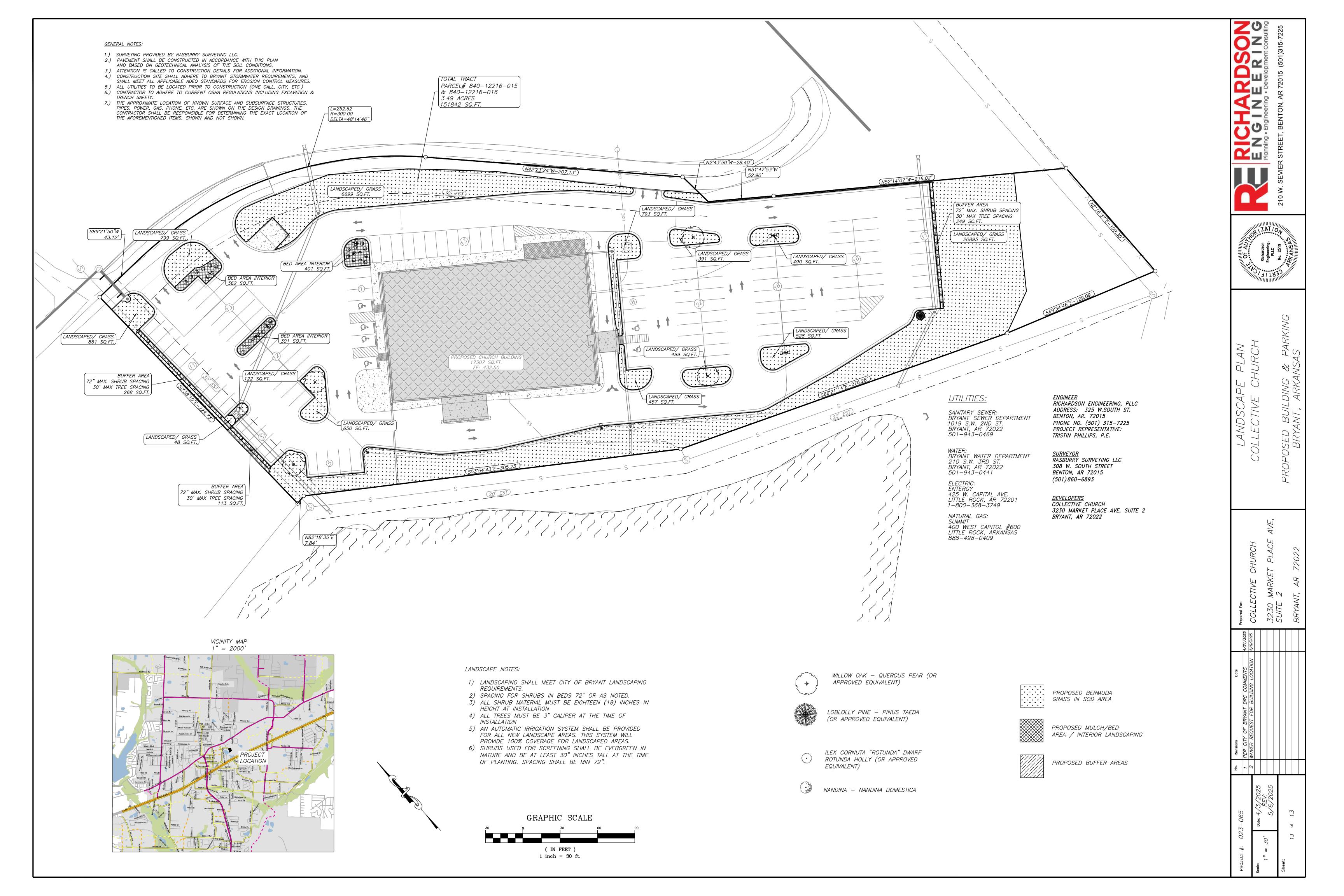


RAWN BY: CHECKED BY: FILE: W10-Meter Settings.dwg









Drainage Report

For

Collective Church

Bryant, Saline County, Arkansas



May 2, 2025

Prepared by:

RICHARDSON ENGINEERING, PLLC

325 W. South St. Benton, AR 72015 501-315-7225

TABLE OF CONTENTS

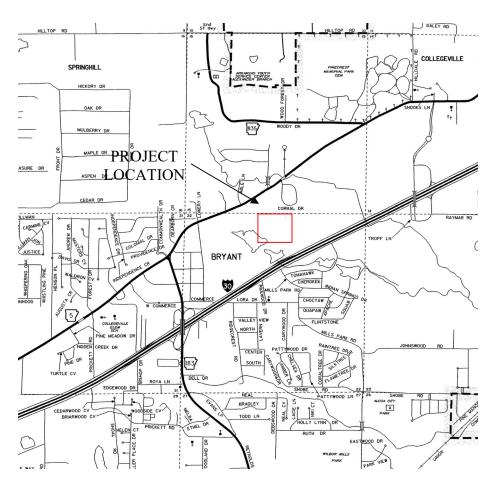
Title	Page Number
Project Owner Information	3
Project Location and Description	3
Site Drainage	4
Runoff Summary	4
Recommendations/Summary	6
Appendices:	7
Drainage Ditch Design Calculations	8
Post Development Tc Calculations	9
Site Drainage Basin Maps	10
Storm System Design (SSA)	11
2 Year Design Storm	12
10 Year Design Storm	13
25 Year Design Storm	14
50 Year Design Storm	15
100 Year Design Storm	16
Pre and Post Development Hydrographs (Hydrology	17
Studio)	

Project Owner Information

Collective Church 3230 Markey Place Ave Bryant, AR 72022

Project Location and Description

The project is located on Progress Way, part of the East Half of the Northwest Quarter, Section 22, Township 1-S, Range 14-W, Saline County, Arkansas.



Vicinity Map – N.T.S

This project is a Commercial Development for a Church, located in the City of Bryant, Saline County.

Site Drainage

Pre-Development

The pre-developed runoff for the site flows to the South to a regional detention basin for the overall commercial development. The pre-development runoff condition is undeveloped/woods.

Post-Development

The site drainage starts on the North side of the project and flows to the East and West. The drainage is intercepted into a storm sewer system and is discharged into the existing regional detention basin to the South of the proposed project. The post-development runoff conditions changed from undeveloped/woods to commercial development.

Runoff Summary

Drainage Basin "A"

(West Side of Project/30" ADS Discharge Point)

Pre-Development Drainage Area = 0.81 Ac

Post-Development Drainage Area = 6.28 Ac

Existing Condition runoff Coefficient: C = 0.47

Proposed runoff Coefficient: C = 0.95

Tc Undeveloped = 16 Minutes (TR55 Method)

Tc Developed = 6 Minutes

Design Storm	Pre-Development Flow Rate (cfs)	Post-Development Flow Rate (cfs)
2-yr	1.38	33.73
10-yr	1.85	45.13
25-yr	2.13	51.84
50-yr 100-yr	2.33 2.53	56.64 61.57

Drainage Basin "B"

(West side of Project/12" ADS Discharge Point)

Pre-Development Drainage Area = 5.62 Ac

Post-Development Drainage Area = 0.20 Ac

Existing Condition runoff Coefficient: C = 0.47

Proposed runoff Coefficient: C = 0.95

Tc Undeveloped = 13 Minutes (TR55 Method)

Tc Developed = 5 Minutes

Design Storm	Pre-Development Flow Rate (cfs)	Post-Development Flow Rate (cfs)
2-yr	10.53	1.17
10-yr	14.12	1.56
25-yr	16.22	1.79
50-yr	17.74	1.96
100-yr	19.26	2.13

Drainage Basin "C"

(East Side of Project/18" ADS Discharge Point)

Pre-Development Drainage Area = 0.64 Ac

Post-Development Drainage Area = 0.45 Ac

Existing Condition runoff Coefficient: C = 0.47

Proposed runoff Coefficient: C = 0.95

Tc Undeveloped = 9 Minutes (TR55 Method)

Tc Developed = 6 Minutes

Design Storm	Pre-Development Flow Rate (cfs)	Post-Development Flow Rate (cfs)
2 xxm	1.41	2.42
2-yr 10-yr	1.41	3.23
25-yr	2.18	3.72
50-yr	2.38	4.06
100-yr	2.59	4.41

Drainage Basin "D"

(East Side of Project/24" ADS Discharge Point)

Pre-Development Drainage Area = 0.47 Ac

Post-Development Drainage Area = 3.90 Ac

Existing Condition runoff Coefficient: C = 0.47

Proposed runoff Coefficient: C = 0.95

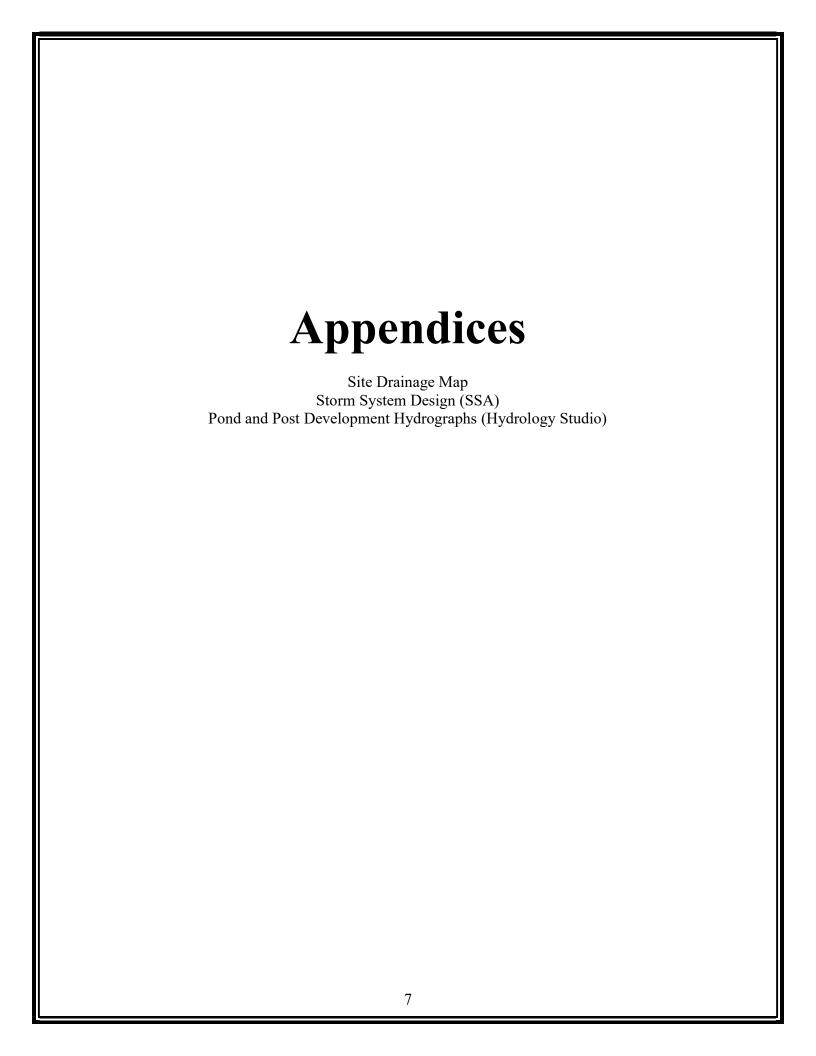
Tc Undeveloped = 19 Minutes (TR55 Method)

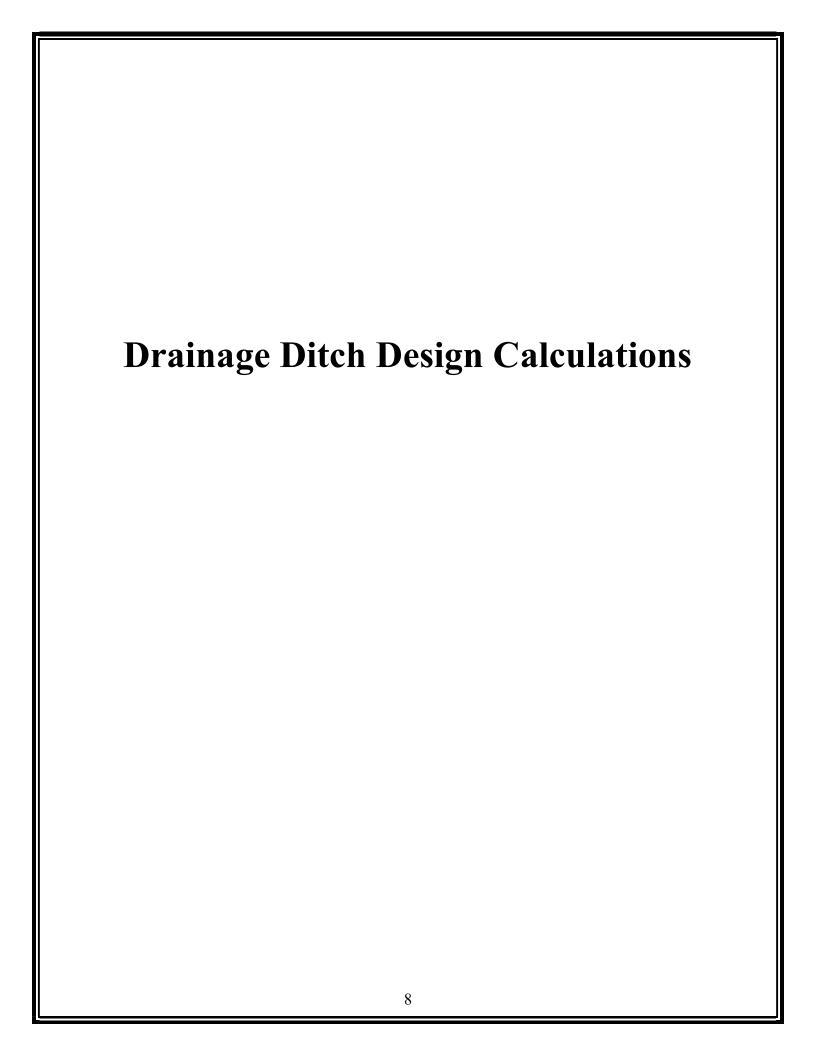
Tc Developed = 10 Minutes

Design Storm	Pre-Development Flow Rate (cfs)	Post-Development Flow Rate (cfs)
2-yr	0.99	9.95
10-yr	1.33	13.36
25-yr	1.53	15.35
50-yr	1.67	16.80
100-yr	1.81	18.23

Recommendations/Summary

The proposed drainage improvements include a storm sewer system for the commercial development that will be discharged into the existing regional detention basin. The proposed storm system also catches water from the commercial lot to the North and Hunters Crossing subdivision and routes it to the existing regional detention basin.

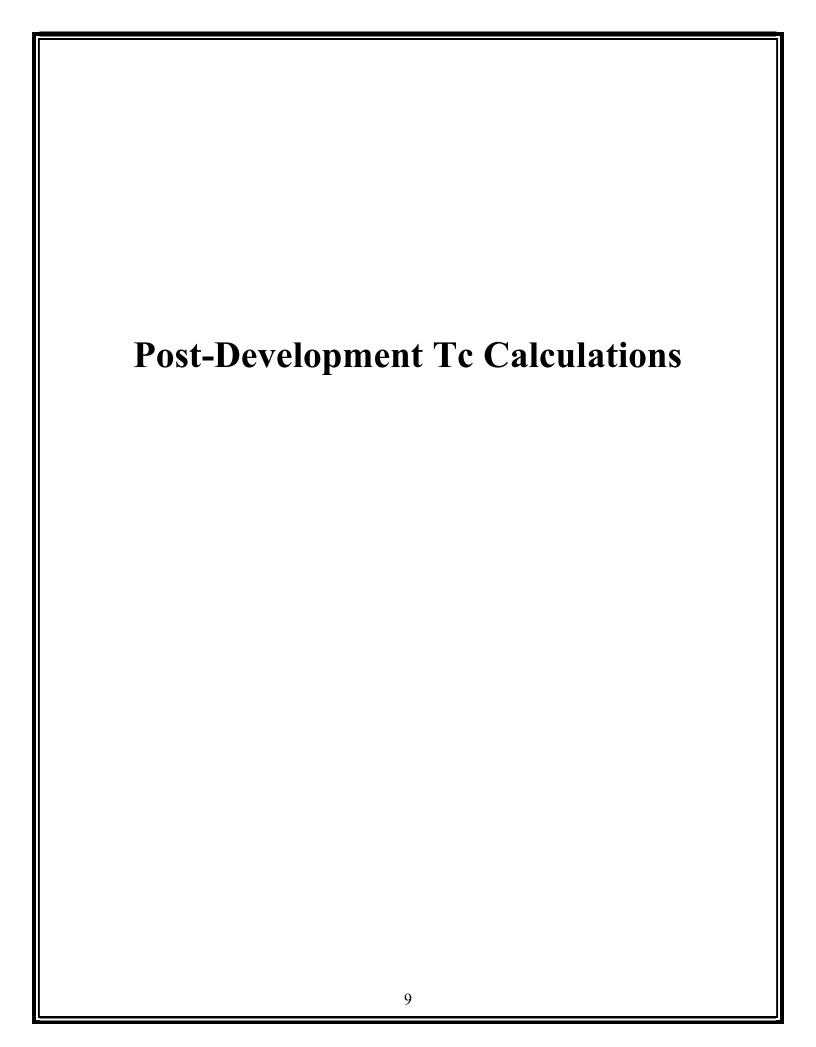






325 West South Street Benton, AR 72015 (501) 315-7225

PROJECT 023-065	COLLECTIVE CHURCH	(1/1)
	COLLECTION CHURCH	DATE 05/62/2025
DRAINAGE 3,7784 Q100 = 40	44	
		3
Q \ (1.49)	* A * Ry (2/3) x 5/3	
50.03	(GRASS DATER WAY)	
A = 18 8 3		
₩e = 13.U1		
5 2 2.07	0.02 FT/FT	
(3 2 (0.49) 0,38	- * (18) 4 (-8) - * (18) 4 (-8)	* (0.62)
= 153.8	CFS V	





325 West South Street Benton, AR 72015 (501) 315-7225

(1/4)

PROJECT 023-065 GILECTIVE CHURCH DATE 05/02/2525 POST - DEV BASIN "A" TE SUB FES-S : 77 = 5 mil PIPE 25 Tan = 5 = 53 = 0.06 min PIPE 24 => (10.49)(60) = 0,28 mw PIPE 15 2) 106 = 0.16 mm 5.5 MIN



325 West South Street Benton, AR 72015 (501) 315-7225 (2/4)

PROJECT <u>023-065</u>	COLLECTIVE CHUNCH	DATE 05/02/2025
	BASIN "B"	
P1PG - 16 Tp.	00 = 2 00 00 00 00 00 00 00 00 00 00 00 00 0	- 0,27 m,2
PIPE 17	(10.37)(60)	= 0.10 m/N
	Ta = 5.37 v	



325 West South Street Benton, AR 72015 (501) 315-7225 (3/4)

PROJECT 023-065 COLLECTIVE CHURCH

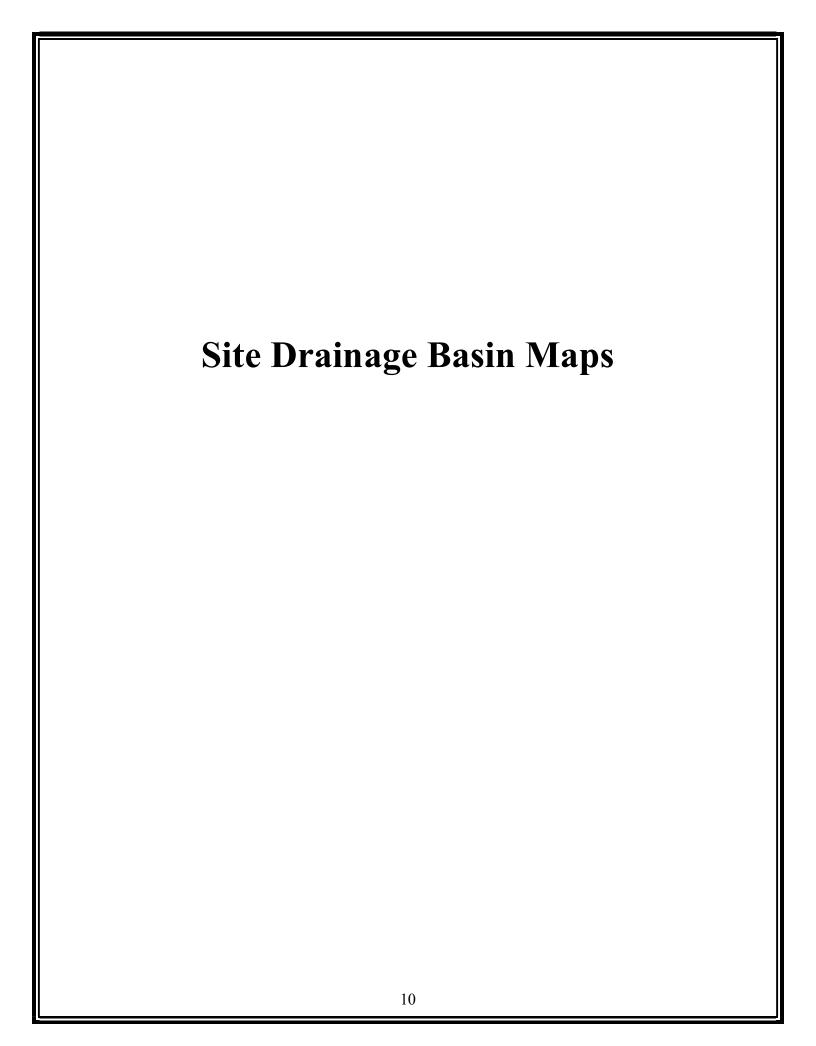
DATE OS/02/2025

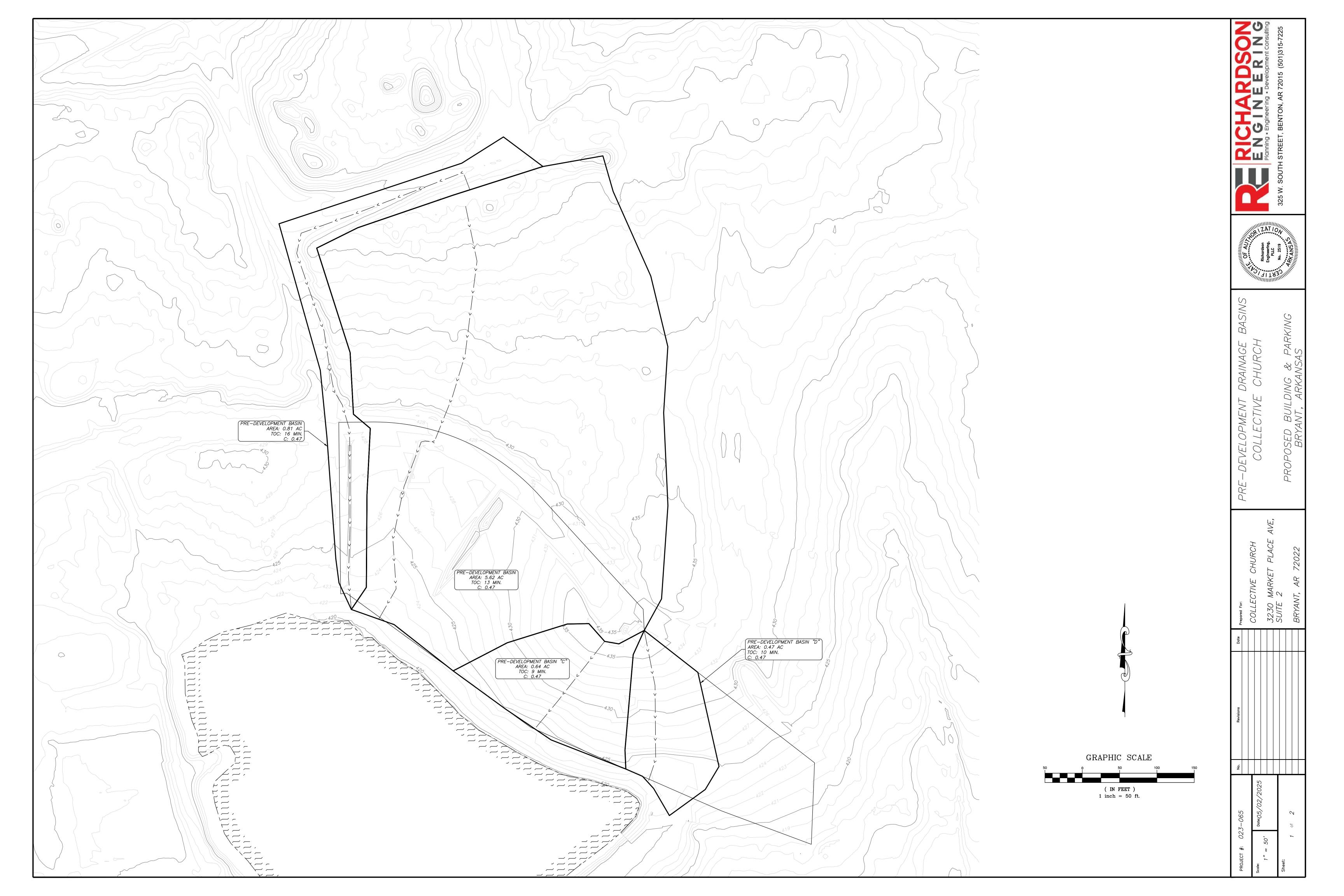
JECI_OCS	7-06-	, 6866	THE CHOR		DATE_05/02/€0
A	857-E	DEV B.	A5W"("		
5	UB A	1D-29	72 -	5m/2	
PIPC	19	1/20w =	5 -	106	6) =0.27 min
PIPE	20	= 2	(7.03)		a 0.65 mw
PIRE	18	33	(6.47)(60		0,34 mm
ו בינו	6 / 13				
1776	8 (1)		20 (7.8)(60)	- + 0	5. 64 mu
			7	5.7	2 m.u

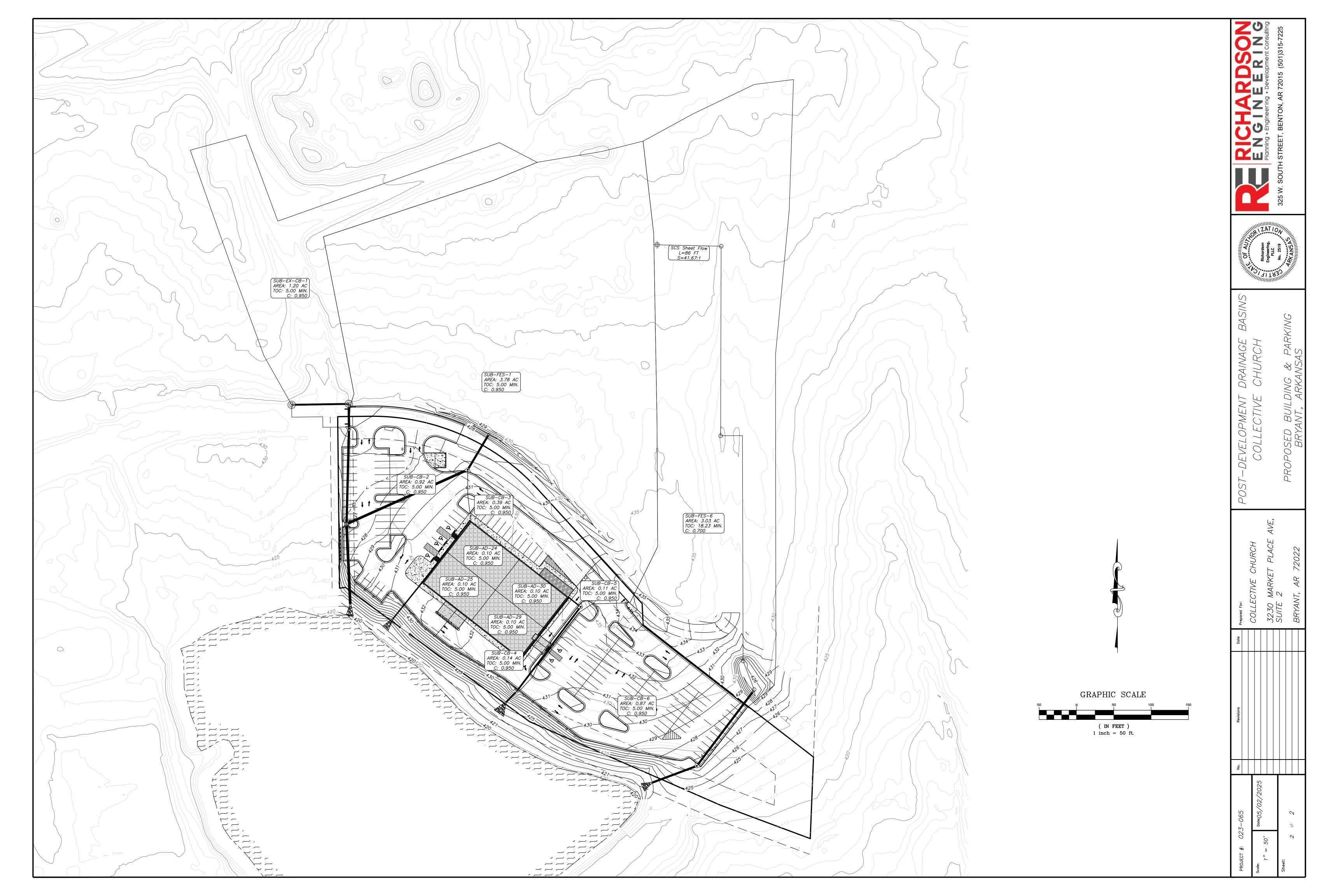


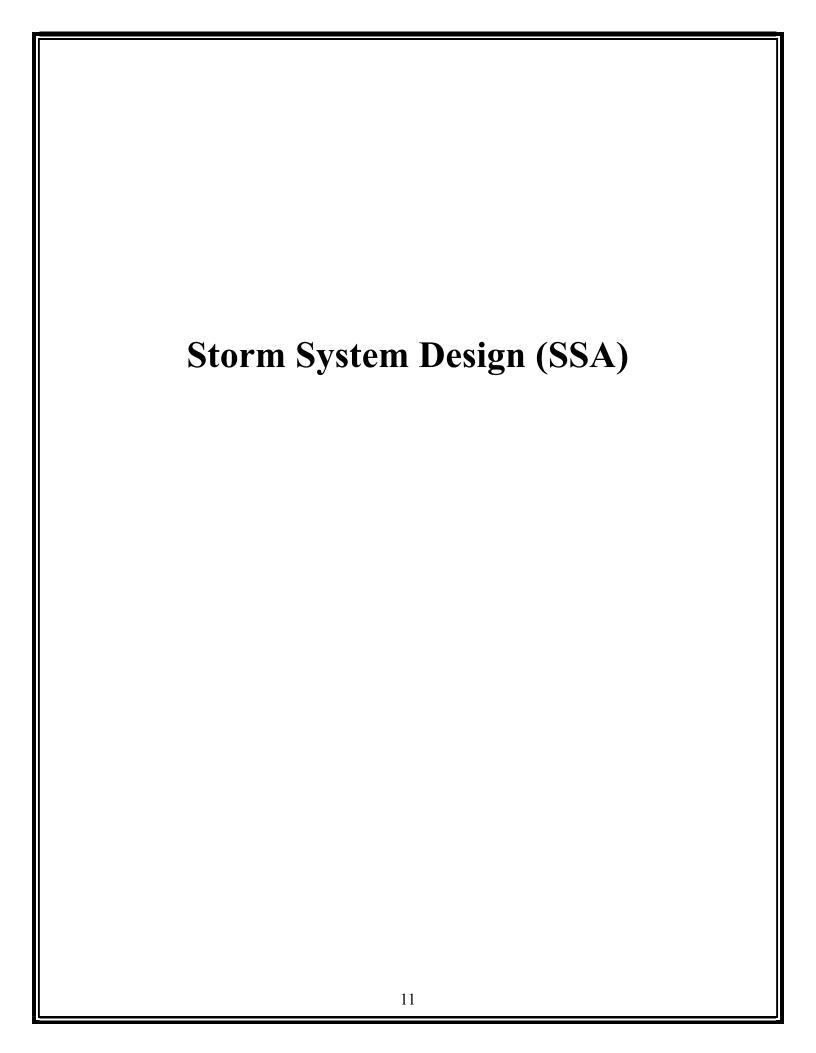
325 West South Street Benton, AR 72015 (501) 315-7225

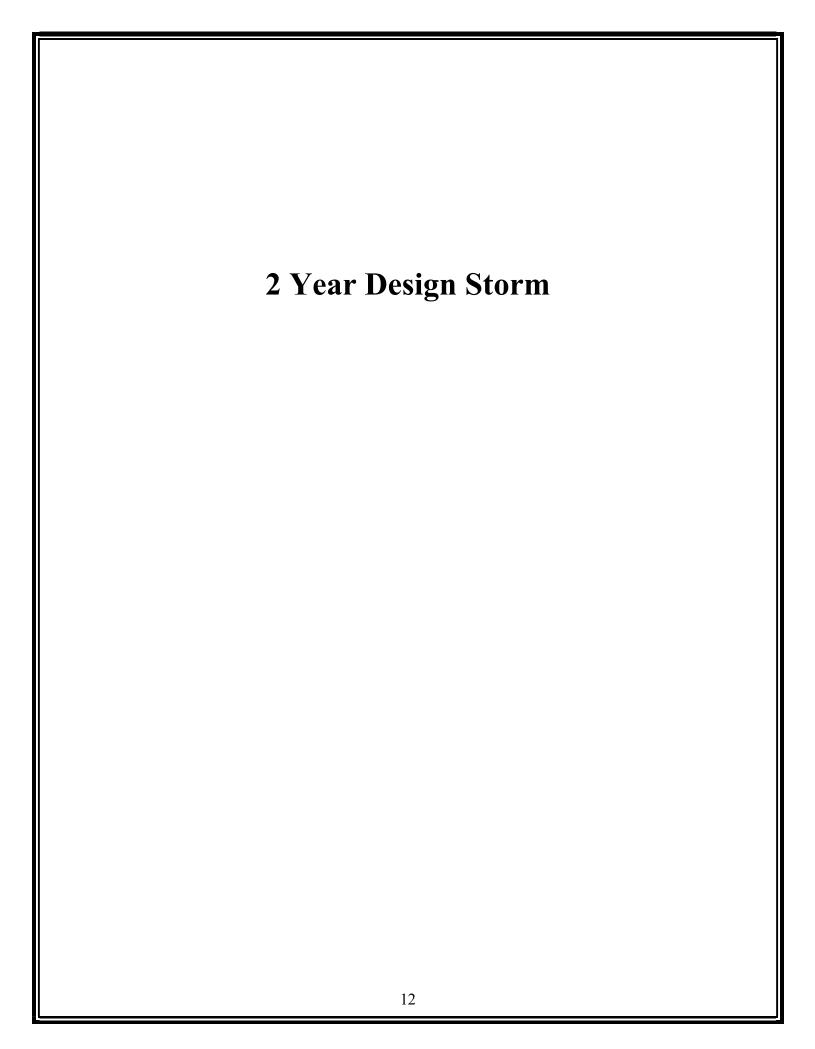
PROJECT_	023	- 665	COLLECT	TVE"	CHURCH	DATE_@	5/02/2025
			u <i>Ba</i> s,		D		
						123	= 0,25 mm
	PIPLE					= 0,11	
				112	- /8.59	m, w	











Project Description

File Name Collective Church Drainage 5-2-25.SPF

Project Options

Flow Units		CFS
Elevation Type		Elevation
Hydrology Method		Rational
Time of Concentration (TOC)	Method	SCS TR-55
Link Routing Method		Kinematic Wave
Enable Overflow Ponding at N	lodes	YES
Skip Steady State Analysis Tir	me Periods	NO

Analysis Options

Start Analysis On	May 02, 2025	00:00:00
End Analysis On	May 03, 2025	00:00:00
Start Reporting On	May 02, 2025	00:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:s
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:s
Reporting Time Step	0 00:05:00	days hh:mm:s
Routing Time Step	30	seconds

Number of Elements

Qt	ty
Rain Gages 0	
Subbasins	2
Nodes	ò
Junctions 6	
Outfalls 4	
Flow Diversions 0	
Inlets 6	
Storage Nodes 0	
Links	5
Channels 1	
Pipes 14	1
Pumps 0	
Orifices 0	
Weirs 0	
Outlets 0	
Pollutants 0	
Land Uses 0	

Rainfall Details

Return Period...... 2 year(s)

Subbasin Summary

SN Subbasin ID	Area	Weighted Runoff Coefficient	Total Rainfall	Total Runoff	Total Runoff Volume	Peak Runoff	Time of Concentration
	(ac)		(in)	(in)	(ac-in)	(cfs)	(days hh:mm:ss)
1 Sub-AD- (24)	0.10	0.9500	0.51	0.49	0.05	0.58	0 00:05:00
2 Sub-AD- (25)	0.10	0.9500	0.51	0.49	0.05	0.58	0 00:05:00
3 Sub-AD- (29)	0.10	0.9500	0.51	0.49	0.05	0.58	0 00:05:00
4 Sub-AD- (30)	0.10	0.9500	0.51	0.49	0.05	0.58	0 00:05:00
5 Sub-CB-1	1.20	0.9500	0.51	0.49	0.58	6.99	0 00:05:00
6 Sub-CB-2	0.92	0.9500	0.51	0.49	0.45	5.35	0 00:05:00
7 Sub-CB-3	0.39	0.9500	0.51	0.49	0.19	2.26	0 00:05:00
8 Sub-CB-4	0.14	0.9500	0.51	0.49	0.07	0.82	0 00:05:00
9 Sub-CB-5	0.11	0.9500	0.51	0.49	0.06	0.67	0 00:05:00
10 Sub-CB-6	0.87	0.9500	0.51	0.49	0.42	5.10	0 00:05:00
11 Sub-FES-5	3.78	0.9500	0.51	0.49	1.84	22.04	0 00:05:00
12 Sub-FES-6	3.03	0.7000	1.02	0.71	2.16	7.14	0 00:18:13

Node Summary

SN Element ID	Element Type	Invert Elevation	Ground/Rim (Max) Elevation	Initial Water Elevation	Surcharge Elevation			Max HGL Elevation Attained	Ma Surcharg Dept Attaine
		(ft)	(ft)	(ft)	(ft)	(ft ²)	(cfs)	(ft)	(f
1 AD- (24)	Junction	429.05	432.47	429.05	432.47	10.00	0.58	429.32	0.0
2 AD- (25)	Junction	428.00	432.46	428.00	432.46	10.00	1.13	428.26	0.0
3 AD- (29)	Junction	429.06	432.45	429.06	432.45	10.00	0.58	429.32	0.0
4 AD- (30)	Junction	428.00	432.46	428.00	432.46	10.00	1.12	428.29	0.0
5 FES-5	Junction	425.10	427.00	425.10	427.50	0.00	22.04	426.14	0.0
6 FES-6	Junction	424.75	426.99	424.75	426.99	0.00	7.14	425.49	0.0
7 Out-1SL - (15)	Outfall	421.25					35.49	422.94	
8 Out-1SL - (17)	Outfall	423.50					1.12	423.72	
9 Out-1SL - (18) (1)	Outfall	424.50					2.52	424.90	
10 Out-1SL - (21)	Outfall	422.50					7.11	423.15	

Link Summary

SN Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness		Design Flow Capacity		Peak Flow Velocity	F
				(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	
1 L-SL - (24)	Pipe	CB-3	CB-2	199.68	430.66	426.94	1.8600	0.000	0.0320	0.36	0.00	0.00	0.00	_
2 L-SL-14	Pipe	CB-1	CB-2	135.67	423.42	422.50	0.6800	0.000	0.0150	2.77	0.00	0.00	0.00	
3 SL - (14)	Pipe	CB-1	CB-2	127.66	423.42	422.80	0.4900	24.000	0.0130	4.16	15.77	0.26	7.45	
4 SL - (15)	Pipe	CB-2	Out-1SL - (15)	106.61	422.32	421.25	1.0000	30.000	0.0120	35.49	44.52	0.80	10.14	
5 SL - (16)	Pipe	AD- (24)	AD- (25)	105.49	429.05	428.00	1.0000	12.000	0.0120	0.57	3.86	0.15	5.59	
6 SL - (17)	Pipe	AD- (25)	Out-1SL - (17)	60.96	428.00	423.50	7.3800	12.000	0.0120	1.12	10.49	0.11	8.73	
7 SL - (18)	Pipe	CB-5	CB-4	141.40	427.00	424.90	1.4900	18.000	0.0120	1.76	13.88	0.13	5.45	
8 SL - (18) (1)	Pipe	CB-4	Out-1SL - (18) (1)	20.22	424.90	424.50	1.9700	18.000	0.0120	2.52	15.96	0.16	6.59	
9 SL - (19)	Pipe	AD- (29)	AD- (30)	106.07	429.06	428.00	1.0000	12.000	0.0120	0.57	3.86	0.15	5.60	
10 SL - (20)	Pipe	AD- (30)	CB-5	19.89	428.00	427.50	2.5100	12.000	0.0120	1.12	6.12	0.18	5.94	
11 SL - (21)	Pipe	CB-6	Out-1SL - (21)	63.64	423.50	422.50	1.5700	24.000	0.0120	7.11	30.72	0.23	7.96	
12 SL - (24)	Pipe	CB-3	CB-2	174.72	424.10	422.32	1.0200	30.000	0.0120	23.43	44.85	0.52	9.34	
13 SL - (25)	Pipe	FES-5	CB-3	52.99	425.10	424.10	1.8900	30.000	0.0120	21.93	61.04	0.36	11.83	
14 SL - (26)	Pipe	FES-6	CB-6	123.36	424.75	423.50	1.0100	24.000	0.0120	7.11	24.67	0.29	7.20	
15 L-SL - (18) (1)	Channel	CB-4	CB-6	272.73	431.93	427.30	1.7000	6.000	0.0150	0.00	7.95	0.00	0.00	

Inlet Summary

SN Element	Inlet		Catchbasin	(,		Ponded					Allowable	Max Gutter	Max Gutter
ID	Location	Inlets	Invert	Elevation	Water	Area	Flow	Intercepted	Bypassing	Efficiency	Spread	Spread	Water Elev.
			Elevation		Elevation			by	Inlet	during Peak		during Peak	during Peak
								Inlet		Flow		Flow	Flow
			(ft)	(ft)	(ft)	(ft ²)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)
1 CB-1	On Grade	1	423.42	429.56	423.42	N/A	6.99	4.21	2.77	60.33	10.00	14.61	429.85
2 CB-2	On Sag	1	422.32	426.95	422.32	10.00	8.48	N/A	N/A	N/A	10.00	9.70	427.49
3 CB-3	On Grade	1	424.10	430.66	424.10	N/A	2.26	1.90	0.36	84.14	10.00	5.89	430.82
4 CB-4	On Grade	1	424.90	431.93	424.90	N/A	0.82	0.82	0.00	100.00	10.00	5.89	432.05
5 CB-5	On Sag	1	427.00	432.00	427.00	10.00	0.67	N/A	N/A	N/A	10.00	2.33	432.32
6 CB-6	On Sag	1	423.50	427.34	423.50	10.00	5.10	N/A	N/A	N/A	10.00	7.76	427.86

Subbasin Hydrology

```
Subbasin: Sub-AD- (24)
      Time of Concentration
              TOC Method: SCS TR-55
              Sheet Flow Equation :
                  Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))
              Where:
                  Tc = Time of Concentration (hr)
                  n = Manning's roughness
                  Lf = Flow Length (ft)
                  P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)
              Shallow Concentrated Flow Equation:
                 V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
                  Tc = (Lf / V) / (3600 sec/hr)
                          Where:
                  Tc = Time of Concentration (hr)
                  Lf = Flow Length (ft)
                  V = Velocity (ft/sec)
                  Sf = Slope (ft/ft)
              Channel Flow Equation :
                  V = (1.49 * (R^{(2/3)}) * (Sf^{0.5})) / n
                  R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)
              Where:
                  Tc = Time of Concentration (hr)
                  Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
                  Aq = Flow Area (ft²)
                  Wp = Wetted Perimeter (ft)
                  V = Velocity (ft/sec)
                  Sf = Slope (ft/ft)
n = Manning's roughness
```

Subbasin: Sub-AD- (25)

Time of Concentration

Subbasin: Sub-AD- (29)

Time of Concentration

Subbasin : Sub-AD- (30)

Time of Concentration

Time of Concentration

Subbasin : Sub-FES-5

Time of Concentration

Subbasin : Sub-FES-6

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0.00	0.00
Flow Length (ft):	85.71195638	0.00	0.00
Slope (%):	2.4	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.36	0.00	0.00
Velocity (ft/sec):	0.12	0.00	0.00
Computed Flow Time (min):	12.01	0.00	0.00
	Subarea	Subarea	Subarea
Shallow Concentrated Flow Computations	A	В	С
Flow Length (ft):	253.76684919	31.2339863	0.93388558
Slope (%):	1.8	0.4	1.25
Surface Type :	Paved	Paved	Unpaved
Velocity (ft/sec):	2.73	1.29	1.80
Computed Flow Time (min) :	1.55	4.29	0.38
Total TOC (min)18.23			

Junction Input

SN Elemen	nt Invert	Ground/Rim	Ground/Rim	Initial	Initial	Surcharge	Surcharge	Ponded	Minimum
ID	Elevation	(Max)	(Max)	Water	Water	Elevation	Depth	Area	Pipe
		Elevation	Offset	Elevation	Depth				Cover
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft ²)	(in)
1 AD- (24	429.05	432.47	3.41	429.05	0.00	432.47	0.00	10.00	0.00
2 AD- (25	5) 428.00	432.46	4.46	428.00	0.00	432.46	0.00	10.00	0.00
3 AD- (29	9) 429.06	432.45	3.39	429.06	0.00	432.45	0.00	10.00	0.00
4 AD- (30) 428.00	432.46	4.46	428.00	0.00	432.46	0.00	10.00	0.00
5 FES-5	425.10	427.00	1.90	425.10	0.00	427.50	0.50	0.00	0.00
6 FES-6	424.75	426.99	2.24	424.75	0.00	426.99	0.00	0.00	0.00

Junction Results

SN Element	Peak	Peak	Max HGL	Max HGL	Max	Min	Average HGL	Average HGL	Time
ID	Inflow	Lateral	Elevation	Depth	Surcharge	Freeboard	Elevation	Depth	Max H
		Inflow	Attained	Attained	Depth	Attained	Attained	Attained	Occurren
					Attained				
	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(days hh:m
1 AD- (24)	0.58	0.58	429.32	0.27	0.00	3.15	429.06	0.01	0 00:
2 AD- (25)	1.13	0.58	428.26	0.26	0.00	4.21	428.00	0.00	0 00:
3 AD- (29)	0.58	0.58	429.32	0.26	0.00	3.13	429.06	0.00	0 00:
4 AD- (30)	1.12	0.58	428.29	0.29	0.00	4.17	428.00	0.00	0 00:
5 FES-5	22.04	22.04	426.14	1.04	0.00	1.46	425.10	0.00	0 00:
6 FES-6	7.14	7.14	425.49	0.74	0.00	1.50	424.76	0.01	0 00:

Channel Input

SN Element	Length	Inlet	Inlet	Outlet	Outlet	Total	Average Sha	аре	Height	Width	Manı
ID		Invert	Invert	Invert	Invert	Drop	Slope				Rough
		Elevation	Offset	Elevation	Offset						
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(%)		(ft)	(ft)	
1 L-SL - (18) (1)	272.73	431.93	7.03	427.30	3.80	4.63	1.7000 Use	er-Defined	0.500	17.000	0

Channel Results

5	SN Element	Peak	Time of	Design Flow	Peak Flow/	Peak Flow	Travel	Peak Flow	Peak Flow	Т
	ID	Flow	Peak Flow	Capacity	Design Flow	Velocity	Time	Depth	Depth/	Sı
			Occurrence		Ratio				Total Depth Ratio	
		(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		
	1 L-SL - (18) (1)	0.00	0 00:00	7.95	0.00	0.00		0.00	0.00	_

Pipe Input

SN Element	Length	Inlet	Inlet				Average		Pipe	Pipe	Ma
ID		Invert			Invert	Drop	Slope	Shape	Diameter or	Width	Rou
		Elevation	Offset	Elevation	Offset				Height		
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(%)		(in)	(in)	
1 L-SL - (24)	199.68	430.66	6.56	426.94	4.62	3.72	1.8600	Dummy	0.000	0.000	
2 L-SL-14	135.67	423.42	0.00	422.50	0.18	0.92	0.6800	Dummy	0.000	0.000	
3 SL - (14)	127.66	423.42	0.00	422.80	0.48	0.62	0.4900	CIRCULAR	24.000	24.000	
4 SL - (15)	106.61	422.32	0.00	421.25	0.00	1.07	1.0000	CIRCULAR	30.000	30.000	
5 SL - (16)	105.49	429.05	0.00	428.00	0.00	1.05	1.0000	CIRCULAR	12.000	12.000	
6 SL - (17)	60.96	428.00	0.00	423.50	0.00	4.50	7.3800	CIRCULAR	12.000	12.000	
7 SL - (18)	141.40	427.00	0.00	424.90	0.00	2.10	1.4900	CIRCULAR	18.000	18.000	
8 SL - (18) (1)	20.22	424.90	0.00	424.50	0.00	0.40	1.9700	CIRCULAR	18.000	18.000	
9 SL - (19)	106.07	429.06	0.00	428.00	0.00	1.06	1.0000	CIRCULAR	12.000	12.000	
10 SL - (20)	19.89	428.00	0.00	427.50	0.50	0.50	2.5100	CIRCULAR	12.000	12.000	
11 SL - (21)	63.64	423.50	0.00	422.50	0.00	1.00	1.5700	CIRCULAR	24.000	24.000	
12 SL - (24)	174.72	424.10	0.00	422.32	0.00	1.78	1.0200	CIRCULAR	30.000	30.000	
13 SL - (25)	52.99	425.10	0.00	424.10	0.00	1.00	1.8900	CIRCULAR	30.000	30.000	
14 SL - (26)	123.36	424.75	0.00	423.50	0.00	1.25	1.0100	CIRCULAR	24.000	24.000	

No. of Barrels

Pipe Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity				Peak Flow Depth	Peak Flow To Depth/ Sur Total Depth Ratio
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)	
1 L-SL - (24)	0.36	0 00:05	0.00	0.00	0.00		0.00	0.00
2 L-SL-14	2.77	0 00:05	0.00	0.00	0.00		0.00	0.00
3 SL - (14)	4.16	0 00:05	15.77	0.26	7.45	0.29	0.70	0.35
4 SL - (15)	35.49	0 00:05	44.52	0.80	10.14	0.18	1.68	0.67
5 SL - (16)	0.57	0 00:05	3.86	0.15	5.59	0.31	0.26	0.26
6 SL - (17)	1.12	0 00:05	10.49	0.11	8.73	0.12	0.22	0.22
7 SL - (18)	1.76	0 00:05	13.88	0.13	5.45	0.43	0.36	0.24
8 SL - (18) (1)	2.52	0 00:05	15.96	0.16	6.59	0.05	0.40	0.27
9 SL - (19)	0.57	0 00:05	3.86	0.15	5.60	0.32	0.26	0.26
10 SL - (20)	1.12	0 00:05	6.12	0.18	5.94	0.06	0.29	0.29
11 SL - (21)	7.11	0 00:18	30.72	0.23	7.96	0.13	0.65	0.33
12 SL - (24)	23.43	0 00:05	44.85	0.52	9.34	0.31	1.28	0.51
13 SL - (25)	21.93	0 00:05	61.04	0.36	11.83	0.07	1.04	0.41
14 SL - (26)	7.11	0 00:18	24.67	0.29	7.20	0.29	0.73	0.37

Inlet Input

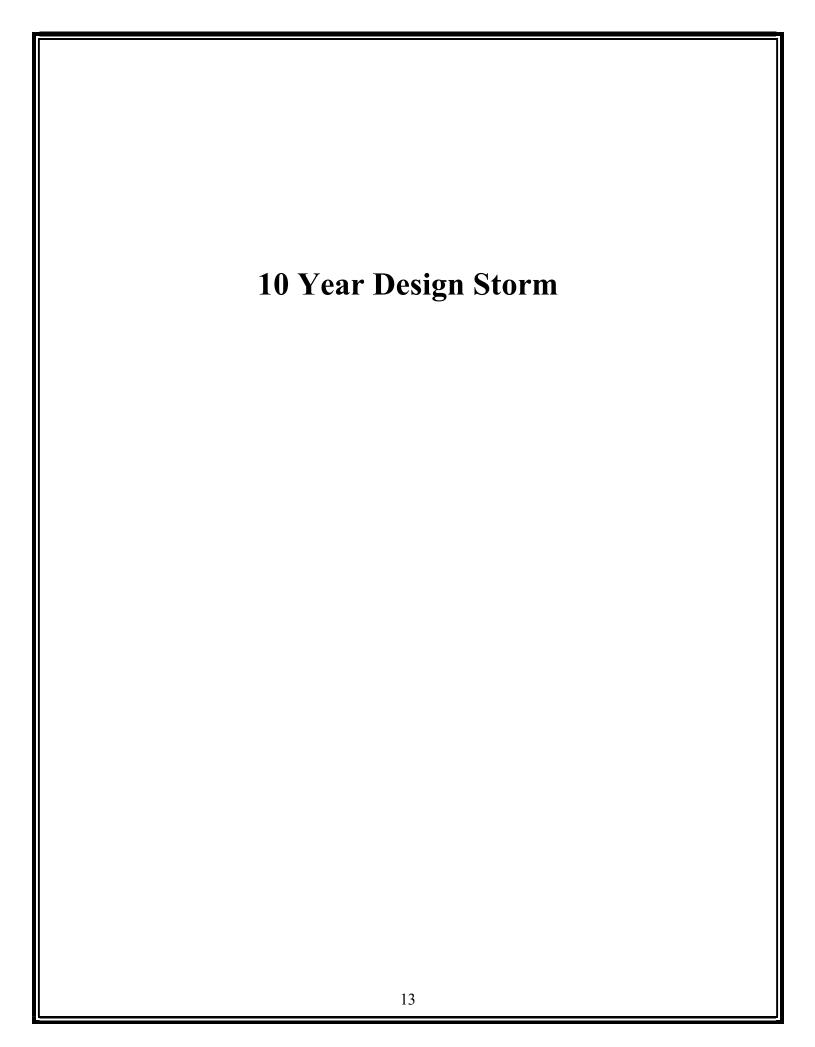
	SN Element	Inlet	Number of	Catchbasin	Max (Rim)	Inlet	Initial	Initial	Ponded	Grate
	ID	Location	Inlets	Invert	Elevation	Depth	Water	Water	Area	Clogging
				Elevation			Elevation	Depth		Factor
_				(ft)	(ft)	(ft)	(ft)	(ft)	(ft ²)	(%)
	1 CB-1	On Grade	1	423.42	429.56	6.14	423.42	0.00	N/A	0.00
	2 CB-2	On Sag	1	422.32	426.95	4.63	422.32	0.00	10.00	0.00
	3 CB-3	On Grade	1	424.10	430.66	6.56	424.10	0.00	N/A	0.00
	4 CB-4	On Grade	1	424.90	431.93	7.03	424.90	0.00	N/A	0.00
	5 CB-5	On Sag	1	427.00	432.00	5.00	427.00	0.00	10.00	0.00
	6 CB-6	On Sag	1	423.50	427.34	3.84	423.50	0.00	10.00	0.00

Roadway & Gutter Input

SN Element	Roadway	Roadway	Roadway	Gutter	Gutter	Gutter	Allowable
ID	Longitudinal	Cross	Manning's	Cross	Width	Depression	Spread
	Slope	Slope	Roughness	Slope			
	(ft/ft)	(ft/ft)		(ft/ft)	(ft)	(in)	(ft)
1 CB-1	0.0100	0.0200	0.0150	0.0200	1.50	0.1312	10.00
2 CB-2	N/A	0.0300	0.0150	0.0200	1.50	0.1312	10.00
3 CB-3	0.0380	0.0300	0.0150	0.0200	1.50	0.1312	10.00
4 CB-4	0.0175	0.0200	0.0150	0.0200	1.50	0.1312	10.00
5 CB-5	N/A	0.0300	0.0150	0.0200	1.50	0.1312	10.00
6 CB-6	N/A	0.0350	0.0150	0.0200	1.50	0.1312	10.00

Inlet Results

SN Element	Peak	Peak	Peak Flow	Peak Flow	Inlet	Max Gutter	Max Gutter	Max Gutter	٦
ID	Flow	Lateral	Intercepted	Bypassing	Efficiency	Spread	Water Elev.	Water Depth	Max
		Inflow	by	Inlet	during Peak	during Peak	during Peak	during Peak	Occı
			Inlet		Flow	Flow	Flow	Flow	
	(cfs)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)	(days h
1 CB-1	6.99	6.99	4.21	2.77	60.33	14.61	429.85	0.29	(
2 CB-2	8.48	5.35	N/A	N/A	N/A	9.70	427.49	0.54	(
3 CB-3	2.26	2.26	1.90	0.36	84.14	5.89	430.82	0.16	(
4 CB-4	0.82	0.82	0.82	0.00	100.00	5.89	432.05	0.12	(
5 CB-5	0.67	0.67	N/A	N/A	N/A	2.33	432.32	0.32	(
6 CB-6	5.10	5.10	N/A	N/A	N/A	7.76	427.86	0.52	(



Project Description

File Name Collective Church Drainage 5-2-25.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	Rational
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Kinematic Wave
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	

Analysis Options

Start Analysis On	May 03, 2025 May 02, 2025 0 0 01:00:00 0 00:05:00 0 00:05:00	00:00:00 00:00:00 00:00:00 days days hh:mm:s days hh:mm:s
Routing Time Step		seconds

Number of Elements

inibor of Elomonio	
	Qty
Rain Gages	0
Subbasins	12
Nodes	16
Junctions	6
Outfalls	4
Flow Diversions	. 0
Inlets	. 6
Storage Nodes	0
Links	15
Channels	1
Pipes	14
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

Subbasin Summary

SN Subbasin ID	Area	Weighted Runoff Coefficient	Total Rainfall	Total Runoff	Total Runoff Volume	Peak Runoff	Time of Concentration
	(ac)	Coomoioni	(in)	(in)	(ac-in)	(cfs)	(days hh:mm:ss)
1 Sub-AD- (24)	0.10	0.9500	0.68	0.65	0.06	0.78	0 00:05:00
2 Sub-AD- (25)	0.10	0.9500	0.68	0.65	0.06	0.78	0 00:05:00
3 Sub-AD- (29)	0.10	0.9500	0.68	0.65	0.06	0.78	0 00:05:00
4 Sub-AD- (30)	0.10	0.9500	0.68	0.65	0.06	0.78	0 00:05:00
5 Sub-CB-1	1.20	0.9500	0.68	0.65	0.78	9.34	0 00:05:00
6 Sub-CB-2	0.92	0.9500	0.68	0.65	0.60	7.15	0 00:05:00
7 Sub-CB-3	0.39	0.9500	0.68	0.65	0.25	3.03	0 00:05:00
8 Sub-CB-4	0.14	0.9500	0.68	0.65	0.09	1.09	0 00:05:00
9 Sub-CB-5	0.11	0.9500	0.68	0.65	0.07	0.89	0 00:05:00
10 Sub-CB-6	0.87	0.9500	0.68	0.65	0.57	6.82	0 00:05:00
11 Sub-FES-5	3.78	0.9500	0.68	0.65	2.46	29.47	0 00:05:00
12 Sub-FES-6	3.03	0.7000	1.36	0.96	2.89	9.55	0 00:18:13

Node Summary

SN Element ID	Element Type	Invert Elevation	Ground/Rim (Max) Elevation	Water	Surcharge Elevation			Max HGL Elevation Attained	Ma Surcharg Dept Attaine
		(ft)	(ft)	(ft)	(ft)	(ft ²)	(cfs)	(ft)	(f
1 AD- (24)	Junction	429.05	432.47	429.05	432.47	10.00	0.78	429.36	0.0
2 AD- (25)	Junction	428.00	432.46	428.00	432.46	10.00	1.50	428.30	0.0
3 AD- (29)	Junction	429.06	432.45	429.06	432.45	10.00	0.78	429.36	0.0
4 AD- (30)	Junction	428.00	432.46	428.00	432.46	10.00	1.51	428.34	0.0
5 FES-5	Junction	425.10	427.00	425.10	427.50	0.00	29.47	426.32	0.0
6 FES-6	Junction	424.75	426.99	424.75	426.99	0.00	9.55	425.61	0.0
7 Out-1SL - (15)	Outfall	421.25					48.16	423.54	
8 Out-1SL - (17)	Outfall	423.50					1.50	423.76	
9 Out-1SL - (18) (1)	Outfall	424.50					3.38	424.97	
10 Out-1SL - (21)	Outfall	422.50					9.51	423.26	

Link Summary

SN Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness		Design Flow Capacity		Peak Flow Velocity	
				(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	
1 L-SL - (24)	Pipe	CB-3	CB-2	199.68	430.66	426.94	1.8600	0.000	0.0320	0.73	0.00	0.00	0.00	
2 L-SL-14	Pipe	CB-1	CB-2	135.67	423.42	422.50	0.6800	0.000	0.0150	4.42	0.00	0.00	0.00	
3 SL - (14)	Pipe	CB-1	CB-2	127.66	423.42	422.80	0.4900	24.000	0.0130	4.86	15.77	0.31	7.88	
4 SL - (15)	Pipe	CB-2	Out-1SL - (15)	106.61	422.32	421.25	1.0000	30.000	0.0120	48.16	44.52	1.08	10.66	
5 SL - (16)	Pipe	AD- (24)	AD- (25)	105.49	429.05	428.00	1.0000	12.000	0.0120	0.75	3.86	0.20	5.92	
6 SL - (17)	Pipe	AD- (25)	Out-1SL - (17)	60.96	428.00	423.50	7.3800	12.000	0.0120	1.50	10.49	0.14	9.47	
7 SL - (18)	Pipe	CB-5	CB-4	141.40	427.00	424.90	1.4900	18.000	0.0120	2.36	13.88	0.17	5.92	
8 SL - (18) (1)	Pipe	CB-4	Out-1SL - (18) (1)	20.22	424.90	424.50	1.9700	18.000	0.0120	3.38	15.96	0.21	7.17	
9 SL - (19)	Pipe	AD- (29)	AD- (30)	106.07	429.06	428.00	1.0000	12.000	0.0120	0.76	3.86	0.20	5.93	
10 SL - (20)	Pipe	AD- (30)	CB-5	19.89	428.00	427.50	2.5100	12.000	0.0120	1.50	6.12	0.25	6.45	
11 SL - (21)	Pipe	CB-6	Out-1SL - (21)	63.64	423.50	422.50	1.5700	24.000	0.0120	9.51	30.72	0.31	8.62	
12 SL - (24)	Pipe	CB-3	CB-2	174.72	424.10	422.32	1.0200	30.000	0.0120	31.14	44.85	0.69	9.98	
13 SL - (25)	Pipe	FES-5	CB-3	52.99	425.10	424.10	1.8900	30.000	0.0120	29.34	61.04	0.48	12.41	
14 SL - (26)	Pipe	FES-6	CB-6	123.36	424.75	423.50	1.0100	24.000	0.0120	9.51	24.67	0.39	7.69	
15 L-SL - (18) (1)	Channel	CB-4	CB-6	272.73	431.93	427.30	1.7000	6.000	0.0150	0.01	7.95	0.00	0.90	

Inlet Summary

SN Element ID	Inlet Location	Number of Inlets	Catchbasin Invert	Max (Rim) Elevation		Ponded Area		Peak Flow Intercepted			Allowable Spread	Max Gutter Spread	Max Gutter Water Elev.
			Elevation		Elevation			by	Inlet	during Peak	•	during Peak	during Peak
								Inlet		Flow		Flow	Flow
			(ft)	(ft)	(ft)	(ft ²)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)
1 CB-1	On Grade	1	423.42	429.56	423.42	N/A	9.34	4.92	4.42	52.73	10.00	16.29	429.88
2 CB-2	On Sag	1	422.32	426.95	422.32	10.00	12.30	N/A	N/A	N/A	10.00	12.42	427.57
3 CB-3	On Grade	1	424.10	430.66	424.10	N/A	3.03	2.29	0.73	75.84	10.00	6.55	430.84
4 CB-4	On Grade	1	424.90	431.93	424.90	N/A	1.09	1.09	0.00	100.00	10.00	6.57	432.06
5 CB-5	On Sag	1	427.00	432.00	427.00	10.00	0.89	N/A	N/A	N/A	10.00	2.83	432.34
6 CB-6	On Sag	1	423.50	427.34	423.50	10.00	6.81	N/A	N/A	N/A	10.00	9.41	427.92

Subbasin Hydrology

Subbasin: Sub-AD- (24) **Time of Concentration** TOC Method: SCS TR-55 Sheet Flow Equation : $Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))$ Where: Tc = Time of Concentration (hr) n = Manning's roughness Lf = Flow Length (ft) P = 2 yr, 24 hr Rainfall (inches) Sf = Slope (ft/ft) Shallow Concentrated Flow Equation: V = 16.1345 * (Sf^0.5) (unpaved surface) V = 20.3282 * (Sf^0.5) (paved surface) V = 15.0 * (Sf^0.5) (grassed waterway surface) V = 10.0 * (Sf^0.5) (nearly bare & untilled surface) V = 9.0 * (Sf^0.5) (cultivated straight rows surface) V = 7.0 * (Sf^0.5) (short grass pasture surface) V = 5.0 * (Sf^0.5) (woodland surface) V = 2.5 * (Sf^0.5) (forest w/heavy litter surface) Tc = (Lf / V) / (3600 sec/hr)Where: Tc = Time of Concentration (hr) Lf = Flow Length (ft) V = Velocity (ft/sec) Sf = Slope (ft/ft) Channel Flow Equation : $V = (1.49 * (R^{(2/3)}) * (Sf^{0.5})) / n$ R = Aq / WpTc = (Lf / V) / (3600 sec/hr) Where: Tc = Time of Concentration (hr) Lf = Flow Length (ft) R = Hydraulic Radius (ft) Aq = Flow Area (ft²) Wp = Wetted Perimeter (ft) V = Velocity (ft/sec) Sf = Slope (ft/ft) n = Manning's roughness

Subbasin: Sub-AD- (25)

Time of Concentration

Subbasin: Sub-AD- (29)

Time of Concentration

Subbasin: Sub-AD- (30)

Time of Concentration

Time of Concentration

Time of Concentration

Time of Concentration

Time of Concentration

Time of Concentration

Time of Concentration

Subbasin : Sub-FES-5

Time of Concentration

Subbasin : Sub-FES-6

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0.00	0.00
Flow Length (ft):	85.71195638	0.00	0.00
Slope (%):	2.4	0.00	0.00
2 yr, 24 hr Rainfall (in):	4.36	0.00	0.00
Velocity (ft/sec):	0.12	0.00	0.00
Computed Flow Time (min) :	12.01	0.00	0.00
	Subarea	Subarea	Subarea
Shallow Concentrated Flow Computations	Α	В	С
Flow Length (ft):	253.76684919	31.2339863	0.93388558
Slope (%):	1.8	0.4	1.25
Surface Type :	Paved	Paved	Unpaved
Velocity (ft/sec):	2.73	1.29	1.80
Computed Flow Time (min) :	1.55	4.29	0.38
Total TOC (min)18.23			

Junction Input

SN Element	Invert	Ground/Rim	Ground/Rim	Initial	Initial	Surcharge	Surcharge	Ponded	Minimum
ID	Elevation	(Max)	(Max)	Water	Water	Elevation	Depth	Area	Pipe
		Elevation	Offset	Elevation	Depth				Cover
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft ²)	(in)
1 AD- (24)	429.05	432.47	3.41	429.05	0.00	432.47	0.00	10.00	0.00
2 AD- (25)	428.00	432.46	4.46	428.00	0.00	432.46	0.00	10.00	0.00
3 AD- (29)	429.06	432.45	3.39	429.06	0.00	432.45	0.00	10.00	0.00
4 AD- (30)	428.00	432.46	4.46	428.00	0.00	432.46	0.00	10.00	0.00
5 FES-5	425.10	427.00	1.90	425.10	0.00	427.50	0.50	0.00	0.00
6 FES-6	424.75	426.99	2.24	424.75	0.00	426.99	0.00	0.00	0.00

Junction Results

SN Element	Peak	Peak	Max HGL	Max HGL	Max	Min	Average HGL	Average HGL	Time
ID	Inflow	Lateral	Elevation	Depth	Surcharge	Freeboard	Elevation	Depth	Max H(
		Inflow	Attained	Attained	Depth	Attained	Attained	Attained	Occurren
					Attained				
	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(days hh:m
1 AD- (24)	0.78	0.78	429.36	0.31	0.00	3.11	429.06	0.01	0 00:
2 AD- (25)	1.50	0.78	428.30	0.30	0.00	4.16	428.00	0.00	0 00:
3 AD- (29)	0.78	0.78	429.36	0.30	0.00	3.09	429.06	0.00	0 00:
4 AD- (30)	1.51	0.78	428.34	0.34	0.00	4.12	428.00	0.00	0 00:
5 FES-5	29.47	29.47	426.32	1.22	0.00	1.28	425.11	0.01	0 00:
6 FES-6	9.55	9.55	425.61	0.86	0.00	1.37	424.76	0.01	0 00:

Channel Input

SN Element	Length	Inlet	Inlet	Outlet	Outlet	Total	Average	Shape	Height	Width	Manı
ID		Invert	Invert	Invert	Invert	Drop	Slope				Rough
		Elevation	Offset	Elevation	Offset						
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(%)		(ft)	(ft)	
1 L-SL - (18) (1)	272.73	431.93	7.03	427.30	3.80	4.63	1.7000	User-Defined	0.500	17.000	0

Channel Results

;	SN Element	Peak	Time of	Design Flow	Peak Flow/	Peak Flow	Travel	Peak Flow	Peak Flow	Т
	ID	Flow	Peak Flow	Capacity	Design Flow	Velocity	Time	Depth	Depth/	Sı
			Occurrence		Ratio				Total Depth	
									Ratio	
_		(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		
	1 L-SL - (18) (1)	0.01	0 00:05	7.95	0.00	0.90	5.05	0.02	0.05	

Pipe Input

SN Element	Length	Inlet	Inlet				Average		Pipe	Pipe	Ma
ID		Invert			Invert	Drop	Slope	Shape	Diameter or	Width	Rou
		Elevation	Offset	Elevation	Offset				Height		
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(%)		(in)	(in)	
1 L-SL - (24)	199.68	430.66	6.56	426.94	4.62	3.72	1.8600	Dummy	0.000	0.000	
2 L-SL-14	135.67	423.42	0.00	422.50	0.18	0.92	0.6800	Dummy	0.000	0.000	
3 SL - (14)	127.66	423.42	0.00	422.80	0.48	0.62	0.4900	CIRCULAR	24.000	24.000	
4 SL - (15)	106.61	422.32	0.00	421.25	0.00	1.07	1.0000	CIRCULAR	30.000	30.000	
5 SL - (16)	105.49	429.05	0.00	428.00	0.00	1.05	1.0000	CIRCULAR	12.000	12.000	
6 SL - (17)	60.96	428.00	0.00	423.50	0.00	4.50	7.3800	CIRCULAR	12.000	12.000	
7 SL - (18)	141.40	427.00	0.00	424.90	0.00	2.10	1.4900	CIRCULAR	18.000	18.000	
8 SL - (18) (1)	20.22	424.90	0.00	424.50	0.00	0.40	1.9700	CIRCULAR	18.000	18.000	
9 SL - (19)	106.07	429.06	0.00	428.00	0.00	1.06	1.0000	CIRCULAR	12.000	12.000	
10 SL - (20)	19.89	428.00	0.00	427.50	0.50	0.50	2.5100	CIRCULAR	12.000	12.000	
11 SL - (21)	63.64	423.50	0.00	422.50	0.00	1.00	1.5700	CIRCULAR	24.000	24.000	
12 SL - (24)	174.72	424.10	0.00	422.32	0.00	1.78	1.0200	CIRCULAR	30.000	30.000	
13 SL - (25)	52.99	425.10	0.00	424.10	0.00	1.00	1.8900	CIRCULAR	30.000	30.000	
14 SL - (26)	123.36	424.75	0.00	423.50	0.00	1.25	1.0100	CIRCULAR	24.000	24.000	

No. of Barrels

Pipe Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity				Peak Flow Depth	Peak Flow To Depth/ Sur Total Depth Ratio
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)	
1 L-SL - (24)	0.73	0 00:05	0.00	0.00	0.00		0.02	0.05
2 L-SL-14	4.42	0 00:05	0.00	0.00	0.00		0.02	0.05
3 SL - (14)	4.86	0 00:05	15.77	0.31	7.88	0.27	0.76	0.38
4 SL - (15)	48.16	0 00:05	44.52	1.08	10.66	0.17	2.32	0.93
5 SL - (16)	0.75	0 00:05	3.86	0.20	5.92	0.30	0.30	0.30
6 SL - (17)	1.50	0 00:05	10.49	0.14	9.47	0.11	0.26	0.26
7 SL - (18)	2.36	0 00:05	13.88	0.17	5.92	0.40	0.42	0.28
8 SL - (18) (1)	3.38	0 00:05	15.96	0.21	7.17	0.05	0.47	0.31
9 SL - (19)	0.76	0 00:05	3.86	0.20	5.93	0.30	0.30	0.30
10 SL - (20)	1.50	0 00:05	6.12	0.25	6.45	0.05	0.34	0.34
11 SL - (21)	9.51	0 00:18	30.72	0.31	8.62	0.12	0.76	0.38
12 SL - (24)	31.14	0 00:05	44.85	0.69	9.98	0.29	1.53	0.61
13 SL - (25)	29.34	0 00:05	61.04	0.48	12.41	0.07	1.22	0.49
14 SL - (26)	9.51	0 00:18	24.67	0.39	7.69	0.27	0.86	0.43

Inlet Input

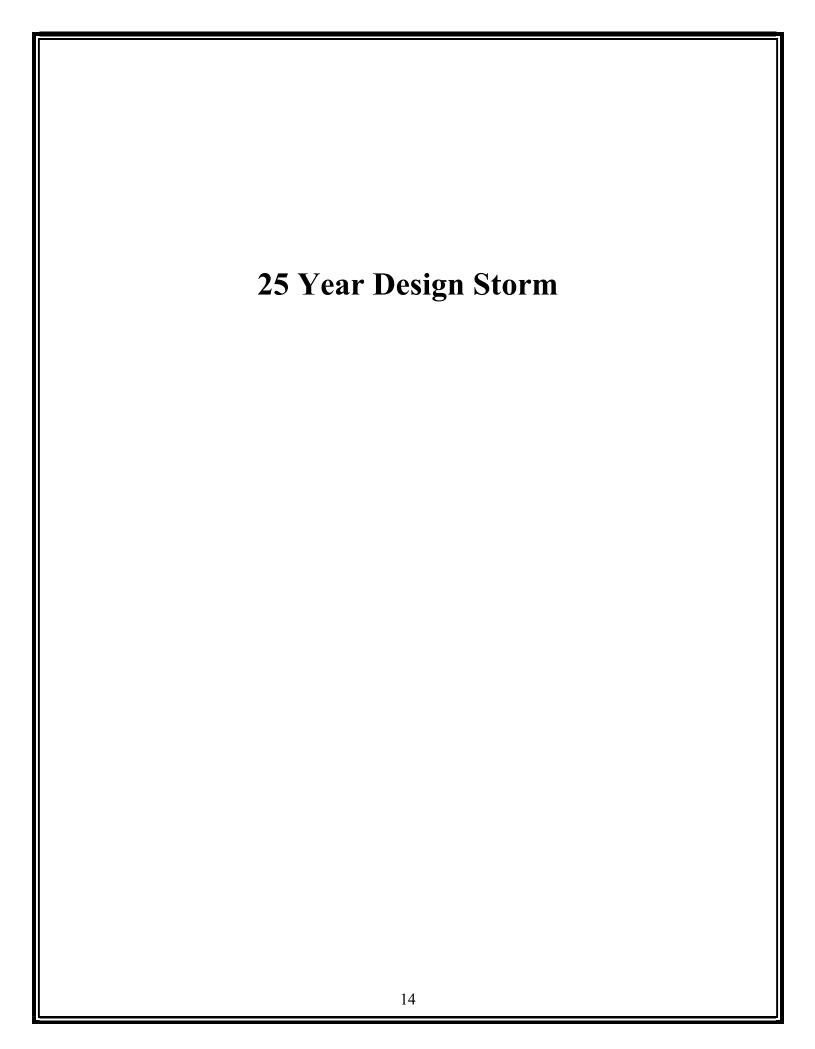
	SN Element	Inlet	Number of	Catchbasin	Max (Rim)	Inlet	Initial	Initial	Ponded	Grate
	ID	Location	Inlets	Invert	Elevation	Depth	Water	Water	Area	Clogging
				Elevation			Elevation	Depth		Factor
_				(ft)	(ft)	(ft)	(ft)	(ft)	(ft ²)	(%)
	1 CB-1	On Grade	1	423.42	429.56	6.14	423.42	0.00	N/A	0.00
	2 CB-2	On Sag	1	422.32	426.95	4.63	422.32	0.00	10.00	0.00
	3 CB-3	On Grade	1	424.10	430.66	6.56	424.10	0.00	N/A	0.00
	4 CB-4	On Grade	1	424.90	431.93	7.03	424.90	0.00	N/A	0.00
	5 CB-5	On Sag	1	427.00	432.00	5.00	427.00	0.00	10.00	0.00
	6 CB-6	On Sag	1	423.50	427.34	3.84	423.50	0.00	10.00	0.00

Roadway & Gutter Input

SN Element	Roadway	Roadway	Roadway	Gutter	Gutter	Gutter	Allowable
ID	Longitudinal	Cross	Manning's	Cross	Width	Depression	Spread
	Slope	Slope	Roughness	Slope			
	(ft/ft)	(ft/ft)		(ft/ft)	(ft)	(in)	(ft)
1 CB-1	0.0100	0.0200	0.0150	0.0200	1.50	0.1312	10.00
2 CB-2	N/A	0.0300	0.0150	0.0200	1.50	0.1312	10.00
3 CB-3	0.0380	0.0300	0.0150	0.0200	1.50	0.1312	10.00
4 CB-4	0.0175	0.0200	0.0150	0.0200	1.50	0.1312	10.00
5 CB-5	N/A	0.0300	0.0150	0.0200	1.50	0.1312	10.00
6 CB-6	N/A	0.0350	0.0150	0.0200	1.50	0.1312	10.00

Inlet Results

SN Element	Peak	Peak	Peak Flow	Peak Flow	Inlet	Max Gutter	Max Gutter	Max Gutter	
ID	Flow	Lateral	Intercepted	Bypassing	Efficiency	Spread	Water Elev.	Water Depth	Max
		Inflow	by	Inlet	during Peak	during Peak	during Peak	during Peak	Occi
			Inlet		Flow	Flow	Flow	Flow	
	(cfs)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)	(days I
1 CB-1	9.34	9.34	4.92	4.42	52.73	16.29	429.88	0.33	-
2 CB-2	12.30	7.15	N/A	N/A	N/A	12.42	427.57	0.62	1
3 CB-3	3.03	3.03	2.29	0.73	75.84	6.55	430.84	0.18	1
4 CB-4	1.09	1.09	1.09	0.00	100.00	6.57	432.06	0.13	1
5 CB-5	0.89	0.89	N/A	N/A	N/A	2.83	432.34	0.33	- (
6 CB-6	6.81	6.81	N/A	N/A	N/A	9.41	427.92	0.58	1



Project Description

File Name Collective Church Drainage 5-2-25.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	Rational
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Kinematic Wave
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	May 03, 2025	00:00:00 00:00:00 00:00:00
Antecedent Dry Days Runoff (Dry Weather) Time Step	0	days days hh:mm:ss
Runoff (Wet Weather) Time Step Reporting Time Step	0 00:05:00	days hh:mm:ss days hh:mm:ss
Routing Time Step		seconds

Number of Elements

Qt	ij
Rain Gages 0	
Subbasins)
Nodes	ò
Junctions 6	
Outfalls 4	
Flow Diversions 0	
Inlets 6	
Storage Nodes 0	
Links	;
Channels 1	
Pipes 14	ŀ
Pumps 0	
Orifices 0	
Weirs 0	
Outlets 0	
Pollutants 0	
Land Uses 0	

Rainfall Details

Subbasin Summary

SN Subbasin ID	Area	Weighted Runoff Coefficient	Total Rainfall	Total Runoff	Total Runoff Volume	Peak Runoff	Time of Concentration
	(ac)	Coemcient	(in)	(in)	(ac-in)	(cfs)	(days hh:mm:ss)
1 Sub-AD- (24)	0.10	0.9500	0.79	0.75	0.07	0.89	0 00:05:00
2 Sub-AD- (25)	0.10	0.9500	0.79	0.75	0.07	0.89	0 00:05:00
3 Sub-AD- (29)	0.10	0.9500	0.79	0.75	0.07	0.89	0 00:05:00
4 Sub-AD- (30)	0.10	0.9500	0.79	0.75	0.07	0.89	0 00:05:00
5 Sub-CB-1	1.20	0.9500	0.79	0.75	0.89	10.73	0 00:05:00
6 Sub-CB-2	0.92	0.9500	0.79	0.75	0.68	8.21	0 00:05:00
7 Sub-CB-3	0.39	0.9500	0.79	0.75	0.29	3.48	0 00:05:00
8 Sub-CB-4	0.14	0.9500	0.79	0.75	0.10	1.26	0 00:05:00
9 Sub-CB-5	0.11	0.9500	0.79	0.75	0.09	1.03	0 00:05:00
10 Sub-CB-6	0.87	0.9500	0.79	0.75	0.65	7.83	0 00:05:00
11 Sub-FES-5	3.78	0.9500	0.79	0.75	2.82	33.85	0 00:05:00
12 Sub-FES-6	3.03	0.7000	1.57	1.10	3.32	10.98	0 00:18:13

Node Summary

SN Element ID	Element Type	Invert Elevation	Ground/Rim (Max) Elevation	Initial Water Elevation	Surcharge Elevation			Max HGL Elevation Attained	Ma Surcharg Dept Attaine
		(ft)	(ft)	(ft)	(ft)	(ft ²)	(cfs)	(ft)	(f
1 AD- (24)	Junction	429.05	432.47	429.05	432.47	10.00	0.89	429.38	0.0
2 AD- (25)	Junction	428.00	432.46	428.00	432.46	10.00	1.73	428.32	0.0
3 AD- (29)	Junction	429.06	432.45	429.06	432.45	10.00	0.89	429.39	0.0
4 AD- (30)	Junction	428.00	432.46	428.00	432.46	10.00	1.73	428.36	0.0
5 FES-5	Junction	425.10	427.00	425.10	427.50	0.00	33.85	426.43	0.0
6 FES-6	Junction	424.75	426.99	424.75	426.99	0.00	10.98	425.68	0.0
7 Out-1SL - (15)	Outfall	421.25					48.16	423.75	
8 Out-1SL - (17)	Outfall	423.50					1.73	423.77	
9 Out-1SL - (18) (1)	Outfall	424.50					3.86	425.00	
10 Out-1SL - (21)	Outfall	422.50					10.93	423.32	

Link Summary

SN Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness		Design Flow Capacity		Peak Flow Velocity	
				(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	
1 L-SL - (24)	Pipe	CB-3	CB-2	199.68	430.66	426.94	1.8600	0.000	0.0320	0.98	0.00	0.00	0.00	
2 L-SL-14	Pipe	CB-1	CB-2	135.67	423.42	422.50	0.6800	0.000	0.0150	5.43	0.00	0.00	0.00	
3 SL - (14)	Pipe	CB-1	CB-2	127.66	423.42	422.80	0.4900	24.000	0.0130	5.23	15.77	0.33	8.17	
4 SL - (15)	Pipe	CB-2	Out-1SL - (15)	106.61	422.32	421.25	1.0000	30.000	0.0120	48.16	44.52	1.08	10.82	
5 SL - (16)	Pipe	AD- (24)	AD- (25)	105.49	429.05	428.00	1.0000	12.000	0.0120	0.87	3.86	0.23	6.22	
6 SL - (17)	Pipe	AD- (25)	Out-1SL - (17)	60.96	428.00	423.50	7.3800	12.000	0.0120	1.73	10.49	0.16	9.88	
7 SL - (18)	Pipe	CB-5	CB-4	141.40	427.00	424.90	1.4900	18.000	0.0120	2.71	13.88	0.19	6.15	
8 SL - (18) (1)	Pipe	CB-4	Out-1SL - (18) (1)	20.22	424.90	424.50	1.9700	18.000	0.0120	3.86	15.96	0.24	7.44	
9 SL - (19)	Pipe	AD- (29)	AD- (30)	106.07	429.06	428.00	1.0000	12.000	0.0120	0.87	3.86	0.23	6.23	
10 SL - (20)	Pipe	AD- (30)	CB-5	19.89	428.00	427.50	2.5100	12.000	0.0120	1.73	6.12	0.28	6.70	
11 SL - (21)	Pipe	CB-6	Out-1SL - (21)	63.64	423.50	422.50	1.5700	24.000	0.0120	10.93	30.72	0.36	8.95	
12 SL - (24)	Pipe	CB-3	CB-2	174.72	424.10	422.32	1.0200	30.000	0.0120	35.74	44.85	0.80	10.29	
13 SL - (25)	Pipe	FES-5	CB-3	52.99	425.10	424.10	1.8900	30.000	0.0120	33.72	61.04	0.55	12.97	
14 SL - (26)	Pipe	FES-6	CB-6	123.36	424.75	423.50	1.0100	24.000	0.0120	10.94	24.67	0.44	7.91	
15 L-SL - (18) (1)	Channel	CB-4	CB-6	272.73	431.93	427.30	1.7000	6.000	0.0150	0.01	7.95	0.00	1.43	

Inlet Summary

SN Element ID	Inlet Location	Number of Inlets	Catchbasin Invert	Max (Rim) Elevation	Initial Water	Ponded Area			Bypassing	Efficiency	Spread	Max Gutter Spread	Max Gutter Water Elev.
			Elevation		Elevation			by	Inlet	during Peak		during Peak	during Peak
								Inlet		Flow		Flow	Flow
			(ft)	(ft)	(ft)	(ft ²)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)
1 CB-1	On Grade	1	423.42	429.56	423.42	N/A	10.73	5.29	5.43	49.35	10.00	17.15	429.90
2 CB-2	On Sag	1	422.32	426.95	422.32	10.00	14.63	N/A	N/A	N/A	10.00	13.95	427.61
3 CB-3	On Grade	1	424.10	430.66	424.10	N/A	3.48	2.50	0.98	71.85	10.00	6.88	430.85
4 CB-4	On Grade	1	424.90	431.93	424.90	N/A	1.25	1.25	0.01	99.54	10.00	6.92	432.07
5 CB-5	On Sag	1	427.00	432.00	427.00	10.00	1.03	N/A	N/A	N/A	10.00	3.11	432.35
6 CB-6	On Sag	1	423.50	427.34	423.50	10.00	7.83	N/A	N/A	N/A	10.00	10.33	427.95

Subbasin Hydrology

Subbasin: Sub-AD- (24) **Time of Concentration** TOC Method: SCS TR-55 Sheet Flow Equation : $Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))$ Where: Tc = Time of Concentration (hr) n = Manning's roughness Lf = Flow Length (ft) P = 2 yr, 24 hr Rainfall (inches) Sf = Slope (ft/ft) Shallow Concentrated Flow Equation: V = 16.1345 * (Sf^0.5) (unpaved surface) V = 20.3282 * (Sf^0.5) (paved surface) V = 15.0 * (Sf^0.5) (grassed waterway surface) V = 10.0 * (Sf^0.5) (nearly bare & untilled surface) V = 9.0 * (Sf^0.5) (cultivated straight rows surface) V = 7.0 * (Sf^0.5) (short grass pasture surface) V = 5.0 * (Sf^0.5) (woodland surface) V = 2.5 * (Sf^0.5) (forest w/heavy litter surface) Tc = (Lf / V) / (3600 sec/hr)Where: Tc = Time of Concentration (hr) Lf = Flow Length (ft) V = Velocity (ft/sec) Sf = Slope (ft/ft) Channel Flow Equation : $V = (1.49 * (R^{(2/3)}) * (Sf^{0.5})) / n$ R = Aq / WpTc = (Lf / V) / (3600 sec/hr) Where: Tc = Time of Concentration (hr) Lf = Flow Length (ft) R = Hydraulic Radius (ft) Aq = Flow Area (ft²) Wp = Wetted Perimeter (ft) V = Velocity (ft/sec) Sf = Slope (ft/ft) n = Manning's roughness

Subbasin: Sub-AD- (25)

Time of Concentration

Subbasin: Sub-AD- (29)

Time of Concentration

Subbasin: Sub-AD- (30)

Time of Concentration

Time of Concentration

Time of Concentration

Time of Concentration

Time of Concentration

Time of Concentration

Time of Concentration

Subbasin : Sub-FES-5

Time of Concentration

Subbasin : Sub-FES-6

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0.00	0.00
Flow Length (ft):	85.71195638	0.00	0.00
Slope (%):	2.4	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.36	0.00	0.00
Velocity (ft/sec):	0.12	0.00	0.00
Computed Flow Time (min):	12.01	0.00	0.00
	Subarea	Subarea	Subarea
Shallow Concentrated Flow Computations	A	В	С
Flow Length (ft):	253.76684919	31.2339863	0.93388558
Slope (%):	1.8	0.4	1.25
Surface Type :	Paved	Paved	Unpaved
Velocity (ft/sec):	2.73	1.29	1.80
Computed Flow Time (min) : Total TOC (min)18.23	1.55	4.29	0.38
10.20			

Junction Input

SN Element	Invert	Ground/Rim	Ground/Rim	Initial	Initial	Surcharge	Surcharge	Ponded	Minimum
ID	Elevation	(Max)	(Max)	Water	Water	Elevation	Depth	Area	Pipe
		Elevation	Offset	Elevation	Depth				Cover
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft ²)	(in)
1 AD- (24)	429.05	432.47	3.41	429.05	0.00	432.47	0.00	10.00	0.00
2 AD- (25)	428.00	432.46	4.46	428.00	0.00	432.46	0.00	10.00	0.00
3 AD- (29)	429.06	432.45	3.39	429.06	0.00	432.45	0.00	10.00	0.00
4 AD- (30)	428.00	432.46	4.46	428.00	0.00	432.46	0.00	10.00	0.00
5 FES-5	425.10	427.00	1.90	425.10	0.00	427.50	0.50	0.00	0.00
6 FES-6	424.75	426.99	2.24	424.75	0.00	426.99	0.00	0.00	0.00

Junction Results

SN Element ID	Peak Inflow	Peak Lateral	Max HGL Elevation		Max Surcharge		Average HGL Elevation	Average HGL Depth	Time Max H
		Inflow	Attained	Attained	Depth	Attained	Attained	Attained	Occurren
					Attained				
	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(days hh:m
1 AD- (24)	0.89	0.89	429.38	0.33	0.00	3.08	429.06	0.01	0 00:
2 AD- (25)	1.73	0.89	428.32	0.32	0.00	4.14	428.00	0.00	0 00:
3 AD- (29)	0.89	0.89	429.39	0.33	0.00	3.07	429.06	0.00	0 00:
4 AD- (30)	1.73	0.89	428.36	0.36	0.00	4.10	428.00	0.00	0 00:
5 FES-5	33.85	33.85	426.43	1.33	0.00	1.17	425.11	0.01	0 00:
6 FES-6	10.98	10.98	425.68	0.93	0.00	1.30	424.77	0.02	0 00:

Channel Input

SN Element	Length	Inlet	Inlet	Outlet	Outlet	Total	Average	Shape	Height	Width	Manı
ID		Invert	Invert	Invert	Invert	Drop	Slope				Rough
		Elevation	Offset	Elevation	Offset						
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(%)		(ft)	(ft)	
1 L-SL - (18) (1)	272.73	431.93	7.03	427.30	3.80	4.63	1.7000	User-Defined	0.500	17.000	0

Channel Results

SN Element	Peak	Time of	Design Flow	Peak Flow/	Peak Flow	Travel	Peak Flow	Peak Flow T
ID	Flow	Peak Flow	Capacity	Design Flow	Velocity	Time	Depth	Depth/ Si
		Occurrence		Ratio				Total Depth Ratio
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)	riatio
1 L-SL - (18) (1)	0.01	0 00:06	7.95	0.00	1.43	3.18	0.03	0.07

Pipe Input

SN Element	Length	Inlet	Inlet				Average		Pipe	Pipe	Ma
ID		Invert			Invert	Drop	Slope	Shape	Diameter or	Width	Rou
		Elevation	Offset	Elevation	Offset				Height		
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(%)		(in)	(in)	
1 L-SL - (24)	199.68	430.66	6.56	426.94	4.62	3.72	1.8600	Dummy	0.000	0.000	
2 L-SL-14	135.67	423.42	0.00	422.50	0.18	0.92	0.6800	Dummy	0.000	0.000	
3 SL - (14)	127.66	423.42	0.00	422.80	0.48	0.62	0.4900	CIRCULAR	24.000	24.000	
4 SL - (15)	106.61	422.32	0.00	421.25	0.00	1.07	1.0000	CIRCULAR	30.000	30.000	
5 SL - (16)	105.49	429.05	0.00	428.00	0.00	1.05	1.0000	CIRCULAR	12.000	12.000	
6 SL - (17)	60.96	428.00	0.00	423.50	0.00	4.50	7.3800	CIRCULAR	12.000	12.000	
7 SL - (18)	141.40	427.00	0.00	424.90	0.00	2.10	1.4900	CIRCULAR	18.000	18.000	
8 SL - (18) (1)	20.22	424.90	0.00	424.50	0.00	0.40	1.9700	CIRCULAR	18.000	18.000	
9 SL - (19)	106.07	429.06	0.00	428.00	0.00	1.06	1.0000	CIRCULAR	12.000	12.000	
10 SL - (20)	19.89	428.00	0.00	427.50	0.50	0.50	2.5100	CIRCULAR	12.000	12.000	
11 SL - (21)	63.64	423.50	0.00	422.50	0.00	1.00	1.5700	CIRCULAR	24.000	24.000	
12 SL - (24)	174.72	424.10	0.00	422.32	0.00	1.78	1.0200	CIRCULAR	30.000	30.000	
13 SL - (25)	52.99	425.10	0.00	424.10	0.00	1.00	1.8900	CIRCULAR	30.000	30.000	
14 SL - (26)	123.36	424.75	0.00	423.50	0.00	1.25	1.0100	CIRCULAR	24.000	24.000	

No. of Barrels

Pipe Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity				Peak Flow Depth	Peak Flow To Depth/ Sur Total Depth Ratio
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)	
1 L-SL - (24)	0.98	0 00:05	0.00	0.00	0.00		0.03	0.07
2 L-SL-14	5.43	0 00:05	0.00	0.00	0.00		0.03	0.07
3 SL - (14)	5.23	0 00:05	15.77	0.33	8.17	0.26	0.79	0.40
4 SL - (15)	48.16	0 00:05	44.52	1.08	10.82	0.16	2.50	1.00
5 SL - (16)	0.87	0 00:05	3.86	0.23	6.22	0.28	0.32	0.32
6 SL - (17)	1.73	0 00:05	10.49	0.16	9.88	0.10	0.27	0.27
7 SL - (18)	2.71	0 00:05	13.88	0.19	6.15	0.38	0.45	0.30
8 SL - (18) (1)	3.86	0 00:05	15.96	0.24	7.44	0.05	0.50	0.34
9 SL - (19)	0.87	0 00:05	3.86	0.23	6.23	0.28	0.32	0.32
10 SL - (20)	1.73	0 00:05	6.12	0.28	6.70	0.05	0.36	0.36
11 SL - (21)	10.93	0 00:18	30.72	0.36	8.95	0.12	0.82	0.41
12 SL - (24)	35.74	0 00:05	44.85	0.80	10.29	0.28	1.68	0.67
13 SL - (25)	33.72	0 00:05	61.04	0.55	12.97	0.07	1.33	0.53
14 SL - (26)	10.94	0 00:18	24.67	0.44	7.91	0.26	0.93	0.47

Inlet Input

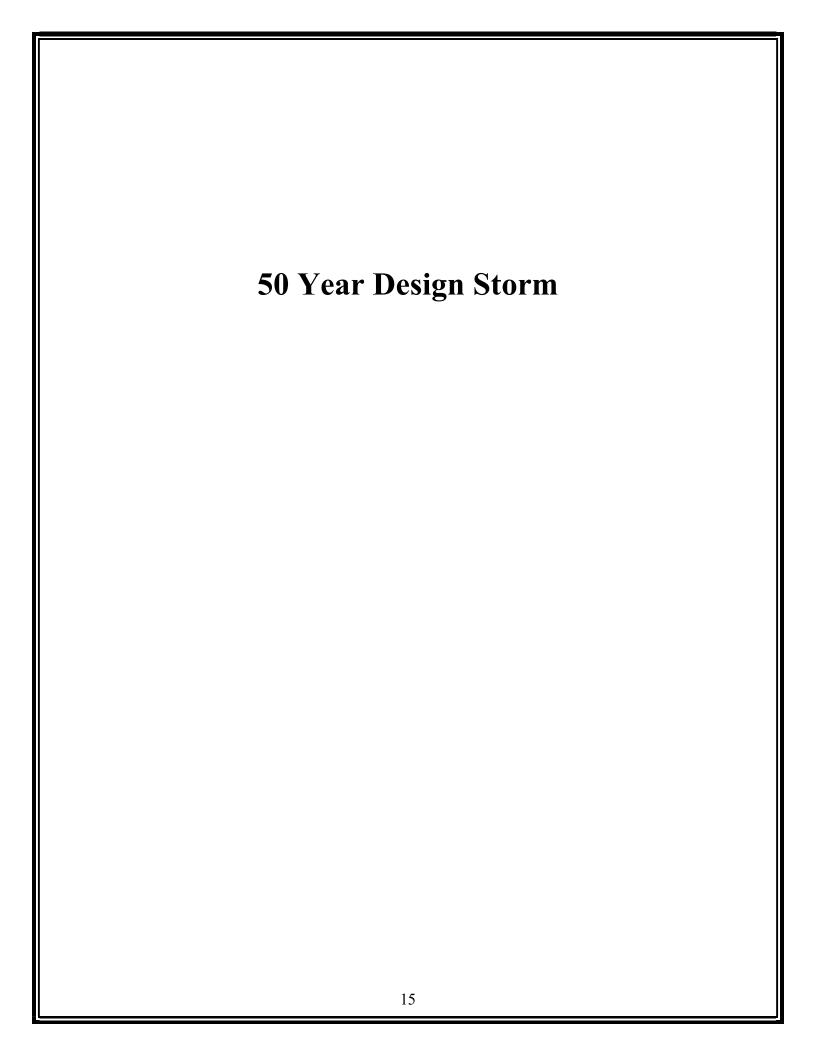
	SN Element	Inlet	Number of	Catchbasin	Max (Rim)	Inlet	Initial	Initial	Ponded	Grate
	ID	Location	Inlets	Invert	Elevation	Depth	Water	Water	Area	Clogging
				Elevation			Elevation	Depth		Factor
_				(ft)	(ft)	(ft)	(ft)	(ft)	(ft ²)	(%)
	1 CB-1	On Grade	1	423.42	429.56	6.14	423.42	0.00	N/A	0.00
	2 CB-2	On Sag	1	422.32	426.95	4.63	422.32	0.00	10.00	0.00
	3 CB-3	On Grade	1	424.10	430.66	6.56	424.10	0.00	N/A	0.00
	4 CB-4	On Grade	1	424.90	431.93	7.03	424.90	0.00	N/A	0.00
	5 CB-5	On Sag	1	427.00	432.00	5.00	427.00	0.00	10.00	0.00
	6 CB-6	On Sag	1	423.50	427.34	3.84	423.50	0.00	10.00	0.00

Roadway & Gutter Input

SN Element	Roadway	Roadway	Roadway	Gutter	Gutter	Gutter	Allowable
ID	Longitudinal	Cross	Manning's	Cross	Width	Depression	Spread
	Slope	Slope	Roughness	Slope			
	(ft/ft)	(ft/ft)		(ft/ft)	(ft)	(in)	(ft)
1 CB-1	0.0100	0.0200	0.0150	0.0200	1.50	0.1312	10.00
2 CB-2	N/A	0.0300	0.0150	0.0200	1.50	0.1312	10.00
3 CB-3	0.0380	0.0300	0.0150	0.0200	1.50	0.1312	10.00
4 CB-4	0.0175	0.0200	0.0150	0.0200	1.50	0.1312	10.00
5 CB-5	N/A	0.0300	0.0150	0.0200	1.50	0.1312	10.00
6 CB-6	N/A	0.0350	0.0150	0.0200	1.50	0.1312	10.00

Inlet Results

SN Element	Peak	Peak	Peak Flow	Peak Flow	Inlet	Max Gutter	Max Gutter	Max Gutter	-
ID	Flow	Lateral	Intercepted	Bypassing	Efficiency	Spread	Water Elev.	Water Depth	Max
		Inflow	by	Inlet	during Peak	during Peak	during Peak	during Peak	Occi
			Inlet		Flow	Flow	Flow	Flow	
	(cfs)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)	(days I
1 CB-1	10.73	10.73	5.29	5.43	49.35	17.15	429.90	0.34	-
2 CB-2	14.63	8.21	N/A	N/A	N/A	13.95	427.61	0.67	1
3 CB-3	3.48	3.48	2.50	0.98	71.85	6.88	430.85	0.19	1
4 CB-4	1.25	1.25	1.25	0.01	99.54	6.92	432.07	0.14	1
5 CB-5	1.03	1.03	N/A	N/A	N/A	3.11	432.35	0.34	1
6 CB-6	7.83	7.83	N/A	N/A	N/A	10.33	427.95	0.61	1



Project Description

File Name Collective Church Drainage 5-2-25.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	Rational
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Kinematic Wave
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	May 02, 2025	00:00:00
End Analysis On	May 03, 2025	00:00:00
Start Reporting On	May 02, 2025	00:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step		days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	30	seconds

Number of Elements

anibor or Elemente	
	Qty
Rain Gages	0
Subbasins	
Nodes	16
Junctions	6
Outfalls	4
Flow Diversions	0
Inlets	6
Storage Nodes	0
Links	15
Channels	1
Pipes	14
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

Return Period...... 50 year(s)

Subbasin Summary

SN Subbasin ID	Area	Weighted Runoff Coefficient	Total Rainfall	Total Runoff	Total Runoff Volume	Peak Runoff	Time of Concentration
	(ac)	Occinicioni	(in)	(in)	(ac-in)	(cfs)	(days hh:mm:ss)
1 Sub-AD- (24)	0.10	0.9500	0.86	0.82	0.08	0.97	0 00:05:00
2 Sub-AD- (25)	0.10	0.9500	0.86	0.82	0.08	0.97	0 00:05:00
3 Sub-AD- (29)	0.10	0.9500	0.86	0.82	0.08	0.97	0 00:05:00
4 Sub-AD- (30)	0.10	0.9500	0.86	0.82	0.08	0.97	0 00:05:00
5 Sub-CB-1	1.20	0.9500	0.86	0.82	0.98	11.72	0 00:05:00
6 Sub-CB-2	0.92	0.9500	0.86	0.82	0.75	8.97	0 00:05:00
7 Sub-CB-3	0.39	0.9500	0.86	0.82	0.32	3.80	0 00:05:00
8 Sub-CB-4	0.14	0.9500	0.86	0.82	0.11	1.37	0 00:05:00
9 Sub-CB-5	0.11	0.9500	0.86	0.82	0.09	1.12	0 00:05:00
10 Sub-CB-6	0.87	0.9500	0.86	0.82	0.71	8.55	0 00:05:00
11 Sub-FES-5	3.78	0.9500	0.86	0.82	3.08	36.97	0 00:05:00
12 Sub-FES-6	3.03	0.7000	1.72	1.20	3.64	12.03	0 00:18:13

Node Summary

SN Element ID	Element Type	Invert Elevation	Ground/Rim (Max) Elevation	Water	Surcharge Elevation			Max HGL Elevation Attained	Ma Surcharg Dept Attaine
		(ft)	(ft)	(ft)	(ft)	(ft ²)	(cfs)	(ft)	(f
1 AD- (24)	Junction	429.05	432.47	429.05	432.47	10.00	0.97	429.40	0.0
2 AD- (25)	Junction	428.00	432.46	428.00	432.46	10.00	1.89	428.34	0.0
3 AD- (29)	Junction	429.06	432.45	429.06	432.45	10.00	0.97	429.40	0.0
4 AD- (30)	Junction	428.00	432.46	428.00	432.46	10.00	1.89	428.38	0.0
5 FES-5	Junction	425.10	427.00	425.10	427.50	0.00	36.97	426.50	0.0
6 FES-6	Junction	424.75	426.99	424.75	426.99	0.00	12.03	425.74	0.0
7 Out-1SL - (15)	Outfall	421.25					48.16	423.75	
8 Out-1SL - (17)	Outfall	423.50					1.89	423.79	
9 Out-1SL - (18) (1)	Outfall	424.50					4.23	425.03	
10 Out-1SL - (21)	Outfall	422.50					11.98	423.37	

Link Summary

SN Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness		Design Flow Capacity		Peak Flow Velocity	F
				(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	
1 L-SL - (24)	Pipe	CB-3	CB-2	199.68	430.66	426.94	1.8600	0.000	0.0320	1.17	0.00	0.00	0.00	_
2 L-SL-14	Pipe	CB-1	CB-2	135.67	423.42	422.50	0.6800	0.000	0.0150	6.18	0.00	0.00	0.00	
3 SL - (14)	Pipe	CB-1	CB-2	127.66	423.42	422.80	0.4900	24.000	0.0130	5.48	15.77	0.35	8.34	
4 SL - (15)	Pipe	CB-2	Out-1SL - (15)	106.61	422.32	421.25	1.0000	30.000	0.0120	48.16	44.52	1.08	10.82	
5 SL - (16)	Pipe	AD- (24)	AD- (25)	105.49	429.05	428.00	1.0000	12.000	0.0120	0.95	3.86	0.25	6.31	
6 SL - (17)	Pipe	AD- (25)	Out-1SL - (17)	60.96	428.00	423.50	7.3800	12.000	0.0120	1.89	10.49	0.18	10.12	
7 SL - (18)	Pipe	CB-5	CB-4	141.40	427.00	424.90	1.4900	18.000	0.0120	2.96	13.88	0.21	6.31	
8 SL - (18) (1)	Pipe	CB-4	Out-1SL - (18) (1)	20.22	424.90	424.50	1.9700	18.000	0.0120	4.23	15.96	0.26	7.63	
9 SL - (19)	Pipe	AD- (29)	AD- (30)	106.07	429.06	428.00	1.0000	12.000	0.0120	0.95	3.86	0.25	6.31	
10 SL - (20)	Pipe	AD- (30)	CB-5	19.89	428.00	427.50	2.5100	12.000	0.0120	1.89	6.12	0.31	6.86	
11 SL - (21)	Pipe	CB-6	Out-1SL - (21)	63.64	423.50	422.50	1.5700	24.000	0.0120	11.98	30.72	0.39	9.17	
12 SL - (24)	Pipe	CB-3	CB-2	174.72	424.10	422.32	1.0200	30.000	0.0120	38.93	44.85	0.87	10.44	
13 SL - (25)	Pipe	FES-5	CB-3	52.99	425.10	424.10	1.8900	30.000	0.0120	36.76	61.04	0.60	13.23	
14 SL - (26)	Pipe	FES-6	CB-6	123.36	424.75	423.50	1.0100	24.000	0.0120	11.98	24.67	0.49	8.11	
15 L-SL - (18) (1)	Channel	CB-4	CB-6	272.73	431.93	427.30	1.7000	6.000	0.0150	0.02	7.95	0.00	1.51	

Inlet Summary

SN Element			Catchbasin	()		Ponded					Allowable		Max Gutter
ID	Location	Inlets	Invert	Elevation	Water	Area	Flow	Intercepted	Bypassing	Efficiency	Spread	Spread	Water Elev.
			Elevation		Elevation			by	Inlet	during Peak		during Peak	during Peak
								Inlet		Flow		Flow	Flow
			(ft)	(ft)	(ft)	(ft ²)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)
1 CB-1	On Grade	1	423.42	429.56	423.42	N/A	11.72	5.54	6.18	47.29	10.00	17.73	429.91
2 CB-2	On Sag	1	422.32	426.95	422.32	10.00	16.31	N/A	N/A	N/A	10.00	15.00	427.65
3 CB-3	On Grade	1	424.10	430.66	424.10	N/A	3.80	2.63	1.16	69.34	10.00	7.11	430.86
4 CB-4	On Grade	1	424.90	431.93	424.90	N/A	1.37	1.35	0.02	98.50	10.00	7.15	432.07
5 CB-5	On Sag	1	427.00	432.00	427.00	10.00	1.12	N/A	N/A	N/A	10.00	3.29	432.35
6 CB-6	On Sag	1	423.50	427.34	423.50	10.00	8.55	N/A	N/A	N/A	10.00	10.95	427.97

Subbasin Hydrology

Subbasin: Sub-AD- (24) **Time of Concentration** TOC Method: SCS TR-55 Sheet Flow Equation : $Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))$ Where: Tc = Time of Concentration (hr) n = Manning's roughness Lf = Flow Length (ft) P = 2 yr, 24 hr Rainfall (inches) Sf = Slope (ft/ft) Shallow Concentrated Flow Equation: V = 16.1345 * (Sf^0.5) (unpaved surface) V = 20.3282 * (Sf^0.5) (paved surface) V = 15.0 * (Sf^0.5) (grassed waterway surface) V = 10.0 * (Sf^0.5) (nearly bare & untilled surface) V = 9.0 * (Sf^0.5) (cultivated straight rows surface) V = 7.0 * (Sf^0.5) (short grass pasture surface) V = 5.0 * (Sf^0.5) (woodland surface) V = 2.5 * (Sf^0.5) (forest w/heavy litter surface) Tc = (Lf / V) / (3600 sec/hr)Where: Tc = Time of Concentration (hr) Lf = Flow Length (ft) V = Velocity (ft/sec) Sf = Slope (ft/ft) Channel Flow Equation : $V = (1.49 * (R^{(2/3)}) * (Sf^{0.5})) / n$ R = Aq / WpTc = (Lf / V) / (3600 sec/hr) Where: Tc = Time of Concentration (hr) Lf = Flow Length (ft) R = Hydraulic Radius (ft) Aq = Flow Area (ft²) Wp = Wetted Perimeter (ft) V = Velocity (ft/sec) Sf = Slope (ft/ft) n = Manning's roughness

Subbasin: Sub-AD- (25)

Time of Concentration

Subbasin: Sub-AD- (29)

Time of Concentration

Subbasin: Sub-AD- (30)

Time of Concentration

Time of Concentration

Subbasin : Sub-FES-5

Time of Concentration

Subbasin : Sub-FES-6

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0.00	0.00
Flow Length (ft):	85.71195638	0.00	0.00
Slope (%):	2.4	0.00	0.00
2 yr, 24 hr Rainfall (in):	4.36	0.00	0.00
Velocity (ft/sec):	0.12	0.00	0.00
Computed Flow Time (min) :	12.01	0.00	0.00
	Subarea	Subarea	Subarea
Shallow Concentrated Flow Computations	Α	В	С
Flow Length (ft):	253.76684919	31.2339863	0.93388558
Slope (%):	1.8	0.4	1.25
Surface Type :	Paved	Paved	Unpaved
Velocity (ft/sec):	2.73	1.29	1.80
Computed Flow Time (min) :	1.55	4.29	0.38
Total TOC (min)18.23			

Junction Input

SN Elemen	nt Invert	Ground/Rim	Ground/Rim	Initial	Initial	Surcharge	Surcharge	Ponded	Minimum
ID	Elevation	(Max)	(Max)	Water	Water	Elevation	Depth	Area	Pipe
		Elevation	Offset	Elevation	Depth				Cover
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft ²)	(in)
1 AD- (24	429.05	432.47	3.41	429.05	0.00	432.47	0.00	10.00	0.00
2 AD- (25	5) 428.00	432.46	4.46	428.00	0.00	432.46	0.00	10.00	0.00
3 AD- (29	9) 429.06	432.45	3.39	429.06	0.00	432.45	0.00	10.00	0.00
4 AD- (30) 428.00	432.46	4.46	428.00	0.00	432.46	0.00	10.00	0.00
5 FES-5	425.10	427.00	1.90	425.10	0.00	427.50	0.50	0.00	0.00
6 FES-6	424.75	426.99	2.24	424.75	0.00	426.99	0.00	0.00	0.00

Junction Results

SN Element ID	Peak Inflow	Peak Lateral	Max HGL Elevation		Max Surcharge		Average HGL Elevation	Average HGL Depth	Time Max H
		Inflow	Attained	Attained	Depth	Attained	Attained	Attained	Occurren
					Attained				
	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(days hh:m
1 AD- (24)	0.97	0.97	429.40	0.35	0.00	3.07	429.06	0.01	0 00:
2 AD- (25)	1.89	0.97	428.34	0.34	0.00	4.13	428.00	0.00	0 00:
3 AD- (29)	0.97	0.97	429.40	0.34	0.00	3.05	429.06	0.00	0 00:
4 AD- (30)	1.89	0.97	428.38	0.38	0.00	4.08	428.00	0.00	0 00:
5 FES-5	36.97	36.97	426.50	1.40	0.00	1.10	425.11	0.01	0 00:
6 FES-6	12.03	12.03	425.74	0.99	0.00	1.25	424.77	0.02	0 00:

Channel Input

SN Element	Length	Inlet	Inlet	Outlet	Outlet	Total	Average Sha	аре	Height	Width	Manı
ID		Invert	Invert	Invert	Invert	Drop	Slope				Rough
		Elevation	Offset	Elevation	Offset						
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(%)		(ft)	(ft)	
1 L-SL - (18) (1)	272.73	431.93	7.03	427.30	3.80	4.63	1.7000 Use	er-Defined	0.500	17.000	0

Channel Results

SN Element	Peak	Time of	Design Flow	Peak Flow/	Peak Flow	Travel	Peak Flow	Peak Flow	Т
ID	Flow	Peak Flow	Capacity	Design Flow	Velocity	Time	Depth	Depth/	Sı
		Occurrence		Ratio				Total Depth	
								Ratio	
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		
1 L-SL - (18) (1)	0.02	0 00:06	7.95	0.00	1.51	3.01	0.04	0.08	

Pipe Input

SN Element	Length	Inlet	Inlet				Average		Pipe	Pipe	Ma
ID		Invert			Invert	Drop	Slope	Shape	Diameter or	Width	Rou
		Elevation	Offset	Elevation	Offset				Height		
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(%)		(in)	(in)	
1 L-SL - (24)	199.68	430.66	6.56	426.94	4.62	3.72	1.8600	Dummy	0.000	0.000	
2 L-SL-14	135.67	423.42	0.00	422.50	0.18	0.92	0.6800	Dummy	0.000	0.000	
3 SL - (14)	127.66	423.42	0.00	422.80	0.48	0.62	0.4900	CIRCULAR	24.000	24.000	
4 SL - (15)	106.61	422.32	0.00	421.25	0.00	1.07	1.0000	CIRCULAR	30.000	30.000	
5 SL - (16)	105.49	429.05	0.00	428.00	0.00	1.05	1.0000	CIRCULAR	12.000	12.000	
6 SL - (17)	60.96	428.00	0.00	423.50	0.00	4.50	7.3800	CIRCULAR	12.000	12.000	
7 SL - (18)	141.40	427.00	0.00	424.90	0.00	2.10	1.4900	CIRCULAR	18.000	18.000	
8 SL - (18) (1)	20.22	424.90	0.00	424.50	0.00	0.40	1.9700	CIRCULAR	18.000	18.000	
9 SL - (19)	106.07	429.06	0.00	428.00	0.00	1.06	1.0000	CIRCULAR	12.000	12.000	
10 SL - (20)	19.89	428.00	0.00	427.50	0.50	0.50	2.5100	CIRCULAR	12.000	12.000	
11 SL - (21)	63.64	423.50	0.00	422.50	0.00	1.00	1.5700	CIRCULAR	24.000	24.000	
12 SL - (24)	174.72	424.10	0.00	422.32	0.00	1.78	1.0200	CIRCULAR	30.000	30.000	
13 SL - (25)	52.99	425.10	0.00	424.10	0.00	1.00	1.8900	CIRCULAR	30.000	30.000	
14 SL - (26)	123.36	424.75	0.00	423.50	0.00	1.25	1.0100	CIRCULAR	24.000	24.000	

No. of Barrels

Pipe Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity		Peak Flow Velocity		Peak Flow Depth	Peak Flow To Depth/ Sur Total Depth Ratio
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)	
1 L-SL - (24)	1.17	0 00:05	0.00	0.00	0.00		0.04	0.08
2 L-SL-14	6.18	0 00:05	0.00	0.00	0.00		0.04	0.08
3 SL - (14)	5.48	0 00:05	15.77	0.35	8.34	0.26	0.81	0.41
4 SL - (15)	48.16	0 00:04	44.52	1.08	10.82	0.16	2.50	1.00
5 SL - (16)	0.95	0 00:05	3.86	0.25	6.31	0.28	0.34	0.34
6 SL - (17)	1.89	0 00:05	10.49	0.18	10.12	0.10	0.29	0.29
7 SL - (18)	2.96	0 00:05	13.88	0.21	6.31	0.37	0.47	0.31
8 SL - (18) (1)	4.23	0 00:05	15.96	0.26	7.63	0.04	0.53	0.35
9 SL - (19)	0.95	0 00:05	3.86	0.25	6.31	0.28	0.34	0.34
10 SL - (20)	1.89	0 00:05	6.12	0.31	6.86	0.05	0.38	0.38
11 SL - (21)	11.98	0 00:18	30.72	0.39	9.17	0.12	0.87	0.43
12 SL - (24)	38.93	0 00:05	44.85	0.87	10.44	0.28	1.79	0.72
13 SL - (25)	36.76	0 00:05	61.04	0.60	13.23	0.07	1.40	0.56
14 SL - (26)	11.98	0 00:18	24.67	0.49	8.11	0.25	0.98	0.49

Inlet Input

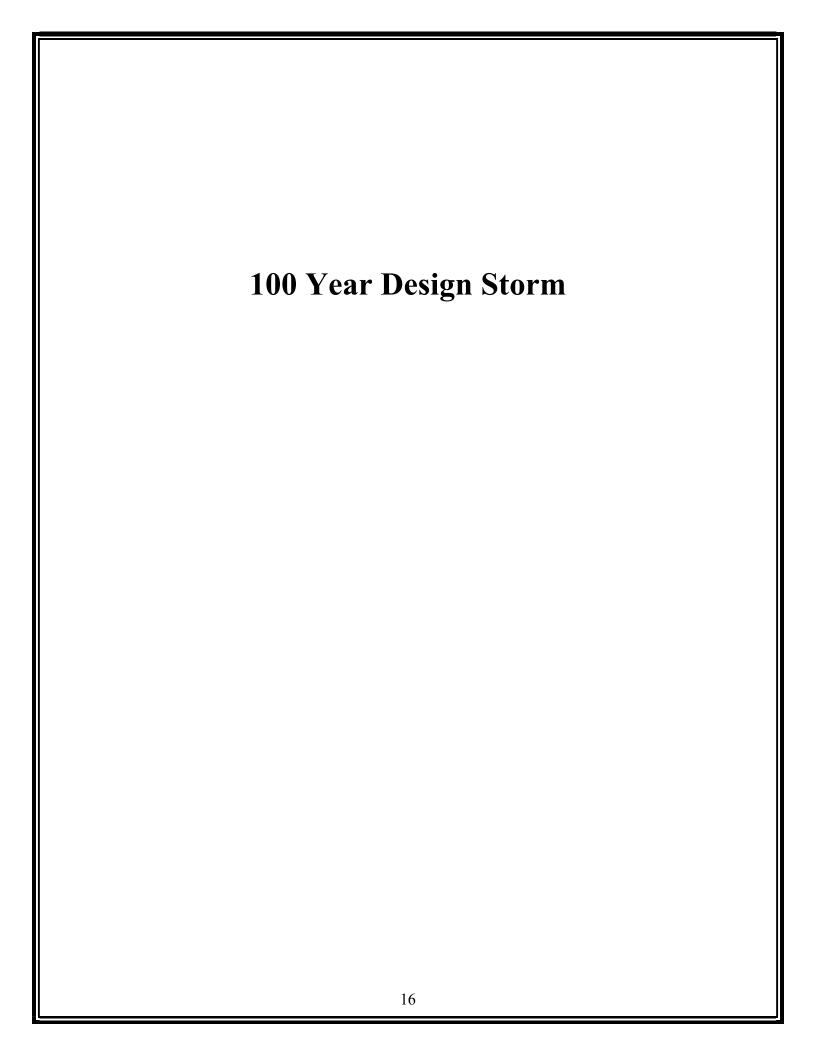
	SN Element	Inlet	Number of	Catchbasin	Max (Rim)	Inlet	Initial	Initial	Ponded	Grate
	ID	Location	Inlets	Invert	Elevation	Depth	Water	Water	Area	Clogging
				Elevation			Elevation	Depth		Factor
_				(ft)	(ft)	(ft)	(ft)	(ft)	(ft ²)	(%)
	1 CB-1	On Grade	1	423.42	429.56	6.14	423.42	0.00	N/A	0.00
	2 CB-2	On Sag	1	422.32	426.95	4.63	422.32	0.00	10.00	0.00
	3 CB-3	On Grade	1	424.10	430.66	6.56	424.10	0.00	N/A	0.00
	4 CB-4	On Grade	1	424.90	431.93	7.03	424.90	0.00	N/A	0.00
	5 CB-5	On Sag	1	427.00	432.00	5.00	427.00	0.00	10.00	0.00
	6 CB-6	On Sag	1	423.50	427.34	3.84	423.50	0.00	10.00	0.00

Roadway & Gutter Input

SN Element	Roadway	Roadway	Roadway	Gutter	Gutter	Gutter	Allowable
ID	Longitudinal	Cross	Manning's	Cross	Width	Depression	Spread
	Slope	Slope	Roughness	Slope			
	(ft/ft)	(ft/ft)		(ft/ft)	(ft)	(in)	(ft)
1 CB-1	0.0100	0.0200	0.0150	0.0200	1.50	0.1312	10.00
2 CB-2	N/A	0.0300	0.0150	0.0200	1.50	0.1312	10.00
3 CB-3	0.0380	0.0300	0.0150	0.0200	1.50	0.1312	10.00
4 CB-4	0.0175	0.0200	0.0150	0.0200	1.50	0.1312	10.00
5 CB-5	N/A	0.0300	0.0150	0.0200	1.50	0.1312	10.00
6 CB-6	N/A	0.0350	0.0150	0.0200	1.50	0.1312	10.00

Inlet Results

SN Element	Peak	Peak	Peak Flow	Peak Flow	Inlet	Max Gutter	Max Gutter	Max Gutter	
ID	Flow	Lateral	Intercepted	Bypassing	Efficiency	Spread	Water Elev.	Water Depth	Max
		Inflow	by	Inlet	during Peak	during Peak	during Peak	during Peak	Occi
			Inlet		Flow	Flow	Flow	Flow	
	(cfs)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)	(days I
1 CB-1	11.72	11.72	5.54	6.18	47.29	17.73	429.91	0.35	- (
2 CB-2	16.31	8.97	N/A	N/A	N/A	15.00	427.65	0.70	(
3 CB-3	3.80	3.80	2.63	1.16	69.34	7.11	430.86	0.20	(
4 CB-4	1.37	1.37	1.35	0.02	98.50	7.15	432.07	0.14	(
5 CB-5	1.12	1.12	N/A	N/A	N/A	3.29	432.35	0.35	(
6 CB-6	8.55	8.55	N/A	N/A	N/A	10.95	427.97	0.63	(



Project Description

File Name Collective Church Drainage 5-2-25.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	Rational
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Kinematic Wave
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On		00:00:00
End Analysis On		00:00:00
Start Reporting On		00:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step		days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	30	seconds

Number of Elements

	Qt
Rain Gages	0
Subbasins	12
Nodes	16
Junctions	6
Outfalls	4
Flow Diversions	0
Inlets	6
Storage Nodes	0
Links	15
Channels	1
Pipes	14
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

Subbasin Summary

SN Subbasin ID	Area	Weighted Runoff Coefficient	Total Rainfall	Total Runoff	Total Runoff Volume	Peak Runoff	Time of Concentration
	(ac)	Occincient	(in)	(in)	(ac-in)	(cfs)	(days hh:mm:ss)
1 Sub-AD- (24)	0.10	0.9500	0.93	0.89	0.09	1.06	0 00:05:00
2 Sub-AD- (25)	0.10	0.9500	0.93	0.89	0.09	1.06	0 00:05:00
3 Sub-AD- (29)	0.10	0.9500	0.93	0.89	0.09	1.06	0 00:05:00
4 Sub-AD- (30)	0.10	0.9500	0.93	0.89	0.09	1.06	0 00:05:00
5 Sub-CB-1	1.20	0.9500	0.93	0.89	1.06	12.74	0 00:05:00
6 Sub-CB-2	0.92	0.9500	0.93	0.89	0.81	9.75	0 00:05:00
7 Sub-CB-3	0.39	0.9500	0.93	0.89	0.34	4.13	0 00:05:00
8 Sub-CB-4	0.14	0.9500	0.93	0.89	0.12	1.49	0 00:05:00
9 Sub-CB-5	0.11	0.9500	0.93	0.89	0.10	1.22	0 00:05:00
10 Sub-CB-6	0.87	0.9500	0.93	0.89	0.77	9.30	0 00:05:00
11 Sub-FES-5	3.78	0.9500	0.93	0.89	3.35	40.20	0 00:05:00
12 Sub-FES-6	3.03	0.7000	1.86	1.30	3.95	13.04	0 00:18:13

Node Summary

SN Element ID	Element Type	Invert Elevation	Ground/Rim (Max) Elevation	Initial Water Elevation	Surcharge Elevation			Max HGL Elevation Attained	Ma Surcharg Dept Attaine
		(ft)	(ft)	(ft)	(ft)	(ft ²)	(cfs)	(ft)	(f
1 AD- (24)	Junction	429.05	432.47	429.05	432.47	10.00	1.06	429.41	0.0
2 AD- (25)	Junction	428.00	432.46	428.00	432.46	10.00	2.05	428.35	0.0
3 AD- (29)	Junction	429.06	432.45	429.06	432.45	10.00	1.06	429.42	0.0
4 AD- (30)	Junction	428.00	432.46	428.00	432.46	10.00	2.06	428.40	0.0
5 FES-5	Junction	425.10	427.00	425.10	427.50	0.00	40.20	426.58	0.0
6 FES-6	Junction	424.75	426.99	424.75	426.99	0.00	13.04	425.78	0.0
7 Out-1SL - (15)	Outfall	421.25					48.15	423.75	
8 Out-1SL - (17)	Outfall	423.50					2.05	423.80	
9 Out-1SL - (18) (1)	Outfall	424.50					4.59	425.05	
10 Out-1SL - (21)	Outfall	422.50					12.99	423.41	

Link Summary

SN Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness		Design Flow Capacity		Peak Flow Velocity	
				(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	
1 L-SL - (24)	Pipe	CB-3	CB-2	199.68	430.66	426.94	1.8600	0.000	0.0320	1.36	0.00	0.00	0.00	
2 L-SL-14	Pipe	CB-1	CB-2	135.67	423.42	422.50	0.6800	0.000	0.0150	6.96	0.00	0.00	0.00	
3 SL - (14)	Pipe	CB-1	CB-2	127.66	423.42	422.80	0.4900	24.000	0.0130	5.71	15.77	0.36	8.46	
4 SL - (15)	Pipe	CB-2	Out-1SL - (15)	106.61	422.32	421.25	1.0000	30.000	0.0120	48.15	44.52	1.08	10.82	
5 SL - (16)	Pipe	AD- (24)	AD- (25)	105.49	429.05	428.00	1.0000	12.000	0.0120	1.03	3.86	0.27	6.40	
6 SL - (17)	Pipe	AD- (25)	Out-1SL - (17)	60.96	428.00	423.50	7.3800	12.000	0.0120	2.05	10.49	0.20	10.37	
7 SL - (18)	Pipe	CB-5	CB-4	141.40	427.00	424.90	1.4900	18.000	0.0120	3.22	13.88	0.23	6.47	
8 SL - (18) (1)	Pipe	CB-4	Out-1SL - (18) (1)	20.22	424.90	424.50	1.9700	18.000	0.0120	4.59	15.96	0.29	7.80	
9 SL - (19)	Pipe	AD- (29)	AD- (30)	106.07	429.06	428.00	1.0000	12.000	0.0120	1.03	3.86	0.27	6.41	
10 SL - (20)	Pipe	AD- (30)	CB-5	19.89	428.00	427.50	2.5100	12.000	0.0120	2.06	6.12	0.34	7.03	
11 SL - (21)	Pipe	CB-6	Out-1SL - (21)	63.64	423.50	422.50	1.5700	24.000	0.0120	12.99	30.72	0.42	9.38	
12 SL - (24)	Pipe	CB-3	CB-2	174.72	424.10	422.32	1.0200	30.000	0.0120	42.23	44.85	0.94	10.56	
13 SL - (25)	Pipe	FES-5	CB-3	52.99	425.10	424.10	1.8900	30.000	0.0120	40.05	61.04	0.66	13.66	
14 SL - (26)	Pipe	FES-6	CB-6	123.36	424.75	423.50	1.0100	24.000	0.0120	13.00	24.67	0.53	8.28	
15 L-SL - (18) (1)	Channel	CB-4	CB-6	272.73	431.93	427.30	1.7000	6.000	0.0150	0.03	7.95	0.00	1.61	

Inlet Summary

SN Element	Inlet	Number of	Catchbasin	Max (Rim)	Initial	Ponded	Peak	Peak Flow	Peak Flow	Inlet	Allowable	Max Gutter	Max Gutter
ID	Location	Inlets	Invert	Elevation	Water	Area	Flow	Intercepted	Bypassing	Efficiency	Spread	Spread	Water Elev.
			Elevation		Elevation			by	Inlet	during Peak		during Peak	during Peak
								Inlet		Flow		Flow	Flow
			(ft)	(ft)	(ft)	(ft ²)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)
1 CB-1	On Grade	1	423.42	429.56	423.42	N/A	12.74	5.79	6.96	45.40	10.00	18.29	429.92
2 CB-2	On Sag	1	422.32	426.95	422.32	10.00	18.08	N/A	N/A	N/A	10.00	16.06	427.68
3 CB-3	On Grade	1	424.10	430.66	424.10	N/A	4.13	2.76	1.36	66.97	10.00	7.33	430.87
4 CB-4	On Grade	1	424.90	431.93	424.90	N/A	1.49	1.45	0.04	97.12	10.00	7.38	432.08
5 CB-5	On Sag	1	427.00	432.00	427.00	10.00	1.22	N/A	N/A	N/A	10.00	3.48	432.36
6 CB-6	On Sag	1	423.50	427.34	423.50	10.00	9.30	N/A	N/A	N/A	10.00	11.58	427.99

Subbasin Hydrology

Subbasin: Sub-AD- (24) **Time of Concentration** TOC Method: SCS TR-55 Sheet Flow Equation : $Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))$ Where: Tc = Time of Concentration (hr) n = Manning's roughness Lf = Flow Length (ft) P = 2 yr, 24 hr Rainfall (inches) Sf = Slope (ft/ft) Shallow Concentrated Flow Equation: V = 16.1345 * (Sf^0.5) (unpaved surface) V = 20.3282 * (Sf^0.5) (paved surface) V = 15.0 * (Sf^0.5) (grassed waterway surface) V = 10.0 * (Sf^0.5) (nearly bare & untilled surface) V = 9.0 * (Sf^0.5) (cultivated straight rows surface) V = 7.0 * (Sf^0.5) (short grass pasture surface) V = 5.0 * (Sf^0.5) (woodland surface) V = 2.5 * (Sf^0.5) (forest w/heavy litter surface) Tc = (Lf / V) / (3600 sec/hr)Where: Tc = Time of Concentration (hr) Lf = Flow Length (ft) V = Velocity (ft/sec) Sf = Slope (ft/ft) Channel Flow Equation : $V = (1.49 * (R^{(2/3)}) * (Sf^{0.5})) / n$ R = Aq / WpTc = (Lf / V) / (3600 sec/hr) Where: Tc = Time of Concentration (hr) Lf = Flow Length (ft) R = Hydraulic Radius (ft) Aq = Flow Area (ft²) Wp = Wetted Perimeter (ft) V = Velocity (ft/sec) Sf = Slope (ft/ft) n = Manning's roughness

Subbasin: Sub-AD- (25)

Time of Concentration

Subbasin: Sub-AD- (29)

Time of Concentration

Subbasin: Sub-AD- (30)

Time of Concentration

Time of Concentration

Time of Concentration

Time of Concentration

Time of Concentration

Subbasin : Sub-CB-5

Time of Concentration

User-Defined TOC override (minutes): 5.00

Subbasin : Sub-CB-6

Time of Concentration

User-Defined TOC override (minutes): 5.00

Subbasin : Sub-FES-5

Time of Concentration

User-Defined TOC override (minutes): 5.00

Subbasin : Sub-FES-6

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.3	0.00	0.00
Flow Length (ft):	85.71195638	0.00	0.00
Slope (%):	2.4	0.00	0.00
2 yr, 24 hr Rainfall (in):	4.36	0.00	0.00
Velocity (ft/sec):	0.12	0.00	0.00
Computed Flow Time (min) :	12.01	0.00	0.00
	Subarea	Subarea	Subarea
Shallow Concentrated Flow Computations	Α	В	С
Flow Length (ft):	253.76684919	31.2339863	0.93388558
Slope (%):	1.8	0.4	1.25
Surface Type :	Paved	Paved	Unpaved
Velocity (ft/sec):	2.73	1.29	1.80
Computed Flow Time (min) :	1.55	4.29	0.38
Total TOC (min)18.23			

Junction Input

SN Elemen	nt Invert	Ground/Rim	Ground/Rim	Initial	Initial	Surcharge	Surcharge	Ponded	Minimum
ID	Elevation	(Max)	(Max)	Water	Water	Elevation	Depth	Area	Pipe
		Elevation	Offset	Elevation	Depth				Cover
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft ²)	(in)
1 AD- (24	429.05	432.47	3.41	429.05	0.00	432.47	0.00	10.00	0.00
2 AD- (25	5) 428.00	432.46	4.46	428.00	0.00	432.46	0.00	10.00	0.00
3 AD- (29	9) 429.06	432.45	3.39	429.06	0.00	432.45	0.00	10.00	0.00
4 AD- (30) 428.00	432.46	4.46	428.00	0.00	432.46	0.00	10.00	0.00
5 FES-5	425.10	427.00	1.90	425.10	0.00	427.50	0.50	0.00	0.00
6 FES-6	424.75	426.99	2.24	424.75	0.00	426.99	0.00	0.00	0.00

Junction Results

SN Element ID	Peak Inflow	Peak Lateral	Max HGL Elevation		Max Surcharge		Average HGL Elevation	Average HGL Depth	Time Max H
		Inflow	Attained	Attained	Depth	Attained	Attained	Attained	Occurren
					Attained				
	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(days hh:m
1 AD- (24)	1.06	1.06	429.41	0.36	0.00	3.05	429.06	0.01	0 00:
2 AD- (25)	2.05	1.06	428.35	0.35	0.00	4.11	428.00	0.00	0 00:
3 AD- (29)	1.06	1.06	429.42	0.36	0.00	3.04	429.06	0.00	0 00:
4 AD- (30)	2.06	1.06	428.40	0.40	0.00	4.06	428.00	0.00	0 00:
5 FES-5	40.20	40.20	426.58	1.48	0.00	1.02	425.11	0.01	0 00:
6 FES-6	13.04	13.04	425.78	1.03	0.00	1.20	424.77	0.02	0 00:

Channel Input

SN Element	Length	Inlet	Inlet	Outlet	Outlet	Total	Average Sha	аре	Height	Width	Manı
ID		Invert	Invert	Invert	Invert	Drop	Slope				Rough
		Elevation	Offset	Elevation	Offset						
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(%)		(ft)	(ft)	
1 L-SL - (18) (1)	272.73	431.93	7.03	427.30	3.80	4.63	1.7000 Use	er-Defined	0.500	17.000	0

Channel Results

5	N Element	Peak	Time of	Design Flow	Peak Flow/	Peak Flow	Travel	Peak Flow	Peak Flow	Т
	ID	Flow	Peak Flow	Capacity	Design Flow	Velocity	Time	Depth	Depth/	Sı
			Occurrence		Ratio				Total Depth Ratio	
		(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)		
	1 L-SL - (18) (1)	0.03	0 00:06	7.95	0.00	1.61	2.82	0.04	0.09	_

Pipe Input

SN Element	Length	Inlet	Inlet				Average		Pipe	Pipe	Ma
ID		Invert			Invert	Drop	Slope	Shape	Diameter or	Width	Rou
		Elevation	Offset	Elevation	Offset				Height		
	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(%)		(in)	(in)	
1 L-SL - (24)	199.68	430.66	6.56	426.94	4.62	3.72	1.8600	Dummy	0.000	0.000	
2 L-SL-14	135.67	423.42	0.00	422.50	0.18	0.92	0.6800	Dummy	0.000	0.000	
3 SL - (14)	127.66	423.42	0.00	422.80	0.48	0.62	0.4900	CIRCULAR	24.000	24.000	
4 SL - (15)	106.61	422.32	0.00	421.25	0.00	1.07	1.0000	CIRCULAR	30.000	30.000	
5 SL - (16)	105.49	429.05	0.00	428.00	0.00	1.05	1.0000	CIRCULAR	12.000	12.000	
6 SL - (17)	60.96	428.00	0.00	423.50	0.00	4.50	7.3800	CIRCULAR	12.000	12.000	
7 SL - (18)	141.40	427.00	0.00	424.90	0.00	2.10	1.4900	CIRCULAR	18.000	18.000	
8 SL - (18) (1)	20.22	424.90	0.00	424.50	0.00	0.40	1.9700	CIRCULAR	18.000	18.000	
9 SL - (19)	106.07	429.06	0.00	428.00	0.00	1.06	1.0000	CIRCULAR	12.000	12.000	
10 SL - (20)	19.89	428.00	0.00	427.50	0.50	0.50	2.5100	CIRCULAR	12.000	12.000	
11 SL - (21)	63.64	423.50	0.00	422.50	0.00	1.00	1.5700	CIRCULAR	24.000	24.000	
12 SL - (24)	174.72	424.10	0.00	422.32	0.00	1.78	1.0200	CIRCULAR	30.000	30.000	
13 SL - (25)	52.99	425.10	0.00	424.10	0.00	1.00	1.8900	CIRCULAR	30.000	30.000	
14 SL - (26)	123.36	424.75	0.00	423.50	0.00	1.25	1.0100	CIRCULAR	24.000	24.000	

No. of Barrels

Pipe Results

SN Element ID	Peak Flow	Time of Peak Flow Occurrence	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity		Peak Flow Depth	Peak Flow To Depth/ Sur Total Depth Ratio
	(cfs)	(days hh:mm)	(cfs)		(ft/sec)	(min)	(ft)	
1 L-SL - (24)	1.36	0 00:05	0.00	0.00	0.00		0.04	0.09
2 L-SL-14	6.96	0 00:05	0.00	0.00	0.00		0.04	0.09
3 SL - (14)	5.71	0 00:05	15.77	0.36	8.46	0.25	0.83	0.42
4 SL - (15)	48.15	0 00:04	44.52	1.08	10.82	0.16	2.50	1.00
5 SL - (16)	1.03	0 00:05	3.86	0.27	6.40	0.27	0.35	0.35
6 SL - (17)	2.05	0 00:05	10.49	0.20	10.37	0.10	0.30	0.30
7 SL - (18)	3.22	0 00:05	13.88	0.23	6.47	0.36	0.49	0.33
8 SL - (18) (1)	4.59	0 00:05	15.96	0.29	7.80	0.04	0.55	0.37
9 SL - (19)	1.03	0 00:05	3.86	0.27	6.41	0.28	0.35	0.35
10 SL - (20)	2.06	0 00:05	6.12	0.34	7.03	0.05	0.40	0.40
11 SL - (21)	12.99	0 00:18	30.72	0.42	9.38	0.11	0.91	0.45
12 SL - (24)	42.23	0 00:05	44.85	0.94	10.56	0.28	1.92	0.77
13 SL - (25)	40.05	0 00:05	61.04	0.66	13.66	0.06	1.48	0.59
14 SL - (26)	13.00	0 00:18	24.67	0.53	8.28	0.25	1.03	0.52

Inlet Input

	SN Element	Inlet	Number of	Catchbasin	Max (Rim)	Inlet	Initial	Initial	Ponded	Grate
	ID	Location	Inlets	Invert	Elevation	Depth	Water	Water	Area	Clogging
				Elevation			Elevation	Depth		Factor
_				(ft)	(ft)	(ft)	(ft)	(ft)	(ft ²)	(%)
	1 CB-1	On Grade	1	423.42	429.56	6.14	423.42	0.00	N/A	0.00
	2 CB-2	On Sag	1	422.32	426.95	4.63	422.32	0.00	10.00	0.00
	3 CB-3	On Grade	1	424.10	430.66	6.56	424.10	0.00	N/A	0.00
	4 CB-4	On Grade	1	424.90	431.93	7.03	424.90	0.00	N/A	0.00
	5 CB-5	On Sag	1	427.00	432.00	5.00	427.00	0.00	10.00	0.00
	6 CB-6	On Sag	1	423.50	427.34	3.84	423.50	0.00	10.00	0.00

Roadway & Gutter Input

SN Element	Roadway	Roadway	Roadway	Gutter	Gutter	Gutter	Allowable
ID	Longitudinal	Cross	Manning's	Cross	Width	Depression	Spread
	Slope	Slope	Roughness	Slope			
	(ft/ft)	(ft/ft)		(ft/ft)	(ft)	(in)	(ft)
1 CB-1	0.0100	0.0200	0.0150	0.0200	1.50	0.1312	10.00
2 CB-2	N/A	0.0300	0.0150	0.0200	1.50	0.1312	10.00
3 CB-3	0.0380	0.0300	0.0150	0.0200	1.50	0.1312	10.00
4 CB-4	0.0175	0.0200	0.0150	0.0200	1.50	0.1312	10.00
5 CB-5	N/A	0.0300	0.0150	0.0200	1.50	0.1312	10.00
6 CB-6	N/A	0.0350	0.0150	0.0200	1.50	0.1312	10.00

Inlet Results

SN Element	Peak	Peak	Peak Flow	Peak Flow	Inlet	Max Gutter	Max Gutter	Max Gutter	
ID	Flow	Lateral	Intercepted	Bypassing	Efficiency	Spread	Water Elev.	Water Depth	Max
		Inflow	by	Inlet	during Peak	during Peak	during Peak	during Peak	Occi
			Inlet		Flow	Flow	Flow	Flow	
	(cfs)	(cfs)	(cfs)	(cfs)	(%)	(ft)	(ft)	(ft)	(days I
1 CB-1	12.74	12.74	5.79	6.96	45.40	18.29	429.92	0.37	- (
2 CB-2	18.08	9.75	N/A	N/A	N/A	16.06	427.68	0.73	(
3 CB-3	4.13	4.13	2.76	1.36	66.97	7.33	430.87	0.20	(
4 CB-4	1.49	1.49	1.45	0.04	97.12	7.38	432.08	0.15	(
5 CB-5	1.22	1.22	N/A	N/A	N/A	3.48	432.36	0.35	(
6 CB-6	9.30	9.30	N/A	N/A	N/A	11.58	427.99	0.66	(

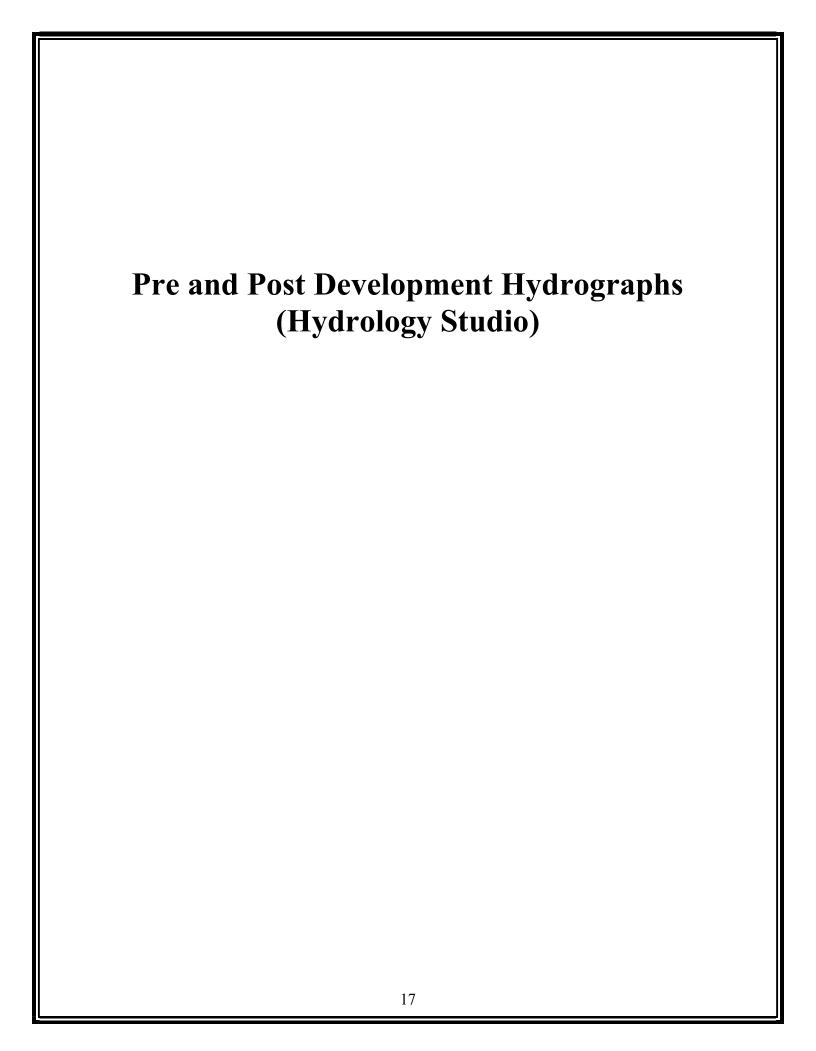


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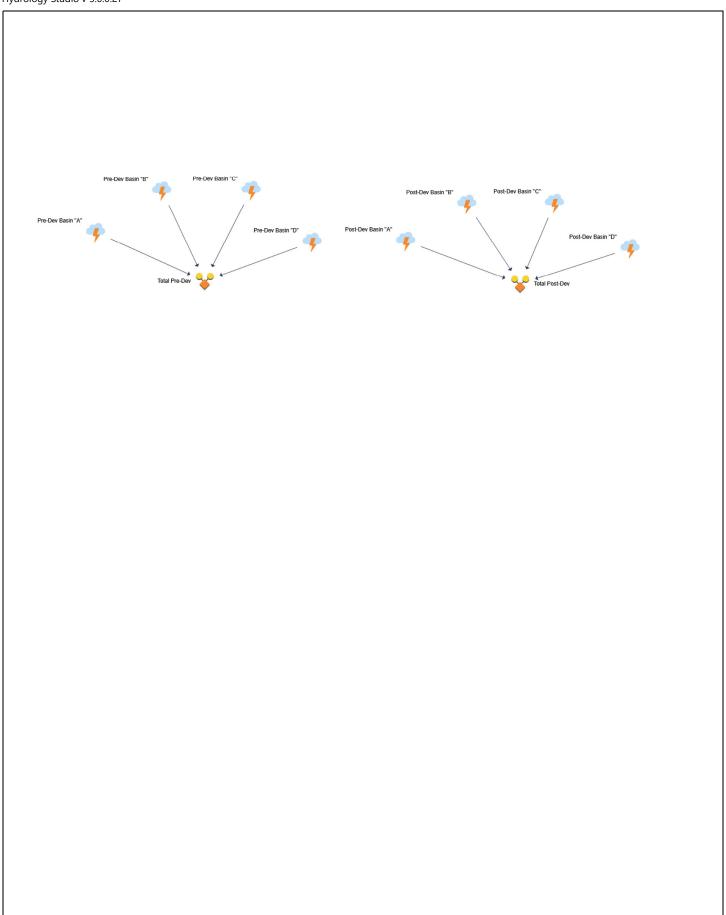
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Hydrograph by Return Period

05-02-2025

Hyd.	Hydrograph	Hydrograph				Peak Out	flow (cfs)			
No.	Туре	Name	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
1	Rational	Pre-Dev Basin "A"		1.381			1.853	2.130	2.330	2.529
2	Rational	Pre-Dev Basin "B"		10.53			14.12	16.22	17.74	19.26
3	Rational	Pre-Dev Basin "C"		1.416			1.896	2.179	2.382	2.588
4	Rational	Pre-Dev Basin "D"		0.991			1.328	1.526	1.669	1.812
5	Junction	Total Pre-Dev		13.49			18.09	20.79	22.74	24.69
6	Rational	Post-Dev Basin "A"		33.73			45.13	51.84	56.64	61.57
7	Rational	Post-Dev Basin "B"		1.167			1.560	1.792	1.957	2.128
8	Rational	Post-Dev Basin "C"		2.417			3.234	3.715	4.058	4.412
9	Rational	Post-Dev Basin "D"		9.949			13.36	15.35	16.80	18.23
10	Junction	Total Post-Dev		40.31			53.94	61.97	67.71	73.60

Hydrograph 2-yr Summary

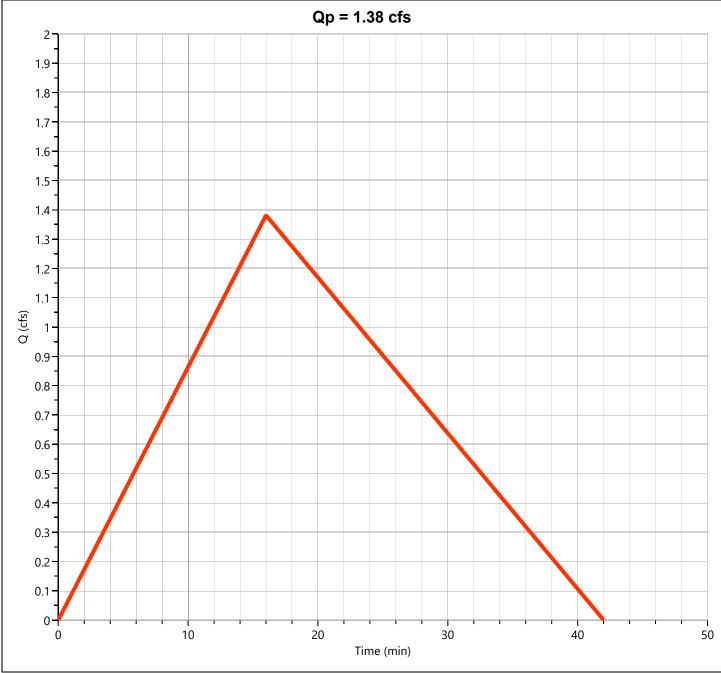
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05-02-2025 Time to Hydrograph Inflow Maximum Peak Maximum Hydrograph Hyd. Hydrograph Flow Peak Volume Hyd(s) Elevation Storage No. Type Name (cuft) (cuft) (cfs) (hrs) (ft) Rational Pre-Dev Basin "A" 1.381 0.27 1,770 1 2 Rational Pre-Dev Basin "B" 10.53 0.22 10,961 3 Rational Pre-Dev Basin "C" 1.416 0.15 1,021 0.991 0.17 Rational Pre-Dev Basin "D" 794 4 5 Junction Total Pre-Dev 13.49 0.22 14,270 1, 2, 3, 4 33.73 0.10 Rational Post-Dev Basin "A" 16,211 6 7 Rational Post-Dev Basin "B" 1.167 0.08 467 Post-Dev Basin "C" 2.417 0.10 8 Rational 1,162 9.949 0.32 15,141 9 Rational Post-Dev Basin "D" 40.31 0.10 32,730 10 Junction Total Post-Dev 6, 7, 8, 9

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Pre-Dev Basin "A"

Hydrograph Type	= Rational	Peak Flow	= 1.381 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.27 hrs
Time Interval	= 1 min	Runoff Volume	= 1,770 cuft
Drainage Area	= 0.81 ac	Runoff Coeff.	= 0.47
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 3.63 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	s = 1/1.67



Tc by TR55 Worksheet

Hydrology Studio v 3.0.0.27 05-02-2025

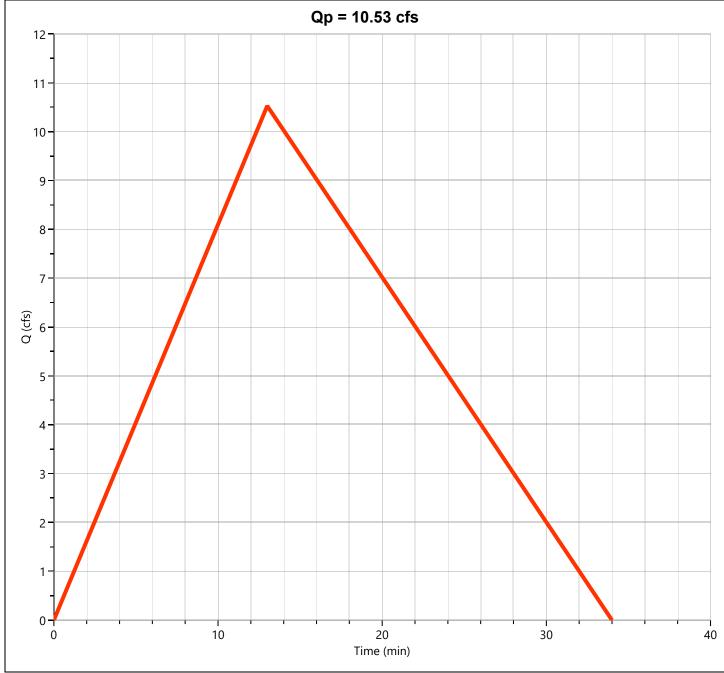
Pre-Dev Basin "A" Rational

Deceription		Segments		
Description	Α	В	С	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.36	2.28	2.28	
Land Slope (%)	3.7			
Travel Time (min)	11.43	0.00	0.00	11.43
Shallow Concentrated Flow				
Flow Length (ft)	673			
Watercourse Slope (%)	2.70	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	2.65			
Travel Time (min)	4.23	0.00	0.00	4.23
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	0.00	0.00	0.00	0.00
Total Travel Time				16 min

Hydrology Studio v 3.0.0.27 05-02-2025

Pre-Dev Basin "B"

Hydrograph Type	= Rational	Peak Flow	= 10.53 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Runoff Volume	= 10,961 cuft
Drainage Area	= 5.62 ac	Runoff Coeff.	= 0.47
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 3.99 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	s = 1/1.67



Tc by TR55 Worksheet

Hydrology Studio v 3.0.0.27 05-02-2025

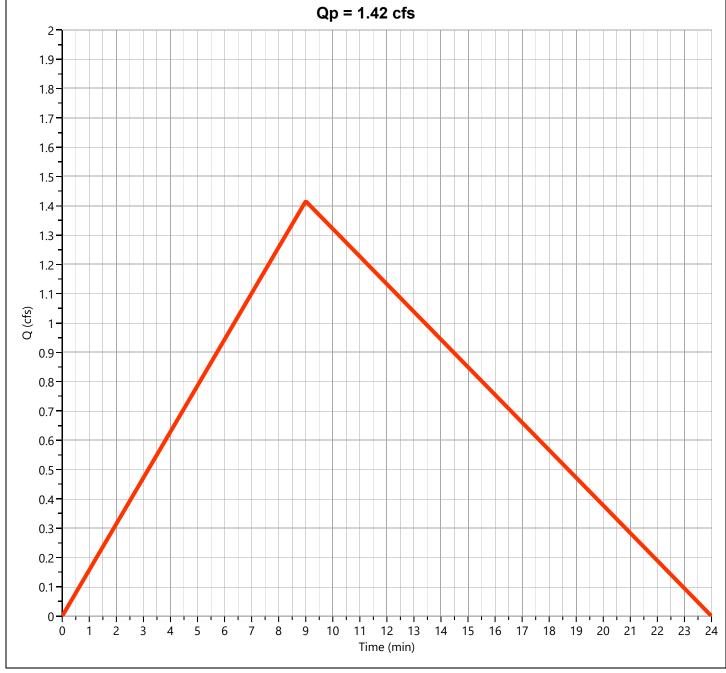
Pre-Dev Basin "B" Rational

December 1		Segments		
Description	Α	В	С	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.36	2.28	2.28	
Land Slope (%)	5			
Travel Time (min)	10.13	0.00	0.00	10.13
Shallow Concentrated Flow				
Flow Length (ft)	492			
Watercourse Slope (%)	2.85	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	2.72			
Travel Time (min)	3.01	0.00	0.00	3.01
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	0.00	0.00	0.00	0.00
Total Travel Time				13 min

Hydrology Studio v 3.0.0.27 05-02-2025

Pre-Dev Basin "C"

Hydrograph Type	= Rational	Peak Flow	= 1.416 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.15 hrs
Time Interval	= 1 min	Runoff Volume	= 1,021 cuft
Drainage Area	= 0.64 ac	Runoff Coeff.	= 0.47
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 9.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.71 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	s = 1/1.67



Tc by TR55 Worksheet

Hydrology Studio v 3.0.0.27 05-02-2025

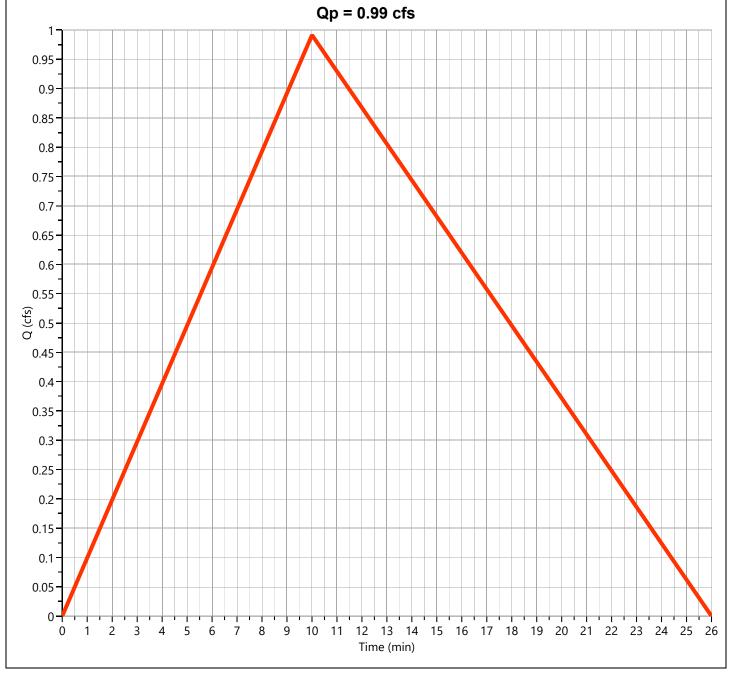
Pre-Dev Basin "C" Rational

December 1		Segments		
Description	Α	В	С	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.36	2.28	2.28	
Land Slope (%)	6.88			
Travel Time (min)	8.92	0.00	0.00	8.92
Shallow Concentrated Flow				
Flow Length (ft)	47			
Watercourse Slope (%)	10.00	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	5.1			
Travel Time (min)	0.15	0.00	0.00	0.15
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	0.00	0.00	0.00	0.00
Total Travel Time				9 min

Hydrology Studio v 3.0.0.27 05-02-2025

Pre-Dev Basin "D"

Hydrograph Type	= Rational	Peak Flow	= 0.991 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.17 hrs
Time Interval	= 1 min	Runoff Volume	= 794 cuft
Drainage Area	= 0.47 ac	Runoff Coeff.	= 0.47
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 10.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.49 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	s = 1/1.67



Tc by TR55 Worksheet

Hydrology Studio v 3.0.0.27 05-02-2025

Pre-Dev Basin "D" Rational

December 1 and 1		Segments		
Description	Α	В	С	Tc (min)
Sheet Flow				
Description				
Manning's n	0.300	0.013	0.013	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	4.36	2.28	2.28	
Land Slope (%)	6.3			
Travel Time (min)	9.24	0.00	0.00	9.24
Shallow Concentrated Flow				
Flow Length (ft)	104			
Watercourse Slope (%)	7.60	0.00	0.00	
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	4.45			
Travel Time (min)	0.39	0.00	0.00	0.39
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	0.00	0.00	0.00	0.00
Total Travel Time				10 min

Hydrology Studio v 3.0.0.27 05-02-2025

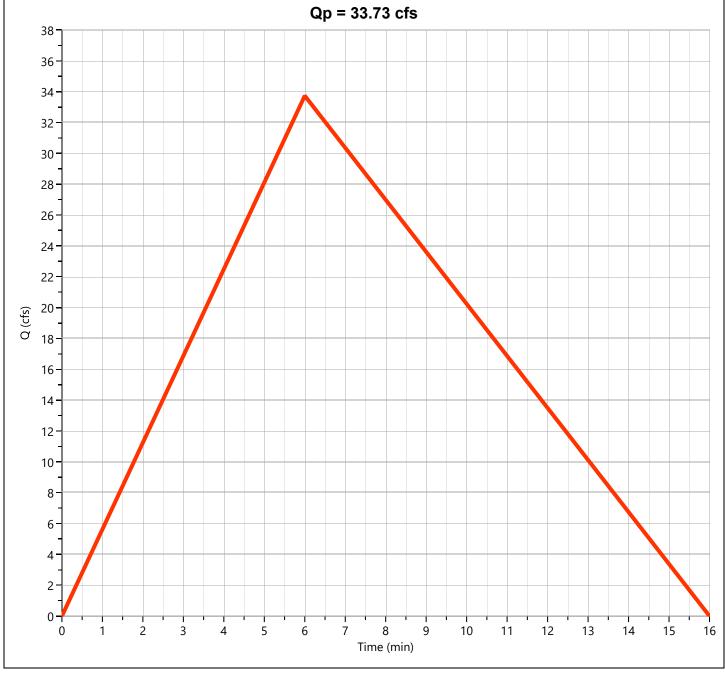
Total Pre-Dev Hyd. No. 5

lydrograph Type	= Junction	Peak Flow	= 13.49 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.22 hrs
īme Interval	= 1 min	Hydrograph Volume	= 14,270 cuft
nflow Hydrographs	= 1, 2, 3, 4	Total Contrib. Area	= 7.54 ac
	Qp = 13.49	9 cfs	
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14 -			
13 -			
-			
12 -			
1			
11			
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— Dra-Do	v Basin "A" — Pre-Dev Basin "B" — Pre-Dev		ntal Pre-Dev
116-06	V Dasiii A TTC DCV Dasiii D TTC-DCV	basiii C TTC Dev basiii D TC	AGE FIC DCV

Hydrology Studio v 3.0.0.27 05-02-2025

Post-Dev Basin "A"

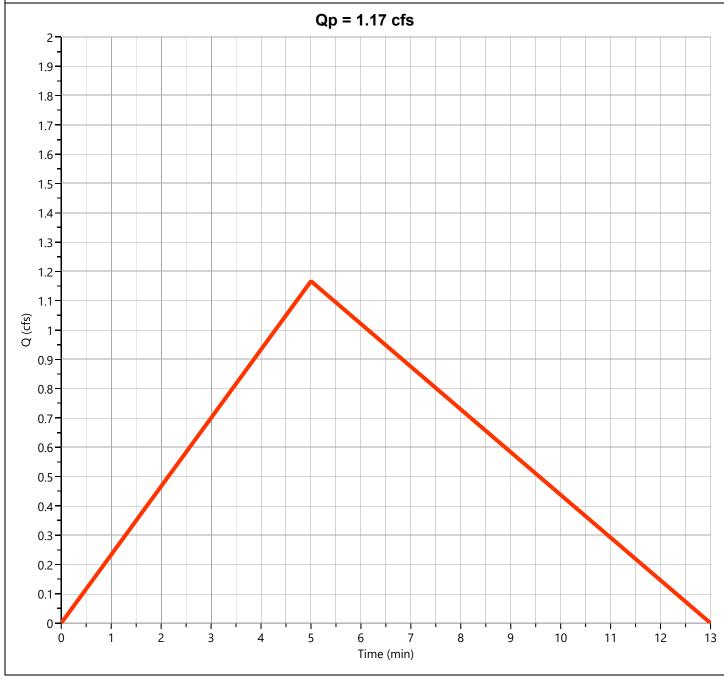
Hydrograph Type	= Rational	Peak Flow	= 33.73 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.10 hrs
Time Interval	= 1 min	Runoff Volume	= 16,211 cuft
Drainage Area	= 6.28 ac	Runoff Coeff.	= 0.95
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.65 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	s = 1/1.67



Hydrology Studio v 3.0.0.27 05-02-2025

Post-Dev Basin "B"

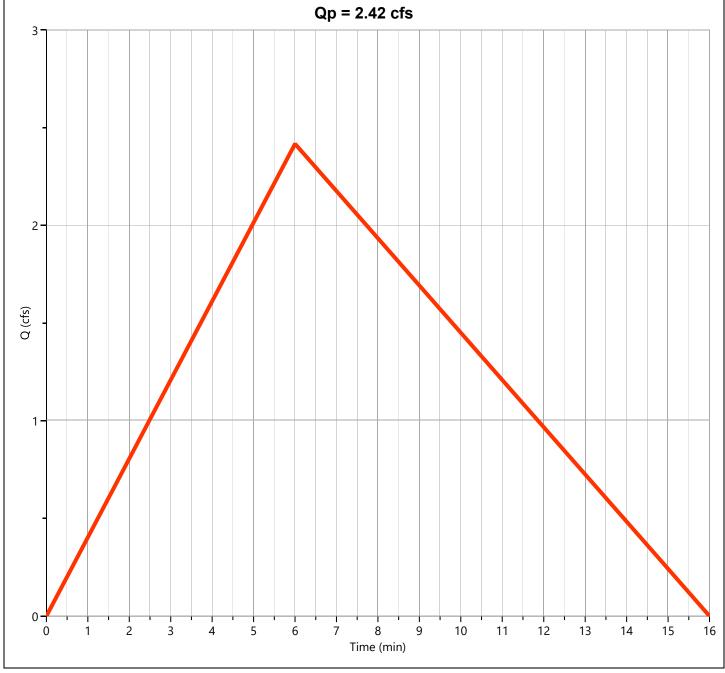
Hydrograph Type	= Rational	Peak Flow	= 1.167 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.08 hrs
Time Interval	= 1 min	Runoff Volume	= 467 cuft
Drainage Area	= 0.2 ac	Runoff Coeff.	= 0.95
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.14 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	s = 1/1.67



Hydrology Studio v 3.0.0.27 05-02-2025

Post-Dev Basin "C"

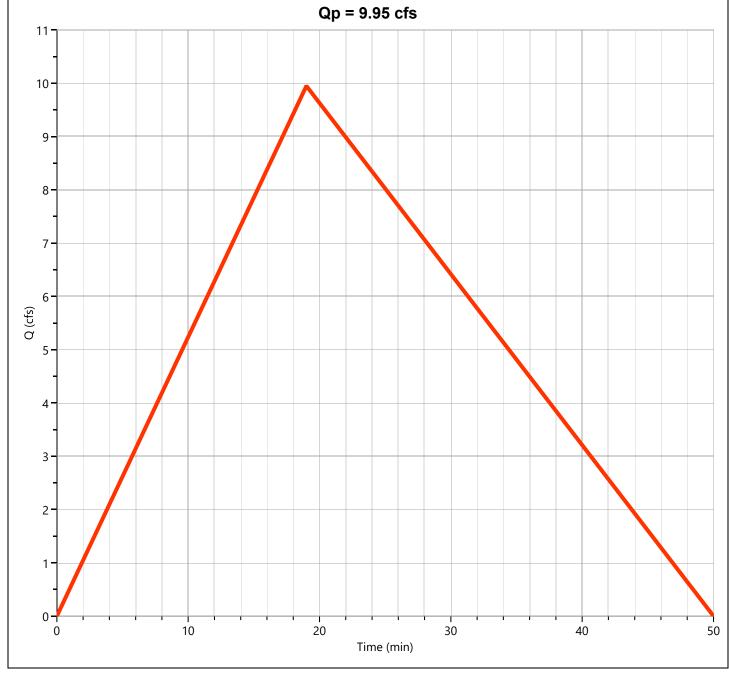
Hydrograph Type	= Rational	Peak Flow	= 2.417 cfs
Storm Frequency	= 2-yr	Time to Peak	= 0.10 hrs
Time Interval	= 1 min	Runoff Volume	= 1,162 cuft
Drainage Area	= 0.45 ac	Runoff Coeff.	= 0.95
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.65 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	s = 1/1.67



Hydrology Studio v 3.0.0.27 05-02-2025

Post-Dev Basin "D"

Hydrograph Type	= Rational	Peak Flow	= 9.949 cfs	
Storm Frequency	= 2-yr	Time to Peak	= 0.32 hrs	
Time Interval	= 1 min	Runoff Volume	= 15,141 cuft	
Drainage Area	= 3.9 ac	Runoff Coeff.	= 0.76	
Tc Method	= User	Time of Conc. (Tc)	= 19.0 min	
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 3.36 in/hr	
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors = 1/1.67		



Hydrology Studio v 3.0.0.27 05-02-2025

Total Post-Dev Hyd. No. 10

Hydrograph Type	= Junction		Peak Flo	W	= 40.31 cfs		
Storm Frequency			Time to F	Peak	= 0.10 hrs		
Time Interval			aph Volume	= 32,730 cuft			
Inflow Hydrographs	= 6, 7, 8, 9		Total Co	ntrib. Area	= 10.83 ac		
	Qp = 40.31 cfs						
46							
44							
42							
40							
38							
36							
-							
34							
32							
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— Post-Dev Basin "A" — Post-Dev Basin "B" — Post-Dev Basin "C" — Post-Dev Basin "D" — Total Post-Dev							

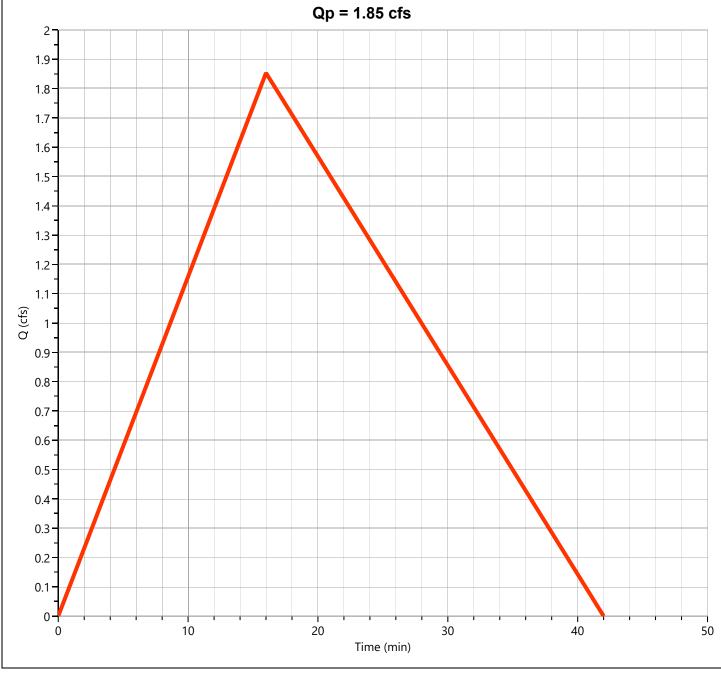
Hydrograph 10-yr Summary

05-02-2025 Hydrology Studio v 3.0.0.27 Time to Hydrograph Inflow Maximum Peak Maximum Hydrograph Hyd. Hydrograph Flow Peak Volume Hyd(s) Elevation Storage No. Type Name (cuft) (cuft) (cfs) (hrs) (ft) Rational Pre-Dev Basin "A" 1.853 0.27 2,375 1 2 Rational Pre-Dev Basin "B" 14.12 0.22 14,699 3 Rational Pre-Dev Basin "C" 1.896 0.15 1,367 0.17 1,064 Rational Pre-Dev Basin "D" 1.328 4 5 Junction Total Pre-Dev 18.09 0.22 19,134 1, 2, 3, 4 45.13 0.10 21,688 Rational Post-Dev Basin "A" 6 7 Rational Post-Dev Basin "B" 1.560 0.08 625 Post-Dev Basin "C" 3.234 0.10 8 Rational 1,554 13.36 0.32 20,327 9 Rational Post-Dev Basin "D" Junction 53.94 0.10 43,856 10 Total Post-Dev 6, 7, 8, 9

Hydrology Studio v 3.0.0.27 05-02-2025

Pre-Dev Basin "A"

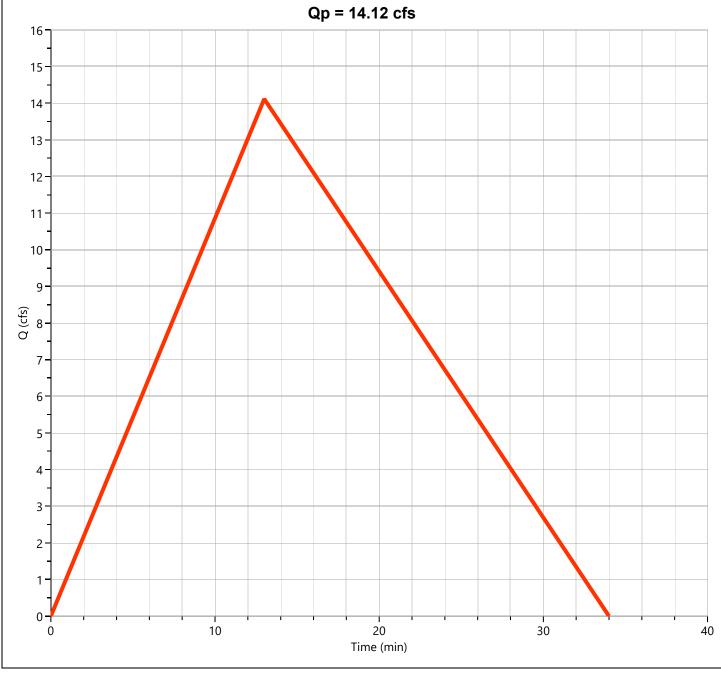
	D.C. I	D 1 El	4.050. 6	
Hydrograph Type	= Rational	Peak Flow	= 1.853 cfs	
Storm Frequency	= 10-yr	Time to Peak	= 0.27 hrs	
Time Interval	= 1 min	Runoff Volume	= 2,375 cuft	
Drainage Area	= 0.81 ac	Runoff Coeff.	= 0.47	
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.0 min	
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.87 in/hr	
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors = 1/1.67		



Hydrology Studio v 3.0.0.27 05-02-2025

Pre-Dev Basin "B"

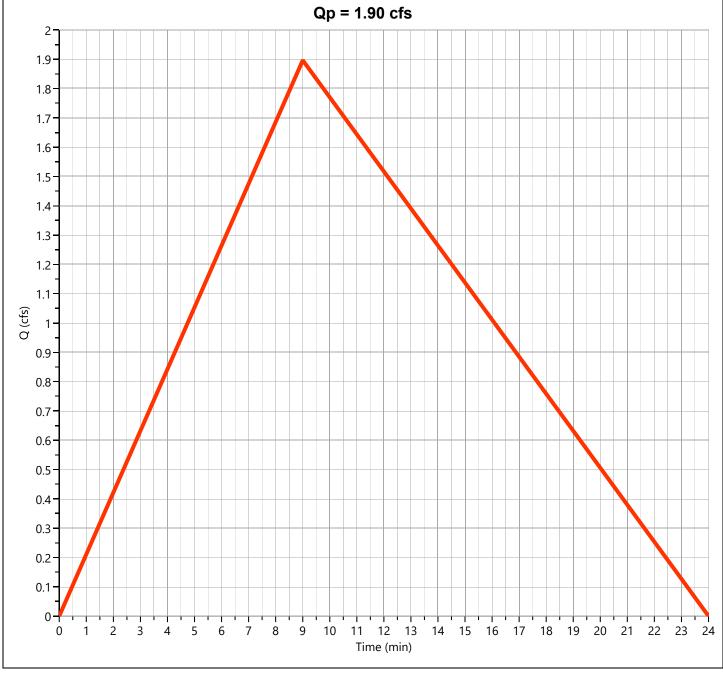
Hydrograph Type	= Rational	Peak Flow	= 14.12 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Runoff Volume	= 14,699 cuft
Drainage Area	= 5.62 ac	Runoff Coeff.	= 0.47
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.34 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	s = 1/1.67



Hydrology Studio v 3.0.0.27 05-02-2025

Pre-Dev Basin "C"

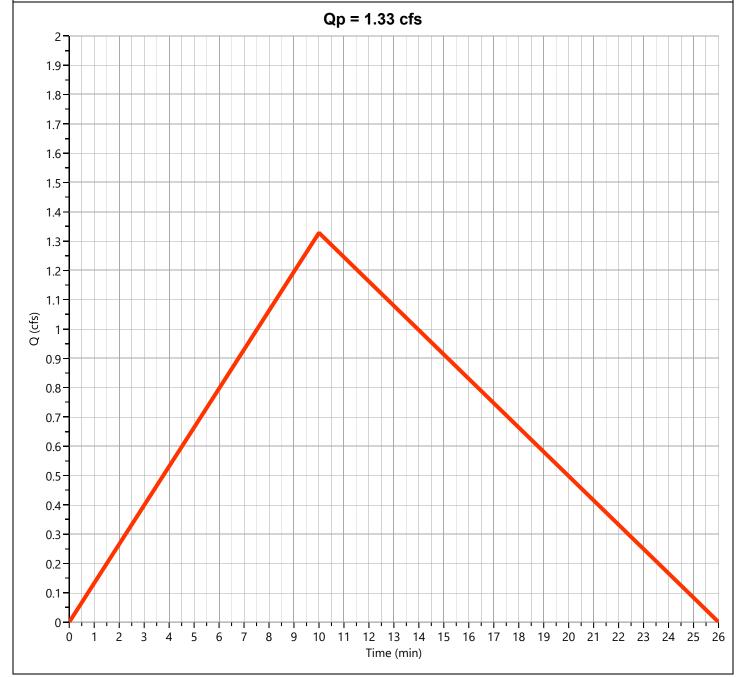
Hydrograph Type	= Rational	Peak Flow	= 1.896 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.15 hrs
Time Interval	= 1 min	Runoff Volume	= 1,367 cuft
Drainage Area	= 0.64 ac	Runoff Coeff.	= 0.47
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 9.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.30 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	s = 1/1.67



Hydrology Studio v 3.0.0.27 05-02-2025

Pre-Dev Basin "D"

Hydrograph Type	= Rational	Peak Flow	= 1.328 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.17 hrs
Time Interval	= 1 min	Runoff Volume	= 1,064 cuft
Drainage Area	= 0.47 ac	Runoff Coeff.	= 0.47
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 10.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.01 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	s = 1/1.67



Hydrology Studio v 3.0.0.27 05-02-2025

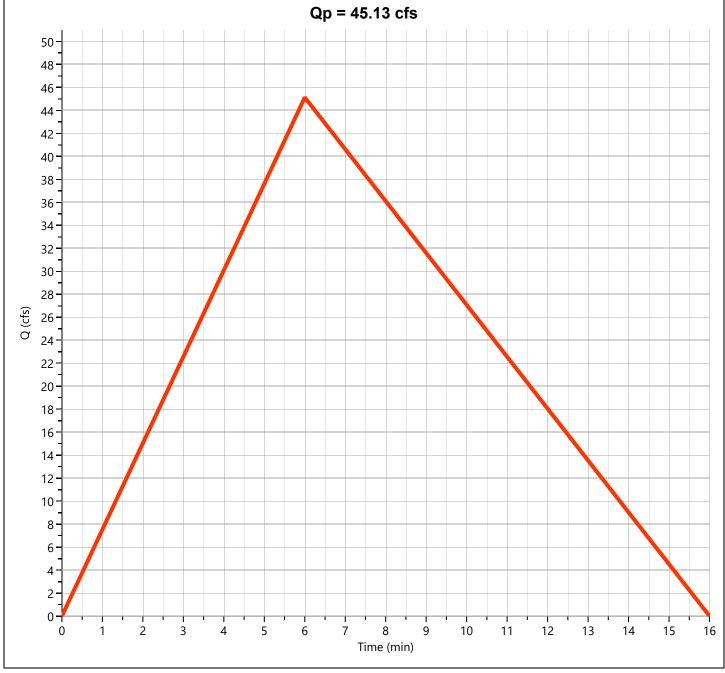
Total Pre-Dev Hyd. No. 5

lydrograph Type	= Junction	Peak Flow	= 18.09 cfs
torm Frequency	= 10-yr	Time to Peak	= 0.22 hrs
ime Interval	= 1 min	Hydrograph Volume	= 19,134 cuft
nflow Hydrographs	= 1, 2, 3, 4	Total Contrib. Area	= 7.54 ac
	Qp = 18.09 cfs	3	
20			
19			
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~ <i>L</i> ¬	Time (min)	0 _20 _30 _32 _34	30 30 4 0

Hydrology Studio v 3.0.0.27 05-02-2025

Post-Dev Basin "A"

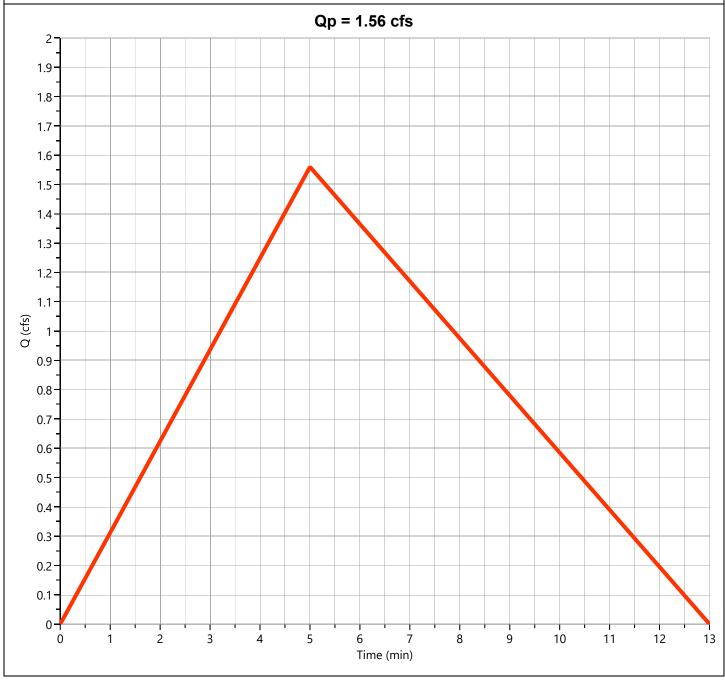
Hydrograph Type	= Rational	Peak Flow	= 45.13 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.10 hrs
Time Interval	= 1 min	Runoff Volume	= 21,688 cuft
Drainage Area	= 6.28 ac	Runoff Coeff.	= 0.95
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.56 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	s = 1/1.67



Hydrology Studio v 3.0.0.27 05-02-2025

Post-Dev Basin "B"

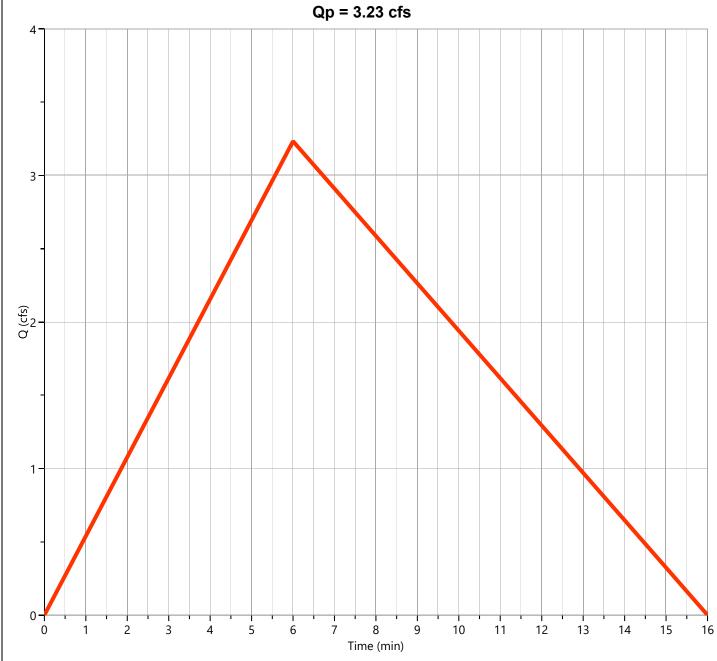
Hydrograph Type	= Rational	Peak Flow	= 1.560 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.08 hrs
Time Interval	= 1 min	Runoff Volume	= 625 cuft
Drainage Area	= 0.2 ac	Runoff Coeff.	= 0.95
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 8.21 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	s = 1/1.67



Hydrology Studio v 3.0.0.27 05-02-2025

Post-Dev Basin "C"

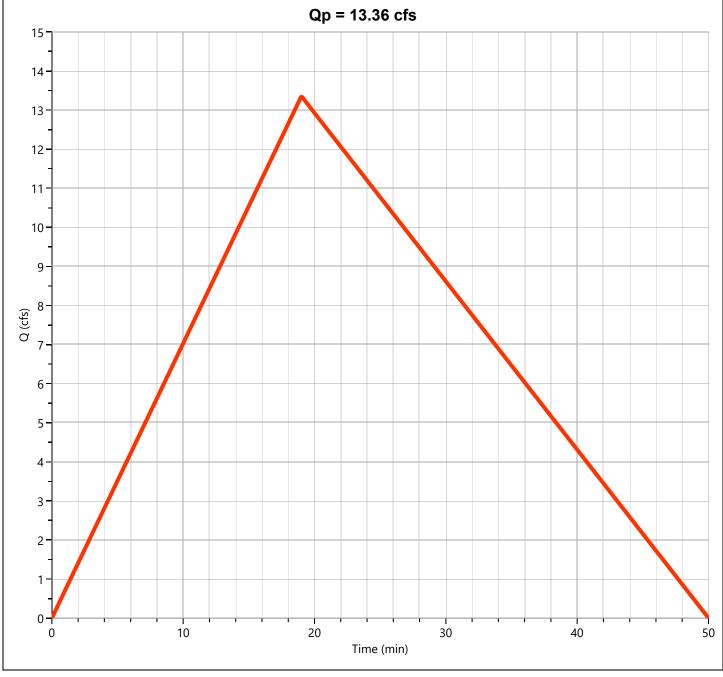
		_	
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Facto	ors = 1/1.67
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.56 in/hr
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
Drainage Area	= 0.45 ac	Runoff Coeff.	= 0.95
Time Interval	= 1 min	Runoff Volume	= 1,554 cuft
Storm Frequency	= 10-yr	Time to Peak	= 0.10 hrs
Hydrograph Type	= Rational	Peak Flow	= 3.234 cfs



Hydrology Studio v 3.0.0.27 05-02-2025

Post-Dev Basin "D"

Hydrograph Type	= Rational	Peak Flow	= 13.36 cfs
Storm Frequency	= 10-yr	Time to Peak	= 0.32 hrs
Time Interval	= 1 min	Runoff Volume	= 20,327 cuft
Drainage Area	= 3.9 ac	Runoff Coeff.	= 0.76
Tc Method	= User	Time of Conc. (Tc)	= 19.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 4.51 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	s = 1/1.67



Hydrology Studio v 3.0.0.27 05-02-2025

Total Post-Dev Hyd. No. 10

Hydrograph Type	= Junction		Peak Flow	= 53.94 cfs
Storm Frequency	= 10-yr		Time to Peak	= 0.10 hrs
Time Interval	= 1 min		Hydrograph Volum	ne = 43,856 cuft
Inflow Hydrographs	= 6, 7, 8, 9		Total Contrib. Area	a = 10.83 ac
	On:	= 53.94 cfs		
62 7	—————————————————————————————————————			
60 7				
58 -				
56				
54				
52 -				
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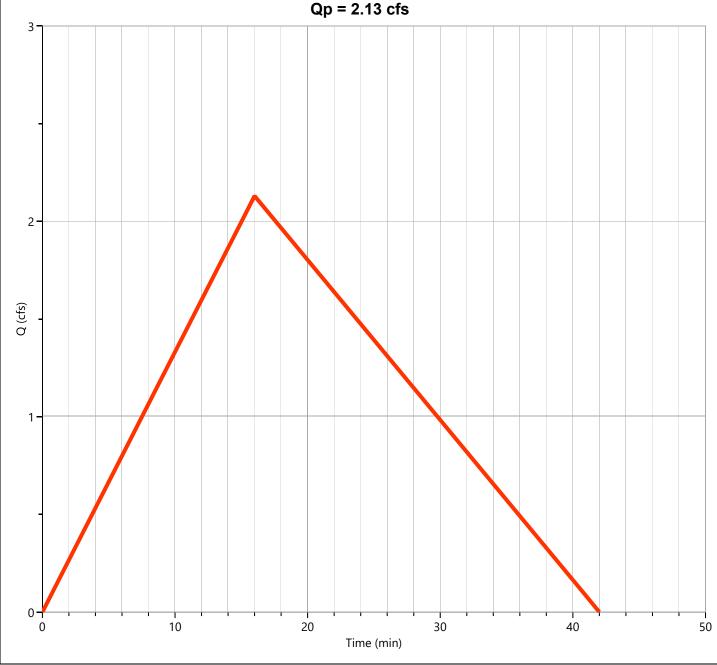
Hydrograph 25-yr Summary

05-02-2025 Hydrology Studio v 3.0.0.27 Time to Hydrograph Inflow Maximum Peak Maximum Hydrograph Hyd. Hydrograph Flow Peak Volume Hyd(s) Elevation Storage No. Type Name (cuft) (cuft) (cfs) (hrs) (ft) Rational Pre-Dev Basin "A" 2.130 0.27 2,730 1 2 Rational Pre-Dev Basin "B" 16.22 0.22 16,893 3 Rational Pre-Dev Basin "C" 2.179 0.15 1,571 0.17 Rational Pre-Dev Basin "D" 1.526 1,223 4 5 Junction Total Pre-Dev 20.79 0.22 21,990 1, 2, 3, 4 51.84 0.10 24,914 Rational Post-Dev Basin "A" 6 7 Rational Post-Dev Basin "B" 1.792 0.08 718 Post-Dev Basin "C" 3.715 0.10 8 Rational 1,785 15.35 0.32 23,367 9 Rational Post-Dev Basin "D" Junction 61.97 0.10 50,395 10 Total Post-Dev 6, 7, 8, 9

Hydrology Studio v 3.0.0.27 05-02-2025

Pre-Dev Basin "A"

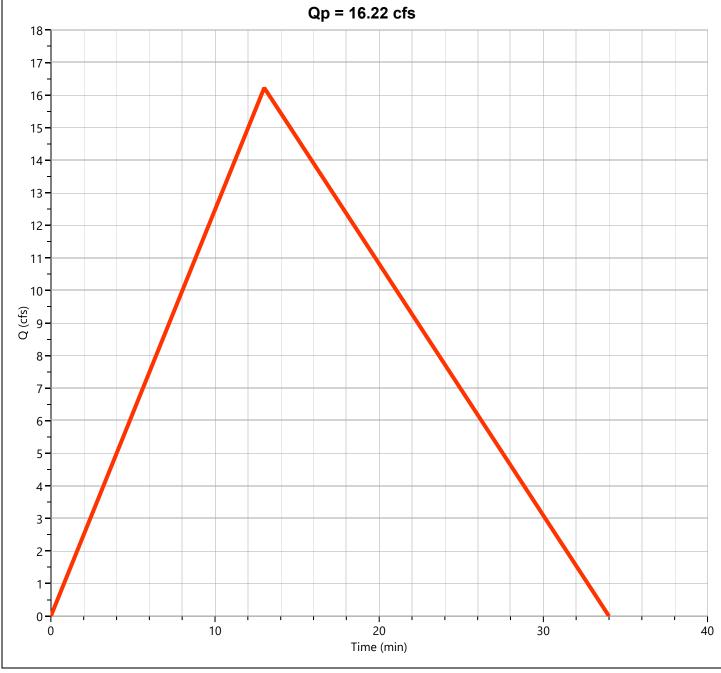
Hydrograph Type	= Rational	Peak Flow	= 2.130 cfs	
Storm Frequency	= 25-yr	Time to Peak	= 0.27 hrs	
Time Interval	= 1 min	Runoff Volume	= 2,730 cuft	
Drainage Area	= 0.81 ac	Runoff Coeff.	= 0.47	
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.0 min	
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.60 in/hr	
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Facto	rs = 1/1.67	
Qp = 2.13 cfs				
3				



Hydrology Studio v 3.0.0.27 05-02-2025

Pre-Dev Basin "B"

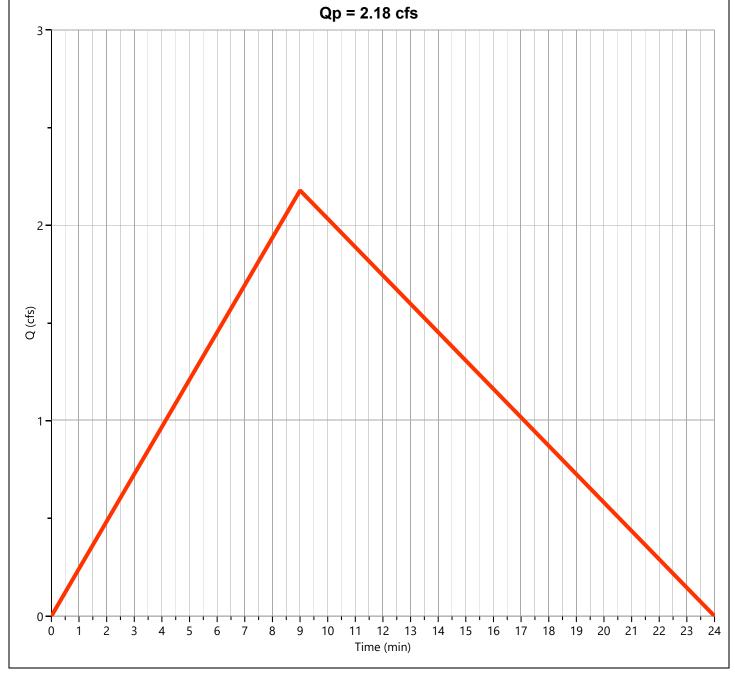
Hydrograph Type	= Rational	Peak Flow	= 16.22 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Runoff Volume	= 16,893 cuft
Drainage Area	= 5.62 ac	Runoff Coeff.	= 0.47
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.14 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factor	s = 1/1.67



Hydrology Studio v 3.0.0.27 05-02-2025

Pre-Dev Basin "C"

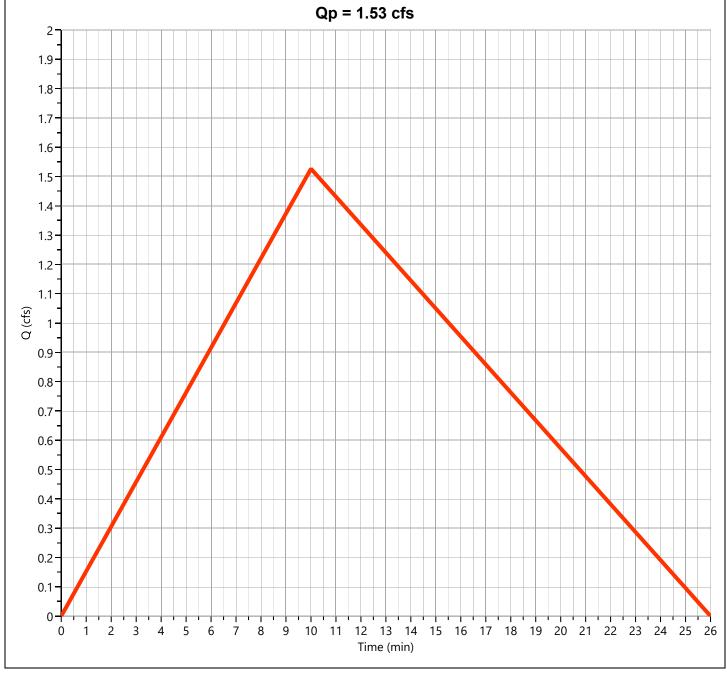
Hydrograph Type	= Rational	Peak Flow	= 2.179 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.15 hrs
Time Interval	= 1 min	Runoff Volume	= 1,571 cuft
Drainage Area	= 0.64 ac	Runoff Coeff.	= 0.47
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 9.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.24 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	s = 1/1.67



Hydrology Studio v 3.0.0.27 05-02-2025

Pre-Dev Basin "D"

Hydrograph Type	= Rational	Peak Flow	= 1.526 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.17 hrs
Time Interval	= 1 min	Runoff Volume	= 1,223 cuft
Drainage Area	= 0.47 ac	Runoff Coeff.	= 0.47
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 10.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.91 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	s = 1/1.67



Hydrology Studio v 3.0.0.27 05-02-2025

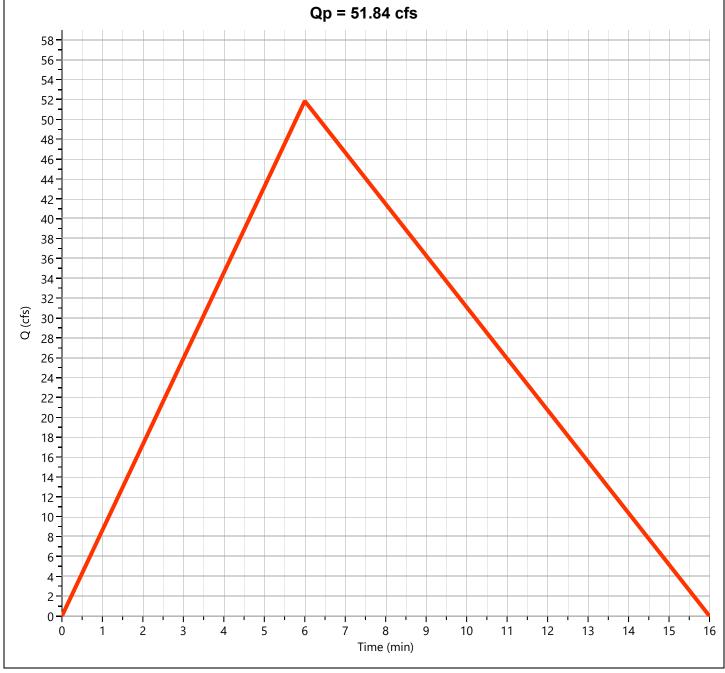
Total Pre-Dev Hyd. No. 5

ydrograph Type	= Junction	Peak Flow	= 20.79 cfs
torm Frequency	= 25-yr	Time to Peak	= 0.22 hrs
ime Interval	= 1 min	Hydrograph Volume	= 21,990 cuft
flow Hydrographs	= 1, 2, 3, 4	Total Contrib. Area	= 7.54 ac
	Qp = 20.	.79 cfs	
23 -	-		
22-			
21			
20			
19			
18			
17 -			
-			
16 -			
15			
14			
13			
<u>2</u> 12 - 			
12- 711-			
10			
9			
8			
7			
6-			
5			
4			
3			
2			
1-			
0			
0 2 4	6 8 10 12 14 16 18 20		36 38 40
	Basin "A" —— Pre-Dev Basin "B" —— Pre-D	C (IIIII)	

Hydrology Studio v 3.0.0.27 05-02-2025

Post-Dev Basin "A"

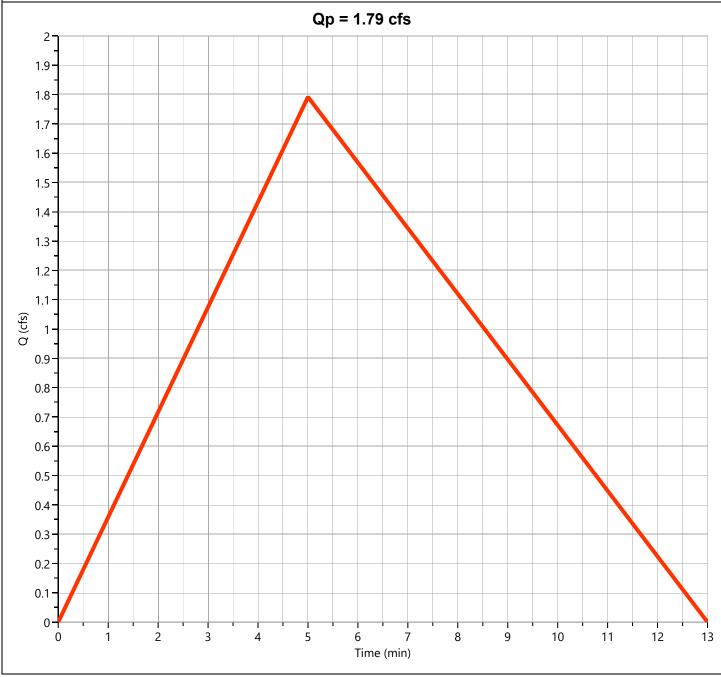
Hydrograph Type	= Rational	Peak Flow	= 51.84 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.10 hrs
Time Interval	= 1 min	Runoff Volume	= 24,914 cuft
Drainage Area	= 6.28 ac	Runoff Coeff.	= 0.95
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 8.69 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factor	s = 1/1.67



Hydrology Studio v 3.0.0.27 05-02-2025

Post-Dev Basin "B"

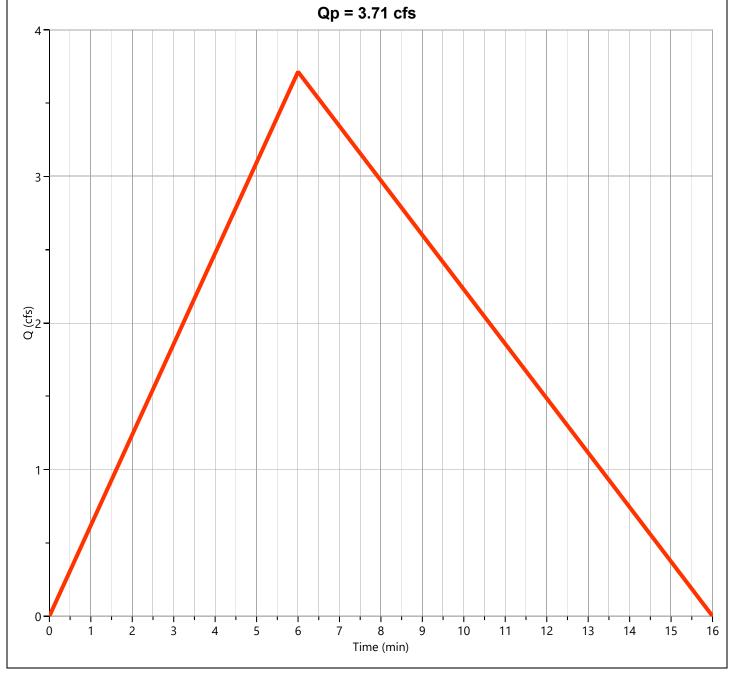
Hydrograph Type	= Rational	Peak Flow	= 1.792 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.08 hrs
Time Interval	= 1 min	Runoff Volume	= 718 cuft
Drainage Area	= 0.2 ac	Runoff Coeff.	= 0.95
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 9.43 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factor	s = 1/1.67



Hydrology Studio v 3.0.0.27 05-02-2025

Post-Dev Basin "C"

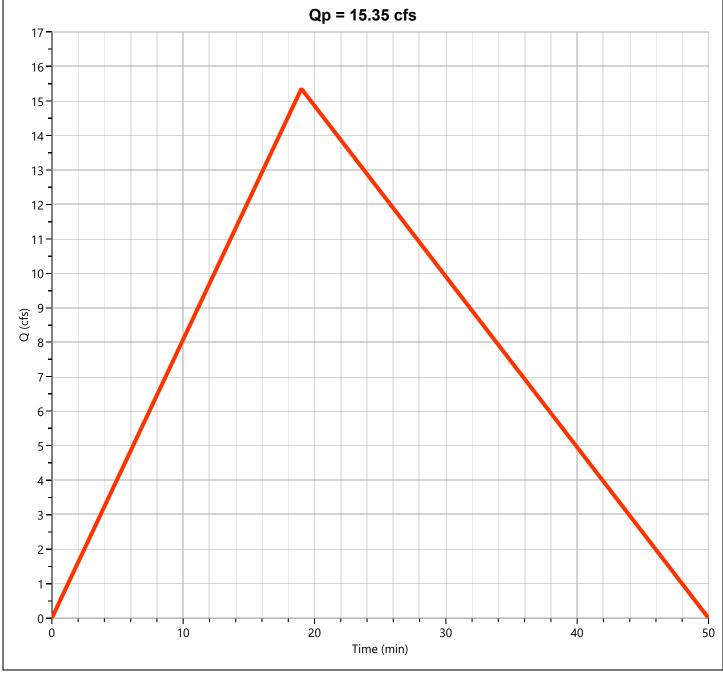
Hydrograph Type	= Rational	Peak Flow	= 3.715 cfs
Storm Frequency	= 25-yr	Time to Peak	= 0.10 hrs
Time Interval	= 1 min	Runoff Volume	= 1,785 cuft
Drainage Area	= 0.45 ac	Runoff Coeff.	= 0.95
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 8.69 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factor	s = 1/1.67



Hydrology Studio v 3.0.0.27 05-02-2025

Post-Dev Basin "D"

Hydrograph Type	= Rational	Peak Flow	= 15.35 cfs	
Storm Frequency	= 25-yr	Time to Peak	= 0.32 hrs	
Time Interval	= 1 min	Runoff Volume	= 23,367 cuft	
Drainage Area	= 3.9 ac	Runoff Coeff.	= 0.76	
Tc Method	= User	Time of Conc. (Tc)	= 19.0 min	
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.18 in/hr	
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors = 1/1.67		



Hydrology Studio v 3.0.0.27 05-02-2025

Total Post-Dev Hyd. No. 10

torm Frequency = 25-yr me Interval = 1 min flow Hydrographs = 6, 7, 8, 9	Time to Peak Hydrograph Volume	= 0.10 hrs
		= 50,395 cuft
10W 11yar ographis = 0, 1, 0, 0	Total Contrib. Area	= 10.83 ac
• • • • •	Total Collins. Alea	- 10.00 ac
Qp = 61.97 cfs		
70 -		
68 - 66 -		
64 -		
62 -		
60 +		
58 - 56 -		
54		
52		
50 7		
48		
46 - 44 - 44 - 44 - 44 - 44 - 44 - 44 -		
42		
40 -		
2 38 -		
G 36		
32		
30 -		
28		
26 - 24		
22 -		
20 =		
18		
16 - 14 -		
12		
10		
8 -		
6		
4-1		
0		
0 10 20 Time (min)	30 40	

Hydrograph 50-yr Summary

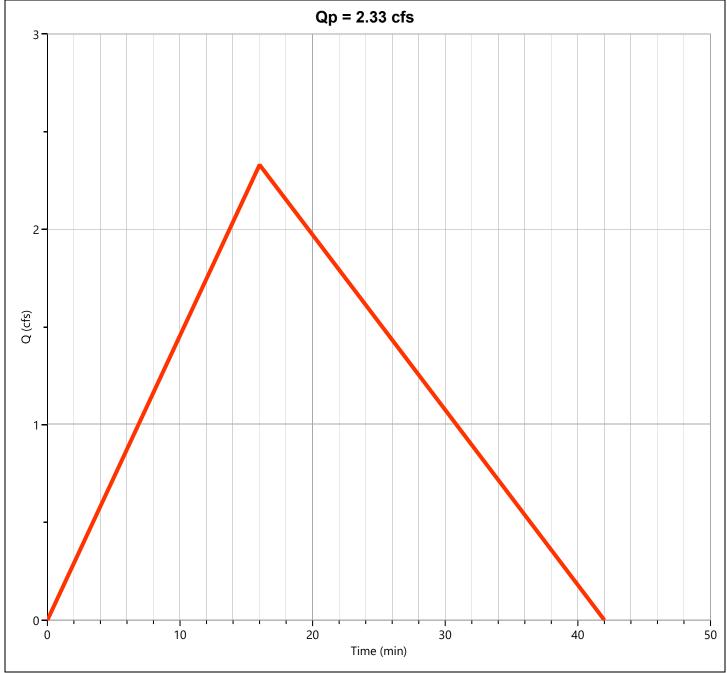
05-02-2025

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	Rational	Pre-Dev Basin "A"	2.330	0.27	2,986			
2	Rational	Pre-Dev Basin "B"	17.74	0.22	18,474			
3	Rational	Pre-Dev Basin "C"	2.382	0.15	1,717			
4	Rational	Pre-Dev Basin "D"	1.669	0.17	1,336			
5	Junction	Total Pre-Dev	22.74	0.22	24,048	1, 2, 3, 4		
6	Rational	Post-Dev Basin "A"	56.64	0.10	27,219			
7	Rational	Post-Dev Basin "B"	1.957	0.08	784			
8	Rational	Post-Dev Basin "C"	4.058	0.10	1,950			
9	Rational	Post-Dev Basin "D"	16.80	0.32	25,566			
10	Junction	Total Post-Dev	67.71	0.10	55,095	6, 7, 8, 9		

Hydrology Studio v 3.0.0.27 05-02-2025

Pre-Dev Basin "A"

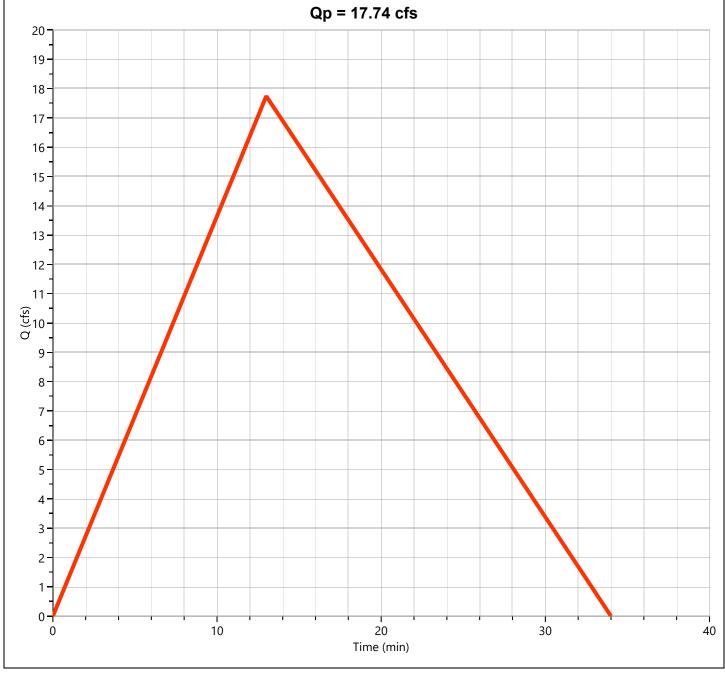
Hydrograph Type	= Rational	Peak Flow	= 2.330 cfs	
Storm Frequency	= 50-yr	Time to Peak	= 0.27 hrs	
Time Interval	= 1 min	Runoff Volume	= 2,986 cuft	
Drainage Area	= 0.81 ac	Runoff Coeff.	= 0.47	
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.0 min	
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.12 in/hr	
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors = 1/1.67		



Hydrology Studio v 3.0.0.27 05-02-2025

Pre-Dev Basin "B"

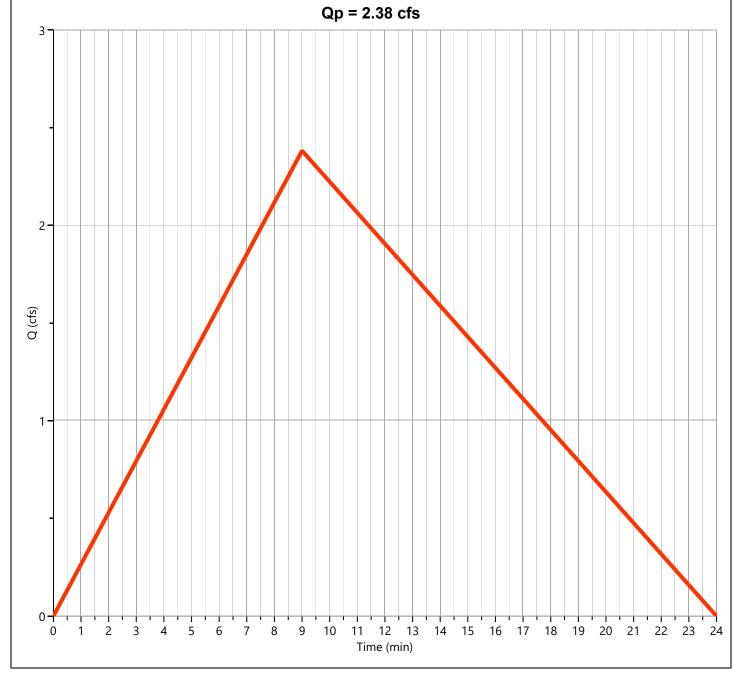
Hydrograph Type	= Rational	Peak Flow	= 17.74 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.22 hrs
Time Interval	= 1 min	Runoff Volume	= 18,474 cuft
Drainage Area	= 5.62 ac	Runoff Coeff.	= 0.47
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.72 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	s = 1/1.67



Hydrology Studio v 3.0.0.27 05-02-2025

Pre-Dev Basin "C"

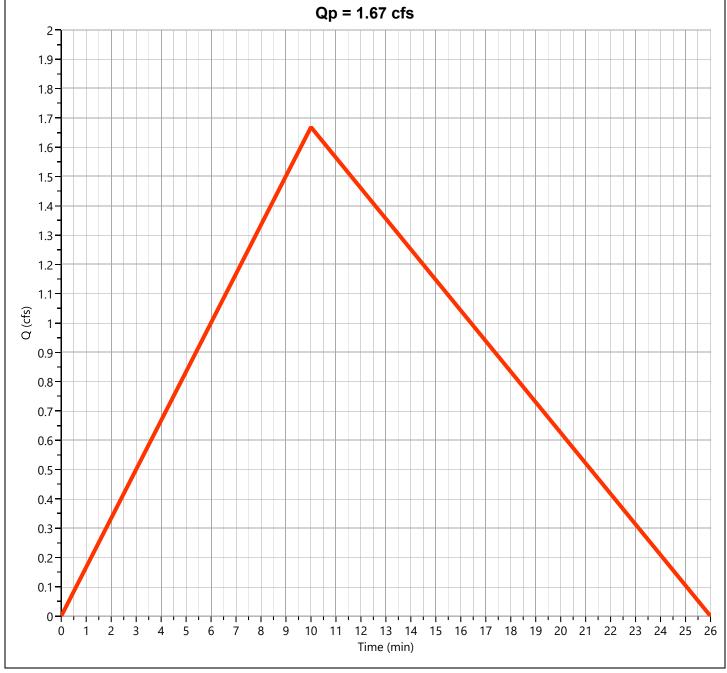
Hydrograph Type	= Rational	Peak Flow	= 2.382 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.15 hrs
Time Interval	= 1 min	Runoff Volume	= 1,717 cuft
Drainage Area	= 0.64 ac	Runoff Coeff.	= 0.47
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 9.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.92 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	s = 1/1.67



Hydrology Studio v 3.0.0.27 05-02-2025

Pre-Dev Basin "D"

Hydrograph Type	= Rational	Peak Flow	= 1.669 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.17 hrs
Time Interval	= 1 min	Runoff Volume	= 1,336 cuft
Drainage Area	= 0.47 ac	Runoff Coeff.	= 0.47
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 10.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.55 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	s = 1/1.67



Hydrology Studio v 3.0.0.27 05-02-2025

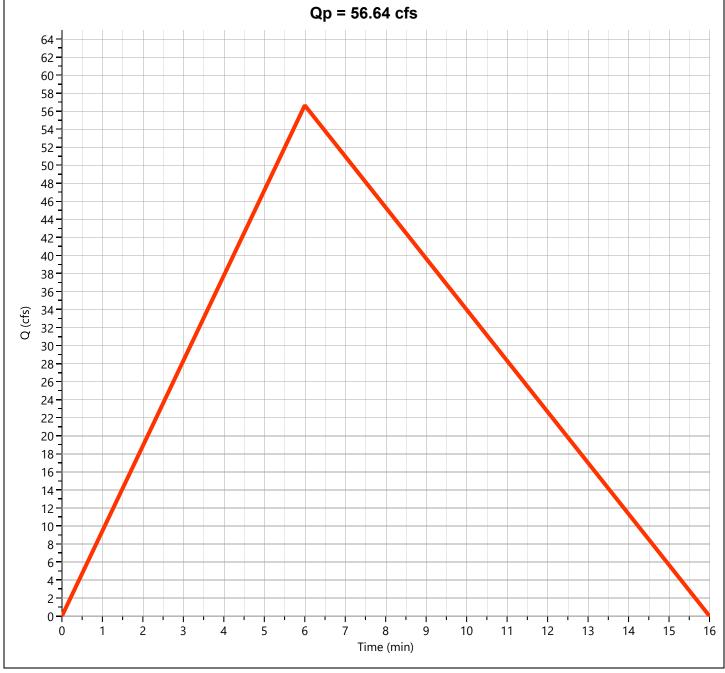
Total Pre-Dev Hyd. No. 5

lydrograph Type	= Junction	Peak Flow	= 22.74 cfs
torm Frequency	= 50-yr	Time to Peak	= 0.22 hrs
ime Interval	= 1 min	Hydrograph Volume	= 24,048 cuft
flow Hydrographs	= 1, 2, 3, 4	Total Contrib. Area	= 7.54 ac
	Qp = 22.	.74 cfs	
26 -	· ·		
25			
24			
23			
22			
21			
20			
19			
18			
17			
16			
15 -			
14 -			
13 -			
12			
11			
10			
9			
8			
7			
6			
5			
4			
3			
2			
1-			
0 2 4	6 9 10 12 14 16 19 20	22 24 26 28 20 22 24	36 38 40
0 2 4		22 24 26 28 30 32 34 e (min)	36 38 40

Hydrology Studio v 3.0.0.27 05-02-2025

Post-Dev Basin "A"

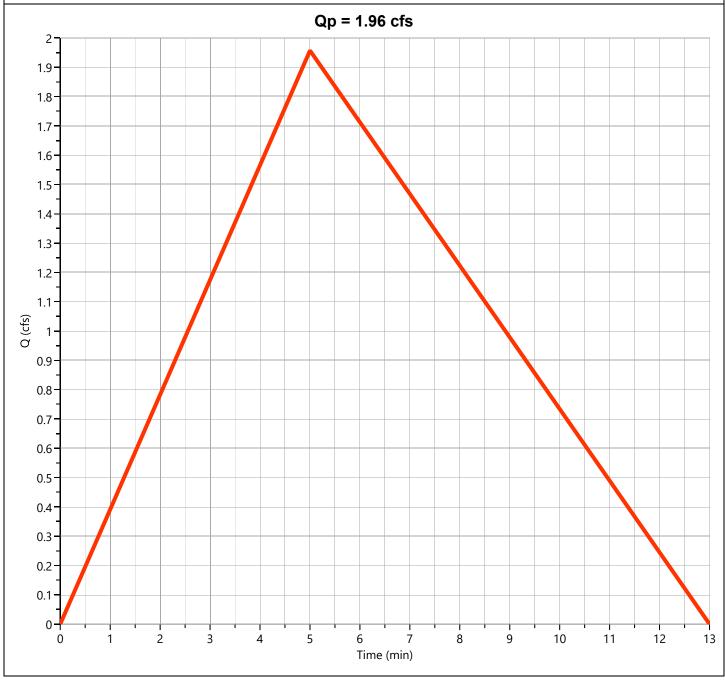
Hydrograph Type	= Rational	Peak Flow	= 56.64 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.10 hrs
Time Interval	= 1 min	Runoff Volume	= 27,219 cuft
Drainage Area	= 6.28 ac	Runoff Coeff.	= 0.95
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 9.49 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	s = 1/1.67



Hydrology Studio v 3.0.0.27 05-02-2025

Post-Dev Basin "B"

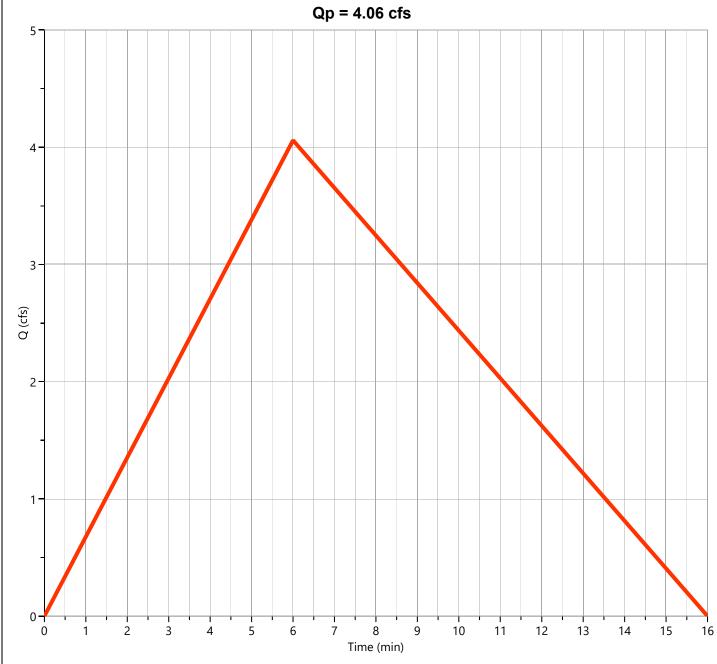
Hydrograph Type	= Rational	Peak Flow	= 1.957 cfs	
Storm Frequency	= 50-yr	Time to Peak	= 0.08 hrs	
Time Interval	= 1 min	Runoff Volume	= 784 cuft	
Drainage Area	= 0.2 ac	Runoff Coeff.	= 0.95	
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min	
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 10.30 in/hr	
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors = 1/1.67		



Hydrology Studio v 3.0.0.27 05-02-2025

Post-Dev Basin "C"

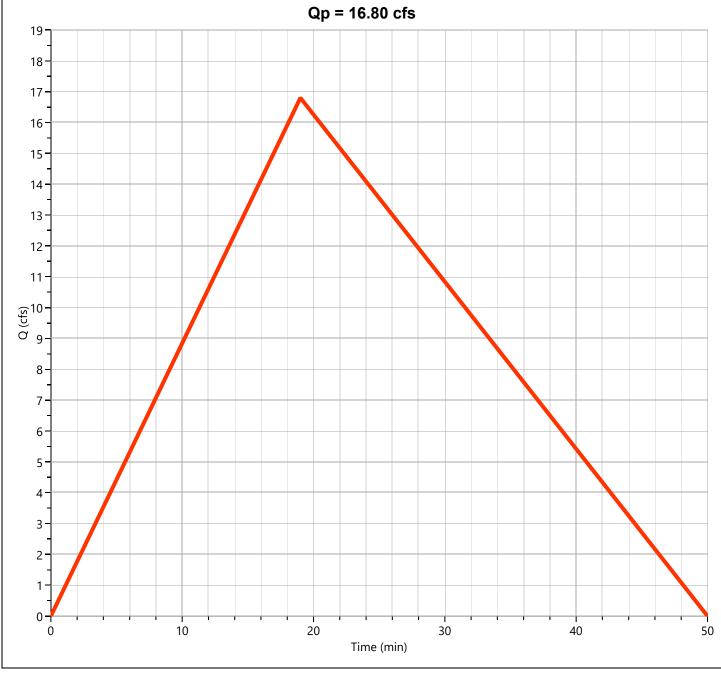
Hydrograph Type	= Rational	Peak Flow	= 4.058 cfs	
Storm Frequency	= 50-yr	Time to Peak	= 0.10 hrs	
Time Interval	= 1 min	Runoff Volume	= 1,950 cuft	
Drainage Area	= 0.45 ac	Runoff Coeff.	= 0.95	
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min	
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 9.49 in/hr	
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors = 1/1.67		



Hydrology Studio v 3.0.0.27 05-02-2025

Post-Dev Basin "D"

Hydrograph Type	= Rational	Peak Flow	= 16.80 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.32 hrs
Time Interval	= 1 min	Runoff Volume	= 25,566 cuft
Drainage Area	= 3.9 ac	Runoff Coeff.	= 0.76
Tc Method	= User	Time of Conc. (Tc)	= 19.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 5.67 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factor	rs = 1/1.67



Hydrology Studio v 3.0.0.27 05-02-2025

Total Post-Dev Hyd. No. 10

Hydrograph Type	= Junction	Peak Flow	= 67.71 cfs
Storm Frequency	= 50-yr	Time to Peak	= 0.10 hrs
īme Interval	= 1 min	Hydrograph Volum	e = 55,095 cuft
nflow Hydrographs	= 6, 7, 8, 9	Total Contrib. Area	= 10.83 ac
		7.71 cfs	
1	Qp - 8	7.71 CIS	
76 - 74 			
72			
70 -			
68 -			
66 -			
64 =			
62 - 60			
58			
56			
54 =			
52			
50 - 48 -			
46 -			
44			
42			
(F) 40 38 38 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3			
38 - 36 -			
34			
32 -			
30 =			
28 -			
26 -			
24 - 22 -			
20			
18			
16 -			
14			
12 -			
10 - 8			
6			
4-			
2			
0	10		
0	10 20	30 4 Time (min)	0

Hydrograph 100-yr Summary

Hydrology Studio v 3.0.0.27

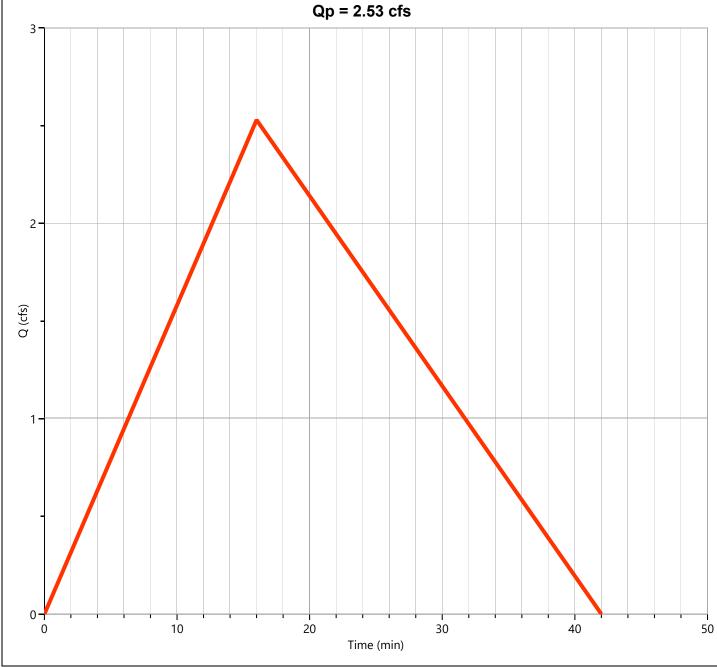
05-02-2025

yarology Sti	udio v 3.0.0.27							05-02-202
Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	Rational	Pre-Dev Basin "A"	2.529	0.27	3,242			
2	Rational	Pre-Dev Basin "B"	19.26	0.22	20,059			
3	Rational	Pre-Dev Basin "C"	2.588	0.15	1,865			
4	Rational	Pre-Dev Basin "D"	1.812	0.17	1,452			
5	Junction	Total Pre-Dev	24.69	0.22	26,112	1, 2, 3, 4		
6	Rational	Post-Dev Basin "A"	61.57	0.10	29,589			
7	Rational	Post-Dev Basin "B"	2.128	0.08	852			
8	Rational	Post-Dev Basin "C"	4.412	0.10	2,120			
9	Rational	Post-Dev Basin "D"	18.23	0.32	27,744			
10	Junction	Total Post-Dev	73.60	0.10	59,844	6, 7, 8, 9		

Hydrology Studio v 3.0.0.27 05-02-2025

Pre-Dev Basin "A"

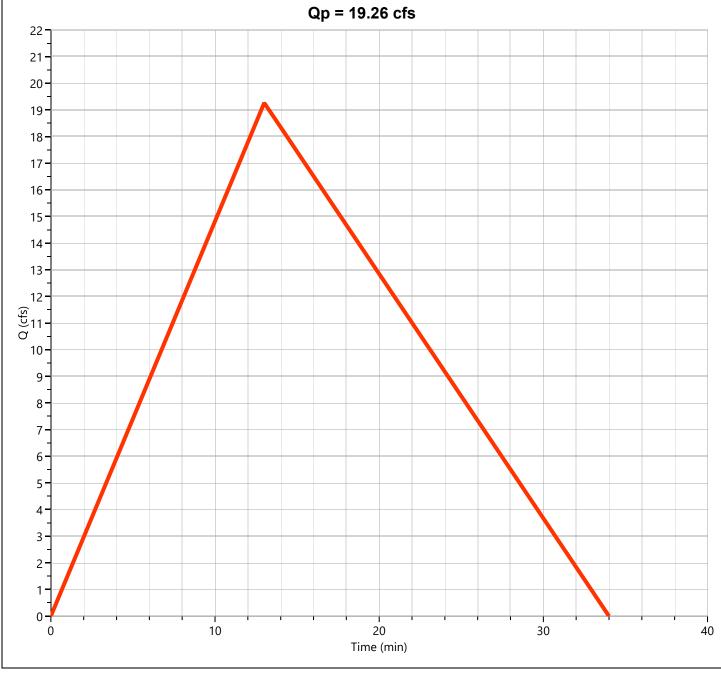
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Facto	ors = 1/1.67
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.64 in/hr
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.0 min
Drainage Area	= 0.81 ac	Runoff Coeff.	= 0.47
Time Interval	= 1 min	Runoff Volume	= 3,242 cuft
Storm Frequency	= 100-yr	Time to Peak	= 0.27 hrs
Hydrograph Type	= Rational	Peak Flow	= 2.529 cfs



Hydrology Studio v 3.0.0.27 05-02-2025

Pre-Dev Basin "B"

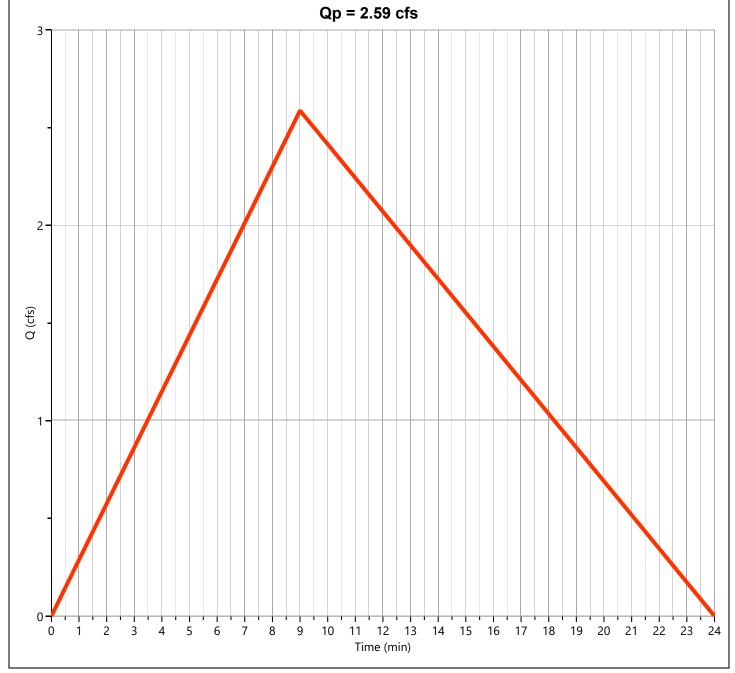
Hydrograph Type	= Rational	Peak Flow	= 19.26 cfs	
Storm Frequency	= 100-yr	Time to Peak	= 0.22 hrs	
Time Interval	= 1 min	Runoff Volume	= 20,059 cuft	
Drainage Area	= 5.62 ac	Runoff Coeff.	= 0.47	
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 13.0 min	
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 7.29 in/hr	
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors = 1/1.67		



Hydrology Studio v 3.0.0.27 05-02-2025

Pre-Dev Basin "C"

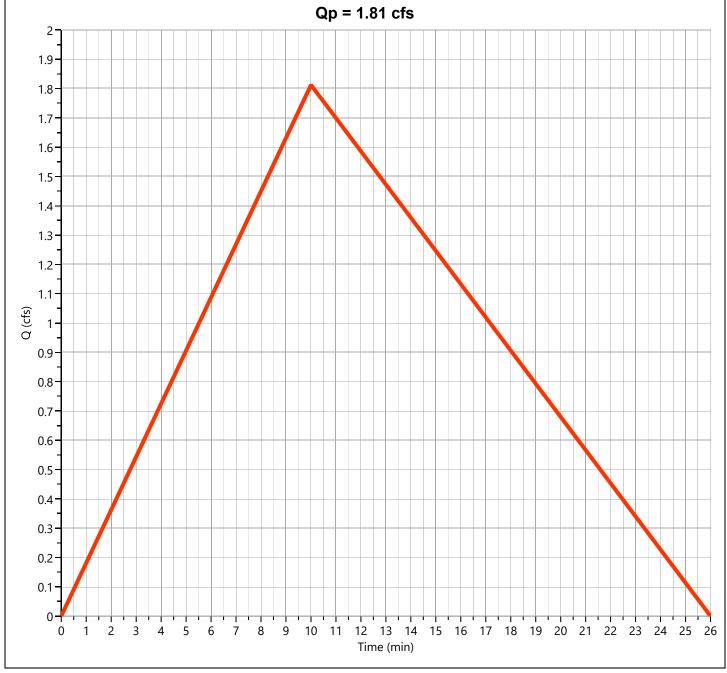
Hydrograph Type	= Rational	Peak Flow	= 2.588 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.15 hrs
Time Interval	= 1 min	Runoff Volume	= 1,865 cuft
Drainage Area	= 0.64 ac	Runoff Coeff.	= 0.47
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 9.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 8.60 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	s = 1/1.67



Hydrology Studio v 3.0.0.27 05-02-2025

Pre-Dev Basin "D"

Hydrograph Type	= Rational	Peak Flow	= 1.812 cfs	
Storm Frequency	= 100-yr	Time to Peak	= 0.17 hrs	
Time Interval	= 1 min	Runoff Volume	= 1,452 cuft	
Drainage Area	= 0.47 ac	Runoff Coeff.	= 0.47	
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 10.0 min	
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 8.20 in/hr	
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors = 1/1.67		



Hydrology Studio v 3.0.0.27 05-02-2025

Total Pre-Dev Hyd. No. 5

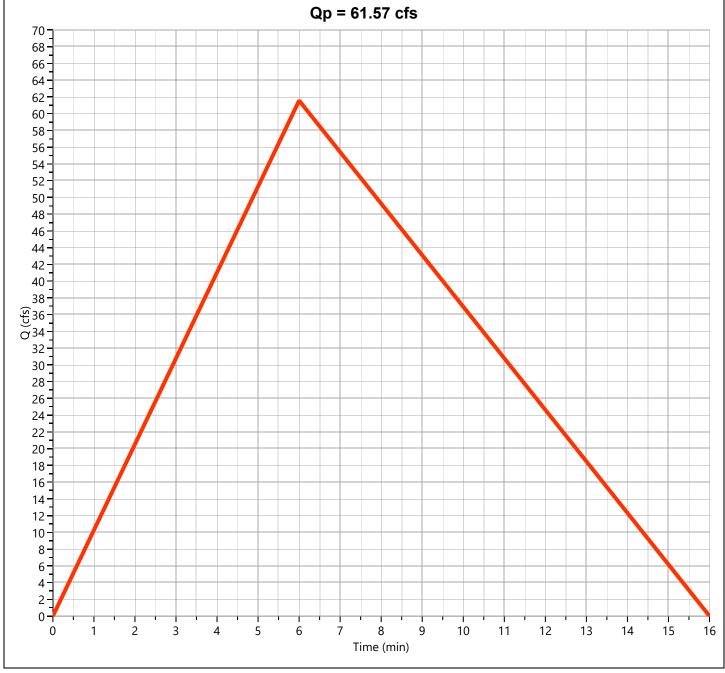
ydrograph Type	= Junction	Peak Flow	= 24.69 cfs	
torm Frequency	= 100-yr	Time to Peak	= 0.22 hrs	
me Interval	= 1 min	Hydrograph Volume	= 26,112 cuft	
flow Hydrographs	= 1, 2, 3, 4	Total Contrib. Area	= 7.54 ac	
	Qp = 24.69 cf	S		
28				
27				
26 -				
25				
24				
23 -				
22 - 21 -				
20				
19				
18				
17				
16				
15 -				
15				
13 -				
12				
11				
10				
9-				
7				
6				
5				
4				
3				
2				
1				
0				
	6 8 10 12 14 16 18 20 22	24 26 28 30 32 34	36 38 40	

Hydrograph Report

Hydrology Studio v 3.0.0.27 05-02-2025

Post-Dev Basin "A"

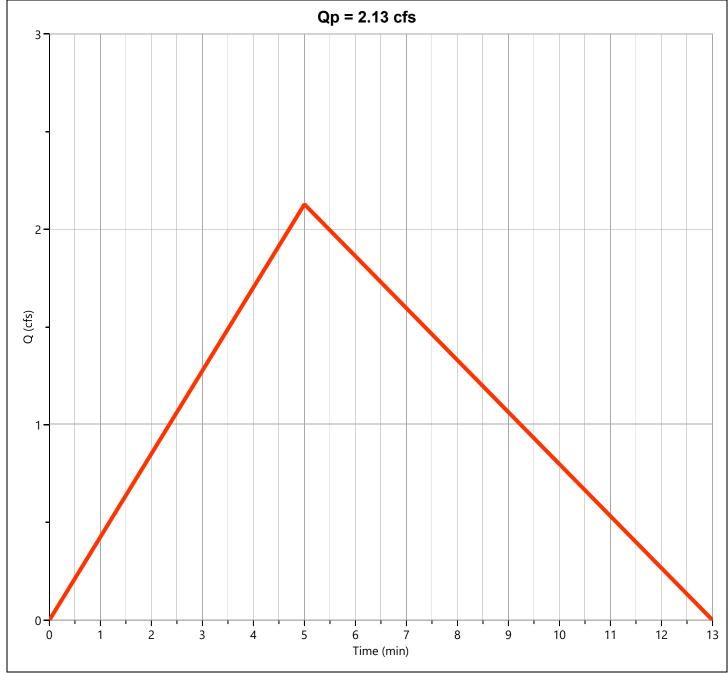
Hydrograph Type	= Rational	Peak Flow	= 61.57 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.10 hrs
Time Interval	= 1 min	Runoff Volume	= 29,589 cuft
Drainage Area	= 6.28 ac	Runoff Coeff.	= 0.95
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 10.32 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factors	s = 1/1.67



Hydrology Studio v 3.0.0.27 05-02-2025

Post-Dev Basin "B"

Hydrograph Type	= Rational	Peak Flow	= 2.128 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.08 hrs
Time Interval	= 1 min	Runoff Volume	= 852 cuft
Drainage Area	= 0.2 ac	Runoff Coeff.	= 0.95
Tc Method	= User	Time of Conc. (Tc)	= 5.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 11.20 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factor	s = 1/1.67

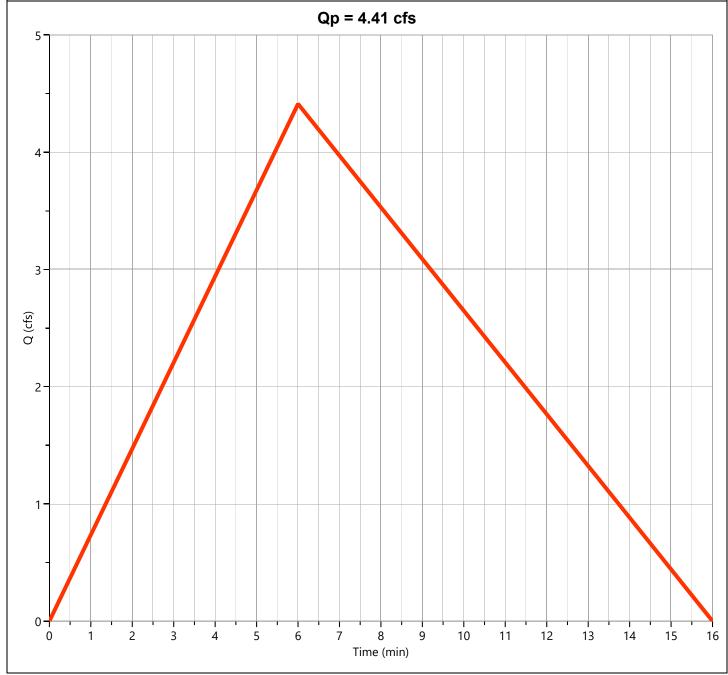


Hydrograph Report

Hydrology Studio v 3.0.0.27 05-02-2025

Post-Dev Basin "C"

Hydrograph Type	= Rational	Peak Flow	= 4.412 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.10 hrs
Time Interval	= 1 min	Runoff Volume	= 2,120 cuft
Drainage Area	= 0.45 ac	Runoff Coeff.	= 0.95
Tc Method	= User	Time of Conc. (Tc)	= 6.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 10.32 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factor	s = 1/1.67

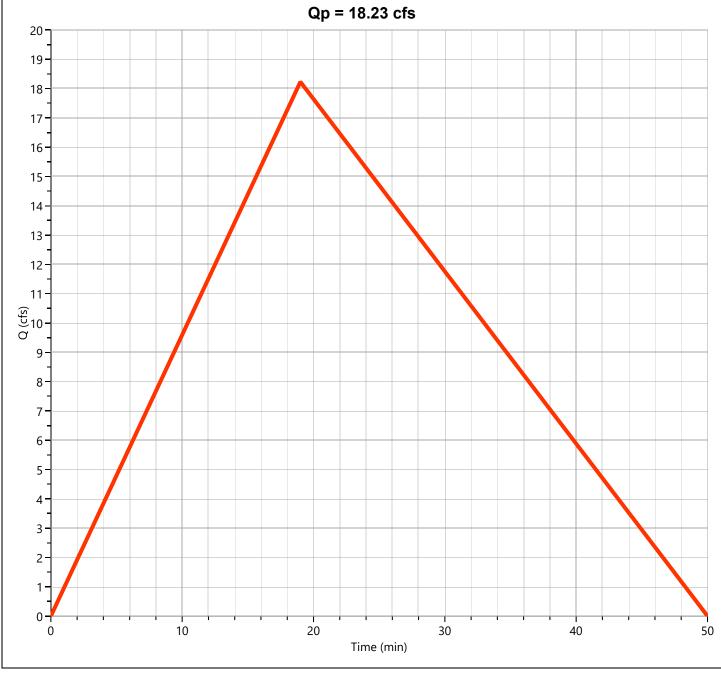


Hydrograph Report

Hydrology Studio v 3.0.0.27 05-02-2025

Post-Dev Basin "D"

Hydrograph Type	= Rational	Peak Flow	= 18.23 cfs
Storm Frequency	= 100-yr	Time to Peak	= 0.32 hrs
Time Interval	= 1 min	Runoff Volume	= 27,744 cuft
Drainage Area	= 3.9 ac	Runoff Coeff.	= 0.76
Tc Method	= User	Time of Conc. (Tc)	= 19.0 min
IDF Curve	= City of Bryant IDF Curve.idf	Intensity	= 6.15 in/hr
Freq. Corr. Factor	= 1.00	Asc/Rec Limb Factor	s = 1/1.67



Hydrology Studio v 3.0.0.27 05-02-2025

Total Post-Dev Hyd. No. 10

Hydrograph Type = Junction Peak Flow		k Flow	= 73.60 cfs			
Storm Frequency = 100-yr			Time	e to Peak	= 0.10 hrs	
Time Interval = 1 min			Hyd	rograph Volume	= 59,844 cuft	
Inflow Hydrographs				l Contrib. Area	= 10.83 ac	
		Qp = 73.60	cfs			
4 4						
80						
-						
75						
70						
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Stormwater Pollution Prevention Plan (SWPPP) for Construction Activity for Small Construction Sites

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

Prepared for:

Collective Church
3230 Market Place Ave, Suite 2
Bryant, AR 72022

Date:

April 2025

Prepared by:

Richardson Engineering, PLLC 325 W South Street Benton, AR 72015

Project Name and Location: <u>Collective Church Lot 4 Marketplace East Subdivision Phase 1, along Progress Way rd i</u> <u>Bryant, AR 72022.</u>	<u>n</u>
Property Parcel Number (<i>Optional</i>):840-12216-016	
Operator Name and Address: Collective Church 3230 Market Place Ave Bryant, AR 72022	

A. Site Description

- a. Project description, intended use after NOI is filed: Proposed church building.
- b. Sequence of major activities which disturb soils: Install silt fencing, establish subgrade elevations, stie drainage structures and piping, parking facilities, curb/gutter, utilities, and landscaping. Monitor disturbed areas while vegetation and stabilization is taking place.
- c. Total Area: 3.49 acres Disturbed Area: 3.49 acres

B. Responsible Parties

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

Individual/Company	Phone Number	Service Provided for SWPPP (i.e., Inspector, SWPPP revisions, Stabilization Activities, BMP Maintenance, etc.)
Richardson Engineering - Tristin Phillips	501-315-7225	Engineer/Responsible Official
Richardson Engineering	501-315-7225	Engineer/SWPPP
TBD	N/A	Contractor/Install Maintain Erosion Control Measures
TBD	N/A	Inspector/SWPPP

C. Receiving Waters

a.	The following waterbody (or waterbodies) receives stormwater from this		
	construction site: Drains south	west to unnamed tributary of Crooked Creek, thence	
	to Crooked Creek, thence into	Fourche Creek, thence into Arkansas River	
b.	Is the project located within th	e jurisdiction of an MS4?	
	i. If yes, Name of MS4: _	City of Bryant	
c.	Ultimate Receiving Water:		
	Red River	White River	
	Ouachita River	St. Francis River	
	Arkansas River	Mississippi River	

- D. Site Map Requirements (Attach Site Map):
 - a. Pre-construction topographic view;

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

E. Stormwater Controls

- a. Initial Site Stabilization, Erosion and Sediment Controls, and Best Management Practices:
 - i. Initial Site Stabilization: <u>Subgrade to be established</u>. <u>Silt fence to be installed to prevent sedimentation and runoff</u>. <u>Drainage to be installed</u>. <u>Utilities to be trenched and covered immediately</u>. <u>Vegetation to be established and soil stabilization closely monitored</u>. <u>After vegetation is established and site is stabilized</u>, NOT to be submitted for approval.
 - ii. Erosion and Sediment Controls: <u>Construction Entrance/Exit, Silt Fence, curb inlet sediment barriers, seeding, additional efforts to stabilize disturbed areas where needed, i.e. filter socks, straw wattles, erosion control matting.</u>

iii.	If periodic inspections or other information indicates a control has been
	used inappropriately or incorrectly, the operator will replace or modify
	the control for site situations: Yes No
	If No, explain:
iv.	Off-site accumulations of sediment will be removed at a frequency
	sufficient to minimize off-site impacts: Yes No

		If No, explain:
	٧.	Sediment will be removed from sediment traps or sedimentation ponds
		when design capacity has been reduced by 50%: Yes No
		If No, explain:
	vi.	Litter, construction debris, and construction chemicals exposed to
		stormwater shall be prevented from becoming a pollutant source for
		stormwater discharges: Yes No
		If No, explain:
	vii.	Off-site material storage areas used solely by the permitted project are
		being covered by this SWPPP: Yes No
		If Yes, explain additional BMPs implemented at off-site material
		storage area:
h	Stahili	zation Practices
٠.		Description and Schedule:
		Are buffer areas required? Yes No
		If Yes, are buffer areas being used? Yes No
		If No, explain why not: <u>Due to the small size of the site and</u>
		limited soil disturbance, no buffer areas will be needed.
		If Yes, describe natural buffer areas:
	iii.	A record of the dates when grading activities occur, when construction
		activities temporarily or permanently cease on a portion of the site, and
		when stabilization measures are initiated shall be included with the plan.
		Yes No
		If No, explain:
	iv.	Deadlines for stabilization:
		1. Stabilization procedures will be initiated 14 days after
		construction activity temporarily ceases on a portion of the site.
		2. Stabilization procedures will be initiated immediately in portions
		of the site where construction activities have permanently ceased
c.	Structi	ural Practices
٥.	i.	Describe any structural practices to divert flows from exposed soils, store
	••	flows, or otherwise limit runoff and the discharge of pollutants from
		exposed areas of the site: N/A
		-

		iii. Sediment Basins:
		Are 10 or more acres draining to a common point? Yes No
		Is a sediment basin included in the project? Yes No
		If Yes, what is the designed capacity for the storage?
		3600 cubic feet per acre = :
		or
		10 year, 24 hour storm = :
		Other criteria were used to design basin:
		If No, explain why no sedimentation basin was included and
		describe required natural buffer areas and other controls
		implemented instead: Due to the size of the project and
		topographical constraints, a sediment basin has not been
		incorporated. Other measures will be deployed as needed.
F.	Other	Controls
	a.	Solid materials, including building materials, shall be prevented from being
		discharged to Waters of the State: Yes No
	b.	Off-site vehicle tracking of sediments and the generation of dust shall be
		minimized through the use of:
		A stabilized construction entrance and exit
		Vehicle tire washing
		Other controls, describe:
	c.	Temporary Sanitary Facilities: On-site, portable facility.
	А	Concrete Waste Area Provided:
	u.	Yes
		No. Concrete is used on the site, but no concrete washout is provided.
		Explain why:
		N/A, no concrete will be used with this project
	e.	Fuel Storage Areas, Hazardous Waste Storage, and Truck Wash Areas: N/A
G.	Non-St	tormwater Discharges
	a.	The following allowable non-stormwater discharges comingled with stormwater
		are present or anticipated at the site:
		Fire-fighting activities;
		Fire hydrant flushings;
		Water used to wash vehicles (where detergents or other chemicals are
		not used) or control dust in accordance with Part II.A.4.H.2;
		Potable water sources including uncontaminated waterline flushings; Landscape Irrigation;
		Routine external building wash down which does not use detergents or
		other chemicals;

15(0000	Pavement wash waters where spills or leaks of toxic or hazardous
		materials have not occurred (unless all spilled materials have been removed) and where detergents or other chemicals are not used;
		Uncontaminated air conditioning, compressor condensate (See Part I.B.12.C of the permit);,
		Uncontaminated springs, excavation dewatering and groundwater (See Part I.B.13.C of the permit);
		Foundation or footing drains where flows are not contaminated with process materials such as solvents (See Part I.B.13.C of the permit);
	b.	Describe any controls associated with non-stormwater discharges present at the site: N/A
H.	any re	able State or Local Programs: The SWPPP will be updated as necessary to reflect visions to applicable federal, state, or local requirements that affect the water controls implemented at the site.
I.	Inspec	tions
	a.	Inspection frequency:
		Every 7 calendar days
		or
		At least once every 14 calendar days and within 24 hours of the end of a
		storm even 0.25 inches or greater (a rain gauge must be maintained on-site)
	b.	Inspections:
		Completed inspection forms will be kept with the SWPPP.
		ADEQ's inspection form will be used (See Appendix B)
		or
		A form other than ADEQ's inspection form will be used and is attached
	C	(See inspection form requirements Part II.A.4.L.2) Inspection records will be retained as part of the SWPPP for at least 3 years from
	c.	mispection records will be retained as part of the sweet for at least 5 years from

- the date of termination.
- d. It is understood that the following sections describe waivers of site inspection requirements. All applicable documentation requirements will be followed in accordance with the referenced sections.
 - i. Winter Conditions (Part II.A.4.L.4)
 - ii. Adverse Weather Conditions (Part II.A.4.L.5)

J. Maintenance:

The following procedures to maintain vegetation, erosion and sediment control measures and other protective measures in good, effective operating condition will be followed: The SWPPP to be followed, control measures inspected and repaired as required.

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

K. Employee Training:

The following is a description of the training plan for personnel (including contractors and subcontractors) on this project: Contractors and Subcontractors for this project to be informed of the SWPPP, as well as procedures for the installation and inspection of erosion control measures and performing inspections thereof.

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

Certification

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

Signature of Responsible or Cognizant Official: _		
Title:	Date:	

				Date of Ir	nspection:	
nspector Title: _						
Date of Rainfall:_						
Days Since Last R	Rain Event:	days	Rai	nfall Since Las	t Rain Event: _	inches
	ny Discharges Durin narges of Sediment,					
	d of Additional BM					
Location	ocution of construct	Activity Begin Date	Activity Occuring Now (y/n)?	Activity Ceased Date	Stabilizatio Initiated Da	
Information on B Location	In Working Order?	Maintenance S Date	Scheduled	Maintenance Date	Completed	Maintenance to be Performed By
	d to the SWPPP:		Rea	asons for chan	ges:	
	completed (date): _					
or supervisior information so responsible fo and complete.	n in accordance with ubmitted. Based or or gathering the infor	h a system designe n my inquiry of the mation, the informa re are significant per	d to ensure th person or per- tion submitted	at qualified persons who mana is, to the best o	rsonnel properlage the system of my knowledge	orepared under my direction ly gather and evaluate the , or those persons directle e and belief, true, accura te ng the possibility of fine and
Signature of Resp	oonsible or Cogniza	nt Official:				Date:
		Title:				_

ARR150000 Inspection Form

Appendix A

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

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

EROSION CONTROL BMPs									
200		idered					BMP Not		If not used, state
BMP	for project		ВМР	Us	ed	Used			reason
EC-1 Scheduling]			1	
EC-2 Preservation of Existing Vegetation				<u> </u>	1			1	
EC-3 Hydraulic Mulch									
EC-4 Hydroseeding									
EC-5 Soil Binders									
EC-6 Straw Mulch									
EC-7 Geotextiles & Mats									
EC-8 Wood Mulching									
EC-9 Earth Dikes & Drainage Swales									
EC-10 Velocity Dissipation Devices									
EC-11 Slope Drains									
EC-12 Stream bank Stabilization									
SE	DIMEN	IT CONT	ROL BM	1Ps					
	ВМР								
	Considered				BMP Not				
								τ	If not used, state
ВМР		idered roject	ВМР	Us	ed	Used		τ	If not used, state reason
SE-1 Silt Fence			ВМР	Use	e d			τ]	· ·
			ВМР	Use	ed]]	· ·
SE-1 Silt Fence			ВМР	Use	ed]]]	· ·
SE-1 Silt Fence SE-2 Sediment Basin			ВМР	Use	ed]	· ·
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap			ВМР	Use	ed 				· ·
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam			ВМР	Use	ed]]]]	· ·
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls			ВМР	Use	ed				· ·
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm			ВМР		ed				· ·
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm SE-7 Street Sweeping and Vacuuming			ВМР		ed]				· ·
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm SE-7 Street Sweeping and Vacuuming SE-8 Sand Bag Barrier			ВМР		ed				· ·
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm SE-7 Street Sweeping and Vacuuming SE-8 Sand Bag Barrier SE-9 Straw Bale Barrier			BMP		ed				· ·
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm SE-7 Street Sweeping and Vacuuming SE-8 Sand Bag Barrier SE-9 Straw Bale Barrier SE-10 Storm Drain Inlet Protection SE-11 Chemical Treatment	for p								· ·
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm SE-7 Street Sweeping and Vacuuming SE-8 Sand Bag Barrier SE-9 Straw Bale Barrier SE-10 Storm Drain Inlet Protection SE-11 Chemical Treatment	for p								reason
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm SE-7 Street Sweeping and Vacuuming SE-8 Sand Bag Barrier SE-9 Straw Bale Barrier SE-10 Storm Drain Inlet Protection SE-11 Chemical Treatment WIN	D EROS	roject	NTROL I		 	BMP	No		If not used, state
SE-1 Silt Fence SE-2 Sediment Basin SE-3 Sediment Trap SE-4 Check Dam SE-5 Fiber Rolls SE-6 Gravel Bag Berm SE-7 Street Sweeping and Vacuuming SE-8 Sand Bag Barrier SE-9 Straw Bale Barrier SE-10 Storm Drain Inlet Protection SE-11 Chemical Treatment	D EROS	roject			 	Used	No		reason

TRACKING CONTROL BMPs										
	ВМР									
200	Cons			BMP Used			BMP Not		If not used, state	
BMP	for p	roj	ect	RIMIA	Us	e d	Use	a 	_	reason
TR-1 Stabilized Construction Entrance/Exit			<u>]</u> 1			<u>]</u> 1		<u> </u>	<u> </u>	
TR-2 Stabilized Construction Roadway]	-		1			<u> </u>	
TR-3 Entrance/Outlet Tire Wash		<u>_</u>			<u></u>	<u> </u>				
NON-STO	1		RMA	NAGEN	1EN	IT BIV	IPs			
	BMP Considered		rad	BMP Not			nt .	If not used, state		
ВМР	for p			BMP Used		ed	Use		,	reason
NS-1 Water Conservation Practices		<u> </u>]]			1	
NS-2 Dewatering Operations]]			1	
NS-3 Paving and Grinding Operations]]			1	
NS-4 Temporary Stream Crossing]]			1	
NS-5 Clear Water Diversion]						1	
NS-6 Illicit Connection/ Discharge]			1			1	
NS-7 Potable Water/Irrigation		T	<u> </u>			1				
NS-8 Vehicle and Equipment Cleaning		T	ĺ			ĺ			1	
NS-9 Vehicle and Equipment Fueling]]				
NS-10 Vehicle and Equipment Maintenance									1	
NS-11 Pile Driving Operations										
NS-12 Concrete Curing										
NS-13 Concrete Finishing										
NS-14 Material and Equipment Use Over Water										
NS-15 Demolition Adjacent to Water										
NS-16 Temporary Batch Plants										
WASTE MANAGEMENT	AND	MΑ	TERIA	LS POL	LU1	TION	CONTR	OL	BMPs	
	ВМР									
DAAD	Cons			DNAD			BM		ot	If not used, state
BMP WAA 1 Material Delivery and Storage	for p	roje	ect	ВМР	US	ea 1	Use	u	7	reason
WM-1 Material Delivery and Storage WM-2 Material Use			<u>]</u>]]			<u> </u> 	
			<u>]</u>]]]		-	<u> </u> 	+
WM-3 Stockpile Management			<u>]</u>]]			<u> </u> 	
WM-4 Spill Prevention and Control			<u> </u> 			<u>]</u>]		┢	<u> </u> 	+
WM-5 Solid Waste Management			<u> </u> 			<u>]</u>]			<u> </u> 	
WM-6 Hazardous Waste Management			<u>]</u>]			<u>]</u>]			<u></u>	
WM-7 Contraminated Soil Management			<u> </u>]			<u>]</u> 1	
WM-8 Concrete Waste Management		\vdash	<u> </u> 	+		<u>]</u>]			<u> </u> 	
WM-9 Sanitary/Septic Waste Management WM-10 Liquid Waste Management		\vdash	<u>] </u>			<u>]</u>]			<u></u>	
vvivi-10 Liquiu vvaste ividilagelilelit	1	1	I	1	1	1	1	1	1	l I

SWPPP Completion Checklist

Appendix C

Yes = Complete

No = Incomplete/Deficient

N/A = Not applicable to project

No	N/A A. A site description, including:	Permit Section
	1. Project description, intended use after NOT	Part II.A.4.A.1
	2. Sequence of major activities	Part II.A.4.A.2
	3. Total & disturbed acreage	Part II.A.4.A.3
	B. Responsible Parties: All parties dealing with the SWPPP and the areas they are	
	responsible for on-site.	Part II.A.4.B
	C. Receiving Water.	Part II.A.4.C
	-MS4 Name	Part II.A.4.C
	-Ultimate Receiving Water	Part II.A.4.C
	D.Site Map See End of Evaluation Form	Part II.A.4.F
·	E. Description of Controls:	•
	Erosion and sediment controls, including:	
	a. Initial site stabilization	Part II.A.4.G.1.a
	b. Erosion and sediment controls	Part II.A.4.G.1.b
	c. Replacement of inadequate controls	Part II.A.4.G.1.c
	d. Removal of off-site accumulations	Part II.A.4.G.1.d
	e. Maintenance of sediment traps/basins @ 50% capacity	Part II.A.4.G.1.e
	f. Litter, construction debris and chemicals properly handled	Part II.A.4.G.1.f
	g. Off-site storage areas and controls	Part II.A.4.G.1.g
	2. Stabilization practices:	
	a. Description and schedule for stabilization	Part II.A.4.G.2.a
	b. Description of buffer areas	Part II.A.4.G.2.b
	c. Records of stabilization	Part II.A.4.G.2.c
	d. Deadlines for stabilization	Part II.A.4.G.2.d
	3. Structural Practices:	
	-Describe structural practices to divert flows, store flows, or otherwise limit runoff	Part II.A.4.G.3
	a. Sediment basins	Part II.A.4.G.3.a.1
	-Are more than 10 acres draining to a common point? If so, are sediment basins include	ed? Part II.A.4.G.3.a.1
	-Sediment basin dimensions and capacity description and calculations	Part II.A.4.G.3.a.1
	-If a basin wasn't practicable, are other controls sufficient?	Part II.A.4.G.3.a.1
	b. Velocity dissipation devices concentrated flow from 2 or more acres	Part II.A.4.G.3.b
	F. Other controls including:	,
	1. Solid waste control measures	Part II.A.4.H.1
	2. Vehicle off-site tracking controls	Part II.A.4.H.2
	3. Compliance with sanitary waste disposal	Part II.A.4.H.4
	4. Does the site have a concrete washout area controls?	Part II.A.4.H.5
	5. Does the site have fuel storage areas, hazardous waste storage and/or truck wash area	as
	controls?	Part II.A.4.H.6
	G. Identification of allowable non-storm water discharges	Part II.A.4.I
	-Appropriate controls for dewatering, if present	Part I.B.12.C

SWPPP Completion Checklist

Yes = Complete

No = Incomplete/Deficient

N/A = Not applicable to project

-	No	N/A	I. Inspections	Permit Section
			1. Inspection frequency listed?	Part II.A.4.L.1
			2. Inspection form	Part II.A.4.L.2
			Ours.	
			If not ours, does it contain the following items:	
			a. Inspector name and title	Part II.A.4.L.2.a
			b. Date of inspection.	Part II.A.4.L.2.b
			c. Amount of rainfall and days since last rain event (14 day only)	Part II.A.4.L.2.c
İ			d. Approx beginning and duration of storm event	Part II.A.4.L.2.d
İ			e. Description of any discharges during inspection	Part II.A.4.L.2.e
			f. Locations of discharges of sediment/other pollutants	Part II.A.4.L.2.f
			g. BMPs in need of maintenance	Part II.A.4.L.2.g
			h. BMPs in working order, if maintenance needed (scheduled and completed)	Part II.A.4.L.2.h
			i. Locations that are in need of additional controls	Part II.A.4.L.2.i
			j. Location and dates when major construction activities begin, occur or cease	Part II.A.4.L.2.j
			k. Signature of responsible/cognizant official	Part II.A.4.L.2.k
			3. Inspection Records	Part II.A.4.L.3
			4. Winter Conditions	Part II.A.4.L.4
			5. Adverse Weather Conditions	Part II.A.4.L.5
			J. Maintenance Procedures	Part II.A.4.M
			K. Employee Training	Part II.A.4.N
		1		
			C4 1751 C 1471 1	Part II.A.7. and Part
			Signed Plan Certification	Part II.A.7. and Part II.B.10
		<u> </u>	D. Site Map showing:	
			D. Site Map showing: 1. Pre-construction topographic view	II.B.10 Part II.A.4.F.1
			D. Site Map showing: 1. Pre-construction topographic view 2. Drainage flow	II.B.10
			D. Site Map showing: 1. Pre-construction topographic view 2. Drainage flow 3. Approximate slopes after grading activities	II.B.10 Part II.A.4.F.1 Part II.A.4.F.2
			D. Site Map showing: 1. Pre-construction topographic view 2. Drainage flow 3. Approximate slopes after grading activities 4. Areas of soil disturbance and areas not disturbed	Part II.A.4.F.1 Part II.A.4.F.2 Part II.A.4.F.2
			D. Site Map showing: 1. Pre-construction topographic view 2. Drainage flow 3. Approximate slopes after grading activities	Part II.A.4.F.1 Part II.A.4.F.2 Part II.A.4.F.2 Part II.A.4.F.3
			D. Site Map showing: 1. Pre-construction topographic view 2. Drainage flow 3. Approximate slopes after grading activities 4. Areas of soil disturbance and areas not disturbed 5. Location of major structural and non-structural controls. 6. Location of main construction entrance and exit.	Part II.A.4.F.1 Part II.A.4.F.2 Part II.A.4.F.2 Part II.A.4.F.3 Part II.A.4.F.4
			D. Site Map showing: 1. Pre-construction topographic view 2. Drainage flow 3. Approximate slopes after grading activities 4. Areas of soil disturbance and areas not disturbed 5. Location of major structural and non-structural controls. 6. Location of main construction entrance and exit. 7. Areas where stabilization practices are expected to occur.	Part II.A.4.F.1 Part II.A.4.F.2 Part II.A.4.F.2 Part II.A.4.F.3 Part II.A.4.F.4 Part II.A.4.F.5 Part II.A.4.F.6
			D. Site Map showing: 1. Pre-construction topographic view 2. Drainage flow 3. Approximate slopes after grading activities 4. Areas of soil disturbance and areas not disturbed 5. Location of major structural and non-structural controls. 6. Location of main construction entrance and exit. 7. Areas where stabilization practices are expected to occur. 8. Locations of off-site materials, waste, borrow area or storage area.	Part II.A.4.F.1 Part II.A.4.F.2 Part II.A.4.F.2 Part II.A.4.F.3 Part II.A.4.F.4 Part II.A.4.F.5 Part II.A.4.F.6 Part II.A.4.F.7
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City of Bryant
Development & Review Committee
Attn: Mr. Truett Smith
Director of Community Development

RE: Letter of Request for approval of Site Plan for Collective Church, Saline County, Arkansas

Dear Mr. Smith:

Please accept this letter as a request to approve the Site Plan for Collective Church at the May 12, 2025, Planning Commission Meeting.

We would like DRC to be made aware in regard to Sheet 7 Grading Plan. We are planning on creating a back slope from our project's south line that goes beyond our property line into drainage easement of detention pond. This slope we are creating does not impact the volume of the detention pond.

Developer's Information:

Collective Church Bryant, AR Skylyr Stott contact@gchomesllc.com (501) 658-2095

Engineer's Information:

Tristin Phillips, PE Richardson Engineering, PLLC P.O. Box 192 Benton, AR 72018 <u>Tristin@Richardson-Engrs.com</u> (501) 315-7225

Sincerely,

Tristin Phillips, PE



May 5, 2025

City of Bryant
Development & Review Committee
Attn: Mr. Colton Leonard
Assistant Director of Planning and Development

RE: Waiver Request for Jamey South Storage Building, Saline County, Arkansas

Dear Mr. Leonard:

Please accept this letter as a waiver request from the Commercial Design Standards for a nonstandard commercial building.

Developer's Information:

Jamey South 515 N. Reynold Road Bryant, AR 72022 jamey.south.dd9b@statefarm.com (501) 317-7595

Engineer's Information:

Tristin Phillips, P.E. Richardson Engineering, PLLC 325 West South Street Benton, AR 72015 <u>Tristin@Richardson-Engrs.com</u> (501) 315-7225

Sincerely,

Tristin Phillips, P.E.

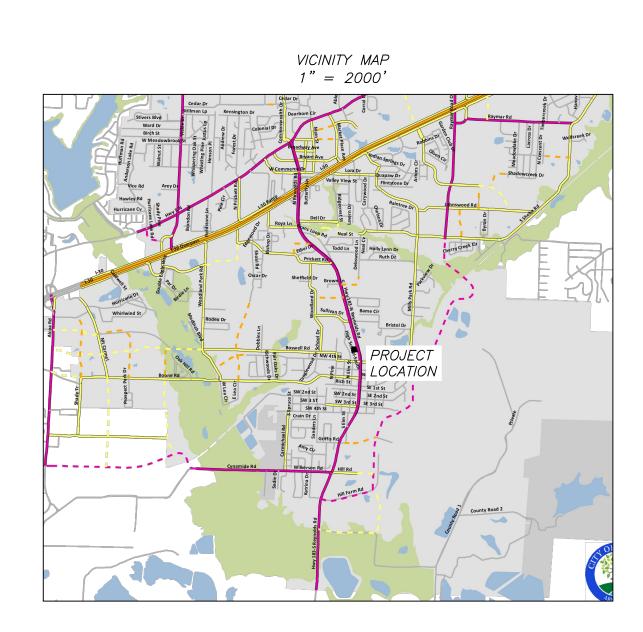
DETAILED PLANS:

STATE FARM – JAMEY SOUTH PROPOSED STORAGE BUILDING

515 N. REYNOLDS ROAD BRYANT, ARKANSAS

PRE-CONSTRUCTION COPY -

PLANS FOR BIDDING PURPOSES.
QUANTITIES TO BE VERIFIED PRIOR
TO CONSTRUCTION. CONTRACTOR
TO VERIFY GRADES WITH ENGINEER
PRIOR TO CONSTRUCTION.



Prepared By:



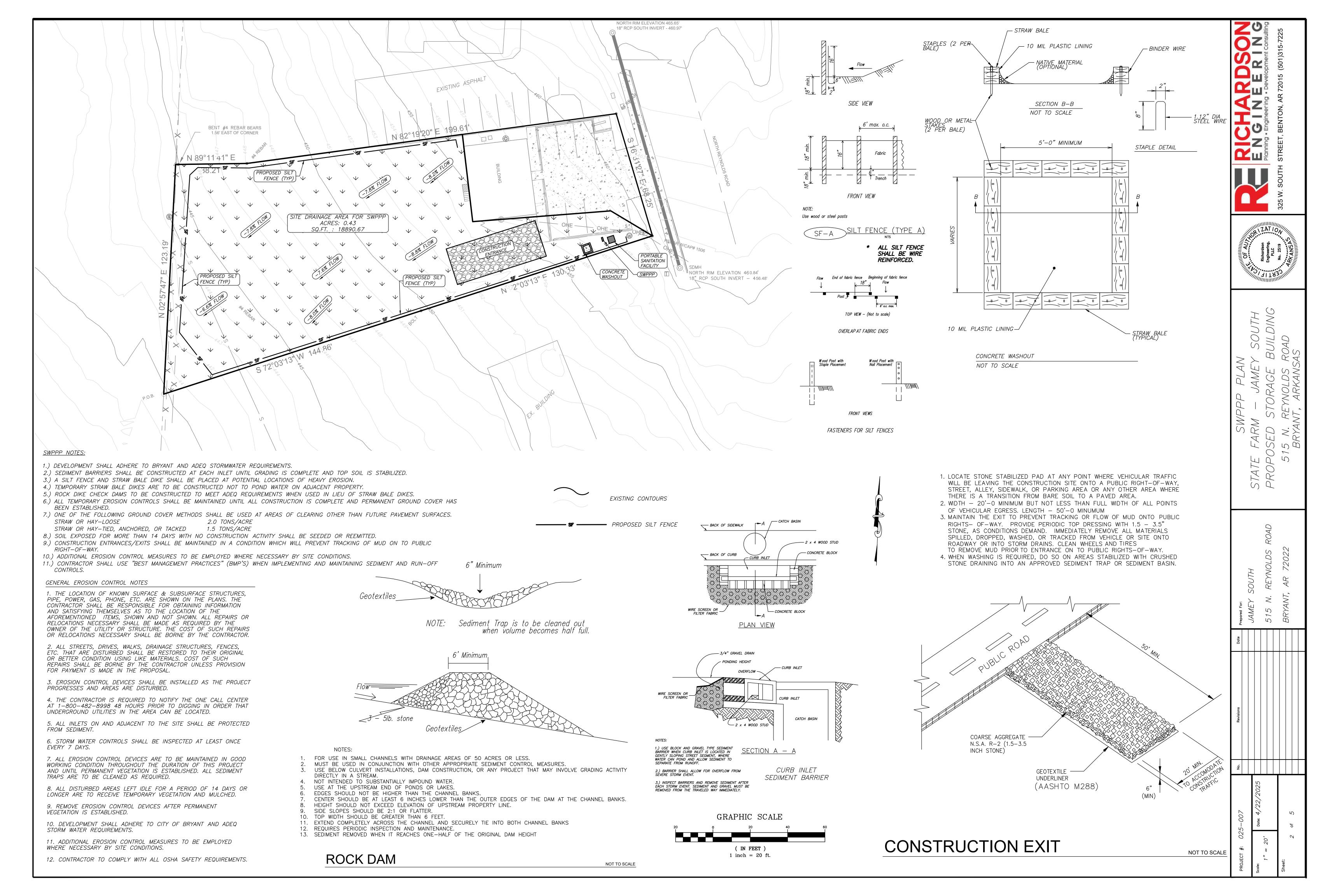
4/22/2025

PREPARED FOR:

JAMEY SOUTH
515 N. REYNOLDS ROAD
BRYANT, AR 72022



INDEX OF SHEETS	
COVER SHEET	1
SWPPP	2
DEMOLITION PLAN	3
SITE/LANDSCAPE PLAN	4
GRADING PLAN	5



M. CONTRACTOR SHALL CONTACT CITY OF BRYANT PRIOR TO COMMENCEMENT OF UTILITY

CONSTRUCTION OR TIE-INS.

DEMO NOTES:

BRYANT SEWER DEPARTMENT 1019 S.W. 2ND ST. BRYANT, AR 72022

E R I N Gevelopment Consulting

ZAT 10

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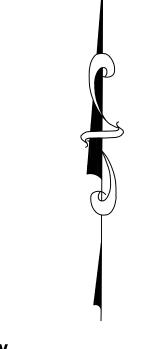
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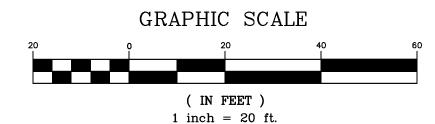
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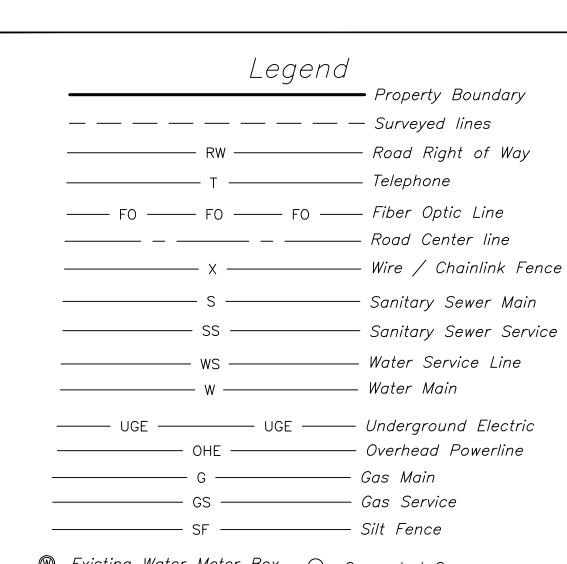
BRYANT WATER DEPARTMENT 210 S.W. 3RD ST. BRYANT, AR 72022 501-943-0441

LITTLE ROCK, AR 72201 1-800-368-3749

NATURAL GAS:







■ Existing Water Meter Box ○ Computed Corner

Found Monument (Labeled)

Sewer Mnahole © Existing Storm Box

∅ Utility Pole Gas Meter

 Existing Fire Hydrant -**①** Guy Wire

(O) Sewer Stubup

<u>UTILITIES:</u>

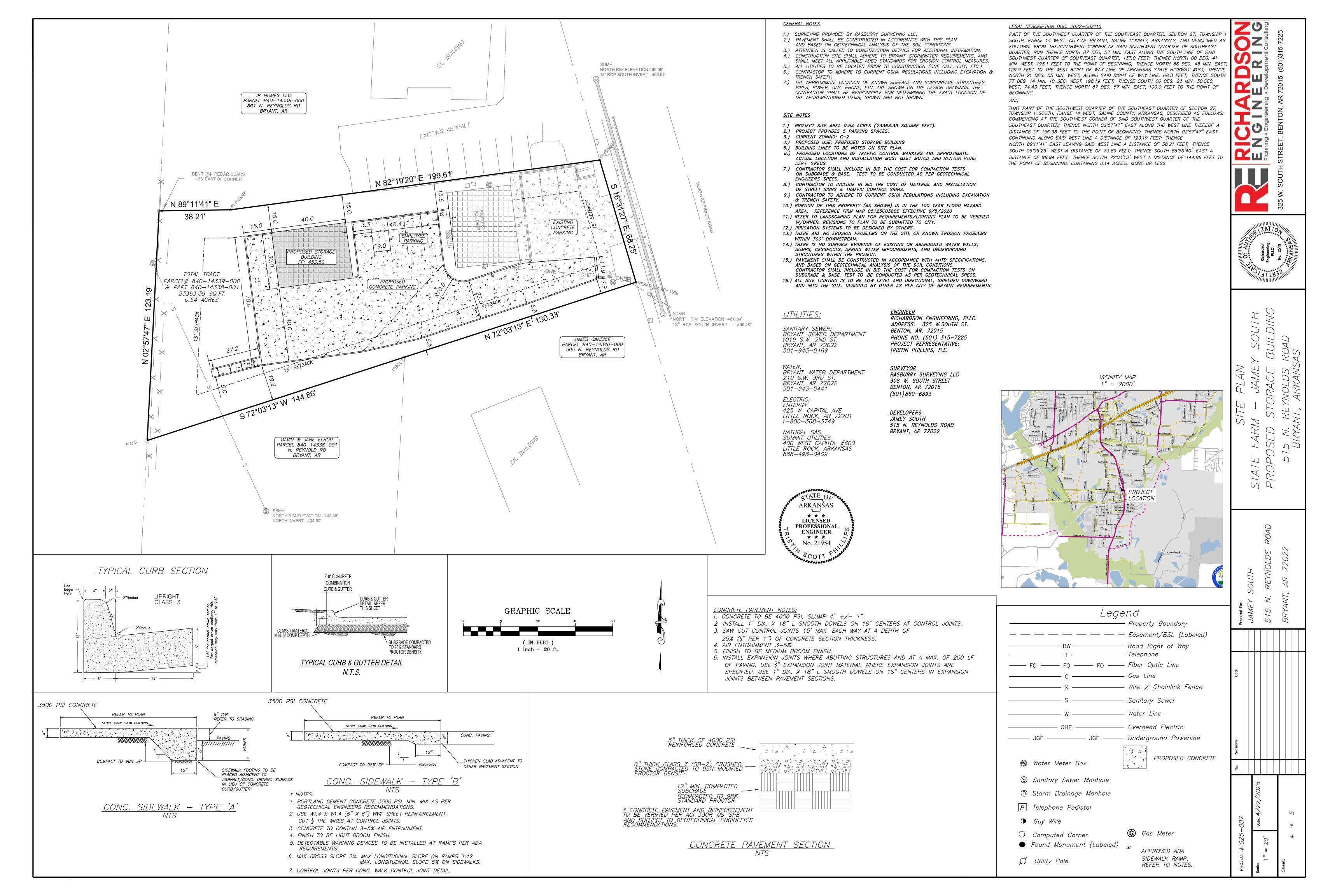
SANITARY SEWER: 501-943-0469

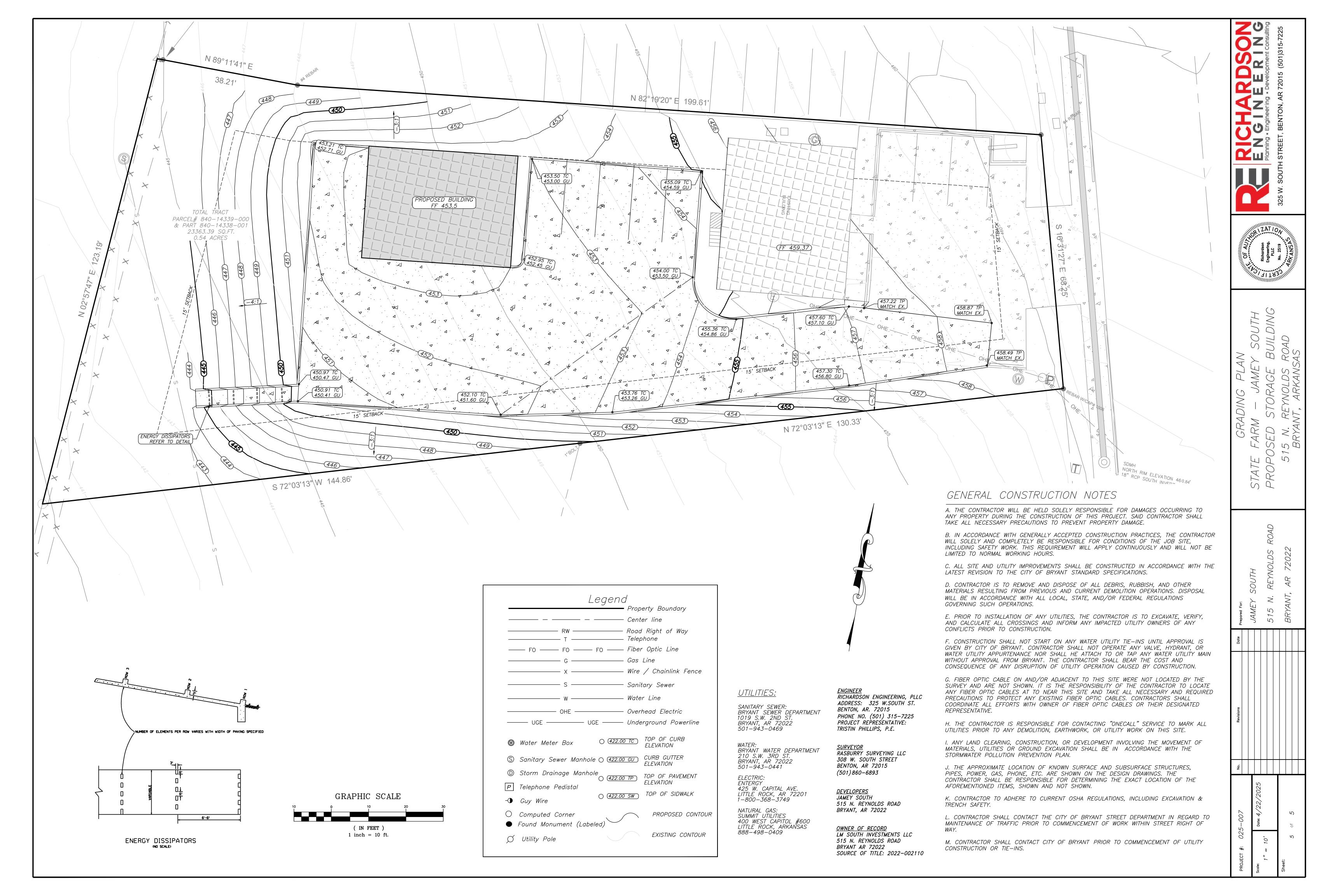
ENTERGY 425 W. CAPITAL AVE.

SUMMIT UTILITIES 400 WEST CAPITOL #600 LITTLE ROCK, ARKANSAS 888-498-0409



Know what's below. Call before you dig.





ACE Sign Company 11935 Interstate 30 Little Rock, AR 72209

RE: Zoning Variance Application for: Central Arkansas Truck Outfitters LLC

To the City of Bryant Adjustment Board Members:

Please allow this letter to serve as a formal recommendation for a variance in regards to the property for Central Arkansas Truck Outfitters. This property with interstate frontage has a physical address of 25633 I-30 in Bryant Arkansas.

The property ownership group is requesting to erect a lighted single pole cabinet sign with a 300 square foot (10' x30') overall size at an overall height of 40' from grade.

Specific points for your review of this variance application hardship letter are as follows:

- Unique shared plot placement with a completely different business address.
- Interstate frontage with a building setback that requires additional visibility.
- Surrounding businesses with the ability to construct pole signs on their property.

We appreciate the consideration of the board, and we remain optimistic that a fair decision will be made regarding this specific request. Thank you.

Jason McDonald Account Manager ACE Sign Company





PROPERTY BRAND/EXTENSION: Central Arkansas Outfitters PROPERTY LOCATION: 25633 I-30 Bryant, AR 72022

DED BY

DATE: 04/21/2025

SALES REP: Jason McDonald PREPARED BY: Victoria Phan

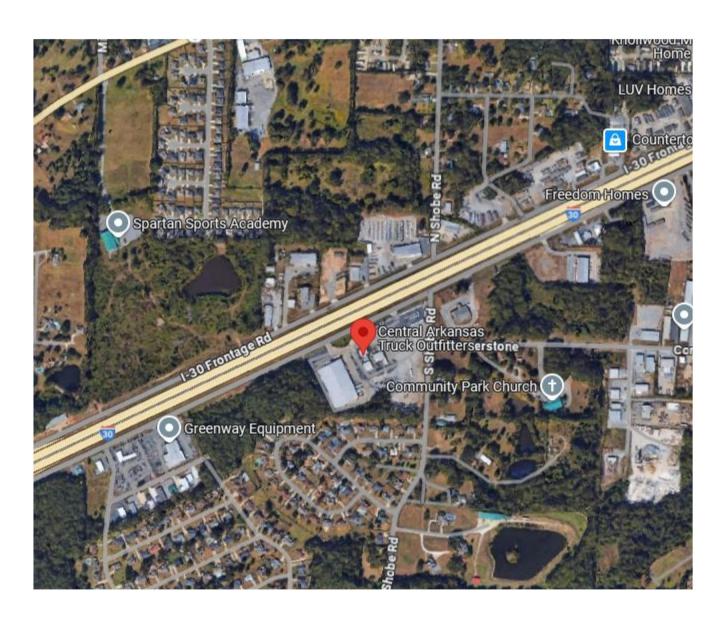
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INITIALS: ___

TBD

PROPERTY CODE:

LOCATION MAP





PROPERTY BRAND/EXTENSION: Central Arkansas Outfitters PROPERTY LOCATION: 25633 I-30 Bryant, AR 72022 PROPERTY CODE: TBD

DATE: 01/13/2025

SALES REP: Jason McDonald PREPARED BY: Victoria Phan

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INITIALS: __

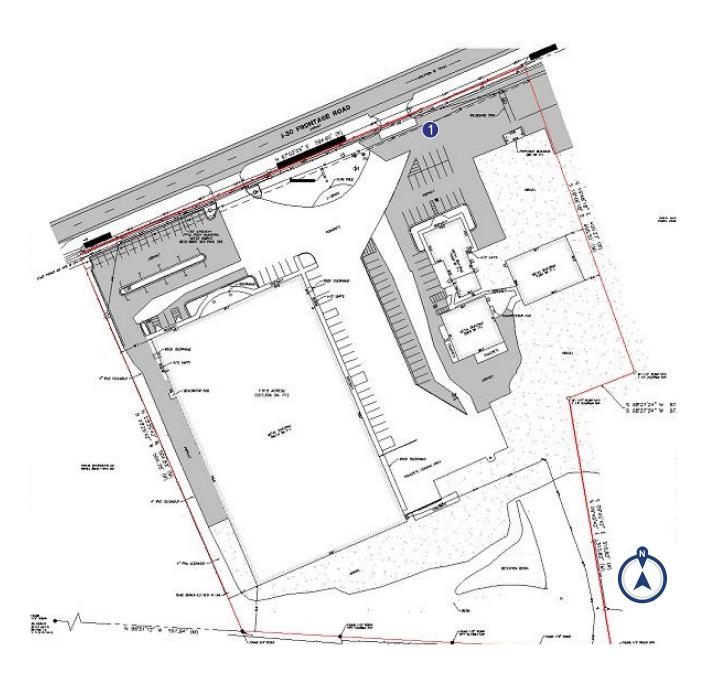
SITE PLAN

PROPOSED SIGNS:

EXISTING SIGNS:

1 MID-RISE

1 NO SIGN





PROPERTY BRAND/EXTENSION: Central Arkansas Outfitters	PROPERTY LOCATIO 25633 I-30 Bryant, AF		PROPERTY CODE: TBD
DATE: 04/16/2025	SALES REP: Jason McDonald	PREPARED BY: Victoria Phan	
They are submitted to your company for the purpose of employees of your company or use of this design or to	f consideration to purchase from ACE Compan create a design that is similar without written a	y of ACE Company and are the result of original work of its employees, y, a project according to this design. Exhibition to anyone other that proval from ACE Company is a violation of copyright. In the event that	INITIAL C.

EXISTING



PROPOSED



RENDERINGS NOT TO SCALE



H10' x W30' x D2'-8" Cabinet with applied graphics Cabinet 300 Sq. Ft. OAH 40'



TO BE DETERMINED



04/21/2025

TO BE DETERMINED

TO BE DETERMINED

PROPERTY BRAND/EXTENSION: Central Arkansas Outfitters

PROPERTY LOCATION: 25633 I-30 Bryant, AR 72022

> PREPARED BY: Victoria Phan

SALES REP: Jason McDonald

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INITIALS: _

PROPERTY CODE:

TBD

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

SIGN	Type (Façade, Pole,	Dimensions (Height, Length, Width)	Sqft (Measurement	Façade Width (Linear Ft of building	He	ight
	Monument, other)		standards found on Pg.7 of Sign Code)	façade where wall sign is being installed)	То Тор	To Bottom
А	Pole Sign	10' x 30'	300 sq ft	N/A	30'	40'
В						
С						
D						
Е						
F						