Bryant Development and Review Committee Meeting

Boswell Municipal Complex - City Hall Conference Room

210 SW 3rd Street

Date: May 29, 2025 - **Time:** 9:00 AM

Call to Order

Old Business

1. 6221 Hwy 5 - Ste. 1 - Site Addition for Deck

Paul Clark - Requesting Site Plan Approval for Deck Addition

- 0960-PLN-01.pdf

2. Springhill Storage - Arey Dr - Site Plan

GarNat Engineering - Requesting Site Plan Approval

- 0962-RSP-02.pdf
- 0962-RSP-01.pdf
- 0962-PLN-01.pdf

3. Bethel Middle School - Solar Field Project - Site Plan

Scenic Hill Solar - Requesting Recommendation Site Plan Approval

- 0957-SWPPP-01.pdf
- 0957-SPEC-01.pdf
- 0957-PLN-02.pdf
- 0957-SMP-01.pdf
- 0957-404-01.pdf

New Business

4. Outdoor Storage Yard - I-30 Frontage Road - Site Plan

Hope Consulting - Requesting Site Plan Approval

- 0966-PLN-01.pdf
- 0966-DRN-01.pdf

5. Good Day Farm - 3205 Hwy 5 - Site Plan

Regan Etheridge - Requesting Site Plan Approval

- 0967-ELV-01.pdf
- 0967-PLN-01.pdf
- 0967-LTR-01.pdf

6. Subdivision Signage - Midland Road Estates - Sign Permit

Lektron LED Technologies - Requesting Sign Permit Approval

- 93762-SGNAPP-01.pdf

Staff Approved

7. La Ta Da Learing and Creative Arts - 5920 Hwy 5 Ste. 5 & 6-7

Rod's Signs - Requesting Sign Permit Approval - STAFF APPROVED

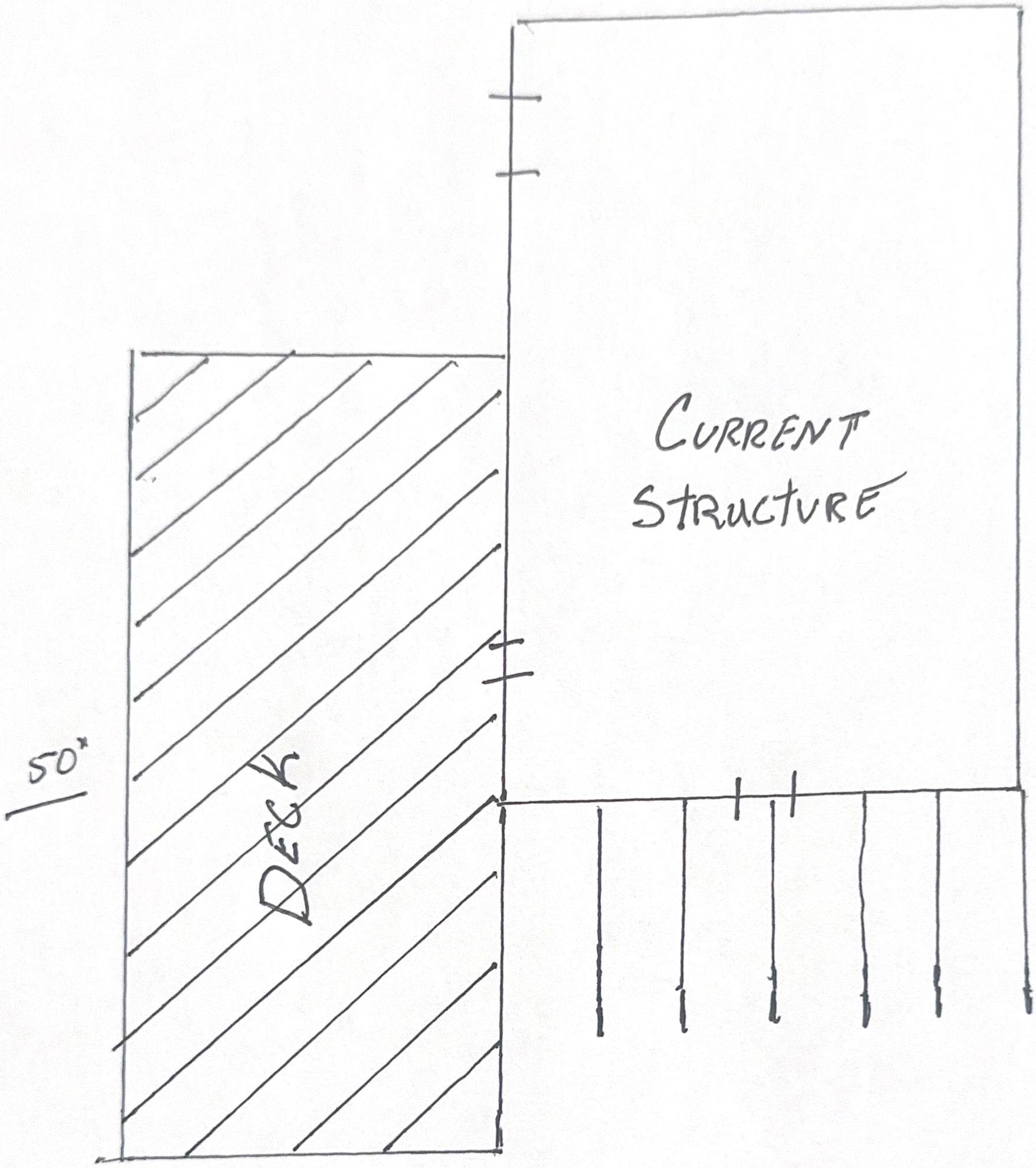
- 093790-SGNAPP-01.pdf

Permit Report

Adjournments

PAUL CLARK
(501) 258 3635
Paul.Clark0715@Icloud.Com

6221 AR-5
#1



Colton Leonard <cleonard@cityofbryant.com>

DRC Staff Comments 5/15/25

Vernon Williams <garnatengineering@gmail.com> Wed, May 21, 2025 at 8:43 AM
To: Colton Leonard <cleonard@cityofbryant.com>
Cc: Jennifer Williams <jennifergarnat@gmail.com>, Shak Mukhitdinov <shakgarnat@gmail.com>, Tariq Morshed <tariqgarnat@gmail.com>

Colton,

See GNE's responses to your comments below in RED.

Vernon J. Williams, P.E.
GarNat Engineering, LLC
Mailing Address: P.O. Box 116 Benton, AR 72018
Physical Address: 3825 Mt Carmel Road Bryant, AR 72022
Ph: (501) 408-4650 Cell: (501) 425-2771
www.garnatengineering.com

On Tue, May 20, 2025 at 11:00 AM Colton Leonard <cleonard@cityofbryant.com> wrote:

> Verenon,
>
> Below are the comments from the DRC meeting. If you have any questions, just let us know.
>
> Best,
> Colton

GNE General Comment.....We are not trying to fully develop this site at this time. The property owner is trying to utilize some capital gains from the sale of another property to purchase this land and do some minimal improvements - grading, fencing, one structure and a previously promised fire hydrant. The new structure is a style that has not been previously built at the facility - covered RV parking

. They want to build one to see how well it rents before they build more. They are trying to keep costs low for this experiment. After a decision is made on the long term development of this property, we will bring a full site plan package back.

1. Springhill Storage Rezoning/ site plan

Public Works

1. Submit a complete site plan, showing access, utilities and other improvements on-site We believe that the attached revised plans consitute a complete package for this limited project.

Stormwater

1. Stormwater Calculations will be required We respectfully request that we be allowed to postpone this until we bring the entire project forward. Please note that the detention required for the previously approved project was already constructed. The only impervious surface included in this phase of the project is the roof of the structure. However, that structure will have gravel under it, not pavement, so water will still be allowed to soak in even where it is built.

Engineering

1. See Stormwater Comments No response.
2. Driveway apron must meet ARDOT requirements We do not have a driveway apron in the scope of this project.

Planning

1. Sign will need to be posted on property 15 days in advance of the meeting. See attached photo of sign posted as discussed with Colton.

2. Provide proof of publication from the Courier once that is run. Will comply. In the meantime, we've attached our receipt for the purchasing the ad.
3. Provide a copy of the green return receipts once those are received. See attached.
4. Are there no plans to put any structures on this property? See general comment.
5. Building setbacks for C-2 are 15ft Side and Front, 25ft rear. We acknowledge your comment. There is no front setback. We do not plan on building agaist the rear or west setback at this time. We'd like to leave the east setback at 25' to allow for grading.
6. With the CUP application that was previously approved, a condition was placed on the property that the fencing had to be visually solid around that new section of the storage facility. That will need to be shown on the Site Plan. We have added a wooden fence to the site plan.
7. Before future plans are approved to expand the storage use to the portion of the property being rezoned, a CUP would be required for the new piece of property. We agree. See general comment at the beginning of the email.

Fire

1. No Comment. There were comments in a separate email. We'll provide those responses separately.

[Quoted text hidden]

---

5 attachments

Zoning Sign.JPG
356K

Springhill Storage - Arey Drive - C1.0 SITE PLAN-R2.pdf
968K

Proof for Ad to be ran 5-17-25.pdf
46K

Receipt Printed from Order 00187787_2025-05-16-09-57-40.pdf
43K

Certified mailing receipts.pdf
227K

Colton Leonard <cleonard@cityofbryant.com>

Fwd: Springhill Storage Site Plan

Vernon Williams <garnatengineering@gmail.com> Wed, May 21, 2025 at 8:44 AM
To: dslack@cityofbryant.com, Colton Leonard <cleonard@cityofbryant.com>, Jennifer Williams <jennifergarnat@gmail.com>, Tariq Morshed <tariqgarnat@gmail.com>, Shak Mukhitdinov <shakgarnat@gmail.com>

See GNE responses below in RED.

Vernon J. Williams, P.E.
GarNat Engineering, LLC
Mailing Address: Physical Address:
P.O. Box 116 3825 Mt Carmel Road
Benton, AR 72018 Bryant, AR 72022
Ph: (501) 408-4650 Cell: (501) 425-2771
www.garnatengineering.com

---------- Forwarded message ---------
From: **Jennifer Williams** <jennifergarnat@gmail.com>
Date: Tue, May 20, 2025 at 11:20 AM
Subject: Fwd: Springhill Storage Site Plan
To: <cleonard@cityofbryant.com>
Cc: Vernon Williams <garnatengineering@gmail.com>

Colton,
Fire Marshall comments below for your records.

Thanks,
Jennifer

---------- Forwarded message ---------
From: **David Slack** <dslack@cityofbryant.com>
Date: Thu, May 15, 2025 at 3:41 PM
Subject: Springhill Storage Site Plan
To: <jennifergarnat@gmail.com>

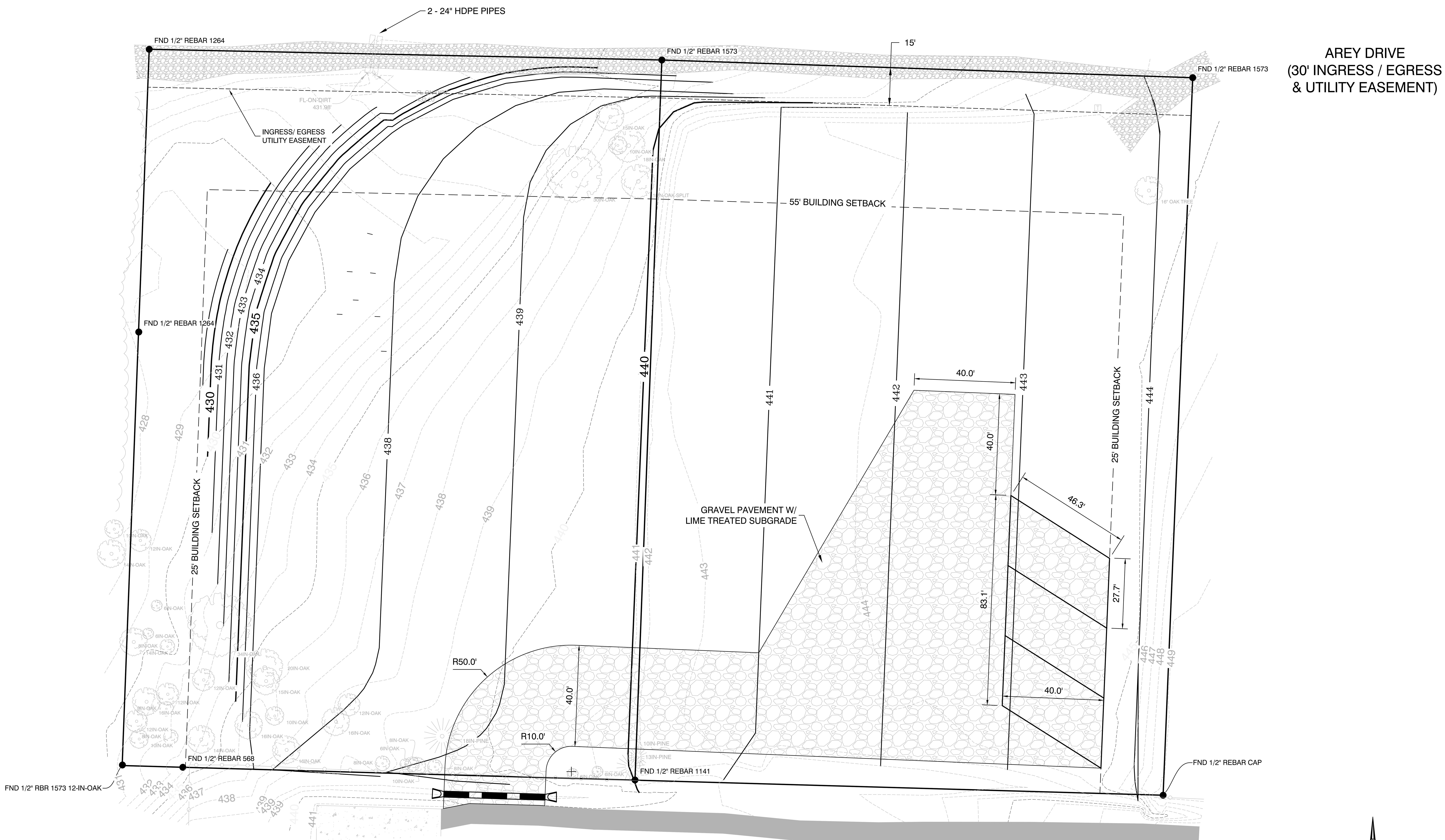
Hell Mrs. Williams,

After the DRC meeting today, I looked up the fire hydrant and fire apparatus access requirements. The Arkansas Fire Prevention Code, 2021 Edition is the current applicable code.

- A fire apparatus access road is required to extend to within 150 feet of any portion of the facility. [Vol1, Section 503.1.1] I believe that we comply.
- The fire apparatus access road shall support the imposed load of a fire apparatus weighing 75,000 pounds, [Appendix D102.1] and shall be surfaced to provide all-weather driving capabilities. [503.2.3] Will comply.
- Dead-end fire apparatus access roads in excess of 150 feet need to have an approved area for turning around. [Appendix D103.4, Figure D103.1] Current plans will be adequate if you can show that one of the turnaround conditions is met on the plans. I have attached a copy of Appendix D and I suspect the current site plan has enough room for the 96' diameter cul-de-sac requirement. We have drawn the limits of a 96' diameter cul-de-sac on our site plan.

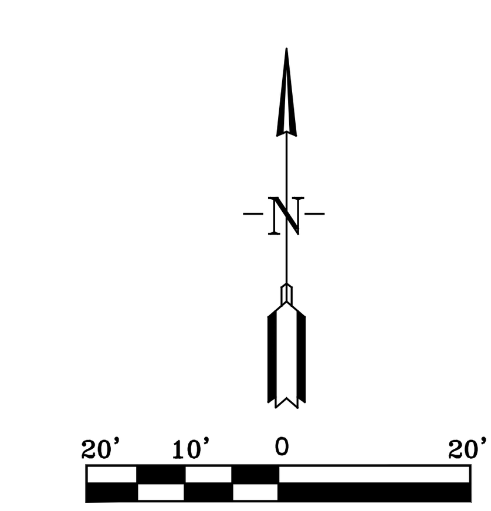
A fire hydrant is required to be within 400 feet of any portion of the facility. [507.5.1] The closest hydrant is about 420 feet south of the lot line in the storage building area. A fire hydrant placed at the entrance to this area will provide adequate coverage under this provision. The previously approved plans included a fire main extension and hydrant. We have added the proposed fire hydrant location to our site plan. We propose to build it as part of this phase of the project.
[Quoted text hidden]

Appendix D - Fire Apparatus Access Roads.pdf
3100K



Cut/Fill Summary

Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
EG VS FG	1.000	1.000	99863.37 Sq. Ft.	3952.50 Cu. Yd.	3590.49 Cu. Yd.	362.00 Cu. Yd.<Cut>
Totals			99863.37 Sq. Ft.	3952.50 Cu. Yd.	3590.49 Cu. Yd.	362.00 Cu. Yd.<Cut>



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

RV STORAGE LAYOUT
FOR: TISDALE PROPERTIES &
DEVELOPMENT LLC - AREY DRIVE
CITY OF BRYANT
SALINE COUNTY, ARKANSAS

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

05-02-2025

CONTENTS:

SITE, GRADING, AND DRAINAGE PLAN

PROJECT NO: 25008

DATE: APRIL 2025

SHEET NO: C1.0

BY	REVISION	DATE

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

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

Prepared for:
Sun Hog Solar – Bryant School District (SD)
Bryant, Arkansas

Date:
May 15, 2025

PMI
A Terracon Company

Project Name and Location: Scenic Hill Solar –Bryant SD

Property Parcel Number (*Optional*): 840-11623-030

Operator Name and Address: SCENIC HILL SOLAR XLV, LLC

A. Site Description

a. Project description intended use after NOI is filed: Scenic Hill Solar plans on creating a solar array near Bryant, Arkansas on the Scenic Hill Solar site. The subject property is approximately 11.35 acres of soil disturbance, with a total site area of approximately 27.45 acres.

b. Sequence of major activities which disturb soils: NOC's will be posted, BMPs will be installed. The array area will be cleared, array installed and seeded within 14 days of earth disturbing activities are completed.

c. Total Area[1]: 27.45 Disturbed Area[2]: 11.35

d. Soils Information:

i. Runoff Coefficient Pre-Construction (See Appendix A) : 0.10

ii. Runoff Coefficient Post-Construction (See Appendix A) : 0.38

iii. Describe the soil or the quality of any discharge from the site: silt loam

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.)
Brian Brown	713-826-0630	Inspector, Construction Manager
Carrie Kyhl	501-707-0555	Responsible Official

C. Receiving Waters

a. The following waterbody (or waterbodies) receives stormwater from this construction site: Unnamed tributaries to Hurricane Creek, to Hurricane Lake, then to Saline River thence to the Ouachita River

b. Is the project located within the jurisdiction of an MS4? ☑ Yes ☐ No

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. Documentation of Permit Eligibility Related to the 303(d) list and Total Maximum Daily Loads (TMDL) (https://www.adeq.state.ar.us/water/planning/)
   a. Does the stormwater enter a waterbody on the 303(d) list or with an approved TMDL? ☐ Yes ☑ No
   b. If yes:
      i. Waterbody identified on 303(d) list: _____
      ii. Pollutant addressed on 303(d) list or TMDL: _____
      iii. This specific project ,or generally construction activity i.e. surface erosion, is identified on 303(d) list or associated assumptions and allocations identified in the TMDL for the discharge: ☐ Yes ☐ No
      iv. Additional controls implemented: _____
      _____

E. Attainment of Water Quality Standards After Authorization
   a. Sediment- and erosion-control measures along the construction project such as silt fences and rock check dams will be installed prior to ground disturbing activities begin to minimize the discharge of sediment and other pollutants into surrounding water bodies. The controls will be implemented and updated as necessary to be stringent enough to prevent an excursion above applicable water quality standards.
   b. At any time after authorization, the Department may determine that the stormwater discharges may cause, have reasonable potential to cause, or contribute to an excursion above any applicable water quality standard. If such a determination is made, the Department will require the permittee to:
      i. Develop a supplemental BMP action plan describing SWPPP modifications to address adequately the identified water quality concerns and submit valid and verifiable data and information that are representative of ambient conditions and indicate that the receiving water is attaining water quality standards; or
      ii. Cease discharges of pollutants from construction activity and submit an individual permit application.

   I understand and agree to follow the above text regarding the attainment of water quality standards after authorization. ☑ Yes ☐ No

F. 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;
j. Locations where stormwater is discharged to a surface water and/or municipal separate storm sewer system if applicable,
k. Locations where stormwater is discharged off-site (should be continuously updated);
l. Areas where final stabilization has been accomplished and no further construction phase permit requirements apply;
m. A legend that identifies any erosion and sediment control measure symbols/labels used in the site map and/or detail sheet; and
n. Locations of any storm drain inlets on the site and in the immediate vicinity of the site.

G. Stormwater Controls
   a. Initial Site Stabilization, Erosion and Sediment Controls, and Best Management Practices:
      i. Initial Site Stabilization: Most of the present vegetation will be cleared. Erosion- and sediment-control BMPs will be installed as necessary to protect drainage paths prior to earth-disturbing activities.
      ii. Erosion and Sediment Controls: good housekeeping practices, BMP installation before clearing begins, maintenance completed within 14 days of an inspection report noting deficiencies.
      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: _____

v. Sediment will be removed from sediment traps or sedimentation ponds when design capacity has been reduced by 50%: ☑ Yes ☐ No

If No, explain: _____

vi. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges: ☑ Yes ☐ No

If No, explain: _____

vii. Off-site material storage areas used solely by the permitted project are being covered by this SWPPP: ☐ Yes ☑ No

If Yes, explain additional BMPs implemented at off-site material storage area: _____

b. Stabilization Practices

i. Description and Schedule: For this project, adequate measures needed to limit erosion at this site will consist of installing silt fencing and/or rock check dams as needed. Specifically, areas around newly disturbed and graded surfaces will be protected using primarily silt fences, rock check dams as needed, and a gravel site entrance to reduce erosion and sediment transport.

ii. Are buffer areas required? ☑ Yes ☐ No

If Yes, are buffer areas being used? ☑ Yes ☐ No

If Yes, describe natural buffer areas: natural buffer areas will remain at a minimum of 25 feet from any jurisdictional wetland and streams

If No, explain why not: _____

iii. A record of the dates when grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated shall be included with the plan. ☑ 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. Structural Practices
i. Describe any structural practices to divert flows from exposed soils, store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site: Silt fences will be installed, and rock check dams will be used to slow water down if needed.
ii. Describe Velocity Dissipation Devices: Rock check dams and hay bales will be utilized as velocity dissipation devices.
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: Natural buffers, silt fences and the amount of room left on the site prevents a sediment pond. Scenic Hill Solar has met with City of Bryant to mitigate the sediment pond.

H. Other Controls
a. Solid materials, including building materials, shall be prevented from being discharged to Waters of the State: ☑ Yes ☐ No
b. Off-site vehicle tracking of sediments and the generation of dust shall be minimized through the use of:
☑ A stabilized construction entrance and exit
☐ Vehicle tire washing
☐ Other controls, describe: _____
_____
c. Temporary Sanitary Facilities: If temporary sanitary facilities are needed, they will be placed inside the silt fence to prevent site runoff from leaving the site.

d. Concrete Waste Area Provided:
☑ Yes
☐ No. Concrete is used on the site, but no concrete washout is provided.
Explain why: _____
_____
☐ N/A, no concrete will be used with this project

e. Fuel Storage Areas, Hazardous Waste Storage, and Truck Wash Areas: _____
_____

I. Non-Stormwater Discharges

a. The following allowable non-stormwater discharges comingled with stormwater are present or anticipated at the site:
☐ Fire-fighting activities;
☐ Fire hydrant flushings;
☐ Water used to wash vehicles (where detergents or other chemicals are not used) or control dust in accordance with Part II.A.4.H.2;
☐ Potable water sources including uncontaminated waterline flushings;
☐ Landscape Irrigation;
☐ Routine external building wash down which does not use detergents or other chemicals;
☐ Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (unless all spilled materials have been removed) and where detergents or other chemicals are not used;
☐ Uncontaminated air conditioning, compressor condensate (See Part I.B.13.C of the permit);
☐ Uncontaminated springs, excavation dewatering and groundwater (See Part I.B.13.C of the permit);
☐ Foundation or footing drains where flows are not contaminated with process materials such as solvents (See Part I.B.13.C of the permit);

b. Describe any controls associated with non-stormwater discharges present at the site: No anticipated non-stormwater discharges are expected to occur.

J. Permanent Controls for Post-Construction Stormwater Management:
Describe measures installed during the construction process to control pollutants in stormwater discharges that will occur after construction operations have been completed: All disturbed areas will be seeded and mulched within 14 days of completing work activities that resulted in the disturbance of soil. The seeding of the areas will be done more than one time if adequate turf coverage is not accomplished in the first seeding event.

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

L. Inspections

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 (See inspection form requirements Part II.A.4.L.2)

c. Inspection records will be retained as part of the SWPPP for at least 3 years from the date of termination.

d. It is understood that the following sections describe waivers of site inspection requirements. All applicable documentation requirements will be followed in accordance with the referenced sections.

i. Winter Conditions (Part II.A.4.L.4)

ii. Adverse Weather Conditions (Part II.A.4.L.5)

M. Maintenance:

The following procedures to maintain vegetation, erosion and sediment control measures and other protective measures in good, effective operating condition will be followed: All disturbed areas will be seeded and mulched within 14 days of completing work activities that resulted in the disturbance of soil. The seeding of the areas will be done more than one time if adequate turf coverage is not accomplished in the first seeding event.

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

N. Employee Training:

The following is a description of the training plan for personnel (including contractors and subcontractors) on this project: Scenic Hill Solar employees and contractors whose normal duties could potentially affect stormwater discharges and installed BMPs will be trained on contents of the SWPPP. Personnel will be trained in their responsibilities while on-site. At a minimum, training will include brief discussions on the following: contents of the SWPPP, summary of stormwater BMPs used on the project, and review of reporting requirements in the case of a spill or damage to a BMP.

**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: Carrie Kyhl

Title: COO

Date: 5/15/25

Computation Sheet for Determining Runoff Coefficients

Appendix A

Total Site Area =	27.45 Acres	[A]

Existing Site Conditions

Impervious Site Area [1] =	0 Acres	[B]
Impervious Site Area Runoff Coefficient [2, 4] =	0.95	
Pervious Site Area [3] =	27.45 Acres	[D]
Pervious Site Area Runoff Coefficient [4] =	0.10	[E]

Pre-Construction Runoff Coefficient

$$\frac{[B \times C] + [D \times E]}{[A]} = 0.1$$

Proposed Site Conditions (after construction)

Impervious Site Area [1] =	11.35 Acres	[F]
Impervious Site Area Runoff Coefficient [2, 4] =	0.80	[G]
Pervious Site Area [3] =	16.1 Acres	[H]
Pervious Site Area Runoff Coefficient [4] =	0.10	[I]

Post-Construction Runoff Coefficient

$$\frac{[F \times G] + [H \times I]}{[A]} = 0.38$$

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

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

ARR150000 Inspection Form

Appendix B

Inspector Name: _____ Date of Inspection: _____

Inspector Title: _____

Date of Rainfall: _____ Duration of Rainfall: _____

Days Since Last Rain Event: _____ days Rainfall Since Last Rain Event: _____ inches

Description of any Discharges During Inspection: _____

Location of Discharges of Sediment/Other Pollutant (specify pollutant & location): _____

_____

Locations in Need of Additional BMPs: _____

Information on Location of Construction Activities

Location	Activity Begin Date	Activity Occurring Now (y/n)?	Activity Ceased Date	Stabilization Initiated Date	Stabilization Complete Date

Information on BMPs in Need of Maintenance

Location	In Working Order?	Maintenance Scheduled Date	Maintenance Completed Date	Maintenance to be Performed By

Changes required to the SWPPP: _____ Reasons for changes: _____

_____ _____

_____ _____

SWPPP changes completed (date): _____

"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: _____ Date: _____

Title: _____

BMP Consideration Checklist

Appendix C

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

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

EROSION CONTROL BMPs				
BMP	**BMP Considered for project**	**BMP Used**	**BMP Not Used**	**If not used, state reason**
EC-1 Scheduling	☐	☑	☐	
EC-2 Preservation of Existing Vegetation	☐	☑	☐	
EC-3 Hydraulic Mulch	☐	☐	☑	Not necessary
EC-4 Hydroseeding	☐	☐	☑	Not necessary
EC-5 Soil Binders	☐	☐	☑	Not necessary
EC-6 Straw Mulch	☐	☑	☐	
EC-7 Geotextiles & Mats	☐	☐	☑	Not necessary
EC-8 Wood Mulching	☐	☐	☑	Not necessary
EC-9 Earth Dikes & Drainage Swales	☑	☐	☐	
EC-10 Velocity Dissipation Devices	☑	☐	☐	
EC-11 Slope Drains	☑	☐	☑	
EC-12 Stream bank Stabilization	☐	☐	☑	Not necessary
SEDIMENT CONTROL BMPs				
BMP	**BMP Considered for project**	**BMP Used**	**BMP Not Used**	**If not used, state reason**
SE-1 Silt Fence	☐	☑	☐	
SE-2 Sediment Basin	☐	☐	☑	Not necessary
SE-3 Sediment Trap	☐	☐	☑	Not necessary
SE-4 Check Dam	☐	☑	☐	
SE-5 Fiber Rolls	☐	☐	☑	Not necessary
SE-6 Gravel Bag Berm	☐	☐	☑	Not necessary
SE-7 Street Sweeping and Vacuuming	☐	☑	☐	
SE-8 Sand Bag Barrier	☐	☐	☑	Not necessary
SE-9 Straw Bale Barrier	☐	☑	☐	
SE-10 Storm Drain Inlet Protection	☐	☐	☑	Not necessary
SE-11 Chemical Treatment	☐	☐	☑	Not necessary
WIND EROSION CONTROL BMPs				
BMP	**BMP Considered for project**	**BMP Used**	**BMP Not Used**	**If not used, state reason**
WE-1 Wind Erosion Control	☐	☐	☑	Not necessary

BMP Consideration Checklist

Appendix C

TRACKING CONTROL BMPs				
BMP	**BMP Considered for project**	**BMP Used**	**BMP Not Used**	**If not used, state reason**
TR-1 Stabilized Construction Entrance/Exit	☐	☑	☐	
TR-2 Stabilized Construction Roadway	☐	☐	☑	Not necessary
TR-3 Entrance/Outlet Tire Wash	☐	☐	☑	Not necessary
NON-STORM WATER MANAGEMENT BMPs				
BMP	**BMP Considered for project**	**BMP Used**	**BMP Not Used**	**If not used, state reason**
NS-1 Water Conservation Practices	☐	☐	☑	Not necessary
NS-2 Dewatering Operations	☐	☐	☑	Not necessary
NS-3 Paving and Grinding Operations	☐	☐	☑	Not necessary
NS-4 Temporary Stream Crossing	☐	☐	☑	Not necessary
NS-5 Clear Water Diversion	☐	☐	☑	Not necessary
NS-6 Illicit Connection/ Discharge	☐	☐	☑	Not necessary
NS-7 Potable Water/Irrigation	☐	☐	☑	Not necessary
NS-8 Vehicle and Equipment Cleaning	☐	☐	☑	Not necessary
NS-9 Vehicle and Equipment Fueling	☐	☐	☑	Not necessary
NS-10 Vehicle and Equipment Maintenance	☐	☐	☑	Not necessary
NS-11 Pile Driving Operations	☐	☐	☑	Not necessary
NS-12 Concrete Curing	☐	☐	☑	Not necessary
NS-13 Concrete Finishing	☐	☐	☑	Not necessary
NS-14 Material and Equipment Use Over Water	☐	☐	☑	Not necessary
NS-15 Demolition Adjacent to Water	☐	☐	☑	Not necessary
NS-16 Temporary Batch Plants	☐	☐	☑	Not necessary
WASTE MANAGEMENT AND MATERIALS POLLUTION CONTROL BMPs				
BMP	**BMP Considered for project**	**BMP Used**	**BMP Not Used**	**If not used, state reason**
WM-1 Material Delivery and Storage	☐	☑	☐	
WM-2 Material Use	☐	☑	☐	
WM-3 Stockpile Management	☐	☑	☐	
WM-4 Spill Prevention and Control	☐	☑	☐	
WM-5 Solid Waste Management	☐	☐	☑	Not necessary
WM-6 Hazardous Waste Management	☐	☐	☑	Not necessary
WM-7 Contaminated Soil Management	☐	☐	☑	Not necessary
WM-8 Concrete Waste Management	☐	☑	☐	
WM-9 Sanitary/Septic Waste Management	☐	☐	☑	Not necessary
WM-10 Liquid Waste Management	☐	☐	☑	Not necessary

SWPPP Completion Checklist

Appendix D

Yes = Complete
No = Incomplete/Deficient
N/A = Not applicable to project

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

SWPPP Completion Checklist

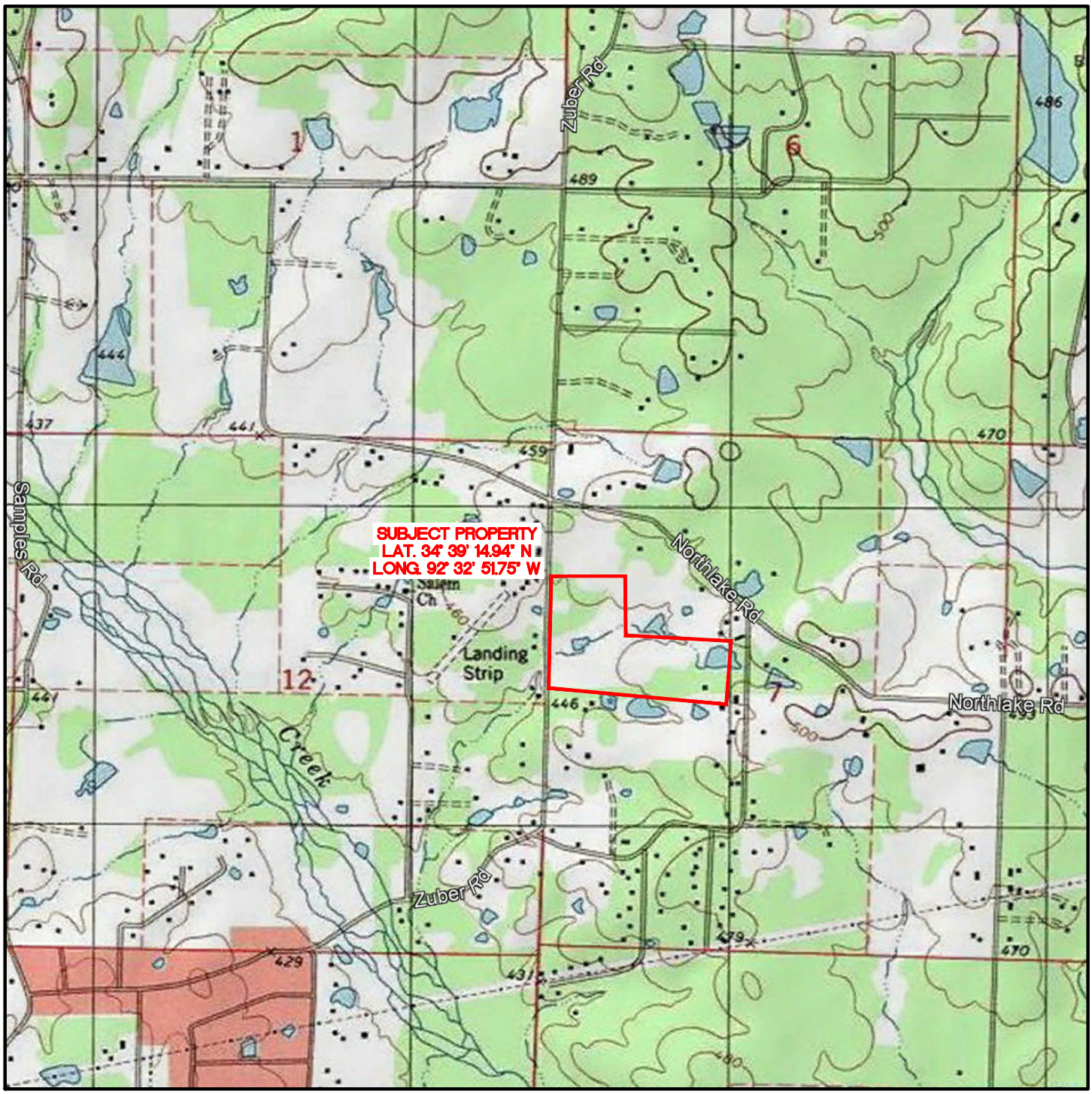
Appendix D

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

SWPPP TRAINING CERTIFICATION FORM

This is to acknowledge that I have reviewed the Stormwater Pollution Prevention Plan for Construction for Scenic Hill Solar. I have been trained in its use and purpose and am familiar with its contents.

Name (Please Print)	Name (Please Print)
Signature	Signature
Date	Date
Responsible For	Responsible For
Name (Please Print)	Name (Please Print)
Signature	Signature
Date	Date
Responsible For	Responsible For
Name (Please Print)	Name (Please Print)
Signature	Signature
Date	Date
Responsible For	Responsible For



DRAWING NO. 1

SITE TOPOGRAPHIC MAP TAKEN FROM BRYANT USGS QUADRANGLE

CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN
BRYANT SD SOLAR ARRAY
SCENIC HILL SOLAR
BRYANT, ARKANSAS

N
W E
S

PMI
A Terracon Company

SUBMITTED:	N. JOHNSON
DRAWN:	D. LLOYD
CHECKED:	N. JOHNSON
DATE:	MAY 15, 2025

SCALE: 0 1500'

JOB NUMBER: KT257024

FILE: KT257024 SWPPP TOPO.DWG

GENERAL NOTES:

1. THE CONTRACTOR IS REQUIRED TO NOTIFY THE ONE CALL CENTER AT 1-800-482-8998 48 HOURS PRIOR TO DIGGING SO THAT UNDERGROUND UTILITIES IN THE AREA CAN BE LOCATED.
2. THE LOCATION OF KNOWN SUBSURFACE STRUCTURES, UTILITY PIPING, GAS, FIBER, ETC. ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE SITE AND OBTAIN FURTHER INFORMATION ON THE LOCATION OF SUBSURFACE STRUCTURES SHOWN AND NOT SHOWN. ALL REPAIRS TO DAMAGED UNDERGROUND STRUCTURES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
3. ALL ITEMS DISTURBED DURING CONSTRUCTION, STREETS, DRIVES, FENCES, ETC. SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. COST OF REPAIRS IS THE RESPONSIBILITY OF THE CONTRACTOR.

PROPERTY BOUNDARY

CONSTRUCTION ROAD ENTRANCE/EXIT

30 LF CONCRETE LOW WATER CROSSING

2 - 10' WIDE GATES

CONCRETE WASH-OUT AREA

JURISDICTIONAL INTERMITTENT STREAM (TYP.)

JURISDICTIONAL WETLAND (TYP.)

3,105 LF CHAIN LINK SECURITY FENCE

20' MIN. TYP.

2,100 LF SILT FENCE

455

450

460

465

470

445

TOTAL PROPERTY APPROXIMATELY 27.45 ACRES

TOTAL DISTURBED AREA APPROXIMATELY 11.35 ACRES

SCALE:
80 0 80 160

PRELIMINARY

SITE LAYOUT - AERIAL

CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN
BRYANT SD SOLAR ARRAY
SCENIC HILL SOLAR
BRYANT, ARKANSAS

REVISIONS:

NO:	DATE:	DESCRIPTION:	BY:

CIVIL ENGINEERING AND ENVIRONMENTAL SERVICES
3512 SOUTH SHACKLEFORD RD
LITTLE ROCK, ARKANSAS 72205
PH: (501) 221-7122 FX: (501) 221-7775

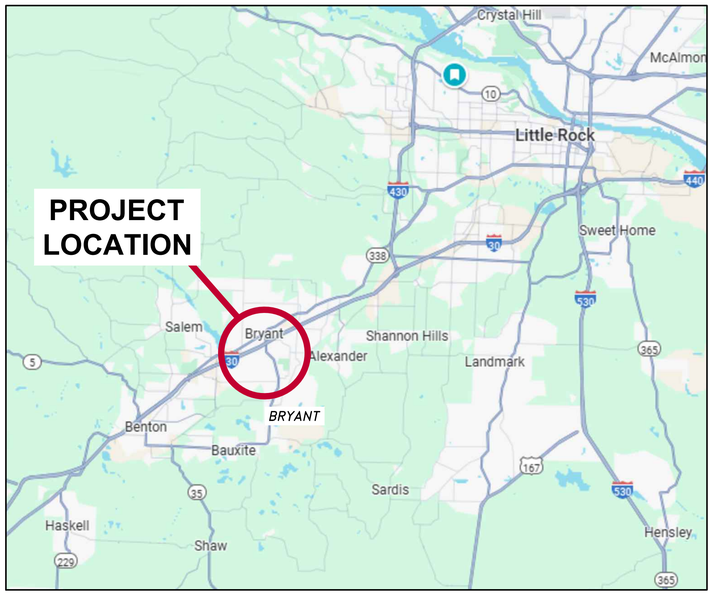
DESIGNED BY: NJ
DRAWN BY: DDL
CHECKED BY: NJ
DATE: APR. 15, 2025
SCALE: 1" = 80'

JOB NUMBER: KT257024

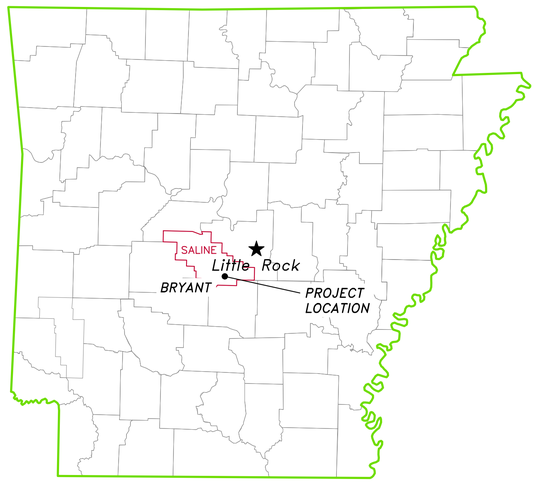
DRAWING NUMBER: 2

FILE: N:\AUTOCAD - ENGINEERING\KT257024 - SHS BRYANT SD CIVIL & SWPPP\SWPPP\KT257024 BRYANT SD SWPPP.DWG

BRYANT SD SOLAR ARRAY
SCENIC HILL SOLAR
BRYANT, ARKANSAS
FEBRUARY 2025



Vicinity Map



INDEX OF DRAWINGS	
SHEET #	SHEET TITLE
C1.0	SITE LAYOUT – AERIAL
C1.1	SITE LAYOUT
C1.2	STAKING PLAN
C1.4	EROSION CONTROL PLAN
C2.0	MISCELLANEOUS DETAILS
C2.1	EROSION CONTROL DETAILS

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

PMI

PROJECT NO. KT257024

PRELIMINARY

CERTIFICATE OF AUTHORIZATION POLLUTION MANAGEMENT, INC. No. 331 ARKANSAS-ENGINEER

NOT FOR CONSTRUCTION

GENERAL NOTES:

1. THE CONTRACTOR IS REQUIRED TO NOTIFY THE ONE CALL CENTER AT 1-800-482-8998 48 HOURS PRIOR TO DIGGING SO THAT UNDERGROUND UTILITIES IN THE AREA CAN BE LOCATED.
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PROPERTY BOUNDARY

PRIMARY ROAD
8,375 SF CLASS 7 BASE COURSE COMPACTED TO 95% MODIFIED PROCTOR

2 - 10' WIDE GATES

JURISDICTIONAL INTERMITTENT STREAM

3,050 LF CHAIN LINK SECURITY FENCE
(SEE DETAIL 1, SHEET C2.0)

20' MIN. TYP.

445 450 455 460 465 470

SCALE:
80 0 80 160

PRELIMINARY

SUBMITTED FOR REVIEW

SHEET TITLE: SITE LAYOUT - AERIAL

PROJECT TITLE: BRYANT SD SOLAR ARRAY
SCENIC HILL SOLAR
BRYANT, ARKANSAS

REVISIONS:

NO.	DATE:	DESCRIPTION:	BY:

CIVIL ENGINEERING AND ENVIRONMENTAL SERVICES
3512 SOUTH SHACKLEFORD RD
LITTLE ROCK, ARKANSAS 72205
PH: (501) 221-7122 FX: (501) 221-7775

DESIGNED BY: JTM
DRAWN BY: JTM
CHECKED BY: JTM
DATE: FEB. 25, 2025
SCALE: 1" = 80'

FILE: N:\PROJECTS\2025\KT257024 - SHS BRYANT SD CIVIL & SWPPP\DRAWINGS\KT257024 BRYANT SD CIVIL.DWG

JOB NUMBER: KT257024

SHEET NUMBER: C1.0

GENERAL NOTES:

1. THE CONTRACTOR IS REQUIRED TO NOTIFY THE ONE CALL CENTER AT 1-800-482-8998 48 HOURS PRIOR TO DIGGING SO THAT UNDERGROUND UTILITIES IN THE AREA CAN BE LOCATED.
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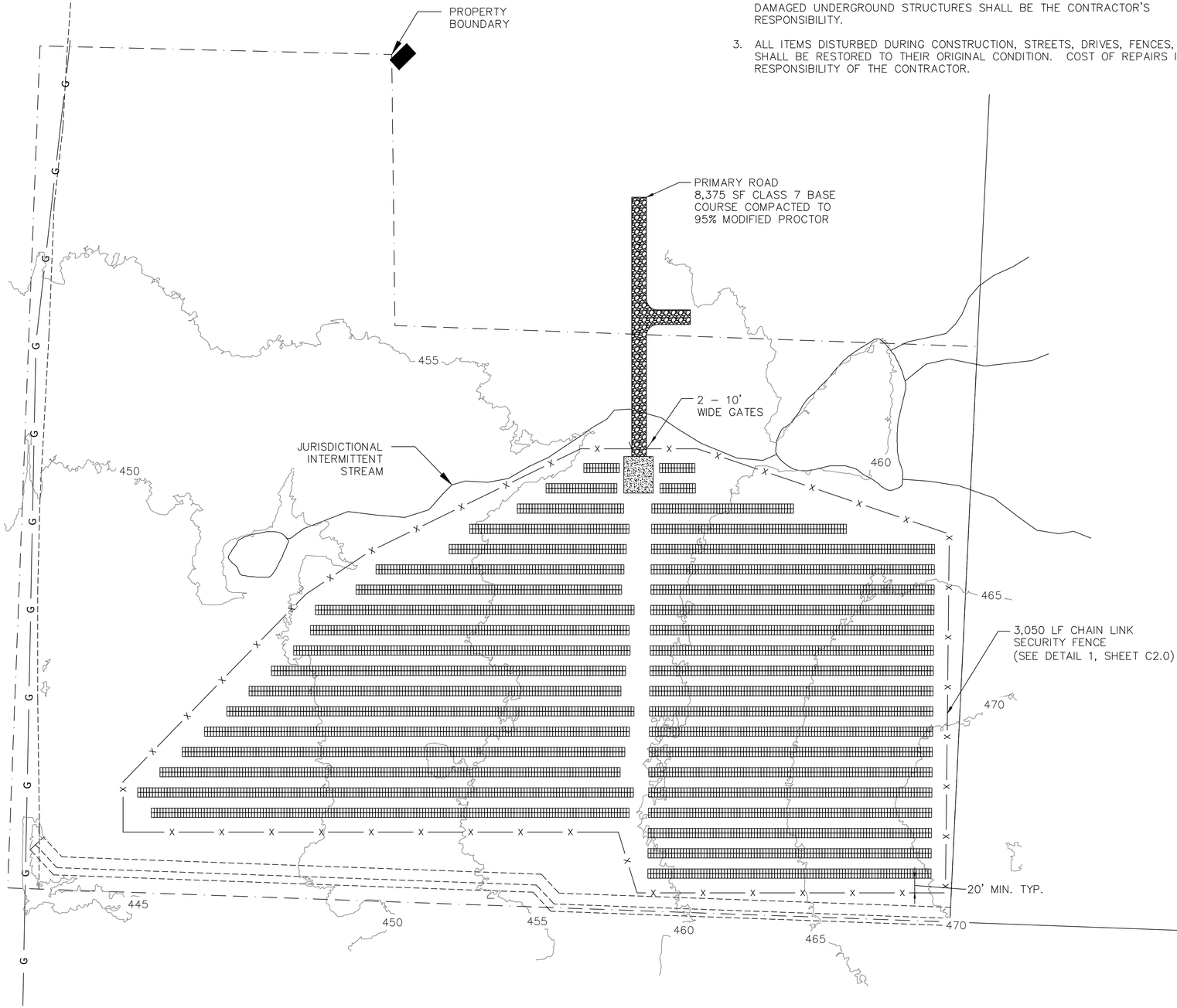

SCALE:
80 0 80 160

PRELIMINARY

SUBMITTED FOR REVIEW

SHEET TITLE: SITE LAYOUT

PROJECT TITLE: BRYANT SD SOLAR ARRAY
SCENIC HILL SOLAR
BRYANT, ARKANSAS

REVISIONS:

NO:	DATE:	DESCRIPTION:	BY:

CIVIL ENGINEERING AND ENVIRONMENTAL SERVICES
3512 SOUTH SHACKLEFORD RD
LITTLE ROCK, ARKANSAS 72205
PH: (501) 221-7122 FX: (501) 221-7775

DESIGNED BY: JTM
DRAWN BY: JTM
CHECKED BY: JTM
DATE: FEB. 25, 2025
SCALE: 1" = 80'

FILE: N:\PROJECTS\2025\KT257024 - SHS BRYANT SD CIVIL & SWPPP\DRAWINGS\KT257024 BRYANT SD CIVIL.DWG

JOB NUMBER:
KT257024

SHEET NUMBER:
C1.1

GENERAL NOTES:

1. THE CONTRACTOR IS REQUIRED TO NOTIFY THE ONE CALL CENTER AT 1-800-482-8998 48 HOURS PRIOR TO DIGGING SO THAT UNDERGROUND UTILITIES IN THE AREA CAN BE LOCATED.

2. THE LOCATION OF KNOWN SUBSURFACE STRUCTURES, UTILITY PIPING, GAS, FIBER, ETC. ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE SITE AND OBTAIN FURTHER INFORMATION ON THE LOCATION OF SUBSURFACE STRUCTURES SHOWN AND NOT SHOWN. ALL REPAIRS TO DAMAGED UNDERGROUND STRUCTURES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

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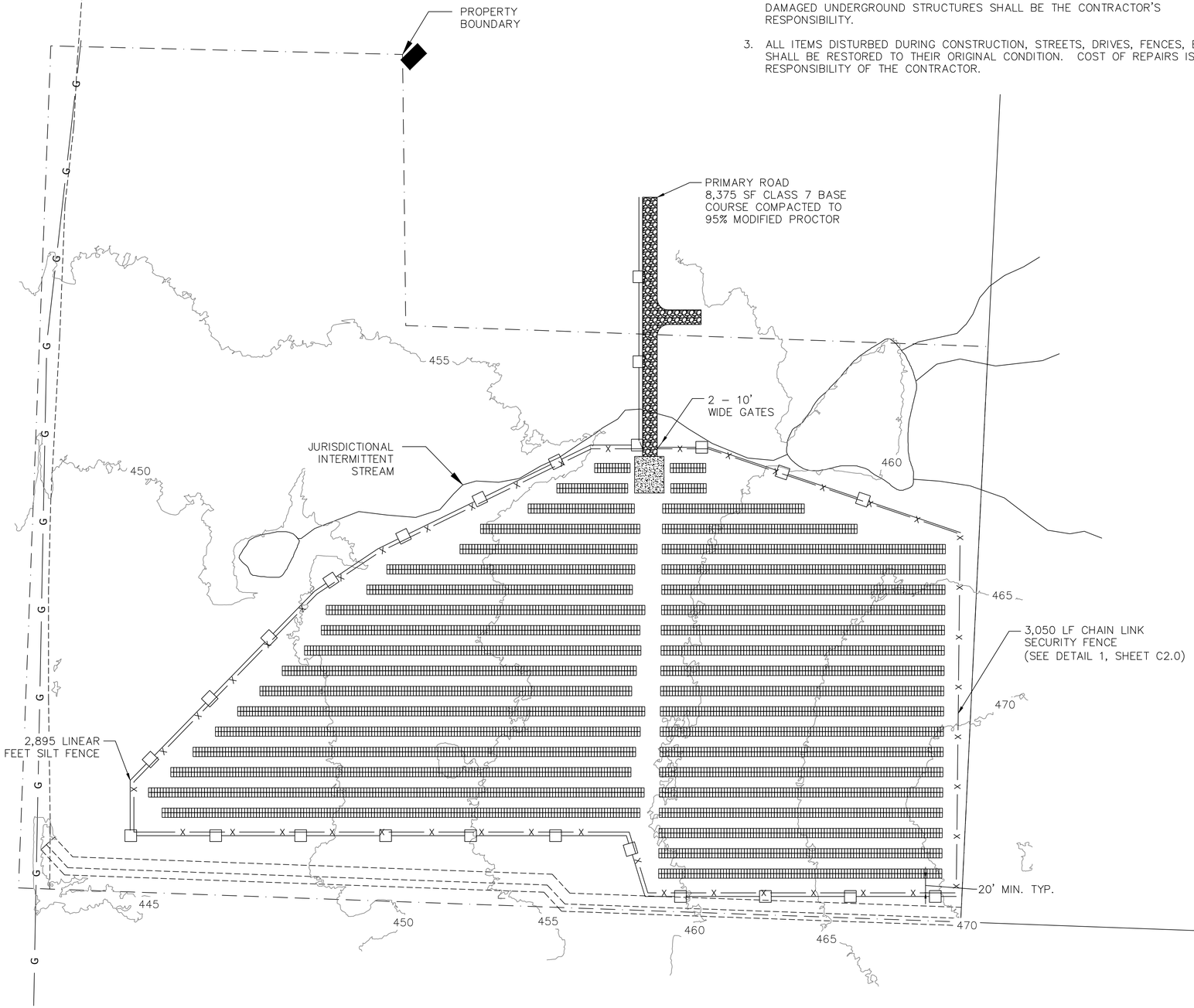


SCALE:
80 0 80 160

PRELIMINARY

SUBMITTED FOR REVIEW

SHEET TITLE: EROSION CONTROL

PROJECT TITLE: BRYANT SD SOLAR ARRAY
SCENIC HILL SOLAR
BRYANT, ARKANSAS

REVISIONS:

NO:	DATE:	DESCRIPTION:	BY:

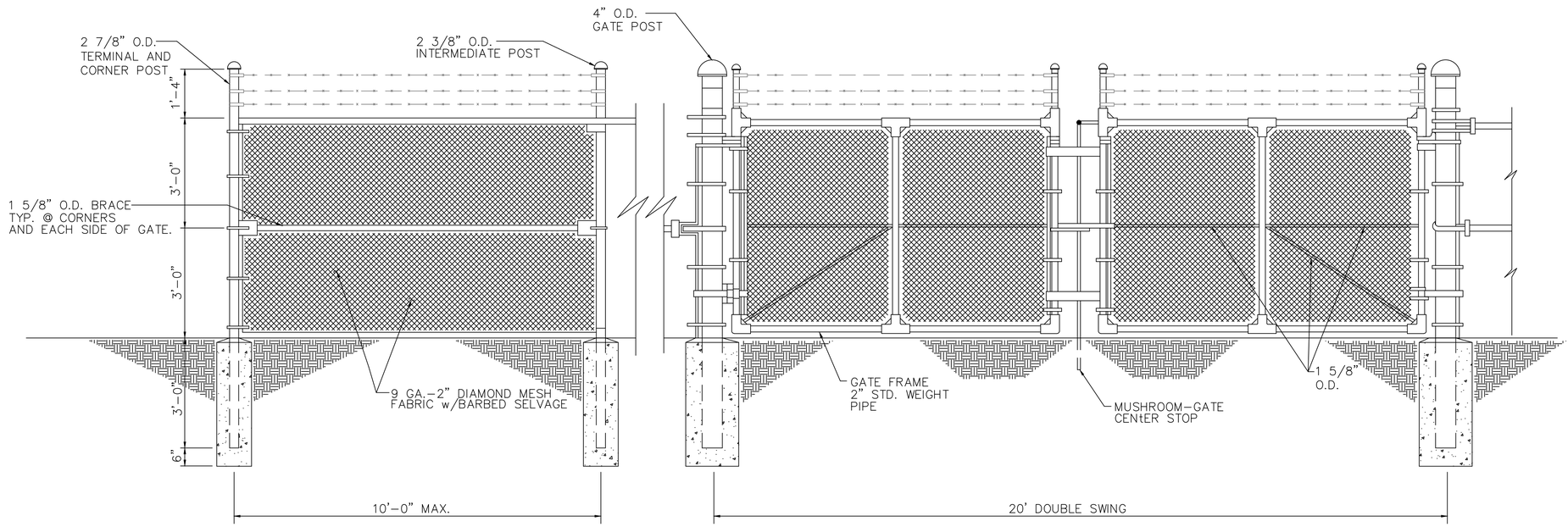
CIVIL ENGINEERING AND ENVIRONMENTAL SERVICES
3512 SOUTH SHACKLEFORD RD
LITTLE ROCK, ARKANSAS 72205
PH: (501) 221-7122 FX: (501) 221-7775

DESIGNED BY: JTM
DRAWN BY: JTM
CHECKED BY: JTM
DATE: FEB. 25, 2025
SCALE: 1" = 80'

FILE: N:\PROJECTS\2025\KT257024 - SHS BRYANT SD CIVIL & SWPPP\DRAWINGS\KT257024 BRYANT SD CIVIL.DWG

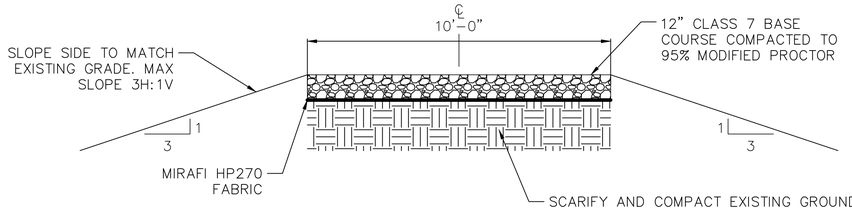
JOB NUMBER:
KT257024

SHEET NUMBER:
C1.1



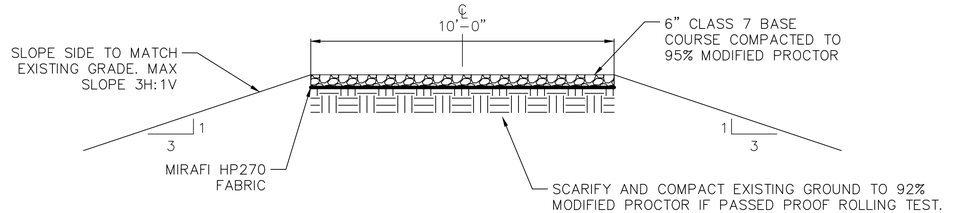
SECURITY FENCE DETAIL — 1 (C1.0 | C2.0)
SCALE: NTS

NOTE: SEE GEOTECHNICAL REPORT
FOR DETAILED SITE INFORMATION



INDUSTRIAL GRAVEL ROAD DETAIL — 2 (C1.0 | C2.0)
SCALE: NTS

NOTE: SEE GEOTECHNICAL REPORT
FOR DETAILED SITE INFORMATION



VEHICULAR GRAVEL ROAD DETAIL — 3 (C1.0 | C2.0)
SCALE: NTS

PRELIMINARY

SUBMITTED FOR REVIEW

SHEET TITLE: MISCELLANEOUS DETAILS

PROJECT TITLE: BRYANT SD SOLAR ARRAY
SCENIC HILL SOLAR
BRYANT, ARKANSAS

REVISIONS:

NO.	DATE:	DESCRIPTION:	BY:

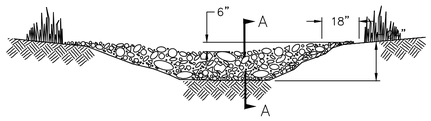
CIVIL ENGINEERING AND ENVIRONMENTAL SERVICES
3512 SOUTH SHACKLEFORD RD
LITTLE ROCK, ARKANSAS 72205
PH: (501) 221-7122 FX: (501) 221-7775

DESIGNED BY: JTM
DRAWN BY: JTM
CHECKED BY: JTM
DATE: FEB. 25, 2025
SCALE: N.T.S.

FILE: N:\PROJECTS\2025\KT257024 - SHS BRYANT SD CIVIL & SWPPP\DRAWINGS\KT257024 BRYANT SD CIVIL.DWG

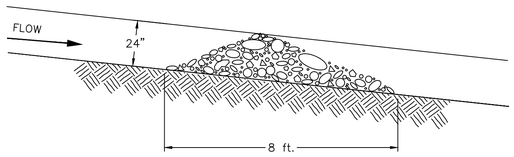
JOB NUMBER: KT257024

SHEET NUMBER: C2.0



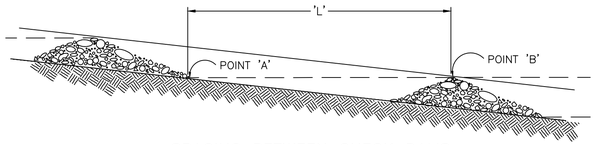
VIEW LOOKING UP STREAM

NOTE: KEY STONE INTO THE DITCH BANKS AND EXTEND IT BEYOND THE ABUTMENTS A MINIMUM OF 18" TO PREVENT OVERFLOW AROUND DAM.



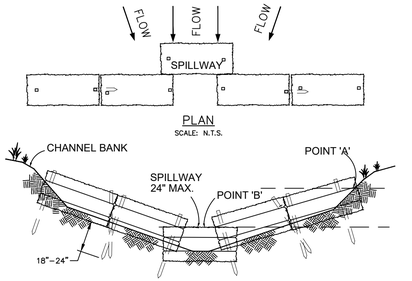
SECTION A–A

'L' = THE DISTANCE SUCH THAT POINTS 'A' AND 'B' ARE OF EQUAL ELEVATION.



SPACING BETWEEN CHECK DAMS

ROCK CHECK DAM DETAIL — 4 (C1.0 | C2.1)
SCALE: NTS



PLAN
SCALE: N.T.S.

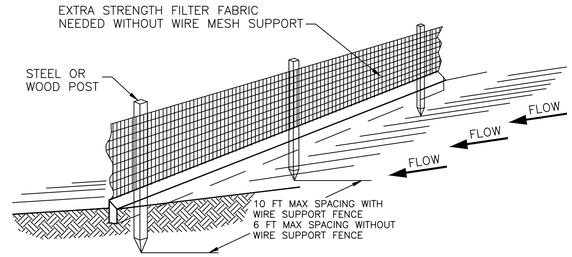
VIEW LOOKING UPSTREAM
SCALE: N.T.S.

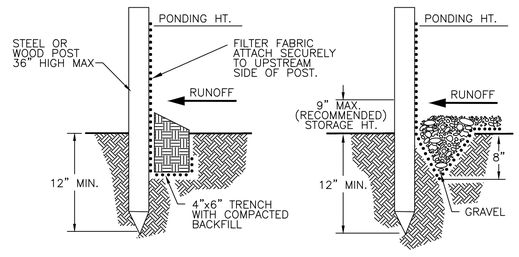
SPACING BETWEEN CHECK DAMS
SCALE: N.T.S.

NOTES:

1. EMBED BALES 4" INTO THE SOIL AND 'KEY' BALES INTO THE CHANNEL BANKS.
2. POINT 'A' MUST BE HIGHER THAN POINT 'B'. (SPILLWAY HEIGHT)
3. PLACE BALES PERPENDICULAR TO THE FLOW WITH ENDS TIGHTLY ABUTTING. USE STRAW, ROCKS OR FILTER FABRIC TO FILL ANY GAPS AND TAMP BACKFILL MATERIAL TO PREVENT EROSION OR FLOW AROUND THE BALES.
4. SPILLWAY HEIGHT SHALL NOT EXCEED 24".
5. INSPECT AFTER EACH SIGNIFICANT STORM, MAINTAIN AND REPAIR PROMPTLY.

STRAW BALE CHECK DAM DETAIL — 5 (C1.0 | C2.1)
SCALE: NTS





STANDARD DETAIL
TRENCH WITH NATIVE BACKFILL

ALTERNATE DETAIL
TRENCH WITH GRAVEL

NOTE:

1. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF–SITE AND CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

SILT FENCE DETAIL — 6 (C1.0 | C2.1)
SCALE: NTS

20' MIN. TYP.

PRELIMINARY

SUBMITTED FOR REVIEW

SHEET TITLE: EROSION CONTROL DETAILS

PROJECT TITLE: BRYANT SD SOLAR ARRAY
SCENIC HILL SOLAR
BRYANT, ARKANSAS

REVISIONS:

NO:	DATE:	DESCRIPTION:	BY:

CIVIL ENGINEERING AND ENVIRONMENTAL SERVICES
3512 SOUTH SHACKLEFORD RD
LITTLE ROCK, ARKANSAS 72205
PH: (501) 221-7122 FX: (501) 221-7775

DESIGNED BY: JTM
DRAWN BY: JTM
CHECKED BY: JTM
DATE: FEB. 25, 2025
SCALE: N.T.S.

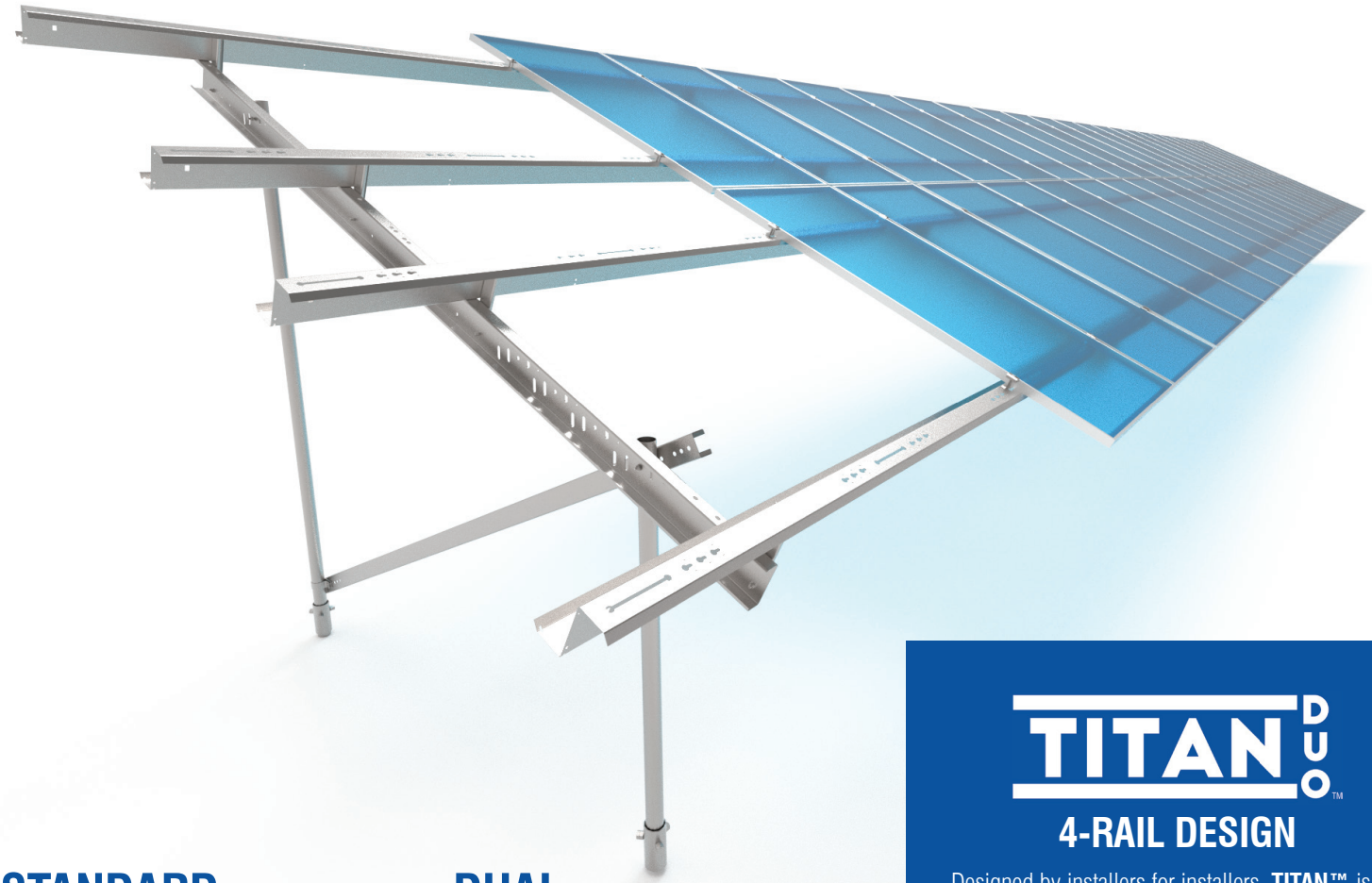
FILE: N:\PROJECTS\2025\KT257024 - SHS BRYANT SD CIVIL & SWPPP\DRAWINGS\KT257024 BRYANT SD CIVIL.DWG

JOB NUMBER: KT257024

SHEET NUMBER: C2.0

APA SOLAR RACKING

APASOLAR.COM
WHERE INNOVATION MEETS AUTOMATION

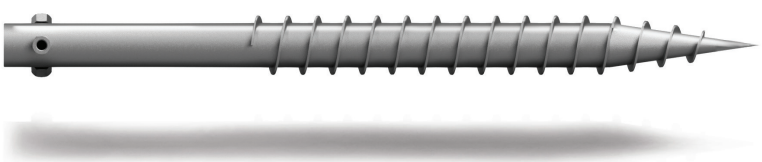


STANDARD SPECIFICATIONS

Engineering: ASCE 7-10/7-16/CPP Wind Tunnel Tested
Grounding: Fully Integrated UL2703
Foundation: Dual Ground Screw
Tilt Angles: 5°-35° Tilt Options
Racking Coating: Galvanized; G90
Foundation Coating: HDG
Wind Loading: Up to 165mph
Snow Loading: Up to 100psf
Mounting Orientation: 2-High in Portrait
Warranty: 25 Years

DUAL GROUND SCREWS

TITAN Duo is designed to tackle the most challenging sites. It's dual ground screw foundation is the ideal solution for sites with glacial till, cobble, hardpan, or solid bedrock. The heavy walled tube and welded connections allow for massive amounts of torque and pressure to be applied, helping the screw advance into the toughest soils.



TITAN DUO™

4-RAIL DESIGN

Designed by installers for installers, **TITAN™** is the most advanced hardware in the industry. TITAN's innovative features allow for flexibility in the field while streamlining the install process. With the lowest part count per MW and integrated grounding and cable trays, TITAN is installers preferred choice. The 4-rail design is an excellent solution for areas with high snow loads and large format modules. TITAN Duo comes standard with dual 3" diameter ground screws to manage rocky soil conditions.

In business since 2008, APA offers a versatile line of racking and foundation solutions for projects in even the most challenging environments. With projects nationwide, APA is a trusted racking partner.

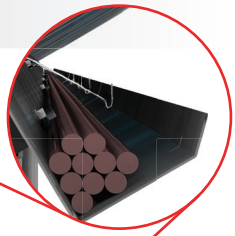
20-345 COUNTY ROAD X \\ PO. BOX 224 \\ RIDGEVILLE CORNERS, OH 43555

419.267.5280 // SALES@APASOLAR.COM

WHY USE TITAN DUO™ 4-RAIL?

WIRE MANAGEMENT

Integrated cable trays and custom wire clips keep your project organized, safe, and code compliant for the life of the project, without adding costly third-party solutions.



4-RAIL DESIGN

- Capable of handling snow loads up to 100psf
- Works with large format modules
- 2-High Portrait, ideal for split cell modules
- Low back panel shading for bifacial modules

ADJUSTABLE BRACING

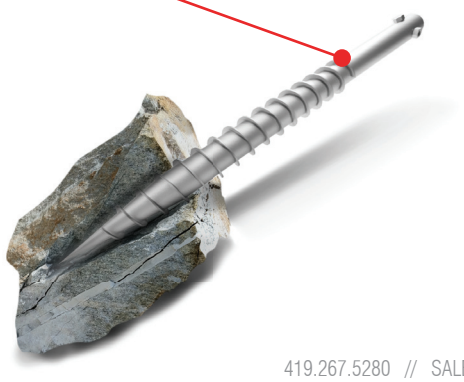
C-channel bracing allows for easy adjustments in the field.

TELESCOPING POST

Allows for quick adjustment in the field for high degrees of topography on site.

GROUND SCREWS STANDARD

TITAN Duo is specifically designed for sites with glacial till, cobble, hardpan and bedrock.



APA SOLAR RACKING

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TITAN DUO

STRUCTURAL PRINT PACKAGE

RIDGEVILLE CORNERS, OH 43555

SAMPLE

RACKING PROVIDER

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(F) 419.267.5214
WWW.APASOLAR.COM

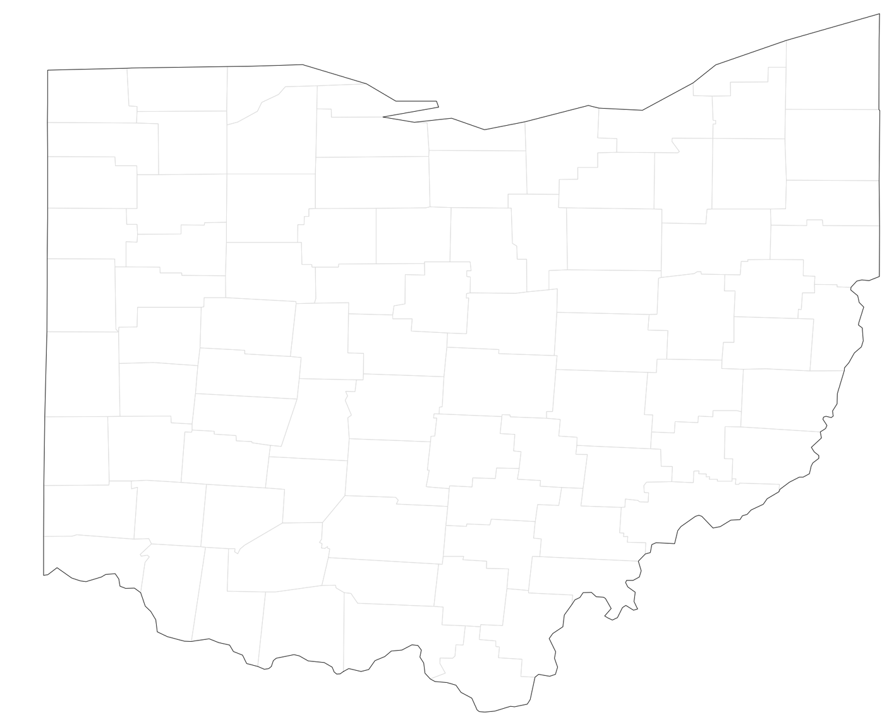
STRUC. ENGINEER OF RECORD

RACKING PRODUCT LINE

TITAN DUO

USE WITH THE FOLLOWING PRINTS & PACKAGES. INCLUDE WITH SUBMISSION TO PERMIT/INSPECTION AGENCY:

- ☑ CALCULATION PACKAGE: SAMPLE CALC SET – STAMPED
- ☑ FOUNDATION DESIGN REPORT (SITE SPECIFIC, & ONLY WHERE REQUIRED BY EOR OR AHJ)



SITE ADDRESS: 20-345 COUNTY ROAD X
RIDGEVILLE CORNERS, OH 43555

REVISION: A

PERMIT SET/
STRUCTURAL PACKET

APPROVED

SOLAR PHOTOVOLTAIC GROUND MOUNT

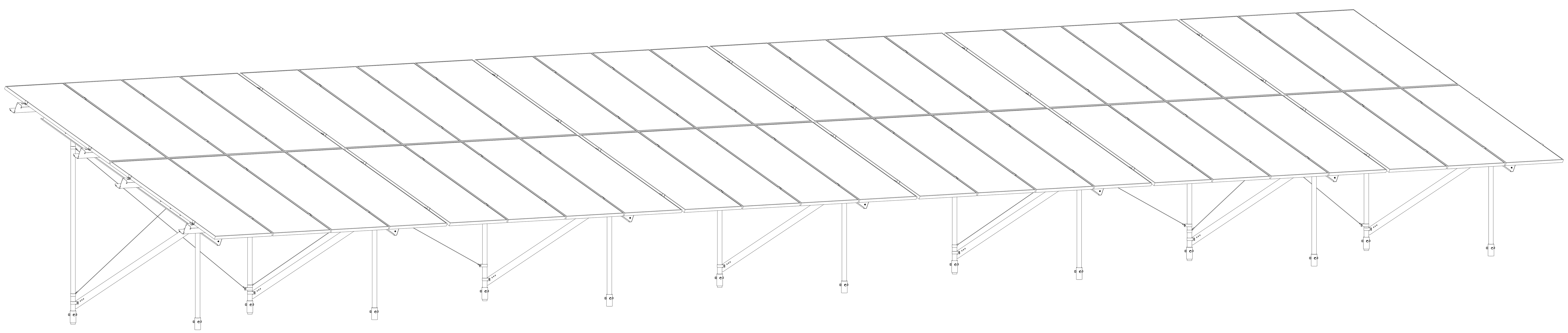


IMAGE FOR REFERENCE ONLY

SHEET INDEX		
STRUCTURAL		
S-000	A	STRUCTURAL COVER
S-100	A	RACKING OVERVIEW
S-200	A	GROUND SCREW
S-300	A	STRUCTURAL COMPONENTS
S-400	A	CONNECTIONS
S-500	A	STRUCTURAL PURLINS
S-600	A	CLAMPS & BRACES

GOVERNING STRUCTURAL CODE/S

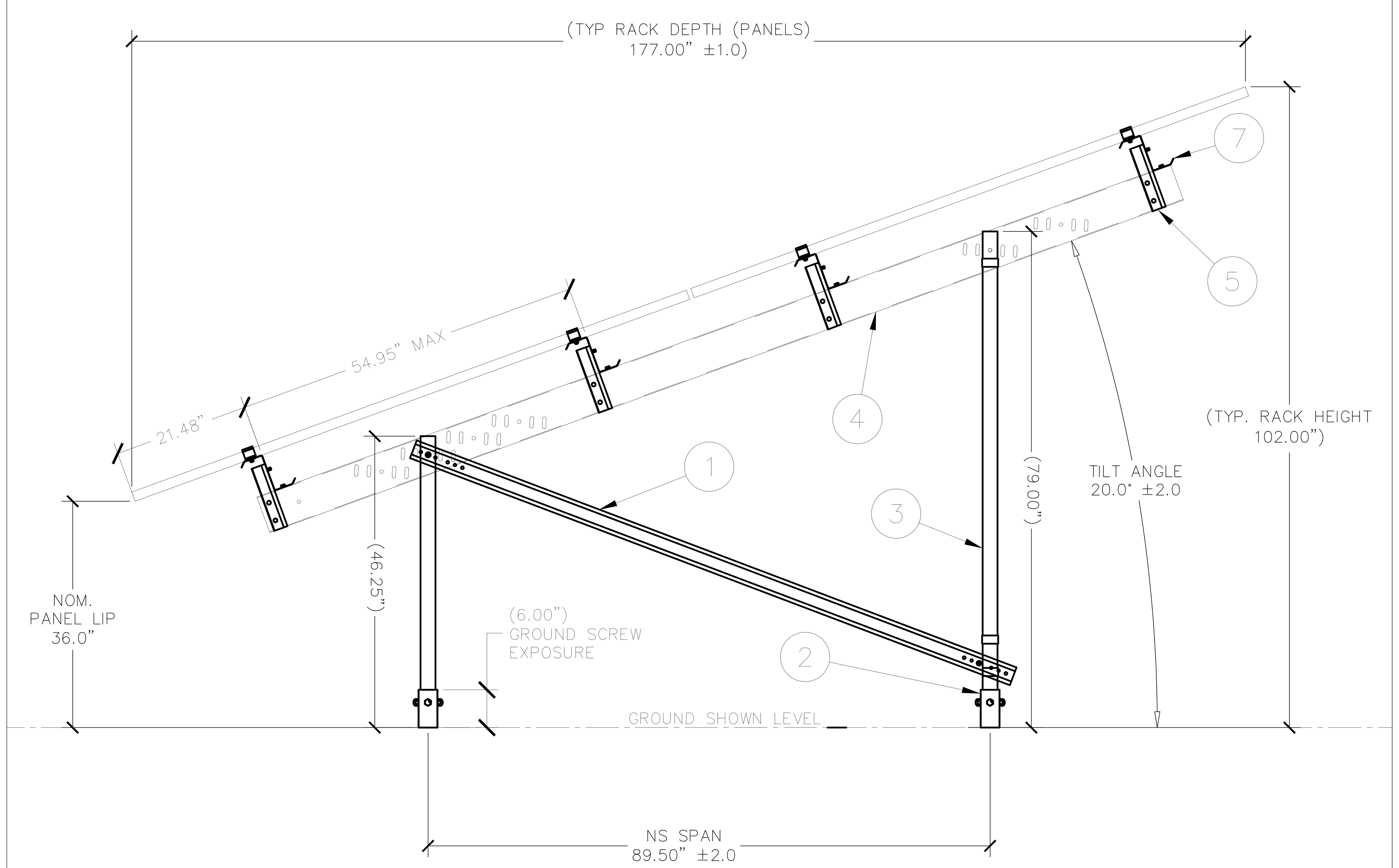
2018 INTERNATIONAL BUILDING CODE

PACKAGE COVERAGE – LOADING AND SETUP RANGES & CONSTANTS

TILT ANGLES:	20°
MAX GROUND SNOW LOAD (PSF):	40
MAX WIND LOADS (MPH):	105
WIND EXPOSURE CATEGORY:	C
MAX SEISMIC Ss:	0.169 g
MAX SEISMIC S1:	0.048 g

PV MODULE: BYD MSTK-33

MAX. PANEL WIDTH:	51.30"
MAX. PANEL LENGTH:	93.86"
MAX. PANEL HEIGHT:	2.00"
MAX. PANEL WEIGHT:	80.00 LBS
RISK CATEGORY:	I
MAX FRONT LIP CLEARANCE:	48"



NOTES: PV MODULE & MODULE RELATED DIMENSIONS THIS DETAIL ARE MAX ALLOWABLE, UNLESS SPECIFIED ELSEWHERE IN THIS PACKET.
DIMENSIONS TO GROUND ARE NOMINAL FROM LEVEL GROUND.

C1 PROFILE VIEW: RACK OVERVIEW

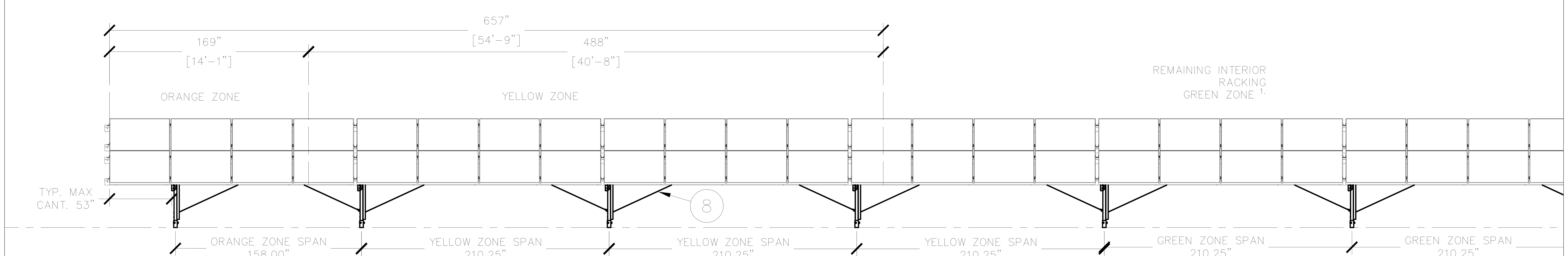
PARTS LIST (BALLOONS THIS SHEET)			
ITEM	DESCRIPTION	SHAPE	DETAIL / SHEET
1	KNEE BRACE	CEE	B2 / S.300
2	GROUND SCREW	POST	D2 / S.200
3	FOUNDATION POST	POST	A6 / S.300
4	NS CHORD	CEE	D1 / S.300
5	ROLL BAR	MIXED	A4 / S.300
6	TRANSVERSE BRACE	HAT	D5 / S.600
7	ZEE PURLIN	ZEE	E1 / S.300
8	CABLE BRACE	CABLE	D4/ S.600

SEE VIEW A1 ON S600 FOR VIEW OF TRANSVERSE BRACE

NOTES:

1. STANDARD FRONT LIP HEIGHT AND TILT ANGLES MEASURED FROM LEVEL GROUND
2. FOUNDATION TESTING, WHERE REQUIRED, SHALL BE DONE ACCORDING TO THE "QUICK TEST METHOD" PER ASTM D1143 & D3689.
3. PRINT DIMENSIONS: DIMENSIONS SHOWN REFLECT POST HEIGHTS ON LEVEL GROUND. ON UNEVEN TERRAIN, REAR FOUNDATION POST HEIGHT WILL BE DICTATED BY FRONT LIP HEIGHT, PANEL TILT, AND NORTH/SOUTH POST SPACING.
4. ADDITIONAL TOLERANCES: POST PLUMBNESS SHOULD BE WITHIN ±2°
5. SPECIAL INSPECTIONS (WHERE REQUIRED):

SPECIAL INSPECTIONS ARE NOT REQUIRED BY APA SOLAR OR THE STRUCTURAL ENGINEER OF RECORD. WHERE REQUIRED BY OWNER, CUSTOMER, AND/OR AUTHORITY HAVING JURISDICTION, MINIMUM INSPECTION SHALL FOLLOW IBC OR LOCAL AHJ SPECIAL INSPECTIONS GUIDELINES.



NOTES: MAX CANTILEVER MEASURED FROM EDGE OF PANEL TO POST CENTER.
MAX SPAN MEASURED FROM PILE CENTER TO PILE CENTER.
POST QUANTITY AS REQUIRED TO SATISFY CANTILEVERS, SPANS, ROW LENGTH, & PANEL QUANTITY
[1] WHERE ALLOWABLE PER THE CALCULATIONS PACKAGE. PROHIBITED AREAS SHALL REMAIN ZONED YELLOW.

IMAGE REFERENCE ONLY. NOT INDICATIVE OF REQUIRED QUANTITIES.

A1 ELEVATION VIEW FROM FRONT (NORTH-FACING)

CUSTOMER

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DOCUMENT NAME: STRUCTURAL PRINT PACKAGE

SITE STREET ADDRESS: 20-345 COUNTY ROAD X

SITE CITY, STATE, ZIP: RIDGEVILLE CORNERS, OH 43555

SHEET REVISIONS		
REV.	DESCRIPTION	DATE
A	INITIAL RELEASE	4/28/2023

SAMPLE

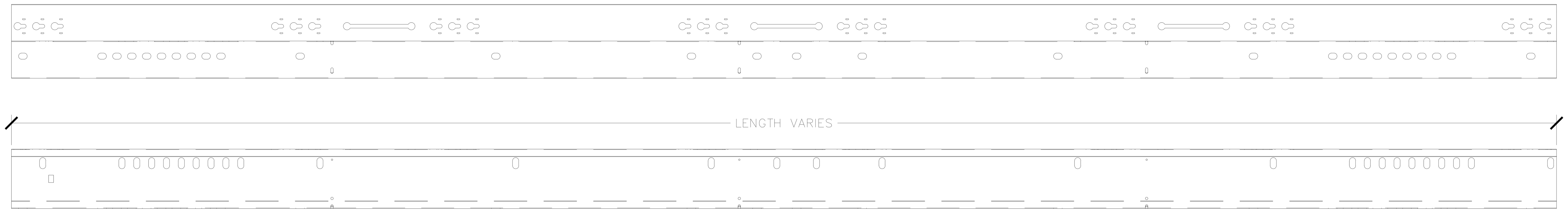
APPROVED

DRAWN	REVIEWED	APPROVED	SIZE
SDS	TM	JDI	D

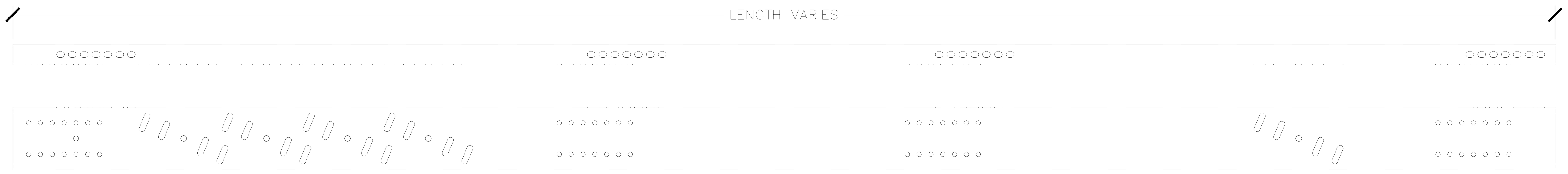
SHEET NAME: RACKING OVERVIEW

PROJECT NUMBER: SAMPLE

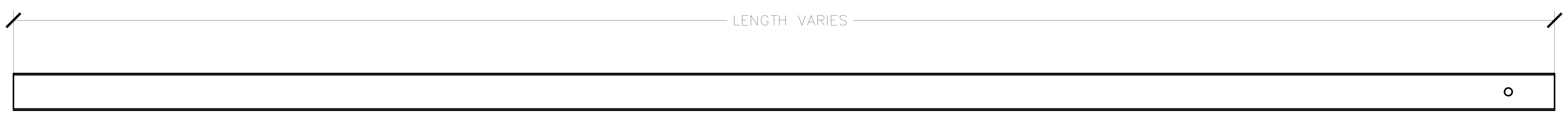
DRAWING NUMBER: S.100 REV. A



E1 SIDE/TOP: ZEE PURLIN

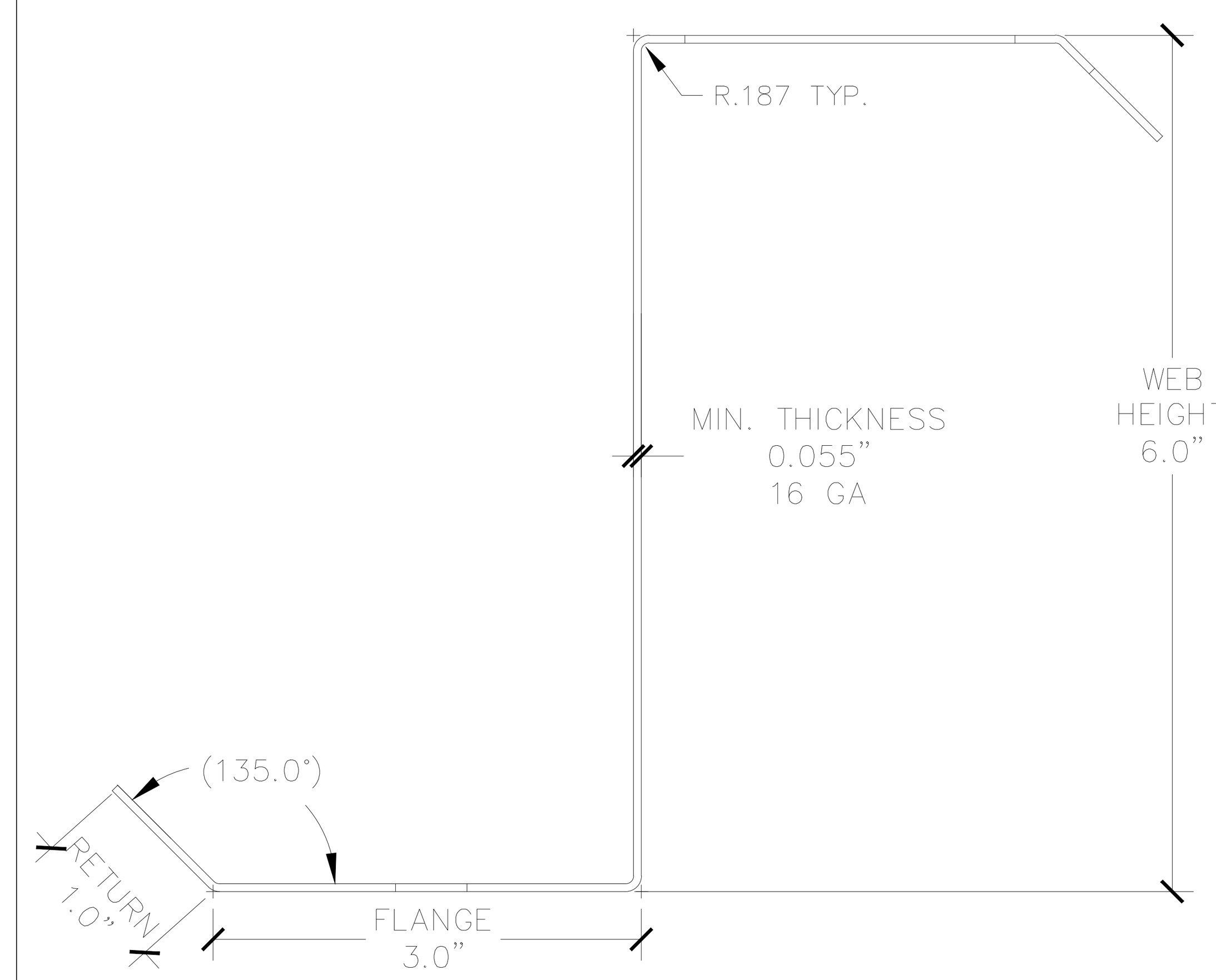


D1 SIDE/TOP: NS CHORD



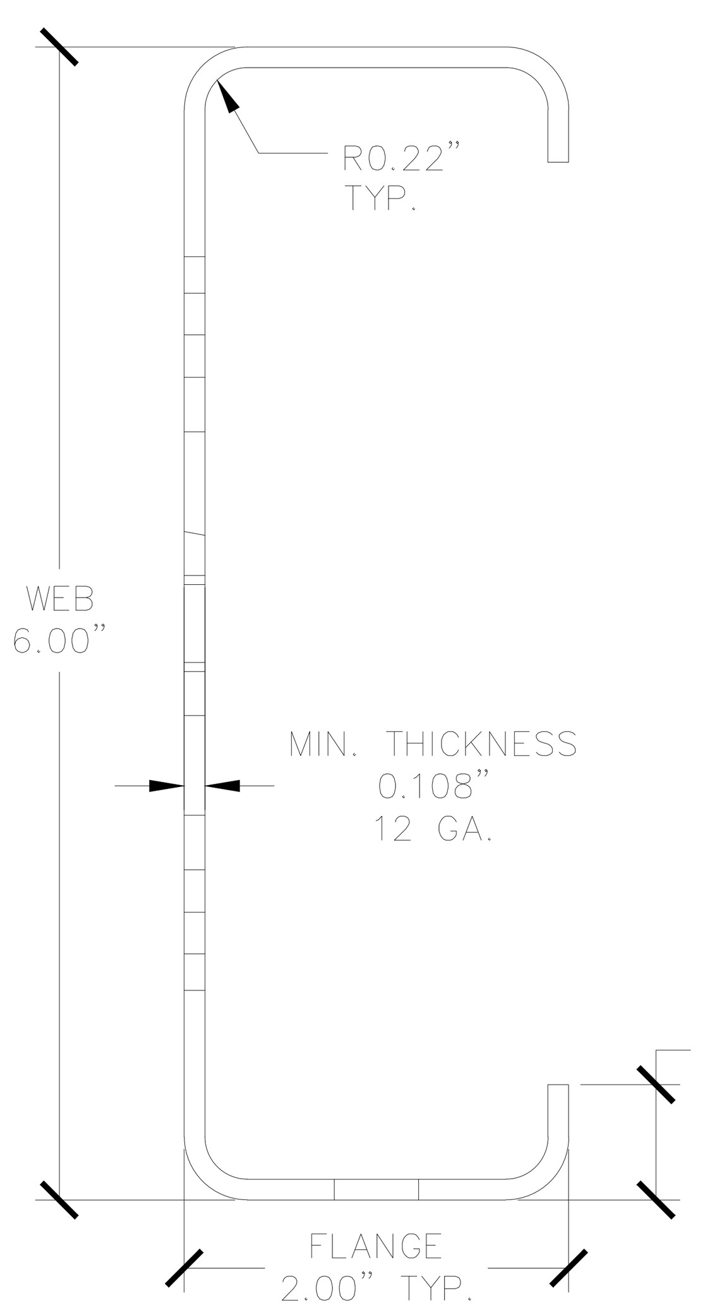
C1 SIDE: FOUNDATION POST

MATERIAL: A653 STR. STL.
STRENGTH: MIN. YIELD (Fy): 80 KSI.



D5 PART: ZEE PURLIN

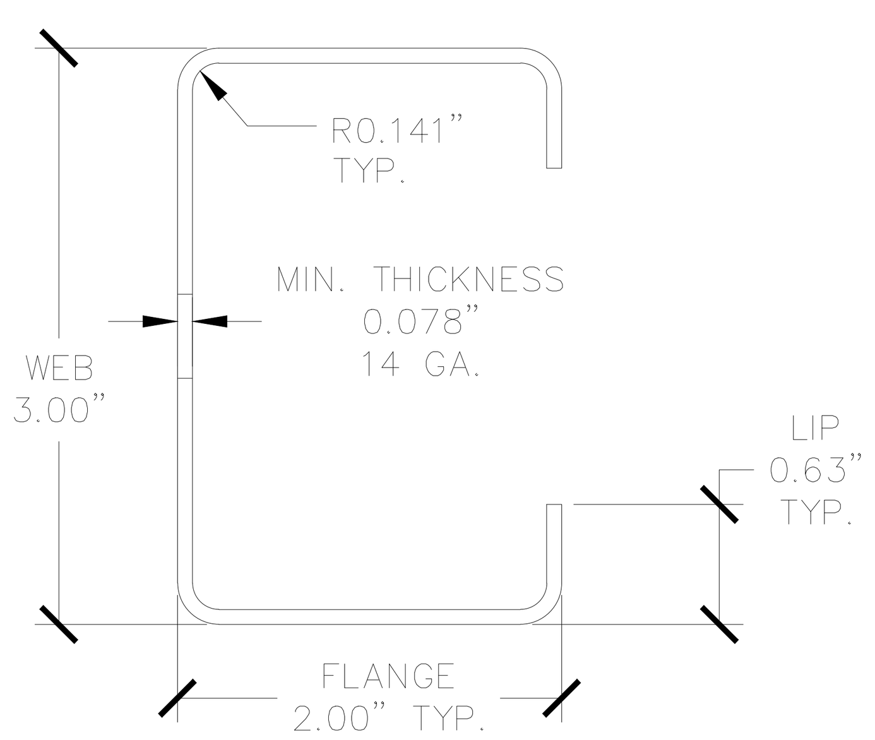
MATERIAL: A653 HSLAS
STRENGTH: MIN. YIELD (Fy): 80 KSI.



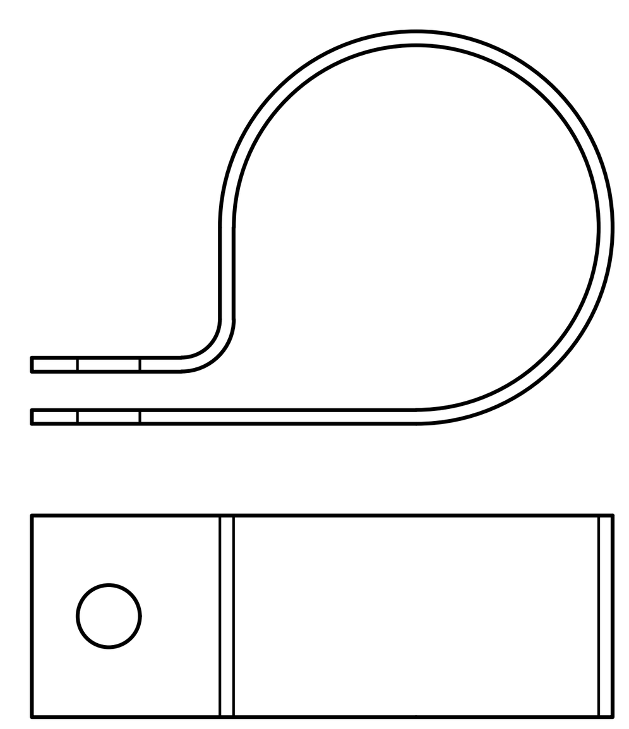
A1 PROFILE: NS CHORD

B2 SIDE: KNEE BRACE

MATERIAL: A653 SS GR 80 CL1
STRENGTH: MIN. YIELD (Fy): 80 KSI.

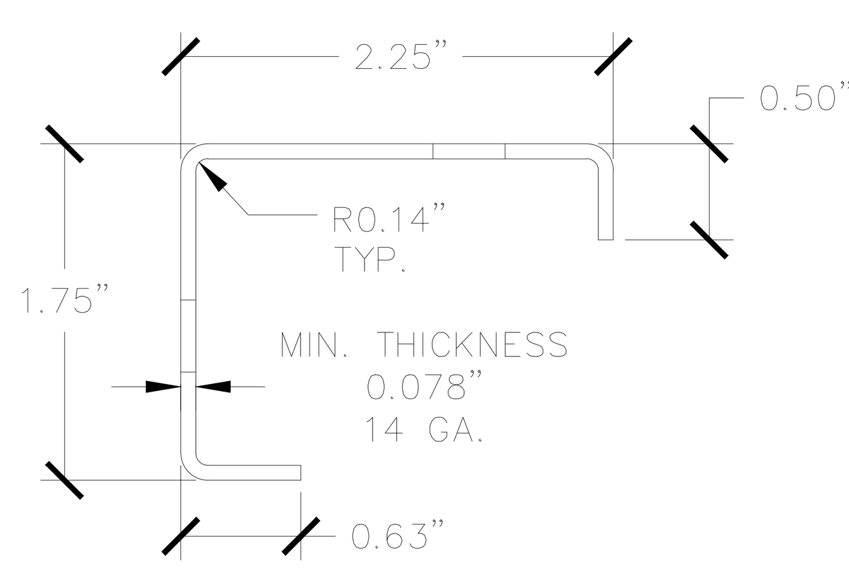


A2 PROFILE: KNEE BRACE

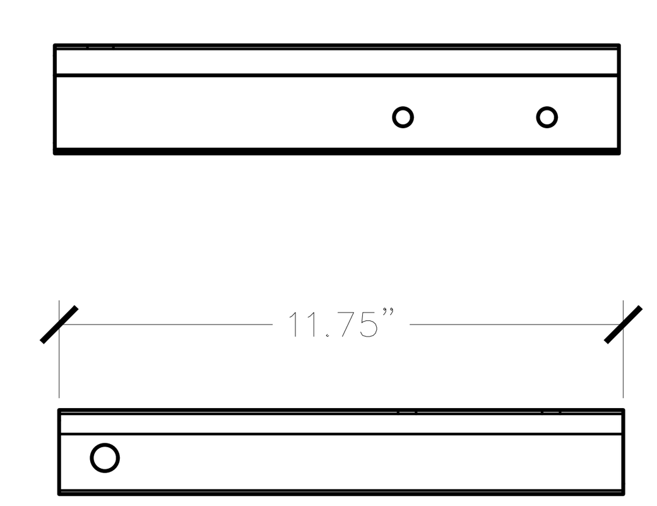


A3 SIDE: BRACE CLAMP

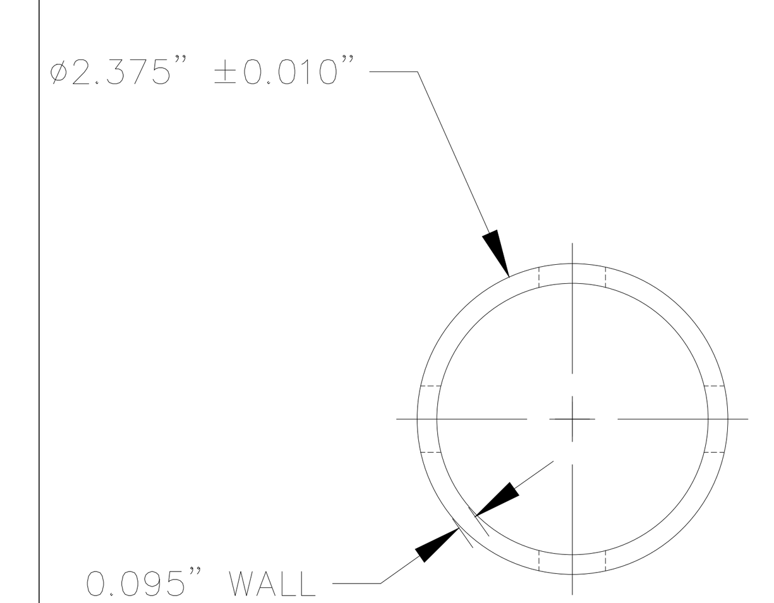
MATERIAL: A572 CF STR. STL.
STRENGTH: MIN. YIELD (Fy): 50 KSI.



A4 PROFILE: ROLL BAR



A5 SIDE/TOP: ROLL BAR



A6 PROFILE: FOUNDATION POST

CUSTOMER

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SITE CITY, STATE, ZIP: RIDGEVILLE CORNERS, OH 43555

SHEET REVISIONS

REV.	DESCRIPTION	DATE
A	INITIAL RELEASE	4/28/2023

SAMPLE

APPROVED

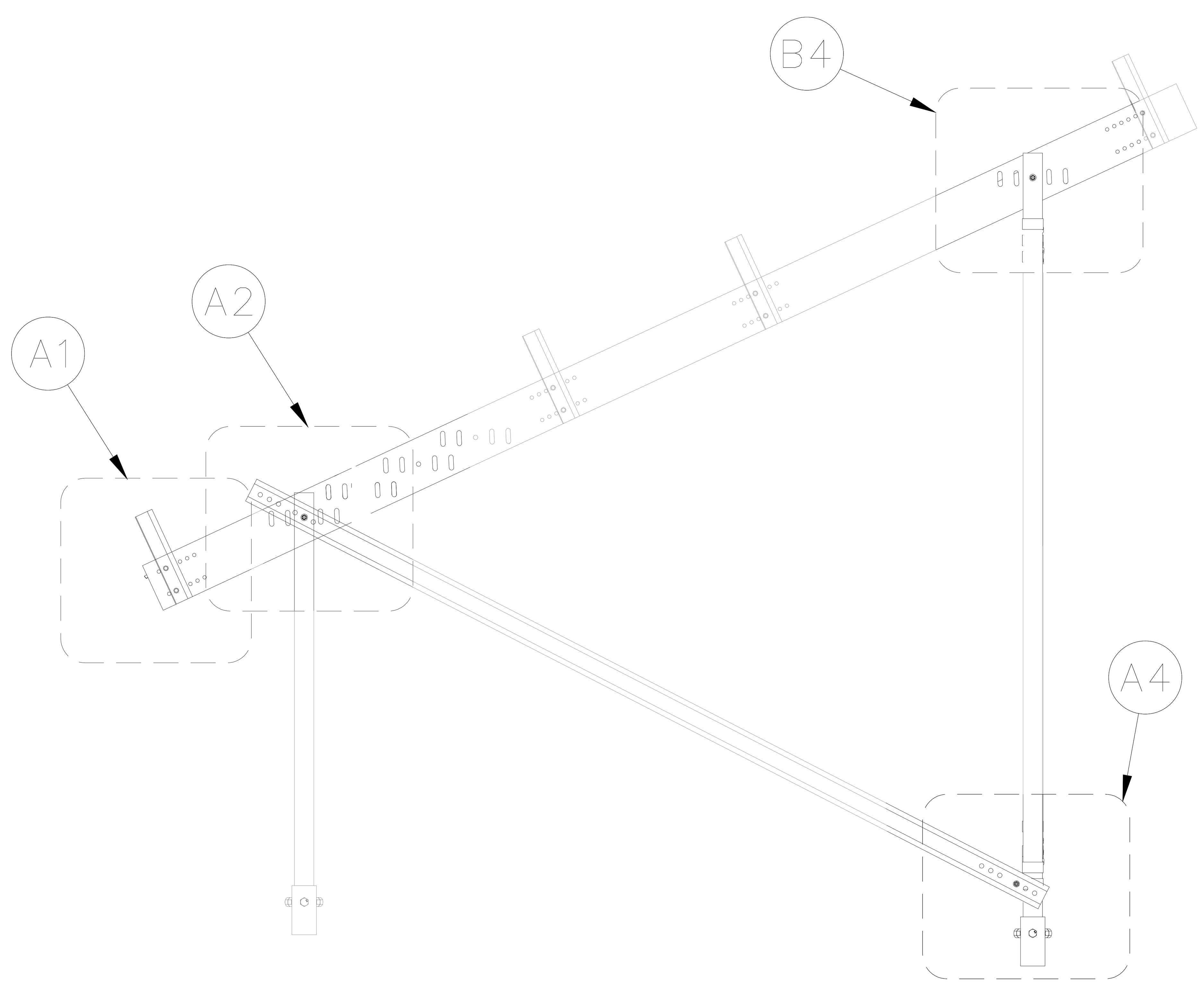
DRAWN	REVIEWED	APPROVED	SIZE
SDS	TM	JDI	D

SHEET NAME: STRUCTURAL COMPONENTS

PROJECT NUMBER: SAMPLE

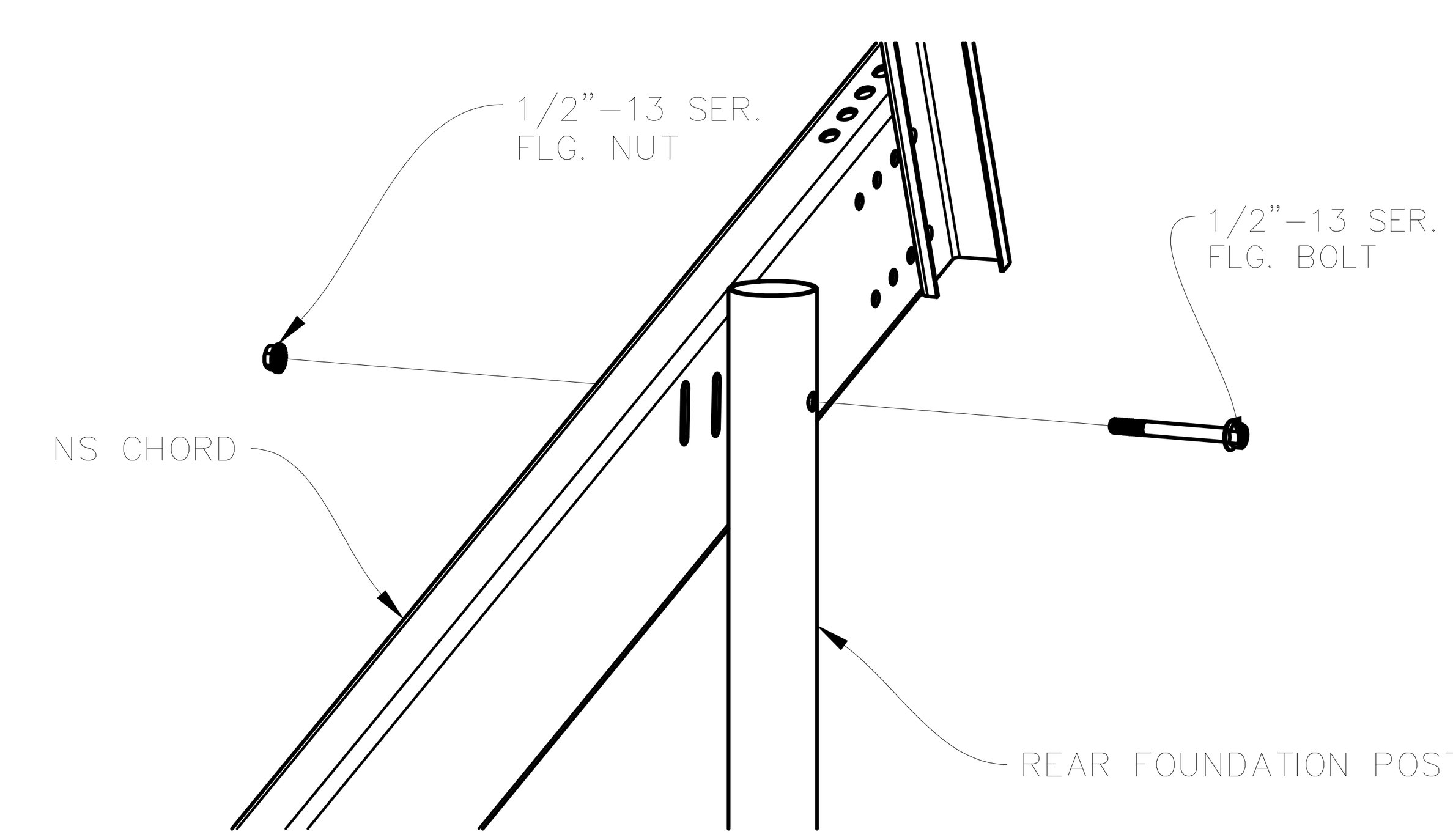
DRAWING NUMBER: S.300 REV. A

IMAGE FOR REFERENCE ONLY



B1 FOUNDATION SET CONNECTIONS OVERVIEW

IMAGE FOR REFERENCE ONLY



B4 CONNECTION: REAR POST–TO–NS CHORD

NOTES:

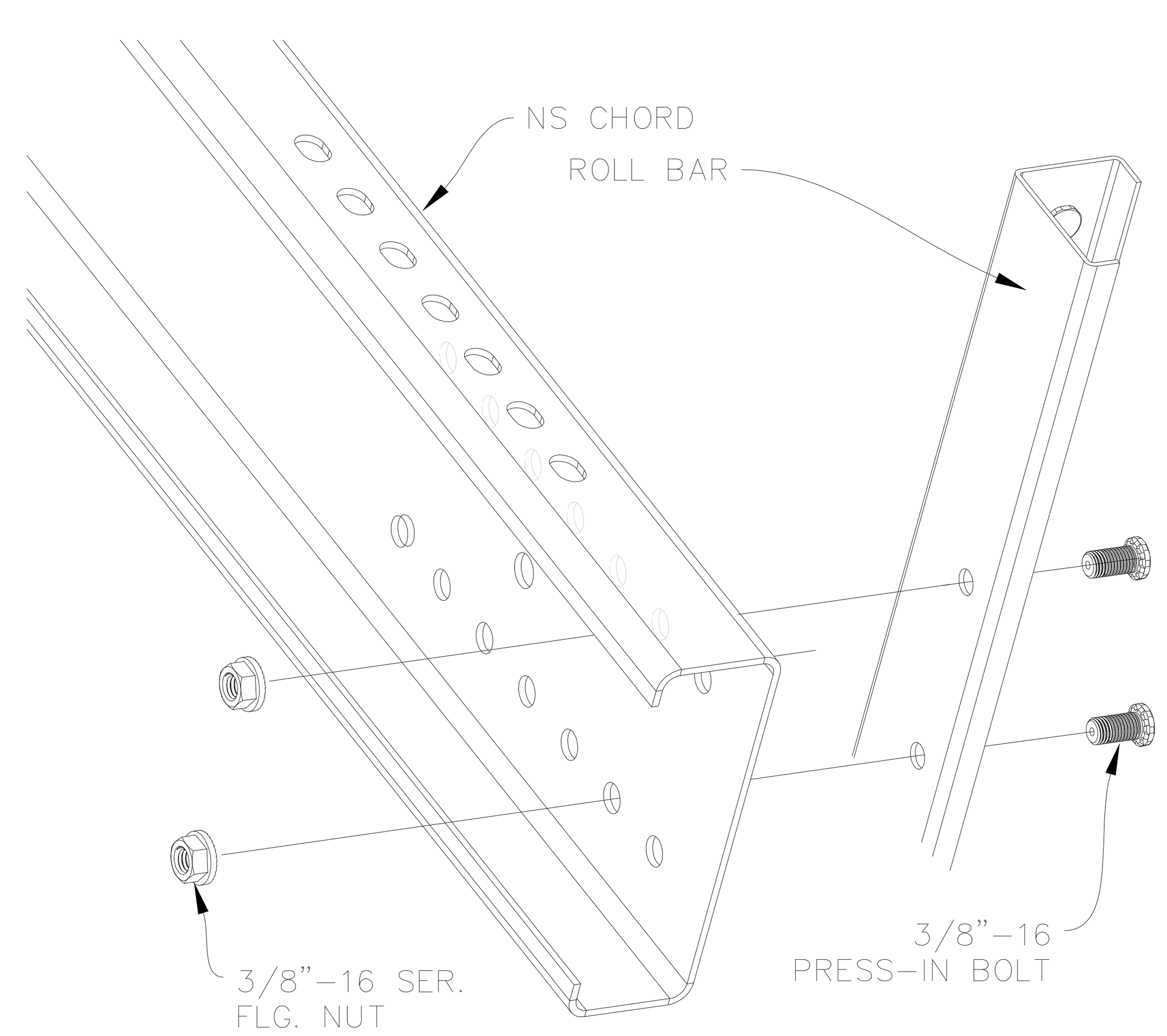
1. HARDWARE TORQUE VALUES:

   3/8"–16 STAINLESS STEEL
   MIN.: 17.5 FT–LBS
   NOM.: 19.6 FT–LBS
   MAX.: 50.0 FT–LBS

   1/2"–13 STAINLESS STEEL
   MIN: 25 FT–LBS

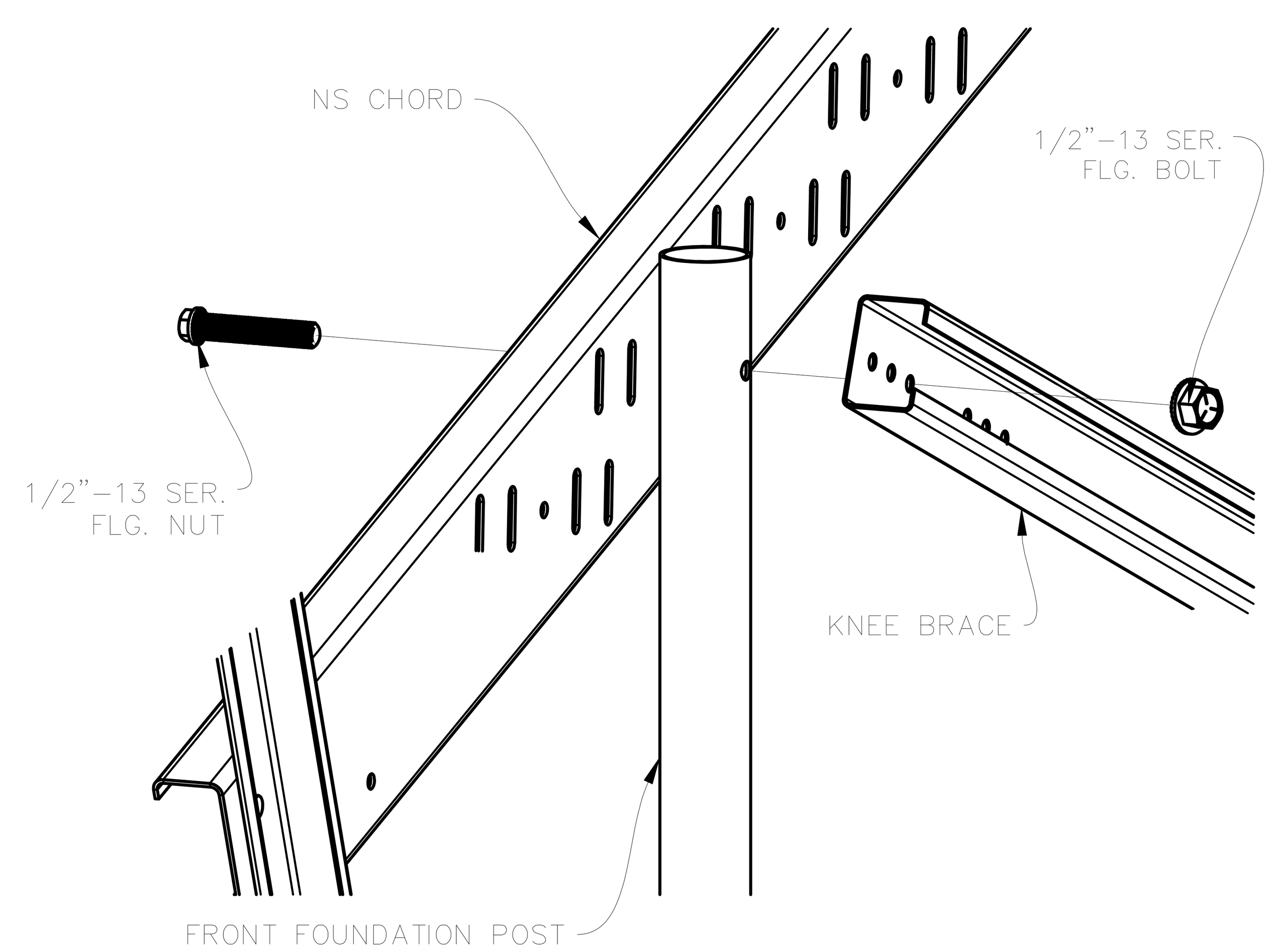
2. DEPICTED HARDWARE AND PART PLACEMENT NOT INDICATIVE OF PREFERRED OR REQUIRED POSITIONS.
3. HOLE/SLOT PATTERNS IN PARTS ALLOW FOR DEVIATION FROM NOMINAL DIMENSIONS, MULTIPLE PART POSITIONS, AND MULTIPLE TILT ANGLES.
4. SEE INSTALLATION MANUAL FOR SETUP INSTRUCTIONS.
5. SERRATED FLANGED BOLTS MAY BE REPLACED WITH EQUIVALENT PRESS–IN BOLTS. SEE NOTE 10 FOR MORE OPTIONS.
6. PRESS–IN BOLTS, WHERE PRESENT, TO BE INSTALLED TO MANUFACTURERS RECOMMENDED VALUES.
7. OTHER SPECIFIC CONNECTIONS ELSEWHERE IN PRINT SET.
8. ROLL BAR MUST CONNECT TO THE CORRECT HOLES IN CEE CHANNEL (INNER, OR OUTER TYPICALLY), AS DETERMINED BY PV MODULE MANUFACTURERS ALLOWABLE CLAMPING ZONE.
9. USE CORRECT NOMINAL HOLES IN CEE TO CONNECT TO FOUNDATION POST, AS INDICATED. ADJACENT HOLES AND SLOTS FOR FIELD ADJUSTMENTS.
10. SERRATED HARDWARE MAY BE REPLACED WITH EQUIVALENT HARDWARE WITH WASHERS IF NECESSARY.
11. IN ALL DETAILS, THE PRESENCE OF TWO SETS OF HARDWARE INDICATES THE REQUIREMENT OF TWO SETS OF HARDWARE.
12. STAINLESS STEEL HARDWARE MAY BE REPLACED WITH GALVANIZED STEEL HARDWARE OR CORROSION AND STRENGTH COMPARABLE HARDWARE MATERIALS AND FINISHES.
13. UNLESS NOTED OTHERWISE, ALL HARDWARE MAY BE INSTALLED IN EITHER DIRECTION (NUT/BOLT MAY BE ON EITHER SIDE OF CONNECTION).
14. WHEN NECESSARY, ADDITIONAL HOLES MAY BE DRILLED TO COMPLETE CONNECTION. ENGINEERING SHALL BE CONTRACTED PRIOR TO FIELD MODIFICATIONS OF PARTS.

IMAGE FOR REFERENCE ONLY



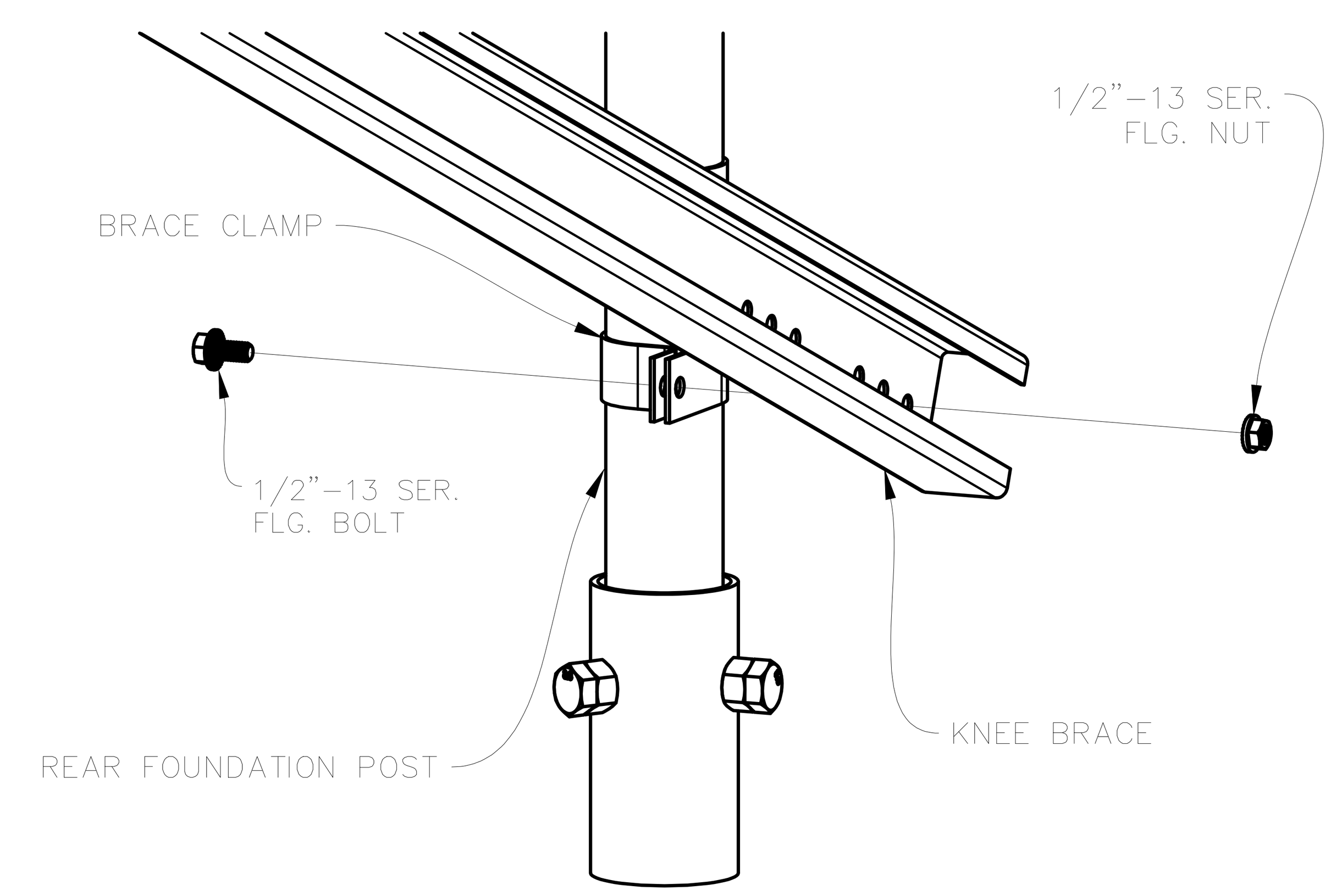
ATTACHED TO OUTER HOLE SET FOR REFERENCE ONLY. SEE NOTES.

A1 CONNECTION: ROLL BAR–TO–NS CHORD



A2 CONNECTION: KNEE BRACE–TO–FRONT POST

IMAGE FOR REFERENCE ONLY



A4 KNEE BRACE–TO–REAR POST

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SITE CITY, STATE, ZIP: RIDGEVILLE CORNERS, OH 43555

SHEET REVISIONS

REV.	DESCRIPTION	DATE
A	INITIAL RELEASE	4/28/2023

SAMPLE

APPROVED

DRAWN	REVIEWED	APPROVED	SIZE
SDS	TM	JDI	D

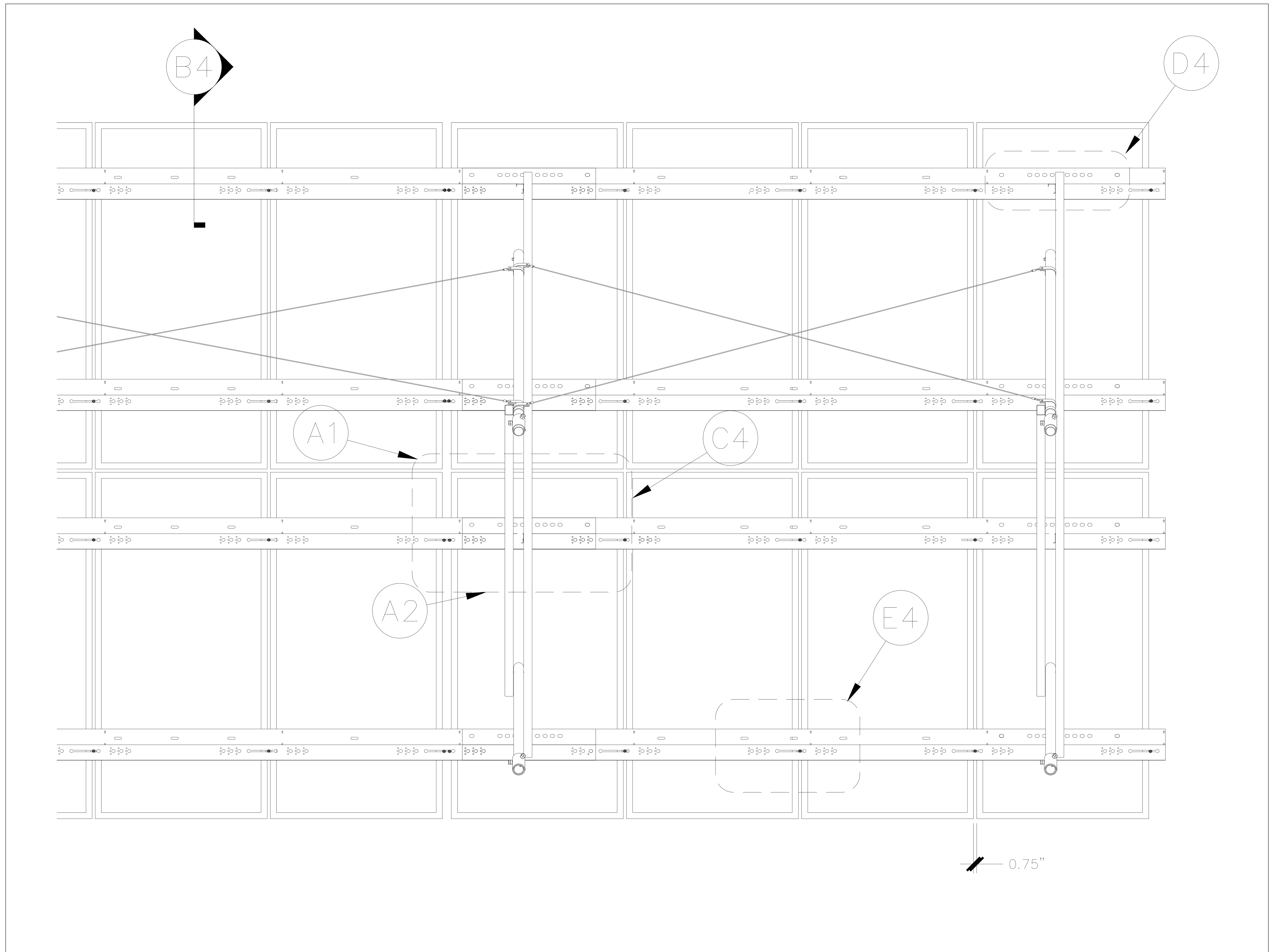
SHEET NAME: CONNECTIONS

PROJECT NUMBER: SAMPLE

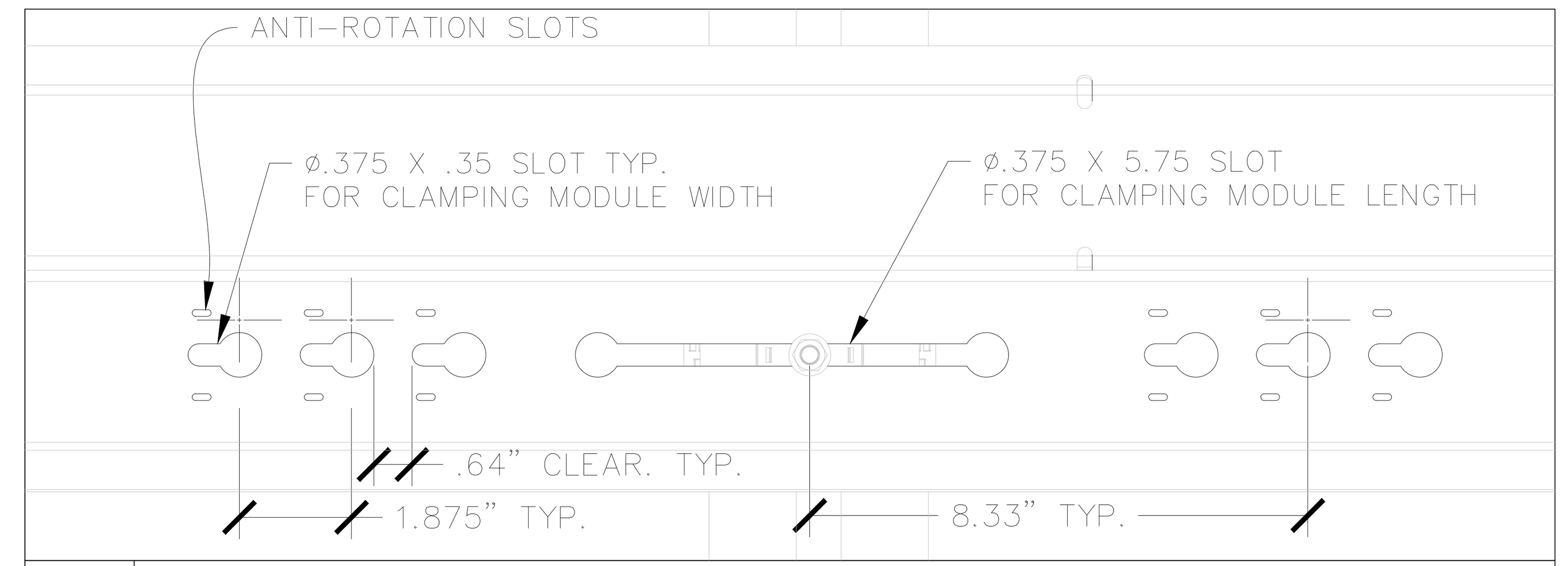
DRAWING NUMBER: S.400 REV.: A

SCALE IS REDUCED WHEN SHEET SIZE IS 11" x 17".

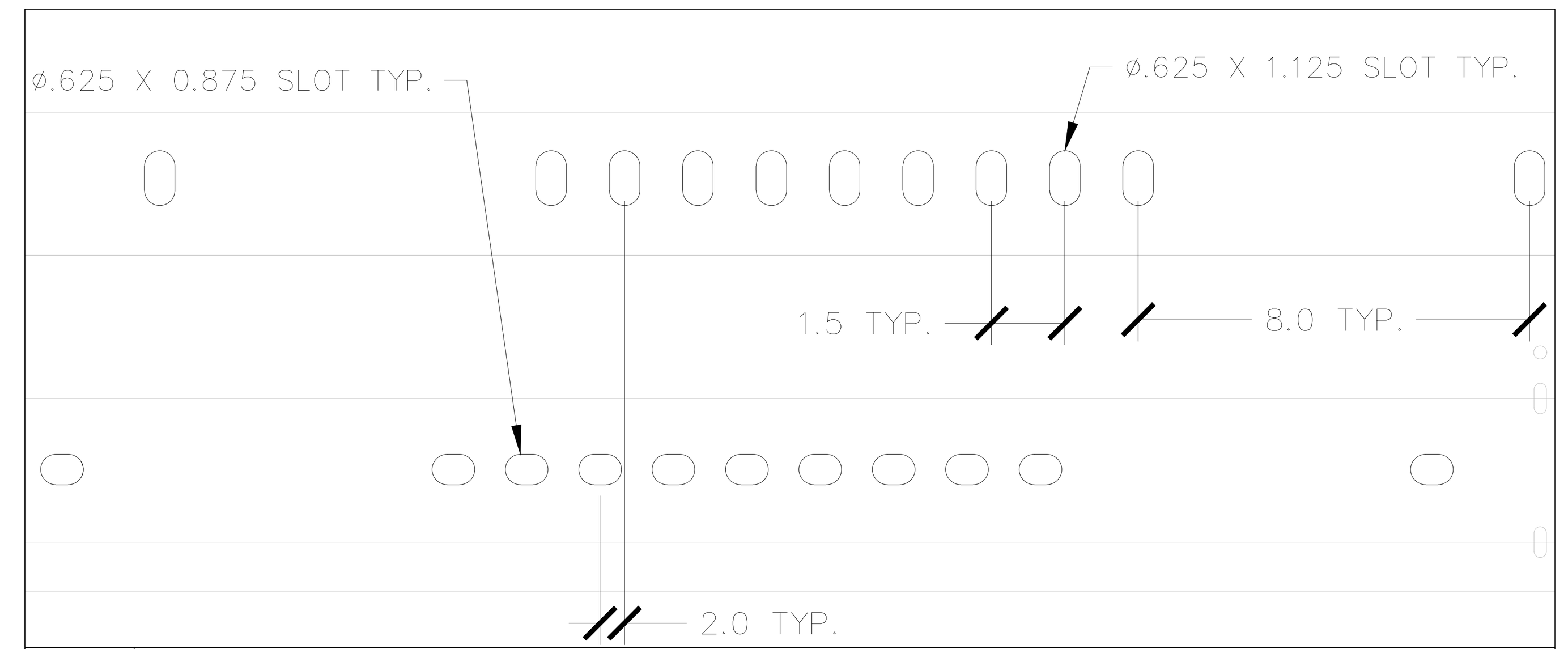
4/28/2023 2:33:20 PM SHANNONS 03:30:09 i:\shannons\example structural docs\apa_str_titan_duo_4 rail_sample.dwg



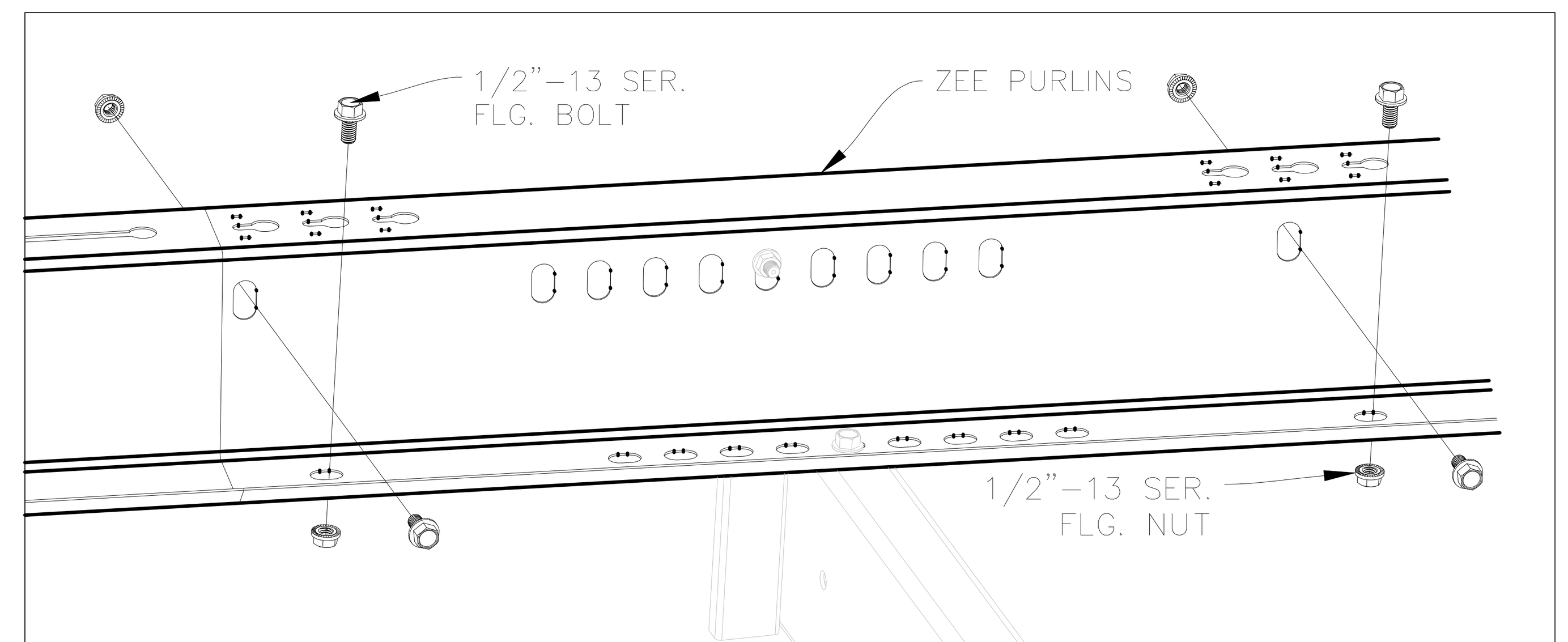
B1 OVERVIEW: ZEE PURLIN CONNECTIONS (RACK UNDERSIDE)



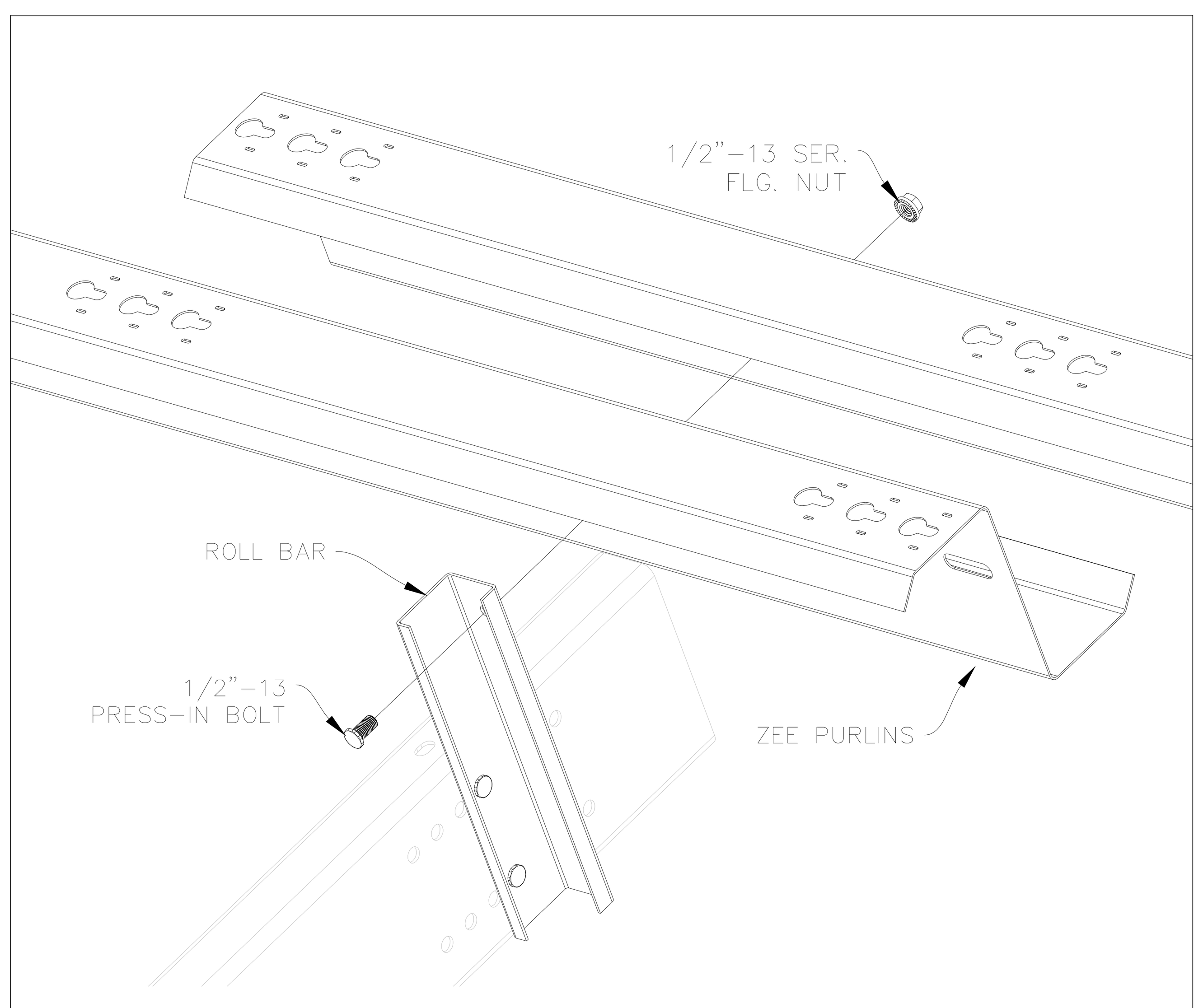
E4 DETAIL: ZEE PURLIN PANEL SLOTS



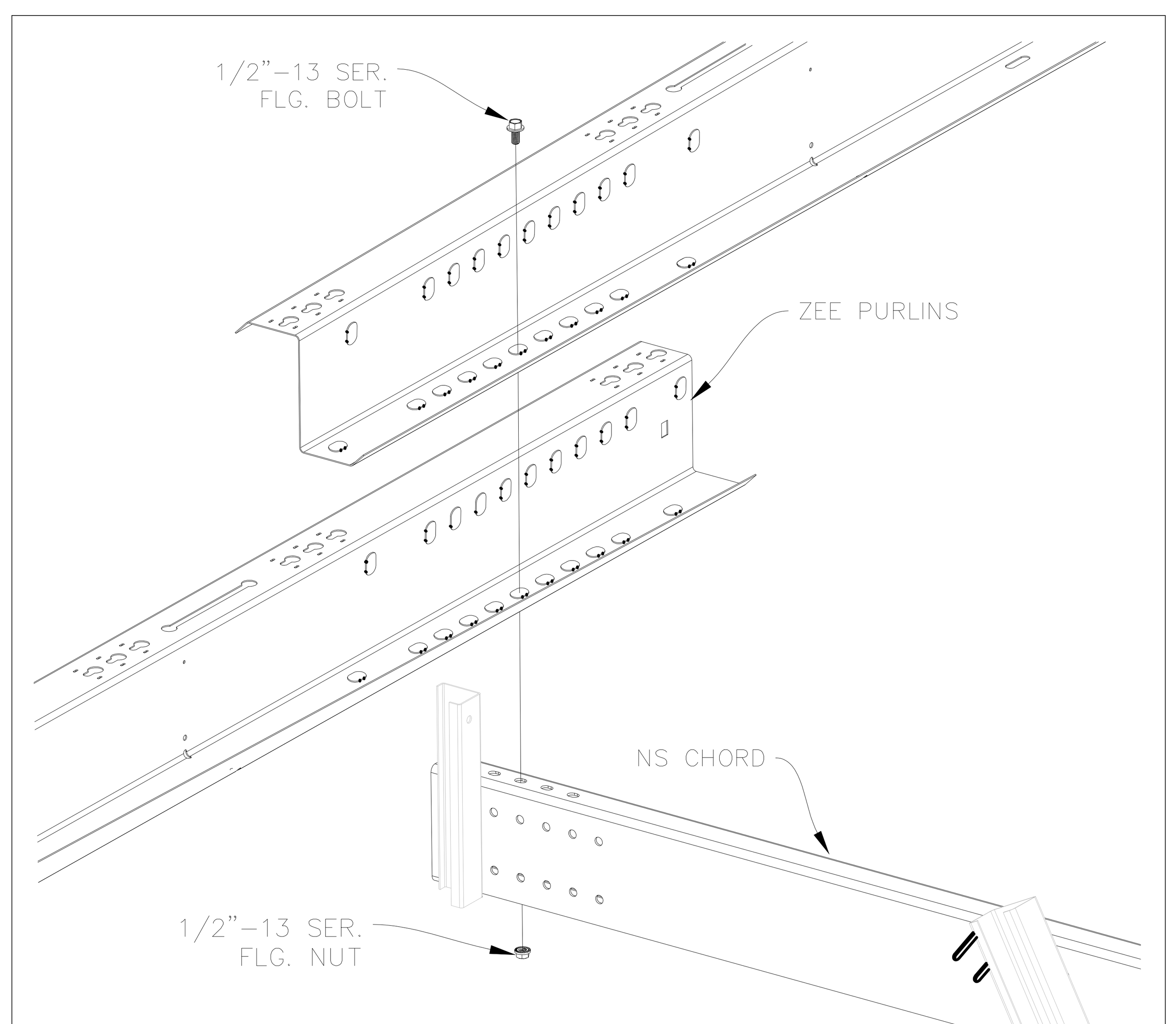
D4 DETAIL: ZEE PURLIN SPLICE SLOTS



C4 CONNECTION: ZEE-TO-ZEE PURLINS SPLICE



A1 CONNECTION: ZEE PURLINS-TO-ROLL BAR



A2 CONNECTION: ZEE PURLINS-TO-NS CHORD

NOTES:

1. HARDWARE TORQUE VALUES:

   3/8"-16 STAINLESS STEEL
   MIN.: 17.5 FT-LBS
   NOM.: 19.6 FT-LBS
   MAX.: 50.0 FT-LBS

2. DEPICTED HARDWARE AND PART PLACEMENT NOT INDICATIVE OF PREFERRED OR REQUIRED POSITIONS.
3. HOLE/SLOT PATTERNS IN PARTS ALLOW FOR DEVIATION FROM NOMINAL DIMENSIONS, MULTIPLE PART POSITIONS, AND MULTIPLE TILT ANGLES.
4. SEE INSTALLATION MANUAL FOR SETUP INSTRUCTIONS.
5. SERRATED FLANGED BOLTS MAY BE REPLACED WITH EQUIVALENT PRESS-IN BOLTS.
6. PRESS-IN BOLTS, WHERE PRESENT, TO BE INSTALLED TO MANUFACTURERS RECOMMENDED VALUES.
7. OTHER SPECIFIC CONNECTIONS ELSEWHERE IN PRINT SET.
8. SERRATED HARDWARE MAY BE REPLACED WITH EQUIVALENT HARDWARE WITH WASHERS IF NECESSARY.
9. IN ALL DETAILS, THE PRESENCE OF TWO SETS OF HARDWARE INDICATES THE REQUIREMENT OF TWO SETS OF HARDWARE.
10. STAINLESS STEEL HARDWARE MAY BE REPLACED WITH GALVANIZED STEEL HARDWARE OR CORROSION AND STRENGTH COMPARABLE HARDWARE MATERIALS AND FINISHES.
11. UNLESS NOTED OTHERWISE, ALL HARDWARE MAY BE INSTALLED IN EITHER DIRECTION (NUT/BOLT MAY BE ON EITHER SIDE OF CONNECTION).
12. WHEN NECESSARY, ADDITIONAL HOLES MAY BE DRILLED TO COMPLETE CONNECTION. ENGINEERING SHALL BE CONTRACTED PRIOR TO FIELD MODIFICATIONS OF PARTS.
13. CONNECTION IN DETAIL A1 & A2 SHOWN IN NOMINAL POSITION. ACTUAL CONNECTION MAY BE ±8".
14. WHEN CONNECTIONS IN DETAIL A1 & A2 ARE AT THEIR MAX/MIN POSITIONS (±2") INTERFERING SPLICE HARDWARE MAY BE RELOCATED TO NEXT NEAREST SLOTS.
15. WHERE PRESENT, TRANSVERSE BRACE MAY UTILIZE LOWER SPLICE BOLTS. SEE CONNECTIONS SHEET FOR MORE INFORMATION.
16. ZEE-TO-ZEE SPLICE SHALL ALWAYS OVERLAP MINIMUM 32", AS INDICATED, EXCEPT AT ENDS OF ROW, WHERE NO SPLICE IS REQUIRED.
17. SPLICE MAY OVERLAP IN EITHER DIRECTION.
18. ZEE PURLIN MATERIAL AND FINISH ARE MANUFACTURED TO SPECIFICATIONS THAT MEET OR EXCEED OUR STANDARD PRODUCT WARRANTY.
19. ZEE PURLINS GALVANIZED TO CONFORM TO A MINIMUM THICKNESS DESIGNATION EQUAL TO G90 OR INLINE GALVANIZED TO COMPARABLE THICKNESS AS PER ASTM A1057.
20. TYPICAL ZEE PURLIN RETURN LIP ANGLE SHOWN. ACTUAL ANGLE MAY VARY.
21. SLOT DIMENSIONS FOR REFERENCE ONLY. FINAL SHAPE, FREQUENCY, AND DIMENSIONS MAY VARY.
22. LENGTH OF PURLIN VARIES BY PROJECT AND LOCATION WITHIN ARRAY.

CUSTOMER

RACKING PROVIDER

APA SOLAR RACKING
20-345 COUNTY ROAD X
RIDGEVILLE CORNERS, OHIO 43555
(P) 419.267.5280
(F) 419.267.5214
WWW.APASOLAR.COM

RACKING TYPE

TITAN DUO

PROFESSIONAL SEAL/STAMP

DOCUMENT NAME: STRUCTURAL PRINT PACKAGE
SITE STREET ADDRESS: 20-345 COUNTY ROAD X
SITE CITY, STATE, ZIP: RIDGEVILLE CORNERS, OH 43555

SHEET REVISIONS

REV.	DESCRIPTION	DATE
A	INITIAL RELEASE	4/28/2023

SAMPLE

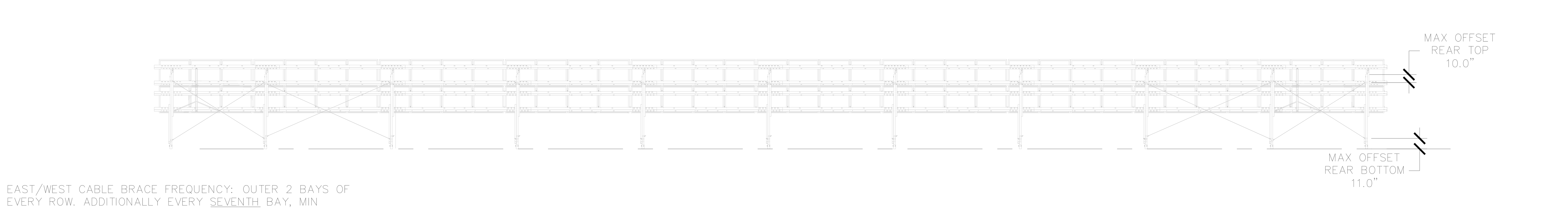
APPROVED

DRAWN	REVIEWED	APPROVED	SIZE
SDS	TM	JDI	D

SHEET NAME: STRUCTURAL PURLINS

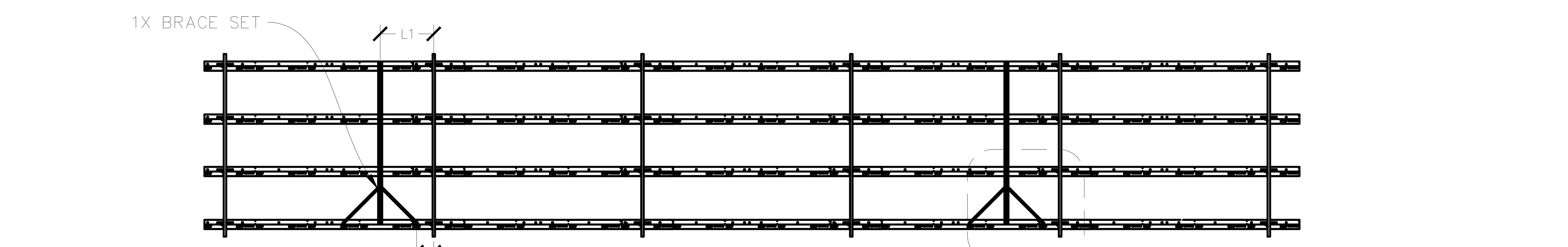
PROJECT NUMBER: SAMPLE

DRAWING NUMBER: S.500 REV. A



EAST/WEST CABLE BRACE FREQUENCY: OUTER 2 BAYS OF EVERY ROW. ADDITIONALLY EVERY SEVENTH BAY, MIN.

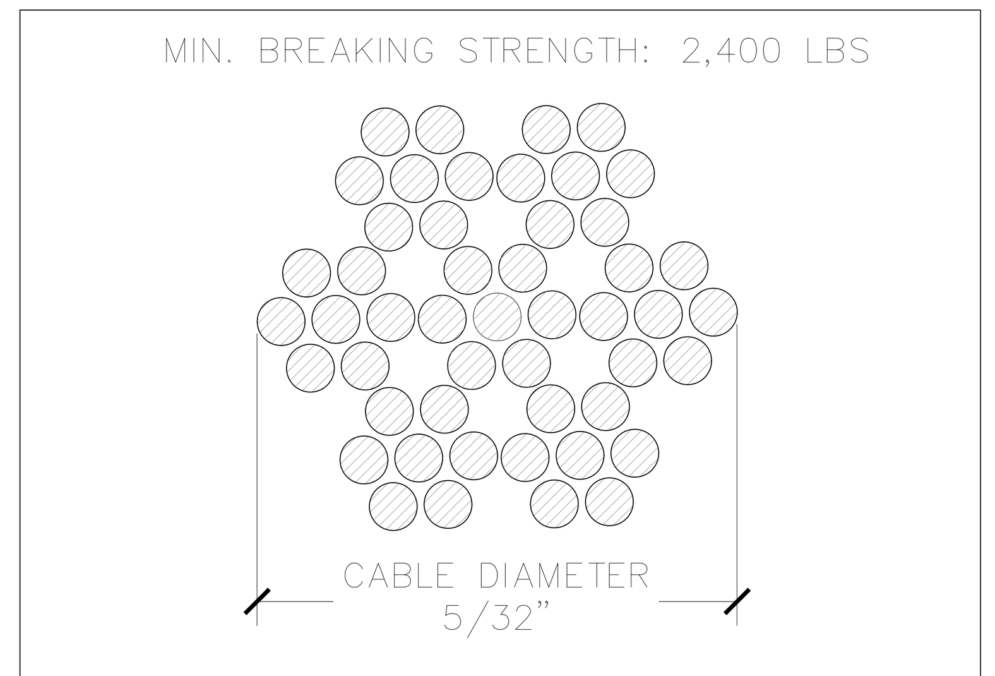
E1 REAR VIEW: CABLE BRACE FREQUENCY



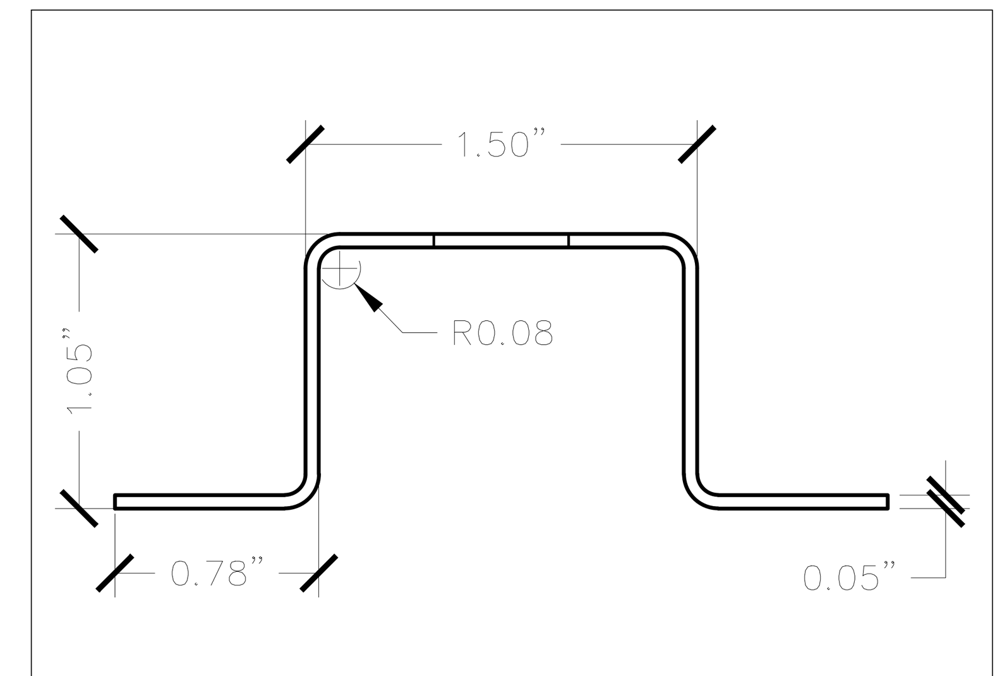
TRANSVERSE BRACE FREQUENCY:
1X BRACE SET AT FIRST & LAST SPLICE PER ROW
1X ADDITIONAL SET EVERY 200', MIN.

TRANSVERSE BRACE LOCATION FROM CHORD		
MODULES PER BAY	L1	L2
>3	(70.25")	(12.00")
<4	(52.00")	(14.00")

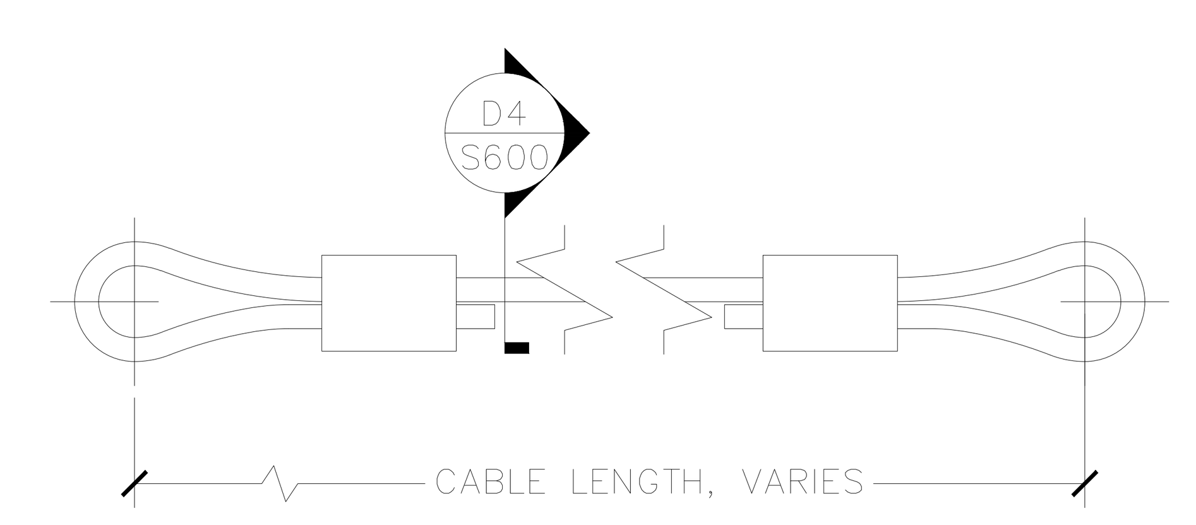
D1 BOTTOM VIEW: TRANSVERSE BRACE LOCATIONS



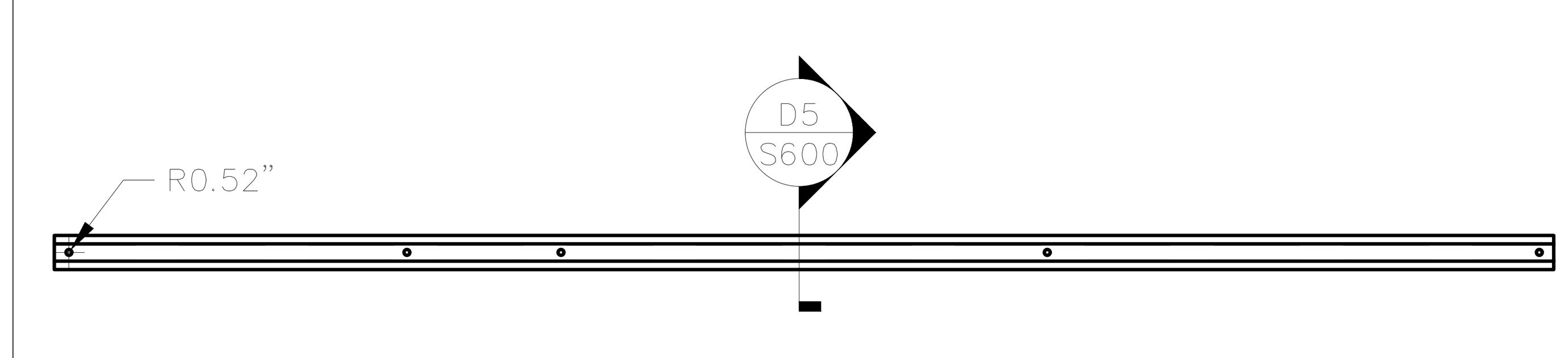
D4 SEC.: CABLE BRACE



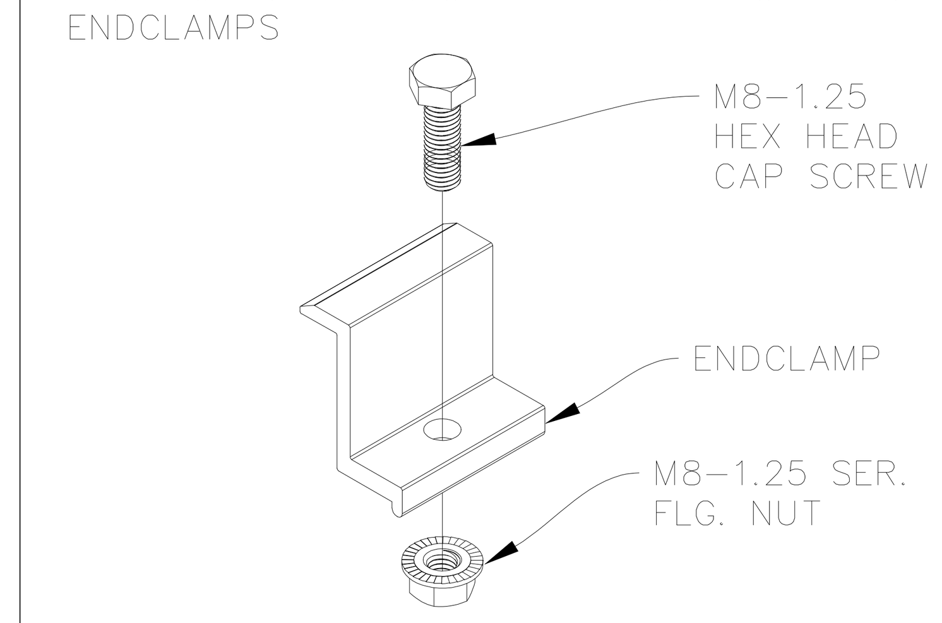
D5 SECTION: TVS BRACE



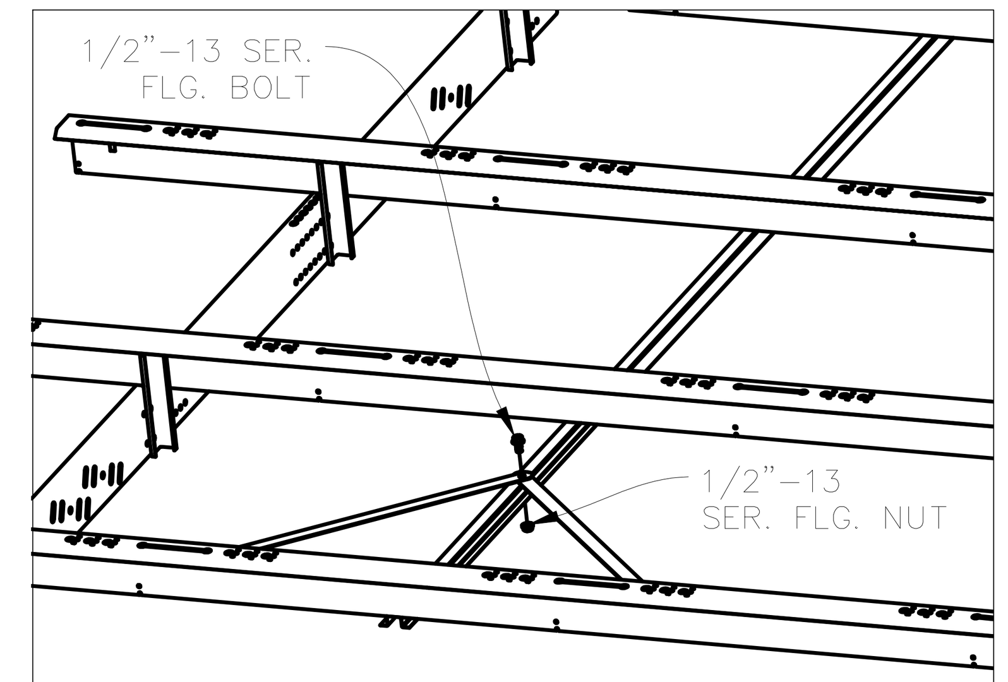
C1 PART: CABLE BRACE



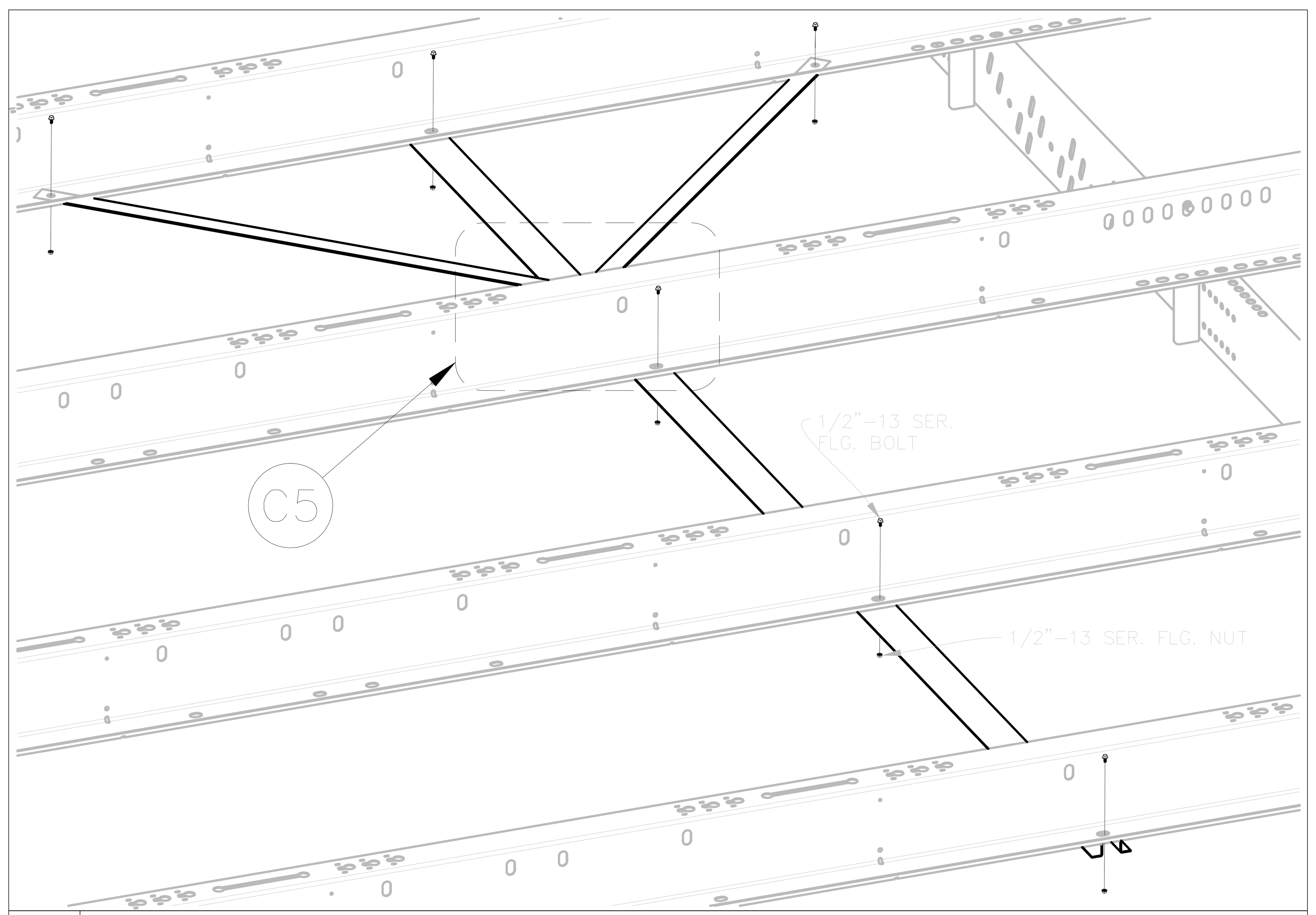
C2 PART: TRANSVERSE BRACE (TVS BRACE)



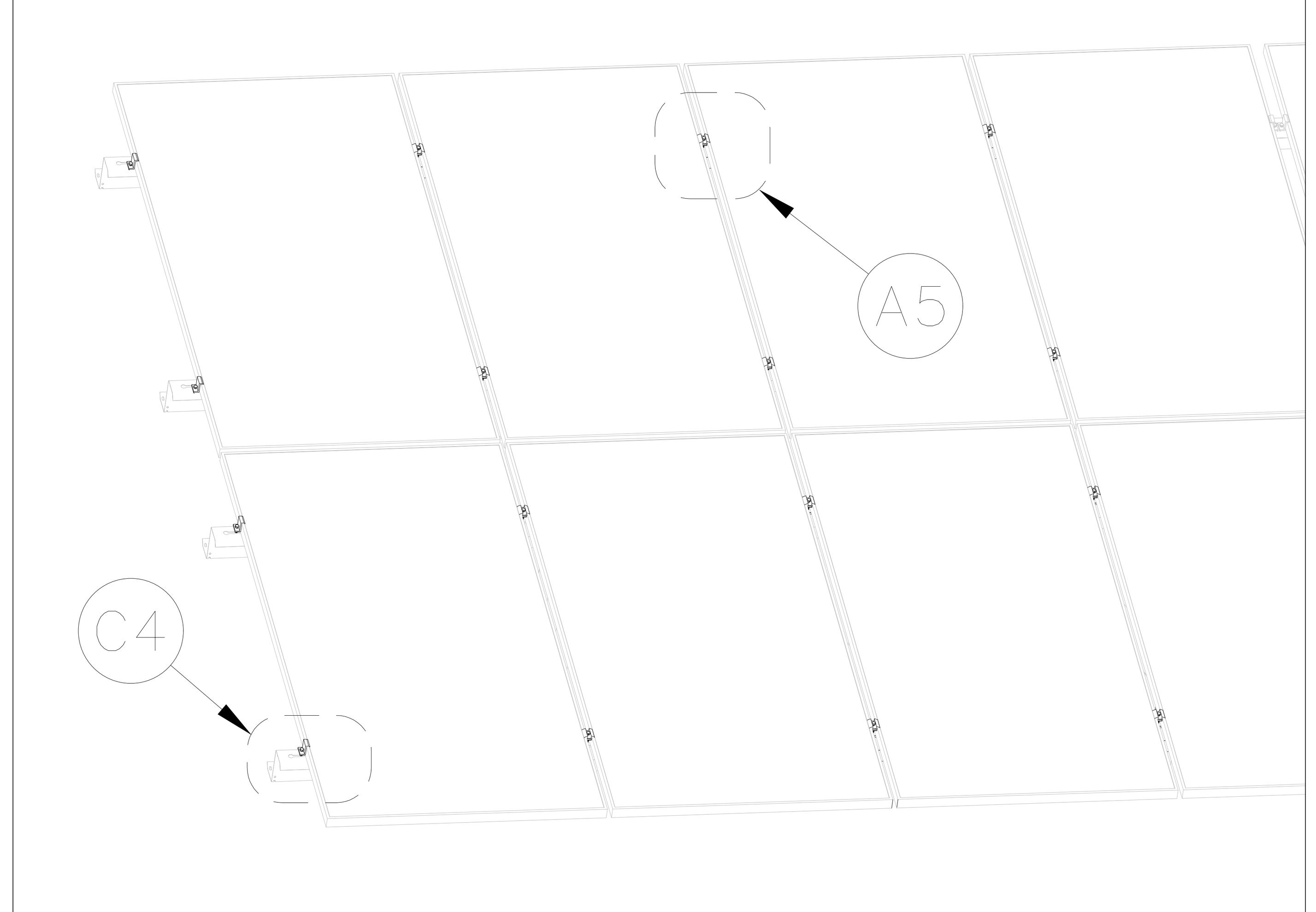
C4 ASSEMBLY: ENDCLAMP



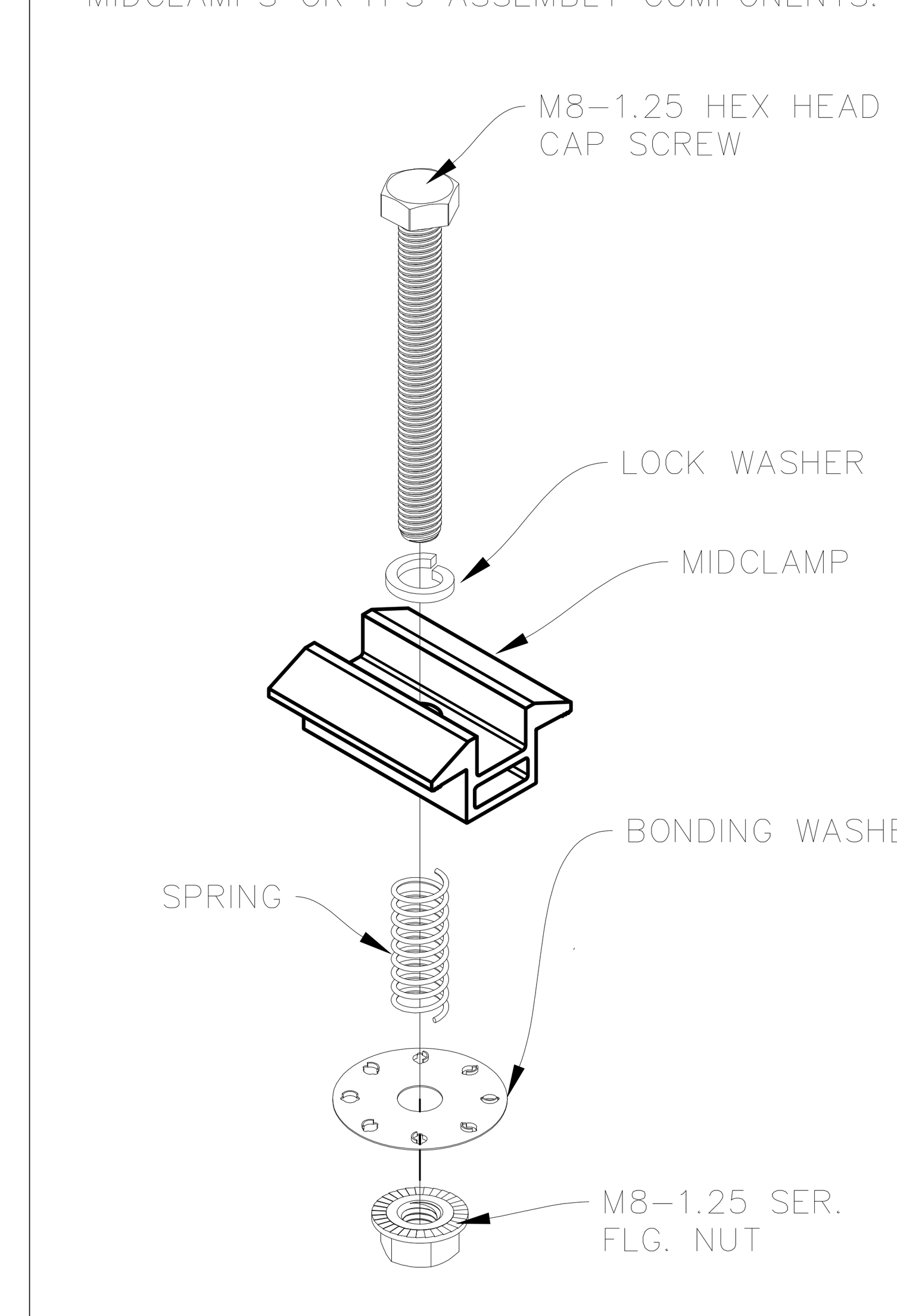
C5 TVS BRACE ASSEMBLY



A1 CONNECTION: TVS BRACE-TO-PURLIN



A3 TOP (ISO) VIEW: PV CLAMP LOCATIONS



A5 ASSEMBLY: MIDCLAMP

NOTES:

1. HARDWARE TORQUE VALUES:

   1/2"-13 STAINLESS STEEL
   MIN.: 40 FT-LBS

   M8-1.25 STAINLESS STEEL
   MIN.: 14.0 FT-LBS
   NOM.: 15.6 FT-LBS
   MAX.: 25 FT-LBS
2. DEPICTED HARDWARE AND PART PLACEMENT NOT INDICATIVE OF PREFERRED OR REQUIRED POSITIONS.
3. HOLE/SLOT PATTERNS IN PARTS ALLOW FOR DEVIATION FROM NOMINAL DIMENSIONS, MULTIPLE PART POSITIONS, AND MULTIPLE TILT ANGLES.
4. SEE INSTALLATION MANUAL FOR SETUP INSTRUCTIONS.
5. SERRATED FLANGED BOLTS MAY BE REPLACED WITH EQUIVALENT PRESS-IN BOLTS. SEE NOTE 8 FOR MORE INFORMATION.
6. PRESS-IN BOLTS, WHERE PRESENT, TO BE INSTALLED TO MANUFACTURERS RECOMMENDED VALUES.
7. OTHER SPECIFIC CONNECTIONS ELSEWHERE IN PRINT SET.
8. SERRATED HARDWARE MAY BE REPLACED WITH EQUIVALENT HARDWARE WITH WASHERS IF NECESSARY.
9. STAINLESS STEEL HARDWARE MAY BE REPLACED WITH GALVANIZED STEEL HARDWARE OR CORROSION AND STRENGTH COMPARABLE HARDWARE MATERIALS AND FINISHES.
10. UNLESS NOTED OTHERWISE, ALL HARDWARE MAY BE INSTALLED IN EITHER DIRECTION (NUT/BOLT MAY BE ON EITHER SIDE OF CONNECTION).
11. WHEN NECESSARY, ADDITIONAL HOLES MAY BE DRILLED TO COMPLETE CONNECTION. ENGINEERING SHALL BE CONTRACTED PRIOR TO FIELD MODIFICATIONS OF PARTS.
12. EASE/WEST CABLE BRACING (C1) TO BE INSTALLED IN THE SPACE BETWEEN ANCHOR SETS (BAY).
13. MINIMUM CABLE BREAKING STRENGTH DETERMINED BY PROJECT SPECIFIC STRUCTURAL CALCULATIONS.
14. CABLE TO BE STAINLESS STEEL AIRCRAFT CABLE.
15. CABLE MAY BE OF ANY CONFIGURATION (IE. 7X7 OR 7X19) AS LONG AS IT MEETS THE REQUIREMENTS LISTED ON THIS SHEET.
16. LENGTH OF BRACES WILL VARY DEPENDENT ON PROJECT SPECIFICS.
17. TRANSVERSE BRACE SETS SHALL BE INSTALLED AT FREQUENCY INDICATED.
18. TRANSVERSE BRACES ARE NOT A REQUIREMENT OF THE STRUCTURAL MODELS. APA REQUIRES THEIR PRESENCE AS AN ASSEMBLY AID ONLY.
19. DUE TO IT'S NON-STRUCTURAL NATURE, TRANSVERSE BRACE PROFILE, THICKNESS, MATERIAL, STRENGTH, COATING, FREQUENCY, AND INSTALLATION MAY CHANGE AT ANY TIME AT THE DISCRETION OF APA, BY APPROVAL OF APA ENGINEERING.
20. WHERE TRANSVERSE BRACE CANNOT BE INSTALLED DUE TO NS CHORD (OUT OF NOMINAL LOCATION), BRACE SHALL BE RELOCATED TO NEXT NEAREST REASONABLE SPLICE.
21. TRANSVERSE BRACE MAY UTILIZE LOWER SPLICE BOLTS, WHERE PRESENT. SEE PURLIN SHEET FOR MORE INFORMATION.
22. EACH PV MODULE SHALL BE CLAMPED IN 4 PLACES.
23. A MAJORITY OF THE CLAMP BOLT FLANGES MUST TERMINATE OVER THE SLOT, AND NOT OVER THE KEYHOLE.
24. SPRING, & PANEL GUIDE MAY NOT BE PRESENT AT ALL LOCATIONS, OR ANY LOCATIONS.
25. ALL PANELS MUST BE GROUNDED/BONDED TO ZEE PURLINS. THIS MAY BE ACCOMPLISHED WITH THE PANEL GUIDE, BONDING WASHERS, DYNOBOND EQUIPMENT OR OTHER APPROVED GROUNDING DEVICE.

CUSTOMER

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APA SOLAR RACKING
20-345 COUNTY ROAD X
RIDGEVILLE CORNERS, OHIO 43555
(P) 419.267.5280
(F) 419.267.5214
WWW.APASOLAR.COM

RACKING TYPE

TITAN DUO

PROFESSIONAL SEAL/STAMP

DOCUMENT NAME: STRUCTURAL PRINT PACKAGE
SITE STREET ADDRESS: 20-345 COUNTY ROAD X
SITE CITY, STATE, ZIP: RIDGEVILLE CORNERS, OH 43555

SHEET REVISIONS

REV.	DESCRIPTION	DATE
A	INITIAL RELEASE	4/28/2023

SAMPLE

APPROVED

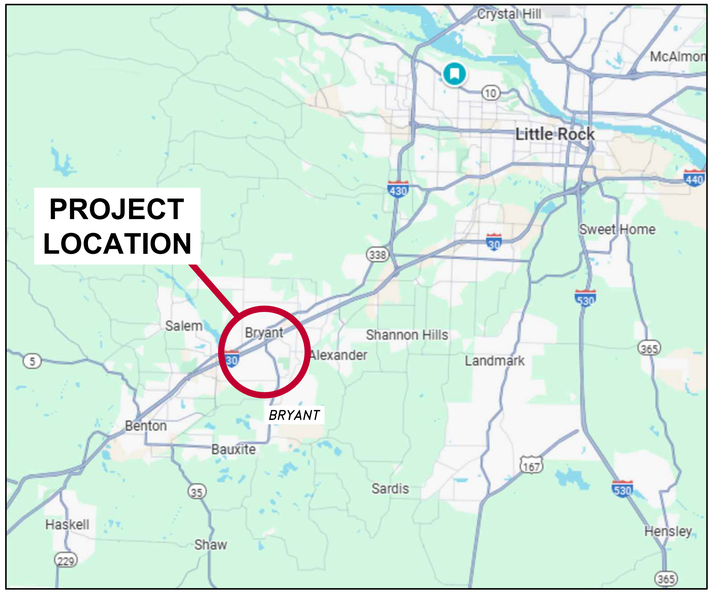
DRAWN	REVIEWED	APPROVED	SIZE
SDS	TM	JDI	D

SHEET NAME: CLAMPS & BRACES

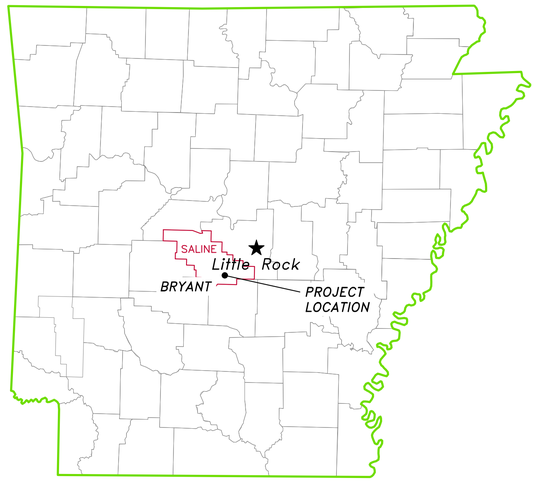
PROJECT NUMBER: SAMPLE

DRAWING NUMBER: S.600 REV.: A

BRYANT SD SOLAR ARRAY
SCENIC HILL SOLAR
BRYANT, ARKANSAS
MAY 2025



Vicinity Map



INDEX OF DRAWINGS	
SHEET #	SHEET TITLE
C1.0	SITE LAYOUT – AERIAL
C1.1	SITE LAYOUT
C1.2	STAKING PLAN
C1.4	EROSION CONTROL PLAN
C2.0	MISCELLANEOUS DETAILS
C2.1	EROSION CONTROL DETAILS

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

PMI

PROJECT NO. KT257024

PRELIMINARY

CERTIFICATE OF AUTHORIZATION POLLUTION MANAGEMENT, INC. No. 331 ARKANSAS-ENGINEER

NOT FOR CONSTRUCTION

GENERAL NOTES:

1. THE CONTRACTOR IS REQUIRED TO NOTIFY THE ONE CALL CENTER AT 1-800-482-8998 48 HOURS PRIOR TO DIGGING SO THAT UNDERGROUND UTILITIES IN THE AREA CAN BE LOCATED.
2. THE LOCATION OF KNOWN SUBSURFACE STRUCTURES, UTILITY PIPING, GAS, FIBER, ETC. ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE SITE AND OBTAIN FURTHER INFORMATION ON THE LOCATION OF SUBSURFACE STRUCTURES SHOWN AND NOT SHOWN. ALL REPAIRS TO DAMAGED UNDERGROUND STRUCTURES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
3. ALL ITEMS DISTURBED DURING CONSTRUCTION, STREETS, DRIVES, FENCES, ETC. SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. COST OF REPAIRS IS THE RESPONSIBILITY OF THE CONTRACTOR.

PROPERTY BOUNDARY

PRIMARY ROAD
8,375 SF CLASS 7 BASE COURSE COMPACTED TO 95% MODIFIED PROCTOR

30 LF CONCRETE LOW WATER CROSSING

2 - 10' WIDE GATES

CONCRETE PADS FOR ELECTRICAL
(1)-6.4' X 20'
(1)-6.4' X 25.8'
(2)-7.9' X 15.8'

20' GRAVITY SEWER EASEMENT

JURISDICTIONAL INTERMITTENT STREAM (TYP.)

JURISDICTIONAL WETLAND (TYP.)

3,090 LF CHAIN LINK SECURITY FENCE
(SEE DETAIL 1, SHEET C2.0)

20' MIN. TYP.

35' CITY EASEMENTS

VEGETATIVE BUFFER STRIP

445 450 455 460 465 470

SCALE:
80 0 80 160

PRELIMINARY

SUBMITTED FOR REVIEW

SHEET TITLE: SITE LAYOUT - AERIAL

PROJECT TITLE: BRYANT SD SOLAR ARRAY
SCENIC HILL SOLAR
BRYANT, ARKANSAS

REVISIONS:

NO.	DATE:	DESCRIPTION:	BY:

CIVIL ENGINEERING AND ENVIRONMENTAL SERVICES
3512 SOUTH SHACKLEFORD RD
LITTLE ROCK, ARKANSAS 72205
PH: (501) 221-7122 FX: (501) 221-7775

DESIGNED BY: JTM
DRAWN BY: JTM
CHECKED BY: JTM
DATE: MAY 22, 2025
SCALE: 1" = 80'

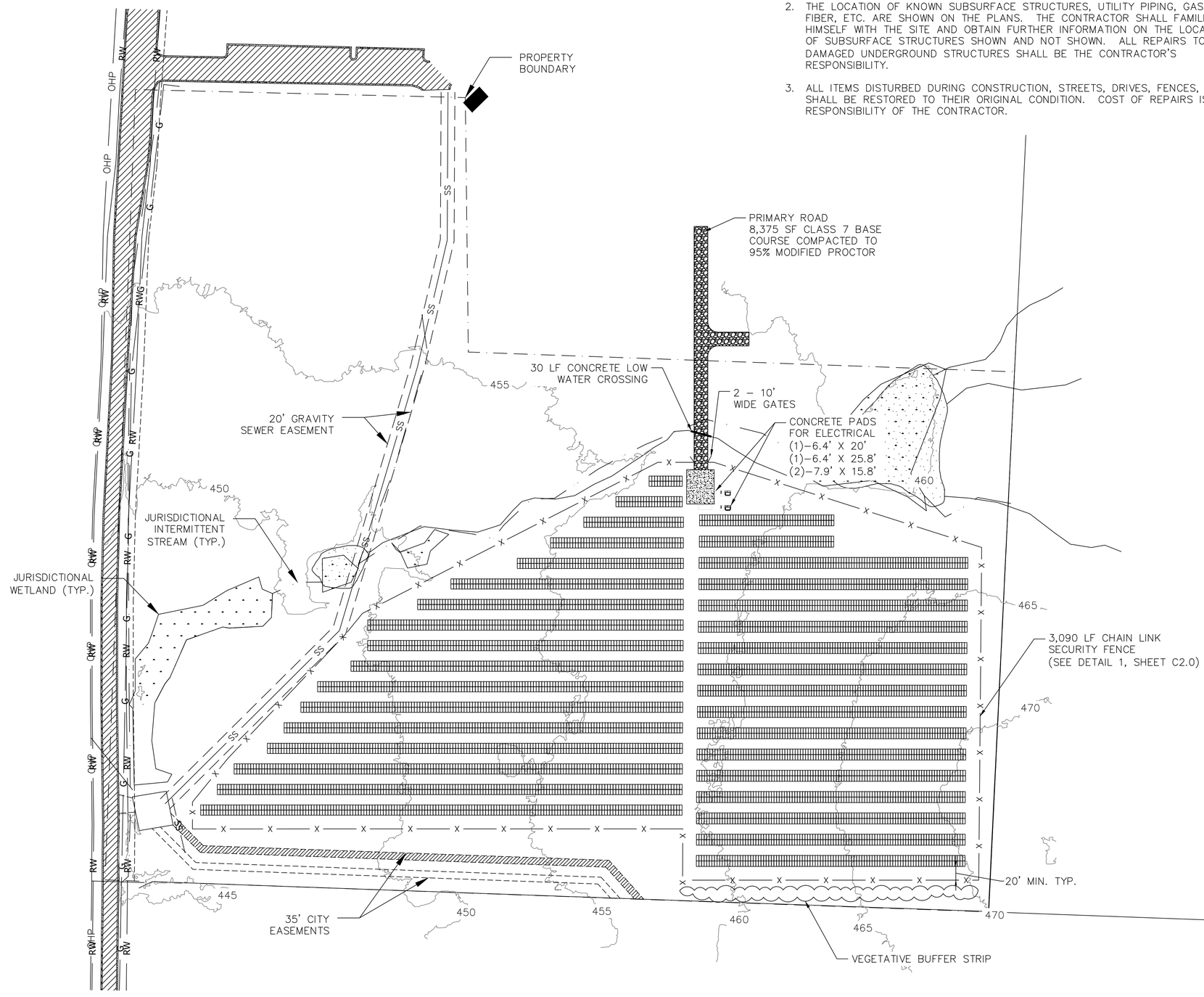
JOB NUMBER: KT257024

SHEET NUMBER: C1.0

FILE: N:\AUTOCAD - ENGINEERING\KT257024 - SHS BRYANT SD CIVIL & SWPPP\DRAWINGS\KT257024 BRYANT SD CIVIL.DWG

GENERAL NOTES:

1. THE CONTRACTOR IS REQUIRED TO NOTIFY THE ONE CALL CENTER AT 1-800-482-8998 48 HOURS PRIOR TO DIGGING SO THAT UNDERGROUND UTILITIES IN THE AREA CAN BE LOCATED.
2. THE LOCATION OF KNOWN SUBSURFACE STRUCTURES, UTILITY PIPING, GAS, FIBER, ETC. ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE SITE AND OBTAIN FURTHER INFORMATION ON THE LOCATION OF SUBSURFACE STRUCTURES SHOWN AND NOT SHOWN. ALL REPAIRS TO DAMAGED UNDERGROUND STRUCTURES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
3. ALL ITEMS DISTURBED DURING CONSTRUCTION, STREETS, DRIVES, FENCES, ETC. SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. COST OF REPAIRS IS THE RESPONSIBILITY OF THE CONTRACTOR.



SCALE: 80 0 80 160

PRELIMINARY

SUBMITTED FOR REVIEW

SHEET TITLE: SITE LAYOUT

PROJECT TITLE: BRYANT SD SOLAR ARRAY
SCENIC HILL SOLAR
BRYANT, ARKANSAS

REVISIONS:

NO:	DATE:	DESCRIPTION:	BY:

CIVIL ENGINEERING AND ENVIRONMENTAL SERVICES
3512 SOUTH SHACKLEFORD RD
LITTLE ROCK, ARKANSAS 72205
PH: (501) 221-7122 FX: (501) 221-7775

DESIGNED BY: JTM
DRAWN BY: JTM
CHECKED BY: JTM
DATE: MAY 22, 2025
SCALE: 1" = 80'

FILE: N:\AUTOCAD - ENGINEERING\KT257024 - SHS BRYANT SD CIVIL & SWPPP\DRAWINGS\KT257024 BRYANT SD CIVIL.DWG

JOB NUMBER: KT257024

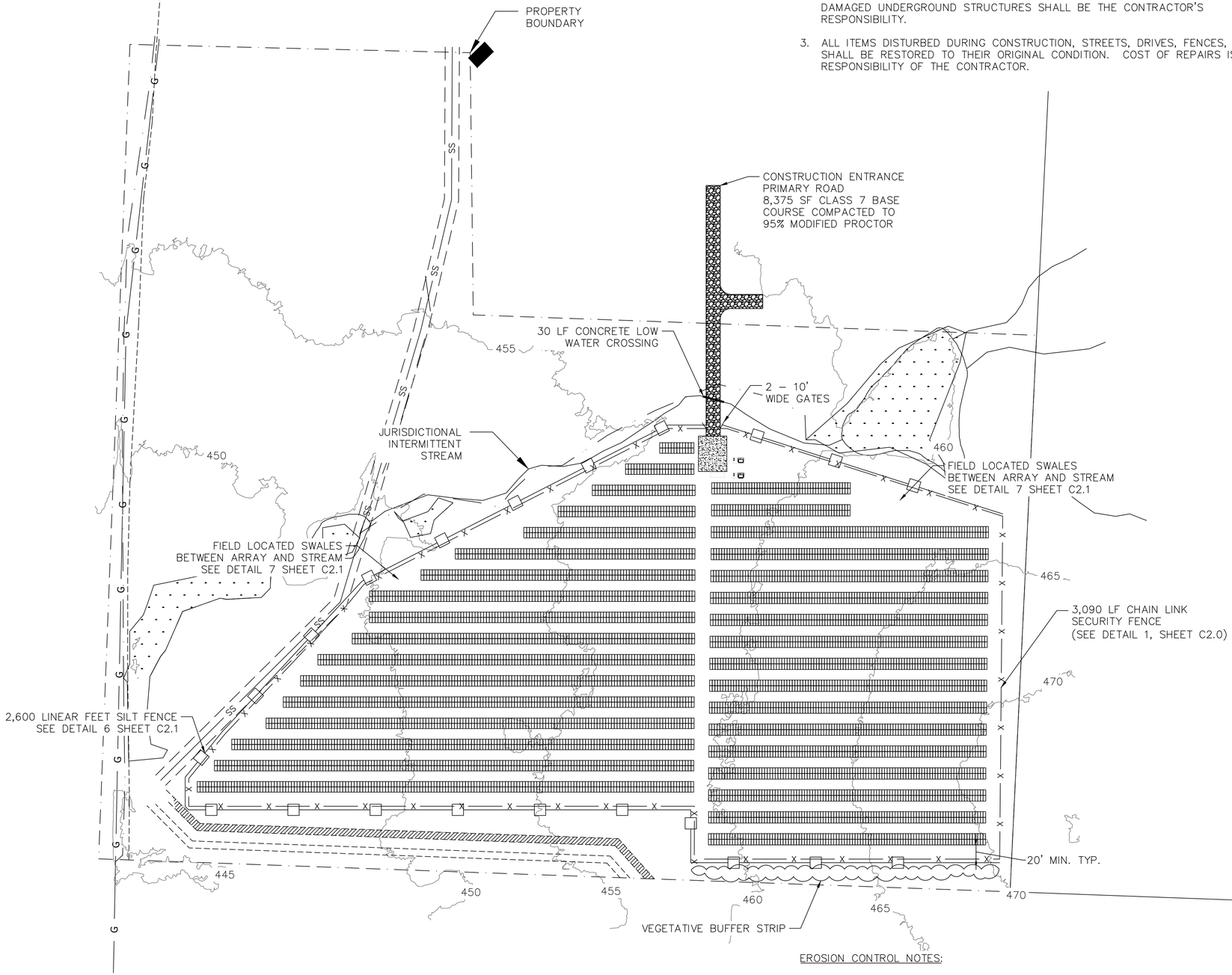
SHEET NUMBER: C1.1

GENERAL NOTES:

1. THE CONTRACTOR IS REQUIRED TO NOTIFY THE ONE CALL CENTER AT 1-800-482-8998 48 HOURS PRIOR TO DIGGING SO THAT UNDERGROUND UTILITIES IN THE AREA CAN BE LOCATED.

2. THE LOCATION OF KNOWN SUBSURFACE STRUCTURES, UTILITY PIPING, GAS, FIBER, ETC. ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE SITE AND OBTAIN FURTHER INFORMATION ON THE LOCATION OF SUBSURFACE STRUCTURES SHOWN AND NOT SHOWN. ALL REPAIRS TO DAMAGED UNDERGROUND STRUCTURES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

3. ALL ITEMS DISTURBED DURING CONSTRUCTION, STREETS, DRIVES, FENCES, ETC. SHALL BE RESTORED TO THEIR ORIGINAL CONDITION. COST OF REPAIRS IS THE RESPONSIBILITY OF THE CONTRACTOR.



EROSION CONTROL NOTES:

1. REFER TO CITY OF BRYANT SCHOOL DISTRICT SOLAR ARRAY STORMWATER MANAGEMENT PLAN FOR SPECIFICS OF EROSION CONTROL MANAGEMENT PLAN AND MAINTENANCE PLAN.

SCALE:
80 0 80 160

PRELIMINARY

SUBMITTED FOR REVIEW

SHEET TITLE: EROSION CONTROL

PROJECT TITLE: BRYANT SD SOLAR ARRAY
SCENIC HILL SOLAR
BRYANT, ARKANSAS

REVISIONS:

NO:	DESCRIPTION:	DATE:	BY:

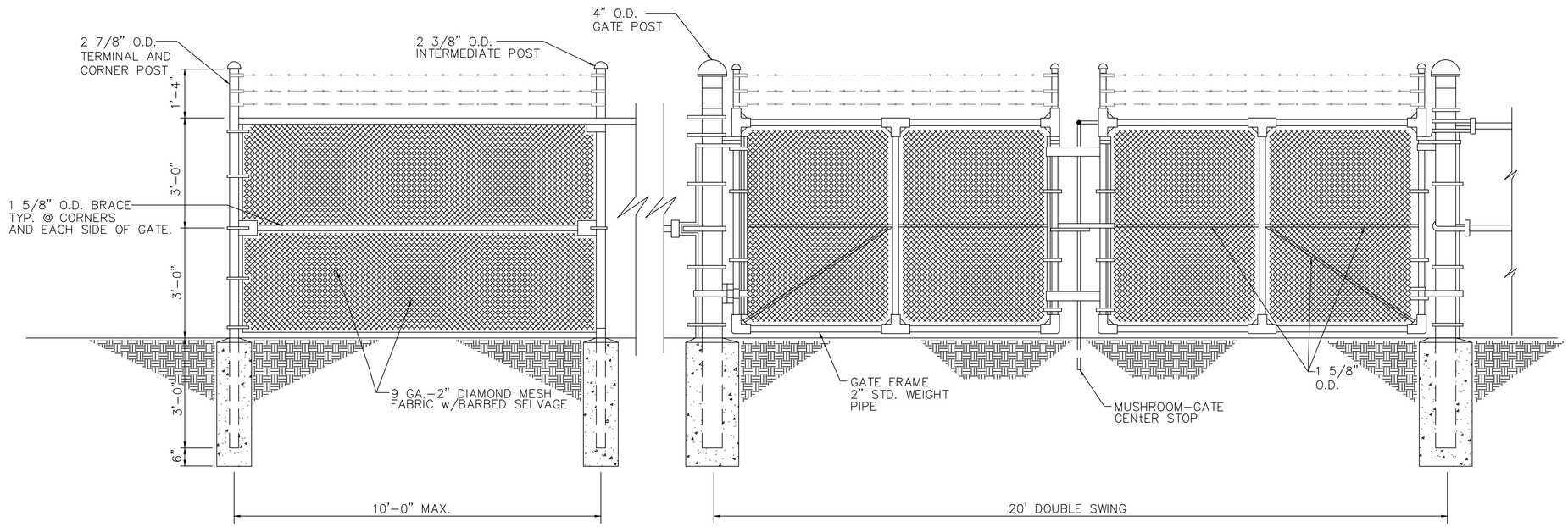
CIVIL ENGINEERING AND ENVIRONMENTAL SERVICES
3512 SOUTH SHACKLEFORD RD
LITTLE ROCK, ARKANSAS 72205
PH: (501) 221-7122 FX: (501) 221-7775

DESIGNED BY: JTM
DRAWN BY: JTM
CHECKED BY: JTM
DATE: MAY 22, 2025
SCALE: 1" = 80'

FILE: N:\AUTOCAD - ENGINEERING\KT257024 - SHS BRYANT SD CIVIL & SWPPP\DRAWINGS\KT257024 BRYANT SD CIVIL.DWG

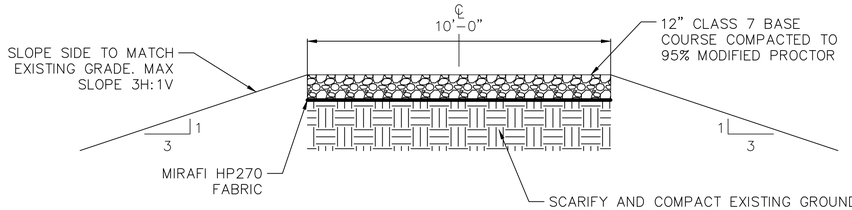
JOB NUMBER:
KT257024

SHEET NUMBER:
C1.1



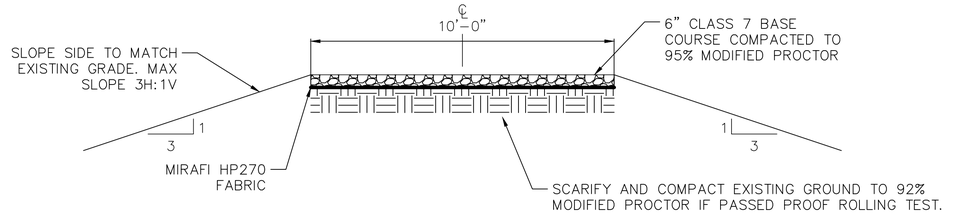
SECURITY FENCE DETAIL — 1 (C1.0 | C2.0)
SCALE: NTS

NOTE: SEE GEOTECHNICAL REPORT
FOR DETAILED SITE INFORMATION



INDUSTRIAL GRAVEL ROAD DETAIL — 2 (C1.0 | C2.0)
SCALE: NTS

NOTE: SEE GEOTECHNICAL REPORT
FOR DETAILED SITE INFORMATION



VEHICULAR GRAVEL ROAD DETAIL — 3 (C1.0 | C2.0)
SCALE: NTS

PRELIMINARY

SUBMITTED FOR REVIEW

SHEET TITLE: MISCELLANEOUS DETAILS

PROJECT TITLE: BRYANT SD SOLAR ARRAY
SCENIC HILL SOLAR
BRYANT, ARKANSAS

REVISIONS:

NO.	DATE:	DESCRIPTION:	BY:

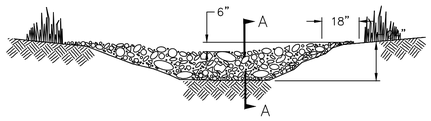
CIVIL ENGINEERING AND ENVIRONMENTAL SERVICES
3512 SOUTH SHACKLEFORD RD
LITTLE ROCK, ARKANSAS 72205
PH: (501) 221-7122 FX: (501) 221-7775

DESIGNED BY: JTM
DRAWN BY: JTM
CHECKED BY: JTM
DATE: FEB. 25, 2025
SCALE: N.T.S.

FILE: N:\PROJECTS\2025\KT257024 - SHS BRYANT SD CIVIL & SWPPP\DRAWINGS\KT257024 BRYANT SD CIVIL.DWG

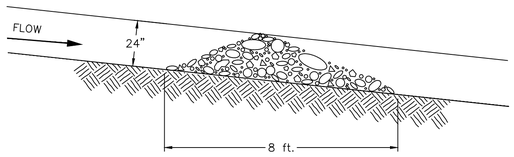
JOB NUMBER: KT257024

SHEET NUMBER: C2.0



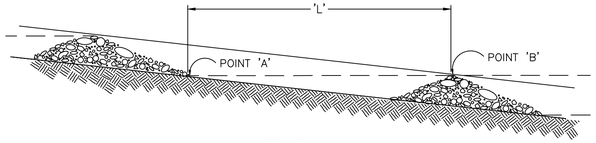
VIEW LOOKING UP STREAM

NOTE: KEY STONE INTO THE DITCH BANKS AND EXTEND IT BEYOND THE ABUTMENTS A MINIMUM OF 18" TO PREVENT OVERFLOW AROUND DAM.



SECTION A–A

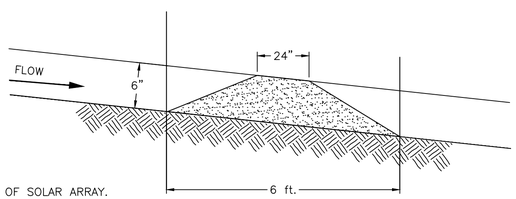
'L' = THE DISTANCE SUCH THAT POINTS 'A' AND 'B' ARE OF EQUAL ELEVATION.



SPACING BETWEEN CHECK DAMS

ROCK CHECK DAM DETAIL — 4 (C1.0 | C2.1)

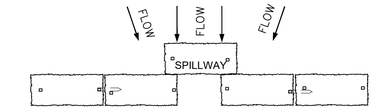
SCALE: NTS



NOTES:
1. INSTALL SWALE DOWNGRADIENT OF SOLAR ARRAY.
2. USE 4:1 H:V SLOPE ON EDGES.

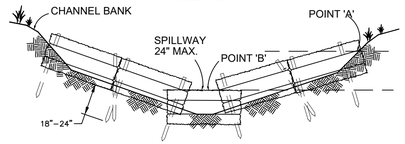
FIELD LOCATED SWALE DETAIL — 7 (C1.0 | C2.1)

SCALE: NTS



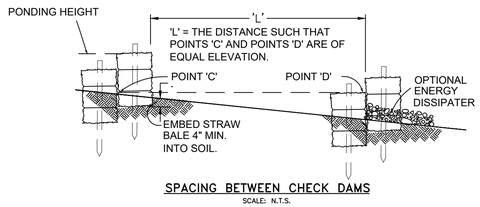
PLAN

SCALE: N.T.S.



VIEW LOOKING UPSTREAM

SCALE: N.T.S.



SPACING BETWEEN CHECK DAMS

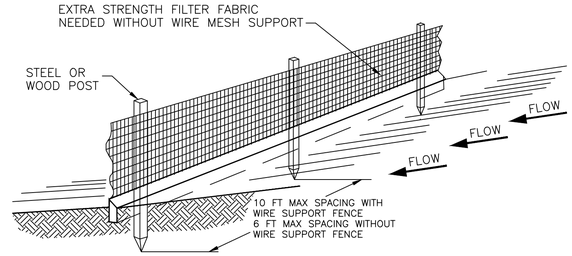
SCALE: N.T.S.

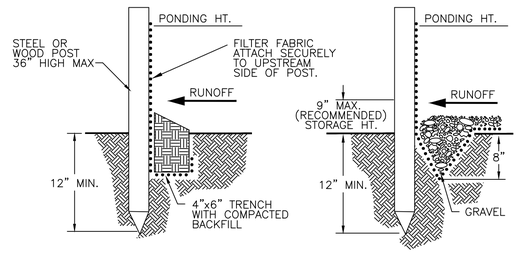
NOTES:

1. EMBED BALES 4" INTO THE SOIL AND 'KEY' BALES INTO THE CHANNEL BANKS.
2. POINT 'A' MUST BE HIGHER THAN POINT 'B'. (SPILLWAY HEIGHT)
3. PLACE BALES PERPENDICULAR TO THE FLOW WITH ENDS TIGHTLY ABUTTING. USE STRAW, ROCKS OR FILTER FABRIC TO FILL ANY GAPS AND TAMP BACKFILL MATERIAL TO PREVENT EROSION OR FLOW AROUND THE BALES.
4. SPILLWAY HEIGHT SHALL NOT EXCEED 24".
5. INSPECT AFTER EACH SIGNIFICANT STORM, MAINTAIN AND REPAIR PROMPTLY.

STRAW BALE CHECK DAM DETAIL — 5 (C1.0 | C2.1)

SCALE: NTS





STANDARD DETAIL
TRENCH WITH NATIVE BACKFILL

ALTERNATE DETAIL
TRENCH WITH GRAVEL

NOTE:

1. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF–SITE AND CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

SILT FENCE DETAIL — 6 (C1.0 | C2.1)

SCALE: NTS

PRELIMINARY

SUBMITTED FOR REVIEW

SHEET TITLE: EROSION CONTROL DETAILS

PROJECT TITLE: BRYANT SD SOLAR ARRAY
SCENIC HILL SOLAR
BRYANT, ARKANSAS

REVISIONS:

NO:	DATE:	DESCRIPTION:	BY:

CIVIL ENGINEERING AND ENVIRONMENTAL SERVICES
3512 SOUTH SHACKLEFORD RD
LITTLE ROCK, ARKANSAS 72205
PH: (501) 221-7122 FX: (501) 221-7775

DESIGNED BY: JTM
DRAWN BY: JTM
CHECKED BY: JTM
DATE: MAY 21, 2025
SCALE: N.T.S.

FILE: N:\AUTOCAD – ENGINEERING\KT257024 – SHS BRYANT SD CIVIL & SWPPP\DRAWINGS\KT257024 BRYANT SD CIVIL.DWG

JOB NUMBER: KT257024

SHEET NUMBER: C2.0

A Terracon Company

3512 S Shackleford Road,
Little Rock, AR 72205
(501) 221-7122
PMICO.com | Terracon.com

May 21, 2025

City of Bryant Planning and Development
210 Southwest 3rd Street
Bryant, Arkansas 72022

Re: City of Bryant School District Solar Array
Stormwater Management & Maintenance Plan

On behalf of The City of Bryant School District and Scenic Hill Solar, **Pollution Management, Inc.,** *A Terracon Company* (PMI) proposes the following Stormwater Management and Maintenance Plan (SWMMP) measures to reduce stormwater runoff, improve stormwater quality, minimize erosion, minimize impervious areas, and minimize gravel or paved areas. The SWMP will utilize best management practices during construction and utilize alternative methods after construction to achieve these goals.

The proposed site plan minimizes the use of impervious surfaces. The gravel entrance road pathway utilizes the shortest possible path to access the array. This road is comprised of Class 7 Base Course which allows infiltration and is designed to minimum area requirements. Only electrical equipment pads will be located on paved areas for stability.

As described in the SWPPP, adequate measures needed to limit erosion during construction will consist of installing silt fencing and/or rock check dams as needed. Specifically, areas around newly disturbed and graded surfaces will be protected using primarily silt fences, rock check dams as needed, and a gravel site entrance to reduce erosion and sediment transport. Only the areas within the site plan will be distributed to minimize site compaction. Tracked equipment with low impact footprints will be used for driving mounting piles and access the site through the stabilized construction entrance and exit. The site will be inspected every seven calendar days during construction and the ADEQ inspection form will be used.

Upon construction completion, the site will be planted with Bermuda grass. If needed, compacted soils around the array will be tilled to encourage vegetative success with strong root systems. The downgradient areas of the array will contain minor field located swales as shown in Detail 7 of the plans. These measures will aid to reduce stormwater runoff through infiltration and diversion, improve stormwater quality through uptake and sedimentation and minimize erosion using stabilized soils.

Upon site stabilization, maintenance of the site will include ensuring Bermuda grass establishment and mowing as required. If required, restorative planting will occur for vegetative areas that fail and additional grading will occur in areas of erosion. In addition to this SWMMP, PMI requests an in-lieu monetary contribution for the development of the City of Bryant School District solar array. We request the contribution to replace the requirement of additional on-site detention due to the limited space availability of the site.

The City of Bryant School District and Scenic Hill Solar have secured the electrical interconnection ability and continue to move forward with the City of Bryant planning requirements to create a

sustainable power generating facility that will also serve as a learning tool the school district. If you have any questions or comments, please do not hesitate to contact me at 501-221-7122 or jmetrailer@pmico.com.

Sincerely,
Pollution Management, Inc., *A Terracon Company*

John Metrailer

John Metrailer, P.E.
Senior Environmental Engineer

U.S. ARMY CORPS OF ENGINEERS

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT

33 CFR 325. The proponent agency is CECW-CO-R.

OMB APPROVAL NO. 0710-0003
EXPIRES: 28 FEBRUARY 2013

Public reporting for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required)
First - Lalik Middle - Last - Sam	First - John Middle - Last - Metrailer
Company - Scenic Hill Solar	Company - PMI, A Terracon Company
E-mail Address - sam.lalik@scenichillsolar.com	E-mail Address - jmetrailer@pmico.com
6. APPLICANT'S ADDRESS:	**9. AGENT'S ADDRESS:**
Address- 44 Isbell Lane	Address- 3512 South Shackleford Road
City - Little Rock State - AR Zip - 72223 Country - USA	City - Little Rock State - AR Zip - 72205 Country - USA
7. APPLICANT'S PHONE NOs. w/AREA CODE	**10. AGENTS PHONE NOs. w/AREA CODE**
a. Residence b. Business c. Fax	a. Residence b. Business c. Fax
(585) 456-4028	(501)9 44-3064 (501) 221-7122 501-221-7775

STATEMENT OF AUTHORIZATION

11. I hereby authorize, John Metrailer to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

SIGNATURE OF APPLICANT — DATE: 04/14/25

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)
Bryant SD Solar Array

13. NAME OF WATERBODY, IF KNOWN (if applicable)
Unnamed Intermittent Stream to Hurricane Creek

14. PROJECT STREET ADDRESS (if applicable)
Address Zuber Road

15. LOCATION OF PROJECT
Latitude: °N 34°39'8.49"N Longitude: °W 92°32'40.12"W

City - Bryant State- Arkansas Zip- 72002

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions)
State Tax Parcel ID Municipality

Section - 07 Township - 1S Range - 14W

17. DIRECTIONS TO THE SITE

The entrance to the site is located approximately 0.44 miles northeast of the intersection between Zuber Road and Wise Road in Bryant, Arkansas.

18. Nature of Activity (Description of project, include all features)

The proposed project will install a low water concrete crossing allowing site access. The crossing is 30 linear feet and is proposed as shown in the attached drawings.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

The purpose of the project is to provide access to solar array. The solar array will provide renewable energy for the Bryant School District.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

Best Management Practices will be used during construction to prevent discharges.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards
5		

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres 0.003

or

Linear Feet 30

23. Description of Avoidance, Minimization, and Compensation (see instructions)

Avoidance is inevitable due to site access. Minimization uses only one crossing with minimal length to create access and ensure proper flow. If compensation is required, the applicant will purchase stream credits from an approved mitigation bank.

24. Is Any Portion of the Work Already Complete? ☐ Yes ☒ No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (If more than can be entered here, please attach a supplemental list).

a. Address- Barbara Floyd, 4901 Northlake Road

City - Alexander State - AR Zip - 72002

b. Address- Britiany Floyd, 5003 Northlake Road

City - Alexander State - AR Zip - 72002

c. Address- Bryant Public School District, 1511 North Reynolds Road

City - Bryant State - AR Zip - 72022

d. Address-

City - State - Zip -

e. Address-

City - State - Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
USACE	concurrence	SWL 2024-00238	2024-07-15	2024-09-17	

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

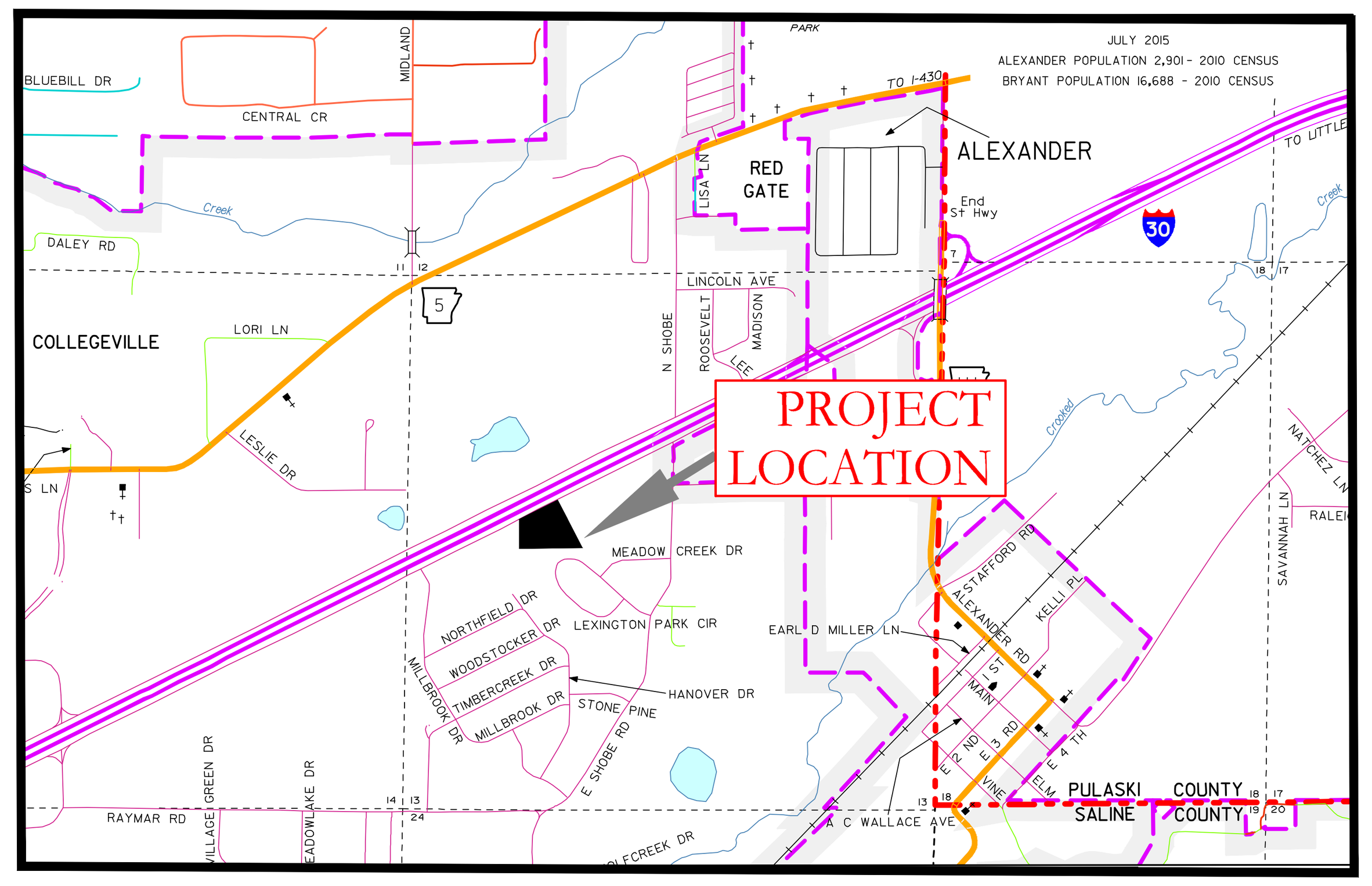
SIGNATURE OF APPLICANT	DATE	SIGNATURE OF AGENT	DATE
	04/14/25	Metrailer, John Digitally signed by Metrailer, John Date: 2025.04.14 08:38:30 -05'00'	2025-04-14

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

CONSTRUCTION PLANS
OUTDOOR STORAGE YARD

I-30 FRONTAGE ROAD, BRYANT, AR



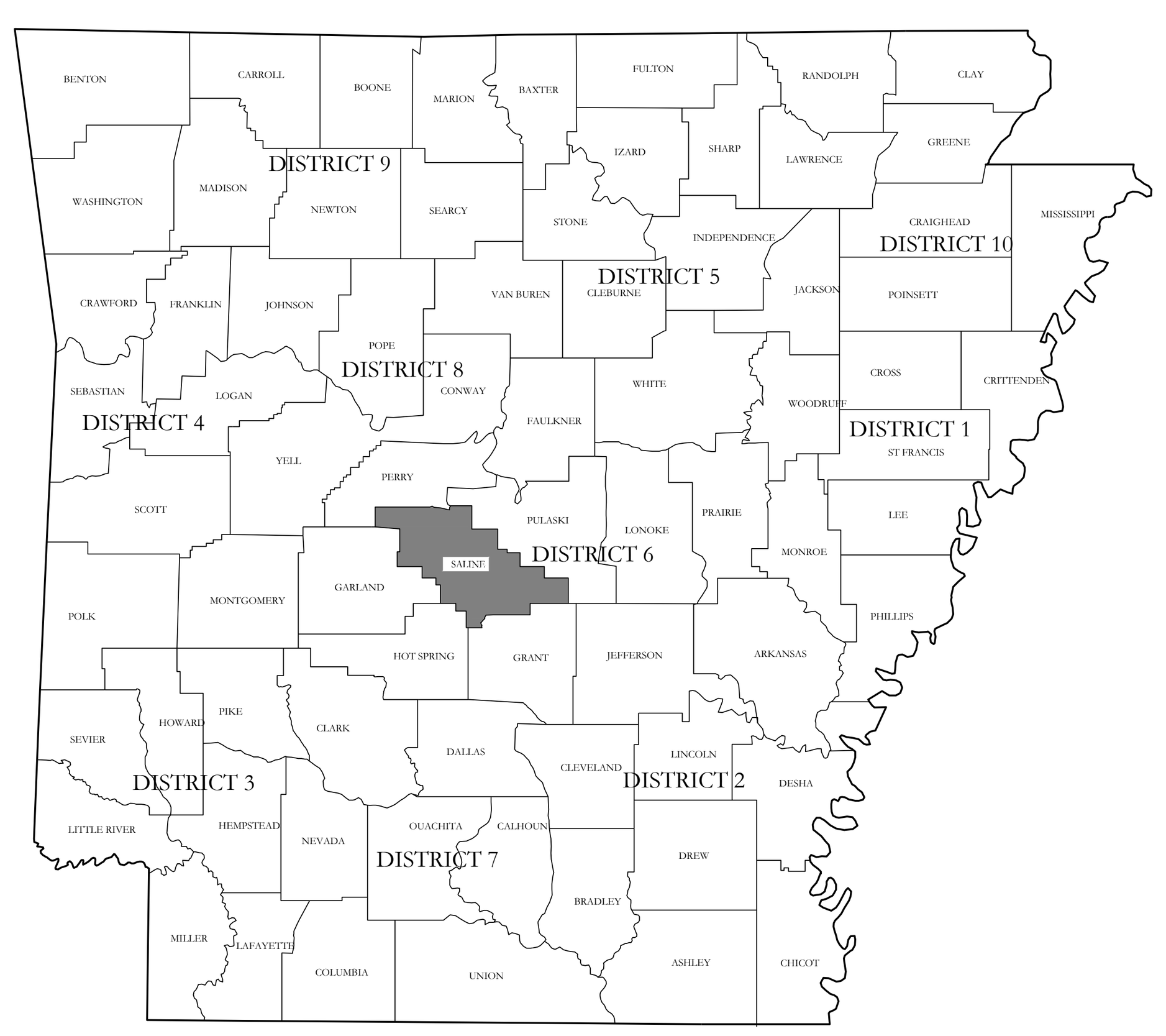
VICINITY MAP

PREPARED BY:

HOPE CONSULTING
ENGINEERS - SURVEYORS

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

DRAWING INDEX



CIVIL ENGINEER
HOPE CONSULTING INC
129 N. Main Street,
Benton, Arkansas 72015

ARCHITECT
N/A

STRUCTURAL ENGINEER
N/A

GEOTECHNICAL ENGINEER

OWNER:
Name: Knoedl Investments, LLC
Address: 406 Beachview Circle
Hot Springs, AR 71913

DEVELOPER:
Name: Knoedl Investments, LLC
Address: 406 Beachview Circle
Hot Springs, AR 71913

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

FOR USE AND BENEFIT OF:
KNOEDL INVESTMENTS, LLC

OUTDOOR STORAGE YARD
COVER SHEET
I-30 FRONTAGE ROAD, BRYANT, AR

DATE: 05/16/2025	C.A.D. BY:	DRAWING NUMBER: 23-1109
REVISED:	CHECKED BY:	
SHEET:	SCALE:	

500	01S	14W	0	13	420	62	1664

A:\HOPE CONSULTING\9. PROJECTS\3. 23-1109 EXPANSION ON I-30\DWG 03.10.25\SAJ_23-1109 PARKING EXTENSION _05-15-2025_FINAL.DWG

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

BASIS OF BEARINGS:
GRID NORTH, ARK SPCS
(NAD83), SOUTH ZONE (0302)

0 30' 60' 120'
SCALE: 1" = 60'

FND. ALLUMINUM CAP
P.L.S. 1695

STORM MANHOLE
RIM ELEV. 363.38

18" PIPE
FL ELEV. 360.97'

I-30 FRONTAGE RD.

N65°08'04"E 400.20' (M)
N67°03'05"E 400.26' (D)

CONCRETE
APRRON

18" PIPE
FL ELEV. 359.42'

20' SEWER EASEMENT
PER DEED 2005-123732

18" PIPE
FL ELEV. 360.99'

CONCRETE
APRRON

18" PIPE
FL ELEV. 361.72'

FND. 1/2" REBAR

KNOEDL INVESTMENTS LLC
840-11647-000

ASPHALT
PARKING

FFE. 352.24

BUILDING

S25°22'44"E 504.86' (M)
S23°25'42"E 504.83' (D)

840-11647-001
4.19 AC
182582.9 SF

N02°35'12"E 275.60' (M)
N04°31'58"E 275.51' (D)

LEXINGTON PARK INC
840-11640-002

POND

FND. 1/2" REBAR
SW CORNER
SE 1/4 , NW 1/4
SEC 13, T01S-R14W

N86°51'12"W 591.93' (D)
N88°47'12"W 592.06' (M)

FND. 1/2" REBAR

SEWER MANHOLE
RIM ELEV. 349.36'

SEWER MANHOLE
RIM ELEV. 343.15'

FND. 1/2" REBAR

FND. 5/8" REBAR
P.L.S. 1141
POINT OF BEGINING

N88°47'06"W 713.45' (M)
N86°51'12"W 713.52' (D)

FND. SURVEY NAIL
SE CORNER
SE 1/4, NW 1/4
SECTION 13, T01S-R14W

18" PIPE

STORM MANHOLE
RIM ELEV. 331.05

RECORD PROPERTY DESCRIPTION
SALINE COUNTY INSTRUMENT DEED 2005-123732

ALL THAT PART OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 13, TOWNSHIP 1 SOUTH, RANGE 14 WEST, SALINE COUNTY, ARKANSAS, MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT A COTTON PICKER PICKER SPINDLE IN THE CENTER OF SHOBE ROAD, ACCEPTED AS THE SOUTHEAST CORNER OF THE SAID SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 13; THENCE NORTH 86 DEG. 51 MIN. 12 SEC. WEST LEAVING SAID ROAD AND ALONG THE SOUTH LINE THEREOF, ALSO BEING ALONG A LINE COMMON WITH THE NORTH LINE OF LEXINGTON PARK SUBDIVISION PHASE ONE, AS FILED IN DEED BOOK 379, PAGE 170 FOR 713.52 FEET TO A REBAR AND THE POINT OF BEGINNING; THENCE CONTINUE NORTH 86 DEG. 51 MIN. 12 SEC. WEST ALONG THE SOUTH LINE OF THE SAID SOUTHEAST QUARTER OF THE NORTHWEST QUARTER 591.93 FEET TO A REBAR AND THE SOUTHWEST CORNER OF THE SAID SOUTHEAST QUARTER OF THE NORTHWEST QUARTER; THENCE NORTH 04 DEG. 30 MIN. 13 SEC. EAST ALONG THE WEST LINE THEREOF 275.40 FEET TO A REBAR IN THE SOUTH RIGHT OF WAY LINE OF INTERSTATE HIGHWAY NUMBER 30; THENCE NORTH 67 DEG. 03 MIN. 03 SEC. EAST ALONG SAID INTERSTATE HIGHWAY, 400.40 FEET TO A REBAR; THENCE SOUTH 23 DEG. 25 MIN. 42 SEC. EAST LEAVING SAID HIGHWAY, 504.78 FEET TO THE POINT OF BEGINNING. SUBJECT TO A 20 FOOT SEWER EASEMENT ALONG THE NORTH LINE HEREIN.

REFERENCE DOCUMENTS CITED
RECORDED SURVEY PLATS BY:
PINNACLE LAND SURVEYORS (PS #1695), FOR KNOEDL INVESTMENTS, LLC, DATED JUNE 07, 2022

SURVEY DETAILS AND NOTES:

OWNER OF RECORD: KNOEDL TOM & BRENDA
PHYSICAL ADDRESS: I-30 SOUTH
COUNTY PARCEL TAX ID: 840-11647-001

ALL DIMENSIONS LISTED ARE AS MEASURED BY THIS SURVEYOR UNLESS OTHERWISE NOTED. FOR RECORD DIMENSIONS SEE DOCUMENTS OF RECORD.

OWNERSHIP INFORMATION, IF SHOWN, IS LISTED AS PUBLISHED BY THE LOCAL COUNTY TAX ASSESSOR AND IS LISTED FOR REFERENCE ONLY. NO STATEMENTS OF OWNERSHIP, RIGHTS, OR INTERESTS ARE MADE.

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

REGISTERED
STATE OF ARKANSAS
No. 1664
SIGNATURE
11/17/2023
PROFESSIONAL LAND SURVEYOR
CORBITT R. SHOFFNER

ORIGINAL SIGNATURE ON FILE

LEGEND

- PLSS Aliquot Corner
- Fnd. Corner Monument
- Set 1/2" Rebar/Cap (1664)
- Computed Point
- (M)- As Measured
- (P) - Per Deed or Plat Records
- ESMT - Easement
- B.S.L. - Building Setback Lines
- Clean Out
- Water Meter
- Power Pole
- Sewer Manhole
- Light Pole
- Telephone Pedestal
- Drainage Manhole
- Gas Meter
- Fence
- Overhead Power
- Sewer Line
- Water Line
- Telephone Line
- Electric Line
- Gas Line

HOPE CONSULTING
ENGINEERS • SURVEYORS
129 North Main Street | Benton, Arkansas 72015
Office: (501) 315-2626 | Fax: (501) 315-0024
www.HopeConsulting.com

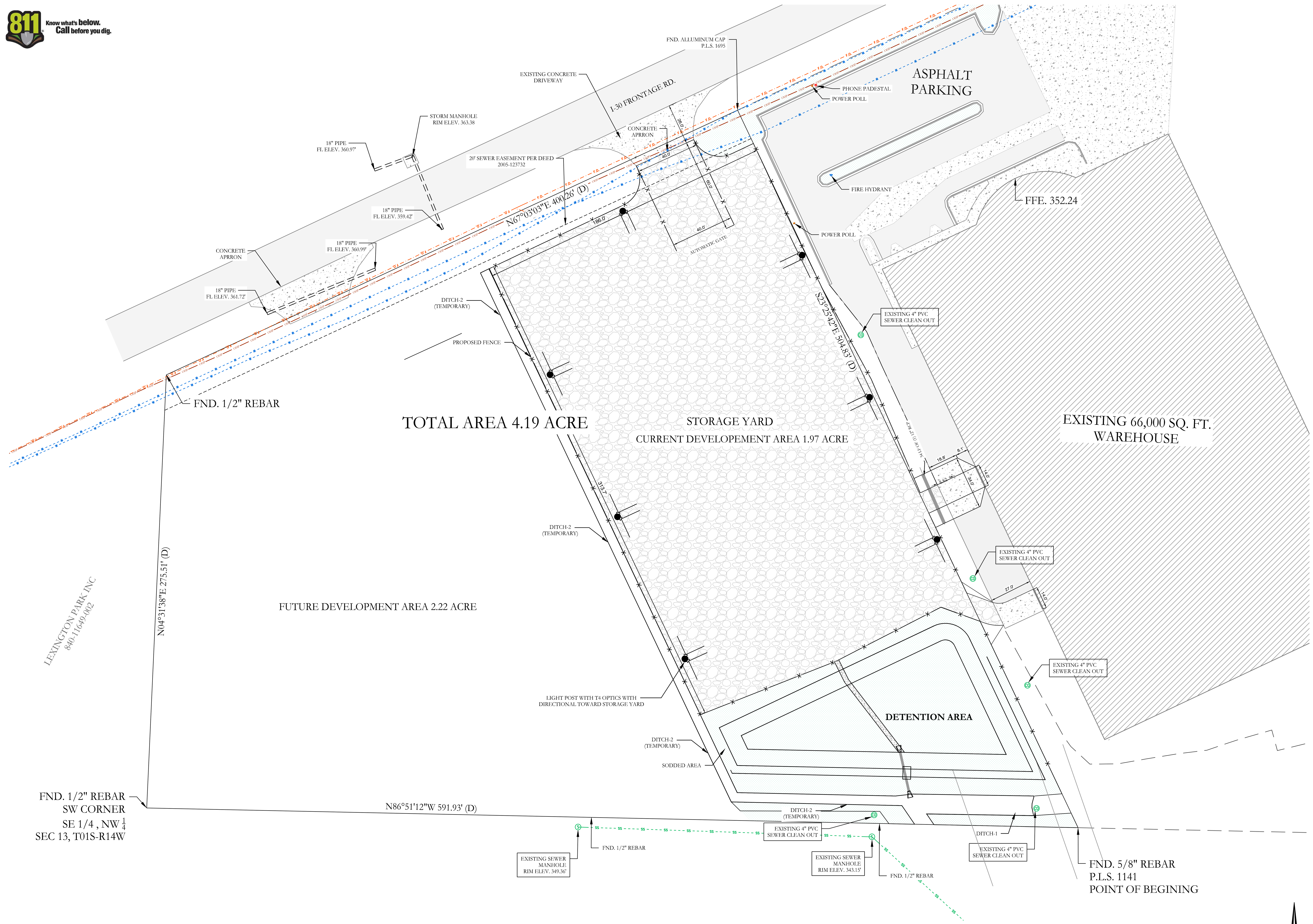
TOPO SURVEY

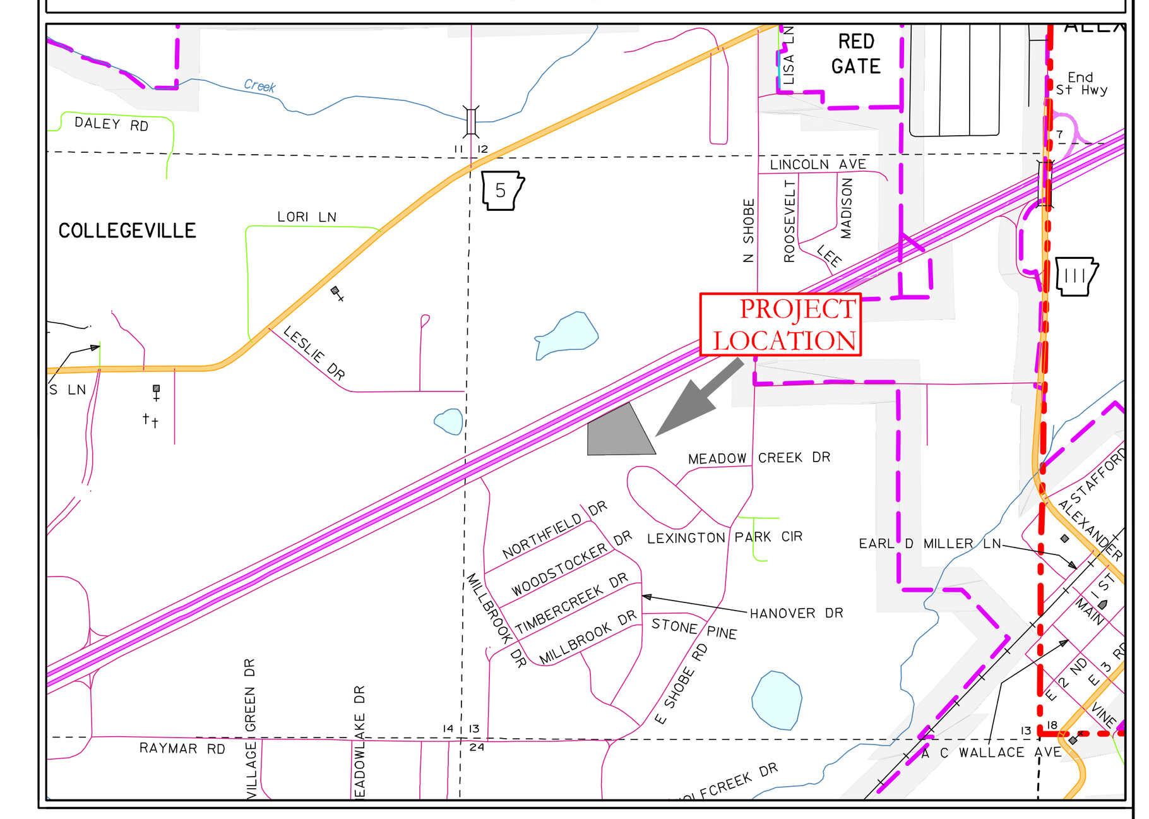
25631 I-30
BRYANT, ARKANSAS, 72022

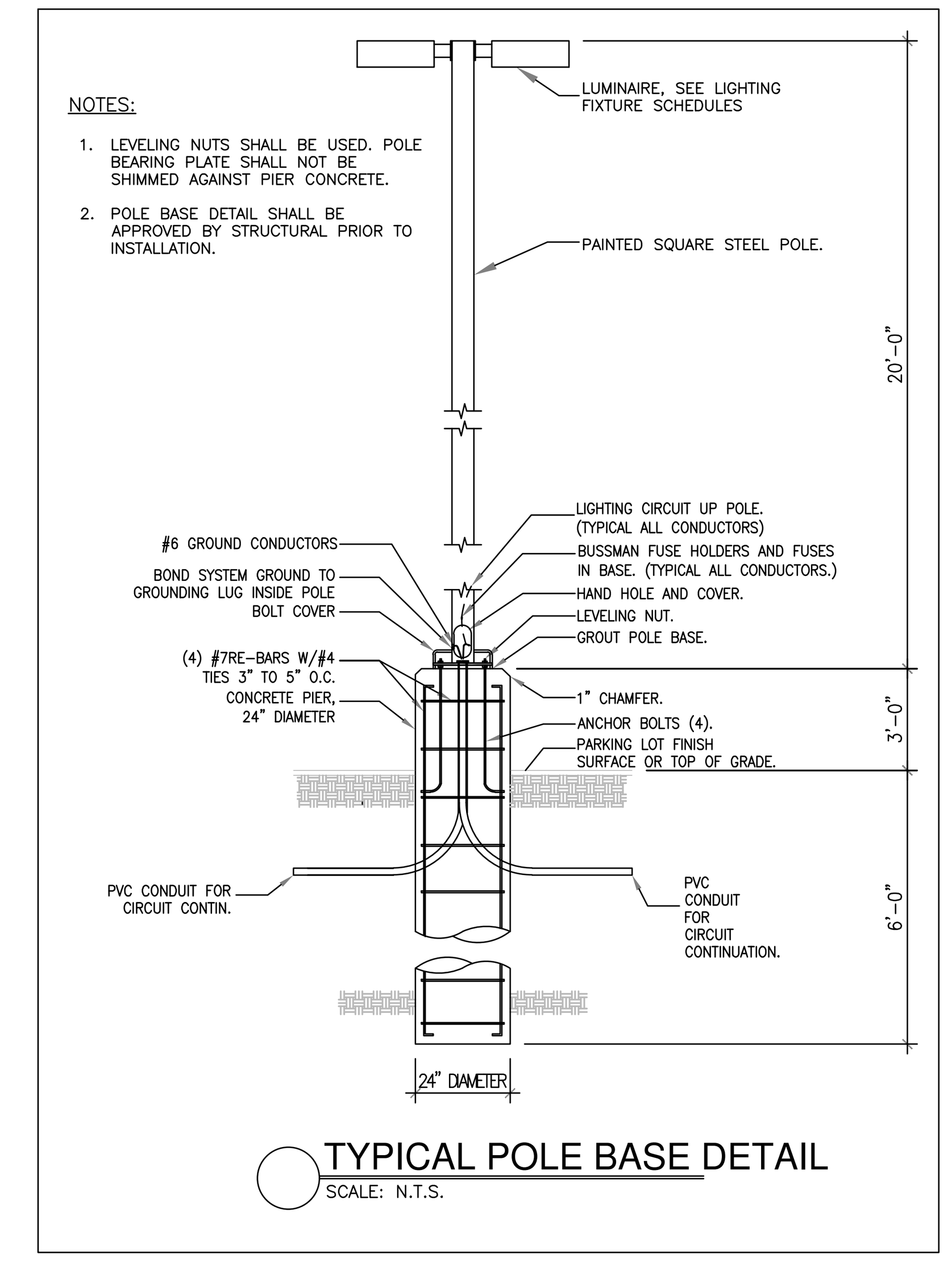
FOR USE AND BENEFIT OF:
TODD KNOEDLE

DATE: 11/17/2023	CAD BY: OV	PROJECT NUMBER: 23-1109
REVISED:	CHECKED BY:	
SHEET: 1 OF 1	SCALE: 1" = 60'	

ARKANSAS STATE LAND SURVEY CODE: 500 - 01S - 14W - 0 - 13 - 420 - 62 - 1664







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

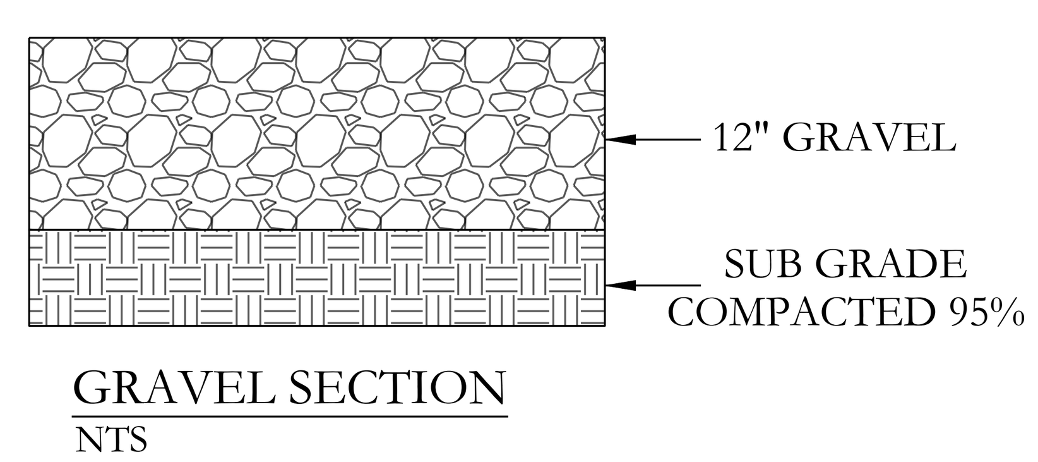
LEGEND

PLSS Aliquot Corner	Clean Out	Fence
Fnd. Corner Monument	Water Meter	Overhead Power
Set 1/2" Rebar/Cap (1664)	Power Pole	Sewer Line
Computed Point	Sewer Manhole	Water Line
(M)- As Measured	Light Pole	Telephone Line
(P) - Per Deed or Plat Records	Telephone Pedestal	Electric Line
ESMT - Easement	Drainage Manhole	Gas Line
B.S.L. - Building Setback Lines	Gas Meter	

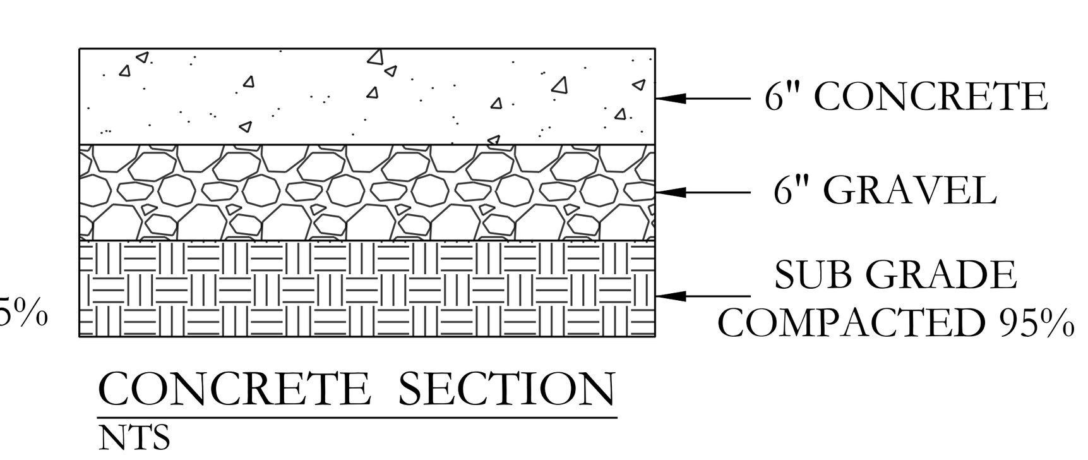
- Asphalt - Concrete - Sod - Gravel

HDPE

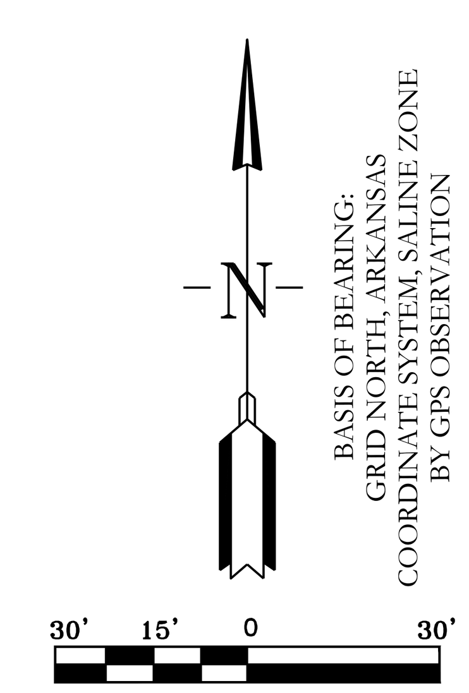
RCP



GRAVEL SECTION
NTS



CONCRETE SECTION
NTS



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

OWNER:		DEVELOPER:	
Name:	Knoedl Investments, LLC	Name:	Knoedl Investments, LLC
Address:	406 Beachview Circle	Address:	406 Beachview Circle
	Hot Springs, AR 71913		Hot Springs, AR 71913

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

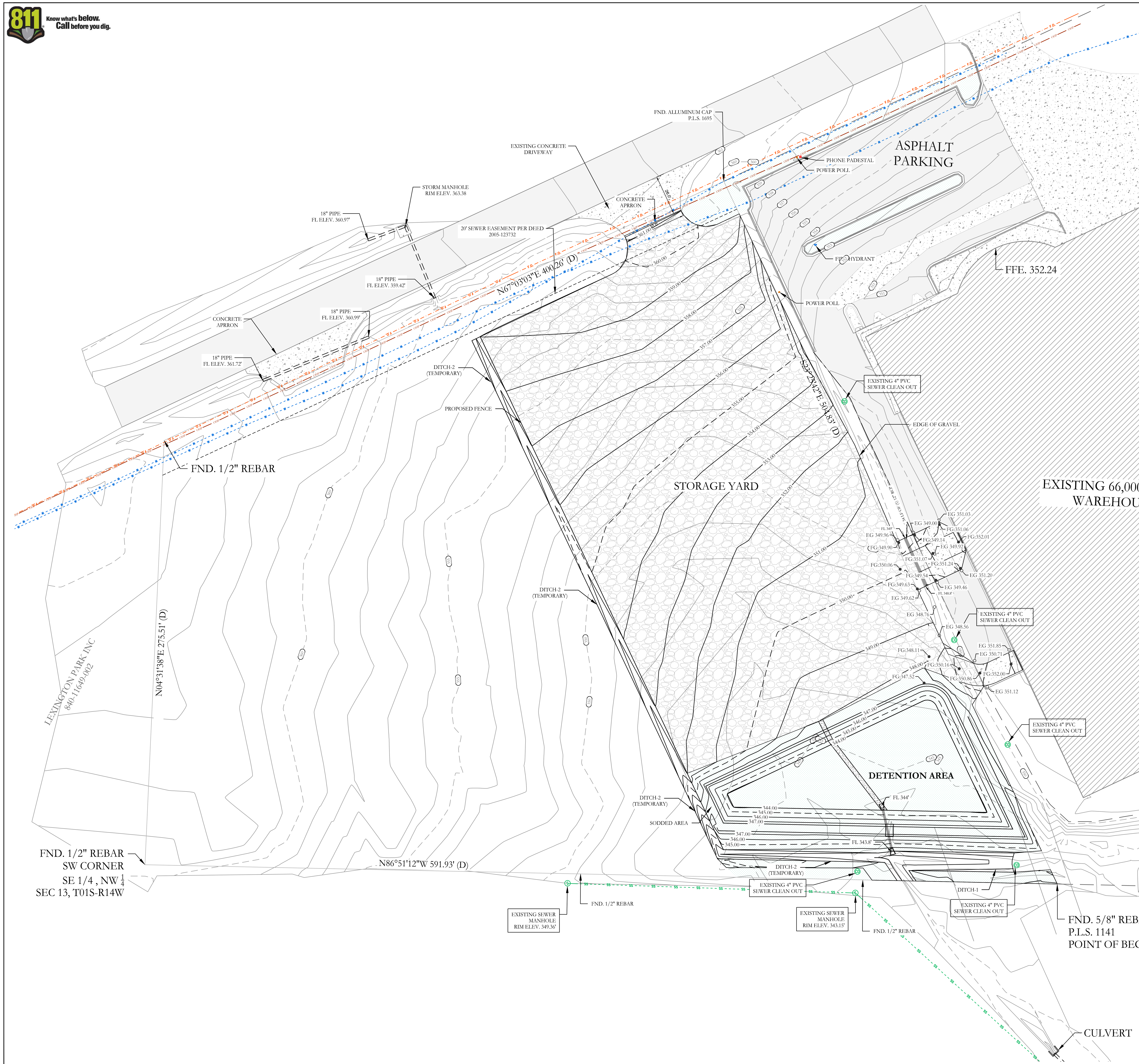
FOR USE AND BENEFIT OF:
KNOEDL INVESTMENTS, LLC

OUTDOOR STORAGE YARD
SITE PLAN
I-30 FRONTAGE ROAD, BRYANT, AR

DATE:	05/16/2025	C.A.D. BY:		DRAWING NUMBER:	
REVISED:		CHECKED BY:		23-1109	
SHEET:	C-1.0	SCALE:	1" = 30"		

500	01S	14W	0	13	420	62	1664

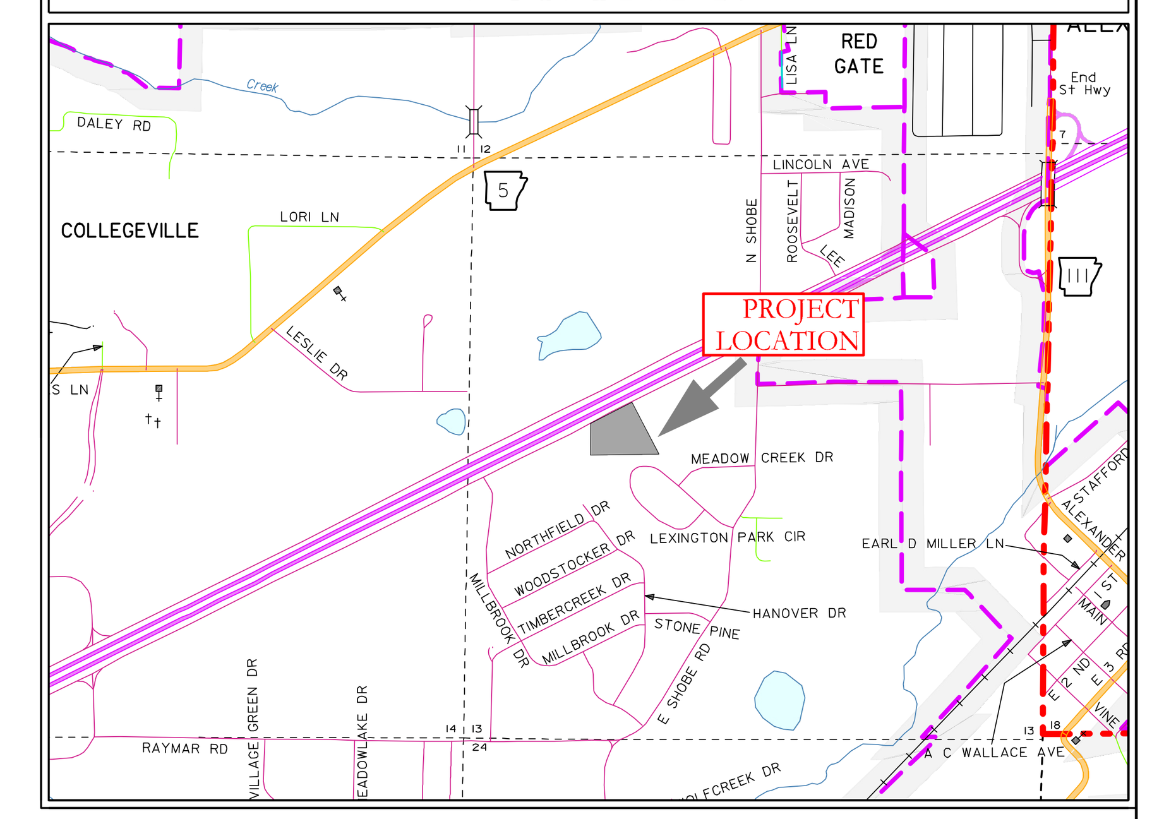
A:\HOPE CONSULTING\A PROJECTS\3_23-1109 EXPANSION ON I-30\DWG\03.10.25\SAJ_23-1109 PARKING EXTENSION _05-15-2025_FINAL.DWG

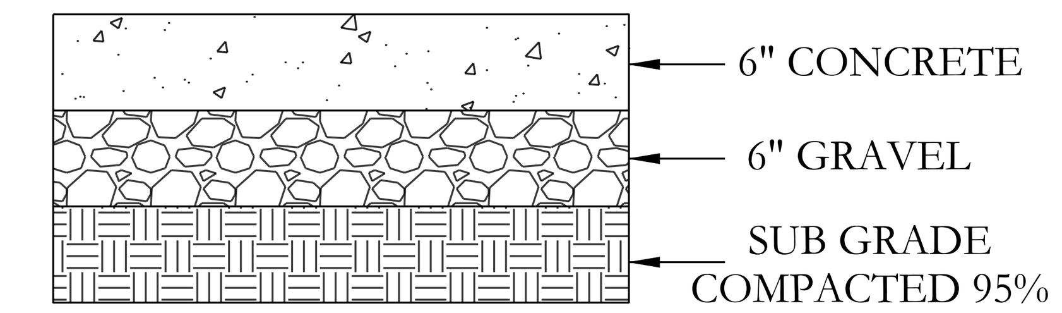


GRADING PLAN NOTES

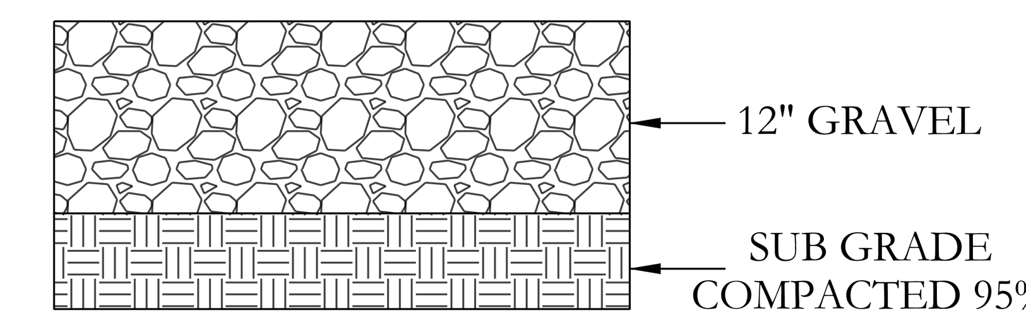
1. DESIGN CONTOURS SHOWN ARE FINISHED GRADE.
2. SPOT ELEVATIONS SHOWN ARE FINISHED ASPHALT, GROUND OR CONCRETE ELEVATIONS.
3. CLEAR AND GRUB AREAS OF THE SITE WHERE CUT OR FILL IS TO OCCUR.
4. FILL SHALL BE COMPACTED AT LEAST 98% OF THE MATERIALS MAXIMUM STANDARD PROCTOR DRY DENSITY.
5. THE MOISTURE CONTENT OF 1% BELOW TO 3% ABOVE THE OPTIMUM MOISTURE CONTENT.
6. SUB-GRADES SHALL BE PROOF-ROLLED WITH A LOADED DUMP TRUCK TO DETECT ZONES OF UNSUITABLE AND/OR EXCESSIVELY WET SOILS. IF PUMPING BEGINS, COMPACTION SHALL BE STOPPED IMMEDIATELY AND RESUMED ONLY WHEN THE MATERIAL IS SUFFICIENTLY DRY THAT PUMPING DOES NOT OCCUR.
7. ALL UNUSABLE SOILS SHALL BE USED ON SITE FOR FILL PURPOSES OUTSIDE THE AREAS OF BUILDING AND PAVEMENT CONSTRUCTION.
8. PROPER DRAINAGE SHALL BE MAINTAINED THROUGHOUT THE PROJECT SITE TO PREVENT THE INCREASE OF THE IN-SITU SOILS MOISTURE CONTENT.

VICINITY MAP:





CONCRETE SECTION
NTS



GRAVEL SECTION
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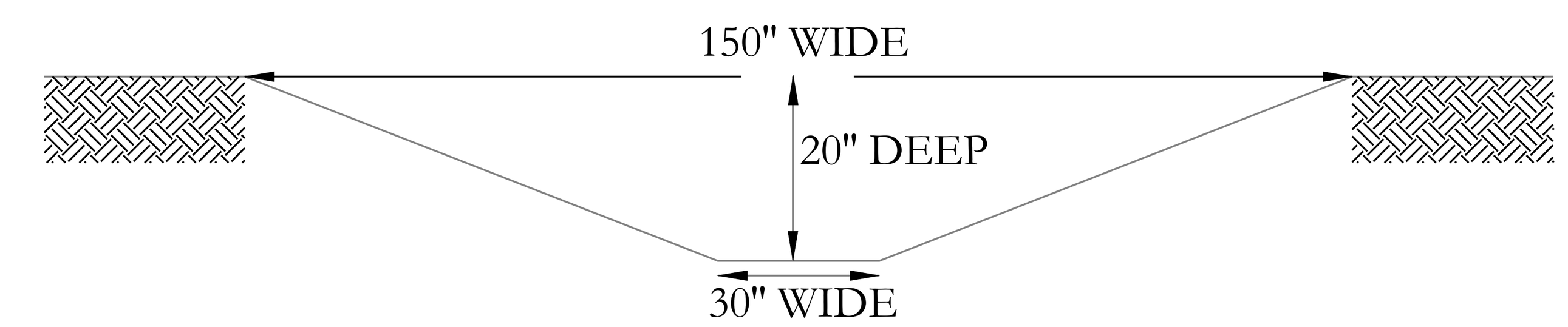

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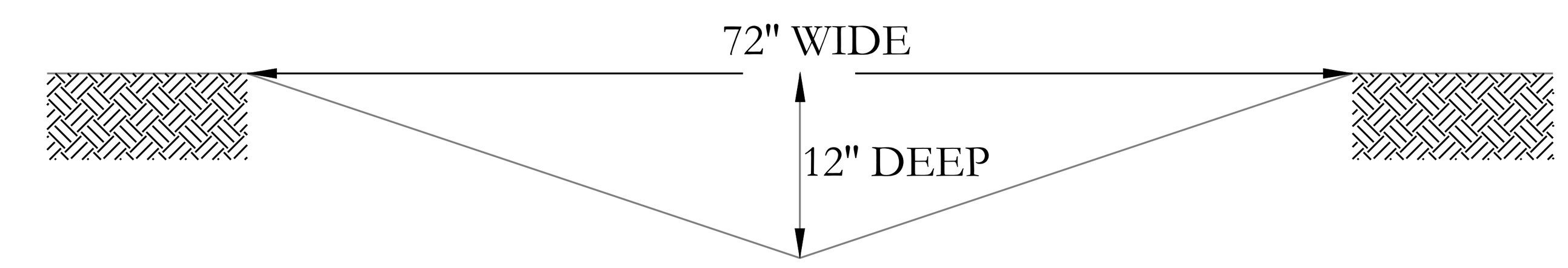
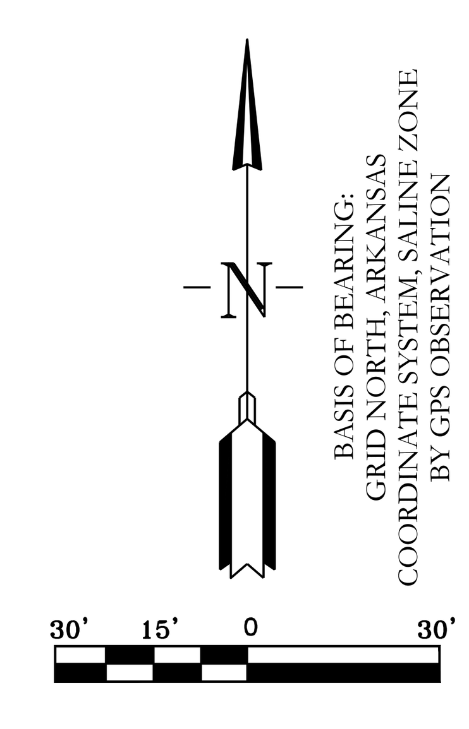


DITCH-2 (TEMPORARY) SECTION
NTS

FG = FINISH GRADE
EG = EXISTING GRADE
FL = FLOW LINE

HDPE

RCP



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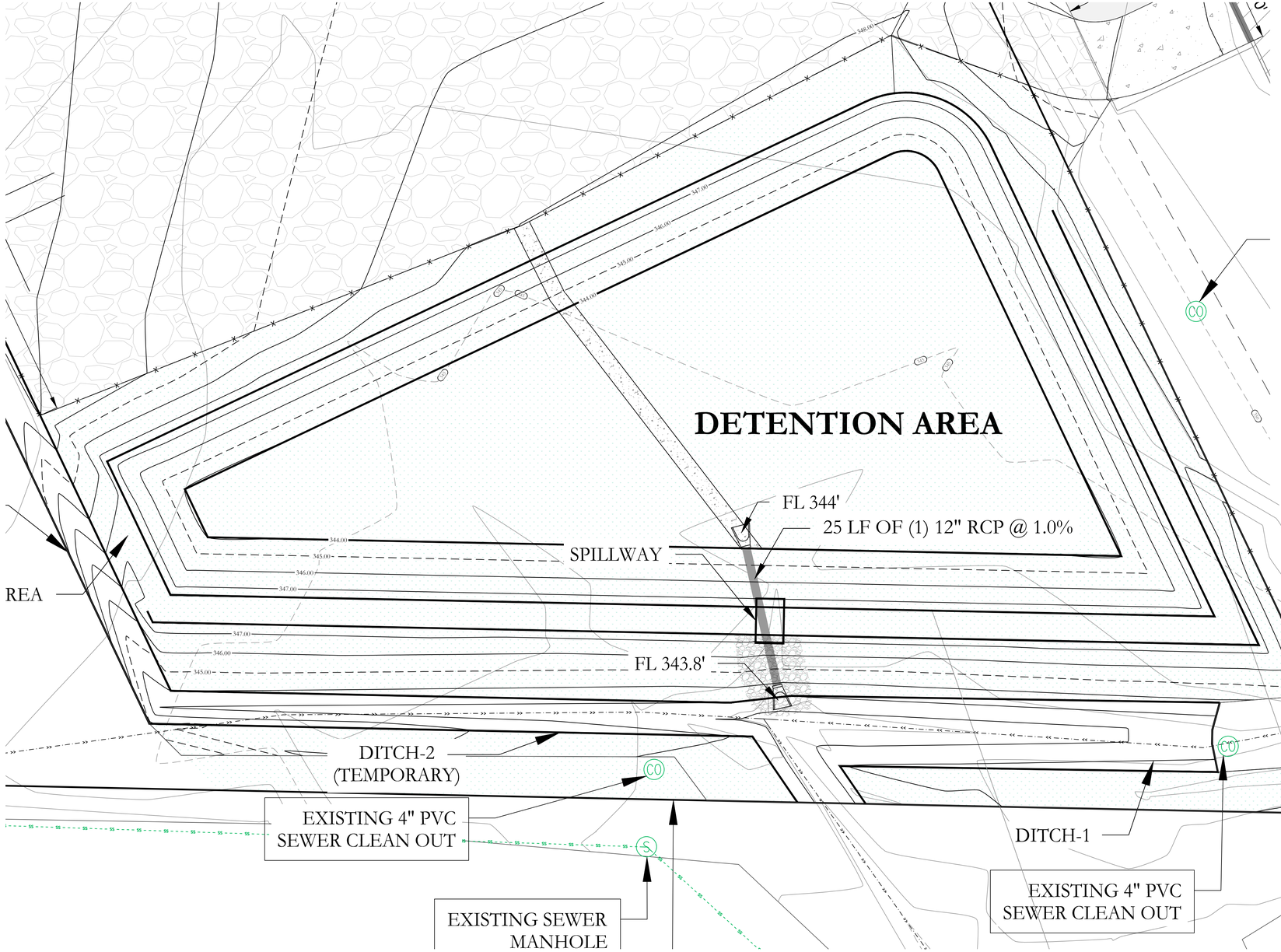
FOR USE AND BENEFIT OF:
KNOEDL INVESTMENTS, LLC

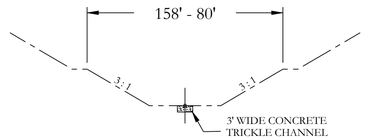
OUTDOOR STORAGE YARD
GRADING PLAN
I-30 FRONTAGE ROAD, BRYANT, AR

DATE: 05/16/2025	C.A.D. BY:	DRAWING NUMBER:
REVISED:	CHECKED BY:	23-1109
SHEET: C-2.0	SCALE: 1' = 30"	

500	01S	14W	0	13	420	62	1664

A:\HOPE CONSULTING\9. PROJECTS\3. 23-1109 EXPANSION ON I-30\DWG 03.10.25\SAJ_23-1109 PARKING EXTENSION_05-15-2025_FINAL.DWG





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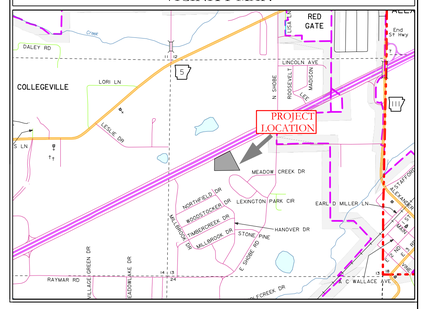
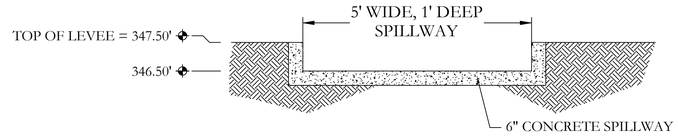
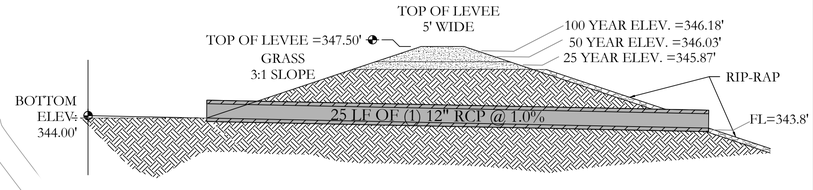




SPILLWAY END VIEW
NTS



OUTLET SECTION
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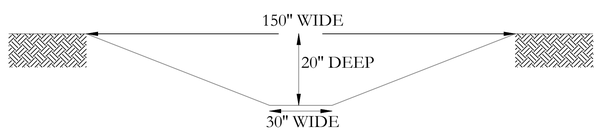

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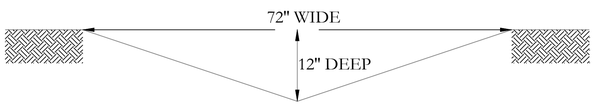
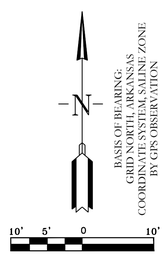


DITCH-2 SECTION (TEMPORARY)



DETENTION POND MAINTENANCE PLAN

Background
The detention pond is located at the **South** of the subjected property. It is designed to temporarily detain stormwater to meet water quantity criteria before discharging off the property.

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

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

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

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

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

For questions or concerns about Tract "A", contact at 501-.

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No. 1931
ARKANSAS

HDPE
RCP

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129 N. Main Street,
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FOR USE AND BENEFIT OF:
KNOEDL INVESTMENTS, LLC

OUTDOOR STORAGE YARD
DETENTION PLAN
I-30 FRONTAGE ROAD, BRYANT, AR

DATE: 05/16/2025	C.A.D. BY:		DRAWING NUMBER:
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SHEET: C-3.0	SCALE: 1" = 10"		

500	01S	14W	0	13	420	62	1664

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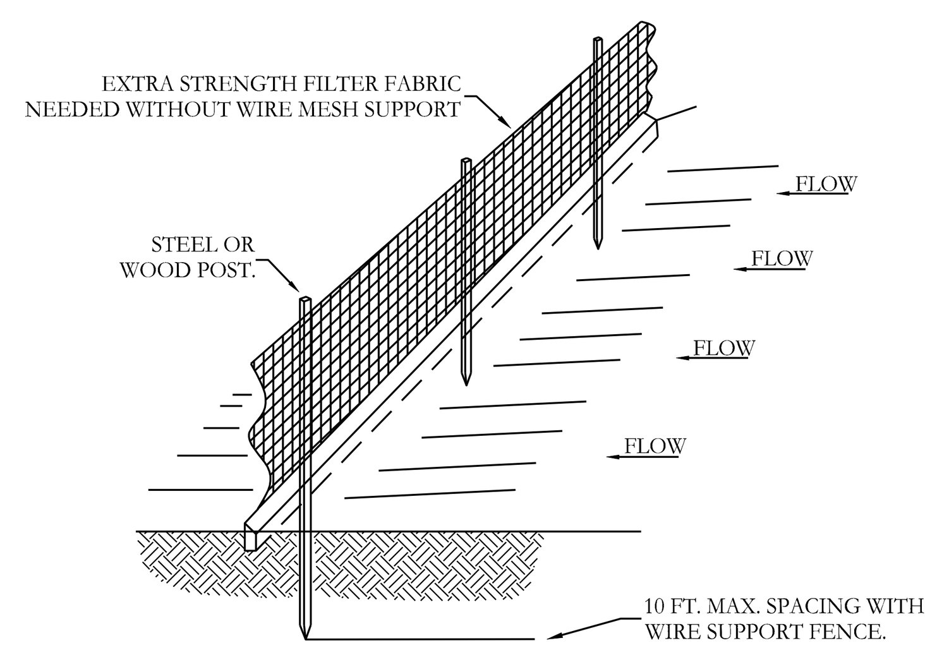
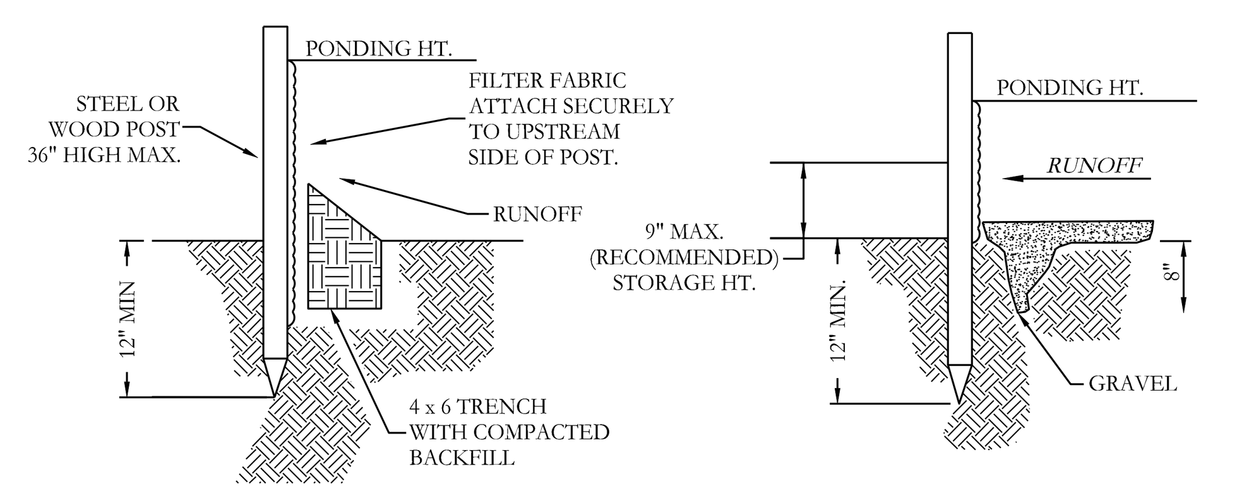




STANDARD DETAIL
TRENCH WITH NATIVE BACKFILL

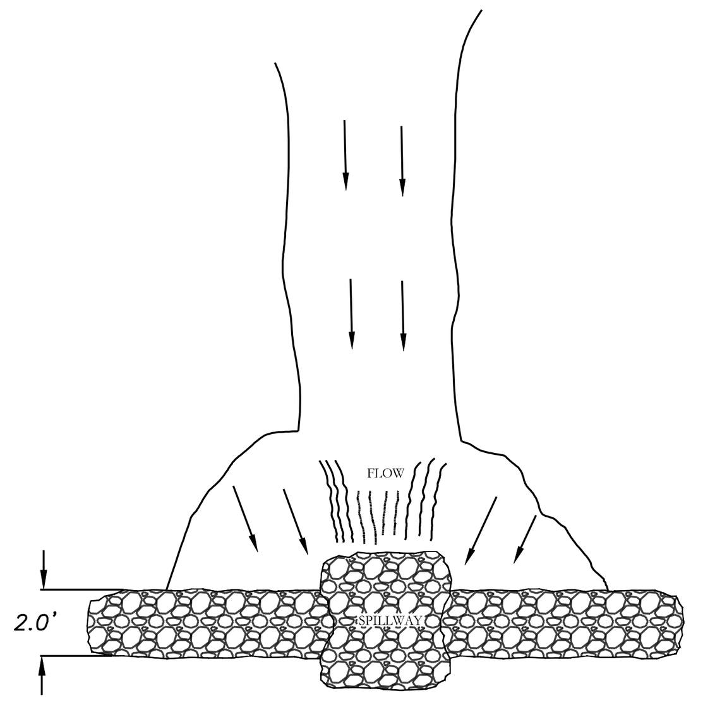
ALTERNATE DETAIL
TRENCH WITH GRAVEL

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

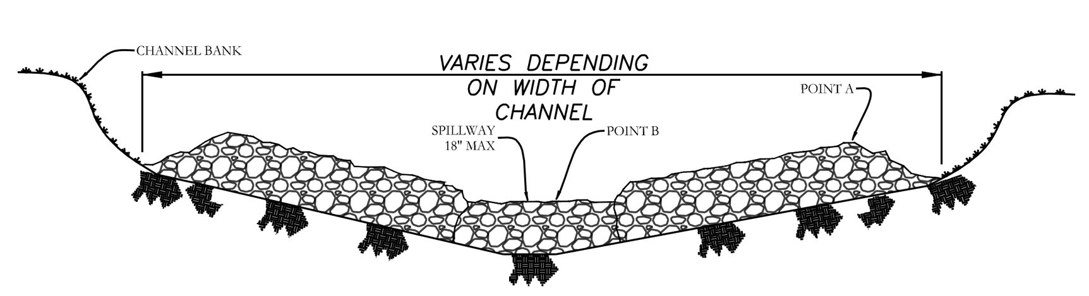
2.) REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

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

SILT FENCE



PLAN



VIEW LOOKING UPSTREAM

NOTES:

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

RIP-RAP
CHECK DAM

EROSION CONTROL NOTES

SOD DETENTION AREA POST-CONSTRUCTION

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

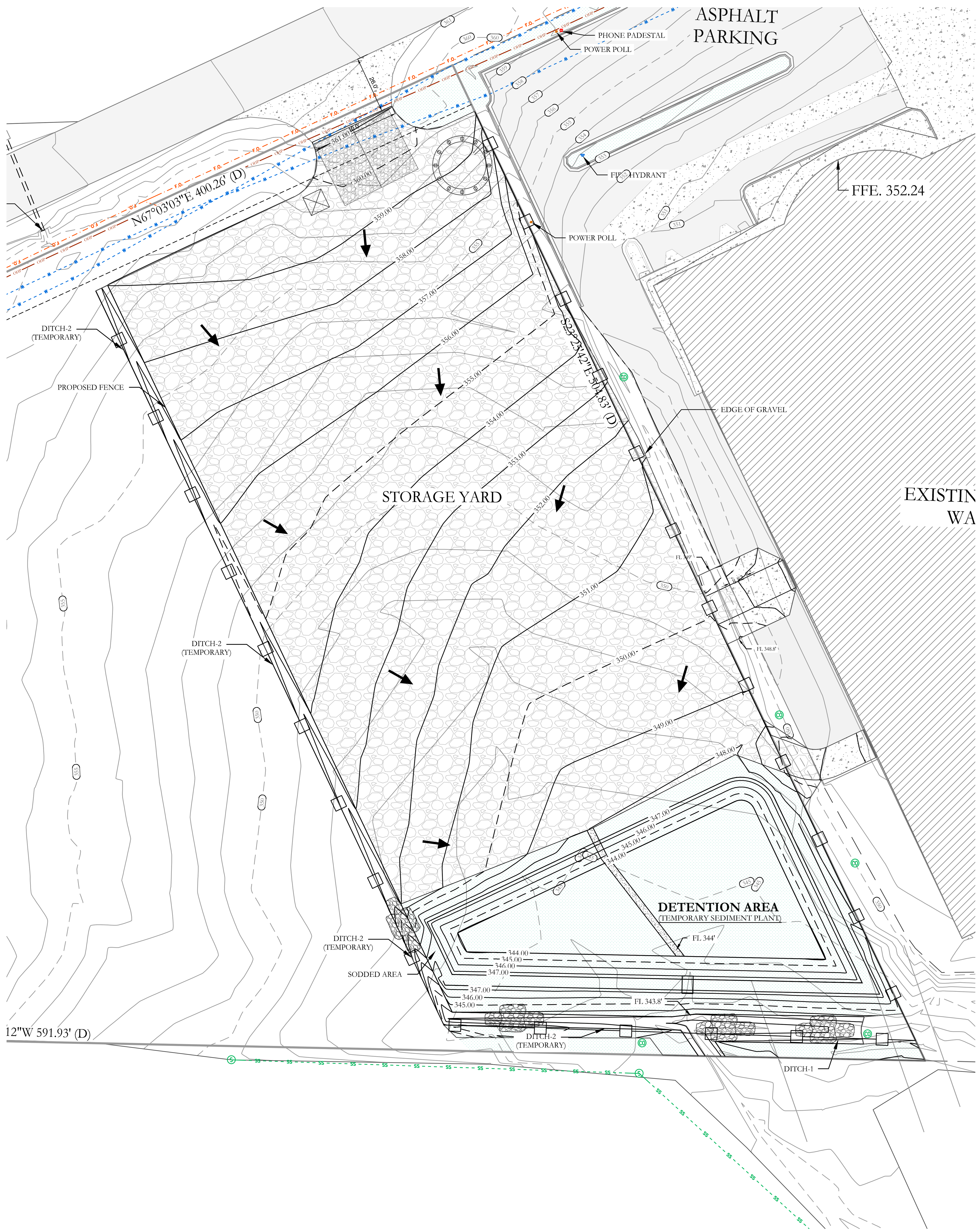
CONTRACTOR MUST HAVE INLET PROTECTION MEASURES INSTALLED IMMEDIATELY AFTER CONSTRUCTION OF DRAINAGE INLETS/STRUCTURES IS COMPLETE. SEDIMENT BARRIERS SHALL BE MAINTAINED THROUGHOUT AND INSPECTED THROUGHOUT CONSTRUCTION PROCESS UNTIL PROJECT IS COMPLETE

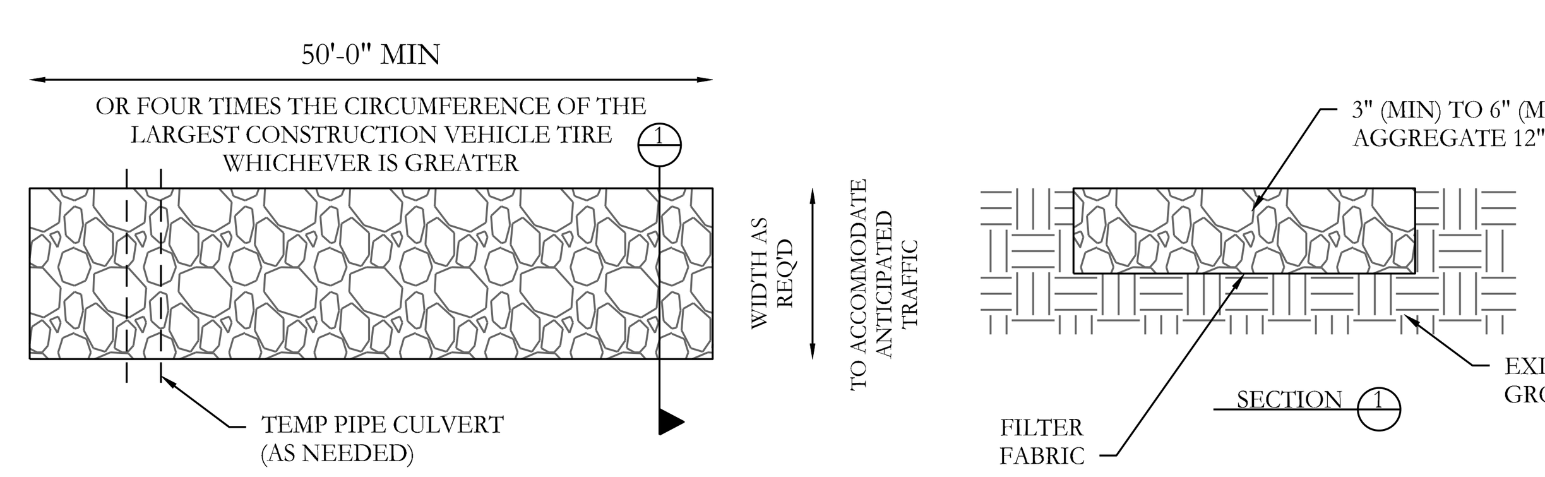
RIP RAP SEDIMENT BARRIERS SHALL BE USED AT ALL STORMWATER DISCHARGE POINTS SHOWN ON PLANS ASAP

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

SOME EROSION CONTROL MEASURES, SILT FENCING, OR CHECK DAMS MAY NOT BE NECESSARY DURING INITIAL SITE CLEARING BUT MAY BE NEEDED ONCE DIRT WORK BEGINS.

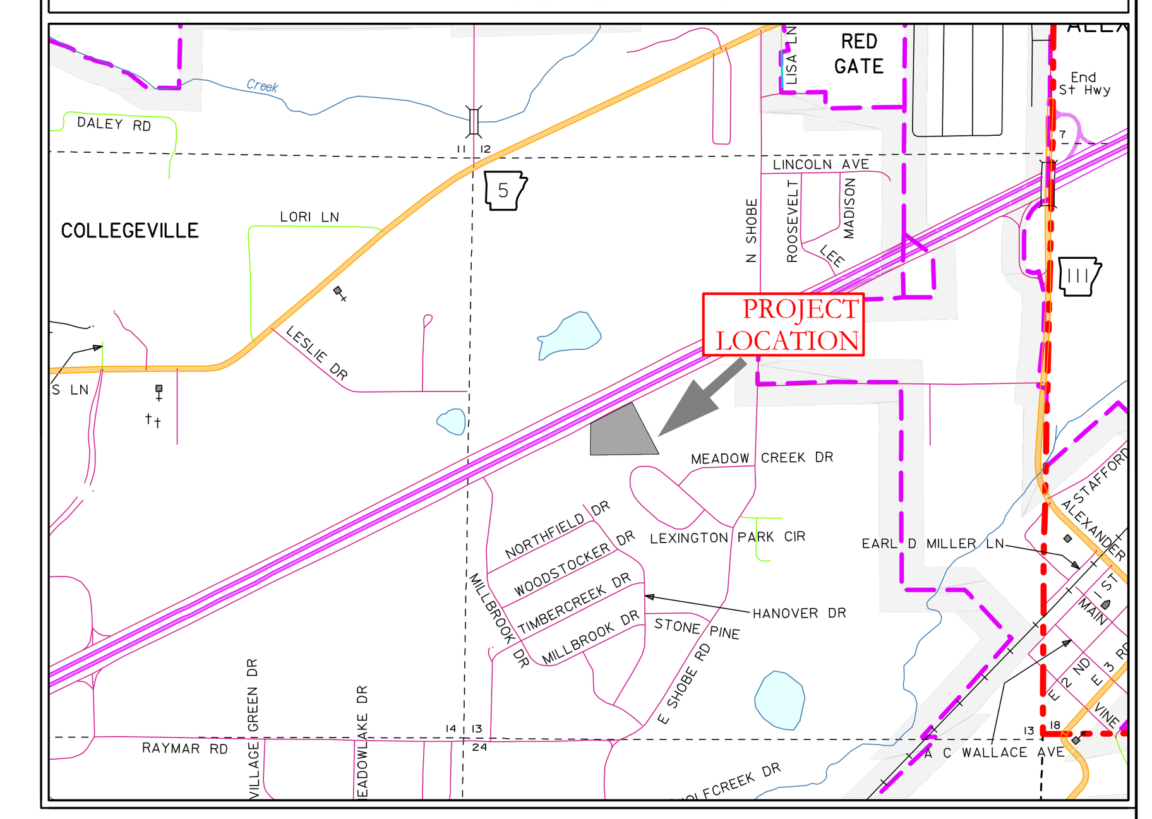
EXISTING VEGETATION WILL ONLY BE REMOVED WITHIN CONSTRUCTION AREA AS THEY ARE DEVELOPED. ADDITIONAL SILT FENCING WILL BE ADDED AS CONSTRUCTION TAKES PLACE IF NECESSARY.



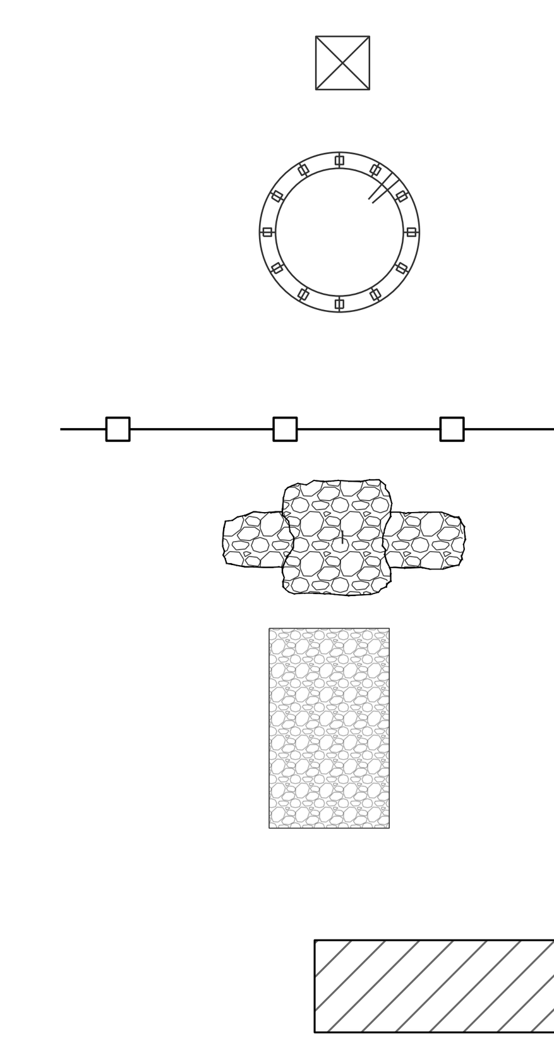


STABILIZED CONSTRUCTION ENTRANCE
N.T.S

VICINITY MAP:



ERC LEGEND



SITE POSTING

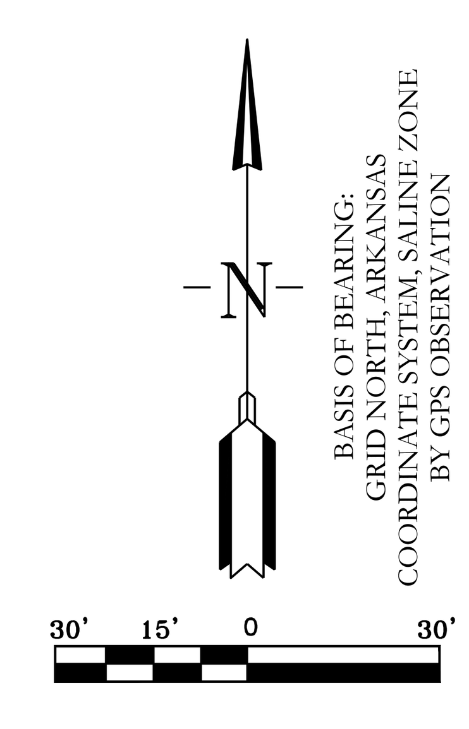
CONC. WASHOUT DETENTION AREA

SILT FENCE

RIP RAP CHECK DAM

CONSTRUCTION ENTRANCE

DISTURBED AREA



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

Know what's below. Call before you dig.

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No. 1931
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ENGINEERS - SURVEYORS
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Benton, Arkansas 72015
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FOR USE AND BENEFIT OF:
KNOEDL INVESTMENTS, LLC

OUTDOOR STORAGE YARD
EROSION CONTROL PLAN
I-30 FRONTAGE ROAD, BRYANT, AR

DATE: 05/16/2025	C.A.D. BY:	DRAWING NUMBER:	
REVISED:	CHECKED BY:	23-1109	
SHEET: C-4.0	SCALE: 1' = 30"		

500	01S	14W	0	13	420	62	1664

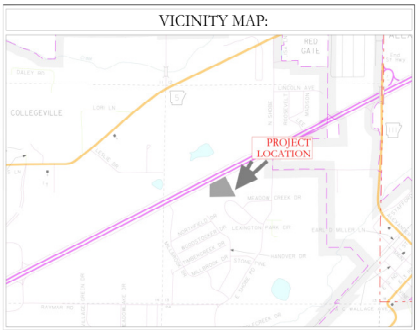
A:\HOPE CONSULTING\9. PROJECTS\3. 23-1109 EXPANSION ON I-30\DWG 03.10.25\SAJ_23-1109 PARKING EXTENSION_05-15-2025_FINAL.DWG

OUTDOOR STORAGE YARD

I-30 FRONTAGE ROAD, SALINE COUNTY, AR

DRAINAGE REPORT

MAY 2025



Owner & Developer

KNOEDL INVESTMENTS, LLC

By:

HOPE CONSULTING
ENGINEERS - SURVEYORS

129 N. Main Street
Benton, Arkansas 72015
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Table of Contents-

PROJECT TITLE

OUTDOOR STORAGE YARD

PROJECT PROPERTY OWNER

KNOEDL INVESTMENTS, LLC

PROJECT LOCATION

I-30 FRONTAGE RD in The City of BRYANT, Saline County, Arkansas

PROJECT DESCRIPTION

The proposed development is on side of the I-30 Frontage road. The total development site area is 4.19 acres.

DRAINAGE ANALYSIS

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

South Detention Pond

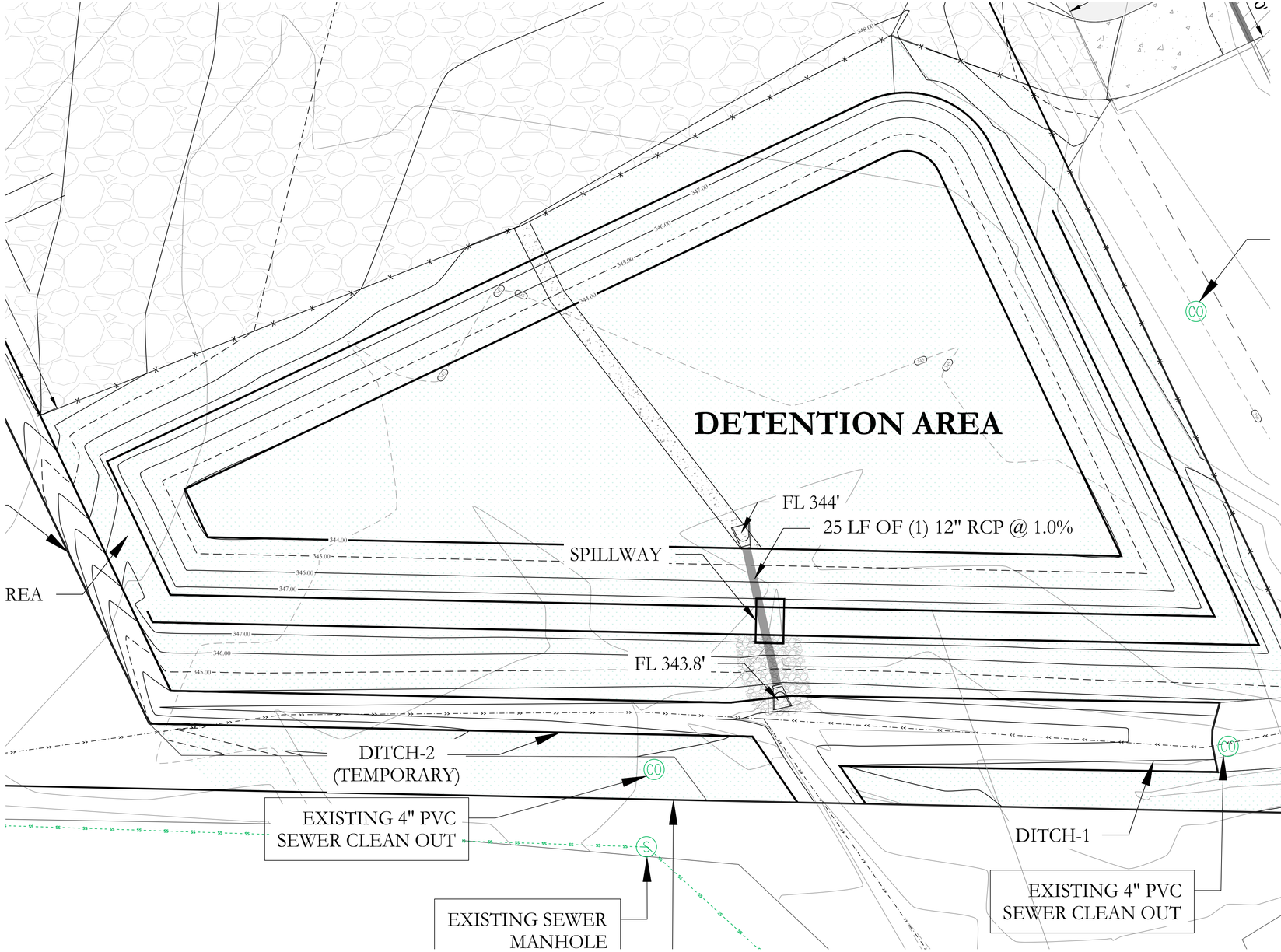
- A detention pond has been proposed on the South side of the property.
- Pre-development area 4.49 acres.
- Post-development area 4.70 acres.
- Considering the existing condition, pre-development runoff coefficient 0.47.
- Post-development cumulative runoff coefficient 0.96.
- Bottom elevation of detention facility is 344.00'.
- One 12" RCP with 1.00% slope is proposed for outflow culvert.

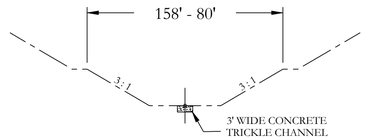
Peak flows for Pre and post development phase of onsite area have been tabulated below-

	Pre-development	Dev. Generated	Post-dev. After detention
	Peak Flow (cfs)	Peak Flow (cfs)	Peak Flow (cfs)
2-Year	7.418	23.19	3.044
5-Year	8.844	27.60	3.636
10- Year	9.965	31.05	3.992
25- Year	11.46	35.65	4.423
50- Year	12.53	39.11	4.681
100- Year	13.57	42.34	4.907

CONCLUSION

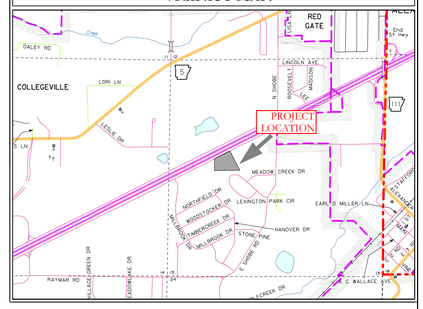
From the drainage calculation, it is seen that there is decrease in flow for all storm events due to the proposed detention pond.

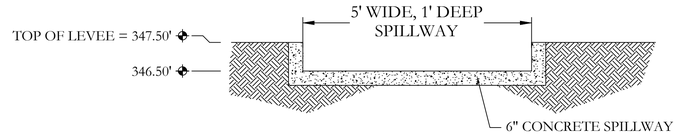




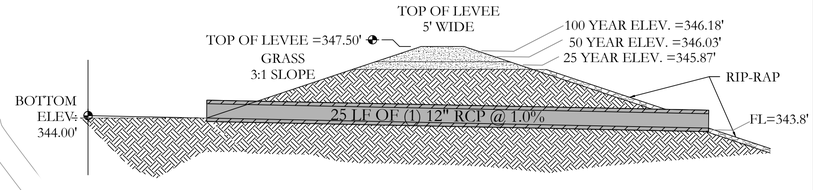
DETENTION PROPOSED SECTION
NTS

VICINITY MAP:





SPILLWAY END VIEW
NTS



OUTLET SECTION
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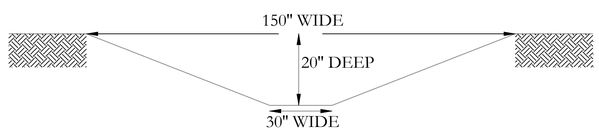

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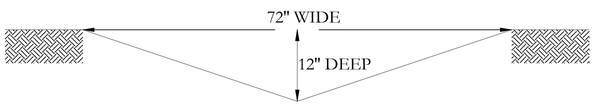

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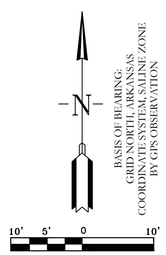

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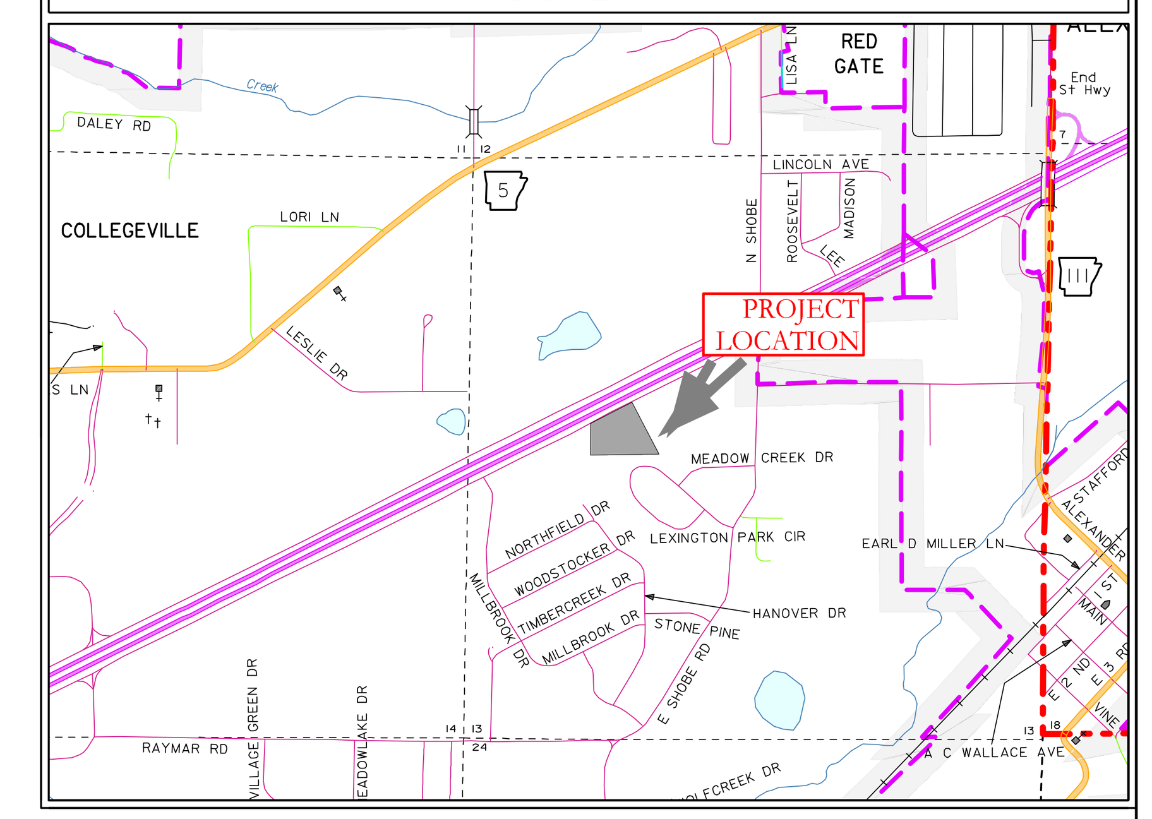

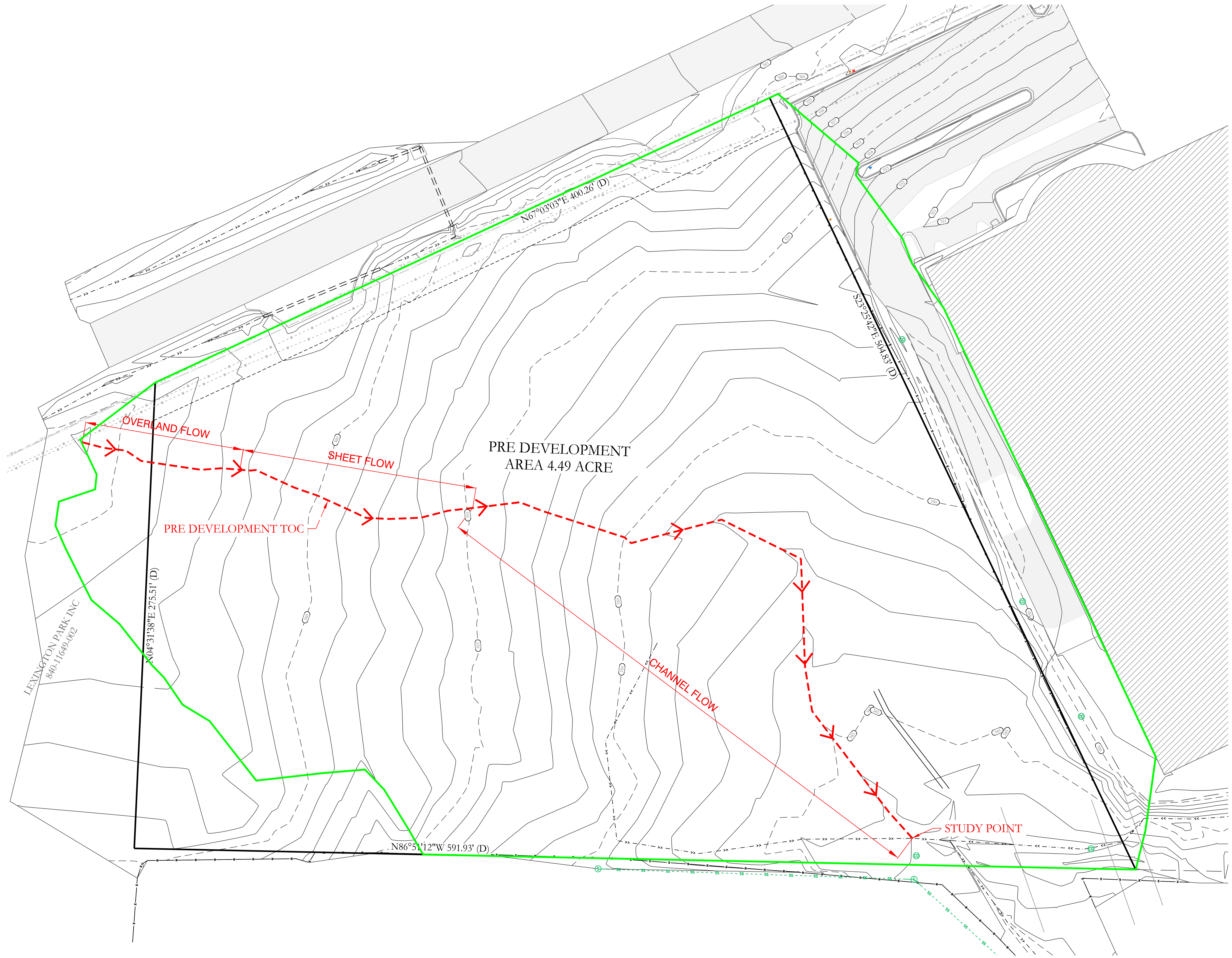

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No. 1938
ARKANSAS

N

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

30' 15' 0 30'

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FOR USE AND BENEFIT OF:
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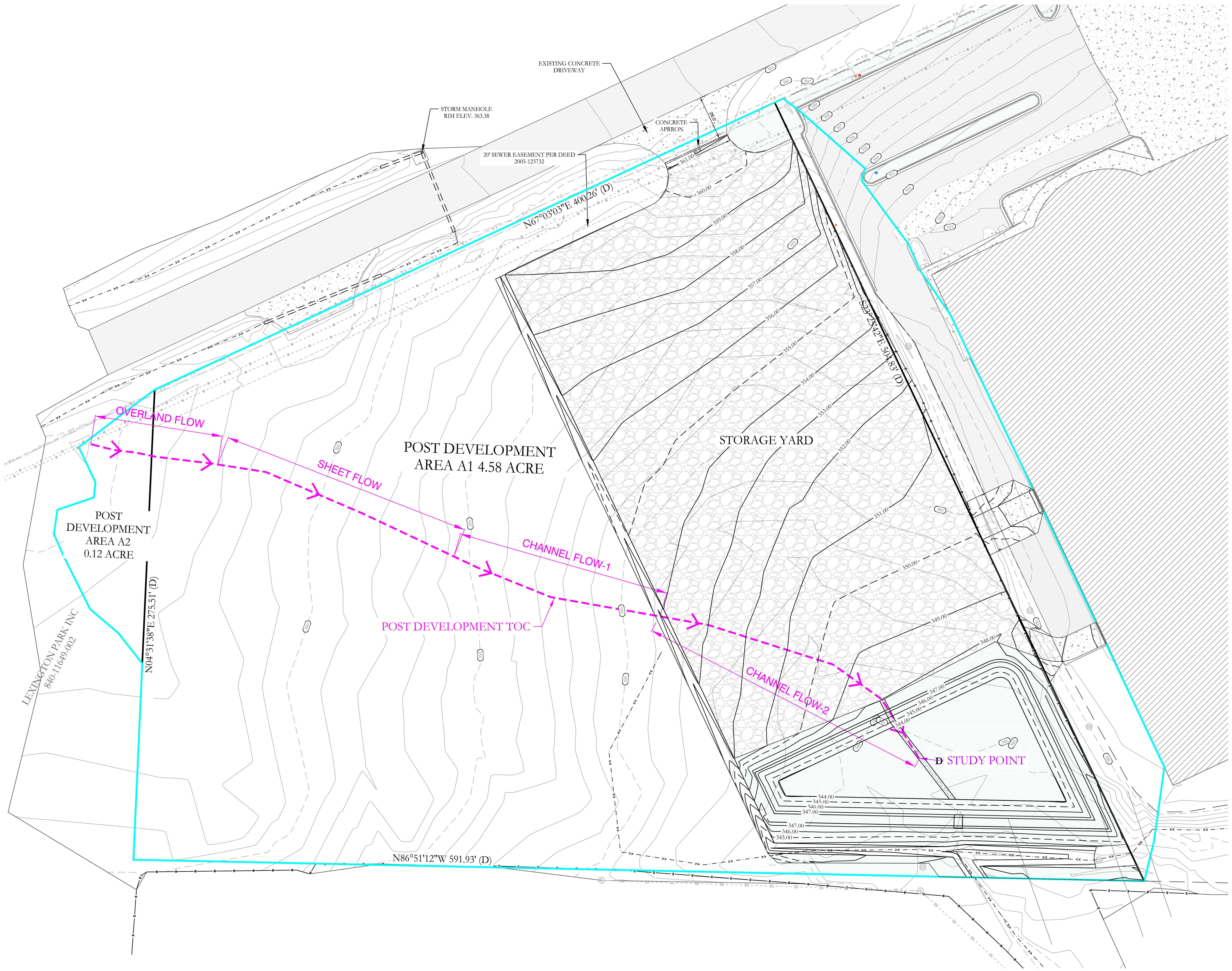
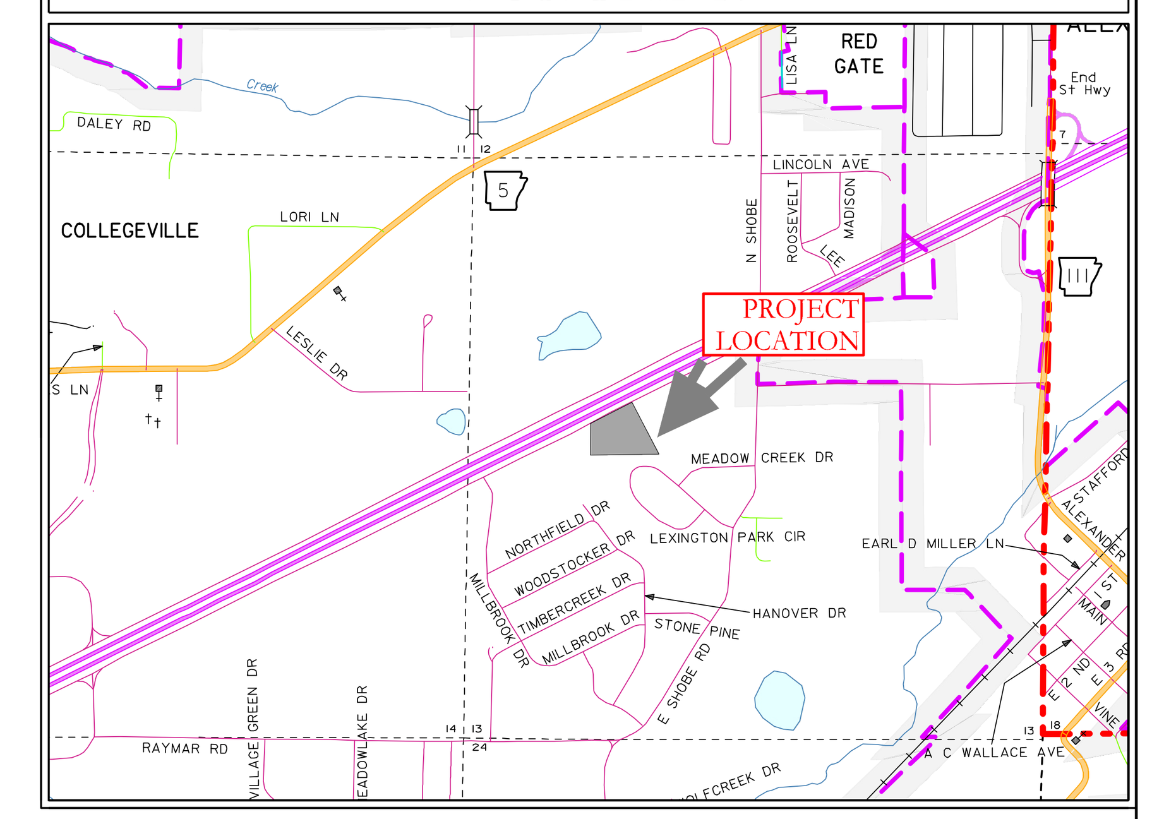
OUTDOOR STORAGE YARD
PRE DEVELOPMENT DRAINAGE AREA MAP
I-30 FRONTAGE ROAD, BRYANT, AR

DATE:	05/16/2025	C.A.D. BY:		DRAWING NUMBER:
REVISED:		CHECKED BY:		23-1109
SHEET:	C-3.1	SCALE:	1" = 30'	

500	01S	14W	0	13	420	62	1664



VICINITY MAP:



POST DEVELOPMENT TIME OF CONCENTRATION

		Velocity, V (ft/sec)	Length, L (ft)	Height, h (ft)	Slope, S (ft/ft)	Mannings, n	Hydraulic Radius, R
Area (ft2)	204931.0						
Area (Acre)	4.70						
Total Length, L (ft)	**535.0**						
Change in Elevation (ft)	20.0						
Gross Slope, S (ft/ft)	0.037						
N (Roughness Coeff)	0.150						
L_i (overland/sheet flow, ft)	75.0						
L_{scs}(shallow concentrated, ft)	150.0						
L_{cs} (channel , ft)	310.0						
$t_i = 0.83 \frac{(N L_i)^{0.467}}{S^{0.5}}$, (min)	5.99	-	75.0	2.0	0.027	0.150	-
$t_{scs} = \frac{L_{scs}}{60\,V}$, (min) , unpaved V=16.1345(S^0.5)	0.77	3.23	150.0	6.0	0.040	-	-
$t_{cs} = \frac{L_{cs}}{60\,V}$, (min) $V = \frac{1.49}{n} R^{\frac{2}{3}} S^{\frac{1}{2}}$ Ch1-Future Dev	0.29	7.34	126.0	7.0	0.056	0.023	0.333
Ch2-Gravel	0.61	5.01	184.0	5.0	0.027	0.023	0.321
Total time of concentration, tc (min)	**7.66**						
USE	8						

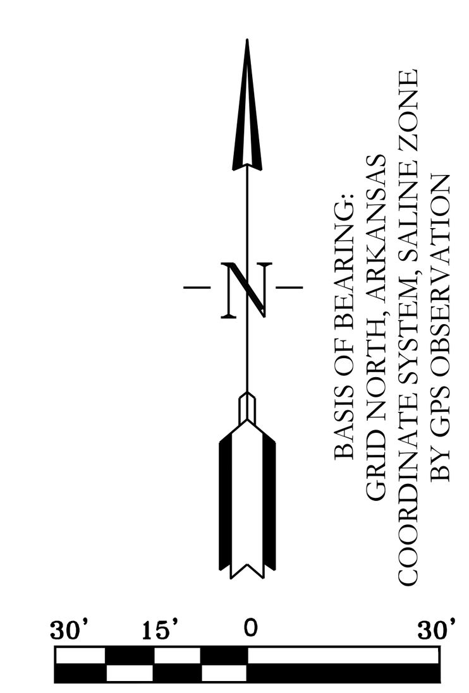
POST DEVELOPMENT RUNOFF COEFFICIENT

	Area (acer)	C 100 year		**100 year**
Area A1 (Storage Yard & Future development)	4.58	0.97		4.45
Area A2 (Undeveloped)	0.12	0.47		0.06
Tot A =	4.70		Corr. C =	**0.96**

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

HDPE

RCP



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

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

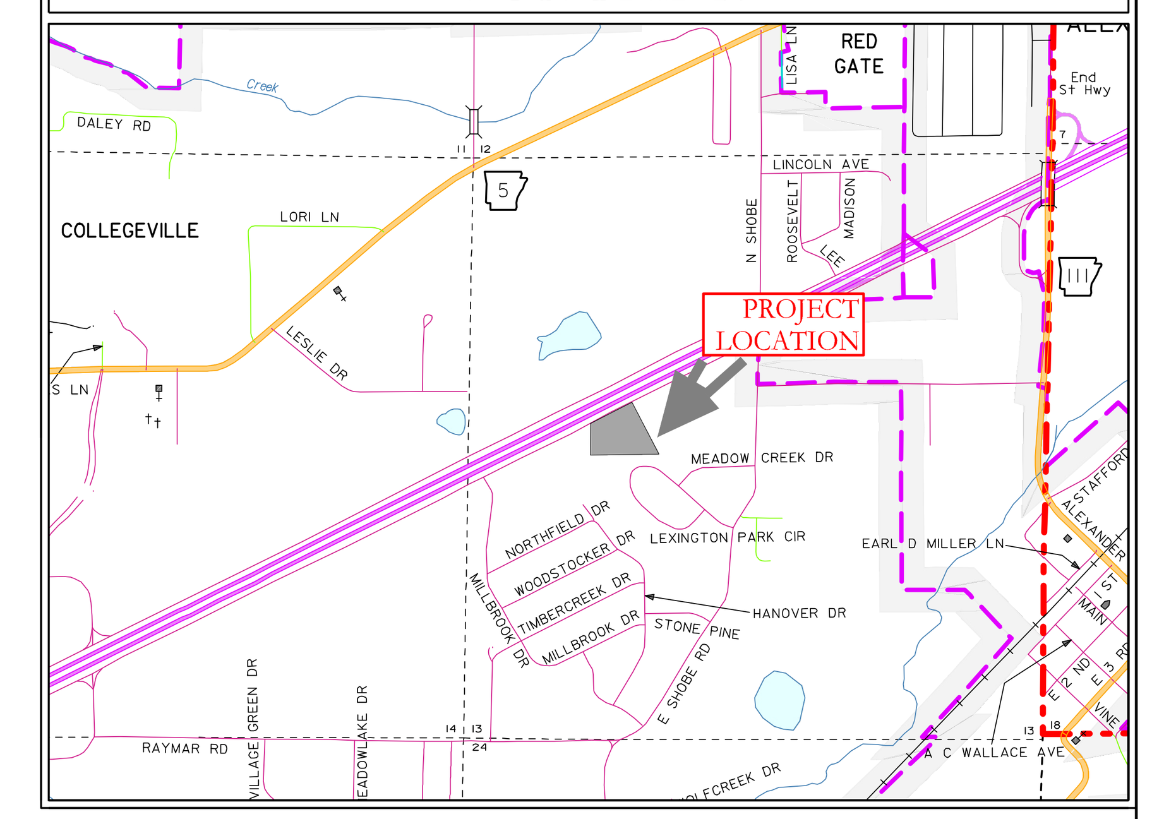
FOR USE AND BENEFIT OF:
KNOEDL INVESTMENTS, LLC

OUTDOOR STORAGE YARD
POST DEVELOPMENT DRAINAGE AREA MAP
I-30 FRONTAGE ROAD, BRYANT, AR

DATE: 05/16/2025	C.A.D. BY:	DRAWING NUMBER:
REVISED:	CHECKED BY:	23-1109
SHEET: C-3.2	SCALE: 1" = 30"	

500	01S	14W	0	13	420	62	1664

A:\HOPE CONSULTING\1 PROJECTS\23-1109 EXPANSION ON I-30\DWG 03.10.25\SAJ_23-1109 PARKING EXTENSION_05-15-2025_FINAL.DWG



12" RCP PIPE Capacity Check

Target Discharge				
Frequency - Duration	Intensity, I (in/hr)	Runoff Coefficient, C	Toal Area, A (ac)	Discharge, Q = CIA (cfs)
100 yr - 5 min	11.20	0.97	0.21	**2.29**

Pipe Capacity Check

Pipe Dia (in): 12
Target Discharge, Q (cfs): 2.29

$Q = V A$

$V = \frac{1.49}{n} R^{\frac{2}{3}} S^{\frac{1}{2}}$

	Discharge Capacity, Q (cfs)	Velocity, V (ft/sec)	Pipe Dia, (ft)	Area, A (ft^2)	Flow Depth, y (ft)	Length, L (ft)	Elevation, h (ft)	Slope, S (ft/ft)	Mannings, n	Wetted Perimeter, P	Hydraulic Radius, R = A/P
100%	2.74	3.49	1.00	0.79	1.00	34.0	0.2	0.0059	0.013	3.142	0.250

(Pipe Dimension)

Adequate size

Ditch-1 Size Calculation

Existing Ditch Capacity Calculation

$Q = V A$

$V = \frac{1.49}{n} R^{\frac{2}{3}} S^{\frac{1}{2}}$

		Velocity, V (ft/sec)	Bottom Width, (ft)	Depth, (ft)	Top Width, (ft)	Ch Side Slope 1:Z	Area, (ft^2)	Slope, S (ft/ft)	Mannings, n	Hydraulic Radius, R
Existing Channel	55.74	3.72	0.00	1.68	17.84	5.31	14.99	0.0100	0.030	0.648
Existing Channel Capacity, Q =	**55.74**	ft^3/s								

(Existing Channel Dimension)

Proposed Ditch Capacity Calculation - DITCH 1

Target Discharge, Q (ft^3/s): 55.7

$Q = V A$

$V = \frac{1.49}{n} R^{\frac{2}{3}} S^{\frac{1}{2}}$

		Velocity, V (ft/sec)	Bottom Width, (ft)	Depth, (ft)	Top Width, (ft)	Ch Side Slope 1:Z	Area, (ft^2)	Slope, S (ft/ft)	Mannings, n	Hydraulic Radius, R
Ditch 1	60.98	4.86	2.50	1.67	12.52	3.00	12.54	0.0100	0.030	0.969
Discharge Capacity, Q =	**60.98**	ft^3/s								

(Proposed Channel Dimension)

Adequate size

Ditch-2 Size Calculation

		Velocity, V (ft/sec)	Length, L (ft)	Height, h (ft)	Slope, S (ft/ft)	Mannings, n	Hydraulic Radius, R
Area (ft2)	102056.0						
Area (Acre)	2.34						
Total Length, L (ft)	**630.0**						
Change in Elevation (ft)	16.9						
Gross Slope, S (ft/ft)	0.027						
N (Coeff. Of roughness, Table 400-3)	0.600						
L_i (overland/sheet flow, ft)	50.0						
L_{scs}(shallow concentrated, ft)	100.0						
L_{cs} (channel , ft)	480.0						
$t_i = 0.83 \frac{(N L_i)^{0.467}}{S^{0.5}}$, (min)	9.21	-	50.0	1.5	0.030	0.600	-
$t_{scs} = \frac{L_{scs}}{60 V}$, (min) , unpaved; V=16.1345(S^0.5)	0.54	3.10	100.0	3.7	0.037	-	-
$t_{cs} = \frac{L_{cs}}{60 V}$, (min); $V = \frac{1.49}{n} R^{\frac{2}{3}} S^{\frac{1}{2}}$ Ch1	2.18	1.40	183.0	9.0	0.049	0.100	0.275
Ch2-Ditch	0.80	6.22	297.0	12.6	0.042	0.030	0.474
Total time of concentration, tc (min)	**12.73**						
USE	13						

Design Peak Runoff Rates, Qp (cfs)

tc =	13.00	Runoff Coefficient, C modified	Toal Area (ac)	Discharge, Q (cfs)
	Intensity, I (in/hr)			
100year	7.69	**0.470**	**2.34 acer**	**8.47**

Channel/ Ditch Dimension Calculation

Total Length, L (ft): 375.0
Total Change in Elevation (ft): 14
Slope, S (ft/ft): 0.037
Target Discharge, Q (ft^3/s): 8.5

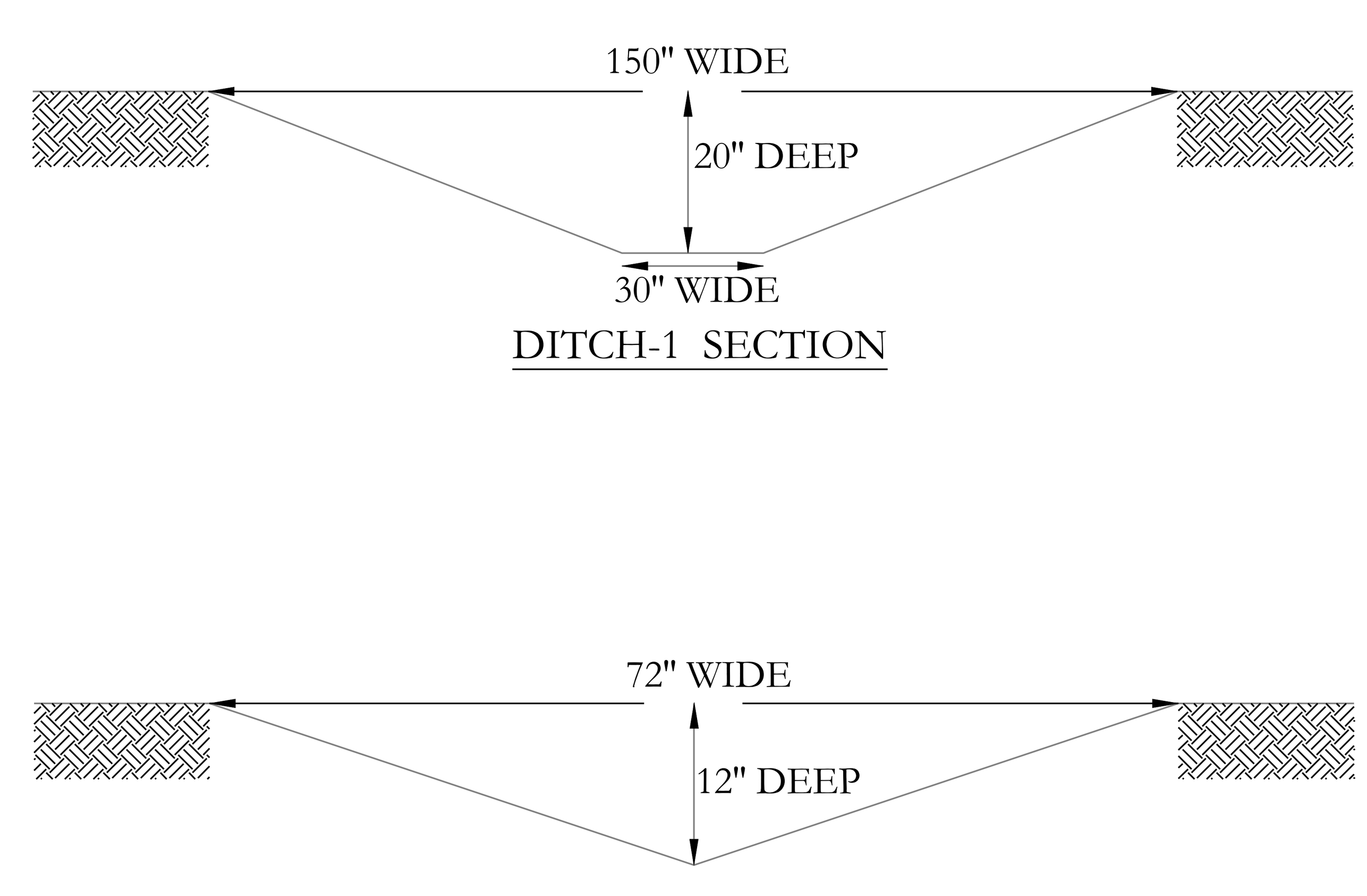
$Q = V A$

$V = \frac{1.49}{n} R^{\frac{2}{3}} S^{\frac{1}{2}}$

		Velocity, V (ft/sec)	Bottom Width, (ft)	Depth, (ft)	Top Width, (ft)	Ch Side Slope 1:Z	Area, (ft^2)	Length, L (ft)	Elevation, h (ft)	Slope, S (ft/ft)	Mannings, n	Hydraulic Radius, R
Ditch 2	17.51	5.84	0.00	1.00	6.00	3	3.00	375.0	14.0	0.0373	0.030	0.474
Discharge Capacity, Q =	**17.51**	ft^3/s										

(Channel Dimension)

Adequate size



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

N

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

40' 20' 0 40'

HDPE
RCP

HOPE CONSULTING
ENGINEERS - SURVEYORS

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FOR USE AND BENEFIT OF:
KNOEDL INVESTMENTS, LLC

OUTDOOR STORAGE YARD
DITCH AND PIPE DRAINAGE MAP & CALCULATION
I-30 FRONTAGE ROAD, BRYANT, AR

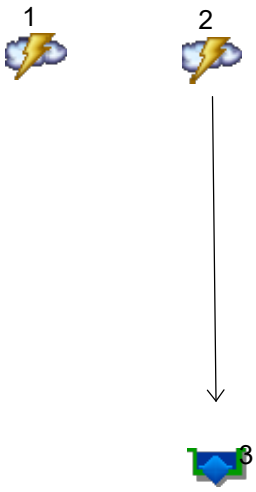
DATE: 05/16/2025	C.A.D. BY:	DRAWING NUMBER:
REVISED:	CHECKED BY:	23-1109
SHEET: C-3.3	SCALE: 1' = 40"	

500	01S	14W	0	13	420	62	1664

A:\HOPE CONSULTING\9. PROJECTS\3. 23-1109 EXPANSION ON I-30\DWG 03.10.25\SAJ_23-1109 PARKING EXTENSION_05-15-2025_FINAL.DWG

Hydrograph Summary Report
SOUTH DETENTION

Watershed Model Schematic



Legend

Hyd.	Origin	Description
1	Rational	Pre Development
2	Rational	Post Development
3	Reservoir	Detention

Multi-Hydrograph Plot

Hyd. No. 1

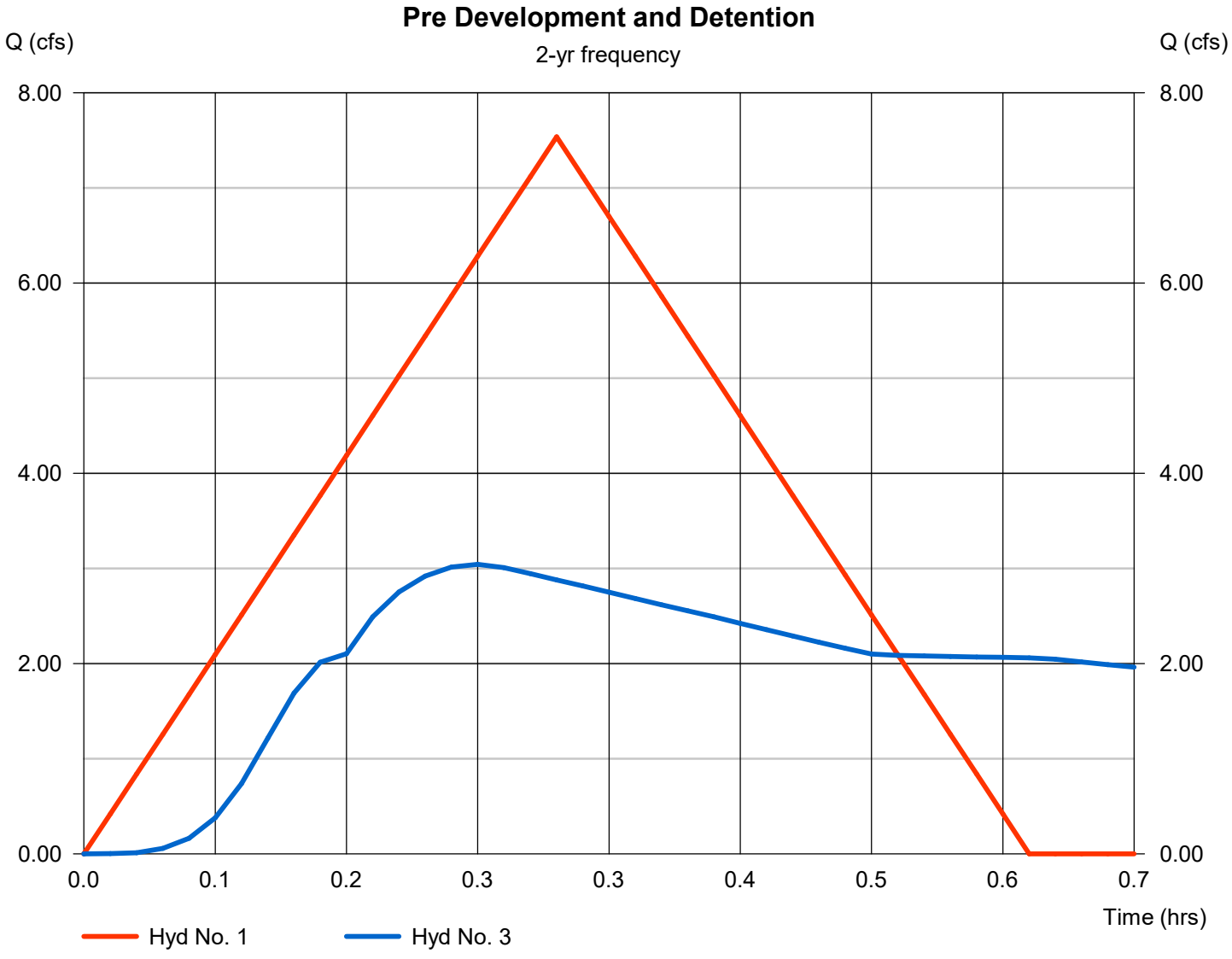
Pre Development

Hydrograph type	=	Rational
Peak discharge	=	7.535 cfs
Time to peak	=	0.30 hrs
Hyd. Volume	=	8,138 cuft

Hyd. No. 3

Detention

Hydrograph type	=	Reservoir
Peak discharge	=	3.04 cfs
Time to peak	=	0.25 hrs
Hyd. Volume	=	11,152 cuft



Multi-Hydrograph Plot

Hyd. No. 1

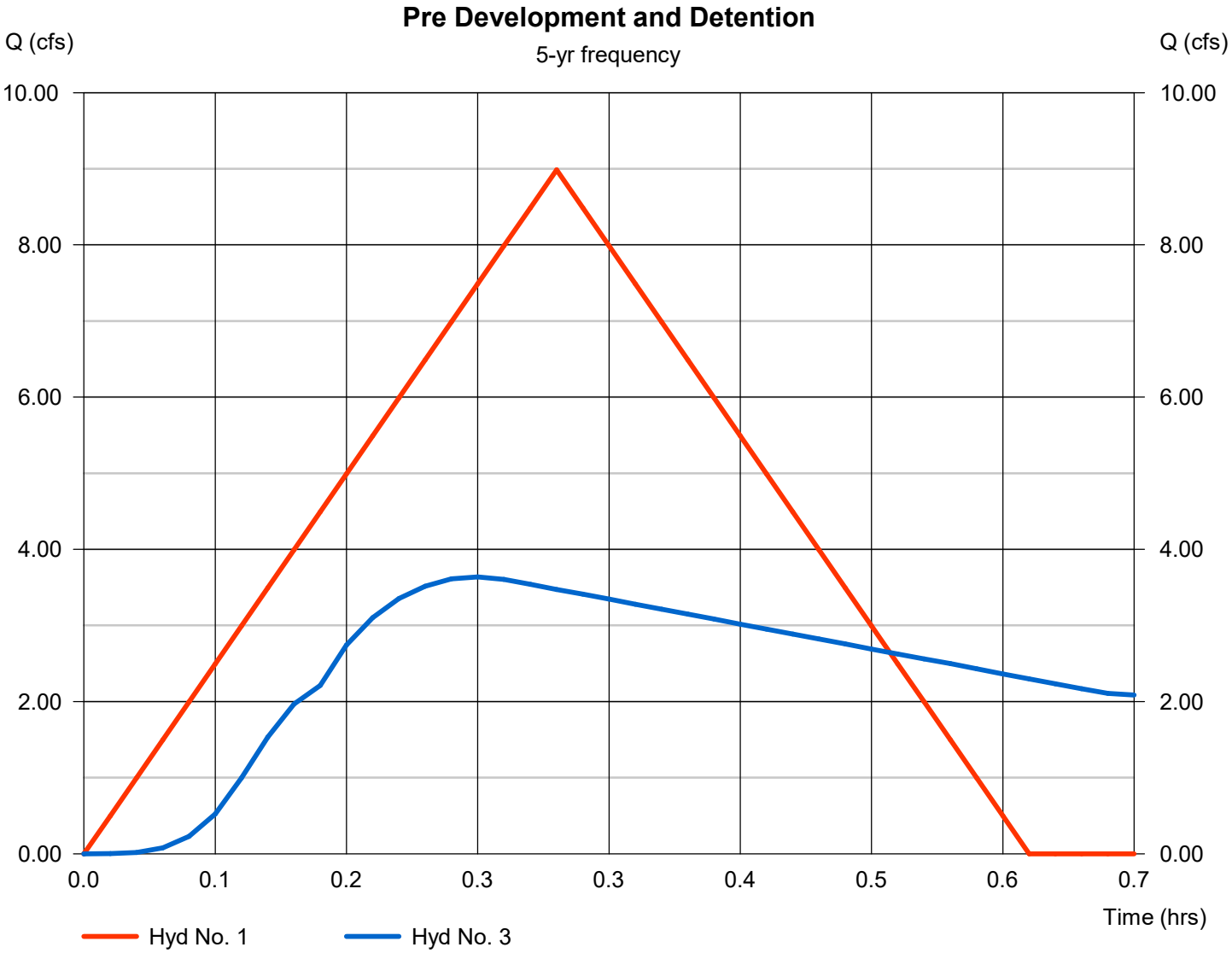
Pre Development

Hydrograph type	=	Rational
Peak discharge	=	8.984 cfs
Time to peak	=	0.30 hrs
Hyd. Volume	=	9,703 cuft

Hyd. No. 3

Detention

Hydrograph type	=	Reservoir
Peak discharge	=	3.64 cfs
Time to peak	=	0.25 hrs
Hyd. Volume	=	13,276 cuft



Multi-Hydrograph Plot

Hyd. No. 1

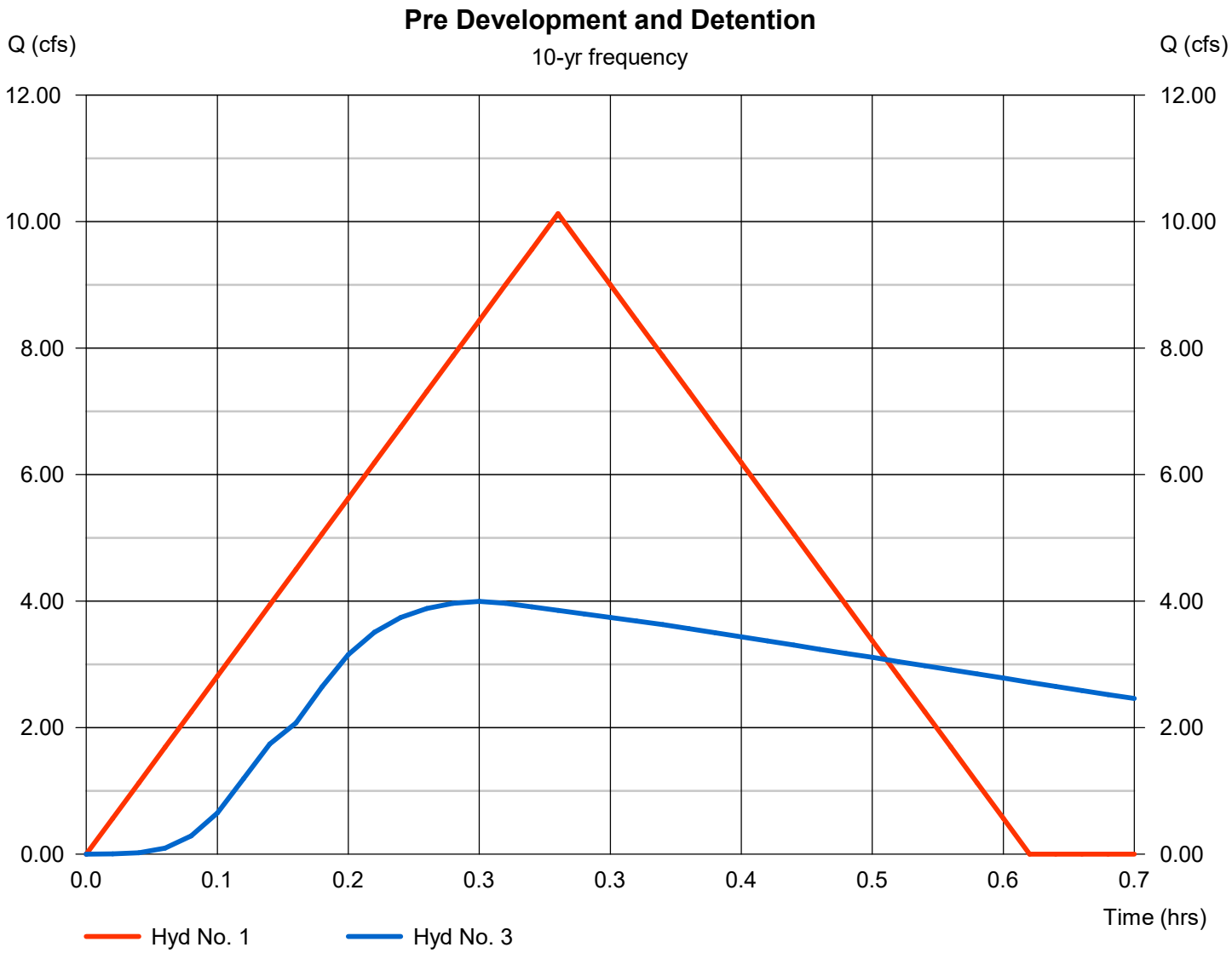
Pre Development

Hydrograph type	=	Rational
Peak discharge	=	10.12 cfs
Time to peak	=	0.30 hrs
Hyd. Volume	=	10,933 cuft

Hyd. No. 3

Detention

Hydrograph type	=	Reservoir
Peak discharge	=	3.99 cfs
Time to peak	=	0.25 hrs
Hyd. Volume	=	14,943 cuft



Multi-Hydrograph Plot

Hyd. No. 1

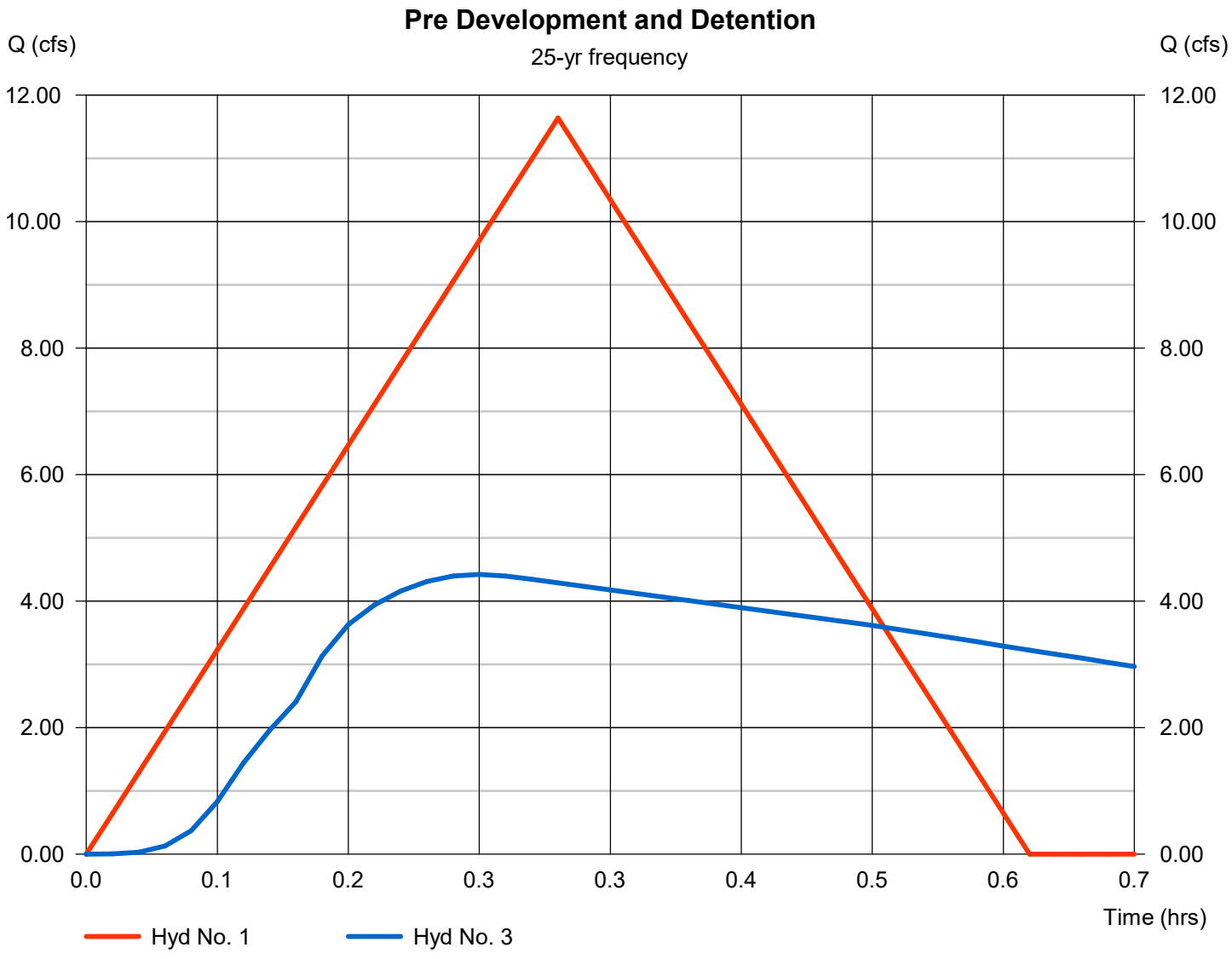
Pre Development

Hydrograph type	=	Rational
Peak discharge	=	11.64 cfs
Time to peak	=	0.30 hrs
Hyd. Volume	=	12,569 cuft

Hyd. No. 3

Detention

Hydrograph type	=	Reservoir
Peak discharge	=	4.42 cfs
Time to peak	=	0.25 hrs
Hyd. Volume	=	17,162 cuft



Multi-Hydrograph Plot

Hyd. No. 1

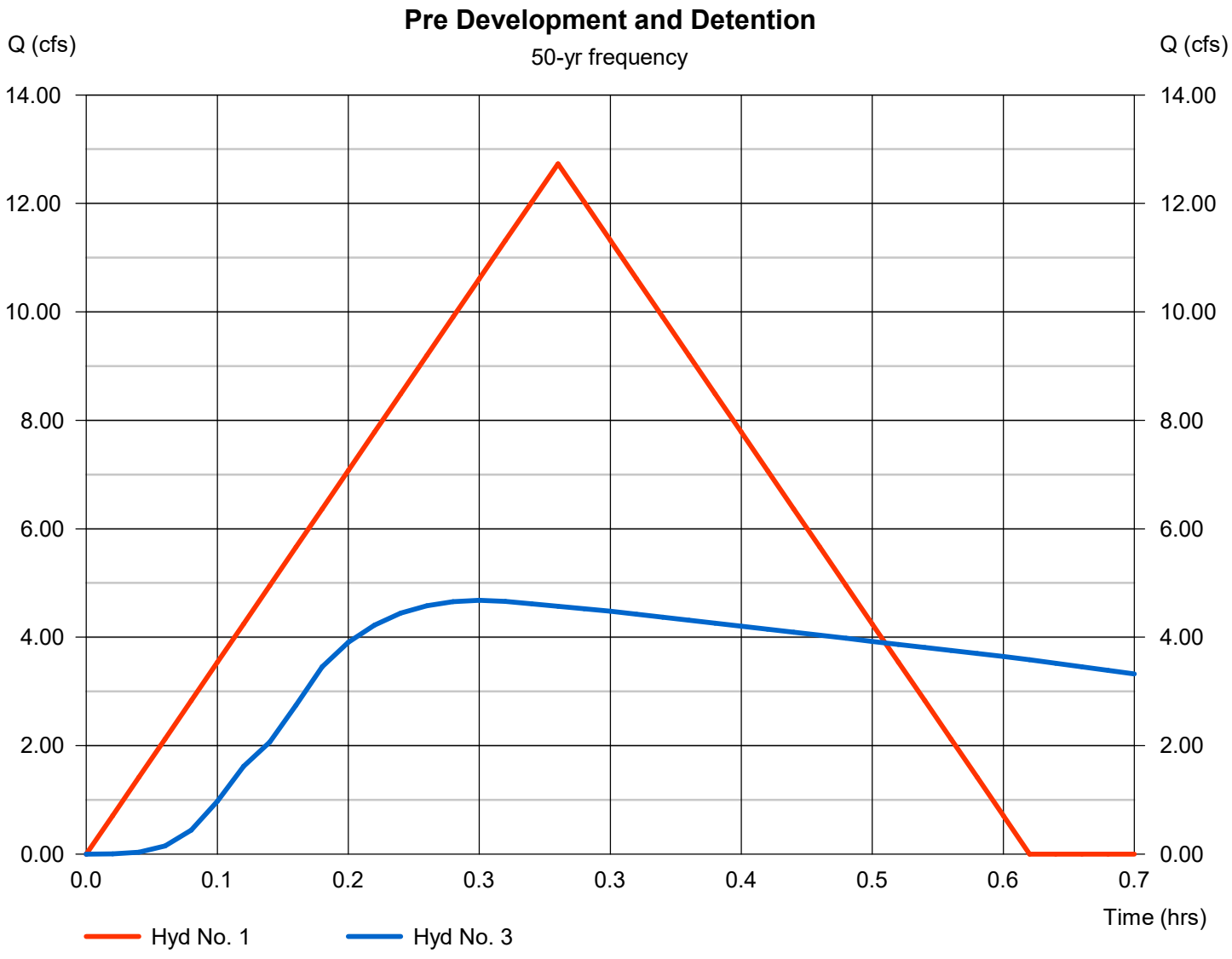
Pre Development

Hydrograph type	=	Rational
Peak discharge	=	12.73 cfs
Time to peak	=	0.30 hrs
Hyd. Volume	=	13,751 cuft

Hyd. No. 3

Detention

Hydrograph type	=	Reservoir
Peak discharge	=	4.68 cfs
Time to peak	=	0.25 hrs
Hyd. Volume	=	18,830 cuft



Multi-Hydrograph Plot

Hyd. No. 1

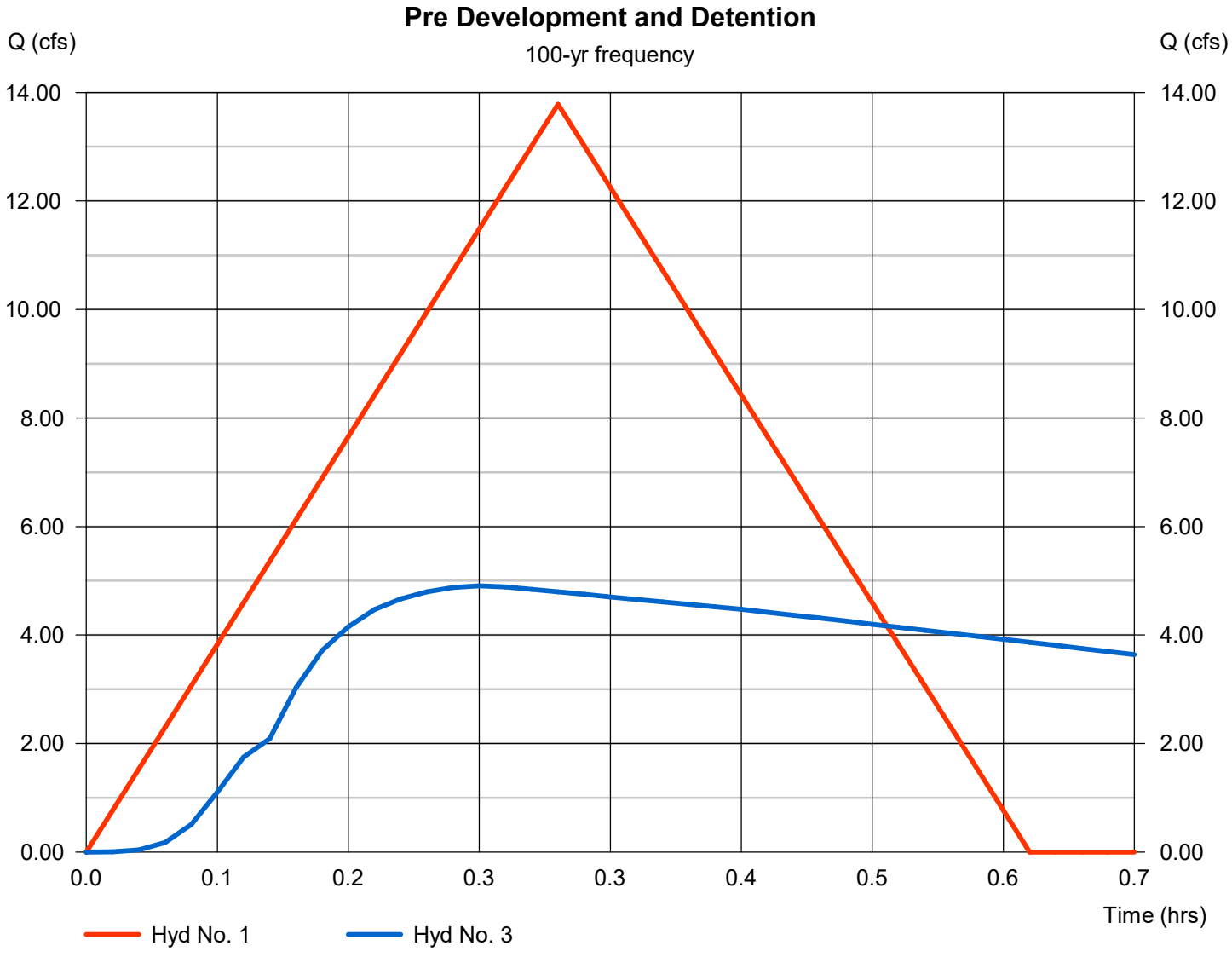
Pre Development

Hydrograph type	=	Rational
Peak discharge	=	13.78 cfs
Time to peak	=	0.30 hrs
Hyd. Volume	=	14,883 cuft

Hyd. No. 3

Detention

Hydrograph type	=	Reservoir
Peak discharge	=	4.91 cfs
Time to peak	=	0.25 hrs
Hyd. Volume	=	20,388 cuft



Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	Rational	------	-------	7.535	-------	8.984	10.12	11.64	12.73	13.78	Pre Development
2	Rational	------	-------	23.30	-------	27.72	31.20	35.82	39.29	42.54	Post Development
3	Reservoir	2	-------	3.044	-------	3.636	3.992	4.423	4.681	4.907	Detention

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	7.535	1	18	8,138	------	------	------	Pre Development
2	Rational	23.30	1	8	11,184	------	------	------	Post Development
3	Reservoir	3.044	1	15	11,152	2	345.28	9,832	Detention

Hydrograph Report

Hyd. No. 1

Pre Development

Hydrograph type	= Rational	Peak discharge	= 7.535 cfs
Storm frequency	= 2 yrs	Time to peak	= 18 min
Time interval	= 1 min	Hyd. volume	= 8,138 cuft
Drainage area	= 4.490 ac	Runoff coeff.	= 0.47
Intensity	= 3.571 in/hr	Tc by User	= 18.00 min
IDF Curve	= Bryant, Arkansas, USA (La 34.6349 Lo -92.4569).IDF	Asc/Rec limb fact	= 1/1

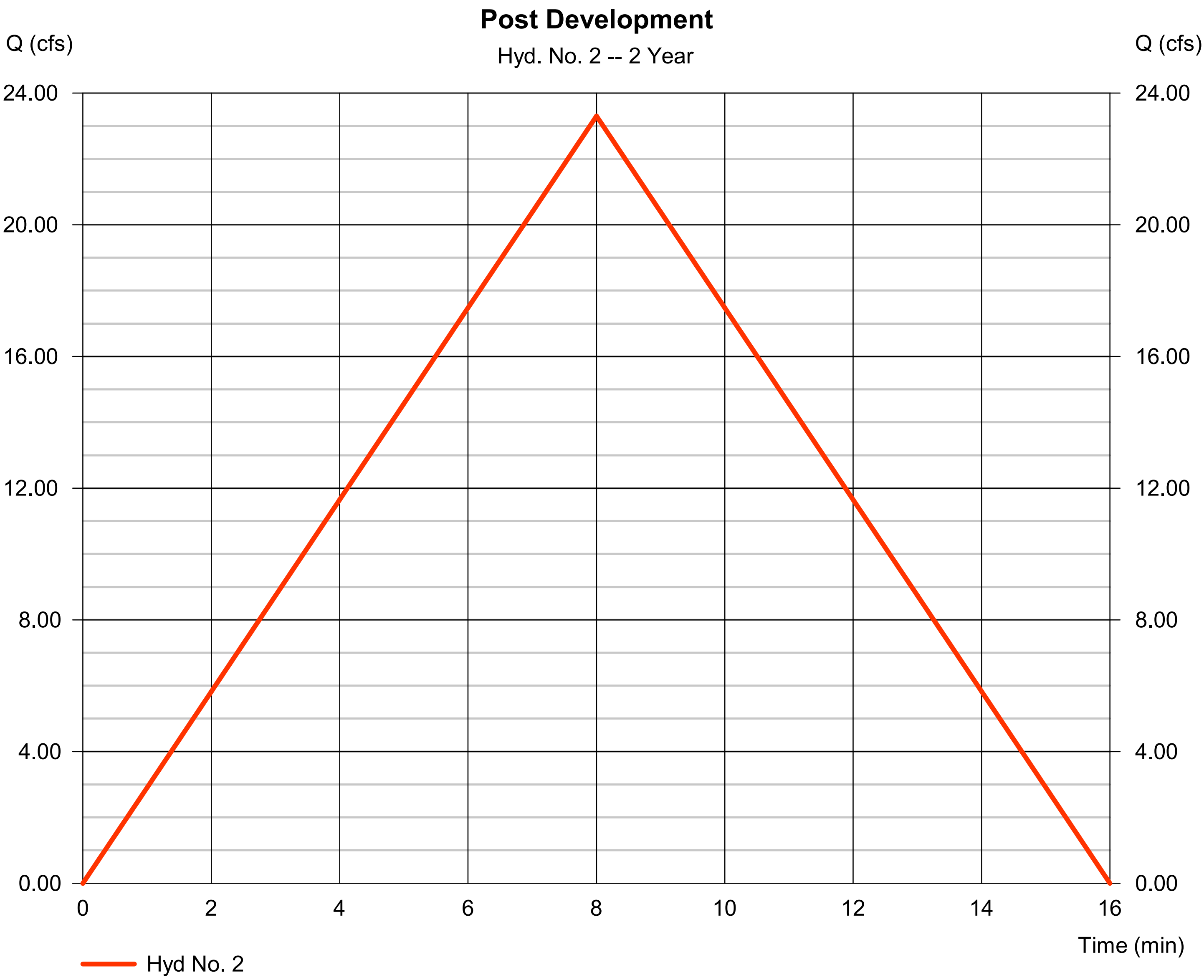
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Friday, 05 / 16 / 2025

Hyd. No. 2

Post Development

Hydrograph type	= Rational	Peak discharge	= 23.30 cfs
Storm frequency	= 2 yrs	Time to peak	= 8 min
Time interval	= 1 min	Hyd. volume	= 11,184 cuft
Drainage area	= 4.700 ac	Runoff coeff.	= 0.96
Intensity	= 5.164 in/hr	Tc by User	= 8.00 min
IDF Curve	= Bryant, Arkansas, USA (La 34.6349 Lo -92.4569).IDF	Asc/Rec limb fact	= 1/1



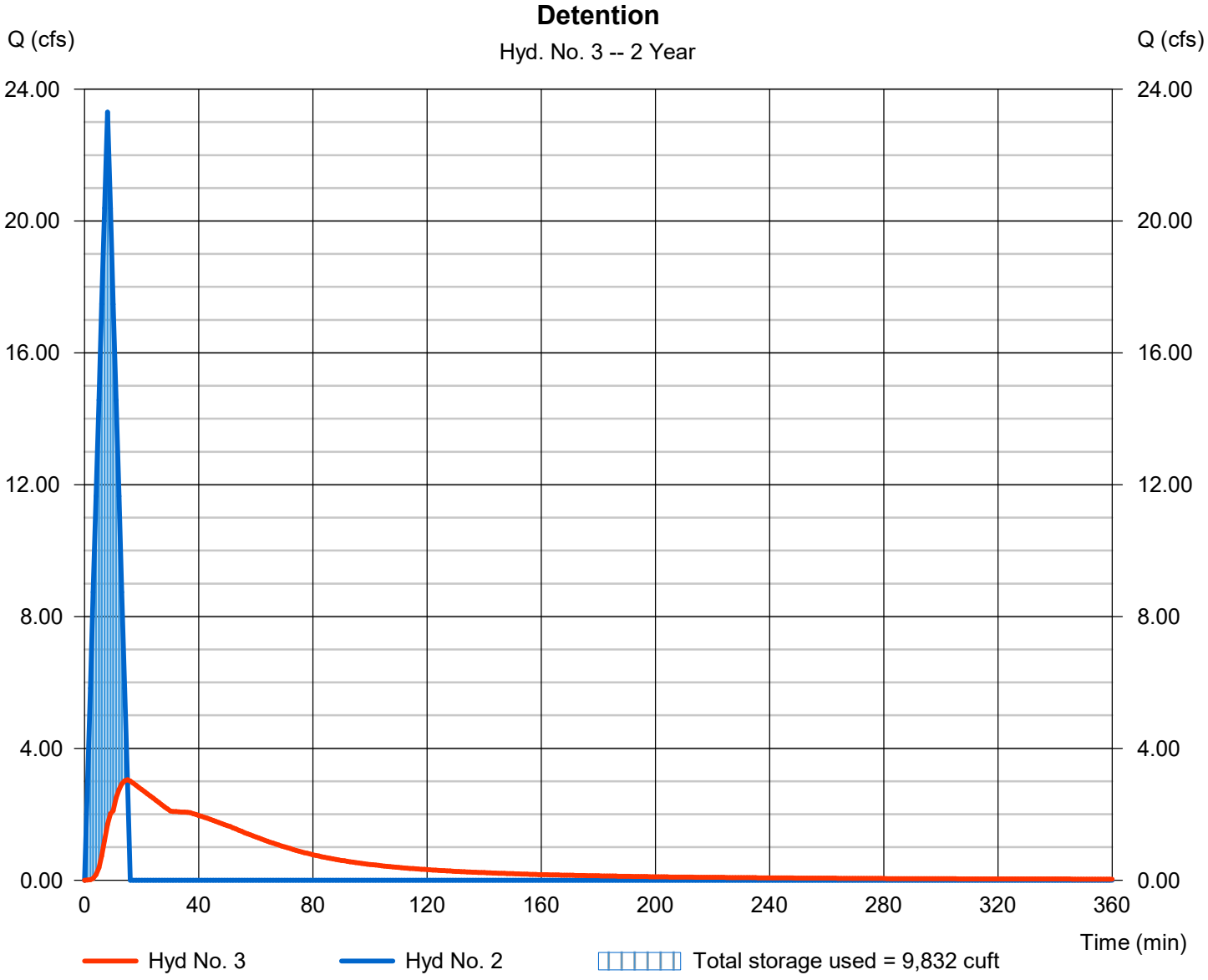
Hydrograph Report

Hyd. No. 3

Detention

Hydrograph type	=	Reservoir	Peak discharge	=	3.044 cfs
Storm frequency	=	2 yrs	Time to peak	=	15 min
Time interval	=	1 min	Hyd. volume	=	11,152 cuft
Inflow hyd. No.	=	2 - Post Development	Max. Elevation	=	345.28 ft
Reservoir name	=	Pond	Max. Storage	=	9,832 cuft

Storage Indication method used.



Pond Report

Pond No. 1 - Pond

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 344.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	344.00	6,800	0	0
0.50	344.50	7,411	3,551	3,551
1.50	345.50	8,687	8,040	11,591
2.50	346.50	10,035	9,352	20,943
3.50	347.50	11,456	10,737	31,680

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 12.00	0.00	0.00	0.00
Span (in)	= 12.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 344.00	0.00	0.00	0.00
Length (ft)	= 25.00	0.00	0.00	0.00
Slope (%)	= 1.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

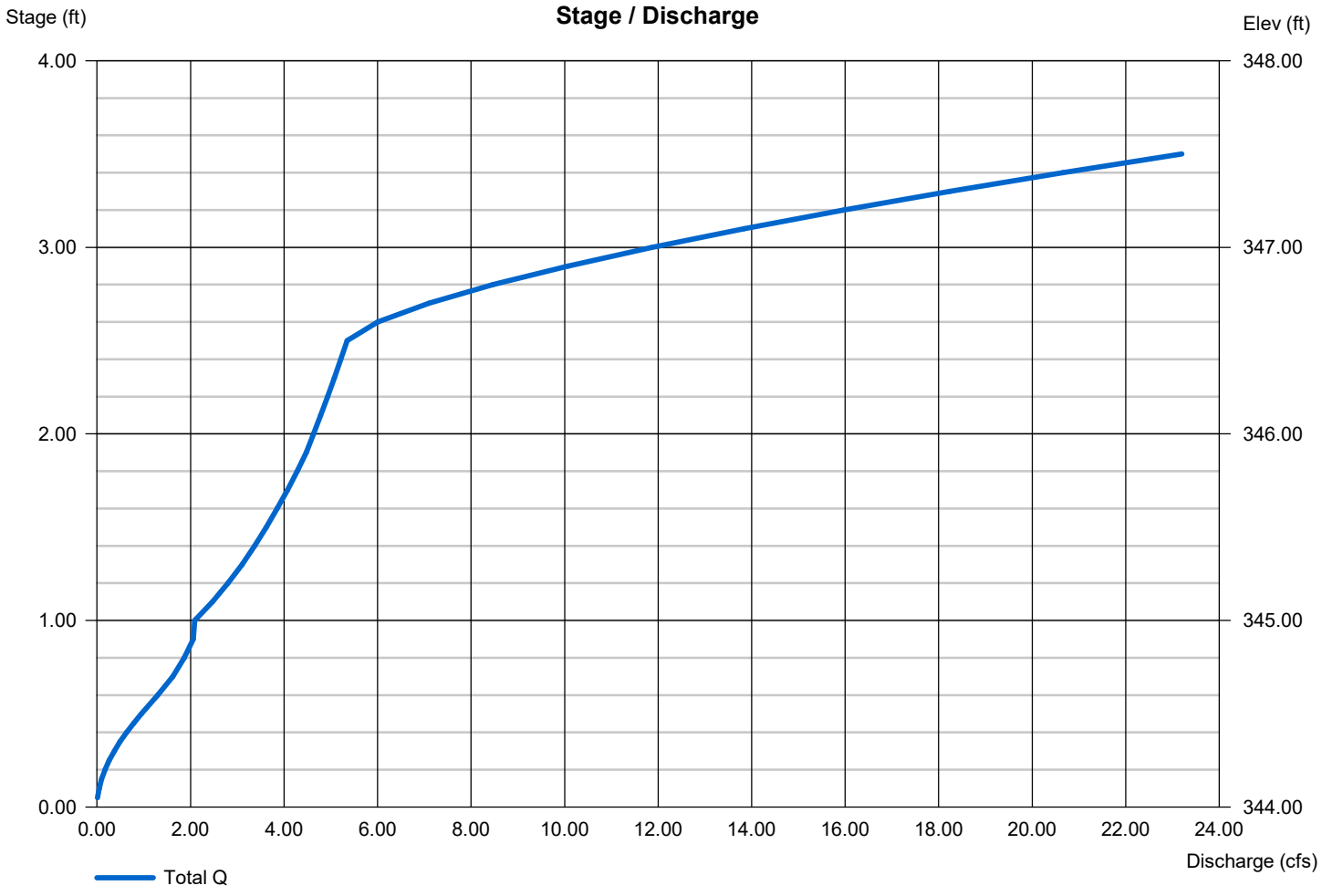
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 5.00	0.00	0.00	0.00
Crest El. (ft)	= 346.50	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Contour)

TW Elev. (ft) = 0.00

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



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	8.984	1	18	9,703	------	------	------	Pre Development
2	Rational	27.72	1	8	13,308	------	------	------	Post Development
3	Reservoir	3.636	1	15	13,276	2	345.51	11,662	Detention

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Friday, 05 / 16 / 2025

Hyd. No. 1

Pre Development

Hydrograph type	= Rational	Peak discharge	= 8.984 cfs
Storm frequency	= 5 yrs	Time to peak	= 18 min
Time interval	= 1 min	Hyd. volume	= 9,703 cuft
Drainage area	= 4.490 ac	Runoff coeff.	= 0.47
Intensity	= 4.257 in/hr	Tc by User	= 18.00 min
IDF Curve	= Bryant, Arkansas, USA (La 34.6349 Lo -92.4569).IDF	Asc/Rec limb fact	= 1/1

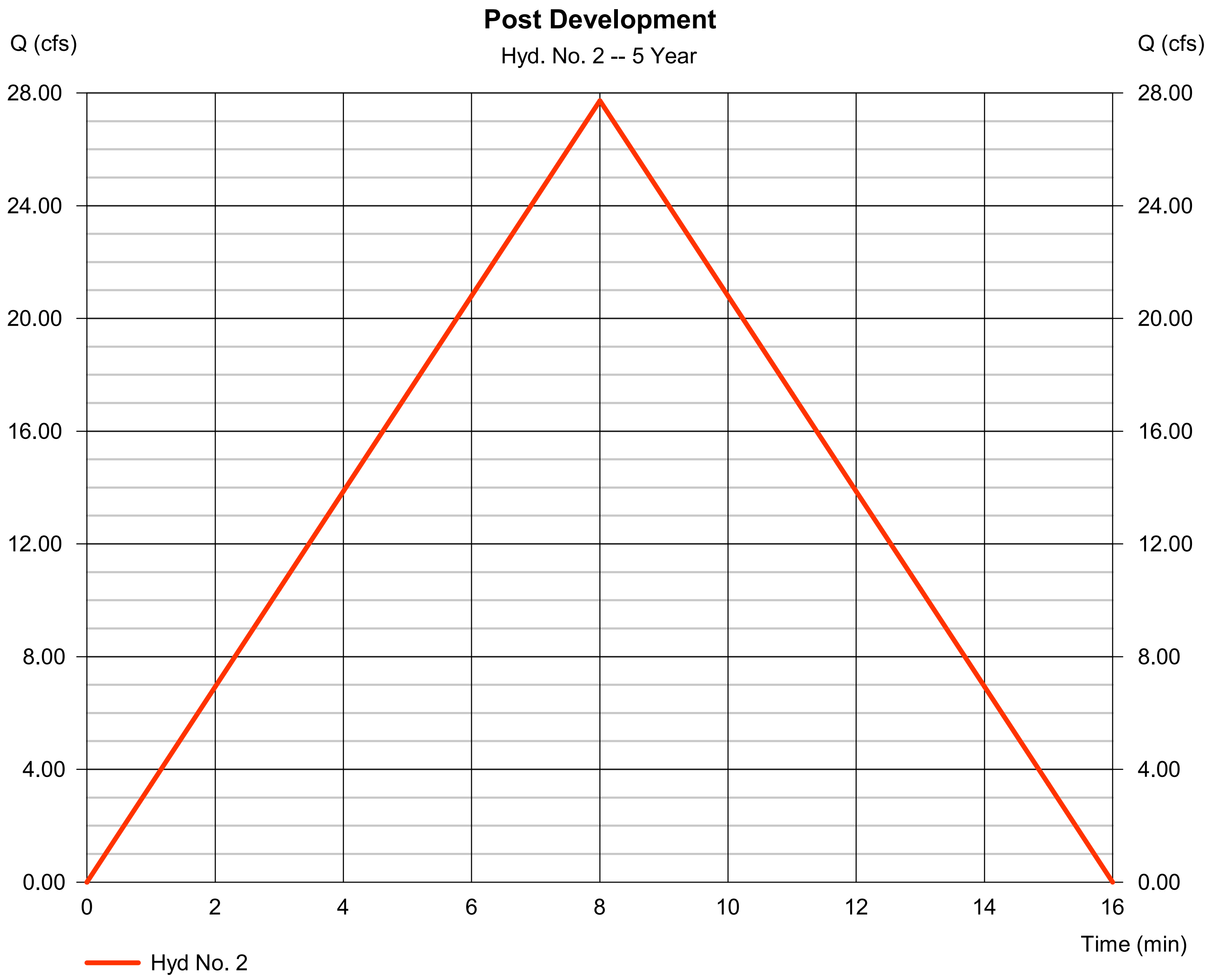
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Friday, 05 / 16 / 2025

Hyd. No. 2

Post Development

Hydrograph type	= Rational	Peak discharge	= 27.72 cfs
Storm frequency	= 5 yrs	Time to peak	= 8 min
Time interval	= 1 min	Hyd. volume	= 13,308 cuft
Drainage area	= 4.700 ac	Runoff coeff.	= 0.96
Intensity	= 6.145 in/hr	Tc by User	= 8.00 min
IDF Curve	= Bryant, Arkansas, USA (La 34.634 Lo -92.4569).IDF	Asc/Rec limb fact	= 1/1



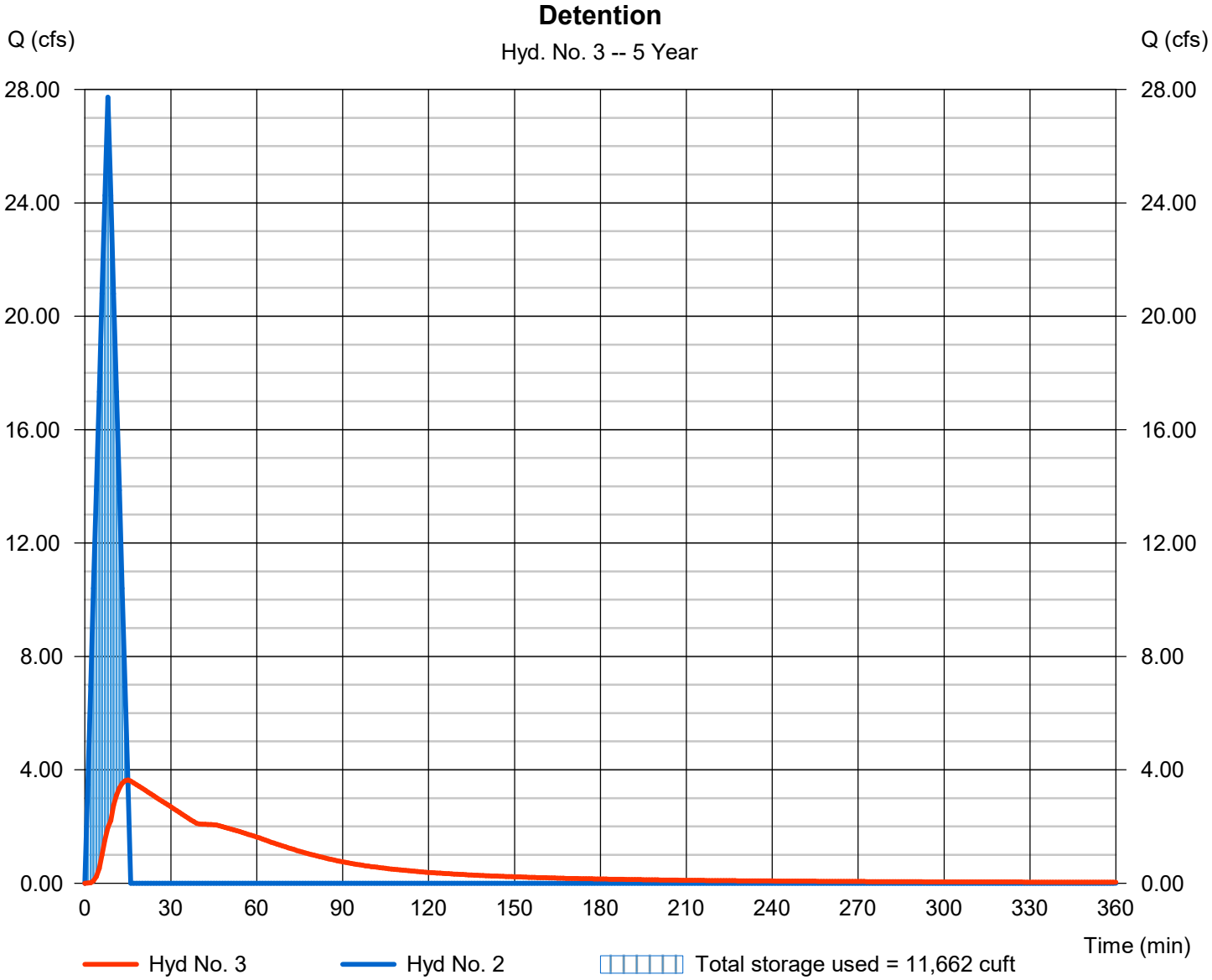
Hydrograph Report

Hyd. No. 3

Detention

Hydrograph type	=	Reservoir	Peak discharge	=	3.636 cfs
Storm frequency	=	5 yrs	Time to peak	=	15 min
Time interval	=	1 min	Hyd. volume	=	13,276 cuft
Inflow hyd. No.	=	2 - Post Development	Max. Elevation	=	345.51 ft
Reservoir name	=	Pond	Max. Storage	=	11,662 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	10.12	1	18	10,933	------	------	------	Pre Development
2	Rational	31.20	1	8	14,974	------	------	------	Post Development
3	Reservoir	3.992	1	15	14,943	2	345.66	13,120	Detention

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Friday, 05 / 16 / 2025

Hyd. No. 1

Pre Development

Hydrograph type	= Rational	Peak discharge	= 10.12 cfs
Storm frequency	= 10 yrs	Time to peak	= 18 min
Time interval	= 1 min	Hyd. volume	= 10,933 cuft
Drainage area	= 4.490 ac	Runoff coeff.	= 0.47
Intensity	= 4.797 in/hr	Tc by User	= 18.00 min
IDF Curve	= Bryant, Arkansas, USA (La 34.634 Lo -92.4569).IDF	Asc/Rec limb fact	= 1/1

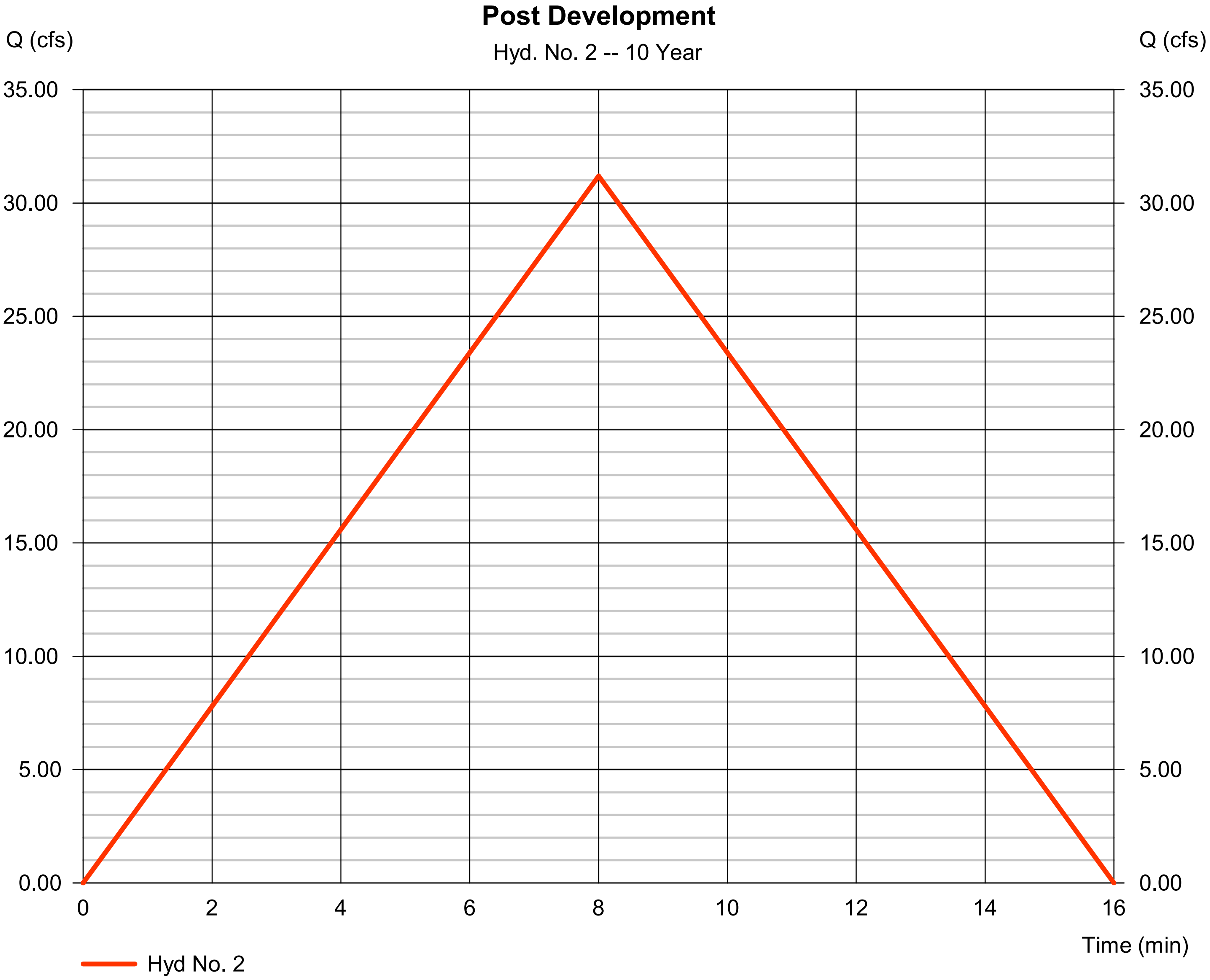
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Friday, 05 / 16 / 2025

Hyd. No. 2

Post Development

Hydrograph type	= Rational	Peak discharge	= 31.20 cfs
Storm frequency	= 10 yrs	Time to peak	= 8 min
Time interval	= 1 min	Hyd. volume	= 14,974 cuft
Drainage area	= 4.700 ac	Runoff coeff.	= 0.96
Intensity	= 6.914 in/hr	Tc by User	= 8.00 min
IDF Curve	= Bryant, Arkansas, USA (La 34.6349Lo -92.4569).IDF	Asc/Rec limb fact	= 1/1



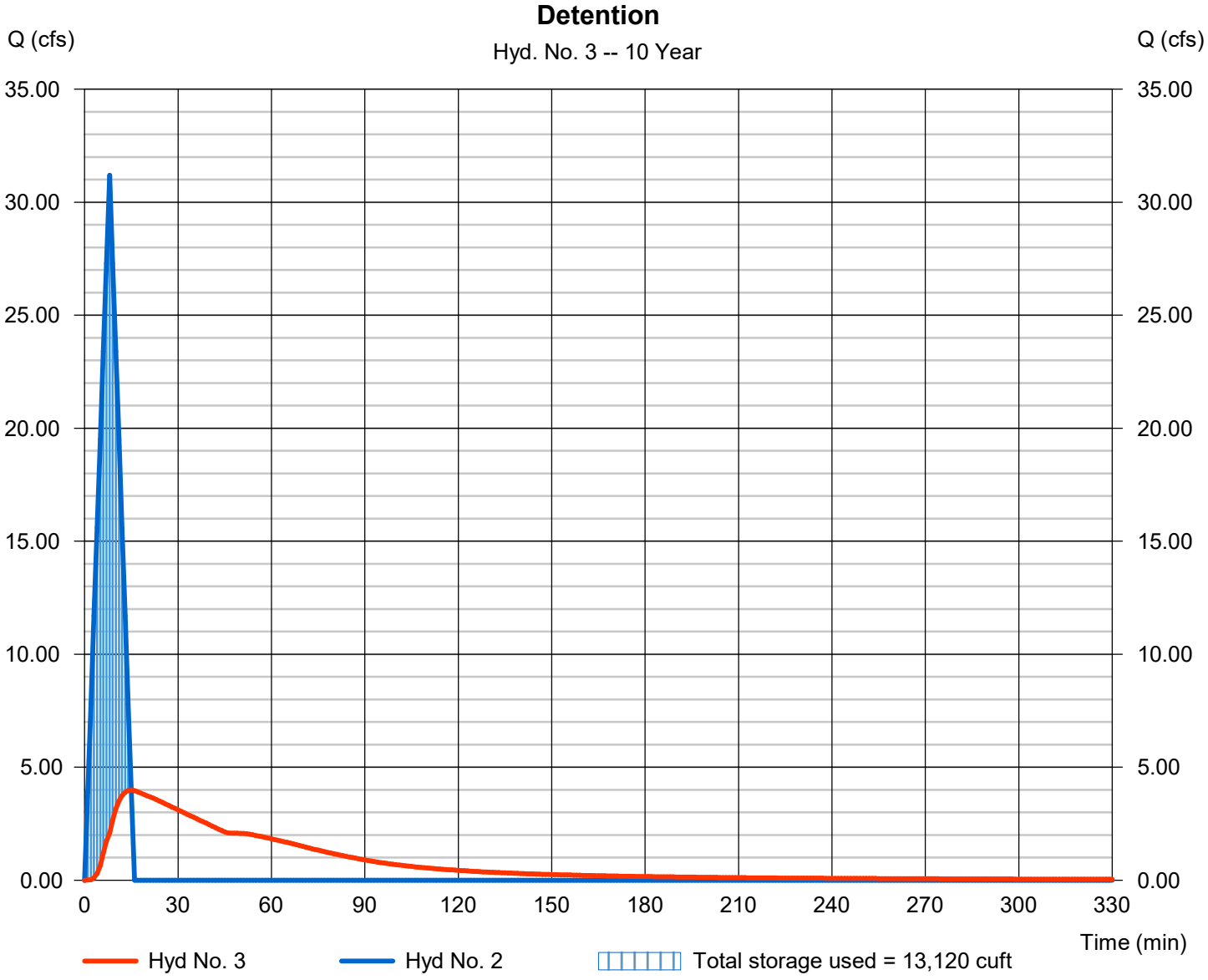
Hydrograph Report

Hyd. No. 3

Detention

Hydrograph type	=	Reservoir	Peak discharge	=	3.992 cfs
Storm frequency	=	10 yrs	Time to peak	=	15 min
Time interval	=	1 min	Hyd. volume	=	14,943 cuft
Inflow hyd. No.	=	2 - Post Development	Max. Elevation	=	345.66 ft
Reservoir name	=	Pond	Max. Storage	=	13,120 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	11.64	1	18	12,569	------	------	------	Pre Development
2	Rational	35.82	1	8	17,193	------	------	------	Post Development
3	Reservoir	4.423	1	15	17,162	2	345.87	15,083	Detention

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Friday, 05 / 16 / 2025

Hyd. No. 1

Pre Development

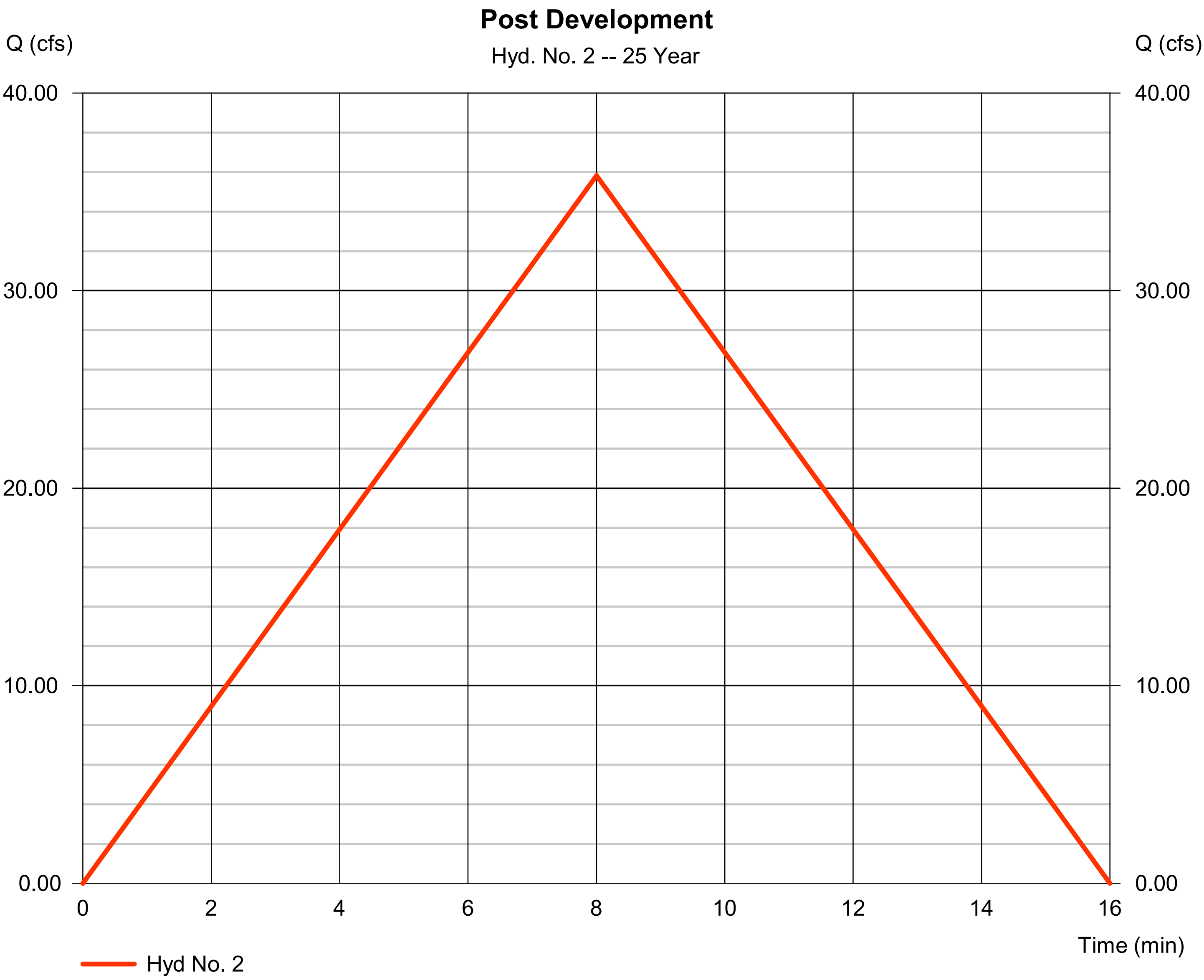
Hydrograph type	= Rational	Peak discharge	= 11.64 cfs
Storm frequency	= 25 yrs	Time to peak	= 18 min
Time interval	= 1 min	Hyd. volume	= 12,569 cuft
Drainage area	= 4.490 ac	Runoff coeff.	= 0.47
Intensity	= 5.515 in/hr	Tc by User	= 18.00 min
IDF Curve	= Bryant, Arkansas, USA (La 34.634 Lo -92.4569).IDF	Asc/Rec limb fact	= 1/1

Hydrograph Report

Hyd. No. 2

Post Development

Hydrograph type	= Rational	Peak discharge	= 35.82 cfs
Storm frequency	= 25 yrs	Time to peak	= 8 min
Time interval	= 1 min	Hyd. volume	= 17,193 cuft
Drainage area	= 4.700 ac	Runoff coeff.	= 0.96
Intensity	= 7.939 in/hr	Tc by User	= 8.00 min
IDF Curve	= Bryant, Arkansas, USA (La 34.634 Lo -92.4569).IDF	Asc/Rec limb fact	= 1/1



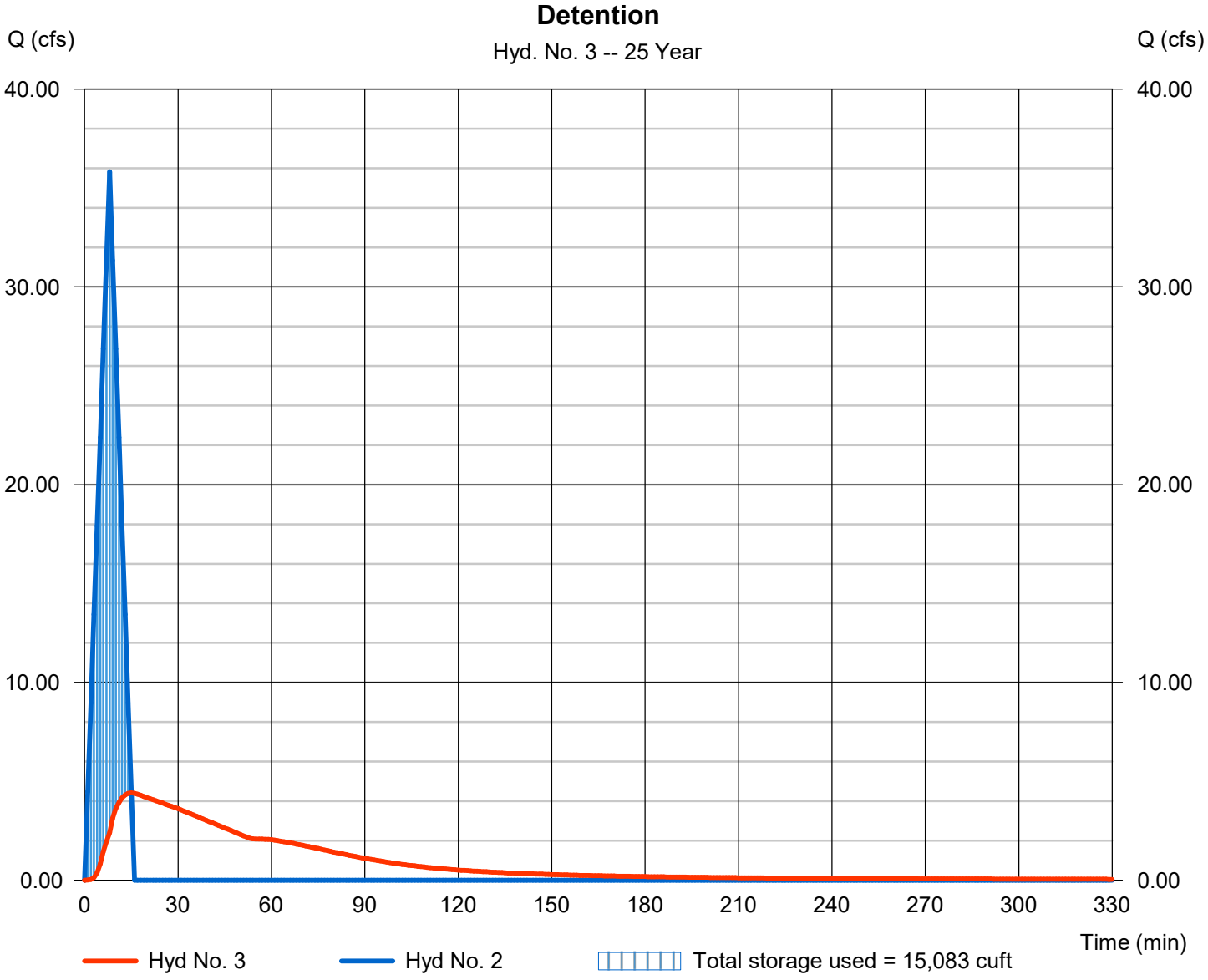
Hydrograph Report

Hyd. No. 3

Detention

Hydrograph type	=	Reservoir	Peak discharge	=	4.423 cfs
Storm frequency	=	25 yrs	Time to peak	=	15 min
Time interval	=	1 min	Hyd. volume	=	17,162 cuft
Inflow hyd. No.	=	2 - Post Development	Max. Elevation	=	345.87 ft
Reservoir name	=	Pond	Max. Storage	=	15,083 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	12.73	1	18	13,751	------	------	------	Pre Development
2	Rational	39.29	1	8	18,861	------	------	------	Post Development
3	Reservoir	4.681	1	15	18,830	2	346.03	16,576	Detention

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 | Friday, 05 / 16 / 2025

Hyd. No. 1

Pre Development

Hydrograph type	= Rational	Peak discharge	= 12.73 cfs
Storm frequency	= 50 yrs	Time to peak	= 18 min
Time interval	= 1 min	Hyd. volume	= 13,751 cuft
Drainage area	= 4.490 ac	Runoff coeff.	= 0.47
Intensity	= 6.034 in/hr	Tc by User	= 18.00 min
IDF Curve	= Bryant, Arkansas, USA (La 34.634 Lo -92.4569).IDF	Asc/Rec limb fact	= 1/1

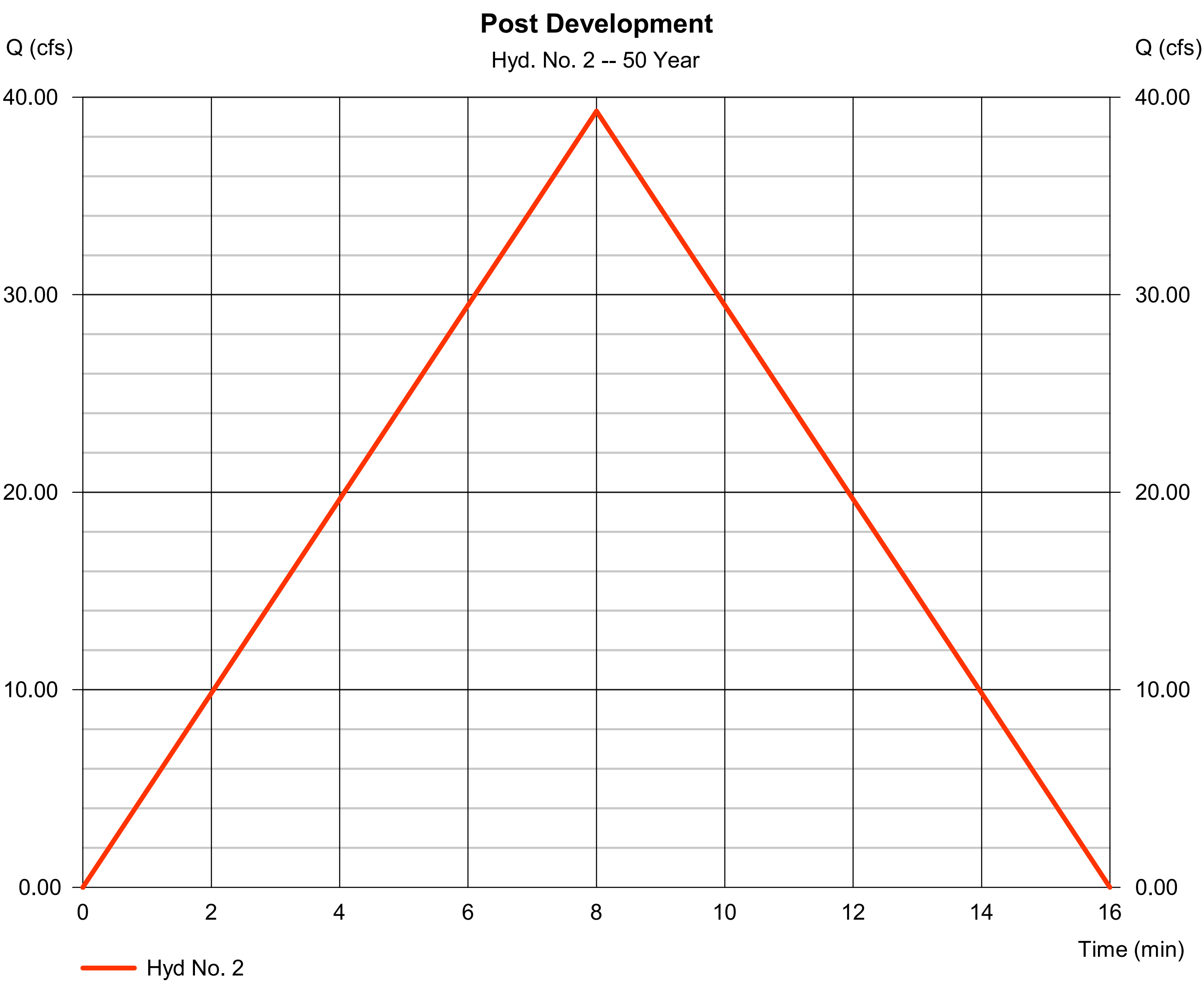
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Friday, 05 / 16 / 2025

Hyd. No. 2

Post Development

Hydrograph type	= Rational	Peak discharge	= 39.29 cfs
Storm frequency	= 50 yrs	Time to peak	= 8 min
Time interval	= 1 min	Hyd. volume	= 18,861 cuft
Drainage area	= 4.700 ac	Runoff coeff.	= 0.96
Intensity	= 8.709 in/hr	Tc by User	= 8.00 min
IDF Curve	= Bryant, Arkansas, USA (La 34.634Lo -92.4569).IDF	Asc/Rec limb fact	= 1/1



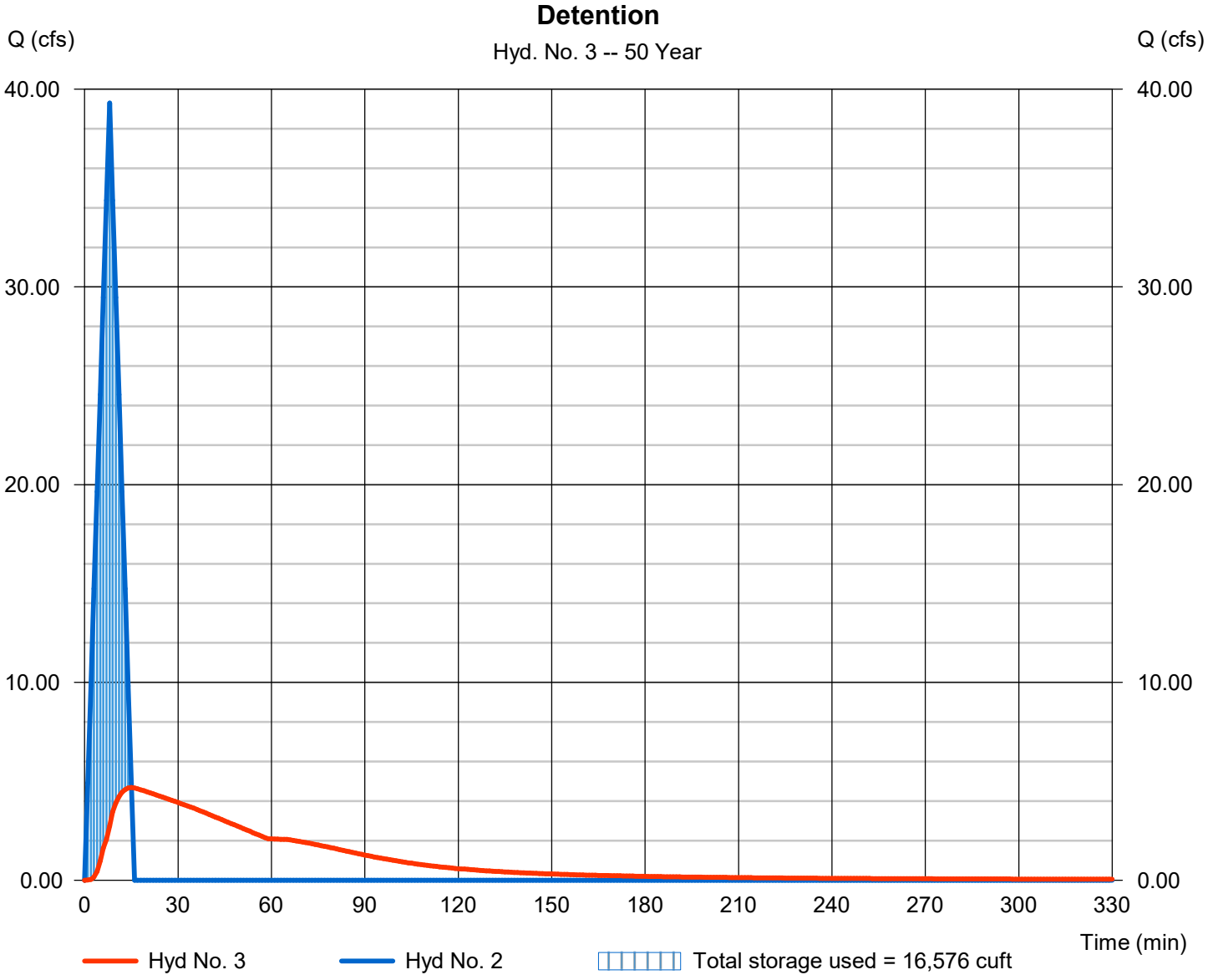
Hydrograph Report

Hyd. No. 3

Detention

Hydrograph type	=	Reservoir	Peak discharge	=	4.681 cfs
Storm frequency	=	50 yrs	Time to peak	=	15 min
Time interval	=	1 min	Hyd. volume	=	18,830 cuft
Inflow hyd. No.	=	2 - Post Development	Max. Elevation	=	346.03 ft
Reservoir name	=	Pond	Max. Storage	=	16,576 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	13.78	1	18	14,883	------	------	------	Pre Development
2	Rational	42.54	1	8	20,419	------	------	------	Post Development
3	Reservoir	4.907	1	15	20,388	2	346.18	17,991	Detention

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 — Friday, 05 / 16 / 2025

Hyd. No. 1

Pre Development

Hydrograph type	= Rational	Peak discharge	= 13.78 cfs
Storm frequency	= 100 yrs	Time to peak	= 18 min
Time interval	= 1 min	Hyd. volume	= 14,883 cuft
Drainage area	= 4.490 ac	Runoff coeff.	= 0.47
Intensity	= 6.530 in/hr	Tc by User	= 18.00 min
IDF Curve	= Bryant, Arkansas, USA (La 34.6349 Lo -92.4569).IDF	Asc/Rec limb fact	= 1/1

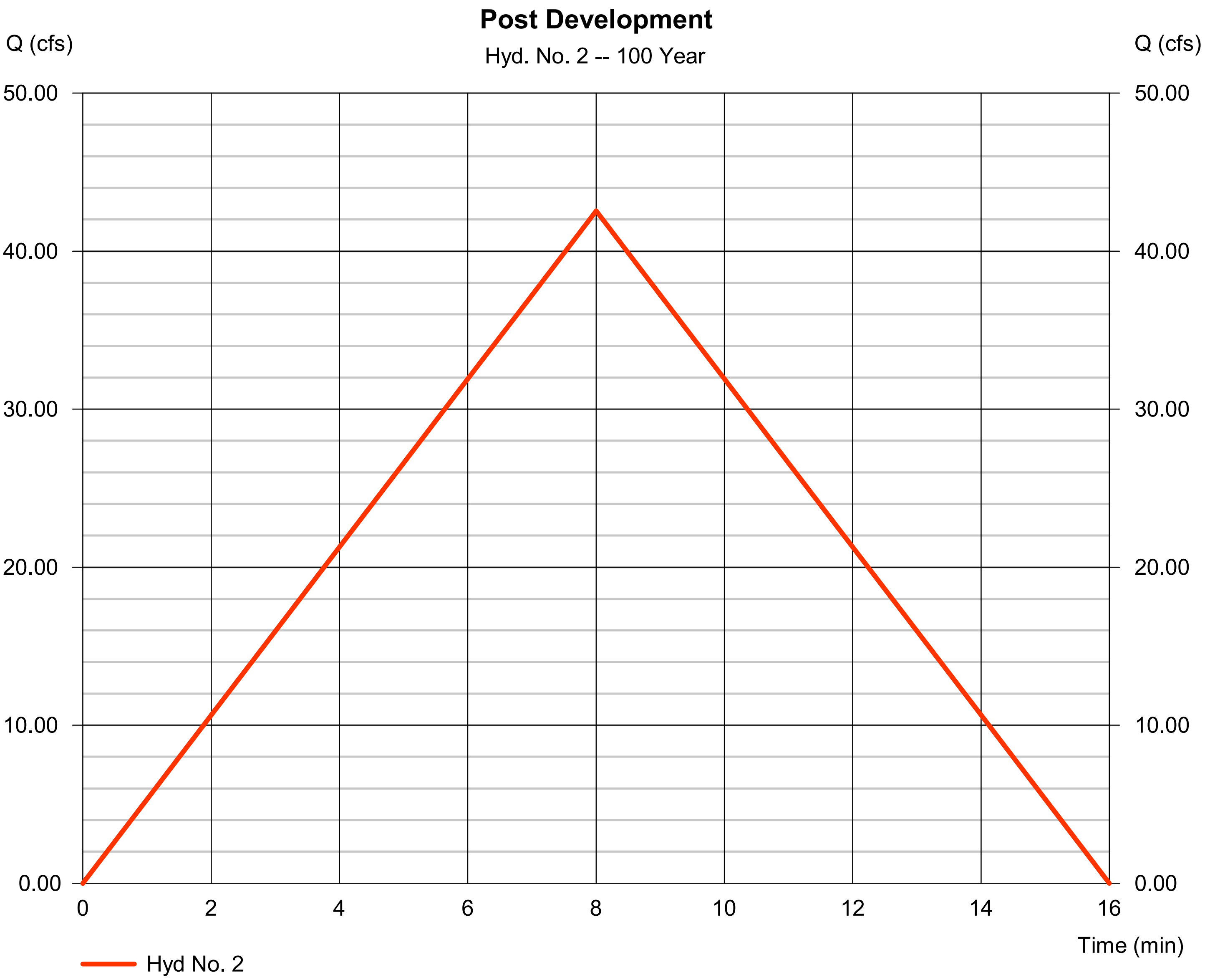
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2025 Friday, 05 / 16 / 2025

Hyd. No. 2

Post Development

Hydrograph type	= Rational	Peak discharge	= 42.54 cfs
Storm frequency	= 100 yrs	Time to peak	= 8 min
Time interval	= 1 min	Hyd. volume	= 20,419 cuft
Drainage area	= 4.700 ac	Runoff coeff.	= 0.96
Intensity	= 9.428 in/hr	Tc by User	= 8.00 min
IDF Curve	= Bryant, Arkansas, USA (La 34.6349 Lo -92.4569).IDF	Asc/Rec limb fact	= 1/1



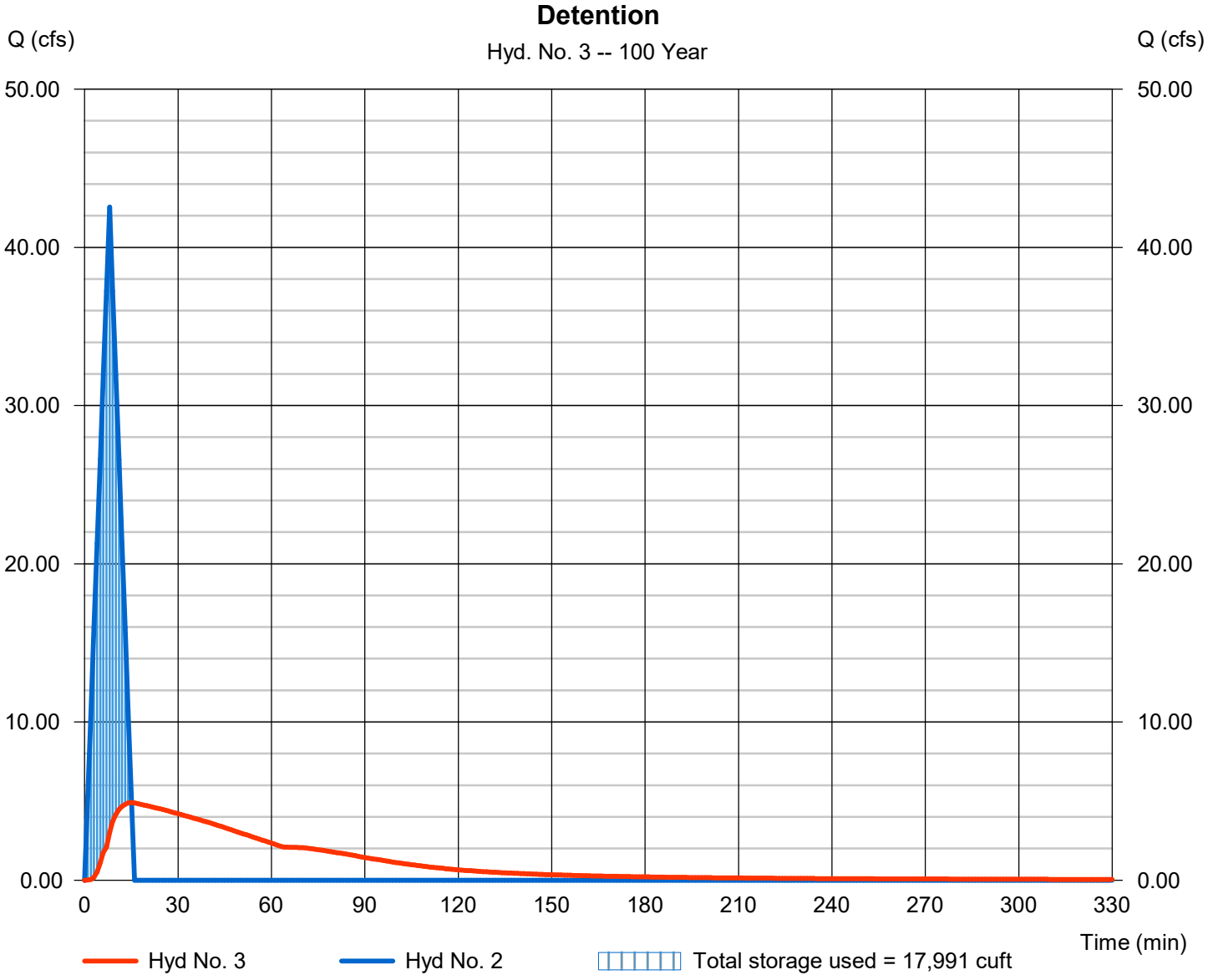
Hydrograph Report

Hyd. No. 3

Detention

Hydrograph type	=	Reservoir	Peak discharge	=	4.907 cfs
Storm frequency	=	100 yrs	Time to peak	=	15 min
Time interval	=	1 min	Hyd. volume	=	20,388 cuft
Inflow hyd. No.	=	2 - Post Development	Max. Elevation	=	346.18 ft
Reservoir name	=	Pond	Max. Storage	=	17,991 cuft

Storage Indication method used.



Hydraflow Rainfall Report

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	--------
2	27.5237	5.1000	0.6504	--------
3	0.0000	0.0000	0.0000	--------
5	34.4145	5.5000	0.6620	--------
10	39.6208	5.7000	0.6670	--------
25	45.2262	5.7000	0.6648	--------
50	46.6831	5.2000	0.6507	--------
100	47.7305	4.8000	0.6362	--------

File name: Bryant, Arkansas, USA (La 34.6349 Lo -92.4569).IDF

Intensity = B / (Tc + D)^E

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	6.12	4.71	3.91	3.38	3.01	2.72	2.49	2.31	2.16	2.03	1.92	1.82
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	7.26	5.61	4.66	4.03	3.58	3.24	2.97	2.75	2.57	2.41	2.28	2.16
10	8.15	6.31	5.25	4.54	4.04	3.65	3.34	3.10	2.89	2.71	2.56	2.43
25	9.36	7.25	6.03	5.23	4.64	4.20	3.85	3.56	3.33	3.12	2.95	2.80
50	10.30	7.94	6.60	5.72	5.08	4.60	4.22	3.91	3.65	3.43	3.24	3.08
100	11.17	8.60	7.14	6.19	5.51	4.99	4.58	4.25	3.97	3.74	3.54	3.36

Tc = time in minutes. Values may exceed 60.

Precip. file name: Sample.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	0.00	2.20	0.00	3.30	4.25	5.77	6.80	7.95
SCS 6-Hr	0.00	1.80	0.00	0.00	2.60	0.00	0.00	4.00
Huff-1st	0.00	1.55	0.00	2.75	4.00	5.38	6.50	8.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	1.75	0.00	2.80	3.90	5.25	6.00	7.10

Hydraflow Table of Contents

NOAA Atlas 14, Volume 9, Version 2
Location name: Bryant, Arkansas, USA*
Latitude: 34.6349°, Longitude: -92.4569°
Elevation: 350 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**5.40** (4.36-6.64)	**6.12** (4.93-7.52)	**7.26** (5.83-8.94)	**8.17** (6.53-10.1)	**9.38** (7.22-11.9)	**10.3** (7.76-13.2)	**11.2** (8.15-14.7)	**12.0** (8.42-16.2)	**13.1** (8.84-18.1)	**13.9** (9.17-19.6)
10-min	**3.95** (3.19-4.85)	**4.48** (3.61-5.50)	**5.31** (4.27-6.55)	**5.98** (4.78-7.40)	**6.87** (5.29-8.69)	**7.53** (5.68-9.67)	**8.17** (5.96-10.7)	**8.79** (6.17-11.9)	**9.58** (6.48-13.3)	**10.2** (6.71-14.3)
15-min	**3.22** (2.59-3.95)	**3.64** (2.93-4.48)	**4.32** (3.47-5.32)	**4.86** (3.88-6.02)	**5.59** (4.30-7.07)	**6.12** (4.62-7.86)	**6.64** (4.85-8.72)	**7.15** (5.02-9.64)	**7.79** (5.27-10.8)	**8.26** (5.46-11.7)
30-min	**2.39** (1.93-2.94)	**2.72** (2.19-3.34)	**3.24** (2.60-3.99)	**3.65** (2.92-4.52)	**4.20** (3.23-5.31)	**4.60** (3.47-5.91)	**4.99** (3.64-6.55)	**5.37** (3.77-7.23)	**5.84** (3.95-8.09)	**6.18** (4.09-8.73)
60-min	**1.60** (1.29-1.97)	**1.82** (1.46-2.23)	**2.16** (1.73-2.66)	**2.43** (1.94-3.01)	**2.80** (2.16-3.55)	**3.08** (2.33-3.96)	**3.36** (2.45-4.42)	**3.63** (2.55-4.90)	**3.98** (2.69-5.51)	**4.23** (2.80-5.98)
2-hr	**1.00** (0.817-1.22)	**1.14** (0.922-1.38)	**1.35** (1.09-1.65)	**1.52** (1.22-1.87)	**1.76** (1.37-2.21)	**1.93** (1.47-2.47)	**2.11** (1.55-2.76)	**2.29** (1.62-3.07)	**2.52** (1.71-3.47)	**2.69** (1.79-3.77)
3-hr	**0.753** (0.615-0.913)	**0.850** (0.694-1.03)	**1.01** (0.822-1.23)	**1.14** (0.926-1.40)	**1.33** (1.04-1.67)	**1.47** (1.13-1.87)	**1.61** (1.20-2.10)	**1.76** (1.25-2.36)	**1.95** (1.34-2.69)	**2.10** (1.40-2.94)
6-hr	**0.453** (0.373-0.545)	**0.514** (0.424-0.620)	**0.618** (0.508-0.746)	**0.707** (0.577-0.857)	**0.834** (0.660-1.04)	**0.935** (0.723-1.19)	**1.04** (0.776-1.35)	**1.15** (0.822-1.53)	**1.29** (0.893-1.77)	**1.41** (0.946-1.96)
12-hr	**0.265** (0.220-0.316)	**0.305** (0.253-0.364)	**0.374** (0.309-0.447)	**0.433** (0.357-0.521)	**0.520** (0.416-0.649)	**0.590** (0.461-0.746)	**0.664** (0.500-0.859)	**0.741** (0.536-0.984)	**0.848** (0.590-1.16)	**0.932** (0.630-1.29)
24-hr	**0.155** (0.130-0.184)	**0.180** (0.151-0.214)	**0.223** (0.186-0.265)	**0.261** (0.216-0.311)	**0.316** (0.255-0.392)	**0.361** (0.284-0.454)	**0.409** (0.311-0.526)	**0.459** (0.335-0.607)	**0.530** (0.371-0.719)	**0.586** (0.399-0.803)
2-day	**0.091** (0.077-0.107)	**0.105** (0.088-0.123)	**0.129** (0.109-0.152)	**0.150** (0.126-0.178)	**0.182** (0.148-0.224)	**0.208** (0.165-0.259)	**0.235** (0.180-0.300)	**0.264** (0.194-0.347)	**0.305** (0.215-0.411)	**0.337** (0.231-0.459)
3-day	**0.066** (0.056-0.077)	**0.076** (0.065-0.089)	**0.093** (0.079-0.109)	**0.108** (0.091-0.128)	**0.130** (0.106-0.160)	**0.148** (0.118-0.184)	**0.167** (0.128-0.212)	**0.187** (0.138-0.244)	**0.214** (0.152-0.288)	**0.236** (0.162-0.321)
4-day	**0.053** (0.045-0.062)	**0.061** (0.052-0.071)	**0.074** (0.063-0.087)	**0.086** (0.072-0.101)	**0.103** (0.084-0.125)	**0.116** (0.093-0.144)	**0.131** (0.101-0.165)	**0.146** (0.108-0.190)	**0.167** (0.118-0.223)	**0.183** (0.126-0.248)
7-day	**0.035** (0.030-0.040)	**0.040** (0.034-0.046)	**0.048** (0.041-0.056)	**0.055** (0.047-0.064)	**0.065** (0.054-0.079)	**0.074** (0.059-0.090)	**0.082** (0.063-0.103)	**0.091** (0.067-0.117)	**0.103** (0.073-0.136)	**0.112** (0.078-0.151)
10-day	**0.028** (0.024-0.032)	**0.031** (0.027-0.036)	**0.037** (0.032-0.043)	**0.042** (0.036-0.049)	**0.050** (0.041-0.060)	**0.055** (0.045-0.067)	**0.061** (0.048-0.076)	**0.067** (0.050-0.087)	**0.076** (0.054-0.100)	**0.082** (0.057-0.110)
20-day	**0.018** (0.016-0.021)	**0.020** (0.018-0.023)	**0.024** (0.020-0.027)	**0.026** (0.023-0.030)	**0.030** (0.025-0.036)	**0.033** (0.027-0.040)	**0.036** (0.028-0.044)	**0.039** (0.029-0.049)	**0.043** (0.031-0.056)	**0.046** (0.032-0.061)
30-day	**0.015** (0.013-0.017)	**0.016** (0.014-0.019)	**0.019** (0.016-0.022)	**0.021** (0.018-0.024)	**0.024** (0.020-0.028)	**0.026** (0.021-0.031)	**0.028** (0.022-0.034)	**0.030** (0.022-0.038)	**0.032** (0.023-0.042)	**0.034** (0.024-0.046)
45-day	**0.012** (0.010-0.014)	**0.013** (0.012-0.015)	**0.015** (0.013-0.017)	**0.017** (0.015-0.019)	**0.019** (0.016-0.023)	**0.021** (0.017-0.025)	**0.022** (0.018-0.027)	**0.024** (0.018-0.030)	**0.026** (0.019-0.034)	**0.027** (0.019-0.036)
60-day	**0.010** (0.009-0.011)	**0.011** (0.010-0.013)	**0.013** (0.012-0.015)	**0.015** (0.013-0.017)	**0.017** (0.014-0.020)	**0.018** (0.015-0.022)	**0.020** (0.016-0.024)	**0.021** (0.016-0.027)	**0.023** (0.017-0.030)	**0.024** (0.017-0.032)

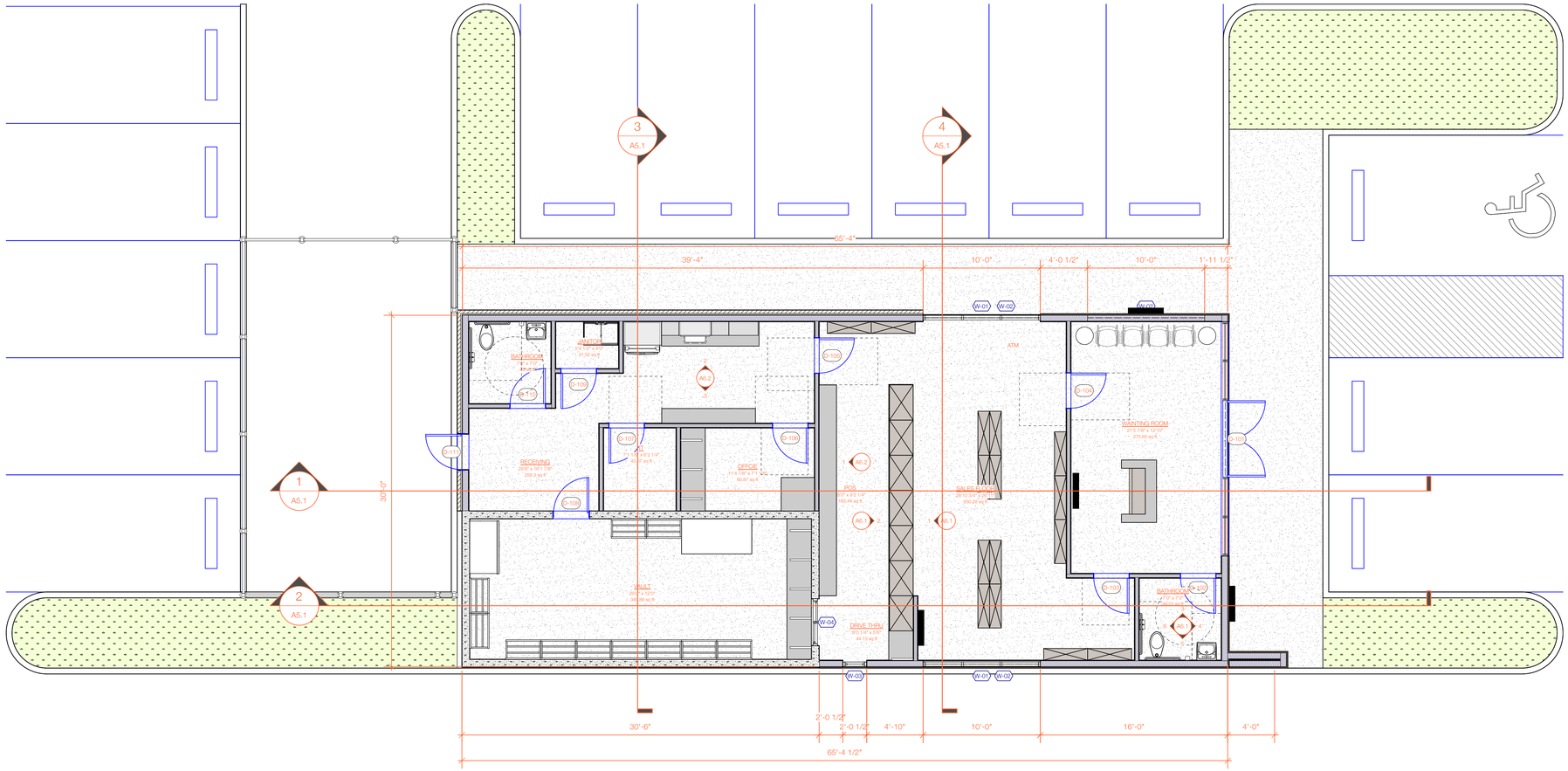
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical



1 FLOOR PLAN

Scale: 3/16" = 1'-0"

CERTIFICATION:

A2.2

ROGUE Architecture PLLC
300 S Spring Street
Suite 720
Little Rock, Arkansas 72201
[p] 501.365.1576
[w] www.roguearch.com

ROGUE architecture

PROPOSED FLOOR PLANS

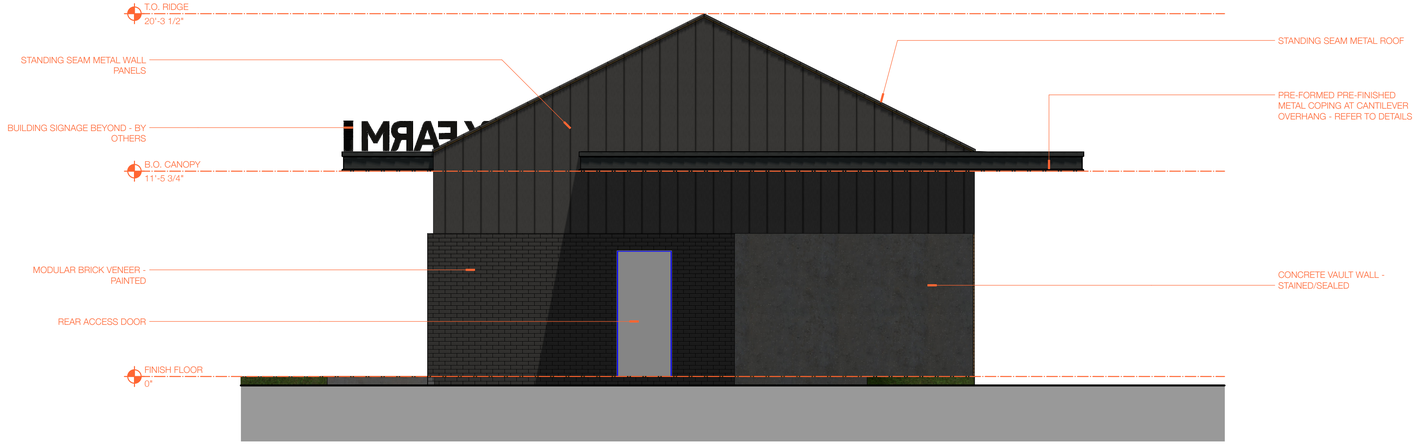
Issue Date: 2025.05.20

GOOD DAY FARM
DISPENSARY

2320 HURRICANE LAKE ROAD
Bryant, Arkansas

Revisions

FOR CERTIFICATE OF AUTHORIZATION
ARCHITECTURE
NO. 162
ARKANSAS
NOT FOR CONSTRUCTION



1 NORTH ELEVATION

Scale: 1/4" = 1'-0"

2 EAST ELEVATION

Scale: 1/4" = 1'-0"

CERTIFICATION:

A4.4

ROGUE Architecture PLLC
300 S Spring Street
Suite 720
Little Rock, Arkansas 72201
[p] 501.365.1576
[w] www.roguearch.com

EXTERIOR ELEVATIONS

Issue Date: 2025.05.20

Revisions

GOOD DAY FARM
DISPENSARY

2320 HURRICANE LAKE ROAD
Bryant, Arkansas

ROGUE architecture

CERTIFICATE OF AUTHORIZATION
ROGUE ARCHITECTURE PLLC
162
ARKANSAS
NOT FOR CONSTRUCTION

1 SOUTH ELEVATION
Scale: 1/4" = 1'-0"

2 WEST ELEVATION
Scale: 1/4" = 1'-0"

CERTIFICATION:

A4.3

ROGUE Architecture PLLC
300 S Spring Street
Suite 720
Little Rock, Arkansas 72201
[p] 501.365.1576
[w] www.roguearch.com

EXTERIOR ELEVATIONS

Issue Date: 2025.05.20

Revisions

GOOD DAY FARM DISPENSARY

2320 HURRICANE LAKE ROAD
Bryant, Arkansas

CERTIFICATE OF AUTHORIZATION
ROGUE ARCHITECTURE
COA-01162
ARKANSAS

NOT FOR CONSTRUCTION

SITE DEVELOPMENT PLAN
FOR GOOD DAY FARM DISPENSARY

A TRACT OF LAND BEING PART OF THE SE 1/4 OF SECTION 20,
TOWNSHIP 1 SOUTH, RANGE 14 WEST
CITY OF BRYANT, SALINE COUNTY, ARKANSAS

LEGEND

- BENCH MARK
- FOUND IRON ROD
- FOUND IRON PIPE
- RIGHT OF WAY MARKER
- UTILITY POLE
- SUPPORT POLE
- UTILITY POLE WITH LIGHT
- LIGHT STANDARD
- ELECTRIC METER
- ELECTRIC MANHOLE
- ELECTRIC PEDESTAL
- ELECTRIC SPLICE BOX
- ELECTRIC BREAKER
- GAS DRIP
- GAS METER
- GAS VALVE
- TELEPHONE MANHOLE
- TELEPHONE PEDESTAL
- TELEPHONE SPLICE BOX
- CABLE TV PEDESTAL
- FIRE HYDRANT
- FIRE DEPARTMENT CONNECTION
- WATER MANHOLE
- WATER METER
- WATER VALVE
- POST INDICATOR VALVE
- CLEAN OUT
- STORM MANHOLE
- GRATED MANHOLE
- STORMWATER INLET
- GRATED STORMWATER INLET
- SANITARY MANHOLE
- TREE
- BUSH
- TRAFFIC SIGNAL
- PARKING METER
- STREET SIGN
- SPRINKLER
- MAIL BOX

LINE TYPE LEGEND

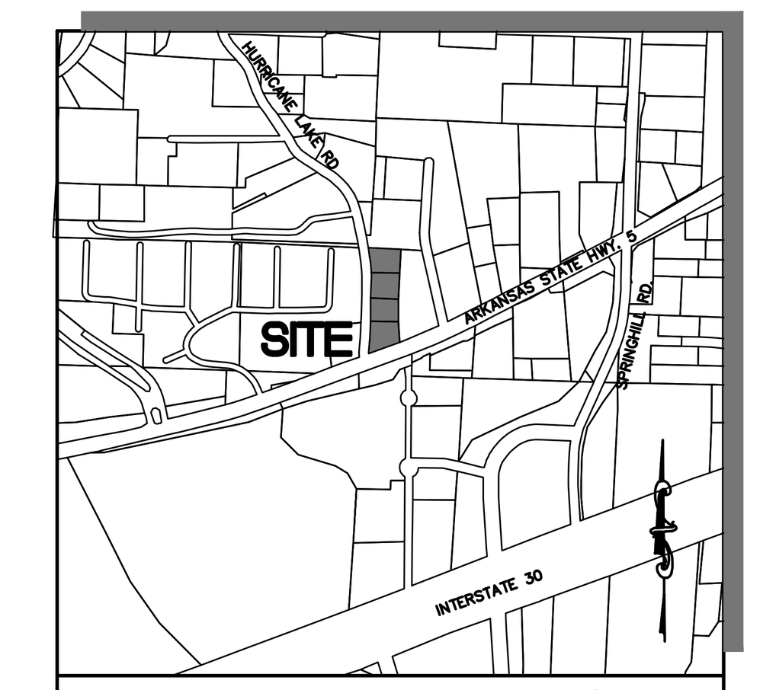
- EX CONT MJR
- EX CONT MNR
- TREE LINE
- FEMA ELEV
- FEMA LIMIT
- PAVEMENT
- WALL
- GUARD RAIL
- CHAINLINK/WIRE FENCE
- WOOD/VINYL FENCE
- GAS
- UNDER GROUND ELEC
- OVERHEAD ELEC
- TELEPHONE LINE
- FIBER OPTIC LINE
- WATERLINE
- FLOODWAY
- SLOPE/LEVEE

ABBREVIATIONS

C.O.	–	CLEANOUT
DB.	–	DEED BOOK
E	–	ELECTRIC
FL	–	FLOWLINE
FT	–	FEET
FND.	–	FOUND
G	–	GAS
M.H.	–	MANHOLE
N/F	–	NOW OR FORMERLY
PB.	–	PLAT BOOK
PG.	–	PAGE
P.V.C.	–	POLYVINYL CHLORIDE PIPE
R.B.	–	RADIAL BEARING
R.C.P.	–	REINFORCED CONCRETE PIPE
SQ.	–	SQUARE
T	–	TELEPHONE CABLE
V.C.P.	–	VETRIFIED CLAY PIPE
W	–	WATER
(86'W)	–	RIGHT-OF-WAY WIDTH

PERTINENT DATA

TRACT AREA:	1.99 ± AC. (86,509 S.F.)
CURRENT OWNER:	NEATHERY SHARON CLYDENA
SITE ADDRESS:	3205 HWY 5 N, BRYANT, AR 72019 2320 HURRICANE LAKE RD, BRYANT, AR 72019
PARCEL ID:	840-12036-000, 840-12037-000, 840-12038-000, 840-12042-000
FEMA FLOOD MAP:	05125C0360E (REVISED JUNE 05, 2020)
EXISTING ZONING:	SOUTH LOTS – "C-2" – HIGHWAY COMMERCIAL NORTH LOTS – "R-M" – RESIDENTIAL
PROPOSED USE:	COMMUNITY BUSINESS – MARIJUANA DISPENSARY



LOCATION MAP
(NOT TO SCALE)

PARKING CALCS.

MINIMUM PARKING FOR C-2 DISTRICT:
1.0 SPACES PER 300 SF
(1,960 SF/300 SF) * 1.0 SPACE = 6.53 OR A MINIMUM OF 7 SPACES

PARKING SPACES PROVIDED = 36 SPACES (2 ADA)

STORMWATER MANAGEMENT

TABLE 2
Peak Discharge - Post-Developed Conditions

Flood Frequency	*Allowable Discharge (cfs)*	*Post-Developed Discharge (cfs)*
2 Year	4.98	1.31
5 Year	7.34	5.41
10 Year	9.57	6.70
25 Year	11.35	8.32
50 Year	14.73	10.53
100 Year	15.78	11.16

TABLE 3
Stormwater Detention Summary

Flood Frequency	*Basin Discharge (cfs)*	*Basin WSEL (feet)*	*Basin Freeboard (feet)*
2 Year	1.31	407.38	2.62
5 Year	5.41	407.78	2.22
10 Year	6.70	408.12	1.88
25 Year	8.32	408.37	1.63
50 Year	10.53	408.84	1.16
100 Year	11.16	409.00	1.00

STORMWATER DIFFERENTIAL RUNOFF

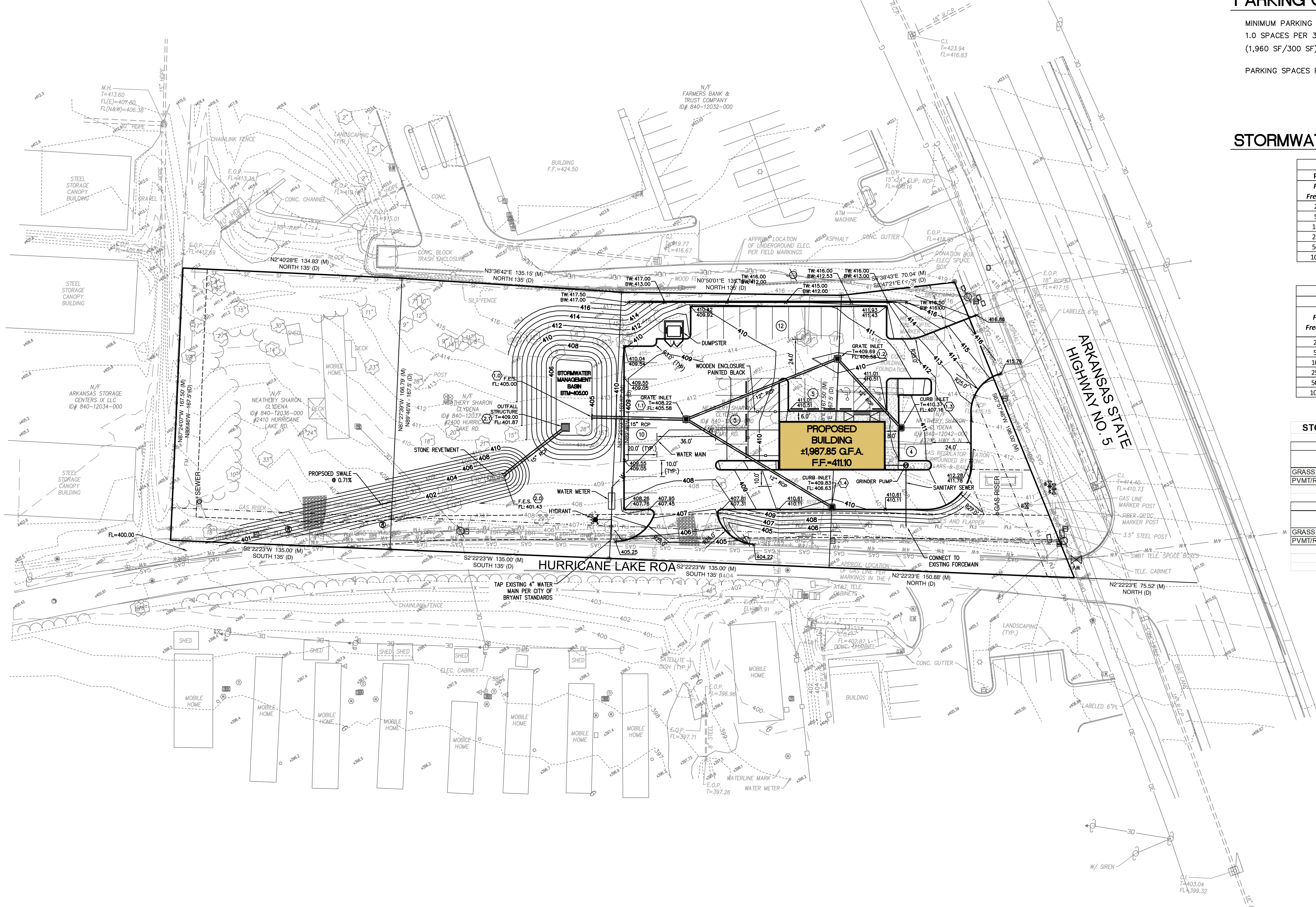
PRE-DEVELOPED

	ACRES	PI FACTOR (CFS/AC)	TOTAL Q(15)
GRASS	1.81	1.70	3.07
PVMT/ROOF	0.18	3.54	0.63
		TOTAL Q(15) =	3.71

POST-DEVELOPED

	ACRES	PI FACTOR (CFS/AC)	TOTAL Q(15)
GRASS	1.30	1.70	2.22
PVMT/ROOF	0.68	3.54	2.41
		TOTAL Q(15) =	4.63

DIFFERENTIAL = POST - PRE = + 0.93



GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.

PREPARED BY:
STOCK & ASSOCIATES CONSULTING ENGINEERS, INC.
257 CHESTERFIELD BUSINESS PARKWAY
ST. LOUIS, MO 63005
PH. (636) 530-9100, FAX (636) 530-9130
EMAIL: GENERAL@STOCKASSOC.COM
WEB: WWW.STOCKASSOC.COM

PREPARED FOR:
GOOD DAY FARM
C/O REGAN ETHERIDGE
SENIOR PROJECT MANAGER–
STORE DEVELOPMENT, DESIGN & CONSTRUCTION
425 W. CAPITOL AVE.,
LITTLE ROCK, AR 72201

USGS BENCHMARK

BENCHMARK# R 338 ELEV.=405.60 (NAVD88) DESCRIBED BY ARKANSAS DEPARTMENT OF TRANSPORTATION 2013 THE STATION IS LOCATED ABOUT 5.9 MI (9.5 KM) EAST-SOUTHEAST OF CONGO, 3.0 MI (4.8 KM) WEST OF ALEXANDER AND 1.8 MI (2.9 KM) NORTH OF BRYANT.
TO REACH FROM THE INTERSECTION OF BASELINE ROAD AND NORTH FRONTAGE ROAD PARALLELING I-30, GO WEST ON NORTH FRONTAGE ROAD FOR 7.48 MITO THE STATION ON THE RIGHT, IN THE CENTER OF A HEADWALL.
IT IS 85 FT (25.9 M) WEST OF A COMBINATION POLE AND 20 FT (6.1 M) NORTH OF THE CENTERLINE OF NORTH FRONTAGE ROAD.

DRAWING FILE: O:\DRAW7700\20257775\Civil\Preliminary\7775-Base.dwg LAYOUT: Site Development Plan PLOTTED: May 21, 2025 - 2:27pm

PREPARED BY:
STOCK & ASSOCIATES Consulting Engineers, Inc.
257 Chesterfield Business Parkway
St. Louis, MO 63005 PH. (636) 530-9100 FAX (636) 530-9130
e-mail: general@stockassoc.com
Web: www.stockassoc.com

SITE DEVELOPMENT PLAN FOR:
GOOD DAY FARM - BRYANT
3205 HIGHWAY 5 N,
BRYANT, ARKANSAS 72019

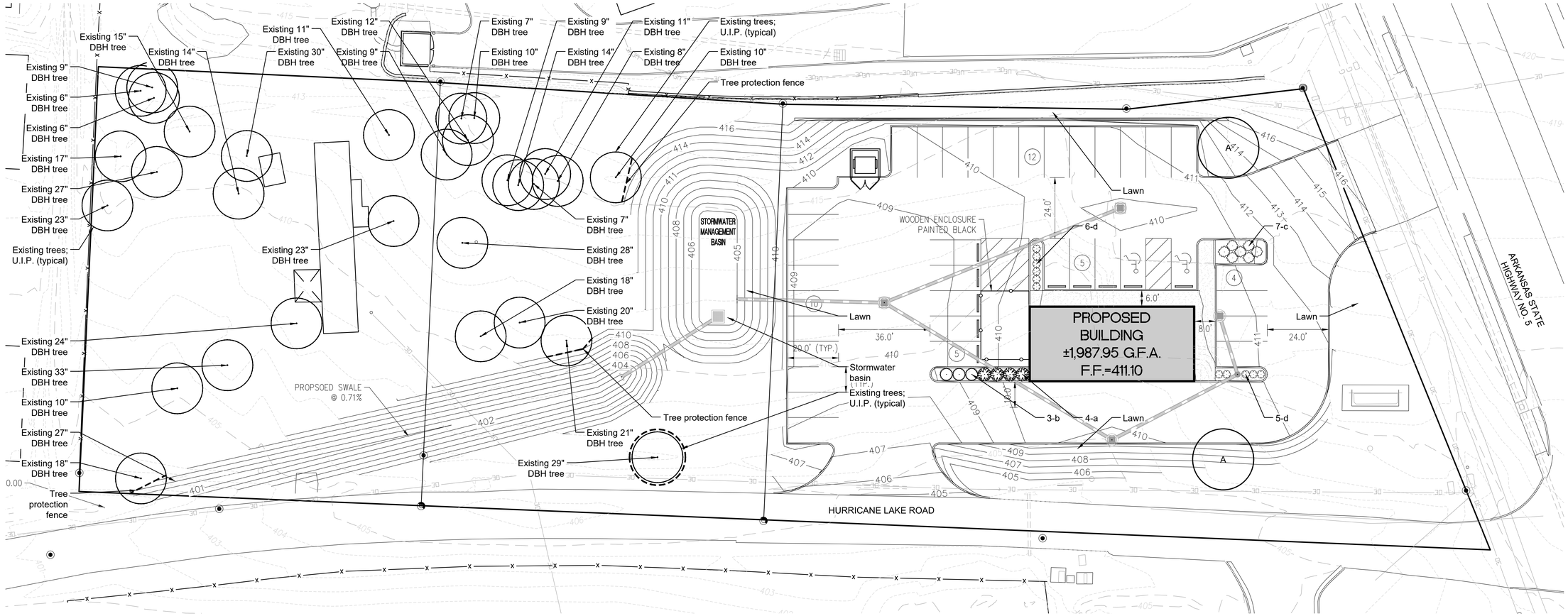
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 9185 GEORGE STOCK
5/21/25
GEORGE M. STOCK E-25116
CIVIL ENGINEER
CERTIFICATE OF AUTHORITY NUMBER: 000996

REVISIONS:

DRAWN BY: L.C.W.	CHECKED BY: G.M.S.
DATE: 05-21-2025	JOB NO: 2025-7775
M.S.D. P #:	BASE MAP #:
S.L.C. H&T #:	H&T S.U.P. #
M.D.N.R. #:	

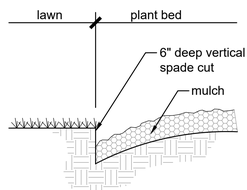
SHEET TITLE:
SITE DEVELOPMENT PLAN

SHEET NO.:
1.0

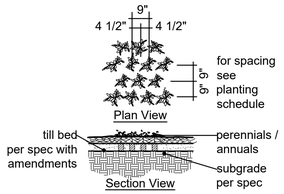


Landscape Plan
SCALE 1"=20'

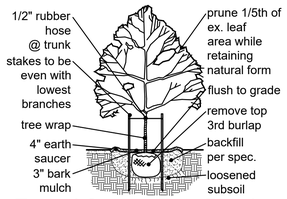
0 20 40 80



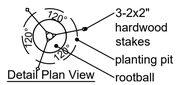
Spade Cut Bed Edge

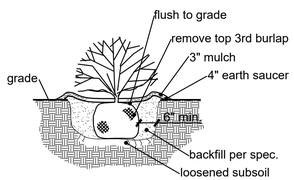


Typical Perennial Planting



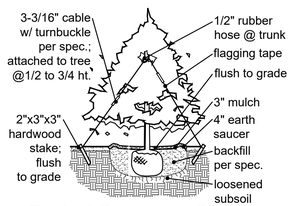
Typical Canopy Tree Planting



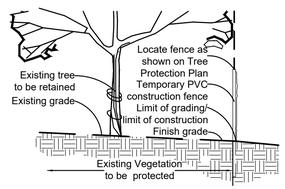


Scarify root ball of all container stock

Typical Shrub Planting



Typical Evergreen Planting



Tree Protection Detail

PLANTING SCHEDULE

ID	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
CANOPY-SHADE TREE					
A	2	Acer saccharum 'Bailsta'	Fall Fiesta Sugar Maple	3" caliper	B & B

PLANTING SCHEDULE

ID	QUANTITY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
SHRUBS-ORNAMENTAL GRASSES-PERENNIALS-ANNUALS-GROUNDCOVER					
a	4	Ilex x meserveae meserveae 'Heckenstar'	Castle Wall Blue Holly	18" tall	60" o.c.
b	3	Ilex x meserveae 'SMNIFA'	Castle Keep Blue Holly	18" tall	60" o.c.
c	6	Abelia x grandiflora 'Radiance'	Radiance Abelia	18" tall	48" o.c.
d	11	Juniperus horizontalis 'Wiltonii'	Blue Rug Juniper	18" tall	36" o.c.

Landscape Summary:

- Minimum landscaping criteria:
  - C-2 zoning = 1 tree per ½ acre
    - 41,666 s.f. / 2 = 1.91 half-acre units x 1 tree = **2** trees required
  - C-2 zoning = 1 evergreen per 2,000 s.f.
    - 1,988 s.f. / 2,000 s.f. = **1** evergreen required

Landscape Notes:

1) Provide lawn in all disturbed areas.
All 3:1 or steeper slopes shall be lawn seed and have erosion control blanket.

2) Topsoil in all disturbed lawn areas at 6" depth.

3) Soil mix in all shrub beds at 8" depth.

4) All mulch to be double ground bark mulch.

5) Bed edges to be spade cut.

Tree Protection Notes:

1) Pre-construction meeting to be held on-site to include a presentation of tree protection measures to operators, construction supervisors, developer's representative, and city zoning inspector.

2) Clearing Limits to be rough staked in order to facilitate location for installation of protection fencing. No early maintenance schedule is required.

3) No clearing or grading shall begin in areas where the treatment and preservation measures have not been completed, including the installation of tree protection fencing as shown on the plan. Where necessary, Contractor may perform minor tree clearing prior to installing silt fencing and tree protection fencing provided they maintain tree protection area.

4) Tree Protection Fencing shall be 4-foot high temporary plastic construction fence. No equipment traffic/parking, concrete washout, material storage or other such construction activity shall be permitted to penetrate the protection fencing except for the removal of dead or invasive plant material. All ground plane in planting areas shall be mulched with hardwood bark mulch. Tree Protection Signage will be placed along the Protection Fencing as shown as the dashed line on the plan.

5) Tree protection measures to be maintained throughout construction.

Licensed Landscape Architect
LEE HESS
Arkansas
5-20-25

Lee Hess - Landscape Architect
AR License # LA-712056

Consultants:

GOOD DAY FARMS

3205 HIGHWAY 5 N
BRYANT, ARKANSAS 72019

Revisions:

Date	Description	No.

Drawn: RS
Checked: LH

LOOMIS ASSOCIATES
landscape architects + planners
750 spirit 40 park drive, chesterfield, missouri 63005
t. 636-519-8668
www.loomis-associates.com

Sheet Title: LANDSCAPE PLAN

Sheet No: L1.01

Date: 5/20/25
Job #: 813.150

Regan Etheridge
Good Day Farm Dispensary
425 W. Capitol Ave., Suite 1400
Little Rock, AR 72201
reetheridge@gooddayfarm.com
(501)551-0502

May 21, 2025

Development and Review Committee
The City of Bryant
210 SW 3rd Street
Bryant, AR 72022

RE: Small Scale Commercial Development Plan - Narrative of Request and Operations

Dear Development and Review Committee of Bryant,

Please accept this letter as our official request for the commercial development of 3205 HWY 5 N Parcel ID: 840-12042-000 & 2320 Hurricane Lake Rd Parcel ID: 840-12038-000 (the "**Property**") for the ground-up build of a medical marijuana facility. The planned facility will occupy a 1,987 sqft. building with drive-through operations, fully compliant with all applicable regulations, laws, and codes of the City of Bryant, Arkansas.

Both properties are zoned C-2, where commercial uses such as Institutional - Large Scale and Institutional - Small Scale are permitted. A medical marijuana dispensary falls within these categories. Our site comfortably exceeds the required distance from any public or private school, church, daycare center, or center for the developmentally disabled, as documented in the included distance certification.

Thank you for your attention to our application. We appreciate your consideration and look forward to your guidance as we move forward.

Sincerely,

Regan Etheridge
Senior Project Manager of Store Development

GNE

3825 Mt Carmel Rd.
Bryant, AR 72022

GarNat Engineering, LLC

P.O. Box 116
Benton, AR 72018

TO WHOM IT MAY CONCERN:

I hereby certify that the property, consisting of four parcels, 840-12042-000 located at 3205 Highway 5 North, 840-12038-000 located at 2320 Hurricane Lake Road, 840-12037-000 located at 2400 Hurricane Lake Road, and 840-12036-000 located at 2410 Hurricane Lake Road, Bryant, Arkansas, as more particularly described on EXHIBIT A hereto (the "**PROPERTY**") is not within 1,500 feet of a known public or private school, church, daycare center, or center for the developmentally disabled.

The closest church to the Property is: Hurricane Lake Baptist Church located at 2516 Springhill Road which sits approximately 1,828 +/- feet from the Property, as measured in accordance with applicable rules and regulations governing medical marijuana dispensaries.

The closest school to the Property is: Arkansas Christian Academy located at 21815 I-30 Frontage Road which sits approximately 1,737 +/- feet from the Property, as measured in accordance with applicable rules and regulations governing medical marijuana dispensaries.

The closest daycare center to the Property is: Kids Town Academy located at 21941 I-30 South which sits approximately 2,270 +/- feet from the Property, as measured in accordance with applicable rules and regulations governing medical marijuana dispensaries.

The closest center for the developmentally disabled to the Property is: Civitan Services Bryant Campus located at 403 South Reynolds Road which sits approximately 12,328 +/- feet from the Property, as measured in accordance with applicable rules and regulations governing medical marijuana dispensaries.

12-5-24

Sincerely,

[Surveyor]

PH: (501)408-4650 FX: (888) 900-3068 www.garnatengineering.com

210 SW 3rd Street • Bryant, AR 72022 • 501.943.0999 • www.CityofBryant.com

City of Bryant Mayor
Chris Treat

Thursday, December 12, 2024

To Whom It May Concern,

The property located at 3205 HWY 5 N with parcel number 840-12042-000 is zoned as C-2 Commercial, and the property located at 2320 Hurricane Lake Rd with parcel number 840-12038-000 is also zoned as C-2 Commercial.

The commercial uses of Institutional – Large Scale and Institutional – Small Scale are both permitted uses under the C-2 Zoning.

A medical marijuana dispensary would fall under the commercial use of "Institutional - Small Scale" or "Institutional – Large Scale."

Additional zoning regulations and permitted uses for this zone can be found at the cityofbryant.com by clicking on "Zoning Code" on the Community Development page under "Codes and Maps".

If there are any questions or concerns, please feel free to contact me at ctreat@cityofbryant.com or 501-943-0999.

Sincerely,

Chris Treat
Mayor

City of Bryant, Arkansas
Community Development
210 SW 3rd Street Bryant, AR 72022
501-943-0488, Comdev@cityofbryant.com

Sign Permit Application

Date: 05/06/2025

Applicant / Owner

Applicant Name:	Hope Garcia	Owner Name:	Little Rock LD, LLC
Address:	4111 S 74th E Ave	Address:	P.O. Box 10560
City, State, Zip:	Tulsa, OK 74145	City, State, Zip:	Fayetteville, AR 72703
Phone:	214-500-3003	Phone:	501-945-0455
Email:	hgarcia@lektroninc.com	Email:	hgarcia@lektroninc.com

General Information

Business Name:	Lektron LED Technologies DBA Lektron Branding Solutions	Dwelling Type:	
Site Address:	3021 Midland Rd		

Project Description: Midland Road Estates- Two Subdivsion Entryway Monuments

I do hereby certify that the information contained herein is true and correct.

Hope Garcia	05/06/2025
Name	Date

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

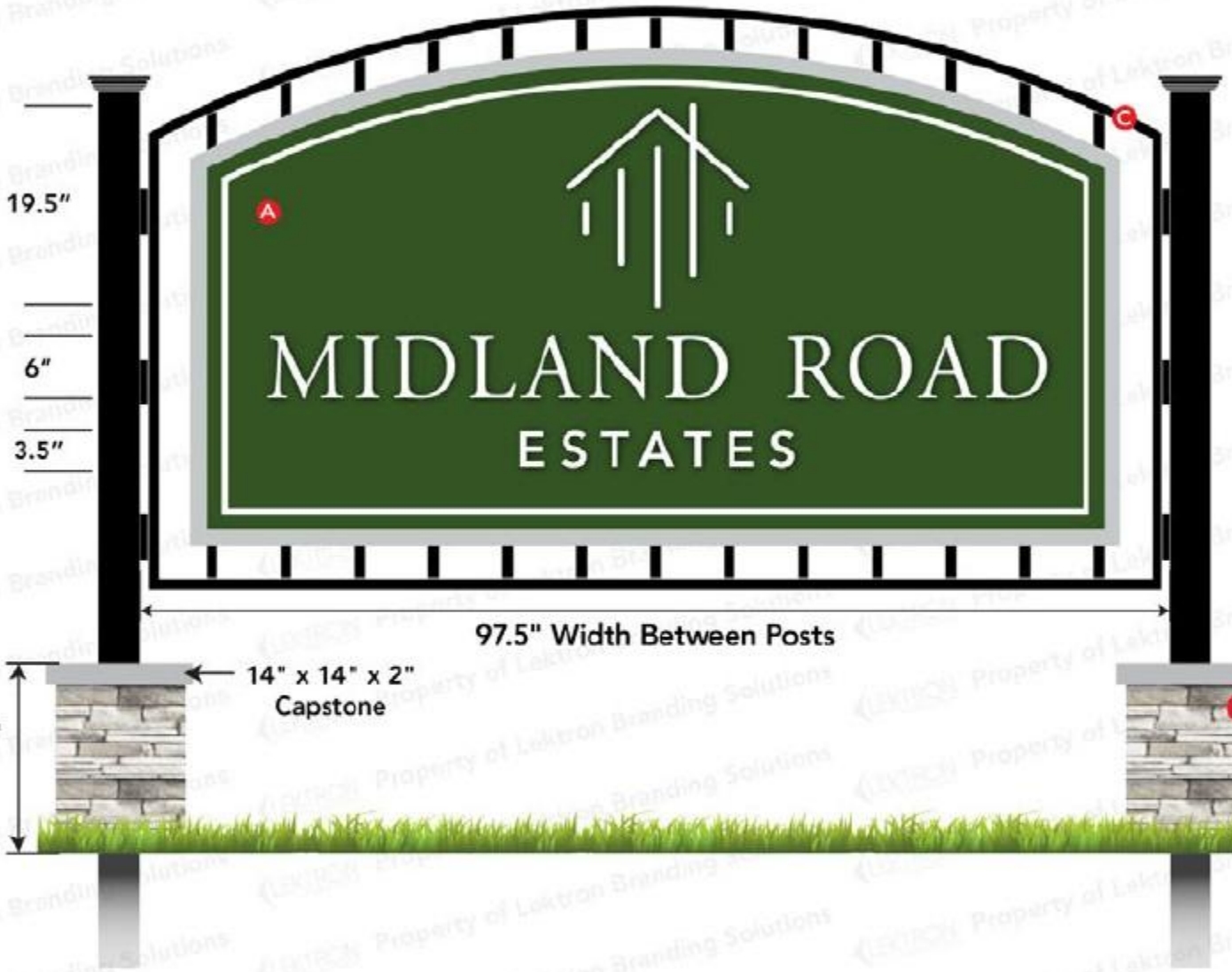
SIGN	**Type** (Façade, Pole, Monument, other)	**Dimensions** (Height, Length, Width)	**Sqft** (Measurement standards found on Pg.7 of Sign Code)	**Façade Width** (Linear Ft of building façade where wall sign is being installed)	**Height**	
					To Top	To Bottom
A	Monument	6'H x 8.5'L x 12"W	26.88 sq. ft.	N/A	6'	22"
B	Monument	6'H x 8.5'L x 12"W	26.88 sq. ft.	N/A	6'	22"
C						
D						
E						
F						

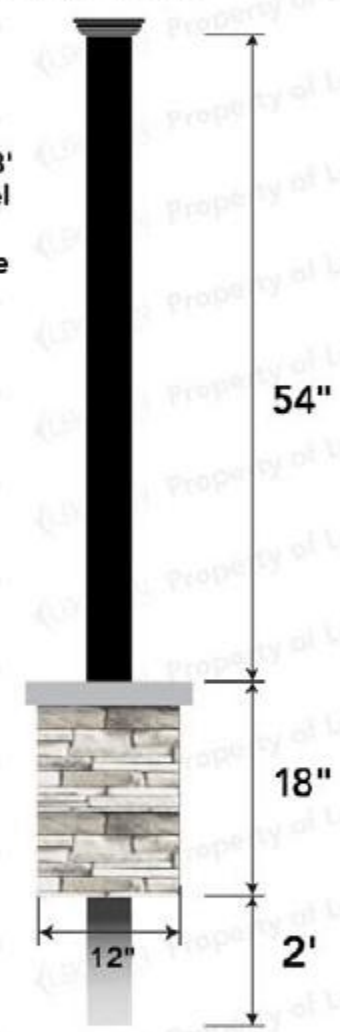
Monument Option 1

A 2-PFO 88" x 47" x 1/2" Thick MDO Sign Panel
- Backer Painted SW 7071 Gray Screen
- 3mm Dibond Overlay, Pantone 2266 C
- Custom 6mm Dibond Logo & Letters, White Satin
- Cut Vinyl Bead

B (2x) 12" x 12" x 18" Stone Masonry Base
- 14" x 14" x 2" Capstone
- (2x) 4" x 4" x 96" Steel Posts
  54" Visible, 18" in Masonry,
  24" Below Grade

C 96" x 55" x 1" Welded Tube Frame
- Black Powdercoat Finish
- Welded to Steel Posts





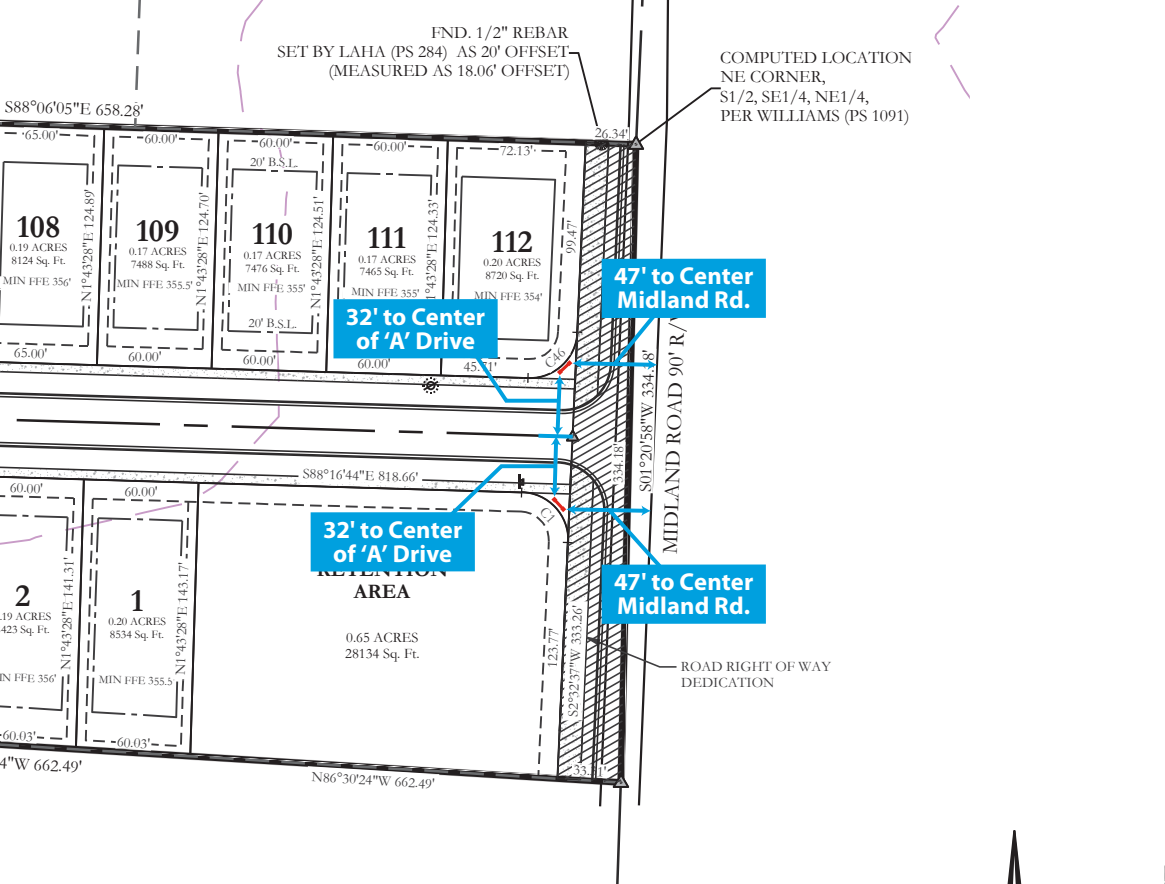
Black Frame | SW 7071 Gray Screen Backer | Pantone 2266 C | White Satin Letters | 751 White Vinyl Bead

Project: Midland Road Estates-Rausch Coleman	Customer Approval: Via Phone: ☐ Via Email: ☐	Date: 4-21-2025	
Address:	Rev. No.	Sales Rep: Roland W.	
		Designer: Rhonda M.	

Proof Disclaimer. An email or fax stating your approval constitutes the total and final approval to produce your job as is on this proof or with changes indicated.
While we make every attempt to eliminate mistakes in our proof progression, sometimes oversights occur. You have the final responsibility for review to ensure there are no errors. Oversights that require the job to be reproduced will be done at your expense.

Signs will be built to meet UL specifications if required. UL LISTED

LEKTRON Branding Solutions


FND. 1/2" REBAR
SET BY LAHA (PS 284) AS 20' OFFSET
(MEASURED AS 18.06' OFFSET)
COMPUTED LOCATION
NE CORNER,
S1/2, SE1/4, NE1/4,
PER WILLIAMS (PS 1091)
S88°06'05"E 658.28'
26.34'
108
0.19 ACRES
8124 Sq. Ft.
MIN FFE 356'
109
0.17 ACRES
7488 Sq. Ft.
MIN FFE 355.5'
110
0.17 ACRES
7476 Sq. Ft.
MIN FFE 355'
111
0.17 ACRES
7465 Sq. Ft.
MIN FFE 355'
112
0.20 ACRES
8720 Sq. Ft.
MIN FFE 354'
20' B.S.L.
65.00'
60.00'
72.13'
99.47'
N1°43'28"E 124.89'
N1°43'28"E 124.70'
N1°43'28"E 124.51'
N1°43'28"E 124.33'
47' to Center
Midland Rd.
32' to Center
of 'A' Drive
CMS
45.31'
MIDLAND ROAD 90' R/
S01°20'58"W 334.38'
334.18'
S88°16'44"E 818.66'
32' to Center
of 'A' Drive
47' to Center
Midland Rd.
RETENTION
AREA
0.65 ACRES
28134 Sq. Ft.
123.77'
S2°32'37"W 333.26'
ROAD RIGHT OF WAY
DEDICATION
2
.19 ACRES
423 Sq. Ft.
1
0.20 ACRES
8534 Sq. Ft.
MIN FFE 355.5
N1°43'28"E 141.31'
N1°43'28"E 143.17'
60.03'
4"W 662.49'
N86°30'24"W 662.49'
33.1

Rod'S.Signs@yahoo.com

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 Community Development tab.

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

Date: 5/6/25

Sign Co. or Sign Owner Rodney Barefield

Name Rod's Signs, LLC
Address 111 Dogwood Pl Dr.
City, State, Zip Bryant, AR 72022
Phone 501-351-4077
Alternate Phone Same

Property Owner

Name Melnika Bale
Address 5920 Hwy 5 N # 5
City, State, Zip Bryant, AR 72022
Phone 501-240-8098
Alternate Phone Same

GENERAL INFORMATION

Name of Business LaTaDa Learning & Creative Arts Center, LLC
Address/Location of sign 5920 Hwy 5 N, # 5
Zoning Classification _____

Please use following page to provide details on the signs requesting approval. Along with information provided on this application, **a Site Plan showing placement of sign(s) and any existing sign(s) on the property is required** to be submitted. **Renderings of the sign(s) showing the correct dimensions is also required** to be submitted with the application. A fifty dollar ($50) per sign payment will be collected at the time of permit issuance. According to the Sign Ordinance a fee for a sign variance or Alternative Signage Plan request shall be two hundred and fifty dollars ($250). Additional documentation may be required by Sign Administrator.

READ CAREFULLY BEFORE SIGNING

I _____, 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 in packet.

SIGN	**Type** (Façade, Pole, Monument, other)	**Dimensions** (Height, Length, Width)	**Sqft** (Measurement standards found on Pg.7 of Sign Code)	**Façade Width** (Linear Ft of building façade where wall sign is being installed)	**Height** To Top	To Bottom
A	Facade	3'H x 10'W	30SF	30 Ft		
B	Facade	3'H x 10'W	~~30~~ 60SF	60 Ft		
C						
D						
E						
F						

STE. 5

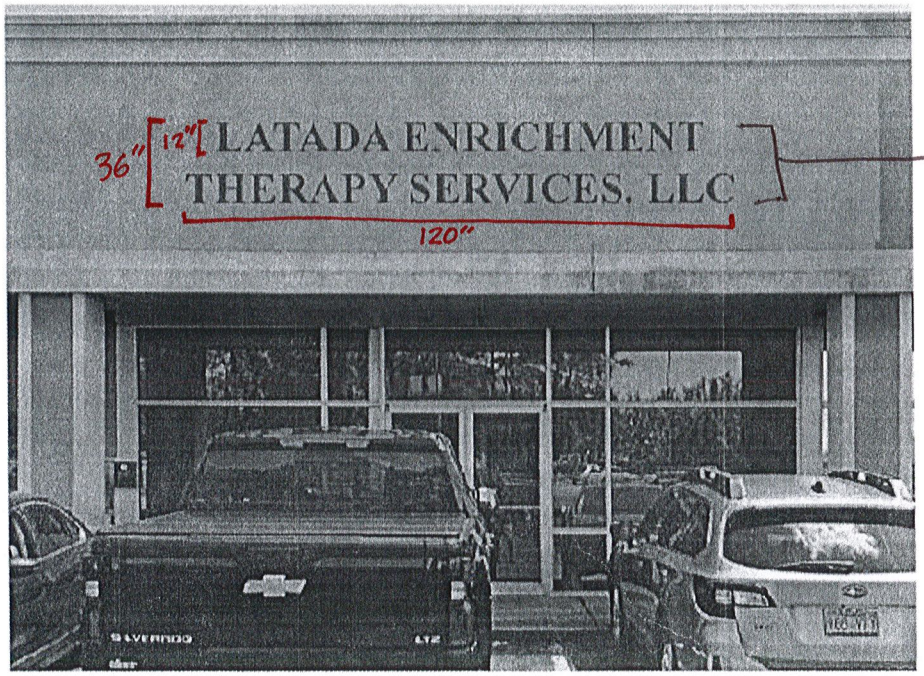
STE. 6+7

501-351-4077

STE 5 & 6

SIGN A

STE. 5



10'

10'

30'

~~3' x 12'~~

3' x 10'

STE. 6+7

SIGN B