



**TOWN OF WEDDINGTON
REGULAR PLANNING BOARD MEETING
MONDAY OCTOBER 26TH, 2026 – 6:30 P.M. OR
AS SOON AS PRACTICAL AFTER THE
BOARD OF ADJUSTMENT HEARING IS FINISHED
WEDDINGTON TOWN HALL
1924 WEDDINGTON ROAD
WEDDINGTON, NC 28104
AGENDA**

1. Call to Order
2. Determination of Quorum
3. Conflict of Interest Statement: *In accordance with the state government ethics act, it is the duty of every Board member to avoid conflicts of interest. Does any Board member have any known conflict of interest with respect to any matters on the agenda? If so, please identify the conflict and refrain from any participation in the matter involved.*
4. Approval of Minutes
 - A. Approval of Minutes from 9-28-2026 Planning Board Meeting
5. Public Comments: *Individuals are allowed 3 minutes to speak. A maximum of 30 minutes is allocated to the Public Comment Period. The time limit may be extended at the discretion of the Chairman.*
6. Old Business
7. New Business
 - A. Planning Workshop
 - i. Luna CD
 - ii. Appendix 2B
 - iii. Other Topics to discuss
 - B. Discussion of UDO text amendments
 - i. Parking
 - ii. Event venues
 - iii. Home Use Occupations
8. Update from October Town Council Meeting

9. Board member Comments

10. Adjournment



**TOWN OF WEDDINGTON
REGULAR PLANNING BOARD MEETING
MONDAY SEPTEMBER 28TH, 2026 – 7:00 P.M.
WEDDINGTON TOWN HALL
1924 WEDDINGTON ROAD
WEDDINGTON, NC 28104
AGENDA**

1. Call to Order

The Regular Planning Board Meeting of the Town of Weddington was called to order at 7:10 PM on Monday, September 28, 2026, at Weddington Town Hall, 1924 Weddington Road, Weddington, NC 28104.

2. Determination of Quorum

The Chair confirmed that a quorum was present and the meeting proceeded.

Board members present: Rusty Setzer, Scott Buzzard, Steve Fellmeth, Amanda Jarrell, Taylor Grove, Bill Deter

Staff Present: Town Administrator Doug Gailey, Town Planner Ryne Ratti, Permit Technician Aditya Roy

Visitors: Chad Emerine, Clayton Jones, Christopher Neve

3. Conflict of Interest Statement: *In accordance with the state government ethics act, it is the duty of every Board member to avoid conflicts of interest. Does any Board member have any known conflict of interest with respect to any matters on the agenda? If so, please identify the conflict and refrain from any participation in the matter involved.*

The Chair noted that the Conflict of Interest Statement had been previously read when the internet wasn't working and would not be re-read. No Board members declared a conflict of interest with respect to any matter on the agenda.

4. Approval of Minutes

A. Approval of Minutes from 06-22-2026 Planning Board Meeting

Board Member Bill Deter moved to approve the minutes from the June 22, 2026 Planning Board Meeting as presented. The motion was seconded by Board Member Fellmeth. No discussion followed.

MOTION: *to approve the minutes from the June 22, 2026 Planning Board Meeting as presented was made by Board Member Bill Deter and seconded by Board Member Steve Fellmeth.*

VOTE: *The motion carried unanimously.*

5. *Public Comments: Individuals are allowed 3 minutes to speak. A maximum of 30 minutes is allocated to the Public Comment Period. The time limit may be extended at the discretion of the Chairman.*

One member of the public addressed the Board during the public comment period.

Chad Emerine, Eagle Road, welcomed the Town's new planner and offered comments on two subjects: the proposed reduction of the poultry setback, and the written recommendation process to the Town Engineer referenced in Appendix 2B of the meeting packet.

Regarding the proposed setback reduction, Mr. Emerine stated his opposition to reducing Weddington's poultry setback from 150 feet to 60 feet or less at the current time. He noted that the Town's existing 150-foot setback is consistent with Union County's setback for non-farm poultry and expressed concern that reducing it would make Weddington substantially less restrictive than surrounding municipalities without a clear basis for doing so. He stated that, to his knowledge, the Town is not currently experiencing widespread complaints about chickens or existing setbacks, and cautioned that a reduction could generate new complaints by situating coops and hens considerably closer to neighboring properties.

Mr. Emerine also raised the issue of enforcement capacity, noting that the Town's code enforcement officer works approximately one day per week, which he argued may be insufficient to investigate and address potential complaints related to noise, odor, sanitation, waste, and coop maintenance that could arise from a reduced setback.

He further referenced UDO Section 9-17(D), which requires that waste removed from structures housing poultry or livestock must remain at least 150 feet from the property line. He drew a parallel to the horse farm provision, where a structure may be located 60 feet from a property line but removed waste must still remain 150 feet away, and argued that any change to coop setbacks must also address associated waste and sanitation requirements.

Mr. Emerine concluded by recommending that the Board allow adequate time for research, comparison with the county and similar municipalities, and the development of a comprehensive ordinance rather than a standalone setback change.

On the second matter, Mr. Emerine noted that Town Council has stated on multiple occasions that the written recommendation to the Town Engineer under Appendix 2B should encompass a review against the entire UDO, not only stormwater provisions. He indicated this was consistent with the practice of prior planners and constitutes a standard part of the Town's review process, including setbacks, easements, and open space calculations.

The Chair closed the public comment period following Mr. Emerine's remarks.

6. Old Business

A. Discussion and Possible Recommendation of Text Amendment 2026-4 Section D-917D (A) Agricultural Uses (chicken coops)

The Chair invited discussion on Text Amendment 2026-4 regarding agricultural uses and chicken coops. Board Member Bill Deter opened by expressing agreement with the comments made during the public comment period and posing several threshold questions: what prompted the discussion in the first instance, whether there had been a meaningful number of complaints regarding chickens or chicken coops, what approaches other municipalities have taken, and what enforcement mechanisms those communities employ.

Board Member Amanda Jarrell stated that prior discussions had centered on properties of less than one acre, and offered the view that properties over one acre should not be subject to the proposed restrictions, as residents who own larger parcels generally expect to use their land as they see fit. She indicated support for addressing the matter in smaller-lot neighborhoods but expressed reservations about applying new restrictions broadly.

Board Member Steve Fellmeth acknowledged that the item had been before the Board previously and noted that the prior direction to staff had included a request for research on how other towns regulate the matter. The Chair summarized that at the prior meeting, the Board had produced draft language, which staff forwarded to the Mayor and Council for review. The Chair had also conducted a brief survey comparing Weddington's regulations to those of neighboring municipalities, and read the following findings into the record:

The Town of Marvin requires a permit for keeping chickens, regulates flock size through space restrictions, has a minimum lot size of one acre, and sets coop setbacks at 60 feet from the side property line and 150 feet from the rear property line and adjacent dwellings. Roosters are permitted in Marvin subject to specific setback parameters. The Town of Waxhaw also requires a permit, caps the flock at a maximum of six hens, has a minimum lot size of 0.25 acres, sets coop setbacks at 5 feet from the property line and 30 feet from the nearest neighboring residence, and strictly prohibits roosters.

Board Member Fellmeth recommended that the item be tabled and incorporated into the upcoming UDO workshop, where additional research could be conducted and a more comprehensive review could take place. Board Member Jarrell expressed support for that approach. Board Member Scott Buzzard agreed, noting that if the item is not a pressing concern, tabling it to a future meeting was a reasonable course of action.

The Board discussed whether to table the item to the upcoming workshop specifically or to a future meeting generally, ultimately concluding that it should be tabled to a future meeting without designating a specific date, so that it could be addressed with proper preparation and Council direction.

MOTION: to table the discussion and any possible recommendation of Text Amendment 2026-4, Section D-917D(A), Agricultural Uses (chicken coops), to a future meeting was made by Board Member Scott Buzzard and seconded by the Board Member Bill Deter.

VOTE: The motion carried unanimously.

7. New Business

A. Planning Board Workshop for UDO and plan submittal process.

The Chair introduced the item, proposing that the next scheduled Planning Board meeting be designated as a workshop session in lieu of a regular meeting, contingent on there being no significant applications requiring action. The Chair noted that a Board of Adjustment meeting is scheduled for the preceding week and suggested that the Planning Board workshop could begin immediately following the Board of Adjustment meeting, with the agenda notice reflecting a start time of "immediately following the Board of Adjustment meeting" rather than a fixed time. Board Member Deter confirmed there would be no legal issue with this approach, provided the date and approximate time were properly noticed.

B. Discussion on Upcoming Workshop

The Board engaged in a detailed discussion regarding the topics and structure of the upcoming workshop. Board Member Deter suggested that the workshop be organized around a simulated application scenario, to be assembled by staff, that would allow the Board to work through the plan submittal process as an applicant would experience it. He identified several areas warranting focused discussion, including the distinction between primary and secondary open space in R-40 zoning versus primary and secondary conservation areas in conservation subdivisions, the level of detail required under Exhibit 2B of the plan submittal checklist, and recurring issues such as stormwater, tree ordinance compliance, septic and sewer requirements, and the Town's dual-entrance requirement and its interaction with emergency access provisions.

Board Member Deter also noted that a number of text amendments approved by the Planning Board, some dating back to March, had not yet been formally adopted by the Town Council. He expressed hope that those amendments could be placed before the Council at the next meeting so that the most current version of the UDO would be in effect for the workshop.

The Chair reiterated a prior request that the workshop include a review of the Town's plan submittal process through the lens of the applicant, specifically including the Town's website and the online permitting pathway. The Chair noted that placing the same outdated materials on a new website without substantive revision would not improve the applicant experience. Town Administrator Doug Gailey confirmed that internal discussions on this matter were already underway and that staff had developed preliminary ideas for structuring the online process to guide applicants through a decision-based pathway depending on the type of permit sought. Mr. Gailey stated that the new website is expected to be ready for training and launch by approximately February, and offered to send Board members a link to review the site and provide feedback without the need for a formal meeting.

Board Member Deter suggested that, rather than engaging the full Planning Board in website review, a subcommittee of two or three members could meet between regular sessions to review and refine the online materials and then present their findings to the full Board. Mr. Gailey indicated that staff intended to complete a substantial portion of the preparatory work before involving the Board, so that the Board's role would be focused review and fine-tuning rather than building from scratch.

Board Member Fellmeth requested that, in instances where a subcommittee convenes between meetings, a written summary of what was discussed be circulated to all Board members in advance of the meeting at which the subcommittee's work would be considered, so that no member would be seeing the material for the first time at the meeting. Board Member Deter concurred, adding that subcommittee presentations should generally be treated as a starting point for full Board deliberation rather than a final recommendation.

The Chair raised the matter of packet delivery timelines, noting that Board members have at times received packets as late as Thursday afternoon prior to a Monday meeting, leaving insufficient time to thoroughly review subdivision materials. The Chair requested that this issue be addressed as part of the workshop discussion, particularly with respect to establishing submission deadlines for applicants that allow staff adequate review time

before distribution to the Board. Town Planner Ryne Ratti stated that his goal is to provide a preliminary draft to the Board at least 30 days in advance of a meeting, and that once he signs off on a complete application, it will come before the Board in final form with no subsequent change orders unless the applicant is willing to withdraw and resubmit. Mr. Gailey offered a more immediate solution, noting that in the case of a large subdivision, staff could send the subdivision materials to Board members as a preliminary distribution with notice that the remainder of the packet would follow, so that members could begin their review without waiting for the full packet to be assembled. Board Member Buzzard agreed that the electronic nature of the current process lends itself well to this approach. The Chair indicated support for this as an interim measure.

8. Update from September Town Council Meeting

Town Planner Ryne Ratti reported that there was nothing new to discuss from the September Town Council meeting.

9. Board member Comments

Board Member Scott Buzzard expressed that it was good to be back at the table after an extended period without meetings, welcomed the new staff members, and thanked the public for attending.

Board Member Amanda Jarrell echoed the welcome and expressed enthusiasm for working with the new staff.

Board Member Taylor Grove welcomed the new staff, expressed hope for continued reliable technology at future meetings, and stated that she is looking forward to a productive workshop.

Board Member Steve Fellmeth, welcomed the new staff and offered his assistance to them going forward.

Board Member Bill Deter stated that he is eager to have new staff in place, that his expectations are high and he believes them to be realistic, and that he anticipates significant progress in tightening processes and bringing greater clarity to the Town's planning operations.

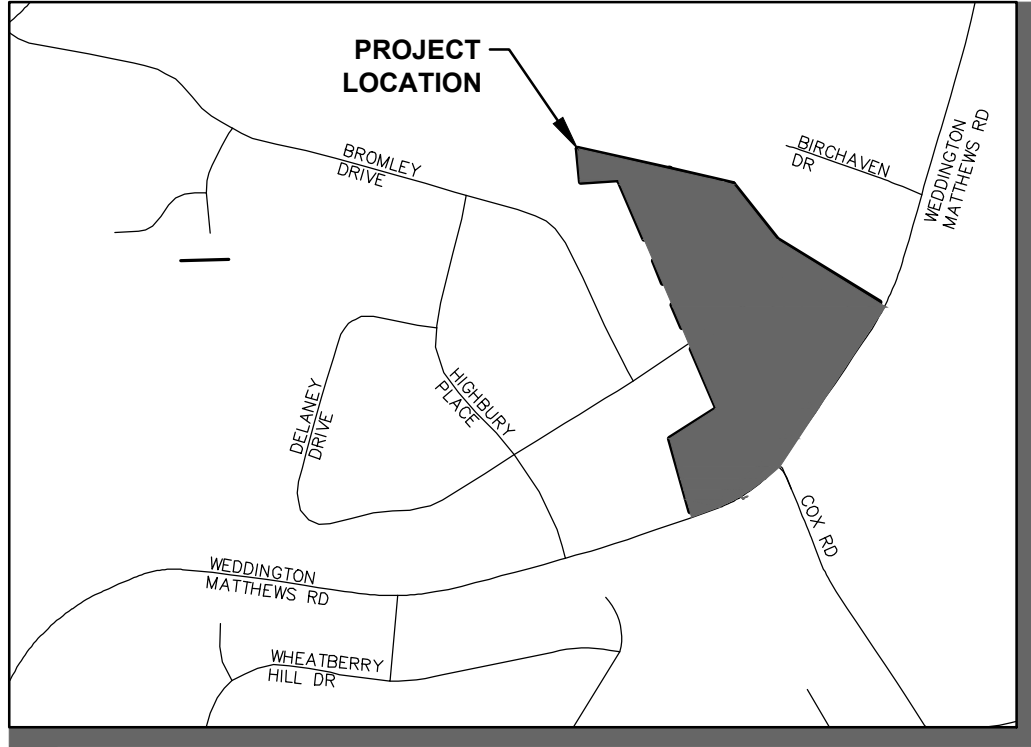
The chair echoed the sentiments of the previous board comments.

10. Adjournment

MOTION: *to adjourn was made by Board Member Deter and seconded by Board Member Buzzard.*

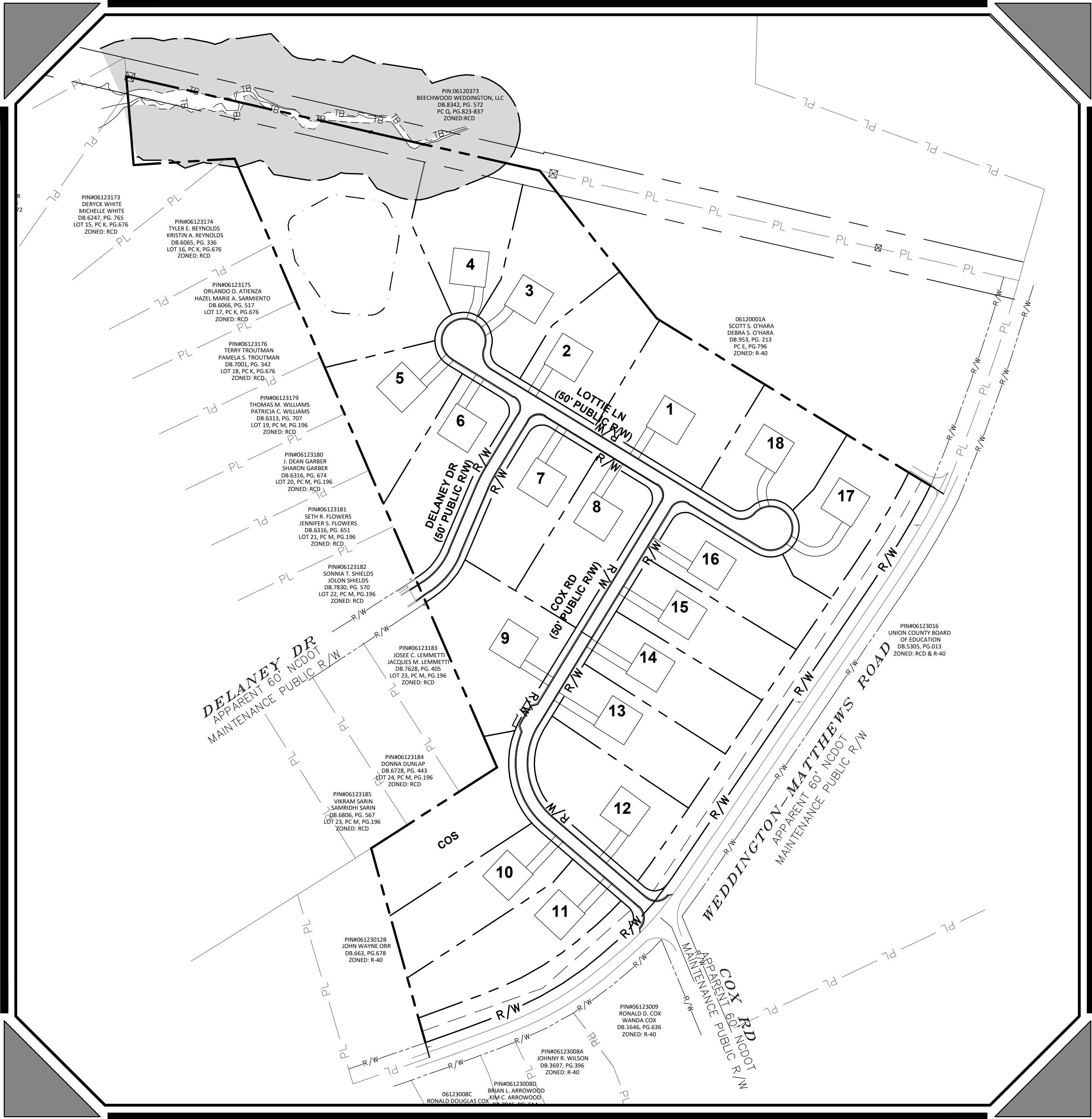
VOTE: *The motion carried unanimously..*

The meeting was adjourned



LUNA ESTATES SUBDIVISION

Sheet List Table		ORIGINAL ISSUE DATE	REVISION DATE	REVISION NUMBER
SHEET NO.	SHEET TITLE			
C1.0	COVER SHEET	01/22/2024	03/14/2024	A
C1.1	GENERAL NOTES	01/22/2024	03/14/2024	A
C1.2	NCEOG NOTES	01/22/2024	03/14/2024	A
C2.0	EXISTING CONDITIONS & DEMOLITION PLAN	01/22/2024	03/14/2024	A
C3.0	SITE PLAN - OVERALL	01/22/2024	03/14/2024	A
C3.1	SITE PLAN - ENLARGED	01/22/2024	03/14/2024	A
C3.2	SITE PLAN - ENLARGED	01/22/2024	03/14/2024	A
C3.3	SITE PLAN - ENLARGED	01/22/2024	03/14/2024	A
C4.0	EROSION CONTROL PLAN STAGE 1 - OVERALL	01/22/2024	03/14/2024	A
C4.1	EROSION CONTROL PLAN STAGE 1 - ENLARGED	01/22/2024	03/14/2024	A
C4.2	EROSION CONTROL PLAN STAGE 1 - ENLARGED	01/22/2024	03/14/2024	A
C4.3	EROSION CONTROL PLAN STAGE 1 - ENLARGED	01/22/2024	03/14/2024	A
C5.0	EROSION CONTROL PLAN STAGE 2 - OVERALL	01/22/2024	03/14/2024	A
C5.1	EROSION CONTROL PLAN STAGE 2 - ENLARGED	01/22/2024	03/14/2024	A
C5.2	EROSION CONTROL PLAN STAGE 2 - ENLARGED	01/22/2024	03/14/2024	A
C5.3	EROSION CONTROL PLAN STAGE 2 - ENLARGED	01/22/2024	03/14/2024	A
C6.0	EROSION CONTROL PLAN STAGE 3 - OVERALL	01/22/2024	03/14/2024	A
C6.1	EROSION CONTROL PLAN STAGE 3 - ENLARGED	01/22/2024	03/14/2024	A
C6.2	EROSION CONTROL PLAN STAGE 3 - ENLARGED	01/22/2024	03/14/2024	A
C6.3	EROSION CONTROL PLAN STAGE 3 - ENLARGED	01/22/2024	03/14/2024	A
C7.0	GRADING PLAN - OVERALL	01/22/2024	03/14/2024	A
C7.1	GRADING PLAN - ENLARGED	01/22/2024	03/14/2024	A
C7.2	GRADING PLAN - ENLARGED	01/22/2024	03/14/2024	A
C7.3	GRADING PLAN - ENLARGED	01/22/2024	03/14/2024	A
C7.4	DRAINAGE AREA PLAN	01/22/2024	03/14/2024	A
C7.5	STORM TABLES	01/22/2024	03/14/2024	A
C8.0	UTILITY PLAN - OVERALL	01/22/2024	03/14/2024	A
C8.1	UTILITY PLAN - ENLARGED	01/22/2024	03/14/2024	A
C8.2	UTILITY PLAN - ENLARGED	01/22/2024	03/14/2024	A
C8.3	UTILITY PLAN - ENLARGED	01/22/2024	03/14/2024	A
C8.4	STORM PLAN AND PROFILE	01/22/2024	03/14/2024	A
C8.5	STORM PLAN AND PROFILE	01/22/2024	03/14/2024	A
C8.6	STORM PLAN AND PROFILE	01/22/2024	03/14/2024	A
C9.0	DELANEY DRIVE - PLAN AND PROFILE	01/22/2024	03/14/2024	A
C9.1	COX ROAD - PLAN AND PROFILE	01/22/2024	03/14/2024	A
C9.2	LOTTIE LANE - PLAN AND PROFILE	01/22/2024	03/14/2024	A
C9.3	SIGHT DISTANCE PLAN AND PROFILE	01/22/2024	03/14/2024	A
C10.0	LANDSCAPE PLAN - OVERALL	01/22/2024	03/14/2024	A
C10.1	LANDSCAPE PLAN - ENLARGED	01/22/2024	03/14/2024	A
C10.2	LANDSCAPE PLAN - ENLARGED	01/22/2024	03/14/2024	A
C10.3	LANDSCAPE PLAN - ENLARGED	01/22/2024	03/14/2024	A
C11.0	SITE DETAILS	01/22/2024	03/14/2024	A
C11.1	SITE DETAILS	01/22/2024	03/14/2024	A
C11.2	UTILITY DETAILS	01/22/2024	03/14/2024	A
C12.0	EROSION CONTROL DETAILS	01/22/2024	03/14/2024	A
C12.1	EROSION CONTROL DETAILS	01/22/2024	03/14/2024	A
C12.2	EROSION CONTROL DETAILS	01/22/2024	03/14/2024	A
C13.0	STORMWATER CONTROL MEASURE #1 DETAILS	01/22/2024	03/14/2024	A



SITE STATISTICS

TAX MAP & PARCEL #:	06123012 & 06123012C
DEED BOOK & PAGE #:	4812 - 879
PROJECT AREA:	28.959 ACRES
LIMITS OF DISTURBANCE AREA:	+27 ACRES
ZONING:	R-CD
WATERSHED:	SIX MILE CREEK (LOWER CATAWBA)
EXISTING LAND USE:	SINGLE FAMILY RESIDENTIAL
PROPOSED LAND USE:	SINGLE FAMILY RESIDENTIAL
NUMBER OF LOTS:	18
DENSITY PROPOSED:	1.61 DUA
OPEN SPACE REQUIRED:	2.90 AC (10% GROSS AREA)
OPEN SPACE PROPOSED:	5.07 AC (17.5% GROSS AREA)
PER ORDINANCE:	ROLL-OUT CONTAINERS
PCOO:	40,000 SF
SOLID WASTE:	40,000 SF +
MINIMUM LOT SIZE REQUIRED:	120 LF
MINIMUM LOT WIDTH REQUIRED:	120 LF +
MINIMUM LOT WIDTH PROVIDED:	120 LF +
MINIMUM SETBACKS:	
FRONT:	50'
SIDE:	15'
SIDE CORNER:	25'
REAR:	40'
TOTAL LENGTH OF ROADS:	
LOTTIE LN:	702 LF
COX ROAD:	1,038 LF
DELANEY ROAD:	434 LF

DEVELOPER

NAME:	TOLL BROTHERS
ADDRESS:	9130 KINGS PARADE BLVD CHARLOTTE, NC 28273
PHONE #:	(980) 722-6715
EMAIL:	rprice1@tollbrothers.com

OWNERS

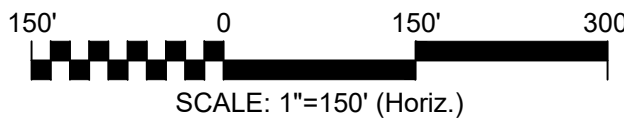
NAME:	J WAYNE & CINDY CAROL ORR
ADDRESS:	6100 MATTHEWS-WEDDINGTON RD MATTHEWS, NC 28104
PHONE #:	(704) 526-6284
NAME:	GERALD D. & MARTHA P. ORR
ADDRESS:	125 LAUREN DR INDIAN TRAIL, NC 28079
PHONE #:	(704) 574-6110

CERTIFICATION OF APPROVAL OF THE CONSTRUCTION PLAN

ON _____ THE WEDDINGTON TOWN ENGINEER APPROVED THE CONSTRUCTION PLAN OF THE LUNA SUBDIVISION. THIS CONSTRUCTION PLAN AND ITS PRELIMINARY PLAT SHALL BECOME NULL AND VOID IF, AFTER TWO YEARS OF APPROVAL OF THE CONSTRUCTION PLAN, CONSTRUCTION OF THE IMPROVEMENTS TO THE LAND HAVE NOT BEEN COMPLETED, OR IF AN APPROVED PERFORMANCE GUARANTEE HAS NOT BEEN EXTENDED WITH THE CONSENT OF THE TOWN COUNCIL, IN ACCORDANCE WITH SECTION 46-44 OF THE SUBDIVISION ORDINANCE.

WEDDINGTON TOWN ENGINEER

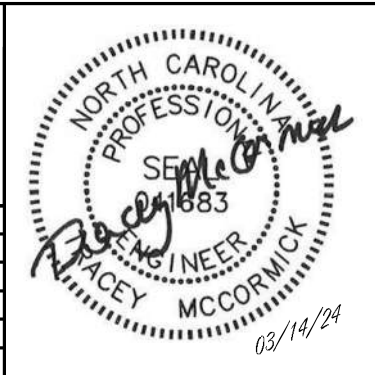
OVERALL SITE



TOWN OF WEDDINGTON, UNION CO., NC
MARCH 2024

REVIEW DRAWINGS
NOT FOR CONSTRUCTION
03/14/2024

REV NO.	ADDRESSED TOWN COMMENTS	DATE
A		03/14/24

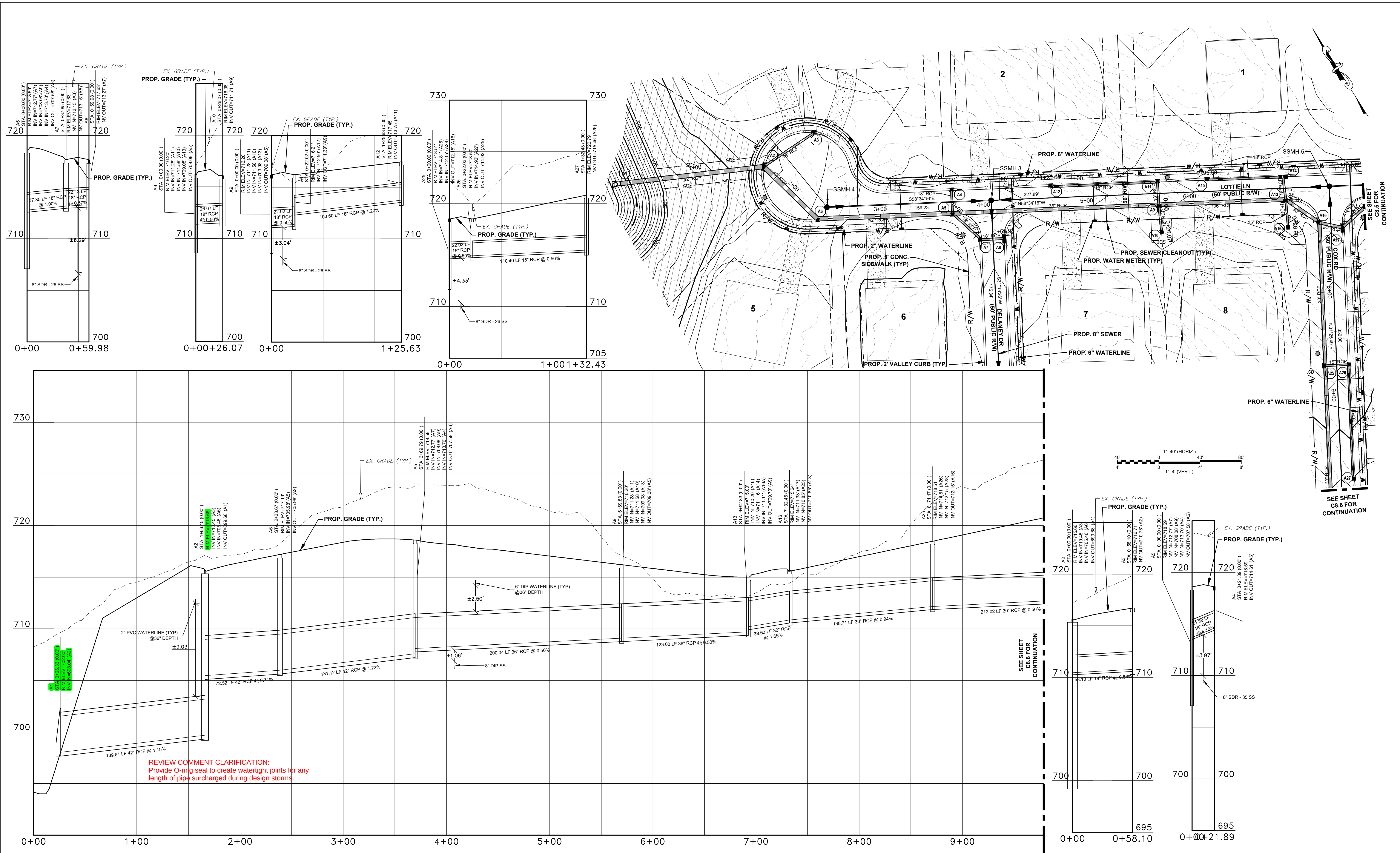


CIVIL ENGINEER

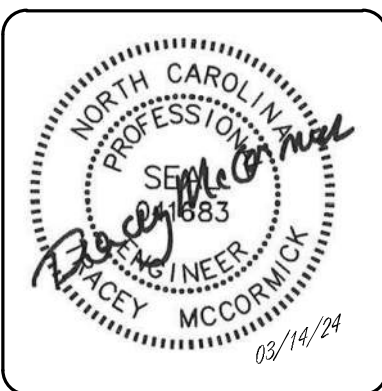


8020 Tower Point Drive
Charlotte, North Carolina 28227
Phone: (704) 841-2588, Fax: (704) 841-2567
NC License# F-1222
www.mckimcreed.com





REV.	DESCRIPTION	DATE
A	ADDRESSED TOWN COMMENTS	03/14/24
REV.	DESCRIPTIONS	DATE
REVISIONS		



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www.mckimcreed.com

AMERICA'S LUXURY HOME BUILDER®

LUNA ESTATES SUBDIVISION
WEDDINGTON, UNION COUNTY
NORTH CAROLINA

STORM PLAN AND PROFILE

DATE: MARCH 2024
MCE PROJ. #: 02741-0010
DRAWN: DJS
DESIGNED: DJS
CHECKED: TMM
PROJ. MGR. TMM

SCALE
HORIZONTAL: 1" = 40'
VERTICAL: N/A

C8.4
DRAWING NUMBER
A
REVISION

STATUS: PRELIMINARY DRAWING
NOT FOR CONSTRUCTION

Installation Specifications

- The base of both end posts should be at least one foot higher than the middle of the fence. Check with a level if necessary.
- Install posts 4 feet apart in critical areas and 6 feet apart on standard applications.
- Install posts 2 feet deep on the downstream side of the silt fence, and as close as possible to the fabric, enabling posts to support the fabric from upstream water pressure.
- Install posts with the nipples facing away from the silt fabric.
- Attach the fabric to each post with three ties, all spaced within the top 8 inches of the fabric. Attach each tie diagonally 45 degrees through the fabric, with each puncture at least 1 inch vertically apart. Also, each tie should be positioned to hang on a post nipple when tightened to prevent sagging.
- Wrap approximately 6 inches of fabric around the end posts and secure with 3 ties.
- No more than 24 inches of a 36 inch fabric is allowed above ground level.
- The installation should be checked and corrected for any deviations before compaction.
- Compaction is vitally important for effective results. Compact the soil immediately next to the silt fence fabric with the front wheel of the tractor, skid steer, or roller exerting at least 60 pounds per square inch. Compact the upstream side first, and then each side twice for a total of 4 trips.
- Install wattles as shown on approved plans with 2' overlap from edge of silt fence to edge of wattle.

Maintenance

Inspect sediment fences at least once a week and after each rainfall. Make any required repairs immediately.

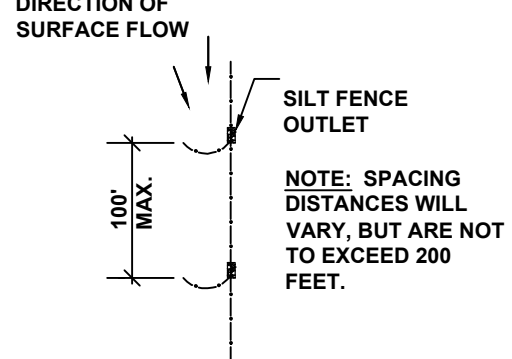
Should the fabric of a sediment fence collapse, tear, decompose or become ineffective, replace it promptly.

Remove sediment deposits as necessary to provide adequate storage volume for the next rain and to reduce pressure on the fence. Take care to avoid undermining the fence during cleanout.

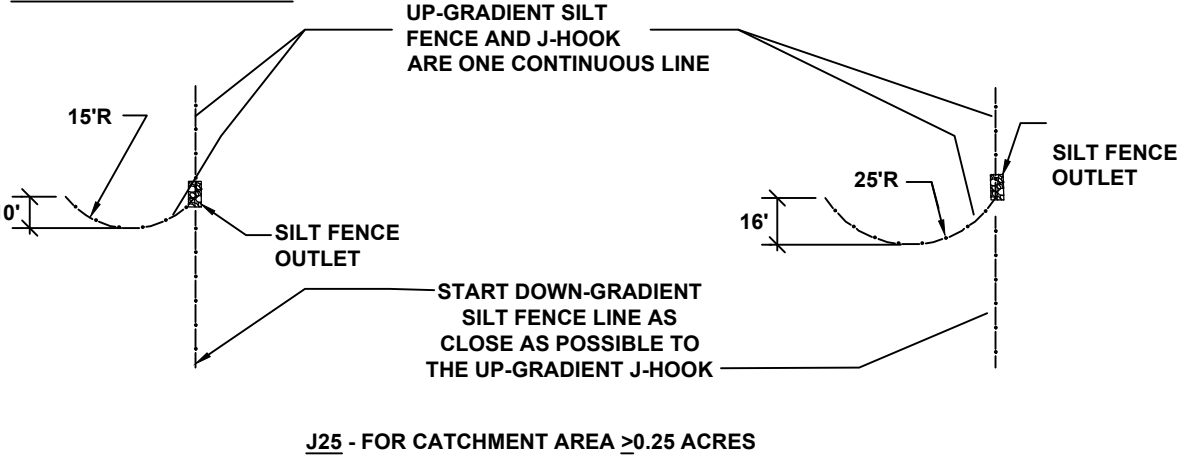
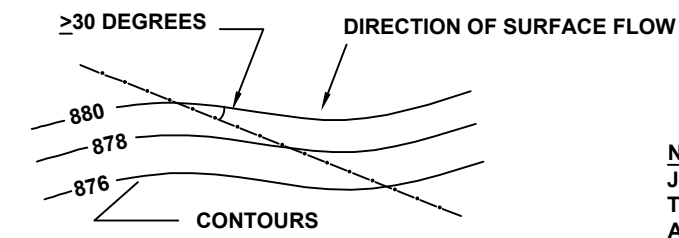
Remove all fencing materials and unstable sediment deposits and bring the area to grade and stabilize it after the contributing drainage area has been properly stabilized.

SILT FENCE OUTLET J-HOOK SPECIFICATIONS AND MAINTENANCE

I. SPACING REQUIREMENTS



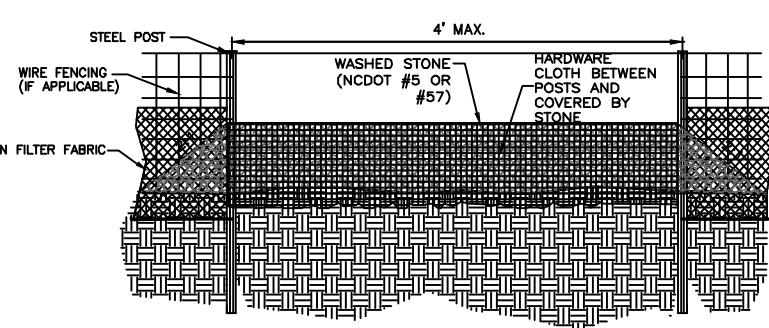
II. SIZING REQUIREMENTS: J25



NOTE:
J-HOOKS SHALL BE USED WHEN THE SILT FENCE IS INSTALLED AT AN ANGLE OF 30 DEGREES OR GREATER FROM PARALLEL TO THE CONTOURS.

MAINTENANCE: CLEAN OUT AT 50% CAPACITY
LIFE OF FENCING: 6-9 MONTHS

SILT FENCE OUTLET WITH J-HOOK NOT TO SCALE



- GENERAL NOTES:
- SEDIMENT FILTER OUTLET AND HARDWARE CLOTH SHALL BE 16 INCHES HIGH BUT NO TALLER THAN 18 INCHES.
 - HARDWARE CLOTH SHALL BE ANCHORED TO THE STEEL POSTS SECURELY USING APPROPRIATE ANCHORS. HARDWARE CLOTH SHALL BE KEYED IN A MINIMUM OF 12 INCHES IN LENGTH AND BACKFILLED PROPERLY AS SHOWN IN ABOVE DETAIL. HARDWARE CLOTH TO BE SAME AS STD. #30.09 (19 GAUGE, 1/4" SPACING).
 - POSTS SHALL BE NO MORE THAN 4 FEET APART.
 - SITE OUTLETS AT ANY POINT SMALL CONCENTRATED FLOWS ARE ANTICIPATED AND AT THE DIRECTION OF THE INSPECTOR.
- MAINTENANCE NOTES:
- FILTER OUTLETS SHALL BE INSPECTED BY THE FINANCIALLY RESPONSIBLE PARTY OR HIS AGENT IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS NEEDED SHALL BE MADE IMMEDIATELY.
 - THE STONE SHALL BE REPLACED PROMPTLY AFTER ANY EVENT THAT HAS CLOGGED OR REMOVED IT.
 - SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN DEPOSITS REACH HALF THE HEIGHT OF THE BARRIER. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OUTLET IS REMOVED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

SILT FENCE OUTLET NOT TO SCALE

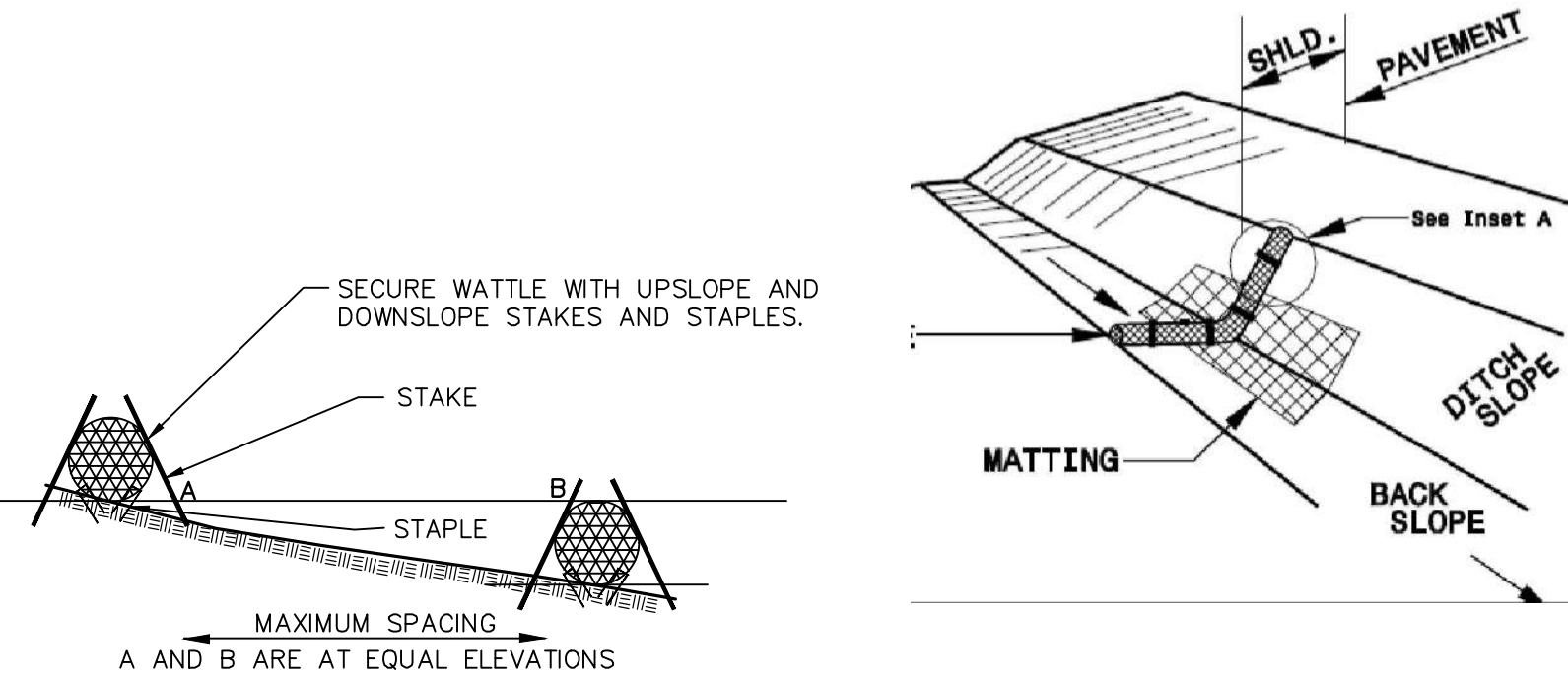
GENERAL NOTES:

- SEDIMENT FILTER OUTLET AND HARDWARE CLOTH SHALL BE 16 INCHES HIGH BUT NO TALLER THAN 18 INCHES.
- HARDWARE CLOTH SHALL BE ANCHORED TO THE POSTS SECURELY USING APPROPRIATE ANCHORS. HARDWARE CLOTH SHALL BE KEYED IN A MINIMUM OF 12 INCHES IN LENGTH AND BACKFILLED PROPERLY AS SHOWN IN ABOVE DETAIL. HARDWARE CLOTH TO BE 19 GAUGE, 1/4" SPACING.
- POSTS SHALL BE NO MORE THAN 4 FEET APART.
- SITE OUTLETS AT ANY POINT SMALL CONCENTRATED FLOWS ARE ANTICIPATED AND AT THE DIRECTION OF THE INSPECTOR.
- ONE ACRE MAXIMUM DRAINAGE AREA PER OUTLET.

MAINTENANCE NOTES:

- FILTER OUTLETS SHALL BE INSPECTED BY THE FINANCIALLY RESPONSIBLE PARTY OR HIS AGENT IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REPAIRS NEEDED SHALL BE MADE IMMEDIATELY.
- THE STONE SHALL BE REPLACED PROMPTLY AFTER ANY EVENT THAT HAS CLOGGED OR REMOVED IT.
- SEDIMENT DEPOSITS SHOULD BE REMOVED WHEN DEPOSITS REACH HALF THE HEIGHT OF THE BARRIER. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OUTLET IS REMOVED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

REINFORCED SILT FENCE (SUPER SILT FENCE) OUTLET DEVICE INSTALLATION SPECIFICATIONS AND MAINTENANCE



NOTES:

- USE MINIMUM 18" DIA. STRAW WATTLE. 20" WATTLES ARE ALSO SPECIFIED.
- USE 2"x2" WOODEN STAKES 2'-FT IN LENGTH ON THE UPSLOPE AND DOWNSLOPE.
- AT AN ANGLE TO WEDGE THE WATTLE TO THE BOTTOM OF THE SWALE. STAPLE ON BOTH SIDES OF THE WATTLE TO SECURE IT TO THE BOTTOM OF THE SWALE.
- ENSURE THAT MAXIMUM SPACING BETWEEN WATTLES PLACES THE TOP OF THE UPSLOPE WATTLE AT THE SAME ELEVATION AS THE DOWNSLOPE WATTLE (SEE DIAGRAM ABOVE).

MAINTENANCE NOTES:
INSPECT WATTLES AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT. REPAIR ALL DAMAGE IMMEDIATELY.

STRAW WATTLES NOT TO SCALE

NOTES:

- WIRE SHALL BE A MINIMUM OF 32" IN WIDTH AND SHALL HAVE A MINIMUM OF 6 LINE WIRES W/12" STAY SPACING.
- FILTER FABRIC SHALL BE A MINIMUM OF 36" IN WIDTH AND SHALL BE FASTENED ADEQUATELY TO THE WIRE AS DIRECTED BY THE ENGINEER.
- STEEL POST SHALL BE 5' 0" IN HEIGHT AND BE OF SELF FASTENER ANGLE STEEL TYPE.
- SILT FENCE SHALL BE INSTALLED ON ROW OR TWS ALONG DOWNHILL SIDE OF EASEMENT. SILT FENCE IS OFFSET FROM ROW OR TWS ON EROSION CONTROL PLAN SHEETS FOR DISPLAY PURPOSES ONLY.
- SYNTHETIC FILTER FABRIC OF AT LEAST 95% WEIGHT OF POLYOLEFINS OR POLYESTER, WHICH IS CERTIFIED BY THE MANUFACTURER OR SUPPLIER AS CONFORMING TO THE REQUIREMENTS IN ASTM D 6461.

MAINTENANCE NOTES:

- INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
- SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
- REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.
- ENSURE THAT THE IMPOUNDED WATER DOES NOT EXCEED 1.5 FT AT ANY POINT ALONG THE SILT FENCE.
- REMOVE ALL FENCING MATERIALS AND UNSTABLE SEDIMENT DEPOSITS AND BRING THE AREA TO GRADE AND STABILIZE IT AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

GUIDELINES FOR TEMPORARY SILT FENCE DETAIL NOT TO SCALE

GENERAL NOTES:

- SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP.
- REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
- THE STRUCTURE SHALL BE INSPECTED AFTER EACH STORM EVENT BY THE CONTRACTOR OR HIS AGENT AND REPAIRS MADE AS NECESSARY.
- CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION ARE MINIMIZED.
- THE SEDIMENT TRAP SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE DRAINAGE BASIN HAS BEEN PROPERLY STABILIZED.
- SILT FENCE INSTALLATION SHALL BE IN ACCORDANCE WITH TEMPORARY SILT FENCE DETAIL.

TEMPORARY INLET PROTECTION CLOTH AND GRAVEL NOT TO SCALE

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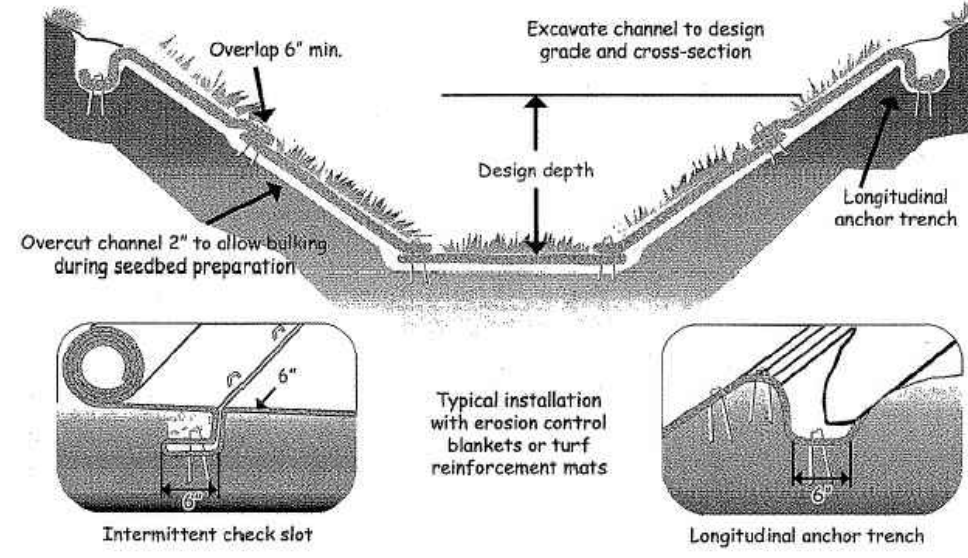
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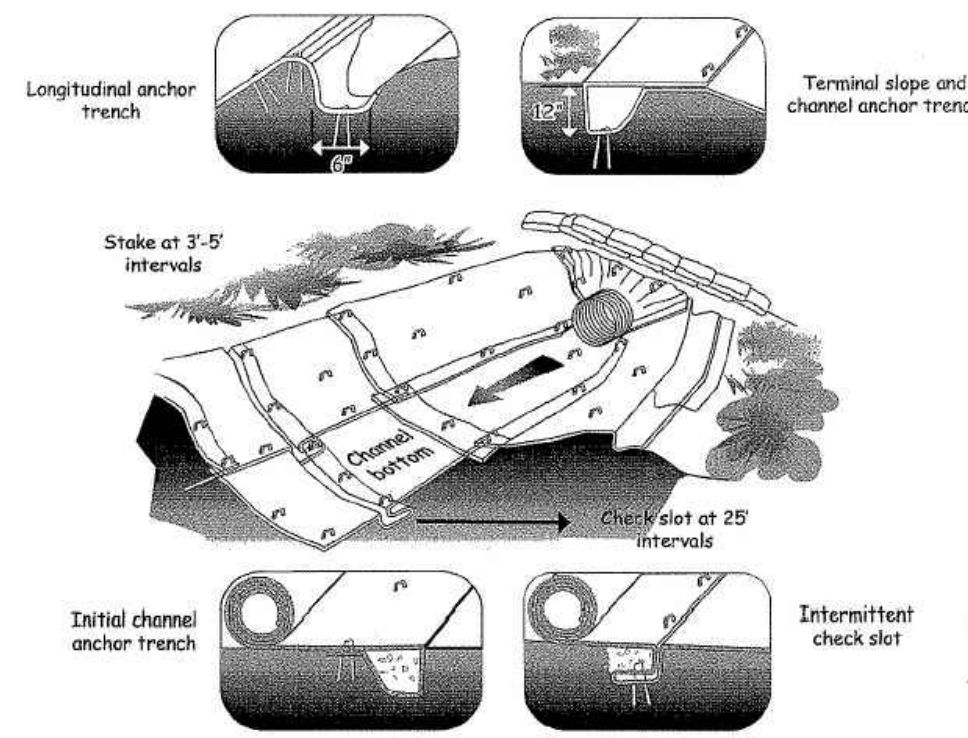
EROSION CONTROL DETAILS

Figure 6.17d Temporary Channel Liners, Washington State Department of Ecology

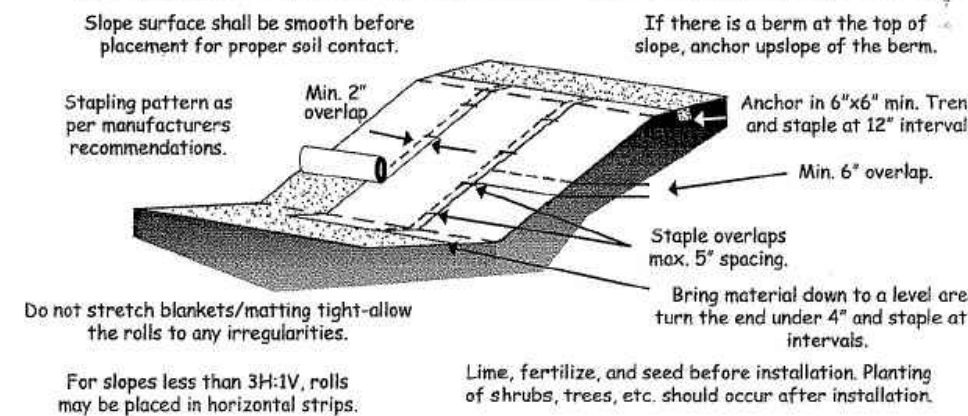


- NOTES:
- Design velocities exceeding 2 ft/sec require temporary blankets, mats or similar liners to protect seed and soil until vegetation becomes established.
 - Grass-lined channels with design velocities exceeding 6 ft/sec should include turf reinforcement mats.

Figure 6.17e Channel Installation and Slope Installation, Washington State Ecology Department



- NOTE:
- Check slots to be constructed per manufacturers specifications.
 - Staking or stapling layout per manufacturers specifications.



TEMPORARY CHANNEL LINERS AND EROSION CONTROL MATTING SPECIFICATION:

- SEE DIVERSION DITCH CHART FOR LINER TYPE.
- MIN. SHEAR STRENGTH: STRAW WITH NET (OR APPROVED EQUAL) - 1.45 LBS/FT²
CURLEX I (OR APPROVED EQUAL) - 1.75 LBS/FT²
CURLEX II (OR APPROVED EQUAL) - 2.25 LBS/FT²
PSRM (PERMANENT SOIL REINFORCED MAT) - 3.0 LBS/FT²

* ALL RATINGS ABOVE ARE MINIMUM SHEAR STRENGTH REQUIREMENTS FOR THE MATTING BASED ON UNVEGETATED CONDITIONS.
** RIPRAP IN CHANNELS AS REQUIRED PER THE EROSION SPREADSHEET MAY BE REPLACED WITH A COIR MATTING OR SYNTHETIC MATTING AS LONG AS THE MATTING MEETS THE MINIMUM SHEAR STRESS AND VELOCITY REQUIREMENTS OF EACH INDIVIDUAL DITCH. SHEAR STRESS REQUIREMENTS AND VELOCITY REQUIREMENTS FOR EACH DITCH ARE OUTLINED IN THE DITCH SCHEDULES.

CONSTRUCTION SPECIFICATION

- GRADE THE SURFACE OF INSTALLATION AREAS SO THAT THE GROUND IS SMOOTH AND LOOSE.
- WHEN SEEDING PRIOR TO INSTALLATION, FOLLOW THE STEPS FOR SEED BED PREPARATION, SOIL AMENDMENTS, AND SEEDING AS NOTED IN "SURFACE STABILIZATION" (GENERAL NOTES) AND AS PER NCDEM STANDARDS.
- SPREAD SEED BEFORE EROSION CONTROL MATTING IS INSTALLED.
- MATting SHALL BE INSTALLED FROM TOP OF BANK TO TOP OF BANK ALONG DITCHES WITHIN DENUDED LIMITS. MATTING SHALL BE INSTALLED IN ALL DITCHES INDICATED ON PLANS AFTER SOIL IS DISTURBED BY CONSTRUCTION ACTIVITY.

MAINTENANCE

- ALL EROSION CONTROL MATTING SHALL BE INSPECTED EVERY SEVEN (7) DAYS OR AFTER EACH RAINFALL OCCURRENCE THAT EXCEEDS ONE-HALF (0.5) INCH.
- GOOD CONTACT WITH THE GROUND MUST BE MAINTAINED AND EROSION MUST NOT OCCUR BENEATH THE EROSION CONTROL MATTING.
- ANY AREAS OF THE EROSION CONTROL MATTING THAT ARE DAMAGED OR NOT IN CLOSE CONTACT WITH THE GROUND SHALL BE REPAIRED AND STAPLED.
- IF EROSION OCCURS DUE TO POORLY CONTROLLED DRAINAGE, THE PROBLEM SHALL BE FIXED AND THE ERODED AREA PROTECTED.
- MONITOR AND REPAIR THE EROSION CONTROL MATTING AS NECESSARY UNTIL GROUND COVER IS ESTABLISHED.
- SEE SHEET 2 FOR ADDITIONAL EROSION CONTROL MAINTENANCE NOTES.

EROSION CONTROL MATTING NOT TO SCALE

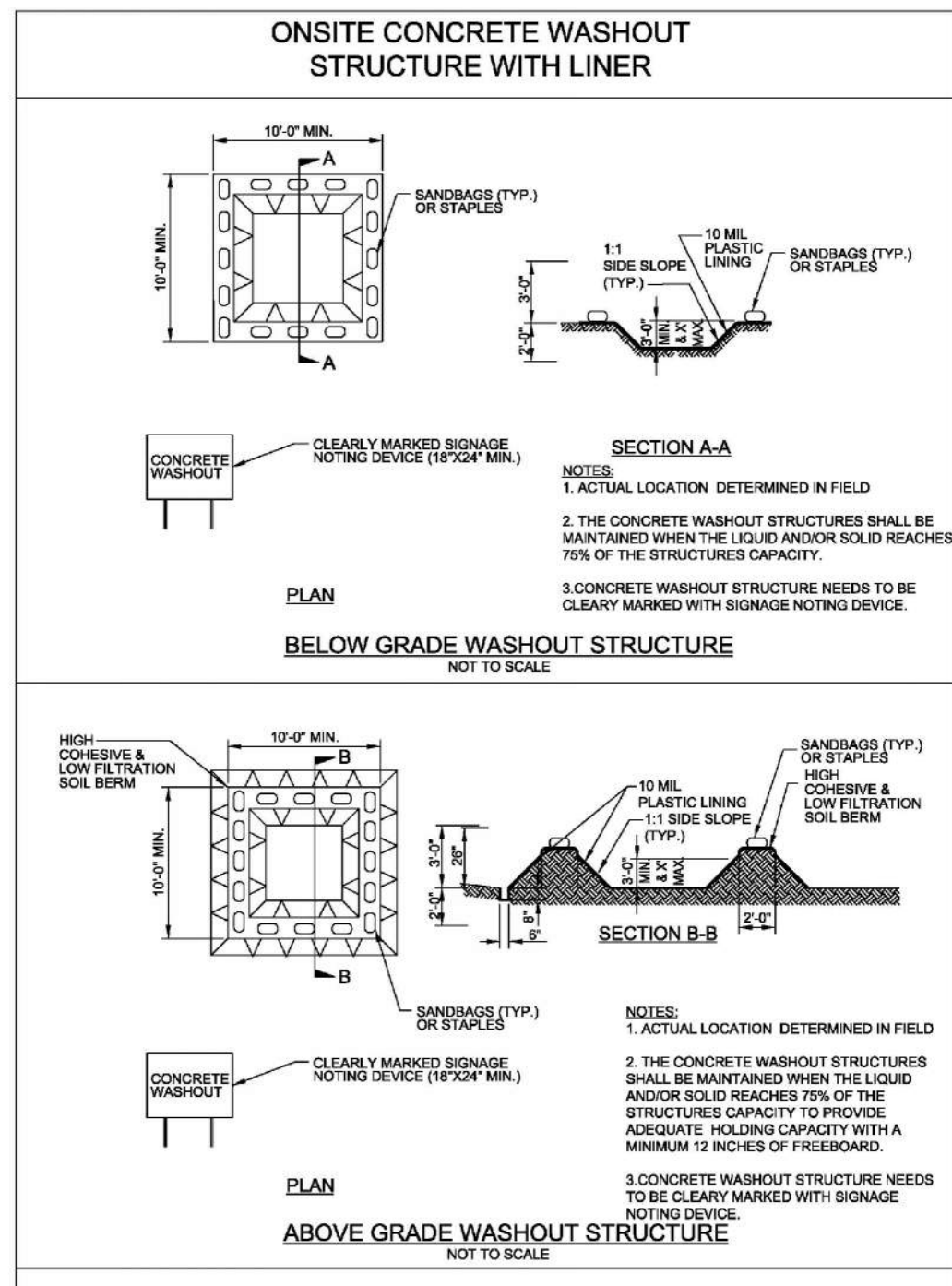
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DESIGNED: ECB
CHECKED: TMM
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VERTICAL: N/A

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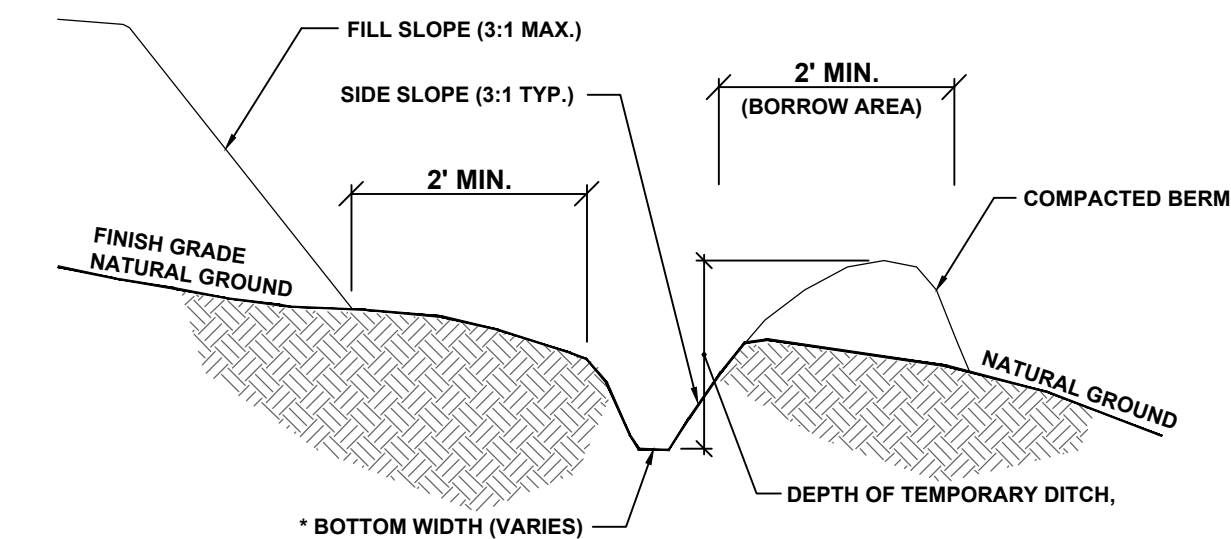
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WITH LINER, NO GRAVEL APPROACH



CONCRETE WASHOUT DETAIL

NOT TO SCALE



	DEPTH (FT)	TOP WIDTH (FT)	*BOTTOM WIDTH (FT)	SIDE SLOPE (H:V)	CHANNEL LINING TYPE	SHEAR STRESS (PSF)	SLOPE (FT/FT)	AREA (ACRES)	LENGTH (FT)
TDD #1A	2.00	15.0	3.0	3	STRAW W/ NET	1.14	0.044	1.70	216
TDD #1B	2.50	18.0	3.0	3	STRAW W/ NET	0.67	0.006	13.95	751
TDD #2	2.00	12.0	0.0	3	STRAW W/ NET	0.85	0.012	2.80	750
TDD #3	2.00	8.0	0.0	2	STRAW W/ NET	1.37	0.040	0.62	288
TDD #4	1.50	6.0	2.0	2	STRAW W/ NET	0.78	0.020	1.61	329
PD #1	2.50	16.0	3.0	3	STRAW W/ NET	0.50	0.010	2.90	829
PD #2	2.00	14.0	2.0	3	STRAW W/ NET	0.64	0.018	1.48	527
PD #3	2.00	13.0	1.0	3	STRAW W/ NET	0.87	0.049	0.20	135
PD #4	2.00	13.0	1.0	3	STRAW W/ NET	0.32	0.010	0.61	183
PD #5	2.00	13.0	1.0	3	STRAW W/ NET	0.51	0.010	1.69	546
PD #5	3.00	19.0	1.0	3	STRAW W/ NET	0.85	0.010	5.60	368

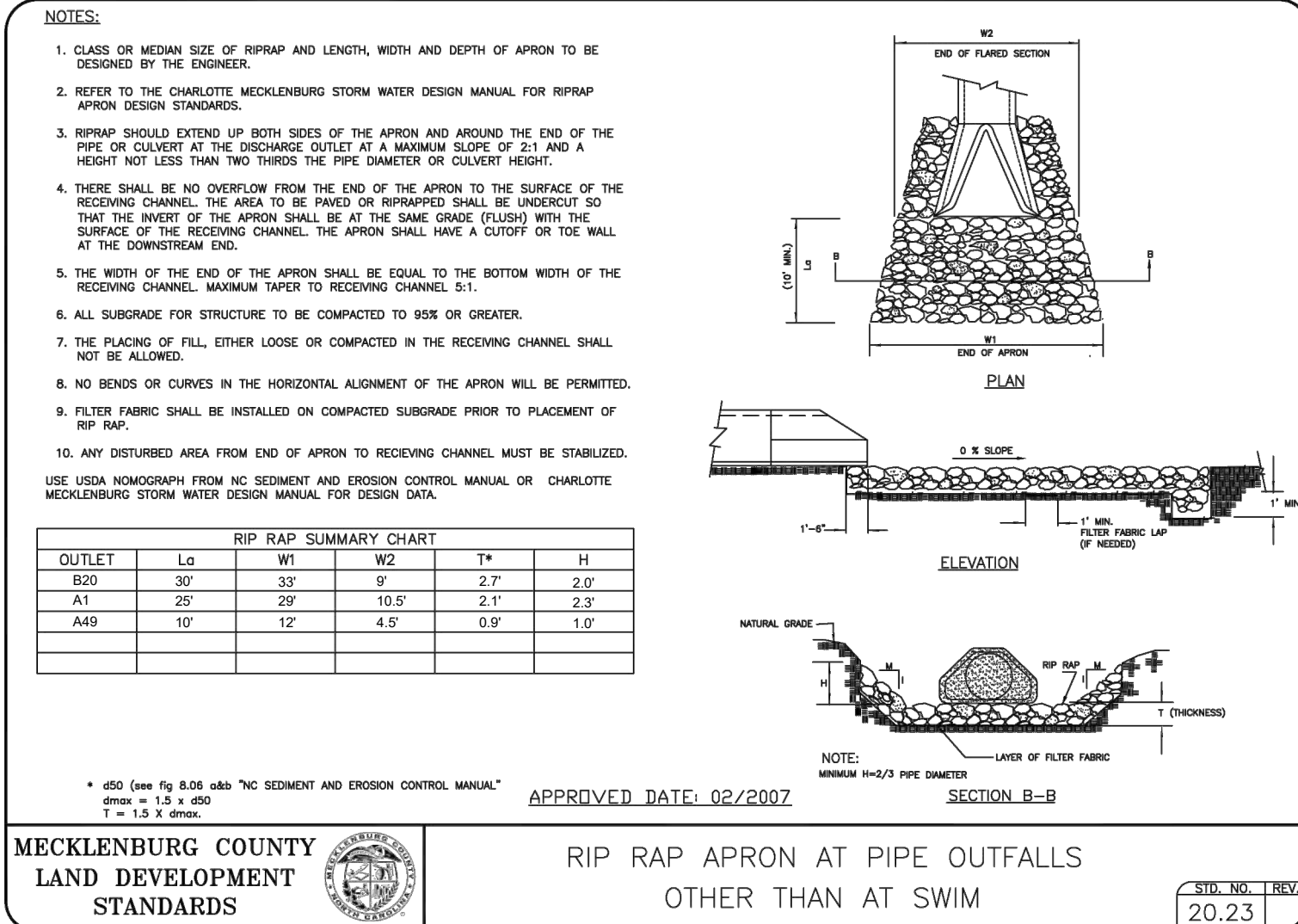
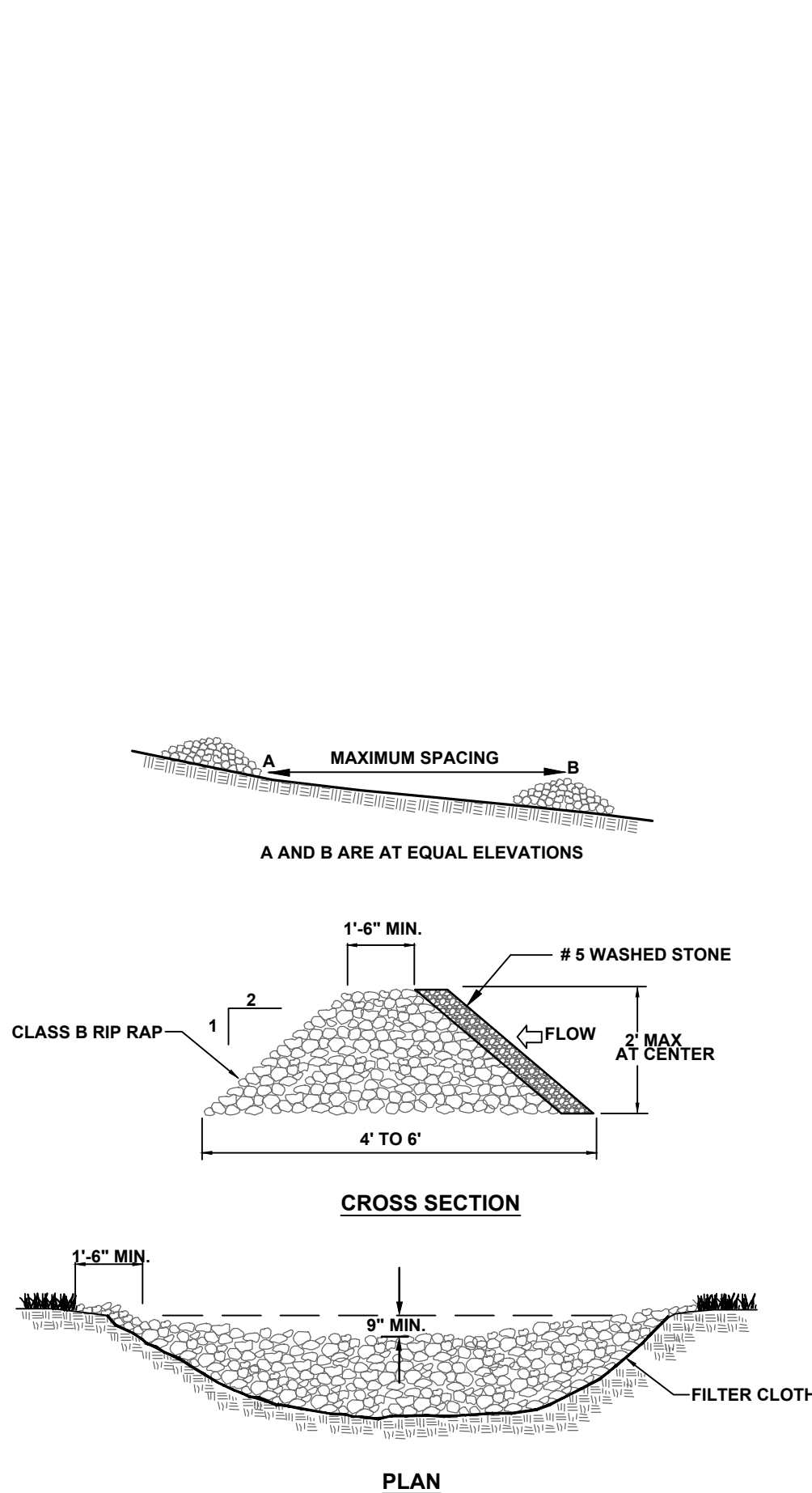
TEMPORARY DIVERSION DITCH (TDD) / PERMANENT DITCH (PD)

NOT TO SCALE



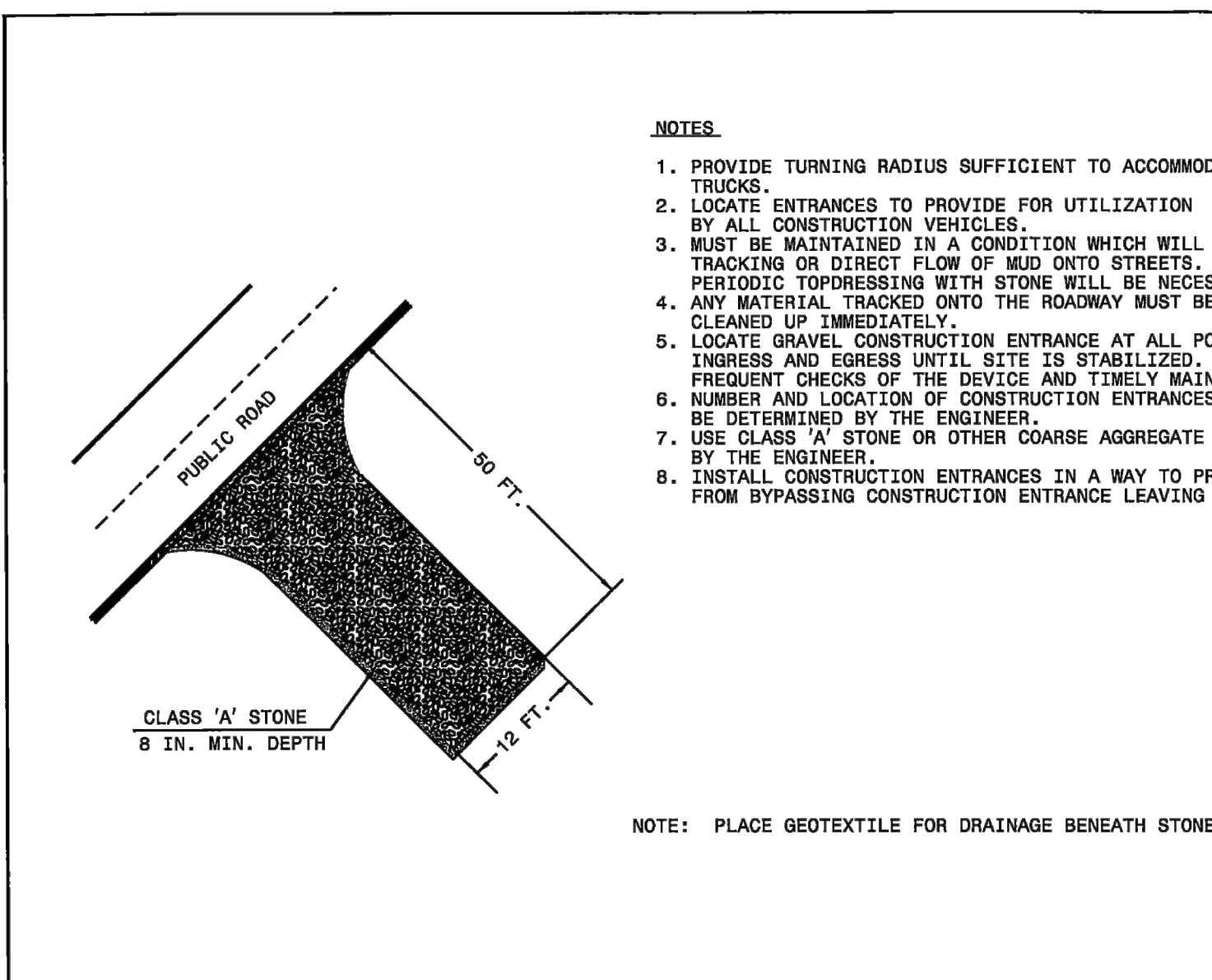
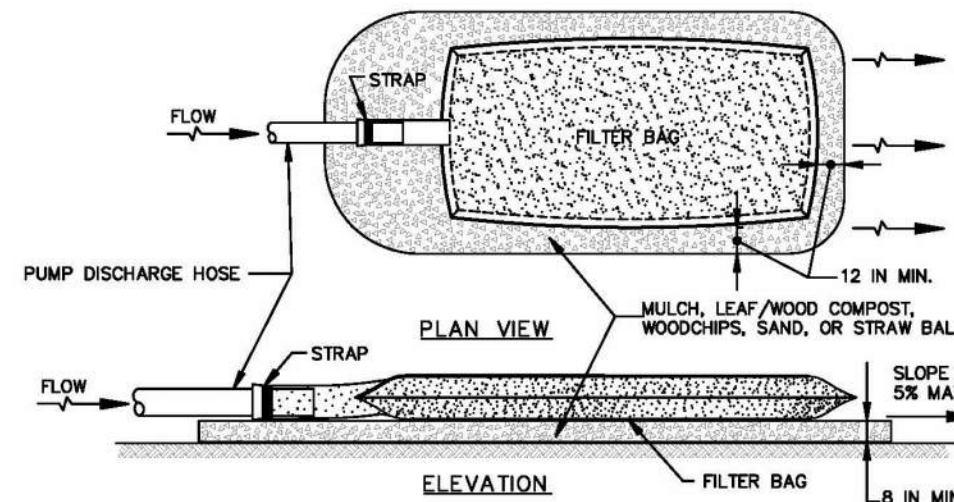
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Call before you dig.

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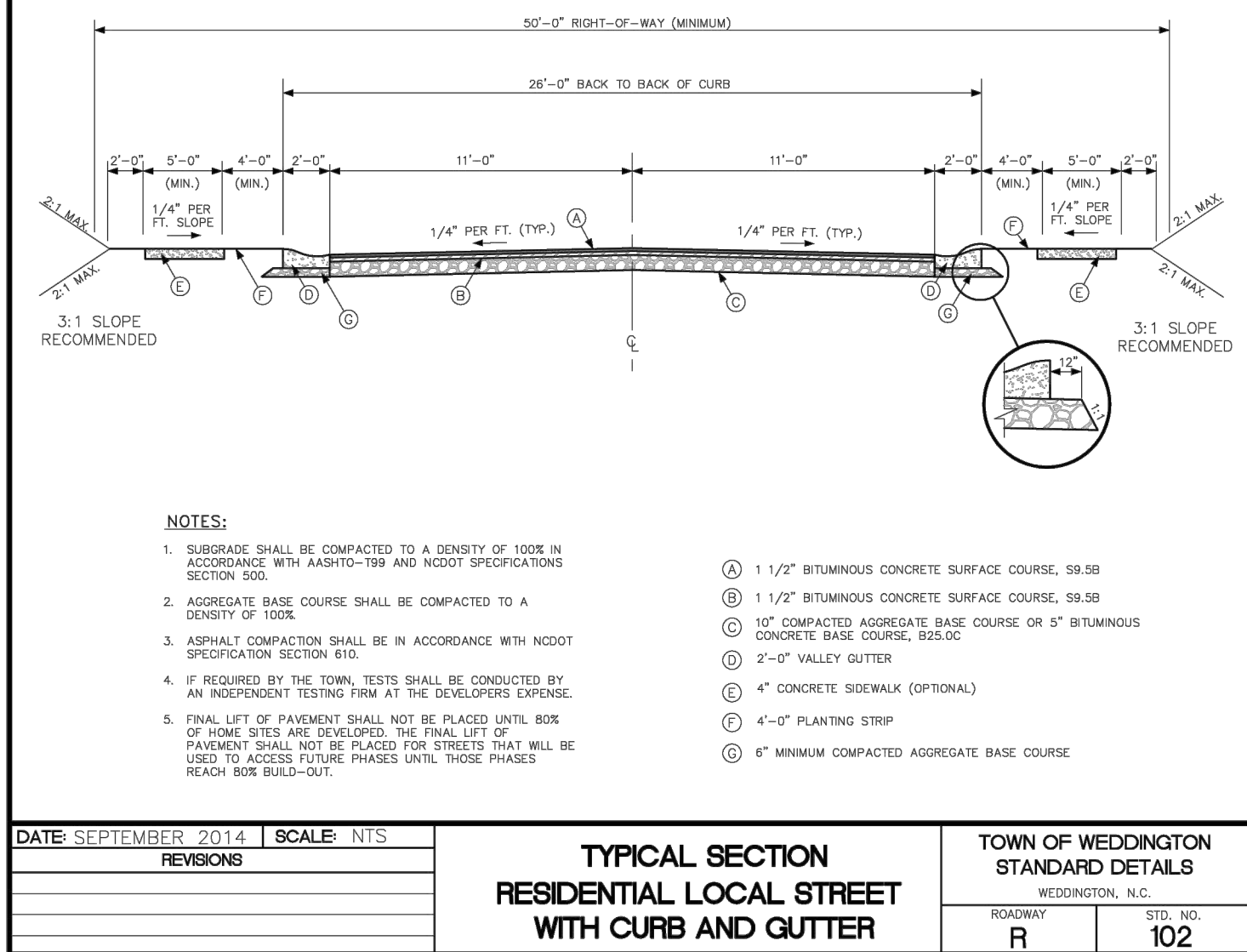
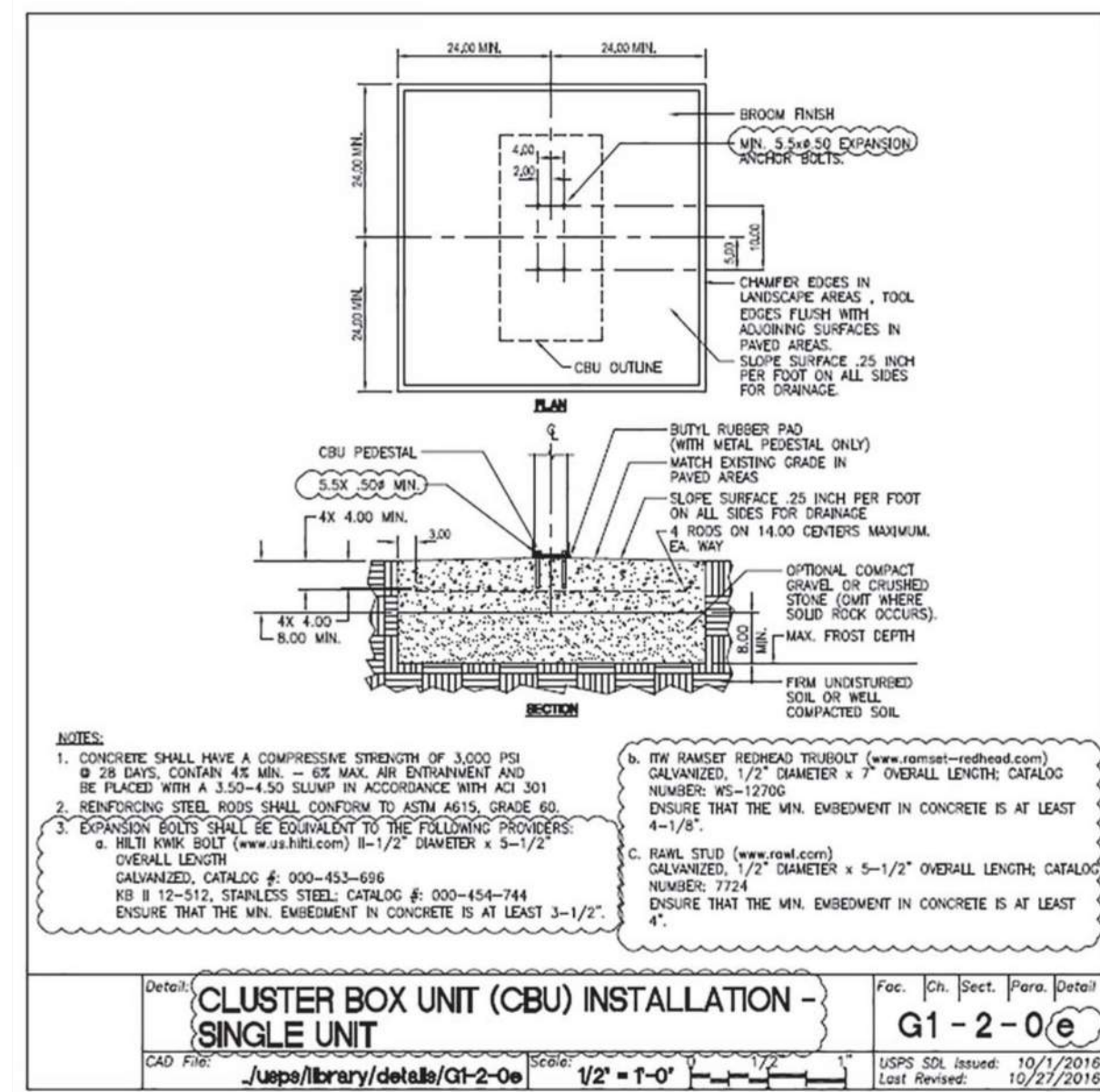
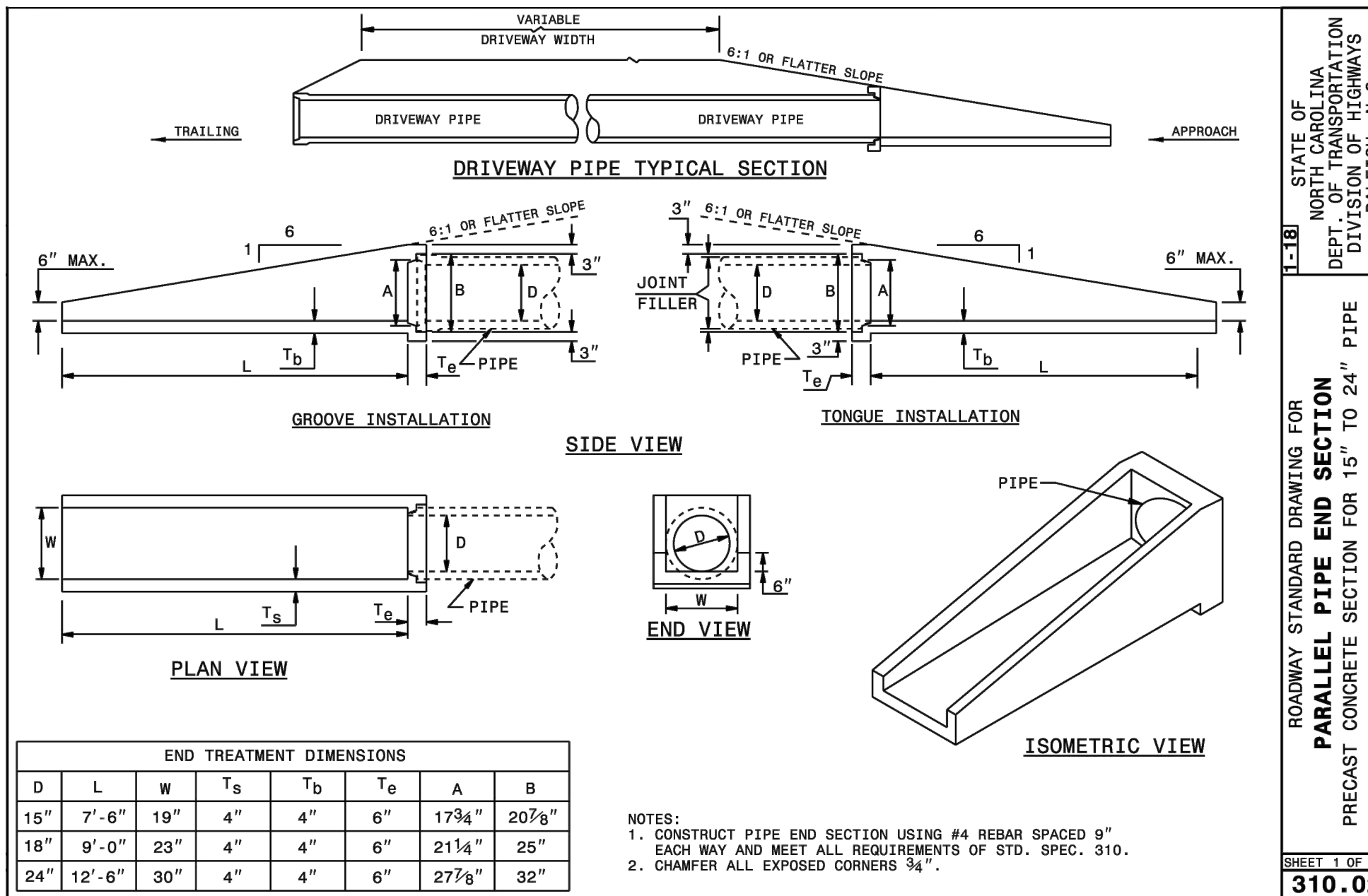
TEMPORARY ROCK CHECK DAM

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FILTER BAG DETAIL

NOT TO SCALE



GENERAL NOTES:

CHAMFER ALL CORNERS 1" OR HAVE A RADIUS OF 1".

PLACE 2 #6 "U" BARS IN THE TOP OF ALL ENDWALL FOR PIPE CULVERTS 42" AND OVER WITH A MINIMUM OF 3" COVER AND A LENGTH OF 6" LESS THAN ENDWALL LENGTH.

CONSTRUCT BOTTOM SLAB WITH FORMS.

DO NOT INTERPRET WALL THICKNESS (T) SHOWN FOR THE THICKNESS ACCEPTABLE, BUT IS USED IN COMPUTING ENDWALL QUANTITIES.

WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE, PLACE BAR "X" DOWELS IN THE BASE AS SHOWN ON PLANS. SPACE BARS APPROXIMATELY ON 12" CENTERS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

WHEN THE CONTRACTOR ELECTS TO USE A CONSTRUCTION JOINT AT THE BOTTOM OF THE PIPE AND POUR THE BASE SEPARATELY LEAVE THE POUR ROUGH.

USE CLASS "B" CONCRETE.

put with sheet 1 and 2 of 3

LUNA ESTATES SUBDIVISION WEDDINGTON, UNION COUNTY NORTH CAROLINA

EROSION CONTROL DETAILS

DATE: MARCH 2024	SCALE: HORIZONTAL: C12.1	DRAWING NUMBER: A
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Construction Specifications

1. Clear, grub, and strip the area under the embankment of all vegetation and root mat. Remove all surface soil containing high amounts of organic matter and stockpile or dispose of it properly. Haul all objectionable material to the designated disposal area. Place temporary sediment control measures below basin as needed.
2. Ensure that fill material for the embankment is free of roots, woody vegetation, organic matter, and other objectionable material. Place the fill in lifts not to exceed 9 inches, and machine compact it. Over fill the embankment 6 inches to allow for settlement.
3. Shape the basin to the specified dimensions. Prevent the skimming device from setting into the mud by excavating a shallow pit under the skimmer or providing a low support under the skimmer of stone or timber.
4. Place the barrel (typically 4-inch Schedule 40 PVC pipe) on a firm, smooth foundation of impervious soil. Do not use pervious material such as sand, gravel, or crushed stone as backfill around the pipe. Place the fill material around the pipe spillway in 4-inch layers and compact it under and around the pipe to at least the same density as the adjacent embankment. Care must be taken not to raise the pipe from the firm contact with its foundation when compacting under the pipe haunches.
- Place a minimum depth of 2 feet of compacted backfill over the pipe spillway before crossing it with construction equipment. In no case should the pipe conduit be installed by cutting a trench through the dam after the embankment is complete.
5. Assemble the skimmer following the manufacturers instructions, or as designed.
6. Lay the assembled skimmer on the bottom of the basin with the flexible joint at the inlet of the barrel pipe. Attach the flexible joint to the barrel pipe and position the skimmer over the excavated pit or support. Be sure to attach a rope to the skimmer and anchor it to the side of the basin. This will be used to pull the skimmer to the side for maintenance.
7. Earthen spillways—Install the spillway in undisturbed soil to the greatest extent possible. The achievement of planned elevations, grade, design width, and entrance and exit channel slopes are critical to the successful operation of the spillway. The spillway should be lined with laminated plastic or impermeable geotextile fabric. The fabric must be wide and long enough to cover the bottom and sides and extend onto the top of the dam for anchoring in a trench. The edges may be secured with 8-inch staples or pins. The fabric must be long enough to extend down the slope and exit onto stable ground. The width of the fabric must be one piece, not joined or spliced; otherwise water can get under the fabric. If the length of the fabric is insufficient for the entire length of the spillway, multiple sections, spanning the complete width, may be used. The upper section(s) should overlap the lower section(s) so that water cannot flow under the fabric. Secure the upper edge and sides of the fabric in a trench with staples or pins. (Adapted from "A Manual for Designing, Installing and Maintaining Skimmer Sediment Basins," February, 1999. J. W. Faircloth & Son.)
8. Inlets—Discharge water into the basin in a manner to prevent erosion. Use temporary slope drains or diversions with outlet protection to divert sediment-laden water to the upper end of the pool area to improve basin trap efficiency (References: *Runoff Control Measures and Outlet Protection*).
9. Erosion control—Construct the structure so that the disturbed area is minimized. Divert surface water away from bare areas. Complete the embankment before the area is cleared. Stabilize the emergency spillway embankment and all other disturbed areas above the crest of the principal spillway immediately after construction (References: *Surface Stabilization*).
10. Install porous baffles as specified in Practice 6.65, *Porous Baffles*.
11. After all the sediment-producing areas have been permanently stabilized, remove the structure and all the unstable sediment. Smooth the area to blend with the adjoining areas and stabilize properly (References: *Surface Stabilization*).

Maintenance

Inspect skimmer sediment basins at least weekly and after each significant (one-half inch or greater) rainfall event and repair immediately. Remove sediment and restore the basin to its original dimensions when sediment accumulates to one-half the height of the first baffle. Pull the skimmer to one side so that the sediment underneath it can be excavated. Excavate the sediment from the entire basin, not just around the skimmer or the first cell. Make sure vegetation growing in the bottom of the basin does not hold down the skimmer.

Repair the baffles if they are damaged. Re-anchor the baffles if water is flowing underneath or around them.

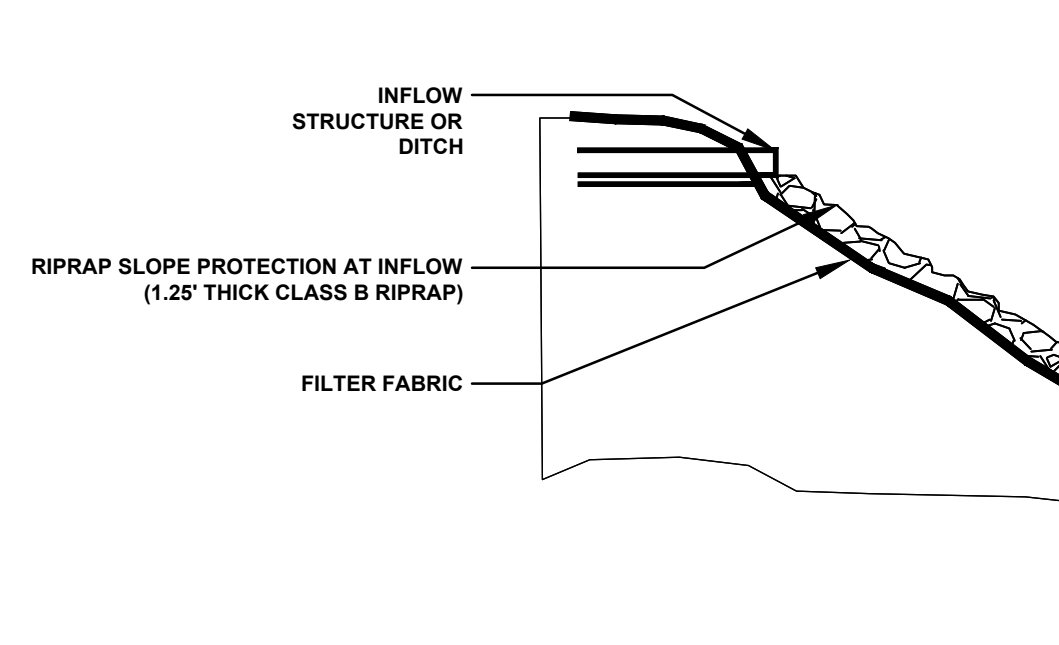
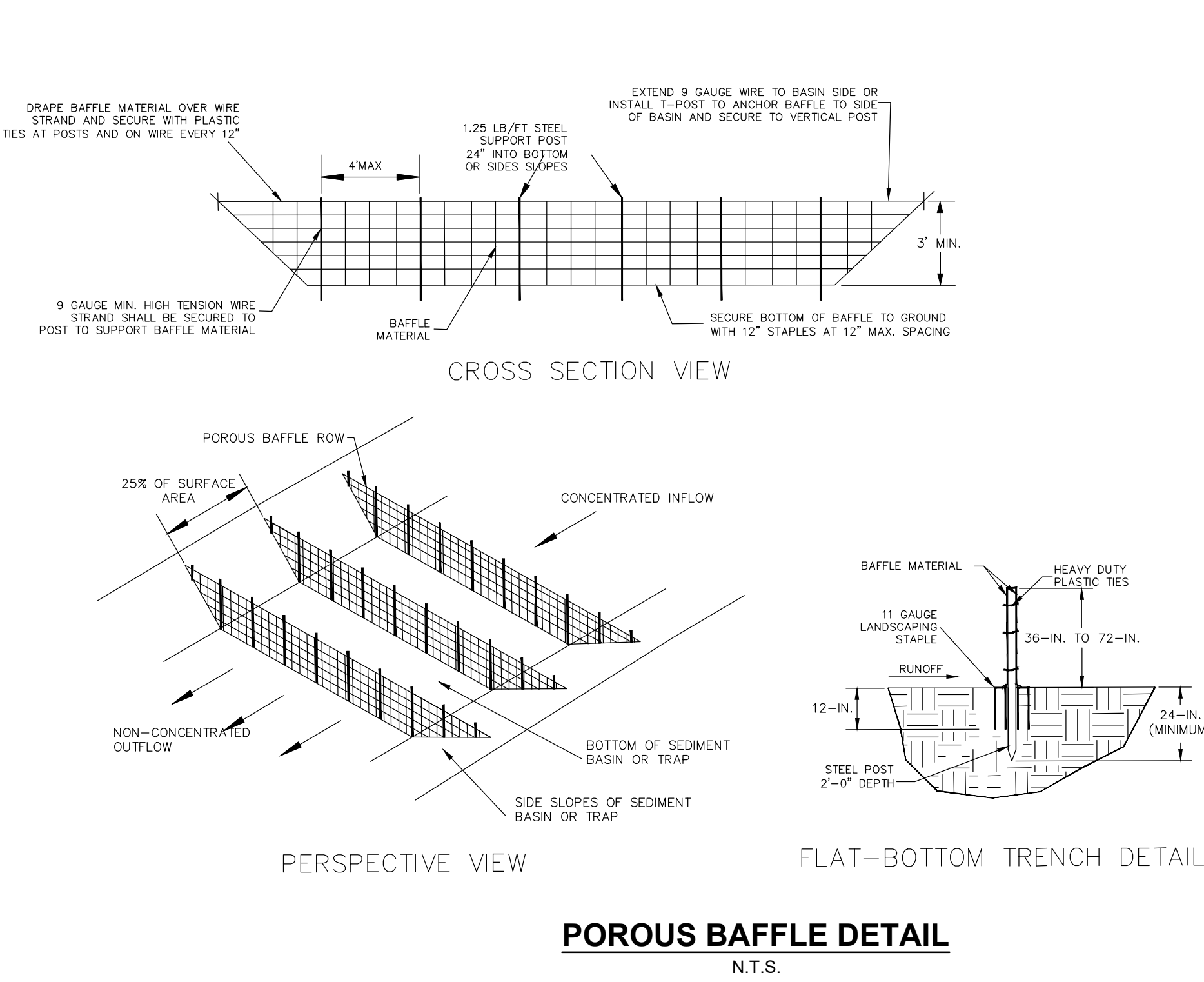
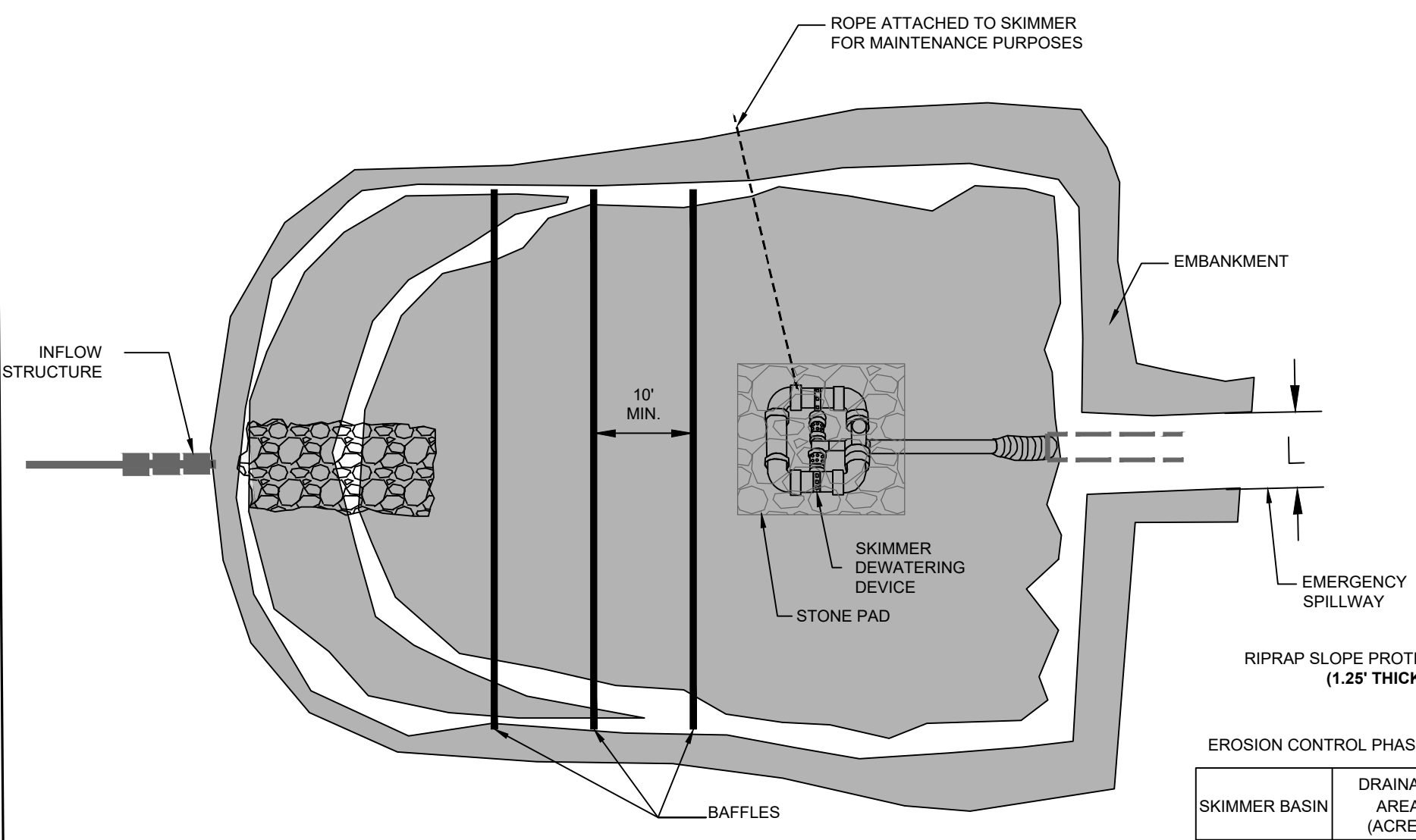
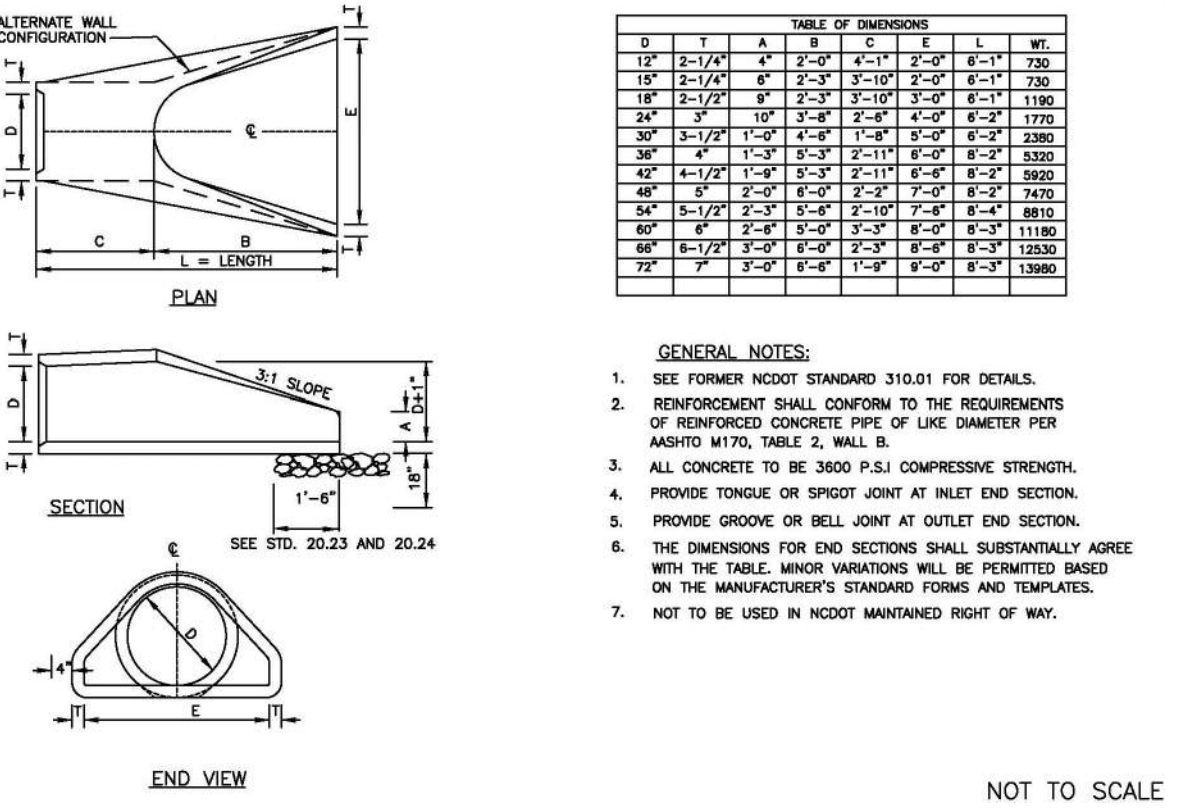
If the skimmer is clogged with trash and there is water in the basin, usually jerking on the rope will make the skimmer bob up and down and dislodge the debris and restore flow. If this does not work, pull the skimmer over to the side of the basin and remove the debris. Also check the orifice inside the skimmer to see if it is clogged; if so remove the debris.

If the skimmer arm or barrel pipe is clogged, the orifice can be removed and the obstruction cleared with a plumber's snake or by flushing with water. Be sure and replace the orifice before repositioning the skimmer.

Check the fabric lined spillway for damage and make any required repairs with fabric that spans the full width of the spillway. Check the embankment, spillways, and outlet for erosion damage, and inspect the embankment for piping and settlement. Make all necessary repairs immediately. Remove all trash and other debris from the skimmer and pool areas.

Freezing weather can result in ice forming in the basin. Some special precautions should be taken in the winter to prevent the skimmer from plugging with ice.

SEDIMENT BASINS SPECIFICATIONS AND MAINTENANCE



BAFFLES — INSPECTION & MAINTENANCE

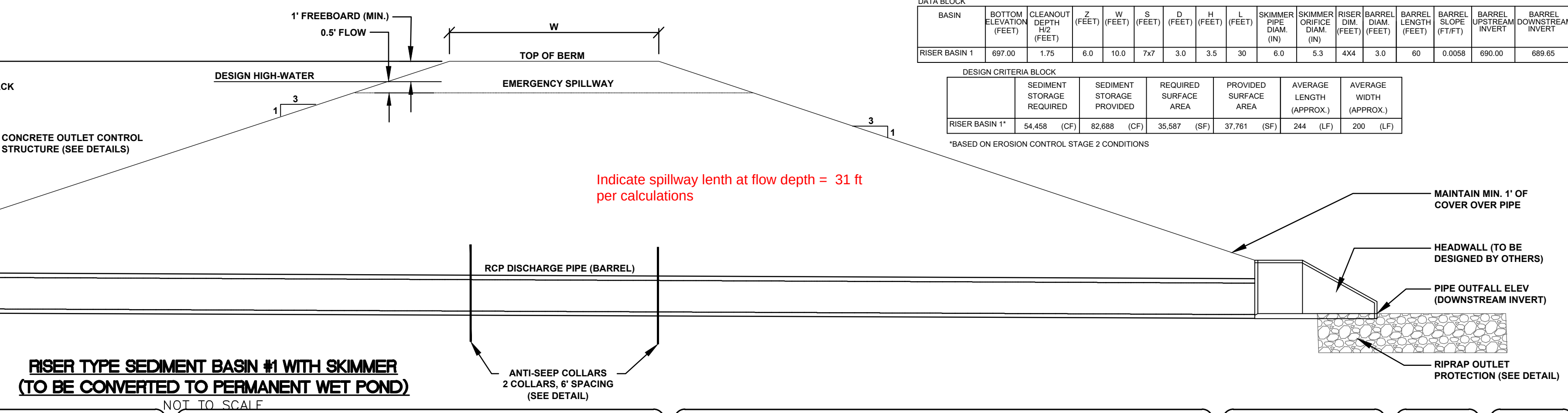
1. INSPECT BAFFLES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
2. BE SURE TO MAINTAIN ACCESS TO THE BAFFLES. SHOULD THE FABRIC OF A BAFFLE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.
3. REMOVE SEDIMENT DEPOSITS WHEN IT REACHES HALF FULL, TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE BAFFLES. TAKE CARE TO AVOID DAMAGING THE BAFFLES DURING CLEANOUT, AND REPLACE IF DAMAGED DURING CLEANOUT OPERATIONS. SEDIMENT DEPTH SHOULD NEVER EXCEED HALF THE DESIGNED STORAGE DEPTH.
4. AFTER THE CONTRIBUTING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED, REMOVE ALL BAFFLE MATERIALS AND UNSTABLE SEDIMENT DEPOSITS, BRING THE AREA TO GRADE, AND STABILIZE IT.

NOTES:

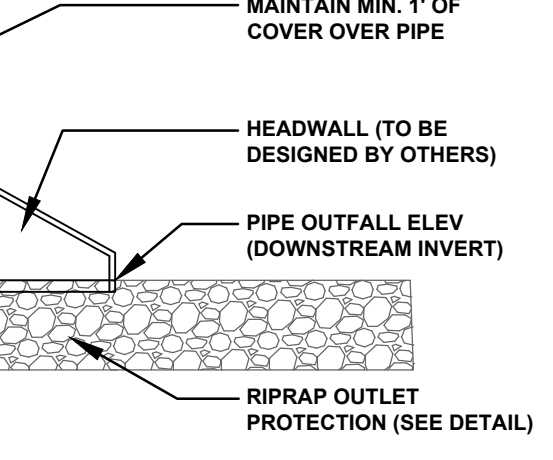
1. REFER TO NCESCPDM SECTION #6.64 FOR ADDITIONAL DESIGN SPECIFICATIONS REGARDING SKIMMER SEDIMENT BASINS.
2. REFER TO BAFFLE DETAIL FOR SPACING AND INSTALLATION OF BAFFLES.
3. ALL SKIMMER BASIN DEWATERING TIMES ARE 3 DAYS.
4. STABILIZE, SEED, AND MULCH BASIN SLOPES IMMEDIATELY AFTER CONSTRUCTION
5. SYNTHETIC MAT WILL BE REQUIRED ON ALL FILL BERMS AT SEDIMENT BASINS AND SHALL EXTEND 10' INTO VIRGIN SOIL AT EACH END OF THE BERM.
6. THE LOCATION OF THE EMERGENCY SPILLWAY IS SHOWN BELOW FOR REFERENCE ONLY. SEE PLAN FOR ACTUAL LOCATION IN POND.

EROSION CONTROL PHASE I																			
SKIMMER BASIN	DRAINAGE AREA (ACRES)	DENUDED AREA (ACRES)	Q ₁₀ (CFS)	BASIN VOLUME		BASIN SURFACE AREA		CLEANOUT DEPTH (FT.) H ₂	H (FEET)	Z (FEET)	L (FEET)	T (FEET)	W (FEET)	SKIMMER PIPE DIAMETER	SKIMMER ORIFICE DIAMETER	SKIMMER INVERT (MSL)	BOTTOM ELEVATION (MSL)	DEWATERING TIME (DAYS)	
				REQUIRED (CUBIC FT.)	PROVIDED (CUBIC FT.)	REQUIRED (SQ FT.)	PROVIDED (SQ FT.)												
SKIMMER BASIN 2	3.31	3.31	13.95	7,441	8,468	4,862	7,502	0.625	1.25	3.25	17	1.5	5	2.0 INCH	1.8 INCH	712.75	712.75	2.90	

SKIMMER SEDIMENT BASIN #2 NOT TO SCALE SEE EC REPORT FOR ADDITIONAL SEDIMENT BASIN INFORMATION



DATA BLOCK		DESIGN CRITERIA BLOCK		AVERAGE LENGTH (APPROX.)		AVERAGE WIDTH (APPROX.)	
BASIN	DESIGN HIGH-WATER	SEDIMENT STORAGE REQUIRED	SEDIMENT STORAGE PROVIDED	REQUIRED SURFACE AREA	PROVIDED SURFACE AREA	REQUIRED SURFACE AREA	PROVIDED SURFACE AREA
RISER BASIN 1	697.00	54,458 (CF)	82,688 (CF)	35,587 (SF)	37,761 (SF)	244 (LF)	200 (LF)



REV.	DESCRIPTION	DATE
1	ADDRESSED TOWN COMMENTS	03/14/24
2	DESCRIPTIONS	
3	REVISIONS	



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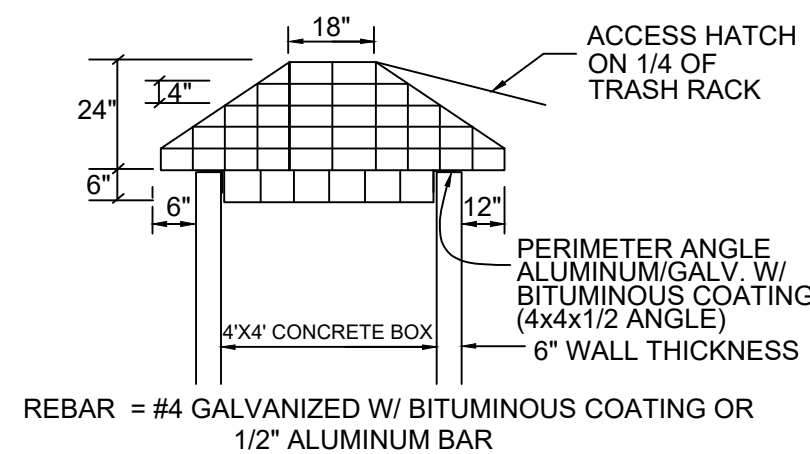
EROSION CONTROL DETAILS

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DESIGNED: ECB
CHECKED: TMM
PROJ. MGR: TMM

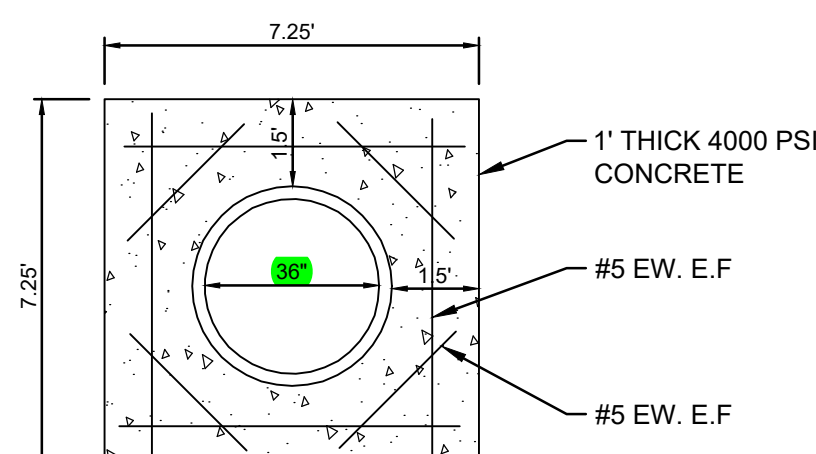
SCALE: HORIZONTAL: N/A, VERTICAL: N/A

C12.2
DRAWING NUMBER: A
REVISION

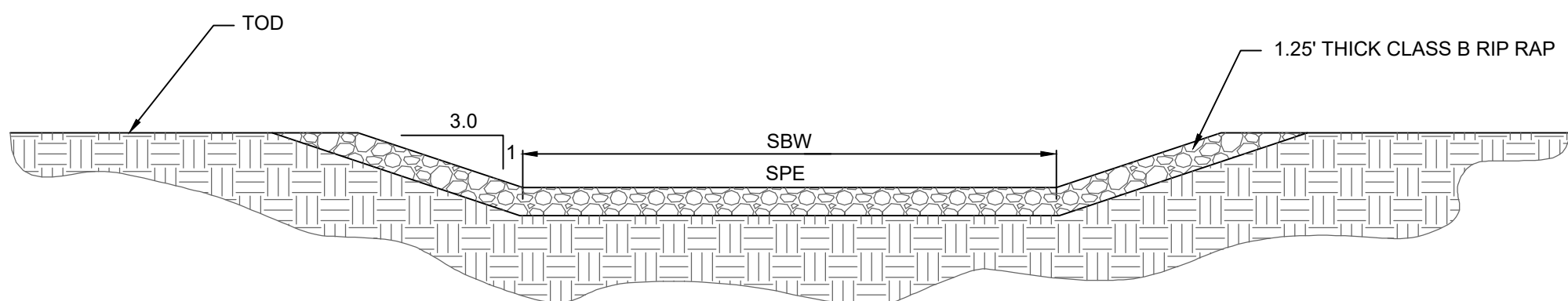
STATUS: PRELIMINARY DRAWING NOT FOR CONSTRUCTION



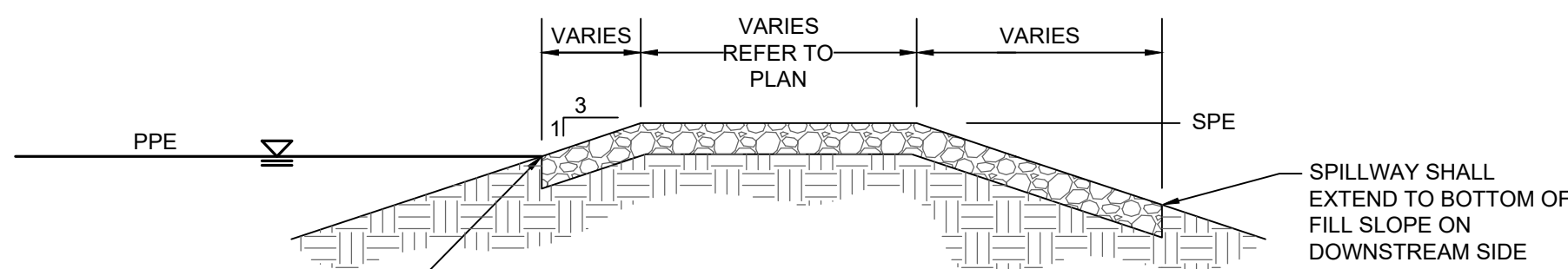
TRASH RACK
NTS



ANTI-SEEP COLLAR DETAIL
N.T.S.



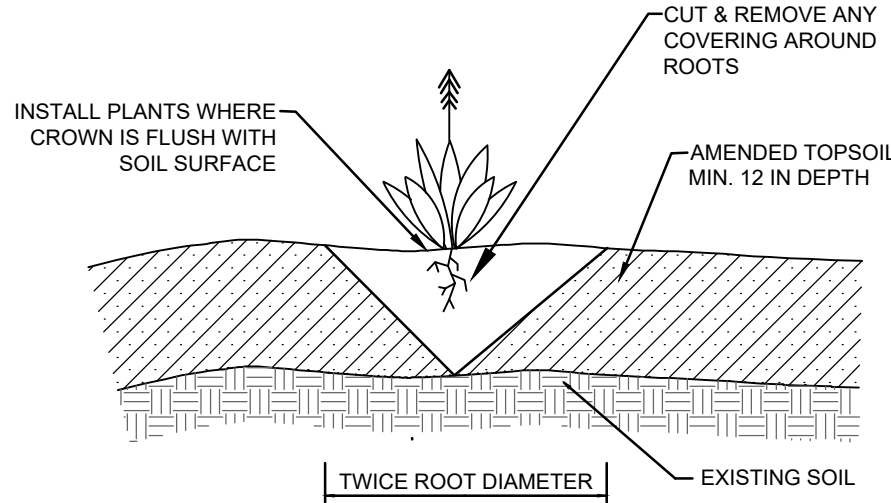
SECTION A-A



SECTION B-B

EMERGENCY SPILLWAY DETAIL

N.T.S.



GENERAL PLANTING DETAIL

NTS

WET POND #1 PLANTING SCHEDULE

SPECIES	LOCATION	QUANTITY	COMMON NAME	SPACING	CONT. SIZE
QS	SHALLOW WATER	65	QUILL SEDGE	1.5' O.C.	4 CU-IN
LL	SHALLOW WATER	66	LONGLEAF LOBELIA	1.5' O.C.	4 CU-IN
SM	SHALLOW WATER	66	SEASHORE MALLOW	1.5' O.C.	4 CU-IN
SW	SHALLOW LAND	66	SWAMP MILKWEED	1.5' O.C.	4 CU-IN
WT	SHALLOW LAND	67	WHITE TURTLEHEAD	1.5' O.C.	4 CU-IN
ST	SHALLOW LAND	67	STARRUSH WHITETOP	1.5' O.C.	4 CU-IN

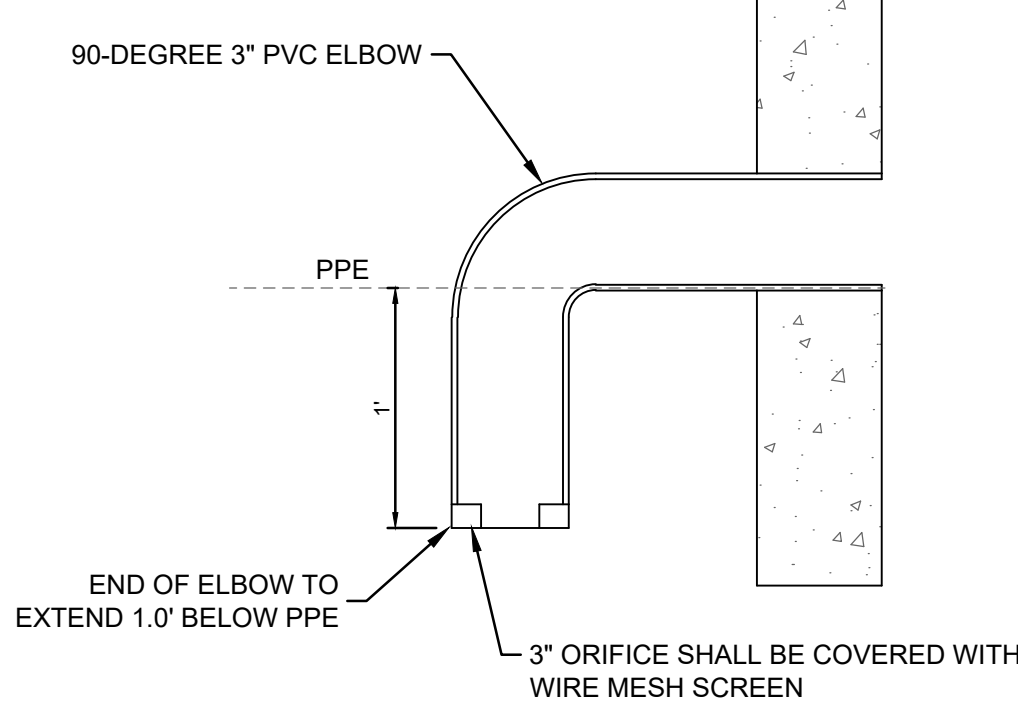
PLANTING LEGEND



PLANTING NOTES:

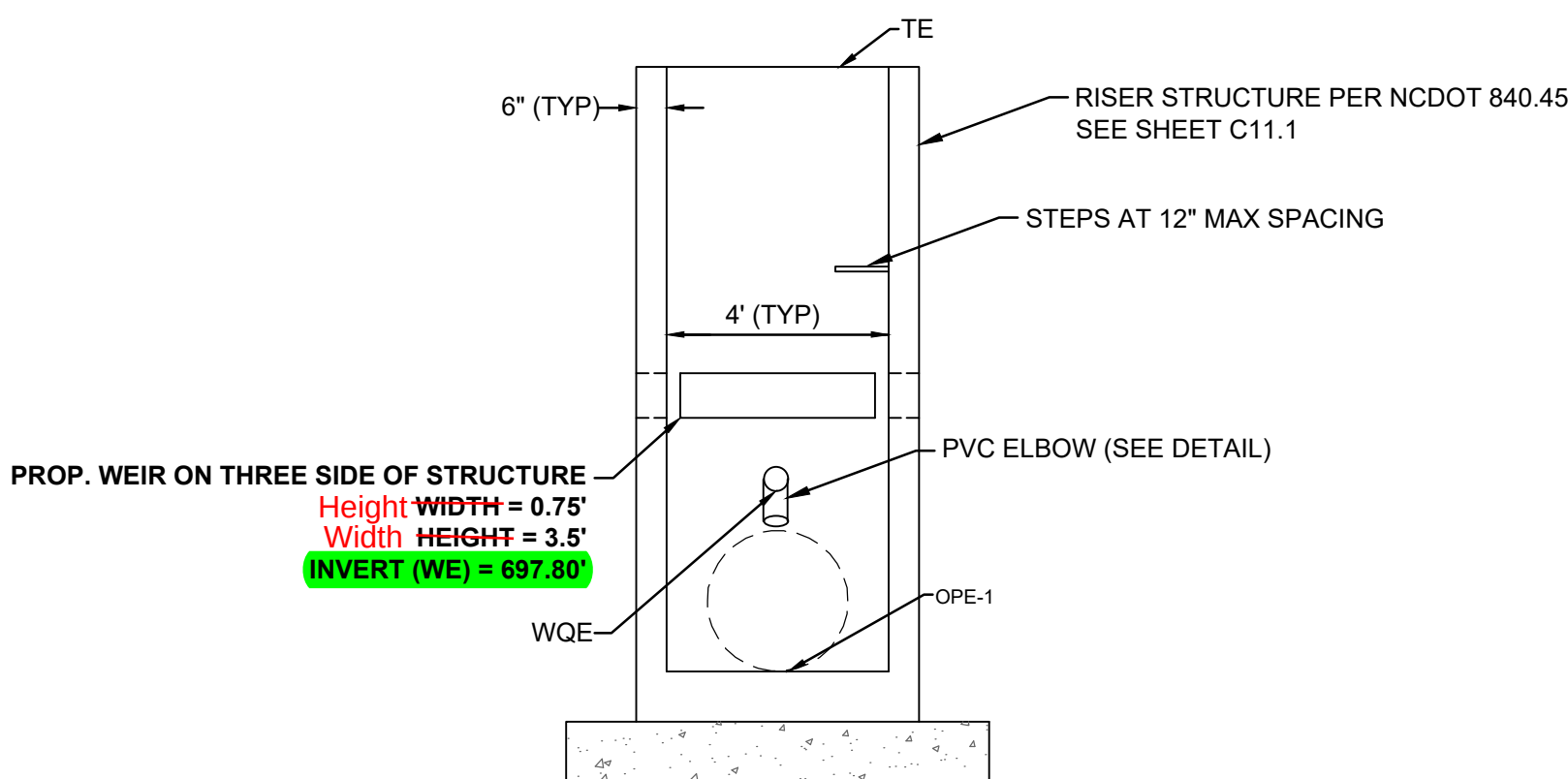
SHALLOW WATER PLANTING REQUIREMENTS
785 SF PLANTED AT 50 PLANTS PER 200 SF = 197 PLANTS REQUIRED

SHALLOW LAND PLANTING REQUIREMENTS
806 SF PLANTED AT 50 PLANTS PER 200 SF = 200 PLANTS REQUIRED



WET POND - WATER QUALITY ORIFICE

NTS



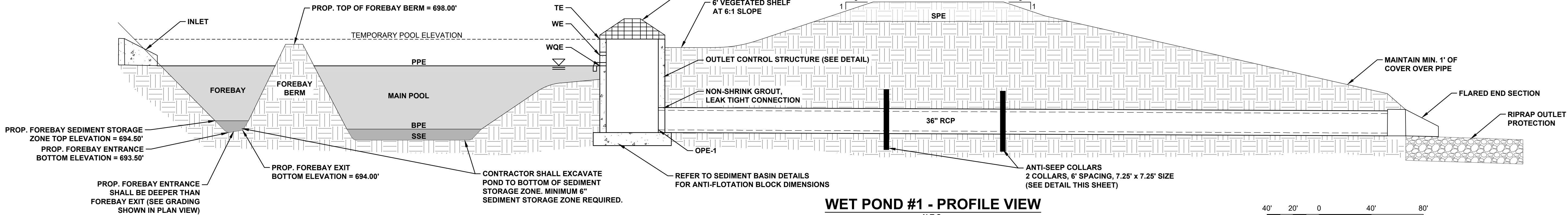
WET POND #1 - OUTLET CONTROL STRUCTURE

NTS

WET POND #1 ELEVATION INFORMATION

PERMANENT POOL ELEVATION	PPE	697.00'	per calculations
BOTTOM OF MAIN POOL ELEVATION	BPE	693.50'	
BOTTOM OF SEDIMENT STORAGE ZONE	SSE	692.50'	
TOP OF DAM ELEVATION	TOD	703.00'	689.7
EMERGENCY SPILLWAY BOTTOM WIDTH	SBW	20'	
EMERGENCY SPILLWAY BOTTOM ELEVATION	SPE	701.50'	
OUTLET PIPE UPSTREAM INVERT ELEVATION	OPE-1	690.00'	
OUTLET PIPE DOWNSTREAM INVERT ELEVATION	OPE-2	689.65'	697.80'
OUTLET PIPE LENGTH	OPL	60'	
OUTLET PIPE SLOPE	OPS	0.58%	
WATER QUALITY ORIFICE DIAMETER	WQD	36"	
WATER QUALITY ORIFICE INVERT ELEVATION	WQE	697.80'	
WEIR INVERT ELEVATION	WE	698.00'	
TOP OF OUTLET CONTROL STRUCTURE ELEVATION	TE	700.80'	

- NOTES:
- DAM MATERIAL AND COMPACTION REQUIREMENTS ARE TO BE FIELD DETERMINED BY GEOTECHNICAL ENGINEER. ALL WORK REGARDING THE DAM EMBANKMENT MUST BE MONITORED AND APPROVED BY GEOTECHNICAL ENGINEER.
 - DAM STRUCTURE, INCLUDING FRONT AND BACK EMBANKMENT SLOPES, SHALL BE VEGETATED WITH NON-CLUMPING TURF GRASS; TREES AND WOODY SHRUBS SHALL NOT BE ALLOWED.
 - PERMANENT POOL SHALL BE DRAINED VIA PUMP FOR MAINTENANCE.



WET POND #1 - PROFILE VIEW

N.T.S.

1"=40'

LUNA ESTATES SUBDIVISION
WEDDINGTON, UNION COUNTY
NORTH CAROLINA

STORMWATER CONTROL MEASURE #1
DETAILS

DATE: MARCH 2024
MCE PROJ. # 02741-0010
DRAWN: ECB
DESIGNED: ECB
CHECKED: TMM
PROJ. MGR. TMM

SCALE
HORIZONTAL: N/A
VERTICAL: N/A

811

Know what's below.
Call before you dig.

C13.0

DRAWING NUMBER
A
REVISION

STATUS: PRELIMINARY DRAWING
NOT FOR CONSTRUCTION



LUNA SUBDIVISION

MC # 02741-0010

CALCULATIONS FOR:

***Downstream
Stormwater
Analysis***

DATE: 10/02/23

REV: N/A

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<i>Table of Contents</i>	<i>X</i>
<i>Narrative</i>	<i>X</i>
<i>Pre-Development vs. Post-Development Summary Tables</i>	<i>X</i>
<i>Appendix A - Drainage Area Maps</i>	<i>X</i>
<i>Appendix B - StormCAD Calculations for Bromley Storm System (Existing Conditions)</i>	<i>X</i>
<i>Appendix C - StormCAD Calculations for Bromley Storm System (Proposed Conditions)</i>	<i>X</i>
<i>Appendix D - HydroCAD Calculations for Luna Subdivision</i>	<i>X</i>
<i>Appendix E - Bromley Subdivision Drainage Design Drawings</i>	<i>X</i>

LUNA SUBDIVISION

DOWNSTREAM ANALYSIS NARRATIVE

Luna is a proposed 18-lot single-family subdivision located on +/- 29 acres in Weddington, Union County, North Carolina. The existing site conditions include a mix of grass and trees. The predominant soil types according to the USDA Soil Survey are Cecil, Helena & Appling, both Cecil and Appling have a hydrologic soil group rating of "B" while Helena has a hydrologic soil group rating of "D". The site is located in the Sixmile Creek watershed, within the Catawba River Basin. The development will be located off Weddington-Matthews Road, adjacent to the existing Bromley Subdivision.

Stormwater management for the project will be designed in accordance with the Charlotte-Mecklenburg Stormwater Design Manual, with exceptions where Weddington's ordinances list a stricter regulation. Over 20,000 square feet of new impervious will be created as part of the Luna development, therefore stormwater detention will be provided to control runoff to pre-developed rates for the 2-, 10-, 25-, 50- and 100-year, 24-hour storm events. Volume control for the 1-year, 24-hour storm will also be provided.

A downstream analysis of the existing Bromley subdivision storm system was performed to ensure that the proposed Luna development will not create downstream drainage issues. The existing Bromley storm system was modeled using Bentley StormCAD to compare flows under existing conditions versus flows after the development of Luna subdivision. The storm system was modeled for the 10-, 25- and 100-year storm events.

The summary tables provided on the following page demonstrate that flows entering Bromley Subdivision will decrease as a result of the Luna development. Stormwater Control Measure (SCM) #2 located behind Bromley lots 23-25 is designed to restrict flows leaving the site at point of interest (POI) #2 to below pre-development rates. The offsite drainage area flowing to Bromley lots 19-22 and the dead end of Delaney Drive will be reduced from 2.99 acres to approximately 0.15 acres

PRE-DEVELOPMENT FLOWS TO POINT OF INTEREST #2

STORM EVENT	PEAK FLOW (CFS)
2-YEAR	6.65
10-YEAR	17.78
25-YEAR	25.64
50-YEAR	32.31
100-YEAR	39.50

POST-DEVELOPMENT FLOWS TO POINT OF INTEREST #2

STORM EVENT	PEAK FLOW (CFS)
2-YEAR	5.60
10-YEAR	13.75
25-YEAR	19.66
50-YEAR	24.51
100-YEAR	29.68

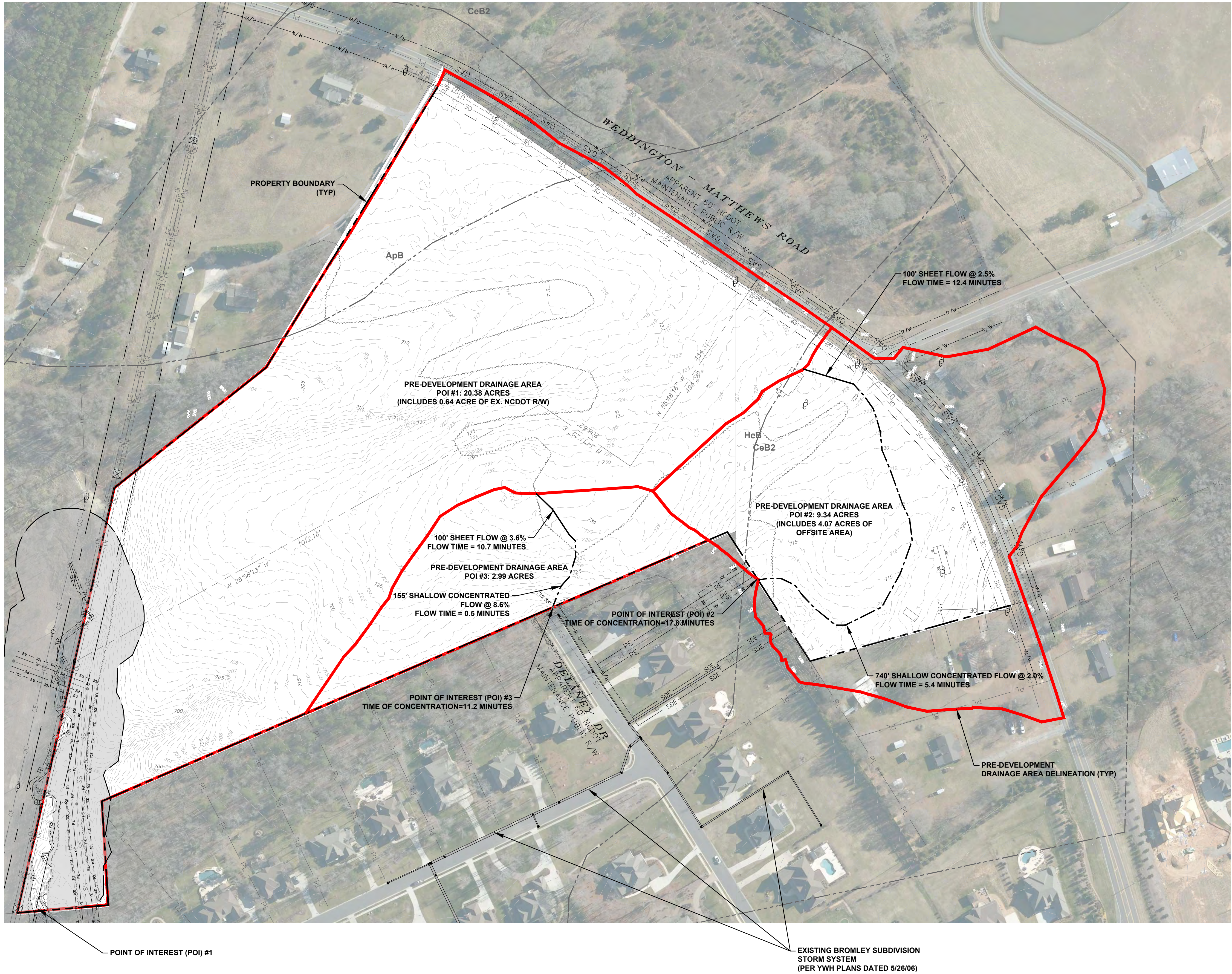
PRE-DEVELOPMENT FLOWS TO POINT OF INTEREST #3

STORM EVENT	PEAK FLOW (CFS)
2-YEAR	6.39
10-YEAR	12.13
25-YEAR	15.82
50-YEAR	18.80
100-YEAR	21.93

POST-DEVELOPMENT FLOWS TO POINT OF INTEREST #3

STORM EVENT	PEAK FLOW (CFS)
2-YEAR	0.46
10-YEAR	0.83
25-YEAR	1.06
50-YEAR	1.24
100-YEAR	1.43

APPENDIX A



REV. NO.	DESCRIPTIONS REVISIONS	DATE

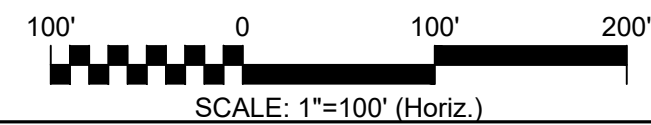
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Toll Brothers
AMERICA'S LUXURY HOME BUILDER®

**LUNA SUBDIVISION
WEDDINGTON, UNION COUNTY
NORTH CAROLINA**
**PRE-DEVELOPMENT
DRAINAGE AREA MAP**



SCALE: 1"=100' (Horiz.)

DATE:	AUGUST 2023
MCE PROJ. #	02741-0010
DRAWN	ECB
DESIGNED	ECB
CHECKED	TMM
PROJ. MGR.	TMM

SCALE
HORIZONTAL: 1" = 100'
VERTICAL: N/A

DA-1

DRAWING NUMBER

REVISION

STATUS: **PRELIMINARY DRAWING
NOT FOR CONSTRUCTION**

APPENDIX B

EXISTING CONDITIONS - 10-YEAR STORM

FlexTable: Conduit Table

Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Unified) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Manning's n	Flow (ft³/s)	Capacity (Full Flow) (ft³/s)	Velocity (ft/s)	System Intensity (in/h)
DI 63	706.00	DI 64	702.20	119.83	0.032	15.0	706.78	702.69	0.013	3.67	11.50	8.33	7.540
HW 51	705.00	CB 52	696.00	199.93	0.045	36.0	706.35	697.40	0.013	17.78	141.51	13.68	7.570
DI 64	701.45	CB 65	698.53	195.10	0.015	24.0	702.65	699.41	0.013	11.14	27.67	8.33	7.467
OPEN PIPE	707.00	CB 62	701.80	120.71	0.043	15.0	707.74	702.23	0.013	3.35	13.41	9.08	7.540
CB 62	701.60	CB 52	697.75	120.64	0.032	15.0	702.54	698.35	0.013	5.33	11.54	9.22	7.473
CB 65	698.33	CB 66	696.89	121.41	0.012	24.0	699.65	697.94	0.013	13.38	24.64	8.00	7.348
CB 66	696.69	DCB 53	695.72	83.70	0.012	24.0	698.08	696.86	0.013	14.91	24.35	8.14	7.272
CB 52	695.80	DCB 53	694.72	35.62	0.030	36.0	697.40	696.60	0.013	24.70	116.14	13.05	7.406
CB 54	693.80	CB 55	693.23	52.34	0.011	36.0	695.91	694.99	0.013	41.82	69.60	10.29	7.209
DCB 53	694.52	CB 54	694.00	25.96	0.020	36.0	696.60	695.63	0.013	40.81	94.39	12.87	7.220
CB 55	693.00	CB 56	688.59	131.67	0.033	36.0	695.11	690.79	0.013	41.88	122.06	15.65	7.184
CB 56	688.49	CB 57	687.42	54.96	0.019	36.0	690.79	689.15	0.013	49.90	93.06	13.40	7.141
CB 68	690.00	DCB 59	689.00	88.92	0.011	15.0	690.54	689.44	0.013	1.84	6.85	4.73	7.540
CB 57	687.42	CB 58	686.39	186.20	0.006	42.0	689.70	688.70	0.013	52.92	74.82	8.43	7.120
CB 67	690.00	CB 57	689.74	25.92	0.010	15.0	690.45	690.12	0.013	1.28	6.47	4.10	7.540
CB 60	685.90	FES 61	685.00	179.96	0.005	42.0	688.32	687.40	0.013	58.53	71.15	8.26	6.974
DCB 59	686.13	CB 60	686.00	24.79	0.005	42.0	688.52	688.36	0.013	58.05	72.86	8.41	6.989
CB 58	686.39	DCB 59	686.23	30.78	0.005	42.0	688.70	688.49	0.013	54.22	72.53	8.27	7.008
DI 56A	694.48	CB 56	690.70	180.00	0.021	18.0	695.47	691.39	0.013	6.60	15.22	8.31	7.540

EXISTING CONDITIONS - 25-YEAR STORM

FlexTable: Conduit Table

Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Unified) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Manning's n	Flow (ft³/s)	Capacity (Full Flow) (ft³/s)	Velocity (ft/s)	System Intensity (in/h)
DI 63	706.00	DI 64	702.20	119.83	0.032	15.0	706.82	702.71	0.013	4.06	11.50	8.56	8.330
HW 51	705.00	CB 52	696.00	199.93	0.045	36.0	706.64	697.67	0.013	25.64	141.51	15.20	8.364
DI 64	701.45	CB 65	698.53	195.10	0.015	24.0	702.71	699.47	0.013	12.31	27.67	8.55	8.251
OPEN PIPE	707.00	CB 62	701.80	120.71	0.043	15.0	707.78	702.58	0.013	3.70	13.41	9.34	8.330
CB 62	701.60	CB 52	697.75	120.64	0.032	15.0	702.58	698.38	0.013	5.88	11.54	9.45	8.257
CB 65	698.33	CB 66	696.89	121.41	0.012	24.0	699.72	698.01	0.013	14.79	24.64	8.20	8.123
CB 66	696.69	DCB 53	695.72	83.70	0.012	24.0	698.16	696.93	0.013	16.48	24.35	8.33	8.039
CB 52	695.80	DCB 53	694.72	35.62	0.030	36.0	697.67	696.85	0.013	33.29	116.14	14.18	8.185
CB 54	693.80	CB 55	693.23	52.34	0.011	36.0	696.15	695.26	0.013	52.22	69.60	10.81	7.972
DCB 53	694.52	CB 54	694.00	25.96	0.020	36.0	696.85	695.87	0.013	51.10	94.39	13.62	7.983
CB 55	693.00	CB 56	688.59	131.67	0.033	36.0	695.35	691.01	0.013	52.29	122.06	16.60	7.945
CB 56	688.49	CB 57	687.42	54.96	0.019	36.0	691.01	689.39	0.013	61.18	93.06	14.05	7.900
CB 68	690.00	DCB 59	689.00	88.92	0.011	15.0	690.57	689.47	0.013	2.03	6.85	4.86	8.330
CB 57	687.42	CB 58	686.39	186.20	0.006	42.0	689.94	689.02	0.013	64.52	74.82	8.75	7.878
CB 67	690.00	CB 57	689.74	25.92	0.010	15.0	690.47	690.14	0.013	1.41	6.47	4.22	8.330
CB 60	685.90	FES 61	685.00	179.96	0.005	42.0	688.75	687.64	0.013	70.75	71.15	8.43	7.721
DCB 59	686.13	CB 60	686.00	24.79	0.005	42.0	688.88	688.75	0.013	70.22	72.86	8.63	7.738
CB 58	686.39	DCB 59	686.23	30.78	0.005	42.0	689.02	688.88	0.013	65.98	72.53	8.54	7.758
DI 56A	694.48	CB 56	690.70	180.00	0.021	18.0	695.53	691.43	0.013	7.29	15.22	8.52	8.330

EXISTING CONDITIONS - 100-YEAR STORM

FlexTable: Conduit Table

Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Unified) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Manning's n	Flow (ft³/s)	Capacity (Full Flow) (ft³/s)	Velocity (ft/s)	System Intensity (in/h)
DI 63	706.00	DI 64	702.20	119.83	0.032	15.0	706.87	702.75	0.013	4.56	11.50	8.83	9.370
HW 51	705.00	CB 52	696.00	199.93	0.045	36.0	707.05	698.06	0.013	39.50	141.51	17.16	9.408
DI 64	701.45	CB 65	698.53	195.10	0.015	24.0	702.79	699.53	0.013	13.85	27.67	8.81	9.283
OPEN PIPE	707.00	CB 62	701.80	120.71	0.043	15.0	707.83	702.64	0.013	4.17	13.41	9.64	9.370
CB 62	701.60	CB 52	697.75	120.64	0.032	15.0	702.64	698.43	0.013	6.62	11.54	9.73	9.290
CB 65	698.33	CB 66	696.89	121.41	0.012	24.0	699.80	698.10	0.013	16.64	24.64	8.42	9.141
CB 66	696.69	DCB 53	695.72	83.70	0.012	24.0	698.24	697.03	0.013	18.55	24.35	8.53	9.049
CB 52	695.80	DCB 53	694.72	35.62	0.030	36.0	698.06	697.15	0.013	48.11	116.14	15.66	9.210
CB 54	693.80	CB 55	693.23	52.34	0.011	36.0	696.45	695.72	0.013	69.42	69.60	11.22	8.975
DCB 53	694.52	CB 54	694.00	25.96	0.020	36.0	697.15	696.22	0.013	68.16	94.39	14.54	8.986
CB 55	693.00	CB 56	688.59	131.67	0.033	36.0	695.65	692.11	0.013	69.51	122.06	17.83	8.945
CB 56	688.49	CB 57	687.42	54.96	0.019	36.0	692.11	691.33	0.013	79.52	93.06	11.25	8.898
CB 68	690.00	DCB 59	689.00	88.92	0.011	15.0	690.60	689.84	0.013	2.28	6.85	5.02	9.370
CB 57	687.42	CB 58	686.39	186.20	0.006	42.0	691.33	690.06	0.013	83.26	74.82	8.65	8.866
CB 67	690.00	CB 57	689.74	25.92	0.010	15.0	691.35	691.33	0.013	1.59	6.47	1.29	9.370
CB 60	685.90	FES 61	685.00	179.96	0.005	42.0	689.64	687.95	0.013	90.27	71.15	9.38	8.689
DCB 59	686.13	CB 60	686.00	24.79	0.005	42.0	689.84	689.64	0.013	89.66	72.86	9.32	8.706
CB 58	686.39	DCB 59	686.23	30.78	0.005	42.0	690.06	689.84	0.013	84.89	72.53	8.82	8.729
DI 56A	694.48	CB 56	690.70	180.00	0.021	18.0	695.59	692.11	0.013	8.20	15.22	8.77	9.370

APPENDIX C

PROPOSED CONDITIONS - 10-YEAR STORM

FlexTable: Conduit Table

Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Unified) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Manning's n	Flow (ft³/s)	Capacity (Full Flow) (ft³/s)	Velocity (ft/s)	System Intensity (in/h)
DI 63	706.00	DI 64	702.20	119.83	0.032	15.0	706.78	702.69	0.013	3.67	11.50	8.33	7.540
HW 51	705.00	CB 52	696.00	199.93	0.045	36.0	706.18	696.63	0.013	13.75	141.51	12.69	7.570
DI 64	701.45	CB 65	698.53	195.10	0.015	24.0	702.65	699.41	0.013	11.14	27.67	8.33	7.467
OPEN PIPE	707.00	CB 62	701.80	120.71	0.043	15.0	707.37	702.28	0.013	0.90	13.41	6.22	7.540
CB 62	701.60	CB 52	697.75	120.64	0.032	15.0	702.28	698.18	0.013	2.89	11.54	7.82	7.442
CB 65	698.33	CB 66	696.89	121.41	0.012	24.0	699.65	697.94	0.013	13.38	24.64	8.00	7.348
CB 66	696.69	DCB 53	695.72	83.70	0.012	24.0	698.08	696.86	0.013	14.91	24.35	8.14	7.272
CB 52	695.80	DCB 53	694.72	35.62	0.030	36.0	697.17	696.43	0.013	18.24	116.14	11.98	7.364
CB 54	693.80	CB 55	693.23	52.34	0.011	36.0	695.74	694.83	0.013	35.44	69.60	9.89	7.209
DCB 53	694.52	CB 54	694.00	25.96	0.020	36.0	696.43	695.48	0.013	34.43	94.39	12.30	7.220
CB 55	693.00	CB 56	688.59	131.67	0.033	36.0	694.94	690.56	0.013	35.52	122.06	14.97	7.182
CB 56	688.49	CB 57	687.42	54.96	0.019	36.0	690.56	688.94	0.013	40.19	93.06	12.68	7.137
CB 68	690.00	DCB 59	689.00	88.92	0.011	15.0	690.54	689.44	0.013	1.84	6.85	4.73	7.540
CB 57	687.42	CB 58	686.39	186.20	0.006	42.0	689.47	688.47	0.013	43.22	74.82	8.06	7.116
CB 67	690.00	CB 57	689.74	25.92	0.010	15.0	690.45	690.12	0.013	1.28	6.47	4.10	7.540
CB 60	685.90	FES 61	685.00	179.96	0.005	42.0	688.09	687.13	0.013	48.90	71.15	7.97	6.963
DCB 59	686.13	CB 60	686.00	24.79	0.005	42.0	688.30	688.10	0.013	48.42	72.86	8.10	6.979
CB 58	686.39	DCB 59	686.23	30.78	0.005	42.0	688.47	688.23	0.013	44.59	72.53	7.92	6.998
DI 56A	694.48	CB 56	690.70	180.00	0.021	18.0	695.15	691.16	0.013	3.06	15.22	6.73	7.540

PROPOSED CONDITIONS - 25-YEAR STORM

FlexTable: Conduit Table

Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Unified) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Manning's n	Flow (ft³/s)	Capacity (Full Flow) (ft³/s)	Velocity (ft/s)	System Intensity (in/h)
DI 63	706.00	DI 64	702.20	119.83	0.032	15.0	706.82	702.71	0.013	4.06	11.50	8.56	8.330
HW 51	705.00	CB 52	696.00	199.93	0.045	36.0	706.42	696.76	0.013	19.66	141.51	14.08	8.364
DI 64	701.45	CB 65	698.53	195.10	0.015	24.0	702.71	699.47	0.013	12.31	27.67	8.55	8.251
OPEN PIPE	707.00	CB 62	701.80	120.71	0.043	15.0	707.39	702.32	0.013	1.00	13.41	6.41	8.330
CB 62	701.60	CB 52	697.75	120.64	0.032	15.0	702.32	698.20	0.013	3.19	11.54	8.04	8.224
CB 65	698.33	CB 66	696.89	121.41	0.012	24.0	699.72	698.01	0.013	14.79	24.64	8.20	8.123
CB 66	696.69	DCB 53	695.72	83.70	0.012	24.0	698.16	696.93	0.013	16.48	24.35	8.33	8.039
CB 52	695.80	DCB 53	694.72	35.62	0.030	36.0	697.40	696.65	0.013	24.63	116.14	13.04	8.139
CB 54	693.80	CB 55	693.23	52.34	0.011	36.0	695.95	695.04	0.013	43.65	69.60	10.40	7.971
DCB 53	694.52	CB 54	694.00	25.96	0.020	36.0	696.65	695.67	0.013	42.53	94.39	13.01	7.983
CB 55	693.00	CB 56	688.59	131.67	0.033	36.0	695.16	690.77	0.013	43.73	122.06	15.84	7.943
CB 56	688.49	CB 57	687.42	54.96	0.019	36.0	690.77	689.13	0.013	48.91	93.06	13.33	7.896
CB 68	690.00	DCB 59	689.00	88.92	0.011	15.0	690.57	689.47	0.013	2.03	6.85	4.86	8.330
CB 57	687.42	CB 58	686.39	186.20	0.006	42.0	689.68	688.69	0.013	52.27	74.82	8.41	7.873
CB 67	690.00	CB 57	689.74	25.92	0.010	15.0	690.47	690.14	0.013	1.41	6.47	4.22	8.330
CB 60	685.90	FES 61	685.00	179.96	0.005	42.0	688.32	687.40	0.013	58.59	71.15	8.26	7.711
DCB 59	686.13	CB 60	686.00	24.79	0.005	42.0	688.52	688.36	0.013	58.04	72.86	8.41	7.727
CB 58	686.39	DCB 59	686.23	30.78	0.005	42.0	688.69	688.48	0.013	53.80	72.53	8.26	7.748
DI 56A	694.48	CB 56	690.70	180.00	0.021	18.0	695.18	691.18	0.013	3.38	15.22	6.93	8.330

PROPOSED CONDITIONS - 100-YEAR STORM

FlexTable: Conduit Table

Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Unified) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)	Manning's n	Flow (ft³/s)	Capacity (Full Flow) (ft³/s)	Velocity (ft/s)	System Intensity (in/h)
DI 63	706.00	DI 64	702.20	119.83	0.032	15.0	706.87	702.75	0.013	4.56	11.50	8.83	9.370
HW 51	705.00	CB 52	696.00	199.93	0.045	36.0	706.77	696.93	0.013	29.68	141.51	15.84	9.408
DI 64	701.45	CB 65	698.53	195.10	0.015	24.0	702.79	699.53	0.013	13.85	27.67	8.81	9.283
OPEN PIPE	707.00	CB 62	701.80	120.71	0.043	15.0	707.42	702.37	0.013	1.12	13.41	6.63	9.370
CB 62	701.60	CB 52	697.75	120.64	0.032	15.0	702.37	698.23	0.013	3.59	11.54	8.30	9.254
CB 65	698.33	CB 66	696.89	121.41	0.012	24.0	699.80	698.10	0.013	16.64	24.64	8.42	9.141
CB 66	696.69	DCB 53	695.72	83.70	0.012	24.0	698.24	697.03	0.013	18.55	24.35	8.53	9.049
CB 52	695.80	DCB 53	694.72	35.62	0.030	36.0	697.73	696.94	0.013	35.27	116.14	14.41	9.160
CB 54	693.80	CB 55	693.23	52.34	0.011	36.0	696.24	695.37	0.013	56.69	69.60	10.97	8.974
DCB 53	694.52	CB 54	694.00	25.96	0.020	36.0	696.94	695.96	0.013	55.42	94.39	13.89	8.986
CB 55	693.00	CB 56	688.59	131.67	0.033	36.0	695.44	691.04	0.013	56.78	122.06	16.95	8.944
CB 56	688.49	CB 57	687.42	54.96	0.019	36.0	691.04	689.99	0.013	62.63	93.06	14.12	8.894
CB 68	690.00	DCB 59	689.00	88.92	0.011	15.0	690.60	689.50	0.013	2.28	6.85	5.02	9.370
CB 57	687.42	CB 58	686.39	186.20	0.006	42.0	689.99	689.12	0.013	66.42	74.82	8.79	8.869
CB 67	690.00	CB 57	689.74	25.92	0.010	15.0	690.50	690.16	0.013	1.59	6.47	4.36	9.370
CB 60	685.90	FES 61	685.00	179.96	0.005	42.0	688.86	687.69	0.013	73.56	71.15	8.41	8.692
DCB 59	686.13	CB 60	686.00	24.79	0.005	42.0	688.99	688.86	0.013	72.95	72.86	8.63	8.711
CB 58	686.39	DCB 59	686.23	30.78	0.005	42.0	689.12	688.99	0.013	68.16	72.53	8.57	8.734
DI 56A	694.48	CB 56	690.70	180.00	0.021	18.0	695.23	691.21	0.013	3.80	15.22	7.16	9.370

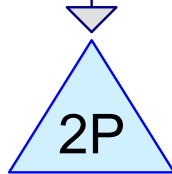
APPENDIX D



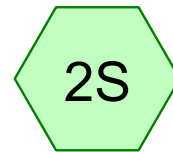
Pre-Development to POI
#2



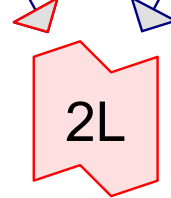
Post-Development to
SCM #2



SCM #2



Bypass to POI #2



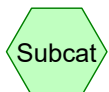
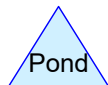
Total Post-Development
to POI #2



Pre-Development to POI
#3



Post-Development to
POI #3



Routing Diagram for Luna

Prepared by -

HydroCAD® 10.00-15 s/n 03870 © 2015 HydroCAD Software Solutions LLC

Summary for Subcatchment 2PRE: Pre-Development to POI #2

Runoff = 6.65 cfs @ 12.13 hrs, Volume= 0.561 af, Depth= 0.72"

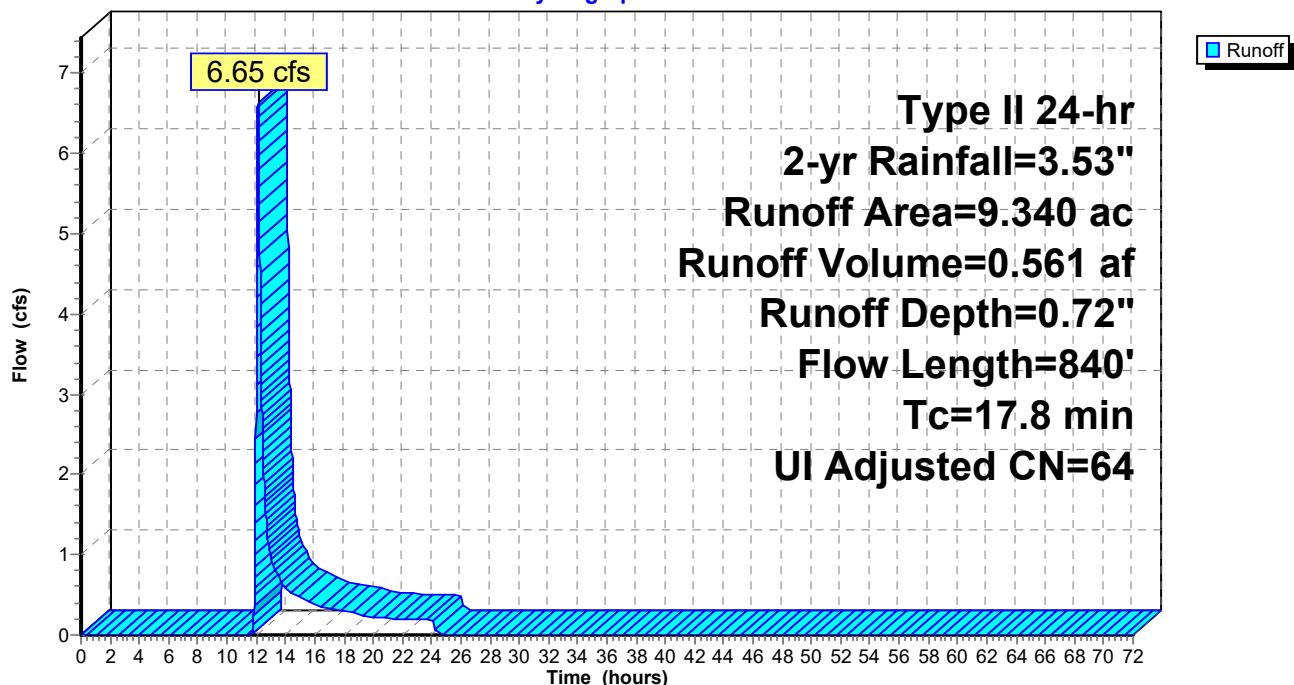
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=3.53"

Area (ac)	CN	Adj	Description
0.590	55		Woods, Good, HSG B
0.700	77		Woods, Good, HSG D
0.750	98		Unconnected roofs, HSG B
0.080	80		>75% Grass cover, Good, HSG D
7.220	61		>75% Grass cover, Good, HSG B
9.340	65	64	Weighted Average, UI Adjusted
8.590			91.97% Pervious Area
0.750			8.03% Impervious Area
0.750			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	100	0.0250	0.13		Sheet Flow, Grass: Dense n= 0.240 P2= 3.53"
5.4	740	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
17.8	840	Total			

Subcatchment 2PRE: Pre-Development to POI #2

Hydrograph



Hydrograph for Subcatchment 2PRE: Pre-Development to POI #2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	3.53	0.72	0.00
1.00	0.04	0.00	0.00	54.00	3.53	0.72	0.00
2.00	0.08	0.00	0.00	55.00	3.53	0.72	0.00
3.00	0.12	0.00	0.00	56.00	3.53	0.72	0.00
4.00	0.17	0.00	0.00	57.00	3.53	0.72	0.00
5.00	0.22	0.00	0.00	58.00	3.53	0.72	0.00
6.00	0.28	0.00	0.00	59.00	3.53	0.72	0.00
7.00	0.35	0.00	0.00	60.00	3.53	0.72	0.00
8.00	0.42	0.00	0.00	61.00	3.53	0.72	0.00
9.00	0.52	0.00	0.00	62.00	3.53	0.72	0.00
10.00	0.64	0.00	0.00	63.00	3.53	0.72	0.00
11.00	0.83	0.00	0.00	64.00	3.53	0.72	0.00
12.00	2.34	0.22	3.48	65.00	3.53	0.72	0.00
13.00	2.73	0.35	0.97	66.00	3.53	0.72	0.00
14.00	2.89	0.42	0.59	67.00	3.53	0.72	0.00
15.00	3.01	0.47	0.46	68.00	3.53	0.72	0.00
16.00	3.11	0.52	0.37	69.00	3.53	0.72	0.00
17.00	3.18	0.55	0.32	70.00	3.53	0.72	0.00
18.00	3.25	0.58	0.29	71.00	3.53	0.72	0.00
19.00	3.31	0.61	0.26	72.00	3.53	0.72	0.00
20.00	3.36	0.64	0.22				
21.00	3.41	0.66	0.21				
22.00	3.45	0.68	0.20				
23.00	3.49	0.70	0.19				
24.00	3.53	0.72	0.19				
25.00	3.53	0.72	0.00				
26.00	3.53	0.72	0.00				
27.00	3.53	0.72	0.00				
28.00	3.53	0.72	0.00				
29.00	3.53	0.72	0.00				
30.00	3.53	0.72	0.00				
31.00	3.53	0.72	0.00				
32.00	3.53	0.72	0.00				
33.00	3.53	0.72	0.00				
34.00	3.53	0.72	0.00				
35.00	3.53	0.72	0.00				
36.00	3.53	0.72	0.00				
37.00	3.53	0.72	0.00				
38.00	3.53	0.72	0.00				
39.00	3.53	0.72	0.00				
40.00	3.53	0.72	0.00				
41.00	3.53	0.72	0.00				
42.00	3.53	0.72	0.00				
43.00	3.53	0.72	0.00				
44.00	3.53	0.72	0.00				
45.00	3.53	0.72	0.00				
46.00	3.53	0.72	0.00				
47.00	3.53	0.72	0.00				
48.00	3.53	0.72	0.00				
49.00	3.53	0.72	0.00				
50.00	3.53	0.72	0.00				
51.00	3.53	0.72	0.00				
52.00	3.53	0.72	0.00				

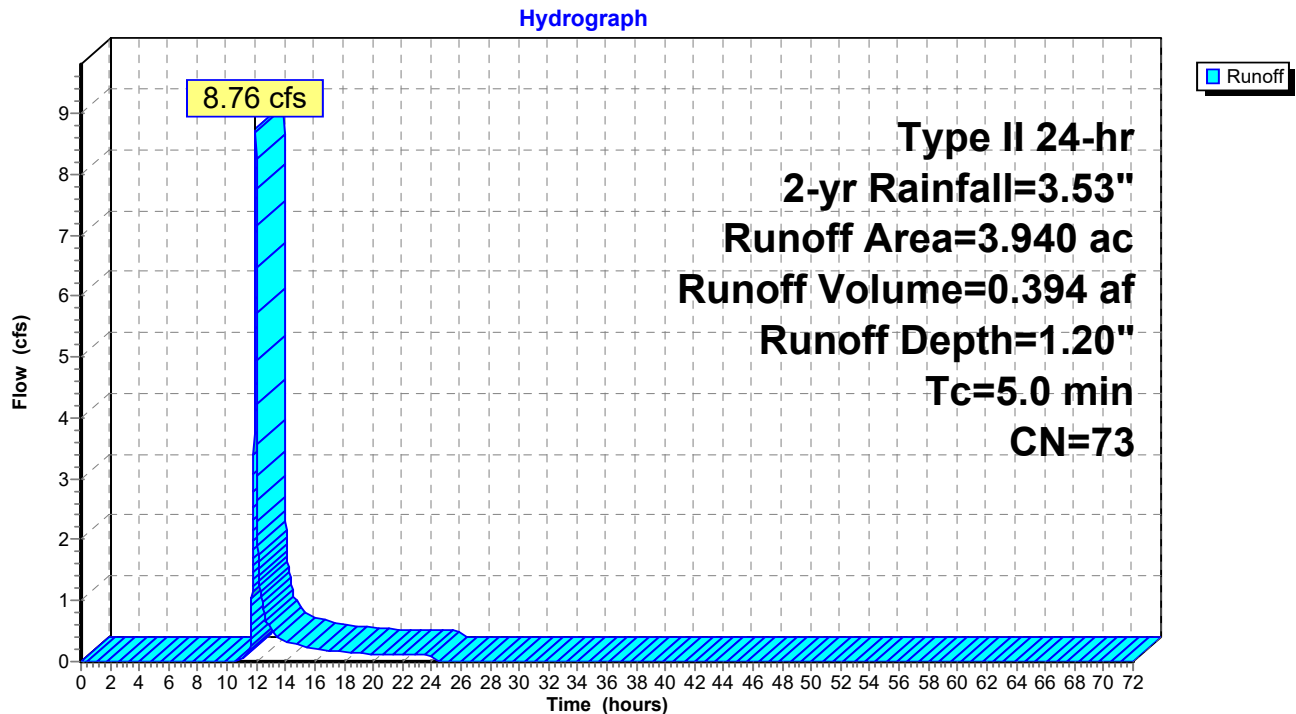
Summary for Subcatchment 2PST: Post-Development to SCM #2

Runoff = 8.76 cfs @ 11.97 hrs, Volume= 0.394 af, Depth= 1.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=3.53"

Area (ac)	CN	Description
* 0.880	98	Proposed Impervious
* 0.020	98	Existing Impervious
2.290	61	>75% Grass cover, Good, HSG B
0.750	80	>75% Grass cover, Good, HSG D
3.940	73	Weighted Average
3.040		77.16% Pervious Area
0.900		22.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 2PST: Post-Development to SCM #2

Hydrograph for Subcatchment 2PST: Post-Development to SCM #2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	3.53	1.20	0.00
1.00	0.04	0.00	0.00	54.00	3.53	1.20	0.00
2.00	0.08	0.00	0.00	55.00	3.53	1.20	0.00
3.00	0.12	0.00	0.00	56.00	3.53	1.20	0.00
4.00	0.17	0.00	0.00	57.00	3.53	1.20	0.00
5.00	0.22	0.00	0.00	58.00	3.53	1.20	0.00
6.00	0.28	0.00	0.00	59.00	3.53	1.20	0.00
7.00	0.35	0.00	0.00	60.00	3.53	1.20	0.00
8.00	0.42	0.00	0.00	61.00	3.53	1.20	0.00
9.00	0.52	0.00	0.00	62.00	3.53	1.20	0.00
10.00	0.64	0.00	0.00	63.00	3.53	1.20	0.00
11.00	0.83	0.00	0.04	64.00	3.53	1.20	0.00
12.00	2.34	0.48	7.78	65.00	3.53	1.20	0.00
13.00	2.73	0.69	0.52	66.00	3.53	1.20	0.00
14.00	2.89	0.79	0.32	67.00	3.53	1.20	0.00
15.00	3.01	0.87	0.26	68.00	3.53	1.20	0.00
16.00	3.11	0.92	0.21	69.00	3.53	1.20	0.00
17.00	3.18	0.97	0.18	70.00	3.53	1.20	0.00
18.00	3.25	1.02	0.16	71.00	3.53	1.20	0.00
19.00	3.31	1.05	0.14	72.00	3.53	1.20	0.00
20.00	3.36	1.09	0.12				
21.00	3.41	1.12	0.12				
22.00	3.45	1.15	0.11				
23.00	3.49	1.17	0.11				
24.00	3.53	1.20	0.10				
25.00	3.53	1.20	0.00				
26.00	3.53	1.20	0.00				
27.00	3.53	1.20	0.00				
28.00	3.53	1.20	0.00				
29.00	3.53	1.20	0.00				
30.00	3.53	1.20	0.00				
31.00	3.53	1.20	0.00				
32.00	3.53	1.20	0.00				
33.00	3.53	1.20	0.00				
34.00	3.53	1.20	0.00				
35.00	3.53	1.20	0.00				
36.00	3.53	1.20	0.00				
37.00	3.53	1.20	0.00				
38.00	3.53	1.20	0.00				
39.00	3.53	1.20	0.00				
40.00	3.53	1.20	0.00				
41.00	3.53	1.20	0.00				
42.00	3.53	1.20	0.00				
43.00	3.53	1.20	0.00				
44.00	3.53	1.20	0.00				
45.00	3.53	1.20	0.00				
46.00	3.53	1.20	0.00				
47.00	3.53	1.20	0.00				
48.00	3.53	1.20	0.00				
49.00	3.53	1.20	0.00				
50.00	3.53	1.20	0.00				
51.00	3.53	1.20	0.00				
52.00	3.53	1.20	0.00				

Summary for Subcatchment 2S: Bypass to POI #2

Runoff = 5.54 cfs @ 12.09 hrs, Volume= 0.402 af, Depth= 0.82"

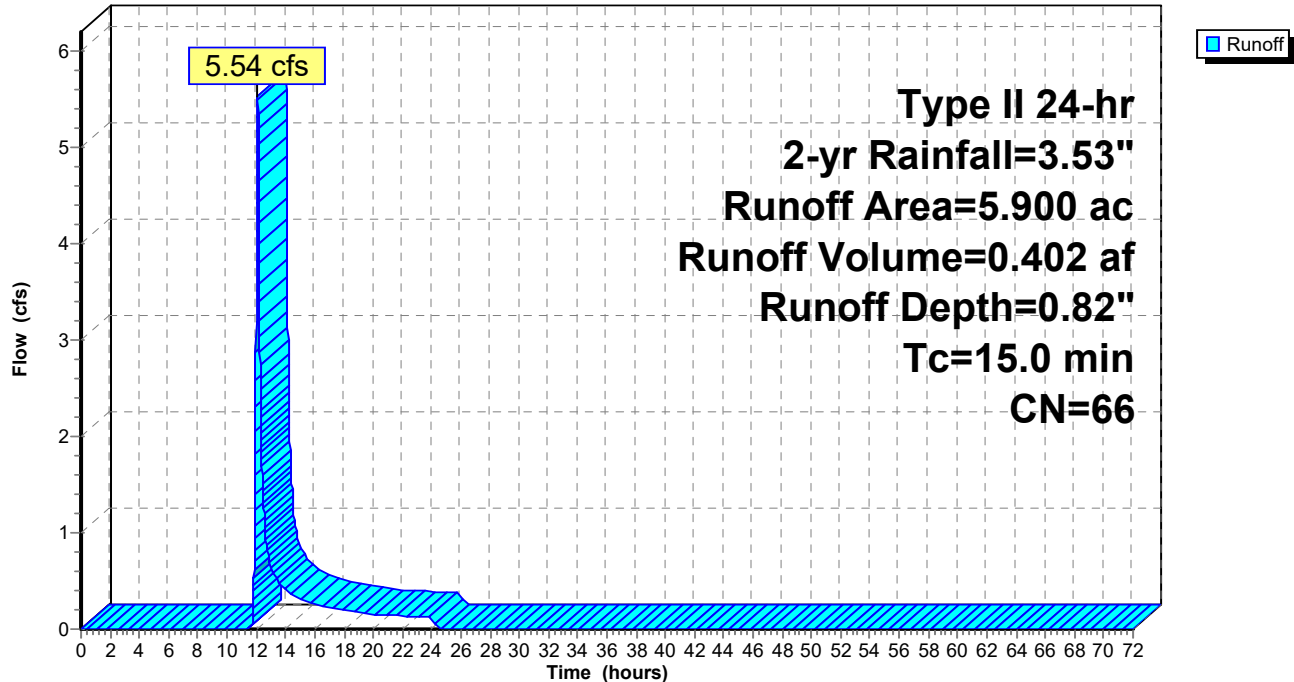
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=3.53"

Area (ac)	CN	Description
* 0.650	98	Existing Impervious
4.740	61	>75% Grass cover, Good, HSG B
0.280	80	>75% Grass cover, Good, HSG D
0.180	55	Woods, Good, HSG B
0.050	77	Woods, Good, HSG D
5.900	66	Weighted Average
5.250		88.98% Pervious Area
0.650		11.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry,

Subcatchment 2S: Bypass to POI #2

Hydrograph



Hydrograph for Subcatchment 2S: Bypass to POI #2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	3.53	0.82	0.00
1.00	0.04	0.00	0.00	54.00	3.53	0.82	0.00
2.00	0.08	0.00	0.00	55.00	3.53	0.82	0.00
3.00	0.12	0.00	0.00	56.00	3.53	0.82	0.00
4.00	0.17	0.00	0.00	57.00	3.53	0.82	0.00
5.00	0.22	0.00	0.00	58.00	3.53	0.82	0.00
6.00	0.28	0.00	0.00	59.00	3.53	0.82	0.00
7.00	0.35	0.00	0.00	60.00	3.53	0.82	0.00
8.00	0.42	0.00	0.00	61.00	3.53	0.82	0.00
9.00	0.52	0.00	0.00	62.00	3.53	0.82	0.00
10.00	0.64	0.00	0.00	63.00	3.53	0.82	0.00
11.00	0.83	0.00	0.00	64.00	3.53	0.82	0.00
12.00	2.34	0.27	3.82	65.00	3.53	0.82	0.00
13.00	2.73	0.42	0.65	66.00	3.53	0.82	0.00
14.00	2.89	0.50	0.40	67.00	3.53	0.82	0.00
15.00	3.01	0.55	0.32	68.00	3.53	0.82	0.00
16.00	3.11	0.60	0.25	69.00	3.53	0.82	0.00
17.00	3.18	0.63	0.22	70.00	3.53	0.82	0.00
18.00	3.25	0.67	0.20	71.00	3.53	0.82	0.00
19.00	3.31	0.70	0.17	72.00	3.53	0.82	0.00
20.00	3.36	0.73	0.15				
21.00	3.41	0.75	0.14				
22.00	3.45	0.77	0.14				
23.00	3.49	0.80	0.13				
24.00	3.53	0.82	0.13				
25.00	3.53	0.82	0.00				
26.00	3.53	0.82	0.00				
27.00	3.53	0.82	0.00				
28.00	3.53	0.82	0.00				
29.00	3.53	0.82	0.00				
30.00	3.53	0.82	0.00				
31.00	3.53	0.82	0.00				
32.00	3.53	0.82	0.00				
33.00	3.53	0.82	0.00				
34.00	3.53	0.82	0.00				
35.00	3.53	0.82	0.00				
36.00	3.53	0.82	0.00				
37.00	3.53	0.82	0.00				
38.00	3.53	0.82	0.00				
39.00	3.53	0.82	0.00				
40.00	3.53	0.82	0.00				
41.00	3.53	0.82	0.00				
42.00	3.53	0.82	0.00				
43.00	3.53	0.82	0.00				
44.00	3.53	0.82	0.00				
45.00	3.53	0.82	0.00				
46.00	3.53	0.82	0.00				
47.00	3.53	0.82	0.00				
48.00	3.53	0.82	0.00				
49.00	3.53	0.82	0.00				
50.00	3.53	0.82	0.00				
51.00	3.53	0.82	0.00				
52.00	3.53	0.82	0.00				

Summary for Subcatchment 3PRE: Pre-Development to POI #3

Runoff = 6.39 cfs @ 12.03 hrs, Volume= 0.362 af, Depth= 1.45"

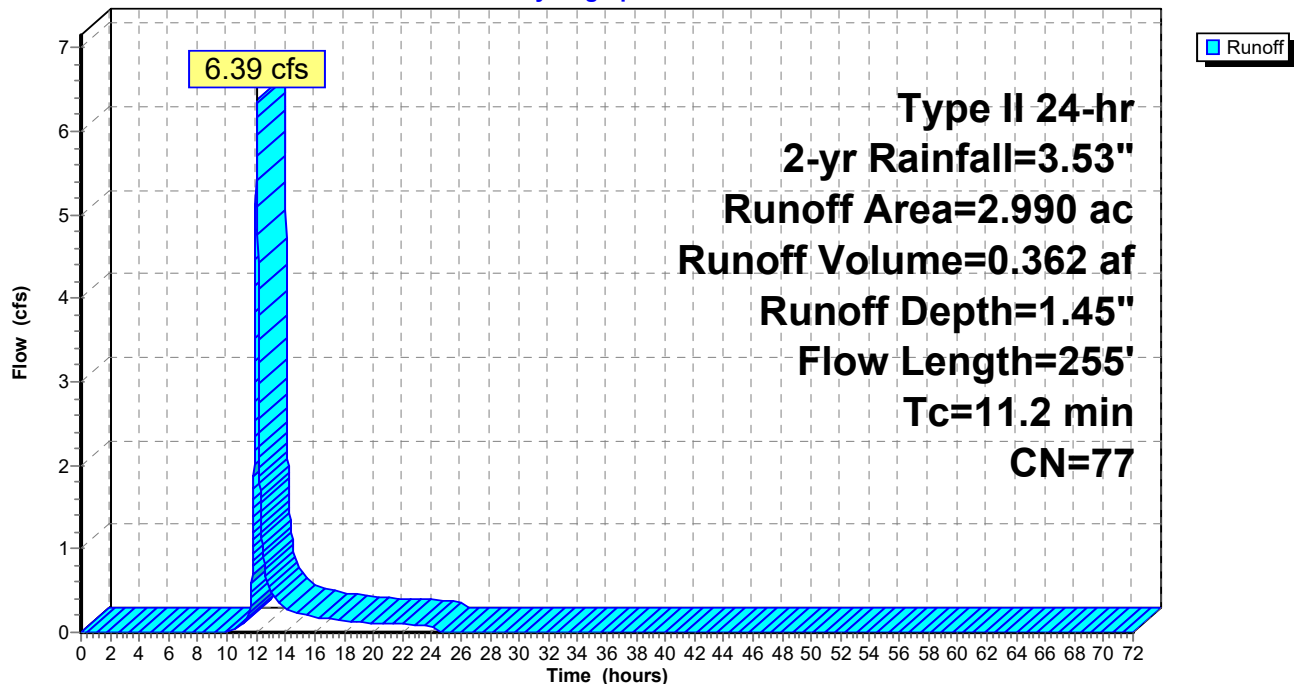
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=3.53"

Area (ac)	CN	Description
2.610	77	Woods, Good, HSG D
0.380	80	>75% Grass cover, Good, HSG D
2.990	77	Weighted Average
2.990		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	100	0.0360	0.16		Sheet Flow, Grass: Dense n= 0.240 P2= 3.53"
0.5	155	0.0860	4.72		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
11.2	255	Total			

Subcatchment 3PRE: Pre-Development to POI #3

Hydrograph



Hydrograph for Subcatchment 3PRE: Pre-Development to POI #3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	3.53	1.45	0.00
1.00	0.04	0.00	0.00	54.00	3.53	1.45	0.00
2.00	0.08	0.00	0.00	55.00	3.53	1.45	0.00
3.00	0.12	0.00	0.00	56.00	3.53	1.45	0.00
4.00	0.17	0.00	0.00	57.00	3.53	1.45	0.00
5.00	0.22	0.00	0.00	58.00	3.53	1.45	0.00
6.00	0.28	0.00	0.00	59.00	3.53	1.45	0.00
7.00	0.35	0.00	0.00	60.00	3.53	1.45	0.00
8.00	0.42	0.00	0.00	61.00	3.53	1.45	0.00
9.00	0.52	0.00	0.00	62.00	3.53	1.45	0.00
10.00	0.64	0.00	0.00	63.00	3.53	1.45	0.00
11.00	0.83	0.02	0.08	64.00	3.53	1.45	0.00
12.00	2.34	0.64	5.98	65.00	3.53	1.45	0.00
13.00	2.73	0.89	0.49	66.00	3.53	1.45	0.00
14.00	2.89	1.00	0.29	67.00	3.53	1.45	0.00
15.00	3.01	1.08	0.23	68.00	3.53	1.45	0.00
16.00	3.11	1.15	0.18	69.00	3.53	1.45	0.00
17.00	3.18	1.20	0.16	70.00	3.53	1.45	0.00
18.00	3.25	1.25	0.14	71.00	3.53	1.45	0.00
19.00	3.31	1.29	0.12	72.00	3.53	1.45	0.00
20.00	3.36	1.33	0.10				
21.00	3.41	1.36	0.10				
22.00	3.45	1.39	0.09				
23.00	3.49	1.42	0.09				
24.00	3.53	1.45	0.09				
25.00	3.53	1.45	0.00				
26.00	3.53	1.45	0.00				
27.00	3.53	1.45	0.00				
28.00	3.53	1.45	0.00				
29.00	3.53	1.45	0.00				
30.00	3.53	1.45	0.00				
31.00	3.53	1.45	0.00				
32.00	3.53	1.45	0.00				
33.00	3.53	1.45	0.00				
34.00	3.53	1.45	0.00				
35.00	3.53	1.45	0.00				
36.00	3.53	1.45	0.00				
37.00	3.53	1.45	0.00				
38.00	3.53	1.45	0.00				
39.00	3.53	1.45	0.00				
40.00	3.53	1.45	0.00				
41.00	3.53	1.45	0.00				
42.00	3.53	1.45	0.00				
43.00	3.53	1.45	0.00				
44.00	3.53	1.45	0.00				
45.00	3.53	1.45	0.00				
46.00	3.53	1.45	0.00				
47.00	3.53	1.45	0.00				
48.00	3.53	1.45	0.00				
49.00	3.53	1.45	0.00				
50.00	3.53	1.45	0.00				
51.00	3.53	1.45	0.00				
52.00	3.53	1.45	0.00				

Summary for Subcatchment 3PST: Post-Development to POI #3

Runoff = 0.46 cfs @ 11.96 hrs, Volume= 0.021 af, Depth= 1.66"

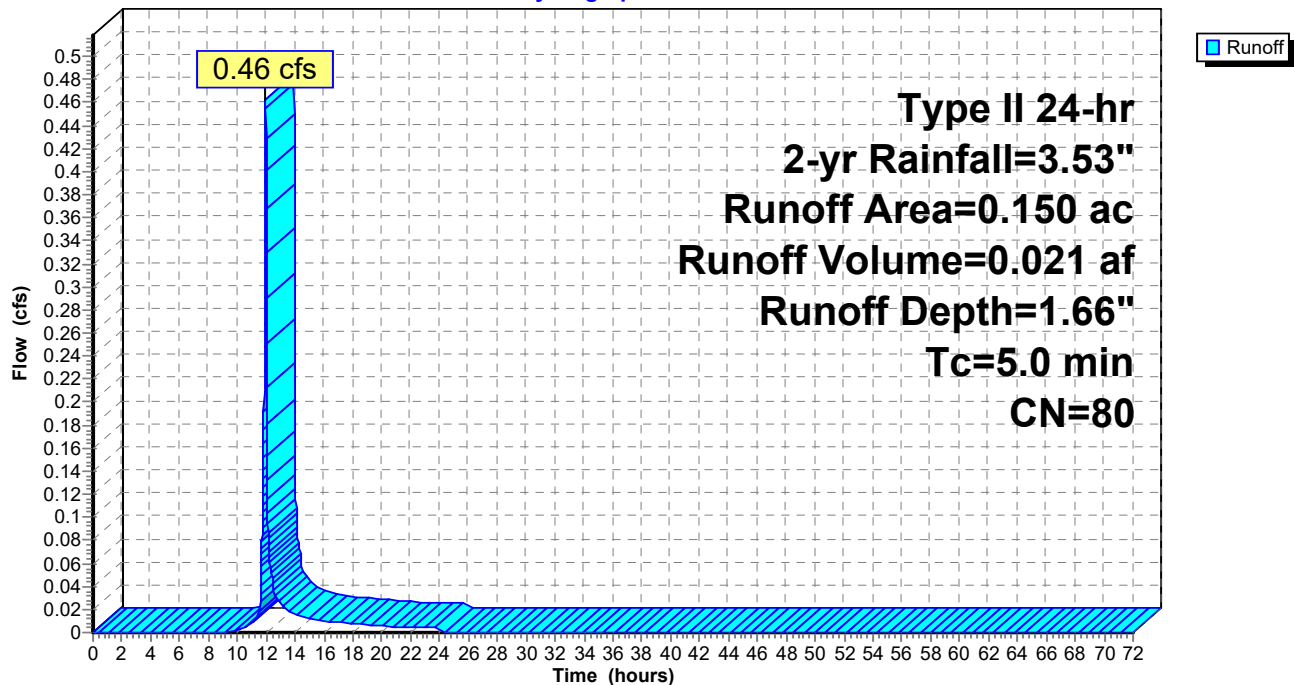
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-yr Rainfall=3.53"

Area (ac)	CN	Description
0.020	98	Paved roads w/curbs & sewers, HSG B
0.130	77	Woods, Good, HSG D
0.150	80	Weighted Average
0.130		86.67% Pervious Area
0.020		13.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 3PST: Post-Development to POI #3

Hydrograph



Hydrograph for Subcatchment 3PST: Post-Development to POI #3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	3.53	1.66	0.00
1.00	0.04	0.00	0.00	54.00	3.53	1.66	0.00
2.00	0.08	0.00	0.00	55.00	3.53	1.66	0.00
3.00	0.12	0.00	0.00	56.00	3.53	1.66	0.00
4.00	0.17	0.00	0.00	57.00	3.53	1.66	0.00
5.00	0.22	0.00	0.00	58.00	3.53	1.66	0.00
6.00	0.28	0.00	0.00	59.00	3.53	1.66	0.00
7.00	0.35	0.00	0.00	60.00	3.53	1.66	0.00
8.00	0.42	0.00	0.00	61.00	3.53	1.66	0.00
9.00	0.52	0.00	0.00	62.00	3.53	1.66	0.00
10.00	0.64	0.01	0.00	63.00	3.53	1.66	0.00
11.00	0.83	0.04	0.01	64.00	3.53	1.66	0.00
12.00	2.34	0.78	0.40	65.00	3.53	1.66	0.00
13.00	2.73	1.05	0.02	66.00	3.53	1.66	0.00
14.00	2.89	1.17	0.02	67.00	3.53	1.66	0.00
15.00	3.01	1.26	0.01	68.00	3.53	1.66	0.00
16.00	3.11	1.33	0.01	69.00	3.53	1.66	0.00
17.00	3.18	1.39	0.01	70.00	3.53	1.66	0.00
18.00	3.25	1.44	0.01	71.00	3.53	1.66	0.00
19.00	3.31	1.49	0.01	72.00	3.53	1.66	0.00
20.00	3.36	1.53	0.01				
21.00	3.41	1.56	0.01				
22.00	3.45	1.60	0.01				
23.00	3.49	1.63	0.00				
24.00	3.53	1.66	0.00				
25.00	3.53	1.66	0.00				
26.00	3.53	1.66	0.00				
27.00	3.53	1.66	0.00				
28.00	3.53	1.66	0.00				
29.00	3.53	1.66	0.00				
30.00	3.53	1.66	0.00				
31.00	3.53	1.66	0.00				
32.00	3.53	1.66	0.00				
33.00	3.53	1.66	0.00				
34.00	3.53	1.66	0.00				
35.00	3.53	1.66	0.00				
36.00	3.53	1.66	0.00				
37.00	3.53	1.66	0.00				
38.00	3.53	1.66	0.00				
39.00	3.53	1.66	0.00				
40.00	3.53	1.66	0.00				
41.00	3.53	1.66	0.00				
42.00	3.53	1.66	0.00				
43.00	3.53	1.66	0.00				
44.00	3.53	1.66	0.00				
45.00	3.53	1.66	0.00				
46.00	3.53	1.66	0.00				
47.00	3.53	1.66	0.00				
48.00	3.53	1.66	0.00				
49.00	3.53	1.66	0.00				
50.00	3.53	1.66	0.00				
51.00	3.53	1.66	0.00				
52.00	3.53	1.66	0.00				

Summary for Pond 2P: SCM #2

Inflow Area = 3.940 ac, 22.84% Impervious, Inflow Depth = 1.20" for 2-yr event
 Inflow = 8.76 cfs @ 11.97 hrs, Volume= 0.394 af
 Outflow = 0.08 cfs @ 24.05 hrs, Volume= 0.320 af, Atten= 99%, Lag= 725.2 min
 Primary = 0.08 cfs @ 24.05 hrs, Volume= 0.320 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 715.44' @ 24.05 hrs Surf.Area= 11,088 sf Storage= 13,974 cf

Plug-Flow detention time= 1,614.9 min calculated for 0.320 af (81% of inflow)
 Center-of-Mass det. time= 1,531.2 min (2,386.1 - 854.9)

Volume	Invert	Avail.Storage	Storage Description
#1	713.50'	81,212 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
713.50	2,258	0	0
714.00	4,670	1,732	1,732
715.00	10,425	7,548	9,280
716.00	11,945	11,185	20,465
717.00	13,515	12,730	33,195
718.00	15,145	14,330	47,525
719.00	16,830	15,988	63,512
720.00	18,570	17,700	81,212

Device	Routing	Invert	Outlet Devices
#1	Primary	711.50'	24.0" Round Outlet Pipe L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 711.50' / 711.30' S= 0.0050 ' S= 0.0050 ' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	713.50'	Filter Bed Head (feet) 0.00 1.00 2.00 3.00 4.00 5.00 Disch. (cfs) 0.000 0.055 0.077 0.098 0.120 0.142
#3	Device 1	715.50'	4.0" Vert. Orifice C= 0.600
#4	Device 1	717.50'	48.0" x 48.0" Horiz. Top of OCS C= 0.600 Limited to weir flow at low heads
#5	Secondary	718.50'	20.0' long x 10.0' breadth Emergency Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.08 cfs @ 24.05 hrs HW=715.44' (Free Discharge)

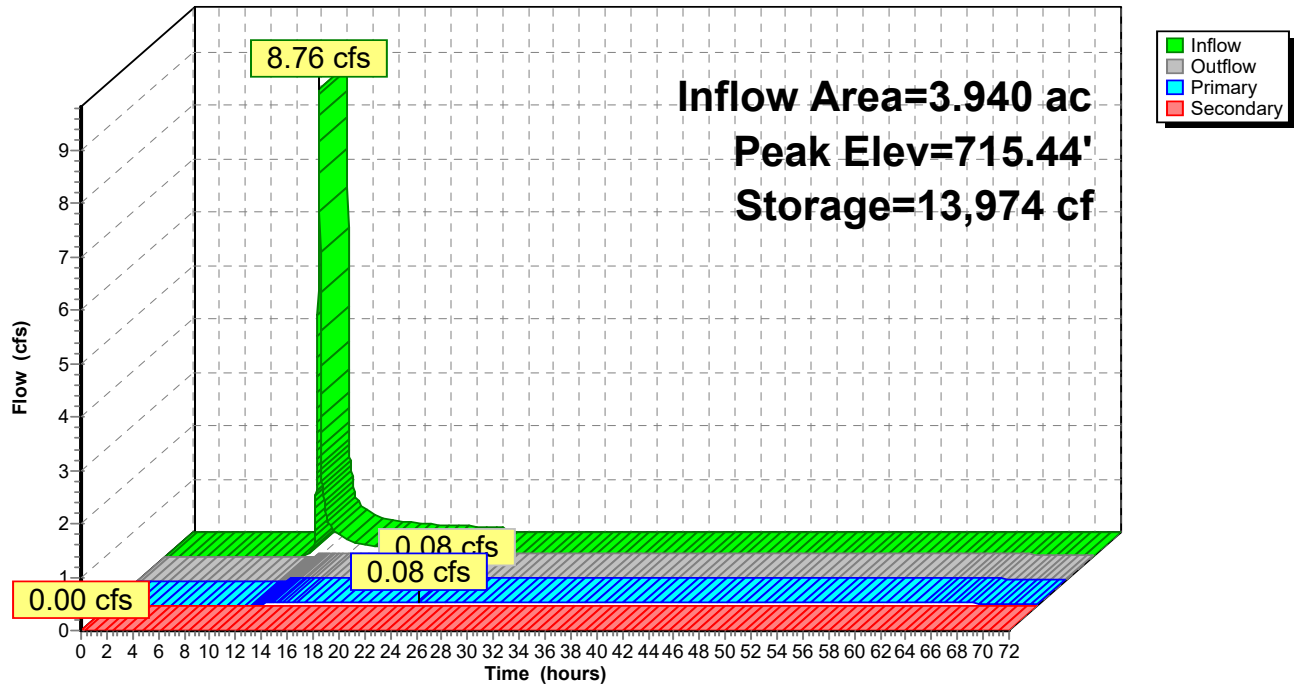
- 1=Outlet Pipe (Passes 0.08 cfs of 25.92 cfs potential flow)
- 2=Filter Bed (Custom Controls 0.08 cfs)
- 3=Orifice (Controls 0.00 cfs)
- 4=Top of OCS (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=713.50' (Free Discharge)

- 5=Emergency Spillway (Controls 0.00 cfs)

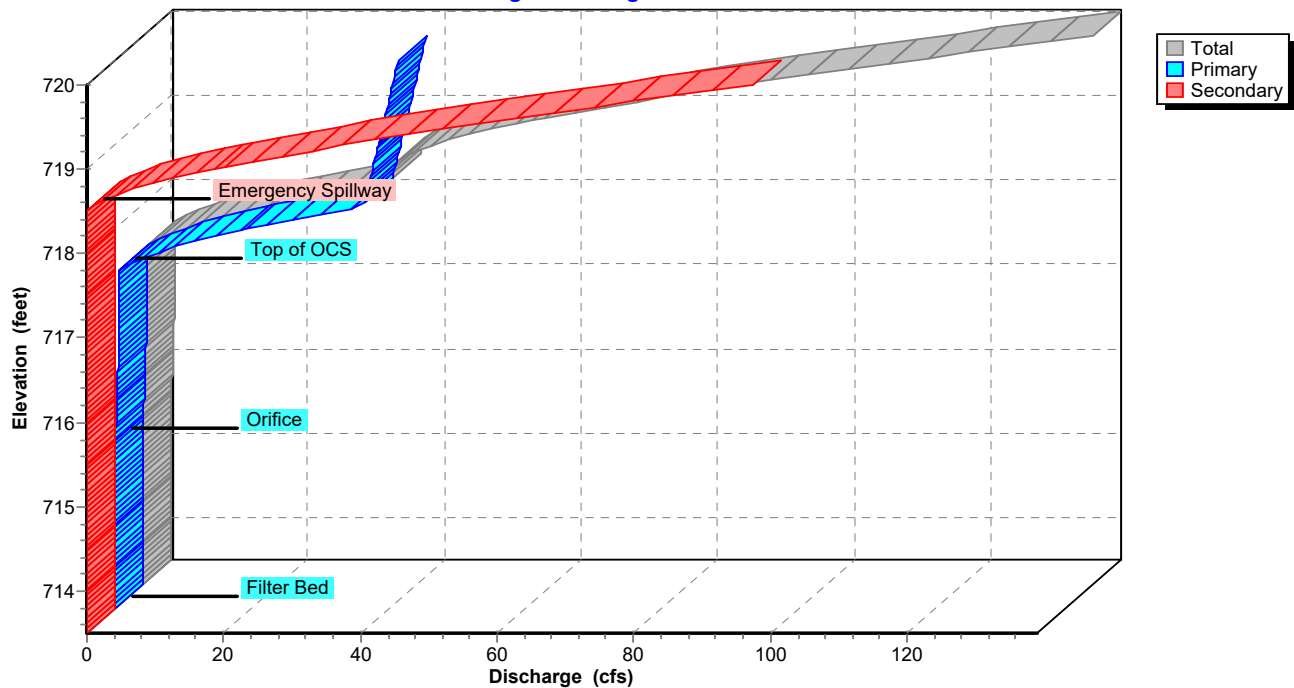
Pond 2P: SCM #2

Hydrograph

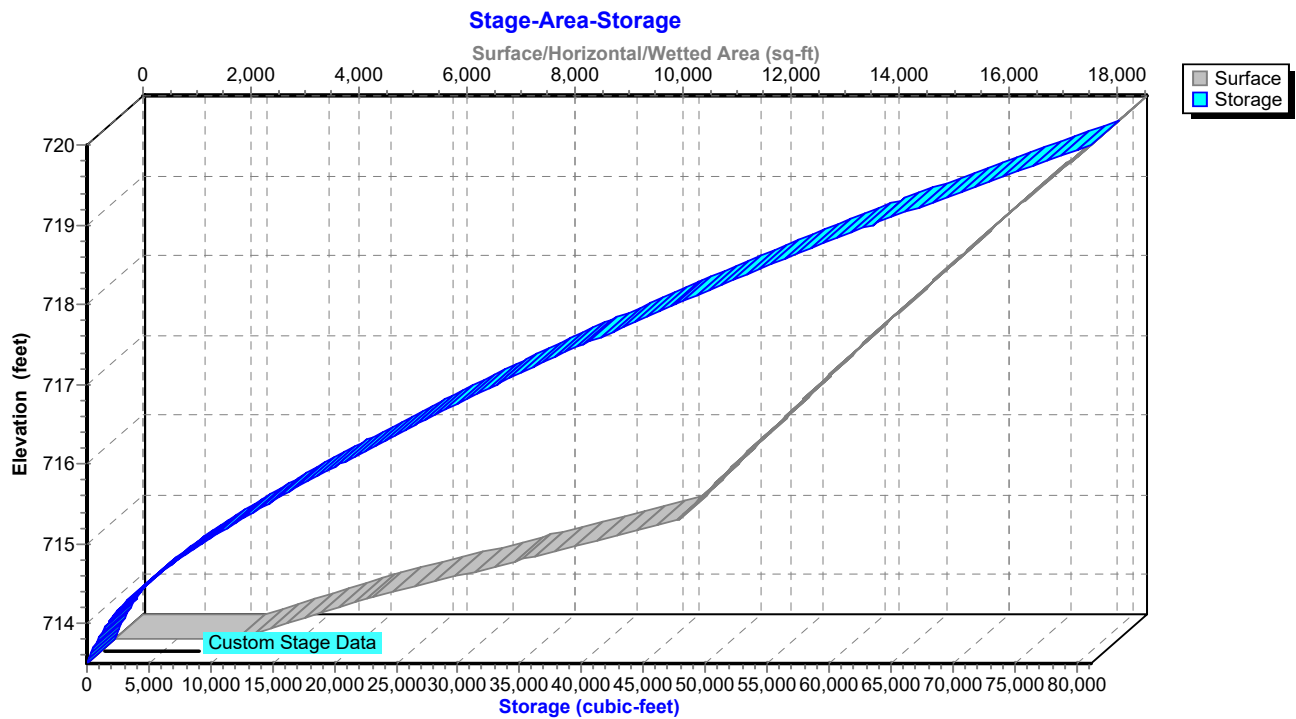


Pond 2P: SCM #2

Stage-Discharge



Pond 2P: SCM #2



Hydrograph for Pond 2P: SCM #2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	713.50	0.00	0.00	0.00
2.00	0.00	0	713.50	0.00	0.00	0.00
4.00	0.00	0	713.50	0.00	0.00	0.00
6.00	0.00	0	713.50	0.00	0.00	0.00
8.00	0.00	0	713.50	0.00	0.00	0.00
10.00	0.00	0	713.50	0.00	0.00	0.00
12.00	7.78	5,291	714.56	0.06	0.06	0.00
14.00	0.32	10,743	715.14	0.07	0.07	0.00
16.00	0.21	12,129	715.27	0.07	0.07	0.00
18.00	0.16	12,934	715.34	0.07	0.07	0.00
20.00	0.12	13,433	715.39	0.07	0.07	0.00
22.00	0.11	13,732	715.41	0.08	0.08	0.00
24.00	0.10	13,971	715.44	0.08	0.08	0.00
26.00	0.00	13,459	715.39	0.07	0.07	0.00
28.00	0.00	12,926	715.34	0.07	0.07	0.00
30.00	0.00	12,400	715.29	0.07	0.07	0.00
32.00	0.00	11,883	715.25	0.07	0.07	0.00
34.00	0.00	11,372	715.20	0.07	0.07	0.00
36.00	0.00	10,869	715.15	0.07	0.07	0.00
38.00	0.00	10,374	715.10	0.07	0.07	0.00
40.00	0.00	9,886	715.06	0.07	0.07	0.00
42.00	0.00	9,405	715.01	0.07	0.07	0.00
44.00	0.00	8,932	714.97	0.07	0.07	0.00
46.00	0.00	8,466	714.92	0.06	0.06	0.00
48.00	0.00	8,007	714.87	0.06	0.06	0.00
50.00	0.00	7,555	714.83	0.06	0.06	0.00
52.00	0.00	7,112	714.78	0.06	0.06	0.00
54.00	0.00	6,675	714.73	0.06	0.06	0.00
56.00	0.00	6,247	714.68	0.06	0.06	0.00
58.00	0.00	5,826	714.63	0.06	0.06	0.00
60.00	0.00	5,413	714.58	0.06	0.06	0.00
62.00	0.00	5,009	714.53	0.06	0.06	0.00
64.00	0.00	4,613	714.48	0.05	0.05	0.00
66.00	0.00	4,237	714.42	0.05	0.05	0.00
68.00	0.00	3,881	714.37	0.05	0.05	0.00
70.00	0.00	3,545	714.32	0.05	0.05	0.00
72.00	0.00	3,229	714.27	0.04	0.04	0.00

Stage-Discharge for Pond 2P: SCM #2

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
713.50	0.00	0.00	0.00	718.80	46.27	37.97	8.30
713.60	0.01	0.01	0.00	718.90	51.22	38.27	12.95
713.70	0.01	0.01	0.00	719.00	57.16	38.57	18.60
713.80	0.02	0.02	0.00	719.10	63.96	38.86	25.10
713.90	0.02	0.02	0.00	719.20	70.72	39.15	31.57
714.00	0.03	0.03	0.00	719.30	77.94	39.45	38.50
714.10	0.03	0.03	0.00	719.40	85.58	39.73	45.85
714.20	0.04	0.04	0.00	719.50	93.62	40.02	53.60
714.30	0.04	0.04	0.00	719.60	102.26	40.31	61.95
714.40	0.05	0.05	0.00	719.70	111.31	40.59	70.72
714.50	0.06	0.06	0.00	719.80	120.32	40.87	79.45
714.60	0.06	0.06	0.00	719.90	129.61	41.15	88.46
714.70	0.06	0.06	0.00	720.00	138.98	41.43	97.55
714.80	0.06	0.06	0.00				
714.90	0.06	0.06	0.00				
715.00	0.07	0.07	0.00				
715.10	0.07	0.07	0.00				
715.20	0.07	0.07	0.00				
715.30	0.07	0.07	0.00				
715.40	0.07	0.07	0.00				
715.50	0.08	0.08	0.00				
715.60	0.10	0.10	0.00				
715.70	0.16	0.16	0.00				
715.80	0.24	0.24	0.00				
715.90	0.29	0.29	0.00				
716.00	0.33	0.33	0.00				
716.10	0.37	0.37	0.00				
716.20	0.40	0.40	0.00				
716.30	0.43	0.43	0.00				
716.40	0.46	0.46	0.00				
716.50	0.48	0.48	0.00				
716.60	0.51	0.51	0.00				
716.70	0.53	0.53	0.00				
716.80	0.55	0.55	0.00				
716.90	0.57	0.57	0.00				
717.00	0.59	0.59	0.00				
717.10	0.61	0.61	0.00				
717.20	0.63	0.63	0.00				
717.30	0.65	0.65	0.00				
717.40	0.67	0.67	0.00				
717.50	0.69	0.69	0.00				
717.60	2.36	2.36	0.00				
717.70	5.40	5.40	0.00				
717.80	9.34	9.34	0.00				
717.90	13.99	13.99	0.00				
718.00	19.27	19.27	0.00				
718.10	25.10	25.10	0.00				
718.20	31.45	31.45	0.00				
718.30	36.43	36.43	0.00				
718.40	36.74	36.74	0.00				
718.50	37.05	37.05	0.00				
718.60	38.93	37.36	1.57				
718.70	42.12	37.67	4.45				

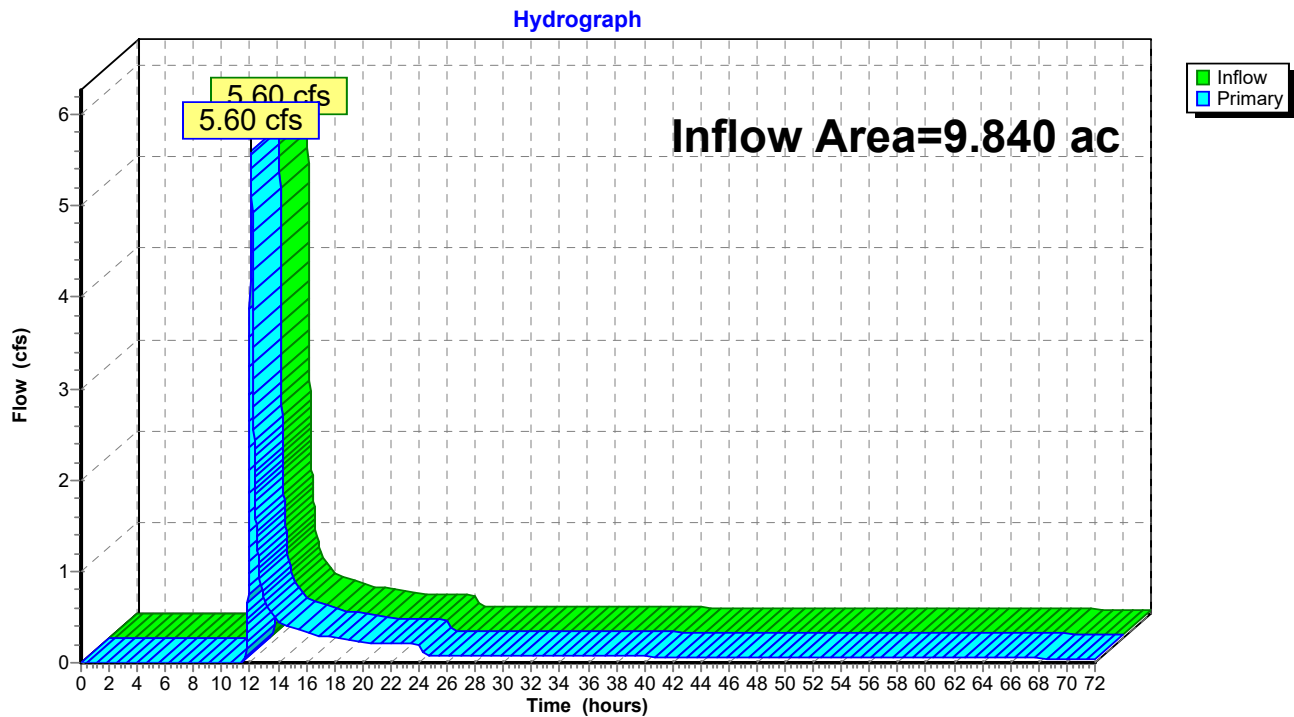
Stage-Area-Storage for Pond 2P: SCM #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
713.50	2,258	0	718.80	16,493	60,180
713.60	2,740	250	718.90	16,661	61,837
713.70	3,223	548	719.00	16,830	63,512
713.80	3,705	894	719.10	17,004	65,204
713.90	4,188	1,289	719.20	17,178	66,913
714.00	4,670	1,732	719.30	17,352	68,639
714.10	5,246	2,228	719.40	17,526	70,383
714.20	5,821	2,781	719.50	17,700	72,145
714.30	6,396	3,392	719.60	17,874	73,923
714.40	6,972	4,060	719.70	18,048	75,719
714.50	7,548	4,786	719.80	18,222	77,533
714.60	8,123	5,570	719.90	18,396	79,364
714.70	8,699	6,411	720.00	18,570	81,212
714.80	9,274	7,310			
714.90	9,849	8,266			
715.00	10,425	9,280			
715.10	10,577	10,330			
715.20	10,729	11,395			
715.30	10,881	12,475			
715.40	11,033	13,571			
715.50	11,185	14,682			
715.60	11,337	15,808			
715.70	11,489	16,949			
715.80	11,641	18,106			
715.90	11,793	19,278			
716.00	11,945	20,465			
716.10	12,102	21,667			
716.20	12,259	22,885			
716.30	12,416	24,119			
716.40	12,573	25,368			
716.50	12,730	26,633			
716.60	12,887	27,914			
716.70	13,044	29,211			
716.80	13,201	30,523			
716.90	13,358	31,851			
717.00	13,515	33,195			
717.10	13,678	34,554			
717.20	13,841	35,930			
717.30	14,004	37,322			
717.40	14,167	38,731			
717.50	14,330	40,156			
717.60	14,493	41,597			
717.70	14,656	43,054			
717.80	14,819	44,528			
717.90	14,982	46,018			
718.00	15,145	47,525			
718.10	15,314	49,047			
718.20	15,482	50,587			
718.30	15,650	52,144			
718.40	15,819	53,717			
718.50	15,988	55,308			
718.60	16,156	56,915			
718.70	16,325	58,539			

Summary for Link 2L: Total Post-Development to POI #2

Inflow Area = 9.840 ac, 15.75% Impervious, Inflow Depth > 0.88" for 2-yr event
Inflow = 5.60 cfs @ 12.09 hrs, Volume= 0.721 af
Primary = 5.60 cfs @ 12.09 hrs, Volume= 0.721 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 2L: Total Post-Development to POI #2

Hydrograph for Link 2L: Total Post-Development to POI #2

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	53.00	0.06	0.00	0.06
1.00	0.00	0.00	0.00	54.00	0.06	0.00	0.06
2.00	0.00	0.00	0.00	55.00	0.06	0.00	0.06
3.00	0.00	0.00	0.00	56.00	0.06	0.00	0.06
4.00	0.00	0.00	0.00	57.00	0.06	0.00	0.06
5.00	0.00	0.00	0.00	58.00	0.06	0.00	0.06
6.00	0.00	0.00	0.00	59.00	0.06	0.00	0.06
7.00	0.00	0.00	0.00	60.00	0.06	0.00	0.06
8.00	0.00	0.00	0.00	61.00	0.06	0.00	0.06
9.00	0.00	0.00	0.00	62.00	0.06	0.00	0.06
10.00	0.00	0.00	0.00	63.00	0.06	0.00	0.06
11.00	0.00	0.00	0.00	64.00	0.05	0.00	0.05
12.00	3.88	0.00	3.88	65.00	0.05	0.00	0.05
13.00	0.72	0.00	0.72	66.00	0.05	0.00	0.05
14.00	0.47	0.00	0.47	67.00	0.05	0.00	0.05
15.00	0.39	0.00	0.39	68.00	0.05	0.00	0.05
16.00	0.32	0.00	0.32	69.00	0.05	0.00	0.05
17.00	0.29	0.00	0.29	70.00	0.05	0.00	0.05
18.00	0.27	0.00	0.27	71.00	0.04	0.00	0.04
19.00	0.25	0.00	0.25	72.00	0.04	0.00	0.04
20.00	0.22	0.00	0.22				
21.00	0.22	0.00	0.22				
22.00	0.21	0.00	0.21				
23.00	0.21	0.00	0.21				
24.00	0.20	0.00	0.20				
25.00	0.08	0.00	0.08				
26.00	0.07	0.00	0.07				
27.00	0.07	0.00	0.07				
28.00	0.07	0.00	0.07				
29.00	0.07	0.00	0.07				
30.00	0.07	0.00	0.07				
31.00	0.07	0.00	0.07				
32.00	0.07	0.00	0.07				
33.00	0.07	0.00	0.07				
34.00	0.07	0.00	0.07				
35.00	0.07	0.00	0.07				
36.00	0.07	0.00	0.07				
37.00	0.07	0.00	0.07				
38.00	0.07	0.00	0.07				
39.00	0.07	0.00	0.07				
40.00	0.07	0.00	0.07				
41.00	0.07	0.00	0.07				
42.00	0.07	0.00	0.07				
43.00	0.07	0.00	0.07				
44.00	0.07	0.00	0.07				
45.00	0.06	0.00	0.06				
46.00	0.06	0.00	0.06				
47.00	0.06	0.00	0.06				
48.00	0.06	0.00	0.06				
49.00	0.06	0.00	0.06				
50.00	0.06	0.00	0.06				
51.00	0.06	0.00	0.06				
52.00	0.06	0.00	0.06				

Summary for Subcatchment 2PRE: Pre-Development to POI #2

Runoff = 17.78 cfs @ 12.12 hrs, Volume= 1.307 af, Depth= 1.68"

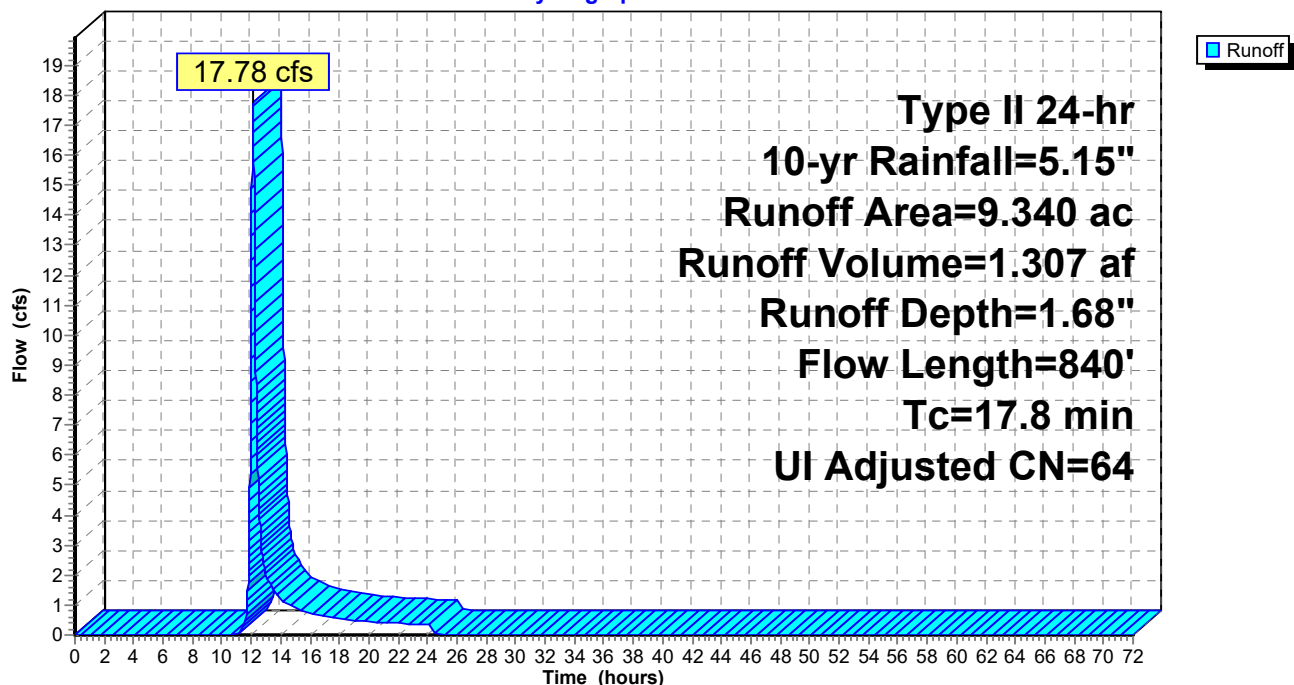
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=5.15"

Area (ac)	CN	Adj	Description
0.590	55		Woods, Good, HSG B
0.700	77		Woods, Good, HSG D
0.750	98		Unconnected roofs, HSG B
0.080	80		>75% Grass cover, Good, HSG D
7.220	61		>75% Grass cover, Good, HSG B
9.340	65	64	Weighted Average, UI Adjusted
8.590			91.97% Pervious Area
0.750			8.03% Impervious Area
0.750			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	100	0.0250	0.13		Sheet Flow, Grass: Dense n= 0.240 P2= 3.53"
5.4	740	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
17.8	840	Total			

Subcatchment 2PRE: Pre-Development to POI #2

Hydrograph



Hydrograph for Subcatchment 2PRE: Pre-Development to POI #2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	5.15	1.68	0.00
1.00	0.05	0.00	0.00	54.00	5.15	1.68	0.00
2.00	0.11	0.00	0.00	55.00	5.15	1.68	0.00
3.00	0.18	0.00	0.00	56.00	5.15	1.68	0.00
4.00	0.25	0.00	0.00	57.00	5.15	1.68	0.00
5.00	0.32	0.00	0.00	58.00	5.15	1.68	0.00
6.00	0.41	0.00	0.00	59.00	5.15	1.68	0.00
7.00	0.51	0.00	0.00	60.00	5.15	1.68	0.00
8.00	0.62	0.00	0.00	61.00	5.15	1.68	0.00
9.00	0.76	0.00	0.00	62.00	5.15	1.68	0.00
10.00	0.93	0.00	0.00	63.00	5.15	1.68	0.00
11.00	1.21	0.00	0.01	64.00	5.15	1.68	0.00
12.00	3.41	0.66	11.64	65.00	5.15	1.68	0.00
13.00	3.98	0.96	2.04	66.00	5.15	1.68	0.00
14.00	4.22	1.10	1.19	67.00	5.15	1.68	0.00
15.00	4.40	1.20	0.92	68.00	5.15	1.68	0.00
16.00	4.53	1.29	0.74	69.00	5.15	1.68	0.00
17.00	4.64	1.35	0.64	70.00	5.15	1.68	0.00
18.00	4.74	1.42	0.57	71.00	5.15	1.68	0.00
19.00	4.83	1.47	0.50	72.00	5.15	1.68	0.00
20.00	4.90	1.52	0.43				
21.00	4.97	1.56	0.40				
22.00	5.03	1.60	0.38				
23.00	5.09	1.64	0.37				
24.00	5.15	1.68	0.36				
25.00	5.15	1.68	0.00				
26.00	5.15	1.68	0.00				
27.00	5.15	1.68	0.00				
28.00	5.15	1.68	0.00				
29.00	5.15	1.68	0.00				
30.00	5.15	1.68	0.00				
31.00	5.15	1.68	0.00				
32.00	5.15	1.68	0.00				
33.00	5.15	1.68	0.00				
34.00	5.15	1.68	0.00				
35.00	5.15	1.68	0.00				
36.00	5.15	1.68	0.00				
37.00	5.15	1.68	0.00				
38.00	5.15	1.68	0.00				
39.00	5.15	1.68	0.00				
40.00	5.15	1.68	0.00				
41.00	5.15	1.68	0.00				
42.00	5.15	1.68	0.00				
43.00	5.15	1.68	0.00				
44.00	5.15	1.68	0.00				
45.00	5.15	1.68	0.00				
46.00	5.15	1.68	0.00				
47.00	5.15	1.68	0.00				
48.00	5.15	1.68	0.00				
49.00	5.15	1.68	0.00				
50.00	5.15	1.68	0.00				
51.00	5.15	1.68	0.00				
52.00	5.15	1.68	0.00				

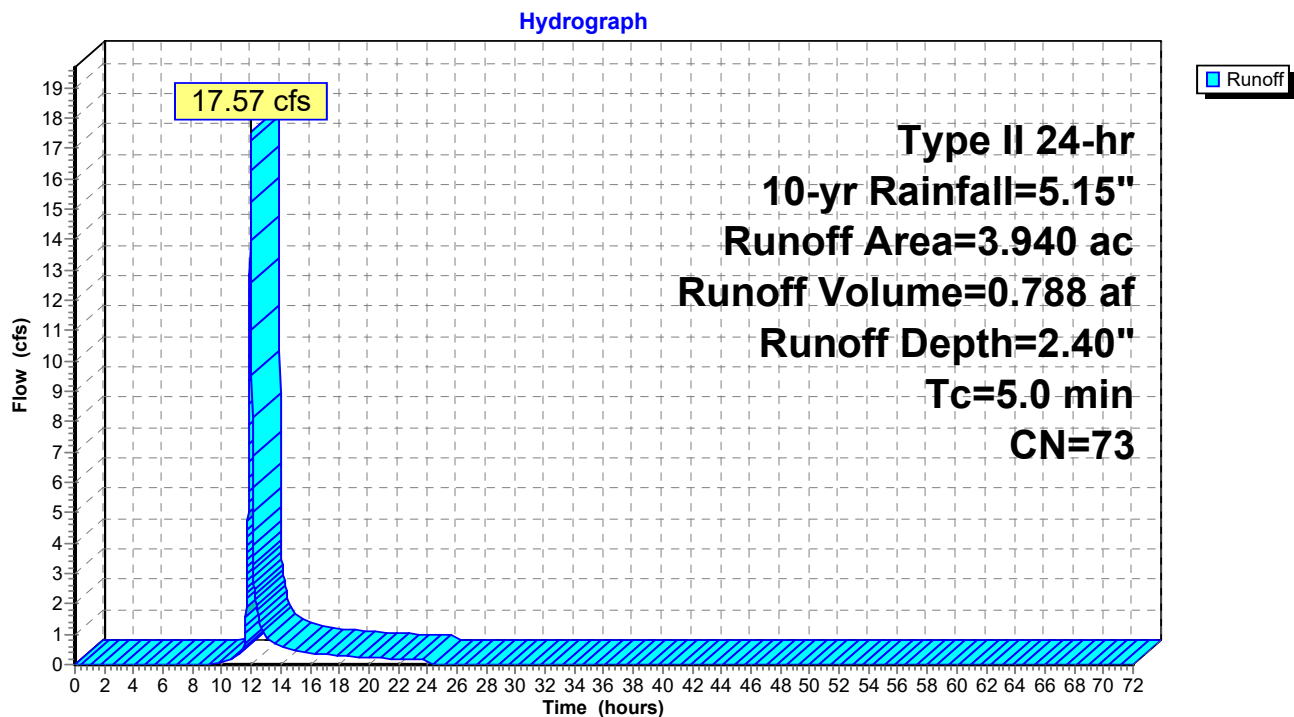
Summary for Subcatchment 2PST: Post-Development to SCM #2

Runoff = 17.57 cfs @ 11.96 hrs, Volume= 0.788 af, Depth= 2.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=5.15"

Area (ac)	CN	Description
* 0.880	98	Proposed Impervious
* 0.020	98	Existing Impervious
2.290	61	>75% Grass cover, Good, HSG B
0.750	80	>75% Grass cover, Good, HSG D
3.940	73	Weighted Average
3.040		77.16% Pervious Area
0.900		22.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 2PST: Post-Development to SCM #2

Hydrograph for Subcatchment 2PST: Post-Development to SCM #2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	5.15	2.40	0.00
1.00	0.05	0.00	0.00	54.00	5.15	2.40	0.00
2.00	0.11	0.00	0.00	55.00	5.15	2.40	0.00
3.00	0.18	0.00	0.00	56.00	5.15	2.40	0.00
4.00	0.25	0.00	0.00	57.00	5.15	2.40	0.00
5.00	0.32	0.00	0.00	58.00	5.15	2.40	0.00
6.00	0.41	0.00	0.00	59.00	5.15	2.40	0.00
7.00	0.51	0.00	0.00	60.00	5.15	2.40	0.00
8.00	0.62	0.00	0.00	61.00	5.15	2.40	0.00
9.00	0.76	0.00	0.00	62.00	5.15	2.40	0.00
10.00	0.93	0.01	0.07	63.00	5.15	2.40	0.00
11.00	1.21	0.05	0.29	64.00	5.15	2.40	0.00
12.00	3.41	1.12	15.25	65.00	5.15	2.40	0.00
13.00	3.98	1.51	0.95	66.00	5.15	2.40	0.00
14.00	4.22	1.69	0.58	67.00	5.15	2.40	0.00
15.00	4.40	1.82	0.47	68.00	5.15	2.40	0.00
16.00	4.53	1.92	0.36	69.00	5.15	2.40	0.00
17.00	4.64	2.00	0.32	70.00	5.15	2.40	0.00
18.00	4.74	2.08	0.29	71.00	5.15	2.40	0.00
19.00	4.83	2.15	0.25	72.00	5.15	2.40	0.00
20.00	4.90	2.20	0.21				
21.00	4.97	2.26	0.20				
22.00	5.03	2.31	0.19				
23.00	5.09	2.35	0.19				
24.00	5.15	2.40	0.18				
25.00	5.15	2.40	0.00				
26.00	5.15	2.40	0.00				
27.00	5.15	2.40	0.00				
28.00	5.15	2.40	0.00				
29.00	5.15	2.40	0.00				
30.00	5.15	2.40	0.00				
31.00	5.15	2.40	0.00				
32.00	5.15	2.40	0.00				
33.00	5.15	2.40	0.00				
34.00	5.15	2.40	0.00				
35.00	5.15	2.40	0.00				
36.00	5.15	2.40	0.00				
37.00	5.15	2.40	0.00				
38.00	5.15	2.40	0.00				
39.00	5.15	2.40	0.00				
40.00	5.15	2.40	0.00				
41.00	5.15	2.40	0.00				
42.00	5.15	2.40	0.00				
43.00	5.15	2.40	0.00				
44.00	5.15	2.40	0.00				
45.00	5.15	2.40	0.00				
46.00	5.15	2.40	0.00				
47.00	5.15	2.40	0.00				
48.00	5.15	2.40	0.00				
49.00	5.15	2.40	0.00				
50.00	5.15	2.40	0.00				
51.00	5.15	2.40	0.00				
52.00	5.15	2.40	0.00				

Summary for Subcatchment 2S: Bypass to POI #2

Runoff = 13.66 cfs @ 12.08 hrs, Volume= 0.900 af, Depth= 1.83"

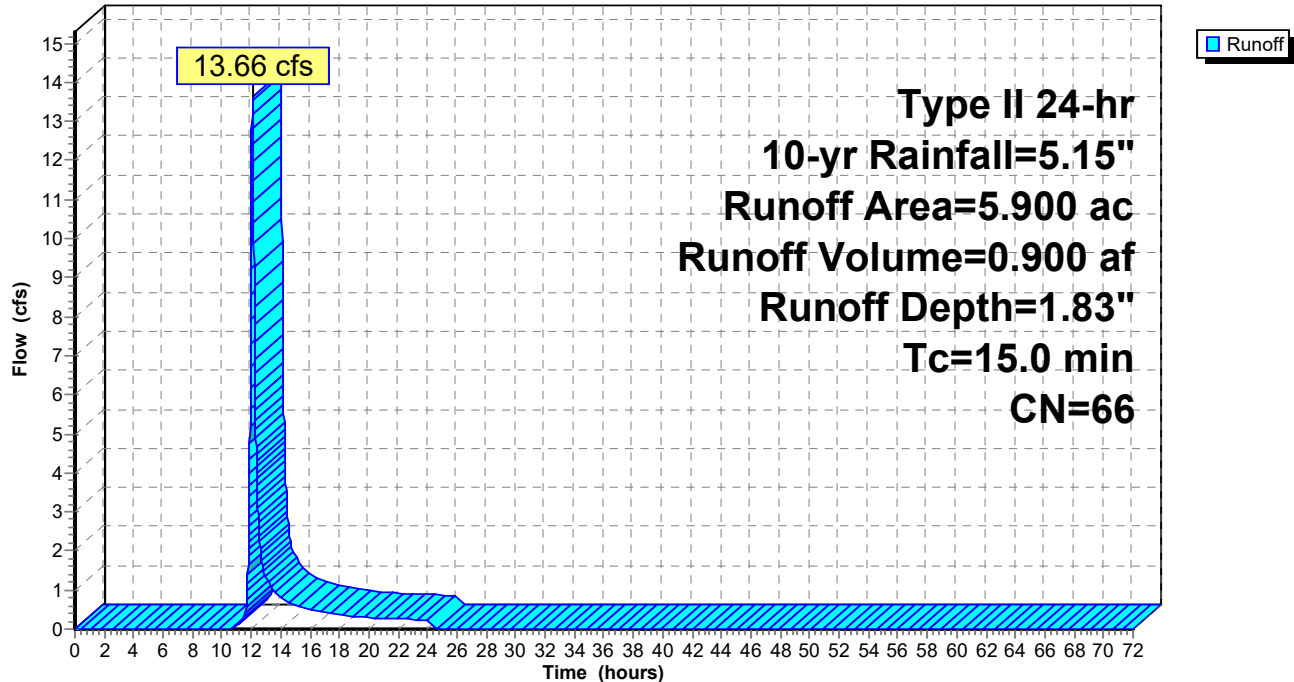
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=5.15"

Area (ac)	CN	Description
* 0.650	98	Existing Impervious
4.740	61	>75% Grass cover, Good, HSG B
0.280	80	>75% Grass cover, Good, HSG D
0.180	55	Woods, Good, HSG B
0.050	77	Woods, Good, HSG D
5.900	66	Weighted Average
5.250		88.98% Pervious Area
0.650		11.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry,

Subcatchment 2S: Bypass to POI #2

Hydrograph



Hydrograph for Subcatchment 2S: Bypass to POI #2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	5.15	1.83	0.00
1.00	0.05	0.00	0.00	54.00	5.15	1.83	0.00
2.00	0.11	0.00	0.00	55.00	5.15	1.83	0.00
3.00	0.18	0.00	0.00	56.00	5.15	1.83	0.00
4.00	0.25	0.00	0.00	57.00	5.15	1.83	0.00
5.00	0.32	0.00	0.00	58.00	5.15	1.83	0.00
6.00	0.41	0.00	0.00	59.00	5.15	1.83	0.00
7.00	0.51	0.00	0.00	60.00	5.15	1.83	0.00
8.00	0.62	0.00	0.00	61.00	5.15	1.83	0.00
9.00	0.76	0.00	0.00	62.00	5.15	1.83	0.00
10.00	0.93	0.00	0.00	63.00	5.15	1.83	0.00
11.00	1.21	0.01	0.07	64.00	5.15	1.83	0.00
12.00	3.41	0.75	10.59	65.00	5.15	1.83	0.00
13.00	3.98	1.07	1.32	66.00	5.15	1.83	0.00
14.00	4.22	1.22	0.78	67.00	5.15	1.83	0.00
15.00	4.40	1.33	0.61	68.00	5.15	1.83	0.00
16.00	4.53	1.42	0.48	69.00	5.15	1.83	0.00
17.00	4.64	1.49	0.42	70.00	5.15	1.83	0.00
18.00	4.74	1.56	0.38	71.00	5.15	1.83	0.00
19.00	4.83	1.61	0.33	72.00	5.15	1.83	0.00
20.00	4.90	1.66	0.28				
21.00	4.97	1.71	0.26				
22.00	5.03	1.75	0.25				
23.00	5.09	1.79	0.24				
24.00	5.15	1.83	0.23				
25.00	5.15	1.83	0.00				
26.00	5.15	1.83	0.00				
27.00	5.15	1.83	0.00				
28.00	5.15	1.83	0.00				
29.00	5.15	1.83	0.00				
30.00	5.15	1.83	0.00				
31.00	5.15	1.83	0.00				
32.00	5.15	1.83	0.00				
33.00	5.15	1.83	0.00				
34.00	5.15	1.83	0.00				
35.00	5.15	1.83	0.00				
36.00	5.15	1.83	0.00				
37.00	5.15	1.83	0.00				
38.00	5.15	1.83	0.00				
39.00	5.15	1.83	0.00				
40.00	5.15	1.83	0.00				
41.00	5.15	1.83	0.00				
42.00	5.15	1.83	0.00				
43.00	5.15	1.83	0.00				
44.00	5.15	1.83	0.00				
45.00	5.15	1.83	0.00				
46.00	5.15	1.83	0.00				
47.00	5.15	1.83	0.00				
48.00	5.15	1.83	0.00				
49.00	5.15	1.83	0.00				
50.00	5.15	1.83	0.00				
51.00	5.15	1.83	0.00				
52.00	5.15	1.83	0.00				

Summary for Subcatchment 3PRE: Pre-Development to POI #3

Runoff = 12.13 cfs @ 12.03 hrs, Volume= 0.685 af, Depth= 2.75"

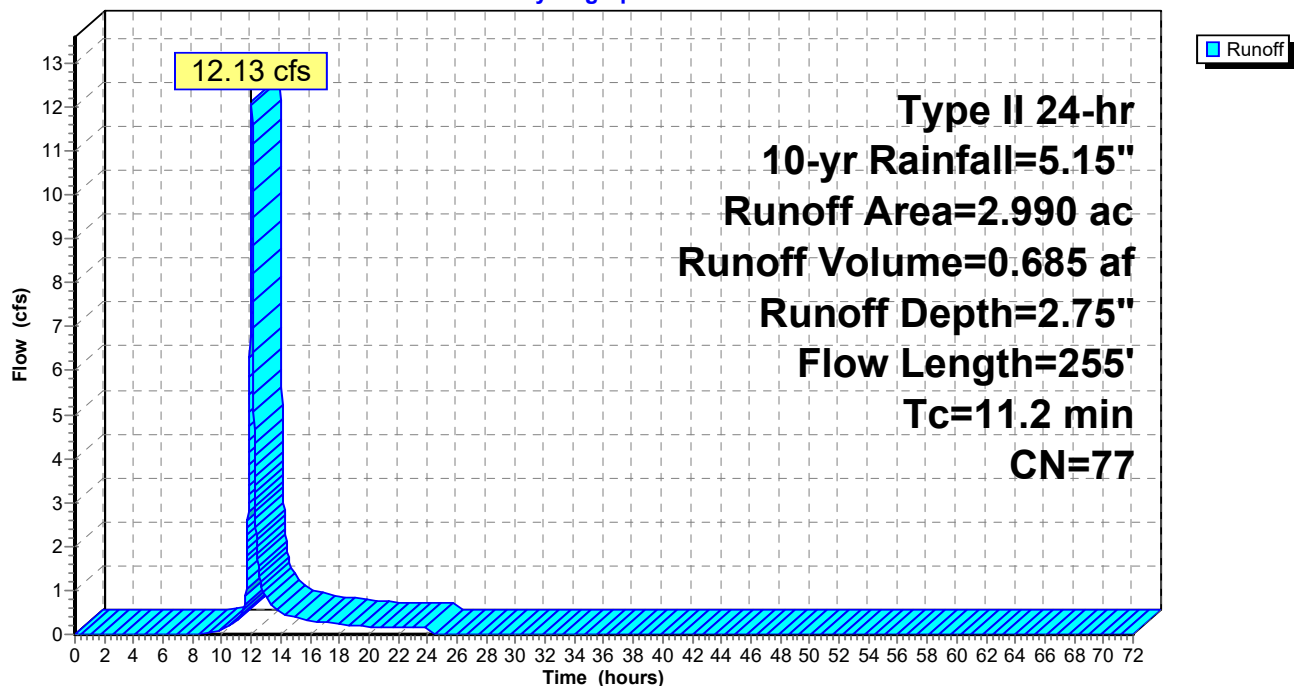
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=5.15"

Area (ac)	CN	Description
2.610	77	Woods, Good, HSG D
0.380	80	>75% Grass cover, Good, HSG D
2.990	77	Weighted Average
2.990		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	100	0.0360	0.16		Sheet Flow, Grass: Dense n= 0.240 P2= 3.53"
0.5	155	0.0860	4.72		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
11.2	255	Total			

Subcatchment 3PRE: Pre-Development to POI #3

Hydrograph



Hydrograph for Subcatchment 3PRE: Pre-Development to POI #3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	5.15	2.75	0.00
1.00	0.05	0.00	0.00	54.00	5.15	2.75	0.00
2.00	0.11	0.00	0.00	55.00	5.15	2.75	0.00
3.00	0.18	0.00	0.00	56.00	5.15	2.75	0.00
4.00	0.25	0.00	0.00	57.00	5.15	2.75	0.00
5.00	0.32	0.00	0.00	58.00	5.15	2.75	0.00
6.00	0.41	0.00	0.00	59.00	5.15	2.75	0.00
7.00	0.51	0.00	0.00	60.00	5.15	2.75	0.00
8.00	0.62	0.00	0.00	61.00	5.15	2.75	0.00
9.00	0.76	0.01	0.04	62.00	5.15	2.75	0.00
10.00	0.93	0.03	0.10	63.00	5.15	2.75	0.00
11.00	1.21	0.10	0.29	64.00	5.15	2.75	0.00
12.00	3.41	1.37	11.55	65.00	5.15	2.75	0.00
13.00	3.98	1.79	0.84	66.00	5.15	2.75	0.00
14.00	4.22	1.99	0.50	67.00	5.15	2.75	0.00
15.00	4.40	2.13	0.39	68.00	5.15	2.75	0.00
16.00	4.53	2.24	0.31	69.00	5.15	2.75	0.00
17.00	4.64	2.33	0.27	70.00	5.15	2.75	0.00
18.00	4.74	2.41	0.24	71.00	5.15	2.75	0.00
19.00	4.83	2.48	0.20	72.00	5.15	2.75	0.00
20.00	4.90	2.54	0.17				
21.00	4.97	2.60	0.16				
22.00	5.03	2.65	0.16				
23.00	5.09	2.70	0.15				
24.00	5.15	2.75	0.15				
25.00	5.15	2.75	0.00				
26.00	5.15	2.75	0.00				
27.00	5.15	2.75	0.00				
28.00	5.15	2.75	0.00				
29.00	5.15	2.75	0.00				
30.00	5.15	2.75	0.00				
31.00	5.15	2.75	0.00				
32.00	5.15	2.75	0.00				
33.00	5.15	2.75	0.00				
34.00	5.15	2.75	0.00				
35.00	5.15	2.75	0.00				
36.00	5.15	2.75	0.00				
37.00	5.15	2.75	0.00				
38.00	5.15	2.75	0.00				
39.00	5.15	2.75	0.00				
40.00	5.15	2.75	0.00				
41.00	5.15	2.75	0.00				
42.00	5.15	2.75	0.00				
43.00	5.15	2.75	0.00				
44.00	5.15	2.75	0.00				
45.00	5.15	2.75	0.00				
46.00	5.15	2.75	0.00				
47.00	5.15	2.75	0.00				
48.00	5.15	2.75	0.00				
49.00	5.15	2.75	0.00				
50.00	5.15	2.75	0.00				
51.00	5.15	2.75	0.00				
52.00	5.15	2.75	0.00				

Summary for Subcatchment 3PST: Post-Development to POI #3

Runoff = 0.83 cfs @ 11.96 hrs, Volume= 0.038 af, Depth= 3.02"

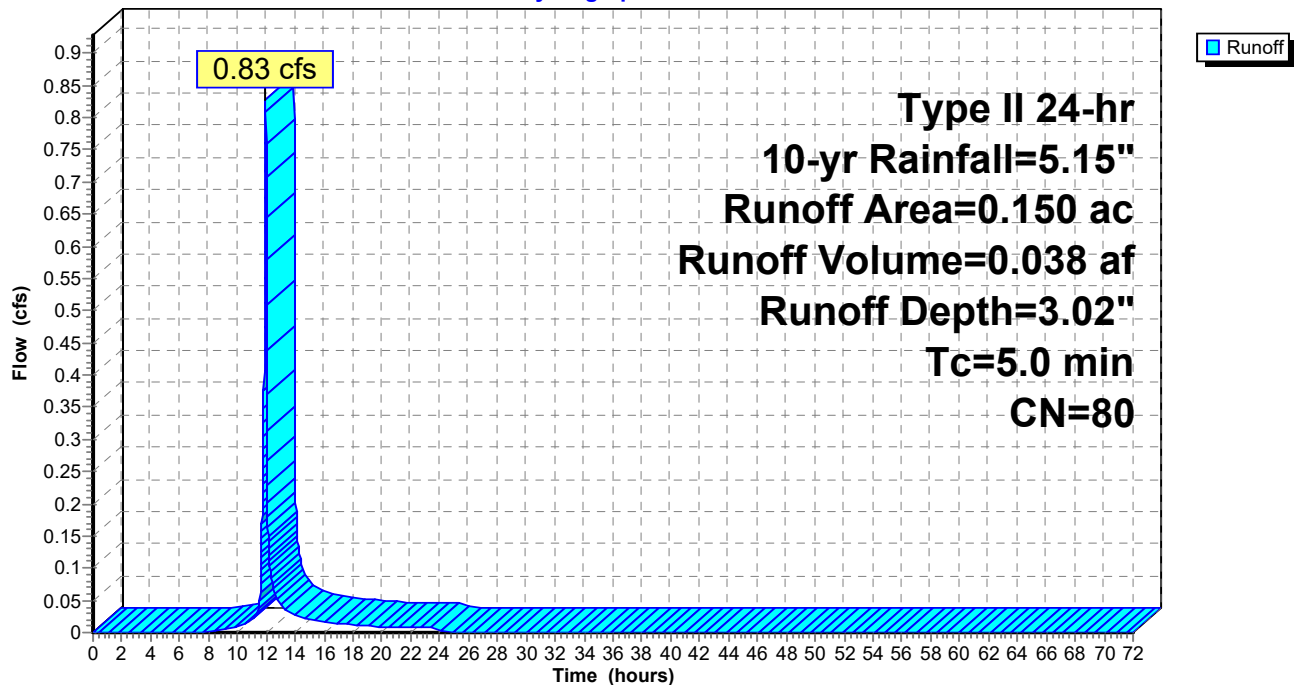
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=5.15"

Area (ac)	CN	Description
0.020	98	Paved roads w/curbs & sewers, HSG B
0.130	77	Woods, Good, HSG D
0.150	80	Weighted Average
0.130		86.67% Pervious Area
0.020		13.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 3PST: Post-Development to POI #3

Hydrograph



Hydrograph for Subcatchment 3PST: Post-Development to POI #3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	5.15	3.02	0.00
1.00	0.05	0.00	0.00	54.00	5.15	3.02	0.00
2.00	0.11	0.00	0.00	55.00	5.15	3.02	0.00
3.00	0.18	0.00	0.00	56.00	5.15	3.02	0.00
4.00	0.25	0.00	0.00	57.00	5.15	3.02	0.00
5.00	0.32	0.00	0.00	58.00	5.15	3.02	0.00
6.00	0.41	0.00	0.00	59.00	5.15	3.02	0.00
7.00	0.51	0.00	0.00	60.00	5.15	3.02	0.00
8.00	0.62	0.01	0.00	61.00	5.15	3.02	0.00
9.00	0.76	0.02	0.00	62.00	5.15	3.02	0.00
10.00	0.93	0.06	0.01	63.00	5.15	3.02	0.00
11.00	1.21	0.16	0.02	64.00	5.15	3.02	0.00
12.00	3.41	1.57	0.71	65.00	5.15	3.02	0.00
13.00	3.98	2.02	0.04	66.00	5.15	3.02	0.00
14.00	4.22	2.23	0.03	67.00	5.15	3.02	0.00
15.00	4.40	2.37	0.02	68.00	5.15	3.02	0.00
16.00	4.53	2.49	0.02	69.00	5.15	3.02	0.00
17.00	4.64	2.58	0.01	70.00	5.15	3.02	0.00
18.00	4.74	2.67	0.01	71.00	5.15	3.02	0.00
19.00	4.83	2.74	0.01	72.00	5.15	3.02	0.00
20.00	4.90	2.81	0.01				
21.00	4.97	2.87	0.01				
22.00	5.03	2.92	0.01				
23.00	5.09	2.97	0.01				
24.00	5.15	3.02	0.01				
25.00	5.15	3.02	0.00				
26.00	5.15	3.02	0.00				
27.00	5.15	3.02	0.00				
28.00	5.15	3.02	0.00				
29.00	5.15	3.02	0.00				
30.00	5.15	3.02	0.00				
31.00	5.15	3.02	0.00				
32.00	5.15	3.02	0.00				
33.00	5.15	3.02	0.00				
34.00	5.15	3.02	0.00				
35.00	5.15	3.02	0.00				
36.00	5.15	3.02	0.00				
37.00	5.15	3.02	0.00				
38.00	5.15	3.02	0.00				
39.00	5.15	3.02	0.00				
40.00	5.15	3.02	0.00				
41.00	5.15	3.02	0.00				
42.00	5.15	3.02	0.00				
43.00	5.15	3.02	0.00				
44.00	5.15	3.02	0.00				
45.00	5.15	3.02	0.00				
46.00	5.15	3.02	0.00				
47.00	5.15	3.02	0.00				
48.00	5.15	3.02	0.00				
49.00	5.15	3.02	0.00				
50.00	5.15	3.02	0.00				
51.00	5.15	3.02	0.00				
52.00	5.15	3.02	0.00				

Summary for Pond 2P: SCM #2

Inflow Area = 3.940 ac, 22.84% Impervious, Inflow Depth = 2.40" for 10-yr event
 Inflow = 17.57 cfs @ 11.96 hrs, Volume= 0.788 af
 Outflow = 0.38 cfs @ 15.80 hrs, Volume= 0.666 af, Atten= 98%, Lag= 230.1 min
 Primary = 0.38 cfs @ 15.80 hrs, Volume= 0.666 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 716.16' @ 15.80 hrs Surf.Area= 12,192 sf Storage= 22,360 cf

Plug-Flow detention time= 1,054.4 min calculated for 0.666 af (85% of inflow)
 Center-of-Mass det. time= 983.1 min (1,817.5 - 834.3)

Volume	Invert	Avail.Storage	Storage Description
#1	713.50'	81,212 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
713.50	2,258	0	0
714.00	4,670	1,732	1,732
715.00	10,425	7,548	9,280
716.00	11,945	11,185	20,465
717.00	13,515	12,730	33,195
718.00	15,145	14,330	47,525
719.00	16,830	15,988	63,512
720.00	18,570	17,700	81,212

Device	Routing	Invert	Outlet Devices
#1	Primary	711.50'	24.0" Round Outlet Pipe L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 711.50' / 711.30' S= 0.0050 ' S= 0.0050 ' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	713.50'	Filter Bed Head (feet) 0.00 1.00 2.00 3.00 4.00 5.00 Disch. (cfs) 0.000 0.055 0.077 0.098 0.120 0.142
#3	Device 1	715.50'	4.0" Vert. Orifice C= 0.600
#4	Device 1	717.50'	48.0" x 48.0" Horiz. Top of OCS C= 0.600 Limited to weir flow at low heads
#5	Secondary	718.50'	20.0' long x 10.0' breadth Emergency Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.39 cfs @ 15.80 hrs HW=716.16' (Free Discharge)

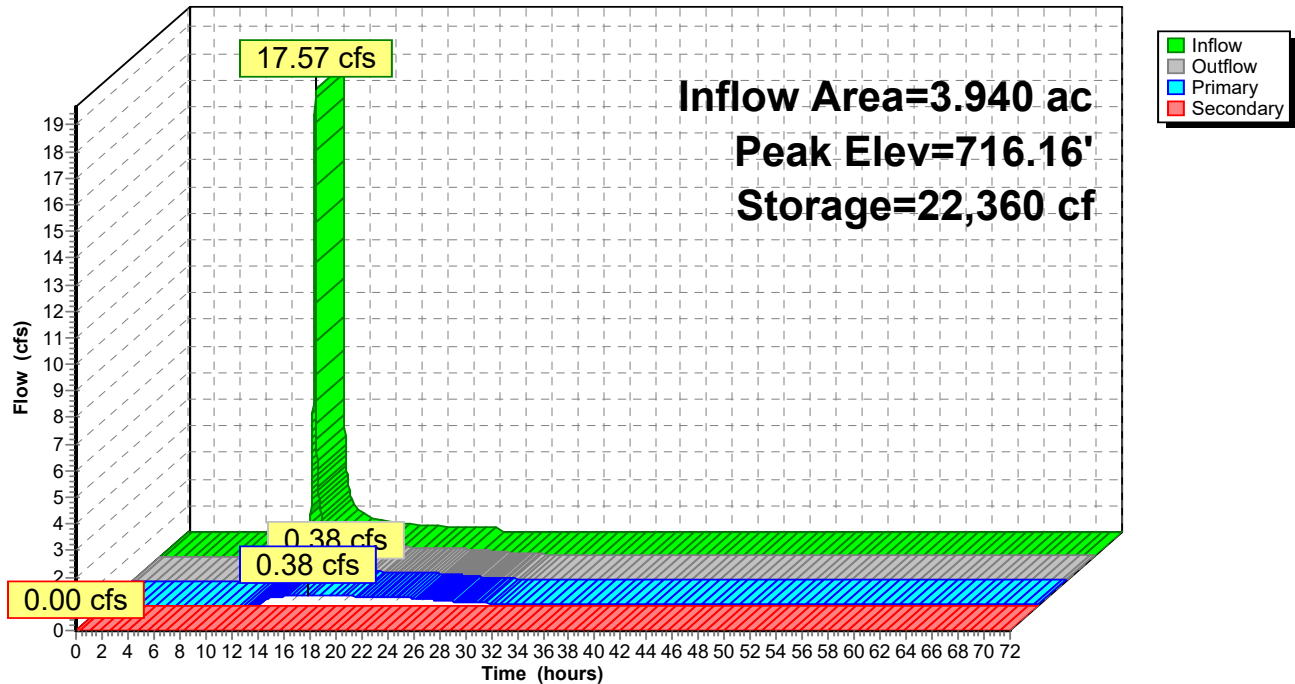
- 1=Outlet Pipe (Passes 0.39 cfs of 28.93 cfs potential flow)
- 2=Filter Bed (Custom Controls 0.09 cfs)
- 3=Orifice (Orifice Controls 0.29 cfs @ 3.37 fps)
- 4=Top of OCS (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=713.50' (Free Discharge)

- 5=Emergency Spillway (Controls 0.00 cfs)

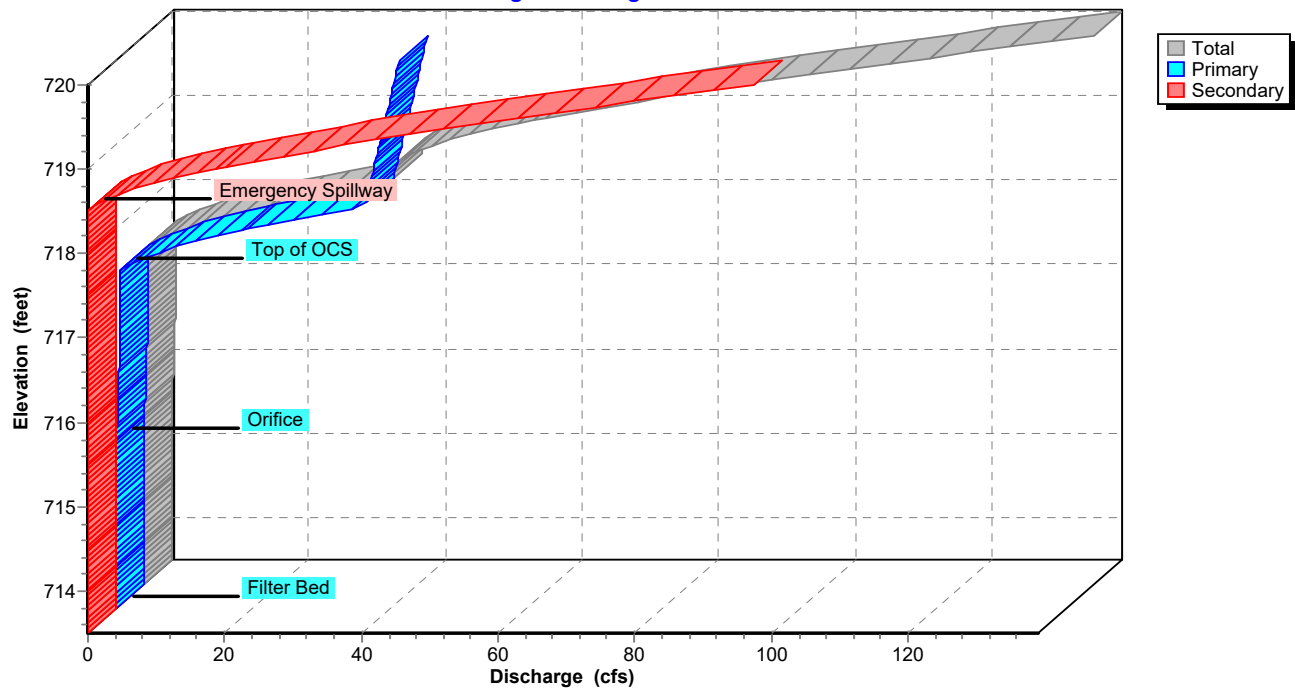
Pond 2P: SCM #2

Hydrograph



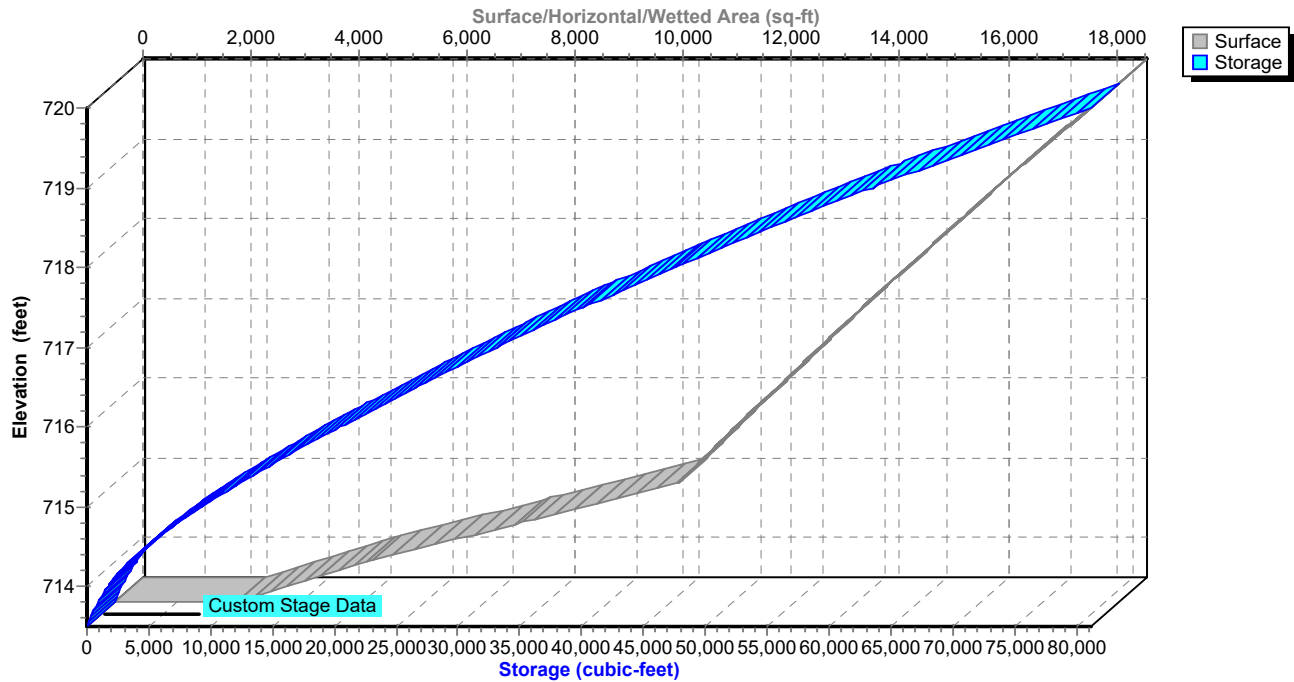
Pond 2P: SCM #2

Stage-Discharge



Pond 2P: SCM #2

Stage-Area-Storage



Hydrograph for Pond 2P: SCM #2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	713.50	0.00	0.00	0.00
2.00	0.00	0	713.50	0.00	0.00	0.00
4.00	0.00	0	713.50	0.00	0.00	0.00
6.00	0.00	0	713.50	0.00	0.00	0.00
8.00	0.00	0	713.50	0.00	0.00	0.00
10.00	0.07	112	713.55	0.00	0.00	0.00
12.00	15.25	12,849	715.33	0.07	0.07	0.00
14.00	0.58	21,734	716.11	0.37	0.37	0.00
16.00	0.36	22,353	716.16	0.38	0.38	0.00
18.00	0.29	21,940	716.12	0.37	0.37	0.00
20.00	0.21	21,116	716.05	0.35	0.35	0.00
22.00	0.19	20,149	715.97	0.32	0.32	0.00
24.00	0.18	19,299	715.90	0.29	0.29	0.00
26.00	0.00	17,560	715.75	0.20	0.20	0.00
28.00	0.00	16,379	715.65	0.13	0.13	0.00
30.00	0.00	15,579	715.58	0.09	0.09	0.00
32.00	0.00	14,953	715.52	0.08	0.08	0.00
34.00	0.00	14,396	715.47	0.08	0.08	0.00
36.00	0.00	13,850	715.43	0.08	0.08	0.00
38.00	0.00	13,311	715.38	0.07	0.07	0.00
40.00	0.00	12,780	715.33	0.07	0.07	0.00
42.00	0.00	12,257	715.28	0.07	0.07	0.00
44.00	0.00	11,741	715.23	0.07	0.07	0.00
46.00	0.00	11,233	715.18	0.07	0.07	0.00
48.00	0.00	10,732	715.14	0.07	0.07	0.00
50.00	0.00	10,239	715.09	0.07	0.07	0.00
52.00	0.00	9,753	715.05	0.07	0.07	0.00
54.00	0.00	9,274	715.00	0.07	0.07	0.00
56.00	0.00	8,803	714.95	0.06	0.06	0.00
58.00	0.00	8,338	714.91	0.06	0.06	0.00
60.00	0.00	7,882	714.86	0.06	0.06	0.00
62.00	0.00	7,432	714.81	0.06	0.06	0.00
64.00	0.00	6,990	714.76	0.06	0.06	0.00
66.00	0.00	6,556	714.72	0.06	0.06	0.00
68.00	0.00	6,130	714.67	0.06	0.06	0.00
70.00	0.00	5,711	714.62	0.06	0.06	0.00
72.00	0.00	5,301	714.57	0.06	0.06	0.00

Stage-Discharge for Pond 2P: SCM #2

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
713.50	0.00	0.00	0.00	718.80	46.27	37.97	8.30
713.60	0.01	0.01	0.00	718.90	51.22	38.27	12.95
713.70	0.01	0.01	0.00	719.00	57.16	38.57	18.60
713.80	0.02	0.02	0.00	719.10	63.96	38.86	25.10
713.90	0.02	0.02	0.00	719.20	70.72	39.15	31.57
714.00	0.03	0.03	0.00	719.30	77.94	39.45	38.50
714.10	0.03	0.03	0.00	719.40	85.58	39.73	45.85
714.20	0.04	0.04	0.00	719.50	93.62	40.02	53.60
714.30	0.04	0.04	0.00	719.60	102.26	40.31	61.95
714.40	0.05	0.05	0.00	719.70	111.31	40.59	70.72
714.50	0.06	0.06	0.00	719.80	120.32	40.87	79.45
714.60	0.06	0.06	0.00	719.90	129.61	41.15	88.46
714.70	0.06	0.06	0.00	720.00	138.98	41.43	97.55
714.80	0.06	0.06	0.00				
714.90	0.06	0.06	0.00				
715.00	0.07	0.07	0.00				
715.10	0.07	0.07	0.00				
715.20	0.07	0.07	0.00				
715.30	0.07	0.07	0.00				
715.40	0.07	0.07	0.00				
715.50	0.08	0.08	0.00				
715.60	0.10	0.10	0.00				
715.70	0.16	0.16	0.00				
715.80	0.24	0.24	0.00				
715.90	0.29	0.29	0.00				
716.00	0.33	0.33	0.00				
716.10	0.37	0.37	0.00				
716.20	0.40	0.40	0.00				
716.30	0.43	0.43	0.00				
716.40	0.46	0.46	0.00				
716.50	0.48	0.48	0.00				
716.60	0.51	0.51	0.00				
716.70	0.53	0.53	0.00				
716.80	0.55	0.55	0.00				
716.90	0.57	0.57	0.00				
717.00	0.59	0.59	0.00				
717.10	0.61	0.61	0.00				
717.20	0.63	0.63	0.00				
717.30	0.65	0.65	0.00				
717.40	0.67	0.67	0.00				
717.50	0.69	0.69	0.00				
717.60	2.36	2.36	0.00				
717.70	5.40	5.40	0.00				
717.80	9.34	9.34	0.00				
717.90	13.99	13.99	0.00				
718.00	19.27	19.27	0.00				
718.10	25.10	25.10	0.00				
718.20	31.45	31.45	0.00				
718.30	36.43	36.43	0.00				
718.40	36.74	36.74	0.00				
718.50	37.05	37.05	0.00				
718.60	38.93	37.36	1.57				
718.70	42.12	37.67	4.45				

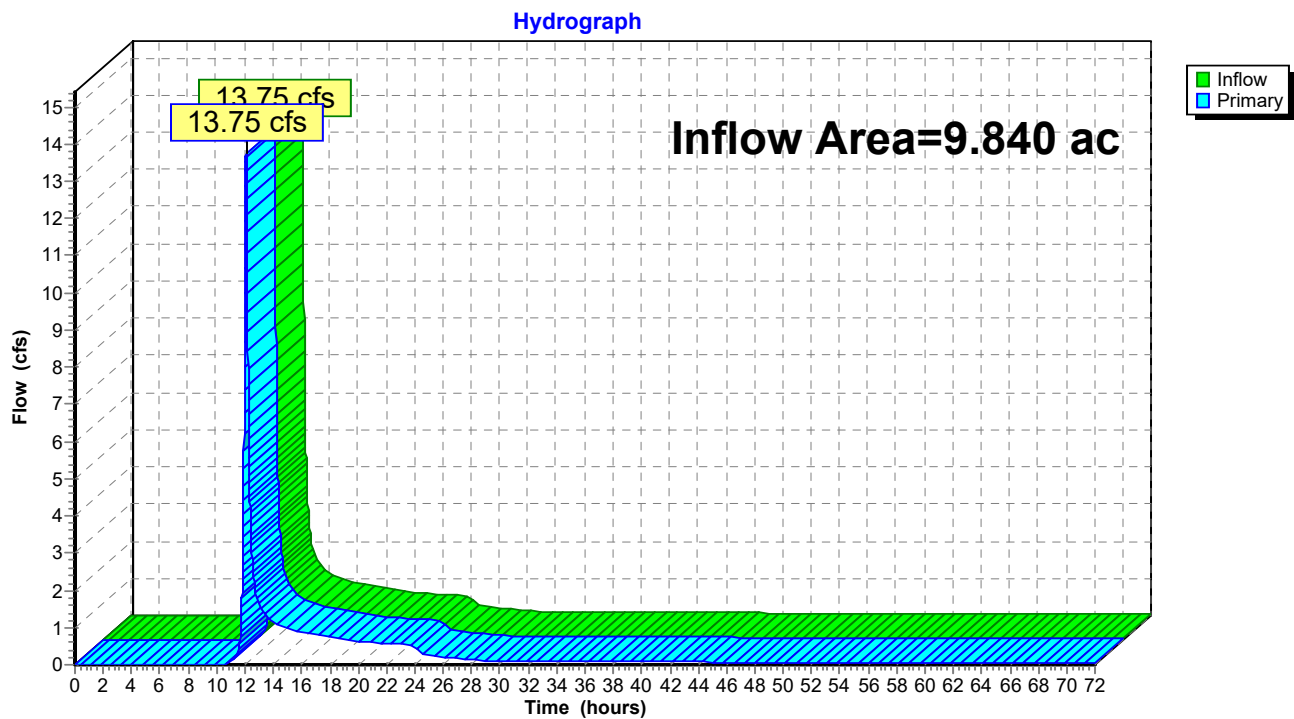
Stage-Area-Storage for Pond 2P: SCM #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
713.50	2,258	0	718.80	16,493	60,180
713.60	2,740	250	718.90	16,661	61,837
713.70	3,223	548	719.00	16,830	63,512
713.80	3,705	894	719.10	17,004	65,204
713.90	4,188	1,289	719.20	17,178	66,913
714.00	4,670	1,732	719.30	17,352	68,639
714.10	5,246	2,228	719.40	17,526	70,383
714.20	5,821	2,781	719.50	17,700	72,145
714.30	6,396	3,392	719.60	17,874	73,923
714.40	6,972	4,060	719.70	18,048	75,719
714.50	7,548	4,786	719.80	18,222	77,533
714.60	8,123	5,570	719.90	18,396	79,364
714.70	8,699	6,411	720.00	18,570	81,212
714.80	9,274	7,310			
714.90	9,849	8,266			
715.00	10,425	9,280			
715.10	10,577	10,330			
715.20	10,729	11,395			
715.30	10,881	12,475			
715.40	11,033	13,571			
715.50	11,185	14,682			
715.60	11,337	15,808			
715.70	11,489	16,949			
715.80	11,641	18,106			
715.90	11,793	19,278			
716.00	11,945	20,465			
716.10	12,102	21,667			
716.20	12,259	22,885			
716.30	12,416	24,119			
716.40	12,573	25,368			
716.50	12,730	26,633			
716.60	12,887	27,914			
716.70	13,044	29,211			
716.80	13,201	30,523			
716.90	13,358	31,851			
717.00	13,515	33,195			
717.10	13,678	34,554			
717.20	13,841	35,930			
717.30	14,004	37,322			
717.40	14,167	38,731			
717.50	14,330	40,156			
717.60	14,493	41,597			
717.70	14,656	43,054			
717.80	14,819	44,528			
717.90	14,982	46,018			
718.00	15,145	47,525			
718.10	15,314	49,047			
718.20	15,482	50,587			
718.30	15,650	52,144			
718.40	15,819	53,717			
718.50	15,988	55,308			
718.60	16,156	56,915			
718.70	16,325	58,539			

Summary for Link 2L: Total Post-Development to POI #2

Inflow Area = 9.840 ac, 15.75% Impervious, Inflow Depth > 1.91" for 10-yr event
Inflow = 13.75 cfs @ 12.08 hrs, Volume= 1.566 af
Primary = 13.75 cfs @ 12.08 hrs, Volume= 1.566 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 2L: Total Post-Development to POI #2

Hydrograph for Link 2L: Total Post-Development to POI #2

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	53.00	0.07	0.00	0.07
1.00	0.00	0.00	0.00	54.00	0.07	0.00	0.07
2.00	0.00	0.00	0.00	55.00	0.07	0.00	0.07
3.00	0.00	0.00	0.00	56.00	0.06	0.00	0.06
4.00	0.00	0.00	0.00	57.00	0.06	0.00	0.06
5.00	0.00	0.00	0.00	58.00	0.06	0.00	0.06
6.00	0.00	0.00	0.00	59.00	0.06	0.00	0.06
7.00	0.00	0.00	0.00	60.00	0.06	0.00	0.06
8.00	0.00	0.00	0.00	61.00	0.06	0.00	0.06
9.00	0.00	0.00	0.00	62.00	0.06	0.00	0.06
10.00	0.00	0.00	0.00	63.00	0.06	0.00	0.06
11.00	0.09	0.00	0.09	64.00	0.06	0.00	0.06
12.00	10.66	0.00	10.66	65.00	0.06	0.00	0.06
13.00	1.65	0.00	1.65	66.00	0.06	0.00	0.06
14.00	1.15	0.00	1.15	67.00	0.06	0.00	0.06
15.00	0.99	0.00	0.99	68.00	0.06	0.00	0.06
16.00	0.87	0.00	0.87	69.00	0.06	0.00	0.06
17.00	0.80	0.00	0.80	70.00	0.06	0.00	0.06
18.00	0.75	0.00	0.75	71.00	0.06	0.00	0.06
19.00	0.69	0.00	0.69	72.00	0.06	0.00	0.06
20.00	0.63	0.00	0.63				
21.00	0.60	0.00	0.60				
22.00	0.57	0.00	0.57				
23.00	0.55	0.00	0.55				
24.00	0.52	0.00	0.52				
25.00	0.25	0.00	0.25				
26.00	0.20	0.00	0.20				
27.00	0.16	0.00	0.16				
28.00	0.13	0.00	0.13				
29.00	0.11	0.00	0.11				
30.00	0.09	0.00	0.09				
31.00	0.09	0.00	0.09				
32.00	0.08	0.00	0.08				
33.00	0.08	0.00	0.08				
34.00	0.08	0.00	0.08				
35.00	0.08	0.00	0.08				
36.00	0.08	0.00	0.08				
37.00	0.07	0.00	0.07				
38.00	0.07	0.00	0.07				
39.00	0.07	0.00	0.07				
40.00	0.07	0.00	0.07				
41.00	0.07	0.00	0.07				
42.00	0.07	0.00	0.07				
43.00	0.07	0.00	0.07				
44.00	0.07	0.00	0.07				
45.00	0.07	0.00	0.07				
46.00	0.07	0.00	0.07				
47.00	0.07	0.00	0.07				
48.00	0.07	0.00	0.07				
49.00	0.07	0.00	0.07				
50.00	0.07	0.00	0.07				
51.00	0.07	0.00	0.07				
52.00	0.07	0.00	0.07				

Summary for Subcatchment 2PRE: Pre-Development to POI #2

Runoff = 25.64 cfs @ 12.11 hrs, Volume= 1.840 af, Depth= 2.36"

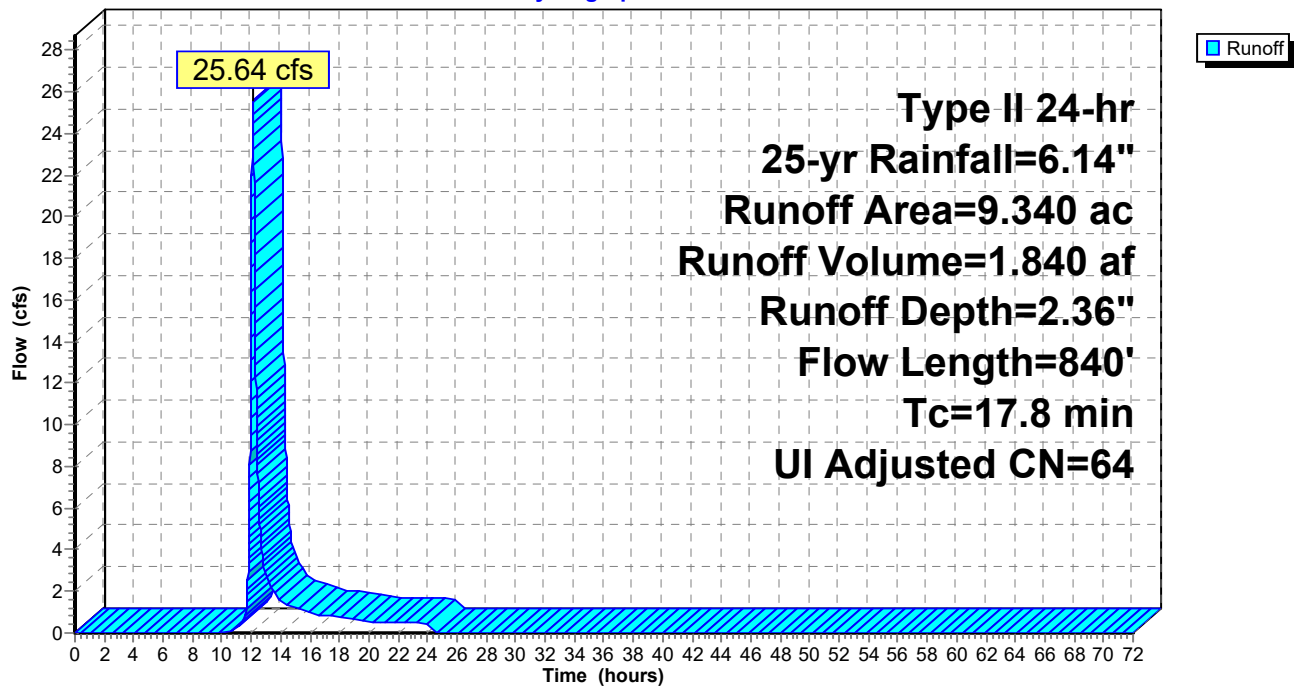
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=6.14"

Area (ac)	CN	Adj	Description
0.590	55		Woods, Good, HSG B
0.700	77		Woods, Good, HSG D
0.750	98		Unconnected roofs, HSG B
0.080	80		>75% Grass cover, Good, HSG D
7.220	61		>75% Grass cover, Good, HSG B
9.340	65	64	Weighted Average, UI Adjusted
8.590			91.97% Pervious Area
0.750			8.03% Impervious Area
0.750			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	100	0.0250	0.13		Sheet Flow, Grass: Dense n= 0.240 P2= 3.53"
5.4	740	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
17.8	840	Total			

Subcatchment 2PRE: Pre-Development to POI #2

Hydrograph



Hydrograph for Subcatchment 2PRE: Pre-Development to POI #2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	6.14	2.36	0.00
1.00	0.06	0.00	0.00	54.00	6.14	2.36	0.00
2.00	0.14	0.00	0.00	55.00	6.14	2.36	0.00
3.00	0.21	0.00	0.00	56.00	6.14	2.36	0.00
4.00	0.29	0.00	0.00	57.00	6.14	2.36	0.00
5.00	0.39	0.00	0.00	58.00	6.14	2.36	0.00
6.00	0.49	0.00	0.00	59.00	6.14	2.36	0.00
7.00	0.61	0.00	0.00	60.00	6.14	2.36	0.00
8.00	0.74	0.00	0.00	61.00	6.14	2.36	0.00
9.00	0.90	0.00	0.00	62.00	6.14	2.36	0.00
10.00	1.11	0.00	0.00	63.00	6.14	2.36	0.00
11.00	1.44	0.02	0.25	64.00	6.14	2.36	0.00
12.00	4.07	1.01	17.60	65.00	6.14	2.36	0.00
13.00	4.74	1.41	2.74	66.00	6.14	2.36	0.00
14.00	5.03	1.60	1.59	67.00	6.14	2.36	0.00
15.00	5.24	1.74	1.22	68.00	6.14	2.36	0.00
16.00	5.40	1.85	0.97	69.00	6.14	2.36	0.00
17.00	5.54	1.94	0.84	70.00	6.14	2.36	0.00
18.00	5.65	2.02	0.75	71.00	6.14	2.36	0.00
19.00	5.76	2.09	0.65	72.00	6.14	2.36	0.00
20.00	5.85	2.15	0.56				
21.00	5.92	2.21	0.52				
22.00	6.00	2.26	0.50				
23.00	6.07	2.31	0.48				
24.00	6.14	2.36	0.46				
25.00	6.14	2.36	0.00				
26.00	6.14	2.36	0.00				
27.00	6.14	2.36	0.00				
28.00	6.14	2.36	0.00				
29.00	6.14	2.36	0.00				
30.00	6.14	2.36	0.00				
31.00	6.14	2.36	0.00				
32.00	6.14	2.36	0.00				
33.00	6.14	2.36	0.00				
34.00	6.14	2.36	0.00				
35.00	6.14	2.36	0.00				
36.00	6.14	2.36	0.00				
37.00	6.14	2.36	0.00				
38.00	6.14	2.36	0.00				
39.00	6.14	2.36	0.00				
40.00	6.14	2.36	0.00				
41.00	6.14	2.36	0.00				
42.00	6.14	2.36	0.00				
43.00	6.14	2.36	0.00				
44.00	6.14	2.36	0.00				
45.00	6.14	2.36	0.00				
46.00	6.14	2.36	0.00				
47.00	6.14	2.36	0.00				
48.00	6.14	2.36	0.00				
49.00	6.14	2.36	0.00				
50.00	6.14	2.36	0.00				
51.00	6.14	2.36	0.00				
52.00	6.14	2.36	0.00				

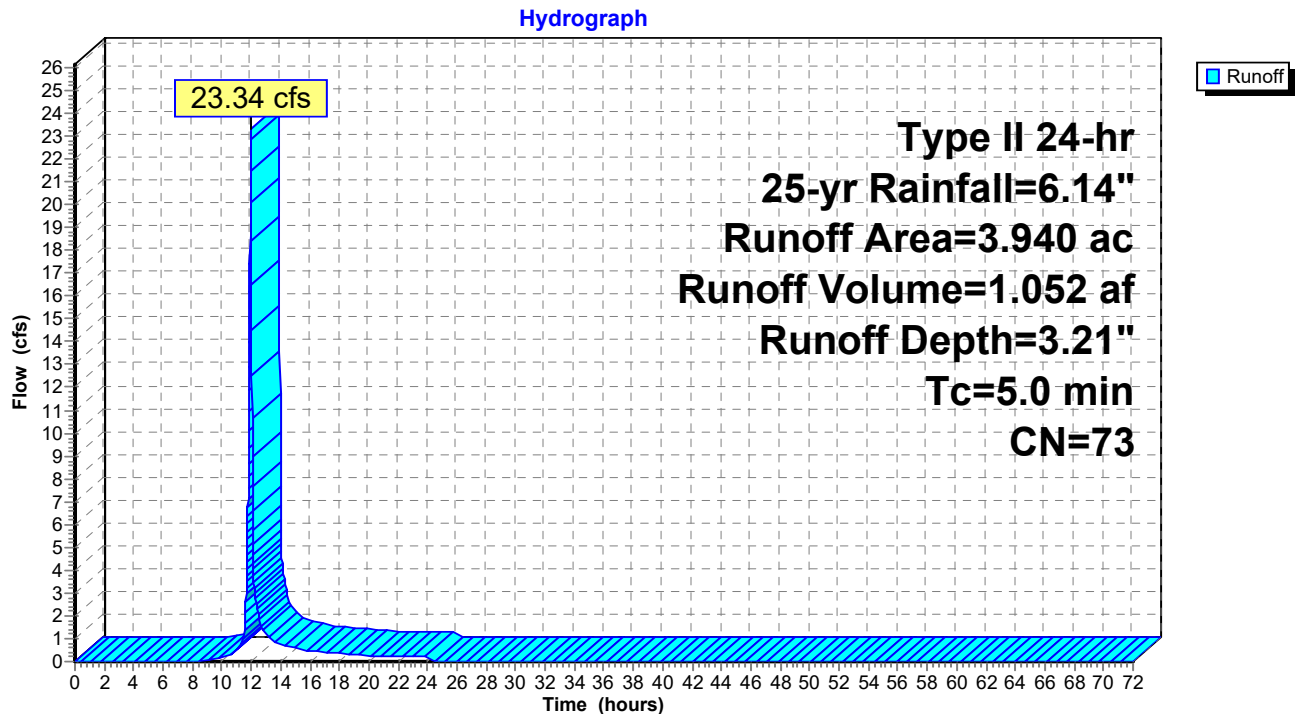
Summary for Subcatchment 2PST: Post-Development to SCM #2

Runoff = 23.34 cfs @ 11.96 hrs, Volume= 1.052 af, Depth= 3.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=6.14"

Area (ac)	CN	Description
* 0.880	98	Proposed Impervious
* 0.020	98	Existing Impervious
2.290	61	>75% Grass cover, Good, HSG B
0.750	80	>75% Grass cover, Good, HSG D
3.940	73	Weighted Average
3.040		77.16% Pervious Area
0.900		22.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 2PST: Post-Development to SCM #2

Hydrograph for Subcatchment 2PST: Post-Development to SCM #2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	6.14	3.21	0.00
1.00	0.06	0.00	0.00	54.00	6.14	3.21	0.00
2.00	0.14	0.00	0.00	55.00	6.14	3.21	0.00
3.00	0.21	0.00	0.00	56.00	6.14	3.21	0.00
4.00	0.29	0.00	0.00	57.00	6.14	3.21	0.00
5.00	0.39	0.00	0.00	58.00	6.14	3.21	0.00
6.00	0.49	0.00	0.00	59.00	6.14	3.21	0.00
7.00	0.61	0.00	0.00	60.00	6.14	3.21	0.00
8.00	0.74	0.00	0.00	61.00	6.14	3.21	0.00
9.00	0.90	0.01	0.06	62.00	6.14	3.21	0.00
10.00	1.11	0.03	0.16	63.00	6.14	3.21	0.00
11.00	1.44	0.11	0.48	64.00	6.14	3.21	0.00
12.00	4.07	1.58	20.08	65.00	6.14	3.21	0.00
13.00	4.74	2.08	1.22	66.00	6.14	3.21	0.00
14.00	5.03	2.31	0.74	67.00	6.14	3.21	0.00
15.00	5.24	2.47	0.59	68.00	6.14	3.21	0.00
16.00	5.40	2.60	0.46	69.00	6.14	3.21	0.00
17.00	5.54	2.71	0.41	70.00	6.14	3.21	0.00
18.00	5.65	2.80	0.36	71.00	6.14	3.21	0.00
19.00	5.76	2.89	0.31	72.00	6.14	3.21	0.00
20.00	5.85	2.96	0.26				
21.00	5.92	3.03	0.25				
22.00	6.00	3.09	0.24				
23.00	6.07	3.15	0.23				
24.00	6.14	3.21	0.22				
25.00	6.14	3.21	0.00				
26.00	6.14	3.21	0.00				
27.00	6.14	3.21	0.00				
28.00	6.14	3.21	0.00				
29.00	6.14	3.21	0.00				
30.00	6.14	3.21	0.00				
31.00	6.14	3.21	0.00				
32.00	6.14	3.21	0.00				
33.00	6.14	3.21	0.00				
34.00	6.14	3.21	0.00				
35.00	6.14	3.21	0.00				
36.00	6.14	3.21	0.00				
37.00	6.14	3.21	0.00				
38.00	6.14	3.21	0.00				
39.00	6.14	3.21	0.00				
40.00	6.14	3.21	0.00				
41.00	6.14	3.21	0.00				
42.00	6.14	3.21	0.00				
43.00	6.14	3.21	0.00				
44.00	6.14	3.21	0.00				
45.00	6.14	3.21	0.00				
46.00	6.14	3.21	0.00				
47.00	6.14	3.21	0.00				
48.00	6.14	3.21	0.00				
49.00	6.14	3.21	0.00				
50.00	6.14	3.21	0.00				
51.00	6.14	3.21	0.00				
52.00	6.14	3.21	0.00				

Summary for Subcatchment 2S: Bypass to POI #2

Runoff = 19.29 cfs @ 12.08 hrs, Volume= 1.251 af, Depth= 2.54"

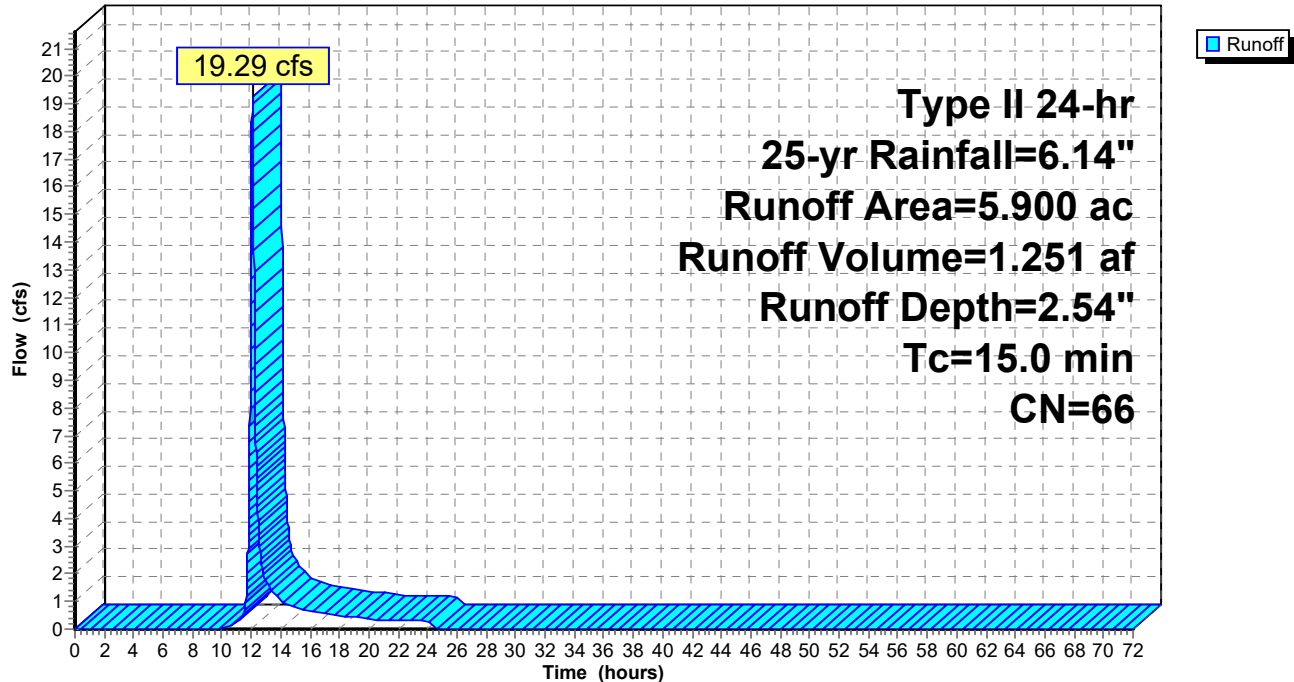
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=6.14"

Area (ac)	CN	Description
* 0.650	98	Existing Impervious
4.740	61	>75% Grass cover, Good, HSG B
0.280	80	>75% Grass cover, Good, HSG D
0.180	55	Woods, Good, HSG B
0.050	77	Woods, Good, HSG D
5.900	66	Weighted Average
5.250		88.98% Pervious Area
0.650		11.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry,

Subcatchment 2S: Bypass to POI #2

Hydrograph



Hydrograph for Subcatchment 2S: Bypass to POI #2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	6.14	2.54	0.00
1.00	0.06	0.00	0.00	54.00	6.14	2.54	0.00
2.00	0.14	0.00	0.00	55.00	6.14	2.54	0.00
3.00	0.21	0.00	0.00	56.00	6.14	2.54	0.00
4.00	0.29	0.00	0.00	57.00	6.14	2.54	0.00
5.00	0.39	0.00	0.00	58.00	6.14	2.54	0.00
6.00	0.49	0.00	0.00	59.00	6.14	2.54	0.00
7.00	0.61	0.00	0.00	60.00	6.14	2.54	0.00
8.00	0.74	0.00	0.00	61.00	6.14	2.54	0.00
9.00	0.90	0.00	0.00	62.00	6.14	2.54	0.00
10.00	1.11	0.00	0.02	63.00	6.14	2.54	0.00
11.00	1.44	0.03	0.26	64.00	6.14	2.54	0.00
12.00	4.07	1.13	15.38	65.00	6.14	2.54	0.00
13.00	4.74	1.55	1.75	66.00	6.14	2.54	0.00
14.00	5.03	1.75	1.03	67.00	6.14	2.54	0.00
15.00	5.24	1.89	0.80	68.00	6.14	2.54	0.00
16.00	5.40	2.01	0.63	69.00	6.14	2.54	0.00
17.00	5.54	2.10	0.55	70.00	6.14	2.54	0.00
18.00	5.65	2.19	0.49	71.00	6.14	2.54	0.00
19.00	5.76	2.26	0.43	72.00	6.14	2.54	0.00
20.00	5.85	2.33	0.36				
21.00	5.92	2.38	0.34				
22.00	6.00	2.44	0.33				
23.00	6.07	2.49	0.32				
24.00	6.14	2.54	0.30				
25.00	6.14	2.54	0.00				
26.00	6.14	2.54	0.00				
27.00	6.14	2.54	0.00				
28.00	6.14	2.54	0.00				
29.00	6.14	2.54	0.00				
30.00	6.14	2.54	0.00				
31.00	6.14	2.54	0.00				
32.00	6.14	2.54	0.00				
33.00	6.14	2.54	0.00				
34.00	6.14	2.54	0.00				
35.00	6.14	2.54	0.00				
36.00	6.14	2.54	0.00				
37.00	6.14	2.54	0.00				
38.00	6.14	2.54	0.00				
39.00	6.14	2.54	0.00				
40.00	6.14	2.54	0.00				
41.00	6.14	2.54	0.00				
42.00	6.14	2.54	0.00				
43.00	6.14	2.54	0.00				
44.00	6.14	2.54	0.00				
45.00	6.14	2.54	0.00				
46.00	6.14	2.54	0.00				
47.00	6.14	2.54	0.00				
48.00	6.14	2.54	0.00				
49.00	6.14	2.54	0.00				
50.00	6.14	2.54	0.00				
51.00	6.14	2.54	0.00				
52.00	6.14	2.54	0.00				

Summary for Subcatchment 3PRE: Pre-Development to POI #3

Runoff = 15.82 cfs @ 12.03 hrs, Volume= 0.897 af, Depth= 3.60"

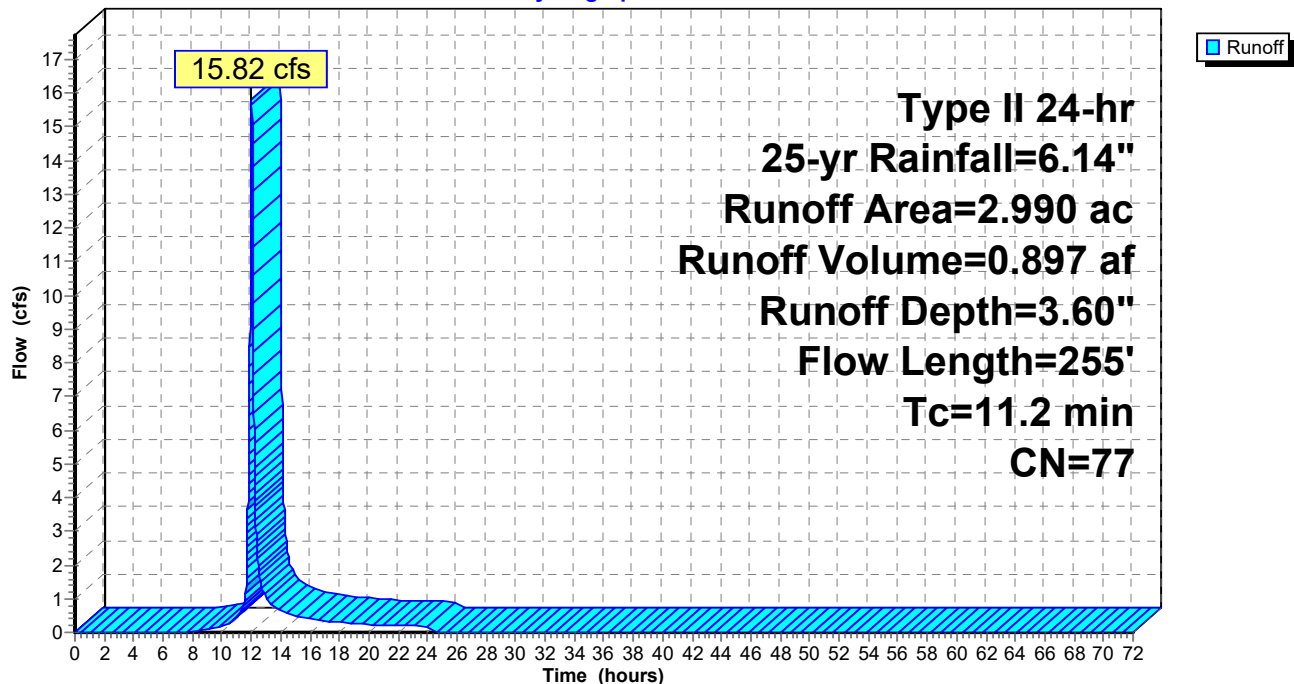
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=6.14"

Area (ac)	CN	Description
2.610	77	Woods, Good, HSG D
0.380	80	>75% Grass cover, Good, HSG D
2.990	77	Weighted Average
2.990		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	100	0.0360	0.16		Sheet Flow, Grass: Dense n= 0.240 P2= 3.53"
0.5	155	0.0860	4.72		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
11.2	255	Total			

Subcatchment 3PRE: Pre-Development to POI #3

Hydrograph



Hydrograph for Subcatchment 3PRE: Pre-Development to POI #3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	6.14	3.60	0.00
1.00	0.06	0.00	0.00	54.00	6.14	3.60	0.00
2.00	0.14	0.00	0.00	55.00	6.14	3.60	0.00
3.00	0.21	0.00	0.00	56.00	6.14	3.60	0.00
4.00	0.29	0.00	0.00	57.00	6.14	3.60	0.00
5.00	0.39	0.00	0.00	58.00	6.14	3.60	0.00
6.00	0.49	0.00	0.00	59.00	6.14	3.60	0.00
7.00	0.61	0.00	0.00	60.00	6.14	3.60	0.00
8.00	0.74	0.01	0.03	61.00	6.14	3.60	0.00
9.00	0.90	0.03	0.09	62.00	6.14	3.60	0.00
10.00	1.11	0.08	0.18	63.00	6.14	3.60	0.00
11.00	1.44	0.19	0.44	64.00	6.14	3.60	0.00
12.00	4.07	1.87	15.14	65.00	6.14	3.60	0.00
13.00	4.74	2.41	1.06	66.00	6.14	3.60	0.00
14.00	5.03	2.65	0.63	67.00	6.14	3.60	0.00
15.00	5.24	2.83	0.49	68.00	6.14	3.60	0.00
16.00	5.40	2.96	0.38	69.00	6.14	3.60	0.00
17.00	5.54	3.08	0.33	70.00	6.14	3.60	0.00
18.00	5.65	3.18	0.29	71.00	6.14	3.60	0.00
19.00	5.76	3.27	0.26	72.00	6.14	3.60	0.00
20.00	5.85	3.34	0.22				
21.00	5.92	3.41	0.20				
22.00	6.00	3.48	0.20				
23.00	6.07	3.54	0.19				
24.00	6.14	3.60	0.18				
25.00	6.14	3.60	0.00				
26.00	6.14	3.60	0.00				
27.00	6.14	3.60	0.00				
28.00	6.14	3.60	0.00				
29.00	6.14	3.60	0.00				
30.00	6.14	3.60	0.00				
31.00	6.14	3.60	0.00				
32.00	6.14	3.60	0.00				
33.00	6.14	3.60	0.00				
34.00	6.14	3.60	0.00				
35.00	6.14	3.60	0.00				
36.00	6.14	3.60	0.00				
37.00	6.14	3.60	0.00				
38.00	6.14	3.60	0.00				
39.00	6.14	3.60	0.00				
40.00	6.14	3.60	0.00				
41.00	6.14	3.60	0.00				
42.00	6.14	3.60	0.00				
43.00	6.14	3.60	0.00				
44.00	6.14	3.60	0.00				
45.00	6.14	3.60	0.00				
46.00	6.14	3.60	0.00				
47.00	6.14	3.60	0.00				
48.00	6.14	3.60	0.00				
49.00	6.14	3.60	0.00				
50.00	6.14	3.60	0.00				
51.00	6.14	3.60	0.00				
52.00	6.14	3.60	0.00				

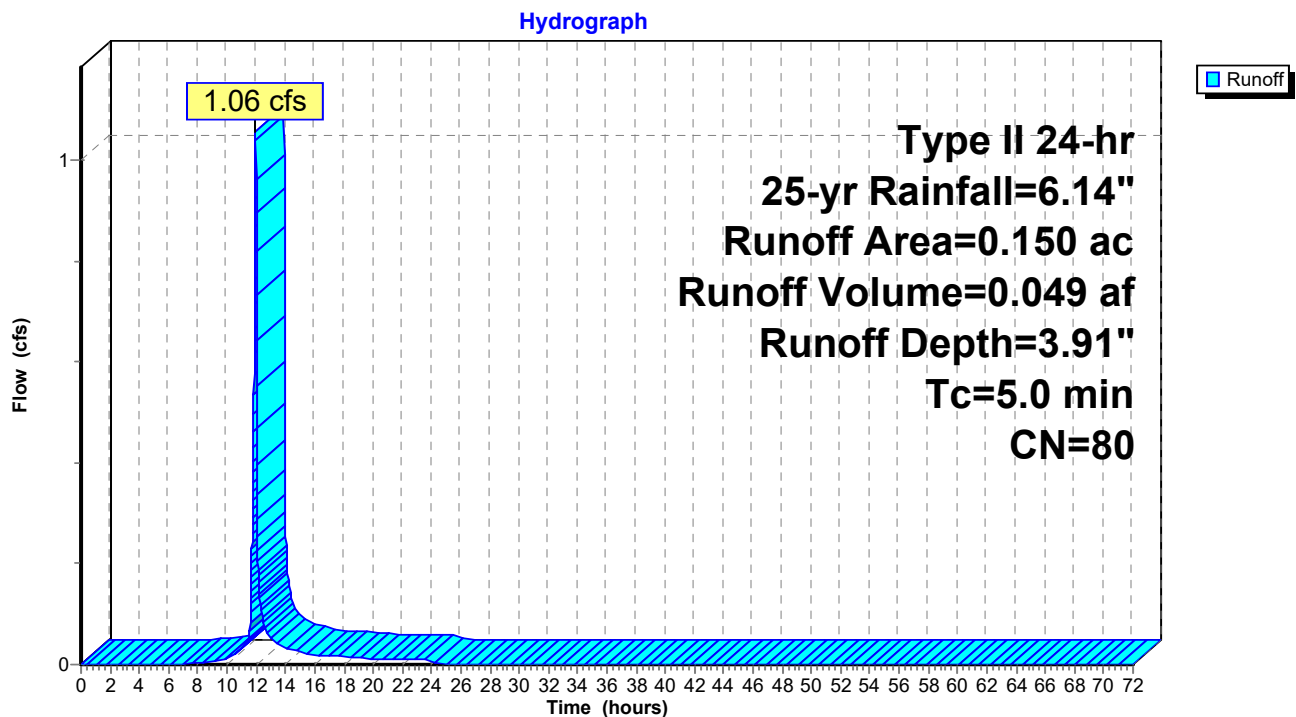
Summary for Subcatchment 3PST: Post-Development to POI #3

Runoff = 1.06 cfs @ 11.96 hrs, Volume= 0.049 af, Depth= 3.91"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-yr Rainfall=6.14"

Area (ac)	CN	Description
0.020	98	Paved roads w/curbs & sewers, HSG B
0.130	77	Woods, Good, HSG D
0.150	80	Weighted Average
0.130		86.67% Pervious Area
0.020		13.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 3PST: Post-Development to POI #3

Hydrograph for Subcatchment 3PST: Post-Development to POI #3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	6.14	3.91	0.00
1.00	0.06	0.00	0.00	54.00	6.14	3.91	0.00
2.00	0.14	0.00	0.00	55.00	6.14	3.91	0.00
3.00	0.21	0.00	0.00	56.00	6.14	3.91	0.00
4.00	0.29	0.00	0.00	57.00	6.14	3.91	0.00
5.00	0.39	0.00	0.00	58.00	6.14	3.91	0.00
6.00	0.49	0.00	0.00	59.00	6.14	3.91	0.00
7.00	0.61	0.00	0.00	60.00	6.14	3.91	0.00
8.00	0.74	0.02	0.00	61.00	6.14	3.91	0.00
9.00	0.90	0.06	0.01	62.00	6.14	3.91	0.00
10.00	1.11	0.12	0.01	63.00	6.14	3.91	0.00
11.00	1.44	0.26	0.03	64.00	6.14	3.91	0.00
12.00	4.07	2.10	0.90	65.00	6.14	3.91	0.00
13.00	4.74	2.67	0.05	66.00	6.14	3.91	0.00
14.00	5.03	2.92	0.03	67.00	6.14	3.91	0.00
15.00	5.24	3.10	0.02	68.00	6.14	3.91	0.00
16.00	5.40	3.25	0.02	69.00	6.14	3.91	0.00
17.00	5.54	3.37	0.02	70.00	6.14	3.91	0.00
18.00	5.65	3.47	0.02	71.00	6.14	3.91	0.00
19.00	5.76	3.56	0.01	72.00	6.14	3.91	0.00
20.00	5.85	3.64	0.01				
21.00	5.92	3.71	0.01				
22.00	6.00	3.78	0.01				
23.00	6.07	3.85	0.01				
24.00	6.14	3.91	0.01				
25.00	6.14	3.91	0.00				
26.00	6.14	3.91	0.00				
27.00	6.14	3.91	0.00				
28.00	6.14	3.91	0.00				
29.00	6.14	3.91	0.00				
30.00	6.14	3.91	0.00				
31.00	6.14	3.91	0.00				
32.00	6.14	3.91	0.00				
33.00	6.14	3.91	0.00				
34.00	6.14	3.91	0.00				
35.00	6.14	3.91	0.00				
36.00	6.14	3.91	0.00				
37.00	6.14	3.91	0.00				
38.00	6.14	3.91	0.00				
39.00	6.14	3.91	0.00				
40.00	6.14	3.91	0.00				
41.00	6.14	3.91	0.00				
42.00	6.14	3.91	0.00				
43.00	6.14	3.91	0.00				
44.00	6.14	3.91	0.00				
45.00	6.14	3.91	0.00				
46.00	6.14	3.91	0.00				
47.00	6.14	3.91	0.00				
48.00	6.14	3.91	0.00				
49.00	6.14	3.91	0.00				
50.00	6.14	3.91	0.00				
51.00	6.14	3.91	0.00				
52.00	6.14	3.91	0.00				

Summary for Pond 2P: SCM #2

Inflow Area = 3.940 ac, 22.84% Impervious, Inflow Depth = 3.21" for 25-yr event
 Inflow = 23.34 cfs @ 11.96 hrs, Volume= 1.052 af
 Outflow = 0.54 cfs @ 15.44 hrs, Volume= 0.913 af, Atten= 98%, Lag= 208.5 min
 Primary = 0.54 cfs @ 15.44 hrs, Volume= 0.913 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 716.73' @ 15.44 hrs Surf.Area= 13,089 sf Storage= 29,589 cf

Plug-Flow detention time= 921.5 min calculated for 0.913 af (87% of inflow)
 Center-of-Mass det. time= 858.1 min (1,684.1 - 826.0)

Volume	Invert	Avail.Storage	Storage Description
#1	713.50'	81,212 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
713.50	2,258	0	0
714.00	4,670	1,732	1,732
715.00	10,425	7,548	9,280
716.00	11,945	11,185	20,465
717.00	13,515	12,730	33,195
718.00	15,145	14,330	47,525
719.00	16,830	15,988	63,512
720.00	18,570	17,700	81,212

Device	Routing	Invert	Outlet Devices
#1	Primary	711.50'	24.0" Round Outlet Pipe L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 711.50' / 711.30' S= 0.0050 ' S= 0.0050 ' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	713.50'	Filter Bed Head (feet) 0.00 1.00 2.00 3.00 4.00 5.00 Disch. (cfs) 0.000 0.055 0.077 0.098 0.120 0.142
#3	Device 1	715.50'	4.0" Vert. Orifice C= 0.600
#4	Device 1	717.50'	48.0" x 48.0" Horiz. Top of OCS C= 0.600 Limited to weir flow at low heads
#5	Secondary	718.50'	20.0' long x 10.0' breadth Emergency Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.54 cfs @ 15.44 hrs HW=716.73' (Free Discharge)

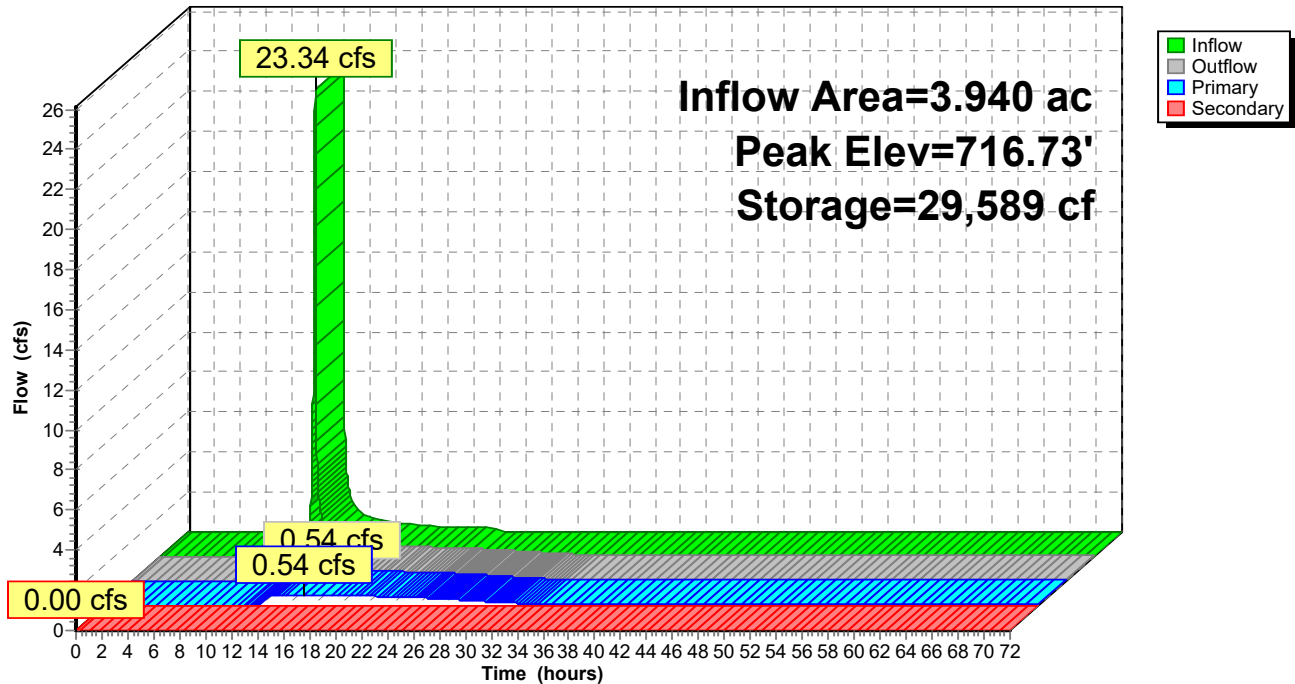
- 1=Outlet Pipe (Passes 0.54 cfs of 31.11 cfs potential flow)
- 2=Filter Bed (Custom Controls 0.10 cfs)
- 3=Orifice (Orifice Controls 0.43 cfs @ 4.96 fps)
- 4=Top of OCS (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=713.50' (Free Discharge)

- 5=Emergency Spillway (Controls 0.00 cfs)

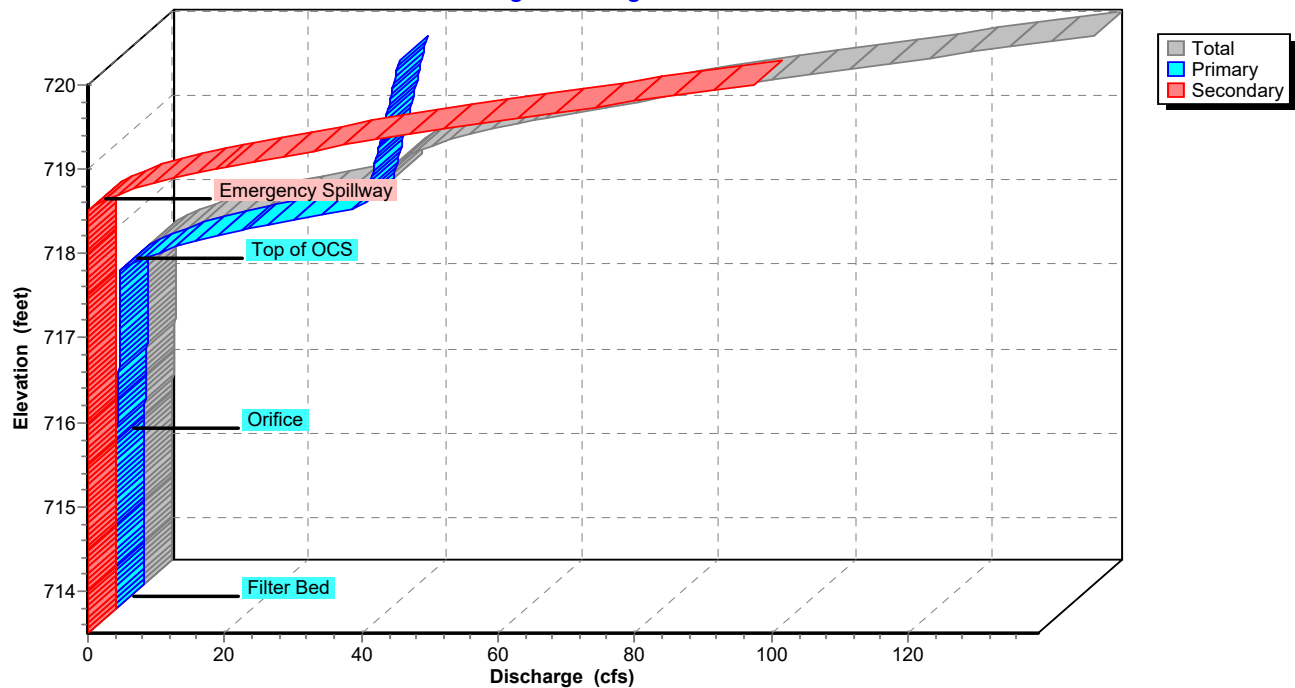
Pond 2P: SCM #2

Hydrograph



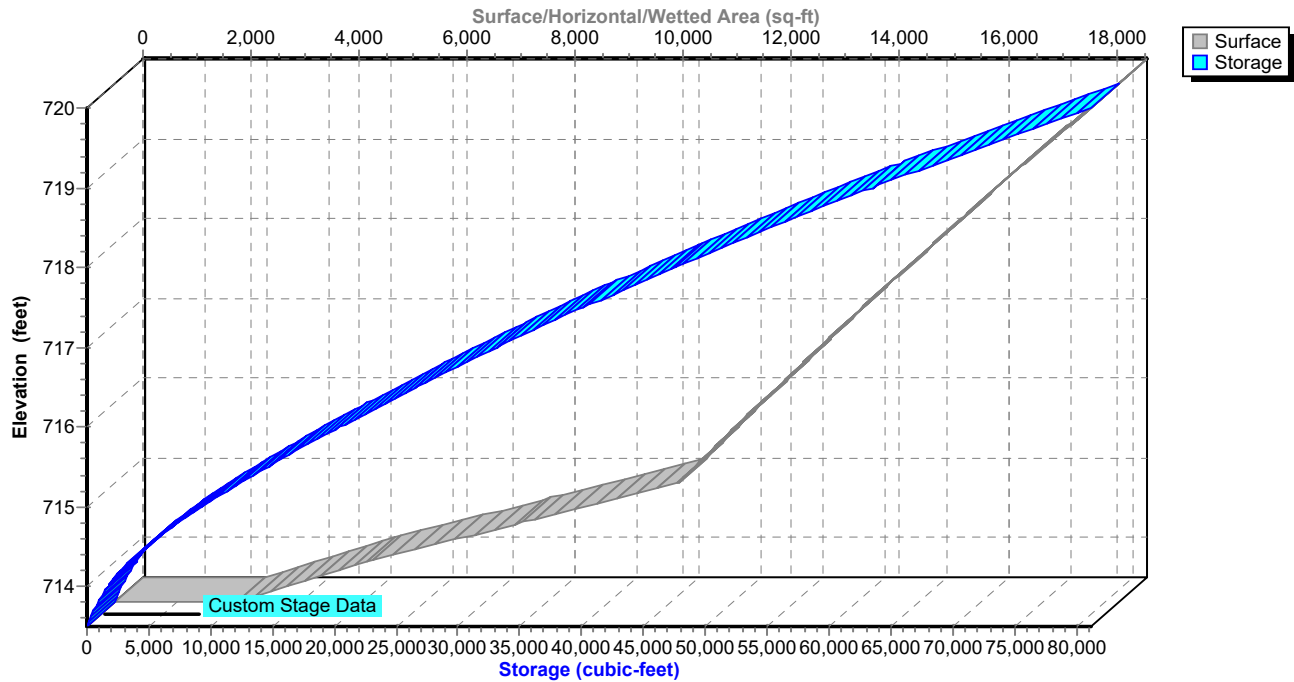
Pond 2P: SCM #2

Stage-Discharge



Pond 2P: SCM #2

Stage-Area-Storage



Hydrograph for Pond 2P: SCM #2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	713.50	0.00	0.00	0.00
2.00	0.00	0	713.50	0.00	0.00	0.00
4.00	0.00	0	713.50	0.00	0.00	0.00
6.00	0.00	0	713.50	0.00	0.00	0.00
8.00	0.00	0	713.50	0.00	0.00	0.00
10.00	0.16	421	713.66	0.01	0.01	0.00
12.00	20.08	18,314	715.82	0.25	0.25	0.00
14.00	0.74	29,094	716.69	0.53	0.53	0.00
16.00	0.46	29,515	716.72	0.53	0.53	0.00
18.00	0.36	28,656	716.66	0.52	0.52	0.00
20.00	0.26	27,260	716.55	0.49	0.49	0.00
22.00	0.24	25,641	716.42	0.46	0.46	0.00
24.00	0.22	24,124	716.30	0.43	0.43	0.00
26.00	0.00	21,352	716.07	0.36	0.36	0.00
28.00	0.00	19,057	715.88	0.28	0.28	0.00
30.00	0.00	17,357	715.74	0.19	0.19	0.00
32.00	0.00	16,249	715.64	0.12	0.12	0.00
34.00	0.00	15,484	715.57	0.09	0.09	0.00
36.00	0.00	14,872	715.52	0.08	0.08	0.00
38.00	0.00	14,318	715.47	0.08	0.08	0.00
40.00	0.00	13,773	715.42	0.08	0.08	0.00
42.00	0.00	13,235	715.37	0.07	0.07	0.00
44.00	0.00	12,705	715.32	0.07	0.07	0.00
46.00	0.00	12,183	715.27	0.07	0.07	0.00
48.00	0.00	11,668	715.23	0.07	0.07	0.00
50.00	0.00	11,161	715.18	0.07	0.07	0.00
52.00	0.00	10,661	715.13	0.07	0.07	0.00
54.00	0.00	10,169	715.08	0.07	0.07	0.00
56.00	0.00	9,684	715.04	0.07	0.07	0.00
58.00	0.00	9,206	714.99	0.07	0.07	0.00
60.00	0.00	8,736	714.95	0.06	0.06	0.00
62.00	0.00	8,273	714.90	0.06	0.06	0.00
64.00	0.00	7,817	714.85	0.06	0.06	0.00
66.00	0.00	7,369	714.81	0.06	0.06	0.00
68.00	0.00	6,928	714.76	0.06	0.06	0.00
70.00	0.00	6,495	714.71	0.06	0.06	0.00
72.00	0.00	6,070	714.66	0.06	0.06	0.00

Stage-Discharge for Pond 2P: SCM #2

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
713.50	0.00	0.00	0.00	718.80	46.27	37.97	8.30
713.60	0.01	0.01	0.00	718.90	51.22	38.27	12.95
713.70	0.01	0.01	0.00	719.00	57.16	38.57	18.60
713.80	0.02	0.02	0.00	719.10	63.96	38.86	25.10
713.90	0.02	0.02	0.00	719.20	70.72	39.15	31.57
714.00	0.03	0.03	0.00	719.30	77.94	39.45	38.50
714.10	0.03	0.03	0.00	719.40	85.58	39.73	45.85
714.20	0.04	0.04	0.00	719.50	93.62	40.02	53.60
714.30	0.04	0.04	0.00	719.60	102.26	40.31	61.95
714.40	0.05	0.05	0.00	719.70	111.31	40.59	70.72
714.50	0.06	0.06	0.00	719.80	120.32	40.87	79.45
714.60	0.06	0.06	0.00	719.90	129.61	41.15	88.46
714.70	0.06	0.06	0.00	720.00	138.98	41.43	97.55
714.80	0.06	0.06	0.00				
714.90	0.06	0.06	0.00				
715.00	0.07	0.07	0.00				
715.10	0.07	0.07	0.00				
715.20	0.07	0.07	0.00				
715.30	0.07	0.07	0.00				
715.40	0.07	0.07	0.00				
715.50	0.08	0.08	0.00				
715.60	0.10	0.10	0.00				
715.70	0.16	0.16	0.00				
715.80	0.24	0.24	0.00				
715.90	0.29	0.29	0.00				
716.00	0.33	0.33	0.00				
716.10	0.37	0.37	0.00				
716.20	0.40	0.40	0.00				
716.30	0.43	0.43	0.00				
716.40	0.46	0.46	0.00				
716.50	0.48	0.48	0.00				
716.60	0.51	0.51	0.00				
716.70	0.53	0.53	0.00				
716.80	0.55	0.55	0.00				
716.90	0.57	0.57	0.00				
717.00	0.59	0.59	0.00				
717.10	0.61	0.61	0.00				
717.20	0.63	0.63	0.00				
717.30	0.65	0.65	0.00				
717.40	0.67	0.67	0.00				
717.50	0.69	0.69	0.00				
717.60	2.36	2.36	0.00				
717.70	5.40	5.40	0.00				
717.80	9.34	9.34	0.00				
717.90	13.99	13.99	0.00				
718.00	19.27	19.27	0.00				
718.10	25.10	25.10	0.00				
718.20	31.45	31.45	0.00				
718.30	36.43	36.43	0.00				
718.40	36.74	36.74	0.00				
718.50	37.05	37.05	0.00				
718.60	38.93	37.36	1.57				
718.70	42.12	37.67	4.45				

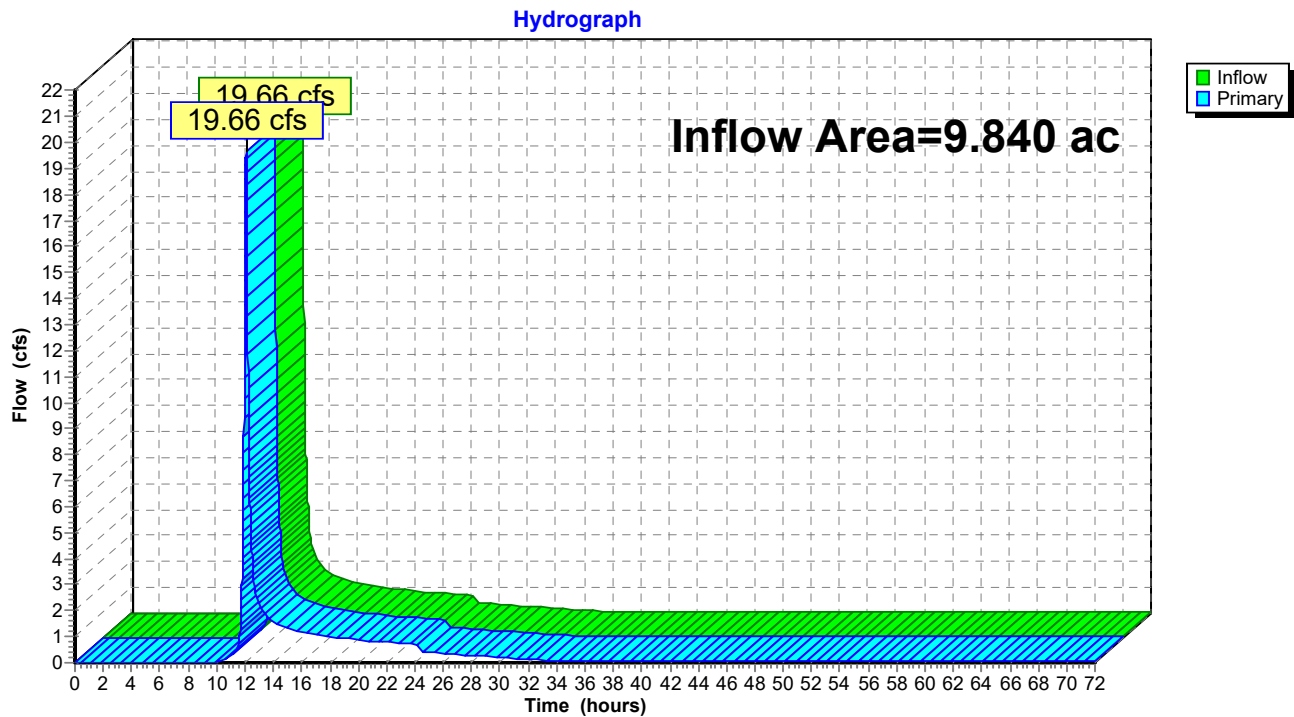
Stage-Area-Storage for Pond 2P: SCM #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
713.50	2,258	0	718.80	16,493	60,180
713.60	2,740	250	718.90	16,661	61,837
713.70	3,223	548	719.00	16,830	63,512
713.80	3,705	894	719.10	17,004	65,204
713.90	4,188	1,289	719.20	17,178	66,913
714.00	4,670	1,732	719.30	17,352	68,639
714.10	5,246	2,228	719.40	17,526	70,383
714.20	5,821	2,781	719.50	17,700	72,145
714.30	6,396	3,392	719.60	17,874	73,923
714.40	6,972	4,060	719.70	18,048	75,719
714.50	7,548	4,786	719.80	18,222	77,533
714.60	8,123	5,570	719.90	18,396	79,364
714.70	8,699	6,411	720.00	18,570	81,212
714.80	9,274	7,310			
714.90	9,849	8,266			
715.00	10,425	9,280			
715.10	10,577	10,330			
715.20	10,729	11,395			
715.30	10,881	12,475			
715.40	11,033	13,571			
715.50	11,185	14,682			
715.60	11,337	15,808			
715.70	11,489	16,949			
715.80	11,641	18,106			
715.90	11,793	19,278			
716.00	11,945	20,465			
716.10	12,102	21,667			
716.20	12,259	22,885			
716.30	12,416	24,119			
716.40	12,573	25,368			
716.50	12,730	26,633			
716.60	12,887	27,914			
716.70	13,044	29,211			
716.80	13,201	30,523			
716.90	13,358	31,851			
717.00	13,515	33,195			
717.10	13,678	34,554			
717.20	13,841	35,930			
717.30	14,004	37,322			
717.40	14,167	38,731			
717.50	14,330	40,156			
717.60	14,493	41,597			
717.70	14,656	43,054			
717.80	14,819	44,528			
717.90	14,982	46,018			
718.00	15,145	47,525			
718.10	15,314	49,047			
718.20	15,482	50,587			
718.30	15,650	52,144			
718.40	15,819	53,717			
718.50	15,988	55,308			
718.60	16,156	56,915			
718.70	16,325	58,539			

Summary for Link 2L: Total Post-Development to POI #2

Inflow Area = 9.840 ac, 15.75% Impervious, Inflow Depth > 2.64" for 25-yr event
Inflow = 19.66 cfs @ 12.08 hrs, Volume= 2.164 af
Primary = 19.66 cfs @ 12.08 hrs, Volume= 2.164 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 2L: Total Post-Development to POI #2

Hydrograph for Link 2L: Total Post-Development to POI #2

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	53.00	0.07	0.00	0.07
1.00	0.00	0.00	0.00	54.00	0.07	0.00	0.07
2.00	0.00	0.00	0.00	55.00	0.07	0.00	0.07
3.00	0.00	0.00	0.00	56.00	0.07	0.00	0.07
4.00	0.00	0.00	0.00	57.00	0.07	0.00	0.07
5.00	0.00	0.00	0.00	58.00	0.07	0.00	0.07
6.00	0.00	0.00	0.00	59.00	0.07	0.00	0.07
7.00	0.00	0.00	0.00	60.00	0.06	0.00	0.06
8.00	0.00	0.00	0.00	61.00	0.06	0.00	0.06
9.00	0.00	0.00	0.00	62.00	0.06	0.00	0.06
10.00	0.02	0.00	0.02	63.00	0.06	0.00	0.06
11.00	0.28	0.00	0.28	64.00	0.06	0.00	0.06
12.00	15.62	0.00	15.62	65.00	0.06	0.00	0.06
13.00	2.25	0.00	2.25	66.00	0.06	0.00	0.06
14.00	1.56	0.00	1.56	67.00	0.06	0.00	0.06
15.00	1.34	0.00	1.34	68.00	0.06	0.00	0.06
16.00	1.17	0.00	1.17	69.00	0.06	0.00	0.06
17.00	1.08	0.00	1.08	70.00	0.06	0.00	0.06
18.00	1.01	0.00	1.01	71.00	0.06	0.00	0.06
19.00	0.93	0.00	0.93	72.00	0.06	0.00	0.06
20.00	0.86	0.00	0.86				
21.00	0.82	0.00	0.82				
22.00	0.79	0.00	0.79				
23.00	0.76	0.00	0.76				
24.00	0.73	0.00	0.73				
25.00	0.39	0.00	0.39				
26.00	0.36	0.00	0.36				
27.00	0.32	0.00	0.32				
28.00	0.28	0.00	0.28				
29.00	0.24	0.00	0.24				
30.00	0.19	0.00	0.19				
31.00	0.15	0.00	0.15				
32.00	0.12	0.00	0.12				
33.00	0.11	0.00	0.11				
34.00	0.09	0.00	0.09				
35.00	0.08	0.00	0.08				
36.00	0.08	0.00	0.08				
37.00	0.08	0.00	0.08				
38.00	0.08	0.00	0.08				
39.00	0.08	0.00	0.08				
40.00	0.08	0.00	0.08				
41.00	0.07	0.00	0.07				
42.00	0.07	0.00	0.07				
43.00	0.07	0.00	0.07				
44.00	0.07	0.00	0.07				
45.00	0.07	0.00	0.07				
46.00	0.07	0.00	0.07				
47.00	0.07	0.00	0.07				
48.00	0.07	0.00	0.07				
49.00	0.07	0.00	0.07				
50.00	0.07	0.00	0.07				
51.00	0.07	0.00	0.07				
52.00	0.07	0.00	0.07				

Summary for Subcatchment 2PRE: Pre-Development to POI #2

Runoff = 32.31 cfs @ 12.11 hrs, Volume= 2.295 af, Depth= 2.95"

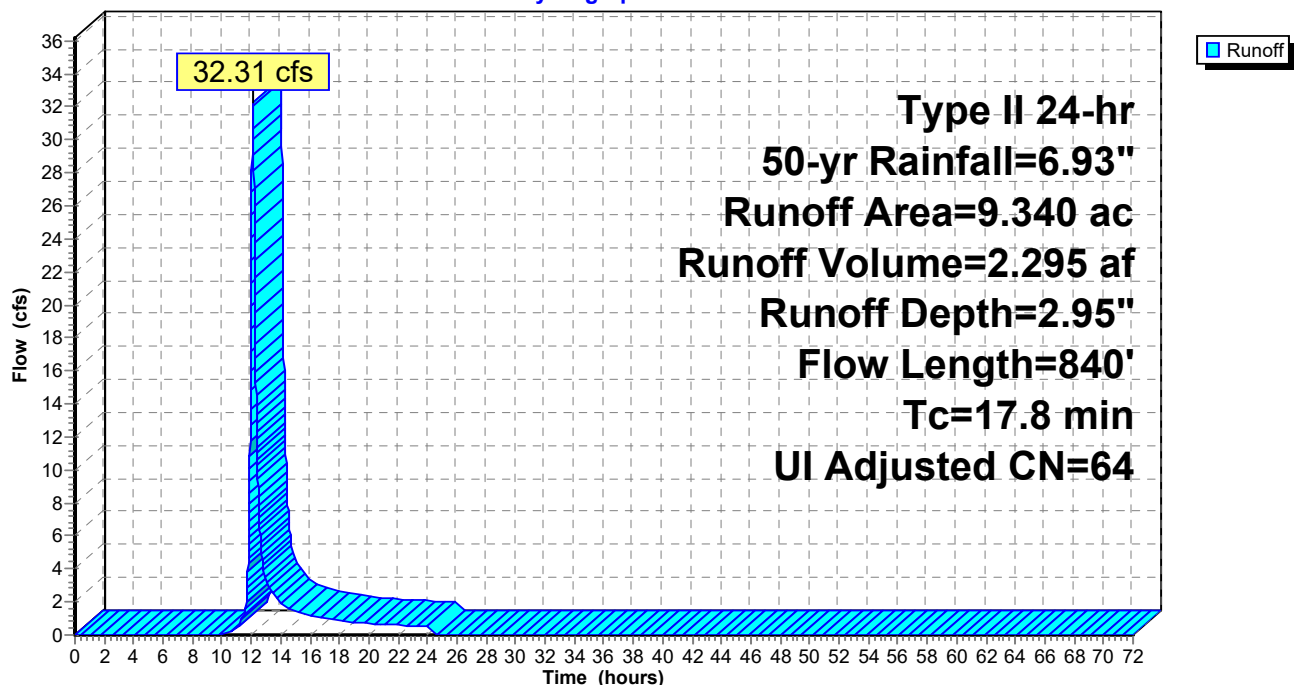
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.93"

Area (ac)	CN	Adj	Description
0.590	55		Woods, Good, HSG B
0.700	77		Woods, Good, HSG D
0.750	98		Unconnected roofs, HSG B
0.080	80		>75% Grass cover, Good, HSG D
7.220	61		>75% Grass cover, Good, HSG B
9.340	65	64	Weighted Average, UI Adjusted
8.590			91.97% Pervious Area
0.750			8.03% Impervious Area
0.750			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	100	0.0250	0.13		Sheet Flow, Grass: Dense n= 0.240 P2= 3.53"
5.4	740	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
17.8	840	Total			

Subcatchment 2PRE: Pre-Development to POI #2

Hydrograph



Hydrograph for Subcatchment 2PRE: Pre-Development to POI #2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	6.93	2.95	0.00
1.00	0.07	0.00	0.00	54.00	6.93	2.95	0.00
2.00	0.15	0.00	0.00	55.00	6.93	2.95	0.00
3.00	0.24	0.00	0.00	56.00	6.93	2.95	0.00
4.00	0.33	0.00	0.00	57.00	6.93	2.95	0.00
5.00	0.44	0.00	0.00	58.00	6.93	2.95	0.00
6.00	0.55	0.00	0.00	59.00	6.93	2.95	0.00
7.00	0.69	0.00	0.00	60.00	6.93	2.95	0.00
8.00	0.83	0.00	0.00	61.00	6.93	2.95	0.00
9.00	1.02	0.00	0.00	62.00	6.93	2.95	0.00
10.00	1.25	0.00	0.05	63.00	6.93	2.95	0.00
11.00	1.63	0.04	0.49	64.00	6.93	2.95	0.00
12.00	4.59	1.32	22.72	65.00	6.93	2.95	0.00
13.00	5.35	1.81	3.32	66.00	6.93	2.95	0.00
14.00	5.68	2.04	1.92	67.00	6.93	2.95	0.00
15.00	5.91	2.20	1.47	68.00	6.93	2.95	0.00
16.00	6.10	2.33	1.17	69.00	6.93	2.95	0.00
17.00	6.25	2.44	1.00	70.00	6.93	2.95	0.00
18.00	6.38	2.54	0.89	71.00	6.93	2.95	0.00
19.00	6.50	2.63	0.78	72.00	6.93	2.95	0.00
20.00	6.60	2.70	0.66				
21.00	6.69	2.76	0.62				
22.00	6.77	2.83	0.59				
23.00	6.85	2.89	0.57				
24.00	6.93	2.95	0.55				
25.00	6.93	2.95	0.00				
26.00	6.93	2.95	0.00				
27.00	6.93	2.95	0.00				
28.00	6.93	2.95	0.00				
29.00	6.93	2.95	0.00				
30.00	6.93	2.95	0.00				
31.00	6.93	2.95	0.00				
32.00	6.93	2.95	0.00				
33.00	6.93	2.95	0.00				
34.00	6.93	2.95	0.00				
35.00	6.93	2.95	0.00				
36.00	6.93	2.95	0.00				
37.00	6.93	2.95	0.00				
38.00	6.93	2.95	0.00				
39.00	6.93	2.95	0.00				
40.00	6.93	2.95	0.00				
41.00	6.93	2.95	0.00				
42.00	6.93	2.95	0.00				
43.00	6.93	2.95	0.00				
44.00	6.93	2.95	0.00				
45.00	6.93	2.95	0.00				
46.00	6.93	2.95	0.00				
47.00	6.93	2.95	0.00				
48.00	6.93	2.95	0.00				
49.00	6.93	2.95	0.00				
50.00	6.93	2.95	0.00				
51.00	6.93	2.95	0.00				
52.00	6.93	2.95	0.00				

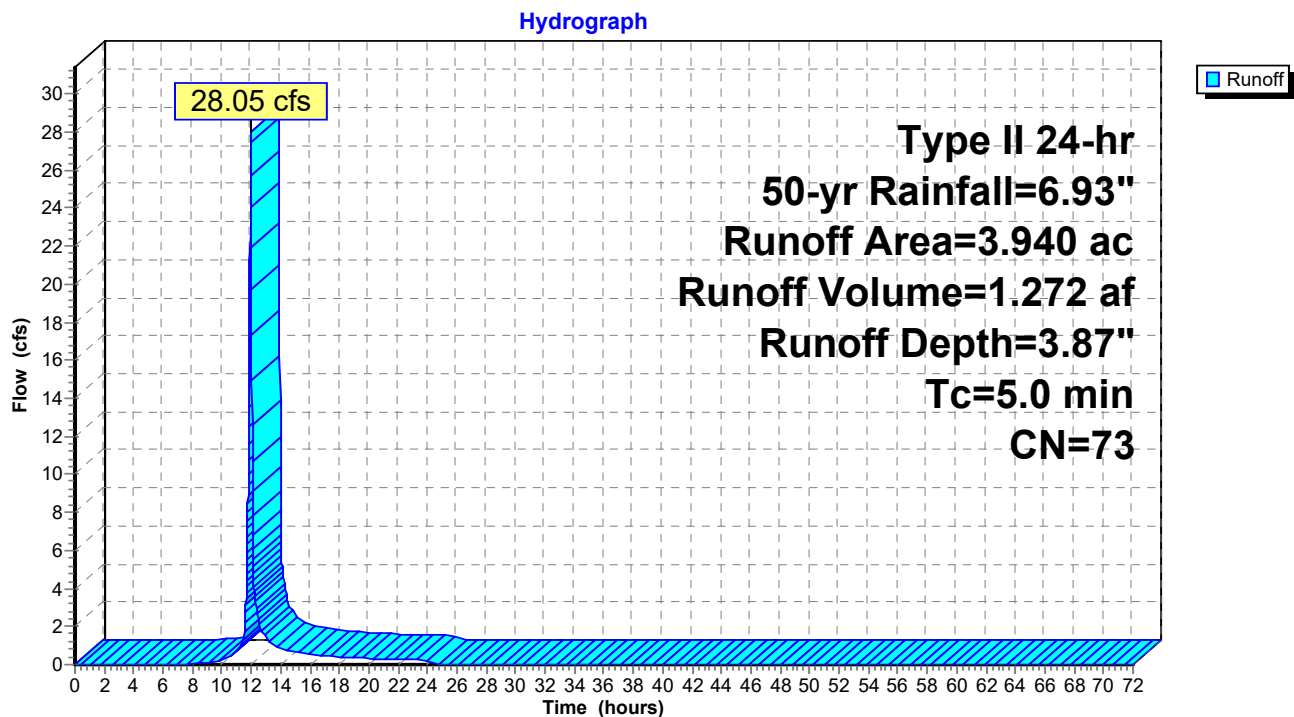
Summary for Subcatchment 2PST: Post-Development to SCM #2

Runoff = 28.05 cfs @ 11.96 hrs, Volume= 1.272 af, Depth= 3.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.93"

Area (ac)	CN	Description
* 0.880	98	Proposed Impervious
* 0.020	98	Existing Impervious
2.290	61	>75% Grass cover, Good, HSG B
0.750	80	>75% Grass cover, Good, HSG D
3.940	73	Weighted Average
3.040		77.16% Pervious Area
0.900		22.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 2PST: Post-Development to SCM #2

Hydrograph for Subcatchment 2PST: Post-Development to SCM #2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	6.93	3.87	0.00
1.00	0.07	0.00	0.00	54.00	6.93	3.87	0.00
2.00	0.15	0.00	0.00	55.00	6.93	3.87	0.00
3.00	0.24	0.00	0.00	56.00	6.93	3.87	0.00
4.00	0.33	0.00	0.00	57.00	6.93	3.87	0.00
5.00	0.44	0.00	0.00	58.00	6.93	3.87	0.00
6.00	0.55	0.00	0.00	59.00	6.93	3.87	0.00
7.00	0.69	0.00	0.00	60.00	6.93	3.87	0.00
8.00	0.83	0.00	0.03	61.00	6.93	3.87	0.00
9.00	1.02	0.02	0.11	62.00	6.93	3.87	0.00
10.00	1.25	0.06	0.24	63.00	6.93	3.87	0.00
11.00	1.63	0.17	0.64	64.00	6.93	3.87	0.00
12.00	4.59	1.97	24.01	65.00	6.93	3.87	0.00
13.00	5.35	2.56	1.43	66.00	6.93	3.87	0.00
14.00	5.68	2.83	0.87	67.00	6.93	3.87	0.00
15.00	5.91	3.02	0.69	68.00	6.93	3.87	0.00
16.00	6.10	3.17	0.54	69.00	6.93	3.87	0.00
17.00	6.25	3.30	0.48	70.00	6.93	3.87	0.00
18.00	6.38	3.41	0.42	71.00	6.93	3.87	0.00
19.00	6.50	3.51	0.37	72.00	6.93	3.87	0.00
20.00	6.60	3.59	0.31				
21.00	6.69	3.67	0.29				
22.00	6.77	3.74	0.28				
23.00	6.85	3.81	0.27				
24.00	6.93	3.87	0.26				
25.00	6.93	3.87	0.00				
26.00	6.93	3.87	0.00				
27.00	6.93	3.87	0.00				
28.00	6.93	3.87	0.00				
29.00	6.93	3.87	0.00				
30.00	6.93	3.87	0.00				
31.00	6.93	3.87	0.00				
32.00	6.93	3.87	0.00				
33.00	6.93	3.87	0.00				
34.00	6.93	3.87	0.00				
35.00	6.93	3.87	0.00				
36.00	6.93	3.87	0.00				
37.00	6.93	3.87	0.00				
38.00	6.93	3.87	0.00				
39.00	6.93	3.87	0.00				
40.00	6.93	3.87	0.00				
41.00	6.93	3.87	0.00				
42.00	6.93	3.87	0.00				
43.00	6.93	3.87	0.00				
44.00	6.93	3.87	0.00				
45.00	6.93	3.87	0.00				
46.00	6.93	3.87	0.00				
47.00	6.93	3.87	0.00				
48.00	6.93	3.87	0.00				
49.00	6.93	3.87	0.00				
50.00	6.93	3.87	0.00				
51.00	6.93	3.87	0.00				
52.00	6.93	3.87	0.00				

Summary for Subcatchment 2S: Bypass to POI #2

Runoff = 24.02 cfs @ 12.08 hrs, Volume= 1.549 af, Depth= 3.15"

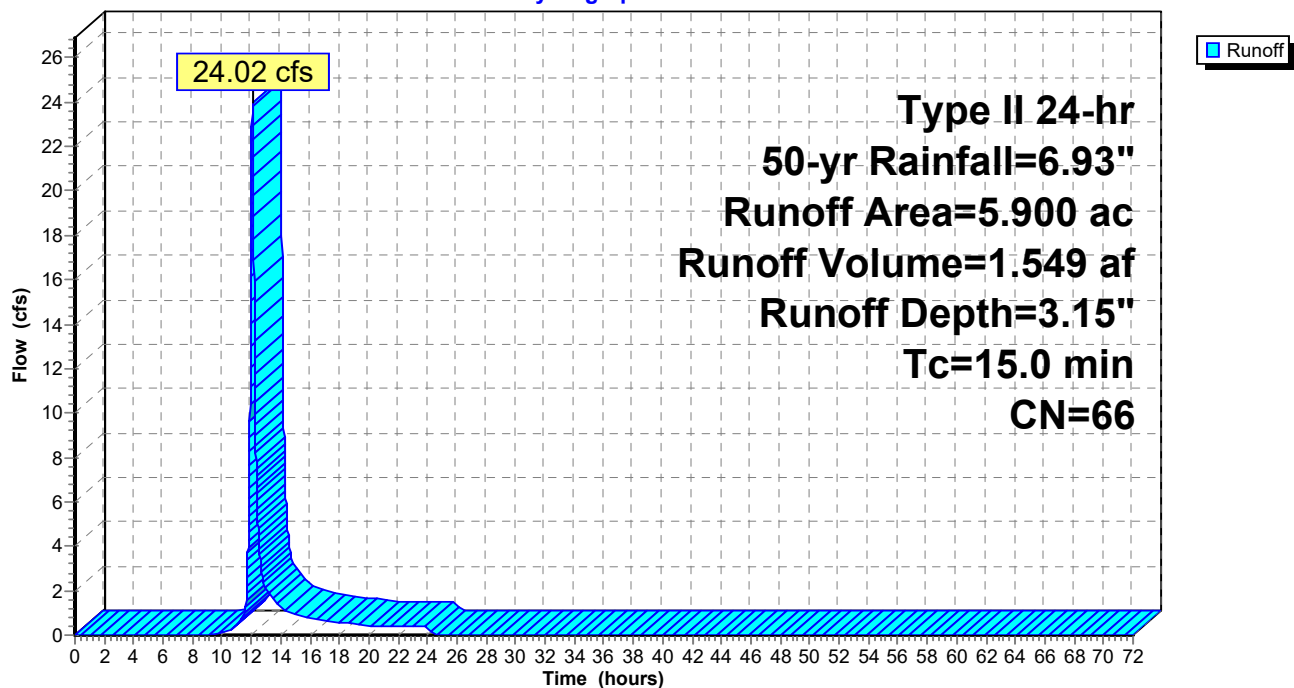
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.93"

Area (ac)	CN	Description
* 0.650	98	Existing Impervious
4.740	61	>75% Grass cover, Good, HSG B
0.280	80	>75% Grass cover, Good, HSG D
0.180	55	Woods, Good, HSG B
0.050	77	Woods, Good, HSG D
5.900	66	Weighted Average
5.250		88.98% Pervious Area
0.650		11.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry,

Subcatchment 2S: Bypass to POI #2

Hydrograph



Hydrograph for Subcatchment 2S: Bypass to POI #2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	6.93	3.15	0.00
1.00	0.07	0.00	0.00	54.00	6.93	3.15	0.00
2.00	0.15	0.00	0.00	55.00	6.93	3.15	0.00
3.00	0.24	0.00	0.00	56.00	6.93	3.15	0.00
4.00	0.33	0.00	0.00	57.00	6.93	3.15	0.00
5.00	0.44	0.00	0.00	58.00	6.93	3.15	0.00
6.00	0.55	0.00	0.00	59.00	6.93	3.15	0.00
7.00	0.69	0.00	0.00	60.00	6.93	3.15	0.00
8.00	0.83	0.00	0.00	61.00	6.93	3.15	0.00
9.00	1.02	0.00	0.00	62.00	6.93	3.15	0.00
10.00	1.25	0.01	0.09	63.00	6.93	3.15	0.00
11.00	1.63	0.06	0.43	64.00	6.93	3.15	0.00
12.00	4.59	1.46	19.43	65.00	6.93	3.15	0.00
13.00	5.35	1.97	2.11	66.00	6.93	3.15	0.00
14.00	5.68	2.21	1.24	67.00	6.93	3.15	0.00
15.00	5.91	2.38	0.96	68.00	6.93	3.15	0.00
16.00	6.10	2.51	0.75	69.00	6.93	3.15	0.00
17.00	6.25	2.63	0.65	70.00	6.93	3.15	0.00
18.00	6.38	2.73	0.58	71.00	6.93	3.15	0.00
19.00	6.50	2.82	0.51	72.00	6.93	3.15	0.00
20.00	6.60	2.89	0.43				
21.00	6.69	2.96	0.40				
22.00	6.77	3.03	0.39				
23.00	6.85	3.09	0.37				
24.00	6.93	3.15	0.36				
25.00	6.93	3.15	0.00				
26.00	6.93	3.15	0.00				
27.00	6.93	3.15	0.00				
28.00	6.93	3.15	0.00				
29.00	6.93	3.15	0.00				
30.00	6.93	3.15	0.00				
31.00	6.93	3.15	0.00				
32.00	6.93	3.15	0.00				
33.00	6.93	3.15	0.00				
34.00	6.93	3.15	0.00				
35.00	6.93	3.15	0.00				
36.00	6.93	3.15	0.00				
37.00	6.93	3.15	0.00				
38.00	6.93	3.15	0.00				
39.00	6.93	3.15	0.00				
40.00	6.93	3.15	0.00				
41.00	6.93	3.15	0.00				
42.00	6.93	3.15	0.00				
43.00	6.93	3.15	0.00				
44.00	6.93	3.15	0.00				
45.00	6.93	3.15	0.00				
46.00	6.93	3.15	0.00				
47.00	6.93	3.15	0.00				
48.00	6.93	3.15	0.00				
49.00	6.93	3.15	0.00				
50.00	6.93	3.15	0.00				
51.00	6.93	3.15	0.00				
52.00	6.93	3.15	0.00				

Summary for Subcatchment 3PRE: Pre-Development to POI #3

Runoff = 18.80 cfs @ 12.03 hrs, Volume= 1.072 af, Depth= 4.30"

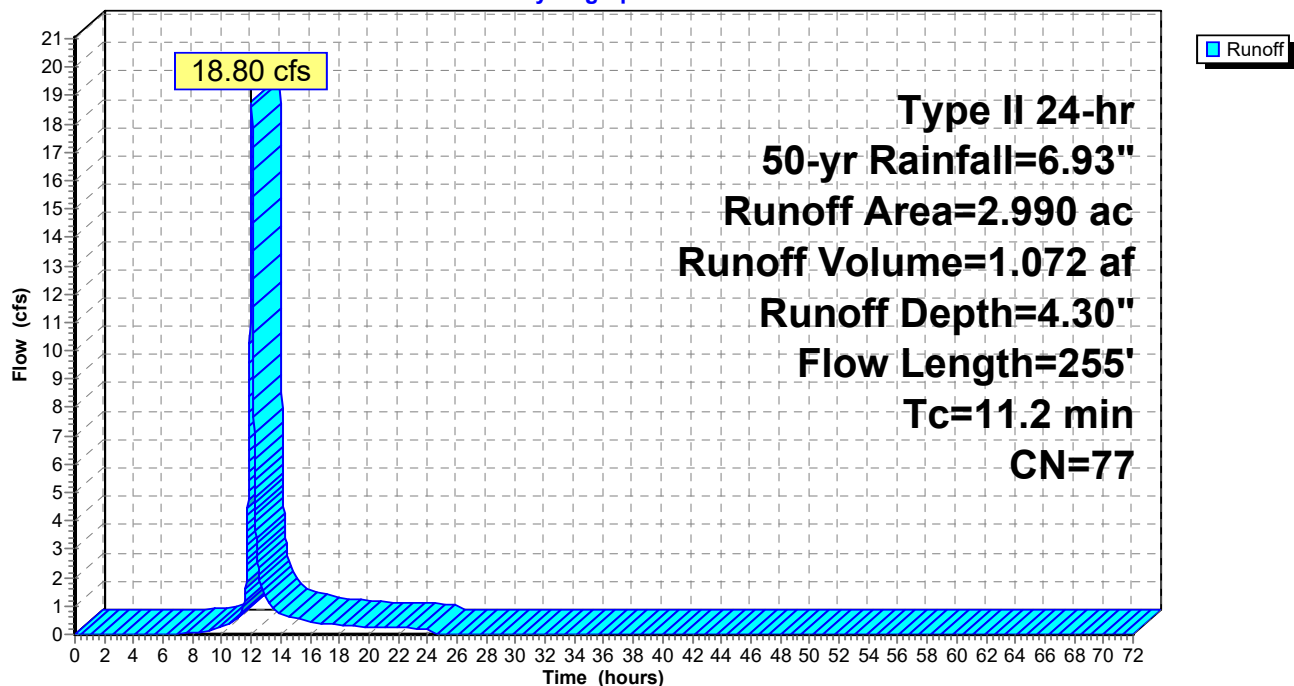
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.93"

Area (ac)	CN	Description
2.610	77	Woods, Good, HSG D
0.380	80	>75% Grass cover, Good, HSG D
2.990	77	Weighted Average
2.990		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	100	0.0360	0.16		Sheet Flow, Grass: Dense n= 0.240 P2= 3.53"
0.5	155	0.0860	4.72		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
11.2	255	Total			

Subcatchment 3PRE: Pre-Development to POI #3

Hydrograph



Hydrograph for Subcatchment 3PRE: Pre-Development to POI #3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	6.93	4.30	0.00
1.00	0.07	0.00	0.00	54.00	6.93	4.30	0.00
2.00	0.15	0.00	0.00	55.00	6.93	4.30	0.00
3.00	0.24	0.00	0.00	56.00	6.93	4.30	0.00
4.00	0.33	0.00	0.00	57.00	6.93	4.30	0.00
5.00	0.44	0.00	0.00	58.00	6.93	4.30	0.00
6.00	0.55	0.00	0.00	59.00	6.93	4.30	0.00
7.00	0.69	0.00	0.02	60.00	6.93	4.30	0.00
8.00	0.83	0.02	0.06	61.00	6.93	4.30	0.00
9.00	1.02	0.05	0.14	62.00	6.93	4.30	0.00
10.00	1.25	0.12	0.24	63.00	6.93	4.30	0.00
11.00	1.63	0.26	0.58	64.00	6.93	4.30	0.00
12.00	4.59	2.29	18.05	65.00	6.93	4.30	0.00
13.00	5.35	2.92	1.24	66.00	6.93	4.30	0.00
14.00	5.68	3.20	0.73	67.00	6.93	4.30	0.00
15.00	5.91	3.40	0.57	68.00	6.93	4.30	0.00
16.00	6.10	3.57	0.44	69.00	6.93	4.30	0.00
17.00	6.25	3.70	0.38	70.00	6.93	4.30	0.00
18.00	6.38	3.82	0.34	71.00	6.93	4.30	0.00
19.00	6.50	3.92	0.30	72.00	6.93	4.30	0.00
20.00	6.60	4.01	0.25				
21.00	6.69	4.08	0.23				
22.00	6.77	4.16	0.23				
23.00	6.85	4.23	0.22				
24.00	6.93	4.30	0.21				
25.00	6.93	4.30	0.00				
26.00	6.93	4.30	0.00				
27.00	6.93	4.30	0.00				
28.00	6.93	4.30	0.00				
29.00	6.93	4.30	0.00				
30.00	6.93	4.30	0.00				
31.00	6.93	4.30	0.00				
32.00	6.93	4.30	0.00				
33.00	6.93	4.30	0.00				
34.00	6.93	4.30	0.00				
35.00	6.93	4.30	0.00				
36.00	6.93	4.30	0.00				
37.00	6.93	4.30	0.00				
38.00	6.93	4.30	0.00				
39.00	6.93	4.30	0.00				
40.00	6.93	4.30	0.00				
41.00	6.93	4.30	0.00				
42.00	6.93	4.30	0.00				
43.00	6.93	4.30	0.00				
44.00	6.93	4.30	0.00				
45.00	6.93	4.30	0.00				
46.00	6.93	4.30	0.00				
47.00	6.93	4.30	0.00				
48.00	6.93	4.30	0.00				
49.00	6.93	4.30	0.00				
50.00	6.93	4.30	0.00				
51.00	6.93	4.30	0.00				
52.00	6.93	4.30	0.00				

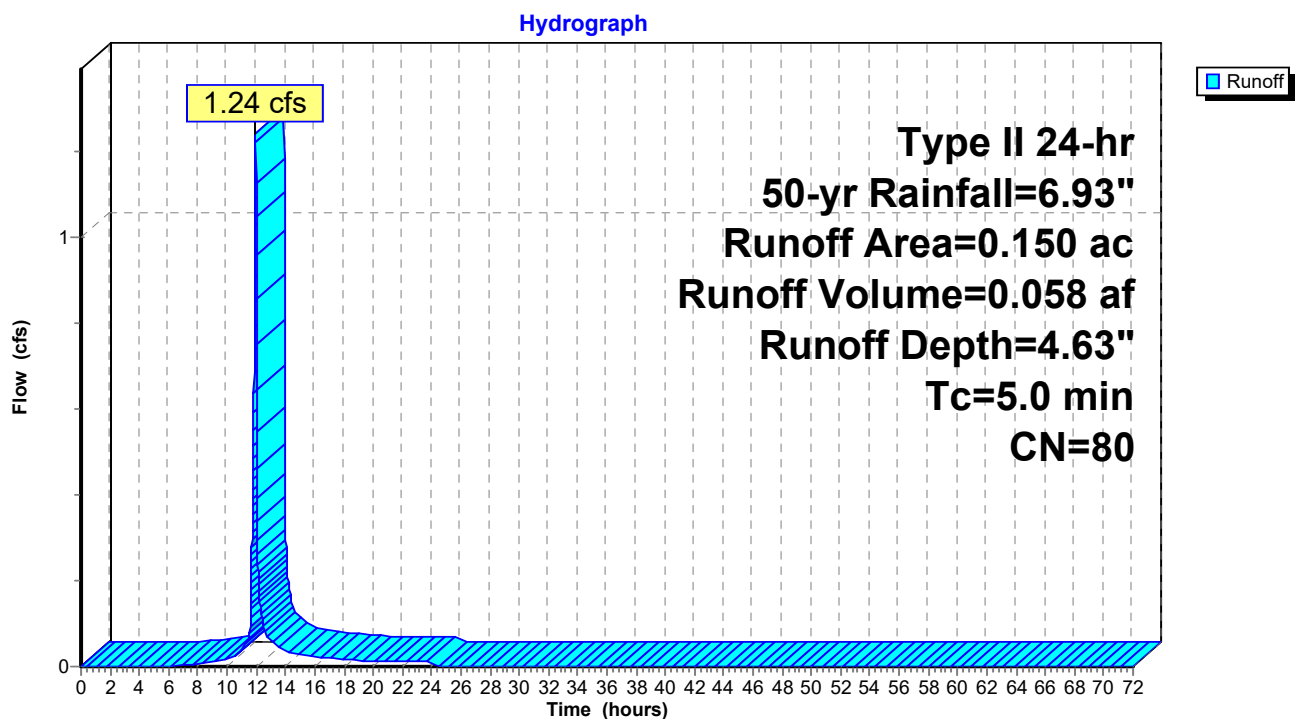
Summary for Subcatchment 3PST: Post-Development to POI #3

Runoff = 1.24 cfs @ 11.96 hrs, Volume= 0.058 af, Depth= 4.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.93"

Area (ac)	CN	Description
0.020	98	Paved roads w/curbs & sewers, HSG B
0.130	77	Woods, Good, HSG D
0.150	80	Weighted Average
0.130		86.67% Pervious Area
0.020		13.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 3PST: Post-Development to POI #3

Hydrograph for Subcatchment 3PST: Post-Development to POI #3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	6.93	4.63	0.00
1.00	0.07	0.00	0.00	54.00	6.93	4.63	0.00
2.00	0.15	0.00	0.00	55.00	6.93	4.63	0.00
3.00	0.24	0.00	0.00	56.00	6.93	4.63	0.00
4.00	0.33	0.00	0.00	57.00	6.93	4.63	0.00
5.00	0.44	0.00	0.00	58.00	6.93	4.63	0.00
6.00	0.55	0.00	0.00	59.00	6.93	4.63	0.00
7.00	0.69	0.01	0.00	60.00	6.93	4.63	0.00
8.00	0.83	0.04	0.00	61.00	6.93	4.63	0.00
9.00	1.02	0.09	0.01	62.00	6.93	4.63	0.00
10.00	1.25	0.17	0.02	63.00	6.93	4.63	0.00
11.00	1.63	0.35	0.04	64.00	6.93	4.63	0.00
12.00	4.59	2.54	1.05	65.00	6.93	4.63	0.00
13.00	5.35	3.20	0.06	66.00	6.93	4.63	0.00
14.00	5.68	3.50	0.04	67.00	6.93	4.63	0.00
15.00	5.91	3.70	0.03	68.00	6.93	4.63	0.00
16.00	6.10	3.87	0.02	69.00	6.93	4.63	0.00
17.00	6.25	4.01	0.02	70.00	6.93	4.63	0.00
18.00	6.38	4.13	0.02	71.00	6.93	4.63	0.00
19.00	6.50	4.23	0.02	72.00	6.93	4.63	0.00
20.00	6.60	4.32	0.01				
21.00	6.69	4.41	0.01				
22.00	6.77	4.48	0.01				
23.00	6.85	4.56	0.01				
24.00	6.93	4.63	0.01				
25.00	6.93	4.63	0.00				
26.00	6.93	4.63	0.00				
27.00	6.93	4.63	0.00				
28.00	6.93	4.63	0.00				
29.00	6.93	4.63	0.00				
30.00	6.93	4.63	0.00				
31.00	6.93	4.63	0.00				
32.00	6.93	4.63	0.00				
33.00	6.93	4.63	0.00				
34.00	6.93	4.63	0.00				
35.00	6.93	4.63	0.00				
36.00	6.93	4.63	0.00				
37.00	6.93	4.63	0.00				
38.00	6.93	4.63	0.00				
39.00	6.93	4.63	0.00				
40.00	6.93	4.63	0.00				
41.00	6.93	4.63	0.00				
42.00	6.93	4.63	0.00				
43.00	6.93	4.63	0.00				
44.00	6.93	4.63	0.00				
45.00	6.93	4.63	0.00				
46.00	6.93	4.63	0.00				
47.00	6.93	4.63	0.00				
48.00	6.93	4.63	0.00				
49.00	6.93	4.63	0.00				
50.00	6.93	4.63	0.00				
51.00	6.93	4.63	0.00				
52.00	6.93	4.63	0.00				

Summary for Pond 2P: SCM #2

Inflow Area = 3.940 ac, 22.84% Impervious, Inflow Depth = 3.87" for 50-yr event
 Inflow = 28.05 cfs @ 11.96 hrs, Volume= 1.272 af
 Outflow = 0.64 cfs @ 15.38 hrs, Volume= 1.119 af, Atten= 98%, Lag= 205.0 min
 Primary = 0.64 cfs @ 15.38 hrs, Volume= 1.119 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 717.21' @ 15.38 hrs Surf.Area= 13,865 sf Storage= 36,130 cf

Plug-Flow detention time= 878.9 min calculated for 1.118 af (88% of inflow)
 Center-of-Mass det. time= 820.1 min (1,640.7 - 820.6)

Volume	Invert	Avail.Storage	Storage Description
#1	713.50'	81,212 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
713.50	2,258	0	0
714.00	4,670	1,732	1,732
715.00	10,425	7,548	9,280
716.00	11,945	11,185	20,465
717.00	13,515	12,730	33,195
718.00	15,145	14,330	47,525
719.00	16,830	15,988	63,512
720.00	18,570	17,700	81,212

Device	Routing	Invert	Outlet Devices
#1	Primary	711.50'	24.0" Round Outlet Pipe L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 711.50' / 711.30' S= 0.0050 ' S= 0.0050 ' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	713.50'	Filter Bed Head (feet) 0.00 1.00 2.00 3.00 4.00 5.00 Disch. (cfs) 0.000 0.055 0.077 0.098 0.120 0.142
#3	Device 1	715.50'	4.0" Vert. Orifice C= 0.600
#4	Device 1	717.50'	48.0" x 48.0" Horiz. Top of OCS C= 0.600 Limited to weir flow at low heads
#5	Secondary	718.50'	20.0' long x 10.0' breadth Emergency Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.64 cfs @ 15.38 hrs HW=717.21' (Free Discharge)

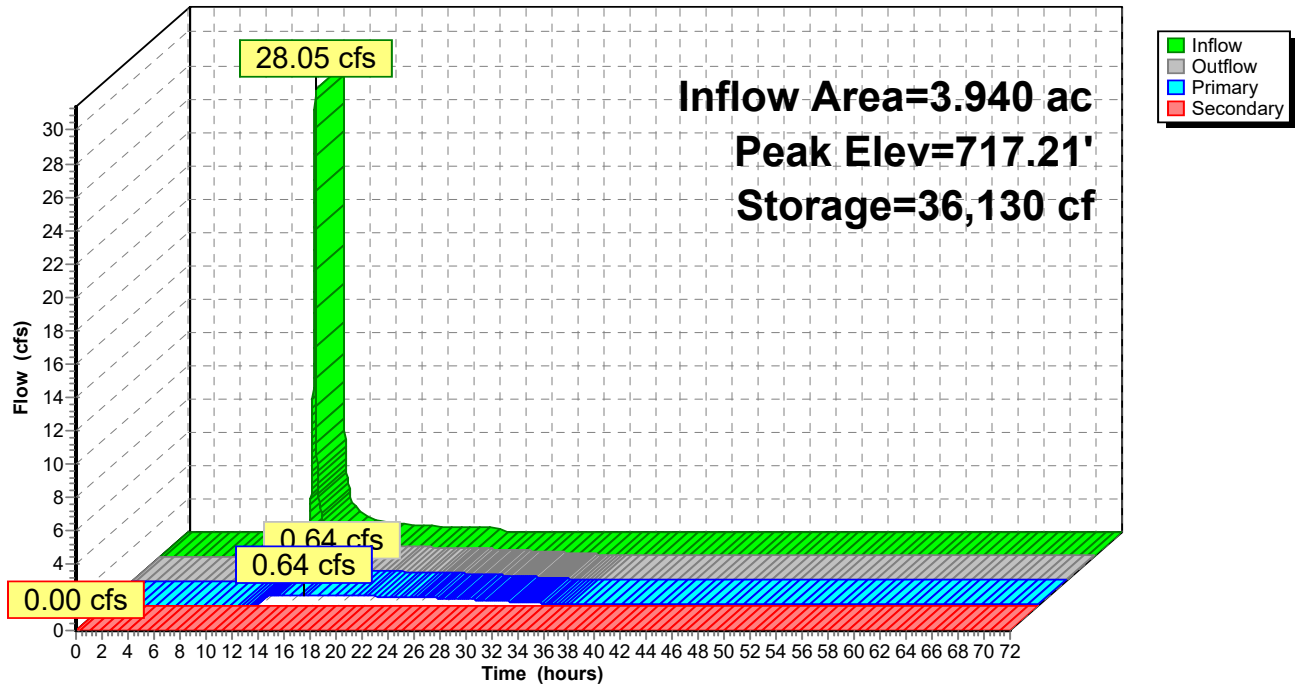
- 1=Outlet Pipe (Passes 0.64 cfs of 32.84 cfs potential flow)
- 2=Filter Bed (Custom Controls 0.11 cfs)
- 3=Orifice (Orifice Controls 0.52 cfs @ 5.99 fps)
- 4=Top of OCS (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=713.50' (Free Discharge)

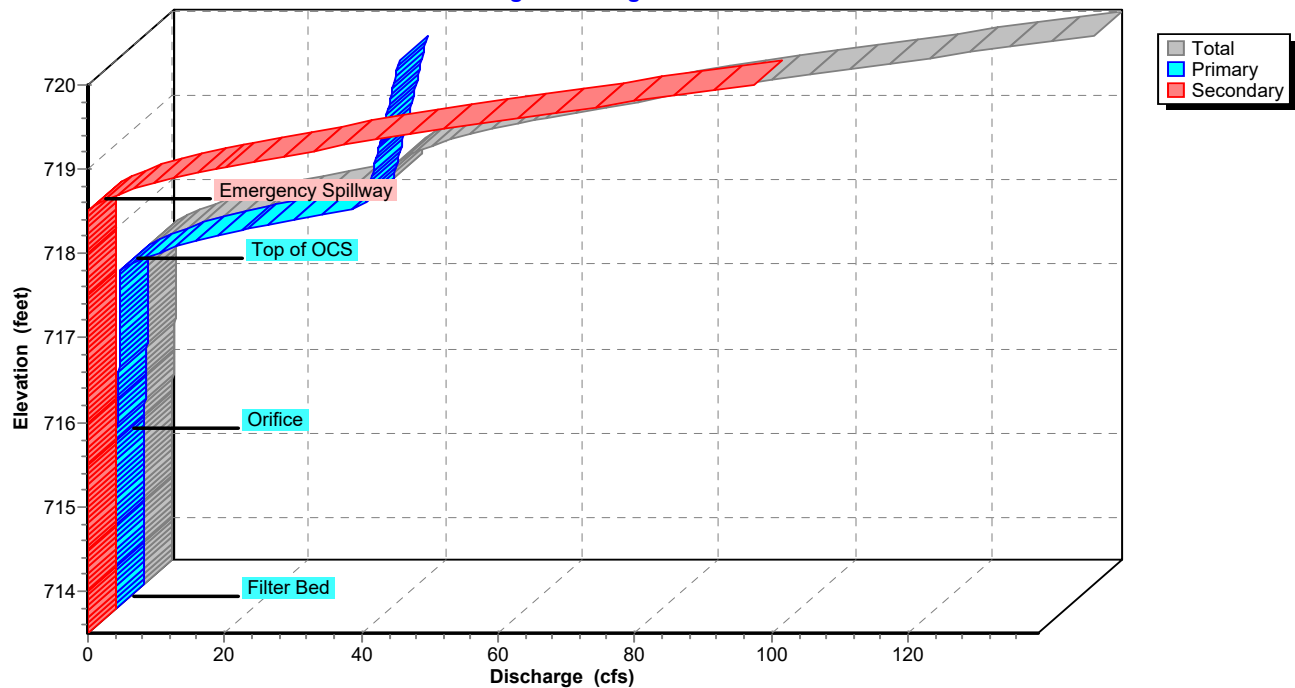
- 5=Emergency Spillway (Controls 0.00 cfs)

Pond 2P: SCM #2

Hydrograph

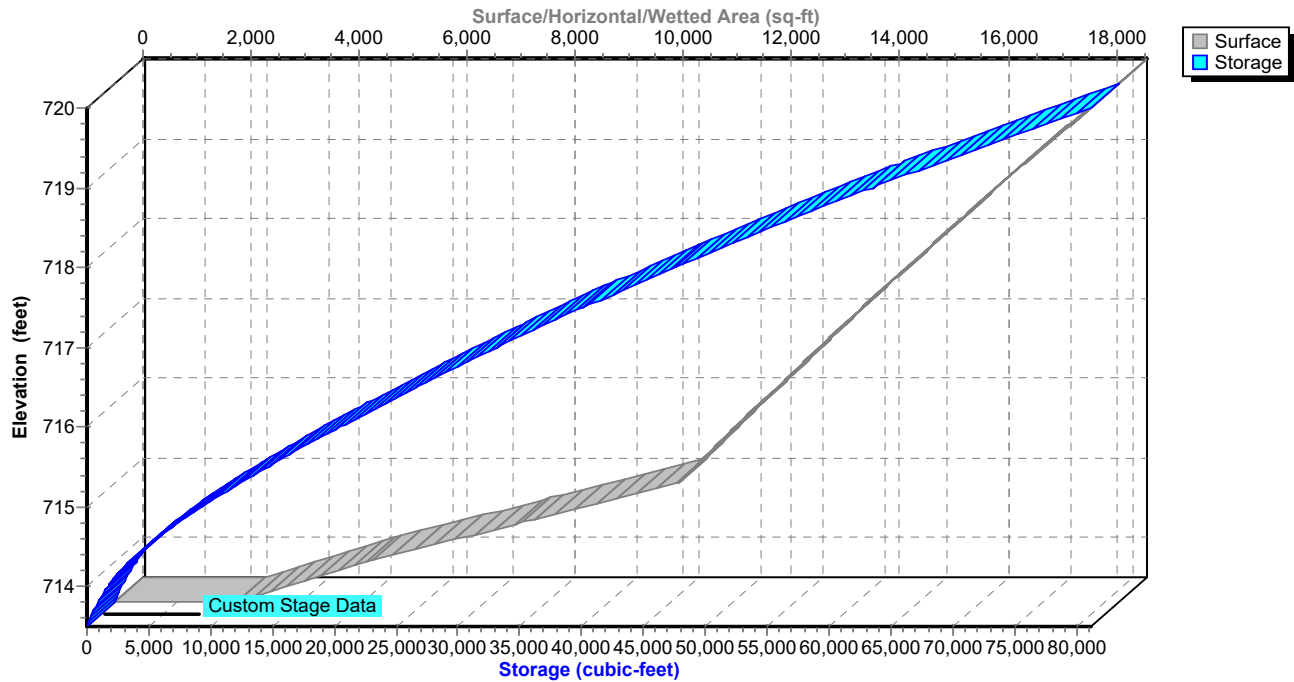
**Pond 2P: SCM #2**

Stage-Discharge



Pond 2P: SCM #2

Stage-Area-Storage



Hydrograph for Pond 2P: SCM #2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	713.50	0.00	0.00	0.00
2.00	0.00	0	713.50	0.00	0.00	0.00
4.00	0.00	0	713.50	0.00	0.00	0.00
6.00	0.00	0	713.50	0.00	0.00	0.00
8.00	0.03	24	713.51	0.00	0.00	0.00
10.00	0.24	787	713.77	0.01	0.01	0.00
12.00	24.01	22,977	716.21	0.40	0.40	0.00
14.00	0.87	35,597	717.18	0.63	0.63	0.00
16.00	0.54	36,024	717.21	0.64	0.64	0.00
18.00	0.42	34,939	717.13	0.62	0.62	0.00
20.00	0.31	33,196	717.00	0.59	0.59	0.00
22.00	0.28	31,152	716.85	0.56	0.56	0.00
24.00	0.26	29,185	716.70	0.53	0.53	0.00
26.00	0.00	25,683	716.42	0.46	0.46	0.00
28.00	0.00	22,608	716.18	0.39	0.39	0.00
30.00	0.00	20,056	715.97	0.32	0.32	0.00
32.00	0.00	18,070	715.80	0.23	0.23	0.00
34.00	0.00	16,706	715.68	0.15	0.15	0.00
36.00	0.00	15,810	715.60	0.10	0.10	0.00
38.00	0.00	15,145	715.54	0.08	0.08	0.00
40.00	0.00	14,575	715.49	0.08	0.08	0.00
42.00	0.00	14,026	715.44	0.08	0.08	0.00
44.00	0.00	13,484	715.39	0.07	0.07	0.00
46.00	0.00	12,951	715.34	0.07	0.07	0.00
48.00	0.00	12,425	715.30	0.07	0.07	0.00
50.00	0.00	11,907	715.25	0.07	0.07	0.00
52.00	0.00	11,396	715.20	0.07	0.07	0.00
54.00	0.00	10,893	715.15	0.07	0.07	0.00
56.00	0.00	10,397	715.11	0.07	0.07	0.00
58.00	0.00	9,909	715.06	0.07	0.07	0.00
60.00	0.00	9,428	715.01	0.07	0.07	0.00
62.00	0.00	8,954	714.97	0.07	0.07	0.00
64.00	0.00	8,488	714.92	0.06	0.06	0.00
66.00	0.00	8,029	714.88	0.06	0.06	0.00
68.00	0.00	7,577	714.83	0.06	0.06	0.00
70.00	0.00	7,133	714.78	0.06	0.06	0.00
72.00	0.00	6,696	714.73	0.06	0.06	0.00

Stage-Discharge for Pond 2P: SCM #2

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
713.50	0.00	0.00	0.00	718.80	46.27	37.97	8.30
713.60	0.01	0.01	0.00	718.90	51.22	38.27	12.95
713.70	0.01	0.01	0.00	719.00	57.16	38.57	18.60
713.80	0.02	0.02	0.00	719.10	63.96	38.86	25.10
713.90	0.02	0.02	0.00	719.20	70.72	39.15	31.57
714.00	0.03	0.03	0.00	719.30	77.94	39.45	38.50
714.10	0.03	0.03	0.00	719.40	85.58	39.73	45.85
714.20	0.04	0.04	0.00	719.50	93.62	40.02	53.60
714.30	0.04	0.04	0.00	719.60	102.26	40.31	61.95
714.40	0.05	0.05	0.00	719.70	111.31	40.59	70.72
714.50	0.06	0.06	0.00	719.80	120.32	40.87	79.45
714.60	0.06	0.06	0.00	719.90	129.61	41.15	88.46
714.70	0.06	0.06	0.00	720.00	138.98	41.43	97.55
714.80	0.06	0.06	0.00				
714.90	0.06	0.06	0.00				
715.00	0.07	0.07	0.00				
715.10	0.07	0.07	0.00				
715.20	0.07	0.07	0.00				
715.30	0.07	0.07	0.00				
715.40	0.07	0.07	0.00				
715.50	0.08	0.08	0.00				
715.60	0.10	0.10	0.00				
715.70	0.16	0.16	0.00				
715.80	0.24	0.24	0.00				
715.90	0.29	0.29	0.00				
716.00	0.33	0.33	0.00				
716.10	0.37	0.37	0.00				
716.20	0.40	0.40	0.00				
716.30	0.43	0.43	0.00				
716.40	0.46	0.46	0.00				
716.50	0.48	0.48	0.00				
716.60	0.51	0.51	0.00				
716.70	0.53	0.53	0.00				
716.80	0.55	0.55	0.00				
716.90	0.57	0.57	0.00				
717.00	0.59	0.59	0.00				
717.10	0.61	0.61	0.00				
717.20	0.63	0.63	0.00				
717.30	0.65	0.65	0.00				
717.40	0.67	0.67	0.00				
717.50	0.69	0.69	0.00				
717.60	2.36	2.36	0.00				
717.70	5.40	5.40	0.00				
717.80	9.34	9.34	0.00				
717.90	13.99	13.99	0.00				
718.00	19.27	19.27	0.00				
718.10	25.10	25.10	0.00				
718.20	31.45	31.45	0.00				
718.30	36.43	36.43	0.00				
718.40	36.74	36.74	0.00				
718.50	37.05	37.05	0.00				
718.60	38.93	37.36	1.57				
718.70	42.12	37.67	4.45				

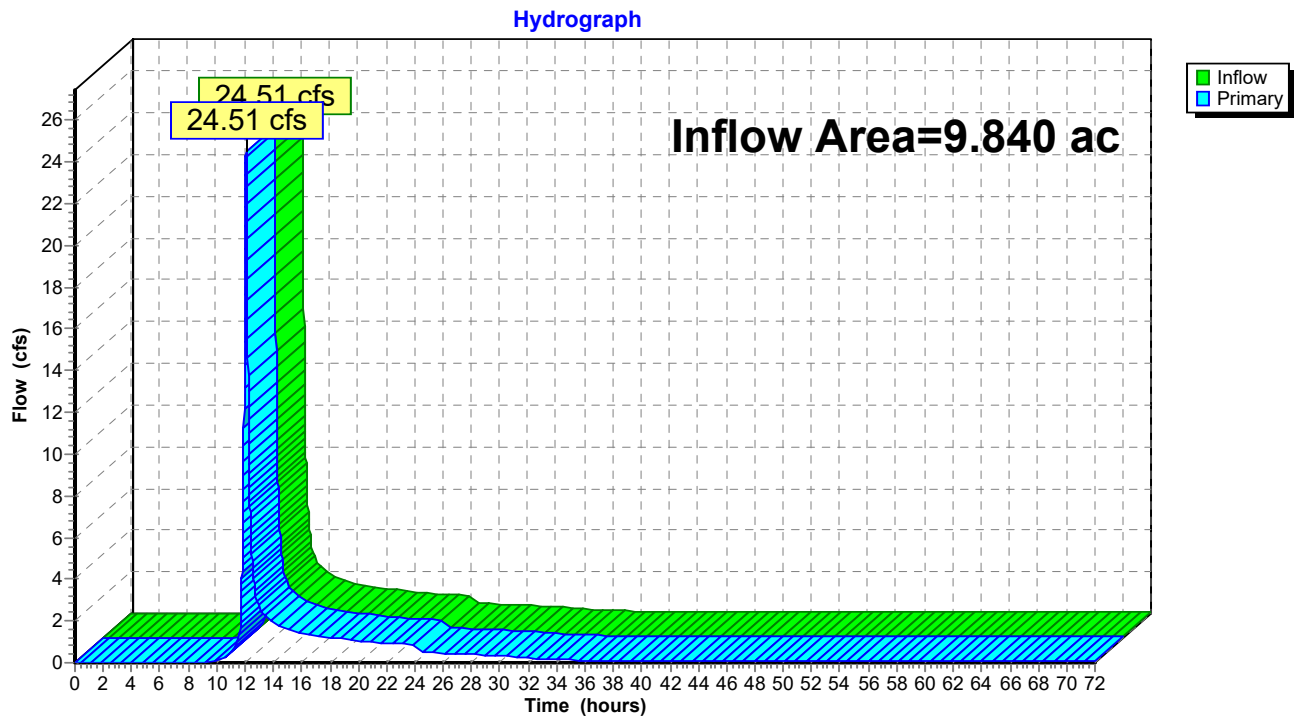
Stage-Area-Storage for Pond 2P: SCM #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
713.50	2,258	0	718.80	16,493	60,180
713.60	2,740	250	718.90	16,661	61,837
713.70	3,223	548	719.00	16,830	63,512
713.80	3,705	894	719.10	17,004	65,204
713.90	4,188	1,289	719.20	17,178	66,913
714.00	4,670	1,732	719.30	17,352	68,639
714.10	5,246	2,228	719.40	17,526	70,383
714.20	5,821	2,781	719.50	17,700	72,145
714.30	6,396	3,392	719.60	17,874	73,923
714.40	6,972	4,060	719.70	18,048	75,719
714.50	7,548	4,786	719.80	18,222	77,533
714.60	8,123	5,570	719.90	18,396	79,364
714.70	8,699	6,411	720.00	18,570	81,212
714.80	9,274	7,310			
714.90	9,849	8,266			
715.00	10,425	9,280			
715.10	10,577	10,330			
715.20	10,729	11,395			
715.30	10,881	12,475			
715.40	11,033	13,571			
715.50	11,185	14,682			
715.60	11,337	15,808			
715.70	11,489	16,949			
715.80	11,641	18,106			
715.90	11,793	19,278			
716.00	11,945	20,465			
716.10	12,102	21,667			
716.20	12,259	22,885			
716.30	12,416	24,119			
716.40	12,573	25,368			
716.50	12,730	26,633			
716.60	12,887	27,914			
716.70	13,044	29,211			
716.80	13,201	30,523			
716.90	13,358	31,851			
717.00	13,515	33,195			
717.10	13,678	34,554			
717.20	13,841	35,930			
717.30	14,004	37,322			
717.40	14,167	38,731			
717.50	14,330	40,156			
717.60	14,493	41,597			
717.70	14,656	43,054			
717.80	14,819	44,528			
717.90	14,982	46,018			
718.00	15,145	47,525			
718.10	15,314	49,047			
718.20	15,482	50,587			
718.30	15,650	52,144			
718.40	15,819	53,717			
718.50	15,988	55,308			
718.60	16,156	56,915			
718.70	16,325	58,539			

Summary for Link 2L: Total Post-Development to POI #2

Inflow Area = 9.840 ac, 15.75% Impervious, Inflow Depth > 3.25" for 50-yr event
Inflow = 24.51 cfs @ 12.08 hrs, Volume= 2.667 af
Primary = 24.51 cfs @ 12.08 hrs, Volume= 2.667 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 2L: Total Post-Development to POI #2

Hydrograph for Link 2L: Total Post-Development to POI #2

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	53.00	0.07	0.00	0.07
1.00	0.00	0.00	0.00	54.00	0.07	0.00	0.07
2.00	0.00	0.00	0.00	55.00	0.07	0.00	0.07
3.00	0.00	0.00	0.00	56.00	0.07	0.00	0.07
4.00	0.00	0.00	0.00	57.00	0.07	0.00	0.07
5.00	0.00	0.00	0.00	58.00	0.07	0.00	0.07
6.00	0.00	0.00	0.00	59.00	0.07	0.00	0.07
7.00	0.00	0.00	0.00	60.00	0.07	0.00	0.07
8.00	0.00	0.00	0.00	61.00	0.07	0.00	0.07
9.00	0.01	0.00	0.01	62.00	0.07	0.00	0.07
10.00	0.11	0.00	0.11	63.00	0.06	0.00	0.06
11.00	0.47	0.00	0.47	64.00	0.06	0.00	0.06
12.00	19.83	0.00	19.83	65.00	0.06	0.00	0.06
13.00	2.71	0.00	2.71	66.00	0.06	0.00	0.06
14.00	1.87	0.00	1.87	67.00	0.06	0.00	0.06
15.00	1.59	0.00	1.59	68.00	0.06	0.00	0.06
16.00	1.39	0.00	1.39	69.00	0.06	0.00	0.06
17.00	1.28	0.00	1.28	70.00	0.06	0.00	0.06
18.00	1.20	0.00	1.20	71.00	0.06	0.00	0.06
19.00	1.11	0.00	1.11	72.00	0.06	0.00	0.06
20.00	1.02	0.00	1.02				
21.00	0.98	0.00	0.98				
22.00	0.95	0.00	0.95				
23.00	0.92	0.00	0.92				
24.00	0.89	0.00	0.89				
25.00	0.50	0.00	0.50				
26.00	0.46	0.00	0.46				
27.00	0.43	0.00	0.43				
28.00	0.39	0.00	0.39				
29.00	0.35	0.00	0.35				
30.00	0.32	0.00	0.32				
31.00	0.28	0.00	0.28				
32.00	0.23	0.00	0.23				
33.00	0.19	0.00	0.19				
34.00	0.15	0.00	0.15				
35.00	0.12	0.00	0.12				
36.00	0.10	0.00	0.10				
37.00	0.09	0.00	0.09				
38.00	0.08	0.00	0.08				
39.00	0.08	0.00	0.08				
40.00	0.08	0.00	0.08				
41.00	0.08	0.00	0.08				
42.00	0.08	0.00	0.08				
43.00	0.08	0.00	0.08				
44.00	0.07	0.00	0.07				
45.00	0.07	0.00	0.07				
46.00	0.07	0.00	0.07				
47.00	0.07	0.00	0.07				
48.00	0.07	0.00	0.07				
49.00	0.07	0.00	0.07				
50.00	0.07	0.00	0.07				
51.00	0.07	0.00	0.07				
52.00	0.07	0.00	0.07				

Summary for Subcatchment 2PRE: Pre-Development to POI #2

Runoff = 39.50 cfs @ 12.11 hrs, Volume= 2.789 af, Depth= 3.58"

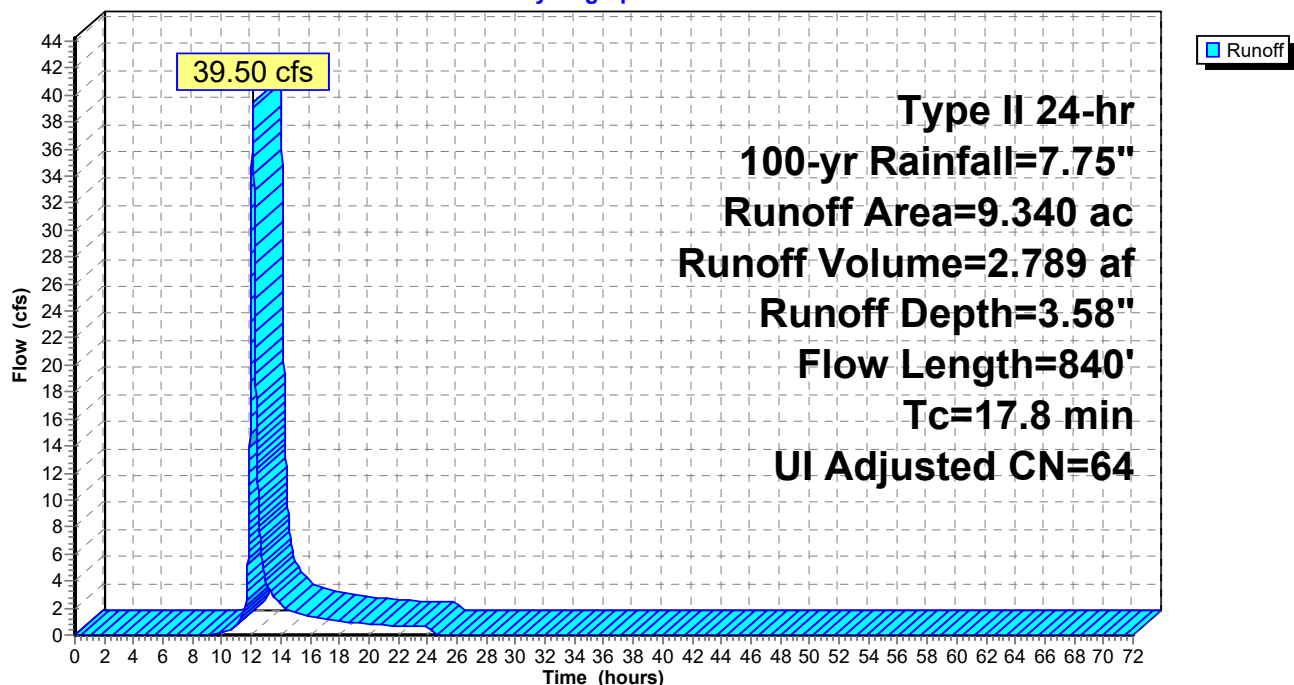
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.75"

Area (ac)	CN	Adj	Description
0.590	55		Woods, Good, HSG B
0.700	77		Woods, Good, HSG D
0.750	98		Unconnected roofs, HSG B
0.080	80		>75% Grass cover, Good, HSG D
7.220	61		>75% Grass cover, Good, HSG B
9.340	65	64	Weighted Average, UI Adjusted
8.590			91.97% Pervious Area
0.750			8.03% Impervious Area
0.750			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	100	0.0250	0.13		Sheet Flow, Grass: Dense n= 0.240 P2= 3.53"
5.4	740	0.0200	2.28		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
17.8	840	Total			

Subcatchment 2PRE: Pre-Development to POI #2

Hydrograph



Hydrograph for Subcatchment 2PRE: Pre-Development to POI #2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	7.75	3.58	0.00
1.00	0.08	0.00	0.00	54.00	7.75	3.58	0.00
2.00	0.17	0.00	0.00	55.00	7.75	3.58	0.00
3.00	0.27	0.00	0.00	56.00	7.75	3.58	0.00
4.00	0.37	0.00	0.00	57.00	7.75	3.58	0.00
5.00	0.49	0.00	0.00	58.00	7.75	3.58	0.00
6.00	0.62	0.00	0.00	59.00	7.75	3.58	0.00
7.00	0.77	0.00	0.00	60.00	7.75	3.58	0.00
8.00	0.93	0.00	0.00	61.00	7.75	3.58	0.00
9.00	1.14	0.00	0.00	62.00	7.75	3.58	0.00
10.00	1.40	0.01	0.18	63.00	7.75	3.58	0.00
11.00	1.82	0.08	0.77	64.00	7.75	3.58	0.00
12.00	5.14	1.67	28.29	65.00	7.75	3.58	0.00
13.00	5.98	2.25	3.93	66.00	7.75	3.58	0.00
14.00	6.36	2.52	2.26	67.00	7.75	3.58	0.00
15.00	6.61	2.71	1.73	68.00	7.75	3.58	0.00
16.00	6.82	2.87	1.37	69.00	7.75	3.58	0.00
17.00	6.99	2.99	1.17	70.00	7.75	3.58	0.00
18.00	7.14	3.11	1.04	71.00	7.75	3.58	0.00
19.00	7.27	3.21	0.91	72.00	7.75	3.58	0.00
20.00	7.38	3.29	0.77				
21.00	7.48	3.37	0.72				
22.00	7.57	3.44	0.69				
23.00	7.66	3.51	0.67				
24.00	7.75	3.58	0.64				
25.00	7.75	3.58	0.00				
26.00	7.75	3.58	0.00				
27.00	7.75	3.58	0.00				
28.00	7.75	3.58	0.00				
29.00	7.75	3.58	0.00				
30.00	7.75	3.58	0.00				
31.00	7.75	3.58	0.00				
32.00	7.75	3.58	0.00				
33.00	7.75	3.58	0.00				
34.00	7.75	3.58	0.00				
35.00	7.75	3.58	0.00				
36.00	7.75	3.58	0.00				
37.00	7.75	3.58	0.00				
38.00	7.75	3.58	0.00				
39.00	7.75	3.58	0.00				
40.00	7.75	3.58	0.00				
41.00	7.75	3.58	0.00				
42.00	7.75	3.58	0.00				
43.00	7.75	3.58	0.00				
44.00	7.75	3.58	0.00				
45.00	7.75	3.58	0.00				
46.00	7.75	3.58	0.00				
47.00	7.75	3.58	0.00				
48.00	7.75	3.58	0.00				
49.00	7.75	3.58	0.00				
50.00	7.75	3.58	0.00				
51.00	7.75	3.58	0.00				
52.00	7.75	3.58	0.00				

Summary for Subcatchment 2PST: Post-Development to SCM #2

Runoff = 33.00 cfs @ 11.96 hrs, Volume= 1.507 af, Depth= 4.59"

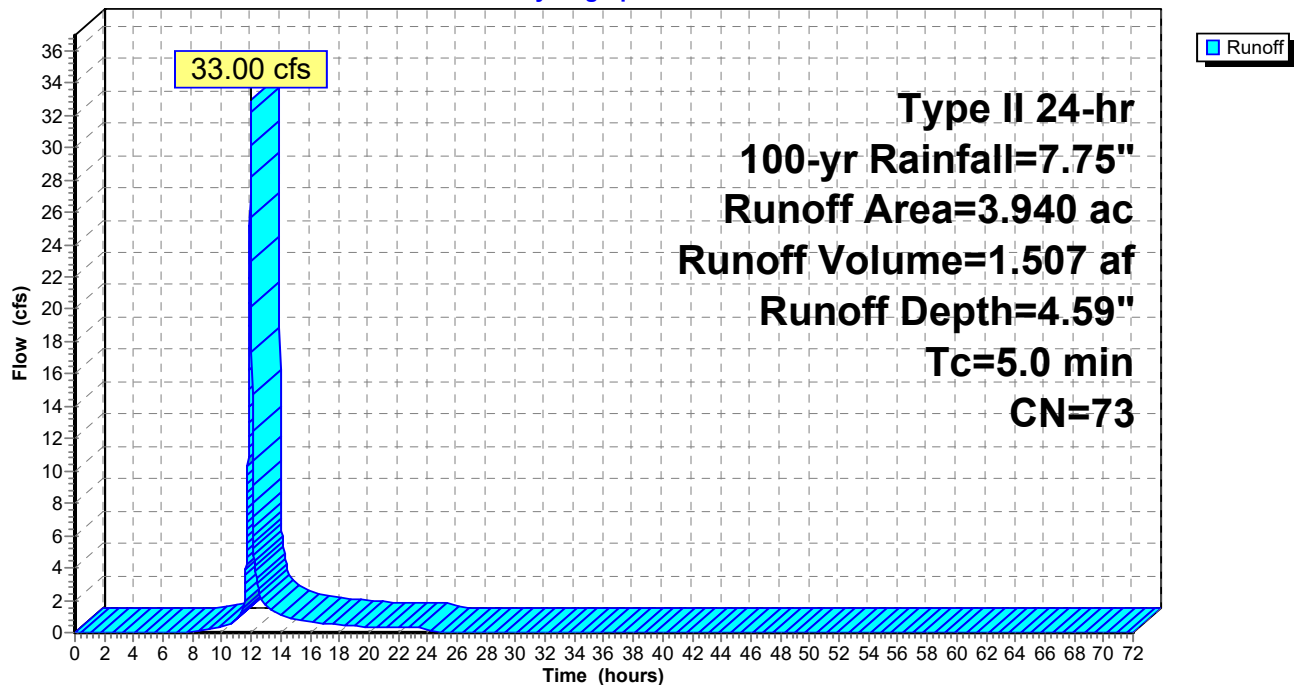
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.75"

Area (ac)	CN	Description
* 0.880	98	Proposed Impervious
* 0.020	98	Existing Impervious
2.290	61	>75% Grass cover, Good, HSG B
0.750	80	>75% Grass cover, Good, HSG D
3.940	73	Weighted Average
3.040		77.16% Pervious Area
0.900		22.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 2PST: Post-Development to SCM #2

Hydrograph



Hydrograph for Subcatchment 2PST: Post-Development to SCM #2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	7.75	4.59	0.00
1.00	0.08	0.00	0.00	54.00	7.75	4.59	0.00
2.00	0.17	0.00	0.00	55.00	7.75	4.59	0.00
3.00	0.27	0.00	0.00	56.00	7.75	4.59	0.00
4.00	0.37	0.00	0.00	57.00	7.75	4.59	0.00
5.00	0.49	0.00	0.00	58.00	7.75	4.59	0.00
6.00	0.62	0.00	0.00	59.00	7.75	4.59	0.00
7.00	0.77	0.00	0.01	60.00	7.75	4.59	0.00
8.00	0.93	0.01	0.06	61.00	7.75	4.59	0.00
9.00	1.14	0.04	0.17	62.00	7.75	4.59	0.00
10.00	1.40	0.10	0.33	63.00	7.75	4.59	0.00
11.00	1.82	0.24	0.83	64.00	7.75	4.59	0.00
12.00	5.14	2.39	28.13	65.00	7.75	4.59	0.00
13.00	5.98	3.07	1.66	66.00	7.75	4.59	0.00
14.00	6.36	3.39	1.00	67.00	7.75	4.59	0.00
15.00	6.61	3.61	0.80	68.00	7.75	4.59	0.00
16.00	6.82	3.78	0.62	69.00	7.75	4.59	0.00
17.00	6.99	3.93	0.55	70.00	7.75	4.59	0.00
18.00	7.14	4.05	0.48	71.00	7.75	4.59	0.00
19.00	7.27	4.17	0.42	72.00	7.75	4.59	0.00
20.00	7.38	4.26	0.35				
21.00	7.48	4.35	0.34				
22.00	7.57	4.43	0.32				
23.00	7.66	4.51	0.31				
24.00	7.75	4.59	0.30				
25.00	7.75	4.59	0.00				
26.00	7.75	4.59	0.00				
27.00	7.75	4.59	0.00				
28.00	7.75	4.59	0.00				
29.00	7.75	4.59	0.00				
30.00	7.75	4.59	0.00				
31.00	7.75	4.59	0.00				
32.00	7.75	4.59	0.00				
33.00	7.75	4.59	0.00				
34.00	7.75	4.59	0.00				
35.00	7.75	4.59	0.00				
36.00	7.75	4.59	0.00				
37.00	7.75	4.59	0.00				
38.00	7.75	4.59	0.00				
39.00	7.75	4.59	0.00				
40.00	7.75	4.59	0.00				
41.00	7.75	4.59	0.00				
42.00	7.75	4.59	0.00				
43.00	7.75	4.59	0.00				
44.00	7.75	4.59	0.00				
45.00	7.75	4.59	0.00				
46.00	7.75	4.59	0.00				
47.00	7.75	4.59	0.00				
48.00	7.75	4.59	0.00				
49.00	7.75	4.59	0.00				
50.00	7.75	4.59	0.00				
51.00	7.75	4.59	0.00				
52.00	7.75	4.59	0.00				

Summary for Subcatchment 2S: Bypass to POI #2

Runoff = 29.09 cfs @ 12.08 hrs, Volume= 1.870 af, Depth= 3.80"

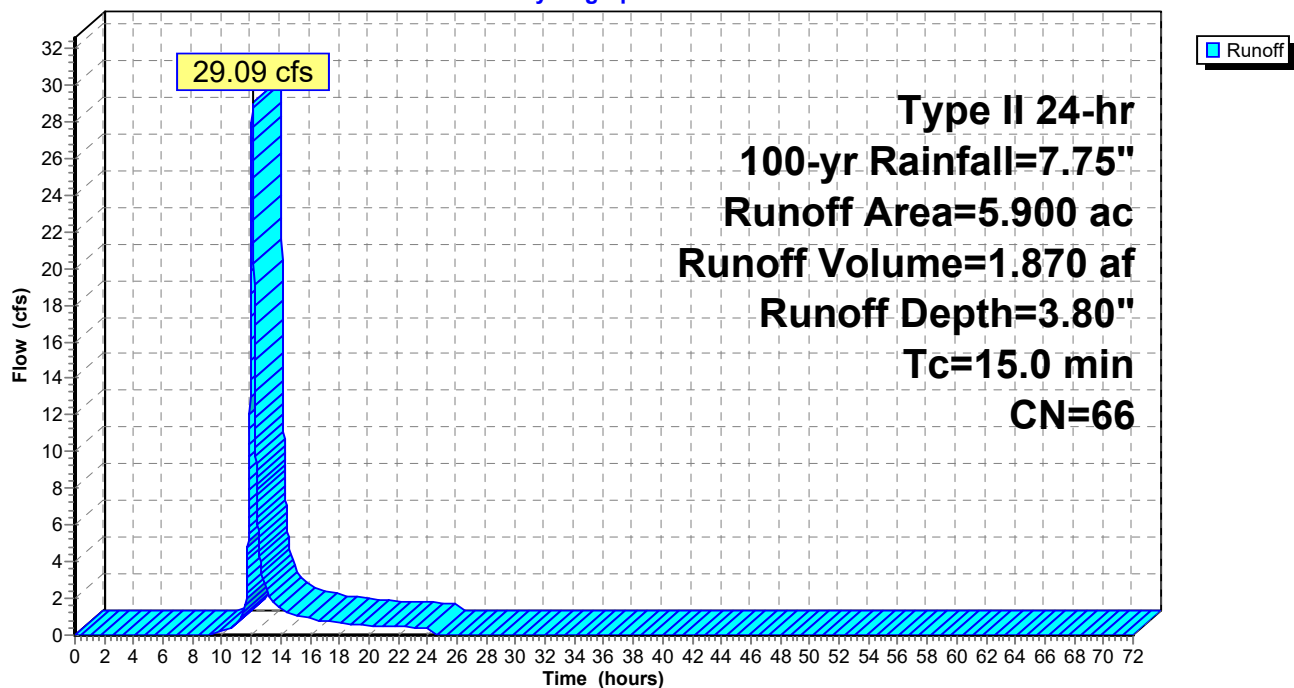
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.75"

Area (ac)	CN	Description
* 0.650	98	Existing Impervious
4.740	61	>75% Grass cover, Good, HSG B
0.280	80	>75% Grass cover, Good, HSG D
0.180	55	Woods, Good, HSG B
0.050	77	Woods, Good, HSG D
5.900	66	Weighted Average
5.250		88.98% Pervious Area
0.650		11.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					Direct Entry,

Subcatchment 2S: Bypass to POI #2

Hydrograph



Hydrograph for Subcatchment 2S: Bypass to POI #2

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	7.75	3.80	0.00
1.00	0.08	0.00	0.00	54.00	7.75	3.80	0.00
2.00	0.17	0.00	0.00	55.00	7.75	3.80	0.00
3.00	0.27	0.00	0.00	56.00	7.75	3.80	0.00
4.00	0.37	0.00	0.00	57.00	7.75	3.80	0.00
5.00	0.49	0.00	0.00	58.00	7.75	3.80	0.00
6.00	0.62	0.00	0.00	59.00	7.75	3.80	0.00
7.00	0.77	0.00	0.00	60.00	7.75	3.80	0.00
8.00	0.93	0.00	0.00	61.00	7.75	3.80	0.00
9.00	1.14	0.00	0.03	62.00	7.75	3.80	0.00
10.00	1.40	0.03	0.18	63.00	7.75	3.80	0.00
11.00	1.82	0.11	0.63	64.00	7.75	3.80	0.00
12.00	5.14	1.82	23.80	65.00	7.75	3.80	0.00
13.00	5.98	2.43	2.48	66.00	7.75	3.80	0.00
14.00	6.36	2.71	1.45	67.00	7.75	3.80	0.00
15.00	6.61	2.90	1.12	68.00	7.75	3.80	0.00
16.00	6.82	3.06	0.88	69.00	7.75	3.80	0.00
17.00	6.99	3.20	0.76	70.00	7.75	3.80	0.00
18.00	7.14	3.31	0.68	71.00	7.75	3.80	0.00
19.00	7.27	3.42	0.59	72.00	7.75	3.80	0.00
20.00	7.38	3.50	0.50				
21.00	7.48	3.58	0.47				
22.00	7.57	3.66	0.45				
23.00	7.66	3.73	0.43				
24.00	7.75	3.80	0.42				
25.00	7.75	3.80	0.00				
26.00	7.75	3.80	0.00				
27.00	7.75	3.80	0.00				
28.00	7.75	3.80	0.00				
29.00	7.75	3.80	0.00				
30.00	7.75	3.80	0.00				
31.00	7.75	3.80	0.00				
32.00	7.75	3.80	0.00				
33.00	7.75	3.80	0.00				
34.00	7.75	3.80	0.00				
35.00	7.75	3.80	0.00				
36.00	7.75	3.80	0.00				
37.00	7.75	3.80	0.00				
38.00	7.75	3.80	0.00				
39.00	7.75	3.80	0.00				
40.00	7.75	3.80	0.00				
41.00	7.75	3.80	0.00				
42.00	7.75	3.80	0.00				
43.00	7.75	3.80	0.00				
44.00	7.75	3.80	0.00				
45.00	7.75	3.80	0.00				
46.00	7.75	3.80	0.00				
47.00	7.75	3.80	0.00				
48.00	7.75	3.80	0.00				
49.00	7.75	3.80	0.00				
50.00	7.75	3.80	0.00				
51.00	7.75	3.80	0.00				
52.00	7.75	3.80	0.00				

Summary for Subcatchment 3PRE: Pre-Development to POI #3

Runoff = 21.93 cfs @ 12.03 hrs, Volume= 1.257 af, Depth= 5.05"

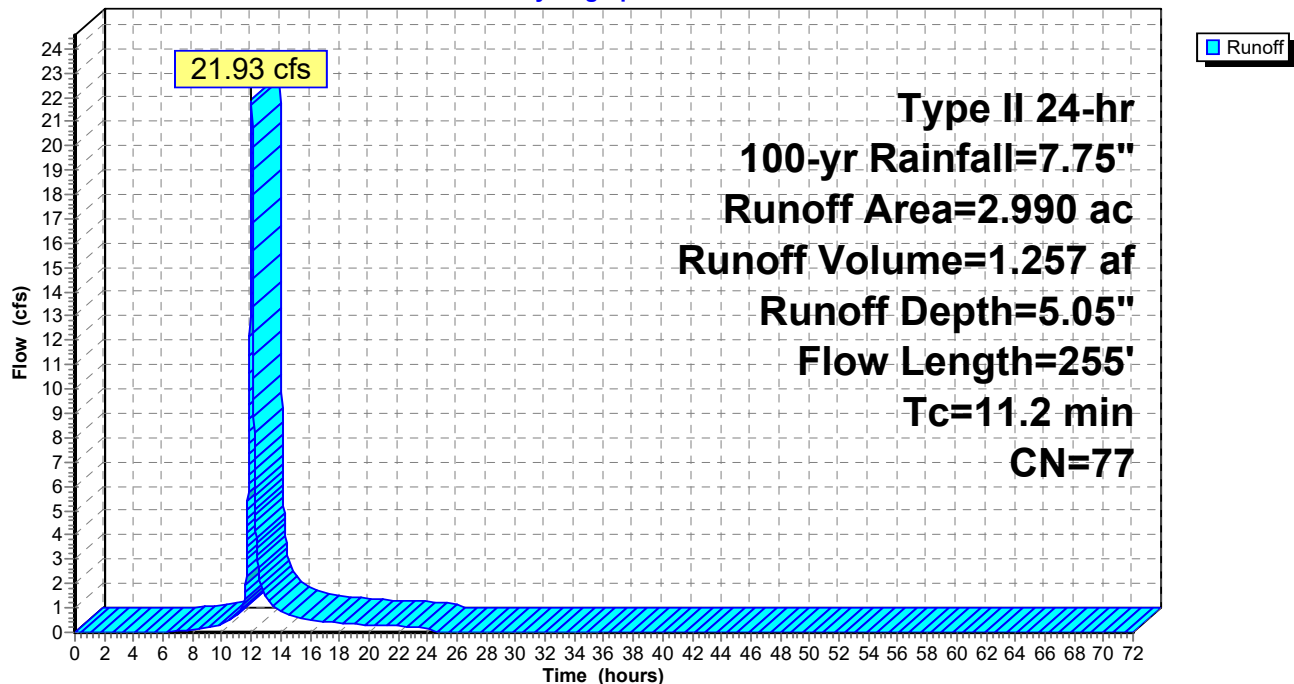
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.75"

Area (ac)	CN	Description
2.610	77	Woods, Good, HSG D
0.380	80	>75% Grass cover, Good, HSG D
2.990	77	Weighted Average
2.990		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	100	0.0360	0.16		Sheet Flow, Grass: Dense n= 0.240 P2= 3.53"
0.5	155	0.0860	4.72		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
11.2	255	Total			

Subcatchment 3PRE: Pre-Development to POI #3

Hydrograph



Hydrograph for Subcatchment 3PRE: Pre-Development to POI #3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	7.75	5.05	0.00
1.00	0.08	0.00	0.00	54.00	7.75	5.05	0.00
2.00	0.17	0.00	0.00	55.00	7.75	5.05	0.00
3.00	0.27	0.00	0.00	56.00	7.75	5.05	0.00
4.00	0.37	0.00	0.00	57.00	7.75	5.05	0.00
5.00	0.49	0.00	0.00	58.00	7.75	5.05	0.00
6.00	0.62	0.00	0.00	59.00	7.75	5.05	0.00
7.00	0.77	0.01	0.04	60.00	7.75	5.05	0.00
8.00	0.93	0.03	0.09	61.00	7.75	5.05	0.00
9.00	1.14	0.08	0.19	62.00	7.75	5.05	0.00
10.00	1.40	0.17	0.32	63.00	7.75	5.05	0.00
11.00	1.82	0.36	0.72	64.00	7.75	5.05	0.00
12.00	5.14	2.74	21.10	65.00	7.75	5.05	0.00
13.00	5.98	3.46	1.42	66.00	7.75	5.05	0.00
14.00	6.36	3.79	0.83	67.00	7.75	5.05	0.00
15.00	6.61	4.02	0.65	68.00	7.75	5.05	0.00
16.00	6.82	4.20	0.51	69.00	7.75	5.05	0.00
17.00	6.99	4.36	0.44	70.00	7.75	5.05	0.00
18.00	7.14	4.49	0.39	71.00	7.75	5.05	0.00
19.00	7.27	4.61	0.34	72.00	7.75	5.05	0.00
20.00	7.38	4.71	0.28				
21.00	7.48	4.80	0.27				
22.00	7.57	4.88	0.26				
23.00	7.66	4.97	0.25				
24.00	7.75	5.05	0.24				
25.00	7.75	5.05	0.00				
26.00	7.75	5.05	0.00				
27.00	7.75	5.05	0.00				
28.00	7.75	5.05	0.00				
29.00	7.75	5.05	0.00				
30.00	7.75	5.05	0.00				
31.00	7.75	5.05	0.00				
32.00	7.75	5.05	0.00				
33.00	7.75	5.05	0.00				
34.00	7.75	5.05	0.00				
35.00	7.75	5.05	0.00				
36.00	7.75	5.05	0.00				
37.00	7.75	5.05	0.00				
38.00	7.75	5.05	0.00				
39.00	7.75	5.05	0.00				
40.00	7.75	5.05	0.00				
41.00	7.75	5.05	0.00				
42.00	7.75	5.05	0.00				
43.00	7.75	5.05	0.00				
44.00	7.75	5.05	0.00				
45.00	7.75	5.05	0.00				
46.00	7.75	5.05	0.00				
47.00	7.75	5.05	0.00				
48.00	7.75	5.05	0.00				
49.00	7.75	5.05	0.00				
50.00	7.75	5.05	0.00				
51.00	7.75	5.05	0.00				
52.00	7.75	5.05	0.00				

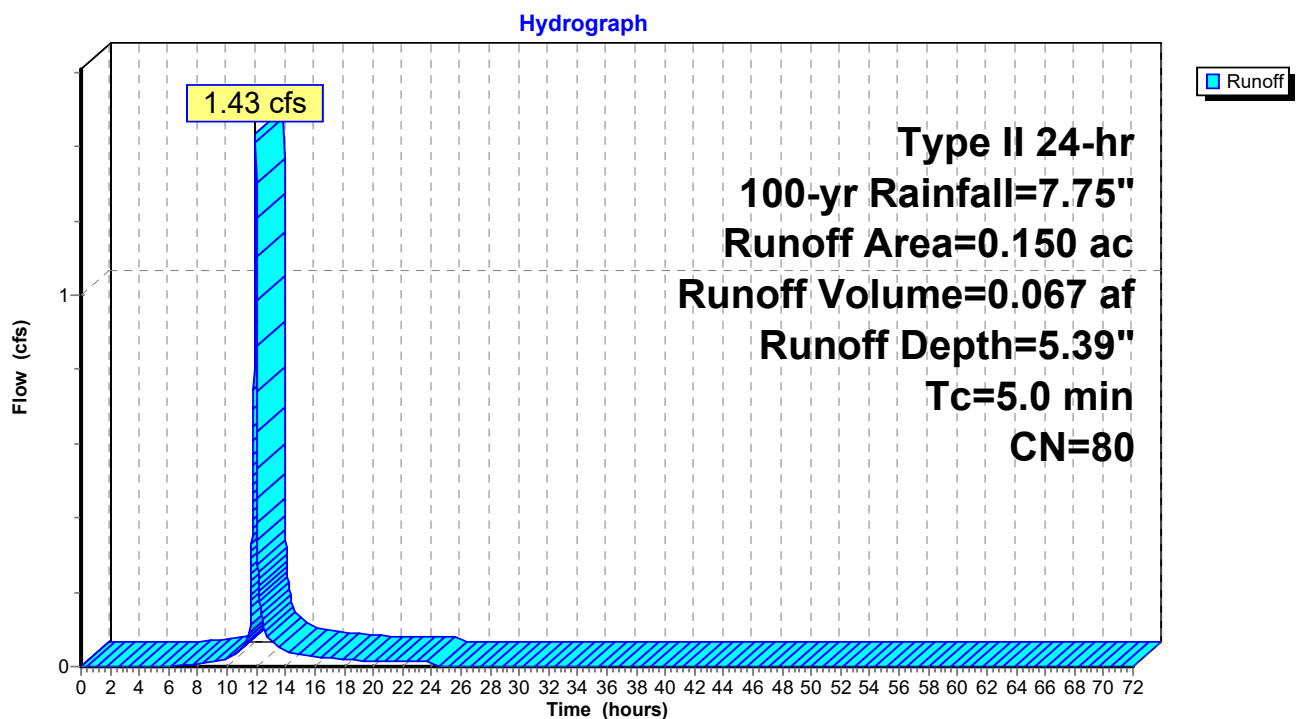
Summary for Subcatchment 3PST: Post-Development to POI #3

Runoff = 1.43 cfs @ 11.96 hrs, Volume= 0.067 af, Depth= 5.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.75"

Area (ac)	CN	Description
0.020	98	Paved roads w/curbs & sewers, HSG B
0.130	77	Woods, Good, HSG D
0.150	80	Weighted Average
0.130		86.67% Pervious Area
0.020		13.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry,

Subcatchment 3PST: Post-Development to POI #3

Hydrograph for Subcatchment 3PST: Post-Development to POI #3

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)	Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00	53.00	7.75	5.39	0.00
1.00	0.08	0.00	0.00	54.00	7.75	5.39	0.00
2.00	0.17	0.00	0.00	55.00	7.75	5.39	0.00
3.00	0.27	0.00	0.00	56.00	7.75	5.39	0.00
4.00	0.37	0.00	0.00	57.00	7.75	5.39	0.00
5.00	0.49	0.00	0.00	58.00	7.75	5.39	0.00
6.00	0.62	0.01	0.00	59.00	7.75	5.39	0.00
7.00	0.77	0.03	0.00	60.00	7.75	5.39	0.00
8.00	0.93	0.06	0.01	61.00	7.75	5.39	0.00
9.00	1.14	0.13	0.01	62.00	7.75	5.39	0.00
10.00	1.40	0.24	0.02	63.00	7.75	5.39	0.00
11.00	1.82	0.46	0.05	64.00	7.75	5.39	0.00
12.00	5.14	3.01	1.21	65.00	7.75	5.39	0.00
13.00	5.98	3.77	0.07	66.00	7.75	5.39	0.00
14.00	6.36	4.10	0.04	67.00	7.75	5.39	0.00
15.00	6.61	4.34	0.03	68.00	7.75	5.39	0.00
16.00	6.82	4.53	0.03	69.00	7.75	5.39	0.00
17.00	6.99	4.68	0.02	70.00	7.75	5.39	0.00
18.00	7.14	4.82	0.02	71.00	7.75	5.39	0.00
19.00	7.27	4.94	0.02	72.00	7.75	5.39	0.00
20.00	7.38	5.04	0.01				
21.00	7.48	5.14	0.01				
22.00	7.57	5.22	0.01				
23.00	7.66	5.31	0.01				
24.00	7.75	5.39	0.01				
25.00	7.75	5.39	0.00				
26.00	7.75	5.39	0.00				
27.00	7.75	5.39	0.00				
28.00	7.75	5.39	0.00				
29.00	7.75	5.39	0.00				
30.00	7.75	5.39	0.00				
31.00	7.75	5.39	0.00				
32.00	7.75	5.39	0.00				
33.00	7.75	5.39	0.00				
34.00	7.75	5.39	0.00				
35.00	7.75	5.39	0.00				
36.00	7.75	5.39	0.00				
37.00	7.75	5.39	0.00				
38.00	7.75	5.39	0.00				
39.00	7.75	5.39	0.00				
40.00	7.75	5.39	0.00				
41.00	7.75	5.39	0.00				
42.00	7.75	5.39	0.00				
43.00	7.75	5.39	0.00				
44.00	7.75	5.39	0.00				
45.00	7.75	5.39	0.00				
46.00	7.75	5.39	0.00				
47.00	7.75	5.39	0.00				
48.00	7.75	5.39	0.00				
49.00	7.75	5.39	0.00				
50.00	7.75	5.39	0.00				
51.00	7.75	5.39	0.00				
52.00	7.75	5.39	0.00				

Summary for Pond 2P: SCM #2

Inflow Area = 3.940 ac, 22.84% Impervious, Inflow Depth = 4.59" for 100-yr event
 Inflow = 33.00 cfs @ 11.96 hrs, Volume= 1.507 af
 Outflow = 1.37 cfs @ 13.35 hrs, Volume= 1.343 af, Atten= 96%, Lag= 83.2 min
 Primary = 1.37 cfs @ 13.35 hrs, Volume= 1.343 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
 Peak Elev= 717.55' @ 13.35 hrs Surf.Area= 14,413 sf Storage= 40,885 cf

Plug-Flow detention time= 818.7 min calculated for 1.343 af (89% of inflow)
 Center-of-Mass det. time= 764.3 min (1,580.1 - 815.8)

Volume	Invert	Avail.Storage	Storage Description
#1	713.50'	81,212 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
713.50	2,258	0	0
714.00	4,670	1,732	1,732
715.00	10,425	7,548	9,280
716.00	11,945	11,185	20,465
717.00	13,515	12,730	33,195
718.00	15,145	14,330	47,525
719.00	16,830	15,988	63,512
720.00	18,570	17,700	81,212

Device	Routing	Invert	Outlet Devices
#1	Primary	711.50'	24.0" Round Outlet Pipe L= 40.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 711.50' / 711.30' S= 0.0050 ' S= 0.0050 ' Cc= 0.900 n= 0.012 Concrete pipe, finished, Flow Area= 3.14 sf
#2	Device 1	713.50'	Filter Bed Head (feet) 0.00 1.00 2.00 3.00 4.00 5.00 Disch. (cfs) 0.000 0.055 0.077 0.098 0.120 0.142
#3	Device 1	715.50'	4.0" Vert. Orifice C= 0.600
#4	Device 1	717.50'	48.0" x 48.0" Horiz. Top of OCS C= 0.600 Limited to weir flow at low heads
#5	Secondary	718.50'	20.0' long x 10.0' breadth Emergency Spillway Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.30 cfs @ 13.35 hrs HW=717.55' (Free Discharge)

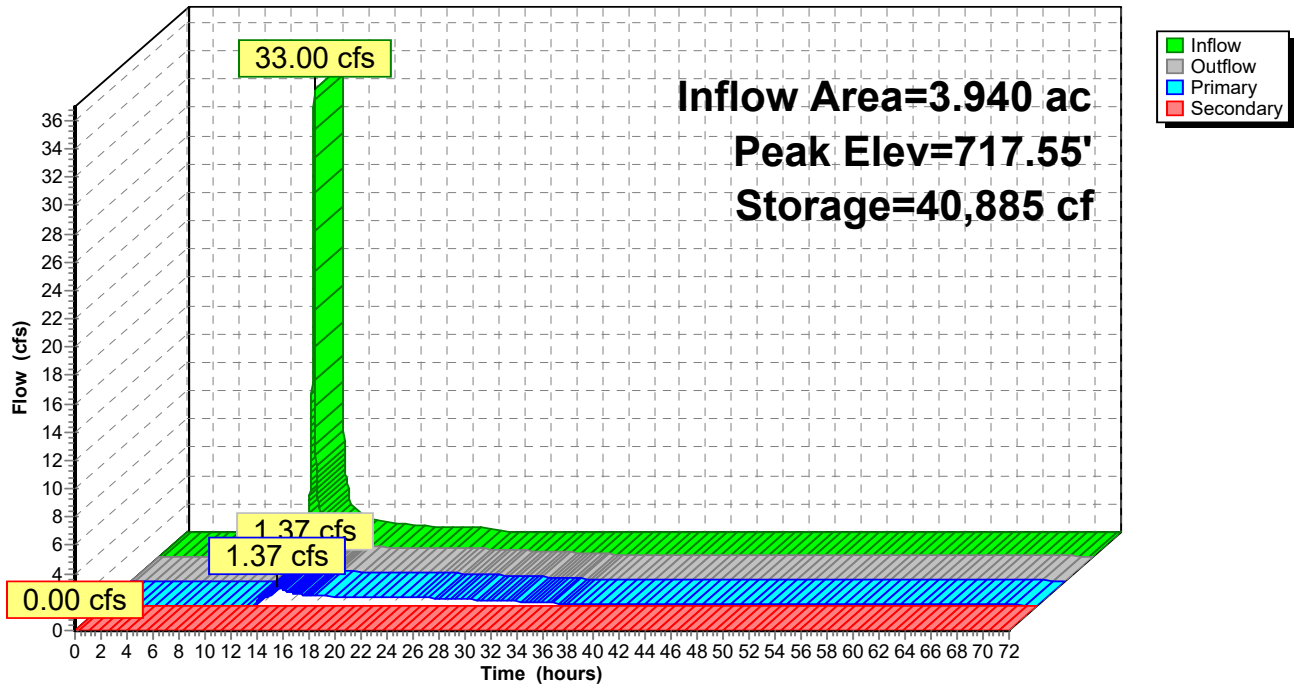
- 1=Outlet Pipe (Passes 1.30 cfs of 34.00 cfs potential flow)
- 2=Filter Bed (Custom Controls 0.12 cfs)
- 3=Orifice (Orifice Controls 0.58 cfs @ 6.61 fps)
- 4=Top of OCS (Weir Controls 0.60 cfs @ 0.74 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=713.50' (Free Discharge)

- 5=Emergency Spillway (Controls 0.00 cfs)

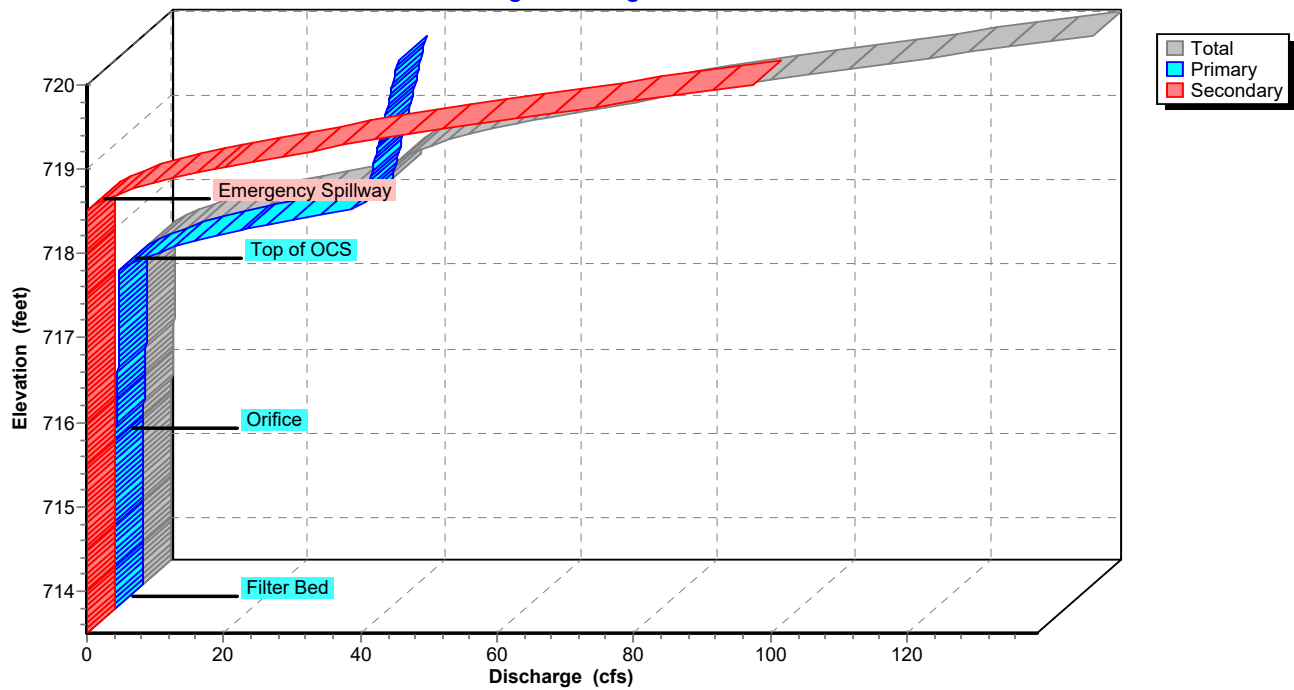
Pond 2P: SCM #2

Hydrograph



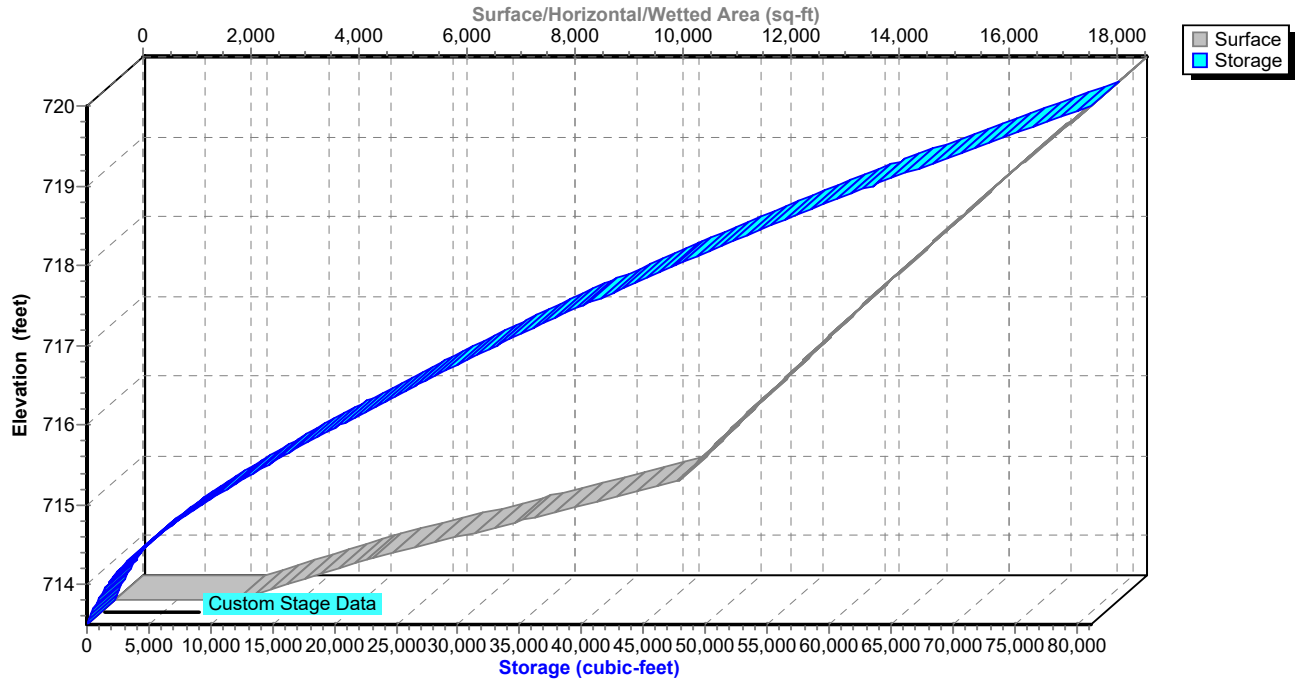
Pond 2P: SCM #2

Stage-Discharge



Pond 2P: SCM #2

Stage-Area-Storage



Hydrograph for Pond 2P: SCM #2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	713.50	0.00	0.00	0.00
2.00	0.00	0	713.50	0.00	0.00	0.00
4.00	0.00	0	713.50	0.00	0.00	0.00
6.00	0.00	0	713.50	0.00	0.00	0.00
8.00	0.06	113	713.55	0.00	0.00	0.00
10.00	0.33	1,269	713.89	0.02	0.02	0.00
12.00	28.13	28,055	716.61	0.51	0.51	0.00
14.00	1.00	40,686	717.54	1.10	1.10	0.00
16.00	0.62	40,169	717.50	0.70	0.70	0.00
18.00	0.48	39,196	717.43	0.68	0.68	0.00
20.00	0.35	37,421	717.31	0.65	0.65	0.00
22.00	0.32	35,249	717.15	0.62	0.62	0.00
24.00	0.30	33,114	716.99	0.59	0.59	0.00
26.00	0.00	29,154	716.70	0.53	0.53	0.00
28.00	0.00	25,593	716.42	0.46	0.46	0.00
30.00	0.00	22,532	716.17	0.39	0.39	0.00
32.00	0.00	19,995	715.96	0.31	0.31	0.00
34.00	0.00	18,024	715.79	0.23	0.23	0.00
36.00	0.00	16,677	715.68	0.15	0.15	0.00
38.00	0.00	15,790	715.60	0.10	0.10	0.00
40.00	0.00	15,128	715.54	0.08	0.08	0.00
42.00	0.00	14,560	715.49	0.08	0.08	0.00
44.00	0.00	14,011	715.44	0.08	0.08	0.00
46.00	0.00	13,470	715.39	0.07	0.07	0.00
48.00	0.00	12,937	715.34	0.07	0.07	0.00
50.00	0.00	12,411	715.29	0.07	0.07	0.00
52.00	0.00	11,893	715.25	0.07	0.07	0.00
54.00	0.00	11,383	715.20	0.07	0.07	0.00
56.00	0.00	10,880	715.15	0.07	0.07	0.00
58.00	0.00	10,384	715.11	0.07	0.07	0.00
60.00	0.00	9,896	715.06	0.07	0.07	0.00
62.00	0.00	9,415	715.01	0.07	0.07	0.00
64.00	0.00	8,942	714.97	0.07	0.07	0.00
66.00	0.00	8,475	714.92	0.06	0.06	0.00
68.00	0.00	8,016	714.87	0.06	0.06	0.00
70.00	0.00	7,565	714.83	0.06	0.06	0.00
72.00	0.00	7,121	714.78	0.06	0.06	0.00

Stage-Discharge for Pond 2P: SCM #2

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)	Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
713.50	0.00	0.00	0.00	718.80	46.27	37.97	8.30
713.60	0.01	0.01	0.00	718.90	51.22	38.27	12.95
713.70	0.01	0.01	0.00	719.00	57.16	38.57	18.60
713.80	0.02	0.02	0.00	719.10	63.96	38.86	25.10
713.90	0.02	0.02	0.00	719.20	70.72	39.15	31.57
714.00	0.03	0.03	0.00	719.30	77.94	39.45	38.50
714.10	0.03	0.03	0.00	719.40	85.58	39.73	45.85
714.20	0.04	0.04	0.00	719.50	93.62	40.02	53.60
714.30	0.04	0.04	0.00	719.60	102.26	40.31	61.95
714.40	0.05	0.05	0.00	719.70	111.31	40.59	70.72
714.50	0.06	0.06	0.00	719.80	120.32	40.87	79.45
714.60	0.06	0.06	0.00	719.90	129.61	41.15	88.46
714.70	0.06	0.06	0.00	720.00	138.98	41.43	97.55
714.80	0.06	0.06	0.00				
714.90	0.06	0.06	0.00				
715.00	0.07	0.07	0.00				
715.10	0.07	0.07	0.00				
715.20	0.07	0.07	0.00				
715.30	0.07	0.07	0.00				
715.40	0.07	0.07	0.00				
715.50	0.08	0.08	0.00				
715.60	0.10	0.10	0.00				
715.70	0.16	0.16	0.00				
715.80	0.24	0.24	0.00				
715.90	0.29	0.29	0.00				
716.00	0.33	0.33	0.00				
716.10	0.37	0.37	0.00				
716.20	0.40	0.40	0.00				
716.30	0.43	0.43	0.00				
716.40	0.46	0.46	0.00				
716.50	0.48	0.48	0.00				
716.60	0.51	0.51	0.00				
716.70	0.53	0.53	0.00				
716.80	0.55	0.55	0.00				
716.90	0.57	0.57	0.00				
717.00	0.59	0.59	0.00				
717.10	0.61	0.61	0.00				
717.20	0.63	0.63	0.00				
717.30	0.65	0.65	0.00				
717.40	0.67	0.67	0.00				
717.50	0.69	0.69	0.00				
717.60	2.36	2.36	0.00				
717.70	5.40	5.40	0.00				
717.80	9.34	9.34	0.00				
717.90	13.99	13.99	0.00				
718.00	19.27	19.27	0.00				
718.10	25.10	25.10	0.00				
718.20	31.45	31.45	0.00				
718.30	36.43	36.43	0.00				
718.40	36.74	36.74	0.00				
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718.60	38.93	37.36	1.57				
718.70	42.12	37.67	4.45				

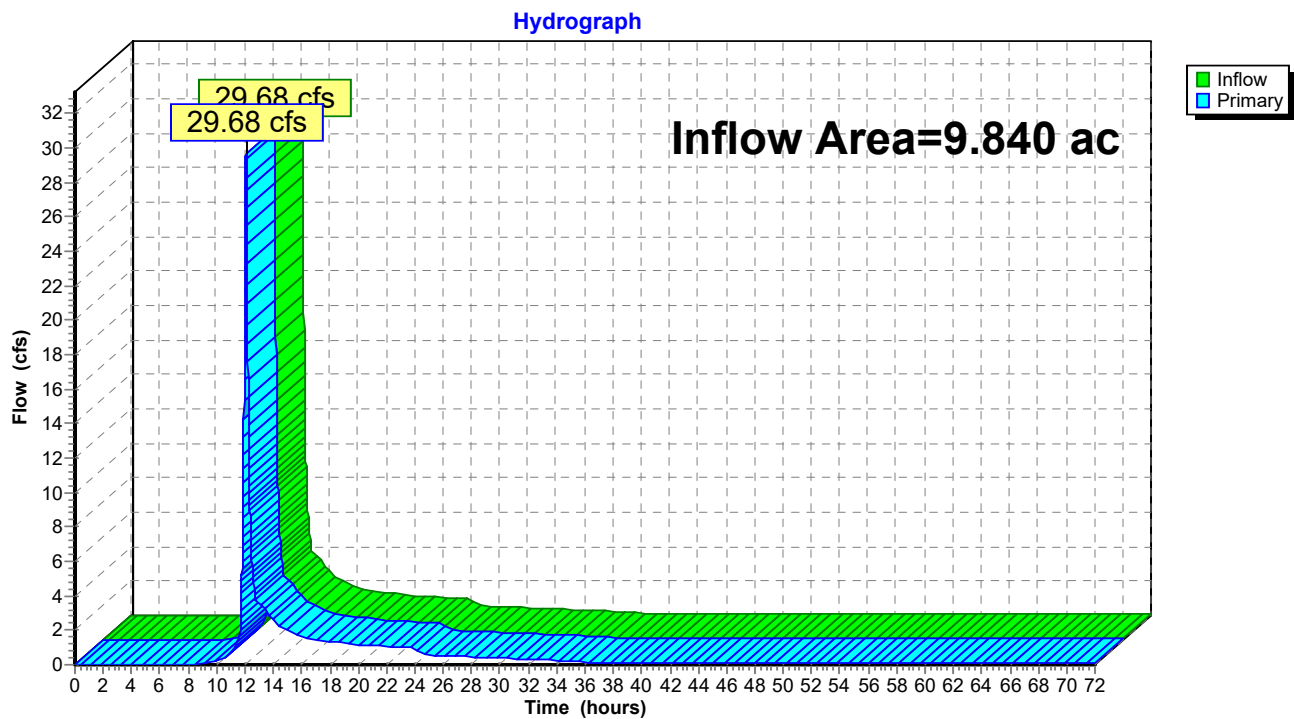
Stage-Area-Storage for Pond 2P: SCM #2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
713.50	2,258	0	718.80	16,493	60,180
713.60	2,740	250	718.90	16,661	61,837
713.70	3,223	548	719.00	16,830	63,512
713.80	3,705	894	719.10	17,004	65,204
713.90	4,188	1,289	719.20	17,178	66,913
714.00	4,670	1,732	719.30	17,352	68,639
714.10	5,246	2,228	719.40	17,526	70,383
714.20	5,821	2,781	719.50	17,700	72,145
714.30	6,396	3,392	719.60	17,874	73,923
714.40	6,972	4,060	719.70	18,048	75,719
714.50	7,548	4,786	719.80	18,222	77,533
714.60	8,123	5,570	719.90	18,396	79,364
714.70	8,699	6,411	720.00	18,570	81,212
714.80	9,274	7,310			
714.90	9,849	8,266			
715.00	10,425	9,280			
715.10	10,577	10,330			
715.20	10,729	11,395			
715.30	10,881	12,475			
715.40	11,033	13,571			
715.50	11,185	14,682			
715.60	11,337	15,808			
715.70	11,489	16,949			
715.80	11,641	18,106			
715.90	11,793	19,278			
716.00	11,945	20,465			
716.10	12,102	21,667			
716.20	12,259	22,885			
716.30	12,416	24,119			
716.40	12,573	25,368			
716.50	12,730	26,633			
716.60	12,887	27,914			
716.70	13,044	29,211			
716.80	13,201	30,523			
716.90	13,358	31,851			
717.00	13,515	33,195			
717.10	13,678	34,554			
717.20	13,841	35,930			
717.30	14,004	37,322			
717.40	14,167	38,731			
717.50	14,330	40,156			
717.60	14,493	41,597			
717.70	14,656	43,054			
717.80	14,819	44,528			
717.90	14,982	46,018			
718.00	15,145	47,525			
718.10	15,314	49,047			
718.20	15,482	50,587			
718.30	15,650	52,144			
718.40	15,819	53,717			
718.50	15,988	55,308			
718.60	16,156	56,915			
718.70	16,325	58,539			

Summary for Link 2L: Total Post-Development to POI #2

Inflow Area = 9.840 ac, 15.75% Impervious, Inflow Depth > 3.92" for 100-yr event
Inflow = 29.68 cfs @ 12.08 hrs, Volume= 3.213 af
Primary = 29.68 cfs @ 12.08 hrs, Volume= 3.213 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link 2L: Total Post-Development to POI #2

Hydrograph for Link 2L: Total Post-Development to POI #2

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	0.00	0.00	53.00	0.07	0.00	0.07
1.00	0.00	0.00	0.00	54.00	0.07	0.00	0.07
2.00	0.00	0.00	0.00	55.00	0.07	0.00	0.07
3.00	0.00	0.00	0.00	56.00	0.07	0.00	0.07
4.00	0.00	0.00	0.00	57.00	0.07	0.00	0.07
5.00	0.00	0.00	0.00	58.00	0.07	0.00	0.07
6.00	0.00	0.00	0.00	59.00	0.07	0.00	0.07
7.00	0.00	0.00	0.00	60.00	0.07	0.00	0.07
8.00	0.00	0.00	0.00	61.00	0.07	0.00	0.07
9.00	0.04	0.00	0.04	62.00	0.07	0.00	0.07
10.00	0.20	0.00	0.20	63.00	0.07	0.00	0.07
11.00	0.67	0.00	0.67	64.00	0.07	0.00	0.07
12.00	24.31	0.00	24.31	65.00	0.06	0.00	0.06
13.00	3.46	0.00	3.46	66.00	0.06	0.00	0.06
14.00	2.55	0.00	2.55	67.00	0.06	0.00	0.06
15.00	1.99	0.00	1.99	68.00	0.06	0.00	0.06
16.00	1.58	0.00	1.58	69.00	0.06	0.00	0.06
17.00	1.45	0.00	1.45	70.00	0.06	0.00	0.06
18.00	1.35	0.00	1.35	71.00	0.06	0.00	0.06
19.00	1.26	0.00	1.26	72.00	0.06	0.00	0.06
20.00	1.15	0.00	1.15				
21.00	1.11	0.00	1.11				
22.00	1.07	0.00	1.07				
23.00	1.04	0.00	1.04				
24.00	1.01	0.00	1.01				
25.00	0.56	0.00	0.56				
26.00	0.53	0.00	0.53				
27.00	0.49	0.00	0.49				
28.00	0.46	0.00	0.46				
29.00	0.43	0.00	0.43				
30.00	0.39	0.00	0.39				
31.00	0.35	0.00	0.35				
32.00	0.31	0.00	0.31				
33.00	0.27	0.00	0.27				
34.00	0.23	0.00	0.23				
35.00	0.19	0.00	0.19				
36.00	0.15	0.00	0.15				
37.00	0.12	0.00	0.12				
38.00	0.10	0.00	0.10				
39.00	0.09	0.00	0.09				
40.00	0.08	0.00	0.08				
41.00	0.08	0.00	0.08				
42.00	0.08	0.00	0.08				
43.00	0.08	0.00	0.08				
44.00	0.08	0.00	0.08				
45.00	0.08	0.00	0.08				
46.00	0.07	0.00	0.07				
47.00	0.07	0.00	0.07				
48.00	0.07	0.00	0.07				
49.00	0.07	0.00	0.07				
50.00	0.07	0.00	0.07				
51.00	0.07	0.00	0.07				
52.00	0.07	0.00	0.07				

APPENDIX E

NOW OR FORMERLY
MARY LEE BARD
FAMILY LIMITED PARTNERSHIP
TAX #06147004
DEED:553-251
"CHURCH PROPERTY"

NOW OR FORMERLY
MARY LEE BARD
FAMILY LIMITED PARTNERSHIP
TAX #06147004B
DEED:553-251
"CHURCH PROPERTY"

LEILA L. MORRIS
TAX #06120004C
DEED:1490-533

NOW OR FORMERLY
CHARLES ARCHIE WALTON &
LAURIE M. WALTON
TAX #06147014
DEED:381-606

NOW OR FORMERLY
JAMES SCOTT MUNDORF &
NANCY BUSH
TAX #06147015
DEED:375-786

NOW OR FORMERLY
WEDDINGTON ON
PROVIDENCE DEVELOPERS, LLC
TAX #06147001
DEED:1429-596

PROPOSED PROVIDENCE FOREST ESTATES
PARKER-ORLEANS HOMEBUILDERS

EXISTING
LAKE
(W.S. 644.0)

SEE DRAINAGE PLAN #2
SHEET 6 OF 33

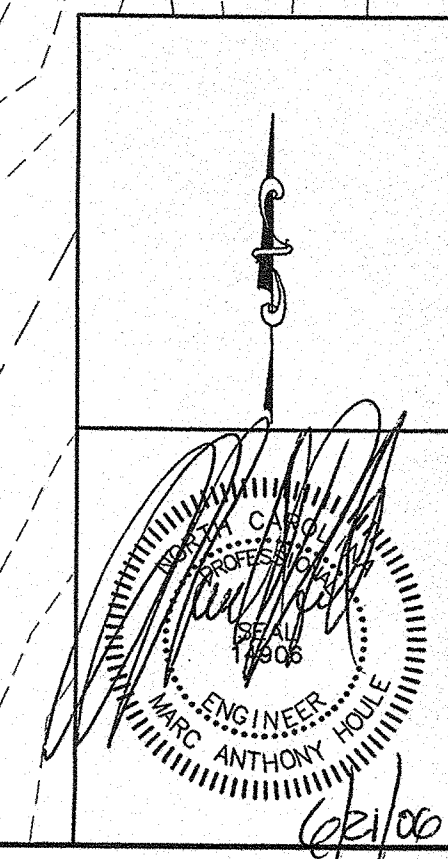
THIS PLAN IS A FINAL DESIGN-NOT
RELEASED FOR CONSTRUCTION
UNLESS INITIALED/DATED AS APPROVED:
APPROVED: _____
INITIALS DATE

- LEGEND
- CB - CATCH BASIN
 - DCB - DOUBLE CATCH BASIN
 - DI - DROP INLET
 - DDI - DOUBLE DROP INLET
 - MH - MANHOLE
 - FES - FLARED END SECTION
 - INV - INVERT
 - TC - TOP OF CURB
 - L-HW - L SHAPED HEADWALL
 - SDE - STORM DRAINAGE EASEMENT
 - XXXX AC - DRAINAGE BASIN TO EACH STRUCTURE
 - SPE - 100 YR. + 1 STORM WATER PROTECTION ELEVATION
 - S.W.E.L. - 100 YR STORM WATER ELEVATION LINE

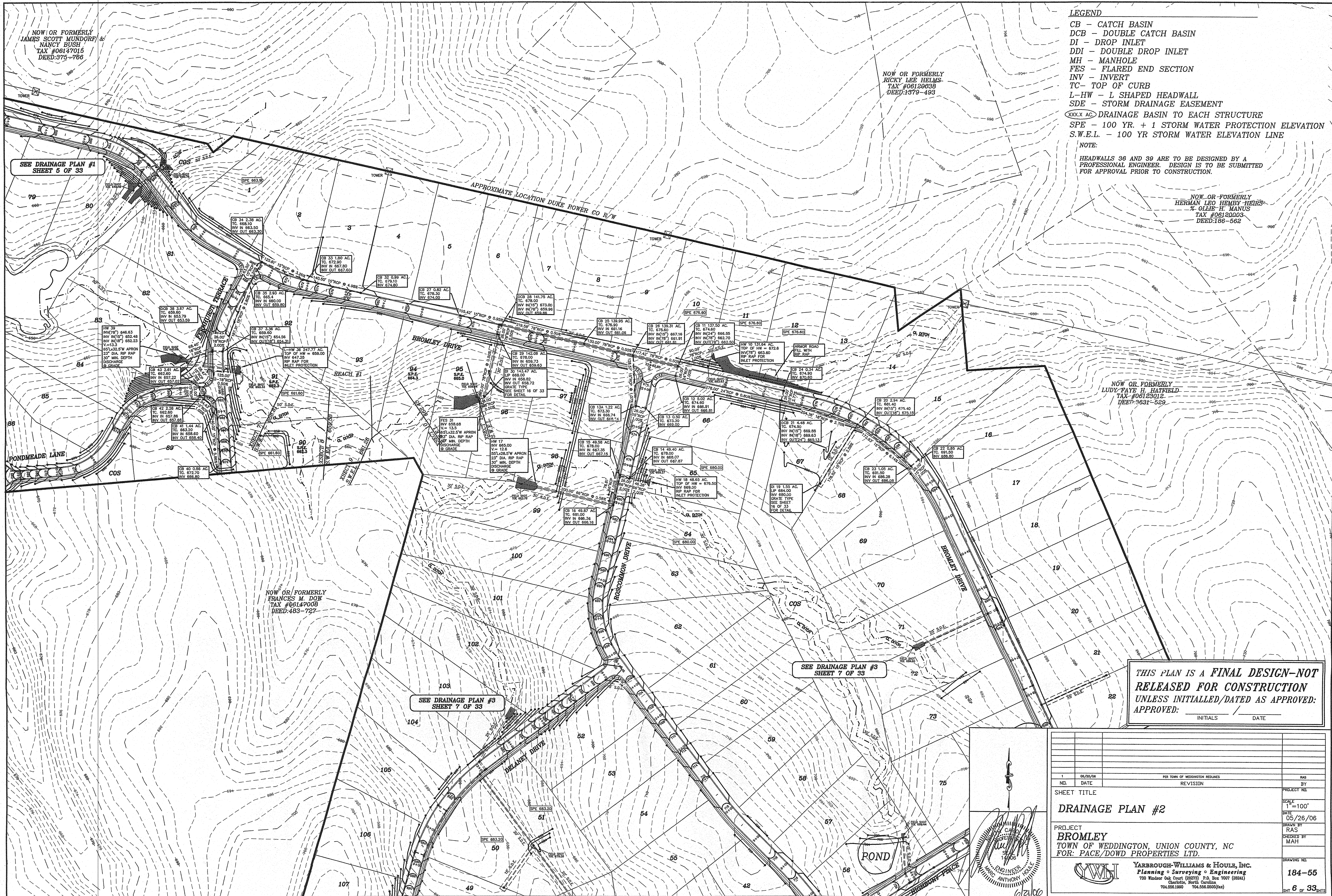
NOW OR FORMERLY
DONALD M. PATTERSON
TAX #06147009
DEED:665-669

NOTE:
HEADWALLS 6 AND 7 ARE TO BE DESIGNED BY A
PROFESSIONAL ENGINEER. DESIGN IS TO BE SUBMITTED
FOR APPROVAL PRIOR TO CONSTRUCTION.

NOW OR FORMERLY
FRANCES M. DOW
TAX #06147008
DEED:483-727



1		05/26/06	PER TOWN OF WEDDINGTON REGULATIONS	RAS
NO.	DATE	REVISION	BY	PROJECT NO.
SHEET TITLE				SCALE 1"=100'
DRAINAGE PLAN #1				DATE 05/26/06
PROJECT				BROUW BY RAS
BROMLEY				CHECKED BY MAH
TOWN OF WEDDINGTON, UNION COUNTY, NC				DRAWING NO.
FOR: PACE/DOWD PROPERTIES LTD.				184-58
YARBROUGH-WILLIAMS & HOULE, INC.				SHT 5 OF 33
Planning • Surveying • Engineering				
730 Windsor Oak Court (28270) P.O. Box 7007 (28241)				
Charlotte, North Carolina				
704.566.1990 704.566.0505(fax)				



CB - CATCH BASIN
DCB - DOUBLE CATCH BASIN
DI - DROP INLET
DDI - DOUBLE DROP INLET
MH - MANHOLE
FES - FLARED END SECTION
INV - INVERT
TC- TOP OF CURB
L-HW - L SHAPED HEADWALL
SDE - STORM DRAINAGE EASEMENT
(XXX.X AC) DRAINAGE BASIN TO EACH STRUCTURE
SPE - 100 YR. + 1 STORM WATER PROTECTION ELEVATION
S.W.E.L. - 100 YR STORM WATER ELEVATION LINE

RESIDENTIAL
NOW OR FORMERLY
JOHN R. DELANEY, JR - et al
P.O. BOX 218
HICKORY, NC, 28603
DEED:3785-163
TAX #06-123-011
ZONED R-CD

~~—~~ NOW OR FORMER
 JOHN WAYNE OR
~~—~~ TAX #06123012B
 DEED:663-678

THIS PLAN IS A FINAL DESIGN-NOT
RELEASED FOR CONSTRUCTION
UNLESS INITIALLED/DATED AS APPROVED:
APPROVED: /

I	06/29/06			FED TOWN OF WEDDINGTON REGULATES				PWS	
NEL	DATE			REVISION				BY	
SHEET TITLE									PROJECT NO.
DRAINAGE PLAN #3									SCALE 1" = 100'
PROJECT BROMLEY TOWN OF WEDDINGTON, UNION COUNTY, NC FOR: PACE/DOWD PROPERTIES LTD.									DATE 06/26/06
									DRAWN BY RAS
									CHECKED BY WAFH
									DRAWING NO. 184-54
	YARBROUGH-WILLIAMS & HOULE, INC. <i>Planning • Surveying • Engineering</i> 730 Windsor Oak Court (28278) P.O. Box 7007 (28241) Charlotte, North Carolina 704.556.1900 704.556.0500(fax)								SHT 7 OF 33

LEGEND
CB - CATCH BASIN
DCB - DOUBLE CATCH BASIN
DI - DROP INLET
DDI - DOUBLE DROP INLET
MH - MANHOLE
FES - FLARED END SECTION
INV - INVERT
TC - TOP OF CURB
L-HW - L SHAPED HEADWALL
SDE - STORM DRAINAGE EASEMENT
XXX.X AC DRAINAGE BASIN TO EACH STRUCTURE

NOW OR FORMERLY
MARY LEE BARD
FAMILY LIMITED PARTNERSHIP
TAX #06147004A
DEED: NONE SHOWN

NOW OR FORMERLY
MARY LEE BARD
FAMILY LIMITED PARTNERSHIP
TAX #06147004B
DEED: 563-251
"CHURCH PROPERTY"

NOW OR FORMERLY
CHARLES ARCHIE WALTON &
LAURIE M. WALTON
TAX #06147014
DEED: 381-606

NOW OR FORMERLY
JAMES SCOTT MUNDORF &
NANCY BUSH
TAX #06147015
DEED: 375-788

NOW OR FORMERLY
WEDDINGTON ON
PROVIDENCE DEVELOPERS, LLC
TAX #06147001
DEED: 1429-598

PROPOSED PROVIDENCE FOREST-ESTATES
PARKER-ORLEANS HOMEBUILDERS

NOW OR FORMERLY
DELANEY FARM, LLC
TAX #06147010
DEED: 1534-853

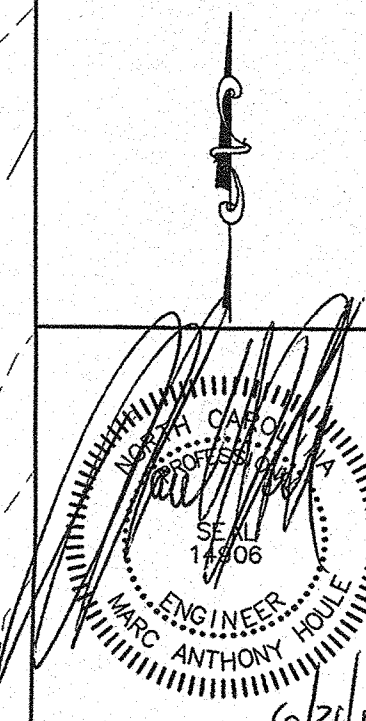
NOW OR FORMERLY
DONALD M. PATTERSON
TAX #06147009
DEED: 665-669

NOW OR FORMERLY
FRANCES M. DOW
TAX #06147008
DEED: 489-727

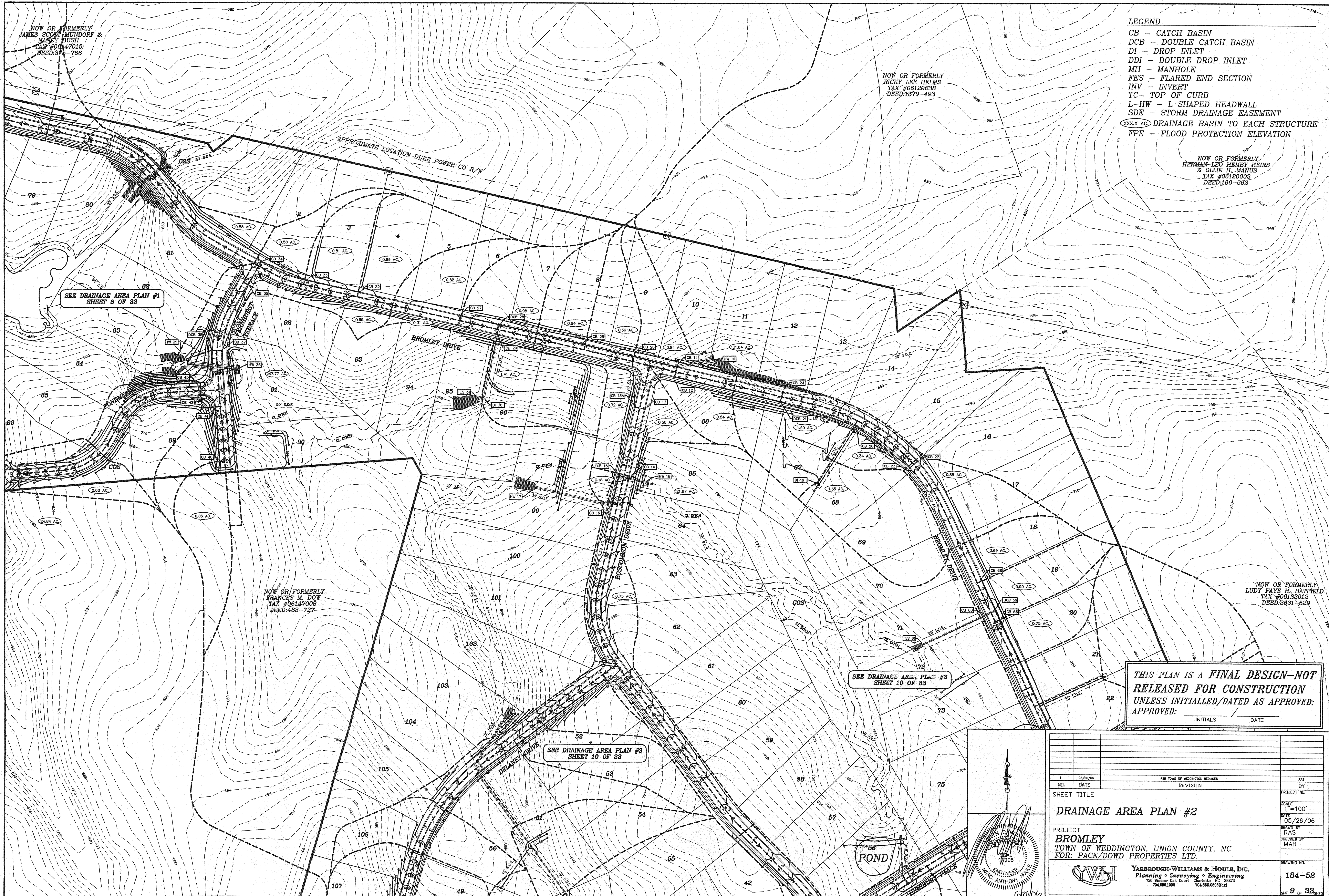
EXISTING LAKE

THIS PLAN IS A FINAL DESIGN-NOT
RELEASED FOR CONSTRUCTION
UNLESS INITIALLED/DATED AS APPROVED:
APPROVED: _____
INITIALS _____ DATE _____

1	06/20/06	PER TOWN OF WEDDINGTON REGULATIONS	RAS
ND	DATE	REVISION	BY
SHEET TITLE			
DRAINAGE AREA PLAN #1			
PROJECT			
BROMLEY			
TOWN OF WEDDINGTON, UNION COUNTY, NC			
FOR: PACE/DOWD PROPERTIES LTD.			
DRAWING NO.			
184-53			
SHT 8 OF 33			



YARBROUGH WILLIAMS & HOULE, INC.
Planning • Surveying • Engineering
750 Windsor Oak Court Charlotte, NC 28278
704.558.1900 704.558.0502(fax)



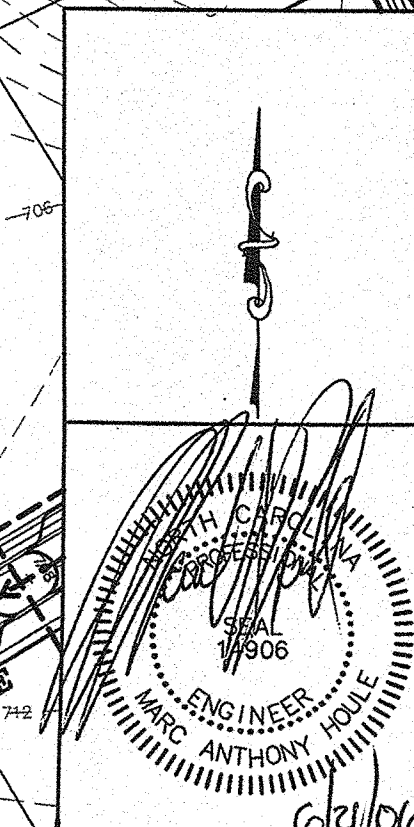
LEGEND
CB - CATCH BASIN
DCB - DOUBLE CATCH BASIN
DI - DROP INLET
DDI - DOUBLE DROP INLET
MH - MANHOLE
FES - FLARED END SECTION
INV - INVERT
TC - TOP OF CURB
L-HW - L SHAPED HEADWALL
SDE - STORM DRAINAGE EASEMENT
(XXXX AC) DRAINAGE BASIN TO EACH STRUCTURE
FPE - FLOOD PROTECTION ELEVATION

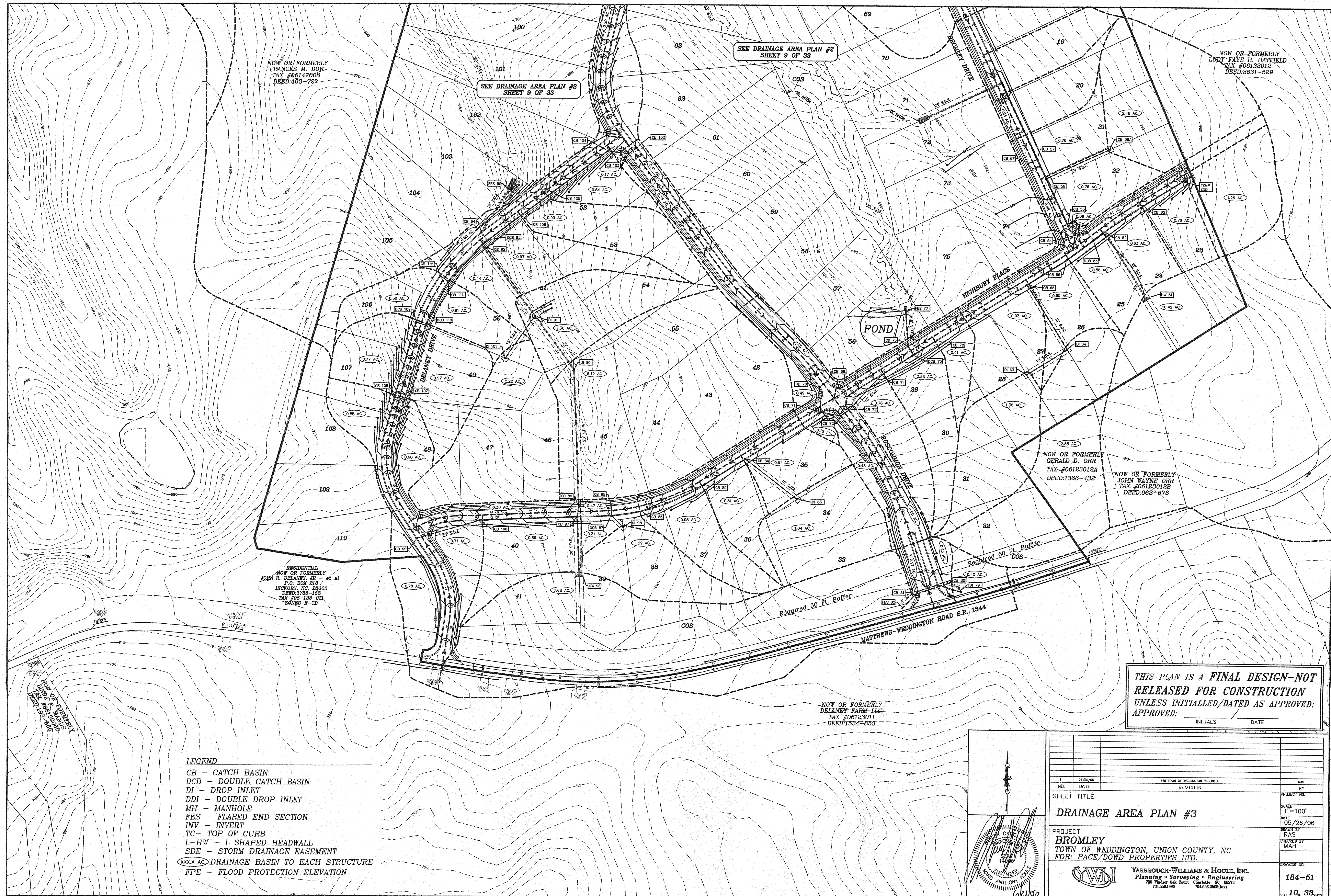
NOW OR FORMERLY
HERMAN-LEO HEMBY HEIRS
% OLLIE H. MANUS
TAX #06120003
DEED-186-562

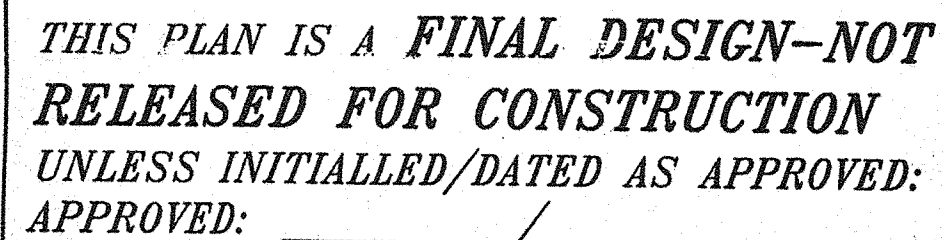
NOW OR FORMERLY
LUDY FAYE H. HATFIELD
TAX #06123012
DEED-3831-529

THIS PLAN IS A FINAL DESIGN-NOT
RELEASED FOR CONSTRUCTION
UNLESS INITIALED/DATED AS APPROVED:
APPROVED: _____ INITIALS _____ DATE _____

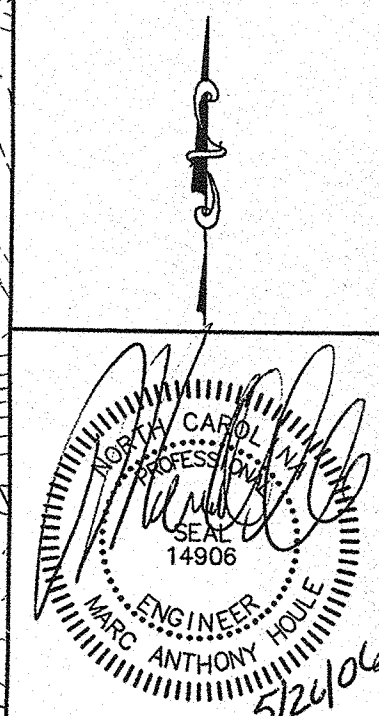
1		06/20/06		PER TOWN OF WEDDINGTON REELINES		RHS	
NO.		DATE		REVISION		BY	
SHEET TITLE						PROJECT NO.	
DRAINAGE AREA PLAN #2						SCALE 1"=100'	
PROJECT BROMLEY TOWN OF WEDDINGTON, UNION COUNTY, NC FOR: FACE/DOWD PROPERTIES LTD.						DATE 05/26/06	
DRAWN BY RAS						CHECKED BY MAH	
DRAWING NO.						184-52	
SHT 9 OF 33							







INITIALS / DATE



184-50
SHT 11 OF 33 SHTS

Stratford Hall: *Redesigning a Property to Inaugurate Conservation Design*

by Randall Arendt

Location: Weddington, NC

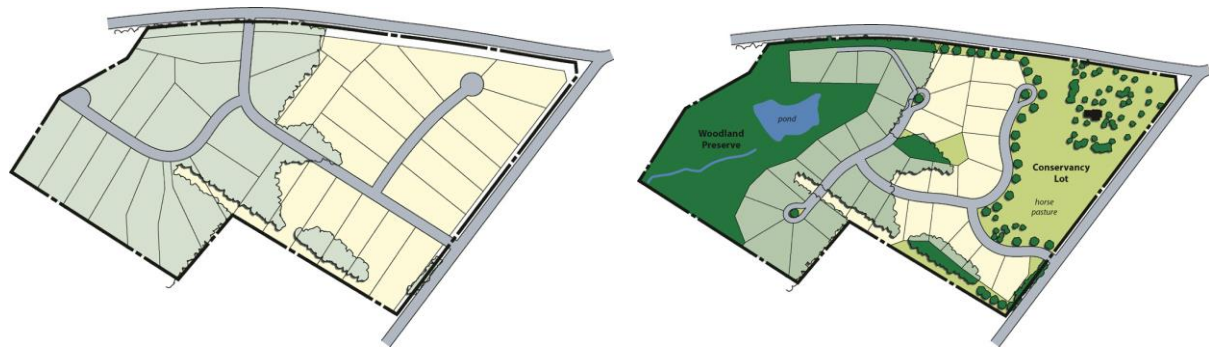
Developer: Fairview Developers, Inc., Greg Williams, President, Monroe, NC

Site Designer: Randall Arendt, FRTPI, Brunswick, Maine

Dates: 2003-2005

The genesis of this project was a workshop presentation by the site designer on conservation subdivision design principles to leading public officials in Union County, sponsored by the County Co-operative Extension Service. Among the participants was Ed Howie, then Mayor of Weddington, a small upscale rural town several miles southeast of Charlotte, located squarely in the path of development.

Following further presentations, several public meetings, and technical assistance in ordinance drafting from planners at the Centralina COG, the Council voted to adopt a conservation subdivision ordinance in 2002. Greg Williams, of Fairview Developers, who had purchased this property with a previously approved subdivision plan, approached the Mayor about my reworking the layout for Stratford Hall, which met the existing code but was not well received. The main problem, from a viewshed perspective, was that two long sides of the property, which were bordered by well-travelled local roads, were proposed to be lined with double-frontage lots backing up to those streets, creating unpleasant views from those roads. In the open farming landscape, their back sides of the houses would be conspicuously on public view, creating a very unattractive “fanny-first” appearance with pressure-treated decks and sliding glass doors dominating the streetscape as seen by all passing motorists. Another problem with the original layout was that it would have divided the entire property into houselots and streets with no open space, resulting in a small pond being sliced into three ownerships, denying neighborhood residents the pleasure of walking around its shoreline.



Figures 1 and 2: A before-and-after pair of sketch plans showing the differences between a conventional layout and a conservation design. The standard plat compromises the public viewshed with lower-value lots backing up to the two public roads instead of creating a large, high-value conservancy lot at the corner. In the conservation design, homes are buffered from the two public roadways and residents have an attractive woodland park to enjoy, with trails ringing the pond. Half of the original woodlands were preserved, including environmental buffers around the pond, which had been proposed to be split among three lots. The financial success of Stratford Hall has spurred a dozen similar “twice green” developments in Weddington, testament to the superior economic benefits this design approach provides developers, and the appeal of good design to home-buyers and residents of the area. Also note that street length was shortened in the conservation design, in spite of the fact that much of it is “single-loaded” (homes on one side only, to opening it to value-adding views of the conservation land. Source: Natural Lands Trust



Figures 3 and 4: Views from the public road into Stratford Hall, preserving Weddington’s rural character. Note that homes face forward onto open space so that their back yards remain private. Source: Randall Arendt

After walking the 35-acre property and determining that the two highest conservation priorities were the pond and surrounding woodlands, plus the public viewshed, these areas were “greenlined” and set aside as the first step in the design process. (It is critically important to design the open space areas first, lest they become afterthoughts, as they are in many “planned unit developments”). Golf course development design follows the same sequence, with the open space designed during the very first step. Conservation designs are sometimes referred to as “golf course communities without the golf course, with greenways instead of fairways”).

Next, house positions were located to maximize open space views from each home, and a street and trail system were laid out to connect everything. Finally, lot lines were drawn in. The 35 lots were generally 100 feet wide and 150 feet deep, most facing onto or backing up to preserved open space. All lots are served by public sewerage, although there was suitable land for a community wastewater system had that been necessary. The 35 lots consume approximately 12 acres, the streets take up about 2.5 acres leaving 18.5 acres of upland open space, plus two acres of wetland or open water.

In addition to the value added by making the pond and wooded parkland around it accessible to all neighborhood residents, a large eight-acre “conservancy lot” was created as a weekend farmette, featuring a large residence and horse pastures framing the public viewshed and establishing an upscale equestrian atmosphere for the entire development. With conservation easements protecting both the common open space and the “non-common” conservancy lot, none of this land will be further developed. Creating a conservancy lot is a useful approach for reducing the maintenance responsibilities for the homeowner association and for enhancing the developer’s rate of return on investment, 90 percent of it is counted as open space.

One of the public benefits of the approved plan is the orientation of the homes that minimizes rear elevations facing onto the two well-traveled roads bordering the property, a flaw of the original layout. This benefits the developer as well, because lots that do not back up to public roads command higher prices and sell faster than those that do.

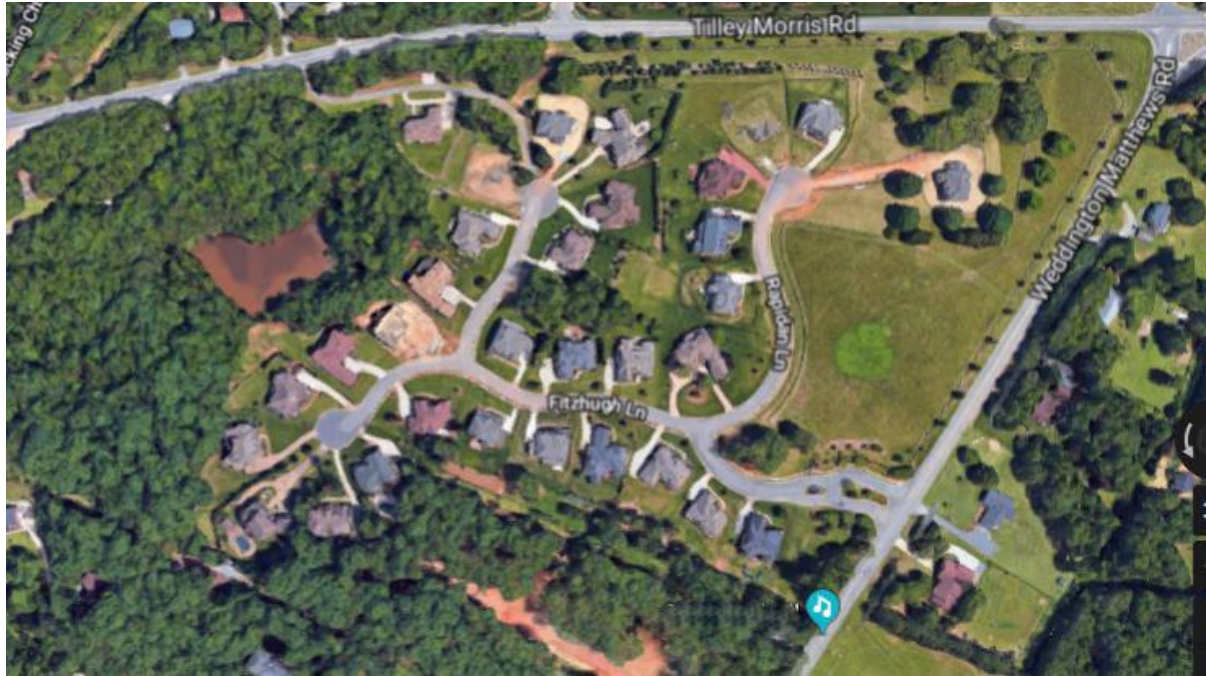


Figure 5: Aerial view of Stratford Hall

Parking Cont.

Sec. D-607 (C) (11) (b) (ii) (3) Reducing parking spaces ~~below the minimum standards.~~

Sec. D-703 (C) (8) Location of Structures. Proposed structures within the downtown overlay should be located towards the exterior of the parcels (along the thoroughfares) ~~and contain interior parking.~~ **Any proposed parking must be on the interior of the site plan.** The Town Council may approve structures located towards the interior of the parcels if more than one structure is proposed on the same parcel.

~~(9) Possible Reduction in Parking Requirements (as part of CZ process). As part of the conditional zoning process, the Town Council may reduce parking requirements by up to 50 percent if proposed development provides shared parking between more than one use or property owner.~~

~~(10)~~ **(9)** Infrastructure. Any new development within the downtown overlay must connect to a sewer system, whether private or public, unless it is shown to be unreasonable to make the connection, or unless the applicant provides a suitable alternative.

Sec. D-917C (A) (2) Parking Decks. If one or more parking decks are to be built in accordance with the guidelines herein ~~and contain 33 percent or greater of the required off-street parking for the development,~~ the maximum allowable floor area ratio may be increased by the Town Council up to a ratio of 0.25. Parking decks not to exceed three above grade levels of parking may be allowed provided they do not exceed the maximum height provided in subsection 3, below. To the maximum extent possible, such decks shall be built of materials and designed in a manner to blend in with the associated development. Cars on all levels of a structural parking facility must be screened from view from outside the structure. Retail or office uses may be allowed on the periphery of all levels of the parking deck.

“ (8) Internal Streets; Private Ownership; Parking. Streets within the development may be privately owned and maintained. Onstreet parking is allowed ~~and may be counted towards meeting the off-street parking requirements.~~ For both on-street and off-street parking, a parking space shall be not less than nine feet in width or less than 20 feet in length, and all parking spaces shall be clearly marked and maintained so that the boundaries of each space may be easily seen. In offstreet parking lots with more than 20 standard spaces, one compact parking space may be permitted for every five standard spaces. Each compact space shall be at least seven feet wide and at least 17 feet long, and shall be clearly marked, "compact cars only".

D-917D (K) (4) (f) ~~(1) At elementary and middle schools provide one space per staff member plus 1.6 spaces per classroom or one space for each three seats used for assembly purposes whichever is greater.~~

~~(2) At high schools provide five spaces per instructional classroom or one space for each three seats used for assembly purposes whichever is greater.~~

~~(3)~~ (1) No more than 20 percent of the required **proposed** spaces can be compact spaces.

~~(4)~~ (2) Minimum size of spaces shall be nine feet wide by 19 feet long for regular, 7½ feet wide by 15 feet long for compact, and accessible spaces shall meet current accessibility codes.

D-917D (M) (2) (a) ~~(5) at least one additional off-street parking space shall be provided for the use of those occupying the accessory family dwelling.~~

~~(6)~~ (5) The exterior appearance of the accessory family dwelling unit shall be compatible to the principal dwelling.

D-918 (L) Off-street Parking and Loading. Every new use, or an enlargement, expansion, or alteration of an existing use, ~~shall require off-street parking~~ **that has proposed off-street parking, or makes alterations to existing off-street parking must do so** in compliance with this article, unless specifically exempt from such provisions or portions thereof.

~~(1) Off-street parking spaces shall be increased when a change of use of either a structure or of land requires additional parking spaces in compliance with this article. Parking spaces may be decreased when a change of use in either a structure or of land requires less spaces than provided for the replaced use.~~

~~(2) A one-time only enlargement of a structure or increase in the amount of land used may be made for existing uses deficient in off-street parking, provided that the enlargement or increase does not represent a requirement in excess of five off-street parking spaces. In the event that such increase represents a requirement in excess of five off-street parking spaces, such increase shall require complete compliance of the provisions of this article for the entire use.~~

(2) ~~(3)~~ Off-street parking shall be located as follows:

(a) Parking ~~as required herein~~ shall be located on the same lot as the principal use except when specifically permitted to be located elsewhere. Driveways shall be considered as providing off-street parking spaces for all single-family and two-family dwellings.

(b) Cooperative provisions for off-street parking may be made by contract between owners of adjacent property, and such contract filed with the Administrator. ~~The parking area provided on any one lot may be reduced to not less than half the parking spaces required for the use occupying such lot. The total number of spaces provided under such a cooperative parking scheme shall not be less than the total number of spaces required for each use.~~

(c) No parking area shall be located over an active septic tank field.

(d) Parking areas may not extend into the required rear yard or side yard setbacks.

~~(4)~~ (3) A City or Town Hall, post office, library or other governmental facility ~~may count shared parking spaces toward up to 50 percent of its total off-street parking requirement. Such a use may share parking spaces only with one or more other uses that also may share parking spaces under subsection 3.b of this section. The following formula shall be used to determine how many shared parking spaces a particular use may use apply toward its off-street parking requirement:~~

~~(5)~~ (4) For off-street private parking, a use may treat as shared parking, any parking spaces that are within 800 feet of that use. A document must be filed with the Town's Administrator that confirms that the parking lot's owner or operator consents to parking spaces in that lot being shared. If fewer than all the spaces within the lot are being shared, this document must clearly identify which spaces are being shared. If the shared parking arrangement described in the document is later modified, a document describing the modified arrangement must be filed with the Town's Administrator. If the shared parking arrangement described in any document filed with the Town's Administrator is later rescinded, the Administrator must be notified immediately. ~~If the rescission or modification of a shared parking arrangement leaves a use with inadequate parking to satisfy the requirements of this article, said use will not be considered nonconforming, and it will not be permitted to continue without satisfying this article's parking requirements.~~

~~(6)~~ (5) Design standards for parking areas are as follows:

(a) A parking space shall be not less than nine feet in width nor less than 20 feet in length. In lots of more than 20 spaces, compact stalls may be permitted on the basis of one compact stall to each additional five standard stalls. Each compact stall shall be seven feet wide and 17 feet long, and shall be clearly marked, "small cars only." All parking stalls shall be clearly marked, and such markings shall be maintained so as to be easily seen.

(b) Parking bays shall be designed in accordance with accepted standard practice for parking at various angles, with aisles being of such widths as to permit the entering and leaving of a parking space with ease and safety.

(c) Access to all required parking areas shall be by roads adequate in width to accommodate two-way traffic, except for parking areas designed and clearly marked for one-way traffic. Except by way of approved driveways, access from or egress to a public road from a parking area shall be expressly prohibited. Adequate provisions shall be made to ensure compliance by the use of fences, walls, wheel stops, or landscaping, or a combination of those devices.

(d) Wheel stops, curbs, or other devices shall be provided in such locations as to prevent any vehicle from encroaching either on a public right-of-way or an adjacent property.

(e) Parking areas shall be so designed as to retain existing trees and other plant life. Where no trees or other plant life exists, adequate landscaping shall be provided, both within the parking area and on the external boundaries of such area.

(f) Screening shall be provided as required in section D-918. I. (Screening and Landscaping

(g) Signs shall be permitted in compliance with D-918.K (Signs).

~~(7)~~ (6) Permits for driveway locations on state-maintained roads shall be obtained from the state department of transportation.

~~(8)~~ (7) Storm drainage facilities shall be required and shall be so designed as to protect any public right-of-way or adjacent property from the damage.

~~(9) The requirements for off-street parking spaces shall be computed as follows:~~

~~(a) When units of measurement determining the number of required parking spaces result in a fractional space, any fraction of one-half or more shall require one parking space.~~

~~(b) Where seats consist of pews or benches, each 20 inches in length of pew or a bench shall be considered as one seat.~~

~~(c) For the purpose of computing parking requirements based on the number of employees, the owners or managers shall also be considered employees.~~

~~(d) Lots containing more than one principal use shall provide parking in the amount equal to the total of the requirements for each use.~~

~~10. The following chart indicates the minimum off-street parking requirements:~~

The entire table following D918-L (10) needs to be removed.

Event Venues

Section D-917D Supplemental Requirements for Certain Uses.

N. Event Venues

1. Indoor Event Venue

a. Principal Event Area: The principal event activities shall occur within an enclosed building or structure.

b. Outdoor Activity: Outdoor event activities that are incidental and subordinate to the Indoor Event Venue may occur in designated outdoor areas shown on the approved site plan. All outdoor activities must take place a minimum of 500ft away from any residential, agricultural, or institutional structures.

c. Noise: All noise generated may not exceed 65dBa at any abutting property line for a residential, agricultural, or institutional use.

d. Loading and Deliveries: Areas used for event setup, catering deliveries, equipment loading, or similar activities shall be located so as to minimize conflicts with customer parking, public rights-of-way, and adjoining properties.

e. Screening: Property must be screened from adjoining residential, agricultural, and institutional uses, as well as from the right-of-way with in compliance with screening requirements set forth in Sec. D-918 (I).

f. Structure Locations: All structures in which any event activity is taking place must be located a minimum of 300ft from any residential, agricultural, or institutional structure.

2. Outdoor Event Venue

a. Principal Event Area: The principal event activities shall occur outdoors. Buildings and structures on the property may be used for activities that are incidental and subordinate to the principal outdoor event use.

b. Minimum Lot Area: An Outdoor Event Venue shall be located on a lot containing at least 5 acres.

c. Event Area Setback: The principal outdoor event area, including areas used for outdoor seating, stages, dance floors, tents, ceremonies, or similar activities, shall be located at least 500ft feet from any property line of any residential, agricultural, or institutional use.

d. Amplified Sound: Amplified music, public address systems, or other electronically amplified sound associated with an Outdoor Event Venue shall be oriented and operated to minimize impacts on adjoining properties. Any amplified sound shall not emit a sound louder than 65dBa at the property line of any adjoining residential, agricultural, or institutional use.

e. Hours of Outdoor Events. Outdoor events shall not operate later than 8 p.m. Sunday through Thursday or 10 p.m. Friday and Saturday. All amplified music and entertainment shall cease no later than 8 p.m.

i. New Years Celebrations: New Years Eve celebrations are exempt from this requirement and may proceed until 1:00 a.m. on New Years Day. Amplified sound and music must cease at 12:00 a.m. on New Years Day.

f. Outdoor Lighting. Lighting associated with an Outdoor Event Venue shall be designed and installed to prevent unreasonable glare, light trespass, and direct illumination of adjoining residential, agricultural, and institutional properties.

g. Parking Surface. Event-related parking shall be located on an approved parking area. Overflow parking may be provided on designated grass or stabilized areas shown on the approved site plan, provided that such areas do not interfere with emergency access, drainage, or neighboring properties.

h. Outdoor Activities. Outdoor activities associated with the Event Venue shall be limited to those shown on the approved site plan. Expansion of the outdoor event area or addition of substantially different outdoor activities shall require approval of an amended site plan.

i. Screening: Property must be screened from adjoining residential, agricultural, and institutional uses, as well as from the right-of-way within compliance with screening requirements set forth in Sec. D-918 (I).

3. Event Venue Operating Plan

As a condition of approval, the Zoning Administrator may require an indoor/outdoor Event Venue to maintain an operating plan containing the following information:

- a. Maximum permitted event attendance
- b. Normal days and hours of operation
- c. Location of indoor and outdoor event areas
- d. Location and number of parking spaces
- e. Location of overflow parking, if applicable

- f. Vehicular ingress and egress
- g. Emergency access
- h. Location of amplified sound equipment
- i. Outdoor lighting
- j. Restroom and sanitary facilities
- k. Solid waste and recycling facilities
- l. Procedures for managing event-related traffic
- m. Procedures for addressing severe weather and emergencies; and
- n. Contact information for the property owner or responsible event operator.

4. Temporary Variance

The Zoning Administrator may approve a temporary variance from one or more operational standards of this section when strict compliance would create an undue hardship for a specific event and where the variance can be granted without creating a substantial adverse impact on surrounding properties, public safety, or the general welfare.

a. An application for a temporary variance shall be submitted to the Town no less than thirty (30) days prior to the event date and shall include the following information:

- 1. Name and contact information of the property owner and event operator;
- 2. Date, time, and nature of the event;
- 3. Identification of the specific standard(s) from which a variance is requested;
- 4. A written explanation of the need for the variance;
- 5. A site plan showing the location of event activities affected by the variance request; and
- 6. Any proposed measures to mitigate impacts on surrounding properties and the public.
- 7. A \$50 application fee.

b. The Zoning Administrator will provide written notice of the variance request to owners of adjoining properties.

c. In reviewing a request for a temporary variance, the Zoning Administrator shall consider:

1. The nature and duration of the requested variance;
2. The potential impact on adjoining properties and nearby residential, agricultural, or institutional uses;
3. Traffic, parking, noise, lighting, and public safety considerations;
4. The applicant's history of compliance with applicable regulations and approved operating plans; and
5. Any proposed mitigation measures.

d. The Zoning Administrator may impose reasonable conditions necessary to minimize adverse impacts, including but not limited to limitations on event duration, attendance, amplified sound, parking arrangements, security, traffic management, and notification requirements.

e. A temporary variance shall apply only to the specific event and date(s) approved and shall not constitute a permanent modification of any requirement of this section.

f. A temporary variance may be revoked by the Zoning Administrator if the applicant fails to comply with the conditions of approval or if the event is operated in a manner that creates a threat to public health, safety, or welfare.

Appendix 1 Definitions

Indoor Event Venue. A commercial use of a building or structure, or portion thereof, in which the principal use is the hosting of private events, gatherings, or functions and where the principal event activities occur within an enclosed building or structure. Events may include, but are not limited to, weddings, receptions, parties, banquets, celebrations, reunions, meetings, conferences, fundraisers, performances, and similar gatherings. May include outdoor areas that are incidental and subordinate to the principal indoor event use.

Outdoor Event Venue. A commercial use of land, or land together with associated buildings or structures, in which the principal use is the hosting of public or private events, gatherings, or functions, and where the principal event activities occur outdoors. Events may include, but are not limited to, weddings, receptions, parties, festivals, celebrations, reunions, ceremonies, performances, markets, fairs, and similar gatherings. An Outdoor Event Venue may include accessory facilities and buildings or structures that are incidental and subordinate to the principal outdoor event use.

Home Use Occupations

F. Customary Home Occupations.

Customary home occupations may be established in any dwelling unit. The following requirements shall apply in addition to all other applicable requirements of this UDO for the district in which such uses are located:

Suburban Home Occupations:

1. The home occupation shall be clearly incidental and subordinate to the residential use of the dwelling and shall not change the residential use of the dwelling.
2. No accessory buildings or outside storage **visible from the right of way** shall be used in connection with the home occupation.
3. Use of the dwelling for the home occupation shall be limited to 25 percent of the area of the principal building.
- ~~4. Only residents of the dwelling may be engaged in the home occupation.~~
- ~~5.~~**4** No display of products shall be visible from any adjoining streets or properties. Sales of products are limited to those made on the premises ~~and those which are accessory to the service being provided.~~
- ~~6.~~**5** No alterations to the exterior appearance of the residence or premises shall be made which changes the residential characteristics.
- ~~7.~~**6** ~~Only vehicles used primarily as passenger vehicles (e.g., automobiles, vans, and pick-up trucks) shall be permitted in connection with the conduct of the customary home occupation.~~ **Any vehicle used in conjunction with the home use occupation must not be visible from the right of way. Any vehicle being used must be in conjunction with vehicles typically seen in a residential setting (e.g. automobiles, vans, pick-up trucks, trailers). The site may not be used as a staging area for work to be done off-site.**
- ~~8.~~**7** Chemical, mechanical, or electrical equipment that creates odor, light emission, noise, or interference with radio or television reception detectable outside of the dwelling shall be prohibited.
- ~~9.~~**8** No traffic shall be generated by the home occupation in greater volumes than would normally be expected in a residential neighborhood. Any need for parking generated by the conduct of the home occupation shall be provided off the road right-of-way.

~~10.9~~ One nonilluminated professional name plate, occupational sign, or business identification sign mounted flush to the dwelling unit and not more than 1 ½ square ft in area shall be allowed. Signs must not be visible from the right of way.

10. Any noise generated in conjunction with the home occupation cannot exceed 65dBa at any adjoining residential or institutional property.

Rural Home Occupations:

1. The home occupation shall be clearly incidental and subordinate to the residential or agricultural use of the dwelling and shall not change the residential or agricultural use of the dwelling.

2. Outdoor material storage, and outdoor work areas must be setback at least 350ft from adjoining properties.

3. Any outdoor storage must be screened from adjacent properties where the primary use is residential.

4. No traffic shall be generated by the home occupation in greater volumes than would normally be expected in an agricultural area. Any need for parking generated by the conduct of the home occupation shall be provided off the road right of way.

5. Any noise generated in conjunction with the home occupation cannot exceed 65dBa at any adjoining residential or institutional property.

Appendix 1 Definitions

Suburban Home Use Occupation:

A home-based business conducted on a property whose primary use is residential while maintaining the property's primary residential character and minimizing impacts on surrounding properties.

Rural Home Use Occupation:

A home-based business conducted on a property whose primary use is agricultural that allows for business activity, accessory structures, outdoor operations, and business-related equipment while maintaining the property's primary residential or agricultural use and preserving the rural character of the area.