

50' Open Space / Landscape Buffer

Street 'B' (50

Preliminary Development Plan and Development Text

Planned Unit Development (PUD)
Application: ZON-19-

Hazelton Crossing

City of Pataskala, Ohio

Submitted By:

Southgate Corporation

Robert O'Neill

1499 West Main Street

Newark, Ohio 43058

Phone: 740.522.2151

Email: robert@southgatecorporation.com

Retention Pond
± 14.34 Ac

Date of Re-Submittal:

January 29, 2021

(rev. April 28, 2021)

Prepared By:



Retention
Pond

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and Development Text**

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Planning Commission Approval:

Date: _____

City Council Approval:

Date: _____

Signatures:

Applicant:

Chair, Planning and Zoning Commission:

PRELIMINARY PLAN APPLICATION

- Application
- Statement Concerning Application Submitted Under Protest

Tab 1 – Planned Residential Development Text

EXHIBITS

Tab 2 – Legal Description

Tab 3 – List of Adjacent Property Owners

Tab 4 – Development Plan Exhibits

- Exhibit 'A' - Site Regional Context Plan
- Exhibit 'B-1' - Site Survey
- Exhibit 'B-2' – Existing Conditions Plan
- Exhibit 'C' – Zoning Sub-Area Plan
- Exhibit 'D-1' - Preliminary Development Plan
- Exhibit 'D-2' – Preliminary Phasing Plan
- Exhibit 'E' – Open Space / Sidewalk Plan
- Exhibit 'F' – Illustrative Master Plan
- Exhibit 'G' – Conceptual Landscape / Buffer Plan
- Exhibit 'H-1' – Public Road Details
- Exhibit 'H-2' – Conceptual Landscape Enlargements
- Exhibit 'H-3' – Conceptual Signage Details
- Exhibit 'I' – Preliminary Utility Plan
- Exhibit 'J' – Preliminary Grading Plan
- Exhibit 'K-1' – Existing Tree Survey Key Plan
- Exhibit 'K-2' – Existing Tree Survey Enlargements A, B, & C
- Exhibit 'K-3' – Existing Tree Survey Enlargements D & E
- Exhibit 'K-4' – Existing Tree Index

Tab 5 – Architectural Exhibits

- Exhibit 'L-1' – SUB AREA 'A' Retail Center Conceptual Architecture
- Exhibit 'L-2' – SUB AREA 'A' Outparcel Conceptual Architecture
- Exhibit 'M-1' – SUB AREA 'B' Assisted Living Conceptual Architecture
- Exhibit 'N-1' – SUB AREA 'C' Condominium Conceptual Architecture
- Exhibits 'O-1' through 'O-6' – SUB AREA 'D' Single-Family Conceptual Architecture

Tab 6 – Legal Instruments

- Draft Deed of Restrictions and HOA Covenants

Tab 7 – Supporting Documents

- Exhibit 'P-1' – Summary of Environmental Site Assessment
- Exhibit 'P-2' – Phase 1 Environmental Site Assessment
- Exhibit 'Q-1' – TIS Memorandum of Understanding
- Exhibit 'Q-2' – Traffic Impact Study
- Exhibit 'R' – Preliminary Stormwater Management Plan

Tab 8 – Serviceability Letters

- Exhibit 'S' – Southwest Licking Local School District Letter and email correspondence
- Exhibit 'T' – Southwest Licking Community Water & Sewer District email correspondence
- Exhibit 'U' – Post-Development Peak Discharge rate calculation method approval email
- Exhibit 'V' – EMH&T email summarizing storm sewer layout understanding reached with Alan Haines
- Exhibit 'W' – Isaac Wiles email outlining proposed terms of settlement
- Exhibit 'X' – Southwest Licking Community Water & Sewer District email of conditional approval



CITY OF PATASKALA PLANNING AND ZONING COMMISSION

City Hall, Council Chambers
621 West Broad Street
Pataskala, Ohio 43062

PRELIMINARY PLAN APPLICATION

(Pataskala Codified Ordinances Chapter 1113)

Property Information		
Address:		
Parcel Number: 064-152964-00.000 / 064-152964-00.001		
Zoning: PUD	Acres: 95.35	
Water Supply:		
<input type="checkbox"/> City of Pataskala	<input type="checkbox"/> South West Licking	<input type="checkbox"/> On Site
Wastewater Treatment:		
<input type="checkbox"/> City of Pataskala	<input type="checkbox"/> South West Licking	<input type="checkbox"/> On Site

Staff Use	
Application Number:	
Fee:	
Filing Date:	
Hearing Date:	

Applicant Information		
Name: Robert O'Neill		
Address: PO Box 397		
City: Newark	State: Ohio	Zip: 43058
Phone: 740-522-2151	Email: robert@southgatecorporation.com	

Owner Information		
Name: Southgate Company Limited Partnership		
Address: PO Box 397		
City: Newark	State: Ohio	Zip: 43058
Phone: 740-522-2151	Email:	

Documents	
<input type="checkbox"/> Application	
<input type="checkbox"/> Fee	
<input type="checkbox"/> Preliminary Plan	
<input type="checkbox"/> Supplementary Info	
<input type="checkbox"/> Deed	
<input type="checkbox"/> Address List	
<input type="checkbox"/> Area Map	

Preliminary Plan Information	
Describe the Project:	
The proposed development of the property is to provide four Subareas at the corner of Refugee Road and Hazelton- Etna Rd. The four Subareas would have the following:	
A:	Retail/ Commercial consisting of an anchor and several outparcel lots.
B:	Assited Living Facility
C:	Condominium Residences
D:	Single Family Rsidences

Documents to Submit

Preliminary Plan Application: Submit 14 copies of the preliminary plan application.

Preliminary Plan: Submit 14 copies of a preliminary plan 24 x 36 inches in size containing the following:

- a) *Proposed name of the subdivision*
- b) *Location by section, range, township or other official surveys*
- c) *Names, addresses and phone numbers of the owner, subdivider, an Ohio Registered Professional Engineer who prepared the plan, or Registered Surveyor who prepared the plan, and the appropriate registration numbers and seals of each.*
- d) *Date of survey.*
- e) *Scale of the plan, not less than 100 feet to the inch, and north arrow.*
- f) *Boundaries of the subdivision, its acreage, and deed book and page number of lands within the proposed subdivision.*
- g) *Names of adjacent subdivisions, owners of adjoin parcels of unsubdivided land, and the location of their boundary lines.*
- h) *Locations, widths, and names of existing streets, railroad rights of way, easements, parks, permanent buildings, corporation and township lines, location of wooded areas and any other significant topographic and natural features within and adjacent to the plan for a minimum distance of 200 feet.*
- i) *Zoning classification of the tract and adjoining properties and a description of the proposed zoning changes, if any.*
- j) *Existing contours at an interval of not greater than two (2) feet if the slope of the ground is 15 percent or less, and not greater than five (5) feet where the slope is more than 15 percent.*
- k) *Existing storm and sanitary sewers, water lines, culverts, and other public utilities underground structures, and power transmission poles and lines, within and adjacent to the tract.*
- l) *Location, names and widths of typical cross section and right of way width of proposed streets and easements.*
- m) *Building setback lines with dimensions.*
- n) *Location and dimensions of all proposed public and private utilities, water, wastewater, storm drain lines, detention and/or retention facilities showing their locations and connections with existing system.*
- o) *Layout, lot number of and approximate dimensions of each lot. When a lot is located on a curved street, or when side lot lines are not at 90 degree angles, the width of the building line shall be shown.*
- p) *Parcels of land in acres and/or parts of acres to be preserved for public use, or to be reserved by covenant for residents of the subdivision.*
- q) *The location and width of sidewalks and spacing of street lighting.*
- r) *A vicinity map at a scale of not less than 2,000 feet to the inch shall show all existing subdivisions, roads, tract lines, nearest existing thoroughfares and the most advantageous connections between roads in the proposed subdivision and those of the neighboring area.*

Supplementary Information: Submit 14 copies of a site plan to scale of the subject property indicating the following:

- a) *Statement of proposed use of all lots, giving types number of dwelling units and any type of business or industry.*
- b) *Location and approximate dimensions of all existing buildings.*
- c) *For commercial and industrial development, the location, dimensions, approximate grade of proposed parking and loading areas, alleys, pedestrian walks, streets and the points of vehicular ingress and egress to the development and storm drainage detention of retention facilities.*
- d) *Description of the proposed covenants and restrictions.*
- e) *The extension or improvements of, including any oversize requirements to the City Central Water and Wastewater Treatment Systems that may be required by the City, to be constructed by the Subdivider at the Subdivider's expense, and according to all City ordinances. (See Section 1113.14)*
- f) *Calculations which develop the water and sanitary sewer demand rates for the subdivision.*

Deed: Provide a copy of the deed for the property with any deed restrictions. Deeds can be obtained at www.lcounty.com/rec.

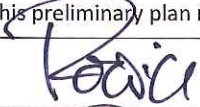
Address List: Submit one copy of a list of all property owners and addresses of those owning property within 200 feet or two parcels from any point on the subject property line, whichever creates more property owners. This list must be in accordance with the Licking County Auditor's current tax list and must be submitted on mailing labels.

Area Map: Submit 14 copies of an area map from the Licking County Engineer's office showing the area encompassed by the address list. Area maps can be obtained at www.lcounty.com/taxparcelviewer/default.

Signatures

I certify the facts, statements and information provided on and attached to this application are true and correct to the best of my knowledge. Also, I authorize City of Pataskala staff to conduct site visits and photograph the property as necessary as it pertains to this preliminary plan request.

Applicant:



Date: 9/6/2019

Owner:



Date: 9/6/2019

STATEMENT CONCERNING APPLICATION
SUBMITTED UNDER PROTEST

Southgate Company Limited Partnership (“Applicant”) submits this application, preliminary plan, and preliminary development plan text for approval of the Planning and Zoning Commission under protest and only at the direction of the City. As set forth in the attached correspondence between Joseph R. Miller, counsel for the Applicant, and Brian M. Zets, Law Director for the City of Pataskala, Applicant maintains that the prior approval of Applicant’s development text associated with this property’s Planned Development District (“PDD”) zoning remains in full effect and such approval has not expired. Further, it is arguable, and Applicant maintains, that its prior preliminary plan approval likewise remains in effect. Applicant’s position is consistent with both the provisions of the City’s Codified Ordinances cited in the attached correspondence and Ohio law. Specifically, under Ohio law, zoning regulations which restrict the use of real estate are “strictly construed against limitations upon such use, and that all doubts should be resolved against a possible construction thereof which would increase the restriction upon the use of such real estate.” *Loblaw, Inc. v. Warren Plaza, Inc.*, 163 Ohio St. 581, 592 (1955). Stated differently, because such restrictions must be strictly construed, “the scope of the restrictions cannot be extended to include limitations not clearly prescribed.” *Saunders v. Clark County Zoning Dept.*, 66 Ohio St.2d 259, 261 (1981). However, Applicant has been instructed that it must apply for preliminary plan and development plan text approval or it cannot move forward to final development plan approval. Applicant does so only under protest and maintains that the prior approval of its development text and arguably its preliminary plan remain in full effect pursuant to the property’s PDD zoning.

Miller, Joseph R.

From: Brian M. Zets <bzets@isaacwiles.com>
Sent: Monday, August 05, 2019 1:26 PM
To: Miller, Joseph R.
Cc: Tangeman, Jill S.
Subject: [EXTERNAL] RE: Hazelton Crossing PDD in Pataskala

CAUTION: External Email.

Joe –

SUBJECT TO EVID. R. 408 – NOT ADMISSIBLE AS EVIDENCE

Sorry for the delay. The end of the week seemed to have crisis after crisis. I appreciate your thorough analysis, but the City's position has not changed.



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From: Miller, Joseph R. <JRMiller@vorys.com>
Sent: Monday, August 5, 2019 10:28 AM
To: Brian M. Zets <bzets@isaacwiles.com>
Cc: Tangeman, Jill S. <jstangeman@vorys.com>
Subject: FW: Hazelton Crossing PDD in Pataskala

Brian, per my voicemail. This is headed for P & Z on Wednesday night and we would like to know of your agreement before then.

Thanks,
Joe

From: Miller, Joseph R.
Sent: Friday, July 26, 2019 5:00 PM
To: 'Brian M. Zets'
Cc: Tangeman, Jill S.
Subject: FW: Hazelton Crossing PDD in Pataskala

Brian,

I wanted to follow up on this. Our client and Rockford Homes would like to hear of the City's agreement in light of the Code provisions I address below as Rockford is preparing for the August 7 Planning and Zoning Commission meeting.

Thanks very much,
Joe

From: Miller, Joseph R.
Sent: Monday, July 22, 2019 3:03 PM
To: 'Brian M. Zets'
Cc: Tangeman, Jill S.
Subject: Hazelton Crossing PDD in Pataskala

SUBJECT TO EVID. R. 408 – NOT ADMISSIBLE AS EVIDENCE

Brian,

Thanks for your time last week to discuss the current status and issue related to my client Southgate Company's approved Planned Development District in Pataskala. As we discussed, Jill Tangeman and I met recently with Scott Fulton and thought that we were on the same page – namely, that the City took the position that the preliminary plan had expired but that the development standards text remained in effect and we would proceed to Planning Commission for approval.

Then, recently, Jill met again with Scott and representatives of Southgate and Rockford and Scott informed them that the City believed that both the plan AND the development standards text had expired. We do not believe that could be so and, in any event, is not advisable either.

Chapter 1255.13(b)(13), entitled "Expiration of Preliminary/Master Plan Approval", states only that "the Preliminary/Master Plan specific to the Planned Development District designation shall remain valid for 12 months from the date of City Council approval." After which time, the Code says, the City may begin procedures to rezone the property. All agree that did not take place here. The property remains zoned as Planned Development District.

Under the Code, this section, its title, and expiration only apply to the "Preliminary/Master Plan" and do not mention at all the separately used terms in the Code "Planned Development Text" (see 1255.03(b)) or "Development Standards Text" (see 1255.13(a)). In fact, "Preliminary Development Plan" is a defined term in the Code (1255.02(d)) and this definition likewise does not include or even make reference to "Planned Development Text" or "Development Standards Text". They simply are, under the Code, separate things. This is especially clear in 1255.13(a), which describes what an application for rezoning to a PDD must include and separately itemizes a "Preliminary Development Plan (or Master Plan) for the total development" and "Development Standards Text". (See also that same section on what City Council must approve, separately itemizing "the zoning change, Preliminary Plan and Development Standards Text.") Thus, and as the Code needs to be strictly construed to prevent restrictions on property not clearly set forth, these terms each need to be given meaning and our development standards text remains in effect.

What is more, as a practical matter, the property can't be zoned PDD and yet have no standards whatsoever governing its development. As a practical matter, those standards must remain in effect for clarity with regard to development of the property. As we discussed, our proposed development conforms fully to the development standards text previously approved and remaining in effect.

I appreciate you discussing this internally and getting back to me as soon as possible. We think the Code and the desired practical result are very clear. We hope you agree so that this matter can be put to rest and we can proceed expeditiously before the Planning Commission.

Thanks,
Joe



Joseph R. Miller
Partner

Vorys, Sater, Seymour and Pease LLP
52 East Gay Street | Columbus, Ohio 43215

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Email: jrmiller@vorys.com
www.vorys.com

From the law offices of Vorys, Sater, Seymour and Pease LLP.

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TAB 1
INTRODUCTION &
PRELIMINARY DEVELOPMENT
PLAN TEXT

Hazelton Crossing Preliminary Development Plan Text Planned Residential Development

Introduction (as filed Feb 5, 2016)

This Hazelton Crossing Zoning Application is intended to replace the existing zoning, Ordinance No. 2006-3746 approved in 2006. The Southgate Company Limited Partnership Team has intensely reviewed the existing zoning to see how a new zoning could improve the Hazelton Crossing Community for the City of Pataskala, the neighbors and the owners. The solution is what is included in this application. The new Preliminary Development Plan (Exhibit D) and the Conceptual Illustrative Plan(Exhibit F) show the new proposed Planned Residential Development and is divided into four (4) separate Sub-Areas. The proposed permitted land uses are Retail/Commercial for Sub-Area 'A', Assisted Living for Sub-Area 'B', Condominium for Sub-Area 'C' and Single Family for Sub-Area 'D'. The new zoning proposal significantly reduces the intensity of the proposed development. Some of those improvements are listed below:

- Reduces the number of residential units by 84 units (30.4% reduction).
- Reduces the Retail/Commercial building sign for the primary center by 75,000 square feet (31.5% reduction).
- Reduces the number of parking spaces for the primary center by 326 spaces (31.2% reduction).
- Relocates the Assisted Living Facility from Refugee Road to Hazelton-Aetna Road.
- The Apartments have been replaced by single family detached units.
- Reduces the number of condominium units by 54 units and moved the condominium community away from the neighbors into the interior of the development.
- Increases the amount of Open Space to 25.9 acres.
- Increases the Open Space separation of the retail/commercial from the new and existing residential uses.

Hazelton Crossing Preliminary Development Plan Text Planned Residential Development

A. Completed application form and application fee.

The completed and signed application form is included as a separate document.

B. A vicinity map showing the relationship of the proposed Planned District to existing development and including existing; property lines, easements, utilities, and street rights-of-way of the subject property and property within 200 feet of the site, zoning district boundaries, and existing land uses and structures.

The Site Regional Context Plan, included as Exhibit A, and the Site Survey/Existing Conditions, included as Exhibits B-1 and B-2, will provide the information required for the vicinity map.

C. A regional context map; indicating the proposed site and all areas within 2,000 feet in all directions; showing the basics of the proposed layout of the proposed project and property lines of the adjacent areas on a drawing of 11 inches X 17 inches in size.

The Site Regional Context Map is included as Exhibit A.

D. A legal description of the property including County Auditor parcel numbers.

The Site Survey and legal description is included as Exhibit B-1.

E. A map of existing conditions and features drawn to scale, with accurate boundaries of the entire project and north arrow, including:

- 1. Boundaries of the area proposed for development, dimensions and total acreage;**
- 2. Existing public rights-of-way, buildings, permanent facilities, access points and easements on, and adjacent to the site;**
- 3. Identification of any existing buildings or structures to be removed or demolished;**
- 4. Existing zoning district boundaries and jurisdictional boundaries;**
- 5. Existing utility systems and providers;**
- 6. The location of existing topography showing contour lines at vertical intervals of not more than 5 feet, highlighting ridges, rock outcroppings and other significant topographical features and identifying any areas with slopes over 5%;**
- 7. Locations of all wooded areas, tree lines, hedgerows, and a description of significant existing vegetation by type of species, health and quality.**

8. Existing drainage patterns on the property including connections with farm tiles on adjacent properties,
9. Locations of wetlands and potential wetlands, the 100 year floodplain, floodway boundary, 20 foot buffer beyond the floodway, and flood elevation as provided by the most recent Federal Emergency Management Agency mapping, including rivers and streams and their related river or stream bank, pond, and water courses,

The information requested above will be found on Site Survey/Existing Conditions, included as Exhibits B-1 and B-2.

- F. The Preliminary Development Plan map shall include a plan for the entire area of the proposed Planned District Project and shall be drawn to an appropriate scale with accurate boundaries of the entire project including a north arrow. The applicant shall also provide 13 copies or the number determined necessary by the Director of Planning. The Preliminary Development Plan portion of the application shall include:

1. The proposed location, use and size of sub-areas of residential, retail, office, industrial uses, community facilities, parks, playgrounds, school sites and other public areas and open spaces with the suggested ownership and maintenance provisions of such areas, and their related parking areas and access points.

The Zoning Sub-Area Plan is included as Exhibit C and the Preliminary Development Plan is included as Exhibit D-1. The ownership and maintenance of all open space areas shall fall to the owners of each individual sub-area. Open space within the single-family sub area 'D', and condo sub area 'C' shall be owned and maintained by separate homeowner associations for each development. Open spaces within the commercial sub area 'A' and assisted living sub area 'B' shall be owned and maintained by each commercial entity.

2. The general layout of the proposed internal road system, indicating the proposed vehicular right of way of all proposed public streets, general indication of private streets and pedestrian circulation, bike paths and other trail systems, access drive locations, improvements to existing streets, and traffic control requirements.

The Preliminary Development Plan depicts the various transportation choices on the included Exhibit D and the proposed pedestrian circulation on Exhibit E- Open Space/ Sidewalk Plan.

3. Any proposed off-site improvements and/or utility lines/extensions needed to serve the site;

The Proposed Utility Plan shows the utility layout for off-site and within the development on included Exhibit I.

4. Environmental plan showing natural features and preservation zones

The Summary of the Phase I Environmental Assessment from Jobes Henderson & Associates dated February 5, 2016 is included as Exhibit P-1, An environmental site assessment is included as Exhibit P-2, and the site survey and existing conditions plan are included as exhibit B-1 and B-2. There are no natural features that require preservation.

5. Natural areas and other natural, historic or significant features to be conserved and any required buffer areas;

There are no significant features to be conserved.

6. Natural features to be altered or impacted by the development and areas where new landscaping will be installed, etc.

There are no natural features that will be impacted by the development other than grading activity as shown on the Proposed Grading Plan included as Exhibit J.

7. A summary table showing total acres of the proposed development; the number of acres devoted to each type of land use, including streets and common areas; the number of dwelling units by type and density for each residential use area and the building height(s) and square footage as proposed for retail, office, industrial and institutional uses, by use area; and the number of parking spaces provided for each use area; Estimated total population, size, employment or other measurements of the scale of the project at each phase and at buildout;

The summary tables are presented on the Preliminary Development Plan included as Exhibit D-1.

8. The provision of water, sanitary sewer;

The provisions for water and sanitary sewer are shown on the Proposed Utility Plan included as Exhibit I.

9. The schedule of site development, construction of structures and associated facilities. Such schedule shall include the proposed use or reuse of existing features such as topography, streets, easements and natural areas;

The start of site development for ALL Subareas will be based upon market conditions.

10. Proposed buffers between incompatible land uses and activities;

The proposed buffers and landscape screening are shown on the Landscape and Buffer Plan included as Exhibit G and the Landscape Enlargements Plan included as Exhibit H-2.

11. Included with the site plan shall be the proposed location and proposed character of all signs for the entire development (sign master plans are encouraged);

The Preliminary Signage locations are included on the Preliminary Development Plan, Exhibit D. Conceptual sign details are shown on exhibit H-3. The Preliminary Signage Standards are as follows:

HAZELTON CROSSING RETAIL SIGN CRITERIA

Shopping Center Identification Sign:

1. *Developer shall be permitted to have (2) Shopping Center Identification Signs listing the name of the shopping center and names of select tenants. The Primary Shopping Center Identification Sign will have a maximum of eight (8) tenants listed on the sign. The Secondary Shopping Center Identification Sign will have a maximum of four (4) tenants listed on the sign.*
2. *The Primary Shopping Center Identification sign shall not exceed (25) feet in height. The Secondary Shopping Center Identification Sign shall not exceed (20) feet in height.*
1. *All monument signs shall be placed in a landscape area and shall be located a minimum of 10' from the edge of the R.O.W of the road on which it fronts.*
3. *Tenant panels on the shopping center Identification signs shall be internally illuminated.*

Outparcel Ground Signs:

2. *Each outparcel shall be allowed one (1) monument sign per right-of-way frontage.*
3. *Monument sign shall have a maximum height of (7) feet and a maximum width of ten (10) feet. The graphic area shall not exceed fifty (50) square feet per sign face.*
4. *All monument signs are to be constructed with a masonry base that is consistent with the materials used in the main retail center.*
5. *All monument signs shall be placed in a landscape area and shall be located a minimum of 10' from the edge of the R.O.W of the road on which it fronts.*
6. *Each outparcel may provide appropriate directional signage at ingress/egress access points. On site permanent directional signs, e.g. employee and visitor parking, deliveries, etc. will be of a common design, material and size. Maximum height of directional signage shall be four (4) feet and the maximum copy area type face shall be four (4) square feet.*
7. *Monument signs shall be internally illuminated.*

Retail Center Tenant Signage - Anchor Store:

1. *All wall mounted signage may be internally illuminated. Signs shall be mounted with non-corrosive hardware and all points of penetration will be caulked and sealed.*
2. *Graphic area: The maximum sign area of an anchor store tenant shall be three (3) square feet of wall sign for each one (1) linear foot of wall to which the signage is to be mounted. Total graphics area*

- shall not exceed four hundred (400) square feet per facade.
3. Sign drawings in color must be submitted to and approved by Landlord prior to manufacture of signage. Minimum drawings submitted shall include:
 - a. Scale elevation drawing of sign superimposed on building elevation, including width and height of signage.
 - b. Section through typical signage indicating all sign and wiring components, materials, colors and finishes.
 - c. Sign control specifications.
 4. Installation specifications, including requirements outlined in this criteria. Upon vacating the center, the tenant shall remove their signage and seal all openings and restore the fascia to its original condition finish and color.

Retail Center Tenant Signage - In-line Retail:

1. Use of individually mounted letters or raceway mounted letters shall be limited to the fronts, or with endcap tenants, front and side of stores relative to each tenant's space. In all instances the message letters and/or its raceway shall be mounted to the building face. Signs shall be mounted with non-corrosive hardware and all points of penetration will be caulked and sealed.
2. All tenant signage shall be internally illuminated. Sign Illumination shall be LED (preferred) or neon tubing properly spaced for even illumination. Neon transformers shall not exceed 12,000 A.
3. Signs cannot exceed eighty percent (80%) of width of storefront of Leased Premises. The maximum sign area allowed shall not exceed two (2) square feet of sign area for each lineal footage of store frontage.
4. Sign faces shall be 1/8" to 3/16" thick Plexiglas of any color that provides good contrast illumination to the store front.
5. Sign drawings in color must be submitted to and approved by Landlord prior to manufacture and installation. Minimum drawings submitted shall include:
 - a. Scale elevation drawing of sign superimposed on building elevation, including width and height of letters.
 - b. Section through typical letter indicating all sign and wiring components, materials, colors and finishes.
 - c. Size, numbers of rows and color of neon.
 - d. Transformer size and location.
 - e. Sign control specifications.
 - f. Installation specifications, including requirements outlined in this criteria.
6. Upon vacating the center, the tenant shall remove their sign or raceway and seal all openings and restore the fascia to its original condition finish and color.
7. Tenant raceway color to match building finish.
8. All signs, including installation, will comply with all local building zoning and electrical codes and will bear the UL Label. Prior to installation, Tenant must first obtain all appropriate governmental licenses and permits.

Outparcel Building Signs:

1. *All wall mounted signage may be internally illuminated. Signs shall be mounted with non-corrosive hardware and all points of penetration will be caulked and sealed.*
2. *The horizontal width of each tenant's copy shall be a maximum of (80%) of the width of the wall on which is located.*
3. *Outparcel buildings shall be permitted the (3) on-premise wall signs. No graphic area shall be larger than 100 square feet per sign. The total aggregate graphic area for all such wall signs shall not exceed two hundred (200) square feet per building.*
4. *Sign faces shall be 1/8" to 3/16" thick Plexiglas of any color that provides good contrast illuminations to the store front.*
5. *All signs, including installation, will comply with all local building zoning and electrical codes and will bear the UL Label. Prior to installation, Tenant must first obtain all appropriate governmental licenses and permits.*

HAZELTON CROSSING SUB AREA SIGN CRITERIA

Sub-Area Entry Signs:

1. *Sub-Areas 'B', 'C', and 'D' shall be allowed one (1) entry monument sign to be installed at each entry along the right-of-way frontage.*
 2. *Monument sign shall have a maximum height of (7) feet, and a maximum length of nine (9) feet. The graphic area shall not exceed fifty (50) square feet per sign face.*
 3. *All sub-area entry signs are to be constructed with a masonry base that is consistent with the materials used for signage throughout the rest of the project.*
 4. *All monument signs shall be placed in a landscape area and shall be located a minimum of 10' from the edge of the R.O.W of the road on which it fronts.*
 5. *Entry monument signs shall either be externally illuminated through the use of ground mounted low voltage lighting, or through the use of backlighting of individual sign letters.*
- 12. A letter of communication from the appropriate school district regarding any residential development included in the Planned Development District;**
- Correspondence from Southwest Licking School District Has been included as Exhibit S.*
- 13. Space for signatures of the applicant and the Chair of the Planning and Zoning Commission, and for the dates of Planning and Zoning**

Commission and City Council approvals;

The signatures for the applicant, Chair of the Planning and Zoning Commission and the City Council are included on the cover of this submittal document, and on the title sheet.

G. Development Standards Text; a development standards text document including the special requirements that will govern the design and layout of the proposed Planned District, including:

- 1. Architectural guidelines for each subarea, or phase; Architectural drawings demonstrating the prototypical design of the proposed buildings, to demonstrate the exterior design, character and general elements in sufficient detail to indicate the proposed visual character of the development**

The architectural guidelines are as follows:

SUBAREA 'A' –RETAIL/COMMERCIAL

GENERAL AND SITE REQUIREMENTS

Maximum Building Height

Where buildings are located adjacent to the approved side and rear yard setback lines, the maximum building height for the main retail buildings shall be 35' as measured from the ground to the peak of any roof or parapet wall. For large retail tenants (over 30,000 square feet), the maximum height of 35 feet may be exceeded for architectural features if, for each foot of building height over 35 feet, the distance between such buildings and the side and rear property lines is increased by a one foot addition to the required side and rear yard. In any case the maximum height of such features shall be 45 feet. Retail outparcel buildings shall have a maximum height of 30 feet as measured from the base of the building to the peak of the roof.

Bulk Requirements

All structures shall have a minimum of 600 square feet per building unit and not be less than 24 feet in width or depth.

Required Trash Areas

All trash and garbage shall be stored in container systems which are located and enclosed so as to effectively screen them from view. Container systems shall not be located in front yards. Container systems enclosures shall be 100 percent opaque, enclosing all four sides with a gate on one side and shall be constructed of materials harmonious with the design of the main building on the lot which it serves.

Prohibited enclosure materials

Chain link fence

Concrete block

Loading Areas

Loading areas shall be screened from adjacent unlike uses and shall not be located at the front of buildings. Loading areas shall not face Hazelton-Etna Road or Refugee Road.

Landscaping and Screening

See Preliminary Landscape and Buffer Plan Exhibit G. All trees identified on the survey.

Site Improvements

An 8' public leisure path, constructed of asphalt, shall be installed along the frontage of Hazelton-Etna Road and Refugee Road and may be located within the Right-of-Way (ROW) of both roads. The public leisure path shall not encroach more than 12 feet into the ROW.

ARCHITECTURAL GUIDELINES

Building Orientation

Buildings shall be sited orthogonally to the street; angled buildings are discouraged. Where possible, outparcel buildings shall be sited adjacent to the minimum setback of Hazelton-Etna Road and Refugee Road. If the main entry to the outparcel buildings cannot be oriented toward the main road then such buildings shall be designed so that the façade facing Hazelton-Etna Road or Refugee Road shall have the same level of detailing and materials as the façade having the main entry. Outparcels shall not be designed to have head in parking adjacent to Hazelton-Etna Road Frontage, and no parking shall be installed closer to the Right-of-Way of Hazelton-Etna Road than the main façade.

Outparcels with drive-thru operations may be permitted to circulate around the building provided that no parking is installed adjacent to the Hazelton-Etna Road Right-of-Way. All service or loading areas shall be screened from Hazelton-Etna Road and Refugee Road. Mechanical systems shall be screened from streets.

Walls

Acceptable Materials

Wood clapboard, finished with paint or stain
Cedar shingles, finished with paint or stain

Fiber-cement (Hardiplank" or equal) lap siding,
finished with paint or stain

Brick, minimal color variation, traditional colors

Exterior Insulation and Finishing Systems (EIFS)

Decorative block

Natural stone, Cultured Stone, or equal
Stucco

Prohibited Materials

Aluminum siding

Vinyl siding

Methods and Configuration

- Wall materials must be appropriate for architectural style. Generally, siding shall be horizontal with no greater than a 7.5" lap. Multiple wall cladding materials are discouraged unless typical of the architectural style. Where brick, stone, or stucco is used on the front of a building it must wrap the side by a minimum of 4' or stop at an acceptable break line, and on a corner lot must be used on the entire street sides. Where stucco type materials are used, they shall have a background color and a complementary trim color to include banding and windows. Stucco shall have full trim detailing, raised a minimum of 1" from the background.
- On outparcels, equivalent design treatment shall be given to all facades of each building. "Four-sided" architecture is encouraged.
- The building(s) that are part of the primary retail space shall have equivalent architectural treatment given to any facades that are exposed to public streets. The rear facades of the buildings shall be composed of decorative concrete block, color banding, or other articulation and coloring to provide for a finished appearance. The paint and/or color scheme shall be continued from the front of the building to the rear of the building.

Foundations & Piers

Acceptable Materials

Poured concrete

Brick

Natural stone, Cultured Stone, or equal

Prohibited Materials

Exposed concrete block

Methods & Configuration

Exposed foundations must be painted or covered by brick, stone or stucco on all sides of the building. In-form stamped and stained concrete, and other simulated brick and stone applications may also be acceptable with developer approval of a sample or photograph.

Roofs

Acceptable Materials

30 year or better dimensional asphalt or fiberglass shingles

Standing seam and batten seam metal
Copper
Slate or approved synthetic slate
Membrane or built-up (for flat roof)

Prohibited Materials

Corrugated metal

Methods and Configuration

Roof pitch shall be appropriate with style, generally 6:12 to 12:12. Porch roofs may be a minimum of 3:12. Multiple roof styles and shapes are discouraged on a single building unless typical of the style (for instance, Victorian). Flat roofs are permitted under upper level decks and porches or if hidden by a facade. The facade requirement may be waived at the rear of the building. See Chimneys, Chases and Vents for details on equipment screening.

Cornice

Acceptable Materials

Wood, painted or stained
Decorative metal,
Fiber-cement (HardiSoffit, HardiPanel) or other approved synthetic products
EIFS

Methods and Configuration

Eaves shall be appropriate for building style. Open, exposed rafters are acceptable, as are sloped soffits. Decorative cornice work and facades covering flat roof may include fiberglass and preformed materials, i.e., plaster elements.

Porches & Balconies

Acceptable Materials

Columns:

Wood, painted or stained
Fiberglass, painted
Brick
Smooth or sand textured stucco

Balustrades:

Metal
Wood, painted or stained
Vinyl, if components match wood in style, dimensions, and detailing.

Porch Floors:

Wood, painted or stained
Stained concrete

Tile
Brick pavers
Synthetic material (at balconies only, above dry areas)
Porch Ceilings:
Wood, painted or stained Stucco
Exposed rafters, painted or stained
Vinyl
Aluminum

Methods and Configuration

Porch columns shall be at least 6" in diameter. Balustrades shall have top and bottom rails with eased edges, centered on balusters.

Windows

Acceptable Materials

Frame & Sash:

Wood
Aluminum

Glazing:

Clear glass
Beveled or stained
Lightly tinted

Prohibited Materials

Vinyl
Highly reflective glazing

Methods and Configuration

Windows shall be vertically proportioned. Mullions are encouraged. Shutters may be used.

Doors

Acceptable Materials

Glass with aluminum frames
Solid wood with glazing and/or panels, painted or stained
Fiberglass with glazing and/or panels, painted.
Insulated metal with glazing and/or panels, painted.
Other commercial assemblies with approval of the developer

Chimneys, Chases, Roof and Wall Vents

Acceptable Chimney and Chase Materials

Stucco with cap or coping
Brick

Natural stone, Cultured Stone, or equal
Siding, only with specific approval of the developer

Methods and Configuration

Chimneys and chases on street sides must be compatible with the building architecture, and truncation below the roof lines is strongly discouraged. Wall vents shall be finished in a color compatible with the surrounding material. At gable roofs, ridge vents are encouraged. Every effort shall be made to screen mechanical equipment from streets, parking and alleys.

Sidewalks

Acceptable Materials

Concrete, plain, colored, stamped or exposed aggregate
Concrete or brick pavers

Prohibited Materials

Gravel

Colors

All exterior finishes shall be carefully reviewed to ensure compatibility with surrounding buildings. Muted colors are encouraged, and excessively bright or harsh colors are not permitted. A trim color that differs from the siding color is encouraged.

Signage

Free-standing signs are to conform to a master signage plan, which shall be submitted by the developer of the commercial area. Signage shall be of uniform and consistent design and appearance.

Lighting

- The developer recognizes the significant need for individual private development to present a "corporate" or "distinctive" image for the facilities and functions of the development according to each use. The developer will review reasonable proposals for approaches to lighting design, which may include building facade lighting, sign lighting, access lighting, and feature lighting.
- Color, style, proportion, and technical aspects such as intensity, glare, fixture height, direction of lighting, and photometric considerations shall be reviewed by the developer, in order to minimize light pollution and spillover onto adjacent properties.

SUBAREA 'B' – Adult Assisted Living Facility

GENERAL AND SITE REQUIREMENTS

Maximum Building Height

No building shall be erected above three (3) stories in height plus the roof.

Required Trash Areas

All trash and garbage shall be stored in container systems which are located and enclosed so as to effectively screen them from view. Container systems shall not be located in front yards. Container systems shall be 100 percent opaque, enclosing all four sides with a gate on one side.

Service and Loading Areas

Service and Loading areas shall be screened from adjacent unlike uses and shall not be located at the front of buildings. Service and Loading areas shall not face Hazelton-Etna Road.

Landscaping and Screening

See Preliminary Landscape and Buffer Plan (Exhibit G)

ARCHITECTURAL GUIDELINES**Walls**Acceptable Materials

Wood clapboard, finished with paint or solid stain
Cedar shingles, finished with paint or stain
Fiber-cement ("HardiPlank" or equal) lap siding, finished with paint
Brick, minimal color variation, traditional colors
Natural stone, Cultured Stone, or equal
Stucco
Vinyl siding, minimum 44 mil thickness, acceptable profiles are limited to triple 3" and double 4.5" shiplap

Prohibited Materials

Wood fiber composites
T-111
Plywood
Aluminum siding

Methods and Configuration

Wall materials must be appropriate for architectural style. Generally, siding shall be horizontal with no greater than a 7.5" exposure, except as noted for vinyl siding. Multiple wall cladding materials are discouraged unless typical of the architectural style. Where brick, stone, or stucco is used on the front of a building it must wrap the side by a minimum of 4' or stop at an acceptable break line. Where stucco type materials are used, they shall have a background color and a complimentary trim color to include banding and windows.

Foundations & Piers

Acceptable Materials

Poured concrete

Brick

Natural stone, Cultured Stone, or equal

Pressure treated lumber (above grade, for piers only)

Roofs

Acceptable Materials

30 year or better dimensional asphalt or fiberglass shingles

Standing seam and batten seam metal

Copper

Slate or approved synthetic slate

Membrane or built-up (for flat roof)

Prohibited Materials

Corrugated metal

Methods and Configuration

Roof pitch shall be appropriate with style, generally 4:12 to 12:12.

Flat roofs are permitted if hidden by a facade.

Mansard roofs are not permitted.

Fascia, Trim, and Soffit

Acceptable Materials

Wood, painted or stained

Prefinished aluminum

Fiber-cement (HardiSoffit, HardiPanel) or other approved synthetic products

Porches & Balconies

Acceptable Materials

Columns:

Natural stone, Cultured Stone, or equal

Wrought iron or equal

Wood, painted or stained

Fiberglass or other approved synthetic materials, painted

Brick

Stucco

Balustrades:

Wrought iron or equal

Wood, painted or stained

Vinyl

Porch Floors:

Wood, painted or stained

Concrete

Tile

Brick pavers
Trex or equal
Synthetic material (at balconies only, above dry areas)

Porch Ceilings:

Wood, painted or stained
Stucco
Exposed rafters, painted or stained
Exterior drywall
Vinyl
Aluminum

Prohibited Materials

Screen on front porches
T-111

Methods and Configuration

Porch columns shall be at least 6" in diameter if greater than 8' in height. Balustrades shall have top and bottom rails with eased edges, centered on balusters.

Decks

Acceptable Materials

Wood, pressure treated or western red cedar
Trex or equal

Windows

Acceptable Materials

Frame & Sash:

Wood
Clad wood windows
Vinyl
Aluminum
Glazing:
Clear glass Beveled or
stained Lightly tinted

Prohibited Materials

Highly reflective
glazing Steel windows

Methods and Configuration

Windows shall be vertically proportioned. Mullions are encouraged. Shutters may be used.

Acceptable Finishes

Solid wood with glazing and/or panels, painted or stained
Fiberglass with glazing and/or panels, painted
Insulated metal with glazing and/or panels, painted
Aluminum sliding glass for patio doors

Garages, Covered Parking and Garage Doors

Insulated raised panel steel doors with and without window glass

Garages should have exterior materials consistent with the Main Building(s) and with same design style

Covered Parking – standing seam metal roofs with galvanized or painted steel columns

Chases, Roof and Wall Vents

Acceptable Chimney and Chase Materials

Stucco with cap or coping

Brick

Natural stone, Cultured Stone, or equal Siding

Methods and Configuration

Chimneys and chases on street sides must be compatible with the building architecture, and truncations below the roof line are strongly discouraged. Wall and roof vents shall be finished in a color compatible with the surrounding material. Ridge vents are encouraged.

Colors

Exterior colors: The color palette for the proposed buildings shall generally be natural earth tone colors, primarily shades of green, brown, and gray.

SUBAREA ‘C’ - MULTI-FAMILY CONDOMINIUMS

GENERAL AND SITE REQUIREMENTS

Maximum Building Height

No building shall be erected or enlarged to exceed 35 feet above grade. Buildings shall consist of single-story, one & one half and two-story two family attached buildings.

Lot Area

The number of condominium dwellings shall not exceed six (6) dwelling units per acre of lot area.

Dwelling Size and Distribution

The following are minimum sizes for finished areas of the condominium units, excluding porches or basements shall be 1,400 square feet.

Required Trash Areas

All trash and garbage shall be stored in the garage or where effectively screened from the street.

Landscaping/Screening

See Preliminary Landscape and Buffering Plan, Exhibit G.

ARCHITECTURAL GUIDELINES

Building Orientation

Buildings shall be sited as shown on the Final Development Plan.

Walls

Acceptable Materials

Wood clapboard, finished with paint or solid stain

Cedar shingles, finished with paint or stain

Fiber-cement ("HardiPlank" or equal) lap siding or other approved synthetic product, finished with paint

Brick, minimal color variation, traditional colors

Natural stone, Cultured Stone, or equal

Stucco

Vinyl siding, minimum 44 mil thickness, acceptable profiles are limited to triple 3" and double 4.5" shiplap

Prohibited Materials

Wood fiber composites

Aluminum siding

T-111

Methods and Configuration

Wall materials must be appropriate for architectural style. Generally, siding shall be horizontal with no greater than a 7.5" exposure, except as noted for vinyl. Multiple wall cladding materials are discouraged unless typical of the architectural style. Where brick, stone, or stucco is used on the front of a building it must wrap the side by a minimum of 4' or stop at an acceptable break line. Where stucco type materials are used, they shall have a background color and a complimentary trim color to include banding and windows.

Foundations & Piers

Acceptable Materials

Poured concrete

Brick

Natural stone, Cultured Stone, or equal

Exposed concrete block - painted

Prohibited Materials

Exposed concrete block (where foundation exposed more than 24" above grade)

Roofs

Acceptable Materials

30 year or better dimensional asphalt or fiberglass shingles

Standing seam and batten seam metal

Prohibited Materials

Corrugated metal

Methods and Configuration

Roof pitch shall be appropriate with style, generally 6:12 to 12:12.

Porch and minor gables roofs may be a minimum of 4:12. Multiple roof styles and shapes are discouraged on a single building unless typical of the style (for instance, Victorian). Mansard roofs are not permitted.

Fascia, Trim, and Soffit

Acceptable Materials

Wood, painted or stained

Prefinished aluminum

Fiber-cement (HardiSoffit, HardiPanel or approved equal)

Vinyl

Aluminum

Porches & Exterior Balconies

Acceptable Materials

Columns:

Natural stone, Cultured Stone, or equal

Wrought iron or equal

Wood, painted or stained

Fiberglass prefinished or painted

Brick

Stucco

Balustrades:

Wrought iron or equal

Wood, painted or stained

Vinyl

Porch Floors:

Wood, painted or stained

Concrete

Tile

Brick pavers

Trex or equal

Synthetic material (at balconies only, above dry areas)

Porch Ceilings:

Wood, painted or stained

Stucco

Exposed rafters, painted or stained

Exterior drywall – painted or stained

Vinyl

Aluminum

Prohibited Materials

Screen on front porches

Methods and Configuration

Porch columns shall be at least 6" in diameter if greater than 8' in height. Balustrades shall have top and bottom rails with eased edges, centered on balusters.

Decks

Acceptable Materials

Wood, pressure treated or western red cedar
Trex or other approved equal

Windows

Acceptable Materials

Frame & Sash:

Wood
Clad wood windows
Vinyl
Aluminum

Glazing:

Clear glass
Beveled or stained
Lightly tinted

Prohibited Materials

Highly reflective glazing
Steel windows

Methods and Configuration

Windows shall be vertically proportioned. Mullions are encouraged. Shutters may be used.

Doors

Acceptable Materials

Solid wood with glazing and/or panels, painted or stained
Fiberglass with glazing and/or panels, painted
Insulated metal with glazing and/or panels, painted
Aluminum sliding glass for patio doors

Chimneys, Chases, Roof and Wall Vents

Acceptable Chimney and Chase Materials

Stucco with cap or coping

Brick

Natural stone, Cultured Stone, or equal

Siding, only with specific approval of the developer

Methods and Configuration

Chimneys and chases on street sides must be compatible with the building architecture, and truncations below the roof line are strongly discouraged. Wall and roof vents shall be finished in a color compatible with the surrounding material. Ridge vents are encouraged.

Colors

Exterior colors: The color palette for the proposed buildings shall generally be natural earth tone colors, primarily shades of green, brown or gray.

SUBAREA 'D' – SINGLE FAMILY HOMES

GENERAL AND SITE REQUIREMENTS

Maximum Building Height

No building shall be erected or enlarged to exceed 35 feet above grade. Buildings shall consist of single-story, one & one half and two-story single-family homes.

Lot Area

The total number of single-family detached dwellings shall not exceed three (3) dwelling units per acre.

Minimum Lot Size

The minimum lot sizes shall be 52' x 120' and 62' x 120' as indicated on the Development Plan.

Lot Setbacks

Lot Setbacks for Subarea D shall be as follows:

For 52' wide lots:

Front Yard Setback	25 feet
Rear Yard Setback	25 feet
Side yard Setback	5 feet (10 feet combined)

For 62' wide lots:

Front Yard Setback	25 feet
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Rear Yard Setback	25 feet
Side yard Setback	6 feet (12 feet combined)

Dwelling Size and Distribution

The following are minimum sizes for finished areas of the condominium units, excluding porches or basements shall be 1,400 square feet for single story homes and 1,600 for one & one half and two-story homes.

Required Trash Areas

All trash and garbage shall be stored in the garage or whereas to effectively screen from the street.

Landscaping/Screening

See Preliminary Landscape and Buffering Plan (Exhibit G)

ARCHITECTURAL GUIDELINES

Building Orientation

Buildings shall be sited as shown on the Final Development Plan.

Walls

Acceptable Materials

Wood clapboard, finished with paint or solid stain

Cedar shingles, finished with paint or stain

Fiber-cement ("Hardiplank" or equal) lap siding or other approved product, finished with paint

Brick, minimal color variation, traditional colors

Decorative concrete block

Natural stone, Cultured Stone, or equal

Stucco

Vinyl siding, minimum 44 mil thickness

Prohibited Materials

Wood fiber composites

Aluminum siding

T-111

Methods and Configuration

Wall materials must be appropriate for architectural style. Generally, siding shall be horizontal with no greater than a 7.5" exposure, except as noted for vinyl. Multiple wall cladding materials are discouraged unless typical of the architectural style. Where brick, stone, or stucco is used on the front of a building it must wrap the side by a minimum of 4' or stop at an acceptable break line. Where stucco type materials are used, they shall have a background color and a complimentary trim color to include banding and windows.

Foundations & Piers

Acceptable Materials

Poured concrete
Brick
Natural stone, Cultured Stone, or equal
Exposed concrete block - painted

Prohibited Materials

Exposed concrete block (where foundation exposed more than 24" above grade)

Roofs

Acceptable Materials

30 year or better dimensional asphalt or fiberglass shingles
Standing seam and batten seam metal

Prohibited Materials

Corrugated metal

Methods and Configuration

Roof pitch shall be appropriate with style, generally 6:12 to 12:12.
Porch and minor gables roofs may be a minimum of 4:12. Multiple roof styles and shapes are discouraged on a single building unless typical of the style (for instance, Victorian). Mansard roofs are not permitted.

Fascia, Trim, and Soffit

Acceptable Materials

Wood, painted or stained
Prefinished aluminum
Fiber-cement (HardiSoffit, HardiPanel or approved equal) or other approved synthetic product
Vinyl
Aluminum

Porches & Exterior Balconies

Acceptable Materials

Columns:

Natural stone, Owens Corning Cultured Stone, or equal
Wrought iron or equal
Wood, painted or stained
Fiberglass, prefinished or painted
Brick
Stucco

Balustrades:

Wrought iron or equal
Wood, painted or stained
Vinyl

Porch Floors:

Wood, painted or stained
Concrete
Tile
Brick pavers
Trex or equal
Synthetic material (at balconies only, above dry areas)

Porch Ceilings:

Wood, painted or stained
Stucco
Exposed rafters, painted or stained
Exterior drywall – painted or stained
Vinyl
Aluminum

Prohibited Materials

Screen on front porches

Methods and Configuration

Porch columns shall be at least 6" in diameter if greater than 8' in height. Balustrades shall have top and bottom rails with eased edges, centered on balusters.

Decks

Acceptable Materials

Wood, pressure treated or western red cedar
Trex or other approved equal

Windows

Acceptable Materials

Frame & Sash:

Wood
Clad wood windows
Vinyl
Aluminum

Glazing:

Clear glass Beveled or stained
Lightly tinted

Prohibited Materials

Highly reflective glazing

Methods and Configuration

Windows shall be vertically proportioned. Mullions are

encouraged. Shutters may be used.

Doors

Acceptable Materials

Solid wood with glazing and/or panels, painted or stained

Fiberglass with glazing and/or panels, painted

Insulated metal with glazing and/or panels, painted

Aluminum sliding glass for patio doors

Chimneys, Chases, Roof and Wall Vents

Acceptable Chimney and Chase Materials

Stucco with cap or coping

Brick

Natural stone, Owens Corning Cultured Stone, or equal

Siding, only with specific approval of the developer

Methods and Configuration

Chimneys and chases on street sides must be compatible with the building architecture. Direct vent fireplaces without full chimneys are approved. Wall and roof vents shall be finished in a color compatible with the surrounding material. Ridge vents are encouraged.

Colors

Exterior colors: The color palette for the proposed buildings shall generally be natural earth tone colors, primarily shades of green, brown or gray.

2. Including signature and date lines for the applicant, certifying the text

See below for signature certification.

3. Dimensions and or acreages illustrated on the development plan shall be described in the development standards text.

Sub-Area 'A' - +/- 25.10 acres

Sub-Area 'B' - +/- 8.4 acres

Sub-Area 'C' - +/- 10.5 acres

Sub-Area 'D' - +/- 51.35 acres

4. Any provisions that depart from applicable standards set forth in the City of Pataskala Zoning Code addressing signage; landscaping, appearance and parking will be described and justified.

- a. 50% of dwellings shall have direct access to or abut common open space – 1255.10(c) – The Applicant is proposing to cluster*

the single-family units to permit significant perimeter Open Space around the two (2) sections of single family detached units and provide a large park for the benefit for the community.

- b. Minimum 16 feet between buildings for the 52' wide lots - 1255.08(g)(2) – The intended cluster development needs to reduce the side yards to 10 feet between buildings for the 52' lots.*
- c. Minimum 35% open space of land developed with no more than 10% of open space may be used for storm water basins – 1255.10(b)(1) – The Applicant is proposing at least 35% Open Space for residential uses (including Sub-Area 'B') only. See Exhibit E Open Space/ Sidewalk Plan. It is desirable to have the commercial buildings in a more urban design with less parking and having the buildings along Hazelton-Etna Road as close as practical. This leaves little room to meet the minimum Open Space for that use. Further the site is challenged with limited storm outlets so the size of the retention basins had to increase thus the percentage of Open Space used for the ponds will need to increase.*
- d. All underground utilities required – 1255.10(f) – It is not practical to install the existing power and other utilities, located along Hazelton-Etna Road, underground. The costs would be prohibitive.*
- e. Maximum 80% impervious surface for commercial uses – 1255(i)(2) – The proposed more urban site design of the commercial makes the 80% goal likely challenging. The Applicant would like some flexibility to consider more impervious surfaces based upon the users and design of Sub- Area 'A' when the Final Development Plan(s) are submitted.*
- f. Parking area serving non- residential areas shall provide for 100% opaque screens for 7 feet in height if abutting residential areas, other residential zones or uses – 1255.10(j) – The design intent for Hazelton Crossing is to create a true mixed-use pedestrian friendly community which the Applicant believes will make the community more desirable for a range of residents. It seems inconsistent with that intent to completely screen the parking area from the proposed residential uses on the site. Screening for the headlights in the parking area is certainly appropriate.*
- g. Landscape Requirements for screening – 1283.06 & 1283.07 – The Applicant is proposing that the significant open space*

buffer around the site particularly adjacent residential neighborhood to the north that there be some flexibility on the screening standards. It is suggested that the Landscape/Buffer Plan, Exhibit G, as submitted be the required landscaping for the site.

- h. Can the retail parcel have a full access curb cut as proposed on the Preliminary Development Plan? – The Applicant is proposing that the full access entrance to Sub-Area ‘A’ from Refugee Road be permitted.*
 - i. Is this development subject to the Transportation Corridor Overlay District – Chapter 1259? – The Applicant hereby requests that the standards for the Transportation Corridor Overlay District be waived for this community.*
 - j. The applicant requests a divergence from Section 1113.07(i) in order to provide the required plans and applications necessary for the NPDES permit at the Final Development Plan / Final Engineering Stage.*
 - k. The applicant requests a divergence from Section 1113.07(k) in order to provide the requested information at the Final Development Plan / Final Engineering stage.*
 - l. The applicant has agreed to the City’s request to relocate the main access for subarea ‘D’ from it’s northern location on Refugee Road to align with the existing single family entrance. To accomplish this request, and maintain the proposed layout for the single-family subarea, the applicant requests a divergence from the design standards of section 1117.10 to allow for the entrance road design as shown on the Preliminary Development Plan.*
 - m. The applicant requests a divergence from the standards of section 1117.10 to allow for the reduced centerline radii and the eyebrow design as indicated at the intersections of Hannahs drive and Beams Way, the northwest corner of Beams Way, and the northwest corner of Scotsgrove Drive.*
- 5. Provision shall be made to establish a private organization (i.e. homeowners/ or master association) with direct responsibility to provide for the operation and maintenance of all common facilities and amenities that are part of the planned development, and in such instance the legal assurances demonstrating that the private organization is self-perpetuating.**
- The Applicant shall provide with the submission of the Final Development Plan a Declaration of Covenants, Conditions, Restrictions and Easements for Hazelton Crossing for Sub-Area ‘D’ committing that a Homeowners Association will be formed that*

requires all lot owners to be members of the Association and to be responsible for the maintenance of properties of the community, including the Open Space of that Subarea. Further, the Declaration shall provide the Association the authority to foreclose on members who do not meet their obligations to fund that maintenance.

- *In addition, the Applicant shall provide with the submission of Final Development Plan a Declaration of Condominium for Hazelton Crossing Condominium in Sub-Area 'C' committing to the formation of a Condominium Association that requires all Condominium owners to be members of the Association and to be responsible for the maintenance of properties of the community, including the Open Space of that Subarea. Also, the Condominium Association will be responsible for the maintenance and even snow plowing of the private streets of the community. Finally, the Declaration shall provide the Association the authority to foreclose on members who do not meet their obligations to fund that maintenance.*
- *The owners of Sub-Areas 'A' and 'B' shall be obligated to maintain to any Open Space identified on the Preliminary Development Plan included as Exhibit D.*

6. Traffic Issues

7. *The Applicant has included a Memorandum of Understanding executory as of January 27, 2021 as Exhibit Q-1, and an updated Traffic Impact Study dated June 24, 2020 as Exhibit Q-2.***Permitted Land Uses**

Sub-Area 'A'

All Permitted Uses in the General Business District (GB) plus all Conditional Uses in GB except Watercraft and/or recreational vehicle storage, Newspaper publishing plant and Welding shops.

Sub-Area 'B'

Skilled Nursing Facilities, Memory Care Facilities, Assisted Care Facilities, Long Term Care Facilities, Inpatient Rehabilitation Centers and Independent Senior Residential Community.

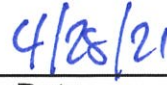
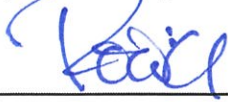
Sub-Area 'C'

Multi-family attached residential units

Sub-Area 'D'

Single family detached residential units

The applicant hereby Certifies this Development Standards Text



Applicant

Date

Southgate Company Limited Partnership

Robert E. O'Neill, President

TAB 2
LEGAL DESCRIPTION

SEC. 319.202 COMPLIED WITH
MICHAEL L. SMITH, AUDITOR
BY 480.00



201511170024924

Pgs: 2 \$28.00 T20150027703
11/17/2015 2:26PM BXHAYES
Bryan A. Long
Licking County Recorder

GENERAL WARRANTY DEED

Lance W. Clayton, unmarried, of Licking County, Ohio, for valuable consideration paid, grants with general warranty covenants to **Southgate Company Limited Partnership**, an Ohio Limited Partnership, whose tax mailing address is P.O. Box 397, Newark, OH 43058-0397, the following real property:

Situated in the Township of ~~Lima~~ ^{Pataskala}, County of Licking, State of Ohio, and being a part of Lot No. 6 in the Fourth Quarter, Township 1N, Range 15W, of the United States Military Lands, and being more particularly described on the attached Exhibit "A"

Prior Deed Reference: Instrument Number 200411170041148, Licking County Recorder's Office, Licking County, Ohio.

Also known as: 7913 Hazelton-Etna Road, Pataskala, Ohio 43062
Auditor's Parcel # 064-152964-00.001

Excepting conditions, easements, restrictions, rights of way and zoning and other governmental regulations of record and taxes and assessments not yet due and payable which Grantees assume and agree to pay as a part of the consideration herein.


Executed this 13th day of November, 2015


Lance W. Clayton

State of Ohio
County of Licking SS:

The foregoing instrument was acknowledged before me this 13th day of November, 2015 by Lance W. Clayton.




LAURIE WELLS, ATTORNEY AT LAW
NOTARY PUBLIC, STATE OF OHIO
My commission has no expiration date.
Section 147.03 R.C.

Prepared by:
Laurie Wells, Esq., through
Hayes Law Offices, INC., L.P.A.
195 E. Broad St., Pataskala, OH 43062
740.927.2927



Exhibit "A"

Situated in the Township of ~~Lima~~ ^{Pataskala}, County of Licking, State of Ohio, and being a part of Lot No. 6 in the Fourth Quarter, Township 1N, Range 15W, of the United States Military Lands, and being more particularly described as follows:

Being a Survey of a part of a parcel conveyed to Georgiana E. Smoke & Bonnie Campbell, as recorded in Official Record Volume 193, Page 673, in the Licking County Official Records, and further described as follows;

Commencing at a P.K. nail found in the centerline of State Route 310 marking the Southeast corner of a 5.01 acre parcel conveyed to Pat Lacy & Kevin King, as recorded in Official Record Volume 667, Page 253, and being on the West line of said parcel conveyed to Smoke & Campbell: said nail bears N 00 deg. 14' 16" W 1422.45 feet and S 89 deg. 57' 57" E 1311.29 feet from the Southwest corner of Lot 6;

Thence N 05 deg. 11' 24" E 88.39 feet with the centerline of State Route 310, the same being the East line of said parcel conveyed to King and the West line of said parcel conveyed to Smoke & Campbell, to a P.K. nail set, and being the principle place of beginning of the tract herein to be described;

Thence, N 05 deg. 11' 24" E 350.08 feet continuing with the centerline of State Route 310, the same being the West line of said parcel conveyed to Smoke & Campbell, to a P.K. nail set, and passing over a P.K. nail found at the corner to said parcel conveyed to Lacey & King at 212.83 feet;

Thence leaving said centerline with a line across said parcel conveyed to Smoke & Campbell, with the following three (3) courses and distances:

- 1) S 76 deg. 53' 09" E 743.45 feet to an iron pin set, and passing over an iron pin set at 50.00 feet;
- 2) S 05 deg. 11' 20" W 241.61 feet to an iron pin set;
- 3) N 85 deg. 16' 32" W 736.34 feet to the place of beginning, and passing over an iron pin set at 686.38 feet;

The above described parcel contains 5.000 acres, more or less, and is subject to all legal easements and right of ways of record.

The bearings of the above description are based on the centerline of State Route 310 as N 05 deg. 11' 24" E.

All iron pins set are 5/8" o.d. reinforcing bars with yellow caps labeled "S.A. England #7452".

The above description was prepared by S.A. England and Associates, under the supervision of Scott A. England, Ohio Registered Surveyor No. 7452, in February of 1995.

7913 Hazelton-Etna Road, Pataskala, OH 43062

Permanent Parcel No.: 064-152964-00.001

FIDUCIARY DEED

BONNIE M. OSBORN, TRUSTEE of the **BONNIE M. OSBORN REVOCABLE LIVING TRUST**, Grantor, by the power conferred by said Trust Agreement, and every other power granted by law, for valuable consideration **GRANTS**, with *Fiduciary Covenants*, to **SOUTHGATE COMPANY LIMITED PARTNERSHIP**, an Ohio Limited Partnership, Grantee, whose tax-mailing address is P.O. BOX 397 NEWARK, OHIO 43058 the following described Real Property:

See exhibit "A" attached hereto and incorporated herein for a legal description of the property being conveyed herein.

Street Address: _____

Parcel No.: _____

Prior Instrument Reference: _____

No. 199807100026119, No. 199807100026118, No. 199807100026117, O.R. Vol. 941, Page 366, O.R. Vol. 769, Page 158, O.R. Vol. 769, Page 155, and O.R. Vol. 193, Page 673, Recorder's Office, **LICKING** County, Ohio.

Subject to (a) those liens and encumbrances created or assumed by Grantee; (b) zoning and building laws, ordinances and regulations; (c) legal streets and highways; (d) easement of record to Southwest Licking Community Water & Sewer, recorded in O.R. VOL. 675, Page 74, Licking County, Ohio. (e) easement of record to Ohio Power Company, recorded in D.B. VOL. 765, Page 583, Licking County, Ohio; (f) easement of record to Licking County, recorded in D.B. VOL. 764, Page 1007, Licking County, Ohio; and (g) real estate taxes not due and payable.

Grantor also grants to Grantee for a period of ten (10) years following the date of the closing hereon a prior option or first refusal to purchase the House Property and contiguous land as defined and described in, and upon the terms set forth in, paragraph 11 of the Real Estate Purchase Contract between Grantor and Grantee executed the 6th day of October, 2005, which right and provisions shall survive this closing.

Signed and acknowledged this 30th day of August, 2007.

Bonnie M. Osborn, Trustee
BONNIE M. OSBORN, Trustee

STATE OF OHIO

COUNTY OF Licking, ss.

BE IT REMEMBERED, that on this 30th day of August, 2007, before me, the subscriber, a Notary Public in and for said County, personally came the above named **BONNIE M. OSBORN**, TRUSTEE of the **BONNIE M. OSBORN REVOCABLE LIVING TRUST**, the Grantor in the foregoing deed, and she acknowledged the signing of the same to be her voluntary act and deed as such TRUSTEE on behalf of said trust.

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and affixed my official notary seal, on the day and year first above said.



ANNE S. MOORHEAD
NOTARY PUBLIC, STATE OF OHIO
MY COMMISSION EXPIRES SEPTEMBER 24, 2010

Anne S. Moorhead
Notary Public

Area Below Reserved for Use By Recorder and Auditor

Legal Description

SITUATED IN THE STATE OF OHIO, COUNTY OF LICKING, CITY OF PATASKALA, BEING A PART OF LOT 6 LOCATED IN THE 4TH QUARTER, TOWNSHIP 1, RANGE 15, UNITED STATES MILITARY LANDS, AND BEING A PART OF THAT 92.55 ACRE TRACT AS CONVEYED TO BONNIE M. OSBORN, TRUSTEE BY DEED OF RECORD IN INSTRUMENT NUMBER 199807100026118, AND PART OF THAT 10.000 ACRE TRACT AS CONVEYED TO BONNIE M. OSBORN, TRUSTEE BY DEED OF RECORD IN INSTRUMENT NUMBER 199807100026119, ALL REFERENCES BEING TO THOSE OF RECORD IN THE RECORDER'S OFFICE, LICKING COUNTY, OHIO, SAID 94.811 ACRES BEING MORE PARTICULARLY BOUNDED AND DESCRIBED AS FOLLOWS:

BEGINNING AT AN IRON PIPE FOUND MARKING THE NORTHEASTERLY CORNER OF SAID OSBORN, 92.55 ACRE TRACT, THE SAME BEING THE SOUTHEASTERLY CORNER OF LOT 30 OF 'TATMAN PLACE SECOND ADDITION' OF RECORD IN PLAT BOOK 11, PAGE 61;

THENCE ALONG THE EASTERLY LINE OF SAID OSBORN TRACT THE FOLLOWING THREE (3) COURSES AND DISTANCES;

SOUTH 03 DEGREES 31' 40" WEST, 252.00 FEET TO AN IRON PIPE FOUND MARKING THE NORTHWESTERLY CORNER OF THAT 22.001 ACRE TRACT AS CONVEYED TO EDNA F. BARNHILL BY DEED OF RECORD IN OFFICIAL RECORD VOLUME 113, PAGE 808;

SOUTH 03 DEGREES 34' 26" WEST, 1150.38 FEET TO AN IRON PIPE FOUND MARKING THE NORTHWESTERLY CORNER OF THAT 5.034 ACRE TRACT AS CONVEYED TO JOSEPH A. AND NANCY A. CROCK BY DEED OF RECORD IN INSTRUMENT NUMBER 199910250044007; AND...

SOUTH 03 DEGREES 32' 24" WEST, 813.06 FEET TO A POINT IN THE CENTERLINE OF COUNTY ROAD 30, ALSO KNOWN AS REFUGEE ROAD, PASSING AN IRON PIPE FOUND AT 783.18 FEET;

THENCE ALONG SAID CENTERLINE, NORTH 86 DEGREES 07' 32" WEST, 1790.99 FEET TO A POINT IN STATE ROUTE 310 MARKING THE SOUTHWESTERLY CORNER OF SAID OSBORN TRACT;

THENCE ALONG THE WESTERLY LINE OF SAID OSBORN TRACT THE FOLLOWING TWO (2) COURSES AND DISTANCES;

NORTH 18 DEGREES 52' 38" WEST, 768.54 FEET TO A POINT; AND...

NORTH 09 DEGREES 11' 53" EAST, 632.38 FEET TO A POINT, PASSING THE SOUTHWESTERLY CORNER OF SAID 10.000 ACRE, OSBORN TRACT AT 457.33 FEET;

THENCE LEAVING THE WESTERLY LINE ACROSS SAID OSBORN TRACT THE FOLLOWING TWO (2) COURSES AND DISTANCES;

SOUTH 81 DEGREES 16' 00" EAST, 320.00 FEET TO AN IRON PIN SET, PASSING AN IRON PIN SET AT 49.65 FEET; AND...

NORTH 09 DEGREES 11' 53" EAST, 175.00 FEET TO AN IRON PIN SET IN THE SOUTHERLY LINE OF THAT 5.000 ACRE TRACT AS CONVEYED TO LANCE W. CLAYTON BY DEED OF RECORD IN INSTRUMENT NUMBER 200411170041148;

THENCE ALONG SAID SOUTHERLY LINE, SOUTH 81 DEGREES 16' 00" EAST 416.37 FEET TO AN IRON

PIN FOUND MARKING THE SOUTHEASTERLY CORNER OF SAID CLAYTON TRACT;

THENCE ALONG THE EASTERLY LINE OF SAID CLAYTON TRACT, NORTH 09 DEGREES 12' 04" EAST, 241.70 FEET TO AN IRON PIN FOUND MARKING THE NORTHEASTERLY CORNER OF SAID CLAYTON TRACT;

THENCE ALONG THE NORTHERLY LINE OF SAID CLAYTON TRACT, NORTH 72 DEGREES 52' 47" WEST, 743.45 FEET TO A POINT IN THE WESTERLY LINE OF SAID 92.55 ACRE, OSBORN TRACT, PASSING AN IRON PIN FOUND AT 696.50 FEET;

THENCE ALONG SAID WESTERLY LINE, NORTH 10 DEGREES 41' 53" EAST, 360.99 FEET TO A POINT IN THE NORTHERLY LINE OF LOT 6 MARKING THE NORTHWESTERLY CORNER OF SAID 92.55 ACRE, OSBORN TRACT;

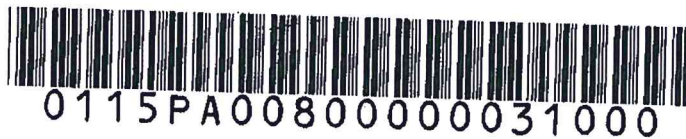
THENCE ALONG THE NORTHERLY LINE OF SAID OSBORN TRACT, LOT 6 AND THE SOUTHERLY LINE OF 'TATMAN PLACE FIRST ADDITION' OF RECORD IN PLAT BOOK 9, PAGE 26 AND SAID 'TATMAN PLACE SECOND ADDITION', SOUTH 85 DEGREES 59' 51" EAST, PASSING THE CENTERLINE OF STATE ROUTE 310, ALSO KNOWN AS HAZELTON-ETNA ROAD, (AS SHOWN ON THE O.D.O.T. RIGHT-OF-WAY PLANS ENTITLED "LIC-310-1.73,3.70") AT 25.13 FEET AND AN IRON PIN FOUND IN THE EASTERLY RIGHT-OF-WAY LINE AT 65.47 FEET, A TOTAL DISTANCE OF 1925.62 FEET TO THE POINT OF BEGINNING AND CONTAINING 94.811 ACRES, MORE OR LESS, (2.398 ACRES WITHIN RIGHT-OF-WAY OF STATE ROUTE 310 AND 1.215 ACRES WITHIN RIGHT-OF-WAY OF REFUGEE ROAD) ACCORDING TO A PREVIOUS SURVEY CONDUCTED BY JOBES HENDERSON AND ASSOCIATES, INC. IN DECEMBER OF 2005.

THE BEARINGS IN THE ABOVE DESCRIPTION ARE BASED ON THE OHIO STATE PLANE COORDINATE SYSTEM (SOUTH ZONE).

ALL IRON PINS SET ARE 5/8" IN DIAMETER REBAR BY 30" IN LENGTH WITH RED SURVEYORS IDENTIFICATION CAPS MARKED "J&H, PS 8283".

TRANSFERRED
Date August 31, 2007
J. Terry Evans
Licking County Auditor-TH
SEC.319.202 COMPLIED WITH
J. TERRY EVANS, AUDITOR
BY TH 6030 60

DESCRIPTION APPROVED
TIM LOLLO
LICKING COUNTY ENGINEER
APPROVED BY
P.M.N.



TAB 3
LIST OF ADJACENT PROPERTY
OWNERS

Randy Fisher
122 Stoney Ridge Drive
Pataskala, OH 43062

Susan Bowles
166 Stone Ridge Drive
Pataskala, OH 43062

Shanna J Atwood
224 Stoney Ridge Drive
Pataskala, OH 43062

Sharon Hukle
268 Stoney Ridge Drive
Pataskala, OH 43062

Beverly Butts
318 Stoney Ridge Drive
Pataskala, OH 43062

David Beeson
4234 Watkins Road
Pataskala, OH 43062

Robert & Barbara Scarberry
245 Stoney Ridge Drive
Pataskala, OH 43062

Lawrence & Diane Mock
144 Stoney Ridge Drive
Pataskala, OH 43062

William & Marilyn Green
188 Stoney Ridge Drive
Pataskala, OH 43062

Anthony & Deborah Mangine
246 Stoney Ridge Drive
Pataskala, OH 43062

Bruce & Sara Miller
290 Stoney Ridge Drive
Pataskala, OH 43062

Paul & Janet Maxim
311 Stoney Ridge Drive
Pataskala, OH 43062

Kimberly Legg
271 Stoney Ridge Drive
Pataskala, OH 43062

John & Carol Conner
227 Stoney Ridge Drive
Pataskala, OH 43062

Joseph & Nancy Crock
9796 Refugee Road, SW
Pataskala, OH 43062

Michael & Patricia Bookman
9756 Refugee Road
Pataskala, OH 43062

David & Pi-Feng Kauf
447 Heather Hill Road
Whitehall, OH 43213

Kevin King & Patricia Lacey
7922 Hazelton Etna Road
Pataskala, OH 43062

J & CW Enterprises
PO Box 2278
Zanesville, OH 43702

Conrad Veidt
34 Stoney Ridge Drive
Pataskala, OH 43062

Julie Rhodeback
76 Stoney Ridge Drive
Pataskala, OH 43062

Pataskala Church of the Nazarene
8100 Hazelton Etna Road
Pataskala, OH 43062

Vitold Ltd.
9570 Refugee Road
Pataskala, OH 43062

Southgate Co Ltd Partnership
1499 W Main St
Newark, OH 43055

Robert & Carolyn McQuattie
7874 Hazelton Etna Road
Pataskala, OH 43062

Scott & Pamela McIlwain
14 Stoney Ridge Drive
Pataskala, OH 43062

Frank & Camille Martin
56 Stoney Ridge Drive
Pataskala, OH 43062

Hollis & Mary Coleman
100 Stoney Ridge Drive
Pataskala, OH 43062

James & Lindsay Ryan
195 Stoney Ridge Drive
Pataskala, OH 43062

Frances Morris
151 Stoney Ridge Drive
Pataskala, OH 43062

Renate Ast
107 Stoney Ridge Drive
Pataskala, OH 43062

James Kellett
63 Stoney Ridge Drive
Pataskala, OH 43062

Phillip & Traci Cochran
173 Stoney Ridge Drive
Pataskala, OH 43062

Barry & Debra Gallogly
129 Stoney Ridge Drive
Pataskala, OH 43062

Brenda Weatherwax
85 Stoney Ridge Drive
Pataskala, OH 43062

Joseph & Sylvia Zagar
21 Stoney Ridge Drive
Pataskala, OH 43062

Brian T. Dixon (Trustee)
P.O. Box 1266
Pataskala, OH 43062

James & Kimberly Lafferty
102 Brenden Park Drive
Pataskala, OH 43062

Karen Ispan
118 Brenden Park Drive
Etna, OH 43062

Philip A & Leah R Mollohan
110 Brenden Park Drive
Pataskala, OH 43062

Gerald Phillips
114 Brenden Park Drive
Etna, OH 43062

John Henderson &
Ashlin Streetman
130 Brenden Park Drive
Pataskala, OH 43062

Eric & Sarah Evans
122 Brenden Park Drive
Pataskala, OH 43062

Joseph & Jean Browning
138 Brenden Park Drive
Pataskala, OH 43062

Mark & Katy Klettlinger
142 Brenden Park Drive
Pataskala, OH 43062

Angela Lawson
146 Brenden Park Drive
Pataskala, OH 43062

Patrick & Phyllis Jensen
101 Brenden Park Drive
Pataskala, OH 43062

William & Katherine Queen
105 Brenden Park Drive
Pataskala, OH 43062

Joseph & Allison Blanton
109 Brenden Park Drive
Pataskala, OH 43062

Vaughn & Kimberly Pennington
113 Brenden Park Drive
Pataskala, OH 43062

Brian & Chelsea Kohler
117 Brenden Park Drive
Pataskala, OH 43062

James E & Dorthey M Stump
121 Brenden Park Drive
Pataskala, OH 43062

Mark & Heather Sharpe
125 Brenden Park Drive
Pataskala, OH 43062

Theresa Eddy-Barringer
129 Brenden Park Drive
Pataskala, OH 43062

Matthew & Anna Haynes
133 Brenden Park Drive
Pataskala, OH 43062

James Peagler
137 Brenden Park Drive
Pataskala, OH 43062

Laura Johnson
141 Brenden Park Drive
Pataskala, OH 43062

Gary & Melody McCardle
145 Brenden Park Drive
Pataskala, OH 43062

Howard & Rosemary Emswiler
13167 Morse Road, SW
Pataskala, OH 43062

Adam & Jamie Justi
147 Purple Finch Loop
Pataskala, OH 43062

Barbara Hacht
141 Purple Finch Loop
Pataskala, OH 43062

Geoffrey & Wendy Piras
515 E Carefree Hwy., #829
Phoenix, AZ 85085

Dennis Domres
137 Purple Finch Loop
Pataskala, OH 43062

Audra L & Bruce A Brothers
135 Purple Finch Loop
Pataskala, OH 43062

Jon C & Vaneta M Rogers
121 Purple Finch Loop
Pataskala, OH 43062

Brett & Kaitlyn Hagenbuch
117 Purple Finch Loop
Pataskala, OH 43062

Christopher & Sarah Mauger
113 Purple Finch Loop
Pataskala, OH 43062

Rupa Devi & Yog M Dahal
109 Purple Finch Loop
Pataskala, OH 43062

Richard & Lynne Tea
105 Purple Finch Loop
Pataskala, OH 43062

Eric & Traci Brandt
101 Purple Finch Loop
Pataskala, OH 43062

Olan Long (Trust)
7684 Smoke Road
Pataskala, OH 43062

Marvin Dearman
93 Purple Finch Loop
Pataskala, OH 43062

Dennis & Angela Summers
91 Purple Finch Loop
Etna, OH 43062

Michael & Amy Hartless
2005 Sugar Mill Drive
Pataskala, OH 43062

Jerry & Rose Banner
2009 Sugar Mill Drive
Pataskala, OH 43062

PKL Property Management
2000 Sugar Mill Drive
Pataskala, OH 43062

William & Susan Cross
2013 Sugar Mill Drive
Pataskala, OH 43062

James & Jennifer Massie
2017 Sugar Mill Drive
Pataskala, OH 43062

Paul & Mimi Rivenbark
2021 Sugar Mill Drive
Pataskala, OH 43062

James M & Tiffany B Dewhurst
2006 Sugar Mill Drive
Pataskala, OH 43062

Richard P & Beverly Masa
2010 Sugar Mill Drive
Pataskala, OH 43062

Ronald & Sharon Howell
2012 Sugar Mill Drive
Pataskala, OH 43062

PKL Property Management LLC
1470 Sedgefield Dr
New Albany, OH 43054

Cameron Chase Homeowners
Real Property Management
9054 Cotter Street
Lewis Center, OH 43035

David & Karen Shoemaker
10 Wrens Nest Court
Pataskala, OH 43062

AMH 2015-2 Borrower LLC
30601 Agoura Rd., Ste 200
Agoura Hills, CA 91301

American Homes 4 Rent
Properties Seven LLC
30601 Agoura Rd., Ste 200
Agoura Hills, CA 91301

Abby Wolfe
158 Purple Finch Loop
Etna, OH 43062

Patrick Muldovan
162 Purple Finch Loop
Etna, OH 43062

Julie A Hanood
154 Purple Finch Loop
Pataskala, OH 43062

Heidi Horn
9692 Refugee Road, SW
Pataskala, OH 43062

Dennis & Mary Napier
7990 Smoke Road
Pataskala, OH 43062

AH4R Properties LLC
30601 Agoura Rd., Ste 200
Agoura Hills, CA 91301

Brenda & Michael Byers
7728 Smoke Road
Pataskala, OH 43062

Rhonda E Whitsel Trustee
2113 W Gardenia Drive
Pataskala, OH 43062

Micheal & Jennifer Kasper
97 Purple Finch Loop
Pataskala, OH 43062

Adam Musilli & Elisa Nyman
2101 Gardenia Drive, W
Pataskala, OH 43062

Joseph & Jennifer Negri
2105 W Gardenia Drive
Pataskala, OH 43062

Dustin Epperson
2109 W Gardenia Drive
Pataskala, OH 43062

ODOT-SE Region Real Estate
1980 W Br St
Columbus, OH 43223

Dawn Arndt
106 Brenden Park Dr.
Etna, OH 43062

AH4R Properties LLC
30601 Agoura Rd., Ste 200
Agoura Hills, CA 91301

Sugar Mill Homeowners Ass Inc
P.O. Box 253
Pataskala, OH 43062

Korbin A Mauger
126 Brenden Park Drive
Pataskala, OH 43062

Micheal & Jennifer Kasper
97 Purple Finch Loop
Pataskala, OH 43062

AMH 2014-2 Borrower LLC
30601 Agoura Rd., Ste 200
Agoura Hills, CA 91301

Richard & Whitney Davis
134 Brenden Park Drive
Pataskala, OH 43062

Dustin Epperson
2109 W Gardenia Drive
Pataskala, OH 43062

Dustin Epperson
2109 W Gardenia Drive
Pataskala, OH 43062

TAB 4
DEVELOPMENT PLAN
EXHIBITS

Preliminary Development Plan for HAZELTON CROSSING

SITUATED IN THE STATE OF OHIO, COUNTY OF LICKING, CITY OF PATASKALA,
AND BEING A PART OF LOT 6 LOCATED IN THE 4TH QUARTER, TOWNSHIP - 1, RANGE -15, UNITED STATES MILITARY LANDS

SHEET INDEX - SITE AND LANDSCAPE PLANS

- EXHIBIT 'A' - SITE REGIONAL CONTEXT PLAN
- EXHIBIT 'B-1' - SITE SURVEY
- EXHIBIT 'B-2' - EXISTING CONDITIONS PLAN
- EXHIBIT 'C' - ZONING SUB-AREA PLAN
- EXHIBIT 'D-1' - PRELIMINARY DEVELOPMENT PLAN
- EXHIBIT 'D-2' - PRELIMINARY PHASING PLAN
- EXHIBIT 'E' - OPEN SPACE / SIDEWALK PLAN
- EXHIBIT 'F' - ILLUSTRATIVE MASTER PLAN
- EXHIBIT 'G' - CONCEPTUAL LANDSCAPE / BUFFER PLAN
- EXHIBIT 'H-1' - PUBLIC ROAD DETAILS
- EXHIBIT 'H-2' - CONCEPTUAL LANDSCAPE ENLARGEMENTS
- EXHIBIT 'H-3' - CONCEPTUAL SIGNAGE DETAILS
- EXHIBIT 'I' - PRELIMINARY UTILITY PLAN
- EXHIBIT 'J' - PRELIMINARY GRADING PLAN
- EXHIBIT 'K-1' - EXISTING TREE SURVEY KEY PLAN
- EXHIBIT 'K-2' - EXISTING TREE SURVEY ENLARGEMENTS A, B, & C
- EXHIBIT 'K-3' - EXISTING TREE SURVEY ENLARGEMENTS D & E
- EXHIBIT 'K-4' - EXISTING TREE INDEX

SHEET INDEX - SUB-AREA 'A' CONCEPTUAL ARCHITECTURE

- EXHIBIT 'N-1' - SUB AREA 'A' RETAIL CENTER CONCEPTUAL ARCHITECTURE
- EXHIBIT 'N-2' - SUB AREA 'A' OUTPARCEL CONCEPTUAL ARCHITECTURE

SHEET INDEX - SUB-AREA 'B' CONCEPTUAL ARCHITECTURE

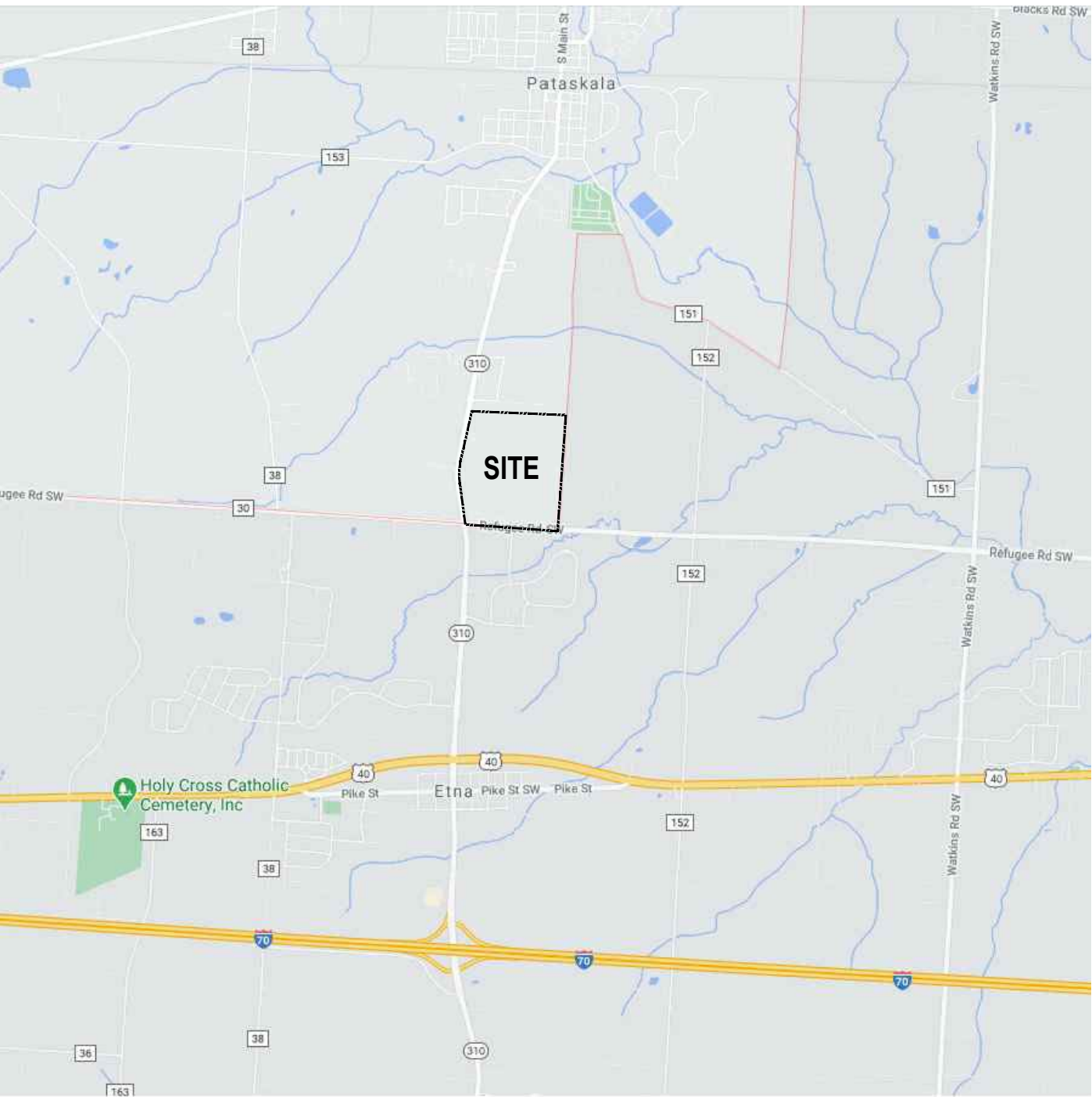
- EXHIBIT 'O-1' - SUB AREA 'B' ASSISTED LIVING CONCEPTUAL ARCHITECTURE

SHEET INDEX - SUB-AREA 'C' CONCEPTUAL ARCHITECTURE

- EXHIBIT 'P-1' - SUB AREA 'C' CONDOMINIUM CONCEPTUAL ARCHITECTURE

SHEET INDEX - SUB-AREA 'D' CONCEPTUAL ARCHITECTURE

- EXHIBIT 'Q-1' - "THE BALDWIN"
 - EXHIBIT 'Q-2' - "THE BRADFORD"
 - EXHIBIT 'Q-3' - "THE BRENTWOOD"
- EXHIBIT 'Q-4' - "THE CHARLESTON"
 - EXHIBIT 'Q-5' - "THE MANCHESTER"
 - EXHIBIT 'Q-6' - "THE RICHMOND"



VICINITY MAP

SCALE: N.T.S.

PREPARED FOR

OWNER : SOUTHGATE COMPANY LIMITED PARTNERSHIP
PO BOX 397
NEWARK, OH 43058

APPLICANT: ROBERT O'NEILL
PO BOX 397
NEWARK, OH 43058

ISSUED FOR

DATE

- PRELIMINARY DEVELOPMENT PLAN

PRELIMINARY DEVELOPMENT PLAN - REVISED
- 01.29.2021

04.28.2021

APPROVED BY

DATE

- PLANNING AND ZONING COMMISSION

CITY COUNCIL
- XX.XX.XXXX

XX.XX.XXXX

SIGNATURES

APPLICANT, ROBERT O'NEILL

DATE

KYLE J. SHREVES, REGISTERED PROFESSIONAL ENGINEER

DATE

CHAIRMAN OF PLANNING AND ZONING COMMISSION

DATE

UTILITY DIRECTOR

DATE

DIRECTOR OF PLANNING

DATE

PUBLIC SERVICES DIRECTOR

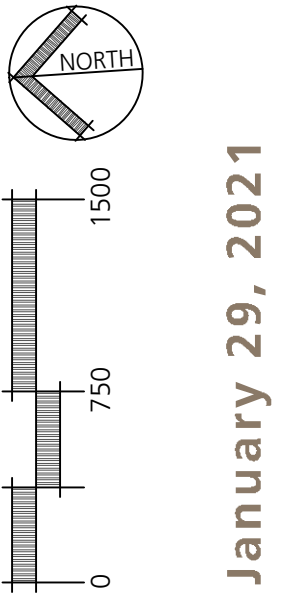
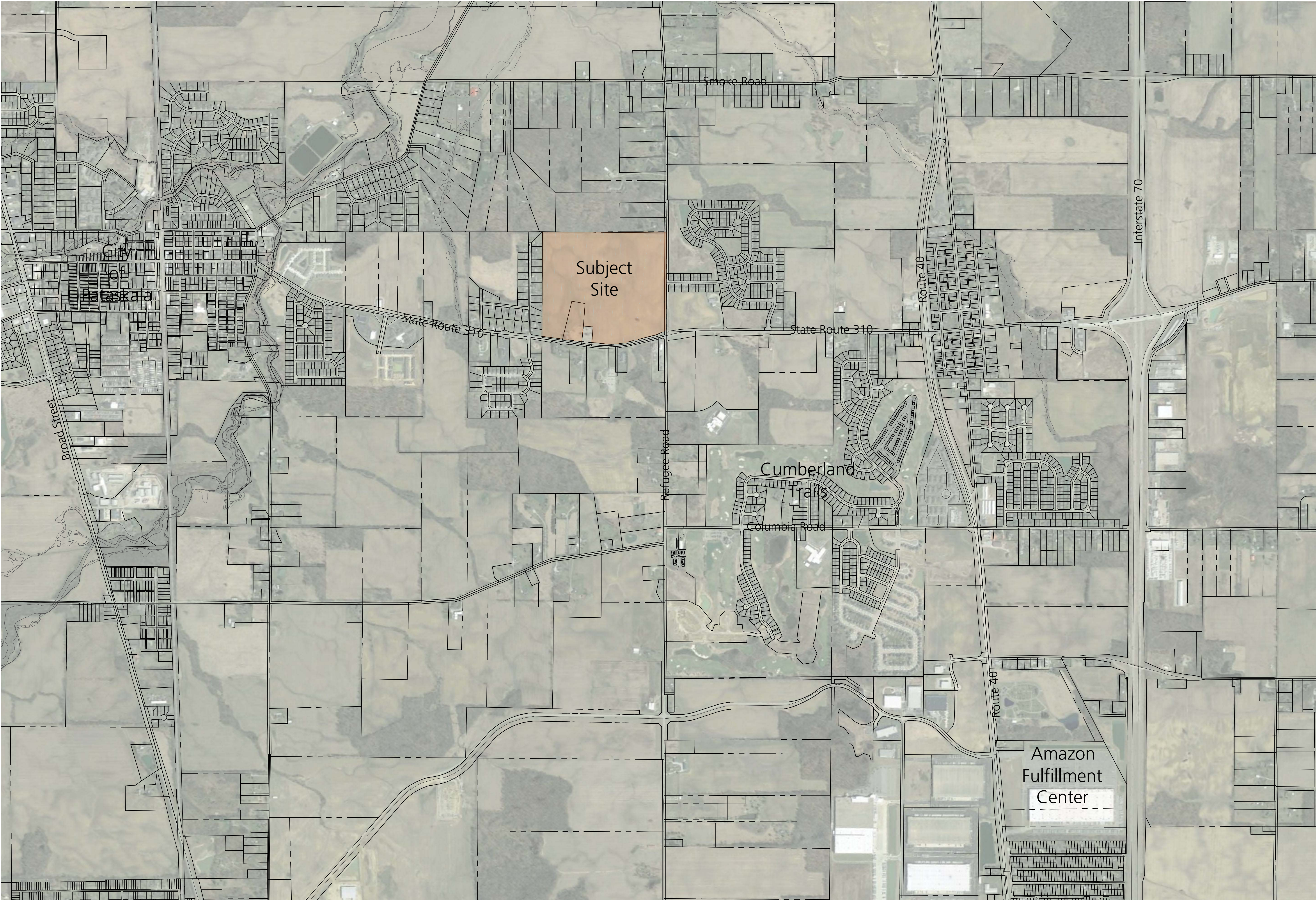
DATE

CITY ADMINISTRATOR

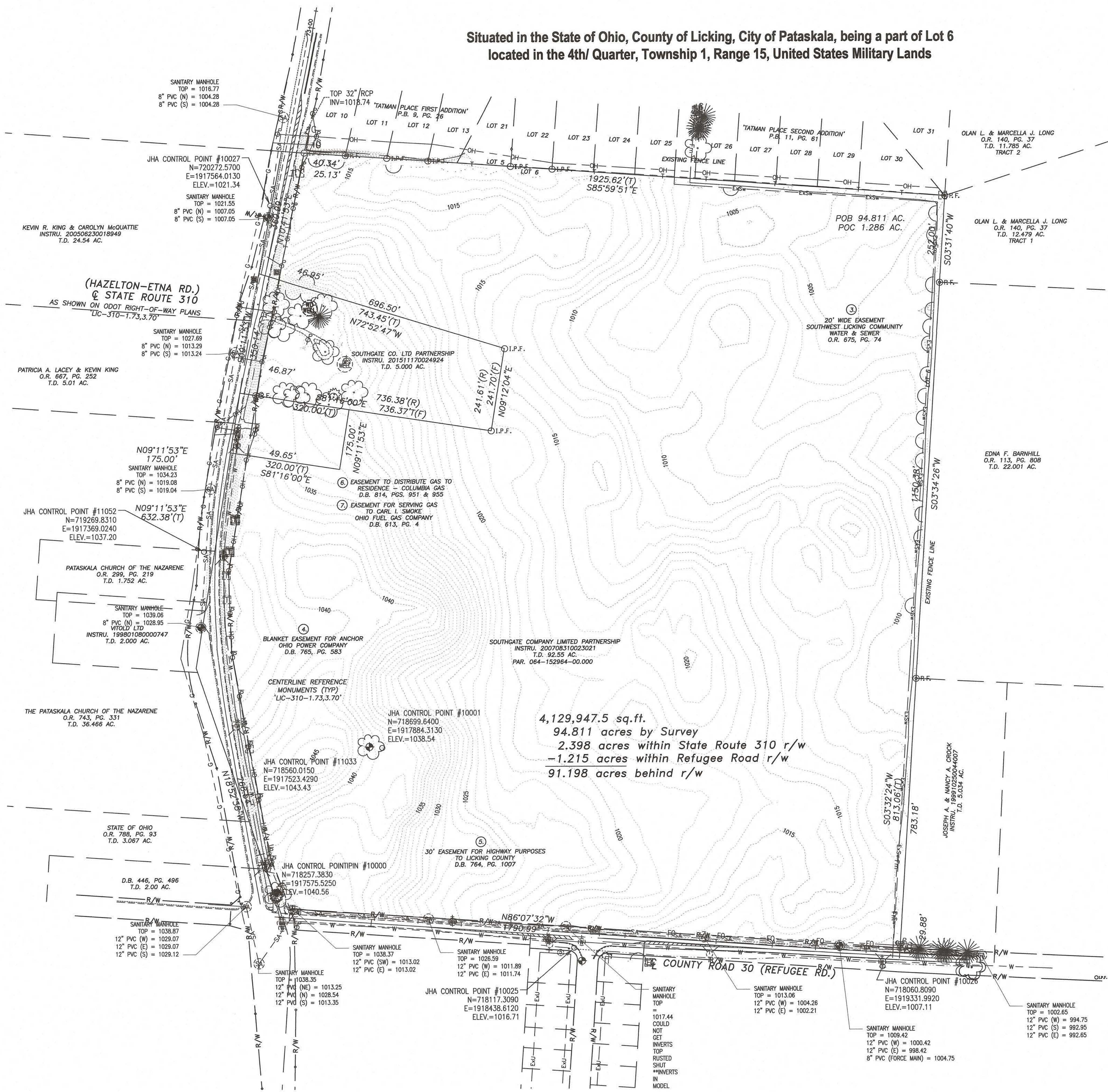
DATE

CITY ENGINEER

DATE



Situated in the State of Ohio, County of Licking, City of Pataskala, being a part of Lot 6
located in the 4th/ Quarter, Township 1, Range 15, United States Military Lands



ELECTRIC
AMERICAN ELECTRIC POWER
850 TECH CENTER DRIVE
GAHANNA, OHIO 43230
614-883-7958
800-672-2231
CALVIN JOHNSON
















































GAS
THE ENERGY COOPERATIVE
120 O'NEILL DRIVE
HEBRON, OHIO 43025
740-348-1116
SEAMUS MULLIGAN

STORM WATER
THE CITY OF PATASKALA
621 W. BROAD STREET
PATASKALA, OH 43062
740-964-2416

SANITARY & WATER
SOUTHWEST LICKING COMMUNITY
WATER AND SEWER DISTRICT
69 ZELLERS LANE
PATASKALA OHIO 43062
740-927-0410
DONALD S. RECTOR, P.E.

TELECOMMUNICATIONS/FIBER
CENTURY LINK
441 WEST BROAD STREET
PATASKALA, OH 43062
740-927-8282
DEE REED

LEGEND

	AC UNIT		POWER/TELEPHONE POLE		DRILL HOLE FND.
	CABLE TV PEDESTAL		SANITARY CLEANOUT		GOV. DISK FND.
	CATCH BASIN		SANITARY MANHOLE		IRON PIN FND.
	CURB INLET		SIGN		IRON PIN SET
	ELECTRIC BOX		STORM MANHOLE		IRON PIPE FND.
	ELECTRIC METER		TELEPHONE MANHOLE		IRON PIPE SET
	FIRE DEPT. CONNECTION		TELEPHONE PEDESTAL		MAG NAIL FND.
	FIRE HYDRANT		TELEPHONE POLE		CONC. MON. FND.
	GAS LINE MARKER		WATER METER		MON. BOX FND.
	GAS METER		WATER VALVE (MAIN)		MINE SPIKE FND.
	GAS VALVE (MAIN)		WATER VALVE (SERVICE)		P.K. NAIL FND.
	GAS VALVE (SERVICE)		TEL. UTILITY MARKER		P.K. NAIL SET
	GUY WIRE		WYE POLE		RR SPIKE FND.
	LIGHT POLE		YARD DRAIN		SECTION COR. FND.
	POWER POLE		YARD LIGHT		STONE FND.
	POWER/LIGHT POLE				T-BAR FND.

— CATV —	UGND. CABLE	— ExA —	EX. AERIAL ESMT.
— T —	UGND. COMMUN.	— ExCh —	EX. CHANNEL ESMT.
— E —	UGND. ELECTRIC	— ExC —	EX. CONSERVATION ESMT.
— FO —	UGND. FIBER OPTIC	— ExDr —	EX. DRAINAGE ESMT.
— G —	UGND. GAS	— ExFL —	EX. FLOWAGE ESMT.
— SAN —	UGND. SANITARY SEWER	— ExLA —	EX. LIMITED ACCESS ESMT.
— SS —	UGND. SANITARY SERVICE	— ExRR —	EX. RAILROAD ESMT.
.....	UGND. STORM SEWER	— ExSH —	EX. STD. HIGHWAY ESMT.
— W —	UGND. WATER	— ExSL —	EX. SLOPE ESMT.
— WS —	UGND. WATER SERVICE	— ExU —	EX. UTILITY ESMT.
— OH —	OVERHEAD LINES	— R/W —	EX. RIGHT-OF-WAY
— X —	FENCE	— LA-R/W —	EX. LIMITED ACCESS RIGHT-OF-WAY
— P —	PROPERTY LINE		

SURVEYOR NOTES:

THE LOCATIONS OF UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON ABOVE GROUND STRUCTURES AND RECORD DRAWINGS PROVIDED TO THE SURVEYOR. LOCATIONS OF UNDERGROUND UTILITIES/STRUCTURES MAY VARY FROM LOCATIONS SHOWN HEREON. ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED. NO EXCAVATIONS WERE MADE DURING THE PROGRESS OF THIS SURVEY TO LOCATE BURIED UTILITIES/STRUCTURES.

DATE OF FIELD WORK: 1/15/2016
EVERY DOCUMENT OF RECORD REVIEWED AND CONSIDERED AS A PART OF THIS SURVEY IS NOTED HEREON.

SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED AS A PART OF THIS SURVEY. NO STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND OR OVERHEAD CONTAINERS OR FACILITIES THAT MAY AFFECT THE USE OR DEVELOPMENT OF THIS TRACT.

NO WATER FEATURES LOCATED ONSITE.

BASIS OF BEARINGS:

THE BEARINGS SHOWN HEREIN ARE BASED ON OHIO STATE PLANE COORDINATE SYSTEM. SOUTH SYSTEM, NAD83, GEOID12A.

BENCHMARKS:

AS PER THE TOPOGRAPHIC SURVEY PREPARED BY JOBS HENDERSON & ASSOCIATES THE CONTRACTOR AND/OR HIS SURVEYOR SHALL BE RESPONSIBLE TO CROSS CHECK ALL CONTROL FOR DISTURBANCE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

BENCHMARK #10028 - CHISELED "X" SOUTH SIDE OF MANHOLE WEST OF 9798 REFUGEE ROAD ELEVATION = 1009.16

BENCHMARK #10029 - CHISELED "X" FIRST CATCH BASIN ON WEST SIDE OF BRENDEN PARK DRIVE ELEVATION = 1016.14

BENCHMARK #10030 - CHISELED "X" IN NORTH BOLT ON TRAFFIC SIGNAL POLE AT AT NORTHEAST CORNER OF INTERSECTION OF SR. RT. 310 AND REFUGEE ROAD. ELEVATION = 1041.34

BENCHMARK #10031 - CHISELED "X" IN EAST RIM SANITARY MANHOLE SOUTH SIDE OF DRIVE INTO ELEVATION = 1038.97

BENCHMARK #10032 - CHISELED "X" WEST RIM OF SANITARY MANHOLE LOCATED ON WEST SIDE OF SR. RT. 310 AT NORTHEAST CORNER OF 7874 HAZELTON ROAD. ELEVATION = 1021.37

BENCHMARK #10033 - RAILROAD SPIKE IN NORTH SIDE OF 48" OAK TREE 600± NORTH OF REFUGEE ROAD AND 800± EAST OF ST. RT. 310. ELEVATION = 1041.55

CONTROL POINTS
BASIS OF BEARING: TRUE NORTH, BASED ON OBSERVATIONS. GPS DATA COLLECTED WITH TRIMBLER8 UNIT VRS CORRECTION ON OHIO STATE PLANE SOUTH ZONE COORDINATE SYSTEM, NAD 1983, NAVD 1988, GEOID 12A.

SEE DRAWING FOR LOCATION AND INFORMATION. ALL CONTROL POINT ARE 5/8" REBAR WITH CAP.

FIRM COMMUNITY PANEL No.: 39089C0431J
FLOOD ZONE: X
EFFECTIVE DATE: 03/16/2015

JEREMY L. VAN OSTRAN P.S. 8283



OWNER/DEVELOPER
SOUTHGATE CORPORATION
1499 W MAIN ST
NEWARK, OH
740-522-2151

0 150 300
HORIZONTAL SCALE
IN FEET

Planning
Urban Design
Landscape Architecture
G2
Planning + Design

720 E. Broad Street
Columbus, Ohio 43215
Ph: 614.565.9230
Web: www.g2planning.com

**Jobs
Henderson**
A HULL COMPANY

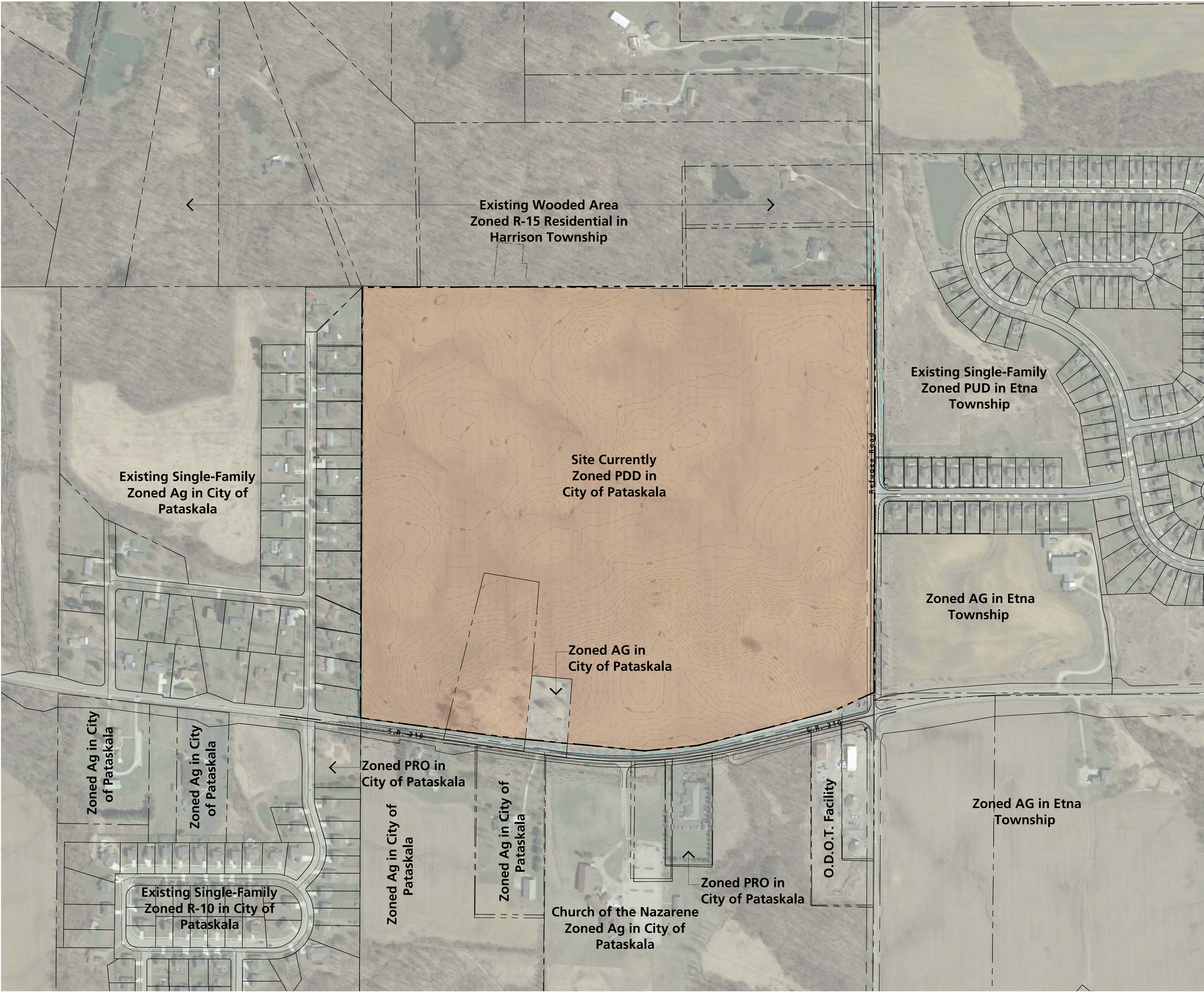
59 GRANT ST NEWARK, OH
740-344-5451

Exhibit 'B-1' Site Survey

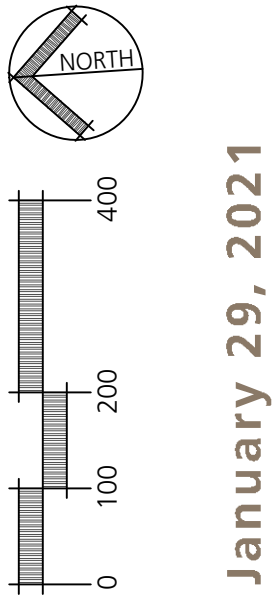
HAZELTON CROSSING

CLIENT:

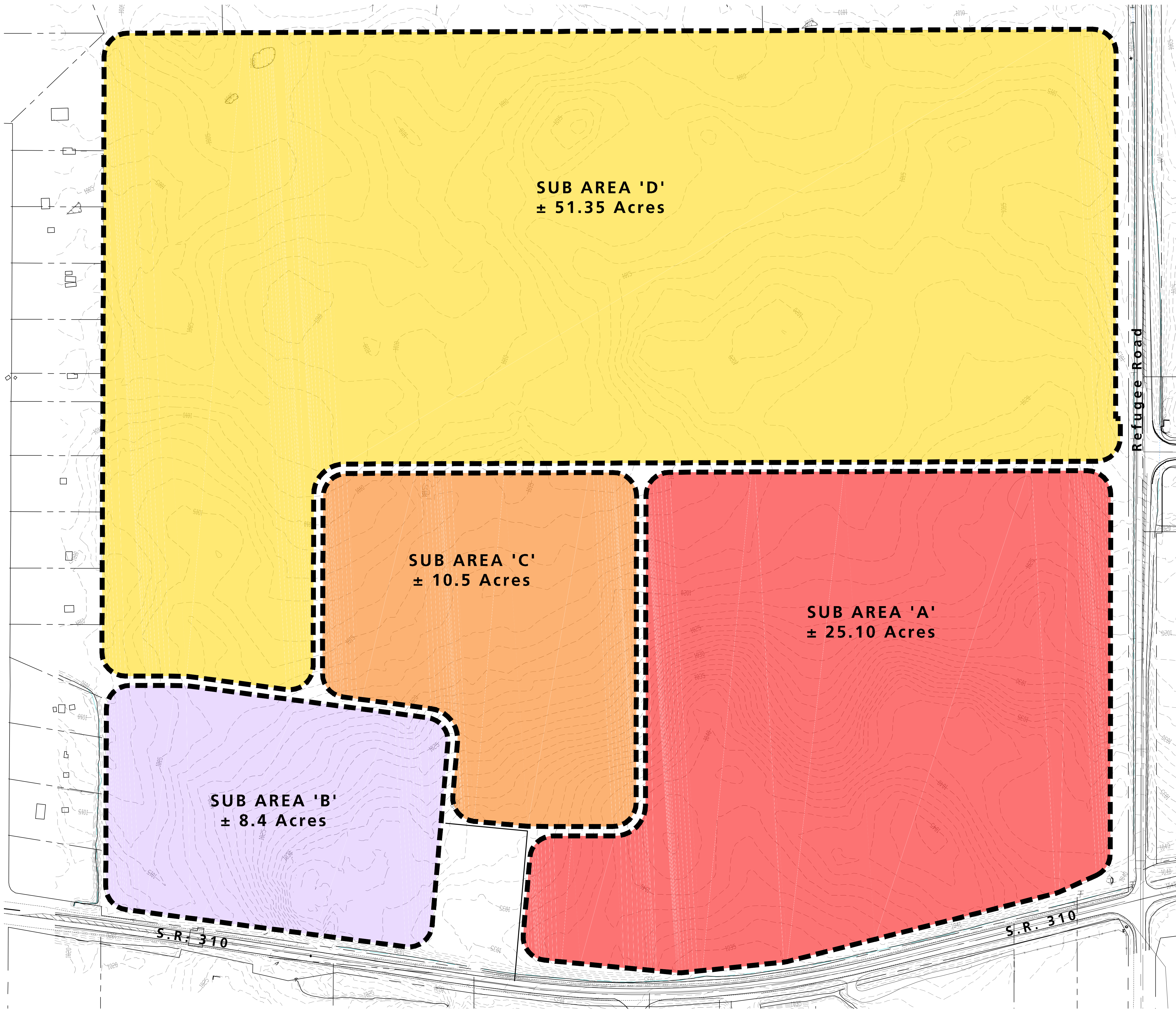
SOUTHGATE CORPORATION



Site Data:
Total Site Acreage: ± 95.35 Acres

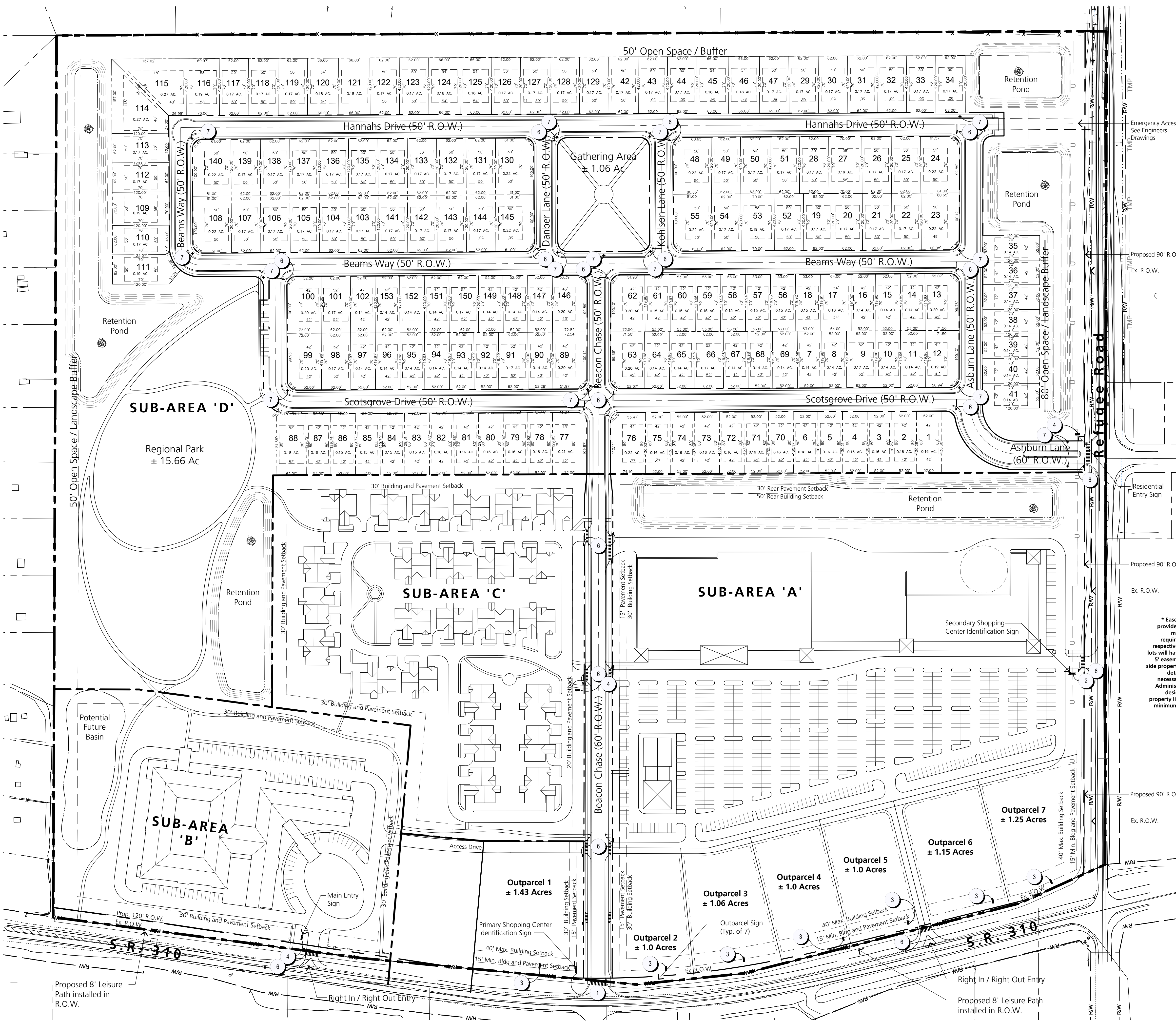


January 29, 2021



Preliminary Development Plan Data:

Total Site Acreage:	± 95.35 Acres
Sub-Area 'A':	± 25.10 Acres
Proposed Use -	Retail / Commercial
Sub-Area 'B':	± 8.4 Acres
Proposed Use -	Assisted Living
Sub-Area 'C':	± 10.5 Acres
Proposed Use -	Condominium
Sub-Area 'D':	± 51.35 Acres
Proposed Use -	Single-Family



Preliminary Development Plan Data:

Total Site Acreage:	± 95.35 Acres
Total Open Space:	±28.27 Acres (30%)
Sub-Area 'A'	± 25.10 Acres
Proposed Use:	Retail / Commercial
Maximum Density:	10,000 s.f. / Acre
Maximum Height:	35'/45' (see development text)
• Main Retail Bldg.:	30'
• Outparcel Bldg.s:	1 space/250 s.f. Gross Floor Area
Minimum Parking:	

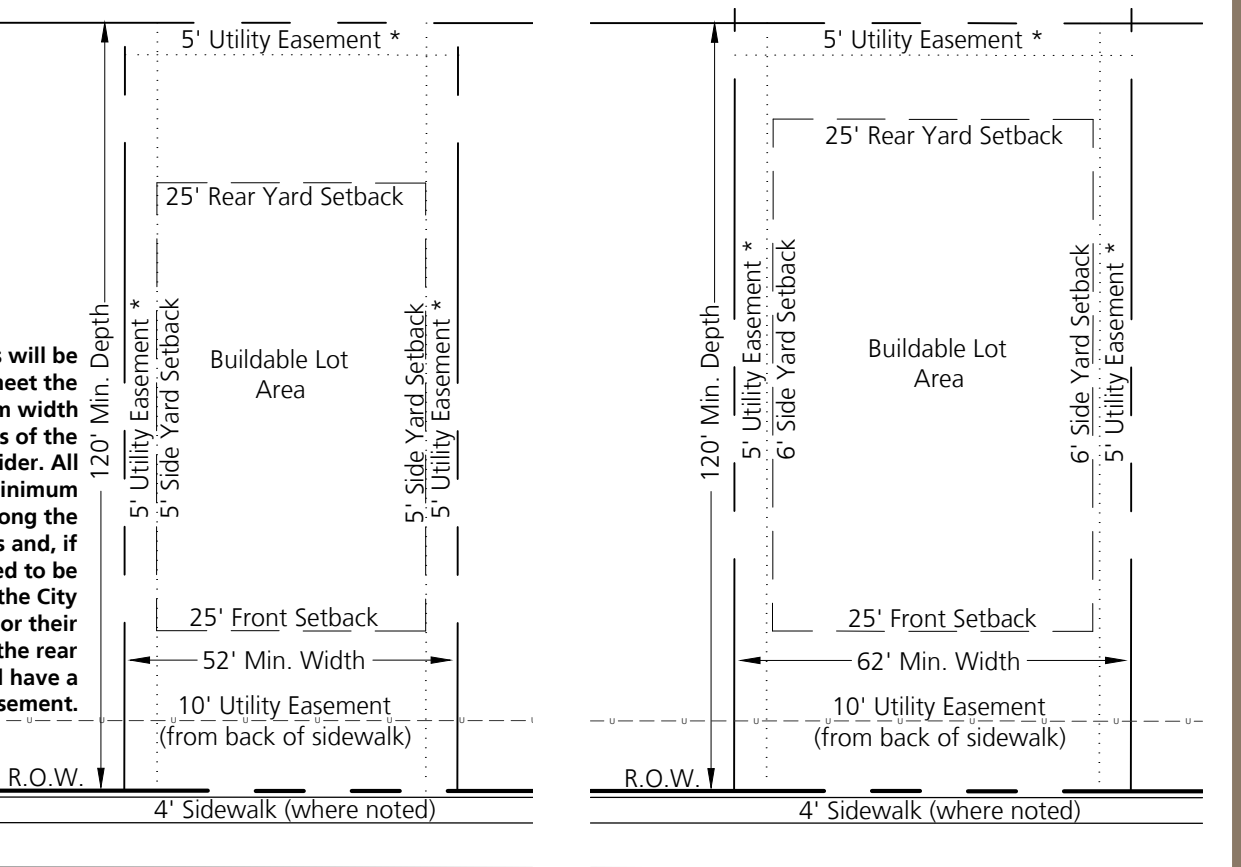
Shown on Plan	
Retail Storefront:	163,000 s.f.
Parking Spaces:	688 Retail
Outparcels:	7

Sub-Area 'B'	± 8.4 Acres
Proposed Use:	Assisted Living
Maximum Bldg. Height:	50'
Minimum Parking:	1 space per 3 occupants plus 1 for each employee for main work shift T.B.D.

Total Beds:	
Sub-Area 'C'	± 10.5 Acres
Proposed Use:	Condominium
Maximum Density:	5 D.U. / Acre
Maximum Bldg. Height:	35'
Minimum Parking:	1 attached garage space and 1 driveway space per unit

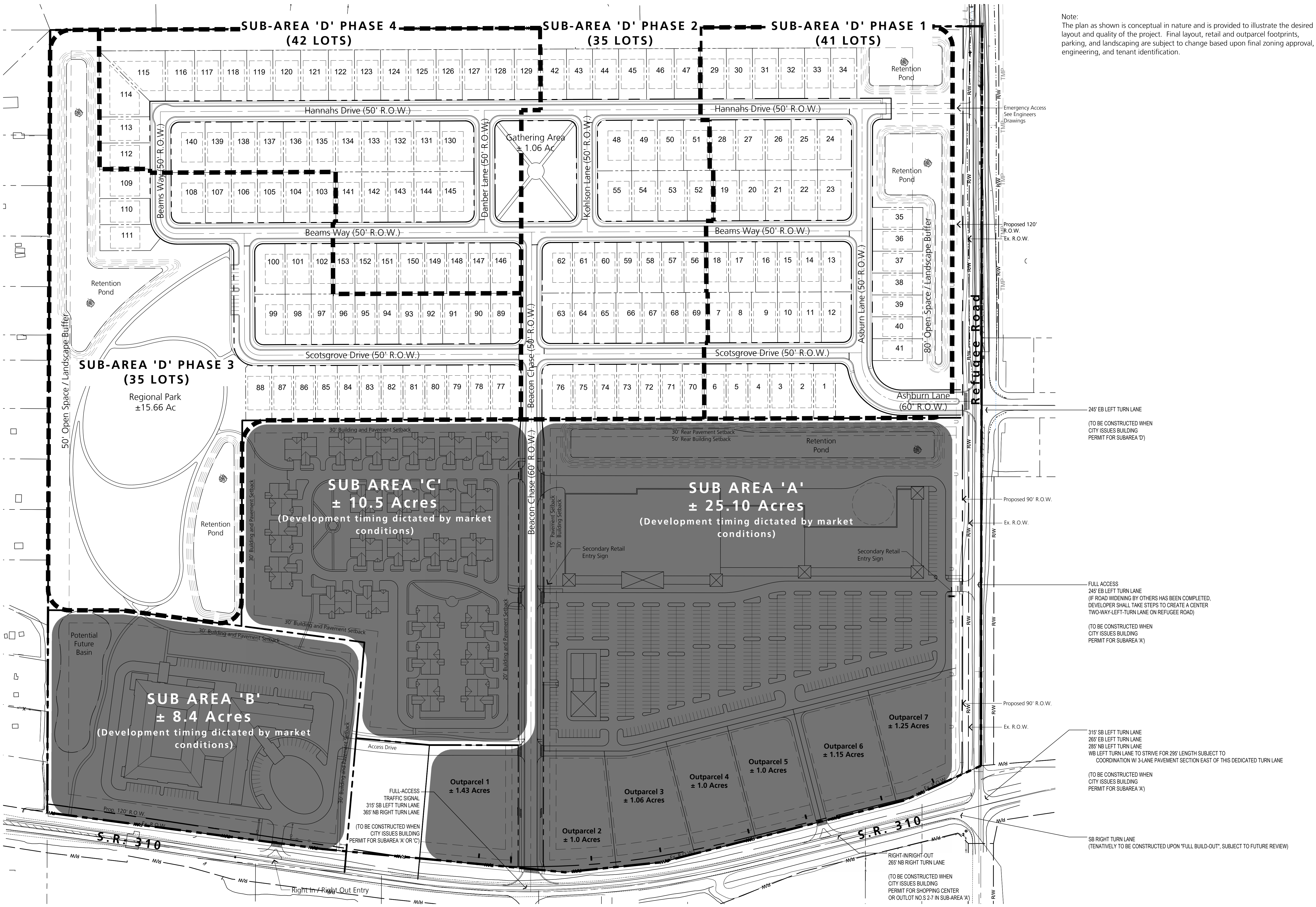
Shown on Plan	
Duplex Condominium Units:	50
Sub-Area 'D'	± 51.35 Acres
Proposed Use :	Single-Family
Maximum Lots Permitted:	155
Maximum Bldg. Height:	35'
Minimum Parking:	2 attached garage spaces and 2 driveway space per unit + 6 park parking spaces

Single Family Typical Lot Diagrams:
(Not To Scale)

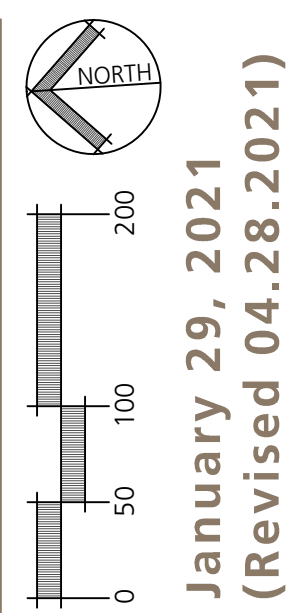


52' Lot Typ. Diagram:			
62' Lot Typ. Diagram:			
CODED LAYOUT & MATERIALS NOTES			
KEY	ITEM	REFERENCE	NOTES
1	SUB-AREA 'A' PRIMARY SIGN	A-1 EX. 'H-3'	SEE DETAIL A-1, EXHIBIT 'H-3'
2	SUB-AREA 'A' SECONDARY SIGN	A-2 EX. 'H-3'	SEE DETAIL A-2, EXHIBIT 'H-3'
3	SUB-AREA 'A' OUTPARCEL SIGN	A-3 EX. 'H-3'	SEE DETAIL A-3, EXHIBIT 'H-3'
4	SUB-AREA 'B/C/D' MAIN ENTRY SIGN	B EX. 'H-3'	SEE DETAIL B, EXHIBIT 'H-3'
5	NOT USED	-	NOT USED
6	STOP SIGN	-	STANDARD DETAIL
7	STREET LIGHT	D EX. 'H-1'	LUMINAIRE: GP03-P30-30K-MS-BK-R8-BK POST-TOP LIGHT POLE: PL-A-12-T4C-10-P05-ABG-BK SEE DETAIL B, EXHIBIT 'H-2'

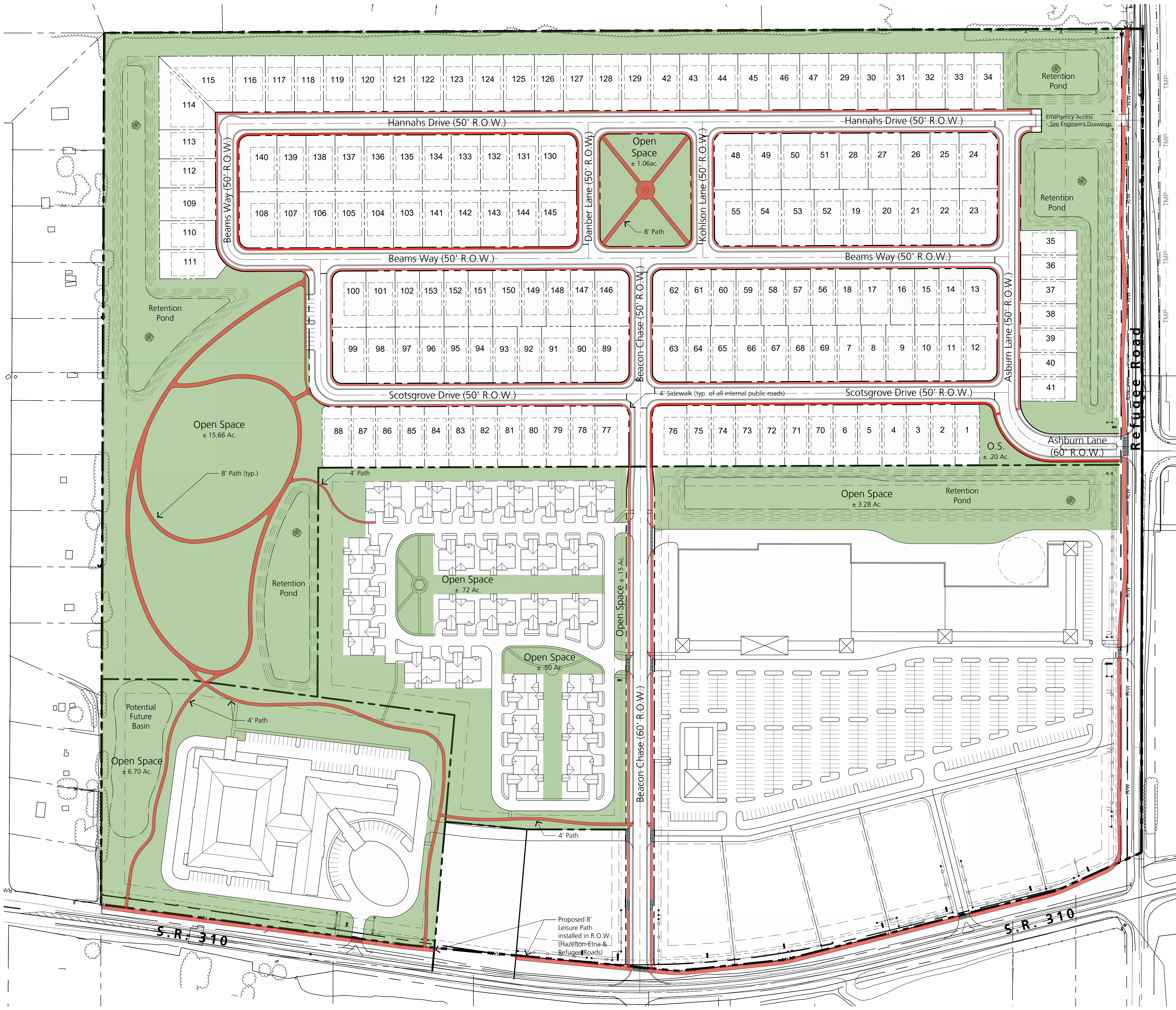
Note:
The plan as shown is conceptual in nature and is provided to illustrate the desired layout and quality of the project. Final layout, retail and outparcel footprints, parking, and landscaping are subject to change based upon final zoning approval, engineering, and tenant identification.



Note:
The plan as shown is conceptual in nature and is provided to illustrate the desired layout and quality of the project. Final layout, retail and outparcel footprints, parking, and landscaping are subject to change based upon final zoning approval, engineering, and tenant identification.



- 245' EB LEFT TURN LANE
(TO BE CONSTRUCTED WHEN CITY ISSUES BUILDING PERMIT FOR SUBAREA 'D')
- Proposed 90' R.O.W.
Ex. R.O.W.
- FULL ACCESS
245' EB LEFT TURN LANE
(IF ROAD WIDENING BY OTHERS HAS BEEN COMPLETED, DEVELOPER SHALL TAKE STEPS TO CREATE A CENTER TWO-WAY-LEFT-TURN LANE ON REFUGEE ROAD)
- (TO BE CONSTRUCTED WHEN CITY ISSUES BUILDING PERMIT FOR SUBAREA 'A')
- 315' SB LEFT TURN LANE
265' EB LEFT TURN LANE
285' NB LEFT TURN LANE
WB LEFT TURN LANE TO STRIVE FOR 295' LENGTH SUBJECT TO COORDINATION W/ 3-LANE PAVEMENT SECTION EAST OF THIS DEDICATED TURN LANE
- (TO BE CONSTRUCTED WHEN CITY ISSUES BUILDING PERMIT FOR SUBAREA 'A')
- SB RIGHT TURN LANE
(TENATIVELY TO BE CONSTRUCTED UPON "FULL BUILD-OUT", SUBJECT TO FUTURE REVIEW)
- RIGHT-IN/RIGHT-OUT
285' NB RIGHT TURN LANE
(TO BE CONSTRUCTED WHEN CITY ISSUES BUILDING PERMIT FOR SHOPPING CENTER OR OUTLOT NO.S 2-7 IN SUB-AREA 'A')



Open Space / Sidewalk Data:

Total Site Acreage ± 95.35 Acres

Open Space / Landscape Buffer ± 28.27 Acres (30%)

Notes: Sidewalk layout shown is conceptual in nature and indicates the intent for pedestrian circulation throughout the development. Exact location for sidewalks may change with final street and site layout. Final sidewalk layout to be submitted for approval with the Final Development Plan.

The ownership and maintenance of all open space areas shall fall to the owners of each individual sub-area. Open space within the single-family sub area 'D', and condo sub area 'C' shall be owned and maintained by separate homeowner associations for each development. Open spaces within the commercial sub area 'A' and assisted living sub area 'B' shall be owned and maintained by each commercial entity.

Note:
The plan as shown is conceptual in nature and is provided to illustrate the desired layout and quality of the project. Final layout, retail and outparcel footprints, parking, and landscaping are subject to change based upon final zoning approval, engineering, and tenant identification.



Preliminary Development Plan Data:

Total Site Acreage:	± 95.35 Acres
Total Open Space:	±28.27 Acres (30%)
Sub-Area 'A': ± 25.10 Acres	
Proposed Use -	Retail / Commercial
Maximum Density -	10,000 s.f. / Acre
Shown on Plan:	
Retail Storefront -	163,000 s.f.
Parking Spaces	720
Retail Outparcels -	7
Sub-Area 'B': ± 8.4 Acres	
Proposed Use -	Assisted Living
Total Beds	TBD
Sub-Area 'C': ± 10.5 Acres	
Proposed Use -	Condominium
Maximum Density -	5 D.U. / Acre
Shown on Plan:	
Duplex Condominium Units -	50
Sub-Area 'D': ± 51.35 Acres	
Proposed Use -	Single-Family
Maximum Lots Permitted:	155

NORTH

200

100

50

0

January 29, 2021
(Revised 04.28.2021)

PLANNING
+ DESIGN

G2

EMHT

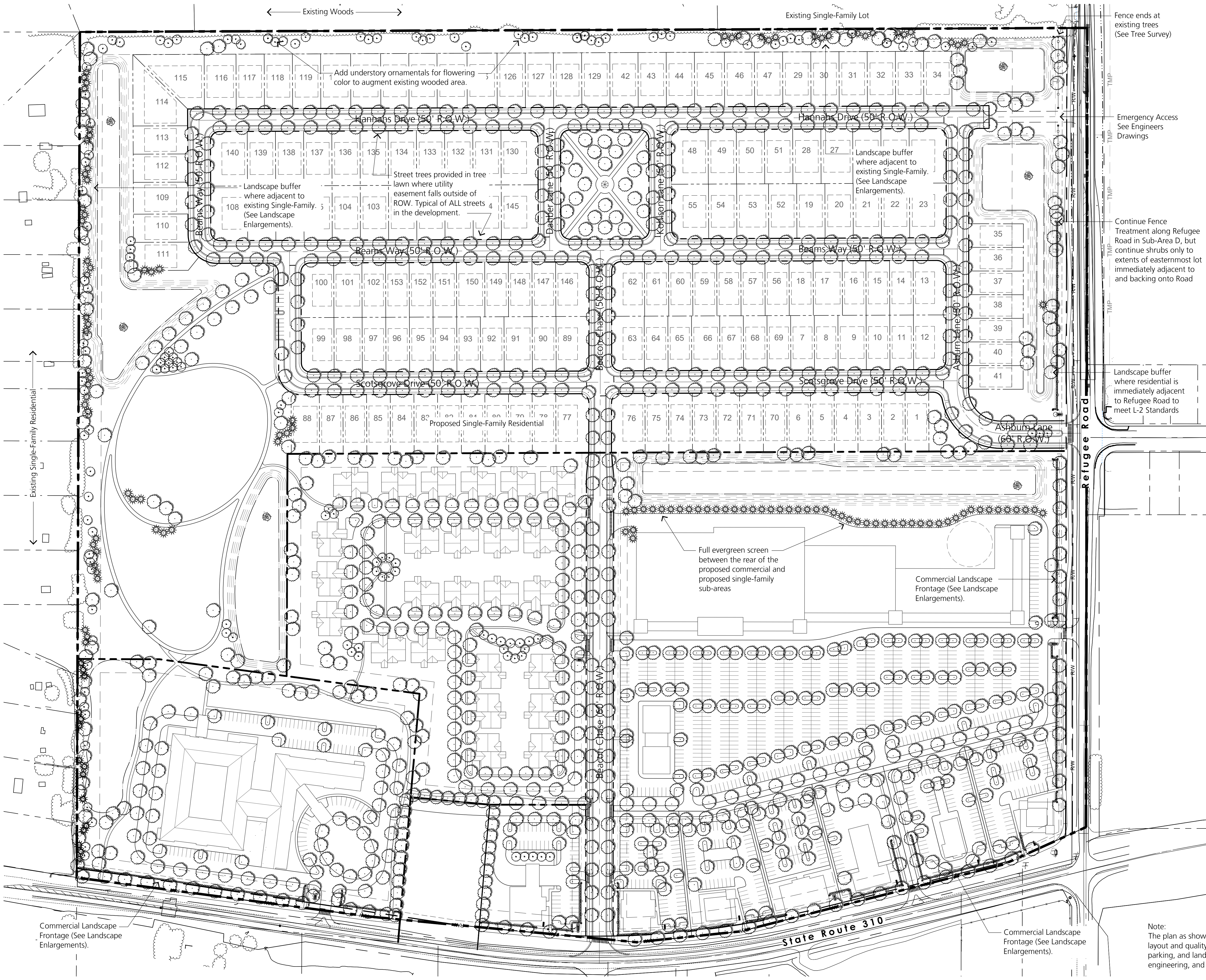
Exhibit 'F' - Illustrative Master Plan

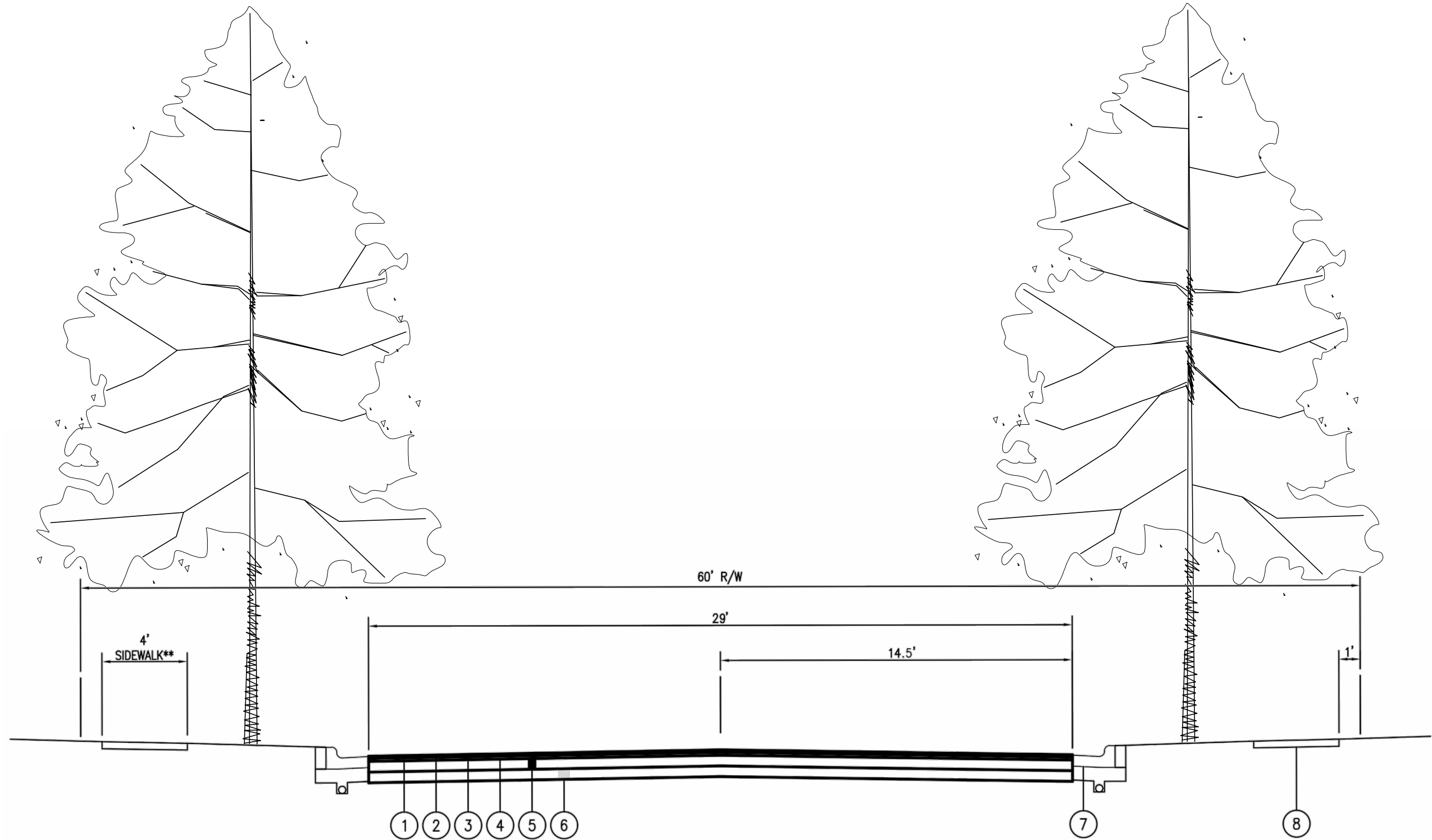
HAZELTON CROSSING

CLIENT:

SOUTHGATE CORPORATION

Note:
The plan as shown is conceptual in nature and is provided to illustrate the desired layout and quality of the project. Final layout, retail and outparcel footprints, parking, and landscaping are subject to change based upon final zoning approval, engineering, and tenant identification.





ENTRANCE ROAD TYPICAL SECTION

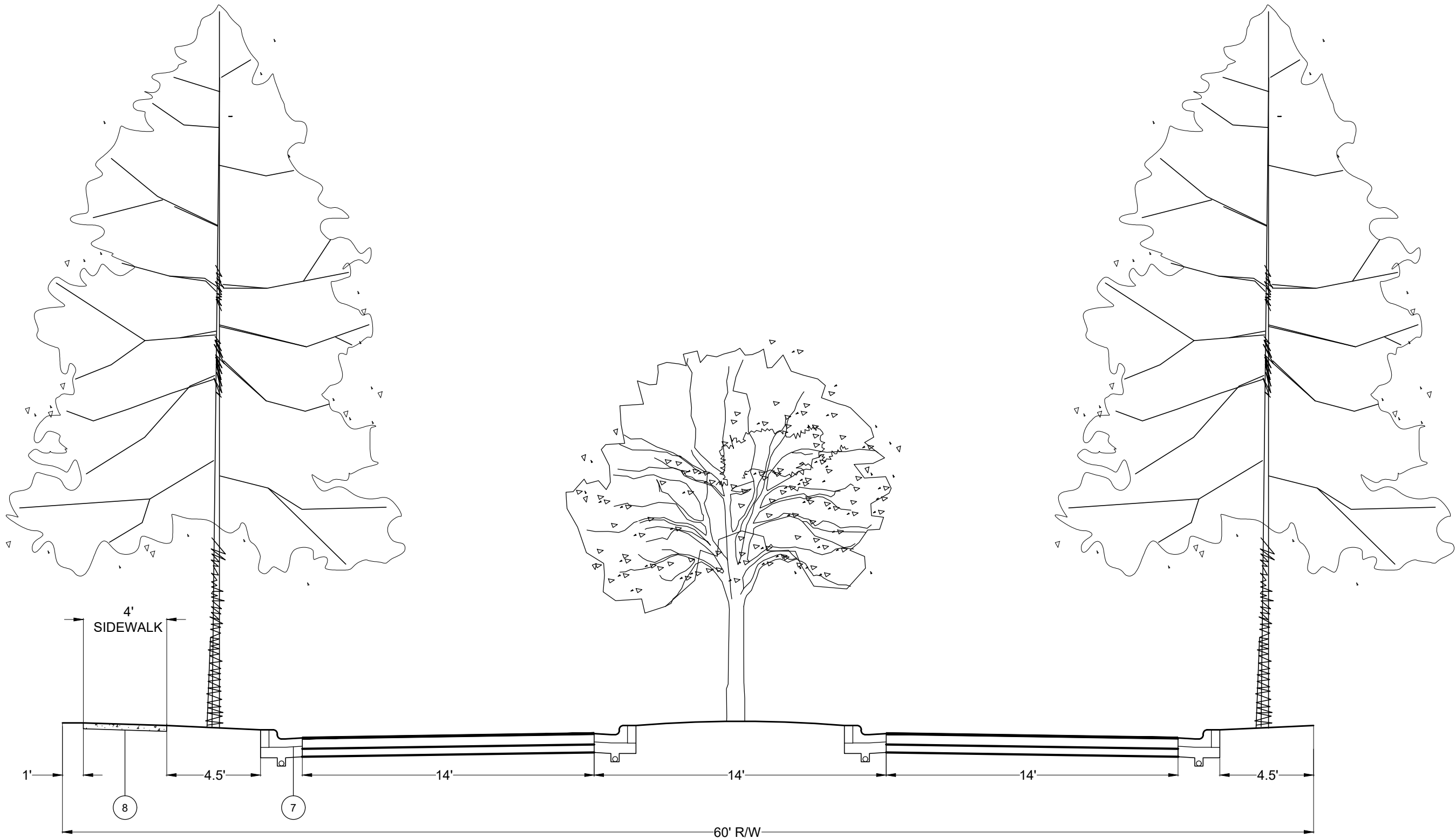
LEGEND

- ITEM 441 - 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE 1, (448), PG64-22
- ITEM 407 - TACK COAT @ 0.05 GAL/SY
- ITEM 441 - 1 1/2" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE 2, (448), PG64-22
- ITEM 407 - TACK COAT FOR INTERMEDIATE COURSE @ 0.075 GAL/SY
- ITEM 301 - 6" ASPHALT CONCRETE BASE, PG64-22
- ITEM 304 - 6" AGGREGATE BASE
- CURB AND GUTTER
- 4" SIDEWALK

**SEE PRELIMINARY SITE PLAN FOR SIDEWALK LOCATION

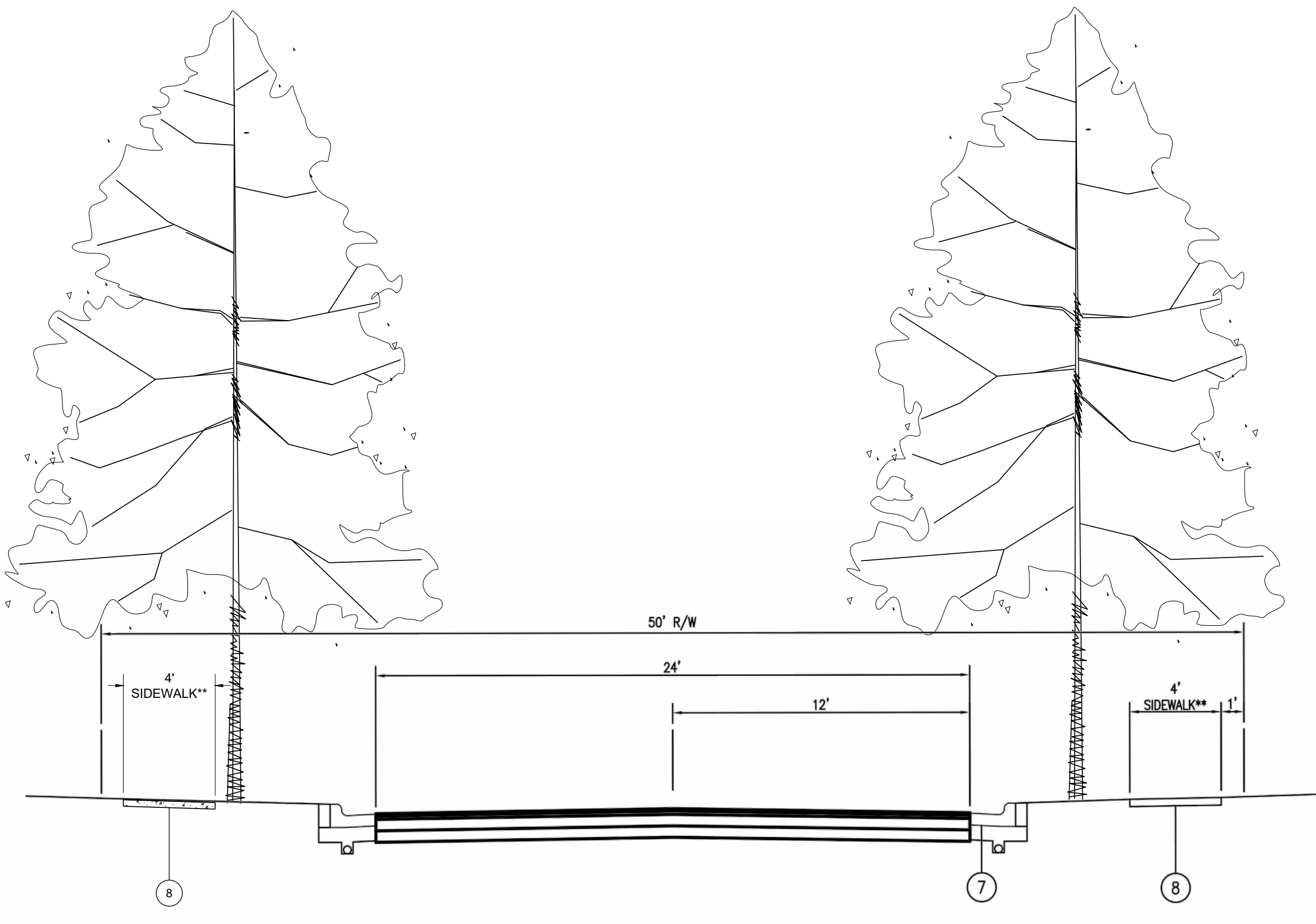


STREET LIGHT (OR OWNER-APPROVED EQUAL)

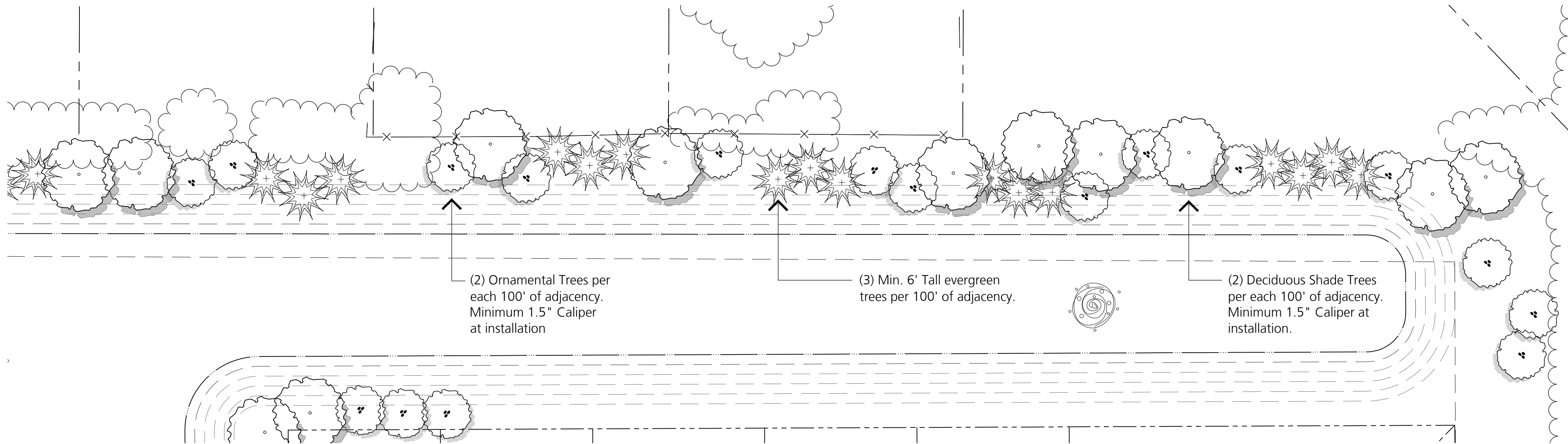


SUB-AREA 'D' ENTRANCE ROAD TYPICAL SECTION - BOULEVARD

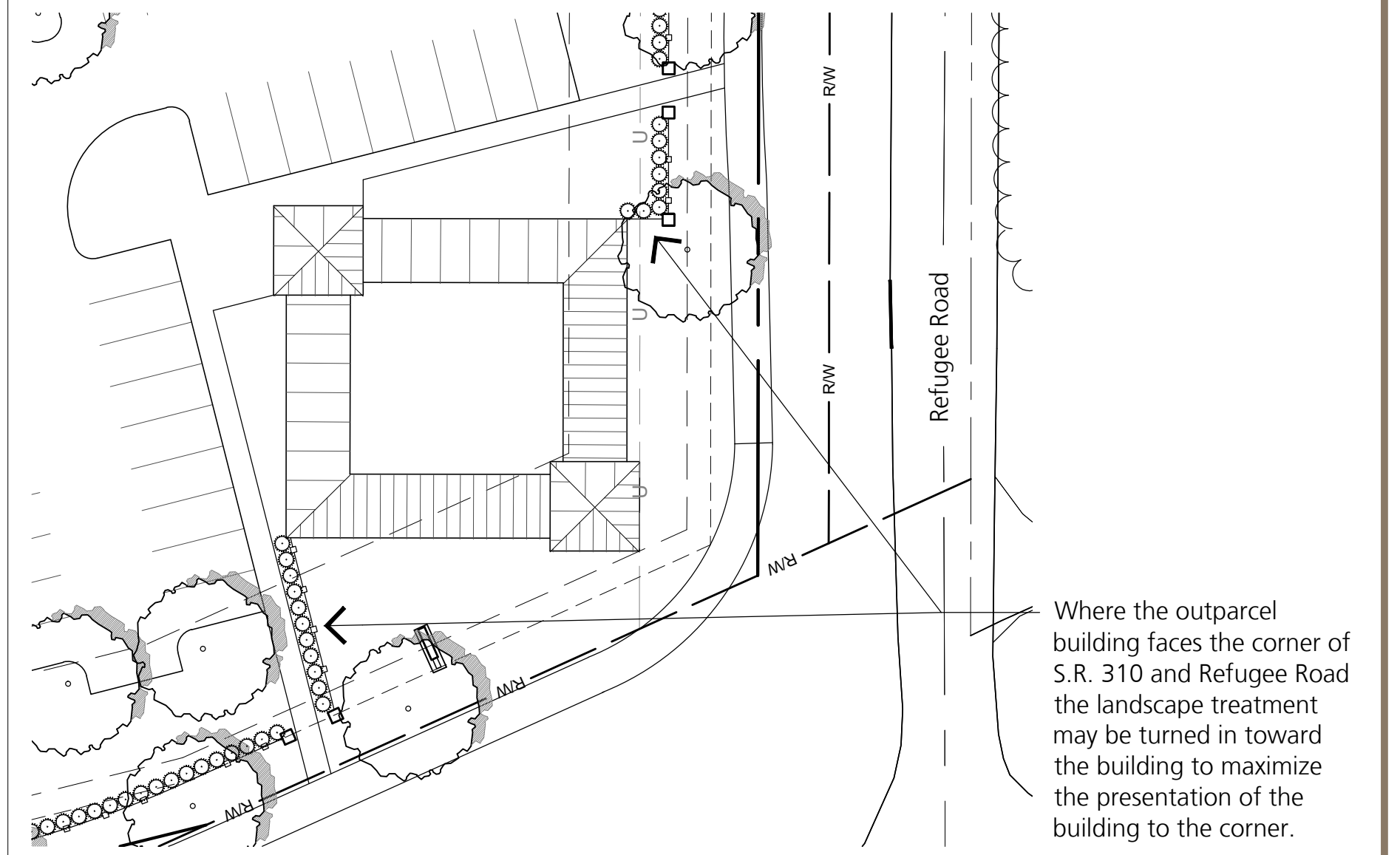
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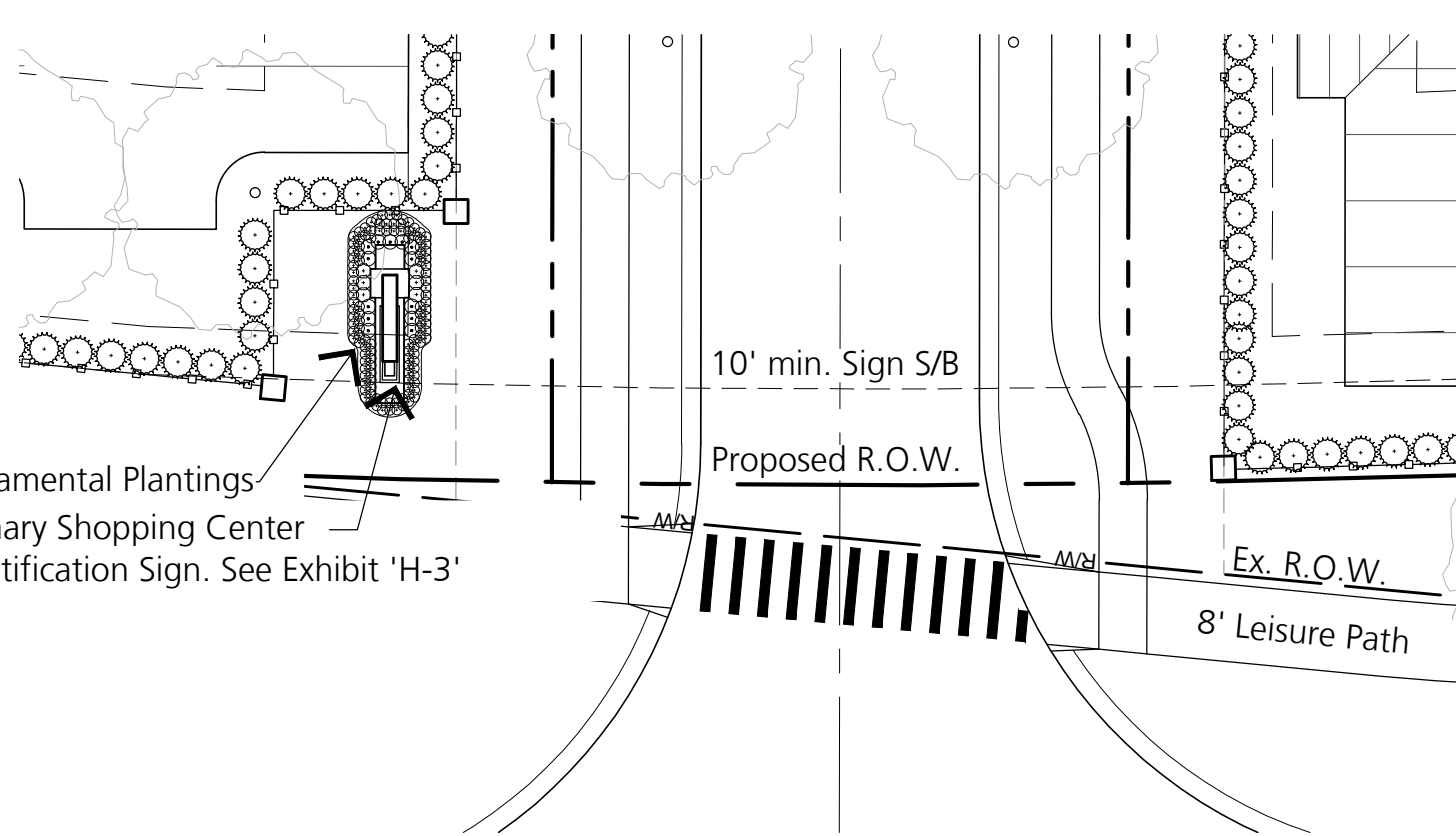
RESIDENTIAL ROAD TYPICAL SECTION



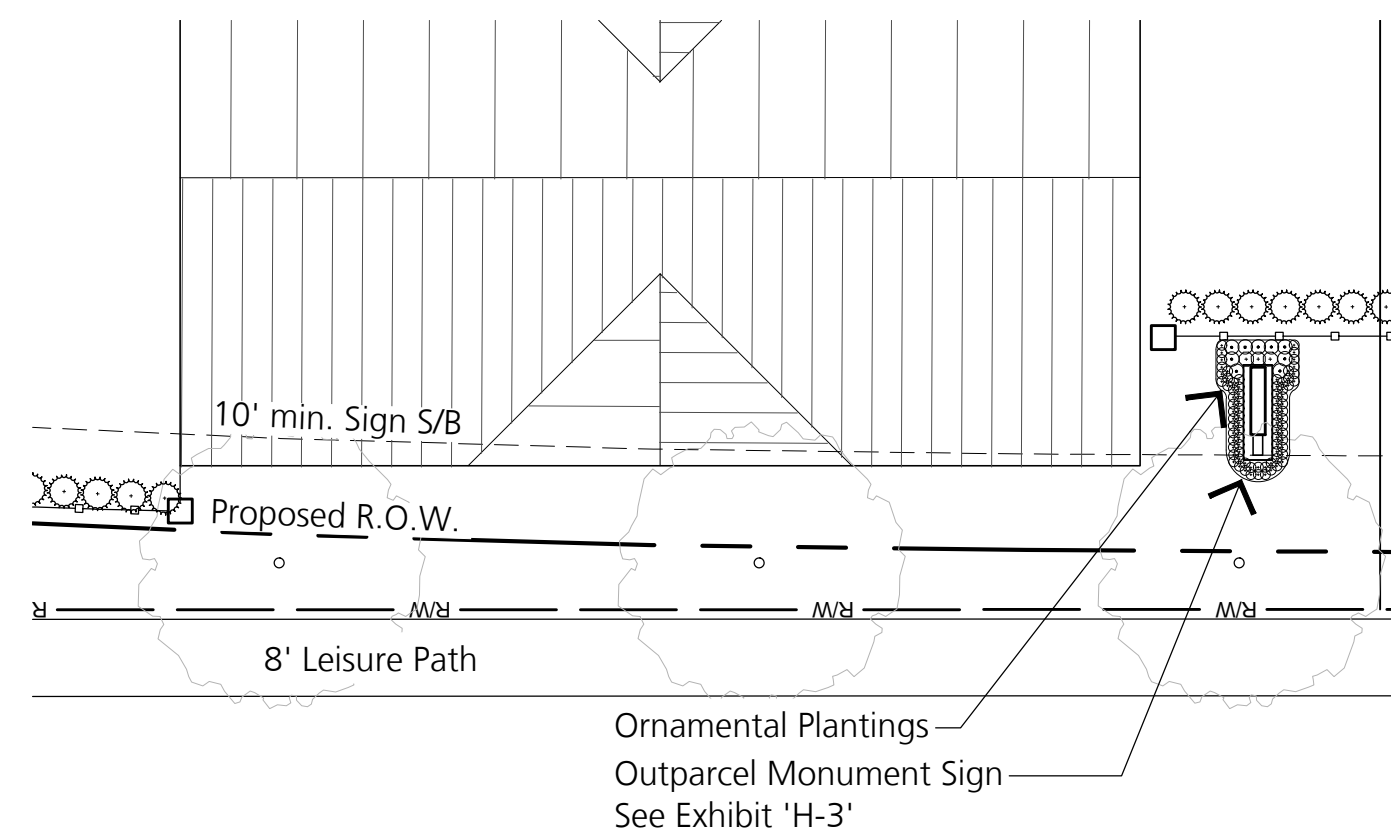
Adjacent Single-Family Buffer Treatment



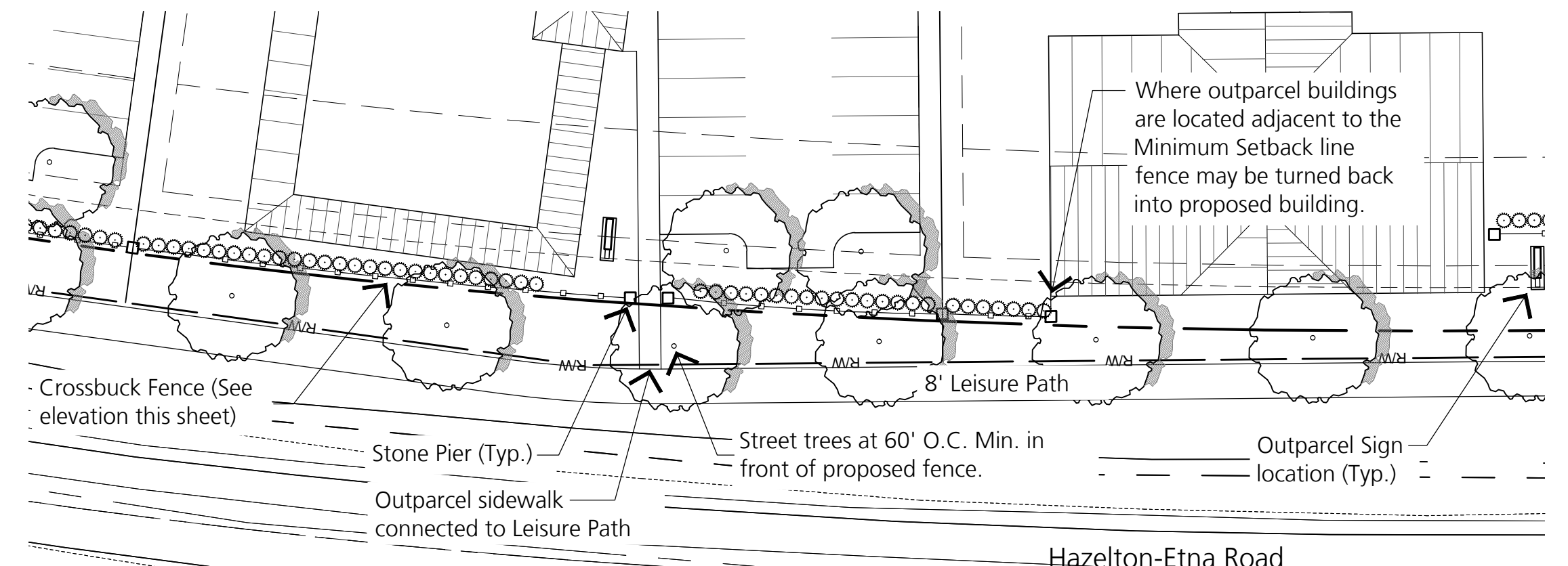
S.R. 310 & Refugee Road Corner Treatment



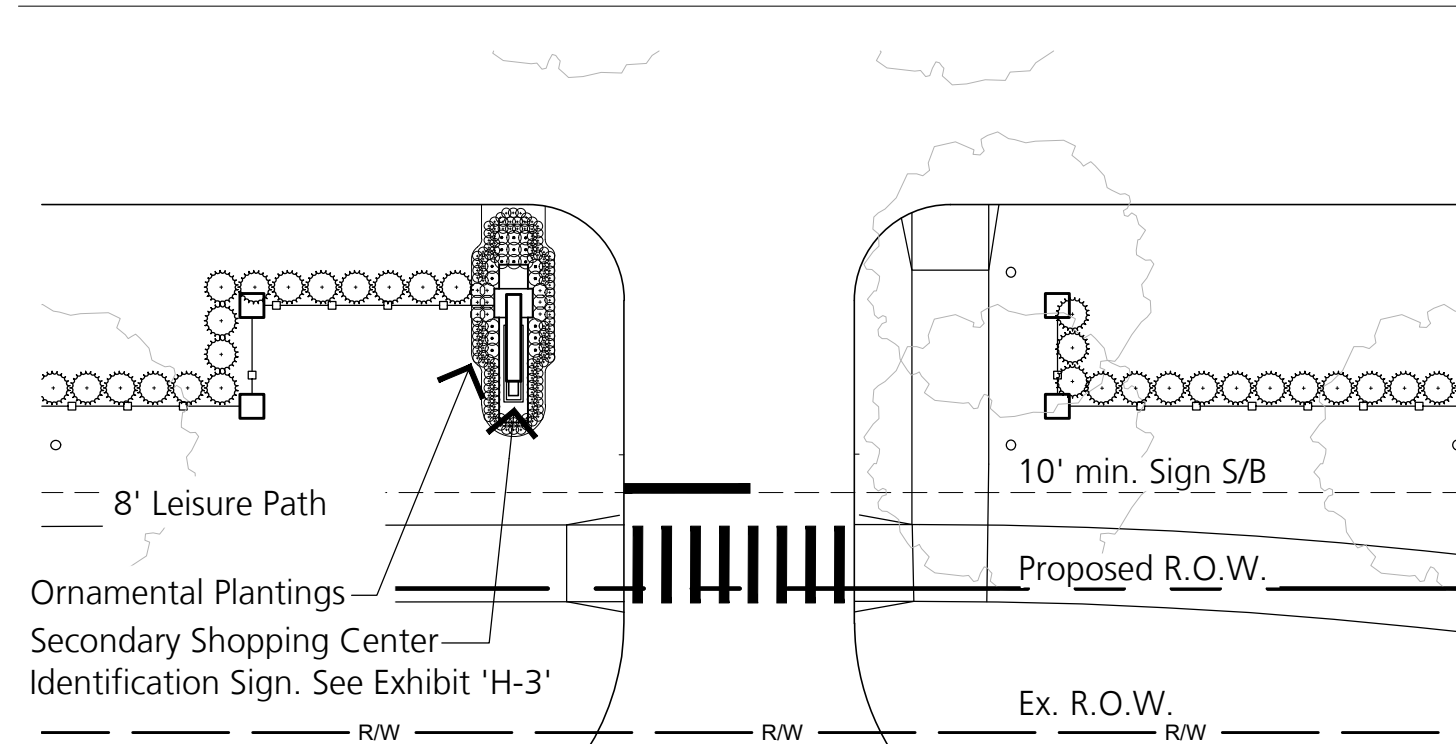
Sub-Area 'A' Primary Entry



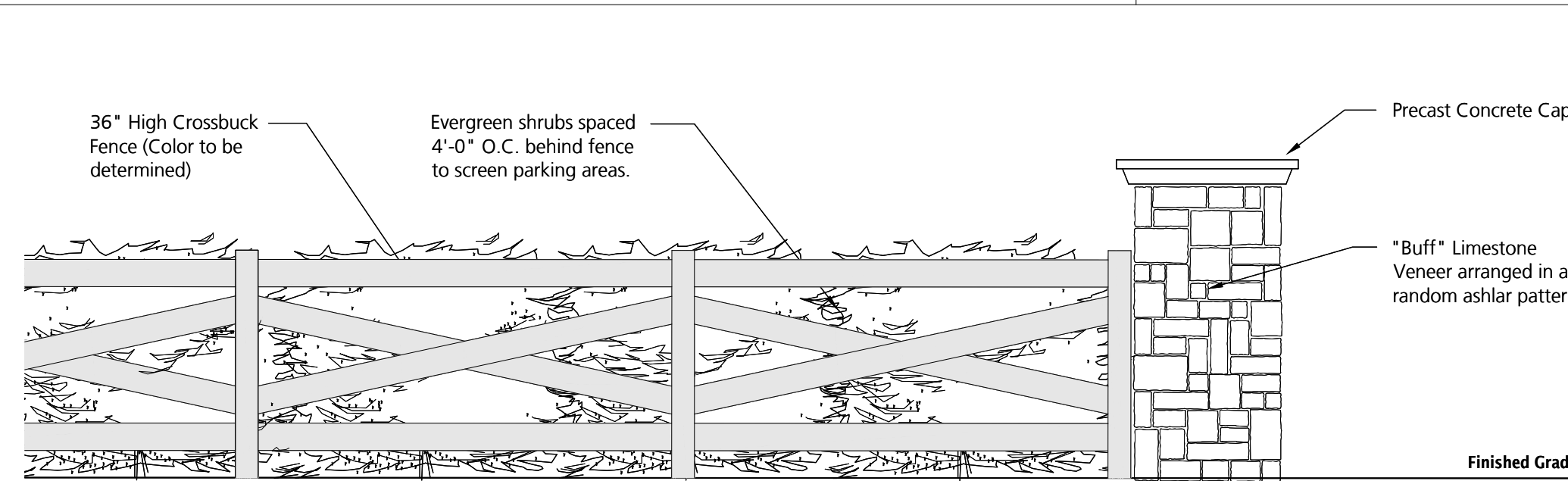
Typical Sub-Area 'A' Outparcel Sign



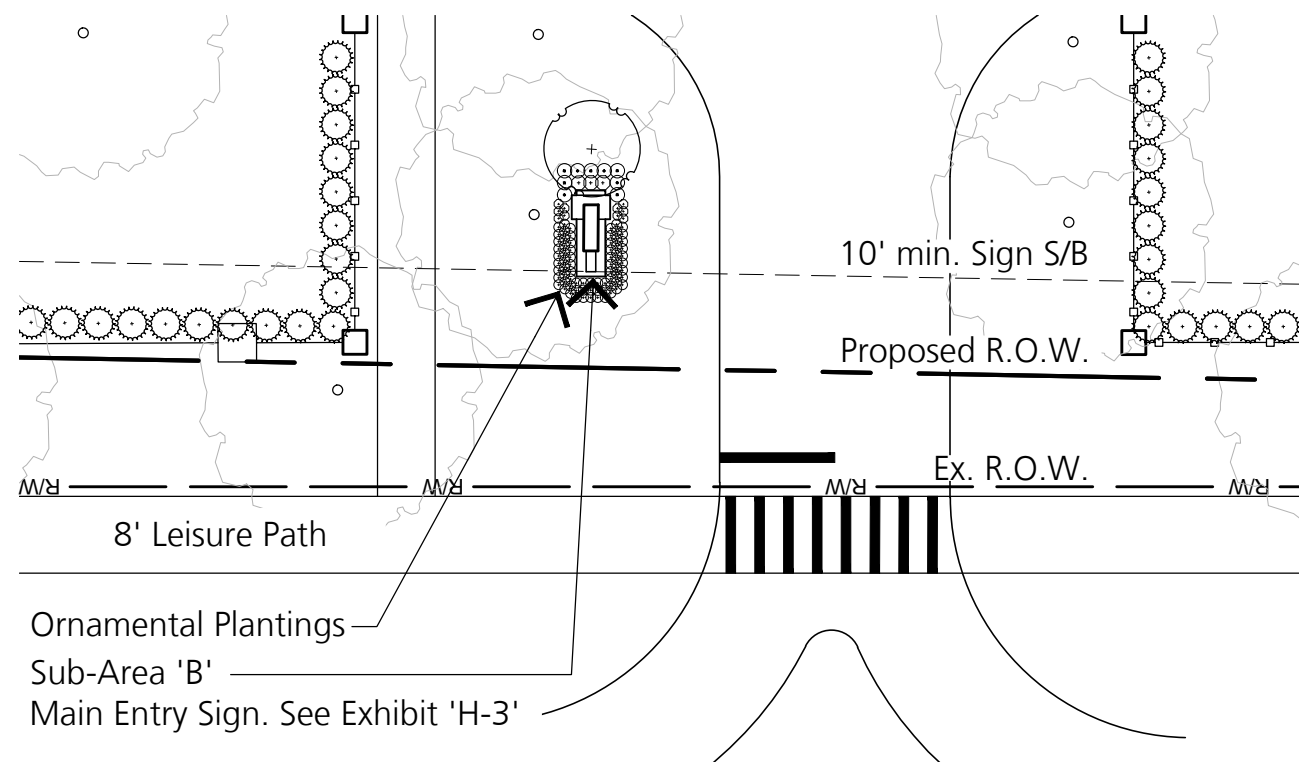
Conceptual Commercial Frontage Landscape



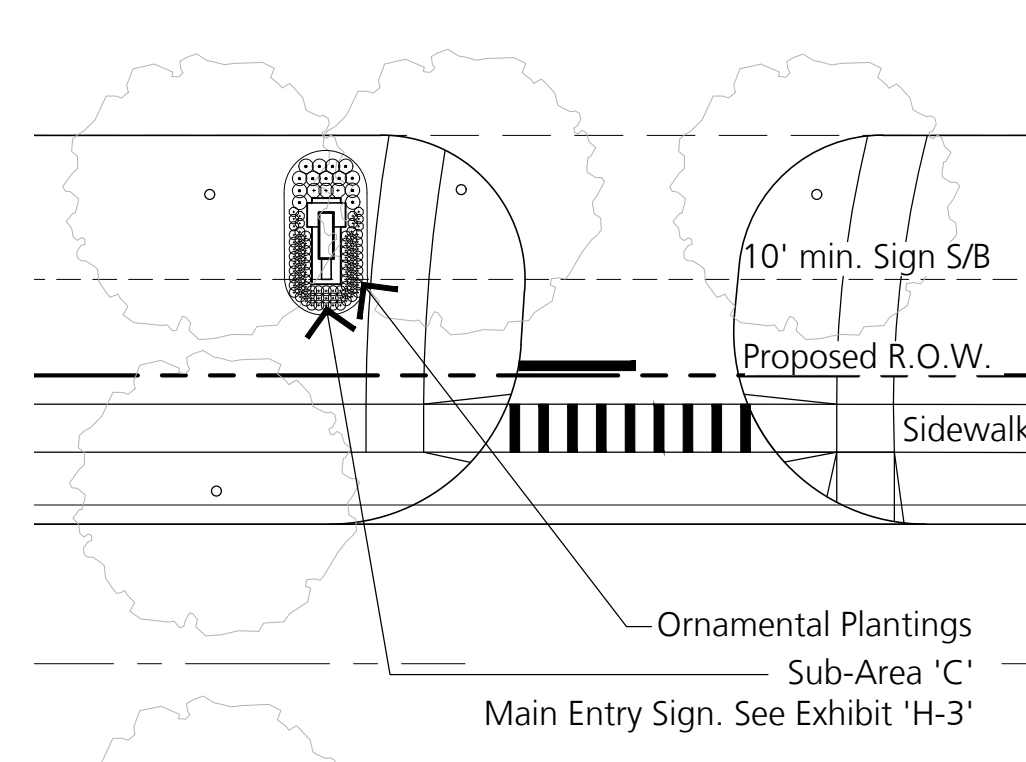
Sub-Area 'A' Secondary Entry



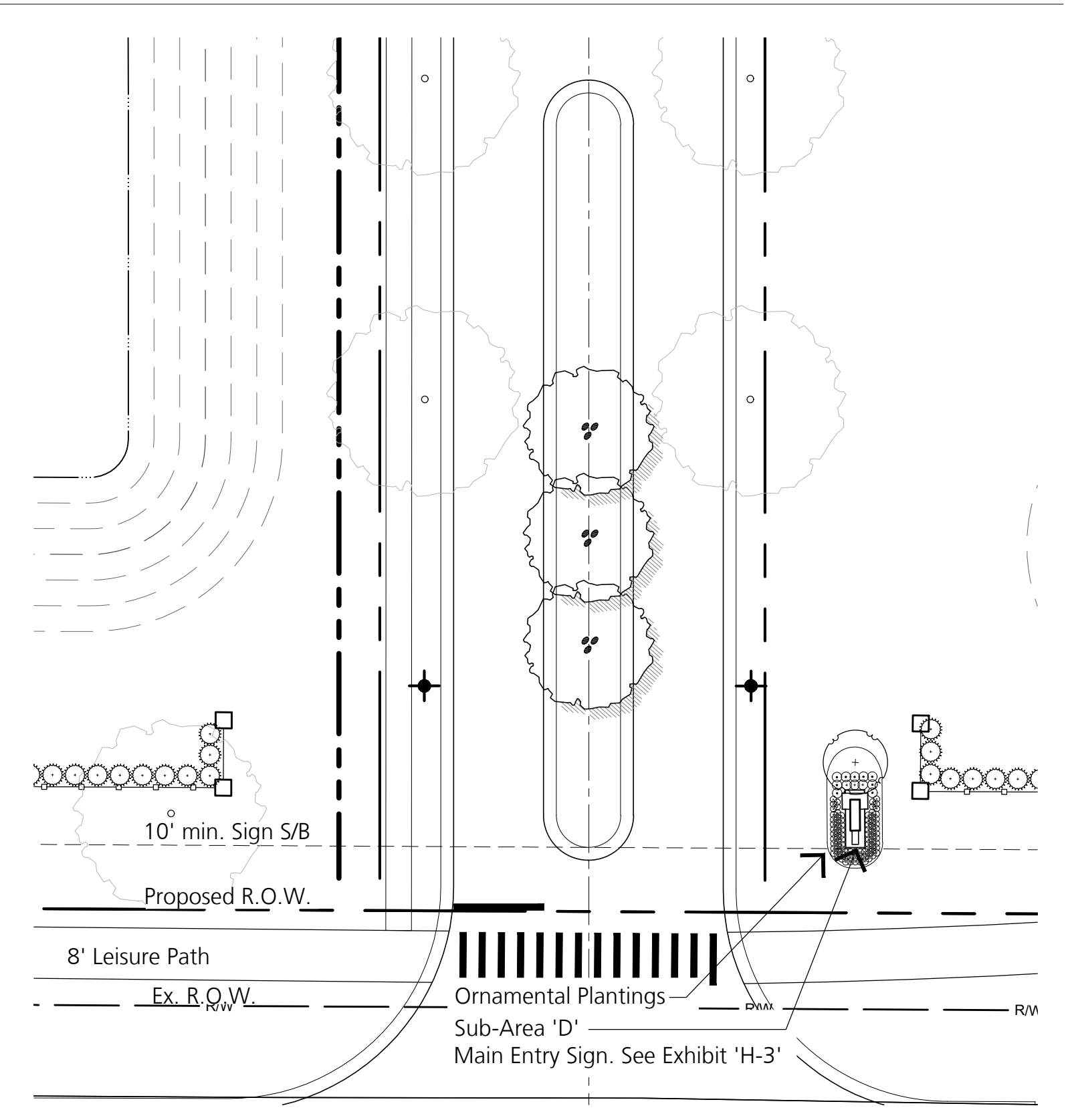
Elevation of Commercial Frontage Treatment



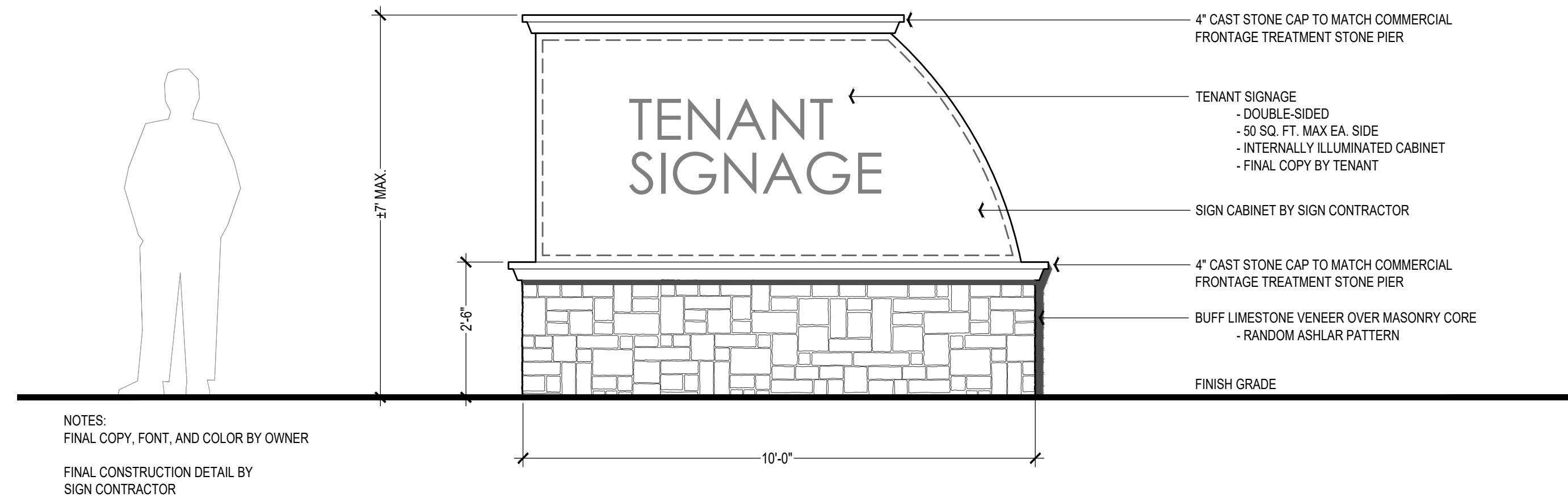
Sub-Area 'B' Main Entry



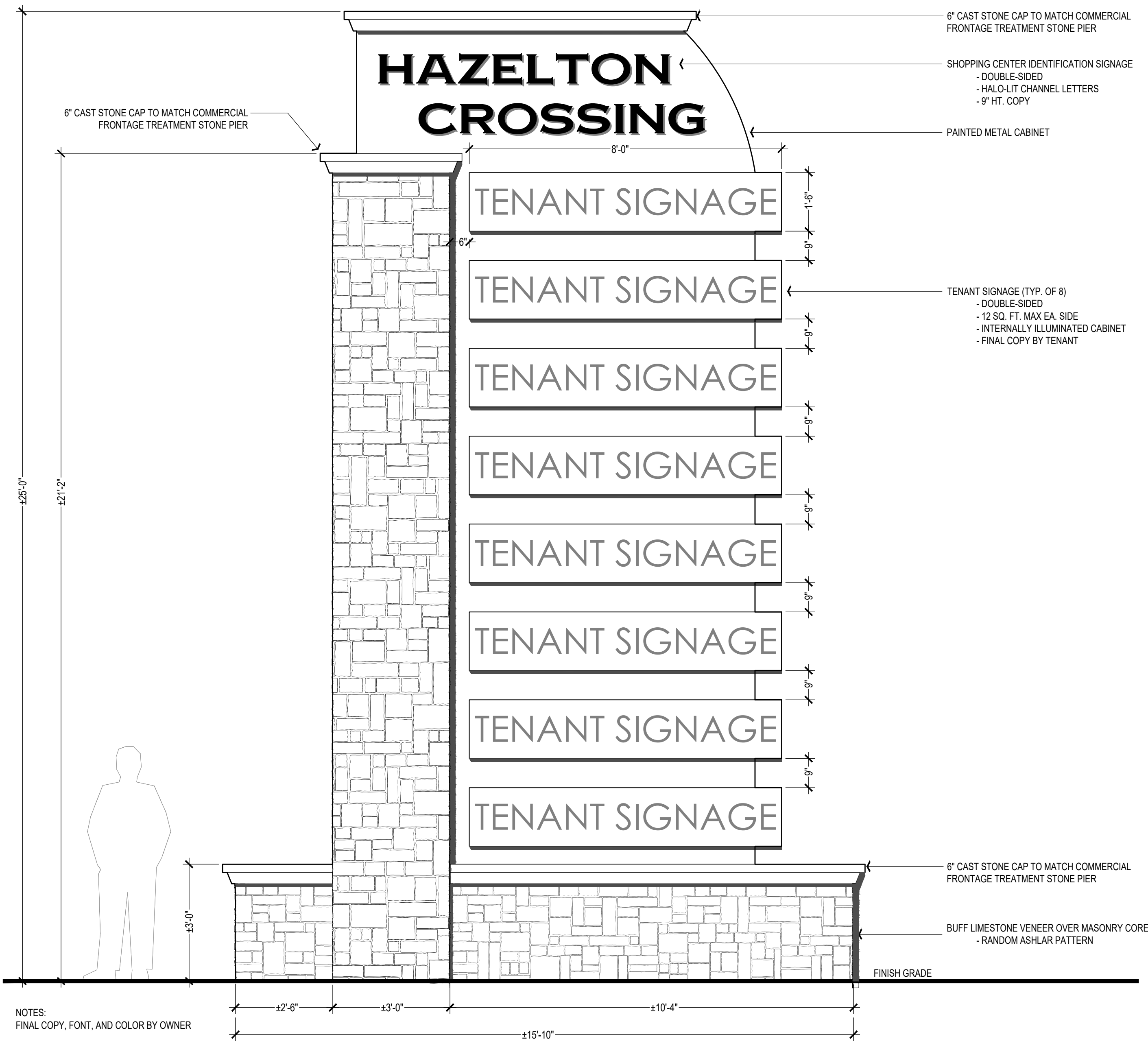
Sub-Area 'C' Main Entry



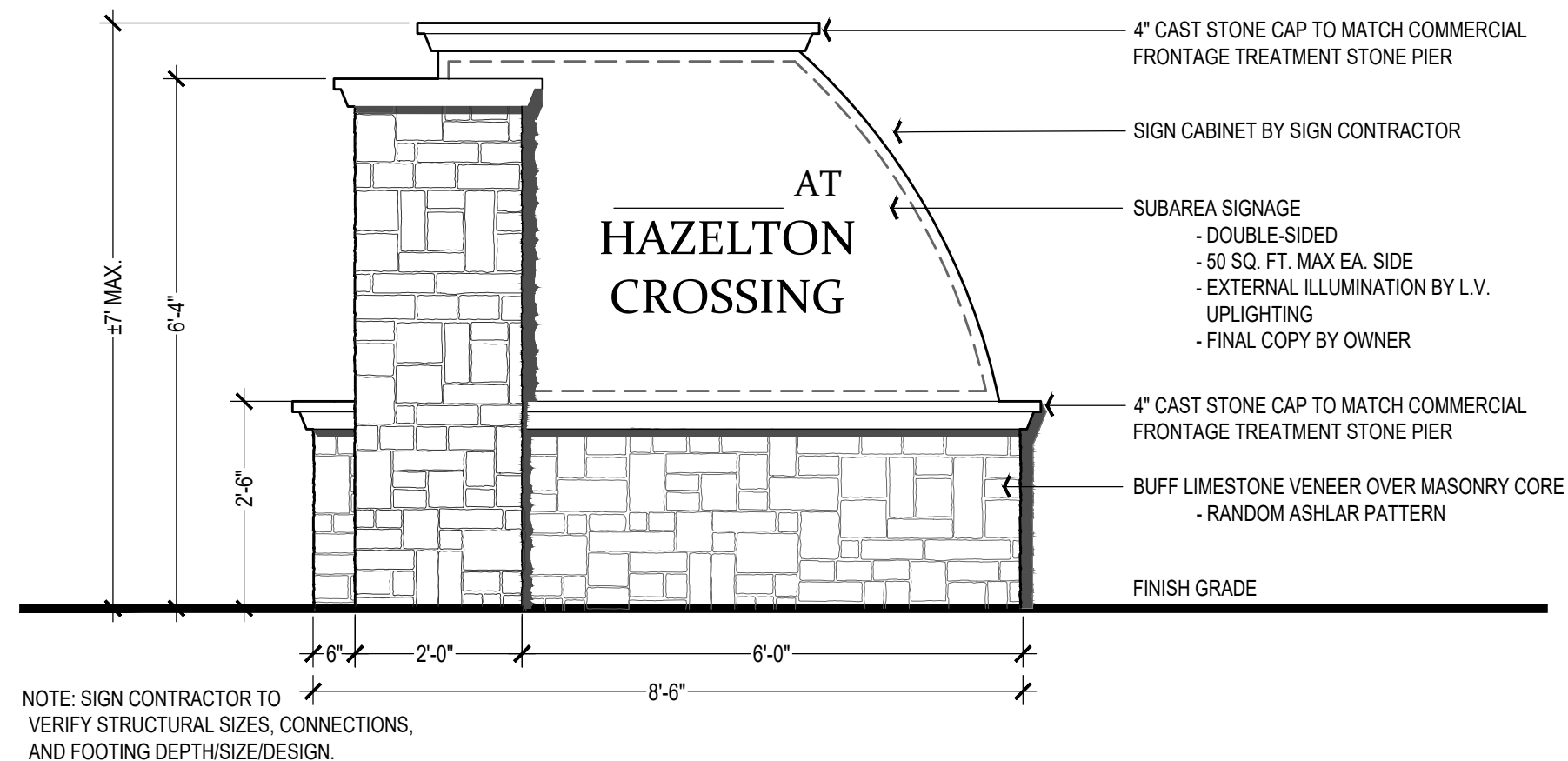
Sub-Area 'D' Main Entry



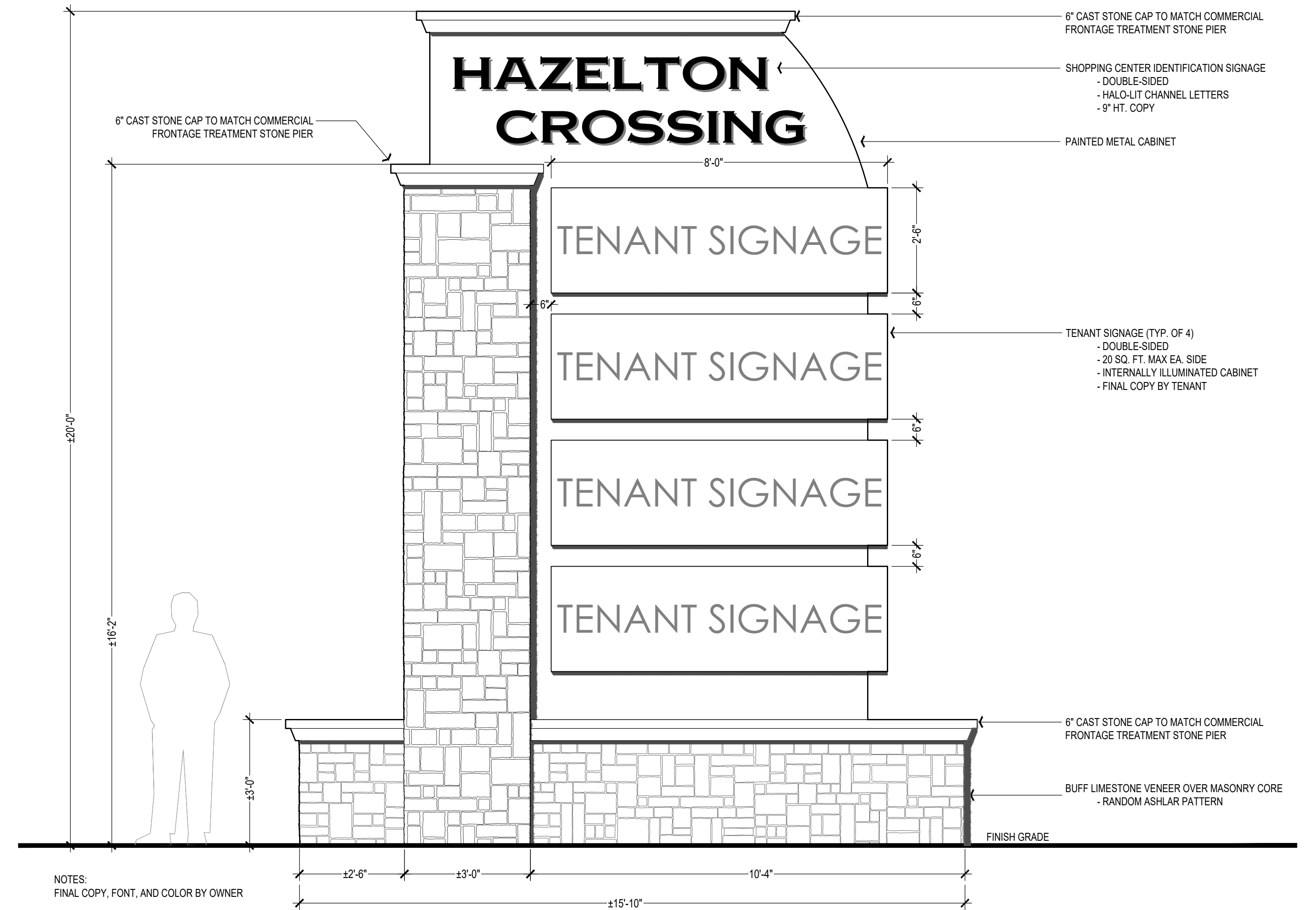
A-3 OUTPARCEL MONUMENT SIGN
SCALE: 1/2" = 1'-0"



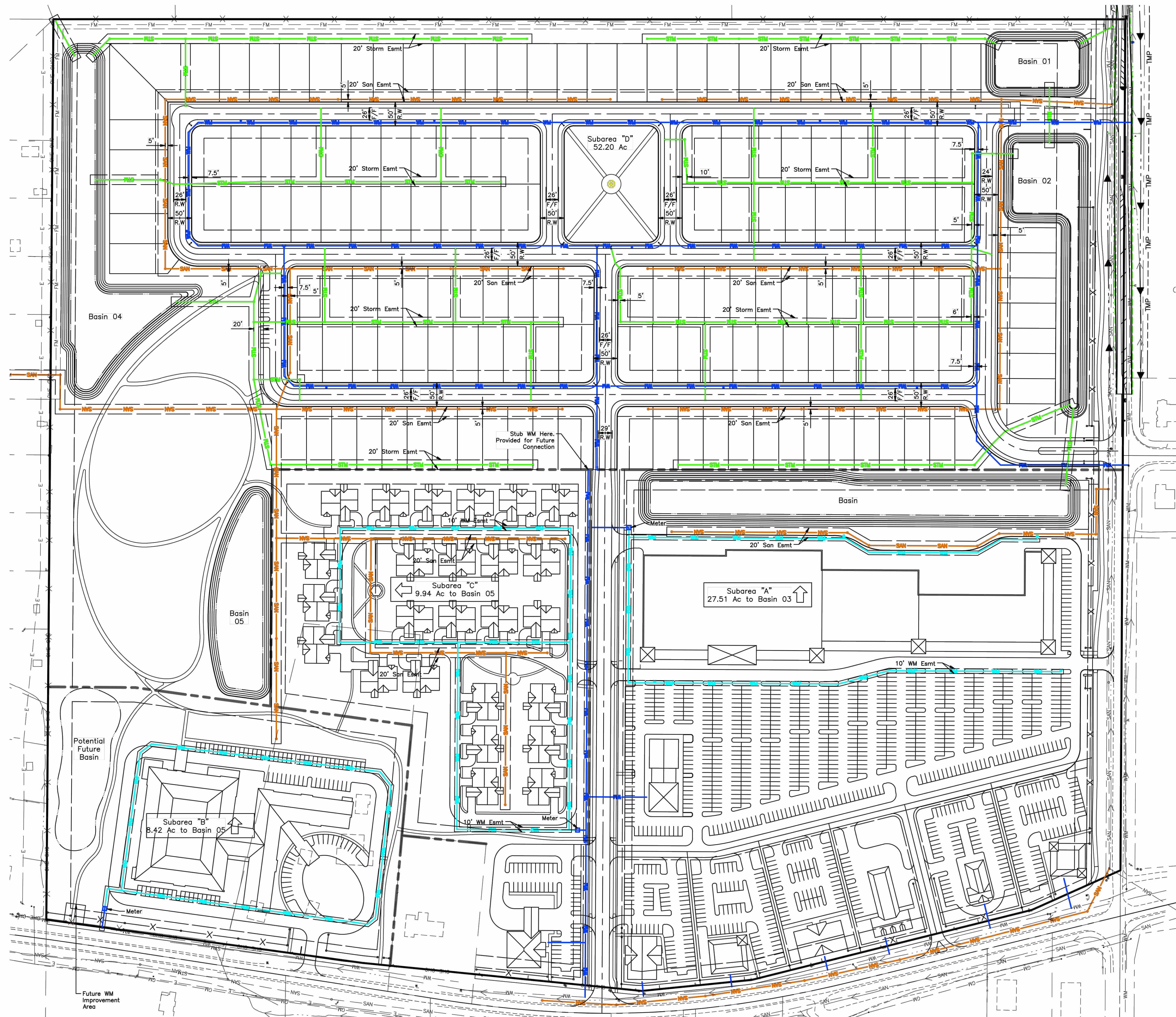
A-1 PRIMARY SHOPPING CENTER IDENTIFICATION SIGN
SCALE: 1/2" = 1'-0"



B SUB-AREA 'B', 'C', & 'D' ENTRY SIGN
SCALE: 1/2" = 1'-0"



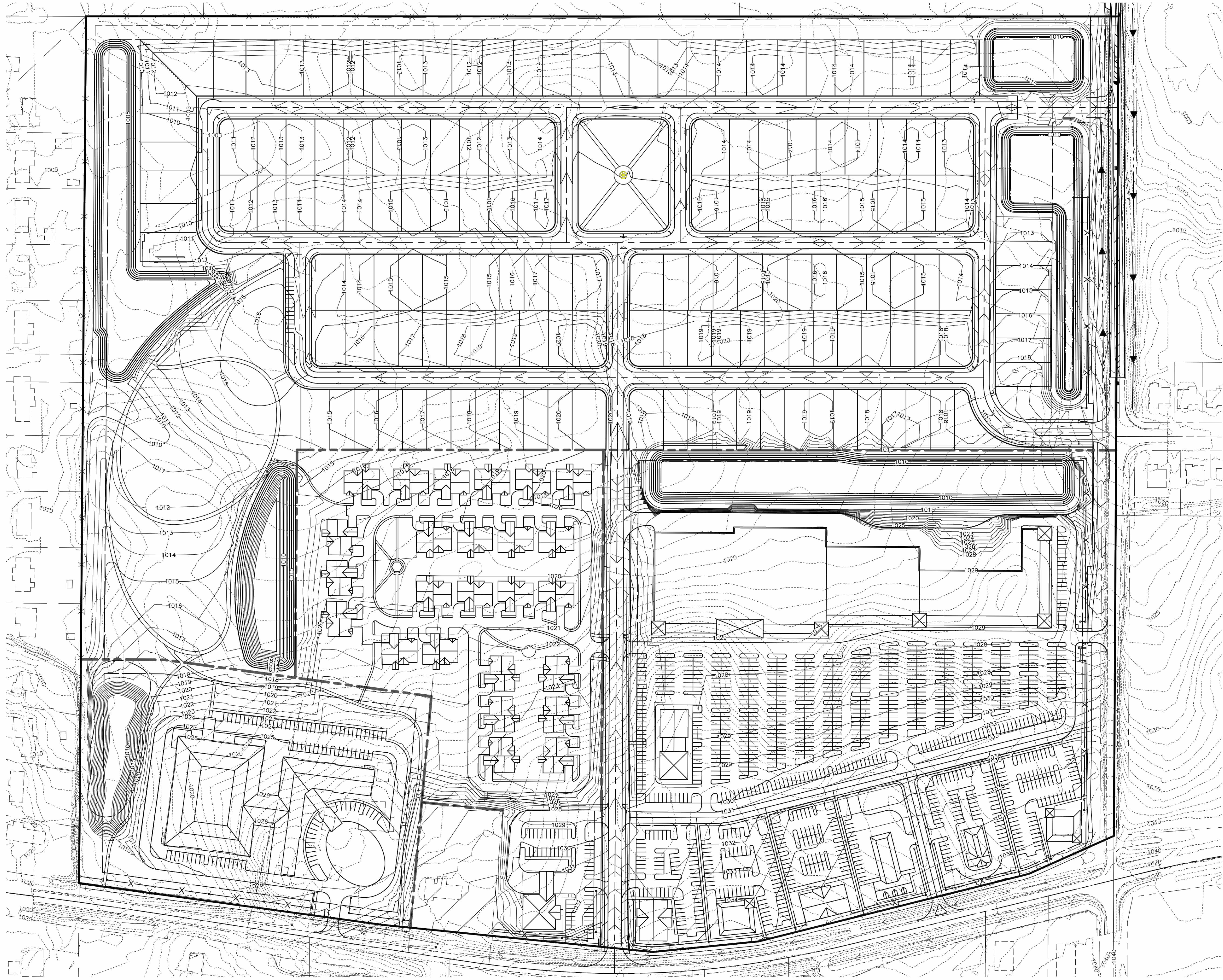
A-2 SECONDARY SHOPPING CENTER IDENTIFICATION SIGN
SCALE: 1/2" = 1'-0"



LEGEND

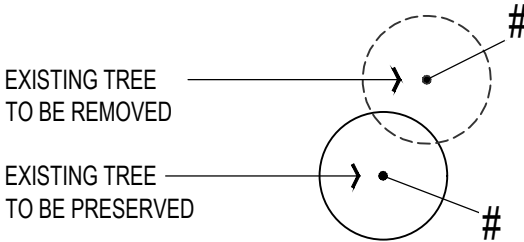
- Public Water
- Private Water
- Public Sanitary
- Public Storm

EASEMENT NOTE:
Easements will be provided to meet the minimum width requirements of the respective service provider. All lots will have a minimum 5' easement along the side property lines and, if determined to be necessary by the City Administrator or their designee, the rear property line will have a minimum 5' easement.





EXISTING TREE KEY



*SEE EXHIBIT "K-4" FOR EXISTING TREE INDEX
- USE TREE # FOR CROSS-REFERENCE

January 29, 2021
(Revised 04.28.2021)

EMH&T

G2

PLANNING
+ DESIGN

Exhibit 'K-1' Existing Tree Survey Key Plan

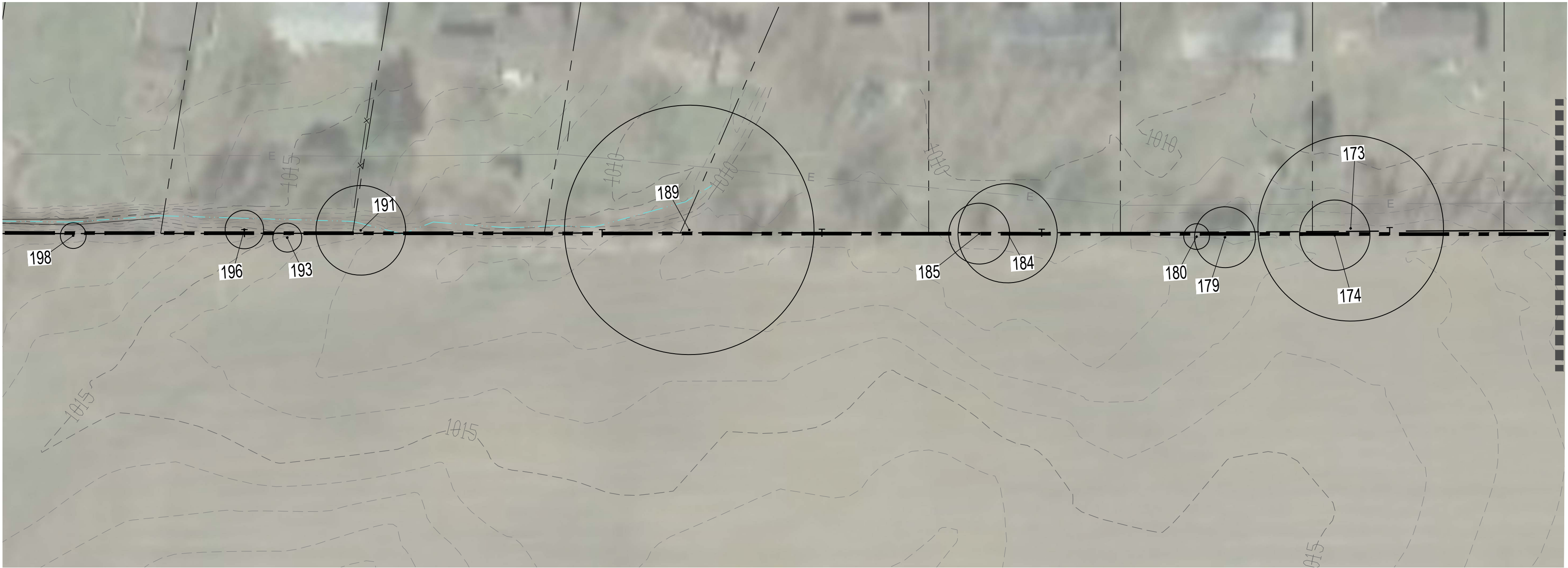
HAZELTON CROSSING

CLIENT:

SOUTHGATE
CORPORATION



Existing Tree Enlargement Plan 'A'

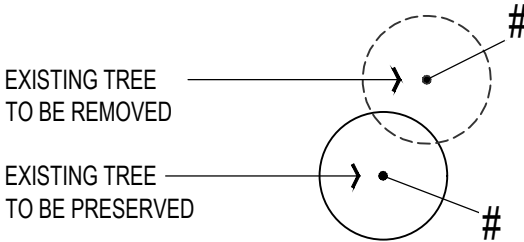


Existing Tree Enlargement Plan 'B'



Existing Tree Enlargement Plan 'C'

EXISTING TREE KEY



*SEE EXHIBIT "K-4" FOR EXISTING TREE INDEX
- USE TREE # FOR CROSS-REFERENCE

MATCHLINE: SEE EXISTING TREE ENLARGEMENT PLAN 'C', THIS SHEET

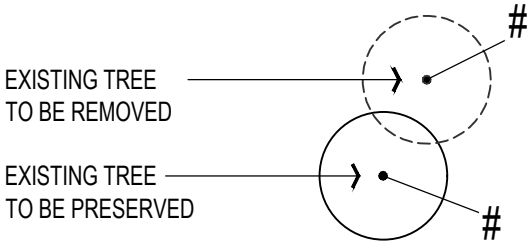


Existing Tree Enlargement Plan 'D'



Existing Tree Enlargement Plan 'E'

EXISTING TREE KEY



*SEE EXHIBIT "K-4" FOR EXISTING TREE INDEX
- USE TREE # FOR CROSS-REFERENCE

TREE #	SIZE	SPECIES	CONDITION	STATUS
1	9	APPLE	FAIR	REMOVE
2	29	MAPLE	GOOD	REMOVE
3	29	LOCUST	GOOD	REMOVE
4	18	SPRUCE	POOR	REMOVE
5	16	PEAR	POOR	REMOVE
6	9	MULBERRY	FAIR	REMOVE
7	16	OAK	GOOD	REMOVE
8	16	MAPLE	GOOD	REMOVE
9	36	SWEETGUM	FAIR	REMOVE
10	13	APPLE	GOOD	REMOVE
11	23	MAPLE	GOOD	REMOVE
12	41	MAPLE	POOR	REMOVE
13	52	MAPLE	POOR	REMOVE
14	36	MAPLE	GOOD	REMOVE
15	30	BUCKEYE	GOOD	REMOVE
16	23	SPRUCE	POOR	REMOVE
17	27	MAPLE	GOOD	REMOVE
18	38	MULBERRY	FAIR	REMOVE
19	20	ELM	FAIR	REMOVE
20	14	MULBERRY	FAIR	REMOVE
21	36	SPRUCE	FAIR	REMOVE
22	15	PINE	FAIR	REMOVE
23	M. STEM (13,9,13,11,10,7)	MAPLE	GOOD	REMOVE
24	8	ELM	FAIR	REMOVE
25	11	SPRUCE	GOOD	REMOVE
26	54	OAK	GOOD	REMOVE
28	28	OAK	GOOD	T.B.D.
29	8	LOCUST	FAIR	T.B.D.
30	8	LOCUST	FAIR	T.B.D.
31	M. STEM (8,7)	HICKORY	GOOD	T.B.D.
32	M. STEM (9,8,7,6)	LOCUST	POOR	T.B.D.
33	9	HICKORY	GOOD	T.B.D.
34	8	LOCUST	FAIR	T.B.D.
35	M. STEM (8,6,6,5)	HICKORY	GOOD	T.B.D.
36	8	LOCUST	FAIR	T.B.D.
37	8	LOCUST	GOOD	T.B.D.
38	8	LOCUST	POOR	T.B.D.
39	22	HICKORY	GOOD	T.B.D.
40	12	LOCUST	FAIR	T.B.D.
41	M. STEM (13,8,6)	LOCUST	FAIR	T.B.D.
42	13	LOCUST	FAIR	T.B.D.
43	16	ELM	FAIR	T.B.D.
44	37	OAK	GOOD	T.B.D.
45	8	LOCUST	FAIR	T.B.D.
46	11	LOCUST	FAIR	T.B.D.
47	10	LOCUST	FAIR	T.B.D.
48	12	LOCUST	FAIR	T.B.D.
49	8	LOCUST	FAIR	T.B.D.
50	9	LOCUST	FAIR	T.B.D.
51	10	HICKORY	GOOD	T.B.D.
52	9	LOCUST	FAIR	T.B.D.
54	10	LOCUST	FAIR	T.B.D.
55	9	HICKORY	GOOD	T.B.D.
56	12	HICKORY	GOOD	T.B.D.
57	9	HICKORY	GOOD	T.B.D.
58	9	LOCUST	GOOD	T.B.D.
60	9	HICKORY	GOOD	T.B.D.
61	8	LOCUST	GOOD	T.B.D.
62	9	HICKORY	GOOD	T.B.D.
63	10	LOCUST	FAIR	T.B.D.
64	39	OAK	GOOD	T.B.D.
66	9	LOCUST	FAIR	T.B.D.
67	10	LOCUST	POOR	T.B.D.
68	14	LOCUST	POOR	T.B.D.
69	16	LOCUST	POOR	T.B.D.
70	10	LOCUST	POOR	T.B.D.
71	9	LOCUST	POOR	T.B.D.

73	10	LOCUST	POOR	T.B.D.
74	11	LOCUST	FAIR	T.B.D.
77	9	LOCUST	GOOD	T.B.D.
78	11	LOCUST	FAIR	T.B.D.
91	9	ELM	FAIR	T.B.D.
95	15	LOCUST	POOR	T.B.D.
99	22	LOCUST	POOR	T.B.D.
103	13	OAK	GOOD	T.B.D.
104	16	OAK	GOOD	T.B.D.
105	9	MAPLE	GOOD	T.B.D.
106	11	BEECH	FAIR	T.B.D.
107	9	MAPLE	GOOD	T.B.D.
108	10	HICKORY	GOOD	T.B.D.
109	10	ELM	GOOD	T.B.D.
111	11	HICKORY	GOOD	T.B.D.
114	14	HICKORY	GOOD	T.B.D.
115	9	HICKORY	GOOD	T.B.D.
117	11	MAPLE	GOOD	T.B.D.
118	8	MAPLE	GOOD	T.B.D.
119	8	OAK	GOOD	T.B.D.
126	13	HICKORY	GOOD	T.B.D.
137	9	HICKORY	GOOD	T.B.D.
139	9	HICKORY	GOOD	T.B.D.
142	17	OAK	GOOD	T.B.D.
143	M. STEM (13,12,11,7)	HICKORY	GOOD	T.B.D.
144	19	HICKORY	GOOD	T.B.D.
145	29	HICKORY	GOOD	T.B.D.
146	10	HICKORY	GOOD	T.B.D.
147	12	HICKORY	GOOD	T.B.D.
148	17	HICKORY	GOOD	T.B.D.
149	15	HICKORY	GOOD	T.B.D.
151	15	HICKORY	GOOD	T.B.D.
152	11	HICKORY	GOOD	T.B.D.
153	11	HICKORY	GOOD	T.B.D.
154	12	HICKORY	GOOD	T.B.D.
155	13	HICKORY	GOOD	T.B.D.
156	8	CHERRY	FAIR	T.B.D.
157	8	HICKORY	GOOD	T.B.D.
158	28	OAK	GOOD	T.B.D.
159	12	HICKORY	GOOD	T.B.D.
160	26	HICKORY	GOOD	T.B.D.
161	11	ELM	GOOD	T.B.D.
162	13	HICKORY	GOOD	T.B.D.
163	14	HICKORY	GOOD	T.B.D.
164	9	HICKORY	GOOD	T.B.D.
165	15	HICKORY	GOOD	T.B.D.
166	11	HICKORY	GOOD	T.B.D.
173	M. STEM (30,25)	LOCUST	POOR	T.B.D.
174	22	CHERRY	FAIR	T.B.D.
176	11	CHERRY	FAIR	T.B.D.
179	19	LOCUST	GOOD	T.B.D.
180	8	SPRUCE	FAIR	T.B.D.
184	M. STEM (18,13)	MULBERRY	POOR	T.B.D.
185	19	MULBERRY	FAIR	T.B.D.
189	M. STEM (19,17,18,16,9)	MAPLE	GOOD	T.B.D.
190	18	MULBERRY	FAIR	T.B.D.
191	M. STEM (15,14)	MAPLE	POOR	T.B.D.
193	9	CHERRY	FAIR	T.B.D.
198	8	ELM	FAIR	T.B.D.
TREE REPLACEMENT CALCULATIONS				
TREE CATEGORY		TREES REMOVED	REPLACEMENTS REQ'D	
TREES 8" TO 15" replace with 2 native trees @ 2.5" cal. min. for ea. removed		5 TREES	10 TREES @ 2.5" MIN. CAL.	
TREES GREATER THAN 15" replace with 4 native trees @ 2.5" cal. min. for ea. removed		13 TREES	52 TREES @ 2.5" MIN. CAL.	
TOTAL REPLACEMENT TREES REQUIRED* (ACHIEVED WITH 2.5" MIN CAL. TREES)			062 TREES	
*(“ASH”, “PEAR”, “APPLE”, “POOR”, AND “DEAD” TREES NOT INCLUDED IN REPLACEMENT CALCULATIONS)				

TAB 5
ARCHITECTURAL
EXHIBITS



Exhibit 'L-1' - SUB AREA 'A' Retail Center Conceptual Architecture

HAZELTON CROSSING

AWNINGS, CORNICES, TRIM AND ACCENTS TO
COMPLEMENT/CONTRAST WITH SIDING

MUTED COLOR PALETTE

ARCHITECTURAL FEATURES WHICH ADD INTEREST TO
ROOFLINES AND ELEVATIONS ARE ENCOURAGED



BUFF LIMESTONE VENEER ACCENTS TO MATCH COMMERCIAL
FRONTAGE TREATMENT STONE PIERS AND SIGNAGE

BRANDED GRAPHICS , COLORS, AND MATERIALS
TO COMPOSE NO MORE THAN 1/3 OF
TOTAL BUILDING ELEVATION

Exhibit 'L-2' - SUB AREA 'A' Outparcel Conceptual Architecture

HAZELTON CROSSING

TRIM AND ACCENTS TO
COMPLEMENT/CONTRAST WITH SIDING
MUTED COLOR PALETTE
ARCHITECTURAL FEATURES
WHICH ADD INTEREST TO ROOFLINES AND ELEVATIONS
ARE ENCOURAGED



BUFF LIMESTONE VENEER ACCENTS TO MATCH COMMERCIAL
FRONTAGE TREATMENT STONE PIERS AND SIGNAGE

Exhibit 'M-1' - SUB AREA 'B' Assisted Living Conceptual Architecture

HAZELTON CROSSING



Exhibit 'N-1' - SUB AREA 'C' Condominium Conceptual Architecture

HAZELTON CROSSING



ROCKFORD
HOMES

Exhibit 'O-1'

AMERICAN FARMHOUSE
SHOWN WITH OPTIONAL DIMENSIONAL SHINGLES

1,850+ SQ. FT. • 4 BED • 2.5 BATH • 2-CAR GARAGE

Homestead Series

The Baldwin

TWO STORY FLOOR PLAN

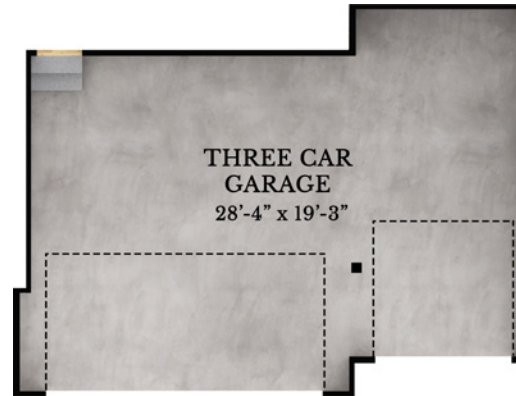
Homestead Series

The Baldwin

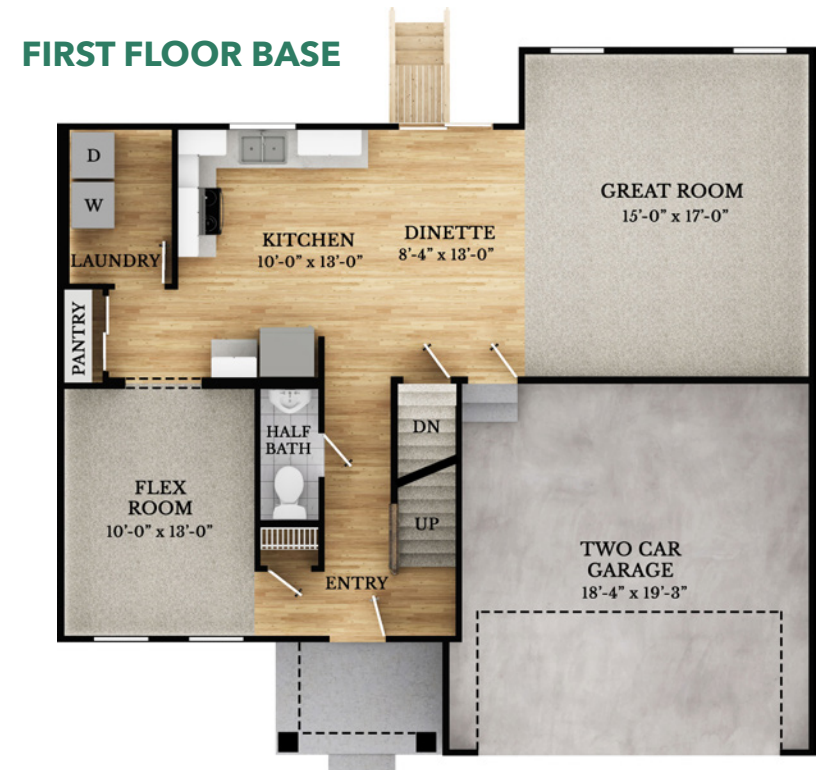
TWO STORY FLOOR PLAN



OPTIONAL MORNING ROOM



OPTIONAL THREE CAR GARAGE



OPTIONAL AMERICAN FARMHOUSE ELEVATION



OPTIONAL COLONIAL REVIVAL ELEVATION

1,850+ SQ. FT. • 4 BED • 2.5 BATH • 2-CAR GARAGE

Exhibit 'O-1'

Homestead Series

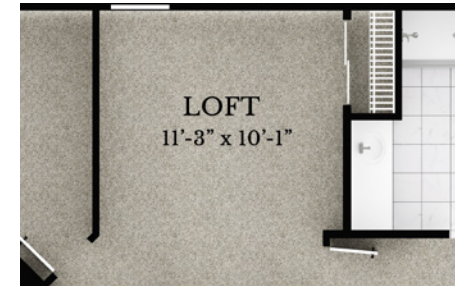
The Baldwin

TWO STORY FLOOR PLAN

SECOND FLOOR BASE



**OPTIONAL DELUXE
OWNER'S BATHROOM**



OPTIONAL LOFT



OPTIONAL COLONIAL REVIVAL ELEVATION



**OPTIONAL AMERICAN FARMHOUSE
ELEVATION**

1,850+ SQ. FT. • 4 BED • 2.5 BATH • 2-CAR GARAGE

Exhibit 'O-1'

Homestead Series

The Baldwin

ADDITIONAL EXTERIOR DESIGNS



AMERICAN CLASSIC

Shown with optional dimensional shingles



COLONIAL REVIVAL

Shown with optional dimensional shingles



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RockfordHomes.net

Exhibit 'O-1'

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ROCKFORD
HOMES

Exhibit 'O-2'
CRAFTSMAN

SHOWN WITH OPTIONAL DIMENSIONAL SHINGLES

2,850+ SQ. FT. • 4 BED • 2.5 BATH • 2-CAR GARAGE

Homestead Series

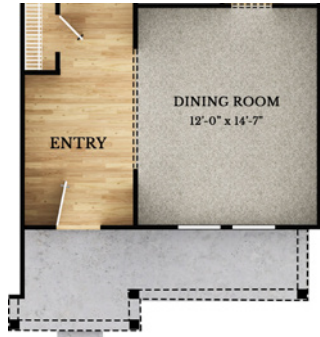
The Bradford

TWO STORY FLOOR PLAN

Homestead Series

The Bradford

TWO STORY FLOOR PLAN



OPTIONAL AMERICAN
FARMHOUSE ELEVATION



OPTIONAL COLONIAL
REVIVAL ELEVATION



OPTIONAL SHINGLE
ELEVATION



OPTIONAL CRAFTSMAN
ELEVATION

FIRST FLOOR BASE



OPTIONAL
BUTLER'S PANTRY



OPTIONAL
GREAT ROOM
EXTENSION



OPTIONAL
KITCHEN
CABINETS



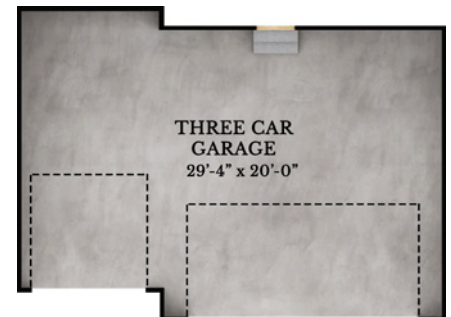
OPTIONAL
FIREPLACE



OPTIONAL
BREAKFAST
EXTENSION



OPTIONAL
GUEST SUITE



OPTIONAL THREE CAR GARAGE

2,850+ SQ. FT. • 4 BED • 2.5 BATH • 2-CAR GARAGE

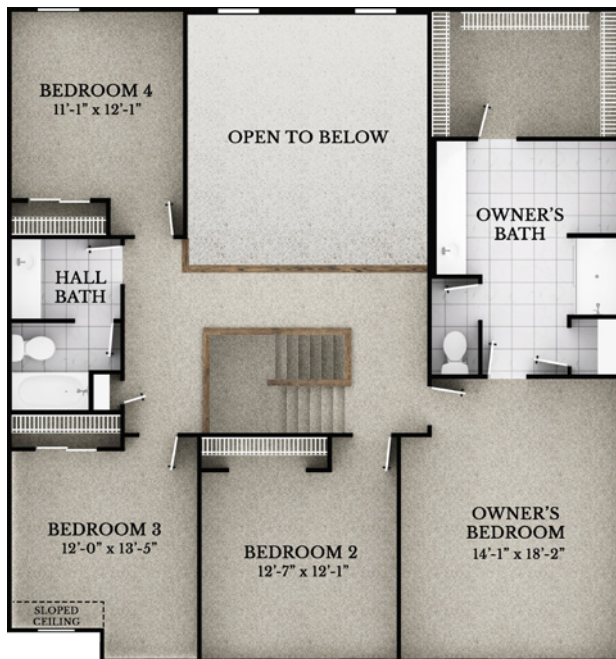
Exhibit 'O-2'

Homestead Series

The Bradford

TWO STORY FLOOR PLAN

SECOND FLOOR BASE



OPTIONAL DELUXE OWNER'S BATHROOM



OPTIONAL FULL BATH



OPTIONAL CRAFTSMAN ELEVATION



OPTIONAL AMERICAN FARMHOUSE ELEVATION



OPTIONAL SHINGLE ELEVATION



OPTIONAL COLONIAL REVIVAL ELEVATION

2,850+ SQ. FT. • 4 BED • 2.5 BATH • 2-CAR GARAGE

Exhibit 'O-2'

Homestead Series
The Bradford
ADDITIONAL EXTERIOR DESIGNS



AMERICAN CLASSIC
Shown with optional dimensional shingles



COLONIAL REVIVAL
Shown with optional dimensional shingles



SHINGLE
Shown with optional dimensional shingles



AMERICAN FARMHOUSE
Shown with optional dimensional shingles



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ROCKFORD
HOMES

Exhibit 'O-3'

AMERICAN FARMHOUSE
SHOWN WITH OPTIONAL DIMENSIONAL SHINGLES

2,610+ SQ. FT. • 4 BED • 2.5 BATH • 2-CAR GARAGE

Homestead Series

The Brentwood

TWO STORY FLOOR PLAN

Homestead Series

The Brentwood

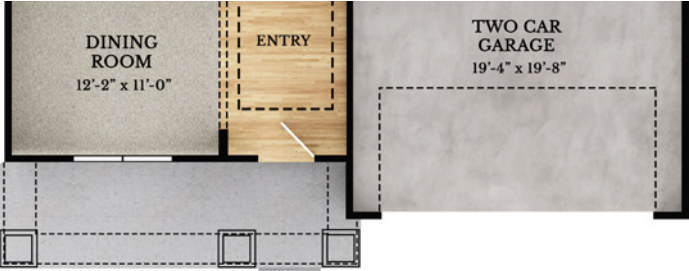
TWO STORY FLOOR PLAN



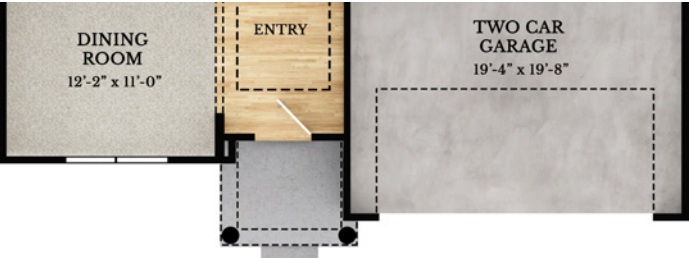
2,610+ SQ. FT. • 4 BED • 2.5 BATH • 2-CAR GARAGE



OPTIONAL GREAT ROOM EXTENSION



OPTIONAL CRAFTSMAN ELEVATION



OPTIONAL COLONIAL REVIVAL ELEVATION



OPTIONAL AMERICAN FARMHOUSE ELEVATION

Exhibit 'O-3'

Homestead Series

The Brentwood

TWO STORY FLOOR PLAN

SECOND FLOOR BASE



OPTIONAL COLONIAL REVIVAL ELEVATION



OPTIONAL CRAFTSMAN ELEVATION



OPTIONAL AMERICAN FARMHOUSE ELEVATION

OPTIONAL HALL BATHROOM



OPTIONAL DELUXE OWNER'S BATHROOM



OPTIONAL HALL BATHROOM



OPTIONAL JACK & JILL BATHROOM



2,610+ SQ. FT. • 4 BED • 2.5 BATH • 2-CAR GARAGE

Exhibit 'O-3'

Homestead Series

The Brentwood

ADDITIONAL EXTERIOR DESIGNS



AMERICAN CLASSIC
Shown with optional dimensional shingles



COLONIAL REVIVAL
Shown with optional dimensional shingles



CRAFTSMAN
Shown with optional dimensional shingles



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Exhibit 'O-3'

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ROCKFORD
HOMES

Exhibit 'O-4'

AMERICAN FARMHOUSE
SHOWN WITH OPTIONAL DIMENSIONAL SHINGLES

1,980+ SQ. FT. • 3 BED • 2.5 BATH • 2-CAR GARAGE

Homestead Series

The Charleston

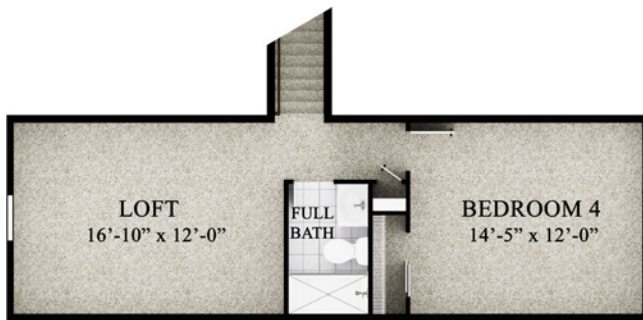
RANCH FLOOR PLAN

Homestead Series

The Charleston

RANCH FLOOR PLAN

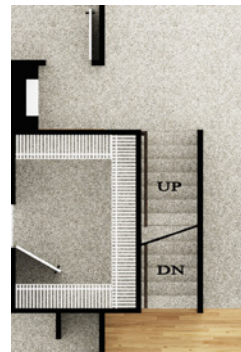
OPTIONAL SECOND FLOOR UPGRADES



OPTIONAL SECOND FLOOR



OPTIONAL BEDROOM 5



STAIRS TO
OPTIONAL
SECOND FLOOR

1,980+ SQ. FT. • 3 BED • 2.5 BATH • 2-CAR GARAGE

BASE FLOORPLAN

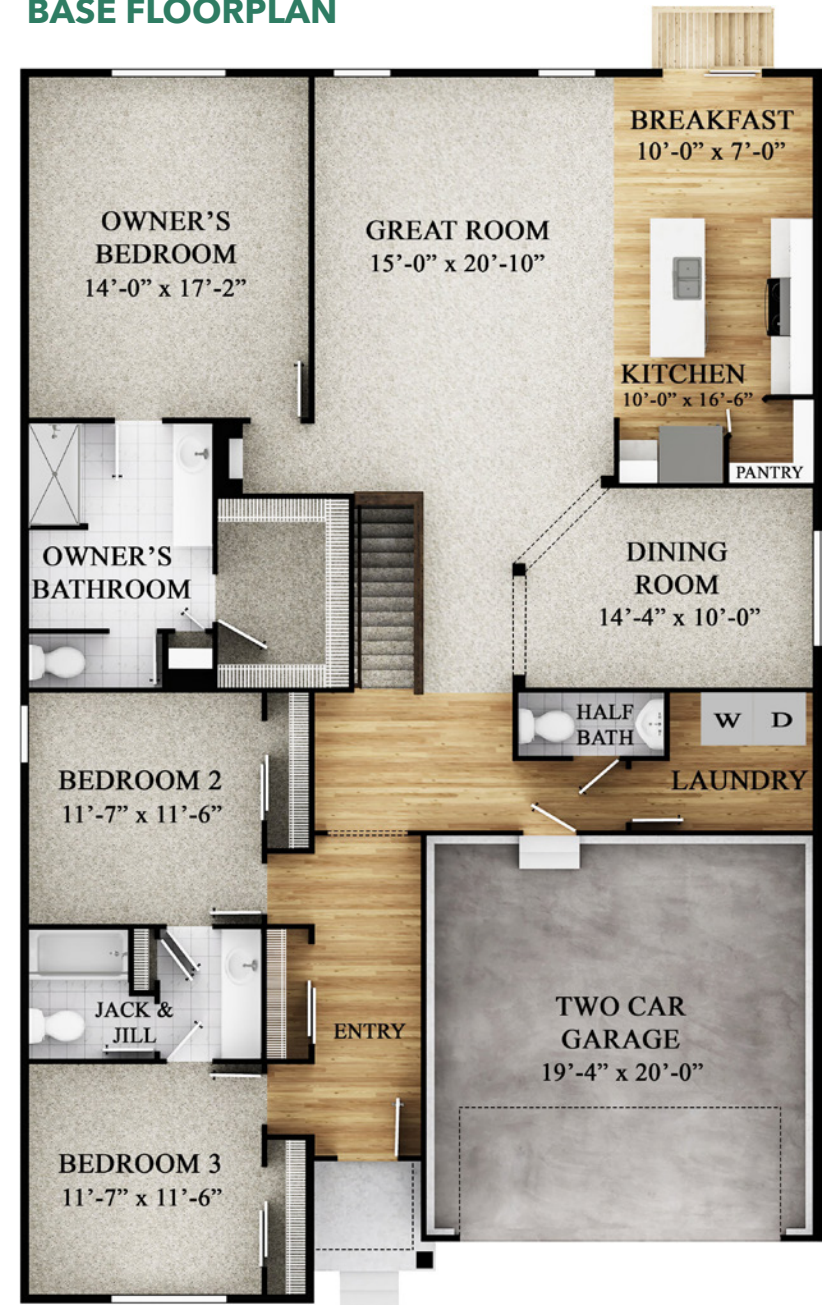


Exhibit 'O-4'

Homestead Series

The Charleston

RANCH FLOOR PLAN

FLOORPLAN UPGRADES



**OPTIONAL DELUXE
OWNER'S BATH**



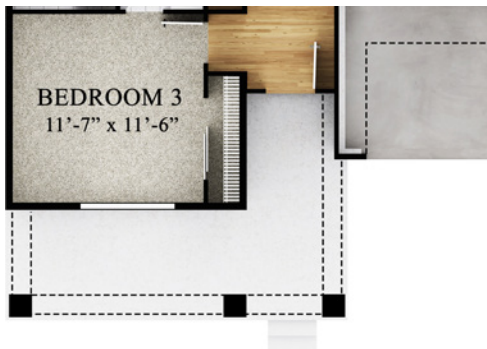
OPTIONAL AMERICAN FARMHOUSE EXTERIOR



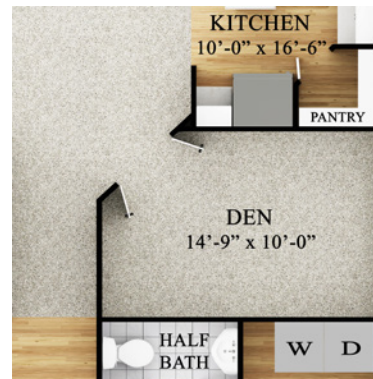
OPTIONAL COLONIAL REVIVAL EXTERIOR



**OPTIONAL
EXTENDED
BREAKFAST AREA**



OPTIONAL CRAFTSMAN EXTERIOR



OPTIONAL DEN



OPTIONAL THREE CAR GARAGE



**OPTIONAL TWO CAR
SIDE LOAD GARAGE**

1,980+ SQ. FT. • 3 BED • 2.5 BATH • 2-CAR GARAGE

Exhibit 'O-4'

Homestead Series
The Charleston
ADDITIONAL EXTERIOR DESIGNS



AMERICAN CLASSIC
Shown with optional dimensional shingles



COLONIAL REVIVAL
Shown with optional stone and dimensional shingles



CRAFTSMAN
Shown with optional dimensional shingles



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Exhibit 'O-4'

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ROCKFORD
HOMES

Exhibit 'O-5'

AMERICAN CLASSIC

SHOWN WITH OPTIONAL STONE AND DIMENSIONAL SHINGLES

2,170+ SQ. FT. • 4 BED • 2.5 BATH • 2-CAR GARAGE

Homestead Series

The Manchester

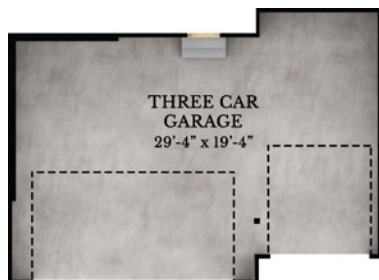
TWO STORY FLOOR PLAN

Homestead Series

The Manchester

TWO STORY FLOOR PLAN

FIRST FLOOR BASE



OPTIONAL THREE CAR GARAGE



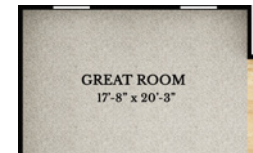
OPTIONAL MORNING ROOM/GREAT ROOM EXTENSION



OPTIONAL MORNING ROOM



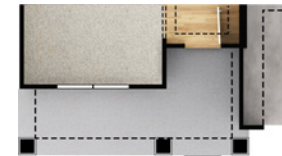
OPTIONAL GREAT ROOM EXTENSION



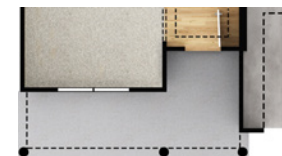
OPTIONAL GREAT ROOM EXTENSION



OPTIONAL AMERICAN FARMHOUSE ELEVATION



OPTIONAL CRAFTSMAN ELEVATION



OPTIONAL COLONIAL REVIVAL ELEVATION

2,170+ SQ. FT. • 4 BED • 2.5 BATH • 2-CAR GARAGE

Exhibit 'O-5'

Homestead Series

The Manchester

TWO STORY FLOOR PLAN

SECOND FLOOR BASE



OPTIONAL DELUXE
OWNER'S BATH



OPTIONAL LOFT



OPTIONAL AMERICAN FARMHOUSE ELEVATION



OPTIONAL COLONIAL REVIVAL ELEVATION



OPTIONAL CRAFTSMAN ELEVATION

2,170+ SQ. FT. • 4 BED • 2.5 BATH • 2-CAR GARAGE

Exhibit 'O-5'

Homestead Series

The Manchester

ADDITIONAL EXTERIOR DESIGNS



AMERICAN FARMHOUSE

Shown with optional dimensional shingles



COLONIAL REVIVAL

Shown with optional dimensional shingles



CRAFTSMAN

Shown with optional dimensional shingles



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Exhibit 'O-5'

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ROCKFORD
HOMES

Exhibit 'O-6'

COLONIAL REVIVAL

SHOWN WITH OPTIONAL STONE AND DIMENSIONAL SHINGLES

2,800+ SQ. FT. • 4 BED • 2.5 BATH • 2-CAR GARAGE

Homestead Series

The Richmond

MULTI-LEVEL

Homestead Series

The Richmond

MULTI-LEVEL



OPTIONAL SHINGLE
ELEVATION



OPTIONAL CRAFTSMAN
ELEVATION



OPTIONAL COLONIAL
REVIVAL ELEVATION



OPTIONAL
FIREPLACE

FIRST FLOOR BASE



OPTIONAL KITCHEN
ISLAND



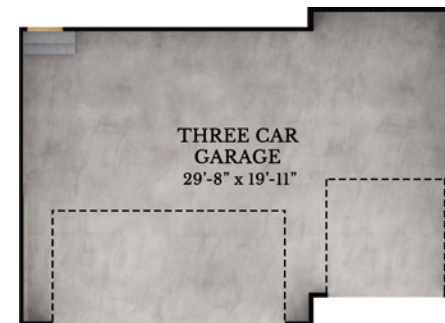
OPTIONAL KITCHEN



OPTIONAL MUD
ROOM SHELF



OPTIONAL MUD
ROOM CLOSET



OPTIONAL THREE CAR GARAGE

2,800+ SQ. FT. • 4 BED • 2.5 BATH • 2-CAR GARAGE

Exhibit 'O-6'

Homestead Series

The Richmond

MULTI-LEVEL

SECOND FLOOR BASE



OPTIONAL COLONIAL REVIVAL ELEVATION



OPTIONAL SHINGLE ELEVATION



OPTIONAL CRAFTSMAN ELEVATION



OPTIONAL JACK & JILL BATH



OPTIONAL DELUXE OWNER'S BATH



OPTIONAL LOFT

2,800+ SQ. FT. • 4 BED • 2.5 BATH • 2-CAR GARAGE

Exhibit 'O-6'

Homestead Series

The Richmond

ADDITIONAL EXTERIOR DESIGNS



AMERICAN CLASSIC
Shown with optional dimensional shingles



CRAFTSMAN
Shown with optional dimensional shingles



SHINGLE
Shown with optional dimensional shingles



Corporate Office - Rockford Homes
999 Polaris Parkway - Suite 200 | Columbus, OH 43240
614-785-0015

RockfordHomes.net

Exhibit 'O-6'

Because we are constantly improving our product, we reserve the right to revise, change, and / or substitute product features, dimensions, specifications, architectural details and designs without notice. This brochure is for illustration purposes only and is not part of a legal contract. **RH - 10/7/2020**



TAB 6
LEGAL
INSTRUMENTS

DEED OF RESTRICTIONS

Rockford Homes, Inc., an Ohio corporation of the City of Columbus, Ohio, the tax mailing address of which is 999 Polaris Parkway, Suite 200, Columbus, Ohio, 43240, for valuable consideration paid, grants with general warranty covenants, to Robert H. Albert, Sr., Trustee ("Grantee") whose tax mailing address is 999 Polaris Parkway, Suite 200, Columbus, Ohio, 43240, the following real estate situated in _____ County, _____ City, Ohio and described as follows:

Being Lots Nos. One (1) through _____), inclusive, of NAME OF SUBDIVISION, as the same are numbered and delineated upon the recorded plat thereof of record in Plat Book _____, Pages _____, in the office of the Recorder, Licking County, Ohio.

Pursuant to a general plan for the protection, benefit and the mutual advantage of all real estate comprising the NAME OF SUBDIVISION the subdivision"), and all of the persons who may now or hereafter become owners ("owner(s)") of any of said lots or parts thereof, and _____ Homeowners Association, Inc. ("Homeowners Association"), an Ohio corporation not for profit, and as a part of the consideration for this conveyance, Grantor executes and delivers this Deed of Restrictions, and Grantee accepts the same, subject to all and each of the following reservations, restrictions, conditions, easement rights, uses and provisions, hereinafter referred to as "restrictions", which are for the mutual benefit and protection of and shall be enforceable by all and any of the present and future owners of said lots described above, and/or the Homeowners Association, their successors and assigns; and Grantee, for himself and his successors and assigns, covenants and agrees to keep and perform each of said restrictions as hereinafter set out, and fully and punctually to observe, comply with and perform and carry out the same.

ARTICLE I

PROTECTIVE COVENANTS AND RESTRICTIONS

1. LAND USE: All lots or combinations or parts thereof shall be used exclusively for residential purposes only and not for any business or trade. However, the sale of a lot or a house by any owner shall not be considered to be a commercial activity as defined herein. No building shall be constructed, altered, placed or permitted to remain on any of the lots, other than one (1) detached single family dwelling not to exceed two (2) stories in height, and private garage for not less than two, or more than three cars.

2. PLAN APPROVAL - STRUCTURE REQUIREMENTS: (a) For the purpose of maintaining specific architectural guidelines and standards for the development of all lots within the subdivision, each owner of a lot shall be required to submit to Grantor, two (2) sets of complete building and site plans with specifications, for the buildings and landscaping intended to be constructed thereon, not less than thirty (30) full business days prior to the commencement of work of any kind. Said building and site plans with specifications, shall set forth the general arrangement of the interior and exterior of the structure, including the color and the texture of the building materials, the type and character of all windows, doors, exterior light fixtures and appurtenant elements, such as decorative walls, chimneys, driveways and walkways, and detail the location of the structure on the lot including setbacks, driveway locations, garage openings, exterior landscape lighting, orientation of the structure to the topography and conformance with the grading and drainage plan. Prior to final approval, a landscape plan with types, size, and location must be submitted and approved.

(b) Each owner covenants that no excavation shall be made, no structures shall be constructed, and no materials shall be stored upon any lot until Grantor has approved said plans and specifications, in writing. If Grantor fails, within thirty (30) days after receipt of said plans and specifications, to either approve or disapprove said plans and specifications, they shall be deemed to have been approved and the requirements herein fulfilled. If Grantor disapproves said plans and specifications, the owner may revise and resubmit said plans and specifications until approval is received. Grantor reserves the right, at its option to repurchase any lot at the original purchase price thereof as evidenced by the closing statement executed at the time of purchase of said lot, if satisfactory plans and specifications for construction for a residence and improvements as aforesaid are not received and approved by Grantor within sixty (60) days following conveyance of title to the owner, or if construction of the residence is not commenced within six (6) months and completed within one (1) year following conveyance of title, or such extension of time as Grantor may, at its sole option, grant. Any plan(s) for improvement(s) to be constructed by Grantor, its successors or assigns, is (are) considered approved without documentation.

(c) Grantor may require submission of samples of materials to be used in the construction of said residence and improvements. Each owner further acknowledges that Grantor shall not be responsible or liable to the owner of a lot desiring to have plans and specifications approved, or to any other owners of lots in the subdivision, by reason of the exercise of Grantor's judgment in approving or disapproving plans submitted to it, nor shall it be liable for any expenses entailed to any owner in the preparation, submission and, if necessary, resubmission of proposed plans and specifications.

3. EXTERIOR ELEVATIONS: The individual exterior elevations of each house shall be finished and compatible with each other.

4. SITE WORK: No tree removal, excavation, construction or other site work which would in any way alter the lot from its present state shall be commenced until the plans and specifications are first approved in writing by Grantor in accordance herewith or until such time as the Homeowners Association and the Design Control Committee, as provided for under Article II, are formed and assume such responsibility as provided for herein. However, Grantor may perform any work upon the lots or do any excavation, construction, site work or tree removal for the purpose of improving lots, including, but not limited to, the construction of utility services and other work deemed necessary or appropriate by a developer in completing the preparation of the subdivision for sale of single family lots.

5. EASEMENTS: Easements for installation and maintenance of utilities, drainage facilities and overlot drainage are reserved over, under and through all areas designated "easements" as shown on the recorded plat and other instruments of record. Within the limits of these easements, the grade specified on the master grading plan must be complied with and no structure, planting or other materials shall be placed or permitted to remain which may damage or interfere with the installation, operation or maintenance of utilities, or which may change the direction or flow of drainage channels in the easements or which may obstruct or retard the flow of water through drainage channels in the easements. In the event of a dispute as to compliance or non-compliance with the master grading plan for the subdivision, the determination of the Pataskala Engineer will be final.

6. FLOOR AREA: No dwelling shall be constructed on any lot unless the area of the main structure, exclusive of open porches, basements and garages, is not less than 1,400 square feet for a one-story dwelling, not less than 1,600 square feet for a one and one-half story dwelling and 1,600 square feet for a two story dwelling.

7. EXTERIOR COMPLETION: Exterior construction of all buildings shall be completed not later than ten (10) months after excavation has begun and shall be in accordance with the approved plans and specifications, and landscaping shall be completed within six (6) months after completion of the exterior construction. All lawn or yard areas on all lots, with the exception of areas to be landscaped, shall be fully sodded or seeded.

8. SET BACK AREAS: No building shall be located on any lot nearer to the side street lines than the minimum building setback lines shown on the recorded plat. For purpose of this covenant, eaves and steps shall not be considered as a part of a building provided, however, that this shall not be construed to permit any part of the building on a lot to encroach upon any other lot. No portion of any lot between the building setback lines and the street shall be used for any purpose other than that of a lawn. No unsightly growths or unsightly objects shall be allowed to be placed or permitted to remain anywhere within such areas of the lots. Nothing herein contained shall be construed so as to permit a violation of any applicable law, ordinance or governmental regulation.

9. FENCES: All fences to be installed on any lot in the subdivision shall be subject to the following restrictions:

- A. No 72 inch stockade or other solid fences shall be permitted.
- B. No chain link fences shall be permitted.
- C. Yard fencing shall strictly comply with the yard fence exhibit in Exhibit "A"
- D. Notwithstanding the above, a lot owner may install a fence around an in-ground swimming pool and pool deck if and only if said fence is in accordance with applicable government regulations and has been approved by Grantor or its nominee in accordance with paragraph 2 hereof and complies with the design in Exhibit "A", pool fence. The pool fence shall be black aluminum.
- E. Notwithstanding the above, any fencing which complies with all provisions set forth in these restrictions may be installed without prior submission to Grantor for approval.
- F. Fences installed by Grantor or the Association within any common area or landscape or entry easement area shall not be subject to the provisions above, and Grantor or the Association shall have the right to maintain or replace such fencing.

10. DRIVEWAYS: Driveways shall be constructed and completed with the residence and shall be of asphalt, concrete, or pavers in compliance with zoning regulations. All drive openings to be cut, not removed and replaced.

11. TEMPORARY STRUCTURES/ OUTBUILDINGS: No structure of a temporary character such as trailers, basements, tents, shacks, garages, barns or other outbuildings shall be used at any time as a residence, either temporarily or permanently. No trucks, commercial vehicles or trailers shall be parked or stored in the subdivision on a regular or ongoing basis. Attractive, non-metal yard storage buildings for gardening use are permitted upon approval of Grantor, in accordance with these restrictions. Nothing contained in this section shall prohibit Grantor's use of a construction trailer to be used as a field office and for related purposes, such as storage, while Grantor is constructing houses within the subdivision.

12. DEVELOPMENT AND SALES ACTIVITIES: Notwithstanding any provisions of the restrictions, Grantor or its successors or assigns, may perform activities within the subdivision of any nature for the completion of the subdivision and the marketing of lots in the subdivision. Grantor may, maintain temporary development and sales locations and offices, including but not limited to, model homes, trailers or other structures. If a developer or builder, other than Grantor, does not own any lots in the subdivision, other than a lot on which a trailer, garage, model home or other structure is located, sales activities from such location shall discontinue. In any event, the use of such development and sales locations and offices shall be terminated thirty (30) days after the sale of the last lot.

13. SIGNS: No billboard, sign or advertising device, other than one sign advertising professional services, or a "For Sale" or a "For Rent" sign, shall be erected, placed or allowed to remain on any of the lots or reserve areas. Signs advertising professional services shall not exceed one (1) square foot in size and other signs may not exceed six (6) square feet in size. Contractors' signs announcing the names of the contractors participating in the improvement of the premises may be displayed upon the lots, but these shall not exceed six (6) square feet. Contractors' signs shall not be located closer to the street than ten (10) feet in front of the building setback line shown on the recorded plat. Temporary signs which are displayed for less than forty-eight (48) hours and not redisplayed at least for one month may be displayed subject to size and location restrictions described above. Nothing contained within this section shall prohibit Grantor, its successors or assigns, from installing and maintaining marketing signs within the subdivision which advertise the development and the sale of lots or homes.

14. EXCAVATIONS: The finished grade of any lot or lots or parts thereof shall comply with the finished grading and drainage plan as set forth in the approved engineering plans for the subdivision, subject only to modification by the City of Pataskala Engineer or Grantor. Deviations from the requirements of the approved subdivision grading plan are in no way permitted without the approval of the City of Pataskala Engineer or Grantor. The approved grading plan is binding on all lots in the subdivision. Erosion and its effects in respect to lots are not the responsibility of Grantor.

15. BUILDER APPROVAL: All general contractors and builders must be approved in writing by Grantor before the start of construction.

16. LIVESTOCK AND POULTRY: No animals, livestock, or poultry of any kind shall be raised, bred or kept on any lot or parts thereof, except that dogs, cats or other domestic household pets may be kept in reasonable numbers so as not to cause a nuisance or disturbance to others, provided that they are not kept, bred or maintained for any commercial purposes, and that they are not permitted to run loose. No dog runs or kennels are permitted.

17. MAINTENANCE: No lot, lots, or parts thereof shall be used or maintained for the dumping or storage of rubbish, trash, garbage, brush or other waste materials, all of which shall be kept in a clean and sanitary condition. There shall be no dumping or dirt storage on any lots.

18. SATELLITE DISHES OR RADIO/TV ANTENNAS: No satellite dishes shall be used or erected, either temporarily or permanently, on any lot, which exceed twenty-four (24) inches in diameter, none of which shall be placed in the front or along the sides of any house. No radio or TV antennas shall be used or erected, either temporarily or permanently.

19. CLOTHES LINES AND HANGING DEVICES: Clothes, diapers, towels, bedding, rugs, draperies or other similar articles may not be hung out.

20. EXTERIOR DISPLAYS: Nothing shall be caused or permitted to be hung, displayed, or stored on the outside of windows, including window air conditioners, or placed on the outside walls of a building or displayed on the patios, or otherwise outside of the residence, and no sign, awning, canopy, shutter or any other device, ornament, or object shall be affixed to or placed upon the exterior walls, roof, or exterior patio wall that has a deleterious effect upon any other lot except for model homes sales activities.

21. PARKING: No truck, trailer, boat, camper, recreational vehicle, commercial vehicle or other vehicle, weather operative or not, shall be parked or stored on the public street in front of any lot or on any lot, unless it is in a garage or other vehicle enclosure out of view from the street and abutting properties; provided, however, that nothing herein shall prohibit the occasional, non-recurring, temporary parking of

such truck, trailer, boat, camper, recreational vehicle or commercial vehicle in the subdivision for a period not to exceed forty-eight (48) hours in any period of thirty (30) days. Notwithstanding the foregoing, an operable automobile which is in good condition and driven regularly by a person residing on the Lot, may be parked in a driveway on a regular basis if there is insufficient space in the garage for storage of such vehicle due occupancy of the garage space by other regularly driven vehicles.

22. SWIMMING POOLS: No above ground swimming pools shall be permitted on any lot except that this Section 22 shall not be intended to prohibit the installation of a hot tub or sauna.

23. All residential lots in the _____ subdivision are required to connect to the public water and sewer system. No wells or septic systems are permitted within the subdivision.

ARTICLE II

HOMEOWNERS ASSOCIATION

1. HOMEOWNERS ASSOCIATION: The _____ Homeowners Association, Inc. ("Homeowners Association") has been or will be formed for the purpose of providing for matters of concern to the owners of lots in the subdivision. The membership of the Homeowners Association shall be comprised of the record owners of lots in the subdivision who shall each have one vote for each lot, on all matters requiring a vote as set forth herein or in the Articles of Incorporation, Code of Regulations or By-Laws of the Homeowners Association. Grantor shall be a member of the Homeowners Association so long as it owns one or more of said lots. Upon transfer of 90% of the total platted lots in all phases of the subdivision, the Homeowners Association shall obtain control and assume responsibility for maintenance of entryways, open space and common and reserve areas, not done by City of Pataskala or others. All areas designated as open space, reserve or common areas which are owned by the Homeowners Association shall be continuously maintained by the Homeowners Association. The actions of the Homeowners Association shall be made by the votes of a simple majority of the votes of the lot owners. Joint, common or other multiple ownership of any of the lots shall not entitle the owners thereof to more than the number of votes which would be authorized if said lot were held in one name.

The Homeowners Association shall have the authority to assess each lot an annual fee as set forth hereinafter under Article III for maintenance of the common open space areas as well as other expenses of the Homeowners Association. Should the Association fail to maintain the designated areas in a manner acceptable to City of Pataskala, the City of Pataskala shall have the right, but not the obligation, to maintain such areas and assess the owner of each lot in the subdivision through the process referred to in Article III, including the right to file a lien for collection of delinquent assessments. City of Pataskala may assess such fees in an amount enough to cover the cost of any required maintenance in addition to the cost for administration thereof.

2. DESIGN CONTROL COMMITTEE: The Homeowners Association shall establish a Design Control Committee ("Committee") for the purpose of establishing, maintaining and preserving specific architectural guidelines and standards to carry out the intent of these restrictions with respect to all or any portion of the lots or buildings in the subdivision, and enforcing the applicable provisions of these restrictions. The Committee shall exercise its best judgment to see that all improvements in the subdivision conform to these restrictions. The actions of the Committee, through its approval or disapproval of plans and other information submitted pursuant hereto, shall be conclusive and binding on all interested parties.

No improvement, change, construction, addition, excavation, landscaping, tree removal, or other work or action which in any way alters the exterior appearance of the subdivision from its theretofore natural or improved state shall be commenced or continued until the same shall have first been approved in writing by the Committee. Approval shall be requested by submission to the Committee of plans and specifications, in duplicate, showing the following:

- (a) Existing and proposed land contours and grades;
- (b) All landscaping, including existing and proposed tree locations and planting areas, and species thereof, mailboxes, and exterior ornamentation;
- (c) Exterior lighting plans. No yard posts taller than 8 feet, mercury lights, barn yard lighting or area lighting shall be allowed. Architectural lighting on the house shall be compatible with building design;
- (d) Walls, fencing and screening;
- (e) Patios, decks, pools and porches;

(f) Samples of materials to be used to the extent requested by the Committee; and

(g) Such other information, data, and drawings as may be reasonably requested by the Committee.

Approval shall be based, among other things, upon conformity and harmony of the proposed plans with the design standards and other structures in the subdivision, the effect of the location and use of improvements on neighboring properties, and conformity of the plans and specifications to the purposes and general intent of these restrictions.

If the Committee fails either to approve or disapprove such plans and specifications within thirty (30) days after the same have been delivered to the Committee either personally or by certified mail, it shall be presumed that the Committee has approved said plans and specifications.

Neither the Committee, nor any member thereof, nor any of their respective heirs, personal representatives, successors or assigns, shall be liable to any one submitting plans for approval by reason of mistakes in judgment, negligence, or nonfeasance arising out of or in connection with the approval or failure to approve any plans. Every person and entity who submits plans to the Committee agrees that by submission of such plans, he/she/it will not bring any action or suit against the Committee or any of its members to recover any damage.

An owner of any lot in the subdivision shall cause any improvement to be completed in a workmanlike manner. Upon completion of any such improvement, the person or entity who completed the same may request in writing that the Committee issue a certificate certifying that said improvement is completed and is in compliance with all provisions of this Article II, which certificate shall be issued in a timely manner, and which certificate shall be conclusive evidence that said improvement is completed and in compliance with all provisions of this Article. The Committee may make a reasonable charge for the issuance of such certificates, which must be paid at the time that the request for such certificate is made. As provided in Article I Section 2 Item (b), the Committee shall have no authority as to plan approval for original new home construction by Grantor, its successors or assigns, on any lot in the subdivision at any time.

ARTICLE III

Section 1. The Reserve, Common or Open Space areas upon any recorded plat of the _____ subdivision, (hereinafter referred to as the "Open Space Areas") shall be owned and maintained by the Homeowners' Association, unless specified on the plat to be owned by the City of Pataskala, referred to in Article II hereof. It is the desire of Grantor that the Open Space Areas be preserved in the state as constructed by Grantor; therefore, in furtherance of this objective the Open Space Areas are hereby designated No-Build Zones.

Section 2. The Homeowners Association shall: (a) own in fee simple and mow and otherwise maintain the Open Space Areas; (b) provide and pay for insurance in such types and amounts as the Homeowners Association shall determine with respect thereto; (c) pay all real estate taxes, assessments and the like pertaining to the Open Space Areas; (d) install and maintain signs as described or deemed necessary in and around the Open Space Areas, (e) establish rules and regulations pertaining to the use of the Open Space Areas; (f) construct, repair, reconstruct and maintain entry monument signs and adjacent landscaping, fencing and sprinkler system in the Entry Areas and establish, receive, construct, repair, reconstruct and maintain such common areas or common area improvements as may be established in future sections of the subdivision; and (g) to take such other action as the Association is authorized to take pursuant to its Articles of Incorporation and By-Laws, or this Deed.

Section 3. Each owner of any lot, by acceptance of a deed or other conveyance thereto, whether or not it shall be so expressed in such deed or conveyance, is deemed to covenant and agree to pay to the Association an annual assessment for Common Expenses, (as hereinafter defined and special assessments, as hereinafter provided). For the purposes hereof, the term "Common Expenses" shall mean the expenses and costs incurred by the Association in performing the rights, duties and obligations set forth herein and in its Articles of Incorporation or By-Laws.

Section 4. In addition to the annual assessments authorized above, the Homeowners Association may levy in any assessment year a special assessment ("Special Assessment") applicable to that year only for the purpose of defraying, in whole or in part, the cost of any repair of major maintenance related to the Open Space Areas, Entry Areas or any other area or items for which the Homeowners Association owns or is obligated to maintain.

Section 5. The annual assessments for Common Expenses shall not commence as to Homeowners Association members prior to _____. The Homeowners Association shall fix the amount of annual assessments for Common Expenses against each lot not later than December 1 of each calendar year for the following calendar year. Written notice of the annual assessment for Common Expenses shall be sent

to every owner subject hereto. Unless otherwise established by the Association, annual assessments for Common Expenses shall be collected on an annual basis. The due date for special assessments shall be established by the Homeowners Association. Notwithstanding the foregoing to the contrary: prior to the date that Grantor relinquishes its right to appoint members of the Board as set forth in the By-Laws and responsibility of the maintenance of reserve and common areas is turned over to the Homeowners Association, Grantor may elect to pay the Annual, Special or Lot Assessments applicable to Lots owned by Grantor or in lieu thereof, not pay such Annual Assessments, and to instead pay any deficit incurred in operating the Association, determined annually.

Section 6. All sums assessed to any Homeowners Association member pursuant hereto, including any lots owned by the Grantor, together with interest and all costs and expenses of collection, including reasonable attorneys fees, shall be secured by a continuing lien on such lot in favor of the Homeowners Association, or City of Pataskala as needed as previously provided under Article II.

Section 7. Any assessment not paid within thirty (30) days after the due date shall bear interest from the due date at the rate of twelve percent (12%) per annum. The Homeowners Association or City of Pataskala may bring an action at law against the owner personally obligated to pay the same, or foreclose the lien against the lot. No owner may waive or otherwise escape liability for the assessments provided for herein by non-use of the Open Space Areas, or abandonment of his lot.

Section 8. The lien for sums assessed pursuant hereto may be enforced by judicial foreclosure by the Homeowners Association or City of Pataskala in the same manner in which mortgages on real property may be foreclosed in Ohio. In any such foreclosure, the owner shall be required to pay all costs and expenses of foreclosure, including reasonable attorney fees. All such costs and expenses shall be secured by the lien being foreclosed. The owner shall also be required to pay to the Homeowners Association or City of Pataskala any assessments against the lot which shall become due during the period of foreclosure, and the same shall be secured by the lien foreclosed and accounted for as of the date the owner's title is divested by foreclosure. The Homeowners Association or City of Pataskala shall have the right and power to bid at the foreclosure or other legal sale to acquire the lot foreclosed, and thereafter to hold, convey, lease, rent, encumber, use and otherwise deal with the same as the owner thereof.

Section 9. The lien for the assessments provided for herein shall be subordinate to the lien of any first mortgage which is given to or held by a bank, savings and loan association, FNMA, GNMA, insurance company, mortgage company or other institutional lender, or which is guaranteed or insured by the FHA or VA. The sale or transfer of any lot pursuant to foreclosure of such a first mortgage or any proceeding in lieu thereof shall extinguish the lien of such assessments as to payments which become due prior to such sale or transfer. No sale or transfer shall relieve such lot from liability for any assessments which thereafter become due or from the lien thereof. The Homeowners Association shall, upon written request, report to any such first mortgagee of an Homeowners Association member's lot, any assessments remaining unpaid for a period longer than thirty (30) days after the same shall have become due, and shall give such first mortgagee a period of thirty (30) days in which to cure such delinquency before instituting foreclosure proceedings against the lot; provided, however, that such first mortgagee shall have furnished the Homeowners Association written notice of the existence of its mortgage, which notice shall designate the lot encumbered by a proper legal description and shall state the address to which notices pursuant to this paragraph are to be given. Any such first mortgagee holding a lien on a lot may pay, but shall not be required to pay, any amounts secured by the lien created this Article.

Section 10. Every Owner of a lot in the subdivision shall have a right and non-exclusive easement of enjoyment in and to the Open Space Areas which shall pass with the title to every lot in the subdivision, subject to the following provisions: (a) the right of the Homeowners Association, from time to time, in accordance with its by-laws to establish, modify, amend and rescind reasonable rules and regulations regarding use of the Open Space Areas; (b) the right of the Homeowners Association to suspend the voting rights and right to the use of the Open Space Areas by a lot owner for any period during which any assessment levied under this deed against the lot remains unpaid, and, for a period not to exceed sixty (60) days for any infraction of its published rules and regulations; and (c) the right of the Homeowners Association to otherwise deal with the Open Space Areas as provided by its Articles of Incorporation.

Any Homeowners Association member may delegate, in accordance with the By-Laws, the right of enjoyment to the Open Space Areas or Entry Areas to the members of his family, his tenants or to contract purchasers provided the foregoing reside at the Homeowners Association member's lot. No damage to or waste of the Open Space Areas or Entry Areas or any part thereof shall be committed by any lot owner or any tenant or invitee of any lot owner. No noxious, destructive or offensive activity shall be permitted in the Open Space Areas, Entry Areas or any part thereof, nor shall anything be done thereon which may be or may become an unreasonably annoyance or nuisance to any other owner. No lot owner may erect any improvement or structure of any kind in the Open Space Areas or Entry Easement Areas.

Section 11. At any time after the formation of the Homeowners Association, any Open Space Areas may be conveyed to the City of Pataskala; provided that said conveyance shall have the agreement of a majority of the total voted of the Homeowners Association members at a meeting duly called for this purpose, and agreed to by the City of Pataskala.

Section 12. The Homeowner Association shall be responsible for the stormwater facilities and maintenance as outlined in the attached City of Pataskala, Stormwater Facilities Maintenance Agreement, Exhibit C.

ARTICLE IV

GENERAL PROVISIONS

1. VIOLATION OF COVENANTS: It shall be lawful for any owner of a lot in the subdivision or the Homeowner's Association to prosecute any proceedings at law or in equity against a person or persons violating or attempting to violate any of the covenants herein, either to prevent him/her/it from doing so or to recover damages. Failure by any party to enforce any covenant, restriction, or agreement herein shall in no event be deemed a waiver of the right to take such action for the violation or for any future violation. These restrictions shall be binding upon all and shall be enforceable by any of the present and future owners of the land in the subdivision.

2. TERM OF COVENANT AND RESTRICTIONS: The restrictions, rights, reservations, limitations agreements, covenants and conditions contained herein shall be deemed as covenants and not as conditions hereof, shall run with the land and shall bind all lot owners, their successors, heirs, executors, administrators and assigns, for twenty-five (25) years from the date of the execution of this Deed. Said covenants shall automatically be extended for successive periods of ten (10) years unless terminated by a vote of two-thirds (2/3) of the then owners of the lots in the subdivision. In ascertaining the number of owners of two-thirds (2/3) of the lots, persons having the power to convey the fee simple in a given lot shall constitute a unit having a single vote.

3. INCORPORATION INTO DEED: The above covenants, reservations, and restrictions shall be incorporated by reference in every deed hereafter issued conveying any lot of the subdivision.

4. PARAGRAPH HEADINGS - GENDER NUMBER: The section and paragraph headings are intended for convenience only and are not intended to be a part of these restrictions or in any way to define, limit, describe the scope or intent of the particular section and paragraph to which they refer. All pronouns and all variations thereof, shall be construed so as to refer to the masculine, feminine, neuter, singular or plural forms thereof, as the identity of the person or persons or as the situation may require.

5. EFFECT OF INVALIDATION: If any provision of these restrictions is held to be invalid by any court of competent jurisdiction, the invalidity of such provision shall not affect the validity of the remaining provisions hereof.

6. RIGHT TO AMEND: So long as the Grantor owns property in NAME OF SUBDIVISION, but not longer than ten (10) years from the date of the recording of this Deed, the Grantor shall have the right to waive, terminate, and/or modify any of these restrictions as, in the sole opinion of the Grantor, are necessary in order to achieve and preserve an architecturally harmonious, artistic and desirable subdivision, so long as the modifications comply with local zoning codes and County development standard. Any amendment of or addition to these Restrictions under this section of the deed restrictions shall be effective as of the time of the recording of a written document evidencing such amendment or addition in the office of the Licking County Recorder.

So long as the Grantor owns property in NAME OF SUBDIVISION, but not longer than ten (10) years from the date of the recording of this Deed, the Grantor shall have the right to waive, terminate, and/or modify any of these restrictions which the Grantor believes to be in conflict with any federal, state and/or local regulation including without limitation any regulation of the Federal Housing Administration, Veterans Administration or the United States Department of Housing and Urban Development, in order to comply with such regulation.

ARTICLE V

ACCEPTANCE

By accepting a deed to any lot of the subdivision or part thereof, the Grantee accepts the same subject to the foregoing covenants and agrees for himself/herself/itself, their successors and assigns, to be bound by each of such covenants.

Signed on _____, 201_.

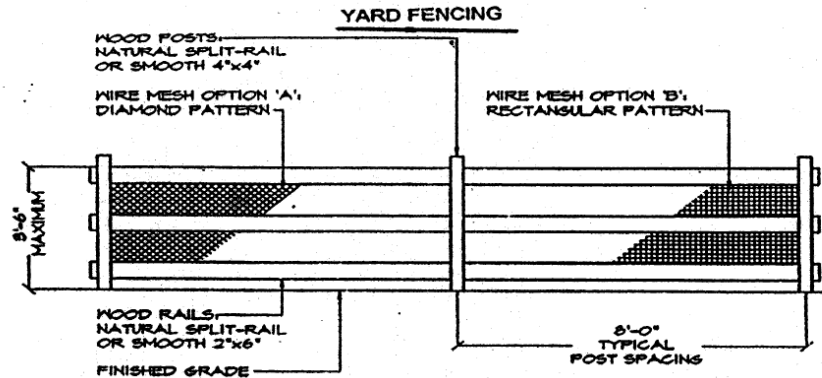
ROCKFORD HOMES, INC.,
an Ohio Corporation

By: _____
President

State of Ohio
County of _____, ss:

The foregoing Deed of Restrictions was acknowledged before me this _____ day of _____, 201_, by _____, President of Rockford Homes, Inc. an Ohio corporation.

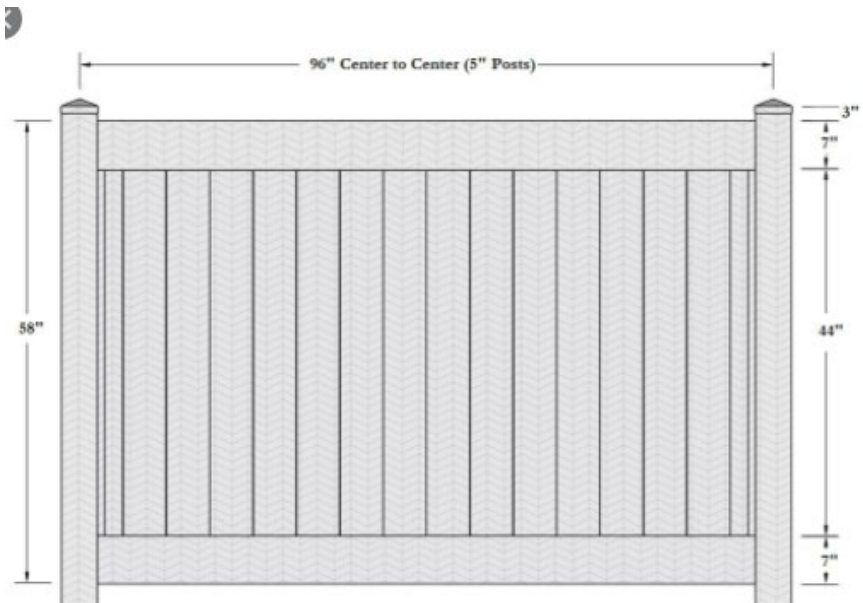
Notary Public

42-Inch-Tall Yard Fence**SPLIT-RAIL YARD FENCE**

Where permitted, these fences are to be placed around yard areas. The fence, post, and rail colors should be natural or earth tones. Wire is permitted to be applied on the interior side of the fence only, and shall be black in color, either by applied vinyl or painted. Light colors or aluminum finishes are not accepted for any portion of fences.

Split-Rail Yard Fence: To be permitted in rear yards only, not to extend closer to the front lot line than the rear line of the house on that lot. The fence post and rail colors should be natural or earth tones. Wire is permitted to be applied on the interior side of the fence only and shall be black in color, either by applied vinyl or painted. Light colors or aluminum finishes are not accepted for any portion of fences.

**5-Foot-Tall Wood or Resin Based
Yard Screen Fence and Pool Screen Fence**



**_____Homeowners Association, Inc.,
An Ohio not-for-profit corporation**

CODE OF REGULATIONS

Article I - Organization Name, Program Area and Executive Board

Section I - Organization Name

The name of the organization shall be _____ Homeowners Association, Inc. (the "Homeowners Association").

Section II - Program Area

The organization's program area to be served is _____ Subdivision, in the City of Pataskala, Licking County, Ohio, as developed by Rockford Homes, Inc., an Ohio corporation.

Section III - Executive Board

The organization will be represented by a smaller body to act as their official representatives. This body shall consist of the President, Secretary, and Treasurer. This body shall be referred to as the Executive Board.

Responsibilities of the Executive Board shall include:

- A. To develop agenda and action plans for the Board of Directors.
- B. To provide guidance between Board meetings to the organization's management, as needed.

Article II - Mission

The mission of the organization is as follows:

- A. To promote the welfare of the residents of _____ Subdivision, and to engage in activities, civil and social, which will result in the accomplishment of said purpose; to provide for the maintenance and repairs of common areas within _____ Subdivision and to divide and assess the cost of such maintenance and repairs, real estate taxes and insurance among homeowners within _____ Subdivision; and to do such other things as may be required by law or by the recorded plats and residential restrictions of _____ Subdivision, as recorded in the Licking County, Ohio Recorder's Office, and as may be amended; and
- B. To have and exercise all rights and powers which are conferred on nonprofit corporations or which may hereafter be conferred by the laws of the State of Ohio, including the power to contract, rent, buy, lease or sell personal or real property; provided, that this corporation shall not, except to an insubstantial degree, if at all, engage in any activities, or exercise any powers, that are not in furtherance of the primary purposes of this corporation.

Notwithstanding any other provisions of these Articles, the corporation shall not conduct or carry on any activities not to be conducted or carried on by an organization qualifying under Section 528 of the Internal Revenue Code and the Regulations promulgated thereunder as they now exist or as they may hereafter be amended.

Article III - Members

Members of the corporation shall consist of the owners of the individual lots in _____ Subdivision, as the same are numbered and delineated on the recorded plats thereof of record with the Licking County, Ohio Recorder's Office. For purposes of conducting the business of the corporation, each lot shall have one vote, provided that, no members shall have any voting rights in the corporation until ninety percent (90%) of said lots have been conveyed by Rockford Homes, Inc., to ultimate lot users and the initial board of directors has resigned. In the case of two-family dwellings, each side shall be deemed to be a separate lot.

Article IV - Services to Members

The organization will provide the following services to its members:

Own and maintain all open space/reserve areas as delineated on the recorded plats of _____ Subdivision of record in the Licking County, Ohio Recorder's Office.

Repair and maintain common areas within and the appurtenant improvements thereto _____ Subdivision, as delineated on the recorded plats of _____ Subdivision of record in the Licking County, Ohio Recorder's Office.

Comply with all requirements included in said recorded plats and restrictions, as recorded with the _____ County, Ohio Recorder's Office, for _____ Subdivision.

The organization shall (a) own in fee simple the parcels as designated and delineated on the recorded plats to be owned/dedicated to the organization, (b) maintain, including mowing and landscaping, the parcels and open spaces owned by the organization, (c) pay all real estate taxes, assessments and the like pertaining to the parcels, (d) install and maintain signs as described in the recorded plats and declarations or as deemed necessary in and around the parcels, (e) establish rules and regulations pertaining to the use of the parcels, (f) construct, repair, reconstruct and maintain entry monument signs and adjacent landscaping, fencing and sprinkler system within said parcels, (g) construct, repair, reconstruct and maintain such parcel or improvements thereto, (h) adopt, annually, an estimated budget for revenues and expenses, including reserves in an amount adequate to repair and replace any major capital items, all in the normal course of operations, (i) collect assessments for the common expenses, as budgeted, including reserves, (j) engage any third party deemed necessary and appropriate to conduct its business, including but not limited to, managers, managing agents, attorneys, and accountants, and (k) take such other action as deemed necessary by the organization in the best interest of the NAME OF SUBDIVISION, as required by the recorded plats and declarations, and as required by law, all as may be amended from time to time.

Coordinate, on matters of common concern, the collective representation of the homeowners of _____ Subdivision.

Article V - Meetings of the Organization

Section I - Bi-Monthly Meeting

The bi-monthly meeting of the organization shall be held in at such time and place as designated by the Board of Directors. A notice of such meeting shall be mailed to all members, at least one month in advance.

Section II - Special Meetings

Special meetings of the organization may be held at the request of the Board of Directors or at the request of fifty percent (50%) of the members. Notice of such meetings shall be mailed at least ten (10) days in advance.

Article VI - Board of Directors

Section I - Board of Directors

The Board of Directors shall be comprised of a minimum of three (3) individuals competent to direct its efficient operation, who are members of the organization. The members by a majority vote may increase the number of Directors to serve. After the initial Board of Directors is in place, upon the expiration of a Director's term or their resignation, a replacement will be voted into office by the members in attendance at the next Directors' meeting. Directors will be appointed for one-year terms and may serve an unlimited number of terms. To start a rotation of terms, a lottery or drawing can be conducted for the Board of Directors to serve for more than one year. Directors shall not receive compensation for their services as Directors.

Section II - Directors Meetings and Quorum

Meetings will be held bi-monthly. Two-thirds of the Board of Directors shall constitute a quorum.

Section III – Power and Authority of the Board of Directors

The Board of Directors shall

- A. Establish the rules, objectives and long-range plans for the organization.
- B. Establish policies to govern the organization.
- C. Evaluate the performance and progress of the organization in meeting its mission and objectives.
- D. Take the following actions on behalf of the organization:
 - i. Hire and/or fire managing agents, attorneys, accountants, and other independent professionals and employees that the board determines are necessary or desirable in the management of the common elements, as defined by O.R.C. Section 5312.01(C), as may be amended from time to time, and the organization.
 - ii. Commence, defend, intervene in, settle, or compromise any civil, criminal, or administrative action or proceeding that is in the name of, or threatened against, the organization, the board of directors, or the common elements, or that involves two or more members and relates to matters affecting the common elements.
 - iii. Enter into contracts and incur liabilities relating to the operation of the common elements.
 - iv. Enforce all provisions of the declaration, bylaws, covenants, conditions, restrictions, and articles of incorporation governing the lots, common elements, and limited common elements.
 - v. Adopt and enforce rules that regulate the maintenance, repair, replacement, modification, and appearance of common elements, and any other rules as the declaration provides.
 - vi. Acquire, encumber, and convey or otherwise transfer real and personal property.

- vii. Hold in the name of the organization real and personal property.
- viii. Grant easements, leases, licenses, and concessions through or over the common elements.
- ix. Levy and collect fees or other charges for the use, maintenance, or operation of the common elements or for services provided to members.
- x. Levy the charges and assessments, including (i) interest and charges for the late payment of assessments; (ii) returned check charges; (iii) enforcement assessments for violations of the declaration, the bylaws, and the rules of the organization; and (iv) charges for damage to the common elements or other property.
- xi. Adopt and amend rules to regulate the collection of delinquent assessments and the application of payments of delinquent assessments.
- xii. Impose reasonable charges for preparing, recording, or copying the declaration, bylaws, amendments to the declaration and bylaws, resale certificates, or statements of unpaid assessments.
- xiii. Authorize entry to any portion of the common elements to designated individuals when conditions exist that involve an imminent risk of damage or harm to the common elements, or to the health or safety of residents.
- xiv. Purchase and maintain (i) fidelity and indemnity insurance for the Board of Directors and the organization's management, (ii) property insurance, and (iii) liability insurance.
- xv. Exercise such powers that are (i) conferred by the declaration or bylaws; (ii) necessary to incorporate the organization as a nonprofit corporation; (iii) permitted to be exercised in this state by a nonprofit corporation; and/or (iv) necessary and proper for the governance and operation of the organization in conformance with Ohio law.

Section III - Officers and Tenure

The Board of Directors shall elect the following officers for one-year terms: President, Secretary, Treasurer, and such other officers as designated by the Directors.

Section IV - Duties of Officers

- A. President - to preside at all the Board of Directors meetings and to see that the authorized business of the association is carried to completion.
- B. Secretary - to keep the minutes of all meetings, carry on official correspondence,
- C. Treasurer - to collect all dues, pay authorized bills, present the bills for audit prior to the annual meeting each year and conduct such other business as shall be delegated to him/her; to maintain the financial records of the organization; to prepare financial reports and present them to the Board of Directors at least annually; to protect the organization's tax exempt status by insuring the organization's compliance with all government and granting authority requirements.

Section V - Election

Officers shall be elected and installed at the Directors' meeting following the December meeting of the organization.

Section VI – Removal of Directors or Officers

In the event of fraud, bad faith, gross negligence, or willful misconduct by any director or officer, a special meeting shall be called for the purpose to discuss and vote for the removal said individual. Said individual shall be given written notice, at least ten (10) days in advance, of the date, time, location and purpose of the meeting. By a vote of a majority of the members in attendance, the organization may remove the director or officer.

Section VII - Vacancy

The Board of Directors shall make appointments to fill vacancies created by the unexpired term(s) of either officers or directors.

Section VIII - Indemnification

The Board of Directors shall be indemnified by the organization against liabilities imposed upon them and expenses reasonably incurred by them in connection with any claim against them, or any action, suit or proceeding to which they may be a party by reason of their being a director. No director is indemnified (a) with respect to matters for which they shall be adjudged in such action, suit or proceeding to be liable for negligence or misconduct in performance of duty, (b) with respect to any matters which shall be settled by the payment of sums which independent counsel selected by the member(s) shall not deem reasonable payment made primarily with a view to avoiding expense of litigation, or (c) with respect to matters for which such indemnification would be against public policy.

Section IX - Duties of Management

If the organization retains a manager or a management agent, the duties shall be as determined by the Board of Directors and may include:

- A. To supervise and coordinate the business activities of the organization including human and financial resources.
- B. To manage the day-to-day operations of the organization.
- C. To provide reports for use by the Board of Directors and Executive Board on the performance and progress of the organization.

Section X - Committees

Committees shall be appointed by the Executive Board, as needed, to work on specific programs, events, etc., for a specified period of time.

Article VII - Order of Business

Section I - Parliamentary Law

All meetings will be governed by Roberts' Rules of Order.

Section II - Agenda

The order of business at all meetings shall be as follows:

- 1. Roll Call
- 2. Report of Minutes of preceding meeting
- 3. Reports of officers and management
- 4. Reports of standing committees
- 5. Report of special committees
- 6. Old Business
- 7. New Business
- 8. Miscellaneous

Article VIII - Financial Procedures

Section I - Fiscal Year

The fiscal year of the organization for accounting and tax purposes shall be January 1st to December 31st.

Section II - Authority to Receive Funds

The organization may accept, receive, and expend funds, grants and services from the federal government or its agencies, from departments, agencies and instrumentalities of state or local government, civic sources, private individuals, groups and foundations. It may contract with respect thereto and will provide such information and reports as may be necessary to secure such financial aid.

Section III - Deposits

All funds shall be deposited in a bank selected by the Board of Directors for disbursement.

Section IV - Approvals

All expenditures or disbursements by the organization must be in conformance with the approved annual budget or as approved by the Board of Directors.

Section V - Audit

The Executive Board shall provide for an annual audit at the end of each calendar year to confirm the authorized disbursement of and receipt of funds and shall provide for any other audits required by law.

Section VI - Official Filings

The Executive Board shall ensure that all requirements shall be met which are necessary to establish and maintain the status of the corporation as (i) a homeowners association as defined and required by Section 528 of the Internal Revenue Code and the Regulations promulgated, as they now exist or as they may be amended and (ii) an Ohio not for profit corporation as required by the Ohio Revised Code. Such requirements shall include, but are not limited to, those informational documents to be filed periodically with the State of Ohio and the Internal Revenue Service.

Article IX - Books and Records

There shall be kept at the office of the organization complete and correct books and records of accounts, with specific details of receipts and expenditures of the activities and transactions of the organization, and a detail record of assessments, charges, fees and other costs/expenses collected from each member. The minute book shall contain a copy of the articles of incorporation, these regulations, all minutes of the Board and organization meetings, and record of the names, addresses, lot numbers and tax parcel numbers of each member.

Article X - Amendment Procedures

These regulations may be amended annually through the following procedures:

A motion for amendment of the by-laws may be made or seconded at any regular meeting of the Board of Directors. If the motion is approved, the Secretary shall thereafter, but not less than ten (10) days prior to the next monthly or special meeting, forward to each member of the Board of Directors a copy of such proposed amendment together with a notice that it will be the subject of action at the next meeting. Such amendment, when presented and considered, shall be deemed adopted upon two-thirds (2/3) vote of the members at the next meeting. Voting by absentee balloting will be permitted. No amendment of the code of regulations shall be effective until properly filed with the Recorder's Office, Licking County, Ohio.

Article XI - Dissolution

Under the dissolution of the corporation, the Board of Directors thereof shall, after paying, or making provision for the payment of, all liabilities of the corporation, dispose of all the assets of the corporation exclusively for the primary purposes of the corporation in such manner, or to such organization or organizations organized as the Board of Directors shall determine. Any such assets not so disposed of shall be disposed of by the majority vote of the members present at a spec

City of Pataskala, Stormwater Facilities Maintenance Agreement
For
HAZELTON CROASSING

The owner/homeowner's association as well as its agents, representative, assigns, and any subsequent owners/homeowner's associations, agents, representative, or assigns ("the Owner") shall be solely responsible for the inspection and maintenance of the stormwater basins, associated outlet structures, and all other procedures listed in Table 1 for the subject development. Inspections and maintenance that are conducted shall be documented and filed for future reviews by the City of Pataskala. The duties and responsibilities set forth herein are continuing in nature and never expire or end.

Stormwater basins naturally collect sediment, including gravel, sand, and mud, as well as other debris like litter. To maintain their capacity and function, the basins must be kept free of excessive debris, litter, and sediment. The stormwater basins shown in these plans shall be inspected annually to ensure the system is free of sediment and debris. The outlet control structures shall be visually inspected at the intervals indicated as most of the sediment and debris will collect within these structures.

The design depth should be verified every 5 – 10 years to ensure that the basin will continue to function properly. This inspection shall be performed by using a boat, canoe, kayak, or similar means to position the inspector in the middle of the stormwater basin. Several measurements around the center of the stormwater basin shall be taken using a stadia rod to determine the depth of the permanent pool. Measurements taken when basin water level is a normal pool elevation (min. 72 hours after rain event). Once the depth of the stormwater basin reaches and/or exceeds the cleanout elevation level, the accumulated sediment shall be excavated to restore the permanent pool depth to the design depth. The stormwater basin is to be temporarily drained/pumped down so that the accumulated sediment can be removed. Sediment excavated from the stormwater basin is required to be tested to determine where to appropriately dispose of the material offsite. Sediment removed from the stormwater basin should be stored properly until disposal to ensure no exposure to stormwater runoff and properly disposed of per local guidelines.

The Owner shall maintain the stormwater control facility or facilities in good working condition acceptable to the City and in accordance with the schedule of long-term maintenance activities in the stormwater control facility maintenance plan.

The Owner shall keep a Maintenance Inspection Log with complete copies of the dated and signed inspection checklists as well as the dates and descriptions of all maintenance activities performed to remedy the deficiencies observed during prior inspection. All inspection reports and logs shall be submitted to the City of Pataskala Service Director when completed. The Maintenance Inspection Log shall be kept on the property and shall be made available to the City upon request.

The City of Pataskala shall have permission and authority to enter the promises at any time to inspect any of the facilities governed by this Stormwater Facilities Maintenance Agreement. If the City determines, at its sole discretion, the stormwater basin and/or associated outlet structures do not meet minimum requirements, are not functioning properly, and/or have fallen into a state of disrepair, the Owner shall make necessary improvements within 90 days of written notification from the City.

If at any time, there ceases to be a Homeowners Association, or other responsible entity, responsibility for compliance with this Stormwater Facilities Maintenance Agreement will become the individual property owners' responsibility. In subdivided developments, costs will be split evenly per recorded lot ownership of all owners within the platted section, phase, or part of the subdivision wherein the stormwater basin lies.

If the City determines, at its sole discretion, the requirements of the Stormwater Facilities Maintenance Agreement have not been complied with after written notification to the Owner, the City may enter the premises and perform any maintenance and/or corrective measures deemed necessary by the City. Costs and expenses of this maintenance and/or corrective measures will be billed to the Owner, who must pay the invoice within 60 days of receipt. Bills remaining unpaid for greater than 60 days may be assessed to the entity or entities having responsibility, or the City may collect the outstanding balance through any available legal remedy.

DEVELOPER ACCEPTANCE

Printed Name of Developer

Signature of Authorized Representative

Date

Printed Name and Title of Authorized Representative

ACCEPTANCE BY THE CITY

Signature of City Administrator

Date

Printed Name of City Administrator

Prohibited construction activities

The Contractor shall not use construction proceedings, activities or operations that unnecessarily impact the natural environment or the public health and safety. Prohibited construction proceedings, activities, or operations include by are not limited to:

1. Disposing excess or unsuitable excavated material in wetlands or floodplains, even with the permission of the property owner;
2. Indiscriminate, arbitrary, or capricious operation of equipment in any stream corridor, wetland, a surface waters or outside the easement limits;
3. Pumping sediment-laden water from trenches or other excavations into any surface water, stream corridor, wetland or storm drain;
4. Discharging pollutants such as chemical, fuel, lubricants, bituminous materials, raw sewage, and other harmful waste into or alongside of rivers, streams impoundments or into natural or man-made channels leading thereto.
5. Permanent or unspecified alterations of the constructed area;
6. Damaging vegetation outside of the construction area;
7. Disposing trees, brush and other debris in any stream corridor, wetland, surface water, or unspecified location;
8. Open burning of project debris without a permit;
9. Storing construction equipment and vehicles and/or stockpiling construction materials on public or private property, not previously specified and approved by the city engineer.

Table 1: Water Quality Basin & Maintenance and Inspection

WATER QUALITY BASIN & MAINTENANCE AND INSPECTION		
INSPECTION ITEM	MAINTENANCE PROCEDURES	FREQUENCY OF INSPECTION
INLET/OUTLET STRUCTURE & SIDE SLOPES	-REMOVE ACCUMULATED SEDIMENT AND DEBRIS FROM INLET AND OUTLET STRUCTURES.	MONTHLY
	-MOW SIDE SLOPES. (MIN. GRASS HEIGHT 3")	
	-DO NOT FERTILIZE VEGETATION SURROUNDING BASIN.	
BASIN EMBANKMENT	-REPAIR UNDERCUT/ERODED AREAS AND STABILIZE.	EVERY 6 MONTHS
STORM SEWER SYSTEM	-REMOVE DEBRIS FROM THE SEWER SYSTEM TO ENSURE POSITIVE FLOW TO THE BASIN.	EVERY 6 MONTHS
STORMWATER BASIN	-INSPECT FOR DAMAGE, PAYING PARTICULAR ATTENTION TO THE OUTLET CONTROL STRUCTURE.	ANNUALLY
	-CHECK FOR SIGNS OF EUTROPHIC CONDITIONS. (ALGAE BUILDUP)	
	-NOTE SIGNS OF HYDROCARBON BUILD-UP, REMOVE APPROPRIATELY	
	-MONITOR SEDIMENT ACCUMULATION IN THE FACILITY.	
	-EXAMINE TO ENSURE INLET AND OUTLET DEVICES ARE FREE OF DEBRIS AND ARE OPERATIONAL.	
	-INSPECT FOR INVASIVE VEGETATION IF WETLAND COMPONENTS INCLUDED.	
STORMWATER BASIN SEDIMENT ACCUMULATION	-MONITOR SEDIMENT ACCUMULATIONS, AND REMOVE SEDIMENT WHEN THE POOL VOLUME HAS BECOME REDUCED SIGNIFICANTLY (25% OF PERMANENT POOL VOLUME LOST), OR THE POND BECOMES EUTROPHIC.	ANNUALLY

TAB 7
SUPPORTING
DOCUMENTS



Memorandum

RE: Hazelton Crossing (Formerly Osborn Site) | Phase I Environmental Site Assessment Summary

February 5, 2016

Jobs Henderson & Associates, Inc. (JHA) has reviewed a Phase I Environmental Site Assessment (ESA) Report that was completed on February 2, 2006 by BBC&M Engineering for the Osborn Site in Pataskala, Licking County, Ohio. The approximately 95 acre site is located on the northeast quadrant of the intersection of State Route 310 and Refugee Road. The property currently exists as an agricultural field planted in row crops and contains a homestead on a parcel separate from this site. Below is the Executive Summary from the Phase I ESA Report explaining that there was one identified "recognized environmental condition" (REC) connected to the site. This one REC is a leaking underground storage tank on an adjacent property to the west and based on the report however, the listing has been issued a No Further Action (NFA) status and potential impacts to the site are low.

Executive Summary from the referenced Phase I ESA:

"BBC&M Engineering (BBCM) has conducted the Phase I Environmental Site Assessment (ESA) for the Osborn Site located in the northeastern quadrant of the intersection of State Route 310 (Hazelton Etna Road) and Refugee Road in Pataskala, Licking County, Ohio (the "Property"). The Property is a vacant agricultural field approximately 92.55 acres in size. The approximate location of the Property is indicated on the Vicinity Map and United States Geologic Survey (USGS) map (Appendix A). According to aerial photographs, historical maps, and an interview with the Property owner, the Property was historically used for agricultural purposes.

The Phase I ESA was completed in general accordance with the scope and limitations set forth in the American Society for Testing and Material (ASTM) Designation E 1527-00: "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process". The Phase I ESA investigation has revealed the following potential "recognized environmental conditions" in connection with the Site:

- One Leaking Underground Storage Tank (LUST) listing is adjacent to the west of the Property. The listing has been issued a No Further Action (NFA) status. Based on the NFA status of the listing, it is believed that potential for the listing to impact the Property is low.

Additional information about the above-referenced conditions included in the text of this report. Depending on the level of comfort desired, the incident field at the Bureau of Underground Storage Tanks could be reviewed and/or a Limited Phase II ESA could be performed to further investigate the LUST listing."

The full-text Phase I ESA Report for this site shall be submitted with the rezoning text for reference. Please contact JHA if you have any questions about interpreting this report or about the site by emailing jhaynal@hullinc.com or calling (740) 344-5451.

Respectfully,

Jobs Henderson & Associates, Inc.

Jaclyn Haynal
Environmental Scientist

F:\Clients\Active\SGT\SGT004\Env\2016-02-04_MEMO_Phase I ESA Summary.docx

Exhibit 'P-1'

**PHASE I ENVIRONMENTAL SITE ASSESSMENT
OSBORN SITE
PATASKALA, LICKING COUNTY, OHIO**

Report to

**SOUTHGATE CORPORATION
NEWARK, OHIO**

Prepared by

**BBC&M ENGINEERING, INC.
ENVIRONMENTAL SERVICES
COLUMBUS, OHIO**

February 6, 2006

Exhibit 'P-2'



BBC&M Engineering, Inc.

6190 Enterprise Court, Dublin, Ohio 43016-7297
Phone (614) 793-2226 Fax (614) 793-2410

February 6, 2006
015-00141-000

Mr. Casey McKinley
Southgate Corporation
1445 West Main Street, PO Box 397
Newark, Ohio 43058

Re: Phase I Environmental Site Assessment
Osborn Site
Pataskala, Licking County, Ohio

Mr. McKinley:

In accordance with our proposal dated January 24, 2006 and your authorization on January 25, 2006, BBC&M Engineering, Inc. has completed a Phase I Environmental Site Assessment of the Osborn Site located in the northeastern quadrant of the intersection of State Route 310 (Hazelton Etna Road) and Refugee Road in Pataskala, Licking County, Ohio. A report of our findings is herewith submitted.

We appreciate having been given the opportunity to be of service to you on this project. Please do not hesitate to contact this office at (614) 793-2226 if you have questions on this report.

Respectfully submitted,

BBC&M ENGINEERING, INC.
Columbus, Ohio

Eric P. Slosser
Project Environmental Scientist

Mary E. Sharrett, P.E.
Environmental Manager

EPS/eps
Submitted: 3 hard copies, 1 electronic copy (pdf)

EXECUTIVE SUMMARY

BBC&M Engineering, Inc. (BBCM) has conducted the Phase I Environmental Site Assessment (ESA) for the Osborn Site located in the northeastern quadrant of the intersection of State Route 310 (Hazelton Etna Road) and Refugee Road in Pataskala, Licking County, Ohio (the "Property"). The Property is a vacant agricultural field approximately 92.55 acres in size. The approximate location of the Property is indicated on the Vicinity Map and United States Geologic Society (USGS) map (Appendix A). According to aerial photographs, historical maps, and an interview with the Property owner, the Property was historically used for agricultural purposes.

The Phase I ESA was completed in general accordance with the scope and limitations set forth in the American Society for Testing and Materials (ASTM) Designation E 1527-00 "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process". The Phase I ESA investigation has revealed the following potential "recognized environmental conditions" in connection with the Site:

- One Leaking Underground Storage Tank (LUST) listing is adjacent to the west of the Property. The listing has been issued a No Further Action (NFA) status. Based on the NFA status of the listing, it is believed the potential for the listing to impact the Property is low.

Additional information about the above-referenced conditions is included in the text of this report. Depending on the level of comfort desired, the incident files at the Bureau of Underground Storage Tanks could be reviewed and/or a Limited Phase II ESA could be performed to further investigate the LUST listing.

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PHASE I ENVIRONMENTAL SITE ASSESSEMT

Osborn Site

Pataskala, Licking County, Ohio

1.0 INTRODUCTION

The 92.55-Acre site is located in the northeastern quadrant of the intersection of State Route 310 (Hazelton Etna Road) and Refugee Road in Pataskala, Licking County, Ohio (the "Property"). The Property is currently a vacant agricultural field. The land uses in the vicinity of the Property are mixed residential, commercial, and agricultural. The approximate location of the Property is indicated on the Vicinity Map and United States Geologic Society (USGS) map (Appendix A) and Property features are indicated on the Site Plan (Appendix A). Color photographs of the Property are included in Appendix B.

The Phase I ESA was conducted in general accordance with American Society for Testing and Materials (ASTM) Designation E 1527-00. The purpose of the Phase I ESA is to provide a professional opinion, based on obvious and reasonably attainable information, on the potential for the Property to be adversely impacted by current and/or past releases of petroleum products or hazardous substances (as defined by federal, state, or local laws and regulations), including potential threats of releases, from sources on the Property or within the vicinity of the Property. These potential adverse environmental impacts from on-and off-site sources are defined by ASTM as "recognized environmental conditions".

Items not included in the Phase I ESA are wetland delineations, radon evaluations, asbestos surveys, lead-based paint surveys, mold surveys, mechanical inspections, compliance surveys, risk assessments, subsurface investigations, and chemical analyses.

2.0 HISTORICAL REVIEW

2.1 Ownership History

BBCM performed a cursory review of the ownership history of the Property based on available deed records on file at the Licking County Recorder's office. The Property was purchased by the Bonnie Osborn on November 5, 1987. No companies or corporations appear on the ownership history since at least 1946. The ownership history of the Property since 1946 is summarized in the following table.

OWNERSHIP HISTORY SUMMARY OSBORN SITE, PATASKALA, LICKING CO., OHIO		
Grantee	Grantor	Transfer Date
Bonnie M. Osborn, Trustee	Bonnie M. Osborn	6/10/98
Bonnie M. Osborn	Georgiana E. Smoke	11/5/87
Georgiana E. & Carl I. Smoke	Harry E. & Lilia A. Eswine	10/24/46

2.2 County Auditors Information

BBCM reviewed the Property records from the Licking County Auditor's office. The records indicate that the Property (Parcel Numbers 06415296400000 and 06415296400002) is approximately 92.55 acres in size and is owned by Bonnie Osborn. No buildings are listed for the Property. A copy of the Licking County Property information is included in Appendix C.

2.3 Historical Aerial Photographs

Historical aerial photographs from the Licking County Natural Resource Conservation Service (NRCS) office taken in 1940, 1950-1951, 1958, 1964, 1989, and 2004 were reviewed. Copies of the aerial photographs are present in Appendix D. The photographs are summarized as follows.

- The Property appears to be vacant agricultural land. An agricultural field is visible just north of the Property and tree-covered land is immediately east. Refugee Road is visible just south of the Property and agricultural fields are visible south of Refugee Road. State Route 310 (Hazelton Etna Road) appears immediately west and agricultural fields and farmsteads are visible along SR 310. (1940, 1950-1951, 1958, and 1964 photographs). An access lane is visible from a farmstead to the Property (1940 photograph) and the Property appears disturbed (1951 photograph). A commercial building is located immediately west of the southwest portion of the Property (1958 and 1964 photographs).
- The Property appears to be vacant agricultural land. Rural residential homes are visible just north of the Property and tree-covered land is immediately east. Refugee Road is visible just south of the Property and agricultural fields are visible south of Refugee Road. State Route 310 (Hazelton Etna Road) appears immediately west and agricultural fields and farmsteads are visible along SR 310. A commercial building is located immediately west of the southwest portion of the Property and a church is located west of the Property (1989 photograph).
- The Property appears to be vacant agricultural land. Rural residential homes are visible just north of the Property and tree-covered land is immediately east. Refugee Road is visible just south of the Property and a housing development is visible south of Refugee Road. State Route 310 (Hazelton Etna Road) appears immediately west and rural residential homes, a commercial building, and a church are located immediately west of the Property (2004 photograph).

2.4 Historic Map Search

According to Environmental Data Resources, Inc. (EDR), no Sanborn fire insurance maps were found for the Property. The lack of Sanborn mapping implies a low probability of past industrial use during the time frame searched. It is noted that EDR's map library does not include all Sanborn maps.

A Historic USGS map printed in 1909 was reviewed. A copy of the map is presented in Appendix D. The map is summarized as follows.

- The Property appears to be vacant with no structures.
- The area in the vicinity of the Property appears to be rural with suspected rural residential structures in the vicinity.

2.5 Interviews

On February 3, 2006, BBCM personnel interviewed Ms. Bonnie Osborn, the current Property owner. Ms. Osborn indicated to the best of her knowledge the following information about the Property. Documentation of the interview is included in Appendix E.

- The Property has always been an agricultural field as long as she can remember. There have been no structures on the Property.
- There are no underground storage tanks (USTs) or above-ground storage (ASTs) on the Property or removed from the Property.
- Hazardous materials have not been used, stored, handled, or disposed on the Property.
- The Property has not been used for automotive repairs, waste disposal, or as a shooting range.
- There are no known oil/gas wells, water wells, septic systems, or cisterns on the Property.
- There is no known contaminated soil on the Property.
- There have been no Environmental Protection Agency (EPA) or health department violations or citations for the Property.

3.0 RECORDS REVIEW

3.1 Regulatory Database Search

BBCM retained the services of EDR to search state and federal environmental databases. To attempt to evaluate whether properties identified in the EDR database report (including unmapped properties) were located within the search radii specified by ASTM Designation E 1527-00, BBCM conducted a reconnaissance of the surrounding area. A copy of the EDR report, which includes detailed descriptions of the databases searched and a digitized map, is included in Appendix F.

Leaking Underground Storage Tank (LUST) Listings

The Leaking Underground Storage Tank (LUST) list is Ohio's listing of known or suspected releases of hydrocarbon products from USTs. The LUST list is maintained by The Bureau of Underground Storage Tank Regulations (BUSTR). One known LUST listing is located within a half-mile of the Property. The listing is summarized in the following table.

OSBORN SITE - PATASKALA, LICKING CO., OHIO				
SUMMARY OF LUST LISTINGS WITHIN A HALF-MILE OF THE PROPERTY				
Facility	Distance (feet)	Direction	BUSTR Release Number	Status
Licking Co. Hwy. Dept. (Twp. Line Rd.)	Adjacent	West	45005613	NFA
NFA – No Further Action A release was confirmed and initial and/or long-term corrective actions have been conducted. BUSTR has determined that further corrective actions are not necessary for this incident.				

3.2 County Emergency Management Agency (EMA)

BBCM submitted a written request to the Licking County EMA on January 26, 2006 for information about potential environmental concerns for the Property. According to the EMA, the agency has no reports on file for responses, spills, releases, USTs, or environmental problems at the Property. A copy of the correspondence is included in Appendix E.

3.3 Licking County Health Department

BBCM submitted a written request to the Licking County Health Department on January 26, 2006, for information on spills, releases, underground storage tanks (USTs), past industrial use, and fires for the Property. According to the health department, they have no records in their files for the Property. A copy of the correspondence is included in Appendix E.

3.4 Fire Department

BBCM submitted a written request to the West Licking Joint Fire Department on January 26, 2006, for information on spills, releases, USTs, past industrial use, and fires for the Property. According to Richard Sellers, the property is a vacant farm fields and the fire department has no records of environmental problems at the Property. A copy of the correspondence is included in Appendix E.

3.5 Well Log Search

Based on a review of on-line water well log records from the Ohio Department of Natural Resources (ODNR) Division of Water, there are no known water well logs for the Property. Water wells in the vicinity of the Property are completed into sand and gravel deposits. Copies of the well logs for several local wells are included in Appendix C.

According to the Lima Township, Licking County Oil and Gas Well map by ODNR, Division of Geological Survey, there are no oil/gas wells on the Property. No evidence of oil/gas wells was noted during the reconnaissance.

4.0 SITE RECONNAISSANCE

On January 27, 2006, Mrs. Martina Rutti, a Project Environmental Scientist, from BBCM's Dublin, Ohio office, visited the Property to visually observe and photograph reasonably accessible areas. The approximate locations of the photographs and Property

characteristics are indicated on the Site Plan (Appendix A). Color copies of photographs are included in Appendix B.

4.1 Property Observations

- The Property is a vacant agricultural field (Photographs 1 through 5).
- A debris pile containing concrete, rocks, and wood was noted on the west-central portion of the Property (Photograph 6). Based on the material observed in the debris pile it does not appear the debris pile represents a REC.
- Overhead electrical lines and evidence of a buried natural gas pipeline and telecommunications line was noted along the west side of the Property.
- One pole-mounted electrical transformer was observed at the southwestern corner of the Property. No stains were observed on the unit and no visible labels indicating the polychlorinated biphenyl (PCB) content of the unit was observed. Because there was no evidence of stains on the unit or stressed or dying vegetation, it is believed the electrical transformer does not represent a REC at this time.
- There was no indication of buried waste or demolition debris noted on the ground surface.
- No obvious evidence of USTs such as fill ports or vent pipes were observed on the Property.
- No obvious evidence of hazardous waste handling, storage, or disposal was noted on the Property.
- During the reconnaissance no obvious visual evidence of wetland hydrology or hydrophytic vegetation was noted.

4.2 Adjacent Property Use

- Single-family residential homes were noted adjacent to the north side of the Property.
- The area immediately east of the Property is generally tree-covered. A single-family home is located east of the south side of the Property.
- Refugee Road (Photograph 3) is located along the south side of the Property and agricultural land and a single-family home are along the south side of Refugee Road.
- A farmstead (Photograph 7) and State Route 310 are located immediately west of the Property. Single-family homes, a church, a medical office building, and an Ohio Department of Transportation (ODOT) highway outpost (Photograph 8) are located just west of the Property.

5.0 JURISDICTIONAL WATERS OF THE U.S. OPINION

No streams are mapped on the Property on the USGS Pataskala, Ohio Quadrangle topographic map (Appendix A). No wetlands are indicated on the National Wetlands

Inventory map (Pataskala, Ohio quadrangle). No indications of potential jurisdictional waters of the U.S. (streams/wetlands) or isolated wetlands were observed on the site.

6.0 CONCLUSIONS AND RECOMMENDATIONS

BBCM has performed a Phase I ESA for the Osborn Site located in the northeastern quadrant of the intersection of State Route 310 and Refugee Road in Pataskala, Licking County, Ohio. The Phase I ESA was completed in general accordance with the scope and limitations set forth in ASTM Designation E 1527-00. There were no exceptions to or deletions from this standard.

Aerial photographs, historical maps, and an interview with the Property owner indicate the Property was used for agricultural purposes since at least 1909. This Phase I ESA has revealed the following potential "recognized environmental conditions" in connection with the Property.

Leaking Underground Storage Tank (LUST)

One Leaking Underground Storage Tank (LUST) listing is located adjacent to the east side of the Property. The facility has been issued a status of "no further action" (NFA) by the Bureau of Underground Storage Tank Regulations (BUSTR) indicating that further corrective actions are not required for the incident. Based on the NFA status of the listing, it is believed the potential for the listing to impact the Property is low; however, based on the level of comfort desired BBCM can provide a proposal and cost estimate to review the incident files at BUSTR and/or for the performance of the Limited Phase II ESA including soil borings with soil and/or groundwater analysis for common petroleum constituents.

7.0 LIMITATIONS

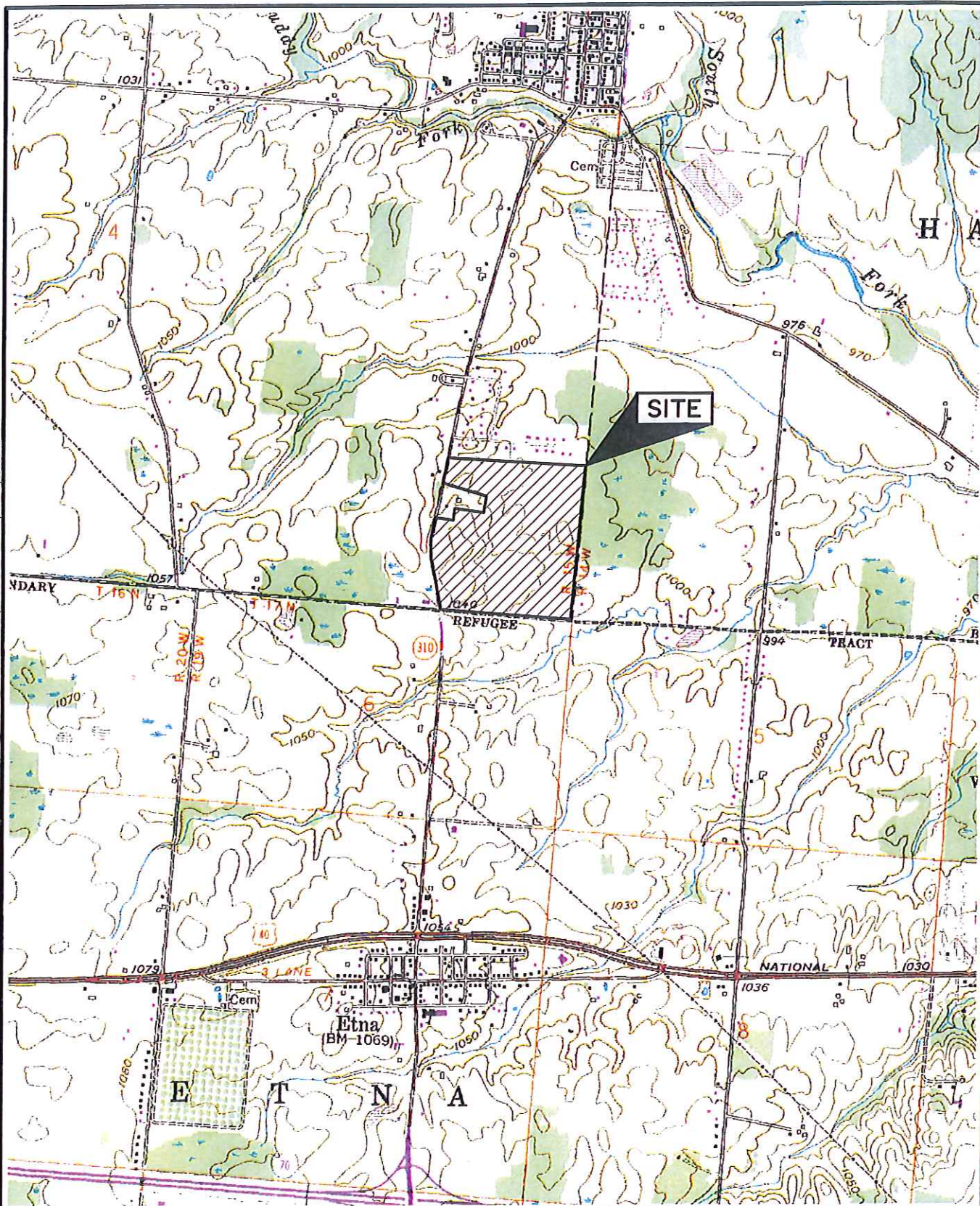
This Phase I ESA is limited in scope to the specific terms of the agreement previously entered into between BBCM and Southgate Corporation. While BBCM has made every reasonable effort to ensure the accuracy and completeness of the information contained in this report, BBCM is not the guarantor, and makes no warranty, express or implied with respect to the information related to the records reviews conducted for this investigation, since this information is collected, maintained, and provided by federal, state, and local government agencies. BBCM shall not be liable for any damage, consequential or otherwise, caused by or resulting from the information and/or conclusions contained herein, except for damage resulting from the negligence of BBCM.

The ownership history information was obtained from a cursory review of public records. BBCM is not a professional title insurance firm and makes no warranty, express or implied, that the ownership history is a legally defensible or insurable comprehensive delineation of past ownerships. This report represents the Property conditions as of the date issued. BBCM has no responsibility for updating the information herein, and

therefore, it should not be assumed that the information contained herein continues to be accurate subsequent to the date of this report.

This report is intended solely for the use of Southgate Corporation and may not be relied upon or disseminated to any third person or entity, other than a legal representative or commercial financial institution or other lender providing financing for the acquisition or improvement subject to this report at the time this report is issued without the express written permission of BBCM.

APPENDIX A



VICINITY MAP

Osborn Site
Pataskala, Licking County, Ohio

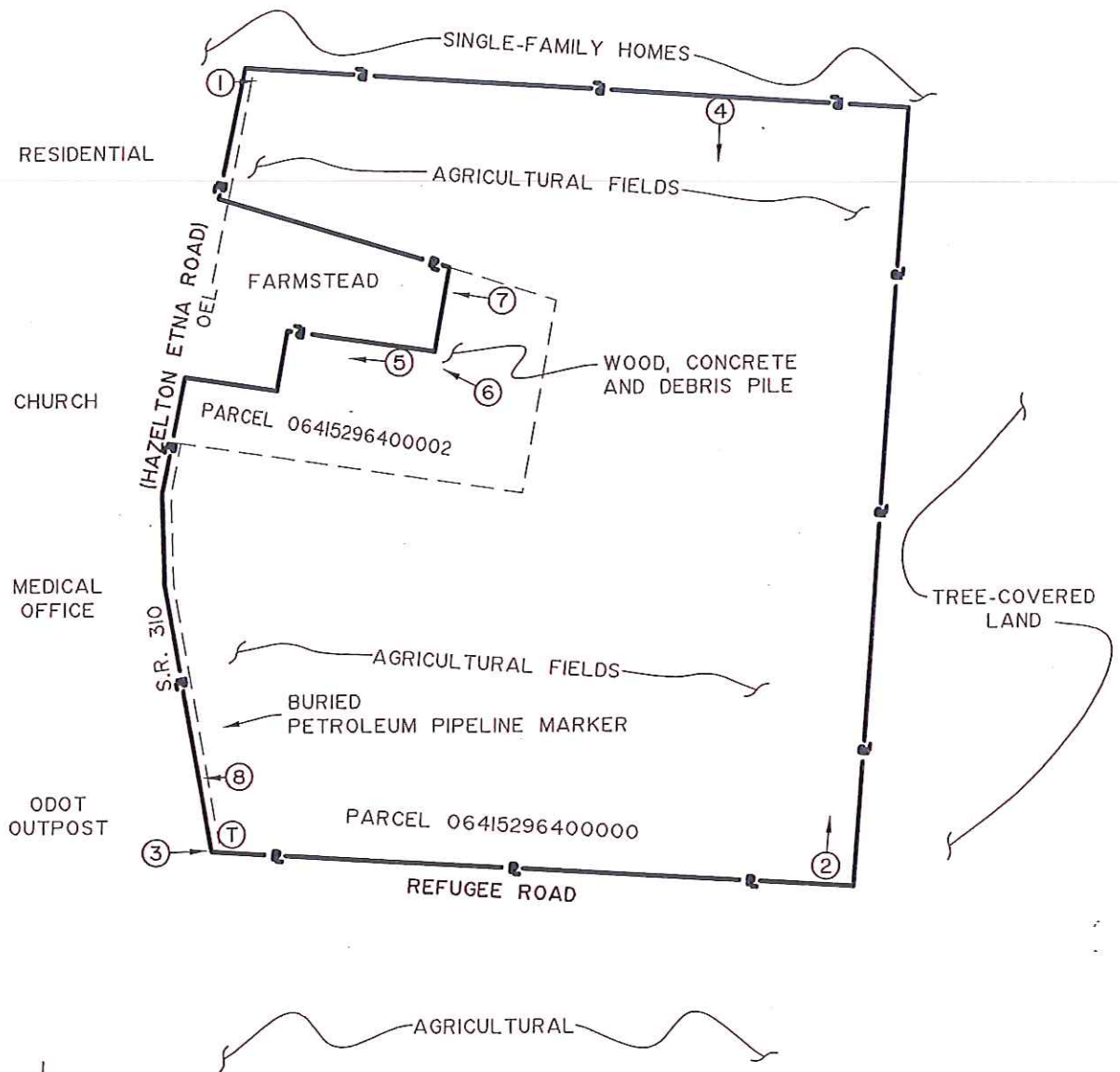
BBCM

Columbus
(614) 793-2226
Cleveland
(440) 585-9995
Cincinnati
(513) 771-8471
Dayton
(937) 424-1011




Project: 015-00141-000	Drawn By: TIS
Drawing Date: 01/31/06	Approved By: EPS
Revision Date:	Scale: 1" = 2000'

USGS Quad Name: Pataskala Quad

BBCBM Filename: I:\DEPT\TS\CADD\Drawings\Projects\015-00141-000\015-00141-000A020.dwg Tab:8.5x1P Plot Date:Feb 08, 2006 4:08pm By:BRush



LEGEND

-  PROPERTY LINE
-  POLE-MOUNTED ELECTRICAL TRANSFORMER
-  PHOTOGRAPH LOCATION, ID AND ORIENTATION

SITE PLAN

OSBORN SITE
PATASKALA, LICKING COUNTY, OHIO

Project: 015-00141-000 Drawn By: TIS

Drawing Date: 02/03/06 Approved By: EPS

Revision Date: Scale: 1"=500'

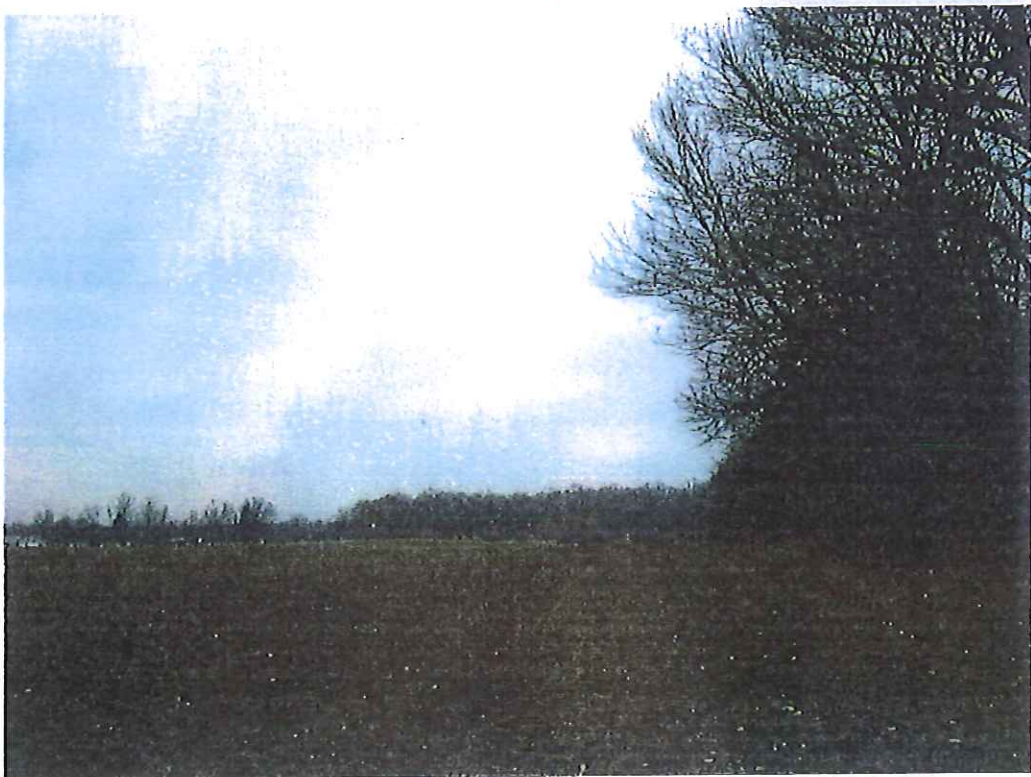
BBCM

Columbus
(614) 793-2226
Cleveland
(440) 585-9995
Cincinnati
(513) 771-6471
Dayton
(937) 424-1011

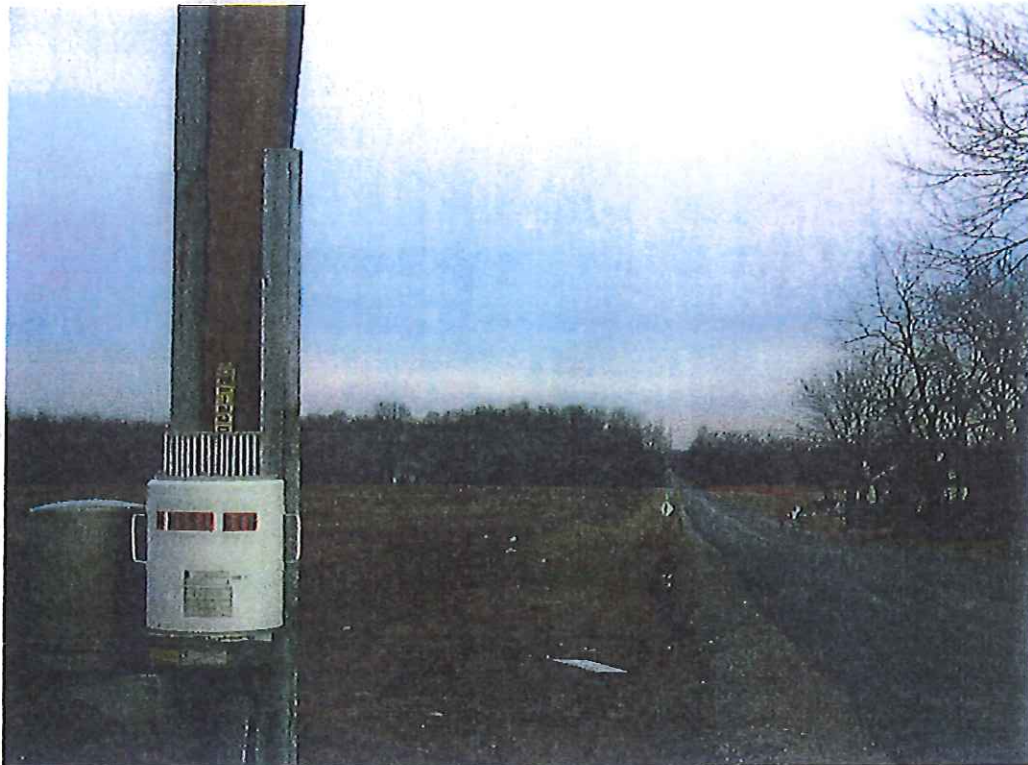
APPENDIX B



PHOTOGRAPH 1
View of the northwestern portion of the Property



PHOTOGRAPH 2
View of the southeastern portion of the Property



PHOTOGRAPH 3

View of the southwestern corner of the Property along Refugee Road



PHOTOGRAPH 4

View of the north-central portion of the Property



PHOTOGRAPH 5
View of the west-central portion of the Property



PHOTOGRAPH 6
A small debris pile on the west central portion of the Property



PHOTOGRAPH 7

View of the farmstead located along the west side of the Property



PHOTOGRAPH 8

View of the ODOT outpost located west of the south side of the Property

APPENDIX C



Licking County
J. Terry Evans, Auditor
Michael L. Smith, Treasurer

Site Provided by...
 governmax.com T1.11

Summary



Owner(Current)
 2 of 3

Parcel Info

Summary

Transfer
 Billing

Search By

Parcel ID
 Owner
 (Current)
 Address
 Legal

Site Functions

Property Search
 On-Line Help
 Home
 County Website

Parcel ID	Address	Index Order	Card
06415296400002	8049 HAZELTON ETNA RD	Owner(Current)	1 of 1

Summary

Property Location 8049 HAZELTON ETNA RD

Tax District 064 PATASKALA SW-LK LSD-WLJFD
 Land Use 111 CAUV general farm
 Neighborhood 7700 Pataskala-Vil-Maps 7 & 8
 Acres 10.000

Legal Description
 Property Information
 LOT 6 PT 10.00 AC

Owner Information
 Owner Information
 OSBORN BONNIE M TRUSTEE
 8049 HAZELTON ETNA RD
 PATASKALA, OH 43062 USA

Mail Information
 OSBORN BONNIE M TRUSTEE
 8049 HAZELTON ETNA RD
 PATASKALA, OH 43062 USA

Assessment Info

Board of Revision No
 Homestead/Disability No
 2.5% Reduction Yes
 Divided Property No
 New Construction No
 Foreclosure No
 Other Assessments No
 Front Ft. 0

Mkt Land Value \$95,000
 Cauv Value \$31,860
 Mkt Improvement Value \$97,800
 Total Value \$129,660
 Taxes Paid \$0.00

Recent Sale

Valid Sale No
 No. of Parcels 1
 Deed Type 117
 Sale Amount \$0

Sale Date 7/10/1998
 Conveyance No. 99999
 Deed Number

Other notes

[Back to List](#) | [<< First](#) [< Previous](#) [Next >](#) [Last >>](#)

User ID : Licking

Legal disclaimer / Privacy Statement / countystatement

Data updated on 01/30/2006



Licking County
J. Terry Evans, Auditor
Michael L. Smith, Treasurer

Site Provided by...
 governmax.com T1.14

Summary



Owner(Current)
1 of 3

Parcel Info

Summary

Transfer

Billing

Search By

Parcel ID

Owner

(Current)

Address

Legal

Site Functions

Property Search

On-Line Help

Home

County Website

Parcel ID Address
 06415296400000 HAZELTON ETNA RD

Index Order
 Owner(Current)

Card
 1 of 1

Summary
 Property Location HAZELTON ETNA RD

Tax District 064 PATASKALA SW-LK LSD-
 WLJFD
 Land Use 110 CAUV Vacant land
 Neighborhood 7700 Pataskala-Vil-Maps 7 & 8
 Acres 82.550

Legal Description
 Property Information
 LOT 6 PT DEFERRED S/A T-8
 217 & T-8187

Owner Information
 Owner Information
 OSBORN BONNIE M TRUSTEE
 8049 HAZELTON ETNA RD S W
 PATASKALA, OH 43062 USA

Mail Information
 OSBORN BONNIE M TRUSTEE
 8049 HAZELTON ETNA RD S W
 PATASKALA, OH 43062 USA

Assessment Info
 Board of Revision No
 Homestead/Disability No
 2.5% Reduction No
 Divided Property No
 New Construction No
 Foreclosure No
 Other Assessments No
 Front Ft. 0

Mkt Land Value \$1,209,600
 Cauv Value \$13,000
 Mkt Improvement Value \$0
 Total Value \$13,000
 Taxes Paid \$0.00

Recent Sale
 Valid Sale No
 No. of Parcels 0
 Deed Type 0
 Sale Amount \$0

Sale Date
 Conveyance No.
 Deed Number

Other notes

[Back to List](#) | << First < Previous [Next](#) > Last >>

User ID : Licking

Legal disclaimer / Privacy Statement / countystatement

Data updated on 01/30/2006



Licking County
J. Terry Evans, Auditor
Michael L. Smith, Treasurer

Site Provided by...
 governmax.com T1.11

Transfer



Owner(Current)
 2 of 3

Parcel Info

Summary
 Transfer
 Billing

Parcel ID
 06415296400002

Address
 8049 HAZELTON ETNA RD

Index Order
 Owner(Current)

Card(s)
 1

Transfer History

Search By

Parcel ID
 Owner
 (Current)
 Address
 Legal

Sale Price	Sale Date	Current Owner	Validity of Sale
\$0	7/10/1998	OSBORN BONNIE M TRUSTEE	3
\$0	9/19/1997	OSBORN BONNIE M	3

Site Functions

Property Search
 On-Line Help
 Home
 County Website

[Back to List](#) | [<< First](#) [< Previous](#) [Next >](#) [Last >>](#)

User ID : Licking

Legal disclaimer / Privacy Statement / countystatement

Data updated on 01/25/2006

**Water Well Log and Drilling Report**

Ohio Department of Natural Resources
Division of Water
Phone: 614-265-6740 Fax: 614-265-6767

Well Log Number: 353887

ORIGINAL OWNER AND LOCATION

Original Owner Name: *CARL SMOKE*
County: *LICKING*
Address: *ST RT HAZELTON-ETNA*
City:
Location Number: *400*
Latitude:

Township: *LIMA*

State: *OH*
Location Map Year: *1985*
Longitude:

Section Number:
Lot Number:
Zip Code:
Location Area:

CONSTRUCTION DETAILS

Borehole Diameter:
Casing Diameter: *5.5 in.*
Well Use:
Aquifer Type: *SAND AND GRAVEL*

Depth to Bedrock:
Casing Thickness:
Screen Length:
Driller's Name: *VOLLMUTH RAYMOND A*

Total Depth: *160 ft.*
Casing Length: *160 ft.*
Date of Completion: *11/5/1966*

WELL TEST DETAILS

Static Water Level: *68 ft.*
Drawdown: *77 ft.*

Test Rate: *10 gpm*
Test Duration: *4 hrs.*

Associated Reports
NONE

COMMENTS:**WELL LOG**Formations

YEL CLAY
GRY CLAY
YEL SAND & GRAVEL
WATER AT

From To

0 - 15
15 - 141
141 - 160
160 - 160

[Printing Tips](#) (opens in new window)

OR use your browsers back button to see the last list of addresses or roads.

[Well log questions](#) - [Web site questions](#) - [Web policies](#)



Water Well Log and Drilling Report

Ohio Department of Natural Resources
Division of Water
Phone: 614-265-6740 Fax: 614-265-6767

Well Log Number: 894383

ORIGINAL OWNER AND LOCATION

Original Owner Name: CITY OF PATASKALA

County: LICKING

Township: LIMA

Address: 7024 HAZELTON-ETNA ROAD

City: PATASKALA

State: OH

Location Number:

Location Map Year:

Latitude:

Longitude:

Section Number:

Lot Number:

Zip Code: 43062

Location Area:

CONSTRUCTION DETAILS

Borehole Diameter:

Depth to Bedrock:

Total Depth: 87 ft.

Casing Diameter: 16 in.

Casing Thickness: 0.38 in.

Casing Length: 30 ft.

Well Use: MUNICIPAL

Screen Length: 18 ft.

Date of Completion: 10/30/2000

Aquifer Type: TOP SOIL

Driller's Name: G.M. BAKER & SON

WELL TEST DETAILS

Static Water Level: 30 ft.

Test Rate: 528 gpm

Associated Reports

Drawdown: 35 ft.

Test Duration: 24 hrs.

NONE

COMMENTS:

WELL LOG

Formations

TOP SOIL

From To

0 - 2

BRN SILTY CLAY & GRAVEL

2 - 17

COBBLES

17 - 17

SEAM GRAVEL & SILT

17 - 69

GRY SILTY CLAY/SAND/GRAVEL

69 - 69

SILTY SAND

69 - 85

COBBLES

85 - 85

GRY SAND & GRAVEL

85 - 85

GRY SILTY GRAVEL & SAND

85 - 88

COBBLES

88 - 88

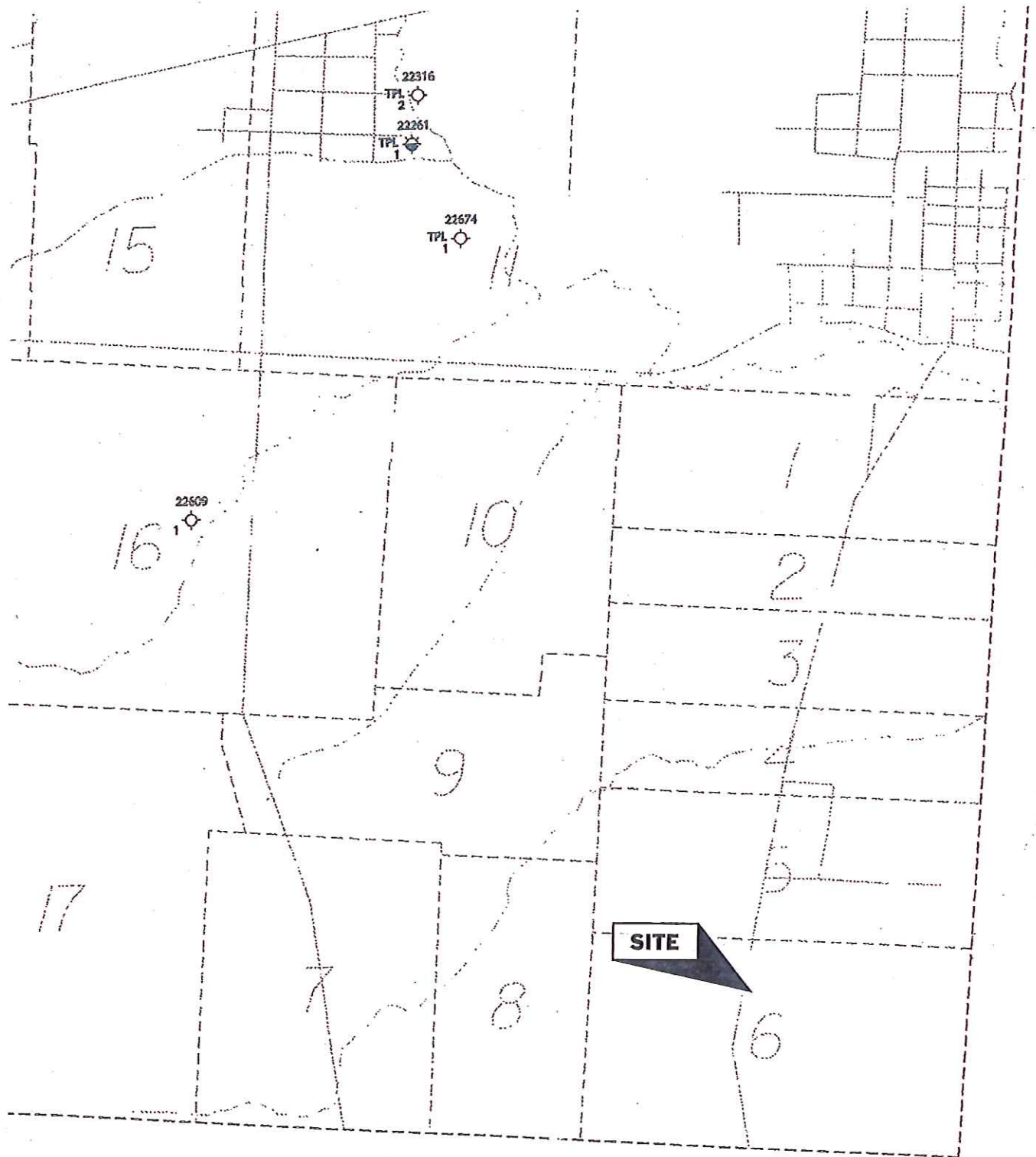
GRY GRAVEL & SAND

88 - 88

[Printing Tips](#) (opens in new window)

OR use your browsers back button to see the last list of addresses or roads.

[Well log questions](#) - [Web site questions](#) - [Web policies](#)

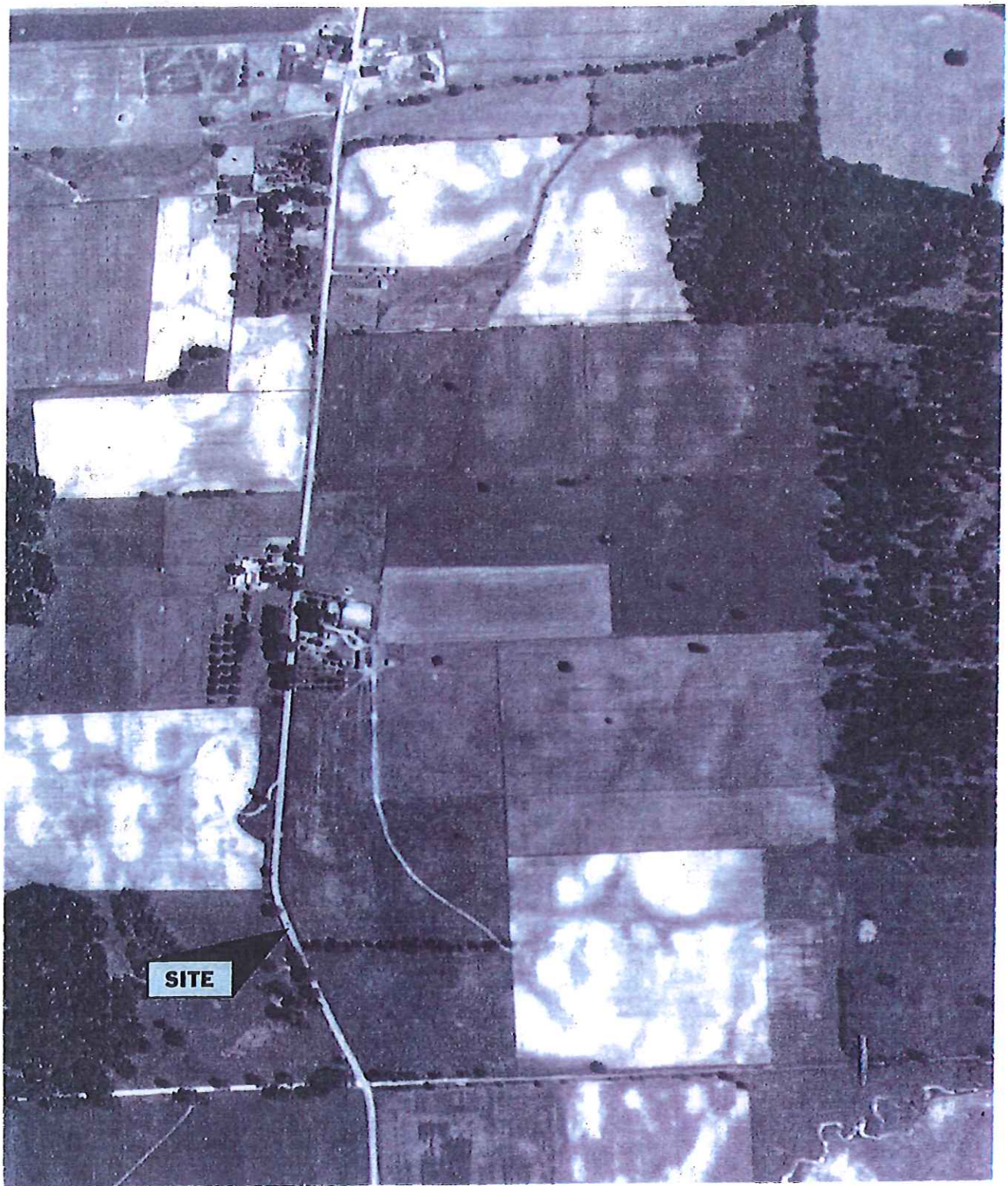


OIL & GAS WELL MAP
Osborn Site
Pataskala, Licking County, Ohio
Scale: 1 inch = 1,320 feet

Source: Ohio Department of Natural Resources, Division of Geological Survey



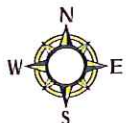
APPENDIX D



1940 AERIAL PHOTOGRAPH

**Osborn Site
Pataskala, Licking County, Ohio**

Source: Licking County Soil and Water Conservation District





1950-51 AERIAL PHOTOGRAPH

**Osborn Site
Pataskala, Licking County, Ohio**

Source: Licking County Soil and Water Conservation District

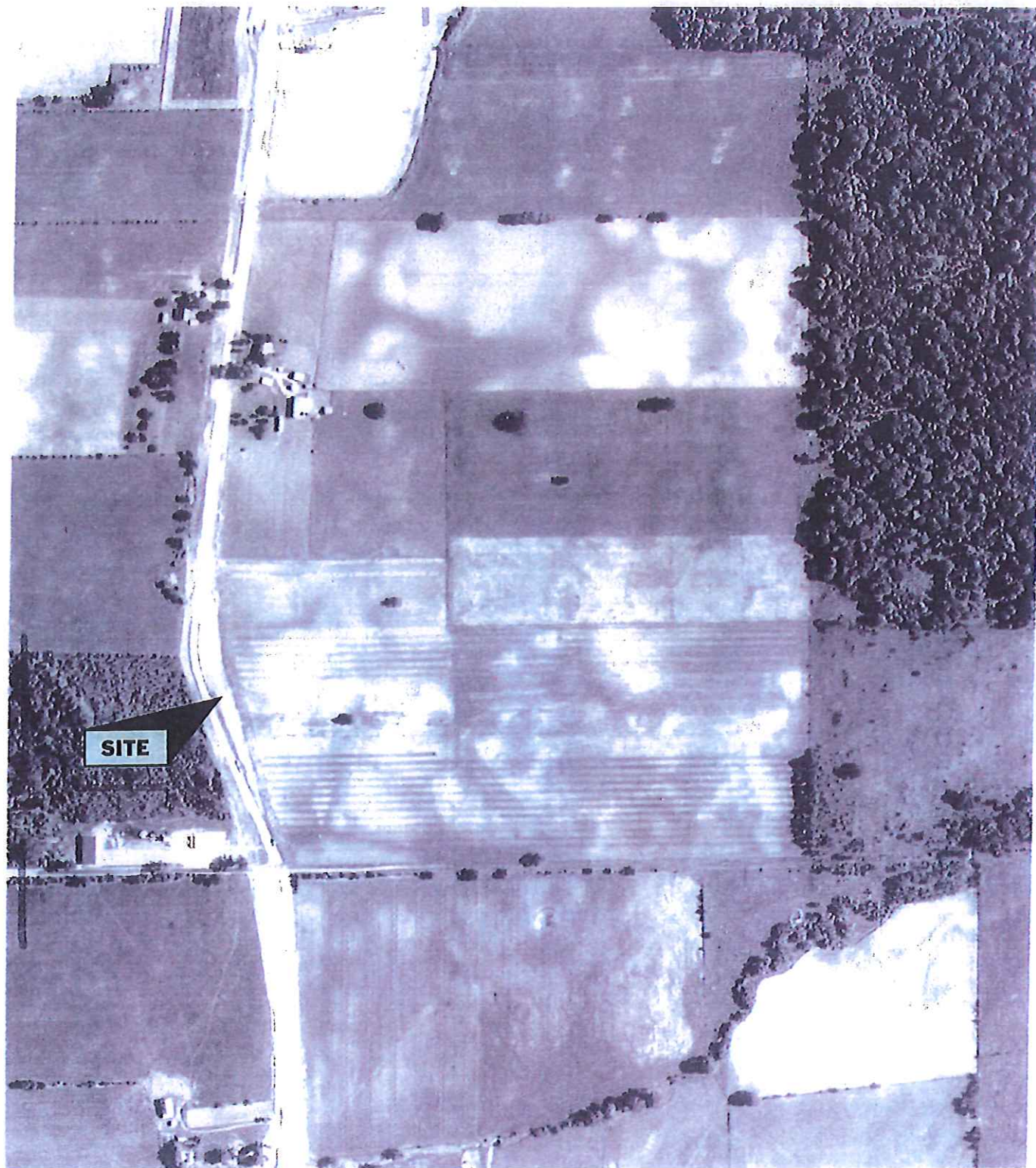




1958 AERIAL PHOTOGRAPH
Osborn Site
Pataskala, Licking County, Ohio

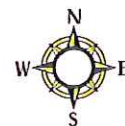
Source: Licking County Soil and Water Conservation District





1964 AERIAL PHOTOGRAPH
Osborn Site
Pataskala, Licking County, Ohio

Source: Licking County Soil and Water Conservation District



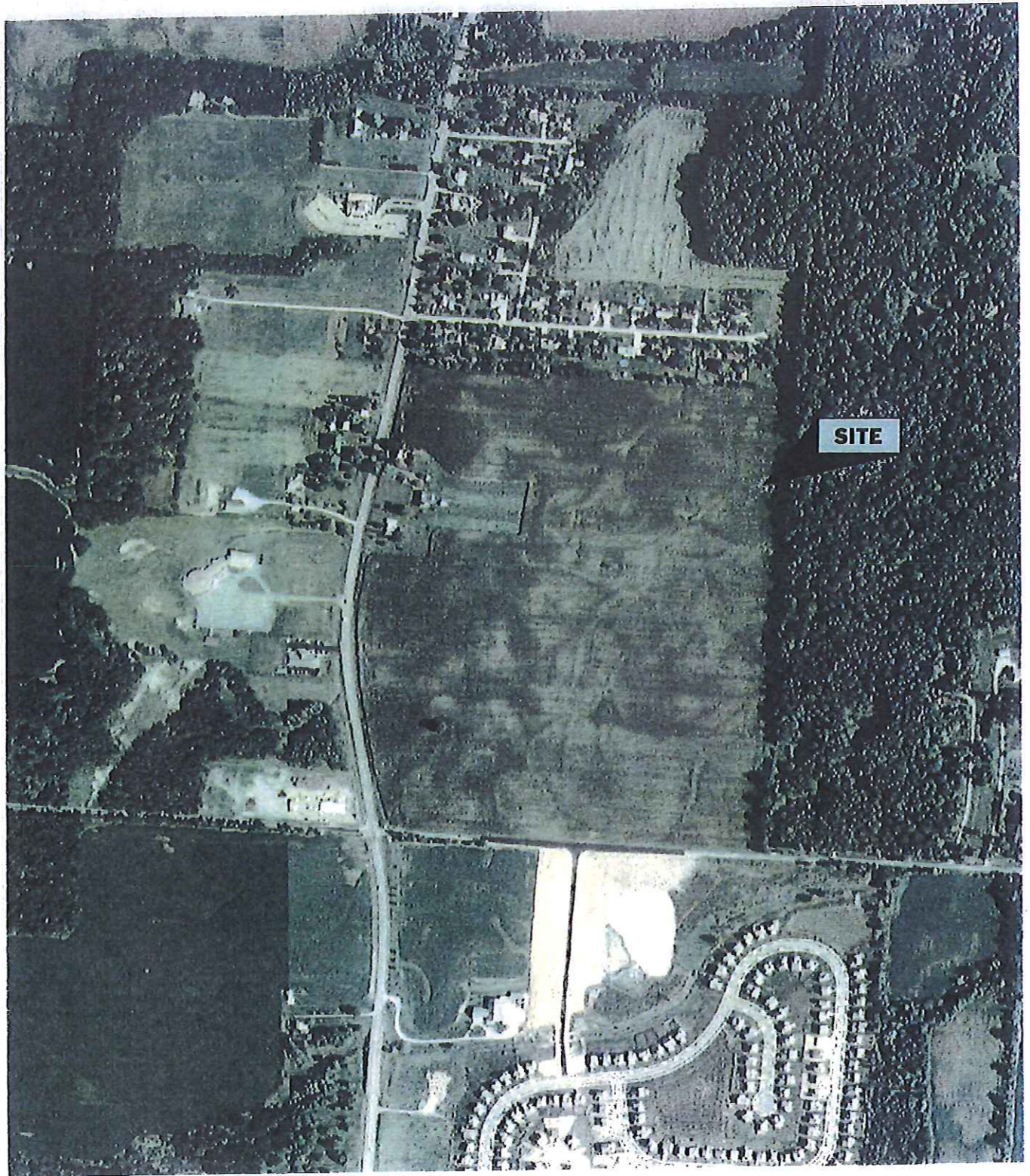


1989 AERIAL PHOTOGRAPH

**Osborn Site
Pataskala, Licking County, Ohio**

Source: Licking County Soil and Water Conservation District





2004 AERIAL PHOTOGRAPH
Osborn Site
Pataskala, Licking County, Ohio

Source: Licking County Soil and Water Conservation District





EDR® Environmental
Data Resources Inc

"Linking Technology with Tradition"®

Sanborn® Map Report

Ship To: Eric P. Slosser
BBC & M Engineering,
6190 Enterprise Court
Dublin, OH 43017

Order Date: 1/26/2006 **Completion Date:** 1/26/2006

Inquiry #: 1601034.2

P.O. #: na

Site Name: Osborn Property

Address: 111 Basin Street

City/State: Hebron, OH 43025

Customer Project: na

1011583TIM 614-793-2226

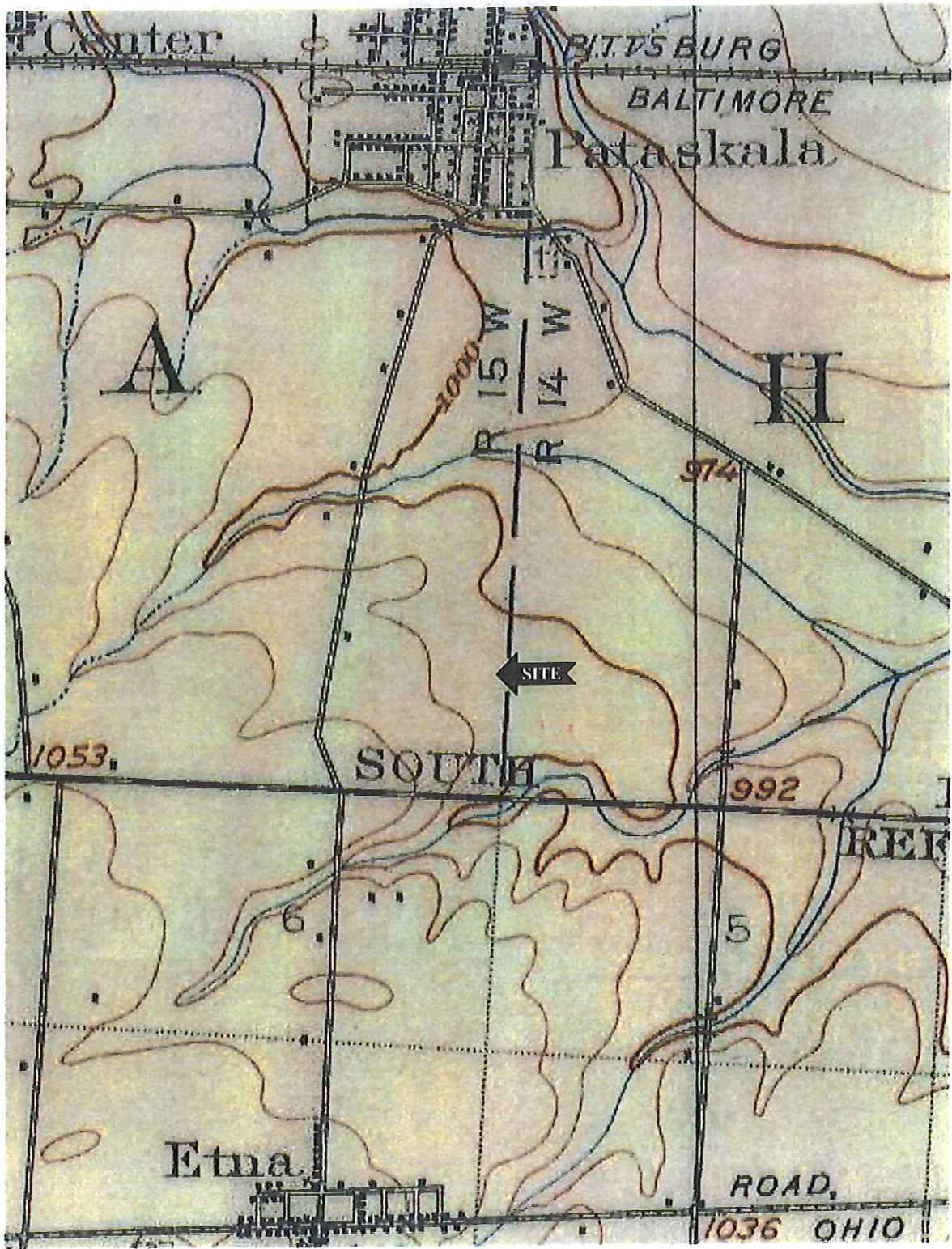
Cross Streets:

This document reports that the largest and most complete collection of Sanborn fire insurance maps has been reviewed based on client supplied information, and fire insurance maps depicting the target property at the specified address were not identified.

NO COVERAGE

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report AS IS. Any analyses, estimates, ratings, or predictions of environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

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1909 USGS TOPOGRAPHIC MAP

Osborn Site

Pataskala, Licking County, Ohio



APPENDIX E

BBC&M ENGINEERING, INC.

6190 Enterprise Court • DUBLIN, OHIO • 43016-7297
8555 Sweet Valley Drive, Suite S • VALLEY VIEW, OHIO • 44125-4254
11699 Chesterdale Road • CINCINNATI, OHIO • 45246-3917
6272 Executive Boulevard • HUBER HEIGHTS, OHIO • 45424-1424

DOCUMENTATION MEMO

Date: 2/3/06 Time: 9:20 Job Number: 015-00141-000

() Phone Call From (☒) Phone Call To

Bonnie Osborn
Name

Title

Organization

(740) 927-3463
Phone Number

() Meeting () Location

Attendee


Organization

Remarks:

- No USTs or ASTs currently on the site or removed from the site.
- The site has always been used for agriculture, no buildings were ever on the site.
- No water wells, oil/gas wells, septic systems, or cisterns on the site.
- The site has not been used for automotive repairs, land filling, or as a shooting range.
- No OEPA or health dept. violations or citations.
- No prior Environmental Investigations at the site.
- Hazardous materials have not been used, stored, or disposed on site.
- No knowledge of waste disposal or contaminated soil on site.

Action Steps and Person Responsible

Copies to:

Signed: 



BBC&M ENGINEERING, INC.

6190 Enterprise Court, Dublin, Ohio 43016-7297
Phone (614) 793-2226 Fax (614) 793-2410

January 26, 2006
015-00141-000

Mr. Jeff Walker
Licking County EMA
155 East Main Street
Newark, Ohio 43055
Fax: (740) 349-6442

Re: Phase I Environmental Site Assessment
Osborn Site
Pataskala, Licking County, Ohio

Mr. Fisher:

BBC&M Engineering, Inc. (BBCM) is currently performing a Phase I Environmental Site Assessment of a property located in the northeast quadrant of the intersection of State Route 310 (Hazelton Etna Road) and Refugee Road (addressed as 8049 Hazelton Etna Road) in Pataskala, Licking County, Ohio. We would like to know if your office has records of any responses, spills, releases, underground storage tanks, or environmental problems concerning the referenced property.

We appreciate your help with this determination and would like to thank you for your time and consideration. If you have any questions with regard to this request, please do not hesitate to contact this office at (614) 793-2226.

Sincerely,

BBC&M ENGINEERING, INC.
Dublin, Ohio

A handwritten signature in dark ink, appearing to read "Eric P. Slosser". The signature is fluid and cursive.

Eric P. Slosser
Project Environmental Scientist

Licking County Office of Homeland Security and Emergency Management

155 E. Main Street, Newark, Ohio 43055 • Office (740) 349-6437 Fax (740) 349-6442



Hazardous
Materials



Severe
Weather

RECEIVED

JAN 30 2006

BBC&M

January 26, 2006

Mr. Eric P. Slosser, Project Environmental Scientist
BBC & M Engineering, Inc.
6190 Enterprise Court
Dublin, Ohio 43016-7297

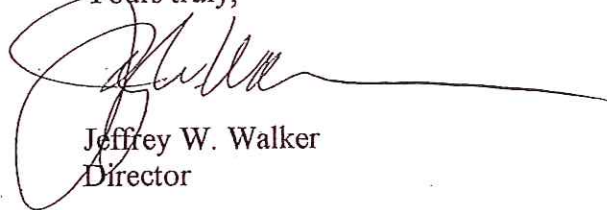
Dear Mr. Slosser,

RE: Phase I Environmental Site Assessment
Osborn Site
Pataskala, Licking County, Ohio

Our agency has no reports on file of any responses, spills, releases, underground storage tanks, or environmental problems on or near this property. This does prevent other local, state, and federal agencies from have response reports related to this location

If we may be of further assistance, please contact our office.

Yours truly,



Jeffrey W. Walker
Director



BBC&M ENGINEERING, INC.

6190 Enterprise Court, Dublin, Ohio 43016-7297
Phone (614) 793-2226 Fax (614) 793-2410

January 16, 2006
015-00141-000

Mr. Chad Brown
Licking County Health Department
675 Price Road
Newark, Ohio 43055
Fax: (740) 349-6510

Re: Phase I Environmental Site Assessment
Osborn Site
Pataskala Licking Co., Ohio

Mr. Brown:

BBC&M Engineering, Inc. (BBCM) is currently performing a Phase I Environmental Site Assessment of a site located in the northeast quadrant of the intersection of State Route 310 (Hazelton Etna Road) and Refugee Road (addressed as 8049 Hazelton Etna Road) in Pataskala, Licking County, Ohio. We would like to know if your office has records of any complaints, violations, spills, historical uses, wells, septic systems, or environmental problems concerning the referenced property. A vicinity map illustrating the location of the property is attached.

We appreciate your help with this determination and would like to thank you for your time and consideration. If you have any questions with regard to this request, please do not hesitate to contact this office at (614) 793-2226.

Sincerely,

BBC&M ENGINEERING, INC.
Dublin, Ohio

A handwritten signature in cursive script that reads 'Eric P. Slosser'.

Eric P. Slosser
Project Environmental Scientist

Attachment: Vicinity Map

675 Price Road
Newark, OH 43055
740-349-6535
740-349-6510 Fax

**Licking County
Health Department**

Fax

To: Eric P. Slosser

From: Richele Piper

Fax: 1-614-793-2410

Pages: 2

Phone:

Date: 2-02-06

Re: File search

CC:

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

◆ **Comments:**

I could not find any information in our files re: the property site on 310 and Refugee Rd. (8049 Hazelton-Etna Rd) in Pataskala. Please let me know if I can be of any further assistance.

Best regards,

Richele Piper

Sanitarian-in-Training

Phone: 740-349-6505

Email: rpiper@lickingcohealth.org



BBC&M ENGINEERING, INC.

6190 Enterprise Court, Dublin, Ohio 43016-7297
Phone (614) 793-2226 Fax (614) 793-2410

January 26, 2006
015-00141-000

James P. Weber
West Licking Joint Fire District
851 East Broad Street
Pataskala, Ohio 43062
Fax (740) 964-6621

Re: Phase I Environmental Site Assessment
Osborn Site
Pataskala, Licking County, Ohio

Mr. Weber:

BBC&M Engineering, Inc. (BBCM) is currently performing a Phase I Environmental Site Assessment of a property located at located in the northeast quadrant of the intersection of State Route 310 (Hazelton Etna Road) and Refugee Road (addressed as 8049 Hazelton Etna Road) in Pataskala, Licking County, Ohio. We would like to know if your office has records of any responses, spills, releases, underground storage tanks, or environmental problems concerning the referenced property. Attached is a Vicinity Map illustrating the location of the Property.

We appreciate your help with this determination and would like to thank you for your time and consideration. If you have any questions with regard to this request, please do not hesitate to contact this office at (614) 793-2226.

Sincerely,

BBC&M ENGINEERING, INC.
Columbus, Ohio

A handwritten signature in dark ink, appearing to read "Eric P. Slosser". The signature is fluid and cursive, written over a horizontal line.

Eric P. Slosser
Project Environmental Scientist

Attachment: Vicinity Map

BBC&M ENGINEERING, INC.

6190 Enterprise Court • DUBLIN, OHIO • 43016-7297
8555 Sweet Valley Drive, Suite S • VALLEY VIEW, OHIO • 44125-4254
11699 Chesterdale Road • CINCINNATI, OHIO • 45246-3917
6272 Executive Boulevard • HUBER HEIGHTS, OHIO • 45424-1424

DOCUMENTATION MEMO

Date: 1/27/06

Time: 11:24

Job Number: 015-03141-000

(☒) Phone Call From () Phone Call To

Richard Sellers

Name

Title

West Licking Fire

Organization

(740) 927-8600

Phone Number

() Meeting () Location

Attendee

Organization

Remarks:

The fire Department has no record of Environmental problems at the
site

-The site is open farm fields

Action Steps and Person Responsible

Copies to:

Signed: JRS



ERIC P. SLOSSER

PROJECT ENVIRONMENTAL SCIENTIST

PROFESSIONAL EXPERIENCE AND RESPONSIBILITIES

SPECIALTIES

Phase I Environmental Site Assessment
Phase II Environmental Site Assessment
Asbestos Inspection
Categorical Exclusion Document Preparation
Environmental Screening
National Environmental Policy Act Site Assessment
Underground Storage Tank Closure
Lead-Based Paint Inspection
Bulk Solids Flow Testing

WORK HISTORY

BBC&M Engineering, Inc.
Since 1999, Project Environmental Scientist
1992 to 1998, Staff Environmental Scientist
1991 to 1992, Laboratory Technician

EDUCATION

The Ohio State University
B.S. Natural Resource Development – Specializing in Monitoring and Assessment, 1991

PROFESSIONAL ACCREDITATION AND MEMBERSHIPS

Certified Asbestos Hazard Evaluation Specialist, 1993
Certified Lead Risk Assessor, 1997
OSHA 40-Hour Hazardous Waste Operation
ODOT CE Training (10/04/02)
ODOT Section 106/National Register Eligibility Training (01/29/03)
ACGIH Membership

Phase I Environmental Site Assessment (ESA)

Conducts site reconnaissance, interviews, record reviews, historical research, file reviews, and report writing for Phase I ESAs.

Phase II Environmental Site Assessment (ESA)

Designs programs for investigating potential soil and groundwater contamination. Collects soil and groundwater samples, logs and ships samples, assigns laboratory analysis, interprets and reports analytical results.

Asbestos Inspections and Management Planning

Performs field observation, sample collection, sample handling, analytical assignment, data interpretation, and report preparation for asbestos-containing material investigations.

Groundwater and Surface Water Monitoring

Experience includes sampling, preserving, shipping, and record keeping for groundwater and surface water monitoring. Measures groundwater levels and assists in aquifer tests.

Categorical Exclusion (CE) Document Preparation

Works with government agencies, local organizations, special interest groups, and property owners to complete the ODOT CE documentation.

Environmental Screenings

Conducts field investigations, record reviews, historical research, and prepares reports for ODOT Environmental Screenings.

National Environmental Policy Act (NEPA) Site Assessment

Conducts field investigation, interviews, records research, site history investigation, environmental justice compliance and report preparation for NEPA site assessment.

Underground Storage Tank (UST) Closures

Conducts field work, sample collection, assigns sample analysis, and report preparation for UST removal.

Bulk Solids Flow Testing

Conducts flowability strength, linear friction, and compressibility tests of various bulk solids. Reduces data for use in configuring bin and silo hoppers.

Partial List of Project Experience

-Proposed Broadway Commerce Park, Ph. I ESA, Grove City, OH
-Garfield Tower, Ph. I ESA, Cincinnati, OH
-Former Globe Iron Furnace, Phase II ESA, Jackson, OH
-Tipton Salvage Yard, Ph. II ESA, Belmont County
-Three Monticello Warehouses, Asbestos Survey, South Euclid, OH
-Proposed Alum Creek Marina, NEPA Site Assessment, Delaware County, OH



MARY E. SHARRETT, P.E.
ASSOCIATE/SENIOR ENGINEER/
ENVIRONMENTAL MANAGER

PROFESSIONAL EXPERIENCE AND RESPONSIBILITIES

SPECIALTIES

Environmental Site Assessments
Subsurface Investigations
Underground Storage Tank
Closures
Petroleum Underground Storage
Tank Release Compensation
Board Reimbursement
Asbestos Inspections

WORK HISTORY

BBC&M Engineering, Inc.

Since 2005, Environmental
Manager/Senior Engineer
2002 to 2004 Environmental
Manager/Project Engineer
1999 to 2002, Project Engineer
1996 to 1998, Staff
Environmental Engineer

H. C. Nutting Company

1993 to 1996, Staff Engineer
and Project Manager

Paul C. Rizzo Associates

1990 to 1992, Environmental
Engineer

**Ohio Environmental Protection
Agency**

1989 to 1990, Wastewater
Specialist for Water Pollution
Control Division

EDUCATION

University of Cincinnati

B.S. Civil Engineering, 1993

**PROFESSIONAL
ACCREDITATION AND
MEMBERSHIPS**

Professional Engineer, Ohio
American Society of Civil
Engineers

OSHA 40-Hour Hazardous Waste
Operations Training

Certified Asbestos Inspector /
Management Planner, Ohio
USACE Wetland Delineation
Training Course

ODOT Categorical Exclusion
Training 10/4/02

ODOT Section 4f Training 3/4/03

ODOT Section 106 Training
11/19/02

ODOT NEPA Training 3/17-
28/03

**Phase I Environmental Site
Assessments (ESA)**

Performs all aspects of Phase I ESA
preparation and reporting and meets the
definition of environmental professional
as defined in AAI.

Environmental Screenings

Conducts field investigations, record
reviews, historical research, and prepares
reports for ODOT Environmental
Screenings.

**National Environmental Policy Act
(NEPA) Site Assessment**

Conducts field investigation, interviews,
records research, site history
investigation, environmental justice
compliance and report preparation for
NEPA site evaluation.

**Phase II Environmental Site
Assessments**

Conducts environmental site assessments
and subsurface investigations for soil and
groundwater contamination. Responsible
for record reviews, interviews, site
reconnaissance, and report preparation.
Develops sampling and analysis plans,
and interprets analytical results for
determination of extent of contaminant
migration. Supervises ground penetrating
radar (GPR) and magnetometer surveys
where buried USTs and/or foundations
are suspected.

Hydrology

Directs and supervises installation of
monitoring well systems in
unconsolidated material. Logs geologic
parameters for drilling methods by
hollow-stem auger, water rotary, and
geoprobe methods.

Wetland/Ecological Surveys

Oversees staff and senior scientists and
biologists conducting wetland
determinations, delineations, stream
assessments, and ecological surveys.
Assists with nationwide, isolated and
individual 401/404 permits through the
OEPA and USACE.

**Underground Storage Tank (UST)
Closures**

Supervises removal of regulated UST's
and prepares closure reports. Conducts
and prepares Site Assessments and
Remedial Action Plans. Prepares
submittals to the Petroleum UST Release
Compensation Board (PUSTRCB) for
reimbursement of funds.

**Asbestos Inspections and
Management Planning**

Conducts asbestos surveys, including
records reviews, building inspections, and
sampling. Assesses the conditions of
asbestos-containing materials.

Geotechnical Investigations

Conducts subsurface investigations and
site reconnaissance for residential and
commercial buildings. Responsible for
supervising drilling and sampling
procedures, determining boring locations
and elevations and preparing geotechnical
engineering reports. Compiles and
analyzes subsurface information and
makes recommendations for design of
shallow and deep foundations for
commercial, transportation, and
residential projects.

APPENDIX F



EDR® Environmental
Data Resources Inc

The EDR Radius Map™ Report

**Osborn Property
111 Basin Street
Hebron, OH 43062**

Inquiry Number: 1601034.1s

January 26, 2006

The Standard in Environmental Risk Management Information

**440 Wheelers Farms Road
Milford, Connecticut 06461**

Nationwide Customer Service

**Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com**

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	6
Orphan Summary	7
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

GeoCheck - Not Requested

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

111 BASIN STREET
HEBRON, OH 43062

COORDINATES

Latitude (North):	39.975000 - 39° 58' 30.0"
Longitude (West):	82.677200 - 82° 40' 37.9"
Universal Transverse Mercator:	Zone 17
UTM X (Meters):	356775.1
UTM Y (Meters):	4426119.5
Elevation:	1010 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property:	39082-H6 PATASKALA, OH
Source:	USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

FEDERAL RECORDS

NPL.....	National Priority List
Proposed NPL.....	Proposed National Priority List Sites
Delisted NPL.....	National Priority List Deletions
NPL Liens.....	Federal Superfund Liens
CERCLIS.....	Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP.....	CERCLIS No Further Remedial Action Planned
CORRACTS.....	Corrective Action Report
RCRA-TSDF.....	Resource Conservation and Recovery Act Information
RCRA-LQG.....	Resource Conservation and Recovery Act Information

EXECUTIVE SUMMARY

RCRA-SQG.....	Resource Conservation and Recovery Act Information
ERNS.....	Emergency Response Notification System
HMIRS.....	Hazardous Materials Information Reporting System
US ENG CONTROLS.....	Engineering Controls Sites List
US INST CONTROL.....	Sites with Institutional Controls
DOD.....	Department of Defense Sites
FUDS.....	Formerly Used Defense Sites
US BROWNFIELDS.....	A Listing of Brownfields Sites
CONSENT.....	Superfund (CERCLA) Consent Decrees
ROD.....	Records Of Decision
UMTRA.....	Uranium Mill Tailings Sites
ODI.....	Open Dump Inventory
TRIS.....	Toxic Chemical Release Inventory System
TSCA.....	Toxic Substances Control Act
FTTS.....	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
SSTS.....	Section 7 Tracking Systems
PADS.....	PCB Activity Database System
MLTS.....	Material Licensing Tracking System
MINES.....	Mines Master Index File
FINDS.....	Facility Index System/Facility Registry System
RAATS.....	RCRA Administrative Action Tracking System

STATE AND LOCAL RECORDS

SHWS.....	This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.
DERR.....	Division of Emergency & Remedial Response's Database
TOWNGAS.....	DERR Towngas Database
MSL.....	Master Sites List
SWF/LF.....	Licensed Solid Waste Facilities
HIST LF.....	Old Solid Waste Landfill
UNREG LTANKS.....	Ohio Leaking UST File
UST.....	Underground Storage Tank Tank File
ARCHIVE UST.....	Archived Underground Storage Tank Sites
OH Spills.....	Emergency Response Database
ENG CONTROLS.....	Sites with Engineering Controls
INST CONTROL.....	Sites with Institutional Engineering Controls
VCP.....	Voluntary Action Program Sites
BROWNFIELDS.....	Ohio Brownfield Inventory
CDL.....	Clandestine Drug Lab Locations
USD.....	Urban Setting Designation Sites

TRIBAL RECORDS

INDIAN RESERV.....	Indian Reservations
--------------------	---------------------

EDR PROPRIETARY RECORDS

Manufactured Gas Plants...	EDR Proprietary Manufactured Gas Plants
----------------------------	---

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified.

EXECUTIVE SUMMARY

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property. Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STATE AND LOCAL RECORDS

LUST:The Leaking Underground Storage Tank Incident Reports contain an inventory of reported leaking underground storage tank incidents. The data come from the Department of Commerce Division of State Fire Marshal's List of Reported Petroleum Underground Storage Tank Release Incidents.

A review of the LUST list, as provided by EDR, and dated 12/13/2005 has revealed that there is 1 LUST site within approximately 0.5 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
LICKING COUNTY HWY DEPT	TWP LINE RD	1/4 - 1/2WSW 1		6

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

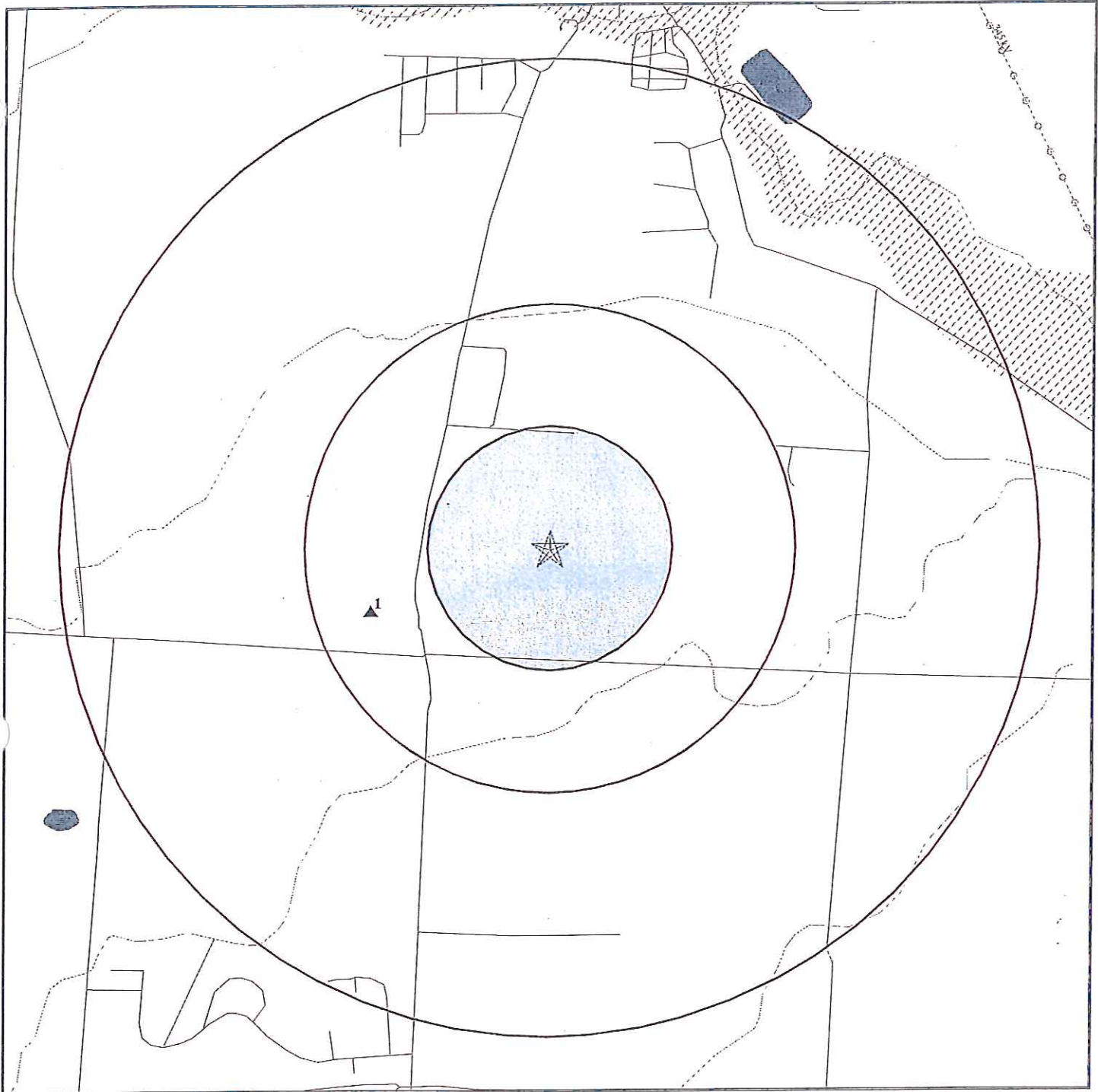
Site Name

UNION TWP GARAGE PROPERTY
ABANDONED GAS STATION
STANDARD OIL CO PATASKALA BULK #420

Database(s)

LUST
LUST
RCRA-SQG, FINDS

OVERVIEW MAP - 1601034.1s



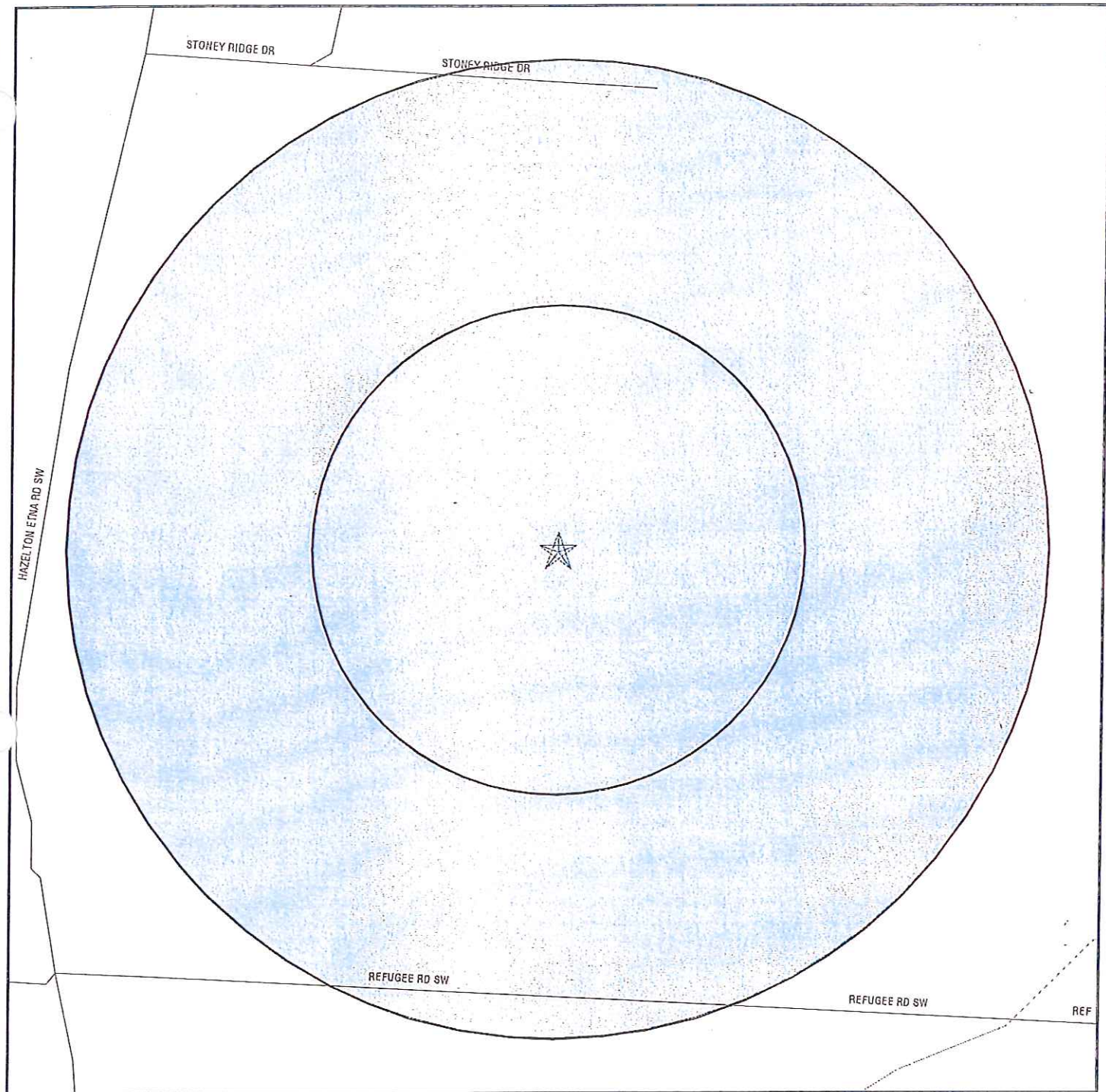
- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Manufactured Gas Plants
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites

- Indian Reservations BIA
- Power transmission lines
- Oil & Gas pipelines
- 100-year flood zone
- 500-year flood zone

SITE NAME: Osborn Property
 ADDRESS: 111 Basin Street
 Hebron OH 43062
 LAT/LONG: 39.9750 / 82.6772

CLIENT: BBC & M Engineering, Inc.
 CONTACT: Eric P. Slosser
 INQUIRY #: 1601034.1s
 DATE: January 26, 2006

DETAIL MAP - 1601034.1s



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ⬆ Manufactured Gas Plants
- ⬆ Sensitive Receptors
- ☐ National Priority List Sites
- ☐ Landfill Sites
- ☐ Dept. Defense Sites

- ☐ Indian Reservations BIA
- ☐ Oil & Gas pipelines
- ☐ 100-year flood zone
- ☐ 500-year flood zone

0 1/16 1/8 1/4 Miles



SITE NAME: Osborn Property
 ADDRESS: 111 Basin Street
 Hebron OH 43062
 LAT/LONG: 39.9750 / 82.6772

CLIENT: BBC & M Engineering, Inc.
 CONTACT: Eric P. Slosser
 INQUIRY #: 1601034.1s
 DATE: January 26, 2006

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<u>FEDERAL RECORDS</u>								
NPL		1.000	0	0	0	0	NR	0
Proposed NPL		1.000	0	0	0	0	NR	0
Delisted NPL		1.000	0	0	0	0	NR	0
NPL Liens	TP		NR	NR	NR	NR	NR	0
CERCLIS		0.500	0	0	0	NR	NR	0
CERC-NFRAP		0.500	0	0	0	NR	NR	0
CORRACTS		1.000	0	0	0	0	NR	0
RCRA TSD		0.500	0	0	0	NR	NR	0
RCRA Lg. Quan. Gen.		0.250	0	0	NR	NR	NR	0
RCRA Sm. Quan. Gen.		0.250	0	0	NR	NR	NR	0
ERNS	TP		NR	NR	NR	NR	NR	0
HMIRS	TP		NR	NR	NR	NR	NR	0
US ENG CONTROLS		0.500	0	0	0	NR	NR	0
US INST CONTROL		0.500	0	0	0	NR	NR	0
DOD		1.000	0	0	0	0	NR	0
FUDS		1.000	0	0	0	0	NR	0
US BROWNFIELDS		0.500	0	0	0	NR	NR	0
CONSENT		1.000	0	0	0	0	NR	0
ROD		1.000	0	0	0	0	NR	0
UMTRA		0.500	0	0	0	NR	NR	0
ODI		0.500	0	0	0	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
MINES		0.250	0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
<u>STATE AND LOCAL RECORDS</u>								
State Haz. Waste		N/A	N/A	N/A	N/A	N/A	N/A	N/A
DERR		1.000	0	0	0	0	NR	0
TOWNGAS		1.000	0	0	0	0	NR	0
MSL		1.000	0	0	0	0	NR	0
State Landfill		0.500	0	0	0	NR	NR	0
HIST LF		0.500	0	0	0	NR	NR	0
LUST		0.500	0	0	1	NR	NR	1
UNREG LTANKS		0.500	0	0	0	NR	NR	0
UST		0.250	0	0	NR	NR	NR	0
ARCHIVE UST		0.250	0	0	NR	NR	NR	0
OH Spills	TP		NR	NR	NR	NR	NR	0
ENG CONTROLS		0.500	0	0	0	NR	NR	0
INST CONTROL		0.500	0	0	0	NR	NR	0
VCP		0.500	0	0	0	NR	NR	0
BROWNFIELDS		0.500	0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CDL		TP	NR	NR	NR	NR	NR	0
USD		0.500	0	0	0	NR	NR	0
<u>TRIBAL RECORDS</u>								
INDIAN RESERV		1.000	0	0	0	0	NR	0
<u>EDR PROPRIETARY RECORDS</u>								
Manufactured Gas Plants		1.000	0	0	0	0	NR	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

N/A = This State does not maintain a SHWS list. See the Federal CERCLIS list.

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

Site

Database(s)

EDR ID Number
EPA ID Number

1 LICKING COUNTY HWY DEPT
WSW TWP LINE RD
1/4-1/2 PATASKALA, OH 43062
2037 ft.

LUST S104777505
N/A

Relative:
Higher

LUST:

Owner: LICKING COUNTY COMMISSIONERS
LTF Status: 6 Closure of regulated UST
Release Number: 45005613-N00001
Owner Address: 20 S 2ND ST
NEWARK, OH 43055
Facility Status: Inactive
FR Status: No Further Action letter issued
Old Facility Id: 455613
Former Lust Release Number: 458000900
Release Date: 1991-09-16 00:00:00

Actual:
1039 ft.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
HEBRON	S104268077	UNION TWP GARAGE PROPERTY	SR 40		LUST
LIMA TWP	S105501821	ABANDONED GAS STATION	SE C/O ST RT 16 / DALEY DR	43062	LUST
PATASKALA	1000310407	STANDARD OIL CO PATASKALA BULK #420	US ROUTE 40	43062	RCRA-SQG, FINDS

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

FEDERAL RECORDS

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 10/14/05	Source: EPA
Date Data Arrived at EDR: 11/02/05	Telephone: N/A
Date Made Active in Reports: 12/07/05	Last EDR Contact: 11/02/05
Number of Days to Update: 35	Next Scheduled EDR Contact: 01/30/06
	Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 8
Telephone: 303-312-6774

EPA Region 4
Telephone 404-562-8033

Proposed NPL: Proposed National Priority List Sites

Date of Government Version: 10/14/05	Source: EPA
Date Data Arrived at EDR: 11/02/05	Telephone: N/A
Date Made Active in Reports: 12/07/05	Last EDR Contact: 11/02/05
Number of Days to Update: 35	Next Scheduled EDR Contact: 01/30/06
	Data Release Frequency: Quarterly

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 10/14/05	Source: EPA
Date Data Arrived at EDR: 11/02/05	Telephone: N/A
Date Made Active in Reports: 12/07/05	Last EDR Contact: 11/02/05
Number of Days to Update: 35	Next Scheduled EDR Contact: 01/30/06
	Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 10/15/91
Date Data Arrived at EDR: 02/02/94
Date Made Active in Reports: 03/30/94
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 11/21/05
Next Scheduled EDR Contact: 02/20/06
Data Release Frequency: No Update Planned

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 09/19/05
Date Data Arrived at EDR: 10/21/05
Date Made Active in Reports: 10/27/05
Number of Days to Update: 6

Source: EPA
Telephone: 703-413-0223
Last EDR Contact: 12/21/05
Next Scheduled EDR Contact: 03/20/06
Data Release Frequency: Quarterly

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

Date of Government Version: 08/22/05
Date Data Arrived at EDR: 09/20/05
Date Made Active in Reports: 10/27/05
Number of Days to Update: 37

Source: EPA
Telephone: 703-413-0223
Last EDR Contact: 12/21/05
Next Scheduled EDR Contact: 03/20/06
Data Release Frequency: Quarterly

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 10/13/05
Date Data Arrived at EDR: 10/27/05
Date Made Active in Reports: 12/07/05
Number of Days to Update: 41

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 12/06/05
Next Scheduled EDR Contact: 03/06/06
Data Release Frequency: Quarterly

RCRA: Resource Conservation and Recovery Act Information

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 10/14/05	Source: EPA
Date Data Arrived at EDR: 10/27/05	Telephone: 800-424-9346
Date Made Active in Reports: 12/07/05	Last EDR Contact: 12/28/05
Number of Days to Update: 41	Next Scheduled EDR Contact: 02/27/06
	Data Release Frequency: Quarterly

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/04	Source: National Response Center, United States Coast Guard
Date Data Arrived at EDR: 01/27/05	Telephone: 202-260-2342
Date Made Active in Reports: 03/24/05	Last EDR Contact: 01/12/06
Number of Days to Update: 56	Next Scheduled EDR Contact: 04/24/06
	Data Release Frequency: Annually

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 08/17/05	Source: U.S. Department of Transportation
Date Data Arrived at EDR: 10/18/05	Telephone: 202-366-4555
Date Made Active in Reports: 12/07/05	Last EDR Contact: 01/16/06
Number of Days to Update: 50	Next Scheduled EDR Contact: 04/17/06
	Data Release Frequency: Annually

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 08/02/05	Source: Environmental Protection Agency
Date Data Arrived at EDR: 08/12/05	Telephone: 703-603-8867
Date Made Active in Reports: 10/06/05	Last EDR Contact: 01/24/06
Number of Days to Update: 55	Next Scheduled EDR Contact: 04/03/06
	Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 01/10/05	Source: Environmental Protection Agency
Date Data Arrived at EDR: 02/11/05	Telephone: 703-603-8867
Date Made Active in Reports: 04/06/05	Last EDR Contact: 01/20/06
Number of Days to Update: 54	Next Scheduled EDR Contact: 04/03/06
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/04	Source: USGS
Date Data Arrived at EDR: 02/08/05	Telephone: 703-692-8801
Date Made Active in Reports: 08/04/05	Last EDR Contact: 11/11/05
Number of Days to Update: 177	Next Scheduled EDR Contact: 02/06/06
	Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/31/04	Source: U.S. Army Corps of Engineers
Date Data Arrived at EDR: 06/29/05	Telephone: 202-528-4285
Date Made Active in Reports: 08/08/05	Last EDR Contact: 01/19/06
Number of Days to Update: 40	Next Scheduled EDR Contact: 04/03/06
	Data Release Frequency: Varies

US BROWNFIELDS: A Listing of Brownfields Sites

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 08/18/05	Source: Environmental Protection Agency
Date Data Arrived at EDR: 08/18/05	Telephone: 202-566-2777
Date Made Active in Reports: 10/06/05	Last EDR Contact: 11/30/05
Number of Days to Update: 49	Next Scheduled EDR Contact: 03/13/06
	Data Release Frequency: Semi-Annually

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/14/04	Source: Department of Justice, Consent Decree Library
Date Data Arrived at EDR: 02/15/05	Telephone: Varies
Date Made Active in Reports: 04/25/05	Last EDR Contact: 10/31/05
Number of Days to Update: 69	Next Scheduled EDR Contact: 01/23/06
	Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 10/07/05	Source: EPA
Date Data Arrived at EDR: 10/20/05	Telephone: 703-416-0223
Date Made Active in Reports: 12/07/05	Last EDR Contact: 01/04/06
Number of Days to Update: 48	Next Scheduled EDR Contact: 04/03/06
	Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 12/29/04
Date Data Arrived at EDR: 01/07/05
Date Made Active in Reports: 03/14/05
Number of Days to Update: 66

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 10/28/05
Next Scheduled EDR Contact: 12/19/05
Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/85
Date Data Arrived at EDR: 08/09/04
Date Made Active in Reports: 09/17/04
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/04
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/03
Date Data Arrived at EDR: 07/13/05
Date Made Active in Reports: 08/17/05
Number of Days to Update: 35

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 12/21/05
Next Scheduled EDR Contact: 03/20/06
Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/02
Date Data Arrived at EDR: 04/27/04
Date Made Active in Reports: 05/21/04
Number of Days to Update: 24

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 01/16/06
Next Scheduled EDR Contact: 04/17/06
Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 10/12/05
Date Data Arrived at EDR: 10/31/05
Date Made Active in Reports: 12/20/05
Number of Days to Update: 50

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 12/20/05
Next Scheduled EDR Contact: 03/20/06
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

Date of Government Version: 10/12/05
Date Data Arrived at EDR: 10/31/05
Date Made Active in Reports: 12/20/05
Number of Days to Update: 50

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 12/20/05
Next Scheduled EDR Contact: 03/20/06
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/03
Date Data Arrived at EDR: 01/03/05
Date Made Active in Reports: 01/25/05
Number of Days to Update: 22

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/16/06
Next Scheduled EDR Contact: 04/17/06
Data Release Frequency: Annually

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 08/30/05
Date Data Arrived at EDR: 09/13/05
Date Made Active in Reports: 10/27/05
Number of Days to Update: 44

Source: EPA
Telephone: 202-564-3887
Last EDR Contact: 12/29/05
Next Scheduled EDR Contact: 02/06/06
Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 10/18/05
Date Data Arrived at EDR: 10/31/05
Date Made Active in Reports: 12/20/05
Number of Days to Update: 30

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 01/03/06
Next Scheduled EDR Contact: 04/03/06
Data Release Frequency: Quarterly

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/12/05
Date Data Arrived at EDR: 09/27/05
Date Made Active in Reports: 11/14/05
Number of Days to Update: 48

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 12/27/05
Next Scheduled EDR Contact: 03/27/06
Data Release Frequency: Semi-Annually

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 09/29/05
Date Data Arrived at EDR: 10/04/05
Date Made Active in Reports: 11/14/05
Number of Days to Update: 41

Source: EPA
Telephone: N/A
Last EDR Contact: 01/03/06
Next Scheduled EDR Contact: 04/03/06
Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 04/17/95
Date Data Arrived at EDR: 07/03/95
Date Made Active in Reports: 08/07/95
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 12/05/05
Next Scheduled EDR Contact: 03/06/06
Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/03
Date Data Arrived at EDR: 06/17/05
Date Made Active in Reports: 08/04/05
Number of Days to Update: 48

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 09/12/05
Next Scheduled EDR Contact: 12/12/05
Data Release Frequency: Biennially

STATE AND LOCAL RECORDS

SHWS: This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: 0

Source: EPA
Telephone: 703-413-0223
Last EDR Contact: 12/05/05
Next Scheduled EDR Contact: 03/06/06
Data Release Frequency: No Update Planned

DERR: Division of Emergency & Remedial Response's Database

The DERR listings contains sites from all of Ohio that are in the Division of Emergency and Remedial Response (DERR) database, which is an index of sites for which our district offices maintain files. The database is NOT a record of contaminated sites or sites suspected of contamination. Not all sites in the database are contaminated, and a site's absence from the database does not imply that it is uncontaminated.

Date of Government Version: 12/12/05
Date Data Arrived at EDR: 12/12/05
Date Made Active in Reports: 01/19/06
Number of Days to Update: 38

Source: Ohio EPA, Div. of Emergency and Remedial Response
Contact: Central District Office, 614-728-3778
Last EDR Contact: 12/12/05
Next Scheduled EDR Contact: 03/13/06
Data Release Frequency: Semi-Annually

MSL: Master Sites List

Ohio EPA no longer maintains or publishes the MSL, which was a list of sites with known or suspected contamination. Please be advised that this report does not constitute a determination that any site identified in the report is or may be contaminated.

Date of Government Version: 03/01/99
Date Data Arrived at EDR: 03/29/99
Date Made Active in Reports: 04/21/99
Number of Days to Update: 23

Source: Ohio Environmental Protection Agency
Telephone: 614-644-2068
Last EDR Contact: 12/05/05
Next Scheduled EDR Contact: 03/06/06
Data Release Frequency: No Update Planned

TOWNGAS: DERR Towngas Database

The database includes 82 very old sites (circa 1895) which produced gas from coal for street lighting. Most visual evidence of these sites has disappeared, however the potential for buried coal tar remains. The database is no longer in active use.

Date of Government Version: 07/28/92
Date Data Arrived at EDR: 02/21/03
Date Made Active in Reports: 03/05/03
Number of Days to Update: 12

Source: Ohio EPA
Telephone: 614-644-3749
Last EDR Contact: 02/12/03
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SWF/LF: Licensed Solid Waste Facilities

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 11/09/05
Date Data Arrived at EDR: 11/09/05
Date Made Active in Reports: 12/20/05
Number of Days to Update: 41

Source: Ohio Environmental Protection Agency
Telephone: 614-644-2621
Last EDR Contact: 11/07/05
Next Scheduled EDR Contact: 02/06/06
Data Release Frequency: Annually

HIST LF: Old Solid Waste Landfill

A list of about 1200 old abandoned dumps or landfills. This database was developed from Ohio EPA staff notebooks and other information dating from the mid-1970s

Date of Government Version: 01/01/80
Date Data Arrived at EDR: 07/01/03
Date Made Active in Reports: 07/17/03
Number of Days to Update: 16

Source: Ohio EPA
Telephone: 614-644-3749
Last EDR Contact: 06/26/03
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

LUST: Leaking Underground Storage Tank File

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 12/13/05
Date Data Arrived at EDR: 12/13/05
Date Made Active in Reports: 01/19/06
Number of Days to Update: 37

Source: Department of Commerce
Telephone: 614-752-7924
Last EDR Contact: 12/13/05
Next Scheduled EDR Contact: 03/13/06
Data Release Frequency: Quarterly

UNREG LTANKS: Ohio Leaking UST File

A suspected or confirmed release of petroleum from a non-regulated UST.

Date of Government Version: 08/25/99
Date Data Arrived at EDR: 08/19/03
Date Made Active in Reports: 08/26/03
Number of Days to Update: 7

Source: Department of Commerce
Telephone: 614-752-7938
Last EDR Contact: 08/01/03
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST: Underground Storage Tank Tank File

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 12/13/05
Date Data Arrived at EDR: 12/13/05
Date Made Active in Reports: 01/18/06
Number of Days to Update: 36

Source: Department of Commerce
Telephone: 614-752-7938
Last EDR Contact: 12/13/05
Next Scheduled EDR Contact: 03/13/06
Data Release Frequency: Quarterly

ARCHIVE UST: Archived Underground Storage Tank Sites

Underground storage tank records that have been removed from the Underground Storage Tank database.

Date of Government Version: 09/13/05
Date Data Arrived at EDR: 12/13/05
Date Made Active in Reports: 01/19/06
Number of Days to Update: 37

Source: Department of Commerce, Division of State Fire Marshal
Telephone: 614-752-7938
Last EDR Contact: 12/13/05
Next Scheduled EDR Contact: 03/13/06
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

SPILLS: Emergency Response Database

Incidents reported to the Emergency Response Unit. The focus of the ER program is to minimize the impact on the environment from accidental releases, spills, and unauthorized discharges from any fixed or mobile sources. Incidents involving petroleum products, hazardous materials, hazardous waste, abandoned drums, or other materials which may pose as a pollution threat to the state's water, land, or air should be reported immediately. Not all incidents included in the database are actual SPILLS, they can simply be reported incidents.

Date of Government Version: 06/30/05	Source: Ohio EPA
Date Data Arrived at EDR: 07/27/05	Telephone: 614-644-2084
Date Made Active in Reports: 08/31/05	Last EDR Contact: 12/07/05
Number of Days to Update: 35	Next Scheduled EDR Contact: 12/05/05
	Data Release Frequency: Varies

ENG CONTROLS: Sites with Engineering Controls

A database that tracks properties with engineering controls.

Date of Government Version: 05/10/05	Source: Ohio EPA
Date Data Arrived at EDR: 06/08/05	Telephone: 614-644-2324
Date Made Active in Reports: 06/28/05	Last EDR Contact: 01/26/06
Number of Days to Update: 20	Next Scheduled EDR Contact: 03/20/06
	Data Release Frequency: Semi-Annually

INST CONTROL: Sites with Institutional Engineering Controls

A database that tracks properties with institutional controls.

Date of Government Version: 05/10/05	Source: Ohio Environmental Protection Agency
Date Data Arrived at EDR: 06/08/05	Telephone: 614-644-2324
Date Made Active in Reports: 07/01/05	Last EDR Contact: 01/26/06
Number of Days to Update: 23	Next Scheduled EDR Contact: 03/20/06
	Data Release Frequency: Semi-Annually

VCP: Voluntary Action Program Sites

Site involved in the Voluntary Action Program.

Date of Government Version: 12/12/05	Source: Ohio EPA, Voluntary Action Program
Date Data Arrived at EDR: 12/12/05	Telephone: 614-644-1298
Date Made Active in Reports: 01/19/06	Last EDR Contact: 12/05/05
Number of Days to Update: 38	Next Scheduled EDR Contact: 03/06/06
	Data Release Frequency: Semi-Annually

BROWNFIELDS: Ohio Brownfield Inventory

A statewide brownfields inventory. A brownfield is an abandoned, idled or under-used industrial or commercial property where expansion or redevelopment is complicated by known or potential releases of hazardous substances and/or petroleum.

Date of Government Version: 10/10/05	Source: Ohio EPA
Date Data Arrived at EDR: 11/07/05	Telephone: 614-644-3748
Date Made Active in Reports: 11/23/05	Last EDR Contact: 01/12/06
Number of Days to Update: 16	Next Scheduled EDR Contact: 04/10/06
	Data Release Frequency: Varies

CDL: Clandestine Drug Lab Locations

A list of clandestine drug lab sites with environmental impact. This list is extracted from the SPILLS database based on the "product" type.

Date of Government Version: 06/30/05	Source: Ohio EPA
Date Data Arrived at EDR: 07/27/05	Telephone: 614-644-2080
Date Made Active in Reports: 08/31/05	Last EDR Contact: 12/07/05
Number of Days to Update: 35	Next Scheduled EDR Contact: 12/05/05
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

USD: Urban Setting Designation Sites

A USD may be requested for properties participating in the VAP when there is no current or future use of the ground water by local residents for drinking, showering, bathing or cooking. In these areas, an approved USD would lower the cost of cleanup and promote economic redevelopment while still protecting public health and safety. If these USDs were to be approved, the ground water cleanup or response requirements for the areas could be lessened. The Ohio EPA director may approve a USD request based on a demonstration that the USD requirements are met and an evaluation of existing and future uses of ground water in the area. The Ohio EPA director's decision on approval or denial of the request is needed before cleanup requirements for the site can be determined.

Date of Government Version: 05/10/05
Date Data Arrived at EDR: 06/08/05
Date Made Active in Reports: 07/01/05
Number of Days to Update: 23

Source: Ohio EPA
Telephone: 614-644-2324
Last EDR Contact: 01/26/06
Next Scheduled EDR Contact: 03/20/06
Data Release Frequency: Varies

TRIBAL RECORDS

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/04
Date Data Arrived at EDR: 02/08/05
Date Made Active in Reports: 08/04/05
Number of Days to Update: 177

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 11/11/05
Next Scheduled EDR Contact: 02/06/06
Data Release Frequency: Semi-Annually

EDR PROPRIETARY RECORDS

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: 11/15/05
Date Data Arrived at EDR: 12/05/05
Date Made Active in Reports: 12/28/05
Number of Days to Update: 23

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: 01/25/06
Next Scheduled EDR Contact: 04/24/06
Data Release Frequency: No Update Planned

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data

Source: PennWell Corporation
Telephone: (800) 823-6277

This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.

Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services

Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes

Source: National Institutes of Health

Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Child Day Care Facilities

Source: Department of Job & Family Services

Telephone: 614-466-6282

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 from the U.S. Fish and Wildlife Service.

STREET AND ADDRESS INFORMATION

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Memorandum of Understanding

Between the City of Pataskala and Southgate Company Limited Partnership

Southgate Company Limited Partnership (“Southgate”) owns 95.35+/- acres located at the northeast corner of State Route 310 (Hazelton-Etna Road) and Refuge Road (the “Property”). The City of Pataskala (“City”) previously zoned the Property as a Planned Development District known as Hazelton Crossing. Southgate seeks to develop the Property pursuant to the Preliminary Development Plan attached as Exhibit A (the “Development Plan”). As set forth in the Development Plan, the Hazelton Crossing development consists of four separate Sub-Areas:

<u>Sub-Area</u>	<u>Size</u>	<u>Use</u>
A	25.10+/- acres	Retail/Commercial (up to 10,000 sq.ft./acre)
B	8.4+/- acres	Assisted Living
C	10.5+/- acres	Condominium (up to 5 dwelling units/acre)
D	51.35+/- acres	Single-Family Homes (up to 155 lots)

Southgate and its successors and assigns (collectively, “Developer”) intend to develop Sub-Area D first. Sub-Areas A, B, and C will be developed in future phases. A traffic impact study, dated June 24, 2020, of the proposed Hazelton Crossing development described in the Development Plan (the “TIS”), is attached as Exhibit B (without exhibits). As set forth in the TIS, there are conclusions and recommendations concerning roadway improvements to areas adjacent or near the Property, including but not limited to five enumerated recommendations on page eight of the TIS that pertain to the full development of Sub-Areas A, B, and C (each a “Recommendation”). In an effort to allow Developer to proceed with development of the Hazelton Crossing development, the parties hereby set forth the following memorandum of understanding:

- (1) At such time City issues Developer a building permit to commence construction of one or more single-family homes within Sub-Area D, Developer shall be obligated to construct an east-bound turn lane that is 245 feet in length on Refugee Road into the entrance of Sub-Area D, located across from Brenden Park Drive. The improvements on Refugee Road west of Brendan Park Drive must be widened to provide full width pavement, rather than tapered pavement, within the limits required to develop the left turn lane. The City may withhold certificates of occupancy for one or more single-family homes within Sub-Area D until such left turn-lane is completed.
- (2) At the earlier of the time City issues Developer a building permit to commence construction of the shopping center in Sub-Area A, or to commence construction of one or more condominium buildings in Sub-

Exhibit ‘Q-1’

Area C, Developer shall be obligated to complete Recommendation 1: the intersection of State Route 310 and the Property's main access point (depicted as "Beacon Chase" in the Development Plan) shall be controlled by a traffic signal, and a southbound left turn lane 315 feet in length, and northbound right turn lane 365 feet in length shall be constructed. The City may withhold certificates of occupancy for one or more of the shopping center units within Sub-Area A or one or more of the condominium buildings in Sub-Area C, as applicable, until the improvements set forth in this paragraph are completed.

- (3) At such time City issues Developer a building permit to commence construction of the shopping center in Sub-Area A or construction of a development on any one of Outlot Nos. 2-7 in Sub-Area A, Developer shall be obligated to complete Recommendation 2: the State Route 310 and South Right-in, Right-out access point and a northbound right turn lane 265 feet in length shall be constructed. The City may withhold certificates of occupancy for one or more units within the shopping center or Outlot Nos. 2-7 in Sub-Area A until the improvements set forth in this paragraph are completed.
- (4) At such time City issues Developer a building permit to commence construction of the shopping center in Sub-Area A, Developer shall be obligated to complete Recommendations 3 and 4: Recommendation 3 - an access point on the south side of Sub-Area A to Refugee Road with an eastbound left turn lane 245 feet in length and, in the event City or a third party has sufficiently widened Refugee Road at the time the foregoing access point is constructed, Developer shall take steps necessary to create a center two-way-left-turn-lane on Refugee Road; and Recommendation 4 – dedicated left turn lanes for all four approaches to the intersection of State Route 310 and Refugee Road shall be constructed as follows, the southbound left turn lane 315 feet in length, eastbound left turn lane 265 feet in length, northbound turn lane 285 feet in length, and a westbound left turn lane that should strive for a 295-foot length subject to coordination with the three-lane pavement section east of this dedicated turn lane. The City may withhold certificates of occupancy for one or more units within the shopping center in Sub-Area A until the improvements set forth in this paragraph are completed.
- (5) Upon completion of the full development of all of Sub-Areas A, B, C, and D consistent with the Development Plan ("Full Build-Out"), Developer may

be obligated to construct the infrastructure described in Recommendation 5: a southbound right turn lane may be constructed, if necessary, at the intersection of State Route 310 and U.S. Route 40. The obligation set forth in the preceding sentence shall be null and void in the event the infrastructure described in this paragraph is no longer warranted upon Full Build-Out, pursuant to either: (a) agreement by Developer and City, or (b) as a result of a traffic impact study conducted by a mutually acceptable engineer. In determining whether the improvements described in this paragraph are warranted upon Full Build-Out, such determination should account for changes in the assumptions set forth in the TIS, including without limitation, changes in background conditions, impacts on the intersection by other developments, and/or growth in the region.

- (6) It is acknowledged and agreed by Developer and the City that the intent of this MOU is to ensure that traffic impacts of the development project are viewed in totality and no Sub-Area is separable from the entirety of the project. Traffic improvements noted herein shall be installed concurrently with the proposed development improvements as specifically described herein. In the event the Development Plan is modified to change the uses or intensity of uses in either Sub-Areas A, B, C, or D (each, a "Changed Sub-Area"), the obligation(s) set forth in Paragraphs 1-5 above that are applicable to the Changed Sub-Area shall be void and revised based upon the recommendations of a new traffic study performed by a mutually acceptable engineer. Such new, future traffic study shall account for the traffic impact of all of the improvements constructed or planned to be constructed on the Property and for changes in the assumptions set forth in the TIS, including without limitation, changes in background conditions, impacts on the applicable obligation by other developments, and/or growth in the region.
- (7) It is further acknowledged and agreed by Developer and the City that any of the foregoing roadway improvements that Developer is required to construct described in Paragraphs 1-6 and that is not located on the Property, City shall be obligated to acquire the right, title, or property interest in the real property necessary for Developer to complete the applicable roadway improvement. City shall acquire such right, title, or property interest in a timely manner that does not unreasonably delay Developer's completion of the roadway improvement. In the event City fails to timely acquire such right, title, or property interest, Developer's applicable roadway improvement obligation shall be void.

- (8) The duties, obligations, responsibilities, and covenants set forth in this Memorandum of Understanding shall run with the land and bind and inure all Southgate's successors and assigns.

Southgate Company Limited Partnership,
an Ohio limited partnership

By: Southgate Corporation, an Ohio corporation

Its: General Partner

Robert E. O'Neill, President
Southgate Corporation

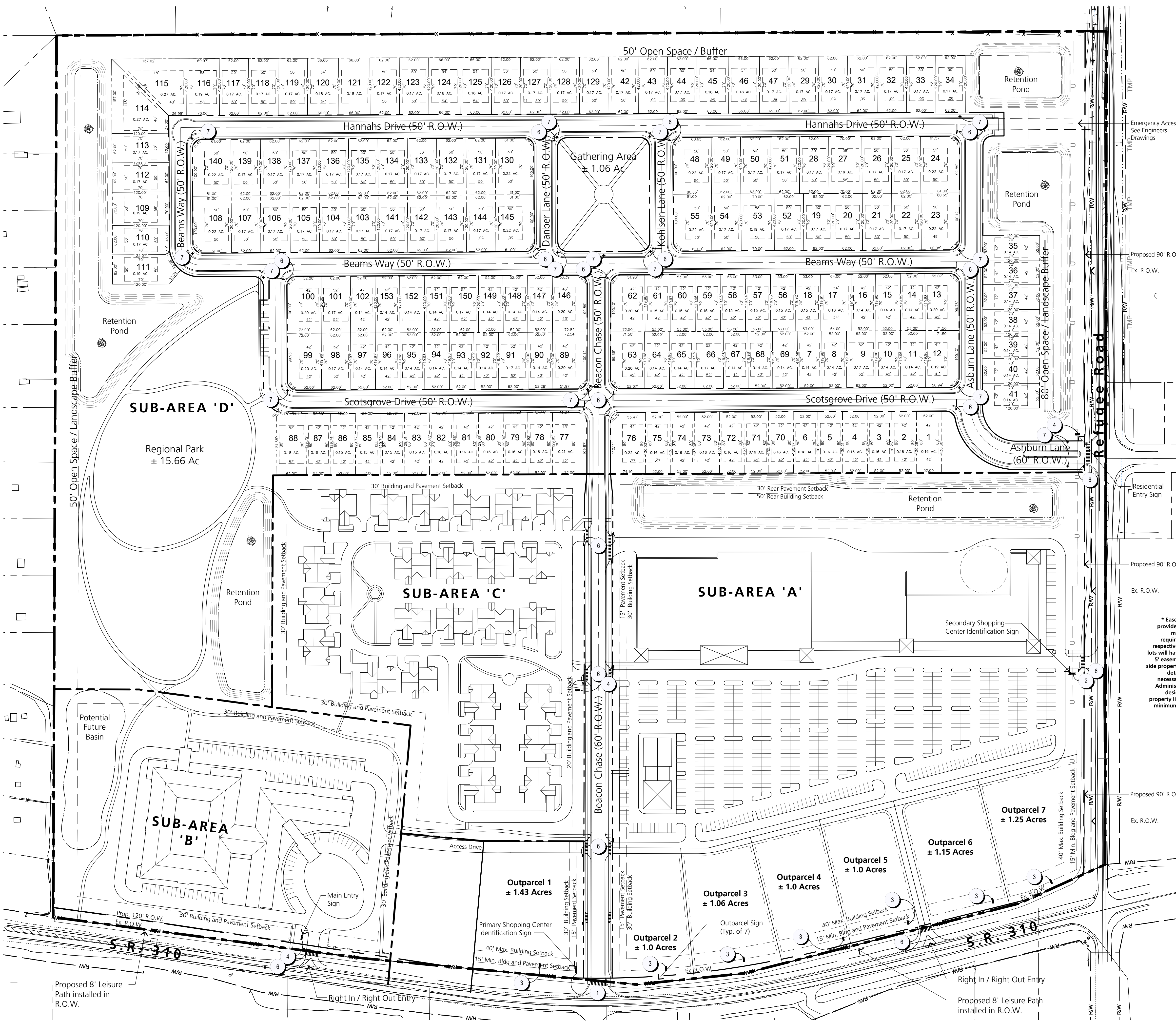
Date: _____

City of Pataskala

By: _____

Date: _____

Its: _____



Preliminary Development Plan Data:

Total Site Acreage:	± 95.35 Acres
Total Open Space:	±28.27 Acres (30%)
Sub-Area 'A'	± 25.10 Acres
Proposed Use:	Retail / Commercial
Maximum Density:	10,000 s.f. / Acre
Maximum Height:	35'/45' (see development text)
• Main Retail Bldg.:	30'
• Outparcel Bldg.s:	1 space/250 s.f. Gross Floor Area
Minimum Parking:	

Shown on Plan	
Retail Storefront:	163,000 s.f.
Parking Spaces:	688 Retail
Outparcels:	7

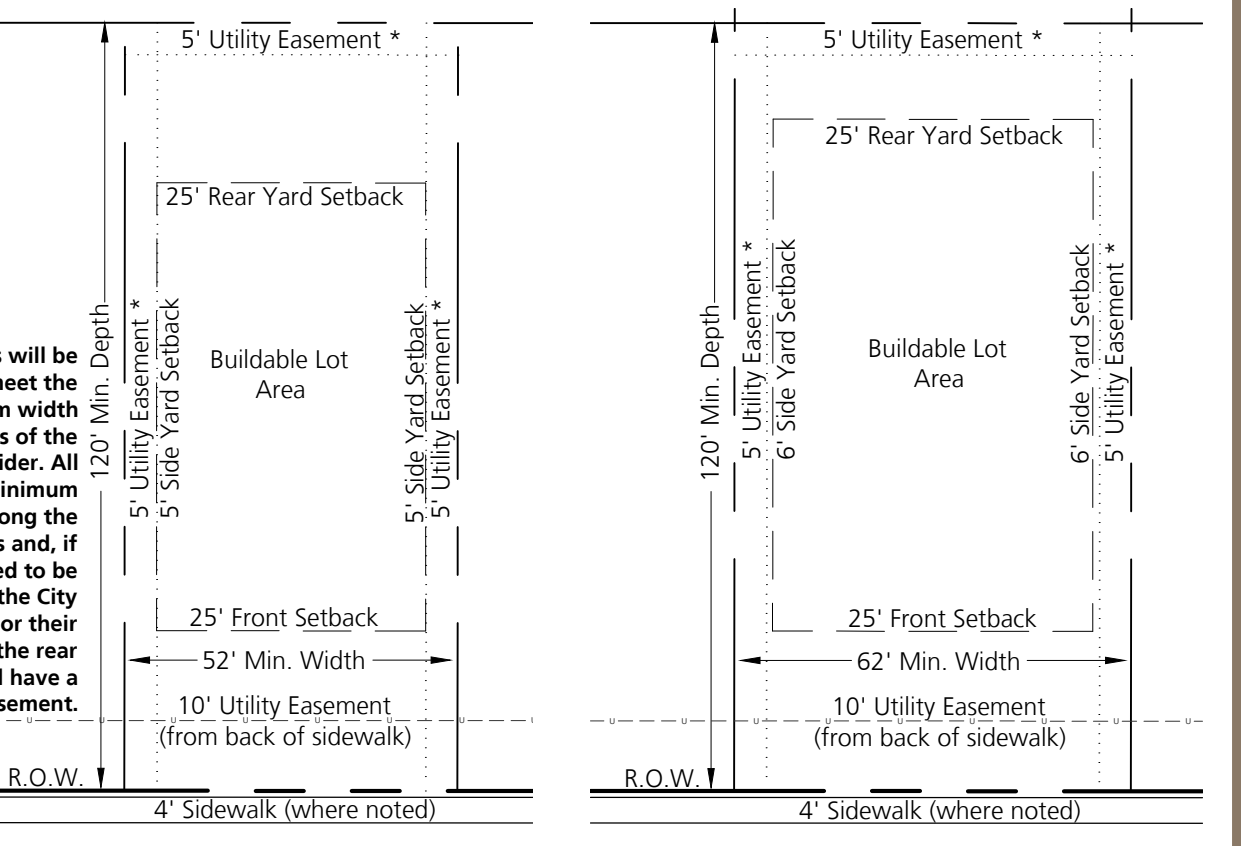
Sub-Area 'B'	± 8.4 Acres
Proposed Use:	Assisted Living
Maximum Bldg. Height:	50'
Minimum Parking:	1 space per 3 occupants plus 1 for each employee for main work shift T.B.D.

Total Beds:	
Sub-Area 'C'	± 10.5 Acres
Proposed Use:	Condominium
Maximum Density:	5 D.U. / Acre
Maximum Bldg. Height:	35'
Minimum Parking:	1 attached garage space and 1 driveway space per unit

Shown on Plan	
Duplex Condominium Units:	50

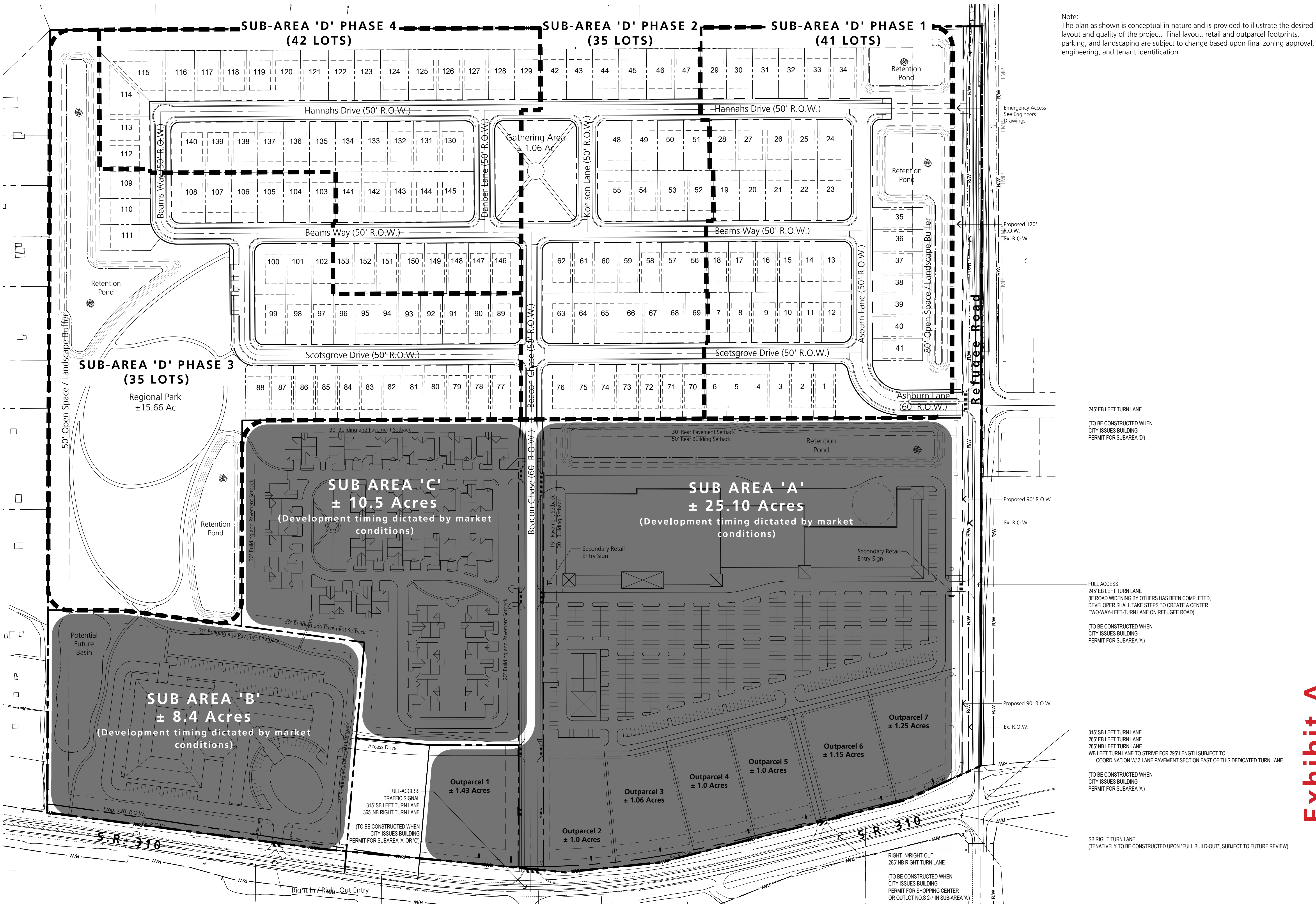
Sub-Area 'D'	± 51.35 Acres
Proposed Use :	Single-Family
Maximum Lots Permitted:	155
Maximum Bldg. Height:	35'
Minimum Parking:	2 attached garage spaces and 2 driveway space per unit + 6 park parking spaces

Single Family Typical Lot Diagrams:
(Not To Scale)



52' Lot Typ. Diagram:			
CODED LAYOUT & MATERIALS NOTES			
KEY	ITEM	REFERENCE	NOTES
1	SUB-AREA 'A' PRIMARY SIGN	A-1 EX. 'H-3'	SEE DETAIL A-1, EXHIBIT 'H-3'
2	SUB-AREA 'A' SECONDARY SIGN	A-2 EX. 'H-3'	SEE DETAIL A-2, EXHIBIT 'H-3'
3	SUB-AREA 'A' OUTPARCEL SIGN	A-3 EX. 'H-3'	SEE DETAIL A-3, EXHIBIT 'H-3'
4	SUB-AREA 'B/C/D' MAIN ENTRY SIGN	B EX. 'H-3'	SEE DETAIL B, EXHIBIT 'H-3'
5	NOT USED	-	NOT USED
6	STOP SIGN	-	STANDARD DETAIL
7	STREET LIGHT	D EX. 'H-1'	LUMINAIRE: GPD3-P30-30K-MS-BK-RB-BK POST-TOP LIGHT POLE: PL-A-12-T4C-10-P05-ABG-BK SEE DETAIL B, EXHIBIT 'H-2'

Note:
The plan as shown is conceptual in nature and is provided to illustrate the desired layout and quality of the project. Final layout, retail and outparcel footprints, parking, and landscaping are subject to change based upon final zoning approval, engineering, and tenant identification.



Note:
The plan as shown is conceptual in nature and is provided to illustrate the desired layout and quality of the project. Final layout, retail and outparcel footprints, parking, and landscaping are subject to change based upon final zoning approval, engineering, and tenant identification.

NORTH

200

100

50

0

January 29, 2021
(Revised 04.28.2021)

PLANNING
+ DESIGN

G2

EMHT

Exhibit A

Exhibit D-2' - Preliminary Phasing Plan

HAZELTON CROSSING

CLIENT:

SOUTHGATE CORPORATION



Engineers, Surveyors, Planners, Scientists

Exhibit B

June 24, 2020

Mr. Alan W. Haines, PE
Public Service Director
City of Pataskala
621 West Broad Street
Pataskala, OH 43062

Subject: Hazelton Crossing - Traffic Impact Study

Dear Mr. Haines,

This letter provides a Traffic Impact Study (TIS) in support of the Preliminary Development Plan (PDP) and Development Text application currently pending with the City of Pataskala for the above captioned site. The development site is located in the northeast quadrant of the SR 310/Refugee Road intersection and was the subject of a TIS dated April 2016 prepared by others. Development text and a preliminary plan similar to the current application was approved by Pataskala that same year through Ordinance number 2016-4257. As we discussed by phone on November 6, 2019, the scope of this TIS is an update of the 2016 study with the Study Area expanded to include additional off-site intersections at US 40/SR 310 and SR 310/Smoke Road.

Development Plan and Study Area

The attached Preliminary Development Plan shows a land use concept for the entire 95-acre site. Near-term development focuses on Subarea D comprised of 51 acres at the eastern side of the property where up to 155 single-family detached residences are proposed. Subarea D is the only part of the plan that the applicant expects to move to construction as soon as practicable following the City's approval. The ultimate use of the balance of the site (44 acres) is uncertain at this time and the current application provides for 25 acres of retail/commercial use, 8.4 acres of assisted living, and 50 units of multifamily housing/condominiums consistent with the 2016 approval. Accordingly, this study analyzes traffic impacts of Subarea D development separately and together with the uses in Subareas A, B, and C at the intensities of use set forth in the attached Preliminary Development Plan. In the event the uses or intensity of such uses are changed, the impacts related to Subareas A, B, and C identified herein shall be re-studied and subject to modification.

The development plan features one full-movement public street access to Refugee Road, located opposite Brenden Park Drive. The Refugee Road/Brenden Park Drive access point exclusively serves the single-family residential, Subarea D, site. Access to Subareas A, B, and C consists of a new full-movement public street access to State Route 310, one full-movement private driveway access to the retail site from Refugee Road, and two right-in/right-out (RIRO) private driveways, one focused on the retail subarea and one focused on the assisted living facility from State Route 310. The preliminary development plan provides for a future connection between Subarea D and the full-movement public street access to State Route 310 at the time that Subarea A develops and the access to State Route 310 is built.

All proposed site access points and Study Area intersections are within the City of Pataskala, except for the State Route 310/US 40 intersection which is under Ohio Department of Transportation jurisdiction and the Refugee Road/Smoke Road intersection under the jurisdiction of the Licking County Engineer. The State Route 310/Refugee Road intersection is situated on the City boundary and ODOT controls the portion of this intersection outside Pataskala. **Figure 1** below shows the site location and Study Area for this TIS.

Figure 1: Site Location Map



The Study Area for this TIS is limited to the following intersections:

- State Route 310/Refugee Road (a portion of which is outside of Pataskala)
- Refugee Road/Brenden Park Drive
- Refugee Road/Smoke Road (outside of Pataskala)
- State Route 310/US 40 (outside of Pataskala)
- State Route 310/Proposed Access Points
- Refugee Road/Proposed Access Points

Data Collection

Existing traffic levels were observed at the four existing intersections within the Study Area from peak-hour turning movement count performed on November 20, 2019 (7:00 – 9:00 AM, 4:00 – 6:00 PM) and November 21, 2019 (7:00 – 9:00 AM, 4:00 – 6:00 PM). The count data can be found attached in **Appendix B**. We compared current counts to those observed in 2015 that served as the basis for the 2016 TIS. The total volume entering the intersection on all four approaches increased about 12% over 4 years with most of the percentage increase on Refugee Road where volumes are low. Northbound and southbound approach volumes on State Route 310 increased by 2% or less from the 2016 projection to the 2019 count.

Trip Generation

This study used trip generation methodology contained in the Trip Generation Manual, 10th Edition (Institute of Transportation Engineers, 2017), to calculate site traffic as illustrated below in **Table 1**. Land use code 210 (Single Family - Detached) was used to forecast traffic generated by Subarea D development for near term development. We calculated trip generation for Subareas A, B, and C using ITE land use code 820

(Shopping Center), 620 (Nursing Home), and 220 (Multifamily Housing). Because it is unknown how many beds will be within the assisted living complex, this study assumed a building size of 10,000 square feet per acre identical to the methodology applied to the 2016 TIS.

Even though development data for Subareas A, B, and C is identical to the development studied in the 2016 TIS, current trip generation projections are significantly lower. This study calculates trip generation using the latest 10th edition of the Trip Generation Manual, released in 2017, while the 2016 TIS was based on the previous 9th edition. With the 10th edition, ITE updated trip forecasting formulas based on an expanded number of samples (more data) and realigned some data categories, in this case changing the former condominium and assisted living land uses to “multi-family housing” and “nursing home” respectively. The result of applying current ITE data and methodology is to lower the number of site-generated vehicle trips by 12% compared to the 2016 calculations.

Table 1: Trip Generation

Sub Area	Land Use	Square Feet or Units	ITE Code	Time Period	ITE Formula	Total Trips	Trips Entering	Trips Exiting
A1	Shopping Center	163,000 sf	820	ADT	$\ln(T) = 0.68\ln(x) + 5.57$	8,382	4,191	4,191
				AM Peak	$T = 0.50(x) + 151.78$	233	See Below	
				PM Peak	$\ln(T) = 0.74\ln(x) + 2.89$	780	See Below	
				100%	AM Primary Trips	233	144	89
				0%	AM Pass-By Trips	0	0	0
				66%	PM Primary Trips	514	247	267
				34%	PM Pass-By Trips	266	133	133
A2	Shopping Center (Outparcels)	78,900 sf	820	ADT	$\ln(T) = 0.68\ln(x) + 5.57$	5,118	2,559	2,559
				AM Peak	$T = 0.50(x) + 151.78$	191	See Below	
				PM Peak	$\ln(T) = 0.74\ln(x) + 2.89$	456	See Below	
				100%	AM Primary Trips	191	118	73
				0%	AM Pass-By Trips	0	0	0
				66%	PM Primary Trips	300	144	156
				34%	PM Pass-By Trips	156	78	78
B	Nursing Home (Sub for Assisted Living)	84,000 sf	620	ADT	$\ln(T) = 0.83\ln(x) + 2.51$	488	244	244
				AM Peak	$\ln(T) = 0.84\ln(x)$	41	32	9
				PM Peak	Average Rate = 0.59	50	21	29
C	Multifamily Housing Low Rise (One or two floors) (Sub for Condos)	50 units	220	ADT	$T = 7.56(x) - 40.86$	338	169	169
				AM Peak	$\ln(T) = 0.95\ln(x) - 0.51$	25	6	19
				PM Peak	$\ln(T) = 0.89\ln(x) - 0.02$	32	20	12
D	Single Family - Detached	155 units	210	ADT	$\ln(T) = 0.92\ln(x) + 2.71$	1556	778	778
				AM Peak	$T = 0.71(x) + 4.8$	115	29	86
				PM Peak	$\ln(T) = 0.96\ln(x) + 0.2$	155	98	57
TOTAL				ADT		15,882	7,941	7,941
				AM Primary Trips		605	329	276
				AM Pass-By Trips		0	0	0
				AM TOTAL		605	329	276
				PM Primary Trips		1,051	530	521
				PM Pass-By Trips		422	211	211
				PM TOTAL		1,473	741	732

Traffic Volume Projections

This study analyzed AM and PM peak hours in the opening year (2022) and the horizon year (2042) with, and without, site-generated traffic. The peak hours identified from the count data were 8:00 – 9:00 AM, and 4:45 – 5:45 PM. The Mid-Ohio Regional Planning Commission (MORPC) provided growth rates that this study applied to Study Area roadways. MORPC forecast linear annual growth of 1.0% to 1.2% in the State Route 310/Refugee Road area and 1.35% to 1.55% at off-site intersections. MORPC correspondence is documented in **Appendix A** and growth calculations are detailed in **Appendix C**.

We balanced observed volumes between intersections, keeping other intersections and driveways between intersections in mind, and increased counts to account for non-site background growth using the MORPC growth rates described above. The resulting 2022 and 2042 horizon year traffic volumes represent pre-development conditions exclusive of new trips generated by site development, referred to as the “No Build” or background condition. We added Hazelton Crossing site generated trips to the 2022 and 2042 background volumes to define the “Build” conditions. The scenarios analyzed in this study are as follows:

- | | |
|--------------------------------------|--------------------------------------|
| • 2022 AM No Build | • 2022 PM No Build |
| • 2022 AM Build – Single Family Only | • 2022 PM Build – Single Family Only |
| • 2042 AM No Build | • 2042 PM No Build |
| • 2042 AM Build – Single Family Only | • 2042 PM Build – Single Family Only |
| • 2042 AM Full Build | • 2042 PM Full Build |

Traffic Distribution

The existing distribution of volumes was analyzed from observed count data, as shown on plates C1 and C2 in Appendix C. This distribution applied to this study is as follows:

- | | |
|-----------------------------------|-------------------------------------|
| • 20% to/from the north on SR 310 | • 4% to/from the east on Refugee Rd |
| • 28% to/from the south on SR 310 | • 9% to/from the west on Refugee Rd |
| • 15% to/from the east on US 40 | • 1% to/from the north on Smoke Rd |
| • 22% to/from the west on US 40 | • 1% to/from the south on Smoke Rd |

Traffic Analysis

Turn Lane Warrant Analysis

This study evaluated left and right turn lane warrants at proposed site access points pursuant to requirements set forth in the Location and Design Manual § 400 (Ohio Department of Transportation). Posted speed limits are 50 mph on SR 310 (north of Refugee Road) and 45 mph on Refugee Road requiring application of high-speed criteria to both roadways. Refer to **Appendix E** for detailed turn lane warrant analysis.

Turn lane warrant analysis of both the 2022 and 2042 Single Family Only Build scenario results in the eastbound left turn lane meeting warrant criteria at the proposed single family access point on Refugee Road opposite Brenden Park Drive.

Turn lane warrant analysis of the 2042 Full Build scenario with development of the entire 95 acre site resulted in the following additional required turn lanes.

- Northbound right turn lane at SR 310/Main Access Point
- Southbound left turn lane at SR 310/Main Access Point
- Northbound right turn lane at SR 310/South RI-RO
- Eastbound left turn lane at Refugee Road/Retail Access Point

Turn Lane Length Analysis

The length of warranted turn lanes were evaluated pursuant to the requirements set forth in the Location and Design Manual § 400 (Ohio Department of Transportation). Refer to **Appendix F** for detailed turn lane length analysis. The turn lane length results are summarized in **Table 2** including ODOT recommended storage and deceleration distance based on a design speed 5 mph over the posted speed.

Table 2: Turn Lane Lengths at Proposed Site Access Points

<u>Turn Lane</u>	<u>Turn Lane Length</u>
Northbound right at SR 310/Main Access Point West	365'
Southbound left at SR 310/Main Access Point West	315'
Northbound right at SR 310/South RI-RO	265'
Eastbound left at Refugee Road/Shopping Access Point South	245'
Eastbound left at Refugee Road/Single Family Dr/Brenden Park Dr	245'

The need for turn lanes at signalized intersections is determined from capacity analysis rather than turn lane warrants. The capacity analysis for the State Route 310/Refugee Road intersection finds that left turn lanes at any of the four approaches are not necessary until the 2042 Full Build conditions occur. **Table 3** provides the length of turn lanes at the State Route 310/Refugee Road intersection, again including queue storage and deceleration components in accordance with ODOT methodology.

Table 3: Turn Lane Lengths at SR 310/Refugee Road

<u>Turn Lane</u>	<u>Turn Lane Length</u>
Northbound left at SR 310/Refugee Road	285'
Southbound left at SR 310/Refugee Road	315'
Eastbound left at SR 310/Refugee Road	295'
Westbound left at SR 310/Refugee Road	295'

Site frontage on Refugee Road between State Route 310 and Brenden Park Drive provides about 950 feet (center to center) including 520 feet from State Route 310 to the proposed retail access point and 430 feet from the proposed retail access point to Brenden Park Drive. The former (State Route 310 to proposed retail access point) can accommodate back-to-back left turn lanes with appropriate queue storage but cannot accommodate full deceleration length in both directions. The latter (proposed retail access point to Brenden Park Drive) can accommodate an eastbound left turn lane with the full queue storage and deceleration length shown in Table 2, but widening tapers will overlap with improvements at the proposed retail access point. Accordingly, the westbound approach of Refugee Road to State Route 310 should provide approximately 370 feet of storage/deceleration (measured from the centerline of State Route 310) in a dedicated westbound left turn lane, meeting the specification in Table 3, and the balance of Refugee Road east of that point through Brenden Park Drive should provide a consistent 3-lane section marked with a two-way center left-turn lane.

Intersection Capacity Analyses

This study used Synchro 10 software implementing HCM 6th edition methodology to evaluate operational characteristics of the Study Area intersections. A minimum overall intersection level of service (LOS) D is acceptable with minimum approach LOS D and minimum LOS E in any individual movement.

Existing signal phasing and timing, provided by the Ohio Department of Transportation, was modeled for the SR 310/Refugee Road, and SR 310/US 40 intersections. Intersection signal timing is modified slightly throughout all the analyses if necessary to rebalance the intersection as traffic volumes changed. **Table 4** below shows the results of the capacity analysis performed. Detailed capacity analysis reports can be found in **Appendix D**.

Table 4: Synchro Capacity Analysis Results

Time Period	Year	Scenario	EBLT	EBTH	EBRT	Approach	WBLT	WBTH	WBRT	Approach	NBLT	NBTH	NBRT	Approach	SBLT	SBTH	SBRT	Approach	TOTAL	
SR 310/Refugee Rd																				
AM Peak Hour	2022	No Build	B/17.7	B/17.7	B/17.7	B/17.7	B/16.2	B/16.2	B/16.2	B/16.2	A/7.3	A/7.3	A/7.3	A/7.3	A/8.8	A/8.8	A/8.8	A/8.8	B/11.0	
		Single Family Only	B/17.8	B/17.8	B/17.8	B/17.8	B/17.6	B/17.6	B/17.6	B/17.6	A/7.6	A/7.6	A/7.6	A/7.6	A/9.0	A/9.0	A/9.0	A/9.0	B/11.7	
	2042	No Build	B/17.7	B/17.7	B/17.7	B/17.7	B/15.9	B/15.9	B/15.9	B/15.9	A/9.5	A/9.5	A/9.5	A/9.5	B/12.5	B/12.5	B/12.5	B/12.5	B/13.0	
		Single Family Only	B/17.9	B/17.9	B/17.9	B/17.9	B/17.0	B/17.0	B/17.0	B/17.0	B/10.6	B/10.6	B/10.6	B/10.6	B/13.7	B/13.7	B/13.7	B/13.7	B/14.1	
		Full Build	B/18.1	B/18.1	B/18.1	B/18.1	B/16.8	B/16.8	B/16.8	B/16.8	C/26.2	C/26.2	C/26.2	C/26.2	C/21.6	C/21.6	C/21.6	C/21.6	C/21.9	
Full Build With Improvements			C/34.4	C/24.9	C/24.9	C/29.5	C/29.9	C/25.5	C/25.5	C/26.9	C/21.1	B/10.6	B/10.6	B/11.9	B/13.4	B/13.4	B/13.4	B/13.4	B/17.4	
PM Peak Hour	2022	No Build	B/17.9	B/17.9	B/17.9	B/17.9	B/14.9	B/14.9	B/14.9	B/14.9	B/10.4	B/10.4	B/10.4	B/10.4	B/10.9	B/10.9	B/10.9	B/10.9	B/12.3	
		Single Family Only	B/17.9	B/17.9	B/17.9	B/17.9	B/15.5	B/15.5	B/15.5	B/15.5	B/12.1	B/12.1	B/12.1	B/12.1	B/11.8	B/11.8	B/11.8	B/11.8	B/13.3	
	2042	No Build	B/18.0	B/18.0	B/18.0	B/18.0	B/14.4	B/14.4	B/14.4	B/14.4	B/16.4	B/16.4	B/16.4	B/16.4	C/20.1	C/20.1	C/20.1	C/20.1	B/18.0	
		Single Family Only	B/18.0	B/18.0	B/18.0	B/18.0	B/15.0	B/15.0	B/15.0	B/15.0	C/21.6	C/21.6	C/21.6	C/21.6	C/34.7	C/34.7	C/34.7	C/34.7	C/25.1	
		Full Build	B/18.9	B/18.9	B/18.9	B/18.9	B/16.8	B/16.8	B/16.8	B/16.8	F/208.2	F/208.2	F/208.2	F/208.2	F/212.1	F/212.1	F/212.1	F/212.1	F/163.9	
Full Build With Improvements			C/28.2	D/46.0	D/46.0	D/40.5	E/75.9	C/23.0	C/23.0	D/47.5	B/18.3	E/55.2	E/55.2	D/54.1	E/66.9	B/13.9	B/13.9	B/18.9	D/39.2	
Refugee Rd/Brendan Park Dr																				
AM Peak Hour	2022	No Build	-	-	-	-	A/7.3	-	-	A/0.2	A/9.6	-	A/9.6	A/9.6	-	-	-	-	A/1.3	
		Single Family Only	A/7.6	-	-	-	A/2.4	A/7.3	-	-	A/0.2	B/11.1	B/11.1	B/11.1	A/9.7	A/9.7	A/9.7	A/9.7	A/3.9	
	2042	No Build	-	-	-	-	A/7.4	-	-	A/0.2	B/10.0	-	B/10.0	B/10.0	-	-	-	-	A/1.3	
		Single Family Only	A/7.7	-	-	-	A/2.1	A/7.4	-	-	A/0.2	B/11.7	B/11.7	B/11.7	B/11.7	A/9.9	A/9.9	A/9.9	A/9.9	A/3.7
		Full Build	A/7.7	-	-	-	A/1.7	A/7.4	-	-	A/0.2	B/11.6	B/11.6	B/11.6	B/11.6	B/10.0	B/10.0	B/10.0	B/10.0	A/3.2
Full Build With Improvements			A/7.7	-	-	-	A/1.7	A/7.4	-	-	A/0.2	B/11.6	B/11.6	B/11.6	B/11.6	B/10.0	B/10.0	B/10.0	A/3.2	
PM Peak Hour	2022	No Build	-	-	-	-	A/7.7	-	-	A/1.1	B/10.3	-	B/10.3	B/10.3	-	-	-	-	A/1.3	
		Single Family Only	A/7.6	-	-	-	A/2.4	A/7.7	-	-	A/1.0	B/13.2	B/13.2	B/13.2	B/13.2	A/9.3	A/9.3	A/9.3	A/9.3	A/3.6
	2042	No Build	-	-	-	-	A/7.8	-	-	A/1.1	B/10.8	-	B/10.8	B/10.8	-	-	-	-	A/1.3	
		Single Family Only	A/7.6	-	-	-	A/2.1	A/7.8	-	-	A/1.0	B/14.2	B/14.2	B/14.2	B/14.2	A/9.5	A/9.5	A/9.5	A/9.5	A/3.4
		Full Build	A/7.7	-	-	-	A/1.6	A/7.9	-	-	A/0.8	B/14.7	B/14.7	B/14.7	B/14.7	A/9.9	A/9.9	A/9.9	A/9.9	A/2.8
Full Build With Improvements			A/7.7	-	-	-	A/1.6	A/7.9	-	-	A/0.8	B/14.7	B/14.7	B/14.7	B/14.7	A/9.9	A/9.9	A/9.9	A/2.8	
Refugee Rd/Smoke Rd																				
AM Peak Hour	2022	No Build	A/7.5	A/7.5	A/7.5	A/7.5	A/7.9	A/7.9	A/7.9	A/7.9	A/7.6	A/7.6	A/7.6	A/7.6	A/7.4	A/7.4	A/7.4	A/7.4	A/7.7	
		Single Family Only	A/7.6	A/7.6	A/7.6	A/7.6	A/7.9	A/7.9	A/7.9	A/7.9	A/7.6	A/7.6	A/7.6	A/7.6	A/7.4	A/7.4	A/7.4	A/7.4	A/7.7	
	2042	No Build	A/7.7	A/7.7	A/7.7	A/7.7	A/8.2	A/8.2	A/8.2	A/8.2	A/7.8	A/7.8	A/7.8	A/7.8	A/7.5	A/7.5	A/7.5	A/7.5	A/7.9	
		Single Family Only	A/7.7	A/7.7	A/7.7	A/7.7	A/8.2	A/8.2	A/8.2	A/8.2	A/7.8	A/7.8	A/7.8	A/7.8	A/7.6	A/7.6	A/7.6	A/7.6	A/8.0	
		Full Build	A/7.8	A/7.8	A/7.8	A/7.8	A/8.4	A/8.4	A/8.4	A/8.4	A/7.9	A/7.9	A/7.9	A/7.9	A/7.6	A/7.6	A/7.6	A/7.6	A/8.1	
Full Build With Improvements			A/7.8	A/7.8	A/7.8	A/7.8	A/8.4	A/8.4	A/8.4	A/8.4	A/7.9	A/7.9	A/7.9	A/7.9	A/7.6	A/7.6	A/7.6	A/7.6	A/8.1	
PM Peak Hour	2022	No Build	A/8.4	A/8.4	A/8.4	A/8.4	A/7.8	A/7.8	A/7.8	A/7.8	A/7.7	A/7.7	A/7.7	A/7.7	A/7.7	A/7.7	A/7.7	A/7.7	A/8.1	
		Single Family Only	A/8.4	A/8.4	A/8.4	A/8.4	A/7.9	A/7.9	A/7.9	A/7.9	A/7.7	A/7.7	A/7.7	A/7.7	A/7.8	A/7.8	A/7.8	A/7.8	A/8.1	
	2042	No Build	A/8.9	A/8.9	A/8.9	A/8.9	A/8.1	A/8.1	A/8.1	A/8.1	A/8.1	A/7.9	A/7.9	A/7.9	A/7.9	A/8.0	A/8.0	A/8.0	A/8.0	A/8.5
		Single Family Only	A/8.9	A/8.9	A/8.9	A/8.9	A/8.1	A/8.1	A/8.1	A/8.1	A/8.1	A/7.9	A/7.9	A/7.9	A/7.9	A/8.0	A/8.0	A/8.0	A/8.0	A/8.5
		Full Build	A/9.6	A/9.6	A/9.6	A/9.6	A/8.5	A/8.5	A/8.5	A/8.5	A/8.2	A/8.2	A/8.2	A/8.2	A/8.2	A/8.2	A/8.2	A/8.2	A/8.2	A/9.0
Full Build With Improvements			A/9.6	A/9.6	A/9.6	A/9.6	A/8.5	A/8.5	A/8.5	A/8.5	A/8.2	A/8.2	A/8.2	A/8.2	A/8.2	A/8.2	A/8.2	A/8.2	A/9.0	
US 40/SR 310																				
AM Peak Hour	2022	No Build	E/59.3	D/45.8	E/66.4	E/57.9	E/59.2	D/45.0	D/43.2	D/50.7	B/13.1	B/17.5	B/14.8	B/15.4	B/12.0	B/18.3	B/18.4	B/17.8	C/32.0	
		Single Family Only	E/59.6	D/45.6	E/57.6	D/53.5	E/59.0	D/45.0	D/43.4	D/50.5	B/13.5	B/18.2	B/15.4	B/16.0	B/12.1	B/18.9	B/19.0	B/18.2	C/31.1	
	2042	No Build	E/60.1	D/42.2	E/55.2	D/50.9	E/66.0	D/40.6	D/38.5	D/50.8	B/18.2	C/23.5	B/19.0	C/20.9	B/16.8	C/25.9	C/25.9	C/25.1	C/34.9	
		Single Family Only	E/60.8	D/42.2	E/55.2	D/51.1	E/67.2	D/40.8	D/38.8	D/51.4	B/18.8	C/24.0	B/19.2	C/21.4	B/16.9	C/26.5	C/26.5	C/25.5	D/35.1	
		Full Build	E/62.9	D/42.1	D/54.7	D/52.6	E/70.0	D/44.6	D/44.3	D/54.1	C/20.8	C/26.8	B/19.6	C/24.0	B/17.8	C/26.9	C/26.9	C/25.8	D/36.6	
Full Build With Improvements			E/64.4	D/43.4	E/56.7	D/54.3	E/61.9	D/45.5	D/45.3	D/51.6	E/57.3	C/20.7	C/20.8	C/33.6	E/60.0	C/24.8	C/24.9	C/29.1	D/40.2	
PM Peak Hour	2022	No Build	E/62.8	D/35.8	E/68.7	D/53.0	E/55.8	D/35.4	C/34.3	D/42.1	C/25.0	D/35.6	C/28.1	C/30.5	C/25.2	C/34.6	C/34.9	C/33.6	D/40.3	
		Single Family Only	E/61.7	D/35.8	E/68.7	D/53.1	E/55.8	D/36.8	D/36.0	D/42.7	C/25.8	D/37.6	C/28.4	C/31.9	C/25.6	C/34.8	D/35.0	C/33.7	D/40.8	
	2042	No Build	E/61.1	C/34.2	E/77.2	D/54.8	E/57.3	D/35.0	C/33.5	D/42.3	D/47.5	E/55.5	C/33.9	D/48.4	C/32.5	D/43.7	D/43.9	D/42.4	D/48.8	
		Single Family Only	E/60.2	C/34.2	E/73.5	D/53.2	E/57.3	D/36.3	D/35.2	D/42.9	D/44.2	E/64.1	C/34.1	D/51.6	C/33.6	D/45.3	D/45.5	D/43.9	D/49.7	
		Full Build	E/64.2	C/29.9	E/62.9	D/50.1	E/57.3	D/40.8	D/43.5	D/45.9	E/77.5	F/262.1	D/40.6	F/171.1	D/39.9	F/276.2	F/276.6	F/240.1	F/133.0	
Full Build With Improvements			E/75.1	C/35.0	E/64.8	D/54.9	E/56.7	D/44.9	D/46.7	D/48.6	E/60.9	D/48.9	D/49.2	D/52.5	E/76.6	D/48.2	D/48.8	D/52.9	D/52.9	
Refugee Rd/Full Access South																				
AM Peak Hour	2042	Full Build	A/8.0	-	-	A/3.4	-	-	-	-	-	-	-	-	B/10.9	-	B/10.9	B/10.9	A/2.2	
		Full Build With Improvements	A/8.0	-	-	A/3.4	-	-	-	-	-	-	-	-	B/10.9	-	B/10.9	B/10.9	A/2.2	
PM Peak Hour	2042	Full Build	A/7.9	-	-	A/2.2	-	-	-	-	-	-	-	-	B/13.6	-	B/13.6	B/13.6	A/4.0	
		Full Build With Improvements	A/7.9	-	-	A/2.2	-	-	-	-	-	-	-	-	B/13.5	-	B/13.5	B/13.5	A/4.0	
SR 310/South RI/RO																				
AM Peak Hour	2042	Full Build	-	-	-	-	-	-	B/13.9	B/13.9	-	-	-	-	-	-	-	-	A/0.1	
		Full Build With Improvements	-	-	-	-	-	-	B/13.6	B/13.6	-	-	-	-	-	-	-	-	A/0.1	
PM Peak Hour	2042	Full Build	-	-	-	-	-	-	C/23.7	C/23.7	-	-	-	-	-	-	-	-	A/0.2	
		Full Build With Improvements	-	-	-	-	-	-	C/22.5	C/22.5	-	-	-	-	-	-	-	-	A/0.2	
SR 310/Full Access West																				
AM Peak Hour	2042	Full Build	-	-	-	-	F/167.4	-	B/13.6	F/133.7	-	-	-	-	A/9.4	-	-	A/0.8	B/13.3	
		Full Build With Improvements	-	-	-	-	B/12.1	-	B/10.2	B/11.7	-	-	A/4.9	A/3.2	A/4.6	A/6.8	A/5.2	-	A/5.4	A/5.7
PM Peak Hour	2042	Full Build	-	-	-	-	F/287.5	-	E/35.6	F/169.2	-	-	-	-	B/12.1	-	-	A/2.0	F/369.4	
		Full Build With Improvements	-	-	-	-	B/19.1	-	B/17.4	B/18.4	-	-	A/7.1	A/5.0	A/6.5	B/13.9	A/6.8	-	A/8.0	A/9.6
SR 310/North RI/RO																				
AM Peak Hour	2042	Full Build	-	-	-	-	-	-	B/12.8	B/12.8	-	-	-	-	-	-	-	-	A/0.0	
		Full Build	-	-	-	-	-	-	B/12.8	B/12.8	-	-	-	-	-	-	-	-	A/0.0	
PM Peak Hour	2042	Full Build	-	-	-	-	-	-	C/19.8	C/19.8	-	-	-	-	-	-	-	-	A/0.1	
		Full Build	-	-	-	-	-	-	C/19.8	C/19.8	-	-	-	-	-	-	-	-	A/0.1	

Table 4 results show the performance of existing roadway conditions unless “with improvements” is noted in the scenario column of the table. Where improvements were needed to meet performance criteria, those improvements are discussed below. The partial (51 acre) development scenarios limited to single family development in Sub-Area D, developed alone, did not require capacity improvements to meet performance requirements. Rather, not until the entirety of the “full build” scenario that includes the development of all the retail, assisted living and multi-family development assumptions made for the 44-acre balance of the site in Sub-Areas A, B, and C respectively are capacity improvements necessary at the three locations discussed below.

(1) State Route 310/Main Access Point West

The addition of a traffic signal at the intersection of State Route 310/Main Access Point West is necessary to attain the required levels of service. This intersection should include a southbound left turn lane that is 315' long and a northbound right turn lane that is 365' long. Two westbound lanes, one for right turns and one for left turns, are necessary for traffic leaving the site.

(2) State Route 310/Refugee Road

The addition of left turn lanes for each approach at the signalized intersection of State Route 310/Refugee Road is necessary to attain the required levels of service.

(3) State Route 310/US 40

The signalized intersection of State Route 310/US 40 was analyzed at the City's request, although it is an ODOT maintained intersection outside of Pataskala city limits and nearly one mile from the site. By the 2042 horizon year, in large part due to anticipated offsite development, this intersection requires the addition of a southbound right turn lane, signalized right turn overlap phasing on all approaches, conversion to lead-lag phasing on eastbound and westbound approaches and adjustments to phase minimums.

Conclusions and Recommendations

Near Term Development of Single Family Homes in Sub-Area D

Delay and level of service at study area intersections are largely unaffected by near term development of the 51 acre single family portion of the site. The only improvement needed as a result of the full development of Sub-Area D, is the addition of an eastbound left turn lane on Refugee Road into the proposed driveway across from Brenden Park Drive.

Refugee Road will eventually require a consistent 3-lane section between State Route 310 and Brenden Park Drive once Sub Area A is fully developed. It is therefore recommended that widening improvements on Refugee Road west of Brenden Park Drive for the 51 acre single family site should provide full width pavement rather than tapered pavement within the limits required to develop the left turn lane. In this manner, the near-term single family widening will meet the future 3-lane pavement section provided by others across the retail site frontage.

Long Term Site Build-Out

Full development of the remaining 44 acre western portion of the site in Sub-Areas A, B, and C, with retail and other uses as originally proposed in 2016, may require certain access and roadway improvements to support site generated traffic. These improvements are outlined in the five recommendations below and are unrelated to the development of Sub-Area D, single family portion of the site. There is no known timetable for development of the 44 acre portion of the site and it is entirely foreseeable that market conditions could give rise to future land use changes prior to actual development. Accordingly, we recommend a flexible approach to implementation that allows re-study and revision of these recommendations closer to the time of actual development. Moreover, these recommendations shall be re-examined and subject to modification

in the event the uses or intensity of uses in Sub-Areas A, B, or C are modified from the attached Preliminary Development Plan.

- 1) The State Route 310/Main Site Access West intersection requires signal control to operate effectively. A southbound left turn lane of 315', and a northbound right turn lane of 365' are also recommended at this intersection.
- 2) The State Route 310/South RI-RO access points warrants a 265' northbound right turn lane at the time of development.
- 3) The South Site Access (retail) warrants an eastbound left turn lane addition on Refugee Road and due to intersection spacing a 3-lane section with a center two-way-left-turn-lane is recommended in this area of Refugee Road.
- 4) The State Route 310/Refugee Road intersection requires dedicated left turn lanes for all four approaches. The southbound left turn lane requires a length of 315', the eastbound left turn lane requires 265', the northbound left turn lane requires 285', and the westbound left turn lane should strive for a length of 295' subject to coordination with the 3-lane pavement section recommended east of this dedicated turn lane. No changes to existing traffic signal operation are required.
- 5) The State Route 310/US 40 intersection may require the following changes:
 - a. Change phasing to lead-lag operation for eastbound and westbound left turn phases
 - b. Add a southbound right turn lane
 - c. Add signalized right turn overlaps on all approaches
 - d. Reduce phase minimums to 7 seconds for left turn phases and 10 seconds for through phases

Access improvements and off-site intersection improvements associated with the 44 acre long-term site build-out are sensitive to the type and amount of development on the site as well as background conditions that may change over time in ways that deviate from our estimates of future regional growth. In particular, the State Route 310/US 40 intersection is likely to be impacted by other development, for example in the Etna Parkway area or around the I-70/State Route 310 intersection, possibly years prior to development of the 44 acre portion of Hazelton Crossing. Commitments related to the long-term build-out of Hazelton Crossing should be flexible enough to accommodate updates and reanalysis of proposed land uses proximate to the time of actual development.

In the near term, the single family residential portion of Hazelton Crossing in Sub-Area D should be approved for development with the eastbound left turn lane addition to Refugee Road described above.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Lawrence C. Creed', with a stylized, cursive script.

Lawrence C. Creed, PE
Principal
Director of Traffic Engineering Services

Attachments: Site Plan, MORPC Correspondence, Count Data, Traffic Volume Calculations, Capacity Analysis Reports, Turn Lane Warrant Analysis, Turn Lane Length Analysis

REFER TO COPY OF
TRAFFIC IMPACT STUDY ON
FILE WITH CITY

Exhibit 'Q-2'



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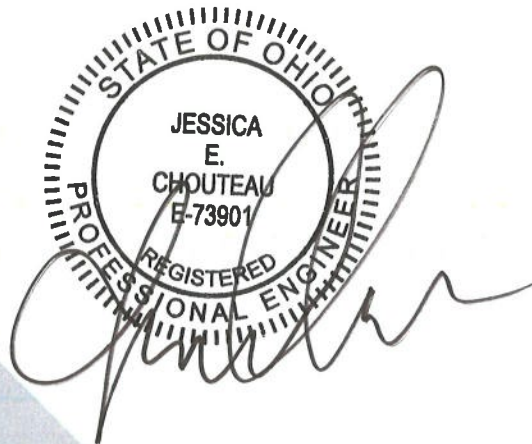
Job Number: 2019-0848

HAZELTON CROSSING

Preliminary Stormwater Management Plan (SWMP)

Prepared For: Rockford Homes

January 08, 2021





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PROJECT SUMMARY

Project Name:	Hazelton Crossing
Location:	Licking County, Ohio
Type:	Stormwater Management Plan
Reviewing Agency:	City of Pataskala, Ohio EPA

HYDROLOGIC SUMMARY

Rainfall Data:	NOAA Atlas 14, Volume 2, Version 3, 2004
----------------	--

1-yr	2.20"
2-yr	2.63"
5-yr	3.24"
10-yr	3.74"
25-yr	4.44"
50-yr	5.02"
100-yr	5.63"

Rainfall Distribution:	NRCS Type II 24 hour
Detention Policy:	City of Pataskala
Water Quality:	City of Pataskala, Ohio EPA
Hydrology Modeling Program:	HydroCAD 10.10

DESIGN SUMMARY

Detention:	Wet Basins
Water Quality:	Wet Basins
Receiving Water Body:	Unnamed Tributary of South Fork Licking River

REVISIONS



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APPENDICES

- Appendix A: USDA Soils Report
- Appendix B: HydroCAD Output
- Appendix C: Exhibits

1.0 INTRODUCTION

The following memo summarizes the stormwater management plan for the Hazelton Crossing project in Licking County, Ohio. The proposed project includes a housing development on the eastern portion of the site, as well as a future commercial development on the western portion of the site. The housing section of the site will be developed first. The proposed site is located north of Refugee Road, south of Stoney Ridge Drive and east of Hazelton-Etna Road. The Stormwater Management Plan was prepared in accordance with the requirements of both the City of Pataskala and the Ohio EPA. The runoff from this site will be routed through wet basins for water quality and quantity control before discharging to an unnamed tributary of South Fork Licking River.



Figure 1 – Site Location Map

2.0 HYDROLOGIC ANALYSIS

Hydrologic parameters such as Runoff Curve Number (RCN) and Time of Concentration were determined using standard Natural Resources Conservation Service (NRCS) methodology. The 1-, 2-, 5-, 10-, 25-, 50-, and 100-year storm event discharge amounts were calculated using the NRCS TR-55 method. This analysis reflects the NRCS Type II distribution, 24-hr storm duration. Rainfall depths were obtained from NOAA Atlas 14, Volume 2, Version 3, 2004. The peak flow rates were computed using the HydroCAD 10.10 computer program.

3.0 PRE-DEVELOPED ANALYSIS

The pre-developed condition, as seen on Exhibit 1 in Appendix C, consists mainly of agricultural area in good condition Type “C” soils, which corresponds to Runoff Curve Numbers of 78. Pre-developed Northeast naturally drains to the northeast where it then flows through a wooded area before discharging to an unnamed tributary of the South Fork Licking River. Pre-Developed Southeast naturally drains to the southeast of the site and to an existing roadside ditch that runs east along Refugee Road.

All pre-developed subarea characteristics are summarized in Table 1. Pre-developed peak flow rates are provided in Table 2. All time of concentration calculations can be found in the HydroCAD output in Appendix B.

Table 1 -Pre-developed Subarea Characteristics

Subarea Identifier	Tributary Area (acres)	Land Usage	Runoff Curve Number	% Impervious (%)	Time of Concentration (min)	1-year Runoff Volume (ac-ft)
Pre-Developed Northeast	50.83	Agricultural	78	0%	51.4	2.544
Pre-Developed Southeast (Post Full)	14.82	Agricultural	78	0%	38.3	0.742
Pre-Developed Southeast (Phase 1)	8.55	Agricultural	78	0%	22.9	0.428

Table 2 -Pre-developed Peak Flow Rates

Storm Event (year)	Pre-developed Northeast Peak Flow Rates (cfs)	Pre-developed Southeast (Post Full) Peak Flow Rates (cfs)	Pre-developed Southeast (Phase 1) Peak Flow Rates (cfs)
1	15.92	5.77	4.77
2	24.50	8.87	7.26
5	38.15	13.72	11.17
10	50.17	17.98	14.61
25	67.84	24.28	19.65
50	83.02	29.69	23.96
100	99.33	35.50	28.59

4.0 POST-DEVELOPED ANALYSIS

The Hazelton Crossing project will be developed in two phases. The Phase 1 will involve the development of the housing portion on the eastern side of the site, while leaving the western portion of the site in its Pre-Developed conditions. In Phase 1, the Post NE subarea and the Pre NW subarea will drain to the NE Basin, which discharges to the northeastern outfall and to an unnamed tributary of South Fork Licking River. In the second phase of development (Full Post), the western portion of the site will be developed. The Full Post phase will install the NW Basin, which will receive flow from the Post NW subarea. The NW Basin will drain directly into the NE basin, where the NE basin will provide water quality for both subareas.

In Phase 1, the Post SE subarea will drain to the SE Basins, which discharges to an existing roadside ditch that runs east along the north side of Refugee Road. The Pre SW subarea will drain to the SW Basin, which will be connected via storm sewer to the SE Basins. The SE Basins will provide water quality for both Subareas. The Pre SW to Road subarea is a 5.38 acre portion of the Pre-Developed SE that will continue draining to the roadside ditch and will not be tributary to the SW Basin during Phase 1. In the Full Post conditions, the Post SW subarea will be tributary to the SW Basin.

Exhibits 2 and 3, provided within Appendix C, show the post-developed conditions. The post-developed subarea characteristics are summarized in Table 3. The post-developed allowable release rates can be found in Tables 4, 5 and 6.

Table 3 -Post-developed Subarea Characteristics

Subarea Identifier	Tributary Area (acres)	Land Usage	Runoff Curve Number	% Impervious (%)	Time of Concentration (min)	1-year Runoff Volume (ac-ft)
Post NE	24.18	Open Space, Impervious cover	87	55%	10.0	2.145
Post NW	26.71	Open Space, Impervious cover	90	65%	10.0	2.819
Pre NW	22.06	Agricultural	78	0%	28.7	1.104
Post SE	22.27	Open Space, Impervious cover	87	55%	10.0	1.976
Post SW	23.72	Open Space, Impervious cover	94	85%	10.0	3.132
Pre SW to Basin	12.45	Agricultural	78	0%	21.1	0.623
Pre SW to Road	5.38	Agricultural	78	0%	25.7	0.269



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The Phase 1 1-year runoff volume to the NE outfall increases to 3.249 ac-ft, an increase of 27.71% from the existing condition, which results in a 5-year critical storm event.

$$\% \text{ Increase} = [(3.249 - 2.544)/2.544] \times 100 = 27.71\%$$

5-Yr Critical Storm

Table 4 - NE Basin (Phase 1) Allowable Release Rates

Storm Event (yr.)	Pre-developed NE Peak Flow Rates (cfs.)	Offsite NW Pre to Road Peak Flow Rates (cfs.)	NE Basin Allowable Release Rates (cfs.)
1	15.92	10.53	26.45
2	24.50	16.13	32.05
5	38.15	24.91	40.83
10	50.17	32.61	82.78
25	67.84	44.00	94.17
50	83.02	53.75	103.92
100	99.33	64.23	114.40

The Full Post 1-year runoff volume to the NE outfall increases to 4.964 ac-ft, an increase of 95.13% from the existing condition, which results in a 10-year critical storm event.

$$\% \text{ Increase} = [(4.964 - 2.544)/2.544] \times 100 = 95.13\%$$

10-Yr Critical Storm

Table 5 - NE Basin (Full Post) Allowable Release Rates

Storm Event (yr.)	Pre-developed NE Peak Flow Rates (cfs.)	NE Basin Allowable Release Rates (cfs.)
1	15.92	15.92
2	24.50	15.92
5	38.15	15.92
10	50.17	15.92
25	67.84	50.17
50	83.02	50.17
100	99.33	50.17

The Phase 1 1-year runoff volume to the SE outfall increases to 1.976 ac-ft, an increase of 361.68% from the existing condition, which results in a 50-year critical storm event.

$$\% \text{ Increase} = [(1.976 - 0.428)/0.428] \times 100 = 361.68\%$$

50-Yr Critical Storm

Table 6 - SE Basin (Phase 1) Allowable Release Rates

Storm Event (yr.)	Pre-developed SE (Phase 1) Peak Flow Rates (cfs.)	Onsite Allowable Release Rate (cfs.)	Offsite SW Pre to Road Peak Flow Rates (cfs.)	Total Allowable Release Rates (cfs.)
1	4.77	4.77	2.77	7.54
2	7.26	4.77	4.24	9.01
5	11.17	4.77	6.55	11.32
10	14.61	4.77	8.58	13.35
25	19.65	4.77	11.55	16.32
50	23.96	4.77	14.09	18.86
100	28.59	14.61	16.82	31.43

The Full Post 1-year runoff volume to the SE outfall increases to 0.742 ac-ft, an increase of 588.41% from the existing condition, which results in a 100-year critical storm event.

$$\% \text{ Increase} = [(5.108 - 0.742)/0.742] \times 100 = 588.41\%$$

100-Yr Critical Storm

Table 7 - SE Basin (Full Post) Allowable Release Rates

Storm Event (yr.)	Pre-developed SE Peak Flow Rates (cfs.)	SE Basin Allowable Release Rates (cfs.)
1	5.77	5.77
2	8.87	5.77
5	13.72	5.77
10	17.98	5.77
25	24.28	5.77
50	29.69	5.77
100	35.50	5.77

5.0 OUTLET DESIGN

The outlet structure for the proposed basins will meet the City of Pataskala requirements.

Table 8 - Estimated Required Storage Volume for Phase 1

Basin Name	Estimated Storage Volume at the 100-Year Elevation (ac-ft)
NE Basin	6.65
SE Basin	5.10
SW Basin	2.70

Table 9 - Estimated Required Storage Volume for Full Post

Basin Name	Estimated Storage Volume at the 100-Year Elevation (ac-ft)
NE Basin	7.45
NW Basin	3.50
SE Basin	5.50
SW Basin	7.90

*The minimum 1 foot of freeboard must be provided. The preliminary basin layouts may need to be expanded to provide the minimum 1 foot of freeboard, based on a final analysis.

6.0 WATER QUALITY

The Ohio EPA requires that the water quality volume for wet basins be detained for a period of 24 hours while not discharging more than the first half of the water quality volume in less than 8 hours. Water quality drawdown for the basin will be provided by the basin's 1st stage outlet listed in Section 5.0.

The proposed basins will meet the water quality requirements.

7.0 CONCLUSION

The proposed stormwater management plan for Hazelton Crossing will meet all requirements for detention and water quality as set forth by the City of Pataskala and the Ohio EPA.



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APPENDIX A:

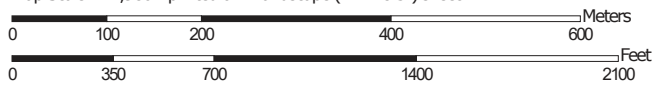
USDA Soils Report

Hydrologic Soil Group—Licking County, Ohio



Soil Map may not be valid at this scale.

Map Scale: 1:7,980 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84




**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

1/7/2021
Page 1 of 4



MAP LEGEND

Area of Interest (AOI)









 Area of Interest (AOI)

Soils


Soil Rating Polygons





 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines


 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points






 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Licking County, Ohio
 Survey Area Data: Version 18, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 31, 2010—Aug 27, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
AmD2	Amanda silt loam, 12 to 18 percent slopes, eroded	C	5.2	2.0%
BeA	Bennington silt loam, 0 to 2 percent slopes	C/D	53.9	21.0%
BeB	Bennington silt loam, 2 to 6 percent slopes	C/D	10.2	4.0%
Crd1B1	Cardington silt loam, 2 to 6 percent slopes	C/D	105.3	41.1%
Crd1C2	Cardington silt loam, 6 to 12 percent slopes, eroded	C/D	3.6	1.4%
Pe	Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes	C/D	71.6	28.0%
So	Sloan silt loam, Columbus Lowland, 0 to 2 percent slopes, frequently flooded	B/D	6.4	2.5%
Totals for Area of Interest			256.2	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

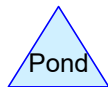
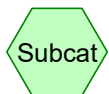
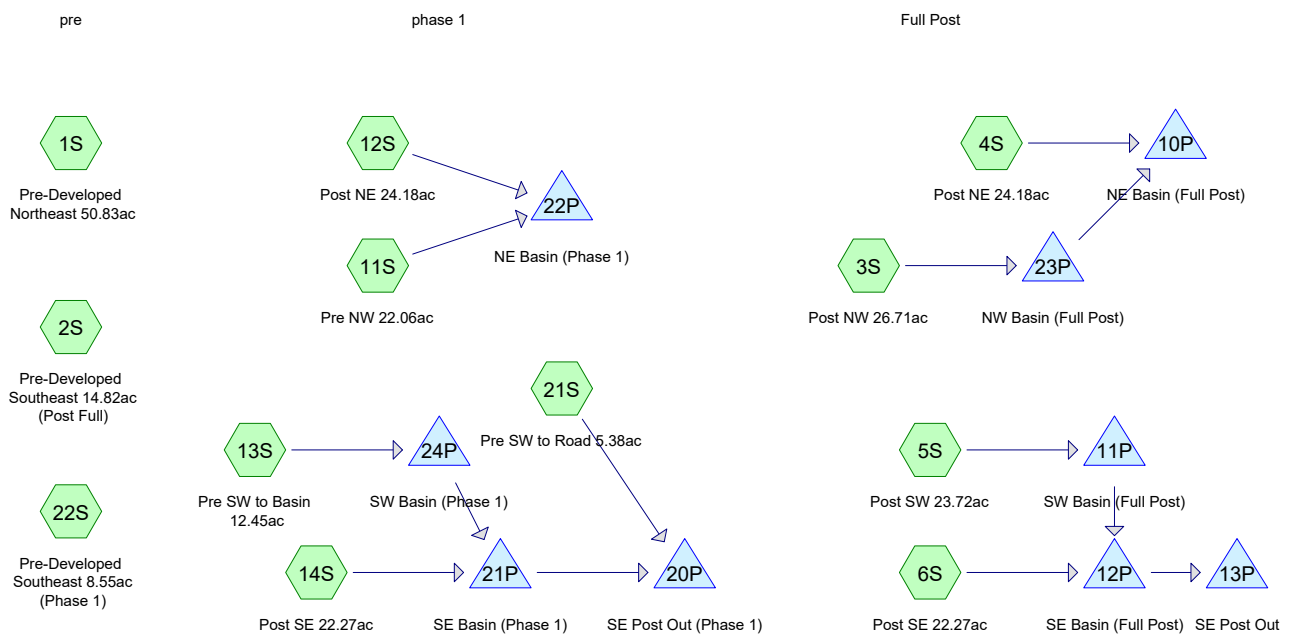
Tie-break Rule: Higher



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APPENDIX B:

HydroCAD Output



Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-year	Type II 24-hr		Default	24.00	1	2.20	2
2	2-year	Type II 24-hr		Default	24.00	1	2.63	2
3	5-year	Type II 24-hr		Default	24.00	1	3.24	2
4	10-year	Type II 24-hr		Default	24.00	1	3.74	2
5	25-year	Type II 24-hr		Default	24.00	1	4.44	2
6	50-year	Type II 24-hr		Default	24.00	1	5.02	2
7	100-year	Type II 24-hr		Default	24.00	1	5.63	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
92.900	87	(4S, 6S, 12S, 14S)
26.710	90	1/8 acre lots, 65% imp, HSG C (3S)
114.090	78	Row crops, C&T, Good, HSG C (1S, 2S, 11S, 13S, 21S, 22S)
23.720	94	Urban commercial, 85% imp, HSG C (5S)
257.420	84	TOTAL AREA

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
164.520	HSG C	1S, 2S, 3S, 5S, 11S, 13S, 21S, 22S
0.000	HSG D	
92.900	Other	4S, 6S, 12S, 14S
257.420		TOTAL AREA

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	92.900	92.900		4S, 6S, 12S, 14S
0.000	0.000	26.710	0.000	0.000	26.710	1/8 acre lots, 65% imp	3S
0.000	0.000	114.090	0.000	0.000	114.090	Row crops, C&T, Good	1S, 2S, 11S, 13S, 21S, 22S
0.000	0.000	23.720	0.000	0.000	23.720	Urban commercial, 85% imp	5S
0.000	0.000	164.520	0.000	92.900	257.420	TOTAL AREA	

Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	23P	1,013.00	1,012.50	100.0	0.0050	0.013	48.0	0.0	0.0

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Pre-Developed	Runoff Area=50.830 ac 0.00% Impervious Runoff Depth=0.60" Flow Length=2,529' Tc=51.4 min CN=78 Runoff=15.92 cfs 2.544 af
Subcatchment2S: Pre-Developed	Runoff Area=14.820 ac 0.00% Impervious Runoff Depth=0.60" Flow Length=1,945' Tc=38.3 min CN=78 Runoff=5.77 cfs 0.742 af
Subcatchment3S: Post NW 26.71ac	Runoff Area=26.710 ac 65.00% Impervious Runoff Depth=1.27" Tc=10.0 min CN=90 Runoff=51.84 cfs 2.819 af
Subcatchment4S: Post NE 24.18ac	Runoff Area=24.180 ac 0.00% Impervious Runoff Depth=1.06" Tc=10.0 min CN=87 Runoff=39.70 cfs 2.145 af
Subcatchment5S: Post SW 23.72ac	Runoff Area=23.720 ac 85.00% Impervious Runoff Depth=1.58" Tc=10.0 min CN=94 Runoff=55.89 cfs 3.132 af
Subcatchment6S: Post SE 22.27ac	Runoff Area=22.270 ac 0.00% Impervious Runoff Depth=1.06" Tc=10.0 min CN=87 Runoff=36.56 cfs 1.976 af
Subcatchment11S: Pre NW 22.06ac	Runoff Area=22.060 ac 0.00% Impervious Runoff Depth=0.60" Flow Length=1,231' Tc=28.7 min CN=78 Runoff=10.53 cfs 1.104 af
Subcatchment12S: Post NE 24.18ac	Runoff Area=24.180 ac 0.00% Impervious Runoff Depth=1.06" Tc=10.0 min CN=87 Runoff=39.70 cfs 2.145 af
Subcatchment13S: Pre SW to Basin	Runoff Area=12.450 ac 0.00% Impervious Runoff Depth=0.60" Flow Length=650' Tc=21.1 min CN=78 Runoff=7.32 cfs 0.623 af
Subcatchment14S: Post SE 22.27ac	Runoff Area=22.270 ac 0.00% Impervious Runoff Depth=1.06" Tc=10.0 min CN=87 Runoff=36.56 cfs 1.976 af
Subcatchment21S: Pre SW to Road 5.38ac	Runoff Area=5.380 ac 0.00% Impervious Runoff Depth=0.60" Flow Length=1,065' Tc=25.7 min CN=78 Runoff=2.77 cfs 0.269 af
Subcatchment22S: Pre-Developed	Runoff Area=8.550 ac 0.00% Impervious Runoff Depth=0.60" Flow Length=867' Tc=22.9 min CN=78 Runoff=4.77 cfs 0.428 af
Pond 10P: NE Basin (Full Post)	Peak Elev=1,006.23' Storage=2.871 af Inflow=48.08 cfs 4.936 af Outflow=3.26 cfs 4.861 af
Pond 11P: SW Basin (Full Post)	Peak Elev=1,013.59' Storage=2.249 af Inflow=55.89 cfs 3.132 af Outflow=1.10 cfs 2.815 af
Pond 12P: SE Basin (Full Post)	Peak Elev=1,011.34' Storage=2.074 af Inflow=37.33 cfs 4.790 af Outflow=1.09 cfs 3.854 af
Pond 13P: SE Post Out	Inflow=1.09 cfs 3.854 af Primary=1.09 cfs 3.854 af

Pond 20P: SE Post Out (Phase 1)

Inflow=3.49 cfs 2.575 af

Primary=3.49 cfs 2.575 af

Pond 21P: SE Basin (Phase 1)

Peak Elev=1,010.78' Storage=1.383 af Inflow=36.57 cfs 2.467 af

Outflow=0.89 cfs 2.305 af

Pond 22P: NE Basin (Phase 1)

Peak Elev=1,005.71' Storage=2.129 af Inflow=43.79 cfs 3.249 af

Outflow=1.31 cfs 3.095 af

Pond 23P: NW Basin (Full Post)

Peak Elev=1,014.48' Storage=1.172 af Inflow=51.84 cfs 2.819 af

48.0" Round Culvert n=0.013 L=100.0' S=0.0050 ' Outflow=13.77 cfs 2.791 af

Pond 24P: SW Basin (Phase 1)

Peak Elev=1,012.32' Storage=0.414 af Inflow=7.32 cfs 0.623 af

Outflow=0.25 cfs 0.491 af

Total Runoff Area = 257.420 ac Runoff Volume = 19.901 af Average Runoff Depth = 0.93"**85.42% Pervious = 219.896 ac 14.58% Impervious = 37.524 ac**

Summary for Subcatchment 1S: Pre-Developed Northeast 50.83ac

Runoff = 15.92 cfs @ 12.57 hrs, Volume= 2.544 af, Depth= 0.60"

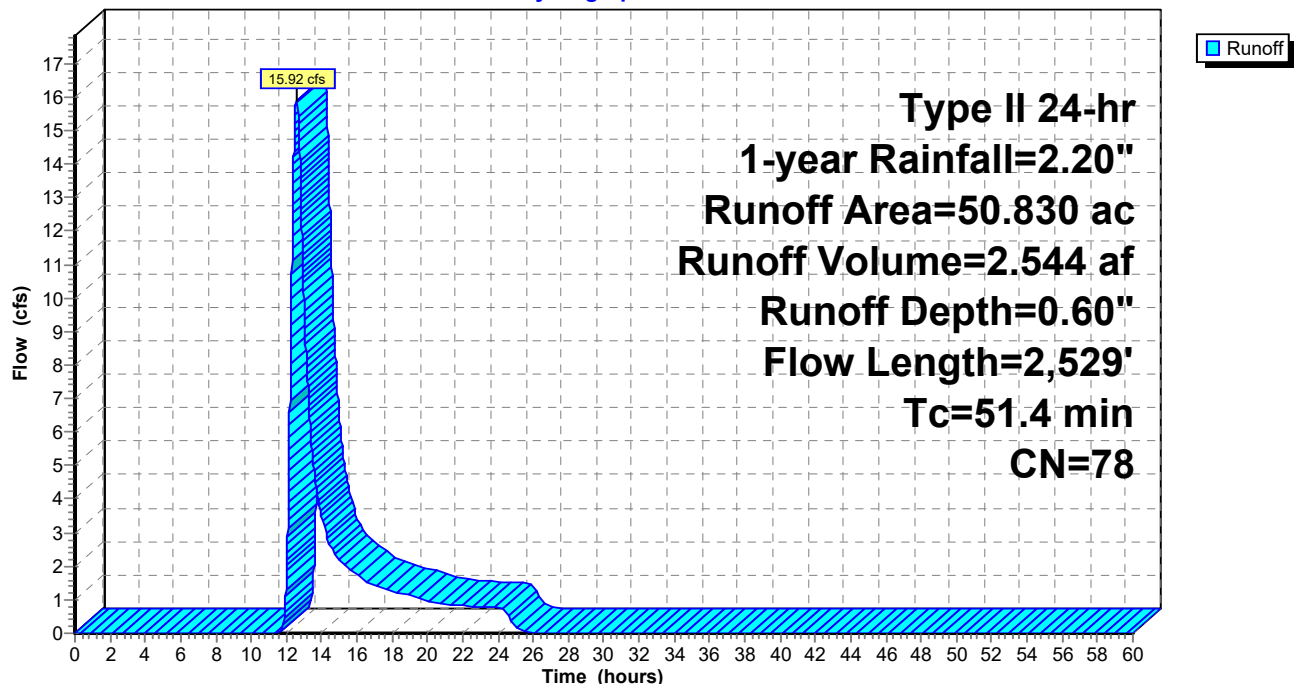
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-year Rainfall=2.20"

Area (ac)	CN	Description
50.830	78	Row crops, C&T, Good, HSG C
50.830		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.63"
6.2	633	0.0363	1.71		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
33.3	1,796	0.0100	0.90		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
51.4	2,529	Total			

Subcatchment 1S: Pre-Developed Northeast 50.83ac

Hydrograph



Summary for Subcatchment 2S: Pre-Developed Southeast 14.82ac (Post Full)

Runoff = 5.77 cfs @ 12.38 hrs, Volume= 0.742 af, Depth= 0.60"

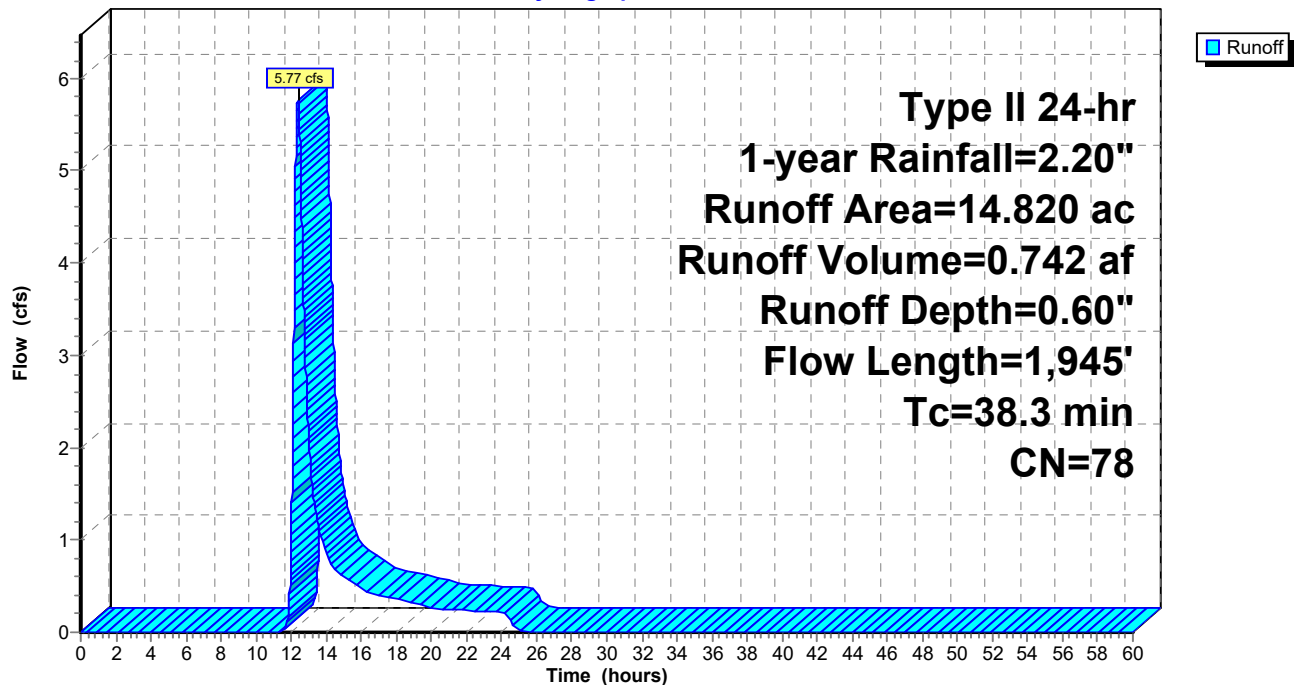
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-year Rainfall=2.20"

Area (ac)	CN	Description
14.820	78	Row crops, C&T, Good, HSG C
14.820		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow,
					Cultivated: Residue>20% n= 0.170 P2= 2.63"
26.4	1,845	0.0168	1.17		Shallow Concentrated Flow,
					Cultivated Straight Rows Kv= 9.0 fps
38.3	1,945	Total			

Subcatchment 2S: Pre-Developed Southeast 14.82ac (Post Full)

Hydrograph



Summary for Subcatchment 3S: Post NW 26.71ac

Runoff = 51.84 cfs @ 12.02 hrs, Volume= 2.819 af, Depth= 1.27"

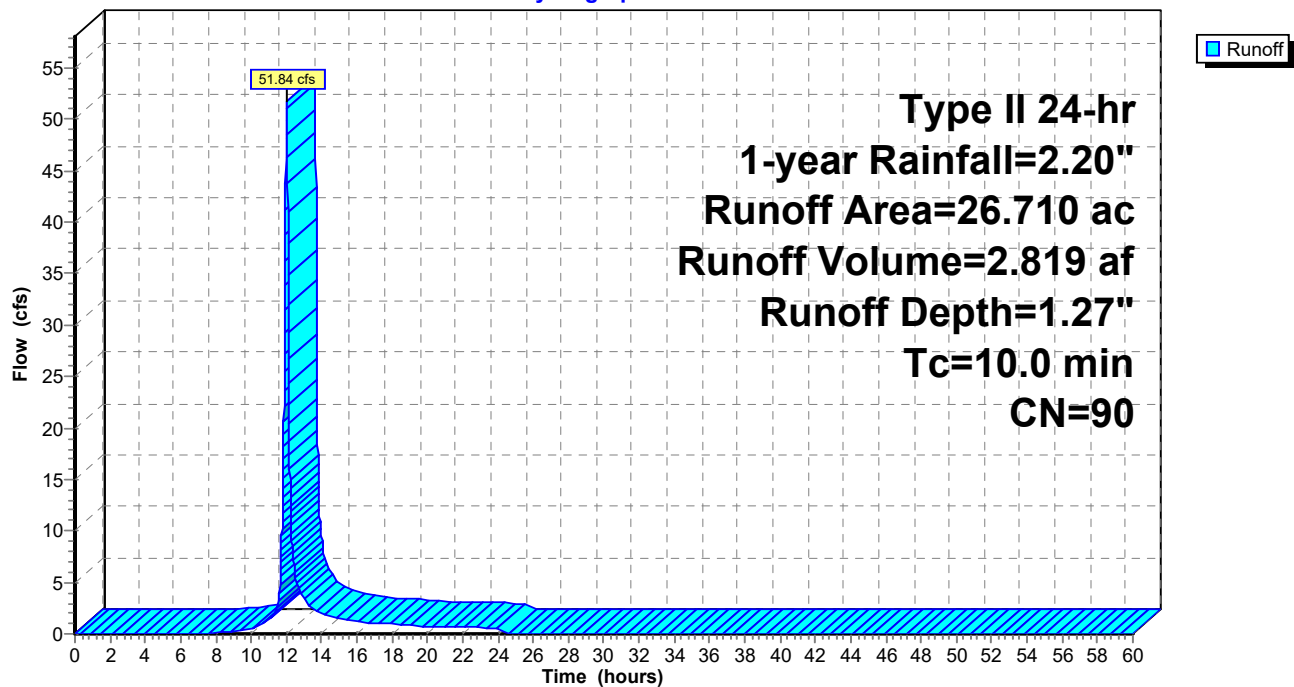
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-year Rainfall=2.20"

Area (ac)	CN	Description
26.710	90	1/8 acre lots, 65% imp, HSG C
9.349		35.00% Pervious Area
17.362		65.00% Impervious Area

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

Subcatchment 3S: Post NW 26.71ac

Hydrograph



Summary for Subcatchment 4S: Post NE 24.18ac

Runoff = 39.70 cfs @ 12.02 hrs, Volume= 2.145 af, Depth= 1.06"

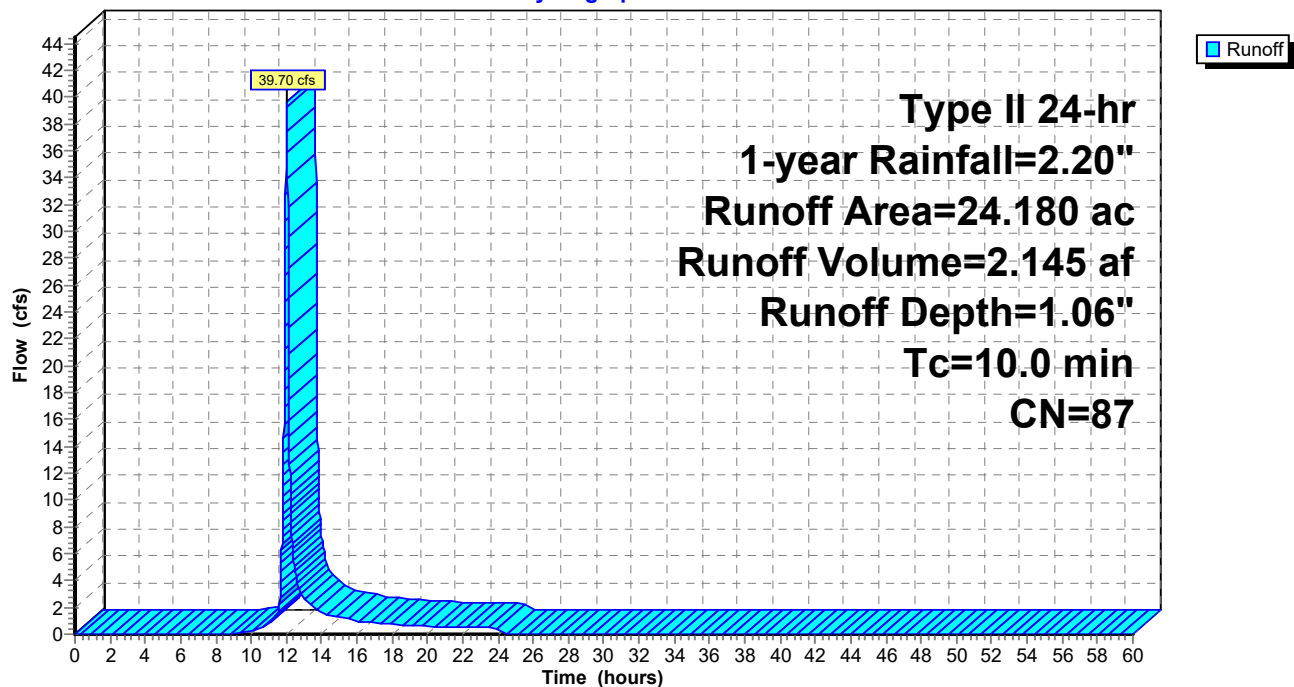
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-year Rainfall=2.20"

Area (ac)	CN	Description
* 24.180	87	
24.180		100.00% Pervious Area

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

Subcatchment 4S: Post NE 24.18ac

Hydrograph



Summary for Subcatchment 5S: Post SW 23.72ac

Runoff = 55.89 cfs @ 12.01 hrs, Volume= 3.132 af, Depth= 1.58"

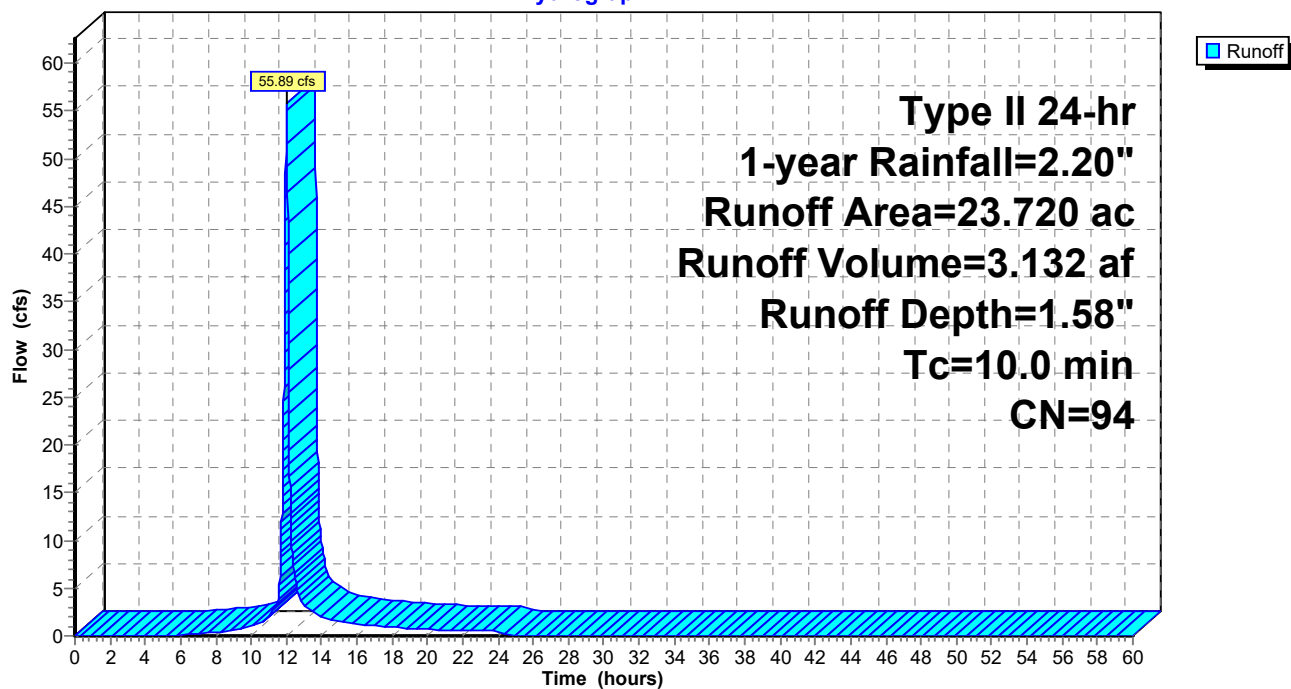
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-year Rainfall=2.20"

Area (ac)	CN	Description
23.720	94	Urban commercial, 85% imp, HSG C
3.558		15.00% Pervious Area
20.162		85.00% Impervious Area

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

Subcatchment 5S: Post SW 23.72ac

Hydrograph



Summary for Subcatchment 6S: Post SE 22.27ac

Runoff = 36.56 cfs @ 12.02 hrs, Volume= 1.976 af, Depth= 1.06"

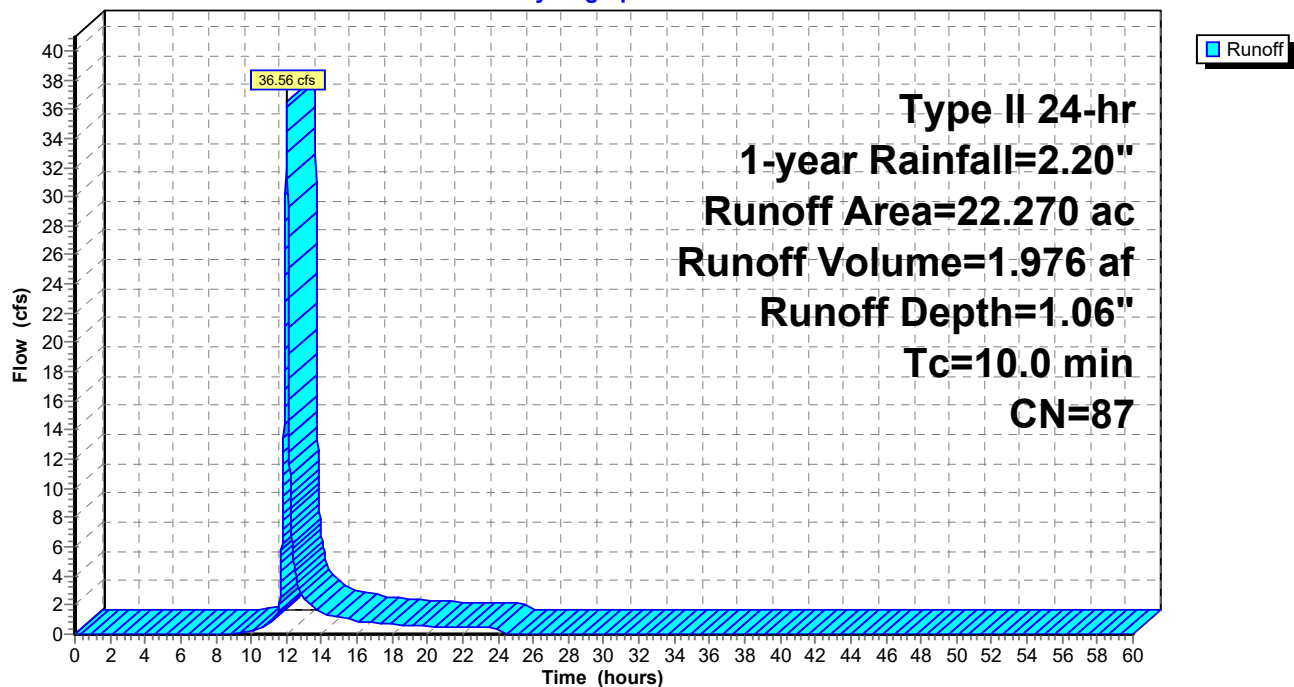
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-year Rainfall=2.20"

Area (ac)	CN	Description
* 22.270	87	
22.270		100.00% Pervious Area

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

Subcatchment 6S: Post SE 22.27ac

Hydrograph



Summary for Subcatchment 11S: Pre NW 22.06ac

Runoff = 10.53 cfs @ 12.25 hrs, Volume= 1.104 af, Depth= 0.60"

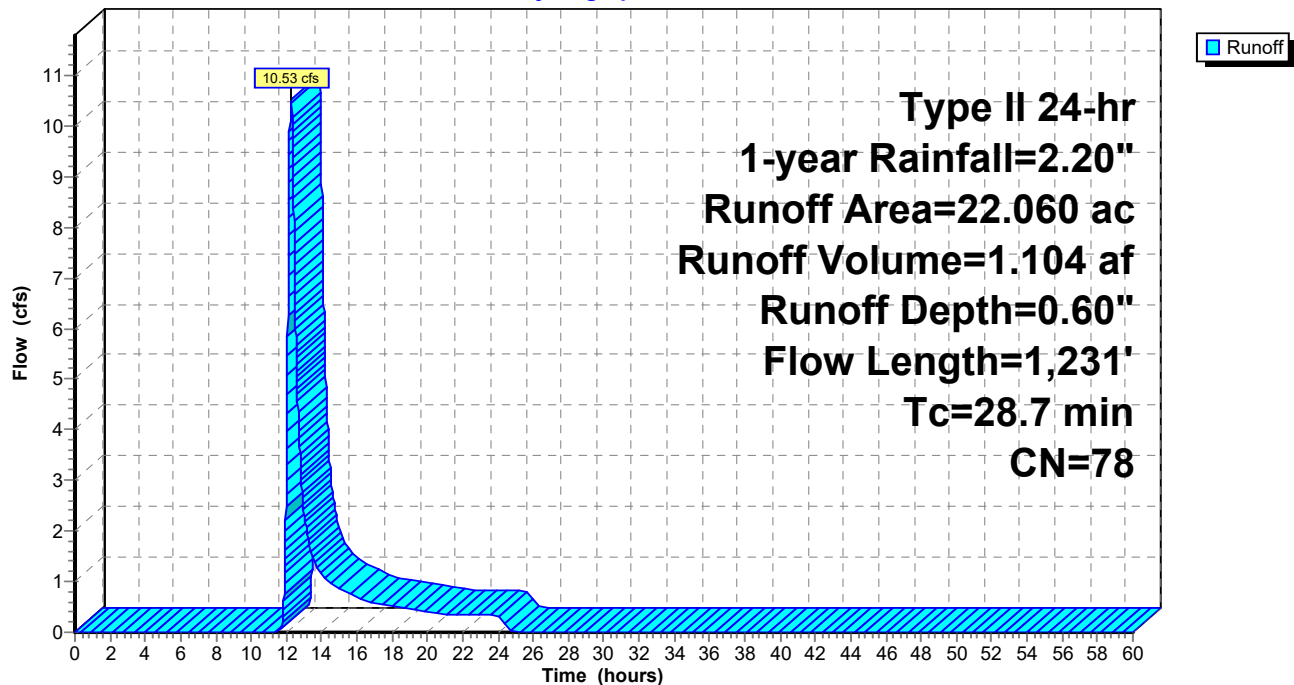
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-year Rainfall=2.20"

Area (ac)	CN	Description
22.060	78	Row crops, C&T, Good, HSG C
22.060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	100	0.0100	0.11		Sheet Flow,
					Cultivated: Residue>20% n= 0.170 P2= 2.63"
12.9	1,131	0.0265	1.47		Shallow Concentrated Flow,
					Cultivated Straight Rows Kv= 9.0 fps
28.7	1,231	Total			

Subcatchment 11S: Pre NW 22.06ac

Hydrograph



Summary for Subcatchment 12S: Post NE 24.18ac

Runoff = 39.70 cfs @ 12.02 hrs, Volume= 2.145 af, Depth= 1.06"

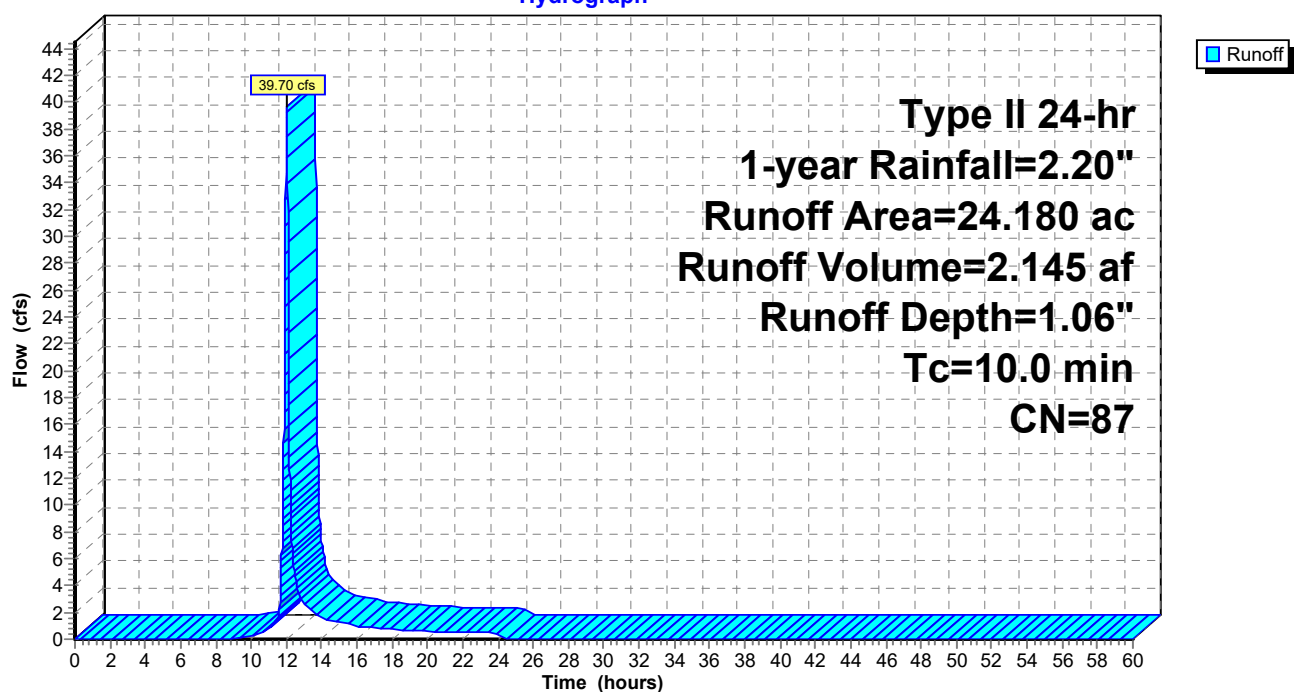
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-year Rainfall=2.20"

Area (ac)	CN	Description
* 24.180	87	
24.180		100.00% Pervious Area

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

Subcatchment 12S: Post NE 24.18ac

Hydrograph



Summary for Subcatchment 13S: Pre SW to Basin 12.45ac

Runoff = 7.32 cfs @ 12.16 hrs, Volume= 0.623 af, Depth= 0.60"

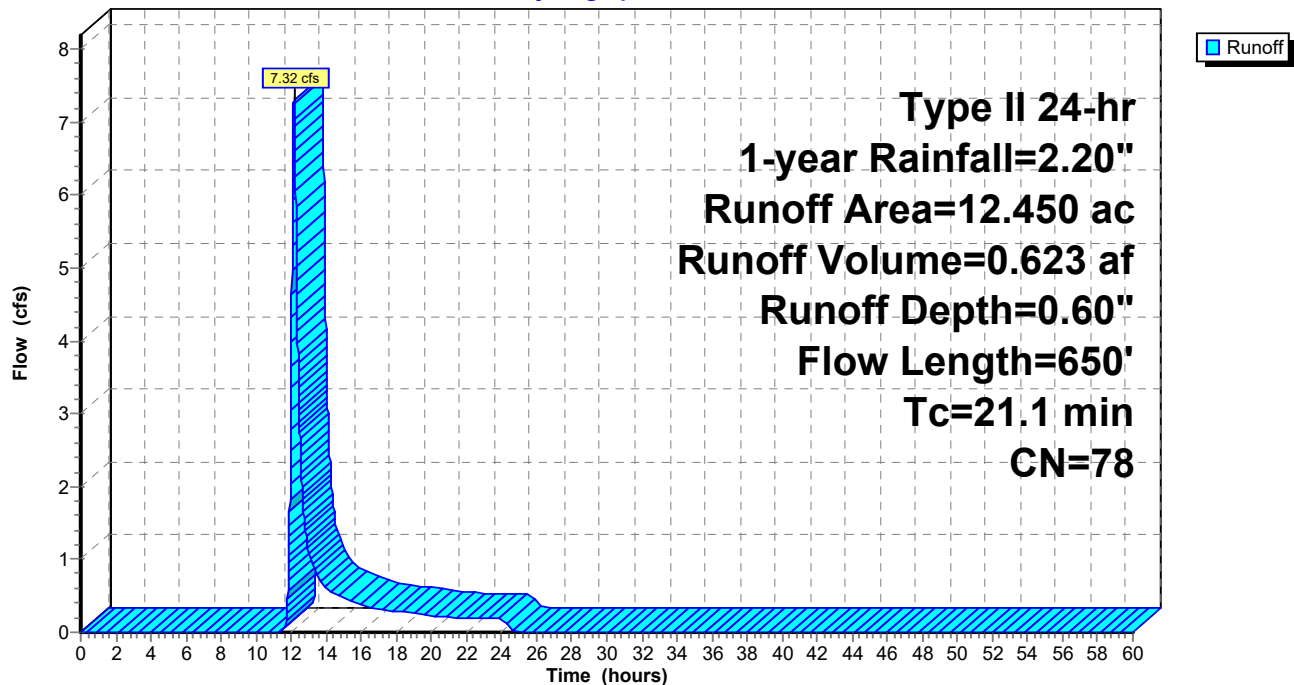
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-year Rainfall=2.20"

Area (ac)	CN	Description
12.450	78	Row crops, C&T, Good, HSG C
12.450		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	100	0.0100	0.11		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.63"
5.3	550	0.0364	1.72		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
21.1	650	Total			

Subcatchment 13S: Pre SW to Basin 12.45ac

Hydrograph



Summary for Subcatchment 14S: Post SE 22.27ac

Runoff = 36.56 cfs @ 12.02 hrs, Volume= 1.976 af, Depth= 1.06"

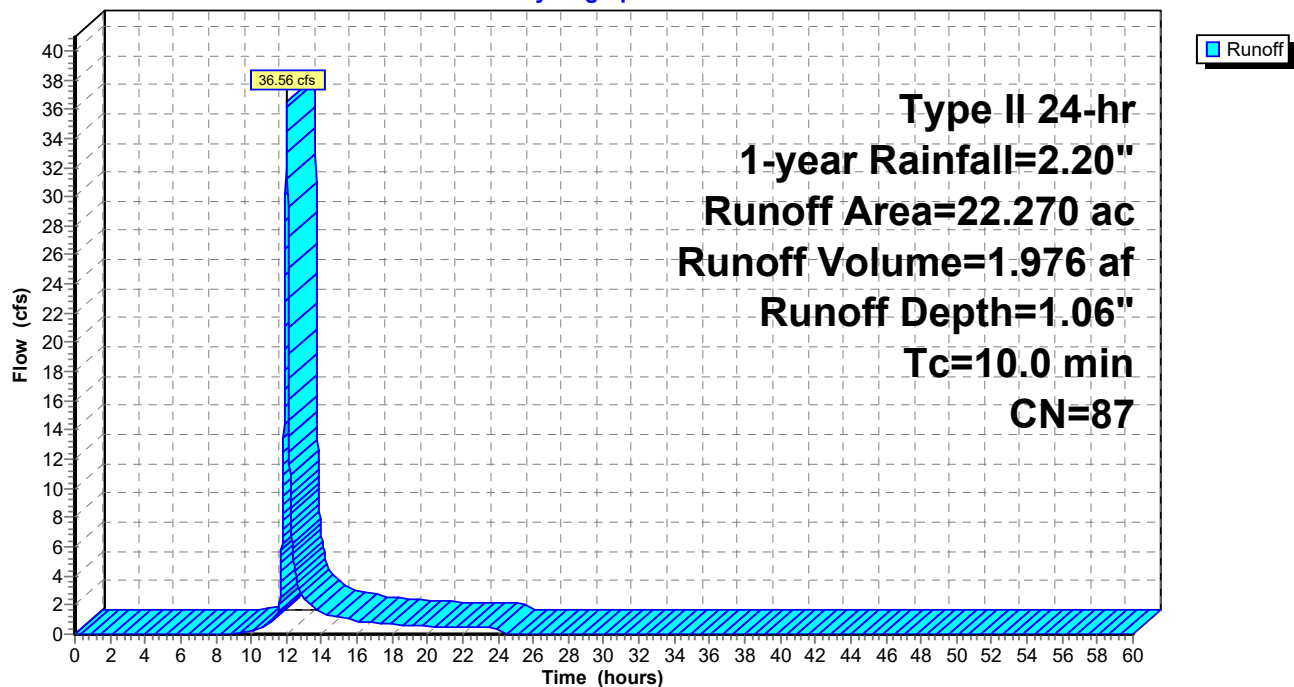
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-year Rainfall=2.20"

Area (ac)	CN	Description
* 22.270	87	
22.270		100.00% Pervious Area

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

Subcatchment 14S: Post SE 22.27ac

Hydrograph



Summary for Subcatchment 21S: Pre SW to Road 5.38ac

Runoff = 2.77 cfs @ 12.22 hrs, Volume= 0.269 af, Depth= 0.60"

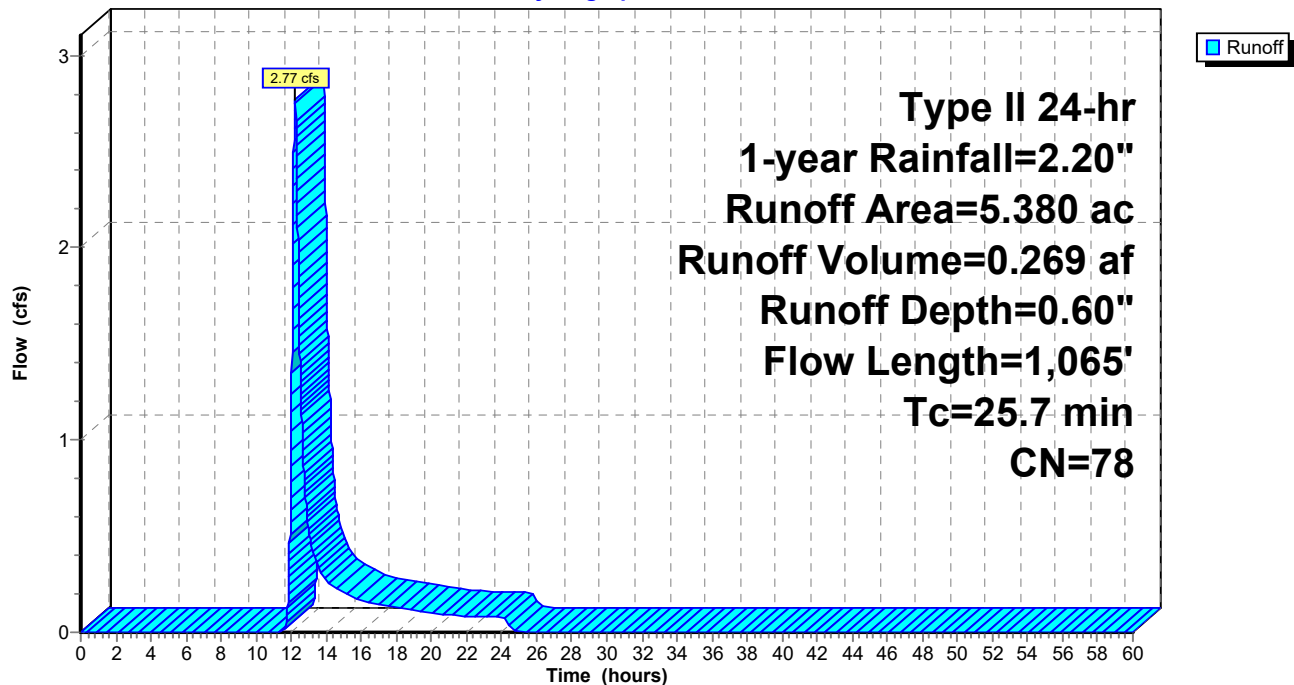
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-year Rainfall=2.20"

Area (ac)	CN	Description
5.380	78	Row crops, C&T, Good, HSG C
5.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow,
					Cultivated: Residue>20% n= 0.170 P2= 2.63"
13.8	965	0.0168	1.17		Shallow Concentrated Flow,
					Cultivated Straight Rows Kv= 9.0 fps
25.7	1,065	Total			

Subcatchment 21S: Pre SW to Road 5.38ac

Hydrograph



Summary for Subcatchment 22S: Pre-Developed Southeast 8.55ac (Phase 1)

Runoff = 4.77 cfs @ 12.19 hrs, Volume= 0.428 af, Depth= 0.60"

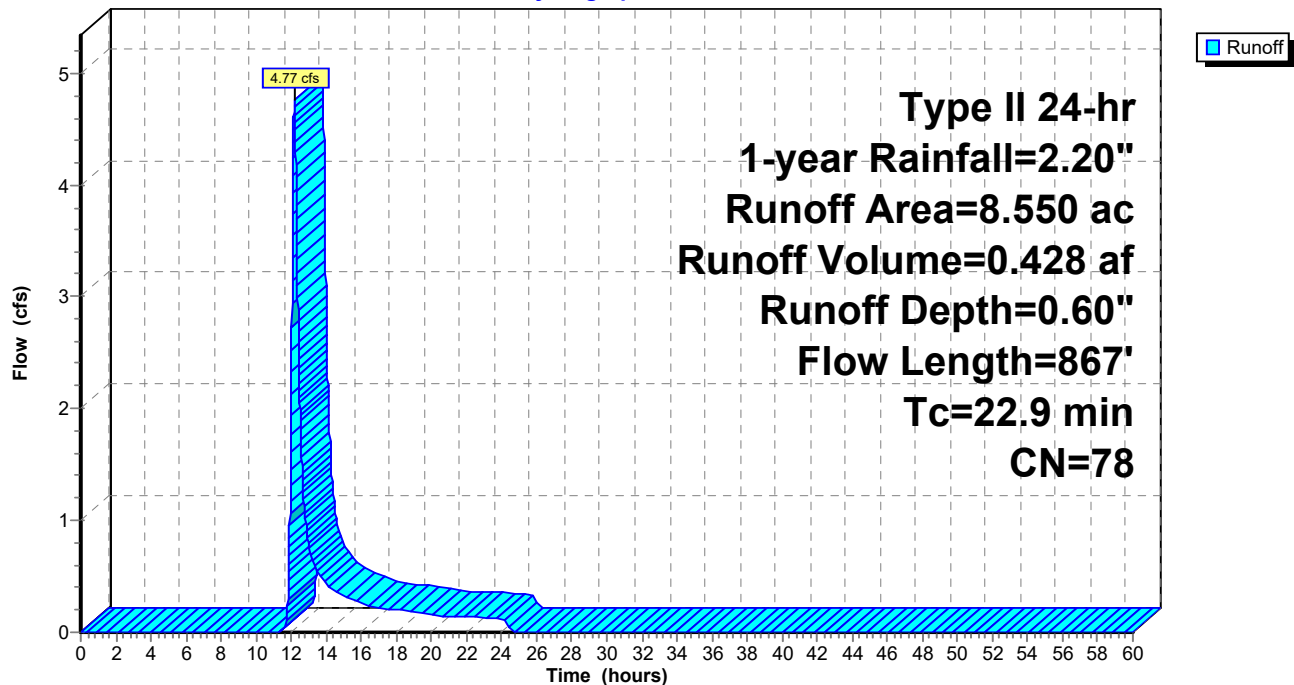
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-year Rainfall=2.20"

Area (ac)	CN	Description
8.550	78	Row crops, C&T, Good, HSG C
8.550		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow,
					Cultivated: Residue>20% n= 0.170 P2= 2.63"
11.0	767	0.0168	1.17		Shallow Concentrated Flow,
					Cultivated Straight Rows Kv= 9.0 fps
22.9	867	Total			

Subcatchment 22S: Pre-Developed Southeast 8.55ac (Phase 1)

Hydrograph



Summary for Pond 10P: NE Basin (Full Post)

Inflow Area = 50.890 ac, 34.12% Impervious, Inflow Depth > 1.16" for 1-year event
 Inflow = 48.08 cfs @ 12.03 hrs, Volume= 4.936 af
 Outflow = 3.26 cfs @ 15.58 hrs, Volume= 4.861 af, Atten= 93%, Lag= 213.0 min
 Primary = 3.26 cfs @ 15.58 hrs, Volume= 4.861 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,006.23' @ 15.58 hrs Surf.Area= 1.468 ac Storage= 2.871 af

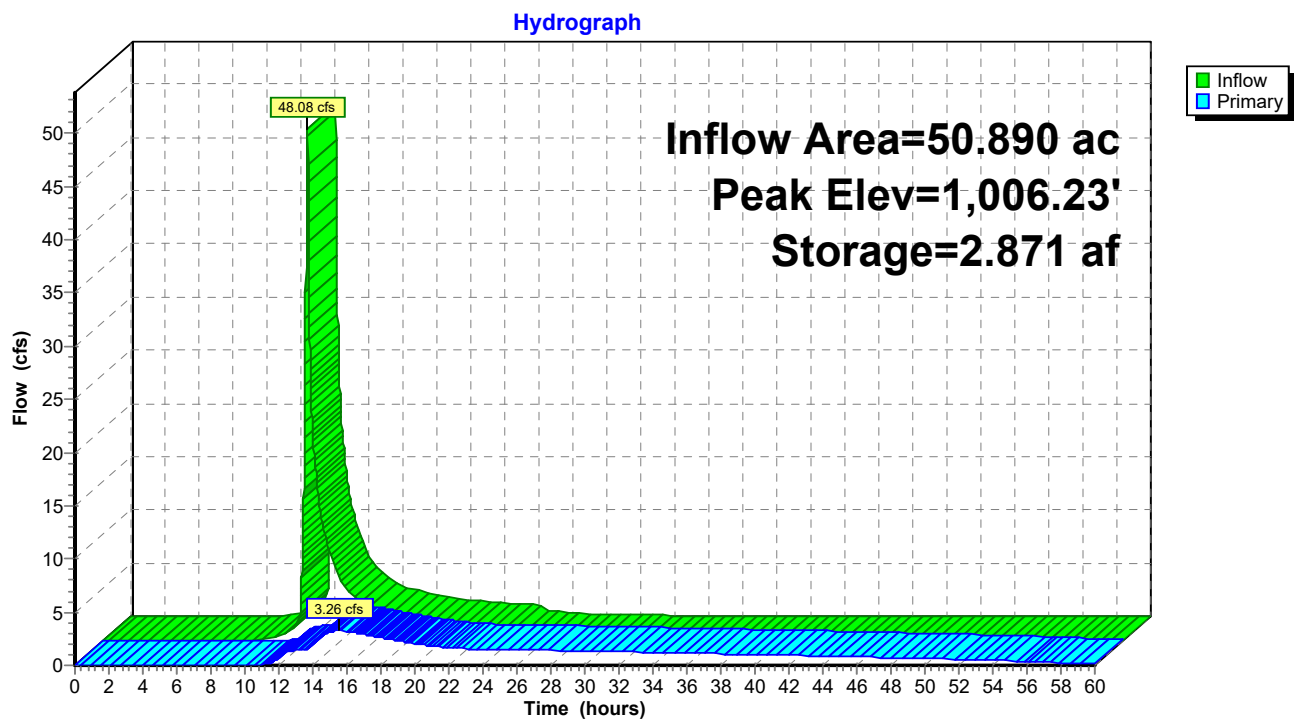
Plug-Flow detention time= 831.3 min calculated for 4.860 af (98% of inflow)
 Center-of-Mass det. time= 810.1 min (1,716.0 - 905.9)

Volume	Invert	Avail.Storage	Storage Description
#1	1,004.00'	7.574 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,004.00	1.108	0.000	0.000
1,005.00	1.267	1.187	1.187
1,006.00	1.430	1.349	2.536
1,007.00	1.595	1.512	4.049
1,008.00	1.762	1.679	5.727
1,009.00	1.931	1.846	7.574

Device	Routing	Invert	Outlet Devices
#1	Primary	1,004.00'	4.5" Horiz. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,006.00'	28.0" W x 12.0" H Vert. Window X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Primary	1,007.50'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=3.26 cfs @ 15.58 hrs HW=1,006.23' (Free Discharge)

- 1=WQ Orifice (Orifice Controls 1.59 cfs @ 7.19 fps)
- 2=Window (Orifice Controls 1.67 cfs @ 1.54 fps)
- 3=Grate (Controls 0.00 cfs)

Pond 10P: NE Basin (Full Post)

Summary for Pond 11P: SW Basin (Full Post)

Inflow Area = 23.720 ac, 85.00% Impervious, Inflow Depth = 1.58" for 1-year event
 Inflow = 55.89 cfs @ 12.01 hrs, Volume= 3.132 af
 Outflow = 1.10 cfs @ 16.42 hrs, Volume= 2.815 af, Atten= 98%, Lag= 264.6 min
 Primary = 1.10 cfs @ 16.42 hrs, Volume= 2.815 af

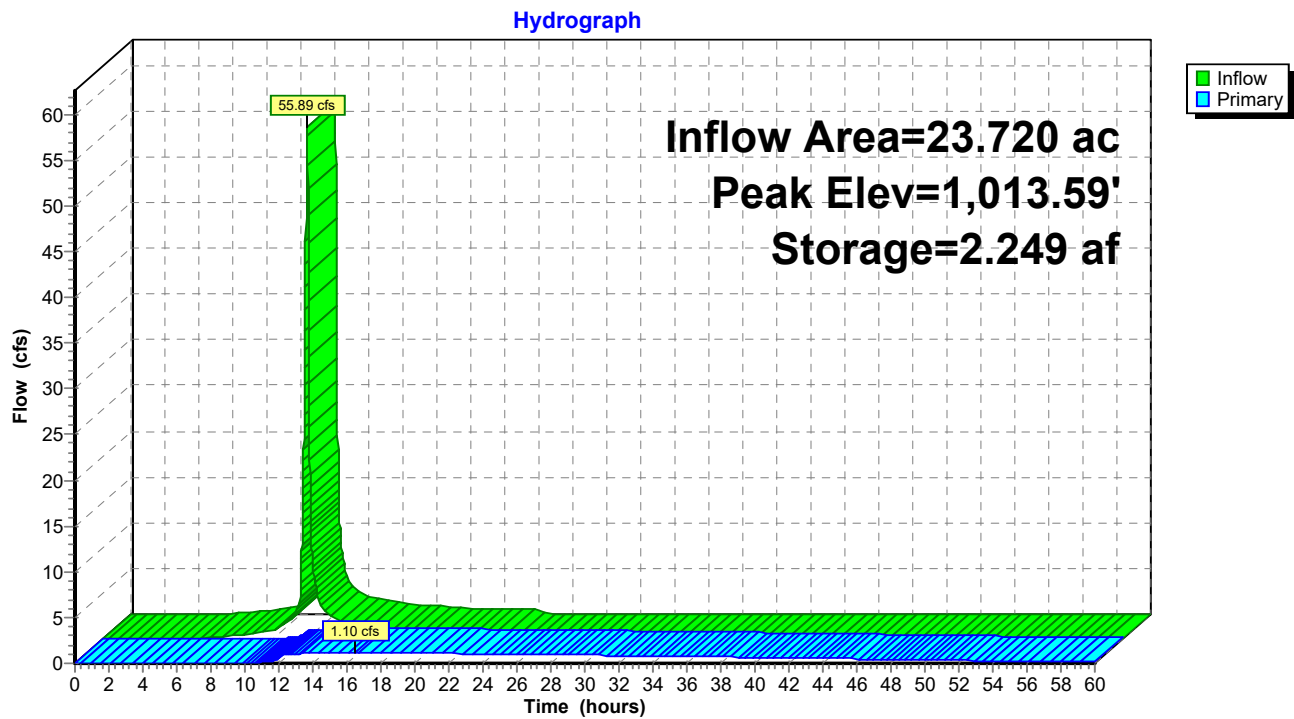
Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,013.59' @ 16.42 hrs Surf.Area= 1.548 ac Storage= 2.249 af

Plug-Flow detention time= 1,033.1 min calculated for 2.815 af (90% of inflow)
 Center-of-Mass det. time= 981.5 min (1,782.2 - 800.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,012.00'	10.787 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,012.00	1.275	0.000	0.000
1,013.00	1.446	1.360	1.360
1,014.00	1.619	1.532	2.893
1,015.00	1.794	1.706	4.599
1,016.00	1.972	1.883	6.482
1,017.00	2.152	2.062	8.544
1,018.00	2.334	2.243	10.787

Device	Routing	Invert	Outlet Devices
#1	Primary	1,012.00'	6.0" Vert. Orifice Plate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.10 cfs @ 16.42 hrs HW=1,013.59' TW=1,011.04' (Dynamic Tailwater)
 ↑**1=Orifice Plate** (Orifice Controls 1.10 cfs @ 5.58 fps)

Pond 11P: SW Basin (Full Post)

Summary for Pond 12P: SE Basin (Full Post)

Inflow Area = 45.990 ac, 43.84% Impervious, Inflow Depth > 1.25" for 1-year event
 Inflow = 37.33 cfs @ 12.02 hrs, Volume= 4.790 af
 Outflow = 1.09 cfs @ 24.24 hrs, Volume= 3.854 af, Atten= 97%, Lag= 733.0 min
 Primary = 1.09 cfs @ 24.24 hrs, Volume= 3.854 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,011.34' @ 24.24 hrs Surf.Area= 1.288 ac Storage= 2.074 af

Plug-Flow detention time= 1,015.9 min calculated for 3.854 af (80% of inflow)
 Center-of-Mass det. time= 711.0 min (2,103.0 - 1,392.1)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.50'	4.535 af	Basin 01 (Prismatic) Listed below (Recalc)
#2	1,009.50'	2.519 af	Basin 02 (Prismatic) Listed below (Recalc)
		7.054 af	Total Available Storage

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.591	0.000	0.000
1,010.00	0.653	0.311	0.311
1,011.00	0.777	0.715	1.026
1,012.00	0.904	0.841	1.867
1,013.00	1.034	0.969	2.836
1,014.00	1.165	1.100	3.935
1,014.50	1.232	0.599	4.535

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.375	0.000	0.000
1,010.00	0.399	0.194	0.194
1,011.00	0.449	0.424	0.618
1,012.00	0.501	0.475	1.093
1,013.00	0.556	0.528	1.621
1,014.00	0.613	0.584	2.205
1,014.50	0.642	0.314	2.519

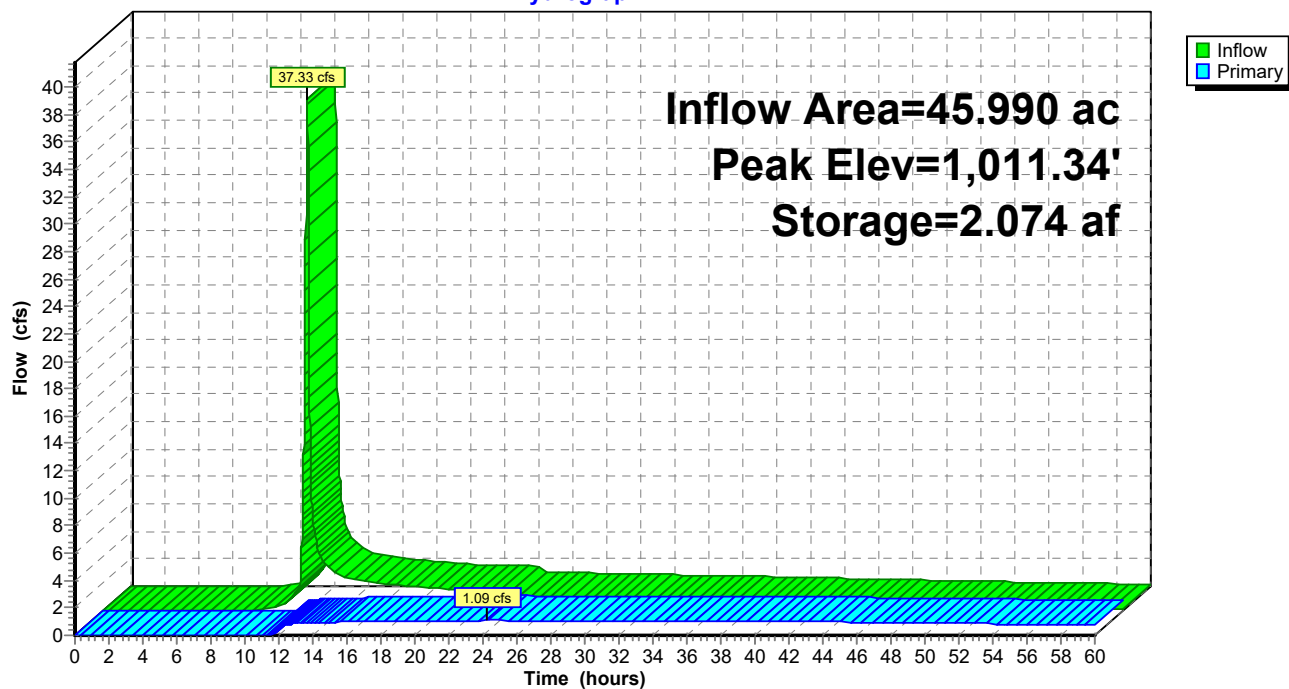
Device	Routing	Invert	Outlet Devices
#1	Primary	1,009.50'	4.0" Vert. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,012.00'	10.0" Horiz. Riser Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	1,013.75'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=1.09 cfs @ 24.24 hrs HW=1,011.34' TW=0.00' (Dynamic Tailwater)

1=WQ Orifice (Orifice Controls 1.09 cfs @ 6.23 fps)
 2=Riser Pipe (Controls 0.00 cfs)
 3=Grate (Controls 0.00 cfs)

Pond 12P: SE Basin (Full Post)

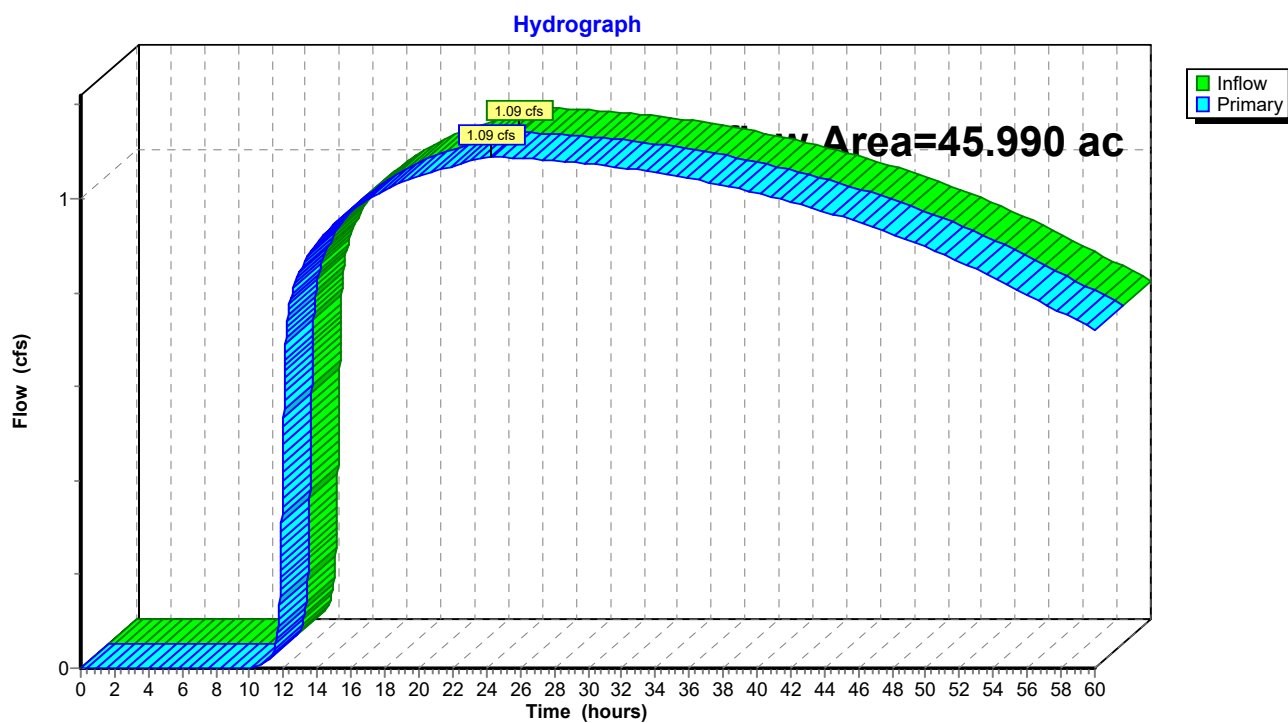
Hydrograph



Summary for Pond 13P: SE Post Out

Inflow Area = 45.990 ac, 43.84% Impervious, Inflow Depth > 1.01" for 1-year event
Inflow = 1.09 cfs @ 24.24 hrs, Volume= 3.854 af
Primary = 1.09 cfs @ 24.24 hrs, Volume= 3.854 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Pond 13P: SE Post Out

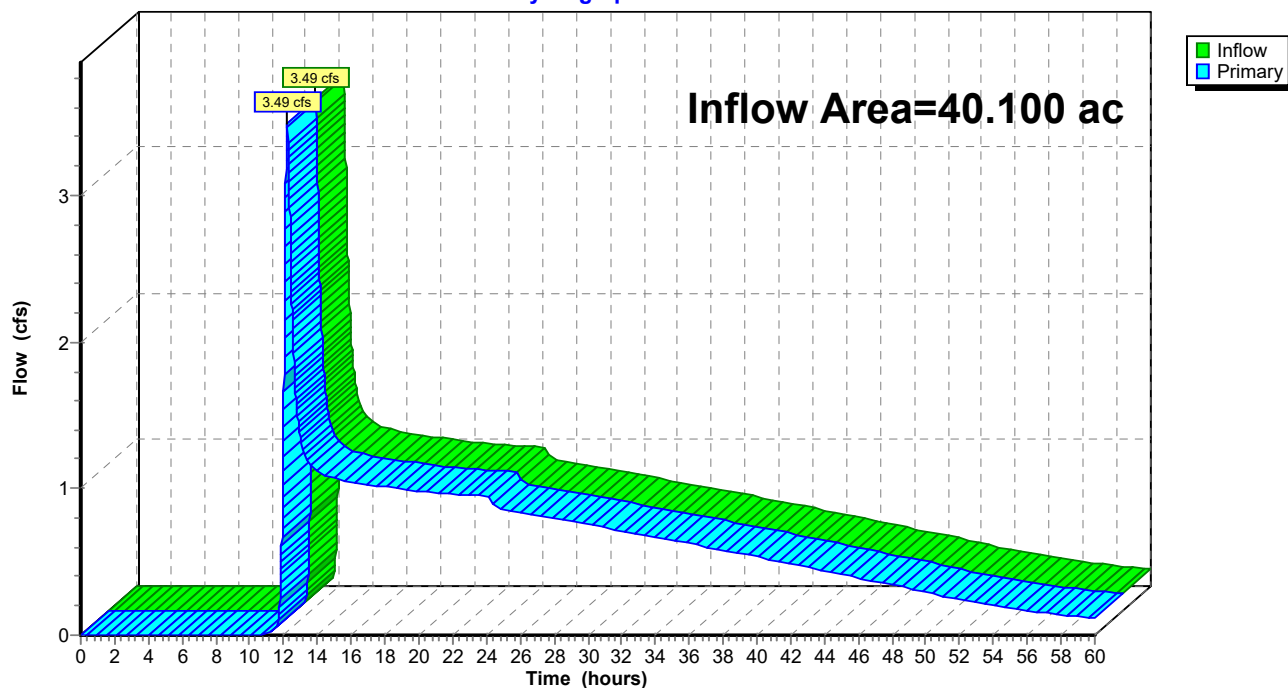
Summary for Pond 20P: SE Post Out (Phase 1)

Inflow Area = 40.100 ac, 0.00% Impervious, Inflow Depth > 0.77" for 1-year event
Inflow = 3.49 cfs @ 12.22 hrs, Volume= 2.575 af
Primary = 3.49 cfs @ 12.22 hrs, Volume= 2.575 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Pond 20P: SE Post Out (Phase 1)

Hydrograph



Summary for Pond 21P: SE Basin (Phase 1)

Inflow Area = 34.720 ac, 0.00% Impervious, Inflow Depth > 0.85" for 1-year event
 Inflow = 36.57 cfs @ 12.02 hrs, Volume= 2.467 af
 Outflow = 0.89 cfs @ 18.82 hrs, Volume= 2.305 af, Atten= 98%, Lag= 408.0 min
 Primary = 0.89 cfs @ 18.82 hrs, Volume= 2.305 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,010.78' @ 18.82 hrs Surf.Area= 1.189 ac Storage= 1.383 af

Plug-Flow detention time= 893.6 min calculated for 2.305 af (93% of inflow)
 Center-of-Mass det. time= 787.4 min (1,793.8 - 1,006.5)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.50'	4.535 af	Basin 01 (Prismatic) Listed below (Recalc)
#2	1,009.50'	2.519 af	Basin 02 (Prismatic) Listed below (Recalc)
		7.054 af	Total Available Storage

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.591	0.000	0.000
1,010.00	0.653	0.311	0.311
1,011.00	0.777	0.715	1.026
1,012.00	0.904	0.841	1.867
1,013.00	1.034	0.969	2.836
1,014.00	1.165	1.100	3.935
1,014.50	1.232	0.599	4.535

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.375	0.000	0.000
1,010.00	0.399	0.194	0.194
1,011.00	0.449	0.424	0.618
1,012.00	0.501	0.475	1.093
1,013.00	0.556	0.528	1.621
1,014.00	0.613	0.584	2.205
1,014.50	0.642	0.314	2.519

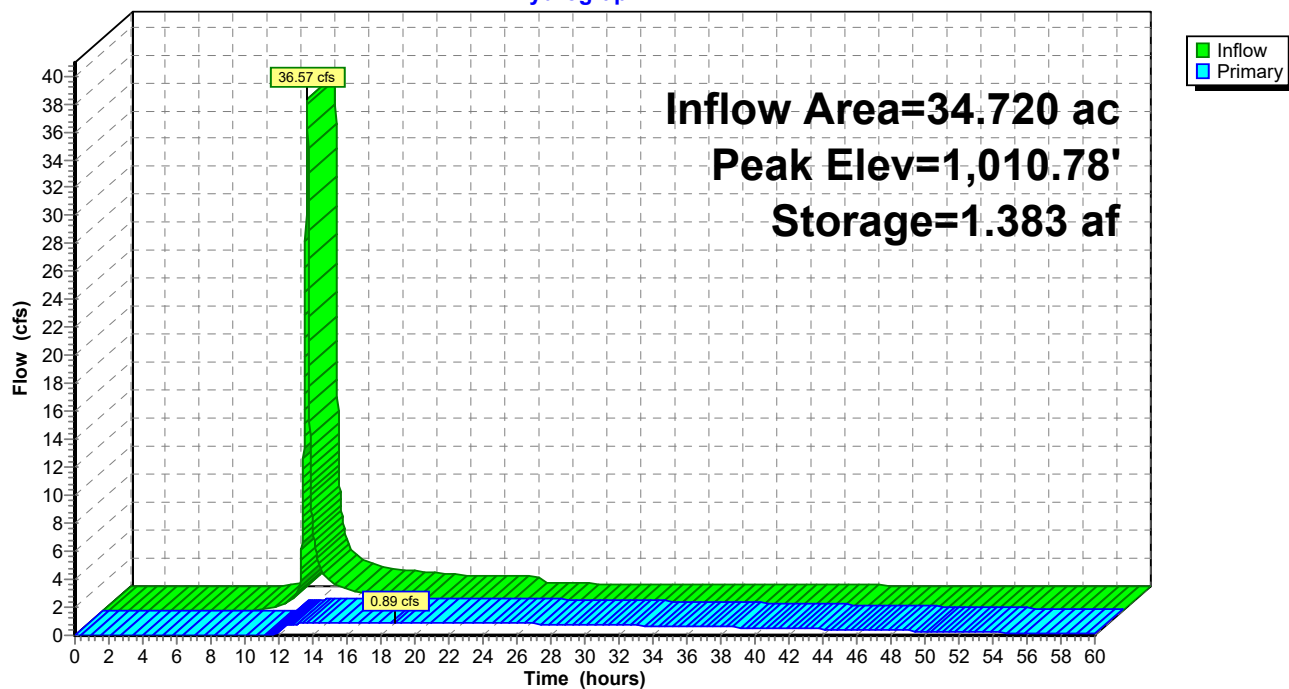
Device	Routing	Invert	Outlet Devices
#1	Primary	1,009.50'	4.0" Vert. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,012.00'	10.0" Horiz. Open Top Riser Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	1,013.75'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.89 cfs @ 18.82 hrs HW=1,010.78' TW=0.00' (Dynamic Tailwater)

- 1=WQ Orifice (Orifice Controls 0.89 cfs @ 5.09 fps)
- 2=Open Top Riser Pipe (Controls 0.00 cfs)
- 3=Grate (Controls 0.00 cfs)

Pond 21P: SE Basin (Phase 1)

Hydrograph



Summary for Pond 22P: NE Basin (Phase 1)

Inflow Area = 46.240 ac, 0.00% Impervious, Inflow Depth = 0.84" for 1-year event
 Inflow = 43.79 cfs @ 12.03 hrs, Volume= 3.249 af
 Outflow = 1.31 cfs @ 17.91 hrs, Volume= 3.095 af, Atten= 97%, Lag= 353.2 min
 Primary = 1.31 cfs @ 17.91 hrs, Volume= 3.095 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,005.71' @ 17.91 hrs Surf.Area= 1.383 ac Storage= 2.129 af

Plug-Flow detention time= 882.6 min calculated for 3.094 af (95% of inflow)
 Center-of-Mass det. time= 856.2 min (1,710.8 - 854.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,004.00'	7.574 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,004.00	1.108	0.000	0.000
1,005.00	1.267	1.188	1.188
1,006.00	1.430	1.349	2.536
1,007.00	1.595	1.512	4.048
1,008.00	1.762	1.678	5.727
1,009.00	1.931	1.847	7.574

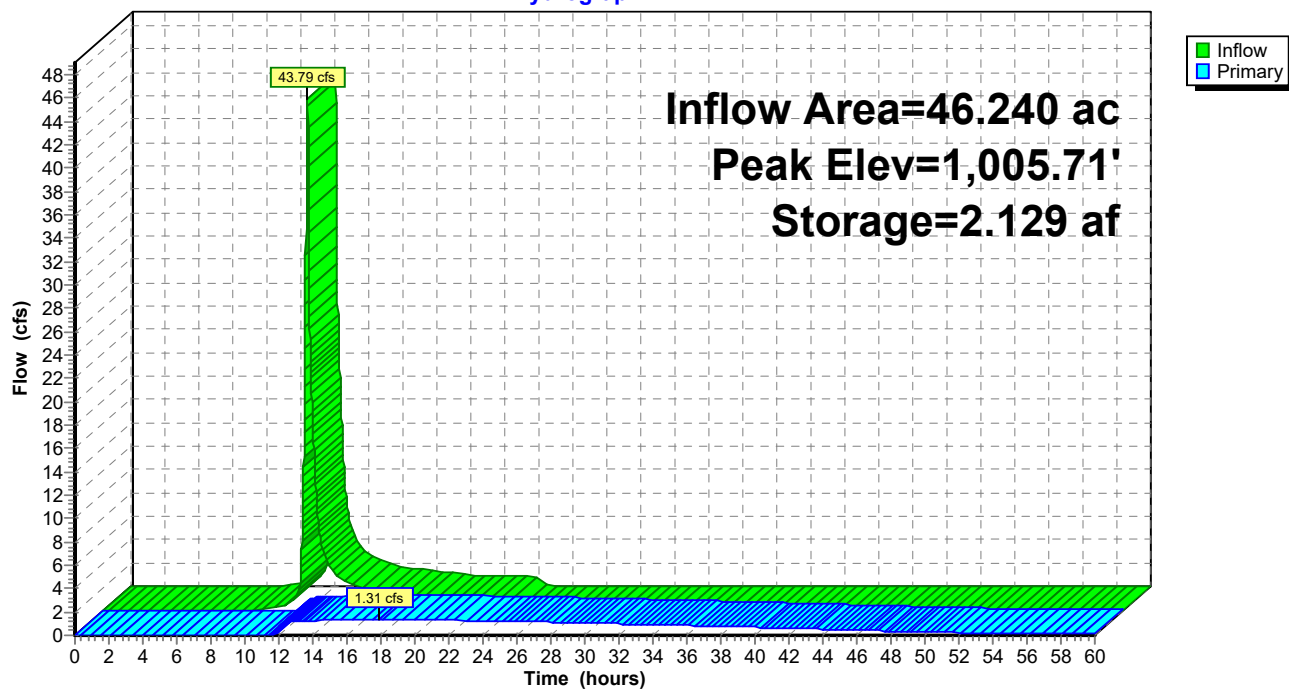
Device	Routing	Invert	Outlet Devices
#1	Primary	1,004.00'	4.5" Vert. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,006.00'	28.0" W x 12.0" H Vert. Window X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Primary	1,007.50'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=1.31 cfs @ 17.91 hrs HW=1,005.71' (Free Discharge)

- 1=WQ Orifice (Orifice Controls 1.31 cfs @ 5.94 fps)
- 2=Window (Controls 0.00 cfs)
- 3=Grate (Controls 0.00 cfs)

Pond 22P: NE Basin (Phase 1)

Hydrograph



Summary for Pond 23P: NW Basin (Full Post)

Inflow Area = 26.710 ac, 65.00% Impervious, Inflow Depth = 1.27" for 1-year event
 Inflow = 51.84 cfs @ 12.02 hrs, Volume= 2.819 af
 Outflow = 13.77 cfs @ 12.21 hrs, Volume= 2.791 af, Atten= 73%, Lag= 11.9 min
 Primary = 13.77 cfs @ 12.21 hrs, Volume= 2.791 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,014.48' @ 12.21 hrs Surf.Area= 0.854 ac Storage= 1.172 af

Plug-Flow detention time= 142.3 min calculated for 2.790 af (99% of inflow)
 Center-of-Mass det. time= 136.5 min (959.3 - 822.8)

Volume	Invert	Avail.Storage	Storage Description
#1	1,013.00'	3.604 af	Custom Stage Data (Prismatic) Listed below (Recalc)

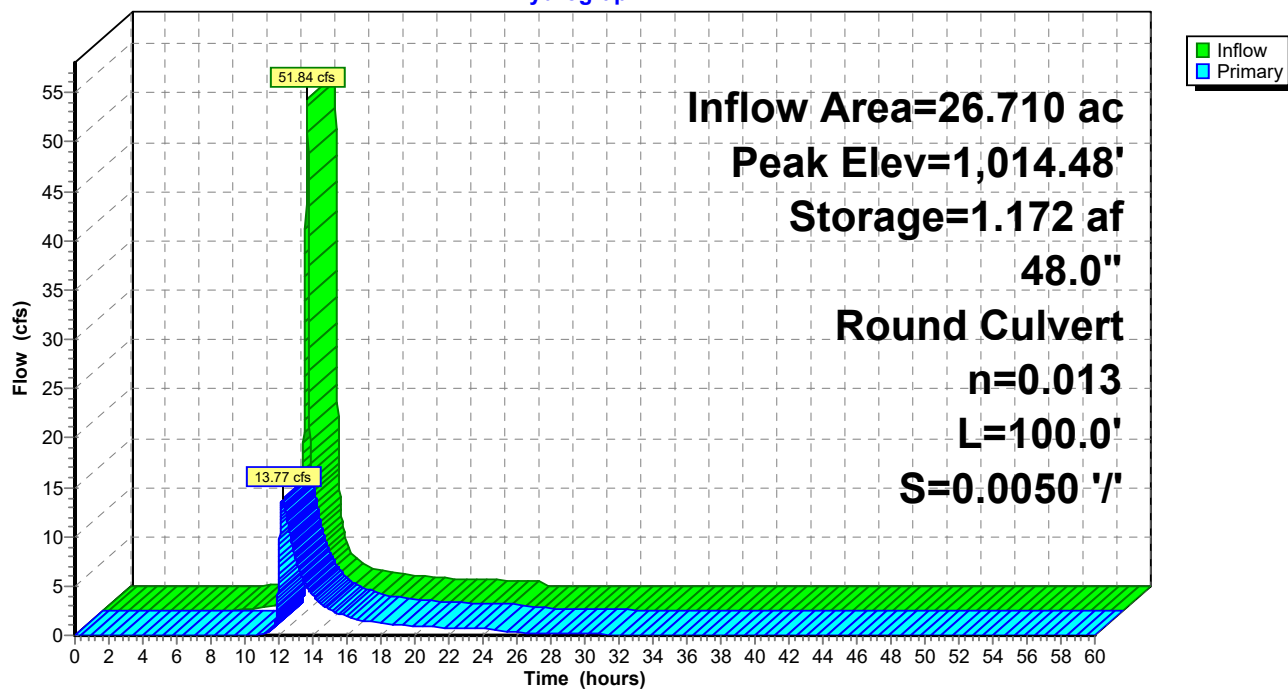
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,013.00	0.729	0.000	0.000
1,014.00	0.813	0.771	0.771
1,015.00	0.899	0.856	1.627
1,016.00	0.988	0.943	2.570
1,017.00	1.079	1.033	3.604

Device	Routing	Invert	Outlet Devices
#1	Primary	1,013.00'	48.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,013.00' / 1,012.50' S= 0.0050 ' / ' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 12.57 sf

Primary OutFlow Max=13.77 cfs @ 12.21 hrs HW=1,014.48' TW=1,005.07' (Dynamic Tailwater)
 ↑ **1=Culvert** (Barrel Controls 13.77 cfs @ 4.84 fps)

Pond 23P: NW Basin (Full Post)

Hydrograph



Summary for Pond 24P: SW Basin (Phase 1)

Inflow Area = 12.450 ac, 0.00% Impervious, Inflow Depth = 0.60" for 1-year event
 Inflow = 7.32 cfs @ 12.16 hrs, Volume= 0.623 af
 Outflow = 0.25 cfs @ 19.13 hrs, Volume= 0.491 af, Atten= 97%, Lag= 418.2 min
 Primary = 0.25 cfs @ 19.13 hrs, Volume= 0.491 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,012.32' @ 19.13 hrs Surf.Area= 1.329 ac Storage= 0.414 af

Plug-Flow detention time= 899.7 min calculated for 0.491 af (79% of inflow)
 Center-of-Mass det. time= 807.5 min (1,690.9 - 883.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,012.00'	10.787 af	Custom Stage Data (Prismatic) Listed below (Recalc)

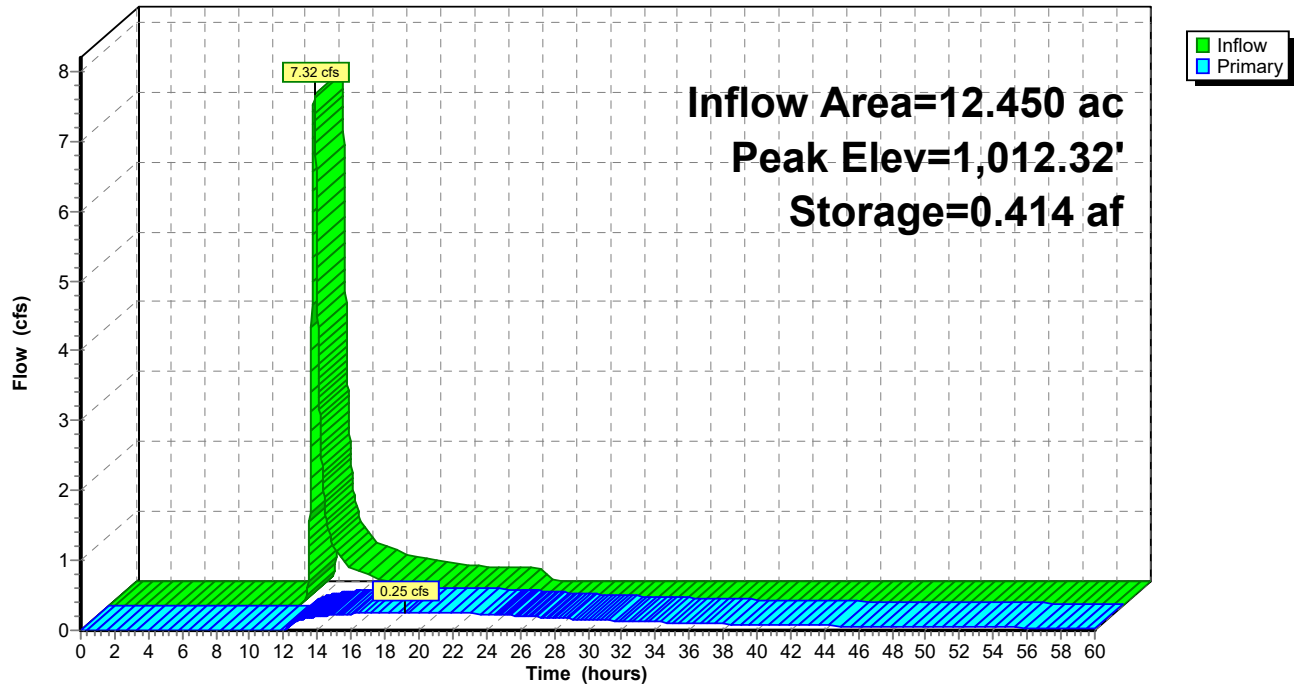
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,012.00	1.275	0.000	0.000
1,013.00	1.446	1.360	1.360
1,014.00	1.619	1.532	2.893
1,015.00	1.794	1.706	4.599
1,016.00	1.972	1.883	6.482
1,017.00	2.152	2.062	8.544
1,018.00	2.334	2.243	10.787

Device	Routing	Invert	Outlet Devices
#1	Primary	1,012.00'	6.0" Vert. Orifice Plate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.25 cfs @ 19.13 hrs HW=1,012.32' TW=1,010.78' (Dynamic Tailwater)
 ↑ **1=Orifice Plate** (Orifice Controls 0.25 cfs @ 1.92 fps)

Pond 24P: SW Basin (Phase 1)

Hydrograph



Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Pre-Developed	Runoff Area=50.830 ac 0.00% Impervious Runoff Depth=0.87" Flow Length=2,529' Tc=51.4 min CN=78 Runoff=24.50 cfs 3.700 af
Subcatchment2S: Pre-Developed	Runoff Area=14.820 ac 0.00% Impervious Runoff Depth=0.87" Flow Length=1,945' Tc=38.3 min CN=78 Runoff=8.87 cfs 1.079 af
Subcatchment3S: Post NW 26.71ac	Runoff Area=26.710 ac 65.00% Impervious Runoff Depth=1.65" Tc=10.0 min CN=90 Runoff=66.95 cfs 3.667 af
Subcatchment4S: Post NE 24.18ac	Runoff Area=24.180 ac 0.00% Impervious Runoff Depth=1.42" Tc=10.0 min CN=87 Runoff=52.84 cfs 2.862 af
Subcatchment5S: Post SW 23.72ac	Runoff Area=23.720 ac 85.00% Impervious Runoff Depth=1.99" Tc=10.0 min CN=94 Runoff=69.45 cfs 3.941 af
Subcatchment6S: Post SE 22.27ac	Runoff Area=22.270 ac 0.00% Impervious Runoff Depth=1.42" Tc=10.0 min CN=87 Runoff=48.67 cfs 2.636 af
Subcatchment11S: Pre NW 22.06ac	Runoff Area=22.060 ac 0.00% Impervious Runoff Depth=0.87" Flow Length=1,231' Tc=28.7 min CN=78 Runoff=16.13 cfs 1.606 af
Subcatchment12S: Post NE 24.18ac	Runoff Area=24.180 ac 0.00% Impervious Runoff Depth=1.42" Tc=10.0 min CN=87 Runoff=52.84 cfs 2.862 af
Subcatchment13S: Pre SW to Basin	Runoff Area=12.450 ac 0.00% Impervious Runoff Depth=0.87" Flow Length=650' Tc=21.1 min CN=78 Runoff=11.14 cfs 0.906 af
Subcatchment14S: Post SE 22.27ac	Runoff Area=22.270 ac 0.00% Impervious Runoff Depth=1.42" Tc=10.0 min CN=87 Runoff=48.67 cfs 2.636 af
Subcatchment21S: Pre SW to Road 5.38ac	Runoff Area=5.380 ac 0.00% Impervious Runoff Depth=0.87" Flow Length=1,065' Tc=25.7 min CN=78 Runoff=4.24 cfs 0.392 af
Subcatchment22S: Pre-Developed	Runoff Area=8.550 ac 0.00% Impervious Runoff Depth=0.87" Flow Length=867' Tc=22.9 min CN=78 Runoff=7.26 cfs 0.622 af
Pond 10P: NE Basin (Full Post)	Peak Elev=1,006.53' Storage=3.312 af Inflow=66.19 cfs 6.501 af Outflow=7.42 cfs 6.418 af
Pond 11P: SW Basin (Full Post)	Peak Elev=1,014.00' Storage=2.886 af Inflow=69.45 cfs 3.941 af Outflow=1.25 cfs 3.503 af
Pond 12P: SE Basin (Full Post)	Peak Elev=1,011.85' Storage=2.749 af Inflow=49.56 cfs 6.140 af Outflow=1.24 cfs 4.556 af
Pond 13P: SE Post Out	Inflow=1.24 cfs 4.556 af Primary=1.24 cfs 4.556 af

Pond 20P: SE Post Out (Phase 1)

Inflow=5.10 cfs 3.514 af

Primary=5.10 cfs 3.514 af

Pond 21P: SE Basin (Phase 1)

Peak Elev=1,011.27' Storage=1.985 af Inflow=48.68 cfs 3.395 af

Outflow=1.07 cfs 3.122 af

Pond 22P: NE Basin (Phase 1)

Peak Elev=1,006.19' Storage=2.807 af Inflow=59.89 cfs 4.468 af

Outflow=2.72 cfs 4.265 af

Pond 23P: NW Basin (Full Post)

Peak Elev=1,014.84' Storage=1.488 af Inflow=66.95 cfs 3.667 af

48.0" Round Culvert n=0.013 L=100.0' S=0.0050 '/' Outflow=20.43 cfs 3.639 af

Pond 24P: SW Basin (Phase 1)

Peak Elev=1,012.44' Storage=0.578 af Inflow=11.14 cfs 0.906 af

Outflow=0.41 cfs 0.759 af

Total Runoff Area = 257.420 ac Runoff Volume = 26.910 af Average Runoff Depth = 1.25"**85.42% Pervious = 219.896 ac 14.58% Impervious = 37.524 ac**

Summary for Subcatchment 1S: Pre-Developed Northeast 50.83ac

Runoff = 24.50 cfs @ 12.56 hrs, Volume= 3.700 af, Depth= 0.87"

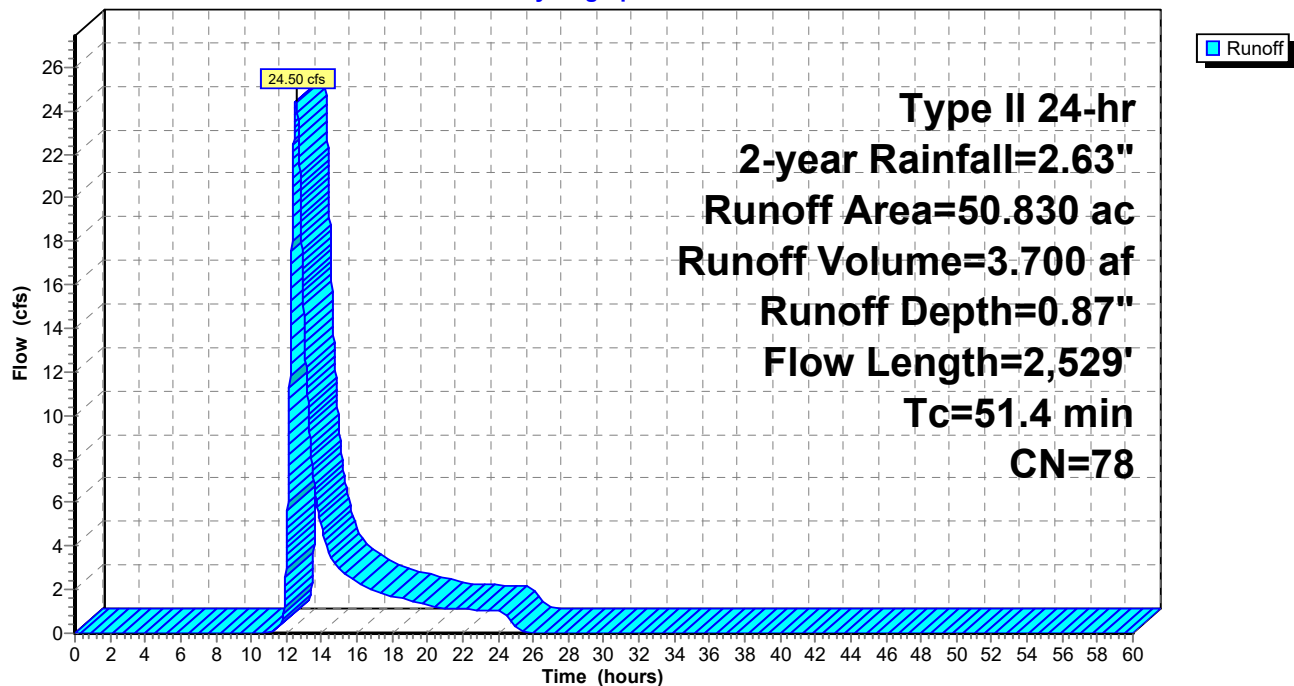
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-year Rainfall=2.63"

Area (ac)	CN	Description
50.830	78	Row crops, C&T, Good, HSG C
50.830		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.63"
6.2	633	0.0363	1.71		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
33.3	1,796	0.0100	0.90		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
51.4	2,529	Total			

Subcatchment 1S: Pre-Developed Northeast 50.83ac

Hydrograph



Summary for Subcatchment 2S: Pre-Developed Southeast 14.82ac (Post Full)

Runoff = 8.87 cfs @ 12.38 hrs, Volume= 1.079 af, Depth= 0.87"

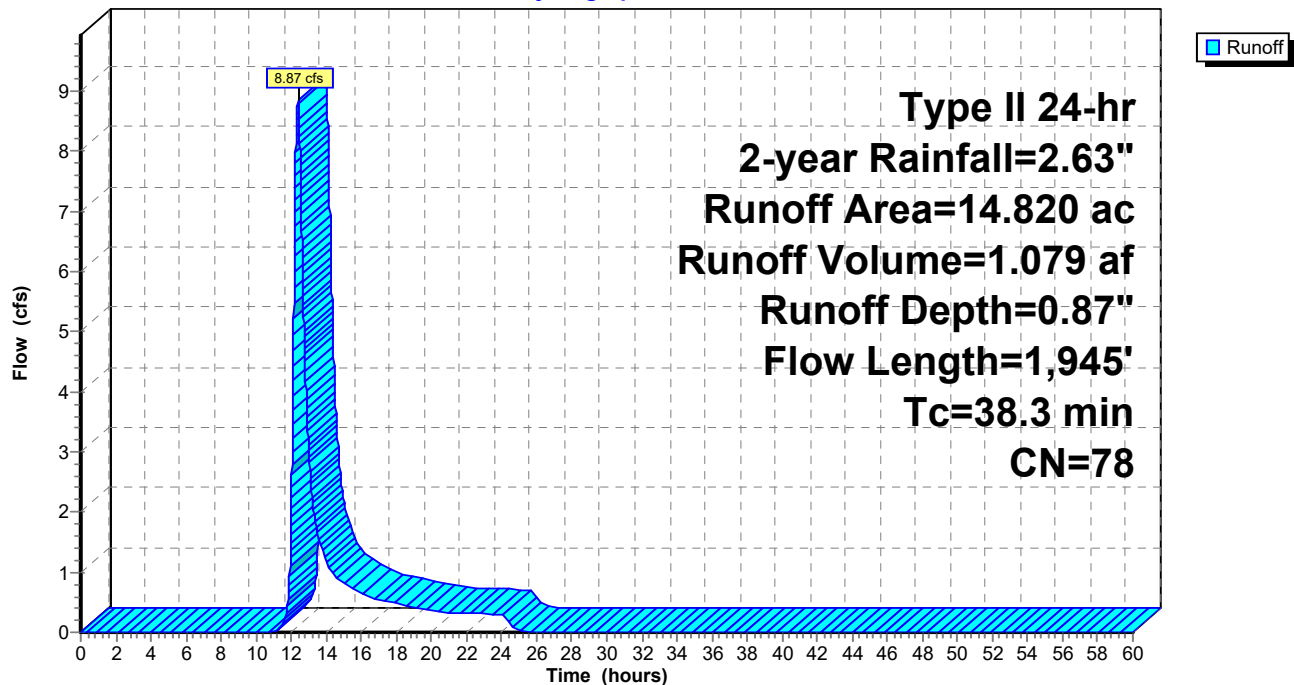
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-year Rainfall=2.63"

Area (ac)	CN	Description
14.820	78	Row crops, C&T, Good, HSG C
14.820		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.63"
26.4	1,845	0.0168	1.17		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
38.3	1,945	Total			

Subcatchment 2S: Pre-Developed Southeast 14.82ac (Post Full)

Hydrograph



Summary for Subcatchment 3S: Post NW 26.71ac

Runoff = 66.95 cfs @ 12.01 hrs, Volume= 3.667 af, Depth= 1.65"

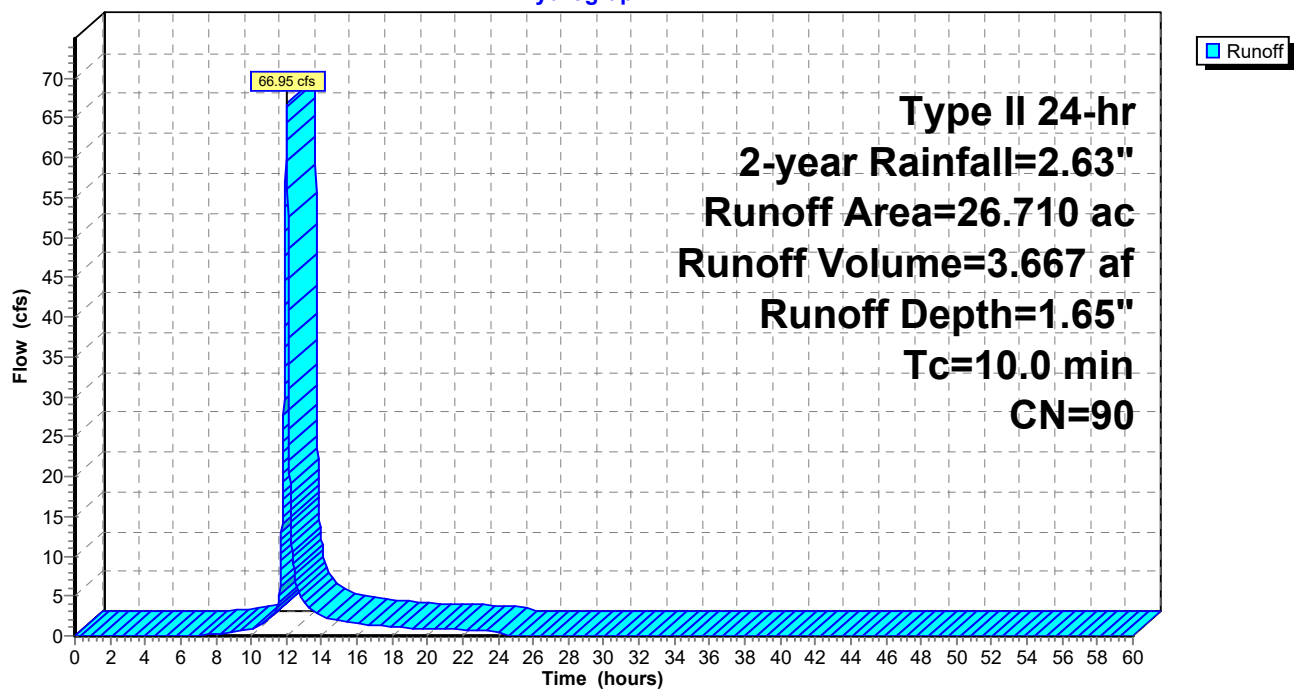
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-year Rainfall=2.63"

Area (ac)	CN	Description
26.710	90	1/8 acre lots, 65% imp, HSG C
9.349		35.00% Pervious Area
17.362		65.00% Impervious Area

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

Subcatchment 3S: Post NW 26.71ac

Hydrograph



Summary for Subcatchment 4S: Post NE 24.18ac

Runoff = 52.84 cfs @ 12.02 hrs, Volume= 2.862 af, Depth= 1.42"

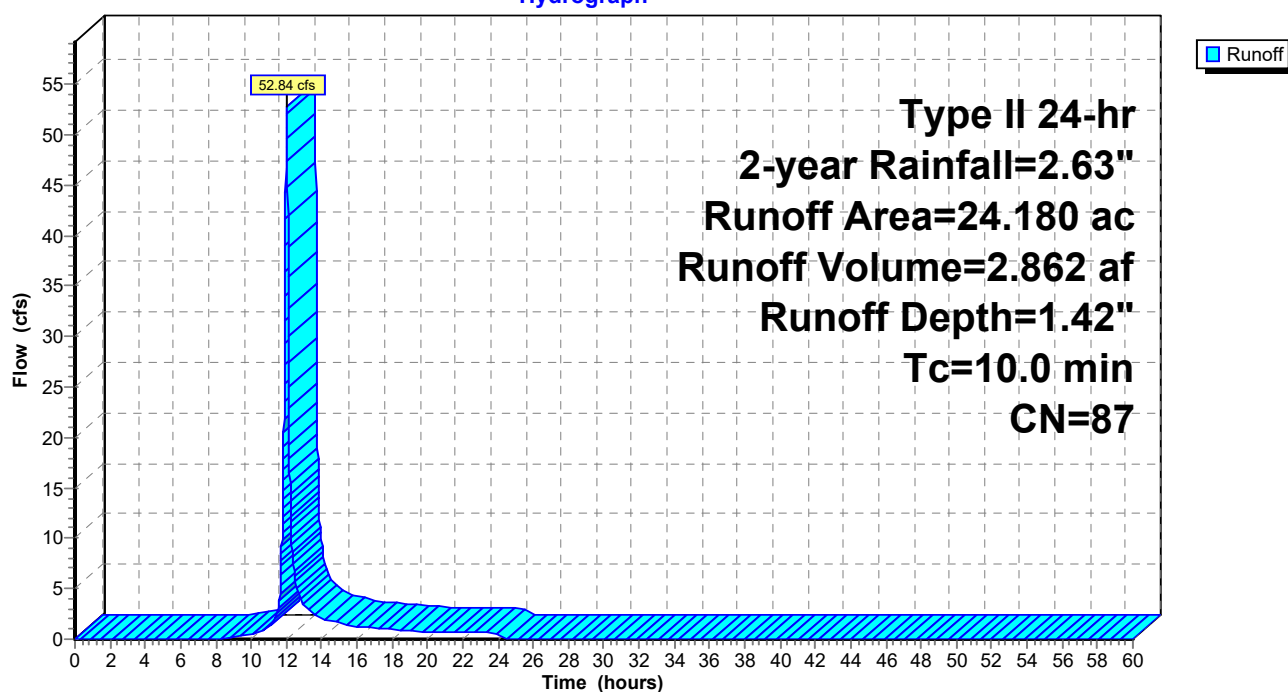
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-year Rainfall=2.63"

Area (ac)	CN	Description
* 24.180	87	
24.180		100.00% Pervious Area

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

Subcatchment 4S: Post NE 24.18ac

Hydrograph



Summary for Subcatchment 5S: Post SW 23.72ac

Runoff = 69.45 cfs @ 12.01 hrs, Volume= 3.941 af, Depth= 1.99"

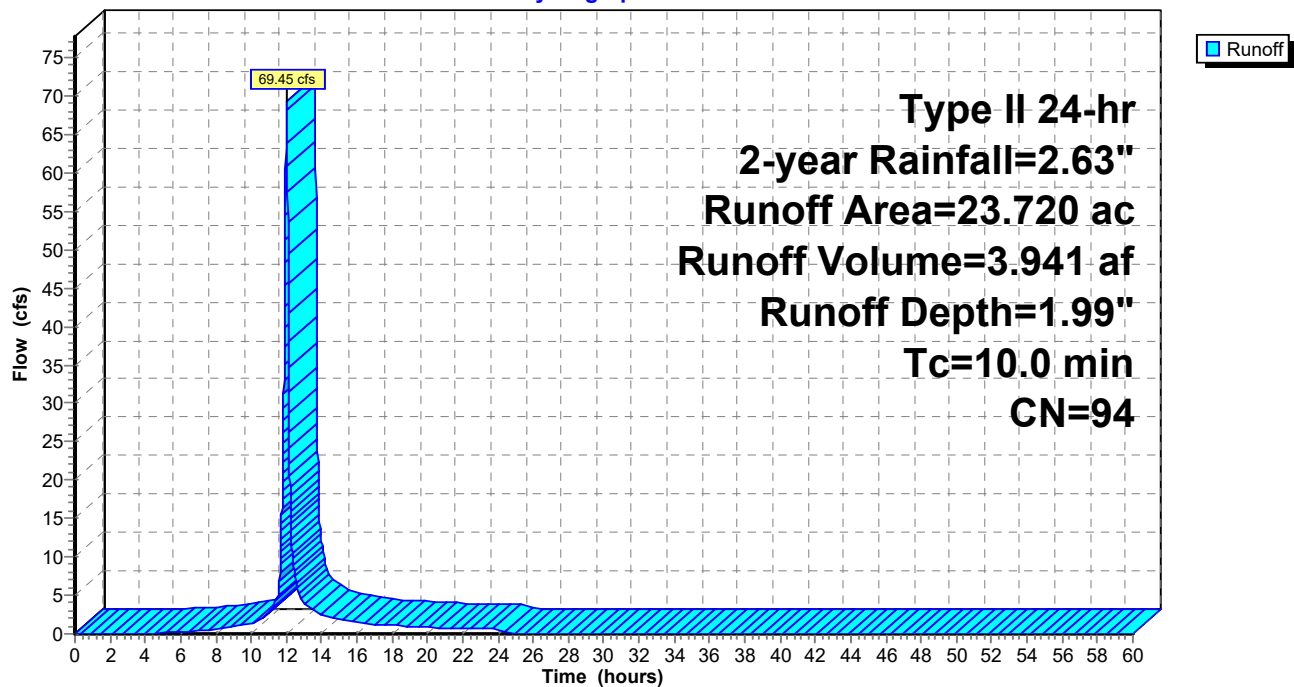
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-year Rainfall=2.63"

Area (ac)	CN	Description
23.720	94	Urban commercial, 85% imp, HSG C
3.558		15.00% Pervious Area
20.162		85.00% Impervious Area

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

Subcatchment 5S: Post SW 23.72ac

Hydrograph



Summary for Subcatchment 6S: Post SE 22.27ac

Runoff = 48.67 cfs @ 12.02 hrs, Volume= 2.636 af, Depth= 1.42"

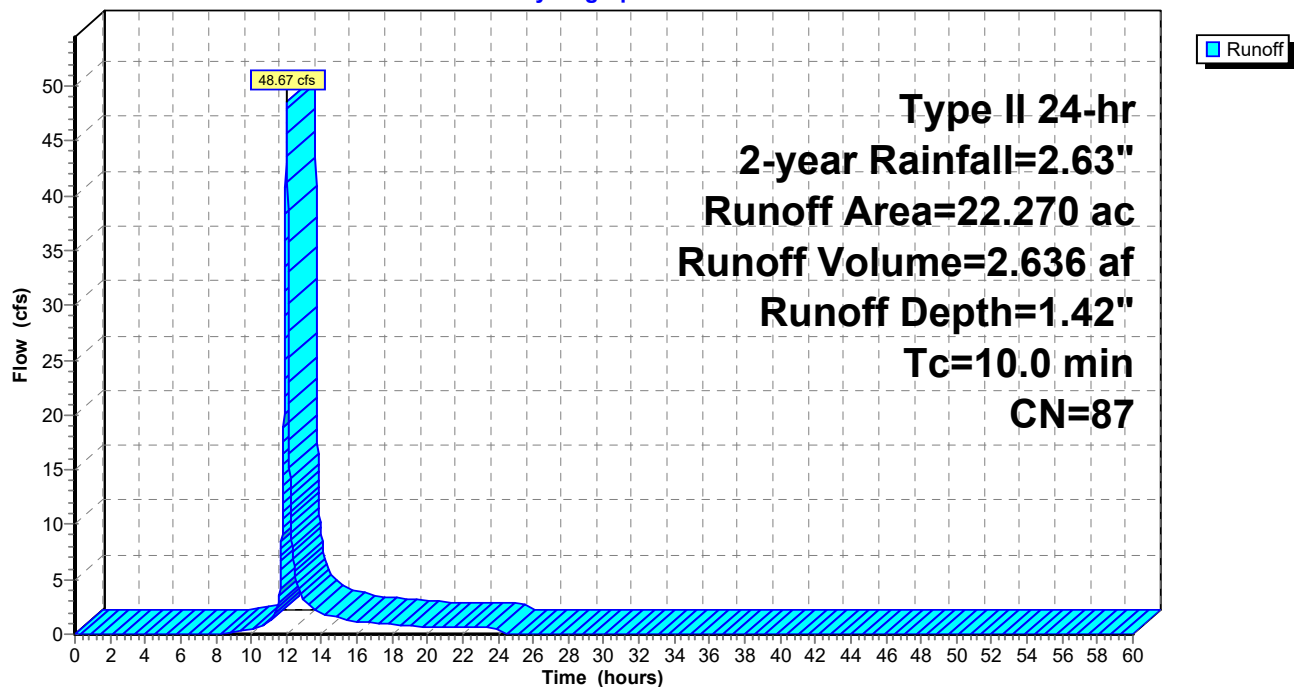
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-year Rainfall=2.63"

Area (ac)	CN	Description
* 22.270	87	
22.270		100.00% Pervious Area

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

Subcatchment 6S: Post SE 22.27ac

Hydrograph



Summary for Subcatchment 11S: Pre NW 22.06ac

Runoff = 16.13 cfs @ 12.25 hrs, Volume= 1.606 af, Depth= 0.87"

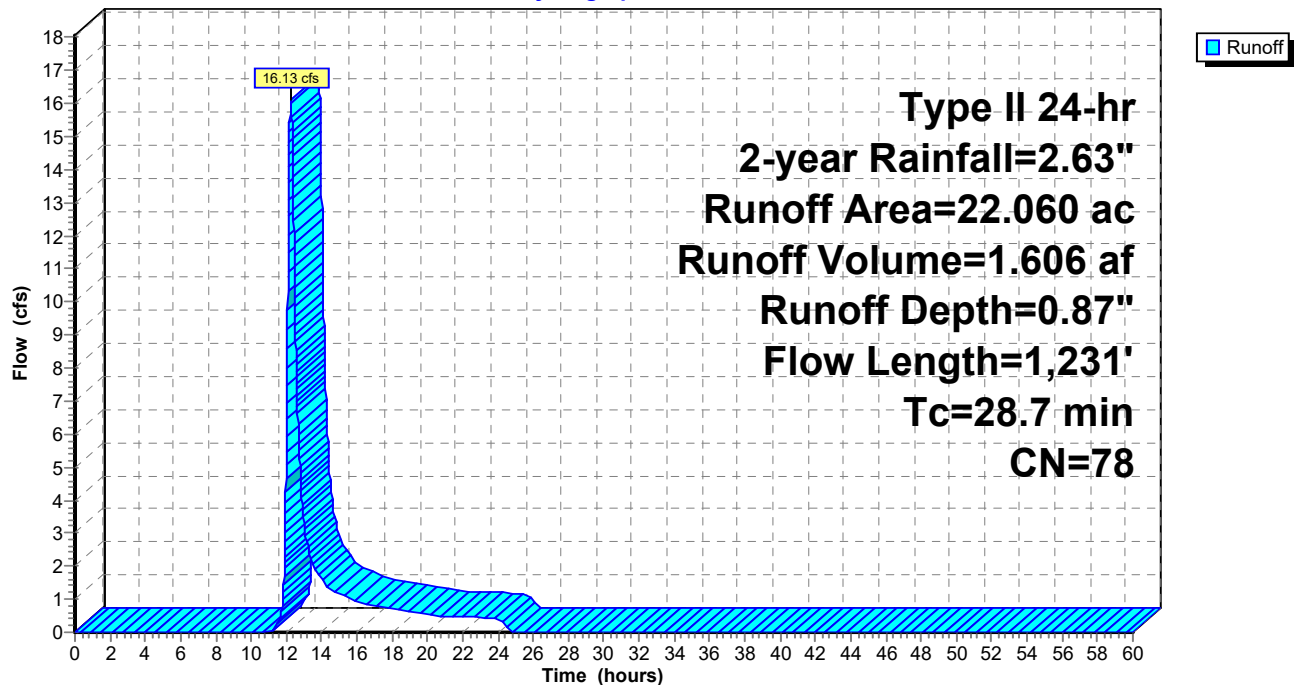
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-year Rainfall=2.63"

Area (ac)	CN	Description
22.060	78	Row crops, C&T, Good, HSG C
22.060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	100	0.0100	0.11		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.63"
12.9	1,131	0.0265	1.47		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
28.7	1,231	Total			

Subcatchment 11S: Pre NW 22.06ac

Hydrograph



Summary for Subcatchment 12S: Post NE 24.18ac

Runoff = 52.84 cfs @ 12.02 hrs, Volume= 2.862 af, Depth= 1.42"

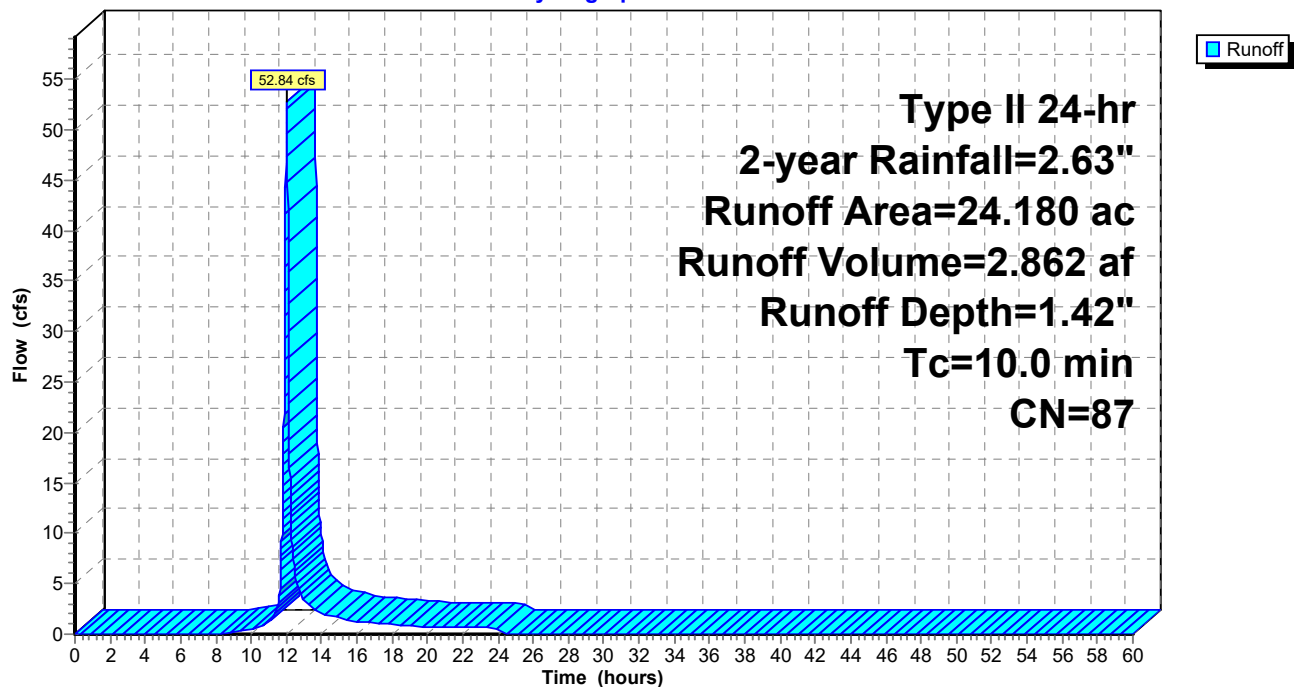
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-year Rainfall=2.63"

Area (ac)	CN	Description
* 24.180	87	
24.180		100.00% Pervious Area

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

Subcatchment 12S: Post NE 24.18ac

Hydrograph



Summary for Subcatchment 13S: Pre SW to Basin 12.45ac

Runoff = 11.14 cfs @ 12.15 hrs, Volume= 0.906 af, Depth= 0.87"

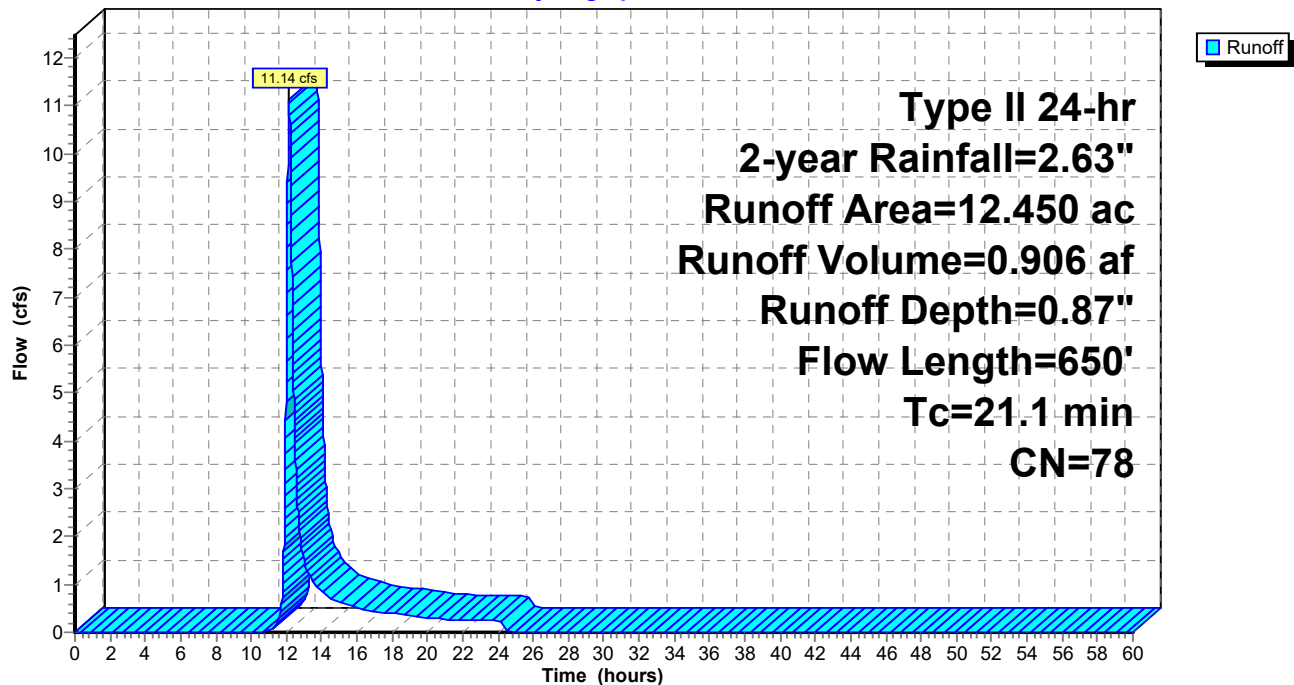
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-year Rainfall=2.63"

Area (ac)	CN	Description
12.450	78	Row crops, C&T, Good, HSG C
12.450		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	100	0.0100	0.11		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.63"
5.3	550	0.0364	1.72		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
21.1	650	Total			

Subcatchment 13S: Pre SW to Basin 12.45ac

Hydrograph



Summary for Subcatchment 14S: Post SE 22.27ac

Runoff = 48.67 cfs @ 12.02 hrs, Volume= 2.636 af, Depth= 1.42"

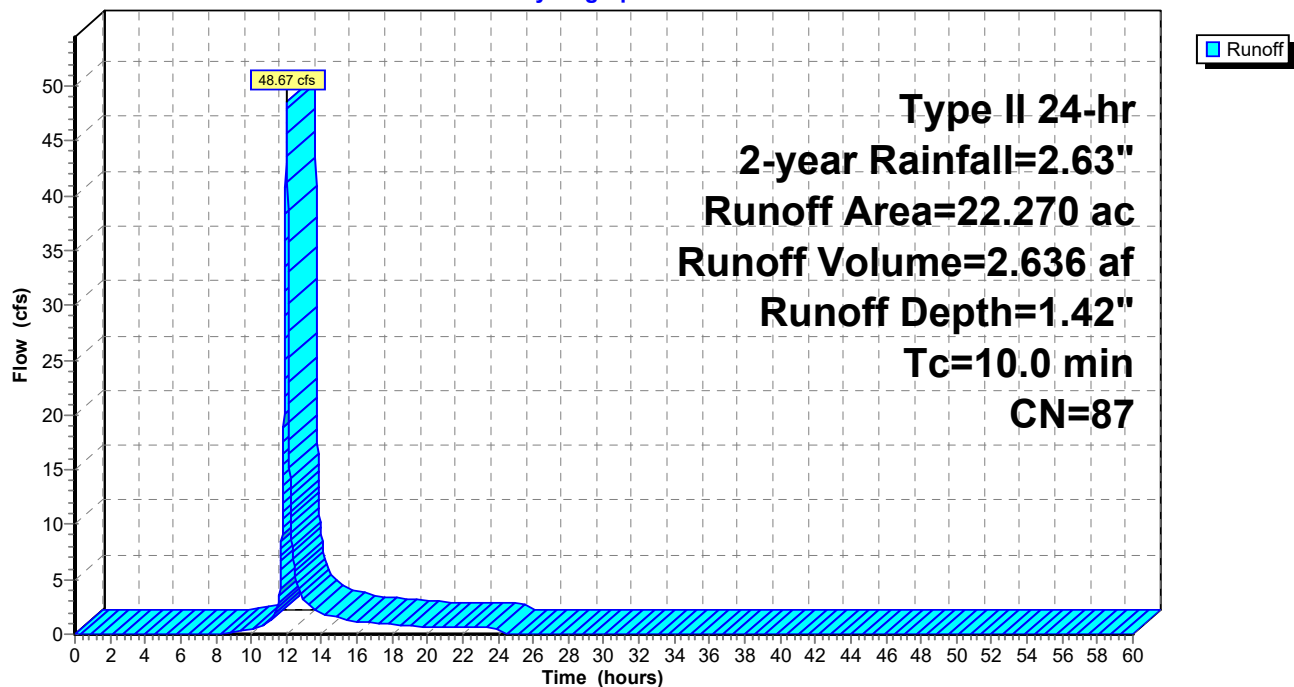
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-year Rainfall=2.63"

Area (ac)	CN	Description
* 22.270	87	
22.270		100.00% Pervious Area

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

Subcatchment 14S: Post SE 22.27ac

Hydrograph



Summary for Subcatchment 21S: Pre SW to Road 5.38ac

Runoff = 4.24 cfs @ 12.20 hrs, Volume= 0.392 af, Depth= 0.87"

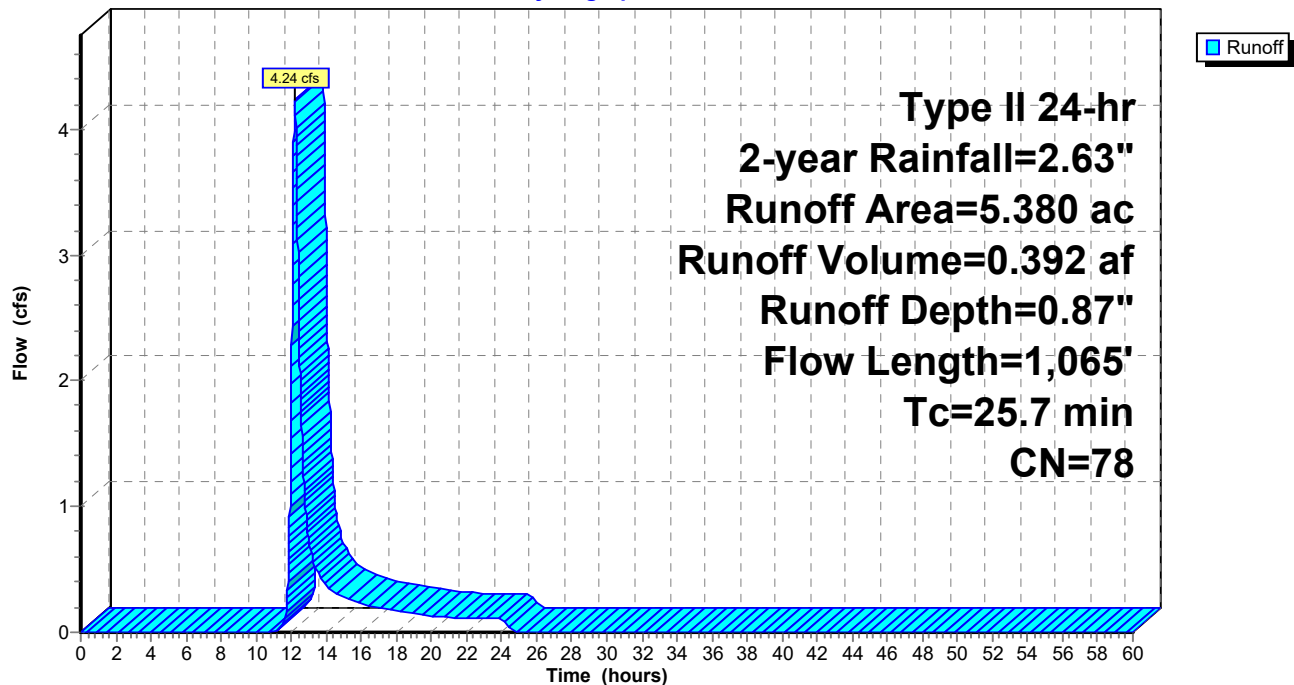
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-year Rainfall=2.63"

Area (ac)	CN	Description
5.380	78	Row crops, C&T, Good, HSG C
5.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow,
					Cultivated: Residue>20% n= 0.170 P2= 2.63"
13.8	965	0.0168	1.17		Shallow Concentrated Flow,
					Cultivated Straight Rows Kv= 9.0 fps
25.7	1,065	Total			

Subcatchment 21S: Pre SW to Road 5.38ac

Hydrograph



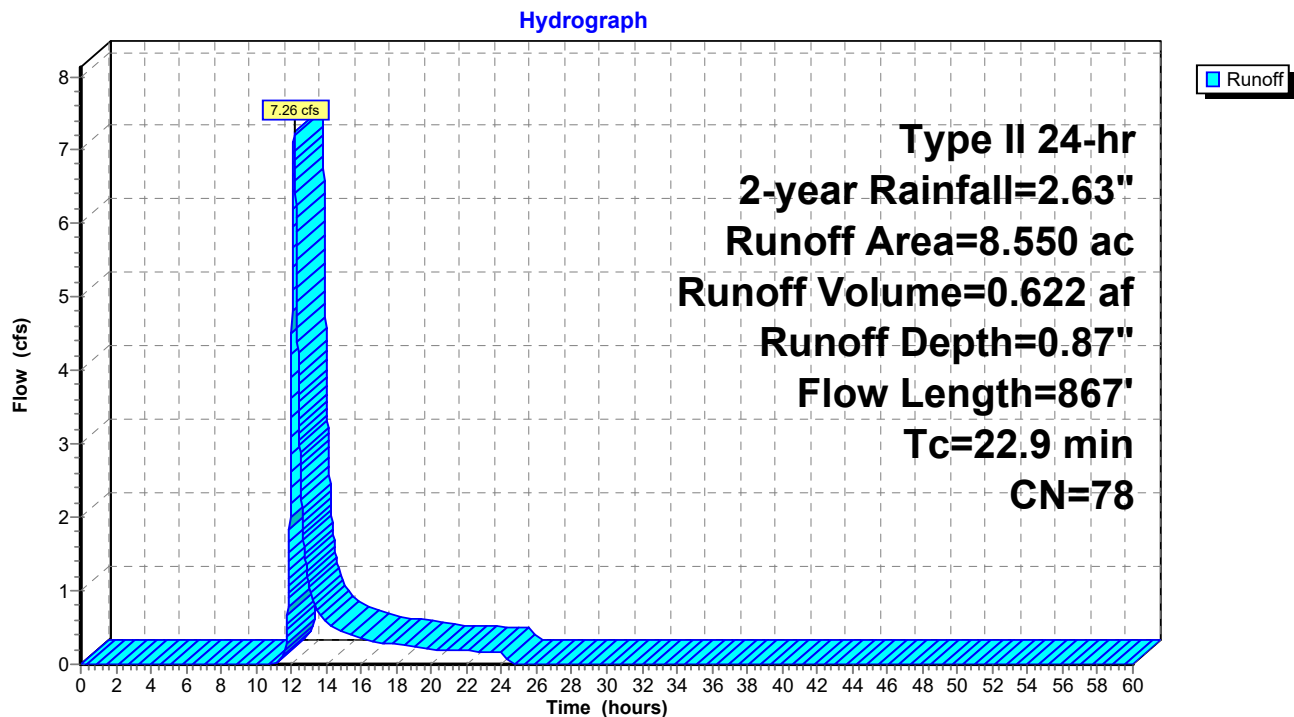
Summary for Subcatchment 22S: Pre-Developed Southeast 8.55ac (Phase 1)

Runoff = 7.26 cfs @ 12.18 hrs, Volume= 0.622 af, Depth= 0.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 2-year Rainfall=2.63"

Area (ac)	CN	Description
8.550	78	Row crops, C&T, Good, HSG C
8.550		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow,
					Cultivated: Residue>20% n= 0.170 P2= 2.63"
11.0	767	0.0168	1.17		Shallow Concentrated Flow,
					Cultivated Straight Rows Kv= 9.0 fps
22.9	867	Total			

Subcatchment 22S: Pre-Developed Southeast 8.55ac (Phase 1)

Summary for Pond 10P: NE Basin (Full Post)

Inflow Area = 50.890 ac, 34.12% Impervious, Inflow Depth > 1.53" for 2-year event
 Inflow = 66.19 cfs @ 12.03 hrs, Volume= 6.501 af
 Outflow = 7.42 cfs @ 13.90 hrs, Volume= 6.418 af, Atten= 89%, Lag= 112.3 min
 Primary = 7.42 cfs @ 13.90 hrs, Volume= 6.418 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,006.53' @ 13.90 hrs Surf.Area= 1.517 ac Storage= 3.312 af

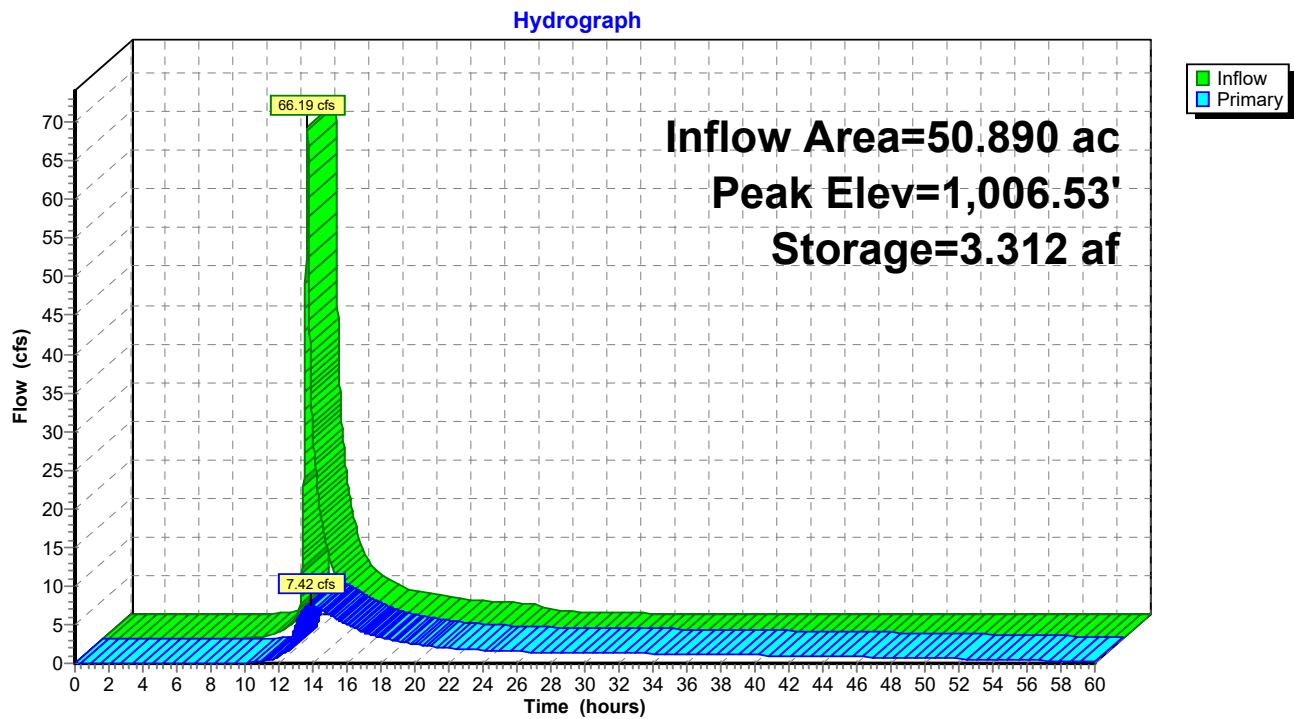
Plug-Flow detention time= 674.4 min calculated for 6.418 af (99% of inflow)
 Center-of-Mass det. time= 656.7 min (1,545.0 - 888.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,004.00'	7.574 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,004.00	1.108	0.000	0.000
1,005.00	1.267	1.187	1.187
1,006.00	1.430	1.349	2.536
1,007.00	1.595	1.512	4.049
1,008.00	1.762	1.679	5.727
1,009.00	1.931	1.846	7.574

Device	Routing	Invert	Outlet Devices
#1	Primary	1,004.00'	4.5" Horiz. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,006.00'	28.0" W x 12.0" H Vert. Window X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Primary	1,007.50'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=7.42 cfs @ 13.90 hrs HW=1,006.53' (Free Discharge)

- 1=WQ Orifice (Orifice Controls 1.69 cfs @ 7.65 fps)
- 2=Window (Orifice Controls 5.73 cfs @ 2.33 fps)
- 3=Grate (Controls 0.00 cfs)

Pond 10P: NE Basin (Full Post)

Summary for Pond 11P: SW Basin (Full Post)

Inflow Area = 23.720 ac, 85.00% Impervious, Inflow Depth = 1.99" for 2-year event
 Inflow = 69.45 cfs @ 12.01 hrs, Volume= 3.941 af
 Outflow = 1.25 cfs @ 17.00 hrs, Volume= 3.503 af, Atten= 98%, Lag= 299.2 min
 Primary = 1.25 cfs @ 17.00 hrs, Volume= 3.503 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,014.00' @ 17.00 hrs Surf.Area= 1.618 ac Storage= 2.886 af

Plug-Flow detention time= 1,114.3 min calculated for 3.503 af (89% of inflow)
 Center-of-Mass det. time= 1,059.0 min (1,853.3 - 794.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,012.00'	10.787 af	Custom Stage Data (Prismatic) Listed below (Recalc)

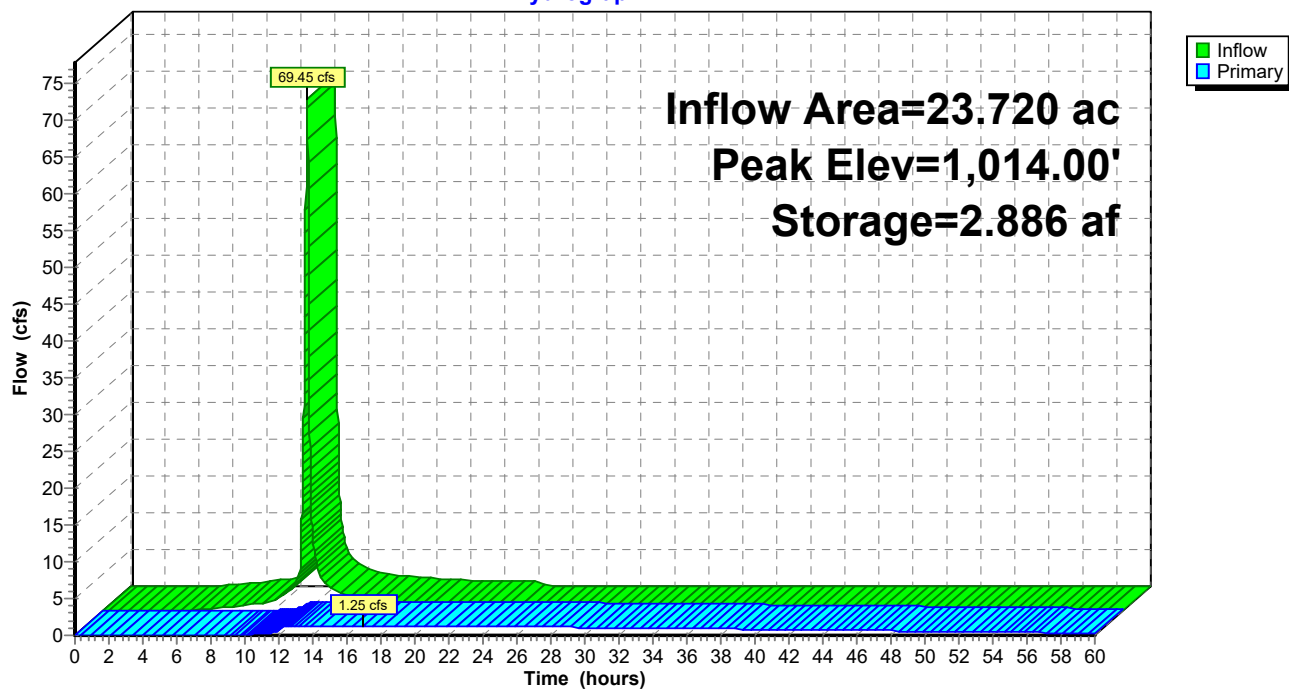
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,012.00	1.275	0.000	0.000
1,013.00	1.446	1.360	1.360
1,014.00	1.619	1.532	2.893
1,015.00	1.794	1.706	4.599
1,016.00	1.972	1.883	6.482
1,017.00	2.152	2.062	8.544
1,018.00	2.334	2.243	10.787

Device	Routing	Invert	Outlet Devices
#1	Primary	1,012.00'	6.0" Vert. Orifice Plate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.25 cfs @ 17.00 hrs HW=1,014.00' TW=1,011.53' (Dynamic Tailwater)
 ↑ **1=Orifice Plate** (Orifice Controls 1.25 cfs @ 6.36 fps)

Pond 11P: SW Basin (Full Post)

Hydrograph



Summary for Pond 12P: SE Basin (Full Post)

Inflow Area = 45.990 ac, 43.84% Impervious, Inflow Depth > 1.60" for 2-year event
 Inflow = 49.56 cfs @ 12.02 hrs, Volume= 6.140 af
 Outflow = 1.24 cfs @ 24.26 hrs, Volume= 4.556 af, Atten= 97%, Lag= 734.8 min
 Primary = 1.24 cfs @ 24.26 hrs, Volume= 4.556 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,011.85' @ 24.26 hrs Surf.Area= 1.378 ac Storage= 2.749 af

Plug-Flow detention time= 1,113.9 min calculated for 4.556 af (74% of inflow)
 Center-of-Mass det. time= 712.5 min (2,125.6 - 1,413.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.50'	4.535 af	Basin 01 (Prismatic) Listed below (Recalc)
#2	1,009.50'	2.519 af	Basin 02 (Prismatic) Listed below (Recalc)
		7.054 af	Total Available Storage

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.591	0.000	0.000
1,010.00	0.653	0.311	0.311
1,011.00	0.777	0.715	1.026
1,012.00	0.904	0.841	1.867
1,013.00	1.034	0.969	2.836
1,014.00	1.165	1.100	3.935
1,014.50	1.232	0.599	4.535

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.375	0.000	0.000
1,010.00	0.399	0.194	0.194
1,011.00	0.449	0.424	0.618
1,012.00	0.501	0.475	1.093
1,013.00	0.556	0.528	1.621
1,014.00	0.613	0.584	2.205
1,014.50	0.642	0.314	2.519

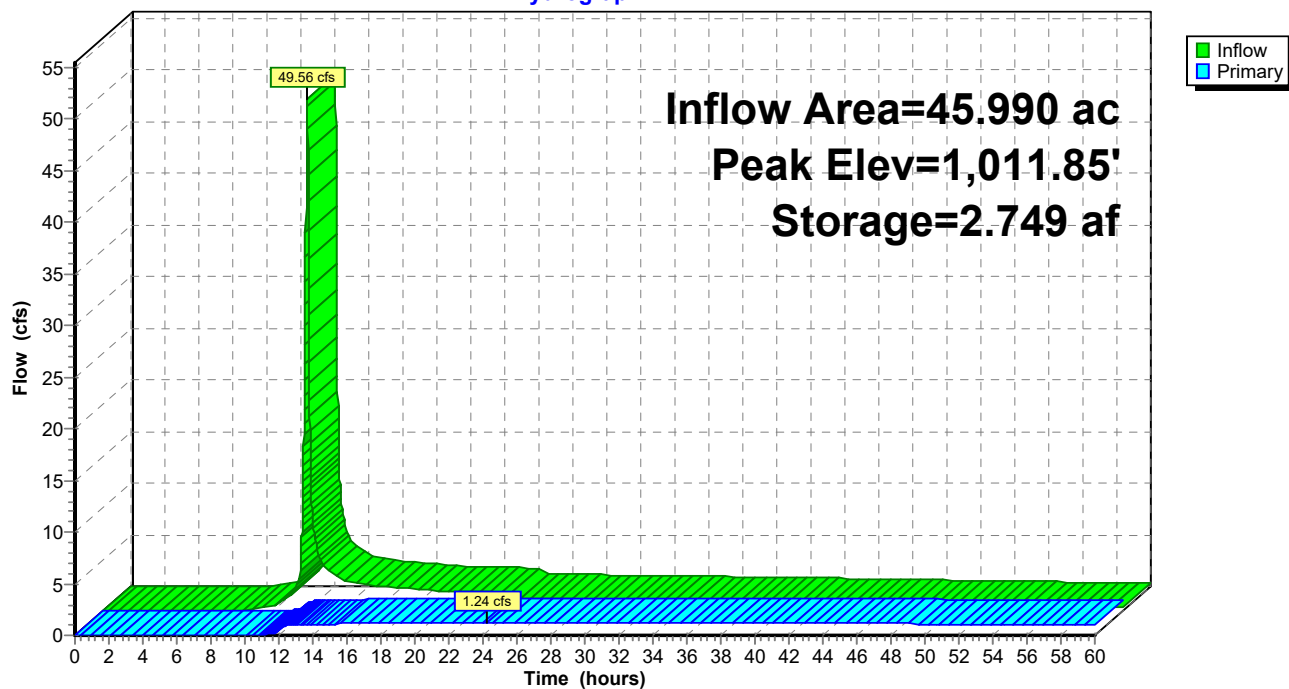
Device	Routing	Invert	Outlet Devices
#1	Primary	1,009.50'	4.0" Vert. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,012.00'	10.0" Horiz. Riser Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	1,013.75'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=1.24 cfs @ 24.26 hrs HW=1,011.85' TW=0.00' (Dynamic Tailwater)

1=WQ Orifice (Orifice Controls 1.24 cfs @ 7.11 fps)
 2=Riser Pipe (Controls 0.00 cfs)
 3=Grate (Controls 0.00 cfs)

Pond 12P: SE Basin (Full Post)

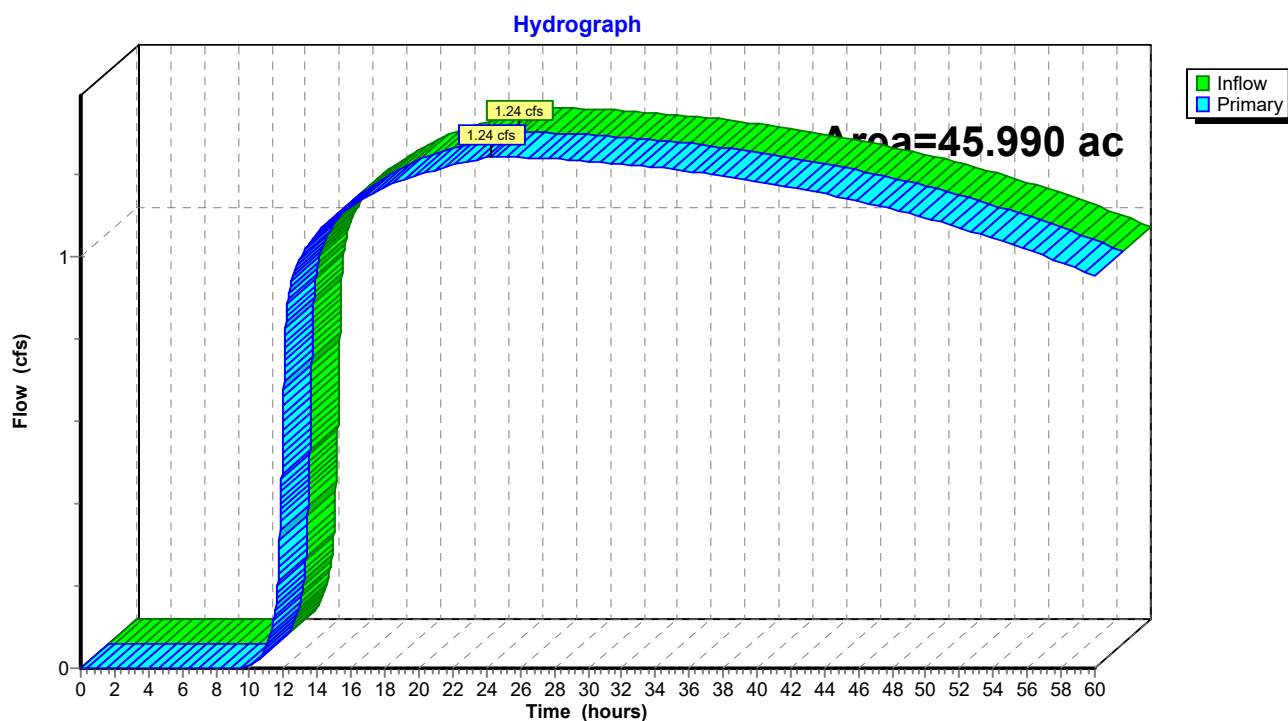
Hydrograph



Summary for Pond 13P: SE Post Out

Inflow Area = 45.990 ac, 43.84% Impervious, Inflow Depth > 1.19" for 2-year event
Inflow = 1.24 cfs @ 24.26 hrs, Volume= 4.556 af
Primary = 1.24 cfs @ 24.26 hrs, Volume= 4.556 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Pond 13P: SE Post Out

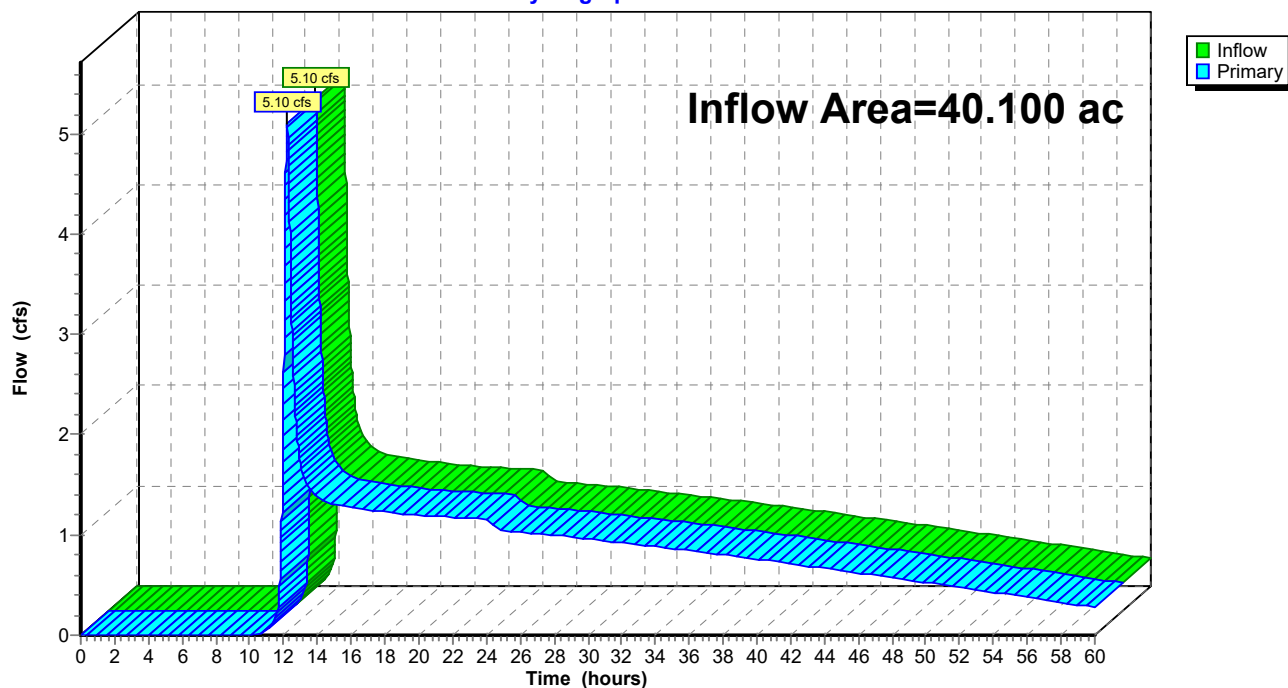
Summary for Pond 20P: SE Post Out (Phase 1)

Inflow Area = 40.100 ac, 0.00% Impervious, Inflow Depth > 1.05" for 2-year event
Inflow = 5.10 cfs @ 12.20 hrs, Volume= 3.514 af
Primary = 5.10 cfs @ 12.20 hrs, Volume= 3.514 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Pond 20P: SE Post Out (Phase 1)

Hydrograph



Summary for Pond 21P: SE Basin (Phase 1)

Inflow Area = 34.720 ac, 0.00% Impervious, Inflow Depth > 1.17" for 2-year event
 Inflow = 48.68 cfs @ 12.02 hrs, Volume= 3.395 af
 Outflow = 1.07 cfs @ 20.00 hrs, Volume= 3.122 af, Atten= 98%, Lag= 478.9 min
 Primary = 1.07 cfs @ 20.00 hrs, Volume= 3.122 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,011.27' @ 20.00 hrs Surf.Area= 1.275 ac Storage= 1.985 af

Plug-Flow detention time= 1,017.2 min calculated for 3.122 af (92% of inflow)
 Center-of-Mass det. time= 898.6 min (1,903.8 - 1,005.2)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.50'	4.535 af	Basin 01 (Prismatic) Listed below (Recalc)
#2	1,009.50'	2.519 af	Basin 02 (Prismatic) Listed below (Recalc)
		7.054 af	Total Available Storage

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.591	0.000	0.000
1,010.00	0.653	0.311	0.311
1,011.00	0.777	0.715	1.026
1,012.00	0.904	0.841	1.867
1,013.00	1.034	0.969	2.836
1,014.00	1.165	1.100	3.935
1,014.50	1.232	0.599	4.535

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.375	0.000	0.000
1,010.00	0.399	0.194	0.194
1,011.00	0.449	0.424	0.618
1,012.00	0.501	0.475	1.093
1,013.00	0.556	0.528	1.621
1,014.00	0.613	0.584	2.205
1,014.50	0.642	0.314	2.519

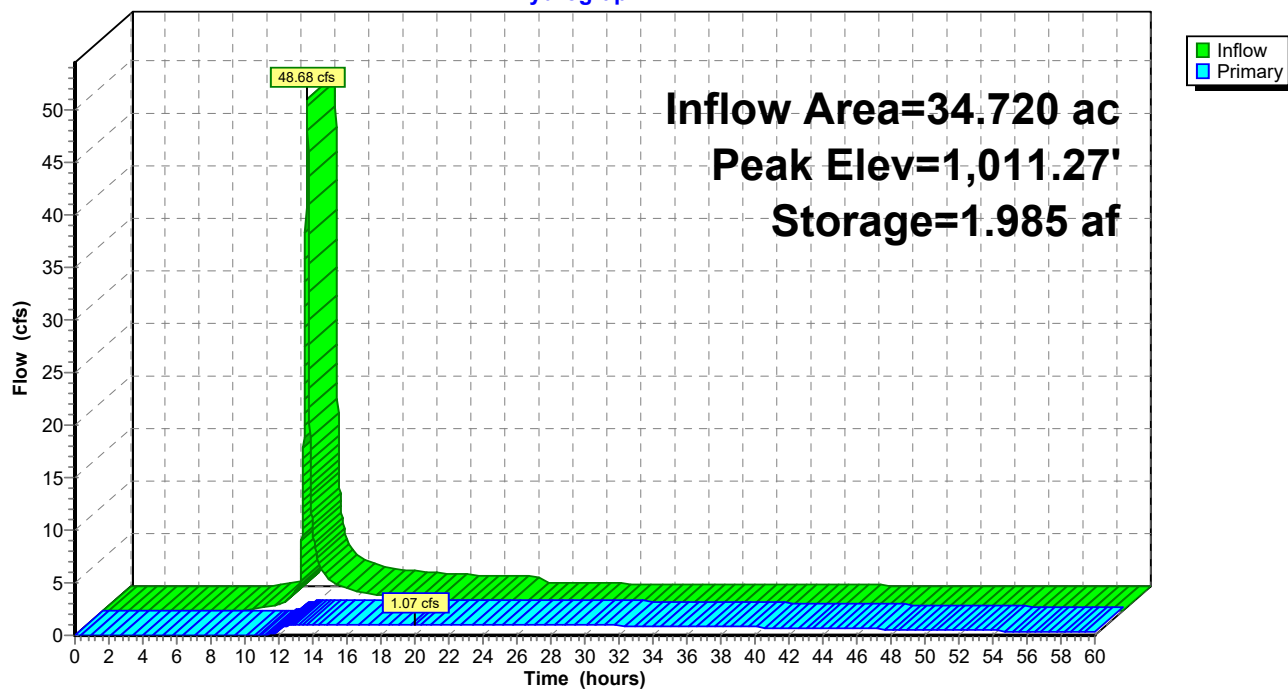
Device	Routing	Invert	Outlet Devices
#1	Primary	1,009.50'	4.0" Vert. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,012.00'	10.0" Horiz. Open Top Riser Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	1,013.75'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=1.07 cfs @ 20.00 hrs HW=1,011.27' TW=0.00' (Dynamic Tailwater)

1=WQ Orifice (Orifice Controls 1.07 cfs @ 6.10 fps)
 2=Open Top Riser Pipe (Controls 0.00 cfs)
 3=Grate (Controls 0.00 cfs)

Pond 21P: SE Basin (Phase 1)

Hydrograph



Summary for Pond 22P: NE Basin (Phase 1)

Inflow Area = 46.240 ac, 0.00% Impervious, Inflow Depth = 1.16" for 2-year event
 Inflow = 59.89 cfs @ 12.03 hrs, Volume= 4.468 af
 Outflow = 2.72 cfs @ 15.10 hrs, Volume= 4.265 af, Atten= 95%, Lag= 184.6 min
 Primary = 2.72 cfs @ 15.10 hrs, Volume= 4.265 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,006.19' @ 15.10 hrs Surf.Area= 1.461 ac Storage= 2.807 af

Plug-Flow detention time= 865.2 min calculated for 4.264 af (95% of inflow)
 Center-of-Mass det. time= 839.7 min (1,685.7 - 846.1)

Volume	Invert	Avail.Storage	Storage Description
#1	1,004.00'	7.574 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,004.00	1.108	0.000	0.000
1,005.00	1.267	1.188	1.188
1,006.00	1.430	1.349	2.536
1,007.00	1.595	1.512	4.048
1,008.00	1.762	1.678	5.727
1,009.00	1.931	1.847	7.574

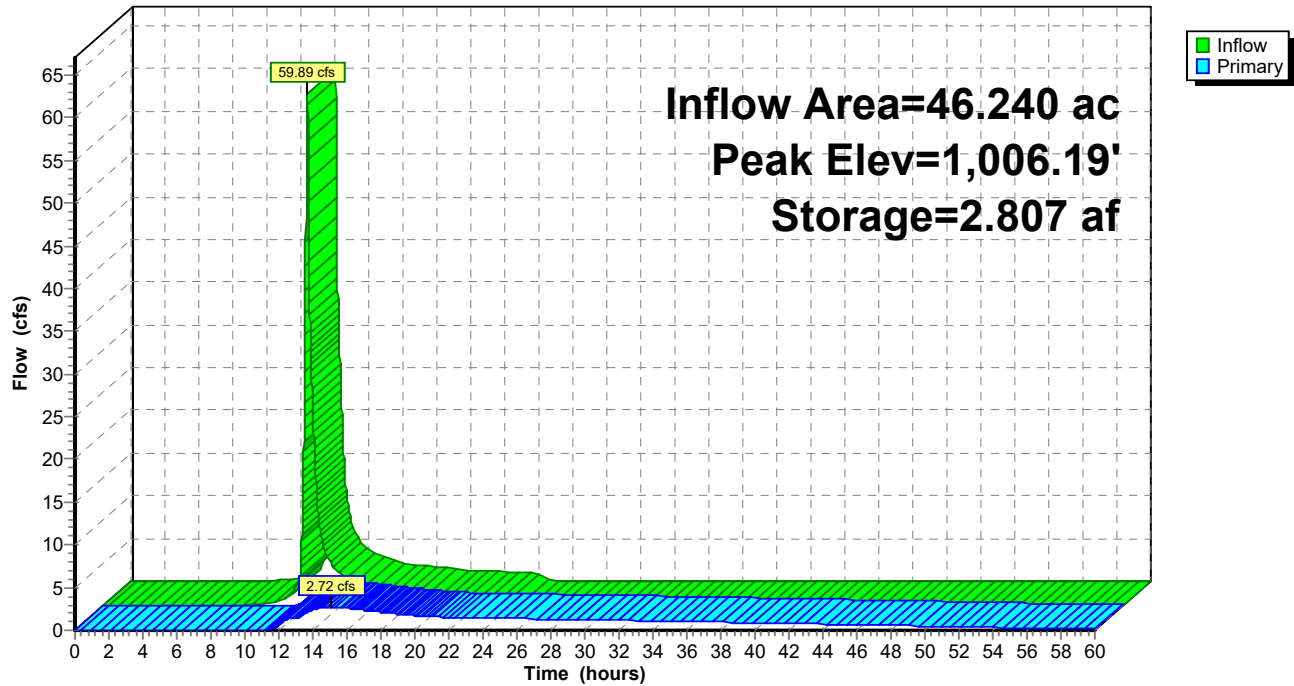
Device	Routing	Invert	Outlet Devices
#1	Primary	1,004.00'	4.5" Vert. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,006.00'	28.0" W x 12.0" H Vert. Window X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Primary	1,007.50'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=2.72 cfs @ 15.10 hrs HW=1,006.19' (Free Discharge)

- 1=WQ Orifice (Orifice Controls 1.50 cfs @ 6.81 fps)
- 2=Window (Orifice Controls 1.22 cfs @ 1.39 fps)
- 3=Grate (Controls 0.00 cfs)

Pond 22P: NE Basin (Phase 1)

Hydrograph



Summary for Pond 23P: NW Basin (Full Post)

Inflow Area = 26.710 ac, 65.00% Impervious, Inflow Depth = 1.65" for 2-year event
 Inflow = 66.95 cfs @ 12.01 hrs, Volume= 3.667 af
 Outflow = 20.43 cfs @ 12.19 hrs, Volume= 3.639 af, Atten= 69%, Lag= 10.6 min
 Primary = 20.43 cfs @ 12.19 hrs, Volume= 3.639 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,014.84' @ 12.19 hrs Surf.Area= 0.886 ac Storage= 1.488 af

Plug-Flow detention time= 124.8 min calculated for 3.638 af (99% of inflow)
 Center-of-Mass det. time= 120.3 min (935.7 - 815.3)

Volume	Invert	Avail.Storage	Storage Description
#1	1,013.00'	3.604 af	Custom Stage Data (Prismatic) Listed below (Recalc)

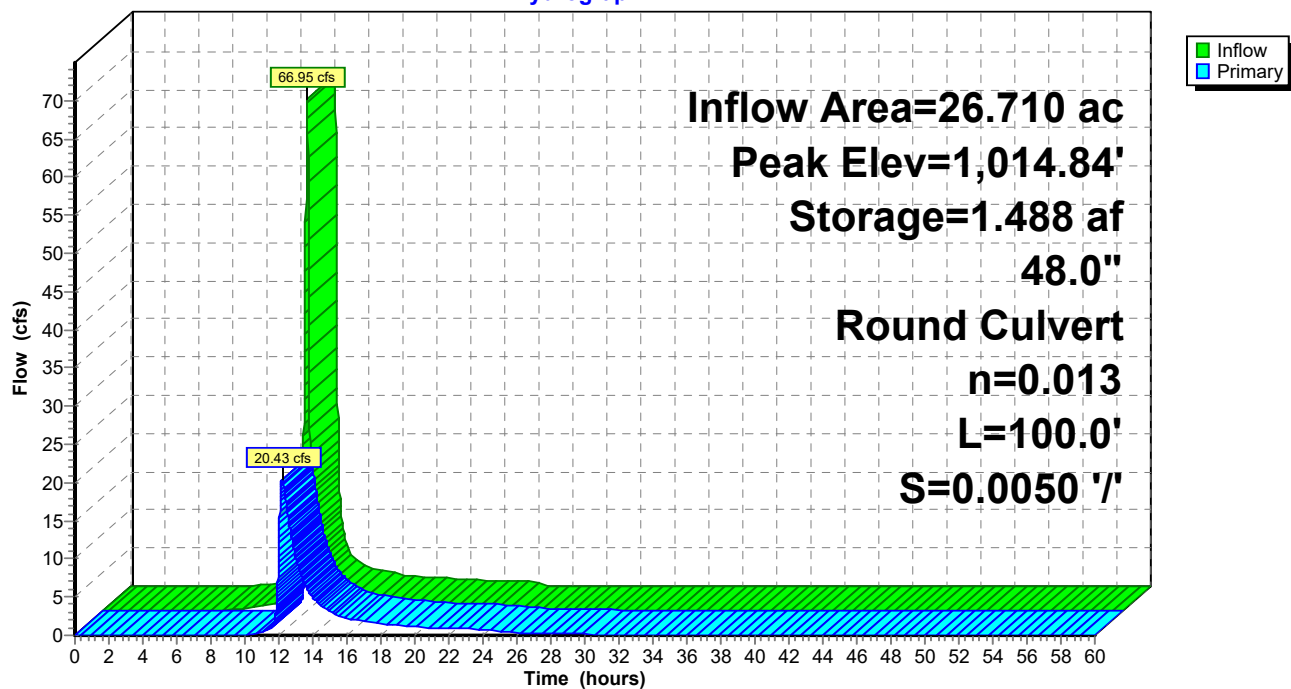
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,013.00	0.729	0.000	0.000
1,014.00	0.813	0.771	0.771
1,015.00	0.899	0.856	1.627
1,016.00	0.988	0.943	2.570
1,017.00	1.079	1.033	3.604

Device	Routing	Invert	Outlet Devices
#1	Primary	1,013.00'	48.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,013.00' / 1,012.50' S= 0.0050 ' / ' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 12.57 sf

Primary OutFlow Max=20.43 cfs @ 12.19 hrs HW=1,014.84' TW=1,005.47' (Dynamic Tailwater)
 ↑ **1=Culvert** (Barrel Controls 20.43 cfs @ 5.30 fps)

Pond 23P: NW Basin (Full Post)

Hydrograph



Summary for Pond 24P: SW Basin (Phase 1)

Inflow Area = 12.450 ac, 0.00% Impervious, Inflow Depth = 0.87" for 2-year event
 Inflow = 11.14 cfs @ 12.15 hrs, Volume= 0.906 af
 Outflow = 0.41 cfs @ 17.58 hrs, Volume= 0.759 af, Atten= 96%, Lag= 325.3 min
 Primary = 0.41 cfs @ 17.58 hrs, Volume= 0.759 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,012.44' @ 17.58 hrs Surf.Area= 1.350 ac Storage= 0.578 af

Plug-Flow detention time= 824.5 min calculated for 0.759 af (84% of inflow)
 Center-of-Mass det. time= 749.3 min (1,620.5 - 871.2)

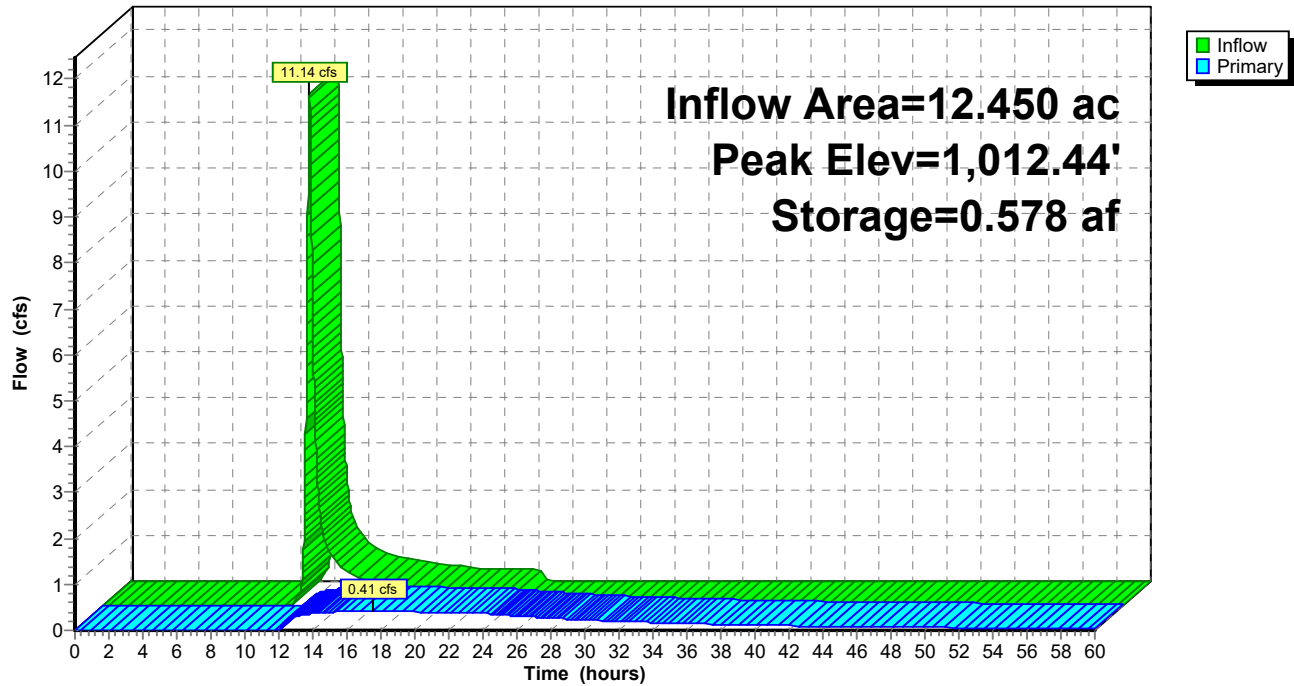
Volume	Invert	Avail.Storage	Storage Description
#1	1,012.00'	10.787 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,012.00	1.275	0.000	0.000
1,013.00	1.446	1.360	1.360
1,014.00	1.619	1.532	2.893
1,015.00	1.794	1.706	4.599
1,016.00	1.972	1.883	6.482
1,017.00	2.152	2.062	8.544
1,018.00	2.334	2.243	10.787

Device	Routing	Invert	Outlet Devices
#1	Primary	1,012.00'	6.0" Vert. Orifice Plate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.41 cfs @ 17.58 hrs HW=1,012.44' TW=1,011.25' (Dynamic Tailwater)
 ↑ **1=Orifice Plate** (Orifice Controls 0.41 cfs @ 2.26 fps)

Pond 24P: SW Basin (Phase 1)

Hydrograph



Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Pre-Developed	Runoff Area=50.830 ac 0.00% Impervious Runoff Depth=1.30" Flow Length=2,529' Tc=51.4 min CN=78 Runoff=38.15 cfs 5.518 af
Subcatchment2S: Pre-Developed	Runoff Area=14.820 ac 0.00% Impervious Runoff Depth=1.30" Flow Length=1,945' Tc=38.3 min CN=78 Runoff=13.72 cfs 1.609 af
Subcatchment3S: Post NW 26.71ac	Runoff Area=26.710 ac 65.00% Impervious Runoff Depth=2.21" Tc=10.0 min CN=90 Runoff=88.58 cfs 4.909 af
Subcatchment4S: Post NE 24.18ac	Runoff Area=24.180 ac 0.00% Impervious Runoff Depth=1.95" Tc=10.0 min CN=87 Runoff=72.05 cfs 3.930 af
Subcatchment5S: Post SW 23.72ac	Runoff Area=23.720 ac 85.00% Impervious Runoff Depth=2.58" Tc=10.0 min CN=94 Runoff=88.59 cfs 5.105 af
Subcatchment6S: Post SE 22.27ac	Runoff Area=22.270 ac 0.00% Impervious Runoff Depth=1.95" Tc=10.0 min CN=87 Runoff=66.36 cfs 3.619 af
Subcatchment11S: Pre NW 22.06ac	Runoff Area=22.060 ac 0.00% Impervious Runoff Depth=1.30" Flow Length=1,231' Tc=28.7 min CN=78 Runoff=24.91 cfs 2.395 af
Subcatchment12S: Post NE 24.18ac	Runoff Area=24.180 ac 0.00% Impervious Runoff Depth=1.95" Tc=10.0 min CN=87 Runoff=72.05 cfs 3.930 af
Subcatchment13S: Pre SW to Basin	Runoff Area=12.450 ac 0.00% Impervious Runoff Depth=1.30" Flow Length=650' Tc=21.1 min CN=78 Runoff=17.12 cfs 1.352 af
Subcatchment14S: Post SE 22.27ac	Runoff Area=22.270 ac 0.00% Impervious Runoff Depth=1.95" Tc=10.0 min CN=87 Runoff=66.36 cfs 3.619 af
Subcatchment21S: Pre SW to Road 5.38ac	Runoff Area=5.380 ac 0.00% Impervious Runoff Depth=1.30" Flow Length=1,065' Tc=25.7 min CN=78 Runoff=6.55 cfs 0.584 af
Subcatchment22S: Pre-Developed	Runoff Area=8.550 ac 0.00% Impervious Runoff Depth=1.30" Flow Length=867' Tc=22.9 min CN=78 Runoff=11.17 cfs 0.928 af
Pond 10P: NE Basin (Full Post)	Peak Elev=1,006.95' Storage=3.963 af Inflow=93.15 cfs 8.811 af Outflow=15.62 cfs 8.719 af
Pond 11P: SW Basin (Full Post)	Peak Elev=1,014.56' Storage=3.819 af Inflow=88.59 cfs 5.105 af Outflow=1.44 cfs 4.381 af
Pond 12P: SE Basin (Full Post)	Peak Elev=1,012.22' Storage=3.275 af Inflow=67.38 cfs 8.000 af Outflow=2.23 cfs 5.803 af
Pond 13P: SE Post Out	Inflow=2.23 cfs 5.803 af Primary=2.23 cfs 5.803 af

Pond 20P: SE Post Out (Phase 1)

Inflow=7.58 cfs 4.723 af

Primary=7.58 cfs 4.723 af

Pond 21P: SE Basin (Phase 1)

Peak Elev=1,011.97' Storage=2.916 af Inflow=66.39 cfs 4.799 af

Outflow=1.28 cfs 4.139 af

Pond 22P: NE Basin (Phase 1)

Peak Elev=1,006.60' Storage=3.430 af Inflow=83.83 cfs 6.325 af

Outflow=8.69 cfs 6.110 af

Pond 23P: NW Basin (Full Post)

Peak Elev=1,015.32' Storage=1.920 af Inflow=88.58 cfs 4.909 af

48.0" Round Culvert n=0.013 L=100.0' S=0.0050 '/' Outflow=30.50 cfs 4.881 af

Pond 24P: SW Basin (Phase 1)

Peak Elev=1,012.66' Storage=0.873 af Inflow=17.12 cfs 1.352 af

Outflow=0.60 cfs 1.180 af

Total Runoff Area = 257.420 ac Runoff Volume = 37.499 af Average Runoff Depth = 1.75"**85.42% Pervious = 219.896 ac 14.58% Impervious = 37.524 ac**

Summary for Subcatchment 1S: Pre-Developed Northeast 50.83ac

Runoff = 38.15 cfs @ 12.51 hrs, Volume= 5.518 af, Depth= 1.30"

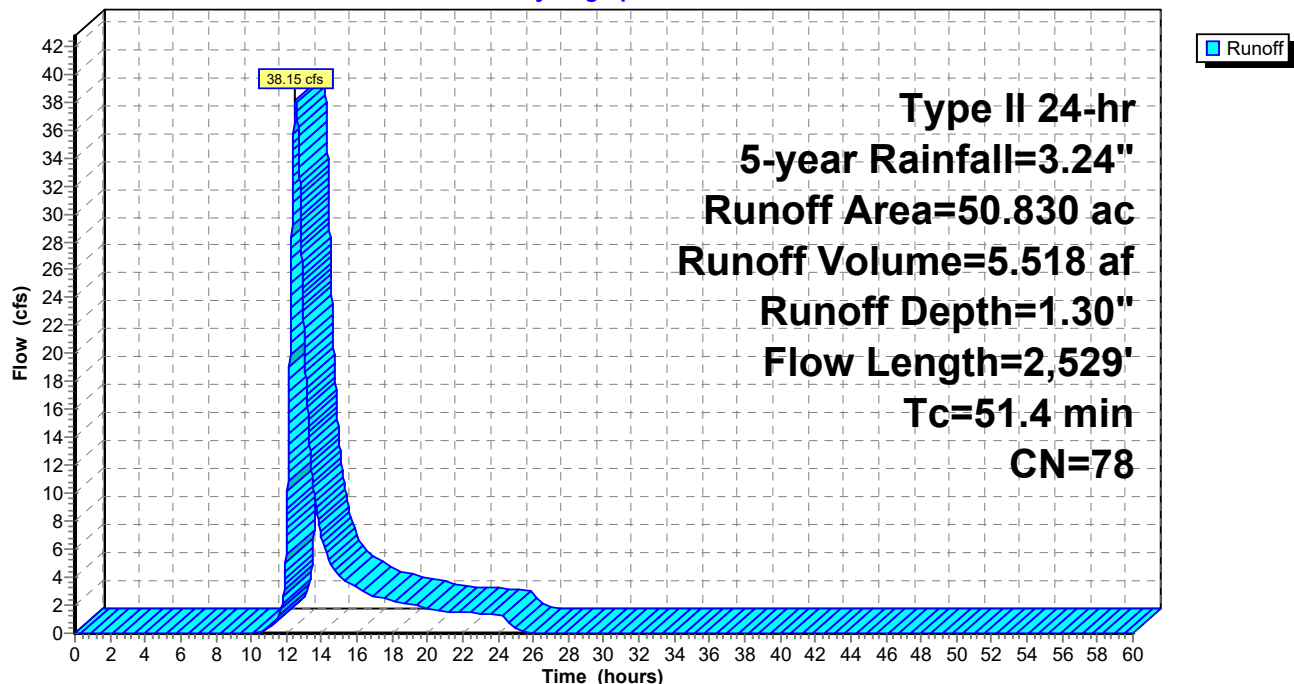
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-year Rainfall=3.24"

Area (ac)	CN	Description
50.830	78	Row crops, C&T, Good, HSG C
50.830		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.63"
6.2	633	0.0363	1.71		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
33.3	1,796	0.0100	0.90		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
51.4	2,529	Total			

Subcatchment 1S: Pre-Developed Northeast 50.83ac

Hydrograph



Summary for Subcatchment 2S: Pre-Developed Southeast 14.82ac (Post Full)

Runoff = 13.72 cfs @ 12.38 hrs, Volume= 1.609 af, Depth= 1.30"

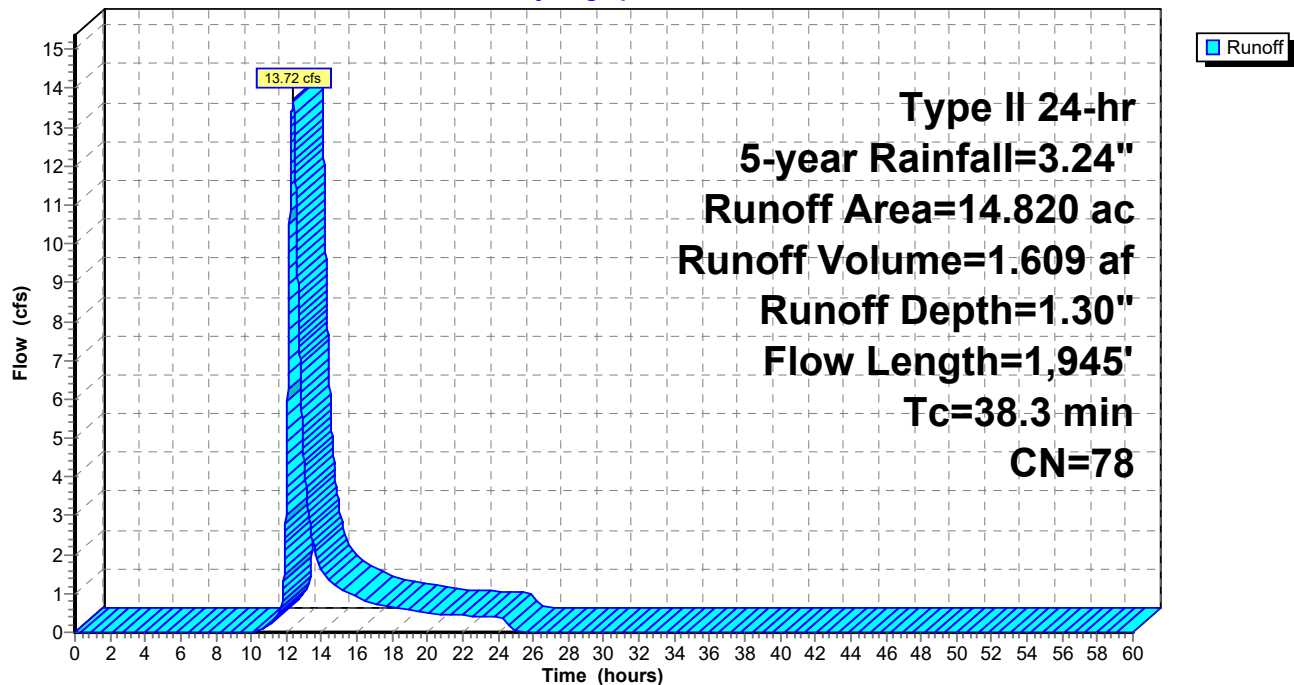
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-year Rainfall=3.24"

Area (ac)	CN	Description
14.820	78	Row crops, C&T, Good, HSG C
14.820		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow,
					Cultivated: Residue>20% n= 0.170 P2= 2.63"
26.4	1,845	0.0168	1.17		Shallow Concentrated Flow,
					Cultivated Straight Rows Kv= 9.0 fps
38.3	1,945	Total			

Subcatchment 2S: Pre-Developed Southeast 14.82ac (Post Full)

Hydrograph



Summary for Subcatchment 3S: Post NW 26.71ac

Runoff = 88.58 cfs @ 12.01 hrs, Volume= 4.909 af, Depth= 2.21"

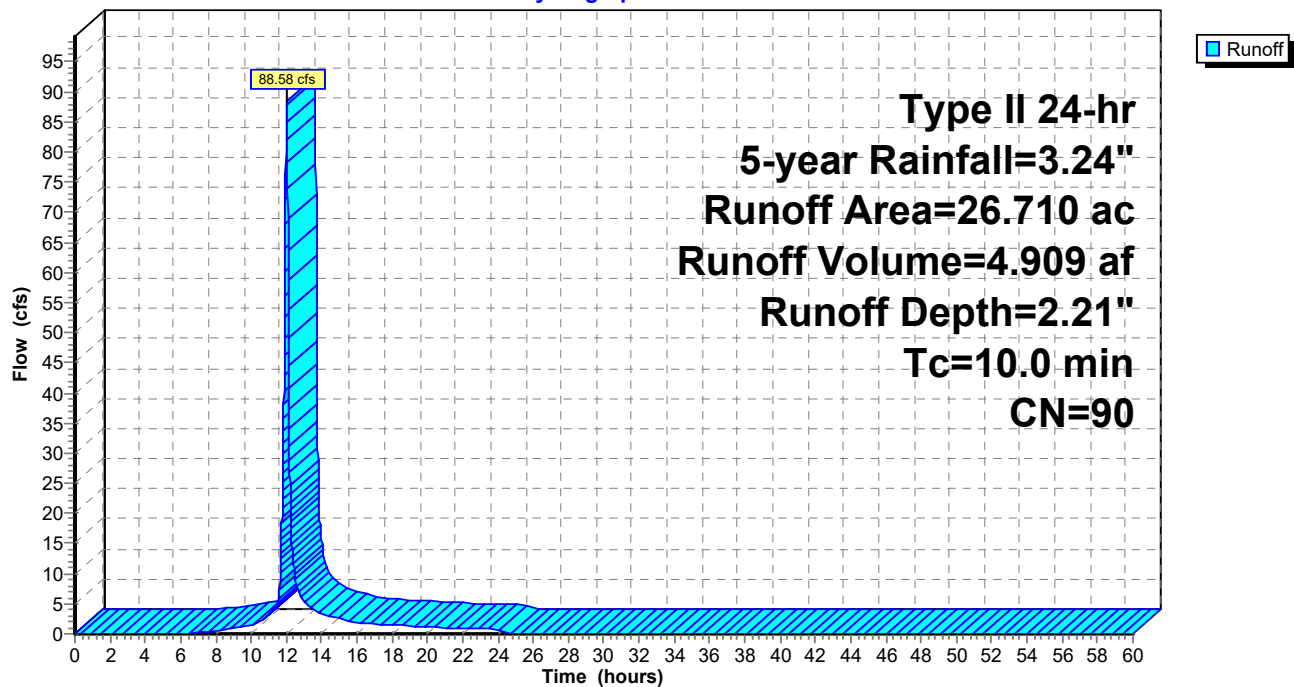
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-year Rainfall=3.24"

Area (ac)	CN	Description
26.710	90	1/8 acre lots, 65% imp, HSG C
9.349		35.00% Pervious Area
17.362		65.00% Impervious Area

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

Subcatchment 3S: Post NW 26.71ac

Hydrograph



Summary for Subcatchment 4S: Post NE 24.18ac

Runoff = 72.05 cfs @ 12.01 hrs, Volume= 3.930 af, Depth= 1.95"

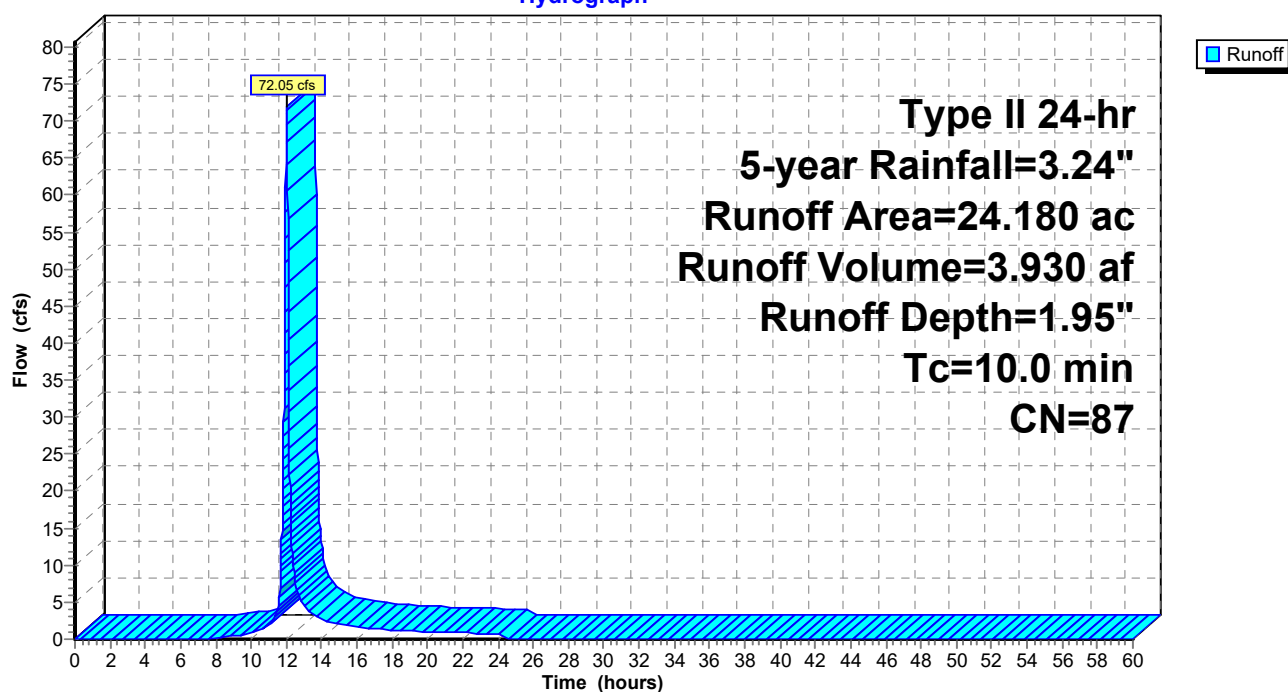
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-year Rainfall=3.24"

Area (ac)	CN	Description
* 24.180	87	
24.180		100.00% Pervious Area

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

Subcatchment 4S: Post NE 24.18ac

Hydrograph



Summary for Subcatchment 5S: Post SW 23.72ac

Runoff = 88.59 cfs @ 12.01 hrs, Volume= 5.105 af, Depth= 2.58"

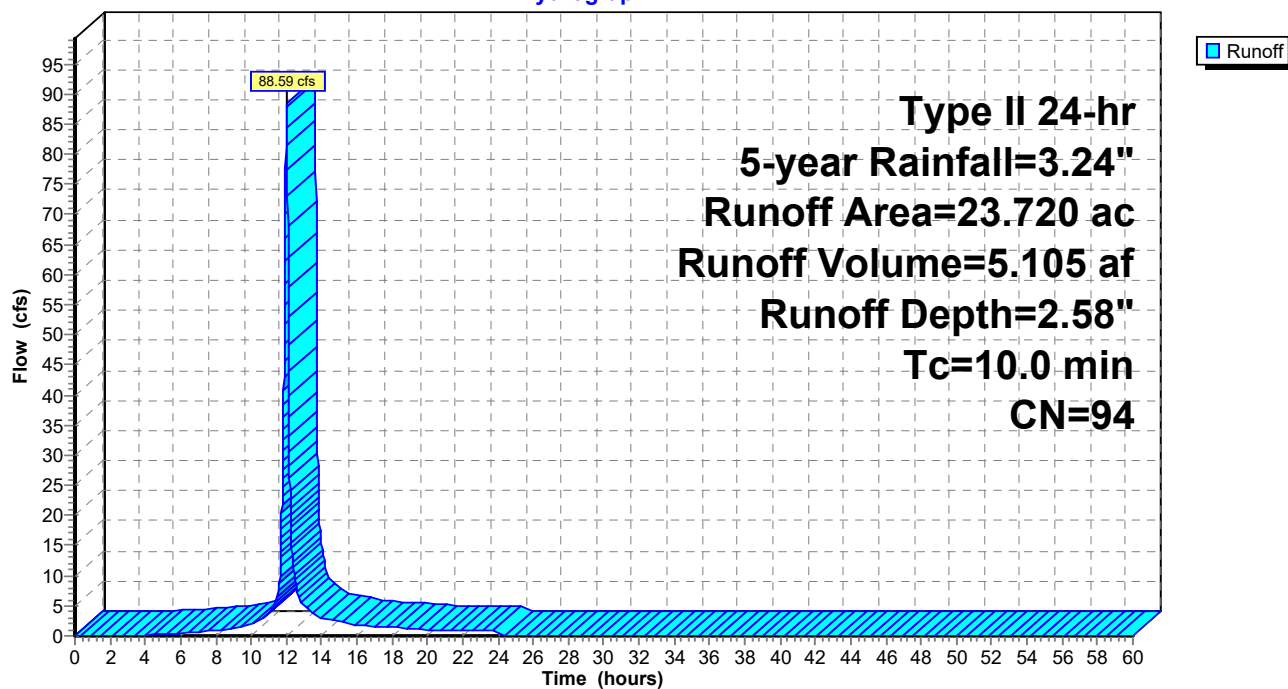
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-year Rainfall=3.24"

Area (ac)	CN	Description
23.720	94	Urban commercial, 85% imp, HSG C
3.558		15.00% Pervious Area
20.162		85.00% Impervious Area

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

Subcatchment 5S: Post SW 23.72ac

Hydrograph



Summary for Subcatchment 6S: Post SE 22.27ac

Runoff = 66.36 cfs @ 12.01 hrs, Volume= 3.619 af, Depth= 1.95"

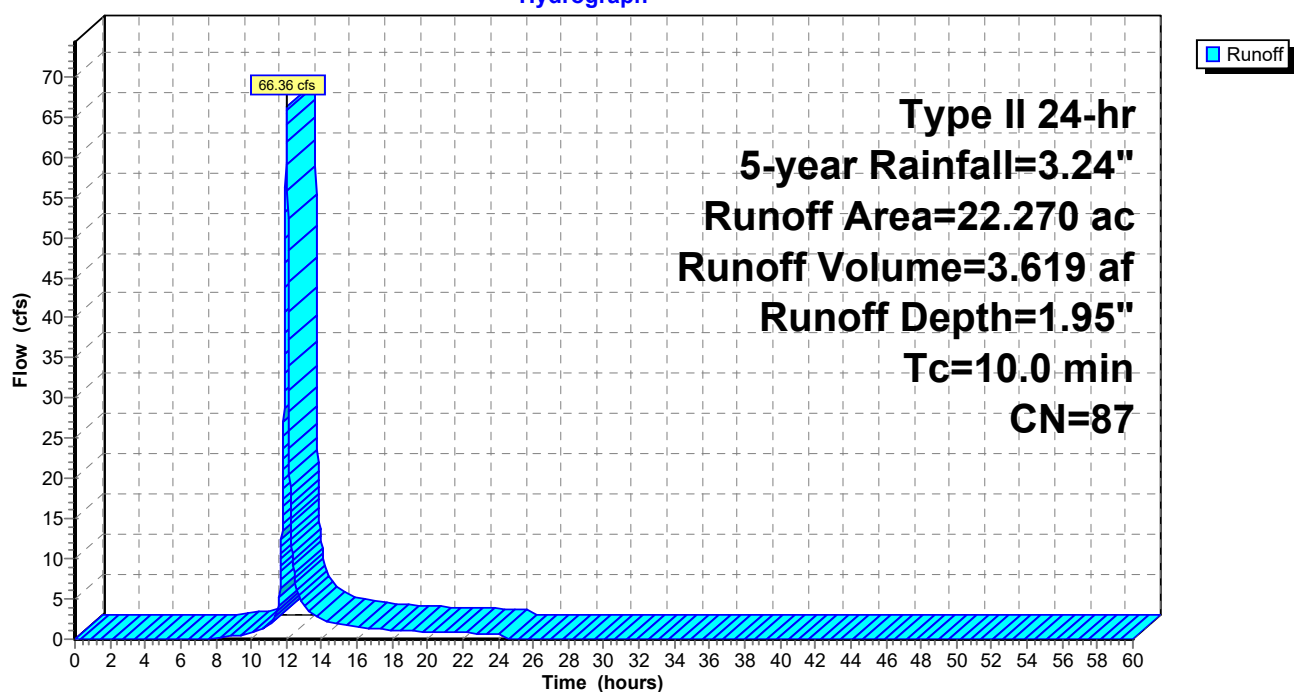
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-year Rainfall=3.24"

Area (ac)	CN	Description
* 22.270	87	
22.270		100.00% Pervious Area

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

Subcatchment 6S: Post SE 22.27ac

Hydrograph



Summary for Subcatchment 11S: Pre NW 22.06ac

Runoff = 24.91 cfs @ 12.24 hrs, Volume= 2.395 af, Depth= 1.30"

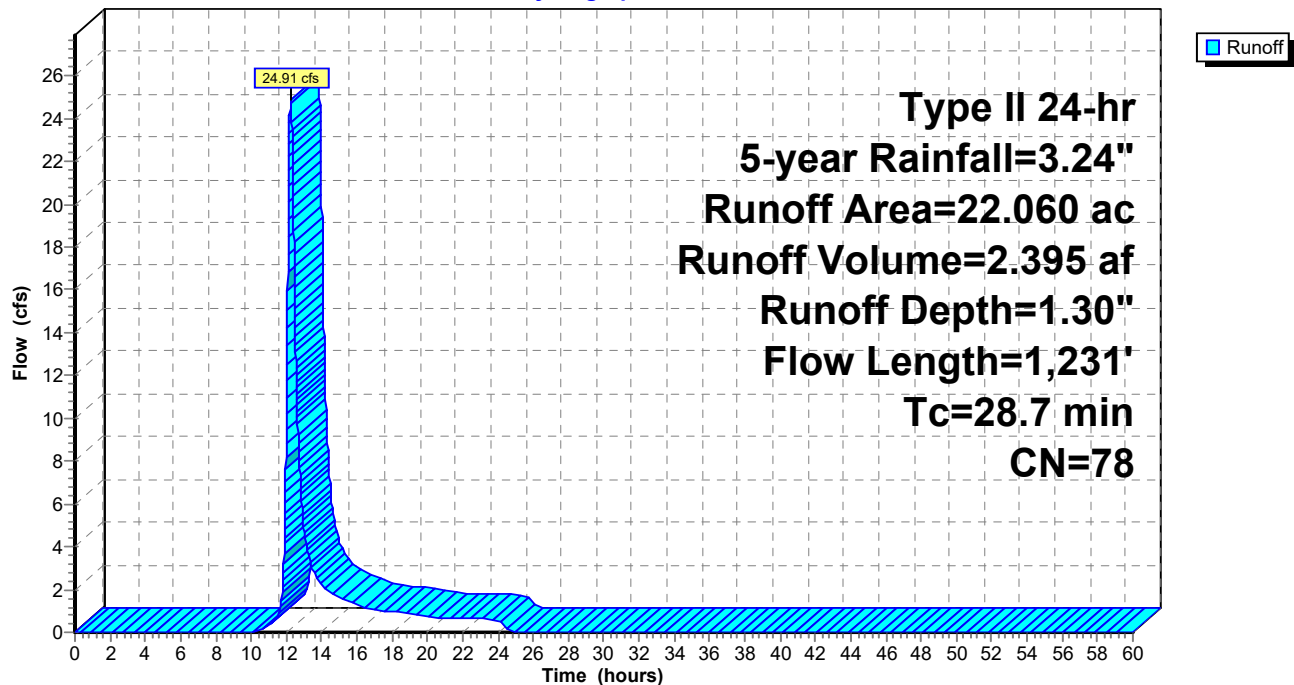
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-year Rainfall=3.24"

Area (ac)	CN	Description
22.060	78	Row crops, C&T, Good, HSG C
22.060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	100	0.0100	0.11		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.63"
12.9	1,131	0.0265	1.47		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
28.7	1,231	Total			

Subcatchment 11S: Pre NW 22.06ac

Hydrograph



Summary for Subcatchment 12S: Post NE 24.18ac

Runoff = 72.05 cfs @ 12.01 hrs, Volume= 3.930 af, Depth= 1.95"

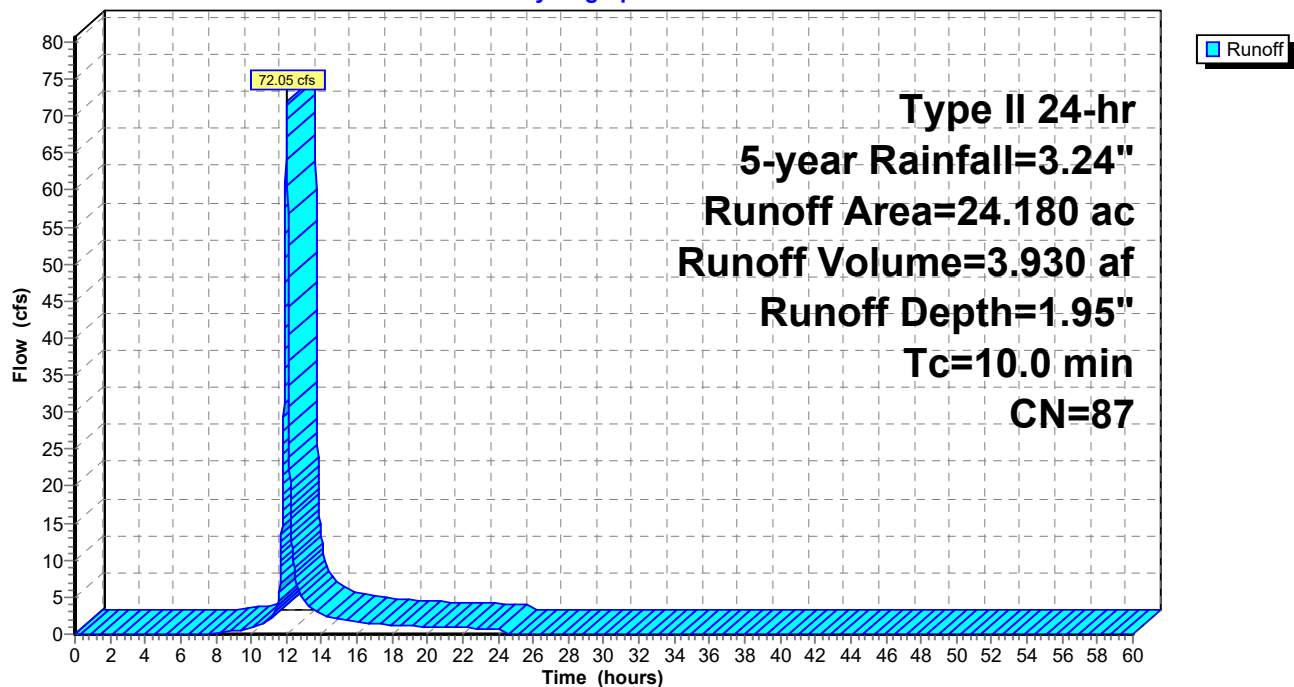
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-year Rainfall=3.24"

Area (ac)	CN	Description
* 24.180	87	
24.180		100.00% Pervious Area

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

Subcatchment 12S: Post NE 24.18ac

Hydrograph



Summary for Subcatchment 13S: Pre SW to Basin 12.45ac

Runoff = 17.12 cfs @ 12.15 hrs, Volume= 1.352 af, Depth= 1.30"

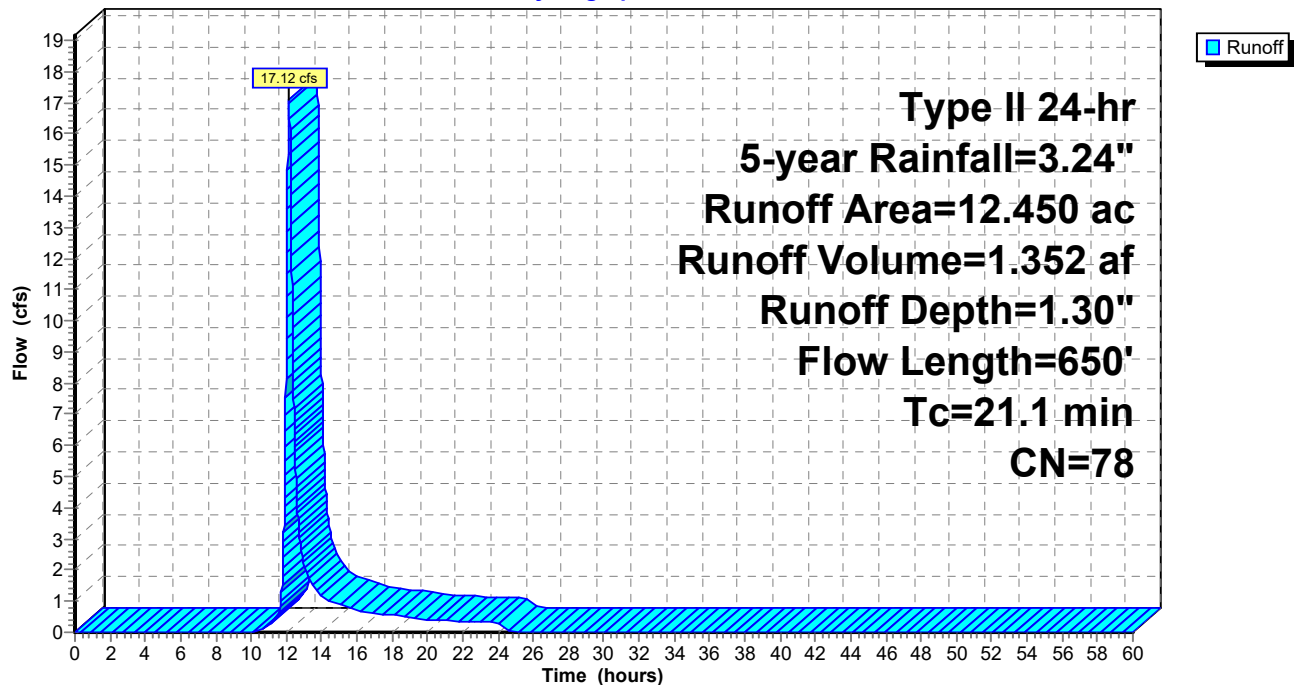
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-year Rainfall=3.24"

Area (ac)	CN	Description
12.450	78	Row crops, C&T, Good, HSG C
12.450		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	100	0.0100	0.11		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.63"
5.3	550	0.0364	1.72		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
21.1	650	Total			

Subcatchment 13S: Pre SW to Basin 12.45ac

Hydrograph



Summary for Subcatchment 14S: Post SE 22.27ac

Runoff = 66.36 cfs @ 12.01 hrs, Volume= 3.619 af, Depth= 1.95"

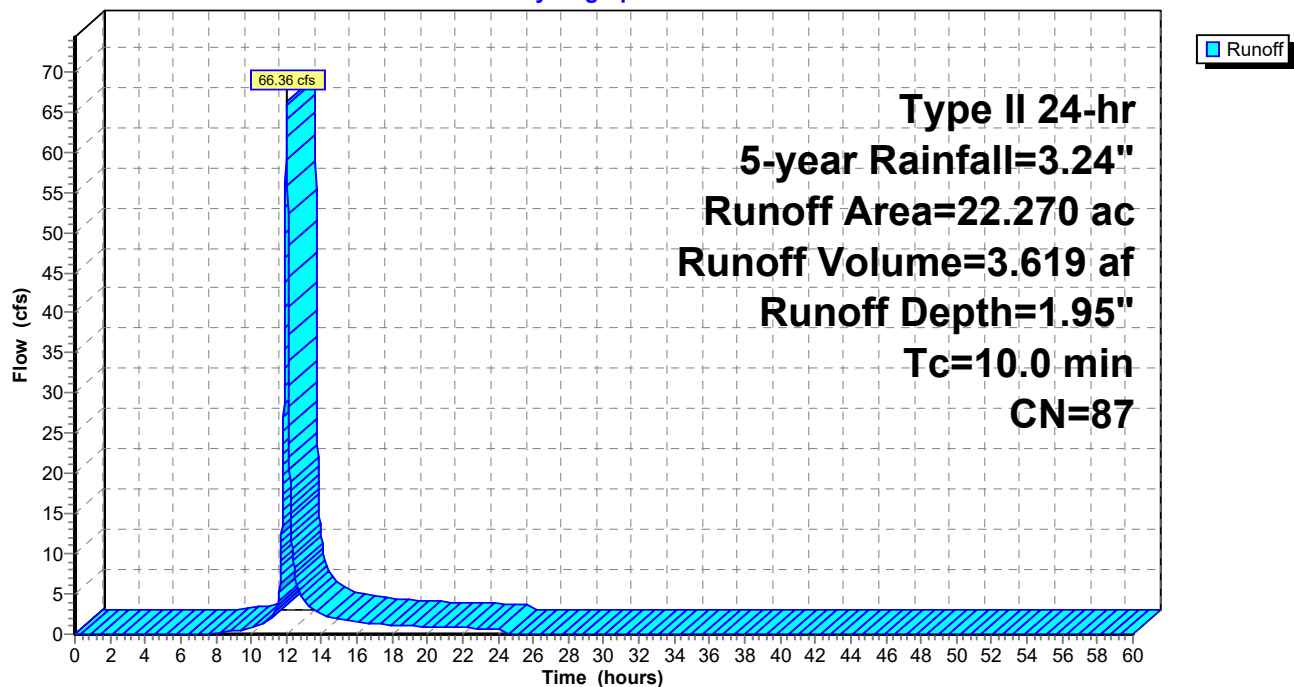
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-year Rainfall=3.24"

Area (ac)	CN	Description
* 22.270	87	
22.270		100.00% Pervious Area

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

Subcatchment 14S: Post SE 22.27ac

Hydrograph



Summary for Subcatchment 21S: Pre SW to Road 5.38ac

Runoff = 6.55 cfs @ 12.20 hrs, Volume= 0.584 af, Depth= 1.30"

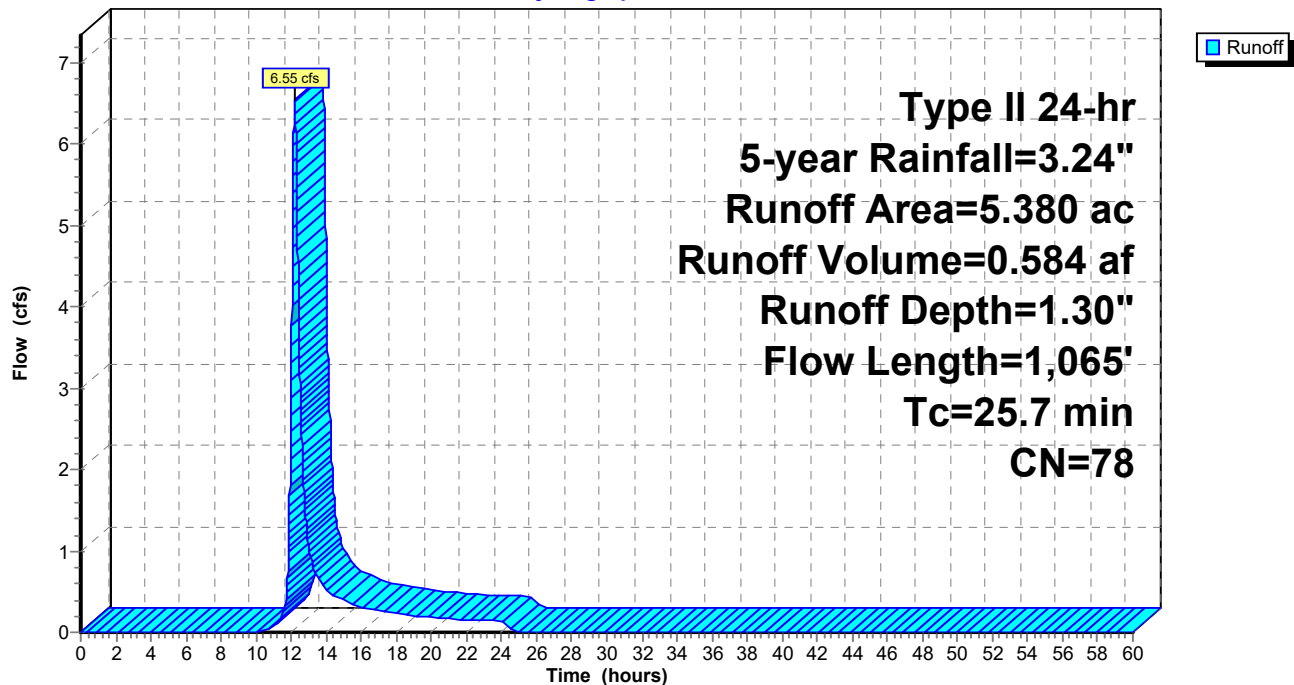
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-year Rainfall=3.24"

Area (ac)	CN	Description
5.380	78	Row crops, C&T, Good, HSG C
5.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow,
					Cultivated: Residue>20% n= 0.170 P2= 2.63"
13.8	965	0.0168	1.17		Shallow Concentrated Flow,
					Cultivated Straight Rows Kv= 9.0 fps
25.7	1,065	Total			

Subcatchment 21S: Pre SW to Road 5.38ac

Hydrograph



Summary for Subcatchment 22S: Pre-Developed Southeast 8.55ac (Phase 1)

Runoff = 11.17 cfs @ 12.17 hrs, Volume= 0.928 af, Depth= 1.30"

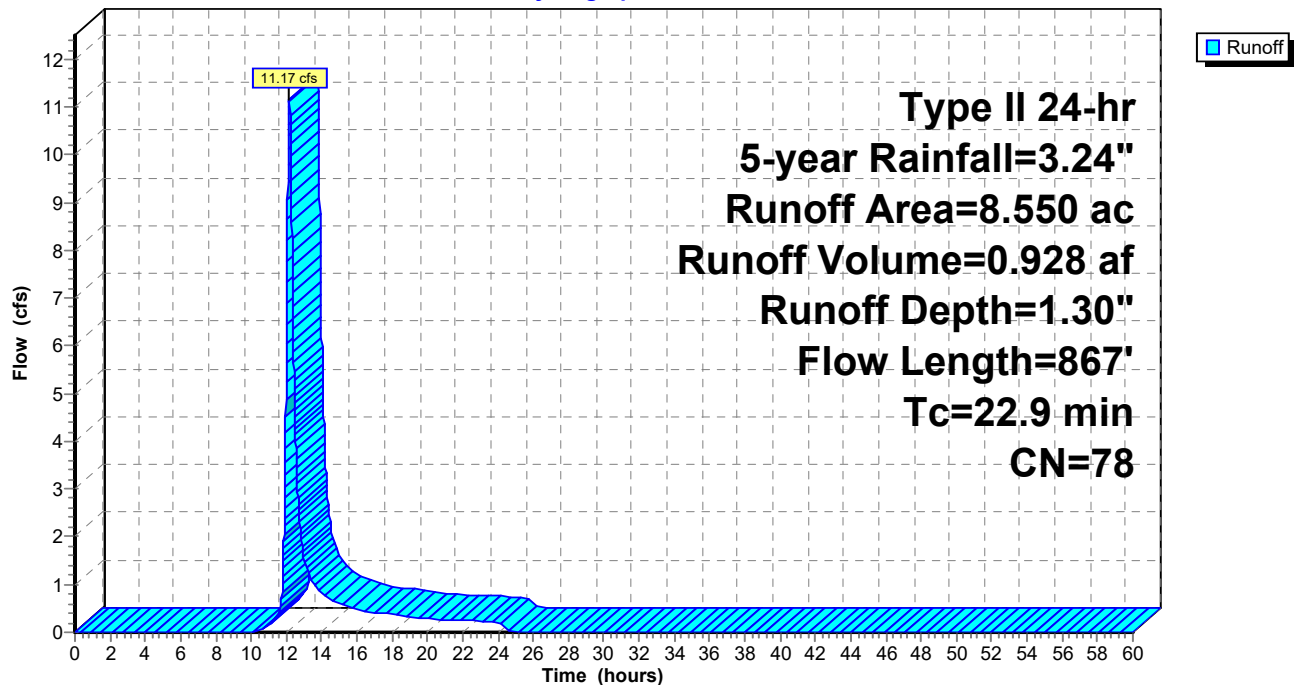
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 5-year Rainfall=3.24"

Area (ac)	CN	Description
8.550	78	Row crops, C&T, Good, HSG C
8.550		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow,
					Cultivated: Residue>20% n= 0.170 P2= 2.63"
11.0	767	0.0168	1.17		Shallow Concentrated Flow,
					Cultivated Straight Rows Kv= 9.0 fps
22.9	867	Total			

Subcatchment 22S: Pre-Developed Southeast 8.55ac (Phase 1)

Hydrograph



Summary for Pond 10P: NE Basin (Full Post)

Inflow Area = 50.890 ac, 34.12% Impervious, Inflow Depth = 2.08" for 5-year event
 Inflow = 93.15 cfs @ 12.03 hrs, Volume= 8.811 af
 Outflow = 15.62 cfs @ 13.16 hrs, Volume= 8.719 af, Atten= 83%, Lag= 67.6 min
 Primary = 15.62 cfs @ 13.16 hrs, Volume= 8.719 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,006.95' @ 13.16 hrs Surf.Area= 1.586 ac Storage= 3.963 af

Plug-Flow detention time= 528.9 min calculated for 8.719 af (99% of inflow)
 Center-of-Mass det. time= 514.7 min (1,385.4 - 870.8)

Volume	Invert	Avail.Storage	Storage Description
#1	1,004.00'	7.574 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,004.00	1.108	0.000	0.000
1,005.00	1.267	1.187	1.187
1,006.00	1.430	1.349	2.536
1,007.00	1.595	1.512	4.049
1,008.00	1.762	1.679	5.727
1,009.00	1.931	1.846	7.574

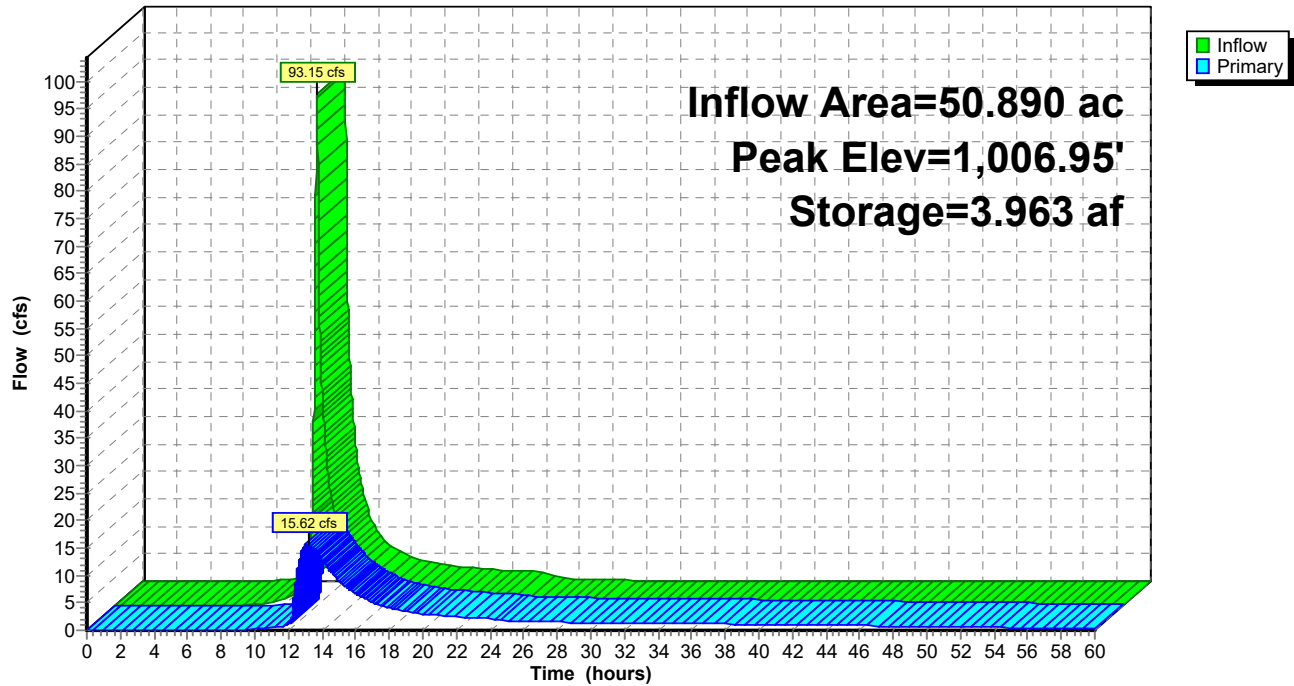
Device	Routing	Invert	Outlet Devices
#1	Primary	1,004.00'	4.5" Horiz. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,006.00'	28.0" W x 12.0" H Vert. Window X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Primary	1,007.50'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=15.62 cfs @ 13.16 hrs HW=1,006.95' (Free Discharge)

- 1=WQ Orifice (Orifice Controls 1.83 cfs @ 8.26 fps)
- 2=Window (Orifice Controls 13.79 cfs @ 3.12 fps)
- 3=Grate (Controls 0.00 cfs)

Pond 10P: NE Basin (Full Post)

Hydrograph



Summary for Pond 11P: SW Basin (Full Post)

Inflow Area = 23.720 ac, 85.00% Impervious, Inflow Depth = 2.58" for 5-year event
 Inflow = 88.59 cfs @ 12.01 hrs, Volume= 5.105 af
 Outflow = 1.44 cfs @ 17.68 hrs, Volume= 4.381 af, Atten= 98%, Lag= 340.4 min
 Primary = 1.44 cfs @ 17.68 hrs, Volume= 4.381 af

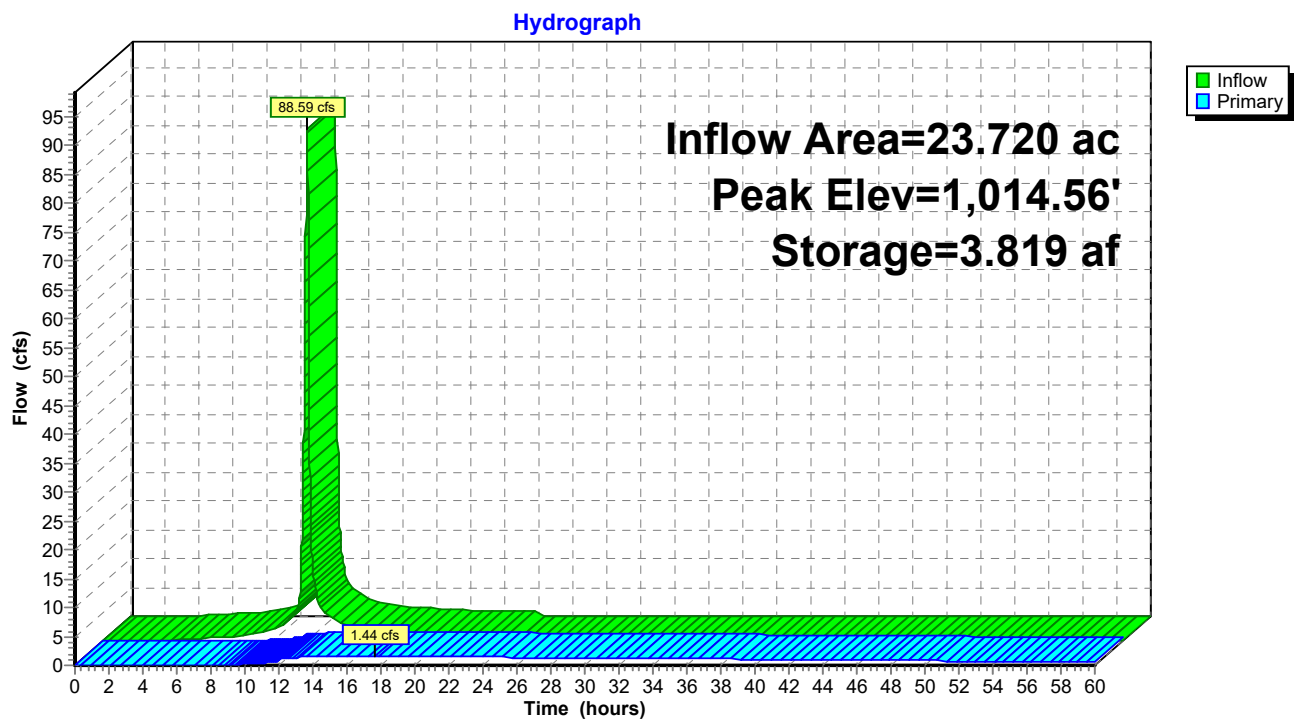
Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,014.56' @ 17.68 hrs Surf.Area= 1.716 ac Storage= 3.819 af

Plug-Flow detention time= 1,195.1 min calculated for 4.381 af (86% of inflow)
 Center-of-Mass det. time= 1,129.6 min (1,916.7 - 787.1)

Volume	Invert	Avail.Storage	Storage Description
#1	1,012.00'	10.787 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,012.00	1.275	0.000	0.000
1,013.00	1.446	1.360	1.360
1,014.00	1.619	1.532	2.893
1,015.00	1.794	1.706	4.599
1,016.00	1.972	1.883	6.482
1,017.00	2.152	2.062	8.544
1,018.00	2.334	2.243	10.787

Device	Routing	Invert	Outlet Devices
#1	Primary	1,012.00'	6.0" Vert. Orifice Plate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.44 cfs @ 17.68 hrs HW=1,014.56' TW=1,012.18' (Dynamic Tailwater)
 ↑**1=Orifice Plate** (Orifice Controls 1.44 cfs @ 7.31 fps)

Pond 11P: SW Basin (Full Post)

Summary for Pond 12P: SE Basin (Full Post)

Inflow Area = 45.990 ac, 43.84% Impervious, Inflow Depth > 2.09" for 5-year event
 Inflow = 67.38 cfs @ 12.02 hrs, Volume= 8.000 af
 Outflow = 2.23 cfs @ 20.82 hrs, Volume= 5.803 af, Atten= 97%, Lag= 528.1 min
 Primary = 2.23 cfs @ 20.82 hrs, Volume= 5.803 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,012.22' @ 20.82 hrs Surf.Area= 1.446 ac Storage= 3.275 af

Plug-Flow detention time= 1,043.4 min calculated for 5.802 af (73% of inflow)
 Center-of-Mass det. time= 601.0 min (2,021.1 - 1,420.1)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.50'	4.535 af	Basin 01 (Prismatic) Listed below (Recalc)
#2	1,009.50'	2.519 af	Basin 02 (Prismatic) Listed below (Recalc)
		7.054 af	Total Available Storage

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.591	0.000	0.000
1,010.00	0.653	0.311	0.311
1,011.00	0.777	0.715	1.026
1,012.00	0.904	0.841	1.867
1,013.00	1.034	0.969	2.836
1,014.00	1.165	1.100	3.935
1,014.50	1.232	0.599	4.535

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.375	0.000	0.000
1,010.00	0.399	0.194	0.194
1,011.00	0.449	0.424	0.618
1,012.00	0.501	0.475	1.093
1,013.00	0.556	0.528	1.621
1,014.00	0.613	0.584	2.205
1,014.50	0.642	0.314	2.519

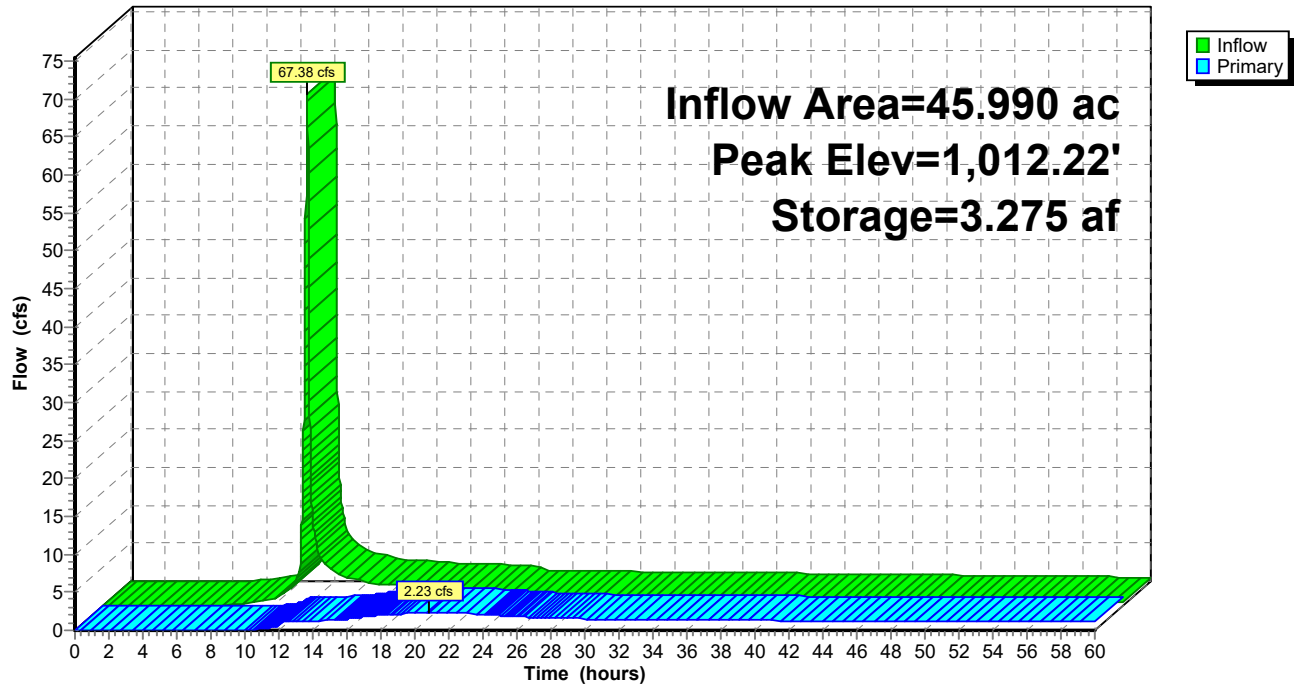
Device	Routing	Invert	Outlet Devices
#1	Primary	1,009.50'	4.0" Vert. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,012.00'	10.0" Horiz. Riser Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	1,013.75'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=2.23 cfs @ 20.82 hrs HW=1,012.22' TW=0.00' (Dynamic Tailwater)

1=WQ Orifice (Orifice Controls 1.34 cfs @ 7.70 fps)
 2=Riser Pipe (Weir Controls 0.89 cfs @ 1.54 fps)
 3=Grate (Controls 0.00 cfs)

Pond 12P: SE Basin (Full Post)

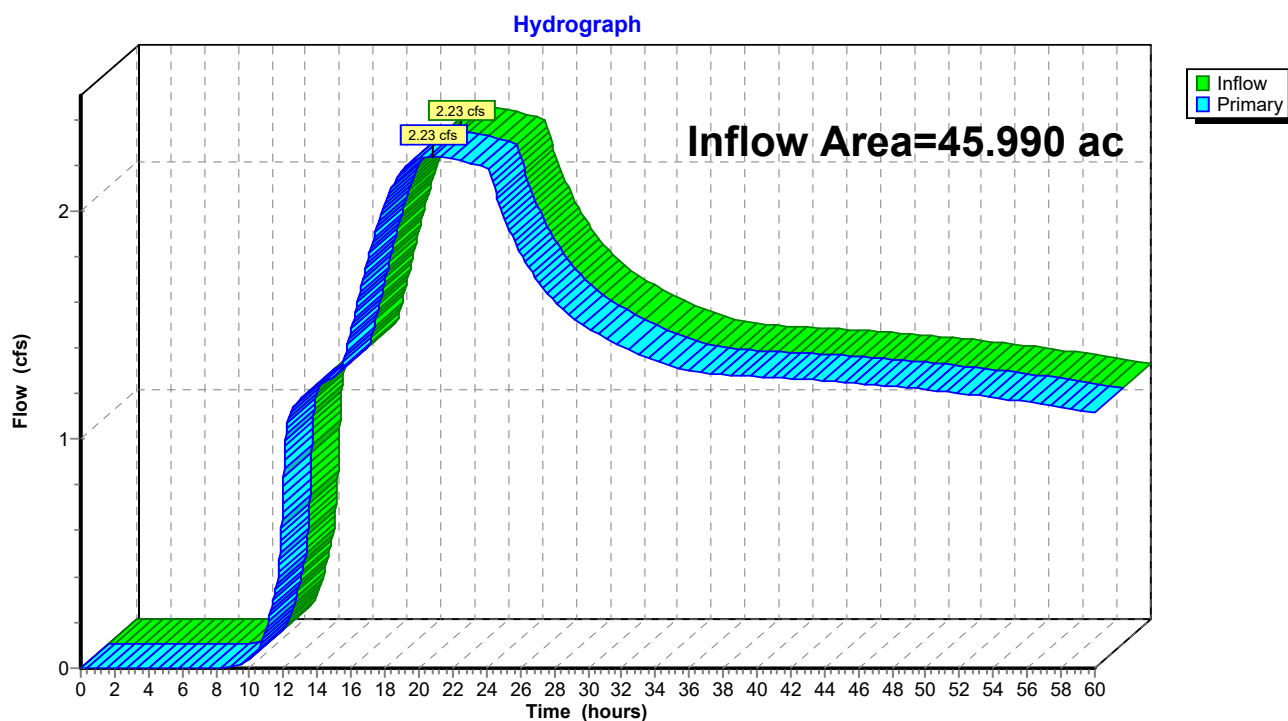
Hydrograph



Summary for Pond 13P: SE Post Out

Inflow Area = 45.990 ac, 43.84% Impervious, Inflow Depth > 1.51" for 5-year event
Inflow = 2.23 cfs @ 20.82 hrs, Volume= 5.803 af
Primary = 2.23 cfs @ 20.82 hrs, Volume= 5.803 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Pond 13P: SE Post Out

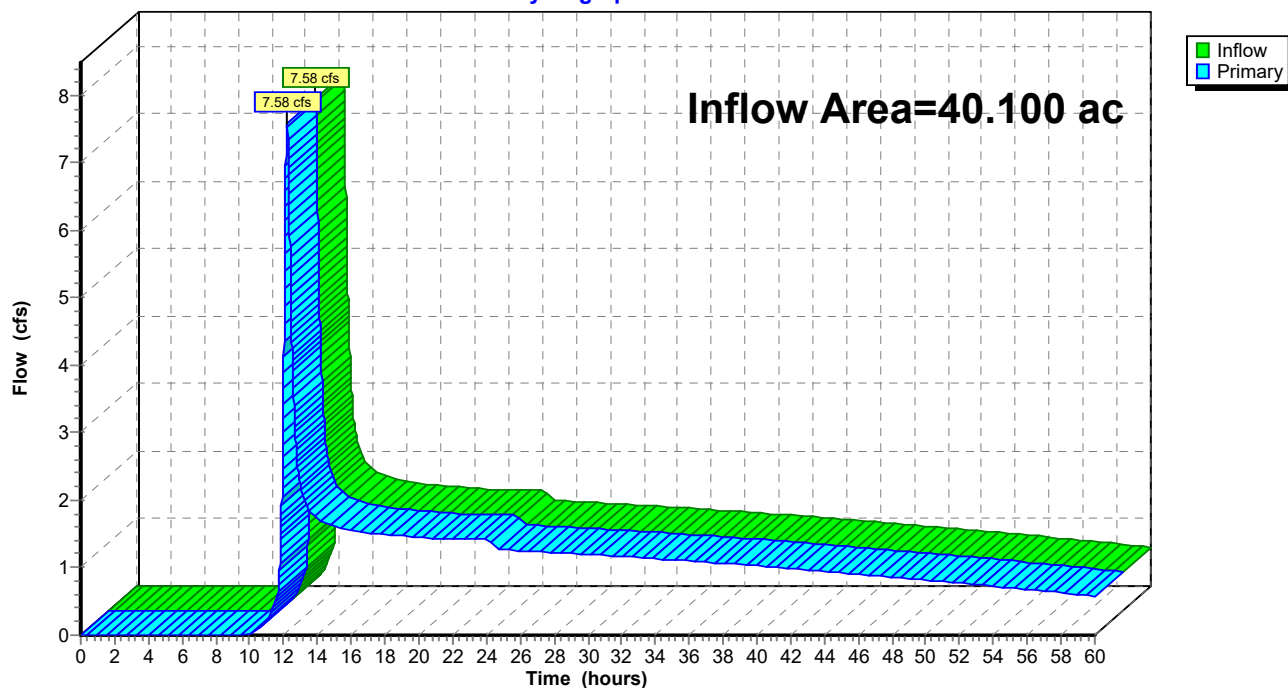
Summary for Pond 20P: SE Post Out (Phase 1)

Inflow Area = 40.100 ac, 0.00% Impervious, Inflow Depth > 1.41" for 5-year event
Inflow = 7.58 cfs @ 12.20 hrs, Volume= 4.723 af
Primary = 7.58 cfs @ 12.20 hrs, Volume= 4.723 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Pond 20P: SE Post Out (Phase 1)

Hydrograph



Summary for Pond 21P: SE Basin (Phase 1)

Inflow Area = 34.720 ac, 0.00% Impervious, Inflow Depth > 1.66" for 5-year event
 Inflow = 66.39 cfs @ 12.01 hrs, Volume= 4.799 af
 Outflow = 1.28 cfs @ 23.76 hrs, Volume= 4.139 af, Atten= 98%, Lag= 704.5 min
 Primary = 1.28 cfs @ 23.76 hrs, Volume= 4.139 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,011.97' @ 23.76 hrs Surf.Area= 1.400 ac Storage= 2.916 af

Plug-Flow detention time= 1,141.6 min calculated for 4.138 af (86% of inflow)
 Center-of-Mass det. time= 975.4 min (1,991.2 - 1,015.8)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.50'	4.535 af	Basin 01 (Prismatic) Listed below (Recalc)
#2	1,009.50'	2.519 af	Basin 02 (Prismatic) Listed below (Recalc)
		7.054 af	Total Available Storage

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.591	0.000	0.000
1,010.00	0.653	0.311	0.311
1,011.00	0.777	0.715	1.026
1,012.00	0.904	0.841	1.867
1,013.00	1.034	0.969	2.836
1,014.00	1.165	1.100	3.935
1,014.50	1.232	0.599	4.535

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.375	0.000	0.000
1,010.00	0.399	0.194	0.194
1,011.00	0.449	0.424	0.618
1,012.00	0.501	0.475	1.093
1,013.00	0.556	0.528	1.621
1,014.00	0.613	0.584	2.205
1,014.50	0.642	0.314	2.519

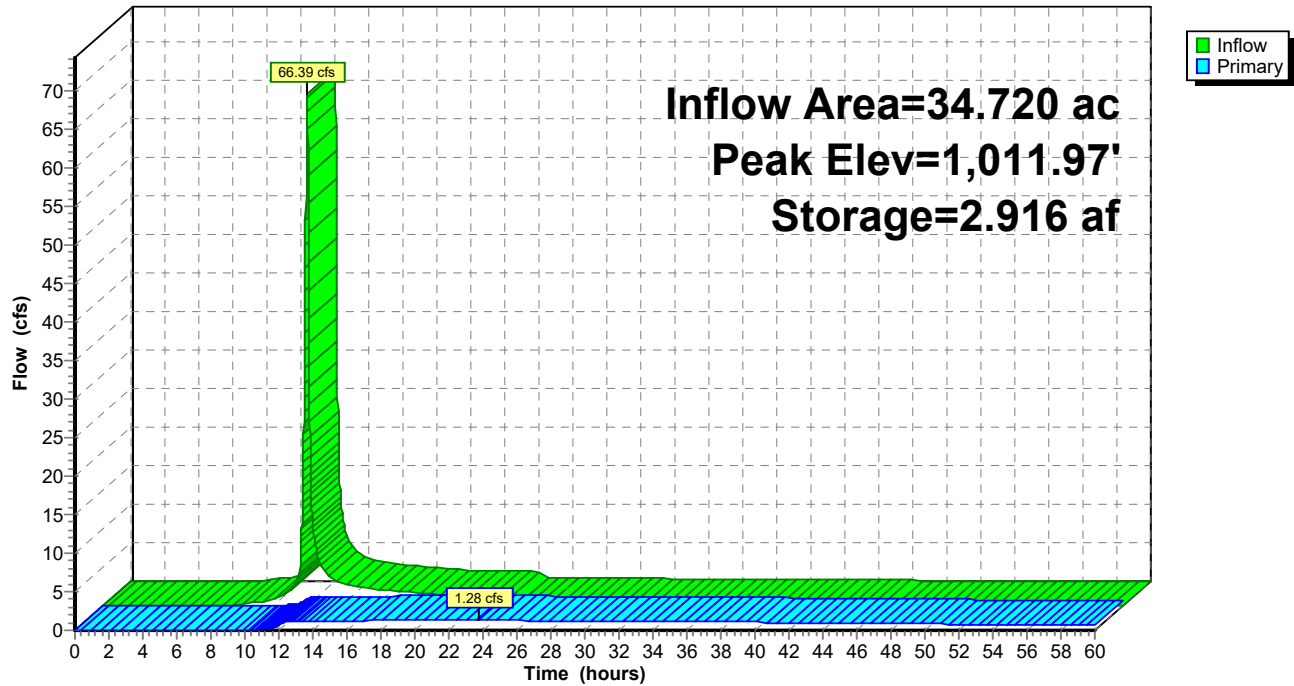
Device	Routing	Invert	Outlet Devices
#1	Primary	1,009.50'	4.0" Vert. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,012.00'	10.0" Horiz. Open Top Riser Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	1,013.75'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=1.28 cfs @ 23.76 hrs HW=1,011.97' TW=0.00' (Dynamic Tailwater)

1=WQ Orifice (Orifice Controls 1.28 cfs @ 7.31 fps)
 2=Open Top Riser Pipe (Controls 0.00 cfs)
 3=Grate (Controls 0.00 cfs)

Pond 21P: SE Basin (Phase 1)

Hydrograph



Summary for Pond 22P: NE Basin (Phase 1)

Inflow Area = 46.240 ac, 0.00% Impervious, Inflow Depth = 1.64" for 5-year event
 Inflow = 83.83 cfs @ 12.03 hrs, Volume= 6.325 af
 Outflow = 8.69 cfs @ 13.07 hrs, Volume= 6.110 af, Atten= 90%, Lag= 62.4 min
 Primary = 8.69 cfs @ 13.07 hrs, Volume= 6.110 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,006.60' @ 13.07 hrs Surf.Area= 1.530 ac Storage= 3.430 af

Plug-Flow detention time= 654.8 min calculated for 6.109 af (97% of inflow)
 Center-of-Mass det. time= 635.3 min (1,472.1 - 836.9)

Volume	Invert	Avail.Storage	Storage Description
#1	1,004.00'	7.574 af	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,004.00	1.108	0.000	0.000
1,005.00	1.267	1.188	1.188
1,006.00	1.430	1.349	2.536
1,007.00	1.595	1.512	4.048
1,008.00	1.762	1.678	5.727
1,009.00	1.931	1.847	7.574

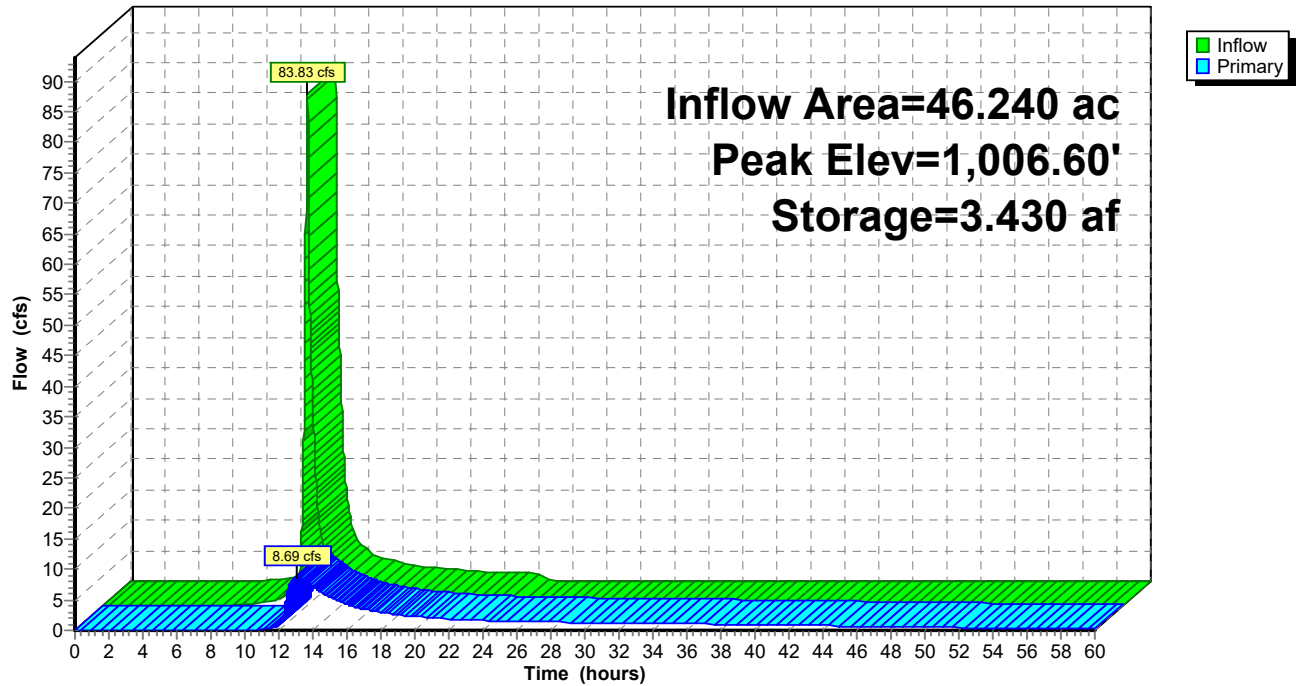
Device	Routing	Invert	Outlet Devices
#1	Primary	1,004.00'	4.5" Vert. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,006.00'	28.0" W x 12.0" H Vert. Window X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Primary	1,007.50'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=8.69 cfs @ 13.07 hrs HW=1,006.60' (Free Discharge)

1=WQ Orifice (Orifice Controls 1.65 cfs @ 7.49 fps)
 2=Window (Orifice Controls 7.03 cfs @ 2.49 fps)
 3=Grate (Controls 0.00 cfs)

Pond 22P: NE Basin (Phase 1)

Hydrograph



Summary for Pond 23P: NW Basin (Full Post)

Inflow Area = 26.710 ac, 65.00% Impervious, Inflow Depth = 2.21" for 5-year event
 Inflow = 88.58 cfs @ 12.01 hrs, Volume= 4.909 af
 Outflow = 30.50 cfs @ 12.17 hrs, Volume= 4.881 af, Atten= 66%, Lag= 9.6 min
 Primary = 30.50 cfs @ 12.17 hrs, Volume= 4.881 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,015.32' @ 12.17 hrs Surf.Area= 0.928 ac Storage= 1.920 af

Plug-Flow detention time= 109.1 min calculated for 4.881 af (99% of inflow)
 Center-of-Mass det. time= 105.4 min (912.4 - 807.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,013.00'	3.604 af	Custom Stage Data (Prismatic) Listed below (Recalc)

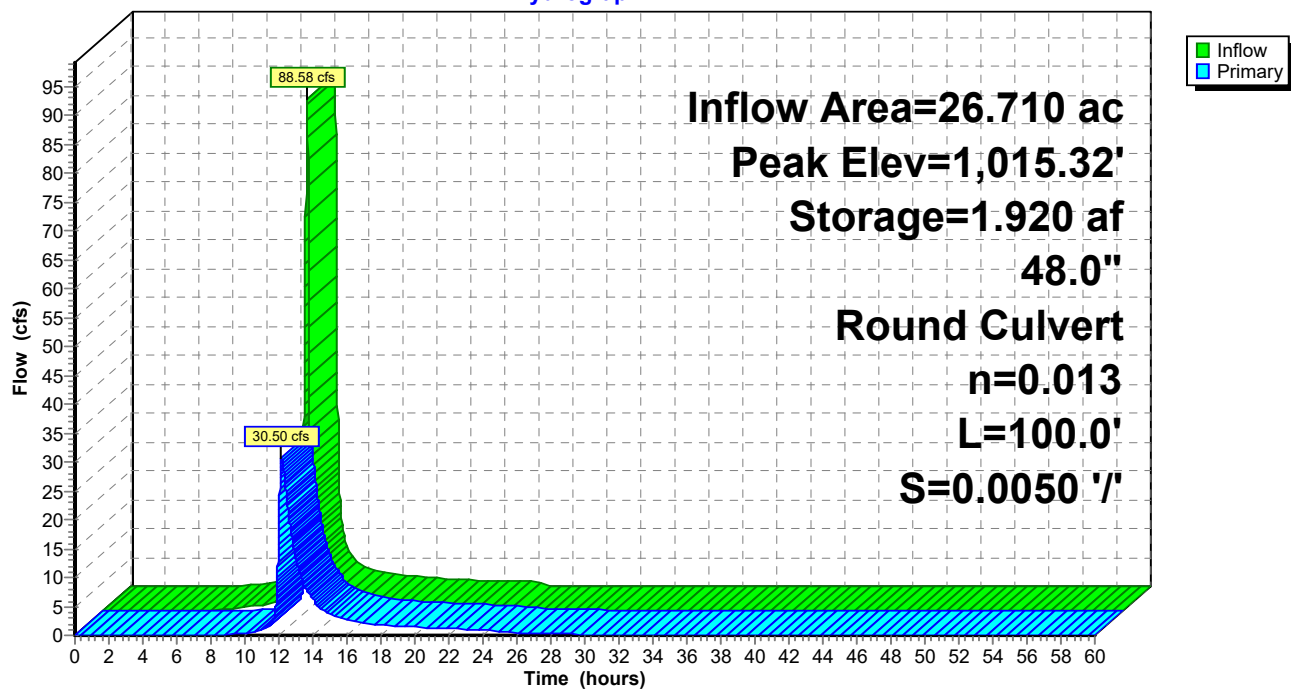
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,013.00	0.729	0.000	0.000
1,014.00	0.813	0.771	0.771
1,015.00	0.899	0.856	1.627
1,016.00	0.988	0.943	2.570
1,017.00	1.079	1.033	3.604

Device	Routing	Invert	Outlet Devices
#1	Primary	1,013.00'	48.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,013.00' / 1,012.50' S= 0.0050 ' / ' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 12.57 sf

Primary OutFlow Max=30.50 cfs @ 12.17 hrs HW=1,015.32' TW=1,006.06' (Dynamic Tailwater)
 ↑ **1=Culvert** (Barrel Controls 30.50 cfs @ 5.81 fps)

Pond 23P: NW Basin (Full Post)

Hydrograph



Summary for Pond 24P: SW Basin (Phase 1)

Inflow Area = 12.450 ac, 0.00% Impervious, Inflow Depth = 1.30" for 5-year event
 Inflow = 17.12 cfs @ 12.15 hrs, Volume= 1.352 af
 Outflow = 0.60 cfs @ 17.07 hrs, Volume= 1.180 af, Atten= 96%, Lag= 295.6 min
 Primary = 0.60 cfs @ 17.07 hrs, Volume= 1.180 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,012.66' @ 17.07 hrs Surf.Area= 1.387 ac Storage= 0.873 af

Plug-Flow detention time= 822.3 min calculated for 1.179 af (87% of inflow)
 Center-of-Mass det. time= 760.5 min (1,619.7 - 859.2)

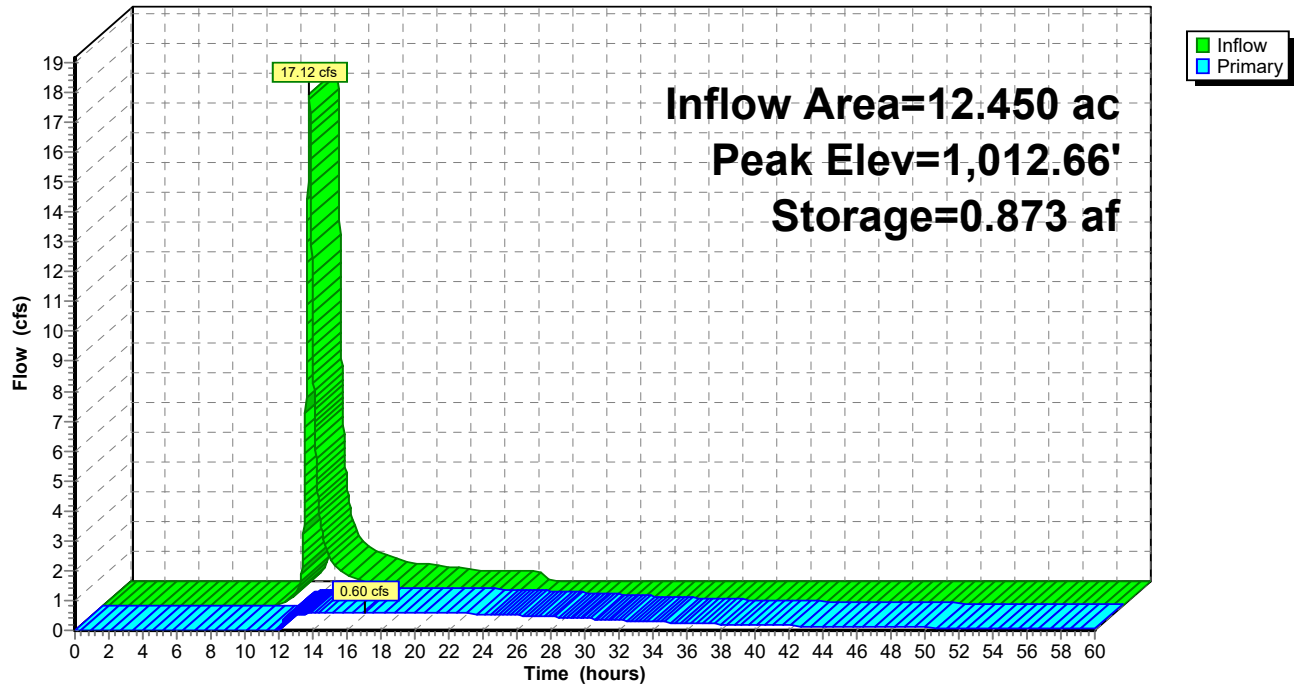
Volume	Invert	Avail.Storage	Storage Description
#1	1,012.00'	10.787 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,012.00	1.275	0.000	0.000
1,013.00	1.446	1.360	1.360
1,014.00	1.619	1.532	2.893
1,015.00	1.794	1.706	4.599
1,016.00	1.972	1.883	6.482
1,017.00	2.152	2.062	8.544
1,018.00	2.334	2.243	10.787

Device	Routing	Invert	Outlet Devices
#1	Primary	1,012.00'	6.0" Vert. Orifice Plate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.60 cfs @ 17.07 hrs HW=1,012.66' TW=1,011.88' (Dynamic Tailwater)
 ↑ **1=Orifice Plate** (Orifice Controls 0.60 cfs @ 3.07 fps)

Pond 24P: SW Basin (Phase 1)

Hydrograph



Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Pre-Developed	Runoff Area=50.830 ac 0.00% Impervious Runoff Depth=1.68" Flow Length=2,529' Tc=51.4 min CN=78 Runoff=50.17 cfs 7.125 af
Subcatchment2S: Pre-Developed	Runoff Area=14.820 ac 0.00% Impervious Runoff Depth=1.68" Flow Length=1,945' Tc=38.3 min CN=78 Runoff=17.98 cfs 2.077 af
Subcatchment3S: Post NW 26.71ac	Runoff Area=26.710 ac 65.00% Impervious Runoff Depth=2.67" Tc=10.0 min CN=90 Runoff=106.37 cfs 5.950 af
Subcatchment4S: Post NE 24.18ac	Runoff Area=24.180 ac 0.00% Impervious Runoff Depth=2.40" Tc=10.0 min CN=87 Runoff=88.01 cfs 4.835 af
Subcatchment5S: Post SW 23.72ac	Runoff Area=23.720 ac 85.00% Impervious Runoff Depth=3.07" Tc=10.0 min CN=94 Runoff=104.19 cfs 6.068 af
Subcatchment6S: Post SE 22.27ac	Runoff Area=22.270 ac 0.00% Impervious Runoff Depth=2.40" Tc=10.0 min CN=87 Runoff=81.06 cfs 4.453 af
Subcatchment11S: Pre NW 22.06ac	Runoff Area=22.060 ac 0.00% Impervious Runoff Depth=1.68" Flow Length=1,231' Tc=28.7 min CN=78 Runoff=32.61 cfs 3.092 af
Subcatchment12S: Post NE 24.18ac	Runoff Area=24.180 ac 0.00% Impervious Runoff Depth=2.40" Tc=10.0 min CN=87 Runoff=88.01 cfs 4.835 af
Subcatchment13S: Pre SW to Basin	Runoff Area=12.450 ac 0.00% Impervious Runoff Depth=1.68" Flow Length=650' Tc=21.1 min CN=78 Runoff=22.36 cfs 1.745 af
Subcatchment14S: Post SE 22.27ac	Runoff Area=22.270 ac 0.00% Impervious Runoff Depth=2.40" Tc=10.0 min CN=87 Runoff=81.06 cfs 4.453 af
Subcatchment21S: Pre SW to Road 5.38ac	Runoff Area=5.380 ac 0.00% Impervious Runoff Depth=1.68" Flow Length=1,065' Tc=25.7 min CN=78 Runoff=8.58 cfs 0.754 af
Subcatchment22S: Pre-Developed	Runoff Area=8.550 ac 0.00% Impervious Runoff Depth=1.68" Flow Length=867' Tc=22.9 min CN=78 Runoff=14.61 cfs 1.198 af
Pond 10P: NE Basin (Full Post)	Peak Elev=1,007.33' Storage=4.589 af Inflow=115.79 cfs 10.756 af Outflow=22.12 cfs 10.659 af
Pond 11P: SW Basin (Full Post)	Peak Elev=1,015.01' Storage=4.614 af Inflow=104.19 cfs 6.068 af Outflow=1.54 cfs 5.006 af
Pond 12P: SE Basin (Full Post)	Peak Elev=1,012.38' Storage=3.510 af Inflow=82.22 cfs 9.458 af Outflow=3.01 cfs 6.966 af
Pond 13P: SE Post Out	Inflow=3.01 cfs 6.966 af Primary=3.01 cfs 6.966 af

Pond 20P: SE Post Out (Phase 1)

Inflow=9.72 cfs 5.890 af

Primary=9.72 cfs 5.890 af

Pond 21P: SE Basin (Phase 1)

Peak Elev=1,012.24' Storage=3.297 af Inflow=81.14 cfs 6.001 af

Outflow=2.33 cfs 5.136 af

Pond 22P: NE Basin (Phase 1)

Peak Elev=1,006.98' Storage=4.013 af Inflow=104.06 cfs 7.927 af

Outflow=16.25 cfs 7.706 af

Pond 23P: NW Basin (Full Post)

Peak Elev=1,015.68' Storage=2.261 af Inflow=106.37 cfs 5.950 af

48.0" Round Culvert n=0.013 L=100.0' S=0.0050 '/' Outflow=38.93 cfs 5.922 af

Pond 24P: SW Basin (Phase 1)

Peak Elev=1,012.86' Storage=1.154 af Inflow=22.36 cfs 1.745 af

Outflow=0.74 cfs 1.548 af

Total Runoff Area = 257.420 ac Runoff Volume = 46.585 af Average Runoff Depth = 2.17"**85.42% Pervious = 219.896 ac 14.58% Impervious = 37.524 ac**

Summary for Subcatchment 1S: Pre-Developed Northeast 50.83ac

Runoff = 50.17 cfs @ 12.51 hrs, Volume= 7.125 af, Depth= 1.68"

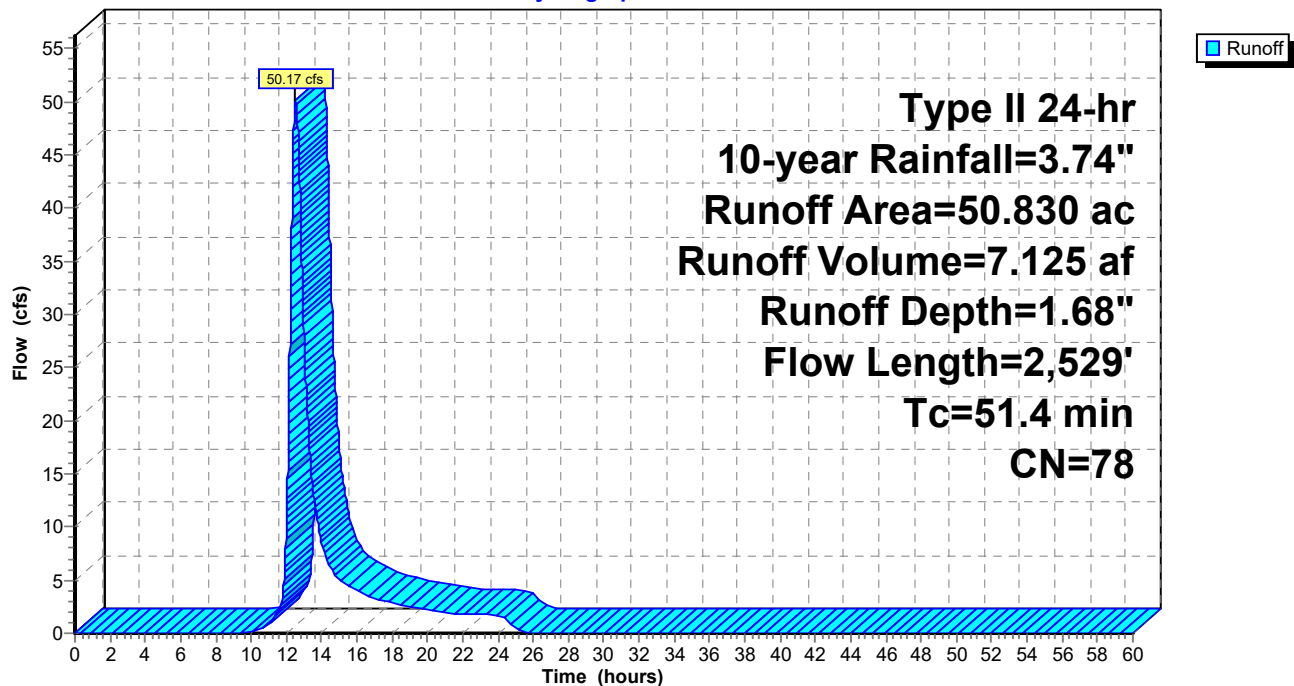
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-year Rainfall=3.74"

Area (ac)	CN	Description
50.830	78	Row crops, C&T, Good, HSG C
50.830		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.63"
6.2	633	0.0363	1.71		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
33.3	1,796	0.0100	0.90		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
51.4	2,529	Total			

Subcatchment 1S: Pre-Developed Northeast 50.83ac

Hydrograph



Summary for Subcatchment 2S: Pre-Developed Southeast 14.82ac (Post Full)

Runoff = 17.98 cfs @ 12.35 hrs, Volume= 2.077 af, Depth= 1.68"

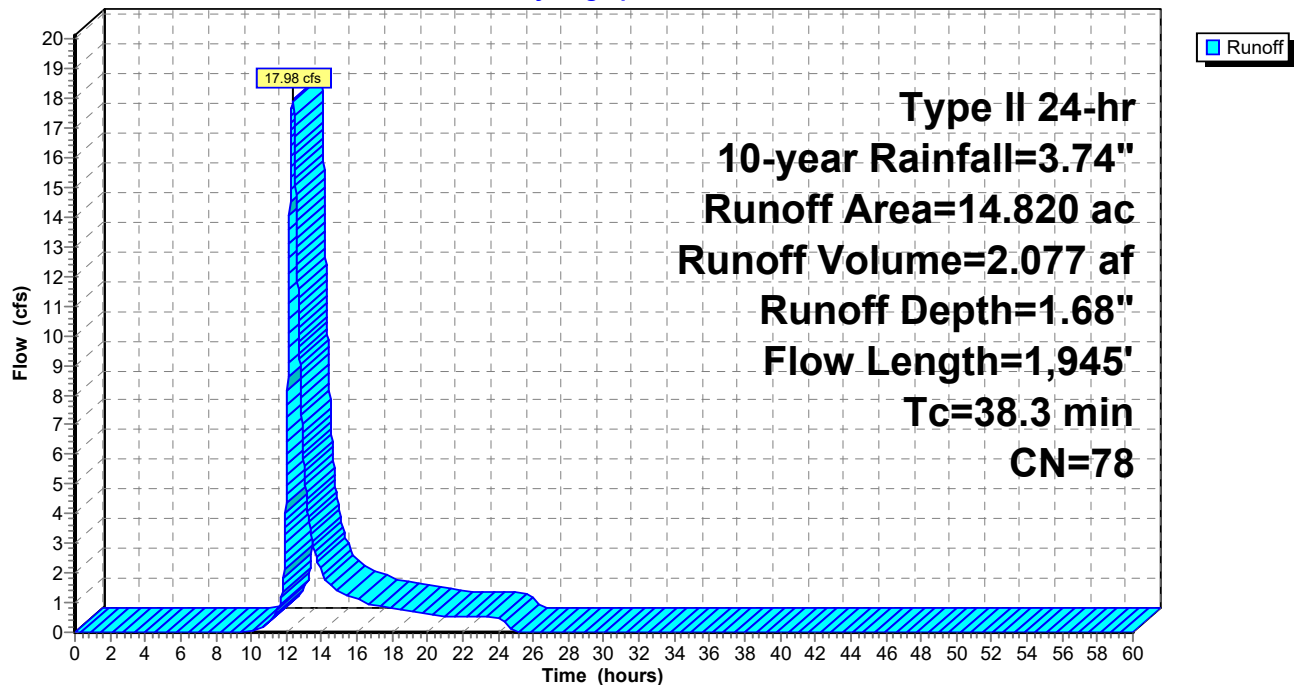
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-year Rainfall=3.74"

Area (ac)	CN	Description
14.820	78	Row crops, C&T, Good, HSG C
14.820		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.63"
26.4	1,845	0.0168	1.17		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
38.3	1,945	Total			

Subcatchment 2S: Pre-Developed Southeast 14.82ac (Post Full)

Hydrograph



Summary for Subcatchment 3S: Post NW 26.71ac

Runoff = 106.37 cfs @ 12.01 hrs, Volume= 5.950 af, Depth= 2.67"

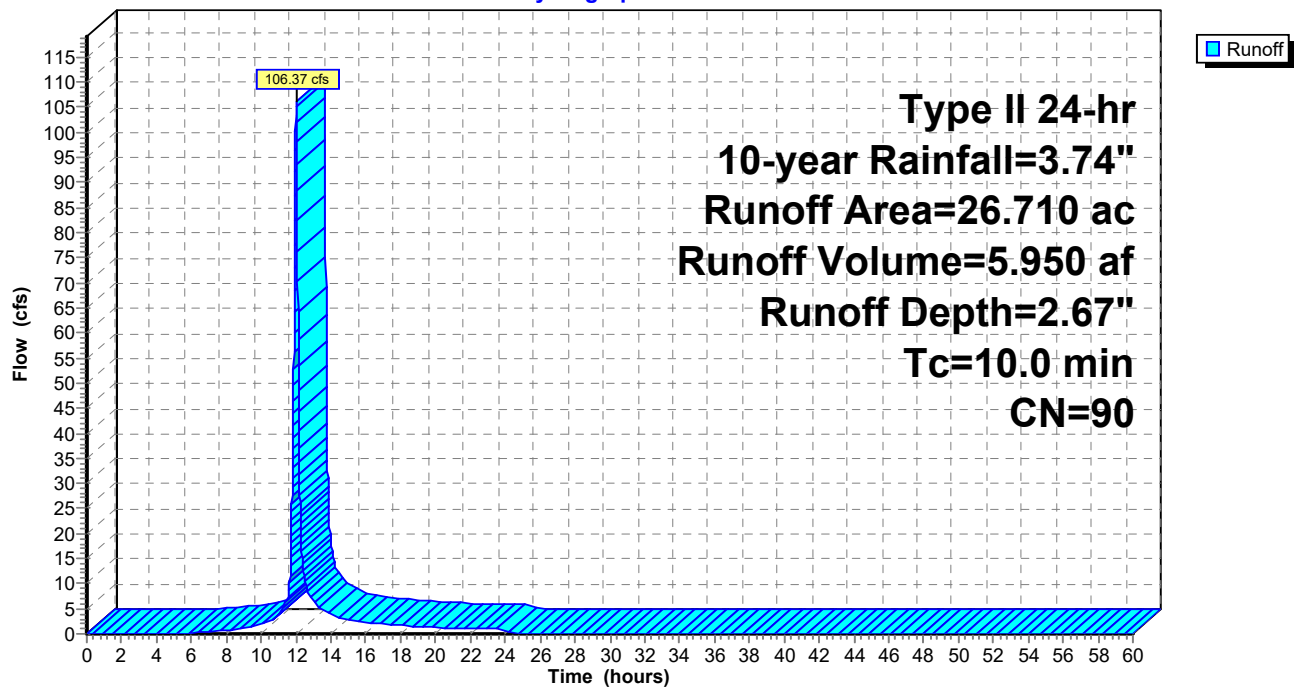
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-year Rainfall=3.74"

Area (ac)	CN	Description
26.710	90	1/8 acre lots, 65% imp, HSG C
9.349		35.00% Pervious Area
17.362		65.00% Impervious Area

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

Subcatchment 3S: Post NW 26.71ac

Hydrograph



Summary for Subcatchment 4S: Post NE 24.18ac

Runoff = 88.01 cfs @ 12.01 hrs, Volume= 4.835 af, Depth= 2.40"

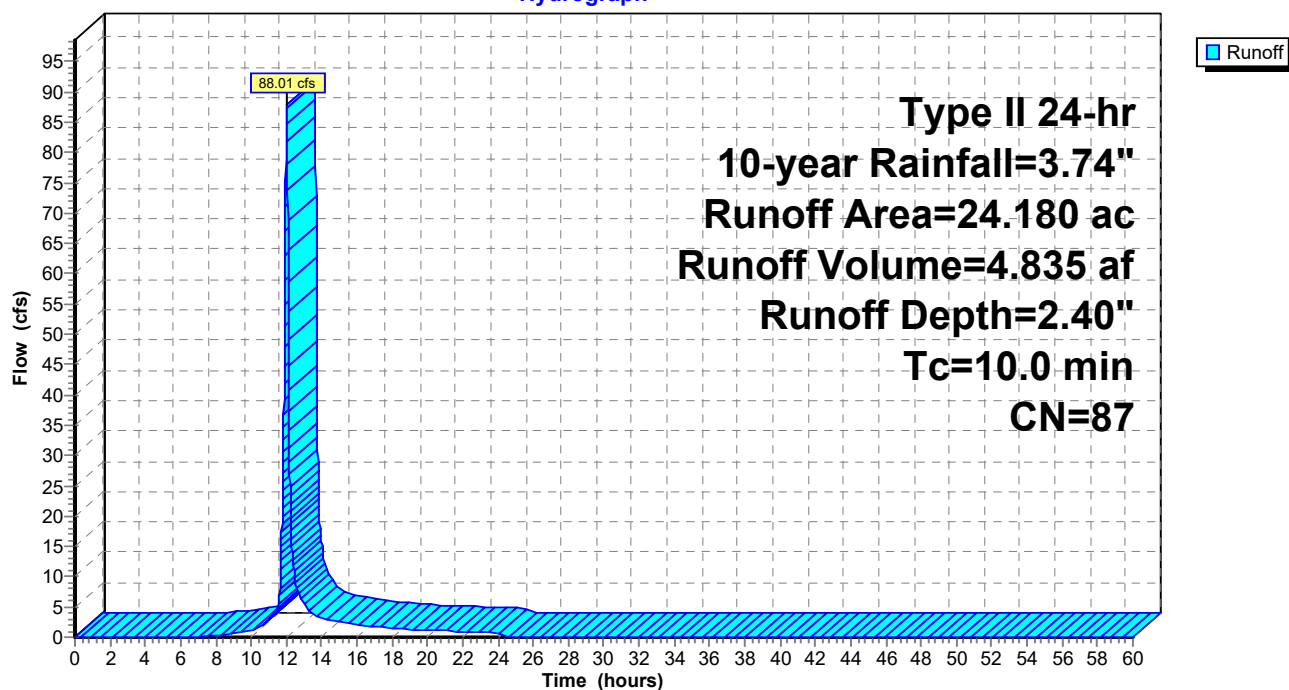
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-year Rainfall=3.74"

Area (ac)	CN	Description
* 24.180	87	
24.180		100.00% Pervious Area

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

Subcatchment 4S: Post NE 24.18ac

Hydrograph



Summary for Subcatchment 5S: Post SW 23.72ac

Runoff = 104.19 cfs @ 12.01 hrs, Volume= 6.068 af, Depth= 3.07"

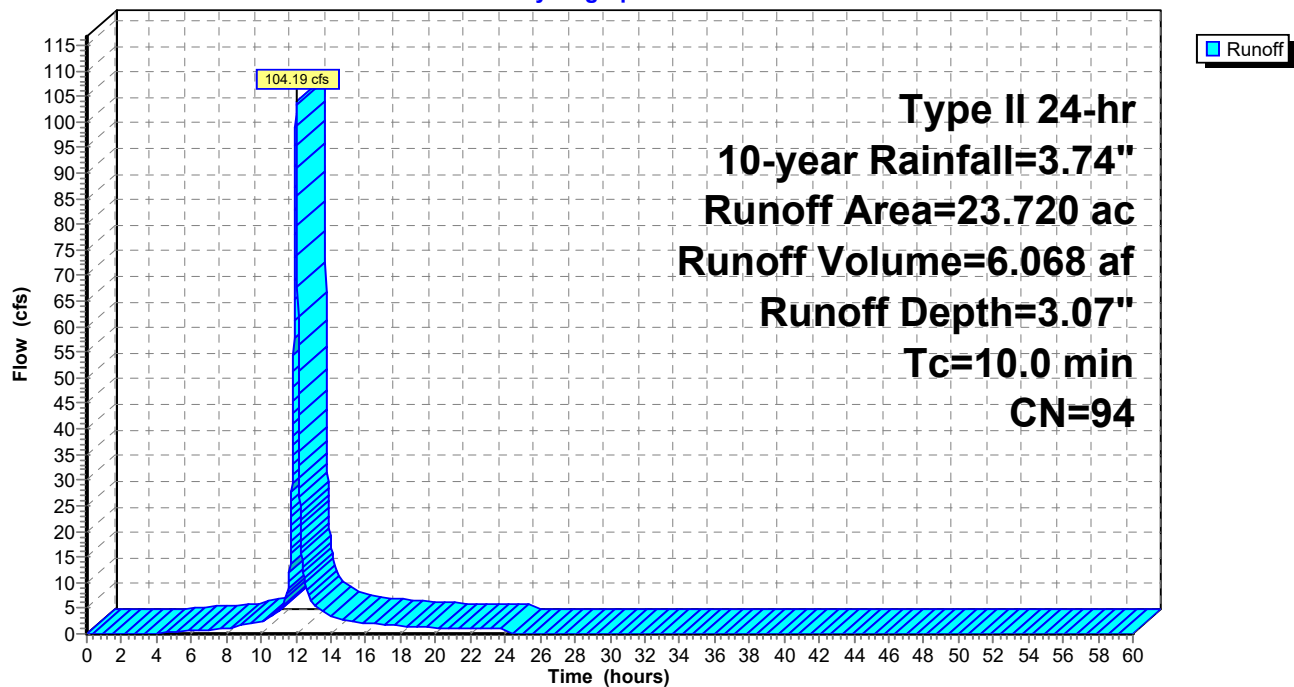
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-year Rainfall=3.74"

Area (ac)	CN	Description
23.720	94	Urban commercial, 85% imp, HSG C
3.558		15.00% Pervious Area
20.162		85.00% Impervious Area

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

Subcatchment 5S: Post SW 23.72ac

Hydrograph



Summary for Subcatchment 6S: Post SE 22.27ac

Runoff = 81.06 cfs @ 12.01 hrs, Volume= 4.453 af, Depth= 2.40"

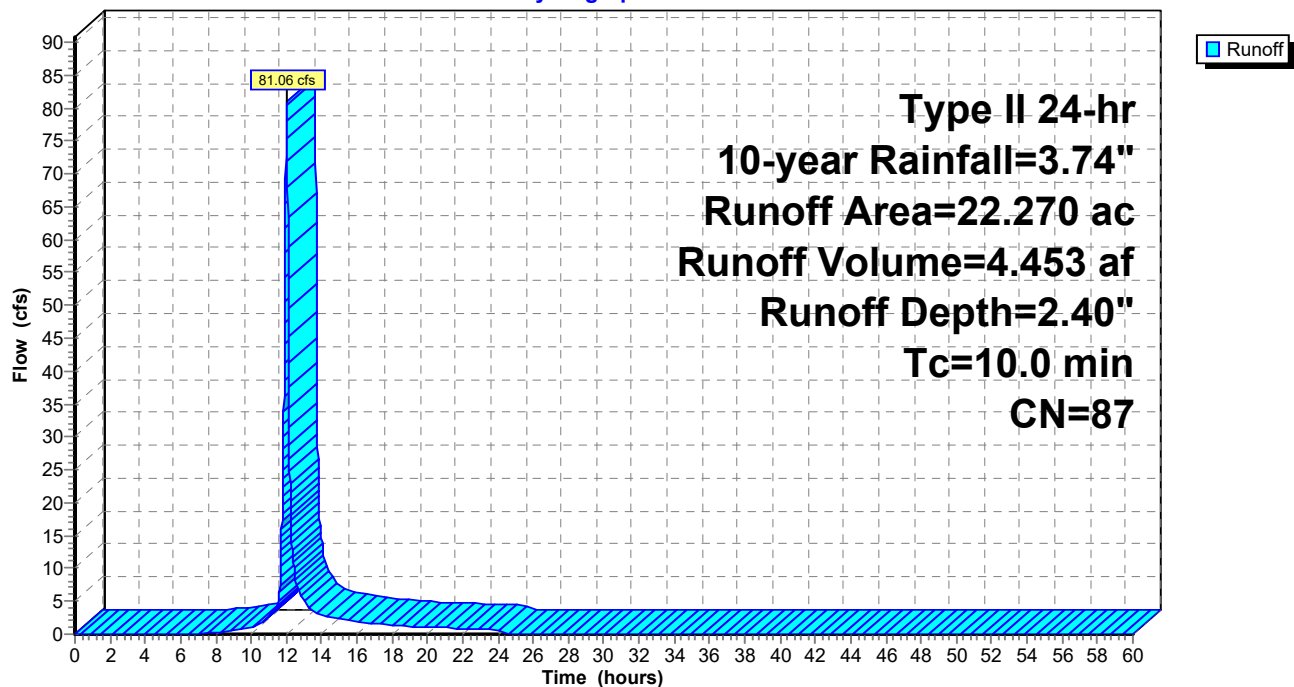
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-year Rainfall=3.74"

Area (ac)	CN	Description
* 22.270	87	
22.270		100.00% Pervious Area

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

Subcatchment 6S: Post SE 22.27ac

Hydrograph



Summary for Subcatchment 11S: Pre NW 22.06ac

Runoff = 32.61 cfs @ 12.22 hrs, Volume= 3.092 af, Depth= 1.68"

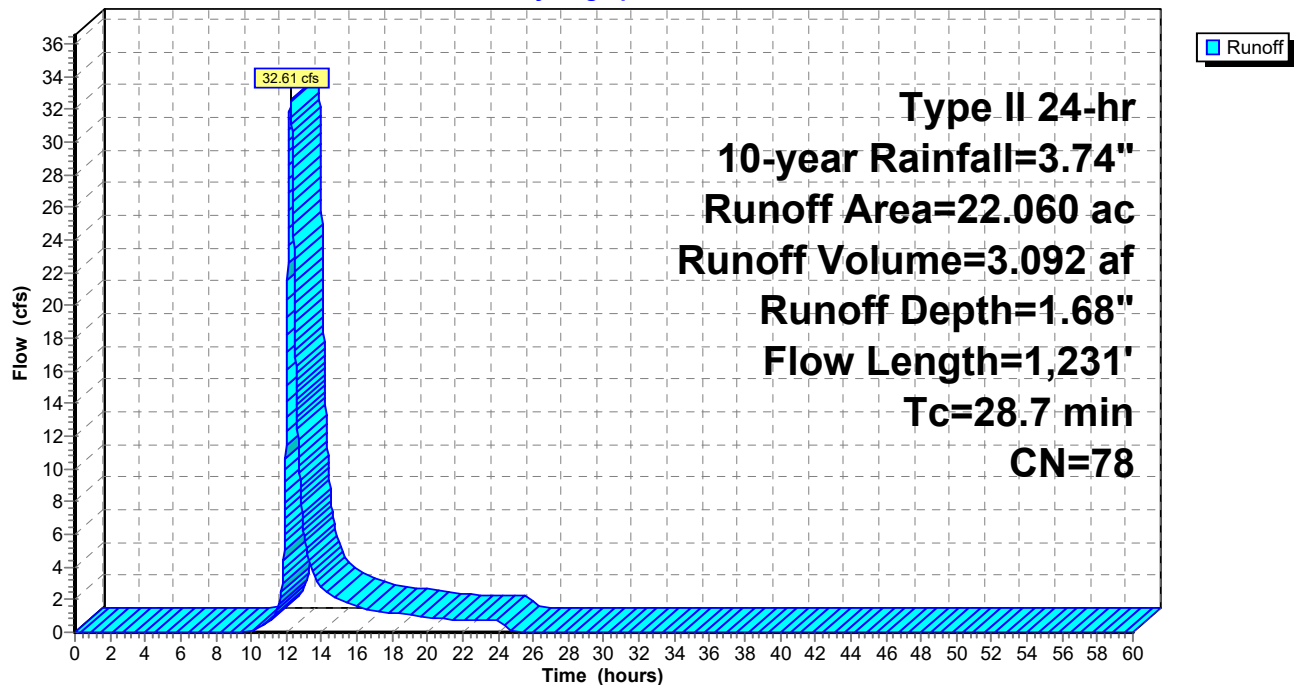
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-year Rainfall=3.74"

Area (ac)	CN	Description
22.060	78	Row crops, C&T, Good, HSG C
22.060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	100	0.0100	0.11		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.63"
12.9	1,131	0.0265	1.47		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
28.7	1,231	Total			

Subcatchment 11S: Pre NW 22.06ac

Hydrograph



Summary for Subcatchment 12S: Post NE 24.18ac

Runoff = 88.01 cfs @ 12.01 hrs, Volume= 4.835 af, Depth= 2.40"

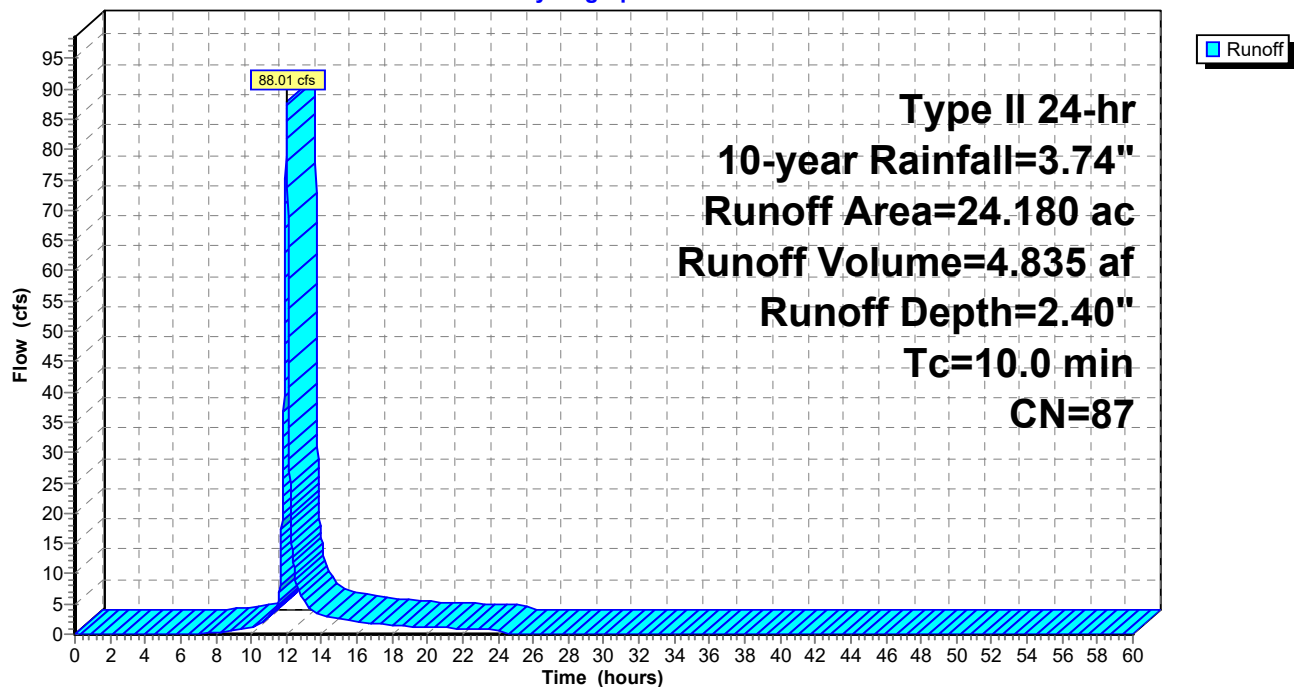
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-year Rainfall=3.74"

Area (ac)	CN	Description
* 24.180	87	
24.180		100.00% Pervious Area

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

Subcatchment 12S: Post NE 24.18ac

Hydrograph



Summary for Subcatchment 13S: Pre SW to Basin 12.45ac

Runoff = 22.36 cfs @ 12.14 hrs, Volume= 1.745 af, Depth= 1.68"

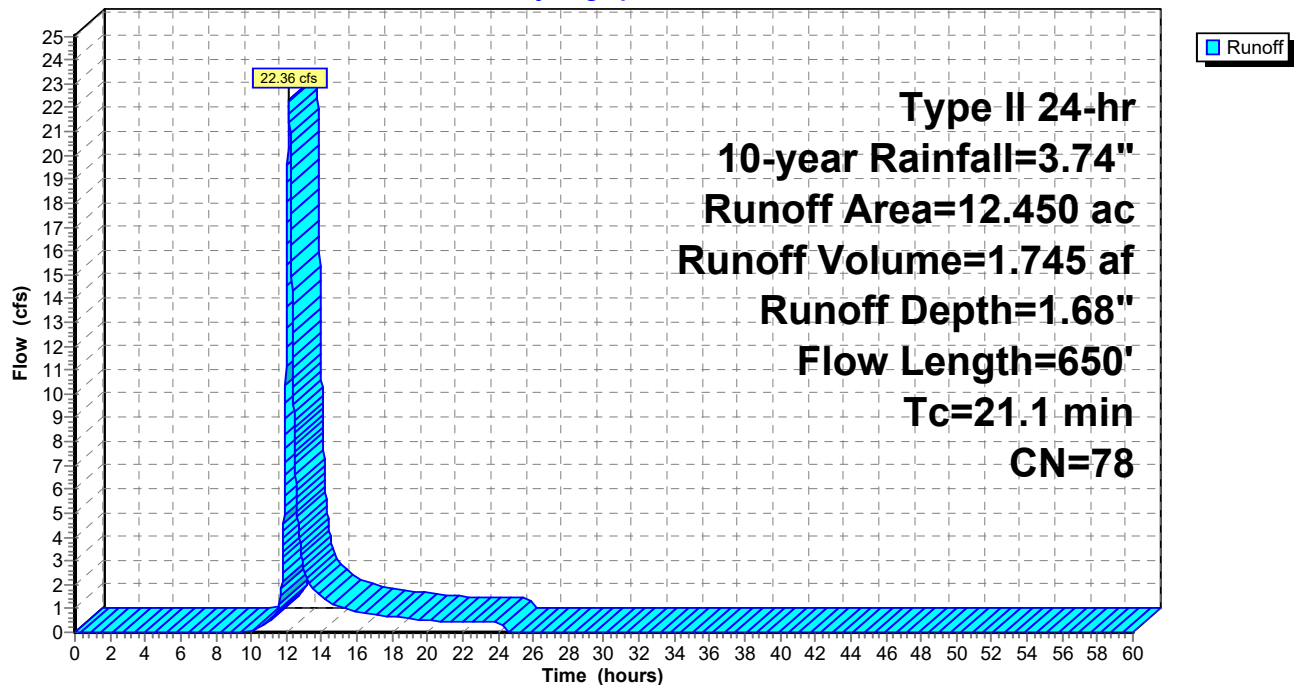
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-year Rainfall=3.74"

Area (ac)	CN	Description
12.450	78	Row crops, C&T, Good, HSG C
12.450		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	100	0.0100	0.11		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.63"
5.3	550	0.0364	1.72		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
21.1	650	Total			

Subcatchment 13S: Pre SW to Basin 12.45ac

Hydrograph



Summary for Subcatchment 14S: Post SE 22.27ac

Runoff = 81.06 cfs @ 12.01 hrs, Volume= 4.453 af, Depth= 2.40"

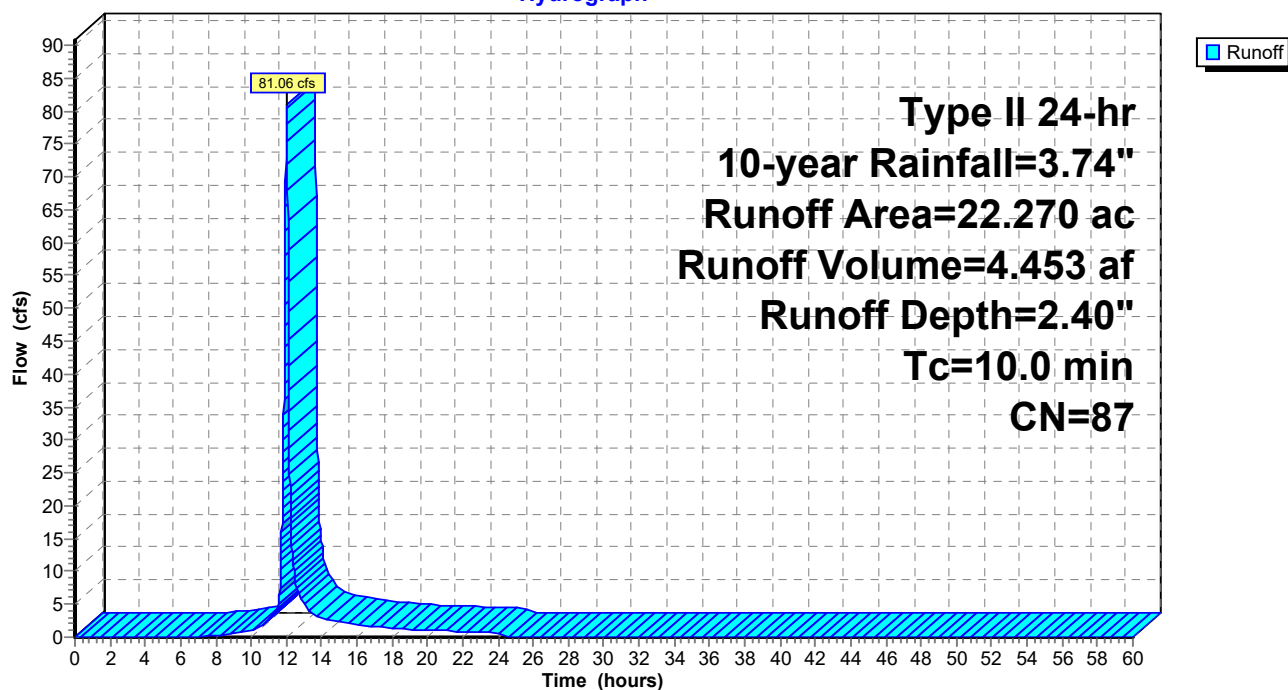
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-year Rainfall=3.74"

Area (ac)	CN	Description
* 22.270	87	
22.270		100.00% Pervious Area

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

Subcatchment 14S: Post SE 22.27ac

Hydrograph



Summary for Subcatchment 21S: Pre SW to Road 5.38ac

Runoff = 8.58 cfs @ 12.19 hrs, Volume= 0.754 af, Depth= 1.68"

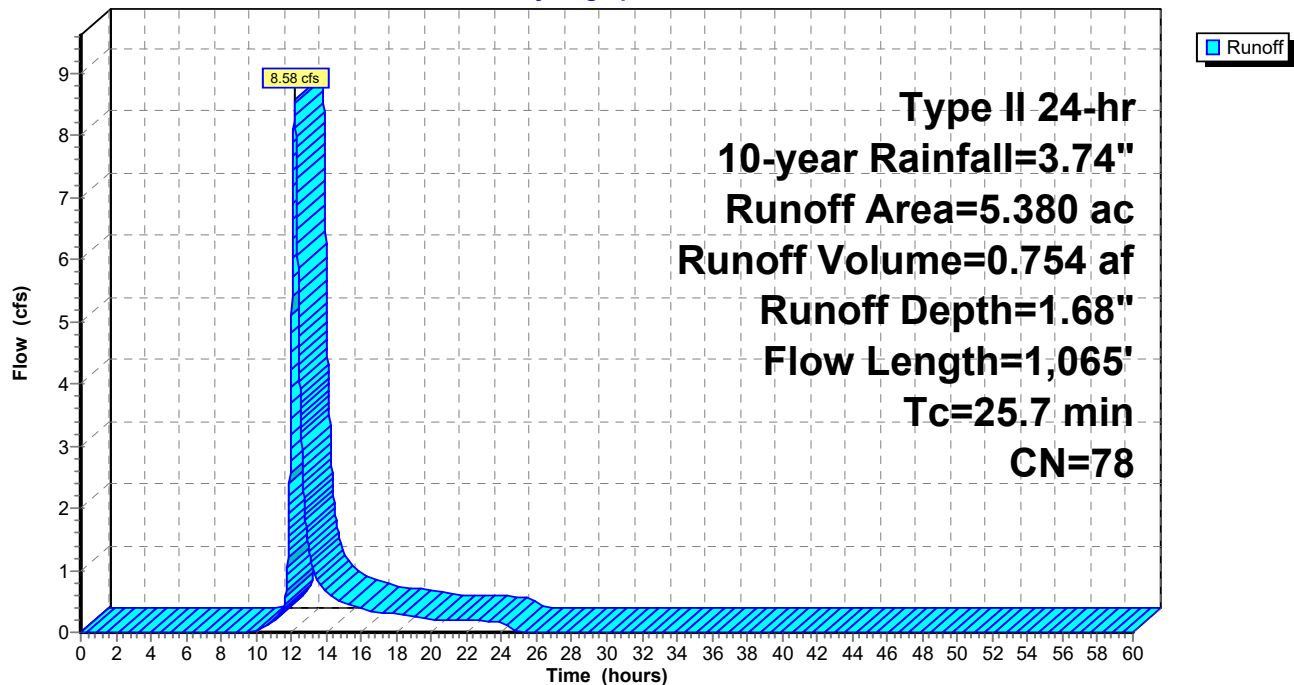
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-year Rainfall=3.74"

Area (ac)	CN	Description
5.380	78	Row crops, C&T, Good, HSG C
5.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow,
					Cultivated: Residue>20% n= 0.170 P2= 2.63"
13.8	965	0.0168	1.17		Shallow Concentrated Flow,
					Cultivated Straight Rows Kv= 9.0 fps
25.7	1,065	Total			

Subcatchment 21S: Pre SW to Road 5.38ac

Hydrograph



Summary for Subcatchment 22S: Pre-Developed Southeast 8.55ac (Phase 1)

Runoff = 14.61 cfs @ 12.16 hrs, Volume= 1.198 af, Depth= 1.68"

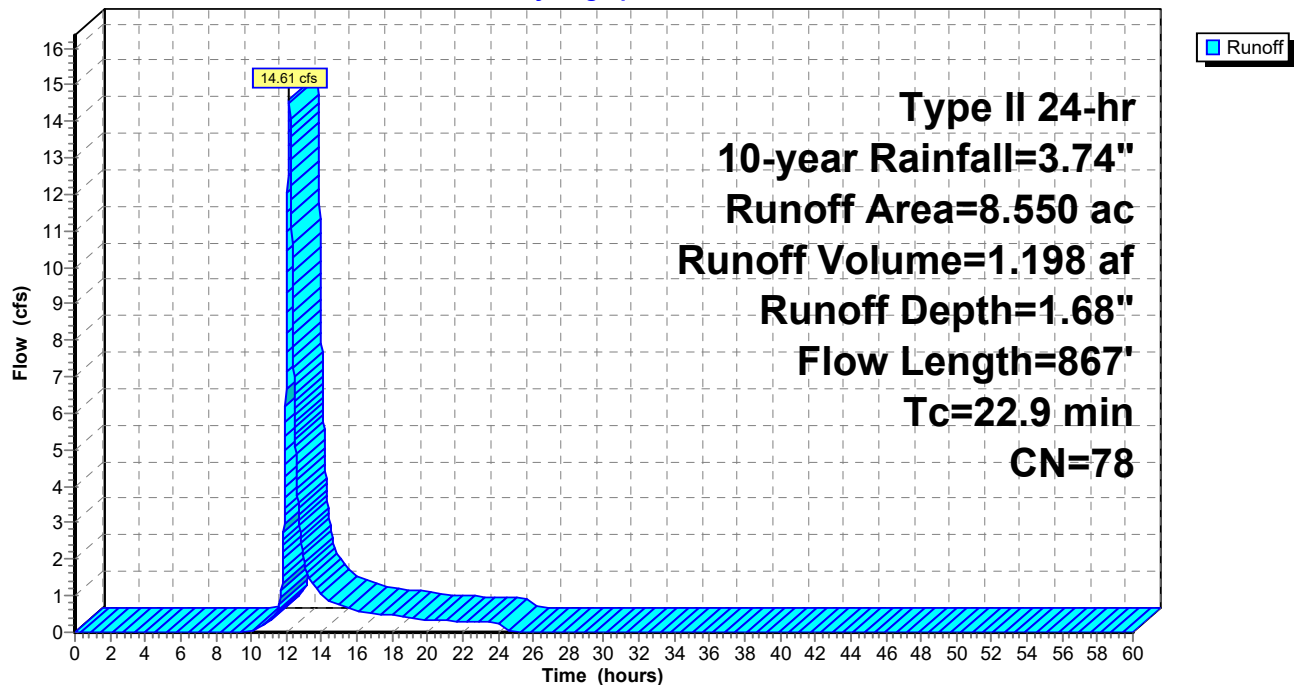
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-year Rainfall=3.74"

Area (ac)	CN	Description
8.550	78	Row crops, C&T, Good, HSG C
8.550		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow,
					Cultivated: Residue>20% n= 0.170 P2= 2.63"
11.0	767	0.0168	1.17		Shallow Concentrated Flow,
					Cultivated Straight Rows Kv= 9.0 fps
22.9	867	Total			

Subcatchment 22S: Pre-Developed Southeast 8.55ac (Phase 1)

Hydrograph



Summary for Pond 10P: NE Basin (Full Post)

Inflow Area = 50.890 ac, 34.12% Impervious, Inflow Depth = 2.54" for 10-year event
 Inflow = 115.79 cfs @ 12.03 hrs, Volume= 10.756 af
 Outflow = 22.12 cfs @ 12.96 hrs, Volume= 10.659 af, Atten= 81%, Lag= 56.0 min
 Primary = 22.12 cfs @ 12.96 hrs, Volume= 10.659 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,007.33' @ 12.96 hrs Surf.Area= 1.651 ac Storage= 4.589 af

Plug-Flow detention time= 451.8 min calculated for 10.659 af (99% of inflow)
 Center-of-Mass det. time= 439.5 min (1,299.6 - 860.2)

Volume	Invert	Avail.Storage	Storage Description
#1	1,004.00'	7.574 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,004.00	1.108	0.000	0.000
1,005.00	1.267	1.187	1.187
1,006.00	1.430	1.349	2.536
1,007.00	1.595	1.512	4.049
1,008.00	1.762	1.679	5.727
1,009.00	1.931	1.846	7.574

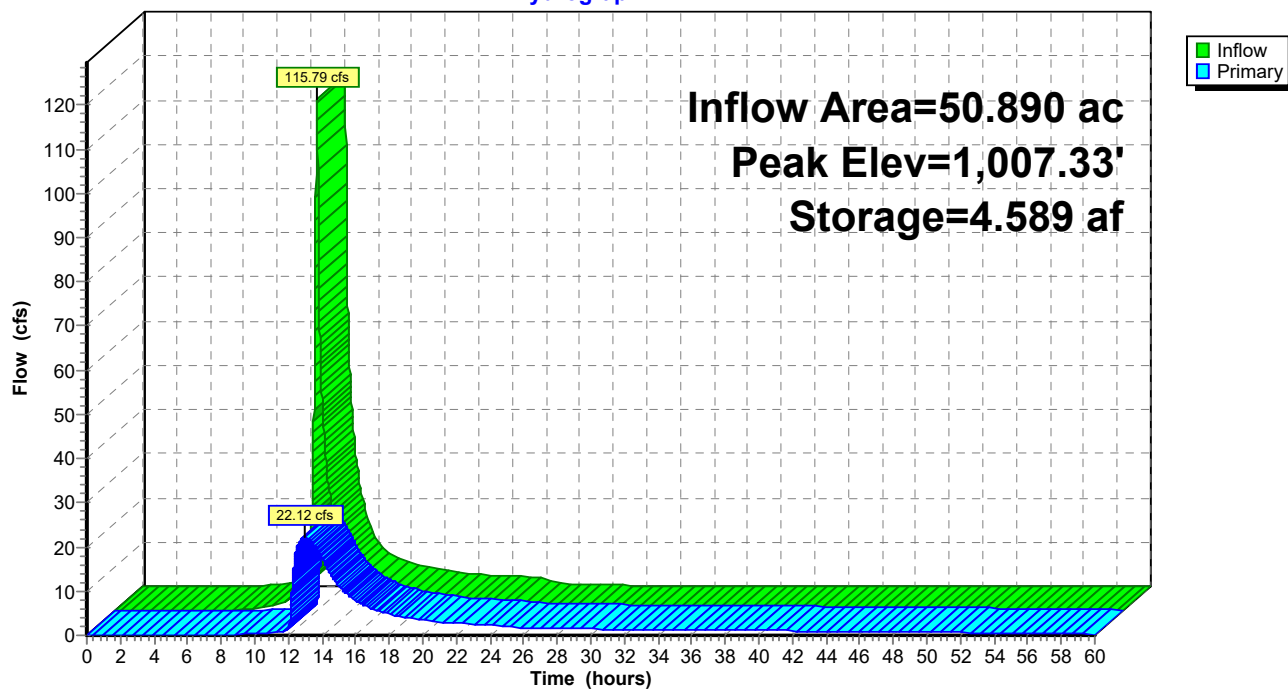
Device	Routing	Invert	Outlet Devices
#1	Primary	1,004.00'	4.5" Horiz. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,006.00'	28.0" W x 12.0" H Vert. Window X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Primary	1,007.50'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=22.12 cfs @ 12.96 hrs HW=1,007.33' (Free Discharge)

- 1=WQ Orifice (Orifice Controls 1.94 cfs @ 8.79 fps)
- 2=Window (Orifice Controls 20.18 cfs @ 4.32 fps)
- 3=Grate (Controls 0.00 cfs)

Pond 10P: NE Basin (Full Post)

Hydrograph



Summary for Pond 11P: SW Basin (Full Post)

Inflow Area = 23.720 ac, 85.00% Impervious, Inflow Depth = 3.07" for 10-year event
 Inflow = 104.19 cfs @ 12.01 hrs, Volume= 6.068 af
 Outflow = 1.54 cfs @ 21.57 hrs, Volume= 5.006 af, Atten= 99%, Lag= 573.6 min
 Primary = 1.54 cfs @ 21.57 hrs, Volume= 5.006 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,015.01' @ 18.32 hrs Surf.Area= 1.796 ac Storage= 4.614 af

Plug-Flow detention time= 1,243.7 min calculated for 5.005 af (82% of inflow)
 Center-of-Mass det. time= 1,169.6 min (1,952.1 - 782.5)

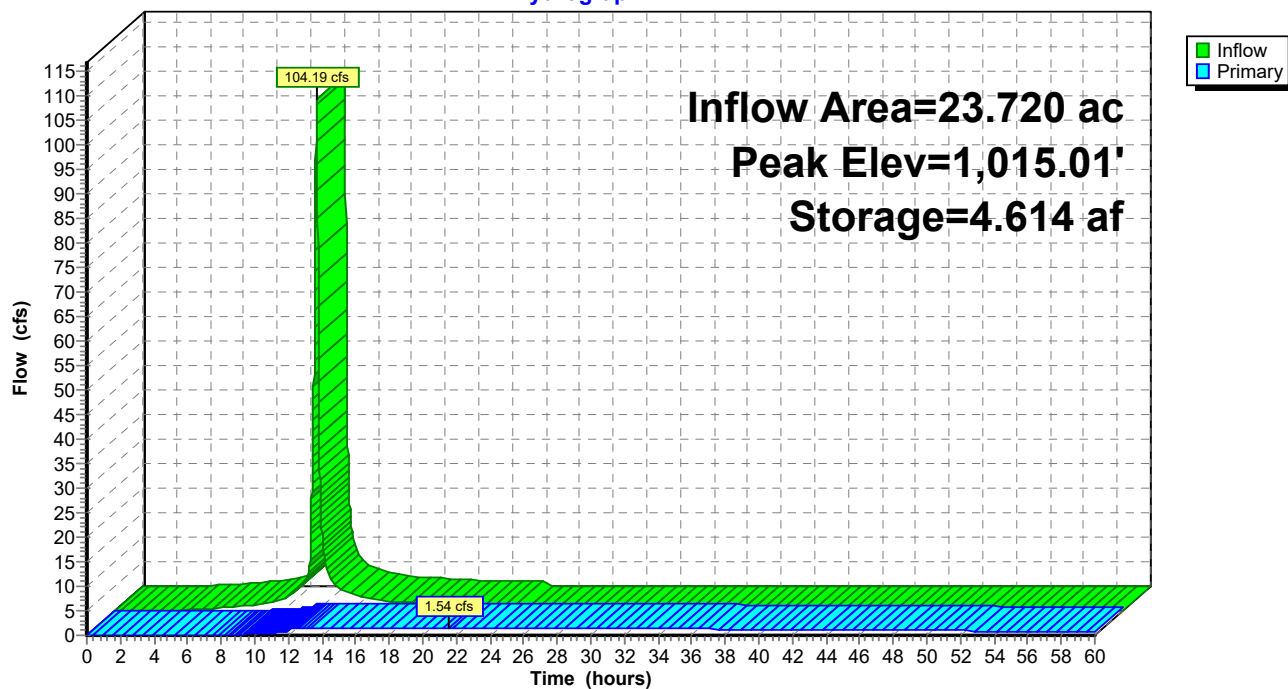
Volume	Invert	Avail.Storage	Storage Description
#1	1,012.00'	10.787 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,012.00	1.275	0.000	0.000
1,013.00	1.446	1.360	1.360
1,014.00	1.619	1.532	2.893
1,015.00	1.794	1.706	4.599
1,016.00	1.972	1.883	6.482
1,017.00	2.152	2.062	8.544
1,018.00	2.334	2.243	10.787

Device	Routing	Invert	Outlet Devices
#1	Primary	1,012.00'	6.0" Vert. Orifice Plate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.54 cfs @ 21.57 hrs HW=1,014.96' TW=1,012.32' (Dynamic Tailwater)
 ↑ **1=Orifice Plate** (Orifice Controls 1.54 cfs @ 7.83 fps)

Pond 11P: SW Basin (Full Post)

Hydrograph



Summary for Pond 12P: SE Basin (Full Post)

Inflow Area = 45.990 ac, 43.84% Impervious, Inflow Depth > 2.47" for 10-year event
 Inflow = 82.22 cfs @ 12.01 hrs, Volume= 9.458 af
 Outflow = 3.01 cfs @ 17.48 hrs, Volume= 6.966 af, Atten= 96%, Lag= 328.2 min
 Primary = 3.01 cfs @ 17.48 hrs, Volume= 6.966 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,012.38' @ 17.48 hrs Surf.Area= 1.476 ac Storage= 3.510 af

Plug-Flow detention time= 924.8 min calculated for 6.965 af (74% of inflow)
 Center-of-Mass det. time= 485.0 min (1,900.8 - 1,415.8)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.50'	4.535 af	Basin 01 (Prismatic) Listed below (Recalc)
#2	1,009.50'	2.519 af	Basin 02 (Prismatic) Listed below (Recalc)
		7.054 af	Total Available Storage

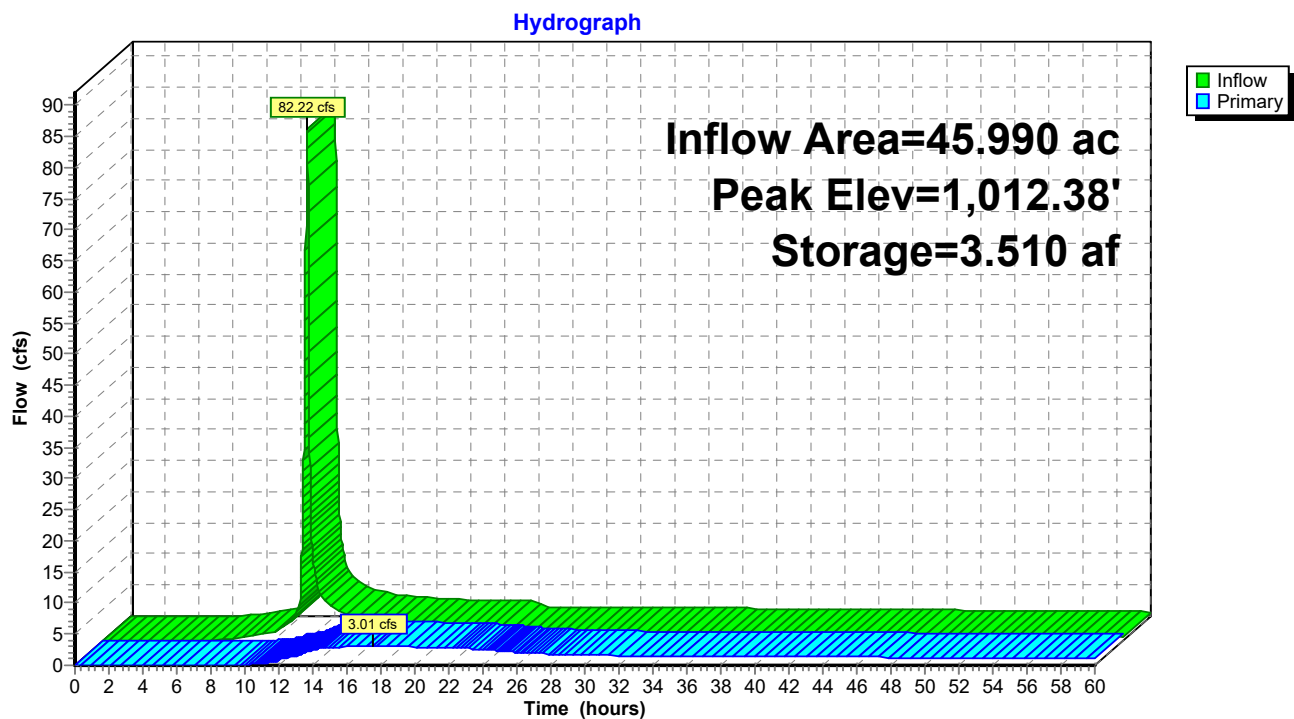
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.591	0.000	0.000
1,010.00	0.653	0.311	0.311
1,011.00	0.777	0.715	1.026
1,012.00	0.904	0.841	1.867
1,013.00	1.034	0.969	2.836
1,014.00	1.165	1.100	3.935
1,014.50	1.232	0.599	4.535

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.375	0.000	0.000
1,010.00	0.399	0.194	0.194
1,011.00	0.449	0.424	0.618
1,012.00	0.501	0.475	1.093
1,013.00	0.556	0.528	1.621
1,014.00	0.613	0.584	2.205
1,014.50	0.642	0.314	2.519

Device	Routing	Invert	Outlet Devices
#1	Primary	1,009.50'	4.0" Vert. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,012.00'	10.0" Horiz. Riser Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	1,013.75'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=3.01 cfs @ 17.48 hrs HW=1,012.38' TW=0.00' (Dynamic Tailwater)

1=WQ Orifice (Orifice Controls 1.38 cfs @ 7.93 fps)
 2=Riser Pipe (Orifice Controls 1.62 cfs @ 2.98 fps)
 3=Grate (Controls 0.00 cfs)

Pond 12P: SE Basin (Full Post)

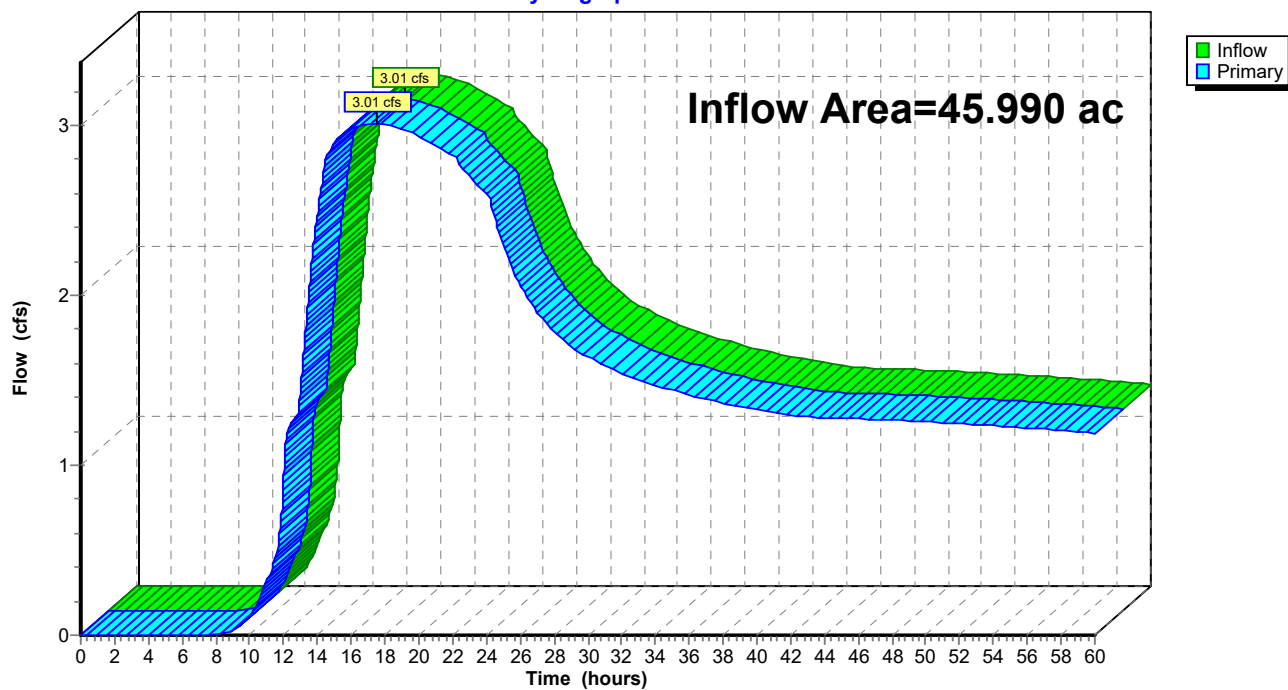
Summary for Pond 13P: SE Post Out

Inflow Area = 45.990 ac, 43.84% Impervious, Inflow Depth > 1.82" for 10-year event
Inflow = 3.01 cfs @ 17.48 hrs, Volume= 6.966 af
Primary = 3.01 cfs @ 17.48 hrs, Volume= 6.966 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Pond 13P: SE Post Out

Hydrograph



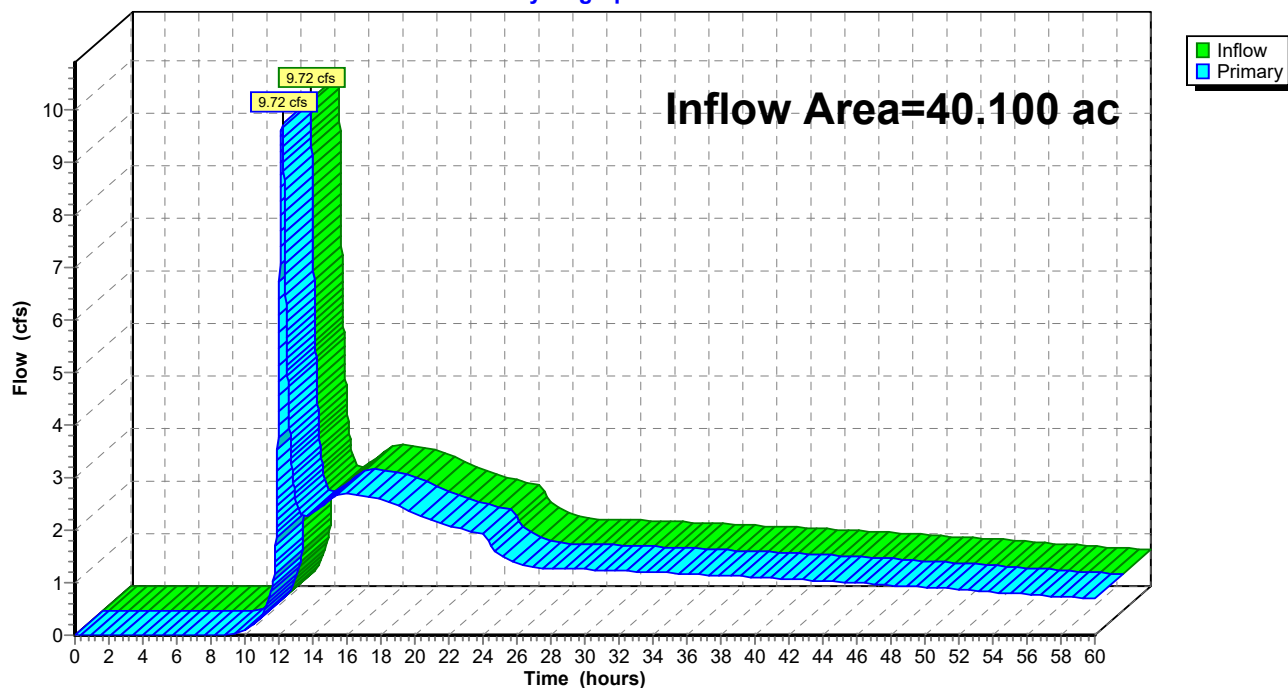
Summary for Pond 20P: SE Post Out (Phase 1)

Inflow Area = 40.100 ac, 0.00% Impervious, Inflow Depth > 1.76" for 10-year event
Inflow = 9.72 cfs @ 12.20 hrs, Volume= 5.890 af
Primary = 9.72 cfs @ 12.20 hrs, Volume= 5.890 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Pond 20P: SE Post Out (Phase 1)

Hydrograph



Summary for Pond 21P: SE Basin (Phase 1)

Inflow Area = 34.720 ac, 0.00% Impervious, Inflow Depth > 2.07" for 10-year event
 Inflow = 81.14 cfs @ 12.01 hrs, Volume= 6.001 af
 Outflow = 2.33 cfs @ 16.84 hrs, Volume= 5.136 af, Atten= 97%, Lag= 289.4 min
 Primary = 2.33 cfs @ 16.84 hrs, Volume= 5.136 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,012.24' @ 16.84 hrs Surf.Area= 1.449 ac Storage= 3.297 af

Plug-Flow detention time= 1,040.2 min calculated for 5.135 af (86% of inflow)
 Center-of-Mass det. time= 859.0 min (1,889.2 - 1,030.2)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.50'	4.535 af	Basin 01 (Prismatic) Listed below (Recalc)
#2	1,009.50'	2.519 af	Basin 02 (Prismatic) Listed below (Recalc)
		7.054 af	Total Available Storage

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.591	0.000	0.000
1,010.00	0.653	0.311	0.311
1,011.00	0.777	0.715	1.026
1,012.00	0.904	0.841	1.867
1,013.00	1.034	0.969	2.836
1,014.00	1.165	1.100	3.935
1,014.50	1.232	0.599	4.535

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.375	0.000	0.000
1,010.00	0.399	0.194	0.194
1,011.00	0.449	0.424	0.618
1,012.00	0.501	0.475	1.093
1,013.00	0.556	0.528	1.621
1,014.00	0.613	0.584	2.205
1,014.50	0.642	0.314	2.519

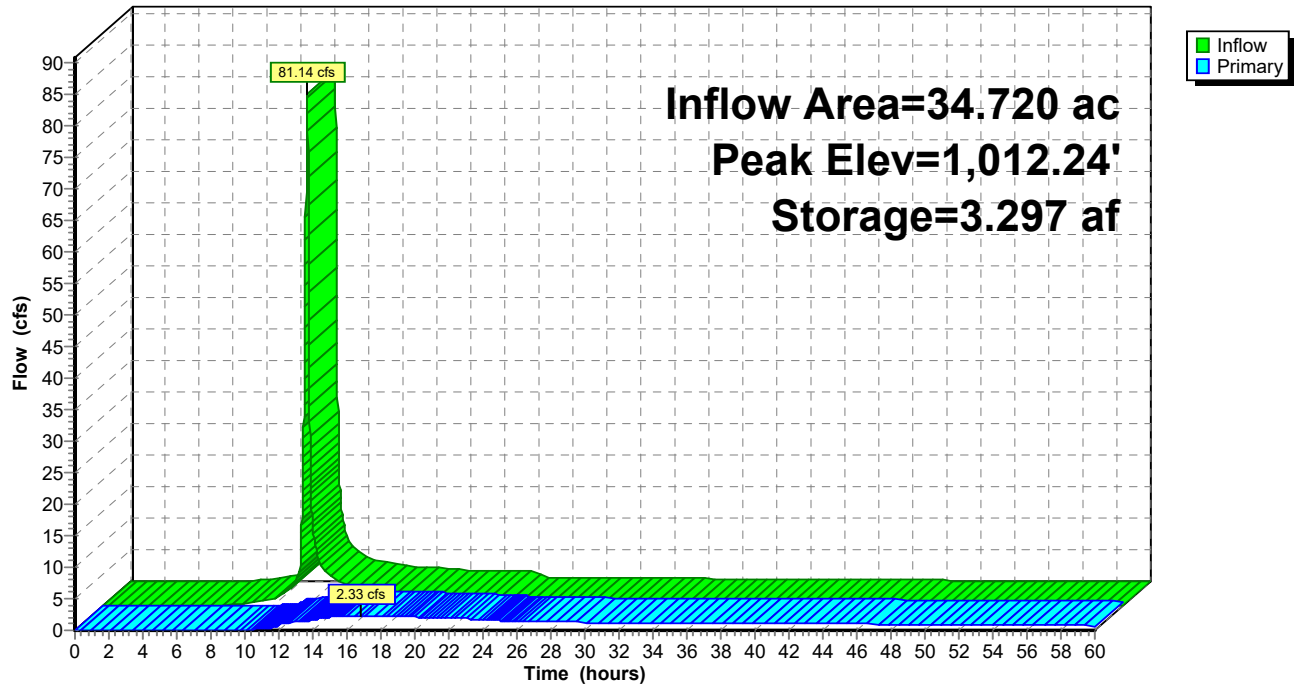
Device	Routing	Invert	Outlet Devices
#1	Primary	1,009.50'	4.0" Vert. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,012.00'	10.0" Horiz. Open Top Riser Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	1,013.75'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=2.33 cfs @ 16.84 hrs HW=1,012.24' TW=0.00' (Dynamic Tailwater)

- 1=WQ Orifice (Orifice Controls 1.35 cfs @ 7.72 fps)
- 2=Open Top Riser Pipe (Weir Controls 0.98 cfs @ 1.59 fps)
- 3=Grate (Controls 0.00 cfs)

Pond 21P: SE Basin (Phase 1)

Hydrograph



Summary for Pond 22P: NE Basin (Phase 1)

Inflow Area = 46.240 ac, 0.00% Impervious, Inflow Depth = 2.06" for 10-year event
 Inflow = 104.06 cfs @ 12.03 hrs, Volume= 7.927 af
 Outflow = 16.25 cfs @ 12.75 hrs, Volume= 7.706 af, Atten= 84%, Lag= 43.2 min
 Primary = 16.25 cfs @ 12.75 hrs, Volume= 7.706 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,006.98' @ 12.75 hrs Surf.Area= 1.591 ac Storage= 4.013 af

Plug-Flow detention time= 543.0 min calculated for 7.705 af (97% of inflow)
 Center-of-Mass det. time= 526.8 min (1,357.7 - 830.9)

Volume	Invert	Avail.Storage	Storage Description
#1	1,004.00'	7.574 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,004.00	1.108	0.000	0.000
1,005.00	1.267	1.188	1.188
1,006.00	1.430	1.349	2.536
1,007.00	1.595	1.512	4.048
1,008.00	1.762	1.678	5.727
1,009.00	1.931	1.847	7.574

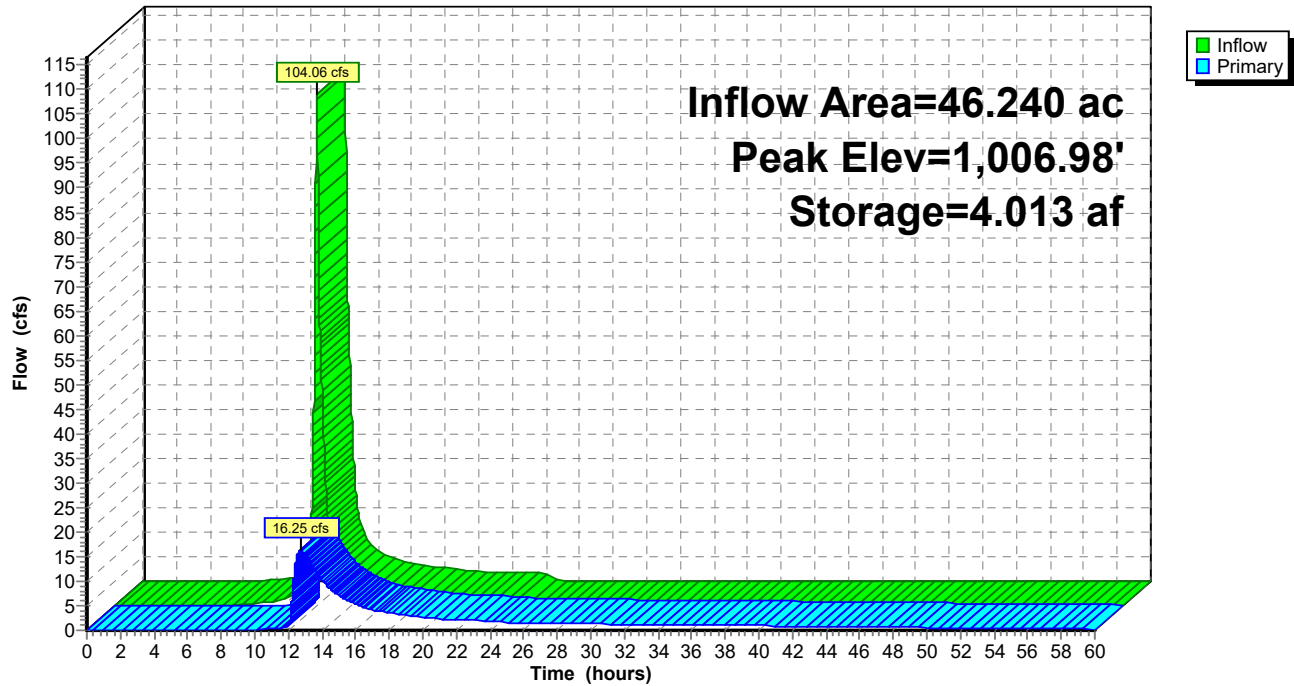
Device	Routing	Invert	Outlet Devices
#1	Primary	1,004.00'	4.5" Vert. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,006.00'	28.0" W x 12.0" H Vert. Window X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Primary	1,007.50'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=16.25 cfs @ 12.75 hrs HW=1,006.98' (Free Discharge)

- 1=WQ Orifice (Orifice Controls 1.78 cfs @ 8.04 fps)
- 2=Window (Orifice Controls 14.48 cfs @ 3.17 fps)
- 3=Grate (Controls 0.00 cfs)

Pond 22P: NE Basin (Phase 1)

Hydrograph



Summary for Pond 23P: NW Basin (Full Post)

Inflow Area = 26.710 ac, 65.00% Impervious, Inflow Depth = 2.67" for 10-year event
 Inflow = 106.37 cfs @ 12.01 hrs, Volume= 5.950 af
 Outflow = 38.93 cfs @ 12.16 hrs, Volume= 5.922 af, Atten= 63%, Lag= 9.1 min
 Primary = 38.93 cfs @ 12.16 hrs, Volume= 5.922 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,015.68' @ 12.16 hrs Surf.Area= 0.960 ac Storage= 2.261 af

Plug-Flow detention time= 100.1 min calculated for 5.922 af (100% of inflow)
 Center-of-Mass det. time= 97.0 min (898.6 - 801.6)

Volume	Invert	Avail.Storage	Storage Description
#1	1,013.00'	3.604 af	Custom Stage Data (Prismatic) Listed below (Recalc)

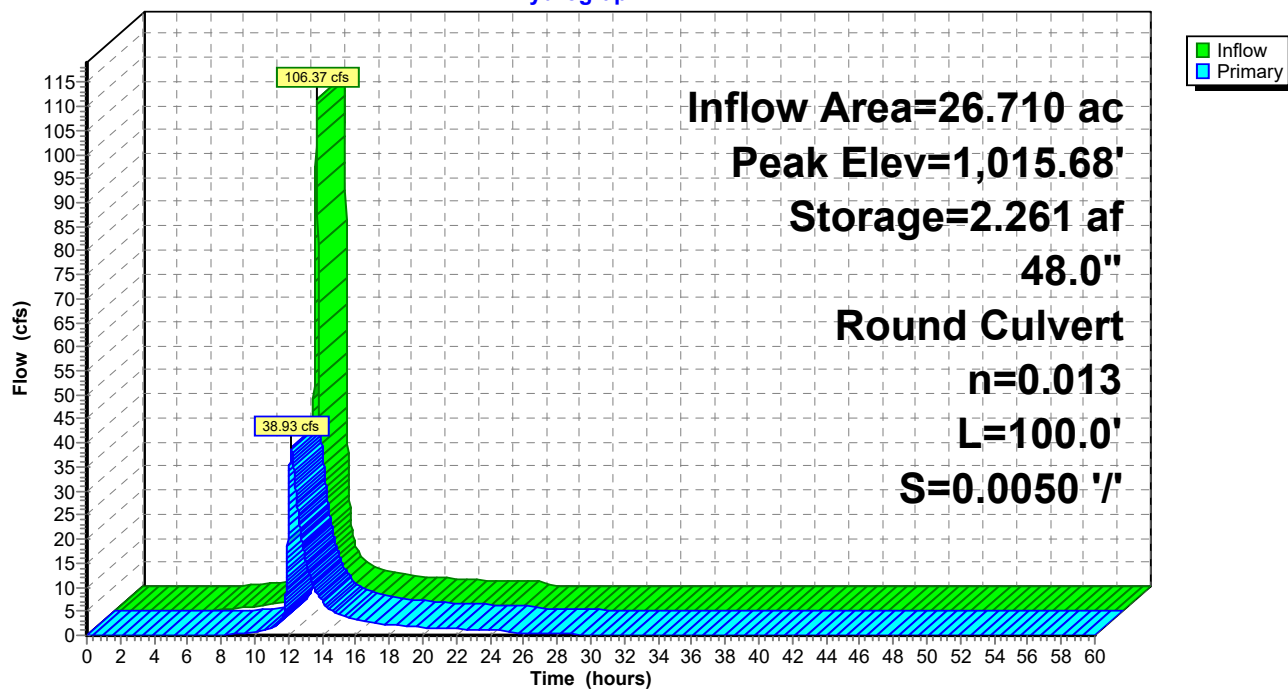
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,013.00	0.729	0.000	0.000
1,014.00	0.813	0.771	0.771
1,015.00	0.899	0.856	1.627
1,016.00	0.988	0.943	2.570
1,017.00	1.079	1.033	3.604

Device	Routing	Invert	Outlet Devices
#1	Primary	1,013.00'	48.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,013.00' / 1,012.50' S= 0.0050 ' / ' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 12.57 sf

Primary OutFlow Max=38.92 cfs @ 12.16 hrs HW=1,015.68' TW=1,006.55' (Dynamic Tailwater)
 ↑ **1=Culvert** (Barrel Controls 38.92 cfs @ 6.15 fps)

Pond 23P: NW Basin (Full Post)

Hydrograph



Summary for Pond 24P: SW Basin (Phase 1)

Inflow Area = 12.450 ac, 0.00% Impervious, Inflow Depth = 1.68" for 10-year event
 Inflow = 22.36 cfs @ 12.14 hrs, Volume= 1.745 af
 Outflow = 0.74 cfs @ 17.14 hrs, Volume= 1.548 af, Atten= 97%, Lag= 299.8 min
 Primary = 0.74 cfs @ 17.14 hrs, Volume= 1.548 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,012.86' @ 17.14 hrs Surf.Area= 1.421 ac Storage= 1.154 af

Plug-Flow detention time= 859.0 min calculated for 1.548 af (89% of inflow)
 Center-of-Mass det. time= 802.9 min (1,654.6 - 851.7)

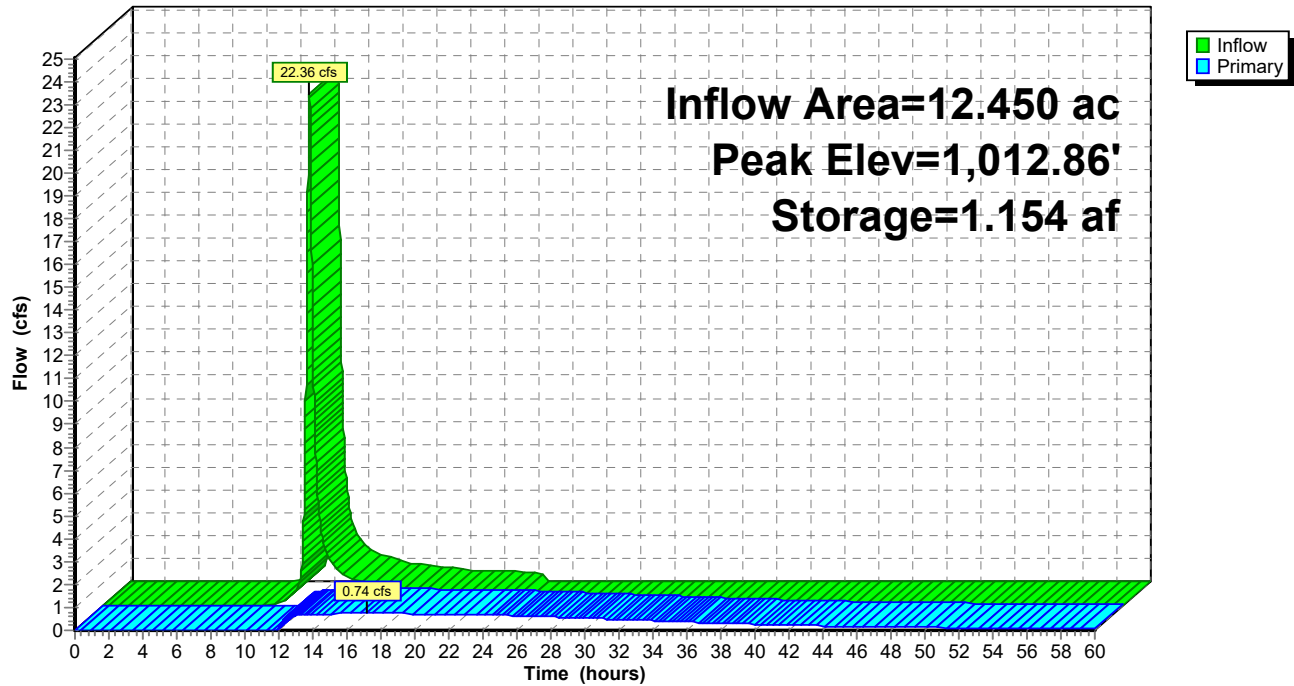
Volume	Invert	Avail.Storage	Storage Description
#1	1,012.00'	10.787 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,012.00	1.275	0.000	0.000
1,013.00	1.446	1.360	1.360
1,014.00	1.619	1.532	2.893
1,015.00	1.794	1.706	4.599
1,016.00	1.972	1.883	6.482
1,017.00	2.152	2.062	8.544
1,018.00	2.334	2.243	10.787

Device	Routing	Invert	Outlet Devices
#1	Primary	1,012.00'	6.0" Vert. Orifice Plate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.74 cfs @ 17.14 hrs HW=1,012.86' TW=1,012.24' (Dynamic Tailwater)
 ↑ **1=Orifice Plate** (Orifice Controls 0.74 cfs @ 3.75 fps)

Pond 24P: SW Basin (Phase 1)

Hydrograph



Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Pre-Developed	Runoff Area=50.830 ac 0.00% Impervious Runoff Depth=2.24" Flow Length=2,529' Tc=51.4 min CN=78 Runoff=67.84 cfs 9.503 af
Subcatchment2S: Pre-Developed	Runoff Area=14.820 ac 0.00% Impervious Runoff Depth=2.24" Flow Length=1,945' Tc=38.3 min CN=78 Runoff=24.28 cfs 2.771 af
Subcatchment3S: Post NW 26.71ac	Runoff Area=26.710 ac 65.00% Impervious Runoff Depth=3.34" Tc=10.0 min CN=90 Runoff=131.24 cfs 7.431 af
Subcatchment4S: Post NE 24.18ac	Runoff Area=24.180 ac 0.00% Impervious Runoff Depth=3.04" Tc=10.0 min CN=87 Runoff=110.51 cfs 6.132 af
Subcatchment5S: Post SW 23.72ac	Runoff Area=23.720 ac 85.00% Impervious Runoff Depth=3.76" Tc=10.0 min CN=94 Runoff=125.89 cfs 7.425 af
Subcatchment6S: Post SE 22.27ac	Runoff Area=22.270 ac 0.00% Impervious Runoff Depth=3.04" Tc=10.0 min CN=87 Runoff=101.78 cfs 5.647 af
Subcatchment11S: Pre NW 22.06ac	Runoff Area=22.060 ac 0.00% Impervious Runoff Depth=2.24" Flow Length=1,231' Tc=28.7 min CN=78 Runoff=44.00 cfs 4.124 af
Subcatchment12S: Post NE 24.18ac	Runoff Area=24.180 ac 0.00% Impervious Runoff Depth=3.04" Tc=10.0 min CN=87 Runoff=110.51 cfs 6.132 af
Subcatchment13S: Pre SW to Basin	Runoff Area=12.450 ac 0.00% Impervious Runoff Depth=2.24" Flow Length=650' Tc=21.1 min CN=78 Runoff=30.05 cfs 2.328 af
Subcatchment14S: Post SE 22.27ac	Runoff Area=22.270 ac 0.00% Impervious Runoff Depth=3.04" Tc=10.0 min CN=87 Runoff=101.78 cfs 5.647 af
Subcatchment21S: Pre SW to Road 5.38ac	Runoff Area=5.380 ac 0.00% Impervious Runoff Depth=2.24" Flow Length=1,065' Tc=25.7 min CN=78 Runoff=11.55 cfs 1.006 af
Subcatchment22S: Pre-Developed	Runoff Area=8.550 ac 0.00% Impervious Runoff Depth=2.24" Flow Length=867' Tc=22.9 min CN=78 Runoff=19.65 cfs 1.598 af
Pond 10P: NE Basin (Full Post)	Peak Elev=1,007.89' Storage=5.531 af Inflow=147.74 cfs 13.533 af Outflow=34.05 cfs 13.430 af
Pond 11P: SW Basin (Full Post)	Peak Elev=1,015.65' Storage=5.795 af Inflow=125.89 cfs 7.425 af Outflow=1.66 cfs 5.742 af
Pond 12P: SE Basin (Full Post)	Peak Elev=1,012.79' Storage=4.134 af Inflow=103.08 cfs 11.389 af Outflow=3.83 cfs 8.590 af
Pond 13P: SE Post Out	Inflow=3.83 cfs 8.590 af Primary=3.83 cfs 8.590 af

Pond 20P: SE Post Out (Phase 1)Inflow=12.94 cfs 7.577 af
Primary=12.94 cfs 7.577 af**Pond 21P: SE Basin (Phase 1)**Peak Elev=1,012.59' Storage=3.827 af Inflow=101.96 cfs 7.724 af
Outflow=3.46 cfs 6.571 af**Pond 22P: NE Basin (Phase 1)**Peak Elev=1,007.55' Storage=4.959 af Inflow=132.95 cfs 10.256 af
Outflow=25.18 cfs 10.029 af**Pond 23P: NW Basin (Full Post)**Peak Elev=1,016.15' Storage=2.722 af Inflow=131.24 cfs 7.431 af
48.0" Round Culvert n=0.013 L=100.0' S=0.0050 '/' Outflow=50.63 cfs 7.402 af**Pond 24P: SW Basin (Phase 1)**Peak Elev=1,013.20' Storage=1.657 af Inflow=30.05 cfs 2.328 af
Outflow=0.89 cfs 2.077 af**Total Runoff Area = 257.420 ac Runoff Volume = 59.743 af Average Runoff Depth = 2.79"**
85.42% Pervious = 219.896 ac 14.58% Impervious = 37.524 ac

Summary for Subcatchment 1S: Pre-Developed Northeast 50.83ac

Runoff = 67.84 cfs @ 12.51 hrs, Volume= 9.503 af, Depth= 2.24"

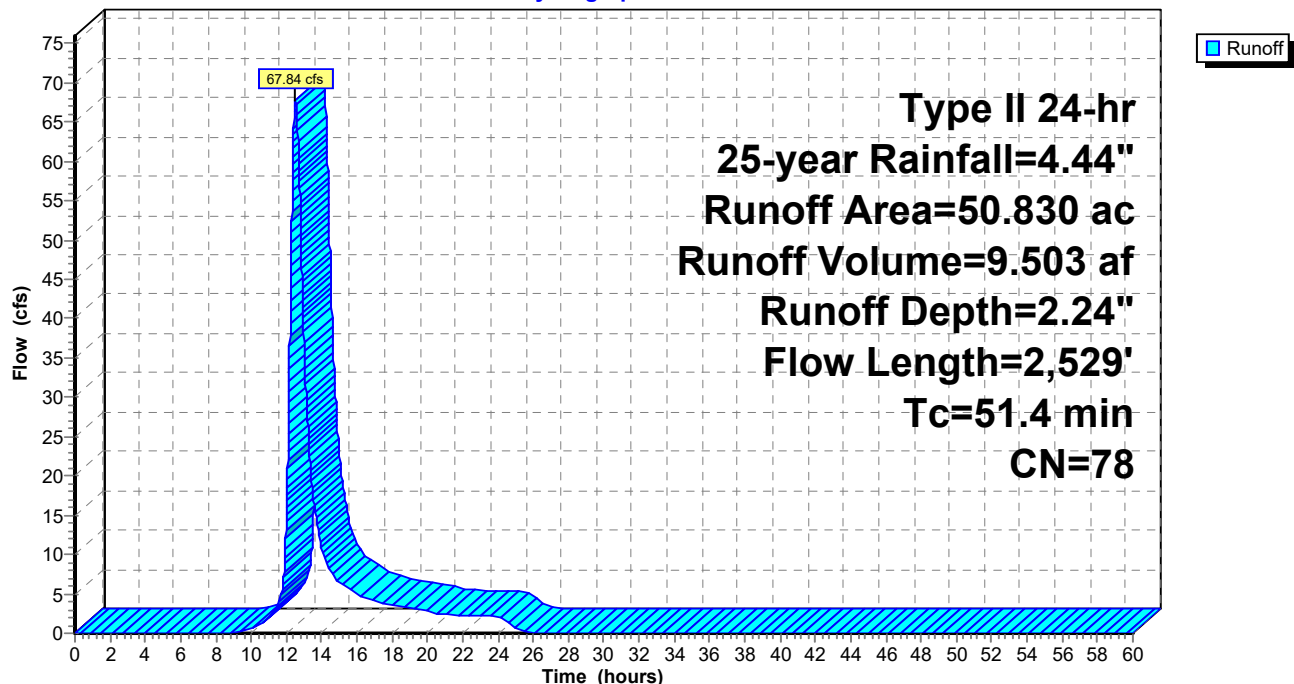
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-year Rainfall=4.44"

Area (ac)	CN	Description
50.830	78	Row crops, C&T, Good, HSG C
50.830		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.63"
6.2	633	0.0363	1.71		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
33.3	1,796	0.0100	0.90		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
51.4	2,529	Total			

Subcatchment 1S: Pre-Developed Northeast 50.83ac

Hydrograph



Summary for Subcatchment 2S: Pre-Developed Southeast 14.82ac (Post Full)

Runoff = 24.28 cfs @ 12.34 hrs, Volume= 2.771 af, Depth= 2.24"

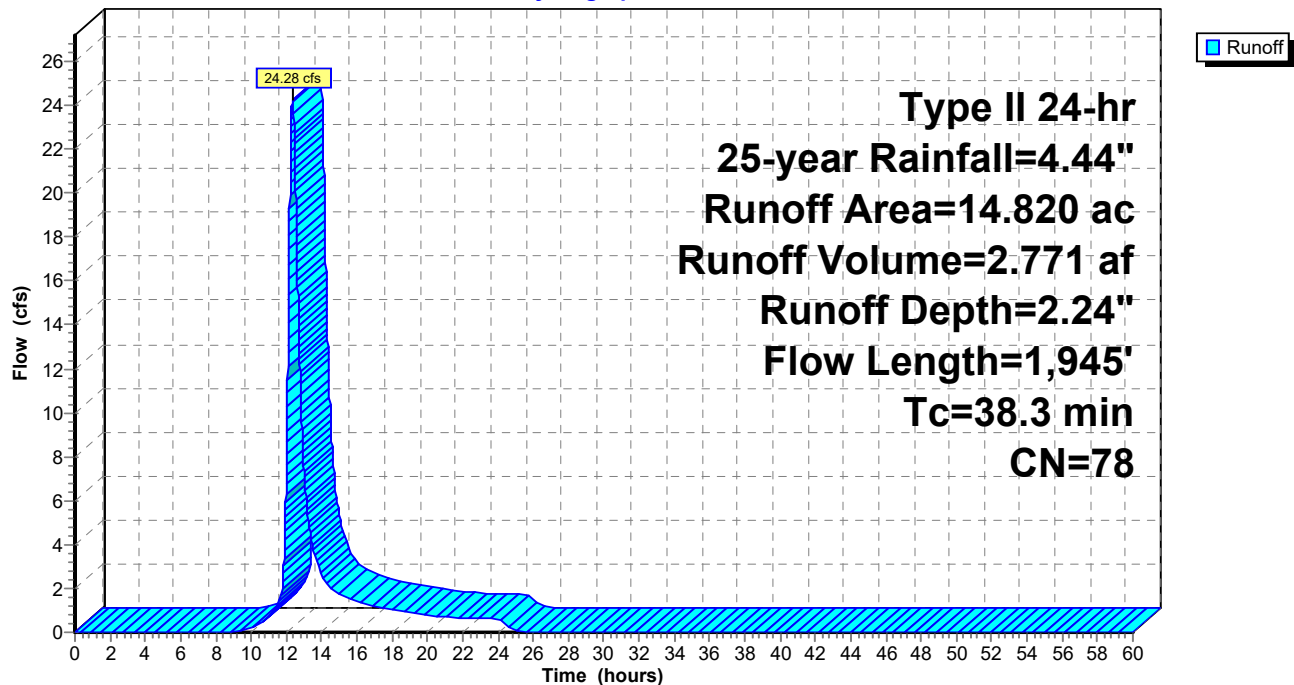
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-year Rainfall=4.44"

Area (ac)	CN	Description
14.820	78	Row crops, C&T, Good, HSG C
14.820		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.63"
26.4	1,845	0.0168	1.17		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
38.3	1,945	Total			

Subcatchment 2S: Pre-Developed Southeast 14.82ac (Post Full)

Hydrograph



Summary for Subcatchment 3S: Post NW 26.71ac

Runoff = 131.24 cfs @ 12.01 hrs, Volume= 7.431 af, Depth= 3.34"

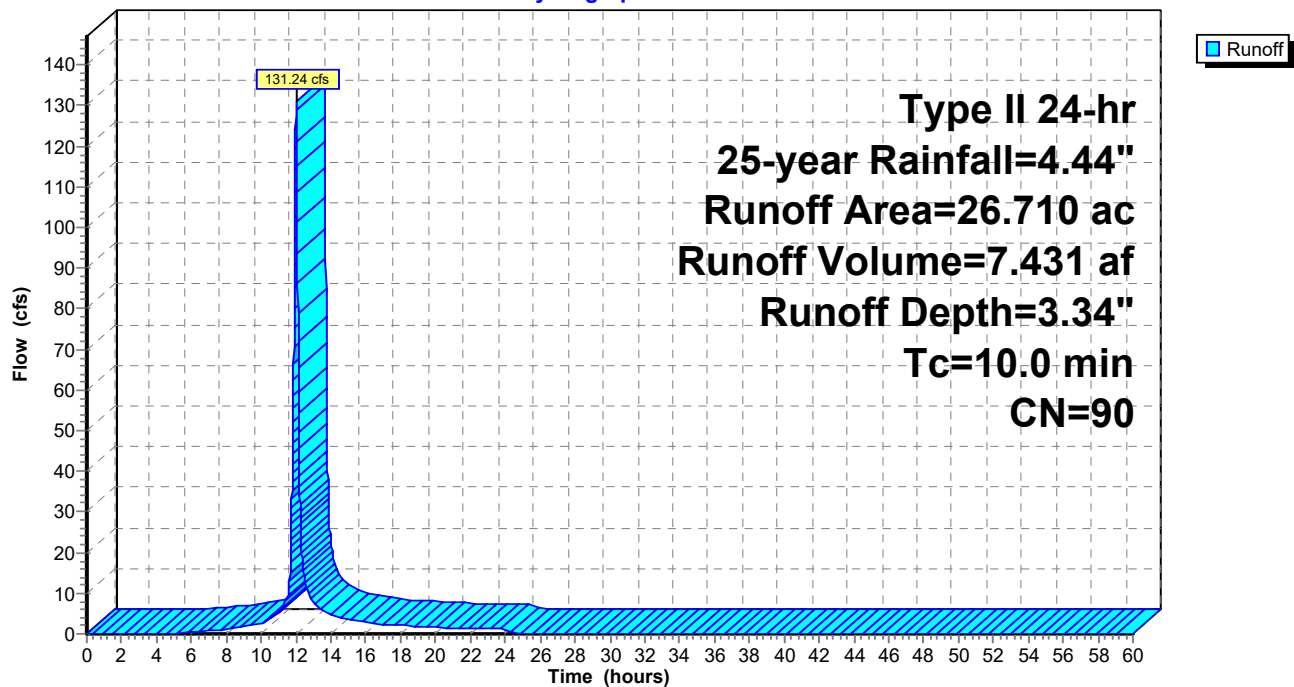
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-year Rainfall=4.44"

Area (ac)	CN	Description
26.710	90	1/8 acre lots, 65% imp, HSG C
9.349		35.00% Pervious Area
17.362		65.00% Impervious Area

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

Subcatchment 3S: Post NW 26.71ac

Hydrograph



Summary for Subcatchment 4S: Post NE 24.18ac

Runoff = 110.51 cfs @ 12.01 hrs, Volume= 6.132 af, Depth= 3.04"

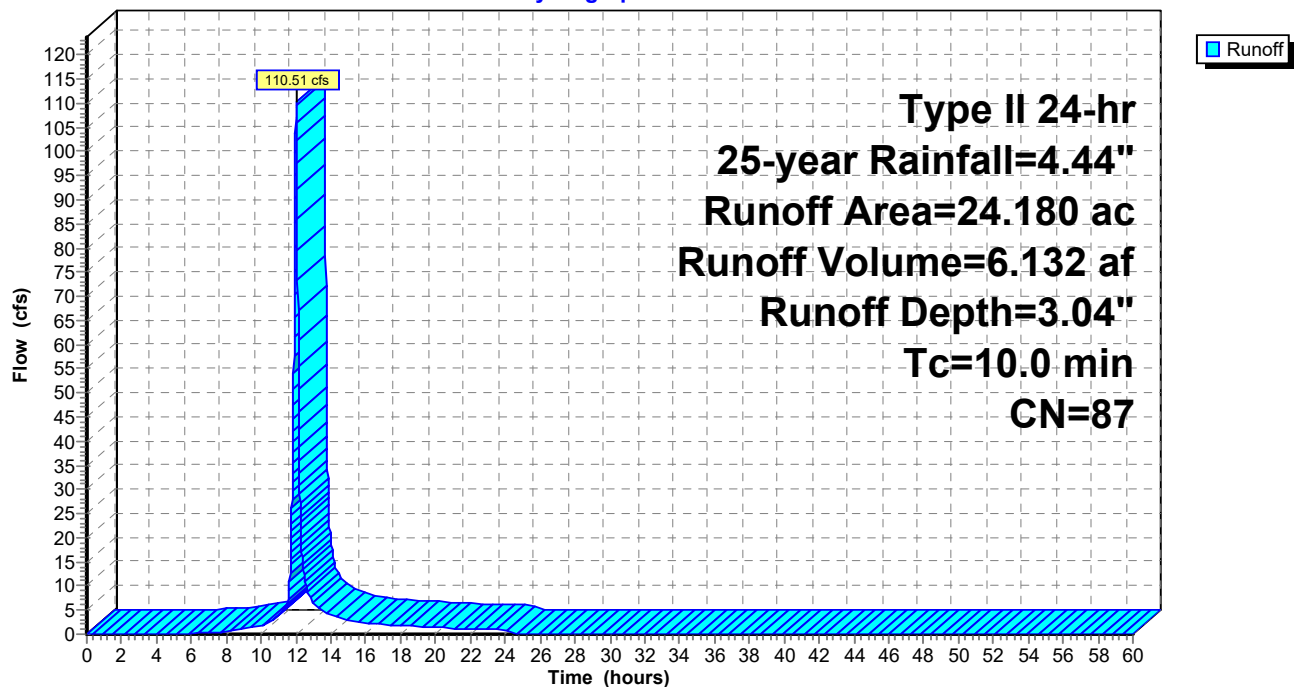
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-year Rainfall=4.44"

Area (ac)	CN	Description
* 24.180	87	
24.180		100.00% Pervious Area

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

Subcatchment 4S: Post NE 24.18ac

Hydrograph



Summary for Subcatchment 5S: Post SW 23.72ac

Runoff = 125.89 cfs @ 12.01 hrs, Volume= 7.425 af, Depth= 3.76"

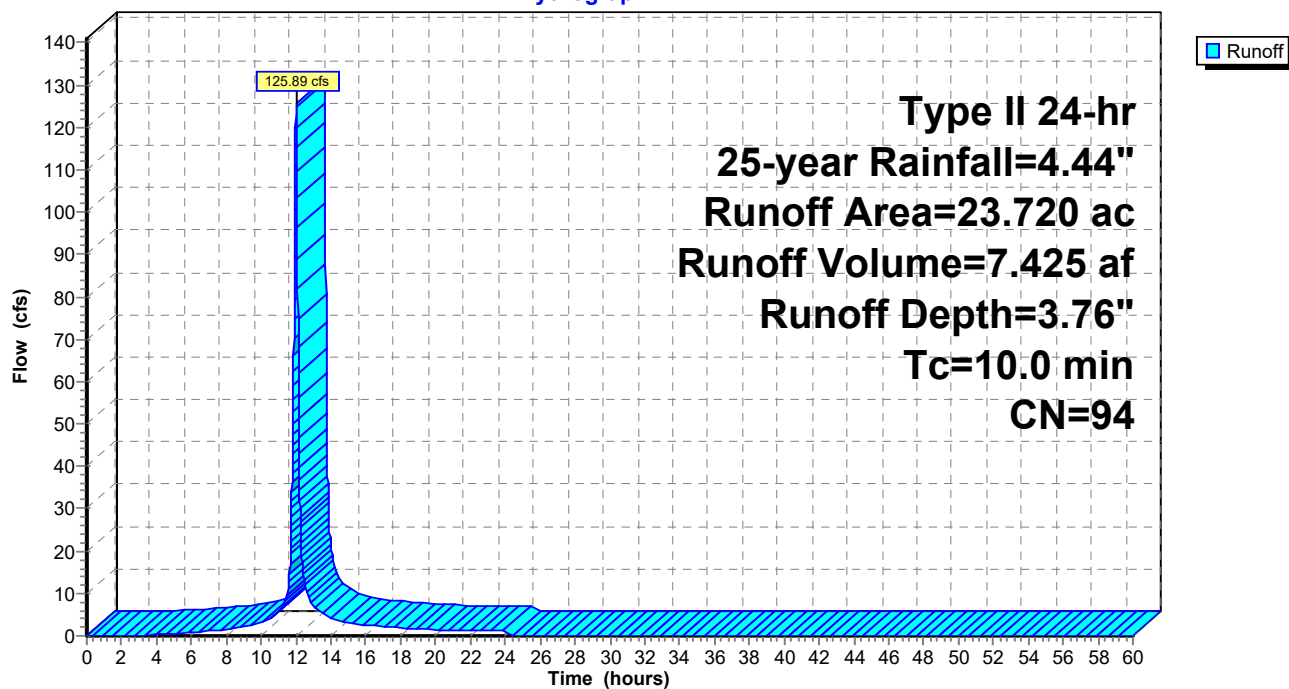
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-year Rainfall=4.44"

Area (ac)	CN	Description
23.720	94	Urban commercial, 85% imp, HSG C
3.558		15.00% Pervious Area
20.162		85.00% Impervious Area

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

Subcatchment 5S: Post SW 23.72ac

Hydrograph



Summary for Subcatchment 6S: Post SE 22.27ac

Runoff = 101.78 cfs @ 12.01 hrs, Volume= 5.647 af, Depth= 3.04"

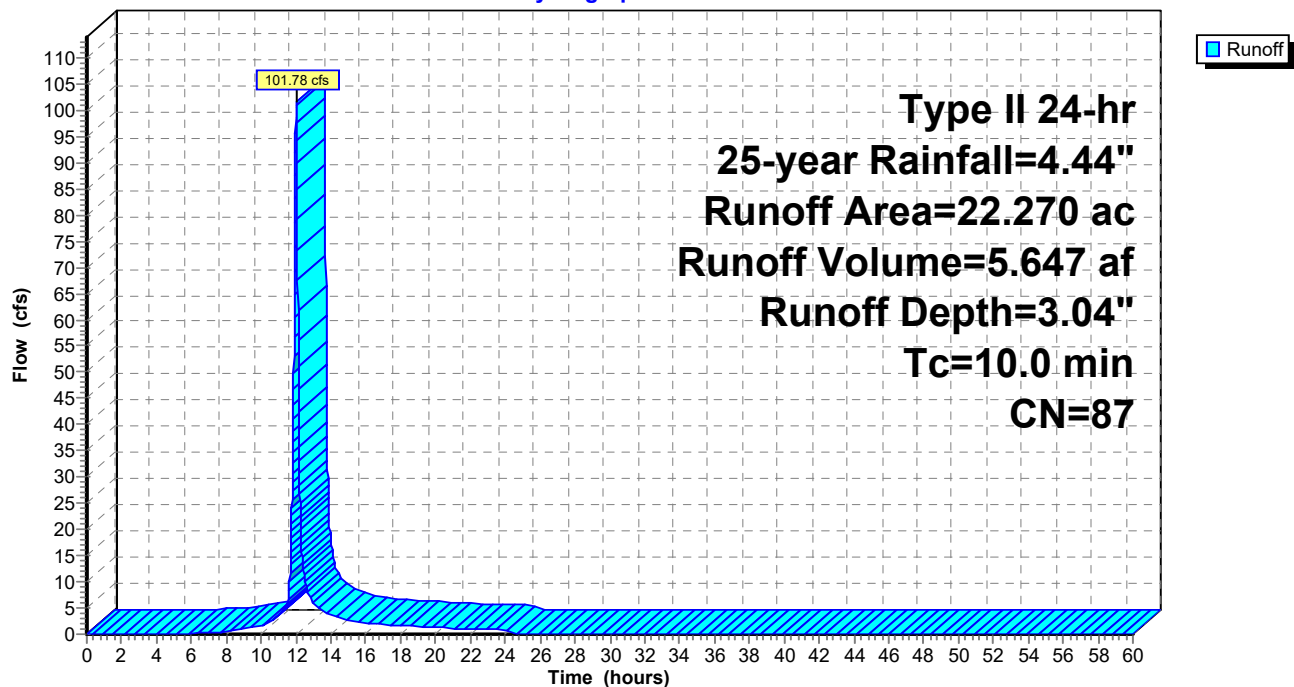
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-year Rainfall=4.44"

Area (ac)	CN	Description
* 22.270	87	
22.270		100.00% Pervious Area

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

Subcatchment 6S: Post SE 22.27ac

Hydrograph



Summary for Subcatchment 11S: Pre NW 22.06ac

Runoff = 44.00 cfs @ 12.22 hrs, Volume= 4.124 af, Depth= 2.24"

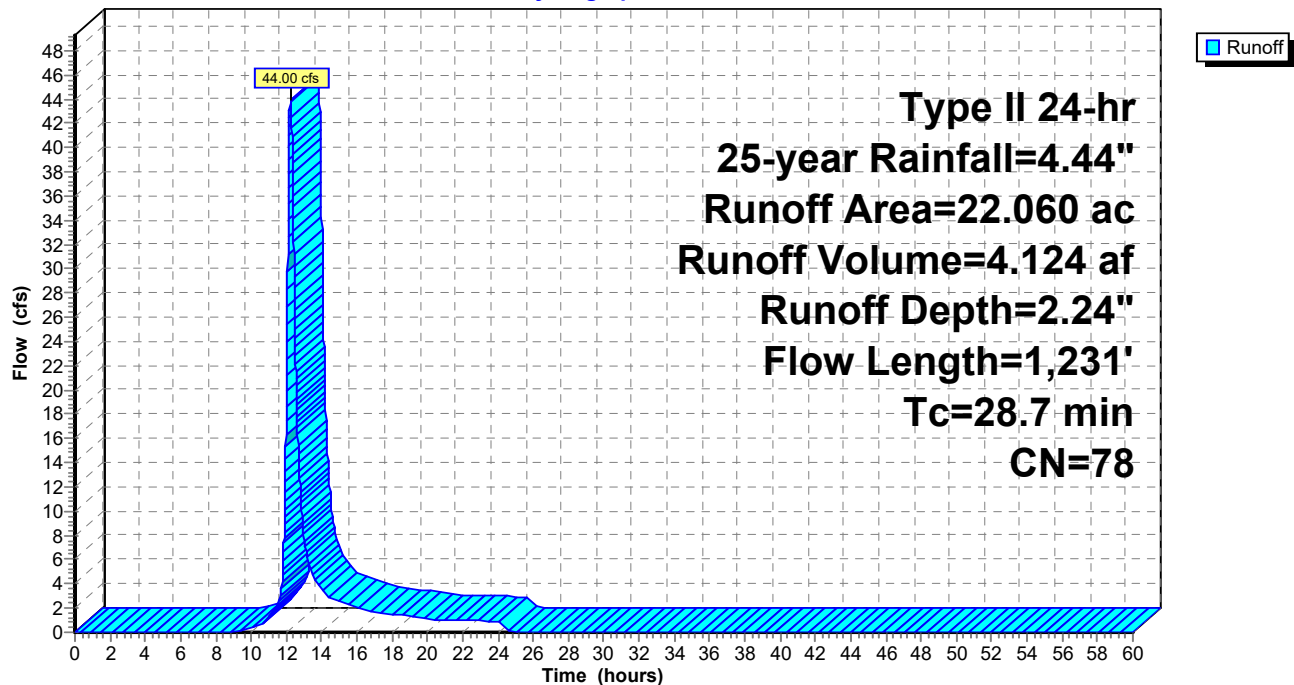
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-year Rainfall=4.44"

Area (ac)	CN	Description
22.060	78	Row crops, C&T, Good, HSG C
22.060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	100	0.0100	0.11		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.63"
12.9	1,131	0.0265	1.47		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
28.7	1,231	Total			

Subcatchment 11S: Pre NW 22.06ac

Hydrograph



Summary for Subcatchment 12S: Post NE 24.18ac

Runoff = 110.51 cfs @ 12.01 hrs, Volume= 6.132 af, Depth= 3.04"

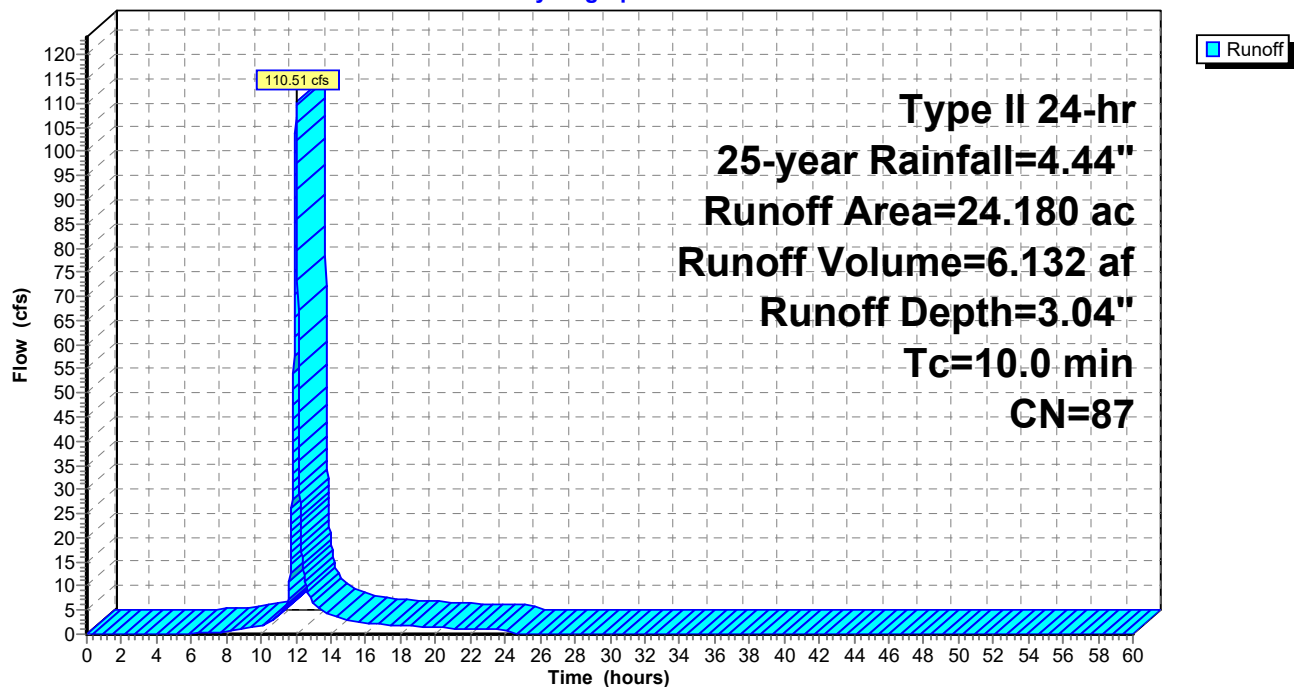
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-year Rainfall=4.44"

Area (ac)	CN	Description
* 24.180	87	
24.180		100.00% Pervious Area

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

Subcatchment 12S: Post NE 24.18ac

Hydrograph



Summary for Subcatchment 13S: Pre SW to Basin 12.45ac

Runoff = 30.05 cfs @ 12.14 hrs, Volume= 2.328 af, Depth= 2.24"

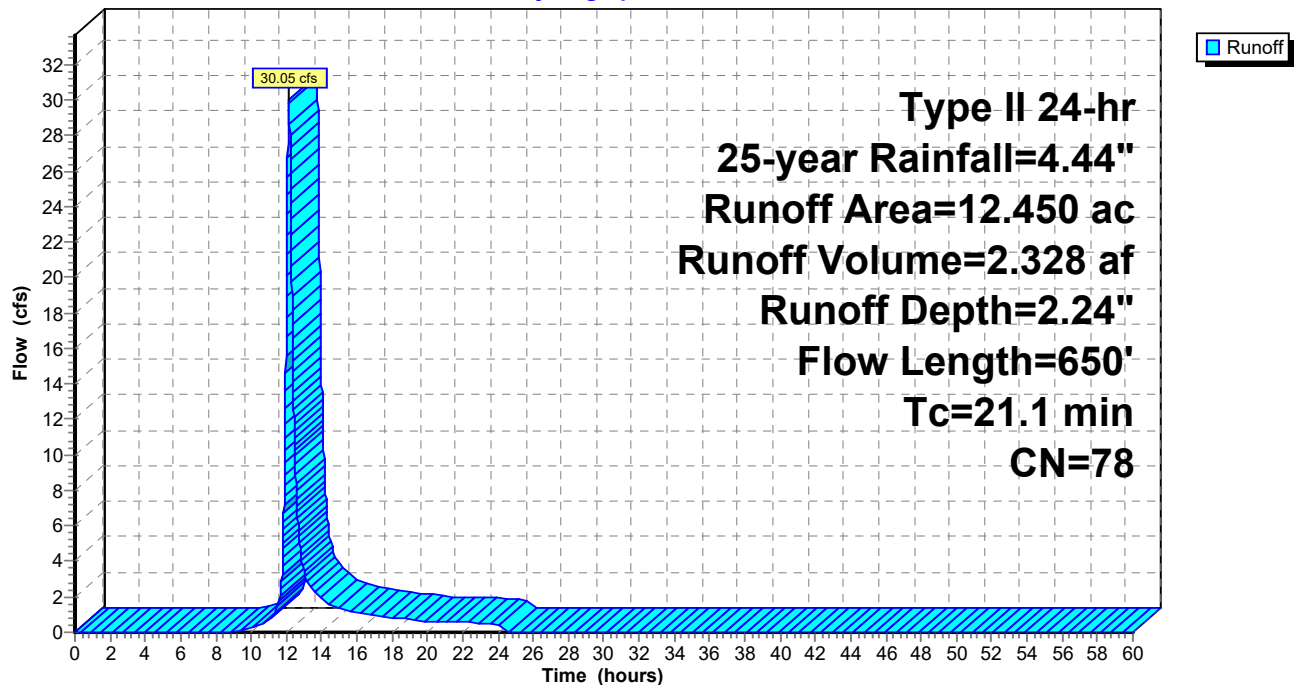
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-year Rainfall=4.44"

Area (ac)	CN	Description
12.450	78	Row crops, C&T, Good, HSG C
12.450		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	100	0.0100	0.11		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.63"
5.3	550	0.0364	1.72		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
21.1	650	Total			

Subcatchment 13S: Pre SW to Basin 12.45ac

Hydrograph



Summary for Subcatchment 14S: Post SE 22.27ac

Runoff = 101.78 cfs @ 12.01 hrs, Volume= 5.647 af, Depth= 3.04"

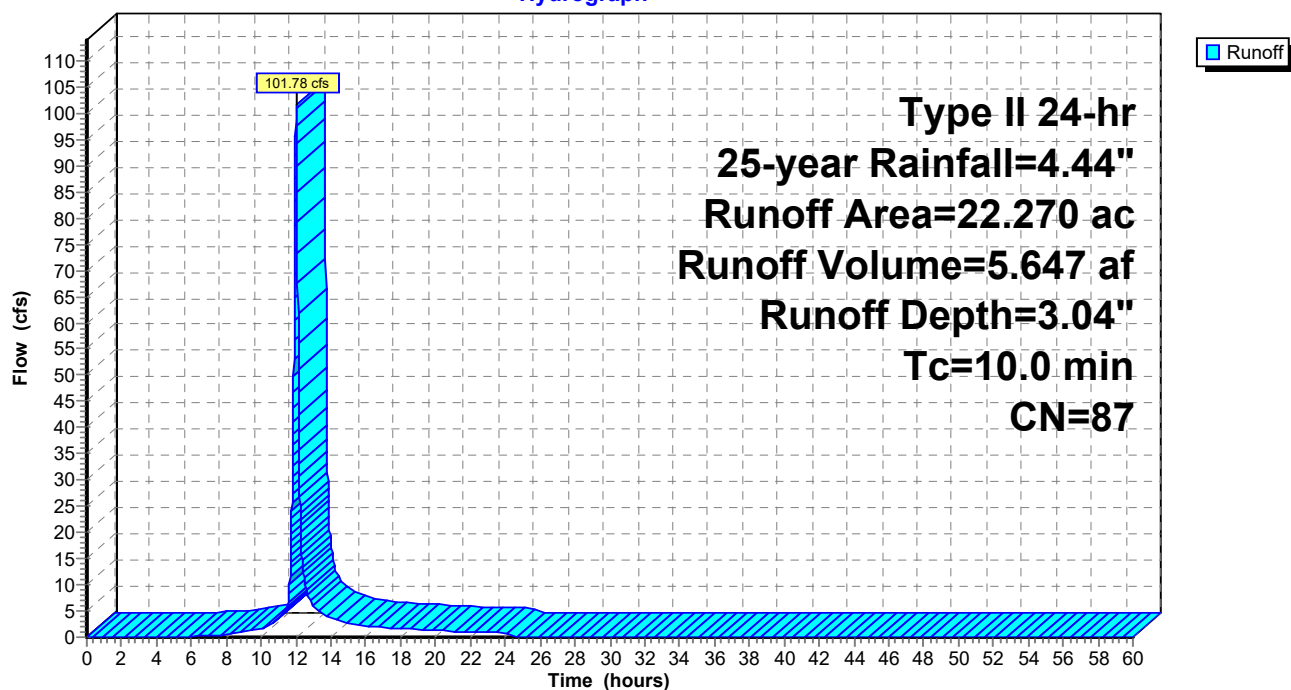
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-year Rainfall=4.44"

Area (ac)	CN	Description
* 22.270	87	
22.270		100.00% Pervious Area

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

Subcatchment 14S: Post SE 22.27ac

Hydrograph



Summary for Subcatchment 21S: Pre SW to Road 5.38ac

Runoff = 11.55 cfs @ 12.19 hrs, Volume= 1.006 af, Depth= 2.24"

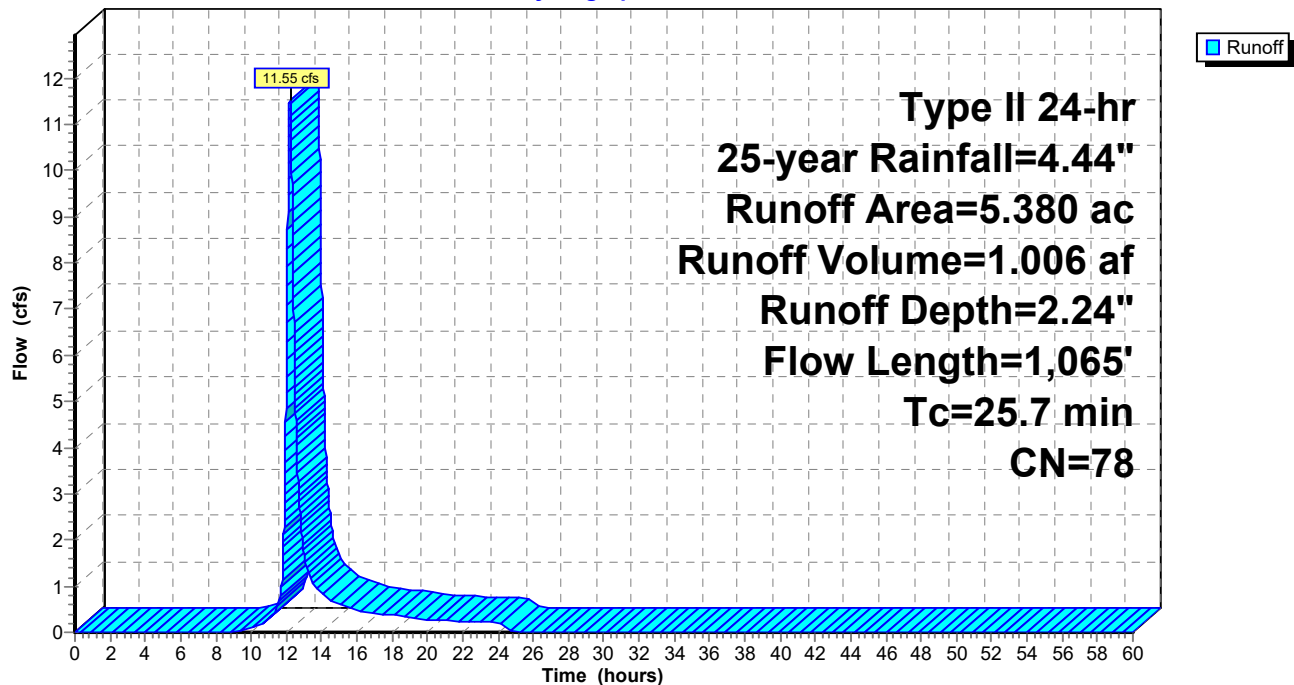
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-year Rainfall=4.44"

Area (ac)	CN	Description
5.380	78	Row crops, C&T, Good, HSG C
5.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow,
					Cultivated: Residue>20% n= 0.170 P2= 2.63"
13.8	965	0.0168	1.17		Shallow Concentrated Flow,
					Cultivated Straight Rows Kv= 9.0 fps
25.7	1,065	Total			

Subcatchment 21S: Pre SW to Road 5.38ac

Hydrograph



Summary for Subcatchment 22S: Pre-Developed Southeast 8.55ac (Phase 1)

Runoff = 19.65 cfs @ 12.16 hrs, Volume= 1.598 af, Depth= 2.24"

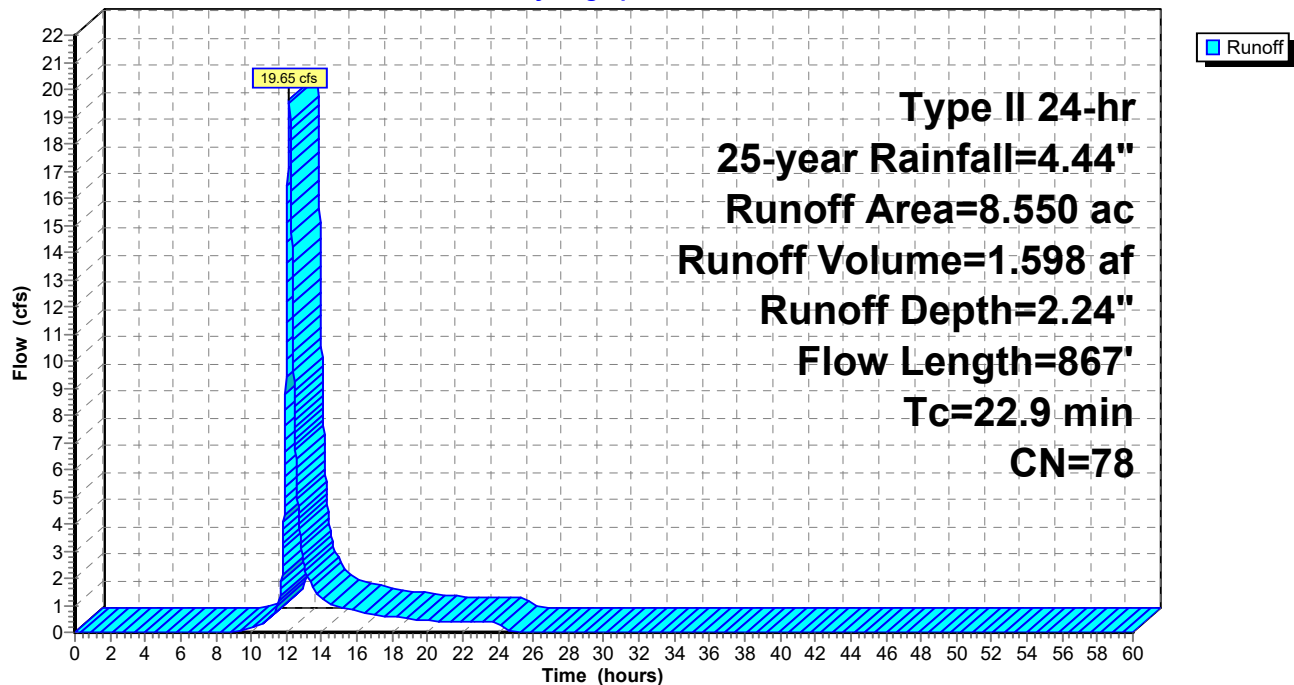
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 25-year Rainfall=4.44"

Area (ac)	CN	Description
8.550	78	Row crops, C&T, Good, HSG C
8.550		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow,
					Cultivated: Residue>20% n= 0.170 P2= 2.63"
11.0	767	0.0168	1.17		Shallow Concentrated Flow,
					Cultivated Straight Rows Kv= 9.0 fps
22.9	867	Total			

Subcatchment 22S: Pre-Developed Southeast 8.55ac (Phase 1)

Hydrograph



Summary for Pond 10P: NE Basin (Full Post)

Inflow Area = 50.890 ac, 34.12% Impervious, Inflow Depth = 3.19" for 25-year event
 Inflow = 147.74 cfs @ 12.03 hrs, Volume= 13.533 af
 Outflow = 34.05 cfs @ 12.75 hrs, Volume= 13.430 af, Atten= 77%, Lag= 43.2 min
 Primary = 34.05 cfs @ 12.75 hrs, Volume= 13.430 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,007.89' @ 12.75 hrs Surf.Area= 1.743 ac Storage= 5.531 af

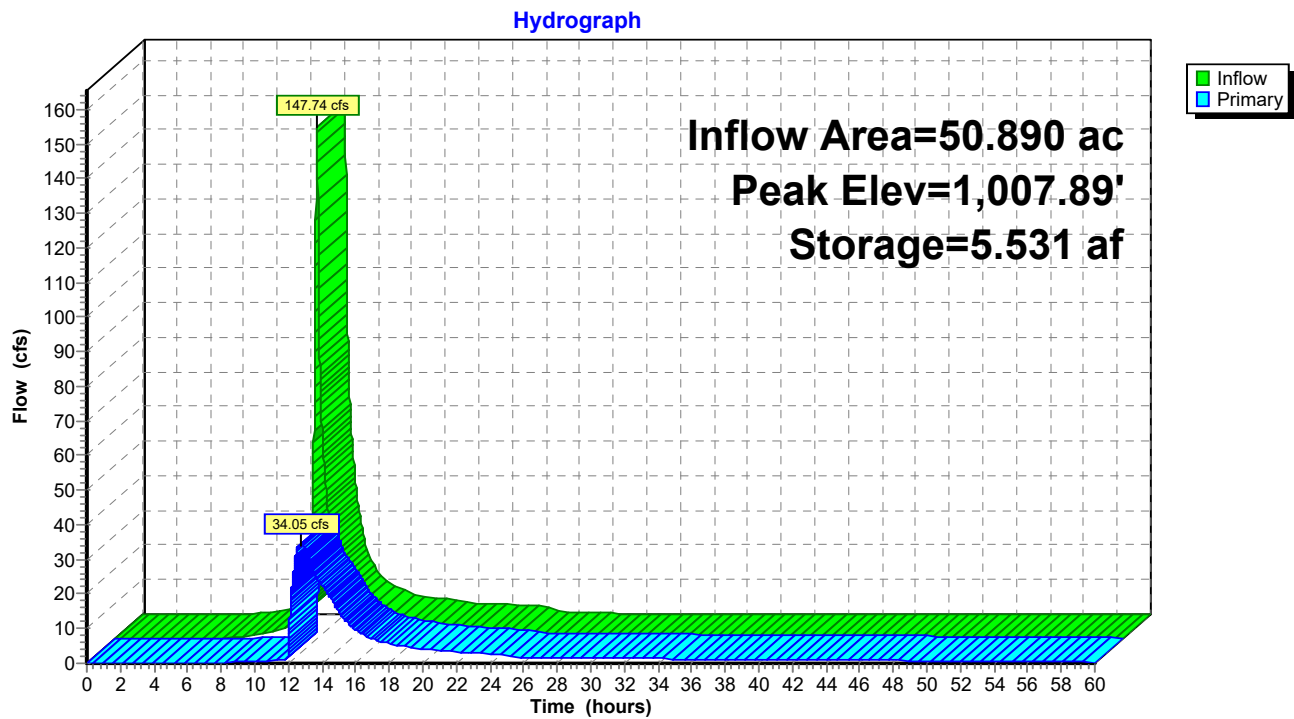
Plug-Flow detention time= 379.2 min calculated for 13.430 af (99% of inflow)
 Center-of-Mass det. time= 368.8 min (1,217.5 - 848.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,004.00'	7.574 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,004.00	1.108	0.000	0.000
1,005.00	1.267	1.187	1.187
1,006.00	1.430	1.349	2.536
1,007.00	1.595	1.512	4.049
1,008.00	1.762	1.679	5.727
1,009.00	1.931	1.846	7.574

Device	Routing	Invert	Outlet Devices
#1	Primary	1,004.00'	4.5" Horiz. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,006.00'	28.0" W x 12.0" H Vert. Window X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Primary	1,007.50'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=34.05 cfs @ 12.75 hrs HW=1,007.89' (Free Discharge)

- 1=WQ Orifice (Orifice Controls 2.10 cfs @ 9.49 fps)
- 2=Window (Orifice Controls 26.33 cfs @ 5.64 fps)
- 3=Grate (Orifice Controls 5.63 cfs @ 3.00 fps)

Pond 10P: NE Basin (Full Post)

Summary for Pond 11P: SW Basin (Full Post)

Inflow Area = 23.720 ac, 85.00% Impervious, Inflow Depth = 3.76" for 25-year event
 Inflow = 125.89 cfs @ 12.01 hrs, Volume= 7.425 af
 Outflow = 1.66 cfs @ 26.17 hrs, Volume= 5.742 af, Atten= 99%, Lag= 849.5 min
 Primary = 1.66 cfs @ 26.17 hrs, Volume= 5.742 af

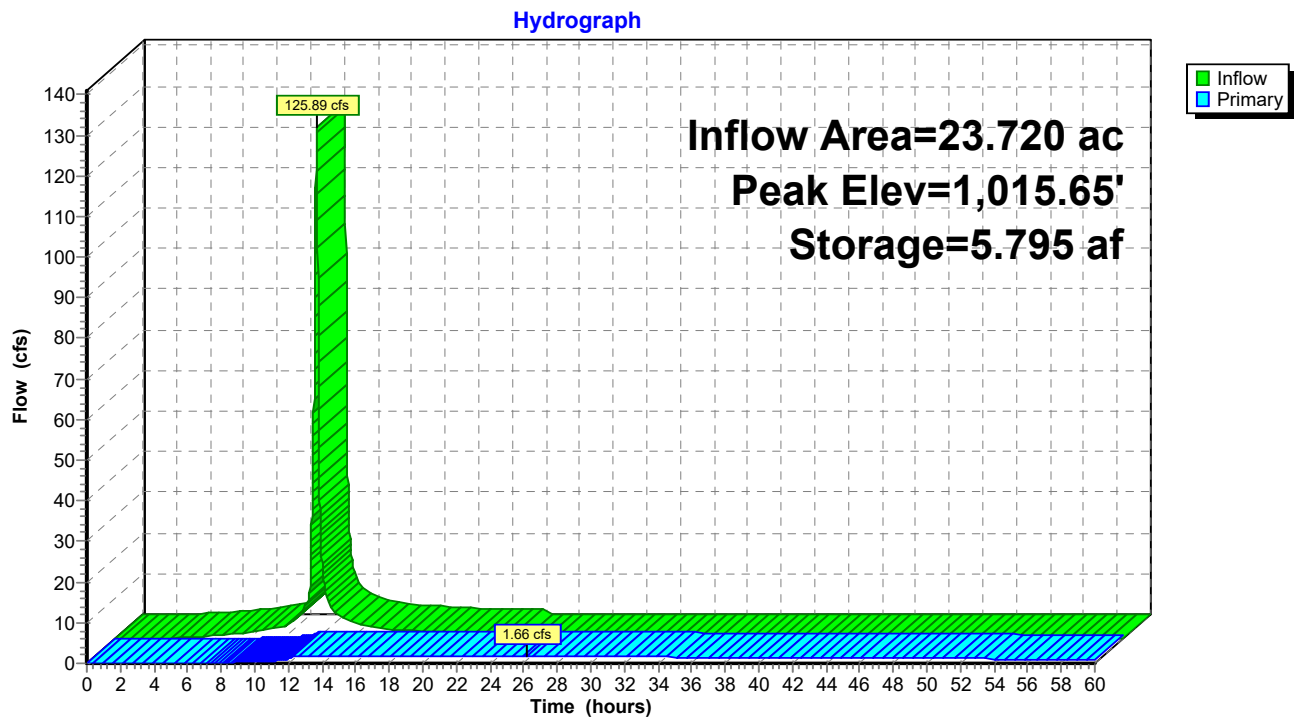
Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,015.65' @ 19.15 hrs Surf.Area= 1.909 ac Storage= 5.795 af

Plug-Flow detention time= 1,305.2 min calculated for 5.741 af (77% of inflow)
 Center-of-Mass det. time= 1,220.6 min (1,997.7 - 777.2)

Volume	Invert	Avail.Storage	Storage Description
#1	1,012.00'	10.787 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,012.00	1.275	0.000	0.000
1,013.00	1.446	1.360	1.360
1,014.00	1.619	1.532	2.893
1,015.00	1.794	1.706	4.599
1,016.00	1.972	1.883	6.482
1,017.00	2.152	2.062	8.544
1,018.00	2.334	2.243	10.787

Device	Routing	Invert	Outlet Devices
#1	Primary	1,012.00'	6.0" Vert. Orifice Plate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.66 cfs @ 26.17 hrs HW=1,015.43' TW=1,012.36' (Dynamic Tailwater)
 ↑**1=Orifice Plate** (Orifice Controls 1.66 cfs @ 8.43 fps)

Pond 11P: SW Basin (Full Post)

Summary for Pond 12P: SE Basin (Full Post)

Inflow Area = 45.990 ac, 43.84% Impervious, Inflow Depth > 2.97" for 25-year event
 Inflow = 103.08 cfs @ 12.01 hrs, Volume= 11.389 af
 Outflow = 3.83 cfs @ 15.91 hrs, Volume= 8.590 af, Atten= 96%, Lag= 234.0 min
 Primary = 3.83 cfs @ 15.91 hrs, Volume= 8.590 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,012.79' @ 15.91 hrs Surf.Area= 1.552 ac Storage= 4.134 af

Plug-Flow detention time= 830.8 min calculated for 8.590 af (75% of inflow)
 Center-of-Mass det. time= 402.8 min (1,809.8 - 1,407.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.50'	4.535 af	Basin 01 (Prismatic) Listed below (Recalc)
#2	1,009.50'	2.519 af	Basin 02 (Prismatic) Listed below (Recalc)
		7.054 af	Total Available Storage

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.591	0.000	0.000
1,010.00	0.653	0.311	0.311
1,011.00	0.777	0.715	1.026
1,012.00	0.904	0.841	1.867
1,013.00	1.034	0.969	2.836
1,014.00	1.165	1.100	3.935
1,014.50	1.232	0.599	4.535

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.375	0.000	0.000
1,010.00	0.399	0.194	0.194
1,011.00	0.449	0.424	0.618
1,012.00	0.501	0.475	1.093
1,013.00	0.556	0.528	1.621
1,014.00	0.613	0.584	2.205
1,014.50	0.642	0.314	2.519

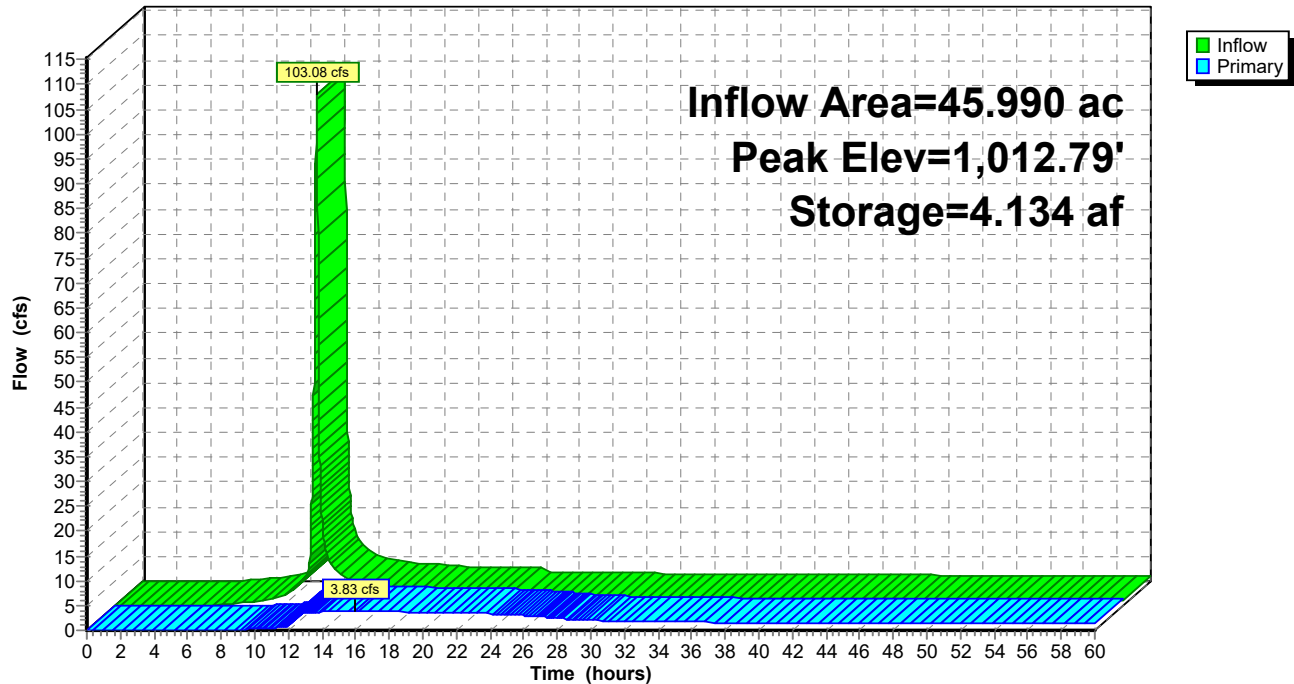
Device	Routing	Invert	Outlet Devices
#1	Primary	1,009.50'	4.0" Vert. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,012.00'	10.0" Horiz. Riser Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	1,013.75'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=3.83 cfs @ 15.91 hrs HW=1,012.79' TW=0.00' (Dynamic Tailwater)

1=WQ Orifice (Orifice Controls 1.49 cfs @ 8.52 fps)
 2=Riser Pipe (Orifice Controls 2.34 cfs @ 4.29 fps)
 3=Grate (Controls 0.00 cfs)

Pond 12P: SE Basin (Full Post)

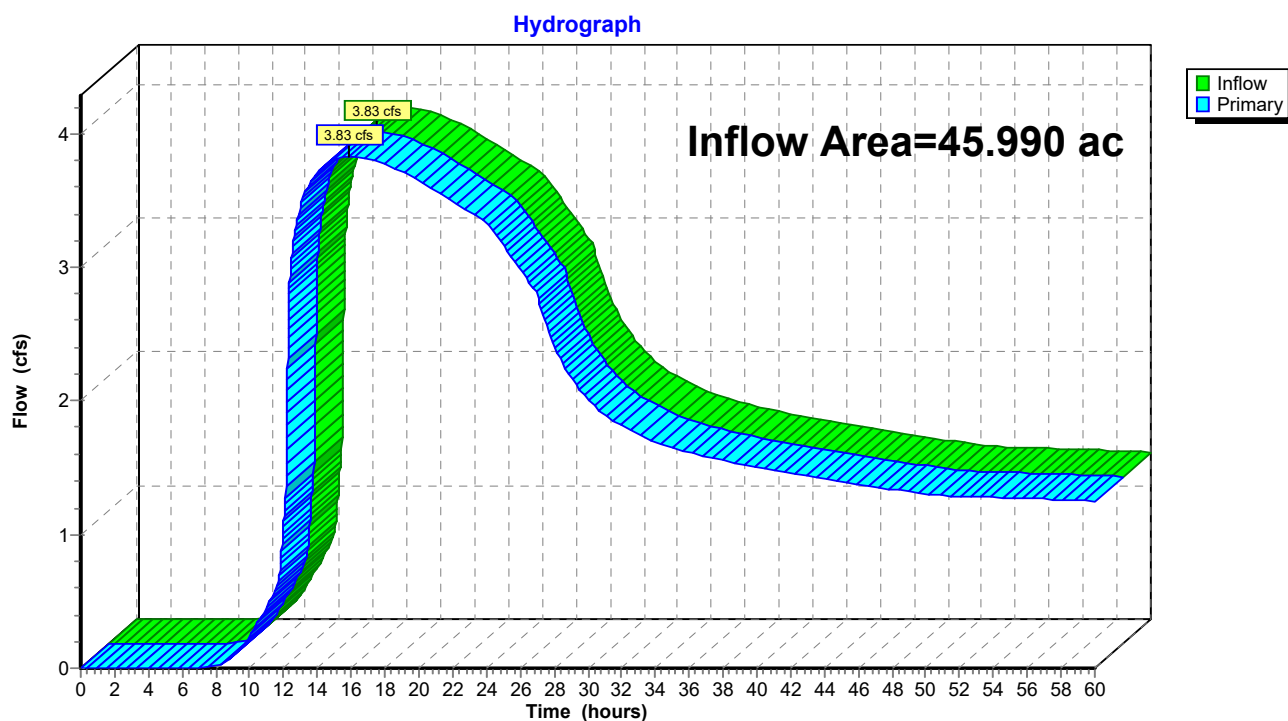
Hydrograph



Summary for Pond 13P: SE Post Out

Inflow Area = 45.990 ac, 43.84% Impervious, Inflow Depth > 2.24" for 25-year event
Inflow = 3.83 cfs @ 15.91 hrs, Volume= 8.590 af
Primary = 3.83 cfs @ 15.91 hrs, Volume= 8.590 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Pond 13P: SE Post Out

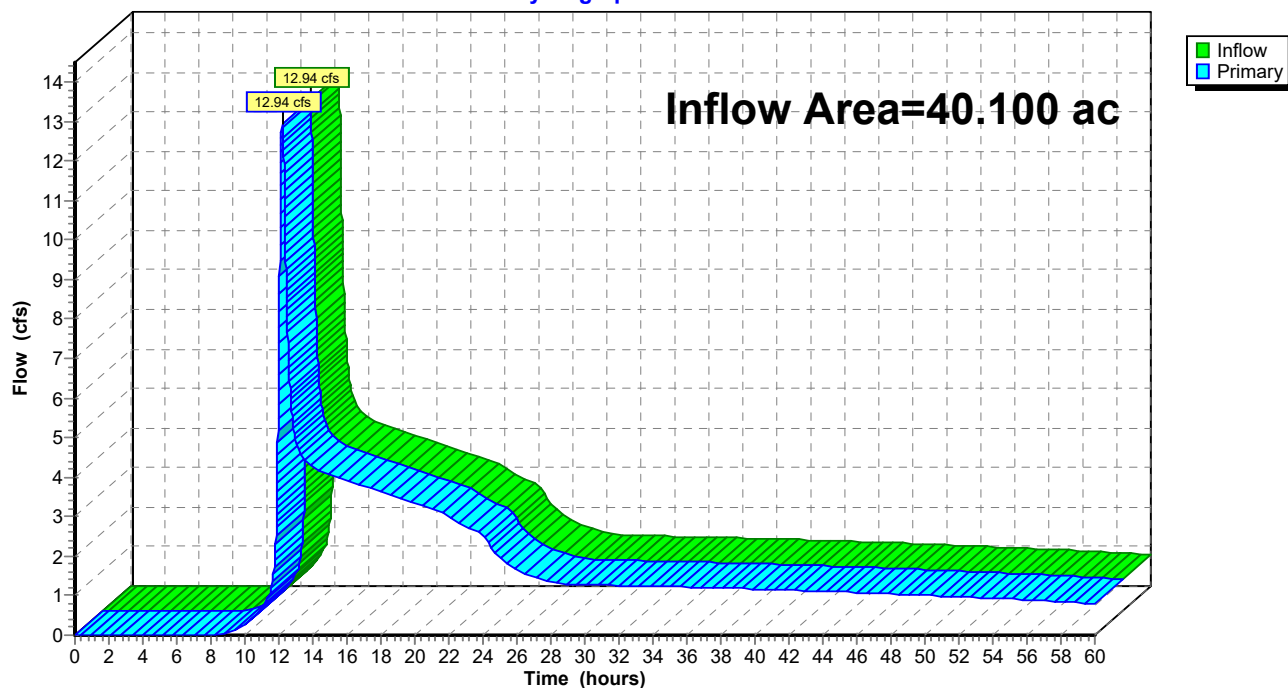
Summary for Pond 20P: SE Post Out (Phase 1)

Inflow Area = 40.100 ac, 0.00% Impervious, Inflow Depth > 2.27" for 25-year event
Inflow = 12.94 cfs @ 12.20 hrs, Volume= 7.577 af
Primary = 12.94 cfs @ 12.20 hrs, Volume= 7.577 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Pond 20P: SE Post Out (Phase 1)

Hydrograph



Summary for Pond 21P: SE Basin (Phase 1)

Inflow Area = 34.720 ac, 0.00% Impervious, Inflow Depth > 2.67" for 25-year event
 Inflow = 101.96 cfs @ 12.01 hrs, Volume= 7.724 af
 Outflow = 3.46 cfs @ 15.10 hrs, Volume= 6.571 af, Atten= 97%, Lag= 185.4 min
 Primary = 3.46 cfs @ 15.10 hrs, Volume= 6.571 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,012.59' @ 15.10 hrs Surf.Area= 1.515 ac Storage= 3.827 af

Plug-Flow detention time= 907.0 min calculated for 6.570 af (85% of inflow)
 Center-of-Mass det. time= 697.9 min (1,763.9 - 1,066.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.50'	4.535 af	Basin 01 (Prismatic) Listed below (Recalc)
#2	1,009.50'	2.519 af	Basin 02 (Prismatic) Listed below (Recalc)
		7.054 af	Total Available Storage

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.591	0.000	0.000
1,010.00	0.653	0.311	0.311
1,011.00	0.777	0.715	1.026
1,012.00	0.904	0.841	1.867
1,013.00	1.034	0.969	2.836
1,014.00	1.165	1.100	3.935
1,014.50	1.232	0.599	4.535

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.375	0.000	0.000
1,010.00	0.399	0.194	0.194
1,011.00	0.449	0.424	0.618
1,012.00	0.501	0.475	1.093
1,013.00	0.556	0.528	1.621
1,014.00	0.613	0.584	2.205
1,014.50	0.642	0.314	2.519

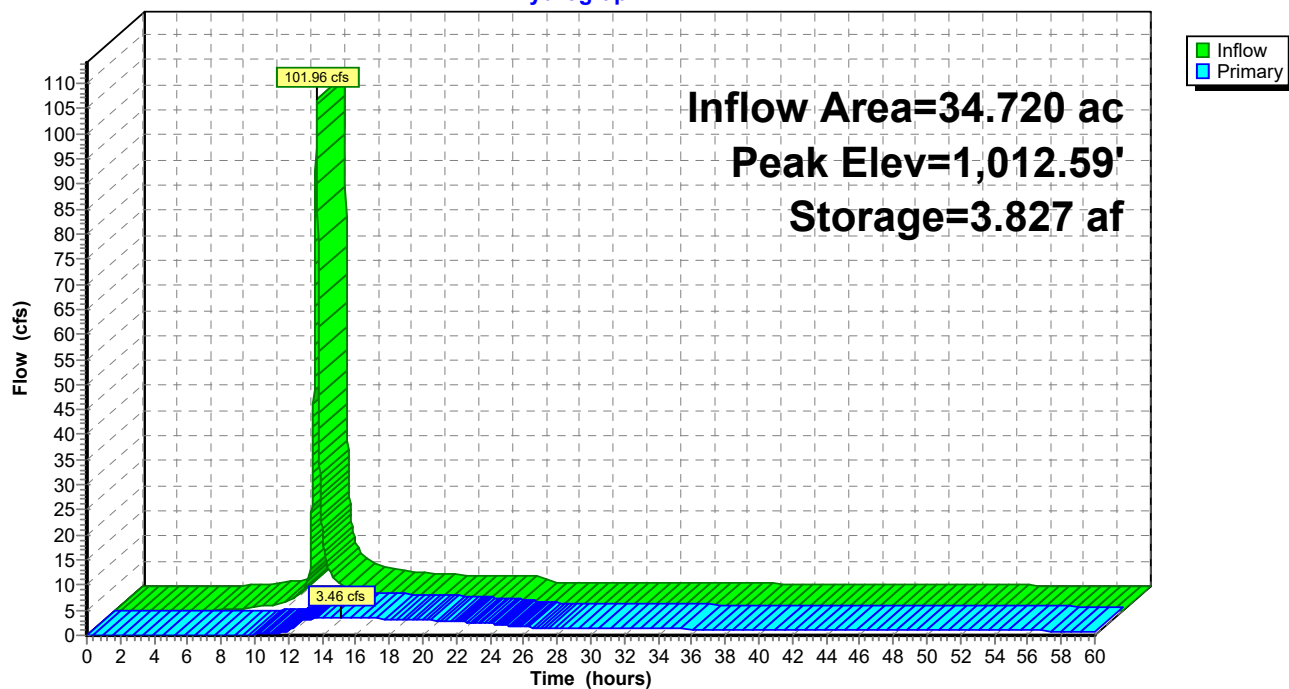
Device	Routing	Invert	Outlet Devices
#1	Primary	1,009.50'	4.0" Vert. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,012.00'	10.0" Horiz. Open Top Riser Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	1,013.75'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=3.46 cfs @ 15.10 hrs HW=1,012.59' TW=0.00' (Dynamic Tailwater)

- 1=WQ Orifice (Orifice Controls 1.44 cfs @ 8.24 fps)
- 2=Open Top Riser Pipe (Orifice Controls 2.02 cfs @ 3.71 fps)
- 3=Grate (Controls 0.00 cfs)

Pond 21P: SE Basin (Phase 1)

Hydrograph



Summary for Pond 22P: NE Basin (Phase 1)

Inflow Area = 46.240 ac, 0.00% Impervious, Inflow Depth = 2.66" for 25-year event
 Inflow = 132.95 cfs @ 12.03 hrs, Volume= 10.256 af
 Outflow = 25.18 cfs @ 12.65 hrs, Volume= 10.029 af, Atten= 81%, Lag= 37.2 min
 Primary = 25.18 cfs @ 12.65 hrs, Volume= 10.029 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,007.55' @ 12.65 hrs Surf.Area= 1.688 ac Storage= 4.959 af

Plug-Flow detention time= 441.7 min calculated for 10.028 af (98% of inflow)
 Center-of-Mass det. time= 428.6 min (1,252.7 - 824.1)

Volume	Invert	Avail.Storage	Storage Description
#1	1,004.00'	7.574 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,004.00	1.108	0.000	0.000
1,005.00	1.267	1.188	1.188
1,006.00	1.430	1.349	2.536
1,007.00	1.595	1.512	4.048
1,008.00	1.762	1.678	5.727
1,009.00	1.931	1.847	7.574

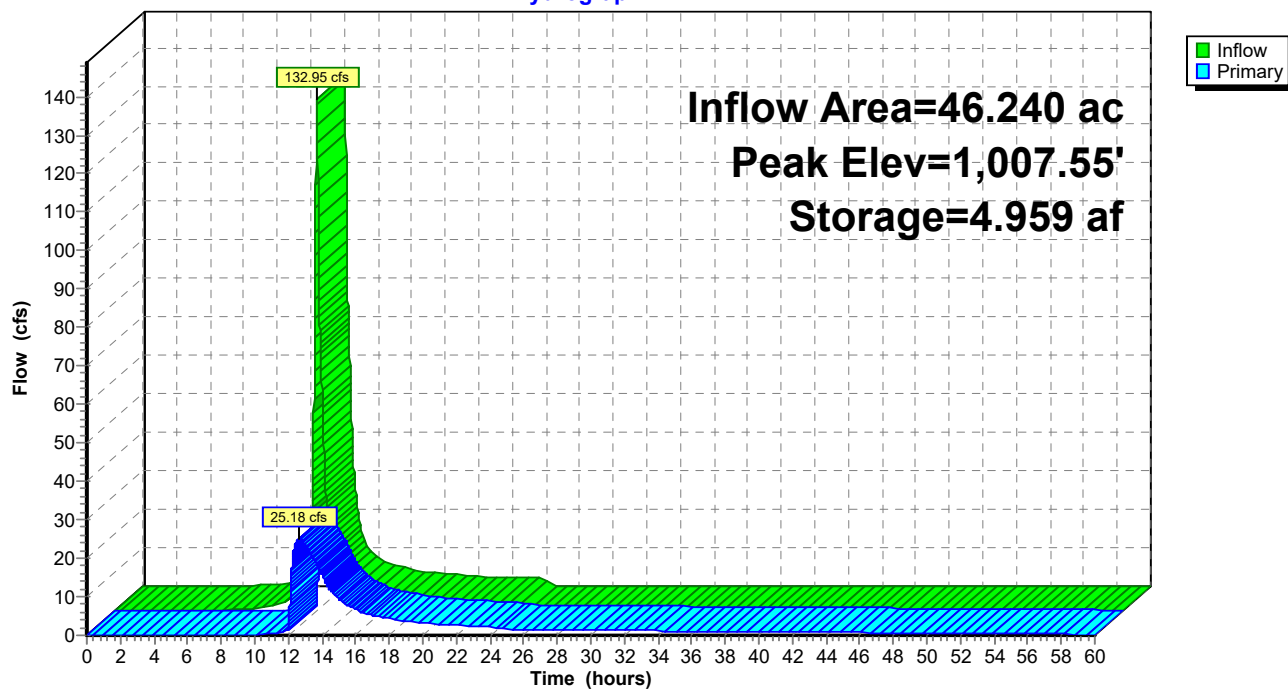
Device	Routing	Invert	Outlet Devices
#1	Primary	1,004.00'	4.5" Vert. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,006.00'	28.0" W x 12.0" H Vert. Window X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Primary	1,007.50'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=25.18 cfs @ 12.65 hrs HW=1,007.55' (Free Discharge)

- 1=WQ Orifice (Orifice Controls 1.95 cfs @ 8.84 fps)
- 2=Window (Orifice Controls 22.85 cfs @ 4.90 fps)
- 3=Grate (Weir Controls 0.38 cfs @ 0.76 fps)

Pond 22P: NE Basin (Phase 1)

Hydrograph



Summary for Pond 23P: NW Basin (Full Post)

Inflow Area = 26.710 ac, 65.00% Impervious, Inflow Depth = 3.34" for 25-year event
 Inflow = 131.24 cfs @ 12.01 hrs, Volume= 7.431 af
 Outflow = 50.63 cfs @ 12.16 hrs, Volume= 7.402 af, Atten= 61%, Lag= 8.8 min
 Primary = 50.63 cfs @ 12.16 hrs, Volume= 7.402 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,016.15' @ 12.16 hrs Surf.Area= 1.002 ac Storage= 2.722 af

Plug-Flow detention time= 91.0 min calculated for 7.402 af (100% of inflow)
 Center-of-Mass det. time= 88.5 min (883.8 - 795.4)

Volume	Invert	Avail.Storage	Storage Description
#1	1,013.00'	3.604 af	Custom Stage Data (Prismatic) Listed below (Recalc)

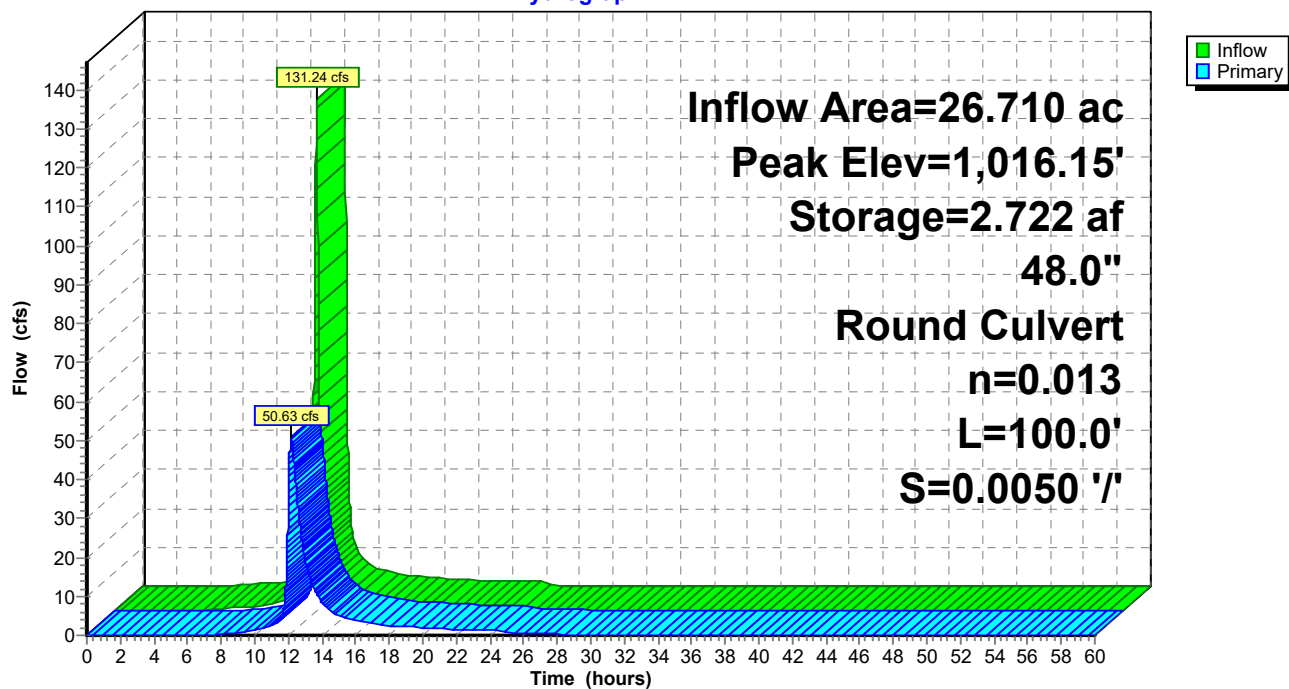
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,013.00	0.729	0.000	0.000
1,014.00	0.813	0.771	0.771
1,015.00	0.899	0.856	1.627
1,016.00	0.988	0.943	2.570
1,017.00	1.079	1.033	3.604

Device	Routing	Invert	Outlet Devices
#1	Primary	1,013.00'	48.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,013.00' / 1,012.50' S= 0.0050 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 12.57 sf

Primary OutFlow Max=50.63 cfs @ 12.16 hrs HW=1,016.15' TW=1,007.18' (Dynamic Tailwater)
 ↑ **1=Culvert** (Barrel Controls 50.63 cfs @ 6.55 fps)

Pond 23P: NW Basin (Full Post)

Hydrograph



Summary for Pond 24P: SW Basin (Phase 1)

Inflow Area = 12.450 ac, 0.00% Impervious, Inflow Depth = 2.24" for 25-year event
 Inflow = 30.05 cfs @ 12.14 hrs, Volume= 2.328 af
 Outflow = 0.89 cfs @ 23.50 hrs, Volume= 2.077 af, Atten= 97%, Lag= 681.4 min
 Primary = 0.89 cfs @ 23.50 hrs, Volume= 2.077 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,013.20' @ 18.38 hrs Surf.Area= 1.481 ac Storage= 1.657 af

Plug-Flow detention time= 983.1 min calculated for 2.077 af (89% of inflow)
 Center-of-Mass det. time= 928.8 min (1,772.2 - 843.4)

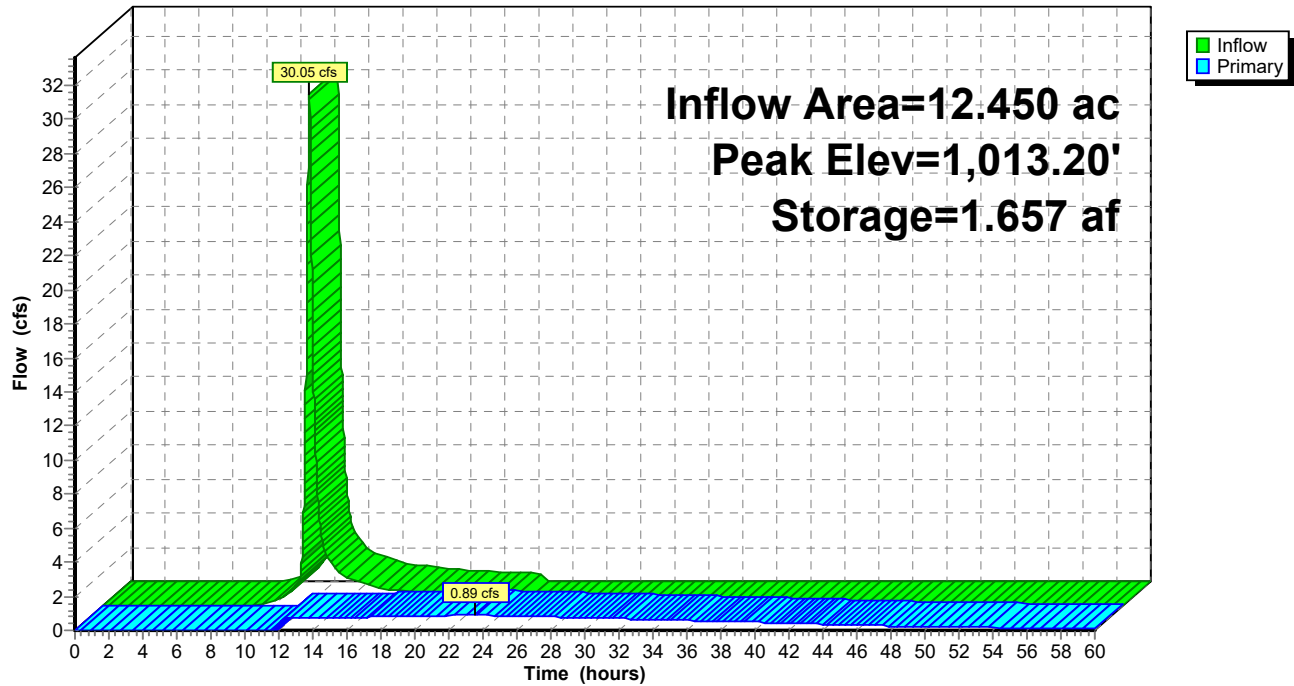
Volume	Invert	Avail.Storage	Storage Description
#1	1,012.00'	10.787 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,012.00	1.275	0.000	0.000
1,013.00	1.446	1.360	1.360
1,014.00	1.619	1.532	2.893
1,015.00	1.794	1.706	4.599
1,016.00	1.972	1.883	6.482
1,017.00	2.152	2.062	8.544
1,018.00	2.334	2.243	10.787

Device	Routing	Invert	Outlet Devices
#1	Primary	1,012.00'	6.0" Vert. Orifice Plate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.89 cfs @ 23.50 hrs HW=1,013.13' TW=1,012.25' (Dynamic Tailwater)
 ↑ **1=Orifice Plate** (Orifice Controls 0.89 cfs @ 4.52 fps)

Pond 24P: SW Basin (Phase 1)

Hydrograph



Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Pre-Developed	Runoff Area=50.830 ac 0.00% Impervious Runoff Depth=2.73" Flow Length=2,529' Tc=51.4 min CN=78 Runoff=83.02 cfs 11.558 af
Subcatchment2S: Pre-Developed	Runoff Area=14.820 ac 0.00% Impervious Runoff Depth=2.73" Flow Length=1,945' Tc=38.3 min CN=78 Runoff=29.69 cfs 3.370 af
Subcatchment3S: Post NW 26.71ac	Runoff Area=26.710 ac 65.00% Impervious Runoff Depth=3.90" Tc=10.0 min CN=90 Runoff=151.78 cfs 8.671 af
Subcatchment4S: Post NE 24.18ac	Runoff Area=24.180 ac 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=87 Runoff=129.18 cfs 7.226 af
Subcatchment5S: Post SW 23.72ac	Runoff Area=23.720 ac 85.00% Impervious Runoff Depth=4.33" Tc=10.0 min CN=94 Runoff=143.79 cfs 8.554 af
Subcatchment6S: Post SE 22.27ac	Runoff Area=22.270 ac 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=87 Runoff=118.98 cfs 6.655 af
Subcatchment11S: Pre NW 22.06ac	Runoff Area=22.060 ac 0.00% Impervious Runoff Depth=2.73" Flow Length=1,231' Tc=28.7 min CN=78 Runoff=53.75 cfs 5.016 af
Subcatchment12S: Post NE 24.18ac	Runoff Area=24.180 ac 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=87 Runoff=129.18 cfs 7.226 af
Subcatchment13S: Pre SW to Basin	Runoff Area=12.450 ac 0.00% Impervious Runoff Depth=2.73" Flow Length=650' Tc=21.1 min CN=78 Runoff=36.63 cfs 2.831 af
Subcatchment14S: Post SE 22.27ac	Runoff Area=22.270 ac 0.00% Impervious Runoff Depth=3.59" Tc=10.0 min CN=87 Runoff=118.98 cfs 6.655 af
Subcatchment21S: Pre SW to Road 5.38ac	Runoff Area=5.380 ac 0.00% Impervious Runoff Depth=2.73" Flow Length=1,065' Tc=25.7 min CN=78 Runoff=14.09 cfs 1.223 af
Subcatchment22S: Pre-Developed	Runoff Area=8.550 ac 0.00% Impervious Runoff Depth=2.73" Flow Length=867' Tc=22.9 min CN=78 Runoff=23.96 cfs 1.944 af
Pond 10P: NE Basin (Full Post)	Peak Elev=1,008.38' Storage=6.407 af Inflow=174.19 cfs 15.868 af Outflow=41.40 cfs 15.760 af
Pond 11P: SW Basin (Full Post)	Peak Elev=1,016.16' Storage=6.805 af Inflow=143.79 cfs 8.554 af Outflow=1.74 cfs 6.257 af
Pond 12P: SE Basin (Full Post)	Peak Elev=1,013.20' Storage=4.780 af Inflow=120.39 cfs 12.913 af Outflow=4.46 cfs 9.965 af
Pond 13P: SE Post Out	Inflow=4.46 cfs 9.965 af Primary=4.46 cfs 9.965 af

Pond 20P: SE Post Out (Phase 1)

Inflow=17.25 cfs 8.921 af

Primary=17.25 cfs 8.921 af

Pond 21P: SE Basin (Phase 1)

Peak Elev=1,012.98' Storage=4.425 af Inflow=119.27 cfs 9.164 af

Outflow=4.13 cfs 7.698 af

Pond 22P: NE Basin (Phase 1)

Peak Elev=1,008.00' Storage=5.723 af Inflow=157.18 cfs 12.242 af

Outflow=35.82 cfs 12.012 af

Pond 23P: NW Basin (Full Post)

Peak Elev=1,016.52' Storage=3.096 af Inflow=151.78 cfs 8.671 af

48.0" Round Culvert n=0.013 L=100.0' S=0.0050 '/' Outflow=60.07 cfs 8.642 af

Pond 24P: SW Basin (Phase 1)

Peak Elev=1,013.53' Storage=2.144 af Inflow=36.63 cfs 2.831 af

Outflow=1.00 cfs 2.509 af

Total Runoff Area = 257.420 ac Runoff Volume = 70.931 af Average Runoff Depth = 3.31"**85.42% Pervious = 219.896 ac 14.58% Impervious = 37.524 ac**

Summary for Subcatchment 1S: Pre-Developed Northeast 50.83ac

Runoff = 83.02 cfs @ 12.51 hrs, Volume= 11.558 af, Depth= 2.73"

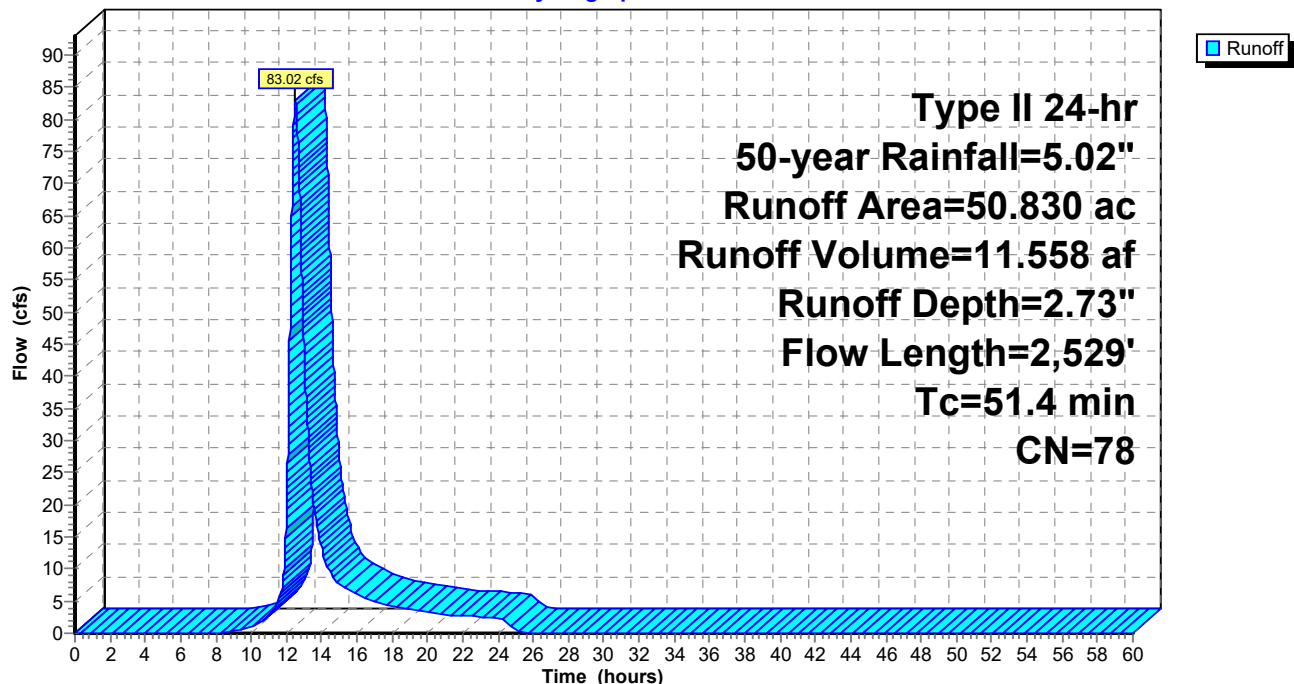
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-year Rainfall=5.02"

Area (ac)	CN	Description
50.830	78	Row crops, C&T, Good, HSG C
50.830		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.63"
6.2	633	0.0363	1.71		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
33.3	1,796	0.0100	0.90		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
51.4	2,529	Total			

Subcatchment 1S: Pre-Developed Northeast 50.83ac

Hydrograph



Summary for Subcatchment 2S: Pre-Developed Southeast 14.82ac (Post Full)

Runoff = 29.69 cfs @ 12.34 hrs, Volume= 3.370 af, Depth= 2.73"

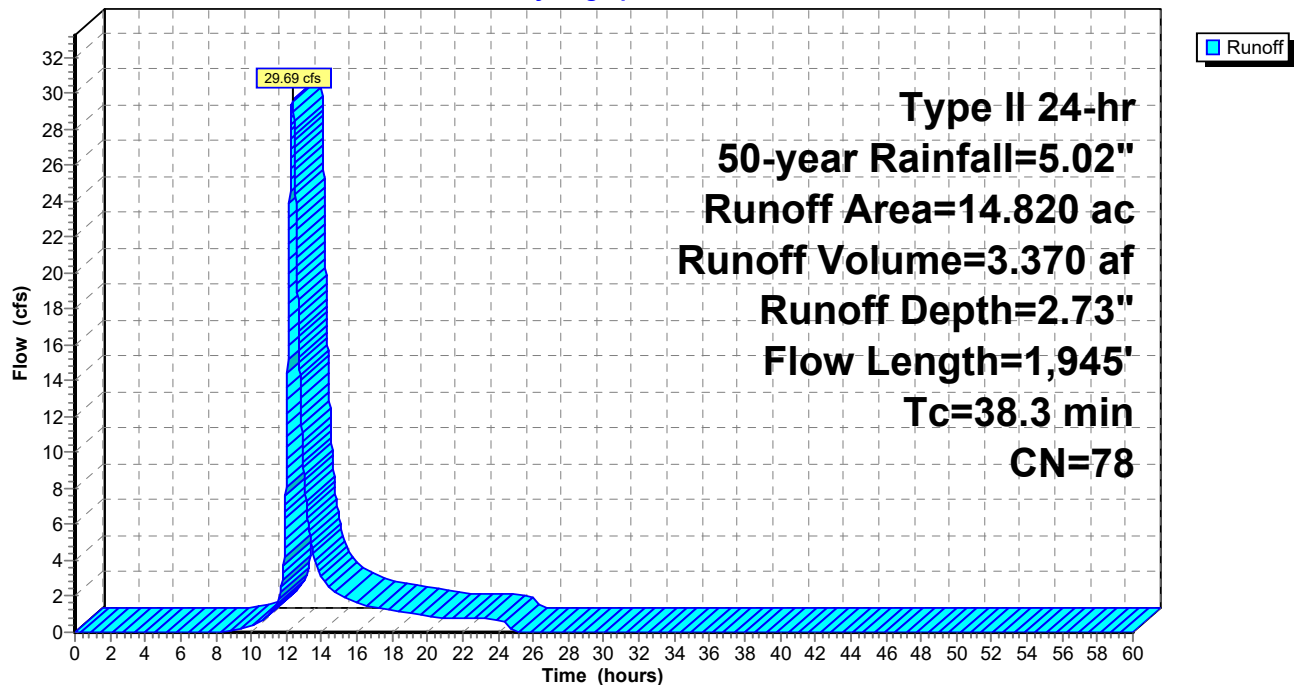
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-year Rainfall=5.02"

Area (ac)	CN	Description
14.820	78	Row crops, C&T, Good, HSG C
14.820		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.63"
26.4	1,845	0.0168	1.17		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
38.3	1,945	Total			

Subcatchment 2S: Pre-Developed Southeast 14.82ac (Post Full)

Hydrograph



Summary for Subcatchment 3S: Post NW 26.71ac

Runoff = 151.78 cfs @ 12.01 hrs, Volume= 8.671 af, Depth= 3.90"

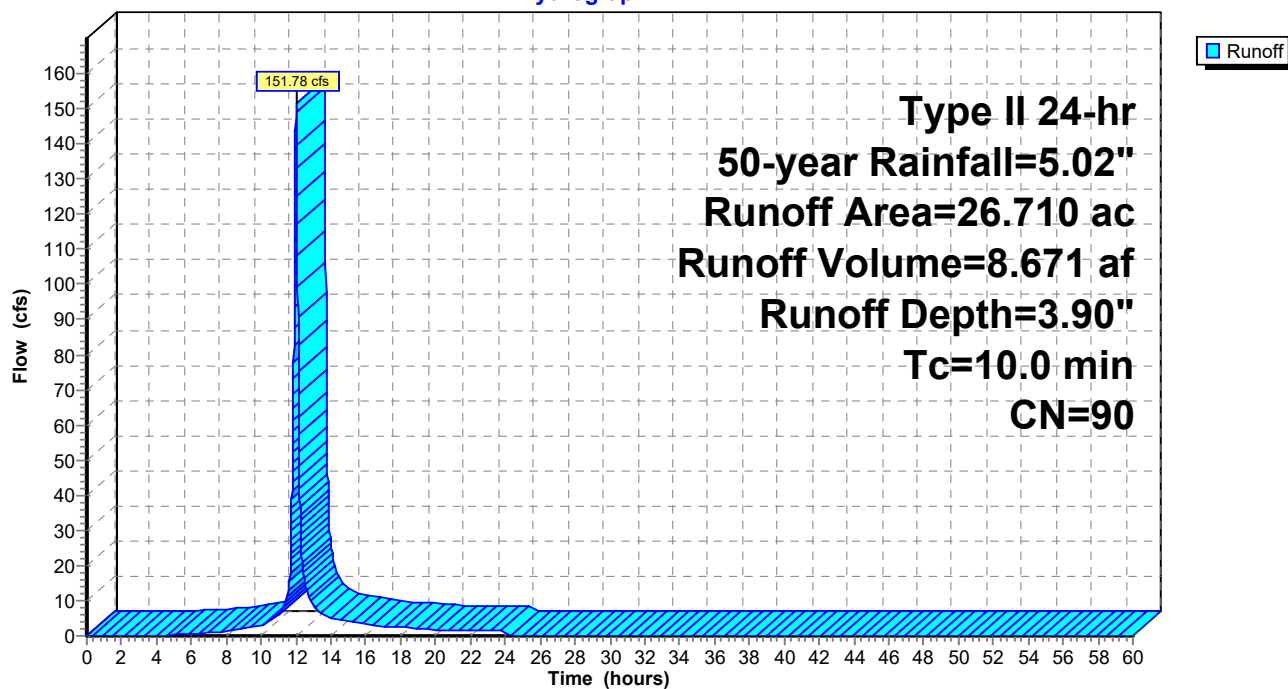
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-year Rainfall=5.02"

Area (ac)	CN	Description
26.710	90	1/8 acre lots, 65% imp, HSG C
9.349		35.00% Pervious Area
17.362		65.00% Impervious Area

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

Subcatchment 3S: Post NW 26.71ac

Hydrograph



Summary for Subcatchment 4S: Post NE 24.18ac

Runoff = 129.18 cfs @ 12.01 hrs, Volume= 7.226 af, Depth= 3.59"

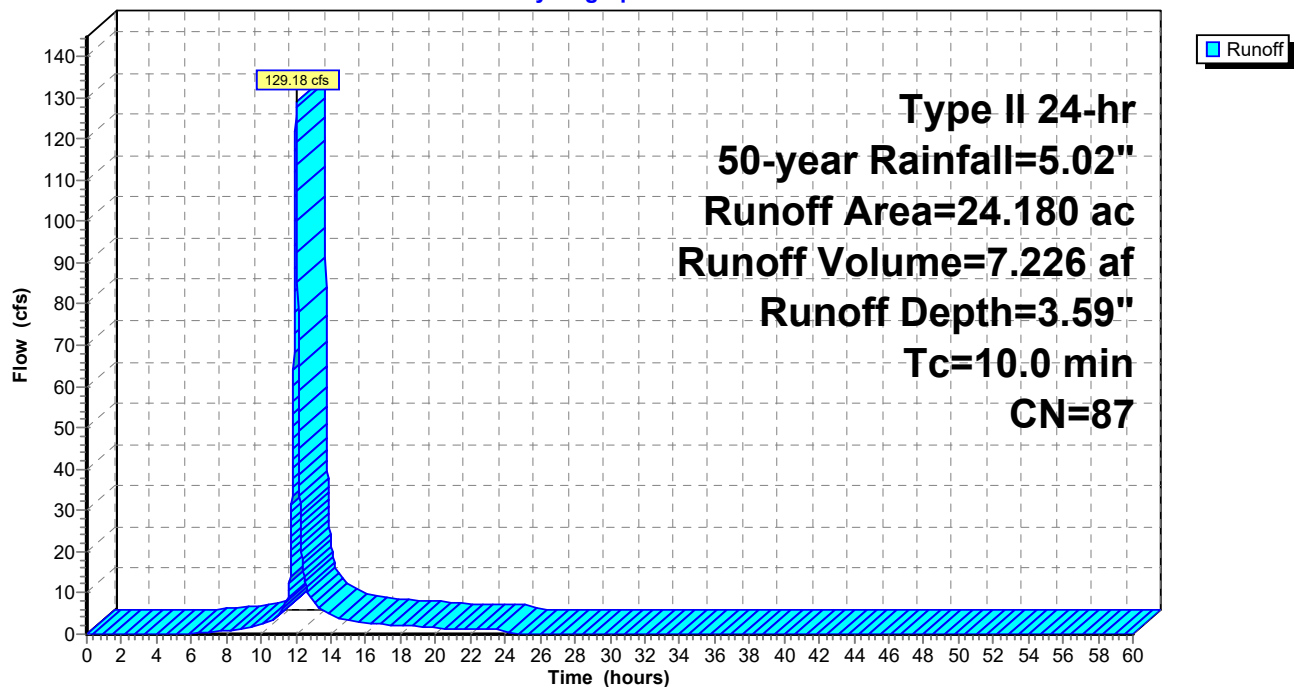
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-year Rainfall=5.02"

Area (ac)	CN	Description
* 24.180	87	
24.180		100.00% Pervious Area

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

Subcatchment 4S: Post NE 24.18ac

Hydrograph



Summary for Subcatchment 5S: Post SW 23.72ac

Runoff = 143.79 cfs @ 12.01 hrs, Volume= 8.554 af, Depth= 4.33"

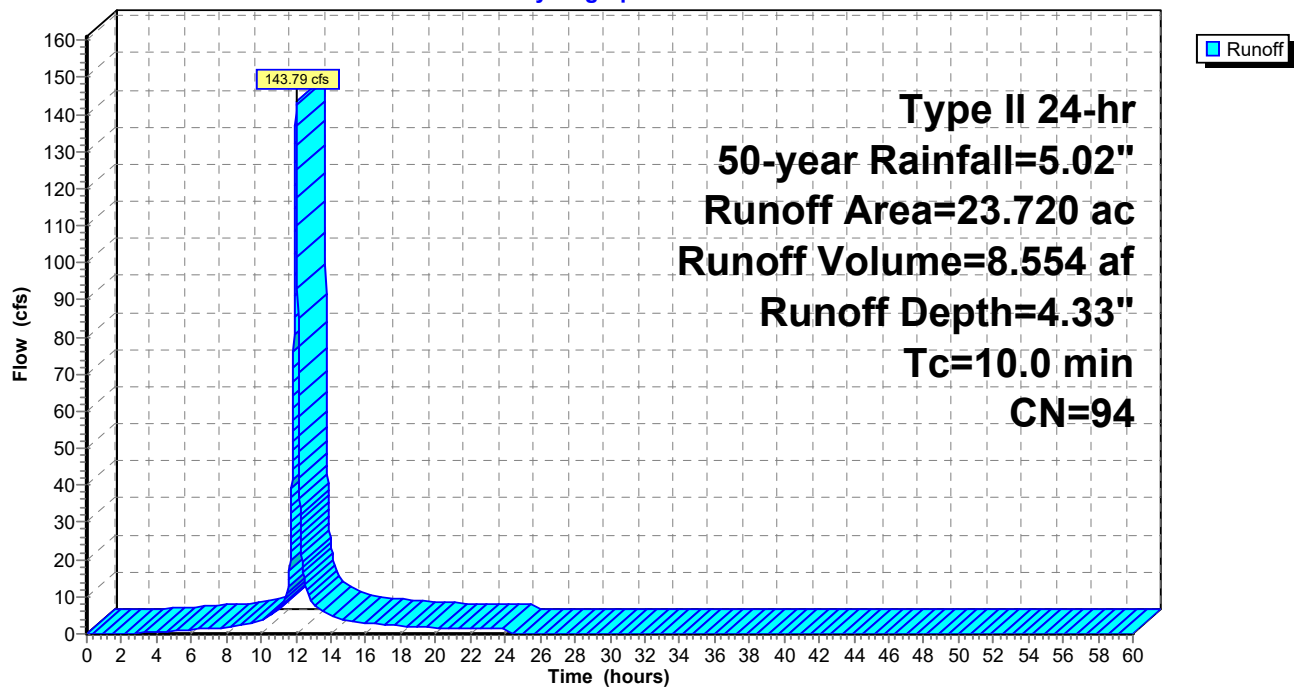
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-year Rainfall=5.02"

Area (ac)	CN	Description
23.720	94	Urban commercial, 85% imp, HSG C
3.558		15.00% Pervious Area
20.162		85.00% Impervious Area

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

Subcatchment 5S: Post SW 23.72ac

Hydrograph



Summary for Subcatchment 6S: Post SE 22.27ac

Runoff = 118.98 cfs @ 12.01 hrs, Volume= 6.655 af, Depth= 3.59"

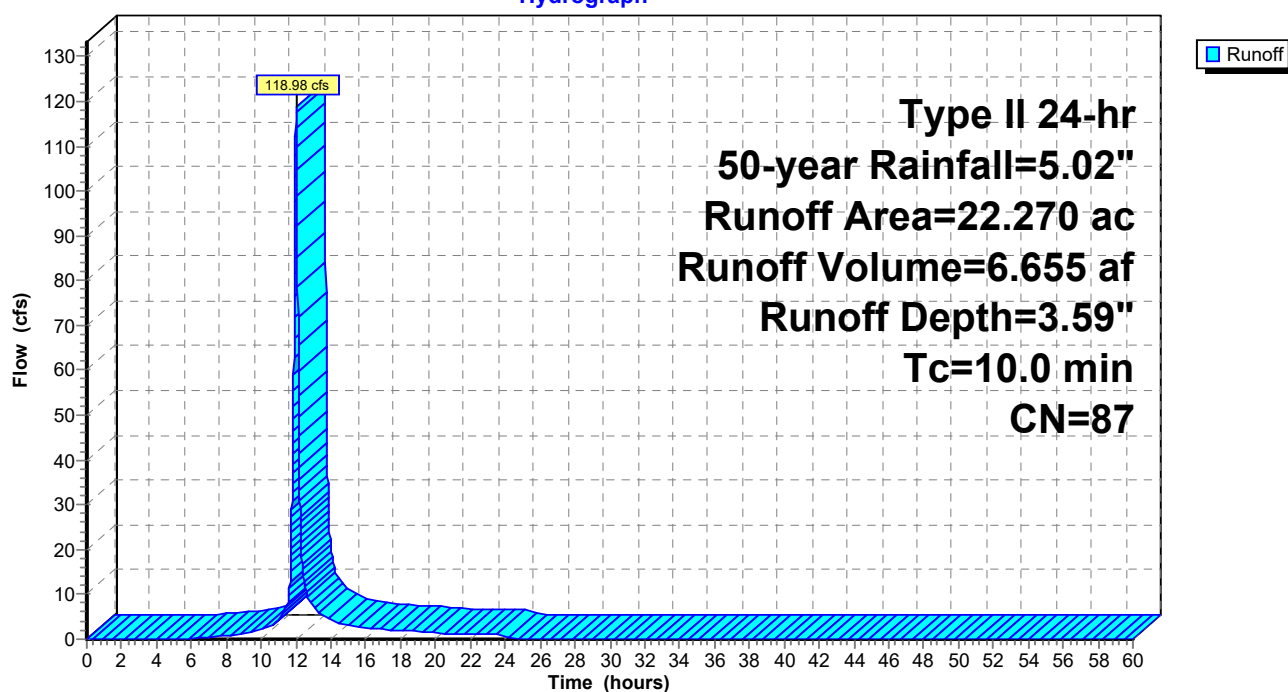
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-year Rainfall=5.02"

Area (ac)	CN	Description
* 22.270	87	
22.270		100.00% Pervious Area

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

Subcatchment 6S: Post SE 22.27ac

Hydrograph



Summary for Subcatchment 11S: Pre NW 22.06ac

Runoff = 53.75 cfs @ 12.22 hrs, Volume= 5.016 af, Depth= 2.73"

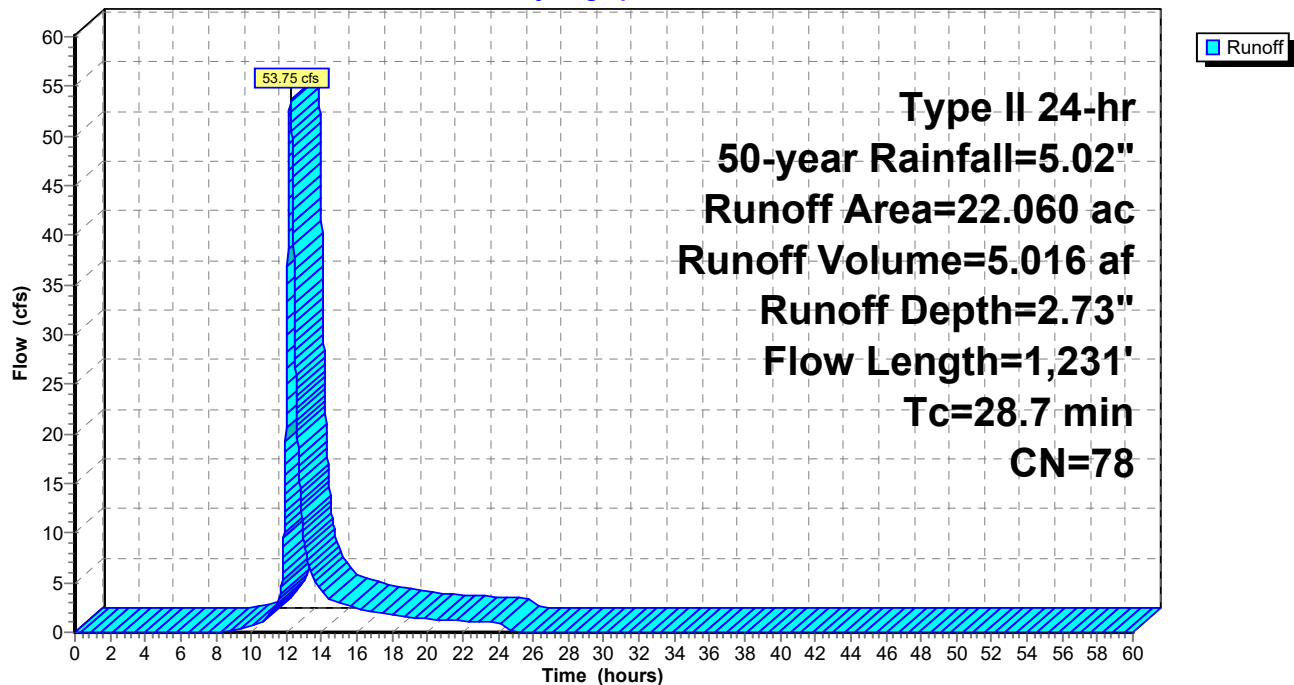
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-year Rainfall=5.02"

Area (ac)	CN	Description
22.060	78	Row crops, C&T, Good, HSG C
22.060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	100	0.0100	0.11		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.63"
12.9	1,131	0.0265	1.47		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
28.7	1,231	Total			

Subcatchment 11S: Pre NW 22.06ac

Hydrograph



Summary for Subcatchment 12S: Post NE 24.18ac

Runoff = 129.18 cfs @ 12.01 hrs, Volume= 7.226 af, Depth= 3.59"

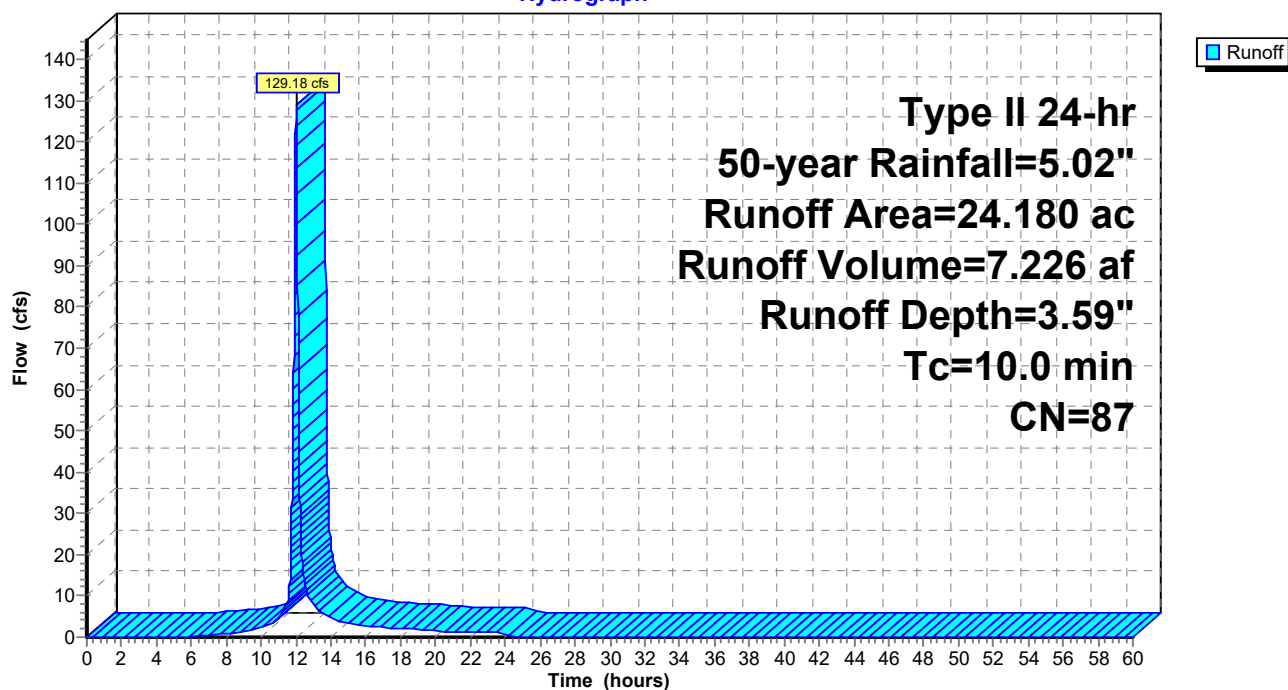
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-year Rainfall=5.02"

Area (ac)	CN	Description
* 24.180	87	
24.180		100.00% Pervious Area

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

Subcatchment 12S: Post NE 24.18ac

Hydrograph



Summary for Subcatchment 13S: Pre SW to Basin 12.45ac

Runoff = 36.63 cfs @ 12.14 hrs, Volume= 2.831 af, Depth= 2.73"

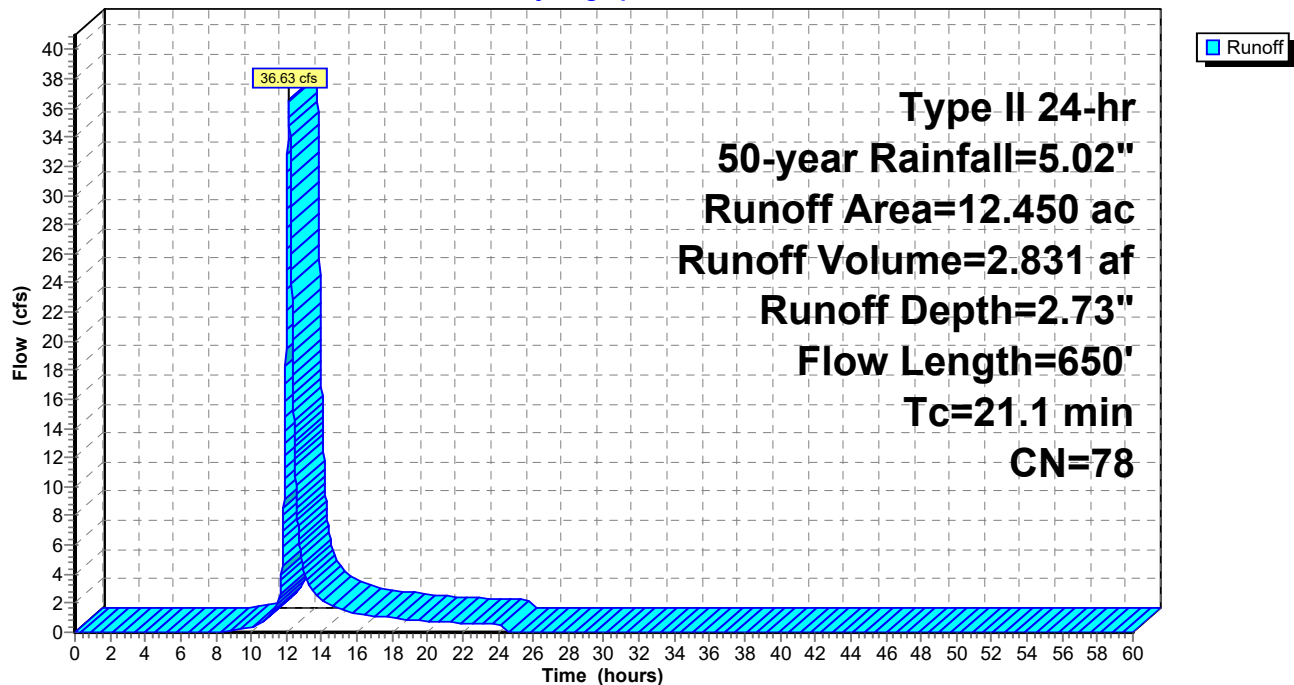
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-year Rainfall=5.02"

Area (ac)	CN	Description
12.450	78	Row crops, C&T, Good, HSG C
12.450		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	100	0.0100	0.11		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.63"
5.3	550	0.0364	1.72		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
21.1	650	Total			

Subcatchment 13S: Pre SW to Basin 12.45ac

Hydrograph



Summary for Subcatchment 14S: Post SE 22.27ac

Runoff = 118.98 cfs @ 12.01 hrs, Volume= 6.655 af, Depth= 3.59"

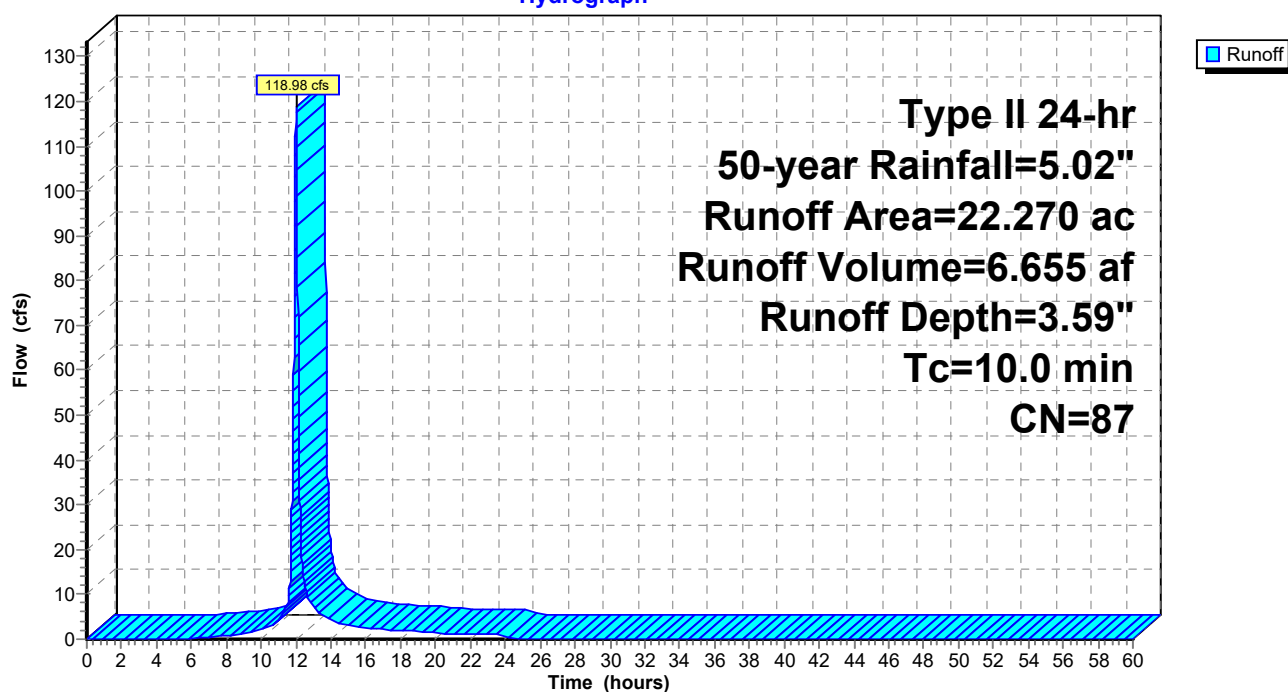
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-year Rainfall=5.02"

Area (ac)	CN	Description
* 22.270	87	
22.270		100.00% Pervious Area

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

Subcatchment 14S: Post SE 22.27ac

Hydrograph



Summary for Subcatchment 21S: Pre SW to Road 5.38ac

Runoff = 14.09 cfs @ 12.19 hrs, Volume= 1.223 af, Depth= 2.73"

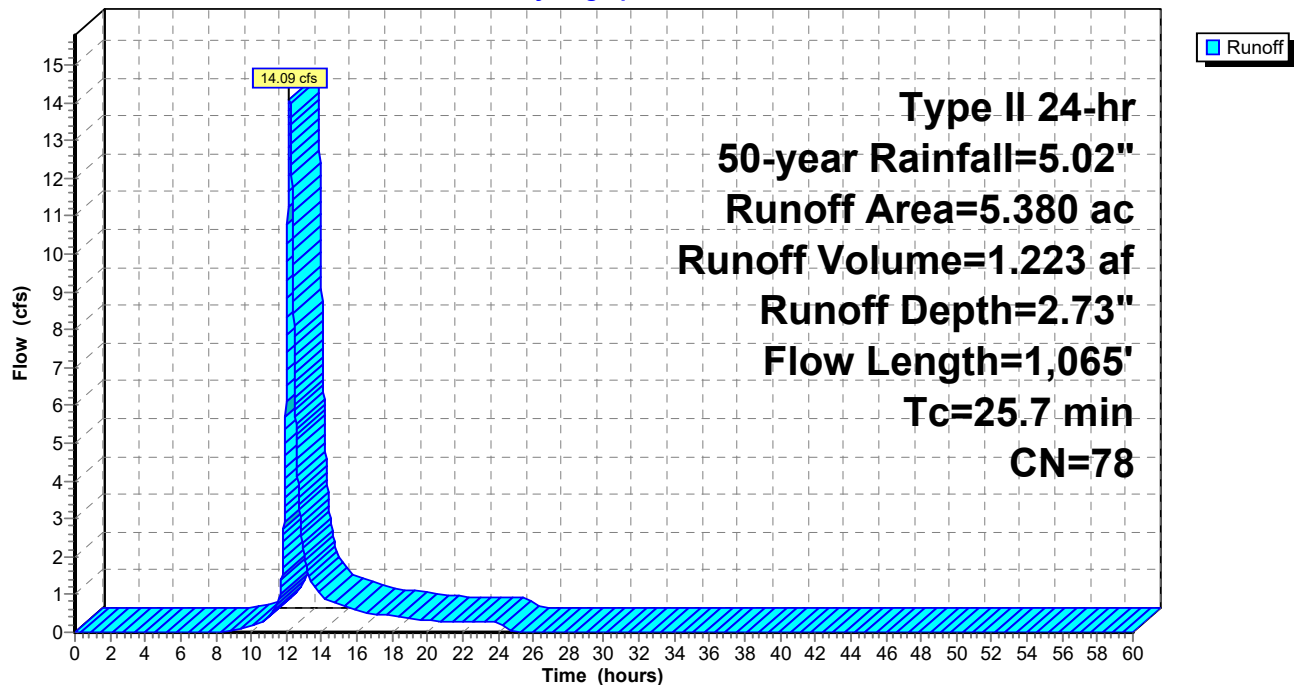
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-year Rainfall=5.02"

Area (ac)	CN	Description
5.380	78	Row crops, C&T, Good, HSG C
5.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow,
					Cultivated: Residue>20% n= 0.170 P2= 2.63"
13.8	965	0.0168	1.17		Shallow Concentrated Flow,
					Cultivated Straight Rows Kv= 9.0 fps
25.7	1,065	Total			

Subcatchment 21S: Pre SW to Road 5.38ac

Hydrograph



Summary for Subcatchment 22S: Pre-Developed Southeast 8.55ac (Phase 1)

Runoff = 23.96 cfs @ 12.16 hrs, Volume= 1.944 af, Depth= 2.73"

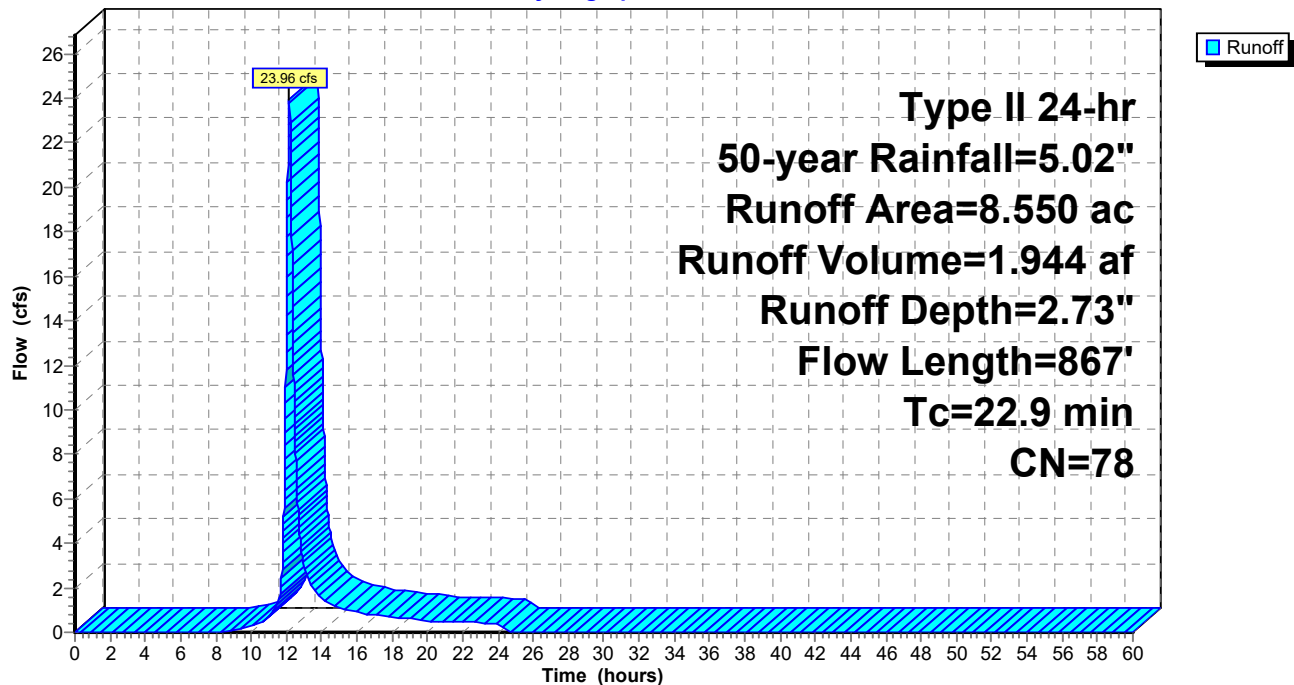
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-year Rainfall=5.02"

Area (ac)	CN	Description
8.550	78	Row crops, C&T, Good, HSG C
8.550		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow,
					Cultivated: Residue>20% n= 0.170 P2= 2.63"
11.0	767	0.0168	1.17		Shallow Concentrated Flow,
					Cultivated Straight Rows Kv= 9.0 fps
22.9	867	Total			

Subcatchment 22S: Pre-Developed Southeast 8.55ac (Phase 1)

Hydrograph



Summary for Pond 10P: NE Basin (Full Post)

Inflow Area = 50.890 ac, 34.12% Impervious, Inflow Depth = 3.74" for 50-year event
 Inflow = 174.19 cfs @ 12.03 hrs, Volume= 15.868 af
 Outflow = 41.40 cfs @ 12.71 hrs, Volume= 15.760 af, Atten= 76%, Lag= 40.9 min
 Primary = 41.40 cfs @ 12.71 hrs, Volume= 15.760 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,008.38' @ 12.71 hrs Surf.Area= 1.826 ac Storage= 6.407 af

Plug-Flow detention time= 337.7 min calculated for 15.760 af (99% of inflow)
 Center-of-Mass det. time= 328.5 min (1,169.7 - 841.2)

Volume	Invert	Avail.Storage	Storage Description
#1	1,004.00'	7.574 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,004.00	1.108	0.000	0.000
1,005.00	1.267	1.187	1.187
1,006.00	1.430	1.349	2.536
1,007.00	1.595	1.512	4.049
1,008.00	1.762	1.679	5.727
1,009.00	1.931	1.846	7.574

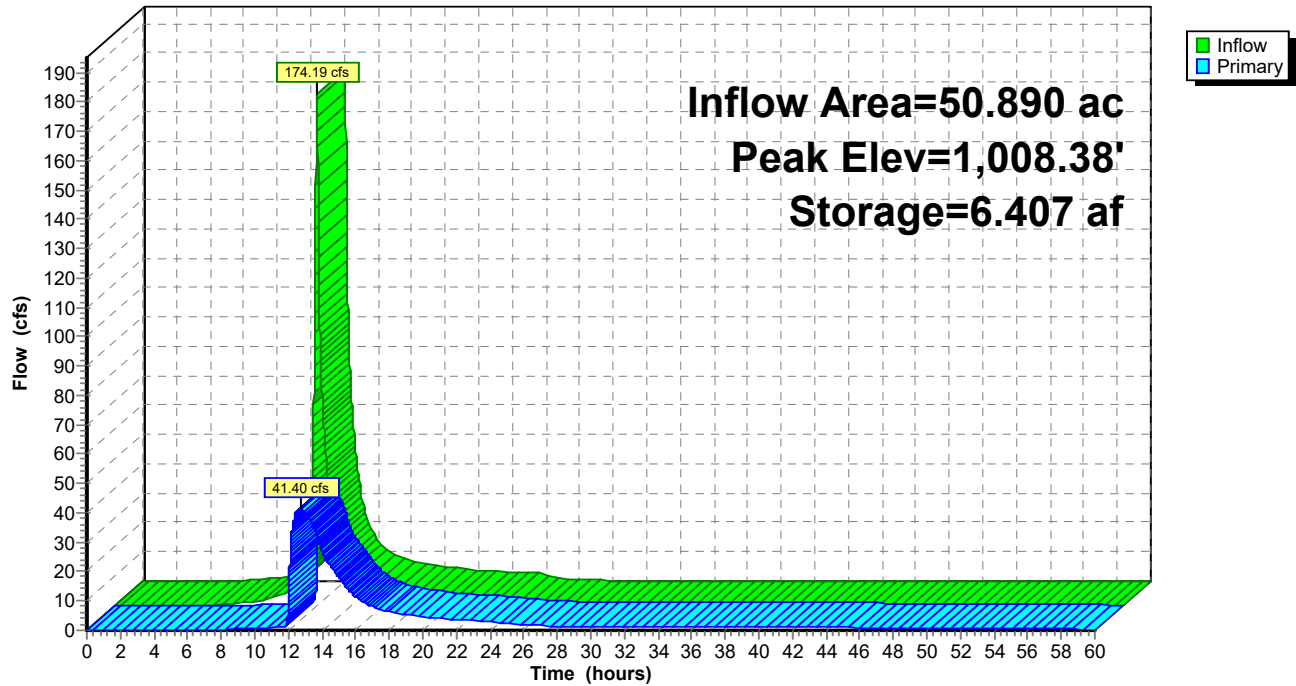
Device	Routing	Invert	Outlet Devices
#1	Primary	1,004.00'	4.5" Horiz. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,006.00'	28.0" W x 12.0" H Vert. Window X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Primary	1,007.50'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=41.40 cfs @ 12.71 hrs HW=1,008.38' (Free Discharge)

- 1=WQ Orifice (Orifice Controls 2.23 cfs @ 10.08 fps)
- 2=Window (Orifice Controls 30.71 cfs @ 6.58 fps)
- 3=Grate (Orifice Controls 8.46 cfs @ 4.51 fps)

Pond 10P: NE Basin (Full Post)

Hydrograph



Summary for Pond 11P: SW Basin (Full Post)

Inflow Area = 23.720 ac, 85.00% Impervious, Inflow Depth = 4.33" for 50-year event
 Inflow = 143.79 cfs @ 12.01 hrs, Volume= 8.554 af
 Outflow = 1.74 cfs @ 28.40 hrs, Volume= 6.257 af, Atten= 99%, Lag= 983.3 min
 Primary = 1.74 cfs @ 28.40 hrs, Volume= 6.257 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,016.16' @ 19.72 hrs Surf.Area= 2.001 ac Storage= 6.805 af

Plug-Flow detention time= 1,346.2 min calculated for 6.257 af (73% of inflow)
 Center-of-Mass det. time= 1,254.9 min (2,028.4 - 773.6)

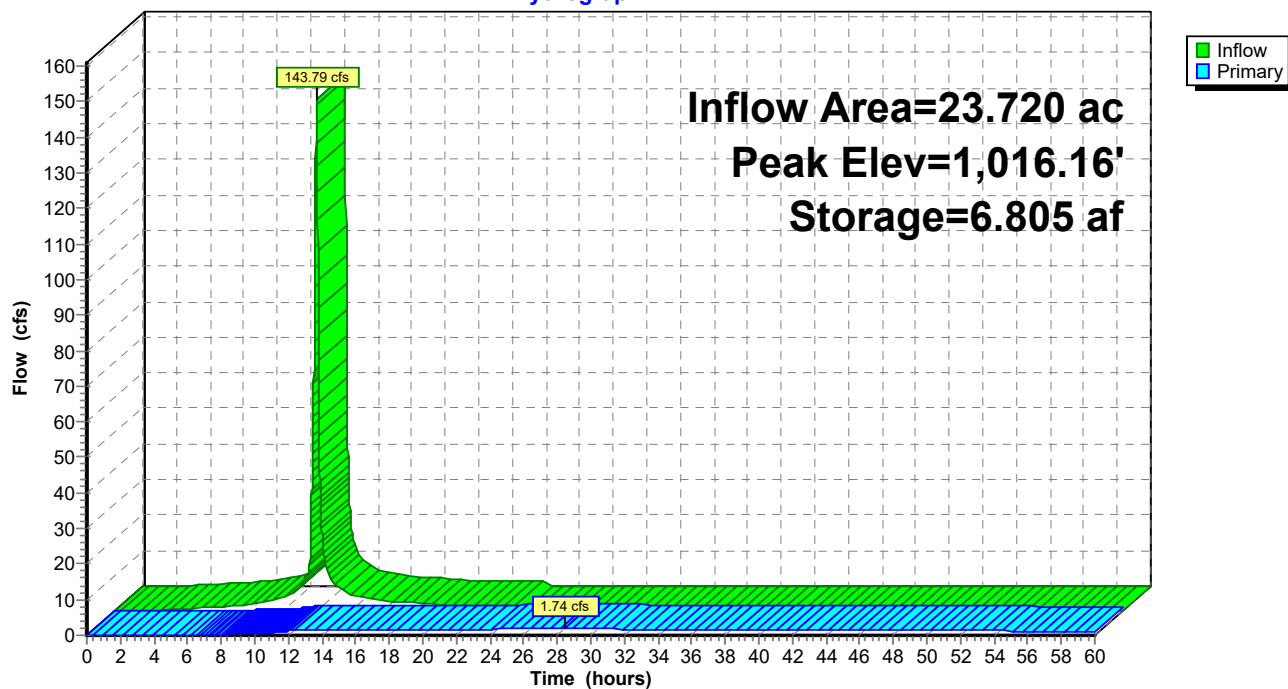
Volume	Invert	Avail.Storage	Storage Description
#1	1,012.00'	10.787 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,012.00	1.275	0.000	0.000
1,013.00	1.446	1.360	1.360
1,014.00	1.619	1.532	2.893
1,015.00	1.794	1.706	4.599
1,016.00	1.972	1.883	6.482
1,017.00	2.152	2.062	8.544
1,018.00	2.334	2.243	10.787

Device	Routing	Invert	Outlet Devices
#1	Primary	1,012.00'	6.0" Vert. Orifice Plate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.74 cfs @ 28.40 hrs HW=1,015.81' TW=1,012.41' (Dynamic Tailwater)
 ↑**1=Orifice Plate** (Orifice Controls 1.74 cfs @ 8.87 fps)

Pond 11P: SW Basin (Full Post)

Hydrograph



Summary for Pond 12P: SE Basin (Full Post)

Inflow Area = 45.990 ac, 43.84% Impervious, Inflow Depth > 3.37" for 50-year event
 Inflow = 120.39 cfs @ 12.01 hrs, Volume= 12.913 af
 Outflow = 4.46 cfs @ 15.53 hrs, Volume= 9.965 af, Atten= 96%, Lag= 210.8 min
 Primary = 4.46 cfs @ 15.53 hrs, Volume= 9.965 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,013.20' @ 15.53 hrs Surf.Area= 1.627 ac Storage= 4.780 af

Plug-Flow detention time= 791.5 min calculated for 9.965 af (77% of inflow)
 Center-of-Mass det. time= 381.5 min (1,777.6 - 1,396.1)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.50'	4.535 af	Basin 01 (Prismatic) Listed below (Recalc)
#2	1,009.50'	2.519 af	Basin 02 (Prismatic) Listed below (Recalc)
		7.054 af	Total Available Storage

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.591	0.000	0.000
1,010.00	0.653	0.311	0.311
1,011.00	0.777	0.715	1.026
1,012.00	0.904	0.841	1.867
1,013.00	1.034	0.969	2.836
1,014.00	1.165	1.100	3.935
1,014.50	1.232	0.599	4.535

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.375	0.000	0.000
1,010.00	0.399	0.194	0.194
1,011.00	0.449	0.424	0.618
1,012.00	0.501	0.475	1.093
1,013.00	0.556	0.528	1.621
1,014.00	0.613	0.584	2.205
1,014.50	0.642	0.314	2.519

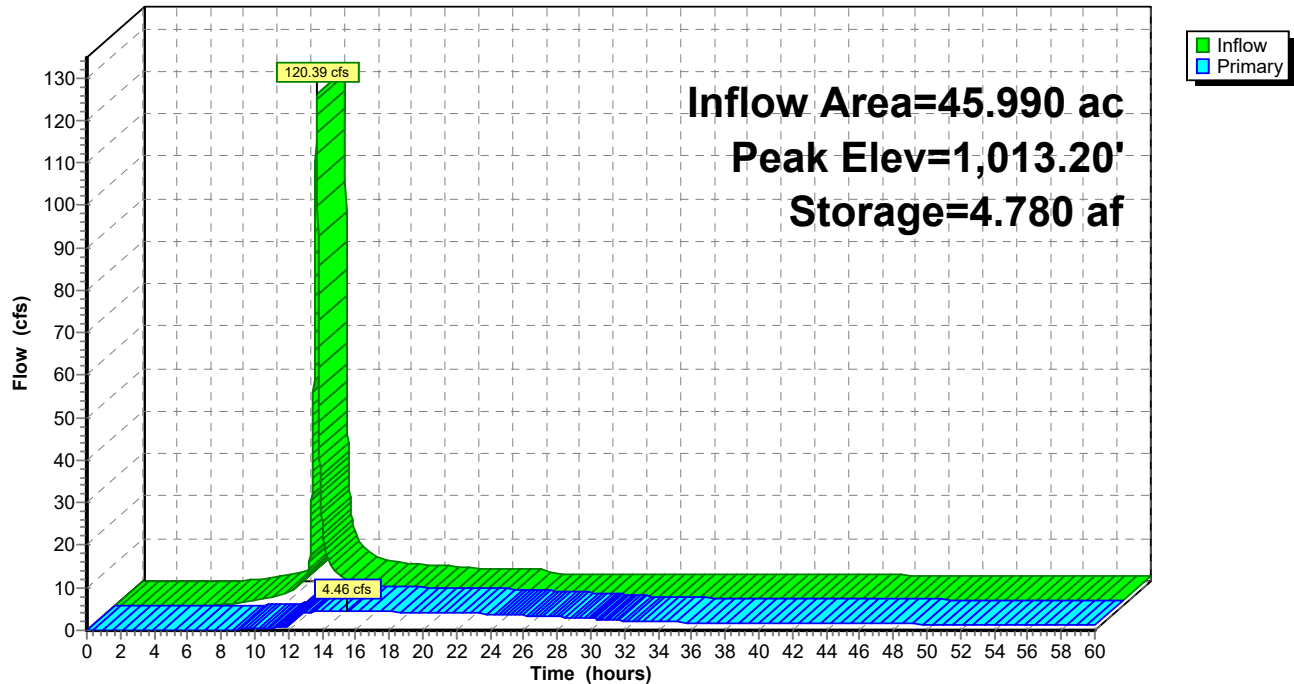
Device	Routing	Invert	Outlet Devices
#1	Primary	1,009.50'	4.0" Vert. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,012.00'	10.0" Horiz. Riser Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	1,013.75'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=4.46 cfs @ 15.53 hrs HW=1,013.20' TW=0.00' (Dynamic Tailwater)

1=WQ Orifice (Orifice Controls 1.58 cfs @ 9.05 fps)
 2=Riser Pipe (Orifice Controls 2.88 cfs @ 5.28 fps)
 3=Grate (Controls 0.00 cfs)

Pond 12P: SE Basin (Full Post)

Hydrograph



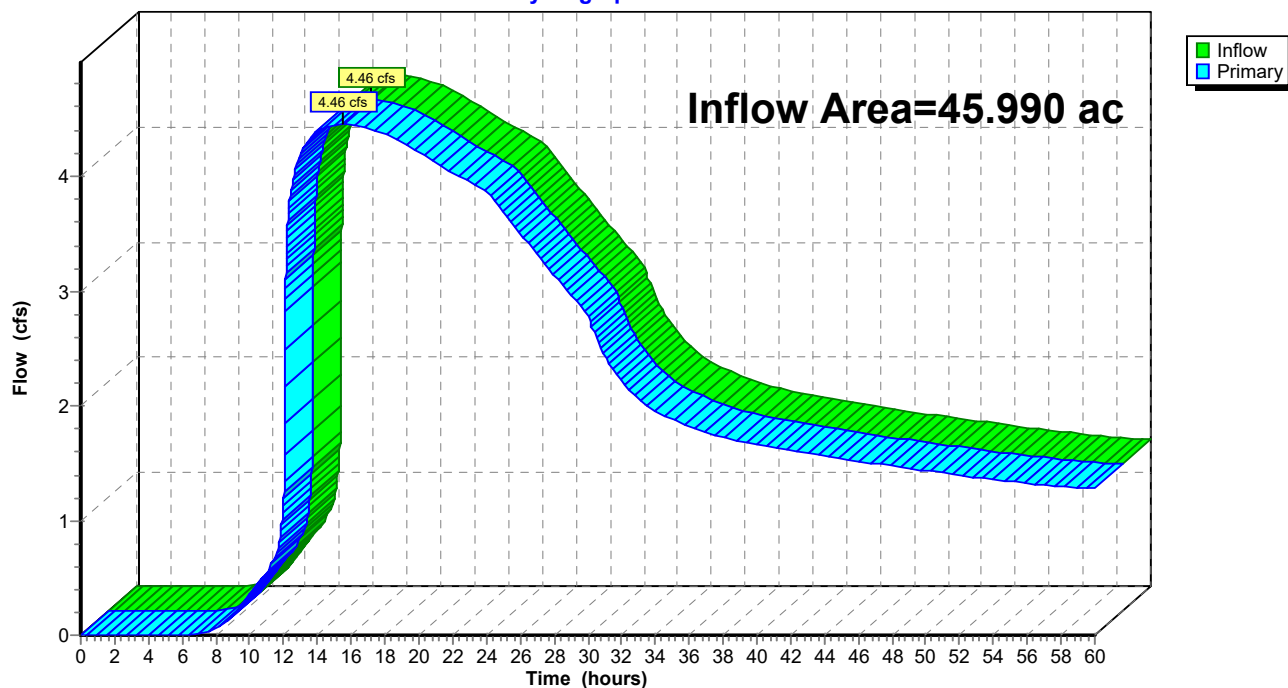
Summary for Pond 13P: SE Post Out

Inflow Area = 45.990 ac, 43.84% Impervious, Inflow Depth > 2.60" for 50-year event
Inflow = 4.46 cfs @ 15.53 hrs, Volume= 9.965 af
Primary = 4.46 cfs @ 15.53 hrs, Volume= 9.965 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Pond 13P: SE Post Out

Hydrograph



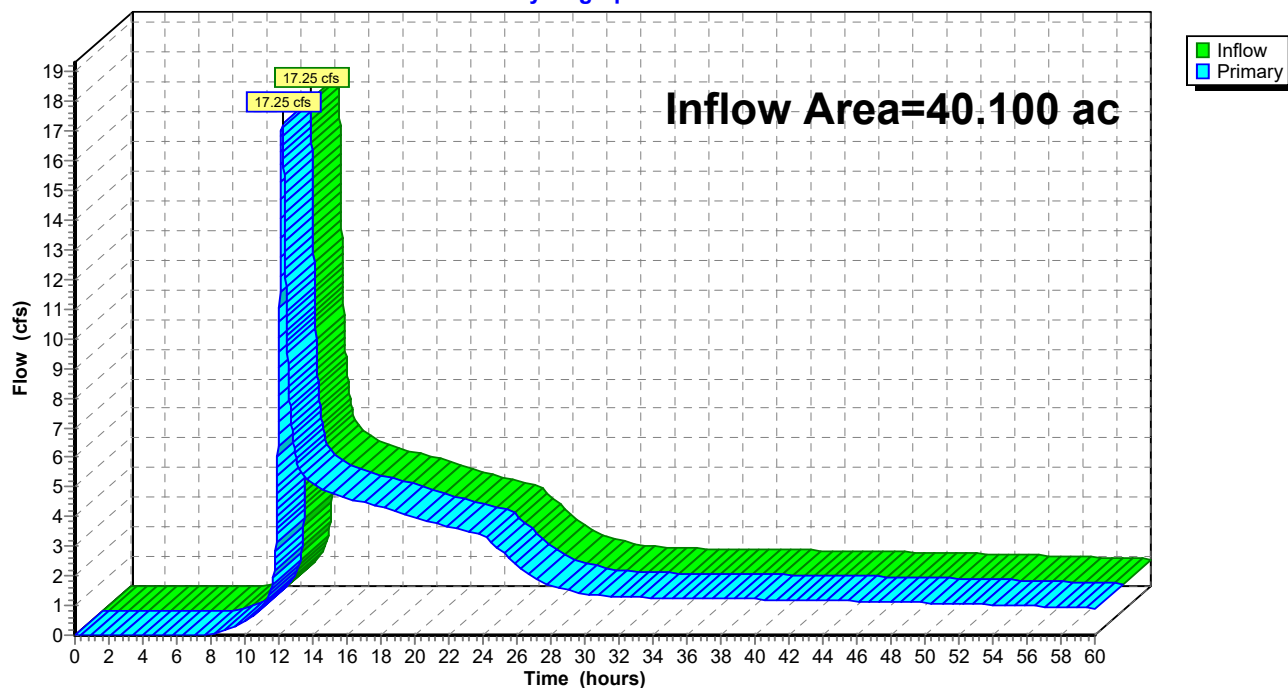
Summary for Pond 20P: SE Post Out (Phase 1)

Inflow Area = 40.100 ac, 0.00% Impervious, Inflow Depth > 2.67" for 50-year event
Inflow = 17.25 cfs @ 12.20 hrs, Volume= 8.921 af
Primary = 17.25 cfs @ 12.20 hrs, Volume= 8.921 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Pond 20P: SE Post Out (Phase 1)

Hydrograph



Summary for Pond 21P: SE Basin (Phase 1)

Inflow Area = 34.720 ac, 0.00% Impervious, Inflow Depth > 3.17" for 50-year event
 Inflow = 119.27 cfs @ 12.01 hrs, Volume= 9.164 af
 Outflow = 4.13 cfs @ 14.63 hrs, Volume= 7.698 af, Atten= 97%, Lag= 156.8 min
 Primary = 4.13 cfs @ 14.63 hrs, Volume= 7.698 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,012.98' @ 14.63 hrs Surf.Area= 1.586 ac Storage= 4.425 af

Plug-Flow detention time= 856.9 min calculated for 7.698 af (84% of inflow)
 Center-of-Mass det. time= 614.9 min (1,716.5 - 1,101.5)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.50'	4.535 af	Basin 01 (Prismatic) Listed below (Recalc)
#2	1,009.50'	2.519 af	Basin 02 (Prismatic) Listed below (Recalc)
		7.054 af	Total Available Storage

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.591	0.000	0.000
1,010.00	0.653	0.311	0.311
1,011.00	0.777	0.715	1.026
1,012.00	0.904	0.841	1.867
1,013.00	1.034	0.969	2.836
1,014.00	1.165	1.100	3.935
1,014.50	1.232	0.599	4.535

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.375	0.000	0.000
1,010.00	0.399	0.194	0.194
1,011.00	0.449	0.424	0.618
1,012.00	0.501	0.475	1.093
1,013.00	0.556	0.528	1.621
1,014.00	0.613	0.584	2.205
1,014.50	0.642	0.314	2.519

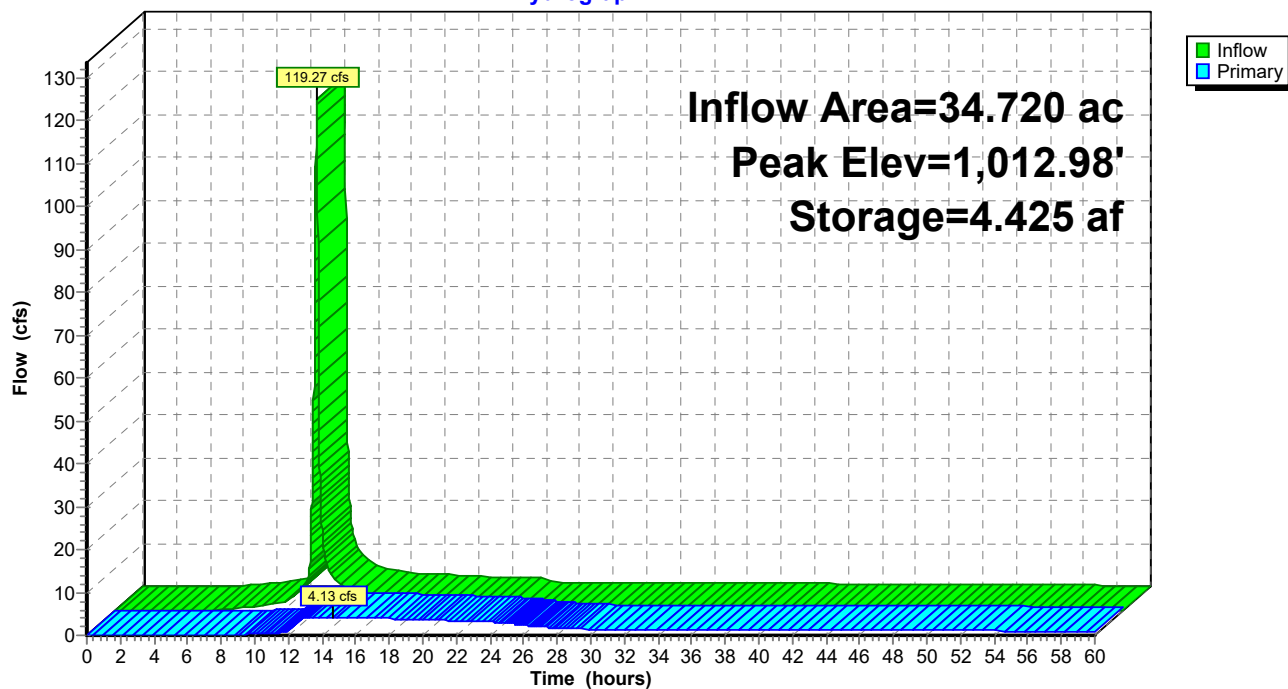
Device	Routing	Invert	Outlet Devices
#1	Primary	1,009.50'	4.0" Vert. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,012.00'	10.0" Horiz. Open Top Riser Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	1,013.75'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=4.13 cfs @ 14.63 hrs HW=1,012.98' TW=0.00' (Dynamic Tailwater)

- 1=WQ Orifice (Orifice Controls 1.53 cfs @ 8.76 fps)
- 2=Open Top Riser Pipe (Orifice Controls 2.60 cfs @ 4.77 fps)
- 3=Grate (Controls 0.00 cfs)

Pond 21P: SE Basin (Phase 1)

Hydrograph



Summary for Pond 22P: NE Basin (Phase 1)

Inflow Area = 46.240 ac, 0.00% Impervious, Inflow Depth = 3.18" for 50-year event
 Inflow = 157.18 cfs @ 12.03 hrs, Volume= 12.242 af
 Outflow = 35.82 cfs @ 12.57 hrs, Volume= 12.012 af, Atten= 77%, Lag= 32.6 min
 Primary = 35.82 cfs @ 12.57 hrs, Volume= 12.012 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,008.00' @ 12.57 hrs Surf.Area= 1.762 ac Storage= 5.723 af

Plug-Flow detention time= 384.9 min calculated for 12.012 af (98% of inflow)
 Center-of-Mass det. time= 373.3 min (1,192.7 - 819.4)

Volume	Invert	Avail.Storage	Storage Description
#1	1,004.00'	7.574 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,004.00	1.108	0.000	0.000
1,005.00	1.267	1.188	1.188
1,006.00	1.430	1.349	2.536
1,007.00	1.595	1.512	4.048
1,008.00	1.762	1.678	5.727
1,009.00	1.931	1.847	7.574

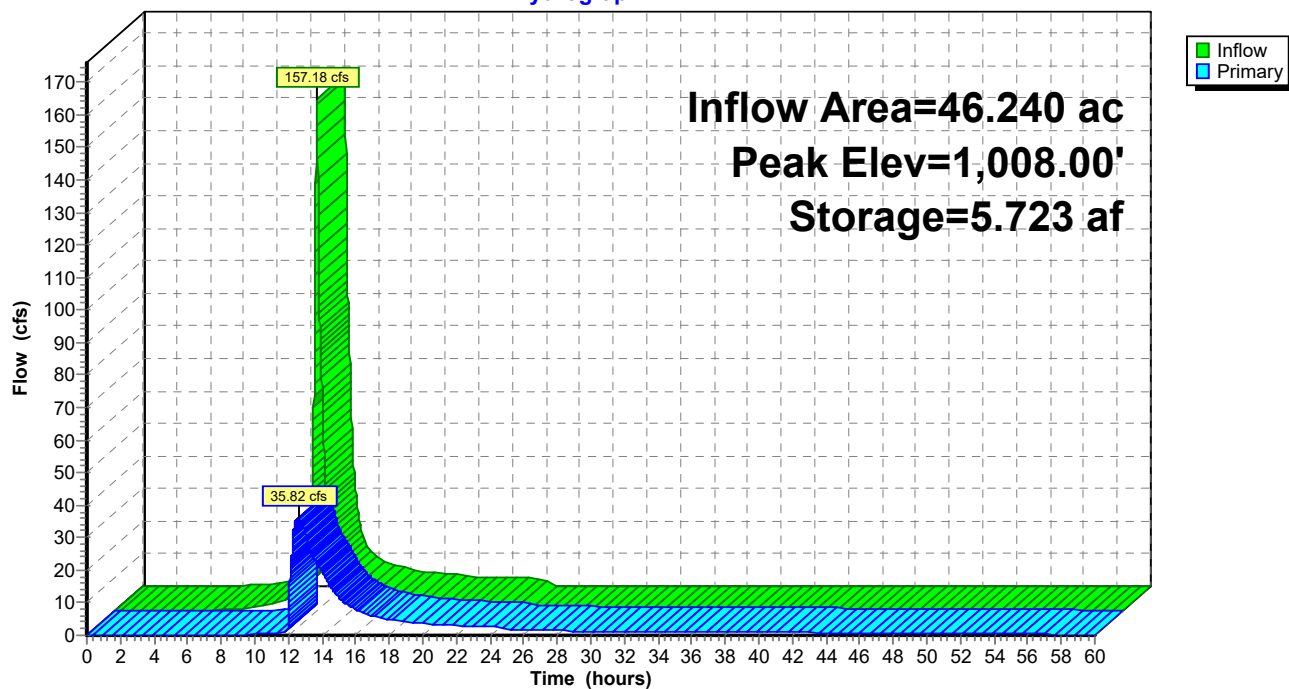
Device	Routing	Invert	Outlet Devices
#1	Primary	1,004.00'	4.5" Vert. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,006.00'	28.0" W x 12.0" H Vert. Window X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Primary	1,007.50'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=35.81 cfs @ 12.57 hrs HW=1,008.00' (Free Discharge)

- 1=WQ Orifice (Orifice Controls 2.08 cfs @ 9.40 fps)
- 2=Window (Orifice Controls 27.37 cfs @ 5.86 fps)
- 3=Grate (Orifice Controls 6.37 cfs @ 3.40 fps)

Pond 22P: NE Basin (Phase 1)

Hydrograph



Summary for Pond 23P: NW Basin (Full Post)

Inflow Area = 26.710 ac, 65.00% Impervious, Inflow Depth = 3.90" for 50-year event
 Inflow = 151.78 cfs @ 12.01 hrs, Volume= 8.671 af
 Outflow = 60.07 cfs @ 12.15 hrs, Volume= 8.642 af, Atten= 60%, Lag= 8.6 min
 Primary = 60.07 cfs @ 12.15 hrs, Volume= 8.642 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,016.52' @ 12.15 hrs Surf.Area= 1.035 ac Storage= 3.096 af

Plug-Flow detention time= 85.0 min calculated for 8.640 af (100% of inflow)
 Center-of-Mass det. time= 83.2 min (874.2 - 791.1)

Volume	Invert	Avail.Storage	Storage Description
#1	1,013.00'	3.604 af	Custom Stage Data (Prismatic) Listed below (Recalc)

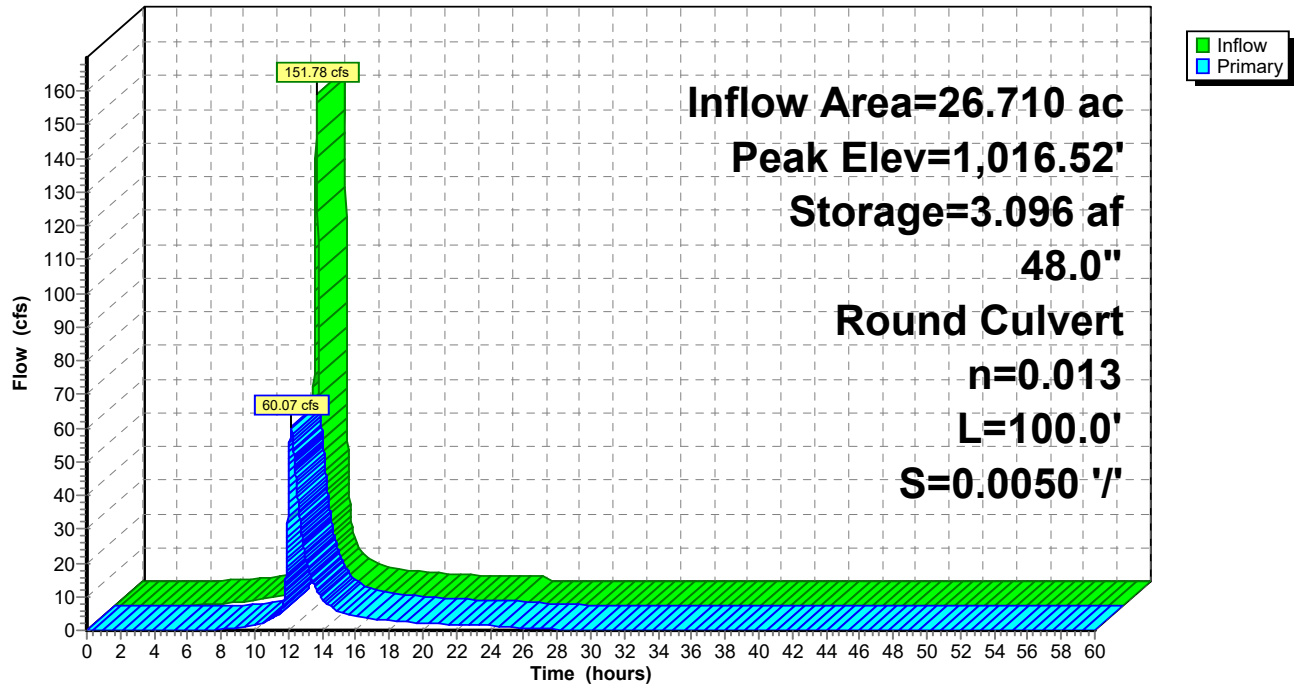
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,013.00	0.729	0.000	0.000
1,014.00	0.813	0.771	0.771
1,015.00	0.899	0.856	1.627
1,016.00	0.988	0.943	2.570
1,017.00	1.079	1.033	3.604

Device	Routing	Invert	Outlet Devices
#1	Primary	1,013.00'	48.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,013.00' / 1,012.50' S= 0.0050 ' / ' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 12.57 sf

Primary OutFlow Max=60.06 cfs @ 12.15 hrs HW=1,016.52' TW=1,007.69' (Dynamic Tailwater)
 ↑ **1=Culvert** (Barrel Controls 60.06 cfs @ 6.83 fps)

Pond 23P: NW Basin (Full Post)

Hydrograph



Summary for Pond 24P: SW Basin (Phase 1)

Inflow Area = 12.450 ac, 0.00% Impervious, Inflow Depth = 2.73" for 50-year event
 Inflow = 36.63 cfs @ 12.14 hrs, Volume= 2.831 af
 Outflow = 1.00 cfs @ 25.87 hrs, Volume= 2.509 af, Atten= 97%, Lag= 823.9 min
 Primary = 1.00 cfs @ 25.87 hrs, Volume= 2.509 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,013.53' @ 19.22 hrs Surf.Area= 1.537 ac Storage= 2.144 af

Plug-Flow detention time= 1,115.5 min calculated for 2.508 af (89% of inflow)
 Center-of-Mass det. time= 1,059.2 min (1,897.0 - 837.8)

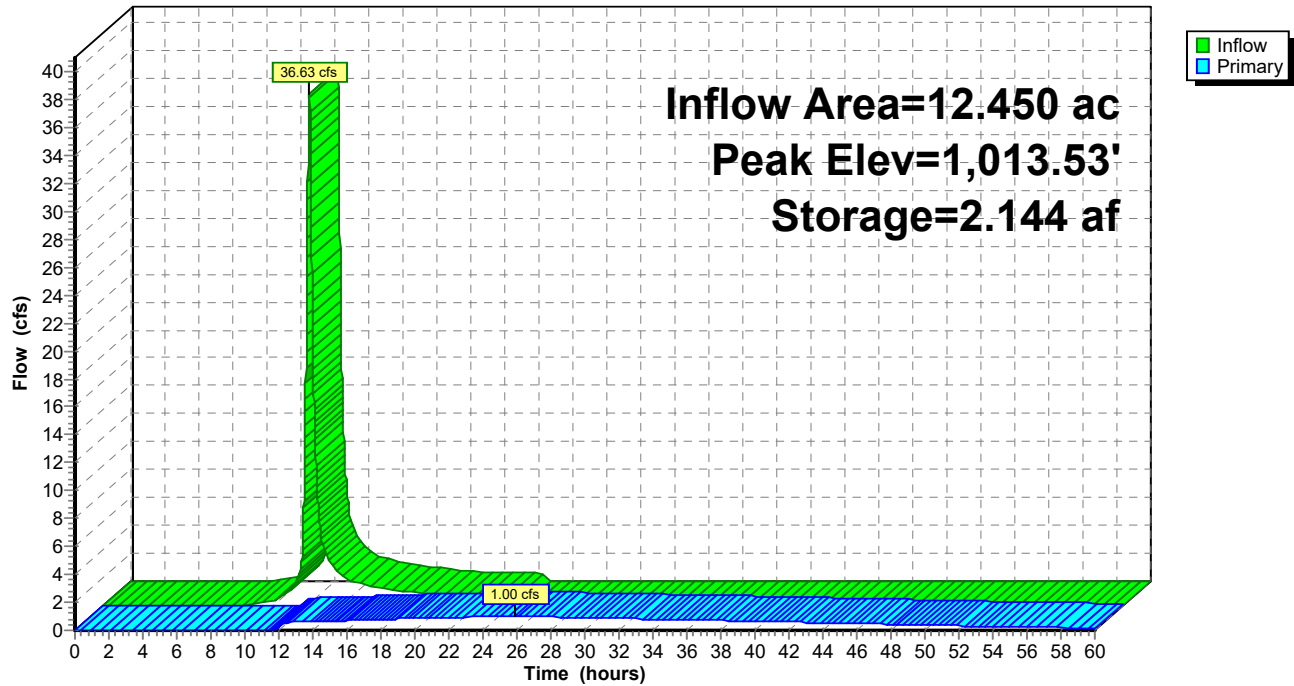
Volume	Invert	Avail.Storage	Storage Description
#1	1,012.00'	10.787 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,012.00	1.275	0.000	0.000
1,013.00	1.446	1.360	1.360
1,014.00	1.619	1.532	2.893
1,015.00	1.794	1.706	4.599
1,016.00	1.972	1.883	6.482
1,017.00	2.152	2.062	8.544
1,018.00	2.334	2.243	10.787

Device	Routing	Invert	Outlet Devices
#1	Primary	1,012.00'	6.0" Vert. Orifice Plate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.00 cfs @ 25.87 hrs HW=1,013.38' TW=1,012.25' (Dynamic Tailwater)
 ↑ **1=Orifice Plate** (Orifice Controls 1.00 cfs @ 5.11 fps)

Pond 24P: SW Basin (Phase 1)

Hydrograph



Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: Pre-Developed	Runoff Area=50.830 ac 0.00% Impervious Runoff Depth=3.25" Flow Length=2,529' Tc=51.4 min CN=78 Runoff=99.33 cfs 13.784 af
Subcatchment2S: Pre-Developed	Runoff Area=14.820 ac 0.00% Impervious Runoff Depth=3.25" Flow Length=1,945' Tc=38.3 min CN=78 Runoff=35.50 cfs 4.019 af
Subcatchment3S: Post NW 26.71ac	Runoff Area=26.710 ac 65.00% Impervious Runoff Depth=4.49" Tc=10.0 min CN=90 Runoff=173.30 cfs 9.985 af
Subcatchment4S: Post NE 24.18ac	Runoff Area=24.180 ac 0.00% Impervious Runoff Depth=4.16" Tc=10.0 min CN=87 Runoff=148.81 cfs 8.391 af
Subcatchment5S: Post SW 23.72ac	Runoff Area=23.720 ac 85.00% Impervious Runoff Depth=4.93" Tc=10.0 min CN=94 Runoff=162.53 cfs 9.746 af
Subcatchment6S: Post SE 22.27ac	Runoff Area=22.270 ac 0.00% Impervious Runoff Depth=4.16" Tc=10.0 min CN=87 Runoff=137.06 cfs 7.728 af
Subcatchment11S: Pre NW 22.06ac	Runoff Area=22.060 ac 0.00% Impervious Runoff Depth=3.25" Flow Length=1,231' Tc=28.7 min CN=78 Runoff=64.23 cfs 5.982 af
Subcatchment12S: Post NE 24.18ac	Runoff Area=24.180 ac 0.00% Impervious Runoff Depth=4.16" Tc=10.0 min CN=87 Runoff=148.81 cfs 8.391 af
Subcatchment13S: Pre SW to Basin	Runoff Area=12.450 ac 0.00% Impervious Runoff Depth=3.25" Flow Length=650' Tc=21.1 min CN=78 Runoff=43.69 cfs 3.376 af
Subcatchment14S: Post SE 22.27ac	Runoff Area=22.270 ac 0.00% Impervious Runoff Depth=4.16" Tc=10.0 min CN=87 Runoff=137.06 cfs 7.728 af
Subcatchment21S: Pre SW to Road 5.38ac	Runoff Area=5.380 ac 0.00% Impervious Runoff Depth=3.25" Flow Length=1,065' Tc=25.7 min CN=78 Runoff=16.82 cfs 1.459 af
Subcatchment22S: Pre-Developed	Runoff Area=8.550 ac 0.00% Impervious Runoff Depth=3.25" Flow Length=867' Tc=22.9 min CN=78 Runoff=28.59 cfs 2.319 af
Pond 10P: NE Basin (Full Post)	Peak Elev=1,008.93' Storage=7.433 af Inflow=201.82 cfs 18.347 af Outflow=48.09 cfs 18.234 af
Pond 11P: SW Basin (Full Post)	Peak Elev=1,016.69' Storage=7.885 af Inflow=162.53 cfs 9.746 af Outflow=1.83 cfs 6.727 af
Pond 12P: SE Basin (Full Post)	Peak Elev=1,013.64' Storage=5.516 af Inflow=138.56 cfs 14.455 af Outflow=5.04 cfs 11.430 af
Pond 13P: SE Post Out	Inflow=5.04 cfs 11.430 af Primary=5.04 cfs 11.430 af

Pond 20P: SE Post Out (Phase 1)

Inflow=20.76 cfs 10.317 af

Primary=20.76 cfs 10.317 af

Pond 21P: SE Basin (Phase 1)

Peak Elev=1,013.40' Storage=5.107 af Inflow=137.48 cfs 10.666 af

Outflow=4.73 cfs 8.858 af

Pond 22P: NE Basin (Phase 1)

Peak Elev=1,008.50' Storage=6.631 af Inflow=182.85 cfs 14.373 af

Outflow=42.94 cfs 14.138 af

Pond 23P: NW Basin (Full Post)

Peak Elev=1,016.89' Storage=3.485 af Inflow=173.30 cfs 9.985 af

48.0" Round Culvert n=0.013 L=100.0' S=0.0050 '/' Outflow=69.56 cfs 9.956 af

Pond 24P: SW Basin (Phase 1)

Peak Elev=1,013.88' Storage=2.694 af Inflow=43.69 cfs 3.376 af

Outflow=1.11 cfs 2.938 af

Total Runoff Area = 257.420 ac Runoff Volume = 82.906 af Average Runoff Depth = 3.86"**85.42% Pervious = 219.896 ac 14.58% Impervious = 37.524 ac**

Summary for Subcatchment 1S: Pre-Developed Northeast 50.83ac

Runoff = 99.33 cfs @ 12.51 hrs, Volume= 13.784 af, Depth= 3.25"

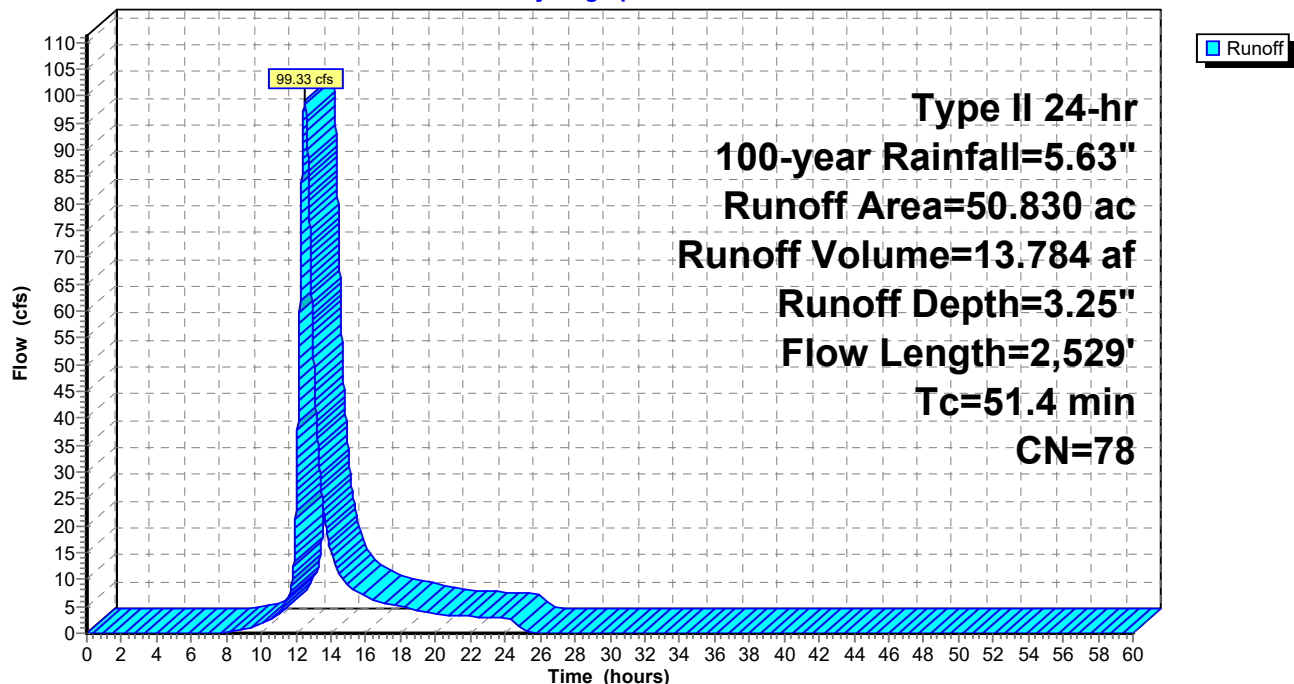
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-year Rainfall=5.63"

Area (ac)	CN	Description
50.830	78	Row crops, C&T, Good, HSG C
50.830		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.63"
6.2	633	0.0363	1.71		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
33.3	1,796	0.0100	0.90		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
51.4	2,529	Total			

Subcatchment 1S: Pre-Developed Northeast 50.83ac

Hydrograph



Summary for Subcatchment 2S: Pre-Developed Southeast 14.82ac (Post Full)

Runoff = 35.50 cfs @ 12.34 hrs, Volume= 4.019 af, Depth= 3.25"

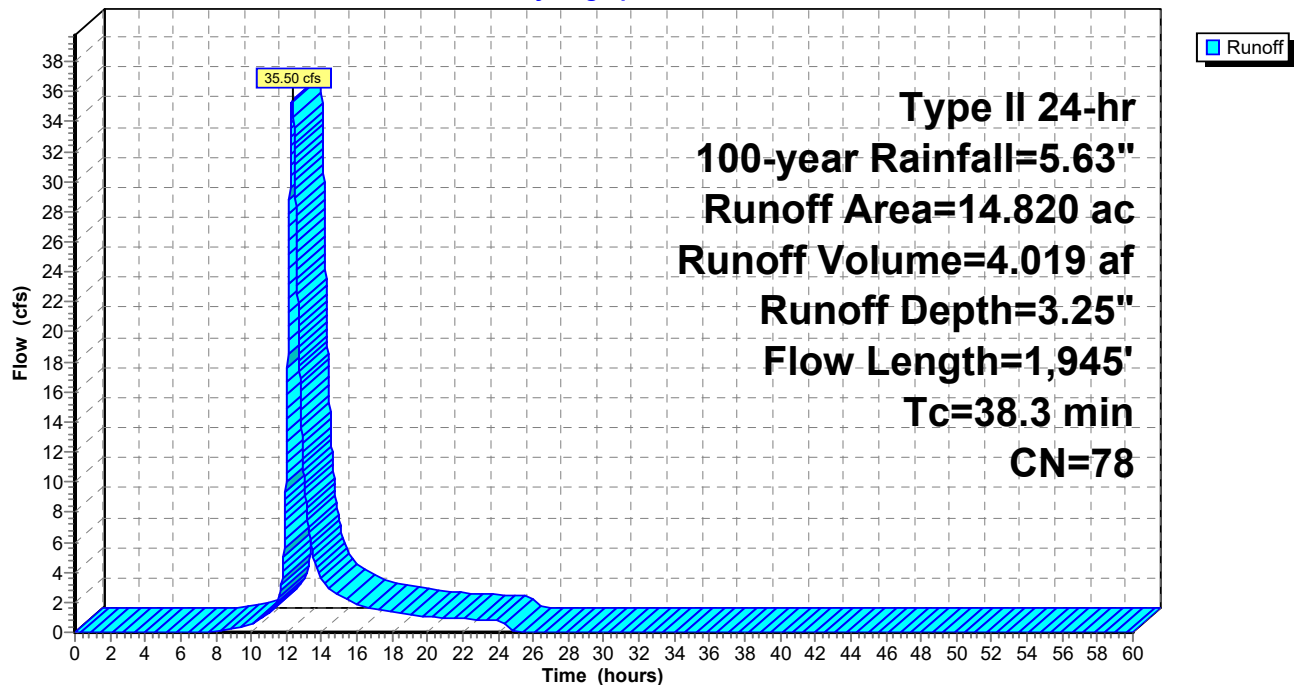
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-year Rainfall=5.63"

Area (ac)	CN	Description
14.820	78	Row crops, C&T, Good, HSG C
14.820		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow,
					Cultivated: Residue>20% n= 0.170 P2= 2.63"
26.4	1,845	0.0168	1.17		Shallow Concentrated Flow,
					Cultivated Straight Rows Kv= 9.0 fps
38.3	1,945	Total			

Subcatchment 2S: Pre-Developed Southeast 14.82ac (Post Full)

Hydrograph



Summary for Subcatchment 3S: Post NW 26.71ac

Runoff = 173.30 cfs @ 12.01 hrs, Volume= 9.985 af, Depth= 4.49"

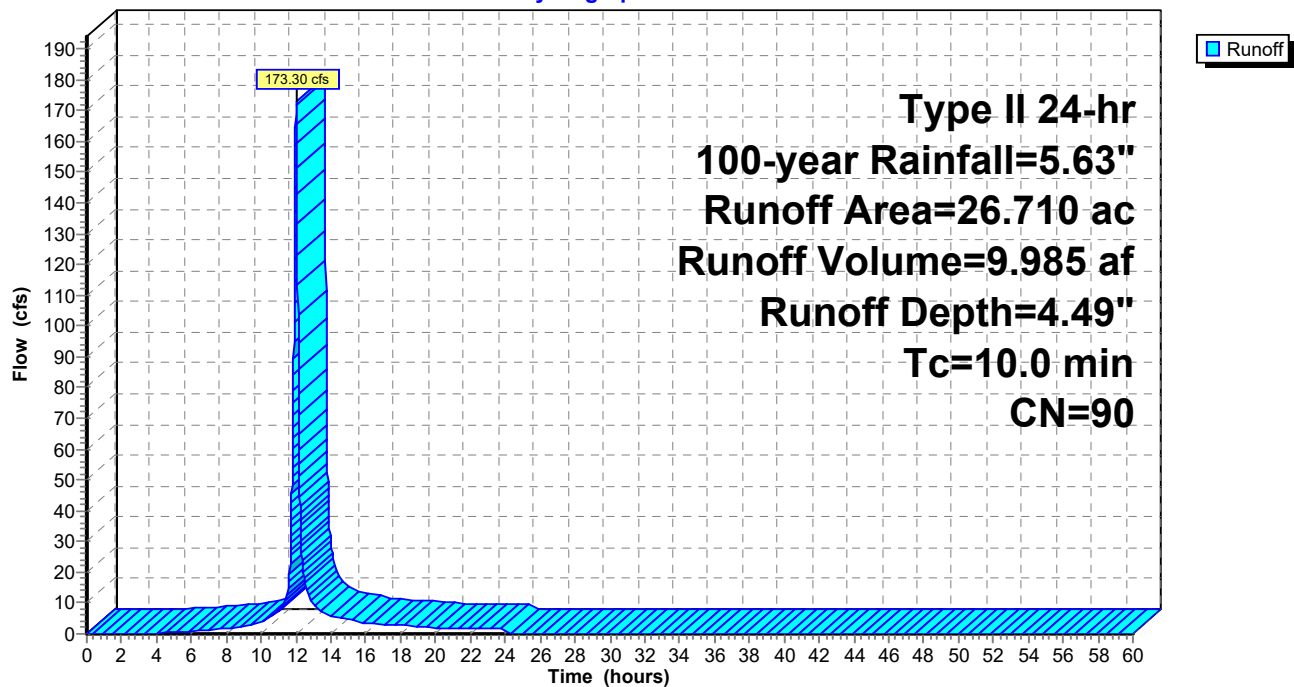
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-year Rainfall=5.63"

Area (ac)	CN	Description
26.710	90	1/8 acre lots, 65% imp, HSG C
9.349		35.00% Pervious Area
17.362		65.00% Impervious Area

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

Subcatchment 3S: Post NW 26.71ac

Hydrograph



Summary for Subcatchment 4S: Post NE 24.18ac

Runoff = 148.81 cfs @ 12.01 hrs, Volume= 8.391 af, Depth= 4.16"

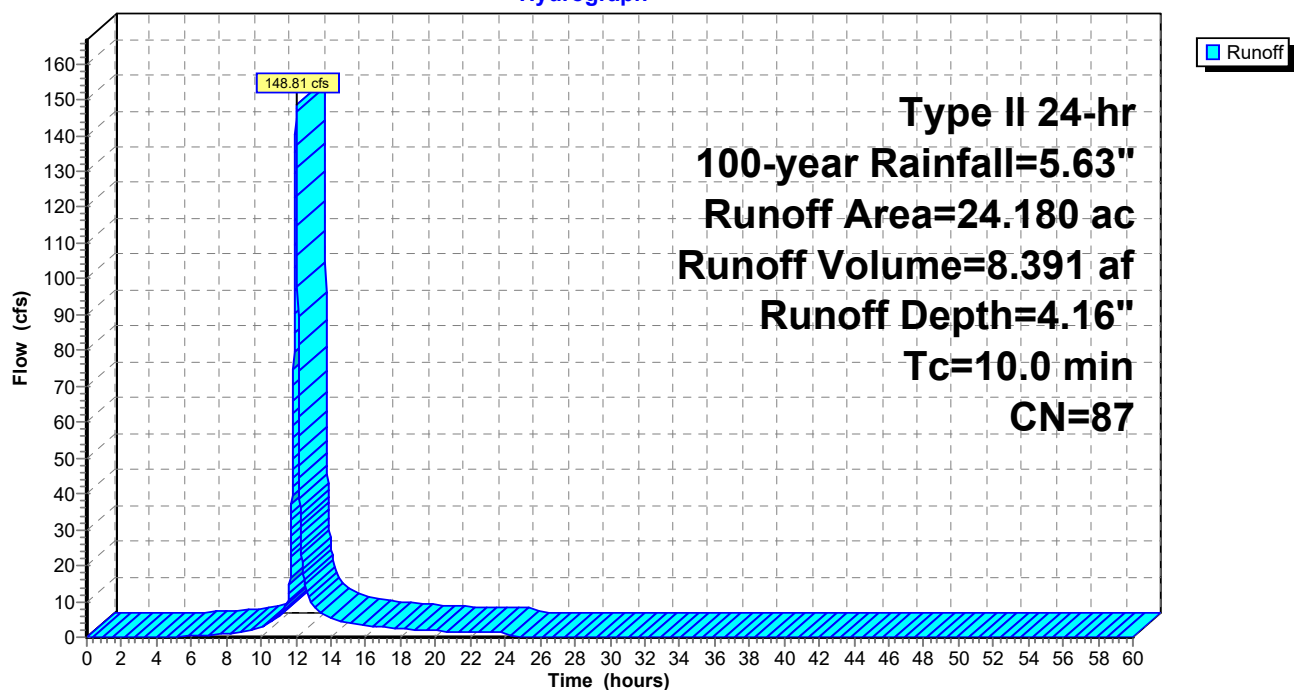
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-year Rainfall=5.63"

Area (ac)	CN	Description
* 24.180	87	
24.180		100.00% Pervious Area

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

Subcatchment 4S: Post NE 24.18ac

Hydrograph



Summary for Subcatchment 5S: Post SW 23.72ac

Runoff = 162.53 cfs @ 12.01 hrs, Volume= 9.746 af, Depth= 4.93"

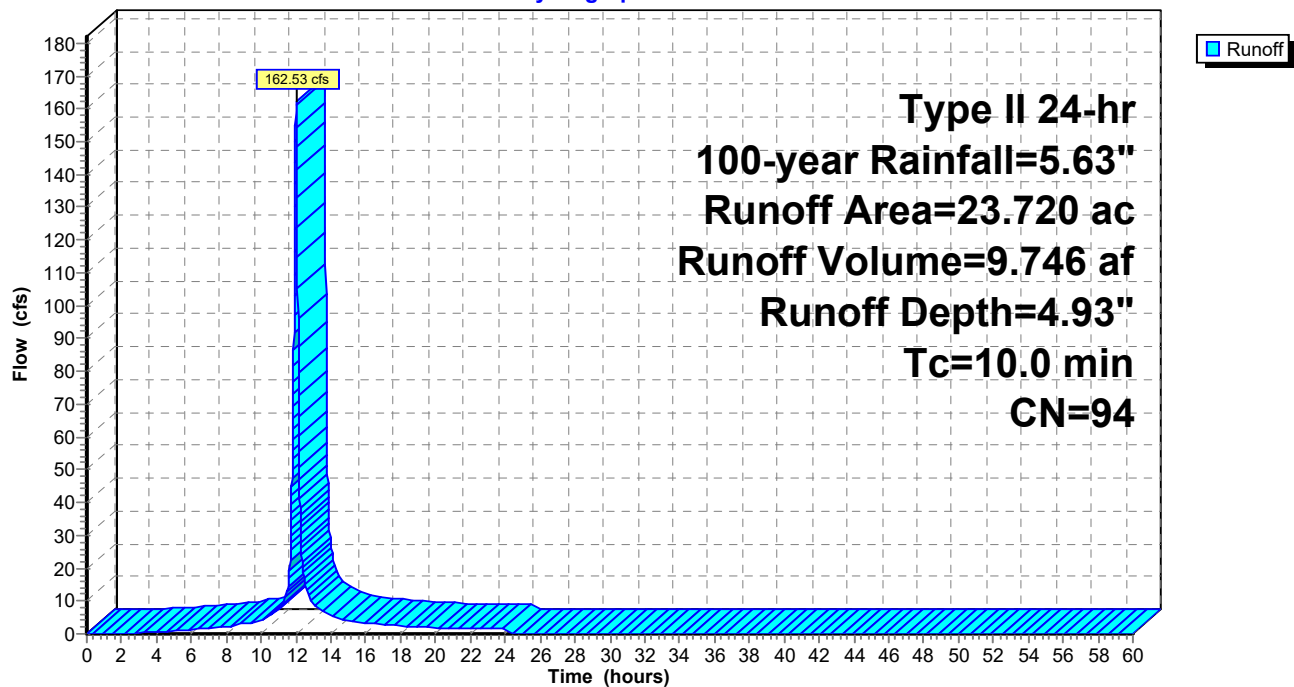
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-year Rainfall=5.63"

Area (ac)	CN	Description
23.720	94	Urban commercial, 85% imp, HSG C
3.558		15.00% Pervious Area
20.162		85.00% Impervious Area

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

Subcatchment 5S: Post SW 23.72ac

Hydrograph



Summary for Subcatchment 6S: Post SE 22.27ac

Runoff = 137.06 cfs @ 12.01 hrs, Volume= 7.728 af, Depth= 4.16"

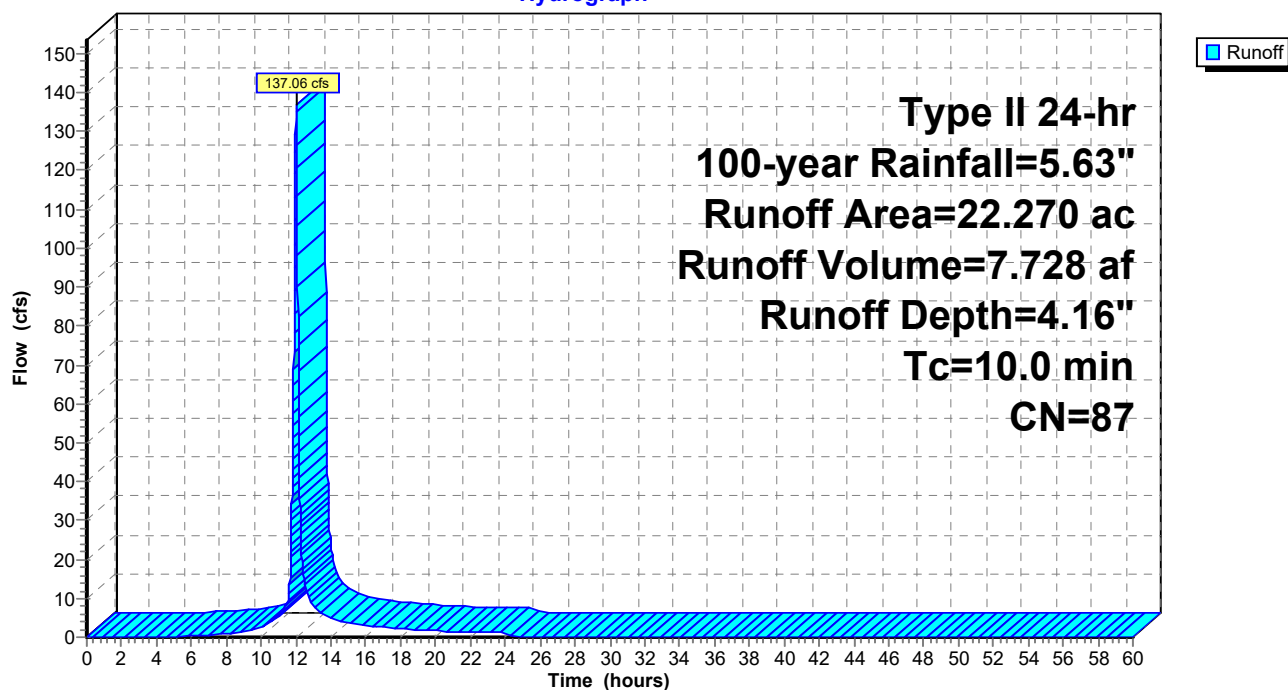
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-year Rainfall=5.63"

Area (ac)	CN	Description
* 22.270	87	
22.270		100.00% Pervious Area

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

Subcatchment 6S: Post SE 22.27ac

Hydrograph



Summary for Subcatchment 11S: Pre NW 22.06ac

Runoff = 64.23 cfs @ 12.22 hrs, Volume= 5.982 af, Depth= 3.25"

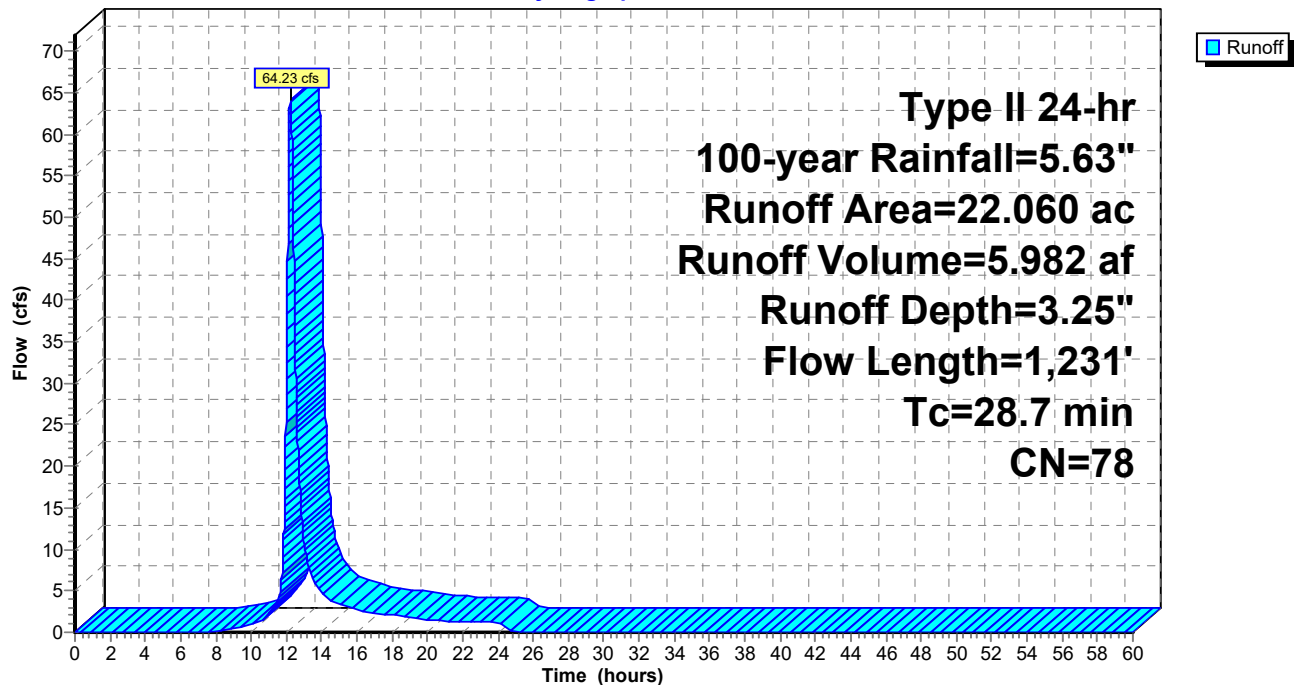
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-year Rainfall=5.63"

Area (ac)	CN	Description
22.060	78	Row crops, C&T, Good, HSG C
22.060		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	100	0.0100	0.11		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.63"
12.9	1,131	0.0265	1.47		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
28.7	1,231	Total			

Subcatchment 11S: Pre NW 22.06ac

Hydrograph



Summary for Subcatchment 12S: Post NE 24.18ac

Runoff = 148.81 cfs @ 12.01 hrs, Volume= 8.391 af, Depth= 4.16"

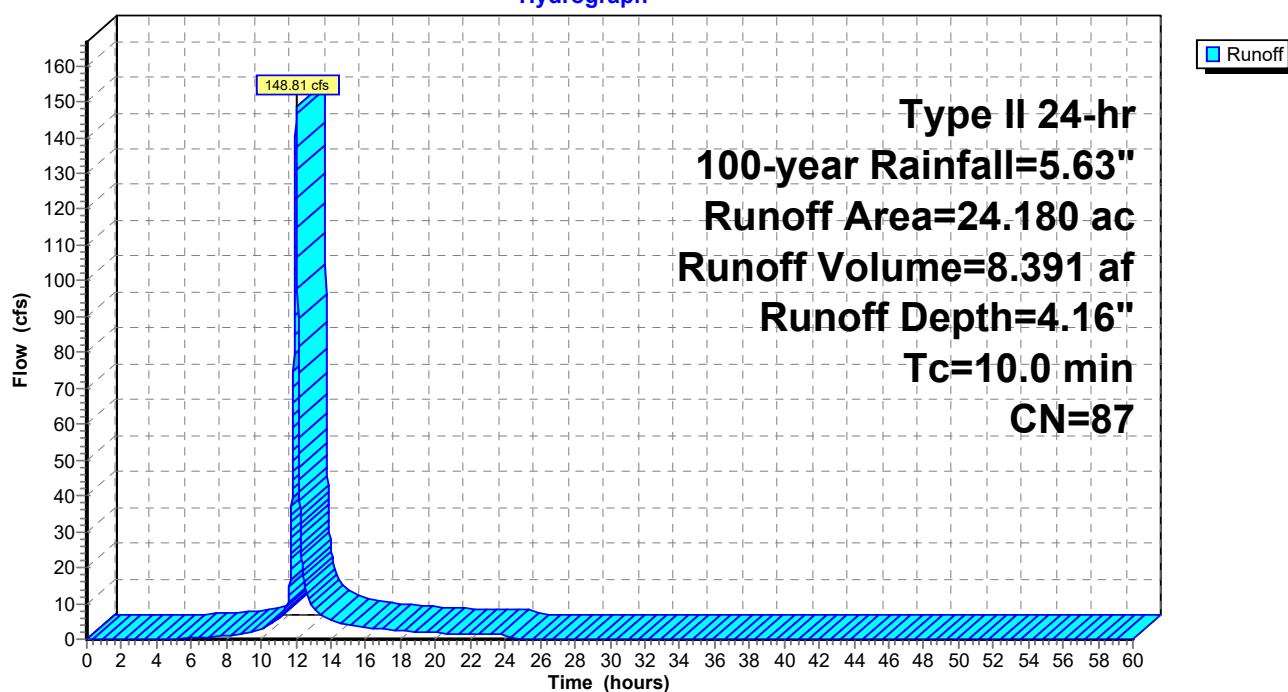
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-year Rainfall=5.63"

Area (ac)	CN	Description
* 24.180	87	
24.180		100.00% Pervious Area

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

Subcatchment 12S: Post NE 24.18ac

Hydrograph



Summary for Subcatchment 13S: Pre SW to Basin 12.45ac

Runoff = 43.69 cfs @ 12.14 hrs, Volume= 3.376 af, Depth= 3.25"

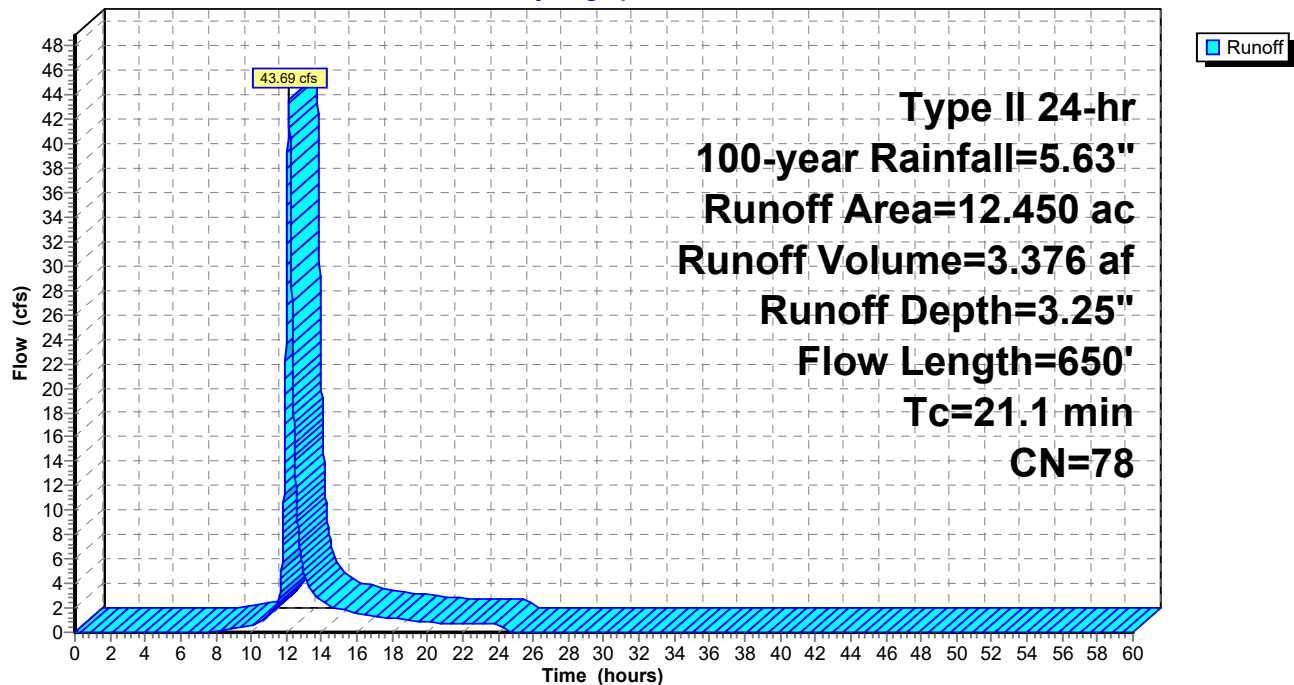
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-year Rainfall=5.63"

Area (ac)	CN	Description
12.450	78	Row crops, C&T, Good, HSG C
12.450		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.8	100	0.0100	0.11		Sheet Flow, Cultivated: Residue>20% n= 0.170 P2= 2.63"
5.3	550	0.0364	1.72		Shallow Concentrated Flow, Cultivated Straight Rows Kv= 9.0 fps
21.1	650	Total			

Subcatchment 13S: Pre SW to Basin 12.45ac

Hydrograph



Summary for Subcatchment 14S: Post SE 22.27ac

Runoff = 137.06 cfs @ 12.01 hrs, Volume= 7.728 af, Depth= 4.16"

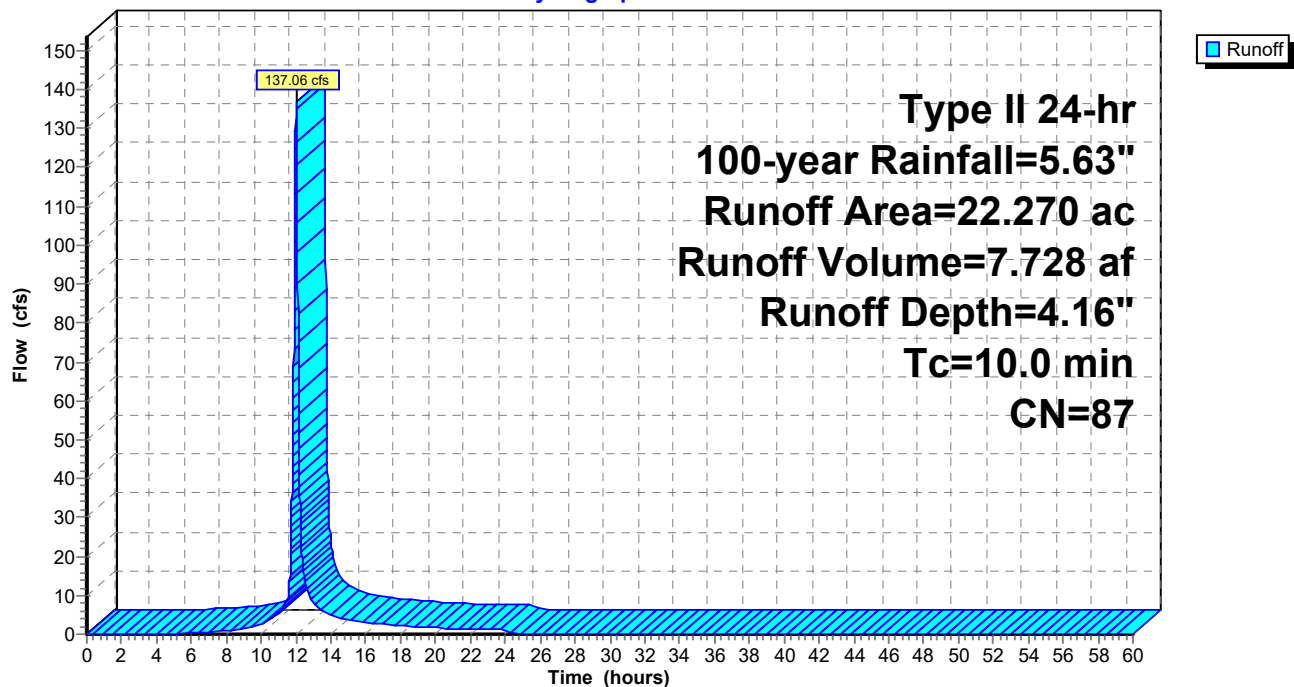
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-year Rainfall=5.63"

Area (ac)	CN	Description
* 22.270	87	
22.270		100.00% Pervious Area

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

Subcatchment 14S: Post SE 22.27ac

Hydrograph



Summary for Subcatchment 21S: Pre SW to Road 5.38ac

Runoff = 16.82 cfs @ 12.19 hrs, Volume= 1.459 af, Depth= 3.25"

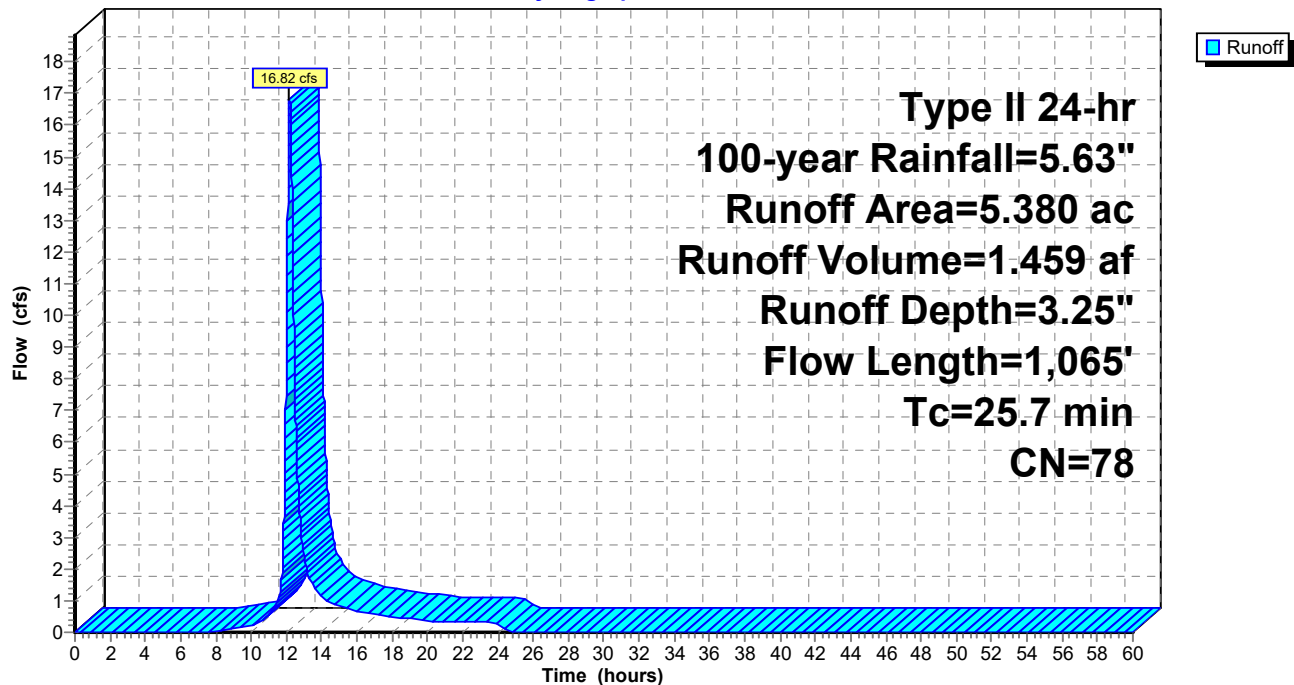
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-year Rainfall=5.63"

Area (ac)	CN	Description
5.380	78	Row crops, C&T, Good, HSG C
5.380		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow,
					Cultivated: Residue>20% n= 0.170 P2= 2.63"
13.8	965	0.0168	1.17		Shallow Concentrated Flow,
					Cultivated Straight Rows Kv= 9.0 fps
25.7	1,065	Total			

Subcatchment 21S: Pre SW to Road 5.38ac

Hydrograph



Summary for Subcatchment 22S: Pre-Developed Southeast 8.55ac (Phase 1)

Runoff = 28.59 cfs @ 12.16 hrs, Volume= 2.319 af, Depth= 3.25"

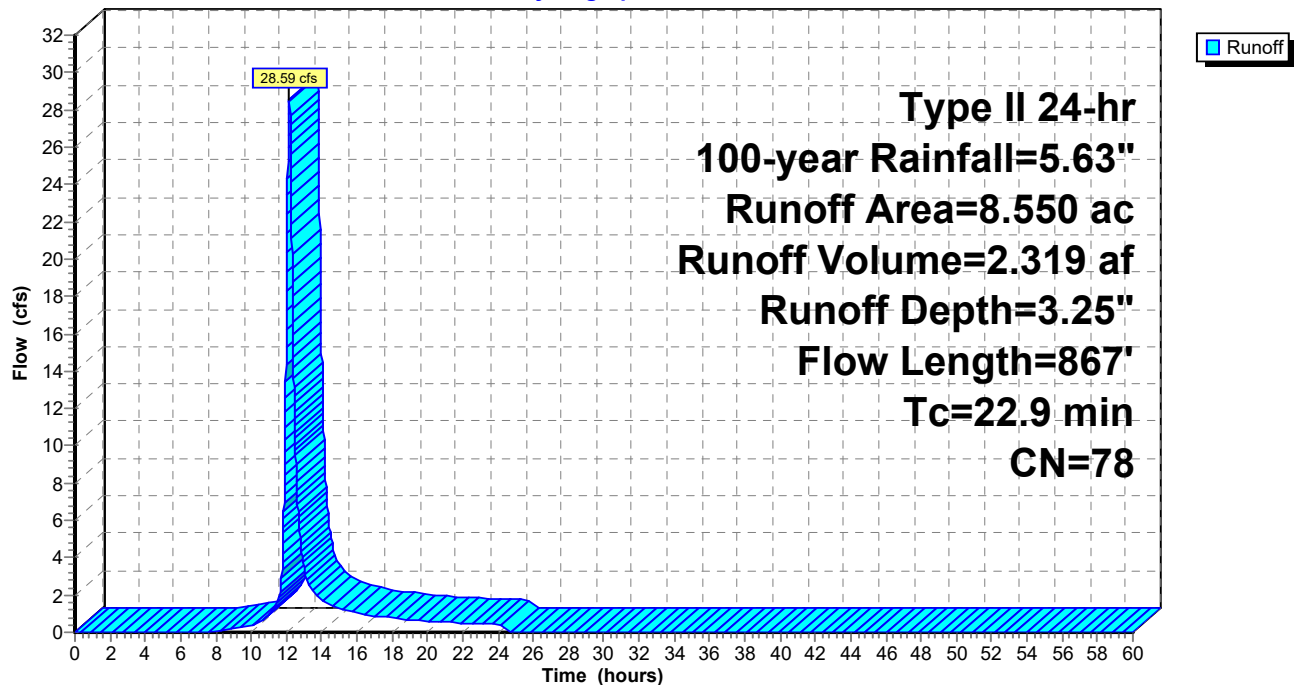
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-year Rainfall=5.63"

Area (ac)	CN	Description
8.550	78	Row crops, C&T, Good, HSG C
8.550		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.9	100	0.0200	0.14		Sheet Flow,
					Cultivated: Residue>20% n= 0.170 P2= 2.63"
11.0	767	0.0168	1.17		Shallow Concentrated Flow,
					Cultivated Straight Rows Kv= 9.0 fps
22.9	867	Total			

Subcatchment 22S: Pre-Developed Southeast 8.55ac (Phase 1)

Hydrograph



Summary for Pond 10P: NE Basin (Full Post)

Inflow Area = 50.890 ac, 34.12% Impervious, Inflow Depth = 4.33" for 100-year event
 Inflow = 201.82 cfs @ 12.03 hrs, Volume= 18.347 af
 Outflow = 48.09 cfs @ 12.70 hrs, Volume= 18.234 af, Atten= 76%, Lag= 40.3 min
 Primary = 48.09 cfs @ 12.70 hrs, Volume= 18.234 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,008.93' @ 12.70 hrs Surf.Area= 1.919 ac Storage= 7.433 af

Plug-Flow detention time= 306.2 min calculated for 18.231 af (99% of inflow)
 Center-of-Mass det. time= 298.2 min (1,132.8 - 834.6)

Volume	Invert	Avail.Storage	Storage Description
#1	1,004.00'	7.574 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,004.00	1.108	0.000	0.000
1,005.00	1.267	1.187	1.187
1,006.00	1.430	1.349	2.536
1,007.00	1.595	1.512	4.049
1,008.00	1.762	1.679	5.727
1,009.00	1.931	1.846	7.574

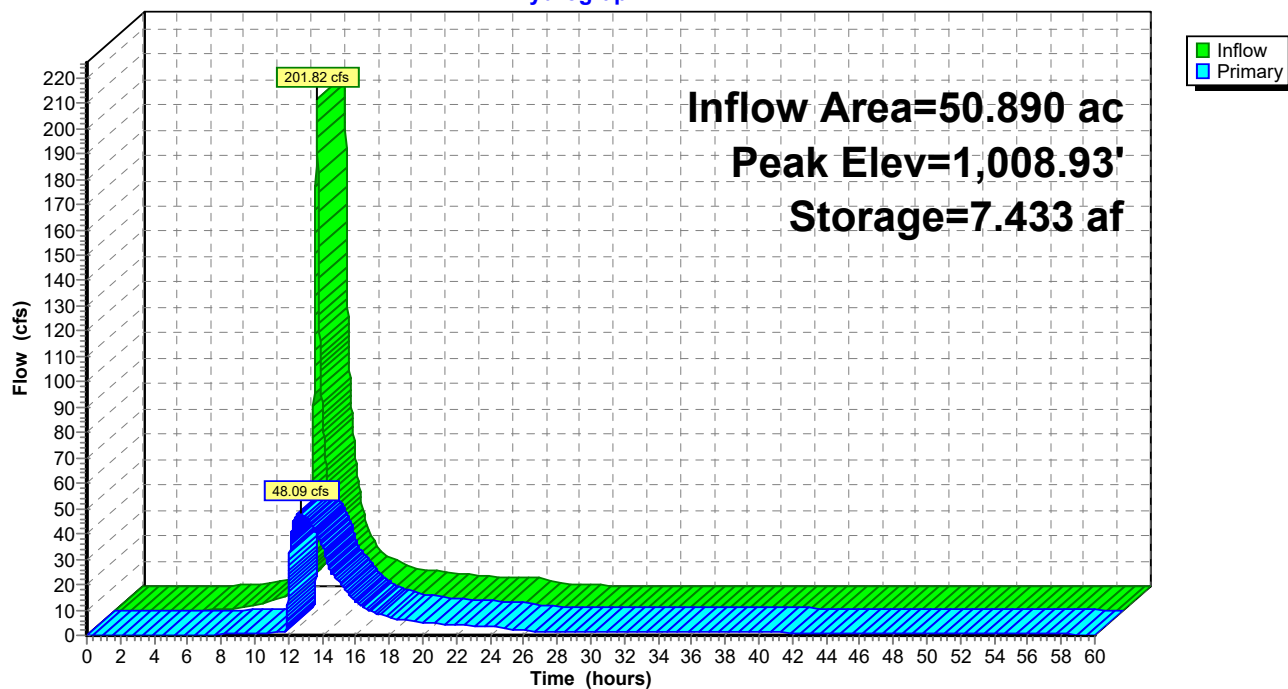
Device	Routing	Invert	Outlet Devices
#1	Primary	1,004.00'	4.5" Horiz. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,006.00'	28.0" W x 12.0" H Vert. Window X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Primary	1,007.50'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=48.09 cfs @ 12.70 hrs HW=1,008.93' (Free Discharge)

- 1=WQ Orifice (Orifice Controls 2.36 cfs @ 10.69 fps)
- 2=Window (Orifice Controls 34.94 cfs @ 7.49 fps)
- 3=Grate (Orifice Controls 10.78 cfs @ 5.75 fps)

Pond 10P: NE Basin (Full Post)

Hydrograph



Summary for Pond 11P: SW Basin (Full Post)

Inflow Area = 23.720 ac, 85.00% Impervious, Inflow Depth = 4.93" for 100-year event
 Inflow = 162.53 cfs @ 12.01 hrs, Volume= 9.746 af
 Outflow = 1.83 cfs @ 30.72 hrs, Volume= 6.727 af, Atten= 99%, Lag= 1,122.5 min
 Primary = 1.83 cfs @ 30.72 hrs, Volume= 6.727 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,016.69' @ 20.38 hrs Surf.Area= 2.096 ac Storage= 7.885 af

Plug-Flow detention time= 1,380.4 min calculated for 6.726 af (69% of inflow)
 Center-of-Mass det. time= 1,284.1 min (2,054.4 - 770.3)

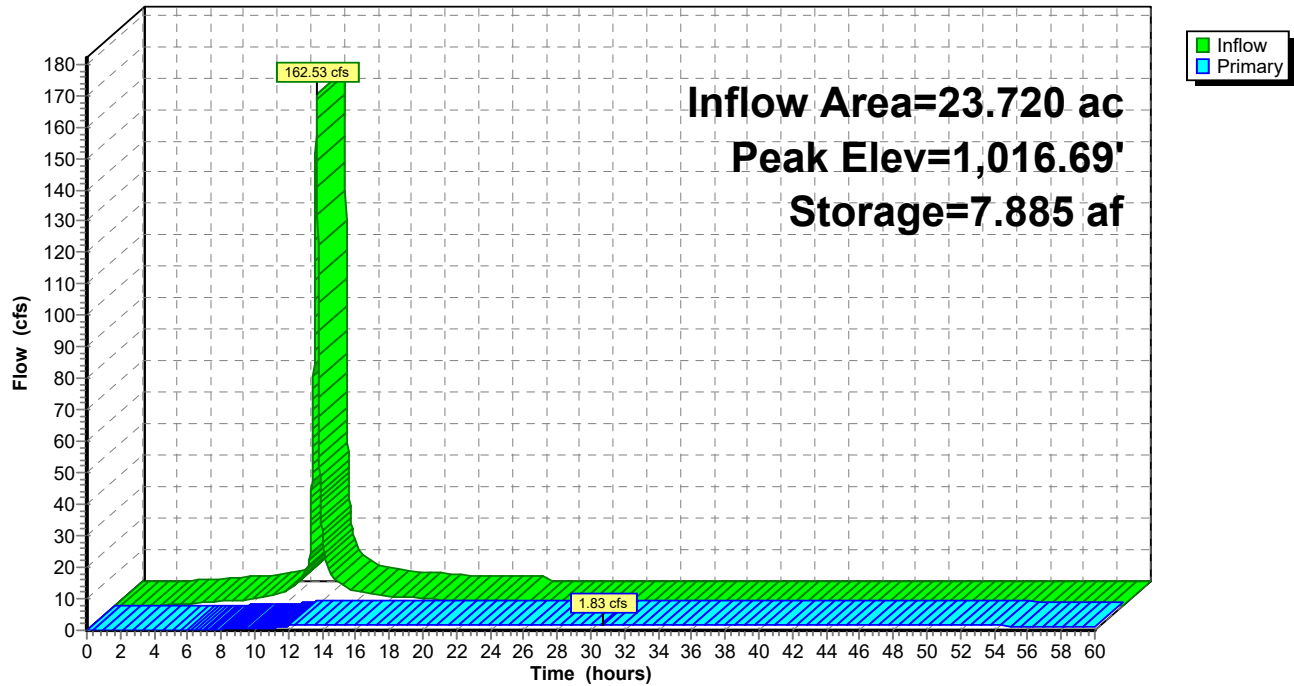
Volume	Invert	Avail.Storage	Storage Description
#1	1,012.00'	10.787 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,012.00	1.275	0.000	0.000
1,013.00	1.446	1.360	1.360
1,014.00	1.619	1.532	2.893
1,015.00	1.794	1.706	4.599
1,016.00	1.972	1.883	6.482
1,017.00	2.152	2.062	8.544
1,018.00	2.334	2.243	10.787

Device	Routing	Invert	Outlet Devices
#1	Primary	1,012.00'	6.0" Vert. Orifice Plate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.83 cfs @ 30.72 hrs HW=1,016.19' TW=1,012.46' (Dynamic Tailwater)
 ↑ **1=Orifice Plate** (Orifice Controls 1.83 cfs @ 9.30 fps)

Pond 11P: SW Basin (Full Post)

Hydrograph



Summary for Pond 12P: SE Basin (Full Post)

Inflow Area = 45.990 ac, 43.84% Impervious, Inflow Depth > 3.77" for 100-year event
 Inflow = 138.56 cfs @ 12.01 hrs, Volume= 14.455 af
 Outflow = 5.04 cfs @ 15.30 hrs, Volume= 11.430 af, Atten= 96%, Lag= 197.2 min
 Primary = 5.04 cfs @ 15.30 hrs, Volume= 11.430 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,013.64' @ 15.30 hrs Surf.Area= 1.711 ac Storage= 5.516 af

Plug-Flow detention time= 772.1 min calculated for 11.428 af (79% of inflow)
 Center-of-Mass det. time= 385.0 min (1,767.4 - 1,382.4)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.50'	4.535 af	Basin 01 (Prismatic) Listed below (Recalc)
#2	1,009.50'	2.519 af	Basin 02 (Prismatic) Listed below (Recalc)
		7.054 af	Total Available Storage

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.591	0.000	0.000
1,010.00	0.653	0.311	0.311
1,011.00	0.777	0.715	1.026
1,012.00	0.904	0.841	1.867
1,013.00	1.034	0.969	2.836
1,014.00	1.165	1.100	3.935
1,014.50	1.232	0.599	4.535

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.375	0.000	0.000
1,010.00	0.399	0.194	0.194
1,011.00	0.449	0.424	0.618
1,012.00	0.501	0.475	1.093
1,013.00	0.556	0.528	1.621
1,014.00	0.613	0.584	2.205
1,014.50	0.642	0.314	2.519

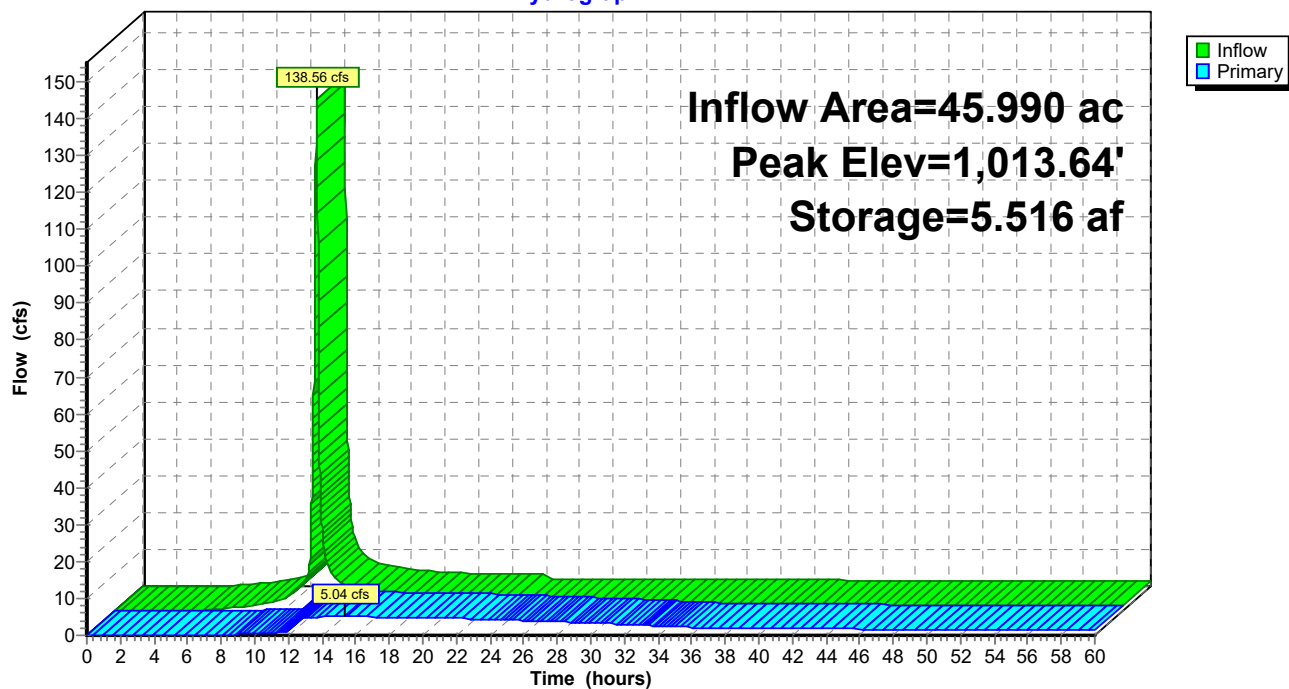
Device	Routing	Invert	Outlet Devices
#1	Primary	1,009.50'	4.0" Vert. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,012.00'	10.0" Horiz. Riser Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	1,013.75'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=5.04 cfs @ 15.30 hrs HW=1,013.64' TW=0.00' (Dynamic Tailwater)

1=WQ Orifice (Orifice Controls 1.68 cfs @ 9.60 fps)
 2=Riser Pipe (Orifice Controls 3.37 cfs @ 6.17 fps)
 3=Grate (Controls 0.00 cfs)

Pond 12P: SE Basin (Full Post)

Hydrograph



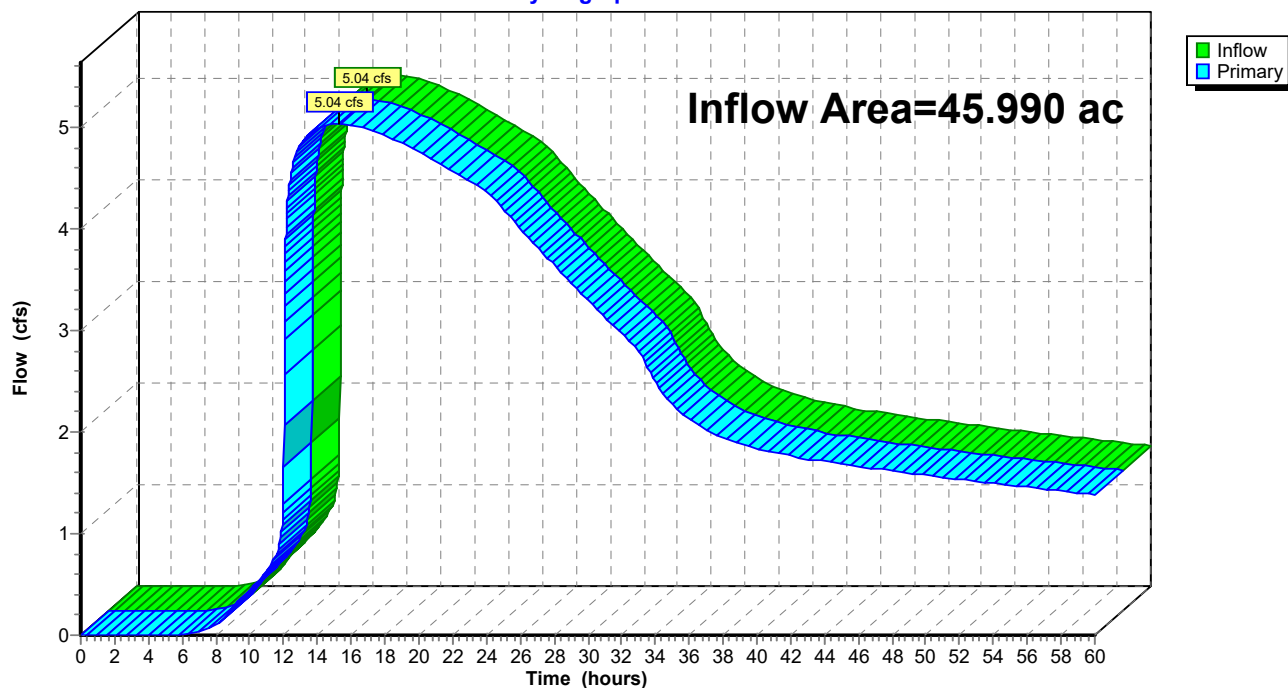
Summary for Pond 13P: SE Post Out

Inflow Area = 45.990 ac, 43.84% Impervious, Inflow Depth > 2.98" for 100-year event
Inflow = 5.04 cfs @ 15.30 hrs, Volume= 11.430 af
Primary = 5.04 cfs @ 15.30 hrs, Volume= 11.430 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Pond 13P: SE Post Out

Hydrograph



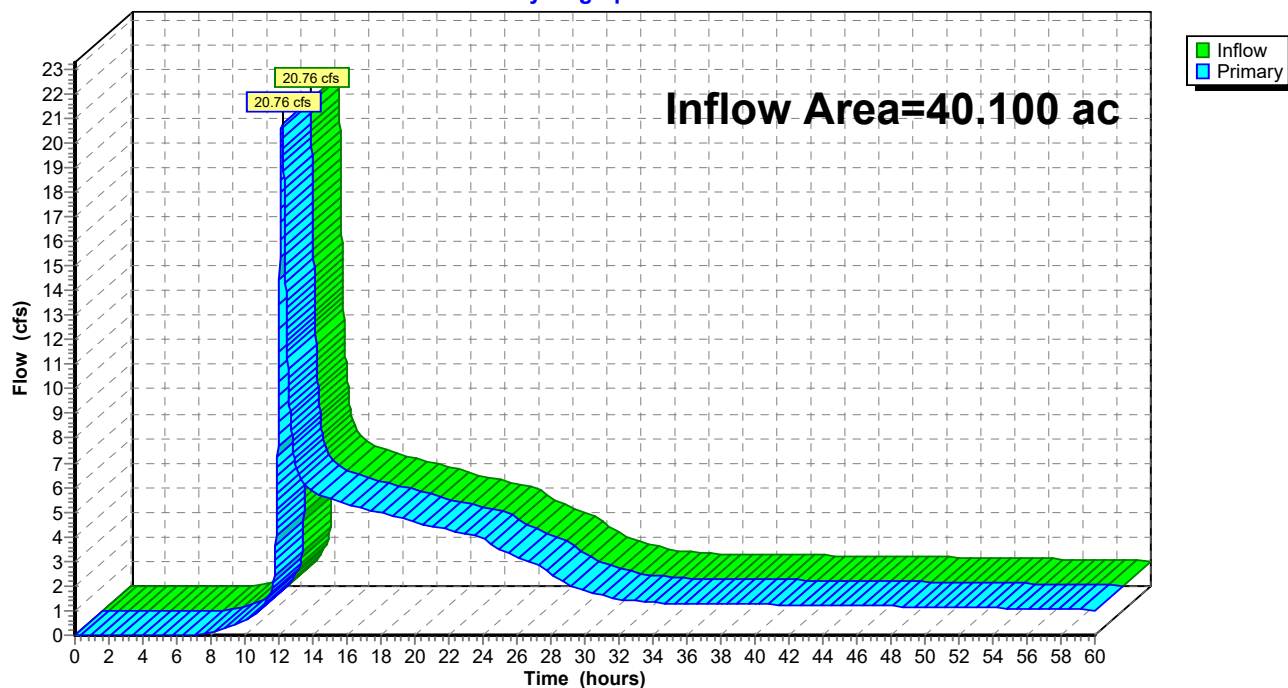
Summary for Pond 20P: SE Post Out (Phase 1)

Inflow Area = 40.100 ac, 0.00% Impervious, Inflow Depth > 3.09" for 100-year event
Inflow = 20.76 cfs @ 12.19 hrs, Volume= 10.317 af
Primary = 20.76 cfs @ 12.19 hrs, Volume= 10.317 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs

Pond 20P: SE Post Out (Phase 1)

Hydrograph



Summary for Pond 21P: SE Basin (Phase 1)

Inflow Area = 34.720 ac, 0.00% Impervious, Inflow Depth > 3.69" for 100-year event
 Inflow = 137.48 cfs @ 12.01 hrs, Volume= 10.666 af
 Outflow = 4.73 cfs @ 14.33 hrs, Volume= 8.858 af, Atten= 97%, Lag= 139.3 min
 Primary = 4.73 cfs @ 14.33 hrs, Volume= 8.858 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,013.40' @ 14.33 hrs Surf.Area= 1.665 ac Storage= 5.107 af

Plug-Flow detention time= 824.9 min calculated for 8.857 af (83% of inflow)
 Center-of-Mass det. time= 552.1 min (1,685.6 - 1,133.5)

Volume	Invert	Avail.Storage	Storage Description
#1	1,009.50'	4.535 af	Basin 01 (Prismatic) Listed below (Recalc)
#2	1,009.50'	2.519 af	Basin 02 (Prismatic) Listed below (Recalc)
		7.054 af	Total Available Storage

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.591	0.000	0.000
1,010.00	0.653	0.311	0.311
1,011.00	0.777	0.715	1.026
1,012.00	0.904	0.841	1.867
1,013.00	1.034	0.969	2.836
1,014.00	1.165	1.100	3.935
1,014.50	1.232	0.599	4.535

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,009.50	0.375	0.000	0.000
1,010.00	0.399	0.194	0.194
1,011.00	0.449	0.424	0.618
1,012.00	0.501	0.475	1.093
1,013.00	0.556	0.528	1.621
1,014.00	0.613	0.584	2.205
1,014.50	0.642	0.314	2.519

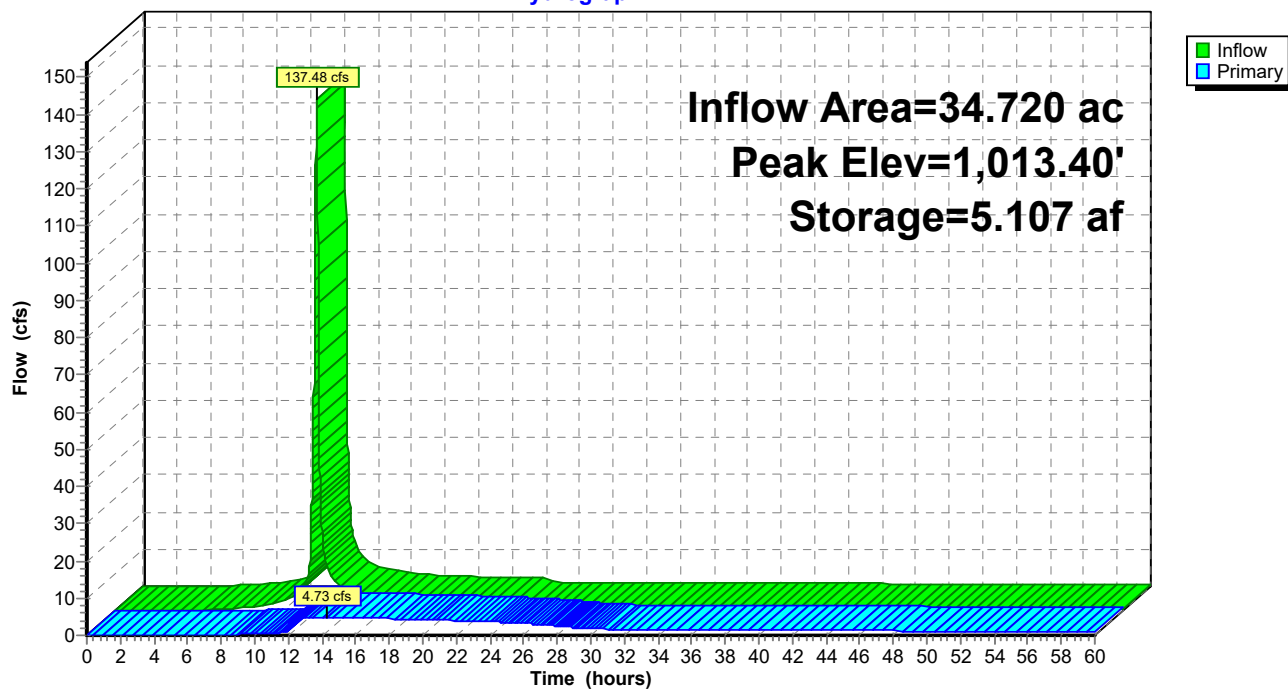
Device	Routing	Invert	Outlet Devices
#1	Primary	1,009.50'	4.0" Vert. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,012.00'	10.0" Horiz. Open Top Riser Pipe C= 0.600 Limited to weir flow at low heads
#3	Primary	1,013.75'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=4.73 cfs @ 14.33 hrs HW=1,013.40' TW=0.00' (Dynamic Tailwater)

- 1=WQ Orifice (Orifice Controls 1.62 cfs @ 9.30 fps)
- 2=Open Top Riser Pipe (Orifice Controls 3.11 cfs @ 5.70 fps)
- 3=Grate (Controls 0.00 cfs)

Pond 21P: SE Basin (Phase 1)

Hydrograph



Summary for Pond 22P: NE Basin (Phase 1)

Inflow Area = 46.240 ac, 0.00% Impervious, Inflow Depth = 3.73" for 100-year event
 Inflow = 182.85 cfs @ 12.03 hrs, Volume= 14.373 af
 Outflow = 42.94 cfs @ 12.56 hrs, Volume= 14.138 af, Atten= 77%, Lag= 31.9 min
 Primary = 42.94 cfs @ 12.56 hrs, Volume= 14.138 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,008.50' @ 12.56 hrs Surf.Area= 1.847 ac Storage= 6.631 af

Plug-Flow detention time= 341.6 min calculated for 14.136 af (98% of inflow)
 Center-of-Mass det. time= 331.8 min (1,146.9 - 815.1)

Volume	Invert	Avail.Storage	Storage Description
#1	1,004.00'	7.574 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,004.00	1.108	0.000	0.000
1,005.00	1.267	1.188	1.188
1,006.00	1.430	1.349	2.536
1,007.00	1.595	1.512	4.048
1,008.00	1.762	1.678	5.727
1,009.00	1.931	1.847	7.574

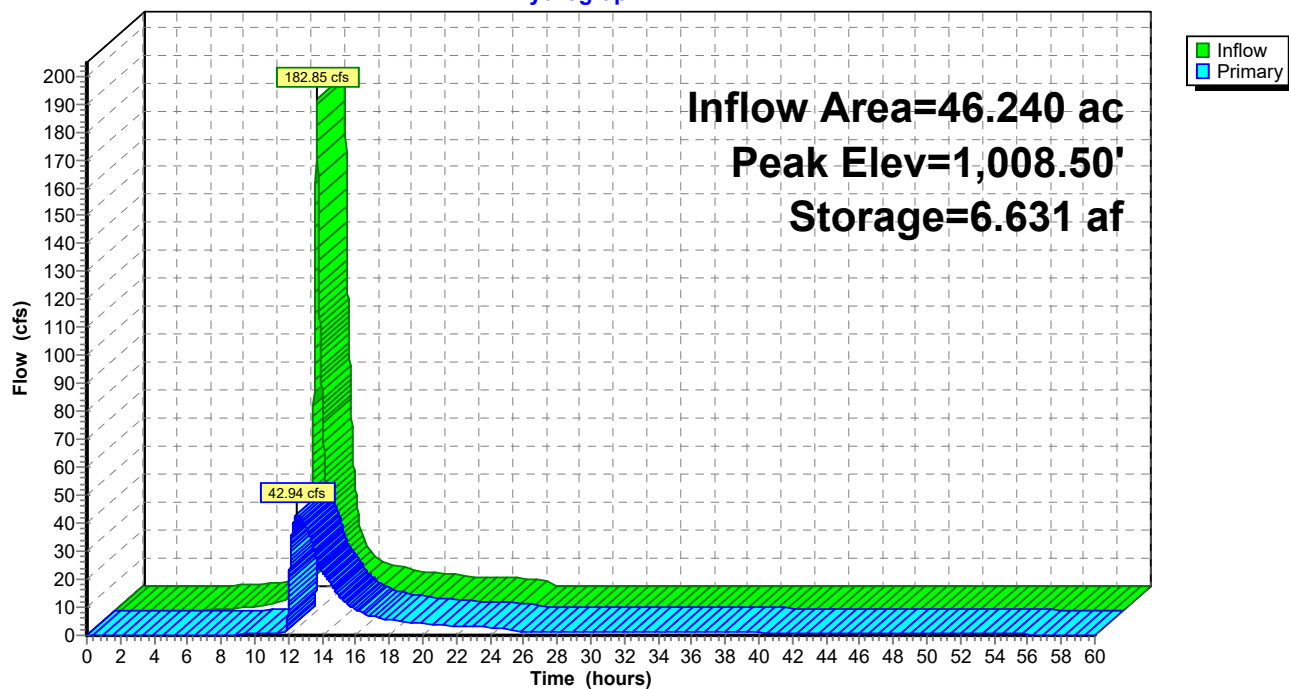
Device	Routing	Invert	Outlet Devices
#1	Primary	1,004.00'	4.5" Vert. WQ Orifice X 2.00 C= 0.600 Limited to weir flow at low heads
#2	Primary	1,006.00'	28.0" W x 12.0" H Vert. Window X 2.00 C= 0.600 Limited to weir flow at low heads
#3	Primary	1,007.50'	1.5" x 5.0" Horiz. Grate X 9.00 columns X 4 rows C= 0.600 in 27.5" x 27.5" Grate (36% open area) Limited to weir flow at low heads

Primary OutFlow Max=42.94 cfs @ 12.56 hrs HW=1,008.50' (Free Discharge)

- 1=WQ Orifice (Orifice Controls 2.21 cfs @ 10.00 fps)
- 2=Window (Orifice Controls 31.70 cfs @ 6.79 fps)
- 3=Grate (Orifice Controls 9.03 cfs @ 4.82 fps)

Pond 22P: NE Basin (Phase 1)

Hydrograph



Summary for Pond 23P: NW Basin (Full Post)

Inflow Area = 26.710 ac, 65.00% Impervious, Inflow Depth = 4.49" for 100-year event
 Inflow = 173.30 cfs @ 12.01 hrs, Volume= 9.985 af
 Outflow = 69.56 cfs @ 12.15 hrs, Volume= 9.956 af, Atten= 60%, Lag= 8.5 min
 Primary = 69.56 cfs @ 12.15 hrs, Volume= 9.956 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,016.89' @ 12.15 hrs Surf.Area= 1.069 ac Storage= 3.485 af

Plug-Flow detention time= 80.7 min calculated for 9.956 af (100% of inflow)
 Center-of-Mass det. time= 78.8 min (866.0 - 787.2)

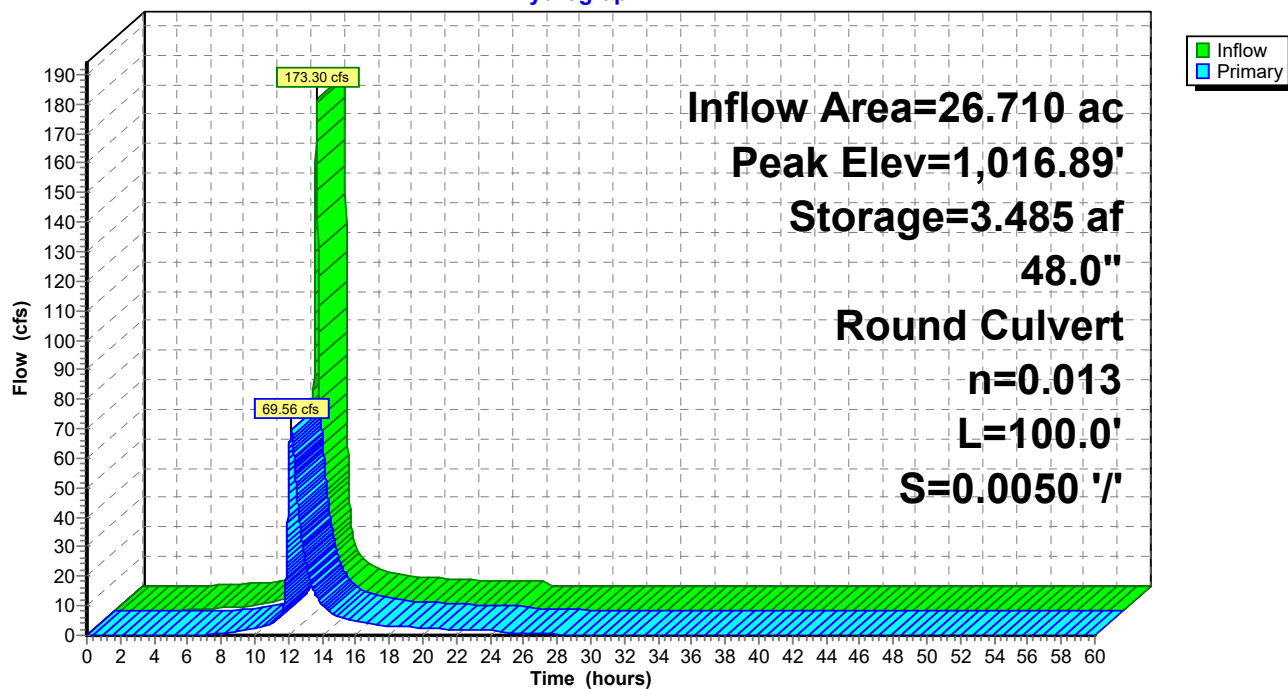
Volume	Invert	Avail.Storage	Storage Description
#1	1,013.00'	3.604 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,013.00	0.729	0.000	0.000
1,014.00	0.813	0.771	0.771
1,015.00	0.899	0.856	1.627
1,016.00	0.988	0.943	2.570
1,017.00	1.079	1.033	3.604

Device	Routing	Invert	Outlet Devices
#1	Primary	1,013.00'	48.0" Round Culvert L= 100.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 1,013.00' / 1,012.50' S= 0.0050 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 12.57 sf

Primary OutFlow Max=69.55 cfs @ 12.15 hrs HW=1,016.89' TW=1,008.19' (Dynamic Tailwater)
 ↑ **1=Culvert** (Barrel Controls 69.55 cfs @ 7.09 fps)

Pond 23P: NW Basin (Full Post)

Hydrograph



Summary for Pond 24P: SW Basin (Phase 1)

Inflow Area = 12.450 ac, 0.00% Impervious, Inflow Depth = 3.25" for 100-year event
 Inflow = 43.69 cfs @ 12.14 hrs, Volume= 3.376 af
 Outflow = 1.11 cfs @ 28.11 hrs, Volume= 2.938 af, Atten= 97%, Lag= 958.5 min
 Primary = 1.11 cfs @ 28.11 hrs, Volume= 2.938 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
 Peak Elev= 1,013.88' @ 19.89 hrs Surf.Area= 1.597 ac Storage= 2.694 af

Plug-Flow detention time= 1,246.5 min calculated for 2.938 af (87% of inflow)
 Center-of-Mass det. time= 1,184.5 min (2,017.3 - 832.8)

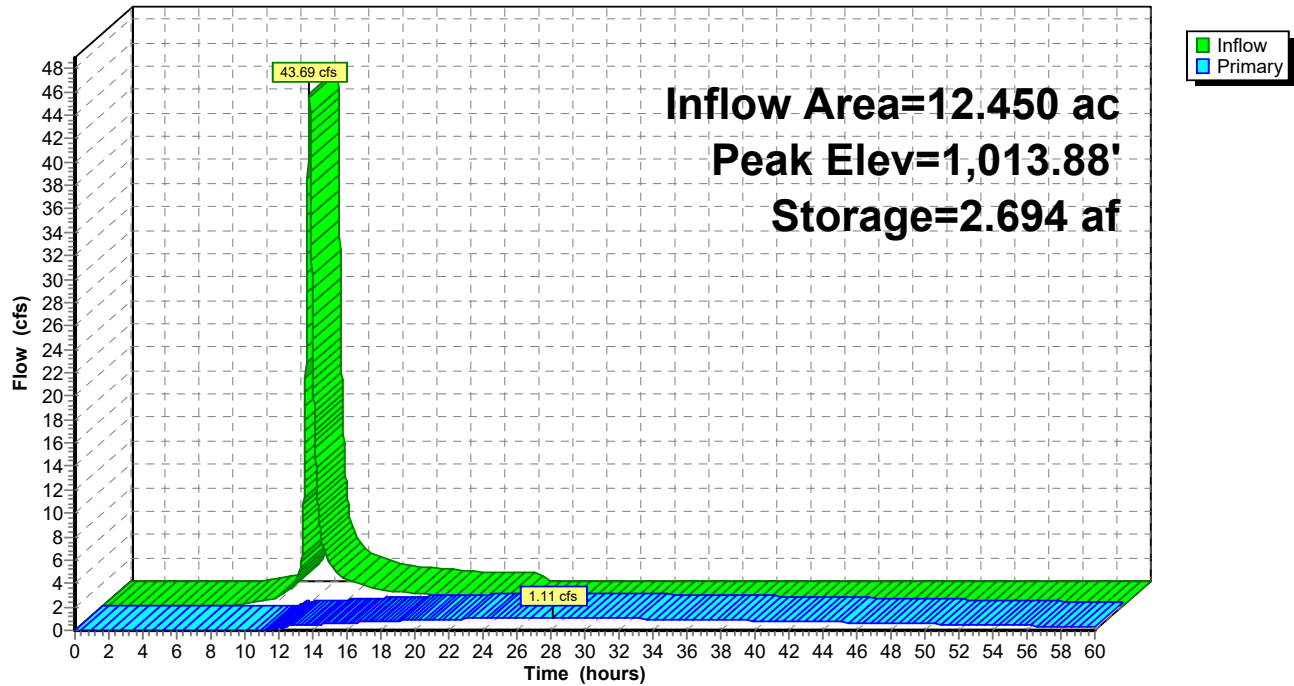
Volume	Invert	Avail.Storage	Storage Description
#1	1,012.00'	10.787 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
1,012.00	1.275	0.000	0.000
1,013.00	1.446	1.360	1.360
1,014.00	1.619	1.532	2.893
1,015.00	1.794	1.706	4.599
1,016.00	1.972	1.883	6.482
1,017.00	2.152	2.062	8.544
1,018.00	2.334	2.243	10.787

Device	Routing	Invert	Outlet Devices
#1	Primary	1,012.00'	6.0" Vert. Orifice Plate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.11 cfs @ 28.11 hrs HW=1,013.62' TW=1,012.25' (Dynamic Tailwater)
 ↑ **1=Orifice Plate** (Orifice Controls 1.11 cfs @ 5.63 fps)

Pond 24P: SW Basin (Phase 1)

Hydrograph





A legacy of **experience**. A reputation for **excellence**.

APPENDIX C:

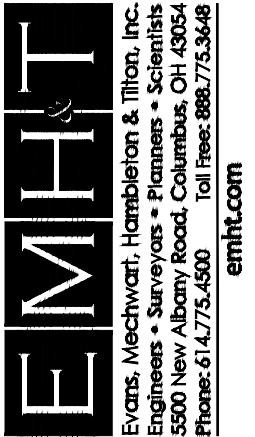
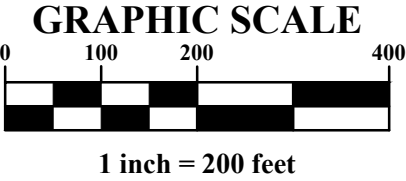
Exhibits

u:\20190848\Drawings\04Sheets\Exhibits\stormwater\20190848 - Pre-Developed Trib Map.dwg, Last Saved By: mlevine, 1/8/2021 3:00 PM Last Printed By: Levine, Megan, 1/8/2021 3:01 PM (No Xrefs)



PRELIMINARY
.....
NOT TO BE USED FOR
CONSTRUCTION

PLAN SET DATE
JANUARY 08, 2021



CITY OF PATASKALA, LICKING COUNTY, OHIO
PRELIMINARY STORMWATER MANAGEMENT PLAN
FOR
HAZELTON CROSSING
PRELIMINARY PRE-DEVELOPED TRIBUTARY
MAP

Rockford Homes

REVISIONS

MARK	DATE	DESCRIPTION

DATE
January, 2021

SCALE
1" = 200'

JOB NO.
2019-0848

SHEET
01/03

TAB 8
SERVICEABILITY
LETTERS



DR. KASEY PERKINS
SUPERINTENDENT
SOUTHWEST LICKING LOCAL SCHOOL DISTRICT

January 7, 2020

Dear Mr. Corey Theuerkauf,

I am confirming that I have received the proposed EX-D2 Phasing Plans. I would be remised in not sharing my concerns regarding the amount of housing going into this project. The price range of these homes will target young and growing families, ultimately increasing the population in our school district. The District is already going to be near capacity as our building project is completed in the fall of 2023. Housing complexes such as this Rockford Homes development will continue to increase our student population at an alarming rate that our current buildings are not equipped to handle. I am concerned regarding community support for school bonds for new buildings, when they are already frustrated by the excessive growth in our school community.

Thank you for reaching out and sharing the upcoming development,

A handwritten signature in black ink that reads "Kasey Perkins".

Dr. Kasey Perkins
Superintendent
kperkins@laca.org

Exhibit 'S'

From: Scott Fulton <sfulton@ci.pataskala.oh.us>
Sent: Wednesday, January 6, 2021 12:41 PM
To: Robert O'Neill <Robert@southgatecorporation.com>
Cc: Corey Theuerkauf <CTheuerkauf@rockfordhomes.net>; Gary Smith (gsmith@g2planning.com)
<gsmith@g2planning.com>
Subject: RE: **Request for Letter of Communication**

Rob,

This email satisfies the requirement. You're all set.

Happy New Year,

SCOTT FULTON

Director of Planning
City of Pataskala
621 West Broad Street, Suite 2-A
Pataskala, Ohio 43062
Phone: 740-927-2168
Cell: 614-440-5222

From: Robert O'Neill <Robert@southgatecorporation.com>
Sent: Tuesday, January 5, 2021 5:21 PM
To: Scott Fulton <sfulton@ci.pataskala.oh.us>
Cc: Corey Theuerkauf <CTheuerkauf@rockfordhomes.net>; Gary Smith (gsmith@g2planning.com)
<gsmith@g2planning.com>
Subject: FW: **Request for Letter of Communication**

Hello Scott,

I hope you are doing well and your holiday was a good one. Happy New Year!

As part of our updated information, we are working to complete the items requested by the City related to our Rockford submittal and I want to be sure the email exchange with Richard Jones satisfies Pataskala's notification requirement.

Please confirm for me the acknowledgement by Richard Jones from the SWL School District completes the school district notification requirement.

Thanks, Rob

Robert E. O'Neill
Southgate Corporation
740-522-2151 office
740-258-2074 mobile

Exhibit 'S'

From: Jones, Richard D. (Southwest Licking Local Schools) [<mailto:rdjones@laca.org>]
Sent: Monday, January 4, 2021 3:41 PM
To: Robert O'Neill <Robert@southgatecorporation.com>
Cc: Corey Theuerkauf <CTheuerkauf@rockfordhomes.net>; sfulton@ci.pataskala.oh.us
Subject: RE: **Request for Letter of Communication**

Rob,

Good afternoon! Thank you for sharing the information.

Richard D. Jones
Treasurer
Southwest Licking LSD
Phone: (740) 927-3941
Fax: (740) 927-4648

From: Robert O'Neill <Robert@southgatecorporation.com>
Sent: Tuesday, December 29, 2020 3:49 PM
To: Jones, Richard D. (Southwest Licking Local Schools) <rdjones@laca.org>
Cc: Corey Theuerkauf <CTheuerkauf@rockfordhomes.net>; sfulton@ci.pataskala.oh.us
Subject: FW: **Request for Letter of Communication**

Hello Richard,

I am following on my previous emails regarding the Southgate land development project in Pataskala with Rockford Homes. Corey Theuerkauf from Rockford sent this summary to Dr. Perkins today and I wanted you to have the same information. Please let me know if you have any questions.

Thanks, Rob

Robert E. O'Neill
Southgate Corporation
740-522-2151 office
740-258-2074 mobile

Exhibit 'S'

From: Corey Theuerkauf [<mailto:CTheuerkauf@rockfordhomes.net>]
Sent: Tuesday, December 29, 2020 1:45 PM
To: kperkins@laca.org
Cc: bbalawajder@laca.org; Phil Moorehead <pmoorehead@g2planning.com>; Robert O'Neill <Robert@southgatecorporation.com>
Subject: **Request for Letter of Communication**

Dear Dr. Perkins,

As part of the public review and approval process for residential developments in Pataskala, their code requires any proposed residential community obtain a letter of communication from the school district. I called the district offices today and I was instructed to email my request to you, if you're not the appropriate person please let me know so I can reach that person as soon as possible. Attached to the email is a screen shot of the Pataskala code section, a site map and our proposed phasing plan of the overall master planned community. The community is broken up into four (4) subareas (A-D): subarea A is planned for commercial use; subarea B is planned for condominium living; subarea C is planned for retirement living and subarea D is planned for single-family housing.

Subareas A-C development time frame is not yet known. However, subarea D is planned to start development potentially in 2021, pending approval from the City of Pataskala. Within subarea D, I anticipate developing the community in four (4) phases as the market demand allows. The anticipated absorption rate of the community based on current trends is estimated at 2.5 lots per month. The total number of lots in subarea D is one-hundred and fifty-three (153) lots. The anticipated lot absorption and timeframe for site development of the community projects 100% completion in 5-7 years. The anticipated price range of the single-family homes will be \$280,000 - \$350,000.

If you have any further questions do not hesitate to contact me by phone or email, my contact information is listed below. If there are no further questions please direct the letter to my attention and if you could email it to me that would help with our timing of submission to the city, the US Postal Office is backed up this time of year.

Sincerely,

Corey Theuerkauf
Vice President of Land



999 Polaris Parkway Suite 200, Columbus, OH 43240
O: 614-785-0015
CTheuerkauf@rockfordhomes.net |
www.rockfordhomes.net



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Exhibit 'S'

Phil Moorehead

From: Chris Gilcher <cgilcher@swlcws.com>
Sent: Monday, January 11, 2021 8:14 AM
To: Shreves, Kyle
Cc: Corey Theuerkauf (CTheuerkauf@rockfordhomes.net); Gary Smith; Bruno, John; Scott Fulton; 'Jack Kuntzman'; 'Alan Haines'
Subject: RE: Hazelton - 310/Refugee

Kyle,

Water and sanitary flow rates will be determined during the final engineering construction plan review portion of the project. Sanitary sewer and water flow rates shall be calculated utilizing the reference materials in SWLCWS District Rules and Regulations Section 502. Sanitary sewer flows shall not exceed the design capacity of the existing "Stoney Ridge" Lift Station nor shall the project be constructed prior to upgrade of the existing "Smoke & Refugee Road Lift Station".

If you have any questions, please feel free to contact me at any time.

Thanks,

CJ Gilcher
Utilities Superintendent
8718 Gale Road
Hebron, Ohio 43025
Ph: 740-928-2178 Cell: 614-348-6627



From: Chris Gilcher
Sent: Thursday, December 17, 2020 3:40 PM
To: Shreves, Kyle <kshreves@emht.com>
Cc: Corey Theuerkauf (CTheuerkauf@rockfordhomes.net) <CTheuerkauf@rockfordhomes.net>; Gary Smith <gsmith@g2planning.com>; Bruno, John <jbruno@emht.com>; Scott Fulton <sfulton@ci.pataskala.oh.us>; 'Jack Kuntzman' <jkuntzman@ci.pataskala.oh.us>; 'Alan Haines' <ahaines@ci.pataskala.oh.us>
Subject: RE: Hazelton - 310/Refugee

Kyle,

Please see the attached preliminary plan review comments for the Hazelton Crossing Project.

If you have any questions, please feel free to contact me at any time.

Thanks,

CJ Gilcher
Utilities Superintendent
8718 Gale Road
Hebron, Ohio 43025
Ph: 740-928-2178 Cell: 614-348-6627



From: Shreves, Kyle <kshreves@emht.com>
Sent: Tuesday, December 8, 2020 9:13 AM
To: Chris Gilcher <cgilcher@swlcws.com>
Cc: Corey Theuerkauf (<CTheuerkauf@rockfordhomes.net> <CTheuerkauf@rockfordhomes.net>; Gary Smith <gsmith@g2planning.com>; Bruno, John <jbruno@emht.com>; Scott Fulton <sfulton@ci.pataskala.oh.us>; 'Jack Kuntzman' <jkuntzman@ci.pataskala.oh.us>; 'Alan Haines' <ahaines@ci.pataskala.oh.us>
Subject: RE: Hazelton - 310/Refugee

Chris,
Per our previous discussions, please find attached the updated preliminary utility plan per your request. I have shown the public and private water systems in different colors for reference. Please review and provide any feedback or send over any concerns or questions to me and if needed we could jump on a call to discuss.

Thank you for your review and time as this having your review and acceptance of the utility layout will be utilized in the preliminary development resubmittal to the City.

Kyle J Shreves, PE
Sr. Project Manager / Associate



EMH&T Engineers, Surveyors, Planners, Scientists
5500 New Albany Road, Columbus, OH 43054
v. 614.775.4443 | c. 614.989.8754 | KShreves@emht.com
emht.com

From: Shreves, Kyle <kshreves@emht.com>
Sent: Thursday, November 12, 2020 8:34 AM
To: Chris Gilcher <cgilcher@swlcws.com>
Cc: Corey Theuerkauf (<CTheuerkauf@rockfordhomes.net> <CTheuerkauf@rockfordhomes.net>; Gary Smith <gsmith@g2planning.com>; Bruno, John <jbruno@emht.com>; Scott Fulton <sfulton@ci.pataskala.oh.us>; 'Jack Kuntzman' <jkuntzman@ci.pataskala.oh.us>; 'Alan Haines' <ahaines@ci.pataskala.oh.us>
Subject: RE: Hazelton - 310/Refugee

Chris,
Thank you for the discussion. I will update the few things we discussed on the call and get an updated utility plan for review/comment. In regards to the future uses and water lines (public/private) for the areas to the west of the single family portion, I will review with the developer's on what the intent would be and update the plan as well.

Per our call, the water calculations are not typically required by your offices and the sanitary calculations would come with the final engineering of the site. I can see what we can pull together from a sanitary perspective using our analysis of the pump station to the north as a jumping off point so you have something in the file.

Thanks

Kyle J Shreves, PE
Sr. Project Manager / Associate



EMH&T Engineers, Surveyors, Planners, Scientists
5500 New Albany Road, Columbus, OH 43054
v. 614.775.4443 | c. 614.989.8754 | KShreves@emht.com
emht.com

From: Chris Gilcher
Sent: Thursday, November 12, 2020 8:03 AM
To: Shreves, Kyle
Cc: Corey Theuerkauf (CTheuerkauf@rockfordhomes.net) ; Gary Smith ; Bruno, John ; Scott Fulton ; 'Jack Kuntzman' ; 'Alan Haines'
Subject: RE: Hazelton - 310/Refugee

Kyle,

Can you please send me a preliminary plan set for review. The District has not received anything on this project.

Thanks,

CJ Gilcher
Utilities Superintendent
8718 Gale Road
Hebron, Ohio 43025
Ph: 740-928-2178 Cell: 614-348-6627



From: Shreves, Kyle <kshreves@emht.com>
Sent: Monday, November 9, 2020 8:08 AM
To: Chris Gilcher <cgilcher@swlcws.com>
Cc: Corey Theuerkauf (CTheuerkauf@rockfordhomes.net) <CTheuerkauf@rockfordhomes.net>; Gary Smith <gsmith@g2planning.com>; Bruno, John <jbruno@emht.com>
Subject: Hazelton - 310/Refugee

Chris,
We received two comments from the Pataskala review of the preliminary development plan on the above project. We have talked about this site previously regarding the pump stations, but based on Pataskala's comments we need a letter

from your offices that indicate that SWL can service the site for sanitary and water and are in general agreement of the utility layouts. My assumption is that the second (blue) comment is set up more for a Pataskala serviced site, but could be addressed in your letter that the 155 single family can be serviced by SWL.

Is this something you can take a look at for us and pull together? Feel free to call to discuss. Thanks

- *1255(a)(3)(F)(8) The provision of water, sanitary sewer;*
 - *Undetermined. While water and sanitary sewer on shown on Exhibit I, the SWLCWSD has not reviewed the layout.* Southgate / EMHT
- *1113.07(f) Calculations that develop the water and sanitary sewer demand rates for the subdivision.*
 - *Incomplete, not provided*

Kyle J Shreves, PE

Sr. Project Manager / Associate



EMH&T Engineers, Surveyors, Planners, Scientists

5500 New Albany Road, Columbus, OH 43054

v. 614.775.4443 | c. 614.989.8754 | KShreves@emht.com

emht.com

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From: [Gary Smith](#)
To: [Phil Moorehead](#)
Subject: FW: Southgate/Hazelton Crossing Review
Date: Tuesday, April 27, 2021 8:29:14 PM
Attachments: [image002.png](#)
[image003.png](#)
[image004.png](#)
[image005.png](#)
[image006.png](#)
[image007.png](#)
[image008.png](#)
[image009.png](#)

Kind Regards,

GARY SMITH, RLA | CLARB
PARTNER
GSMITH@G2PLANNING.COM (O) 614.583.9230 (C) 614-390-6149
720 East Broad Street, Suite 200 Columbus, Ohio 43215

-----Original Message-----

From: Shreves, Kyle <kshreves@emht.com>
Sent: Monday, April 26, 2021 4:08 PM
To: Gary Smith <gsmith@g2planning.com>; Corey Theuerkauf (CTheuerkauf@rockfordhomes.net) <ctheuerkauf@rockfordhomes.net>; Robert O'Neill <Robert@southgatecorporation.com>
Subject: Fwd: Southgate/Hazelton Crossing Review

Gary, I am not in the office but wanted to get this you you. The stormwater comment is good to go.

Get Outlook for Android<<https://aka.ms/AAb9ysg>>
From: Miller, Ben <bmill@structurepoint.com>
Sent: Monday, April 26, 2021 3:52:45 PM
To: Chouteau, Jessica <jchouteau@emht.com>
Cc: Shreves, Kyle <kshreves@emht.com>; Levine, Megan <mlevine@emht.com>; Goodwin, Shawn <SGoodwin@structurepoint.com>
Subject: RE: Southgate/Hazelton Crossing Review

Jessica~

From our conversation this afternoon as well as your explanation below, the method you describe is acceptable. Please disregard the comment on the review letter and proceed under the direction that the Stormwater Report, dated 1/8/2021, for Hazelton Crossing is approved as submitted.

Let me know if you have any further questions.

Exhibit 'U'

Thanks,

BENJAMIN J. MILLER, P.E.

Team Leader – Civil – OH

2550 Corporate Exchange Drive – Suite 300

Columbus, OH 43231

614.901.2235 office

614.598.1919 CELL

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[social media6]

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Best Employers in Ohio

From: Chouteau, Jessica <jchouteau@emht.com>
Sent: Monday, April 26, 2021 3:46 PM
To: Miller, Ben <bmillier@structurepoint.com>
Cc: Shreves, Kyle <kshreves@emht.com>; Levine, Megan <mlevine@emht.com>
Subject: FW: Southgate/Hazelton Crossing Review

Exhibit 'U'

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Benjamin

Thank you for discussing the Hazelton Crossing Project review with me. We wanted to clarify the PUD application review comment from February 26, 2021 in your attached review letter for Hazelton Crossing. The allowable post developed peak discharge rates were calculated by applying the critical storm to the pre developed on-site discharge for each storm and adding the offsite pre flows that will pass thru the basin during phase 1 only. The full build calculation does not have offsite area and all post areas will be detained to critical storm. This is the typical critical storm method calculation and will be carried through to the final stormwater management plan.

As discussed, we will disregard the stormwater report comment. Please confirm approval of the January 8, 2021 stormwater report for the Hazelton Crossing PUD application.

Thanks

Jessica Chouteau, PE
Water Resources Engineer

[EMH&T-email-logo]

EMH&T Engineers, Surveyors, Planners, Scientists
5500 New Albany Road, Columbus, OH 43054 v. 614.775.4373 |
jchouteau@emht.com<<mailto:jchouteau@emht.com>>

emht.com<<http://www.emht.com/>>

From: Robert O'Neill <Robert@southgatecorporation.com<<mailto:Robert@southgatecorporation.com>>>
Sent: Wednesday, April 14, 2021 10:58 AM
To: Bob Yoakam <BYoakam@rockfordhomes.net<<mailto:BYoakam@rockfordhomes.net>>>; Corey Theuerkauf
<CTheuerkauf@rockfordhomes.net<<mailto:CTheuerkauf@rockfordhomes.net>>>; Shreves, Kyle
<kshreves@emht.com<<mailto:kshreves@emht.com>>>
Cc: Gary Smith (gsmith@g2planning.com<<mailto:gsmith@g2planning.com>>
<gsmith@g2planning.com<<mailto:gsmith@g2planning.com>>>; Miller, Joseph R.
<JRMiller@vorys.com<<mailto:JRMiller@vorys.com>>>; Frank Rosato
<Frank@southgatecorporation.com<<mailto:Frank@southgatecorporation.com>>>
Subject: FW: Southgate/Hazelton Crossing Review

Exhibit 'U'

Good Morning,

We have a response from Pataskala and please see the attached comments. I'll also forward email we received yesterday with the SWL Fire Dept comments.

If possible, I would like to set up a call for Friday to review these comments. Please let me know your availability for a Friday call.

Thanks, Robert

Robert E. O'Neill

Southgate Corporation

740-522-2151 office

740-258-2074 mobile

From: Scott Fulton [<mailto:sfulton@ci.pataskala.oh.us>]

Sent: Monday, April 12, 2021 12:44 PM

To: Gary Smith (gsmith@g2planning.com<<mailto:gsmith@g2planning.com>>)

Cc: Robert O'Neill ; Tim Hickin

Subject: Southgate/Hazelton Crossing Review

Gary,

Please see the review comments attached. We are still waiting on comments from the Fire District, but I will forward them to you once received.

If you have any questions, please let me know.

Thanks,

Scott Fulton

Director of Planning

City of Pataskala

621 West Broad Street, Suite 2-A

Exhibit 'U'

Pataskala, Ohio 43062

Phone: 740-927-2168

Cell: 614-440-5222

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Exhibit 'U'

Phil Moorehead

From: Gary Smith
Sent: Tuesday, April 27, 2021 8:31 PM
To: Phil Moorehead
Subject: FW: Hazelton Storm Sewer
Attachments: 20190848-PREP-01.pdf

Kind Regards,



GARY SMITH, RLA | CLARB
PARTNER

GSMITH@G2PLANNING.COM (O) 614.583.9230 (C) 614-390-6149
720 East Broad Street, Suite 200 Columbus, Ohio 43215

From: Shreves, Kyle <kshreves@emht.com>
Sent: Thursday, April 22, 2021 6:57 AM
To: Alan Haines (ahaines@ci.pataskala.oh.us) <ahaines@ci.pataskala.oh.us>
Cc: Corey Theuerkauf (CTheuerkauf@rockfordhomes.net) <CTheuerkauf@rockfordhomes.net>; Gary Smith <gsmith@g2planning.com>; Robert O'Neill <Robert@southgatecorporation.com>; Schehl, Steve <SSchehl@emht.com>
Subject: Hazelton Storm Sewer

Alan,

Thank you for taking our call yesterday. Per our conversation and understanding, final designs of the storm systems will work to have rear yard mainline sewers offset 5' or more from the rear property line and catch basins every other lot to mitigate the request for eliminating storm sewer in the rear yard. As discussed this will assist in future maintenance.

Per our conversation, the Hazelton project in particular, the storm layout as shown on the attached is acceptable by you and we will respond as such to the comments received from the January submittal.

Also to document our conversation for your records as well, the goal of the grading and storm sewer system is to protect the home, which requires grading away from the home. The front half of the home goes to the front, back half goes to the rear to the storm system. The rear yard area is the major flood route area, again protecting the home from flooding. The mainline in this location is the most successful and allows for the most flexibility in getting drainage away from the homes and flood routing out to the streets and into the basins.

As discussed, there were several reasons given in the call in favor of limiting the front yard storm systems and side yard systems. Please see list below of items discussed:

- ... Front yard storm systems along the frontage create conflicts with the landscaping, drives, walks, utilities (private/public), signage, etc. when dealing with maintenance of the storm system.
- ... Eliminating the rear yard system also has the potential to double up storm systems on adjacent roadways in a traditional grid pattern development. Curb inlets along the roadway typically are picked up via a rear yard

backbone through side yards. With rear yard storm eliminated the front yard storm will need to be ran along both streets in the grid pattern.

- ... Water and Sanitary services and private entity utility services have the potential to have their facilities located adjacent/under the storm and storm backfill. The ability to maintenance the facilities would both be hindered and have the chance for damaging the City's public storm system. Typically, a home owner will call a private Contractor to assist in fixing any issues with services, thus having the potential for the City to not have any notice or inspection on the work being completed.
- ... The side yard storm would require repairs to be completed in a confined area in very close proximity to private homes. Any work would need to be completed in a minimum space of 20' as that is the typical storm sewer easement width.
- ... Every run installed between homes now has the potential to become hydraulically connected to the basements. This happened in another municipality and the municipality had to come back and correct all the side yard storm systems and install sump pumps in adjacent homes at their cost.

Thank you for the call and time.

Kyle J Shreves, PE

Sr. Project Manager / Associate



EMH&T Engineers, Surveyors, Planners, Scientists

5500 New Albany Road, Columbus, OH 43054

v. 614.775.4443 | c. 614.989.8754 | KShreves@emht.com

emht.com

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Gary Smith

From: Brian M. Zets <bzets@isaacwiles.com>
Sent: Tuesday, April 21, 2020 8:15 AM
To: Miller, Joseph R.
Cc: Ingram, Christopher L.
Subject: [EXTERNAL] RE: Southgate v. Pataskala: Traffic Study Protocol

CAUTION: External Email.

Joe –

In order to settle this matter, the City needs Southgate to conduct a new traffic impact study for the entire 95-acre development. Southgate must comply fully with all recommendations of the traffic impact study. As previously noted by the City (in September 2019), the follow items also need addressed in addition to, and in connection with, the traffic impact study:

1. The western most access on Refugee Road into the subdivision must be the main entrance to the subdivision
2. The eastern most access to Refugee Road must be removed and an emergency access must be added and installed in its place (or align with Street B to Refugee Road)
3. A roadway connection must be added and installed in the 0.18 acre open space off Street D
4. The SR 310 access to Sub-Area B must be a right in/right out configuration
5. An access road must be added and installed behind Outparcel 1 in order to provide full access to Sub-Area B
6. The access road between Outparcels 5 and 6 (in Sub-Area A) must be a right in/right out configuration

If the above-listed revisions are made to the plan, the Public Service Director will not oppose any divergences related to the radii at the north end of streets B and D even though they do not meet code and require a divergence.

Southgate also must straighten the bowed streets to the east and west of the Gathering Area. Otherwise, the bowed streets will be confusing for motorists and create sight distance issues.

Looking at all of this together, the settlement agreement needs to address two items: (1) Southgate's Preliminary Development Plan (the actual drawing) needs revised/updated and (2) we need to incorporate the above-listed items and details from the EMH&T MOU into a settlement agreement. Thoughts on to accomplish this easily? Maybe it is as easy as cutting and pasting some of the MOU into a settlement agreement. Do you want me to put together a draft?

As you know, any settlement must be formally authorized and approved by council. And, this cannot happen until council meets and deliberates in open session. That said, if Southgate agrees to modify its Preliminary Development Plan as discussed herein, perform a new traffic impact study based upon the revised PDP, and fully comply with all recommendations of the traffic study, the Public Service Director and the Director of Planning will recommend this settlement to council so that council can approve, via a settlement agreement, Southgate's Hazleton Crossing Preliminary Development Plan and Text.

Finally, if we want to seriously look at this option, we need to continue the May 4 PI Hearing. While we will move as quickly as possible to put together the draft settlement agreement, we should focus on settlement over the next two weeks.



Brian M. Zets

Attorney at Law

Two Miranova Place, Ste. 700

Columbus, OH 43215-5098

t 614.221.2121 • f 614.365.9516

d 614.857.1377

Bzets@isaacwiles.com

www.isaacwiles.com

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From: Miller, Joseph R. <JRMiller@vorys.com>
Sent: Monday, April 20, 2020 9:44 AM
To: Brian M. Zets <bzets@isaacwiles.com>
Cc: Ingram, Christopher L. <clingram@vorys.com>
Subject: Southgate v. Pataskala: Traffic Study Protocol

Brian,

I have not heard back from you in response to my prior correspondence concerning an appropriate protocol for a traffic study in order to see if this matter can be resolved. However, I did want to let you know, in consultation with EMH&T, there appears to be a clear answer to this. EMH&T developed the attached MOU based specifically upon its communications with Alan Haines at the City last fall, including a detailed conversation on November 6th. EMH&T would also intend to address the 7 comments regarding access raised by Scott Fulton and Mr. Haines set forth in the attached email from last September.

I hope this is helpful and that all is well with you and your family.

Thanks,

Joe

From the law offices of Vorys, Sater, Seymour and Pease LLP.

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From: [Chris Gilcher](#)
To: [Shreves, Kyle](#)
Cc: [Robert O'Neill](#); [Corey Theuerkauf](#); [Gary Smith](#)
Subject: RE: Hazelton Crossing Review
Date: Monday, April 19, 2021 11:35:12 AM
Attachments: [image001.png](#)
[image002.png](#)
[SKM_C250i21041911260.pdf](#)

Kyle,

See below in RED.

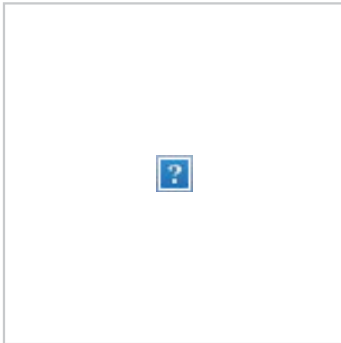
CJ Gilcher

Utilities Superintendent

8718 Gale Road

Hebron, Ohio 43025

Ph: 740-928-2178 Cell: 614-348-6627



From: Shreves, Kyle
Sent: Friday, April 16, 2021 11:08 AM
To: Chris Gilcher
Cc: Robert O'Neill ; Corey Theuerkauf ; Gary Smith (gsmith@g2planning.com)
Subject: Hazelton Crossing Review

Chris,

I have two questions regarding the attached comment letter.

- Which sewer line are you concerned about on the proximity to the basins? Please note, these are preliminary/schematic in nature and final engineering will better place the improvements. Maybe you are alluding to that in the comment letter, but we would like a clear definitive response that, as shown, the lines are acceptable and further placement would be needed with final engineering. See attached. Per the letter, the District approved the preliminary plan as noted.
- Also, with regards to the flow capacity of the 12" along Refugee, can you confirm the District would be able to aid in overall tributary area or current flows in the pipe when we get to that stage in engineering? Trying to understand the scope of work that we may be heading towards. The District can provide assistance on existing flow estimates.

Thanks

Kyle J Shreves, PE

Sr. Project Manager / Associate



Exhibit 'X'