P&Z Commission
07.15.2020 Meeting
Exhibit A1

Village of Powell, Ohio

Planned District Development

Application For:

Submitted On:

May 26, 2020

Submitted For:

Camber Company
Contact: **Chris Bradley**
6760 Colt Court
Dublin, Ohio 43017
614.578.3581

Submitted By:

G2 PLANNING + DESIGN

Contact: **Gary Smith, RLA|CLARB**
720 E. Broad Street, Suite 200
Columbus, Ohio 43215
614.371.4668

Powell OHIO

• Application

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PLANNING AND ZONING COMMISSION (P&Z)
FINAL DEVELOPMENT PLAN APPLICATION

ALL ITEMS ON THIS APPLICATION MUST BE COMPLETED.

Application Fee: $700.00 + $100.00 per acre
Per Fee Ordinance 2019-49

Applicant: The Camber Company, LLC

Address/City/State/Zip: 6760 Colt Court, Dublin, OH 43017

Email Address: thecambercompany@gmail.com

Phone No: _____ Cell Phone No: 614.578.3581 Fax No: _____

Property Owner: 1. Ronald D & Tamra K Rath 2. Michelle Smith & Jeff Starkey

Address/City/State/Zip: 1. 2630 Carriage Rd., Powell, OH 43065 2. 8061 Liberty Rd., Powell, OH 43065

Email Address: 1. bayhillfarm@hotmail.com 2. jstarkey72@yahoo.com

Phone No: _____ Cell Phone No: _____ Fax No: _____

Architect/Designer for Applicant: G2 Planning + Design

Address/City/State/Zip: 720 E Broad St., Columbus, OH 43205

Email Address: gsmith@g2planning.com

Phone No: 614.583.9230 Cell Phone No: _____ Fax No: _____

Property Address: 1. 2630 Carriage Rd., Powell, OH 43065 2. 8061 Liberty Rd., Powell, OH 43065

Lot Number/Subdivision: N/A Existing Use: _____ Proposed Use: S.F. Homes

Reason for Administrative Review (attach necessary documents):

Checklist:

☐ Preliminary Plan requirements set forth in Section 1143.11(c) and Final Plan requirements set forth in Section 1143.11(i).

☐ Provide any other information that may be useful to the Planning and Zoning Commission or City Staff in the space below or attach additional pages.

☐ **5 copies** of all drawings, text, any other items, and application.

☐ **1 digital copy** (CD, USB, Email) of the complete application packet.

☐ Attach the required fee - $700.00 + $100.00 per acre.

☐ Post a public notice sign at least (10) days prior to a public hearing or public meeting, pursuant to ordinance 1107.035

Public notice sign details found here.

(See Over)

APPROVAL SHALL EXPIRE AND MAY BE REVOKED IF CONSTRUCTION DOES NOT BEGIN WITHIN TWO (2) YEARS FROM THE DATE OF ISSUANCE OF APPROVAL.

I agree to grant the City Staff, the Commission, Board or Council considering this application access to the property that is the subject of this application for the purposes of reviewing this application and posting public notice for this application.

Signature of Applicant: _____ Date: _____

Office Use

Received

Office Use

Type/Date: _____

Base Fee: $700.00

Per Acre: $100.00X ( ) = _____

Total: _____

Prepared by: _____

Reviewed by: _____

PAYOR: _____

RECIEPT # _____

City of Powell · 47 Hall Street · Powell, Ohio 43065 · (614) 885-5380 · (614) 885-5339 fax· www.cityofpowell.us

TAB 1
DEVELOPMENT PLAN TEXT

PRELIMINARY DEVELOPMENT PLAN SUBMITTAL

January 22, 2020

(1) Name, address, and phone number of applicant;

The Camber Company, LLC
Chris Bradley, Principal
6760 Colt Court
Dublin, OH 43017
(614) 578-3581

(2) Name, address, and phone number of registered engineer and/or urban planner assisting in the preparation of the preliminary development plan;

Land Planner:
Gary Smith, G2 Planning+Design
720 East Broad Street, suite 200
Columbus, OH 43215
Phone: (614) 583-9230

Engineer:
Christopher Lescody, PE
E.P. Ferris & Associates, Inc.
800 King Ave
Columbus, OH 43212
Phone: (614) 299-2999

(3) Legal description of the property;

Legal Description enclosed.

(4) A description of present use(s) on and of the land;

2 single family homes, a barn and aging horse stables which currently serve as a business for horse training and riding lessons.

(5) A vicinity map at a scale approved by the Zoning Inspector showing all property lines, existing streets and alleys, approved future streets and land uses on adjacent Planned District areas, transportation and land use elements of the Municipality's adopted Comprehensive Plan, current zoning classifications and boundaries, and current land uses on the site of the proposed Planned District development and in the surrounding

areas to the physical extent deemed necessary by the Zoning Inspector, but no less than 250 feet beyond the limits of the proposed Planned District Development Plan.

Vicinity map enclosed.

(6) A preliminary development plan at a scale approved by the Zoning Administrator illustrating:

A Preliminary Development Plan and Conceptual Landscape Plan addressing items A-N are enclosed with the application.

A. The property line definition and dimensions of the perimeter of the site;

B. Right-of-ways and paving widths of all existing, currently platted, and previously approved Planned District streets and alleys adjacent to, on, or abutting the site;

C. The area of the site and its subareas in acres;

D. The topography of the site and abutting areas at no more than five foot contour intervals;

E. Existing surface drainageways and surface sheet flow patterns;

F. Flood plain areas, ravine-bottom areas, and areas of ground slope in excess of six percent;

G. Existing vegetation on the site with specific tree spots for all trees six inches in diameter or greater, measured 24 inches from the ground.

H. Existing easements on the site with notations as to their type, extent, and nature;

I. The location and dimensions of existing utilities on and adjacent to the site, including the nearest sanitary sewer, with manhole invert elevations;

J. Calculation of the maximum residential units permitted on the site under the terms of this Zoning Ordinance, including delineation of the subdistricts of the site upon which these calculations have been made;

K. A preliminary plan for the first, or next, phase of site development illustrating:

1. New street centerlines, right-of-ways, and street classification types;

2. Names of existing and proposed streets;

The property fronts to Liberty Road to the west and Carriage Road to the South. Proposed internal street names TBD.

3. Generalized lot and block layouts, indicating and illustrating property lines, minimum lot areas, minimum building setbacks and yards, location and extent of major off-street parking areas, etc.;

4. Subareas of the site to be developed, by land use type, housing types, and housing densities, including subarea statistics;

5. All proposed structures shall be located showing square footage, tenant or user types, and expected entranceways and service or loading areas;

6. Common open areas, public lands, and natural scenic easements, including the area of each;

7. Proposed landscape treatment of the site;

8. Proposed utility patterns and provisions, including sanitary sewer, individual waste disposal systems, storm sewer, trash collection systems, outdoor lighting, and water supply, including relevant easements and engineering feasibility studies or other evidences of reasonableness;

9. Provisions for accommodating surface drainage runoff;

10. Proposed architectural design criteria;

11. Proposed pedestrian/jogging/bicycle pathways and equestrian paths, including locations, dimensions, landscape and construction, including relationships of such pathways to existing and proposed future pathways on surrounding property;

12. Overall site development statistics comparing this plan for development with requirements of this Zoning Ordinance and with the comprehensive plan and indicating that all requirements of this Zoning Ordinance and the comprehensive plan have been met in this preliminary plan and will be met in final development.

L. Projected development schedule by subareas of the entire planned development site, and for the first, or next, phase of development, including land uses, public areas, natural and scenic reserves, streets, buildings, utilities, and other facilities, indicating the relationship of the proposed development to existing and probable uses of surrounding areas during the development timetable;

M. An overall traffic scheme, illustrating points of access, parking areas, including the number of parking spaces and indicating visitor, employee and service traffic flow, illustrating calculated peak hour traffic use for residents and employees as well as deliveries and other transport and the effect of this traffic on the community traffic ways.

Each home will have a minimum of a 2 car garage. The driveways will support two additional parking spaces. On street parking will be available as well.

N. If to be developed in phases, the entire site development shall be described in outline and diagrammatic plan form, and in a complementing detailed text in a manner calculated to assure City officials that Planned Development requirements and other requirements of this Zoning Ordinance shall be met in the detailed development of the phases to follow, and that the entire Planned Development area will meet all of the requirements of this Zoning Ordinance, such diagrams and descriptive texts being accepted with, and becoming a part of the extended zoning plan for the entire site;

(9) Evidences, as determined by the Zoning Administrator in his/her sole discretion, of the ability of the applicant to carry forth its plan by control of the land and the engineering feasibility of the plan, and that the applicant has sufficient control over the land and financing to initiate the proposed development plan phase within two years;

The applicant controls the property in the form of a purchase and sale agreement. The engineering feasibility has been evaluated by a PE and the utility companies have provided (enclosed) initial approval from a capacity and service perspective.

(10) Evidence of the applicant's ability to post a bond if the plan is approved assuring completion of public service facilities to be constructed within the project area by the developer;

(11) Verification by the owner of the property that all the information in the application is true and correct to the best of his knowledge.

The applicant has reviewed the included information in the Preliminary Development Plan submittal and believes it to be true and correct to the best of the applicant's knowledge.

(12) A statement of the character and nature of the development including the cost range or rent levels for housing in residential development and the general types of business or industrial and commercial developments.

The proposed plan consists of 23 high quality residential units. The square footage of the units will be approximately 1,600-2,200 sf (exclusive of any basement or garage). Natural building materials shall be used for exterior elevations and may include, but not limited to, brick, stone, cultured stone, stucco, concrete, engineered wood or cementious siding shall, provided that entry doors, garage doors, windows, soffits, gutters, downspouts and trim details may be steel, metal, fiberglass or composite materials. Preliminary elevations are enclosed.

(13) A statement of the general impact the development will have on the infrastructure, municipality and schools including projected demographics, a traffic impact study and a fiscal impact analysis may be required by the Planning and Zoning Commission.

The development will not have a significant impact on the infrastructure or schools given the limited single-family density and product type being proposed (2.9 units/acre). It is anticipated the homes will appeal mainly to an older higher net worth demographic. Therefore, the neighborhood is not expected to significantly increase (if at all) new student enrollment within the school system. The values of the homes will provide substantial tax dollars to the schools and the residents will grow the income tax base for the city as many of the residents will continue to have substantial annual income.

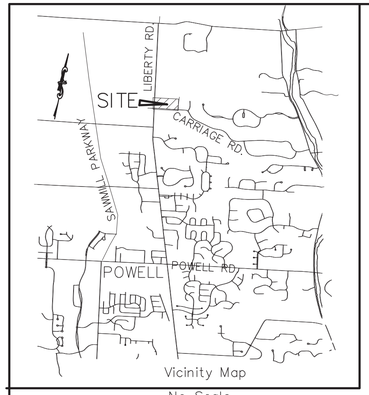
Additionally, the property owners do not typically have a similar commuter pattern as the working public. It is expected the AM and PM peak hour counts will be minimally impacted. The existing use already generates steady traffic throughout the day with larger equipment and in the “after school” peak for riding lessons. Please see enclosed letter with more details on this from the traffic engineer.

(14) A fee as established by ordinance.

Included.

The proposed neighborhood target audience of "empty nesters" may not align with the attraction of quality housing stock in a popular suburban area, with a middle school located across the street. If the units attract a different audience this will have an impact on the density and traffic patterns shown in this report

TAB 2
LEGAL DESCRIPTION
TOPOGRAPHICAL SURVEY
ALTA SURVEY



Vicinity Map

No Scale

ALTA/NSPS LAND TITLE SURVEY OF 1.724 ACRE TRACT & A 6.00 ACRE TRACT, BEING IN RESERVE A IN WESTCHESTER SUBDIVISION AMENDED LIBERTY TOWNSHIP, DELAWARE COUNTY, OHIO

Property Address: (1.724 ac)
8061 Liberty Rd.
Powell, Ohio 43065

AS TO PROPERTY 1.724 ACRES:

Commitment No.: 9966-4598865

Transaction Identification Data for reference only:
Issuing Agent: Northwest Title Family of Companies, Inc. Issuing Office:
Issuing Office's: ALTA® Registry ID: Loan ID Number:
Commitment Number: Issuing Office File Number: 7-9638

Property Address: 8061 Liberty Road, Powell, OH 43065 Revision Number:

SCHEDULE A
1.Commitment Date: December 26, 2019 8:00 AM
2. Policy to be Issued:

(a) ALTA® Owner's Policy of Title Insurance (6-17-06)
D AL TA® Homeowner's Policy of Title Insurance (Rev. 12-2-13)
Proposed Insured: The Camber Company, LLC

Proposed Policy Amount: $375,000.00
(b) ALTA® Loan Policy of Title Insurance (6-17-06)
D ALTA® Expanded Coverage Residential Loan Policy (Rev. 12-2-13) Assessments
Proposed Insured: N/A
Proposed Policy Amount: $N/A
(c) D ALTA® Policy
Proposed Insured:
Proposed Policy Amount: $

3. The estate or interest in the Land described or referred to in this Commitment is Fee Simple.

4. The Title is, at the Commitment Date, vested in: Michelle Smith and Jeff Starkey

Source of Title: General Warranty Deed recorded 04/12/2006 in OR Vol. 700, Page 1315 of the Delaware County, Ohio records.

5. The Land is described as follows:

EXHIBIT "A"
Commitment No.: 9966-4598865

The land referred to herein below is situated in the County of, State of Ohio, and described as follows:

Situated in the State of Ohio, County of Delaware, Township of Liberty, located in part of lot 544 (Reserve "A" remainder) in the Westchester Subdivision Corrected (P.B. 8, Pg.83-86), conveyed to Sarah J. Scuri in Deed Book 476, Page 091, and all of a 1.085 acre tract conveyed to Sarah J. Scuri in Deed Book 564, Page 457, and being more particularly described as follows:

Beginning for reference at a railroad spike found in the centerline of Liberty Road (C.R. 9) marking the Northwest corner of said Westchester Subdivision and the Southwest corner of a 1.0 acre tract conveyed to Thomas Arndt in Deed Book 307, Page 185;

Thence South 86° 13' 05" East 25.00 feet, to an iron pin found in the East line of Liberty Road marking the Northwest corner of said Lot 544 and the Northwest corner of said 1.085 acre tract, also being in the North line of said Westchester Subdivision and the South line of said 1.0 acre tract and marking the Principal Place of Beginning of the herein described tract;

Thence continuing South 86° 13' 05" East 196.47 feet, in the North line of said Westchester Subdivision and the North line of said 1.085 acre tract and the South line of said 1.0 acre tract to an iron pin found marking the Northwest corner of a 6.000 acre tract conveyed to Ronald D. and Tamara K. Rath in Deed Book 591 Page 437;

Thence South 03° 48' 12" West 389.35 feet, across said Lot 544 and the West line of said 6.000 acre tract to an iron pin found in the North line of Carriage Road, marking the Southwest corner of said 6.000 acre tract;

Thence North 86° 11' 48" West 151.57 feet, in the South line of said original Lot 544 and the north line of said Carriage Road to an iron pin found at a point of curvature;

Thence along the arc of a curve to the right (delta = 89 ° 11' 48", radius= 40.00 feet, arc length = 62.67 feet) which has a chord bearing of North 41° 35' 54" West and a chord distance of 56.17 feet, to an iron pin found in the West line of said Lot 544 and in the East line of Liberty Road;

Thence North 03° 00' 00" East 349.86 feet, in the West line of Lot 544, the West line of said 1.085 acre tract and the East line of Liberty Road to the Principal Place of Beginning, containing 1.724 acres more or less.

Subject to all easements, restrictions, and rights-of-way of record.

Basis of bearings from Plat Book 8, Pages 83-86, based on the centerline of Carnage Road being North 86 ° 11' 48" West. A survey of the above described premises was done by Robert T. Patridge Jr., in October, 1999.

All iron pins set are capped PATRIDGE SURVEYING.

All Deed references and Plat Book are on file at the Delaware County Recorder's Office, Delaware, Ohio. Subject to all legal highways, easements, and restrictions of record.

Property Address: (1.724 ac)
8061 Liberty Rd.
Powell, Ohio 43065
&
2630 Carriage Rd. (6.00 Ac.)
Powell, Ohio 43065

NOTE: Subsurface and environmental conditions were not surveyed or examined as part of this survey. No evidence or statement is made concerning the existence of underground or overhead conditions, containers or facilities that may affect the use or development of this property.

The locations of underground utilities as shown hereon are based on above ground structures and record drawings provided 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.

Commitment No.: 9966-4598865

SCHEDULE B, PART II
Exceptions
THIS COMMITMENT DOES NOT REPUBLISH ANY COVENANT, CONDITION, RESTRICTION, OR LIMITATION CONTAINED IN ANY DOCUMENT REFERRED TO IN THIS COMMITMENT TO THE EXTENT THAT THE SPECIFIC COVENANT, CONDITION, RESTRICTION, OR LIMITATION VIOLATES STATE OR FEDERAL LAW BASED ON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, GENDER IDENTITY, HANDICAP, FAMILIAL STATUS, OR NATIONAL ORIGIN.

The Policy will not insure against loss or damage resulting from the terms and provisions of any lease or easement identified in Schedule A, and will include the following Exceptions unless cleared to the satisfaction of the Company:

1. Any defect, lien, encumbrance, adverse claim, or other matter that appears for the first time in the Public Records or is created, attaches, or is disclosed between the Commitment Date and the date on which all of the Schedule B, Part I-Requirements are met.

2. Any facts, rights, interests, or claims that are not shown in the Public Records but that could be ascertained by an inspection of the land or by making inquiry of persons in possession of the land.

3. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the title including discrepancies, conflicts in boundary lines, shortage in area, or any other facts that would be disclosed by an accurate and complete land survey of the land, and that are not shown in the Public Records.

NOTE: The Company requires that survey evidence be provided to its satisfaction in order to delete the Standard Exception for Survey Matters.

4. Any lien or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown in the Public Records.

5. Rights of parties in possession of all or any part of the premises, including, but not limited to, easements, claims of easements or encumbrances that are not shown in the Public Records.

6. The lien of the real estate taxes or assessments imposed on the title by a governmental authority that are not shown as existing liens in the records of any taxing authority that levies taxes or assessments on real property or in the Public Records.

7. Oil and gas leases, pipeline agreements or any other instruments related to the production or sale of oil and gas which may arise subsequent to the Date of Policy.

NOTE: This exception shall be removed from the final Owner's Policy at close.

8. Coal, oil, natural gas or other mineral interests and all rights incident thereto now or previously conveyed, transferred, leased, excepted or reserved

9. Delinquent Sewer and Water Bills may become a lien on the real estate. No liability is assumed by the company for ascertaining the status of utility charges and the insured is cautioned to obtain the current status of these payments.
10. No liability is assumed for tax increases occasioned by retroactive revaluation, change in land usage, or loss of any homestead exemption status for insured premises.
11. Liens in favor of the State of Ohio filed but not yet indexed in the dockets of the Delaware County Common Pleas Clerk.

NOTE: This exception shall be removed from the final Owner's Policy upon execution of the Owner's Affidavit at close.
12. Exception is made for any and all taxes and/or assessments certified or not certified for the year 2019 and thereafter, plus any penalties and interest which may accrue. Taxes for 2020 and subsequent years are undetermined and are not yet due and payable, but are a lien nonetheless.

The County Auditor's General Tax Duplicate Records for the Tax Parcel No. 319-133-01-009-000 are as follows for the tax year 2019:
Taxes for the first half of 2019, due February 10, 2020 are a lien, due and payable.
Taxes for the second half of 2019, due July 10, 2020 are a lien, not yet due but payable.
Assessed Valuations: Land: $37,030.00 Impr.: $33,950.00 Total: $70,980.00
Semi-annual Taxes: $2,297.74
Semi-annual Assessments: $0.00
Homestead Reduction: No
CAUV: No

13. Mortgage from Michelle Smith and Jeff Starkey to MERS as nominee for Real Estate Mortgage Network, Inc., in the original amount of $161,000.00, recorded 9/28/2010 in OR Vol. 994, Page 2385, of the Delaware County records.

14. Open-End Mortgage from Michelle L. Smith AKA Michelle Smith and Jeff Starkey to The Huntington National Bank, in the original amount of $99,324.00, recorded 11/20/2014 in OR Vol. 1319, Page 1666, of the Delaware County records.

15. There is an open civil case, filed April 22, 2013 by Delaware County Bank and Trust Company against Michele D. Smith, Ralph K. Smith and Flohtn Properties LLC, et. al., as Case No. 13CVH040331, in the Court of Common Pleas of Delaware County, Ohio. If a Certificate of Judgment lien is filed prior to the time of recording, the Company will require the payoff of such lien and/or make exception on the policy. NOTE: A judgment has been rendered in this case however, no certificate of judgment has been filed in Delaware County.

16. Platted Easements, Covenants, Conditions, Restrictions, or Building setback lines as shown on the recorded plat, recorded in Plat Book 8, Page(s) 83-86; Plat Book 5, Page 251; Plat Book 6, Page 177 and Plat Book 7, Page 151 of the Delaware County records. PLOTTED

17. Claims or liens for dues, any types of assessments or other charges of whatever nature, charged or levied by any homeowner's association, residents, organization, or association against the premises or common areas.

18. Any matter related to the ownership of the common areas of a homeowner's association or organization.

19. Notwithstanding the reference to acreage or square footage in the description of the land in Schedule A (or contained on any survey), this Policy does not insure nor guarantee the acreage or quantity of land set forth therein.

20. The premises herein is subject to any and all legal highways, public roads, and right-of-ways referenced in the legal description.

21. Subject to the rights of the public and others entitled thereto in and to the use of that portion of subject property within the bounds of any public roads and highways.

22. Right of Way Easement, recorded in OR Vol. 6, Page 1679 of the Delaware County records. N/A DEED ie;PLAT REFERENCES DRAINAGE EASEMENT IN SW CORNER OF SITE.

23. Storm Sewer Easement granted unto Olentangy Board of Education, recorded in Deed Book 552, Page 501 and assigned to Delaware County in OR Vol. 625, Page 2289 of the Delaware County records. PLOTTED, DRAINAGE EASEMENT IN SW CORNER OF SITE

24. Easement(s) granted unto Columbus and Southern Ohio Electric Company recorded in Deed Book 277, Page 236 of the Delaware County records. PLOTTED, 10' EASEMENT FOR POLE LINE ALONG THE NORTH PROPERTY LINE.

25. Easement, recorded in Deed Book 281, Page 406 of the Delaware County records. N/A ACCESS TO WREN LN. FROM OLENTANGY RIVER RD.

26. Easement(s) granted unto Columbus and Southern Ohio Electric Company recorded in Deed Book 282, Page 303 of the Delaware County records. N/A 10' EASEMENT FOR POLE LINE ON THE EAST SIDE OF WESTCHESTER SUB. CORRECTED;

27. Ingress/Egress easement, recorded in Deed Book 286, Page 310 of the Delaware County records. N/A FOR ACCESS TO WREN LN, ALSO REFERS TO 10' EASEMENT FOR POLE LINE.

28. Easement(s) granted unto Columbus and Southern Ohio Electric Company recorded in Deed Book 289, Page 289 of the Delaware County records. REFERS TO 5' & 10' FOR POLE LINE THRU ENTIRE WESTCHESTER SUB. CORRECTED.

29. Easement(s) granted unto Del-Co Water Company, Inc., recorded in Deed Book 361, Page 97 of the Delaware County records.PLOTTED, FOR WATERLINE ALONG THE EAST SIDE OF LIBERTY ROAD.

AS TO PROPERTY 6.00 ACRES:

Commitment No.: 9966-4599565

Property Address: (1.724 ac)
2630 Carriage Rd. (6.00 Ac.)
Powell, Ohio 43065

EXHIBIT "A"
Commitment No.: 9966-4599565

The land referred to herein below is situated in the County of, State of Ohio, and described as follows:

Being situated in the State of Ohio, County of Delaware, Township of Liberty, and being part of Lot 544, also known as Reserve "A" of Westchester Subdivision Corrected as the same is recorded in Plat Book 8, Pages 83-86 in the Delaware County Recorder's Office and being more particularly described as follows:

Beginning for reference at a RR spike in the centerline of Liberty Road (County Road 9) at the northwest corner of Westchester Subdivision; thence South 86° 13' 05" East along the north line of Westchester Subdivision a distance of 221.47 feet to a ¾ inch iron pipe set and being the true place of beginning;

thence from the true place of beginning South 86° 13' 05" East along the north line of Lot 544 of Westchester Subdivision, being the southerly boundaries of Thomas Arndt (D.V. 307, P. 185) and Arndt Subdivision (P.B. 15 P. 54) a distance of 671.06 feet to an iron pipe found;

thence South 03° 48' 12" West along the east line of Lot 544, the west line of Lot 545, a distance of 389.60 feet to an iron pipe found on the north line of carriage Road (50 foot wide);

thence North 86° 11' 48" West along the north line of Carriage Road a distance of 671.06 feet to a ¾ inch iron pipe set; thence North 03° 48' 12" East across Lot 544 a distance of 389.35 feet to the place of beginning - containing 6.000 acres, more or less.

AS TO PROPERTY 6.00 ACRES:

Commitment No.: 9966-4599565

SCHEDULE B, PART II
Exceptions

1. Any defect, lien, encumbrance, adverse claim, or other matter that appears for the first time in the Public Records or is created, attaches, or is disclosed between the Commitment Date and the date on which all of the Schedule B, Part I-Requirements are met.

2. Any facts, rights, interests, or claims that are not shown in the Public Records but that could be ascertained by an inspection of the land or by making inquiry of persons in possession of the land.

3. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the title including discrepancies, conflicts in boundary lines, shortage in area, or any other facts that would be disclosed by an accurate and complete land survey of the land, and that are not shown in the Public Records.
NOTE: The Company requires that survey evidence be provided to its satisfaction in order to delete the Standard Exception for Survey Matters.

4. Any lien or right to a lien, for services, labor or material heretofore or hereafter furnished, imposed by law and not shown in the Public Records.

5. Rights of parties in possession of all or any part of the premises, including, but not limited to, easements, claims of easements or encumbrances that are not shown in the Public Records.

6. The lien of the real estate taxes or assessments imposed on the title by a governmental authority that are not shown as existing liens in the records of any taxing authority that levies taxes or assessments on real property or in the Public Records.

7. Oil and gas leases, pipeline agreements or any other instruments related to the production or sale of oil and gas which may arise subsequent to the Date of Policy.
NOTE: This exception shall be removed from the final Owner's Policy at close.

8. Coal, oil, natural gas or other mineral interests and all rights incident thereto now or previously conveyed, transferred, leased, excepted or reserved.

9. Delinquent Sewer and Water Bills may become a lien on the real estate. No liability is assumed by the company for ascertaining the status of utility charges and the insured is cautioned to obtain the current status of these payments.

10. No liability is assumed for tax increases occasioned by retroactive revaluation, change in land usage, or loss of any homestead exemption status for insured premises.

11. Liens in favor of the State of Ohio filed but not yet indexed in the dockets of the Delaware County Common Pleas Clerk.
NOTE: This exception shall be removed from the final Owner's Policy upon execution of the Owner's Affidavit at close.

12. Exception is made for any and all taxes and/or assessments certified or not certified for the year 2018 and thereafter, plus any penalties and interest which may accrue. Taxes for 2019 and subsequent years are undetermined and are not yet due and payable, but are a lien nonetheless.
The County Auditor's General Tax Duplicate Records for the Tax Parcel No. 319-133-01-010-000 are as follows for the tax year 2019:
Taxes for the first half of 2019, due February 10, 2020 are a lien, not yet due but payable. Taxes for the second half of 2019, due July 10, 2020 are a lien, not yet due but payable.
Assessed Valuations: Land: $2,880.00
Semi-annual Taxes: $1,524.43
Semi-annual Assessments: $0.00
Homestead Reduction: No
CAUV: Yes
Impr.: $36,400.00 Total: $39,280.00

13. Attention is directed to the fact that the premises described under Schedule A hereof is currently listed on the Auditor's Agricultural Land Tax List and is currently taxed at this agricultural use under the provisions of Section 5713.32 of the Ohio Revised code. If the land is removed from the Agricultural Land Tax List a charge may be levied against said land. Under Section 5713.34 of the Ohio Revised Code the charge shall constitute a lien upon the property as of the first day of January of the tax year in which the charge is levied. No liability is assumed under this policy for any lien arising under the provisions of Section 5713.34 of the Ohio Revised Code.

14. Mortgage from Ronald D. Rath and Tamara K. Starkey Rath aka Tamara K. Rath to The Huntington National Bank, in the original amount of $308,553.80, recorded 8/2/2010 in OR Vol. 980, Page 2749, of the Delaware County records.

15. Assignment of Rents and Leases recorded 8/2/2010, in OR Vol. 980, Page 2762, of the Delaware County records.

16. Open-End Mortgage from Ronald D. Rath and Tamara K. Rath to The Huntington National Bank, in the original amount of $330,006.65, recorded 12/29/2015 in OR Vol. 1395, Page 2120, of the Delaware County records.

17. Plotted Easements, Covenants, Conditions, Restrictions, or Building setback lines as shown on the recorded plat, recorded in Plat Book 8, Page(s) 83; Plat Book 5, Page 251; Plat Book 6, Page 177; and Plat Book 7, Page 151, of the Delaware County records.

18. Notwithstanding the reference to acreage or square footage in the description of the land in Schedule A (or contained on any survey), this Policy does not insure nor guarantee the acreage or quantity of land set forth therein.

19. The premises herein is subject to any and all legal highways, public roads, and right-of-ways referenced in the legal description.

20. Subject to the rights of the public and others entitled thereto in and to the use of that portion of subject property within the bounds of any public roads and highways.

21. Easement(s) granted unto Olentangy Board of Education, recorded in Deed Book 552, Page 501 and assigned to The County of Delaware in OR Vol. 625, Page 2289 of the Delaware County records. PLOTTED, IN THE SW CORNER OF THE 10.724 ACRE TRACT

22. Easement(s) granted unto DEL-CO recorded in OR Vol. 547, Page 2421 of the Delaware County records. N/A FOR WATERLINE ON THE SOUTH SIDE OF CARRIAGE RD.

23. Easement(s) granted unto Columbus and Southern Ohio Electric Company recorded in Deed Book 277, Page 236 of the Delaware County records. PLOTTED, FOR POLE LINE ALONG NORTH LINE OF 1.724 ACRE & 6.00 ACRE TRACTS.

24. Easement, recorded in Deed Book 281, Page 406 of the Delaware County records. N/A ACCESS TO WREN LN. FROM OLENTANGY RIVER RD.

25. Easement(s) granted unto Columbus and Southern Ohio Electric Company recorded in Deed Book 282, Page 203 of the Delaware County records. PLOTTED, FOR POLE LINE ALONG NORTH LINE OF 1.724 ACRE & 6.00 ACRE TRACTS.

26. Easement(s) granted unto Columbus and Southern Ohio Electric Company recorded in Deed Book 289, Page 289 of the Delaware County records. PLOTTED, FOR POLE LINE ALONG NORTH LINE OF 1.724 ACRE & 6.00 ACRE TRACTS.

27. Easement(s) granted unto DEL-CO recorded in Deed Book 361, Page 97 of the Delaware County records. FOR WATERLINE ALONG LIBERTY RD.

28. Ingress/Egress easement, recorded in Deed Book 286, Page 310 of the Delaware County records. PLOTTED, REFERS TO 5' & 10' FOR POLE LINE THRU ENTIRE WESTCHESTER SUB. CORRECTED.

29. Covenants, Conditions and Restrictions, and all other matters, recorded in POA Vol. 12, Page 417 of the Delaware County records. Provided, however, those covenants, conditions or restrictions indicating a preference, limitation, or discrimination based on race, color, religion, sex, handicap, age, familial status, national origin or other categories that may from time-to-time be deemed to be protected classes are hereby deleted to the extent such covenants, conditions or restrictions violate the provisions set forth in 42 USC 3604.

1/2

File No: 9966-4599565
Transaction Identification Data for reference only:
Issuing Agent: Northwest Title Family of Companies, Inc. Issuing Office's ALTA® Registry ID:
Commitment Number:
Property Address: 2630 Carriage Road, Powell, OH 43065
Issuing Office:
Loan ID Number:
Issuing Office File Number: 7-9639 Revision Number:
SCHEDULE A
Commitment Date: December 26, 2019 7:00 AM
Policy to be Issued:
(a) ~ ALTA® Owner's Policy of Title Insurance (6-17-06)
D ALTA® Homeowner's Policy of Title Insurance (Rev. 12-2-13) Proposed Insured: The Camber Company, LLC
Proposed Policy Amount: $0.00
(b) ~ ALTA® Loan Policy of Title Insurance (6-17-06)
D ALTA® Expanded Coverage Residential Loan Policy (Rev. 12-2-13) Assessments Proposed Insured: N/A
Proposed Policy Amount: $N/ A
(c) D ALTA® Policy Proposed Insured:
Proposed Policy Amount: $
The estate or interest in the Land described or referred to in this Commitment is Fee Simple.
The Title is, at the Commitment Date, vested in: Ronald D. Rath and Tamara K. Rath
Source of Title: General Warranty Deed, recorded 07/31/1995 in Deed Book 591, Page 437,Delaware County, Ohio records
The Land is described as follows:
See Exhibit "A" attached hereto and made a part hereof

To:
The Camber Company, LLC.
First American Title Insurance Company,
Northwest Title Family of Companies, Inc.

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2016 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items 1, 2, 3, 4, 8, 11, 13, 16, 17, 19 and of Table A thereof. The field work was completed on March, 2020.

Date of Plat or Map: 3/14/20

Robert T. Patridge Jr.

Printed Name: ROBERT T. PATRIDGE JR.
Registration No. 7462

STATE OF OHIO
ROBERT T. PATRIDGE JR.
7462
REGISTERED PROFESSIONAL SURVEYOR

PATRIDGE SURVEYING L.L.C.
9464 DUBLIN ROAD
POWELL, OHIO 43065
TEL. (614)-799-0031
FAX (614)-300-5076
patridgesurvey@rrohio.com

ALTA/NSPS LAND TITLE SURVEY
OF 1.724 ACRE TRACT & A 6.00 ACRE TRACT,
BEING IN RESERVE A IN WESTCHESTER SUBDIVISION AMENDED
LIBERTY TOWNSHIP, DELAWARE COUNTY, OHIO

REVISED:			
REVISED:			
DRAWN BY:	RTP	DATE:	02/14/20
CHECKED BY:	BJP	DRAWING NO.:	13488
JOB NO.:	13488-20	SHEET	1 OF 1

TOPOGRAPHICAL SURVEY OF 1.724 ACRE TRACT & A 6.00 ACRE TRACT ,BEING IN RESREVE A IN WESTCHESTER SUBDIVISION CORRECTED LOCATED IN LIBERTY TOWNSHIP, DELAWARE COUNTY, OHIO

Vicinity Map
No Scale

0 40 80
Scale 1" = 40'

Sharon Arndt
1.004 Ac.
Vol. 1311, Pg. 172

POND

Arndt Amended Subdivision
Lot 829
PB. 15, PG. 54

INV. 10"CMP=916.2

S 86°37'56" E 196.47'

S 86°37'56" E 671.06'

Carriage Trail
Plat Cabinet 4, Slide 67
Vol. 1685, Pg. 2326-2327

Liberty Road (C.R. 9)

N 02°35'09" E 334.86'

10' Bridle Path

MICHELLE SMITH & JEFF STARKEY
1.724 Ac.
Vol. 700, Pg. 1315

50.4' Ex. Metal Bldg.

Septic Tank

LEACH FIELD

1-Story Frame #4964

1-Story Frame #2630

Ex. Corral

Shelter

80' setback line

Elec. Meter

Ex. Stable

Westchester Subdivision
Reserve "A"

Westchester Subdivision Corrected
Reserve "A"
(Original)
Lot 544

RONALD D. RATH & TAMARA K. RATH
6.00 Ac.
D.B. 591, Pg. 437

Ex. Corral

grass gravel concrete

gravel

cleanout
Septic Tank

EX. STORM 6" FOR DOWNSPOUTS (LOCATION PER OWNER) NOT FIELD VERIFIED

100' setback line

S 03°23'21" W 389.34'

possible 4" pvc

1.724 Ac.

6" PVC

4" PVC

10' setback line

24" gds drainage esmt.

Catch Basin
TC=912.89
Inv. W=910.0
Inv. E=910.0

San. MH
TC=913.88
inv. N=900.1
inv. S=900.0
inv. W=900.5

DELAWARE COUNTY
BENCHMARK-97-145
ELEV.-916.43

Catch Basin
TC=913.10
Inv. W=910.32
Inv. E=910.32

INV. 6"=908.0
INV. 6"=908.8
INV. 6"=909.2

INV. 8"=908.99

INV. 8"=908.06

151.57' N 86°36'39" W

GAS SVC. LOCATION UNKNOWN

BRICK PILLARS

WATER SVC. LOCATION UNKNOWN

INV. 913.5

12" ADS

INV. 914.1

671.06' N 86°36'39" W

GAS LINE NOT MARKED BY OUPS

INV. 915.1

12" ADS

INV. 914.5

SET CORNER DETAIL

Carriage Road 50' (T.R. 334)

BUMP

12" STM

4" W

inv=906.58

4" W

INV. 913.0

Board Fence over property Line

Westchester Subdivision
Lot 545
PB. 8, PG. 83-86

S 03°23'21" W 389.50'

100' setback line

LEGEND

- Property Lines
- W Water Line
- G Gas Line
- SAN Sanitary Sewer
- STM Storm Sewer
- —x—x— Fence
- UGE Underground Cables
- MH Manhole
- Storm Inlet
- Fire Hydrant and valve
- Cleanout
- C Cable Television
- E Electric Pedestal
- T Telephone Pedestal Verizion
- G Gas Line
- Water Meter
- Mailbox
- Sign
- found iron pipe 3/4"
- set iron pin 5/8" rebar (capped PATRIDGE SURVEYING)
- set drill hole in back of curb

NOTES:
REF: OUPS # A007102845
WATER SERVICE LINES TO 6.0 AC. LOCATION UNKNOWN. (NOT MARKED BY OUPS)

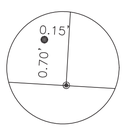
GAS SERVICE LINES TO BOTH TRACTS LOCATION UKNOWN. (NOT MARKED BY OUPS)

GAS MAIN LINE IN FRONT OF THE 6.0 ACRES NOT MARKED IN FIELD, NOT FIELD VERIFIED,

Flood Zone X: MAp No. 39041C237K
Dated: 04/16/2009

NOTE: Subsurface and environmental conditions were not surveyed or examined as part of this survey. No evidence or statement is made concerning the existence of underground or overhead conditions, containers or facilities that may affect the use or development of this property.

The locations of underground utilities as shown hereon are based on above ground structures and record drawings provided 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.



CORNER DETAIL

STATE OF OHIO
ROBERT T. PATRIDGE JR.
7462
REGISTERED PROFESSIONAL SURVEYOR

I hereby certify that I have surveyed the property described in the foregoing title caption, and that said survey and plat are accurate and correct to the best of my knowledge. Easements, restrictions, utilities, and rights-of-way not located, unless noted.

Robert T. Patridge Jr.
Professional Surveyor No.7462

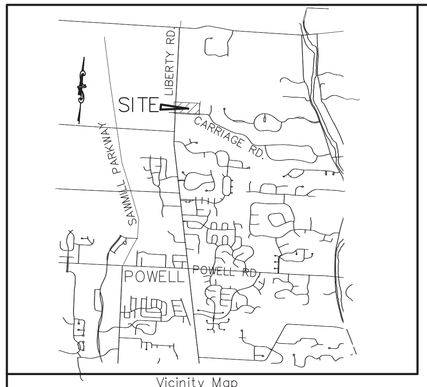
PATRIDGE SURVEYING L.L.C.
9464 DUBLIN ROAD
POWELL, OHIO 43065
TEL. (614)-799-0031
FAX (614)-300-5076
patridgesurvey@rrohio.com

TOPOGRAPHIC SURVEY OF 1.724 ACRE TRACT & A 6.00 ACRE TRACT, BEING IN RESREVE A IN WESTCHESTER SUBDIVISION CORRECTED LOCATED IN LIBERTY TOWNSHIP, DELAWARE COUNTY, OHIO

REVISED:			
REVISED:			
DRAWN BY:	RTP	DATE:	03/20/20
CHECKED BY:	BJP	DRAWING NO.:	13488-20
JOB NO.:	13488-20	SHEET	1 OF 1

ALTA/NSPS LAND TITLE SURVEY
OF 1.724 ACRE TRACT & A 6.00 ACRE TRACT,
BEING IN RESERVE A IN WESTCHESTER SUBDIVISION CORRECTED
LIBERTY TOWNSHIP, DELAWARE COUNTY, OHIO

Property Address: (1.724 Ac.)
8061 Liberty Rd.
Powell, Ohio 43065
&
2630 Carriage Rd. (6.00 Ac.)
Powell, Ohio 43065



Vicinity Map
No Scale

0 40 80
Scale 1" = 40'

Additional Notes:

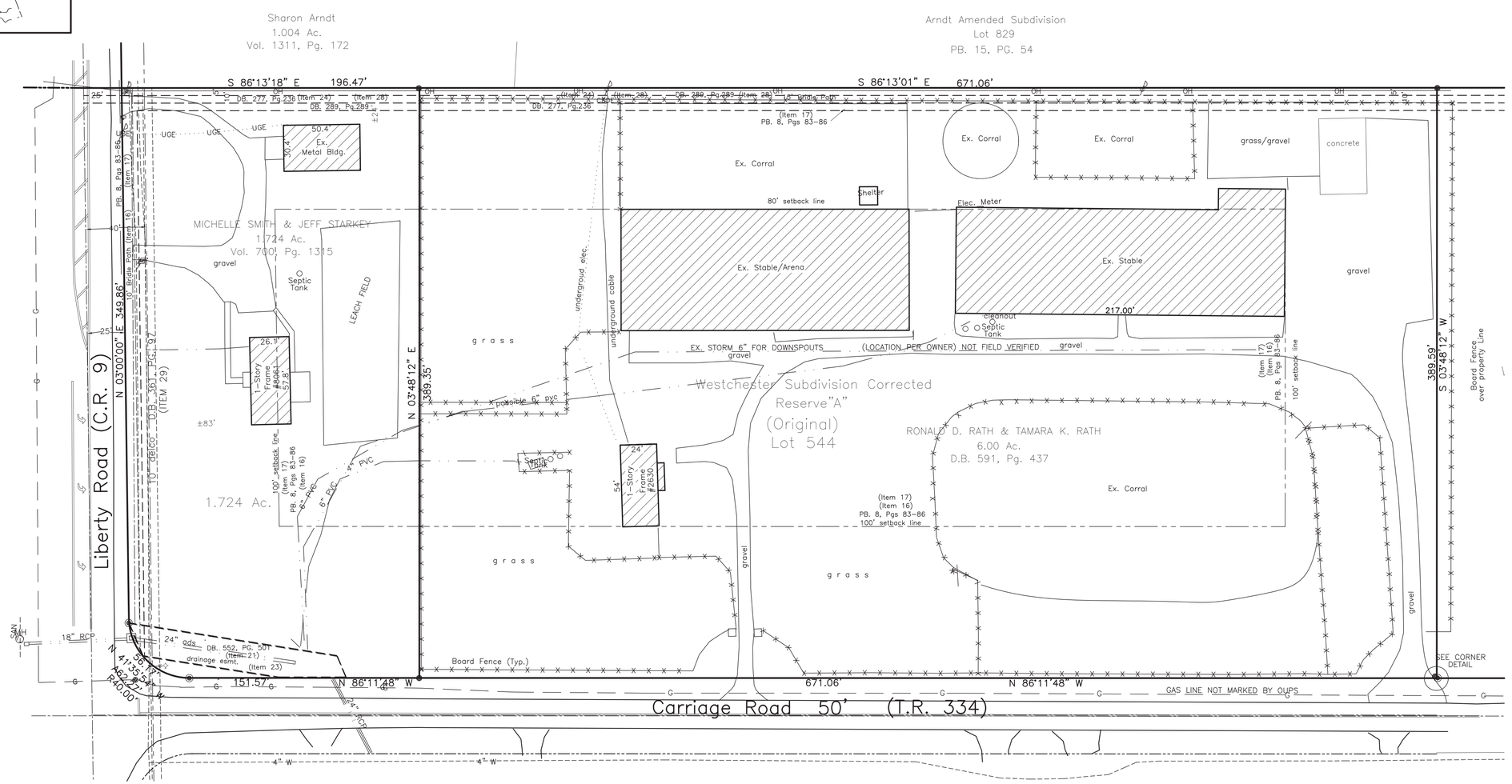
No observed wetlands.

No observed evidence of current earth moving work, building construction or building additions.

No proposed changes in street right of way lines and no evidence of recent street or sidewalk construction or repairs.

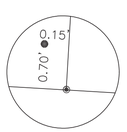
Encroachments observed: Board fence over the east property line of the 6.00 acre tract.

Gravel drive in bridle easement.



LEGEND

- Property Lines
- W — Water Line
- G — Gas Line
- SAN — Sanitary Sewer
- STM — Storm Sewer
- —x—x— Fence
- UGE — Underground Cables
- MH — Manhole
- Storm Inlet
- Fire Hydrant and valve
- Cleanout
- C — Cable Television
- E — Electric Pedestal
- T — Telephone Pedestal Verizion
- G — Gas Line
- Water Meter
- Mailbox
- Sign
- found iron pipe 3/4"
- set iron pin 5/8" rebar (capped PATRIDGE SURVEYING)
- set drill hole in back of curb



CORNER DETAIL

Flood Zone X: MAp No. 39041C237K
Dated: 04/16/2009

NOTE: Subsurface and environmental conditions were not surveyed or examined as part of this survey. No evidence or statement is made concerning the existence of underground or overhead conditions, containers or facilities that may affect the use or development of this property.

The locations of underground utilities as shown hereon are based on above ground structures and record drawings provided 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.

PATRIDGE SURVEYING L.L.C.
9464 DUBLIN ROAD
POWELL, OHIO 43065
TEL. (614)-799-0031
FAX (614)-300-5076
patridgesurvey@rrohio.com

ALTA/NSPS LAND TITLE SURVEY
OF 1.724 ACRE TRACT & A 6.00 ACRE TRACT,
BEING IN RESERVE A IN WESTCHESTER SUBDIVISION CORRECTED
LIBERTY TOWNSHIP, DELAWARE COUNTY, OHIO

REVISED:			
REVISED:			
DRAWN BY:	RTP	DATE:	03/15/20
CHECKED BY:	BJP	DRAWING NO.:	13488-20
JOB NO.:	13488-20	SHEET	1 OF 1

TAB 3
ADJACENT PROPERTY OWNERS

NEIGHBORING PROPERTY OWNERS

2630 Carriage Road & 8061 Liberty Road

POWELL, OH 43065

Owner Name: ROMANELLI & HUGHES BUILDING COMPANY
Address: 148 W SHROCK RD WESTERVILLE OH 43081

Owner Name: OLENTANGY LOCAL SCHOOL DISTRICT
Address: LIBERTY RD POWELL OH 43065

Owner Name: ARNDT SHARON
Address: 8013 LIBERTY RD, POWELL 43065

Owner Name: NORRIS SALLY & ARNDT SHARON
Address: 7995 LIBERTY RD, POWELL 43065

Owner Name: WALENTSCHAK ERIC & MARILYN
Address: 7991 LIBERTY RD, POWELL 43065

Owner Name: WILSON AMY M & RICHARD T
Address: 2699 CARRIAGE RD, POWELL 43065

Owner Name: GUNDER KURT & SHERRI
Address: 2651 CARRIAGE RD, POWELL 43065

Owner Name: WILSON AMY M & RICHARD T
Address: 2699 CARRIAGE RD, POWELL 43065

Owner Name: DIPIERO MARK W & CHRISTINA M
Address: 2615 CARRIAGE RD, POWELL 43065

Owner Name: JOHNSTON MARY I
Address: 2555 CARRIAGE RD, POWELL 43065

Owner Name: MICHAEL JOSEPH S & CANDYCE E TRUSTEES
Address: 2525 CARRIAGE RD, POWELL 43065

Owner Name: CUSTER JAMES L & TRICEINE
Address: 2515 CARRIAGE RD, POWELL 43065

Owner Name: CHRISMAN ROBERT R III & CRYSTAL S
Address: 2520 CARRIAGE RD, POWELL 43065

Owner Name: QUILLIN ANDREA L & CARSON L
Address: 2500 CARRIAGE RD, POWELL 43065

TAB 4
DEVELOPMENT EXHIBITS

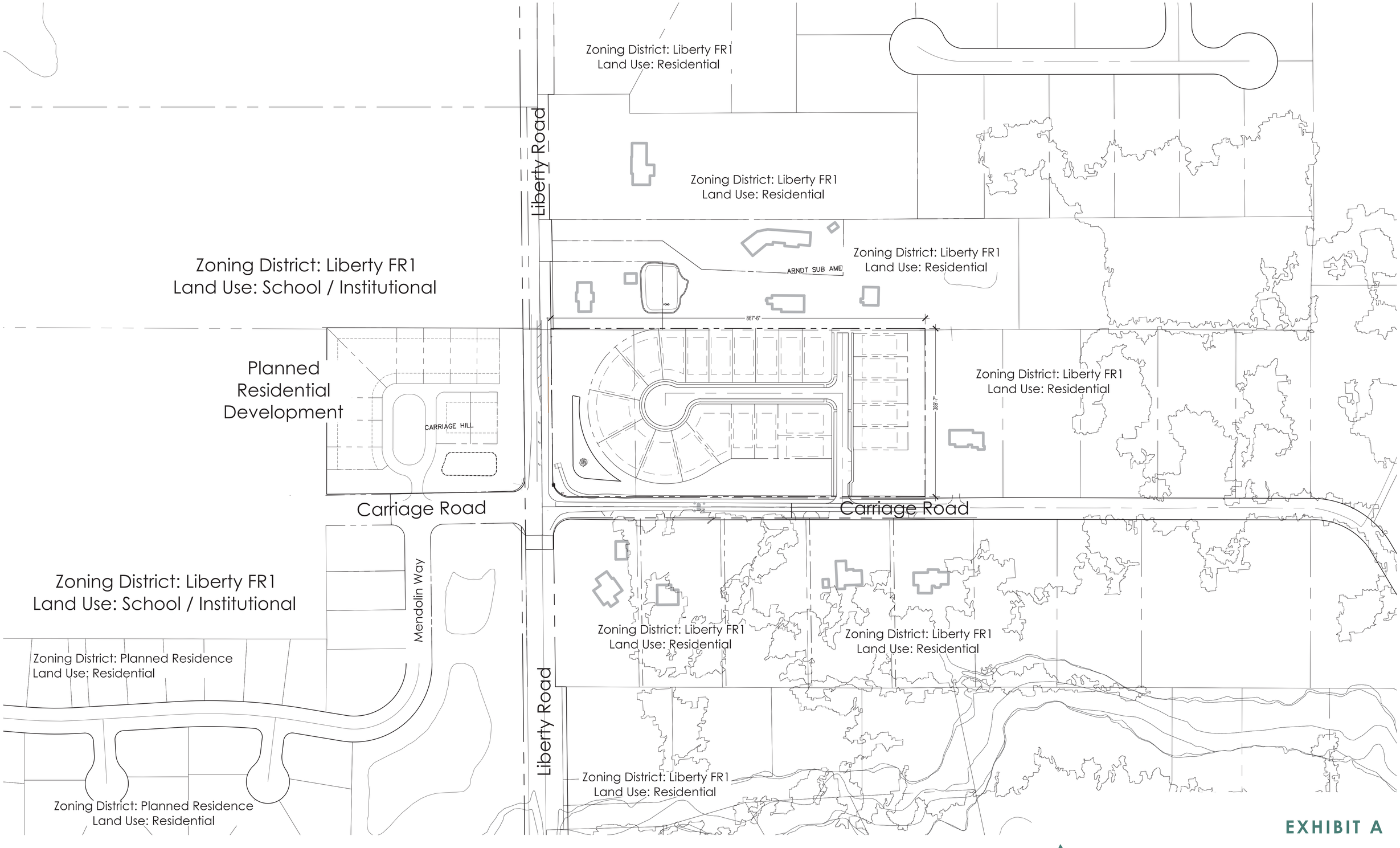


EXHIBIT A

Carriage Farms - Vicinity Map

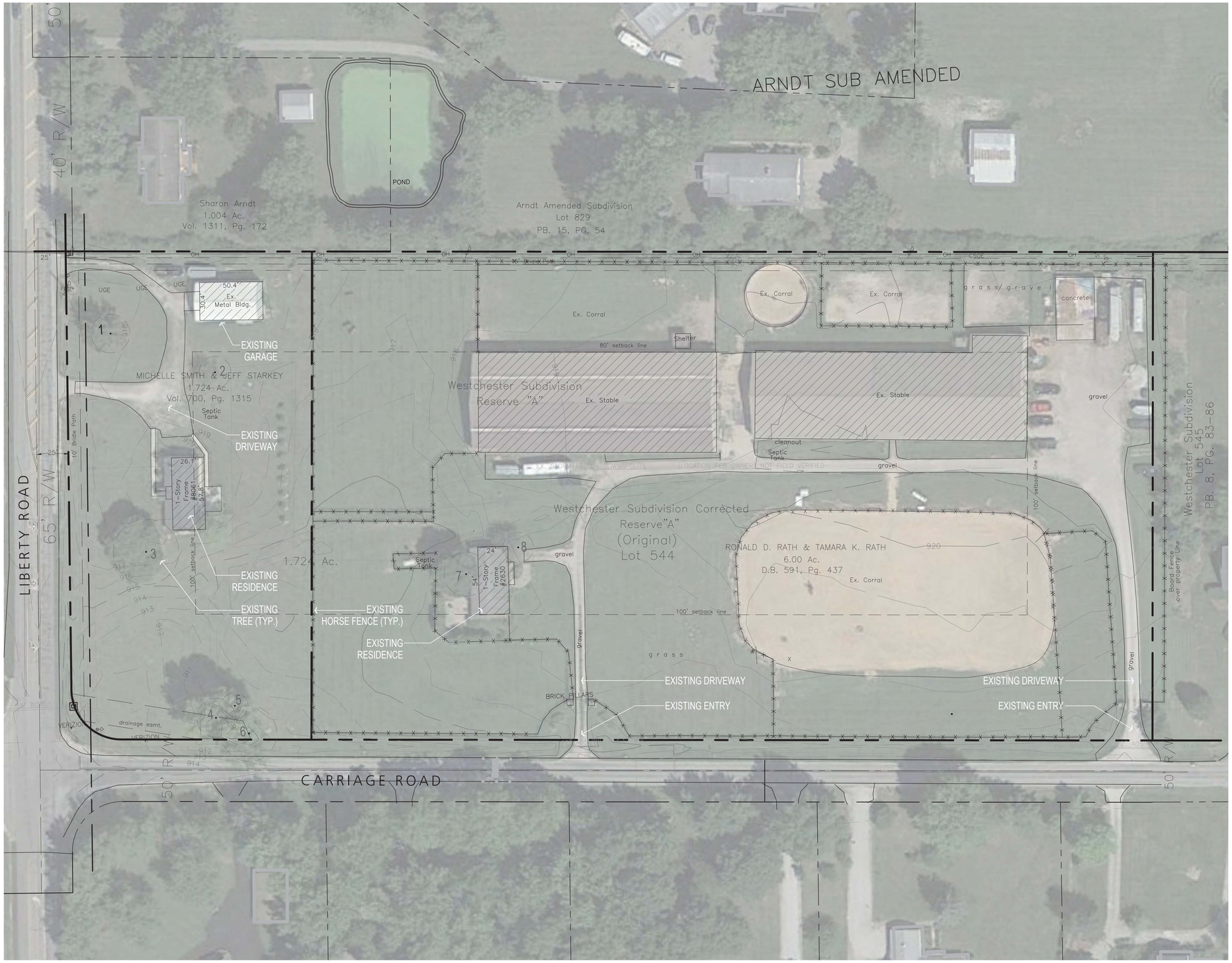
City of Powell, Ohio May 26, 2020

3Pillar Homes Building Dreams

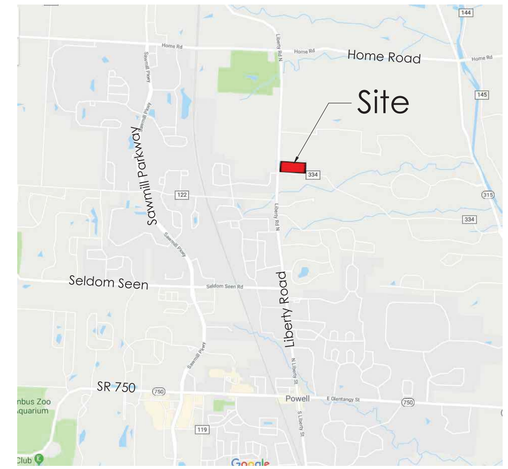
0 100 300 N

Camber Company | G2 PLANNING + DESIGN

E. P. FERRIS AND ASSOCIATES INC
Consulting Civil Engineers and Surveyors



Location Map: NTS



Site Data:

Current Zoning:	Liberty FR1
Total Site Area:	±7.7 Acres

NOTES
EXISTING TREES SHOWN ARE ESTIMATED TO BE IN EXCESS OF 6" DIAMETER
WILL CONFIRM SPECIES AND CONDITION AT A LATER DATE

EXHIBIT B

Carriage Farms - Existing Conditions

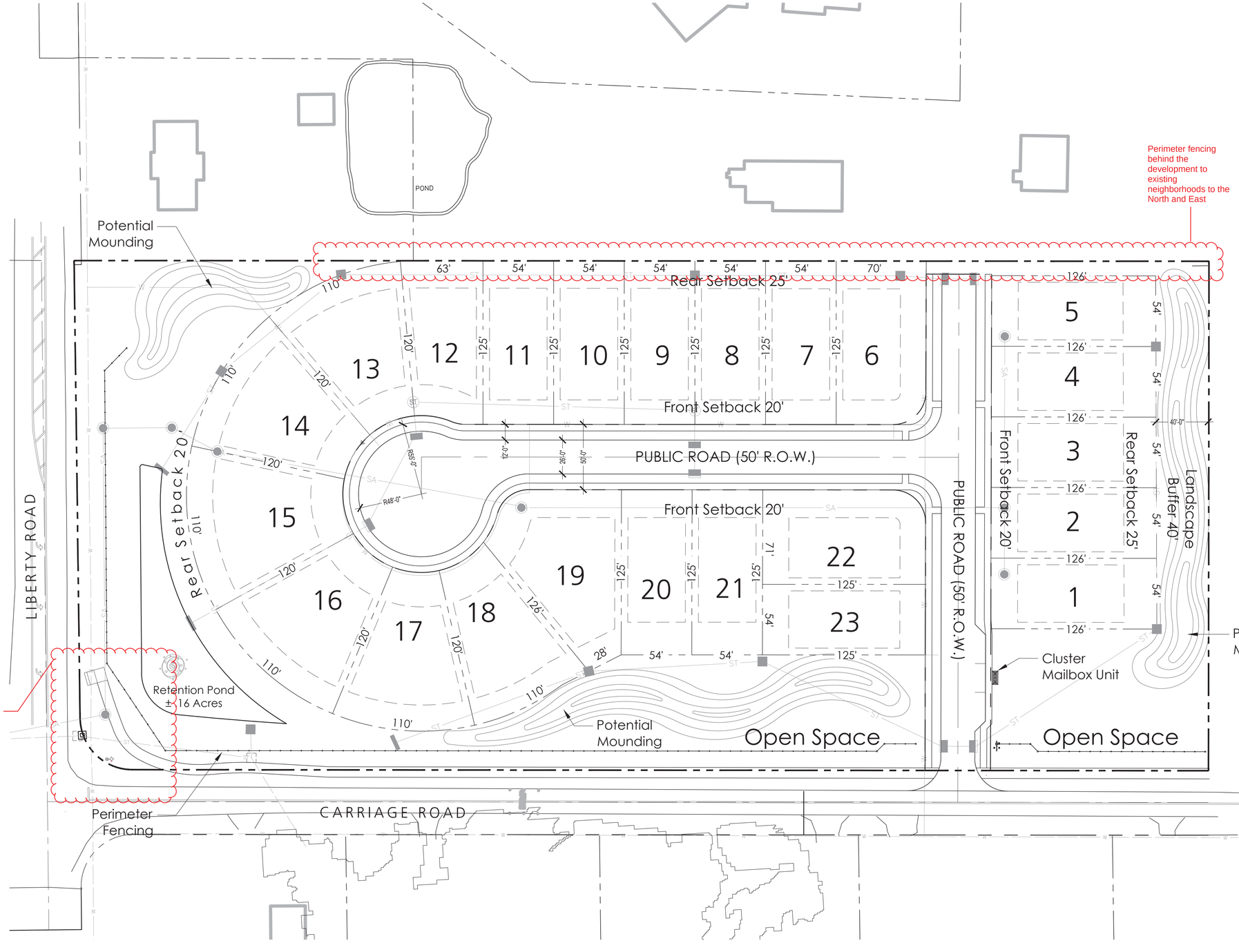
City of Powell, Ohio May 26, 2020

3Pillar Homes Building Dreams

0 40 120 N

Camber Company | G2 PLANNING + DESIGN

E. P. FERRIS AND ASSOCIATES INC
Consulting Civil Engineers and Surveyors



Location Map: NTS

Site Data:

Current Zoning:	Liberty FR1
Proposed Zoning:	Planned Residential
Total Site Area:	±7.7 Acres
Total Lots:	23
Total Density	± 2.9 du/acre

Lot Information:

Typical Lot Width:	54'
Typical Lot Depth:	120 -125'
Smallest Lot Area:	6,750 S.F.
Largest Lot Area:	10,325 S.F.
Front Setback:	20' Min.
Rear Yard Setback:	20'-25' (see plan)
Side Yard Setback:	5' Min.

Lot Coverage:

Maximum Allowed by Code:	50%
As proposed:	50% or less

Open Space:

Shared Open Space:	2.55 Acres
Less Stormwater Basin:	.16 Acres
Total Open Space:	2.39 Acres

NOTE:
THE PLAN AS SHOWN IS CONCEPTUAL IN NATURE AND IS PROVIDED TO ILLUSTRATE THE DESIRED LAYOUT AND QUALITY OF THE PROJECT. FINAL LAYOUT AND LANDSCAPING ARE SUBJECT TO CHANGE BASED UPON FINAL ENGINEERING.

EXHIBIT C

Carriage Farms - Final Development Plan

City of Powell, Ohio May 26, 2020

3Pillar Homes Building Dreams

0 40 120 N

Camber Company | G2 PLANNING + DESIGN | E. P. FERRIS AND ASSOCIATES INC Consulting Civil Engineers and Surveyors

Location Map: NTS

Site Data:

Current Zoning:	Liberty FR1
Proposed Zoning:	Planned Residential
Total Site Area:	±7.7 Acres
Total Lots:	23
Total Density	± 2.9 du/acre

Lot Information:

Typical Lot Width:	54'
Typical Lot Depth:	120 -125'
Smallest Lot Area:	6,750 S.F.
Largest Lot Area:	10,325 S.F.
Front Setback:	20' Min.
Rear Yard Setback:	20'-25' (see plan)
Side Yard Setback:	5' Min.

Lot Coverage:

Maximum Allowed by Code:	50%
As proposed:	50% or less

Open Space:

Shared Open Space:	2.55 Acres
Less Stormwater Basin:	.16 Acres
Total Open Space:	2.39 Acres

NOTE:
THE PLAN AS SHOWN IS CONCEPTUAL IN NATURE AND IS PROVIDED TO ILLUSTRATE THE DESIRED LAYOUT AND QUALITY OF THE PROJECT. FINAL LAYOUT AND LANDSCAPING ARE SUBJECT TO CHANGE BASED UPON FINAL ENGINEERING.

Carriage Farms - Exhibit E: Illustrative Plan

City of Powell, Ohio May 26, 2020

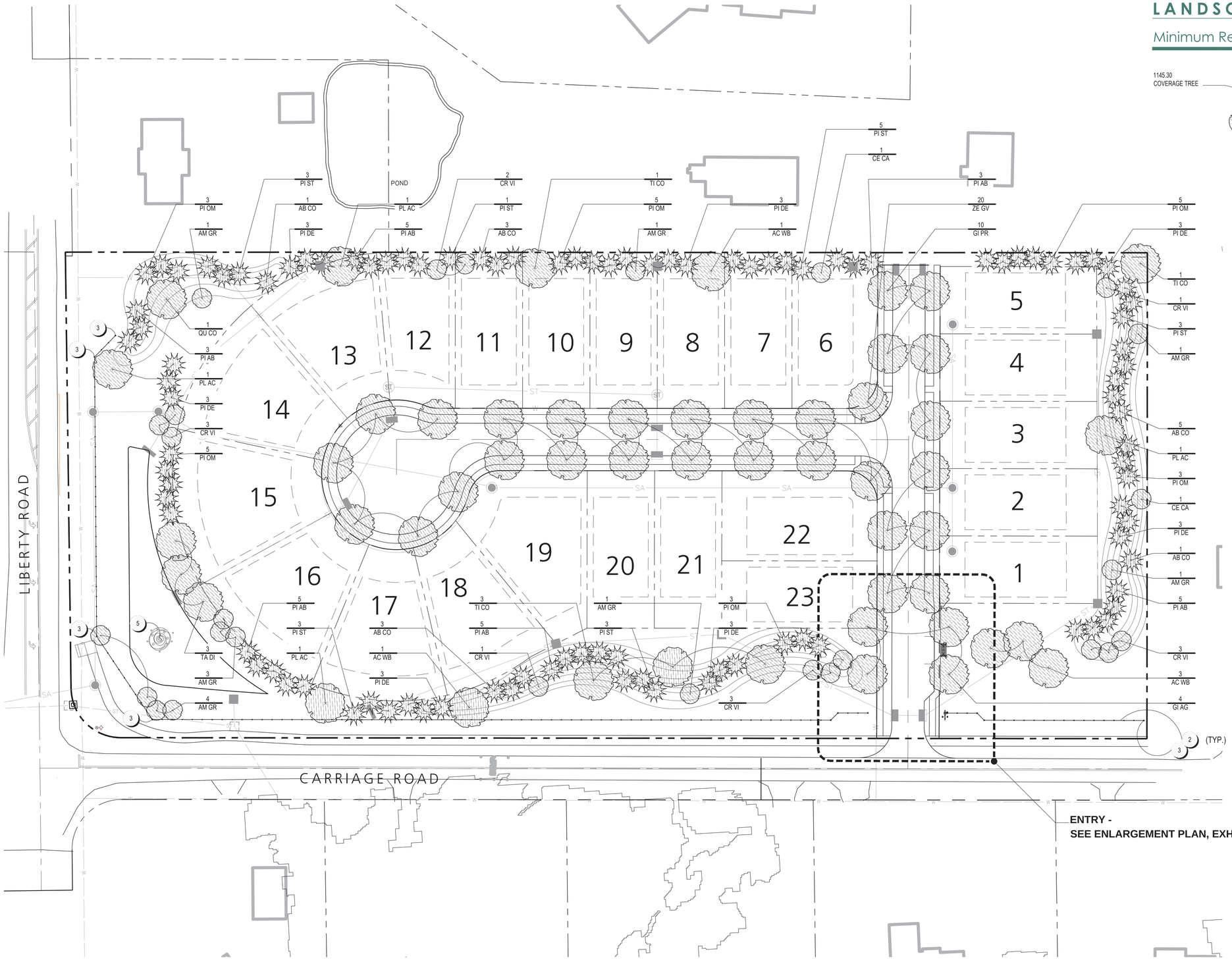
3 Pillar Homes Building Dreams

0 40 120 N

Camber Company

G2 PLANNING + DESIGN

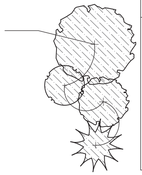
E. P. FERRIS AND ASSOCIATES INC
Consulting Civil Engineers and Surveyors



LANDSCAPE CODE REQUIREMENTS

Minimum Required Trees - 1145.30

1145.30 COVERAGE TREE



(a) MINIMUM TREES	REQUIRED	PROVIDED
THE FOLLOWING MINIMUMS ARE REQUIRED, BASED UPON TOTAL COVERAGE SQUARE FOOTAGE.		
(1) ALL RESIDENCES AND RESIDENTIAL LAND USES, PER DWELLING UNIT: 1/2" IN TRUNK DIAMETER FOR EVERY 150 S.F. OR FRACTION THEREOF OF BUILDING GROUND COVERAGE.	A TOTAL OF 135" FOR +/-40,500 S.F. OF GROUND COVERAGE	A TOTAL OF 353" FOR +/-40,500 S.F. OF GROUND COVERAGE

PLANT LIST (Contractor is responsible for all plant material shown on plan)

QTY.	CODE	BOT. NAME/COMMON NAME	SIZE	COND.	SPACING	NOTES
		DECIDUOUS SHADE TREES / STREET TREES				
5	AC WB	Acer saccharum 'Wright Brothers' Wright Brothers Sugar Maple	2.5" CAL.	B&B	AS SHOWN	Match Form
10	GI PR	Gingko biloba 'Princeton Sentry' Princeton Sentry Ginkgo	2.5" CAL.	B&B	AS SHOWN	Match Form
10	GI AG	Gingko biloba 'Autumn Gold' Autumn Gold Ginkgo	2.5" CAL.	B&B	AS SHOWN	Match Form
4	PL AC	Platanus xacerfolia 'Bloodgood' Bloodgood London Planetree	2.5" CAL.	B&B	AS SHOWN	Match Form
3	TA DI	Taxodium distichum Bald Cypress	2.5" CAL.	B&B	AS SHOWN	Match Form
5	TI CO	Tilia cordata 'Greenspire' Greenspire Linden	2.5" CAL.	B&B	AS SHOWN	Match Form
1	QU CO	Quercus coccinea Scarlet Oak	2.5" CAL.	B&B	AS SHOWN	Match Form
20	ZE SE	Zelkova serrata 'Green Vase' Green Vase Zelkova	2.5" CAL.	B&B	AS SHOWN	Match Form
		SMALL / ORNAMENTAL TREES				
9	AM GR	Amelanchier xgrandiflora 'Autumn Brilliance' Autumn Brilliance Serviceberry	1.5" CAL.	B&B	AS SHOWN	Tree Form
2	CE CA	Cercis canadensis Eastern Redbud	1.5" CAL.	B&B	AS SHOWN	Tree Form
13	CR VI	Crataegus viridus 'Winter King' Winter King Hawthorn	1.5" CAL.	B&B	AS SHOWN	Tree Form
		EVERGREEN TREES				
13	AB CO	Abies concolor White Fir	6' HT.	B&B	PER PLAN	2" CAL.
21	PI AB	Picea abies Norway Spruce	6' HT.	B&B	PER PLAN	2" CAL.
18	PI DE	Picea glauca 'Densata' Black Hills Spruce	6' HT.	B&B	PER PLAN	2" CAL.
19	PI OM	Picea omorika Serbian Spruce	6' HT.	B&B	PER PLAN	2" CAL.
15	PI ST	Pinus Strobus White Pine	6' HT.	B&B	PER PLAN	2" CAL.

PLANT LABEL KEY: 1 / XX XX (QUANTITY / CODE)

NOTE: FIELD VERIFY LOCATION AND DEPTHS OF ALL UTILITIES. HAND EXCAVATE ALL PLANTING PITS.

ADDITIONAL PLANTING NOTES
1. ALL GROUNDCOVERS AND PERENNIALS TO BE PLANTED DURING THE SPRING PLANTING WINDOW. FALL GROUNDCOVER AND PERENNIAL PLANTINGS WILL NOT BE ACCEPTED. COORDINATE PLANTING TIMES WITH OWNERS REPRESENTATIVE TO INCREASE SUCCESS OF GROUNDCOVER AND PERENNIAL PLANTINGS

CODED LAYOUT & MATERIALS NOTES

KEY	ITEM	REFERENCE	NOTES
1	MAIL KIOSK	A EX. D4	CBU LOCATIONS SHOWN HEREON ARE PRELIMINARY IN NATURE. FINAL LOCATION AND CONFIGURATION TO BE COORDINATED WITH AND APPROVED BY THE LOCAL U.S.P.S. GROWTH MANAGER
2	3-RAIL FENCE	B EX. D4	SEE DETAIL B, EXHIBIT D4
3	8x8 END POST	B EX. D4	SEE DETAIL B, EXHIBIT D4
4	ENTRY SIGN	A EX. D2	SEE DETAIL A, EXHIBIT D2
5	FOUNTAIN	X XX-XX	FINAL SELECTION BY OWNER

CODED LANDSCAPE NOTES

1. TURF
2. LANDSCAPE BED - PROVIDE 3" DEPTH HARDWOOD MULCH, POSITIVE DRAINAGE IN ALL DIRECTIONS. HAND SPADE EDGE.

NOTE:
THE PLAN AS SHOWN IS CONCEPTUAL IN NATURE AND IS PROVIDED TO ILLUSTRATE THE DESIRED LAYOUT AND QUALITY OF THE PROJECT. FINAL LAYOUT AND LANDSCAPING ARE SUBJECT TO CHANGE BASED UPON FINAL ENGINEERING.

EXHIBIT D1

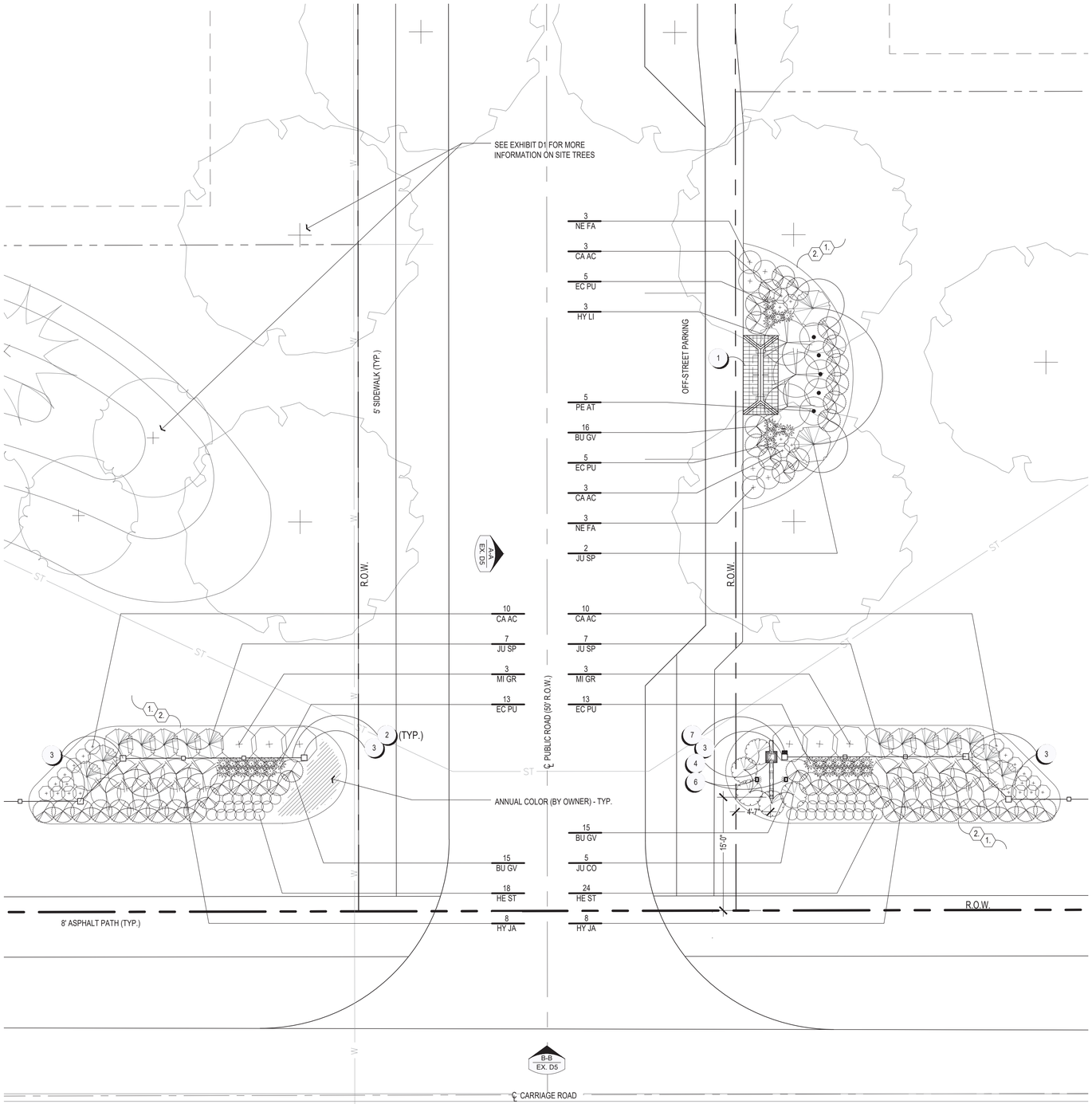
Carriage Farms - Site Landscape Plan

City of Powell, Ohio May 26, 2020

3 Pillar Homes Building Dreams

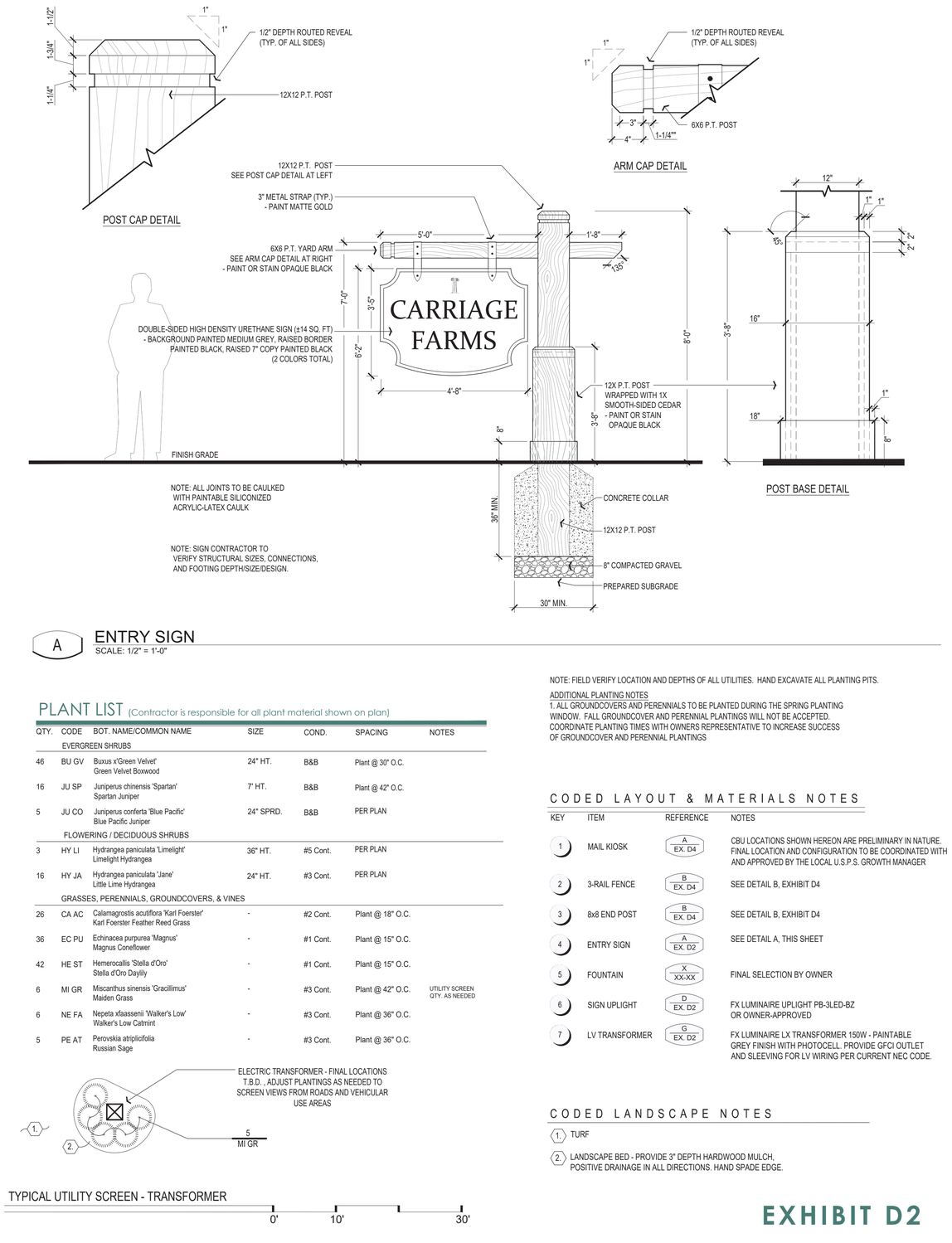
0 40 120 N

Camber Company | G2 PLANNING + DESIGN | E. P. FERRIS AND ASSOCIATES INC Consulting Civil Engineers and Surveyors



ENTRY ENLARGEMENT LANDSCAPE PLAN

0' 8' 24'



NOTE: ALL JOINTS TO BE CAULKED WITH PAINTABLE SILICONIZED ACRYLIC-LATEX CAULK

NOTE: SIGN CONTRACTOR TO VERIFY STRUCTURAL SIZES, CONNECTIONS, AND FOOTING DEPTH/SIZE/DESIGN.

A ENTRY SIGN
SCALE: 1/2" = 1'-0"

PLANT LIST (Contractor is responsible for all plant material shown on plan)

QTY.	CODE	BOT. NAME/COMMON NAME	SIZE	COND.	SPACING	NOTES
		EVERGREEN SHRUBS				
46	BU GV	Buxus x'Green Velvet' Green Velvet Boxwood	24" HT.	B&B	Plant @ 30" O.C.	
16	JU SP	Juniperus chinensis 'Spartan' Spartan Juniper	7' HT.	B&B	Plant @ 42" O.C.	
5	JU CO	Juniperus conferta 'Blue Pacific' Blue Pacific Juniper	24" SPRD.	B&B	PER PLAN	
		FLOWERING / DECIDUOUS SHRUBS				
3	HY LI	Hydrangea paniculata 'Limelight' Limelight Hydrangea	36" HT.	#5 Cont.	PER PLAN	
16	HY JA	Hydrangea paniculata 'Jane' Little Lime Hydrangea	24" HT.	#3 Cont.	PER PLAN	
		GRASSES, PERENNIALS, GROUNDCOVERS, & VINES				
26	CA AC	Calamagrostis acutiflora 'Karl Foerster' Karl Foerster Feather Reed Grass	-	#2 Cont.	Plant @ 18" O.C.	
36	EC PU	Echinacea purpurea 'Magnus' Magnus Coneflower	-	#1 Cont.	Plant @ 15" O.C.	
42	HE ST	Hemerocallis 'Stella d'Oro' Stella d'Oro Daylily	-	#1 Cont.	Plant @ 15" O.C.	
6	MI GR	Miscanthus sinensis 'Gracillimus' Maiden Grass	-	#3 Cont.	Plant @ 42" O.C.	UTILITY SCREEN QTY. AS NEEDED
6	NE FA	Nepeta xfaassenii 'Walker's Low' Walker's Low Catmint	-	#3 Cont.	Plant @ 36" O.C.	
5	PE AT	Perovskia atriplicifolia Russian Sage	-	#3 Cont.	Plant @ 36" O.C.	

TYPICAL UTILITY SCREEN - TRANSFORMER

0' 10' 30'

NOTE: FIELD VERIFY LOCATION AND DEPTHS OF ALL UTILITIES. HAND EXCAVATE ALL PLANTING PITS.

ADDITIONAL PLANTING NOTES
1. ALL GROUNDCOVERS AND PERENNIALS TO BE PLANTED DURING THE SPRING PLANTING WINDOW. FALL GROUNDCOVER AND PERENNIAL PLANTINGS WILL NOT BE ACCEPTED. COORDINATE PLANTING TIMES WITH OWNERS REPRESENTATIVE TO INCREASE SUCCESS OF GROUNDCOVER AND PERENNIAL PLANTINGS

CODED LAYOUT & MATERIALS NOTES

KEY	ITEM	REFERENCE	NOTES
1	MAIL KIOSK	A EX. D4	CBU LOCATIONS SHOWN HEREON ARE PRELIMINARY IN NATURE. FINAL LOCATION AND CONFIGURATION TO BE COORDINATED WITH AND APPROVED BY THE LOCAL U.S.P.S. GROWTH MANAGER
2	3-RAIL FENCE	B EX. D4	SEE DETAIL B, EXHIBIT D4
3	8x8 END POST	B EX. D4	SEE DETAIL B, EXHIBIT D4
4	ENTRY SIGN	A EX. D2	SEE DETAIL A, THIS SHEET
5	FOUNTAIN	X XX-XX	FINAL SELECTION BY OWNER
6	SIGN UPLIGHT	D EX. D2	FX LUMINAIRE UPLIGHT PB-3LED-BZ OR OWNER-APPROVED
7	LV TRANSFORMER	G EX. D2	FX LUMINAIRE LX TRANSFORMER 150W - PAINTABLE GREY FINISH WITH PHOTOCELL. PROVIDE GFCI OUTLET AND SLEEVING FOR LV WIRING PER CURRENT NEC CODE.

CODED LANDSCAPE NOTES

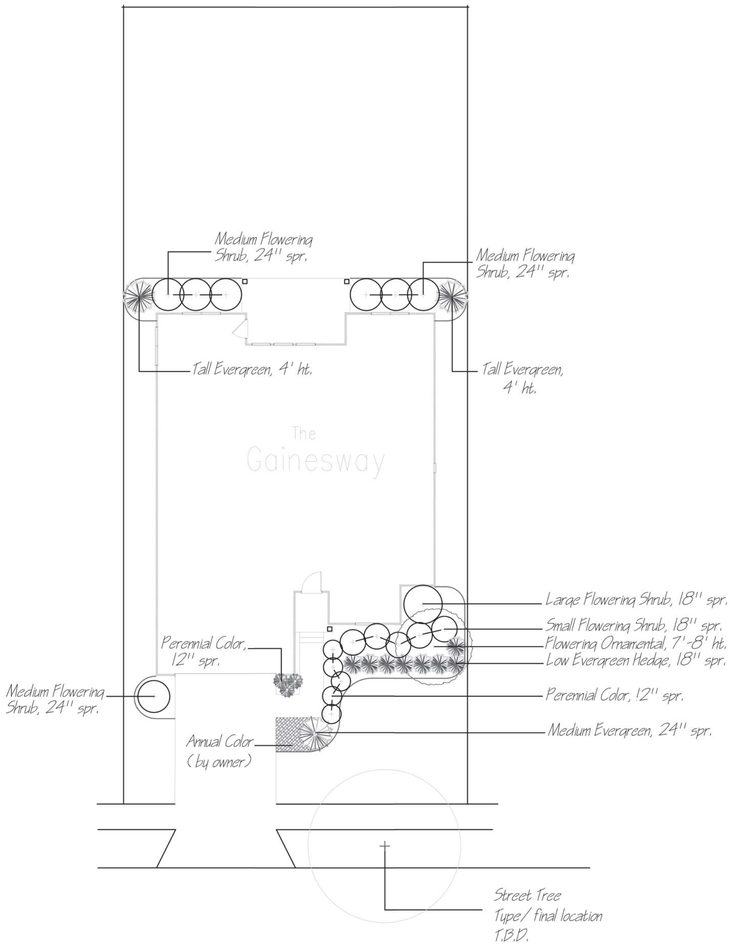
1. TURF
2. LANDSCAPE BED - PROVIDE 3" DEPTH HARDWOOD MULCH, POSITIVE DRAINAGE IN ALL DIRECTIONS. HAND SPADE EDGE.

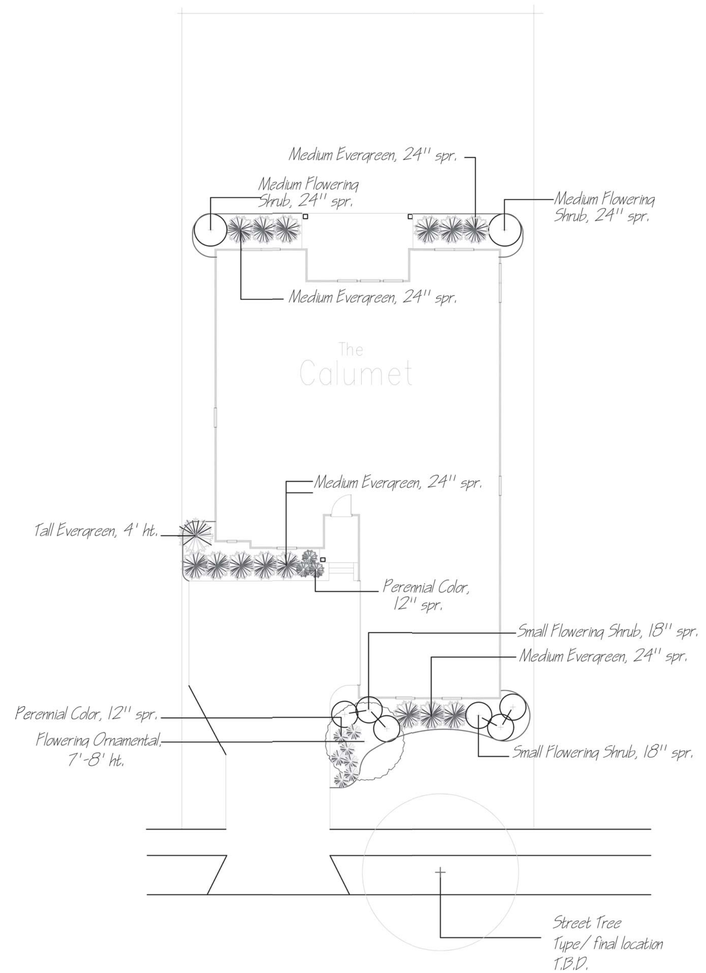
EXHIBIT D2

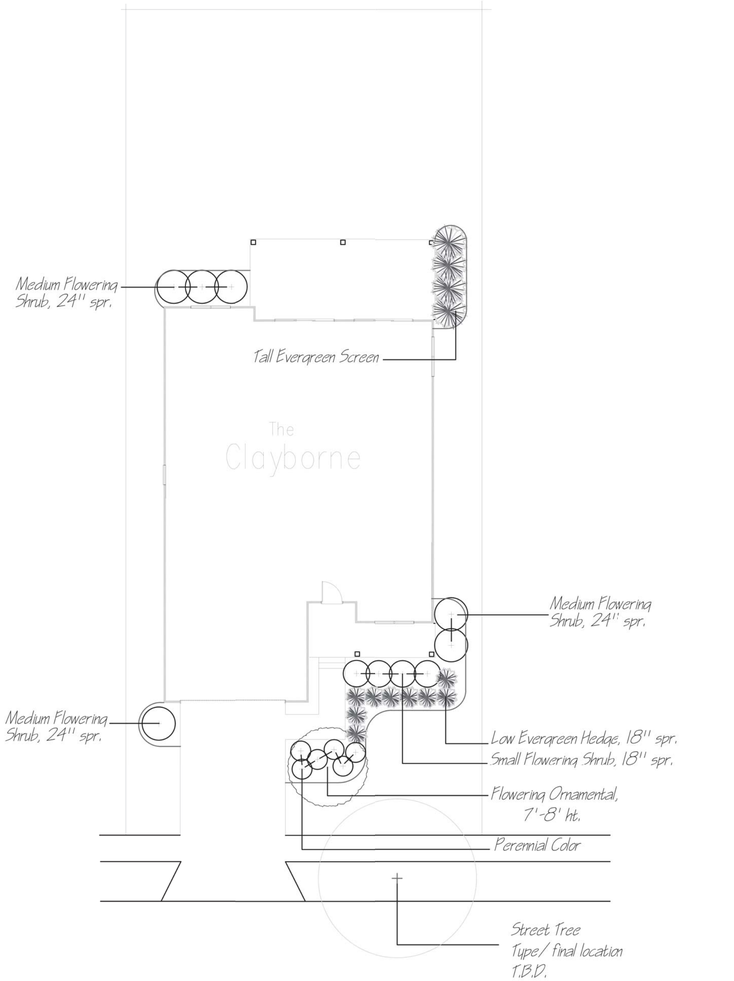
Carriage Farms - Landscape Enlargements

City of Powell, Ohio May 26, 2020

3 Pillar Homes Building Dreams | Camber Company | G2 PLANNING + DESIGN | E. P. FERRIS AND ASSOCIATES INC Consulting Civil Engineers and Surveyors







*NOTE:
THE PLANS AS SHOWN ARE CONCEPTUAL IN NATURE AND ARE PROVIDED TO ILLUSTRATE THE DESIRED LAYOUT AND QUALITY OF THE PROJECT. FINAL LAYOUT AND LANDSCAPING ARE SUBJECT TO CHANGE BASED UPON HOMEOWNER SELECTIONS.

BUILDING TYPICAL LANDSCAPE PLANS PROVIDED BY CIMINELLOS, INC.

EXHIBIT D4

Carriage Farms - Bldg. Typical Landscape Plans*

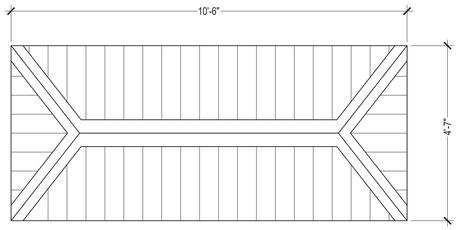
City of Powell, Ohio May 26, 2020

3Pillar Homes Building Dreams

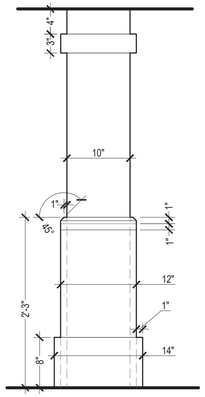
Camber Company

G2 PLANNING + DESIGN

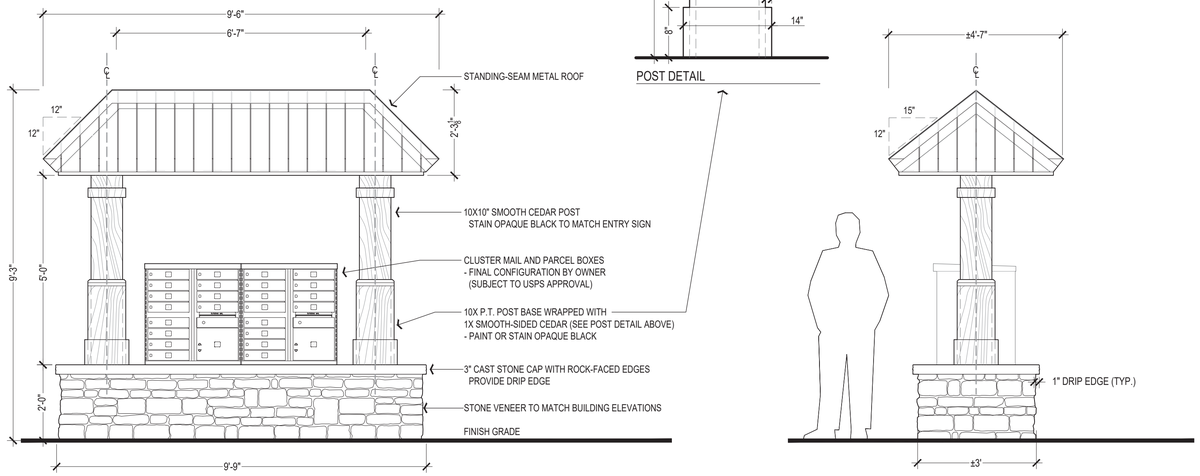
E. P. FERRIS AND ASSOCIATES INC
Consulting Civil Engineers and Surveyors



PLAN VIEW - ROOF



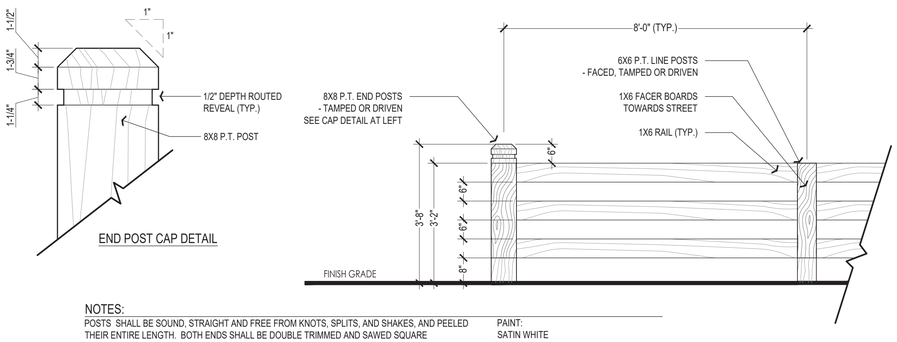
POST DETAIL



FRONT ELEVATION

SIDE ELEVATION

A MAIL KIOSK
SCALE: 1/2" = 1'-0"



END POST CAP DETAIL

NOTES:

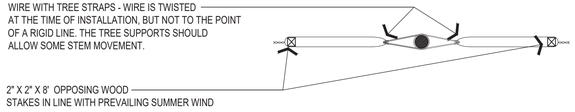
POSTS SHALL BE SOUND, STRAIGHT AND FREE FROM KNOTS, SPLITS, AND SHAKES, AND PEELED THEIR ENTIRE LENGTH. BOTH ENDS SHALL BE DOUBLE TRIMMED AND SAWED SQUARE

FENCE BOARDS:
BOARDS SHALL BE 1" X 6" X 16' POPLAR, PRESSURE TREATED.
THE BOARDS SHALL BE SOUND, STRAIGHT AND FREE OF KNOTS AND SHAKES

PAINT:
SATIN WHITE

FASTENERS:
NAILS-10D PLAIN SHANK BOX GALVANIZED

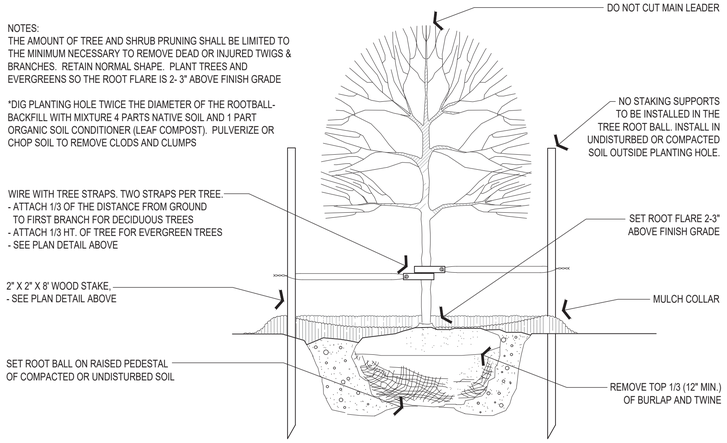
B 3-RAIL BOARD FENCE
SCALE: 1/2" = 1'-0"



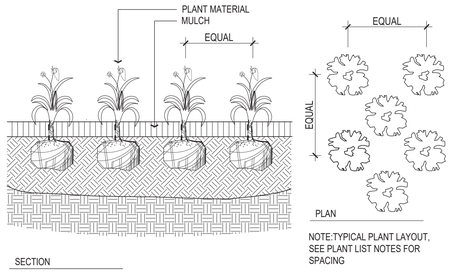
STAKING PLAN DETAIL

NOTES:
THE AMOUNT OF TREE AND SHRUB PRUNING SHALL BE LIMITED TO THE MINIMUM NECESSARY TO REMOVE DEAD OR INJURED TWIGS & BRANCHES. RETAIN NORMAL SHAPE. PLANT TREES AND EVERGREENS SO THE ROOT FLARE IS 2- 3" ABOVE FINISH GRADE

*DIG PLANTING HOLE TWICE THE DIAMETER OF THE ROOTBALL- BACKFILL WITH MIXTURE 4 PARTS NATIVE SOIL AND 1 PART ORGANIC SOIL CONDITIONER (LEAF COMPOST). PULVERIZE OR CHOP SOIL TO REMOVE CLODS AND CLUMPS

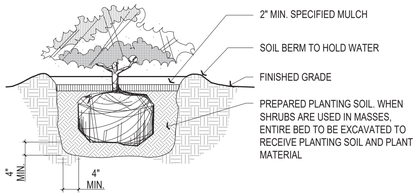


C DECIDUOUS/EVERGREEN TREE
SCALE: 1/2" = 1'-0"



NOTE:TYPICAL PLANT LAYOUT, SEE PLANT LIST NOTES FOR SPACING

E PERENNIALS & GROUNDCOVERS
SCALE: 1" = 1'-0"



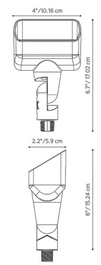
F SHRUB
SCALE: 1/2" = 1'-0"

FXLuminaire

PB: Up Light

NUMBER OF LEDS:	1	3	ZDC
HALOGEN LUMEN EQUIVALENT:	10 Watt	20 Watt	10 Watt
USEFUL LED LIFE (L70):	50,000 hrs avg.	50,000 hrs avg	50,000 hrs avg
INPUT VOLTAGE:	10 to 15V	10 to 15V	11 to 15V
VA TOTAL*:	2.4	4.5	7.2
WATTS USED:	2.0	4.2	6.0
LUMENS PER WATT (EFFICACY):	34	39	37
TOTAL LUMENS:	67	160	122
CRI (Ra):	83	82	83
CBCP (CENTER BEAM CANDLE POWER):	37	93	122
CCT			
AMBER FILTER	2700K	2700K	N/A
FROSTED FILTER	3900K	3900K	N/A
GREEN FILTER	4500K	4500K	N/A
BLUE FILTER	5200K	5200K	N/A

* (Use this number to size the transformer)

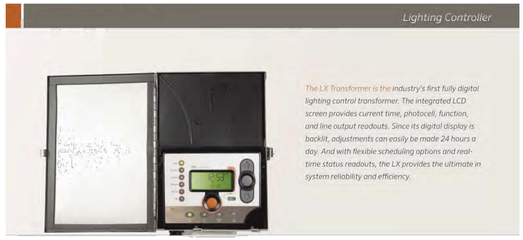


LANDSCAPE LIGHTING

A Hunter Industries Company

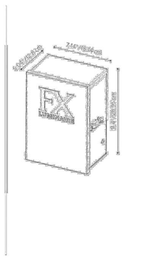
D SIGN UPLIGHT (OR OWNER-APPROVED)

FXLuminaire



LX: Transformer

MODELS:	150 or 300 Watt
FINISHES:	Stainless Steel or Matte Gray Powder Coat
ACCESSORY:	26' Remote Mount Photocell
DEPTH:	5.04" / 128.02 cm
WIDTH:	7.14" / 181.41 cm
HEIGHT:	11.4" / 289.43 cm



Learn more about FX Luminaire lighting control. Visit: fxl.com 760.744.5240

G FX TRANSFORMER (OR OWNER-APPROVED)

EXHIBIT D4

Carriage Farms - Landscape Details

City of Powell, Ohio May 26, 2020

3 Pillar Homes Building Dreams

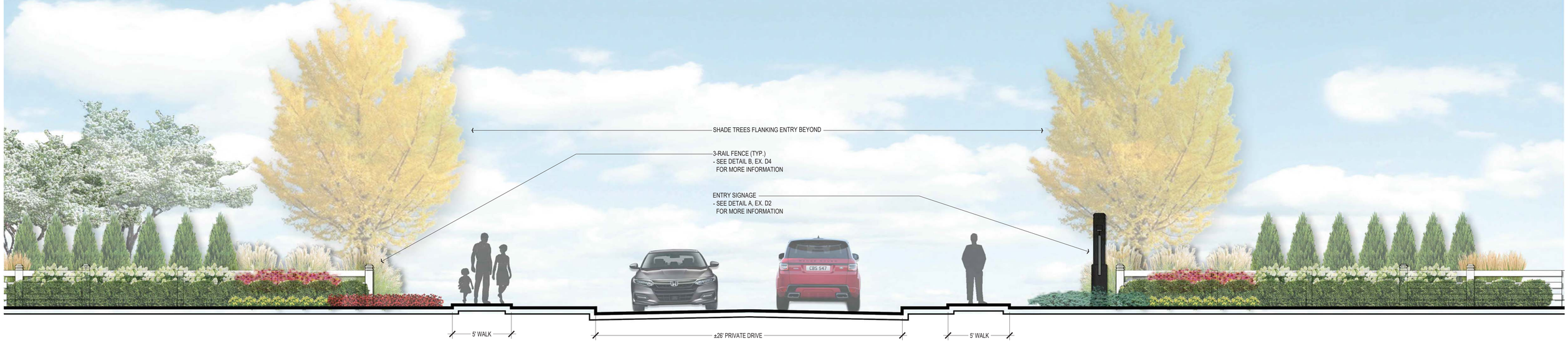
Camber Company

G2 PLANNING + DESIGN

E. P. FERRIS AND ASSOCIATES INC
Consulting Civil Engineers and Surveyors

ELEVATION A-A: MAIL KIOSK AND ENTRY SIGN

0' 4' 12'



ELEVATION B-B: MAIN ENTRY

0' 4' 12'

EXHIBIT D5

Carriage Farms - Illustrative Elevations

City of Powell, Ohio May 26, 2020

3Pillar Homes Building Dreams

0 4 12 N

Camber Company | G2 PLANNING + DESIGN | E. P. FERRIS AND ASSOCIATES INC Consulting Civil Engineers and Surveyors

OLENTANGY LOCAL SCHOOL DISTRICT
PID: 31913302003000

ARNDT SHARON
PID: 31913301008000

NORRIS SALLY & ARNDT SHARON
PID: 31913301007000

LIBERTY TOWNSHIP

CITY OF POWELL

SMITH MICHELLE & STARKEY JEFF
PID: 31913301009000

ROMANELLI & HUGHES
PID: 31913307013000

CHRISMAN ROBERT R III & CRYSTAL S
PID: 31913401004000

RATH RONALD D & TAMARA K
PID: 31913301010000

WOODS OF POWELL HOMEOWNERS ASSOCIATION INC
PID: 31913305001000

WILSON AMY M & RICHARD T
PID: 31913303004000

GUNDER KURT & SHERRI
PID: 31913303003000

DIPIERO MARK W & CHRISTINA M
PID: 31913303002000

JOHNSTON MARY I
PID: 31913303001000

MICHAEL JOSEPH S & CANDYCE E TRUSTEES
PID: 3191340200900

LIBERTY ROAD

PUBLIC ROAD

CARRIAGE ROAD

PROPOSED MOUNDING

RETENTION POND
NP = 910.00
TBK = 914.50

CONTROL OUTLET

PR. 5' SIDEWALK

PR. 8' PATH

1 FG 919.50
2 FG 920.00
3 FG 920.00
4 FG 920.00
5 FG 919.00
6 FG 920.00
7 FG 919.50
8 FG 918.50
9 FG 918.50
10 FG 918.50
11 FG 918.50
12 FG 918.00
13 FG 917.50
14 FG 917.00
15 FG 917.00
16 FG 917.00
17 FG 917.50
18 FG 918.00
19 FG 918.50
20 FG 918.50
21 FG 918.50
22 FG 919.50
23 FG 919.00

0 40 80
SCALE IN FEET

REVISIONS	DATE	BY	CHK.

E. P. FERRIS AND ASSOCIATES INC
Consulting Civil Engineers and Surveyors

880 KING AVENUE
COLUMBUS, OHIO 43212
(614) 299-2999
(614) 299-2992 (Fax)
www.EPFERRIS.com

CITY OF POWELL, DELAWARE COUNTY, OHIO

CARRIAGE FARMS

3 PILLAR HOMES

JOB NO.:	1200.001
DESIGNED BY:	X
DRAWN BY:	MGS
CHECKED BY:	X
APPROVED BY:	X
DATE:	03/30/2020

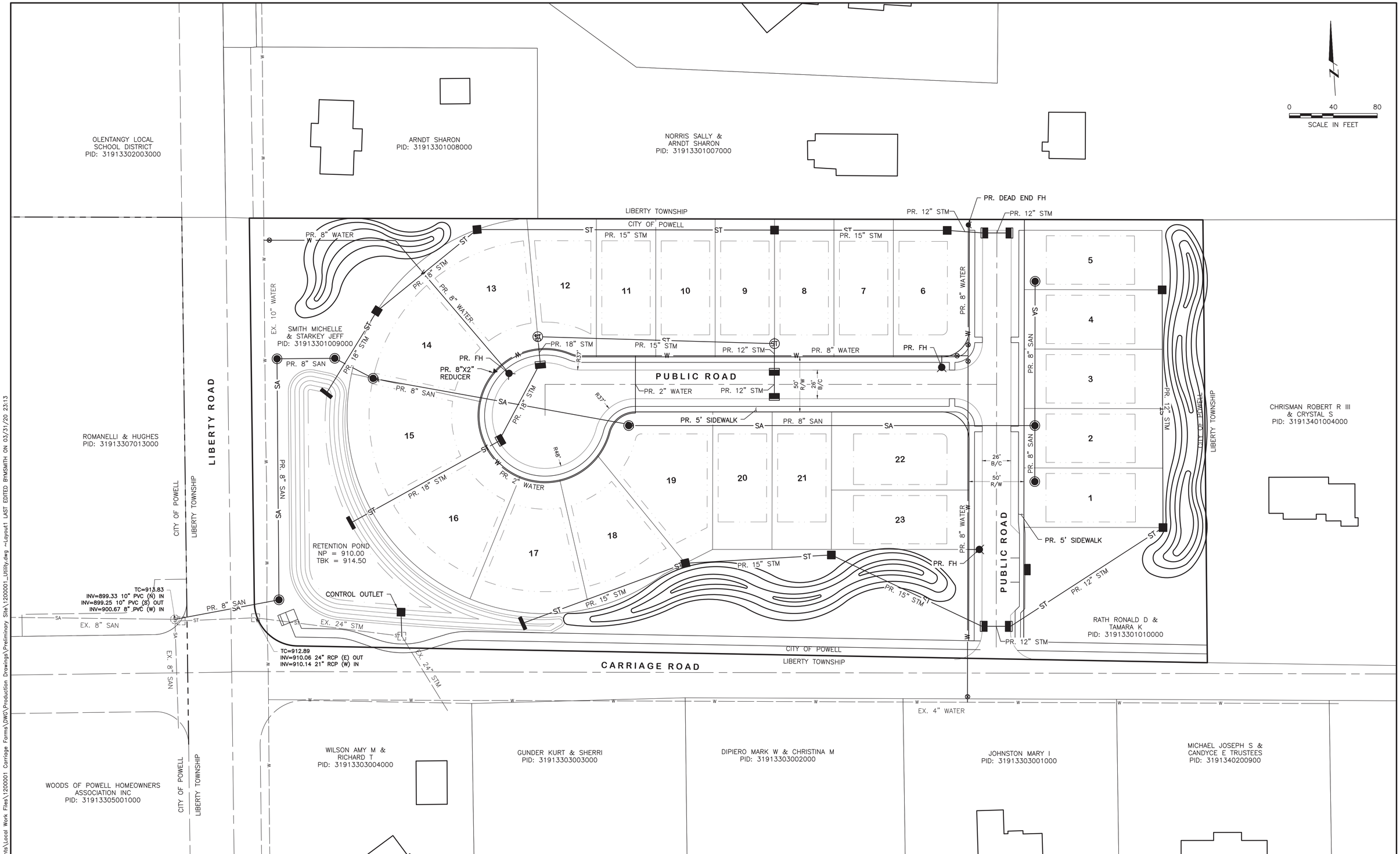
EXHIBIT E1

GRADING PLAN

SCALE: 1" = 40'

SHEET NO. 1 OF 2

C:\Users\msmith\Documents\Local Work Files\1200001 Carriage Farms\DWG\Production Drawings\Preliminary Site\1200001_SiteLayout.dwg ~Layout1 LAST EDITED BYMSMITH ON 03/31/20 23:25



REVISIONS	DATE	BY	CHK.

E. P. FERRIS AND ASSOCIATES INC
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COLUMBUS, OHIO 43212
(614) 299-2999
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www.EPFERRIS.com

CITY OF POWELL, DELAWARE COUNTY, OHIO

CARRIAGE FARMS

3 PILLAR HOMES

JOB NO.:	1200.001
DESIGNED BY:	X
DRAWN BY:	MGS
CHECKED BY:	X
APPROVED BY:	X
DATE:	03/30/2020

EXHIBIT E2

UTILITY PLAN

SCALE: 1" = 40'

SHEET NO. 2 OF 2

C:\Users\msmith\Documents\Local Work Files\1200001 Carriage Farms\DWG\Production Drawings\Preliminary Site\1200001_Utility.dwg ~Layout1 LAST EDITED BYMSMITH ON 03/31/20 23:13

E.P. FERRIS & ASSOCIATES INC

Preliminary Drainage Analysis

For

2630 Carriage Road

Powell, Ohio

Prepared By:

E. P. FERRIS AND ASSOCIATES INC
Consulting Civil Engineers and Surveyors

880 King Ave.
Columbus, Ohio 43212

EP Ferris # 1200.001

Final analysis and drawings to be signed and stamped by professional registered with the state of Ohio. Submit to city/county drainage board for approval.

I hereby certify that the calculations contained herein are accurate to the best of my knowledge and belief.

_____ _____

By: Date

INTRODUCTION:

The following report presents the analysis of the storm water management for the 2630 Carriage Road development in Powell, Ohio. The total tributary area of the proposed project is approximately 6.48 acres, less than the total site area of 7.70 Ac. An offsite area of approximately 0.34 Ac. drains to the proposed retention system provided and will be allowed to pass through. Approximately 1.22 Ac. of open space will drain off the site without detention. The development will drain to the retention pond via proposed storm sewer pipes and flood routing.

HYDROLOGIC ANALYSIS:

All hydrologic parameters were determined using methodology described in The City of Powell, Ohio codified ordinance for storm water management design along with The City of Powell Engineer's Office requirements.

PRE-DEVELOPED CONDITIONS:

The pre-developed condition of the site consists of an open site with ground cover vegetation, grasses, bare soil, gravel and barns. A curve number (CN) of 83 was determined from 0.429 Ac., CN=98 unconnected/roofs, 0.591 Ac., CN=96 gravel, 0.651 Ac., CN=94 bare soil, and 6.029 Ac., CN=80 grass (HSG D) was used along with a minimum time of concentration of 17.3 minutes from the Velocity Method. Currently the site drains to an existing ditch along Carriage Road.

POST-DEVELOPED CONDITIONS:

The post developed condition of the site will consist of 23 single family lots with associated roads and retention pond. A weighted curve number (CN) of 87 was used for the 6.48 Acres developed, taken from (6.337 Ac. CN of 87 for ¼ acre lots, 38% imp. HSG D) and (0.143 Ac. CN of 98 for water surface). The time of concentration of 12.5 minutes which was estimated as the time in the storm sewer system.

An offsite area of approximately 0.34 Ac. of mostly grass in good condition (CN=80, HSG D) will flow through the storm system and into the pond. The flows from this area will be allowed to pass through the pond un-detained but will be accounted for in the water quality volume calculation.

Approximately 1.22 Ac. (CN=80, HSG D) of open space will not be tributary to the pond but will drain un-detained.

The site will use storm sewer pipes and flood routing to convey storm water to the proposed retention pond.

The retention system will release storm runoff at a pre-developed rate of 1-year storm through the 100-year developed storm as required by the city of Powell, Ohio. The offsite area will be allowed to be released without detention. The un-detained area will be deducted from the allowable.

Emergency overland flood routing will take place at the top of bank and rout to the ditch at Carriage Road.

Table 1 – Storm Water Management Summary Table

	1 yr.	**2 yr.**	**5 yr.**	**10 yr.**	**25 yr.**	**50 yr.**	**100 yr.**
Predev. Q (cfs)	**7.26**	10.24	14.64	18.37	23.75	28.34	33.13
Postdev. Q (cfs)	8.85	11.89	16.26	19.89	25.05	29.41	33.91
Offsite Q (cfs)	0.32	0.47	0.69	0.89	1.17	1.41	1.67
Un-detained Q (cfs)	0.68	1.46	1.51	1.94	2.57	3.12	3.70
Allowable Release* (cfs)	6.90	1.01	6.44	6.21	5.86	5.55	5.23
Actual Release (cfs)	0.70	1.67	2.77	3.39	4.08	4.56	5.08
Ponding Elev.(ft)	911.44	911.70	912.13	912.50	912.99	913.38	913.77
Storage (cf) @ Elev.	13,722	17,024	22,822	28,274	36,456	43,681	51,339
Storage Depth (ft)	1.44	1.70	2.13	2.50	2.99	3.38	3.77

* 1 Yr. Predeveloped release rate plus offsite less un-detained

WATER QUALITY:

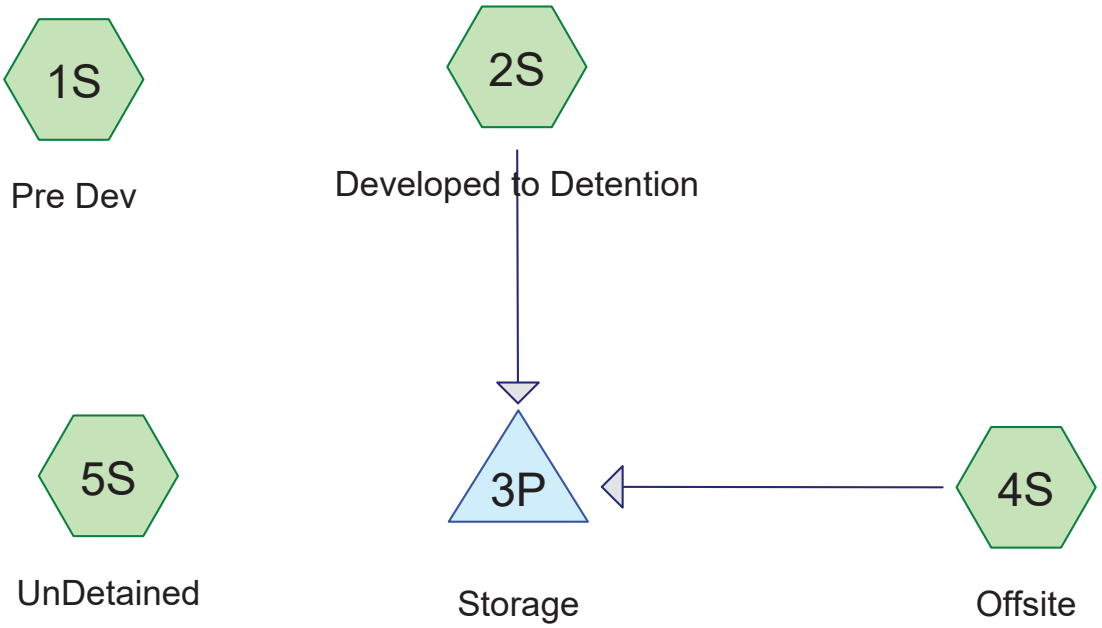
Water quality is provided in the pond volume. A drawdown calculation has also been provided. See Water Quality Calculation Spreadsheet (Appendix B).

SUMMARY:

The developed site is controlled by an outlet structure located inside the retention pond with a water quality and quantity orifices. Storm water will be conveyed to this structure via storm pipes and overland flood routing. The pond in conjunction with the pipes are to provide enough storage in the system to achieve the required release rates. See Hydrograph report in (Appendix A). Tributary maps are provided in (Appendix C).

APPENDIX A

(HydroCAD Report)



Subcat Reach Pond Link

Routing Diagram for Carriage Trails -1200
Prepared by Microsoft, Printed 3/25/2020
HydroCAD® 10.00-20 s/n 05053 © 2017 HydroCAD Software Solutions LLC

Summary for Subcatchment 1S: Pre Dev

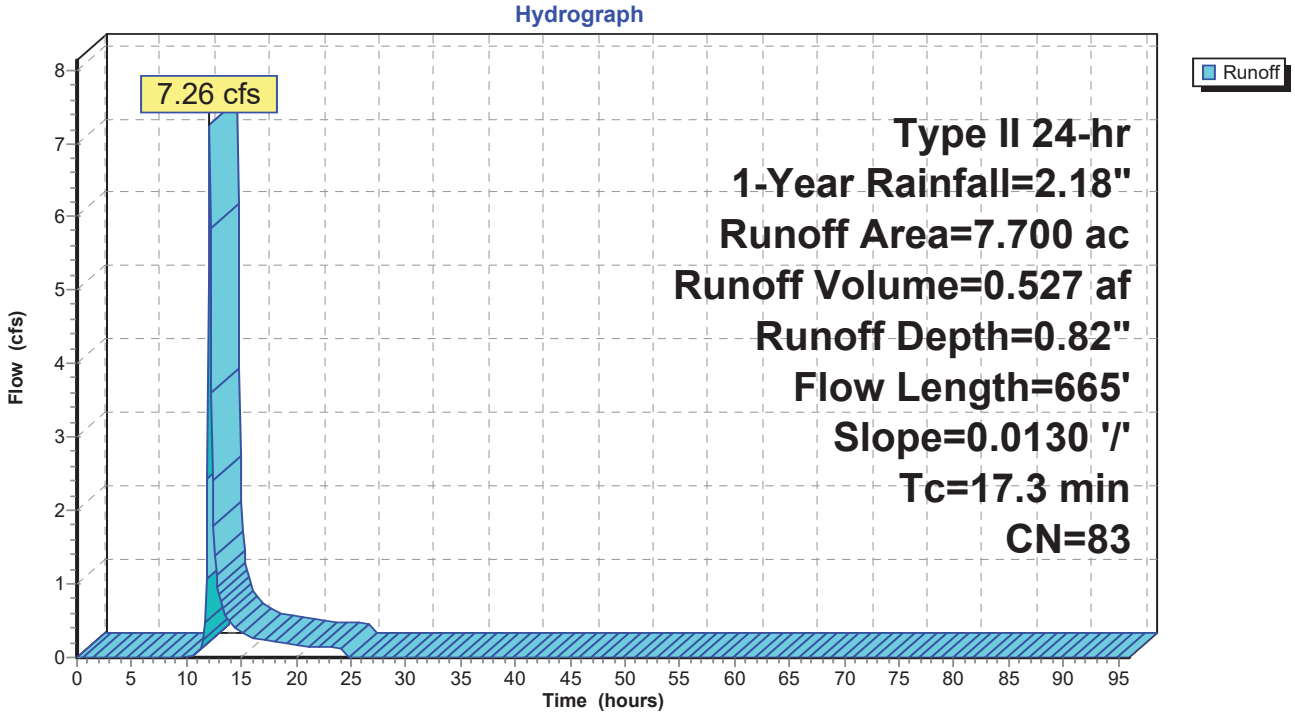
Runoff = 7.26 cfs @ 12.11 hrs, Volume= 0.527 af, Depth= 0.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 1-Year Rainfall=2.18"

Area (ac)	CN	Description
0.429	98	Unconnected pavement, HSG D
0.591	96	Gravel surface, HSG D
0.651	94	Fallow, bare soil, HSG D
6.029	80	>75% Grass cover, Good, HSG D
7.700	83	Weighted Average
7.271		94.43% Pervious Area
0.429		5.57% Impervious Area
0.429		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	20	0.0130	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.25"
13.5	645	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.3	665	Total			

Subcatchment 1S: Pre Dev



Summary for Subcatchment 2S: Developed to Detention

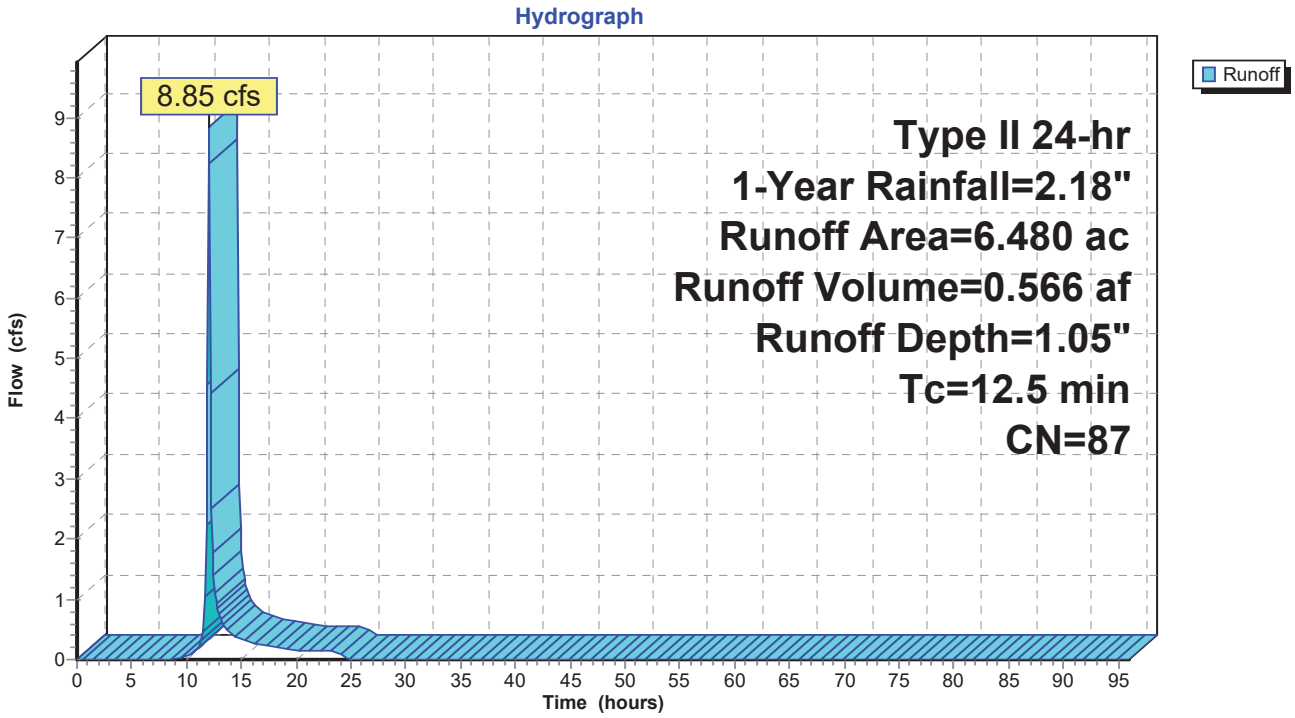
Runoff = 8.85 cfs @ 12.04 hrs, Volume= 0.566 af, Depth= 1.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 1-Year Rainfall=2.18"

Area (ac)	CN	Description
6.337	87	1/4 acre lots, 38% imp, HSG D
0.143	98	Water Surface, HSG D
6.480	87	Weighted Average
3.929		60.63% Pervious Area
2.551		39.37% Impervious Area

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

Subcatchment 2S: Developed to Detention



Summary for Subcatchment 4S: Offsite

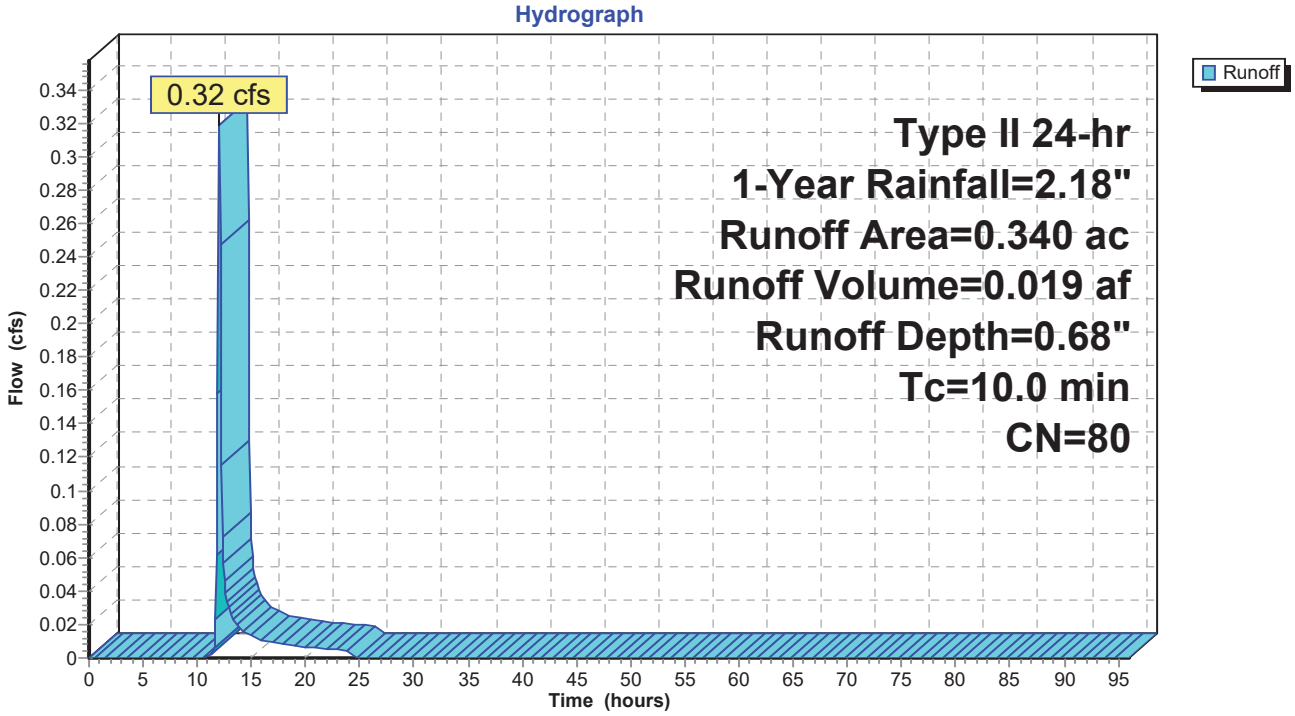
Runoff = 0.32 cfs @ 12.02 hrs, Volume= 0.019 af, Depth= 0.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 1-Year Rainfall=2.18"

Area (ac)	CN	Description
0.340	80	>75% Grass cover, Good, HSG D
0.340		100.00% Pervious Area

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

Subcatchment 4S: Offsite



Summary for Subcatchment 5S: UnDetained

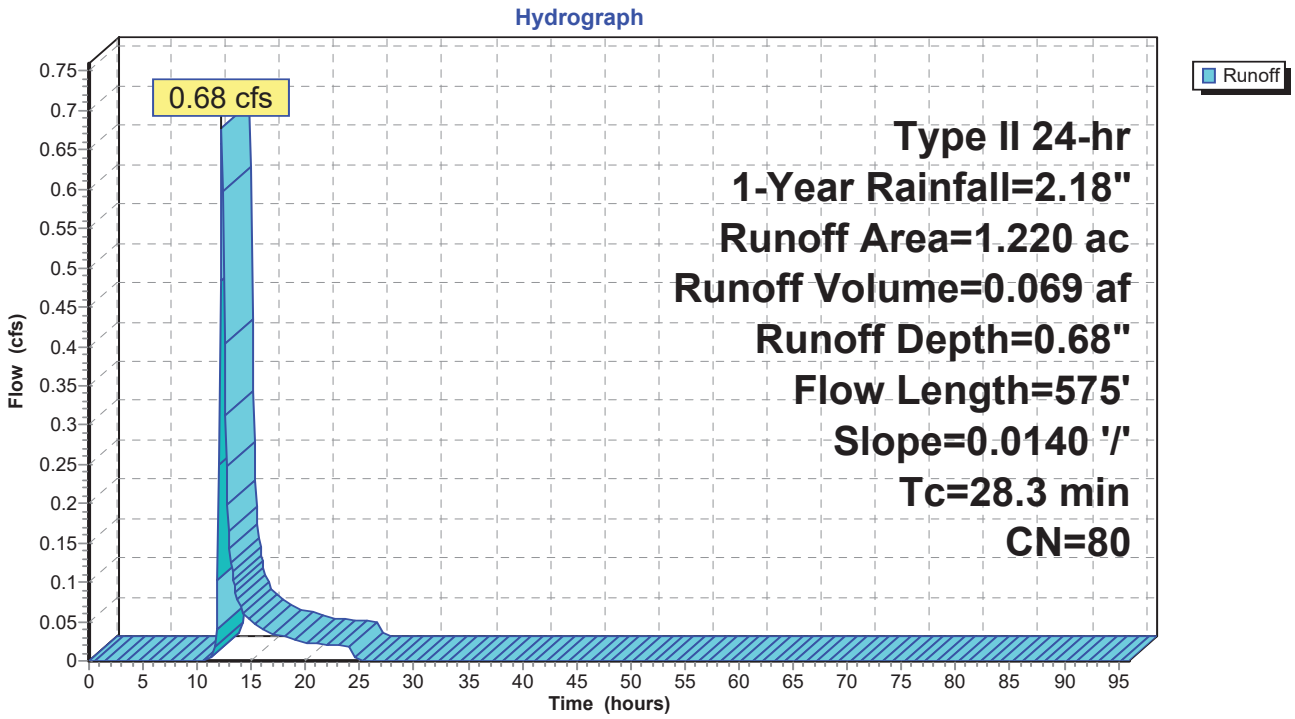
Runoff = 0.68 cfs @ 12.25 hrs, Volume= 0.069 af, Depth= 0.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 1-Year Rainfall=2.18"

Area (ac)	CN	Description
1.220	80	>75% Grass cover, Good, HSG D
1.220		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0140	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.25"
10.6	525	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.0					**Direct Entry,**
28.3	575	Total			

Subcatchment 5S: UnDetained



Summary for Pond 3P: Storage

Inflow Area = 6.820 ac, 37.41% Impervious, Inflow Depth = 1.03" for 1-Year event
Inflow = 9.17 cfs @ 12.04 hrs, Volume= 0.585 af
Outflow = 0.70 cfs @ 13.13 hrs, Volume= 0.584 af, Atten= 92%, Lag= 65.1 min
Primary = 0.70 cfs @ 13.13 hrs, Volume= 0.584 af

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Peak Elev= 911.44' @ 13.13 hrs Surf.Area= 12,092 sf Storage= 13,722 cf

Plug-Flow detention time= 575.6 min calculated for 0.584 af (100% of inflow)
Center-of-Mass det. time= 578.3 min (1,418.2 - 839.9)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	60,914 cf	**Retention Pond (Prismatic)**Listed below (Recalc)
#2	912.00'	3,255 cf	**CB Ponding (Prismatic)**Listed below (Recalc)
#3	911.50'	485 cf	**12.0" Round 12" Pipe Storage** L= 618.0' S= 0.0050 '/'
#4	910.00'	638 cf	**15.0" Round 15" Pipe Storage** L= 520.0' S= 0.0035 '/'
#5	910.00'	818 cf	**18.0" Round 18' Pipe Storage** L= 463.0' S= 0.0030 '/'
		66,111 cf	Total Available Storage

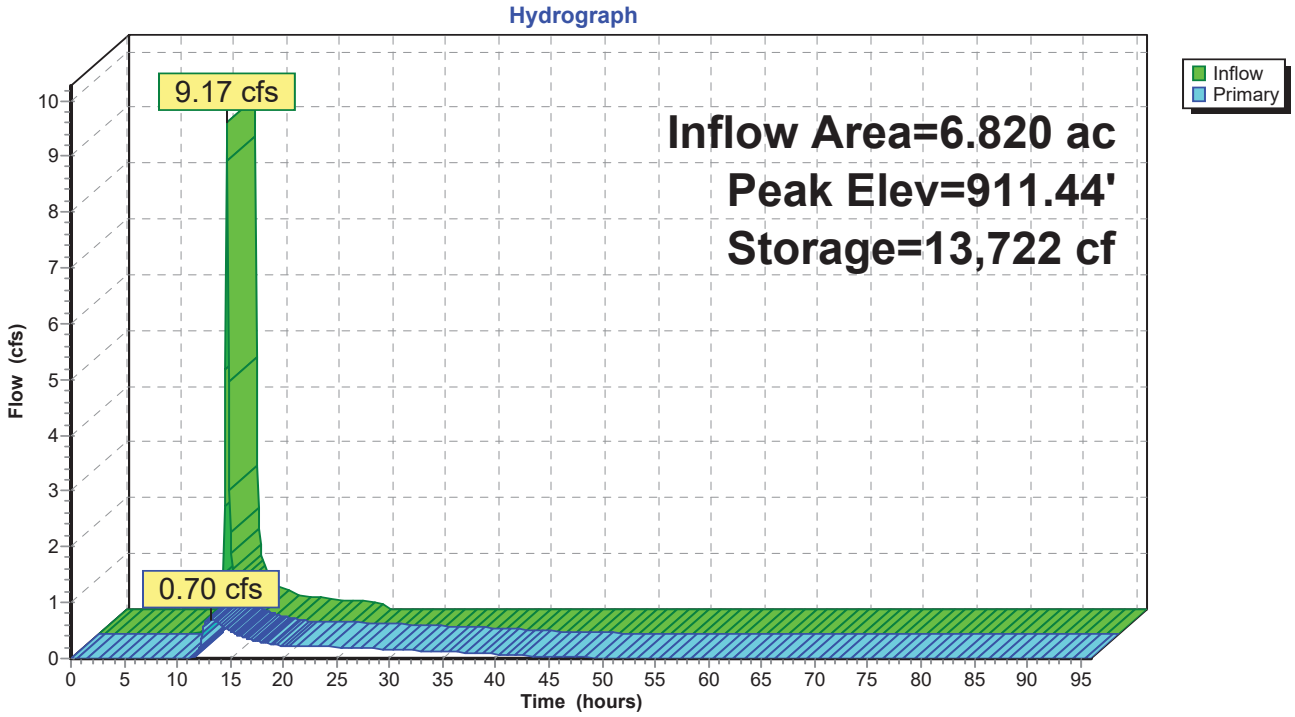
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	6,984	0	0
914.50	20,089	60,914	60,914

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
912.00	0	0	0
913.00	1,814	907	907
914.00	2,882	2,348	3,255

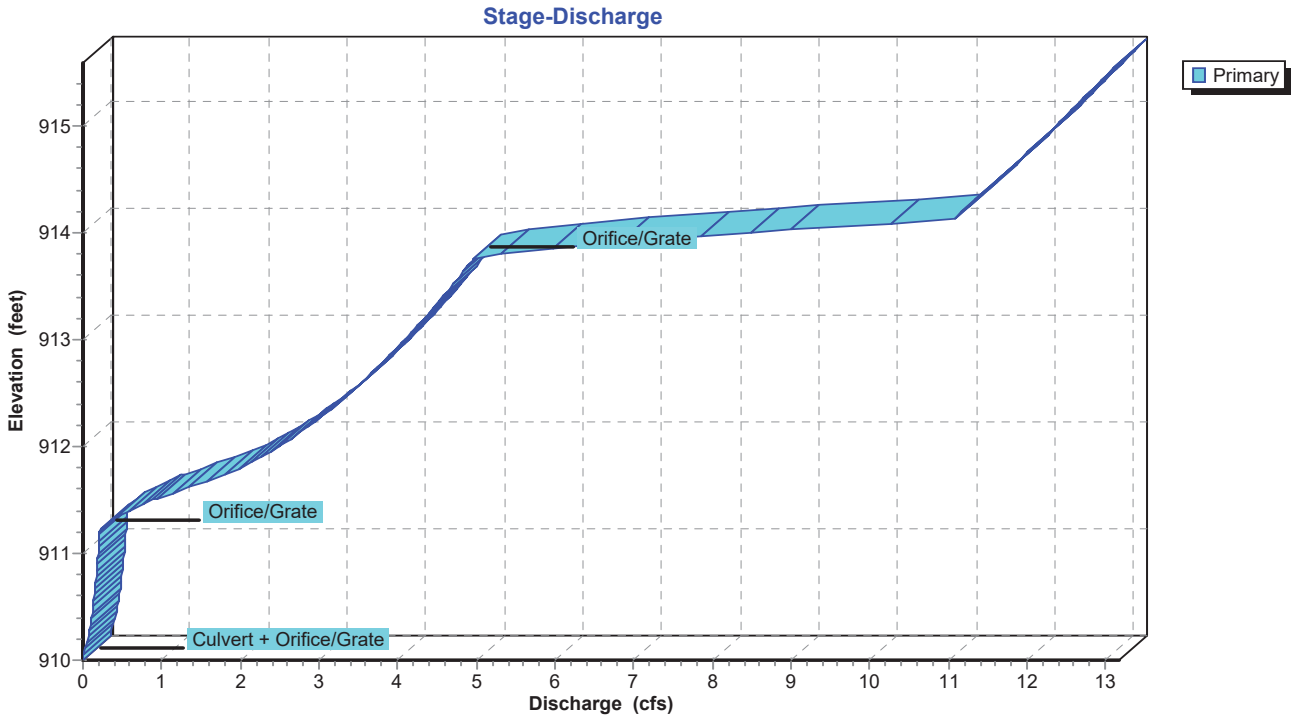
Device	Routing	Invert	Outlet Devices
#1	Primary	910.00'	**15.0" Round Culvert** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 910.00' / 909.75' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	910.00'	**2.8" Vert. Orifice/Grate** C= 0.600
#3	Device 1	911.20'	**15.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600
#4	Device 1	913.75'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.70 cfs @ 13.13 hrs HW=911.44' (Free Discharge)
└**1=Culvert** (Passes 0.70 cfs of 5.04 cfs potential flow)
├**2=Orifice/Grate** (Orifice Controls 0.24 cfs @ 5.53 fps)
├**3=Orifice/Grate** (Orifice Controls 0.46 cfs @ 1.56 fps)
└**4=Orifice/Grate** (Controls 0.00 cfs)

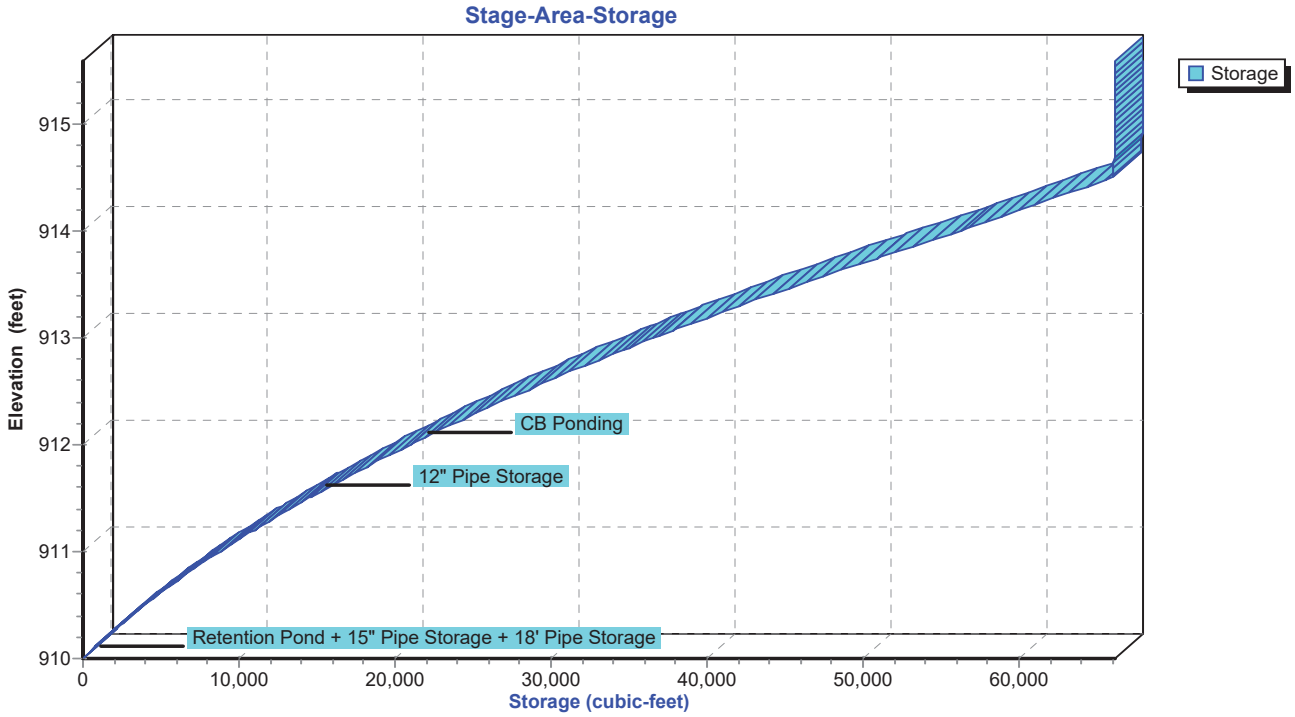
Pond 3P: Storage



Pond 3P: Storage



Pond 3P: Storage



Summary for Subcatchment 1S: Pre Dev

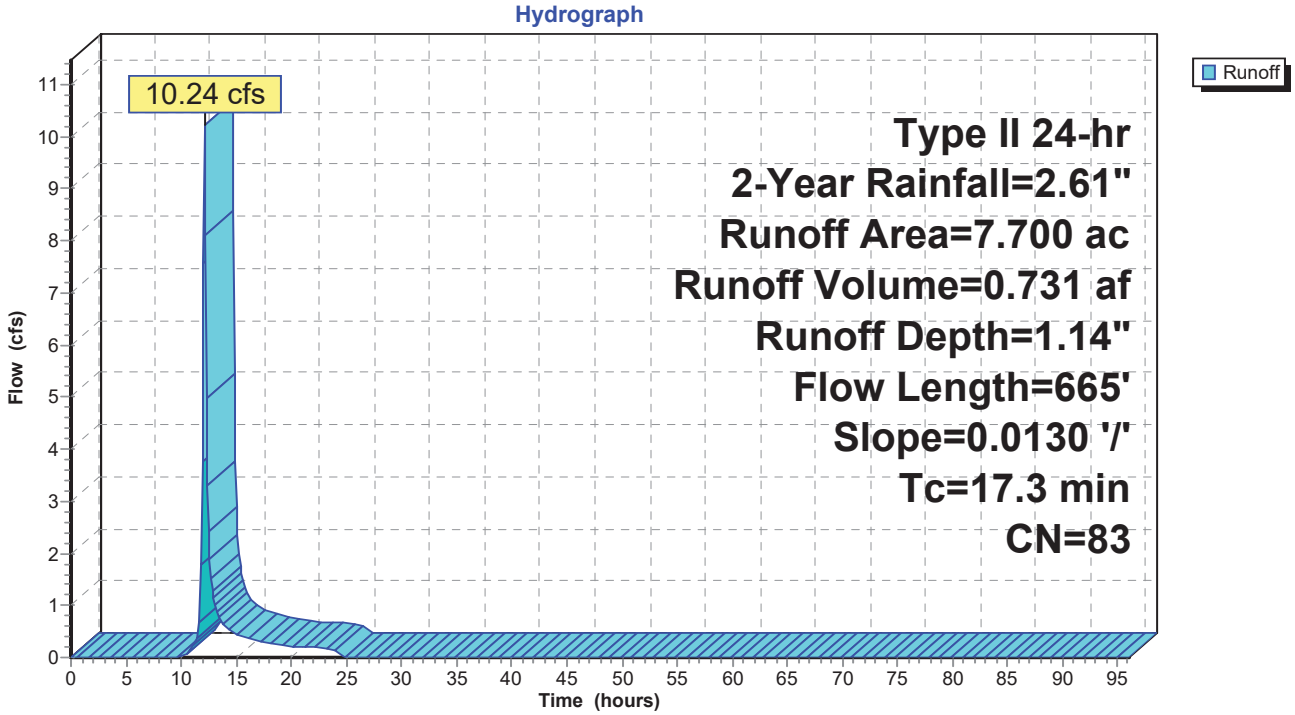
Runoff = 10.24 cfs @ 12.11 hrs, Volume= 0.731 af, Depth= 1.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 2-Year Rainfall=2.61"

Area (ac)	CN	Description
0.429	98	Unconnected pavement, HSG D
0.591	96	Gravel surface, HSG D
0.651	94	Fallow, bare soil, HSG D
6.029	80	>75% Grass cover, Good, HSG D
7.700	83	Weighted Average
7.271		94.43% Pervious Area
0.429		5.57% Impervious Area
0.429		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	20	0.0130	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.25"
13.5	645	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.3	665	Total			

Subcatchment 1S: Pre Dev



Summary for Subcatchment 2S: Developed to Detention

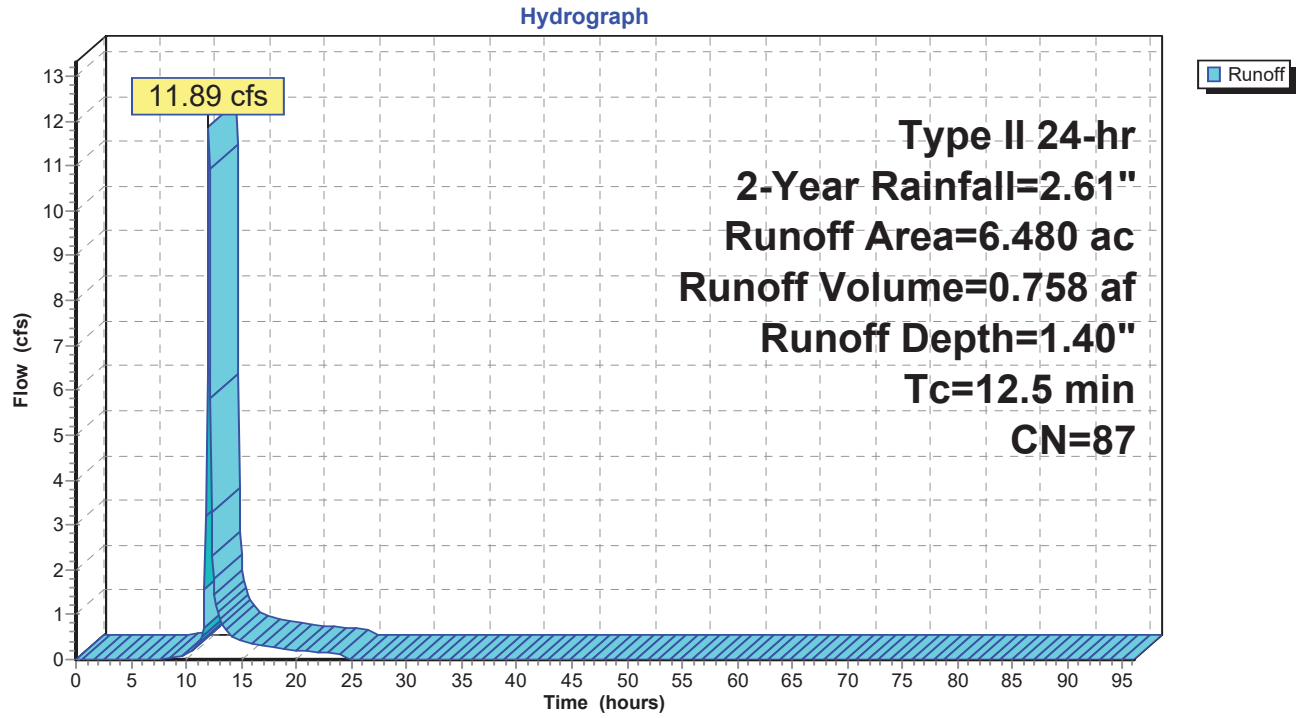
Runoff = 11.89 cfs @ 12.04 hrs, Volume= 0.758 af, Depth= 1.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 2-Year Rainfall=2.61"

Area (ac)	CN	Description
6.337	87	1/4 acre lots, 38% imp, HSG D
0.143	98	Water Surface, HSG D
6.480	87	Weighted Average
3.929		60.63% Pervious Area
2.551		39.37% Impervious Area

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

Subcatchment 2S: Developed to Detention



Summary for Subcatchment 4S: Offsite

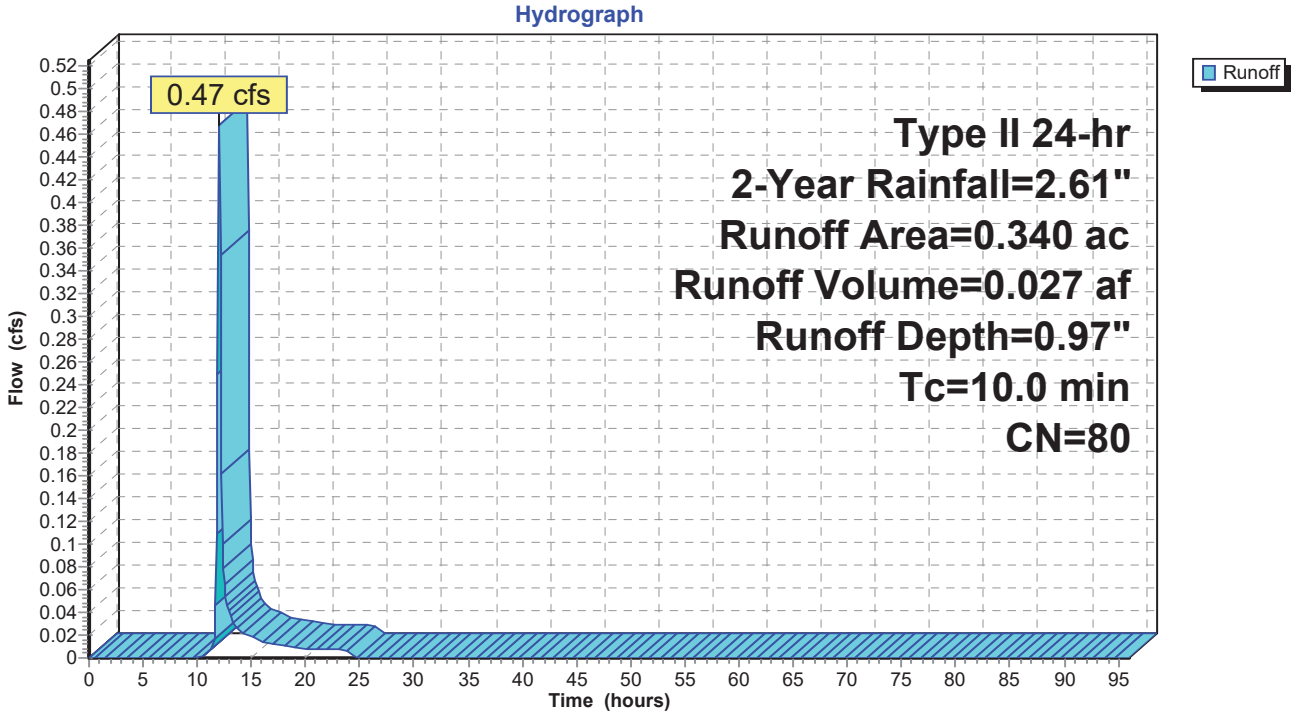
Runoff = 0.47 cfs @ 12.02 hrs, Volume= 0.027 af, Depth= 0.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 2-Year Rainfall=2.61"

Area (ac)	CN	Description
0.340	80	>75% Grass cover, Good, HSG D
0.340		100.00% Pervious Area

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

Subcatchment 4S: Offsite



Summary for Subcatchment 5S: UnDetained

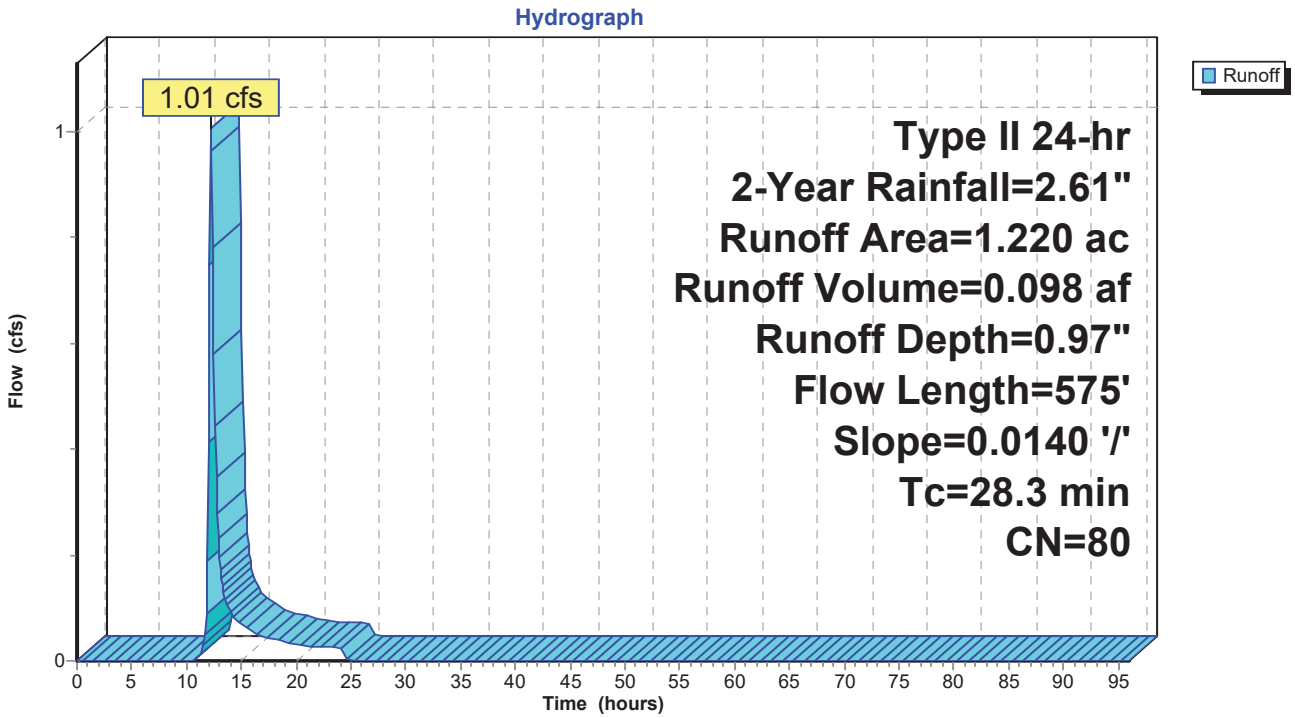
Runoff = 1.01 cfs @ 12.24 hrs, Volume= 0.098 af, Depth= 0.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 2-Year Rainfall=2.61"

Area (ac)	CN	Description
1.220	80	>75% Grass cover, Good, HSG D
1.220		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0140	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.25"
10.6	525	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.0					**Direct Entry,**
28.3	575	Total			

Subcatchment 5S: UnDetained



Summary for Pond 3P: Storage

Inflow Area = 6.820 ac, 37.41% Impervious, Inflow Depth = 1.38" for 2-Year event
Inflow = 12.35 cfs @ 12.04 hrs, Volume= 0.785 af
Outflow = 1.67 cfs @ 12.55 hrs, Volume= 0.784 af, Atten= 86%, Lag= 30.7 min
Primary = 1.67 cfs @ 12.55 hrs, Volume= 0.784 af

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Peak Elev= 911.70' @ 12.55 hrs Surf.Area= 12,812 sf Storage= 17,024 cf

Plug-Flow detention time= 470.2 min calculated for 0.784 af (100% of inflow)
Center-of-Mass det. time= 469.4 min (1,300.9 - 831.5)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	60,914 cf	**Retention Pond (Prismatic)**Listed below (Recalc)
#2	912.00'	3,255 cf	**CB Ponding (Prismatic)**Listed below (Recalc)
#3	911.50'	485 cf	**12.0" Round 12" Pipe Storage** L= 618.0' S= 0.0050 '/'
#4	910.00'	638 cf	**15.0" Round 15" Pipe Storage** L= 520.0' S= 0.0035 '/'
#5	910.00'	818 cf	**18.0" Round 18' Pipe Storage** L= 463.0' S= 0.0030 '/'
		66,111 cf	Total Available Storage

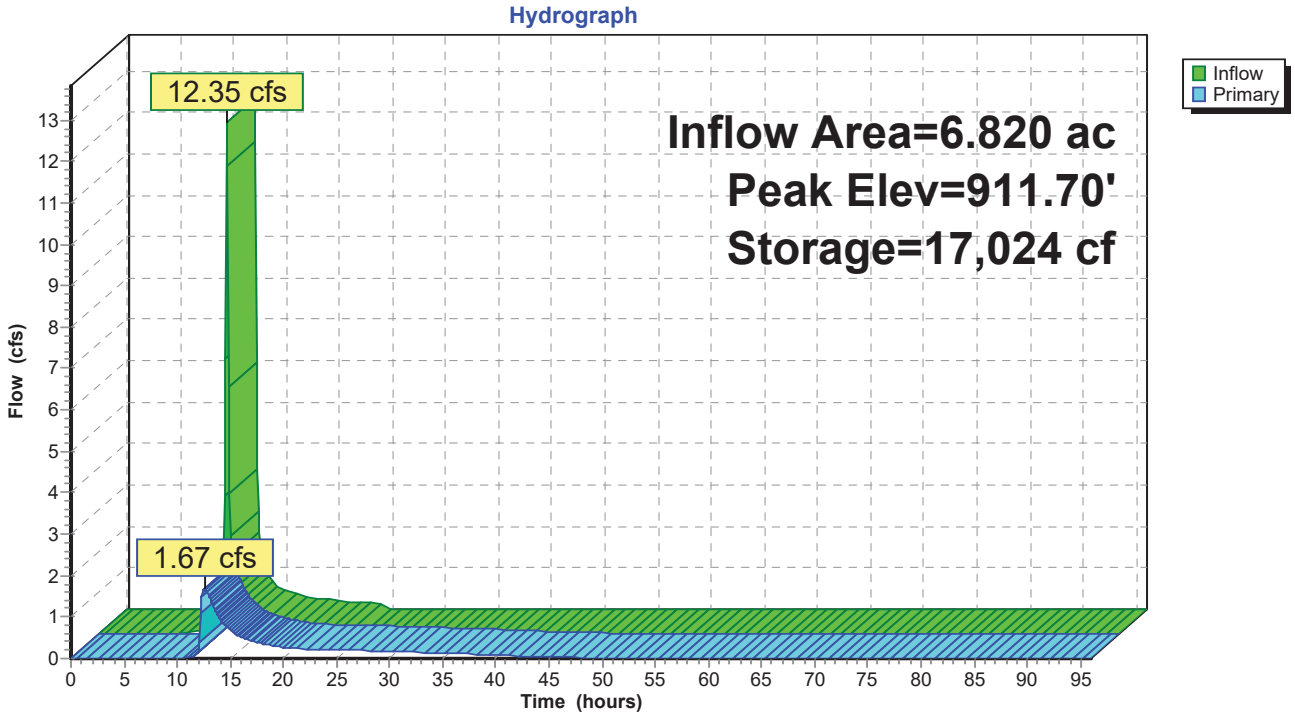
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	6,984	0	0
914.50	20,089	60,914	60,914

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
912.00	0	0	0
913.00	1,814	907	907
914.00	2,882	2,348	3,255

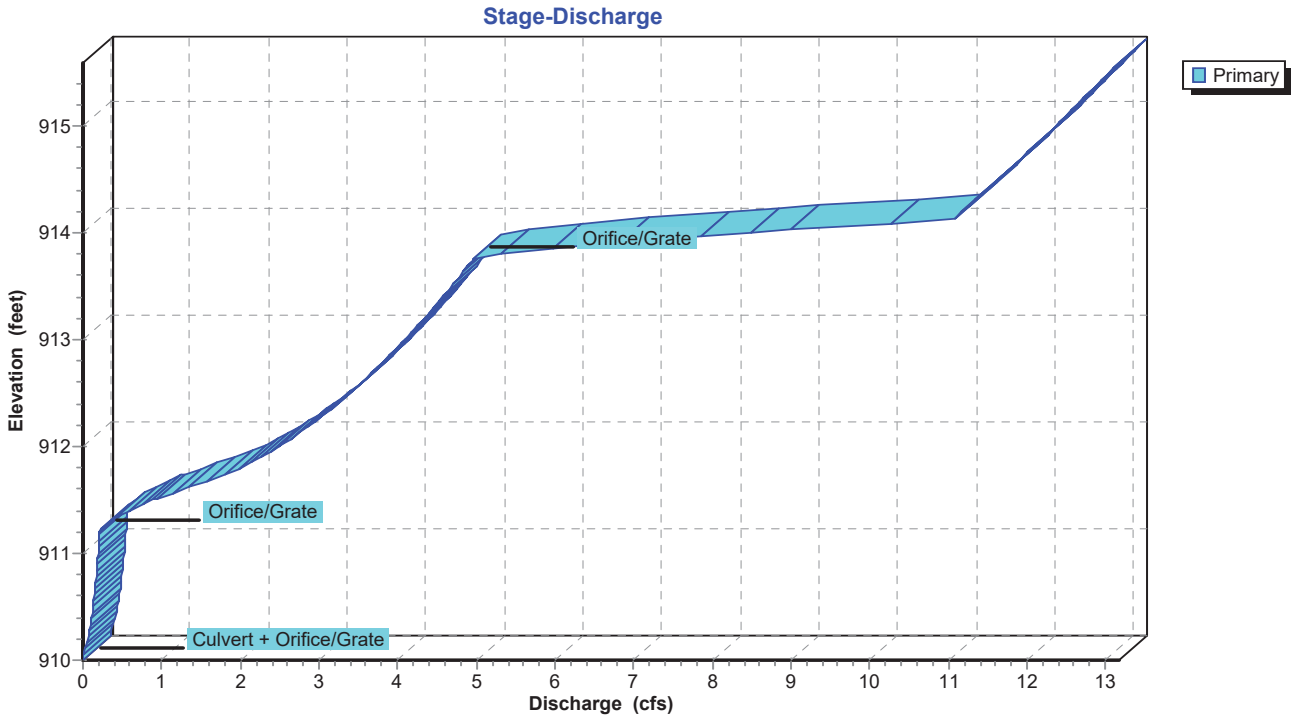
Device	Routing	Invert	Outlet Devices
#1	Primary	910.00'	**15.0" Round Culvert** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 910.00' / 909.75' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	910.00'	**2.8" Vert. Orifice/Grate** C= 0.600
#3	Device 1	911.20'	**15.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600
#4	Device 1	913.75'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.68 cfs @ 12.55 hrs HW=911.70' (Free Discharge)
└**1=Culvert** (Passes 1.68 cfs of 5.71 cfs potential flow)
├**2=Orifice/Grate** (Orifice Controls 0.26 cfs @ 6.06 fps)
├**3=Orifice/Grate** (Orifice Controls 1.42 cfs @ 2.27 fps)
└**4=Orifice/Grate** (Controls 0.00 cfs)

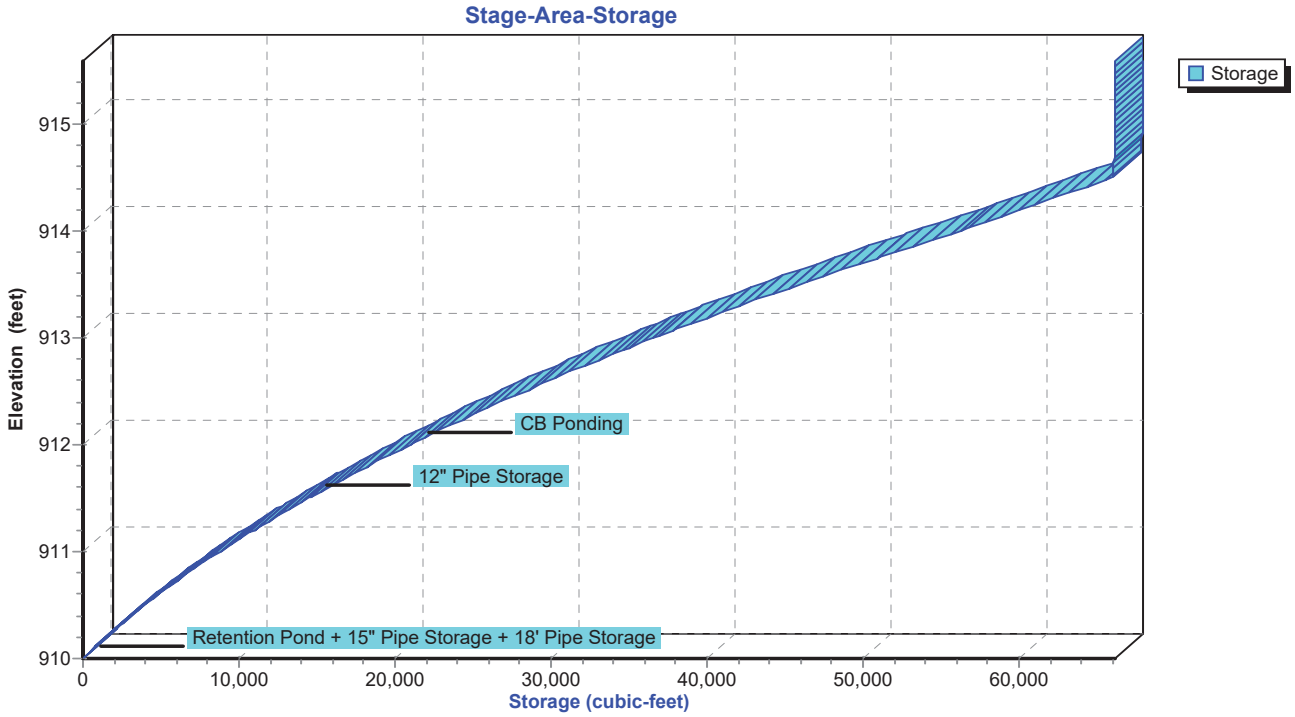
Pond 3P: Storage



Pond 3P: Storage



Pond 3P: Storage



Summary for Subcatchment 1S: Pre Dev

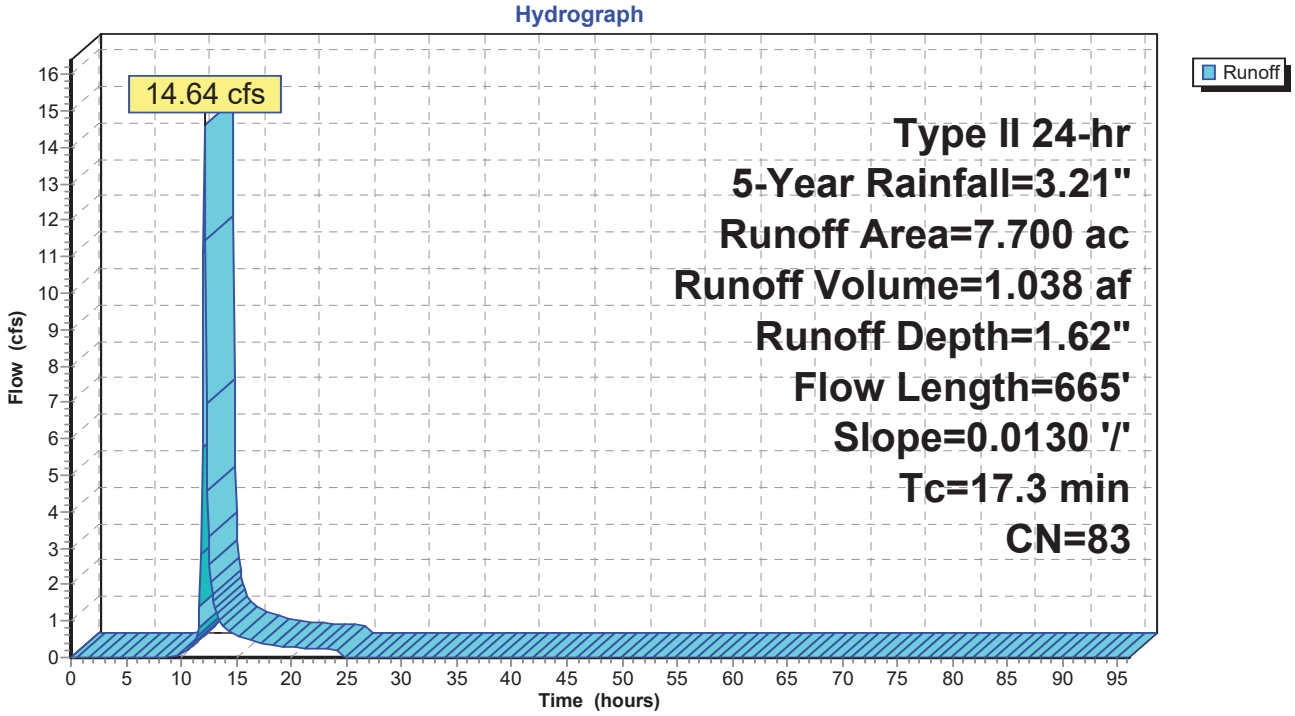
Runoff = 14.64 cfs @ 12.10 hrs, Volume= 1.038 af, Depth= 1.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 5-Year Rainfall=3.21"

Area (ac)	CN	Description
0.429	98	Unconnected pavement, HSG D
0.591	96	Gravel surface, HSG D
0.651	94	Fallow, bare soil, HSG D
6.029	80	>75% Grass cover, Good, HSG D
7.700	83	Weighted Average
7.271		94.43% Pervious Area
0.429		5.57% Impervious Area
0.429		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	20	0.0130	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.25"
13.5	645	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.3	665	Total			

Subcatchment 1S: Pre Dev



Summary for Subcatchment 2S: Developed to Detention

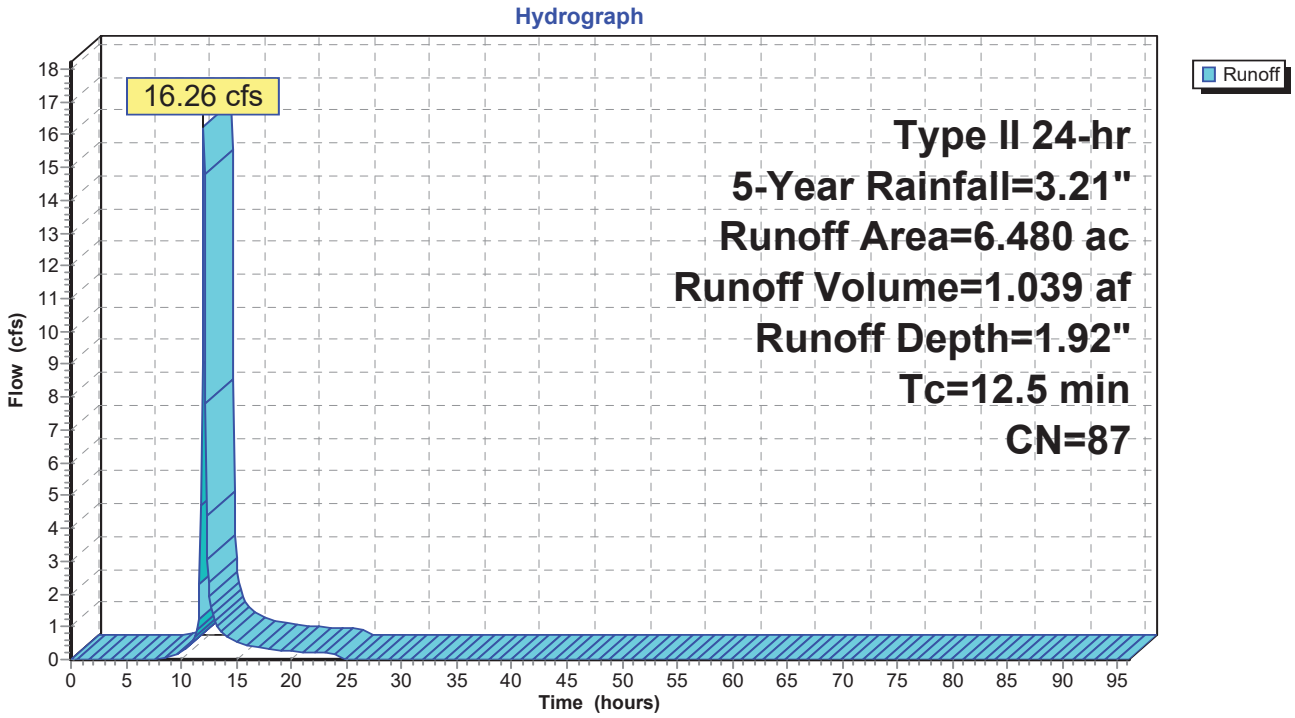
Runoff = 16.26 cfs @ 12.04 hrs, Volume= 1.039 af, Depth= 1.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 5-Year Rainfall=3.21"

Area (ac)	CN	Description
6.337	87	1/4 acre lots, 38% imp, HSG D
0.143	98	Water Surface, HSG D
6.480	87	Weighted Average
3.929		60.63% Pervious Area
2.551		39.37% Impervious Area

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

Subcatchment 2S: Developed to Detention



Summary for Subcatchment 4S: Offsite

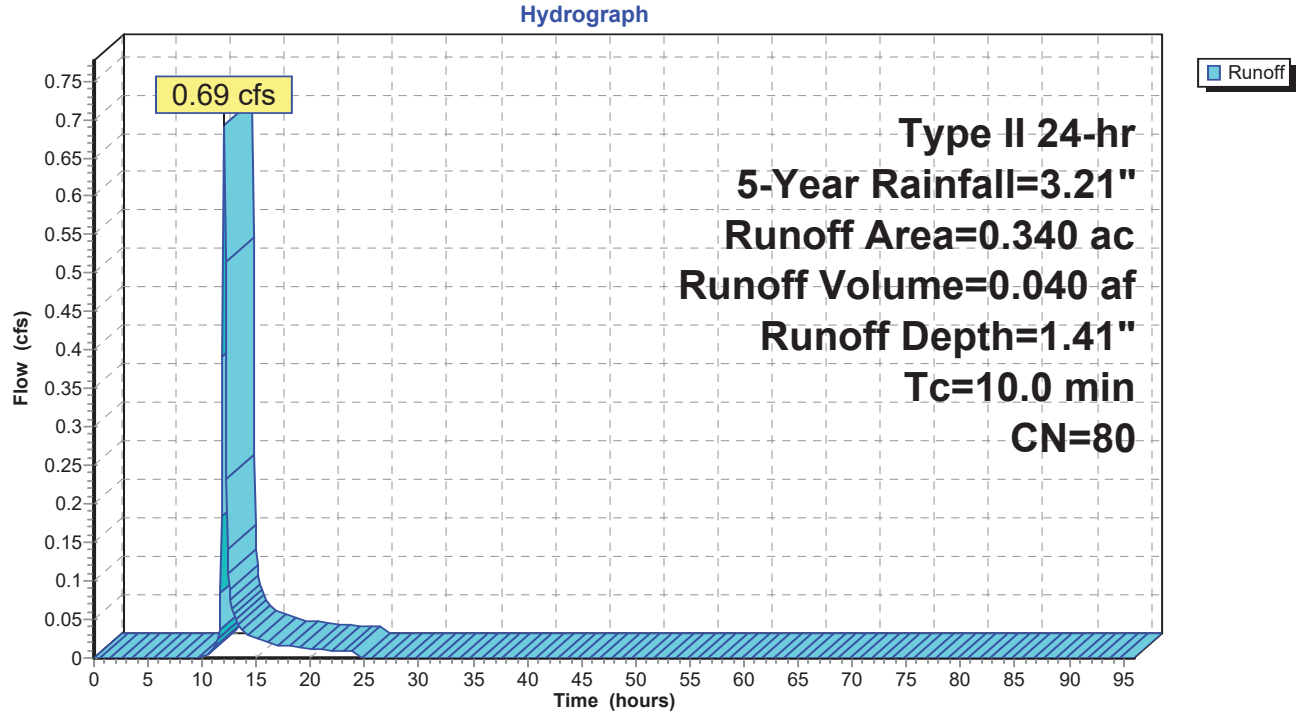
Runoff = 0.69 cfs @ 12.01 hrs, Volume= 0.040 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 5-Year Rainfall=3.21"

Area (ac)	CN	Description
0.340	80	>75% Grass cover, Good, HSG D
0.340		100.00% Pervious Area

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

Subcatchment 4S: Offsite



Summary for Subcatchment 5S: UnDetained

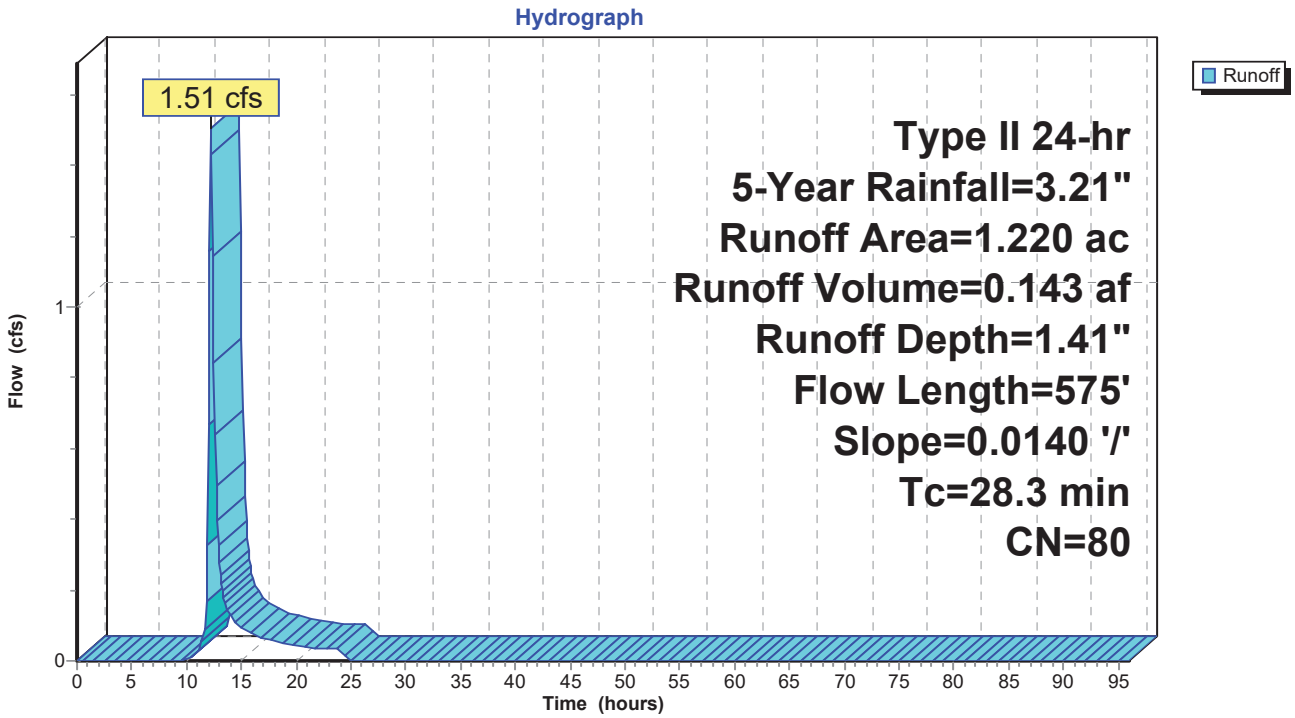
Runoff = 1.51 cfs @ 12.24 hrs, Volume= 0.143 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 5-Year Rainfall=3.21"

Area (ac)	CN	Description
1.220	80	>75% Grass cover, Good, HSG D
1.220		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0140	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.25"
10.6	525	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.0					**Direct Entry,**
28.3	575	Total			

Subcatchment 5S: UnDetained



Summary for Pond 3P: Storage

Inflow Area = 6.820 ac, 37.41% Impervious, Inflow Depth = 1.90" for 5-Year event
Inflow = 16.94 cfs @ 12.04 hrs, Volume= 1.079 af
Outflow = 2.77 cfs @ 12.46 hrs, Volume= 1.078 af, Atten= 84%, Lag= 25.2 min
Primary = 2.77 cfs @ 12.46 hrs, Volume= 1.078 af

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Peak Elev= 912.13' @ 12.46 hrs Surf.Area= 14,125 sf Storage= 22,822 cf

Plug-Flow detention time= 370.8 min calculated for 1.077 af (100% of inflow)
Center-of-Mass det. time= 373.9 min (1,196.3 - 822.5)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	60,914 cf	**Retention Pond (Prismatic)**Listed below (Recalc)
#2	912.00'	3,255 cf	**CB Ponding (Prismatic)**Listed below (Recalc)
#3	911.50'	485 cf	**12.0" Round 12" Pipe Storage** L= 618.0' S= 0.0050 '/'
#4	910.00'	638 cf	**15.0" Round 15" Pipe Storage** L= 520.0' S= 0.0035 '/'
#5	910.00'	818 cf	**18.0" Round 18' Pipe Storage** L= 463.0' S= 0.0030 '/'
		66,111 cf	Total Available Storage

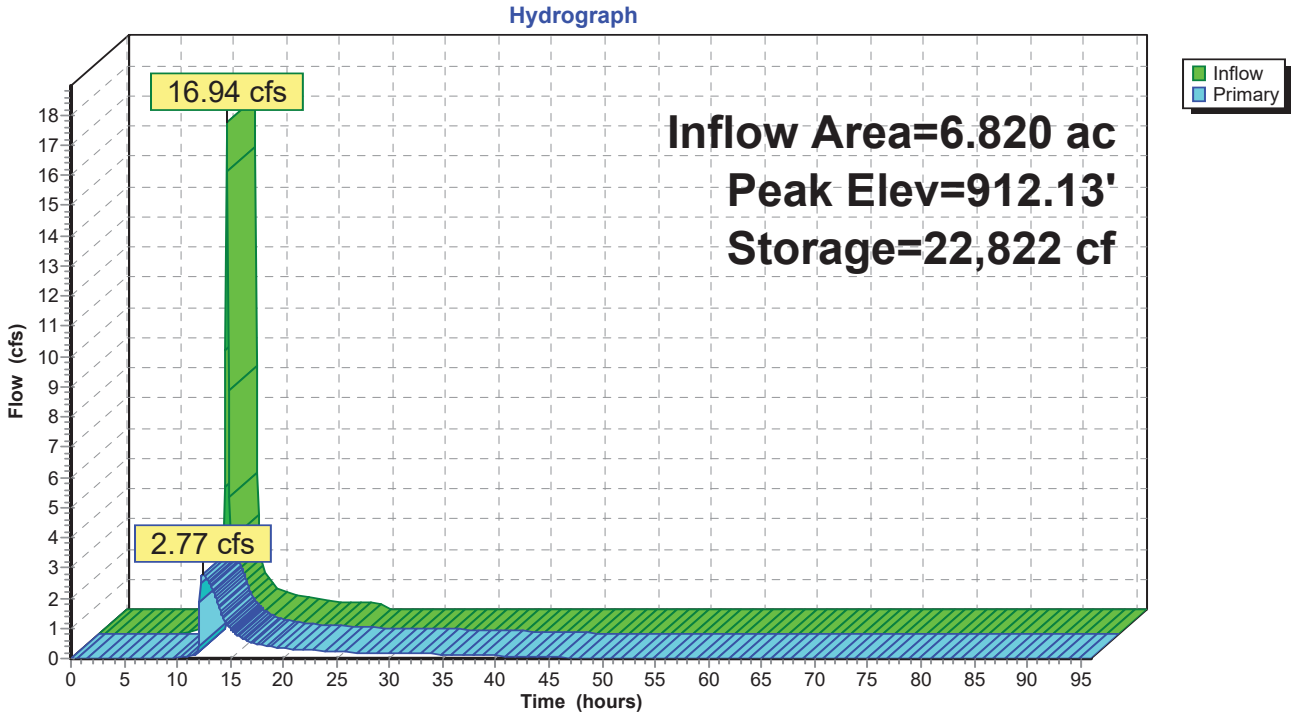
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	6,984	0	0
914.50	20,089	60,914	60,914

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
912.00	0	0	0
913.00	1,814	907	907
914.00	2,882	2,348	3,255

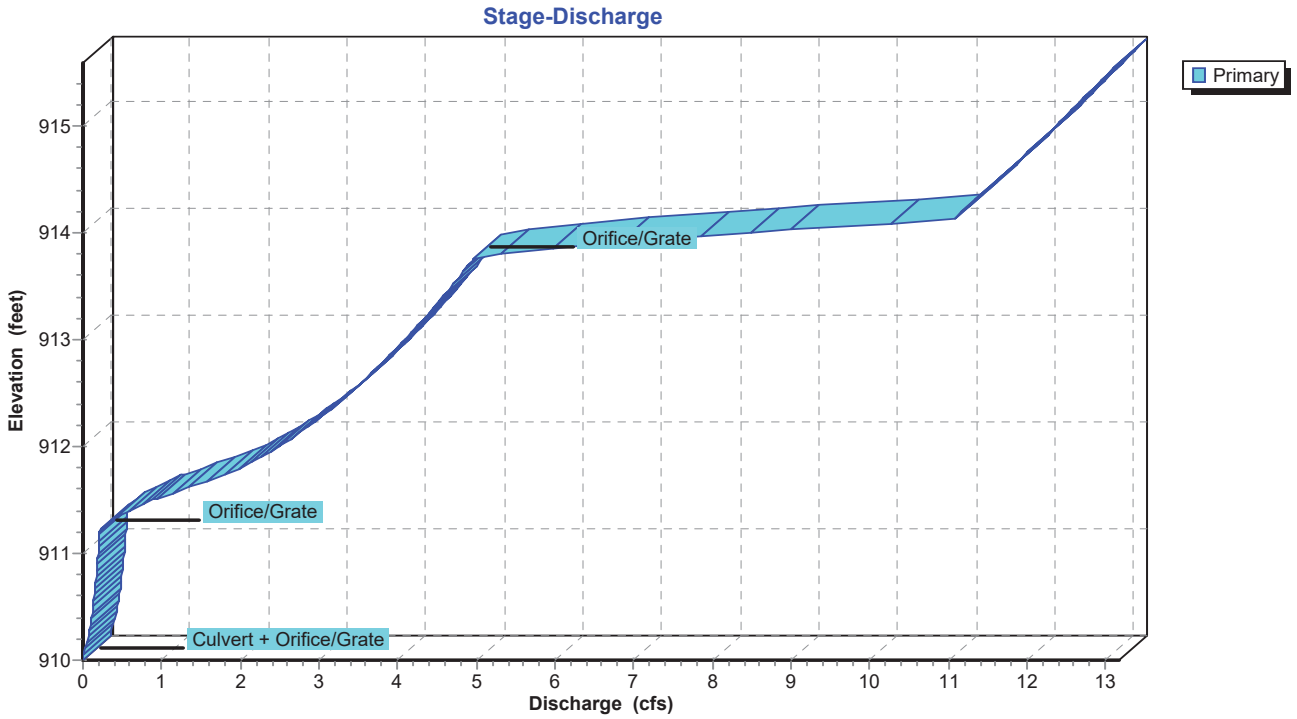
Device	Routing	Invert	Outlet Devices
#1	Primary	910.00'	**15.0" Round Culvert** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 910.00' / 909.75' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	910.00'	**2.8" Vert. Orifice/Grate** C= 0.600
#3	Device 1	911.20'	**15.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600
#4	Device 1	913.75'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.76 cfs @ 12.46 hrs HW=912.13' (Free Discharge)
└**1=Culvert** (Passes 2.76 cfs of 7.25 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.29 cfs @ 6.84 fps)
  ├**3=Orifice/Grate** (Orifice Controls 2.47 cfs @ 3.95 fps)
  └**4=Orifice/Grate** (Controls 0.00 cfs)

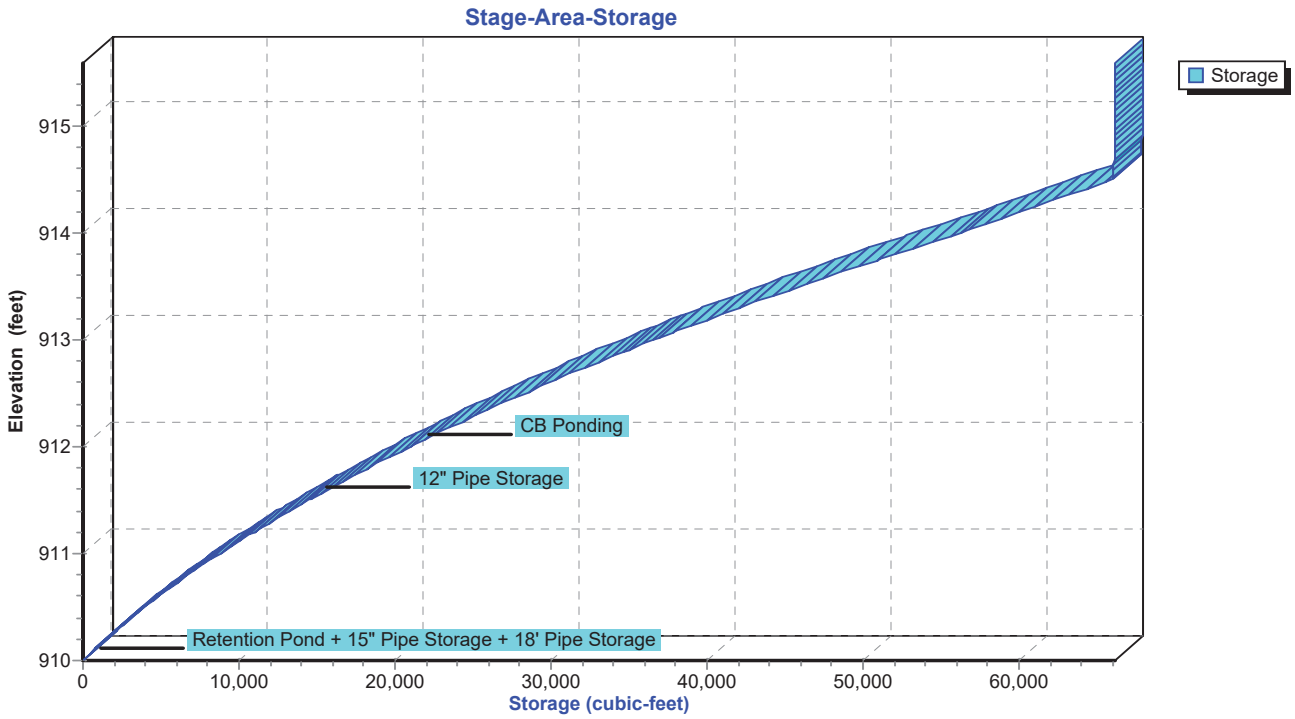
Pond 3P: Storage



Pond 3P: Storage



Pond 3P: Storage



Summary for Subcatchment 1S: Pre Dev

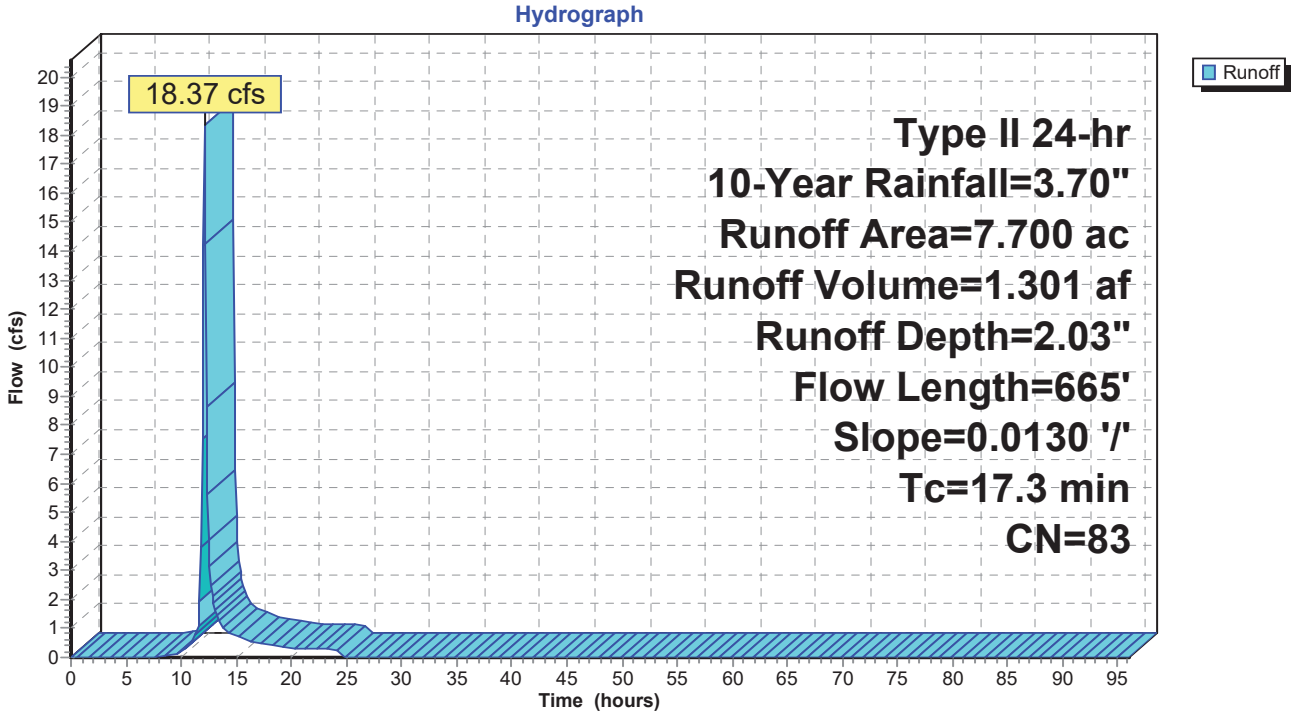
Runoff = 18.37 cfs @ 12.10 hrs, Volume= 1.301 af, Depth= 2.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 10-Year Rainfall=3.70"

Area (ac)	CN	Description
0.429	98	Unconnected pavement, HSG D
0.591	96	Gravel surface, HSG D
0.651	94	Fallow, bare soil, HSG D
6.029	80	>75% Grass cover, Good, HSG D
7.700	83	Weighted Average
7.271		94.43% Pervious Area
0.429		5.57% Impervious Area
0.429		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	20	0.0130	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.25"
13.5	645	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.3	665	Total			

Subcatchment 1S: Pre Dev



Summary for Subcatchment 2S: Developed to Detention

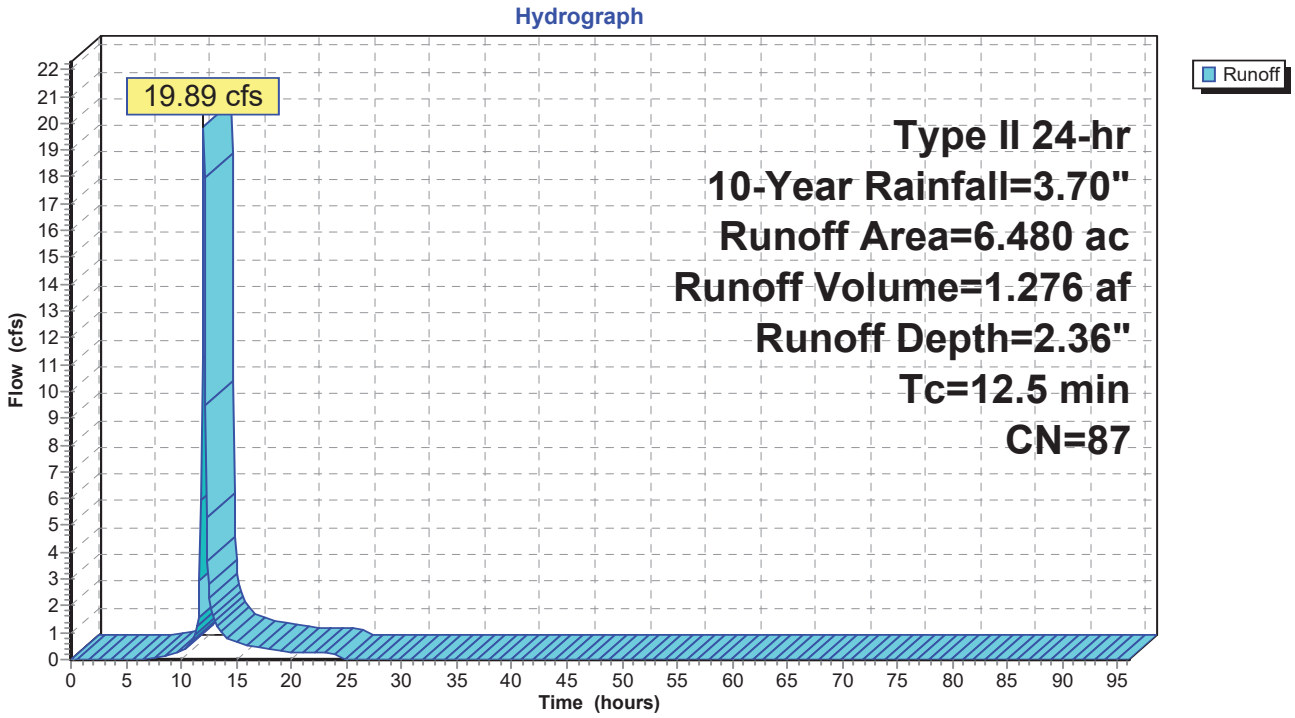
Runoff = 19.89 cfs @ 12.04 hrs, Volume= 1.276 af, Depth= 2.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 10-Year Rainfall=3.70"

Area (ac)	CN	Description
6.337	87	1/4 acre lots, 38% imp, HSG D
0.143	98	Water Surface, HSG D
6.480	87	Weighted Average
3.929		60.63% Pervious Area
2.551		39.37% Impervious Area

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

Subcatchment 2S: Developed to Detention



Summary for Subcatchment 4S: Offsite

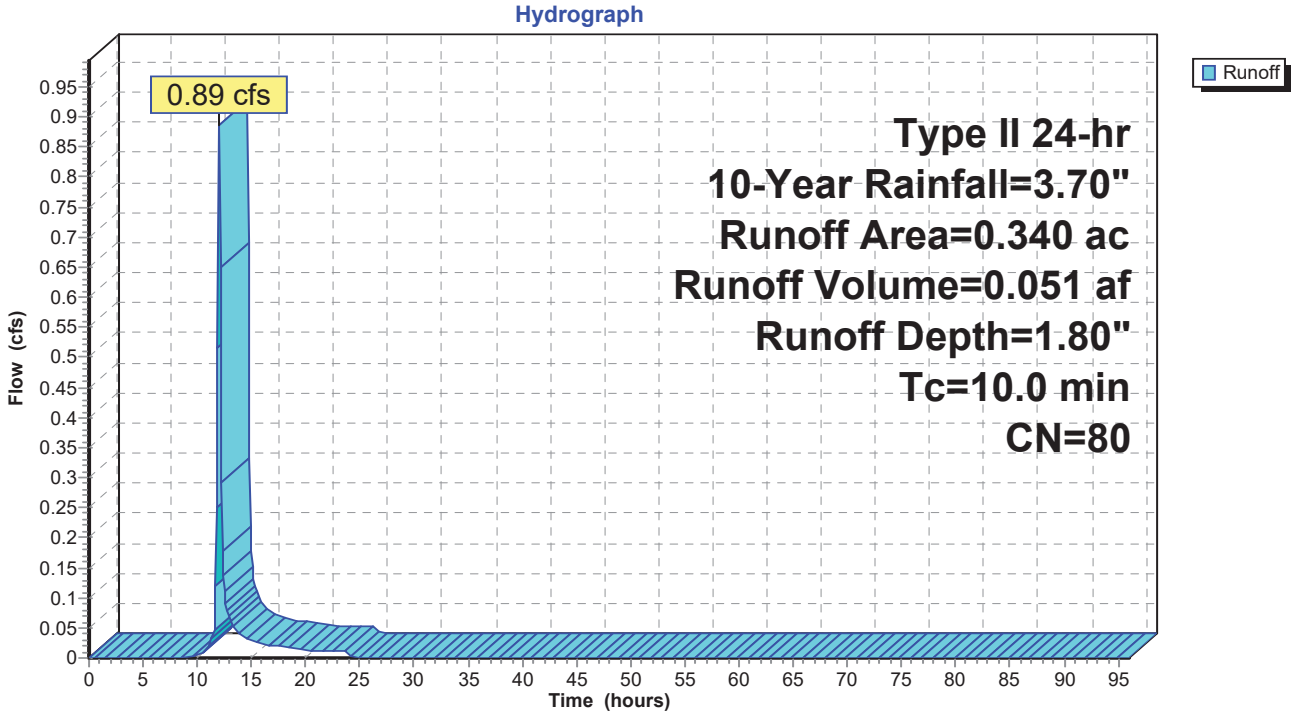
Runoff = 0.89 cfs @ 12.01 hrs, Volume= 0.051 af, Depth= 1.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 10-Year Rainfall=3.70"

Area (ac)	CN	Description
0.340	80	>75% Grass cover, Good, HSG D
0.340		100.00% Pervious Area

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

Subcatchment 4S: Offsite



Summary for Subcatchment 5S: UnDetained

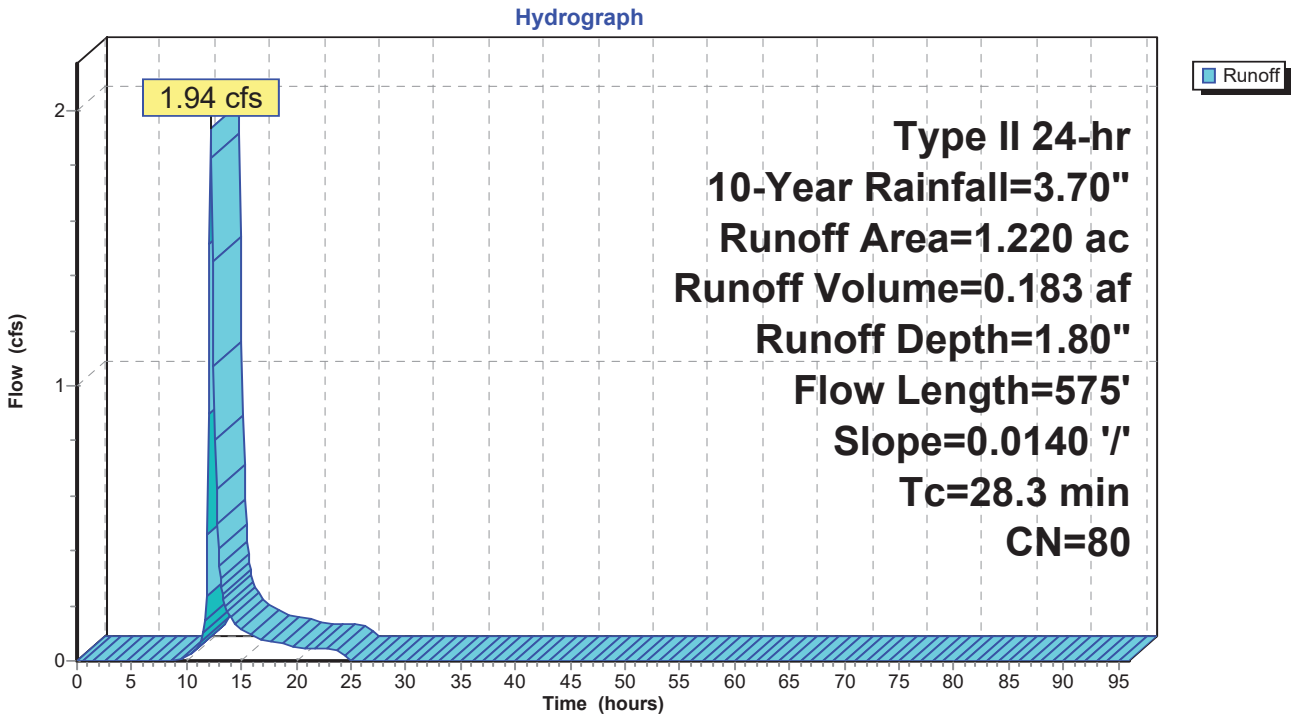
Runoff = 1.94 cfs @ 12.23 hrs, Volume= 0.183 af, Depth= 1.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 10-Year Rainfall=3.70"

Area (ac)	CN	Description
1.220	80	>75% Grass cover, Good, HSG D
1.220		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0140	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.25"
10.6	525	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.0					**Direct Entry,**
28.3	575	Total			

Subcatchment 5S: UnDetained



Summary for Pond 3P: Storage

Inflow Area = 6.820 ac, 37.41% Impervious, Inflow Depth = 2.33" for 10-Year event
Inflow = 20.76 cfs @ 12.03 hrs, Volume= 1.327 af
Outflow = 3.39 cfs @ 12.45 hrs, Volume= 1.326 af, Atten= 84%, Lag= 24.8 min
Primary = 3.39 cfs @ 12.45 hrs, Volume= 1.326 af

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Peak Elev= 912.50' @ 12.45 hrs Surf.Area= 15,608 sf Storage= 28,274 cf

Plug-Flow detention time= 327.3 min calculated for 1.326 af (100% of inflow)
Center-of-Mass det. time= 326.7 min (1,143.3 - 816.6)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	60,914 cf	**Retention Pond (Prismatic)**Listed below (Recalc)
#2	912.00'	3,255 cf	**CB Ponding (Prismatic)**Listed below (Recalc)
#3	911.50'	485 cf	**12.0" Round 12" Pipe Storage** L= 618.0' S= 0.0050 '/'
#4	910.00'	638 cf	**15.0" Round 15" Pipe Storage** L= 520.0' S= 0.0035 '/'
#5	910.00'	818 cf	**18.0" Round 18' Pipe Storage** L= 463.0' S= 0.0030 '/'
		66,111 cf	Total Available Storage

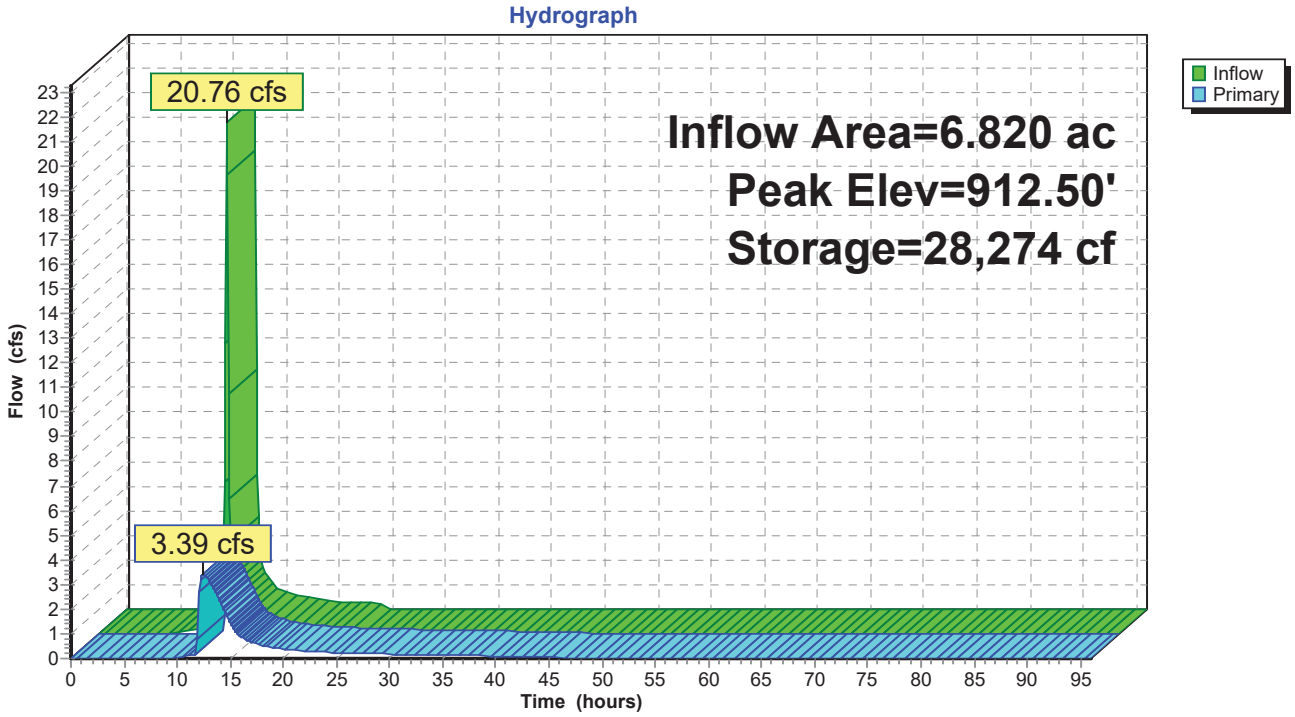
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	6,984	0	0
914.50	20,089	60,914	60,914

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
912.00	0	0	0
913.00	1,814	907	907
914.00	2,882	2,348	3,255

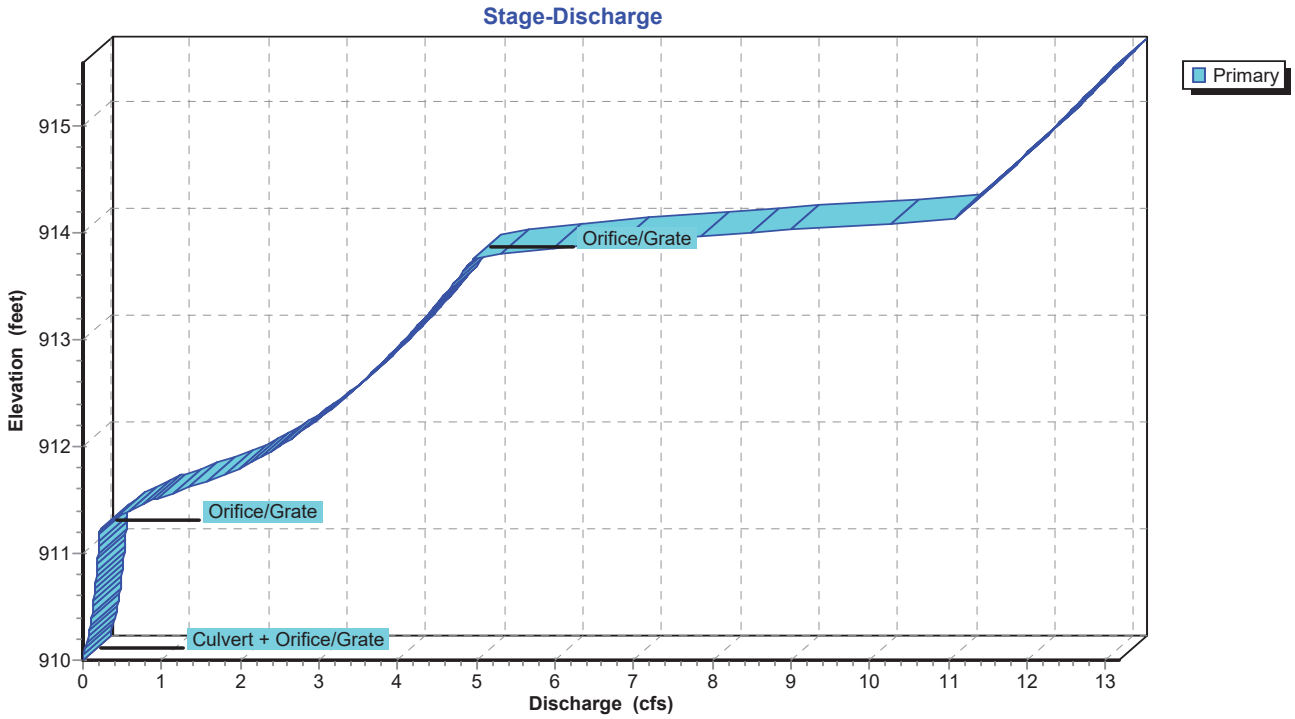
Device	Routing	Invert	Outlet Devices
#1	Primary	910.00'	**15.0" Round Culvert** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 910.00' / 909.75' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	910.00'	**2.8" Vert. Orifice/Grate** C= 0.600
#3	Device 1	911.20'	**15.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600
#4	Device 1	913.75'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=3.39 cfs @ 12.45 hrs HW=912.50' (Free Discharge)
└**1=Culvert** (Passes 3.39 cfs of 8.08 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.32 cfs @ 7.43 fps)
  ├**3=Orifice/Grate** (Orifice Controls 3.07 cfs @ 4.91 fps)
  └**4=Orifice/Grate** (Controls 0.00 cfs)

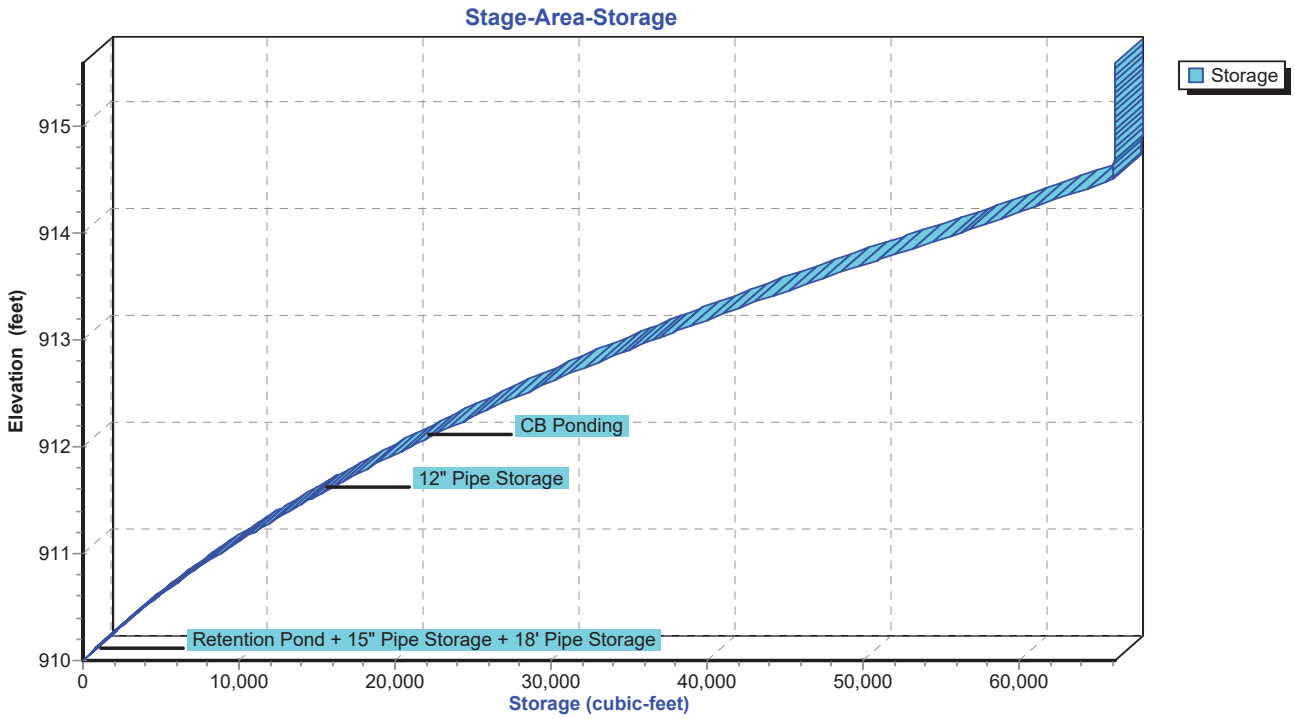
Pond 3P: Storage



Pond 3P: Storage



Pond 3P: Storage



Summary for Subcatchment 1S: Pre Dev

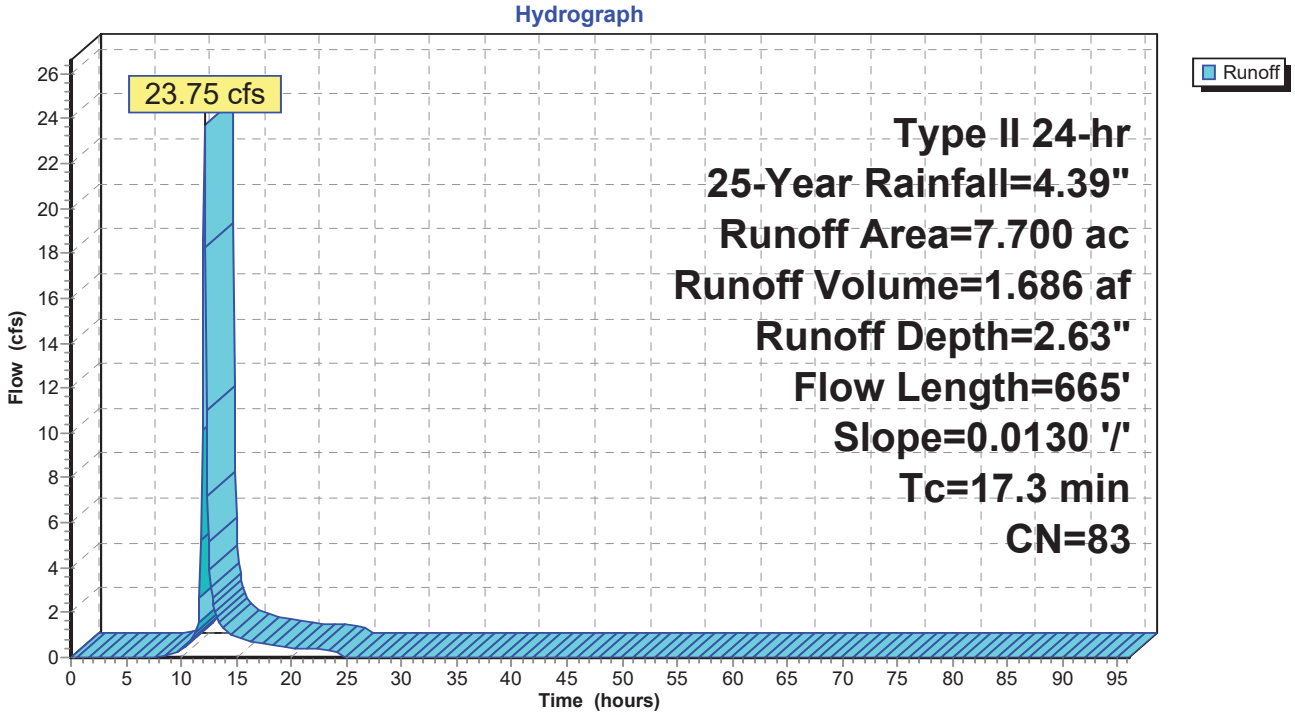
Runoff = 23.75 cfs @ 12.10 hrs, Volume= 1.686 af, Depth= 2.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 25-Year Rainfall=4.39"

Area (ac)	CN	Description
0.429	98	Unconnected pavement, HSG D
0.591	96	Gravel surface, HSG D
0.651	94	Fallow, bare soil, HSG D
6.029	80	>75% Grass cover, Good, HSG D
7.700	83	Weighted Average
7.271		94.43% Pervious Area
0.429		5.57% Impervious Area
0.429		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	20	0.0130	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.25"
13.5	645	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.3	665	Total			

Subcatchment 1S: Pre Dev



Summary for Subcatchment 2S: Developed to Detention

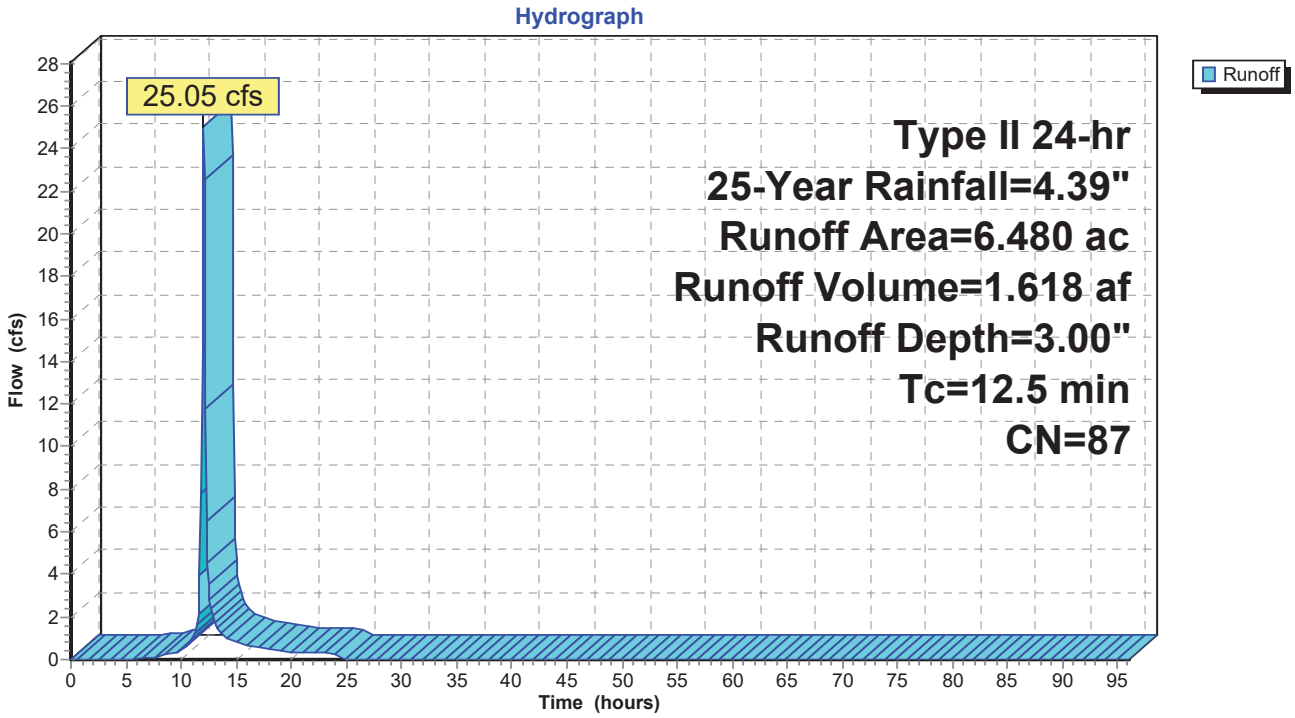
Runoff = 25.05 cfs @ 12.03 hrs, Volume= 1.618 af, Depth= 3.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 25-Year Rainfall=4.39"

Area (ac)	CN	Description
6.337	87	1/4 acre lots, 38% imp, HSG D
0.143	98	Water Surface, HSG D
6.480	87	Weighted Average
3.929		60.63% Pervious Area
2.551		39.37% Impervious Area

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

Subcatchment 2S: Developed to Detention



Summary for Subcatchment 4S: Offsite

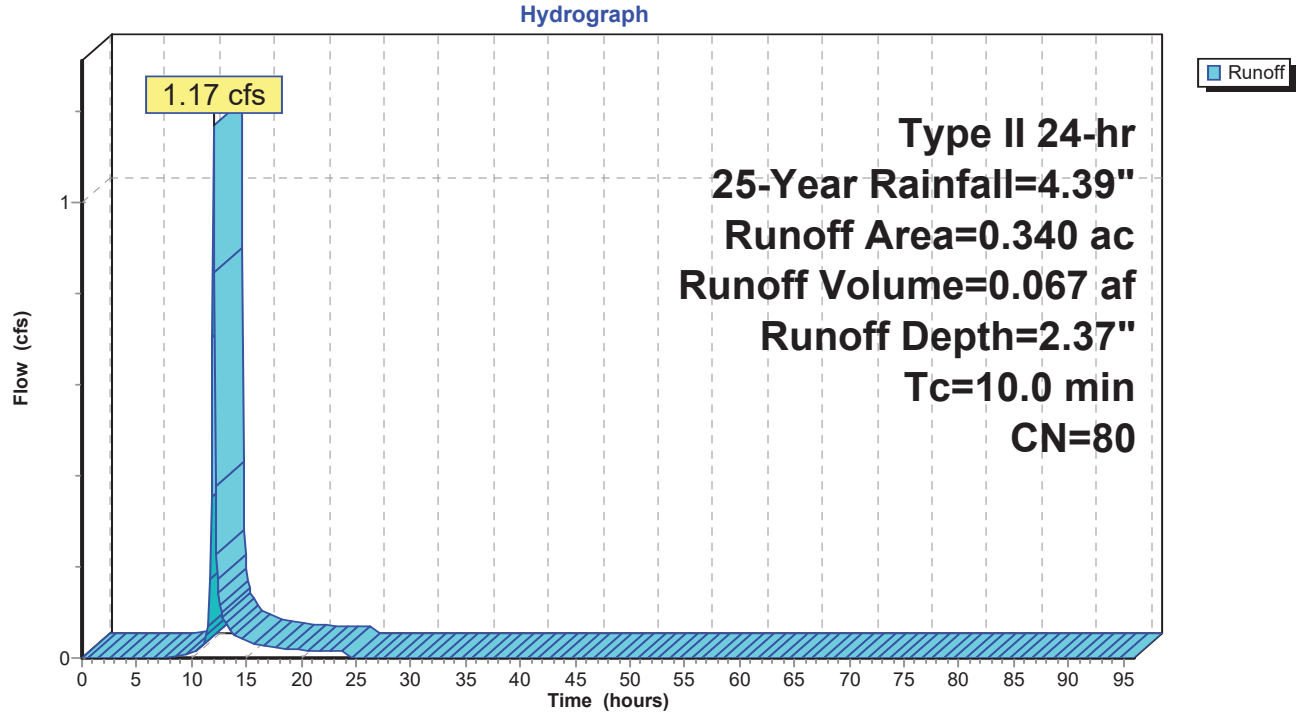
Runoff = 1.17 cfs @ 12.01 hrs, Volume= 0.067 af, Depth= 2.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 25-Year Rainfall=4.39"

Area (ac)	CN	Description
0.340	80	>75% Grass cover, Good, HSG D
0.340		100.00% Pervious Area

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

Subcatchment 4S: Offsite



Summary for Subcatchment 5S: UnDetained

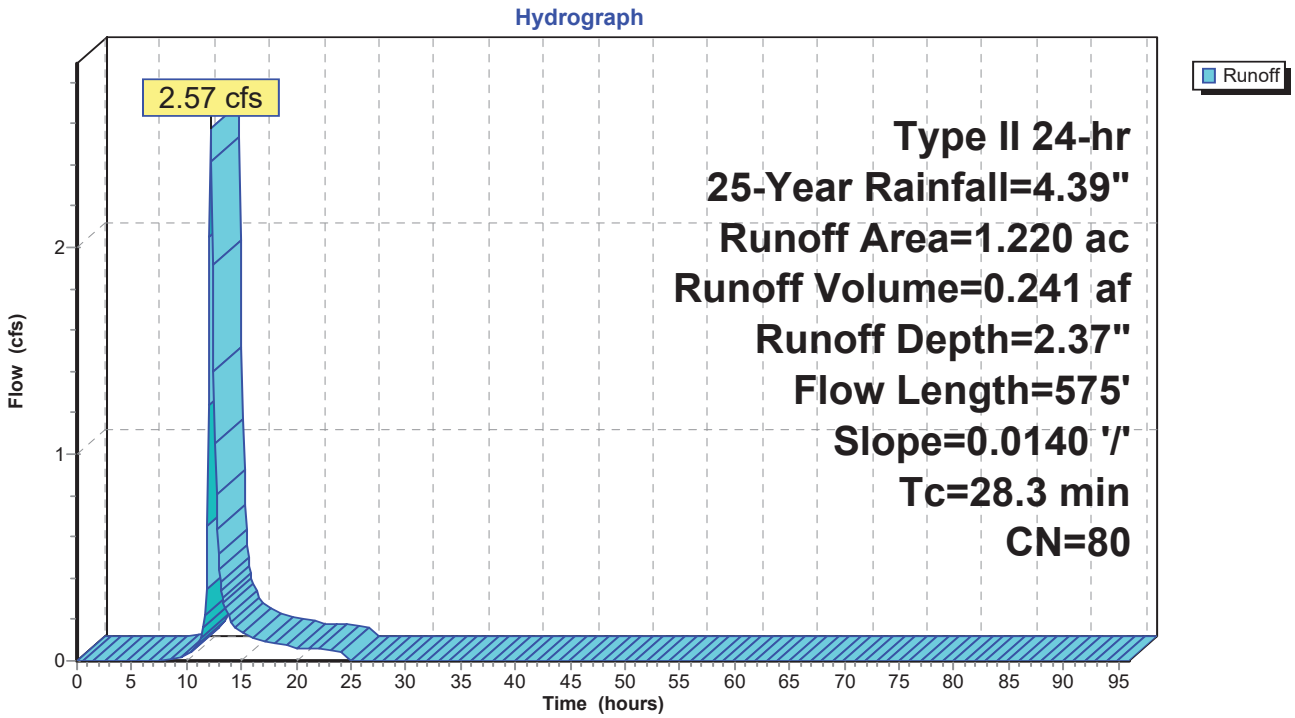
Runoff = 2.57 cfs @ 12.23 hrs, Volume= 0.241 af, Depth= 2.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 25-Year Rainfall=4.39"

Area (ac)	CN	Description
1.220	80	>75% Grass cover, Good, HSG D
1.220		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0140	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.25"
10.6	525	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.0					**Direct Entry,**
28.3	575	Total			

Subcatchment 5S: UnDetained



Summary for Pond 3P: Storage

Inflow Area = 6.820 ac, 37.41% Impervious, Inflow Depth = 2.97" for 25-Year event
Inflow = 26.20 cfs @ 12.03 hrs, Volume= 1.685 af
Outflow = 4.08 cfs @ 12.46 hrs, Volume= 1.684 af, Atten= 84%, Lag= 25.6 min
Primary = 4.08 cfs @ 12.46 hrs, Volume= 1.684 af

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Peak Elev= 912.99' @ 12.46 hrs Surf.Area= 17,669 sf Storage= 36,456 cf

Plug-Flow detention time= 286.4 min calculated for 1.684 af (100% of inflow)
Center-of-Mass det. time= 285.9 min (1,095.7 - 809.8)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	60,914 cf	**Retention Pond (Prismatic)**Listed below (Recalc)
#2	912.00'	3,255 cf	**CB Ponding (Prismatic)**Listed below (Recalc)
#3	911.50'	485 cf	**12.0" Round 12" Pipe Storage** L= 618.0' S= 0.0050 '/'
#4	910.00'	638 cf	**15.0" Round 15" Pipe Storage** L= 520.0' S= 0.0035 '/'
#5	910.00'	818 cf	**18.0" Round 18' Pipe Storage** L= 463.0' S= 0.0030 '/'
		66,111 cf	Total Available Storage

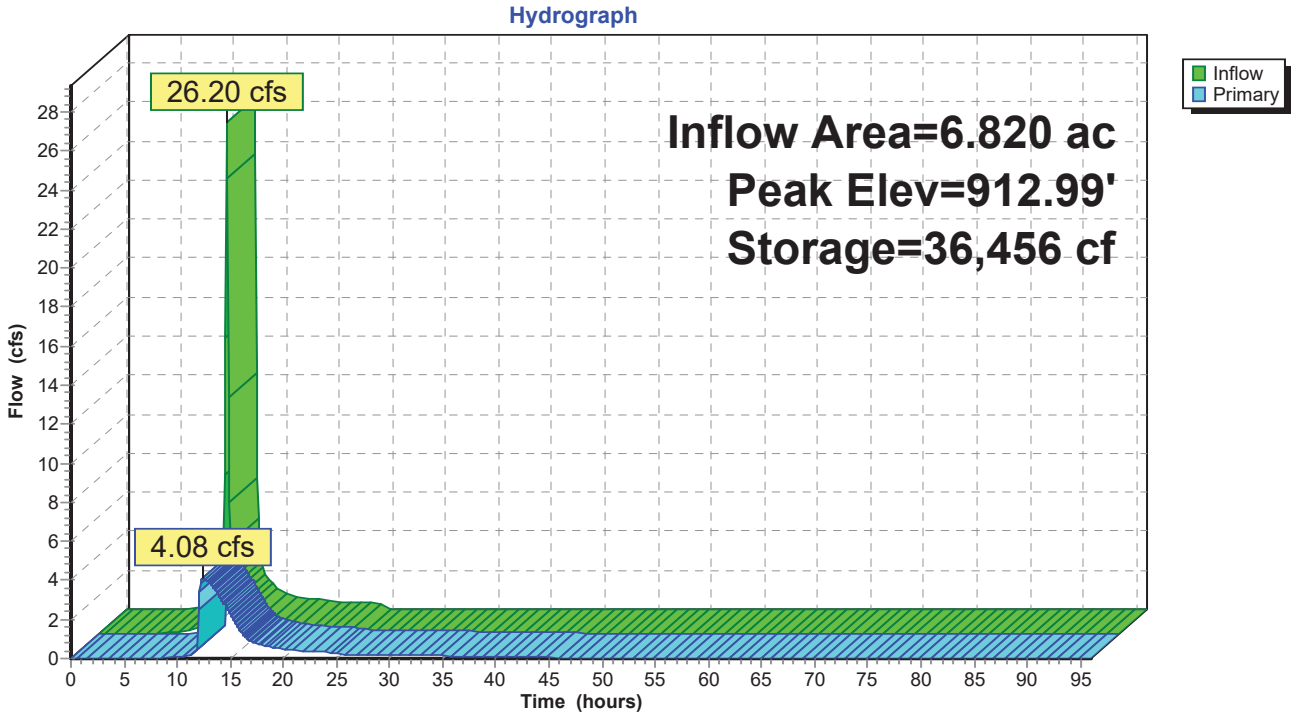
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	6,984	0	0
914.50	20,089	60,914	60,914

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
912.00	0	0	0
913.00	1,814	907	907
914.00	2,882	2,348	3,255

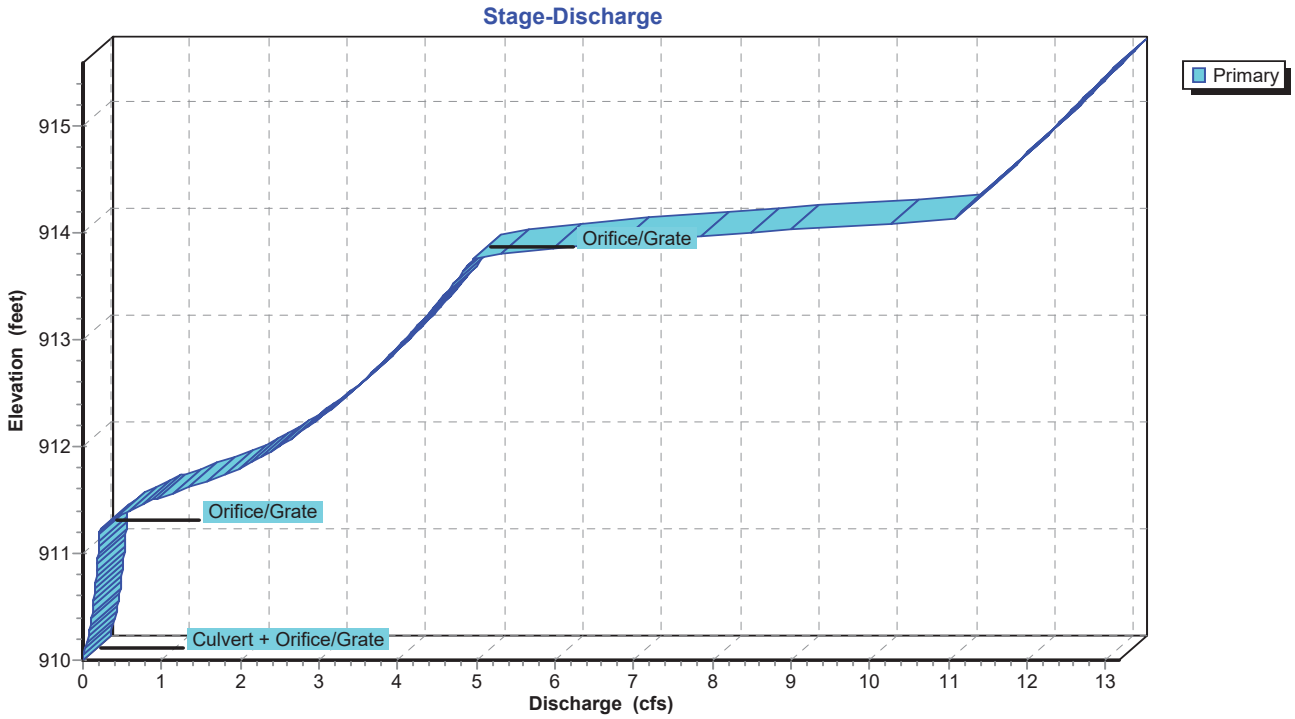
Device	Routing	Invert	Outlet Devices
#1	Primary	910.00'	**15.0" Round Culvert** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 910.00' / 909.75' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	910.00'	**2.8" Vert. Orifice/Grate** C= 0.600
#3	Device 1	911.20'	**15.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600
#4	Device 1	913.75'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.08 cfs @ 12.46 hrs HW=912.99' (Free Discharge)
└**1=Culvert** (Passes 4.08 cfs of 9.09 cfs potential flow)
├**2=Orifice/Grate** (Orifice Controls 0.35 cfs @ 8.16 fps)
├**3=Orifice/Grate** (Orifice Controls 3.73 cfs @ 5.97 fps)
└**4=Orifice/Grate** (Controls 0.00 cfs)

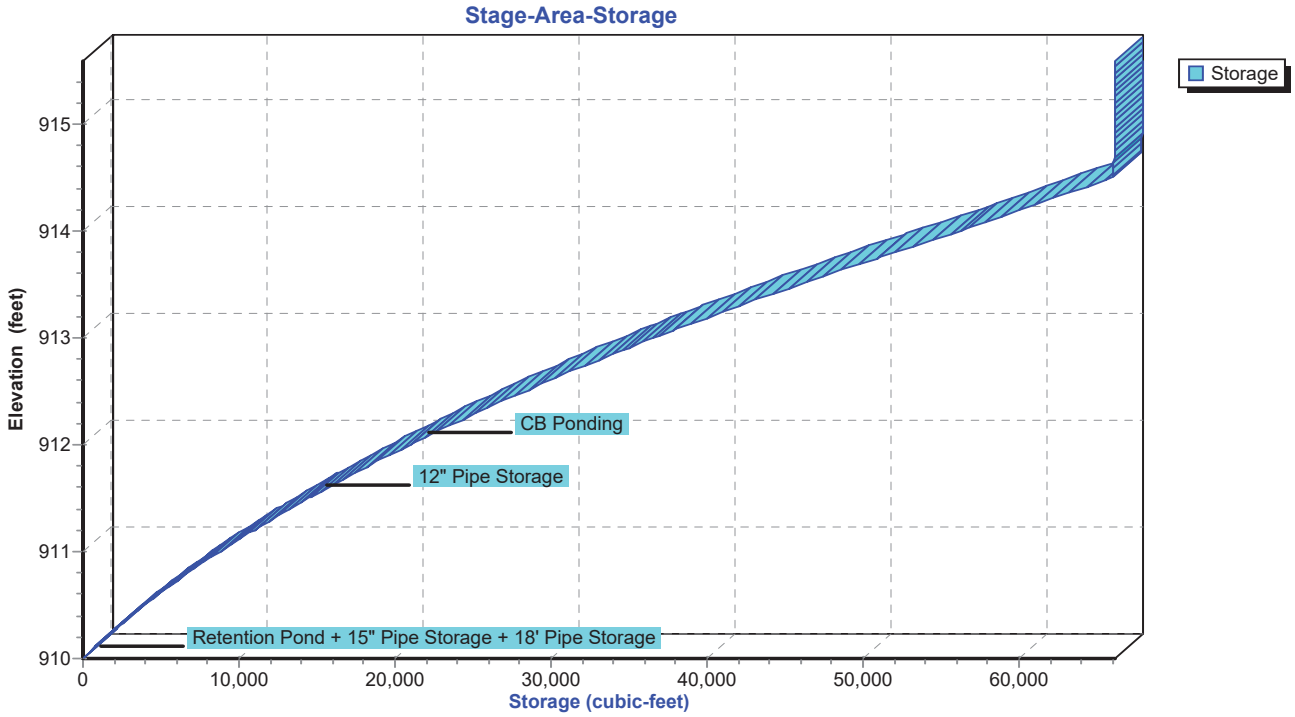
Pond 3P: Storage



Pond 3P: Storage



Pond 3P: Storage



Summary for Subcatchment 1S: Pre Dev

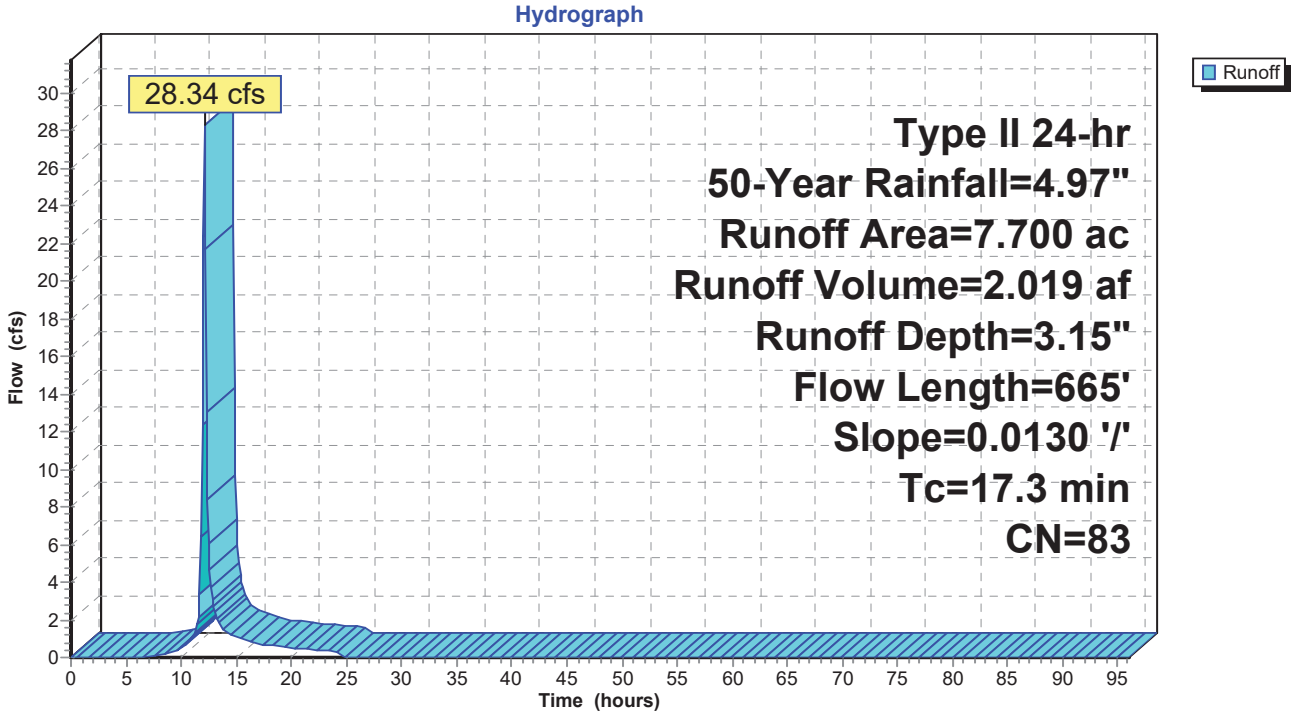
Runoff = 28.34 cfs @ 12.10 hrs, Volume= 2.019 af, Depth= 3.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 50-Year Rainfall=4.97"

Area (ac)	CN	Description
0.429	98	Unconnected pavement, HSG D
0.591	96	Gravel surface, HSG D
0.651	94	Fallow, bare soil, HSG D
6.029	80	>75% Grass cover, Good, HSG D
7.700	83	Weighted Average
7.271		94.43% Pervious Area
0.429		5.57% Impervious Area
0.429		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	20	0.0130	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.25"
13.5	645	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.3	665	Total			

Subcatchment 1S: Pre Dev



Summary for Subcatchment 2S: Developed to Detention

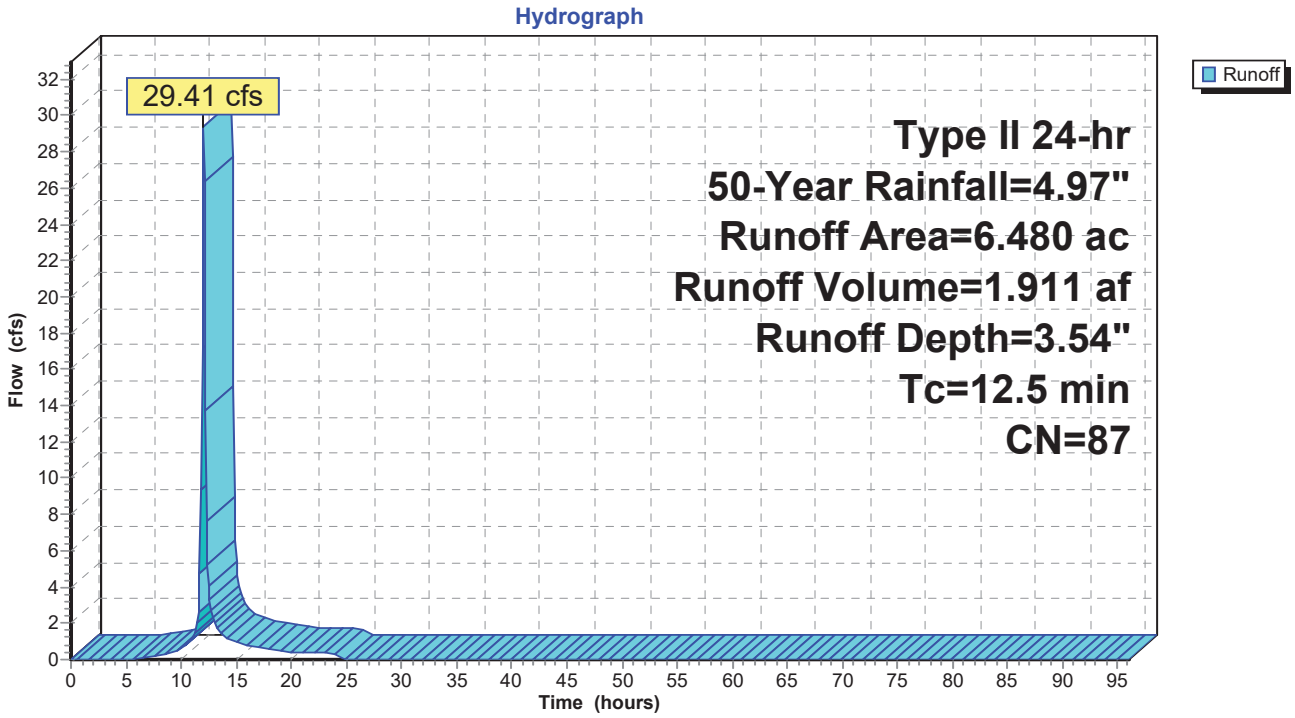
Runoff = 29.41 cfs @ 12.03 hrs, Volume= 1.911 af, Depth= 3.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 50-Year Rainfall=4.97"

Area (ac)	CN	Description
6.337	87	1/4 acre lots, 38% imp, HSG D
0.143	98	Water Surface, HSG D
6.480	87	Weighted Average
3.929		60.63% Pervious Area
2.551		39.37% Impervious Area

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

Subcatchment 2S: Developed to Detention



Summary for Subcatchment 4S: Offsite

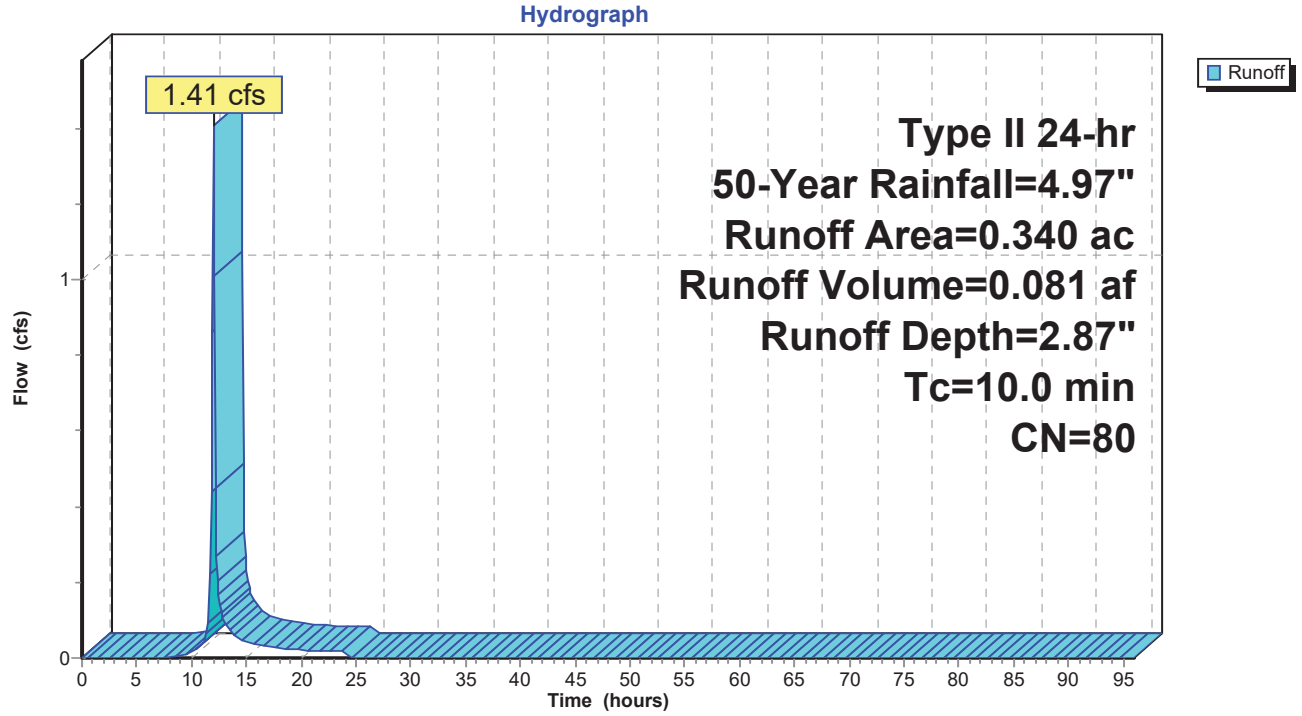
Runoff = 1.41 cfs @ 12.01 hrs, Volume= 0.081 af, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 50-Year Rainfall=4.97"

Area (ac)	CN	Description
0.340	80	>75% Grass cover, Good, HSG D
0.340		100.00% Pervious Area

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

Subcatchment 4S: Offsite



Summary for Subcatchment 5S: UnDetained

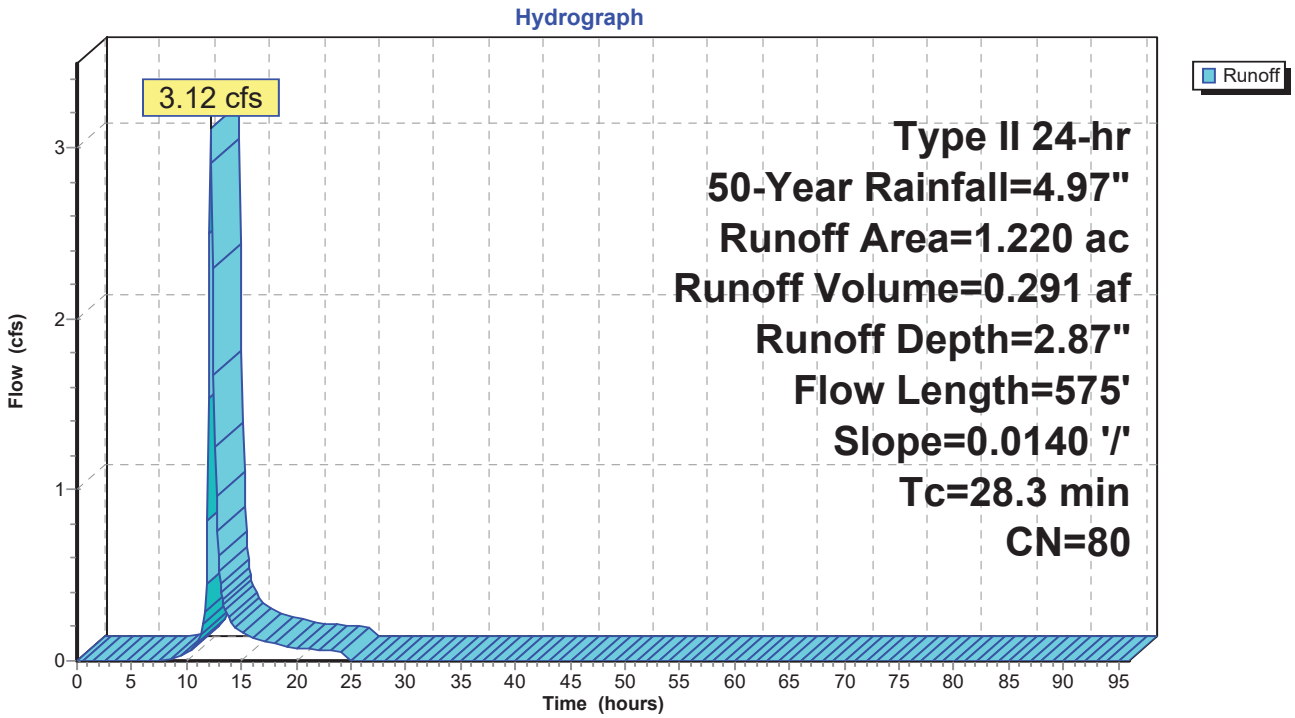
Runoff = 3.12 cfs @ 12.23 hrs, Volume= 0.291 af, Depth= 2.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 50-Year Rainfall=4.97"

Area (ac)	CN	Description
1.220	80	>75% Grass cover, Good, HSG D
1.220		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0140	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.25"
10.6	525	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.0					**Direct Entry,**
28.3	575	Total			

Subcatchment 5S: UnDetained



Summary for Pond 3P: Storage

Inflow Area = 6.820 ac, 37.41% Impervious, Inflow Depth = 3.51" for 50-Year event
Inflow = 30.79 cfs @ 12.03 hrs, Volume= 1.992 af
Outflow = 4.56 cfs @ 12.48 hrs, Volume= 1.991 af, Atten= 85%, Lag= 26.8 min
Primary = 4.56 cfs @ 12.48 hrs, Volume= 1.991 af

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Peak Elev= 913.38' @ 12.48 hrs Surf.Area= 19,224 sf Storage= 43,681 cf

Plug-Flow detention time= 265.5 min calculated for 1.991 af (100% of inflow)
Center-of-Mass det. time= 265.1 min (1,070.2 - 805.1)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	60,914 cf	**Retention Pond (Prismatic)**Listed below (Recalc)
#2	912.00'	3,255 cf	**CB Ponding (Prismatic)**Listed below (Recalc)
#3	911.50'	485 cf	**12.0" Round 12" Pipe Storage** L= 618.0' S= 0.0050 '/'
#4	910.00'	638 cf	**15.0" Round 15" Pipe Storage** L= 520.0' S= 0.0035 '/'
#5	910.00'	818 cf	**18.0" Round 18' Pipe Storage** L= 463.0' S= 0.0030 '/'
		66,111 cf	Total Available Storage

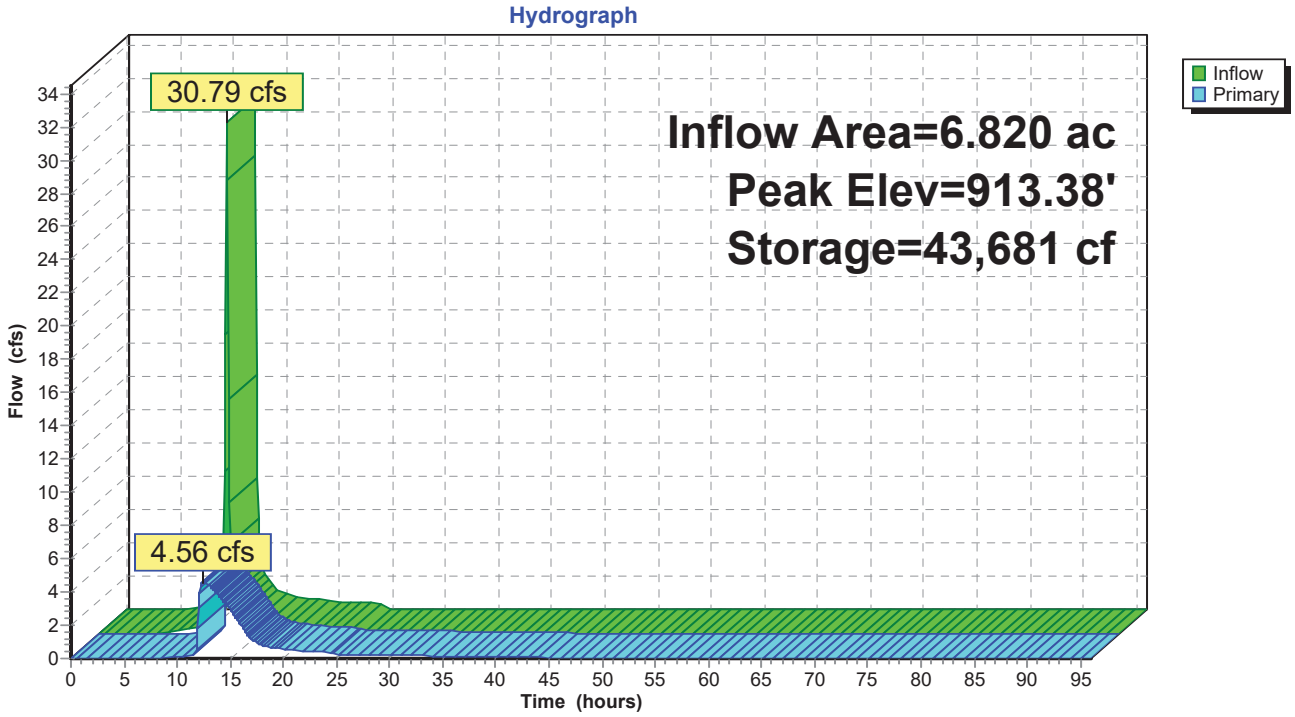
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	6,984	0	0
914.50	20,089	60,914	60,914

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
912.00	0	0	0
913.00	1,814	907	907
914.00	2,882	2,348	3,255

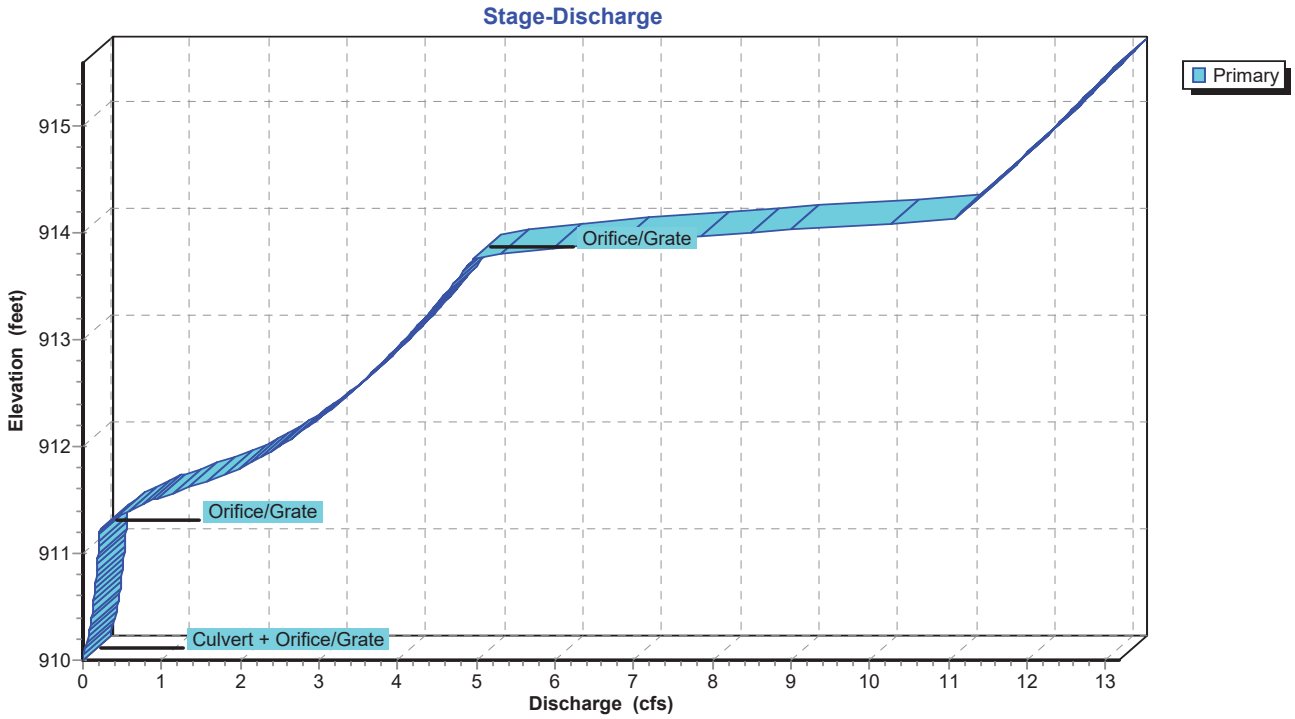
Device	Routing	Invert	Outlet Devices
#1	Primary	910.00'	**15.0" Round Culvert** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 910.00' / 909.75' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	910.00'	**2.8" Vert. Orifice/Grate** C= 0.600
#3	Device 1	911.20'	**15.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600
#4	Device 1	913.75'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.55 cfs @ 12.48 hrs HW=913.38' (Free Discharge)
└**1=Culvert** (Passes 4.55 cfs of 9.81 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.37 cfs @ 8.70 fps)
  ├**3=Orifice/Grate** (Orifice Controls 4.18 cfs @ 6.69 fps)
  └**4=Orifice/Grate** (Controls 0.00 cfs)

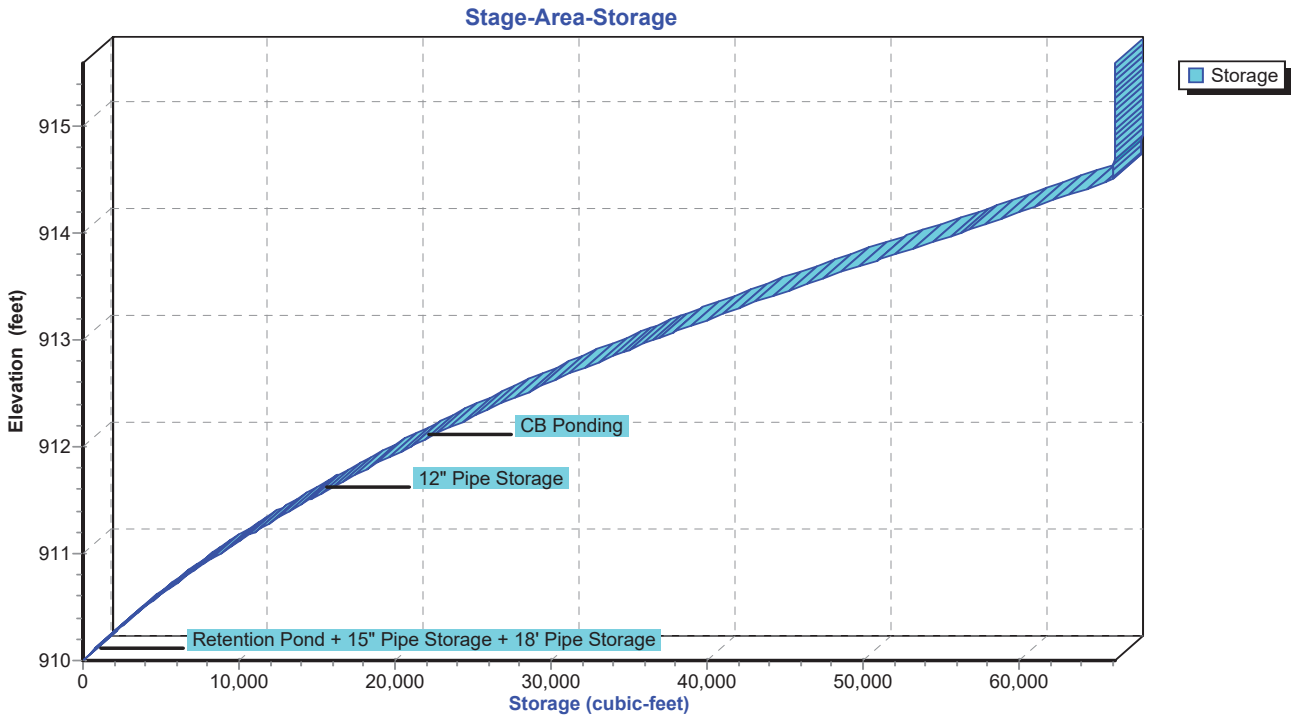
Pond 3P: Storage



Pond 3P: Storage



Pond 3P: Storage



Summary for Subcatchment 1S: Pre Dev

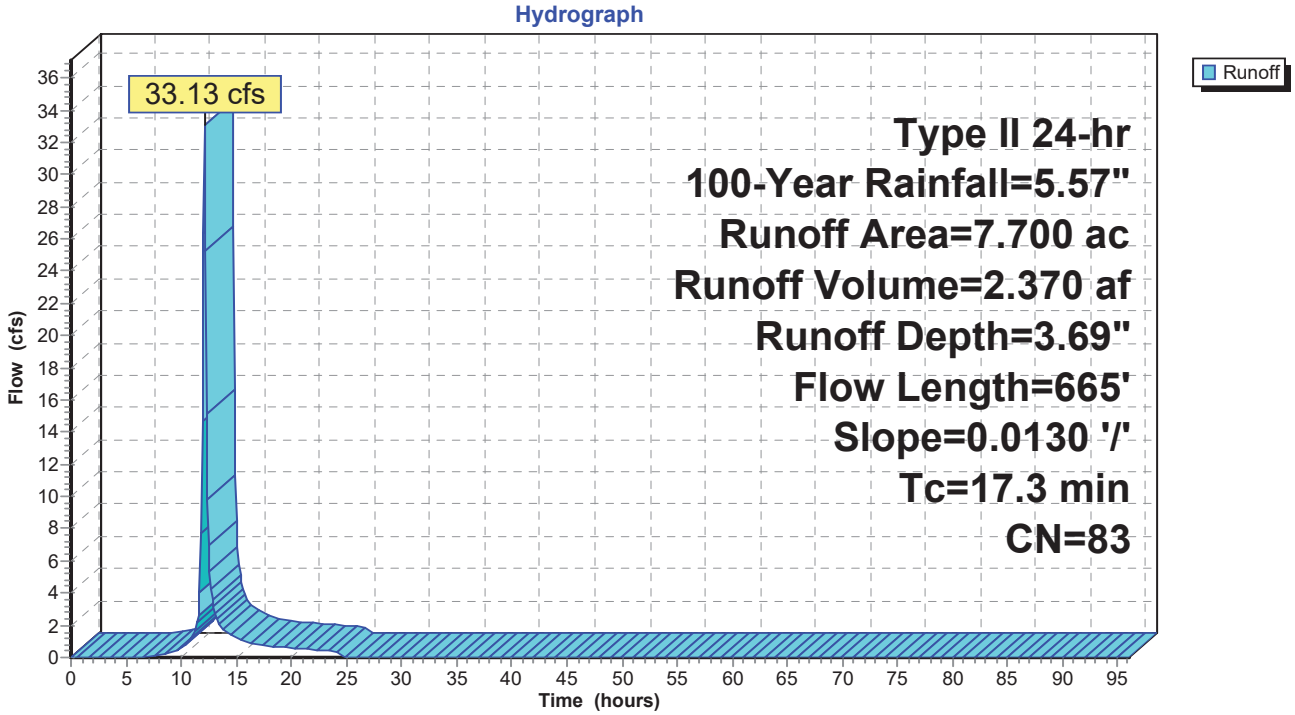
Runoff = 33.13 cfs @ 12.10 hrs, Volume= 2.370 af, Depth= 3.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 100-Year Rainfall=5.57"

Area (ac)	CN	Description
0.429	98	Unconnected pavement, HSG D
0.591	96	Gravel surface, HSG D
0.651	94	Fallow, bare soil, HSG D
6.029	80	>75% Grass cover, Good, HSG D
7.700	83	Weighted Average
7.271		94.43% Pervious Area
0.429		5.57% Impervious Area
0.429		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	20	0.0130	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.25"
13.5	645	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.3	665	Total			

Subcatchment 1S: Pre Dev



Summary for Subcatchment 2S: Developed to Detention

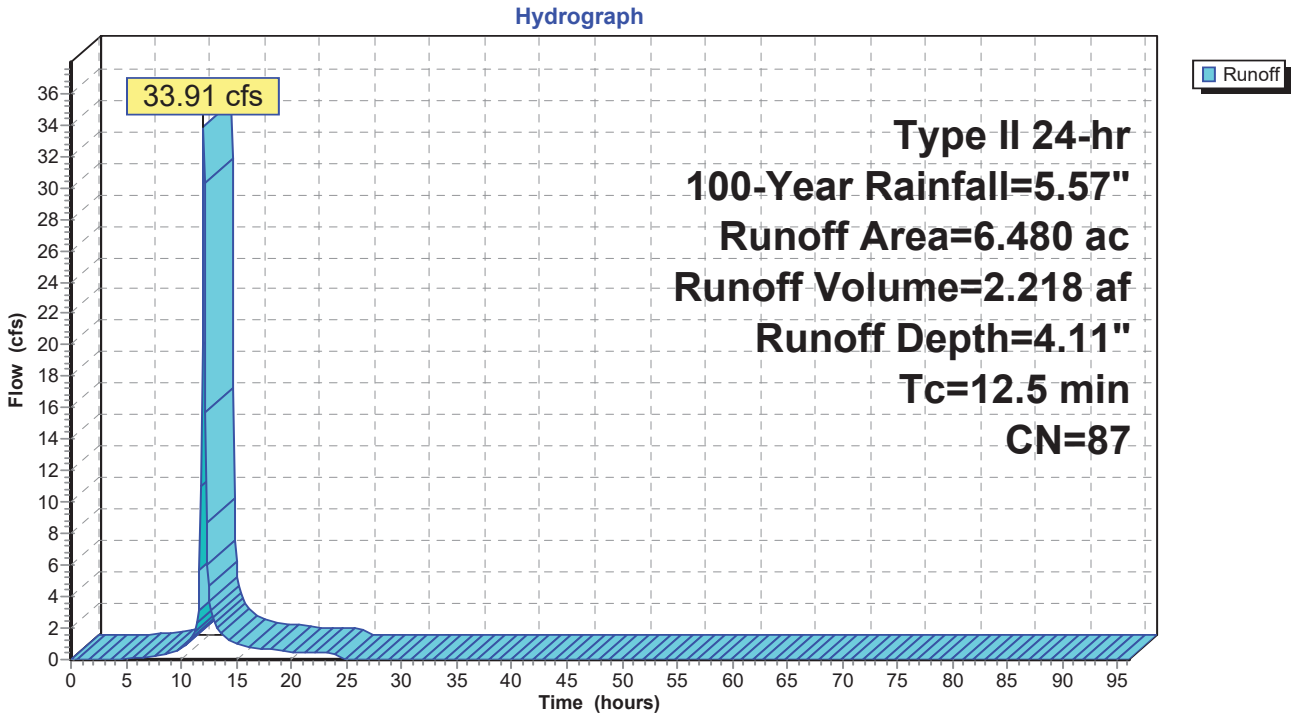
Runoff = 33.91 cfs @ 12.03 hrs, Volume= 2.218 af, Depth= 4.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 100-Year Rainfall=5.57"

Area (ac)	CN	Description
6.337	87	1/4 acre lots, 38% imp, HSG D
0.143	98	Water Surface, HSG D
6.480	87	Weighted Average
3.929		60.63% Pervious Area
2.551		39.37% Impervious Area

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

Subcatchment 2S: Developed to Detention



Summary for Subcatchment 4S: Offsite

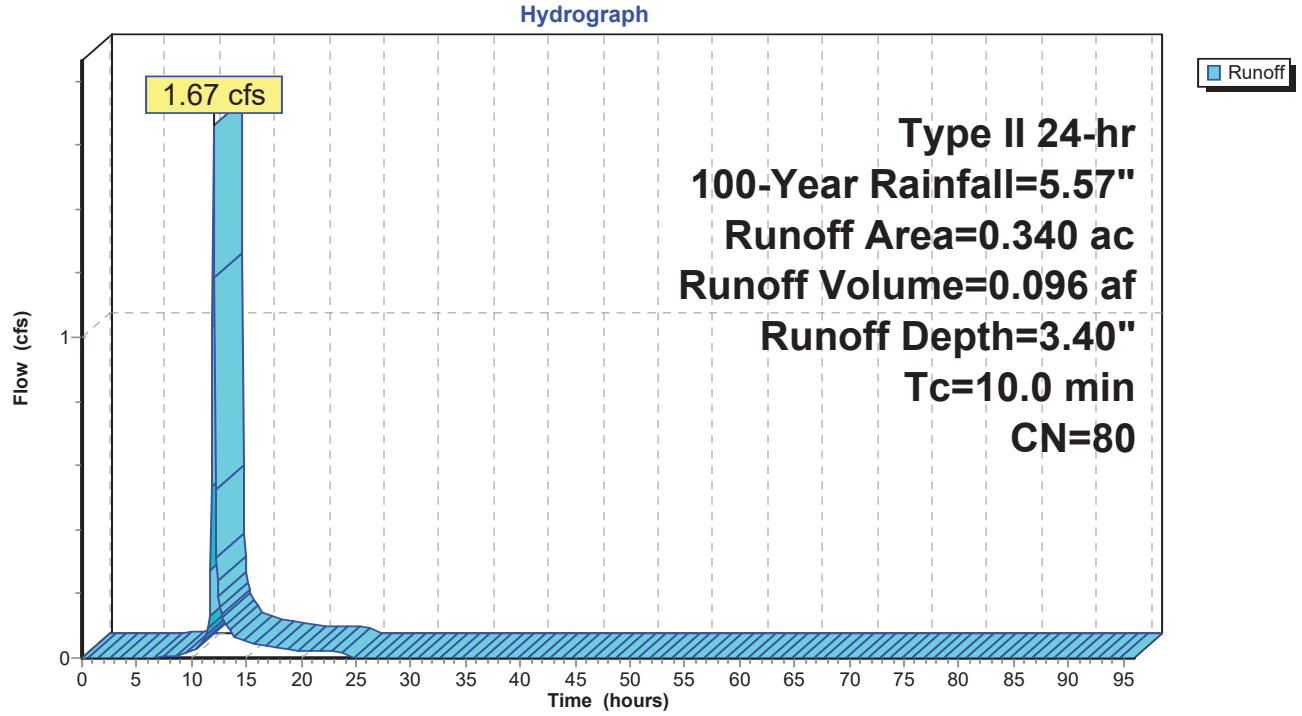
Runoff = 1.67 cfs @ 12.01 hrs, Volume= 0.096 af, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 100-Year Rainfall=5.57"

Area (ac)	CN	Description
0.340	80	>75% Grass cover, Good, HSG D
0.340		100.00% Pervious Area

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

Subcatchment 4S: Offsite



Summary for Subcatchment 5S: UnDetained

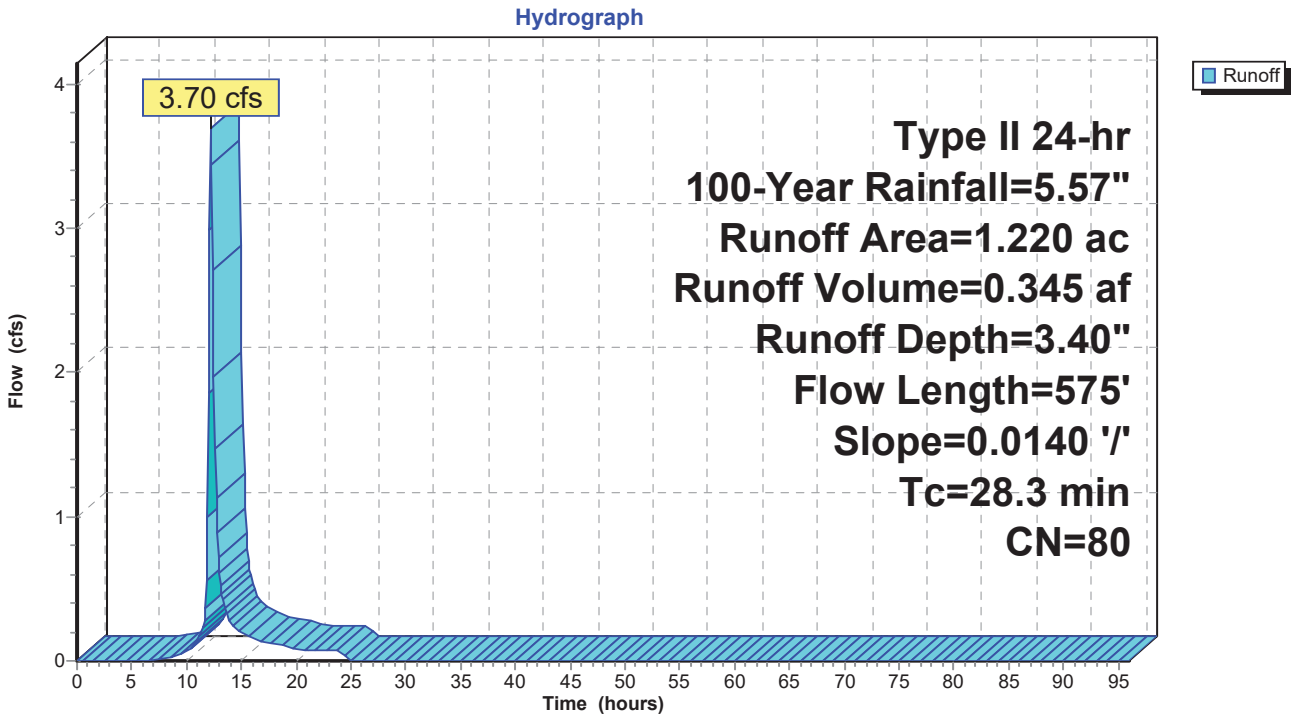
Runoff = 3.70 cfs @ 12.22 hrs, Volume= 0.345 af, Depth= 3.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Type II 24-hr 100-Year Rainfall=5.57"

Area (ac)	CN	Description
1.220	80	>75% Grass cover, Good, HSG D
1.220		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0140	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.25"
10.6	525	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
10.0					**Direct Entry,**
28.3	575	Total			

Subcatchment 5S: UnDetained



Summary for Pond 3P: Storage

Inflow Area = 6.820 ac, 37.41% Impervious, Inflow Depth = 4.07" for 100-Year event
Inflow = 35.55 cfs @ 12.03 hrs, Volume= 2.314 af
Outflow = 5.08 cfs @ 12.49 hrs, Volume= 2.313 af, Atten= 86%, Lag= 27.6 min
Primary = 5.08 cfs @ 12.49 hrs, Volume= 2.313 af

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.10 hrs
Peak Elev= 913.77' @ 12.49 hrs Surf.Area= 20,749 sf Storage= 51,339 cf

Plug-Flow detention time= 251.7 min calculated for 2.313 af (100% of inflow)
Center-of-Mass det. time= 251.2 min (1,052.1 - 800.9)

Volume	Invert	Avail.Storage	Storage Description
#1	910.00'	60,914 cf	**Retention Pond (Prismatic)**Listed below (Recalc)
#2	912.00'	3,255 cf	**CB Ponding (Prismatic)**Listed below (Recalc)
#3	911.50'	485 cf	**12.0" Round 12" Pipe Storage** L= 618.0' S= 0.0050 '/'
#4	910.00'	638 cf	**15.0" Round 15" Pipe Storage** L= 520.0' S= 0.0035 '/'
#5	910.00'	818 cf	**18.0" Round 18' Pipe Storage** L= 463.0' S= 0.0030 '/'
		66,111 cf	Total Available Storage

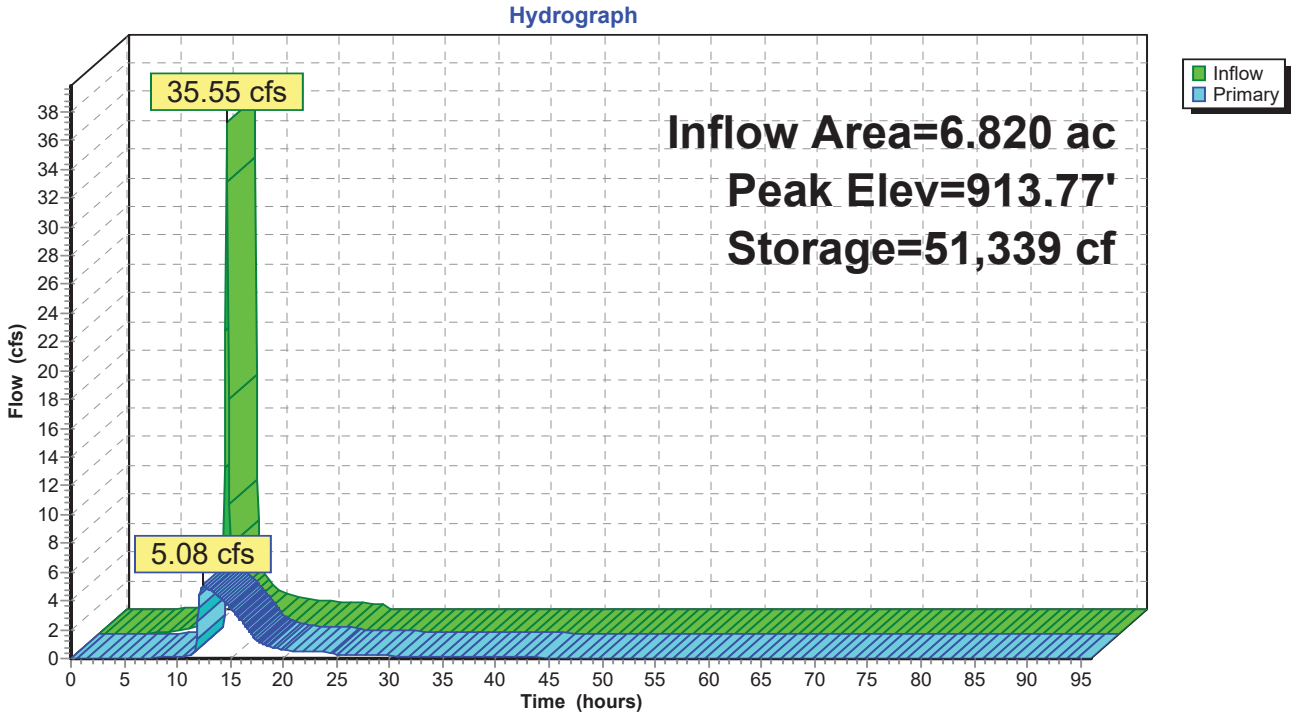
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
910.00	6,984	0	0
914.50	20,089	60,914	60,914

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
912.00	0	0	0
913.00	1,814	907	907
914.00	2,882	2,348	3,255

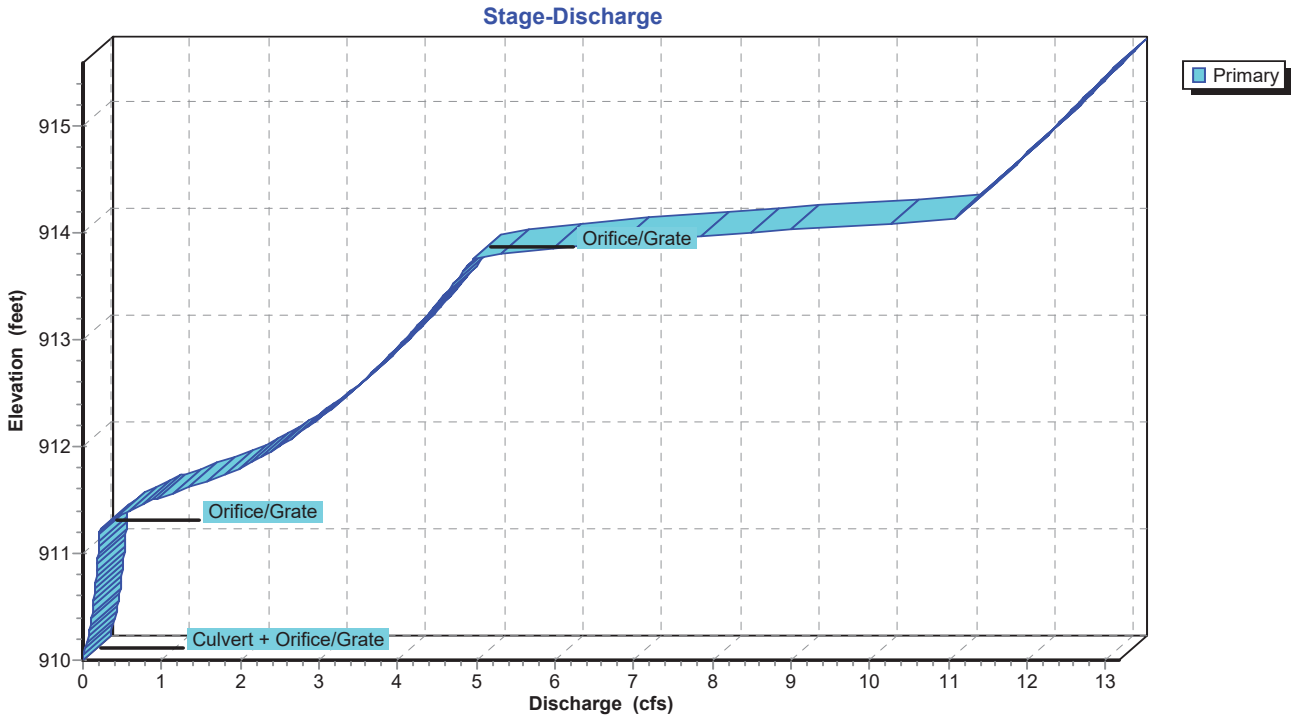
Device	Routing	Invert	Outlet Devices
#1	Primary	910.00'	**15.0" Round Culvert** L= 25.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 910.00' / 909.75' S= 0.0100 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.23 sf
#2	Device 1	910.00'	**2.8" Vert. Orifice/Grate** C= 0.600
#3	Device 1	911.20'	**15.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600
#4	Device 1	913.75'	**24.0" x 24.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=5.03 cfs @ 12.49 hrs HW=913.77' (Free Discharge)
└**1=Culvert** (Passes 5.03 cfs of 10.47 cfs potential flow)
├**2=Orifice/Grate** (Orifice Controls 0.39 cfs @ 9.20 fps)
├**3=Orifice/Grate** (Orifice Controls 4.58 cfs @ 7.33 fps)
└**4=Orifice/Grate** (Weir Controls 0.06 cfs @ 0.43 fps)

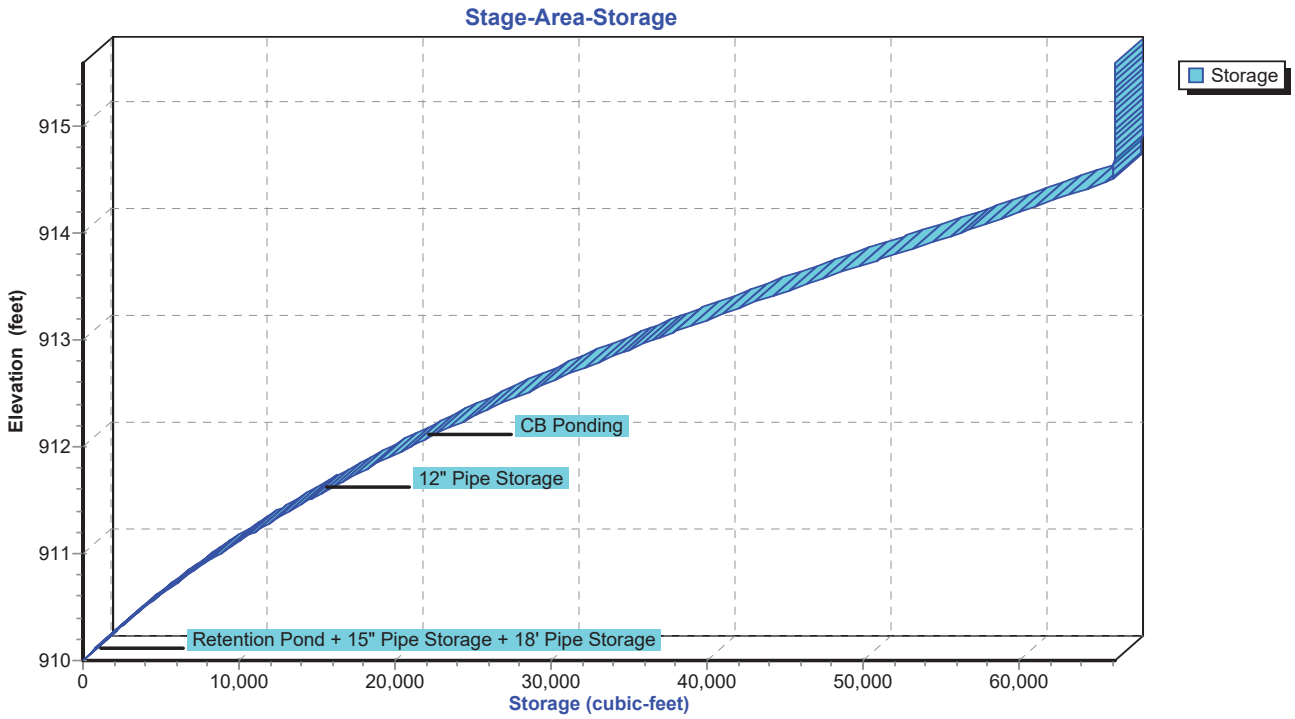
Pond 3P: Storage



Pond 3P: Storage



Pond 3P: Storage



APPENDIX B

(Water Quality Calculations)

WATER QUALITY CALCULATIONS

E. P. FERRIS and ASSOCIATES INC.
880 King Avenue
Columbus, Ohio 43212
614-299-2999
614-299-2992 (Fax)

Carriage Trails
Powell, OH

Prepared I MJO
Checked: CLL

Date: 3/24/2020

Project: 1200.001

Water Quality Calculation - Per Ohio EPA requirements

WQv = Rv x P x A

Rv - Volumetric Runoff Coefficient
P - precepitation depth (0.90 inches EPA)
A - Area draining to BMP in Acres

Rv:	0.41	
P:	0.9	0.90 inches is OEPA
A:	6.82	Acres
	297079	Sq-Ft
i:	0.40	

Table 1 (i) Values:	i = 0.89 for the pervious pavement surface
Industrial/Commercial	0.8
High Density residential (>8dw/ac)	0.5
Medium Density res. (4 to 8 dw/ac)	0.4
Low Density res (<4 dw/ac)	0.3
Open Space and Recreation Area	0.2

Formula:
Rv = 0.05 + 0.9i
i - watershed imperviousness ratio, the percent imperviouness divided by 100

Rv = 0.41

WQv:	2.51658	acre-inches	
	9135	cubic feet	REQUIRED for treatment of disturbed area
	0.209715	*acre-feet*	
	1827	cubic feet of sediment volume	

WQv
Total: 10,962 cubic feet

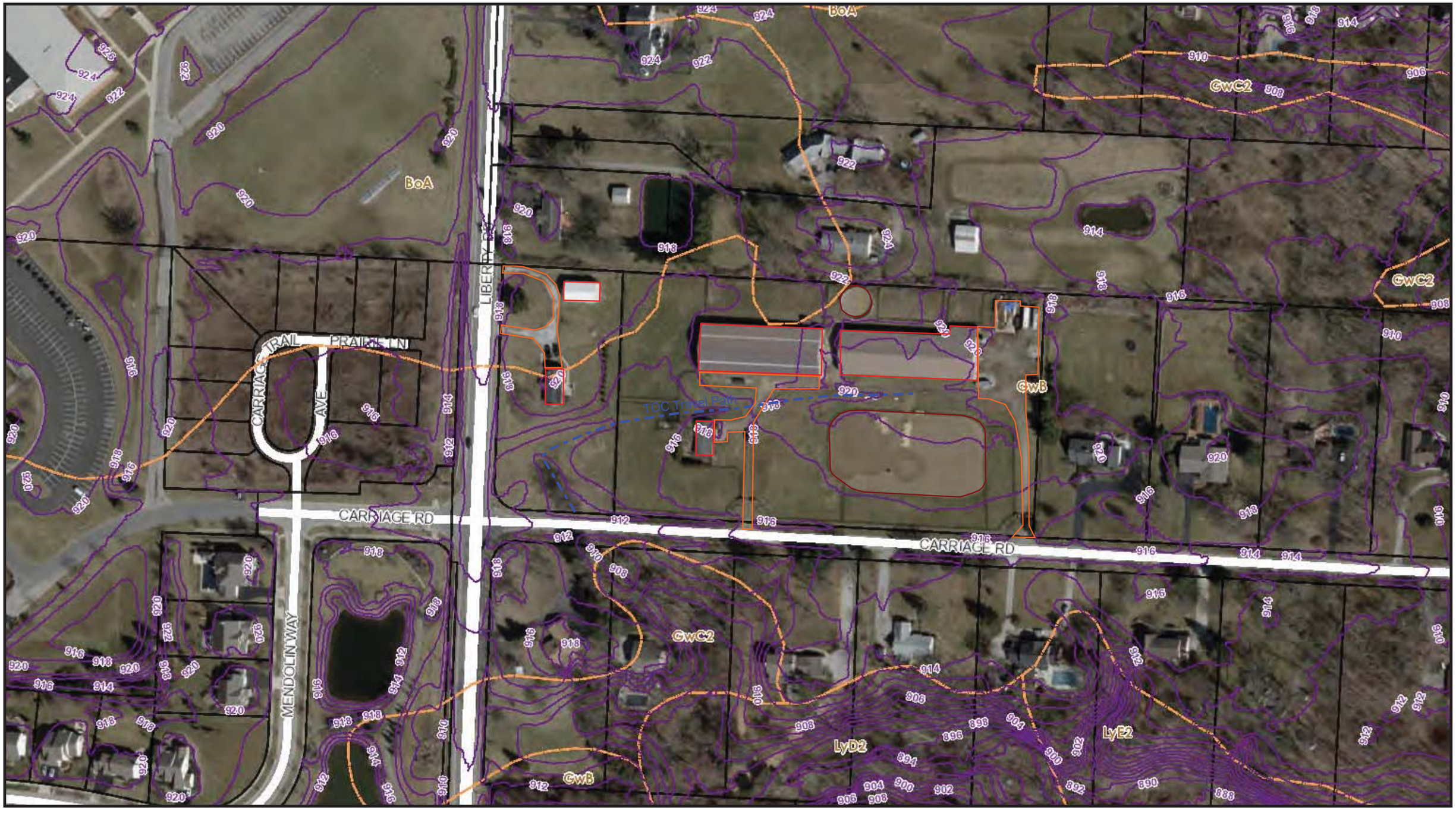
INPUT
OUPUT

Hydrograph for Pond 6P: WQv

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	**0.00**	**10,955**	**911.20**	**0.21**
2.00	0.00	9,461	911.07	0.20
4.00	0.00	8,069	910.93	0.19
6.00	0.00	6,782	910.81	0.17
8.00	0.00	5,607	910.69	0.16
10.00	0.00	4,548	910.57	0.14
12.00	0.00	3,612	910.46	0.12
14.00	0.00	2,803	910.37	0.10
16.00	0.00	2,127	910.29	0.08
18.00	0.00	1,588	910.22	0.07
20.00	0.00	1,197	910.17	0.04
22.00	0.00	931	910.13	0.03
24.00	0.00	750	910.10	0.02
26.00	0.00	620	910.09	0.02
28.00	0.00	523	910.07	0.01
30.00	0.00	450	910.06	0.01
32.00	0.00	397	910.06	0.01
34.00	0.00	353	910.05	0.01
36.00	0.00	315	910.04	0.01
38.00	0.00	281	910.04	0.00
40.00	0.00	250	910.04	0.00
42.00	0.00	223	910.03	0.00
44.00	0.00	198	910.03	0.00
46.00	0.00	177	910.03	0.00
48.00	0.00	158	910.02	0.00
50.00	0.00	140	910.02	0.00
52.00	0.00	125	910.02	0.00
54.00	0.00	111	910.02	0.00
56.00	0.00	99	910.01	0.00
58.00	0.00	88	910.01	0.00
60.00	0.00	79	910.01	0.00
62.00	0.00	70	910.01	0.00
64.00	0.00	63	910.01	0.00
66.00	0.00	56	910.01	0.00
68.00	0.00	50	910.01	0.00
70.00	0.00	44	910.01	0.00
72.00	0.00	39	910.01	0.00
74.00	0.00	35	910.00	0.00
76.00	0.00	31	910.00	0.00
78.00	0.00	28	910.00	0.00
80.00	0.00	25	910.00	0.00
82.00	0.00	22	910.00	0.00
84.00	0.00	20	910.00	0.00
86.00	0.00	18	910.00	0.00
88.00	0.00	16	910.00	0.00
90.00	0.00	14	910.00	0.00
92.00	0.00	12	910.00	0.00
94.00	0.00	11	910.00	0.00
96.00	0.00	10	910.00	0.00

APPENDIX C

(Tributary Maps)



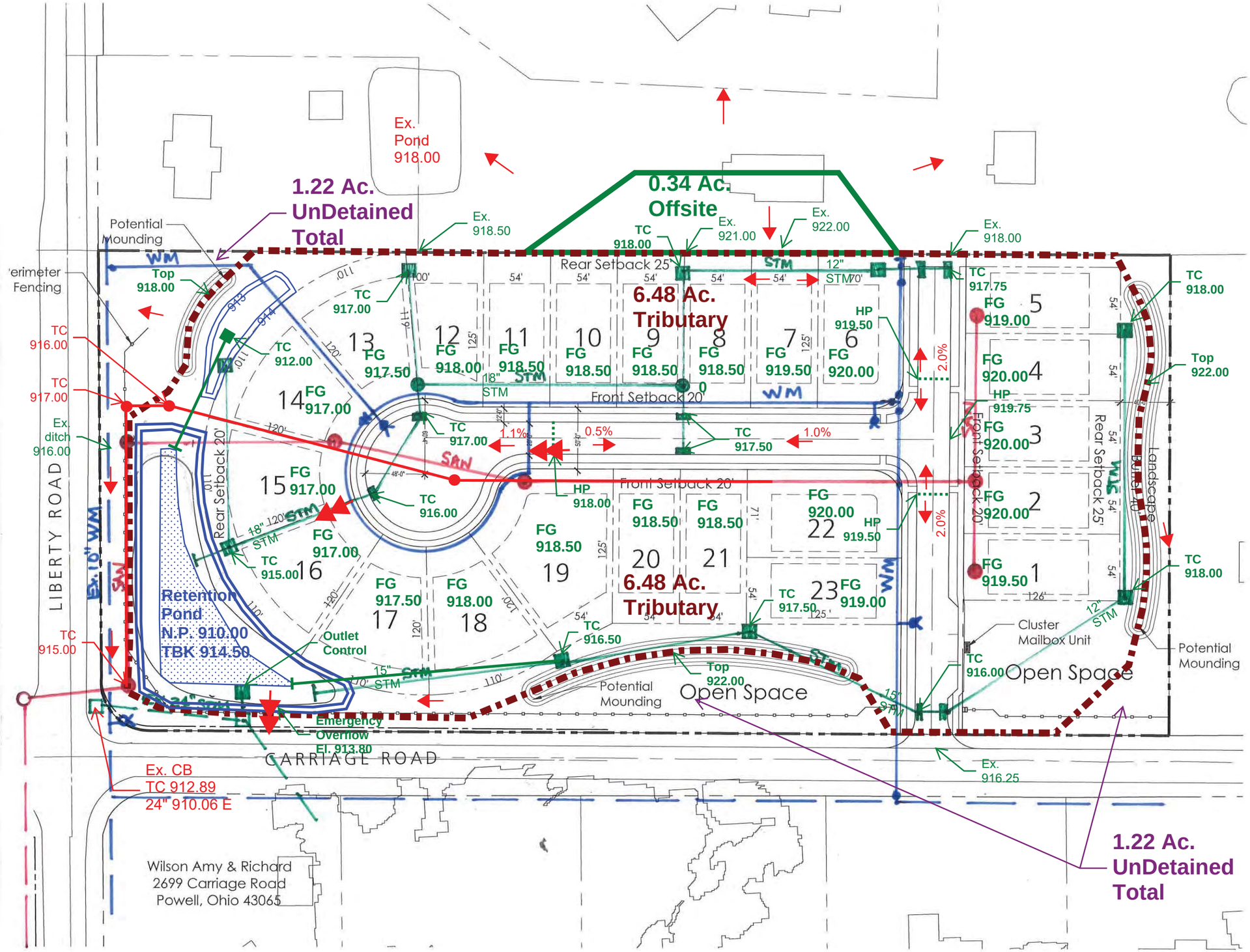
Existing Conditions

Information contained within this map may be used to generally locate, identify and inventory land parcels within Delaware County.
Delaware County cannot warrant or guarantee the information contained herein, including, but not limited to its accuracy
or completeness. The map parcel lines shown are approximate and this information cannot be constructed or used as a "legal description" of a parcel.
Flood Plain information is obtained from FEMA and is administered by the Delaware County Building Department (740-833-2201).
Please report any errors or omissions to the Delaware County Auditor's office at delcogis@co.delaware.oh.us.
Prepared by: Delaware County Auditor's GIS Office

Printed on 3/24/2020

Delaware County Auditor
George Kaitsa

N
W E
S



Location Map: NTS

Site Data:

Current Zoning:	Liberty FR1
Proposed Zoning:	Planned Residential
Total Site Area:	±7.7 Acres
Total Lots:	23
Total Density	± 2.9 du/acre

Lot Information:

Typical Lot Width:	54'
Typical Lot Depth:	120 -125'
Smallest Lot Area:	6,750 S.F.
Largest Lot Area:	12,267 S.F.
Front Setback:	20' Min.
Rear Yard Setback:	25' Min.
Side Yard Setback:	5' Min.

Lot Coverage:

Maximum Allowed by Code:	50%
As proposed:	50% or less

Open Space:

Shared Open Space:	2.53 Acres
Less Stormwater Basin:	.4 Acres
Total Open Space:	2.13 Acres

NOTE:
THE PLAN AS SHOWN IS CONCEPTUAL IN NATURE AND IS PROVIDED TO ILLUSTRATE THE DESIRED LAYOUT AND QUALITY OF THE PROJECT. FINAL LAYOUT AND LANDSCAPING ARE SUBJECT TO CHANGE BASED UPON FINAL ENGINEERING AND HOMEOWNER SELECTIONS.

2630 Carriage Road -Exhibit C: Preliminary Development Plan

City of Powell, Ohio January 15, 2020

0 40 120 N

Camber Company

G2 PLANNING + DESIGN

E. P. FERRIS AND ASSOCIATES INC
Consulting Civil Engineers and Surveyors

TAB 5
ARCHITECTURAL EXHIBITS

Calumet Model

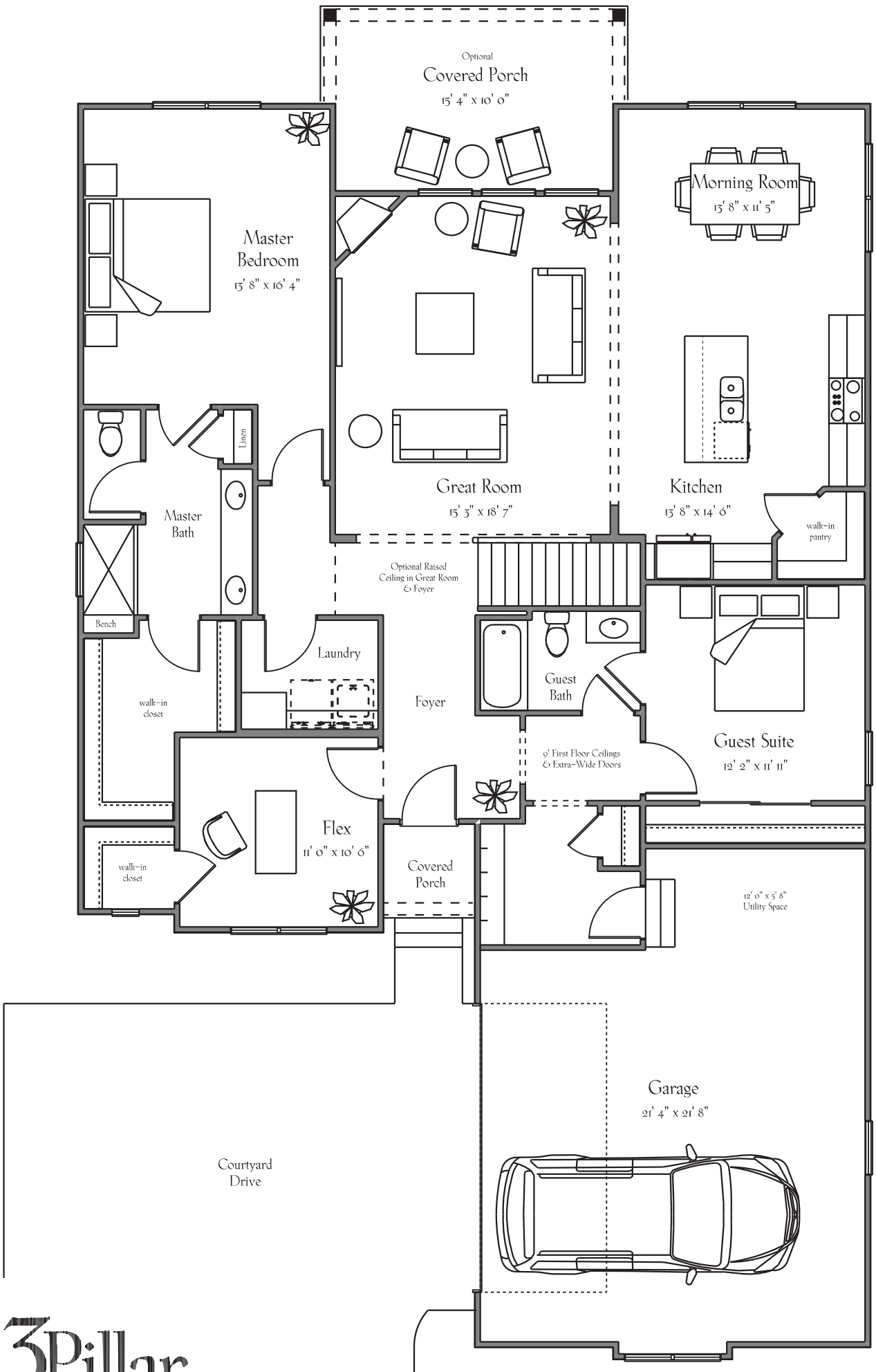
3Pillar Homes
Building Dreams

www.3Pillar.com
3/28/2020

Front Elevation

Calumet

Carriage Farms



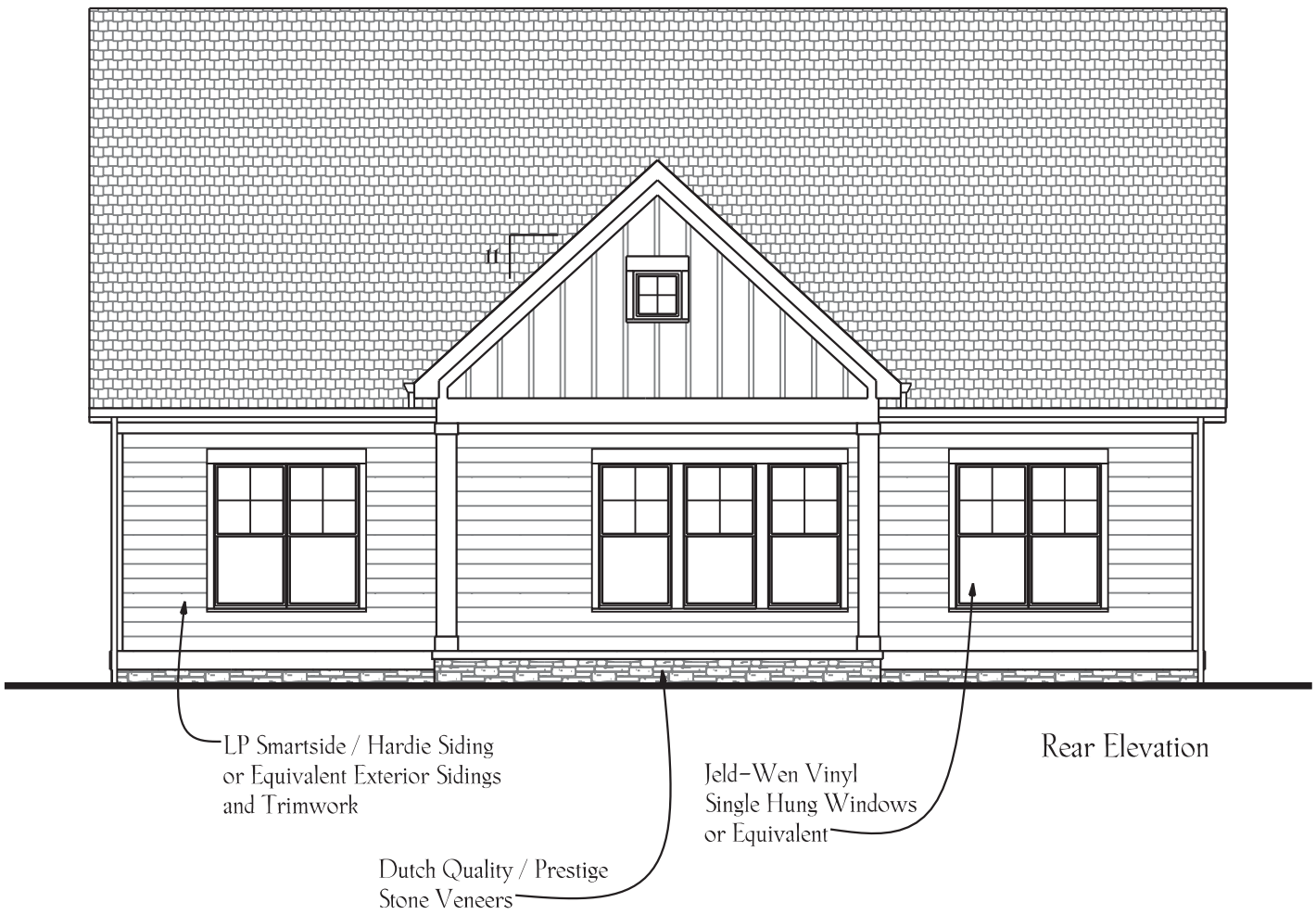
3Pillar Homes
Building Dreams

www.3Pillar.com
3/28/2020

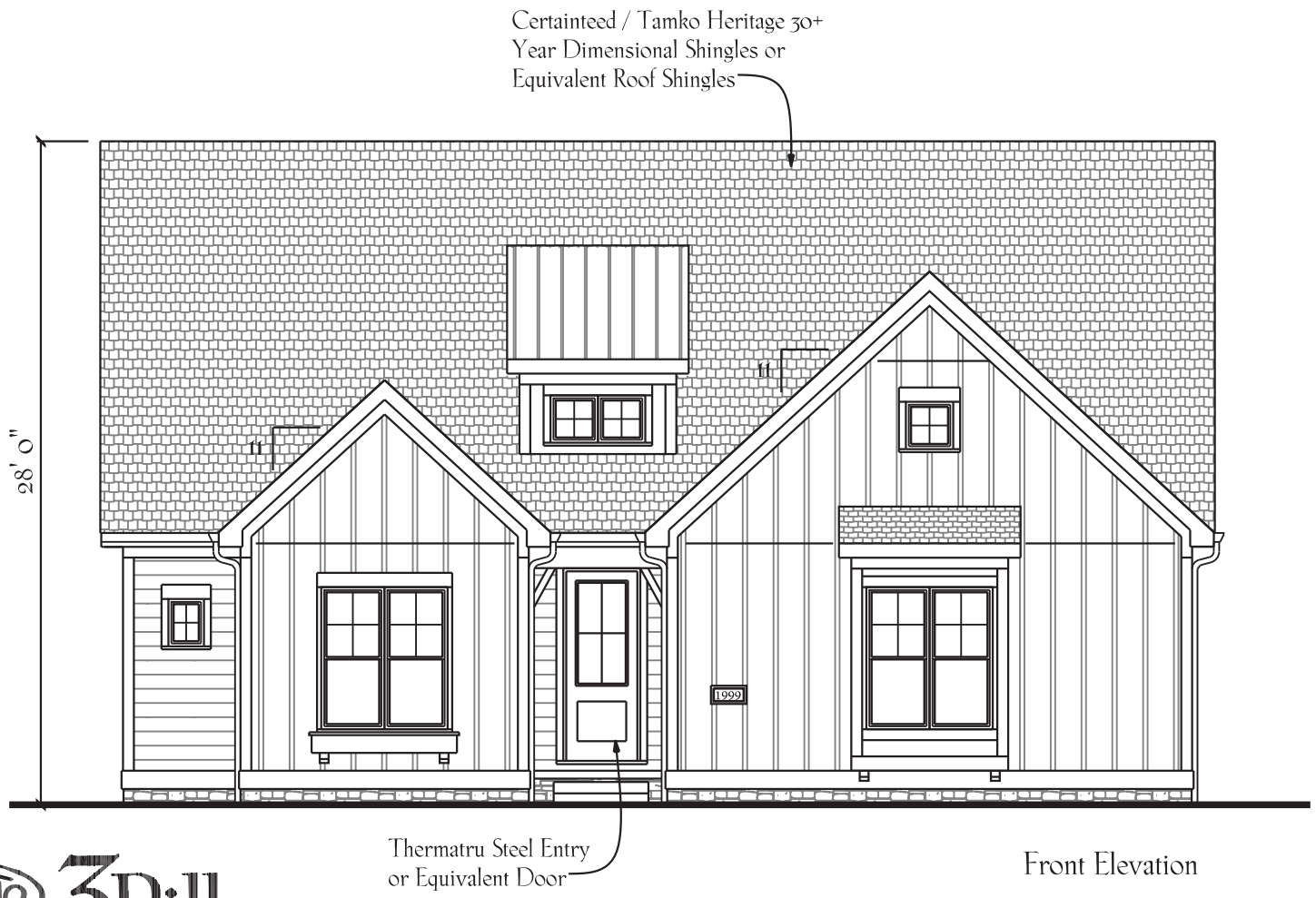
First Floor Plan
1865.2 sq ft.

Calumet

Carriage Farms



Rear Elevation



Front Elevation

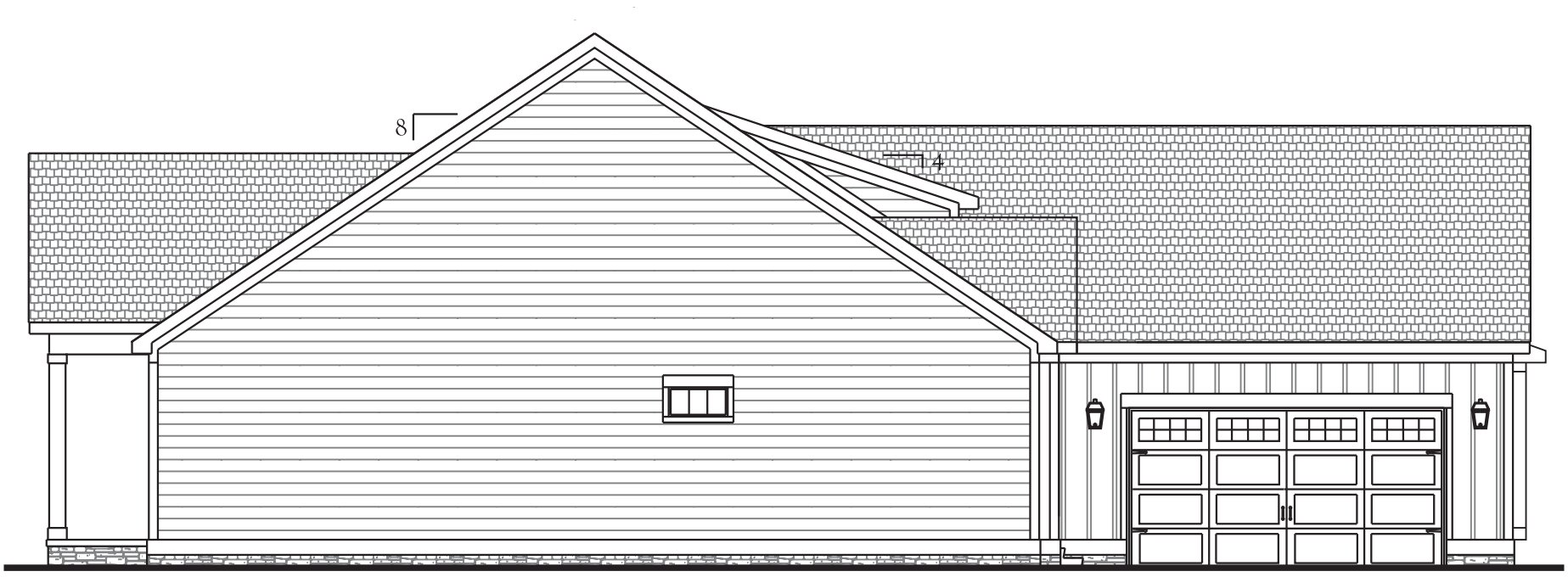
3Pillar Homes
Building Dreams

www.3Pillar.com
3/28/2020

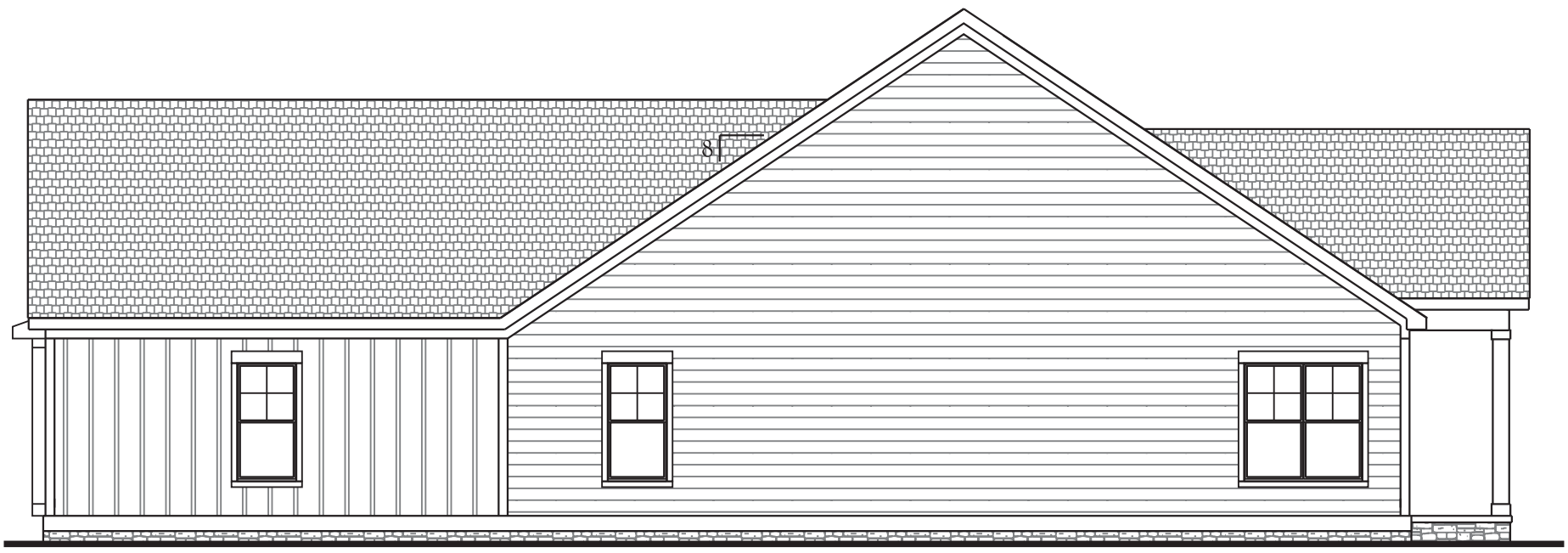
Elevations
Version 'D'

Calumet

Carriage Farms



Left Elevation



Right Elevation

3Pillar Homes
Building Dreams

www.3Pillar.com
3/28/2020

Elevations
Version 'D'

Clayborne Model

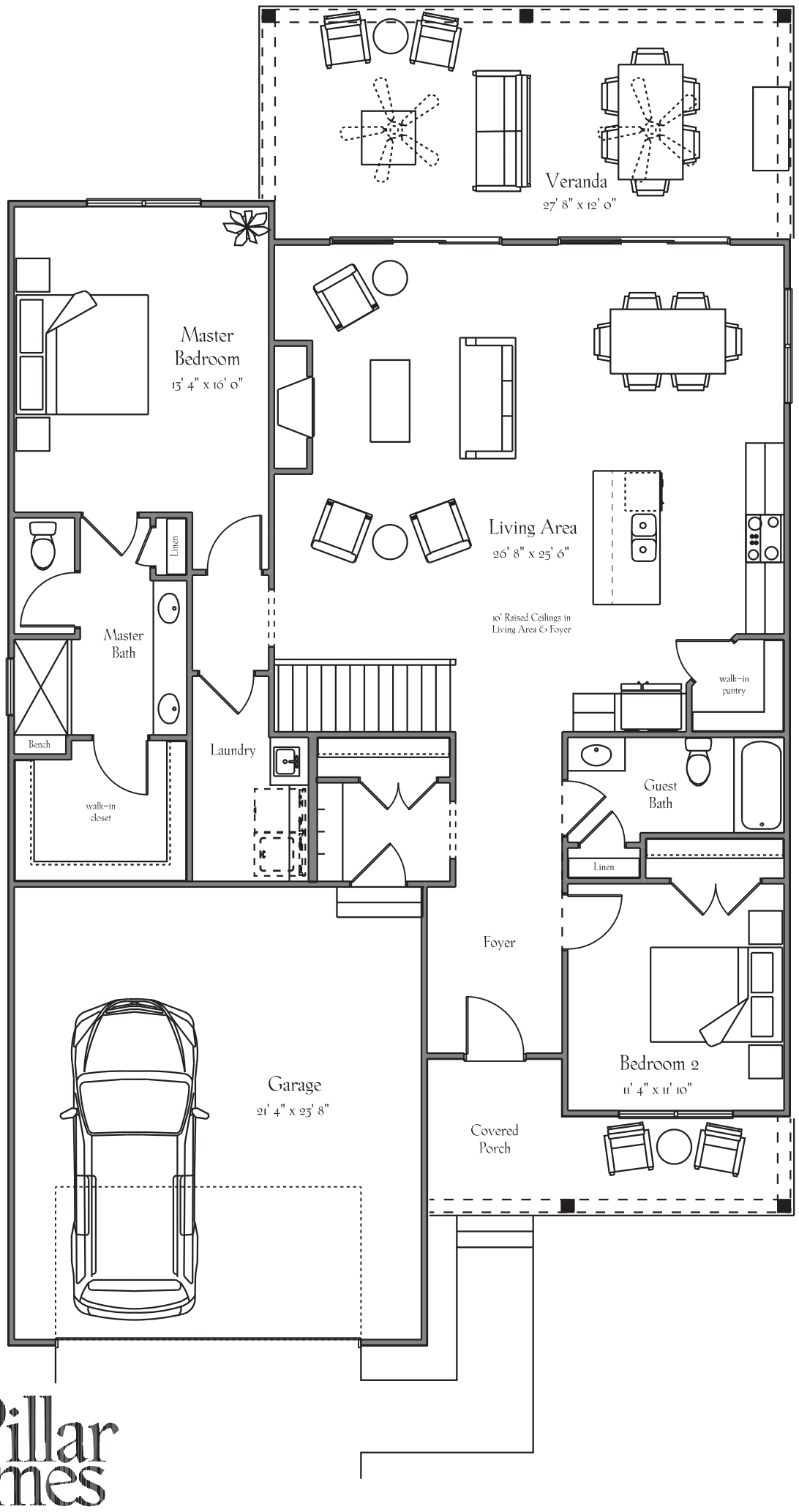
3Pillar Homes
Building Dreams

www.3Pillar.com
3/28/2020

Front Elevation

Clayborne

Carriage Farms



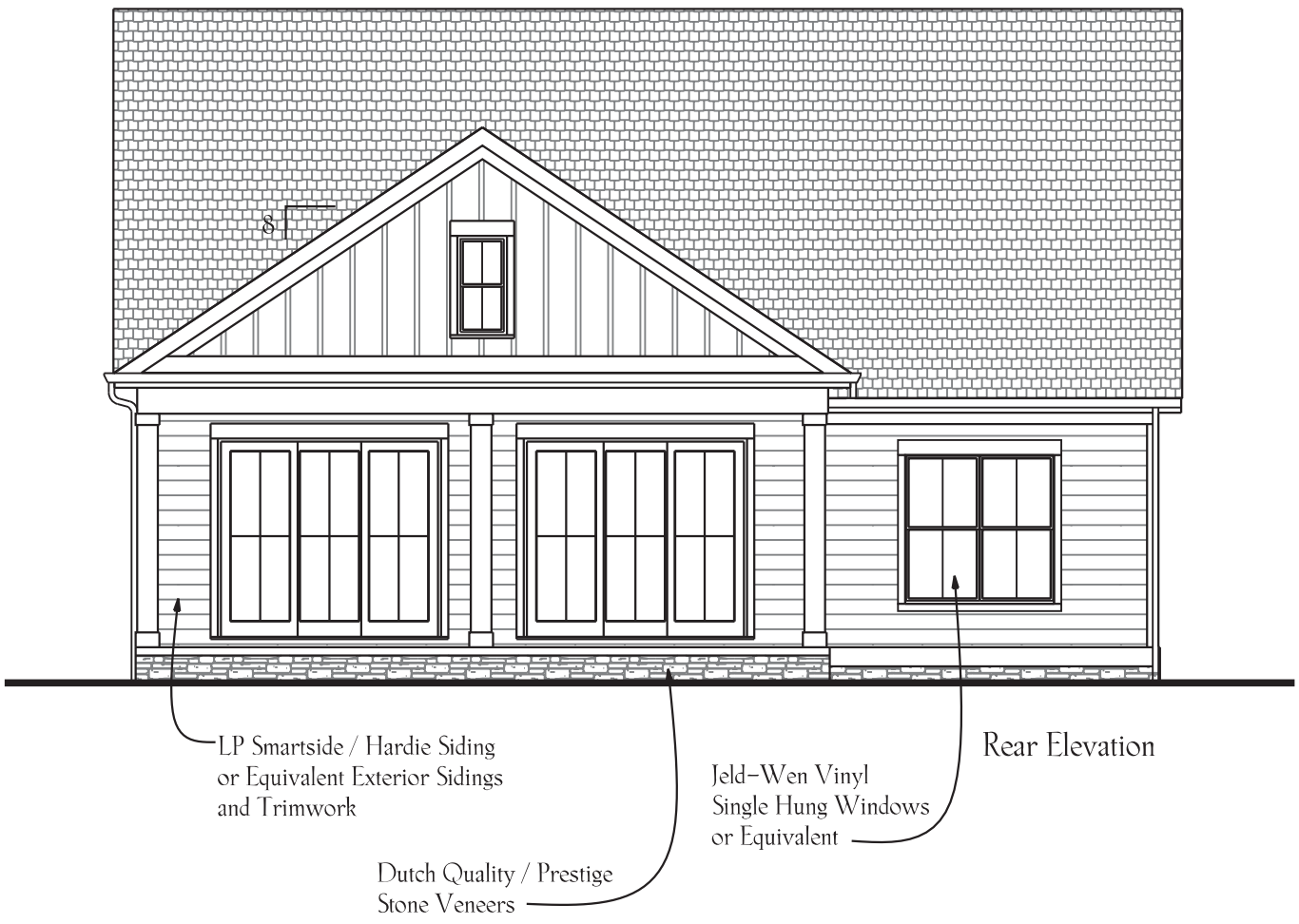
3Pillar Homes
Building Dreams

www.3Pillar.com
3/28/2020

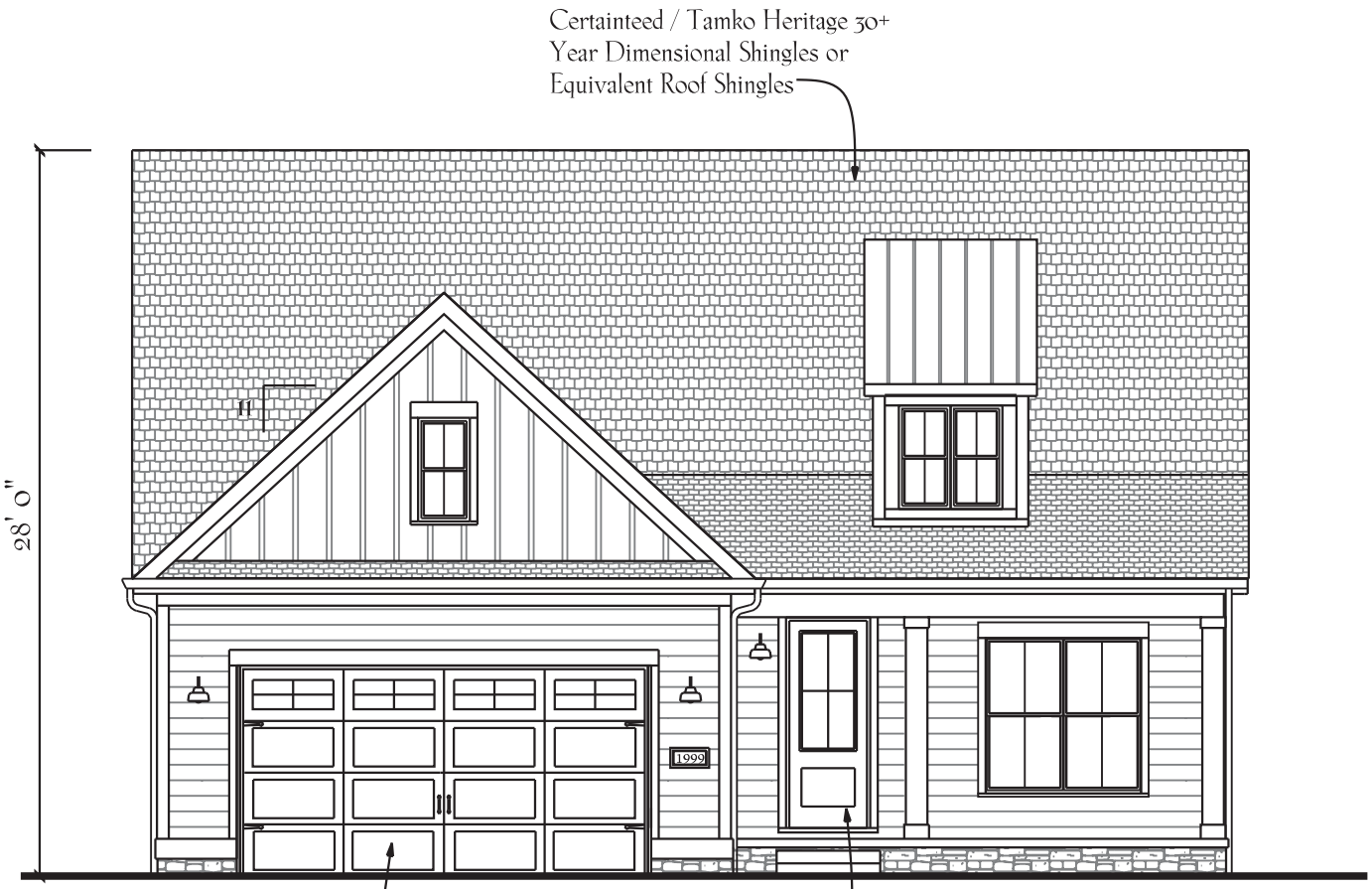
First Floor Plan
1631.0 sq ft.

Clayborne

Carriage Farms



Rear Elevation



Front Elevation

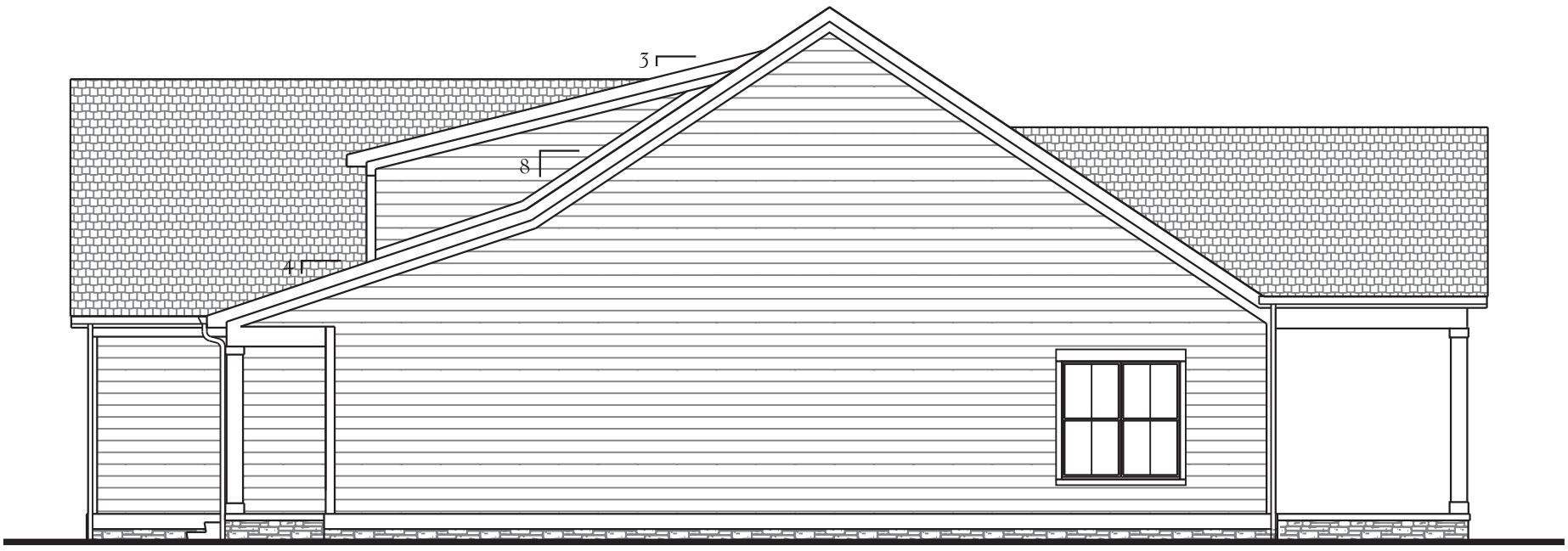
3Pillar Homes
Building Dreams

www.3Pillar.com
3/28/2020

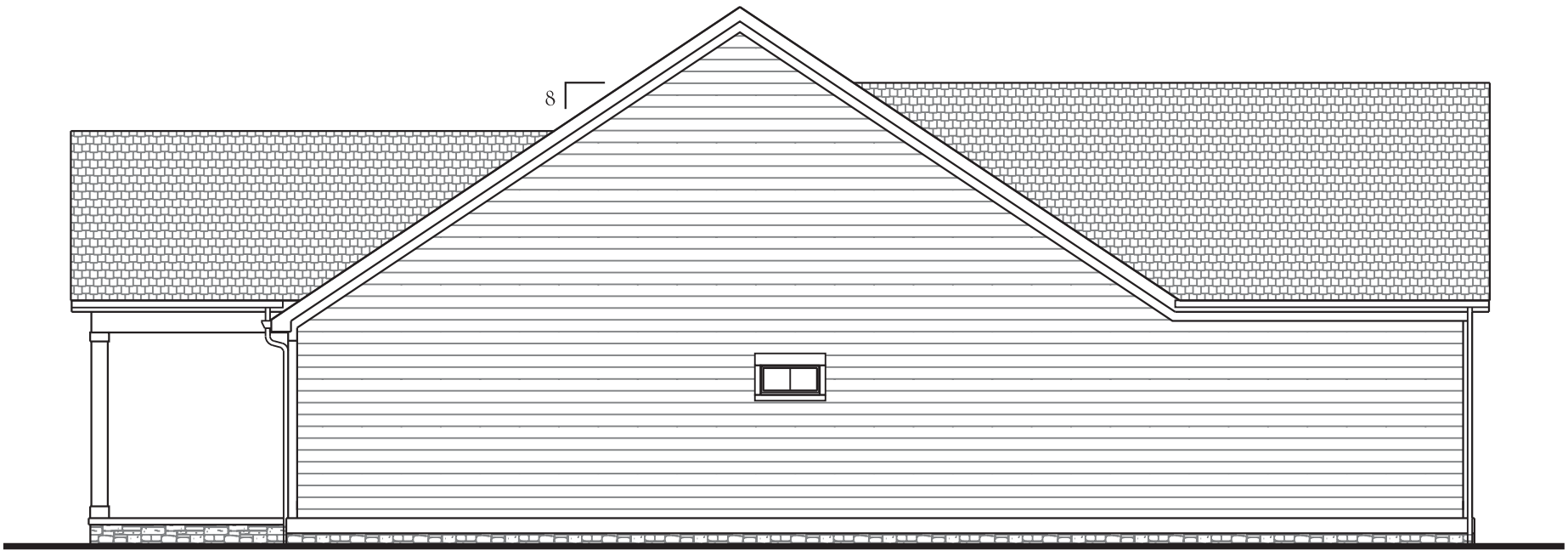
Elevations
Version 'A'

Clayborne

Carriage Farms



Right Elevation



Left Elevation

3Pillar Homes
Building Dreams

www.3Pillar.com
3/28/2020

Elevations
Version 'A'

Gainsway Model

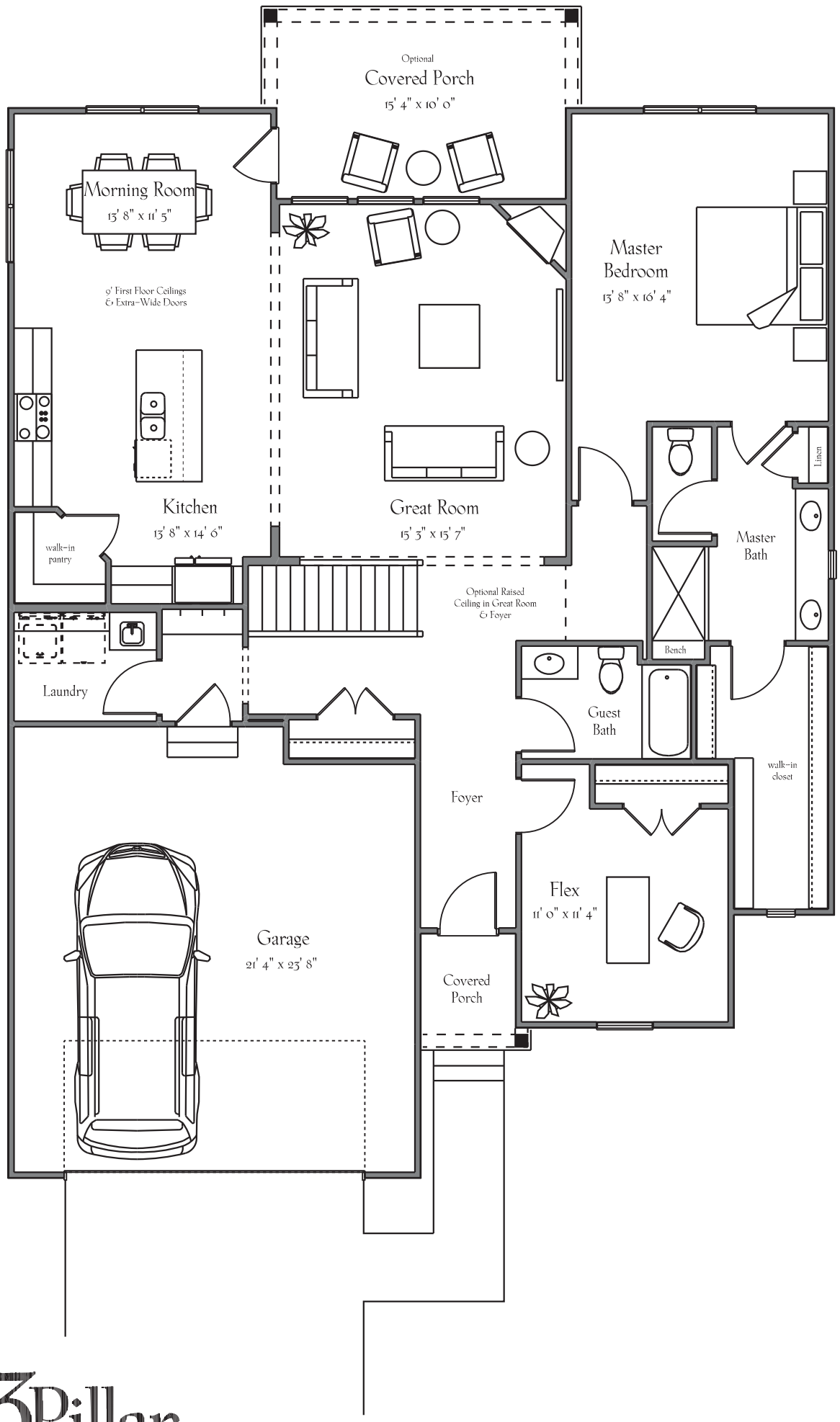
3Pillar Homes
Building Dreams

www.3Pillar.com
3/28/2020

Front Elevation

Gainesway

Carriage Farms



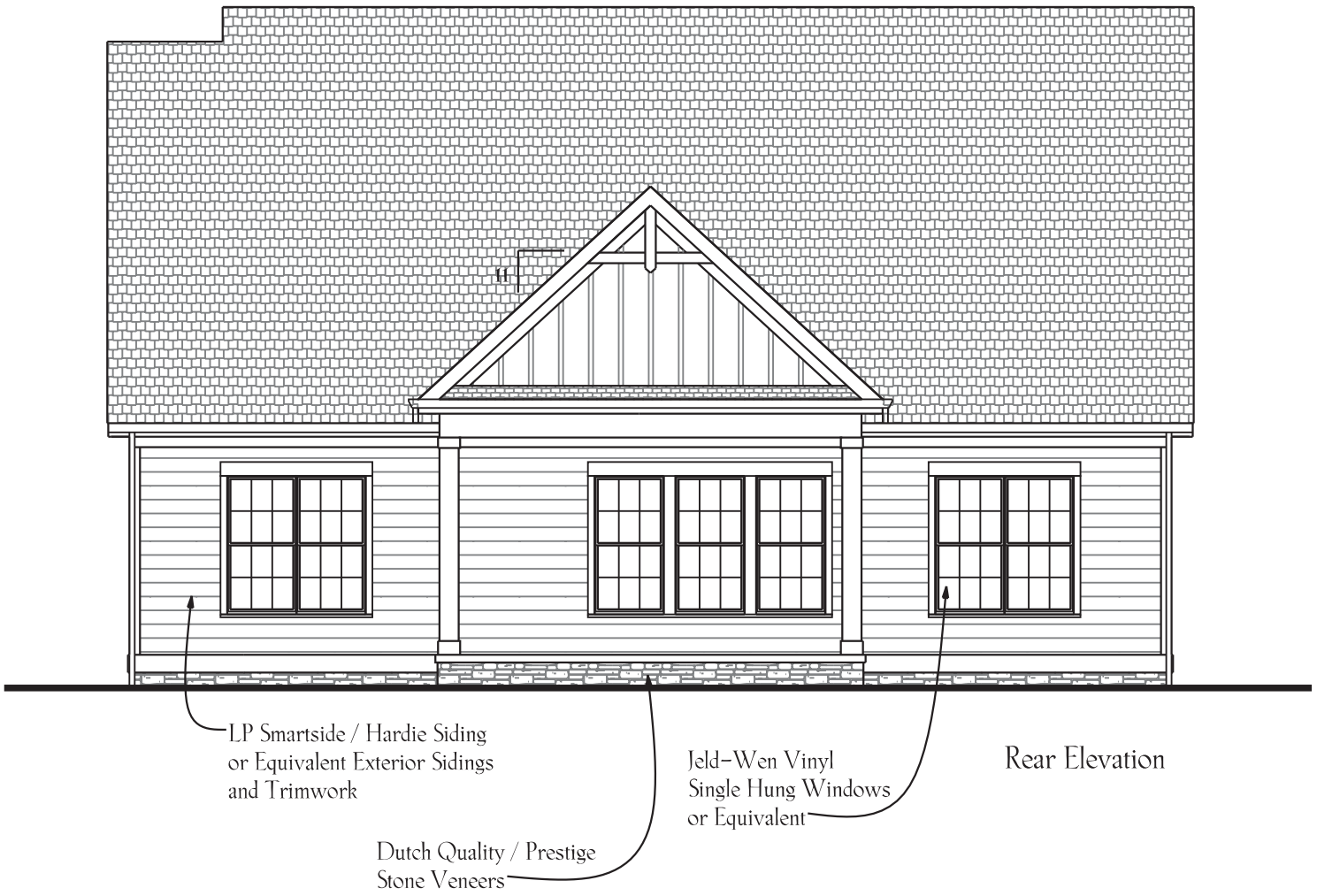
3Pillar Homes
Building Dreams

www.3Pillar.com
3/28/2020

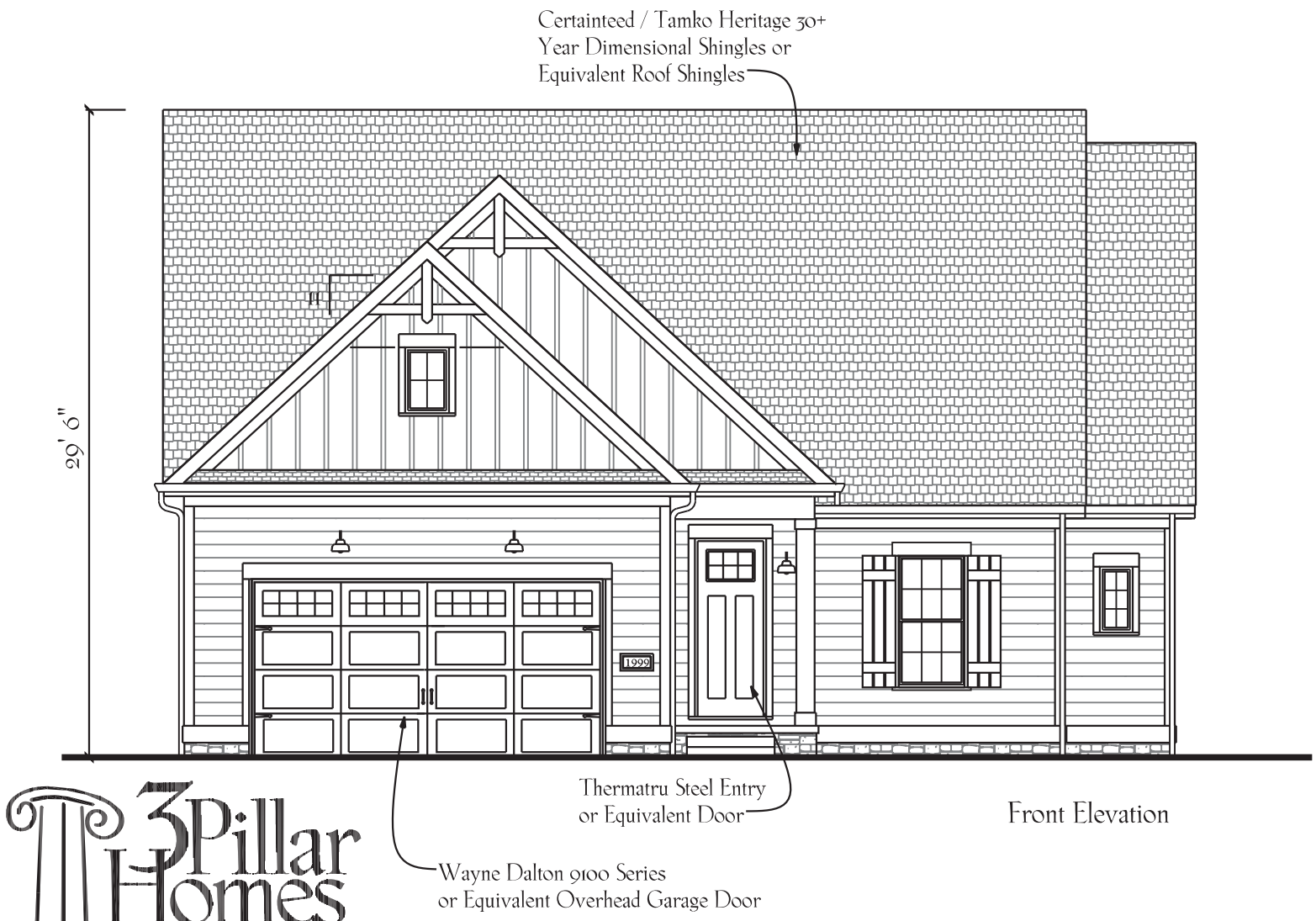
First Floor Plan
1690.0 sq ft.

Gainsway

Carriage Farms



Rear Elevation



Front Elevation

3Pillar Homes
Building Dreams

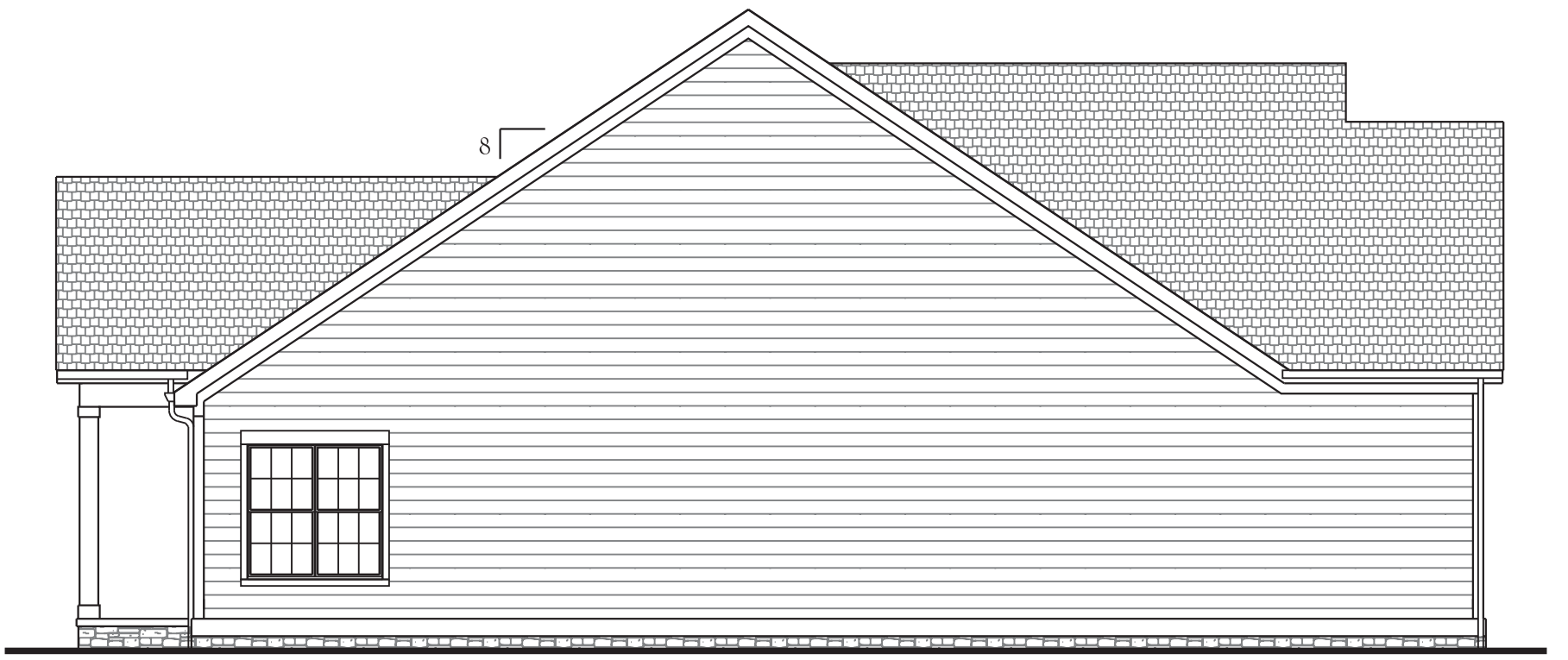
www.3Pillar.com
3/28/2020

Elevations
Version 'A'

Gainsway

Carriage Farms

Right Elevation



Left Elevation

3Pillar Homes
Building Dreams

www.3Pillar.com
3/28/2020

Elevations
Version 'A'

TAB 6
SERVICEABILITY LETTERS

Delaware County
Regional Sewer District

Executive Director
Michael A. Frommer, P.E.

Director/Sanitary Engineer
Tiffany M. Maag, P.E.

July 17, 2019

Christopher L. Lescody, P.E.
E.P. Ferris & Associates, Inc.
880 King Avenue
Columbus, OH 43212

sent via email: clescody@epferris.com

Re: **Request for Sewer Capacity**
2630 Carriage Road
Parcel: 31913301010000

Dear Mr. Lescody:

The Delaware County Regional Sewer District (the "County") has considered your request for approval to discharge sanitary sewage into the Delaware County Sanitary Sewer System from the above referenced location, representing 30 Equivalent Residential Unit(s) (ERU).

Capacity is currently available to serve the proposed project. An existing 10" sanitary sewer is located at the southeast corner of Liberty Road and Carriage Road, in close proximity to the parcel. Extensions from the existing sanitary sewer will be necessary to provide service to the proposed lots.

Although adequate capacity is currently available to serve the project, issuing this letter does not guarantee service by the County or reserve capacity for the project. The current assessment of capacity availability is subject to periodic reevaluation by the County and shall not be valid after 18 months from the date of this letter.

If you have any questions, please feel free to contact me.

Sincerely,

Kelly Thiel

Kelly Thiel
Delaware County Regional Sewer District

cc: Correspondence File

AEP Ohio
700 Morrison Rd
Gahanna, OH 43230
AEPOhio.com

10/2/2019

Christopher L. Lescody, PE
E.P. Ferris & Associates, Inc.
800 King Ave
Columbus, OH 43212

RE: AVAILABILITY OF ELECTRICAL SERVICE

Carriage Road Horse Farm

To Whom It May Concern:

This letter will confirm that American Electric Power has electric service facilities adjacent to your new project. These facilities will be made available to serve your project with some Contribution-In-Aid-To-Construction charged to the project developer.

Our records indicate your project; a 21-lot single-family Residential development is located north of Carriage Rd and east of Liberty Rd, in Powell, Delaware County, Ohio.

American Electric Power anticipates providing your new project the best possible service. I look forward to working with you and remain available to coordinate your project needs. Please contact me to discuss any questions you may have or other assistance you may require.

Sincerely,

Erik Schaas
Customer Design Supervisor

Columbia Gas of Ohio
A NiSource Company

New Business Team
290 W Nationwide Bv, 3rd Floor
Columbus, OH 43215

October 1, 2019

Re: Carriage Rd – City of Powell – Residential Single Family

Dear Chris,

Thank you for wanting to choose Columbia Gas of Ohio, Inc. (COH), a NiSource Company, to serve your natural gas needs to your new proposed residential single family along Carriage Rd and Liberty Rd in Powell, Ohio. This letter is to confirm COH has facilities along Carriage Rd and Liberty Rd, Powell, Ohio. Although COH facilities may be in the vicinity of your proposed property, further investigation will need to take place for capacity. Once Attachment A of the Information Request Packet has been answered and returned and all other requested information is released to the COH New Business Team, gas availability and any capacity issues will be determined; as well as any deposit and/or Aid-To-Construction costs that may be required.

Please note that availability is contingent upon a cost benefit analysis. If the project is not deemed economically feasible for Columbia Gas, a deposit may be necessary

If you have any questions regarding availability, or how it is determined, please feel free to contact me at 800-440-6111 ext 3028 Monday-Friday, 8:00am to 4:30pm. Columbia Gas and I look forward to partnering with you on this and future projects.

Sincerely,

Donyel Gibson

Columbia Gas of Ohio a Nisource Company
Donyel Gibson
New Business Development Manager

P.O. Box 2553
Columbus, Ohio 43216
Tel. (614) 481-5263
Fax (614) 255-6428

Charter
COMMUNICATIONS

October 3, 2019

Christopher Lescody
E.P. Ferris & Associates, Inc.
880 King Ave
Columbus, OH 43212

RE: Carriage Road Horse Farm, City of Powell, Delaware County, OH

Dear Mr. Lescody:

This letter is to confirm that Charter Communications has the capacity and ability to provide advanced cable, high speed internet and digital phone services to the proposed Carriage Road Horse Farm, City of Powell, Delaware County, OH project.

If you have any questions give me a call at 614-481-5263 and I will be happy to discuss this project with you.

Thank You!

Kevin D. Rich
Construction Manager
kevin.rich1@charter.com

Officers
DAVID A. BENDER
President
PERRY K. TUDOR
Vice President
ROBERT W. JENKINS
Secretary
G. MICHAEL DICKEY
Treasurer
GLENN MARZLUF
General Manager/CEO
SHANE CLARK
Deputy General Manager

DEL-CO WATER COMPANY

6658 OLENTANGY RIVER ROAD
DELAWARE, OHIO 43015
www.delcowater.org
Phone (740) 548-7746 • Fax (740) 548-6203

Directors
BRUCE A. BLACKSTON
BRIAN P. COGHLAN
WILLIAM E. COLE
DOUGLAS D. DAWSON
PAMALA L. HAWK
TIMOTHY D. MCNAMARA

July 11, 2019

Christopher L. Lescody, P.E.
Vice President
E.P. Ferris & Associates, Inc.
880 King Ave.
Columbus, Ohio 43212

Via Email: Clescody@epferris.com

RE: Water Availability – Carriage-Liberty Patio Homes

Dear Mr. Lescody:

As requested, this is to inform you that Del-Co Water can provide water service to the site described below upon plan approval and payment of the required fees:

Proposed Land Use: ±30 patio homes
Location: Northeast corner of Liberty Road and Carriage Road
Land Size: ±7.724 acres

This site can be served from an existing 10-inch waterline located on Liberty Road.

This letter of water availability is valid for a period of one year from the date of this letter. Del-Co makes no guarantee of water availability beyond this period. Contact our Engineering Department if you have any questions on the plan review process, or our Customer Service Department for information on tap fees.

Sincerely,
DEL-CO WATER COMPANY, INC.

Shane F. Clark, P.E.
Deputy General Manager

TAB 7
TRAFFIC STUDY

January 13, 2020

Mr. David Betz
City of Powell
47 Hall Street
Powell, OH 43065

Re: Carriage Road Property Trip Generation
City of Powell, Delaware County, Ohio

Dear David:

Please consider this letter the traffic analysis required for the subject development.

BACKGROUND

The site is proposed to be developed with 23 units that are a product marketed to "empty nesters". The site is located in the northeast quadrant of the intersection of Liberty Road & Carriage Road.

PROJECTED SITE GENERATED TRAFFIC

The accepted method for computing trip generation in the traffic engineering profession is *Trip Generation, 10th Edition* published by the Institute of Transportation Engineers (ITE). This report provides trip rates for different land uses based on data from sample sites in each category. Since the homes will be marketed to "empty nesters", it is a judgement as to which land use categories in *Trip Generation, 10th Edition* apply. As part of a previous study in another jurisdiction for an "empty nester" product, peak hour link counts (7-9 AM and 4-6 PM) were taken at the River Highlands access (West Case Road) and the Villas at Tussic access (Tussic Street Road) which are both developments that are marketed to "empty nesters". The compilation of the data collected are below (the counts and calculations are attached):

Villas at Tussic/River Highlands:
AM Peak Hour: 0.27 Trips/unit
PM Peak Hour: 0.39 Trips/unit

To provide a basis of comparison, the rates for Single-Family Detached Housing (ITE Code #210) regression rates based on 23 units is below (Table 1 attached shows the trip generation calculations):

AM Peak Hour: 1.00 Trips/unit
PM Peak Hour: 1.06 Trips/unit

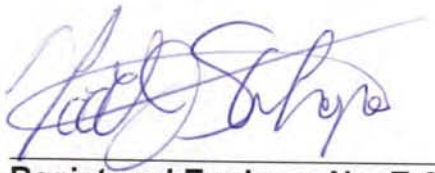
CONCLUSION

The results show that when applying the counted rates, the site will generate 6 trips in the AM Peak Hour and 9 trips in the PM Peak Hour. The counted rates are approximately 1/4 to 1/3 less of the regression rates for Single Family-Detached Housing provided in the *Trip Generation Manual*. In the AM Peak hour based upon the counted rates, the 23 units marketed to "empty nesters" generate the equivalent traffic as six (6) single-family units.

Please let me know if you have any questions. Thank you.

Sincerely,

SMART SERVICES, INC.



1-13-2020

Registered Engineer No. E-64507, Ohio — **Date**

Todd J. Stanhope, PE, PTOE
Director of Traffic Engineering

Smart Services, Inc.
88 W. Church Street

Newark, Ohio, United States 43055
(740) 345 4700 tstanhope@smartservices-inc.com
www.smartservices-inc.com

Count Name: River Highlands Way at Case Rd
Site Code:
Start Date: 01/30/2018

Direction (Southbound)

Start Time	Total
7:00 AM	6
7:15 AM	3
7:30 AM	5
7:45 AM	4
8:00 AM	1
8:15 AM	8
8:30 AM	2
8:45 AM	2
4:00 PM	4
4:15 PM	3
4:30 PM	1
4:45 PM	1
5:00 PM	3
5:15 PM	3
5:30 PM	1
5:45 PM	4
Total	51
Total %	100.0
AM Times	7:00 AM
AM Peaks	18
PM Times	4:45 PM
PM Peaks	8

Smart Services, Inc.
88 W. Church Street

Newark, Ohio, United States 43055
(740) 345 4700 tstanhope@smartservices-inc.com
www.smartservices-inc.com

Count Name: River Highlands Way at Case Rd
Site Code:
Start Date: 01/30/2018

Direction (Northbound)

Start Time	Total
7:00 AM	1
7:15 AM	2
7:30 AM	0
7:45 AM	1
8:00 AM	1
8:15 AM	1
8:30 AM	1
8:45 AM	2
4:00 PM	3
4:15 PM	5
4:30 PM	2
4:45 PM	8
5:00 PM	6
5:15 PM	2
5:30 PM	6
5:45 PM	5
Total	46
Total %	100.0
AM Times	7:00 AM
AM Peaks	4
PM Times	4:45 PM
PM Peaks	22

Smart Services, Inc.
88 W. Church Street

Newark, Ohio, United States 43055
(740) 345 4700 tstanhope@smartservices-inc.com
www.smartservices-inc.com

Count Name: Villas at Tussic Access ATR
Site Code:
Start Date: 01/25/2018

Direction (Westbound)

Start Time	Total
7:00 AM	0
7:15 AM	0
7:30 AM	0
7:45 AM	1
8:00 AM	2
8:15 AM	1
8:30 AM	1
8:45 AM	0
4:00 PM	5
4:15 PM	0
4:30 PM	3
4:45 PM	4
5:00 PM	1
5:15 PM	4
5:30 PM	3
5:45 PM	2
Total	27
Total %	100.0
AM Times	7:00 AM
AM Peaks	1
PM Times	5:00 PM
PM Peaks	10

Smart Services, Inc.
88 W. Church Street

Newark, Ohio, United States 43055
(740) 345 4700 tstanhope@smartservices-inc.com
www.smartservices-inc.com

Count Name: Villas at Tussic Access ATR
Site Code:
Start Date: 01/25/2018

Direction (Eastbound)

Start Time	Total
7:00 AM	3
7:15 AM	4
7:30 AM	2
7:45 AM	3
8:00 AM	1
8:15 AM	3
8:30 AM	0
8:45 AM	2
4:00 PM	1
4:15 PM	1
4:30 PM	2
4:45 PM	2
5:00 PM	0
5:15 PM	3
5:30 PM	1
5:45 PM	7
Total	35
Total %	100.0
AM Times	7:00 AM
AM Peaks	12
PM Times	5:00 PM
PM Peaks	11

SMART SERVICES, INC.
88 W. Church Street
Newark, OH 43055
(740) 345-4700
www.smartservices-inc.com

"Empty Nester" Targeted Housing

TIME	River Highlands 82 Units		Villas at Tussic 49 Units		Total Sample Sites		
	SB (Out)	NB (In)	EB (Out)	WB (In)	IN	OUT	TOTAL
7:00 AM	6	1	**3**	**0**	**1**	**9**	**10**
7:15 AM	**3**	**2**	**4**	**0**	**2**	**7**	**9**
7:30 AM	**5**	**0**	**2**	**0**	**0**	**7**	**7**
7:45 AM	**4**	**1**	**3**	**1**	**2**	**7**	**9**
8:00 AM	**1**	**1**	1	2	3	2	5
8:15 AM	8	1	3	1	2	11	13
8:30 AM	2	1	0	1	2	2	4
8:45 AM	2	2	2	0	2	4	6
AM Peak	**18**	**4**	**12**	**1**	**5** **14%**	**30** **86%**	**35** **0.267**
AM Totals	31	9	18	5	14	49	63
4:00 PM	4	3	1	5	8	5	13
4:15 PM	3	5	1	0	5	4	9
4:30 PM	1	2	2	3	5	3	8
4:45 PM	1	8	2	4	12	3	15
5:00 PM	**3**	**6**	**0**	**1**	**7**	**3**	**10**
5:15 PM	**3**	**2**	**3**	**4**	**6**	**6**	**12**
5:30 PM	**1**	**6**	**1**	**3**	**9**	**2**	**11**
5:45 PM	**4**	**5**	**7**	**2**	**7**	**11**	**18**
PM Peak	**11**	**19**	**11**	**10**	**29** **57%**	**22** **43%**	**51** **0.389**
PM Totals	20	37	17	22	59	37	96
AM & PM Totals	51	46	35	27	73	86	159

LAND USE	TIME OF DAY	DATA SET *Trip Generation Manual, 10th Edition* (Unless noted Otherwise)	OVERRIDE WITH AVERAGE	RATE OR EQUATION FROM: *Trip Generation Manual 10th Edition*	TOTAL TRIPS	ENTERING		EXITING	
						%	TOTAL TRIPS	%	TOTAL TRIPS
Senior Adult Housing-Detached (ITE Code #251)	**Daily**	**Weekday**	❑	**Average Rate= 4.27**	**98**	**50%**	**49**	**50%**	**49**
	AM Peak	**Peak Hour of Adj. Street Traffic, One Hour between 7 & 9 AM**	❑	**ln(T)=0.76ln(X)+0.21**	**13**	**33%**	**4**	**67%**	**9**
Ind. Variable (X) = 23 Dwelling Units	**PM Peak**	**Peak Hour of Adj. Street Traffic, One Hour between 4 & 6 PM**	❑	**ln(T)=0.78ln(X)+0.28**	**15**	**61%**	**9**	**39%**	**6**
TOTALS			❑						
	Daily				**98**		**49**		**49**
	AM Peak				**13**		**4**		**9**
	PM Peak				**15**		**9**		**6**

Carriage Road Property Traffic Analysis - 1/2020

TABLE 1 - SITE TRIP GENERATION SUMMARY

Existing Traffic Conditions - 2 SF homes and Horse Training/Riding(1)

10 boarders/trainers
3 FT employees
15 parent drop-offs
10 operational trips (haul in/out, trailers, deliveries, etc.)
76 Total Trips (38 Entering/Exiting)
(1) Provided by owner of Bayhill Horse Farm

TRAFFIC TRIPS COMPARE

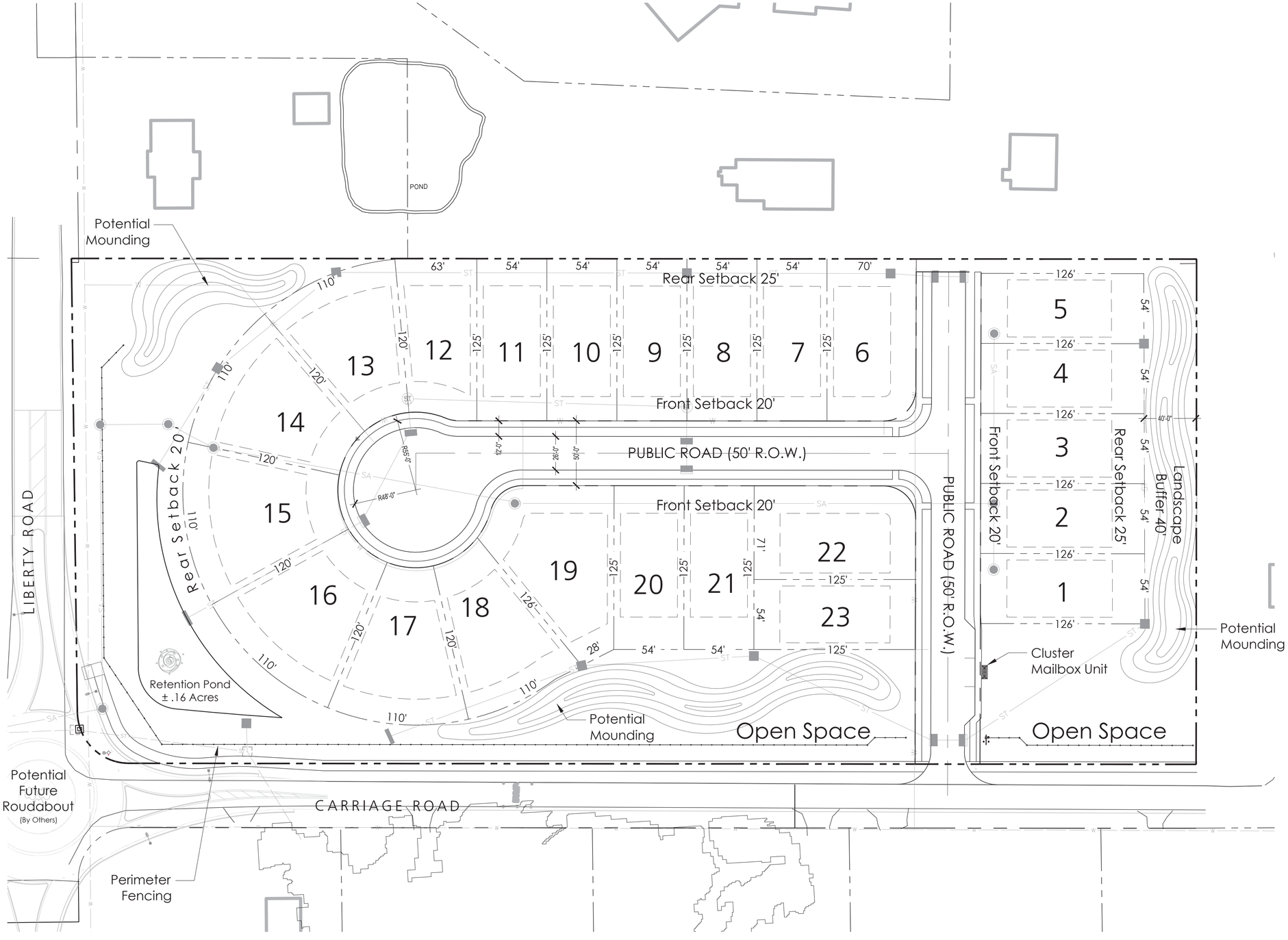
	Existing Use(1	23 Empty Nest(2	Alt - 16 Single Fam(3)
AM Peak	10	6	16
PM Peak	10	9	17

(1) Provided by owner of Bayhill Horse Farm
(2), (3) data provided by Smart Services, Traffic Engineer

PROPERTY TAX COMPARE

	Existing Use	23 Empty Nest(1	16 Single Family(2)
Property Valu	$571,800	$11,500,000	$9,600,000
Annual PT Rev	$7,749	$261,755	$218,509
Students	4	5	28

(1) Assumes home value of $500,000 and 1 student per 5 homes.
(2) Assumes home value of $600,000 and 1.75 students per home.



Location Map: NTS

Site Data:

Current Zoning:	Liberty FR1
Proposed Zoning:	Planned Residential
Total Site Area:	±7.7 Acres
Total Lots:	23
Total Density	± 2.9 du/acre

Lot Information:

Typical Lot Width:	54'
Typical Lot Depth:	120 -125'
Smallest Lot Area:	6,750 S.F.
Largest Lot Area:	10,325 S.F.
Front Setback:	20' Min.
Rear Yard Setback:	20'-25' (see plan)
Side Yard Setback:	5' Min.

Lot Coverage:

Maximum Allowed by Code:	50%
As proposed:	50% or less

Open Space:

Shared Open Space:	2.55 Acres
Less Stormwater Basin:	.16 Acres
Total Open Space:	2.39 Acres

NOTE:
THE PLAN AS SHOWN IS CONCEPTUAL IN NATURE AND IS PROVIDED TO ILLUSTRATE THE DESIRED LAYOUT AND QUALITY OF THE PROJECT. FINAL LAYOUT AND LANDSCAPING ARE SUBJECT TO CHANGE BASED UPON FINAL ENGINEERING.

EXHIBIT C

Carriage Farms - Final Development Plan

City of Powell, Ohio June 10, 2020

3 Pillar Homes Building Dreams

0 40 120 N

Camber Company

G2 PLANNING + DESIGN

E. P. FERRIS AND ASSOCIATES INC
Consulting Civil Engineers and Surveyors