Commissioner John O'Grady • **Commissioner** Paula Brooks • **Commissioner** Marilyn Brown
President

Economic Development & Planning Department
James Schimmer, Director

Technical Review Committee Agenda

Franklin County Engineer's Office
970 Dublin Road
Columbus, OH 43215

June 21, 2016
1:30 p.m.

1. Old Business

A. Board of Zoning Appeals

i. VA-3852 – Brad Fisher

Owner:	Orient (Harrisburg) Dohp XII, LLC C/O Jason Horowitz
Applicant:	JAS GROUP INC.
Township:	Pleasant Township
Site:	6732 Lambert Road (PID #230-000282)
Acreage:	2.18 acres
Zoning:	Neighborhood Commercial (NC) District
Utilities:	Private water and private wastewater
Request:	Requesting a Variance from Sections 670.083(a), 670.083(e), 670.0812(b), 670.083(g) of the Franklin County Zoning Resolution to allow the development of a commercial site that will fail to meet the following requirements: front setback along a primary street, building orientation, parking lot location, and primary entrance on a lot subject to the Smart Growth Overlay in an area zoned Neighborhood Commercial (NC).

2. New Business

A. Planning Commission

i. 672-FP(b) – Matt Brown

Owner:	Rockford Homes, Inc. – Donald Wick
Engineer:	EMH&T – Matt Kirk
Township:	Jefferson Township
Subdivision:	Morrison Farms East Section 2
Site:	8211 Havens Corners Road (PID #170-000673) 8265 Havens Corners Road (PID #170-001336) 3134 Waggoner Road (PID #171-000587)
Acreage:	12.809 acres
Request:	Requesting Final Plat approval to allow the creation of 39 single-family lots and 2 reserves.

ii. ZON-16-03 – Brad Fisher

Owner:	West Broad Building LLC
Applicant:	Daniel McCabe
Agent:	Zach Sanchez
Township:	Franklin Township
Site:	4160 W. Broad Street (PID #140-000457)
Acreage:	1.26 acres
Zoning:	General Industrial (GI) District
Utilities:	Public water and wastewater
Request:	Requesting to rezone from the General Industrial (GI) District to the Community Service (CS) District.

B. Board of Zoning Appeals

i. AP-3856 – Brad Fisher

Owner:	Plumbers & Pipefitters Local #189 – Tim Ely
Applicant:	Bogden Architects Inc. - Emil Bogden
Township:	Clinton Township
Site:	1226-1250 Kinnear Road (PID #130-011663)
Acreage:	4.87 acres
Zoning:	Limited Industrial (LI) District
Utilities:	Public water and wastewater
Request:	Requesting an appeal to allow the expansion of a Non-Conforming Use in an area zoned Limited Industrial (LI).

3. Adjournment of Meeting to July 23, 2016.

Franklin County
Where Government Works

Application for

Zoning Variance

Revised January 1, 2009

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Franklin County, OH

VA

Property Information

Site Address: 6732 Lambert Road	
Parcel ID(s): 230-000282-00	Zoning: NC - Neighborhood Commercial SGO - Smart Growth Overlay
Township: Pleasant	Acreage: 2.18
Water Supply ☐ Public (Central) ☒ Private (Onsite)	Wastewater Treatment ☐ Public (Central) ☒ Private (Onsite)

Applicant Information

Name/Company Name: Orient (Harrisburg) DOHP, LLC	
Address: 9010 Overlook Boulevard Brentwood, Tennessee 37027	
Phone #: 615-370-0670	Fax #
Email	

Property Owner Information

Name/Company Name: JAS Group, LTD. c/o John Messmore	
Address: 3540 La Rochell Drive Columbus, Ohio 43221	
Phone #: 614-457-5827	Fax #
Email	

Agent Information (if applicable)

Name/Company Name: Jason Horowitz, GBT Realty Corporation	
Address: 9010 Overlook Boulevard Brentwood, Tennessee 37027	
Phone #: 615-370-0670	Fax #
Email: jhorowitz@gbtrealty.com	

Staff Use Only

Case #: VA-3852

Date filed: 3/29/2016

Fee paid: 650.00

Receipt #: 16-00702

Received by: KS

Hearing date: 7/18/2016

Zoning Compliance: ZC-15-4556

Document Submission

The following documents must accompany this application:

- ☑ Completed application
- ☑ Fee Payment (Checks only)
- ☑ Auditor's map (8 ½ " x 11")
- ☑ Site Map (max 11" x 17")
- ☑ Covenants and deed
- ☑ Notarized signatures
- ☑ Proof of water & waste water supply

Please see the Application Instructions for complete details

Case #
VA-3852

Variance(s) Requested	
Section	670.083(a) Front Setback along a Primary Street
Description	Harrisburg Pike is considered the Primary Street although the majority of the lot frontage is along Lambert Road.
Section	670.083(e) Building Orientation
Description	Building is parallel to Lambert Road.
Section	670.0812(b) Parking Lot Location
Description	The lot is very narrow and with the location of the building being dictated by stormwater pond discharge, septic system areas, and zoning requirements

Describe the project
there is not enough room on the north side of the building to provide 50% of the required parking. 80% of the parking has been located
on the west side of the building which is the rear yard based on Harrisburg Pike being considered the primary street.
670.083(g) Entrance - a primary building frontage shall incorporate a primary entrance door.
The building entrance has been located on the south side along Lambert Road. Glass windows and architectural
elements have been added to the sides of the building facing Harrisburg Pike and Lambert Road.

NOTE: To receive a variance, you must meet <u>all</u> the variance requirements in Section 810.04 of the Franklin County Zoning Resolution. Your answers to the following questions will help the Board of Zoning Appeals determine whether you meet the requirements for a variance. If you don't answer the questions, we will consider your application incomplete.

1. Are there special conditions or circumstances applying to the property involved that do not generally apply to other properties in the same zoning district.

   Lot dimensions and geometry severely limit the layout options on site. The property is bounded by roadways on three sides and by the B&O railway line on the other. The need for onsite septic, public well, stormwater detention, and groundwater recharge facilities further limits the available space for building and parking area. The location of the detention system is driven by topography and the septic system must be located in an area of acceptable soils.

2. That a literal interpretation of the requirements of this Zoning Resolution would deprive the applicant of rights commonly enjoyed by other properties in the same Zoning District under the terms of the Zoning Resolution.

   A literal interpretation of the Zoning Resolution would prohibit the application from developing this property due to the extent of the existing hardships. Dollar General uses a prototype building and a set of site design guidelines that have been optimized for ease of use and traffic circulation. While the site layout varies from the Dollar General prototype, it has been designed to meet all other guidelines as well as all county and state regulations where possible.

3. That the special conditions and circumstances, listed under question #1, do not result from any actions of the applicant.

   These conditions and circumstances are the result of the existing topography, lot dimensions, soil types, and absence of public water and sewer. The location of the access drive on Lambert Road is dictated by existing utility poles and spacing from the intersection with Harrisburg Pike and the B&O rail line. The lot has 97' of frontage along Harriburg Pike and 633' of frontage along Lambert Road. There is not enough frontage along Harrisburg pike to allow for any of Dollar General's prototype buildings.

Case # VA-3852

4. That approving the variance requested will not grant the applicant any special privilege that is denied by this Zoning Resolution to other lands or structures in the same Zoning District.

Granting these variances will allow this project to move forward which will be a positive addition to the area. The development as designed will not appear out of place in the surrounding area. The store has been designed as a "corner entry" building with architectural upgrades due to the lot frontage on multiple roadways.

5. Would granting the variance adversely affect the health or safety of persons residing or working in the vicinity of the proposed development, be materially detrimental to the public welfare, or injurious to private property or public improvements in the vicinity?

No adverse health and safety impacts are associated with these variances.

6. Can there be any beneficial use of the property without the variance?

Without these variances the Dollar General prototype building and required parking will not fit within the per-code developable area.

7. How substantial is the variance? *(i.e. 10 feet vs. 100 feet - Required frontage vs. proposed)*

Front Setback Variance: 352' Building Orientation: 33 degrees Parking Setback: 100%

8. Would the essential character of the neighborhood be substantially altered or would the adjoining properties suffer substantial harm as a result of the variance?

No, the surrounding areas are not heavily developed. Given the proximity to US 71, this development will not appear out of place.

9. How would the variance adversely affect the delivery of governmental services?
(e.g., water, sewer, garbage, fire, police - Verification from local authorities – i.e. fire might be required)

Water and sewer are provided onsite. Drive aisles have been designed to accommodate fire and garbage collection vehicles in addition to Dollar General's delivery trucks (WB-67 semi).

10. Did the applicant purchase the property with knowledge of the zoning restrictions?

The property is currently under contract. The applicant is aware of the zoning restrictions and has been in discussion with Franklin County Planning during the design and permitting process.

11. Could the applicant's predicament feasibly be obtained through some method other than a variance?

There are no other feasible options for building or parking placement that allow all other site criteria to be met.

12. Would the spirit and intent behind the zoning requirement be observed and would substantial justice be done by granting the variance?

Yes. The proposed design provides adequate facilities to meet all other County and State ordinances and provides a safe and convenient shopping experience for Dollar General customers.

9,100 Square Foot Facility - Prototype "E"
70'-3" Front x 130'-10" Deep

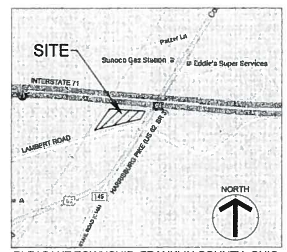
Dollar General Corporation Retail Store

Orient, Ohio

LAMBERT ROAD AT HARRISBURG PIKE (US 62, SR 3)
6732 LAMBERT ROAD
Tax Parcel ID: 230-000282-00

SCHEDULE OF DRAWINGS

DRAWING NUMBER	REVISION DATE	DRAWING TITLE
C0 1		COVER SHEET
C1.0A		EXISTING CONDITIONS SURVEY 1 OF 2
C1 0B		EXISTING CONDITIONS SURVEY 2 OF 2
C2 1		SITE LAYOUT AND UTILITY PLAN
C3 1		GRADING AND DRAINAGE PLAN
C3 2		EROSION AND SEDIMENT CONTROL PLAN
C4 1		SITE DETAILS
C4 2		SITE DETAILS
C4 3		SITE DETAILS
L2 1		LANDSCAPE PLAN



PLEASANT TOWNSHIP, FRANKLIN COUNTY, OHIO

VICINITY MAP
NOT TO SCALE

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Franklin County, OH

SIGNATURES BELOW SIGNIFY ONLY CONCURRENCE WITH THE GENERAL PURPOSE AND GENERAL LOCATION OF THE PROJECT. ALL TECHNICAL DETAILS REMAIN THE RESPONSIBILITY OF THE ENGINEER PREPARING THE PLAN.

FRANKLIN COUNTY ENGINEER

SIGNATURE ____________ DATE ______

FRANKLIN COUNTY CHIEF DEPUTY ENGINEER

SIGNATURE ____________ DATE ______

SURVEYOR
GPD Group
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
520 South Main Street, Suite 2531
Akron, OH 44311
Contact: Jim Karing
Phone: (330) 572-2100
Fax: (330) 572-2101

ARCHITECT
GPD Group
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
520 South Main Street, Suite 2531
Akron, OH 44311
Contact: Mike Rubino
Phone: (330) 572-2100
Fax: (330) 572-2101

DEVELOPER
ORIENT (HARRISBURG) DOHP, LLC
9010 Overlook Boulevard
Brentwood, Tennessee 37027
Development Contact: Jason Horowitz
Email: jhorowitz@gbtrealty.com
Construction Contact: Zach Rogers
Email: zrogers@gbtrealty.com
Phone: (615)370-0670
Fax: (615)373-3111

CIVIL ENGINEER
GRESHAM SMITH AND PARTNERS
1400 Nashville City Center, 511 Union Street
Nashville, Tennessee 37219
Contact: Joe Johnston
Phone: (615)770-8204
Fax: (866)712-3370
Email: joe_johnston@gspnet.com

811
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1400 Nashville City Center
511 Union Street
Nashville, TN 37219
615.770.8100
WWW.GSPNET.COM

DOLLAR GENERAL

ORIENT (HARRISBURG) DOHP, LLC
9010 Overlook Boulevard
Brentwood, TN 37027
615-370-0670

6732 LAMBERT ROAD
PLEASANT TOWNSHIP
FRANKLIN COUNTY, OHIO 43146

STATE OF OHIO
MICHAEL DUANE HUNKLER
6/7/16

Revision		
No	Date	Description

COVER SHEET

C0.1

PROJECT: 40788 11
DATE: 06 09 16

ALTA/ACSM LAND TITLE SURVEY

PART OF V.M.S 947
TOWNSHIP OF PLEASANT
COUNTY OF FRANKLIN
STATE OF OHIO

TITLE DESCRIPTION:

SCHEDULE B - SECTION II:

LOCATION MAP

REFERENCES:

1. COUNTY TAX MAP.
2. DEEDS.
3. PLATS.
4. TITLE REPORT

UTILITY OWNER LIST:

GAS:

ELECTRIC:

WATER:

SANITARY SEWER:

STORM SEWER:

TELEPHONE:

GENERAL NOTES:

1. THE DESCRIBED REAL ESTATE IS IN A ZONE X, AS INDICATED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S NATIONAL FLOOD INSURANCE PROGRAM PANEL NO. 39049C0385K, EFFECTIVE DATE OF JUNE 17, 2008.

2. THE EXISTENCE AND/OR LOCATION OF UTILITIES WERE OBTAINED BY FIELD CHECKS AND RESEARCH OF AVAILABLE RECORDS, AS REQUIRED BY O.R.C. 153.64. IT IS BELIEVED THAT THEY ARE ESSENTIALLY CORRECT; THE SURVEYOR MAKES NO GUARANTEE TO THEIR ACCURACY OR COMPLETENESS. EXACT UTILITY LOCATIONS MUST BE FIELD VERIFIED AT THE TIME OF CONSTRUCTION.

3. THIS SURVEY IS NOT FOR THE PURPOSE OF LOCATING OR IDENTIFYING ANY POLLUTANTS OR HAZARDOUS MATERIALS ON OR UNDER THE PROPERTY SHOWN HEREON.

4. NO OBSERVED EVIDENCE OF CURRENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS.

5. NO OBSERVED EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL.

6. THE 2.1783 ACRE PARCEL HAS ACCESS TO LAMBERT RD. A PUBLIC ROAD ALONG ITS SOUTH SIDE.

ZONING:

NC - NEIGHBORHOOD COMMERCIAL
Building setbacks:
North 20'
South 10' min – max 20'
East 25' max(variance required)
West 20'

Information not provided by Title Insurer.

CERTIFICATION:

TO ORIENT DOHP XII, LLC, FIRST TENNESSEE BANK NATIONAL ASSOCIATION AS AGENT, PANAMINT TITLE AGENCY, LTD., REPUBLIC TITLE OF TEXAS, INC., AND FIRST AMERICAN TITLE INSURANCE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 5, 6, 7(a), 7(b1), 7(c), 8, 9, 11(b), 13, 17, and 18 OF TABLE A THEREOF. FIELD WORK WAS COMPLETED ON JULY 22ND, 2015.

STEVEN L. MULLANEY, PROFESSIONAL SURVEYOR NO. 7900 DATE

GPD GROUP
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101

REV	DATE	DESCRIPTION

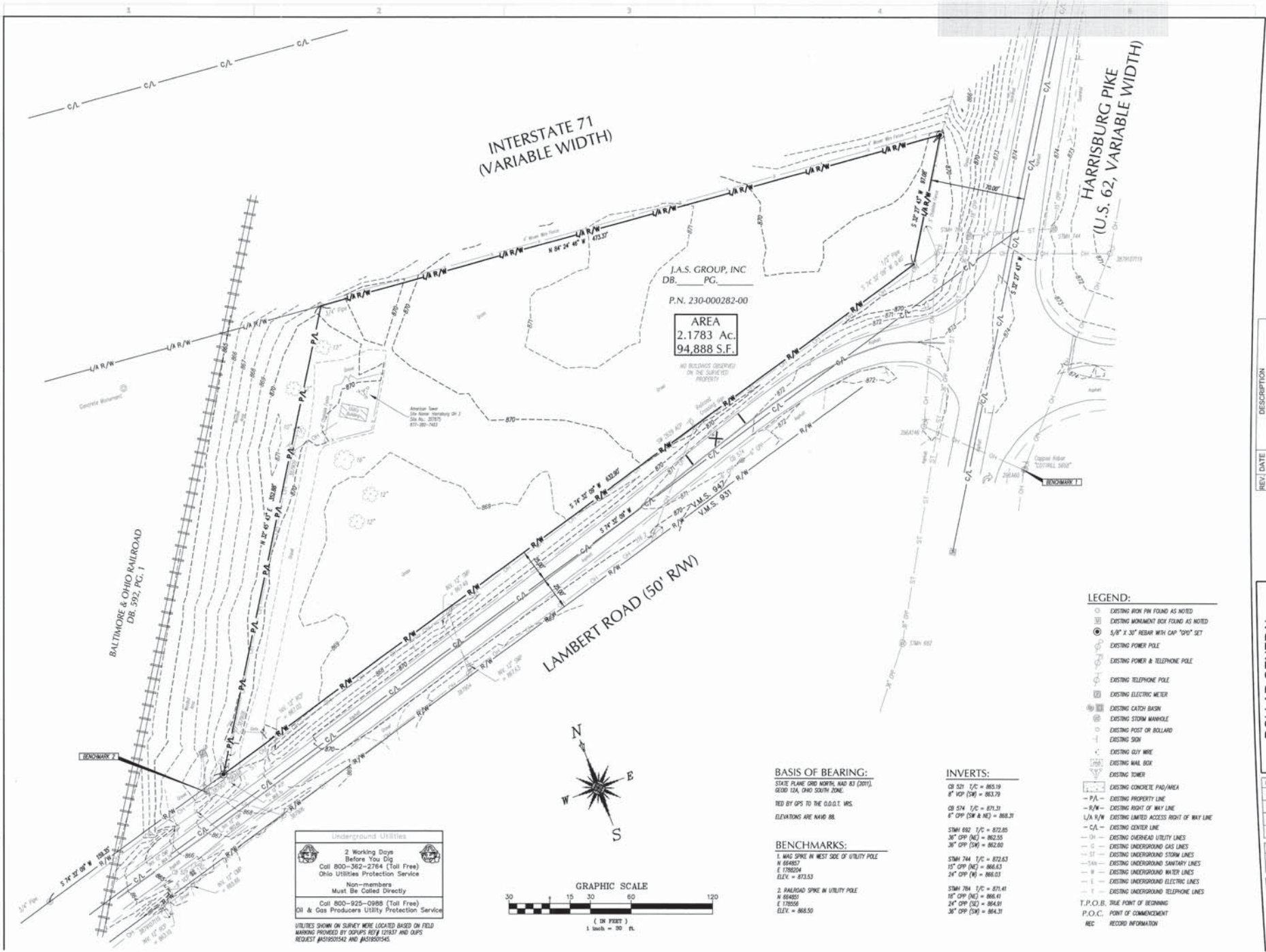
DOLLAR GENERAL
HARRISBURG PIKE & LAMBERT RD.
PLEASANT, OHIO 43146

ALTA/ACSM
LAND TITLE SURVEY

ISSUED FOR:	
PERMIT	-
BID	-
CONSTRUCTION	-
RECORD	-

PROJECT MANAGER	DESIGNER
SLM	JEK

JOB NO.
2015066.19



BASIS OF BEARING:

STATE PLANE GRID NORTH, NAD 83 (2011), GEOID 12A, OHIO SOUTH ZONE.

TIED BY GPS TO THE O.D.O.T. VRS.

ELEVATIONS ARE NAVD 88.

BENCHMARKS:

1. MAG SPIKE IN WEST SIDE OF UTILITY POLE
N 684857
E 1788204
ELEV. = 873.53

2. RAILROAD SPIKE IN UTILITY POLE
N 684851
E 178556
ELEV. = 868.50

INVERTS:

CB 521 T/C = 865.19
8" VCP (SW) = 863.79

CB 574 T/C = 871.31
6" CPP (SW & NE) = 868.31

STMH 692 T/C = 872.85
36" CPP (NE) = 862.55
36" CPP (SW) = 862.00

STMH 744 T/C = 872.63
15" CPP (NE) = 866.63
24" CPP (W) = 866.03

STMH 784 T/C = 871.41
18" CPP (NE) = 866.41
24" CPP (SE) = 864.91
36" CPP (SW) = 864.31

LEGEND:

- EXISTING IRON PIN FOUND AS NOTED
- EXISTING MONUMENT BOX FOUND AS NOTED
- 5/8" X 30" REBAR WITH CAP "GPD" SET
- EXISTING POWER POLE
- EXISTING POWER & TELEPHONE POLE
- EXISTING TELEPHONE POLE
- EXISTING ELECTRIC METER
- EXISTING CATCH BASIN
- EXISTING STORM MANHOLE
- EXISTING POST OR BOLLARD
- EXISTING SIGN
- EXISTING GUY WIRE
- EXISTING MAIL BOX
- EXISTING TOWER
- EXISTING CONCRETE PAD/AREA
- P/L — EXISTING PROPERTY LINE
- R/W — EXISTING RIGHT OF WAY LINE
- L/A R/W — EXISTING LIMITED ACCESS RIGHT OF WAY LINE
- C/L — EXISTING CENTER LINE
- OH — EXISTING OVERHEAD UTILITY LINES
- G — EXISTING UNDERGROUND GAS LINES
- ST — EXISTING UNDERGROUND STORM LINES
- SAN — EXISTING UNDERGROUND SANITARY LINES
- W — EXISTING UNDERGROUND WATER LINES
- E — EXISTING UNDERGROUND ELECTRIC LINES
- T — EXISTING UNDERGROUND TELEPHONE LINES
- T.P.O.B. TRUE POINT OF BEGINNING
- P.O.C. POINT OF COMMENCEMENT
- REC RECORD INFORMATION

GPD GROUP
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 Fax 330.572.2101

REV.	DATE	DESCRIPTION

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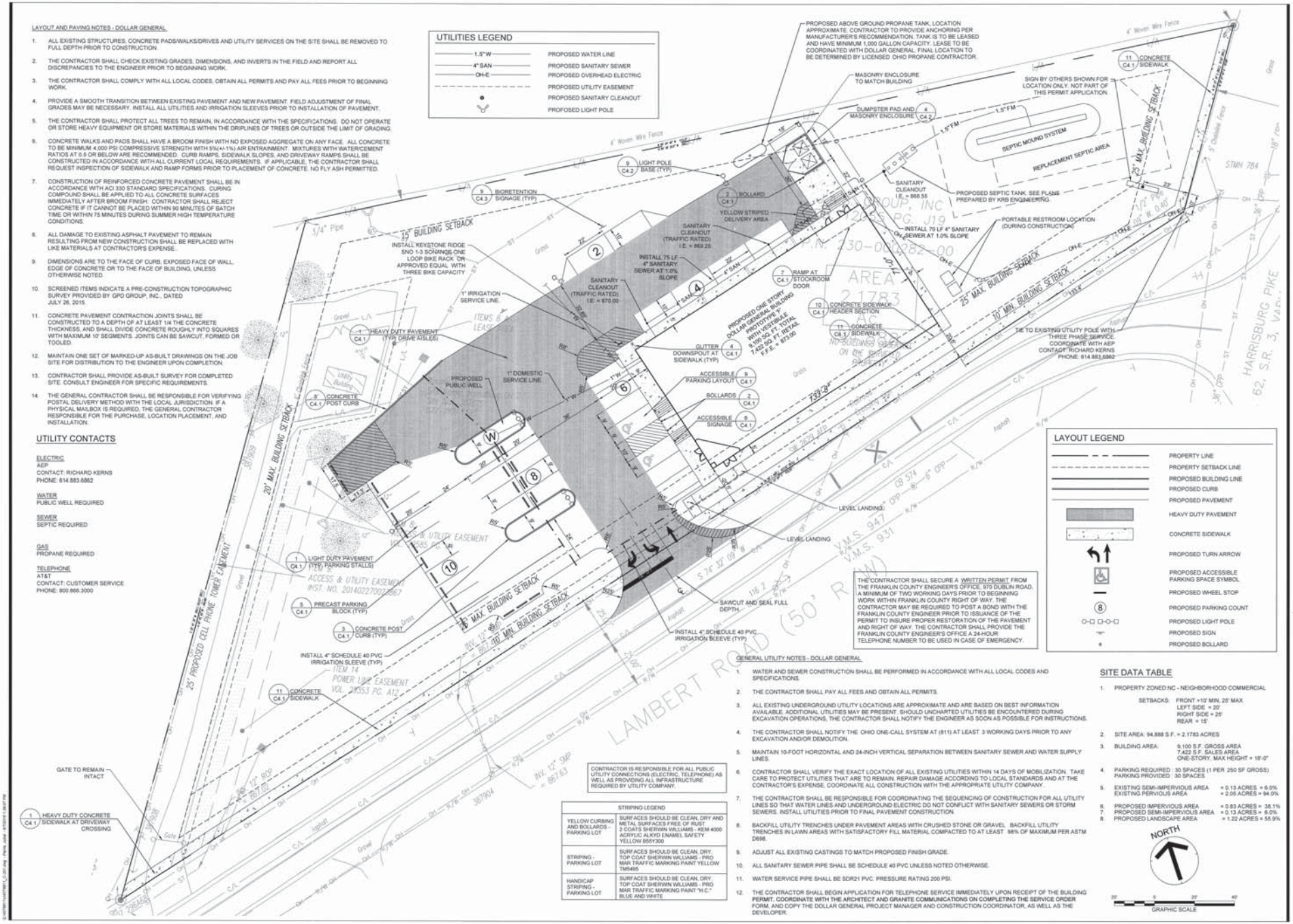
PLEASANT, OHIO 43146

ALTA/ACSM
LAND TITLE SURVEY

ISSUED FOR:	
PERMIT	-
BID	-
CONSTRUCTION	-
RECORD	-

PROJECT MANAGER	DESIGNER
SLM	JEK

JOB NO.
2015066.19



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ORIENT (HARRISBURG) DOHP, LLC

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Brentwood, TN 37027
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PLEASANT TOWNSHIP
FRANKLIN COUNTY, OHIO 43146

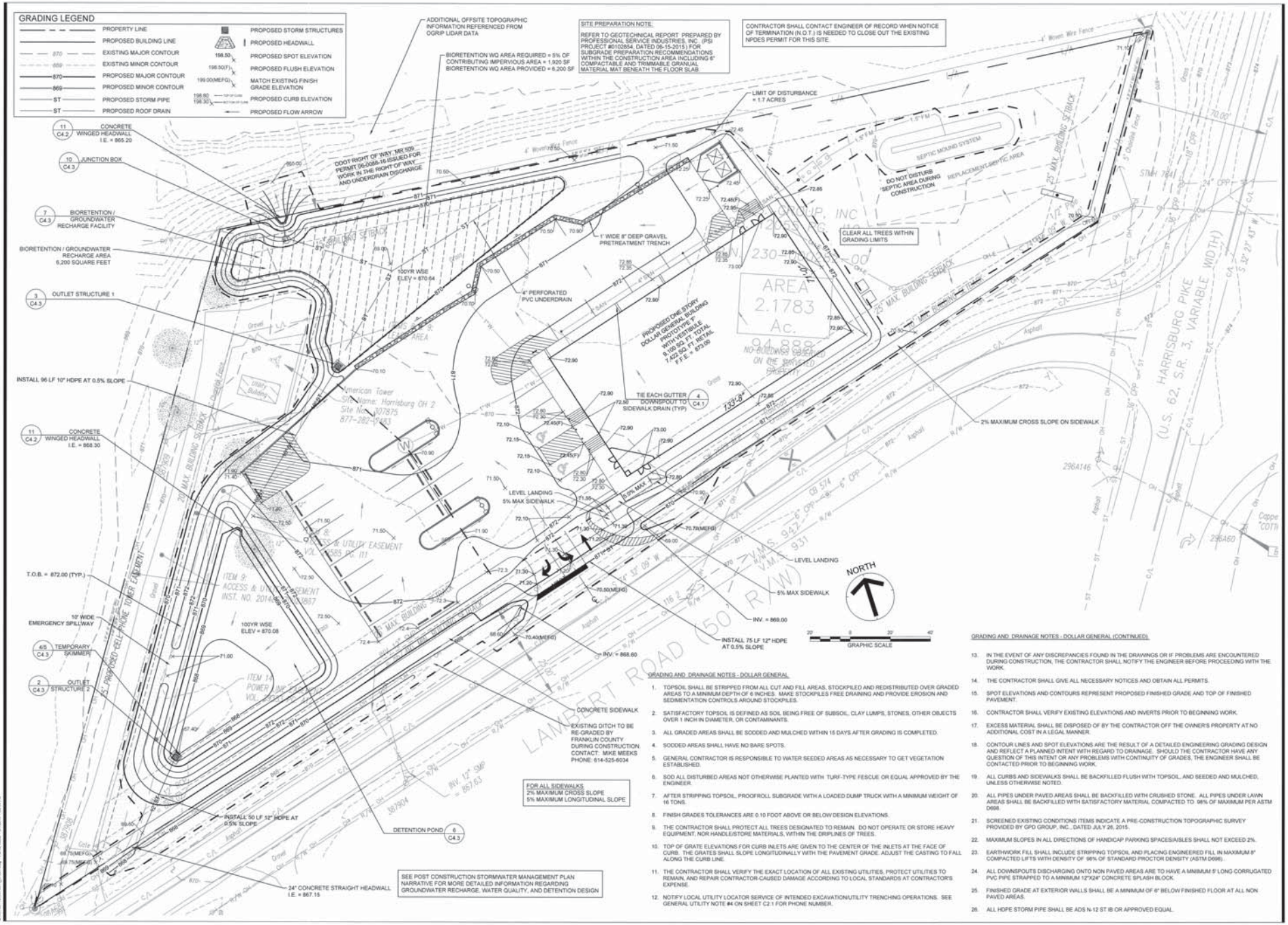
6/7/16

Revision		
No.	Date	Description

SITE LAYOUT & UTILITY PLAN

C2.1

PROJECT: 40788.11
DATE: 06.08.16



GRADING AND DRAINAGE NOTES - DOLLAR GENERAL

1. TOPSOIL SHALL BE STRIPPED FROM ALL CUT AND FILL AREAS, STOCKPILED AND REDISTRIBUTED OVER GRADED AREAS TO A MINIMUM DEPTH OF 6 INCHES. MAKE STOCKPILES FREE DRAINING AND PROVIDE EROSION AND SEDIMENTATION CONTROLS AROUND STOCKPILES.
2. SATISFACTORY TOPSOIL IS DEFINED AS SOIL BEING FREE OF SUBSOIL, CLAY LUMPS, STONES, OTHER OBJECTS OVER 1 INCH IN DIAMETER, OR CONTAMINANTS.
3. ALL GRADED AREAS SHALL BE SODDED AND MULCHED WITHIN 15 DAYS AFTER GRADING IS COMPLETED.
4. SODDED AREAS SHALL HAVE NO BARE SPOTS.
5. GENERAL CONTRACTOR IS RESPONSIBLE TO WATER SEEDED AREAS AS NECESSARY TO GET VEGETATION ESTABLISHED.
6. SOD ALL DISTURBED AREAS NOT OTHERWISE PLANTED WITH TURF-TYPE FESCUE OR EQUAL APPROVED BY THE ENGINEER.
7. AFTER STRIPPING TOPSOIL, PROOFROLL SUBGRADE WITH A LOADED DUMP TRUCK WITH A MINIMUM WEIGHT OF 16 TONS.
8. FINISH GRADES TOLERANCES ARE 0.10 FOOT ABOVE OR BELOW DESIGN ELEVATIONS.
9. THE CONTRACTOR SHALL PROTECT ALL TREES DESIGNATED TO REMAIN. DO NOT OPERATE OR STORE HEAVY EQUIPMENT, NOR HANDLE/STORE MATERIALS, WITHIN THE DRIPLINES OF TREES.
10. TOP OF GRATE ELEVATIONS FOR CURB INLETS ARE GIVEN TO THE CENTER OF THE INLETS AT THE FACE OF CURB. THE GRATES SHALL SLOPE LONGITUDINALLY WITH THE PAVEMENT GRADE. ADJUST THE CASTING TO FALL ALONG THE CURB LINE.
11. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES, PROTECT UTILITIES TO REMAIN, AND REPAIR CONTRACTOR-CAUSED DAMAGE ACCORDING TO LOCAL STANDARDS AT CONTRACTOR'S EXPENSE.
12. NOTIFY LOCAL UTILITY LOCATOR SERVICE OF INTENDED EXCAVATION/UTILITY TRENCHING OPERATIONS. SEE GENERAL UTILITY NOTE #4 ON SHEET C2.1 FOR PHONE NUMBER.

GRADING AND DRAINAGE NOTES - DOLLAR GENERAL (CONTINUED)

13. IN THE EVENT OF ANY DISCREPANCIES FOUND IN THE DRAWINGS OR IF PROBLEMS ARE ENCOUNTERED DURING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
14. THE CONTRACTOR SHALL GIVE ALL NECESSARY NOTICES AND OBTAIN ALL PERMITS.
15. SPOT ELEVATIONS AND CONTOURS REPRESENT PROPOSED FINISHED GRADE AND TOP OF FINISHED PAVEMENT.
16. CONTRACTOR SHALL VERIFY EXISTING ELEVATIONS AND INVERTS PRIOR TO BEGINNING WORK.
17. EXCESS MATERIAL SHALL BE DISPOSED OF BY THE CONTRACTOR OFF THE OWNER'S PROPERTY AT NO ADDITIONAL COST IN A LEGAL MANNER.
18. CONTOUR LINES AND SPOT ELEVATIONS ARE THE RESULT OF A DETAILED ENGINEERING GRADING DESIGN AND REFLECT A PLANNED INTENT WITH REGARD TO DRAINAGE. SHOULD THE CONTRACTOR HAVE ANY QUESTION OF THIS INTENT OR ANY PROBLEMS WITH CONTINUITY OF GRADES, THE ENGINEER SHALL BE CONTACTED PRIOR TO BEGINNING WORK.
19. ALL CURBS AND SIDEWALKS SHALL BE BACKFILLED FLUSH WITH TOPSOIL, AND SEEDED AND MULCHED, UNLESS OTHERWISE NOTED.
20. ALL PIPES UNDER PAVED AREAS SHALL BE BACKFILLED WITH CRUSHED STONE. ALL PIPES UNDER LAWN AREAS SHALL BE BACKFILLED WITH SATISFACTORY MATERIAL COMPACTED TO 98% OF MAXIMUM PER ASTM D698.
21. SCREENED EXISTING CONDITIONS ITEMS INDICATE A PRE-CONSTRUCTION TOPOGRAPHIC SURVEY PROVIDED BY GPD GROUP, INC., DATED JULY 26, 2015.
22. MAXIMUM SLOPES IN ALL DIRECTIONS OF HANDICAP PARKING SPACES/AISLES SHALL NOT EXCEED 2%.
23. EARTHWORK FILL SHALL INCLUDE STRIPPING TOPSOIL AND PLACING ENGINEERED FILL IN MAXIMUM 8" COMPACTED LIFTS WITH DENSITY OF 98% OF STANDARD PROCTOR DENSITY (ASTM D698).
24. ALL DOWNSPOUTS DISCHARGING ONTO NON PAVED AREAS ARE TO HAVE A MINIMUM 5' LONG CORRUGATED PVC PIPE STRAPPED TO A MINIMUM 12"X24" CONCRETE SPLASH BLOCK.
25. FINISHED GRADE AT EXTERIOR WALLS SHALL BE A MINIMUM OF 6" BELOW FINISHED FLOOR AT ALL NON PAVED AREAS.
26. ALL HDPE STORM PIPE SHALL BE ADS N-12 ST IB OR APPROVED EQUAL.

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DOLLAR GENERAL

ORIENT (HARRISBURG) DOHP, LLC
9010 Overlook Boulevard
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615-370-0670

6732 LAMBERT ROAD
PLEASANT TOWNSHIP
FRANKLIN COUNTY, OHIO 43146

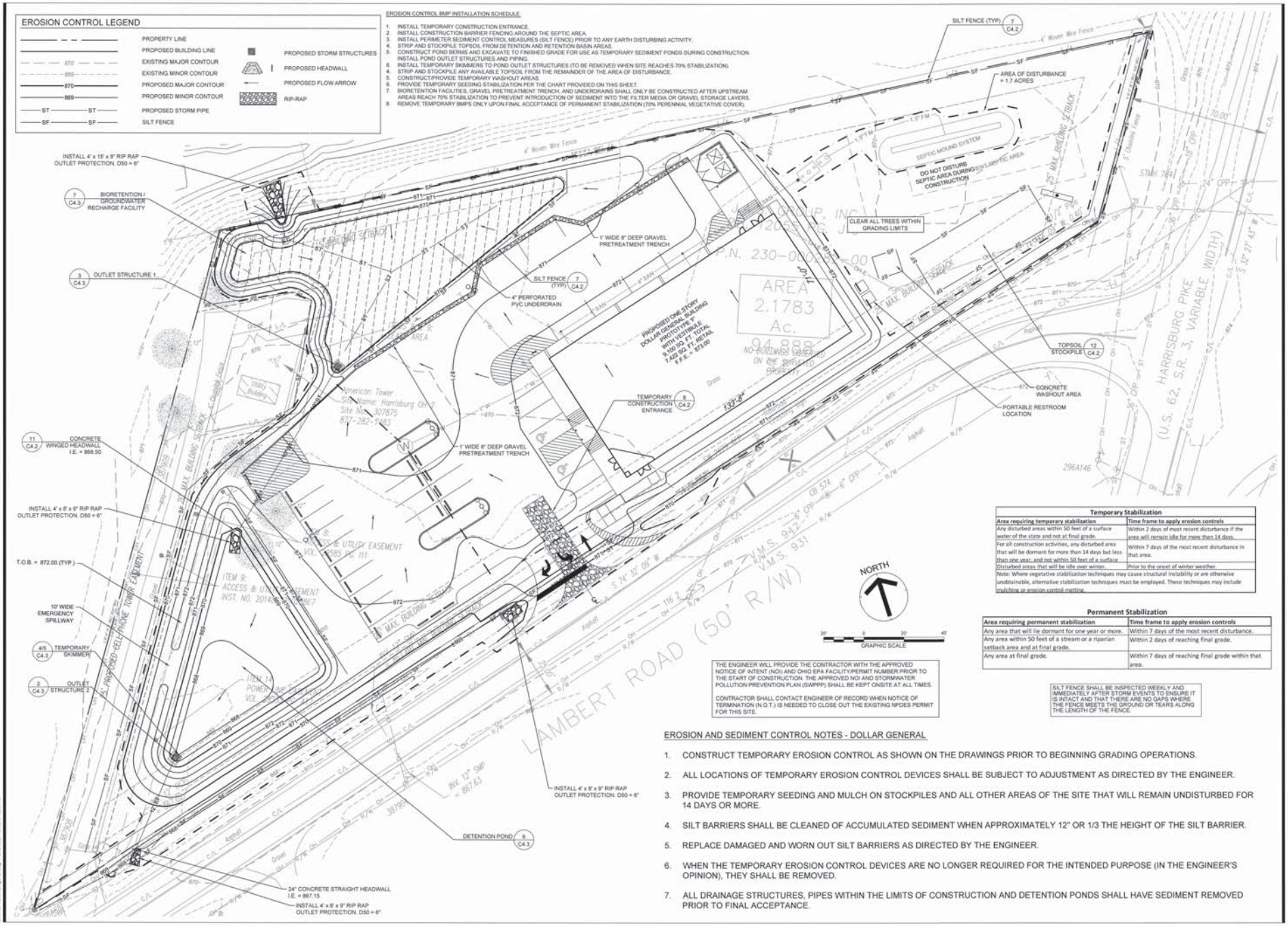
6/7/16

Revision		
No.	Date	Description

GRADING & DRAINAGE PLAN

C3.1

PROJECT: 40788.11
DATE: 06.06.16



Temporary Stabilization	
Area requiring temporary stabilization	**Time frame to apply erosion controls**
Any disturbed areas within 50 feet of a surface water of the state and not at final grade.	Within 2 days of most recent disturbance if the area will remain idle for more than 14 days.
For all construction activities, any disturbed area that will be dormant for more than 14 days but less than one year, and not within 50 feet of a surface.	Within 7 days of the most recent disturbance in that area.
Disturbed areas that will be idle over winter.	Prior to the onset of winter weather.
Note: Where vegetative stabilization techniques may cause structural instability or are otherwise unobtainable, alternative stabilization techniques must be employed. These techniques may include mulching or erosion control matting.	

Permanent Stabilization	
Area requiring permanent stabilization	**Time frame to apply erosion controls**
Any area that will lie dormant for one year or more.	Within 7 days of the most recent disturbance.
Any area within 50 feet of a stream or a riparian setback area and at final grade.	Within 2 days of reaching final grade.
Any area at final grade.	Within 7 days of reaching final grade within that area.

THE ENGINEER WILL PROVIDE THE CONTRACTOR WITH THE APPROVED NOTICE OF INTENT (NOI) AND OHIO EPA FACILITY/PERMIT NUMBER PRIOR TO THE START OF CONSTRUCTION. THE APPROVED NOI AND STORMWATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE KEPT ONSITE AT ALL TIMES.

CONTRACTOR SHALL CONTACT ENGINEER OF RECORD WHEN NOTICE OF TERMINATION (N.O.T.) IS NEEDED TO CLOSE OUT THE EXISTING NPDES PERMIT FOR THIS SITE.

SILT FENCE SHALL BE INSPECTED WEEKLY AND IMMEDIATELY AFTER STORM EVENTS TO ENSURE IT IS INTACT AND THAT THERE ARE NO GAPS WHERE THE FENCE MEETS THE GROUND OR TEARS ALONG THE LENGTH OF THE FENCE.

EROSION AND SEDIMENT CONTROL NOTES - DOLLAR GENERAL

1. CONSTRUCT TEMPORARY EROSION CONTROL AS SHOWN ON THE DRAWINGS PRIOR TO BEGINNING GRADING OPERATIONS.
2. ALL LOCATIONS OF TEMPORARY EROSION CONTROL DEVICES SHALL BE SUBJECT TO ADJUSTMENT AS DIRECTED BY THE ENGINEER.
3. PROVIDE TEMPORARY SEEDING AND MULCH ON STOCKPILES AND ALL OTHER AREAS OF THE SITE THAT WILL REMAIN UNDISTURBED FOR 14 DAYS OR MORE.
4. SILT BARRIERS SHALL BE CLEANED OF ACCUMULATED SEDIMENT WHEN APPROXIMATELY 12" OR 1/3 THE HEIGHT OF THE SILT BARRIER.
5. REPLACE DAMAGED AND WORN OUT SILT BARRIERS AS DIRECTED BY THE ENGINEER.
6. WHEN THE TEMPORARY EROSION CONTROL DEVICES ARE NO LONGER REQUIRED FOR THE INTENDED PURPOSE (IN THE ENGINEER'S OPINION), THEY SHALL BE REMOVED.
7. ALL DRAINAGE STRUCTURES, PIPES WITHIN THE LIMITS OF CONSTRUCTION AND DETENTION PONDS SHALL HAVE SEDIMENT REMOVED PRIOR TO FINAL ACCEPTANCE.

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1400 Nashville City Center
511 Union Street
Nashville, TN 37219
615.770.8100
WWW.GSPNET.COM

DOLLAR GENERAL

ORIENT (HARRISBURG) DOHP, LLC

9010 Overlook Boulevard
Brentwood, TN 37027
615-370-0670

6732 LAMBERT ROAD
PLEASANT TOWNSHIP
FRANKLIN COUNTY, OHIO 43146

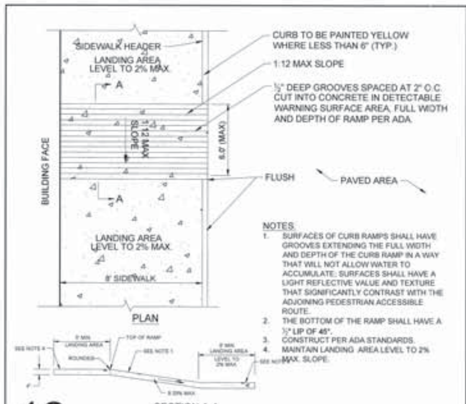
STATE OF OHIO
MICHAEL BOANE HUDDLE
E-68958
PROFESSIONAL ENGINEER
6/7/16

Revision		
No	Date	Description

EROSION AND SEDIMENT CONTROL PLAN

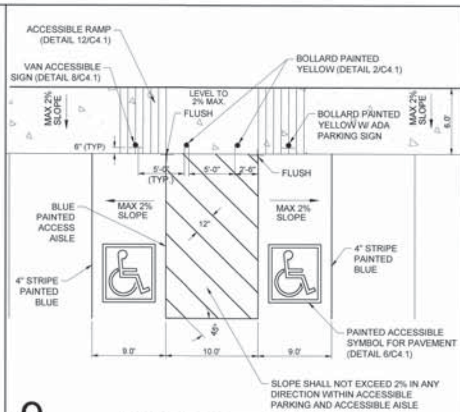
C3.2

PROJECT: 40788.11
DATE: 06.08.16


SIDEWALK HEADER
LANDING AREA LEVEL TO 2% MAX.
CURB TO BE PAINTED YELLOW WHERE LESS THAN 6" (TYP.)
1:12 MAX SLOPE
½" DEEP GROOVES SPACED AT 2" O.C. CUT INTO CONCRETE IN DETECTABLE WARNING SURFACE AREA, FULL WIDTH AND DEPTH OF RAMP PER ADA.
BUILDING FACE
1:12 MAX SLOPE
6.0' (MAX)
FLUSH
PAVED AREA
LANDING AREA LEVEL TO 2% MAX.
8' SIDEWALK
PLAN
SECTION A-A

NOTES:
1. SURFACES OF CURB RAMPS SHALL HAVE GROOVES EXTENDING THE FULL WIDTH AND DEPTH OF THE CURB RAMP IN A WAY THAT WILL NOT ALLOW WATER TO ACCUMULATE; SURFACES SHALL HAVE A LIGHT REFLECTIVE VALUE AND TEXTURE THAT SIGNIFICANTLY CONTRAST WITH THE ADJOINING PEDESTRIAN ACCESSIBLE ROUTE.
2. THE BOTTOM OF THE RAMP SHALL HAVE A ½" LIP OF 45°.
3. CONSTRUCT PER ADA STANDARDS.
4. MAINTAIN LANDING AREA LEVEL TO 2% MAX. SLOPE.

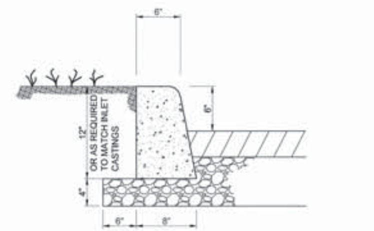
12 ACCESSIBLE RAMP
N.T.S.


ACCESSIBLE RAMP (DETAIL 12/C4.1)
VAN ACCESSIBLE SIGN (DETAIL 8/C4.1)
BOLLARD PAINTED YELLOW (DETAIL 2/C4.1)
LEVEL TO 2% MAX.
FLUSH
BOLLARD PAINTED YELLOW W/ ADA PARKING SIGN
MAX 2% SLOPE
6" (TYP)
5'-0" (TYP.)
5'-0"
2'-6"
FLUSH
BLUE PAINTED ACCESS AISLE
MAX 2% SLOPE
12"
4" STRIPE PAINTED BLUE
PAINTED ACCESSIBLE SYMBOL FOR PAVEMENT (DETAIL 6/C4.1)
9.0'
10.0'
9.0'
SLOPE SHALL NOT EXCEED 2% IN ANY DIRECTION WITHIN ACCESSIBLE PARKING AND ACCESSIBLE AISLE

9 ACCESSIBLE PARKING LAYOUT
N.T.S.

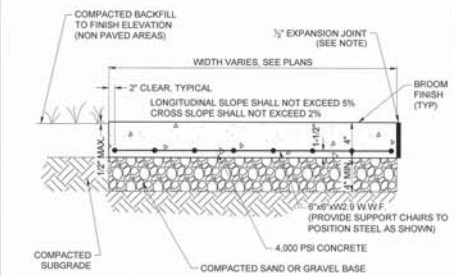
4"x4" GRID PROVIDED FOR LAYOUT OF SYMBOL. PROVIDE PAINT COLORS IN ACCORDANCE WITH ADA AND LOCAL REQUIREMENTS (TYPICALLY WHITE SYMBOL ON BLUE BACKGROUND INSIDE WHITE BORDER).

6 PAINTED ACCESSIBLE SYMBOL FOR PAVEMENT
N.T.S.



NOTES:
1. CURB AND GUTTER SHALL BE CONSTRUCTED IN 10 FOOT LENGTHS, OR EXTRUDED AND THEN SAWCUT AT 10 FOOT INTERVALS TO A DEPTH OF 1.75".
2. ½" EXPANSION JOINTS SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 50 FEET, AT THE ENDS OF RETURNS, AND AT ALL POINTS WHERE THE NEW CURB AND GUTTER ABUTS OTHER CONCRETE STRUCTURES OR INLET CASTINGS.
3. 10' LONG TRANSITIONS SHALL BE PROVIDED BETWEEN NORMAL GUTTER AND PITCHED GUTTER, UNLESS OTHERWISE NOTED ON THE PAVING PLANS.
4. ALL CONCRETE SHALL BE 4,000 PSI (TYP.)
5. CURB HEIGHT TO BE 6" UNLESS OTHERWISE NOTED ON GRADING PLAN, SHEET C3.1

3 CONCRETE POST CURB
N.T.S.

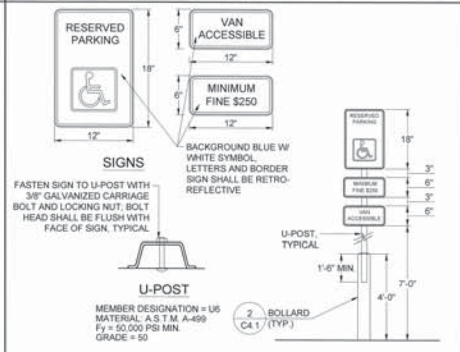

COMPACTED BACKFILL TO FINISH ELEVATION (NON PAVED AREAS)
½" EXPANSION JOINT (SEE NOTE)
WIDTH VARIES, SEE PLANS
2" CLEAR, TYPICAL
LONGITUDINAL SLOPE SHALL NOT EXCEED 5%
CROSS SLOPE SHALL NOT EXCEED 2%
BROOM FINISH (TYP)
1/2" MAX.
6"x6"xW2.9 W.W.F. (PROVIDE SUPPORT CHAIRS TO POSITION STEEL AS SHOWN)
COMPACTED SUBGRADE
4,000 PSI CONCRETE
COMPACTED SAND OR GRAVEL BASE

NOTE:

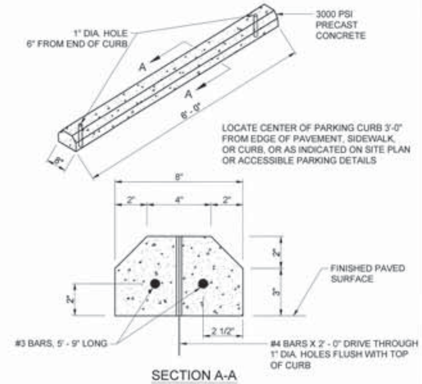
PROVIDE WEAKENED PLANE (SAW CUT OR TOOLED) CONTROL JOINTS AT 5'-0" ON CENTER.

PROVIDE EXPANSION JOINTS AT 50'-0" (MAX.) ON CENTER AND CONTINUOUSLY BETWEEN SIDEWALK AND WALLS OR OTHER STRUCTURES.

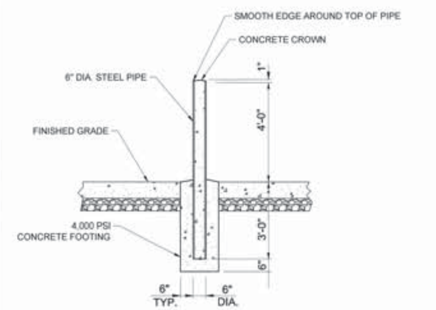
11 CONCRETE SIDEWALK SECTION
N.T.S.


RESERVED PARKING
VAN ACCESSIBLE
MINIMUM FINE $250
12"
18"
6"
SIGNS
BACKGROUND BLUE W/ WHITE SYMBOL, LETTERS AND BORDER SIGN SHALL BE RETRO-REFLECTIVE
FASTEN SIGN TO U-POST WITH 3/8" GALVANIZED CARRIAGE BOLT AND LOCKING NUT; BOLT HEAD SHALL BE FLUSH WITH FACE OF SIGN, TYPICAL
U-POST, TYPICAL
1'-6" MIN.
7'-0"
4'-0"
U-POST
MEMBER DESIGNATION = U6
MATERIAL: A.S.T.M. A-499
Fy = 50,000 PSI MIN.
GRADE = 50
2 C4.1 BOLLARD (TYP.)

8 ACCESSIBLE PARKING SIGN
N.T.S.

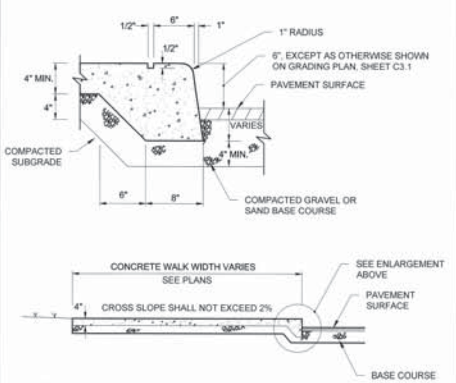

1" DIA. HOLE 6" FROM END OF CURB
3000 PSI PRECAST CONCRETE
6'-0"
LOCATE CENTER OF PARKING CURB 3'-0" FROM EDGE OF PAVEMENT, SIDEWALK, OR CURB, OR AS INDICATED ON SITE PLAN OR ACCESSIBLE PARKING DETAILS
8"
2"
4"
2"
FINISHED PAVED SURFACE
#3 BARS, 5' - 9" LONG
2 1/2"
#4 BARS X 2' - 0" DRIVE THROUGH 1" DIA. HOLES FLUSH WITH TOP OF CURB
SECTION A-A

5 PRECAST CONCRETE PARKING CURB
N.T.S.



PIPE SHALL BE PAINTED WITH YELLOW EXTERIOR ENAMEL PAINT (TWO COATS BEFORE INSTALLATION; ONE COAT AFTER INSTALLATION).

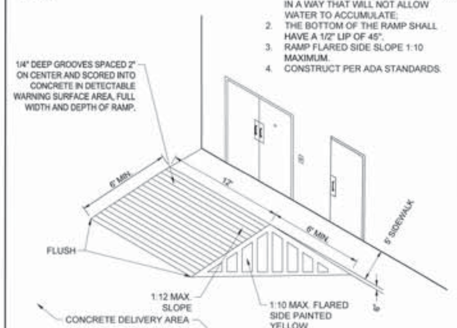
2 BOLLARD
N.T.S.


1/2"
6"
1"
1" RADIUS
6", EXCEPT AS OTHERWISE SHOWN ON GRADING PLAN, SHEET C3.1
PAVEMENT SURFACE
4" MIN.
VARIES
4" MIN.
COMPACTED SUBGRADE
COMPACTED GRAVEL OR SAND BASE COURSE
6"
8"
CONCRETE WALK WIDTH VARIES SEE PLANS
SEE ENLARGEMENT ABOVE
CROSS SLOPE SHALL NOT EXCEED 2%
PAVEMENT SURFACE
BASE COURSE

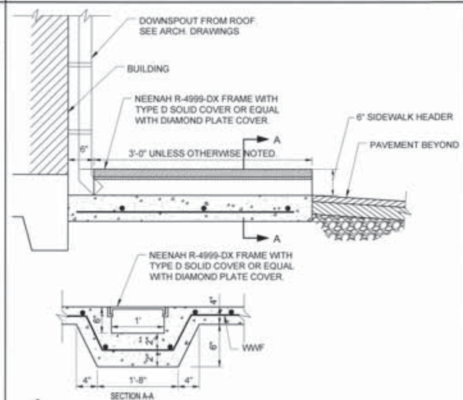
10 CONCRETE SIDEWALK HEADER SECTION
N.T.S.

SURFACES SHALL HAVE A LIGHT REFLECTIVE VALUE AND TEXTURE THAT SIGNIFICANTLY CONTRAST WITH THE ADJOINING PEDESTRIAN ROUTES.

NOTES:
1. SURFACES OF RAMPS SHALL HAVE GROOVES EXTENDING THE FULL WIDTH AND DEPTH OF THE CURB RAMP IN A WAY THAT WILL NOT ALLOW WATER TO ACCUMULATE.
2. THE BOTTOM OF THE RAMP SHALL HAVE A 1/2" LIP OF 45°.
3. RAMP FLARED SIDE SLOPE 1:10 MAXIMUM.
4. CONSTRUCT PER ADA STANDARDS.



7 RAMP AT STOCKROOM DOOR
N.T.S.


DOWNSPOUT FROM ROOF. SEE ARCH. DRAWINGS
BUILDING
NEENAH R-4999-DX FRAME WITH TYPE D SOLID COVER OR EQUAL WITH DIAMOND PLATE COVER.
6" SIDEWALK HEADER
PAVEMENT BEYOND
3'-0" UNLESS OTHERWISE NOTED
NEENAH R-4999-DX FRAME WITH TYPE D SOLID COVER OR EQUAL WITH DIAMOND PLATE COVER.
WWF
4"
1'-8"
4"
SECTION A-A

4 GUTTER DOWNSPOUT AT SIDEWALK
N.T.S.

HEAVY DUTY (ASPHALT SECTION)
- (A) 1.5" (2.0" IN COUNTY R/W) AC SURFACE COURSE (ODOT #448 TYPE 1) PG64-22
- (B) 4.0" (5.0" IN COUNTY R/W) AC BASE COURSE (ODOT #448 TYPE 2) PG64-22
- (C) 6.0" AGGREGATE BASE COURSE (ODOT #304)
- (D) PREPARED SUBGRADE, 98% STANDARD PROCTOR DRY DENSITY (ASTM D698), -2% TO +3% OPTIMUM MOISTURE CONTENT

HEAVY DUTY (CONCRETE SECTION)
- (A) 5.0" (7.0" THICKENED EDGES) MESH REINFORCED CONCRETE (ODOT #499) (4,000 PSI COMPRESSIVE STRENGTH @ 28 DAYS)
- (B) 6.0" AGGREGATE BASE COURSE (ODOT #304)
- (C) PREPARED SUBGRADE, 98% STANDARD PROCTOR DRY DENSITY (ASTM D698), -2% TO +3% OPTIMUM MOISTURE CONTENT

LIGHT DUTY (ASPHALT SECTION)
- (A) 1.5" AC SURFACE COURSE (ODOT #448 TYPE 1) PG64-22
- (B) 2.0" AC BASE COURSE (ODOT #448 TYPE 2) PG64-22
- (C) 6.0" AGGREGATE BASE COURSE (ODOT #304)
- (D) PREPARED SUBGRADE, 98% STANDARD PROCTOR DRY DENSITY (ASTM D698), -2% TO +3% OPTIMUM MOISTURE CONTENT

LIGHT DUTY (CONCRETE SECTION)
- (A) 4.5" (6.5" THICKENED EDGES) MESH REINFORCED CONCRETE (ODOT #499) (4,000 PSI COMPRESSIVE STRENGTH @ 28 DAYS)
- (B) 4.0" AGGREGATE BASE COURSE (ODOT #304)
- (C) PREPARED SUBGRADE, 98% STANDARD PROCTOR DRY DENSITY (ASTM D698), -2% TO +3% OPTIMUM MOISTURE CONTENT

NOTE:
1. REFER TO GEOTECHNICAL INVESTIGATION PREPARED BY PROFESSIONAL SERVICE INDUSTRIES, INC. DATED 6/15/2015 PSI REPORT #0102654

1 PAVEMENT SECTIONS
N.T.S.

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Brentwood, TN 37027
615-370-0670

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FRANKLIN COUNTY, OHIO 43146

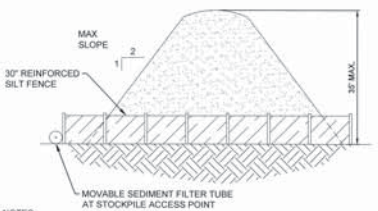
6/7/16

Revision		
No.	Date	Description

SITE DETAILS

C4.1

PROJECT: 40786.11
DATE: 06.08.16



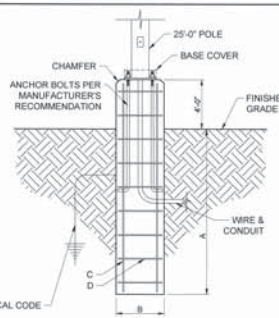
NOTES:

1. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET.
2. STOCKPILES TO BE LOCATED AS SHOWN ON PLAN SHEET C3.1.
3. STOCKPILES SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS.
4. STOCKPILES SHALL BE STABILIZED WITH TEMPORARY SEEDING IF THEY ARE TO REMAIN DORMANT FOR 4 DAYS OR MORE.
5. PROVIDE SEDIMENT CONTROL BMPS AS OUTLINED BY THE SWPPP NARRATIVE.

12 TOPSOIL STOCKPILE
N.T.S.

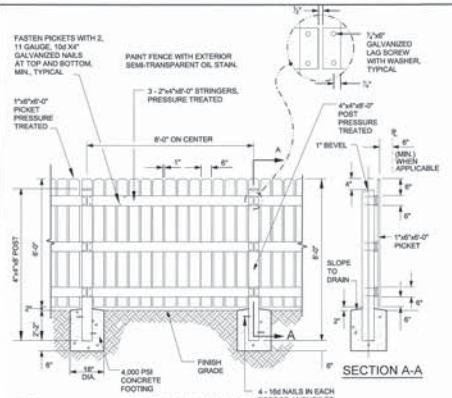
NOTES:

1. POLE BASE IS DESIGNED FOR SOIL BEARING PRESSURE OF 100 PSF/FT BASED ON SOIL TYPE. CONTACT STRUCTURAL ENGINEER IF LOWER ONSITE SOIL BEARING PRESSURE IS ENCOUNTERED.
2. DESIGN WIND SPEED = 90 MPH. CONTACT STRUCTURAL ENGINEER IF LOCAL CODE OR ORDINANCE REQUIRES DESIGN FOR HIGHER WIND SPEED.
3. REBAR SPLICES ARE NOT PERMITTED.
4. FACTORY SUPPLIED TEMPLATE MUST BE USED WHEN SETTING ANCHOR BOLTS.
5. FOR LOCATION, SEE ES1.0/PHOTOMETRIC PLAN.

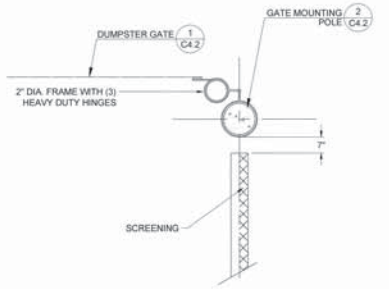


A	EMBEDMENT DEPTH (BELOW GRADE)	7'-0"
B	CONCRETE DIAMETER	30"
C	VERTICAL REINFORCEMENT	4 EA #6 SPACED EQUALLY
D	HORIZONTAL REINFORCEMENT	#3 AT 12" O.C.

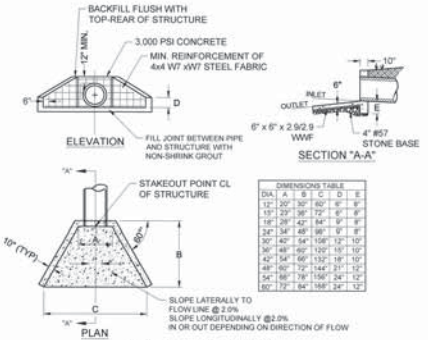
9 LIGHT POLE BASE
N.T.S.



6 REAR ELEVATION WOOD SCREEN FENCE
N.T.S.



3 GATE HINGE
N.T.S.

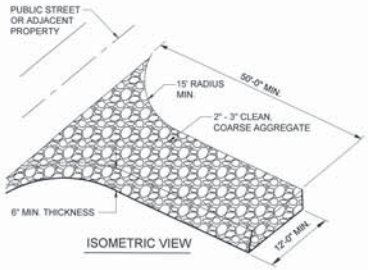


DIMENSIONS TABLE					
DIA.	A	B	C	D	E
12"	20"	36"	60"	6"	6"
15"	23"	36"	72"	6"	6"
18"	26"	42"	84"	6"	8"
24"	34"	48"	96"	6"	8"
30"	40"	54"	108"	12"	10"
36"	46"	60"	120"	15"	10"
42"	54"	66"	132"	18"	10"
48"	60"	72"	144"	21"	12"
54"	66"	78"	156"	24"	12"
60"	72"	84"	168"	24"	12"

NOTE: ALL EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED ONE INCH.

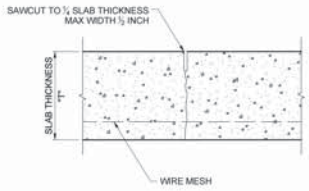
11 CONCRETE WINGED HEADWALL
N.T.S.

NOTE:
GRAVEL PAD IS REQUIRED TO PROVIDE BUFFER AREA WHERE VEHICLES CAN DROP THEIR MUD AND SEDIMENT TO AVOID TRANSPORTING IT ONTO PAVED STREETS, TO CONTROL EROSION FROM SURFACE RUNOFF, AND TO HELP CONTROL DUST.

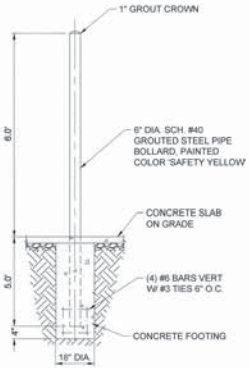


8 TEMPORARY CONSTRUCTION ENTRANCE
N.T.S.

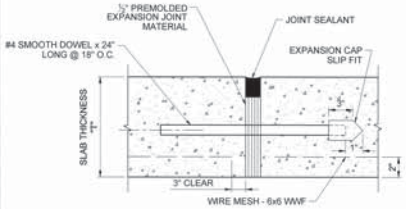
NOTE: CONTRACTION JOINTS TO BE SPACED EVERY 10'



5 CONTRACTION JOINTS IN CONCRETE
N.T.S.



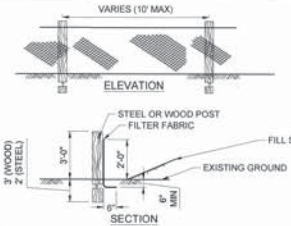
2 GATE MOUNTING POLE
N.T.S.



PARKING LOT EXPANSION JOINTS TO BE INSTALLED IN 3 LOCATIONS:

1. IN THE PARKING LOT LIMITS ALONG A LINE EXTENDED FROM THE FACE OF THE BUILDING.
2. ALONG THE PERIMETER OF THE DUMPSTER PAD ABUTTING THE CONCRETE PAVEMENT.
3. ALONG CONNECTION OF PARKING LOT TO ANY CONCRETE DRIVEWAY RAMPS.

10 EXPANSION JOINT FOR CONCRETE PAVEMENT
N.T.S.

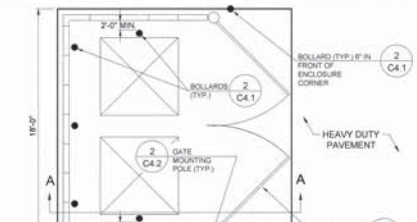


GENERAL NOTES:

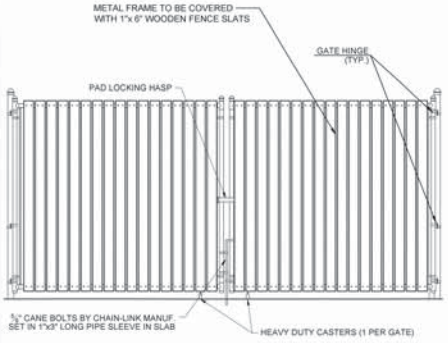
1. SILT FENCE SHALL BE INSTALLED AROUND ALL STORM DRAIN INLETS, AROUND SITE PERIMETER, AND WHERE SHOWN.
2. FILTER FABRIC SHALL BE A MINIMUM OF 36" IN WIDTH AND SHALL BE FASTENED SECURELY TO THE POSTS.
3. STEEL POSTS SHALL BE 5'-0" IN HEIGHT AND BE OF SELF FASTENER ANGLE STEEL TYPE.
4. WOODEN POSTS SHALL BE A MINIMUM OF 6'-0" IN HEIGHT AND 3" OR MORE IN DIAMETER.
5. FILTER FABRIC SHALL BE FASTENED TO WOODEN POSTS WITH NOT LESS THAN #9 WIRE STAPLES @ 1" LONG.
6. CONTRACTOR SHALL PERIODICALLY REMOVE ACCUMULATED SEDIMENT WHEN SEDIMENT DEPTH REACHES 12".

NOTE:
THE FILTER FABRIC SHALL MEET THE FOLLOWING REQUIREMENTS:
A. EOS IS NOT LARGER THAN U.S. STANDARD SIEVE NO. 70
B. GRAB STRENGTH 90-120 LB
C. CONFORM TO ASTM D-1682 OR ASTM D-177

7 SILT FENCE
N.T.S.



4 DUMPSTER PAD W/ SCREENING
N.T.S.



1 WOOD SLAT DUMPSTER GATES
N.T.S.

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DOLLAR GENERAL

ORIENT (HARRISBURG) DOHP, LLC

9010 Overlook Boulevard
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615-370-0670

6732 LAMBERT ROAD
PLEASANT TOWNSHIP
FRANKLIN COUNTY, OHIO 43146

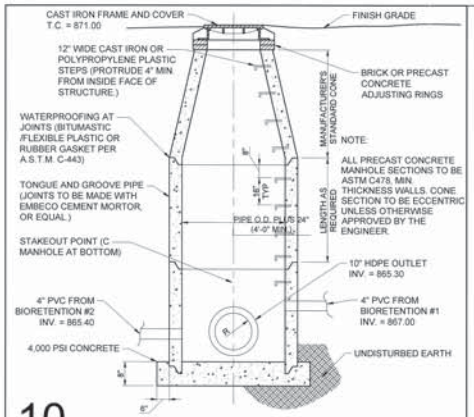
STATE OF OHIO
MICHAEL DUANE MOELLER
E-40855
REGISTERED PROFESSIONAL ENGINEER
6/7/16

Revision		
No.	Date	Description

SITE DETAILS

C4.2

PROJECT: 40788.11
DATE: 06.08.16



10 JUNCTION BOX
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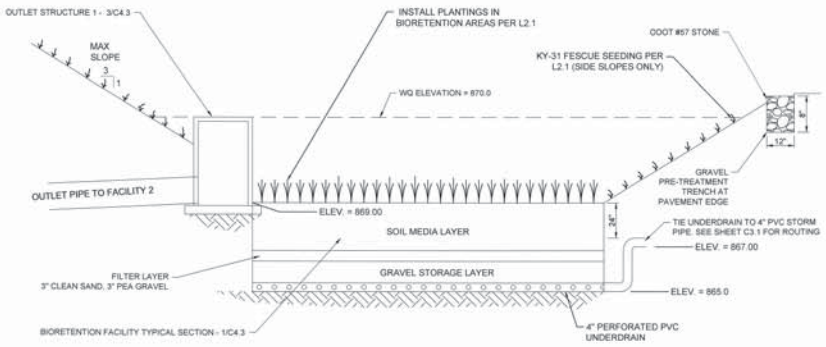

7 BIORETENTION / GROUNDWATER RECHARGE FACILITY
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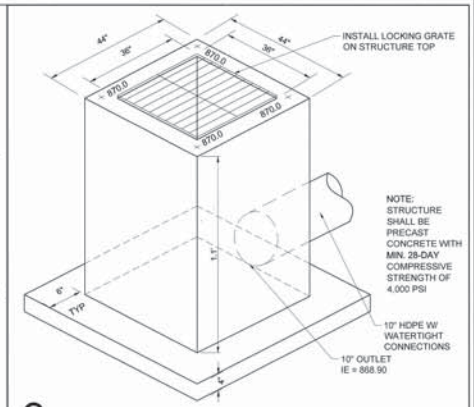

3 OUTLET STRUCTURE 1
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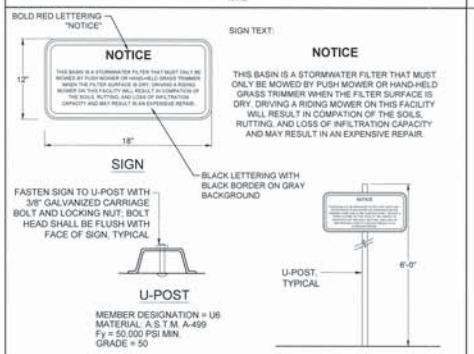

9 BIORETENTION SIGNAGE
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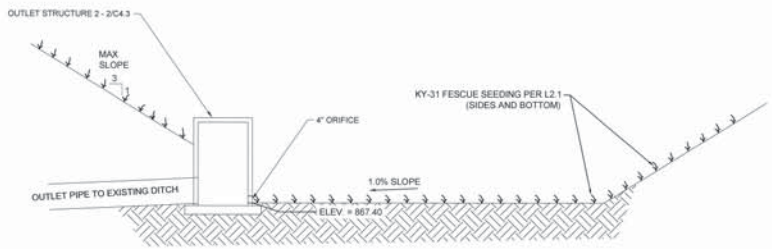
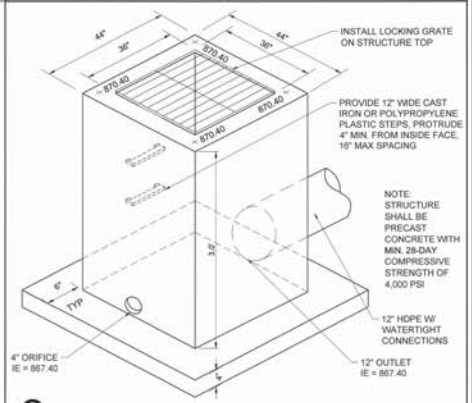


6 DETENTION POND
N.T.S.



2 OUTLET STRUCTURE 2
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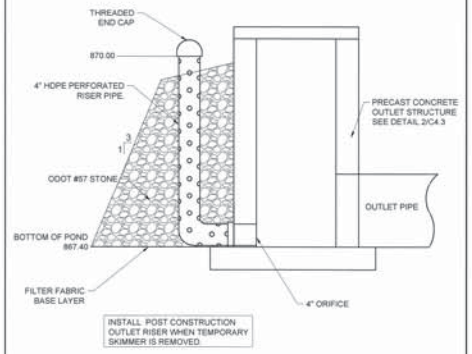
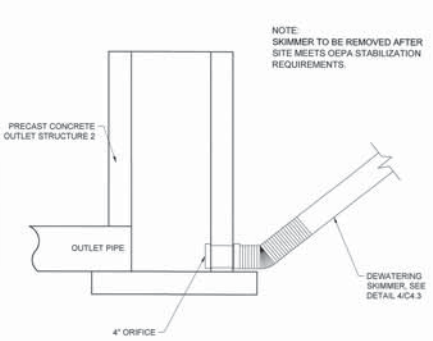
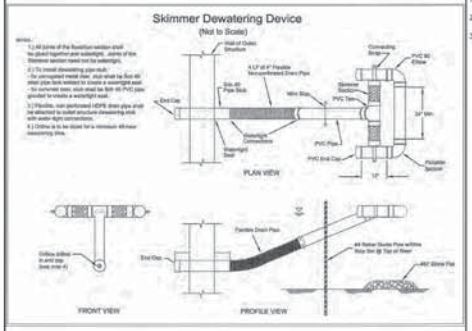


8 DETENTION POND OUTLET RISER PIPE (POST CONSTRUCTION)
N.T.S.



5 TEMPORARY SKIMMER CONNECTION TO OUTLET STRUCTURE
N.T.S.

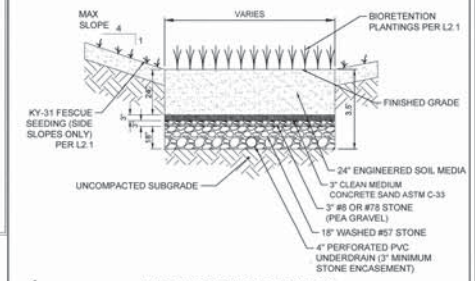


INSTALL POST CONSTRUCTION OUTLET RISER WHEN TEMPORARY SKIMMER IS REMOVED. SEE DETAIL 8, C4.3.

4 TEMPORARY SKIMMER DEWATERING DEVICE
N.T.S.

NOTES:
1. HEAVY MACHINERY SHALL NOT BE PERMITTED WITHIN INFILTRATION BED AREA
2. STONE SHALL BE #57 WASHED GRAVEL FREE OF FINES WITH 40% MINIMUM UNCOMPACTED VOID SPACE
3. ENGINEERED SOIL MEDIA SHALL CONFORM TO THE REQUIREMENTS DESCRIBED BELOW:

SAND: 5 PARTS CLEAN SAND (ASTM C-33 OR EQUIVALENT, <1% PASSSING NO. 200 SIEVE)
NATIVE SOIL: 1 PARTS (LOAM, SILT LOAM OR CLAY LOAM TEXTURE)
DECOMPOSED ORGANIC MATTER: 2 PART (LEAF COMPOST, PINE BARK FINES, MULCH FINES, ETC)



1 BIORETENTION FACILITY TYPICAL SECTION
N.T.S.

GS&P
Design Services For The Built Environment
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Cincinnati
Columbus
Dallas
Fort Lauderdale
Jackson
Jacksonville
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Tampa
GRESHAM SMITH AND PARTNERS
1400 Nashville City Center
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DOLLAR GENERAL

ORIENT (HARRISBURG) DOHP, LLC
9010 Overlook Boulevard
Brentwood, TN 37027
615-370-0670

6732 LAMBERT ROAD
PLEASANT TOWNSHIP
FRANKLIN COUNTY, OHIO 43145

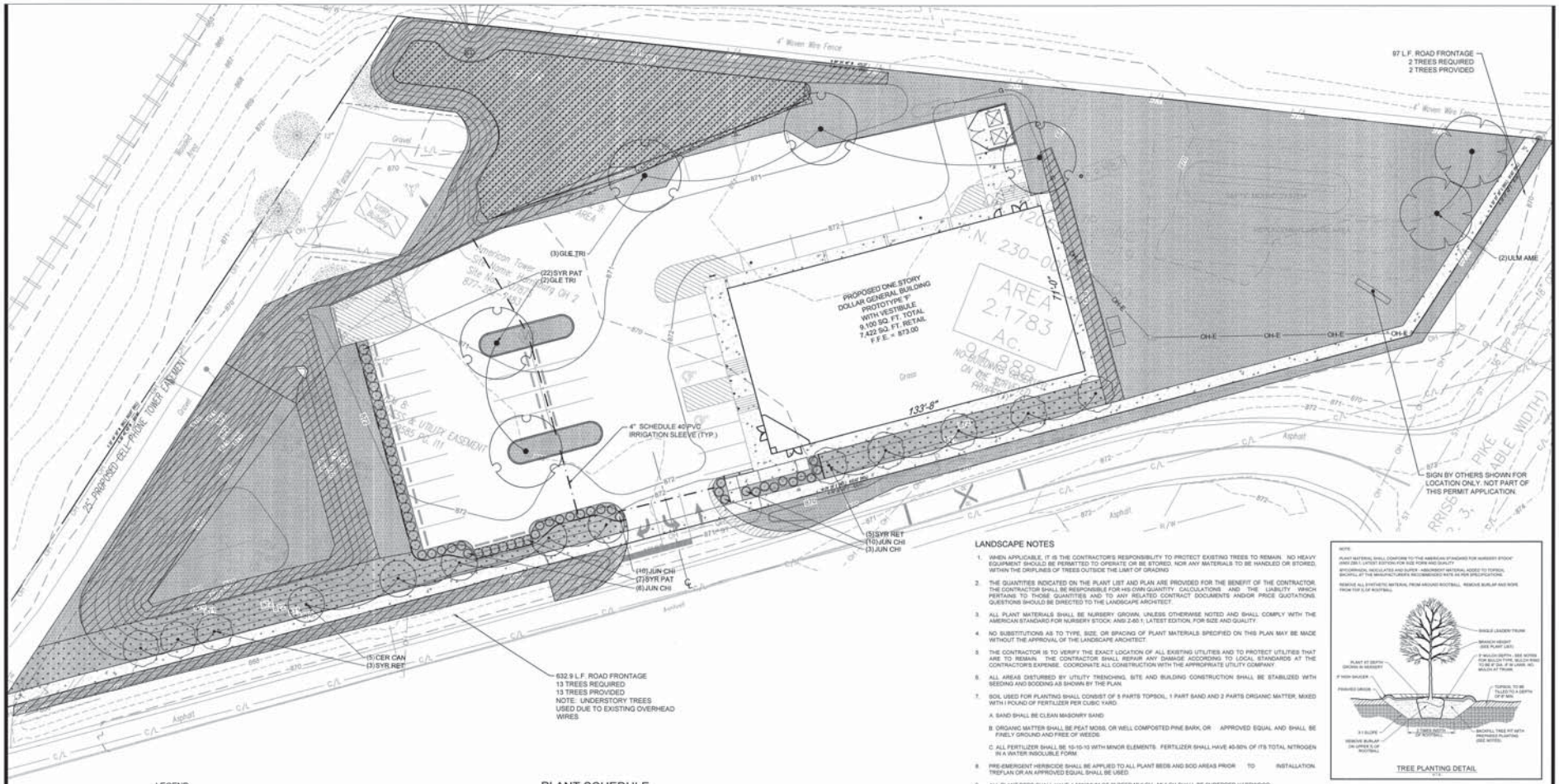
STATE OF OHIO
MICHAEL DUANE HUCKLER
PROFESSIONAL ENGINEER
6/9/16

Revision		
No.	Date	Description

SITE DETAILS

C4.3

PROJECT: 40786.11
DATE: 06.08.16



LEGEND

AREA TO BE SEEDED WITH KY-31 FESCUE AT THE RATE OF 5 LBS. PER 1,000 S.F. (OR ENGINEER APPROVED EQUAL). MULCH SEEDED AREA WITH STRAW AT THE RATE OF 1.5 BALES PER 1,000 S.F. (39,557 S.F.)

AREA TO BE SODDED WITH KY-31 FESCUE OR EQUAL AS APPROVED BY ENGINEER. (4,502 S.F.)

IRRIGATION COVERAGE AREA. CONTRACTOR TO PROVIDE AS A DESIGN/BUILD ITEM. (50,004 S.F.)

AREA TO BE STABILIZED WITH NORTH AMERICAN GREEN S-75 EROSION CONTROL FABRIC (OR ENGINEER APPROVED EQUAL) IN ADDITION TO SEEDING. (18,165 S.F.)

BIORETENTION PLANTINGS-2,750 4" CONTAINERS RANDOMLY PLANTED ON 18" CENTERS:
137 'FIREWORKS' GOLDENROD (SOLIDAGO RUGOSA)
137 'LITTLE JOE' JOE PYE WEED (EUPATORIUM DUBIUM)
138 'SHENANDOAH' SWITCHGRASS (PANICUM VIRGATUM)
138 NARROW LEAF IRONWEED (VERNONIA LETTERMANII)
1,100 PURPLE LOVE GRASS (ERAGROSTIS SPECTABILIS)
1,100 WILD PETUNIA (RUELLIA HUMILIS)
OVERSEED ENTIRE BIORETENTION AREA WITH 2 LBS. OF BLACK-EYED SUSAN (RUDBECKIA HIRTA)

PLANT SCHEDULE

TREES	BOTANICAL NAME / COMMON NAME	ROOT	SIZE	QTY	REMARKS
CER CAN	Cercis canadensis / Eastern Redbud	B & B	2"Cal	5	single trunk
GLE TRI	Gleditsia triacanthos inermis `Skycole` TM / Skyline Thornless Honey Locust	B & B	2"Cal	5	6' clear trunk
SYR RET	Syringa reticulata `Ivory Silk` / Ivory Silk Japanese Tree Lilac	B & B	2"Cal	8	single trunk
ULM AME	Ulmus americana `Princeton` / American Elm	B & B	2"Cal	2	6' clear trunk

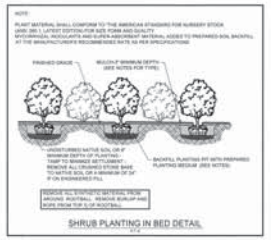
SHRUBS	BOTANICAL NAME / COMMON NAME	ROOT	SIZE	QTY	REMARKS
JUN CHI	Juniperus chinensis `Nick`s Compact` / `Nick`s Compact` Juniper	5 gal	24" spr.	29	full
SYR PAT	Syringa patula `Miss Kim` / Miss Kim Lilac	5 gal	24" ht.	29	full

IRRIGATION NOTES

1. ALL LATERAL AND SUPPLY LINES SHALL BE CLASS 200 PVC, SIZED FOR FLOW VELOCITIES OF 5 FT./SEC. OR LESS.
2. PROVIDE TWO 1" QUICK COUPLING VALVES ON SUPPLY LINE.
3. PROVIDE AUTOMATIC DRAIN VALVES AT ALL LOW POINTS ON SUPPLY AND LATERAL LINES.
4. PROVIDE TWO PLASTIC SUPPLY LINE MANUAL DRAIN VALVES.
5. ACCEPTABLE SYSTEM COMPONENTS:
   A. SYSTEM CONTROLLER: HUNTER X-CORE SERIES, TORO TMC-212 SERIES, RAIN BIRD RZX SERIES
   B. ZONE CONTROL VALVES: HUNTER PGV SERIES, TORO 250/260 SERIES, RAIN BIRD DV/DVF SERIES
   C. SPRINKLER HEADS: HUNTER SRM AND PRO SPRAY SERIES, TORO 570Z AND 300 SERIES, RAIN BIRD 1800 AND 3500 SERIES
   D. DRIP TUBING (PLANT BEDS ONLY): NETAFIM TECHLINE, TORO PL 2000, HUNTER LANDSCAPE DRIPLINE
   E. RAIN SENSOR: HUNTER RAIN CLICK, TORO TRS, RAIN BIRD RSD
6. SYSTEM CONTROLLER SHALL BE LOCATED IN RECEIVING AREA NEXT TO ELECTRICAL PANEL.

LANDSCAPE NOTES

1. WHEN APPLICABLE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROTECT EXISTING TREES TO REMAIN. NO HEAVY EQUIPMENT SHOULD BE PERMITTED TO OPERATE OR BE STORED, NOR ANY MATERIALS TO BE HANDLED OR STORED, WITHIN THE DRIPLINES OF TREES OUTSIDE THE LIMIT OF GRADING
2. THE QUANTITIES INDICATED ON THE PLANT LIST AND PLAN ARE PROVIDED FOR THE BENEFIT OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN QUANTITY CALCULATIONS AND THE LIABILITY WHICH PERTAINS TO THOSE QUANTITIES AND TO ANY RELATED CONTRACT DOCUMENTS AND/OR PRICE QUOTATIONS. QUESTIONS SHOULD BE DIRECTED TO THE LANDSCAPE ARCHITECT.
3. ALL PLANT MATERIALS SHALL BE NURSERY GROWN, UNLESS OTHERWISE NOTED AND SHALL COMPLY WITH THE AMERICAN STANDARD FOR NURSERY STOCK: ANSI Z-60.1, LATEST EDITION, FOR SIZE AND QUALITY.
4. NO SUBSTITUTIONS AS TO TYPE, SIZE, OR SPACING OF PLANT MATERIALS SPECIFIED ON THIS PLAN MAY BE MADE WITHOUT THE APPROVAL OF THE LANDSCAPE ARCHITECT.
5. THE CONTRACTOR IS TO VERIFY THE EXACT LOCATION OF ALL EXISTING UTILITIES AND TO PROTECT UTILITIES THAT ARE TO REMAIN. THE CONTRACTOR SHALL REPAIR ANY DAMAGE ACCORDING TO LOCAL STANDARDS AT THE CONTRACTOR'S EXPENSE. COORDINATE ALL CONSTRUCTION WITH THE APPROPRIATE UTILITY COMPANY.
6. ALL AREAS DISTURBED BY UTILITY TRENCHING, SITE AND BUILDING CONSTRUCTION SHALL BE STABILIZED WITH SEEDING AND SODDING AS SHOWN BY THE PLAN.
7. SOIL USED FOR PLANTING SHALL CONSIST OF 5 PARTS TOPSOIL, 1 PART SAND AND 2 PARTS ORGANIC MATTER, MIXED WITH I POUND OF FERTILIZER PER CUBIC YARD.
   A. SAND SHALL BE CLEAN MASONRY SAND
   B. ORGANIC MATTER SHALL BE PEAT MOSS, OR WELL COMPOSTED PINE BARK, OR APPROVED EQUAL AND SHALL BE FINELY GROUND AND FREE OF WEEDS.
   C. ALL FERTILIZER SHALL BE 10-10-10 WITH MINOR ELEMENTS. FERTILIZER SHALL HAVE 40-50% OF ITS TOTAL NITROGEN IN A WATER INSOLUBLE FORM
8. PRE-EMERGENT HERBICIDE SHALL BE APPLIED TO ALL PLANT BEDS AND SOD AREAS PRIOR TO INSTALLATION. TREFLAN OR AN APPROVED EQUAL SHALL BE USED.
9. ALL PLANT BEDS SHALL HAVE A MINIMUM OF 3" DEEP MULCH. MULCH SHALL BE SHREDDED HARDWOOD.
10. IT IS THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY TO CONFIRM MATERIAL QUANTITIES. IN THE EVENT OF A DISCREPANCY, THE QUANTITIES SHOWN ON THE PLAN SHALL TAKE PRECEDENCE OVER QUANTITIES SHOWN ON THE PLANT LIST.
11. PRIOR TO FINAL PAYMENT, THE LANDSCAPE CONTRACTOR SHALL PROVIDE THE OWNER WITH COMPLETE WRITTEN INSTRUCTIONS ON PROPER CARE OF ALL SPECIFIED PLANT MATERIALS.
12. THE LANDSCAPE INSTALLATION SHALL BE COORDINATED WITH THE IRRIGATION INSTALLATION WHEN APPLICABLE.
13. THE LANDSCAPE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM STRUCTURES AND TAKE SPECIAL CARE TO INSURE THAT BED PREPARATION DOES NOT INHIBIT DRAINAGE.
14. ALL LAWN AREAS SHALL BE CULTIVATED TO A DEPTH OF 4" PRIOR TO SODDING AND SEEDING. PREPARED SOD AND SEED BEDS SHALL BE FREE FROM STONES OVER 2" DIAMETER AND OTHER DELETERIOUS MATERIAL.
15. THE LANDSCAPE CONTRACTOR SHALL RAKE SMOOTH ALL SEED OR SOD AREAS PRIOR TO INSTALLATION.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BACKFILLING BEHIND THE CURB SO GRADE IS LEVEL WITH TOP OF CURB.
17. SODDED AREAS SHALL HAVE NO BARE AREAS. SEEDED AREAS SHALL BE CONSIDERED ACCEPTABLE WHEN FULL COVERAGE OF THE PERMANENT TURFGRASS SPECIES IS ESTABLISHED.
18. CUT AWAY ROPES OR WIRES FROM B&B PLANTS. PULL BACK BURLAP FROM TOP OF ROOT BALL. DO NOT ALLOW BURLAP TO BE EXPOSED AT SURFACE. TOTALLY REMOVE BURLAP IF IT IS SYNTHETIC.
19. IF CONTAINER GROWN PLANTS SHOW SIGNS OF BEING ROOT BOUND, SCORE ROOTS VERTICALLY.
20. ALL PLANT MATERIAL SHALL BE GUARANTEED FOR ONE YEAR FROM DATE OF FINAL ACCEPTANCE.
21. ALL REPLACEMENTS SHALL BE OF THE SAME TYPE, SIZE, AND QUALITY AS SPECIFIED ON THE PLANT LIST, UNLESS APPROVED OTHERWISE IN WRITING BY THE LANDSCAPE ARCHITECT.
22. ANY MATERIAL THAT IS DEEMED TO BE 25% DEAD OR MORE SHALL BE CONSIDERED DEAD, AND MUST BE REPLACED AT NO CHARGE. A TREE IS CONSIDERED DEAD WHEN THE MAIN LEADER HAS DIED BACK, OR MORE THAN 25% OF THE CROWN IS DEAD.
23. REPLACEMENTS SHALL BE MADE DURING THE NEXT PLANTING SEASON UNLESS THE LANDSCAPE CONTRACTOR AGREES TO AN EARLIER DATE.
    PLANTING DATES
    SPRING: MARCH15 - MAY 15
    FALL: OCTOBER 1 - NOVEMBER 30
24. THE LANDSCAPE CONTRACTOR WILL NOT BE RESPONSIBLE FOR PLANT MATERIAL THAT HAS BEEN DAMAGED BY VANDALISM, FIRE, RELOCATION, WILDLIFE, THEFT, OR OTHER ACTIVITIES BEYOND THE LANDSCAPE CONTRACTOR'S CONTROL.



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9010 Overlook Boulevard
Brentwood, TN 37027
615-370-0670

6732 LAMBERT ROAD
PLEASANT TOWNSHIP
FRANKLIN COUNTY, OHIO 43146

STATE OF OHIO
TERENCE L. MALINOWSKI
LANDSCAPE ARCHITECT

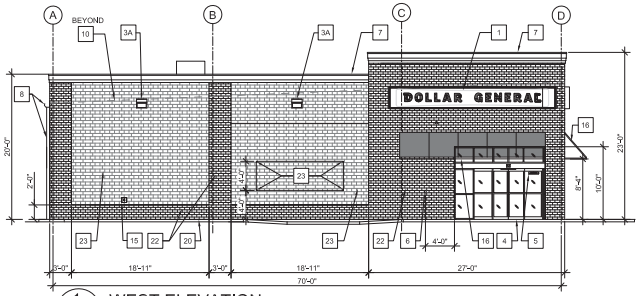
Revision		
No.	Date	Description

LANDSCAPE PLAN

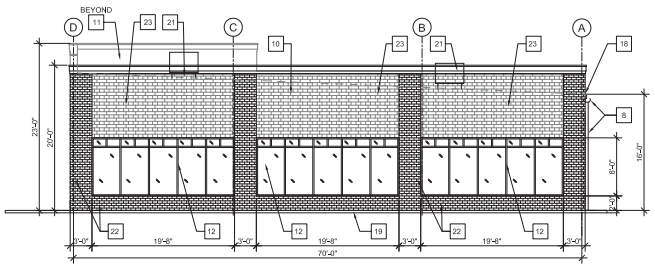
L2.1

PROJECT: 40786.11
DATE: 06.08.16

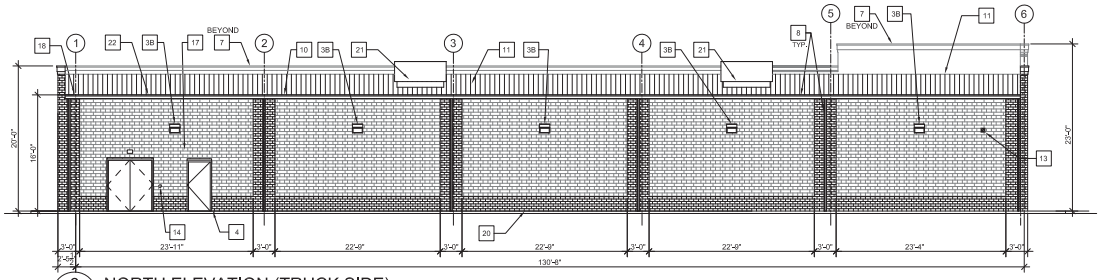
VA-3852
Received 6/9/2016



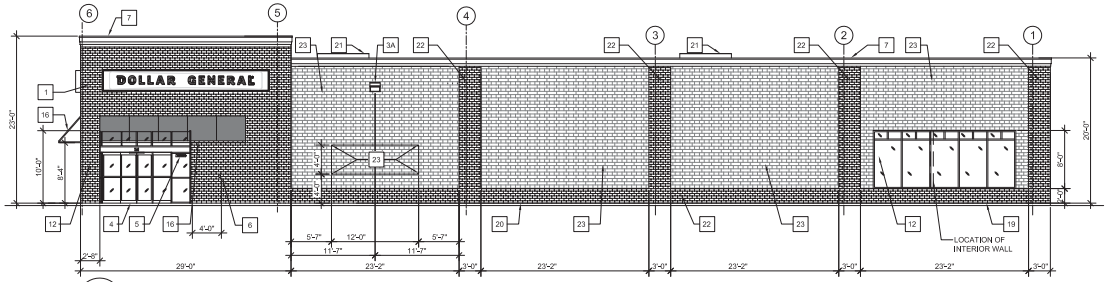
1 A-2 WEST ELEVATION
1/8" = 1'-0"



2 A-2 EAST ELEVATION
1/8" = 1'-0"



3 A-2 NORTH ELEVATION (TRUCK SIDE)
1/8" = 1'-0"



4 A-2 SOUTH ELEVATION
1/8" = 1'-0"

KEYED NOTES

1. SIGN FURNISHED AND INSTALLED BY DOLLAR GENERAL CORP. WITH CIRCUIT AS NOTED ON ELECTRICAL PLAN. SIGN TO BE CENTERED ON FRONT OF BUILDING. CONTRACTOR IS TO PROVIDE ADEQUATE BLOCKING AS REQUIRED BY SIGN MANUFACTURER TO SUPPORT SIGN WEIGHT OF UP TO 1,400 LBS. EXTERIOR CANOPY SIGN SHALL BE SUPPORTED BY THE FACE OF THE CANOPY. COORDINATE THE PROPER SIGNAGE TO BE USED WITH DOLLAR GENERAL.
2. METAL PANEL. INSTALLED IN REVERSE FOR COLOR. SEE THIS SHEET FOR COLOR.
3A. WALL PACK, 16'-6" A.F.F. TO TOP OF WALL PACK. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
3B. WALL PACK, 12'-6" A.F.F. TO TOP OF WALL PACK. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.
4. SIDEWALK TO BE TAPERED AND LEVEL WITH FFE AT DOOR LOCATION.
5. ADDRESS ADJACENT TO DOOR MOUNTED ON SIDE LIGHT GLASS. ADDRESS TO BE 10"-12" VINYL CUT NUMBERS. COLOR: BLACK W/WHITE OUTLINES.
6. RECEPTACLE. REFER TO ELECTRICAL DRAWING E1 FOR ADDITIONAL INFORMATION.
7. EIFS CORNICE. SEE THIS SHEET FOR COLOR.
8. PRE-FINISHED DOWNSPOUT & GUTTER. SEE THIS SHEET FOR COLOR. REFER TO CIVIL SHEETS FOR CONTINUATION.
9. METAL COPING. SEE THIS SHEET FOR COLOR.
10. STANDING SEAM METAL ROOF. GALVALUME FINISH.
11. FASCIA PANEL. SEE THIS SHEET FOR COLOR.
12. 19'-8"W x 8'-0"T CLEAR GLASS WINDOWS.
13. VENT FOR BATHROOM EXHAUST. REFER TO MECHANICAL DRAWING M1 FOR ADDITIONAL INFORMATION.
14. DOOR BUZZER. REFER TO ELECTRICAL DRAWING E-1 FOR ADDITIONAL INFORMATION.
15. WALL HYDRANT. REFER TO PLUMBING DRAWING P-1 FOR ADDITIONAL INFORMATION.
16. STEEL FRAMED AWNING WITH ALUMINUM COVER; COLOR: BLACK. REFER TO SHEET A-3B AND STRUCTURAL SHEETS FOR DETAILS.
17. OUTSIDE AIR TEMP. SENSOR MOUNTED OVER RECEIVING DOORS @ 8'-0" A.F.F.
18. MINIMUM EAVE HEIGHT IS 16'-0".
19. FINISH GRADE AT EXTERIOR WALLS SHALL BE A MINIMUM OF 6" BELOW FINISHED FLOOR AT ALL NON PAVED AREAS.
20. HARD SURFACE AT EXTERIOR WALLS SHALL BE A MINIMUM OF 2" BELOW FINISHED FLOOR AT PAVED AREAS.
21. HVAC UNITS MOUNTED ON ROOF. REFER TO MECHANICAL SHEET M-1 FOR FURTHER INFORMATION.
22. ENDURAMAX WALL SYSTEM. GLEN GERY BRICK. COLOR: AUTUMN OAK.
23. ENDURAMAX WALL SYSTEM. MORENCY STONE. COLOR: LIGHT GRANITE.

GENERAL NOTES

1. G.C. TO CAULK AND SEAL ALL PENETRATIONS.
2. G.C. TO CAULK ALL DISSIMILAR MATERIALS AND GAPS.
3. G.C. TO INSTALL ADDRESS NUMBERS ON SIDELIGHT GLASS ADJACENT TO MAIN DOOR ENTRY.
4. G.C. TO INSTALL KNOX BOX PER LOCAL JURISDICTIONAL REQUIREMENTS. SURFACE OR FLUSH MOUNT.

PEMB VENDOR	VP BUILDING SYSTEMS		STAR BUILDING SYSTEMS		NUCOR BUILDING SYSTEMS		BIG BEE STEEL BUILDING, INC.	
	ATTN: DAVID ENGLISH	(901) 566-4537 DEnglish@vp.com	ATTN: JEFF HORN	866-664-8899	ATTN: BOB BARRY	315-622-4440 or 260-837-7891	ATTN: KEVIN BUSLER	800-633-3378

EXTERIOR FINISHES

EXTERIOR FINISHES ARE TO MATCH OR BE EQUAL TO LIBERTY METAL BUILDING SYSTEM'S FINISH SELECTION.	COOL EGYPTIAN WHITE	PATRICIAN BRONZE KYNAR 500	BRONZE	COOL COTTON WHITE	GALVALUME	LIGHT STONE	MEDIUM BRONZE KYNAR 500	BRONZE	POLAR WHITE	GALVALUME	LIGHT STONE	MEDIUM BRONZE KYNAR 500	BRONZE	POLAR WHITE	GALVALUME	LIGHT STONE	MEDIUM BRONZE KYNAR 500	BRONZE	POLAR WHITE	GALVALUME
GUTTERS	●					●					●					●				
DOWN SPOUTS	●					●					●					●				
REAR METAL WALL PANELS & TRIM RECEIVING & EMERGENCY EXIT DOORS.	●					●					●					●				
ENDURAMAX WALL SYSTEM. GLEN GERY BRICK.	AUTUMN OAK					AUTUMN OAK					AUTUMN OAK					AUTUMN OAK				
ENDURAMAX WALL SYSTEM. MORENCY STONE.	LIGHT GRANITE					LIGHT GRANITE					LIGHT GRANITE					LIGHT GRANITE				
FLAT METAL SOFFIT AT STOREFRONT VESTIBULE.				●					●					●					●	
BUILDING PARAPET WALL		●					●					●					●			
ASSA ABLOY STOREFRONT SYSTEM			●					●					●					●		
STANDARD METAL ROOF PANELS					●					●					●					●
EIFS CORNICE	RENWICK BEIGE					RENWICK BEIGE					RENWICK BEIGE					RENWICK BEIGE				

GPD GROUP
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
520 South Main Street, Suite 2531
Akron, OH 44311
330.572.2100 FAX 330.572.2101

DOLLAR GENERAL

REV.	DATE	DESCRIPTION

DOLLAR GENERAL
LAMBERT RD & US 62
ORIENT, OH (HARRISBURG) 43146

EXTERIOR ELEVATIONS & FINISH SCHEDULE

ISSUED FOR:	
PERMIT	-
BID	-
CONSTRUCTION	-
RECORD	-

PROJECT MANAGER	DESIGNER
MAR	CDL

JOB NO. 2015066.19

A-2

TRAFFIC ACCESS STUDY

Dollar General Store

Lambert Road at Harrisburg Pike (SR 3)
Orient, OH 43146
Pleasant Township
Franklin County

GS&P PROJECT # 40788.11

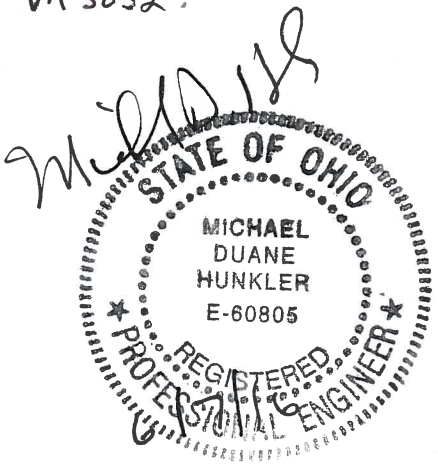
March 2016
Revised June 2016

GRESHAM SMITH AND PARTNERS

511 Union Street
1400 Nashville City Center
Nashville, TN 37219
Phone: 615-770-8100

CONTACT:
Joe Johnston
Phone: 615-770-8204
E-mail: joe_johnston@gspnet.com

VA-3852.



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Summary

The purpose of this traffic access study is to analyze the impact of the proposed driveway access point located North of Lambert Road (County HWY 291), 250 feet west of the intersection of Lambert Road and Harrisburg Pike (SR 3). The access point will serve a proposed 9,100 square foot Dollar General store. A pre-study conference call was held on January 7, 2016 and a Memorandum of Understanding (MOU) was issued, documenting the scope of this study. The MOU was approved on 3/21/16. The scope of the analysis will include a turn lane warrant determination, stopping site distance, intersection site distance and queuing from the railroad crossing to the access point. The store opening year is 2016, the design year is 2026 (opening +10 years) and 1% is the background traffic growth rate. The results of the analysis determine that the proposed access point will not have a significant impact on this segment of Lambert Road.

Existing Conditions and Traffic Volume

Lambert Road is a two-lane rural roadway with a posted speed limit of 45 mph. 55 mph is used for the design speed in all of the following calculations of this study. The proposed access point is located on the north side of Lambert Road. It is situated between a railroad crossing approximately 500 feet to the west and the intersection of Lambert Road and Harrisburg Pike approximately 270 feet to the east.

A traffic count on Lambert Road was conducted on February 24th, 2016, by Cummins Consulting Services, PLLC. The results are as follows and complete detailed counts are in Appendix C.

$$Total\ ADT = 1089\ vehicles/day$$
$$Peak\ Hour\ Volume, AM\ (7{:}00am\ to\ 8{:}00am) = 79\ vehicles/hr$$
$$AM\ Peak\ Hour\ Distribution{:}\ 22\%\ WB\ and\ 78\%\ EB$$
$$Peak\ Hour\ Volume, PM\ (4{:}45pm\ to\ 5{:}45pm) = 105\ vehicles/hr$$
$$PM\ Peak\ Hour\ Distribution{:}\ 62\%\ WB\ and\ 38\%\ EB$$
$$Westbound\ ADT = 533\ vehicles/day\ or\ 49\%$$
$$Eastbound\ ADT = 556\ vehicles/day\ or\ 51\%$$

Traffic Generated by the Proposed Development

The amount of traffic generated by the Dollar General development can best be determined by comparison with similar sites. The Institute of Transportation Engineers (ITE) has compiled data from thousands of studies for various land uses, independent variables, and study periods and published the results in Trip Generation Manual, 9th Edition. The proposed development is most similar to ITE Land Use 814: Variety Store. Table 1 illustrates the amount of traffic to be generated by the proposed development based on the data presented in ITE.

TABLE 1

Land Use	ITE Code	Units	ADT	AM Peak Hr Enter	AM Peak Hr Exit	PM Peak Hr Enter	PM Peak Hr Exit
Variety Store	814	9,100 SF	585	17	17	31	31

Site Distance

The posted speed limit at this section of Lambert Road is 45 mph. 55 mph is the design speed used in calculating the site distances. Based on Stopping Sight Distance table 201-1E of the *ODOT Location and Design Manual, July 2015,* the stopping site distance for the proposed access point is 495 feet. Based on Intersection Sight Distance table 201-5E of the *ODOT Location and Design Manual, July 2015*, the left turn sight distance is 610 feet and the right turn sight distance is 290 feet. For the right turn site distance, 30 mph is assumed for the maximum speed a vehicle would be traveling through the intersection of Lambert Road and SR 3. Vehicles turning right onto Lambert Road are assumed to travel approximately 20 mph, vehicles turning left onto Lambert Road are assumed to travel approximately 15 mph and vehicles crossing SR 3 are assumed to travel approximately 30 mph. 30 mph is used in determining the site distances for westbound traffic. Refer to the Sight Distance Maps, Exhibit A and Exhibit B. The proposed driveway location provides adequate site distance in both directions.

Queuing

The distance from the stop bar at the railroad crossing to the access point is approximately 396 feet. Westbound, PM Peak Hour Volume is used in calculating the expected maximum number of passenger vehicles that queue at the railroad stop block. The calculations are as shown below:

Assumptions:

-5 foot separation between each passenger vehicle

-10 minutes for a train crossing

$$Peak\ Hour\ Volume, AM\ (7{:}00am\ to\ 8{:}00am) = 79\ vehicles/hr$$
$$AM\ Peak\ Hour\ Distribution{:}\ 22\%\ WB\ and\ 78\%\ EB$$
$$Peak\ Hour\ Volume, PM\ (4{:}45pm\ to\ 5{:}45pm) = \mathbf{105\ vehicles/hr}$$
$$PM\ Peak\ Hour\ Distribution{:}\ \mathbf{62\%\ WB}\ and\ 38\%\ EB$$

$$Westbound\ Peak\ Hour\ Volume\ PM = 105(0.62) = 66\ vehicles/hr\ \textit{(Existing Peak Hourly Volume)}$$
$$Westbound\ Peak\ Hour\ Volume\ PM\ plus\ 1\%\ growth\ for\ 10\ years = 66(1+0.01)^{10}$$
$$= 73\ vehicles/day$$
$$Westbound\ PM\ DHV\ generated\ by\ proposed\ Dollar\ General = 31(0.62) = 20\ vehicles/day$$
$$Westbound\ PM\ DHV\ generated\ by\ proposed\ Dollar\ General\ plus\ 1\%\ growth\ for\ 10\ years$$
$$= 20(1+0.1)^{10} = 21\ vehicles/hr$$
$$Total\ Westbound\ Peak\ Hour\ Volume\ PM = 73 + 21 = 94\ vehicles/hr$$

$$\mathbf{Vehicles\ Queued} = \mathbf{94}\frac{\boldsymbol{vehicles}}{\boldsymbol{hr}} \times \left(\frac{\mathbf{1hr}}{\mathbf{60min}} \times \mathbf{10min}\right) = \mathbf{16\ Passenger\ Vehicles}$$

The proposed driveway location provides queuing space for 16 passenger vehicles during a train crossing event. Refer to the Queuing Map, Exhibit C.

Turn Lane Warrant

Turn lanes are not warranted for either direction. Turn lane warrant worksheets are provided in Appendix B. Directional peak hour volumes calculated below are used to complete the analysis. Even if all of the traffic generated from the proposed Dollar General store would enter the driveway from the same direction, turn lanes would not be required.

$$Peak\ Hour\ Volume, AM\ (7{:}00am\ to\ 8{:}00am) = 79\ vehicles/hr$$
$$AM\ Peak\ Hour\ Distribution{:}\ 22\%\ WB\ and\ 78\%\ EB$$
$$Peak\ Hour\ Volume, PM\ (4{:}45pm\ to\ 5{:}45pm) = 105\ vehicles/hr$$
$$PM\ Peak\ Hour\ Distribution{:}\ 62\%\ WB\ and\ 38\%\ EB$$

Westbound Traffic (Higher count in PM used on worksheet): Right Turn Warrant

$$Westbound\ Peak\ Hour\ Volume\ AM = 79(0.22) = 18\ vehicles/hr\ \textit{(Existing Peak Hourly Volume)}$$
$$Westbound\ Peak\ Hour\ Volume\ AM\ plus\ 1\%\ growth\ for\ 10\ years = 18(1 + 0.01)^{10} = 20\ vehicles/day$$
$$Westbound\ AM\ DHV\ generated\ by\ proposed\ Dollar\ General = 17(0.22) = 4\ vehicles/day$$
$$Westbound\ AM\ DHV\ generated\ by\ proposed\ Dollar\ General\ plus\ 1\%\ growth\ for\ 10\ years = 4(1 + 0.1)^{10} = 5\ vehicles/hr$$
$$Total\ Westbound\ Peak\ Hour\ Volume\ PM = 20 + 5 = 25\ vehicles/hr$$

$$Westbound\ Peak\ Hour\ Volume\ PM = 105(0.62) = 66\ vehicles/hr\ \textit{(Existing Peak Hourly Volume)}$$
$$Westbound\ Peak\ Hour\ Volume\ PM\ plus\ 1\%\ growth\ for\ 10\ years = 66(1 + 0.01)^{10} = 73\ vehicles/day$$
$$Westbound\ PM\ DHV\ generated\ by\ proposed\ Dollar\ General = 31(0.62) = 20\ vehicles/day$$
$$Westbound\ PM\ DHV\ generated\ by\ proposed\ Dollar\ General\ plus\ 1\%\ growth\ for\ 10\ years = 20(1 + 0.1)^{10} = 21\ vehicles/hr$$
$$Total\ Westbound\ Peak\ Hour\ Volume\ PM = 73 + 21 = \mathbf{94\ vehicles/hr}$$

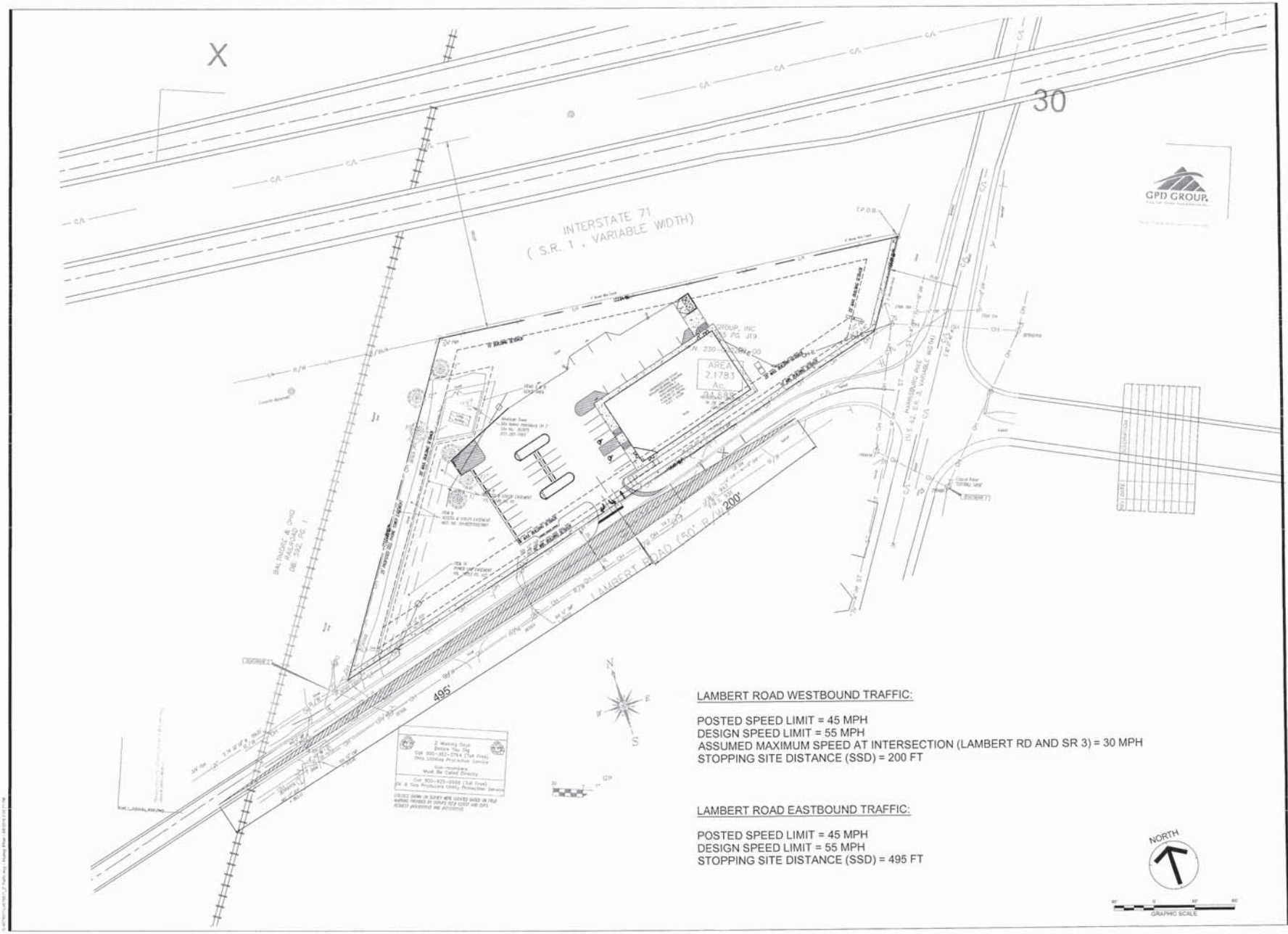
Eastbound Traffic (Higher count in AM used on worksheet): Left Turn Warrant

$$Eastbound\ Peak\ Hour\ Volume\ AM = 79(0.78) = 62\ vehicles/hr\ \textit{(Existing Peak Hourly Volume)}$$
$$Eastbound\ Peak\ Hour\ Volume\ AM\ plus\ 1\%\ growth\ for\ 10\ years = 62(1 + 0.01)^{10} = 69\ vehicles/day$$
$$Eastbound\ AM\ DHV\ generated\ by\ proposed\ Dollar\ General = 17(0.78) = 14\ vehicles/day$$
$$Eastbound\ AM\ DHV\ generated\ by\ proposed\ Dollar\ General\ plus\ 1\%\ growth\ for\ 10\ years = 14(1 + 0.1)^{10} = 16\ vehicles/hr$$
$$Total\ Eastbound\ Peak\ Hour\ Volume\ AM = 69 + 16 = \mathbf{85\ vehicles/hr}$$

$$Eastbound\ Peak\ Hour\ Volume\ PM = 105(0.38) = 40\ vehicles/hr\ \textit{(Existing Peak Hourly Volume)}$$
$$Eastbound\ Peak\ Hour\ Volume\ PM\ plus\ 1\%\ growth\ for\ 10\ years = 40(1 + 0.01)^{10} = 45\ vehicles/day$$
$$Eastbound\ PM\ DHV\ generated\ by\ proposed\ Dollar\ General = 31(0.38) = 12\ vehicles/day$$
$$Eastbound\ PM\ DHV\ generated\ by\ proposed\ Dollar\ General\ plus\ 1\%\ growth\ for\ 10\ years = 12(1 + 0.1)^{10} = 14\ vehicles/hr$$
$$Total\ Eastbound\ Peak\ Hour\ Volume\ PM = 45 + 14 = 59\ vehicles/hr$$

APPENDIX A

Traffic Access Maps



LAMBERT ROAD WESTBOUND TRAFFIC:

POSTED SPEED LIMIT = 45 MPH
DESIGN SPEED LIMIT = 55 MPH
ASSUMED MAXIMUM SPEED AT INTERSECTION (LAMBERT RD AND SR 3) = 30 MPH
STOPPING SITE DISTANCE (SSD) = 200 FT

LAMBERT ROAD EASTBOUND TRAFFIC:

POSTED SPEED LIMIT = 45 MPH
DESIGN SPEED LIMIT = 55 MPH
STOPPING SITE DISTANCE (SSD) = 495 FT

NORTH

GRAPHIC SCALE

G S & P

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Richmond
Tampa

GRESHAM SMITH AND PARTNERS

5400 Nashville City Center
511 Union Street
Nashville, TN 37219
615.770.8100
WWW.GSPNET.COM

DOLLAR GENERAL

ORIENT (HARRISBURG) DOHP, LLC

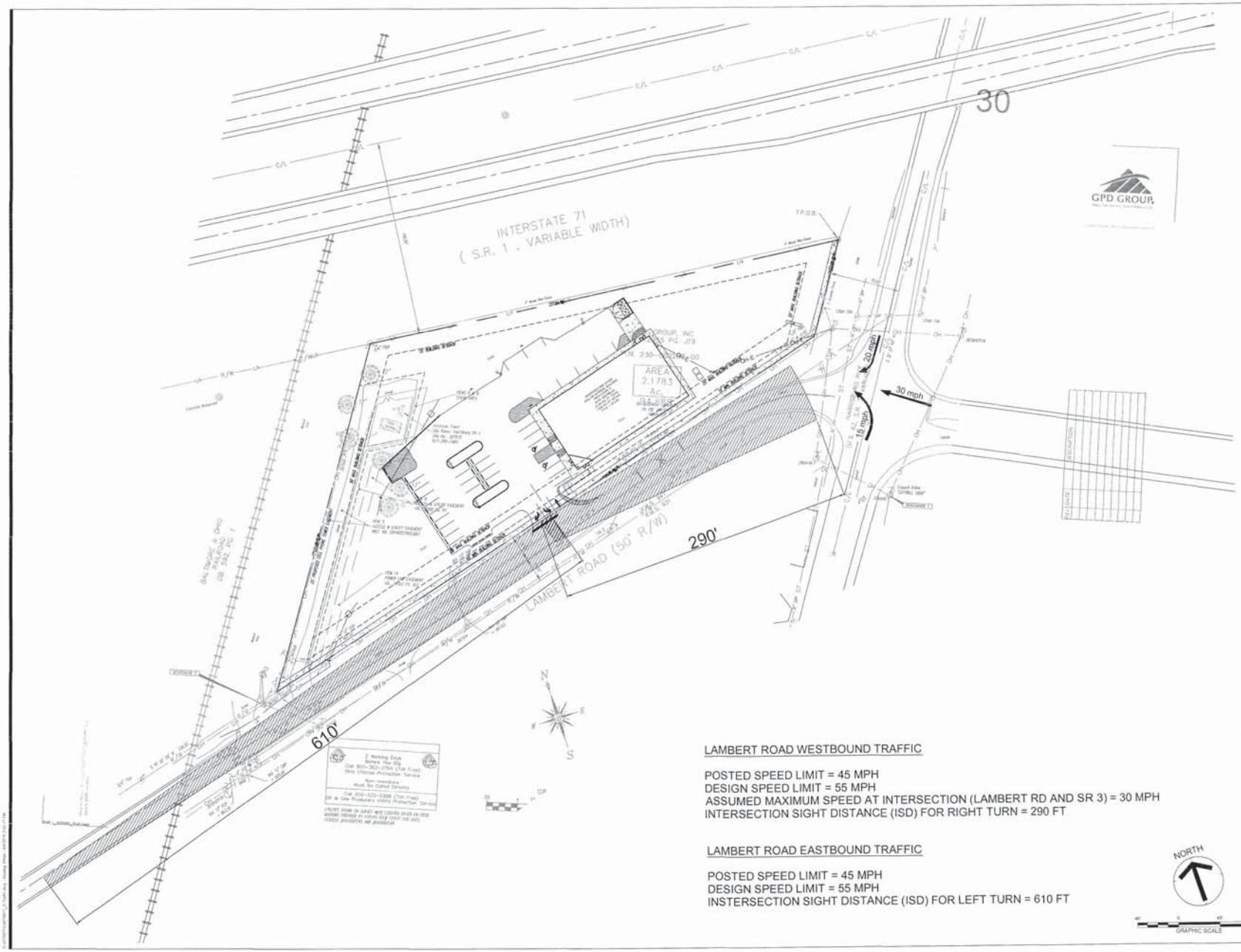
9010 Overlook Boulevard
Brentwood, TN 37027
615-370-0670

6732 LAMBERT ROAD
PLEASANT TOWNSHIP
FRANKLIN COUNTY, OHIO 43148

Revision		
No.	Date	Description

EXHIBIT A:
STOPPING SITE DISTANCE

PROJECT: 40786.11
DATE: 06.02.16



LAMBERT ROAD WESTBOUND TRAFFIC

POSTED SPEED LIMIT = 45 MPH
DESIGN SPEED LIMIT = 55 MPH
ASSUMED MAXIMUM SPEED AT INTERSECTION (LAMBERT RD AND SR 3) = 30 MPH
INTERSECTION SIGHT DISTANCE (ISD) FOR RIGHT TURN = 290 FT

LAMBERT ROAD EASTBOUND TRAFFIC

POSTED SPEED LIMIT = 45 MPH
DESIGN SPEED LIMIT = 55 MPH
INSTERSECTION SIGHT DISTANCE (ISD) FOR LEFT TURN = 610 FT

NORTH

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615.770.8100
WWW.GSPNET.COM

DOLLAR GENERAL

ORIENT (HARRISBURG) DOHP, LLC

9010 Overlook Boulevard
Brentwood, TN 37027
615-370-0670

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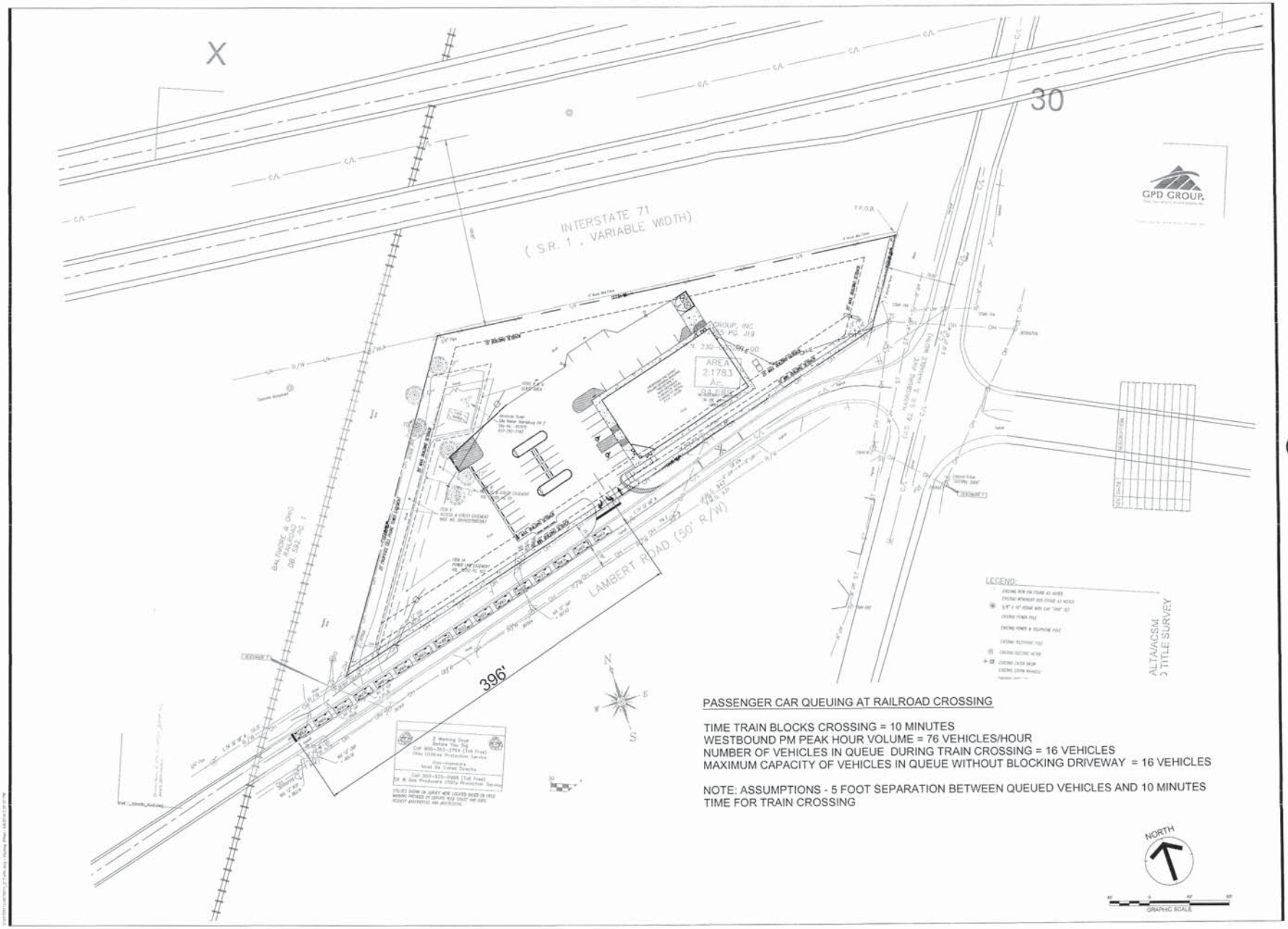
FRANKLIN COUNTY, OHIO 43148

Revision		
No.	Date	Description

EXHIBIT B:
INTERSECTION SITE DISTANCE

PROJECT: 40788.11
DATE: 09.02.16



PASSENGER CAR QUEUING AT RAILROAD CROSSING

TIME TRAIN BLOCKS CROSSING = 10 MINUTES
WESTBOUND PM PEAK HOUR VOLUME = 76 VEHICLES/HOUR
NUMBER OF VEHICLES IN QUEUE DURING TRAIN CROSSING = 16 VEHICLES
MAXIMUM CAPACITY OF VEHICLES IN QUEUE WITHOUT BLOCKING DRIVEWAY = 16 VEHICLES

NOTE: ASSUMPTIONS - 5 FOOT SEPARATION BETWEEN QUEUED VEHICLES AND 10 MINUTES TIME FOR TRAIN CROSSING

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GRESHAM SMITH AND PARTNERS
1600 Nashville City Center
511 Union Street
Nashville, TN 37219
615.770.8155
WWW.GSPNET.COM

DOLLAR GENERAL

ORIENT (HARRISBURG) DOHP, LLC
9010 Overlook Boulevard
Brentwood, TN 37027
615-370-0670

6732 LAMBERT ROAD
PLEASANT TOWNSHIP
FRANKLIN COUNTY, OHIO 43148

Revision		
No.	Date	Description

EXHIBIT C:
QUEUING

PROJECT: 45788.11
DATE: 06.02.16

APPENDIX B

Turn Lane Warrant Worksheet

2-Lane Highway Left Turn Lane Warrant (> 40 MPH)

Project: Dollar General

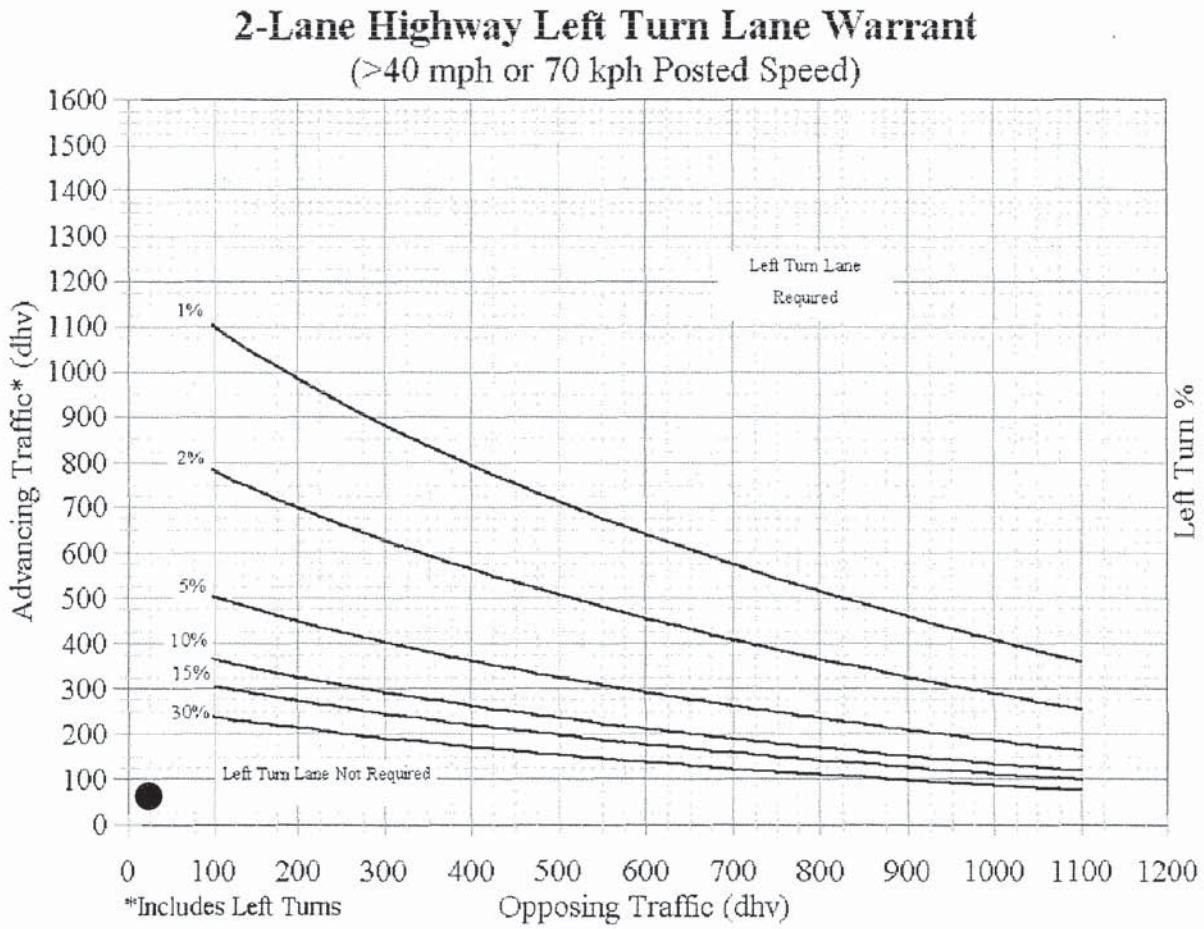
Project No: _____ PID: _____ Date: 1/13/16

Location: NW corner of Harrisburg Pike (US 63 / OH 3) and Lambert Road (County HWY 291)

Prepared for: _____ Calculated by: _____ Checked by: _____

Posted speed: 55 mph

Traffic Volumes:
- ☐ Based on Turning Movement Count, Date: _____
- ☐ Based on Certified Traffic Projections, Year: _____
- ☑ Other Traffic Counts by Cummins Consulting Services, PLLC



Direction	Advancing Volume	Opposing Volume	% Left Turns	Warrants (Yes or No)	Data Point Graph Symbol
Eastbound	85	25	19	No	●

2-Lane Highway Right Turn Lane Warrant (> 40 MPH)

Project: Dollar General

Project No: _____ PID: _____ Date: 1/13/16

Location: NW corner of Harrisburg Pike (US 63 / OH 3) and Lambert Road (County HWY 291)

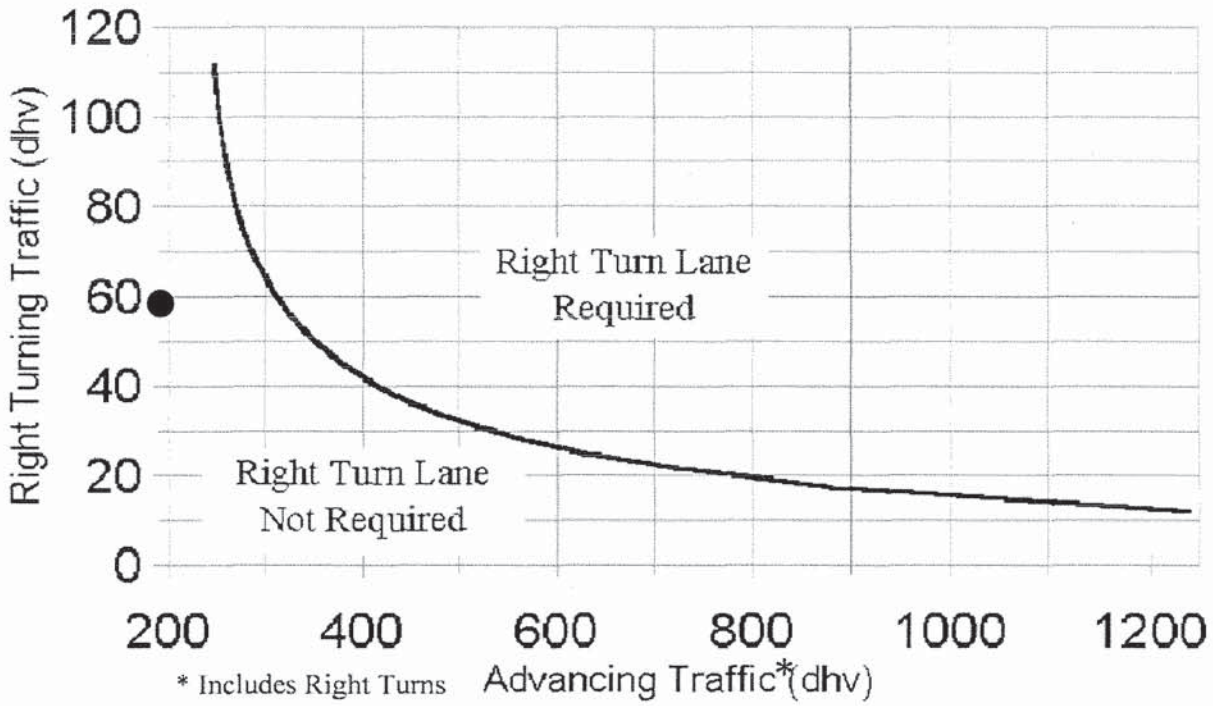
Prepared for: _____ Calculated by: _____ Checked by: _____

Posted speed: 55 mph

Traffic Volumes:
- ☐ Based on Turning Movement Count, Date: _____
- ☐ Based on Certified Traffic Projections, Year: _____
- ☑ Other Traffic Counts by Cummins Consulting Services, PLLC

2-Lane Highway Right Turn Lane Warrant

> 40 mph or 70 kph Posted Speed



Direction	Advancing Volume	Opposing Volume	% Left Turns	Warrants (Yes or No)	Data Point Graph Symbol
Westbound	94	59	N/A	No	●

APPENDIX C

Traffic Counts & Site Distance Charts

Study Name	Lambert Road
Start Date	2/24/2016
Start Time	12:00 AM

Group	Motorcycles	Cars	Light Goods Vehicles	Buses	Single-Unit Trucks	Articulated Trucks	Totals	
12:00 AM	0	1	0	0	0	0	1	
12:15 AM	0	1	0	0	0	0	1	
12:30 AM	0	0	0	0	0	0	0	
12:45 AM	0	2	0	0	0	0	2	4
1:00 AM	0	0	0	0	0	0	0	3
1:15 AM	0	1	0	0	0	0	1	3
1:30 AM	0	0	0	0	0	0	0	3
1:45 AM	0	2	0	0	0	0	2	3
2:00 AM	0	1	0	0	0	0	1	4
2:15 AM	0	1	0	0	0	0	1	4
2:30 AM	0	0	0	0	0	0	0	4
2:45 AM	0	0	0	0	0	0	0	2
3:00 AM	0	1	0	0	0	0	1	2
3:15 AM	0	0	0	0	0	0	0	1
3:30 AM	0	1	0	0	0	0	1	2
3:45 AM	0	1	0	0	0	0	1	3
4:00 AM	0	2	0	0	0	0	2	4
4:15 AM	0	2	0	0	0	0	2	6
4:30 AM	0	1	0	0	0	0	1	6
4:45 AM	0	2	0	0	0	0	2	7
5:00 AM	0	4	0	0	0	0	4	9
5:15 AM	0	4	0	0	0	0	4	11
5:30 AM	0	9	0	0	1	0	10	20
5:45 AM	0	10	0	0	0	0	10	28
6:00 AM	0	9	1	0	0	0	10	34
6:15 AM	0	11	1	0	0	0	12	42
6:30 AM	0	12	2	0	0	0	14	46
6:45 AM	0	11	3	2	0	0	16	52

7:00 AM	0	15	2	1	0	0		18	60
7:15 AM	0	22	2	0	0	0	AM Peak	24	72
7:30 AM	0	17	3	1	0	0		21	79
7:45 AM	0	16	0	0	0	0		16	79
8:00 AM	0	17	0	0	0	0		17	78
8:15 AM	0	15	3	2	0	0		20	74
8:30 AM	0	9	2	0	0	0		11	64
8:45 AM	0	9	1	0	0	0		10	58
9:00 AM	0	3	3	0	0	1		7	48
9:15 AM	0	9	2	0	1	0		12	40
9:30 AM	0	6	2	0	2	0		10	39
9:45 AM	0	13	3	0	0	0		16	45
10:00 AM	0	7	2	0	0	0		9	47
10:15 AM	0	7	3	0	0	0		10	45
10:30 AM	0	11	2	0	1	0		14	49
10:45 AM	0	4	1	0	0	0		5	38
11:00 AM	0	6	3	0	0	0		9	38
11:15 AM	0	4	2	0	0	0		6	34
11:30 AM	0	11	2	0	0	1		14	34
11:45 AM	0	10	2	0	0	0		12	41
12:00 PM	0	6	2	0	0	0		8	40
12:15 PM	0	11	2	0	0	0		13	47
12:30 PM	0	10	1	0	0	0		11	44
12:45 PM	0	11	5	0	1	0		17	49
1:00 PM	0	9	2	0	0	0		11	52
1:15 PM	0	13	4	0	1	0		18	57
1:30 PM	0	7	10	1	1	0		19	65
1:45 PM	0	14	3	2	1	0		20	68
2:00 PM	0	14	4	0	0	0		18	75
2:15 PM	0	11	5	0	0	0		16	73
2:30 PM	0	12	3	1	2	0		18	72
2:45 PM	0	16	3	0	0	0		19	71
3:00 PM	0	14	5	4	0	0		23	76
3:15 PM	0	14	4	1	0	0		19	79

3:30 PM	0	23	9	1	0	1		34	95
3:45 PM	0	13	5	1	0	0		19	95
4:00 PM	0	19	5	0	0	0		24	96
4:15 PM	0	24	2	0	0	0		26	103
4:30 PM	0	18	2	0	0	0		20	89
4:45 PM	0	23	3	0	0	0		26	96
5:00 PM	0	24	5	0	0	0	PM Peak	29	101
5:15 PM	0	28	2	0	0	0		30	105
5:30 PM	0	15	5	0	0	0		20	105
5:45 PM	0	20	3	0	0	0		23	102
6:00 PM	0	24	5	0	0	0		29	102
6:15 PM	0	15	3	0	0	1		19	91
6:30 PM	0	17	3	0	0	0		20	91
6:45 PM	0	14	1	0	0	0		15	83
7:00 PM	0	21	0	0	0	0		21	75
7:15 PM	0	11	0	0	0	0		11	67
7:30 PM	0	10	0	0	0	0		10	57
7:45 PM	0	10	0	0	0	0		10	52
8:00 PM	0	13	0	0	0	0		13	44
8:15 PM	0	15	0	0	0	0		15	48
8:30 PM	0	13	0	0	0	0		13	51
8:45 PM	0	12	0	0	0	0		12	53
9:00 PM	0	15	0	0	1	0		16	56
9:15 PM	0	9	0	0	0	0		9	50
9:30 PM	0	6	0	0	0	0		6	43
9:45 PM	0	7	0	0	0	0		7	38
10:00 PM	0	5	0	0	0	0		5	27
10:15 PM	0	5	0	0	0	0		5	23
10:30 PM	0	0	0	0	0	0		0	17
10:45 PM	0	3	0	0	0	0		3	13
11:00 PM	0	2	0	0	0	0		2	10
11:15 PM	0	5	0	0	0	0		5	10
11:30 PM	0	1	0	0	0	0		1	11
11:45 PM	0	1	0	0	0	0		1	9

	Motorcycles	Cars	Light Goods Vehicles	Buses	Single-Unit Trucks	Articulated Trucks
Totals	0	903	153	17	12	4
ADT	1089					

Study Name	Lambert Road
Start Date	2/24/2016
Start Time	12:00 AM

Channel:	Direction
Direction:	Westbound

Group	Motorcycles	Cars	Light Goods Vehicles	Buses	Single-Unit Trucks	Articulated Trucks
12:00 AM	0	1	0	0	0	0
12:15 AM	0	0	0	0	0	0
12:30 AM	0	0	0	0	0	0
12:45 AM	0	1	0	0	0	0
1:00 AM	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0
1:30 AM	0	0	0	0	0	0
1:45 AM	0	2	0	0	0	0
2:00 AM	0	1	0	0	0	0
2:15 AM	0	1	0	0	0	0
2:30 AM	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0
3:00 AM	0	1	0	0	0	0
3:15 AM	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0
4:00 AM	0	1	0	0	0	0
4:15 AM	0	1	0	0	0	0
4:30 AM	0	0	0	0	0	0
4:45 AM	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0
5:15 AM	0	0	0	0	0	0
5:30 AM	0	2	0	0	0	0
5:45 AM	0	2	0	0	0	0
6:00 AM	0	4	0	0	0	0
6:15 AM	0	1	0	0	0	0
6:30 AM	0	0	0	0	0	0

6:45 AM	0	0	0	1	0	0
7:00 AM	0	3	0	0	0	0
7:15 AM	0	3	0	0	0	0
7:30 AM	0	5	2	1	0	0
7:45 AM	0	3	0	0	0	0
8:00 AM	0	4	0	0	0	0
8:15 AM	0	2	1	1	0	0
8:30 AM	0	1	0	0	0	0
8:45 AM	0	2	0	0	0	0
9:00 AM	0	2	0	0	0	1
9:15 AM	0	4	1	0	0	0
9:30 AM	0	3	1	0	1	0
9:45 AM	0	4	2	0	0	0
10:00 AM	0	1	0	0	0	0
10:15 AM	0	4	2	0	0	0
10:30 AM	0	4	2	0	1	0
10:45 AM	0	2	1	0	0	0
11:00 AM	0	5	1	0	0	0
11:15 AM	0	1	0	0	0	0
11:30 AM	0	6	2	0	0	1
11:45 AM	0	7	1	0	0	0
12:00 PM	0	4	1	0	0	0
12:15 PM	0	5	0	0	0	0
12:30 PM	0	3	0	0	0	0
12:45 PM	0	7	3	0	0	0
1:00 PM	0	1	0	0	0	0
1:15 PM	0	6	2	0	0	0
1:30 PM	0	5	7	0	0	0
1:45 PM	0	6	3	1	0	0
2:00 PM	0	9	3	0	0	0
2:15 PM	0	8	2	0	0	0
2:30 PM	0	7	2	1	2	0
2:45 PM	0	6	1	0	0	0
3:00 PM	0	8	5	1	0	0

3:15 PM	0	9	3	0	0	0
3:30 PM	0	14	5	1	0	1
3:45 PM	0	8	3	0	0	0
4:00 PM	0	10	4	0	0	0
4:15 PM	0	14	2	0	0	0
4:30 PM	0	13	1	0	0	0
4:45 PM	0	12	2	0	0	0
5:00 PM	0	20	3	0	0	0
5:15 PM	0	20	1	0	0	0
5:30 PM	0	5	2	0	0	0
5:45 PM	0	17	2	0	0	0
6:00 PM	0	13	3	0	0	0
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7:00 PM	0	10	0	0	0	0
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7:30 PM	0	6	0	0	0	0
7:45 PM	0	8	0	0	0	0
8:00 PM	0	7	0	0	0	0
8:15 PM	0	12	0	0	0	0
8:30 PM	0	8	0	0	0	0
8:45 PM	0	7	0	0	0	0
9:00 PM	0	9	0	0	0	0
9:15 PM	0	5	0	0	0	0
9:30 PM	0	3	0	0	0	0
9:45 PM	0	4	0	0	0	0
10:00 PM	0	1	0	0	0	0
10:15 PM	0	3	0	0	0	0
10:30 PM	0	0	0	0	0	0
10:45 PM	0	3	0	0	0	0
11:00 PM	0	0	0	0	0	0
11:15 PM	0	3	0	0	0	0
11:30 PM	0	1	0	0	0	0

11:45 PM	0	0	0	0	0	0
Totals	0	438	80	7	4	4
WB ADT	533					

Channel:	Direction					
Direction:	Eastbound					
Group	Motorcycles	Cars	Light Goods Vehicles	Buses	Single-Unit Trucks	Articulated Trucks
12:00 AM	0	0	0	0	0	0
12:15 AM	0	1	0	0	0	0
12:30 AM	0	0	0	0	0	0
12:45 AM	0	1	0	0	0	0
1:00 AM	0	0	0	0	0	0
1:15 AM	0	1	0	0	0	0
1:30 AM	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0
2:45 AM	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0
3:30 AM	0	1	0	0	0	0
3:45 AM	0	1	0	0	0	0
4:00 AM	0	1	0	0	0	0
4:15 AM	0	1	0	0	0	0
4:30 AM	0	1	0	0	0	0
4:45 AM	0	2	0	0	0	0
5:00 AM	0	4	0	0	0	0
5:15 AM	0	4	0	0	0	0
5:30 AM	0	7	0	0	1	0
5:45 AM	0	8	0	0	0	0
6:00 AM	0	5	1	0	0	0
6:15 AM	0	10	1	0	0	0

6:30 AM	0	12	2	0	0	0
6:45 AM	0	11	3	1	0	0
7:00 AM	0	12	2	1	0	0
7:15 AM	0	19	2	0	0	0
7:30 AM	0	12	1	0	0	0
7:45 AM	0	13	0	0	0	0
8:00 AM	0	13	0	0	0	0
8:15 AM	0	13	2	1	0	0
8:30 AM	0	8	2	0	0	0
8:45 AM	0	7	1	0	0	0
9:00 AM	0	1	3	0	0	0
9:15 AM	0	5	1	0	1	0
9:30 AM	0	3	1	0	1	0
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10:00 AM	0	6	2	0	0	0
10:15 AM	0	3	1	0	0	0
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11:00 AM	0	1	2	0	0	0
11:15 AM	0	3	2	0	0	0
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12:00 PM	0	2	1	0	0	0
12:15 PM	0	6	2	0	0	0
12:30 PM	0	7	1	0	0	0
12:45 PM	0	4	2	0	1	0
1:00 PM	0	8	2	0	0	0
1:15 PM	0	7	2	0	1	0
1:30 PM	0	2	3	1	1	0
1:45 PM	0	8	0	1	1	0
2:00 PM	0	5	1	0	0	0
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11:15 PM	0	2	0	0	0	0

11:30 PM	0	0	0	0	0	0
11:45 PM	0	1	0	0	0	0
Totals	0	465	73	10	8	0
EB ADT	556					

STOPPING SIGHT DISTANCE

201-1E

REFERENCE SECTION
201.2 & 201.2.1

HEIGHT OF EYE 3.50'

HEIGHT OF OBJECT 2.00'

$SSD = 1.47Vt + 1.075V^2 \div a$

SSD = stopping sight distance, ft;
t = brake reaction time, 2.5s;
V = design speed, mph;
a = deceleration rate, $11.2 ft/s^2$

DESIGN SPEED (mph)	DESIGN SSD (feet)	DESIGN SPEED (mph)	DESIGN SSD (feet)
20	115	48	400
21	120	49	415
22	130	50	425
23	140	51	440
24	145	52	455
25	155	53	465
26	165	54	480
27	170	55	495
28	180	56	510
29	190	57	525
30	200	58	540
31	210	59	555
32	220	60	570
33	230	61	585
34	240	62	600
35	250	63	615
36	260	64	630
37	270	65	645
38	280	66	665
39	290	67	680
40	305	68	695
41	315	69	715
42	325	70	730
43	340	71	745
44	350	72	765
45	360	73	780
46	375	74	800
47	385	75	820

INTERSECTION SIGHT DISTANCE

201-5E

REFERENCE SECTION
201.3, 201.3.1,
201.3.2 & 201.3.3

(Continued Figures & Notes)

Time Gaps

		Design Vehicle	Time gap(s) at design speed of major road (t_g)
(A)	Left Turn from a Stop	Passenger car	7.5 sec.
		Single-unit truck	9.5 sec.
		Combination truck	11.5 sec.
(B)	RightTurn from a Stop or Crossing Manuever	Passenger car	6.5 sec.
		Single-unit truck	8.5 sec.
		Combination truck	10.5 sec.

A. Note: The ISD & time gaps shown in the above tables are for a stopped vehicle to turn left onto a two-lane highway with no median and grades of 3 % or less. For other conditions, the time gap must be adjusted as follows:

For multilane highways:

For left turns onto two-way highways with more than two lanes, add 0.5 seconds for passenger cars or 0.7 seconds for trucks for each additional lane, from the left, in excess of one, to be crossed by the turning vehicle.

For minor road approach grades:

If the approach grade is an upgrade that exceeds 3 %, add 0.2 seconds for each % grade for left turns.

B. Note: The ISD & time gaps shown in the above tables are for a stopped vehicle to turn right onto a two-lane highway with no median and grades of 3 % or less. For other conditions, the time gap must be adjusted as follows:

For multilane highways:

For crossing a major road with more than two lanes, add 0.5 seconds for passenger cars or 0.7 seconds for trucks for each additional lane to be crossed and for narrow medians that cannot store the design vehicle.

For minor road approach grades:

If the approach grade is an upgrade that exceeds 3 %, add 0.1 seconds for each % grade.

INTERSECTION SIGHT DISTANCE

201-5E

REFERENCE SECTION
201.3, 201.3.1,
201.3.2 & 201.3.3

(See Following Page for Additional Figures & Notes)

HEIGHT OF EYE 3.50′ HEIGHT OF OBJECT 3.50′

DESIGN SPEED (mph)	Passenger Cars Completing a Left Turn from a Stop (assuming a t_g of 7.5 sec.)		Passenger Cars Completing a Right Turn from a Stop or Crossing Maneuuver (assuming a t_g of 6.5 sec.)	
	ISD (ft.)	K-CREST VERT. CURVE	ISD (ft.)	K-CREST VERT. CURVE
15	170	10	145	8
20	225	18	195	14
25	280	28	240	21
30	335	40	290	30
35	390	54	335	40
40	445	71	385	53
45	500	89	430	66
50	555	110	480	82
55	610	133	530	100
60	665	158	575	118
65	720	185	625	140
70	775	214	670	160

If ISD cannot be provided due to environmental or R/W constraints, then as a minimum, the SSD for vehicles on the major road should be provided.

$$ISD = 1.47 \times V_{major} \times t_g$$

ISD = intersection sight distance (ft.)

V_{major} = design speed of major road (mph)

t_g = time gap for minor road vehicle to enter the major road (sec.)

Using: S = Intersection Sight Distance
L = Length of Crest Vertical Curve
A = Algebraic Difference in Grades (%), Absolute Value
K = Rate of Vertical Curvature

- For a given design speed and an "A" value, the calculated length "L" = K x A

- To determine "S" with a given "L" and "A", use the following:

For S<L: $S = 52.92\sqrt{K}$, where K = L/A

For S>L: S = 1400/A + L/2

POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN

Dollar General Store

Lambert Road at Harrisburg Pike (US 62)
Orient, OH 43146
Pleasant Township
Franklin County

GS&P PROJECT # 40788.11

December 2015
Revised June 2016

GRESHAM SMITH AND PARTNERS

511 Union Street
1400 Nashville City Center
Nashville, TN 37219
Phone: 615-770-8100

CONTACT:
Joe Johnston
Phone: 615-770-8204
E-mail: joe_johnston@gspnet.com

TABLE OF CONTENTS

SUMMARY

The proposed Dollar General Store is located on approximately 2.18 acres along Lambert Road in Pleasant Township, Franklin County, Ohio. The site is currently undeveloped but includes a cell tower with gravel access road. Existing slopes range from 0 to 6 percent, draining primarily to the southwest into a ditch along the north right of way of Lambert Road (see Appendix A). A portion of the site drains to the north to an existing ditch in the southern right of way of Interstate 71. The proposed development is a one story, 9,100 square foot commercial retail store with the associated parking and utilities. Existing drainage patterns will be preserved in the proposed design, with the addition of a detention pond for stormwater discharge and quality management.

Approximately 40% of the proposed site will consist of the building footprint and pavement, and the remaining 60% will be grass and landscaped areas. See Table 1 for a further pre and post development breakdown. The soils onsite consist primarily of Crosby silt loam, classified as Hydrologic Group C/D according to the NRCS Web Soil Survey. Curve numbers for Group C were used in the following analysis. The proposed area of disturbance is 1.7 acres.

The stormwater quantity and quality controls for the proposed Dollar General Store have been designed in accordance with the Ohio DNR Rainwater and Land Development Handbook and the Franklin County Stormwater Drainage Manual to the fullest extent possible given the limitations of the site topography and lot dimensions.

The site is located within the Big Darby Creek Watershed and therefore development of the property must include provisions for groundwater recharge in accordance with the Ohio EPA General Permit No. OHCD00002. The site does not lie within any Big Darby Creek stream buffers.

STORMWATER QUANTITY

The proposed site grading reduces the storm peak discharge and volume of runoff from the site through the use of two interconnected ponds, the upper pond (bioretention facility) is primarily used to achieve the required water quality and ground water recharge volumes. The lower pond (detention pond) is used to reduce the peak discharge for the site according to the critical storm method. The pond locations and outfall points may be seen on Drawing C3.1.

The Critical Storm was found using the method presented in Section 3.2.2 of the Franklin County Stormwater Drainage Manual. From Table 3.1, the 5 year storm is critical for an increase in the 1 year runoff volume of 20% – 50%. This project will cause a volume increase for the 1 year storm of 2,264 cubic feet or 34.3%. The detention pond outlet has been designed so that the discharge from the 10 year storm and all more frequent events is less than the 1 year pre-developed rate while still providing 1 foot of freeboard for the 100 year event. All discharges from storm events less frequent than the critical storm have been held to the 10 year pre-developed rate. The majority of runoff leaving the site is sheet flow from bypass areas. Refer to the Hydraflow calculations provided in Appendix B for detailed stage-storage volumes for the ponds. The outlets of both ponds will be precast concrete outlet control structures. See sheet C4.3 for details of the outlet structures. A 10' wide emergency overflow spillway will also be provided.

Table 1 shows the breakdown of land use types used to calculate curve numbers referenced from the FCSDM Table 2-7. Hydrologic Soil Group D has been used with the value for Brush selected to approximate the existing condition. NRCS Soil Map provided in Appendix D.

Table 1: Curve Number Summary Table

Land Use	Curve Number	Pre-Developed Acres	Post-Developed Acres
Impervious	98	0	0.83
Semi-Impervious (Gravel)	89	0.13	0.13
Pervious (Brush, Poor Condition)	83	2.05	0.55
Pervious (Open Space, Good Condition)	80	0.00	0.67
	Total Area	**2.18**	**2.18**
	Composite CN	**83**	**88**

Table 2: Stormwater Discharge Summary Table

DG Site	24-Hour Rainfall	Pre-Developed Runoff	Allowable Discharge based on Critical Storm	Total Post-Developed Runoff	Post Developed Runoff with Detention*	Post Developed Discharge to Ditch
Storm Event	(in.)	(c.f.s.)	(c.f.s.)	(c.f.s.)	(c.f.s.)	(c.f.s.)
1 Year	2.20	2.053	2.053	4.143	1.187	0.262
2 Year	2.63	2.886	2.053	5.455	1.602	0.336
5 Year	3.23	4.125	2.053	7.321	2.199	0.419
10 Year	3.73	5.197	5.197	8.891	2.713	0.461
25 Year	4.44	6.757	5.197	11.130	3.453	0.514
50 Year	5.02	8.050	5.197	12.950	4.056	0.547
100 Year	5.63	9.420	5.197	14.870	4.680	0.564

*Including Bypass

Table 3: Bioretention Facility Summary Table

24 Hour SCS Storm	Peak Stage (ft)	Peak Storage (cu.ft.)	Outlet Peak Discharge (To Detention) (cfs)	Freeboard (ft) Top of Berm = 871.00
1 year	870.09	2,573	0.938	0.91
2 year	870.16	3,085	1.283	0.84
5 year	870.27	3,890	1.449	0.73
10 year	870.37	4,573	1.558	0.63
25 year	870.50	5,491	1.685	0.50
50 year	870.57	6,197	1.783	0.43
100 year	870.64	6,939	1.863	0.36

Table 4: Detention Pond Summary Table

24 Hour SCS Storm	Peak Stage (ft)	Peak Storage (cu.ft.)	Outlet Peak Discharge (To Ditch) (cfs)	Freeboard (ft) Top of Berm = 872.00
1 year	868.26	904	0.626	3.74
2 year	868.59	1,762	0.336	3.41
5 year	869.05	3,044	0.419	2.95
10 year	869.31	4,162	0.461	2.69
25 year	869.68	5,746	0.514	2.32
50 year	869.94	6,858	0.547	2.06
100 year	870.08	7,541	0.564	1.92

DRAINAGE TO ODOT RIGHT OF WAY

A portion of the undeveloped site currently drains to the north to an existing ditch in the southern right of way of Interstate 71 under ODOT jurisdiction. The proposed grading will reduce the area of surface flow to the ditch from 0.76 acres to 0.45 acres. The underdrain from the bioretention area will be routed to discharge from a headwall on the Dollar General lot onto the ODOT right of way. Flow from these underdrain is expected to be minimal as it will be installed above the gravel storage layer provided for groundwater recharge. EPA SWMM modeling software was used to model the bioretention area and underdrain. Flow results from these calculations were found to be less than 0.1 cfs.

STORMWATER QUALITY

The proposed site grading treats the stormwater runoff quality through the use of a bioretention facility. Water Quality Volume required by Franklin County is found by the equation below, given in Section 3.3.2 of the Franklin County Stormwater Drainage Manual.

$$WQv = C * P * (Disturbed\ Area) * (1'/12")$$

WQv = water quality volume (acre-feet)
C = runoff coefficient (0.8 for Commercial Projects)
P = precipitation depth (3/4")
A = Disturbed area (acres)

$$WQv = 0.8 * (3/4") * (1.5) * (1'/12") = 0.075 \text{ acre feet} = 3{,}267 \text{ cubic feet}$$

The bioretention facility provides 6,200 cubic feet of water quality volume below the riser elevation of 870.0. Per the ODNR RLD manual, the bioretention area must be at least 5% of the contributing impervious area (0.88 x 0.05 = 1,920 SF minimum). The provided area of bioretention (6,200 SF) is equal to 16.2% of the 0.88 acres of impervious area that drain to the facilities.

The bioretention facility design also includes a gravel "verge" trench along the pavement edge leading into the upper facility to further filter stormwater runoff from the parking lot and act as pretreatement to the facility.

Areas that bypass the water quality features will generate minimal runoff and will leave the site as sheet flow, being filtered by the new and existing undisturbed vegetation.

GROUNDWATER RECHARGE

This project lies within the Big Darby Creek Watershed. To comply with the Ohio EPA General Permit No. OHCD00002 a groundwater recharge area must be provided to ensure that post-developed recharge rates equal or exceed pre-development. The amount of required recharge has been calculated by the process given in the General Permit. Annual Average Expected Total Groundwater Recharge values are taken from Table 1 in the General Permit due to the site's location within the watershed. The groundwater recharge volume required is equal to the difference in the existing recharge volume and the proposed recharge volume for the disturbed area. Area of the bioretention facilities has not been included in the proposed recharge area below.

$$V_{required} = V_{existing} - V_{proposed}$$

$V_{existing} = A_D * D_{existing} / 12$

A_D = Area of Disturbance = 1.5 acres
$D_{existing}$ = Recharge Rate from Table 1 = 14.6 inches/year (Brush, D soils)

$V_{existing}$ = 1.825 acre-feet/year = 79,497 cubic feet / year

$V_{proposed} = A_D * D_{proposed} / 12$

A_D = Area of Disturbance – Area of Bioretention (0.202 acres) = 1.297 acres
$D_{proposed}$ = Recharge Rate from Table 1 = 0.88 acres * 0 inches/year (Impervious Area) + 0.418 acres * 12.7 inches/year (Urban Grasses, D soils)

$V_{proposed}$ = 0.384 acre-feet per year = 19,270 cubic feet / year

$$V_{required} = 79,497 - 19,270 = 60,227 \text{ cubic feet / year}$$

Based on the existing site conditions and limitations of the underlying fill materials, OEPA has seen fit to impose a reduction of the calculated groundwater recharge requirement by 33% as stated in the memo reproduced on the following page of this report, bringing the groundwater recharge volume required to the figure given below.

Total Groundwater Recharge Volume Required = 40,185 cubic feet / year

The 6,200 square feet of groundwater recharge area has been designed to provide the required annual groundwater recharge volume expected to infiltrate during the months of May – November due to historical water table variations throughout the year. EPA SWMM software has been used to model the amount of infiltration expected to occur in the recharge area using rainfall data for Franklin County. An infiltration rate of 0.03 inches/per hour has been used. See EPA SWMM report in Appendix C.

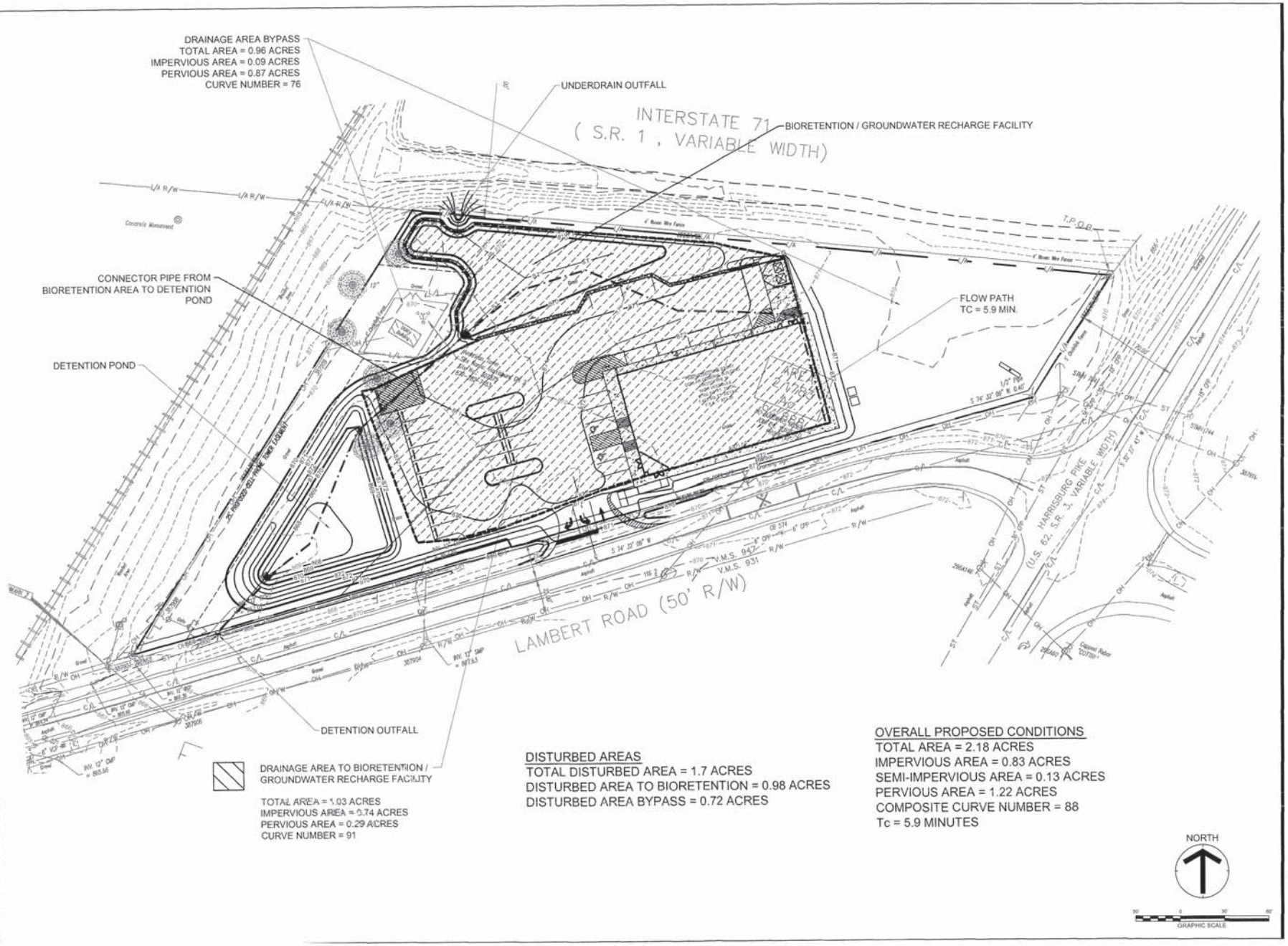
The Low Impact Development (LID) control feature modeled with EPA SWMM was found to provide 84.13" of infiltration loss over the area of bioretention facility as given below. By converting this depth to feet and multiplying by the area of the facility, a volume of expected annual groundwater recharge was found to be approximately 43,467 cubic feet.

$$V_{provided} = 84.13" * (1'/12") * 6,200 \text{ ft}^2 = 43,467 \text{ cubic feet / year}$$

Total Groundwater Recharge Volume Provided = 43,467 cubic feet / year

APPENDIX A

Drainage Area Maps



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GRESHAM SMITH AND PARTNERS
1400 Nashville City Center
511 Union Street
Nashville, TN 37219
615.770.8600
WWW.GSPNET.COM

DOLLAR GENERAL

ORIENT (HARRISBURG) DOHP, LLC

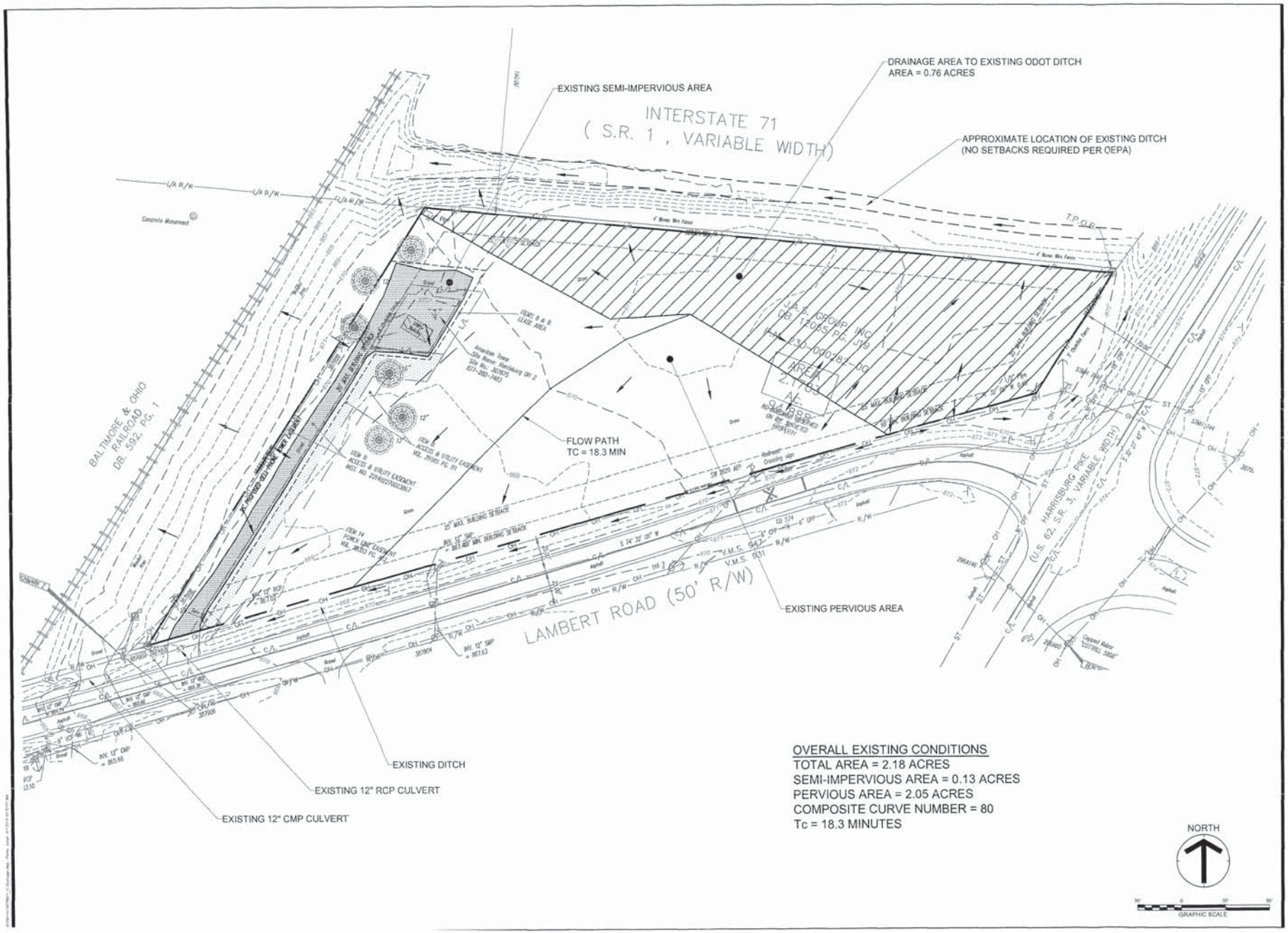
9010 Overlook Boulevard
Brentwood, TN 37027
615-370-0670

6732 LAMBERT ROAD
PLEASANT TOWNSHIP
FRANKLIN COUNTY, OHIO 43146

Revision		
No.	Date	Description

PROPOSED DRAINAGE AREA TO BIORETENTION / GROUNDWATER RECHARGE FACILITY

PROJECT: 40169.11
DATE: 06.02.16



OVERALL EXISTING CONDITIONS
TOTAL AREA = 2.18 ACRES
SEMI-IMPERVIOUS AREA = 0.13 ACRES
PERVIOUS AREA = 2.05 ACRES
COMPOSITE CURVE NUMBER = 80
Tc = 18.3 MINUTES

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1400 Nashville City Center
511 Union Street
Nashville, TN 37219
615.770.8100
WWW.GSPNET.COM

DOLLAR GENERAL

ORIENT (HARRISBURG) DOHP, LLC

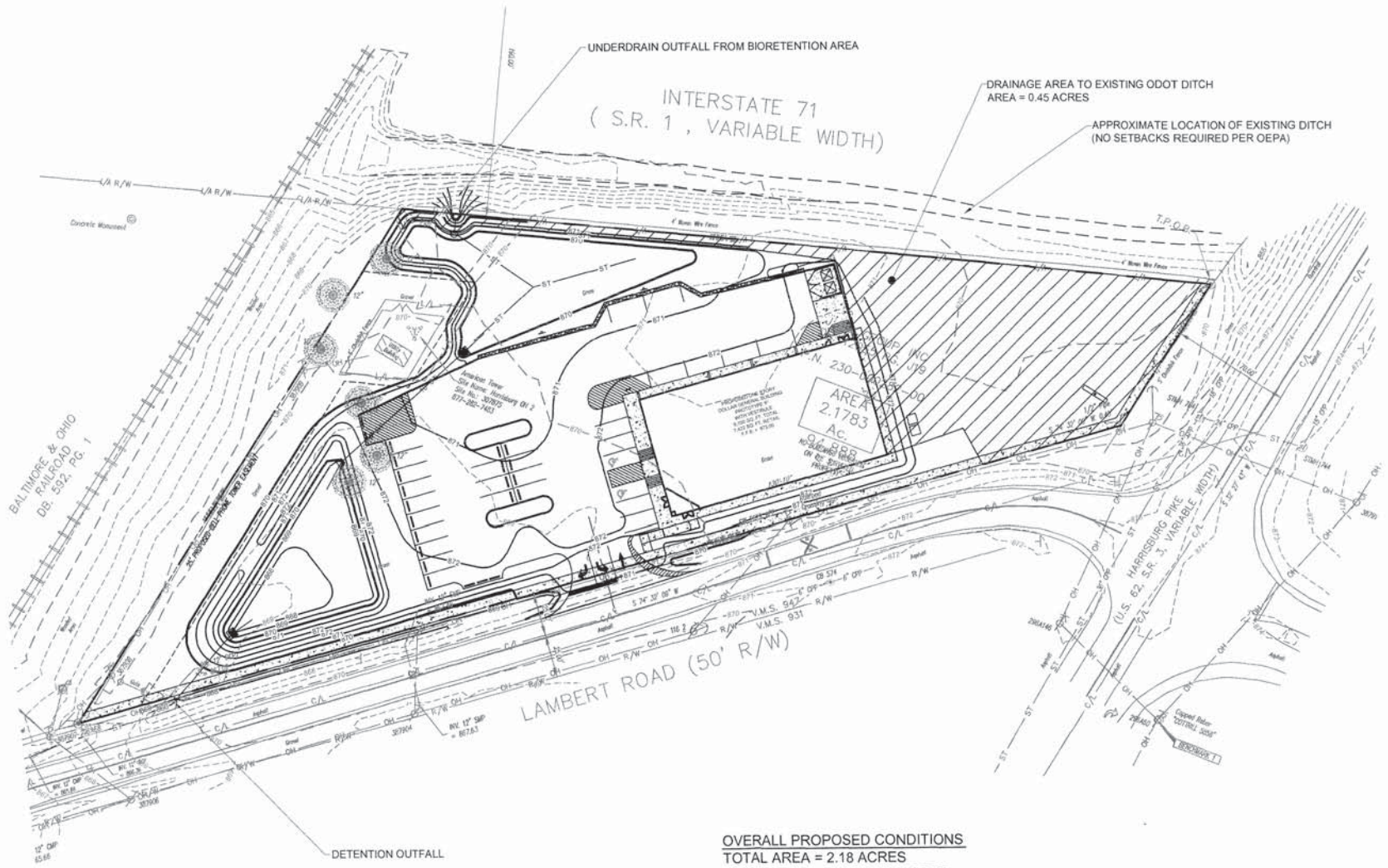
9010 Overlook Boulevard
Brentwood, TN 37027
615-370-0670

6732 LAMBERT ROAD
PLEASANT TOWNSHIP
FRANKLIN COUNTY, OHIO 43146

Revision		
No.	Date	Description

EXISTING

PROJECT: 40786.11
DATE: 09.02.15



OVERALL PROPOSED CONDITIONS
TOTAL AREA = 2.18 ACRES
IMPERVIOUS AREA = 0.83 ACRES
SEMI-IMPERVIOUS AREA = 0.13 ACRES
PERVIOUS AREA = 1.22 ACRES
COMPOSITE CURVE NUMBER = 88
Tc = 5.9 MINUTES

NORTH

GRAPHIC SCALE

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GRESHAM SMITH AND PARTNERS
1400 Nashville City Center
511 Union Street
Nashville, TN 37219
615.770.8100
WWW.GSPNET.COM

DOLLAR GENERAL

ORIENT (HARRISBURG) DOHP, LLC

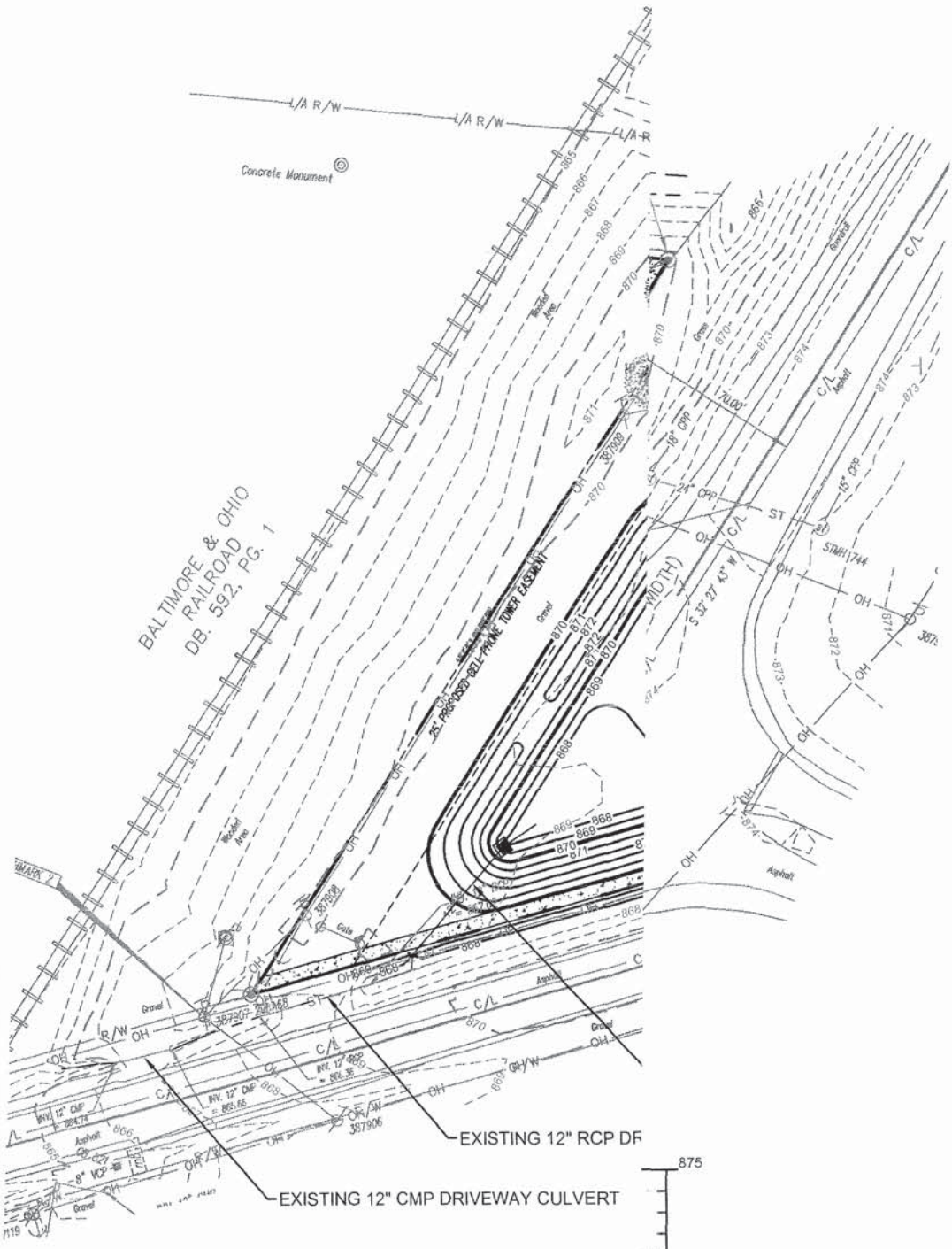
9010 Overlook Boulevard
Brentwood, TN 37027
615-370-0670

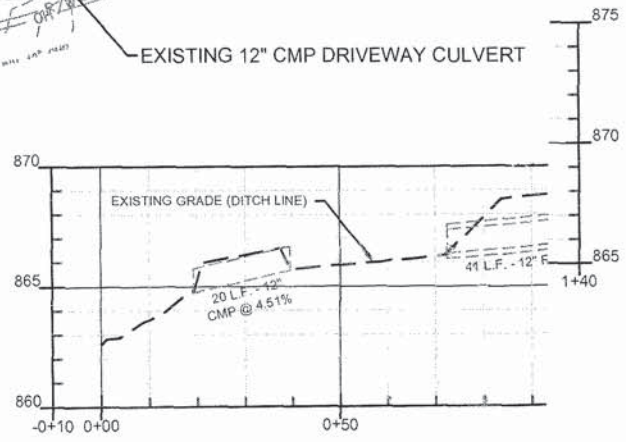
6732 LAMBERT ROAD
PLEASANT TOWNSHIP
FRANKLIN COUNTY, OHIO 43148

Revision		
No.	Date	Description

PROPOSED DRAINAGE AREA TO ODOT RIGHT OF WAY

PROJECT: 40784.11
DATE: 09.02.16





LAMBERT ROAD ROW EXISTING DRAINAG

SCALE H:1"=20'; V:1"=4'

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6732 LAMBERT ROAD
PLEASANT TOWNSHIP
FRANKLIN COUNTY, OHIO 43148

Revision		
No.	Date	Description

EXISTING AND PROPOSED STORM SEWER PROFILES

PROJECT: 40788.11
DATE: 06.02.16

APPENDIX B

Onsite Drainage Calculations

Hydraflow Table of Contents

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	2.053	2	726	6,608	------	------	------	Pre-development
3	SCS Runoff	4.143	2	716	8,373	------	------	------	Post-development
5	SCS Runoff	2.529	2	716	5,254	------	------	------	To Bioretention Facility
7	SCS Runoff	0.222	2	718	445	------	------	------	To Detention Pond
9	SCS Runoff	0.968	2	724	3,097	------	------	------	Bypass
11	Reservoir(i)	0.262	2	758	3,739	5, 7	870.09	3,478	Pond Series Routing
13	Combine	1.187	2	726	6,836	9, 11,	------	------	Total Proposed Runoff

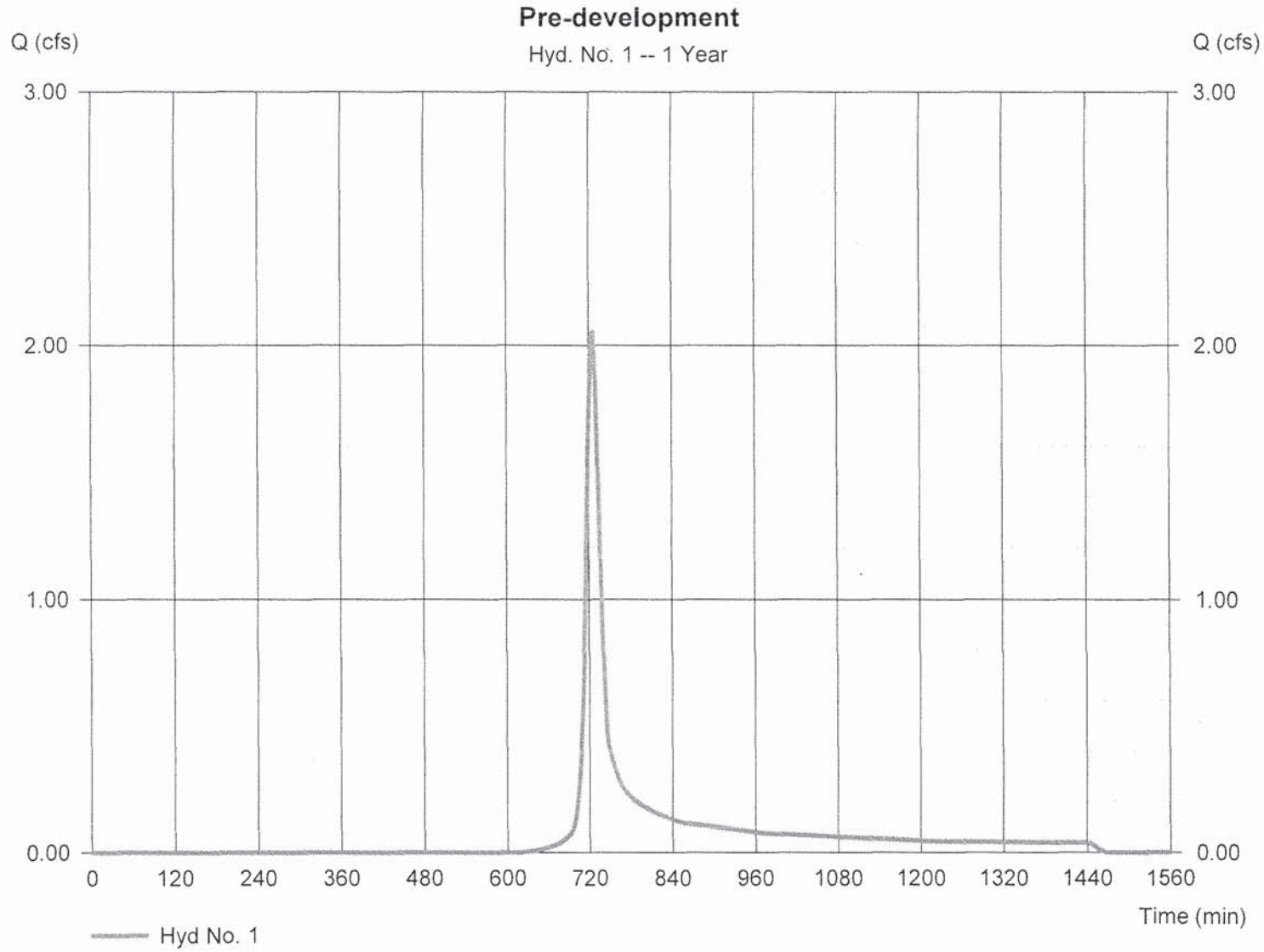
Hydrograph Report

Hyd. No. 1

Pre-development

Hydrograph type	= SCS Runoff	Peak discharge	= 2.053 cfs
Storm frequency	= 1 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 6,608 cuft
Drainage area	= 2.180 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.30 min
Total precip.	= 2.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.130 x 89) + (2.050 x 83)] / 2.180



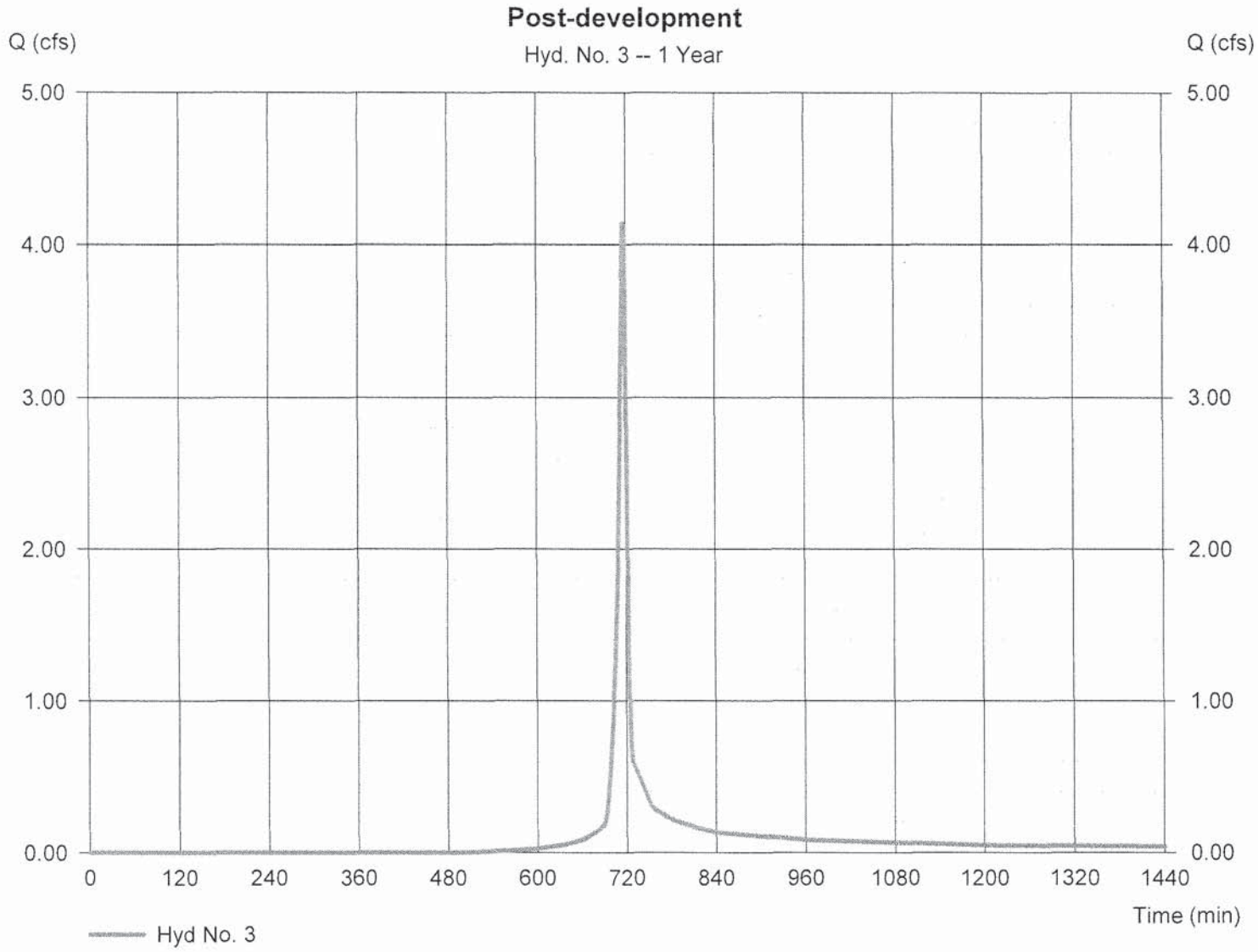
Hydrograph Report

Hyd. No. 3

Post-development

Hydrograph type	= SCS Runoff	Peak discharge	= 4.143 cfs
Storm frequency	= 1 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 8,373 cuft
Drainage area	= 2.180 ac	Curve number	= 88*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 5.90 min
Total precip.	= 2.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.830 x 98) + (0.130 x 89) + (0.550 x 83) + (0.670 x 80)] / 2.180



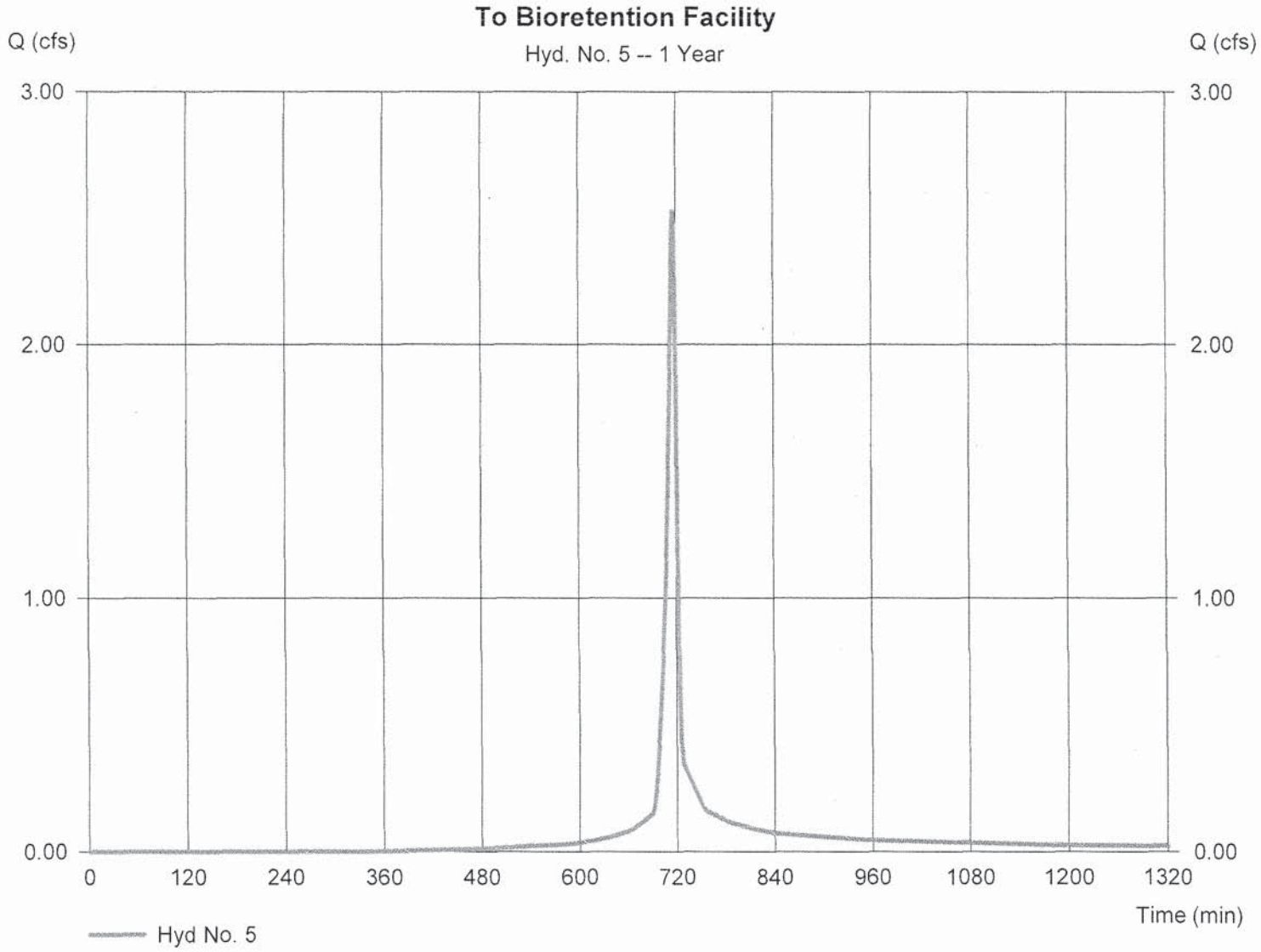
Hydrograph Report

Hyd. No. 5

To Bioretention Facility

Hydrograph type	= SCS Runoff	Peak discharge	= 2.529 cfs
Storm frequency	= 1 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 5,254 cuft
Drainage area	= 1.030 ac	Curve number	= 93*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 5.90 min
Total precip.	= 2.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.740 x 98) + (0.290 x 80)] / 1.030



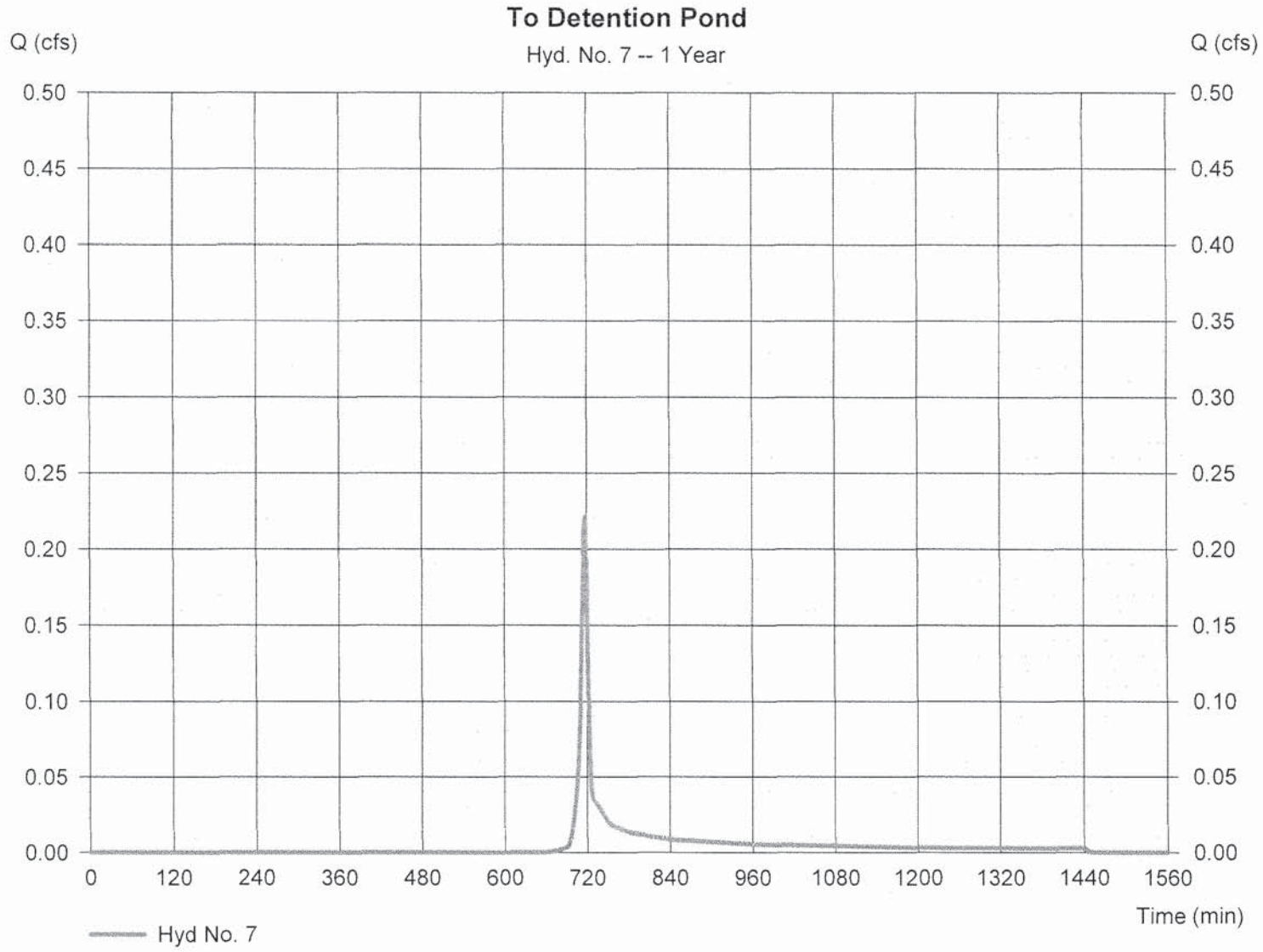
Hydrograph Report

Hyd. No. 7

To Detention Pond

Hydrograph type	= SCS Runoff	Peak discharge	= 0.222 cfs
Storm frequency	= 1 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 445 cuft
Drainage area	= 0.190 ac	Curve number	= 80*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.190 x 80)] / 0.190



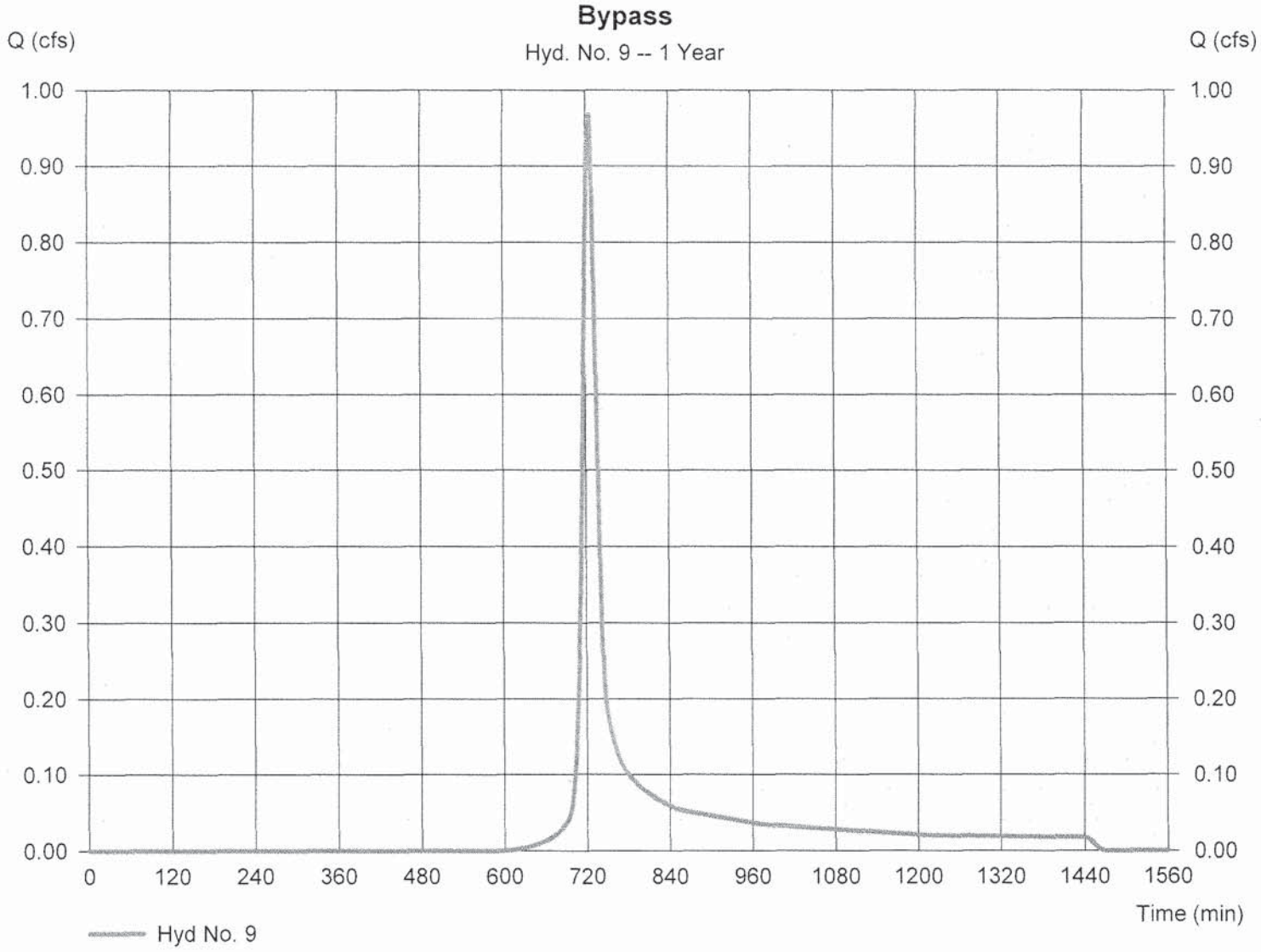
Hydrograph Report

Hyd. No. 9

Bypass

Hydrograph type	= SCS Runoff	Peak discharge	= 0.968 cfs
Storm frequency	= 1 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 3,097 cuft
Drainage area	= 0.960 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 17.00 min
Total precip.	= 2.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.086 x 98) + (0.870 x 83)] / 0.960



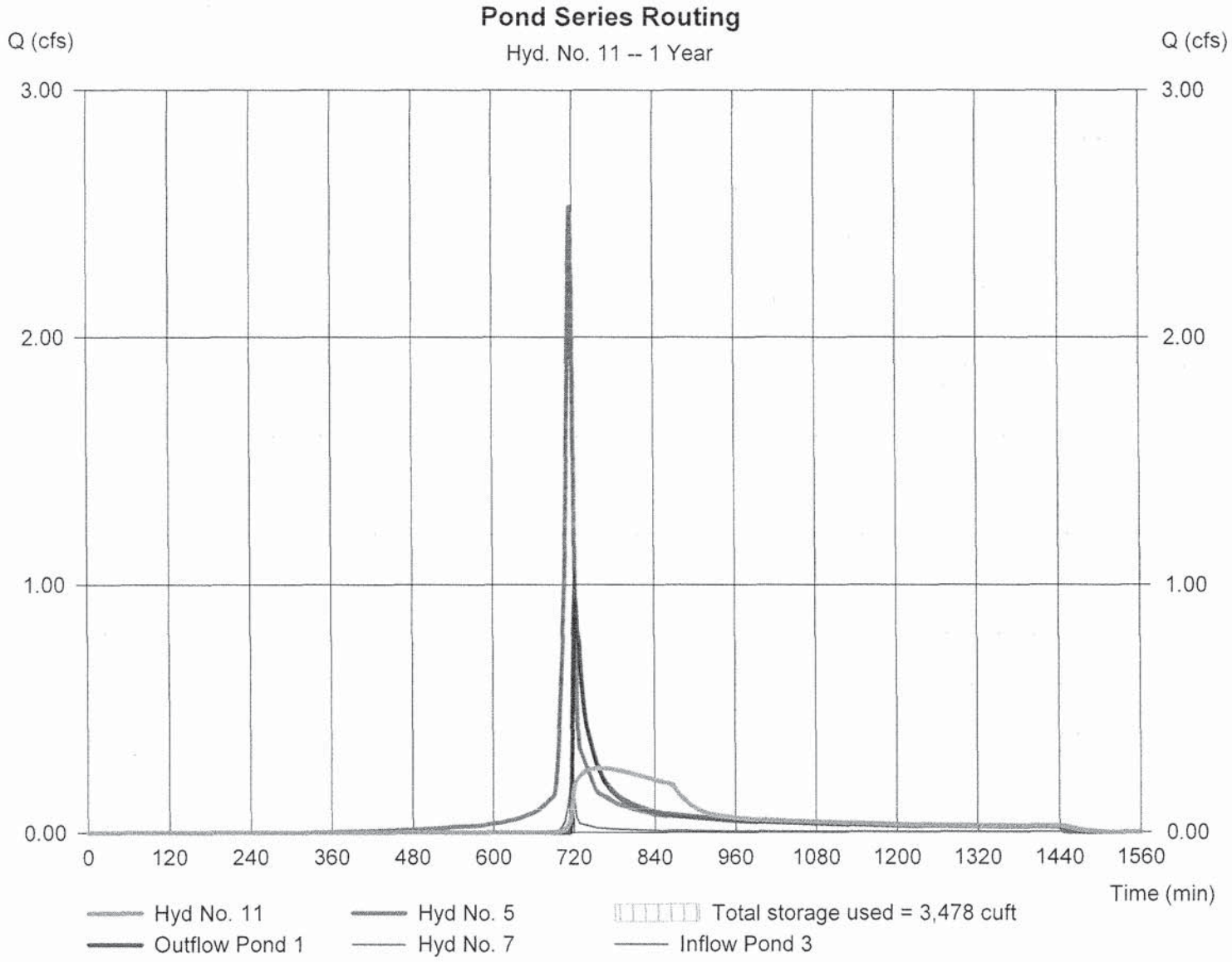
Hydrograph Report

Hyd. No. 11

Pond Series Routing

Hydrograph type	= Reservoir (Interconnected)	Peak discharge	= 0.262 cfs
Storm frequency	= 1 yrs	Time to peak	= 758 min
Time interval	= 2 min	Hyd. volume	= 3,739 cuft
Upper Pond	= Bioretention Facility	Lower Pond	= Detention Pond
Inflow hyd.	= 5 - To Bioretention Facility	Other Inflow hyd.	= 7 - To Detentio
Max. Elevation	= 870.09 ft	Max. Elevation	= 868.26 ft
Max. Storage	= 2,573 cuft	Max. Storage	= 904 cuft

Interconnected Pond Routing. Storage Indication method used.



Pond Report

Pond No. 1 - Bioretention Facility

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 869.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	869.00	00	0	0
1.00	870.00	5,900	1,966	1,966
1.50	870.50	8,330	3,540	5,506
2.00	871.00	12,275	5,119	10,625

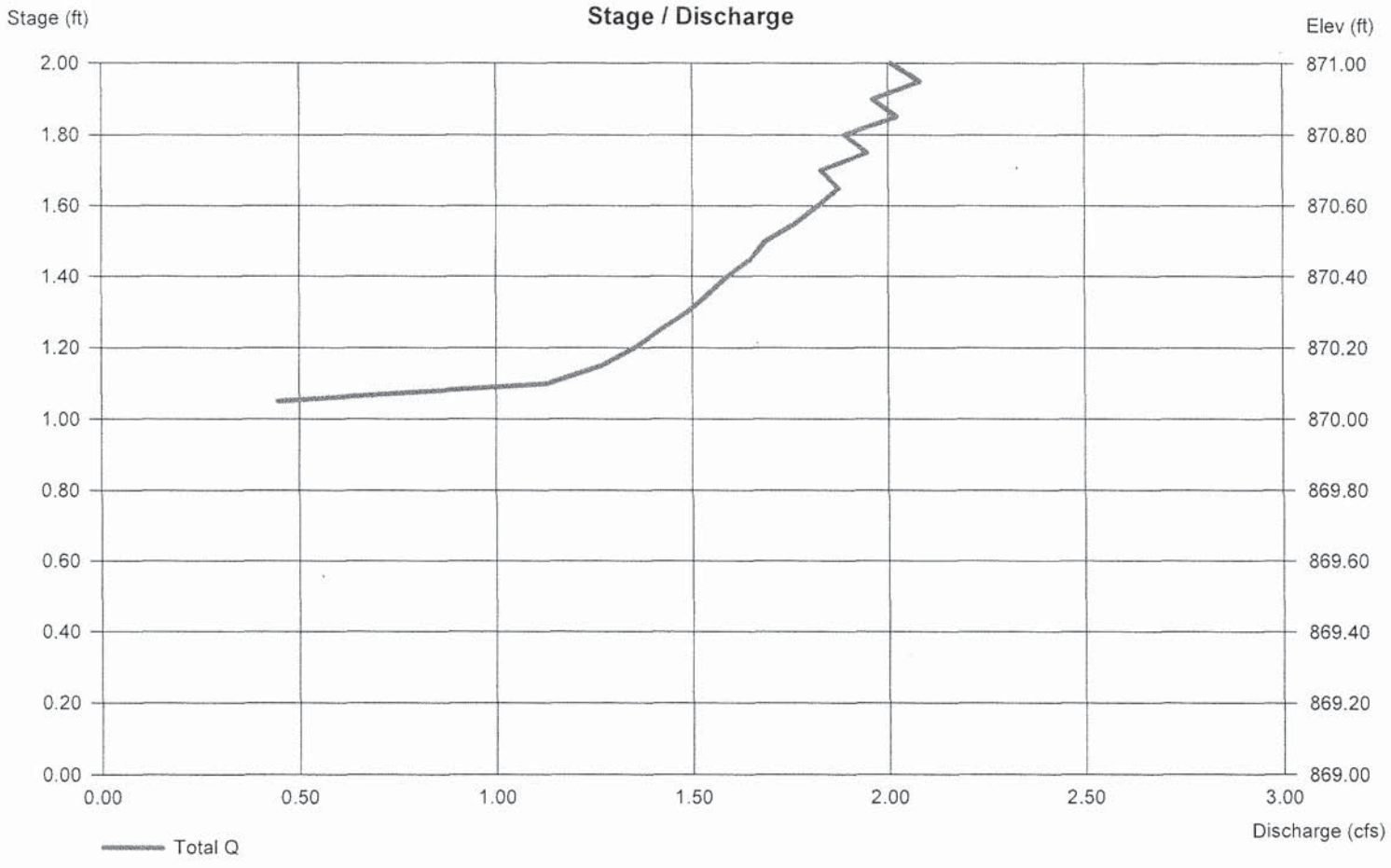
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 10.00	0.00	0.00	0.00
Span (in)	= 10.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 868.90	0.00	0.00	0.00
Length (ft)	= 95.00	0.00	0.00	0.00
Slope (%)	= 0.05	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 12.00	0.00	0.00	0.00
Crest El. (ft)	= 870.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	---	---	---
Multi-Stage	= Yes	No	No	No
Exfil.(in/hr)	= 0.000 (by Contour)			
TW Elev. (ft)	= 0.00			

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



Pond Report

Pond No. 3 - Detention Pond

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Begining Elevation = 867.50 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	867.50	00	0	0
0.50	868.00	1,440	240	240
1.50	869.00	3,900	2,570	2,810
2.50	870.00	4,770	4,327	7,137
3.50	871.00	5,770	5,262	12,398
4.50	872.00	6,800	6,277	18,676

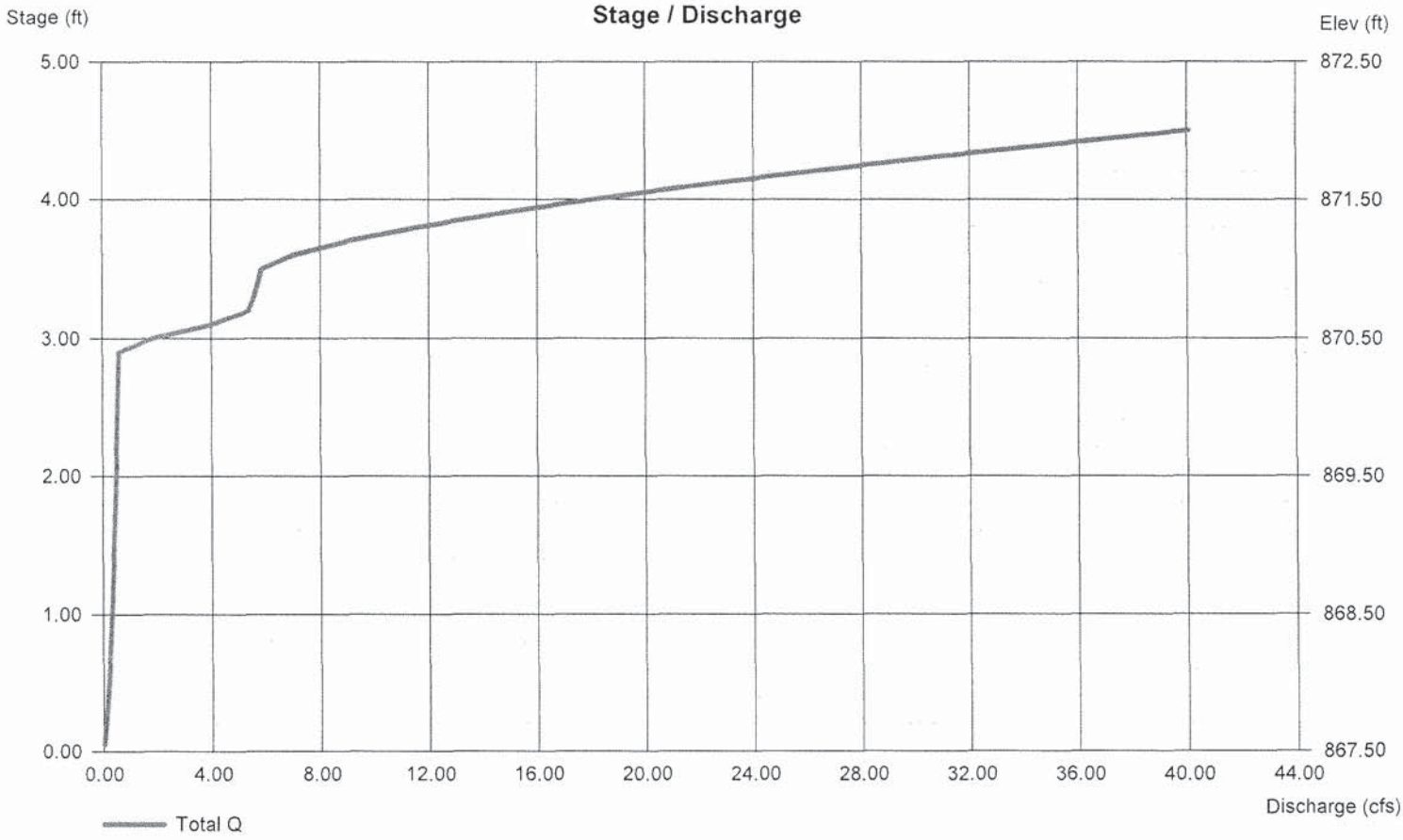
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 12.00	4.00	0.00	0.00
Span (in)	= 12.00	4.00	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 867.40	867.40	0.00	0.00
Length (ft)	= 50.00	0.00	0.00	0.00
Slope (%)	= 0.05	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 12.00	10.00	0.00	0.00
Crest El. (ft)	= 870.40	871.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= 1	Ciplti	---	---
Multi-Stage	= Yes	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

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

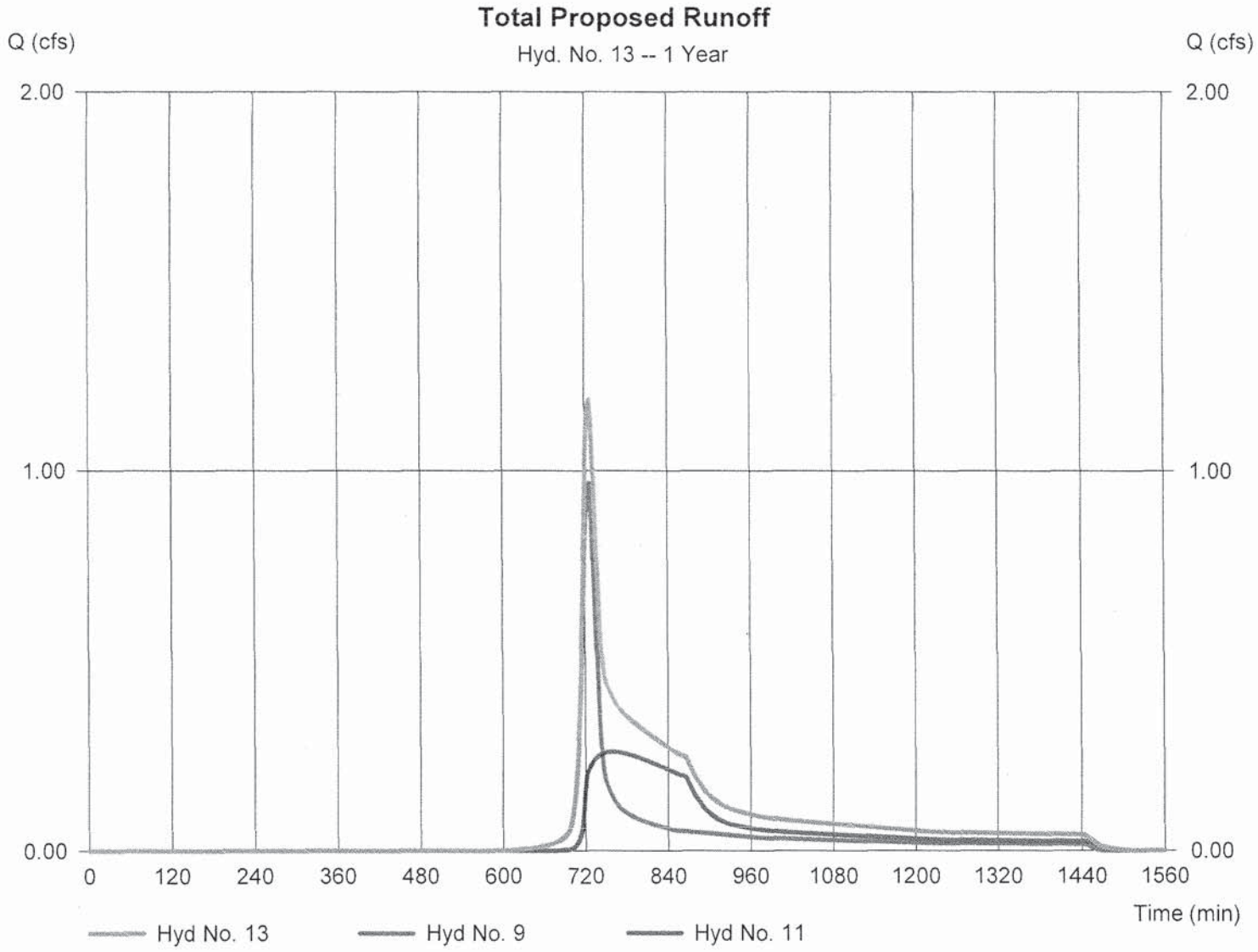


Hydrograph Report

Hyd. No. 13

Total Proposed Runoff

Hydrograph type	= Combine	Peak discharge	= 1.187 cfs
Storm frequency	= 1 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 6,836 cuft
Inflow hyds.	= 9, 11	Contrib. drain. area	= 0.960 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	2.886	2	724	9,140	------	------	------	Pre-development
3	SCS Runoff	5.455	2	716	11,079	------	------	------	Post-development
5	SCS Runoff	3.168	2	716	6,667	------	------	------	To Bioretention Facility
7	SCS Runoff	0.317	2	718	634	------	------	------	To Detention Pond
9	SCS Runoff	1.346	2	724	4,244	------	------	------	Bypass
11	Reservoir(i)	0.336	2	760	5,333	5, 7	870.16	4,847	Pond Series Routing
13	Combine	1.602	2	726	9,576	9, 11,	------	------	Total Proposed Runoff

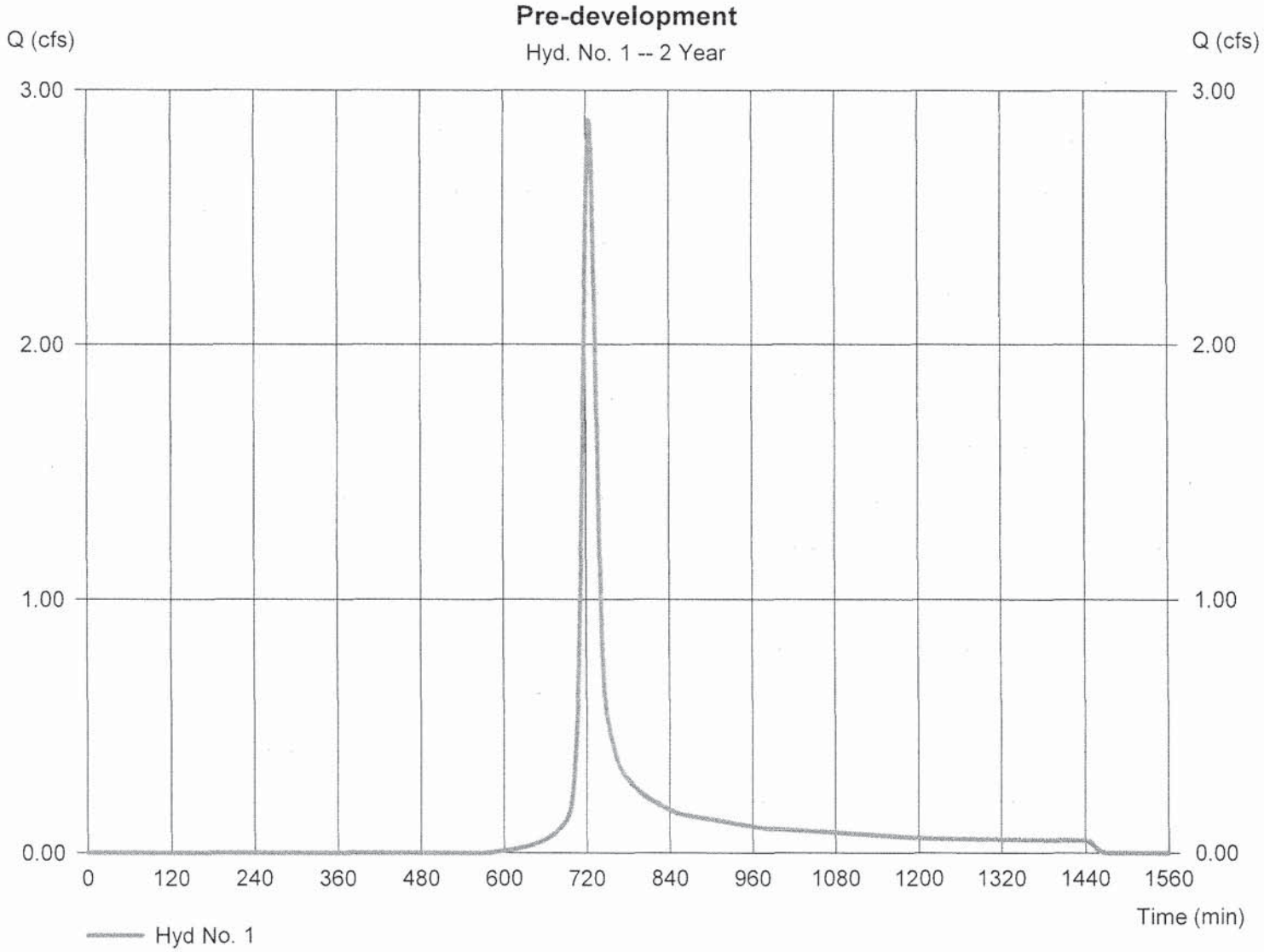
Hydrograph Report

Hyd. No. 1

Pre-development

Hydrograph type	= SCS Runoff	Peak discharge	= 2.886 cfs
Storm frequency	= 2 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 9,140 cuft
Drainage area	= 2.180 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.30 min
Total precip.	= 2.63 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.130 x 89) + (2.050 x 83)] / 2.180



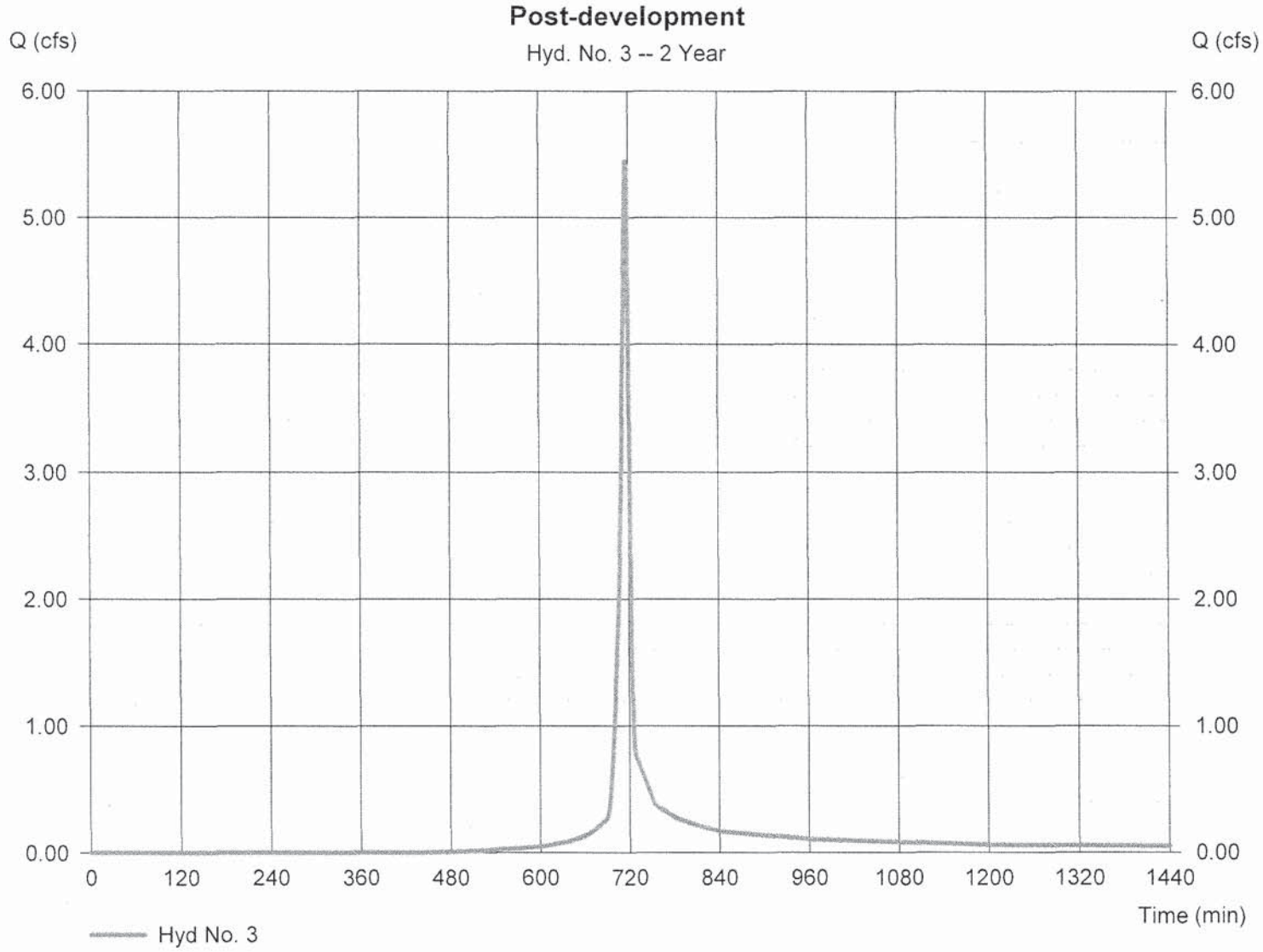
Hydrograph Report

Hyd. No. 3

Post-development

Hydrograph type	= SCS Runoff	Peak discharge	= 5.455 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 11,079 cuft
Drainage area	= 2.180 ac	Curve number	= 88*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 5.90 min
Total precip.	= 2.63 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.830 x 98) + (0.130 x 89) + (0.550 x 83) + (0.670 x 80)] / 2.180



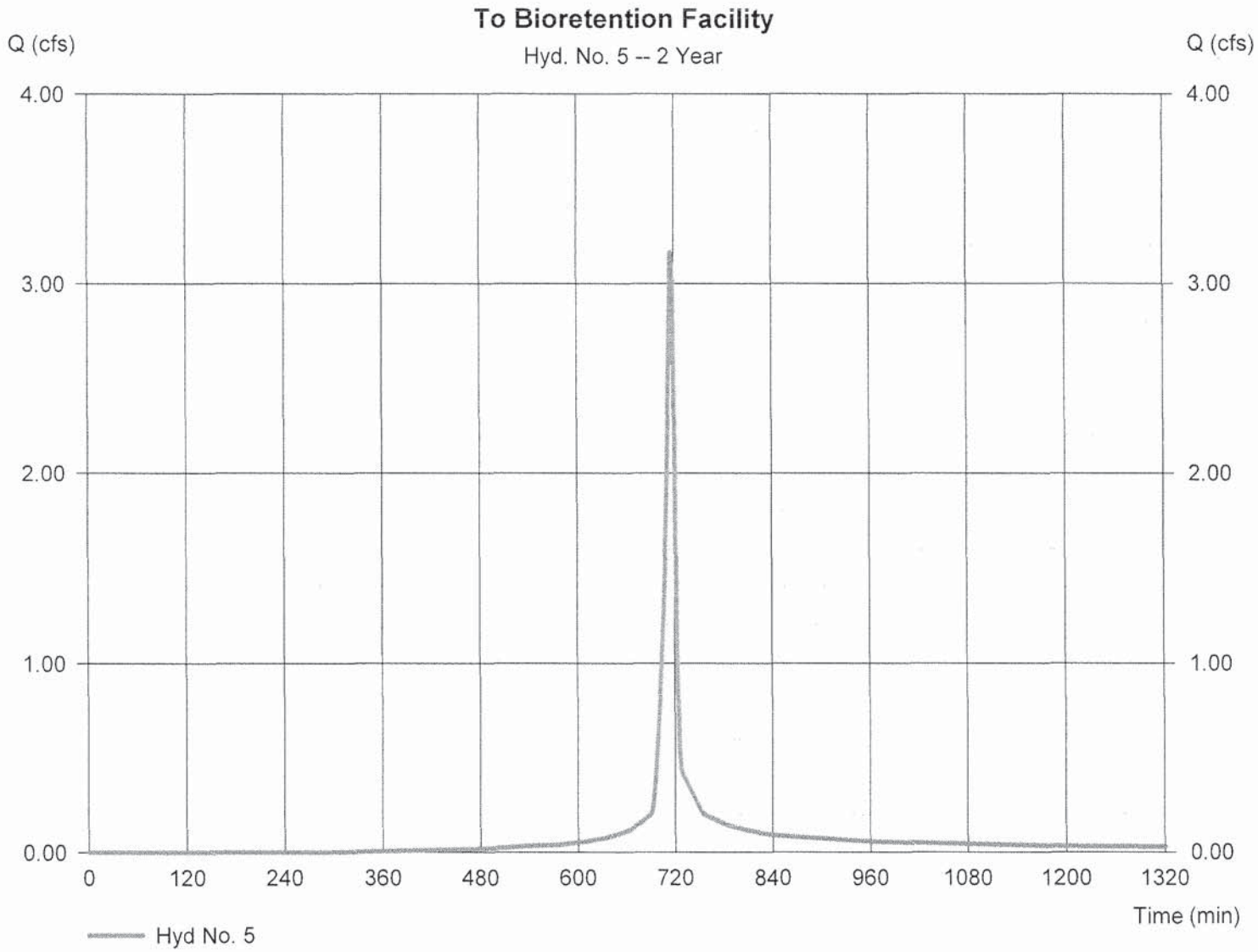
Hydrograph Report

Hyd. No. 5

To Bioretention Facility

Hydrograph type	= SCS Runoff	Peak discharge	= 3.168 cfs
Storm frequency	= 2 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 6,667 cuft
Drainage area	= 1.030 ac	Curve number	= 93*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 5.90 min
Total precip.	= 2.63 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.740 x 98) + (0.290 x 80)] / 1.030



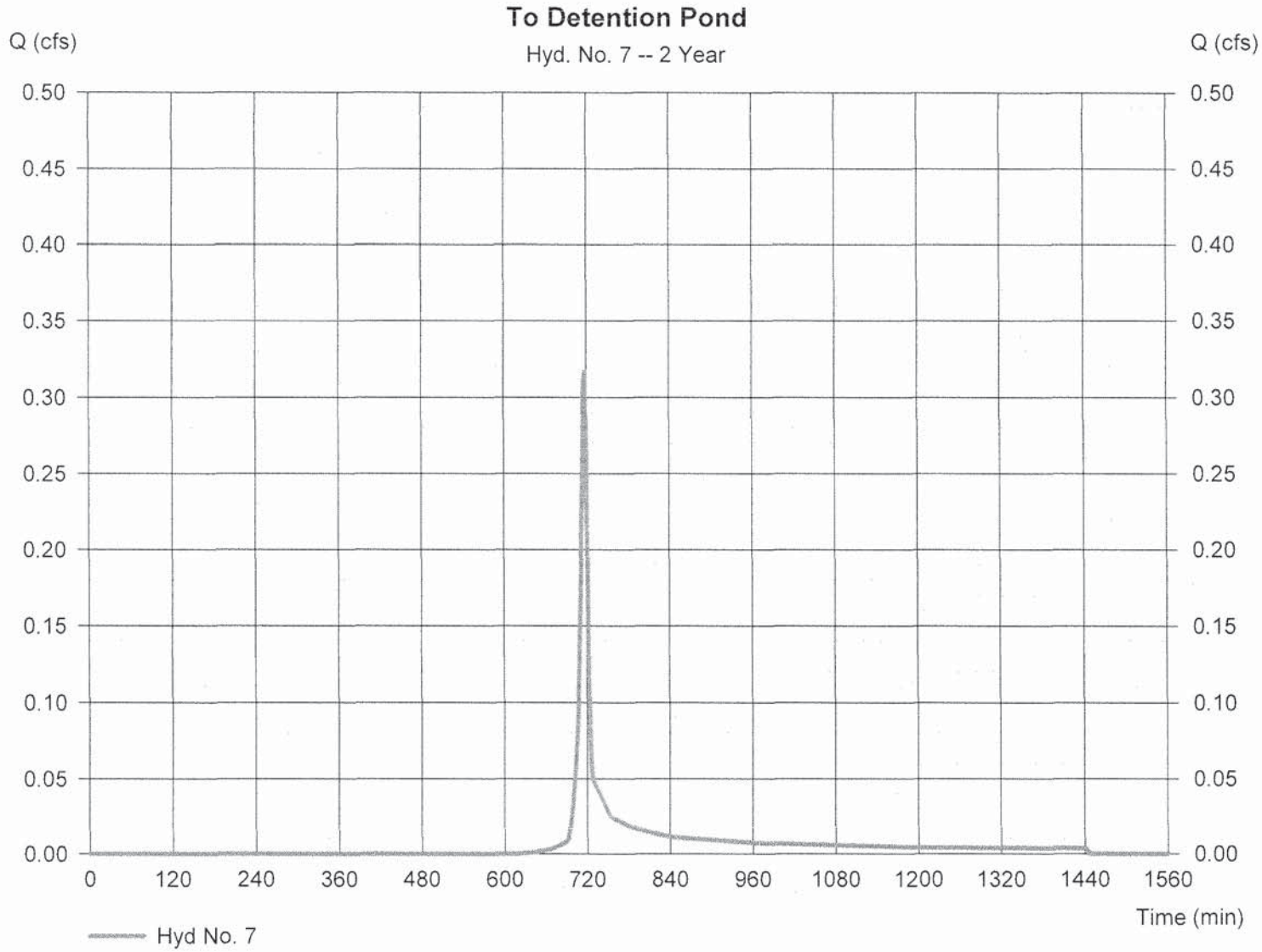
Hydrograph Report

Hyd. No. 7

To Detention Pond

Hydrograph type	= SCS Runoff	Peak discharge	= 0.317 cfs
Storm frequency	= 2 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 634 cuft
Drainage area	= 0.190 ac	Curve number	= 80*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.63 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.190 x 80)] / 0.190



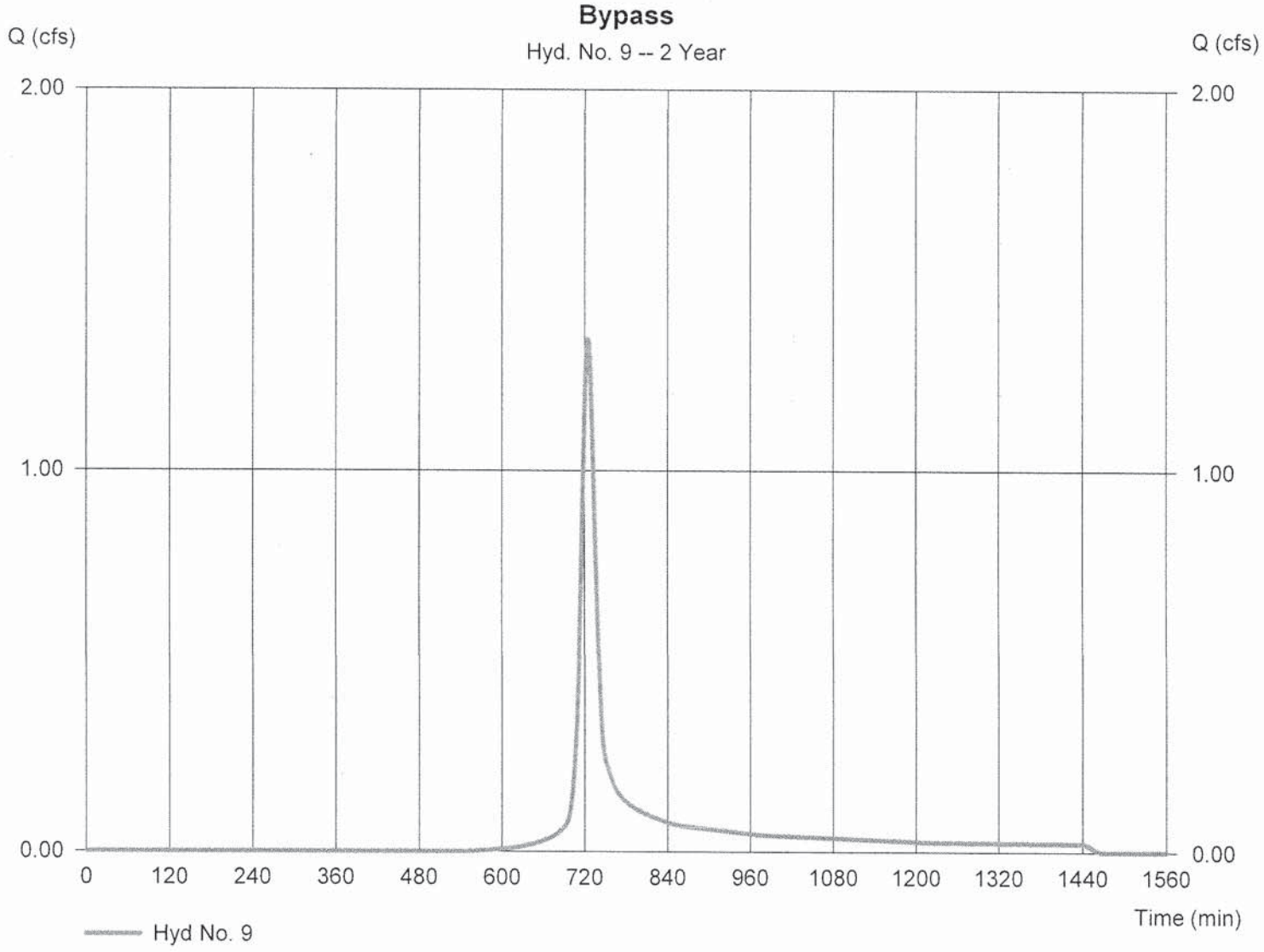
Hydrograph Report

Hyd. No. 9

Bypass

Hydrograph type	= SCS Runoff	Peak discharge	= 1.346 cfs
Storm frequency	= 2 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 4,244 cuft
Drainage area	= 0.960 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 17.00 min
Total precip.	= 2.63 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.086 x 98) + (0.870 x 83)] / 0.960



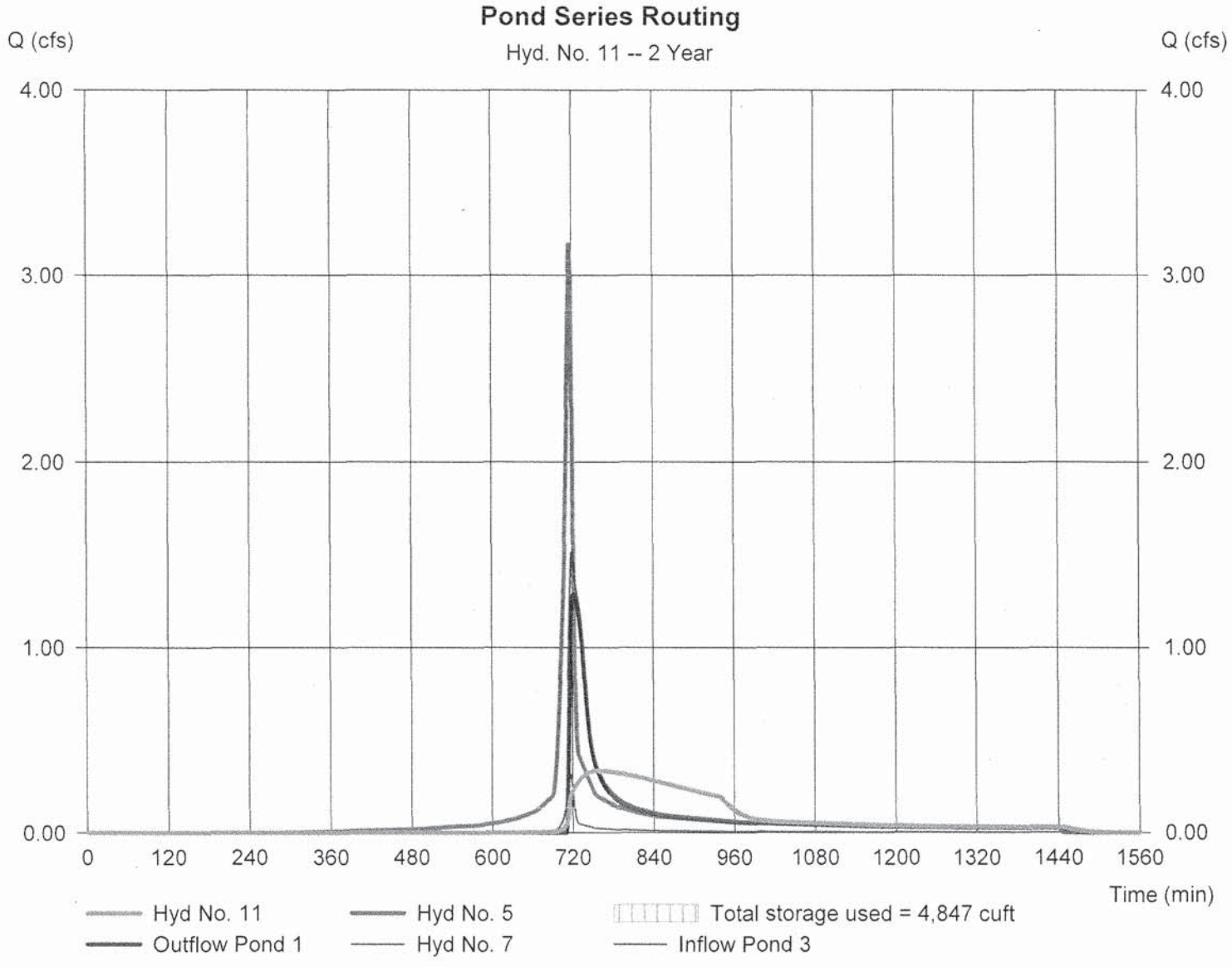
Hydrograph Report

Hyd. No. 11

Pond Series Routing

Hydrograph type	= Reservoir (Interconnected)	Peak discharge	= 0.336 cfs
Storm frequency	= 2 yrs	Time to peak	= 760 min
Time interval	= 2 min	Hyd. volume	= 5,333 cuft
Upper Pond	= Bioretention Facility	Lower Pond	= Detention Pond
Inflow hyd.	= 5 - To Bioretention Facility	Other Inflow hyd.	= 7 - To Detentio
Max. Elevation	= 870.16 ft	Max. Elevation	= 868.59 ft
Max. Storage	= 3,085 cuft	Max. Storage	= 1,762 cuft

Interconnected Pond Routing. Storage Indication method used.

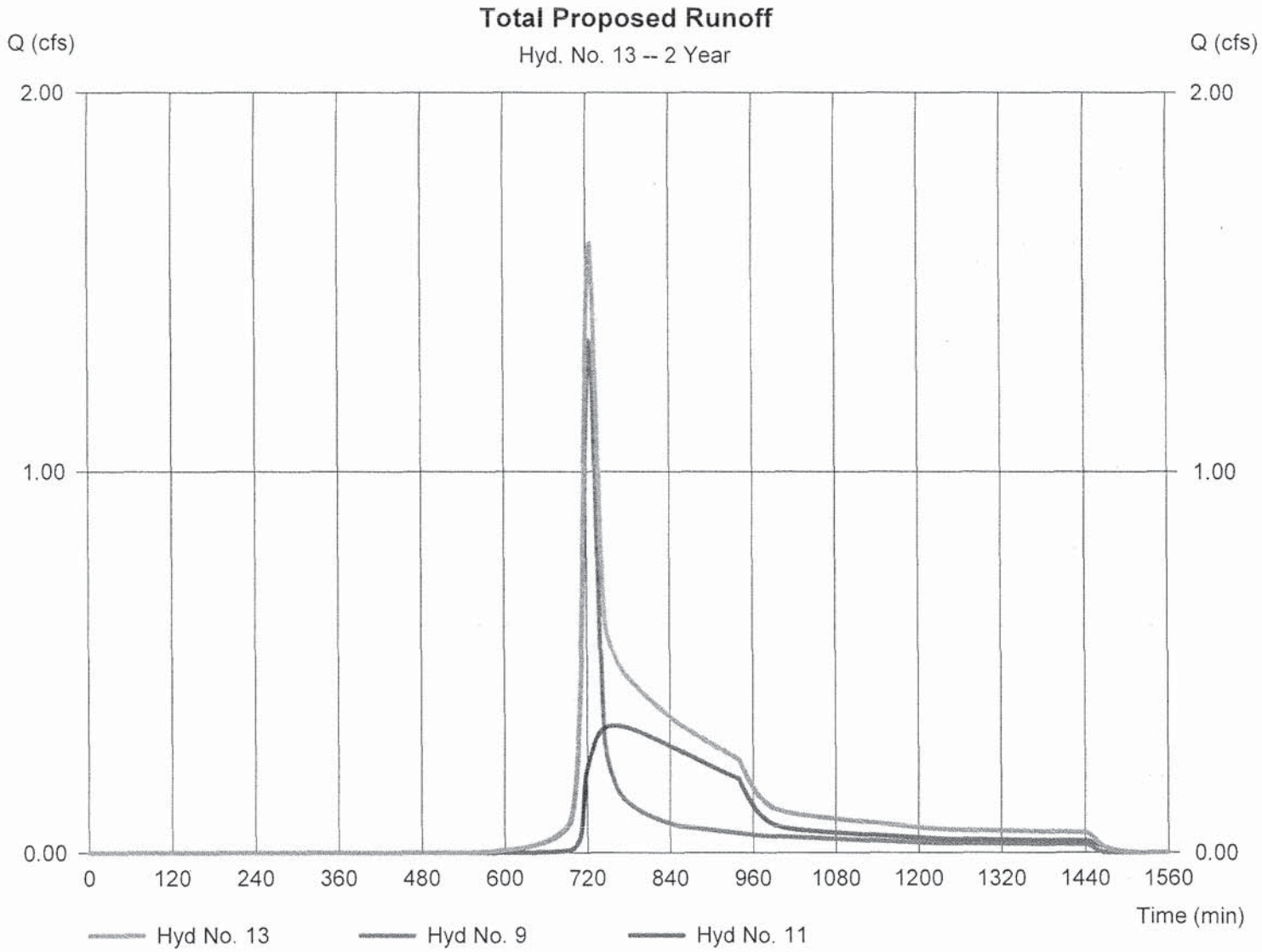


Hydrograph Report

Hyd. No. 13

Total Proposed Runoff

Hydrograph type	= Combine	Peak discharge	= 1.602 cfs
Storm frequency	= 2 yrs	Time to peak	= 726 min
Time interval	= 2 min	Hyd. volume	= 9,576 cuft
Inflow hyds.	= 9, 11	Contrib. drain. area	= 0.960 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	4.125	2	724	12,929	------	------	------	Pre-development
3	SCS Runoff	7.321	2	716	15,016	------	------	------	Post-development
5	SCS Runoff	4.058	2	716	8,674	------	------	------	To Bioretention Facility
7	SCS Runoff	0.459	2	718	921	------	------	------	To Detention Pond
9	SCS Runoff	1.902	2	724	5,950	------	------	------	Bypass
11	Reservoir(i)	0.419	2	766	7,629	5, 7	870.27	6,934	Pond Series Routing
13	Combine	2.199	2	724	13,579	9, 11,	------	------	Total Proposed Runoff

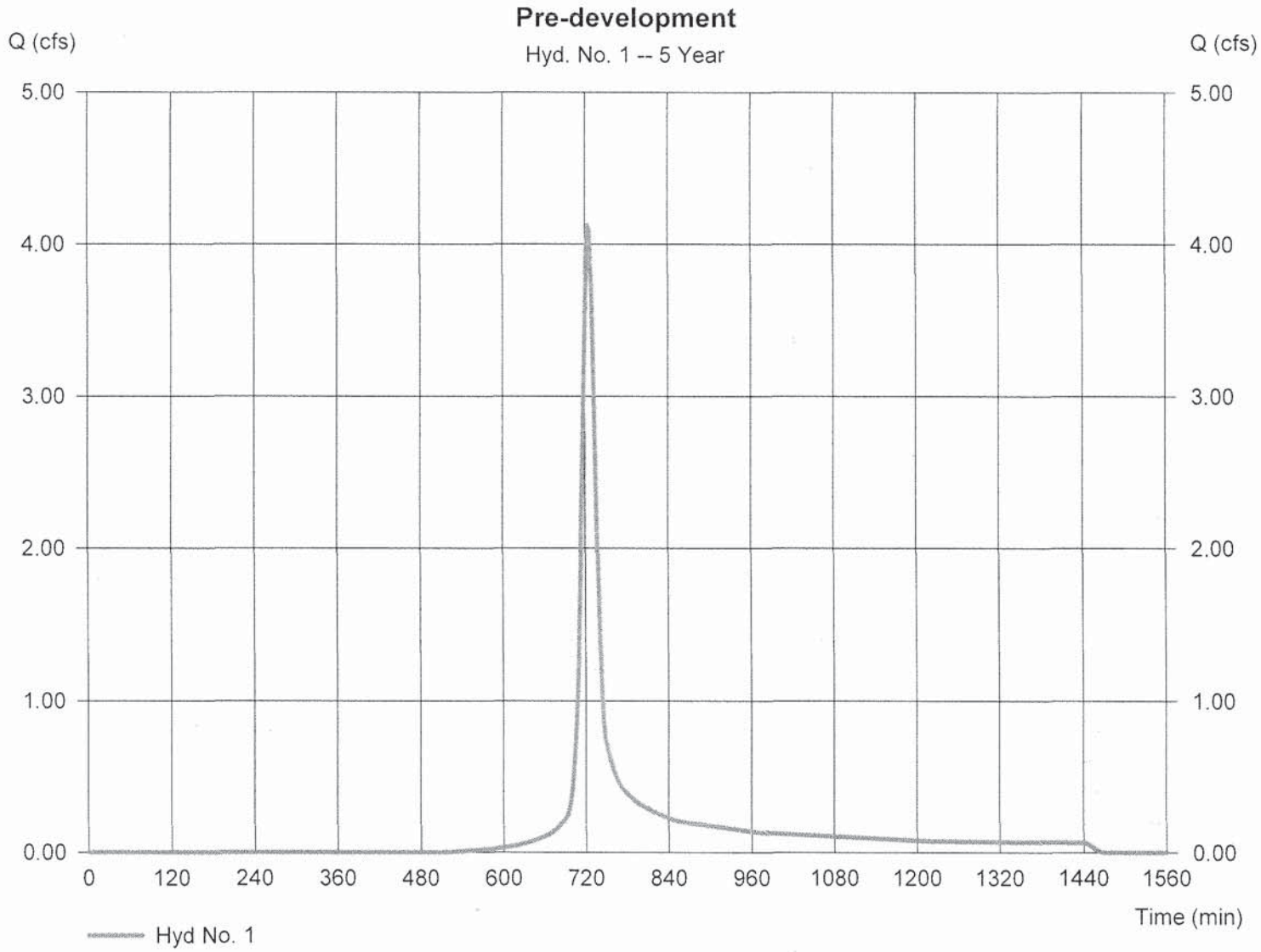
Hydrograph Report

Hyd. No. 1

Pre-development

Hydrograph type	= SCS Runoff	Peak discharge	= 4.125 cfs
Storm frequency	= 5 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 12,929 cuft
Drainage area	= 2.180 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.30 min
Total precip.	= 3.23 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.130 x 89) + (2.050 x 83)] / 2.180



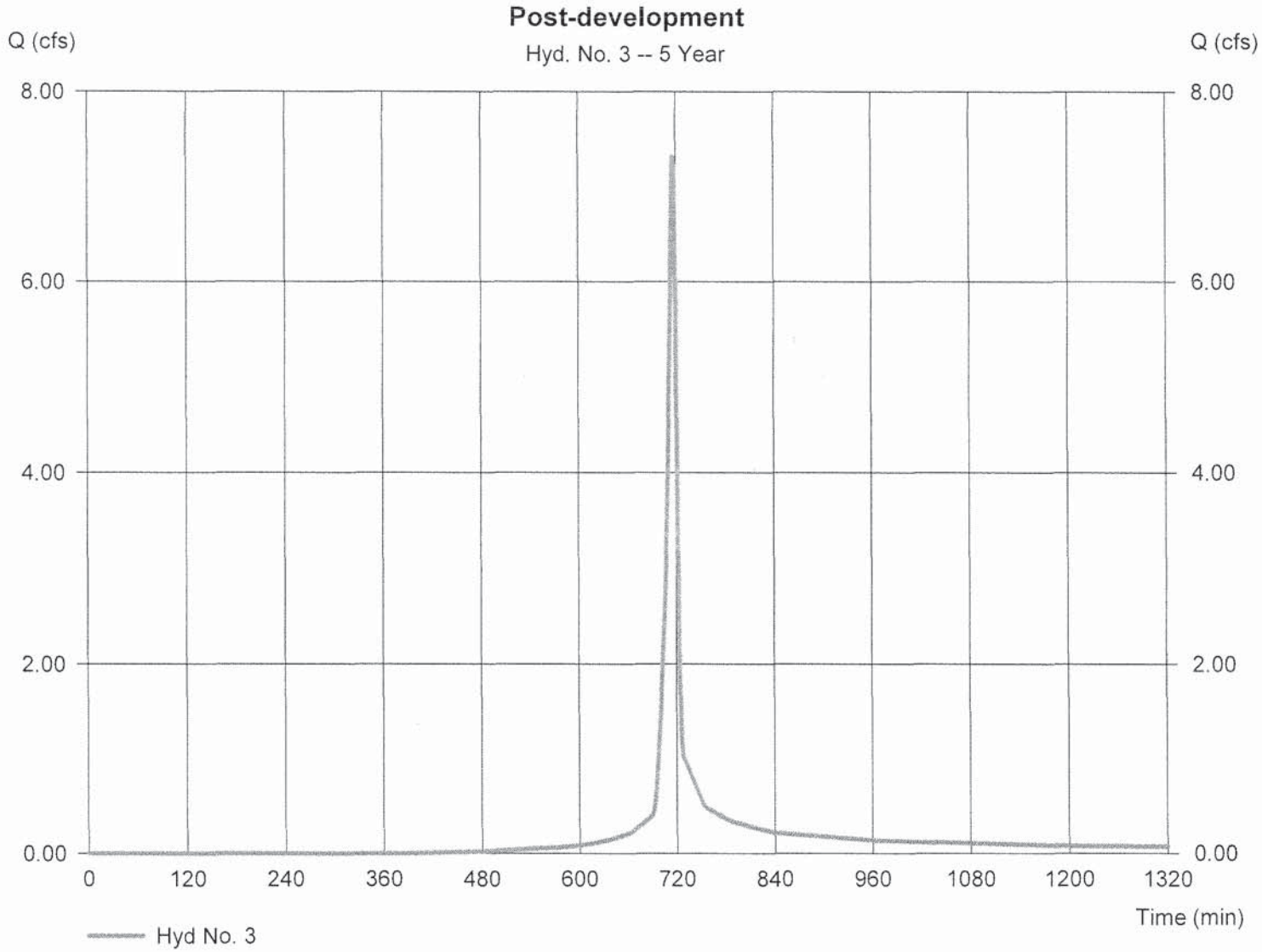
Hydrograph Report

Hyd. No. 3

Post-development

Hydrograph type	= SCS Runoff	Peak discharge	= 7.321 cfs
Storm frequency	= 5 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 15,016 cuft
Drainage area	= 2.180 ac	Curve number	= 88*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 5.90 min
Total precip.	= 3.23 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.830 x 98) + (0.130 x 89) + (0.550 x 83) + (0.670 x 80)] / 2.180



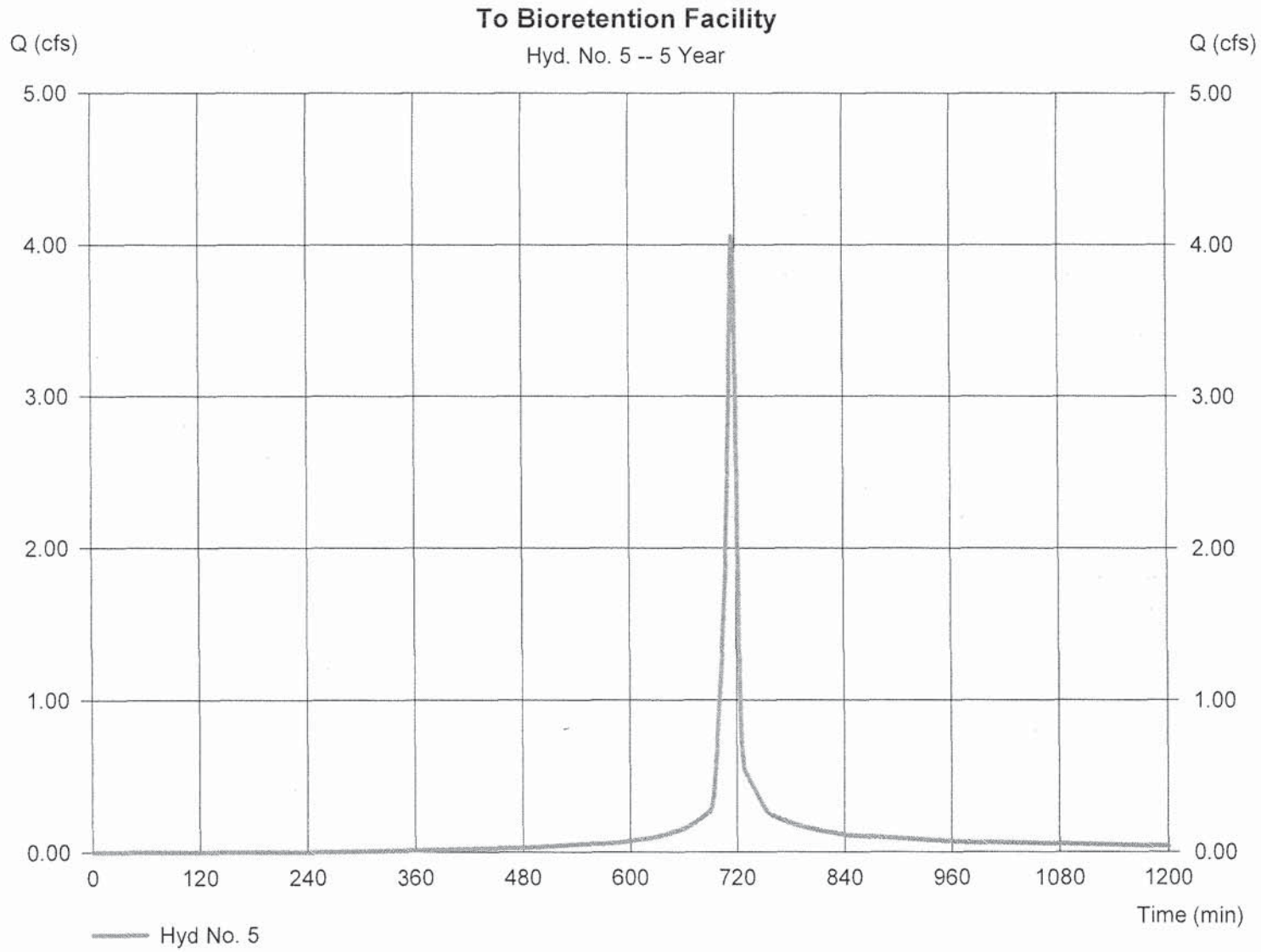
Hydrograph Report

Hyd. No. 5

To Bioretention Facility

Hydrograph type	= SCS Runoff	Peak discharge	= 4.058 cfs
Storm frequency	= 5 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 8,674 cuft
Drainage area	= 1.030 ac	Curve number	= 93*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 5.90 min
Total precip.	= 3.23 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.740 x 98) + (0.290 x 80)] / 1.030



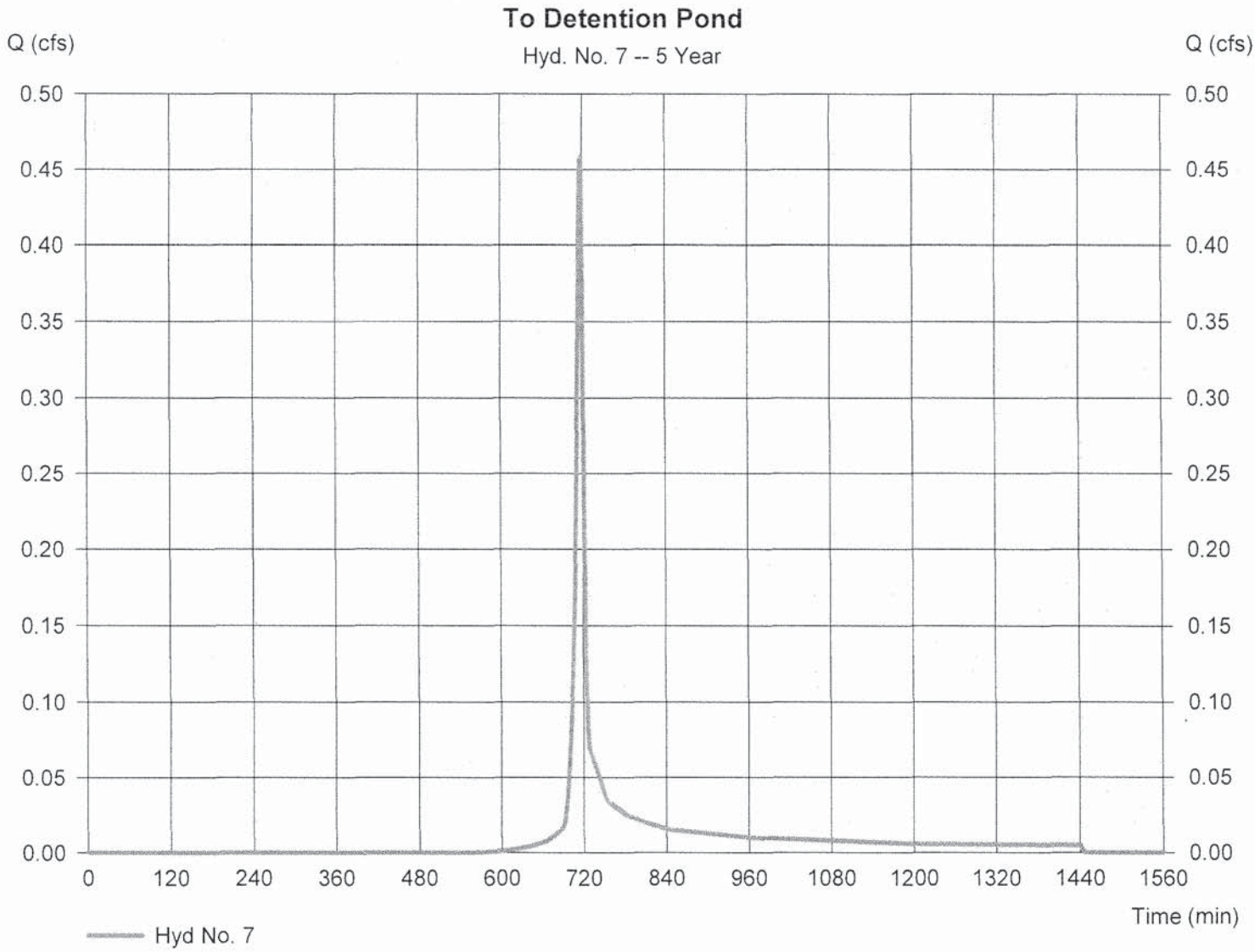
Hydrograph Report

Hyd. No. 7

To Detention Pond

Hydrograph type	= SCS Runoff	Peak discharge	= 0.459 cfs
Storm frequency	= 5 yrs	Time to peak	= 718 min
Time interval	= 2 min	Hyd. volume	= 921 cuft
Drainage area	= 0.190 ac	Curve number	= 80*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.23 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.190 x 80)] / 0.190



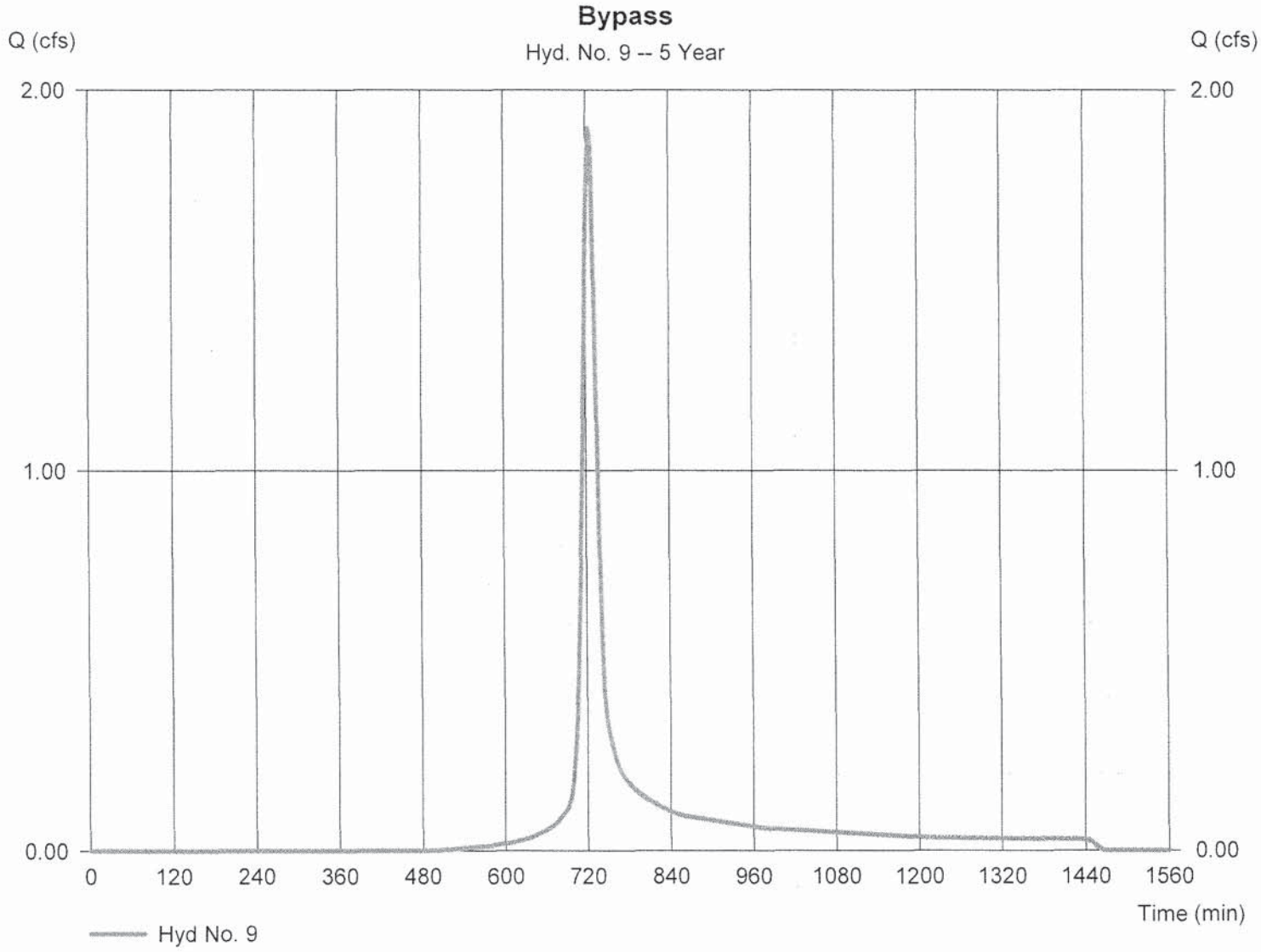
Hydrograph Report

Hyd. No. 9

Bypass

Hydrograph type	= SCS Runoff	Peak discharge	= 1.902 cfs
Storm frequency	= 5 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 5,950 cuft
Drainage area	= 0.960 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 17.00 min
Total precip.	= 3.23 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.086 x 98) + (0.870 x 83)] / 0.960



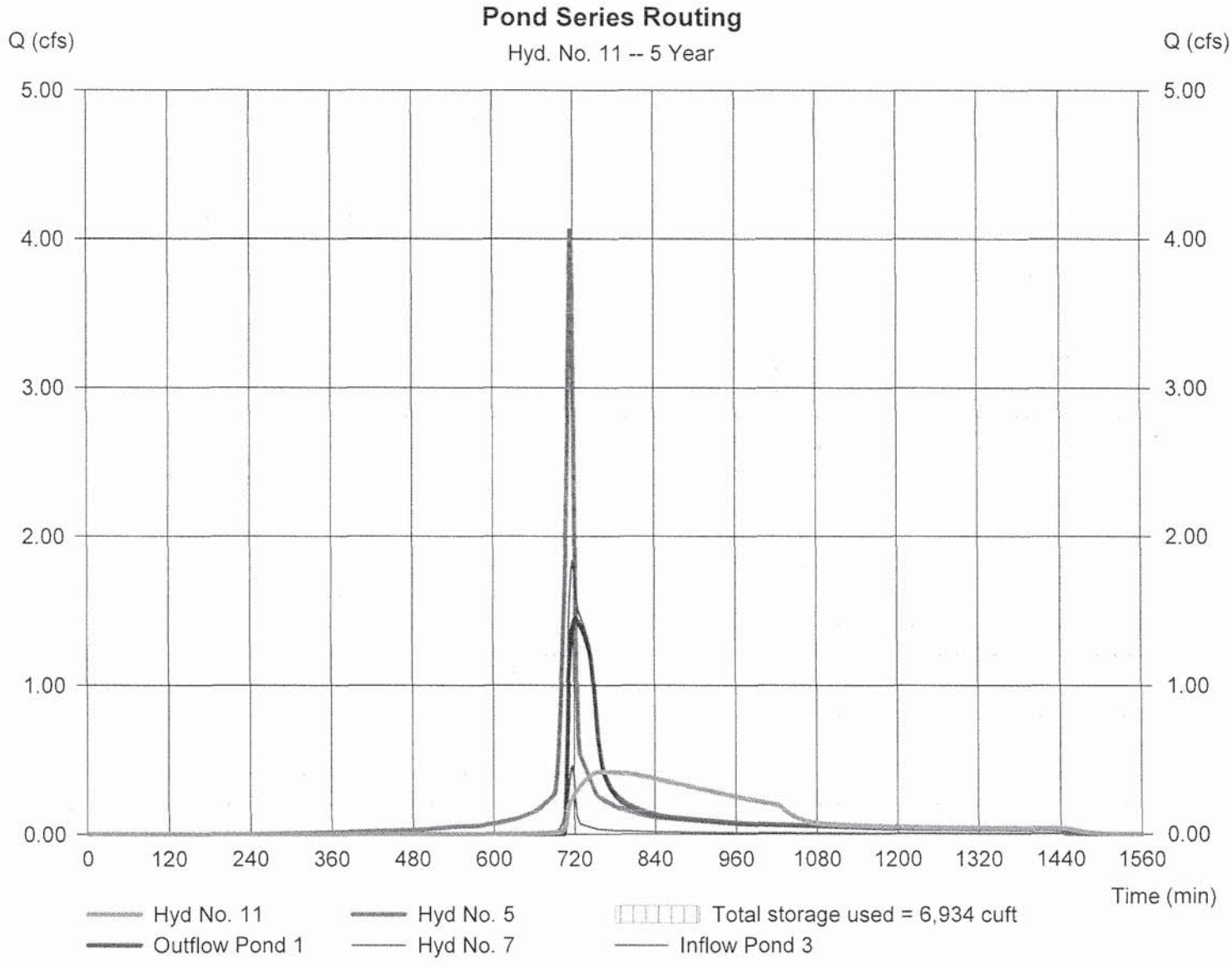
Hydrograph Report

Hyd. No. 11

Pond Series Routing

Hydrograph type	=	Reservoir (Interconnected)	Peak discharge	=	0.419 cfs
Storm frequency	=	5 yrs	Time to peak	=	766 min
Time interval	=	2 min	Hyd. volume	=	7,629 cuft
Upper Pond	=	Bioretention Facility	Lower Pond	=	Detention Pond
Inflow hyd.	=	5 - To Bioretention Facility	Other Inflow hyd.	=	7 - To Detentio
Max. Elevation	=	870.27 ft	Max. Elevation	=	869.05 ft
Max. Storage	=	3,890 cuft	Max. Storage	=	3,044 cuft

Interconnected Pond Routing. Storage Indication method used.

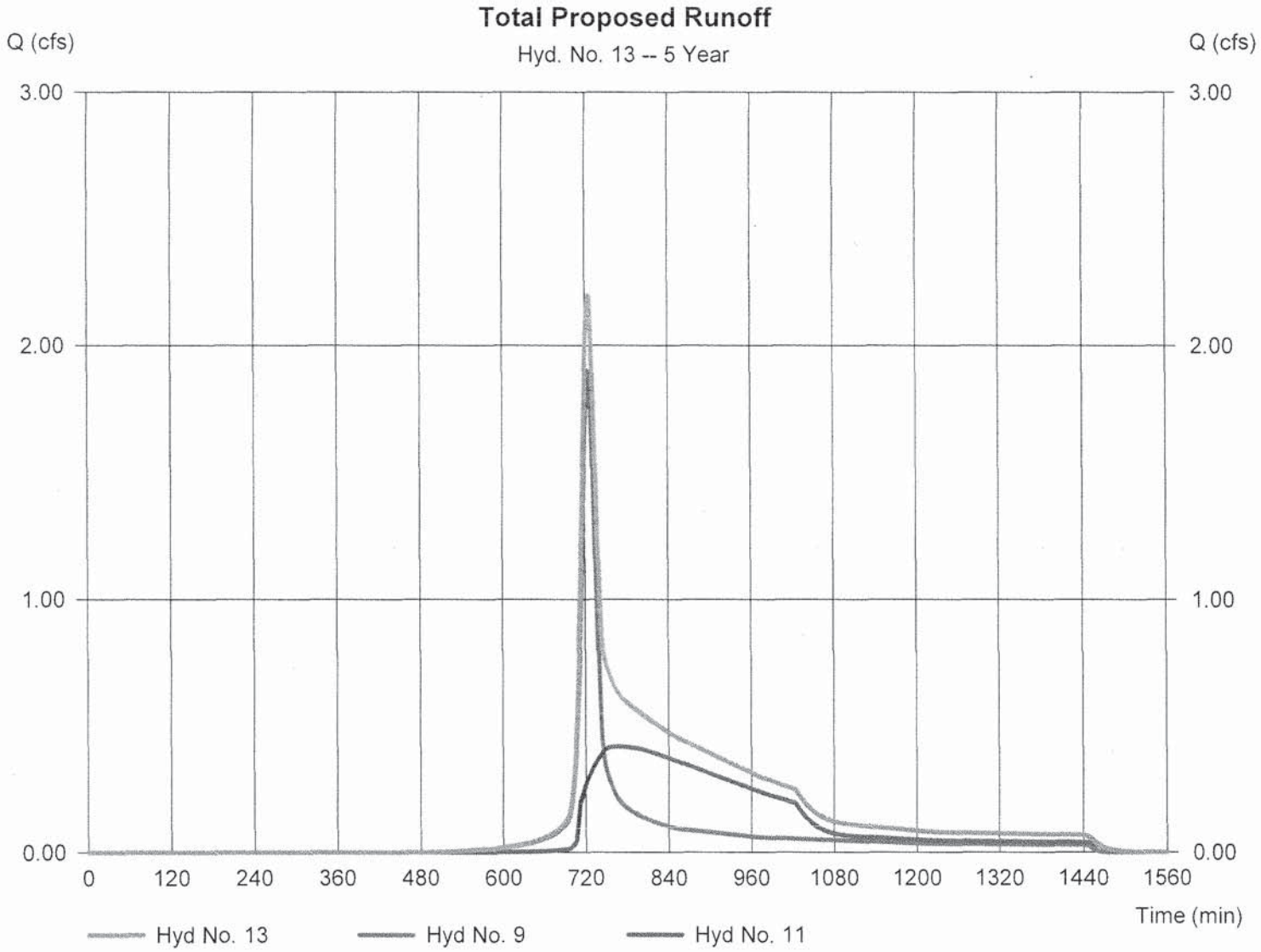


Hydrograph Report

Hyd. No. 13

Total Proposed Runoff

Hydrograph type	= Combine	Peak discharge	= 2.199 cfs
Storm frequency	= 5 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 13,579 cuft
Inflow hyds.	= 9, 11	Contrib. drain. area	= 0.960 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	5.197	2	724	16,251	------	------	------	Pre-development
3	SCS Runoff	8.891	2	716	18,394	------	------	------	Post-development
5	SCS Runoff	4.796	2	716	10,367	------	------	------	To Bioretention Facility
7	SCS Runoff	0.583	2	716	1,177	------	------	------	To Detention Pond
9	SCS Runoff	2.380	2	724	7,440	------	------	------	Bypass
11	Reservoir(i)	0.461	2	774	9,577	5, 7	870.37	8,735	Pond Series Routing
13	Combine	2.713	2	724	17,016	9, 11,	------	------	Total Proposed Runoff

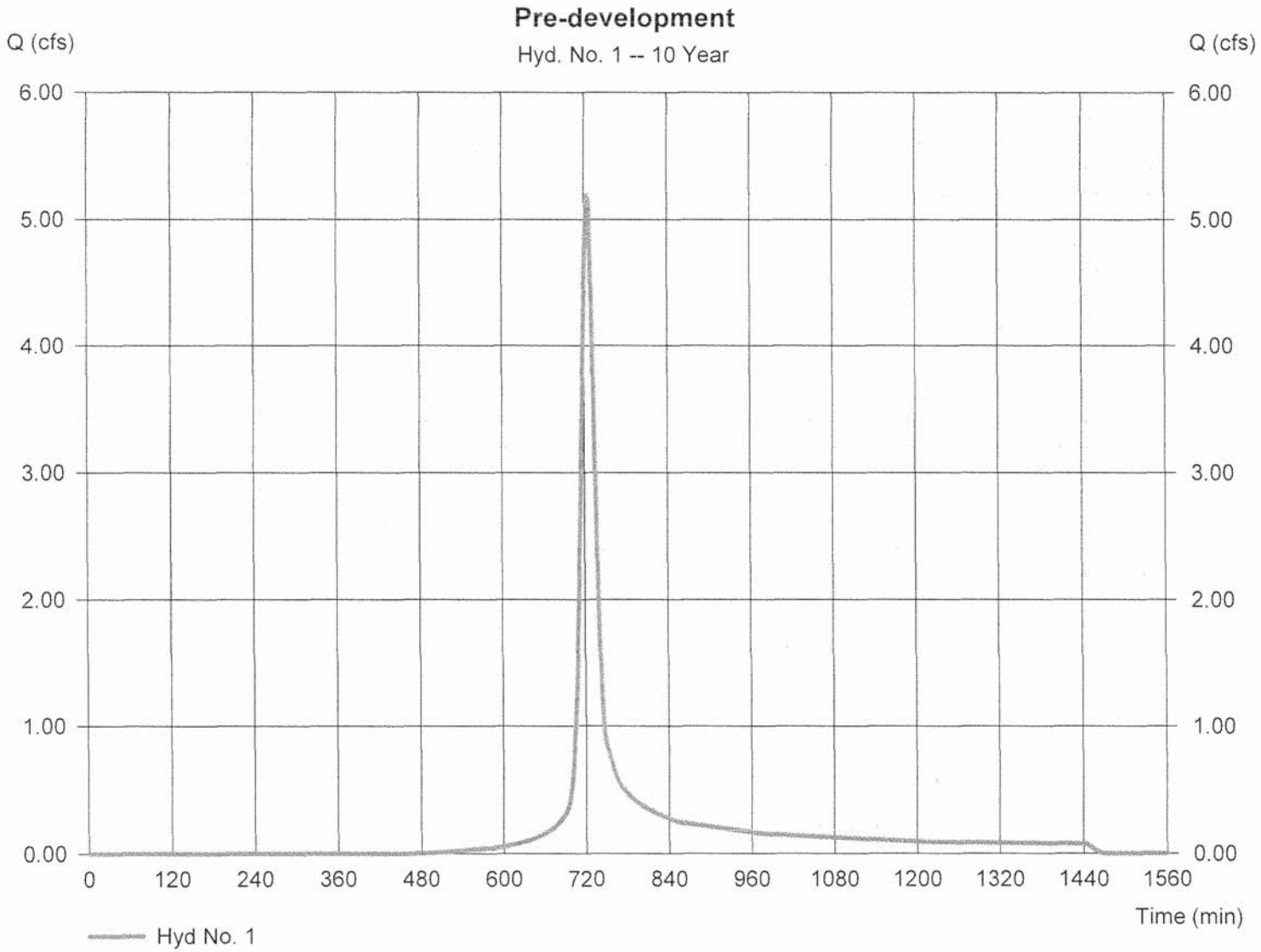
Hydrograph Report

Hyd. No. 1

Pre-development

Hydrograph type	= SCS Runoff	Peak discharge	= 5.197 cfs
Storm frequency	= 10 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 16,251 cuft
Drainage area	= 2.180 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.30 min
Total precip.	= 3.73 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.130 x 89) + (2.050 x 83)] / 2.180



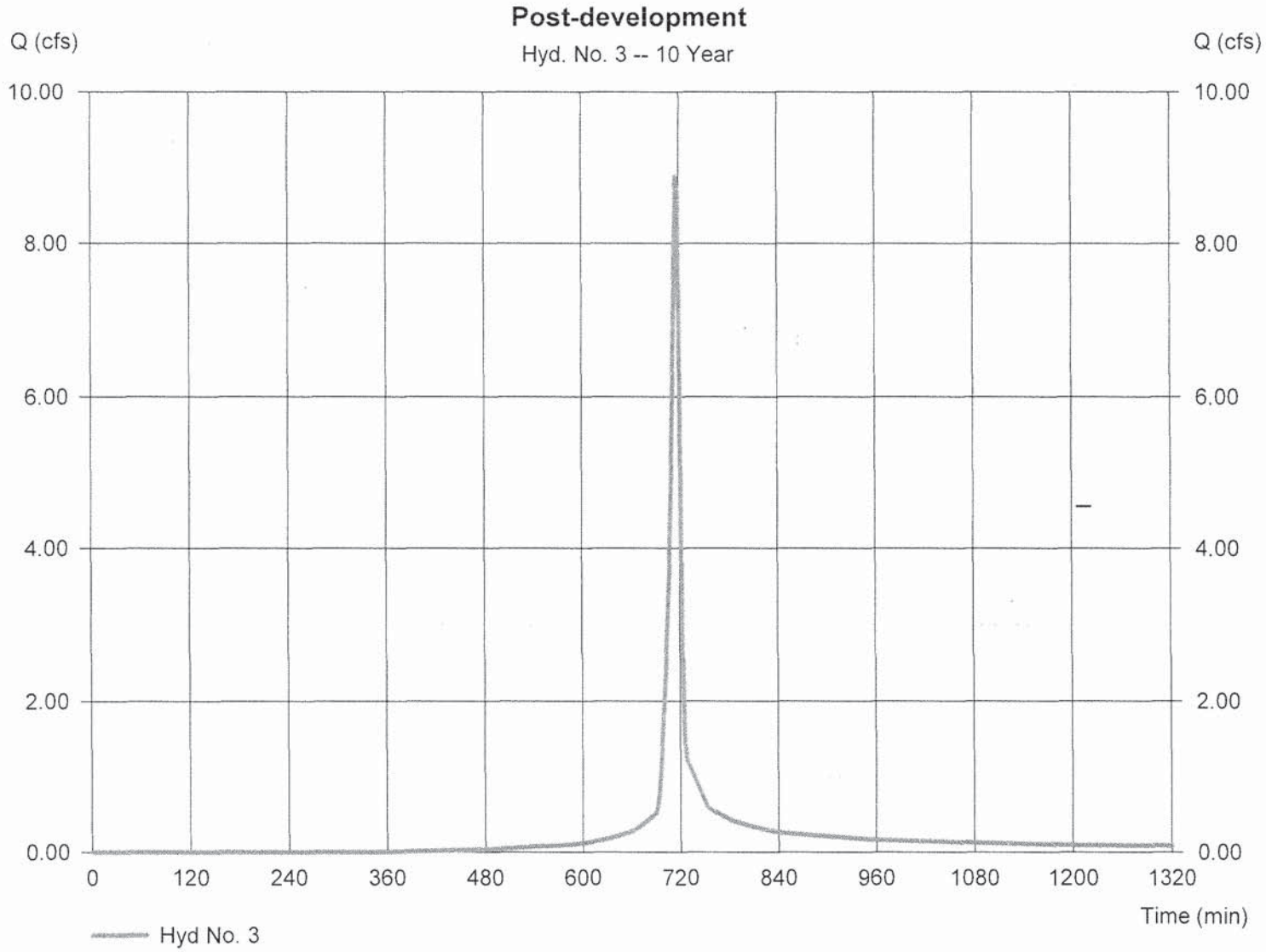
Hydrograph Report

Hyd. No. 3

Post-development

Hydrograph type	= SCS Runoff	Peak discharge	= 8.891 cfs
Storm frequency	= 10 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 18,394 cuft
Drainage area	= 2.180 ac	Curve number	= 88*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 5.90 min
Total precip.	= 3.73 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.830 x 98) + (0.130 x 89) + (0.550 x 83) + (0.670 x 80)] / 2.180



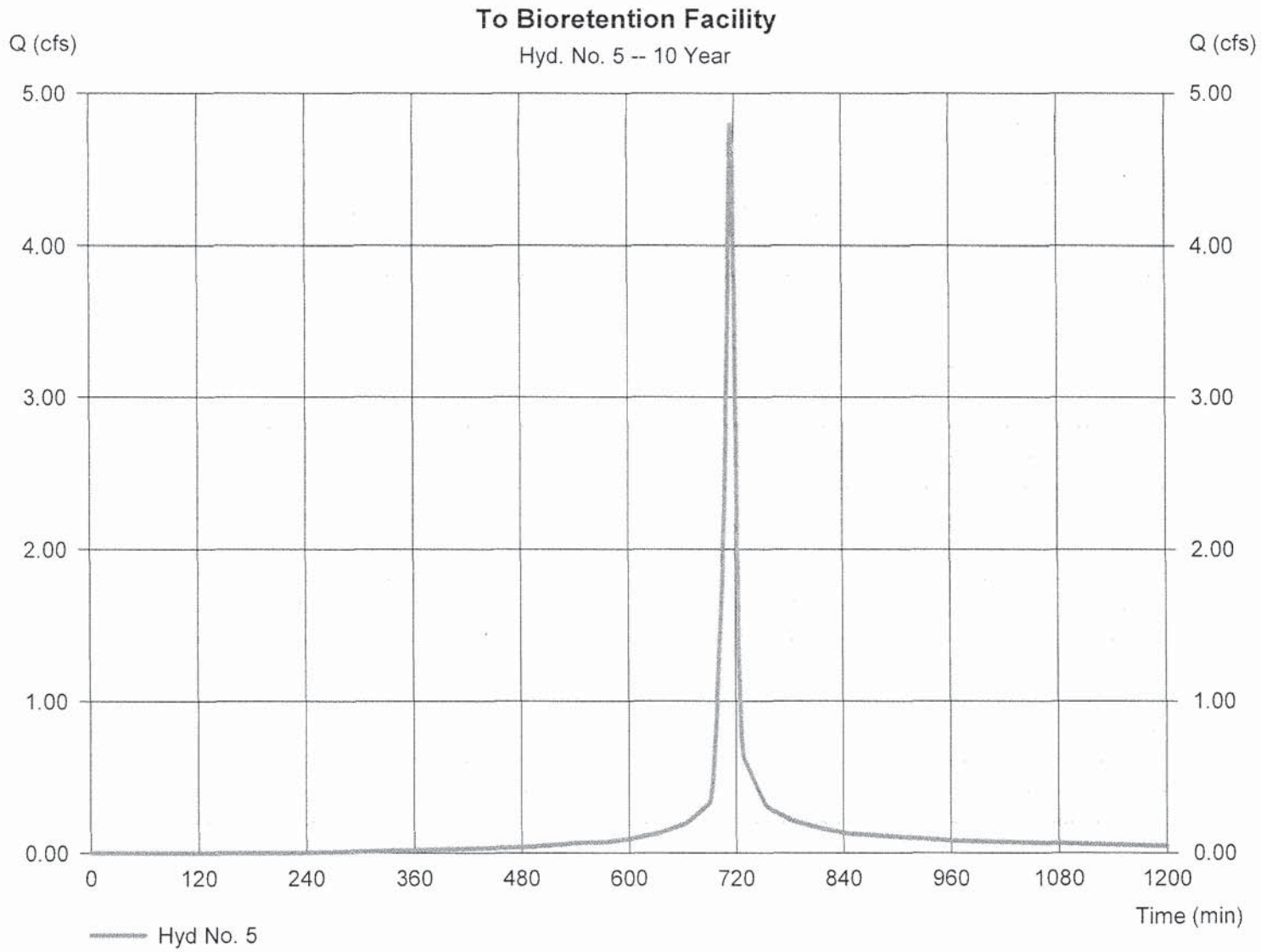
Hydrograph Report

Hyd. No. 5

To Bioretention Facility

Hydrograph type	= SCS Runoff	Peak discharge	= 4.796 cfs
Storm frequency	= 10 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 10,367 cuft
Drainage area	= 1.030 ac	Curve number	= 93*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 5.90 min
Total precip.	= 3.73 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.740 x 98) + (0.290 x 80)] / 1.030



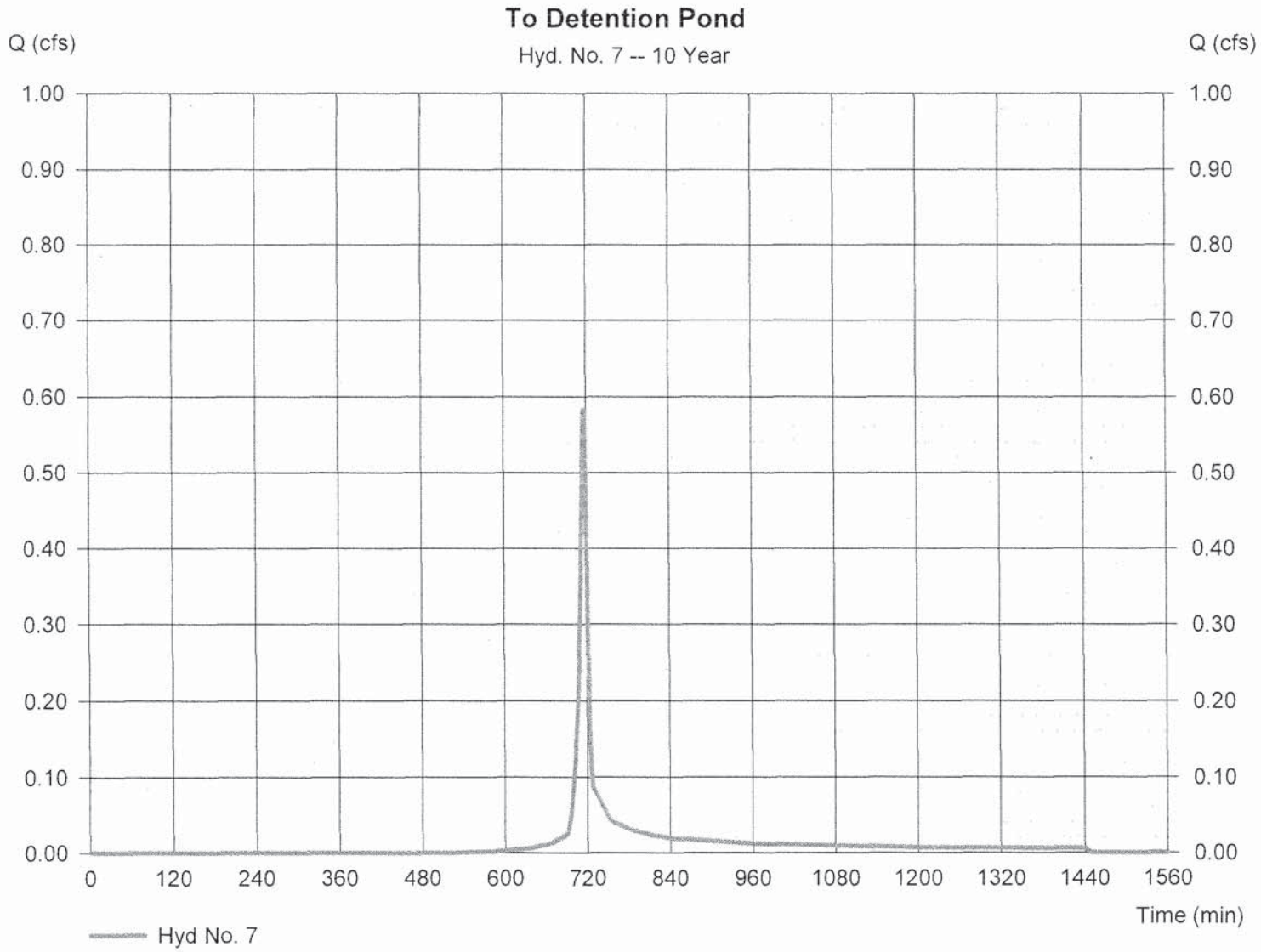
Hydrograph Report

Hyd. No. 7

To Detention Pond

Hydrograph type	= SCS Runoff	Peak discharge	= 0.583 cfs
Storm frequency	= 10 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 1,177 cuft
Drainage area	= 0.190 ac	Curve number	= 80*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 3.73 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.190 x 80)] / 0.190



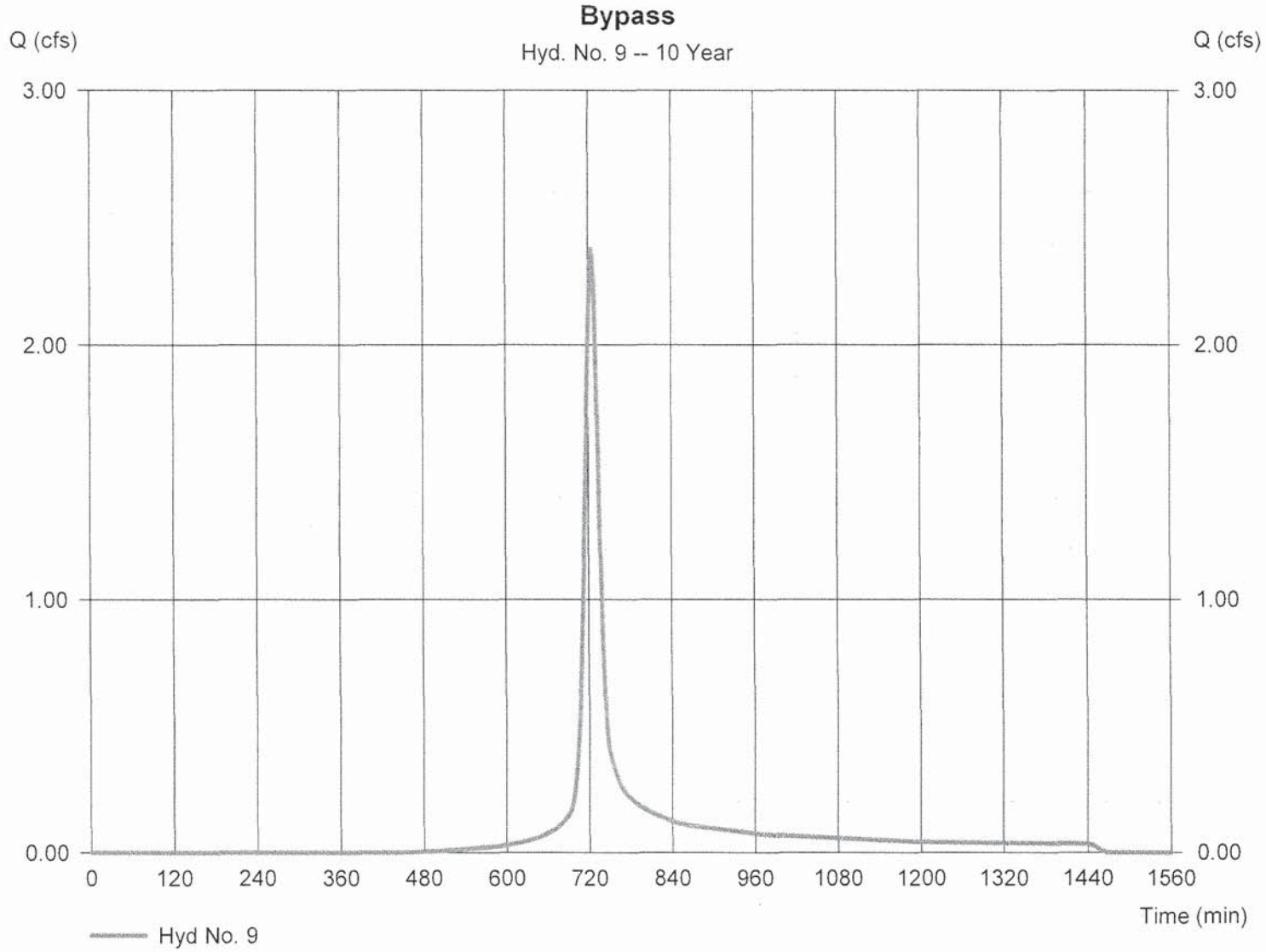
Hydrograph Report

Hyd. No. 9

Bypass

Hydrograph type	= SCS Runoff	Peak discharge	= 2.380 cfs
Storm frequency	= 10 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 7,440 cuft
Drainage area	= 0.960 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 17.00 min
Total precip.	= 3.73 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.086 x 98) + (0.870 x 83)] / 0.960



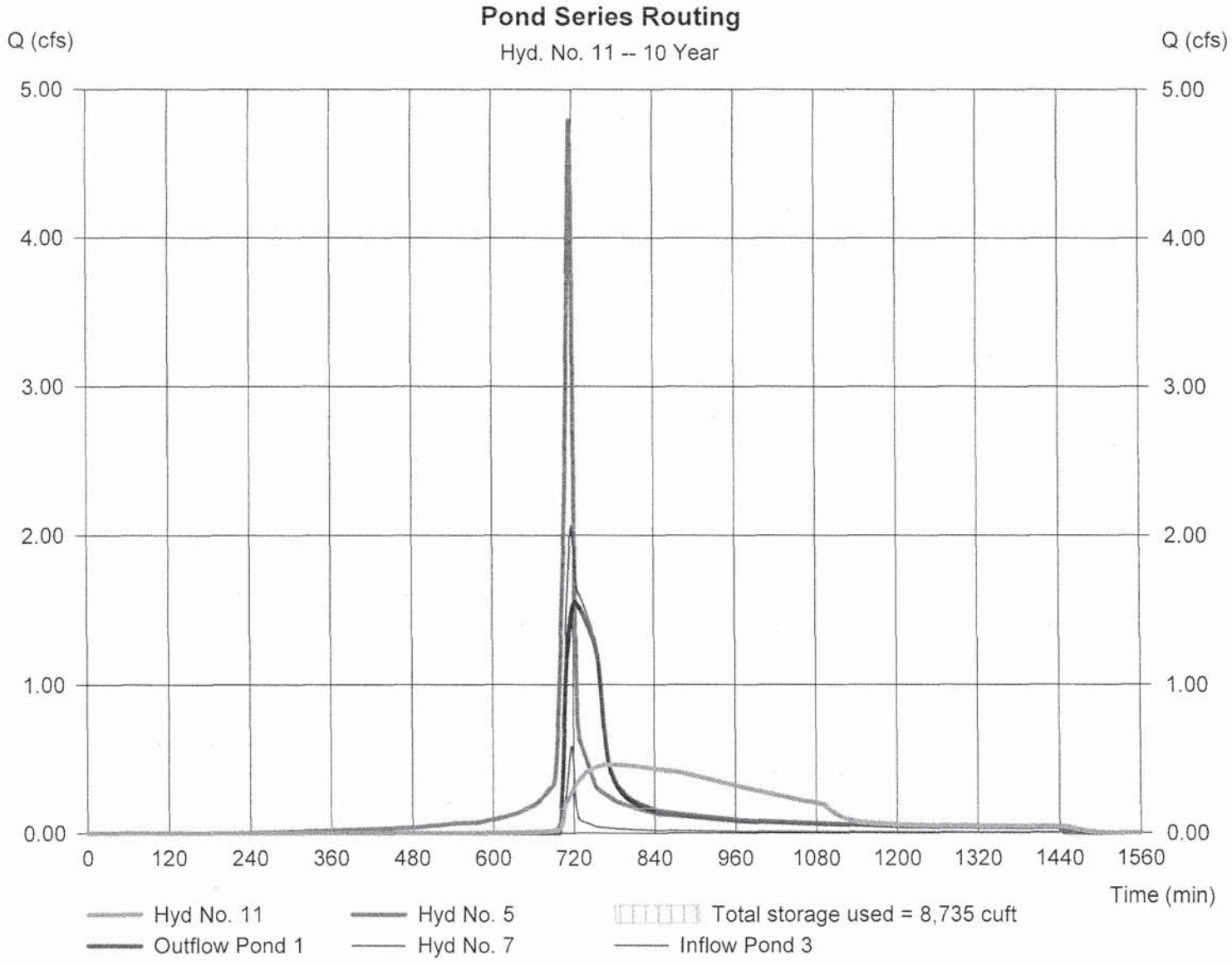
Hydrograph Report

Hyd. No. 11

Pond Series Routing

Hydrograph type	=	Reservoir (Interconnected)	Peak discharge	=	0.461 cfs
Storm frequency	=	10 yrs	Time to peak	=	774 min
Time interval	=	2 min	Hyd. volume	=	9,577 cuft
Upper Pond	=	Bioretention Facility	Lower Pond	=	Detention Pond
Inflow hyd.	=	5 - To Bioretention Facility	Other Inflow hyd.	=	7 - To Detentio
Max. Elevation	=	870.37 ft	Max. Elevation	=	869.31 ft
Max. Storage	=	4,573 cuft	Max. Storage	=	4,162 cuft

Interconnected Pond Routing. Storage Indication method used.

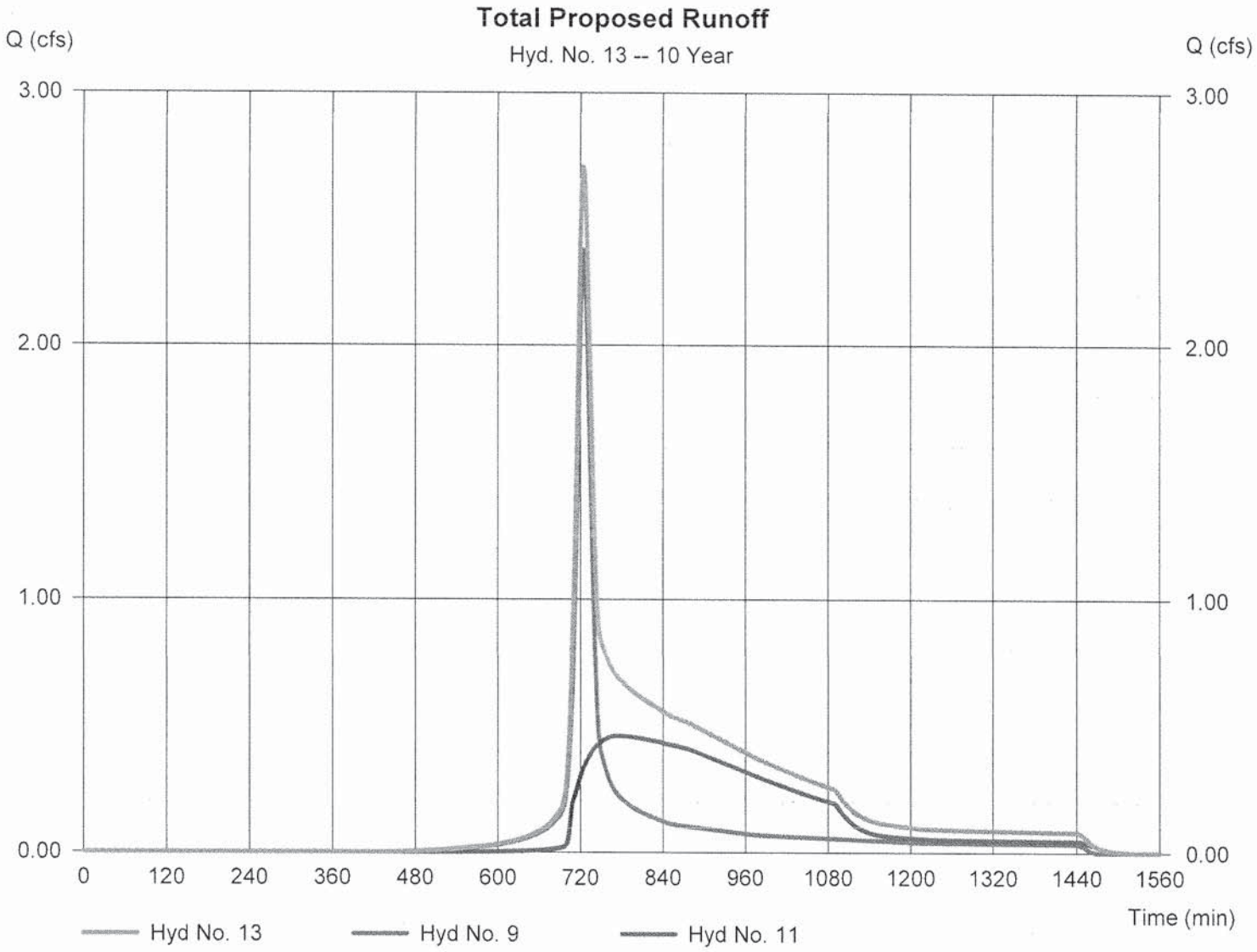


Hydrograph Report

Hyd. No. 13

Total Proposed Runoff

Hydrograph type	= Combine	Peak discharge	= 2.713 cfs
Storm frequency	= 10 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 17,016 cuft
Inflow hyds.	= 9, 11	Contrib. drain. area	= 0.960 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	6.757	2	724	21,147	------	------	------	Pre-development
3	SCS Runoff	11.13	2	716	23,294	------	------	------	Post-development
5	SCS Runoff	5.837	2	716	12,791	------	------	------	To Bioretention Facility
7	SCS Runoff	0.769	2	716	1,559	------	------	------	To Detention Pond
9	SCS Runoff	3.072	2	724	9,627	------	------	------	Bypass
11	Reservoir(i)	0.514	2	786	12,382	5, 7	870.50	11,238	Pond Series Routing
13	Combine	3.453	2	724	22,009	9, 11,	------	------	Total Proposed Runoff

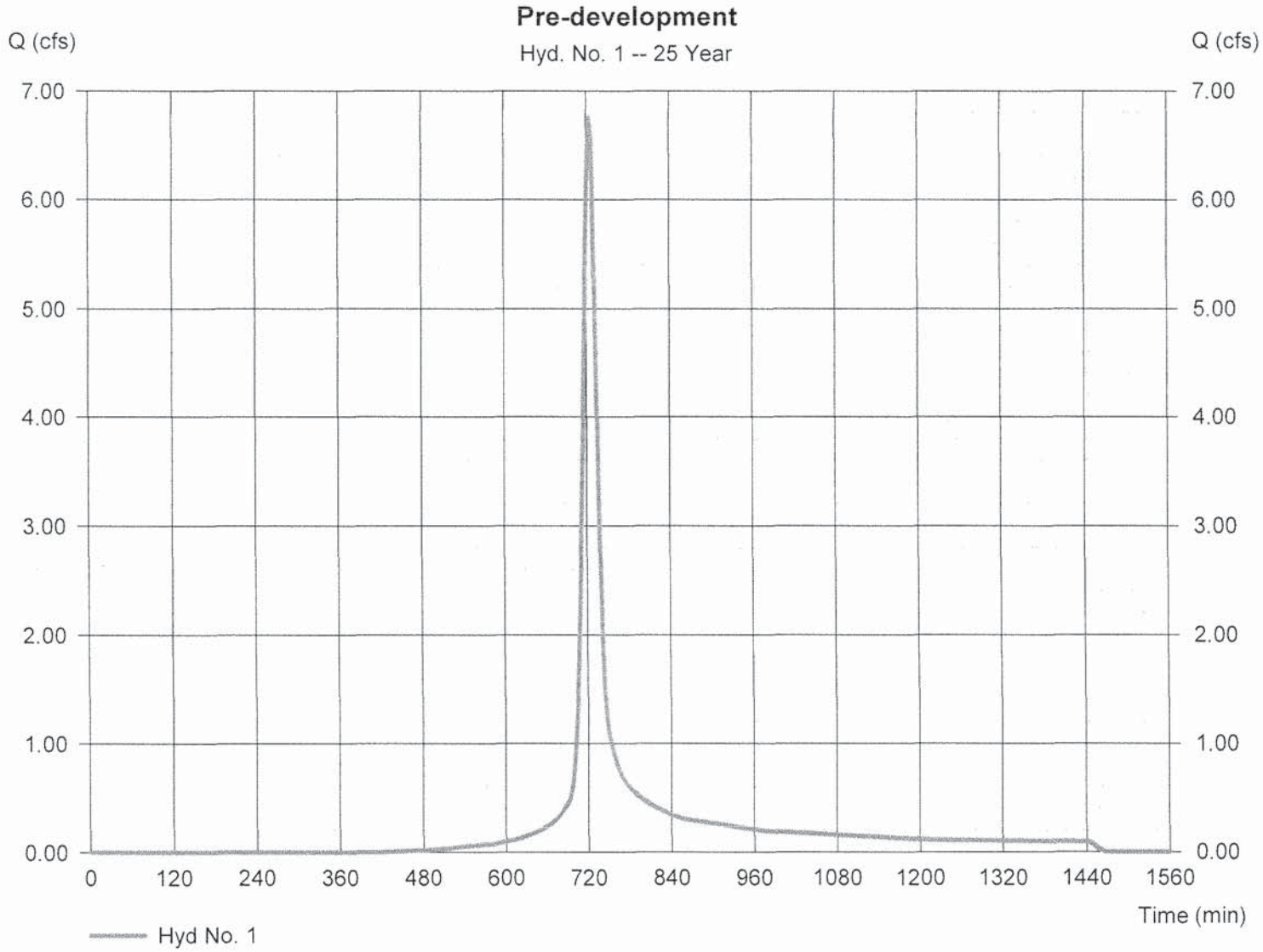
Hydrograph Report

Hyd. No. 1

Pre-development

Hydrograph type	= SCS Runoff	Peak discharge	= 6.757 cfs
Storm frequency	= 25 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 21,147 cuft
Drainage area	= 2.180 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.30 min
Total precip.	= 4.44 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.130 x 89) + (2.050 x 83)] / 2.180



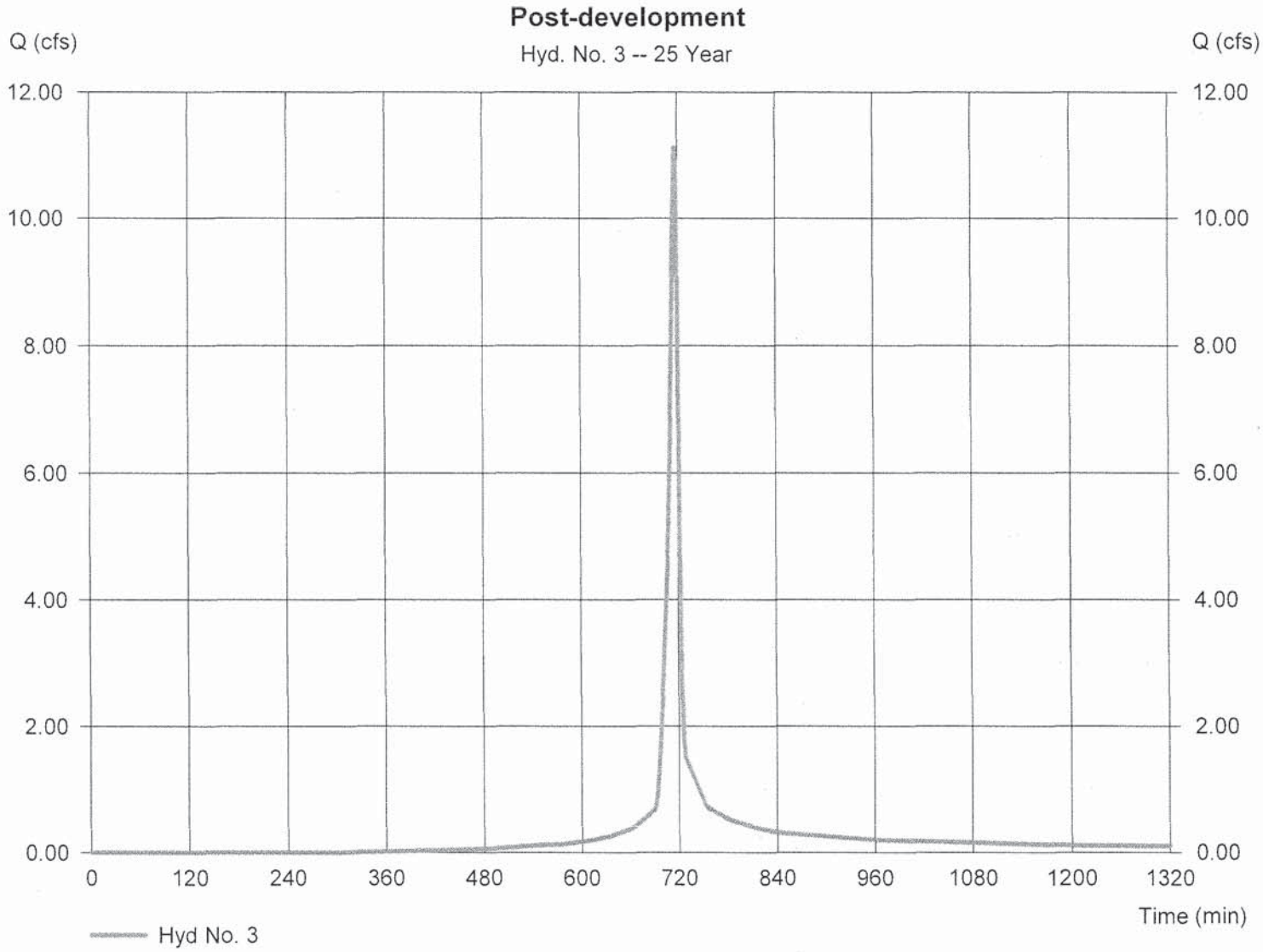
Hydrograph Report

Hyd. No. 3

Post-development

Hydrograph type	= SCS Runoff	Peak discharge	= 11.13 cfs
Storm frequency	= 25 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 23,294 cuft
Drainage area	= 2.180 ac	Curve number	= 88*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 5.90 min
Total precip.	= 4.44 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.830 x 98) + (0.130 x 89) + (0.550 x 83) + (0.670 x 80)] / 2.180



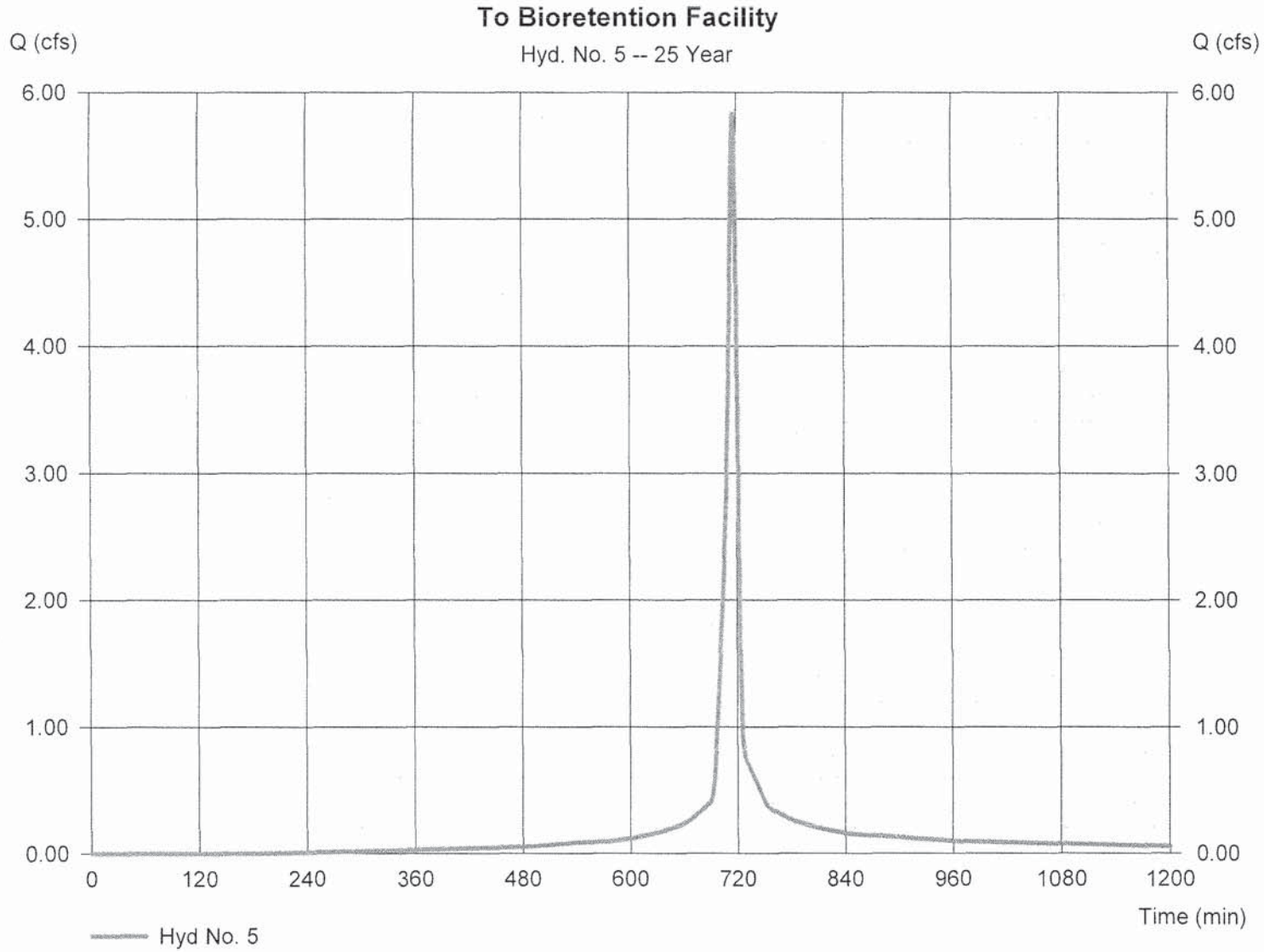
Hydrograph Report

Hyd. No. 5

To Bioretention Facility

Hydrograph type	= SCS Runoff	Peak discharge	= 5.837 cfs
Storm frequency	= 25 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 12,791 cuft
Drainage area	= 1.030 ac	Curve number	= 93*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 5.90 min
Total precip.	= 4.44 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.740 x 98) + (0.290 x 80)] / 1.030



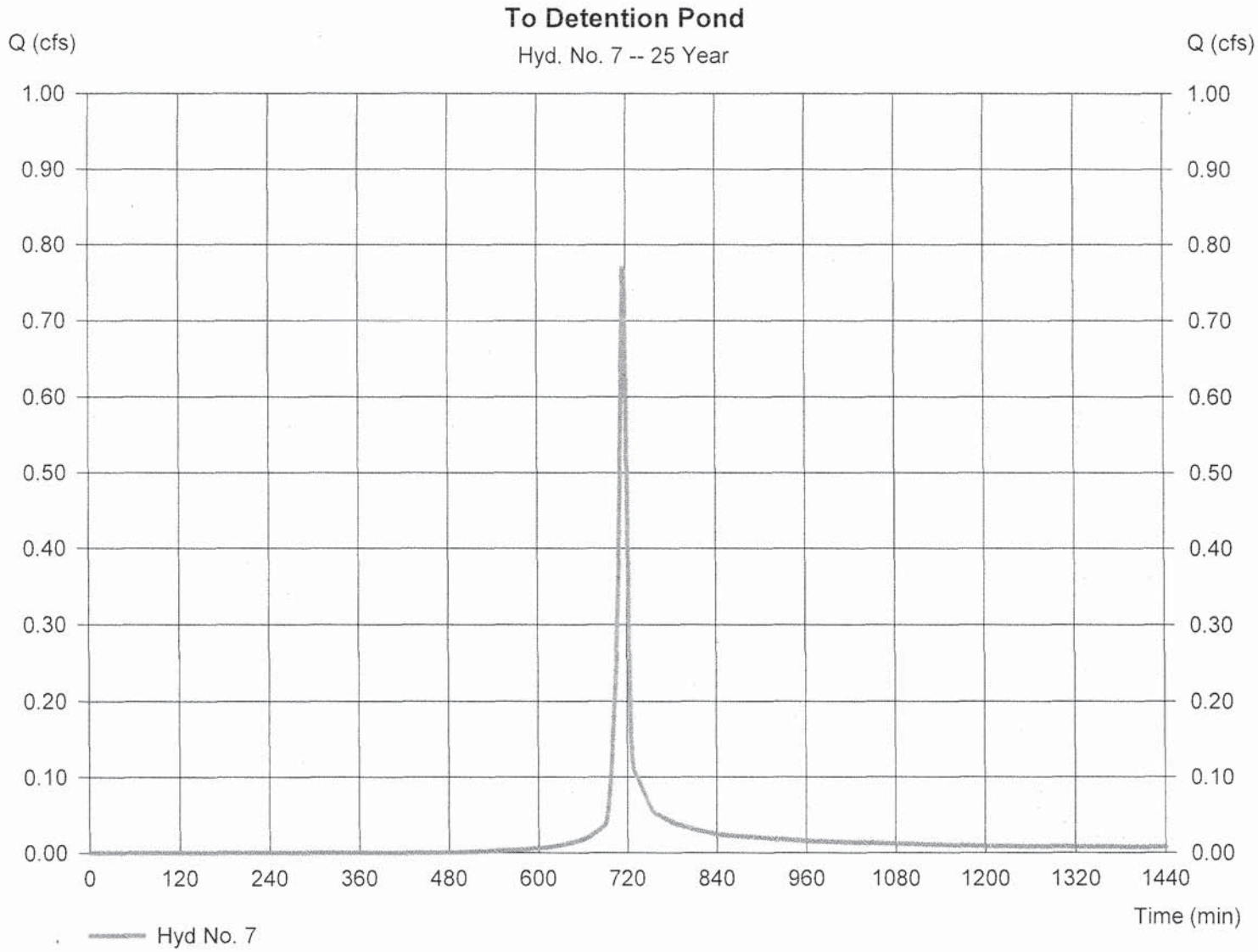
Hydrograph Report

Hyd. No. 7

To Detention Pond

Hydrograph type	= SCS Runoff	Peak discharge	= 0.769 cfs
Storm frequency	= 25 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 1,559 cuft
Drainage area	= 0.190 ac	Curve number	= 80*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 4.44 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.190 x 80)] / 0.190



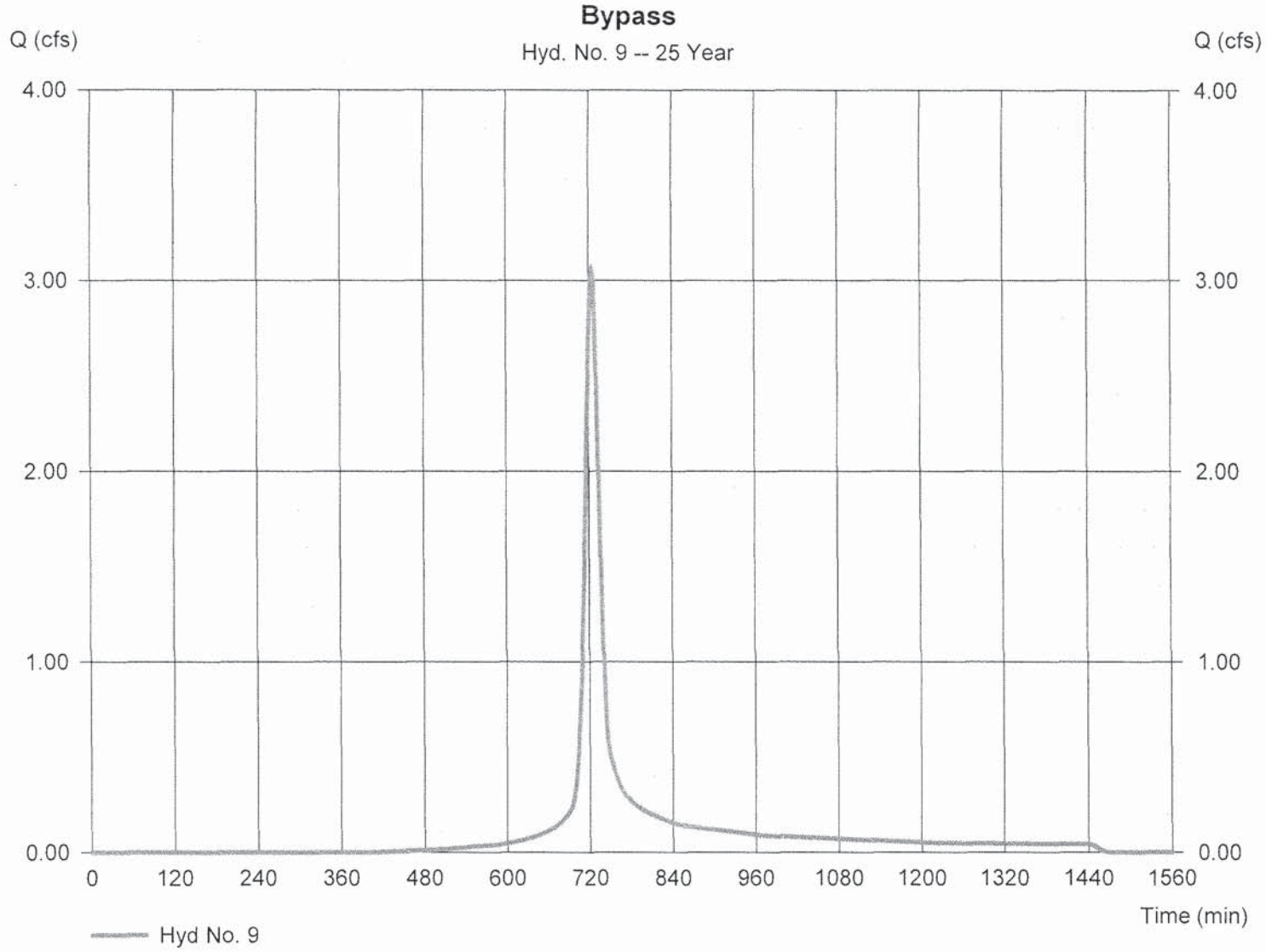
Hydrograph Report

Hyd. No. 9

Bypass

Hydrograph type	= SCS Runoff	Peak discharge	= 3.072 cfs
Storm frequency	= 25 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 9,627 cuft
Drainage area	= 0.960 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 17.00 min
Total precip.	= 4.44 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.086 x 98) + (0.870 x 83)] / 0.960



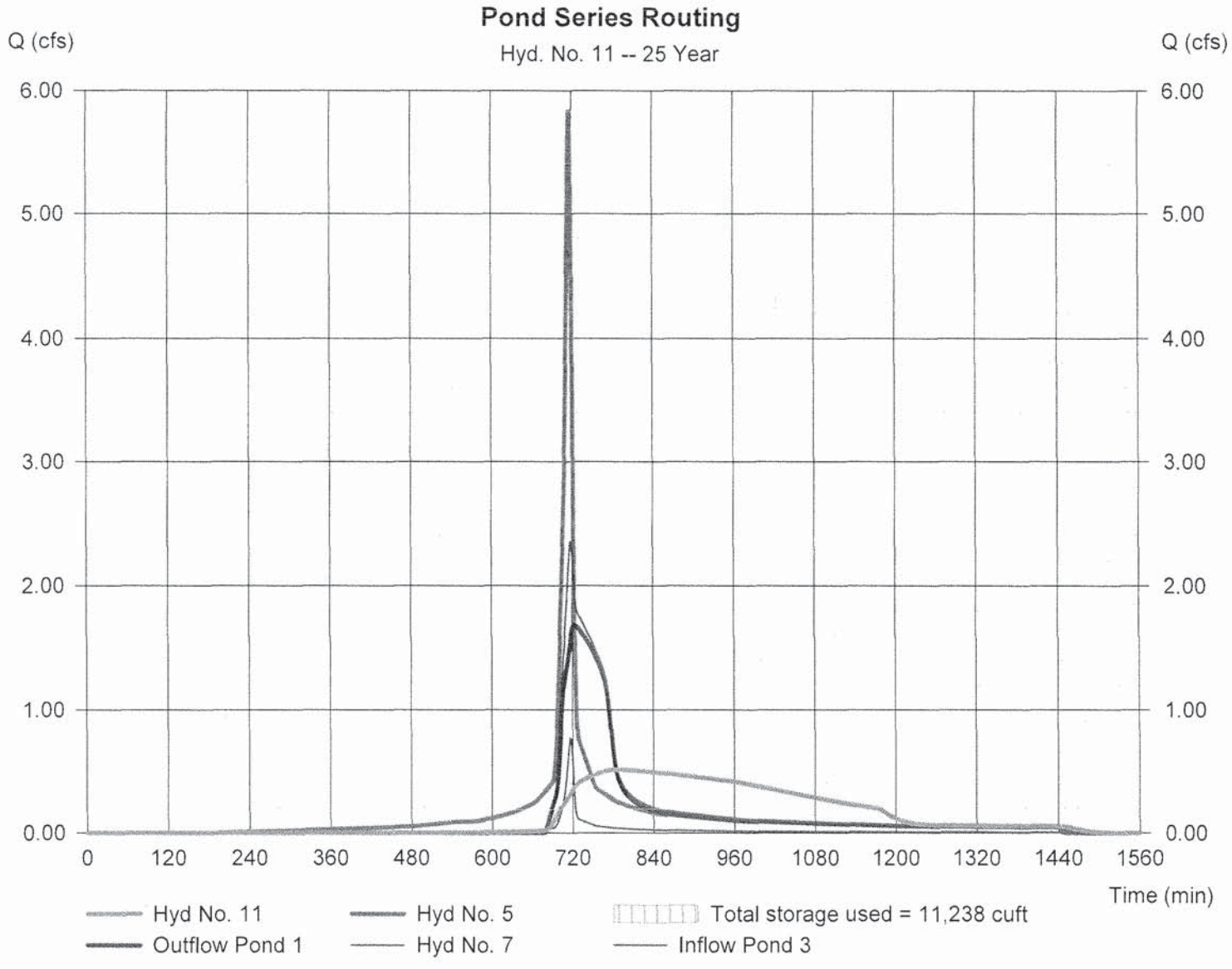
Hydrograph Report

Hyd. No. 11

Pond Series Routing

Hydrograph type	= Reservoir (Interconnected)	Peak discharge	= 0.514 cfs
Storm frequency	= 25 yrs	Time to peak	= 786 min
Time interval	= 2 min	Hyd. volume	= 12,382 cuft
Upper Pond	= Bioretention Facility	Lower Pond	= Detention Pond
Inflow hyd.	= 5 - To Bioretention Facility	Other Inflow hyd.	= 7 - To Detentio
Max. Elevation	= 870.50 ft	Max. Elevation	= 869.68 ft
Max. Storage	= 5,491 cuft	Max. Storage	= 5,746 cuft

Interconnected Pond Routing. Storage Indication method used.

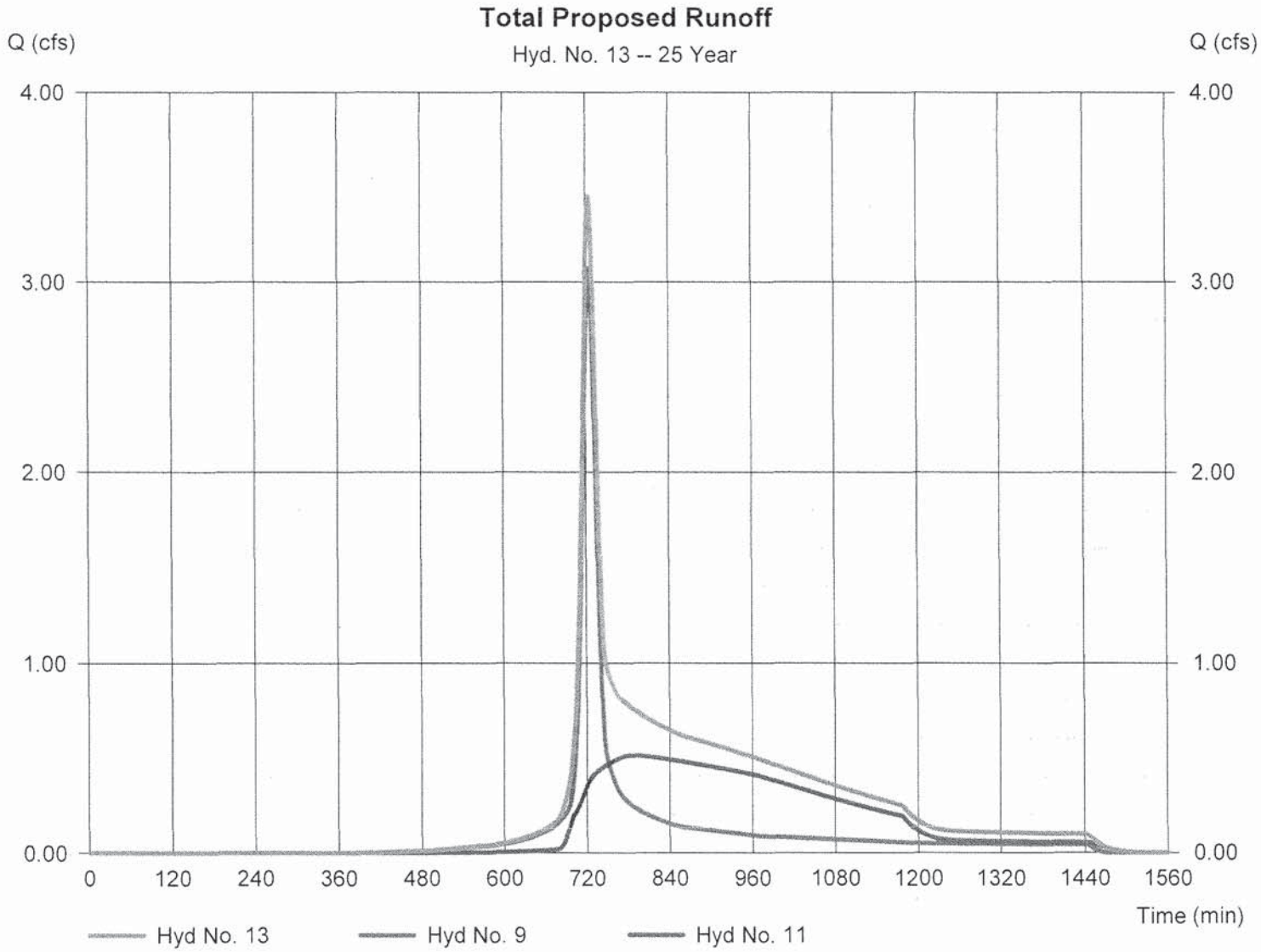


Hydrograph Report

Hyd. No. 13

Total Proposed Runoff

Hydrograph type	= Combine	Peak discharge	= 3.453 cfs
Storm frequency	= 25 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 22,009 cuft
Inflow hyds.	= 9, 11	Contrib. drain. area	= 0.960 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	8.050	2	724	25,261	------	------	------	Pre-development
3	SCS Runoff	12.95	2	716	27,360	------	------	------	Post-development
5	SCS Runoff	6.683	2	716	14,783	------	------	------	To Bioretention Facility
7	SCS Runoff	0.925	2	716	1,882	------	------	------	To Detention Pond
9	SCS Runoff	3.644	2	724	11,461	------	------	------	Bypass
11	Reservoir(i)	0.547	2	802	14,697	5, 7	870.57	13,055	Pond Series Routing
13	Combine	4.056	2	724	26,158	9, 11,	------	------	Total Proposed Runoff

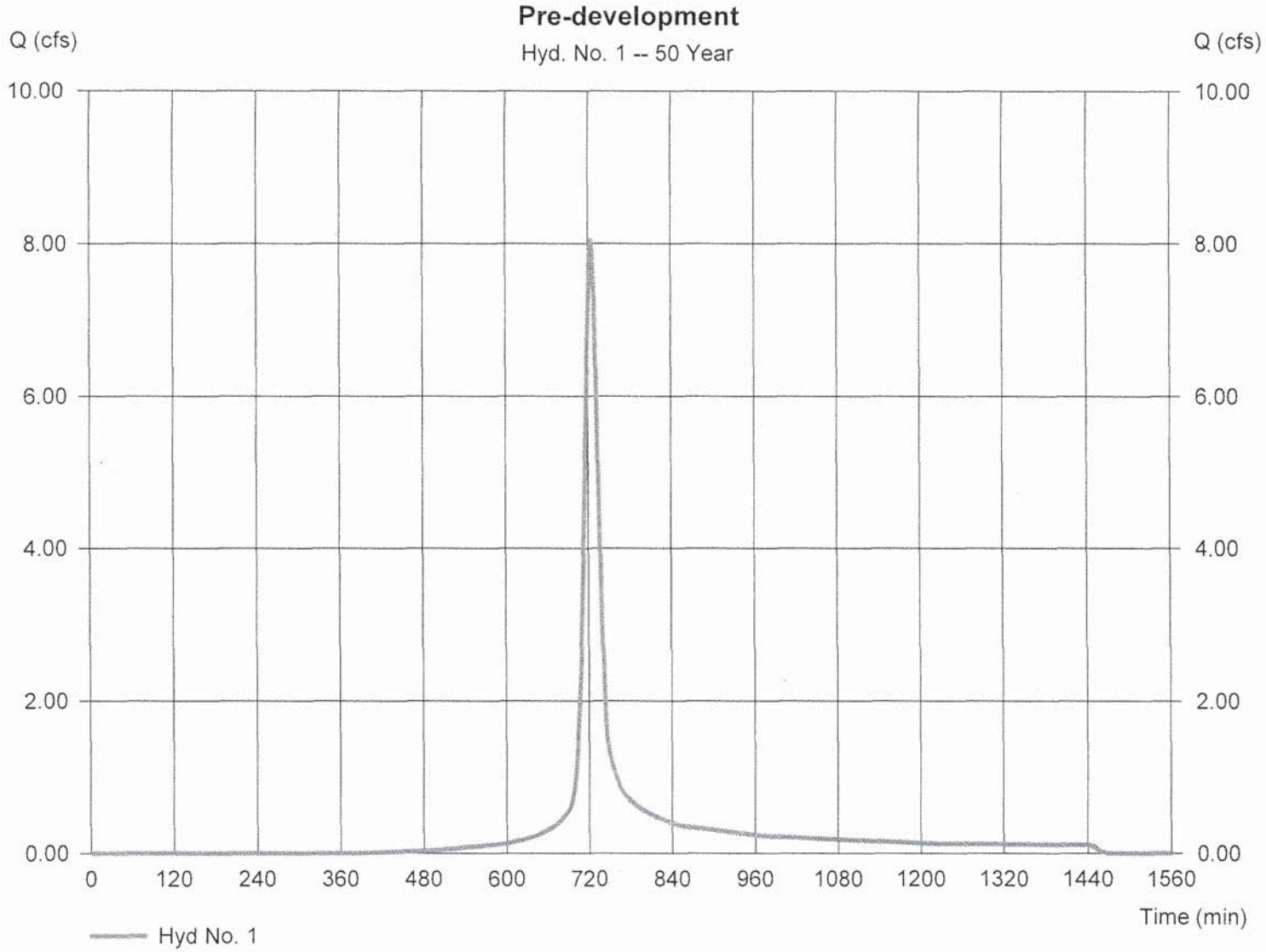
Hydrograph Report

Hyd. No. 1

Pre-development

Hydrograph type	= SCS Runoff	Peak discharge	= 8.050 cfs
Storm frequency	= 50 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 25,261 cuft
Drainage area	= 2.180 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.30 min
Total precip.	= 5.02 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.130 x 89) + (2.050 x 83)] / 2.180



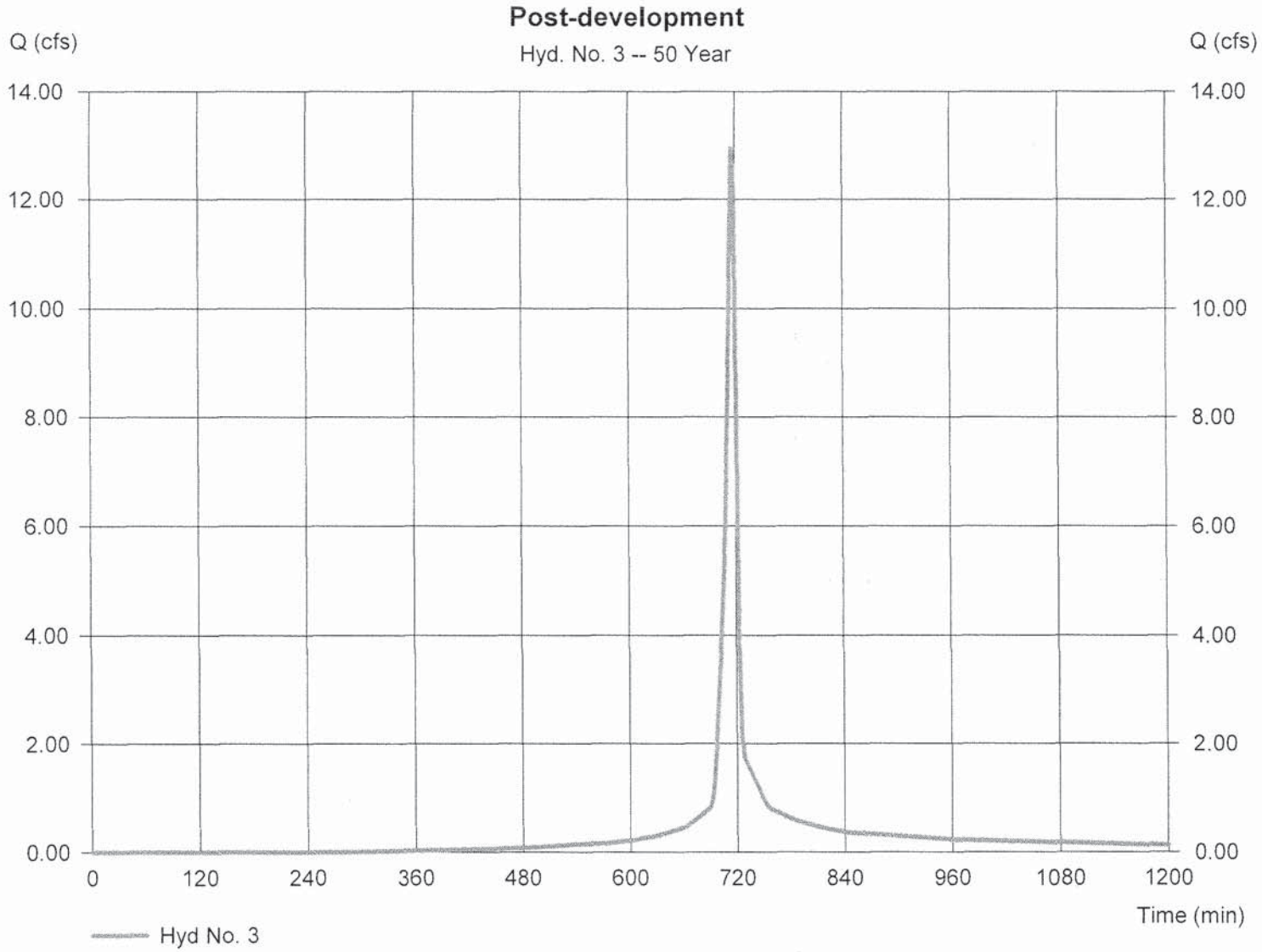
Hydrograph Report

Hyd. No. 3

Post-development

Hydrograph type	= SCS Runoff	Peak discharge	= 12.95 cfs
Storm frequency	= 50 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 27,360 cuft
Drainage area	= 2.180 ac	Curve number	= 88*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 5.90 min
Total precip.	= 5.02 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.830 x 98) + (0.130 x 89) + (0.550 x 83) + (0.670 x 80)] / 2.180



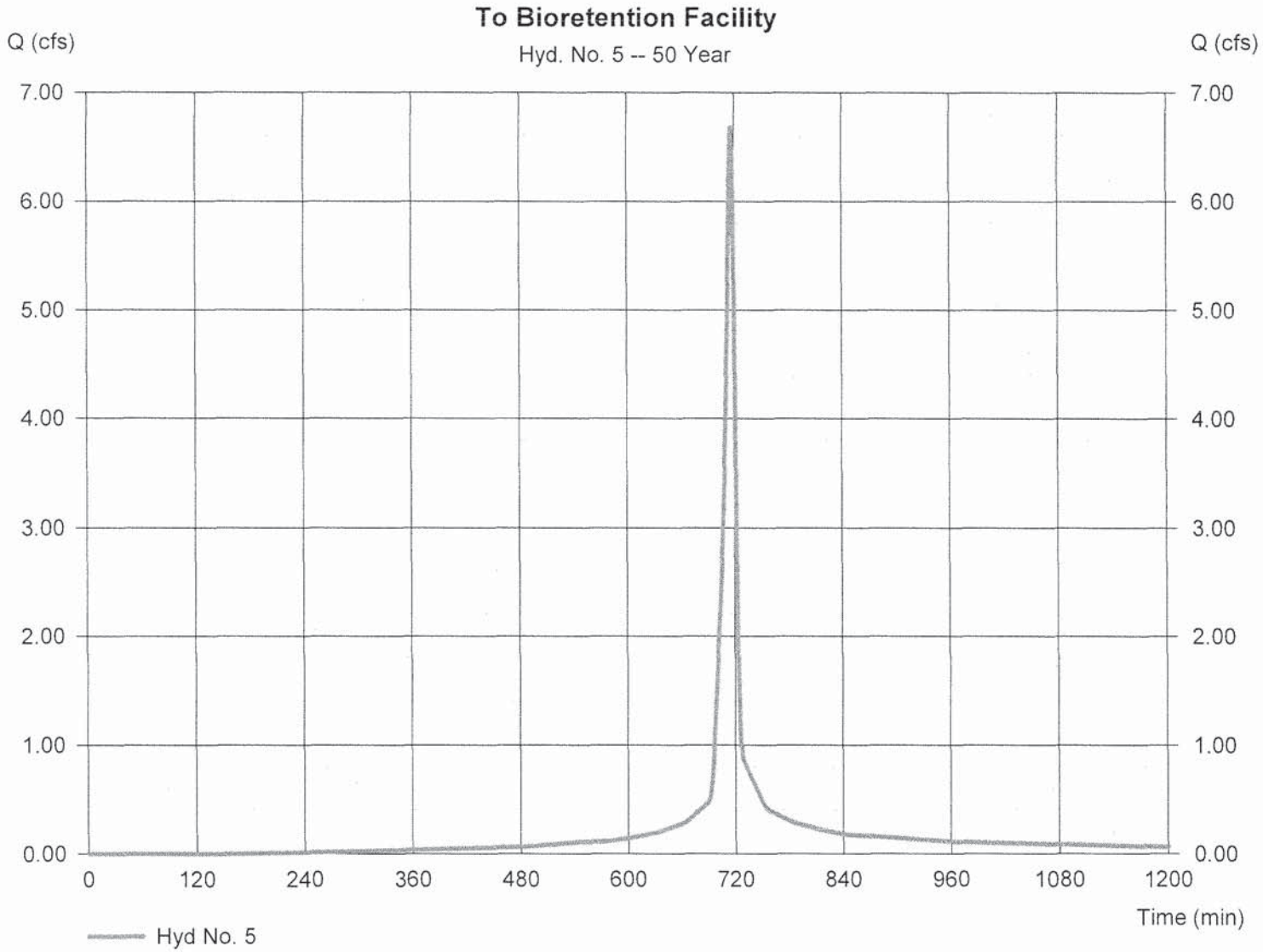
Hydrograph Report

Hyd. No. 5

To Bioretention Facility

Hydrograph type	= SCS Runoff	Peak discharge	= 6.683 cfs
Storm frequency	= 50 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 14,783 cuft
Drainage area	= 1.030 ac	Curve number	= 93*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 5.90 min
Total precip.	= 5.02 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.740 x 98) + (0.290 x 80)] / 1.030



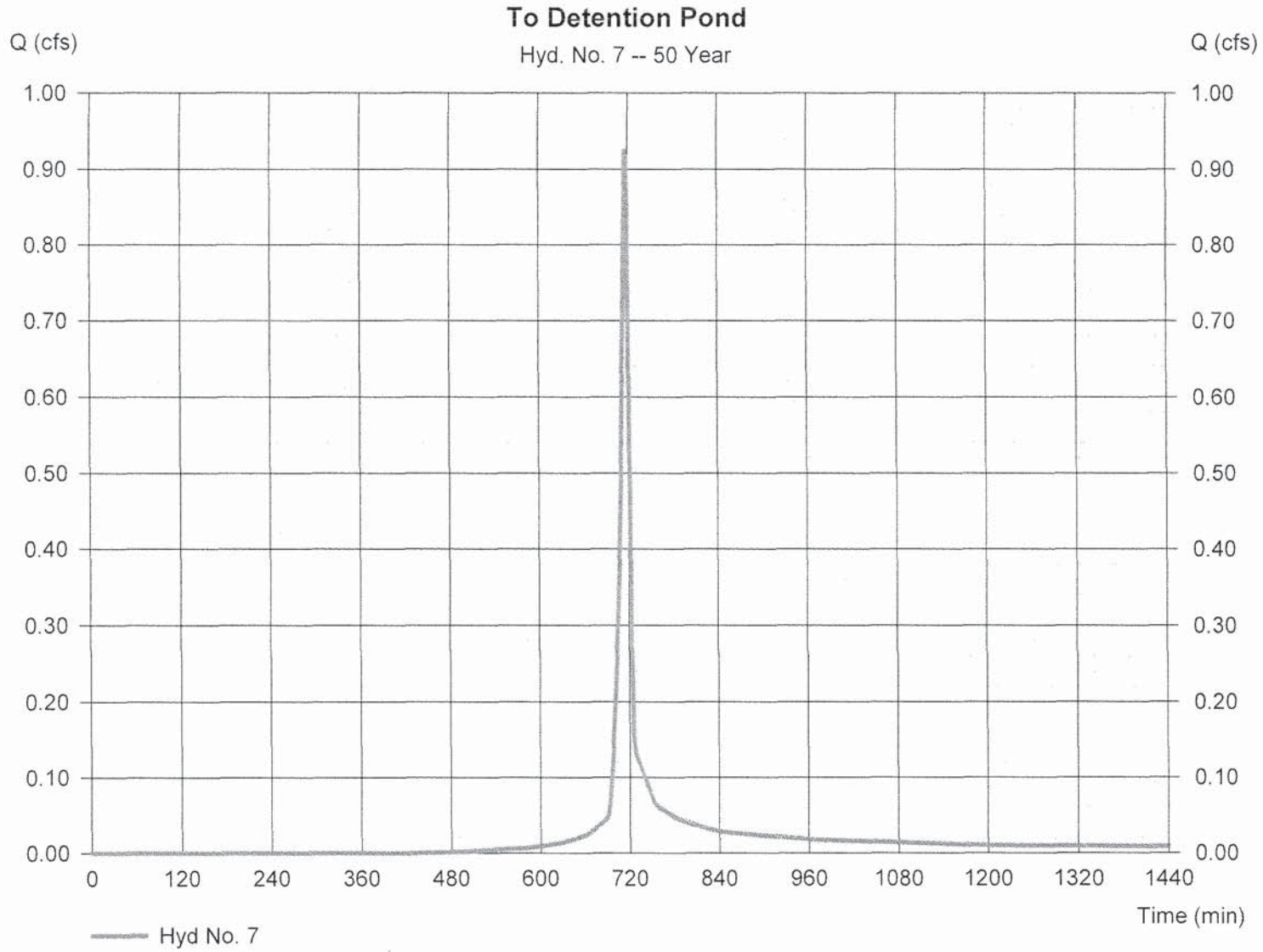
Hydrograph Report

Hyd. No. 7

To Detention Pond

Hydrograph type	= SCS Runoff	Peak discharge	= 0.925 cfs
Storm frequency	= 50 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 1,882 cuft
Drainage area	= 0.190 ac	Curve number	= 80*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.02 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.190 x 80)] / 0.190



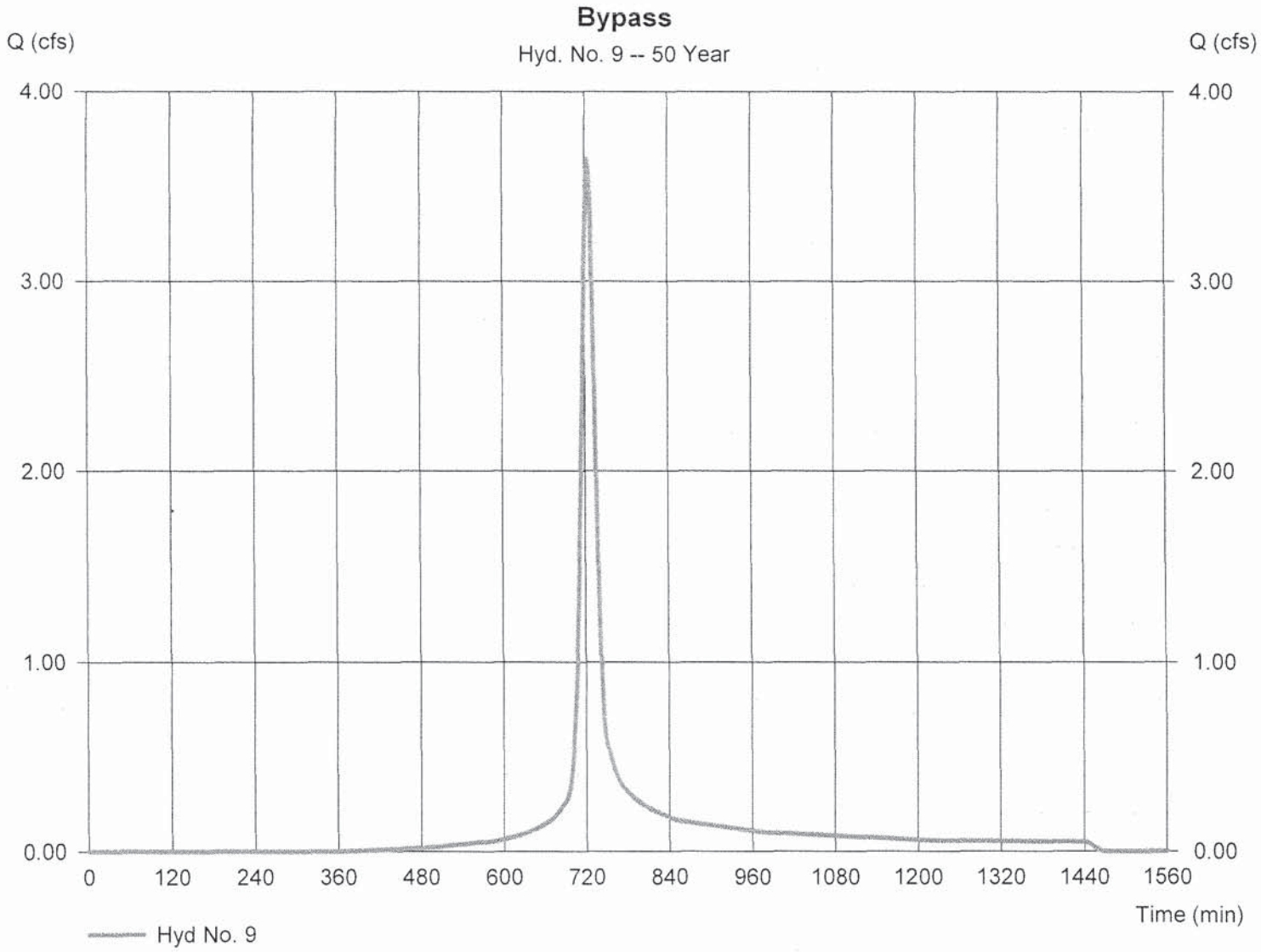
Hydrograph Report

Hyd. No. 9

Bypass

Hydrograph type	= SCS Runoff	Peak discharge	= 3.644 cfs
Storm frequency	= 50 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 11,461 cuft
Drainage area	= 0.960 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 17.00 min
Total precip.	= 5.02 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.086 x 98) + (0.870 x 83)] / 0.960



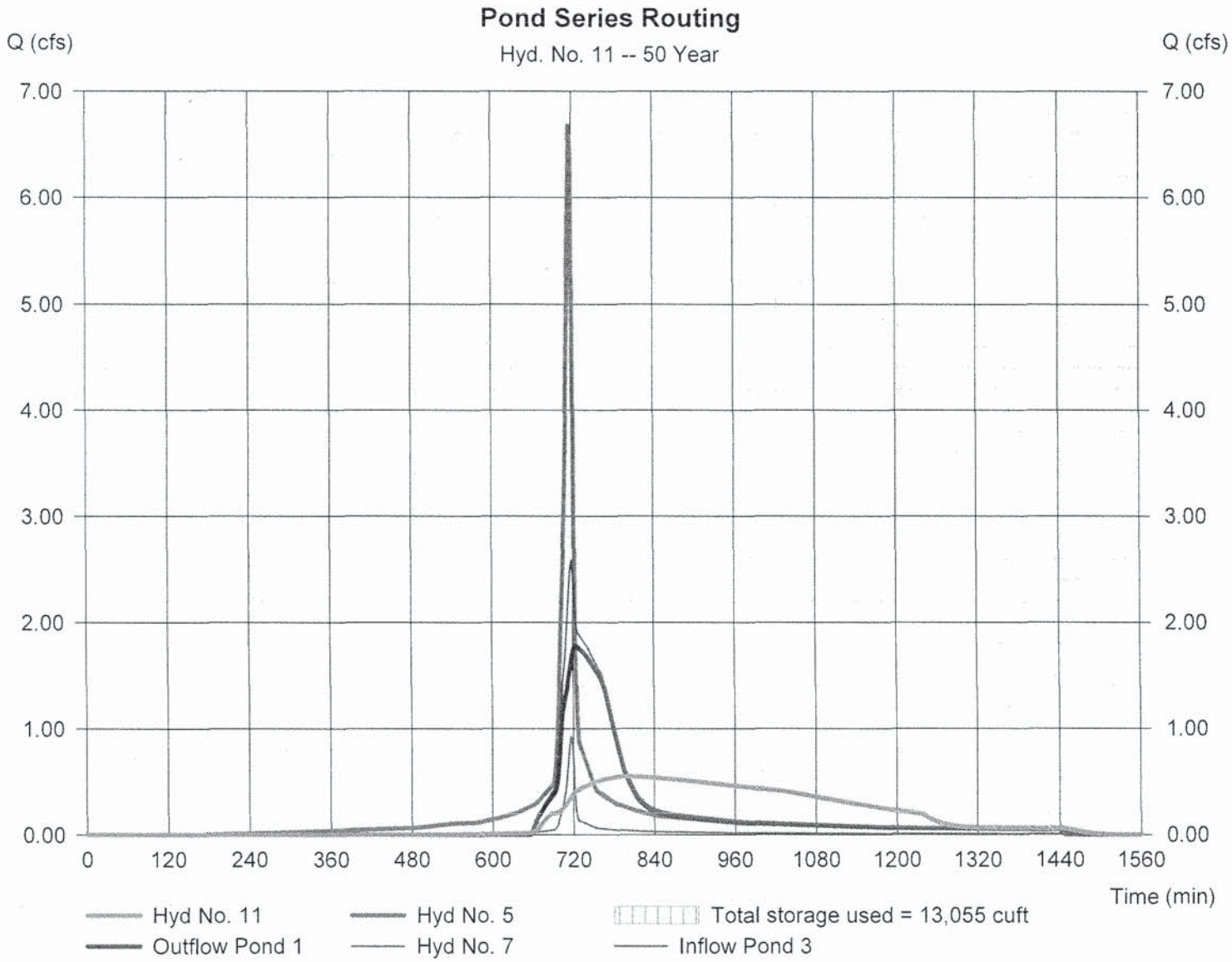
Hydrograph Report

Hyd. No. 11

Pond Series Routing

Hydrograph type	=	Reservoir (Interconnected)	Peak discharge	=	0.547 cfs
Storm frequency	=	50 yrs	Time to peak	=	802 min
Time interval	=	2 min	Hyd. volume	=	14,697 cuft
Upper Pond	=	Bioretention Facility	Lower Pond	=	Detention Pond
Inflow hyd.	=	5 - To Bioretention Facility	Other Inflow hyd.	=	7 - To Detentio
Max. Elevation	=	870.57 ft	Max. Elevation	=	869.94 ft
Max. Storage	=	6,197 cuft	Max. Storage	=	6,858 cuft

Interconnected Pond Routing. Storage Indication method used.

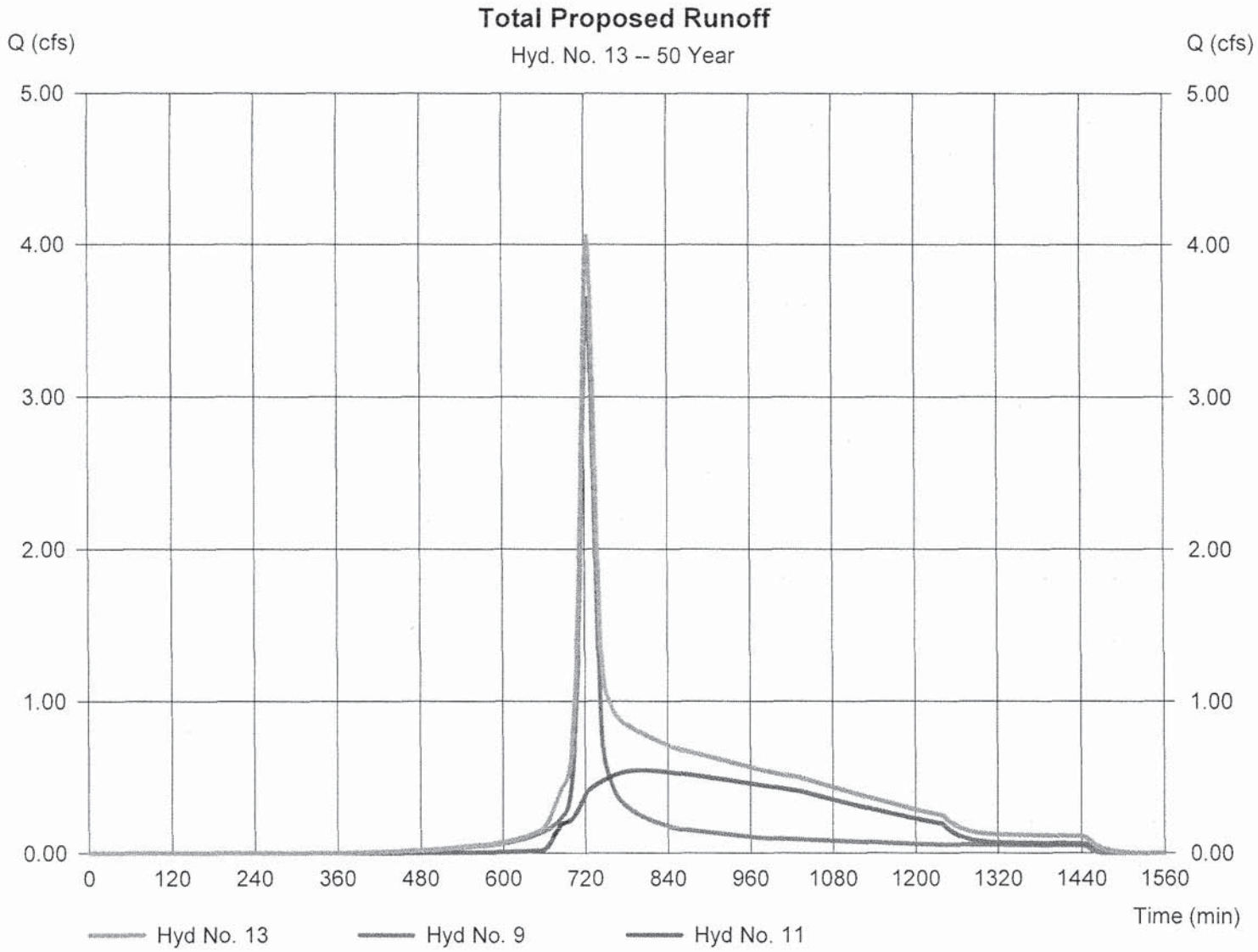


Hydrograph Report

Hyd. No. 13

Total Proposed Runoff

Hydrograph type	= Combine	Peak discharge	= 4.056 cfs
Storm frequency	= 50 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 26,158 cuft
Inflow hyds.	= 9, 11	Contrib. drain. area	= 0.960 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2014 by Autodesk, Inc. v10.3

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	9.420	2	724	29,670	------	------	------	Pre-development
3	SCS Runoff	14.87	2	716	31,681	------	------	------	Post-development
5	SCS Runoff	7.568	2	716	16,887	------	------	------	To Bioretention Facility
7	SCS Runoff	1.090	2	716	2,230	------	------	------	To Detention Pond
9	SCS Runoff	4.249	2	724	13,422	------	------	------	Bypass
11	Reservoir(i)	0.564	2	810	17,152	5, 7	870.64	14,480	Pond Series Routing
13	Combine	4.680	2	724	30,573	9, 11,	------	------	Total Proposed Runoff

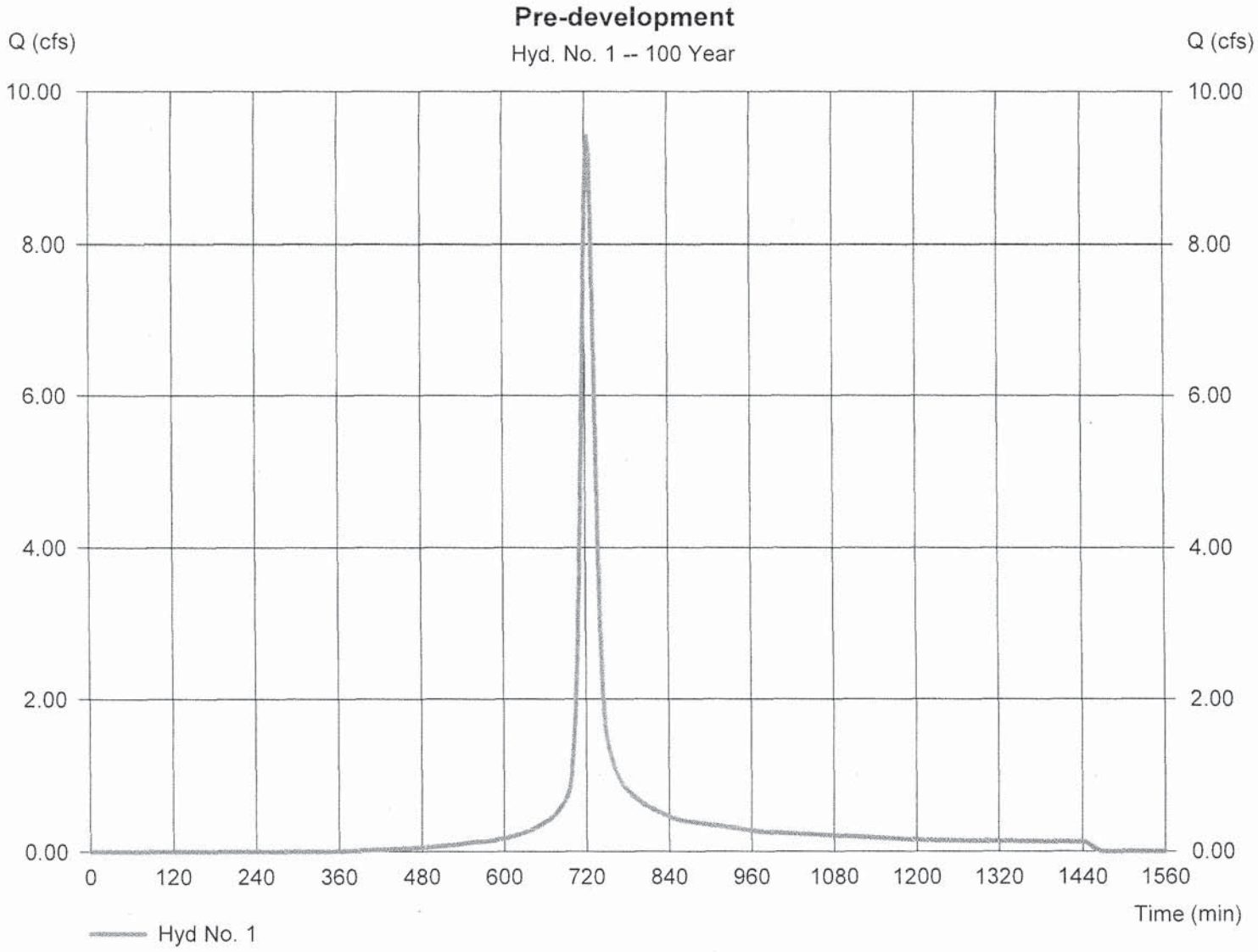
Hydrograph Report

Hyd. No. 1

Pre-development

Hydrograph type	= SCS Runoff	Peak discharge	= 9.420 cfs
Storm frequency	= 100 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 29,670 cuft
Drainage area	= 2.180 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 18.30 min
Total precip.	= 5.63 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.130 x 89) + (2.050 x 83)] / 2.180



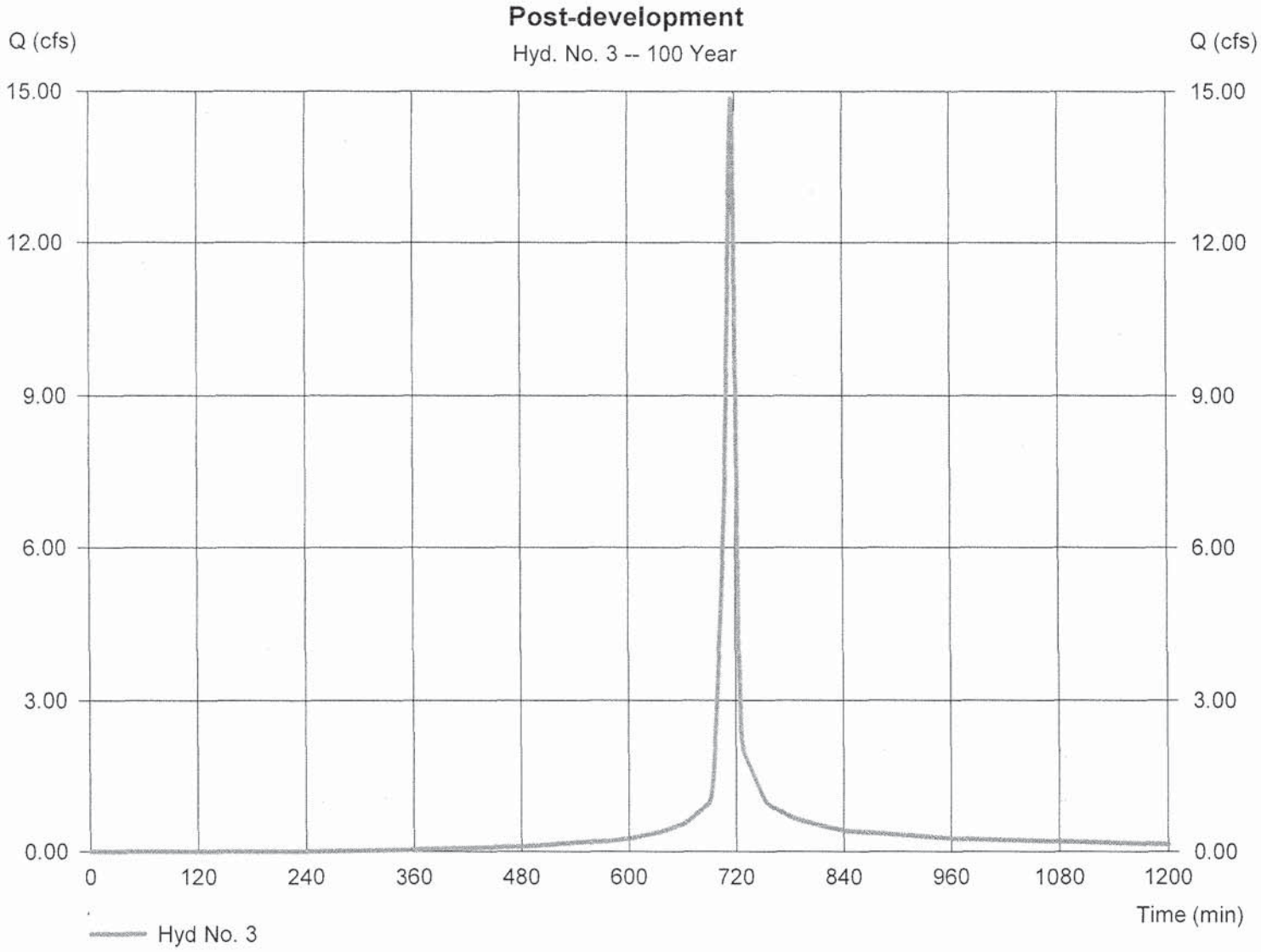
Hydrograph Report

Hyd. No. 3

Post-development

Hydrograph type	= SCS Runoff	Peak discharge	= 14.87 cfs
Storm frequency	= 100 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 31,681 cuft
Drainage area	= 2.180 ac	Curve number	= 88*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 5.90 min
Total precip.	= 5.63 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.830 x 98) + (0.130 x 89) + (0.550 x 83) + (0.670 x 80)] / 2.180



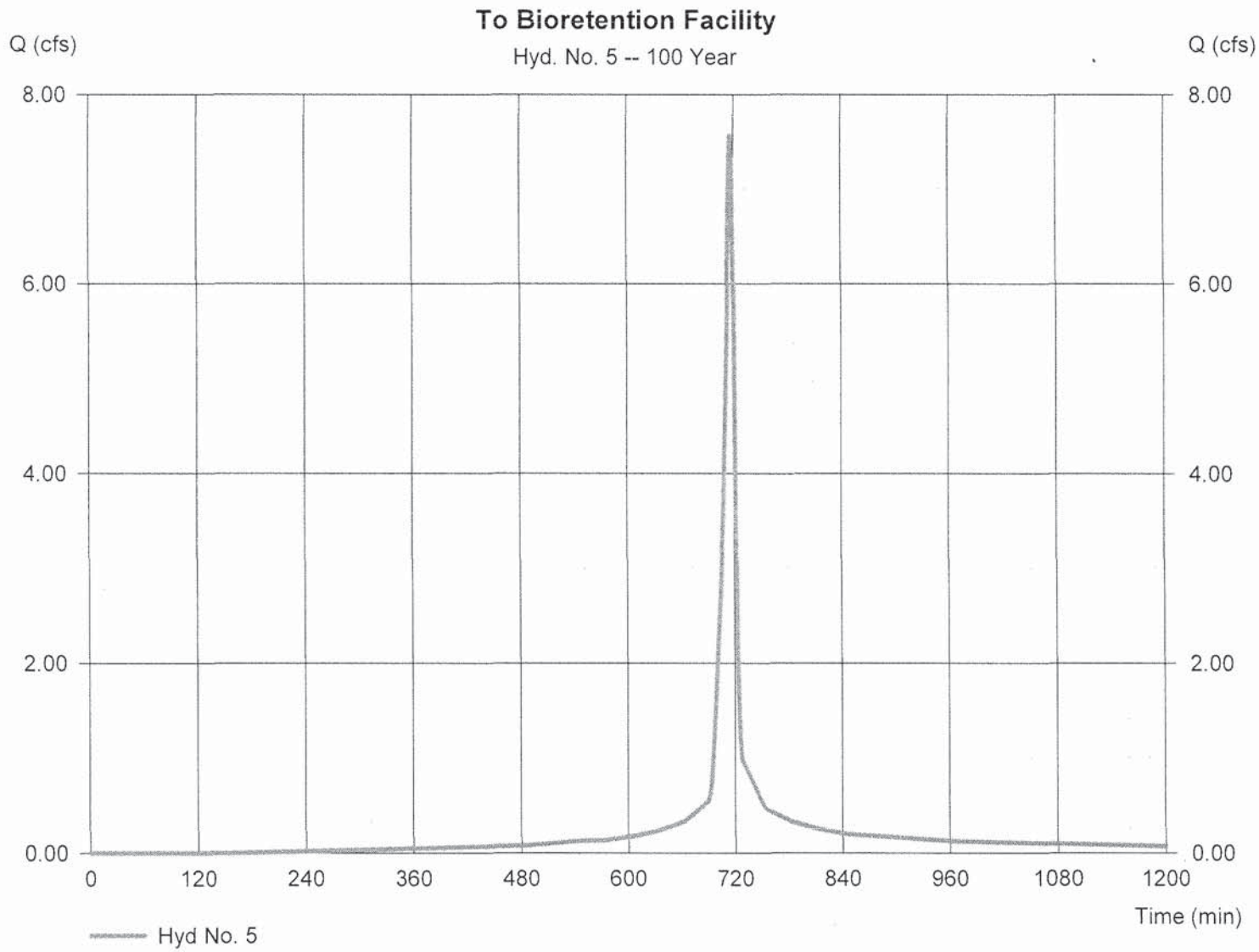
Hydrograph Report

Hyd. No. 5

To Bioretention Facility

Hydrograph type	= SCS Runoff	Peak discharge	= 7.568 cfs
Storm frequency	= 100 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 16,887 cuft
Drainage area	= 1.030 ac	Curve number	= 93*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 5.90 min
Total precip.	= 5.63 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.740 x 98) + (0.290 x 80)] / 1.030



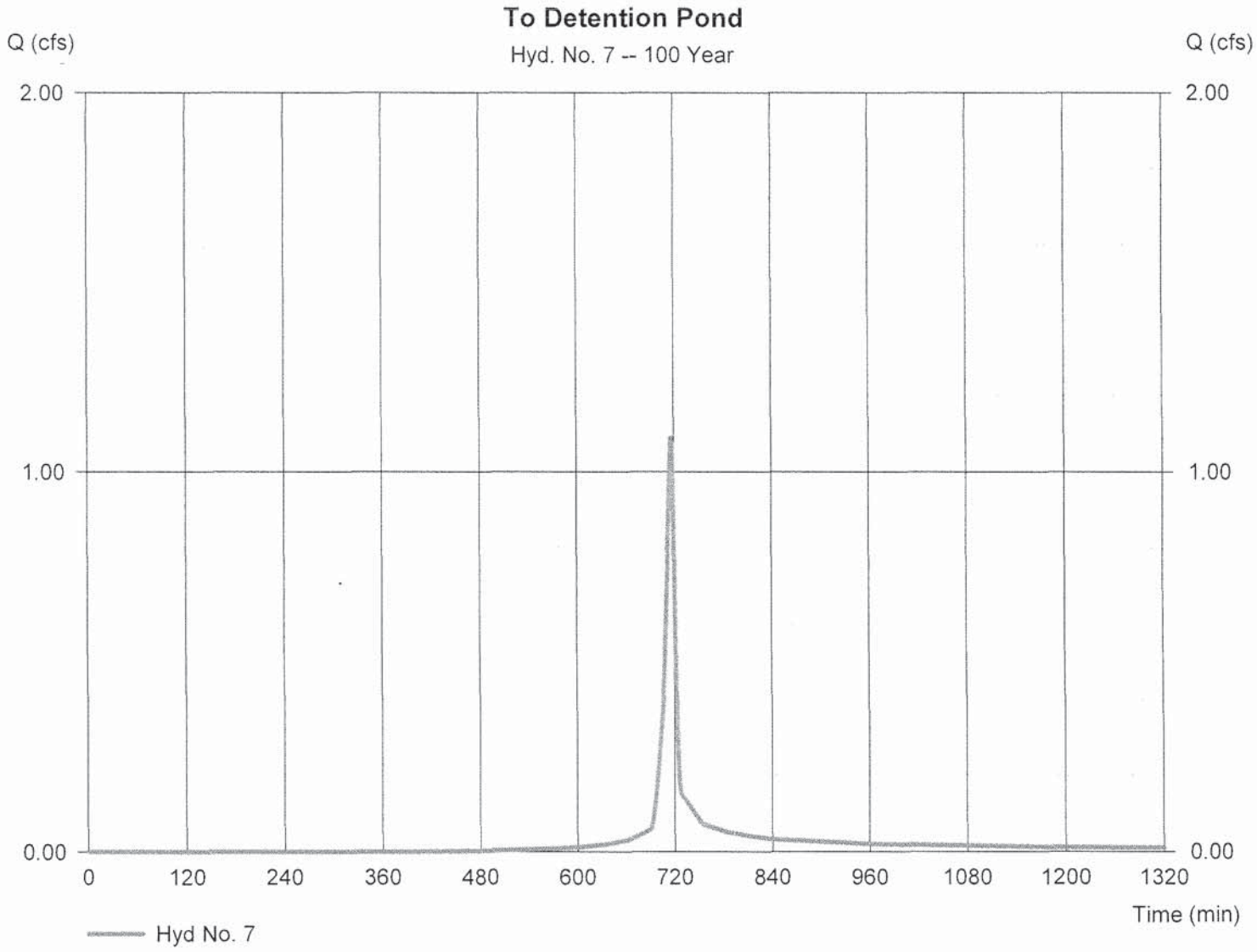
Hydrograph Report

Hyd. No. 7

To Detention Pond

Hydrograph type	= SCS Runoff	Peak discharge	= 1.090 cfs
Storm frequency	= 100 yrs	Time to peak	= 716 min
Time interval	= 2 min	Hyd. volume	= 2,230 cuft
Drainage area	= 0.190 ac	Curve number	= 80*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 5.63 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.190 x 80)] / 0.190



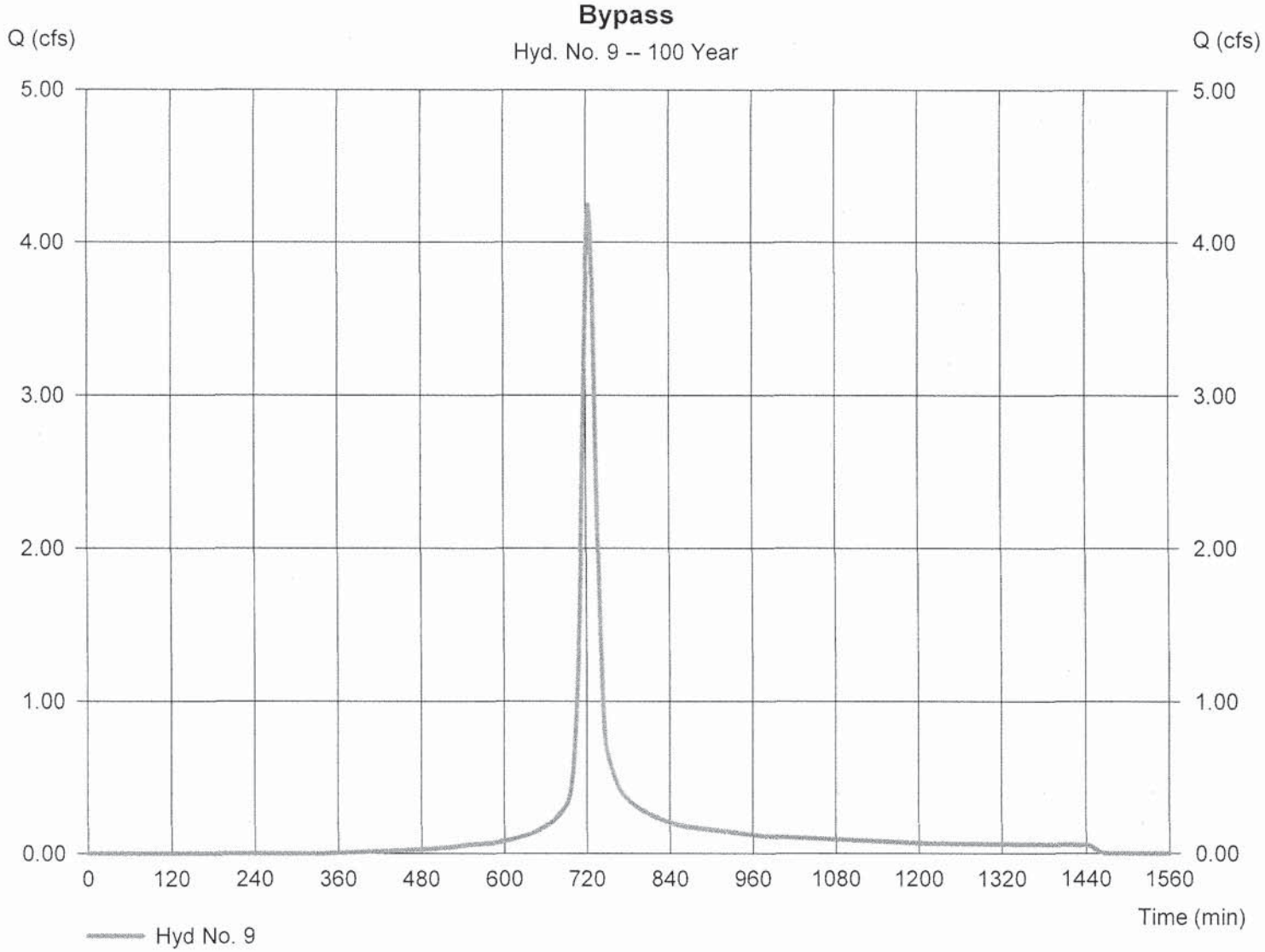
Hydrograph Report

Hyd. No. 9

Bypass

Hydrograph type	= SCS Runoff	Peak discharge	= 4.249 cfs
Storm frequency	= 100 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 13,422 cuft
Drainage area	= 0.960 ac	Curve number	= 84*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 17.00 min
Total precip.	= 5.63 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.086 x 98) + (0.870 x 83)] / 0.960



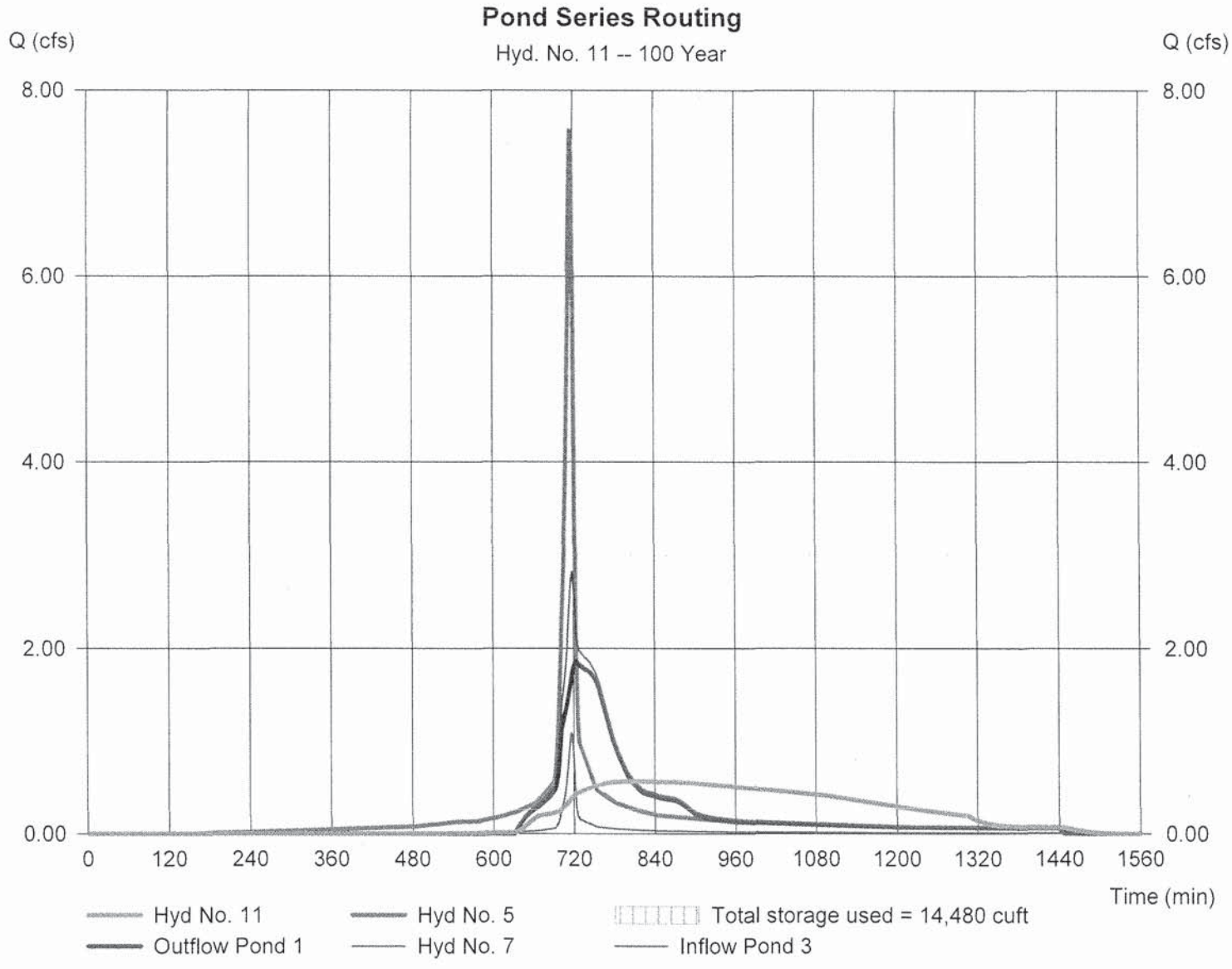
Hydrograph Report

Hyd. No. 11

Pond Series Routing

Hydrograph type	=	Reservoir (Interconnected)	Peak discharge	=	0.564 cfs
Storm frequency	=	100 yrs	Time to peak	=	810 min
Time interval	=	2 min	Hyd. volume	=	17,152 cuft
Upper Pond	=	Bioretention Facility	Lower Pond	=	Detention Pond
Inflow hyd.	=	5 - To Bioretention Facility	Other Inflow hyd.	=	7 - To Detentio
Max. Elevation	=	870.64 ft	Max. Elevation	=	870.08 ft
Max. Storage	=	6,939 cuft	Max. Storage	=	7,541 cuft

Interconnected Pond Routing. Storage Indication method used.

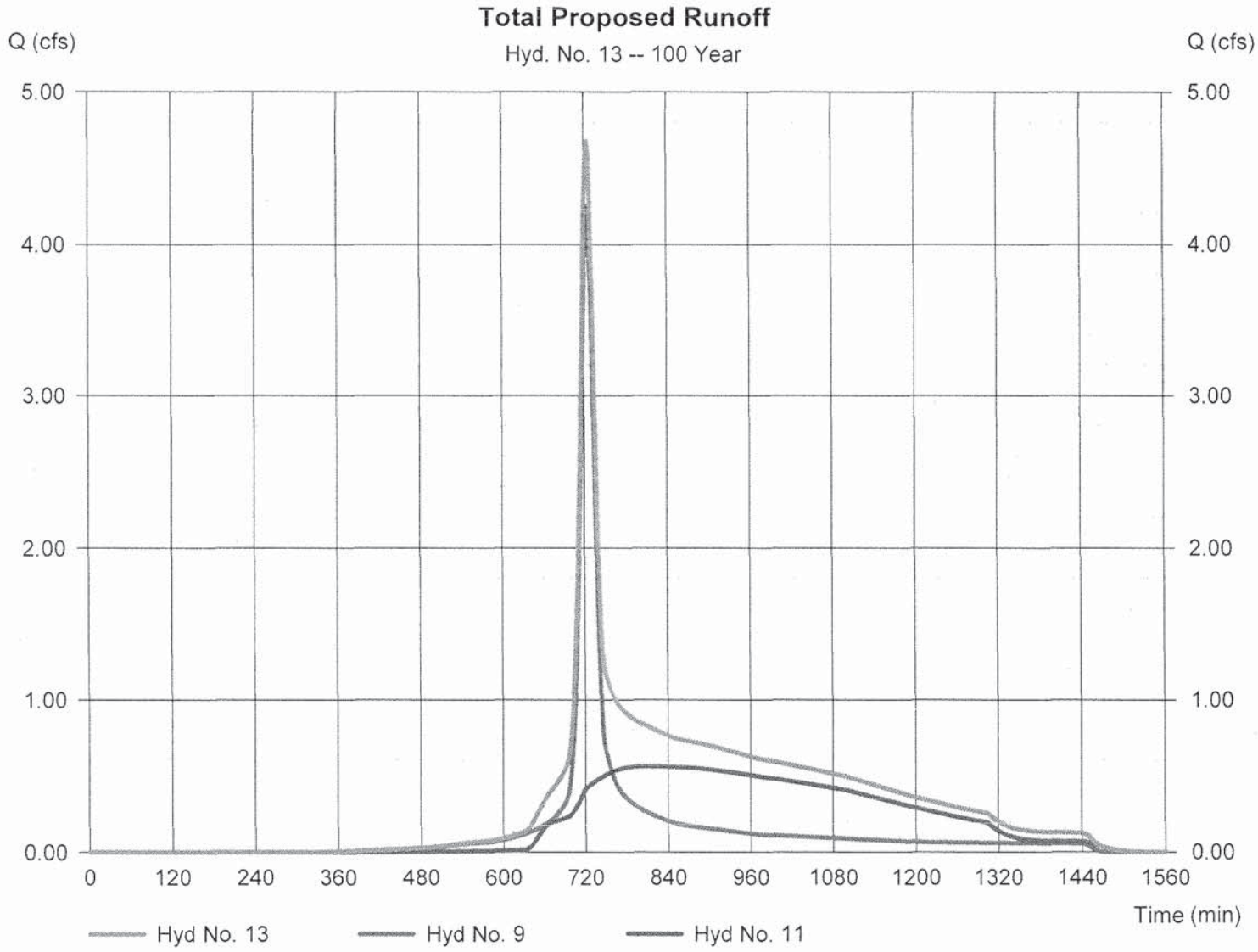


Hydrograph Report

Hyd. No. 13

Total Proposed Runoff

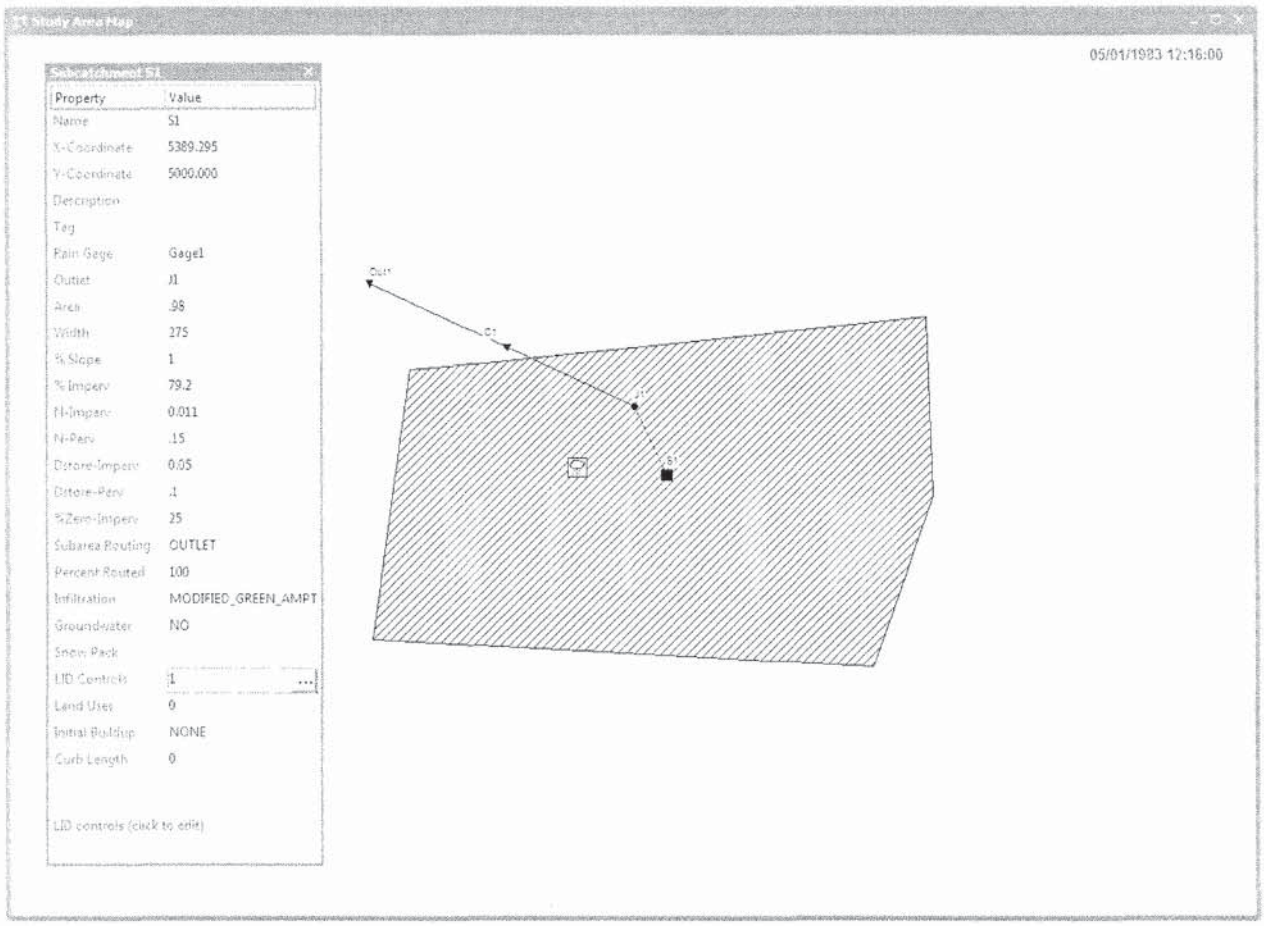
Hydrograph type	= Combine	Peak discharge	= 4.680 cfs
Storm frequency	= 100 yrs	Time to peak	= 724 min
Time interval	= 2 min	Hyd. volume	= 30,573 cuft
Inflow hyds.	= 9, 11	Contrib. drain. area	= 0.960 ac



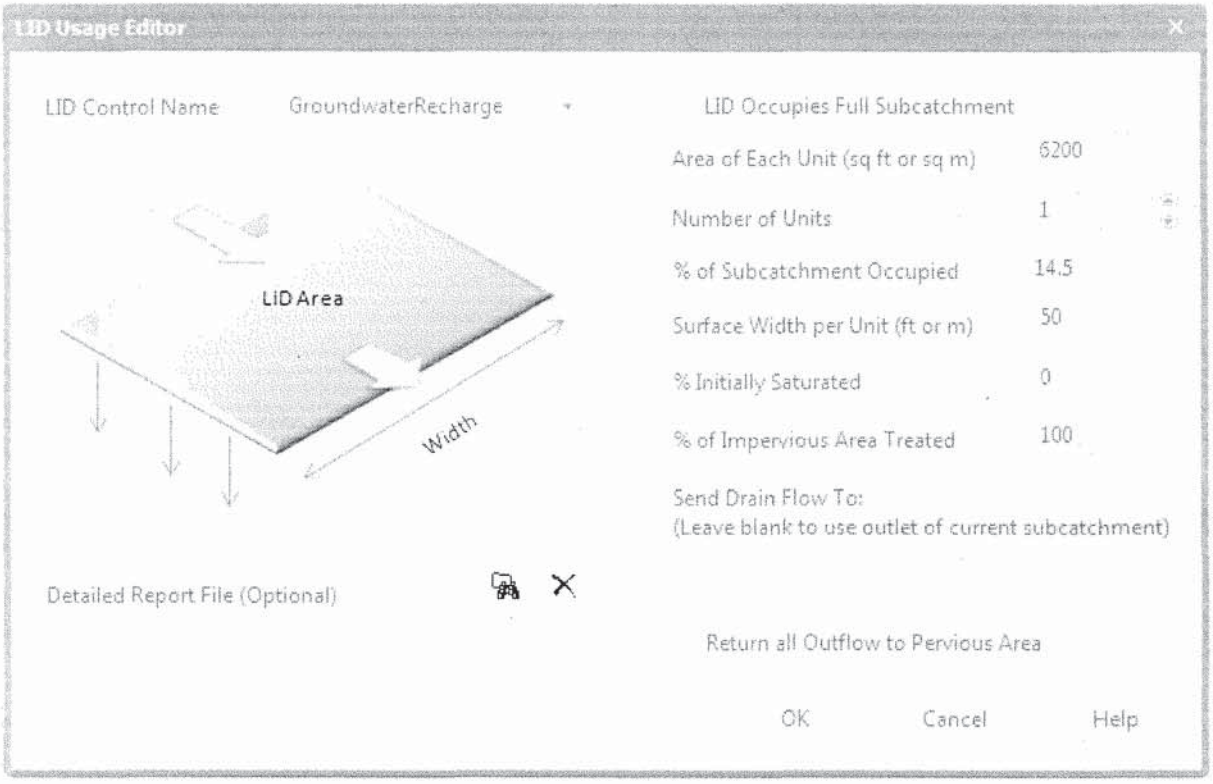
APPENDIX C

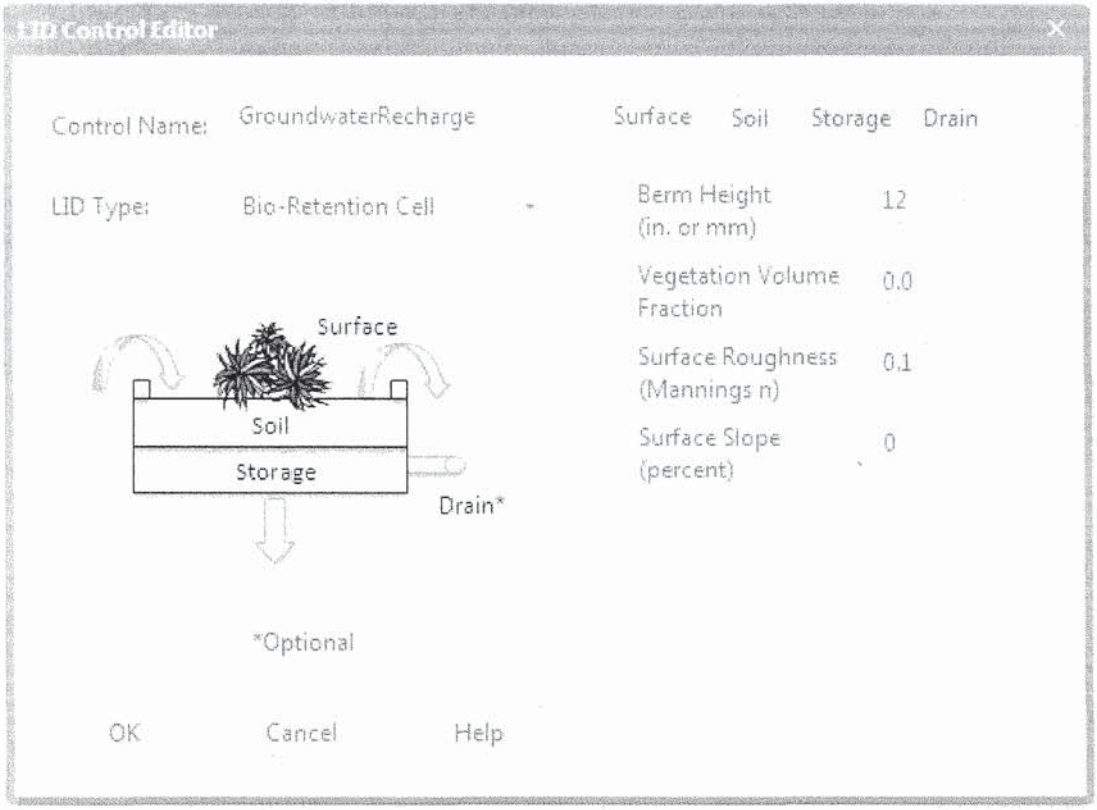
EPA SWMM Model Data and Report

Study Area Map and Subcatchment Inputs



LID Control Inputs

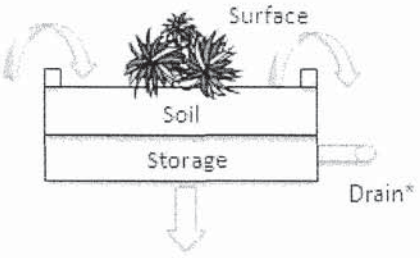




LID Control Editor

Control Name: GroundwaterRecharge

LID Type: Bio-Retention Cell



*Optional

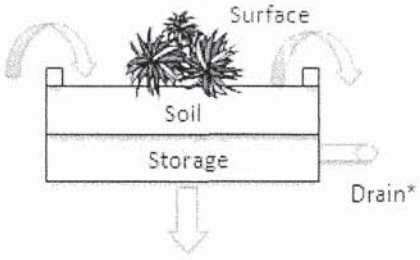
OK Cancel Help

	Surface	Soil	Storage	Drain
Thickness (in. or mm)		30		
Porosity (volume fraction)		.35		
Field Capacity (volume fraction)		.15		
Wilting Point (volume fraction)		.08		
Conductivity (in/hr or mm/hr)		1		
Conductivity Slope		5		
Suction Head (in. or mm)		2.4		

LID Control Editor

Control Name: GroundwaterRecharge

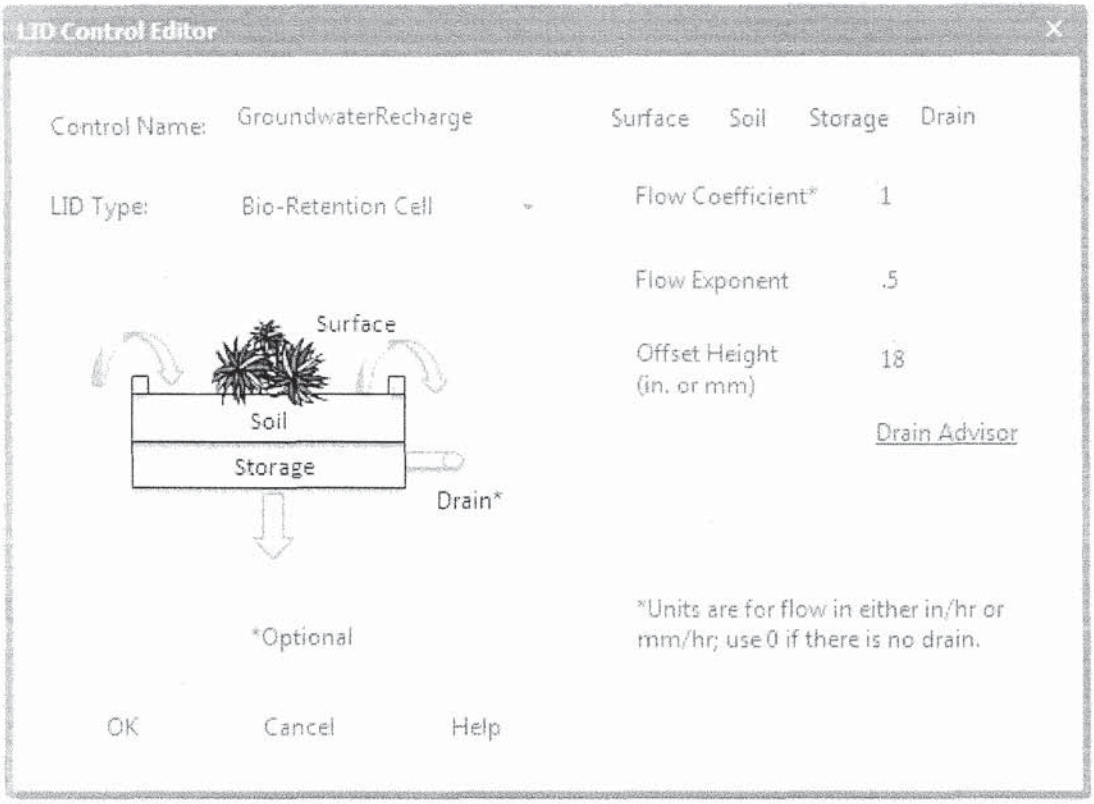
LID Type: Bio-Retention Cell



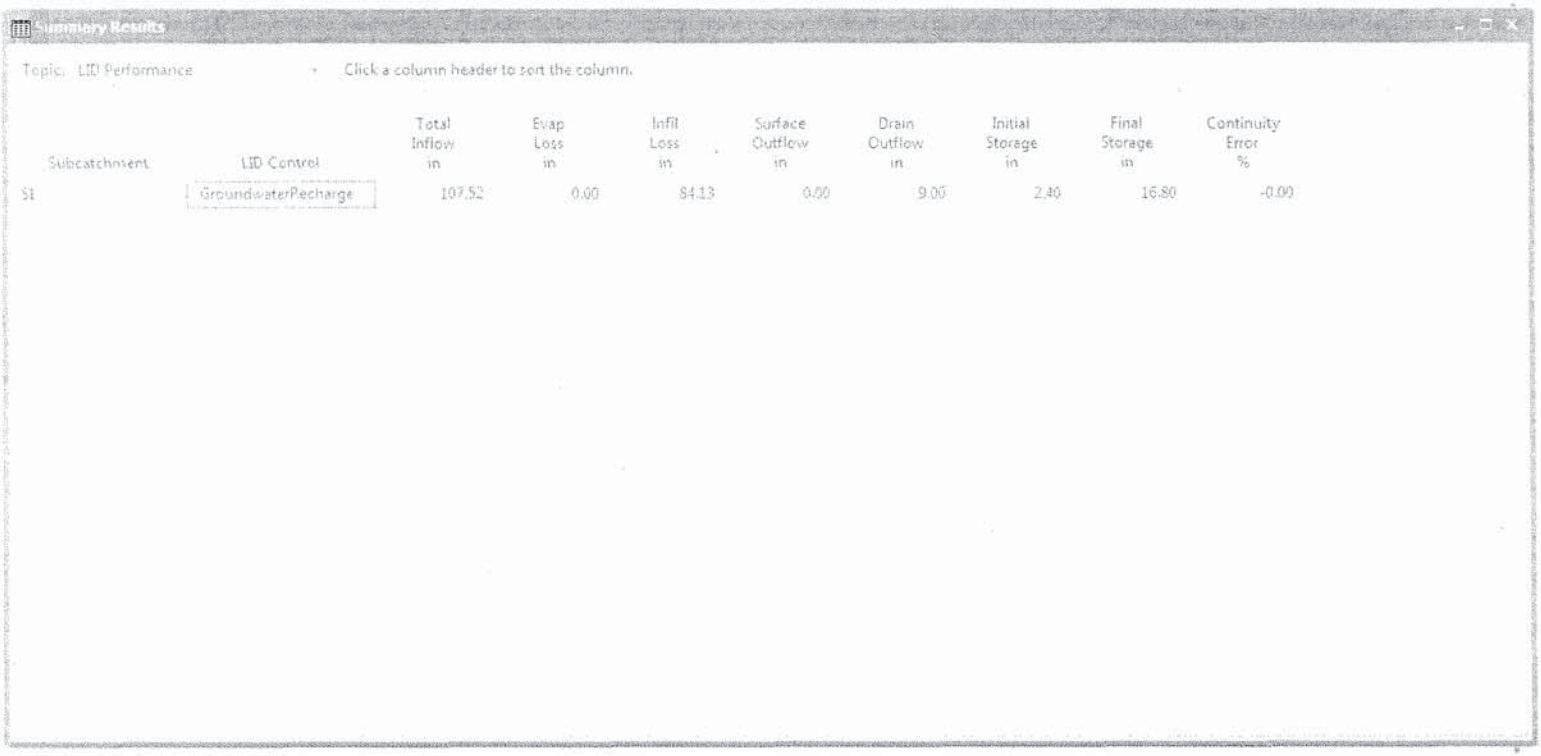
*Optional

OK Cancel Help

	Surface	Soil	Storage	Drain
Thickness (in. or mm)		18		
Void Ratio (Voids / Solids)		.667		
Seepage Rate (in/hr or mm/hr)		.03		
Clogging Factor		0		



LID Control Output



Subcatchment	LID Control	Total Inflow in	Evap Loss in	Infil Loss in	Surface Outflow in	Drain Outflow in	Initial Storage in	Final Storage in	Continuity Error %
S1	GroundwaterRecharge	107.52	0.00	84.13	0.00	9.00	2.40	16.80	-0.00

APPENDIX D

NRCS Soil Map

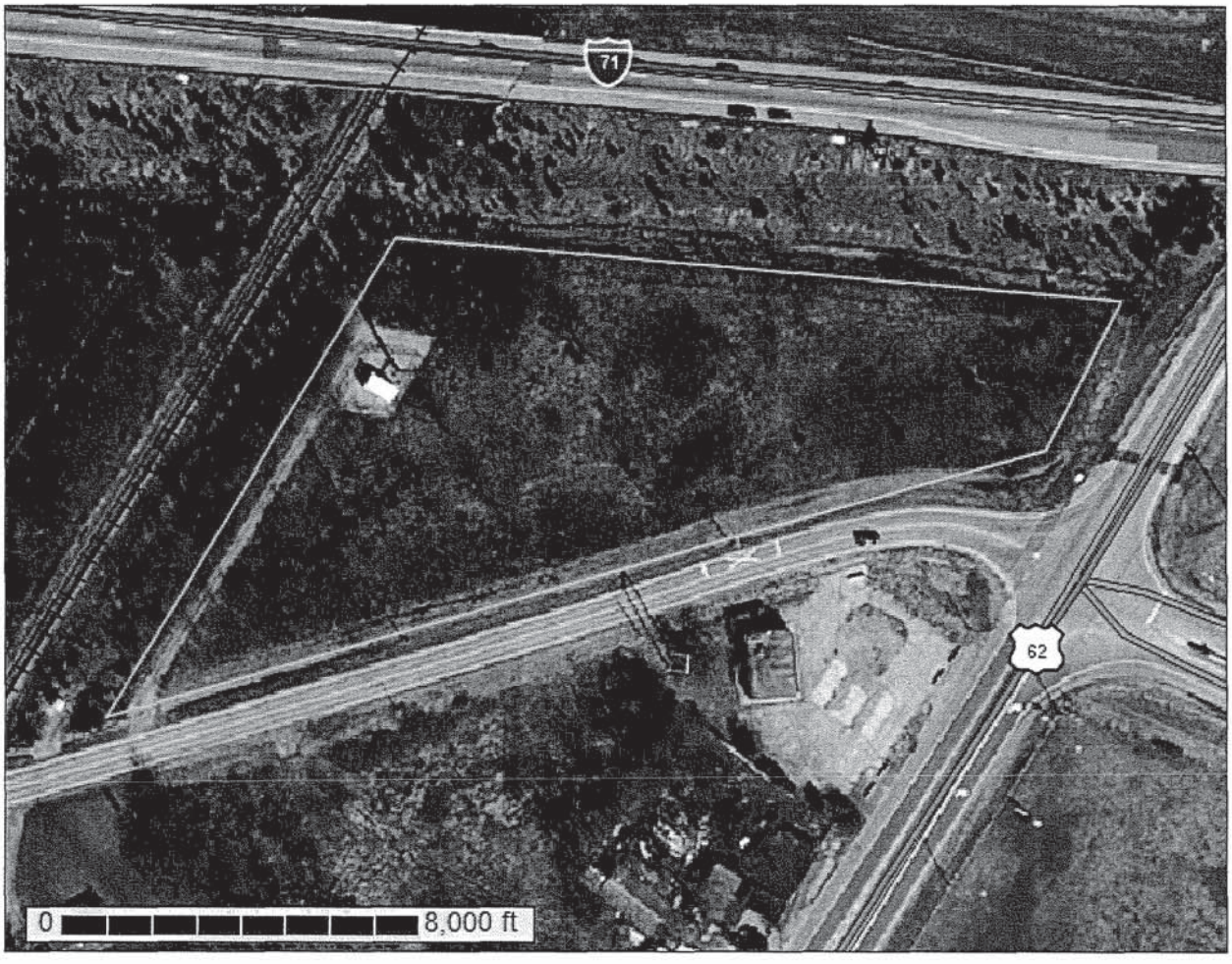
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Franklin County, Ohio



July 15, 2015

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

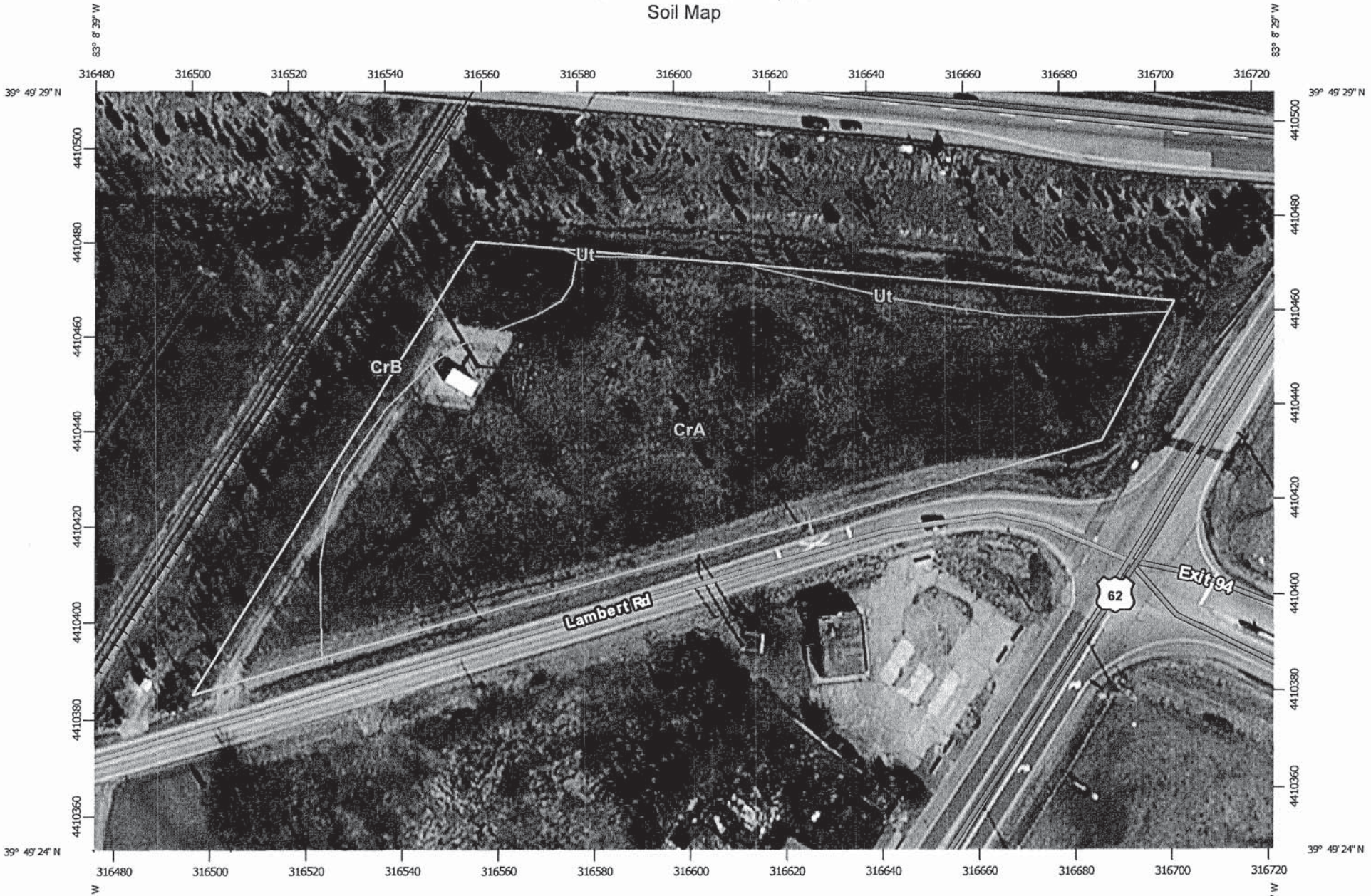
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:1,120 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 15 30 60 90

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

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This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Franklin County, Ohio
Survey Area Data: Version 12, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 27, 2012—Mar 10, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Franklin County, Ohio (OH049)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CrA	Crosby silt loam, Southern Ohio Till Plain, 0 to 2 percent slopes	2.0	85.0%
CrB	Crosby silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes	0.3	11.2%
Ut	Udorthents-Urban land complex, gently rolling	0.1	3.8%
Totals for Area of Interest		2.4	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments

on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series.* Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases.* Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas.* Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Franklin County, Ohio

CrA—Crosby silt loam, Southern Ohio Till Plain, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2thy7
Elevation: 520 to 1,550 feet
Mean annual precipitation: 36 to 44 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 145 to 180 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Crosby and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Crosby

Setting

Landform: Water-lain moraines, ground moraines, recessionial moraines
Landform position (two-dimensional): Footslope, summit, backslope
Landform position (three-dimensional): Interfluve, rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Silty material or loess over loamy till

Typical profile

Ap - 0 to 8 inches: silt loam
BE - 8 to 11 inches: silt loam
Bt1 - 11 to 14 inches: silt loam
2Bt2 - 14 to 28 inches: silty clay loam
2BCt - 28 to 36 inches: loam
2Cd - 36 to 79 inches: loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 24 to 40 inches to densic material
Natural drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.20 in/hr)
Depth to water table: About 6 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 50 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D

Minor Components

Kokomo, drained

Percent of map unit: 5 percent
Landform: Depressions, water-lain moraines, swales
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope, dip
Down-slope shape: Linear
Across-slope shape: Concave

Celina, eroded

Percent of map unit: 4 percent
Landform: Water-lain moraines, ground moraines, recessionial moraines
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest, head slope, nose slope, rise
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex

Miamian, eroded

Percent of map unit: 1 percent
Landform: Water-lain moraines, ground moraines, recessionial moraines
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest, head slope, nose slope, rise
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex

CrB—Crosby silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2thy8
Elevation: 520 to 1,550 feet
Mean annual precipitation: 36 to 44 inches
Mean annual air temperature: 48 to 54 degrees F
Frost-free period: 145 to 180 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Crosby and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Crosby

Setting

Landform: Water-lain moraines, ground moraines, recessionial moraines
Landform position (two-dimensional): Footslope, summit, backslope
Landform position (three-dimensional): Interfluve, rise
Down-slope shape: Convex

Across-slope shape: Linear
Parent material: Silty material or loess over loamy till

Typical profile

Ap - 0 to 8 inches: silt loam
BE - 8 to 11 inches: silt loam
Bt1 - 11 to 14 inches: silt loam
2Bt2 - 14 to 28 inches: silty clay loam
2BCt - 28 to 36 inches: loam
2Cd - 36 to 79 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: 24 to 40 inches to densic material
Natural drainage class: Somewhat poorly drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately high (0.01 to 0.20 in/hr)
Depth to water table: About 6 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 50 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C/D

Minor Components

Kokomo, drained

Percent of map unit: 5 percent
Landform: Depressions, water-lain moraines, swales
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Base slope, dip
Down-slope shape: Linear
Across-slope shape: Concave

Celina, eroded

Percent of map unit: 3 percent
Landform: Water-lain moraines, ground moraines, recessionial moraines
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest, head slope, nose slope, rise
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex

Lewisburg

Percent of map unit: 1 percent
Landform: Water-lain moraines, ground moraines, recessionial moraines
Landform position (two-dimensional): Footslope, summit, backslope
Landform position (three-dimensional): Interfluve, rise
Down-slope shape: Convex
Across-slope shape: Linear

Miamian, eroded

Percent of map unit: 1 percent
Landform: Water-lain moraines, ground moraines, recessionial moraines
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest, head slope, nose slope, rise
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex

Ut—Udorthents-Urban land complex, gently rolling

Map Unit Setting

National map unit symbol: 5mrj
Mean annual precipitation: 35 to 45 inches
Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 160 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 50 percent
Urban land: 40 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Properties and qualities

Slope: 2 to 12 percent
Depth to restrictive feature: More than 80 inches
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Minor Components

Areas similar to adjacent soils

Percent of map unit: 5 percent

Slopes of 12 to 55 percent

Percent of map unit: 5 percent

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Physical Properties

Soil Physical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

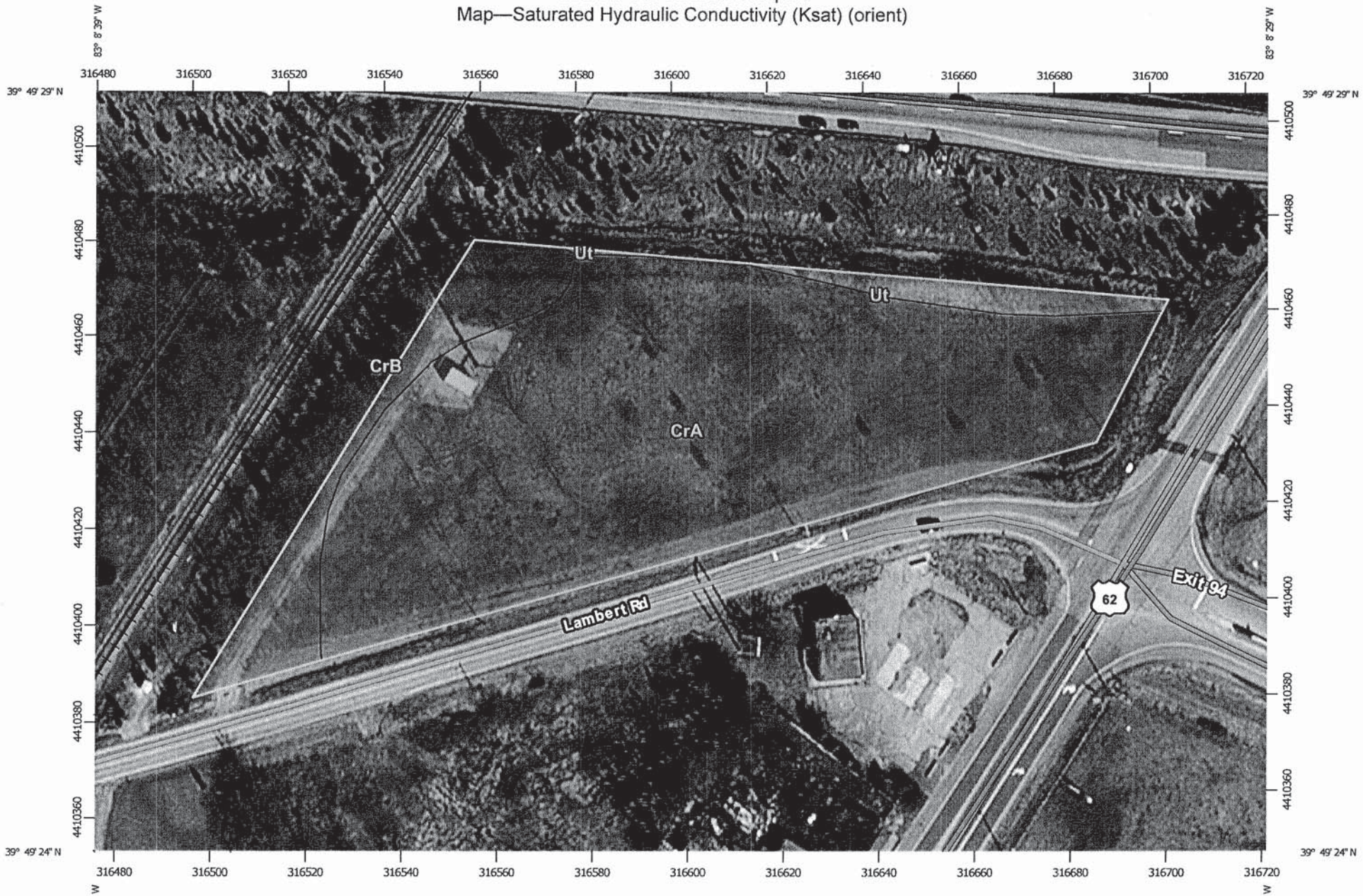
Saturated Hydraulic Conductivity (Ksat) (orient)

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits.

Map—Saturated Hydraulic Conductivity (Ksat) (orient)



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

= 3.4651

Not rated or not available

Soil Rating Lines

= 3.4651

Not rated or not available

Soil Rating Points

= 3.4651

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

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Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

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Survey Area Data: Version 12, Sep 18, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 27, 2012—Mar 10, 2012

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Table—Saturated Hydraulic Conductivity (Ksat) (orient)

Saturated Hydraulic Conductivity (Ksat)— Summary by Map Unit — Franklin County, Ohio (OH049)				
Map unit symbol	**Map unit name**	**Rating (micrometers per second)**	**Acres in AOI**	**Percent of AOI**
CrA	Crosby silt loam, Southern Ohio Till Plain, 0 to 2 percent slopes	3.4651	2.0	85.0%
CrB	Crosby silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes	3.4651	0.3	11.2%
Ut	Udorthents-Urban land complex, gently rolling		0.1	3.8%
Totals for Area of Interest			**2.4**	**100.0%**

Rating Options—Saturated Hydraulic Conductivity (Ksat) (orient)

Units of Measure: micrometers per second

Aggregation Method: Dominant Component

Component Percent Cutoff: None Specified

Tie-break Rule: Fastest

Interpret Nulls as Zero: No

Layer Options (Horizon Aggregation Method): All Layers (Weighted Average)

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group (orient)

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

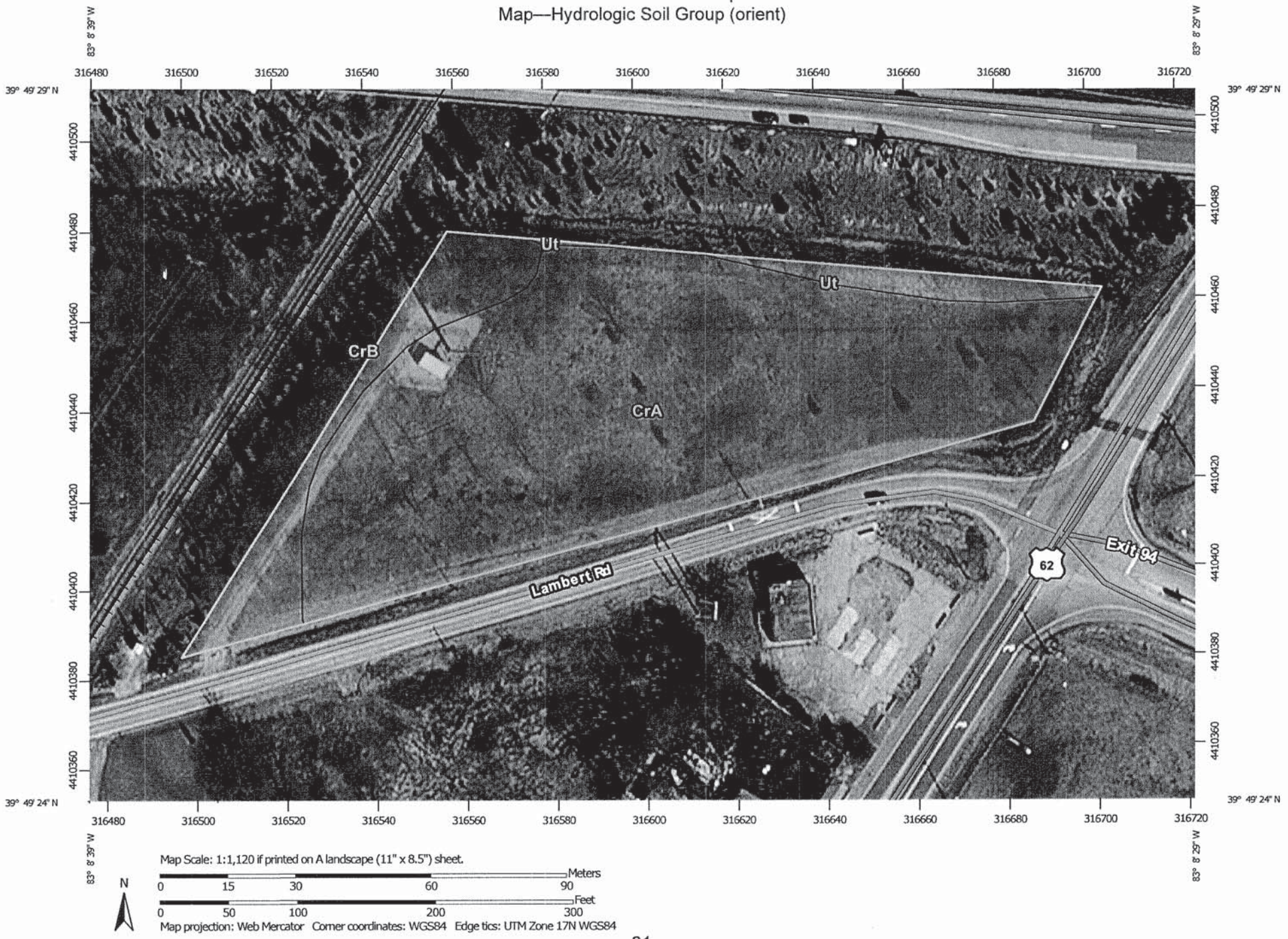
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group (orient)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

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Table—Hydrologic Soil Group (orient)

Hydrologic Soil Group— Summary by Map Unit — Franklin County, Ohio (OH049)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
CrA	Crosby silt loam, Southern Ohio Till Plain, 0 to 2 percent slopes	C/D	2.0	85.0%
CrB	Crosby silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes	C/D	0.3	11.2%
Ut	Udorthents-Urban land complex, gently rolling		0.1	3.8%
Totals for Area of Interest			**2.4**	**100.0%**

Rating Options—Hydrologic Soil Group (orient)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

SUBDIVISION FINAL PLAT APPLICATION

for unincorporated Franklin County

Franklin County Development Department – Franklin County Planning Commission
150 S. Front Street, FSL Suite 10 Columbus, OH 43215 Phone: (614) 525-3094

to be completed by FCPC Staff:

Date Submitted: 6 / 10 / 16 Received By: Matt Brown

Date Accepted / Rejected 6 / 14 / 16 By: Matt Brown

Application No.: 672-FPC(6) Fee: $4,850.00 RCPT # 1609 FCPC Date: 07 / 13 / 16

I, ROCKFORD HOMES, INC., being the owner of the lands within the
(print or type landowner's name)
proposed subdivision, hereby request the Franklin County Planning Commission (FCPC) to approve the accompanying subdivision plat named MORRISON FARMS EAST SECTION 2, located in JEFFERSON Township. The plat contains 39 lots, 2 reserves and 12.809 total acres. I understand approval action by the FCPC must be ratified by the full FCPC board prior to the plat being signed by the executive director of FCPC.

Twenty (20) copies of the plat signed by the subdivider and engineer/surveyor, the original Subdivider's Agreement signed by the subdivider, and one copy of the engineering and construction plans signed by the county are submitted in support of this request. To the best of my knowledge and belief, information and materials submitted to FCPC for the purposes of obtaining approval of this plat are complete, true and correct.

Property Owner/Subdivider

Signature: [signature] Date: 9 JUNE / 16

Name: ROCKFORD HOMES, INC.

Address: 999 POLARIS PARKWAY, SUITE 200

City, State, Zip: COLUMBUS, OHIO, 43240 Phone No.: (614) 785- 0015

Engineer/Surveyor

Signature: [signature] Date: 8 JUNE 16

Name: EMH&T - MATT KIRK

Address: 5500 NEW ALBANY ROAD

City, State, Zip: COLUMBUS, OHIO, 43054 Phone No.: (614) 775 4131

MORRISON FARMS EAST
SECTION 2

Situated in the State of Ohio, County of Franklin, Township of Jefferson, and located in Quarter Township 1, Township 1, Range 16, United States Military Lands, containing 12.809 acres of land, more or less, said 12.809 acres being comprised of a part of each of those tracts of land conveyed to **ROCKFORD HOMES, INC.** by deeds of record in Instrument Numbers 200310020316654 and 200312120393869, Recorder's Office, Franklin County, Ohio.

The undersigned, **ROCKFORD HOMES, INC.,** an Ohio corporation, by **DONALD R. WICK,** President, owner of the land platted herein, duly authorized in the premises, does hereby certify that this plat correctly represents its **"MORRISON FARMS EAST SECTION 2"**, a subdivision containing Lots numbered 38 to 76, both inclusive, and areas designated as Reserve "A" and Reserve "B", does hereby accept this plat of same and dedicates to public use, as such, all or part of the Drives and Road shown hereon and not heretofore dedicated. Franklin County shall not accept the platted rights-of-way for public use until construction is satisfactorily completed.

In consideration of approval of this plat, the undersigned understands and agrees to fulfill their obligations and responsibilities reflected in the subdivider's agreement and the subdivision regulations of Franklin County, Ohio. Zoning, building and health permits may be withheld in this subdivision until the subdivider has complied with the subdivider's agreement.

Easements are hereby reserved in, over and under areas designated on this plat as "Easement" or "Drainage Easement". Each of the aforementioned designated easements permit the construction, operation and maintenance of all public and quasi-public utilities above, beneath and on the surface of the ground and, where necessary, are for the construction, operation and maintenance of service connections to all adjacent lots and lands and for storm water drainage. Within those areas designated "Drainage Easement" on this plat, an additional easement is hereby reserved for the purpose of constructing, operating and maintaining major storm water drainage swales and/or other above ground storm water drainage facilities. No above grade structures, dams or other obstructions to the flow of storm water runoff are permitted within Drainage Easement areas as delineated on this plat unless approved by the Franklin County Engineer. Easement areas shown hereon outside of the platted area are within lands owned by the undersigned and easements are hereby reserved therein for the uses and purposes as expressed herein.

Iron pins shall be set at all lot corners prior to the transfer and acceptance of any street for public purpose.

In Witness Whereof, **DONALD R. WICK,** President of **ROCKFORD HOMES, INC.**, has hereunto set his hand this ___ day of _____, 20___.

Signed and Acknowledged In the presence of:

ROCKFORD HOMES, INC.

_____

By _____
DONALD R. WICK, President

_____

STATE OF OHIO
COUNTY OF FRANKLIN ss:

Before me, a Notary Public in and for said State, personally appeared **DONALD R. WICK,** President of **ROCKFORD HOMES, INC.**, who acknowledged the signing of the foregoing instrument to be his voluntary act and deed and the voluntary act and deed of said **ROCKFORD HOMES, INC.**, for the uses and purposes expressed herein.

In Witness Thereof, I have hereunto set my hand and affixed my official seal this _____ day of _____, 20___.

My commission expires _____

_____
Notary Public. State of Ohio

The undersigned hereby certifies that this subdivision plat conforms to applicable zoning regulations.

Approved this ____ Day of _____
20___ _____
Jefferson Township Zoning Inspector

The undersigned hereby certifies adequate and legal water and sanitary sewer plant capacities exist to serve this subdivision.

Approved this ____ Day of _____
20___ _____
Director,
Jefferson Water and Sewer District

The undersigned hereby certifies that this subdivision plat conforms to applicable subdivision regulations.

Approved this ____ Day of _____
20___ _____
Franklin County Planning Commission

Approved this ____ Day of _____
20___ _____
Franklin County Engineer

Approved this ____ Day of _____
20___ _____
Franklin County Drainage Engineer

This _____ day of _____, 20___, rights-of-way for the Drives and Road herein dedicated to public use are hereby approved and accepted as such for the County of Franklin, State of Ohio.

Franklin County Commissioners

_____

_____

_____

This plat shall not be transferred or recorded until all required signatures are secured.

Transferred this ____ day of _____,
20___ _____
Auditor, Franklin County, Ohio

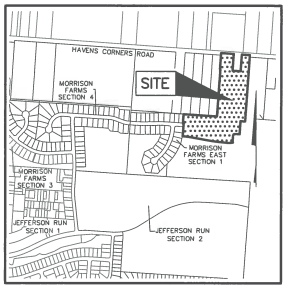
_____
Deputy Auditor, Franklin County, Ohio

Filed for record this ___day of _____,
20___ at _____M. Fee $_____ _____
Recorder, Franklin County, Ohio

File No _____

Recorded this ____ day of _____,
20___ _____
Deputy Recorder, Franklin County, Ohio

Plat Book _____ Pages _____



LOCATION MAP AND BACKGROUND DRAWING
NOT TO SCALE

SURVEY DATA:

BASIS OF BEARINGS: The bearings shown hereon were transferred from a field traverse originating from and tying to FCGS Monument Numbers 0027 and 6640, and is based on the Ohio State Plane Coordinate System, South Zone, as per NAD 83.

SOURCE OF DATA: The sources of recorded survey data referenced in the plan and text of this plat are the records of the Recorder's Office, Franklin County, Ohio.

IRON PINS: Iron pins, where indicated hereon, unless otherwise noted, are to be set and are iron pipes, thirteen sixteenths inch inside diameter, thirty inches long with a plastic plug placed in the top end bearing the initials EMHT INC.

PERMANENT MARKERS: Permanent markers, where indicated hereon in the public street centerline, are to be one-inch diameter, thirty-inch long, solid iron pins, are to be set to monument the points indicated, are to be set after the construction/installation of the street pavement and are to be set with the top end one-fourth inch below the top of the pavement. Once installed, the top of the pin shall be marked (punched) to record the actual location of the point.

SURVEYED & PLATTED BY

EMH&T
Evans Mechwart Hambleton & Tilton, Inc.
Engineers • Surveyors • Planners • Scientists
5500 New Albany Road, Columbus, OH 43054
Phone: 614.775.4500 1.800.eee.EMHT
emht.com

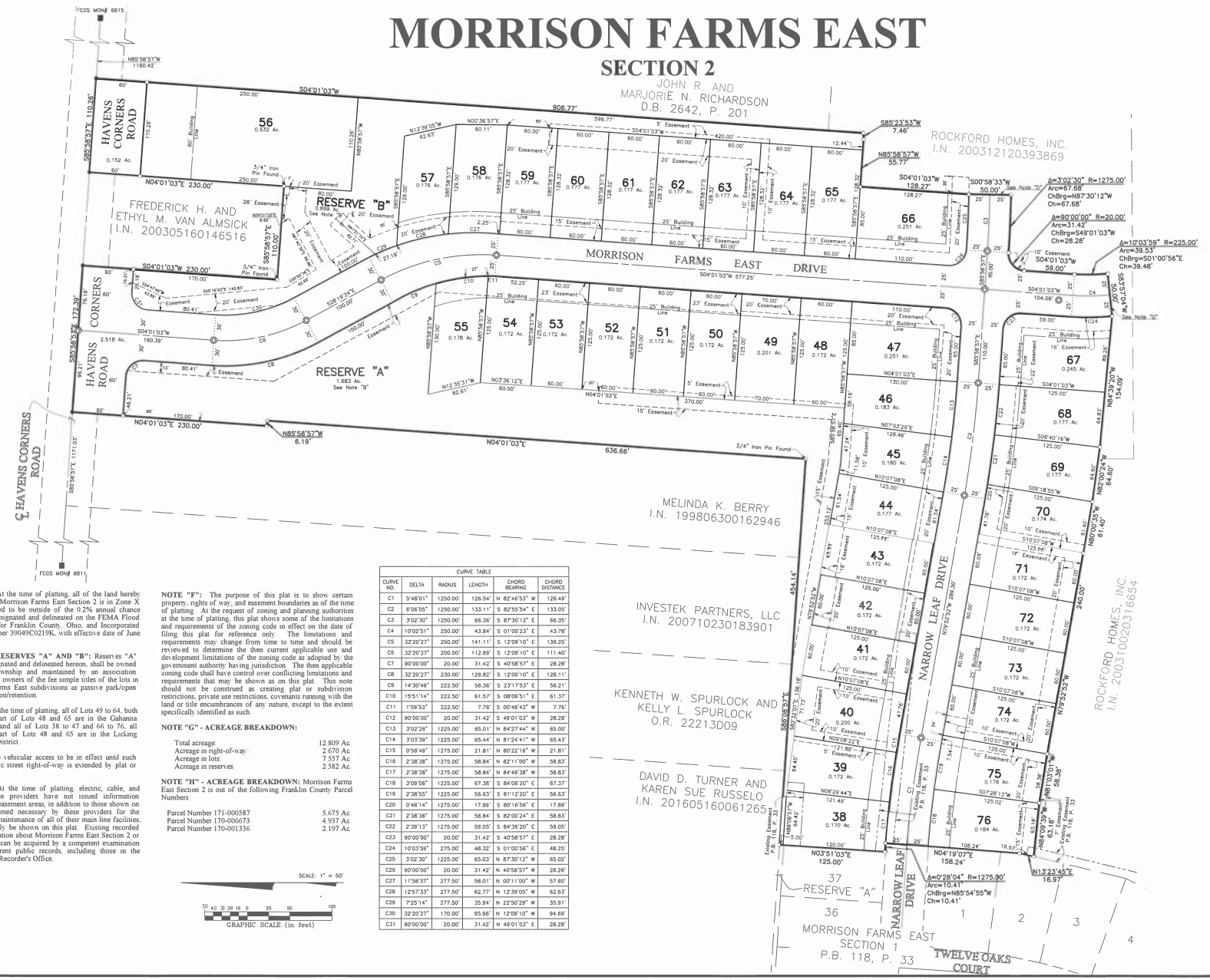
We do hereby certify that we have surveyed the above premises, prepared the attached plat, and that said plat is correct. All dimensions are in feet and decimal parts thereof.

o = Iron Pin (See Survey Data)
• = MAG Nail to be set
@ = Permanent Marker (See Survey Data)

By _____ _____
Professional Surveyor No. 7865 Date

MORRISON FARMS EAST

SECTION 2



NOTE "A": At the time of platting, all of the land hereby being platted as Morrison Farms East Section 2 is in Zone X (Areas determined to be outside of the 0.2% annual chance floodplain) as designated and delineated on the FEMA Flood Insurance Map for Franklin County, Ohio, and Incorporated Areas, map number 39049C0219K, with effective date of June 17, 2008.

NOTE "B" - RESERVES "A" AND "B": Reserves "A" and "B", as designated and delineated hereon, shall be owned by Jefferson Township and maintained by an association comprised of the owners of the fee simple titles of the lots in the Morrison Farms East subdivisions as passive park/open space and detention/retention.

NOTE "C": At the time of platting, all of Lots 49 to 64, both inclusive, and part of Lots 48 and 65 are in the Gahanna School District, and all of Lots 38 to 47 and 66 to 76, all inclusive, and part of Lots 48 and 65 are in the Licking Heights School District.

NOTE "D": No vehicular access to be in effect until such time as the public street right-of-way is extended by plat or deed.

NOTE "E": At the time of platting, electric, cable, and telephone service providers have not issued information required so that easement areas, in addition to those shown on this plat as deemed necessary by these providers for the installation and maintenance of all of their main line facilities, could conveniently be shown on this plat. Existing recorded easement information about Morrison Farms East Section 2 or any part thereof can be acquired by a competent examination of the then current public records, including those in the Franklin County Recorder's Office.

NOTE "F": The purpose of this plat is to show certain property, rights of way, and easement boundaries as of the time of platting. At the request of zoning and planning authorities at the time of platting, this plat shows some of the limitations and requirements of the zoning code in effect on the date of filing this plat for reference only. The limitations and requirements may change from time to time and should be reviewed to determine the then current applicable use and development limitations of the zoning code as adopted by the government authority having jurisdiction. The then applicable zoning code shall have control over conflicting limitations and requirements that may be shown as on this plat. This note should not be construed as creating plat or subdivision restrictions, private use restrictions, covenants running with the land or title encumbrances of any nature, except to the extent specifically identified as such.

NOTE "G" - ACREAGE BREAKDOWN:

Total acreage:	12.809 Ac
Acreage in right-of-way:	2.670 Ac
Acreage in lots:	7.557 Ac
Acreage in reserves:	2.582 Ac

NOTE "H" - ACREAGE BREAKDOWN: Morrison Farms East Section 2 is out of the following Franklin County Parcel Numbers:

Parcel Number 171-000587	5.675 Ac
Parcel Number 170-006673	4.937 Ac
Parcel Number 170-001336	2.197 Ac

CURVE TABLE

CURVE NO.	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD DISTANCE
C1	5°48'01"	1250.00'	126.54'	N 82°46'53" W	126.49'
C2	6°06'05"	1250.00'	133.11'	S 82°55'54" E	133.05'
C3	3°02'30"	1250.00'	66.36'	S 87°30'12" E	66.35'
C4	10°02'51"	250.00'	43.84'	S 01°00'23" E	43.78'
C5	32°20'27"	250.00'	141.11'	S 12°09'10" E	139.25'
C6	32°20'27"	200.00'	112.89'	S 12°09'10" E	111.40'
C7	90°00'00"	20.00'	31.42'	S 40°58'57" E	28.28'
C8	32°20'27"	230.00'	129.82'	S 12°09'10" E	128.11'
C9	14°30'49"	222.50'	56.36'	S 23°17'53" E	56.21'
C10	15°51'14"	222.50'	61.57'	S 08°08'51" E	61.37'
C11	1°59'53"	222.50'	7.76'	S 00°48'43" W	7.76'
C12	90°00'00"	20.00'	31.42'	S 49°01'03" W	28.28'
C13	3°02'26"	1225.00'	65.01'	N 84°27'44" W	65.00'
C14	3°03'39"	1225.00'	65.44'	N 81°24'41" W	65.43'
C15	0°58'49"	1275.00'	21.81'	N 80°22'16" W	21.81'
C16	2°38'38"	1275.00'	58.84'	N 82°11'00" W	58.83'
C17	2°38'38"	1275.00'	58.84'	N 84°49'38" W	58.83'
C18	3°09'06"	1225.00'	67.38'	S 84°06'20" E	67.37'
C19	2°38'55"	1225.00'	56.63'	S 81°12'20" E	56.63'
C20	0°48'14"	1275.00'	17.89'	S 80°16'59" E	17.89'
C21	2°38'38"	1275.00'	58.84'	S 82°00'24" E	58.83'
C22	2°39'13"	1275.00'	59.05'	S 84°39'20" E	59.05'
C23	90°00'00"	20.00'	31.42'	S 40°58'57" E	28.28'
C24	10°03'59"	275.00'	48.32'	S 01°00'56" E	48.25'
C25	3°02'30"	1225.00'	65.03'	N 87°30'12" W	65.02'
C26	90°00'00"	20.00'	31.42'	N 40°58'57" W	28.28'
C27	11°58'37"	277.50'	58.01'	N 00°11'00" W	57.90'
C28	12°57'33"	277.50'	62.77'	N 12°39'05" W	62.63'
C29	7°25'14"	277.50'	35.94'	N 22°50'29" W	35.91'
C30	32°20'27"	170.00'	95.96'	N 12°09'10" W	94.69'
C31	90°00'00"	20.00'	31.42'	N 49°01'03" E	28.28'

MORRISON FARMS EAST
SECTION 2

DRAINAGE EASEMENT
FRANKLIN COUNTY DRAINAGE ENGINEER

1. The shaded area (designated the Storm Water Maintenance Easement) has been granted to the Franklin County Commissioners so that the Franklin County Drainage Engineer can maintain the Storm Sewers, Subsurface Drains, Structures and Culverts.

2. No structure or improvements of any kind, including sheds, fences, flower beds, rock gardens and trees (but excluding grass and approved bank protection), shall be erected or planted within the easement provided for the watercourse unless reviewed and approved by the Franklin County Drainage Engineer.

3. Every owner of property within the storm water maintenance easement shall maintain the portion of said storm water easement in their property and keep the same free of debris and obstruction of all kinds. Said maintenance shall be limited to mowing, removal of debris and turf maintenance. All other maintenance of the grassed waterways, drainage channels, subsurface drains and storm sewers shall be performed at the direction of the Franklin County Drainage Engineer.

4. The property owner will maintain the drainage structures, swales, underdrains and storm sewers along the side and back lot lines.

5. These restrictions and agreements shall run with the land and shall bind the owner, his successors and assigns unless and until a modification or change thereto is agreed to and approved by Franklin County.

6. All areas disturbed during maintenance operations will be reestablished with grass; tree removal will not be replanted.

This sheet is for information purposes only and is not intended to create plat restrictions. More information required regarding the Ditch Maintenance Plan can be acquired by a competent examination of the then current public records, including those in the Recorder's Office, Franklin County, Ohio

HATCH LEGEND

Hatching for ditch maintenance areas are shown here at constant widths. However actual widths of allowable maintenance areas vary based on size of pipe and easement. Ditch maintenance allows ingress/egress to all areas requiring maintenance and will require funding sufficient to maintain adequate drainage.

Franklin County
Economic Development & Planning

Franklin County
Application for Rezoning/Text Amendment

Application Number:	Date Filed:	Received By:	Total Fees:	Receipt Number:
ZON-16-03	6/1/16	BMF	1,100.00	16-61388

Subject Property Information

1. Street Address: 4152-4160 W. Broad Street
2. Parcel ID Number(s): 140 - 000457
3. Township(s): Franklin

Description of Subject Property

4. Acres to be Rezoned: 1.258
5. Current Land Use: various retail uses and auto repair
6. Surrounding Land Use:
   - North: retail market
   - South: commercial strip center
   - East: apartment
   - West: commercial strip center
7. Water Supply Source: ☑ Public (Central) ☐ Private (Onsite)
8. Sanitary Sewer Source: ☑ Public (Central) ☐ Private (Onsite)

Rezoning Request

9. Current Zoning: General Industrial
   Proposed Zoning: Community Service District
10. Proposed Land Use: various retail uses and auto repair
11. Purpose for Request:

To allow proposed retail uses on the site that are not conforming uses with the current zoning.

ZON-16-03

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JUN 01 2016
Franklin County Planning Department
Franklin County, OH

Franklin County
Economic Development & Planning

Franklin County
Application for Rezoning/Text Amendment

Applicant/Owner/Agent Information

12. Applicant Information: Daniel McCabe
Address: 8189 Brecksville Rd. Brecksville, OH 44141
Phone: 440-746-9740 Fax: 440-746-0500
Interest in Property: Member of Property Owner
Signature: [signature]

13. Property Owner: West Broad Building LLC
Address: c/o Snider Temps, 4200 Rockside Rd. #208 Independence, OH 44131
Phone: 440-746-9740 Fax: 440-746-0500
Signature: [signature]

14. Agent Information: Zach Sanchez
Address: 5991 Meadows Glen Drive, Dublin, 43017
Phone: 419-680-1513 Fax: 440-746-0500
Signature: _____

Applicant/Owner/Agent Information

I/we (applicant) Daniel McCabe swear that I/we am/are the owners/lessees/optionees of land requested for rezoning and that the statements, information and exhibits attached are true and correct to the best of my/our knowledge.

Applicant Signature: [signature]
(required)

Date: 5/27/16

Property Owner Signature: [signature]
(required)

Subscribed and sworn to me in my presence and before me on this 27th day of May 2016.

Notary Public Signature: Monique E Sauvé

MONIQUE E. SAUVE
Notary Public, State of Ohio
My Commission Expires 3-27-18

Franklin County Auditors Office

May 27, 2016

- Tax Parcel
- Parcel IDs
- Site Addresses
- Railroads
- Street Network
- Creeks & Streams
- Building Footprints
- Waterbodies
- Education
- Government
- Health and Medical
- Public Attractions and Landmark Buildings

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Franklin County Planning Department
Franklin County, OH

ZON-16-03

1:918

0 0.01 0.02 0.04 mi
0 0.0175 0.035 0.07 km

FCA
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS

200403230062984
Pgs: 2 $28.00 T20040026107
03/23/2004 12:40PM BXHUMMEL TITL
Robert G. Montgomery
Franklin County Recorder

GENERAL WARRANTY DEED*

HICKMAN PROPERTIES I LIMITED, an Ohio limited liability company (the "Grantor") duly organized and existing under the laws of the State of Ohio, for valuable consideration paid, grant(s) with general warranty covenants, to **WEST BROAD BUILDING, LLC, an Ohio limited liability company**, whose tax-mailing address is: 850 Euclid Avenue #405, Cleveland, OH 44114 the following **REAL PROPERTY:** Situated in the County of Franklin, in the State of Ohio, and in the Township of Franklin:

See Attached Exhibit "A"

Subject to taxes and assessments which are now or may hereafter become liens on said premises and except conditions and restrictions and easements, if any, of record for said premises, subject to all of which this conveyance is made.

Parcel Number: 140-000457

Address: 4152-4160 West Broad Street, Columbus, Ohio

Prior Instrument Reference: Official Record Volume 30856, page G17 of the Deed Records of Franklin County, Ohio.

The Grantor has caused its name to be subscribed hereto by Donald Hickman, being the Managing Member of Hickman Properties I Limited, an Ohio limited liability company, thereunto duly authorized by resolution of the company, this 22 day of March, 2004.

HICKMAN PROPERTIES I LIMITED, an Ohio limited liability company

By: D. P. Hickman
Donald P. Hickman, Managing Member

State of Ohio County of Franklin ss.

BE IT REMEMBERED, That on this 22 day of March, 2004, before me, the subscriber, a notary public in and for said state, personally came Donald P. Hickman, Managing Member of Hickman Properties I Limited, an Ohio limited liability company, the Grantor in the foregoing deed, and acknowledged the signing thereof to be his and its voluntary act and deed.

IN TESTIMONY THEREOF, I have hereunto subscribed my name and affixed my official seal on the day and year last aforesaid.

NOTARIAL SEAL STATE OF OHIO
GLENDA J. HARRISON
Notary Public, State of Ohio
My Commission Expires December 10, 2004

Glenda J. Harrison
Notary Public

This instrument was prepared by Murray Davis, Esq. 2715 E. Main St., Columbus, Ohio 43209

Auditor's and Recorder's Stamps
TRANSFERRED
MAR 23 2004
JOSEPH W. TESTA
AUDITOR
FRANKLIN COUNTY, OHIO

6125
CONVEYANCE TAX
$ 880.00
JOSEPH W. TESTA
FRANKLIN COUNTY AUDITOR

See Sections 5302.05 and 5302.06 Ohio Revised Code

Hummel Title Agency, Inc. - Box HTA-1463

Exhibit "A"

Legal Description

Situated in the County of Franklin, in the State of Ohio, and in the Township of Franklin:

Being located in Virginia Military Survey No. 1482, and being out of a 1.844 acre tract deeded to City Developments, Inc., D. B. 3649, page 350, all references are of record in the Franklin County Recorder's Office, Franklin County, Ohio, said 1.240 acre tract being more particularly bounded and described as follows:

Beginning at a point in the centerline of West Broad Street (U.S. Route 40), said point located S 84 deg. 28' 00" W. a distance of 465.55 feet from the intersections of the centerlines of West Broad Street and Phillipi Road, said point being the southwest corner of a 0.386 acre tract deeded to Murray Ebner, et al., D.B. 2442 page 492, said point being also the southeast corner of said 1.844 acre tract, thence S. 84 deg. 28' 00" W. along the centerline of West Broad Street a distance of 130.10 feet to a point, said point being the southeast corner of a 0.587 acre tract known as Parcel No. 4 deeded to Bowling Real Estate, Inc., D.B. 2592, page 488;

Thence N 5 deg. 50' 11" W. along the westerly lines of said 1.844 acre tract, and along the easterly lines of 0.587 acre tract (Parcel No. 4) a 0.155 acre tract (Parcel No. 3) deeded to Bowling Real Estate Corp., D.B. 2592, page 488, a distance of 467.70 feet to an iron pin found, passing an iron pin on line at 70.00 feet;

Thence N. 84 deg. 17' 49" E. through said 1.844 acre tract a distance of 95.71 feet to an iron pin found, said iron pin being the northwesterly corner of a 1.197 acre tract deeded to Murray Ebner, et al., D.B. 2438, page 198;

Thence S 6 deg. 00' 40" E. along an easterly line of said 1.844 acre tract and the westerly line of said 1.197 acre tract a distance of 96.99 feet to an iron pin found;

Thence N. 84 deg. 28' 00" E. along a portion of the south line of said 1.197 acre tract a distance of 12.07 feet to an iron pin, said iron pin being the northwesterly corner of an 0.375 acre tract deeded to Murray Ebner, et al., and known as Parcel No. 2, D.B. 2438, page 199;

Thence S 6 deg. 00' 40" E, along the westerly line of said 0.375 acre tract a distance of 161.00 feet to an iron pin found;

Thence N 84 deg. 28' 00" E. along a portion of the southerly line of said 0.375 acre tract a distance of 21.26 feet to an iron pin said iron pin being the northwesterly corner of said 0.386 acre tract;

Thence S 5 deg. 54' 40" E, along the westerly line of said 0.386 acre tract a distance of 210.00 feet to the place of beginning, passing an iron pin found at 140.00 feet;

Containing 1.240 acres of land, more or less, and being subject, however, to all legal highways.

0-19-A
All of
(40)
457

DESCRIPTION VERIFIED
DEAN C. RINGLE, P.E.P.S.
BY: ADP
DATE: 6 May 04

20N-16-03

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JUN 01 2016
Franklin County Planning Department
Franklin County, OH

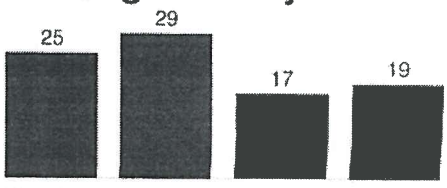
Franklin County
Where Government Works

DEPARTMENT OF SANITARY ENGINEERING
280 EAST BROAD STREET, 2ND FLOOR
COLUMBUS, OH 43215-4524

ACCOUNT NUMBER	16461.1
DUE DATE	05/23/2016
AMOUNT DUE	$320.76
AMOUNT AFTER DUE DATE	$352.84

WEST BROAD BUILDING LLC
4200 ROCKSIDE RD STE 208
INDEPENDENCE OH 44131-2530

Usage History



Three-Month Billing Cycle

This chart approximates your usage for the past year, based on three-month billing cycles. Any anomalies in usage could be a sign of water loss.

SERVICE ADDRESS: 4152 1/2 W BROAD ST

TYPE OF SERVICE	BILLING PERIOD FROM	BILLING PERIOD TO	METER READINGS PREVIOUS	METER READINGS CURRENT	USAGE	AMOUNT
WATER SERVICE	12/10/2015	03/23/2016	2070	2086	16 CCF	141.65
SEWER SERVICE	12/10/2015	03/23/2016	2070	2086	16 CCF	173.50
COLUMBUS SURCHARGE	01/13/2016	04/22/2016				5.61

*CCF is Cubic Hundred Feet; 1 CCF Equals Approximately 748 Gallons.

AMT DUE IF PAID BY DUE DATE

TOTAL DUE
$320.76

Paid By West Broad
- Need to Reimburse
W.B when Collected
by S-B.

www.franklincountyohio.gov Office Hours: Monday-Friday 8:00 AM - 4:00 PM Phone: (614) 525-3940

Please remit this stub with your payment to properly credit your account

ACCOUNT NUMBER: 16461.1
CUSTOMER NAME: WEST BROAD BUILDING LLC
SERVICE ADDRESS: 4152 1/2 W BROAD ST

AMOUNT DUE BY DUE DATE	$320.76	05/23/2016
AMOUNT DUE IF PAID AFTER	$352.84	05/23/2016

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Franklin County Planning Department
Franklin County, OH
ZON-16-03

MAKE CHECKS PAYABLE TO:

DEPARTMENT OF SANITARY ENGINEERING
280 E BROAD ST RM 201
COLUMBUS OH 43215-4524

16461.1 00000320.76

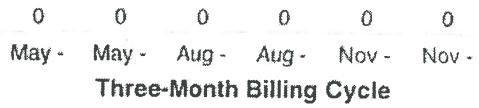
Franklin County
Where Government Works

DEPARTMENT OF SANITARY ENGINEERING
280 EAST BROAD STREET, 2ND FLOOR
COLUMBUS, OH 43215-4524

ACCOUNT NUMBER	14619.8
DUE DATE	05/23/2016
AMOUNT DUE	$106.52
AMOUNT AFTER DUE DATE	$117.17

WEST BROAD BLDG LLC C/O SNIDER BLAKE 1 182
4200 ROCKSIDE RD STE 208
INDEPENDENCE OH 44131-2530

Usage History



This chart approximates your usage for the past year, based on three-month billing cycles. Any anomalies in usage could be a sign of water loss.

SERVICE ADDRESS: 4160 W BROAD ST

TYPE OF SERVICE	BILLING PERIOD FROM	BILLING PERIOD TO	METER READINGS PREVIOUS	METER READINGS CURRENT	USAGE	AMOUNT
WATER SERVICE	12/10/2015	03/23/2016	974	974	0 CCF	51.41
SEWER SERVICE	12/10/2015	03/23/2016	974	974	0 CCF	49.50
COLUMBUS SURCHARGE	01/13/2016	04/22/2016				5.61
Deduct Meter			296	296		

*CCF is Cubic Hundred Feet; 1 CCF Equals Approximately 748 Gallons.

AMT DUE IF PAID BY DUE DATE → TOTAL DUE $106.52

REAR

www.franklincountyohio.gov Office Hours: Monday-Friday 8:00 AM - 4:00 PM Phone: (614) 525-3940

Please remit this stub with your payment to properly credit your account 182

ACCOUNT NUMBER: 14619.8
CUSTOMER NAME: WEST BROAD BLDG LLC C/O
SERVICE ADDRESS: 4160 W BROAD ST

AMOUNT DUE BY DUE DATE	$106.52	05/23/2016
AMOUNT DUE IF PAID AFTER	$117.17	05/23/2016

20-16-03
RECEIVED
JUN 01 2016
Franklin County Planning Department
Franklin County, OH

45-02.13

MAKE CHECKS PAYABLE TO:

DEPARTMENT OF SANITARY ENGINEERING
280 E BROAD ST RM 201
COLUMBUS OH 43215-4524

14619.8 00000106.52

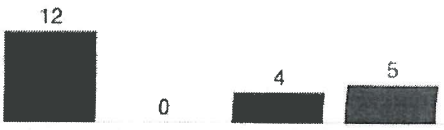
Franklin County
Where Government Works

DEPARTMENT OF SANITARY ENGINEERING
280 EAST BROAD STREET, 2ND FLOOR
COLUMBUS, OH 43215-4524

ACCOUNT NUMBER	14616.6
DUE DATE	05/23/2016
AMOUNT DUE	$106.52
AMOUNT AFTER DUE DATE	$117.17

WEST BROAD BUILDING LLC
4200 ROCKSIDE RD STE 208
INDEPENDENCE OH 44131-2530

Usage History



Three-Month Billing Cycle

This chart approximates your usage for the past year, based on three-month billing cycles. Any anomalies in usage could be a sign of water loss.

SERVICE ADDRESS: 4154 W BROAD ST

TYPE OF SERVICE	BILLING PERIOD FROM	BILLING PERIOD TO	METER READINGS PREVIOUS	METER READINGS CURRENT	USAGE	AMOUNT
WATER SERVICE	01/12/2016	03/23/2016	486	486	0 CCF	51.41
SEWER SERVICE	01/12/2016	03/23/2016	486	486	0 CCF	49.50
COLUMBUS SURCHARGE	01/13/2016	04/22/2016				5.61

*CCF is Cubic Hundred Feet; 1 CCF Equals Approximately 748 Gallons.

AMT DUE IF PAID BY DUE DATE

TOTAL DUE
$106.52

Empty Retail

www.franklincountyohio.gov Office Hours: Monday-Friday 8:00 AM - 4:00 PM Phone: (614) 525-3940

Please remit this stub with your payment to properly credit your account

ACCOUNT NUMBER: 14616.6
CUSTOMER NAME: WEST BROAD BUILDING LLC
SERVICE ADDRESS: 4154 W BROAD ST

AMOUNT DUE BY DUE DATE	$106.52	05/23/2016
AMOUNT DUE IF PAID AFTER	$117.17	05/23/2016

ZON-16-03

RECEIVED
JUN 01 2016
Franklin County Planning Department
Franklin County, OH

MAKE CHECKS PAYABLE TO:

DEPARTMENT OF SANITARY ENGINEERING
280 E BROAD ST RM 201
COLUMBUS OH 43215-4524

14616.6 00000106.52

Franklin County
Where Government Works

Administrative Appeal

Revised January 1, 2009

Property Information

Site Address: 1226 1250 KINNEAR RD	
Parcel ID(s): 130-011663-00	Zoning: Limited Industrial
Township: 130 - CLINTON TOWNSHIP	Acreage: 4.99
Water Supply: ☒ Public (Central) ☐ Private (Onsite)	Wastewater Treatment: ☒ Public (Central) ☐ Private (Onsite)

Applicant Information

Name/Company Name: Emil Bogden - Bogden Architects Inc.	
Address: 850 King Ave. Columbus OH 43212	
Phone #: (614) 421-7774	Fax #: (614) 421-2213
Email: Emil@bogden.com	

Property Owner Information

Name/Company Name: Tim Ely - PLUMBERS & PIPEFITTERS LOCAL #189	
Address: 1250 KINNEAR RD, COLUMBUS OH 43212	
Phone #: (614) 486-2912 x 15	Fax #: (614) 486-2533
Email: t.ely@ualocal189.com	

Agent Information (if applicable)

Name/Company Name:	
Address:	
Phone #:	Fax #:
Email:	

Staff Use Only

Case #: AP-3856

Date filed: 6/9/16

Received by: BMP

Hearing date: 7/18/16

Zoning Compliance: ZC-16-4609

Document Submission

The following documents must accompany this application:

- ☑ Completed form
- ☑ Auditor's map (8 ½ " x 11")
- ☑ Covenants and deed
- ☑ Notarized signatures
- ☑ Proof of water & waste water supply
- ☑ Copy of Administrative Officer's decision

Please see the Application Instructions for complete details

Case # 16-4609

Describe the decision by an Administrative Officer that is being appealed:

Section 110.043(3) Non-Conforming Uses: On approval of an appeal to the Board of Zoning Appeals, a non-conforming use may be expanded.

The Limited Industrial Zoning District does not permit educational uses. The current usage of the property is non-conforming and requires approval of an appeal to the Board of Zoning Appeals to expand that use.

Describe the project

The current building is used for PLUMBERS & PIPEFITTERS LOCAL #189 meeting hall and training courses. The Owner would like to move the training classes and labs to a new building to be constructed on site and remove two of the existing lab spaces from the existing structure.

Affidavit

I hereby certify that the facts, statements, and information presented within this application form are true and correct to the best of my knowledge and belief. I hereby understand and certify that any misrepresentation or omissions of any information required in this application form may result in my application being delayed or not approved by the County. I hereby certify that I have read and fully understand all the information required in this application form.

Applicant — Date: 6/7/16

Timothy S. Ely — Property Owner (Signature must be notarized) — Date: 6-7-2016

Alice R. Yoerger — ~~Property Owner (Signature must be notarized)~~ NOTARY PUBLIC — Date: 6.7.2016

NOTARIAL SEAL STATE OF OHIO

Alice R. Yoerger
Notary Public, State of Ohio
My Commission Expires 12-12-2019

***Agent must provide documentation that they are legally representing the property owner.**

****Approval does not invalidate any restrictions and/or covenants that are on the property.**

AP-3856

Commissioner John OGrady **Commissioner Paula** Brooks · **Commissioner** Marilyn Brown
President

Economic Development & Planning Department
James Schimmer, Director

May 16, 2016

Bogden Architects
Emil Bogden
850 King Avenue
Columbus, OH 43212

Re: Commercial Zoning Compliance Application ZC# 16-4609 (1226-1250 Kinnear Road)

This correspondence is concerning Commercial Zoning Compliance Application ZC-16-4609 filed April 27, 20 1 6, with the proposal to construct a second building and expand a parking area for the existing Plumbers and Pipefitters Local #189 and Mechanical Contractors of Central Ohio apprenticeship educational use at 1226-1250 Kinnear Road. The property is located in the Limited Industrial Zoning District (LI). The application has been reviewed for compliance with the applicable development standards set forth in Sections 1 10, 344, and Article V of the Franklin County Zoning Resolution. The application fails to meet all applicable standards and has therefore been ***denied*** based on the following:

1. Section 1 10.043(3)— *Non-Conforming Uses:* On approval of an appeal to the Board of Zoning Appeals, a non-conforming use may be expanded.
    - The Limited Industrial Zoning District does not permit educational uses. The current usage of the property is non-conforming and requires approval of an appeal to the Board of Zoning Appeals to expand that use.

    Plumbers & Pipefitters Local #189 would like to appeal to the Franklin County Board of Zoning Appeals to expand the current Limited Industrial Zoning District allowing continued operation of the Columbus union hall and trade school at 1226-1250 Kinnear Road and allow construction of a new facility on the property so that Local #189 could continue to provide trade school and union hall functions to the community.

2. Section 344.043— *Minimum Side Yards:* Minimum side yard in the Limited Industrial Zoning District is determined by calculating 1/3 the sum of the height and length of the wall most parallel to the interior lot line, or 15 feet, whichever is greater.
    - The side setback for the proposed building is approximately 39 feet from the right property line and is not meeting the 47.025 foot side setback minimum. The side walls length is 90 feet and the height is 52.5 feet (averaging the maximum height of 62.5 feet and the height of the eaves of 42.5 feet) for a sum of 142.5. 1/3 of 142.5 is approximately 47.025 feet.

    Building height has been revised from a (3) story building to a (2) story building. See attached proposed building Elevation. Side Setback calculations revised per Section 344.043:
    29' + 50" = 79"/2 = 39.5'
    39.5' + 90' Length = 129.5'
    129.5'/3 = 43.166' Side Setback has been revised to 43.33'. See attached Proposed Site Plan.

150 South Front Street, FSL Suite 10 Columbus, Ohio 43215-7104
Tel: 614-525-3094 Fax: 614-525-4876 www.Franklincountyohio.gov

3. Section 531.012— *Parking Space Size:* A parking space for 1 vehicle shall be a rectangular area having dimensions of not less than 9 feet by 1 8 feet plus adequate area for ingress and egress.
    - The proposed ADA/handicapped parking spaces are only 8 feet in width and must be at least 1 foot wider.

    ADA/handicapped parking has been redesigned to meet Section 531.012.

Finally, the application was reviewed by Technical Agencies. Listed below are all comments and concerns provided:

Franklin Soil and Water Conservation District

- A stand alone Operation and Maintenance Plan for post construction Best Management Practices is needed.

  To be provided with Construction Document package.

Franklin County Engineers Office, Drainage

- Stormwater calculations are needed. The Best Management Practices are needed in the SWPPP Plan. A stand alone Operation and Maintenance Plan for post construction Best Management Practices is needed as well.

  To be provided with Construction Document package.

Franklin County Engineers Office, Traffic Department

- No comments or concerns.

City of Columbus Department of Public Service, Division of Traffic Management

- No comments or concerns.

Finally, the application was reviewed by Technical Agencies. Listed below are all comments and concerns provided:

Franklin Soil and Water Conservation District

- A stand alone Operation and Maintenance Plan for post construction Best Management Practices is needed.

Franklin County Engineer's Office, Drainage

- Stormwater calculations are needed. The Best Management Practices are needed in the SWPPP Plan. A stand alone Operation and Maintenance Plan for post construction Best Management Practices is needed as well.

Franklin County Engineer's Office, Traffic Department

- No comments or concerns.

City of Columbus Department of Public Service, Division of Traffic Management

- No comments or concerns.

To resolve these deficiencies, you may file a new Commercial Zoning Compliance Application with a new scaled site plan showing compliance with these standards and addressing all Technical Agencies' concerns with the $275.00 application fee.

The other option is to apply for and receive approval of an administrative appeal and variance request from the Board of Zoning Appeals (BZA). Please note that there is no guarantee that an administrative appeal would be approved. The appeal is for the expansion of the non-conforming use from Section 110.043(3) under item 1 of this letter. No fee is needed to file the administrative appeal. Please note that there is no guarantee that a variance request will be granted. The BZA reviews and makes a decision on the request based on the criteria in Section 810.04. The fee to file a variance request is $650.00 made payable to the Franklin County Treasurer. An Administrative Appeal Application, Variance Application, and the 2016 BZA Schedule are included with this letter.

Should you have any questions or require any additional information, please feel free to contact me at 614-525-4879 or kspergel@franklincountyohio.gov.

Respectfully,

Kendra Spergel
Planning Project Coordinator

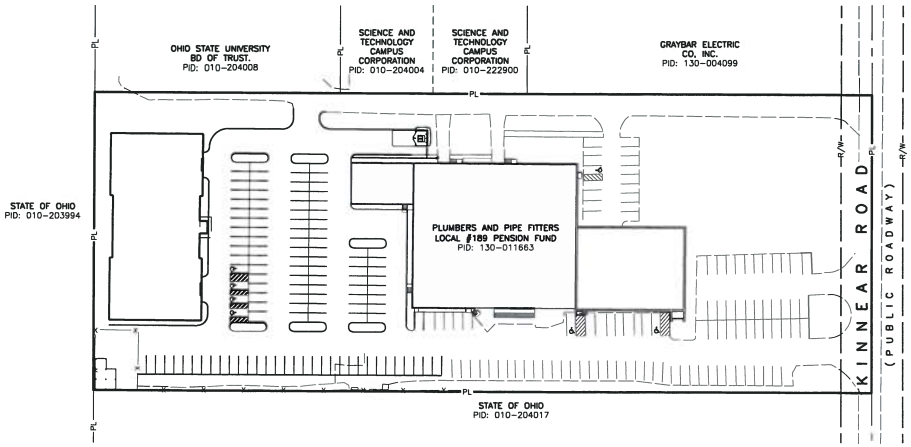
CC: Jim Ramsey, Franklin County Engineer's Office
Katherine Radtke, Franklin County Engineer's Office
Dave Dibling, Franklin County Engineer's Office
Brady Koehler, Franklin County Engineer's Office
Dave Reutter, Franklin Soil & Water Conservation District

Owner/Developer Information:
PLUMBERS AND PIPE FITTERS
LOCAL #189 PENSION FUND
1226 KINNEAR ROAD
COLUMBUS, OHIO 43212

Architect Information:
BOGDEN ARCHITECTS
850 KING AVENUE
COLUMBUS, OHIO 43212
CONTACT: EMIL BOGDEN
PH: 614-421-7774
EMAIL: emil@bogden.com

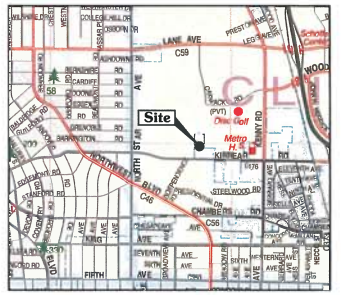
Civil Engineer Information:
E.P. FERRIS & ASSOCIATES
880 KING AVENUE
COLUMBUS, OHIO 43212
Contact: SEAN GILLILAN, P.E.
PH: 614-299-2999
FAX: 614-299-2992
EMAIL: sgillilan@epferris.com

ZONING PLAN
1226 KINNEAR ROAD
CLINTON TOWNSHIP, FRANKLIN COUNTY, OHIO
2016



INDEX MAP
Scale: 1"=60'

0 30 60 120
Scale: 1"=60'



LOCATION MAP
Not To Scale

SHEET INDEX

SITE DATA TABLE:

Total Site Area:	5.000 Ac.
Pre-Developed Impervious Area:	2.265 Ac.
Ex. Gravel @ 90% Impervious	1.334 Ac.
Post-Developed Impervious Area:	3.260 Ac.
% of Lot Area Covered by Buildings:	21.6 %
Disturbed Area:	1.76 Ac.
Total Existing Parking Spaces	103 Spaces
Total Proposed Parking Spaces:	238 Spaces
Handicapped Parking Spaces:	7 Spaces

OHIO Utilities Protection SERVICE
Call Before You Dig
800-362-2764 or 8-1-1
www.oups.org

RECEIVED
JUN 09 2016
Franklin County Planning Department
Franklin County, OH
AP- 3856

REVISIONS

NO.	DATE	DESCRIPTION	BY

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

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

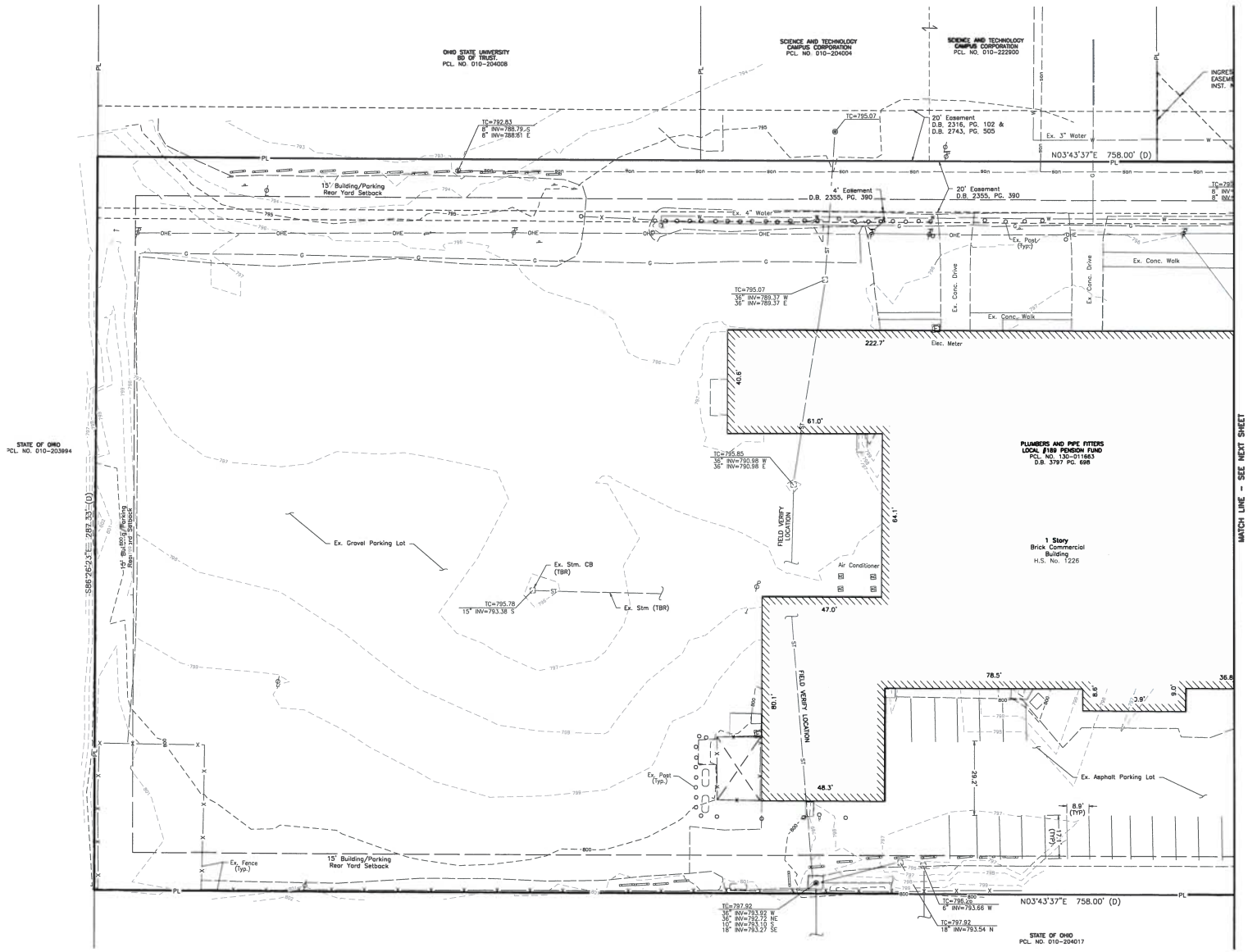
STATE OF OHIO
SEAN W. GILLILAN
E-69119
REGISTERED
PROFESSIONAL ENGINEER

NOT FOR CONSTRUCTION - FOR ZONING REVIEW ONLY

REGISTERED ENGINEER _____ DATE _____

TITLE SHEET	SHEET NO.	OF
	1	10

PROJECT 070008
DATE: 06/09/16



LEGEND

- Ex. Fire Hydrant
- Ex. Pull Box
- Ex. Tree
- Ex. Catch Basin
- Ex. Sanitary Manhole
- Ex. Storm Manhole
- Ex. Storm Curb Inlet
- Ex. Utility Pole
- Ex. Light Pole
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- Ex. Water Service Valve
- Ex. Sign
- Ex. Fence
- Ex. Water Line
- Ex. Water Service
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- Prop. Sanitary Srvc.
- Prop. Water
- Prop. Water Srvc.
- Prop. Concrete Walk/Drive
- Prop. Clean-out
- DND Do Not Disturb
- Proposed Flood Route
- Proposed Drainage Flow Directional Arrow
- Prop. Construction Limits

NOTE: (TBR) Shall mean to be removed.

0 10 20 40

REVISIONS	DATE	BY	CHK.

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

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

CLINTON TOWNSHIP, FRANKLIN COUNTY, OHIO

1226 KINNEAR ROAD

PLUMBERS AND PIPE FITTERS LOCAL #189 PENSION FUND

JOB NO.	970.008
DESIGNED BY:	CLP
DRAWN BY:	CLP
CHECKED BY:	SWG
APPROVED BY:	---
DATE:	04/25/16

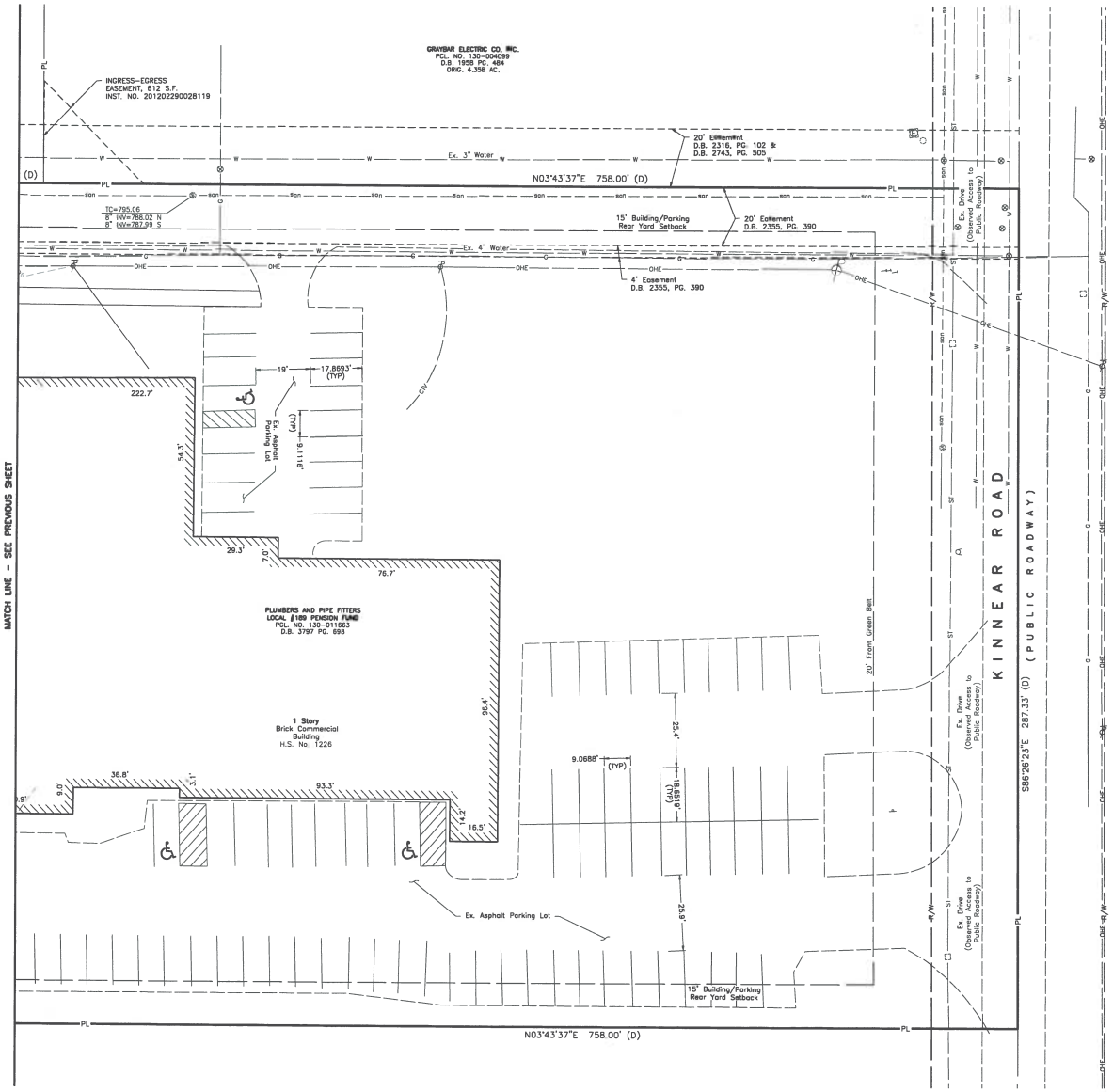
EXISTING CONDITIONS PLAN

SCALE: 1" = 20'

SHEET NO. 2 OF 10

M:\970008_KinnearRd\DWG\Production Drawings\Existing Conditions.dwg -Layout2 LAST EDITED BYemiller ON 6/8/16

E.P. FERRIS & ASSOCIATES, INC.



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0 10 20 40

REVISIONS	DATE	BY	CHK.

E. P. FERRIS AND ASSOCIATES INC
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CLINTON TOWNSHIP, FRANKLIN COUNTY, OHIO

1226 KINNEAR ROAD

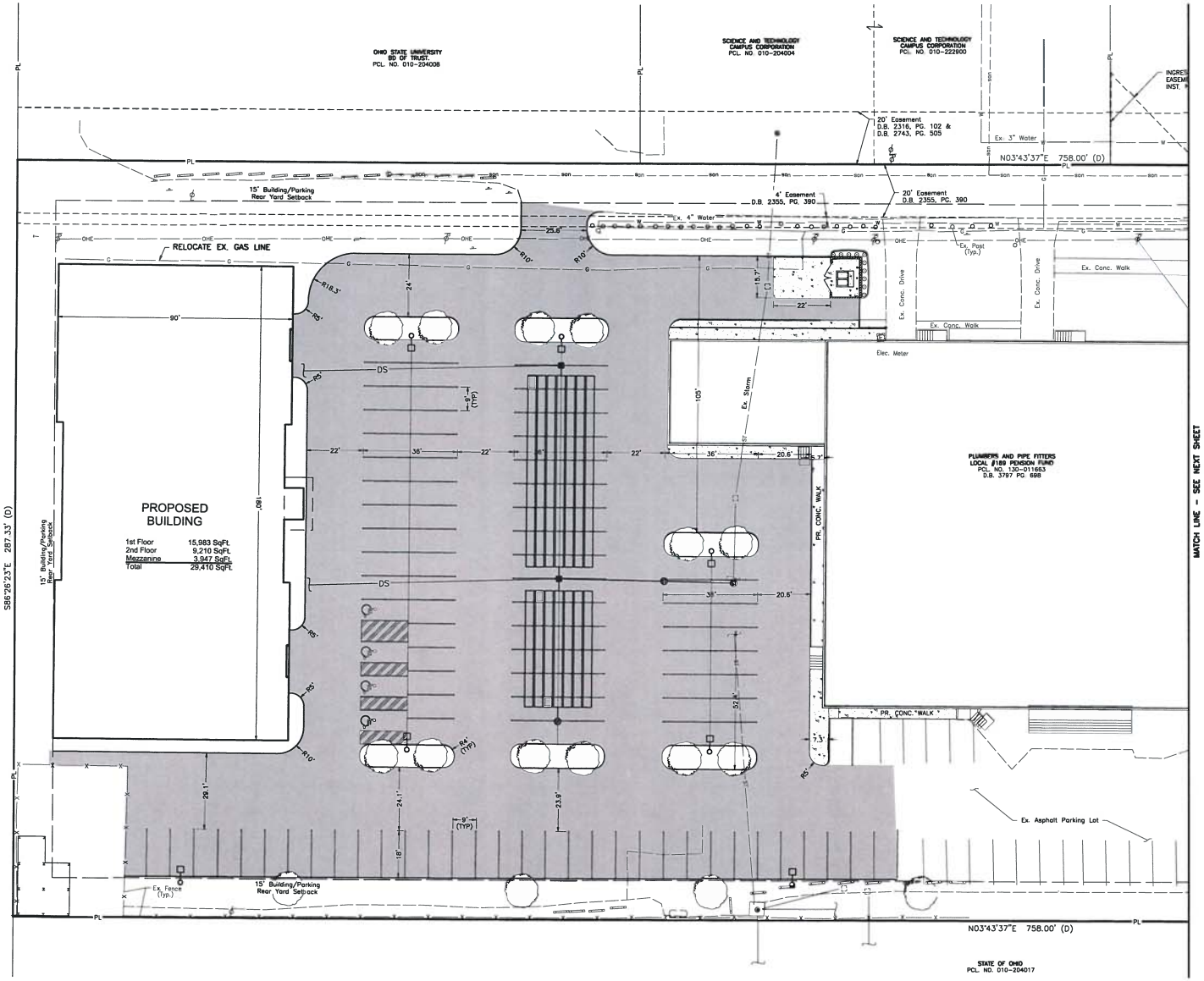
PLUMBERS AND PIPE FITTERS LOCAL #189 PENSION FUND

JOB NO.	970.008
DESIGNED BY:	CLP
DRAWN BY:	CLP
CHECKED BY:	SWC
APPROVED BY:	
DATE:	04/25/16

EXISTING CONDITIONS PLAN

SCALE: 1" = 20'

SHEET NO: 3 OF 10



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- Prop. Clean-out
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- Prop. Construction Limits

NOTE: (TBR) Shall mean to be removed.

0 10 20 40

REVISIONS	DATE	BY	CHK.

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

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CLINTON TOWNSHIP, FRANKLIN COUNTY, OHIO

1226 KINNEAR ROAD

PLUMBERS AND PIPE FITTERS LOCAL #189 PENSION FUND

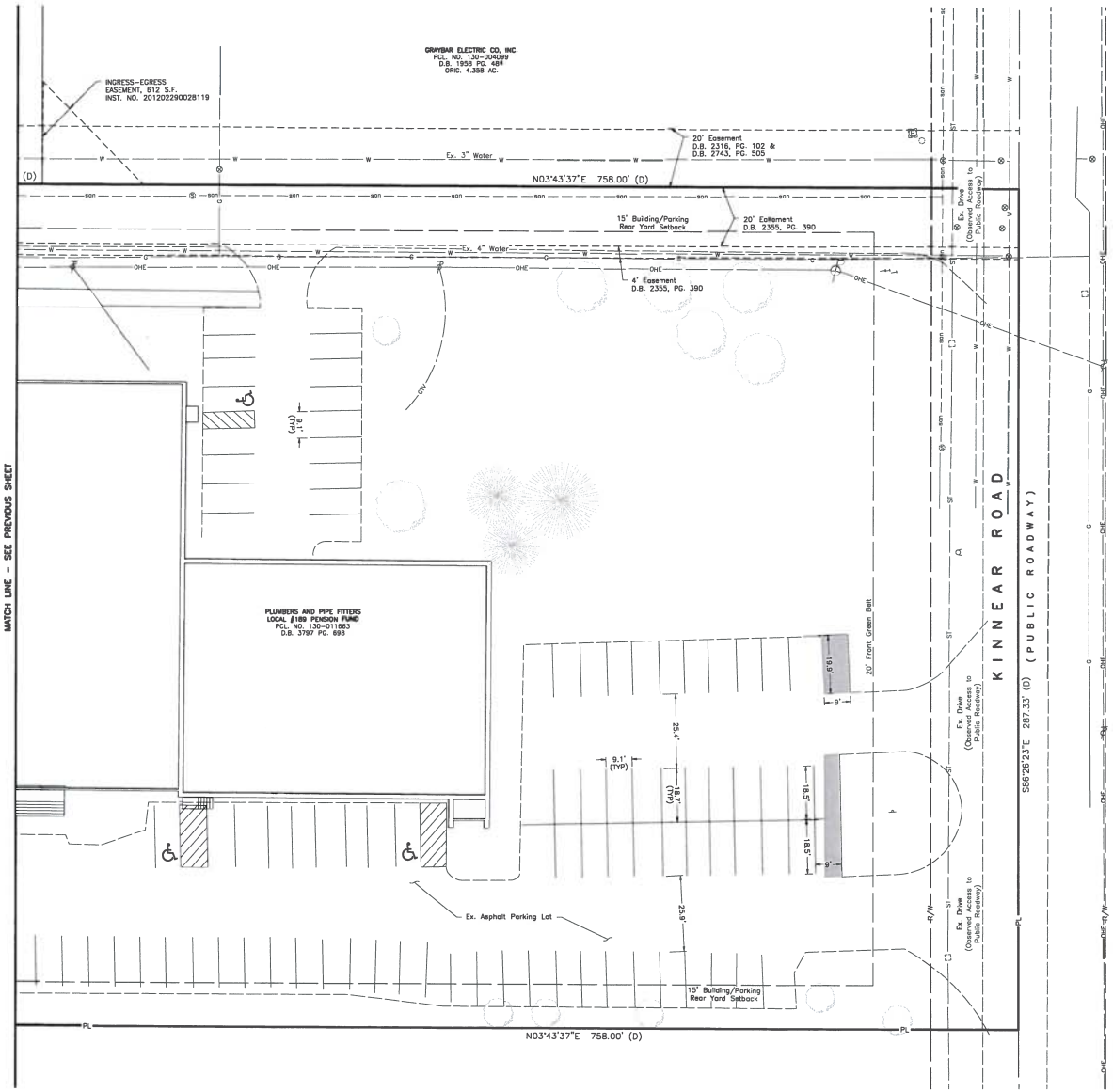
JOB NO.	970.008
DESIGNED BY:	CLP
DRAWN BY:	CLP
CHECKED BY:	SWG
APPROVED BY:	
DATE:	04/25/16

SITE LAYOUT PLAN

SCALE: 1" = 20'

SHEET NO. 4 OF 10

E.P. FERRIS & ASSOCIATES, INC.



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NOTE: (TBR) Shall mean to be removed.

0 10 20 40

REVISIONS	DATE	BY	CHK.

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

CONTACT:
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COLUMBUS, OHIO 43212
(614) 299-2999
(614) 299-2992 (Fax)
www.EPFERRIS.com

CLINTON TOWNSHIP, FRANKLIN COUNTY, OHIO

1226 KINNEAR ROAD

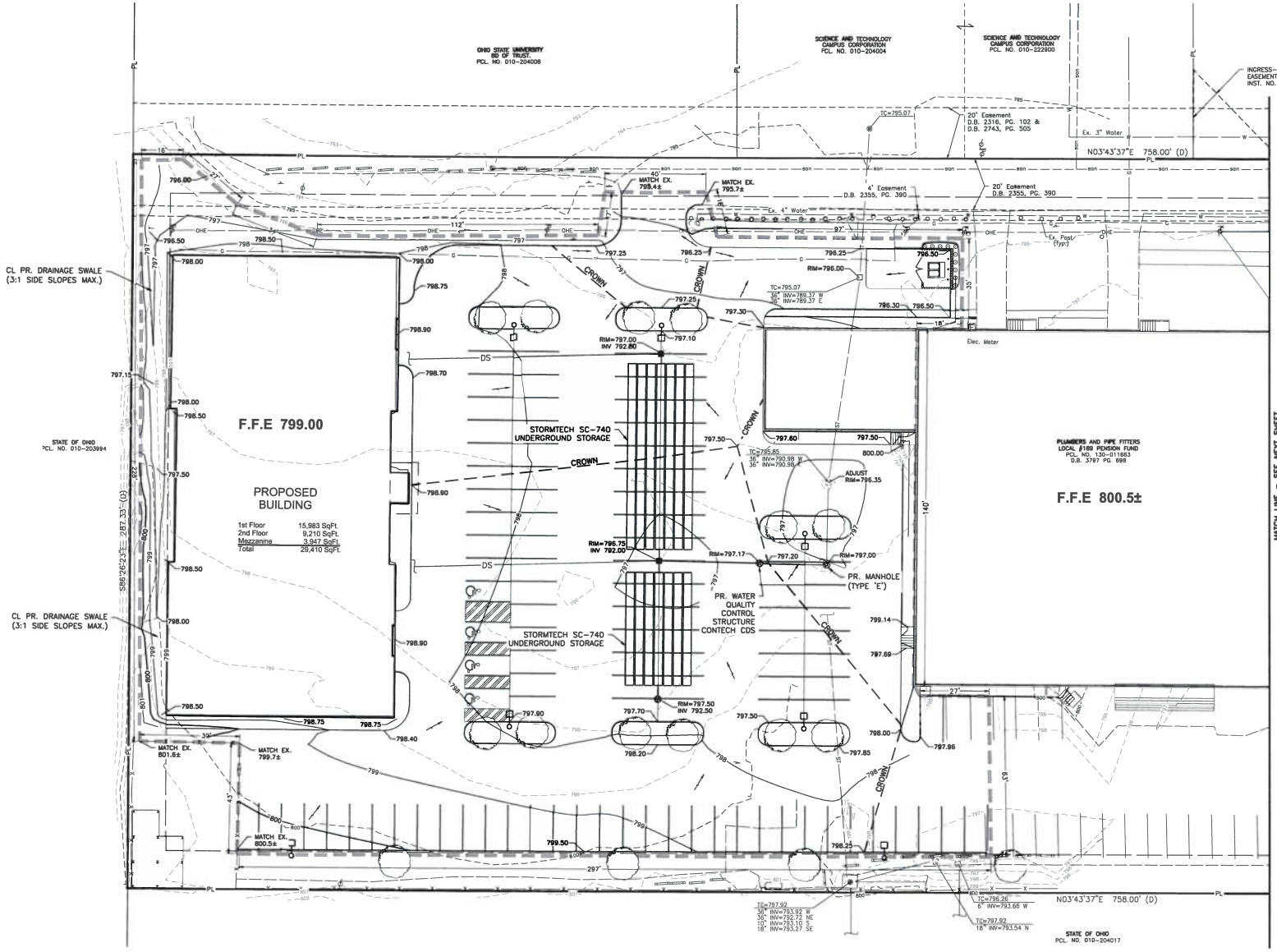
PLUMBERS AND PIPE FITTERS LOCAL #189 PENSION FUND

JOB NO.	970.008
DESIGNED BY:	CLP
DRAWN BY:	CLP
CHECKED BY:	SWC
APPROVED BY:	----
DATE:	04/25/16

SITE LAYOUT PLAN

SCALE: 1" = 20'

SHEET NO. 5 OF 10



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- Proposed Drainage Flow Directional Arrow
- 798.00 Proposed Spot Grade
- Prop. Construction Limits

NOTE: (TBR) Shall mean to be removed.

0 10 20 40

REVISIONS	DATE	BY	CHK.

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

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

CLINTON TOWNSHIP, FRANKLIN COUNTY, OHIO

1226 KINNEAR ROAD

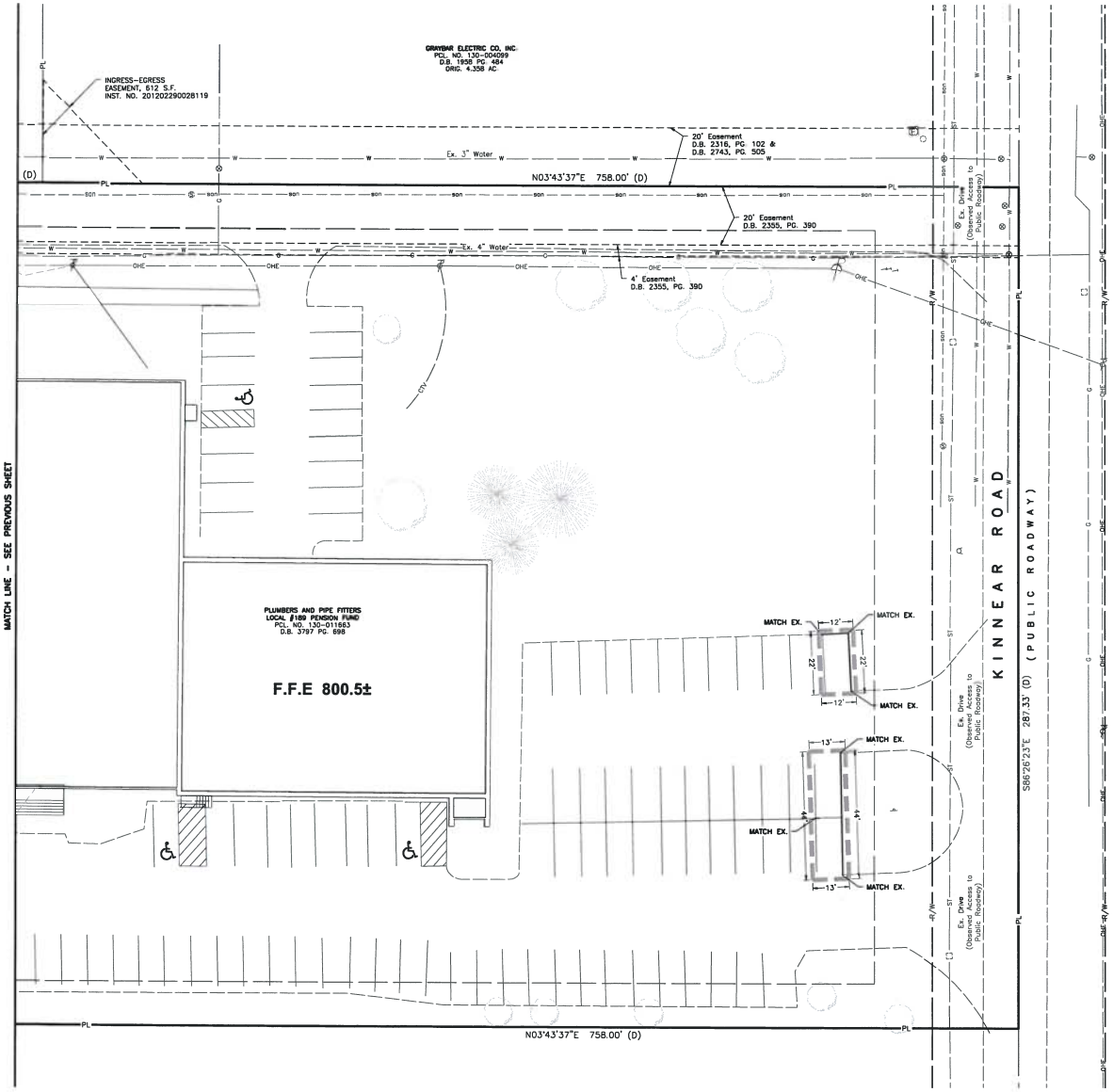
PLUMBERS AND PIPE FITTERS LOCAL #189 PENSION FUND

JOB NO.	970.008
DESIGNED BY:	CLP
DRAWN BY:	CLP
CHECKED BY:	SWC
APPROVED BY:	———
DATE:	06/08/16

GRADING PLAN

SCALE: 1" = 20'

SHEET NO. 6 OF 10



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- Prop. Construction Limits

NOTE: (TBR) Shall mean to be removed.

0 10 20 40

REVISIONS	DATE	BY	CHK.

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

CONTACT:
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COLUMBUS, OHIO 43212
(614) 299-2999
(614) 299-2992 (Fax)
www.EPFERRIS.com

CLINTON TOWNSHIP, FRANKLIN COUNTY, OHIO

1226 KINNEAR ROAD

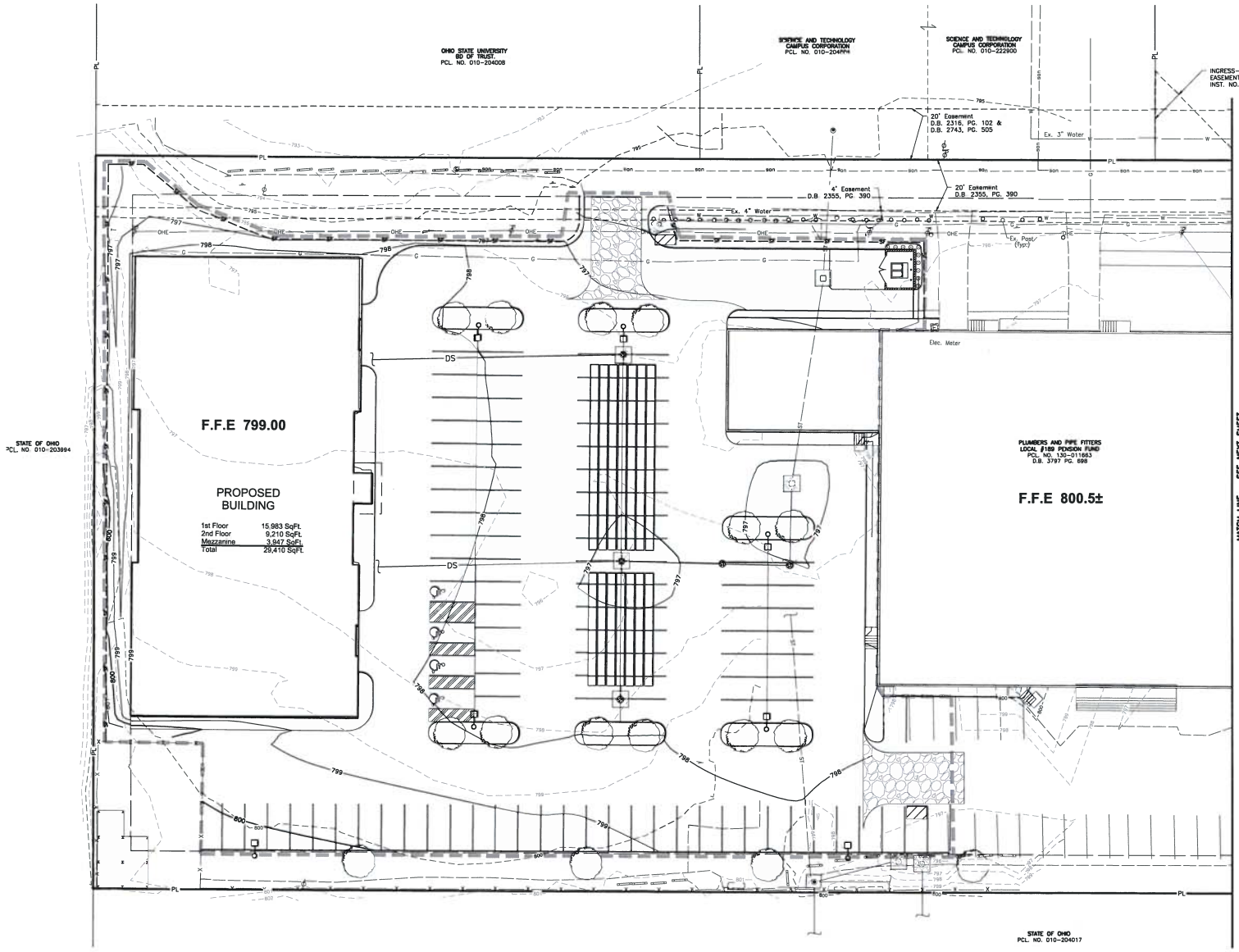
PLUMBERS AND PIPE FITTERS LOCAL #189 PENSION FUND

JOB NO.	970.008
DESIGNED BY:	CLP
DRAWN BY:	CLP
CHECKED BY:	SWG
APPROVED BY:	___
DATE:	06/08/16

GRADING PLAN

SCALE: 1" = 20'

SHEET NO. 7 OF 10



LEGEND

- Ex. Fire Hydrant
- Ex. Pull Box
- Ex. Tree
- Ex. Catch Basin
- Ex. Sanitary Manhole
- Ex. Storm Manhole
- Ex. Storm Curb Inlet
- Ex. Utility Pole
- Ex. Light Pole
- Ex. Gas Service Valve
- Ex. Underground Tele. Pedestal
- Ex. Water Service Valve
- Ex. Sign
- Ex. Fence
- Ex. Water Line
- Ex. Water Service
- Ex. Underground Telephone
- Ex. Gas
- Ex. Storm
- Ex Sanitary
- Ex. Underground Electric
- Ex. Overhead Electric
- Prop. Catch Basin
- Prop. Storm Manhole
- Prop. Storm Sewer
- Prop. Downspout Line
- Prop. Sanitary
- Prop. Sanitary Srvc.
- Prop. Water
- Prop. Water Srvc.
- Prop. Clean-out
- DND Do Not Disturb
- Proposed Flood Route
- Proposed Drainage Flow Directional Arrow
- Filter Fabric Fence
- Inlet Protection
- Concrete Washout Area
- Stabilized Construction Entrance
- Prop. Construction Limits

REVISIONS	DATE	BY	CHK.

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

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

CLINTON TOWNSHIP, FRANKLIN COUNTY, OHIO

1226 KINNEAR ROAD

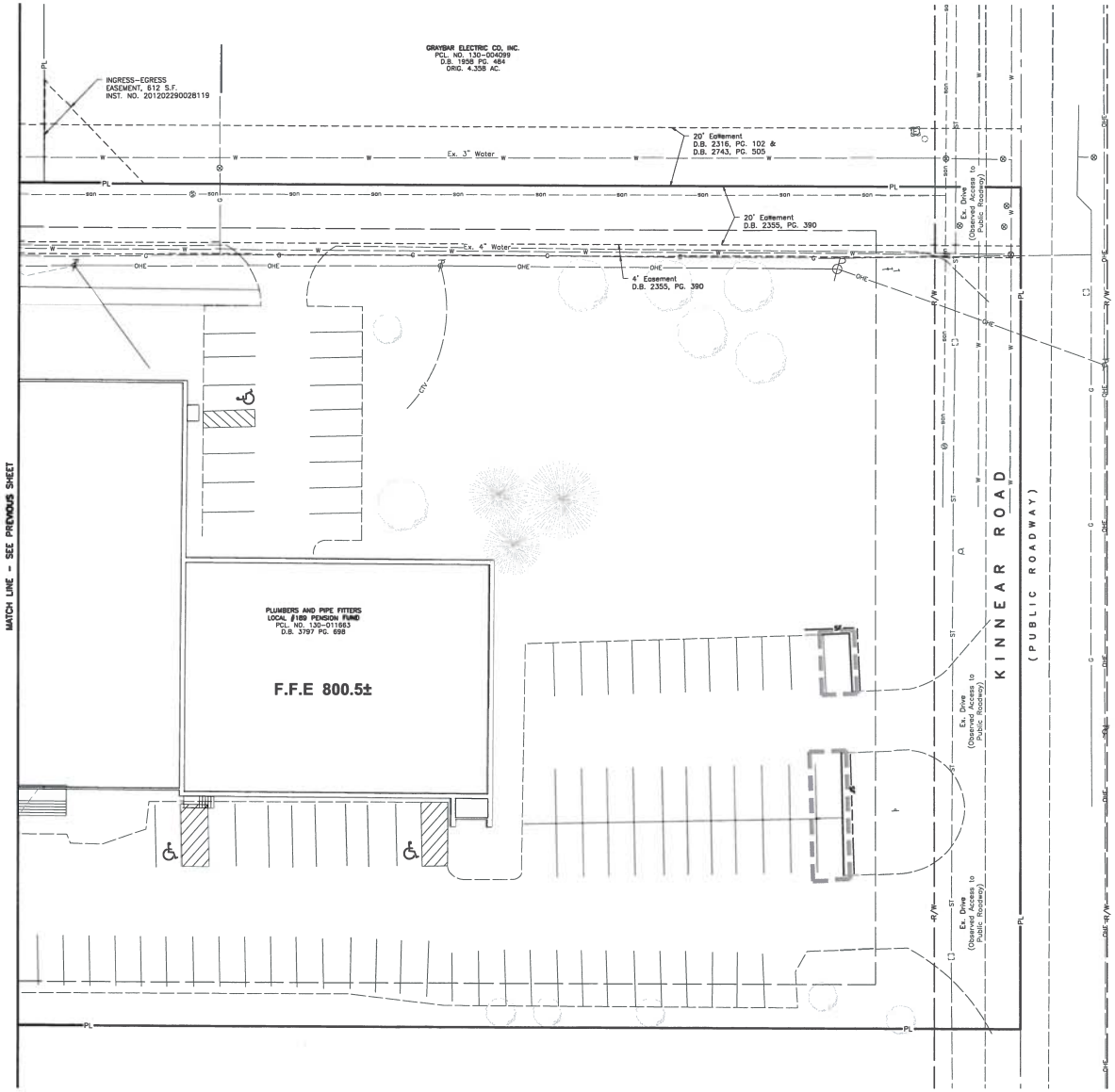
PLUMBERS AND PIPE FITTERS LOCAL #189 PENSION FUND

JOB NO.	970.008
DESIGNED BY:	CLP
DRAWN BY:	CLP
CHECKED BY:	SWG
APPROVED BY:	———
DATE:	06/08/16

EROSION CONTROL AND SWPP PLAN

SCALE: 1" = 20'

SHEET NO. 8 OF 10



LEGEND

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0 10 20 40

REVISIONS	DATE	BY	CHK.

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EROSION CONTROL AND SWPP PLAN

SCALE: 1" = 20'

SHEET NO. 9 OF 10

EROSION AND SEDIMENTATION CONTROL NARRATIVE

OEPA NPDES GENERAL PERMIT NUMBER: _____

PLAN DESIGNER: E.P. Ferris & Associates
880 King Ave.
Columbus, OH 43212
Phone: 614-299-2999 Fax: 614-299-2992

OWNER/DEVELOPER: Plumbers and Pipe Fitters Local #189 Pension Fund
1226 Kinnear Road
Columbus, Ohio 43212

PROJECT DESCRIPTION: The existing site consists of a commercial lot in Franklin County, Ohio. The existing condition of the site includes an existing building, asphalt parking areas and a gravel parking lot. The proposed improvements include a proposed parking lot and building. The disturbed area will include the northern portion of the site being converted from gravel parking lot to asphalt lot as well as the area where the proposed building will be constructed.

SITE DRAINS TO: The northern portion of this site, including the proposed building and parking lot, is proposed to drain to an existing storm sewer system on site. This site is ultimately tributary to the Olentangy River.

SOILS: CrB – Crosby Silt Loam, Southern Ohio Till Plain, 2%-6% slopes; Urban land-Celina complex, 2%-12% slopes

EXISTING SITE CONDITIONS: The site is developed with an existing building and asphalt parking lot located in the center and western portion of the site. The northern portion of the site is made up of a gravel parking area while the southeastern portion of the site is vegetated with short grass and few trees. The site drains into one watershed.

ADJACENT AREAS: The existing adjacent developments have been taken into account for the storm system and flood routing following existing drainage path.

CRITICAL AREAS: N/A

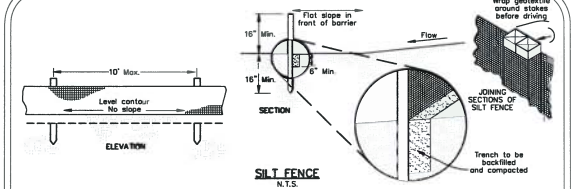
EROSION CONTROL MEASURES: Erosion and site run-off will be controlled through the use of filter fabric fence placed at low lying areas around the site as well Dandy Bags as storm inlet protection.

SEDIMENT CONTROL MEASURES: Sediment will be controlled through the use of inlet protection at proposed and existing inlets. Sediment will also be controlled through the use of silt fence along the northern and eastern portions of the site. Silt fence shall be placed along a level contour of land every 250' since the site is gently sloping at ±2.0%.

PERMANENT STABILIZATION: All disturbed areas are to be seeded.

MAINTENANCE: All erosion control devices will be inspected by the construction superintendent daily and after significant rainfalls. Any damaged devices will be repaired and/or replaced immediately or as necessary.

CONSTRUCTION SEQUENCE: Erosion control devices around and within the site will be in place as needed prior to construction activities. Initial grading will commence as well as construction of underground utilities. As storm sewers are completed, inlet/catch basin erosion devices will be installed. Only after final grading, seeding/sodding and paving operations have been completed will erosion devices be removed.



SILT FENCE
N.T.S.

1. Silt fence shall be constructed before upslope land disturbance begins.
2. All silt fence shall be placed as close to the contour as possible so that water will not concentrate at low points in the fence and so that small swales or depressions that may carry small concentrated flows to the silt fence are dissipated along its length.
3. Ends of the silt fences shall be brought upslope slightly so that water ponded by the silt fence will be prevented from flowing around the ends.
4. Silt fence shall be placed on the flattest area available.
5. Where possible, vegetation shall be preserved for 5 feet (or as much as possible) upslope from the silt fence. If vegetation is removed, it shall be reestablished within 7 days from the installation of the silt fence.
6. The height of the silt fence shall be a minimum of 16 inches above the original ground surface.
7. The silt fence shall be placed in an excavated or sliced trench cut a minimum of 6 inches deep. The trench shall be made with a trencher, cable laying machine, slicing machine, or other suitable device that will ensure an adequately uniform trench depth.
8. The silt fence shall be placed with the stakes on the downslope side of the geotextile. A minimum of 8 inches of geotextile must be below the ground surface. Excess material shall lay on the bottom of the 8-inch deep trench. The trench shall be backfilled and compacted on both sides of the fabric.
9. Seams between sections of silt fence shall be spliced together only at a support post with a minimum 6-in. overlap prior to driving into the ground. (see details)
10. Maintenance–Silt fence shall allow runoff to pass only as diffuse flow through the geotextile. If runoff overtops the silt fence, flows under the fabric or around the fence ends, or in any other way allows a concentrated flow discharge, one of the following shall be performed, as appropriate: 1)the layout of the silt fence shall be changed, 2)accumulated sediment shall be removed, or 3)other practices shall be installed.

    Sediment deposits shall be routinely removed when the deposit reaches approximately one-half of the height of the silt fence.

    Silt fences shall be inspected after each rainfall and at least daily during a prolonged rainfall. The location of existing silt fence shall be reviewed daily to ensure its proper location and effectiveness. If damaged, the silt fence shall be repaired immediately.

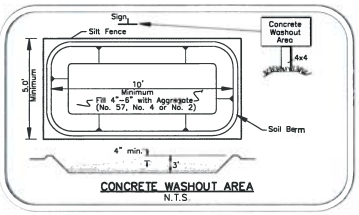
    Criteria for silt fence materials

    1. Fence post – The length shall be a minimum of 32 inches. Wood posts will be 2-by-2-in nominal dimensioned hardwood of sound quality. They shall be free of knots, splits and other visible imperfections, that will weaken the posts. The maximum spacing between posts shall be 10 ft. Posts shall be driven a minimum 16 inches into the ground, where possible. If not possible, the posts shall be adequately secured to prevent overturning of the fence due to sediment/water loading.
    2. Silt fence fabric – See chart below.

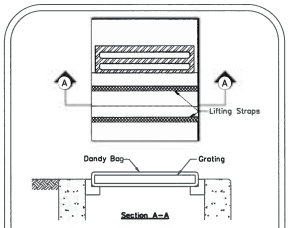
FABRIC PROPERTIES	VALUES	TEST METHOD
Minimum Tensile Strength	120 lbs. (535 N)	ASTM D 4632
Maximum Elongation at 60 lbs	50%	ASTM D 4632
Minimum Puncture Strength	50 lbs (220 N)	ASTM D 4833
Minimum Tear Strength	40 lbs (180 N)	ASTM D 4533
Apparent Opening Size	≤ 0.84 mm	ASTM D 4751
Minimum Permittivity	1X10-2 sec.-1	ASTM D 4491
UV Exposure Strength Retention	70%	ASTM G 4355

GENERAL CONSTRUCTION SEQUENCE:

1. INSTALL SILT FENCE, INLET PROTECTION, AND OTHER SPECIFIED EROSION CONTROL PRACTICES.
2. REMOVE ITEMS SCHEDULED FOR DEMOLITION/RELOCATION.
3. ROUGH GRADE AREA INTENDED FOR IMPROVEMENTS.
4. INSTALL STORM SEWERS AND FINISH GRADE AREA FOR IMPROVEMENTS.
5. APPLY TEMPORARY SEEDING.
6. CONSTRUCT PAVING AND IMPROVEMENTS PROPOSED.
7. UPON INSTALLATION OF PAVEMENT AND IMPROVEMENTS, INSPECT, CLEAN, AND REINSTALL INLET PROTECTION AND ANY EROSION CONTROL DEVICES. EROSION CONTROLS SHALL BE MAINTAINED UNTIL VEGETATION BECOMES ESTABLISHED TO OHIO EPA AND THE FRANKLIN COUNTY STANDARDS. DEBRIS LEFT FROM CONSTRUCTION SHOULD BE COMPLETELY REMOVED FROM THE SITE.
8. INSTALL LANDSCAPING, TREES, ETC. AS DETAILED BY THE LANDSCAPE PLAN.
9. PROVIDE PERMANENT SEEDING/SODDING PER THE LANDSCAPE PLAN.
10. REMOVE EROSION CONTROL PRACTICES.



CONCRETE WASHOUT AREA
N.T.S.



To Be Placed at All Catch Basins in Pavement

INLET PROTECTION – DANDY BAG
N.T.S.

Installation: Stand grate on end. Place Dandy Bag over grate. Roll grate over so that open end is up. Pull up slack. Tuck flap in. Be sure end of grate is completely covered by flap or Dandy Bag will not fit properly. Holding handles, carefully place Dandy Bag with grate inserted into catch basin frame so that the red dot on the top of the Dandy Bag is visible.

Maintenance: With a stiff bristle broom or square point shovel remove silt & other debris off surface after each event.

SEDIMENT & EROSION CONTROL NOTES:

EROSION/SEDIMENT/DUST CONTROL CONSTRUCTION PRACTICES

UTILIZE EROSION AND SEDIMENT CONTROL PRACTICES PER THE SOIL CONSERVATION SERVICE STANDARDS AND SPECIFICATIONS. EROSION CONTROL DEVICES ARE TO BE MAINTAINED IN EFFECTIVE WORKING CONDITION DURING CONSTRUCTION AND UNTIL THE CONSTRUCTION AREA HAS BEEN PERMANENTLY STABILIZED. THE CONTRACTOR SHALL CONSULT WITH SOIL CONSERVATION SERVICE AND THE ENGINEER CONCERNING PROPER EROSION AND SEDIMENT PRACTICES.

STOCKPILED TOPSOIL AND EXCAVATED MATERIAL IS TO BE PROTECTED THROUGH THE USE OF TEMPORARY SEEDING, OR COVERED WITH ANCHORED STRAW MULCH.

FINAL GRADING WILL BE CONSISTENT WITH PRE-CONSTRUCTION TOPOGRAPHY TO MAINTAIN DRAINAGE AND AESTHETICS.

REMOVE ONLY THOSE TREES, SHRUBS, AND GRASSES THAT MUST BE REMOVED TO PERMIT ACTUAL CONSTRUCTION. PROTECT THE REMAINING TO PRESERVE THEIR AESTHETIC AND EROSION CONTROL VALUE.

BACKFILL TRENCHES IMMEDIATELY AFTER COMPACTION. SEED AND MULCH TRENCHES WITHIN TWO WEEKS AFTER TRENCHES ARE OPENED.

SILT FROM CONSTRUCTION OPERATIONS SHALL NOT BE PERMITTED TO ENTER THE STORM DRAIN SYSTEM, WATERWAYS (NATURAL OR MAN-MADE), OR ADJACENT PRIVATE PROPERTY. CONSTRUCTION OCCURRING NEAR STORM DRAIN INLETS OR WATERWAYS (NATURAL OR MAN-MADE) SHALL REQUIRE EROSION CONTROL MEASURES, SUCH AS SILT FENCE AND STRAW BALE BARRIERS, TO PREVENT SILT FROM ENTERING THE STORM DRAIN, WATERWAYS (NATURAL OR MAN-MADE) OR ADJACENT PRIVATE PROPERTY.

ALL EROSION/SEDIMENT/DUST CONTROL PRACTICES SHALL BE PERFORMED AS RECOMMENDED BY THE OHIO DEPARTMENT OF NATURAL RESOURCES DIVISION OF SOIL AND WATER CONSERVATION PUBLICATION "RAINWATER AND LAND DEVELOPMENT", 2006 EDITION.

STABILIZATION OF DENUDED AREAS

DENUDED AREAS SHALL HAVE SOIL STABILIZATION APPLIED WITHIN 7 DAYS OF DISTURBANCE IF THEY ARE TO REMAIN SUBSTANTIALLY UNWORKED FOR MORE THAN 14 DAYS. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN 7 DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE.

SEDIMENT CONTROLS

STORM WATER RUNOFF FROM DENUDED AREAS SHALL PASS THROUGH A SEDIMENT BASIN AND SILT FENCE. THE LOCATION OF THESE CONTROLS IS DEFINED ON SHEET 5.

CONSTRUCTION ACCESS ROUTES

MEASURES SHALL BE TAKEN TO PREVENT SOIL TRANSPORT ONTO SURFACES WHERE RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS, OR ONTO PUBLIC ROADS. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT OFF-SITE TRACKING OF SEDIMENTS BY VEHICLES, EQUIPMENT, AND WORKERS IS MINIMIZED.

SLOUGHING AND DUMPING

NO SOIL, ROCK, DEBRIS OR ANY OTHER MATERIAL SHALL BE DUMPED OR PLACED INTO A WATER RESOURCE OR INTO SUCH PROXIMITY THAT IT MAY READILY SLOUGH, SLIP, OR ERODE INTO A WATER RESOURCE UNLESS SUCH DUMPING OR PLACING IS AUTHORIZED BY THE ENGINEER. UNSTABLE SOILS PRONE TO SLIPPING OR LAND SLIDING SHALL NOT BE GRADED, EXCAVATED, FILLED OR HAVE LOADS IMPOSED UPON THEM UNLESS THE WORK IS DONE IN ACCORDANCE WITH A QUALIFIED PROFESSIONAL ENGINEER'S RECOMMENDATIONS TO CORRECT, ELIMINATE OR ADEQUATELY ADDRESS THE PROBLEMS.

ESTABLISHMENT OF PERMANENT VEGETATION

PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL GROUND COVER IS ACHIEVED WHICH, IN THE OPINION OF THE ENGINEER, IS MATURE ENOUGH TO CONTROL SOIL EROSION SATISFACTORILY AND TO SURVIVE ADVERSE WEATHER CONDITIONS.

SEEDING AND MULCHING:

1. TEMPORARY SEEDING SHALL CONSIST OF ANNUAL RYE-GRASS AS PER ITEM 207. SEED AND MULCHING SHALL BE APPLIED IN ACCORDANCE WITH ITEM 659.

2. PERMANENT SEEDING AND MULCHING SHALL BE TREATED IN ACCORDANCE WITH ITEM 659.

TIMING OF SEDIMENT-TRAPPING PRACTICES

SEDIMENT CONTROL PRACTICES SHALL BE FUNCTIONAL THROUGHOUT EARTH-DISTURBING ACTIVITY. SETTLING FACILITIES, PERIMETER CONTROLS AND OTHER PRACTICES INTENDED TO TRAP SEDIMENT SHALL BE IMPLEMENTED AS THE FIRST STEP OF GRADING OR CONSTRUCTION AND WITHIN SEVEN DAYS FROM THE START OF GRUBBING. THEY SHALL CONTINUE TO FUNCTION UNTIL THE UPSLOPE DEVELOPMENT AREA IS RE-STABILIZED. THESE CONTROLS SHALL BE SELECTED AND LOCATED AS DIRECTED BY THE ENGINEER.

NOTE: LOCATIONS SHOWN FOR SEDIMENT FILTERING BARRIERS ARE SUGGESTED LOCATIONS; THE FINAL AND MOST APPROPRIATE LOCATION FOR THESE DEVICES SHALL BE APPROVED BY THE ENGINEER, BASED ON SITE CONDITIONS AND OBSERVED TOPOGRAPHY. PROPER IMPLEMENTATION, INSTALLATION, MAINTENANCE, AND REPAIR OF SEDIMENT FILTERING BARRIERS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

OUTFLOWS FROM DEWATERING OPERATIONS

ALL WATER PRODUCED FROM CLEANING AND DEWATERING OPERATIONS, WHETHER SPECIFICALLY FROM TRENCH DEWATERING OPERATIONS OR FROM MORE EXTENSIVE DEWATERING OPERATIONS, SHALL BE DISCHARGED IN SUCH A MANNER AS TO ELIMINATE EROSION FROM SUCH A DISCHARGE BY DIVERTING THE WATER THROUGH A SEDIMENT BAG/DE-WATERING BAG.

ADDITIONAL CONTROLS

THE CONTRACTOR SHALL ENSURE THAT NO SEDIMENTS ARE TRACKED OFF-SITE BY CONSTRUCTION EQUIPMENT, VEHICLES, AND WORKERS. THE CONTRACTOR SHALL ALSO ENSURE THAT NO OTHER SOLID (OTHER THAN SEDIMENT) OR LIQUID WASTE IS DISCHARGED INTO ANY STORM WATER FLOW.

PROHIBITED CONSTRUCTION ACTIVITIES

THE CONTRACTOR SHALL NOT USE CONSTRUCTION PROCEEDINGS, ACTIVITIES, OR OPERATIONS THAT MAY UNNECESSARILY IMPACT THE NATURAL ENVIRONMENT OR THE PUBLIC HEALTH AND SAFETY. PROHIBITED CONSTRUCTION PROCEDURES, ACTIVITIES, OR OPERATIONS INCLUDE BUT ARE NOT LIMITED TO:

1. DISPOSING OF EXCESS OR UNSUITABLE EXCAVATED MATERIAL IN WETLANDS OR FLOOD PLAINS, EVEN WITH THE PERMISSION OF THE PROPERTY OWNER.
2. INDISCRIMINATE, ARBITRARY, OR CAPRICIOUS OPERATION OF EQUIPMENT IN ANY STREAM CORRIDORS, ANY WETLANDS, ANY SURFACE WATERS, OR OUTSIDE THE EASEMENT LIMITS.
3. PUMPING OF SEDIMENT-LADEN WATER FROM TRENCHES OR OTHER EXCAVATIONS INTO ANY SURFACE WATERS, ANY STREAM CORRIDORS, ANY WETLANDS, OR STORM DRAINS.
4. DISCHARGING POLLUTANTS SUCH AS CHEMICALS, FUELS, LUBRICANTS, BITUMINOUS MATERIALS, RAW SEWAGE AND OTHER HARMFUL WASTE INTO OR ALONGSIDE OF RIVERS, STREAMS, IMPOUNDMENTS OR INTO NATURAL OR MAN-MADE CHANNELS LEADING THERETO.
5. PERMANENT OR UNSPECIFIED ALTERATION OF THE FLOW LINE OF A STREAM.
6. DAMAGING VEGETATION OUTSIDE OF THE CONSTRUCTION AREA.
7. DISPOSAL OF TREES, BRUSH AND OTHER DEBRIS IN ANY STREAM CORRIDORS, ANY WETLANDS, ANY SURFACE WATERS, OR AT UNSPECIFIED LOCATIONS.
8. OPEN BURNING OF PROJECT DEBRIS WITHOUT A PERMIT.
9. STORING CONSTRUCTION EQUIPMENT AND VEHICLES AND/OR STOCKPILING CONSTRUCTION MATERIALS ON PROPERTY, PUBLIC OR PRIVATE, NOT PREVIOUSLY SPECIFIED BY THE ENGINEER FOR SAID PURPOSES.

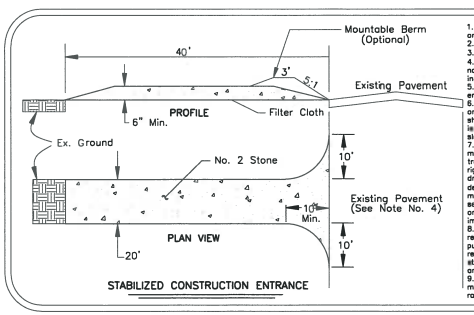
MAINTENANCE AND INSPECTION

ALL TEMPORARY AND PERMANENT EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE DESIGNED AND CONSTRUCTED TO MINIMIZE MAINTENANCE REQUIREMENTS. THEY SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. MAINTENANCE AND INSPECTION OF ALL EROSION/SEDIMENT CONTROL DEVICES REQUIRED BY THE ENGINEER SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. INSPECTION SHALL BE PERFORMED AS PRESCRIBED IN THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (N.P.D.E.S.) GENERAL PERMIT. INSPECTIONS SHALL BE PERFORMED BY THE CONTRACTOR, IN THE PRESENCE OF THE ENGINEER ONCE EVERY 7 CALENDAR DAYS AND/OR WITHIN 24 HOURS AFTER ANY RAIN EVENT OF GREATER THAN 0.5 INCHES IN A 24 HOUR PERIOD. THESE INSPECTIONS SHALL IDENTIFY AREAS CONTRIBUTING TO STORM WATER DISCHARGES ASSOCIATED WITH THE PROJECT; EVALUATE THE ADEQUACY, IMPLEMENTATION, AND MAINTENANCE OF EXISTING AND PROPOSED EROSION/ SEDIMENTATION MEASURES; AND DETERMINE WHETHER ADDITIONAL MEASURES ARE REQUIRED.

ACCEPTABLE INSPECTION REPORTS SHALL BE PREPARED BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER, IF REQUESTED, WITHIN 48 HOURS OF INSPECTION COMPLETION. THE REPORT SHALL CONTAIN THE RESULTS OF THE INSPECTION, NAME(S) AND QUALIFICATIONS OF PERSONNEL MAKING THE INSPECTION, MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE STORM WATER POLLUTION PLAN, A CERTIFICATION THAT THE FACILITY IS IN COMPLIANCE WITH THE PLAN, AND IDENTIFICATION OF ANY INCIDENTS OF NON-COMPLIANCE.

POLLUTION PREVENTION PLAN AVAILABILITY AND UPDATES

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO ENSURE THE IMMEDIATE AVAILABILITY OF THE STORM WATER POLLUTION PREVENTION PLAN ON-SITE. THE CONTRACTOR SHALL ALSO BE SOLELY RESPONSIBLE TO PERFORM ALL UPDATES AND AMENDMENTS TO THE POLLUTION PREVENTION PLAN.



STABILIZED CONSTRUCTION ENTRANCE

1. Stone size – Use 2" stone, or reclaimed or recycled concrete equivalent.
2. Length – As required
3. Thickness – Not less than six (6) inches.
4. Width – Twenty (20) foot minimum, but not less than the full width at points where ingress or egress occurs.
5. Filter Cloth – Will be placed over the entire area prior to placing of stone.
6. Surface Water – All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable berm with 5:1 slopes will be permitted.
7. Maintenance – The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public right-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public rights-of-way must be removed immediately.
8. Washing – Wheels shall be cleaned to remove sediment prior to entrance onto public right-of-ways. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
9. Periodic inspection and needed maintenance shall be provided after each rain.

REVISIONS	DATE	BY	CHK.

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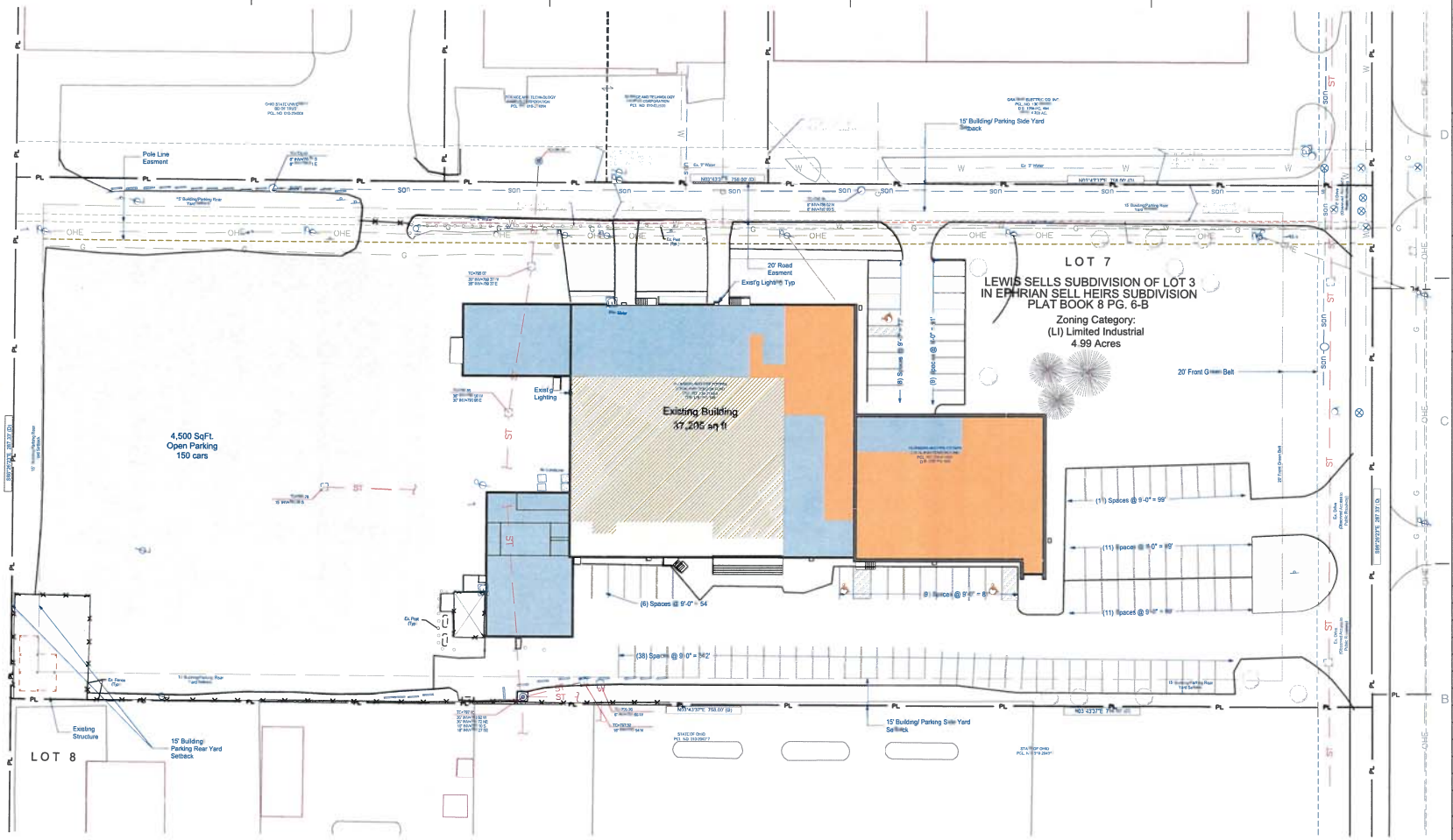
SWPPP NOTES

SCALE: 1" = 20'

SHEET NO. 10 OF 10



EXISTING SITE PLAN

SCALE: 1" = 30'

EXISTING BUILDING PARKING					
	Use	Area SqFt.	Parking Rate	Required Parking	Provided Parking
1st FLOOR					
	Asembly Hall	9,879	1/60	165	
	Lab/Classroom	16,085			
	Office	11,241	1/300	38	
Total Existing		**37,205 sq ft**		**203**	**253**

bogden ARCHITECTS
850 King Ave Columbus, OH 43212
P 614 421 7774 F 614 421 2213

CONSULTANTS

SEAL

Plumbers and Pipefitters Local #189 New Building
1250 Kinnear Road
Columbus, OH 43212

MARK	Date	DESCRIPTION
02	06-09-2016	Zoning Compliance Revised Building
01	04-22-2016	Zoning Compliance

PROJECT NO:	15125.00
DESIGNED BY:	DK
DRAWN BY:	DK
CHECKED BY:	EB

IF THE ABOVE DIMENSION DOES NOT MEASURE ONE INCH (1") DIRECTLY, THIS DRAWING WILL HAVE BEEN ENLARGED OR REDUCED AFFECTING ALL LABELED SCALES

SHEET TITLE

EXISTING SITE PLAN

EXISTING BUILDING PLAN

SCALE: 1/16" = 1'-0"

EXISTING BUILDING SQ FT		
	Use	Area SqFt
1st FLOOR		
	Asembly Hall	9,879
	Lab/Classroom	16,085
	Office	11,241
		37,205 sq ft

bogden ARCHITECTS
850 King Ave., Columbus, OH 43212
P 614.421.7774 F 614.421.2213

CONSULTANTS

SEAL

Plumbers and Pipefitters Local #189 New Building
1250 Kinnear Road
Columbus, OH 43212

MARK	Date	DESCRIPTION
02	06-09-2016	Zoning Compliance Revised Building
01	04-22-2016	Zoning Compliance

PROJECT NO:	15125.00
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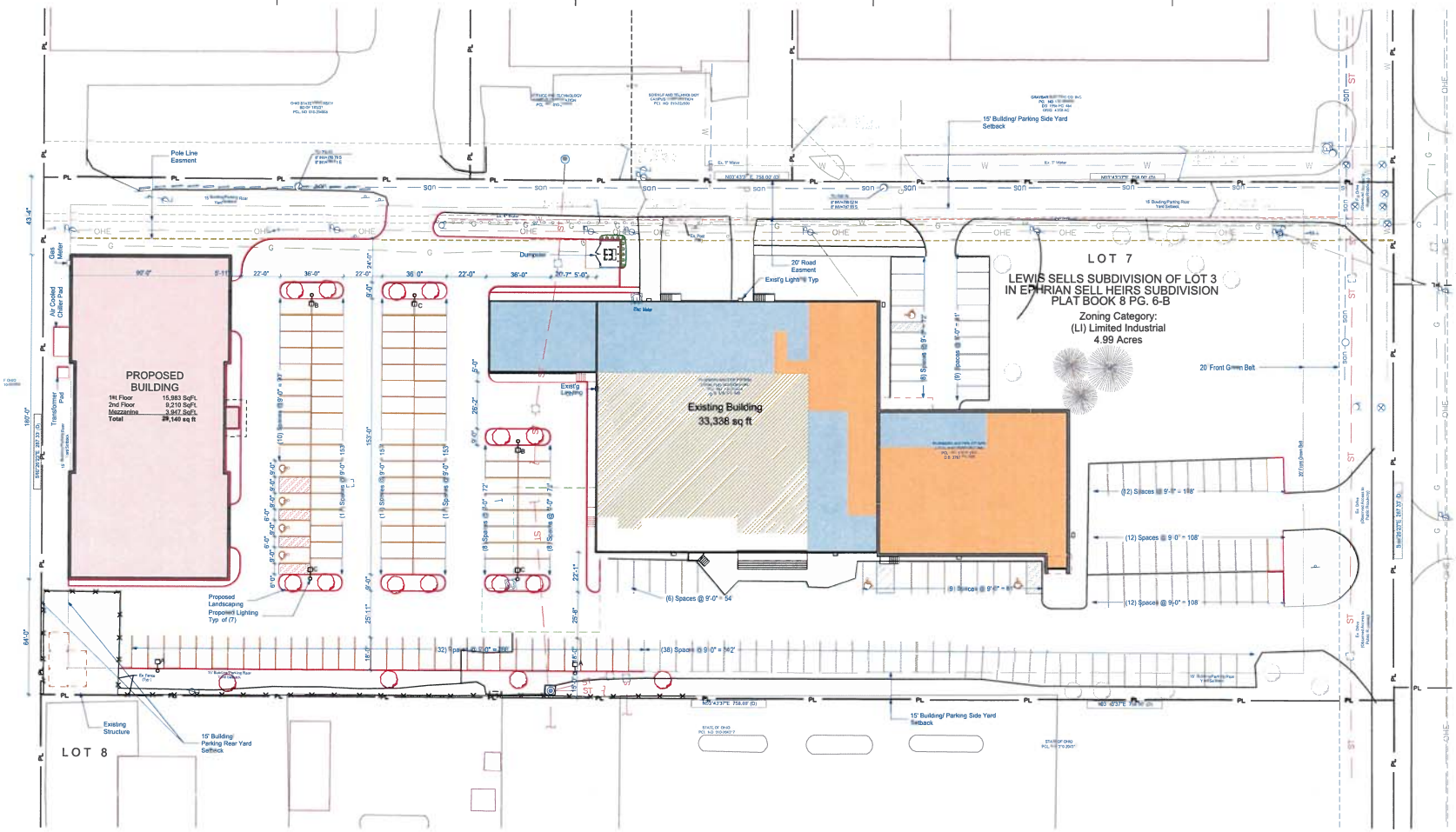
SHEET TITLE

EXISTING FLOOR PLAN



PROPOSED BUILDING SITE PLAN

SCALE: 1" = 30'

	USE	Area SqFt.	Parking Rate	Required Parking	Parking Provided	Lot Area	Building Coverage	Gross Area Coverage	Landscape Open Space	Comments
EXISTING BUILDING PARKING										
1st FLOOR										
	Asembly Hall	9,879	1/60	165						
	Lab/Classroom	12,260								
	Office	11,241	1/300	38						
Total Existing		33,380 sq ft		203						
PROPOSED BUILDING PARKING										
1st FLOOR										
	Lab/Classroom	14,669								
	Office	1,314	1/300	4						
2nd FLOOR										
	Lab/Classroom	9,210								
MEZZANINE										
	Mechanical	3,947								
Total Proposed		29,140 sq ft		4		217,795 sq ft	49,363 sq ft	62,520 sq ft	118,852 sq ft	
Total		**62,520 sq ft**		**207**	**229**		**22.6%**	**28%**	**54%**	

SITE LIGHTING LEGEND		
SYMBOL	DESCRIPTION	MOUNTING
▯	Existing Wall Pack.	Wall mount
○—▯	Proposed 25' pole light	Concrete Base

0 30' 60'

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CONSULTANTS

SEAL

Plumbers and Pipefitters Local #189 New Building
1250 Kinnear Road
Columbus, OH 43212

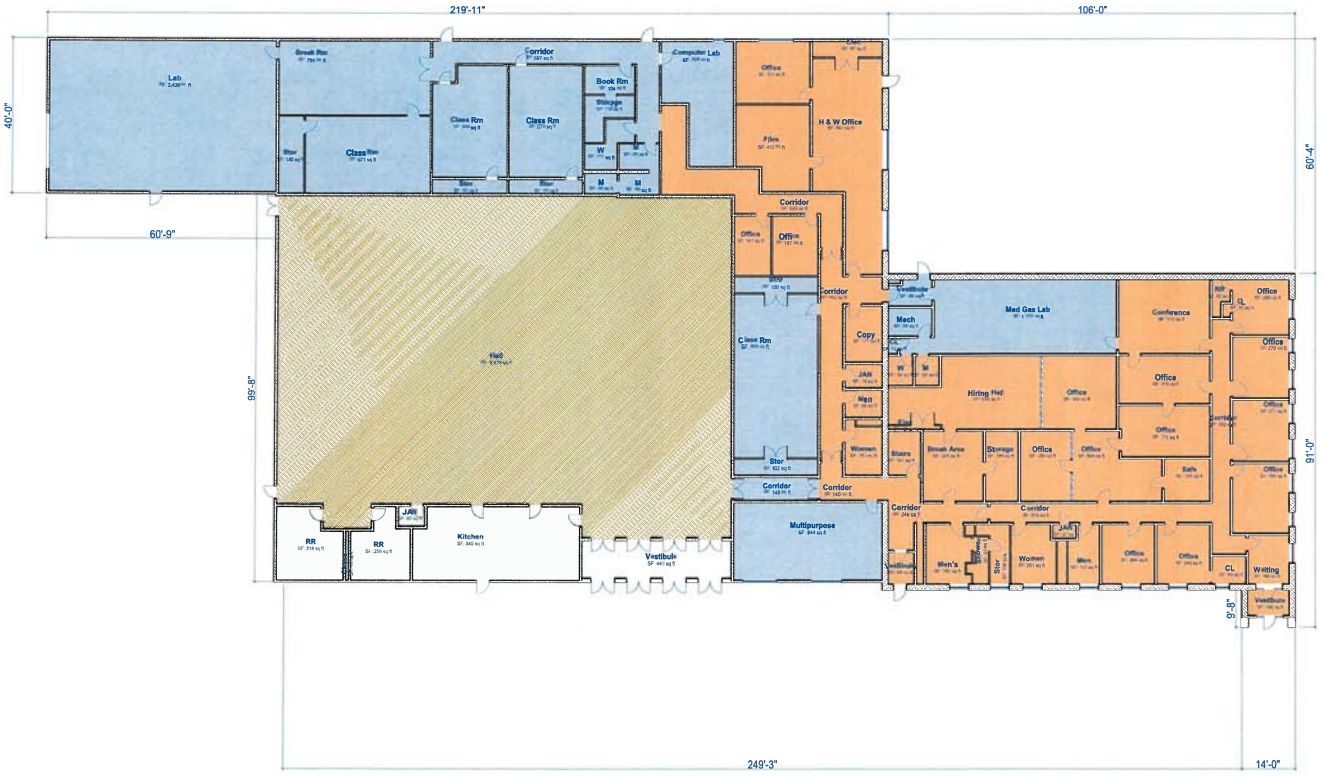
MARK	Date	DESCRIPTION
02	06-09-2016	Zoning Compliance Revised Building
01	04-22-2016	Zoning Compliance

PROJECT NO: 15125.00
DESIGNED BY: DK
DRAWN BY: DK
CHECKED BY: EB

IF THIS ABOVE DIMENSION DOES NOT MEASURE ONE INCH (1") EXACTLY, THIS DRAWING WILL HAVE BEEN ENLARGED OR REDUCED. AFFECTING ALL LABELED SCALES

SHEET TITLE

PROPOSED BUILDING SITE PLAN



PROPOSED EXISTING BUILDING PLAN

SCALE: 1/16" = 1'-0"

EXISTING BUILDING SQ FT ALTERED		
	USE	Area SqFt
1st FLOOR		
	Asembly Hall	9,879
	Lab/Classroom	12,260
	Office	11,241
		33,380 sq ft

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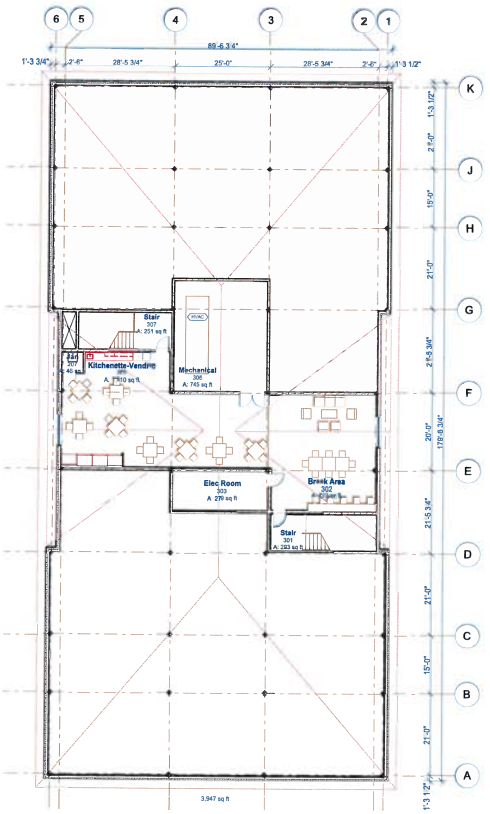
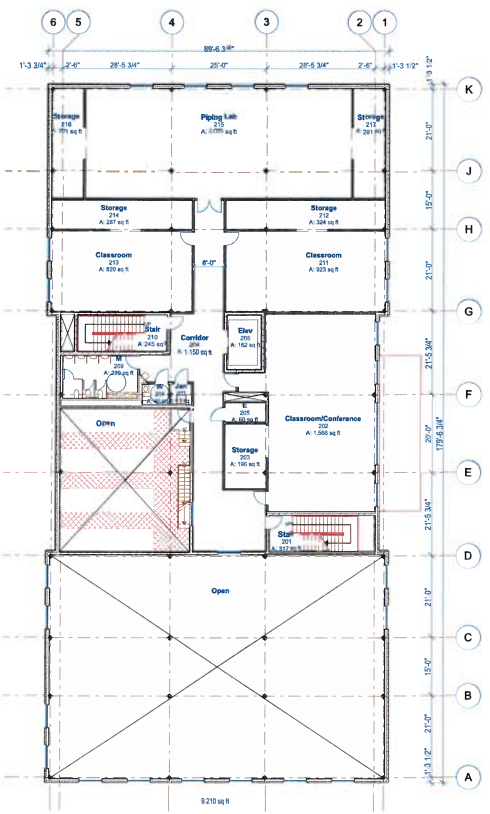
SHEET TITLE

EXISTING BUILDING FLOOR PLAN ALTERED



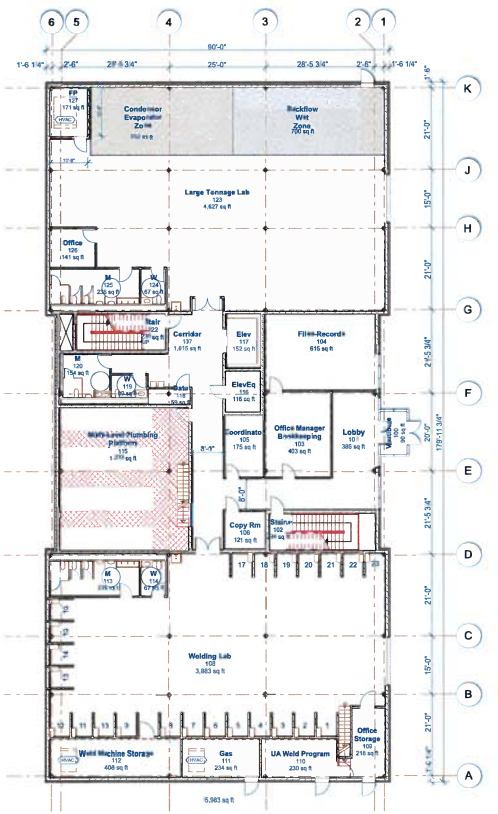
MEZZANINE

SCALE: 1/16" = 1'-0"



2nd FLOOR

SCALE: 1/16" = 1'-0"



1st FLOOR

SCALE: 1/16" = 1'-0"

PROPOSED BUILDING SQFT		
1st FLOOR		
	Lab/Classroom	14,669
	Office	1,314
		15,983 sq ft
2nd FLOOR		
	Lab/Classroom	9,210
		9,210 sq ft
MEZZANINE		
	Mechanical	3,947
		3,947 sq ft
		29,140 sq ft

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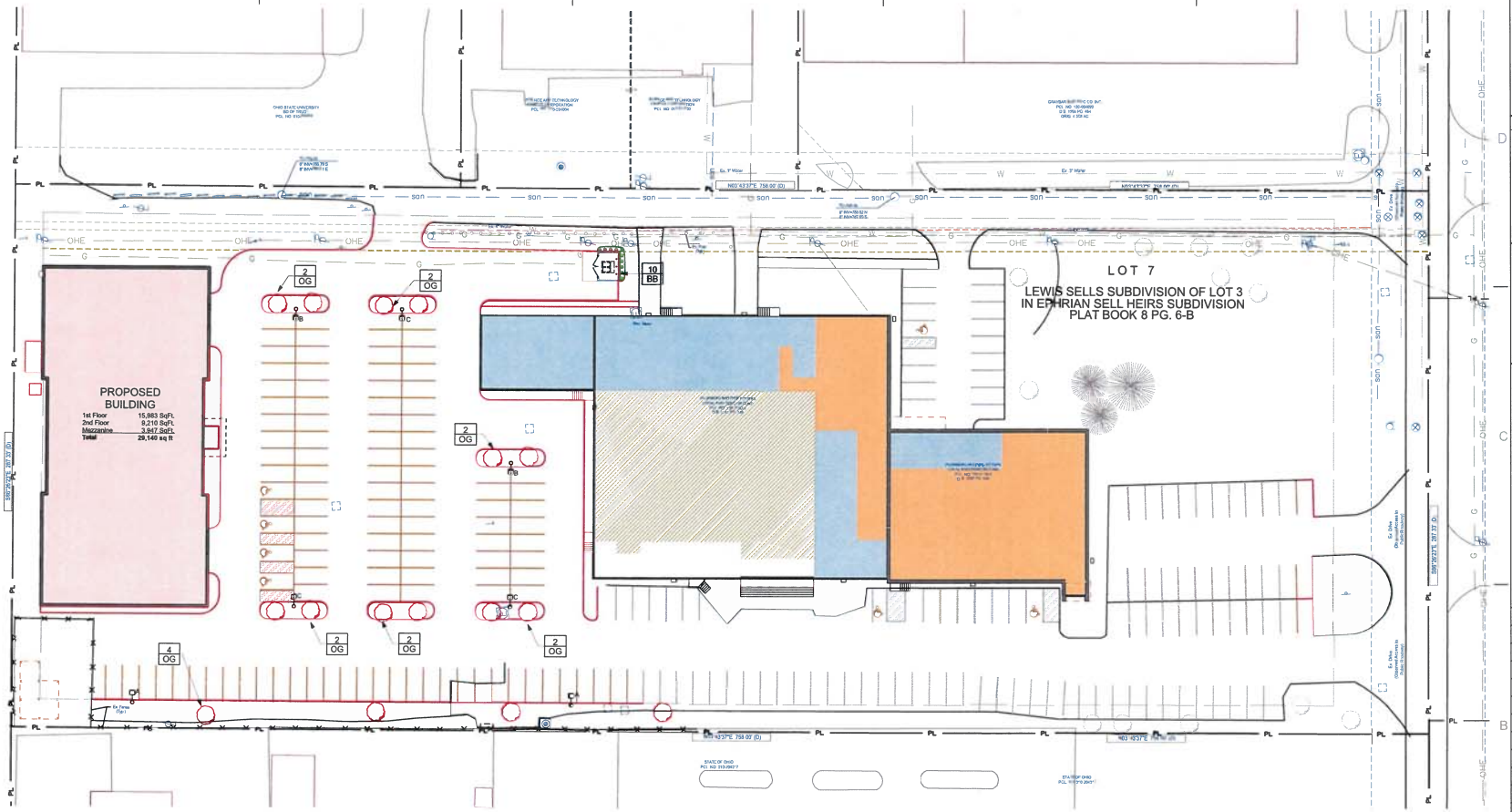
SHEET TITLE

PROPOSED BUILDING FLOOR PLAN



PROPOSED LANDSCAPE PLAN

SCALE: 1" = 30'

PLANT SCHEDULE

QTY	CODE	BOTANICAL NAME	COMMON NAME	PLANTING SIZE	SPACING
16	OG	Acer rubrum 'October Glory'	October Glory Red Maple	2 1/2" B&B	As shown
SHRUBS					
12	BB	Euonymus alata 'Compactus'	Compact Winged Burning Bush	36" B&B	5' O.C.

NOTE: See planting details this sheet and planting specifications for additional information.

PLANTING LEGEND

- Existing Evergreen Tree to remain
- Existing Deciduous Tree to remain
- Proposed Planting Bed
- Proposed Deciduous Shrub
- Proposed Deciduous Tree
- Proposed Evergreen Tree

LANDSCAPE GENERAL NOTES

1. Contractor shall notify the Columbus City & Franklin County Engineer's office, (2) two working days prior to construction. Prior to start, Contractor shall verify the locations of the existing utilities with the Owner and Tenant's construction representative and the utility companies. Ohio Utilities Protection Service: Phone 1-800-362-2764. Contractor to repair all damage to existing utilities, curbs, pavement, etc. resulting from landscape installation occurring during the construction.
2. Contractor shall verify the size and location of all site elements and immediately inform the Owner and Tenant's construction representative of any discrepancy between the drawings and/or specifications and actual conditions. No work shall be done in any area where there is a discrepancy without Owner and Tenant's construction representative approval.
3. Plant locations and beds shall be located by the Contractor and approved by the Owners representative prior to plant installation.
4. Bed lines are to be 18" from base of plant material unless otherwise indicated on the drawings.
5. Final grade topsoil to be seaded. Refer to Specifications Section 32 9219.

LANDSCAPE KEYNOTES

DIVISION 1 GENERAL REQUIREMENTS

1 See General Notes on Cover Sheet for additional information.
2 Refer to specifications for additional information

DIVISION 32 SITE CONSTRUCTION

32-1 Provide seed this area per specifications.
32-2 Reseed into existing undisturbed lawn area.
32-3 Provide mulch this area per specifications.

PARKING TREE DATA

Proposed parking spaces	270
Required Trees (1 Tree per 10 parking spaces)	27
Trees provided	29

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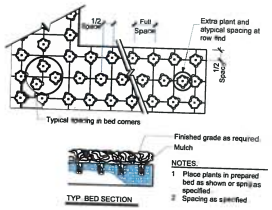
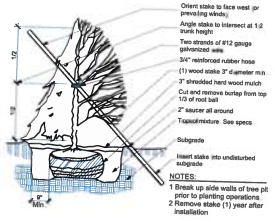
SHEET TITLE

PROPOSED LANDSCAPE PLAN

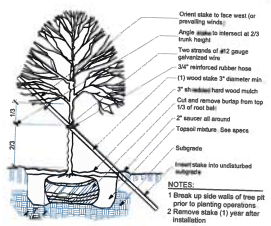
P:\15125.00 Plumbers and Pipefitters\0 Arch\CAD\00_MODEL\15125.00 PP-1250 Kinnear-2 story Zoning Resubmittal.dgn, 6/8/2016



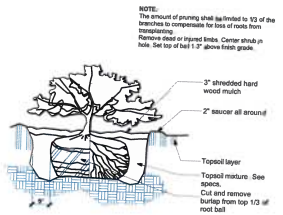
B5 SHRUB PLANTING LAYOUT
SCALE: 3/8" = 1'-0"



A3 EVERGREEN/ORNAMENTAL DETAIL
SCALE: 3/8" = 1'-0"



A4 DECIDUOUS PLANTING DETAIL
SCALE: 3/8" = 1'-0"



A5 SHRUB PLANTING DETAIL
SCALE: 3/8" = 1'-0"

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850 King Ave · Columbus, OH 43212
P 614.421.7774 F 614.421.2211

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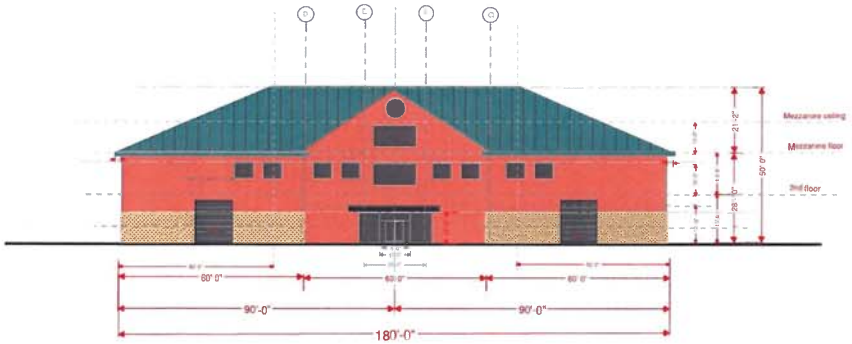
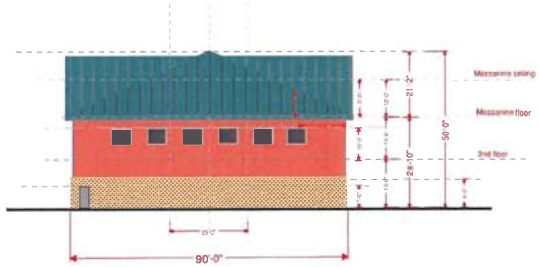
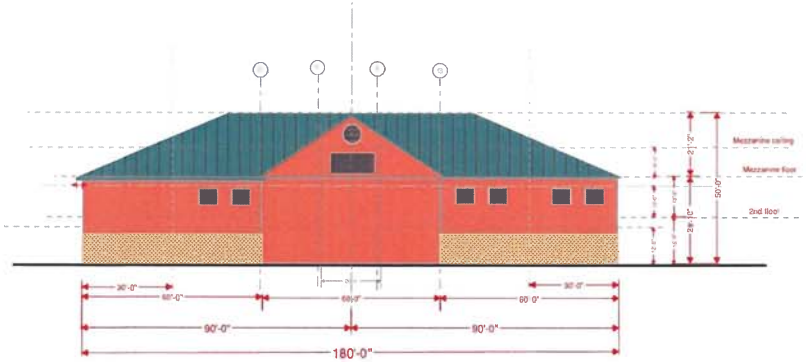
LANDSCAPE DETAILS



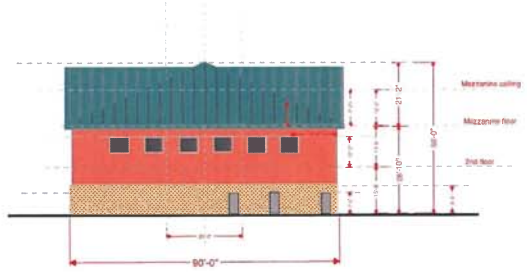
South Elevation-A
2 stories w/mezz.



East Elevation
2 stories w/mezz.



North Elevation
2 stories w/mezz.



West Elevation
2 stories w/mezz.

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SHEET TITLE

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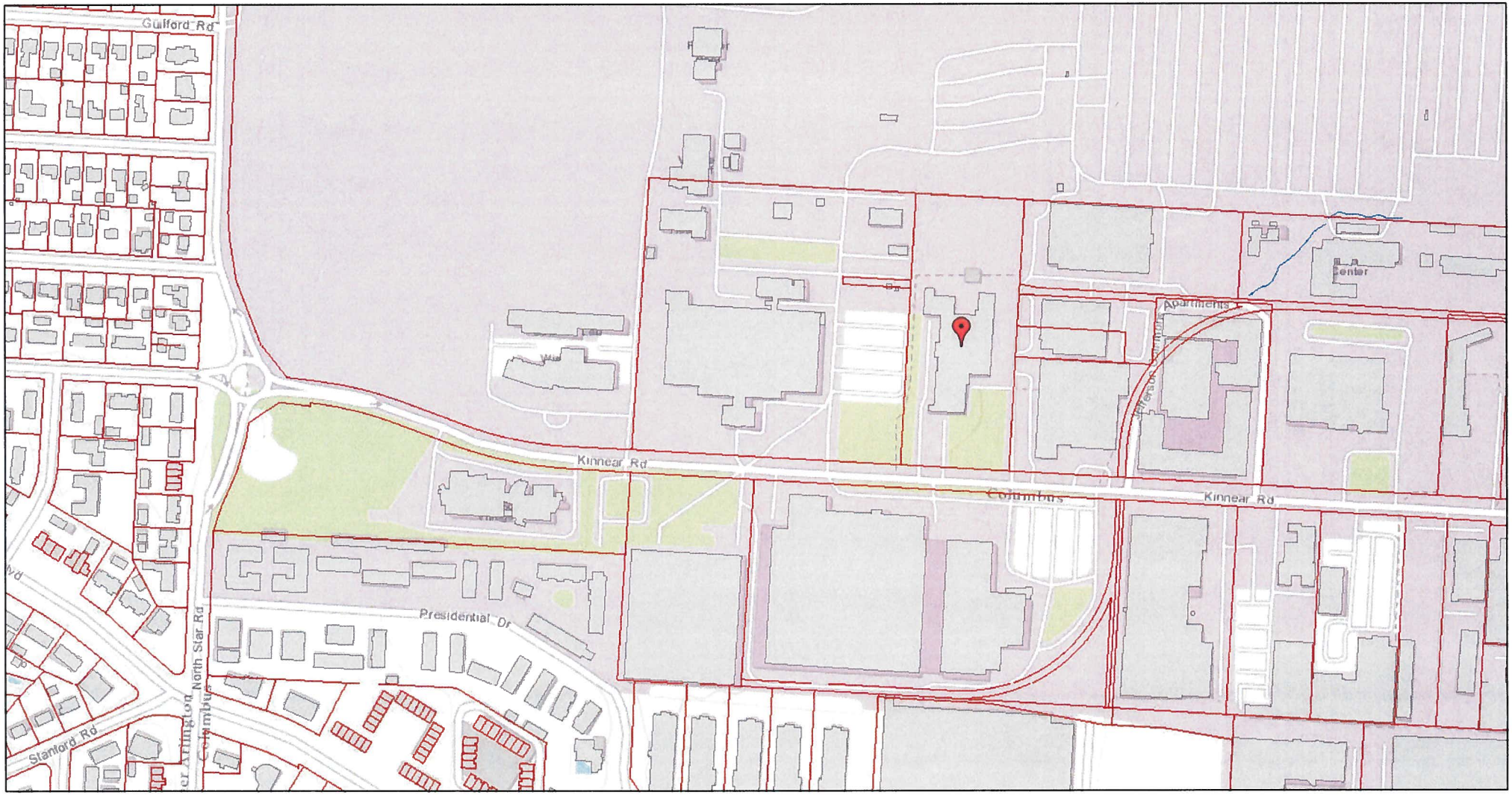

June 3, 2016

- Tax Parcel
- Railroads
- Creeks & Streams
- Building Footprints
- Waterbodies
- Education
- Government
- Health and Medical
- Public Attractions and Landmark Buildings

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Franklin County, OH

AP-2856

1:3,948

0 265 530 1,060 ft
0 80 160 320 m

FCA
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS

THE CITY OF
COLUMBUS
ANDREW J. GINTHER, MAYOR

DEPARTMENT OF
PUBLIC UTILITIES

910 Dublin Rd
Columbus, OH 43215-1169

Customer Service Inquiries
Monday-Friday 7:00 AM - 6:00 PM
(614) 645-8276
http://utilities.columbus.gov/

20103

Account Summary	SEWER and WATER	
Account Number	238700-1123712	
Customer Name	PLUMBER PIPEFITTERS UNION LOCAL 189	
Service Address	1250 KINNEAR RD	
Service Period	04/05/2016 to 05/05/2016	
Bill Date	05/14/2016	
Previous Balance		$430.62
Payment Received		$430.62
Balance Forward		$0.00
New Charges Due	**06/11/2016**	**$399.17**
Total Amount Due		**$399.17**

New charges due 06/11/2016. A 10% penalty may be added if not paid by this date. This date does not extend the due date for any past due billing charges.

Messages

Consumer Alert: Please protect yourself from utility scams. Always request to see a city ID and/or call Customer Service at 645-8276 to verify information. When making payments, be sure to use the authorized city locations/options as stated on your bill.

Meter Reading Details

Service Period 04/05/2016 to 05/05/2016 — 30 Days

Service Type	Meter Serial Number	Current Reading	*	Previous Reading	Mult.	Usage	Units
WCM2	13028255	69.4	A	48.5	1	20.9	CCF

Detail of New Charges

WTR SERV NON CONTRCT		$87.45
WATER USAGE	15.000 CCF @ 5.0100000	$75.15
WATER USAGE	5.900 CCF @ 4.3050000	$25.40
SEWER SERV CHARGE		$11.75
SEWER USAGE	20.900 CCF @ 4.4000000	$91.96
CLEAN RIVER FUND	46.000 ERU	$89.70
SEWER SURCHARGE		$12.33
SEWER CNTY MAINT CHG	20.900 CCF @ 0.2600000	$5.43