Malarkey IND
Stormwater Management

3540 Essex Drive
Franklin, Indiana

Drainage Report

Prepared For:
Cooper & Associates
2200 Ellis Drive
New Lenox, IL 60451

Prepared By:
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Original: July 11th, 2024

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1.0. Project Summary

Project Name:	Malarkey IND
Location:	3540 Essex Drive, Franklin, Johnson County, Indiana
Type:	Drainage Report
Reviewing Agency:	City of Franklin & Johnson County
Detention Policy:	City of Franklin & Johnson County
Water Quality:	City of Franklin & Johnson County
Water Quantity Modeling:	HydroCAD with SCS Type II & Indianapolis Huff Distribution
Storm Sewer Modeling:	N/A (Future)

Design:

Water Quantity:	Wet Detention Basin
Water Quality:	Wet Detention Basin
Receiving Body:	Graham Arm

2.0. Introduction

Kimley-Horn and Associates, Inc. has been retained by Cooper & Associates LLC to prepare construction documents and provide civil engineering services for the proposed industrial development for Malarkey Roofing Product as the Owner and end user (Project). The Project includes the development of approximately 138 acres of agricultural land to the north and west of Essex Drive in Franklin, Indiana. The project includes the planned construction of an approximately 353,300 SF industrial building with associated drives, parking, rail spur and substantial outdoor product storing spaces. The project also includes a 4,110 LF roadway extension of Essex Drive, connecting to Paul Hand Blvd. The extension will become the east frontage of the Malarkey site and will include sanitary sewer and water main extensions along with three entrances. It is anticipated that this private road will ultimately be shared as the lots to the east develop. 90' right of way will be dedicated to the City for Essex Drive. Utility services will be brought from extended infrastructure off Essex Drive and Paul Hand Blvd where applicable. Stormwater detention and quality measures will be provided in the form of a wet detention pond at the south of the site. The project will be broken down into two phases. The first being the mass grading and pond excavation. The second being the final buildout and Essex Drive extension.

This Drainage Report focuses on the mass grading phase while master planning for the fully developed condition. The design will incorporate the existing and planned proposed conditions onsite and offsite and provide supporting calculations for storm sewer, detention basin, and stormwater quality best management practice (BMP) sizing based on the *City of Franklin Stormwater Management Ordinance* and *Johnson County Stormwater Technical Standards Manual (Version 1.0 - 2023)* whichever is more stringent.

3.0. Existing Conditions

The existing site is currently undeveloped and is used for agricultural purposes. The adjacent property to the north, east and west are similar in nature. The property to the south is an existing industrial complex. The 138-acre tract of property is generally divided into three different drainage directions although all ultimately end into the same receiving body of water, Graham Arm. The main portion (114.95 acres) drains toward an on-site ephemeral drainage feature up the middle going N-S toward the existing patch of trees that is apparent isolated wetlands. The second basin is a small portion (5.64 acres) at the northwest corner of the parcel that drains directly into Graham Arm regulated drain via an existing 24" culvert under the railroad tracks. The remaining portion (13.66 acres) along the east of the site drain east into Canary Ditch. In addition, there is a substantial offsite area (68.82 acres) entering the site from the north via a 12" CMP culvert under Paul Hand Blvd. Refer to **Appendix D** for the Existing Drainage Map.

Aerial Photograph

An aerial photograph of the Project Site has been included in **Appendix A** for reference.

FEMA

The Project Site is located on the Flood Insurance Rate Map number 18081C0139E (dated 1/29/2021)and 18081C0137D (date 8/2/2007) concluded that the site lies in Zone X which is the area of minimal flood hazard and outside the 100-Yr Flood Hazard zones. See **Appendix B** for the FEMA FIRMette.

Soil Characteristics

The Natural Resources Conservation Service (NRCS) Web Soil Survey of Johnson County, Indiana, indicates Brookston silty clay loam and Crosby silt loam on site. A soil map can be found in **Appendix C.**

4.0. Proposed Conditions

General Storm Routing & Provided Detention

During Phase 2, it is anticipated that the proposed building, associated pavement areas, rail spurs, and Essex Drive extension will be constructed on the 138 AC+/- site. A part of the paved area will be deferred for future construction/expansion. However, the entire site in fully developed condition will be assumed for the stormwater management design. A set of interconnected wet and extended dry detention ponds will be designed to provide adequate detention for the developed site including Essex Drive to its full buildout condition while also adequately conveying off-site drainage from the north. For the mass grading phase, the proposed ponds will be located to the east of the proposed site, excavated in their entirety. An exception to this is the ponds will be connected via interim swales to eventually be filled in and replaced with culverts during final buildout. The outfall point for the pond will be located to the southwest of the south wet pond. The outfall will route detained discharge from the pond to the existing Graham Arm along the west property line, east of the rail right of way. In the interim condition, the site will overland drain via sheet flow to the closest available pond. During final buildout, proposed storm sewers will be designed to collect surface and roof runoff and route it to the said pond. Said design will be

presented with the drainage memorandum to be developed by Phase 2 along with final calculations of the basins to confirm master planned assumptions. Refer to **Appendix E** for the Proposed Drainage Map.

Proposed Hydrology

HydroCAD was utilized to size the detention ponds. HydroCAD utilizes areas, runoff curve numbers, times of concentration and rainfall data to calculate runoff hydrographs utilizing the NRCS TR-55 methodology. There are two applicable stormwater ordinances to design to, therefore presented respectively.

Per the *City of Franklin Stormwater Management Ordinance*, utilizing the Huff distribution, the storm water detention design shall outlet storm water at a 2-year pre-development rainfall event rate for a 10-year post-development storm and shall outlet at a 10-year pre-development rainfall event rate for a 100-year post-development storm. Utilizing the 114.95 acres onsite contributing basin, curve number CN of 74 (Pasture/Grassland/Range, Good condition) and calculated time concentration (Tc) of 140.36 minutes. The allowable release rates are 12.28 cfs and 25.42 cfs for the 10-year and 100-year storms respectively.

Per Johnson County's *Stormwater Technical Standards Manual*, utilizing the SCS Type II rainfall distribution, the storm water detention designs shall outlet storm water at 0.1 and 0.3 cfs per acre of development area for 10-year and 100-year post-development rainfall respectively. At 114.95 acres, the allowable release rates set by the County are 11.49 cfs and 34.48 cfs as the allowable release rates.

As presented above in addition to the use of SCS Type II vs Huff rainfall distribution, this concludes that both set of ordinances are more stringent than each other in certain ways therefore the need to present both results. Since the south pond will outfall directly into the existing ditch at or less than the current condition, there will be no downstream restrictions to consider, therefore the allowable release rates will not be reduced.

The interconnected proposed detention ponds for this project have been sized to provide rate control for the entire 138-acre developments of the project site including Essex Drive. In addition, the ponds have been oversized to accommodate 68.82 AC of offsite runoff in current condition from the north to bypass through the pond until that area is developed and assumingly their own detention pond is provided. A composite curve number of 95 was assumed for all of the on-site basins, 92 for the ROW area and 74 for the undeveloped off-site drainage area.

The normal pools of each pond were set to ensure positive drainage to their respective outfall. The south pond was set to ensure positive drainage to be at or above Graham Arm's active channel by having the outgoing pipe's crown at or above the existing shelf. The ultimate release rate from the south pond will be controlled by two orifices. The invert of the first, 17" diameter, orifice will be set at the normal pool elevation of 771.50. The invert of the second orifice, one 40"Wx24H" rectangular, will be set the elevation of 774.25. The table below summarizes the water surface elevations and release rates for the pond. Refer to **Appendix F** for detailed HydroCAD calculations.

Summary of Wet Pond 1 (South) Performance without Off-site Bypass

Wet Pond 1 (South)	Peak 10-YR Release Rate (cfs)	Peak 10-YR Water Surface Elevation	Peak 100-YR Release Rate (cfs)	Peak 100-YR Water Surface Elevation	T/Berm
Allowable (City)	12.28	N/A	25.42	N/A	2' Freeboard
Allowable (County)	11.49	N/A	34.48	N/A	1' Freeboard
SCS Type 2 Distribution	10.98	774.28	**25.10**	**775.31**	778.00
Huff Distribution (Highest of 24Hr, 1Q, 2Q, 3Q)	**10.99**	**774.28**	24.05	775.26	778.00

Summary of Wet Pond 1 (South) Performance with Off-site Bypass

Wet Pond 1 (South)	Peak 10-YR Release Rate (cfs)	Peak 10-YR Water Surface Elevation	Peak 100-YR Release Rate (cfs)	Peak 100-YR Water Surface Elevation	T/Berm
SCS Type 2 Distribution	**21.60**	**775.12**	**48.06**	**776.37**	778.00
Huff Distribution (Highest of 24Hr, 1Q, 2Q, 3Q)	21.53	775.11	44.46	776.21	778.00

The emergency overflow weir was designed using 1.25 times the maximum flow into the pond. As seen in **Appendix F** of this report, the highest peak 100-Yr flow without offsite into the pond is 416 CFS resulting in the design flow rate for the overflow weir to be 520 cfs. A 475-ft wide trapezoidal weir and 6" height was modeled with a 3:1 side slope on both sides to the west, toward Graham Arm. The spillway is designed to be set at 775.5. The resulting maximum overflow elevation is 776.00. The top of bank is set at 778.00 in order to provide the minimum required two feet of freeboard above the top of spillway elevation. The top casting of the outlet control structure will be set at 775.33 in order to act in clogging situations as well as gradually convey the interim off-site runoff prior to the emergency spillway elevation. This is done to avoid affecting the downstream condition of Graham Arm with a really large spillway width. All building foundations are set to a minimum 2.0-ft above the overflow elevation. Weir calculations can be found shown in **Appendix F.**

Proposed Hydraulics

The drainage report of the final buildout will present the hydraulic calculations for all on-site storm sewer It will be required that all of the HGL of the 10-yr storm be kept below the proposed rim elevations of each structure. Rainfall intensities and 'c' values to be taken from the *City of Franklin Stormwater Management Ordinance*. The storm sewers are to be designed to maintain a minimum full flow velocity of 2.5 ft/s. The outfall pipe was sized to the highest resulting peak release rate out of the south pond which is 48.06 with offsite. See **Appendix G** for calculations.

Stormwater Quality

Stormwater quality treatment for the project site will be accomplished by routing onsite flow through the proposed detention pond. According to the City of Franklin Subdivisions Standards, "The developer shall be required to provide a water quality detention system that is designed to detain, for over 24 hours after peak run-off from a 24-hour storm, at least 20% of the run-off from either a 1-1/4 inch storm or ½ inch of direct runoff, whichever is greater." With this condition, it is required that the pond have a water quality design volume of 57,896 cubic-feet. It was determined that the available stormwater quality volume is 2,583,071 cubic-feet. See below for detailed calculations and **Appendix H** for HydroCAD outputs.

Scenario 1: South Pond area = 492,794 SF x ½" / 12"/Ft = 20,533 CF
Scenario 2: Highest WQV event per HydroCAD = 289,482 CF (0.17 Hr) x 0.20 = **57,896 CF**

Total Detention Volume = 2,872,553 CF

2,872,553 CF – 289,482 CF = 2,583,071 CF available.

5.0 Appendices

Appendix A: Aerial Photograph

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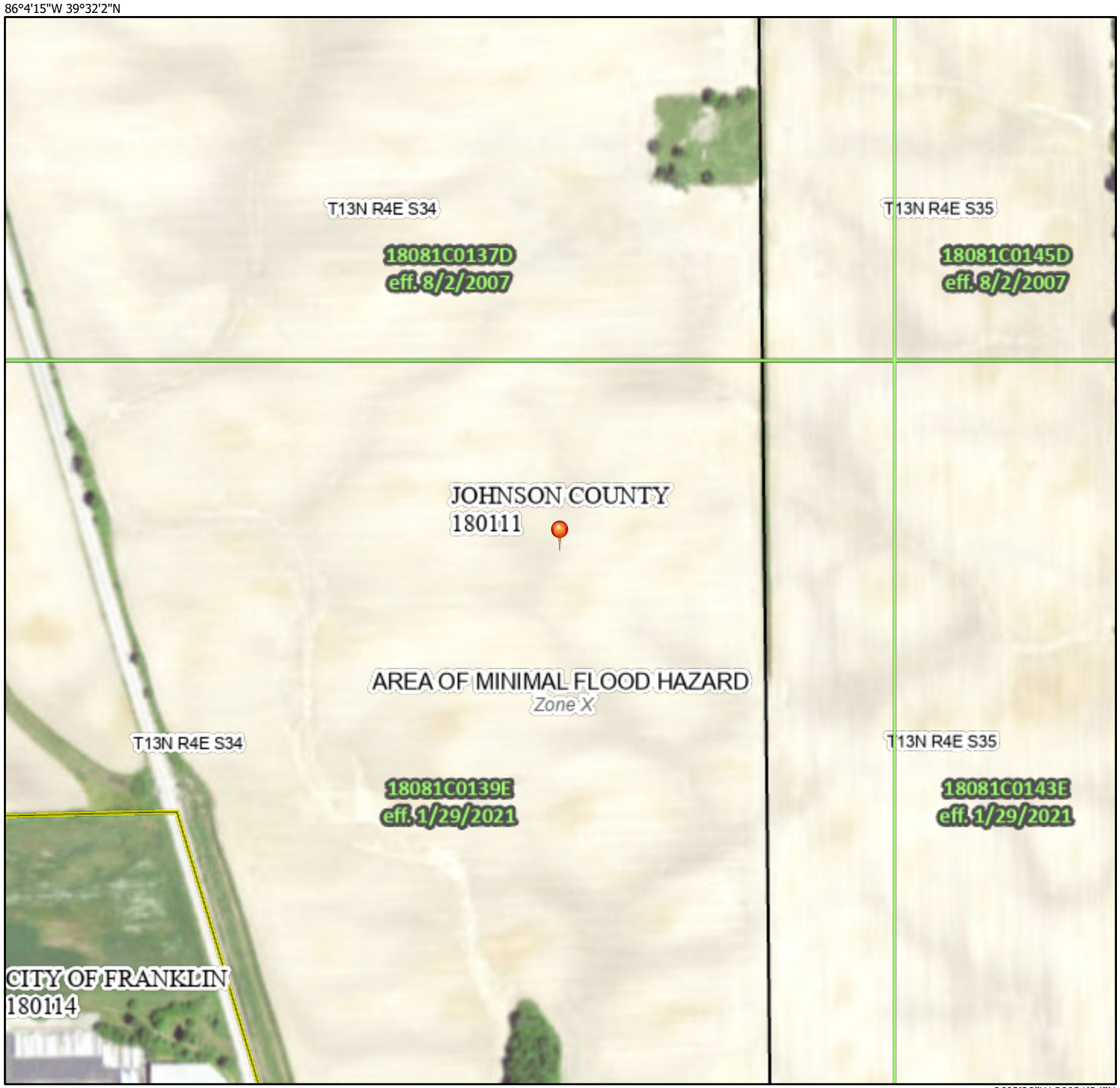
E 400 N
County Rd 400 N
Project Site
Bearing Dr
Graham Ditch
Sloan Dr
Bearing Dr
Essex Dr
E County Rd 300 N

Appendix B: FEMA Flood Insurance Rate Map

National Flood Hazard Layer FIRMette

FEMA



0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/30/2024 at 4:15 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Appendix C: Soil Map


86° 4' 25" W
86° 3' 26" W
39° 32' 17" N
39° 31' 17" N
579700
579900
580100
580300
580500
580700
580900
4376900
4376700
4376500
4376300
4376100
4375900
4375700
4375500
4375300
4375100
CsB2
Br
CrA
MnB2
MtC3
YclA
YbvA
Bearing Dr
Map Scale: 1:9,010 if printed on A portrait (8.5" x 11") sheet.
N
Meters
0
100
200
400
600
Feet
0
400
800
1600
2400
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

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

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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

Soil Survey Area: Johnson County, Indiana
Survey Area Data: Version 31, Sep 1, 2023

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

Date(s) aerial images were photographed: Jun 15, 2022—Jun 21, 2022

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Br	Brookston silty clay loam, 0 to 2 percent slopes	B/D	143.0	47.7%
CrA	Crosby silt loam, fine-loamy subsoil, 0 to 2 percent slopes	C/D	118.3	39.4%
CsB2	Crosby-Miami silt loams, 2 to 4 percent slopes, eroded	C/D	10.8	3.6%
MnB2	Miami silt loam, 2 to 6 percent slopes, eroded	C	15.0	5.0%
MtC3	Miami clay loam, 6 to 12 percent slopes, severely eroded	C	3.1	1.0%
YbvA	Brookston silty clay loam-Urban land complex, 0 to 2 percent slopes	B/D	0.0	0.0%
YclA	Crosby silt loam, fine-loamy subsoil-Urban land complex, 0 to 2 percent slopes	C/D	9.7	3.2%
Totals for Area of Interest			**300.1**	**100.0%**

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Appendix D: Existing Conditions Map

NOTES:
1. 2' & 10' CONTOUR INTERVALS SHOWN FOR CLARITY
2. OFF-SITE CONTOURS/ACREAGE ARE FROM LIDAR RECORDS

EX RAILROAD R/W

ON-SITE FLOW PATH 5,240 LF
TIME OF CONCENTRATION
141.1 MINUTES

EX BASIN (OFF-SITE-TO 24" CMP)
5.64 AC

GRAHAM ARM OPEN DRAIN
(REGULATED DRAIN)

EX. OFF-SITE ENTRY
(THROUGH EX. 12" CULVERT)

OFF-SITE FLOW PATH 2,504 LF
TIME OF CONCENTRATION
63.9 MINUTES

EX BASIN (ON-SITE)
114.95 AC
CN 74

EX BASIN (OFF-SITE UPSTREAM)
68.82 AC
CN 88

EX BASIN (OFFSITE TO CANARY DITCH)
13.67 AC

ESSEX DRIVE

26.97'

PAUL HAND BLVD / 400 N

EX. ON-SITE DISCHARGE POINT
(DOWNSTREAM THROUGH WETLANDS/UNNAMED OFF-SITE TRIBUTARY, ULTIMATELY TO GRAHAM ARM)

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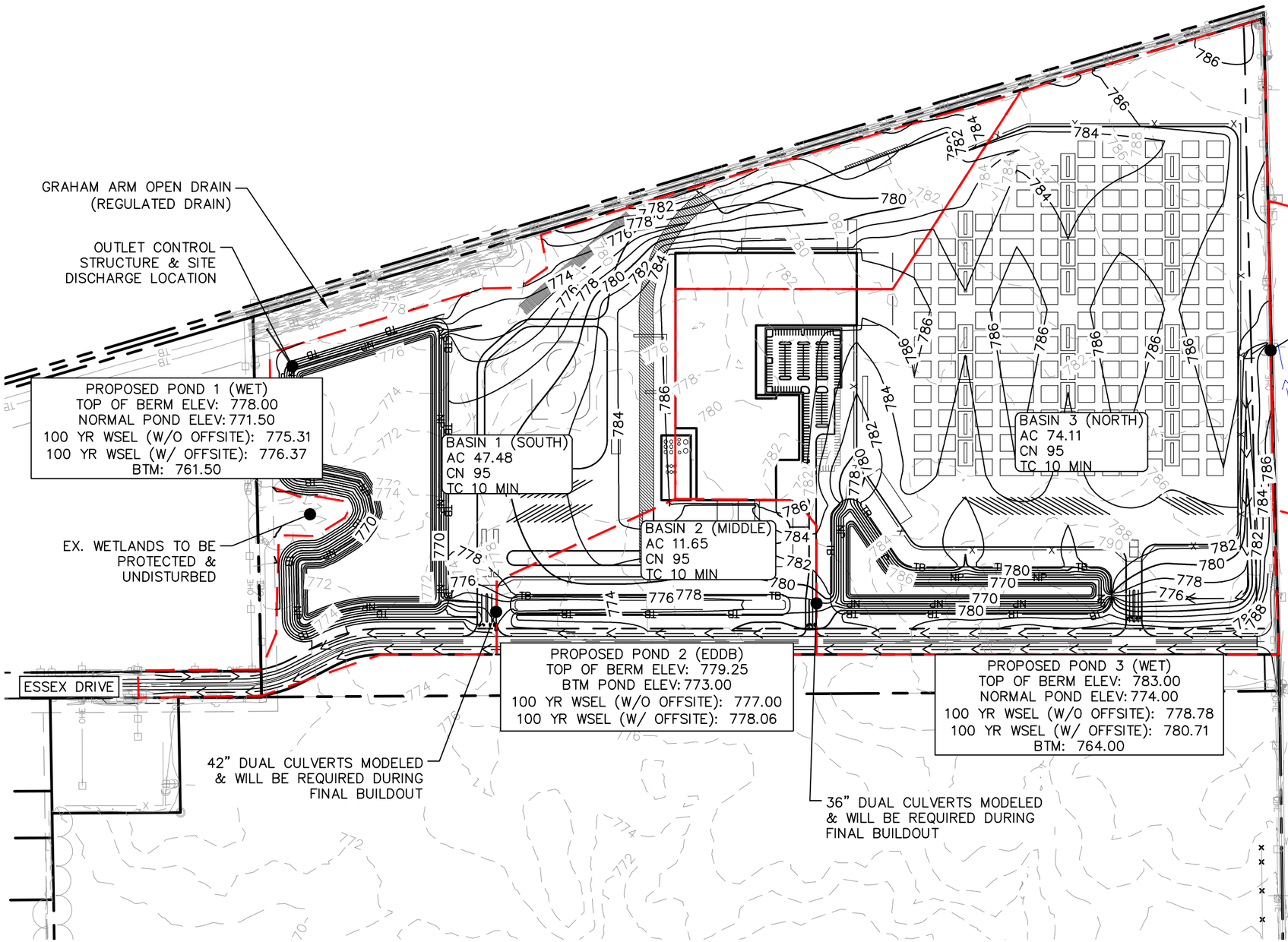
MALARKEY IND

EXISTING DRAINAGE AREA MAP
FRANKLIN, INDIANA
July 1, 2024

0' 200' 400'
SCALE: 1" = 400'
NORTH

Appendix E: Proposed Drainage Map

NOTES:
1. SCHEMATIC SITE LAYOUT IS SHOWN FOR DRAINAGE MASTER PLANNING PURPOSES ONLY. FINAL LAYOUT IS SUBJECT TO CHANGE.
2. PROPOSED GRADING CONTOURS SHOWN ARE FOR MASS GRADING PURPOSES. IT IS THE INTENTION TO REPLACE INTERIM SWALES CONNECTING PONDS WITH EQUALIZING CULVERTS PROPERLY SIZED TO CONVEY DRAINAGE AS PRESENT IN THIS DRAINAGE REPORT.
3. 2' & 10' CONTOUR INTERVALS SHOWN FOR CLARITY
4. OFF-SITE CONTOURS/ACREAGE ARE FROM LIDAR RECORDS



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MALARKEY IND

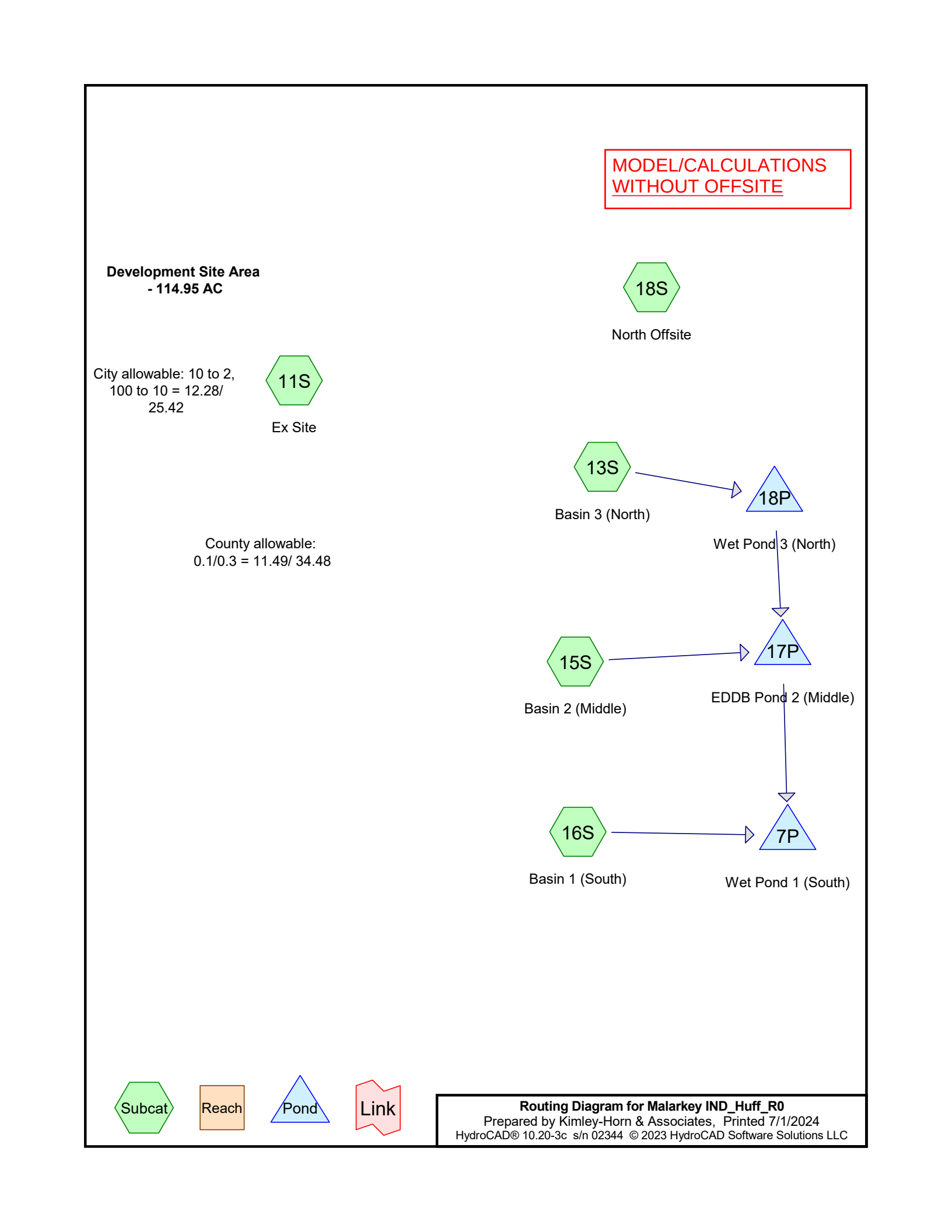
PROPOSED DRAINAGE AREA MAP
FRANKLIN, INDIANA
July 1, 2024

0' 200' 400'
SCALE: 1" = 400'
NORTH

Appendix F: Detention Basin Calculations

MODEL/CALCULATIONS
WITHOUT OFFSITE

Development Site Area
- 114.95 AC



Routing Diagram for Malarkey IND_Huff_R0
Prepared by Kimley-Horn & Associates, Printed 7/1/2024

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	002yr-0.17hr	Indy Huff	1st Quartile	Scale	0.17	1	0.69	2
2	002yr-0.25hr	Indy Huff	1st Quartile	Scale	0.25	1	0.85	2
3	002yr-0.50hr	Indy Huff	1st Quartile	Scale	0.50	1	1.13	2
4	002yr-01hr	Indy Huff	1st Quartile	Scale	1.00	1	1.39	2
5	002yr-02hr	Indy Huff	1st Quartile	Scale	2.00	1	1.62	2
6	002yr-03hr	Indy Huff	1st Quartile	Scale	3.00	1	1.72	2
7	002yr-06hr	Indy Huff	1st Quartile	Scale	6.00	1	2.05	2
8	002yr-12hr	Indy Huff	2nd Quartile	Scale	12.00	1	2.45	2
9	002yr-24hr	Indy Huff	3rd Quartile	Scale	24.00	1	2.92	2
10	10 Yr-SCS 24Hr	Type II 24-Hr		Default	24.00	1	4.10	2
11	010yr-0.17hr	Indy Huff	1st Quartile	Scale	0.17	1	0.93	2
12	010yr-0.25hr	Indy Huff	1st Quartile	Scale	0.25	1	1.14	2
13	010yr-0.50hr	Indy Huff	1st Quartile	Scale	0.50	1	1.59	2
14	010yr-01hr	Indy Huff	1st Quartile	Scale	1.00	1	2.02	2
15	010yr-02hr	Indy Huff	1st Quartile	Scale	2.00	1	2.37	2
16	010yr-03hr	Indy Huff	1st Quartile	Scale	3.00	1	2.53	2
17	010yr-06hr	Indy Huff	1st Quartile	Scale	6.00	1	3.03	2
18	010yr-12hr	Indy Huff	2nd Quartile	Scale	12.00	1	3.52	2
19	010yr-24hr	Indy Huff	3rd Quartile	Scale	24.00	1	4.08	2
20	100 Yr-SCS 24Hr	Type II 24-Hr		Default	24.00	1	5.91	2
21	100yr-0.17hr	Indy Huff	1st Quartile	Scale	0.17	1	1.25	2
22	100yr-0.25hr	Indy Huff	1st Quartile	Scale	0.25	1	1.56	2
23	100yr-0.50hr	Indy Huff	1st Quartile	Scale	0.50	1	2.25	2
24	100yr-01hr	Indy Huff	1st Quartile	Scale	1.00	1	3.01	2
25	100yr-02hr	Indy Huff	1st Quartile	Scale	2.00	1	2.65	2
26	100yr-03hr	Indy Huff	1st Quartile	Scale	3.00	1	3.94	2
27	100yr-06hr	Indy Huff	1st Quartile	Scale	6.00	1	4.78	2
28	100yr-12hr	Indy Huff	2nd Quartile	Scale	12.00	1	5.37	2
29	100yr-24hr	Indy Huff	3rd Quartile	Scale	24.00	1	5.91	2
30	WQV-0.17hr	Indy Huff	1st Quartile	Scale	0.17	1	1.25	2
31	WQV-0.25hr	Indy Huff	1st Quartile	Scale	0.25	1	1.25	2
32	WQV-0.50hr	Indy Huff	1st Quartile	Scale	0.50	1	1.25	2
33	WQV-01hr	Indy Huff	1st Quartile	Scale	1.00	1	1.25	2
34	WQV-02hr	Indy Huff	1st Quartile	Scale	2.00	1	1.25	2
35	WQV-03hr	Indy Huff	1st Quartile	Scale	3.00	1	1.25	2
36	WQV-06hr	Indy Huff	1st Quartile	Scale	6.00	1	1.25	2
37	WQV-12hr	Indy Huff	2nd Quartile	Scale	12.00	1	1.25	2
38	WQV-24hr	Indy Huff	3rd Quartile	Scale	24.00	1	1.25	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
133.238	95	(13S, 15S, 16S)
114.950	74	Pasture/grassland/range, Good, HSG C (11S)
68.815	88	Row crops, straight row, Poor, HSG C (18S)
317.003	**86**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
183.765	HSG C	11S, 18S
0.000	HSG D	
133.238	Other	13S, 15S, 16S
317.003		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	133.238	133.238		13S, 15S, 16S
0.000	0.000	114.950	0.000	0.000	114.950	Pasture/grassland/range, Good	11S
0.000	0.000	68.815	0.000	0.000	68.815	Row crops, straight row, Poor	18S
0.000	**0.000**	**183.765**	**0.000**	**133.238**	**317.003**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	17P	773.00	771.50	810.0	0.0019	0.013	0.0	42.0	0.0	
2	18P	774.00	773.00	211.0	0.0047	0.013	0.0	36.0	0.0	

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 11S: Ex Site Runoff Area=114.950 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=5,240' Tc=141.1 min CN=74 Runoff=0.00 cfs 0.000 af

Subcatchment 13S: Basin 3 (North) Runoff Area=74.111 ac 0.00% Impervious Runoff Depth=0.31"
Tc=10.0 min CN=95 Runoff=115.53 cfs 1.901 af

Subcatchment 15S: Basin 2 (Middle) Runoff Area=11.651 ac 0.00% Impervious Runoff Depth=0.31"
Tc=10.0 min CN=95 Runoff=18.16 cfs 0.299 af

Subcatchment 16S: Basin 1 (South) Runoff Area=47.476 ac 0.00% Impervious Runoff Depth=0.31"
Tc=10.0 min CN=95 Runoff=74.01 cfs 1.218 af

Subcatchment 18S: North Offsite Runoff Area=68.815 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=2,504' Tc=63.9 min CN=88 Runoff=7.07 cfs 0.561 af

Pond 7P: Wet Pond 1 (South) Peak Elev=771.78' Storage=113,442 cf Inflow=77.32 cfs 3.260 af
Outflow=0.39 cfs 1.257 af

Pond 17P: EDDB Pond 2 (Middle) Peak Elev=773.90' Storage=9,785 cf Inflow=19.26 cfs 2.044 af
42.0" Round Culvert x 2.00 n=0.013 L=810.0' S=0.0019 '/' Outflow=7.23 cfs 2.042 af

Pond 18P: Wet Pond 3 (North) Peak Elev=774.68' Storage=1.793 af Inflow=115.53 cfs 1.901 af
36.0" Round Culvert x 2.00 n=0.013 L=211.0' S=0.0047 '/' Outflow=4.60 cfs 1.745 af

Total Runoff Area = 317.003 ac Runoff Volume = 3.978 af Average Runoff Depth = 0.15"
100.00% Pervious = 317.003 ac 0.00% Impervious = 0.000 ac

Events for Subcatchment 11S: Ex Site

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
002yr-0.17hr	0.69	0.00	0.000	0.00
002yr-0.25hr	0.85	0.33	0.057	0.01
002yr-0.50hr	1.13	2.54	0.444	0.05
002yr-01hr	1.39	6.05	1.077	0.11
002yr-02hr	1.62	9.37	1.819	0.19
002yr-03hr	1.72	9.85	2.188	0.23
002yr-06hr	2.05	9.98	3.577	0.37
002yr-12hr	2.45	9.91	5.559	0.58
002yr-24hr	2.92	12.28	8.218	0.86
10 Yr-SCS 24Hr	4.10	50.99	15.998	1.67
010yr-0.17hr	0.93	0.76	0.132	0.01
010yr-0.25hr	1.14	2.68	0.464	0.05
010yr-0.50hr	1.59	9.79	1.714	0.18
010yr-01hr	2.02	19.19	3.441	0.36
010yr-02hr	2.37	25.42	5.140	0.54
010yr-03hr	2.53	24.96	5.989	0.63
010yr-06hr	3.03	21.74	8.883	0.93
010yr-12hr	3.52	21.84	12.010	1.25
010yr-24hr	4.08	22.56	15.856	1.66
100 Yr-SCS 24Hr	**5.91**	**98.87**	**29.785**	**3.11**
100yr-0.17hr	1.25	4.08	0.707	0.07
100yr-0.25hr	1.56	9.30	1.611	0.17
100yr-0.50hr	2.25	25.88	4.532	0.47
100yr-01hr	3.01	48.36	8.761	0.91
100yr-02hr	2.65	32.68	6.652	0.69
100yr-03hr	3.94	58.75	14.871	1.55
100yr-06hr	4.78	47.15	20.979	2.19
100yr-12hr	5.37	46.75	25.507	2.66
100yr-24hr	5.91	40.28	29.785	3.11
WQV-0.17hr	1.25	4.08	0.707	0.07
WQV-0.25hr	1.25	4.08	0.707	0.07
WQV-0.50hr	1.25	4.04	0.707	0.07
WQV-01hr	1.25	3.98	0.707	0.07
WQV-02hr	1.25	3.79	0.707	0.07
WQV-03hr	1.25	3.48	0.707	0.07
WQV-06hr	1.25	2.57	0.707	0.07
WQV-12hr	1.25	1.54	0.707	0.07
WQV-24hr	1.25	1.20	0.707	0.07

10 YR POST ALLOWABLE RELEASE, PER CITY OF FRANKLIN STORMWATER MANAGEMENT ORDINANCE

100 YR POST ALLOWABLE RELEASE, PER CITY OF FRANKLIN STORMWATER MANAGEMENT ORDINANCE

Events for Subcatchment 13S: Basin 3 (North)

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
002yr-0.17hr	0.69	115.53	1.901	0.31
002yr-0.25hr	0.85	129.97	2.695	0.44
002yr-0.50hr	1.13	125.94	4.181	0.68
002yr-01hr	1.39	113.79	5.629	0.91
002yr-02hr	1.62	81.37	6.943	1.12
002yr-03hr	1.72	61.32	7.521	1.22
002yr-06hr	2.05	40.32	9.452	1.53
002yr-12hr	2.45	23.43	11.826	1.91
002yr-24hr	2.92	17.64	14.645	2.37
10 Yr-SCS 24Hr	4.10	361.52	21.799	3.53
010yr-0.17hr	0.93	187.73	3.109	0.50
010yr-0.25hr	1.14	201.69	4.236	0.69
010yr-0.50hr	1.59	217.72	6.770	1.10
010yr-01hr	2.02	195.02	9.276	1.50
010yr-02hr	2.37	138.21	11.349	1.84
010yr-03hr	2.53	104.05	12.304	1.99
010yr-06hr	3.03	67.23	15.308	2.48
010yr-12hr	3.52	35.61	18.273	2.96
010yr-24hr	4.08	25.46	21.677	3.51
100 Yr-SCS 24Hr	**5.91**	**532.34**	32.869	5.32
100yr-0.17hr	1.25	290.94	4.843	0.78
100yr-0.25hr	1.56	312.23	6.597	1.07
100yr-0.50hr	2.25	353.19	10.636	1.72
100yr-01hr	3.01	330.96	15.188	2.46
100yr-02hr	2.65	159.89	13.023	2.11
100yr-03hr	3.94	180.17	20.825	3.37
100yr-06hr	4.78	115.46	25.949	4.20
100yr-12hr	5.37	56.54	29.560	4.79
100yr-24hr	5.91	37.69	**32.869**	**5.32**
WQV-0.17hr	1.25	290.94	4.843	0.78
WQV-0.25hr	1.25	230.02	4.843	0.78
WQV-0.50hr	1.25	147.68	4.843	0.78
WQV-01hr	1.25	96.58	4.843	0.78
WQV-02hr	1.25	54.92	4.843	0.78
WQV-03hr	1.25	37.85	4.843	0.78
WQV-06hr	1.25	19.37	4.843	0.78
WQV-12hr	1.25	9.79	4.843	0.78
WQV-24hr	1.25	6.54	4.843	0.78

Events for Subcatchment 15S: Basin 2 (Middle)

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
002yr-0.17hr	0.69	18.16	0.299	0.31
002yr-0.25hr	0.85	20.43	0.424	0.44
002yr-0.50hr	1.13	19.80	0.657	0.68
002yr-01hr	1.39	17.89	0.885	0.91
002yr-02hr	1.62	12.79	1.091	1.12
002yr-03hr	1.72	9.64	1.182	1.22
002yr-06hr	2.05	6.34	1.486	1.53
002yr-12hr	2.45	3.68	1.859	1.91
002yr-24hr	2.92	2.77	2.302	2.37
10 Yr-SCS 24Hr	4.10	56.83	3.427	3.53
010yr-0.17hr	0.93	29.51	0.489	0.50
010yr-0.25hr	1.14	31.71	0.666	0.69
010yr-0.50hr	1.59	34.23	1.064	1.10
010yr-01hr	2.02	30.66	1.458	1.50
010yr-02hr	2.37	21.73	1.784	1.84
010yr-03hr	2.53	16.36	1.934	1.99
010yr-06hr	3.03	10.57	2.407	2.48
010yr-12hr	3.52	5.60	2.873	2.96
010yr-24hr	4.08	4.00	3.408	3.51
100 Yr-SCS 24Hr	**5.91**	**83.69**	**5.167**	**5.32**
100yr-0.17hr	1.25	45.74	0.761	0.78
100yr-0.25hr	1.56	49.09	1.037	1.07
100yr-0.50hr	2.25	55.52	1.672	1.72
100yr-01hr	3.01	52.03	2.388	2.46
100yr-02hr	2.65	25.14	2.047	2.11
100yr-03hr	3.94	28.32	3.274	3.37
100yr-06hr	4.78	18.15	4.079	4.20
100yr-12hr	5.37	8.89	4.647	4.79
100yr-24hr	5.91	5.93	5.167	5.32
WQV-0.17hr	1.25	45.74	0.761	0.78
WQV-0.25hr	1.25	36.16	0.761	0.78
WQV-0.50hr	1.25	23.22	0.761	0.78
WQV-01hr	1.25	15.18	0.761	0.78
WQV-02hr	1.25	8.63	0.761	0.78
WQV-03hr	1.25	5.95	0.761	0.78
WQV-06hr	1.25	3.05	0.761	0.78
WQV-12hr	1.25	1.54	0.761	0.78
WQV-24hr	1.25	1.03	0.761	0.78

Events for Subcatchment 16S: Basin 1 (South)

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
002yr-0.17hr	0.69	74.01	1.218	0.31
002yr-0.25hr	0.85	83.26	1.726	0.44
002yr-0.50hr	1.13	80.68	2.678	0.68
002yr-01hr	1.39	72.89	3.606	0.91
002yr-02hr	1.62	52.13	4.447	1.12
002yr-03hr	1.72	39.28	4.818	1.22
002yr-06hr	2.05	25.83	6.055	1.53
002yr-12hr	2.45	15.01	7.576	1.91
002yr-24hr	2.92	11.30	9.382	2.37
10 Yr-SCS 24Hr	4.10	231.59	13.965	3.53
010yr-0.17hr	0.93	120.26	1.992	0.50
010yr-0.25hr	1.14	129.20	2.714	0.69
010yr-0.50hr	1.59	139.47	4.337	1.10
010yr-01hr	2.02	124.93	5.942	1.50
010yr-02hr	2.37	88.54	7.270	1.84
010yr-03hr	2.53	66.65	7.882	1.99
010yr-06hr	3.03	43.07	9.807	2.48
010yr-12hr	3.52	22.81	11.706	2.96
010yr-24hr	4.08	16.31	13.887	3.51
100 Yr-SCS 24Hr	**5.91**	**341.02**	**21.056**	**5.32**
100yr-0.17hr	1.25	186.38	3.103	0.78
100yr-0.25hr	1.56	200.02	4.226	1.07
100yr-0.50hr	2.25	226.25	6.813	1.72
100yr-01hr	3.01	212.02	9.729	2.46
100yr-02hr	2.65	102.43	8.342	2.11
100yr-03hr	3.94	115.42	13.341	3.37
100yr-06hr	4.78	73.96	16.623	4.20
100yr-12hr	5.37	36.22	18.936	4.79
100yr-24hr	5.91	24.15	21.056	5.32
WQV-0.17hr	1.25	186.38	3.103	0.78
WQV-0.25hr	1.25	147.35	3.103	0.78
WQV-0.50hr	1.25	94.60	3.103	0.78
WQV-01hr	1.25	61.87	3.103	0.78
WQV-02hr	1.25	35.18	3.103	0.78
WQV-03hr	1.25	24.24	3.103	0.78
WQV-06hr	1.25	12.41	3.103	0.78
WQV-12hr	1.25	6.27	3.103	0.78
WQV-24hr	1.25	4.19	3.103	0.78

Events for Subcatchment 18S: North Offsite

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
002yr-0.17hr	0.69	7.07	0.561	0.10
002yr-0.25hr	0.85	12.37	0.985	0.17
002yr-0.50hr	1.13	22.82	1.898	0.33
002yr-01hr	1.39	29.79	2.885	0.50
002yr-02hr	1.62	25.16	3.840	0.67
002yr-03hr	1.72	19.59	4.273	0.75
002yr-06hr	2.05	17.50	5.767	1.01
002yr-12hr	2.45	15.48	7.677	1.34
002yr-24hr	2.92	13.61	10.020	1.75
10 Yr-SCS 24Hr	4.10	98.85	16.182	2.82
010yr-0.17hr	0.93	15.48	1.226	0.21
010yr-0.25hr	1.14	24.28	1.933	0.34
010yr-0.50hr	1.59	44.40	3.712	0.65
010yr-01hr	2.02	57.17	5.628	0.98
010yr-02hr	2.37	46.10	7.288	1.27
010yr-03hr	2.53	39.57	8.070	1.41
010yr-06hr	3.03	34.44	10.580	1.84
010yr-12hr	3.52	26.00	13.115	2.29
010yr-24hr	4.08	20.81	16.075	2.80
100 Yr-SCS 24Hr	**5.91**	**157.22**	26.031	4.54
100yr-0.17hr	1.25	29.57	2.340	0.41
100yr-0.25hr	1.56	45.04	3.585	0.63
100yr-0.50hr	2.25	79.92	6.711	1.17
100yr-01hr	3.01	105.04	10.478	1.83
100yr-02hr	2.65	55.01	8.663	1.51
100yr-03hr	3.94	79.84	15.330	2.67
100yr-06hr	4.78	68.42	19.844	3.46
100yr-12hr	5.37	44.99	23.061	4.02
100yr-24hr	5.91	32.14	**26.031**	**4.54**
WQV-0.17hr	1.25	29.57	2.340	0.41
WQV-0.25hr	1.25	29.39	2.340	0.41
WQV-0.50hr	1.25	28.08	2.340	0.41
WQV-01hr	1.25	24.32	2.340	0.41
WQV-02hr	1.25	16.09	2.340	0.41
WQV-03hr	1.25	11.36	2.340	0.41
WQV-06hr	1.25	6.18	2.340	0.41
WQV-12hr	1.25	4.82	2.340	0.41
WQV-24hr	1.25	3.65	2.340	0.41

Events for Pond 7P: Wet Pond 1 (South)

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
002yr-0.17hr	77.32	0.39	771.78	113,442
002yr-0.25hr	88.92	0.77	771.89	161,109
002yr-0.50hr	85.69	1.72	772.11	250,002
002yr-01hr	78.60	2.90	772.32	336,246
002yr-02hr	58.33	4.07	772.50	414,260
002yr-03hr	45.55	4.59	772.58	447,984
002yr-06hr	34.06	6.08	772.84	555,948
002yr-12hr	33.74	7.22	773.11	672,686
002yr-24hr	29.60	8.28	773.40	794,865
10 Yr-SCS 24Hr	279.53	10.98	774.28	1,180,737
010yr-0.17hr	126.46	1.00	771.95	185,933
010yr-0.25hr	138.07	1.76	772.12	253,269
010yr-0.50hr	144.04	3.92	772.48	404,325
010yr-01hr	135.22	6.07	772.84	555,674
010yr-02hr	99.99	7.34	773.14	685,508
010yr-03hr	78.72	7.85	773.28	743,624
010yr-06hr	61.68	9.18	773.67	913,490
010yr-12hr	53.80	10.12	773.99	1,050,769
010yr-24hr	42.34	10.99	774.28	1,181,693
100 Yr-SCS 24Hr	**415.48**	**25.10**	**775.31**	**1,645,819**
100yr-0.17hr	196.32	2.24	772.20	289,482
100yr-0.25hr	213.64	3.76	772.46	394,036
100yr-0.50hr	239.91	6.92	773.04	641,299
100yr-01hr	229.29	9.32	773.72	932,520
100yr-02hr	116.08	8.26	773.39	792,174
100yr-03hr	142.19	12.79	774.50	1,277,145
100yr-06hr	114.70	20.14	775.03	1,517,581
100yr-12hr	87.70	23.63	775.23	1,609,230
100yr-24hr	61.05	24.05	775.26	1,619,833
WQV-0.17hr	196.32	2.24	772.20	289,482
WQV-0.25hr	157.47	2.24	772.20	289,482
WQV-0.50hr	100.39	2.24	772.20	289,478
WQV-01hr	66.63	2.24	772.20	289,452
WQV-02hr	39.18	2.23	772.20	289,305
WQV-03hr	27.85	2.23	772.20	289,026
WQV-06hr	15.35	2.21	772.20	287,409
WQV-12hr	11.85	2.16	772.19	283,695
WQV-24hr	9.70	2.10	772.18	279,283

Events for Pond 17P: EDDB Pond 2 (Middle)

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
002yr-0.17hr	19.26	7.23	773.90	9,785
002yr-0.25hr	23.47	10.89	774.10	14,647
002yr-0.50hr	28.78	18.72	774.45	25,016
002yr-01hr	32.40	26.02	774.72	34,119
002yr-02hr	29.45	27.82	774.78	36,312
002yr-03hr	25.28	24.67	774.67	32,465
002yr-06hr	19.55	19.32	774.47	25,789
002yr-12hr	21.21	20.87	774.53	27,746
002yr-24hr	18.96	18.52	774.49	26,226
10 Yr-SCS 24Hr	124.40	77.12	776.23	99,067
010yr-0.17hr	32.64	13.25	774.22	17,810
010yr-0.25hr	39.55	19.81	774.49	26,413
010yr-0.50hr	54.48	36.48	775.06	46,753
010yr-01hr	58.98	49.54	775.45	62,555
010yr-02hr	51.15	49.09	775.44	62,005
010yr-03hr	43.11	42.36	775.24	53,819
010yr-06hr	37.03	35.12	775.02	45,118
010yr-12hr	34.19	33.76	774.98	43,475
010yr-24hr	27.26	26.41	774.90	40,663
100 Yr-SCS 24Hr	**178.30**	**100.55**	**777.00**	**141,561**
100yr-0.17hr	54.05	24.07	774.65	31,729
100yr-0.25hr	68.55	36.47	775.06	46,733
100yr-0.50hr	94.63	63.97	775.86	80,841
100yr-01hr	98.40	83.65	776.42	109,075
100yr-02hr	59.21	56.90	775.66	71,729
100yr-03hr	76.91	72.85	776.11	92,927
100yr-06hr	69.63	65.92	775.91	83,432
100yr-12hr	56.05	54.95	775.67	72,357
100yr-24hr	39.40	37.48	775.62	69,913
WQV-0.17hr	54.05	24.07	774.65	31,729
WQV-0.25hr	46.55	23.87	774.64	31,476
WQV-0.50hr	35.05	23.01	774.61	30,420
WQV-01hr	26.68	21.14	774.54	28,086
WQV-02hr	19.25	17.64	774.40	23,631
WQV-03hr	15.26	14.75	774.28	19,830
WQV-06hr	9.54	9.43	774.03	12,695
WQV-12hr	7.07	6.95	773.88	9,406
WQV-24hr	6.03	5.99	773.82	8,136

Events for Pond 18P: Wet Pond 3 (North)

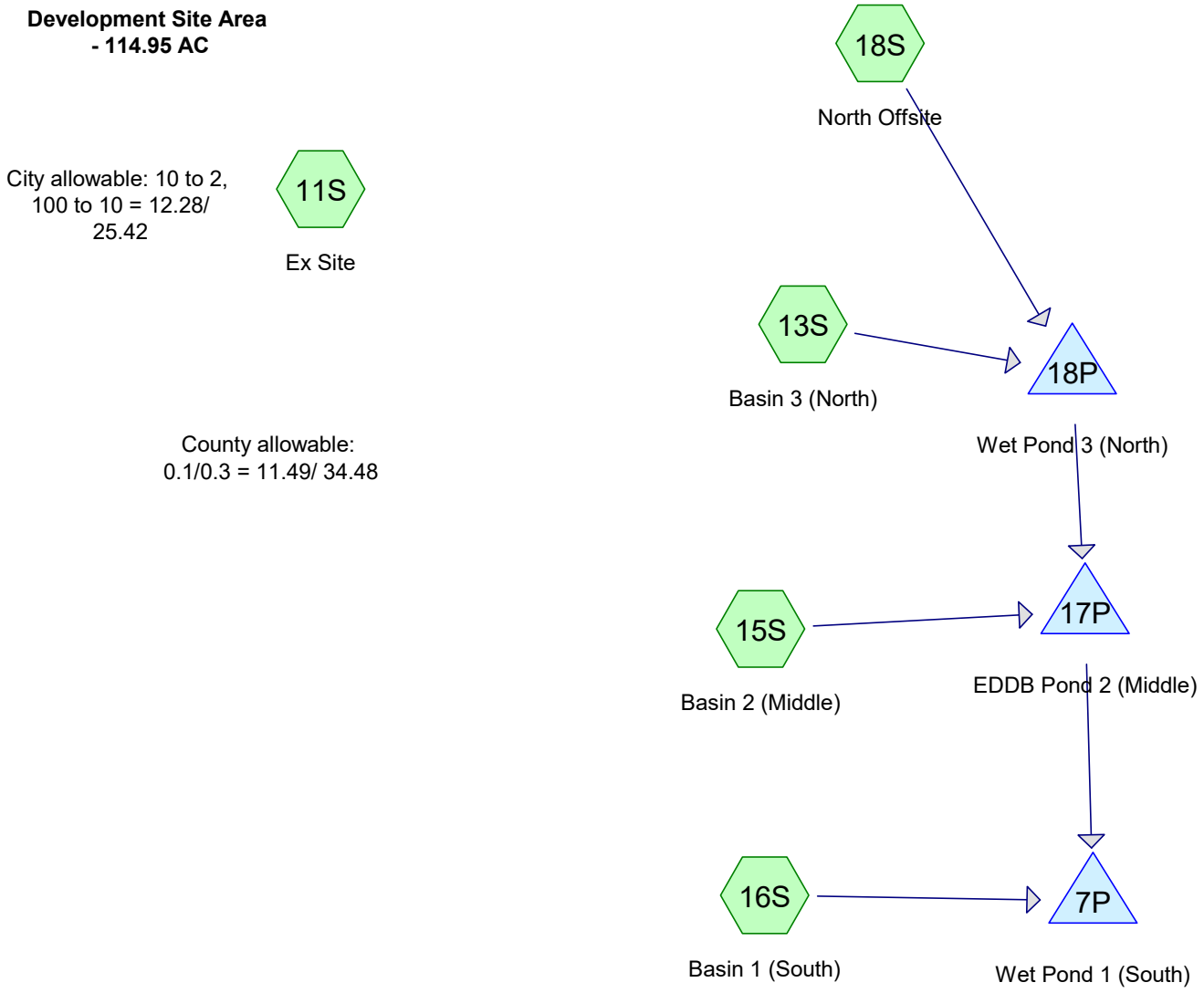
Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
002yr-0.17hr	115.53	4.60	774.68	1.793
002yr-0.25hr	129.97	8.64	774.94	2.493
002yr-0.50hr	125.94	17.90	775.36	3.688
002yr-01hr	113.79	24.75	775.64	4.506
002yr-02hr	81.37	24.76	775.68	4.600
002yr-03hr	61.32	21.49	775.55	4.228
002yr-06hr	40.32	16.77	775.34	3.632
002yr-12hr	23.43	18.16	775.40	3.810
002yr-24hr	17.64	16.27	775.33	3.589
10 Yr-SCS 24Hr	361.52	79.49	777.40	9.997
010yr-0.17hr	187.73	11.16	775.07	2.863
010yr-0.25hr	201.69	18.97	775.40	3.810
010yr-0.50hr	217.72	37.06	776.05	5.707
010yr-01hr	195.02	46.75	776.44	6.907
010yr-02hr	138.21	43.15	776.38	6.722
010yr-03hr	104.05	36.88	776.16	6.036
010yr-06hr	67.23	31.02	775.92	5.334
010yr-12hr	35.61	29.33	775.87	5.172
010yr-24hr	25.46	23.36	775.68	4.599
100 Yr-SCS 24Hr	**532.34**	**97.03**	**778.78**	**14.760**
100yr-0.17hr	290.94	23.73	775.58	4.333
100yr-0.25hr	312.23	38.09	776.06	5.744
100yr-0.50hr	353.19	66.32	776.98	8.615
100yr-01hr	330.96	77.87	777.62	10.703
100yr-02hr	159.89	49.96	776.63	7.498
100yr-03hr	180.17	63.17	777.14	9.137
100yr-06hr	115.46	58.23	776.92	8.427
100yr-12hr	56.54	48.11	776.58	7.339
100yr-24hr	37.69	33.63	776.22	6.232
WQV-0.17hr	290.94	23.73	775.58	4.333
WQV-0.25hr	230.02	23.61	775.58	4.315
WQV-0.50hr	147.68	22.64	775.54	4.216
WQV-01hr	96.58	20.06	775.46	3.960
WQV-02hr	54.92	15.90	775.29	3.485
WQV-03hr	37.85	12.97	775.16	3.105
WQV-06hr	19.37	8.18	774.90	2.386
WQV-12hr	9.79	6.02	774.76	2.013
WQV-24hr	6.54	5.18	774.70	1.854

MODEL/CALCULATIONS WITH OFFSITE

Development Site Area - 114.95 AC

City allowable: 10 to 2, 100 to 10 = 12.28/ 25.42

County allowable: 0.1/0.3 = 11.49/ 34.48



Subcat Reach Pond Link

Routing Diagram for Malarkey IND_Huff_R0
Prepared by Kimley-Horn & Associates, Printed 7/1/2024

Events for Subcatchment 11S: Ex Site

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
002yr-0.17hr	0.69	0.00	0.000	0.00
002yr-0.25hr	0.85	0.33	0.057	0.01
002yr-0.50hr	1.13	2.54	0.444	0.05
002yr-01hr	1.39	6.05	1.077	0.11
002yr-02hr	1.62	9.37	1.819	0.19
002yr-03hr	1.72	9.85	2.188	0.23
002yr-06hr	2.05	9.98	3.577	0.37
002yr-12hr	2.45	9.91	5.559	0.58
002yr-24hr	2.92	12.28	8.218	0.86
10 Yr-SCS 24Hr	4.10	50.99	15.998	1.67
010yr-0.17hr	0.93	0.76	0.132	0.01
010yr-0.25hr	1.14	2.68	0.464	0.05
010yr-0.50hr	1.59	9.79	1.714	0.18
010yr-01hr	2.02	19.19	3.441	0.36
010yr-02hr	2.37	25.42	5.140	0.54
010yr-03hr	2.53	24.96	5.989	0.63
010yr-06hr	3.03	21.74	8.883	0.93
010yr-12hr	3.52	21.84	12.010	1.25
010yr-24hr	4.08	22.56	15.856	1.66
100 Yr-SCS 24Hr	**5.91**	**98.87**	**29.785**	**3.11**
100yr-0.17hr	1.25	4.08	0.707	0.07
100yr-0.25hr	1.56	9.30	1.611	0.17
100yr-0.50hr	2.25	25.88	4.532	0.47
100yr-01hr	3.01	48.36	8.761	0.91
100yr-02hr	2.65	32.68	6.652	0.69
100yr-03hr	3.94	58.75	14.871	1.55
100yr-06hr	4.78	47.15	20.979	2.19
100yr-12hr	5.37	46.75	25.507	2.66
100yr-24hr	5.91	40.28	29.785	3.11
WQV-0.17hr	1.25	4.08	0.707	0.07
WQV-0.25hr	1.25	4.08	0.707	0.07
WQV-0.50hr	1.25	4.04	0.707	0.07
WQV-01hr	1.25	3.98	0.707	0.07
WQV-02hr	1.25	3.79	0.707	0.07
WQV-03hr	1.25	3.48	0.707	0.07
WQV-06hr	1.25	2.57	0.707	0.07
WQV-12hr	1.25	1.54	0.707	0.07
WQV-24hr	1.25	1.20	0.707	0.07

Events for Subcatchment 13S: Basin 3 (North)

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
002yr-0.17hr	0.69	115.53	1.901	0.31
002yr-0.25hr	0.85	129.97	2.695	0.44
002yr-0.50hr	1.13	125.94	4.181	0.68
002yr-01hr	1.39	113.79	5.629	0.91
002yr-02hr	1.62	81.37	6.943	1.12
002yr-03hr	1.72	61.32	7.521	1.22
002yr-06hr	2.05	40.32	9.452	1.53
002yr-12hr	2.45	23.43	11.826	1.91
002yr-24hr	2.92	17.64	14.645	2.37
10 Yr-SCS 24Hr	4.10	361.52	21.799	3.53
010yr-0.17hr	0.93	187.73	3.109	0.50
010yr-0.25hr	1.14	201.69	4.236	0.69
010yr-0.50hr	1.59	217.72	6.770	1.10
010yr-01hr	2.02	195.02	9.276	1.50
010yr-02hr	2.37	138.21	11.349	1.84
010yr-03hr	2.53	104.05	12.304	1.99
010yr-06hr	3.03	67.23	15.308	2.48
010yr-12hr	3.52	35.61	18.273	2.96
010yr-24hr	4.08	25.46	21.677	3.51
100 Yr-SCS 24Hr	**5.91**	**532.34**	32.869	5.32
100yr-0.17hr	1.25	290.94	4.843	0.78
100yr-0.25hr	1.56	312.23	6.597	1.07
100yr-0.50hr	2.25	353.19	10.636	1.72
100yr-01hr	3.01	330.96	15.188	2.46
100yr-02hr	2.65	159.89	13.023	2.11
100yr-03hr	3.94	180.17	20.825	3.37
100yr-06hr	4.78	115.46	25.949	4.20
100yr-12hr	5.37	56.54	29.560	4.79
100yr-24hr	5.91	37.69	**32.869**	**5.32**
WQV-0.17hr	1.25	290.94	4.843	0.78
WQV-0.25hr	1.25	230.02	4.843	0.78
WQV-0.50hr	1.25	147.68	4.843	0.78
WQV-01hr	1.25	96.58	4.843	0.78
WQV-02hr	1.25	54.92	4.843	0.78
WQV-03hr	1.25	37.85	4.843	0.78
WQV-06hr	1.25	19.37	4.843	0.78
WQV-12hr	1.25	9.79	4.843	0.78
WQV-24hr	1.25	6.54	4.843	0.78

Events for Subcatchment 15S: Basin 2 (Middle)

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
002yr-0.17hr	0.69	18.16	0.299	0.31
002yr-0.25hr	0.85	20.43	0.424	0.44
002yr-0.50hr	1.13	19.80	0.657	0.68
002yr-01hr	1.39	17.89	0.885	0.91
002yr-02hr	1.62	12.79	1.091	1.12
002yr-03hr	1.72	9.64	1.182	1.22
002yr-06hr	2.05	6.34	1.486	1.53
002yr-12hr	2.45	3.68	1.859	1.91
002yr-24hr	2.92	2.77	2.302	2.37
10 Yr-SCS 24Hr	4.10	56.83	3.427	3.53
010yr-0.17hr	0.93	29.51	0.489	0.50
010yr-0.25hr	1.14	31.71	0.666	0.69
010yr-0.50hr	1.59	34.23	1.064	1.10
010yr-01hr	2.02	30.66	1.458	1.50
010yr-02hr	2.37	21.73	1.784	1.84
010yr-03hr	2.53	16.36	1.934	1.99
010yr-06hr	3.03	10.57	2.407	2.48
010yr-12hr	3.52	5.60	2.873	2.96
010yr-24hr	4.08	4.00	3.408	3.51
100 Yr-SCS 24Hr	**5.91**	**83.69**	**5.167**	**5.32**
100yr-0.17hr	1.25	45.74	0.761	0.78
100yr-0.25hr	1.56	49.09	1.037	1.07
100yr-0.50hr	2.25	55.52	1.672	1.72
100yr-01hr	3.01	52.03	2.388	2.46
100yr-02hr	2.65	25.14	2.047	2.11
100yr-03hr	3.94	28.32	3.274	3.37
100yr-06hr	4.78	18.15	4.079	4.20
100yr-12hr	5.37	8.89	4.647	4.79
100yr-24hr	5.91	5.93	5.167	5.32
WQV-0.17hr	1.25	45.74	0.761	0.78
WQV-0.25hr	1.25	36.16	0.761	0.78
WQV-0.50hr	1.25	23.22	0.761	0.78
WQV-01hr	1.25	15.18	0.761	0.78
WQV-02hr	1.25	8.63	0.761	0.78
WQV-03hr	1.25	5.95	0.761	0.78
WQV-06hr	1.25	3.05	0.761	0.78
WQV-12hr	1.25	1.54	0.761	0.78
WQV-24hr	1.25	1.03	0.761	0.78

Events for Subcatchment 16S: Basin 1 (South)

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
002yr-0.17hr	0.69	74.01	1.218	0.31
002yr-0.25hr	0.85	83.26	1.726	0.44
002yr-0.50hr	1.13	80.68	2.678	0.68
002yr-01hr	1.39	72.89	3.606	0.91
002yr-02hr	1.62	52.13	4.447	1.12
002yr-03hr	1.72	39.28	4.818	1.22
002yr-06hr	2.05	25.83	6.055	1.53
002yr-12hr	2.45	15.01	7.576	1.91
002yr-24hr	2.92	11.30	9.382	2.37
10 Yr-SCS 24Hr	4.10	231.59	13.965	3.53
010yr-0.17hr	0.93	120.26	1.992	0.50
010yr-0.25hr	1.14	129.20	2.714	0.69
010yr-0.50hr	1.59	139.47	4.337	1.10
010yr-01hr	2.02	124.93	5.942	1.50
010yr-02hr	2.37	88.54	7.270	1.84
010yr-03hr	2.53	66.65	7.882	1.99
010yr-06hr	3.03	43.07	9.807	2.48
010yr-12hr	3.52	22.81	11.706	2.96
010yr-24hr	4.08	16.31	13.887	3.51
100 Yr-SCS 24Hr	**5.91**	**341.02**	**21.056**	**5.32**
100yr-0.17hr	1.25	186.38	3.103	0.78
100yr-0.25hr	1.56	200.02	4.226	1.07
100yr-0.50hr	2.25	226.25	6.813	1.72
100yr-01hr	3.01	212.02	9.729	2.46
100yr-02hr	2.65	102.43	8.342	2.11
100yr-03hr	3.94	115.42	13.341	3.37
100yr-06hr	4.78	73.96	16.623	4.20
100yr-12hr	5.37	36.22	18.936	4.79
100yr-24hr	5.91	24.15	21.056	5.32
WQV-0.17hr	1.25	186.38	3.103	0.78
WQV-0.25hr	1.25	147.35	3.103	0.78
WQV-0.50hr	1.25	94.60	3.103	0.78
WQV-01hr	1.25	61.87	3.103	0.78
WQV-02hr	1.25	35.18	3.103	0.78
WQV-03hr	1.25	24.24	3.103	0.78
WQV-06hr	1.25	12.41	3.103	0.78
WQV-12hr	1.25	6.27	3.103	0.78
WQV-24hr	1.25	4.19	3.103	0.78

Events for Subcatchment 18S: North Offsite

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
002yr-0.17hr	0.69	7.07	0.561	0.10
002yr-0.25hr	0.85	12.37	0.985	0.17
002yr-0.50hr	1.13	22.82	1.898	0.33
002yr-01hr	1.39	29.79	2.885	0.50
002yr-02hr	1.62	25.16	3.840	0.67
002yr-03hr	1.72	19.59	4.273	0.75
002yr-06hr	2.05	17.50	5.767	1.01
002yr-12hr	2.45	15.48	7.677	1.34
002yr-24hr	2.92	13.61	10.020	1.75
10 Yr-SCS 24Hr	4.10	98.85	16.182	2.82
010yr-0.17hr	0.93	15.48	1.226	0.21
010yr-0.25hr	1.14	24.28	1.933	0.34
010yr-0.50hr	1.59	44.40	3.712	0.65
010yr-01hr	2.02	57.17	5.628	0.98
010yr-02hr	2.37	46.10	7.288	1.27
010yr-03hr	2.53	39.57	8.070	1.41
010yr-06hr	3.03	34.44	10.580	1.84
010yr-12hr	3.52	26.00	13.115	2.29
010yr-24hr	4.08	20.81	16.075	2.80
100 Yr-SCS 24Hr	**5.91**	**157.22**	26.031	4.54
100yr-0.17hr	1.25	29.57	2.340	0.41
100yr-0.25hr	1.56	45.04	3.585	0.63
100yr-0.50hr	2.25	79.92	6.711	1.17
100yr-01hr	3.01	105.04	10.478	1.83
100yr-02hr	2.65	55.01	8.663	1.51
100yr-03hr	3.94	79.84	15.330	2.67
100yr-06hr	4.78	68.42	19.844	3.46
100yr-12hr	5.37	44.99	23.061	4.02
100yr-24hr	5.91	32.14	**26.031**	**4.54**
WQV-0.17hr	1.25	29.57	2.340	0.41
WQV-0.25hr	1.25	29.39	2.340	0.41
WQV-0.50hr	1.25	28.08	2.340	0.41
WQV-01hr	1.25	24.32	2.340	0.41
WQV-02hr	1.25	16.09	2.340	0.41
WQV-03hr	1.25	11.36	2.340	0.41
WQV-06hr	1.25	6.18	2.340	0.41
WQV-12hr	1.25	4.82	2.340	0.41
WQV-24hr	1.25	3.65	2.340	0.41

Events for Pond 7P: Wet Pond 1 (South)

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
002yr-0.17hr	77.32	0.52	771.82	131,880
002yr-0.25hr	88.92	1.08	771.97	193,301
002yr-0.50hr	85.70	2.54	772.26	311,377
002yr-01hr	78.60	4.30	772.54	429,079
002yr-02hr	58.33	5.87	772.80	538,260
002yr-03hr	50.93	6.37	772.91	586,670
002yr-06hr	41.68	7.85	773.28	743,773
002yr-12hr	43.72	9.19	773.68	915,062
002yr-24hr	41.08	10.44	774.10	1,101,187
10 Yr-SCS 24Hr	285.91	21.60	775.12	1,556,829
010yr-0.17hr	126.46	1.43	772.05	225,893
010yr-0.25hr	138.08	2.60	772.27	315,800
010yr-0.50hr	144.05	5.69	772.76	524,444
010yr-01hr	135.22	7.88	773.29	746,316
010yr-02hr	100.01	9.33	773.72	934,578
010yr-03hr	88.74	9.91	773.91	1,018,616
010yr-06hr	72.30	12.41	774.46	1,260,417
010yr-12hr	72.04	17.12	774.84	1,429,645
010yr-24hr	59.56	21.53	775.11	1,554,991
100 Yr-SCS 24Hr	**424.26**	**48.06**	**776.37**	**2,136,138**
100yr-0.17hr	196.32	3.32	772.39	364,942
100yr-0.25hr	213.65	5.49	772.73	509,892
100yr-0.50hr	239.91	8.87	773.57	870,925
100yr-01hr	229.30	12.88	774.51	1,281,007
100yr-02hr	116.11	10.36	774.07	1,088,755
100yr-03hr	142.66	26.77	775.40	1,685,798
100yr-06hr	125.10	39.96	776.02	1,971,103
100yr-12hr	117.34	44.10	776.19	2,052,409
100yr-24hr	85.58	44.46	776.21	2,059,438
WQV-0.17hr	196.32	3.32	772.39	364,942
WQV-0.25hr	157.47	3.32	772.39	364,931
WQV-0.50hr	100.39	3.32	772.39	364,907
WQV-01hr	66.63	3.32	772.39	364,846
WQV-02hr	39.18	3.31	772.38	364,529
WQV-03hr	30.22	3.31	772.38	363,975
WQV-06hr	19.61	3.26	772.38	361,000
WQV-12hr	13.90	3.16	772.36	354,423
WQV-24hr	12.23	3.05	772.34	346,972

Events for Pond 17P: EDDB Pond 2 (Middle)

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
002yr-0.17hr	19.27	7.25	773.90	9,802
002yr-0.25hr	23.48	10.95	774.11	14,723
002yr-0.50hr	29.20	19.72	774.49	26,288
002yr-01hr	36.86	30.22	774.86	39,223
002yr-02hr	42.50	38.60	775.13	49,297
002yr-03hr	38.87	37.60	775.10	48,090
002yr-06hr	30.96	30.85	774.88	39,984
002yr-12hr	33.14	32.72	774.94	42,232
002yr-24hr	31.12	30.33	774.95	42,518
10 Yr-SCS 24Hr	133.49	91.75	776.68	122,923
010yr-0.17hr	32.65	13.34	774.22	17,926
010yr-0.25hr	39.62	20.23	774.51	26,941
010yr-0.50hr	55.84	39.40	775.15	50,250
010yr-01hr	69.96	58.61	775.71	73,895
010yr-02hr	75.77	69.97	776.02	88,918
010yr-03hr	67.76	66.40	775.92	84,065
010yr-06hr	54.19	53.90	775.58	68,233
010yr-12hr	54.89	54.23	775.58	68,371
010yr-24hr	45.64	43.85	775.62	70,084
100 Yr-SCS 24Hr	**183.19**	**110.50**	**778.06**	**209,621**
100yr-0.17hr	54.09	24.75	774.67	32,560
100yr-0.25hr	68.79	38.23	775.12	48,855
100yr-0.50hr	97.46	69.54	776.01	88,325
100yr-01hr	110.59	92.26	776.69	123,888
100yr-02hr	86.86	80.40	776.32	103,989
100yr-03hr	105.57	102.22	777.07	145,948
100yr-06hr	94.76	92.26	777.02	142,960
100yr-12hr	88.99	86.70	776.72	125,302
100yr-24hr	66.30	62.20	776.75	127,269
WQV-0.17hr	54.09	24.75	774.67	32,560
WQV-0.25hr	46.65	24.68	774.67	32,480
WQV-0.50hr	35.69	24.54	774.67	32,303
WQV-01hr	29.93	24.32	774.66	32,033
WQV-02hr	26.44	23.44	774.63	30,952
WQV-03hr	22.62	21.26	774.55	28,236
WQV-06hr	14.41	14.30	774.26	19,224
WQV-12hr	10.28	10.20	774.07	13,725
WQV-24hr	8.99	8.93	774.00	12,033

Events for Pond 18P: Wet Pond 3 (North)

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
002yr-0.17hr	115.76	5.48	774.72	1.889
002yr-0.25hr	130.39	10.02	774.98	2.627
002yr-0.50hr	126.28	19.99	775.44	3.928
002yr-01hr	114.19	30.90	775.85	5.123
002yr-02hr	81.99	38.28	776.13	5.959
002yr-03hr	62.19	35.64	776.07	5.761
002yr-06hr	44.45	28.41	775.81	4.997
002yr-12hr	37.00	30.50	775.88	5.217
002yr-24hr	30.97	28.55	775.83	5.056
10 Yr-SCS 24Hr	383.05	90.83	778.39	13.389
010yr-0.17hr	188.20	12.71	775.12	3.008
010yr-0.25hr	202.51	20.56	775.47	3.993
010yr-0.50hr	218.53	39.96	776.18	6.120
010yr-01hr	195.96	60.36	776.84	8.157
010yr-02hr	139.57	68.96	777.20	9.308
010yr-03hr	106.43	62.44	777.02	8.742
010yr-06hr	78.94	50.32	776.58	7.353
010yr-12hr	59.03	50.59	776.61	7.425
010yr-24hr	45.72	41.84	776.41	6.802
100 Yr-SCS 24Hr	**569.32**	**117.34**	**780.71**	**22.184**
100yr-0.17hr	291.79	25.17	775.65	4.523
100yr-0.25hr	313.62	39.39	776.15	6.003
100yr-0.50hr	354.92	71.48	777.23	9.431
100yr-01hr	333.19	93.03	778.52	13.837
100yr-02hr	161.68	79.05	777.60	10.645
100yr-03hr	186.91	97.06	779.06	15.803
100yr-06hr	145.69	86.67	778.24	12.855
100yr-12hr	98.28	81.77	777.89	11.632
100yr-24hr	68.96	60.59	777.42	10.034
WQV-0.17hr	291.79	25.17	775.65	4.523
WQV-0.25hr	230.99	25.10	775.65	4.515
WQV-0.50hr	148.11	24.89	775.64	4.495
WQV-01hr	96.89	24.77	775.63	4.462
WQV-02hr	55.09	23.47	775.58	4.332
WQV-03hr	38.14	20.43	775.48	4.016
WQV-06hr	19.94	13.17	775.16	3.113
WQV-12hr	13.89	9.40	774.96	2.562
WQV-24hr	10.00	8.21	774.89	2.375

Worksheet for Pond 1 Spillway

Project Description	
Friction Method	Manning Formula
Solve For	Bottom Width

Input Data	
Roughness Coefficient	0.030
Channel Slope	0.500 %
Normal Depth	6.00 in
Left Side Slope	3.000 H:V
Right Side Slope	3.000 H:V
Discharge	520.00 cfs

Results	
Bottom Width	470.97 ft
Flow Area	236.2 ft²
Wetted Perimeter	474.1 ft
Hydraulic Radius	5.98 in
Top Width	473.97 ft
Critical Depth	4.03 in
Critical Slope	1.889 %
Velocity	2.20 ft/s
Velocity Head	0.08 ft
Specific Energy	0.58 ft
Froude Number	0.550
Flow Type	Subcritical

GVF Input Data	
Downstream Depth	0.00 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.00 in
Profile Description	N/A
Profile Headloss	0.00 ft
Downstream Velocity	0.00 ft/s
Upstream Velocity	0.00 ft/s
Normal Depth	6.00 in
Critical Depth	4.03 in
Channel Slope	0.500 %
Critical Slope	1.889 %

Appendix G: Outfall Design Calculations

Events for Pond 7P: Wet Pond 1 (South)

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
002yr-0.17hr	77.32	0.52	771.82	131,880
002yr-0.25hr	88.92	1.08	771.97	193,301
002yr-0.50hr	85.70	2.54	772.26	311,377
002yr-01hr	78.60	4.30	772.54	429,079
002yr-02hr	58.33	5.87	772.80	538,260
002yr-03hr	50.93	6.37	772.91	586,670
002yr-06hr	41.68	7.85	773.28	743,773
002yr-12hr	43.72	9.19	773.68	915,062
002yr-24hr	41.08	10.44	774.10	1,101,187
10 Yr-SCS 24Hr	285.91	21.60	775.12	1,556,829
010yr-0.17hr	126.46	1.43	772.05	225,893
010yr-0.25hr	138.08	2.60	772.27	315,800
010yr-0.50hr	144.05	5.69	772.76	524,444
010yr-01hr	135.22	7.88	773.29	746,316
010yr-02hr	100.01	9.33	773.72	934,578
010yr-03hr	88.74	9.91	773.91	1,018,616
010yr-06hr	72.30	12.41	774.46	1,260,417
010yr-12hr	72.04	17.12	774.84	1,429,645
010yr-24hr	59.56	21.53	775.11	1,554,991
100 Yr-SCS 24Hr	**424.26**	**48.06**	**776.37**	**2,136,138**
100yr-0.17hr	196.32	3.32	772.39	364,942
100yr-0.25hr	213.65	5.49	772.73	509,892
100yr-0.50hr	239.91	8.87	773.57	870,925
100yr-01hr	229.30	12.88	774.51	1,281,007
100yr-02hr	116.11	10.36	774.07	1,088,755
100yr-03hr	142.66	26.77	775.40	1,685,798
100yr-06hr	125.10	39.96	776.02	1,971,103
100yr-12hr	117.34	44.10	776.19	2,052,409
100yr-24hr	85.58	44.46	776.21	2,059,438
WQV-0.17hr	196.32	3.32	772.39	364,942
WQV-0.25hr	157.47	3.32	772.39	364,931
WQV-0.50hr	100.39	3.32	772.39	364,907
WQV-01hr	66.63	3.32	772.39	364,846
WQV-02hr	39.18	3.31	772.38	364,529
WQV-03hr	30.22	3.31	772.38	363,975
WQV-06hr	19.61	3.26	772.38	361,000
WQV-12hr	13.90	3.16	772.36	354,423
WQV-24hr	12.23	3.05	772.34	346,972

Worksheet for OCS Outfall Pipe

Project Description	
Friction Method	Manning Formula
Solve For	Channel Slope

Input Data	
Roughness Coefficient	0.013
Normal Depth	36.00 in
Diameter	36.0 in
Discharge	48.06 cfs

Results	
Channel Slope	0.519 %
Flow Area	7.1 ft²
Wetted Perimeter	9.4 ft
Hydraulic Radius	9.00 in
Top Width	0.00 ft
Critical Depth	27.09 in
Percent Full	100.0 %
Critical Slope	0.619 %
Velocity	6.80 ft/s
Velocity Head	0.72 ft
Specific Energy	3.72 ft
Froude Number	(N/A)
Maximum Discharge	51.70 cfs
Discharge Full	48.06 cfs
Slope Full	0.519 %
Flow Type	Subcritical

GVF Input Data	
Downstream Depth	0.00 in
Length	0.0 ft
Number Of Steps	0

GVF Output Data	
Upstream Depth	0.00 in
Profile Description	N/A
Profile Headloss	0.00 ft
Average End Depth Over Rise	0.0 %
Normal Depth Over Rise	100.0 %
Downstream Velocity	Infinity ft/s
Upstream Velocity	Infinity ft/s
Normal Depth	36.00 in
Critical Depth	27.09 in
Channel Slope	0.519 %
Critical Slope	0.619 %

Appendix H: Stormwater Quality Calculations

Events for Pond 7P: Wet Pond 1 (South)

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (cubic-feet)
002yr-0.17hr	77.32	0.39	771.78	113,442
002yr-0.25hr	88.92	0.77	771.89	161,109
002yr-0.50hr	85.69	1.72	772.11	250,002
002yr-01hr	78.60	2.90	772.32	336,246
002yr-02hr	58.33	4.07	772.50	414,260
002yr-03hr	45.55	4.59	772.58	447,984
002yr-06hr	34.06	6.08	772.84	555,948
002yr-12hr	33.74	7.22	773.11	672,686
002yr-24hr	29.60	8.28	773.40	794,865
10 Yr-SCS 24Hr	279.53	10.98	774.28	1,180,737
010yr-0.17hr	126.46	1.00	771.95	185,933
010yr-0.25hr	138.07	1.76	772.12	253,269
010yr-0.50hr	144.04	3.92	772.48	404,325
010yr-01hr	135.22	6.07	772.84	555,674
010yr-02hr	99.99	7.34	773.14	685,508
010yr-03hr	78.72	7.85	773.28	743,624
010yr-06hr	61.68	9.18	773.67	913,490
010yr-12hr	53.80	10.12	773.99	1,050,769
010yr-24hr	42.34	10.99	774.28	1,181,693
100 Yr-SCS 24Hr	**415.48**	**25.10**	**775.31**	**1,645,819**
100yr-0.17hr	196.32	2.24	772.20	289,482
100yr-0.25hr	213.64	3.76	772.46	394,036
100yr-0.50hr	239.91	6.92	773.04	641,299
100yr-01hr	229.29	9.32	773.72	932,520
100yr-02hr	116.08	8.26	773.39	792,174
100yr-03hr	142.19	12.79	774.50	1,277,145
100yr-06hr	114.70	20.14	775.03	1,517,581
100yr-12hr	87.70	23.63	775.23	1,609,230
100yr-24hr	61.05	24.05	775.26	1,619,833
WQV-0.17hr	196.32	2.24	772.20	289,482
WQV-0.25hr	157.47	2.24	772.20	289,482
WQV-0.50hr	100.39	2.24	772.20	289,478
WQV-01hr	66.63	2.24	772.20	289,452
WQV-02hr	39.18	2.23	772.20	289,305
WQV-03hr	27.85	2.23	772.20	289,026
WQV-06hr	15.35	2.21	772.20	287,409
WQV-12hr	11.85	2.16	772.19	283,695
WQV-24hr	9.70	2.10	772.18	279,283