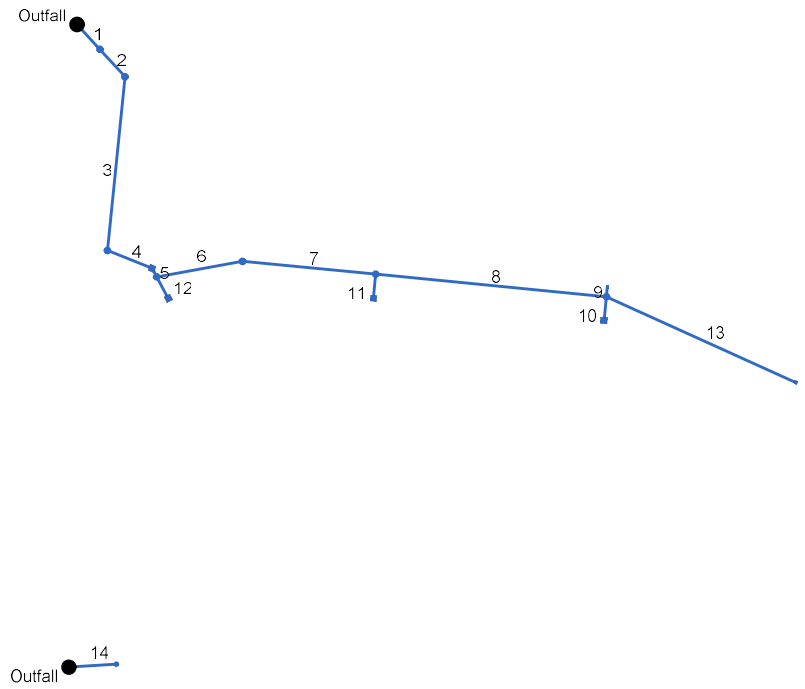
Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Project File: 2022-08-03BUTFAT2201.stm	Number of lines: 14	Date: 8/4/2022

COEC RPT3

Line No.	Inlet ID	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Total CxA	Inlet Time (min)	Tc (min)	Flow Rate (cfs)	Capac Full (cfs)	Line Size (in)	Line Slope (%)	Invert Up (ft)	Invert Dn (ft)	HGL Up (ft)	HGL Dn (ft)	Gnd/Rim El Up (ft)	Gnd/Rim El Dn (ft)	Cover Up (ft)	Cover Dn (ft)	Vel Up (ft/s)	
1	D13	0.00	5.21	0.00	4.15	0.0	22.4	17.35	61.23	24	6.25	734.75	733.00	736.25	734.00	742.25	0.00	5.49	n/a	6.87	
2	D12	0.00	5.21	0.00	4.15	0.0	22.3	17.39	56.64	24	5.34	739.40	737.75	740.90	738.51	749.23	742.25	7.83	2.49	6.87	
3	D11	0.00	5.21	0.00	4.15	0.0	21.8	17.58	30.28	24	1.53	744.61	742.40	746.12	743.49	753.45	749.23	6.84	4.83	6.91	
4	D2	0.34	5.21	0.80	4.15	12.0	21.7	17.64	22.65	24	1.00	745.01	744.61	746.52	746.12	750.75	753.45	3.74	6.84	6.92	
5	D3	0.00	4.87	0.00	3.88	0.0	21.7	16.49	21.22	24	0.75	745.07	745.01	746.53	746.52	750.39	750.75	3.32	3.74	6.70	
6	D5	0.00	3.77	0.00	2.94	0.0	21.5	12.56	13.92	18	1.50	746.65	745.57	747.98	746.69	751.79	750.39	3.64	3.32	7.56	
7	D6	0.00	3.77	0.00	2.94	0.0	21.3	12.62	14.28	15	4.17	751.26	746.65	752.48 j	747.98	755.38	751.79	2.87	3.89	10.34	
8	D9	0.00	2.70	0.00	2.03	0.0	20.9	8.81	8.76	15	1.57	754.27	751.26	755.42 j	752.48	761.35	755.38	5.83	2.87	7.47	
9	D8	0.06	0.06	0.85	0.05	10.0	10.0	0.31	6.10	12	2.50	758.20	758.00	758.43	758.15	761.70	761.35	2.50	2.35	2.27	
10	D10	1.44	1.44	0.75	1.08	12.0	12.0	6.05	11.06	15	2.50	756.75	756.25	757.74	756.91	761.70	761.35	3.70	3.85	5.79	
11	D7	1.07	1.07	0.85	0.91	12.0	12.0	5.10	6.82	15	0.95	751.45	751.26	752.37	752.48	755.54	755.38	2.84	2.87	5.30	
12	D4	1.10	1.10	0.85	0.94	12.0	12.0	5.24	7.34	15	1.10	746.04	745.82	746.97	746.60	750.74	750.39	3.45	3.32	5.37	
13	Ex. CB Tie In	1.20	1.20	0.75	0.90	20.0	20.0	3.99	4.56	15	0.42	755.00	754.27	755.93	755.42	760.82	761.35	4.57	5.83	4.10	
14	D1	0.42	0.42	0.80	0.34	12.0	12.0	1.88	3.07	12	0.99	747.00	746.61	747.58	747.19	750.69	0.00	2.69	n/a	3.95	

Project File: 2022-08-03BUTFAT2201.stm | Number of lines: 14 | Date: 8/4/2022

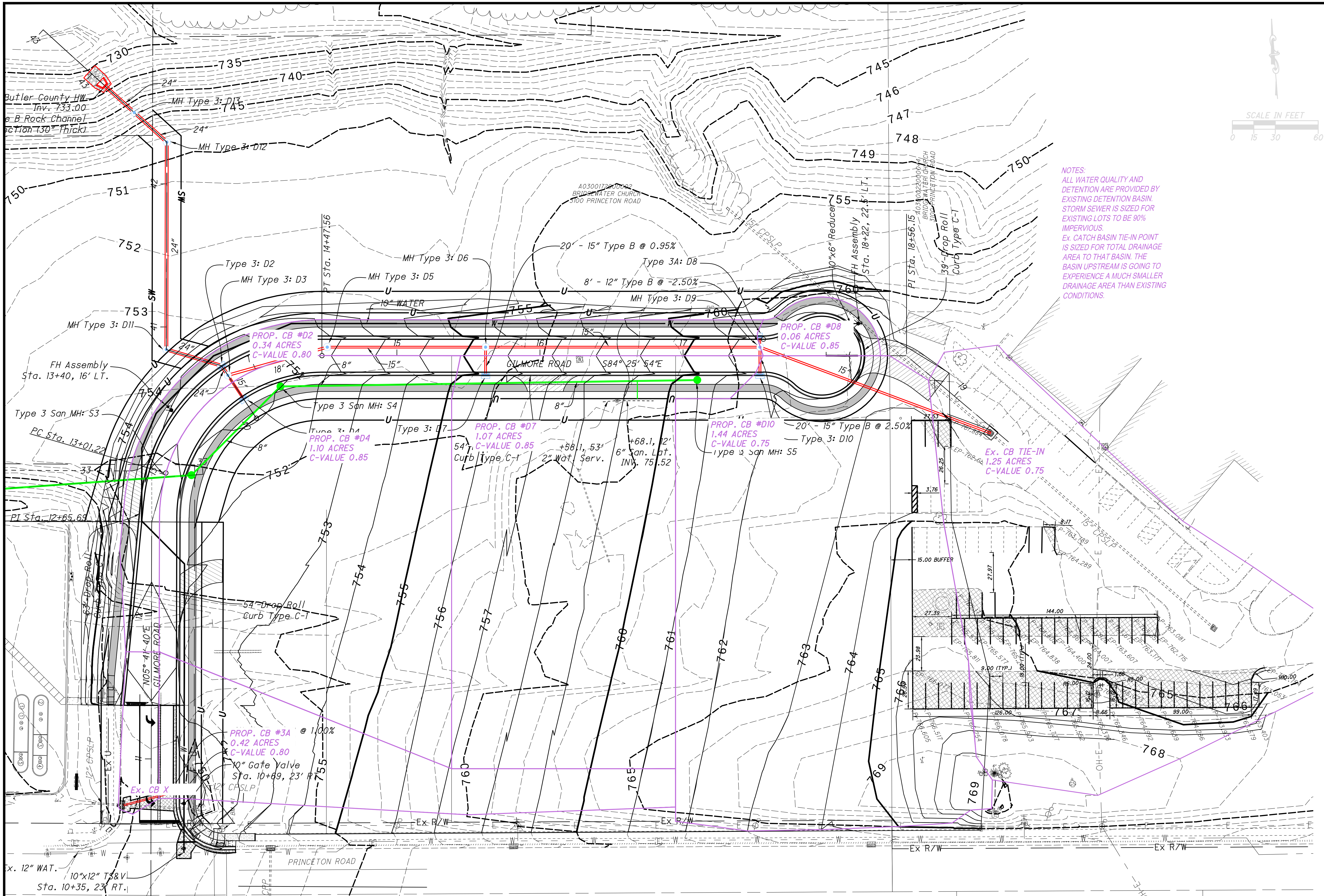
NOTES: ** Critical depth

COEC RPT3

Vel Dn (ft/s)	
11.05	
15.85	
9.99	
6.93	
6.47	
8.91	
10.29	
7.22	
4.05	
9.21	
4.18	
6.50	
3.38	
3.99	

Project File: 2022-08-03BUTFAT2201.stm	Number of lines: 14	Date: 8/4/2022

NOTES: ** Critical depth


NOTES:
ALL WATER QUALITY AND DETENTION ARE PROVIDED BY EXISTING DETENTION BASIN.
STORM SEWER IS SIZED FOR EXISTING LOTS TO BE 90% IMPERVIOUS.
Ex. CATCH BASIN TIE-IN POINT IS SIZED FOR TOTAL DRAINAGE AREA TO THAT BASIN. THE BASIN UPSTREAM IS GOING TO EXPERIENCE A MUCH SMALLER DRAINAGE AREA THAN EXISTING CONDITIONS.
SCALE IN FEET
0 15 30 60
PROP. CB #D2 0.34 ACRES C-VALUE 0.80
PROP. CB #D4 1.10 ACRES C-VALUE 0.85
PROP. CB #D7 1.07 ACRES C-VALUE 0.85
PROP. CB #D8 0.06 ACRES C-VALUE 0.85
PROP. CB #D10 1.44 ACRES C-VALUE 0.75
PROP. CB #3A 0.42 ACRES C-VALUE 0.80
Ex. CB TIE-IN 1.25 ACRES C-VALUE 0.75
Ex. CB X
GILMORE ROAD
S84° 25' 54"E
N05° 41' 40"E
PRINCETON ROAD
MH Type 3: D13
MH Type 3: D12
MH Type 3: D11
MH Type 3: D3
MH Type 3: D5
MH Type 3: D6
MH Type 3: D9
Type 3: D2
Type 3A: D8
Type 3: D4
Type 3: D7
Type 3: D10
Type 3 San MH: S3
Type 3 San MH: S4
Type 3 San MH: S5
20' - 15" Type B @ 0.95%
8' - 12" Type B @ -2.50%
20' - 15" Type B @ 2.50%
10" WATER
Butler County HW Inv. 733.00
FH Assembly Sta. 13+40, 16' LT.
PC Sta. 13+01.22
PI Sta. 12+65.69
PI Sta. 14+47.56
PI Sta. 18+56.15
FH Assembly Sta. 18+22, 22.5' LT.
10"x6" Reducer
39' Drop Roll Curb Type C-1
54' Drop Roll Curb Type C-1
63' Drop Roll Curb Type C-1
+58.1, 53' 2" Wat. Serv.
+68.1, 12' 6" San. Lat. INV. 751.52
10" Gate Valve Sta. 10+69, 23' RT.
10"x12" TS&V Sta. 10+35, 23' RT.
Ex. 12" WAT.
15" CPSLP
12" CPSLP
Ex R/W
A0300172000002 BRIDGEWATER CHURCH 5100 PRINCETON ROAD
15.00 BUFFER

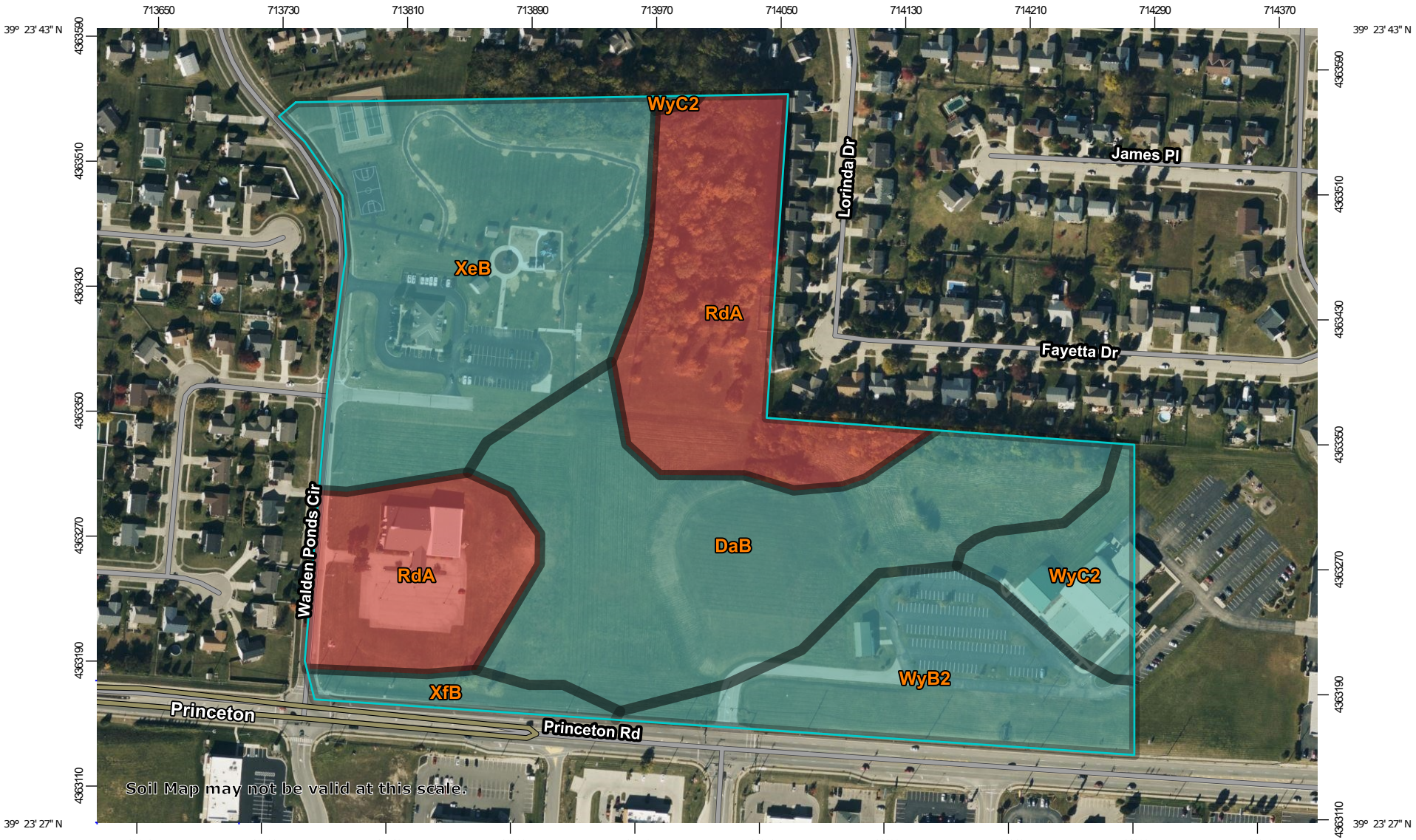
Choice One Engineering

SIDNEY, OHIO 937.497.0200
LOVELAND, OHIO 513.239.8554
www.CHOICEONEENGINEERING.com

BRIDGEWATER LANDINGS
FAIRFIELD TOWNSHIP
CATCH BASIN EXHIBIT

REVISIONS:

FILE NAME	DRAIN
DRAWN BY	MSK
CHECKED BY	MLS
PROJECT No.	BUTFAT2201
DATE	08/04/2022
SHEET NUMBER	1 OF 1



Map Scale: 1:3,590 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

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.

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

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

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

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

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

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

Soil Survey Area: Butler County, Ohio
Survey Area Data: Version 21, Sep 1, 2021

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

Date(s) aerial images were photographed: Oct 28, 2019—Dec 5, 2019

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
DaB	Dana silt loam, 2 to 6 percent slopes	C	10.7	26.6%
RdA	Raub silt loam, 0 to 2 percent slopes	D	10.1	25.2%
WyB2	Wynn silt loam, 2 to 6 percent slopes, eroded	C	5.3	13.2%
WyC2	Wynn silt loam, 6 to 12 percent slopes, eroded	C	2.1	5.3%
XeB	Xenia silt loam, Southern Ohio Till Plain, 2 to 6 percent slopes	C	10.9	27.2%
XfB	Xenia silt loam, bedrock substratum, 2 to 6 percent slopes	C	1.0	2.4%
Totals for Area of Interest			**40.0**	**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