



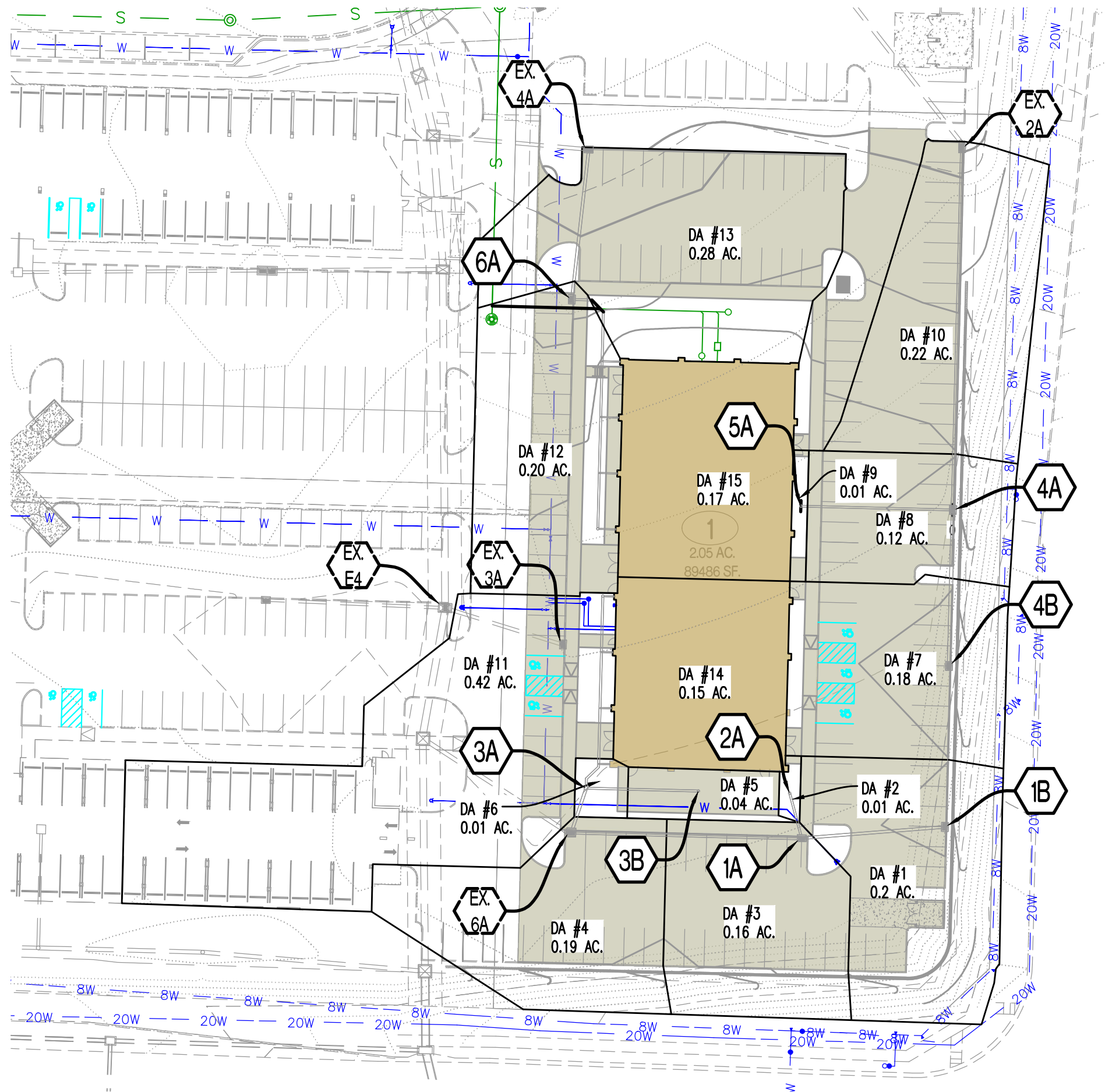
STORM SEWER CALCULATIONS
FOR
The Village at Discovery
Lot 1

PROJECT NO.
230286



October 18, 2024

THE VILLAGE AT DISCOVERY PARK
LOT 1 DRAINAGE AREA MAP
SCALE: 1" = 50'



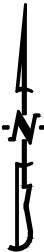
PREPARED BY:

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ENGINEERING CONSULTANTS

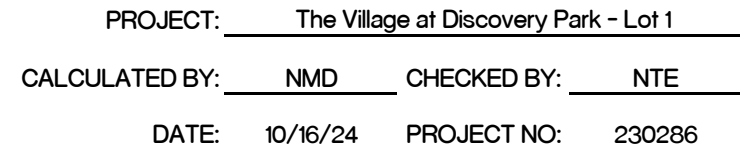
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Nyloplast Inlet Capacity Table

DISCLAIMER: SAFETY FACTORS ARE NOT INCLUDED IN THESE CALCULATIONS. ACTUAL CALCULATIONS SHOULD BE CARRIED OUT AND VERIFIED BY THE DESIGN ENGINEER TAKING INTO ACCOUNT ALL LOCAL CONDITIONS. NYLOPLAST RECOMMENDS USING A MINIMUM SAFETY FACTOR OF 1.25 FOR PAVED AREAS AND 2.0 FOR TURF AREAS. ADS/NYLOPLAST IS NOT RESPONSIBLE FOR MISUSE OF THIS TOOL.

Input	
Type of Grate	10" Dome
Head (ft)	0.5
Properties	
Orifice Flow Area (in)	54.00
Orifice Flow Area (ft)	0.37
Weir Flow Perimeter (in)	32.30
Weir Flow Perimeter (ft)	2.69
Solution	
Capacity (cfs)	1.27
Capacity (gpm)	569.11

$$Q_{weir} = CLH^{3/2}$$

$C = 3.33$ Weir Discharge Coefficient

L = Perimeter of Grate Opening (ft)

H = Flow Height of Water Surface Above Weir (ft)

$$Q_{orifice} = CA\sqrt{2gh}$$

$C = 0.60$ Orifice Discharge Coefficient

A = Area of the Orifice (ft²)

g = Gravitational Constant $\left(32.2 \frac{ft}{s^2}\right)$

H = Depth of Water Above Center of Orifice (ft)

REV 2.1.21



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Input	
Type of Grate	10" Standard
Head (ft)	0.5
Properties	
Orifice Flow Area (in)	28.28
Orifice Flow Area (ft)	0.20
Weir Flow Perimeter (in)	27.48
Weir Flow Perimeter (ft)	2.29
Solution	
Capacity (cfs)	0.66
Capacity (gpm)	298.05

$$Q_{weir} = CLH^{3/2}$$

$C = 3.33$ Weir Discharge Coefficient

L = Perimeter of Grate Opening (ft)

H = Flow Height of Water Surface Above Weir (ft)

$$Q_{orifice} = CA\sqrt{2gh}$$

$C = 0.60$ Orifice Discharge Coefficient

A = Area of the Orifice (ft²)

g = Gravitational Constant $\left(32.2 \frac{ft}{s^2}\right)$

H = Depth of Water Above Center of Orifice (ft)

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Input	
Type of Grate	12" Pedestrian
Head (ft)	0.5
Properties	
Orifice Flow Area (in)	50.60
Orifice Flow Area (ft)	0.35
Weir Flow Perimeter (in)	43.25
Weir Flow Perimeter (ft)	3.60
Solution	
Capacity (cfs)	1.19
Capacity (gpm)	533.28

$$Q_{weir} = CLH^{3/2}$$

$C = 3.33$ Weir Discharge Coefficient

L = Perimeter of Grate Opening (ft)

H = Flow Height of Water Surface Above Weir (ft)

$$Q_{orifice} = CA\sqrt{2gh}$$

$C = 0.60$ Orifice Discharge Coefficient

A = Area of the Orifice (ft²)

g = Gravitational Constant $\left(32.2 \frac{ft}{s^2}\right)$

H = Depth of Water Above Center of Orifice (ft)

REV 2.1.21



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Input	
Type of Grate	15" Standard
Head (ft)	0.5
Properties	
Orifice Flow Area (in)	92.70
Orifice Flow Area (ft)	0.64
Weir Flow Perimeter (in)	54.81
Weir Flow Perimeter (ft)	4.57
Solution	
Capacity (cfs)	2.18
Capacity (gpm)	976.98

$$Q_{weir} = CLH^{3/2}$$

$C = 3.33$ Weir Discharge Coefficient

L = Perimeter of Grate Opening (ft)

H = Flow Height of Water Surface Above Weir (ft)

$$Q_{orifice} = CA\sqrt{2gh}$$

$C = 0.60$ Orifice Discharge Coefficient

A = Area of the Orifice (ft²)

g = Gravitational Constant $\left(32.2 \frac{ft}{s^2}\right)$

H = Depth of Water Above Center of Orifice (ft)

REV 2.1.21