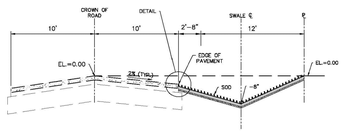
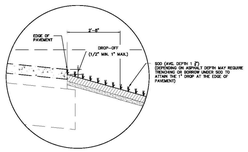
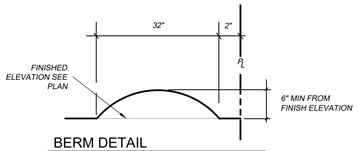


VILLAGE OF PINECREST PUBLIC WORKS
TYPICAL SWALE DETAIL

2021



DETAIL



BERM DETAIL

Date: 4/10/2023
Document: 7725 SW 114TH ST., VILLAGE OF PINECREST, FL
Project Manager: CMB
Project Name: 7725 SW 114TH ST., VILLAGE OF PINECREST, FL

Summary PRE-DEVELOPMENT CONDITION

Definitions		Project Information	Comments
I	Rainfall produced during 10 years, 24 hour storm event (Per figure C-3 SFWMD) - (in)	8.75	(with 1.25 Safety Factor)
S	Soil storage capacity (in)		
A	Site total area (sf)	39,493	
Perv	Pervious area - grass, gravel... - (sf)		
Imp	Impervious area - roof, pavement, walkways, decks,		
R	Run off depth (in)		
V	Volume of runoff (cubic feet)		
WE	Compacted water storage (in)		
AEPA	Average elevation of Pervious Areas (ft)	11.50	
HGWE	High ground water elevation (ft)	4.50	*Also check the geotechnical engineer's report*
DW	Distance between Avg Elevation of Pervious Areas and the High Ground Water Elevation	7.00	*AEPA - HGWE = Depth to Water table - DW*

Detailed Project Information:

Impervious areas		Description	Pervious areas		Description
Imp_1	30,977	*bldg, driveway & decks*	Per_1	8,516	*grass*
Imp_2			Per_2		*pool*
Tot_Imp =	**30977**		**Tot_Per =**	**8516**	

Soil Storage Capacity Calculations (S)

Depth to Water Table	WE Compacted Water Storage (in)
1	0.45
2	1.88
3	4.95
4	8.18

S= Pervious Area / Site Total Area * WE

S= 8516 / 39493 * 8.18

WE = 8.18	**S= 1.76**

Runoff Depth Calculation (R)

R= (I - 0.2 * S)^ * 2 / (I + 0.8 * S)

R= 6.94 in

Pre-Development Total Runoff Volume (V)

V= A * R / 12

PRE-DEV. Vol.= 22,839 Cubic feet

Date: 4/11/2023
Document: 7725 SW 114TH ST.
Project Manager:
Project Name:

Summary POST DEVELOPMENT CONDITION

Definitions		Project Information	Comments
I	Rainfall produced during 10 years, 24 hour storm event (Per figure C-3 SFWMD) - (in)	8.75	(with 1.25 Safety Factor)
S	Soil storage capacity (in)		
A	Site total area (sf)	39,493	
Perv	Pervious area - grass, gravel... - (sf)		
Imp	Impervious area - roof, pavement, walkways, decks,		
R	Run off depth (in)		
V	Volume of runoff (cubic feet)		
WE	Compacted water storage (in)		
AEPA	Average elevation of Pervious Areas (ft)	11.50	
HGWE	High ground water elevation (ft)	4.50	*Also check the geotechnical engineer's report*
DW	Distance between Avg Elevation of Pervious Areas and the High Ground Water Elevation	7.00	*AEPA - HGWE = Depth to Water table - DW*

Detailed Project Information:

Impervious areas		Description	Pervious areas		Description
Imp_1	-	*bldg, driveway & decks*	Per_1	21,789	*grass*
Imp_2	17704	*85' x 4' exf. trench area outside court*	Per_2		
Tot_Imp =	**17704**		**Tot_Per =**	**21789**	

Soil Storage Capacity Calculations (S)

Depth to Water Table	WE Compacted Water Storage (in)
1	0.45
2	1.88
3	4.95
4	8.18

S= Pervious Area / Site Total Area * WE

S= 21789 / 39493 * 8.18

WE = 8.18	**S= 4.51**

Runoff Depth Calculation (R)

R= (I - 0.2 * S)^ * 2 / (I + 0.8 * S)

R= 4.98 in

Volume of Runoff (V)

NOTE: During the Post-Development condition, the volume of runoff generated during the 10-year, 24-hour storm (V) is shown below.

V= A * R / 12 **V= 16,397** Cubic feet

Volume of retention provided

Volume of swales

Retention	A1 (Ft^2)	Ao (Ft^2)	A average (Ft)	h (ft)	Volumen (Ft^3)
N	3879	3507	3693.00	1.5	5540
S	5443	4190	4816.50	1.5	7225
E	2539	1917	2228.00	1.5	3342
W	2590	2172	2381.00	1.5	3572
	0	0	0.00	0	0
				Total	**19678**

Volume of runoff > **Volume of Retention**

Conclusion

Volume of runoff retained by the retention areas (cf) =	19,678
Volume of runoff retained by the Exfiltration Trench (cf) =	(3,281)
Total runoff volume retained (cf)=	16,397

Digitally signed by Edmundo Largaespada
Date: 2023.04.11 17:40:14 -04'00'

EDMUNDO J. LARGAESPADA LICENSE No 56915 STATE OF FLORIDA PROFESSIONAL ENGINEER

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Project No: 23_0012

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NEW CONSTRUCTION AT PINECREST RESIDENCE:
BY HERITAGE HOME BUILDERS, LLC.
7725 SOUTHWEST 114 STREET
VILLAGE OF PINECREST, FL 33156

SEAL:

DRAINAGE DETAILS & CALCULATION

DATE : 03.23.2023
SCALE : AS SHOWN
DRAWN :
CHECK BY:
JOB NO. : 23__0012

SD-2

SHEET NO. :

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