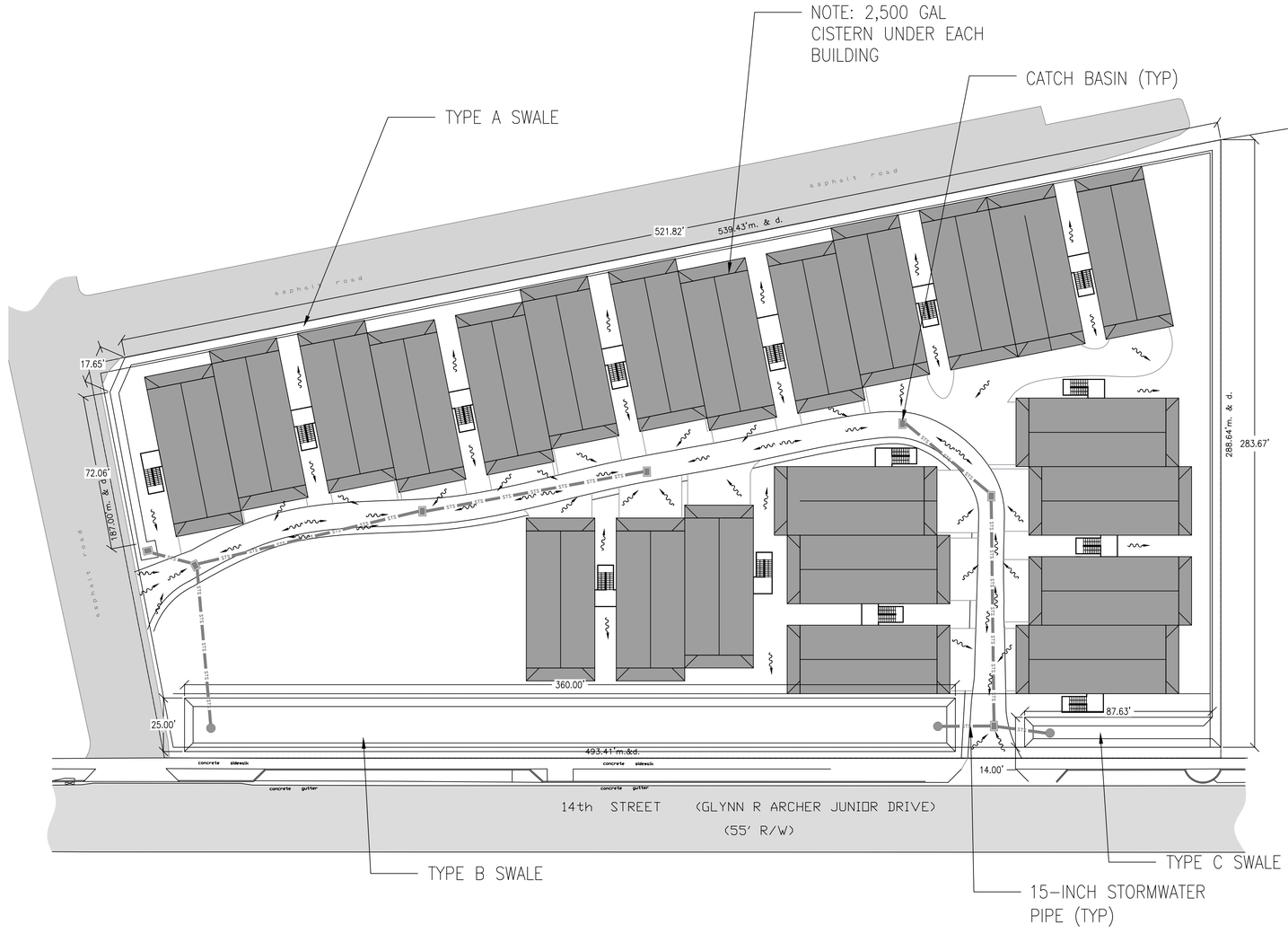
DRAINAGE CALCULATIONS

Type of Project :	**Residential Project**		
Rainfall Event Used for Calculations :	**25yr / 72hr**		
Water Quantity - Predevelopment			
Project Area	2.7926 ac	121644 sq. ft	
Pervious Area	2.7926 ac	121644 sq. ft	
Impervious Area	0.0000 ac	0 sq. ft	
% Impervious	0.00%		
Rainfall for 25yr/24hr event (P)	11.00 in		
Rainfall for 25yr/72hr event (P)	14.95 in		
Depth to Water Table	3 ft		
Undeveloped Available Storage	4.95 in		
Soil Storage (S)	4.95 in		←←←
Qpre = (P - 0.2S)^2 / (P + 0.8S) {*25yr/24hr*}	6.70 in		←←←
Qpre = (P - 0.2S)^2 / (P + 0.8S) {*25yr/72hr*}	10.30 in		←←←
Volume = QA {25yr/72hr}	28.78 ac-in	2.3981 ac-ft	
Water Quantity - Postdevelopment			
Project Area	2.7926 ac	121644 sq. ft	
Pervious Area	1.0772 ac	46922 sq. ft	
Impervious Area	1.7154 ac	74722 sq. ft	
% Impervious	61.43%		
Rainfall for 25yr/24hr event (P)	11.00 in		
Rainfall for 25yr/72hr event (P)	14.95 in		
Depth to Water Table	3 ft		
Developed Available Storage	4.95 in		
Soil Storage (S)	1.91 in		←←←
Qpost = (P - 0.2S)^2 / (P + 0.8S) {*25yr/24hr*}	9.00 in		←←←
Qpost = (P - 0.2S)^2 / (P + 0.8S) {*25yr/72hr*}	12.88 in		←←←
Volume = QA {25yr/72hr}	35.97 ac-in	2.9971 ac-ft	
Postdevelopment - Predevelopment			
Qpost - Qpre {25yr/72hr}	2.57 in		
Volume = QA {25yr/72hr}	7.1886 ac-in	0.5991 ac-ft	
Water Quality			
Roof Area	1.2841 ac	55936 sq. ft	
Project Area (Excluding Roof/Water Area)	1.5084 ac	65708 sq. ft	
Impervious Area (Excluding Roof/Water Area)	0.4313 ac	18786 sq. ft	
% Impervious (Excluding Roof/Water Area)	28.59%		
A) One inch of runoff from drainage basin	2.7926 ac-in	0.2327 ac-ft	
B) Inches of runoff to be treated	0.71 in		
C) 2.5 inches * percent impervious * tot. proj. area	1.9960 ac-in	0.1663 ac-ft	

Water Quantity Vs. Water Quality			
	Quantity		**Quality**
	0.5991 ac-ft	>	0.3574 ac-ft
Swale Volume Required			
Water Quality/Quantity × 50%	**0.2995 ac-ft**		**13047 cu. ft**

Swale Volume Provided		
Swale A =	0.0205 ac-ft	895.00 cu. ft
Swale B =	0.1736 ac-ft	7560.00 cu. ft
Swale C =	0.0200 ac-ft	870.00 cu. ft
Swale D =	0.1764 ac-ft	7682.00 cu. ft
TOTAL =	**0.3904 ac-ft**	**17007.00 cu. ft**



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

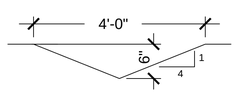
PROPOSED DRAINAGE PLAN

DRAINAGE NOTES:

1. SWALES SHALL HAVE VEGETATION THAT IS APPROVED BY CITY OF KEY WEST.
2. STORMWATER PIPE SHALL BE ADS HDPE PIPE OR EQUAL.
3. STORMWATER STRUCTURES IN THE ROAD SHALL BE PRECAST CONCRETE WITH TRAFFIC RATED GRATES. STORMWATER STRUCTURES IN THE SWALES SHALL BE ADS PLASTIC STRUCTURES.
4. THERE ARE APPROXIMATELY (23) 2,500-GALLON CISTERNS ON THE SITE.
5. SWALE VOLUME PROVIDED EXCEEDS THE REQUIRED IN ORDER TO COMPENSATE FOR ANY LANDSCAPING IN THE SWALES.

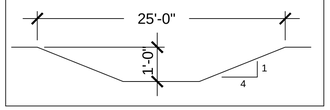
SWALE A SECTION

1.0 CU. FT/FT.
895 LINEAR FEET = 895 CF PROVIDED



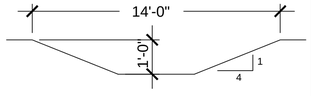
SWALE B SECTION

21 CU. FT/FT.
360 LINEAR FEET = 7,560 CF PROVIDED



SWALE C SECTION

10 CU. FT/FT.
87 LINEAR FEET = 870 CF PROVIDED



CISTERN VOLUME

EACH CISTERN IS 2,500 GALLONS (334 CF)
23 * 334 = 7,682 CF PROVIDED

LEGEND

~→	DIRECTION OF STORMWATER FLOW

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Submissions / Revisions:

B.P.A.S. SUBMISSION: 10.31.17
MAJOR DEV. SUBMISSION: 12.18.17

1213 14th STREET
KEY WEST , FL
RESIDENTIAL DEVELOPMENT

Drawing Size: 24x36 | Project #: 17034

Title:

PROPOSED DRAINAGE PLAN

Sheet Number:

C-1.0

Date: - DECEMBER 15, 2017