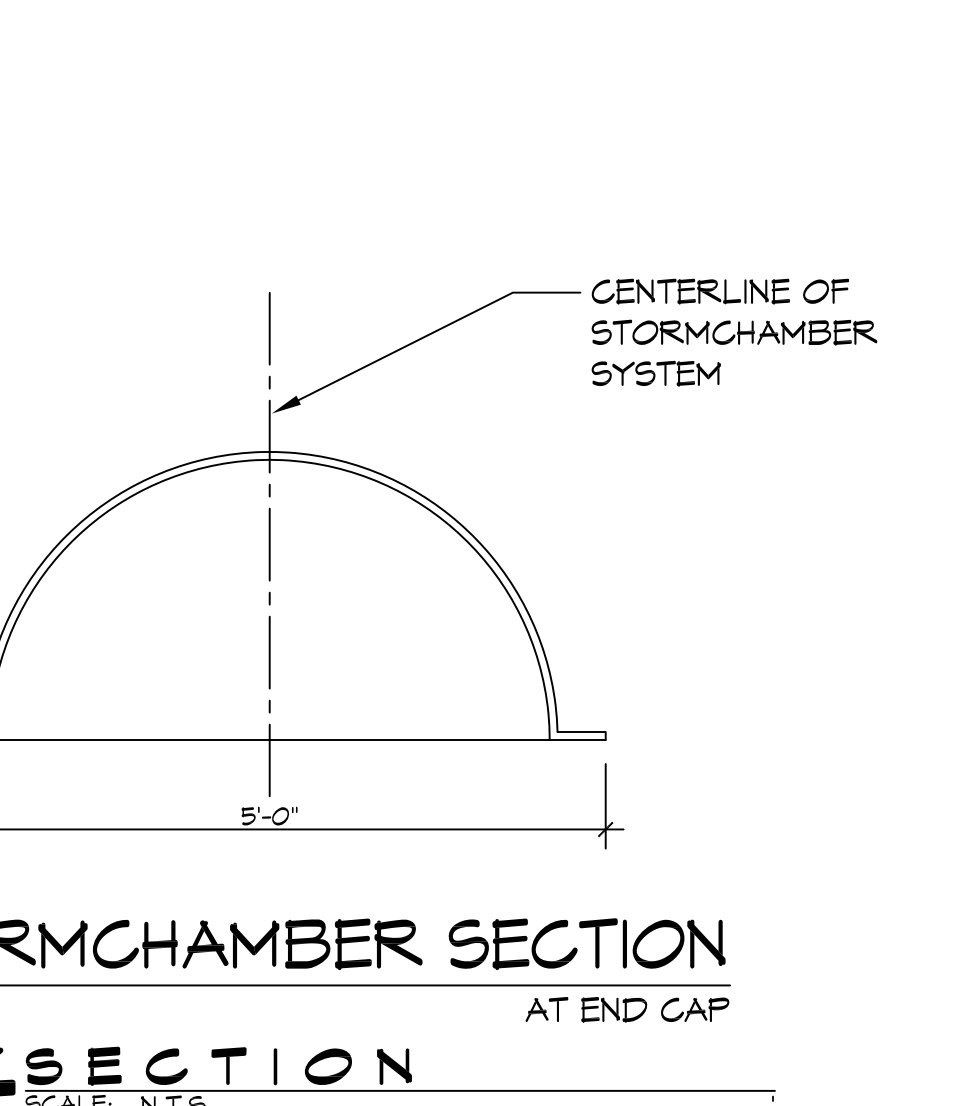
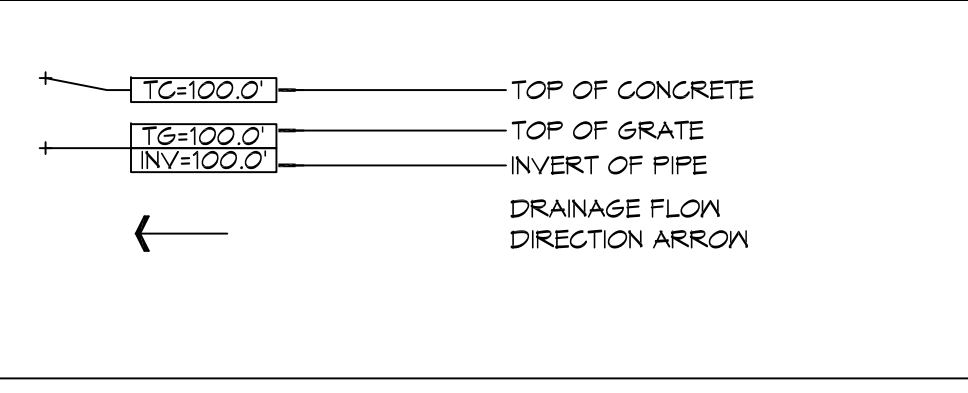


GENERAL SITE DRAINAGE NOTES

1. DRAIN PIPE(S) MUST BE THE BELL AND SPIGOT TYPE WITH 10" RING RUBBER GASKETS. THE BELLS OF THE PIPES SHALL BE LAID UPSTREAM. ALL JOINTS SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. ALL PIPES SHALL REQUIRE A 3" COMPACTED SAND OR LIMESTONE BASE.
2. REMOVE DEBRIS AND CLEAN BOTTOM OF DITCHES DOWN 6" IN DEPTH - REPLACE ANY BROKEN/CRUSHED PIPES OR CULVERTS WITH SAME SIZE AND TYPE.
3. DRAIN PIPE AND FITTINGS WITHIN PROPERTY LINE SHALL BE POLYVINYL CHLORIDE PLASTIC PIPE, MEETING CLASS 100 C-900 PVC.
4. ELEVATIONS SHOWN ARE MSL.
5. FIELD VERIFY ALL ELEVATIONS AND AND DRAINAGE SYSTEM PLACEMENT PRIOR TO START OF WORK.
6. PROVIDE VERTICAL ELBOW AT DOWNSPOUTS FOR CONNECTION TO SUBSURFACE DRAINAGE WHERE INDICATED. ELBOW ID SHALL BE SIZED SUCH THAT THE DOWNSPOUT CAN BE INSERTED INTO THE PIPE OPENING WITHOUT DEFORMATION TO THE DOWNSPOUT.

SITE DRAINAGE LEGEND



STORM WATER RUN-OFF CALCULATIONS

PROJECT:		Josephine Condos	
FORMULAS USED:			
[1] RATIONAL METHOD: $Q = ACi$			
where:	Q = Peak discharge of watershed in cubic feet per second (cfs) due to maximum storm assumed.	A = Area of watershed in acres	i = Intensity of rainfall in inches per hour based on concentration time (3)
	C = Coefficient of runoff (2)		
	i = Intensity of rainfall in inches per hour based on concentration time (3)		
	T_c = Time of concentration time required for rain falling at most remote point to reach discharge point.	C_e = Site runoff coefficient based on conditions shown.	S = Percent slope of overland flow.
PRIOR TO DEVELOPMENT			
$Q_1 = AC_1i_1$	Waterlight Surfaces	0.80	0.000 Acres
	Brick Pavers	0.25	0.000 Acres
	Green Space	0.3	24.211 Acres
	Summary	$C_e = 0.30$	24.211 sqft 0.556 Acres
	Duration (D) = Time of concentration (TC)	1.00	run-off length ft
	where	L = 0.30	run-off coef
		S = 0.002	percent slope
	therefore	$TC = D = 12.30$	minutes
	Expected rainfall intensity	$I = 8.55$	in/hr
	$Q_1 =$	1.045	cfs
POST DEVELOPMENT			
$Q_2 = AC_2i_2$	Waterlight Surfaces	0.80	21.066 sqft 0.454 Acres
	Brick Pavers	0.30	0.000 Acres
	Green Space	0.3	3.145 sqft 0.072 Acres
	Summary	$C_e = 0.32$	24.211 sqft 0.556 Acres
	Duration (D) = Time of concentration (TC)	1.00	run-off length ft
	where	L = 0.30	run-off coef
		S = 0.002	percent slope
	therefore	$TC = D = 9.00$	minutes
	Expected rainfall intensity	$I = 11.82$	in/hr
	$Q_2 =$	3.14	cfs
CAPTURE REQUIREMENTS			
Capture the 1st 1.25" of rainfall of a 10 year storm over a 24-hr period			
Storage = 1.25"/12 x sqft of waterlight surface	2144.4	cuft	or 16,414 gallons
Storage = 1.25"/12 x sqft of waterlight surface	2144.4	cuft	or 16,444 gallons
Storage will be constructed using stormchamber with an area	14.2	sqft	
Stormchamber Length Required with 100% Storage Capacity =	184.66	ft	
CALCULATE THE SIZE ORIFICE TO RESTRICT FLOW			
[5] $A = \frac{Q}{C_v \sqrt{2gh}}$			
where:	A = Discharge Area required	g = Acceleration of gravity	h = Hydraulic head
	C_v = Discharge coefficient	Q = Flow volume from run-off	
	g = 32.18	h = 1.00	feet
	$Q = 3.14$	$A =$	0.230
			sqft
			REQUIRED SIZE ORIFICE = 4.33 inch inside diameter
References:			
1. Chen, P.F. The Civil Engineering Handbook, 1989, Eq# 3.11, pg. 1036			
2. Beelye, Elwyn E. Data Book for Civil Engineers, Vol. 1, 1960, Table B, pg. 10-02			
3. Beelye, Elwyn E. Data Book for Civil Engineers, Vol. 1, 1960, Table B, pg. 10-01			
4. Chen, P.F. The Civil Engineering Handbook, 1989, Table 3.12 Region Equation (M0.019)			
5. Chen, P.F. The Civil Engineering Handbook, 1989, Eq# 2.32, pg. 494			

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SCALE: AS SHOWN FILE NAME: SITE DRAINAGE PLAN
 DATE: 01-11-16

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NO.	DATE	REVISIONS

C1.2

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