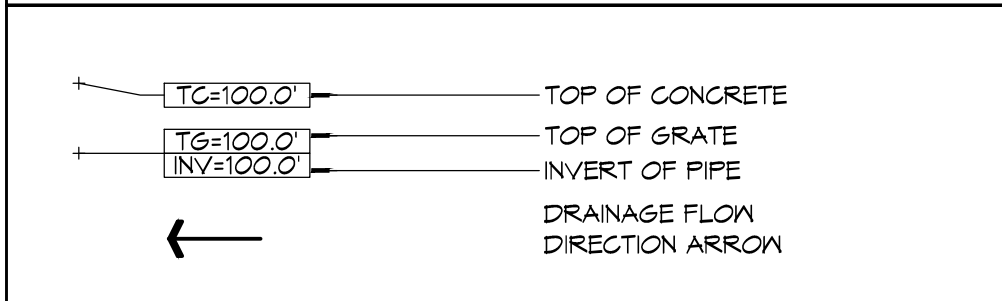


GENERAL SITE DRAINAGE NOTES

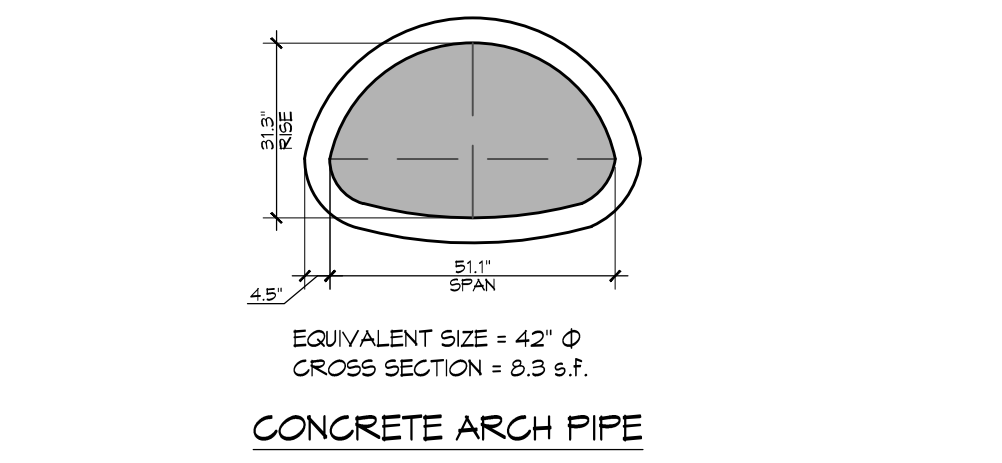
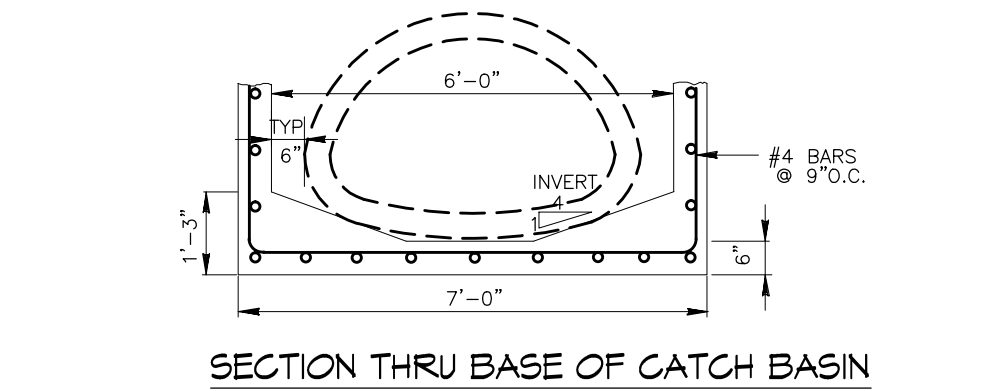
- DRAIN PIPE(S) MUST BE THE BELL AND SPIGOT TYPE WITH "O" RING RUBBER GASKETS. THE BELLS OF THE PIPES SHALL BE LAID UPSTREAM. ALL JOINTS SHALL BE WRAPPED WITH GEOTEXTILE FABRIC. ALL PIPES SHALL REQUIRE A 3" COMPACTED SAND OR LIMESTONE BASE.
- REMOVE DEBRIS AND CLEAN BOTTOM OF DITCHES DOWN 6" IN DEPTH - REPLACE ANY BROKEN/CRUSHED PIPES OR CULVERTS WITH SAME SIZE AND TYPE.
- DRAIN PIPE AND FITTINGS WITHIN PROPERTY LINE SHALL BE POLYVINYL CHLORIDE PLASTIC PIPE, MEETING CLASS 100 C-900 PVC.
- ELEVATIONS SHOWN ARE MSL.
- FIELD VERIFY ALL ELEVATIONS AND DRAINAGE SYSTEM PLACEMENT PRIOR TO START OF WORK.
- 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



DROP INLET

- A. 4' X 7' X 5'-6" DEPTH CONCRETE DROP INLET.
- B. 4' X 7' X 5'-6" DEPTH CONCRETE DROP INLET.
- C. 4' X 7' X 5'-6" DEPTH CONCRETE DROP INLET.



2 CONCRETE ARCH PIPE & BOTTOM OF CATCH BASIN
SCALE: NTS

STORM WATER RUN-OFF CALCULATIONS

PROJECT: Josephine St. Condo's			
FORMULAE USED: RATIONAL METHOD: Q=CIA			
where:	Q = Peak discharge of watershed in cubic feet per second (cfs) due to maximum storm assumed.	A = Area of watershed in acres.	C = Coefficient of runoff (see table below).
	I = Intensity of rainfall in inches per hour based on concentration time (t _c)		
	$C = \frac{1.49 (100 - I)^{0.775}}{(1140 + I)^{1.49}}$		
where:	t _c = Time of concentration in minutes required for rain falling at most remote point to reach discharge point.	C ₁ = Run-off coefficient based on conditions shown.	C ₂ = Percent slope of overland flow.
PRIOR TO DEVELOPMENT			
Q _p = Acl	10 Year Frequency		
Asphalt Surfaces	0.04	0.000	Acres
Brick Pavers	0.04	0.000	Acres
Green Space	0.15	0.001	Acres
Summary	0.15	0.001	Acres
Duration (D) = Time of concentration (t _c)	191	run-off length ft	
where:	L = 191	run-off coefficient	Elev diff
	C = 0.15	percent slope	
therefore	t _c = D = 20.12	minutes	
Expected rainfall intensity	I = 3.14	in/hr	
Q _p =	0.263	cfs	
POST DEVELOPMENT			
Q _p = Acl	10 Year Frequency		
Asphalt Surfaces	0.04	10.000	Acres
Brick Pavers	0.04	4.800	Acres
Green Space	0.15	3.140	Acres
Summary	0.10	24.250	Acres
Duration (D) = Time of concentration (t _c)	170	run-off length ft	
where:	L = 170	run-off coefficient	Elev diff
	C = 0.10	percent slope	
therefore	t _c = D = 0.01	minutes	
Expected rainfall intensity	I = 3.14	in/hr	
Q _p =	1.211	cfs	
LANDSCAPE INFILTRATION			
Landscaping Area	78.0 sq ft	0.010	131 gal
Planting Area	2,448 sq ft	0.010	2,140 gal
Total	2,526 sq ft	0.020	2,271 gal
CAPTURE REQUIREMENTS			
Capture the 1st 1.25" of rainfall of a 10 year storm over a 24-hr period	1,900 cu ft	or	13,048 gallons
Draining a volume of this size using the Post-Development Run-off Rate of 0.263 cfs would take =	1,900 cu ft / 0.263 cfs = 6,844 seconds or 114.4 minutes or 1.91 hrs		
Since the Landscaping Infiltration can handle 2,140 cu ft / hr the storage requirement can be reduced by this amount: 1,900 - 2,140 = -240 cu ft or 1,760 gal			
Storage = 1.25" x sq ft of Interlight Surface	117.0 sq ft	or	8,774 gallons
Storage using an Arch Pipe = 25.0 sq ft x 25.0" = 625 sq ft	625 sq ft	or	4,500 gallons
Arch Pipe Length Required with 100% Storage Capacity =	133.3		
CALCULATE THE SIZE ORIFICE TO RESTRICT FLOW			
[5] A =	0		
where:	A = Discharge Area required		
g = Acceleration of gravity			
C = Discharge coefficient			
H = Hydraulic head			
Q = Flow volume from runoff			
Q =	0.263 cfs	H =	1.00 feet
C =	0.62	A =	0.093 sq ft
g =	32.18 ft/sec/sec		
REQUIRED SIZE ORIFICE =	3.11	inch inside diameter	
References:			
1. Chen, W.P. The Civil Engineering Handbook, 1985, pg 311, pg. 1036			
2. Beyle, Blum P. Data Book for Civil Engineers, Vol. 1, pg. 19-21			
3. Beyle, Blum P. Data Book for Civil Engineers, Vol. 1, pg. 19-21			
4. Chen, W.P. The Civil Engineering Handbook, 1985, Table 31.2 Regan Equation (M.D.19)			
5. Chen, W.P. The Civil Engineering Handbook, 1985, pg 311, pg. 1036			

1 SITE DRAINAGE PLAN
SCALE: 1"=10'-0"

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NO.	DATE	REVISIONS

C1.2

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