

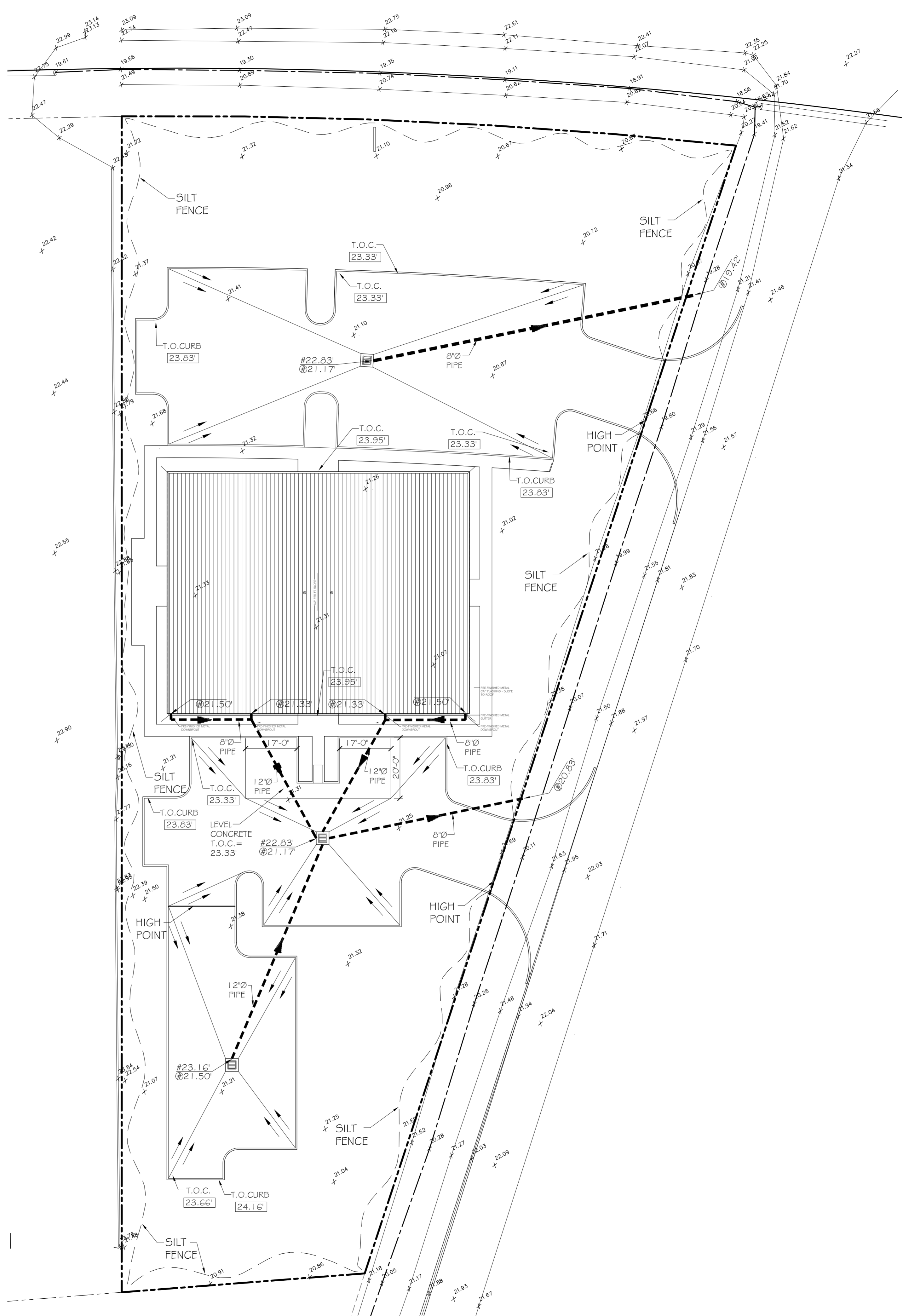
GUTTERS AND DOWN SPOUTS TO BE SEAMLESS ALUMINUM 24 GAUGE. COLOR TO BE SELECTED BY OWNER. GUTTERS TO BE "OGEE" IN CROSS SECTION, MINIMUM 6" WIDTH.

PROJECT: ADULI	
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.
	c = Coefficient of run-off [2].
	i = Intensity of rainfall in inches per hour based on concentration time. [3]
[4] TCI: $(L^{0.8} (100 - 9)^{0.5}) / (1140 c^{0.5})$	
where:	TC = Time of concentration = time required for rain falling at most remote point to reach discharge point.
	c = Site run-off coefficient based on conditions shown.
	L = Percent slope of overland flow.
PRIOR DEVELOPMENT 25 Year Frequency	
Q ₁ = Aci	
Waterlight Surfaces	c(1) = 0.9 sqft = 0.000 Acres
Gravel Surface	c(2) = 0.25 sqft = 0.000 Acres
Green Space	c(3) = 0.15 54513.4 sqft = 1.251 Acres
Summary	c = 0.15 54513.4 sqft = 1.251 Acres
Duration (D) = Time of concentration (TC)	
where:	L = 388 run-off length ft Elev diff = 11
	c = 0.15 run-off coef
	S = 0.2577 percent slope
therefore:	TC = D = 24.89 minutes
Expected rainfall intensity	i = 3.64 in/hr
Q ₁ =	0.683 cfs 10% reduction 0.608 cfs
POST DEVELOPMENT 25 Year Frequency	
Q ₂ = Aci	
Waterlight Surfaces	c(1) = 0.9 25487 sqft = 0.585 Acres
Gravel Surface	c(2) = 0.25 0 sqft = 0.000 Acres
Green Space	c(3) = 0.15 29046.4 sqft = 0.667 Acres
Summary	c = 0.50 54513.4 sqft = 1.251 Acres
Duration (D) = Time of concentration (TC)	
where:	L = 170 run-off length ft Elev diff = 11.5
	c = 0.50 run-off coef
	S = 0.8824 percent slope
therefore:	TC = D = 10.22 minutes
Expected rainfall intensity	i = 3.64 in/hr
Q ₂ =	2.279 cfs
DETECTION REQUIREMENTS	
Detention required Q ₂ -Q ₁	1.60 cfs
ONE HOUR DETENTION	5745.91 cuft
DETECTION DIMENSIONS	WIDTH 84 feet
	LENGTH 186 feet
	DEPTH 6.37 feet
DISCHARGE END AREA REQUIREMENTS 10 Year Frequency	
[5] A = $Q / (c \sqrt{2.48 S})$	
where:	A = Discharge Area required
	g = Acceleration of gravity
	c = Discharge coefficient
	h = Hydraulic head
	Q = Flow volume from run-off
Pipe Servicing Site Drainage	Q = 0.688 cfs h = 1.50 feet
	c = 0.62 coefficient A = 0.011 sqft
	g = 32.16 ft/sec ²
REQUIRED CONDUIT =	1.43 inch inside diameter
References:	
1. Chen, W.F. The Civil Engineering Handbook, 1995. Eq # 31.1, pg. 1036	
2. Seelye, Elwyn E. Data Book for Civil Engineers, Vol. 1 1960. Tbl. B, pg. 18-02	
3. Seelye, Elwyn E. Data Book for Civil Engineers, Vol. 1 1960. Fig. B, pg. 18-01	
4. Chen, W.F. The Civil Engineering Handbook, 1995. Tbl. 31.2 Regan Equation (n=0.013)	
5. Chen, W.F. The Civil Engineering Handbook, 1995. Eq # 28.32, pg. 959	

- NOTES:
- 1) DRAIN PIPE & FITTINGS WITHIN PROPERTY LINE SHALL BE POLYVINYL CHLORIDE PLASTIC PIPE, MEETING CLASS 100 C-900 PVC.
 - 2) ELEVATIONS SHOWN ARE M.S.L.
 - 3) FIELD VERIFY ALL ELEVATIONS AND DRAINAGE SYSTEM PLACEMENT PRIOR TO START OF WORK.
 - 4) MUCK OUT 24" DEEP FOR FOUNDATION PAD MINIMUM, OR TO UNDISTURBED SOIL CAPABLE OF 1500 PSF BEARING.
 - 5) DOWN SPOUTS SHALL FLOW INTO SUB-SURFACE DRAINAGE.
 - 6) THERE IS NO EVIDENCE OF EXISTING OFF-SITE FLOW CROSSING THE PROPERTY. NEW DRAINAGE CALCULATIONS ARE DETERMINED ACCORDINGLY.

LEGEND:

- - - - - PROPERTY LINE
- - - - - SERVITUDE / EASEMENT
- - - - - NEW DRAIN LINE
- ▣ NEW DROP INLET w/TEMP. SILT FENCING
- - - - - SLOPE LINES
- ⊕ T.O. GRATE ELEVATION
- ⊖ INVERT ELEVATION
- 00.00 NEW ELEVATIONS
- x00.00 EXISTING ELEVATIONS
- - - - - TEMPORARY SILT FENCING



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NEW COMMERCIAL BUILDING
DR. FARHAD ADULI
LOT 288 MARGOLD DRIVE
COVINGTON, LA

JOB No: 2178 DATE: 09-23-2013
DRAWN BY: JTL CHECKED BY: KJK

#	DESCRIPTION	DATE

SITE DRAINAGE PLAN & DETAILS

SHEET No: 8 of 22

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