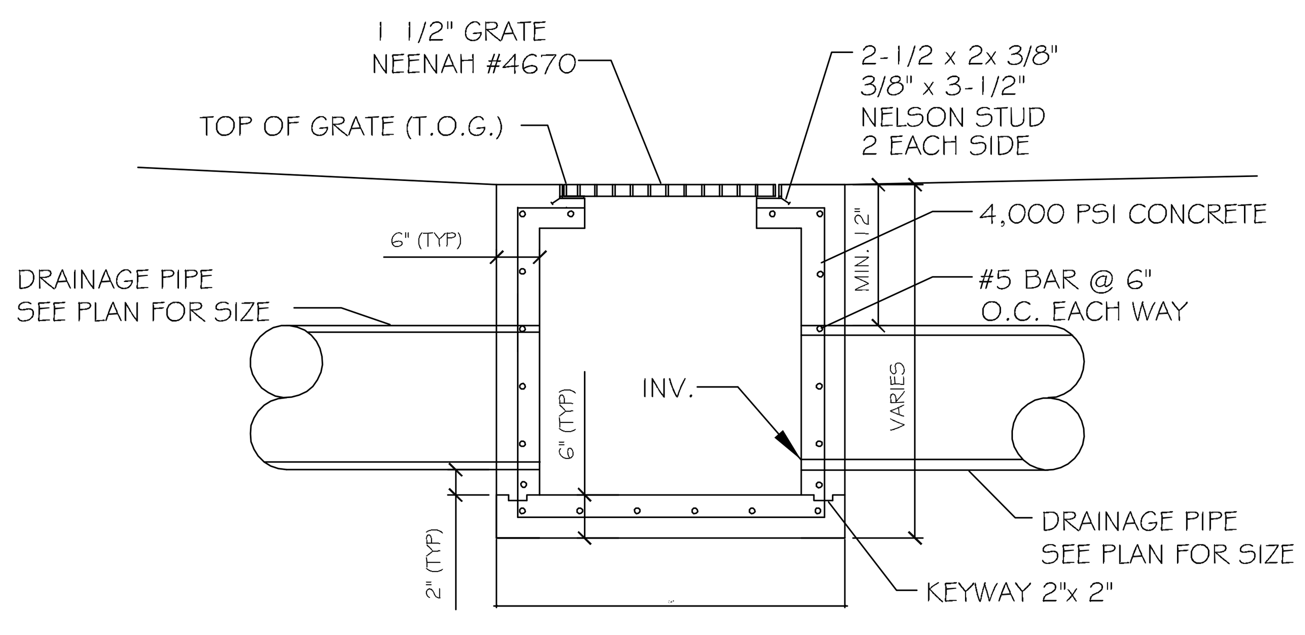
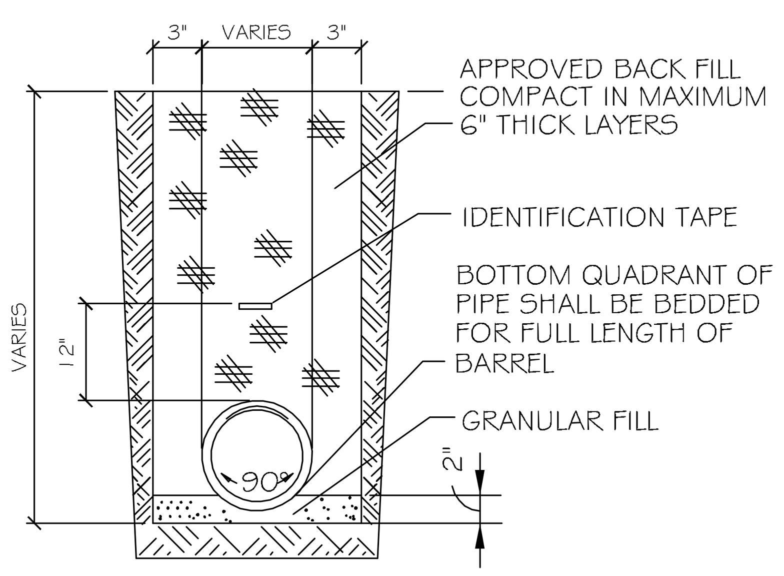


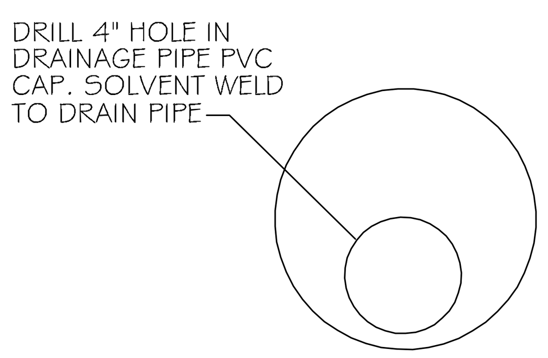
TYPICAL DROP INLET

N.T.S.



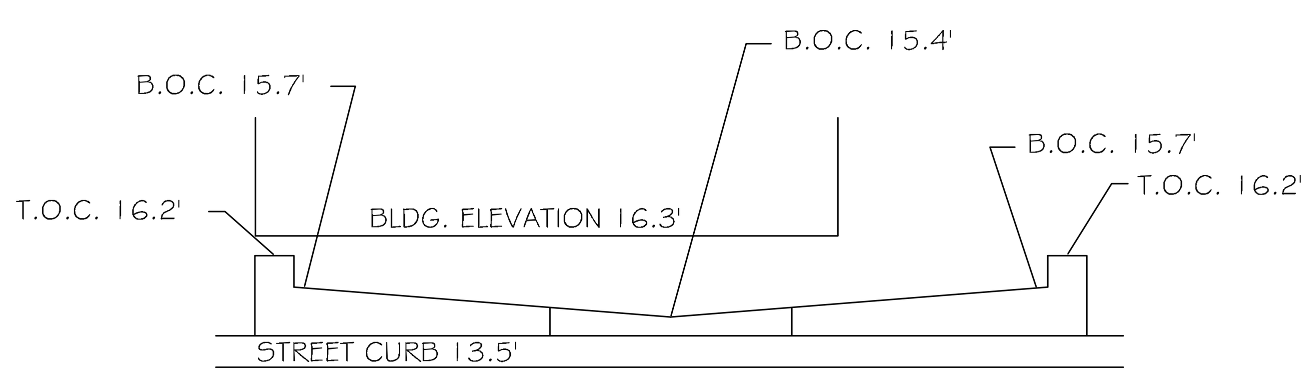
DRAIN PIPE BEDDING

N.T.S.



ORIFICE DETAIL

N.T.S.



SECTION

N.T.S.

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.

O.C. 15.7'

PROJECT: ADULI

STORMWATER RUN-OFF CALCULATIONS

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]

$$[4]\ TC = \frac{\left(L^{0.8}\left(\frac{1000}{c}-9\right)^{0.7}\right)}{(1140(s^{0.5}))}$$

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.
- s= Percent slope of overland flow.

PRIOR DEVELOPMENT
25 Year Frequency

Q_1 = Aci

	c	sqft		Acres
Watertight Surfaces c(1) =	0.9	0	sqft =	0.000 Acres
Gravel Surface c(2) =	0.25	0	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 = 1
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 0.068 cfs

POST DEVELOPMENT
25 Year Frequency

Q_2 = Aci

	c	sqft		Acres
Watertight Surfaces c(1) =	0.9	25467	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 = 1.5
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

DETENTION REQUIREMENTS

Detention required Q_2-Q_1 1.60 cfs
ONE HOUR DETENTION 5745.9 cuft
DETENTION DIMENSIONS
WIDTH 84 feet
LENGTH 186 feet
DEPTH 0.37 feet

DISCHARGE END AREA REQUIREMENTS
10 Year Frequency

$$[5]\ A = \frac{Q}{(c\sqrt{(2gh)})}$$

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 = 0.068 cfs — h = 1.50 feet
c = 0.62 coefficient — A = 0.011 sqft
g = 32.16 ft/sec/sec

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. 969

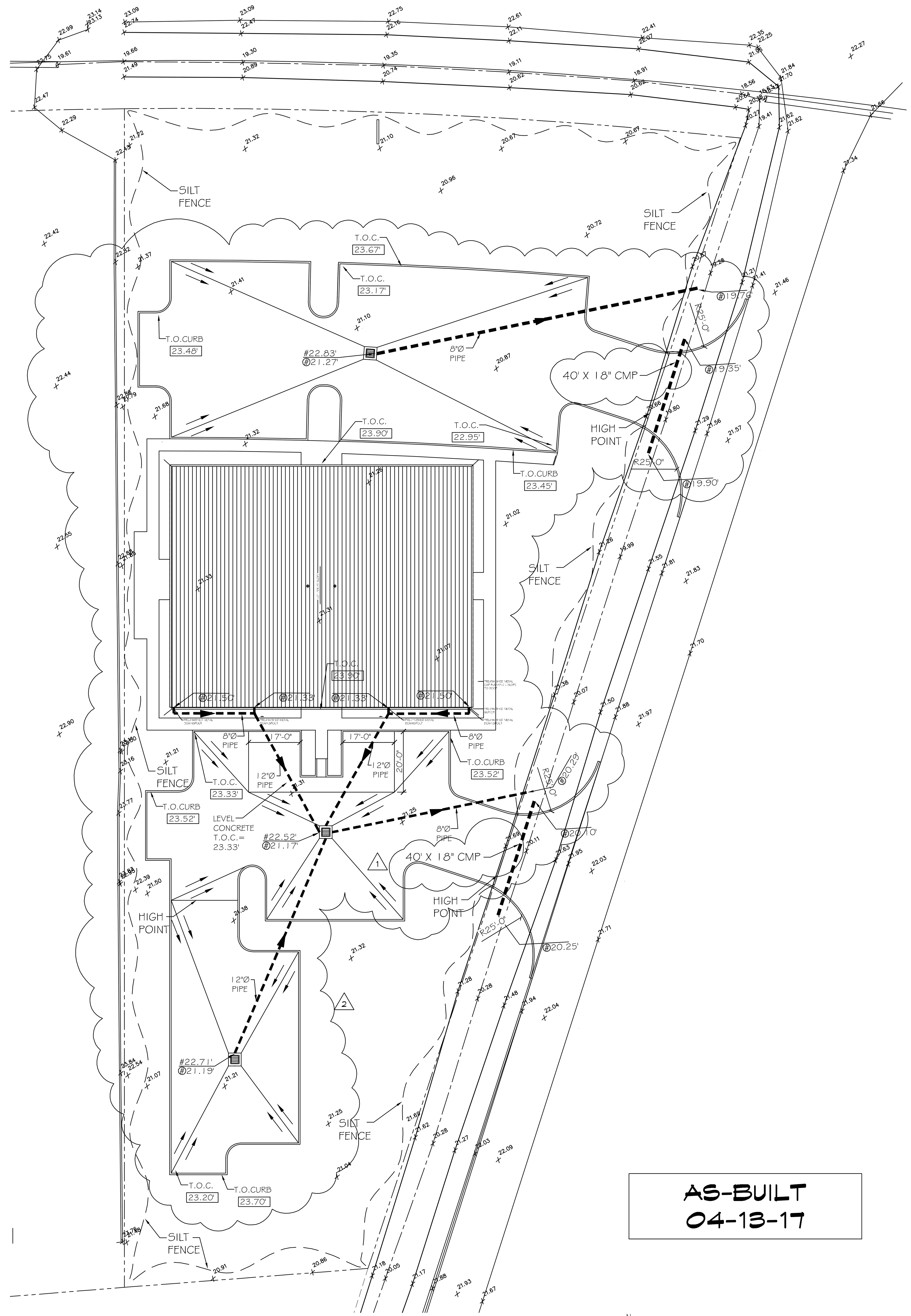
NOTES:

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

2 — 1. ALL ELEVATIONS SHOWN ARE M.S.L. AND ARE PLUS OR MINUS 1 1-2"



AS-BUILT
04-13-17

1 SITE DRAINAGE PLAN
SCALE: 1" = 20'

REVISIONS		
#	DESCRIPTION	DATE
1	CHANGE PIPE IN DITCH TO CMP	01-02-14
2	REVISED ACTUAL FIELD ELEVATIONS	04-13-17

NEW COMMERCIAL BUILDING
DR. FARHAD ADULI

LOT 288 MARIGOLD DRIVE
COVINGTON, LA

JOB No: 2178 — DATE: 03-20-2014
DRAWN BY: JTL — CHECKED BY: KJK

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DAMMON ENGINEERING, INC.
Architects & Engineers

CHIEF ENGINEER: EMMETT DAMMON, P.E.
CHIEF ARCHITECT: KEVIN KINCHEN, NCARB
554 OLD SPANISH TRAIL
SLIDELL, LA 70458

dammonengineering.com
dammoneng@bellsouth.net
PHONE: 985-649-5832
FAX: 985-641-5950

SITE DRAINAGE PLAN & DETAILS

SHEET No: 8 of -

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