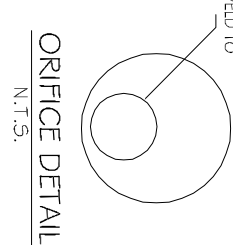
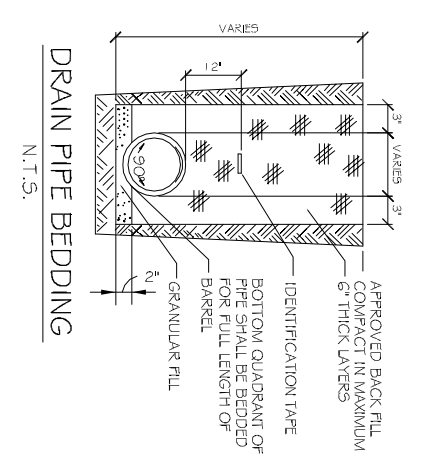
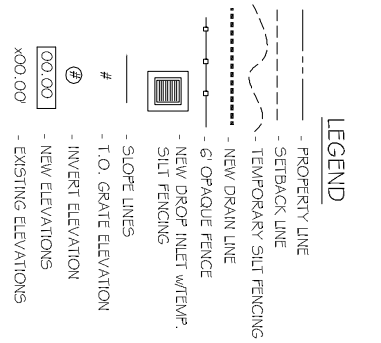
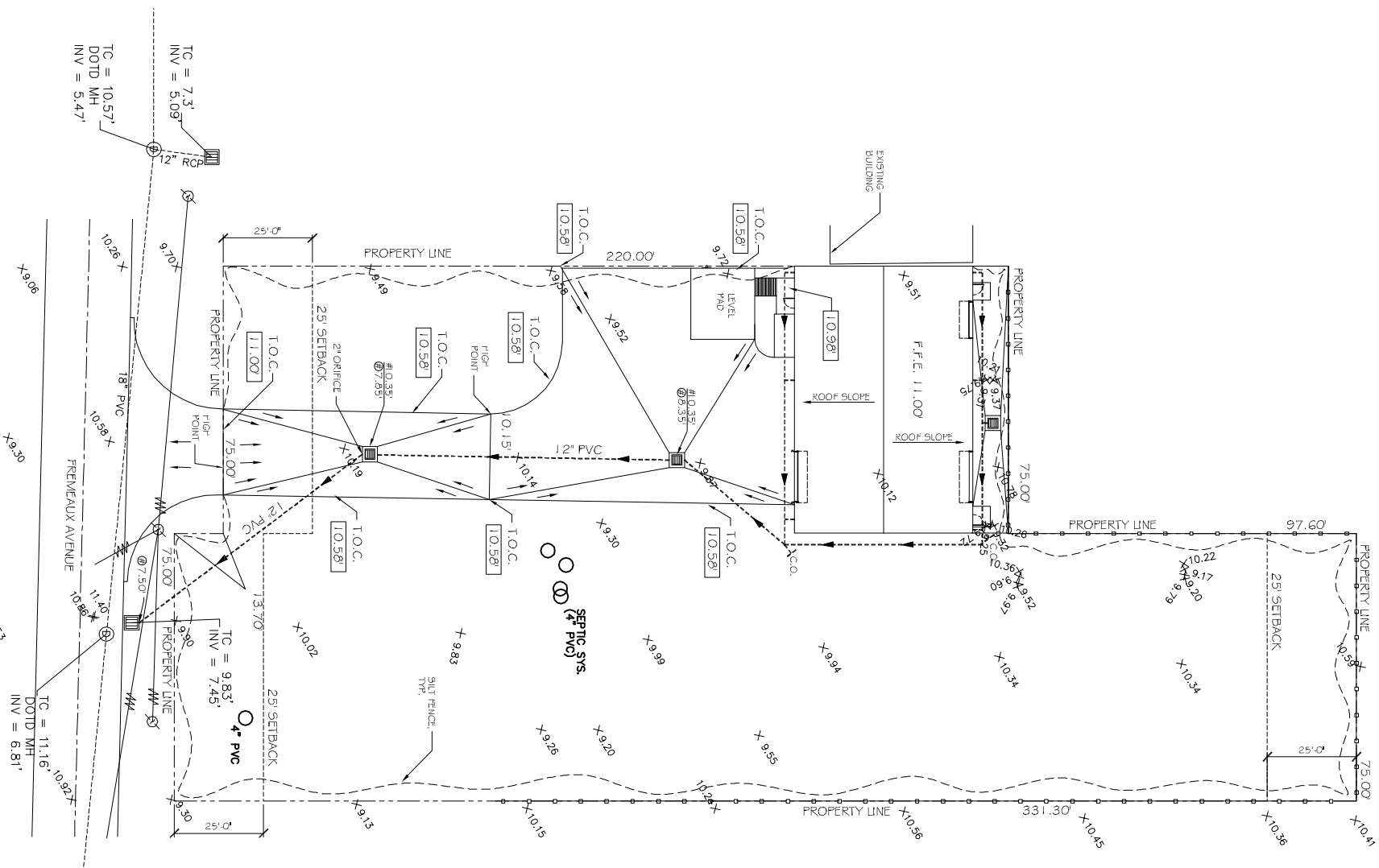
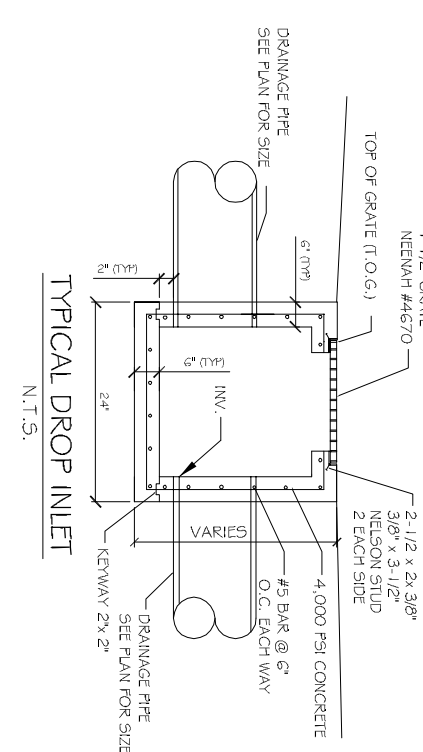
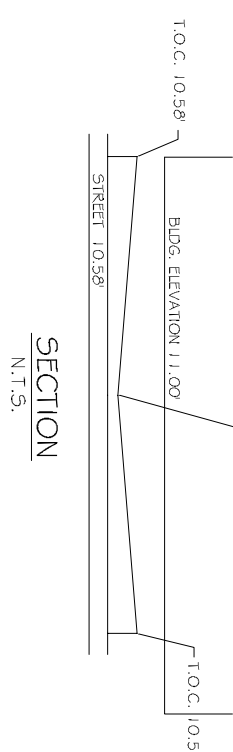


SITE DRAINAGE PLAN
SCALE: 1"=20'-0"



- 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\"/>
 - 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.



BULK SYSTEMS

PROJECT: STORMWATER RUNOFF CALCULATIONS

Formulas used: [1] RATIONAL METHOD: $Q = CiA$

where:

- Q = Peak discharge of watershed in cubic feet per second (cfs) due to maximum storm assumed.
- C = Coefficient of runoff (runoff).
- A = Area of watershed in acres.
- I = Intensity of rainfall in inches per hour based on concentration time, [3]

where:

- T_C = Time of concentration: time required for rain falling at most remote point to reach discharge point.
- S = Site runoff coefficient based on conditions shown.
- S = Percent slope of overland flow.

PROX DEVELOPMENT

25 Year frequency

$Q = CiA$	$cft(1)$	$sqft$	$cft(2)$	$sqft$
Watersight Surfaces	0.9	4144	0.25	0.095 Acres
Gravel Surface	0.25	0	0.15	0.000 Acres
Green Space	0.15	37188	0.23	0.854 Acres
Summary		41332		0.949 Acres

Duration (D) = Time of concentration (T_C)

where

- L = 170 run-off length ft
- C = 0.23 run-off coef
- S = 0.8824 percent slope
- $T_C = D = 0.53$ minutes

therefore

Expected rainfall Intensity $I = 3.64$ in/hr

$Q = 1240$ cfs

DETENTION REQUIREMENTS

Detention required Q-Q ONE HOUR DETENTION

WIDTH	DEPTH
1683.5sqft	697feet
	907feet
	0.287feet

DISCHARGE END AREA REQUIREMENTS

10 Year frequency

where:

- A = Drainage Area required
- C = Discharge coefficient
- I = Hydraulic head
- L = Length of pipe
- Q = Discharge
- R = Hydraulic radius
- S = Pipe slope
- V = Velocity

1.581 inch inside diameter

References:

1. Chen, W.F., The Civil Engineering Handbook, 1994, McGraw-Hill, Inc., pp. 408-410
2. Sutterly, E.M., The Civil Engineering Handbook, 1994, McGraw-Hill, Inc., pp. 442-443
3. Sutterly, E.M., The Civil Engineering Handbook, 1994, McGraw-Hill, Inc., pp. 444-445
4. Chen, W.F., The Civil Engineering Handbook, 1994, McGraw-Hill, Inc., pp. 446-447
5. Chen, W.F., The Civil Engineering Handbook, 1994, McGraw-Hill, Inc., pp. 448-449

BULK SYSTEM'S NEW OFFICE/WAREHOUSE BUILDING

1226 FREMEAUX AVENUE
SUDELL, LOUISIANA 70458

JOB No: 2173 DATE: 04-22-2013
DRAWN BY: JTL CHECKED BY:



CHIEF ENGINEER: EMMETT DAMMON, P.E.
CHIEF ARCHITECT: KEVIN KINCHEN
554 OLD SPANISH TRAIL
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SITE DRAINAGE PLAN

C4

SHEET NO: 5 OF 20