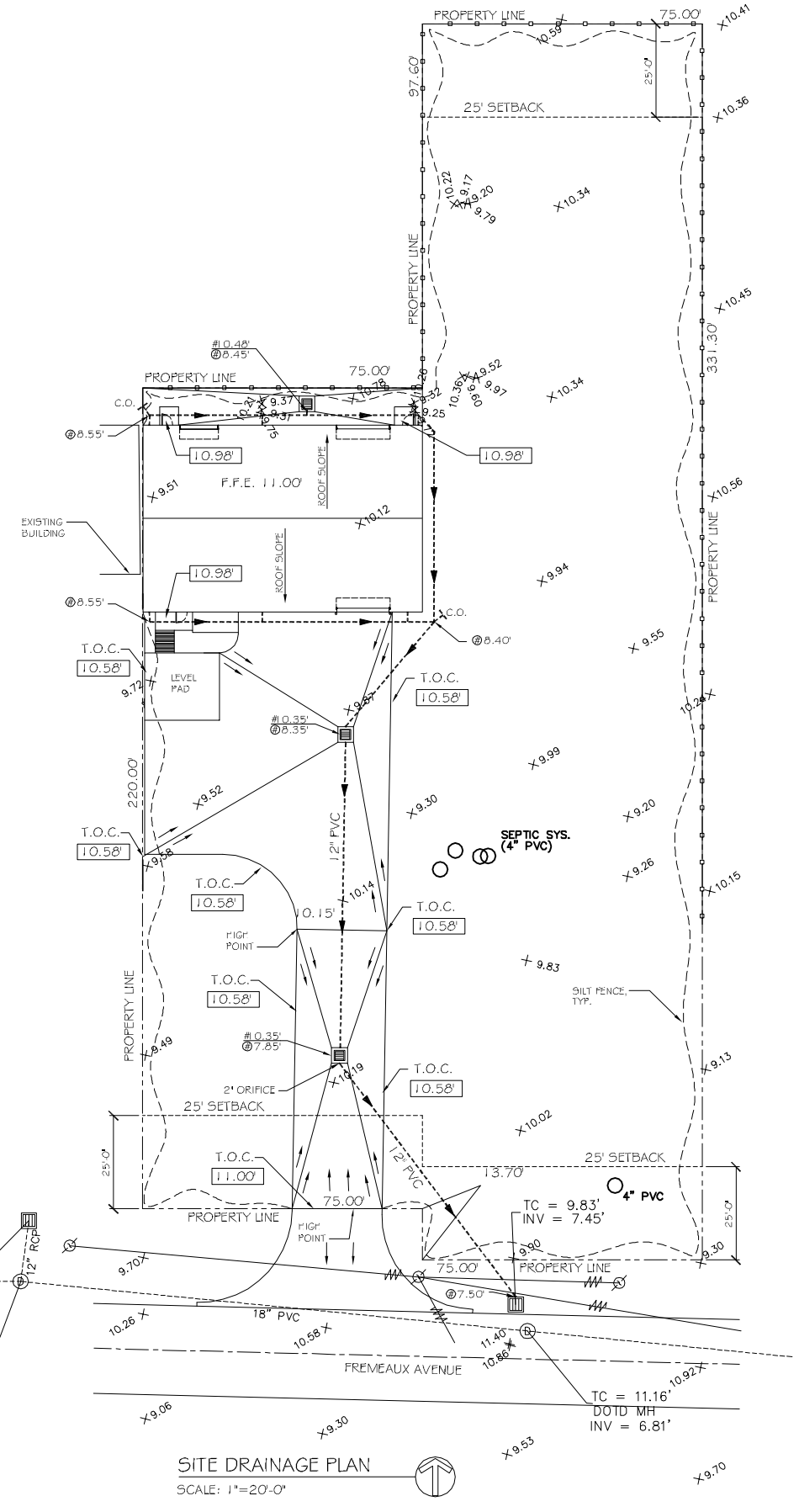


SITE DRAINAGE PLAN

SCALE: 1"=20'-0"

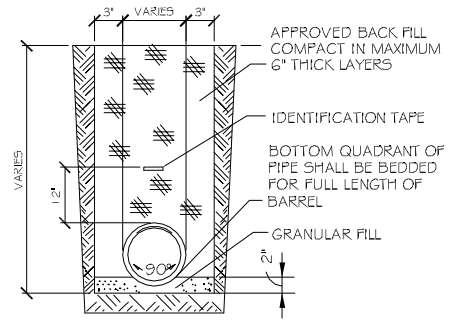
LEGEND

- PROPERTY LINE
- SETBACK LINE
- TEMPORARY SILT FENCING
- NEW DRAIN LINE
- 6' OPAQUE FENCE
- NEW DROP INLET w/TEMP. SILT FENCING
- SLOPE LINES
- # - T.O. GRATE ELEVATION
- (#) - INVERT ELEVATION
- 00.00 - NEW ELEVATIONS
- x00.00 - EXISTING ELEVATIONS

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.

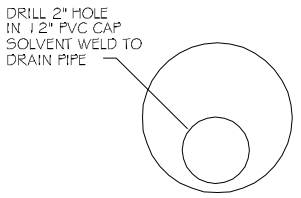
NOTES:

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.



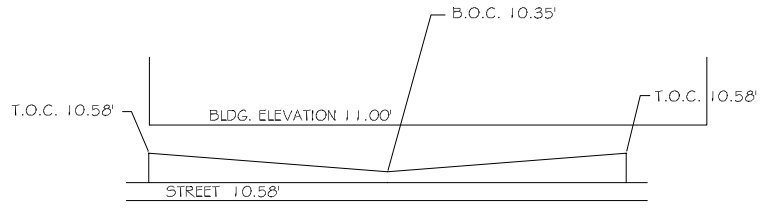
DRAIN PIPE BEDDING

N.T.S.



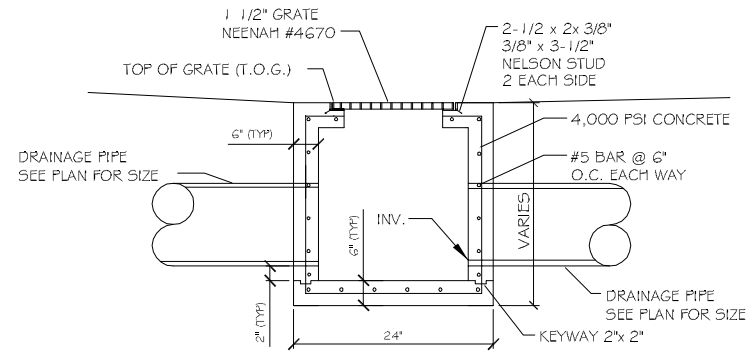
ORIFICE DETAIL

N.T.S.



SECTION

N.T.S.



TYPICAL DROP INLET

N.T.S.

PROJECT: BULK SYSTEMS

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=

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

Watertight Surfaces		4144	sqft =	0.095 Acres
c(1) =	0.9			
Gravel Surface		0	sqft =	0.000 Acres
c(2) =	0.25			
Green Space		37188	sqft =	0.854 Acres
c(3) =	0.15			
Summary		41332	sqft =	0.949 Acres
c =	0.23			

Duration (D) = Time of concentration (TC)

where L = 208 run-off length ft Elev diff =
c = 0.23 run-off coef
S = 0.4808 percent slope
therefore TC = D = 5.53 minutes
Expected rainfall
Intensity I = 3.64 in/hr

Q_1 = 0.778 cfs 10% reduction **0.078 cfs**

POST DEVELOPMENT

25 Year Frequency

Q_1 = Aci

Watertight Surfaces		11517	sqft =	0.264 Acres
c(1) =	0.9			
Gravel Surface		0	sqft =	0.000 Acres
c(2) =	0.25			
Green Space		29815	sqft =	0.684 Acres
c(3) =	0.15			
Summary		41332	sqft =	0.949 Acres
c =	0.36			

Duration (D) = Time of concentration (TC)

where L = 170 run-off length ft Elev diff = 5
c = 0.36 run-off coef
S = 0.8824 percent slope
therefore TC = D = 2.90 minutes
Expected rainfall
Intensity I = 3.64 in/hr

Q_2 = 1.240 cfs

DETENTION REQUIREMENTS

Detention required Q -Q 0.46cfs
ONE HOUR DETENTION 1663.5cuft
DETENTION DIMENSIONS WIDTH 65feet
LENGTH 90feet
DEPTH **0.28feet**

DISCHARGE END AREA REQUIREMENTS

10 Year Frequency

where: A= Discharge Area required
g= Acceleration of gravity
c= Discharge coefficient
h= Hydraulic head
Q= Flow volume from run-off

Pipe Sending Site Drainage

Q =	0.078 cfs	h =	2.50 feet
c =	0.62 coefficient	A =	0.010 sqft
g =	32.16 ft/sec/sec		

REQUIRED CONDUIT = 1.35 Inch inside diameter

References:

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3. Seelye, Elwyn E. Data Book for Civil Engineers, Vol.1 1960, Fig.B, pg. 19-01
4. Chen, W.F. The Civil Engineering Handbook, 1995. Tbl. 31.2 Regan Equation (=0.013)
5. Chen, W.F. The Civil Engineering Handbook, 1995. Eq.# 28.32, pg. 969

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BULK SYSTEMS NEW OFFICE/WAREHOUSE BUILDING

1,2,2 G FREMEAUX AVENUE
SLIDELL, LOUISIANA 70458

JOB No: 2173 DATE: 04-22-2013

DRAWN BY: JTL CHECKED BY:

REVISIONS

#	DESCRIPTION	DATE

SITE DRAINAGE PLAN

SHEET No: 5 OF 20

C4