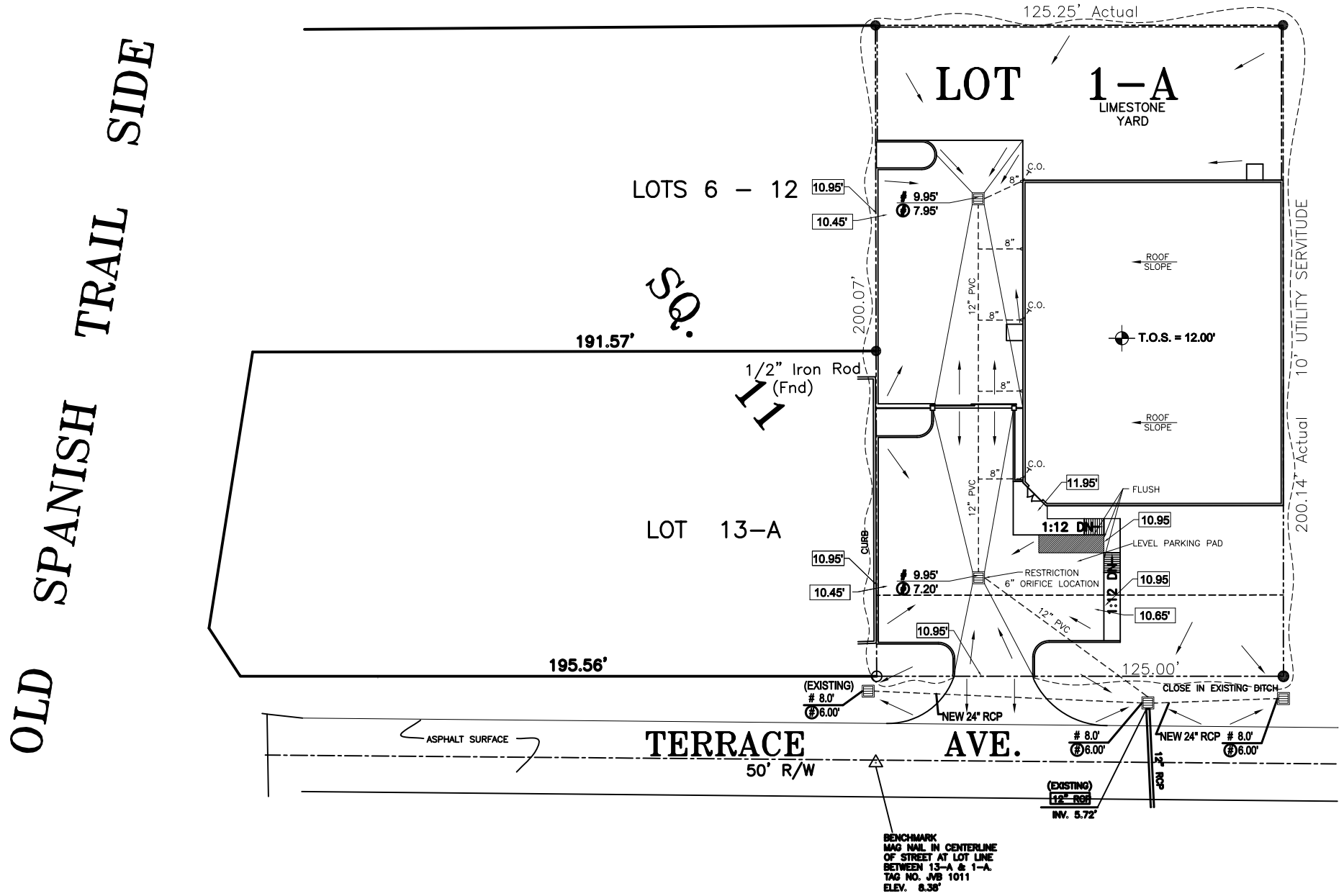
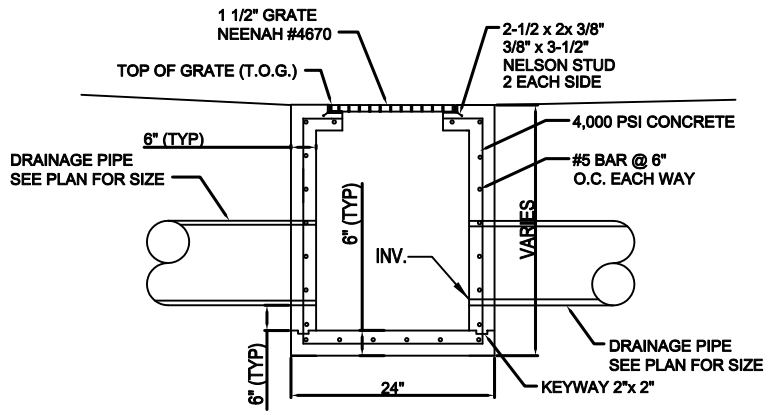


DRAINAGE PLAN
SCALE: 1"=20'-0"

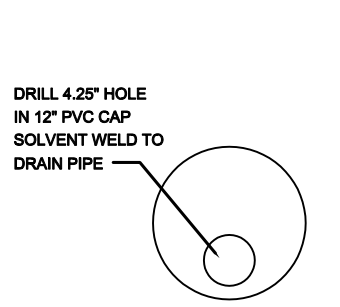
NOTES:
1) DRAIN PIPE & FITTINGS WITHIN PROPERTY LINE SHALL BE POLYVINYL CHLORIDE PLASTIC PIPE, MEETING CLASS 100 C-900 PVC.
2) ELEVATIONS SHOWN ARE M.S.L.
3) FIELD VERIFY ALL ELEVATIONS AND DRAINAGE SYSTEM PLACEMENT PRIOR TO START OF WORK.
3) MUCK OUT 24" DEEP FOR FOUNDATION PAD MINUMINM. OR TO UNDISTURBED SOIL CAPABLE OF 1500 PSF BEARING
4) DOWN SPOUTS SHALL FLOW INTO SUB-SUFRACE DRAINAGE.

LEGEND:

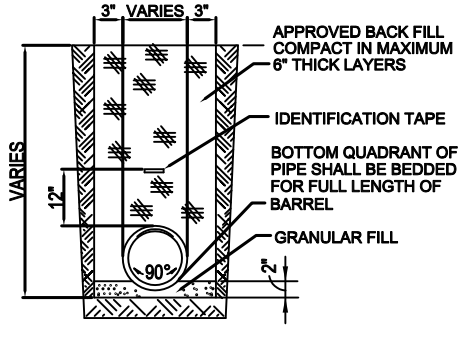
- PROPERTY LINE
- SETBACK
- NEW BUILDING
- NEW DRAIN LINE
- NEW 6' WOODEN FENCE
- NEW DROP INLET w/TEMP. SILT FENCING
- EXPANSION JOINT
- CONTROL JOINT
- SLOPE LINES
- # T.O. GRATE ELEVATION
- (#) INVERT ELEVATION
- 00.00 NEW ELEVATIONS
- 00.00 EXISTING ELEVATIONS
- TEMPORARY SILT FENCING



TYPICAL DROP INLET
N.T.S.



RESTRICTION ORIFICE DETAIL
N.T.S.



DRAIN PIPE BEDDING
N.T.S.

Soil Conservation Service (SCS) Computation for Run-Off

Information
Input
Computed Data

Slidell is in region I; For other regions see Figure 1.3

P = Precipation in inches

Return Period (Years)	Duration (Hours)	Region I	Region II	Region III
25	6	6.6	5.9	5.3
	12	8.2	7.0	6.2
	24	9.6	8.0	7.0
50	6	7.6	6.9	6.0
	12	9.5	8.1	7.0
	24	11.1	9.2	8.0
100	6	8.6	7.9	6.8
	12	10.9	9.3	7.9
	24	12.6	10.5	9.0

CN = Curve Number based on the soil group the property has

	Pre Development	Post Development
Enter CN value from Table 1.3	79	85

Compute Total Run off based on CN and Precipation in Inches

$R=(P-0.2(1000/CN-10))^2/P+0.8(1000/CN-10)$

	Pre Development	Post Development
25 year runoff 24 hour duration =	7.012704139	7.7651583 71
50 year runoff 24 hour duration =	8.44457034	9.23125363
100 year runoff 24 hour duration =	9.88995 1104	10.70460809

Compute Time of Concentration:

$TC=L^{0.8}(1000/CN-9)^{0.7}/1140(S)^{0.5}$

TC = Time of concentration in hours
L = Hydraulic Length of watershed
CN = Weighted runoff curve number (Future Conditions)
S = Average watershed land slope in percent (a minimum slope of 0.1 percent will be used)

Width of Property	180
Length of Property	350.0
Change of Elevation	1.00
Percent Slope	0.29

Time of Concentration Pre Development = C42^0.8*((1000/C24-9)^0.7)/(1140*(C44^0.5))
Pre Development TC= 0.44

Assume the site development used for CN above is 95% and streets with curbs comprise 5%
Time of Concentration Post Development = (C42^0.8*(1000/E24-9)^0.7/(1140*C44^0.5)) *.95
0.34
Time of Concentration Post Development = (C42^0.8*(1000/95-9)^0.7/(1140*C44^0.5)) *.05
0.01
TOTAL Time of Concentration Post Development =
Post Development TC= 0.36

Peak Discharge in cubic feet per second per acre per inch

Use the values for TC above and find that number on the curve in figure 1.1; enter this value as Q

	Pre Development	Post Development
Q =	0.85	0.9

Compute design peak rate of runoff

Qp= A R Q

Qp = Peak rate of runoff in cubic feet per second
Q = Peak discharge in cubic feet per second per acre per inch of runoff
A = Drainage area in acres
R = Runoff in inches

Acres	1.14
Size of Detention Pond	91 X 45

	Pre Development	Post Development
Qp 25 year =	6.80	7.97
Qp 50 year =	8.18	9.47
Qp 100 year =	9.58	10.98

	Post Development Runoff Limit in cfs	1 Hour detention in cubic feet	Depth of Detention Pond in feet
10% Reduction 25 Year (0-2 Acres)	6.12	6664.58	1.63
10% Reduction 50 Year	7.36	7584.96	1.85
10% Reduction 100 Year	8.63	8488.45	2.07
15% Reduction 25 Year (2-5 Acres)	5.78	7887.74	1.93
15% Reduction 50 Year	6.96	9057.83	2.21
15% Reduction 100 Year	8.15	10213.45	2.49
20% Reduction 25 Year	5.44	9110.90	2.22
20% Reduction 50 Year	6.55	10530.69	2.57
20% Reduction 100 Year	7.67	11938.46	2.92
25% Reduction 25 Year	5.10	10334.05	2.52
25% Reduction 50 Year	6.14	12003.56	2.93
25% Reduction 100 Year (Over 5 Acres)	7.19	13663.46	3.34

DISCHARGE END AREA CALCULATIONS

$Q = cA(2gH)^{1/2}$ where Q is allowable run off

Enter the Post Development Allowable run off from above	Q =	5.90	cfs
Friction loss factor	c =	0.98	coefficient
Acceleration	g =	32.2	ft/ft/sec
Height above invert	if H =	3.64	feet
End area	A =	0.39	sqft
REQUIRED CONDUIT =		8.49	Inch diameter
	USE	4.25	Inch orifice

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DRAINAGE PLAN

REV:

SCALE: AS NOTED
JOB#: 1871
DATE:10-31-07
SHEET
C-4
OF