

DAMMON ENGINEERING, INC.

CHIEF ENGINEER
EMMETT DAMMON, P.E.

CHIEF ARCHITECT
ROBERT WILTSE

1095 FLORIDA AVENUE
SLIDELL, LA. 70458
OFFICE: 985-649-5832
FAX: 985-641-5950

WEBSITE:
WWW.DAMMONENGINEERING.COM
EMAIL:
DAMMONENG@BELLSOUTH.NET

ARCHITECTURE
ENGINEERING
STUDIES
PLANNING
INVESTIGATION
EXPERT WITNESS

GREEN-STATEFARM
RETAIL COMPLEX
383 GAUSE
BLVD., WEST
SLIDELL, LA

SITE
DRAINAGE
PLAN

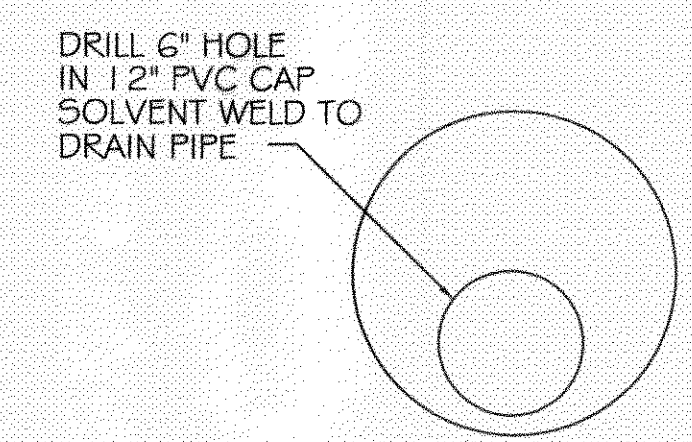
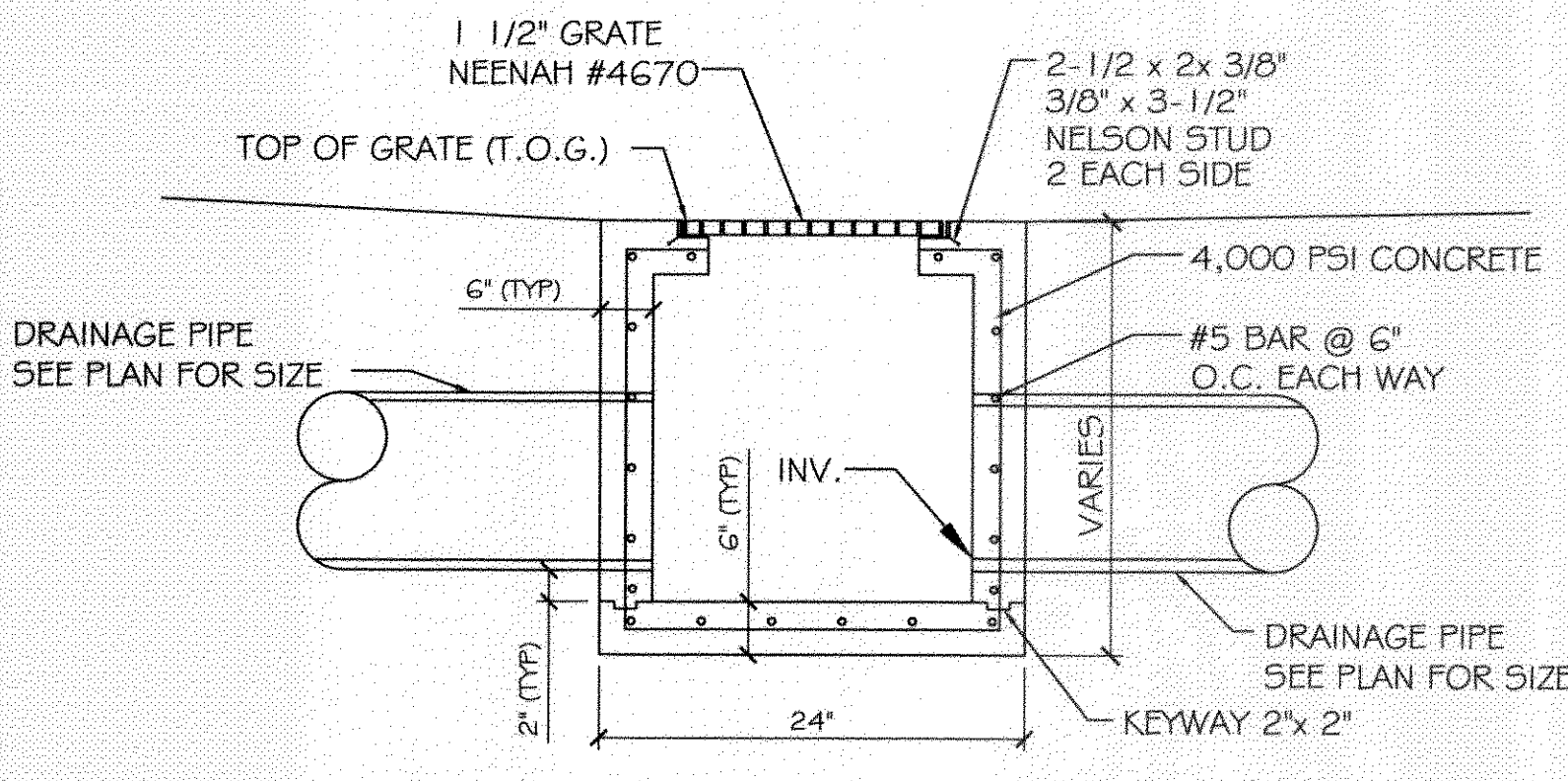
REV:
SCALE: AS NOTED
JOB#: 2057
DATE: 04-29-10
SHEET 4

C-3

OF 19

LEGEND:

- - - - - PROPERTY LINE
- - - - - UTILITY / EASEMENT LINE
- - - - - BUILDING SETBACK MINIMUM
- - - - - LANDSCAPING SETBACK MINIMUM AND BUFFER ZONE LIMITS AT REAR
- - - - - NEW BUILDING
- - - - - NEW DRAIN LINE
- - NEW DROP INLET w/TEMP. SILT FENCING
- - - - - SLOPE LINES
- # - T.O. GRATE ELEVATION
- ⑦ - INVERT ELEVATION
- ⑩.00' - NEW ELEVATIONS
- x00.00' - EXISTING ELEVATIONS
- - - - - TEMPORARY SILT FENCING



PROJECT: GREEN BLDG.
DRAINAGE RUN OFF CALCULATIONS - MODIFIED RATIONAL METHOD

PRIOR DEVELOPMENT
10 Year Frequency

Q₁ = CIA

Waterlight 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) = 0.35	45,094.00	sqft = 1.035 Acres
Summary	c = 0.35	45,094	sqft = 1.035 Acres

Duration (D) = Time of concentration (TC)
TC = .7039(L^{0.3917})(c^{-1.1309})(S^{-1.985})
where
L = 236 Runoff length ft Elev diff = 0.5
c = 0.35 Runoff coef
S = 0.2119 Percent Slope
therefore TC = D = 26.69 minutes
and from Rainfall Intensity Table I = 3.50 in/hr

Q₁ = 1.288 cfs RUNOFF LIMIT 85% 1.078 cfs

POST DEVELOPMENT
10 Year Frequency

Q₂ = CIA

Waterlight Surfaces	c(1) = 0.9	32330	sqft = 0.742 Acres
Gravel Surface	c(2) = 0.25	0	sqft = 0.000 Acres
Green Space	c(3) = 0.35	12764	sqft = 0.293 Acres
Summary	c = 0.74	45,094	sqft = 1.035 Acres

D = Time of concentration (TC)
TC = .7039(L^{0.3917})(c^{-1.1309})(S^{-1.985})
where
L = 174 Runoff length ft Elev diff = 0.75
c = 0.74 Runoff coef
S = 0.4310 Percent Slope
therefore TC = D = 8.77 minutes or
and from Rainfall Intensity Table I = 3.50 in/hr

Q₂ = 2.697 cfs

RESULTS

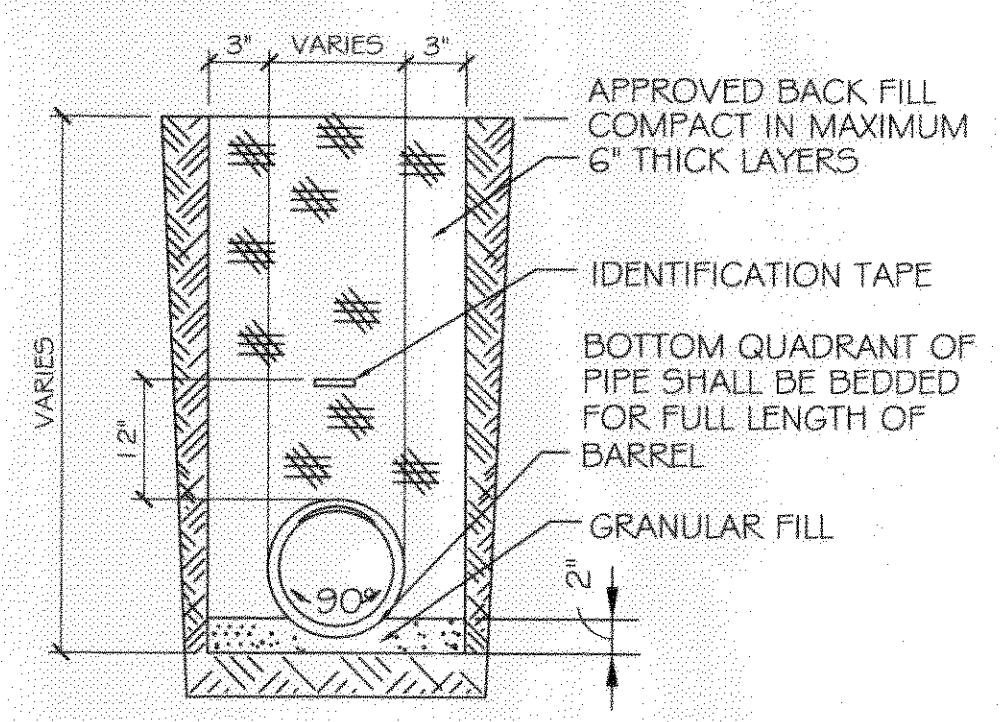
DETENTION REQUIRED Q₂-Q₁ 1.619 cfs
TWO HOUR DETENTION 11656.4 cuft
DETENTION DIMENSIONS
WIDTH 187 feet
LENGTH 106 feet
DEPTH 0.59 feet

DISCHARGE END AREA CALCULATIONS

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

Allowable run off	Q = 1.078 cfs
Friction loss factor	c = 0.98 coefficient
Acceleration	g = 32.2 ft/sec
Height above invert	if H = 2.00 feet
End area	A = 0.10 sqft

REQUIRED CONDUIT = 4.22 inch diameter
USE 6 inch orifice



- 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.

