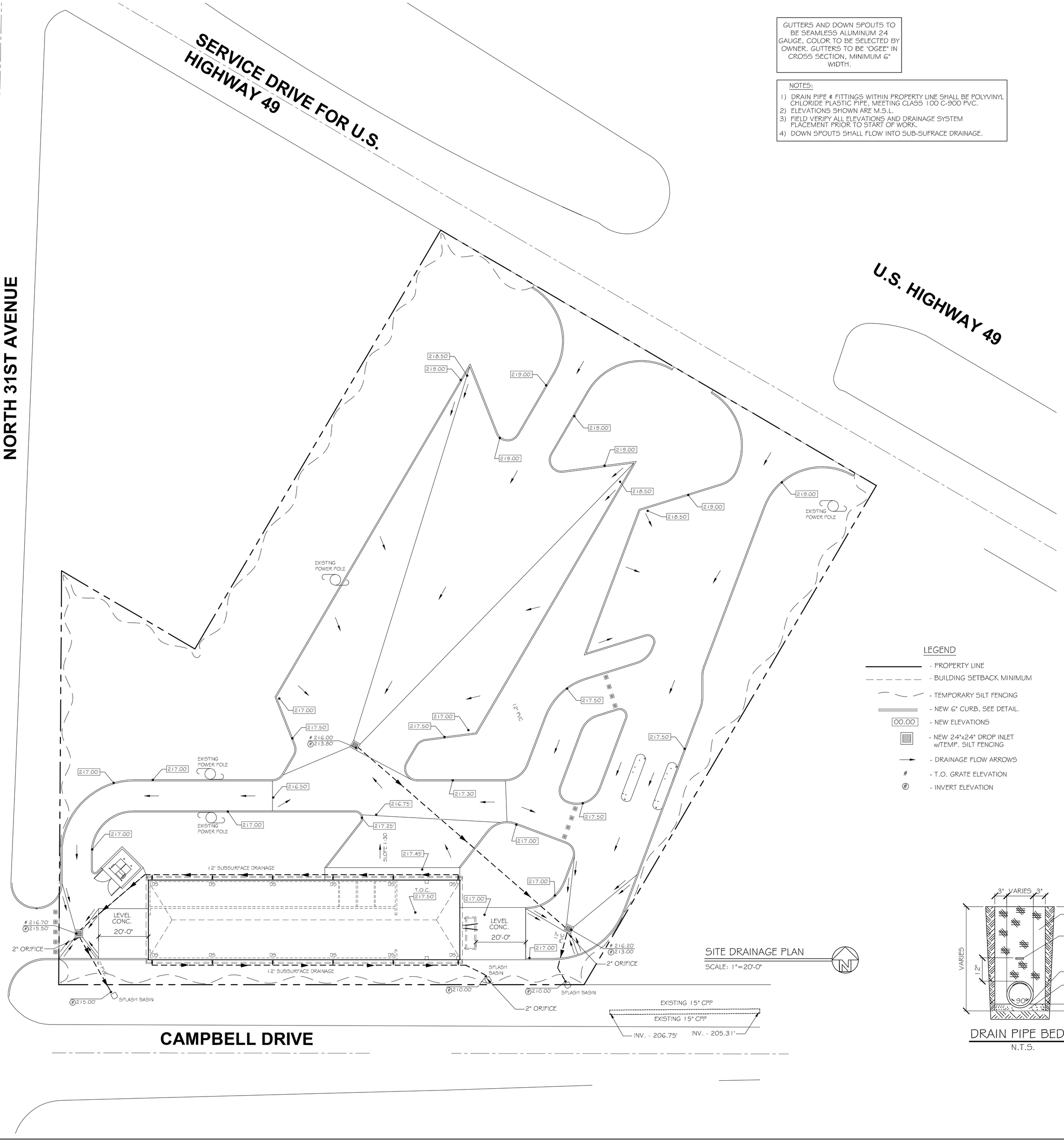


SITE DRAINAGE PLAN
SCALE: 1"=20'-0"

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.

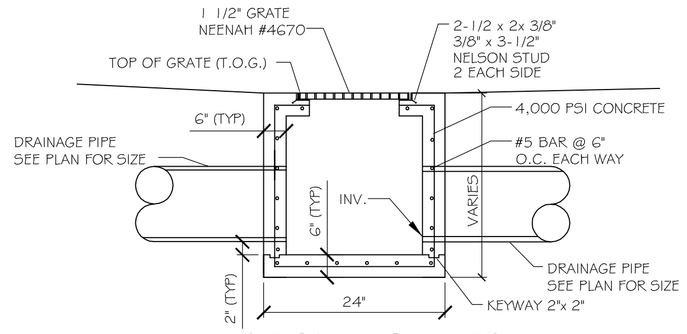
NOTES:
1) DRAIN PIPE & FITTINGS WITHIN PROPERTY LINE SHALL BE POLYVINYL CHLORIDE PLASTIC PIPE, MEETING CLASS 100 C-900 PVC.
2) ELEVATIONS SHOWN ARE M.S.L.
3) FIELD VERIFY ALL ELEVATIONS AND DRAINAGE SYSTEM PLACEMENT PRIOR TO START OF WORK.
4) DOWN SPOUTS SHALL FLOW INTO SUB-SUFRACE DRAINAGE.

LEGEND
- PROPERTY LINE
- BUILDING SETBACK MINIMUM
- TEMPORARY SILT FENCING
- NEW 6" CURB, SEE DETAIL.
- 00.00 - NEW ELEVATIONS
- NEW 24"x24" DROP INLET w/TEMP. SILT FENCING
- DRAINAGE FLOW ARROWS
- # - T.O. GRATE ELEVATION
- Ø - INVERT ELEVATION

PROJECT:	Rainforest Carwash				
	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					
Watertight Surfaces		1179	sqft =	0.027	Acres
c(1) =	0.9				
Gravel Surface		0	sqft =	0.000	Acres
c(2) =	0.25				
Green Space		60670	sqft =	1.393	Acres
c(3) =	0.15				
Summary		61849	sqft =	1.420	Acres
c =	0.16				
Duration (D) = Time of concentration (TC)					
where	L = 245	run-off length ft		Elev diff = 5	
	c = 0.16	run-off coef			
	S = 2.0408	percent slope			
therefore	TC = D = 45.49	minutes			
Expected rainfall intensity	i = 7.66	in/hr			
Q_1 =	1.787 cfs		10% reduction	0.179 cfs	
POST DEVELOPMENT					
25 Year Frequency					
Q_2 = Aci					
Watertight Surfaces		31948	sqft =	0.733	Acres
c(1) =	0.9				
Gravel Surface		0	sqft =	0.000	Acres
c(2) =	0.25				
Green Space		29901	sqft =	0.686	Acres
c(3) =	0.15				
Summary		61849	sqft =	1.420	Acres
c =	0.54				
Duration (D) = Time of concentration (TC)					
where	L = 150	run-off length ft		Elev diff = 3	
	c = 0.54	run-off coef			
	S = 2.0000	percent slope			
therefore	TC = D = 13.24	minutes			
Expected rainfall intensity	i = 7.66	in/hr			
Q_2 =	5.845 cfs				
DETENTION REQUIREMENTS					
Detention required Q_2-Q_1	4.06 cfs				
ONE HOUR DETENTION	14608.9 cuft				
DETENTION DIMENSIONS		WIDTH	105 feet		
		LENGTH	160 feet		
		DEPTH	0.87 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 =	0.179 cfs	h =	2.50 feet		
c =	0.62 coefficient	A =	0.023 sqft		
g =	32.16 ft/sec/sec				
REQUIRED CONDUIT =	2.04 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

DRAIN PIPE BEDDING
N.T.S.



TYPICAL DROP INLET
N.T.S.

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RAINFOREST CARWASH #2
64351 U.S. HWY. 49

HATTIESBURG, MISSISSIPPI

JOB No: 2212 | DATE: 08-12-2014
DRAWN BY: CKD | CHECKED BY: CKD

#	DESCRIPTION	DATE
	REVISIONS	

SITE DRAINAGE PLAN

SHEET No: 00 OF 00

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