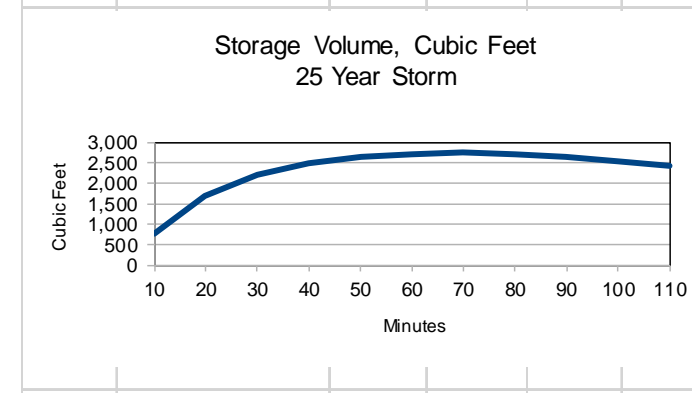


Habanero Mexican Restaurant Madisonville, LA			
Drainage Calculations - Modified Rational Method, LaDOTD Hydraulics Manual Predevelopment Condition 25 Year Frequency			
Q ₁₀ C/A	Factor	Area, sq ft	Total
Undeveloped Area	0.25	71,495	14299
Gravel Area	0.25	0	0
Building/Parking	0.95	0	0
Weighted C Factor	0.20	71,495	14299
Hydraulic Length, L	324	feet	
Slope, in % S	0.306		
Runoff Coefficient, C	0.20		0.003797
Time of Concentration, T _c	32.8	minutes	
T _c = 0.7039 x L ^{0.3917} x C ^{1.1309} x S ^{-0.1985}			
Intensity from Region 1 (I _a) (inches/hour)			
D	0.890157		3.92
a	4.611		
b	0.346		
c	-0.798		
Area, Acres	1.641		
Q ₂₅ Flow, cfs	CTPA	1.29	cts

Habanero Mexican Restaurant Madisonville, LA			
Drainage Calculations - Modified Rational Method, LaDOTD Hydraulics Manual Postdevelopment Condition 25 Year Frequency			
Q ₁₀ C/A	Factor	Area, sq ft	Total
Undeveloped Area	0.25	57,745	11,549.00
Gravel Area	0.25	7,893	1,973.25
Building/Parking	0.95	71,495	19,086.40
Weighted C Factor	0.267		
Hydraulic Length, L	281	feet	
Slope, in % S	1.3393		0.005603
Runoff Coefficient, C	0.267		
Time of Concentration, T _c	26.0	minutes	
T _c = 0.7039 x L ^{0.3917} x C ^{1.1309} x S ^{-0.1985}			
Intensity from Region 1 (I _a) (inches/hour)			
D	0.448706		5.54
a	4.611		
b	0.346		
c	-0.798		
Area, Acres	1.641		
Q ₂₅ Postdev Flow	CTPA	2.43	cts
Q ₂₅ Allowable Flow - Pre-Developed Flow		1.16	cts

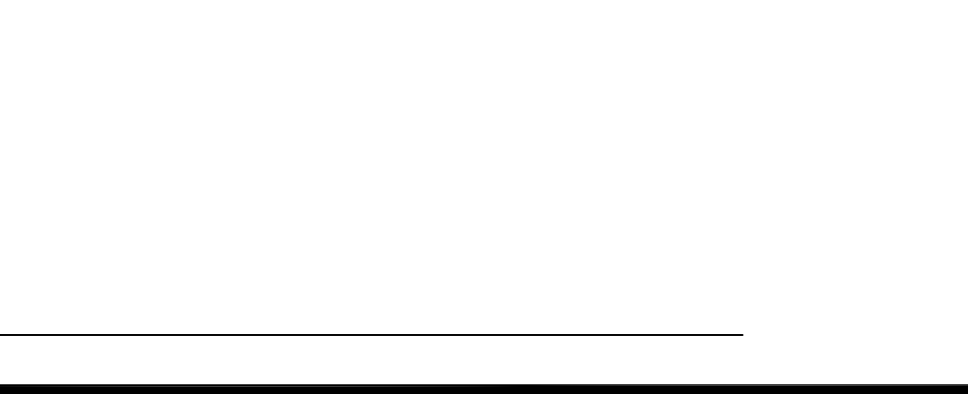
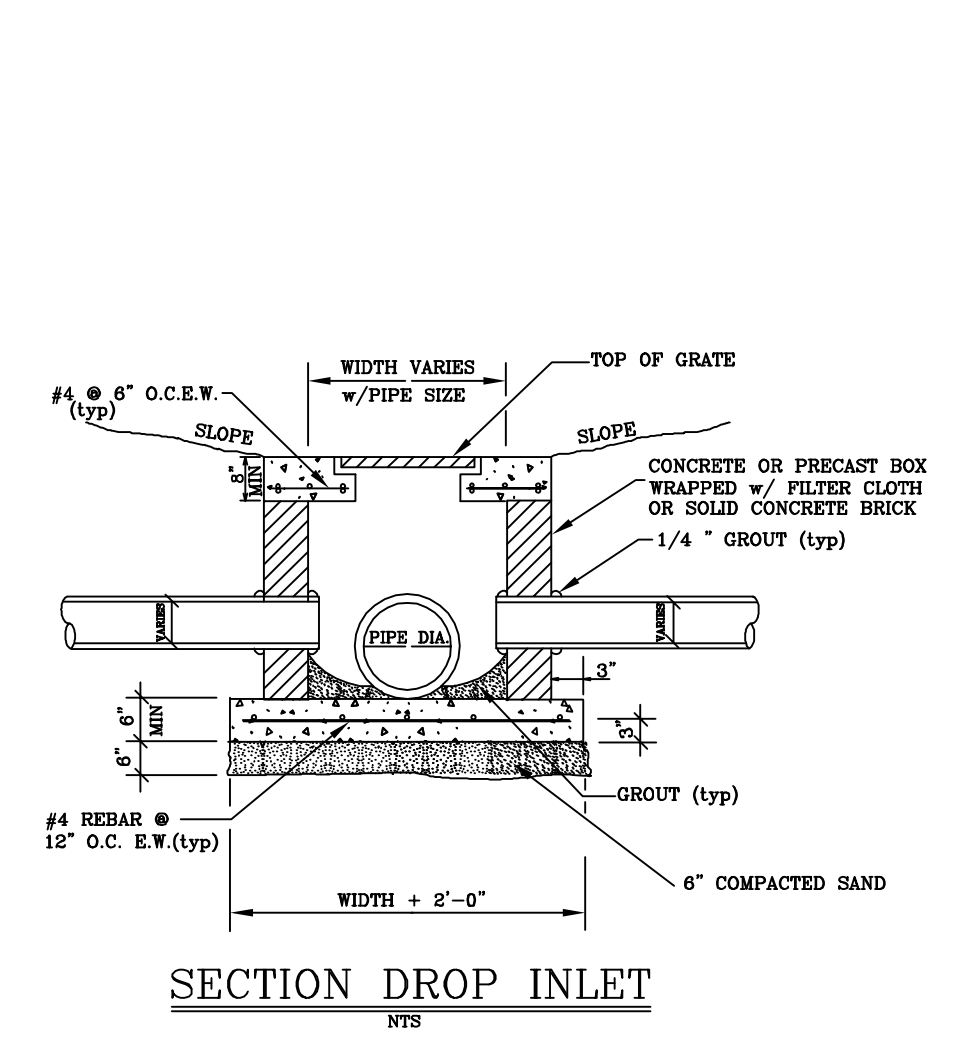
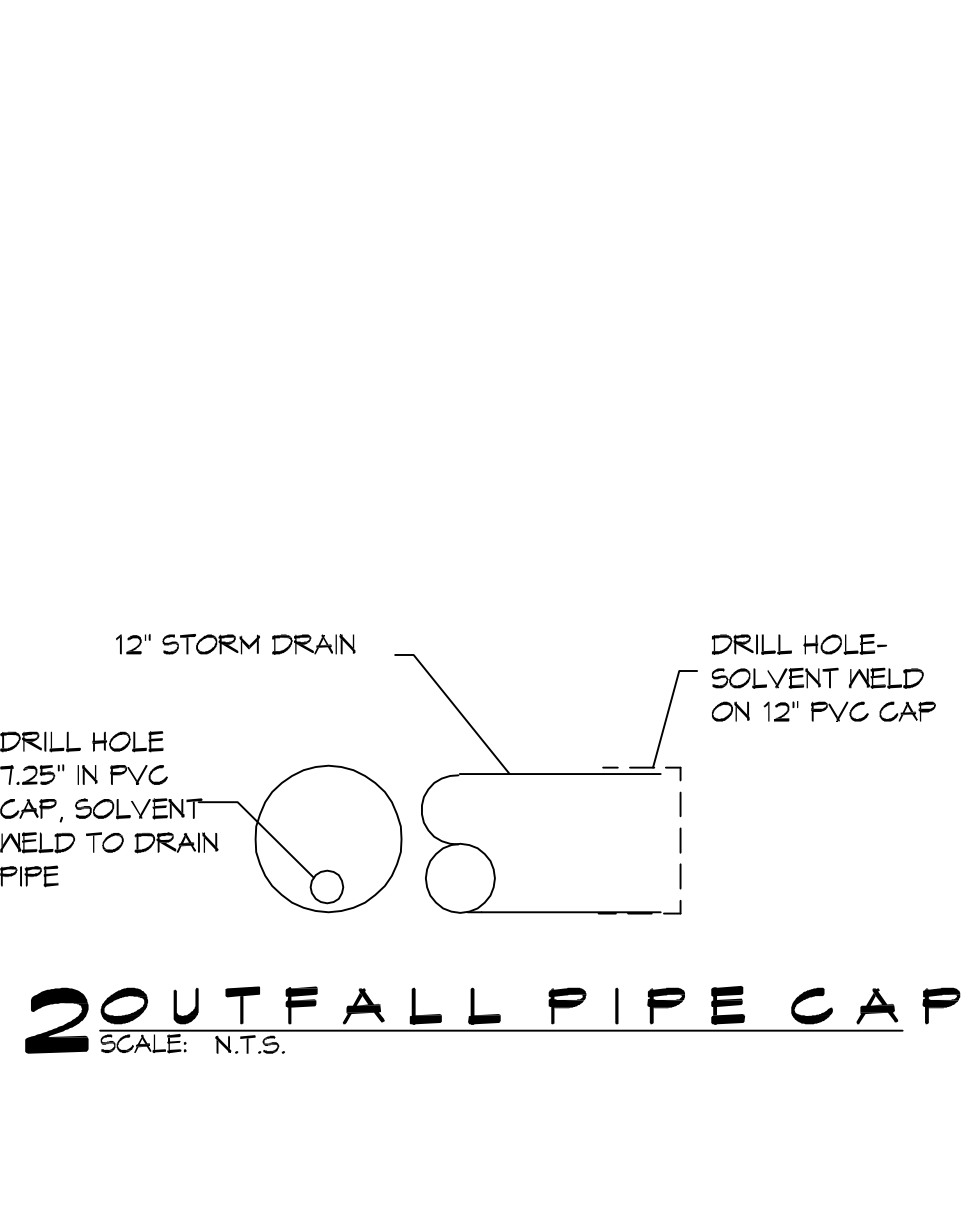
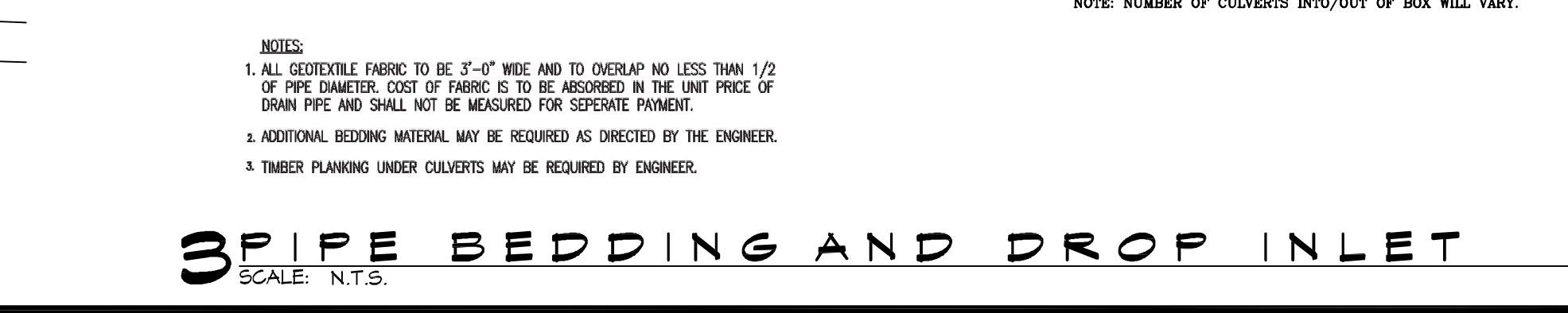
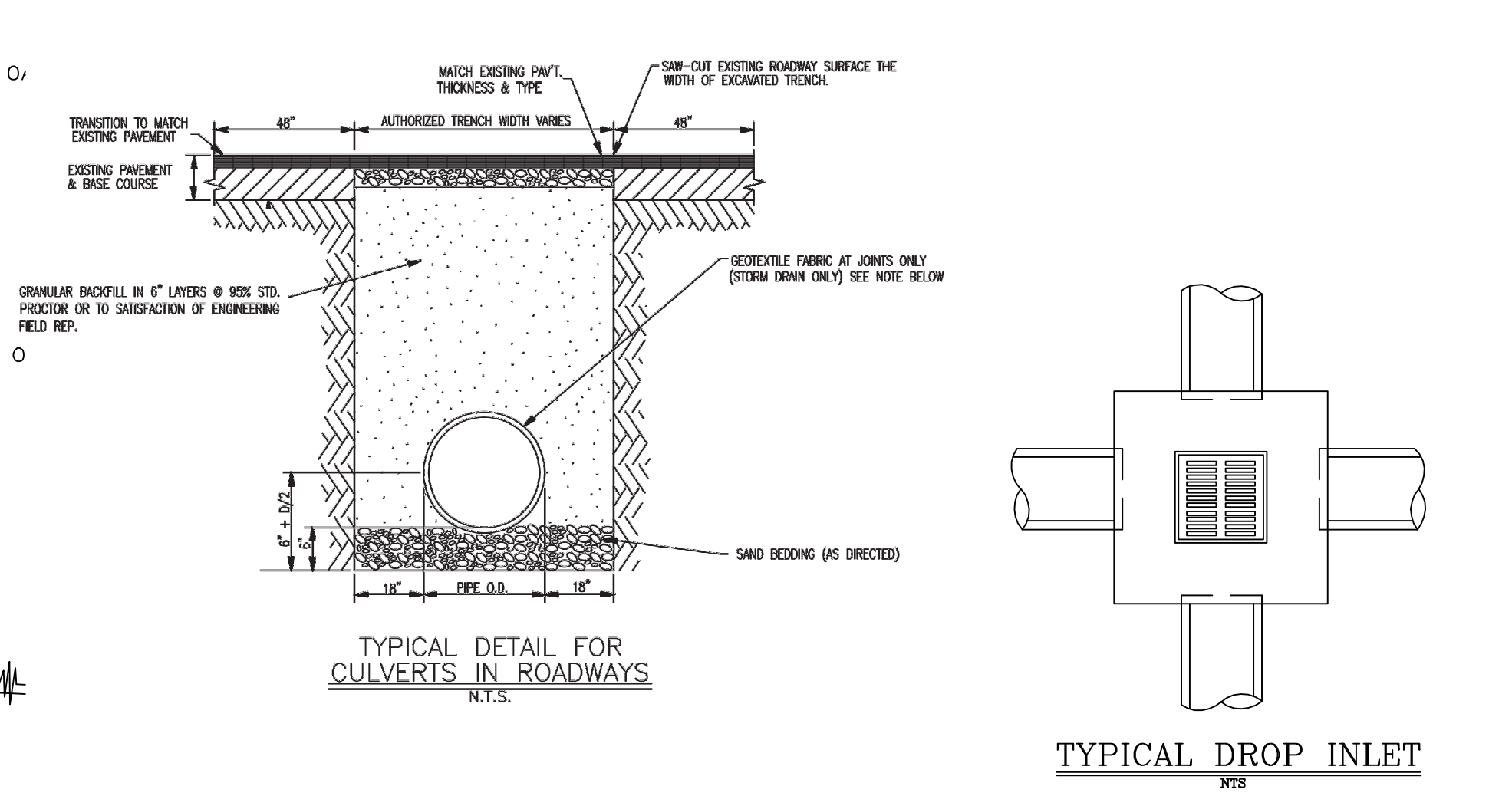
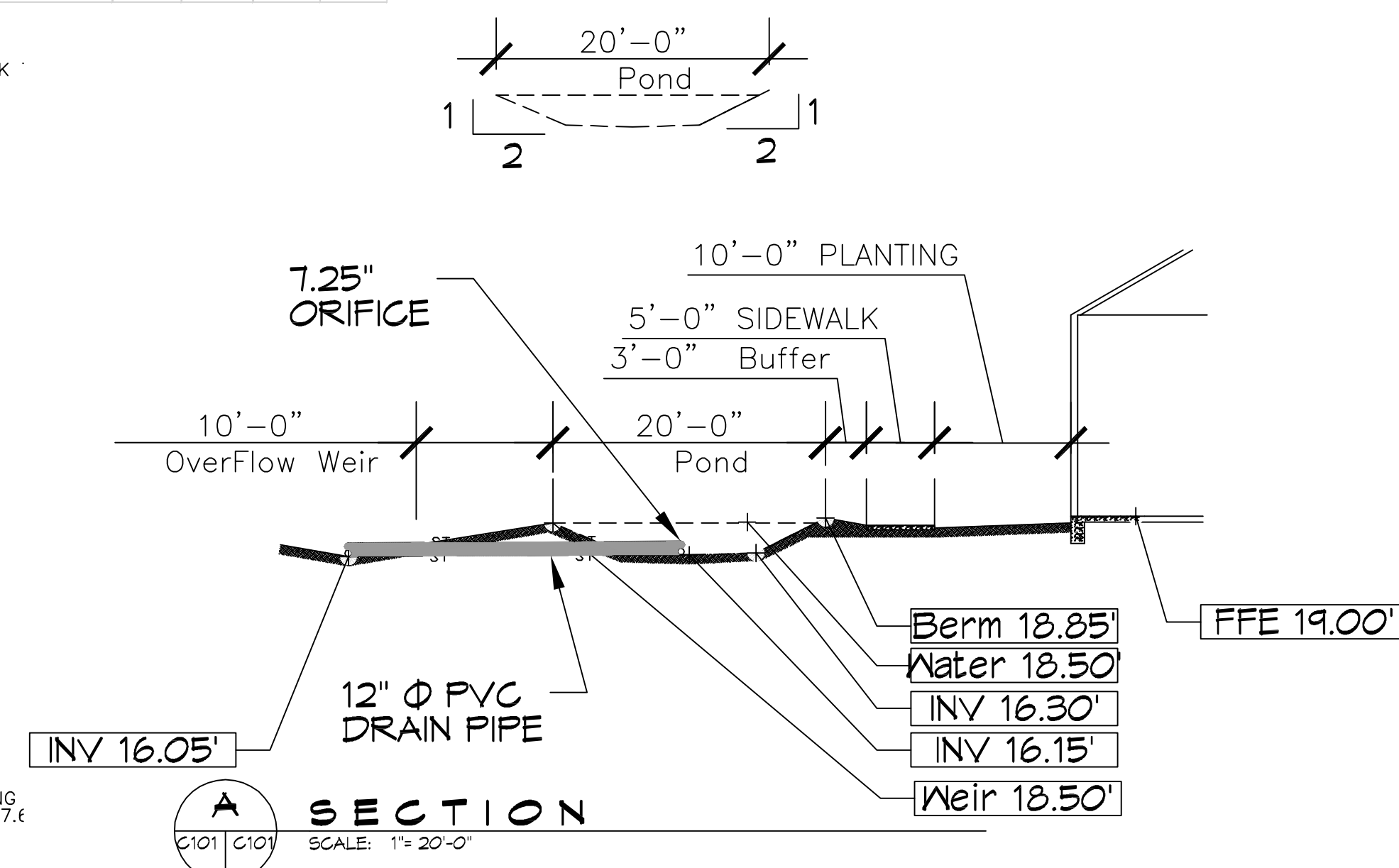
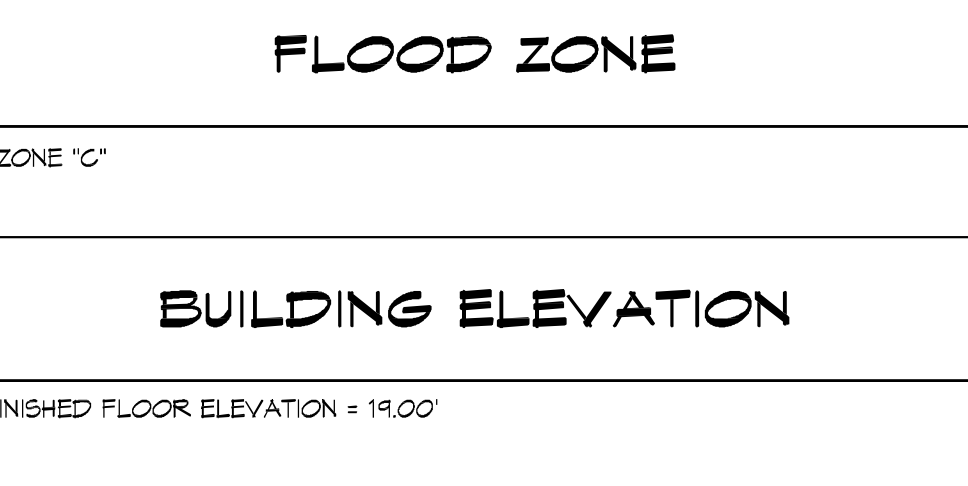
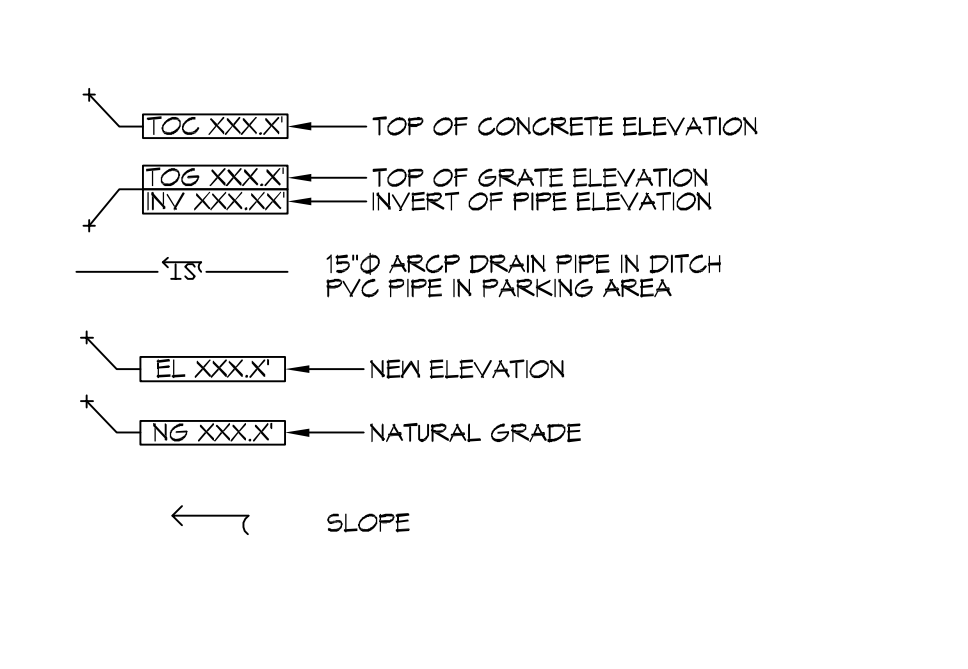
Habanero Mexican Restaurant Madisonville, LA			
Drainage Calculations - Modified Rational Method, LaDOTD Hydraulics Manual Storage Requirements for a 25 Year Frequency Storm Event			
Storm Duration (D)	Time	Max. Storage Volume, cu ft	Max. Storage Volume, ac-ft
10 min	7.86	3,441	0.078
20 min	6.28	2,755	0.038
30 min	5.27	2,311	0.050
40 min	4.56	2,000	0.067
50 min	4.04	1,771	0.081
60 min	3.64	1,591	0.062
70 min	3.31	1,455	0.063
80 min	3.05	1,341	0.062
90 min	2.83	1,241	0.060
100 min	2.64	1,161	0.058
110 min	2.48	1,091	0.055



Habanero Mexican Restaurant Madisonville, LA	
Detention Area:	Detained water surface elevation = 18.50
	Detention required in cubic feet based on Chart = 2,733
Pond has a cross section detention area = 32.74 sq ft	
The pond is 97 feet down the center of the pond, without angles.	
The Pond has a detention capacity of 3,274 sq ft x (97' - 4 ft for slope) = 3,045 cu ft of detention capacity.	
Total detention provided = 3,045 cu ft of water which exceeds the detention required.	

Habanero Mexican Restaurant Madisonville, LA	
Discharge End Area Calculations	A _s = $\frac{Q}{C\sqrt{2gh}}$
Allowable Run Off, Q	1.16 cfs
Friction Factor, c	0.98
Acceleration, g	32.2 ft/sec ²
Height above Invert, H ft	0.9 ft
Area of Opening, Sq ft	0.27 sq ft
Square Inches	38.70
Diameter, Inches	7.02
USE 7.25" DIAMETER ORIFICE	

- ### DRAINAGE NOTES
- ELEVATIONS SHOWN ARE MSL.
 - FIELD VERIFY ALL ELEVATIONS AND DRAINAGE SYSTEM PLACEMENT PRIOR TO START OF WORK.
 - PROVIDE VERTICAL ELBOW AT DOWNSPOUTS WITH SPLASH BLOCKS.



DAMMON ENGINEERING, INC.

LOUISIANA & MISSISSIPPI

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 Slidell, LA 70458
 www.dammonengineering.com
 info@dammonengineering.com
 P.O. Box 207282

DATE	DESCRIPTION
9/26/2019	1 REVISED CUT/FILL CALCS
12-5-2019	2 REVISED OUTFALL CALCS

SEAL:

NEW RESTAURANT
 HABANERO
 123 ESTABLANZA
 MADISONVILLE, LA 70447

11-19-2019
 2345
 DATE: 11-19-2019
 DRAWN BY: BMM
 CHECKED BY: BMM

SHEET TITLE:
DRAINAGE PLAN

DRAWING NUMBER:
C101

SHEET No: 1 of 3