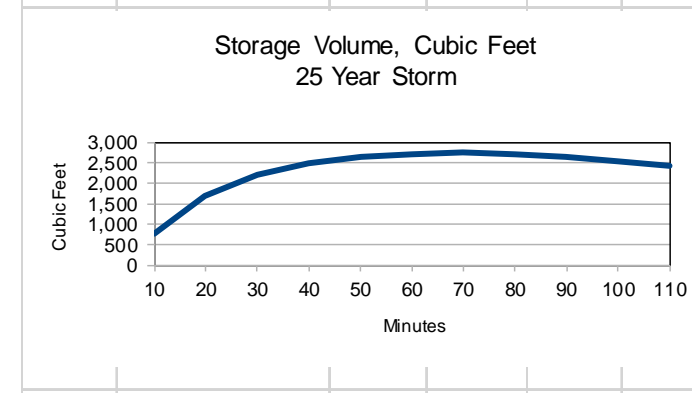


Habanero Mexican Restaurant Madisonville, LA			
Drainage Calculations - Modified Rational Method, LaDOTD Hydraulics Manual Predevelopment Condition 25 Year Frequency			
Q <sub>10</sub> C/A	Factor	Area, sq ft	Total
Undeveloped Area	0.25	71,495	14299
Gravel Area	0.25	0	0
Building/ Parking	0.95	0	0
Weighted C Factor	0.20	71,495	14299
Hydraulic Length, L	324	feet	
Slope, in %	0.306		0.003797
Runoff Coefficient, C	0.20		
Time of Concentration, T <sub>c</sub>	32.8	minutes	
T <sub>c</sub> = 0.7039 x L <sup>0.3917</sup> x C <sup>0.11309</sup> x S <sup>-0.1985</sup>			
Intensity from Region 1 (I <sub>a</sub> )	3.92	in/h	
D = 0.890157			
a	4.611		
b	0.346		
c	-0.798		
Area, Acres	1.641		
Q <sub>25</sub> 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 <sub>10</sub> 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 %	1.3393		0.00603
Runoff Coefficient, C	0.267		
Time of Concentration, T <sub>c</sub>	26	minutes	
T <sub>c</sub> = 0.7039 x L <sup>0.3917</sup> x C <sup>0.11309</sup> x S <sup>-0.1985</sup>			
Intensity from Region 1 (I <sub>a</sub> )	5.54	in/h	
D = 0.448706			
a	4.811		
b	0.346		
c	-0.798		
Area, Acres	1.641		
Q <sub>25</sub> Postdev Flow	CTPA	2.43	cts
Q <sub>25</sub> Allowable Flow - Pre-Developed Flow		1.16	cts

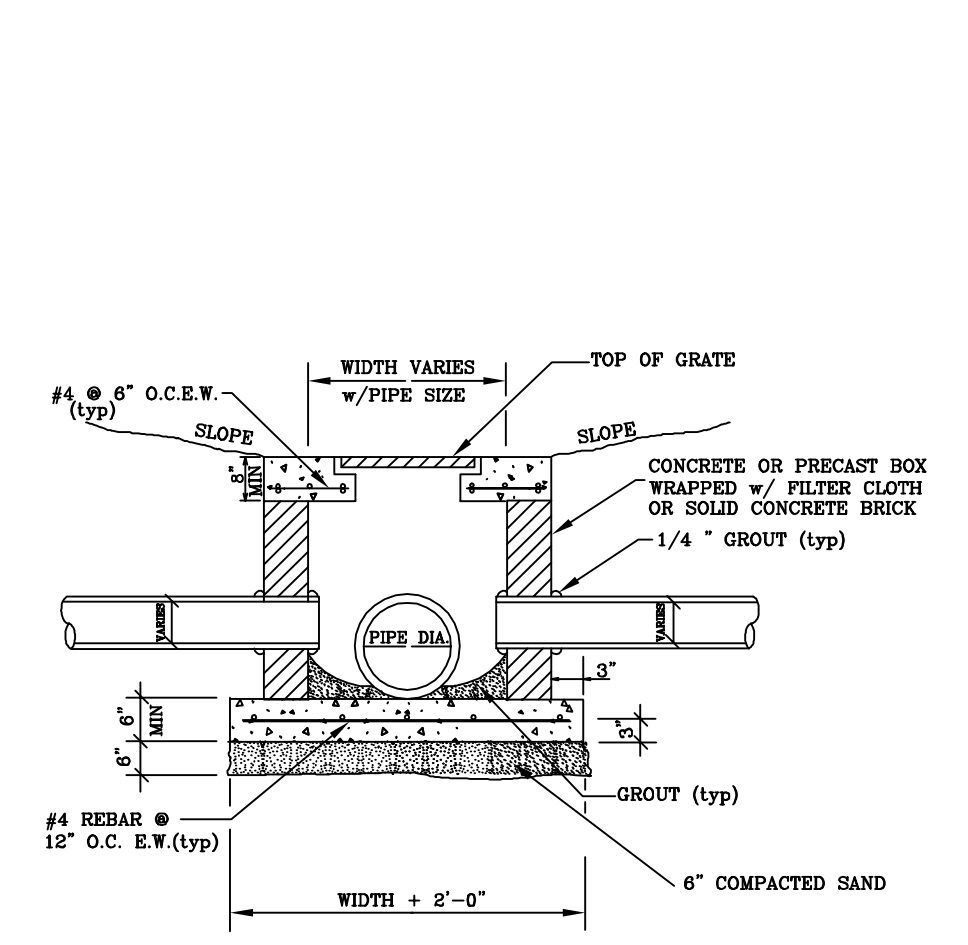
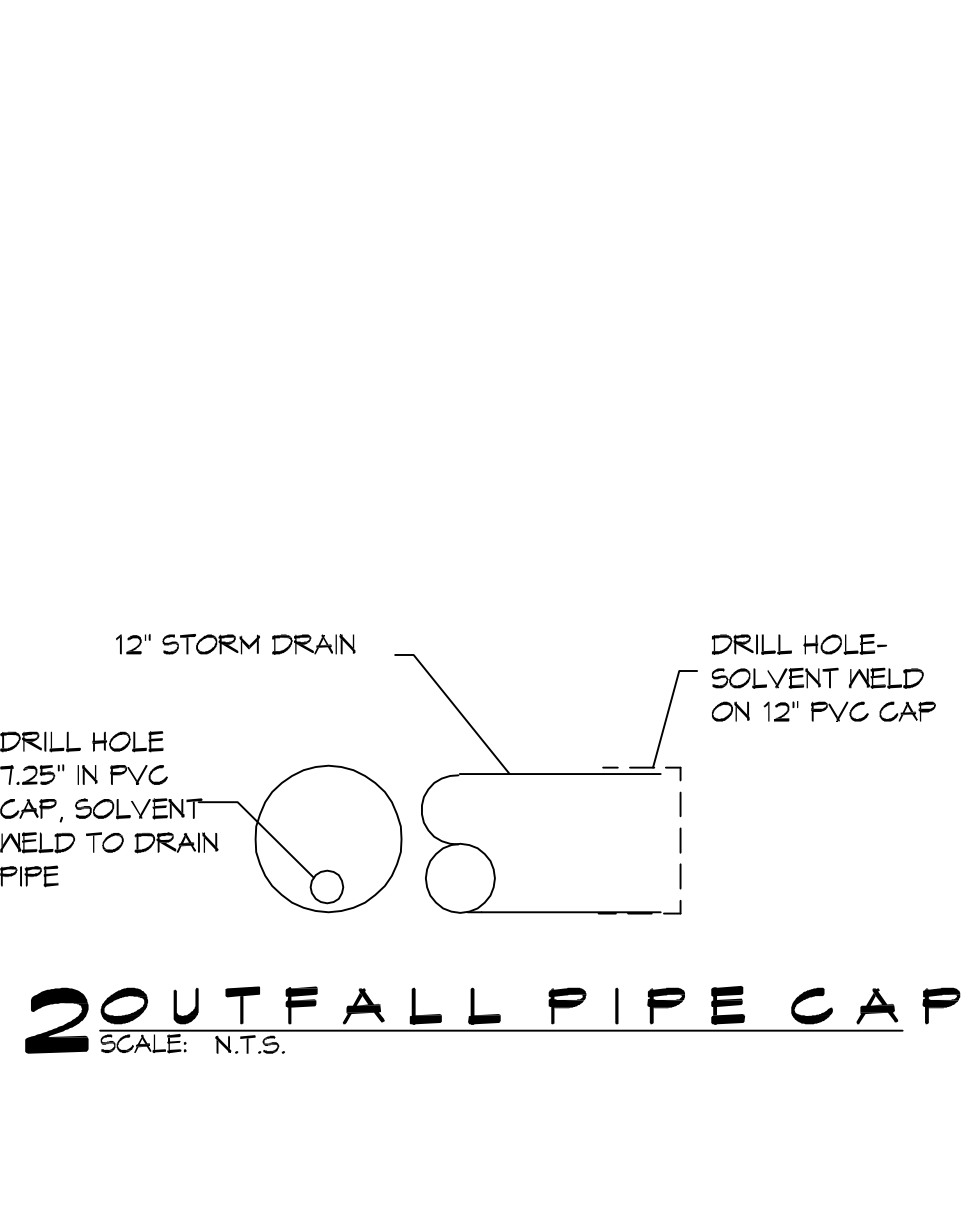
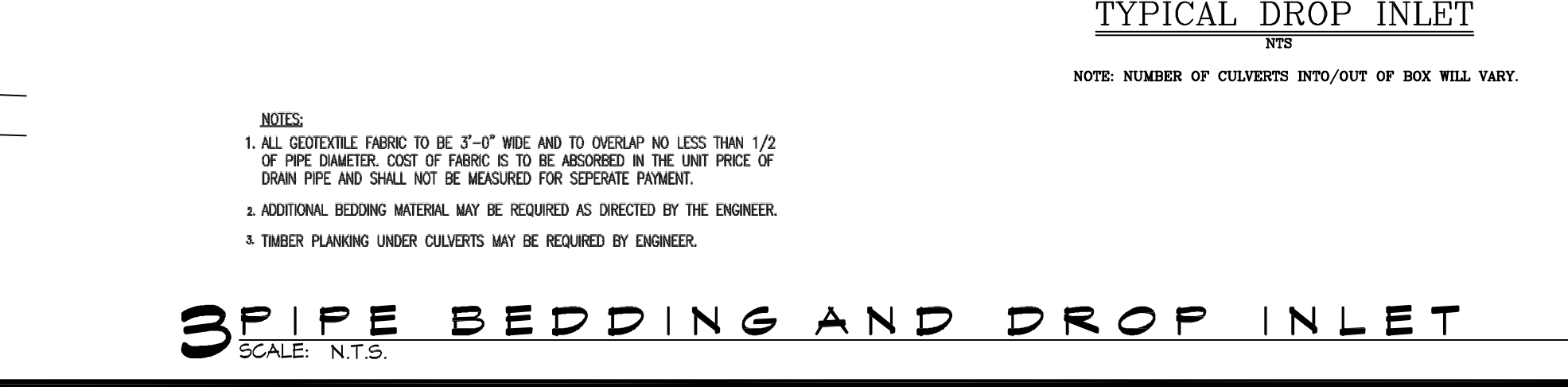
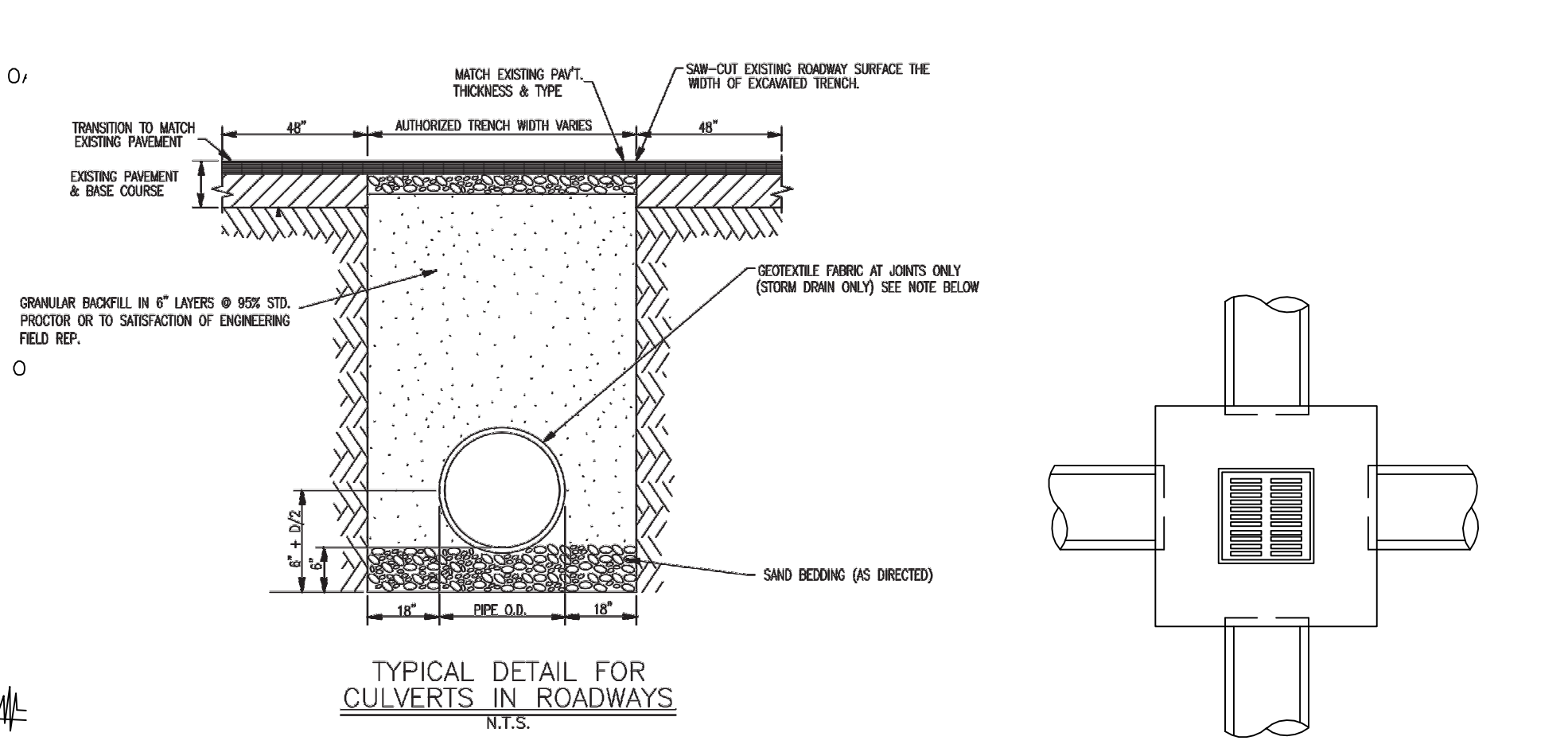
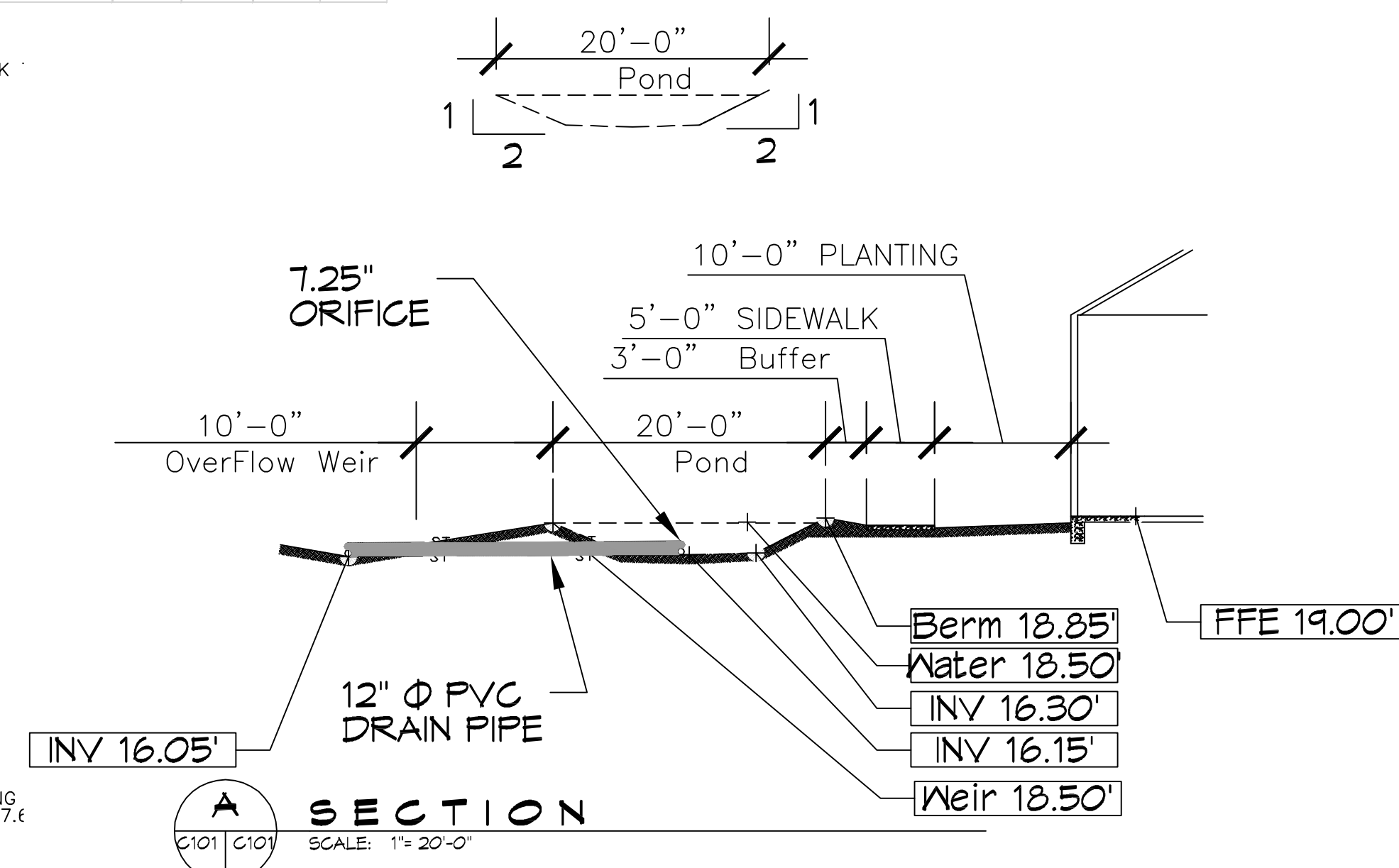
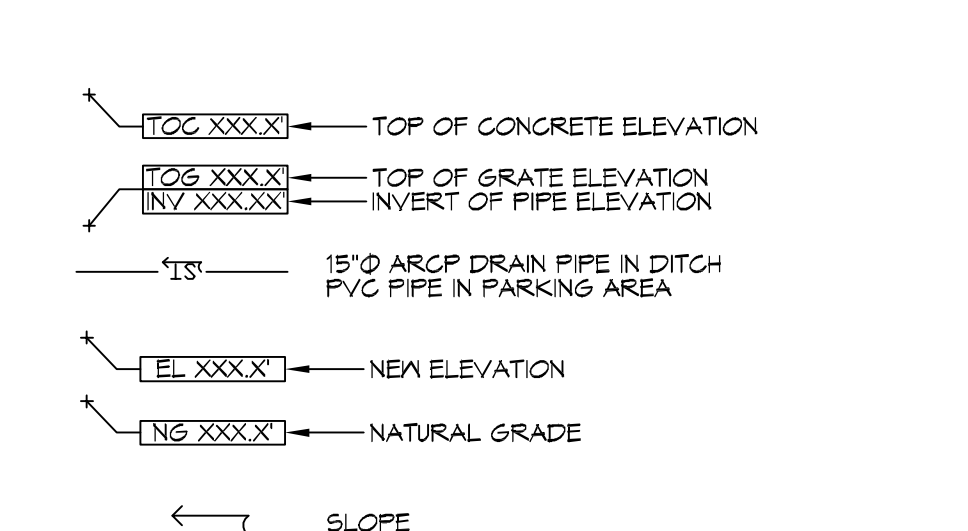
Habanero Mexican Restaurant Madisonville, LA			
Drainage Calculations - Modified Rational Method, LaDOTD Hydraulics Manual Storage Requirements for a 25 Year Frequency Storm Event			
Storm Duration (D)	Time	Max. Storage Volume, cu ft	Max. Storage Volume, ac-ft
10 min	7.86	3,447	0.078
20 min	6.28	2,755	0.038
30 min	5.27	2,311	0.050
40 min	4.56	2,000	0.067
60 min	4.04	1,771	0.081
90 min	3.64	1,597	0.062
120 min	3.31	1,455	0.063
150 min	3.05	1,341	0.062
180 min	2.83	1,241	0.060
210 min	2.64	1,161	0.058
240 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 32,74 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 <sub>s</sub> = 0
Allowable Run Off, Q	1.16 cfs
Friction Factor, c	0.98
Acceleration, g	32.2 ft/sec <sup>2</sup>
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.



NOTES:

- ALL GEOTEXTILE FABRIC TO BE 3'-0" WIDE AND TO OVERLAP NO LESS THAN 1/2 OF PIPE DIAMETER. COST OF FABRIC IS TO BE ABSORBED IN THE UNIT PRICE OF DRAIN PIPE AND SHALL NOT BE MEASURED FOR SEPARATE PAYMENT.
- ADDITIONAL BEDDING MATERIAL MAY BE REQUIRED AS DIRECTED BY THE ENGINEER.
- TIMBER PLANTING UNDER CULVERTS MAY BE REQUIRED BY ENGINEER.

# DAMMON ENGINEERING, INC.

LOUISIANA & MISSISSIPPI

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 Ph: 985.697.8282

DATE	REVISIONS
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  
 1996 LA HWY. 22 WEST  
 MADISONVILLE, LA 70447  
 JOB NO: 2345  
 DRAWN BY: BMM  
 CHECKED BY: BMM

SHEET TITLE:  
**DRAINAGE PLAN**

DRAWING NUMBER:  
**C101**

SHEET No: 1 of 3



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

**3 PIPE BEDDING AND DROP INLET**  
 SCALE: N.T.S.