PROJECT:	Slidell West Shopping Center-Parking - A

DRAINAGE RUN OFF CALCULATIONS -- RATIONAL METHOD

PRIOR DEVELOPMENT
10 Year Frequency

Q_1 = CIA

Waterright Surfaces	c(1) = 0.9	0	sqft =	0.000	Acres
Gravel Surface	c(2) = 0.21	0	sqft =	0.000	Acres
Green Space	c(3) = 0.35	35910	sqft =	0.824	Acres
Summary	c = 0.35	35910	sqft =	0.824	Acres

Duration (D) = Time of concentration (TC)
TC = .7039((L^.3917)(c^-1.1309)(S^-.1985)

where	L = 250	Runoff length ft	Elev diff = 1
	c = 0.35	Runoff coef	
	S = 0.4000	Percent Slope	
therefore	TC = D = 24.08	minutes or	
and from Rainfall Intensity Table	I = 4.50	in/hr	
	Q_1 = 1.298 cfs	**RUNOFF LIMIT 90%**	**1.169 cfs**

POST DEVELOPMENT
10 Year Frequency

Q_2 = CIA

Waterright Surfaces	c(1) = 0.9	31082	sqft =	0.714	Acres
Gravel Surface	c(2) = 0.21	0	sqft =	0.000	Acres
Green Space	c(3) = 0.35	4828	sqft =	0.111	
Summary	c = 0.83	35910	sqft =	0.824	Acres

D = Time of concentration (TC)
TC = .7039((L^.3917)(c^-1.1309)(S^-.1985)

where	L = 250	Runoff length ft	Elev diff = 1.9
	c = 0.83	Runoff coef	
	S = 0.7600	Percent Slope	
therefore	TC = D = 8.03	minutes or	
and from Rainfall Intensity Table	I = 7.60	in/hr	
	Q_2 = 5.175 cfs		

RESULTS

DETENTION REQUIRED Q_2-Q_1		4.007 cfs	
ONE HOUR DETENTION		14424.9 cuft	
DETENTION DIMENSIONS	WIDTH	250 feet	
	LENGTH	144 feet	
	DEPTH	**0.40 feet**	

DISCHARGE END AREA CALCULATIONS

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

Allowable run off	Q =	1.169	cfs
Friction loss factor	c =	0.98	coefficient
Acceleration	g =	32.2	ft/ft/sec
Height above invert	if H =	2.00	feet
End area	A =	0.29	sqft
REQUIRED CONDUIT =		**4.39 inch diameter**	
USE		6 inch orifice	

PROJECT:	Slidell West Shopping Center-Parking - B

DRAINAGE RUN OFF CALCULATIONS -- RATIONAL METHOD

PRIOR DEVELOPMENT
10 Year Frequency

Q_1 = CIA

Waterright Surfaces	c(1) = 0.9	0	sqft =	0.000	Acres
Gravel Surface	c(2) = 0.21	0	sqft =	0.000	Acres
Green Space	c(3) = 0.35	98450	sqft =	2.260	Acres
Summary	c = 0.35	98450	sqft =	2.260	Acres

Duration (D) = Time of concentration (TC)
TC = .7039((L^.3917)(c^-1.1309)(S^-.1985)

where	L = 340	Runoff length ft	Elev diff = 1
	c = 0.35	Runoff coef	
	S = 0.2941	Percent Slope	
therefore	TC = D = 28.87	minutes or	
and from Rainfall Intensity Table	I = 4.50	in/hr	
	Q_1 = 3.560 cfs	**RUNOFF LIMIT 90%**	**3.204 cfs**

POST DEVELOPMENT
10 Year Frequency

Q_2 = CIA

Waterright Surfaces	c(1) = 0.9	91818	sqft =	2.108	Acres
Gravel Surface	c(2) = 0.21	0	sqft =	0.000	Acres
Green Space	c(3) = 0.35	6632	sqft =	0.152	
Summary	c = 0.86	98450	sqft =	2.260	Acres

D = Time of concentration (TC)
TC = .7039((L^.3917)(c^-1.1309)(S^-.1985)

where	L = 340	Runoff length ft	Elev diff = 1.9
	c = 0.86	Runoff coef	
	S = 0.5588	Percent Slope	
therefore	TC = D = 9.16	minutes or	
and from Rainfall Intensity Table	I = 7.60	in/hr	
	Q_2 = 14.823 cfs		

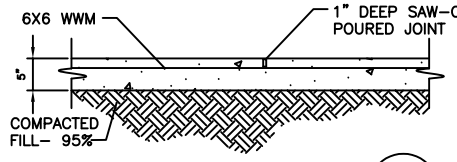
RESULTS

DETENTION REQUIRED Q_2-Q_1		11.619 cfs	
ONE HOUR DETENTION		41828.4 cuft	
DETENTION DIMENSIONS	WIDTH	350 feet	
	LENGTH	290 feet	
	DEPTH	**0.41 feet**	

DISCHARGE END AREA CALCULATIONS

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

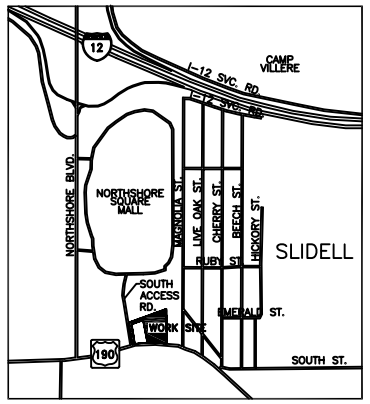
Allowable run off	Q =	3.204	cfs
Friction loss factor	c =	0.98	coefficient
Acceleration	g =	32.2	ft/ft/sec
Height above invert	if H =	2.00	feet
End area	A =	0.29	sqft
REQUIRED CONDUIT =		**7.27 inch diameter**	
USE		6 inch orifice	



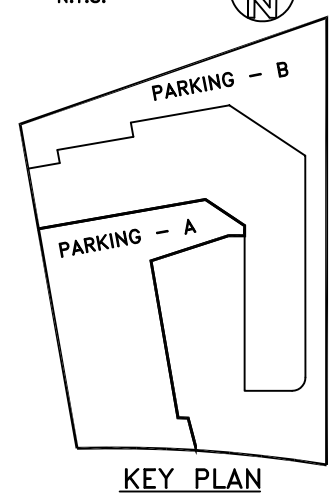
CONTRACTION JOINT (CE / C3 C3)
N.T.S.

CONSTRUCTION JOINT (CD / C3 C3)
N.T.S.

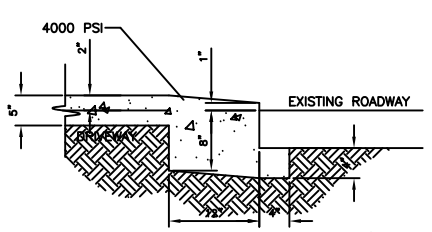
MOUNTABLE CURB DETAIL (CK / C3 C3)
N.T.S.



VICINITY MAP
N.T.S.



KEY PLAN
N.T.S.

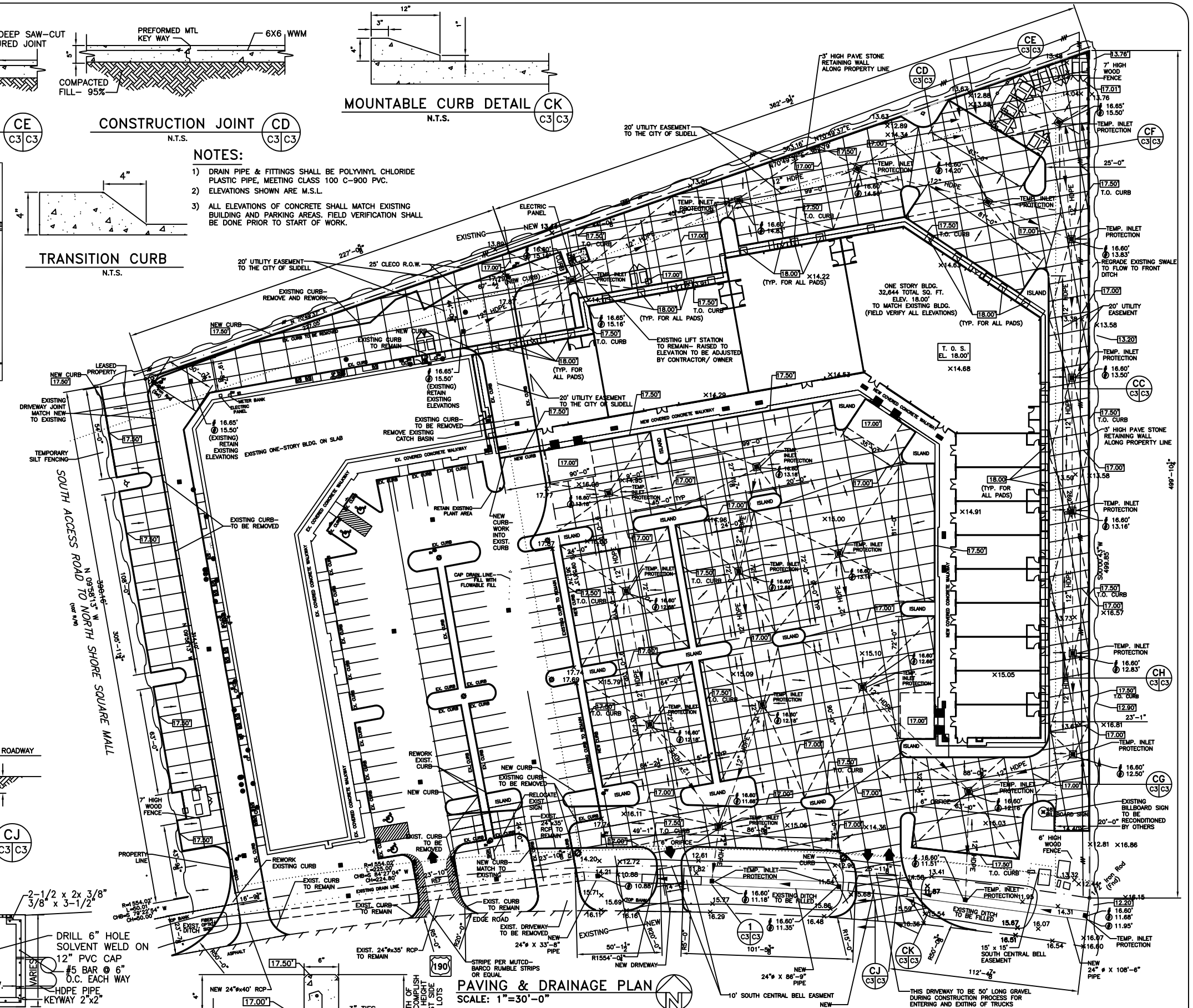


DRIVEWAY SECTION (CJ / C3 C3)
N.T.S.

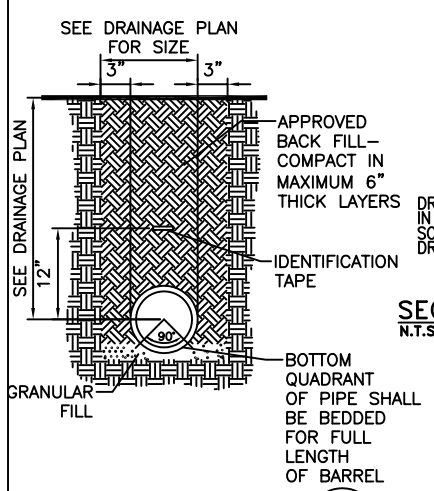
TRANSITION CURB
N.T.S.

NOTES:

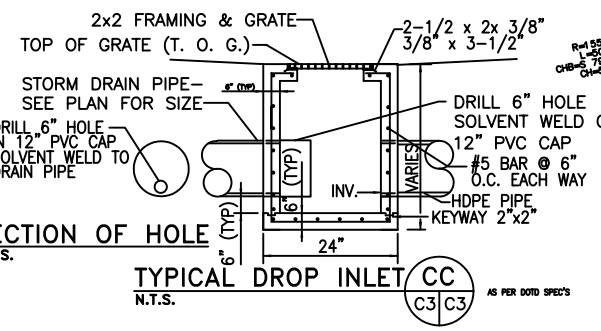
1) DRAIN PIPE & FITTINGS SHALL BE POLYVINYL CHLORIDE PLASTIC PIPE, MEETING CLASS 100 C-900 PVC.
2) ELEVATIONS SHOWN ARE M.S.L.
3) ALL ELEVATIONS OF CONCRETE SHALL MATCH EXISTING BUILDING AND PARKING AREAS. FIELD VERIFICATION SHALL BE DONE PRIOR TO START OF WORK.



PAVING & DRAINAGE PLAN
SCALE: 1"=30'-0"

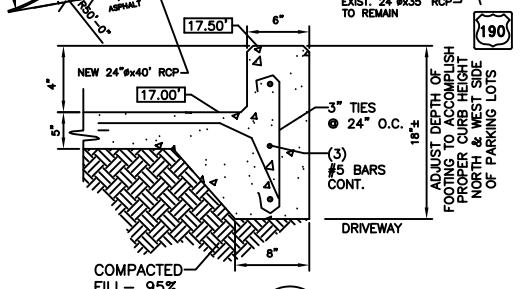


DRAIN PIPE BEDDING (CH / C3 C3)
N.T.S.



SECTION OF HOLE
N.T.S.

TYPICAL DROP INLET (CC / C3 C3)
N.T.S.
AS PER DOTD SPEC'S



CURB DETAIL (CG / C3 C3)
N.T.S.

GENERAL NOTES:

1. FOR DRAIN PIPES REQUIRED ALONG THE FRONT, THESE SPECIFICATIONS INCLUDE:
   A. THE 24" RCP MUST BE THE BELL AND SPIGOT TYPE WITH "O" RING RUBBER GASKETS. THE EQUIVALENT ARCH SIZES ARE REQUIRED WHEN ADEQUATE GROUND COVER (3" MIN.) CAN NOT BE ACHIEVED WITH ROUND PIPE.
   B. THE BELLS OF THE PIPES SHALL BE LAID UPSTREAM.
   C. ALL JOINTS SHALL BE WRAPPED WITH GEOTEXTILE FABRIC.
   D. ALL PIPES SHALL REQUIRE A 3" COMPACTED SAND OR LIMESTONE BASE.
2. NET VOLUME OF FILL TO BE HAULED INTO SITE: 7,465.29 CUBIC YARDS
3. SEE SHEET C-2 FOR FULL PAVING DIMENSIONS.

LEGEND:

- PROPERTY LINE
- UTILITY SERVITUDE
- NEW BUILDING
- NEW DRAIN LINE
- NEW DROP INLET W/ TEMPORARY SILT FENCING
- SLOPE LINES
- T.O. GRATE ELEVATION
- INVERT ELEVATION
- NEW ELEVATIONS
- EXISTING ELEVATIONS
- TEMPORARY SILT FENCING

REVISED: 06-26-06
REVISED: 03-14-06

PAVING & DRAINAGE PLAN

GARY MUTTER
HWY. 190
SLIDELL, LOUISIANA

SLIDELL WEST SHOPPING CENTER

DAMMON ENGINEERING, INC.
1095 FLORIDA AVENUE 985-649-5832 SLIDELL, LA. 70458
DAMMONENGINEERING.COM

SCALE:AS NOTED
FILE:
JOB NO. 1700
DATE:10-25-05
SHEET 4
C-3
OF 24