

LEGEND -- EXISTING

- ⊙ SEWER MANHOLE
- ⊕ SEWER CLEANOUT
- ⊙ DRAIN MANHOLE
- ⊕ DRAIN INLET ROUND
- ⊕ DRAIN INLET SQUARE
- ⊕ DRAIN CLEANOUT
- ⊕ CATCH BASIN
- ⊕ DRAIN LINE
- ⊕ WATER MANHOLE
- ⊕ WATER METER
- ⊕ WATER VALVE
- ⊕ FIRE HYDRANT
- ⊕ WATER LINE
- ⊙ GAS MANHOLE
- ⊕ GAS METER
- ⊕ GAS VALVE
- ⊕ GAS LINE
- ⊕ TELEPHONE MANHOLE
- ⊕ TELEPHONE PEDESTAL
- ⊕ UNDERGROUND TELEPHONE
- ⊕ OVERHEAD TELEPHONE
- ⊕ ELECTRIC MANHOLE
- ⊕ WOOD POLE
- ⊕ OVERHEAD ELECTRIC
- ⊕ UNDERGROUND ELECTRIC
- ⊕ SIGN
- ⊕ TREE

DRAINAGE SCHEDULE

STRUCTURE NUMBER	STRUCTURE TYPE	CASTING ELEV IN	INVERT ELEV IN	ELEVATION OUT	PIPE LENGTH (FEET)	PIPE TYPE	PERCENT SLOPE
1-2	AREA INLET	3.50	-	1.08	99'	18" RCPA*	0.20%
2	AREA INLET	3.25	0.88	0.88	171'	18" RCPA*	0.20%
2-3	-	-	-	-	-	-	-
3	AREA INLET	3.25	0.54	0.54	75'	18" RCPA*	0.20%
3-4	-	-	-	-	-	-	-
4	OPEN PIPE	-	0.39	-	-	-	-
5	OPEN PIPE	-	-	0.03	-	-	-
5-6	-	-	-	-	204'	24" RCPA*	0.20%
6	OPEN PIPE	-	-0.38	-	-	-	-
7	OUTLET CONTROL	2.70	-0.90	-1.85	-	-	-
7-8	STRUCTURE (12" ORIFICE)	-	-	-	67'	24" RCPA	0.20%
8	MANHOLE	4.00	-1.98(EX)	-1.98(EX)	200'(EX)	30"CMPA(EX)	0.12%(EX)
8	MANHOLE	-	-1.98(7)	-	-	-	-
9-10	MANHOLE	3.00	0.25 (EX)	0.25	69'	18" RCPA*	0.28%
10	OPEN PIPE	-	0.44	-	-	-	-
11	OPEN PIPE	-	-	0.65	-	-	-
11-12	-	-	-	-	80'	18" RCPA*	0.12%
12	OPEN PIPE	-	0.55	-	-	-	-
13	OPEN PIPE	-	-	0.46	-	-	-
13-14	-	-	-	-	70'	18" RCPA*	0.12%
14	OPEN PIPE	-	0.38	-	-	-	-

NOTE:
THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR ADDRESSING THIS ISSUE.

PIPE NOTES:

IN THE DRAINAGE CHART, THE "PIPE TYPE" COLUMN DEFINES THE SIZE & MATERIAL TYPE OF THE PIPE. WHERE A SPECIFIC PIPE TYPE IS CALLED FOR, THAT SPECIFIC PIPE MUST BE UTILIZED. WHERE AN ASTERISK (*) IS SPECIFIED, THE CONTRACTOR MAY UTILIZE ANYONE OF THE PIPE TYPES LISTED BELOW. THE #'S LISTED REFER TO THE FOLLOWING PIPE TYPES:
 1. REINFORCED CONCRETE PIPE (RCP) OR REINFORCED CONCRETE ARCH PIPE (RCPA)
 2. POLYVINYL CHLORIDE PIPE A-2000 ULTRA FLOW OR EQUAL (PVC)

STORM DRAINAGE NOTES:

- ALL PIPES ENTERING STORM SEWER STRUCTURES SHALL BE SEALED TO ASSURE CONNECTION AT STRUCTURE IS WATER TIGHT.
- REFERENCE DETAIL SHEETS FOR CONSTRUCTION DETAILS.
- ALL PIPES & STRUCTURES ON STREET RIGHT-OF-WAY SHALL BE PER THE LOUISIANA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS &/OR THE ST. CHARLES PARISH STANDARD SPECIFICATIONS.

STRUCTURE TYPES

DRAINAGE STRUCTURES SHALL BE PRECAST OR CAST-IN-PLACE CONCRETE IN ACCORDANCE WITH DOTD REQUIREMENTS AS FOLLOWS:
 AREA INLETS- CB-01 (PIPE SIZE 36" & SMALLER)
 MANHOLES- R-CB-11 MANHOLES
 ALL INLET FRAMES & GRATES SHALL BE VULCAN FOUNDRY CORP. CATALOG # V-4863 OR EQUAL.

LEGEND - PROPOSED

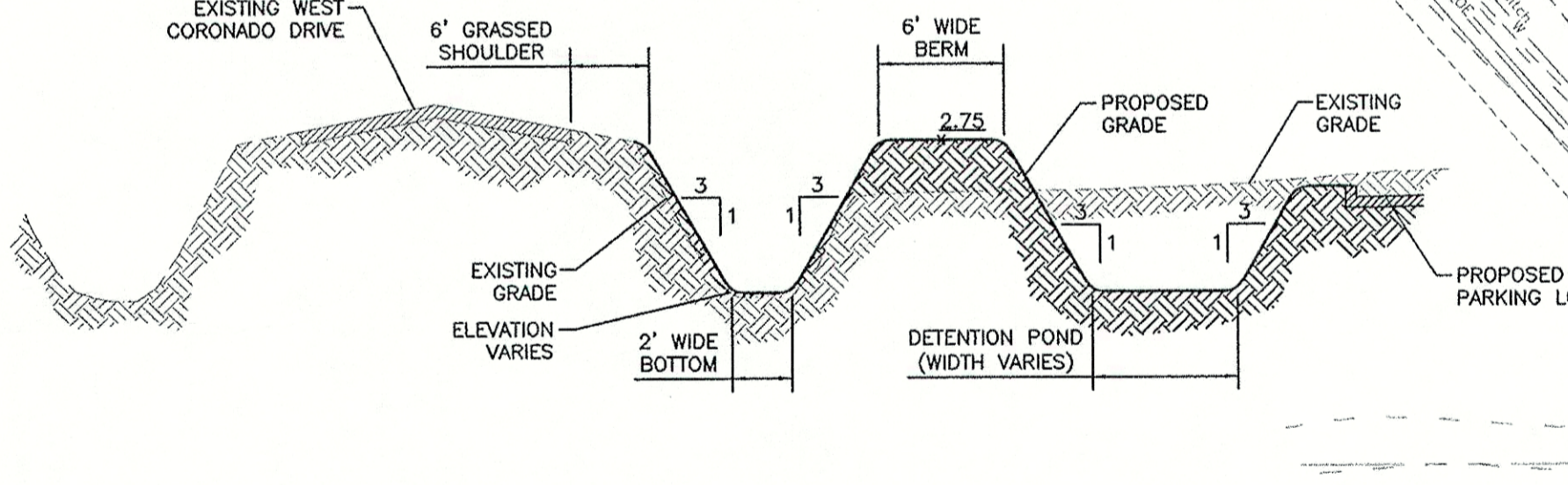
- SUBSURFACE DRAINAGE
- MANHOLE
- AREA INLET
- CONTOUR
- SPOT ELEVATION
- GRADE TO DRAIN
- RIP RAP
- OUTLET CONTROL STRUCTURE

SITE PREPARATION NOTES:

- ALL VEGETATION, TREES, ROOTS, TOPSOIL, ORGANICS, DELETERIOUS MATERIAL & LOOSE OR SOFT SOIL ZONES ENCOUNTERED SHALL BE STRIPPED FROM THE SITE & WASTED. THE ACTUAL DEPTH OF ANY TOPSOIL REMOVAL SHALL BE DETERMINED IN THE FIELD BY THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE AT THE TIME OF CONSTRUCTION. GROUNDWATER WAS ENCOUNTERED RANGING FROM 3.1 TO 4.7 FEET BELOW THE EXISTING GROUND SURFACE. THEREFORE, GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT.
- FOLLOWING STRIPPING OF THE TOPSOIL WITH ORGANICS, THE EXPOSED SOILS PRESENT IN THE PAVEMENT AREAS SHALL BE PROOFROLLED WITH A LOADED TANDEN AXLE DUMP TRUCK OR SIMILAR HEAVY RUBBER Tired VEHICLE. SOILS WHICH ARE OBSERVED TO RUT OR DEFLECT EXCESSIVELY UNDER THE MOVING LOAD SHALL BE UNDERCUT & REPLACED WITH PROPERLY COMPACTED FILL. THE PROOFROLLING, UNDERCUTTING, & FILLING ACTIVITIES SHALL BE WITNESSED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER & SHALL BE PERFORMED DURING A PERIOD OF DRY WEATHER.
- AFTER SUBGRADE PREPARATION & OBSERVATION HAVE BEEN COMPLETED, FILL PLACEMENT MAY BEGIN. THE STRUCTURAL FILL MATERIALS IN THE PARKING LOT SHALL HAVE THE CHARACTERISTICS OF THE COHESIVE OR GRANULAR FILL. STRUCTURAL FILL MAY CONSIST OF PUMPED SAND HAVING LESS THAN 10% FINES PASSING THE NO. 200 SIEVE. THE STRUCTURAL FILL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF STANDARD PROCTOR MAXIMUM DRY DENSITY AS DETERMINED BY ASTM DESIGNATION D698.
- FILL SHALL BE PLACED IN THE NON-PILE SUPPORTED AREAS IN MAXIMUM LIFTS OF 8 INCHES OF LOOSE MATERIAL & SHALL BE COMPACTED WITHIN THE RANGE OF 1 PERCENTAGE POINT BELOW TO 3 PERCENTAGE POINTS ABOVE THE OPTIMUM MOISTURE CONTENT VALUE. IF WATER MUST BE ADDED SHALL BE UNIFORMLY APPLIED & THOROUGHLY MIXED INTO THE SOIL BY DISKING OR SCARIFYING. EACH LIFT OF COMPACTED ENGINEERED FILL SHALL BE TESTED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF SUBSEQUENT LIFTS. CARE SHALL BE TAKEN TO APPLY COMPACTIVE EFFORT THROUGHOUT THE FILL.
- DURING SITE WORK, INSPECTION OF ALL STRIPPING, PROOFROLLING, & COMPACTION OF FILL OR SUBGRADE SOILS IN THE BUILDING & PAVEMENT AREAS IS REQUIRED. DENSITY TESTS SHALL BE PERFORMED TO VERIFY THE COMPACTION & MOISTURE CONTENT OF FILL, SUBGRADE SOILS, & BASE MATERIAL. EACH LIFT OF FILL OR BASE MATERIAL SHALL BE TESTED & APPROVED BY THE SOILS ENGINEER PRIOR TO THE PLACEMENT OF SUBSEQUENT LIFTS. AS A GUIDELINE, IT IS REQUIRED THAT FIELD DENSITY TESTS BE PERFORMED AT A FREQUENCY OF NOT LESS THAN ONE TEST PER 5,000 SQUARE FEET OF SURFACE AREA PER LIFT IN THE PAVEMENT AREAS.
- THE UPPER SOILS ENCOUNTERED AT THIS SITE ARE SENSITIVE TO CHANGES IN MOISTURE CONTENT & MAY LOSE STRENGTH & SUPPORT CAPABILITY IF ALLOWED TO BECOME WET. IN ADDITION, SOILS THAT BECOME WET MAY BE SLOW TO DRY & THUS SIGNIFICANTLY RETARD THE PROGRESS OF GRADING & COMPACTION ACTIVITIES. IT WILL, THEREFORE, BE ADVANTAGEOUS TO PERFORM EARTHWORK CONSTRUCTION ACTIVITIES DURING DRY WEATHER. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A FIRM, UNYIELDING & STABLE SUBGRADE CONDITION. SHOULD THE NEAR SURFACE SOILS BECOME WET, THE CONTRACTOR SHALL BE PREPARED TO MITIGATE THESE CONDITIONS BY REPEATED AERATION & EXPOSURE TO SUNLIGHT OR BY LIME TREATMENT. A REPRESENTATIVE OF THE SOILS ENGINEER SHALL BE PRESENT DURING SITE WORK ACTIVITIES TO EVALUATE THE CONDITION OF THE SOIL & VERIFY THE MATERIAL IS ADEQUATE TO SUPPORT THE PAVEMENT.
- WATER SHALL NOT BE ALLOWED TO COLLECT ON PREPARED SUBGRADES OF THE CONSTRUCTION AREA EITHER DURING OR AFTER CONSTRUCTION. UNDERCUT OR EXCAVATED AREAS SHALL BE SLOPED TOWARD ONE CORNER TO FACILITATE REMOVAL OF ANY COLLECTED RAINWATER, GROUNDWATER, OR SURFACE RUNOFF. POSITIVE SITE SURFACE DRAINAGE SHALL BE PROVIDED TO REDUCE INFILTRATION OF SURFACE WATER AROUND THE PERIMETER OF THE BUILDING & BENEATH THE FLOOR SLABS. THE GRADING SHALL BE SLOPED AWAY FROM THE BUILDING & SURFACE DRAINAGE SHALL BE COLLECTED & DISCHARGED SUCH THAT WATER IS NOT PERMITTED TO INFILTRATE THE BACKFILL & FLOOR SLAB AREAS OF THE BUILDING. ANY WATER ACCUMULATION SHALL BE REMOVED FROM EXCAVATIONS BY PUMPING.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DESIGNING & CONSTRUCTING STABLE, TEMPORARY EXCAVATIONS & SHALL SHORE, SLOPE, OR BENCH THE SIDES OF THE EXCAVATIONS AS REQUIRED TO MAINTAIN STABILITY OF BOTH THE EXCAVATION SIDES & BOTTOM. THE CONTRACTOR'S "RESPONSIBLE PERSON" AS DEFINED IN FEDERAL REGISTER, VOLUME 54, NO. 209 (OCTOBER 1989), THE UNITED STATES DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA) STANDARDS OF EXCAVATIONS, 29 CFR, PART 1926 SHALL EVALUATE THE SOIL EXPOSED IN THE EXCAVATIONS AS PART OF THE CONTRACTOR'S SAFETY PROCEDURES. IN NO CASE SHALL SLOPE HEIGHT, SLOPE INCLINATION OR EXCAVATION DEPTH, INCLUDING UTILITY TRENCH EXCAVATION DEPTH, EXCEED THOSE SPECIFIED IN LOCAL, STATE, & FEDERAL SAFETY REGULATIONS.

GRADING NOTES:

- TOPOGRAPHIC INFORMATION WAS TAKEN FROM A TOPOGRAPHIC SURVEY PROVIDED BY LANDMARK SURVEYING, INC. DATED JANUARY 11, 2006, REVISED 11/9/06 & 11/20/06. IF CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, HE SHALL HAVE MADE, AT HIS EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR & SUBMIT IT TO THE OWNER FOR REVIEW.
- EXISTING GRADE CONTOURS INTERVAL SHOWN AT ONE FOOT (1').
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION &/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES & WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 96 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
- CONTRACTOR SHALL VERIFY HORIZONTAL & VERTICAL LOCATION OF ALL EXISTING STORM SEWER STRUCTURES, PIPES, & ALL UTILITIES PRIOR TO CONSTRUCTION.
- CLEARING & GRUBBING LIMITS SHALL INCLUDE ALL AREAS DISTURBED BY GRADING OPERATIONS. CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL UNDISTURBED AREAS, ALL PROPERTY CORNERS, & REPLACING ALL PINS ELIMINATED OR DAMAGED DURING CONSTRUCTION.
- FINISHED GRADE CONTOUR INTERVALS SHOWN AT ONE FOOT (1').
- CONTRACTOR SHALL COORDINATE WITH ARCHITECTURAL PLANS, POWER COMPANY, & TELEPHONE COMPANY FOR ACTUAL ROUTING OF POWER & TELEPHONE SERVICE TO THE BUILDING.
- CONSTRUCTION SHALL COMPLY WITH ALL GOVERNING CODES & BE CONSTRUCTED TO THE SAME.
- CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING IMPROVEMENTS DURING CONSTRUCTION, SUCH AS, BUT NOT LIMITED TO, DRAINAGE, UTILITIES, PAVEMENT, STRIPING, CURBS, ETC. REPAIRS SHALL BE EQUAL TO OR BETTER THAN EXISTING CONDITIONS.
- ALL UNSURFACED AREAS DISTURBED BY GRADING OPERATION SHALL RECEIVE SOIL OR 4 INCHES OF TOPSOIL, SEED, MULCH, WATER, ETC. CONTRACTOR SHALL MAINTAIN DISTURBED AREAS UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
- ALL SUBGRADE, BASE & PAVEMENT CONSTRUCTION OPERATIONS SHALL MEET MINIMUM REQUIREMENTS OF THE LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION.
- CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL UTILITIES & NOTIFYING THE APPROPRIATE UTILITY COMPANY PRIOR TO BEGINNING CONSTRUCTION.

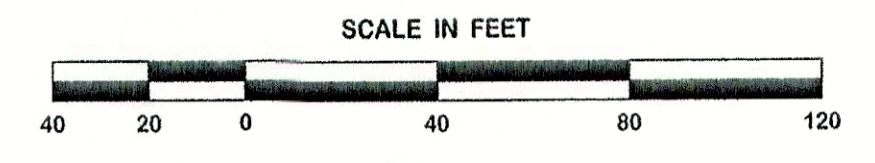


SECTION A-A
N.T.S.

CALL LOUISIANA ONE CALL - 1-800-272-3020

LOUISIANA STATE LAW, SECTION R.S.40:1749.15, REQUIRES EXCAVATORS & DEMOLISHERS TO NOTIFY A REGIONAL NOTIFICATION CENTER BY TELEPHONE 96 HOURS TO 120 HOURS IN ADVANCE OF ANY EXCAVATION OR DEMOLITION ACTIVITY. THE OWNERS/OPERATORS OF ANY UNDERGROUND FACILITY MUST THEN MARK THE AREA OR PROVIDE INFORMATION THAT WILL ENABLE AN EXCAVATOR OR DEMOLISHER TO DETERMINE THE LOCATION OF UNDERGROUND FACILITIES.

GRADING PLAN



DATE	DESCRIPTION	BY

DDG DUPLANTIS DESIGN GROUP, PC
 Respect • Integrity • Client Satisfaction • Excellence
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 Civil Engineering • Site Development • Land Planning • Architecture
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Signature of *Shirley H. Beckel*
 SIGNATURE: _____
 DATE: 9-17-07
 THOMAS H. BUCKEL
 No. 31022
 PROFESSIONAL ENGINEER
 IN
 CIVIL ENGINEERING
 STATE OF LOUISIANA

PROPOSED RETAIL DEVELOPMENT
 CITY OF BOUTTE
 ST. CHARLES PARISH, LOUISIANA
 FOR THE SPECTRA GROUP, INC.
 MEMPHIS, TENNESSEE

DRAWN	NMO
CHECKED	THB
DATE	8-13-07
SCALE	AS SHOWN
PROJECT NO.	07-205
FILE:	07-205 V4
SHEET	C-2