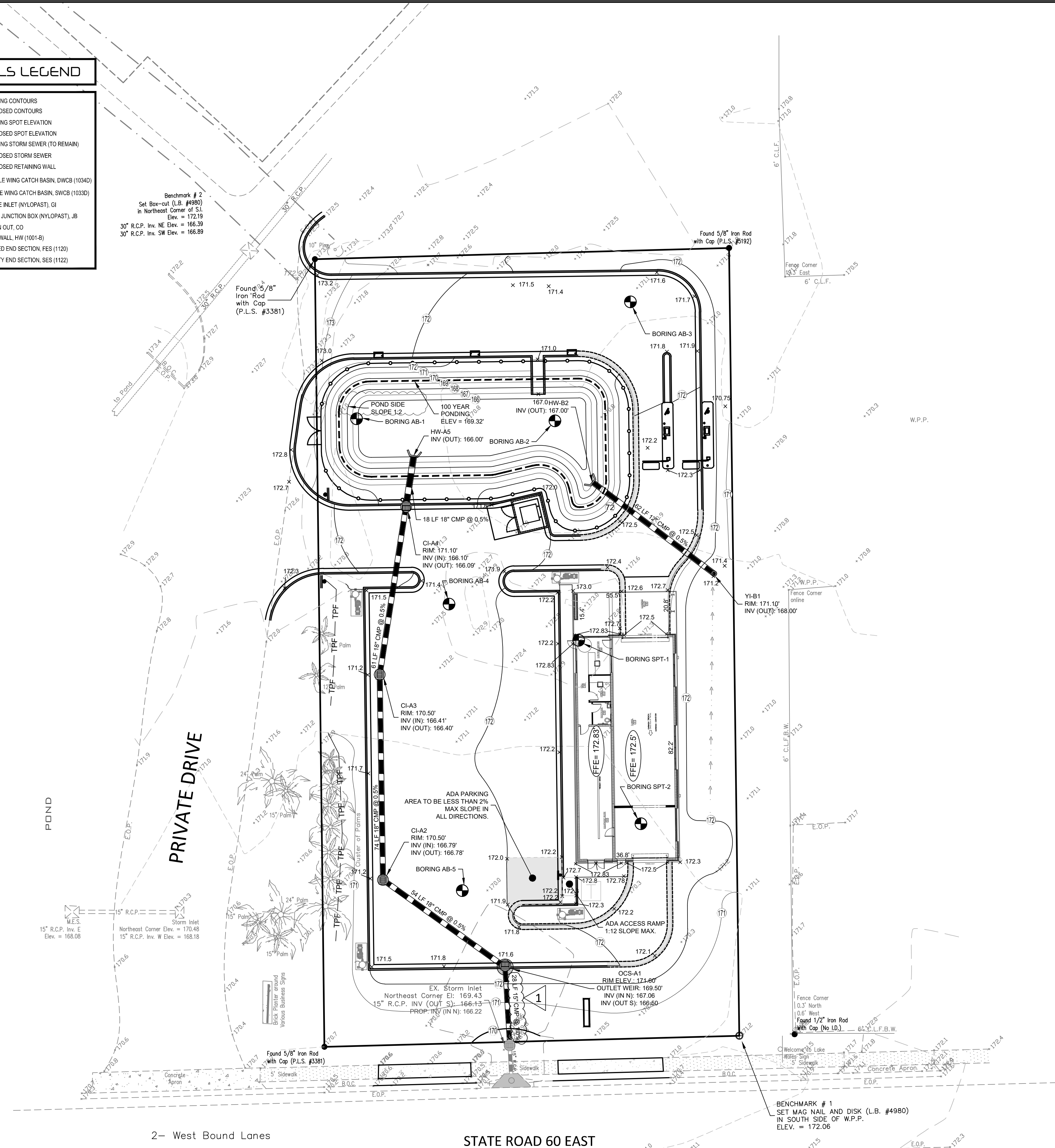


### GRADING SYMBOLS LEGEND

	EXISTING CONTOURS		DOUBLE WING CATCH BASIN, DWCB (10340)
	PROPOSED CONTOURS		SINGLE WING CATCH BASIN, SWCB (10330)
	EXISTING SPOT ELEVATION		GRATE INLET (NYLOPAST), GI
	PROPOSED SPOT ELEVATION		SOLID JUNCTION BOX (NYLOPAST), JB
	EXISTING STORM SEWER (TO REMAIN)		CLEAN OUT, CO
	PROPOSED STORM SEWER		HEADWALL, HW (1001-8)
	PROPOSED RETAINING WALL		FLARED END SECTION, FES (1120)
	JUNCTION BOX, JB (1011A)		SAFETY END SECTION, SES (1122)
	CURB INLET, CI (1019A TYPE E)		
	DOUBLE CURB INLET, DCI		
	DROP INLET, DI (1019A TYPE A)		
	DOUBLE DROP INLET, DDI		
	TRIPLE DROP INLET, TDI		
	YARD INLET, YI		
	OUTLET CONTROL BOX, OCB		

Benchmark # 2  
Set Box-cut (L.B. #4980)  
in Northeast Corner of S.I.  
Elev. = 172.19  
30° R.C.P. Inv. NE Elev. = 166.39  
30° R.C.P. Inv. SW Elev. = 166.89



### BENCHMARKS

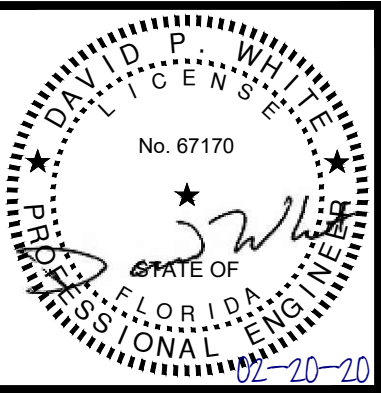
- BM #1: SET MAG NAIL AND DISK IN SOUTH SIDE OF W.P.P. (L.B. #4980) (DESCRIPTION), N-1294531.2545, E-800248.1869, ELV-172.06, (NAVD 88), SOUTHWEST PROPERTY PIN (LOCATION).
- BM #2: SET BOX-CUT (L.B. #4980) IN NORTHEAST CORNER OF S.I. (DESCRIPTION), N-1294812.1707, E-800094.7302, ELV-172.19, (NAVD 88), NORTHWEST PROPERTY PIN (LOCATION).

### GRADING NOTES

- ALL AREAS TO RECEIVE PAVEMENT, STRUCTURES OR FILL MATERIAL SHALL BE STRIPPED OF ORGANIC MATERIAL, TOPSOIL, AND DEBRIS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL INSTALL APPROPRIATE EROSION CONTROL MEASURES PRIOR TO ANY LAND DISTURBANCE ACTIVITIES.
- ONCE STRIPPING HAS BEEN COMPLETED, ALL AREAS TO RECEIVE FILL SHOULD BE PROOF-ROLLED IN THE PRESENCE OF A REPRESENTATIVE OF THE SOILS ENGINEER. SOFT AREAS ENCOUNTERED DURING PROOF-ROLLING SHALL BE STABILIZED BY COMPACTION OR UNDERCUT.
- ALL FILL AREAS SHALL BE FREE OF ORGANIC OR OTHERWISE UNSUITABLE MATERIALS AND COMPACTED TO 95% OF MAXIMUM DRY DENSITY PER STANDARD PROCTOR ASTM D698 UNLESS OTHERWISE SPECIFIED BY THE GEOTECHNICAL REPORT AS LISTED BELOW. THE TOP TWO (2) FEET OF FILL UNDER STRUCTURES AND PAVEMENT SHALL BE COMPACTED TO 98% OF MAXIMUM DRY DENSITY PER STANDARD PROCTOR ASTM D698 UNLESS OTHERWISE SPECIFIED BY THE GEOTECHNICAL REPORT AS LISTED BELOW.
- EARTHMOVING OPERATIONS SHALL BE PERFORMED IN ACCORDANCE TO THE GEOTECHNICAL REPORT BY ANDREYEV ENGINEERING INC., DATED 08/16/2017. IF A CONFLICT EXISTS BETWEEN PLANS OR/AND SPECIFICATIONS OR/AND SOIL REPORT, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY FOR CLARIFICATION.
- ALL SITE PREPARATION SHOULD BE MONITORED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER. INSPECTIONS AND TESTING FOR ALL UNDERCUT AND FILL OPERATIONS AS WELL AS THE UTILIZATION OF ACCEPTABLE OFF-SITE BORROW MATERIALS SHOULD BE PERFORMED. THE OWNER, AT HIS OPTION, MAY HAVE DENSITY TESTS PERFORMED TO VERIFY THAT SPECIFIC COMPACTION IS OBTAINED.
- CUT OR FILL SLOPE SHOULD NOT BE STEEPER THAN 2H:1V. ALL PROPOSED SLOPES SHOULD BE OVERBUILT AND CUT BACK TO THE PROPOSED GRADES, EXPOSING THE FIRM COMPACTED INNER CORE. THE EXCAVATION FOR THE SLOPES SHOULD BE MONITORED BY A REPRESENTATIVE OF THE GEOTECHNICAL ENGINEER. VERTICAL CUTS EXCEED 5 FEET SHOULD BE BRACED AS REQUIRED BY OSHA REGULATIONS FOR SAFETY.
- SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SPOT ELEVATIONS WHICH DO NOT APPEAR TO BE CONSISTENT WITH THE CONTOURS AND SLOPES. SPOT ELEVATIONS SHOWN ALONG CURB & GUTTER DESIGNATE THE PROPOSED GRADE AT THE FACE OF CURB/GUTTER UNLESS OTHERWISE NOTED.
- IF STRUCTURAL FILL IMPORT IS REQUIRED TO PREPARE THE BUILDING PAD, THE COMPACTED BUILDING PAD(S) MUST EXTEND A MINIMUM OF TEN (10) FEET BEYOND THE BUILDING FOOTPRINT, INCLUDING CANOPIES OR OTHER STRUCTURAL APPENDAGES, UNTIL AFTER THE PERIMETER FOUNDATIONS AND/OR WALLS ARE CONSTRUCTED AND BACKFILLED.
- ALL PROPOSED DRAINAGE STRUCTURES ARE TO BE INSTALLED PER POLK COUNTY COUNTY STANDARDS AND SPECIFICATIONS AS REQUIRED.
- PRIOR TO INSTALLATION OF STORM OR SANITARY SEWER, THE CONTRACTOR SHALL VERIFY THE INVERTS OF EXISTING STRUCTURES AND INFORM THE OWNER AND THE ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
- EXISTING DRAINAGE STRUCTURES TO BE INSPECTED AND REPAIRED AS NEEDED AND EXISTING PIPES ARE TO BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS AFTER CONSTRUCTION.
- THE CONTRACTOR SHALL PROVIDE TO THE OWNER AND ENGINEER OF RECORD, A SURVEYED "AS-BUILT" DRAWING OF EACH DETENTION FACILITY SHOWING POND TOPOGRAPHY (2' CONTOURS AND SPOT ELEVATIONS) AND SIZES AND INVERTS OF ALL OUTLET CONTROLS, AND APPURTENANCES. ADDITIONALLY, THE CONTRACTOR SHALL INCLUDE IN THE AS-BUILT DRAWINGS ALL NECESSARY IMPROVEMENTS, NOTES & CERTIFICATIONS REQUIRED BY THE PERMITTING AUTHORITY.
- THE CONTRACTOR SHALL ADJUST ALL MANHOLE COVERS, VALVE COVERS, CLEAN OUTS, VAULTS, BOXES, AND GRATES, EXISTING AND PROPOSED, TO "AS-CONSTRUCTED" FINISHED GRADE. IF GRADE ADJUSTMENTS ARE REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER TO INVESTIGATE SUCH ADJUSTMENTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A MARKED-UP SET OF DESIGN DRAWINGS SHOWING "AS-BUILT" CONDITIONS. THESE "RECORD DRAWINGS" SHALL BE MADE AVAILABLE TO THE DESIGNER AND/OR THE CITY/COUNTY INSPECTOR UPON REQUEST. THE MARK-UPS SHALL BE KEPT ON-SITE AT ALL TIMES AND SHALL BE UTILIZED TO DEVELOP FINAL RECORD DRAWINGS.
- PIPE CONNECTION TO EXISTING STRUCTURE WITHIN THE FDOT HIGHWAY 60 RIGHT OF WAY NOTES:  
A) THE HOLE INTO THE EXISTING STRUCTURE MUST BE SAW CUT OR CORE DRILLED.  
B) USE NON-SHRINKABLE GROUT TO FILL ALL GAPS AROUND THE JOINT.  
C) AFTER PIPE IS CONNECTED WITH THE INLET, THE END OF THE PIPE MUST BE CUT FLUSH WITH THE INSIDE SURFACE OF THE INLET.  
D) REFER TO FDOT STANDARD PLAN INDEX 425-001 FOR FILTER FABRIC WRAP ON GROUTED PIPE TO STRUCTURE JOINT DETAILS
- MULCH SHALL NOT BE USED ON ALL ONSITE AREAS SLOPING TOWARD THE FDOT RIGHT OF WAY.

### MATERIAL NOTES

- STORM SEWER MATERIALS SHALL BE INSTALLED AS SHOWN ON THE PLANS.
- STORM SEWER MATERIAL DESIGNATIONS SHALL BE FURTHER DEFINED AS FOLLOWS:  
"HDPE" - HIGH DENSITY POLYETHYLENE PER AASHTO M284 OR ASTM F2306 (ADS N-12 OR EQUIVALENT), INSTALLED PER ASTM D2321  
"HDPEWT" - HDPE WATER TIGHT PER AASHTO M294 OR ASTM F2306 AND WITH JOINTS PER ASTM D3212 (ADS N-12 WT OR EQUIVALENT), INSTALLED PER ASTM D2321  
"RCP" - REINFORCED CONCRETE PIPE, CLASS PER ASTM C76/AASHTO M170 (MIN. CLASS III) AND JOINTS PER ASTM C443  
"SRP" - ALUMINIZED STEEL, TYPE 2, SPIRAL RIB (CORRUGATED METAL) PIPE PER AASHTO M36 AND M274 OR ASTM A760 AND A929, INSTALLED PER ASTM A798  
"CMP" - ALUMINIZED STEEL, TYPE 2 CORRUGATED METAL PIPE PER AASHTO M36 AND M274 OR ASTM A760 AND A929, INSTALLED PER ASTM A798  
"BCCMP" - BITUMINOUS COATED CORRUGATED METAL PIPE PER AASHTO M36 AND M274 OR ASTM A760 AND A929, COATED PER ASTM A798, AND INSTALLED PER ASTM A798  
"PVC" - SDR 26 PVC PER ASTM D3034
- PRECAST STRUCTURES MAY BE USED AT THE CONTRACTOR'S OPTION.
- ALL CONCRETE TO HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 P.S.I. UNLESS OTHERWISE NOTED.
- PROVIDE ANTI-SEEP COLLARS ON ALL PIPES AT OR EXCEEDING 20% SLOPE.
- PROVIDE WATER-TIGHT JOINTS ON ALL STORM SEWER PIPES AT OR EXCEEDING 20% SLOPE.
- PROVIDE ANTI-SEEP COLLARS ON ALL PIPES DISCHARGING THROUGH DETENTION POND EMBANKMENT.



**civilooustix**  
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(404) 594-4403 - civilooustix.com

**GRADING PLAN**  
PROJECT  
LAKE WALES CAR WASH  
LAKE WALES, FL 33853 FL

FOR  
ALHERON INVESTMENT MANAGEMENT  
3401 W. CROSS ST. STE 101  
TAMPA, FL 33607

SHEET NUMBER  
**C301**

PROJECT NUMBER  
**19219**

DATE  
**NOVEMBER 27, 2019**

REVISIONS  
1 FDOT COMMENTS  
02-20-20

CALCULATIONS FOR STORM SEWER DESIGN										COMP BY: JJB		DATE: 1/10/2020		PAGE: 1																
PROJ. NO.: 19219 LOCATION: Lake Wales										CHECK BY:		DATE:		OF: 1																
FROM PIPE INLET					TO PIPE OUTLET																									
LOCATION	FLOWLINE ELEVATION	LOCATION	FLOWLINE ELEVATION	A	C	CA	TOTAL CA	To	Qd	PIPE TYPE	PIPE SIZE (in.)	MANNING'S n	Qfull (ft <sup>3</sup> /s)	SLOPE (ft/ft)	LENGTH (ft)	Velocity (ft/sec)	Flow Depth (in)	Q (check) (cfs)	PERCENT CAPACITY	HGL (Upstream End)	HGL (Downstream End)	INLET	# OF GRATES	TOP OR THROAT (ft)	COVER (ft)	Q (100) (cfs)	HEAD HGL (cfs)	HEAD HW (cfs)	ACTUAL HGL	PONDING ELV.
B1	168.00	B2	167.00	0.12	0.75	0.09	0.09	5.00	10.30	CHP	18	0.013	13.54	1.6%	62	4.34	3.21	0.93	0.07	168.27	167.27	DI	1	171.10	1.50	1.09	0.00	0.05	0.05	171.15
A1	167.00	A2	166.79	0.05	0.95	0.05	0.05	5.00	10.30	CHP	18	0.013	7.43	0.5%	54	2.58	3.13	0.49	0.07	167.32	167.05	DI	1	171.60	3.04	0.57	0.00	0.07	0.07	171.67
A2	168.74	A3	166.41	0.15	0.80	0.12	0.17	5.00	10.30	CHP	18	0.013	7.43	0.5%	74	3.42	5.90	1.73	0.23	167.27	166.90	DI	1	170.50	2.22	1.45	0.01	0.12	0.12	170.62
A3	166.43	A4	166.10	0.17	0.70	0.12	0.29	5.00	10.30	CHP	18	0.013	7.37	0.5%	61	3.54	7.92	2.95	0.40	167.06	166.76	DI	1	170.50	2.60	1.44	0.01	0.12	0.12	170.62
A4	166.03	A5	166.00	0.08	0.92	0.07	0.36	5.00	10.30	CHP	18	0.013	7.43	0.5%	18	4.20	8.99	3.71	0.50	166.84	166.75	DI	1	171.10	3.51	1.89	0.00	0.09	0.09	171.19

# GRADING PLAN

