

**PROJECT CONTACTS**

PROPERTY OWNER: BBTL PROPERTY, LLC  
 OWNER'S AGENT: ANDRES BORAL  
 BORAL ENGINEERING & DESIGN, INC.

**UTILITY COMPANIES:**

**ELECTRIC:**  
 LEE COUNTY ELECTRIC COOPERATIVE  
 P.O. BOX 3455  
 NORTH FORT MYERS, FL 33918-3455  
 (239) 995-2121

**POTABLE WATER:**  
 MARCO ISLAND UTILITIES  
 771 ELKCAM CIRCLE  
 MARCO ISLAND, FLORIDA 34145  
 (239) 389-5187

**NATURAL GAS:**  
 TECO/PEOPLE'S GAS  
 5901 ENTERPRISE PARKWAY  
 FORT MYERS, FL 33905-5004  
 (239) 313-8554

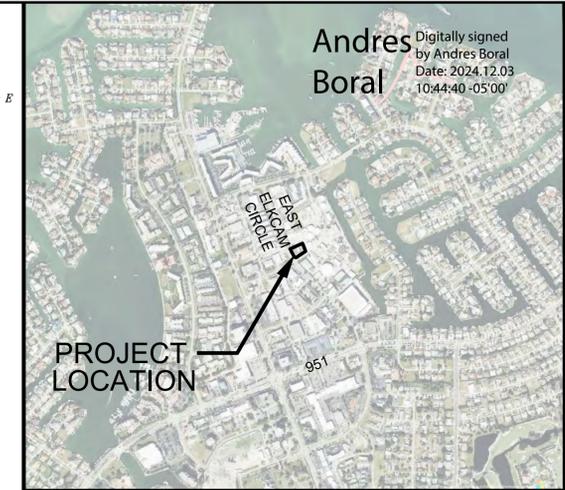
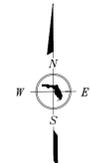
**WASTEWATER:**  
 MARCO ISLAND UTILITIES  
 771 ELKCAM CIRCLE  
 MARCO ISLAND, FLORIDA 34145  
 (239) 389-5187

**TELEPHONE:**  
 CENTURYLINK  
 6438 NAPLES BOULEVARD, SUITE 100  
 NAPLES, FLORIDA 34109  
 (239) 263-6216

**CABLE AND INTERNET:**  
 COMCAST  
 12641 CORPORATE LAKES DRIVE  
 FORT MYERS, FL 33913  
 (239) 432-1805

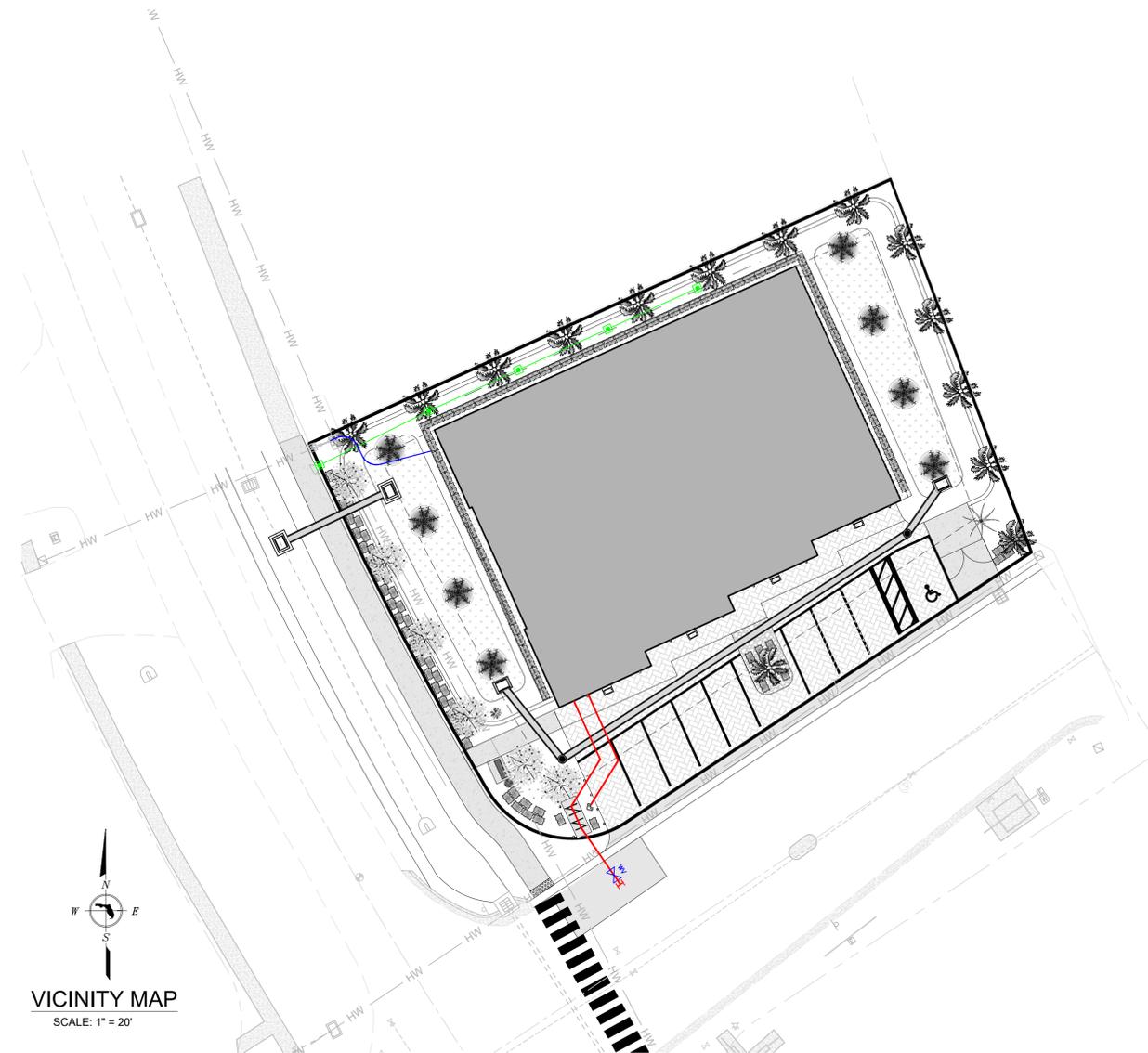
# SITE DEVELOPMENT PLANS FOR ELKCAM WAREHOUSE

**SECTION 16, TOWNSHIP 52 SOUTH, RANGE 26 EAST  
 CITY OF MARCO ISLAND, COLLIER COUNTY, FLORIDA**



**LOCATION MAP**  
 SCALE: 1" = 1000'

**Reviewed for code compliance  
 M Holden  
 12/18/2024 12:29:52 PM**



**VICINITY MAP**  
 SCALE: 1" = 20'

**CITY RIGHT-OF-WAY PERMIT**  
 A CITY RIGHT OF WAY PERMIT WILL BE REQUIRED FOR ANY WORK PERFORMED WITHIN THE PUBLIC RIGHT-OF-WAY

**APPLICABLE PERMITS**

- CITY OF MARCO ISLAND:
  - SITE DEVELOPMENT PLANS
- CITY OF MARCO ISLAND UTILITIES:
  - POTABLE WATER PERMIT
  - SANITARY SEWER PERMIT

**PROPOSED BUILDING**

WAREHOUSE BUILDING: 7,151 SF UNDER AIR  
 NUMBER OF STORIES: 2-STORY BUILDING  
 BUILDING HEIGHT: 28'  
 CONSTRUCTION: TYPE III-B  
 FIRE SUPPRESSION: YES

ZONING DESIGNATION	SITE:	FUTURE LAND USE
(C-5)	SITE:	COMMERCIAL
(C-5)	NORTH:	COMMERCIAL
(ROW)	SOUTH:	WINDWARD DRIVE
(ROW)	WEST:	ELKCAM CIRCLE
(C-5)	EAST:	COMMERCIAL

**SITE DATA TABLE**

SITE ADDRESS: 805 E. ELKCAM CIRCLE  
 CITY OF MARCO ISLAND, FLORIDA 33145

PROPERTY APPRAISERS: MARCO BCH UNIT 4 PORTION OF TRACT C AS DESC IN OR 1362 PG 1409

STRAP NUMBER: 773100 C 3.37816  
 SITE AREA: 17,463 SF (± 0.401 AC)  
 ZONING DESIGNATION: C-5  
 FUTURE LAND USE: COMMERCIAL  
 BUILDING USE: WAREHOUSING (COMMERCIAL)  
 CONSTRUCTION TYPE: FBC - TYPE III-B

**PROJECT AREA BREAKDOWN**

	SQUARE FEET	ACRES	PERCENTAGE
<b>TOTAL</b>	17,463	0.401	100.00%
<b>BUILDING</b>	7,151	0.164	40.95%
<b>CONCRETE</b>	455	0.010	2.61%
<b>IMPERVIOUS</b>	7,606	0.175	43.55%
<b>PERVIOUS</b>	9,857	0.226	56.45%

**INDEX OF SHEETS**

1. COVER SHEET
2. GENERAL NOTES
3. AERIAL, EXISTING CONDITIONS & DEMOLITION PLAN
4. MASTER SITE PLAN
5. MASTER DRAINAGE PLAN
6. MASTER UTILITY PLAN
7. TYPICAL CROSS SECTIONS
8. SIGNING, MARKING & MANEUVERING PLAN
9. STORM WATER POLLUTION PREVENTION PLAN
10. EROSION CONTROL DETAILS
11. PAVING, GRADING & DRAINAGE DETAILS
12. - 14. UTILITY DETAILS
15. & 16. LANDSCAPE & OPEN SPACE PLAN
17. EXTERIOR LIGHTING PLAN
18. IRRIGATION PLAN

**APPROVAL SUBMITTAL PLANS  
 FOR CONSTRUCTION**

**CALL 48 HOURS  
 BEFORE YOU DIG**

**811**

**IT'S THE LAW! Know what's below.  
 Dial 811 Call before you dig.**

SUNSHINE STATE ONE CALL OF FLORIDA, INC.

**NOTES:**  
 ALL EXISTING (SURVEY) & ALL PROPOSED GRADE ELEVATIONS & CONTOURS SHOWN REFER TO N.A.S.D. 88 CONVERSION (N.G.V.D. 1929 - 1.30' = N.A.V.D. 1988)  
 THESE PLANS MAY HAVE BEEN REDUCED OR INCREASED IN SIZE BY REPRODUCTIONS; THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

PROJECT: 23-164 DATE: 03/24 ANDRES BORAL, PE, MEA LICENSE # 80373, FPBE # 31552 711 5TH AVE SOUTH, SUITE 208, NAPLES FL 34102 ANDRES@BORALENGINEERING.COM (P) 239-692-6599	Digitally signed by Andres Boral Date: 2024.12.03 10:44:40 -05'00'
BORAL	
OWNER: BBTL PROPERTY, LLC MARCO ISLAND, FLORIDA 34145	
REVISION DESCRIPTION BY DATE 11/26/2024 MJ REVISOR REVISIONS AND CITY COMMENTS 11/26/2024 MJ REVISOR PER 2ND ROUND CITY COMMENTS	
ELKCAM WAREHOUSE	
805 E. ELKCAM CIRCLE CITY OF MARCO ISLAND, FLORIDA 34145	
COVER SHEET	
SHEET 1 OF 18	

SEP24-00001

**GENERAL CONSTRUCTION NOTES:**

- THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH AND ARE GOVERNED BY THE LATEST EDITIONS OF THE F.D.O.T. STANDARD PLANS AND SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND ALL LOCAL CODES. F.D.O.T. DESIGN STANDARD PLANS AND APPLICABLE DESIGN STANDARDS MODIFICATIONS ARE FOUND AT: <https://www.fdot.gov/designstandards/plans/default.shtm>.
- ALL APPROVALS REQUIRED IN CONJUNCTION WITH THESE NOTES MUST BE OBTAINED IN WRITING BY THE CONTRACTOR. ANY DEVIATIONS FROM THE PLANS AND / OR SPECIFICATIONS MUST BE APPROVED IN ADVANCE BY THE OWNER, ENGINEER, AND APPROPRIATE REGULATORY AGENCY.
- CONTRACTOR SHALL ENSURE THAT ALL PERMITS ARE IN PLACE PRIOR TO CONSTRUCTION. THAT COPIES OF ALL PERMITS ARE RETAINED ON SITE AT ALL TIMES, AND SHALL ADHERE TO ALL PERMIT CONDITIONS. AT LEAST 72 HOURS PRIOR TO CONSTRUCTION, CONTRACTOR SHALL NOTIFY THE LOCAL MAINTENANCE ENGINEER'S OFFICE TO SECURE GENERAL USE PERMITS AND / OR OTHER PERMITS REQUIRED FOR WORK WITHIN F.D.O.T. RIGHT-OF-WAY.
- ALL CONSTRUCTION SHALL COMPLY WITH THE LATEST VERSIONS OF THE AMERICANS WITH DISABILITIES ACT (A.D.A.) AND THE FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION (F.A.C.B.C.). MAXIMUM SLOPE IN ACCESSIBLE PARKING SPACES AND LOADING ZONES SHALL NOT EXCEED 2.0% IN ALL DIRECTIONS. MAXIMUM RUNNING SLOPE SHALL NOT EXCEED 5% AND CROSS SLOPE SHALL NOT EXCEED 2% ON ALL SIDEWALKS AND CROSSWALKS.
- SIDEWALKS ARE DESIGNED AND INTENDED FOR PEDESTRIAN TRAFFIC ONLY. ALL SIDEWALKS AND CURB CUTS SHALL BE IN ACCORDANCE WITH F.D.O.T. S.P.I. 522-002 AND SHALL INCLUDE DETECTABLE WARNING SURFACES. VALLEY GUTTER ADJACENT TO CURB CUTS SHALL DEVIATE FROM STANDARD DETAIL BY NOT EXCEEDING 12:1 SLOPES.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER, OWNERS REPRESENTATIVE AND APPROPRIATE AGENCY A MINIMUM OF 72 HOURS PRIOR TO ALL INSPECTIONS REQUIRED BY THE RESPECTIVE PERMIT.
- THE CONTRACTOR SHALL NOTIFY THE OWNER AND CONTACT ALL UTILITY COMPANIES FOR LOCATIONS OF EXISTING UTILITIES A MINIMUM OF 72 HOURS PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR SHALL DETERMINE IF UTILITIES OTHER THAN THOSE SHOWN ON THESE PLANS EXIST. THE LOCATION OF EXISTING UTILITIES, PAVEMENT, VEGETATION, AND OTHER IMPROVEMENTS ARE APPROXIMATE ONLY. THE EXACT TYPES, ELEVATIONS, AND LOCATIONS SHALL BE VERIFIED BY THE CONTRACTOR IN THE FIELD PRIOR TO COMMENCING CONSTRUCTION OR ORDERING MATERIALS. CONTRACTOR SHALL NOTIFY ENGINEER / OWNER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
- ANY PUBLIC LAND CORNER OR BENCHMARK WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED AND, IF IN DANGER OF BEING DESTROYED, MUST BE PROPERLY REFERENCED BY THE CONTRACTOR.
- EXISTING IMPROVEMENTS SHALL REMAIN UNLESS NOTED OTHERWISE AND SHALL BE RESTORED TO A CONDITION EQUIVALENT TO THAT WHICH EXISTED PRIOR TO COMMENCING CONSTRUCTION AT NO ADDITIONAL COST TO THE OWNER. EXISTING OFF-SITE DRAINAGE PATTERNS SHALL BE MAINTAINED DURING CONSTRUCTION.
- THE CONTRACTOR SHALL OBTAIN ANY CLEARING, VEGETATION REMOVAL, OR RIGHT-OF-WAY PERMITS REQUIRED FOR THIS PROJECT. ALL DEBRIS SHALL BE REMOVED FROM SITE AND PROPERLY DISPOSED OF.
- CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING TRAFFIC AND USAGE OF THE EXISTING STREETS ADJACENT TO THE PROJECT. ALL TRAFFIC MAINTENANCE CONTROL SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE FLORIDA MANUAL OF TRAFFIC CONTROL AND SAFE PRACTICES FOR STREET CONSTRUCTION, MAINTENANCE, AND UTILITY OPERATIONS. CONTRACTOR SHALL ASSURE THAT ALL TRAFFIC CONTROL DEVICES MEET ACCEPTABLE STANDARDS AS OUTLINED IN THE LATEST EDITION OF THE AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION (ATSSA) "QUALITY STANDARDS FOR WORK ZONE TRAFFIC CONTROL DEVICES" AND SHALL IMMEDIATELY REPAIR, REPLACE, OR CLEAN DAMAGED, DEFACED, OR DIRTY DEVICES. TRAFFIC CONTROL OPERATION PROCEDURES SHALL BE SUBMITTED TO OWNER FOR APPROVAL PRIOR TO BEGINNING CONSTRUCTION. ANY IMPACTS TO TRAFFIC FLOW SHALL BE COORDINATED WITH AND APPROVED BY THE APPROPRIATE LOCAL AGENCY.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE IMMEDIATELY REPORTED TO THE ENGINEER AND OWNER'S REPRESENTATIVE.
- THE LOCATIONS OF PROPOSED DRAINAGE STRUCTURES AND UTILITY LINES MAY BE FIELD ADJUSTED TO PRESERVE EXISTING VEGETATION AS APPROVED IN ADVANCE BY THE ENGINEER. UNDERGROUND CONTRACTOR SHALL MINIMIZE AREA AND WIDTH OF TRENCHES TO AVOID DISTURBANCES OF NATURAL VEGETATION. EXERCISE CARE TO PROTECT THE ROOTS OF TREES TO REMAIN. WITHIN THE BRANCH SPREAD OF SUCH TREES, PERFORM ALL TRENCHING BY HAND. OPEN THE TRENCH ONLY WHEN UTILITIES CAN BE INSTALLED IMMEDIATELY. PRUNE INJURED ROOTS CLEANLY AND BACKFILL AS SOON AS POSSIBLE. SPOIL FROM TRENCHES SHALL BE PLACED ONLY ON PREVIOUSLY CLEARED AREAS OR AS DIRECTED BY THE OWNER. CONTRACTOR SHALL NOT REMOVE OR DISTURB ANY TREES AND/OR SHRUBS WITHOUT PRIOR APPROVAL BY OWNER.
- INSTALLATION OF SUBSURFACE CONSTRUCTION, INCLUDING BUT NOT LIMITED TO WATER, SEWER AND IRRIGATION LINES, PUBLIC UTILITIES, AND STORM DRAINAGE IS REQUIRED PRIOR TO COMPACTION OF THE ROADWAY SUBGRADE.
- SUBGRADE AND LIMEROCK BASE COURSES TO BE COMPACTED TO 98% MINIMUM OF THE MAXIMUM DRY DENSITY AS SPECIFIED BY AASHTO T-180 TESTING. CONTRACTOR SHALL PROVIDE THE ENGINEER SATISFACTORY DENSITY TESTS FOR SUBGRADE AND LIMEROCK PRIOR TO PAYMENT OR FINAL ACCEPTANCE. EXCESS ROAD BASE AND COMPACTED SOIL SHALL BE REMOVED FROM ALL LANDSCAPE AREAS PRIOR TO FINAL GRADING.
- SWALE ELEVATIONS SHOWN ARE TO TOP OF SOD. CONTRACTOR TO ADJUST SWALE GRADING ACCORDINGLY. ALL UNPAVED AREAS SHALL BE GRADED TO DRAIN TO THE DRAINAGE SYSTEM TO PREVENT STANDING WATER. YARD DRAINS MAY BE ADDED IN GREEN AREAS AS NECESSARY AT THE DISCRETION OF THE LANDSCAPE ARCHITECT OR ENGINEER AND SHALL HAVE PEDESTRIAN-SAFE GRATES MEETING THE REQUIREMENTS OF H-20 LOADING.
- BERM ELEVATIONS SHOWN ARE THE MINIMUM REQUIRED. CONTRACTOR MAY EXCEED THE MINIMUM BERM ELEVATION BY UP TO 0.5 FEET PROVIDED ALL SLOPE CRITERIA IS MET. ANY CONSTRUCTION OF BERMS IN EXCESS OF THAT LIMIT MUST BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER WITHIN ONE WEEK OF COMPLETION OF DRAINAGE CONTROL STRUCTURES SO THAT ELEVATIONS MAY BE VERIFIED PRIOR TO COMPLETION OF CONSTRUCTION.
- THE CONTRACTOR IS REQUIRED TO ADJUST ALL EXISTING AND PROPOSED VALVE BOXES, MANHOLE RIMS, GRATES AND OTHER IMPROVEMENTS AS REQUIRED TO MATCH THE FINAL GRADE.
- THE CONTRACTOR SHALL COORDINATE WITH THE OWNER'S REPRESENTATIVE IN REGARDS TO THE LOCATION, SIZE AND QUANTITY OF ALL CONDUITS FOR UTILITIES, IRRIGATION, LIGHTING, AND OTHER IMPROVEMENTS PRIOR TO CONSTRUCTION OF THE ROADWAY SUBGRADE. CASING AND/OR CONDUIT SHALL HAVE A MINIMUM OF 30" COVER, EXTEND 5' BEYOND THE EDGE OF PAVEMENT, BACK OF CURB AND/OR SIDEWALK AT EACH END, AND ENDS SHALL BE SEALED AND DENOTED WITH MARKING TAPE.
- CONTRACTOR SHALL NOTIFY THE ENGINEER 24 HOURS PRIOR TO PLACING SOD ON AREAS THAT REQUIRE CRITICAL MINIMUM OR MAXIMUM ELEVATIONS IN ORDER FOR ENGINEER TO VERIFY SUCH ELEVATIONS. THE OBLIGATION TO ACHIEVE MINIMUM OR MAXIMUM ELEVATIONS REMAINS WITH THE CONTRACTOR.
- AT MINIMUM, SOD A 12" STRIP ADJACENT TO ALL PAVEMENT PER F.D.O.T. REQUIREMENTS. SOD ALL UNPAVED DISTURBED AREAS WITHIN F.D.O.T. RIGHT OF WAY. ALL OTHER UNPAVED AREAS DISTURBED DURING CONSTRUCTION SHALL BE SEEDED, FERTILIZED AND MULCHED UNLESS NOTED OTHERWISE.
- THE CONTRACTOR SHALL REMOVE ALL UNSUITABLE MATERIAL ENCOUNTERED FROM FILL AREAS PRIOR TO PLACEMENT OF FILL AND SUCH MATERIAL SHALL BE STOCKPILED OR REMOVED AS DIRECTED BY OWNER.
- THE PROPERTY OWNER OR DESIGNATED AUTHORITY IS RESPONSIBLE FOR THE PERPETUAL MAINTENANCE OF ALL FEATURES OF THE SURFACE WATER MANAGEMENT SYSTEM AS SHOWN IN THESE DRAWINGS AND AS REQUIRED BY LOCAL, STATE, AND FEDERAL PERMITS. IT IS FURTHER RECOMMENDED THAT THE SURFACE WATER MANAGEMENT SYSTEM BE INSPECTED SEMI-ANNUALLY.
- CONTRACTOR SHALL VERIFY DESIGN DETAILS WITH ENGINEER PRIOR TO ORDERING STRUCTURES. STRUCTURE TYPES LABELED ON THE PLANS FOR ITEMS SUCH AS JUNCTION BOXES AND INLETS MAY ONLY BE A REFERENCE TO THE TOP OF THE STRUCTURE. CERTAIN STRUCTURE TYPES REQUIRE A LARGER BOTTOM TO ACCOMMODATE LARGER PIPE SIZES AND/OR PIPE ANGLES. THE APPROPRIATE SIZE AND SHAPE OF THE BOTTOM OF THE STRUCTURE SHALL BE DETERMINED BY THE CONTRACTOR WITH CONSIDERATION GIVEN TO ADJACENT EXISTING OR PROPOSED UTILITIES. THE COST FOR THE ENTIRE STRUCTURE IS INCLUDED IN THE UNIT PRICE FOR THE PRIMARY STRUCTURE.
- STORM DRAIN PIPE LENGTHS ARE APPROXIMATE AND HAVE BEEN MEASURED FROM INSIDE FACE OF STRUCTURE. SANITARY SEWER PIPE LENGTHS ARE APPROXIMATE AND ARE MEASURED FROM THE CENTER OF STRUCTURE.

**GENERAL CONSTRUCTION NOTES CONTINUED:**

- CONTRACTOR SHALL MAINTAIN MINIMUM SEPARATION BETWEEN UTILITIES AS SHOWN ON "UTILITY LOCATION DETAIL" AND IN ACCORDANCE WITH APPLICABLE LOCAL UTILITY SERVICE PROVIDER REQUIREMENTS.
- ALL COMPONENTS OF THE POTABLE WATER SYSTEM SHALL BE IN CONFORMANCE WITH AMERICAN NATIONAL STANDARDS INSTITUTE / NSF INTERNATIONAL STANDARD 61. ALL COMPONENTS, INSTALLATION AND TESTING OF THE POTABLE WATER SYSTEM SHALL BE IN ACCORDANCE WITH ALL A.W.W.A. APPLICABLE STANDARDS.
- CONTRACTOR TO COORDINATE WITH ALL OTHER CONTRACTORS WORKING ON THE PROJECT SITE. THE OWNERS REPRESENTATIVE, AND WITH ELECTRIC, TELEPHONE, AND CABLE COMPANIES TO ASSURE THAT NO SANITARY SEWER, WATERLINE, OR IRRIGATION SERVICES ARE INSTALLED UNDER PROPOSED TRANSFORMERS.
- DEFLECTION TESTING IN ACCORDANCE WITH TECHNICAL SPECIFICATIONS FOR GRAVITY SEWER MAY NOT BE UNDERTAKEN UNTIL 30 DAYS AFTER FINAL BACKFILLING OF THE TRENCH IS COMPLETE. SEWER DEFLECTION MAY NOT EXCEED THE MAXIMUM PROVIDED IN THE TECHNICAL SPECIFICATIONS OR 5%, WHICHEVER IS LESS.
- ALL GRAVITY SEWER MAINS SHALL BE TESTED WITH A MANDREL WITH A DIAMETER OF NOT LESS THAN 95% OF THE INSIDE PIPE DIAMETER. MANDREL TESTS MUST BE PERFORMED WITHOUT USE OF MECHANICAL PULLING DEVICES.
- NO VEGETATION OR OTHER OBSTRUCTIONS SHALL BE PLACED SO AS TO BLOCK ACCESS OR LINE OF SIGHT TO FIRE HYDRANTS, F.D.C., P.I.V., ETC. IN ACCORDANCE WITH LOCAL FIRE JURISDICTION AND / OR AS SHOWN IN DETAILS.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE FLORIDA FIRE CODE. SEPARATE PERMITS MAY BE REQUIRED FOR ANY DEDICATED FIRE LINE. UNDERGROUND FIRE LINES MUST MEET REQUIREMENTS OF NFPA 24. CONTRACTOR TO VERIFY FIRE LINE SIZE WITH BUILDING PLANS PRIOR TO CONSTRUCTION.

**MISCELLANEOUS PLAN INFORMATION**

- FINAL ALIGNMENTS, MATERIALS, COLORS, FINISHES, FOR PEDESTRIAN HARDSCAPE AREAS MUST BE ADJUSTED ON SITE BY OWNER OR THE OWNERS REPRESENTATIVE.
- THE SIZES AND LOCATIONS OF THE UNDERGROUND PRESSURE MAINS, STORM DRAINS, GRAVITY MAINS, ELECTRIC CONDUITS, SLEEVES, TRANSFORMERS, ENCLOSURES, LIGHT POLES AND OTHER APPURTENANCES ARE BASED UPON THE BEST INFORMATION OBTAINED BY THE ENGINEER AT THE TIME OF DESIGN. THE CONTRACTOR SHALL VERIFY ACTUAL LOCATION, SIZE AND DEPTH OF ALL UTILITIES DESCRIBED ABOVE PRIOR TO INSTALLATION OF THEIR FACILITIES.

**ABBREVIATIONS & ACRONYMS**

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	D.A.	DRAINAGE AREA	GAL.	GALLON	NA	NOT APPLICABLE	SPEC.	SPECIFICATION
ABD.	ABANDONED	D.B.	DITCH BOTTOM INLET	GALV.	GALVANIZED	NE	NORTHEAST	S.F.	SQUARE FOOT
AC.	ACRE	DBL.	DOUBLE	GA.	GAUGE OR GAGE	NGVD	NATIONAL GEODETIC DATUM OF 1929	S.F.I.	STANDARD PLAN INDEX
A.D.A.	AMERICANS WITH DISABILITIES ACT	D.C.S.	DEGREE OF CURVATURE (SPIRAL)	GAR.	GARAGE	NAVD	NORTH AMERICAN VERTICAL DATUM OF 1988	S.R.	STATE ROAD
ADJ.	ADJUST	D.C.V.	DOUBLE DETECTOR CHECK VALVE	GOVT.	GOVERNMENT	N.G.S.	NATIONAL GEODETIC SURVEY	STA.	STATION
A.D.T.	AVERAGE DAILY TRAFFIC	D.E.T.	DRAINAGE EASEMENT	GR.	GUARDRAIL	N.G.W.	NORMAL HIGH WATER	STAB.	STABILITY OR STABILIZATION
A.E.	ACCESS EASEMENT	DECEL.	DECELERATION	GRND.	GROUND	N.S.R.S.	NATIONAL SPATIAL REFERENCE SYSTEM	STD.	STANDARD
A.A.D.T.	ANNUAL AVERAGE DAILY TRAFFIC	DEM Obl.	DEMOBILIZATION	GV.	GATE VALVE	N.T.S.	NOT TO SCALE	STR.	STRUCTURE
AGG.	AGGREGATE	DEN.	DENSITY	H.	HEIGHT	N.W.	NORTHWEST	STR.	SQUARE YARD
A.I.C.P.	AMERICAN INSTITUTE OF CERTIFIED PLANNERS	DEPT.	DEPARTMENT	H.D.	HIGH DENSITY	O.D.	OUTSIDE DIAMETER	SW.	SOUTHWEST
ALT.	ALTERNATE	DET.	DETOUR	HDWL.	HEADWALL	O.E.	OVERHEAD ELECTRIC	SW	SIDEWALK
A.S.M.	AMERICAN SOCIETY FOR TESTING MATERIALS	DET.	DETOUR	HNDRL.	HANDRAIL	O.F.T.	OPTIONAL	T.	THICKNESS
ALUM.	ALUMINUM	DIA.	DIAMETER	HORIZ.	HORIZONTAL	O.R.	OFFICIAL RECORD BOOK	TAN.	TANGENT
A.N.S.I.	AMERICAN NATIONAL STANDARDS INSTITUTE	DIM.	DIMENSION	H.P.	HIGH PRESSURE OR HORSE POWER	OZ.	OUNCE	TWP.	TOWNSHIP
APPL.	APPLICATION	D.I.P.	DUCTILE IRON PIPE	H.W.	HIGH WATER	P.I.	POINT OF INTERSECTION	T.B.M.	TEMPORARY BENCH MARK
APPROX.	APPROXIMATELY	DIR.	DIRECTION	H.WY.	HIGHWAY	P.V.	POST INDICATOR VALVE	T.D.	TO BE DETERMINED
ASPH.	ASPHALT	DIST.	DISTANCE	HYDR.	HYDRANT	P.C.	POINT OF CURVATURE	T.B.R.	TO BE REMOVED
ASSY.	ASSEMBLY	D.O.T.	DEPARTMENT OF TRANSPORTATION	I.	INCH	P.E.	PROFESSIONAL ENGINEER	TEL.	TELEPHONE / TELEPHONE BOX
A.S.M.	AMERICAN SOCIETY FOR TESTING MATERIALS	DR.	DRIVE	I.D.	INSIDE DIAMETER	P.E.D.	PEDESTRIAN OR PEDESTAL	TEMP.	TEMPORARY
AUX.	AUXILIARY	DRWY.	DRIVEWAY	I.E.	INVERT ELEVATION	PG.	PAGE	TN.	TON
AVE.	AVENUE	D.S.	DESIGN SPEED	INC.	INCH	P.G.L.	PROFILE GRADE LINE	T.U.E.	TECHNOLOGY UTILITY EASEMENT
AVG.	AVERAGE	D.S.W.T	DRY SEASON WATER TABLE	INC.	INCORPORATED	P.I.E.	PRIVATE IRRIGATION EASEMENT	TYP.	TYPICAL
B.E.	BURIED ELECTRIC	DWS.	DRAWING	INCL.	INCLUDED	P.I.V.	POST INDICATOR VALVE	UG.	UNDERGROUND
B.F.P.	BACKFLOW PREVENTER	E.	EAST	I.P.	IRON PIPE	PH	MEASURE OF ACIDITY OR ALKALINITY	U.E.	UTILITY EASEMENT
BL.	BASE LINE	EA.	EACH	I.R.	IRON ROD	P.I.	POINT OF INTERSECTION	US&GS	UNITED STATES COAST AND GEODETIC SURVEY
B.L.V.D.	BURIED LIVE VALVE	ERR.	RATE OF SUPER ELEVATION	IRR.	IRRIGATION	P.K.	PARALLEL KILON	USGS	UNITED STATES GEOLOGICAL SURVEY
B.M.	BENCHMARK	EA.I.	ENGINEERING INTERN	INSTL.	INSTALL OR INSTALLATION	PL	PROPERTY LINE	UTIL.	UTILITIES
B.O.C.	BACK OF CURB	EL.	ELEVATION	INST.	NO. INSTRUMENT NUMBER	P.M.	12:00 NOON UNTIL 11:59 MIDNIGHT	VAR.	VARIABLE
BOT.	BOTTOM	ELEV.	ELEVATION	INT.	INTERSECTION	P.O.C.	POINT OF CURVE	V.C.	VERTICAL CURVE
B.P.	BORROW PIT	ELEC.	ELECTRIC / ELECTRIC BOX	INVT.	INVERT	P.R.C.	POINT OF REVERSE CURVATURE	VEH.	VEHICLE
BR.	BRIDGE	ELLIP.	ELLIPTICAL	J.B.	JUNCTION BOX	P.R.M.	PERMANENT REFERENCE MONUMENT	V.F.	VERTICAL FOOT
BRG.	BEARING	EMBK.	EMBANKMENT	JCT.	JUNCTION	PROP.	PROPERTY	VERT.	VERTICAL
BT	BURIED TELEPHONE	ENCL.	ENCLOSURE	JT.	JOINT	P.U.E.	PUBLIC UTILITY EASEMENT	VOL.	VOLUME
BTWN.	BETWEEN	E.O.P.	EDGE OF PAVEMENT	K.	RATE OF VERTICAL CURVATURE	P.S.I.	POUNDS PER SQUARE INCH	W.	WEST
BWB.	BARBED WIRE	E.O.W.	EDGE OF WATER	KM.	KILOMETER	P.S.M.	PROFESSIONAL SURVEYOR AND MAPPER	W.G.V.	WATER MAIN GATE VALVE
CALC.	CALCULATED	EQ.	EQUATION OR EQUAL	KV.	KILOVOLT	P.V.C.	POLYVINYL CHLORIDE PIPE	W.W.	WITNESS
CALC.	CALCULATED OR CUT	EQUIP.	EQUIPMENT	KVA.	KILOVOLT AMPERES	P.V.I.	POINT OF VERTICAL INTERSECTION	X.	COORDINATE DISTANCE (EAST-WEST)
CAP.	CAPACITY	E.R.C.P.	ELLIPTICAL REINFORCED CONCRETE PIPE	L.	LENGTH, LENGTH OF CURVE	Q.	QUANTITY	XING.	CROSSING
CATV.	CABLE TELEVISION	ESMT.	EASEMENT	LA.	LIMITED ACCESS	QTY.	QUANTITY	Y.	COORDINATE DISTANCE (NORTH-SOUTH)
C.B.	CATCH BASIN	ETC.	ET CETERA (AND SO FORTH)	LA.T.	LATERAL OR LATITUDE	R.	RADIUS	YR.	YEAR
C.B.C.	CONCRETE BOX CULVERT	E.W.	ENDWALL	LB.	POUND OR LICENSED BUSINESS	RAD.	RADIUS		
CBS.	CONCRETE BOX STRUCTURE	EXCAV.	EXCAVATION	L.C.	LEE COUNTY	REC.	RECORD		
C.C.	CENTER TO CENTER	EX.	EXISTING	L.C.R.	LEE COUNTY RECORDS	RECT.	RECTANGULAR		
COMB.	COUNTY COMMISSIONERS MINUTES BOOK	EXP.	EXPANSION	L.C.U.	LEE COUNTY UTILITIES	REINFC.	REINFORCED CONCRETE PIPE		
C.E.	CONTROL ELEVATION	EXT.	EXTENSION	L.C.U.E.	LEE COUNTY UTILITIES EASEMENT	RELOC.	RELOCATED		
CEM.	CEMENT	(F)	FILL	L.	ARC LENGTH	REM.	REMOVED		
C.A.	CUBIC FOOT	F. TO F.	FACE TO FACE	LA.	LIMITED ACCESS	REQ.	REQUIRED		
C.I.	CAST IRON	F.A.C.	FLORIDA ADMINISTRATIVE CODE	LF.	LINEAR FOOT	RES.	RESIDENCE		
C.I.P.	CAST IRON PIPE	F.A.C.B.C.	FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION	L.M.E.	LAKE MAINTENANCE EASEMENT	R.M.	REFERENCE MONUMENT		
CL.	CENTER LINE	F.B.C.	FLORIDA BUILDING CODE	LOC.	LOCATION	R.O.W.	RIGHT-OF-WAY		
CONC.	CONCRETE	F.D.	FOUND	L.S.	LUMP SUM OR LIFT STATION	R.P.M.	RAISED REFLECTIVE PAVEMENT MARKERS		
C.M.	CONCRETE MONUMENT	F.D.C.	FIRE DEPARTMENT CONNECTION	LT.	LEFT	R.P.M.	REVOLUTIONS PER MINUTE		
C.M.P.	CORRUGATED METAL PIPE	F.D.O.T.	FOUNDATION	M.	MASS	R.P.P.A.	REDUCED PRESSURE PRINCIPLE ASSEMBLY		
CO.	COUNTY OR COMPANY	FDN.	FOUNDATION	M.	MASS	R.P.Z.D.	REDUCED PRESSURE BACKFLOW PREVENTION DEVICE		
CO.	CLEANOUT	F.D.O.T.	FEDERAL DEPARTMENT OF TRANSPORTATION	MAINT.	MAINTENANCE	R.R.	RAILROAD		
COL.	COLUMN	FED.	FEDERAL	MAX.	MAXIMUM	RT.	RIGHT		
COM.	COMMERCIAL	FERT.	FERTILIZER	MED.	MEDIAN	R.R.W.	RIGHT-OF-WAY		
CONST.	CONSTRUCTION	F.E.S.	FINISHED FLOOR ELEVATION	M.E.S.	MITERED END SECTION	S.	SOUTH		
CONT.	CONTRACTOR	F.E.E.	FINISHED FLOOR ELEVATION	MG	MILLION GALLONS	SAN.	SANITARY		
COORD.	COORDINATE	F.G.V.	FORCE MAIN GATE VALVE	M.H.	MANHOLE	SCH.	SCHEDULE		
COR.	CORNER	F.H.	FIRE HYDRANT	M.H.W.	MEAN HIGH WATER	SEC.	SECTION		
C.P.	CONTROL POINT	F.H.A.	FEDERAL HIGHWAY ADMINISTRATION	MILE	MILE	SED.	SEDIMENT		
C.R.	CONTROL RADIUS	FIN.	FINISH	MIN.	MINIMUM	SG.	SPECIFIC GRAVITY		
C.S.	CONTROL STRUCTURE	FL.	FLORIDA	MISC.	MISCELLANEOUS	SH.	SHEET		
CTR.	CENTER	FLEX.	FLEXIBLE	M.L.W.	MEAN LOW WATER	SHLDR.	SHOULDER		
C.U.E.	COUNTY UTILITY EASEMENT	F.M.	FORCE MAIN	MM	MILLIMETER	S.H.W.T.	SEASONAL HIGH WATER TABLE		
CULV.	CULVERT	F.O.C.	FACE OF CURB	MOD.	MODIFY OR MODIFIED	S.M.H.	SANITARY MANHOLE		
CULV.	CULVERT	F.O.C.	FACE OF CURB	MON.	MONUMENT				
C.Y.	CUBIC YARD	F.P.S.	FEET PER SECOND	M.O.T.	MAINTENANCE OF TRAFFIC				
CYL.	CYLINDRICAL	F.RAC.	FRACTION	M.P.H.	MILES PER HOUR				
D.	DEGREE OF CURVATURE	FREQ.	FREQUENCY	M.S.L.	MEAN SEA LEVEL				
DA.	DAVIS	F.	FOOT OR FEET	M.U.T.C.A.	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES				
D.	DEED	FURN.	FURNISH	N.	NORTH				
D.J.		G.	GRAM	N.	NORTH				

APPROVAL SUBMITTAL PLANS FOR CONSTRUCTION

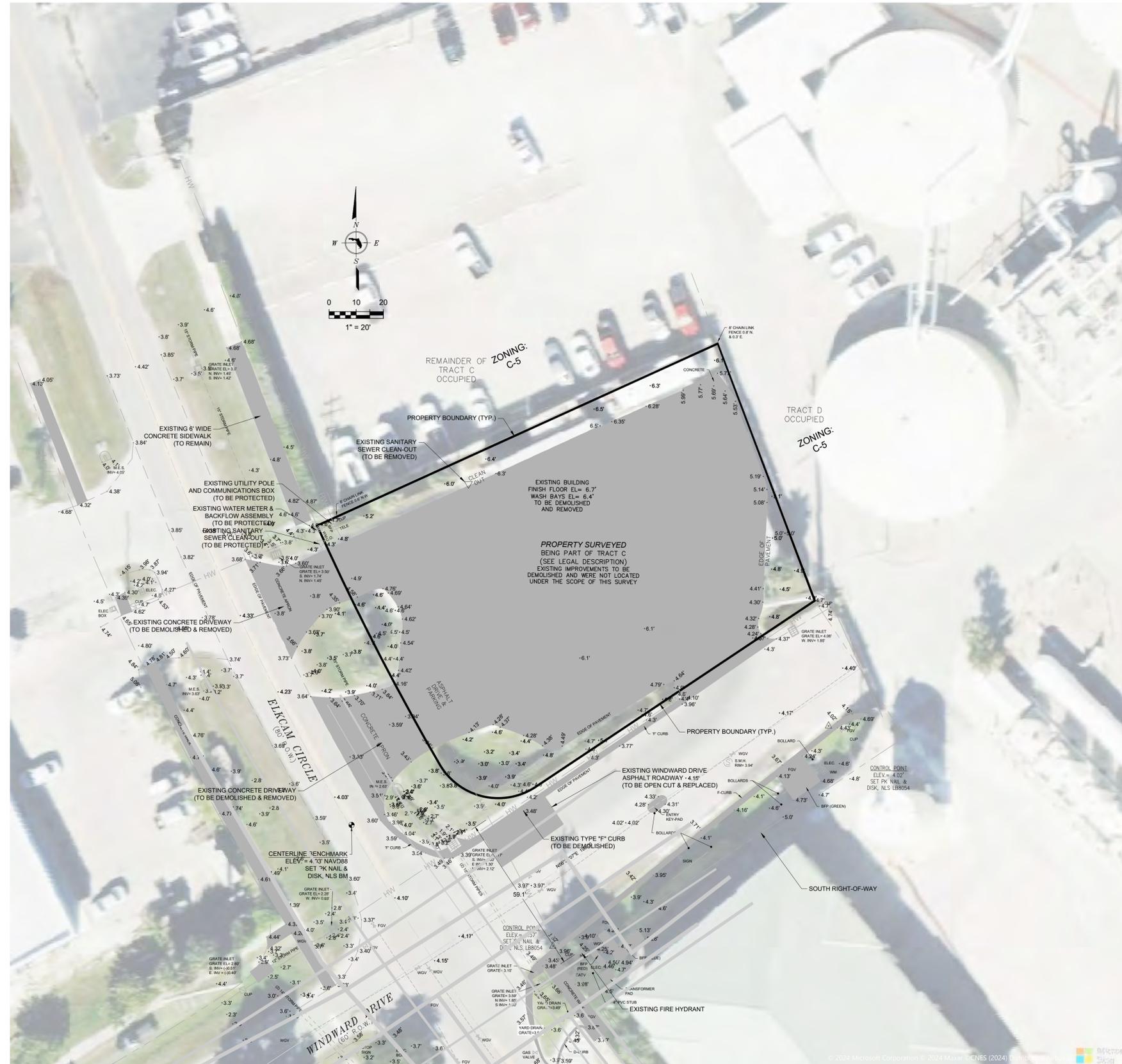
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PROJECT:	23-164
DATE:	03/24
ANDRES BORAL, P.E. MEA	ANDRES BORAL, P.E. MEA
LICENSE # 80373 PIPE # 31552	LICENSE # 80373 PIPE # 31552
711 5TH AVE SOUTH SUITE 208 NAPLES FL 34102	711 5TH AVE SOUTH SUITE 208 NAPLES FL 34102
ANDRESBORAL@BORALENGINEERING.COM	ANDRESBORAL@BORALENGINEERING.COM
(P) 238-692-0509	(P) 238-692-0509
<b>BORAL</b> ENGINEERING	
OWNER:	ELKCAM WAREHOUSE
887L PROPERTY, LLC	805 E. ELKCAM CIRCLE
MARCO ISLAND, FLORIDA 34145	CITY OF MARCO ISLAND, FLORIDA 34145
REVISION DESCRIPTION	REVISION DESCRIPTION
DATE	DATE
BY	BY
11/26/2024	11/26/2024
MJ	MJ
REVISION PER 2ND ROUND CITY COMMENTS	REVISION PER 2ND ROUND CITY COMMENTS
GENERAL NOTES	GENERAL NOTES
<b>SHEET</b> 2 OF 18	

**DEMOLITION NOTES:**

- SURROUNDING FACILITIES SHALL STAY OPERATIONAL AT ALL TIMES OF CONSTRUCTION.
- CONTRACTOR SHALL LOCATE AND VERIFY THE SIZE, LOCATION, AND DEPTH OF ALL EXISTING UTILITIES IN THE FIELD AND SHALL NOTIFY THE UTILITY COMPANIES IN THE AREA BEFORE BEGINNING CONSTRUCTION. ANY UTILITIES THAT ARE DISTURBED OR DAMAGED BY THE CONTRACTOR SHALL BE IMMEDIATELY REPAIRED OR REPLACED BY THE CONTRACTOR AT HIS EXPENSE. ANY DISCREPANCY NOT CALLED TO THE ENGINEER'S ATTENTION PRIOR TO ACCOMPLISHMENT OF THE WORK SHALL BE CORRECTED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND DEMOLITION OF ANY EXISTING STRUCTURES WITHIN THE PROJECT LIMITS. ALL DEBRIS GENERATED SHALL BE REMOVED FROM THE SITE AND HAULED TO A COUNTY APPROVED OFF-SITE DUMP. THE CONTRACTOR SHALL ACQUIRE ALL NECESSARY PERMITS FOR THESE OPERATIONS.
- RELOCATION OR REMOVAL OF EXISTING LANDSCAPE MATERIAL SHALL BE COORDINATED WITH THE OWNER AND/OR LANDSCAPE ARCHITECT.
- THE CONTRACTOR, AT HIS OWN EXPENSE AND IN CONFORMANCE WITH ANY APPLICABLE GOVERNMENTAL REGULATION, SHALL DURING THE COURSE OF AND AFTER COMPLETION OF CONSTRUCTION, REMOVE FROM THE JOB SITE AND DISPOSE OF, IN AN AUTHORIZED GARBAGE OR RUBBISH DISPOSAL SITE, ALL RUBBISH, SCRAP, AND DEBRIS ACCUMULATED IN CONNECTION WITH HIS WORK AND SHALL DELIVER THE WORK IN A NEAT AND WORKMANLIKE MANNER.
- DURING USE OF STREETS AND HIGHWAYS FOR WORK TO BE DONE UNDER THIS CONTRACT, DETERMINE AND CONFORM TO ALL STATE, COUNTY, AND LOCAL LAWS AND REGULATIONS. THE CONTRACTOR SHALL PROVIDE, ERECT, AND MAINTAIN EFFECTIVE BARRICADES, WARNING SIGNALS AND SIGNS ON ALL AFFECTED STREETS OR HIGHWAYS FOR PROTECTION OF COMPLETED WORK AND TO ENSURE THE SAFETY OF THE PUBLIC. ALL BARRICADES OR OBSTRUCTIONS WHICH ENCRUSH ON, OR ARE ADJACENT TO, PUBLIC RIGHTS-OF-WAYS SHALL BE PROVIDED WITH LIGHTS WHICH SHALL BE KEPT ILLUMINATED AT ALL TIMES BETWEEN SUNSET AND SUNRISE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGE RESULTING FROM ANY NEGLIGENCE OR FAILURE TO MEET THESE REQUIREMENTS.
- THE CONTRACTOR SHALL ARRANGE WORK TO MINIMIZE AMOUNT OF DISTURBANCE TO NORMAL PEDESTRIAN AND VEHICULAR TRAFFIC AND PROVIDE ADEQUATE MEANS OF ACCESS TO ALL PUBLIC AND PRIVATE PROPERTIES DURING CONSTRUCTION. IF CONSTRUCTION WORK SHOULD REQUIRE REPAIRS, CHANGES, OR MODIFICATIONS OF OTHER UTILITIES, THE CONTRACTOR SHALL PROVIDE FOR MAINTENANCE OF CONTINUOUS WATER, ELECTRIC, TELEPHONE, GAS, SEWAGE, AND OTHER UTILITY SERVICES TO ALL CONNECTED CUSTOMERS OF SUCH UTILITIES UNLESS APPROVAL IN WRITING IS OBTAINED FROM UTILITY COMPANY OR OWNER FOR INTERRUPTION OF SUCH SERVICES.
- CONTRACTOR SHALL CLEAN OR REPAIR ANY EXISTING INLETS & STORM PIPES THAT WERE DAMAGED OR DISTURBED DURING CONSTRUCTION.
- EXISTING AREA LIGHTING REMOVAL AND/OR RELOCATION SHALL BE COORDINATED WITH OWNER AND APPROVED SITE LIGHTING PLAN. UNDERGROUND ELECTRIC AND TRANSFORMER RELOCATION SHALL BE COORDINATED WITH OWNER AND UTILITY COMPANY.



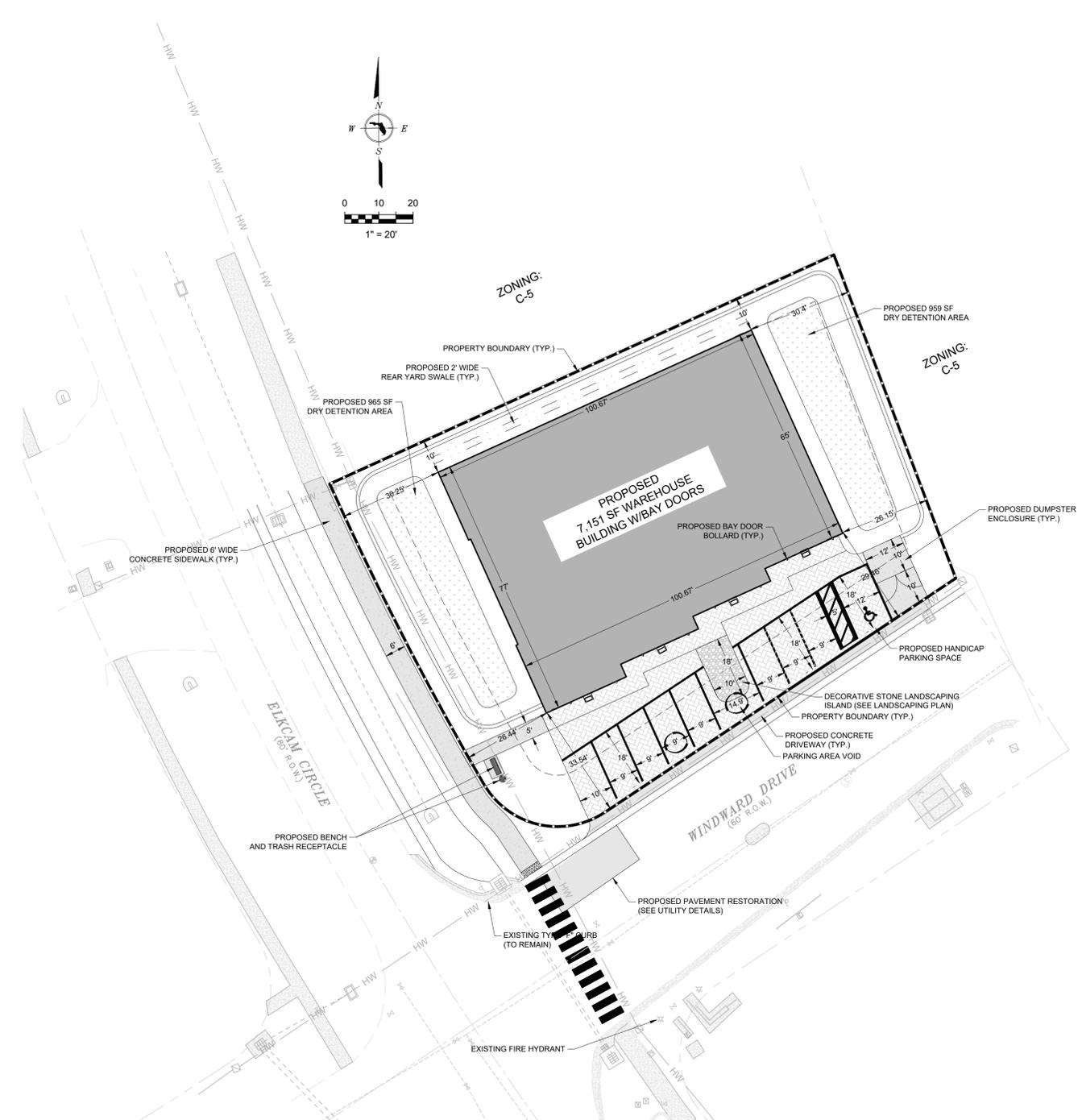
APPROVAL SUBMITTAL PLANS  
FOR CONSTRUCTION

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BEFORE YOU DIG**

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**LAND USE TABLE (EXISTING)**

USE	AC	PERCENT
BUILDING	0.055 AC	13.71%
PAVEMENT	0.260 AC	65.03%
OPEN SPACE	0.085 AC	21.26%
<b>TOTAL</b>	<b>0.400 AC</b>	<b>100.00%</b>

**OFF-SITE IMPROVEMENTS TABLE**

IMPROVEMENT	AC	PERCENT
SIDEWALK	0.02 AC	68.00%
PAVEMENT	0.01 AC	32.00%
<b>TOTAL</b>	<b>0.03 AC</b>	<b>100.00%</b>

**LAND USE TABLE (PROPOSED)**

USE	SQ. FT.	AC	PERCENT
BUILDING	7,151 SF	0.16 AC	40.95%
CONCRETE	455 SF	0.01 AC	2.61%
PERVIOUS PAVER	3,315 SF	0.08 AC	18.98%
DRY DETENTION	1,924 SF	0.04 AC	11.02%
OPEN SPACE	4,618 SF	0.11 AC	26.44%
<b>TOTAL</b>	<b>17,463 SF</b>	<b>0.40 AC</b>	<b>100.00%</b>

**REFUSE & SOLID WASTE CALCULATIONS**

COMMERCIAL BUSINESS BUILDING SQ. FT.	MINIMUM SQ. FT. FOR GARBAGE COLLECTION	MINIMUM SQ. FT. FOR RECYCLABLE COLLECTION
0-5,000	60	24
<b>TOTAL REQUIRED =</b>	<b>60 + 24 = 84 SQ. FT.</b>	
<b>TOTAL PROVIDED =</b>	<b>12' X 10' = 120 SQ. FT.</b>	

**PARKING CALCULATIONS**

USE	PARKING RATIO 1 SPACE PER 'X' SF	SQUARE FOOTAGE PER USE	PARKING SPACES REQUIRED (SF)	PARKING SPACES PROVIDED
WAREHOUSE	1,000 SF	8,684	8.7	9
			9	9

**GENERAL NOTES:**

- THE SITE CAN BE SAFELY USED FOR BUILDING PURPOSES WITHOUT UNDUE DANGER FROM FLOODS OR ADVERSE SOIL OR FOUNDATION CONDITIONS SUBJECT TO SUBSURFACE SOIL EXPLORATION AND DESIGN OF EACH STRUCTURE BY AN ARCHITECT OR GEOTECHNICAL ENGINEER.
- THERE ARE NO NEGATIVE IMPACTS TO GROUND AND SURFACE WATERS, WETLANDS OR FLOOD PLAINS/RIVERINE AREAS ANTICIPATED DUE TO CONSTRUCTION OF THIS PROJECT.
- A VEGETATION REMOVAL PERMIT IS REQUIRED PRIOR TO ANY SITE WORK. PROTECTIVE BARRICADES MUST BE CONSTRUCTED AND INSPECTED PRIOR TO PERMIT ISSUANCE.
- A PERIMETER WALL OR FENCE MAY BE INSTALLED AT THE OPTION OF THE DEVELOPER. ALL REQUIRED LANDSCAPING MUST BE ON THE SIDE OF THE WALL/FENCE ADJACENT TO THE PROJECT BOUNDARY.
- PROPOSED BUILDING FOOTPRINTS, PATIOS AND ACCESSORY STRUCTURES MAY BE MODIFIED WITHIN THE ALLOWABLE SETBACKS.
- REFUSE AND SOLID WASTE DISPOSAL FOR RESIDENTIAL UNITS SHALL BE STORED IN THE DESIGNATED SOLID WASTE AREA.
- THIS PROJECT IS CONSISTENT WITH THE CITY OF MARCO ISLAND PLAN.
- THE QUANTITY AND LOCATION OF OPTIONAL PAVER BRICKS UTILIZED FOR IMPERVIOUS SURFACES MAY VARY.
- THE CONTRACTOR MUST RETAIN DEWATERING EFFLUENT ON SITE. DISCHARGE OF DEWATERING EFFLUENT INTO EXISTING LAKES OR CONSERVATION AREAS IS PROHIBITED.
- ALL DISTURBED AREAS WITHIN F.D.O.T. RIGHT OF WAY SHALL BE SODDED.

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SFP24-000061

**Infiltration Report**

The PavDrain® system was tested in accordance with ASTM C1701/C1701M-09 by an independent third party engineering firm. The tests were conducted on different PavDrain installations that had not been maintained on an average of more than 2 years and still infiltrated in excess of 1,500 inches/hour per one foot diameter.

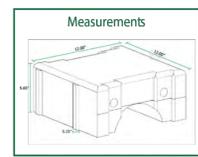
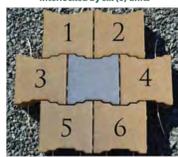
Test #1	Test #2
Inside Dia. of Infiltration Ring (in)	12.19
Elapsed time of Test (sec)	26.9
Infiltration Rate (in/hr) (in <sup>3</sup> /MM/27in <sup>2</sup> )	1,630
Avg. Infiltration Rate (in/hr)	1,595

**PaveDrain® Systems Properties**  
 Thickness: 5.63" (± 1/8")  
 Unit Dimensions: 12.00" x 12.00"  
 Unit Weight: 45-lb  
 Unit: 1 Sq. Ft. Nominal  
 Percentage Open Space: 7% Surface, 20% Storage Area



Passes AASHTO HS-25 Truck Loading

Each individual block is interlocked by six (6) units



**PaveDrain® System Blocks End View Cross Section**



Typ. AASHTO/ASTM #57 Stone (Clean, Angular on all sides. No fines. 4" Bedding layer compacted to no movement. Thicker cross sections with larger compacted angular stone on all sides TBD by engineer).

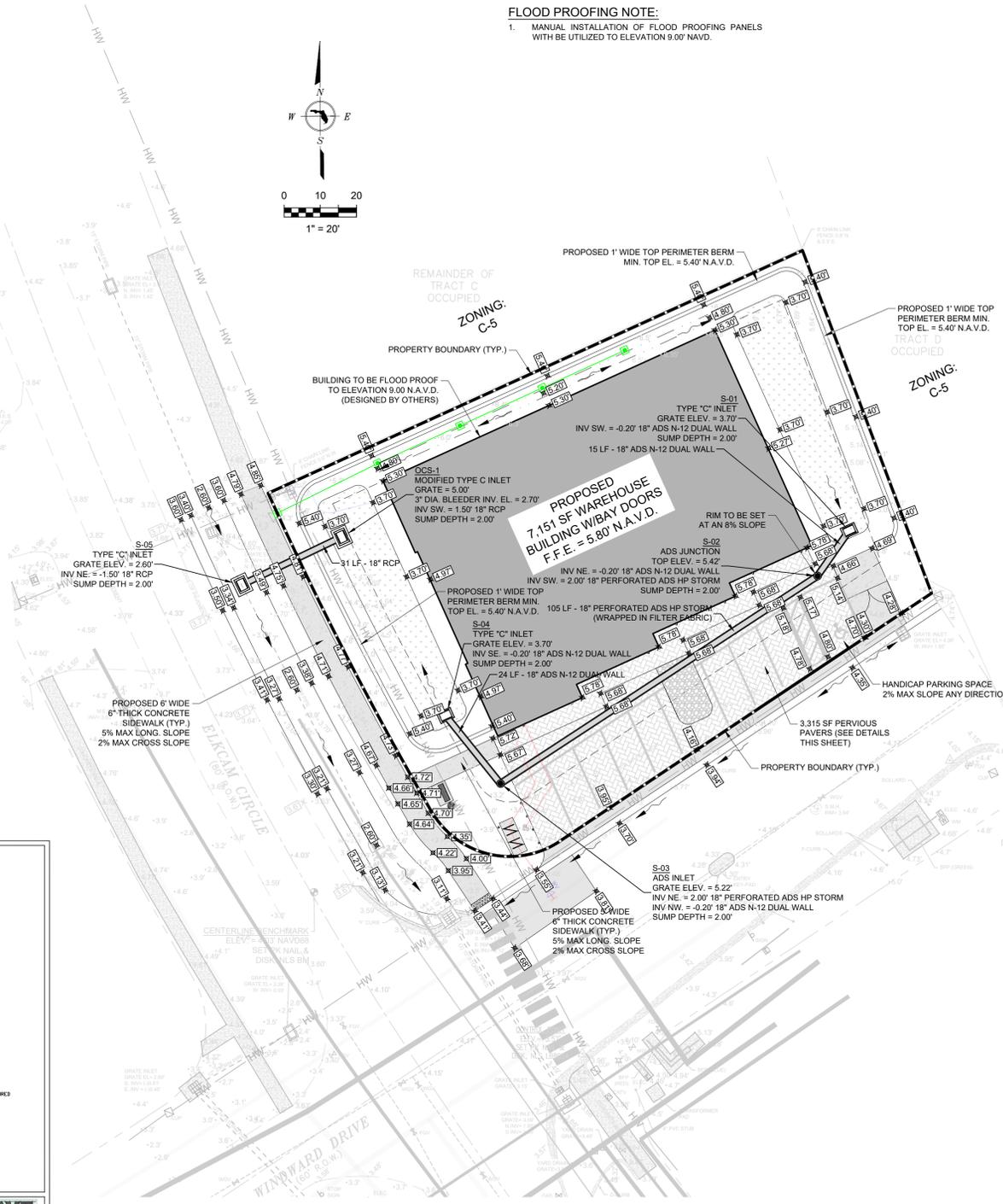
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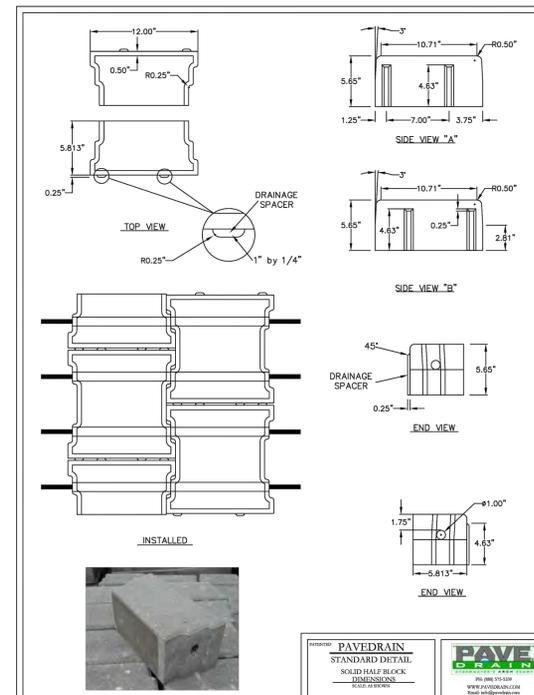
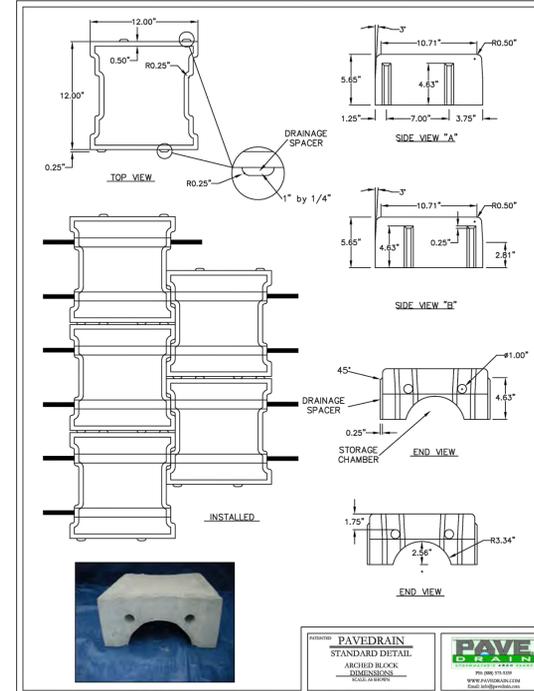
**FLOOD PROOFING NOTE:**

- MANUAL INSTALLATION OF FLOOD PROOFING PANELS WITH BE UTILIZED TO ELEVATION 9.00' NAVD.



**GRADING, PAVING AND DRAINAGE NOTES:**

- PAVED AREAS SHALL BE IN ACCORDANCE WITH LOCAL OR COUNTY SPECIFICATIONS AND STANDARDS (LATEST EDITION) OR FDOT SPECIFICATIONS AND STANDARDS (LATEST EDITION) IF NOT COVERED BY LOCAL OR COUNTY REGULATIONS.
- ALL UNPAVED AREAS IN EXISTING RIGHTS-OF-WAY DISTURBED BY CONSTRUCTION SHALL BE REGRADED AND SODDED.
- TRAFFIC CONTROL ON ALL FDOT, LOCAL AND COUNTY RIGHTS-OF-WAY SHALL MEET THE REQUIREMENTS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (U.S. DOT/FHWA) AND THE REQUIREMENTS OF THE STATE AND ANY LOCAL AGENCY HAVING JURISDICTION IN THE EVENT THAT THE CONTRACT DOCUMENTS AND THE JURISDICTIONAL AGENCY REQUIREMENTS ARE NOT IN AGREEMENT, THE MOST STRINGENT SHALL GOVERN.
- THE CONTRACTOR SHALL GRADE THE SITE TO THE ELEVATIONS INDICATED AND SHALL REGRADE WASHOUTS WHERE THEY OCCUR AFTER EVERY RAINFALL UNTIL A GRASS STAND IS WELL ESTABLISHED OR ADEQUATE STABILIZATION OCCURS.
- ALL OPEN AREAS WITHIN THE PROJECT SITE SHALL BE SEEDDED OR SODDED PER DIRECTION FROM OWNER UNLESS INDICATED OTHERWISE ON THE LANDSCAPE PLAN.
- WHERE EXISTING PAVEMENT IS INDICATED TO BE REMOVED AND REPLACED, THE CONTRACTOR SHALL SAW CUT A MINIMUM 2" DEPTH FOR A SMOOTH AND STRAIGHT JOINT AND REPLACE THE PAVEMENT WITH THE SAME TYPE AND DEPTH OF MATERIAL AS EXISTING OR AS INDICATED.
- WHERE NEW PAVEMENT MEETS THE EXISTING PAVEMENT, THE CONTRACTOR SHALL SAW CUT THE EXISTING PAVEMENT A MINIMUM 2" DEEP FOR A SMOOTH AND STRAIGHT JOINT AND MATCH THE EXISTING PAVEMENT ELEVATION WITH THE PROPOSED PAVEMENT UNLESS OTHERWISE INDICATED.
- THE CONTRACTOR SHALL INSTALL FILTER FABRIC OVER ALL DRAINAGE STRUCTURES FOR THE DURATION OF CONSTRUCTION AND UNTIL ACCEPTANCE OF THE PROJECT BY THE OWNER. ALL DRAINAGE STRUCTURES SHALL BE CLEANED OF DEBRIS AS REQUIRED DURING AND AT THE END OF CONSTRUCTION TO PROVIDE POSITIVE DRAINAGE FLOWS.
- IF DEWATERING IS REQUIRED, THE CONTRACTOR SHALL OBTAIN AN APPLICABLE REQUIRED PERMIT. THE CONTRACTOR IS TO COORDINATE WITH THE OWNER AND THE ENGINEER OF RECORD PRIOR TO ANY EXCAVATION.
- THE CONTRACTOR SHALL STRIP TOPSOIL AND ORGANIC MATTER FROM ALL AREAS OF THE SITE AS REQUIRED. IN SOME CASES TOPSOIL MAY BE STOCKPILED ON SITE FOR PLACEMENT WITHIN LANDSCAPED AREAS BUT AS DIRECTED BY THE OWNER.
- FIELD DENSITY TESTS SHALL BE TAKEN AT INTERVALS IN ACCORDANCE WITH THE LOCAL JURISDICTIONAL AGENCY OR TO FDOT STANDARDS. IN THE EVENT THAT THE CONTRACT DOCUMENTS AND THE JURISDICTIONAL AGENCY REQUIREMENTS ARE NOT IN AGREEMENT, THE MOST STRINGENT SHALL GOVERN.
- ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED AS PER PLANS. THE AREAS SHALL THEN BE SODDED OR SEEDDED AS SPECIFIED IN THE PLANS, AND MAINTAINED UNTIL HARDY GRASS GROWTH IS ESTABLISHED IN ALL AREAS. ANY AREAS DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE JOB SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. ALL EARTHEN AREAS WILL BE SODDED OR SEEDDED AND MULCHED AS SHOWN ON THE LANDSCAPING PLAN.
- ALL CUT OR FILL SLOPES SHALL BE 4:1 (HORIZONTAL) : 1 (VERTICAL) OR FLATTER UNLESS OTHERWISE SHOWN. LAKE BANK SLOPES ARE TO BE 6:1 MAX FROM Z BELOW THE DEFINED DRY SEASON WATER TABLE EXTENDING UPWARD TO THE TOP OF BANK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF DUST AND DIRT RISING AND SCATTERING IN THE AIR DURING CONSTRUCTION AND SHALL PROVIDE WATER SPRINKLING OR OTHER SUITABLE METHODS OF CONTROL. THE CONTRACTOR SHALL COMPLY WITH ALL GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.
- THE CONTRACTOR SHALL TAKE ALL REQUIRED MEASURES TO CONTROL TURBIDITY INCLUDING BUT NOT LIMITED TO THE INSTALLATION OF TURBIDITY BARRIERS AT ALL LOCATIONS WHERE THE POSSIBILITY OF TRANSFERRING SUSPENDED SOLIDS INTO THE RECEIVING WATER BODY EXISTS DUE TO THE PROPOSED WORK. TURBIDITY BARRIERS MUST BE MAINTAINED IN EFFECTIVE CONDITION AT ALL LOCATIONS UNTIL CONSTRUCTION IS COMPLETED AND DISTURBED SOIL AREAS ARE STABILIZED. THEREAFTER, THE CONTRACTOR MUST REMOVE THE BARRIERS AT NO TIME SHALL THERE BE ANY OFF-SITE DISCHARGE WHICH VIOLATES THE WATER QUALITY STANDARDS IN CHAPTER 62-302, FLORIDA ADMINISTRATIVE CODE.
- SOD, WHERE CALLED FOR, MUST BE INSTALLED AND MAINTAINED ON EXPOSED SLOPES WITHIN 48 HOURS OF COMPLETING FINAL GRADING, AND AT ANY OTHER TIME AS NECESSARY, TO PREVENT EROSION, SEDIMENTATION OR TURBID DISCHARGES.
- THE CONTRACTOR MUST REVIEW AND MAINTAIN A COPY OF THE ENVIRONMENTAL RESOURCE PERMIT COMPLETE WITH ALL CONDITIONS, ATTACHMENTS, EXHIBITS, AND PERMIT MODIFICATIONS IN GOOD CONDITION AT THE CONSTRUCTION SITE. THE COMPLETE PERMIT MUST BE AVAILABLE FOR REVIEW UPON REQUEST BY WATER MANAGEMENT DISTRICT REPRESENTATIVES.
- THE CONTRACTOR SHALL ENSURE THAT ISLAND PLANTING AREAS AND OTHER PLANTING AREAS ARE NOT COMPACTED AND DO NOT CONTAIN ROAD BASE MATERIALS. THE CONTRACTOR SHALL ALSO EXCAVATE AND REMOVE ALL UNDESIRABLE MATERIAL FROM ALL AREAS ON THE SITE TO BE PLANTED. CONTRACTOR SHALL PROPERLY DISPOSE OF ALL UNDESIRABLE MATERIAL IN A LEGAL MANNER.
- THE CONTRACTOR SHALL INSTALL ALL UNDERGROUND STORM WATER PIPING PER FOOT SPECIFICATIONS.
- LENGTH OF STORM DRAIN PIPES ARE APPROXIMATE AND ARE MEASURED FROM CENTER OF STRUCTURE
- CONTRACTOR SHALL PLACE 2 FEET OF CONTINUOUS SOD AROUND ALL INLETS, HEADWALLS AND CONTROL STRUCTURES ABOVE CONTROL ELEVATION.
- CONTRACTOR SHALL PLACE 2 FEET OF SOD CONTINUOUS ALONG EDGES OF PAVEMENT OF ALL ROADS AND/ OR CURBS, LAYING PARALLEL WITH THE ROAD MAINTAINING 1" BELOW FINISHED PAVEMENT GRADE.



WATER MANAGEMENT SUMMARY (SFWMD)	
WATER MANAGEMENT CRITERIA	BASIN 1
CONTROL ELEVATION (N.A.V.D.)	2.70'
PEAK 5-YEAR/1-DAY STORM STAGE (N.A.V.D.)	3.94'
PEAK 25-YEAR/3-DAY STORM STAGE (N.A.V.D.)	4.60'
PEAK 100-YEAR/3-DAY STORM STAGE (N.A.V.D.)	5.04'
FEMA FLOOD ELEVATION (N.A.V.D.)	8.00'
MINIMUM CALCULATED PAVEMENT ELEVATION	3.94'
MINIMUM PROPOSED PAVEMENT ELEVATION	4.00'
MINIMUM CALCULATED PERIMETER BERM ELEVATION	4.60'
MINIMUM PROPOSED PERIMETER BERM ELEVATION	5.40'
MINIMUM CALCULATED FINISHED FLOOR ELEVATION	9.00'
MINIMUM PROPOSED FINISHED FLOOR ELEVATION	5.80'

**PROJECT:** 23-164  
**DATE:** 03/24

**OWNER:** ELKCAM WAREHOUSE  
 805 E. ELKCAM CIRCLE  
 CITY OF MARCO ISLAND, FLORIDA 34145

**DESIGNER:** ANDRES BORAL, P.E.  
 LICENSE # 80373, F.P.E.# 31552  
 711 5TH AVENUE SOUTH, SUITE 208, NAPLES FL 34102  
 ANDRES@BORALENGINEERING.COM  
 (P) 239-692-0599

**REVISIONS:**

NO.	DATE	BY	REVISION DESCRIPTION
1	11/26/2024	AM	REVISED PER 2ND ROUND CITY COMMENTS

**MASTER DRAINAGE PLAN**

**SHEET 5 OF 18**

**GENERAL UTILITY NOTES:**

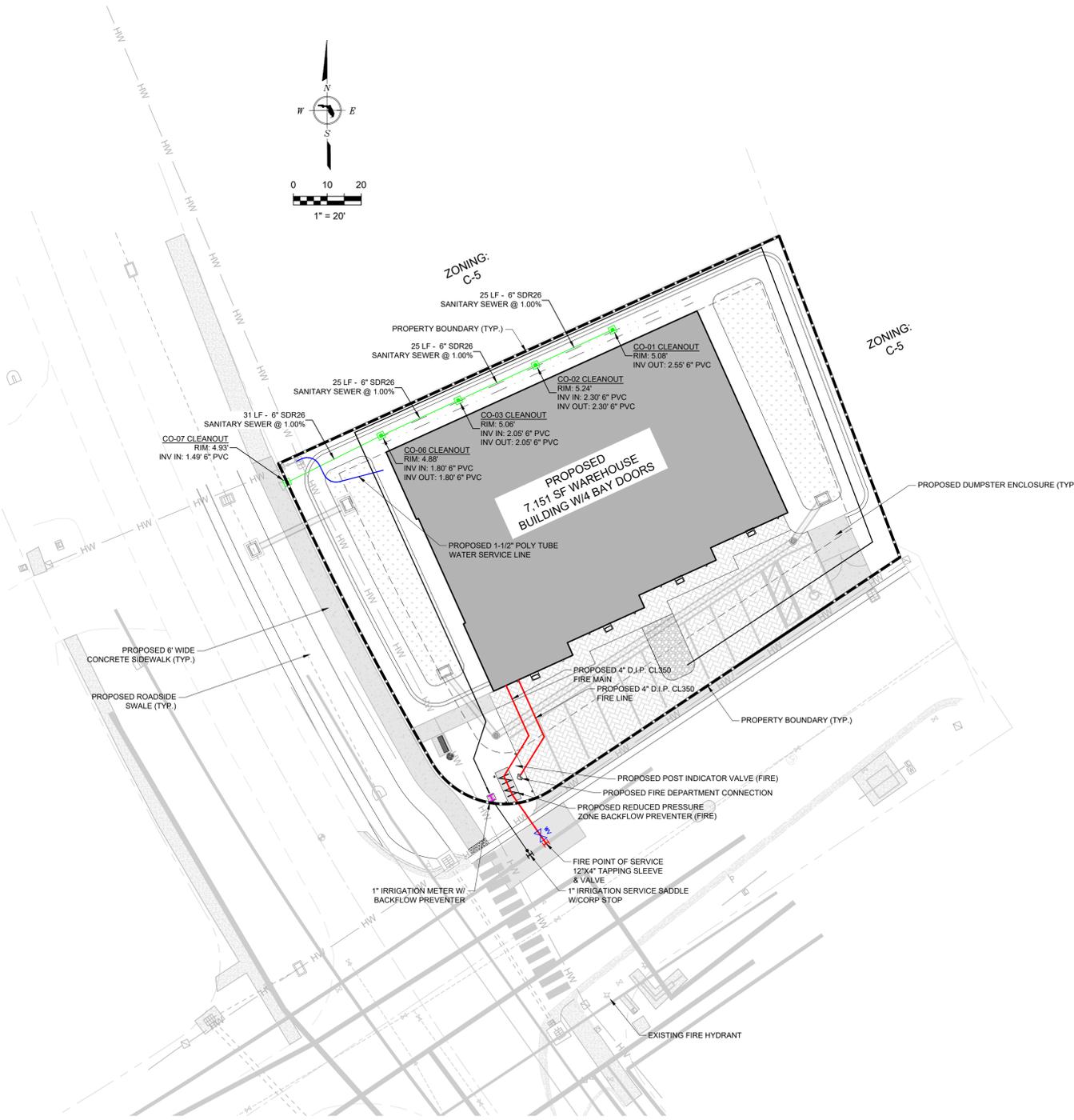
- LOCATIONS OF PROPOSED UTILITY LINES ARE SUBJECT TO MODIFICATION TO PRESERVE EXISTING VEGETATION AS DETERMINED BY ENGINEER.
- EXERCISE CARE TO PROTECT THE ROOTS OF TREES TO REMAIN. WITHIN THE BRANCH SPREAD OF SUCH TREES, PERFORM ALL TRENCHING BY HAND. OPEN THE TRENCH ONLY WHEN UTILITIES CAN BE INSTALLED IMMEDIATELY. PRUNE INJURED ROOTS CLEANLY AND BACKFILL AS SOON AS POSSIBLE.
- ALL UNDERGROUND UTILITIES LOCATED BENEATH THE STABILIZED PORTION OF THE ROAD BED SHALL BE INSTALLED PRIOR TO COMPACTION OF THE SUBGRADE.
- CONTRACTOR TO PROVIDE COORDINATION AND INSTALL CONDUITS FOR LOCATION AND PREPARATION OF UTILITY RECORD DRAWINGS FOR OWNER PRIOR TO FINAL PAYMENT REQUEST.
- NO TREES OR SHRUBS SHALL BE PLACED SO AS TO BLOCK ACCESS OR LINE OF SIGHT TO FIRE HYDRANTS PLACED WITHIN LANDSCAPE ISLANDS THROUGHOUT THE PROJECT SITE.
- PROPOSED FITTINGS ON PRESSURIZED MAINS ARE PLACED AS SHOWN AT BENDS. ADDITIONAL BENDS MAY BE REQUIRED TO BEND MAINS AS SHOWN. IF ANY ADDITIONAL BENDS ARE INSTALLED, CONTRACTOR TO INSTALL CONDUITS FOR LOCATION ON RECORD DRAWINGS.
- CONTRACTOR TO COORDINATE WITH ELECTRIC, TELEPHONE AND CABLE COMPANIES TO ASSURE THAT NO SANITARY SEWER OR WATERLINE SERVICES ARE INSTALLED UNDER PROPOSED TRANSFORMERS.
- ALL WATER SERVICES ARE TO BE 1" UNLESS NOTED OTHERWISE.
- TV, CABLE AND PHONE LINES MAY CROSS MIU FACILITIES WITH A MINIMUM OF 12 INCHES OF VERTICAL CLEARANCE.
- GAS MAINS AND ELECTRIC POWER CABLES SHALL CROSS MIU FACILITIES WITH A MINIMUM OF 18 INCHES OF VERTICAL CLEARANCE.
- INSTALL 10-GAUGE TRACER WIRE ON ALL MAIN PIPELINES. WIRE TO EXTEND INTO EACH VALVE BOX WITH SUFFICIENT EXCESS TO BRING THREE FEET ABOVE FINISHED GRADE.
- ALL WATER AND / OR WASTEWATER LINES PASSING UNDER PAVED AREAS WILL BE CONSTRUCTED WITH A CASING AND SHALL APPLY WITH LOCAL OR STATE DOT STANDARDS.
- FULL CIRCLE STAINLESS STEEL TAPPING SADDLE SLEEVE WITH RESILIENT SEATED TAPPING VALVE FOR PROPOSED WATER AND FORCEMAIN CONNECTIONS TO BE USED.
- WATER TAPPING SADDLES TO BE DOUBLE STRAP BRASS OR DUCTILE IRON OR EPOXY COATED STEEL WITH STAINLESS STEEL HARDWARE. THE STRAPS AND BOLTS SHALL BE CORROSION RESISTANT ALLOY STEEL.
- L.C.U. SHALL OWN AND MAINTAIN ALL WATER SERVICE LINES UP TO THE RIGHT-OF-WAY. ALL WATER MAINS SHALL BE A MINIMUM OF FOUR INCHES (4") IN DIAMETER AND ALL SUCH WATER MAINS SHALL BE CONSTRUCTED IN DEDICATED RIGHT-OF-WAYS OR APPROPRIATE UTILITY EASEMENTS DEDICATED TO THE L.C.U.
- BACKFLOW PREVENTION DEVICES SHALL BE PRIVATELY OWNED AND MAINTAINED. BFPDS SHOULD BE LOCATED OUTSIDE OF ANY L.C.U. EASEMENT OR ROW / PUBLIC EASEMENT. IT IS THE SOLE RESPONSIBILITY OF THE PROPERTY OWNER TO MAINTAIN THE DEVICE.

**WATER MAIN NOTES:**

- THE CONTRACTOR SHALL PROVIDE AND INSTALL BLUE REFLECTIVE PAVEMENT MARKERS AS REQUIRED NEAR PROPOSED FIRE HYDRANTS.
- ALL COMPONENTS OF THE POTABLE WATER SYSTEM SHALL BE IN CONFORMANCE WITH AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) INTERNATIONAL STANDARD 61. ALL COMPONENTS INSTALLATION AND TESTING OF THE POTABLE WATER SYSTEM SHALL BE ACCORDANCE WITH ALL AWWA APPLICABLE STANDARDS.
- THE CONTRACTOR SHALL PLACE PROPOSED VALVES AS SHOWN. THE VALVE BOX SHALL NOT BE LOCATED IN PAVEMENT, BRICK PAVERS OR DRIVEWAY AREAS.
- PROPOSED PIPE FITTINGS ARE SHOWN AT BENDS IN WATERLINE. ADDITIONAL FITTINGS MAY BE REQUIRED TO BEND WATERLINE AS SHOWN.
- ALL POTABLE WATERLINES SHALL BE AWWA C-900, DR-18 CLASS 150 PVC RUBBER GASKET PIPE WITH BELL AND SPIGOT ENDS UNLESS NOTED OTHERWISE. ALL POTABLE WATER LINES UNDER PAVEMENT SHALL BE AWWA C-900 CLASS 250 DUCTILE IRON PIPE (D.I.P.).
- THE ENDS OF ALL CAPPED POTABLE WATERLINES SHALL BE MARKED WITH ELECTRONIC MARKERS AND 2x4 STAKES 5' IN LENGTH WITH 2" ABOVE GROUND.
- CONTRACTOR SHALL USE 45° BENDS AT CONFLICTS. RESTRAINTS TO BE MEGALUG OR APPROVED EQUAL. CONTRACTOR SHALL NOT DEFLECT PIPE WITHOUT PRIOR WRITTEN APPROVAL FROM CITY OF MARCO ISLAND UTILITIES. ALL DEFLECTIONS ARE REQUIRED TO BE D.I.P.
- ALL WATER SERVICE LINES UNDER ROADWAY SHALL BE PLACED IN A 4-INCH SCHEDULE 40 PVC CASING.
- CROSS CONNECTION CONTROL ASSEMBLY REQUIRED BEHIND EACH SINGLE FAMILY RESIDENTIAL WATER SERVICE. REFERENCE DETAIL 6.18 IN UTILITY DETAILS.

**SANITARY SEWER NOTES:**

- ALL GRAVITY SEWER LINES SHALL BE PVC (SDR-26), GREEN IN COLOR, UNLESS NOTED OTHERWISE WITH A MINIMUM COVER OF 48".
- ALL SEWER PIPE LENGTHS ARE APPROXIMATE AND ARE MEASURED FROM THE CENTER OF STRUCTURE.
- MANHOLE TOP ELEVATIONS ARE APPROXIMATE AND SHOULD BE ADJUSTED TO FINAL GRADE OR PAVEMENT ELEVATION.
- ALL SANITARY SEWER SERVICE INVERTS TO BE PLACED A MINIMUM OF 30" BELOW BACK OF CURB (MIN. 1% SLOPE FROM MAIN) TYPICAL UNLESS IN CONFLICT WITH WATERLINE. MAINTAIN MINIMUM 6" CLEARANCE UNDER POTABLE WATERLINE.
- ALL SANITARY SEWER FORCE MAINS 4" TO 12" SHALL BE PVC C-900, DR-18 CLASS 150 MINIMUM UNLESS NOTED OTHERWISE, WITH A MINIMUM COVER OF 30".
- ALL SANITARY SEWER FORCE MAINS 4" TO 12", UNDER PAVEMENT, SHALL BE PVC DR-14 WITH A MINIMUM COVER OF 36".
- DEFLECTION TESTING IN ACCORDANCE WITH TECHNICAL SPECIFICATIONS FOR GRAVITY SEWER MAY NOT BE UNDERTAKEN UNTIL 30 DAYS AFTER FINAL BACK FILLING OF THE TRENCH IS COMPLETE.
- NO GRAVITY SEWER DEFLECTION MAY EXCEED THE MAXIMUM PROVIDED IN THE TECHNICAL SPECIFICATIONS OR 5%, WHICH EVER IS LESS.
- ALL GRAVITY SEWER MAINS SHALL BE TESTED WITH A MANDREL WITH A DIAMETER OF NOT LESS THAN 95% OF THE INSIDE PIPE DIAMETER. MANDREL TESTS MUST BE PERFORMED WITHOUT USE OF MECHANICAL DEVICES.



**Marco Island Fire Rescue**  
Department of Fire Prevention  
(239)394-5405  
dspiolo@cityofmarcoisland.com

Company/Firm Requesting Test: AQUA CONSTRUCTION  
Project Name: LUXURY AUTO SUITES - 805 E ELKCAM  
Contact Person & Email: DIANA GANGI, diana@aquacustomhomes.com  
Date Requested: 6/20/2024  
Amount Due and Payable to The Marco Island Fire Department \$113  
\*Note: Charges for flow testing will be \$77.00 for the first hydrant and \$36.00 for each additional hydrant tested at the same date and time as the first hydrant.  
Remit payment with invoice # to the link below:  
<https://marcoislandfire.com/clients/GraceBilling/default.aspx>

Date Tested: 6/20/24  
Location:  
Time of Test: 7:12  
Pistol: 33 Static: 76 Residual: 75  
Flow: 1,728 gpm  
Flow @ 20psi:

1280 San Marco Road, Marco Island, FL 34145

**FIRE FLOW RESULTS**

**ESTIMATED FIRE FLOW AT 20 PSI**

FLOW DURING TEST	STATIC PRESSURE	RESIDUAL PRESSURE	FLOW @ 20 PSI
1,928 GPM	76 PSI	75 PSI	16,948 GPM

NOTE: SEE FIRE FLOW TEST RESULTS ABOVE.

**LAND USE TABLE (PROPOSED)**

BUILDING	7,151 SF	0.16 AC	40.95%
CONCRETE	455 SF	0.01 AC	2.61%
PERVIOUS PAVER	3,315 SF	0.08 AC	18.98%
DRY DETENTION	1,924 SF	0.04 AC	11.02%
OPEN SPACE	4,618 SF	0.11 AC	26.44%
<b>TOTAL</b>	<b>17,463 SF</b>	<b>0.40 AC</b>	<b>100.00%</b>

**FIRE FLOW CAMULATIONS**

PROPOSED 7,151 SF 2-STORY WAREHOUSE: (BUILDING TYPE III-B) BASED ON NFPA 1 - FIRE CODE - LATEST EDITION, CHAPTER 18, TABLE 18.4.5.2.1. \*MINIMUM REQUIRED FIRE FLOW AND FLOW DURATION FOR BUILDINGS OTHER THAN RESIDENTIAL: A MINIMUM OF 1,750 GPM WITH A DURATION OF 2 HOURS, IS REQUIRED FOR A BUILDING 5,301 SF - 7,900 SF.

1,750 GPM REQUIRED @ 20 PSI  
INSTALLATION OF AN APPROVED FIRE SPRINKLER SYSTEM CAN REDUCE THE FIRE FLOW BY UP TO 50% FOR ONE AND TWO, FAMILY DWELLINGS AND UP TO 75% FOR ALL OTHER BUILDINGS.  
75% REDUCTION APPLIED  
1,750(25) = 437.5 GPM 1,500 GPM MINIMUM GOVERNS  
TOTAL GPM REQUIRED = 1,500 GPM @ 20 PSI  
TOTAL CALCULATED GPM PROVIDED = 16,948 GPM @ 20 PSI

**NUMBER OF FIRE HYDRANTS REQUIRED**

FOR FIRE FLOW REQUIREMENTS OF 1,750 GPM OR LESS, THE MINIMUM NUMBER OF HYDRANTS REQUIRED SHALL BE (1) ONE.

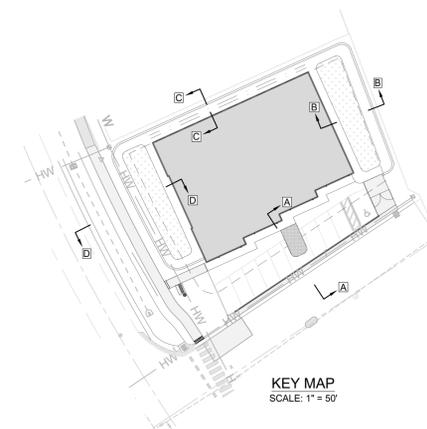
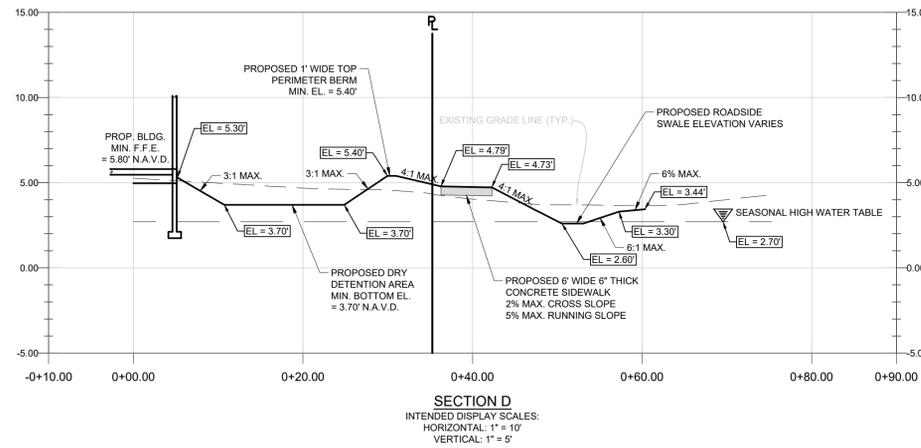
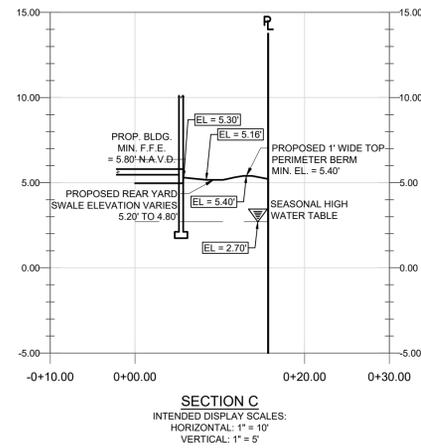
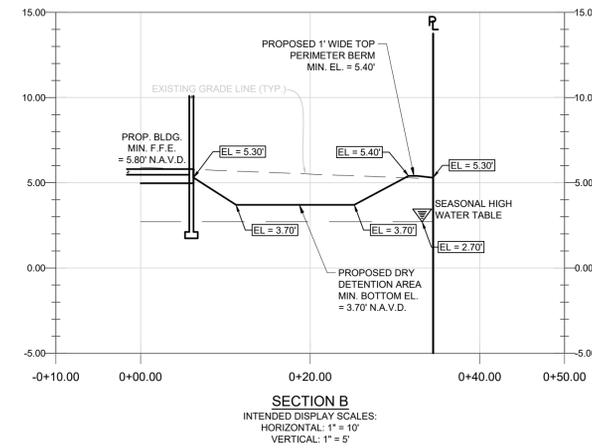
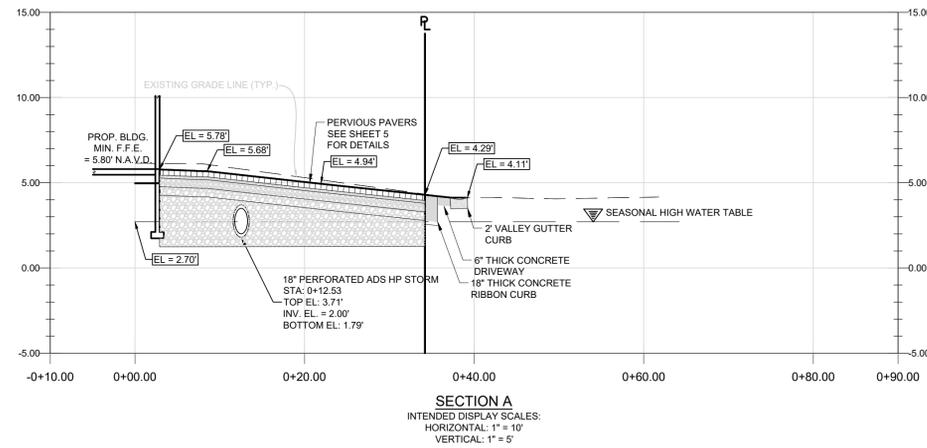
**ESTIMATE OF AVERAGE DAILY FLOW DEMAND FOR POTABLE WATER / SANITARY SEWER**

PER F.A.C. CHAPTER 64E-6.008 (WAREHOUSE)  
PER EMPLOYEE PER 8 HOUR SHIFT = 15 GPD  
PER LOADING BAY = 100 GPD  
TOTAL NUMBER OF 8-HOUR SHIFTS PROPOSED = 2  
TOTAL NUMBER OF BAYS = 4  
2 8-HOUR SHIFTS x 15 GPD = 30 GPD  
4 LOADING BAYS x 100 GPD = 400 GPD  
TOTAL = 430 GPD

APPROVAL SUBMITTAL PLANS FOR CONSTRUCTION

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SUNSHINE STATE ONE CALL OF FLORIDA, INC.

**NOTES:**  
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THESE PLANS MAY HAVE BEEN REVISED OR INCREASED IN SIZE BY REPRODUCTIONS. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.



**PROPOSED DESIGN ELEVATIONS (N.A.V.D.)**

CONTROL	= 2.70'
MIN. DRY DETENTION	= 3.70'
MIN. PAVEMENT	= 4.00'
MIN. PERIMETER BERM	= 5.40'
MIN. FINISH FLOOR	= 5.80'

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PROJECT: 23-164  
DATE: 03/24  
ANDRES BORAL, PE, MEA  
LICENSE # 80373, F.P.E. # 31552  
711 5TH AVE SOUTH, SUITE 208, NAPLES FL, 34102  
ANDRES@BORALENGINEERING.COM  
(P) 239-692-6599

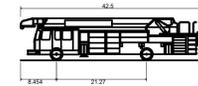
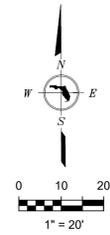
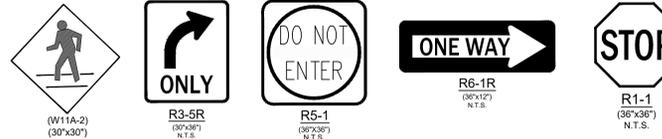


OWNER:  
BBL PROPERTY, LLC  
711 5TH AVE SOUTH, SUITE 208, NAPLES, FLORIDA 34102

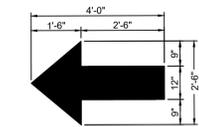
DATE	BY	REVISION DESCRIPTION
11/26/2024	MB	REVISED PER 2ND ROUND CITY COMMENTS

**ELKCAM WAREHOUSE**  
805 E. ELKCAM CIRCLE  
CITY OF MARCO ISLAND,  
FLORIDA 34145

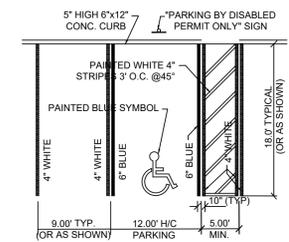
**TYPICAL CROSS SECTIONS**



City of Marco Island Tower 50  
 Overall Length 42.500ft  
 Overall Width 8.240ft  
 Overall Body Height 8.851ft  
 Min Body Ground Clearance 8.851ft  
 Track Width 8.243ft  
 Lock-to-lock time 6.00s  
 Wall to Wall Turning Radius 41.750ft



TYPICAL DIRECTIONAL ARROW  
N.T.S.



TYPICAL STRIPING DETAIL  
N.T.S.



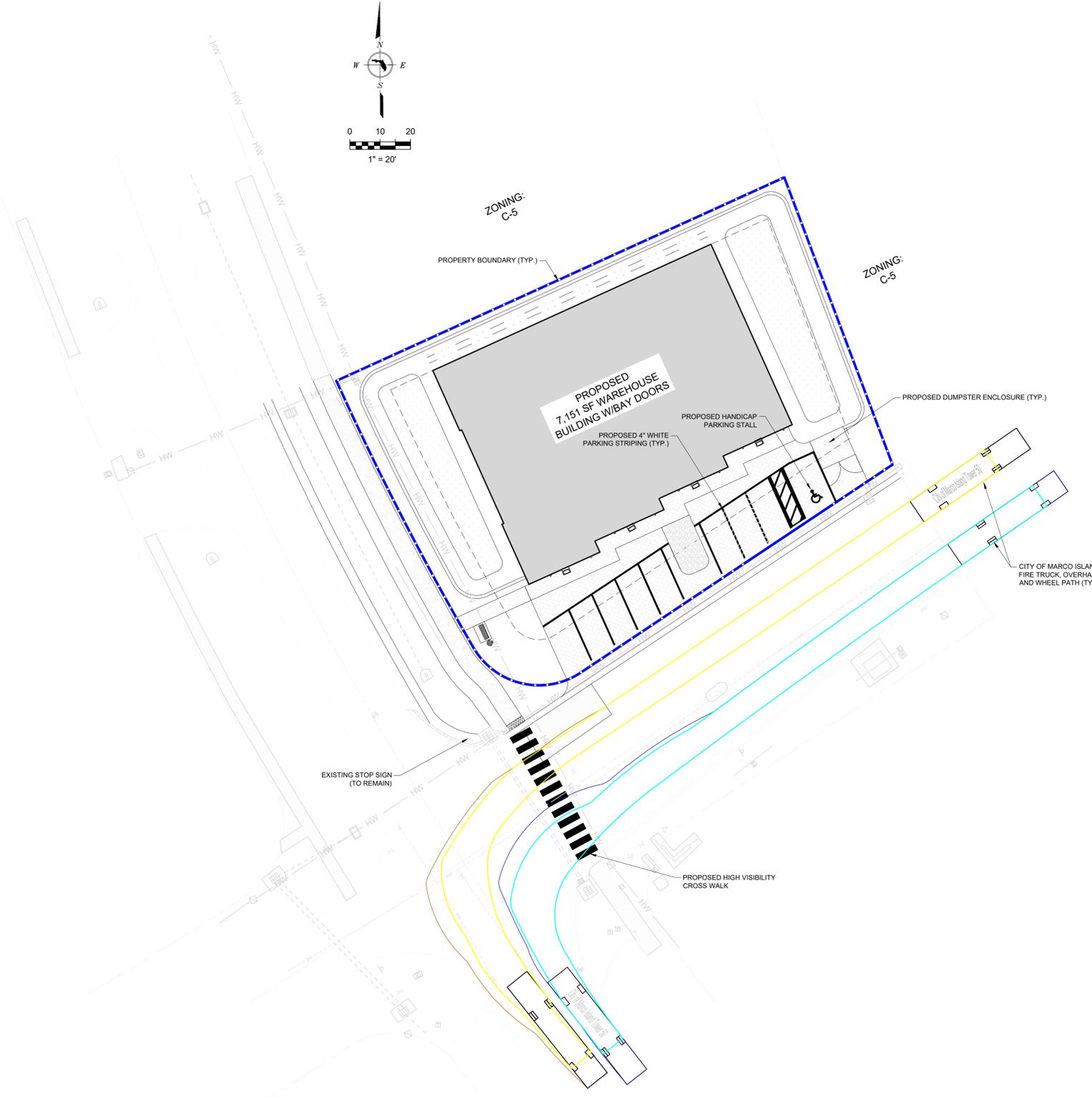
HANDICAP SIGN

ALL LETTERS ARE 1" SERIES "C". TOP PORTION OF SIGN SHALL HAVE A REFLECTIVE BLUE BACKGROUND W/ WHITE REFLECTIVE LEGEND & BORDER.  
 BOTTOM PORTION OF SIGN SHALL HAVE A REFLECTIVE WHITE BACKGROUND W/ BLACK OPAQUE LEGEND & BORDER.

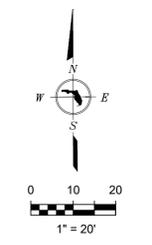
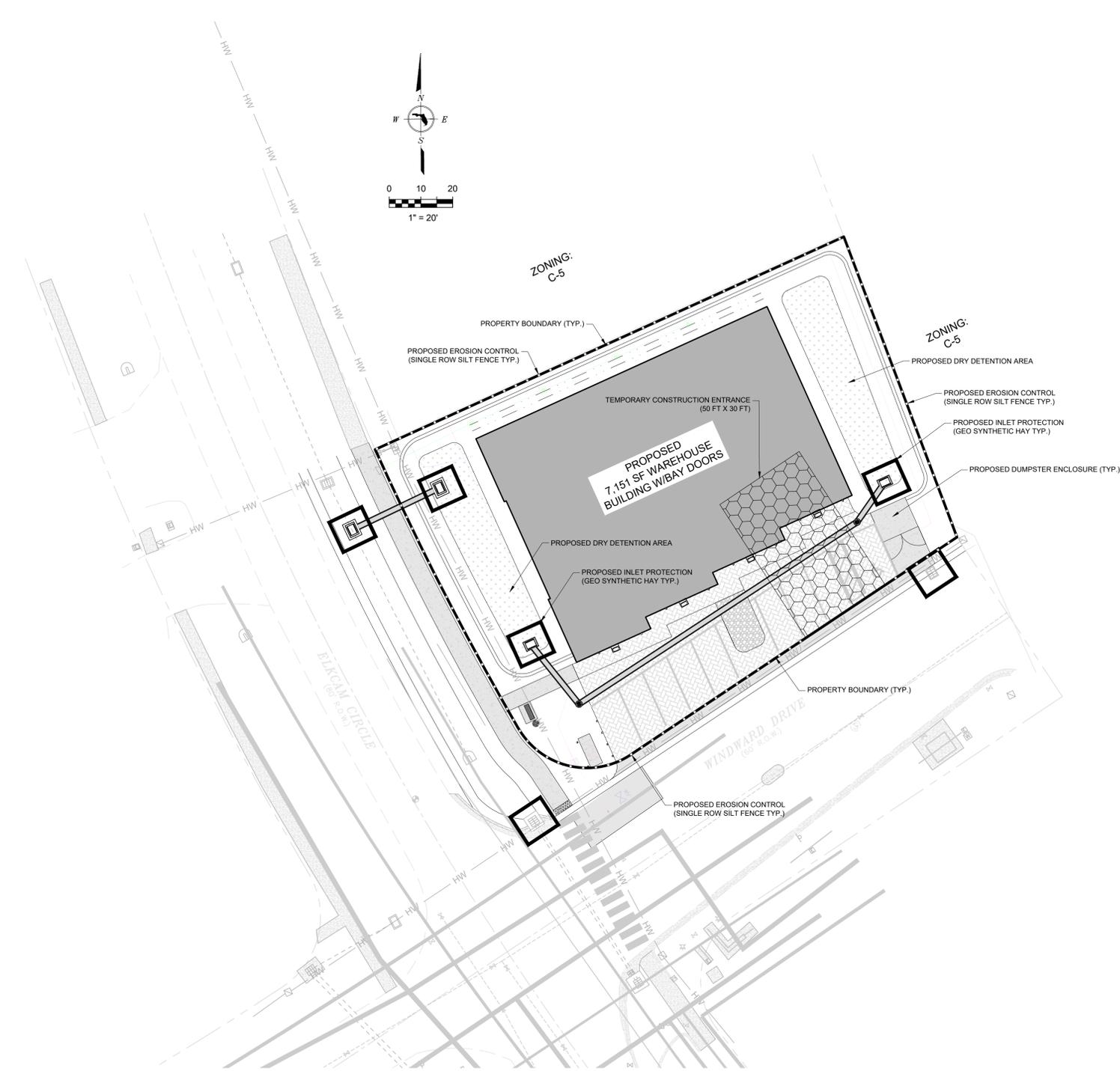
APPROVAL SUBMITTAL PLANS FOR CONSTRUCTION

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PROJECT:	23-164
DATE:	03/24
ANDRES BORAL, PE, MEA LICENSE # 80373, FPPE # 31552 711 5TH AVE SOUTH, SUITE 208, NAPLES FL 34102 ANDRES@BORALENGINEERING.COM (P) 239-692-6599	
<b>BORAL</b> ENGINEERING	
OWNER: BBTL PROPERTY, LLC 711 5TH AVE SOUTH, SUITE 208, MARCO ISLAND, FLORIDA 34145	
REVISION DESCRIPTION	
BY	
DATE	
ELKCAM WAREHOUSE 805 E. ELKCAM CIRCLE CITY OF MARCO ISLAND, FLORIDA 34145	
<b>SIGNING, MARKING &amp; MANEUVERING PLAN</b>	
<b>SHEET 8 OF 18</b>	



WATER MANAGEMENT SUMMARY (SFWMD)	
WATER MANAGEMENT CRITERIA	BASIN 1
CONTROL ELEVATION (N.A.V.D.)	2.70'
PEAK 5-YEAR/1-DAY STORM STAGE (N.A.V.D.)	3.94'
PEAK 25-YEAR/3-DAY STORM STAGE (N.A.V.D.)	4.60'
PEAK 100-YEAR/3-DAY STORM STAGE (N.A.V.D.)	5.04'
FEMA FLOOD ELEVATION (N.A.V.D.)	8.00'
MINIMUM CALCULATED PAVEMENT ELEVATION	3.94'
MINIMUM PROPOSED PAVEMENT ELEVATION	4.00'
MINIMUM CALCULATED PERIMETER BERM ELEVATION	4.60'
MINIMUM PROPOSED PERIMETER BERM ELEVATION	5.40'
MINIMUM CALCULATED FINISHED FLOOR ELEVATION	9.00'
MINIMUM PROPOSED FINISHED FLOOR ELEVATION	5.80'

APPROVAL SUBMITTAL PLANS  
FOR CONSTRUCTION

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PROJECT:	23-164
DATE:	03/24
ANDRES BORAL, PE, MEA LICENSE # 80373, FPPE # 31552 711 5TH AVE SOUTH, SUITE 208, NAPLES FL 34102 ANDRES@BORALENGINEERING.COM (P) 239-692-6599	
<b>BORAL</b> ENGINEERING	
OWNER: BBTL PROPERTY, LLC 711 5TH AVE SOUTH, SUITE 208, MARCO ISLAND, FLORIDA 34145	
REVISION DESCRIPTION	
BY: MAM	REVISION PER 1ST ROUND CITY COMMENTS
DATE: 11/26/2024	REVISION PER 2ND ROUND CITY COMMENTS
BY: MAM	
DATE:	
<b>ELKCAM WAREHOUSE</b> 805 E. ELKCAM CIRCLE CITY OF MARCO ISLAND, FLORIDA 34145	
<b>STORM WATER POLLUTION PREVENTION PLAN</b>	
<b>SHEET 9 OF 18</b>	

SFP24-000061

**GENERAL NOTES:**

1. THE CONTRACTOR MUST SECURE A NPDES STORM WATER PERMIT FROM THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION. PRIOR TO THE START OF CONSTRUCTION, A CONSTRUCTION STORM WATER POLLUTION PREVENTION PLAN HAS BEEN INCLUDED IN THE CONSTRUCTION DOCUMENTS.
2. UNLESS OTHERWISE INDICATED IN SPECIFICATION, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS OF THE STATE OF FLORIDA EROSION AND SEDIMENT CONTROL DESIGNER AND REVIEWER MANUAL (FOOT, FOEP 2013) AND IN ACCORDANCE WITH THE NPDES PERMIT FOR THE PROJECT.
3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN STORM WATER DRAINAGE FLOWS AT ALL TIMES DURING THE PERFORMANCE OF THE WORK. SURFACE WATER RUNOFF SHALL BE CONTROLLED IN SUCH A MANNER TO PREVENT PONDING EXCEPT IN AREAS INDICATED. AREAS WITHIN THE CONSTRUCTION LIMITS SHALL BE GRADED IN SUCH A WAY THAT THE SURFACE WATER WILL FREELY FLOW TOWARD A COLLECTING SYSTEM OF DITCHES, SWALES, AND DETENTION BASINS.
4. ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PROPERLY INSTALLED AND FUNCTIONING PRIOR TO CONSTRUCTION IN AN AREA.
5. A COPY OF THE PERMITTED CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN (CSPPP) SHALL BE MAINTAINED ON THE PROJECT SITE AT ALL TIMES.
6. CUT AND FILL SLOPES AND STOCKPILED MATERIAL SHALL BE PROTECTED TO PREVENT EROSION.
7. THE CONTRACTOR SHALL ESTABLISH A SEQUENCE OF CONSTRUCTION WHICH SHALL BE APPROVED BY THE ENGINEER OF RECORD.
8. DUST CONTROL SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL BE ACHIEVED BY WATERING OR OTHER APPROVED METHOD.
9. THE CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF ANY ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES NECESSARY TO PREVENT EROSION OR SEDIMENTATION AS DETERMINED BY THE PLAN REVIEWING AUTHORITIES OR ENGINEER OF RECORD.
10. SITE GRADING IS TO DRAIN TO THE SEDIMENT BASINS OR SEDIMENT TRAPS AT ALL TIMES DURING LAND DISTURBING ACTIVITIES AND DURING SITE DEVELOPMENT UNTIL FINAL STABILIZATION IS ACHIEVED.

**EROSION CONTROL NOTES:**

1. PLACE SILT FENCE AND OTHER BEST MANAGEMENT PRACTICES (BMP'S) AT LOCATIONS SHOWN ON THE PLANS. SILT FENCE SHALL ALSO BE PLACED AROUND ANY SOIL STOCK PILE AREAS.
2. THE EXISTING AND PROPOSED INLETS SHALL BE PROTECTED TO PREVENT SEDIMENT FROM ENTERING THE STORM SEWER SYSTEM BY THE METHODS APPROVED IN THE STATE OF FLORIDA EROSION AND SEDIMENT CONTROL DESIGNER AND REVIEWER MANUAL (FOOT, FOEP 2013), AS INDICATED IN SPECIFICATIONS.
3. ALL EROSION CONTROL MEASURES SHALL BE INSPECTED ONCE A WEEK AND FOLLOWING ANY STORM EVENT OF 1/2" OR GREATER. ALL EROSION CONTROL MEASURES SHALL BE FUNCTIONAL. ANY REPAIR SHALL BE MADE AS SOON AS IT REASONABLE. ANY ACCUMULATED SEDIMENT SHALL BE REMOVED.
4. EROSION CONTROL MEASURES SHALL BE MAINTAINED ON SITE UNTIL PERMANENT STABILIZATION IS ESTABLISHED.
5. THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN TEMPORARY EROSION CONTROL MEASURES AND CONTINUED MAINTENANCE OF DETENTION AREAS THROUGHOUT CONSTRUCTION.
6. WHERE THE CONTRACTOR'S EQUIPMENT IS OPERATED ON ANY PORTION OF THE PAVEMENT OR STRUCTURES USED BY TRAFFIC ON OR ADJACENT TO THE SECTION UNDER CONSTRUCTION, THE CONTRACTOR SHALL CLEAN THE PAVEMENT OF ALL DIRT EVERY FOUR HOURS AND AT THE END OF THE EACH DAY'S OPERATIONS, AND AT OTHER TIMES AS DIRECTED BY THE RESIDENT ENGINEER OR CONTRACTING AUTHORITY.
7. IN ADDITION TO THE INSTALLATION OF EROSION PROTECTION FACILITIES, THE ENGINEER OF RECORD OR CONTRACTING AUTHORITY MAY DEEM IT NECESSARY, UPON INSPECTION OF THE SITE, THAT TURBIDITY MONITORING BE PERFORMED BY THE CONTRACTOR. THE MONITORING SHALL BE PERFORMED DAILY IF BACKGROUND TURBIDITY LEVELS REACH 25-29 NTUS. FOR BACKGROUND TURBIDITY LEVELS LESS THAN 25 NTUS, TURBIDITY MONITORING SHALL BE PERFORMED WEEKLY. IF BACKGROUND TURBIDITY LEVELS ARE GREATER THAN 29 NTUS, ALL CONSTRUCTION ACTIVITIES SHALL STOP AND THE CONTRACTOR SHALL PROVIDE ADDITIONAL EROSION PROTECTION NECESSARY TO RETURN LEVELS TO 29 NTUS OR LESS. CONSTRUCTION ACTIVITIES SHALL BEGIN AGAIN ONLY UPON APPROVAL BY THE ENGINEER/PRR, OWNER, OR OWNER'S REPRESENTATIVE.
8. ALL REMAINING EROSION PROTECTION FACILITIES SHALL BE REMOVED AFTER CONSTRUCTION COMPLETION, AND WHEN A VEGETATIVE COVER HAS BEEN WELL ESTABLISHED OVER THE CONSTRUCTED AREAS. PER THE PLANS, THE CONTRACTOR SHALL REMOVE PROTECTION FACILITIES ONLY UPON APPROVAL BY THE ENGINEER OF RECORD OR CONTRACTING AUTHORITY.

**CULVERT INLET PROTECTION MAINTENANCE:**

1. THE MEASURE SHALL BE INSPECTED AFTER EVERY STORM AND REPAIRS MADE TO THE DIKE, FLOW CHANNEL, OUTLET OR SEDIMENT TRAPPING FACILITY, AS NECESSARY. ONCE EVERY TWO WEEKS, WHETHER A STORM EVENT HAS OCCURRED OR NOT, THE MEASURE SHALL BE INSPECTED AND REPAIRS MADE IF NEEDED.
2. DAMAGES CAUSED BY CONSTRUCTION TRAFFIC OR OTHER ACTIVITY MUST BE REPAIRED BEFORE THE END OF EACH WORKING DAY.

**EROSION CONTROL MAINTENANCE NOTES**

**TEMPORARY STONE CONSTRUCTION ENTRANCE MAINTENANCE:**

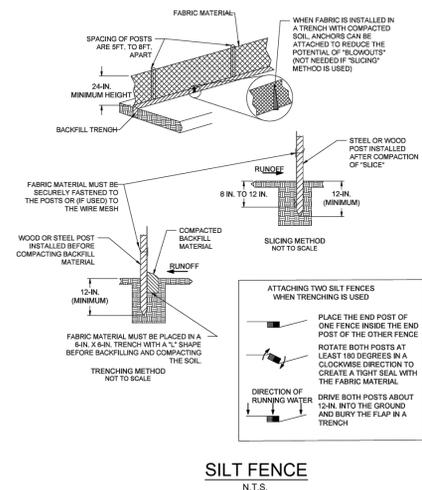
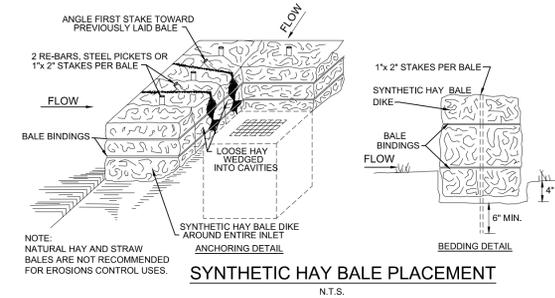
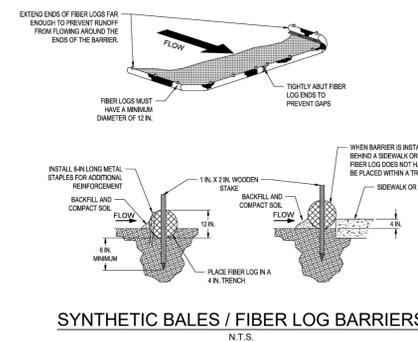
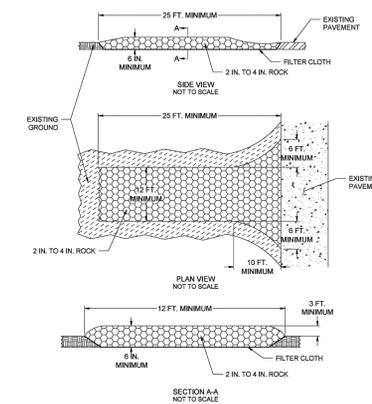
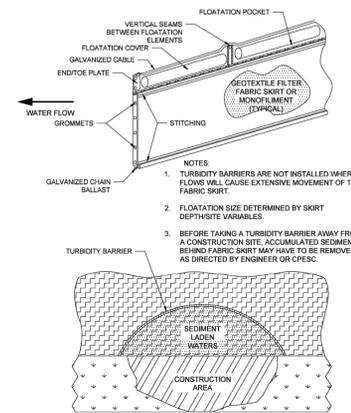
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE OR THE WASHING AND REWORKING OF EXISTING STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
2. THE USE OF WATER TRUCKS TO REMOVE MATERIALS DROPPED, WASHED, OR TRACKED ONTO ROADWAYS WILL NOT BE PERMITTED UNDER ANY CIRCUMSTANCES.

**SILT FENCE MAINTENANCE:**

1. SILT FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
2. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED SILT FENCE RESULTING FROM END RUNS AND UNDERCUTTING.
3. SHOULD THE FABRIC ON A SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
4. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
5. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE PROPOSED GRADE, PREPARED AND FINISHED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS.

**STORM DRAIN INLET PROTECTION MAINTENANCE:**

1. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
2. SEDIMENT SHALL BE REMOVED AND THE STRUCTURE RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE HALF THE DESIGN DEPTH OF THE ITEM. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.
3. TEMPORARY STRUCTURES SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.



APPROVAL SUBMITTAL PLANS FOR CONSTRUCTION

**NOTES:**  
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PROJECT: 23-164  
DATE: 03/24

ANDRES BORAL, PE, MEA  
LICENSE # 80373, FPE # 31552  
711 5TH AVE SOUTH, SUITE 208, NAPLES FL 34102  
ANDRES@BORALENGINEERING.COM  
(P) 239-692-0509

**BORAL**  
ENGINEERING  
WWW.BORALENGINEERING.COM

OWNER:  
BBFL PROPERTY, LLC  
MARCO ISLAND, FLORIDA 34145

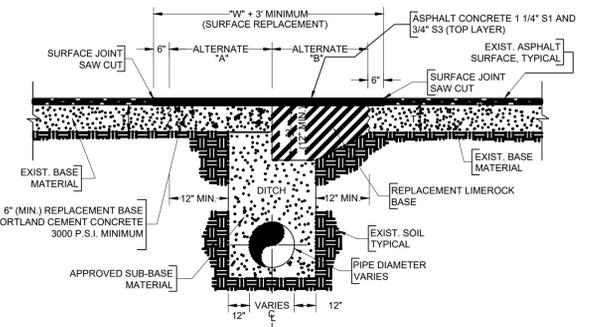
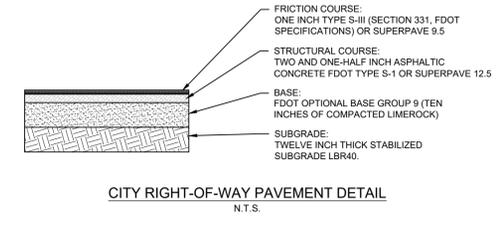
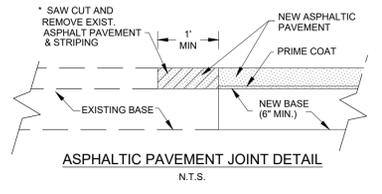
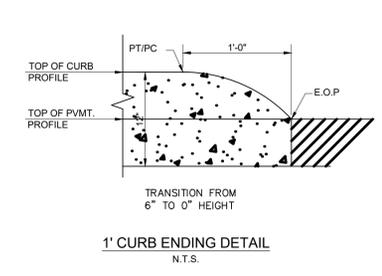
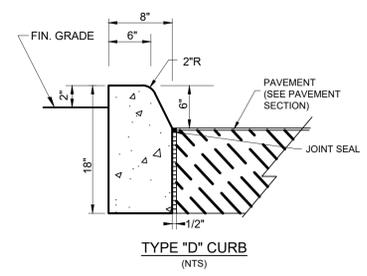
DATE	BY	REVISION DESCRIPTION
11/26/2024	AM	REVISED PER 2ND ROUND CITY COMMENTS

**ELKCAM WAREHOUSE**  
805 E. ELKCAM CIRCLE  
CITY OF MARCO ISLAND,  
FLORIDA 34145

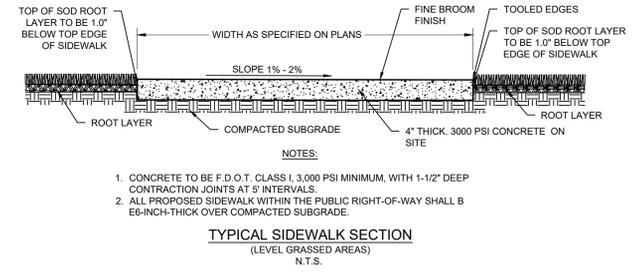
**EROSION CONTROL**  
**DETAILS**

**SHEET**  
**10** OF **18**

SFP24-000061

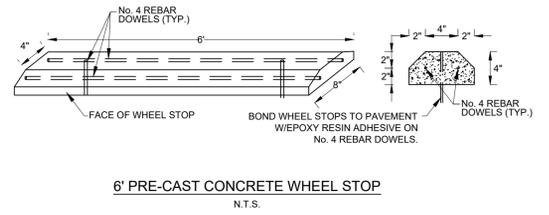
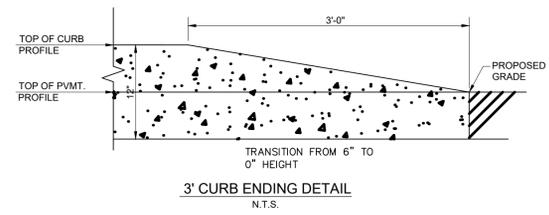
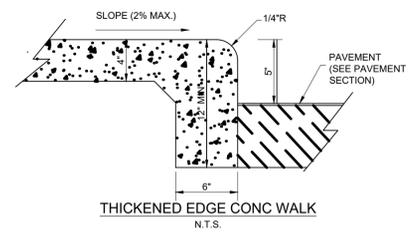


- NOTES:  
1. LIMEROCK MATERIAL (MIN. LBR 100) SHALL BE COMPACTED TO 98% DENSITY, AASHTO T-190.  
2. APPROVED SUB-BASE MATERIAL (MIN. LBR 40) SHALL BE COMPACTED IN 6" LAYERS MAXIMUM, TO 98% DENSITY, AASHTO T-190.  
3. ASPHALT CONCRETE PAVEMENT JOINT SHALL BE MECHANICALLY SAWED.  
4. "W" IS WIDTH OF DITCH AT ITS WIDEST POINT.

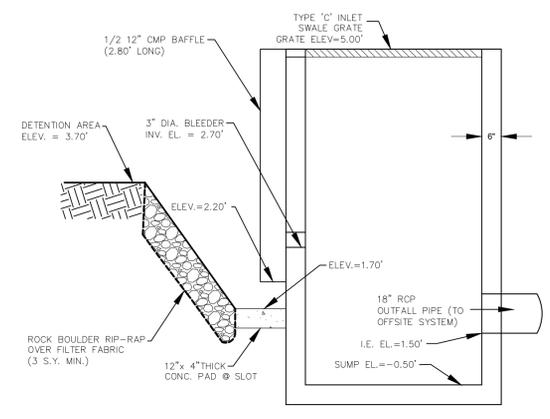


- NOTES:  
1. CONCRETE TO BE F.D.O.T. CLASS 1, 3,000 PSI MINIMUM, WITH 1-1/2" DEEP CONTRACTION JOINTS AT 5' INTERVALS.  
2. ALL PROPOSED SIDEWALK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE 6-8 INCH THICK OVER COMPACTED SUBGRADE.

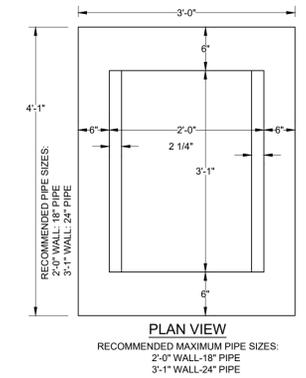
**TYPICAL SIDEWALK SECTION**  
(LEVEL GRASSSED AREAS)  
N.T.S.



**6' PRE-CAST CONCRETE WHEEL STOP**  
N.T.S.

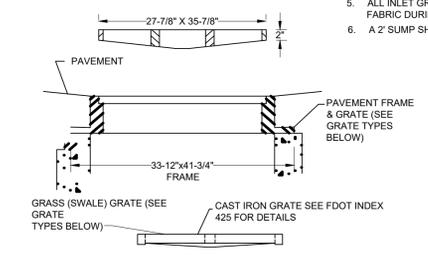


**SECTION CONTROL STRUCTURE OCS-1**  
N.T.S.



**PLAN VIEW**  
RECOMMENDED MAXIMUM PIPE SIZES:  
2'-0" WALL-18" PIPE  
3'-1" WALL-24" PIPE

- STANDARD INLET NOTES:**  
1. REFER TO FDOT STANDARD INDEX NO. 425 FOR ADDITIONAL AND SUPPLEMENTARY DETAILS.  
2. STRUCTURES MAY BE CAST IN PLACE OR PRECAST WITH CLASS 1 (MIN 3000 PSI) CONCRETE PER FDOT SECTION 425. CONCRETE AS SPECIFIED BY ASTM C-475 (MIN 4000 PSI) MAY BE USED IN PRECAST ITEMS MANUFACTURED IN PLANTS AS SPECIFIED IN FDOT STANDARD INDEX NO. 201.  
3. R.C.P. SHALL BE REINFORCED CONCRETE PIPE CONFORMING TO F.D.O.T. SEC. 425.  
4. PLACE SOD #1 ON ALL SIDES OF INLET IN GREEN AREAS UNLESS OTHERWISE NOTED.  
5. ALL INLET GRATES SHALL BE COVERED WITH FILTER FABRIC DURING CONSTRUCTION.  
6. A 2' SUMP SHALL BE REQUIRED WHERE SHOWN.



- OPTIONAL GRATE TYPES:  
USE USF GRATE #6212 AND FRAME #180 IN PAVEMENT AREAS  
USE USF GRATE #6210 IN GRASS AREAS  
USE USF GRATE #6200 LONG SPAN IN GRASS AREAS

**INLET TYPE C FRAME & GRATE DETAIL**  
N.T.S.

**PROPOSED DESIGN ELEVATIONS (N.A.V.D.)**

CONTROL	= 2.70'
MIN. DRY DETENTION	= 3.70'
MIN. PAVEMENT	= 4.00'
MIN. PERIMETER BERM	= 5.40'
MIN. FINISH FLOOR	= 5.80'

**APPROVAL SUBMITTAL PLANS FOR CONSTRUCTION**

- NOTES:**  
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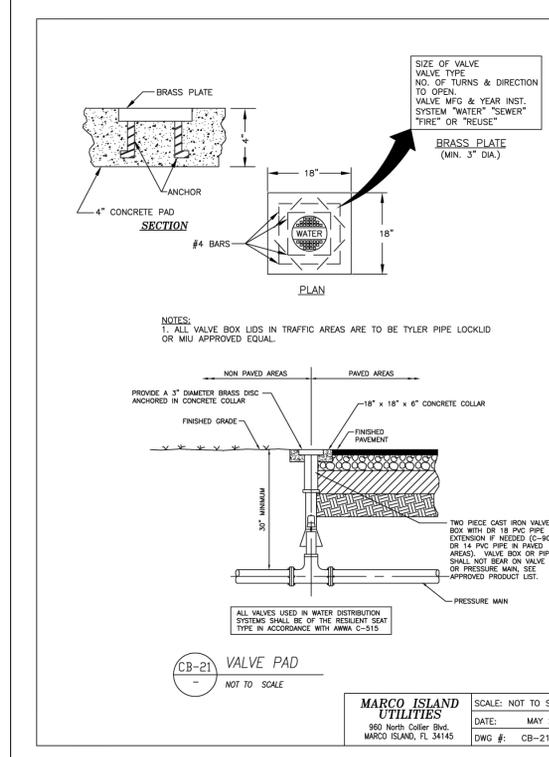
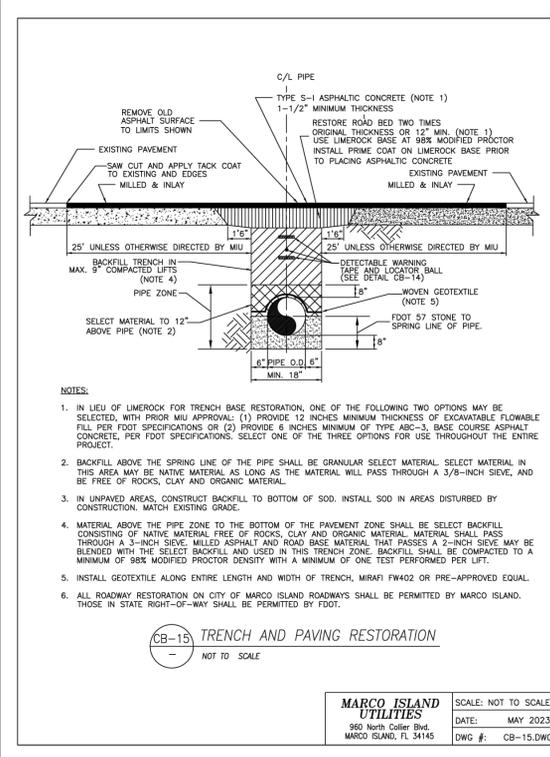
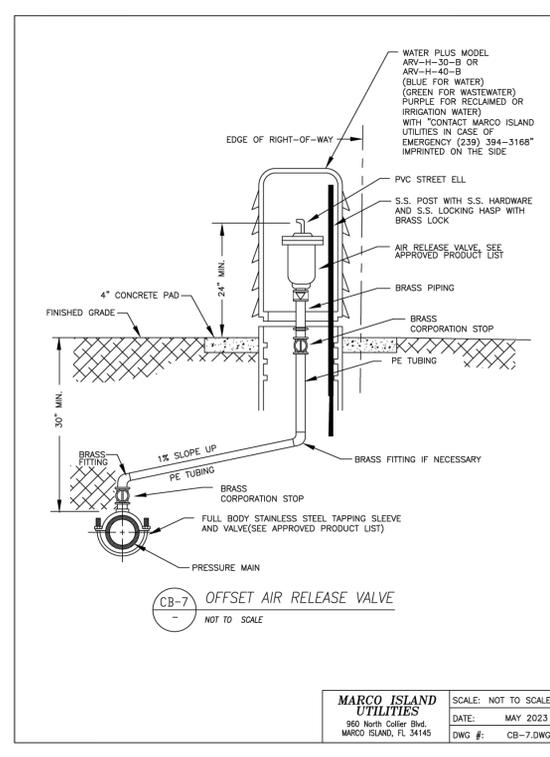
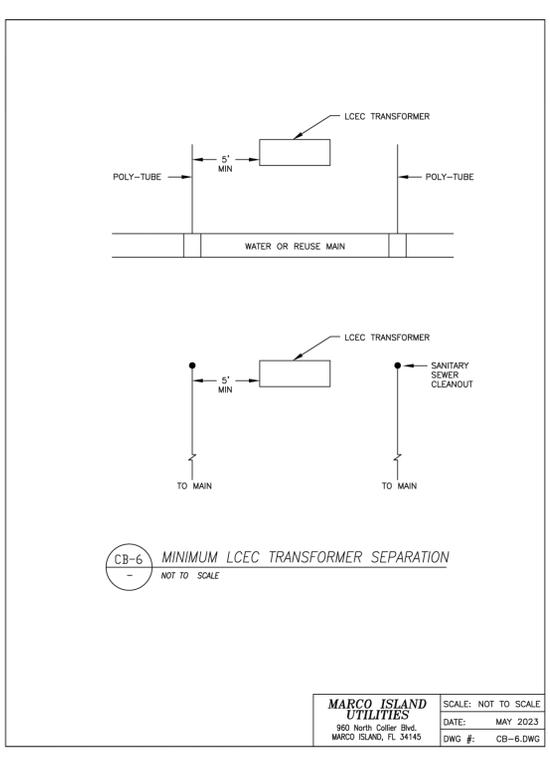
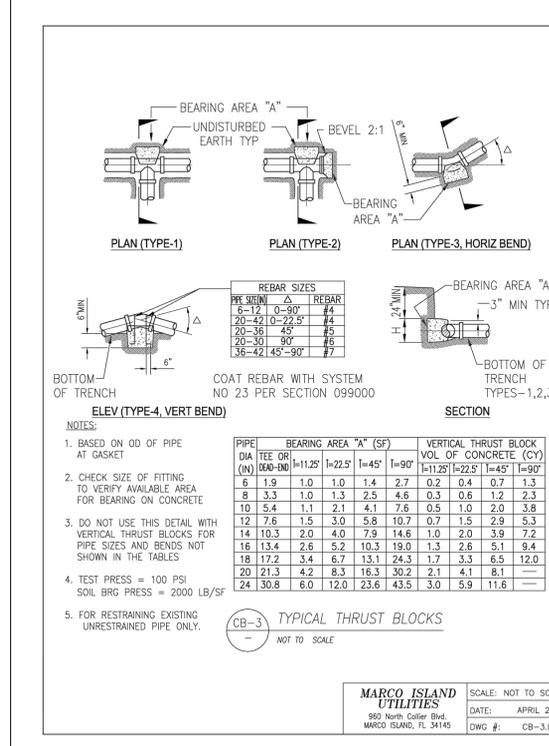
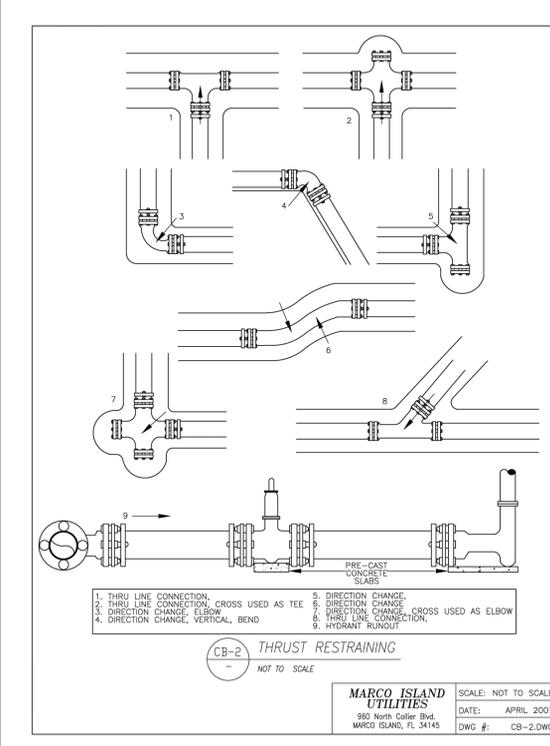
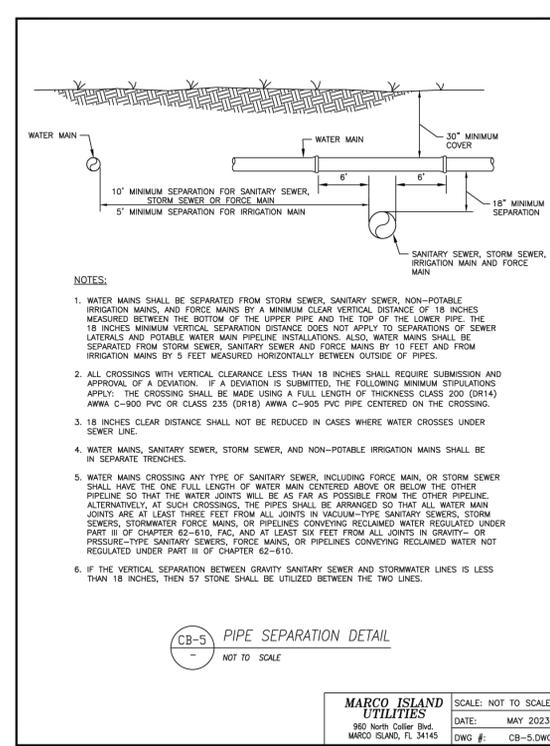
**RESTRAINT TABLE**

PIPE SIZE (IN.)	HORIZONTAL BENDS				VERTICAL OFFSETS				REDUCERS (SEE NOTES)				TEES			
	90° BENDS (L <sub>H</sub> )	45° BENDS (L <sub>H</sub> )	15° BENDS (L <sub>H</sub> )	22.5° BENDS (L <sub>H</sub> )	45° BENDS (L <sub>V</sub> )	90° BENDS (L <sub>V</sub> )	135° BENDS (L <sub>V</sub> )	180° BENDS (L <sub>V</sub> )	SIZE (L <sub>A</sub> )	SIZE (L <sub>B</sub> )	BRANCH SIZE (L <sub>C</sub> )	SIZE (L <sub>D</sub> )	SIZE (L <sub>E</sub> )	SIZE (L <sub>F</sub> )	SIZE (L <sub>G</sub> )	
4"	27	11	5	3	31	8	80	6 x 4	64	43	4"	4"	10	11		
6"	37	15	7	4	43	11	84	8 x 6	60	46	6"	6"	10	11		
8"	48	20	10	5	57	15	110	8 x 8	53	79	8"	8"	10	11		
10"	57	24	11	6	68	17	131	10 x 8	55	44	8"	8"	10	11		
12"	67	29	13	7	80	19	152	10 x 6	53	81	10"	10"	10	11		
16"	84	36	17	9	99	25	188	12 x 8	55	69	12"	12"	10	11		
20"	101	44	21	11	119	31	224	16 x 12	61	45	16"	16"	10	11		
24"	119	52	25	13	141	37	269	20 x 16	58	45	20"	20"	10	11		
								24 x 20	55	45	24"	24"	10	11		
								24 x 16	128	82	8"	8"	10	11		

**NOTES:**  
 1. LENGTHS SHOWN ON THIS TABLE ARE TO BE INTERPRETED AS FOLLOWS:  
 L<sub>H</sub> = RESTRAINED LENGTH FROM HIGH SIDE FITTING OF A VERT. BEND  
 L<sub>V</sub> = RESTRAINED LENGTH FROM LOW SIDE FITTING OF A VERT. BEND  
 L<sub>A</sub> = RESTRAINED LENGTH ON BOTH SIDES FROM FITTING  
 L<sub>B</sub> = MINIMUM LENGTH TO FIRST JOINT OF RUN ON BOTH SIDES  
 L<sub>C</sub> = RESTRAINED LENGTH REQUIRED ON BRANCH FROM FITTING  
 L<sub>D</sub> = LENGTH OF PIPE ON SMALL SIDE FREE OF FITTING  
 L<sub>E</sub> = RESTRAINED LENGTH ON LARGE SIDE OF REDUCER  
 2. A SAFETY FACTOR = 2.5 IS USED FOR VERTICAL OFFSETS TO COMPENSATE FOR SATURATED SOIL CONDITIONS.  
 3. A SAFETY FACTOR = 2.0 IS USED FOR ALL OTHER CASES.  
 4. (L<sub>A</sub>) AND (L<sub>B</sub>) ABOVE ARE TWO OPTIONS FOR PROVIDING THE REQUIRED THRUST RESTRAINT FOR THE FITTING. EITHER (L<sub>A</sub>) LENGTH OF PIPE FREE OF FITTINGS (BENDS, TEES, REDUCERS OR VALVES) ON THE SMALL SIDE OF THE REDUCER WILL PROVIDE THE REQUIRED RESTRAINT OR (L<sub>B</sub>) LENGTH CAN BE RESTRAINED ON THE LARGE SIDE OF THE FITTING.  
 4. THE FOLLOWING ARE ASSUMED:  
 4" - 10" PIPE HAS 30" MIN. COVER  
 12" - 24" PIPE HAS 36" MIN. COVER  
 4" - 24" PIPE IS PVC  
 5. VALVES SHALL BE RESTRAINED ON EITHER SIDE OF THE FITTING AS A MINIMUM. IN LINE VALVES SHALL HAVE NO FITTINGS WITHIN THE LENGTHS SHOWN ON THIS TABLE FOR THE SAME SIZE DEAD END. IN CASES WHERE THIS LENGTH CAN NOT BE PROVIDED FREE OF FITTINGS, ADDITIONAL RESTRAINT SHALL BE REQUIRED AS APPROVED BY ENGINEER.  
 6. ALL DEAD END LINES, PERMANENT OR TEMPORARY, SHALL BE RESTRAINED PER THE ABOVE RESTRAINT TABLE.

**CB-1 RESTRAINT TABLE**  
NOT TO SCALE

**MARCO ISLAND UTILITIES**  
960 North Collier Blvd.  
MARCO ISLAND, FL 34145  
SCALE: NOT TO SCALE  
DATE: MAY 2023  
DWG #: CB-1.DWG



PROJECT: 23-164  
DATE: 03/24

OWNER: BBTL PROPERTY, LLC  
805 E. ELKCAM CIRCLE  
CITY OF MARCO ISLAND, FLORIDA 34145

REVISION DESCRIPTION  
 11/26/2024 MJ REVISION PER 2ND ROUND CITY COMMENTS

DATE: 11/26/2024  
BY: MJ

**UTILITY DETAILS**

**ELKCAM WAREHOUSE**  
805 E. ELKCAM CIRCLE  
CITY OF MARCO ISLAND, FLORIDA 34145

**SHEET 12 OF 18**

**CALL 48 HOURS BEFORE YOU DIG**

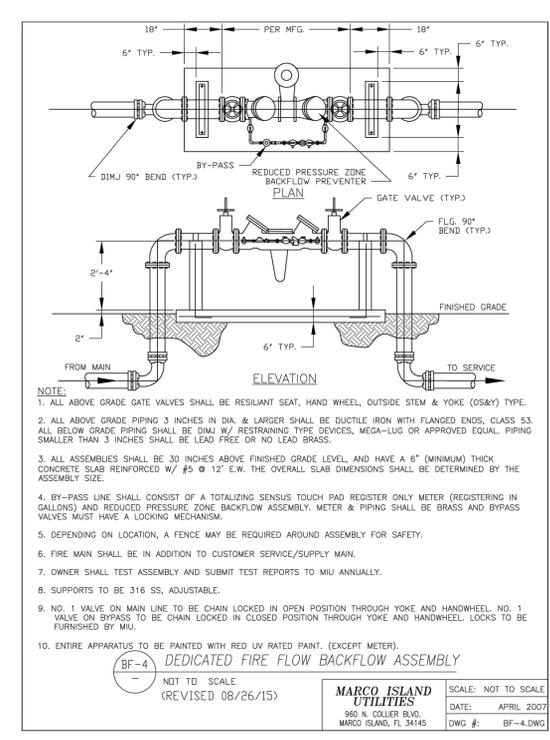
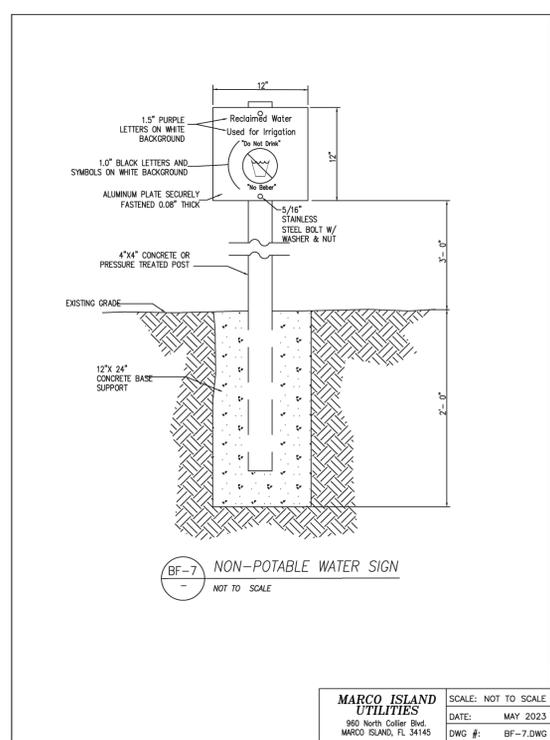
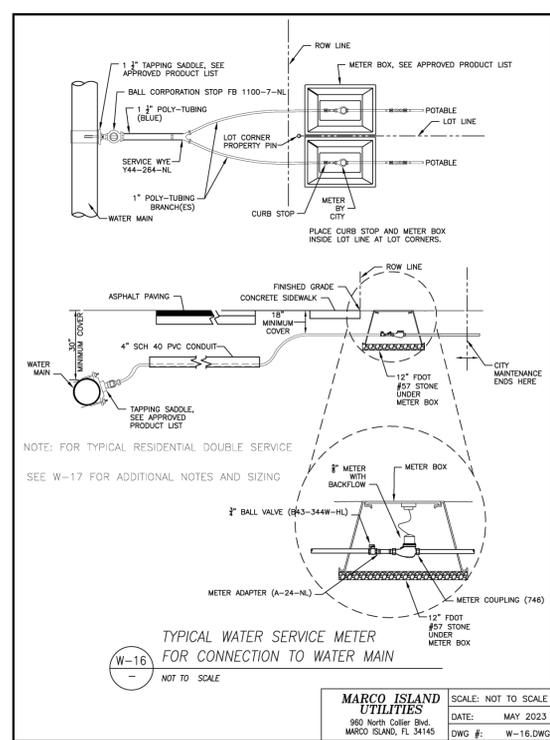
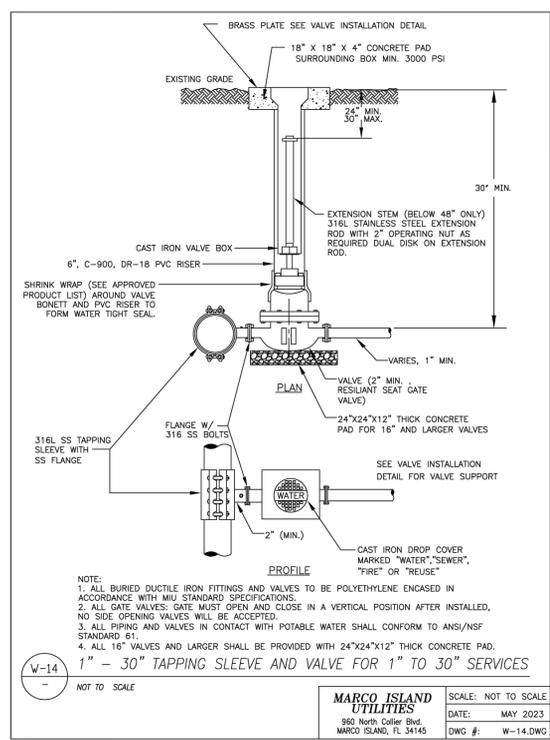
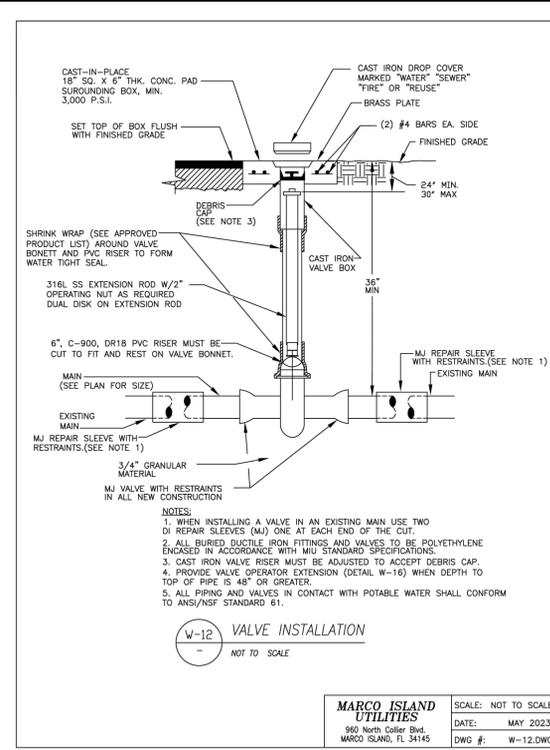
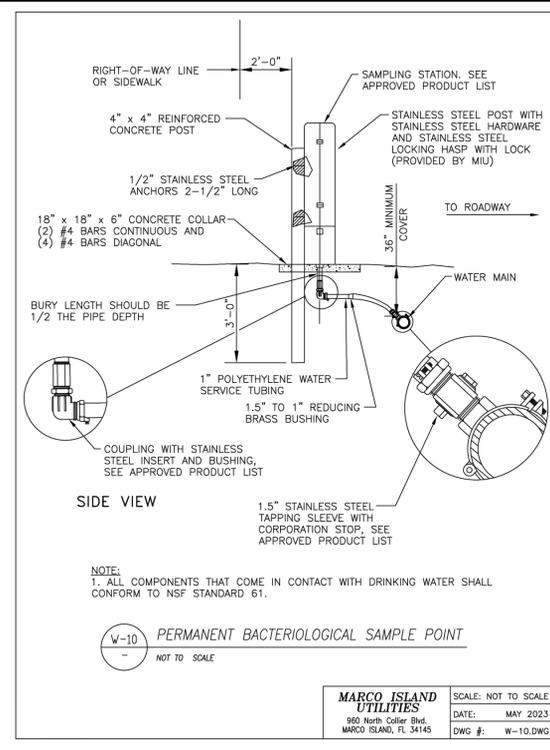
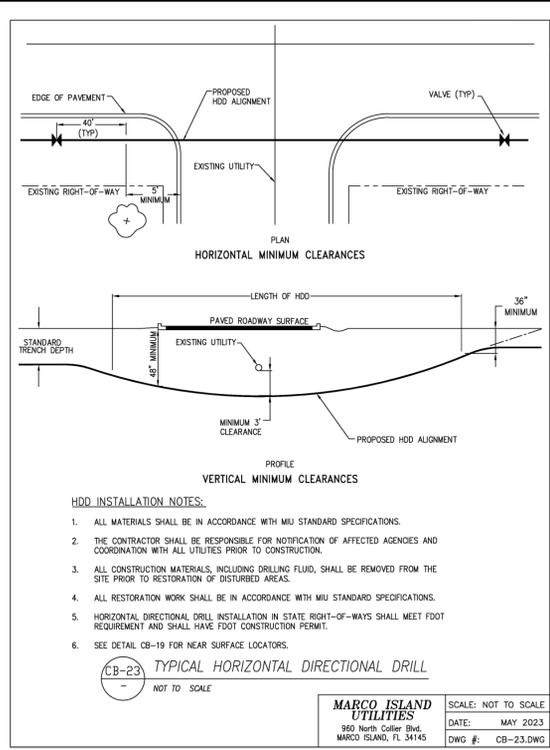
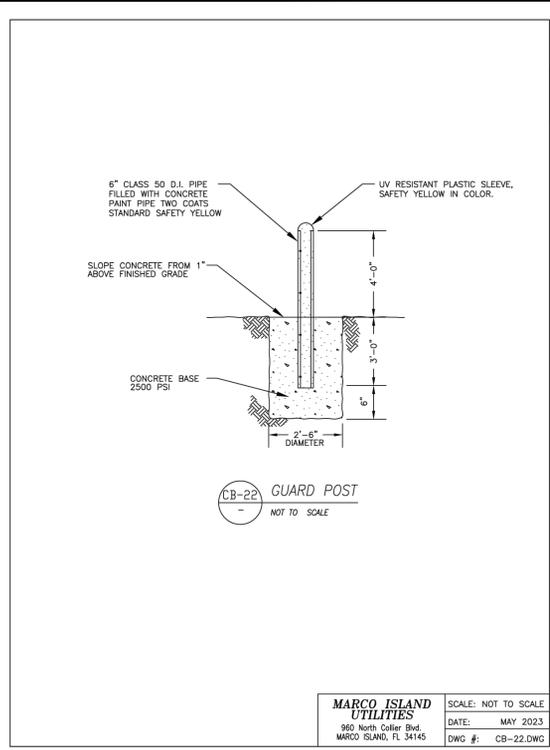
**811**

**IT'S THE LAW! DIAL 811** Know what's below. Call before you dig.

SUNSHINE STATE ONE CALL OF FLORIDA, INC.

**NOTES:**  
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APPROVAL SUBMITTAL PLANS FOR CONSTRUCTION



APPROVAL SUBMITTAL PLANS FOR CONSTRUCTION

**CALL 48 HOURS BEFORE YOU DIG**

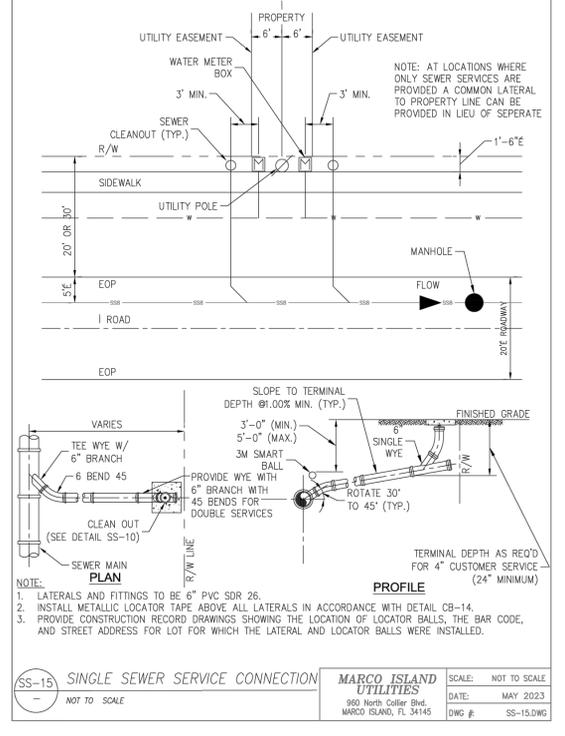
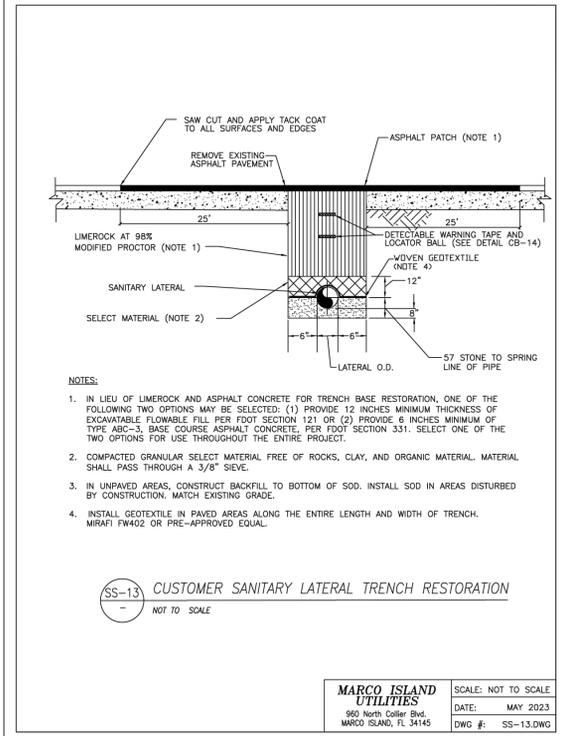
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SEP24-000061



**EXCEPTIONS TO MINIMUM SEPARATION REQUIREMENTS**

Where it is not technically feasible or economically sensible to comply with the requirements of 62-555.314(1) or (2), F.A.C., the Department shall allow exceptions to these requirements if suppliers of water or construction permit applicants provide technical or economic justification for each exception and provide alternative construction features that afford a similar level of reliability and public health protection.

Acceptable alternative construction features include the following:

**LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH 62-555.314(5)(a), F.A.C.**

Figure 1. Horizontal separation distance X less than required but not less than 3 feet.

Figure 2. Joint spacing distance Z less than required.

Where an underground water main is being laid less than the required minimum horizontal distance from another pipeline and where an underground water main is crossing another pipeline and joints in the water main are being located less than the required minimum distance from joints in the other pipeline:

- Use of pressure-rated pipe conforming to the American Water Works Association standards incorporated into Rule 62-555.330, F.A.C., for the other pipeline if it is a gravity- or vacuum-type pipeline;
- Use of welded, fused, or otherwise restrained joints for either the water main or the other pipeline; or
- Use of watertight casing pipe or concrete encasement at least four inches thick for either the water main or the other pipeline.

**LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH 62-555.314(5)(b), F.A.C.**

Figure 3. Horizontal separation distance X less than 3 feet.

Figure 4. Crossing vertical separation distance Y less than required.

Where an underground water main is being laid less than three feet horizontally from another pipeline and where an underground water main is crossing another pipeline and is being laid less than the required minimum vertical distance from the other pipeline:

Use of pipe, or casing pipe, having high impact strength (i.e., having an impact strength at least equal to that of 0.25-inch-thick ductile iron pipe) or concrete encasement at least four inches thick for both the water main and for the other pipeline if it is new and is conveying wastewater or reclaimed water.

**Disclaimer – This document is provided for your convenience only. Please refer to Rule 62-555.314, F.A.C., for additional construction requirements.**

PROJECT:	23-164
DATE:	03/24
ANDRES BORAL, PE, MEA	
LICENSE # 80373 PIPE # 21552	
711 5TH AVE SOUTH SUITE 208 NAPLES FL 34102	
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(P) 239-692-0509	
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ENGINEERING	
WWW.BORALENGINEERING.COM	
OWNER:	
BBTL PROPERTY, LLC	
805 E. ELKCAM CIRCLE	
CITY OF MARCO ISLAND, FLORIDA 34145	
REVISION DESCRIPTION	
DATE	BY
11/26/2024	MJ
REVISION PER 2ND ROUND CITY COMMENTS	
REVISION PER 1ST ROUND CITY COMMENTS	
<b>ELKCAM WAREHOUSE</b>	
805 E. ELKCAM CIRCLE	
CITY OF MARCO ISLAND,	
FLORIDA 34145	
<b>UTILITY DETAILS</b>	
<b>SHEET</b>	
14	OF 18

APPROVAL SUBMITTAL PLANS FOR CONSTRUCTION

**CALL 48 HOURS BEFORE YOU DIG**

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SEP24-000061

**IRRIGATION NOTES:**

1. THE LANDSCAPE AREAS OF THE ENTIRE PROJECT SHALL BE IRRIGATED WITH AN AUTOMATIC IRRIGATION SYSTEM WITH A CONTROLLER SET TO CONSERVE WATER. A MOISTURE DETECTION DEVICE SHALL BE INSTALLED TO OVERRIDE THE SPRINKLER ACTIVATION MECHANISM DURING PERIODS OF INCREASED RAINFALL. THE RAIN SENSOR SHALL BE POSITIONED SO THAT IT WILL RECEIVE DIRECT RAINFALL AND NOT BE IMPEDED BY ANY OTHER OBJECTS. ALL REQUIRED IRRIGATION SYSTEMS SHALL BE LAID OUT SO THAT WATER IS NOT APPLIED TO IMPERVIOUS SURFACES, INCLUDING ROADS, DRIVEWAYS AND OTHER IMPERVIOUS SURFACES. REQUIRED IRRIGATION SHALL NOT IMPACT EXISTING NATIVE VEGETATION THAT WILL BE RETAINED ON THE DEVELOPMENT SITE. "RAINBIRD" IRRIGATION SUPPLIES OR EQUAL SHALL BE UTILIZED. ALL LANDSCAPE AREAS, INCLUDING PARKING ISLANDS WILL BE ADEQUATELY SLEEVED FOR IRRIGATION.

**LANDSCAPE NOTES:**

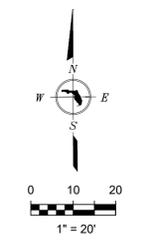
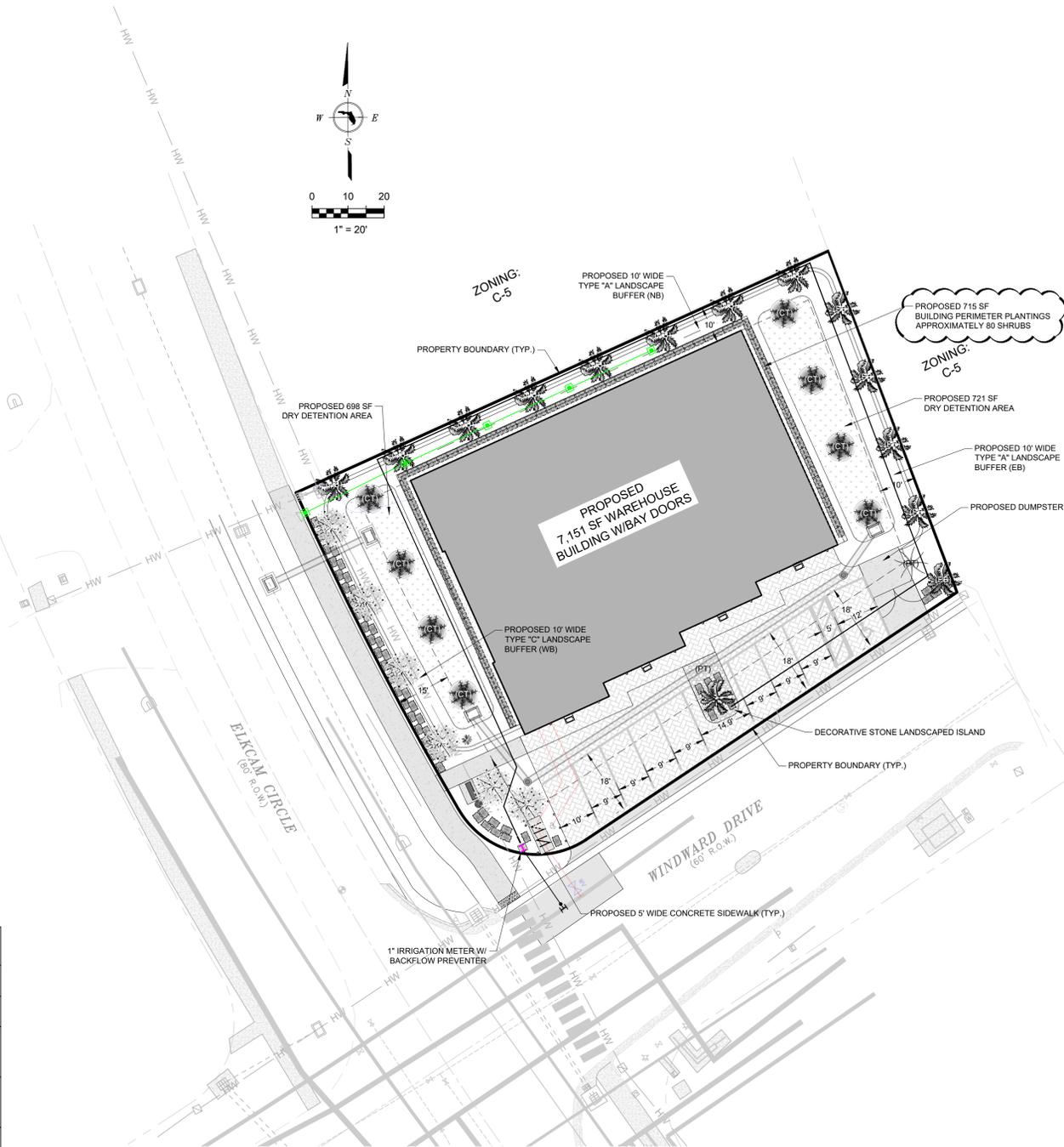
1. THE CONTRACTOR SHALL SOD ALL DISTURBED AREAS. ALL PLANTING SHALL BE MULCHED TO A 3" MINIMUM DEPTH.
2. ACCEPTABLE ROOT BARRIER (BIO BARRIER) MATERIAL TO BE INSTALLED WHEN A CANOPY TREE IS PLANTED WITHIN 7 FEET FROM ANY ROADWAY, SIDEWALK OR PUBLIC UTILITY.
3. VERIFY THE LOCATIONS OF EXISTING TREES, LAWNS, AND SHRUBS. REMOVE EXTRANEOUS MATERIALS SUCH AS ROCKS, BRANCHES, BUILDING MATERIALS OR UNACCEPTABLE SOIL PRIOR TO PLANTING SOD, TREES, AND SHRUBS.
4. CONTRACTOR SHALL BECOME ACQUAINTED WITH THE RELATED PAVING, SITE GRADING, AND ALL UTILITIES TO PRECLUDE ANY MISUNDERSTANDINGS AND ENSURE A TROUBLE FREE INSTALLATION.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEAN UP OF PREMISES AND REMOVAL OF ALL DISCARDED AND SURPLUS MATERIALS, AND RUBBISH.
6. THE EXACT LOCATION OF ALL EXISTING STRUCTURES, UNDERGROUND UTILITIES, AND PIPES MAY NOT BE AS INDICATED ON DRAWINGS. THE CONTRACTOR SHALL DETERMINE THE LOCATION OF THESE ITEMS AND SHALL CONDUCT HIS WORK IN A MANNER TO PREVENT INTERRUPTION OR DAMAGE TO EXISTING SYSTEMS WHICH MUST REMAIN OPERATIONAL. THE CONTRACTOR SHALL PROTECT EXISTING STRUCTURES AND UTILITY SERVICE WHICH MUST REMAIN OPERATIONAL AND SHALL BE RESPONSIBLE FOR THEIR REPLACEMENT IF DAMAGED.
7. ST. AUGUSTINE SOD SHALL BE USED IN PARKING LOT ISLANDS AND COMMON AREAS NOT LANDSCAPED.
8. REFER TO DEMOLITION PLAN (SHEET 3 OF 11) FOR ANY TREES TO BE REMOVED.
9. ALL PLANTS, TREES & SHRUBS SHALL BE FLORIDA NO.1 OR BETTER AS DESCRIBED IN "GRADES AND STANDARDS FOR NURSERY PLANTS" 1975, FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES.
10. THERE SHALL BE 3" MINIMUM CLEARANCE FROM LANDSCAPE PLANTS TO THE EDGE OF THE METERS.
11. TO AVOID CONFLICTS WITH OVERHEAD UTILITY LINES, ONLY TREES LESS THAN 20 FEET IN HEIGHT AT MATURITY MAY BE USED DIRECTLY ADJACENT TO AN OVERHEAD LINE.
12. 100% OF ALL INSTALLED VEGETATION SHALL BE NATIVE TO FLORIDA.
13. HEDGES MUST BE PLANTED IN DOUBLE STAGGERED ROWS AND BE MAINTAINED SO AS TO FORM A 36-INCH HIGH (TYPE "C" BUFFER MUST BE 24 INCHES AT INSTALLATION AND BE MAINTAINED AT 36 INCHES HIGH) CONTINUOUS VISUAL SCREEN WITHIN ONE YEAR AFTER TIME OF PLANTING. IN SITUATIONS WHERE THE ELEVATION OF THE ROW IS HIGHER THAN THE ELEVATION OF THE ADJACENT PROPERTY, THE EFFECTIVE PLANT SCREEN MUST BE INSTALLED AT AN ELEVATION OF AT LEAST 24-INCHES AND GROW TO AND BE MAINTAINED AT AN ELEVATION OF 36 INCHES AS MEASURED FROM THE HIGHEST ELEVATION WITHIN THE BUFFER AREA RESULTING FROM THE COMBINATION OF THE BERM AND/OR PLANTS.
14. HEDGES MUST BE PLANTED AND BE MAINTAINED SO AS TO FORM A 60-INCH HIGH (TYPE "B" BUFFER MUST BE 48 INCHES AT INSTALLATION AND BE MAINTAINED AT 60 INCHES HIGH) CONTINUOUS VISUAL SCREEN WITHIN ONE YEAR AFTER TIME OF PLANTING.

**LAND USE TABLE (PROPOSED)**

BUILDING	7,151 SF	0.16 AC	40.95%
CONCRETE	455 SF	0.01 AC	2.61%
PERVIOUS PAVER	3,315 SF	0.08 AC	18.98%
DRY DETENTION	1,924 SF	0.04 AC	11.02%
OPEN SPACE	4,618 SF	0.11 AC	26.44%
<b>TOTAL</b>	<b>17,463 SF</b>	<b>0.40 AC</b>	<b>100.00%</b>

**PROPOSED PLANT LIST**

NATIVE	SYMBOL	QTY	SPECIES	SIZE, SPEC. & SPREAD
Y	PER PLAN		FLORATAM SOD	ON 4" OF TOP SOIL
Y		145	CLUSIA SHRUB <i>Clusia rosea</i>	3 GAL @ 36" OC 24" HEIGHT MIN
Y		8	CANOPY TREE BALD CYPRESS <i>Taxodium distichum</i>	3.0" CALIPER MIN 12'-24" HEIGHT 65 GAL. MIN.
Y		6	CANOPY TREE MAHOGANY TREE <i>Swietenia mahagoni</i>	3.0" CALIPER MIN 12'-24" HEIGHT 65 GAL. MIN.
Y		14	ROYAL PALM <i>Roystonea regia</i>	12" CLEAR TRUNK HEIGHT MIN 15" MIN CLEAR TRUNK @ MATURITY
Y		1	SABAL PALM <i>Sabal palmetto</i>	12" CLEAR TRUNK HEIGHT MIN 15" MIN CLEAR TRUNK @ MATURITY



**LANDSCAPING REQUIREMENTS - ARTICLE IV.**

**NORTH LANDSCAPE BUFFER - 10' TYPE "A" (NB)**

160 LF FRONTAGE  
(10' WIDE TYPE "A" BUFFER PROVIDED)  
1 TREE REQUIRED EVERY 30 LF  
160 / 30 = 5.33 TREES REQUIRED  
5 TREES PROVIDED

**EAST LANDSCAPE BUFFER - 10' TYPE "A" (EB)**

100 LF FRONTAGE  
(10' WIDE TYPE "A" BUFFER PROVIDED)  
1 TREE REQUIRED EVERY 30 LF  
100 / 30 = 3.33 TREES REQUIRED  
3 TREES PROVIDED

**SOUTH LANDSCAPE BUFFER - 15' TYPE "C" (SB)**

130 LF FRONTAGE  
(15' WIDE TYPE "C" BUFFER PROVIDED)  
1 TREE REQUIRED EVERY 25 LF  
130 / 25 = 5.2 TREES REQUIRED  
5 TREES PROVIDED

**WEST LANDSCAPE BUFFER - 15' TYPE "C" (WB)**

110 LF FRONTAGE  
(15' WIDE TYPE "C" BUFFER PROVIDED)  
1 TREE REQUIRED EVERY 25 LF  
110 / 25 = 4.4 TREES REQUIRED  
4 TREES PROVIDED

**SEE LANDSCAPE NOTES #14 FOR HEDGE REQUIREMENTS**

1 SHRUB PER 4 LF = 28 SHRUBS REQUIRED / PROVIDED  
**BUILDING PERIMETER PLANTINGS (BP)**  
10% OF THE TOTAL BUILDING FOOTPRINT SF  
7,151 \* 0.10 = 715 TOTAL SF REQUIRED  
715 TOTAL SF PROVIDED - APPROXIMATELY 80 SHRUBS

**CANOPY TREES (CT)**

1 CANOPY TREE PER 3,000 SF OF SITE AREA  
SITE AREA = 17,463 SF  
17,463 / 3,000 = 5.82 CANOPY TREES REQUIRED  
6 CANOPY TREES PROVIDED

**INTERNAL PARKING TREES (PT)**

INTERNAL PLANTING AREA = 10% OF PAVED SURFACE AREA  
PAVED SURFACE ON SITE = 3,315 SF  
3,315 \* 0.10 = 331.5 SF REQUIRED INTERNAL PLANTING AREA  
332 SF PROVIDED INTERNAL PLANTING AREA  
1 TREE REQUIRED EVERY 250 SF OF INTERNAL PLANTING AREA  
332 / 250 = 1.33 TREES REQUIRED  
1 TREE PROVIDED

**TOTAL TREES**

28 TREES REQUIRED  
28 TREES PROPOSED (NEW)

**SPECIES MIX:**

REQUIRED: 4 SPECIES  
PROVIDED: 4 SPECIES

**NATIVE TREE SPECIES:**

REQUIRED: 30% NATIVE TREE SPECIES  
PROVIDED: 100% NATIVE TREE SPECIES  
PROVIDED: 50% NATIVE SHRUB SPECIES  
PROVIDED: 100% NATIVE SHRUB SPECIES

PRELIMINARY  
NOT FOR CONSTRUCTION

**CALL 48 HOURS BEFORE YOU DIG**

**IT'S THE LAW! DIAL 811** Know what's below. Call before you dig.

SUNSHINE STATE ONE CALL OF FLORIDA, INC.



**NOTES:**  
ALL EXISTING (SURVEY) & ALL PROPOSED GRADE ELEVATIONS & CONTOURS SHOWN REFER TO N.A.S.D. 88, CONVERSION (N.G.V.D. 1929 - 1.30' = N.A.V.D. 1988).  
THESE PLANS MAY HAVE BEEN REDUCED OR INCREASED IN SIZE BY REPRODUCTIONS. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

PROJECT:	23-164
DATE:	03/24
ANDRES BORAL, PE, MEA	
LICENSE # 80373, F.P.E.# 71552	
711 5TH AVE SOUTH, SUITE 208, NAPLES FL 34102	
ANDRES@BORALENGINEERING.COM	
(P) 239-692-0509	
<b>BORAL</b>	
ENGINEERING	
WWW.BORALENGINEERING.COM	
OWNER:	
BBTL PROPERTY, LLC	
MARCO ISLAND, FLORIDA 34145	
REVISION DESCRIPTION	
BY:	REVISION
DATE:	DATE
11/26/2024	
<b>ELCKAM WAREHOUSE</b>	
805 E. ELCKAM CIRCLE	
CITY OF MARCO ISLAND,	
FLORIDA 34145	
<b>LANDSCAPING</b>	
<b>PLAN</b>	
<b>SHEET</b>	
<b>15</b>	<b>OF 18</b>

SEP24-000051

**REQUIRED LANDSCAPE NOTES:**

**SEC. 10-420. - PLANT MATERIAL STANDARDS.**

- (a) QUALITY PLANT MATERIALS USED TO MEET THE REQUIREMENTS OF THIS DIVISION MUST MEET THE STANDARDS FOR FLORIDA NO. 1 OR BETTER, AS SET OUT IN GRADES AND STANDARDS FOR NURSERY PLANTS, PARTS I AND II, DEPARTMENT OF AGRICULTURAL, STATE OF FLORIDA (AS AMENDED). ROOT BALL SIZES ON ALL TRANSPLANTED PLANT MATERIALS MUST ALSO MEET STATE STANDARDS.
- (b) NATIVE VARIETIES, AT LEAST 75 PERCENT OF THE TREES AND 50 PERCENT OF THE SHRUBS USED TO FULFILL THESE REQUIREMENTS MUST BE NATIVE FLORIDA SPECIES.
- (c) TREES AND PALMS.
  - (1) CODE REQUIRED TREES MUST BE A MINIMUM OF TEN FEET IN HEIGHT, HAVE A TWO-INCH CALIPER (AT 12 INCHES ABOVE THE GROUND) AND A FOUR-FOOT SPREAD AT THE TIME OF INSTALLATION. PALMS MUST HAVE A MINIMUM OF TEN FEET OF CLEAR TRUNK AT PLANTING. TREES HAVING AN AVERAGE MATURE SPREAD OR CROWN LESS THAN 20 FEET MAY BE SUBSTITUTED BY GROUPING THE SAME SO AS TO CREATE THE EQUIVALENT OF A 20-FOOT CROWN SPREAD. TREES ADJACENT TO WALKWAYS, BIKE PATHS AND RIGHTS-OF-WAY MUST BE MAINTAINED WITH EIGHT FEET OF CLEAR TRUNK.
  - (2) LARGER TREES SUBSTITUTED TO REDUCE THE MINIMUM NUMBER OF GENERAL TREES MUST BE NO LESS THAN FOUR INCHES IN DIAMETER AT 12 INCHES ABOVE THE GROUND AND NO LESS THAN 16 FEET IN HEIGHT AT THE TIME OF PLANTING. THE GENERAL TREE REQUIREMENT CANNOT BE REDUCED IN NUMBER BY MORE THAN 50 PERCENT.
- (d) SHRUBS AND HEDGES. SHRUBS MUST BE A MINIMUM OF 24 INCHES (48 INCHES FOR TYPE F BUFFERS) IN HEIGHT, AT TIME OF PLANTING. SAW PALMETTOS (SERENGA, REPENS) AND COONTIES (ZAMIA FLORIDANA) MAY BE USED AS SHRUBS PROVIDED THEY ARE 12 INCHES IN HEIGHT AT TIME OF PLANTING. ALL SHRUBS MUST BE A MINIMUM THREE-GALLON CONTAINER SIZE AND BE SPACED 18 TO 36 INCHES ON CENTER. THEY MUST BE AT LEAST 36 INCHES (60 INCHES FOR TYPE F BUFFERS) IN HEIGHT WITHIN 12 MONTHS OF TIME OF PLANTING AND MAINTAINED IN PERPETUITY AT A HEIGHT OF NO LESS THAN 36 INCHES (60 INCHES FOR TYPE F BUFFERS).
- (e) REQUIRED HEDGES MUST BE PLANTED IN DOUBLE STAGGERED ROWS AND MAINTAINED SO AS TO FORM A CONTINUOUS, UNBROKEN, SOLID VISUAL SCREEN WITHIN A MINIMUM OF ONE YEAR AFTER TIME OF PLANTING.
- (f) THE HEIGHT OF ALL TREES AND SHRUBS MUST BE MEASURED FROM THE FINAL GRADE OF THE PROJECT SITE.
- (g) MULCH REQUIREMENTS. A TWO-INCH MINIMUM LAYER, AFTER WATERING-IN, OF MULCH OR OTHER RECYCLED MATERIALS MUST BE PLACED AND MAINTAINED AROUND ALL NEWLY INSTALLED TREES, SHRUBS, AND GROUNDCOVER PLANTINGS. EACH TREE MUST HAVE A RING OF MULCH NO LESS THAN 24 INCHES BEYOND ITS TRUNK IN ALL DIRECTIONS. THE USE OF CYPRESS MULCH IS STRONGLY DISCOURAGED.

**SEC. 10-421. - PLANT INSTALLATION AND MAINTENANCE STANDARDS.**

- (a) INSTALLATION PLANT MATERIALS MUST BE INSTALLED IN SOIL CONDITIONS THAT ARE CONDUCTIVE TO THE PROPER GROWTH OF THE PLANT MATERIAL. LIMEROCK LOCATED WITHIN PLANTING AREAS MUST BE REMOVED AND REPLACED WITH NATIVE OR GROWING QUALITY SOIL BEFORE PLANTING.
- A PLANT'S GROWTH HABIT MUST BE CONSIDERED IN ADVANCE OF CONFLICTS THAT MIGHT BE CREATED (E.G. VIEWS, SIGNAGE, OVERHEAD POWER LINES, LIGHTING, BUILDINGS, AND CIRCULATION). TREES MAY NOT BE PLACED WHERE THEY INTERFERE WITH SITE DRAINAGE, SUBSURFACE UTILITIES, OR OVERHEAD UTILITY LINES, OR WHERE THEY WILL REQUIRE FREQUENT PRUNING IN ORDER TO AVOID INTERFERENCE WITH OVERHEAD POWER LINES. LIGHT POLES MUST BE LOCATED OUTSIDE OF ALL PARKING ISLANDS CONTAINING REQUIRED TREES.
- ALL LANDSCAPE MATERIALS MUST BE INSTALLED IN A RECOGNIZED HORTICULTURAL CORRECT MANNER. AT A MINIMUM, THE FOLLOWING INSTALLATION REQUIREMENTS MUST BE MET:
  - (1) ALL LANDSCAPE AREAS MUST BE MULCHED UNLESS VEGETATIVE COVER IS ALREADY ESTABLISHED.
  - (2) TREES AND SHRUBS USED IN BUFFERS MUST BE PLANTED IN A MINIMUM WIDTH AREA EQUAL TO ONE-HALF THE REQUIRED WIDTH OF THE BUFFER. HOWEVER, IN NO CASE MAY THE PLANTING AREA BE LESS THAN FIVE FEET IN WIDTH.
  - (3) ALL LANDSCAPED AREAS MUST BE PROVIDED PROTECTION FROM ENCROACHMENT BY ANY TYPE OF VEHICLE.
  - (4) ALL REQUIRED PLANTS USED IN BUFFERS AND LANDSCAPING MUST BE INSTALLED USING XERISCAPE PRINCIPLES. XERISCAPE PRINCIPLES INCLUDE WATER CONSERVATION THROUGH DROUGHT-TOLERANT LANDSCAPING, THE USE OF APPROPRIATE PLANT MATERIAL, MULCHING, AND THE REDUCTION OF TURF AREAS.
  - (5) UTILITY OR DRAINAGE EASEMENTS MAY OVERLAP REQUIRED BUFFERS; HOWEVER, NO CODE REQUIRED TREES OR SHRUBS MAY BE LOCATED IN ANY UTILITY OR DRAINAGE EASEMENT UNLESS A WRITTEN STATEMENT, FROM THE ENTITY HOLDING THE BENEFICIAL INTEREST IN THE EASEMENT, IS SUBMITTED SPECIFICALLY STATING THAT THE ENTITY HAS NO OBJECTION TO THE LANDSCAPING AND THAT THE PROPOSED LANDSCAPING WILL NOT INTERFERE WITH THE LONG TERM MAINTENANCE OF THE INFRASTRUCTURE WITHIN EASEMENT AREA. NO CODE REQUIRED LANDSCAPING MAY BE LOCATED IN ANY STREET EASEMENT OR RIGHT-OF-WAY. TO AVOID CONFLICTS WITH OVERHEAD UTILITY LINES, ONLY TREES LESS THAN 20 FEET IN HEIGHT AT MATURITY MAY BE USED DIRECTLY ADJACENT TO AN OVERHEAD LINE. VARIANCES OR DEVIATIONS FROM THE REQUIREMENTS OF THIS SUBSECTION ARE PROHIBITED.
  - (6) SAFE SIGHT DISTANCE TRIANGLES AT INTERSECTIONS AND VEHICLE CONNECTIONS, WHERE AN ACCESS WAY INTERSECTS A RIGHT-OF-WAY OR WHERE A PROPERTY ABUTS THE INTERSECTION OF TWO OR MORE RIGHTS-OF-WAY, A MINIMUM SAFE SIGHT DISTANCE TRIANGULAR AREA MUST BE ESTABLISHED. WITHIN THIS AREA, VEGETATION MUST BE PLANTED AND MAINTAINED IN A WAY THAT PROVIDES UNOBSTRUCTED VISIBILITY AT A LEVEL BETWEEN 30 INCHES AND EIGHT FEET ABOVE THE CROWN OF THE ADJACENT ROADWAY. LANDSCAPING MUST BE LOCATED IN ACCORDANCE WITH THE ROADSIDE RECOVERY AREA PROVISIONS OF THE STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION'S MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION, AND MAINTENANCE OF STREETS AND HIGHWAYS (FDOT GREEN BOOK) WHERE APPROPRIATE.
  - (7) SIGNAGE LOCATED WITHIN OR ADJACENT TO LANDSCAPE BUFFER AREA. ALL TREES AND SHRUBS LOCATED WITHIN LANDSCAPE BUFFER MUST BE LOCATED SO AS NOT TO BLOCK THE VIEW OF SIGNAGE.
  - (8) IF A WALL OR FENCE IS PROPOSED, BUT NOT REQUIRED, THEN THE REQUIRED BUFFER PLANTINGS MUST BE INSTALLED ON THE EXTERIOR SIDE (BETWEEN THE WALL AND THE ABUTTING PROPERTY OR STREET RIGHT-OF-WAY) OF THE WALL OR FENCE.
  - (9) MAINTENANCE OF LANDSCAPING. THE OWNER IS RESPONSIBLE FOR MAINTAINING THE REQUIRED LANDSCAPING IN A HEALTHY AND VIGOROUS CONDITION AT ALL TIMES. TREE AND PALM STAKING MUST BE REMOVED WITHIN 12 MONTHS AFTER INSTALLATION. ALL LANDSCAPES MUST BE KEPT FREE OF REFUSE, DEBRIS, DISEASE, PESTS, AND WEEDS. ONGOING MAINTENANCE TO PROHIBIT THE ESTABLISHMENT OF PROHIBITED INVASIVE EXOTIC SPECIES IS REQUIRED.
  - (c) PRUNING. VEGETATION REQUIRED BY THIS CODE MAY ONLY BE PRUNED TO PROMOTE HEALTHY, UNIFORM, NATURAL GROWTH OF THE VEGETATION (EXCEPT WHERE NECESSARY TO PROMOTE HEALTH, SAFETY, AND WELFARE) AND BE IN ACCORDANCE WITH "AMERICAN NATIONAL STANDARD FOR TREE CARE OPERATIONS" - TREE, SHRUB, AND OTHER WOODY PLANT MAINTENANCE - STANDARD PRACTICES (PRUNING) (A300, PART 1)" BY THE AMERICAN NATIONAL STANDARD INSTITUTE, AND "BEST MANAGEMENT PRACTICES: TREE PRUNING" BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA).
  - TREES MUST NOT BE SEVERELY PRUNED TO PERMANENTLY MAINTAIN GROWTH AT A REDUCED HEIGHT OR SPREAD. PRUNING MUST NOT INTERFERE WITH THE DESIGN INTENT OF THE ORIGINAL INSTALLATION. SEVERELY PRUNED TREES MUST BE REPLACED BY THE PROPERTY OWNER. REPLACEMENT TREES MUST MEET THE TREE SIZE REQUIREMENTS OF I.C. SECTION 10-420. A PLANT'S GROWTH HABIT MUST BE CONSIDERED IN ADVANCE OF CONFLICTS WHICH MIGHT ARISE (I.E. VIEWS, SIGNAGE, OVERHEAD POWER LINES, LIGHTING, CIRCULATION, SIDEWALKS, BUILDINGS, AND SIMILAR CONFLICTS).

**ADDITIONAL LANDSCAPE NOTES:**

1. ACCEPTABLE ROOT BARRIER (BIO BARRIER) MATERIAL TO BE INSTALLED WHEN A CANOPY TREE IS PLANTED WITHIN 7 FEET FROM ANY ROADWAY, SIDEWALK OR PUBLIC UTILITY.
2. VERIFY THE LOCATIONS OF EXISTING TREES, LAWNS, AND SHRUBS. REMOVE EXTRANEOUS MATERIALS SUCH AS ROCKS, BRANCHES, BUILDING MATERIALS OR UNACCEPTABLE SOILS PRIOR TO PLANTING SOD, TREES, AND SHRUBS.
3. CONTRACTOR SHALL BECOME ACQUAINTED WITH THE RELATED PAVING, SITE GRADING, AND ALL UTILITIES TO PRECLUDE ANY MISUNDERSTANDINGS AND ENSURE A TROUBLE FREE INSTALLATION.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEAN UP OF PREMISES AND REMOVAL OF ALL DISCARDED AND SURPLUS MATERIALS, AND RUBBISH.
5. THE EXACT LOCATION OF ALL EXISTING STRUCTURES, UNDERGROUND UTILITIES, AND PIPES MAY NOT BE AS INDICATED ON DRAWINGS; THE CONTRACTOR SHALL DETERMINE THE LOCATION OF THESE ITEMS AND SHALL CONDUCT HIS WORK IN A MANNER TO PREVENT INTERRUPTION OR DAMAGE TO EXISTING SYSTEMS WHICH MUST REMAIN OPERATIONAL. THE CONTRACTOR SHALL PROTECT EXISTING STRUCTURES AND UTILITY SERVICE WHICH MUST REMAIN OPERATIONAL AND SHALL BE RESPONSIBLE FOR THEIR REPLACEMENT IF DAMAGED.
6. AREAS NOT LANDSCAPED WILL BE SODDED.
7. REFER TO DEMOLITION PLAN (SHEET 3 OF 11) FOR ANY TREES TO BE REMOVED.
8. THERE SHALL BE 3' MINIMUM CLEARANCE FROM LANDSCAPE PLANTS TO THE EDGE OF THE METERS.

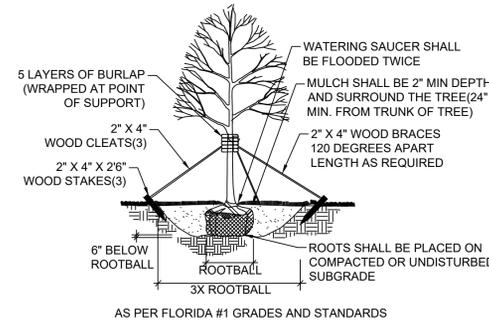
**IRRIGATION NOTES:**

1. THE LANDSCAPE AREAS OF THE ENTIRE PROJECT SHALL BE IRRIGATED WITH AN AUTOMATIC IRRIGATION SYSTEM WITH A CONTROLLER SET TO CONSERVE WATER. A MOISTURE DETECTION DEVICE SHALL BE INSTALLED TO OVERRIDE THE SPRINKLER ACTIVATION MECHANISM DURING PERIODS OF INCREASED RAINFALL. THE RAIN SENSOR SHALL BE POSITIONED SO THAT IT WILL RECEIVE DIRECT RAINFALL AND NOT BE IMPEDED BY ANY OTHER OBJECTS. ALL REQUIRED IRRIGATION SYSTEMS SHALL BE LAID OUT SO THAT WATER IS NOT APPLIED TO IMPERVIOUS SURFACES, INCLUDING ROADS, DRIVEWAYS AND OTHER IMPERVIOUS SURFACES. REQUIRED IRRIGATION SHALL NOT IMPACT EXISTING NATIVE VEGETATION THAT WILL BE RETAINED ON THE DEVELOPMENT SITE. "RAINBIRD" IRRIGATION SUPPLIES OR EQUAL SHALL BE UTILIZED. ALL LANDSCAPE AREAS, INCLUDING PARKING ISLANDS WILL BE ADEQUATELY SLEEVED FOR IRRIGATION.

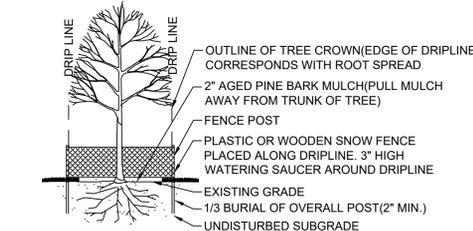
- (i) IF DRY DETENTION AREAS ARE PLANTED WITH NATIVE CLUMP GRASSES IN LIEU OF SOD OR SEEDING, THEN THE PLANTS MUST BE A MINIMUM ONE-GALLON CONTAINER SIZE PLANTED THREE-FOOT ON CENTER.

**(j) CREDITS:**

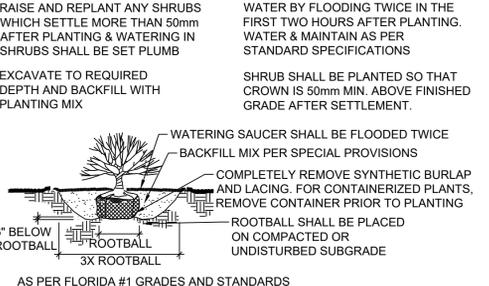
- (1) EXCEPT FOR PROHIBITED INVASIVE EXOTIC SPECIES AS LISTED ABOVE, EVERY CONSIDERATION MUST BE GIVEN TO RETAINING AS MUCH OF THE EXISTING PLANT MATERIAL AS POSSIBLE.
- (2) EACH EXISTING INDIGENOUS NATIVE TREE PRESERVED IN PLACE, WHICH HAS A TRUNK DIAMETER OF FOUR INCHES OR GREATER MEASURED AT FOUR AND ONE-HALF FEET ABOVE THE GROUND (DBH) WILL RECEIVE A CREDIT OF FIVE TREES AGAINST THE GENERAL LANDSCAPE REQUIREMENTS. NATIVE PALMS PRESERVED IN PLACE THAT ARE EIGHT FEET OR GREATER FROM GROUND LEVEL TO BASE OF FRONDS, WILL RECEIVE A CREDIT OF THREE TREES. EXISTING SABAL PALMS, IDENTIFIED ON THE DEVELOPMENT ORDER PLANS THAT ARE RELOCATED ON SITE WILL BE GIVEN A TWO TREE CREDIT. CREDITS FOR EXISTING TREES MAY NOT BE USED TO REDUCE THE REQUIRED PARKING CANOPY TREES IN PARKING OR VEHICLE USE AREAS. EXISTING NATIVE TREES IN BUFFERS MAY BE USED FOR CREDIT PROVIDED THEY OCCUR WITHIN THE REQUIRED 100-FOOT BUFFER SEGMENT. CREDITS WILL APPLY ONLY WHEN THE TREES ARE LABELED AS PROTECTED-CREDIT TREES. IF THE PROTECTED-CREDIT TREES DIE WITHIN THREE YEARS FROM THE DEVELOPMENT ORDER CERTIFICATE OF COMPLIANCE, THEY MUST BE REPLACED BY THE NUMBER OF CREDIT TREES TAKEN.
- (3) CREDITS WILL APPLY WHERE THE PRESERVED TREE IS IN A BARRICADED AREA AT LEAST TWO-THIRDS THE RADIUS OF THE CROWN SPREAD OF THE TREE MEASURED FROM THE TRUNK CENTER. IN NO CASE MAY THIS AREA RADIUS BE LESS THAN TWO AND ONE-HALF FEET. FOR INDIGENOUS NATIVE PINE TREES, THE BARRICADED AREA MAY BE NO LESS THAN THE FULL CROWN SPREAD OF THE TREE, UNLESS OTHER MEASURES SUCH AS TIE-WALLS OR SPECIAL SLOPE TREATMENT ARE CONSTRUCTED FOR ADDITIONAL PROTECTION. PRIOR TO THE LAND CLEARING STAGE OF DEVELOPMENT, THE OWNER, DEVELOPER OR AGENT MUST ERECT PROTECTIVE BARRIERS THAT ARE AT MINIMUM MADE OF THREE-FOOT HIGH SILT FENCE, THREE-FOOT HIGH ORANGE CONSTRUCTION FENCE OR APPROVED ALTERNATIVE BARRICADING MATERIAL. FOR ALL NATIVE, INDIGENOUS OPEN SPACE AREAS, INCLUDING SHRUBS AND GROUND COVER, BARRICADES MUST BE ERECTED AROUND THE PERIMETER OF THE VEGETATION. THE OWNER, DEVELOPER OR AGENT MAY NOT CAUSE OR PERMIT THE MOVEMENT OF EQUIPMENT OR THE STORAGE OF EQUIPMENT, MATERIAL, DEBRIS OR FILL TO BE PLACED WITHIN THE REQUIRED PROTECTIVE BARRIER. THE PROTECTED TREES MUST REMAIN ALIVE AND HEALTHY AT THE END OF THE CONSTRUCTION IN ORDER FOR THIS CREDIT TO APPLY.
- (4) A TREE LOCATION PLAN MUST BE SUBMITTED WHEN GENERAL TREES LOCATED WITHIN A DESIGNATED PRESERVE ARE BEING CLAIMED FOR CREDIT. THE TREE LOCATION PLAN MUST INCLUDE SPECIFIC INFORMATION ABOUT ALL TREES THAT ARE BEING PRESERVED FOR CREDIT WITHIN THE ENTIRE DEVELOPMENT FOOTPRINT. THE TREE LOCATION PLAN MUST: (1) BE AT THE SAME SCALE AS THE SITE PLAN; (2) SHOW THE LOCATION OF TREES TO BE SAVED; (3) STATE THE CALIPER FOR EACH TREE (FOUR-INCH MINIMUM CALIPER MEASURED AT FOUR AND ONE-HALF FEET ABOVE GROUND LEVEL); AND (4) IDENTIFY THE SPECIES OF EACH TREE.



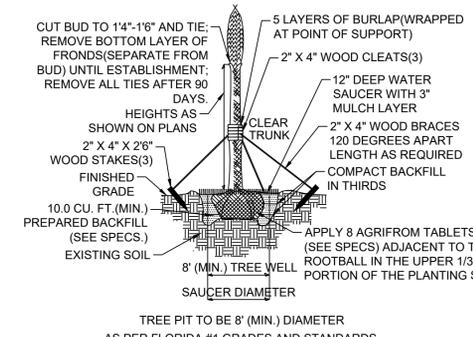
1 DECIDUOUS TREE PLANTING



2 TREE PROTECTION

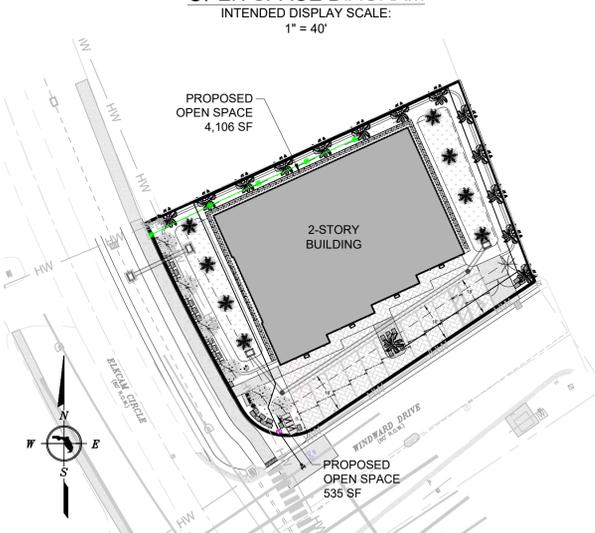


3 SHRUB PLANTING



4 PALM PLANTING AND STAKING

**OPEN SPACE DIAGRAM**



**LAND USE TABLE (PROPOSED)**

Category	Area (SF)	Area (AC)	Percentage
BUILDING	7,151 SF	0.16 AC	40.95%
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<b>TOTAL</b>	<b>17,463 SF</b>	<b>0.40 AC</b>	<b>100.00%</b>

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NOT FOR CONSTRUCTION

**CALL 48 HOURS BEFORE YOU DIG**

**IT'S THE LAW! DIAL 811** Know what's below. Call before you dig.

SUNSHINE STATE ONE CALL OF FLORIDA, INC.

**NOTES:**  
ALL EXISTING (SURVEY) & ALL PROPOSED GRADE ELEVATIONS & CONTOURS SHOWN REFER TO N.A.S.D. 88 CONVERSION (N.G.V.D. 1929 - 1.30' = N.A.V.D. 1988).  
THESE PLANS MAY HAVE BEEN REDUCED OR INCREASED IN SIZE BY REPRODUCTIONS. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

PROJECT: 23-164

DATE: 03/24

ANDRES BORAL, P.E. MEA  
LICENSE # 80373, F.P.E.# 31552  
711 5TH AVE SOUTH, SUITE 209, NAPLES FL 34102  
ANDRES@BORALENGINEERING.COM  
(P) 239-692-0509

**BORAL**  
ENGINEERING  
WWW.BORALENGINEERING.COM

OWNER:  
BRTL PROPERTY, LLC  
10000 W. WINDWARD DRIVE  
MARCO ISLAND, FLORIDA 34145

REVISION DESCRIPTION  
BY: REVISION DATE: REVISION PER: 2ND ROUND CITY COMMENTS

**ELKCAM WAREHOUSE**  
805 E. ELKCAM CIRCLE  
CITY OF MARCO ISLAND,  
FLORIDA 34145

**LANDSCAPE, IRRIGATION  
AND OPEN SPACE PLAN**

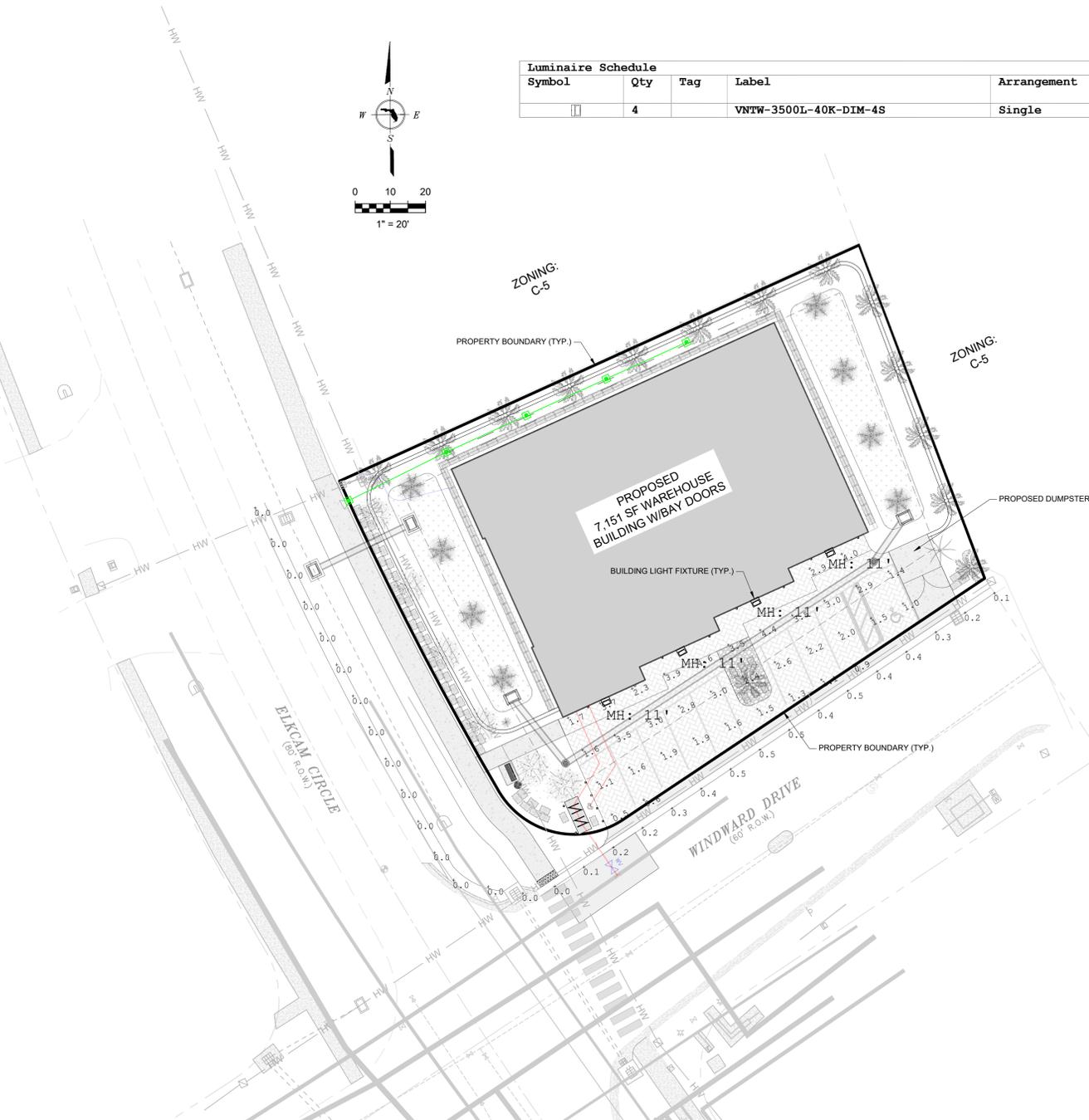
**SHEET  
16 OF 18**

**NOTES:**

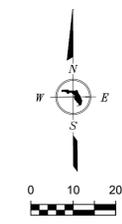
- THIS LIGHTING DESIGN IS BASED ON LIMITED INFORMATION SUPPLIED BY OTHERS TO THE LIGHTING MANUFACTURER. SITE DETAILS PROVIDED HEREON ARE REPRODUCED ONLY AS A VISUALIZATION AID. FIELD DEVIATIONS MAY SIGNIFICANTLY AFFECT PREDICTED PERFORMANCE. PRIOR TO INSTALLATION, CRITICAL SITE INFORMATION (POLE LOCATIONS, ORIENTATION, MOUNTING HEIGHT, ETC.) SHOULD BE COORDINATED WITH THE CONTRACTOR AND/OR SPECIFIER RESPONSIBLE FOR THE PROJECT.
- LUMINAIRE DATA IS TESTED TO INDUSTRY STANDARDS UNDER LABORATORY CONDITIONS. OPERATING VOLTAGE AND NORMAL MANUFACTURING TOLERANCES OF LAMP, BALLAST, AND LUMINAIRE MAY AFFECT FIELD RESULTS.
- CONFORMANCE TO FACILITY CODE AND OTHER LOCAL REQUIREMENTS IS THE RESPONSIBILITY OF THE OWNER AND/OR THE OWNER'S REPRESENTATIVE.
- BORAL ENGINEERING & DESIGN, INC. IS NOT RESPONSIBLE FOR THE PHOTOMETRIC CALCULATIONS SHOWN ON THIS SITE LIGHTING PLAN. LAMP LUMENS, UNIFORMITY RATIOS AND FOOT CANDLES CALCULATIONS ON THIS SITE LIGHTING PLAN HAVE BEEN PROVIDED BY THE LIGHTING MANUFACTURER.
- THESE PLANS MAY HAVE BEEN REDUCED OR INCREASED IN SIZE BY REPRODUCTION(S). THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.
- ANY EXTERIOR LIGHTING SHALL BE DIRECTED TO THE INTERIOR OF THE PARCEL. OUTDOOR LIGHTING OR FIXTURES ON POLES, BUILDINGS AND ELSEWHERE OUTSIDE, SHALL HAVE FULL-HORIZONTAL CUT OFF OPTICS.
- PARKING LOT ACTIVITY LEVEL IS ANTICIPATED TO BE LOW FOR BOTH VEHICULAR & PEDESTRIAN TRAFFIC, SIMILAR TO A NEIGHBORHOOD SHOPPING EXPERIENCE.
- THE MOUNTING HEIGHT OF THE BUILDING MOUNTED FIXTURES ARE LESS THAN 25' ABOVE FINISH FLOOR ELEVATION AND LOWER THAN THE PARAPET.
- CONTROLS SHALL BE PROVIDED THAT AUTOMATICALLY EXTINGUISH ALL OUTDOOR LIGHTING WHEN SUFFICIENT DAYLIGHT IS AVAILABLE USING A CONTROL DEVICE OR SYSTEM SUCH AS A PHOTOELECTRIC SWITCH, ASTRONOMIC TIME SWITCH, OR EQUIVALENT FUNCTIONS FROM A PROGRAMMABLE LIGHTING CONTROLLER, BUILDING AUTOMATION SYSTEM, OR LIGHTING ENERGY MANAGEMENT SYSTEM, ALL WITH BATTERY OR SIMILAR BACKUP POWER OR DEVICE.

**NOTES BY LIGHTING MANUFACTURER:**

- NO LIGHT LOSS FACTOR HAS BEEN USED IN THIS PHOTOMETRIC DESIGN.
- ALL FIXTURES ARE COMPLIANT WITH THE FLAT LENS AND "LESS THAN 85 DEGREE CUTOFF" RULE.
- POLE HEIGHTS ARE COMPLIANT WITH THE HEIGHT RESTRICTION AS IT APPLIES TO THIS PROPERTY.



Luminaire Schedule									
Symbol	Qty	Tag	Label	Arrangement	LLF	Luminaire Lumens	Luminaire Watts	Total Watts	
[Symbol]	4		VNTW-3500L-40K-DIM-4S	Single	1.000	3153	19.4	77.6	



Luminaire Tag Summary	
Tag	Qty
	4



**NO SUBSTITUTIONS STATEMENT:**  
1. MODEL NUMBERS SHOWN HEREON ARE AVAILABLE AT THE TIME OF THIS PRODUCTION. NO SUBSTITUTIONS ARE PERMITTED. IF AT THE TIME OF CONSTRUCTION, THE EXACT MODEL IS NOT AVAILABLE, THE CONTRACTOR SHALL CONTACT THE ENGINEER OF RECORD FOR REVISIONS TO THIS PLAN.

**CONTACTS FOR PROJECT QUOTE:**  
KEN IRWIN  
KIRWIN@CLSF.COM  
727-967-4208 CELL  
JEFF VINACHI  
JVINACHI@CLSF.COM  
727-638-9349 CELL

APPROVAL SUBMITTAL PLANS  
FOR CONSTRUCTION

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Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
CalcPts_1	ILLUMINANCE	Fc	2.33	4.6	0.5	4.66	9.20
PL	ILLUMINANCE	Fc	0.16	0.5	0.0	N.A.	N.A.

**IRRIGATION NOTES**

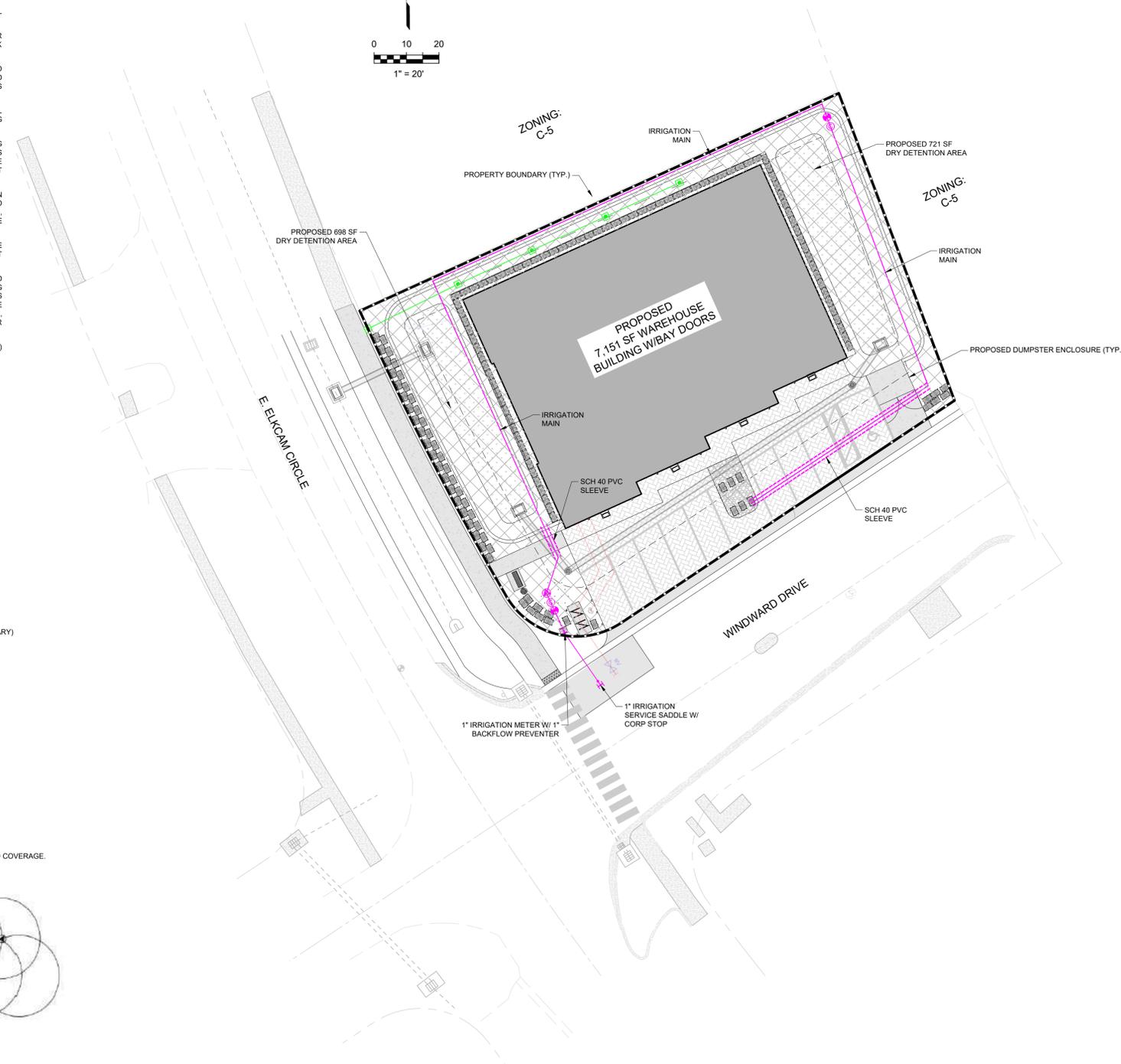
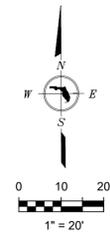
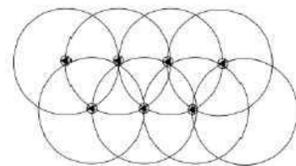
- THIS IRRIGATION PLAN IS SCHEMATIC AND IS FOR THE PURPOSE OF PERMITTING ONLY.
- SUBSTITUTIONS MUST BE APPROVED BY THE OWNER.
- ALL CIRCUIT PIPE IS TO BE CLASS 160 PVC OR A HIGHER GRADE
- ALL MAIN FITTINGS TO BE REINFORCED WITH 2000 PSI POURED CONCRETE THRUST BLOCKS.
- ALL PIPE AND CONTROL LINES TO BE SLEEVED WITH SLEEVED SCHEDULE 40 PVC AND PLACED A MINIMUM OF 24" BELOW GRADE AND BACKFILLED WITH CLEAN SAND.
- IT IS THE CONTRACTOR'S RESPONSIBILITY FOR THE WORK UNTIL FINAL ACCEPTANCE IS GIVEN BY THE OWNER.
- ONCE FINAL ACCEPTANCE IS GIVEN BY THE OWNER, A ONE (1) YEAR GUARANTEE OF THE CONTRACTOR'S QUALITY OF MATERIAL AND WORK BEGINS.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO ADJUST THE HEAD LOCATION, TYPE AND SIZE AND ANY OTHER SYSTEM COMPONENTS TO COMPLY WITH THE REQUIREMENTS OF LANDSCAPE PLANTING AS INSTALLED.
- THE CONTRACTOR TO PROVIDE AS-BUILT DRAWINGS, SHOWING ALL HEADS, VALVES, AND PIPE LINES TO SCALE AFTER COMPLETION OF PIPING INSTALLATION.
- THE CONTRACTOR TO MAKE THE EFFORT TO PRESERVE ALL EXISTING PLANT MATERIAL THAT HAS BEEN TAGGED. IF ANY PLANT MATERIAL IS WITHIN THE PATH OF TRENCHING, THE PIPE OR HAND TRENCH TO BE REROUTED AS NECESSARY. CONTRACTOR TO RESTORE ANY NEW PLANT MATERIAL OR SOD TO ITS ORIGINAL CONDITION.
- THE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTING THE SYSTEM IN COMPLETE ACCORDANCE WITH ALL APPLICABLE CODES ORDINANCES AND LAWS. ANY MODIFICATION MADE TO CONFORM WITH ANY CODES, LAWS, AND ORDINANCES TO BE COMPLETED AT THE CONTRACTOR'S EXPENSE WITH NO ADDITIONAL COST TO THE OWNER.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO FULLY EXAMINE THE SITE AND FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS SO THAT ANY AND ALL MISUNDERSTANDINGS CAN BE AVOIDED.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE A COMPLETE AND OPERABLE SYSTEM FOR THE IRRIGATION OF ALL LANDSCAPE PLANTING ON SITE. PLANS AND SPECIFICATIONS MAY NOT INDICATE ALL ITEMS NECESSARY FOR THE PROPER IRRIGATION OF THE PROJECT AND THE CONTRACTOR HOLD THE RESPONSIBILITY FOR FURNISHING LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR A COMPLETE AND PROPER PROJECT.
- IRRIGATION SYSTEMS SHALL BE DESIGNED FOR THE (SEPARATION) ZONING OF HIGH AND LOW WATER USE AREAS.

**EQUIPMENT LIST**

- AUTOMATIC CONTROL VALVE
- ⊙ COUNTY APPROVED AUTOMATIC IRRIGATION CONTROLLER
- COUNTY APPROVED RAIN SENSOR (FINAL LOCATION MAY VARY)
- 1.5" SDR 21, CLASS 200 MAIN PIPE
- (2) 4" SCHEDULE 40 PVC SLEEVES
- ▨ IRRIGATION AREA (ALL PERVIOUS AREAS TO BE IRRIGATED)

**COVERAGE DETAIL**

- RAIN SENSOR TO BE INSTALLED ON THE IRRIGATION SYSTEM.
- IRRIGATION HEADS TO BE PLACED SO THAT THEY PROVIDE HEAD-TO-HEAD COVERAGE.



**LAND USE TABLE (PROPOSED)**

	SF	AC	%
BUILDING	7,151 SF	0.16 AC	40.95%
CONCRETE	455 SF	0.01 AC	2.61%
PERVIOUS PAVER	3,315 SF	0.08 AC	18.98%
DRY DETENTION	1,924 SF	0.04 AC	11.02%
OPEN SPACE	4,618 SF	0.11 AC	26.44%
<b>TOTAL</b>	<b>17,463 SF</b>	<b>0.40 AC</b>	<b>100.00%</b>

**ANTICIPATED IRRIGATION WATER DEMAND (PROPOSED)**

NET PERVIOUS AREA (SF)	IRRIGATION DAYS PER WEEK	INCHES OF IRRIGATION PER DAY
1,647	7.48	12.317
CUBIC FEET OF IRRIGATION WATER PER WEEK	GALLONS PER CUBIC FOOT	GALLONS OF IRRIGATION WATER PER WEEK

**GENERAL NOTES**

- CONTRACTOR TO VERIFY IRRIGATION SLEEVE LOCATION AND ADD NEW CONNECTION AS SHOWN.
- NO WATER IS TO BE SPRAYED ON ROAD, SIDEWALK, OR ADJACENT PROPERTY. ARC AND RADIUS OF SPRINKLERS TO BE ADJUSTED AS NEEDED.
- CONTRACTOR TO FIELD ADJUST ANY DISTURBED IRRIGATION.

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