GENERAL NOTES

- 1. EXISTING ZONING PD-G
- . UNDERGROUND UTILITY LOCATIONS AS FIELD MARKED BY THE FOLLOWING COMPANIES OR THEIR REPRESENTATIVES: FLORIDA POWER & LIGHT COMPANY 3000 SPRUCE CREEK ROAD PORT ORANGE, FL. 32129 (386) 322-3425 AT&T 900 N. NOVA ROAD DAYTONA BEACH, FL. 32117 (386) 257-7950 1475 S. NOVA ROAD SPECTRUM

DAYTONA BEACH, FL. 32114 TECO PEOPLES GAS HOLLY HILL, FL. 32117 CITY OF DAYTONA BEACH DAYTONA BEACH, FL. 3211

950 BELLEVUE ROAD

3. LOCATIONS OF EXISTING UTILITIES ARE SHOWN BASED ON AVAILABLE DATA. 4. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT LOCATION OF EXISTING UTILITIES AND TO DETERMINE IF OTHER UTILITIES WILL BE ENCOUNTERED DURING THE COURSE OF THE WORK AND TAKE WHATEVER STEPS NECESSARY TO PROVIDE FOR THEIR PROTECTION (I.E. SHEETING, DE-WATERING, ETC.). CONTRACTOR TO NOTIFY DESIGN ENGINEER OF ANY DISCREPANCIES OR CONFLICTS.

(386) 760-9941

(386) 527-8377

(386) 671-8635

1722 RIDGEWOOD AVE

- CONTRACTOR TO COORDINATE DEMOLITION AND CONSTRUCTION WITH ALL PUBLIC AND PRIVATE UTILITY COMPANIES TO AVOID CONFLICTS AND/OR INTERRUPTIONS OF SERVICE. 5. CONTRACTOR TO PROVIDE AS BUILT DRAWINGS OF ALL IMPROVEMENTS
- ON 24" X 36" MYLAR, SIGNED AND SEALED BY A FLORIDA REGISTERED LAND SURVEYOR.
- 6. THERMOPLASTIC STRIPING AND TRAFFIC CONTROL SIGNAGE TO MEET FDOT AND CITY OF DAYTONA BEACH SPECIFICATIONS. 7. TRAFFIC CONTROL SIGNS TO BE IN ACCORDANCE WITH F.D.O.T. STANDARD
- SPECIFICATIONS . ALL STOP SIGNS, SPEED LIMIT AND STREET SIGNS REQUIRED TO BE PROVIDED BY DEVELOPER TO CITY OF DAYTONA BEACH SPECIFICATIONS. 8. ALL TRAFFIC CONTROL SIGNS SHALL BE FABRICATED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES USING 3M BRAND "SCOTCHLIGHT" SHEETING (ENGINEER GRADE) ON MINIMUM 0.080 GAUGE 5052-H38 ALUMINUM BLANKS. ALL STOP SIGNS SHALL BE HIGH INTENSITY 30" OR 36" OCTAGON INSTALLED ON 3" x 12' ROUND ALUMINUM POSTS. ALL WARNING SIGNS SHALL BE 30" x 30".
- 9. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS AND/OR LICENSES TO COMMENCE CONSTRUCTION.
- 10. ALL CONCRETE SHALL DEVELOP A 28-DAY COMPRESSIVE STRENGTH OF 3,500 PSI UNLESS OTHERWISE NOTED.
- 11. THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE, AT ALL TIMES, ONE COPY OF PLANS, SPECIFICATIONS, AND COPIES OF ANY REQUIRED CONSTRUCTION PERMITS.
- 12. CONTRACTOR IS RESPONSIBLE FOR CHECKING ACTUAL SITE CONDITIONS BEFORE STARTING CONSTRUCTION. 13. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE BROUGHT TO THE
- ATTENTION OF THE ENGINEER BEFORE COMMENCING WORK.
- 14. NO FIELD CHANGES OR DEVIATIONS FROM DESIGN TO BE MADE WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- 15. "NO CONSTRUCTION ON THE PROPOSED PORTIONS OF THIS PROJECT MAY COMMENCE UNTIL A MANDATORY PRE-CONSTRUCTION MEETING IS HELD WITH THE CITY, AS STATED IN THE APPROVED DEVELOPMENT ORDER FROM THE CITY OF DAYTONA BEACH. ANY CESSATION OF CONTINUOUS ON-GOING CONSTRUCTION ON THIS PROJECT OF 90 DAYS OR MORE SHALL TRIGGER A REQUIREMENT FOR ANOTHER PRE CONSTRUCTION MEETING BE HELD WITH THE CITY PRIOR TO CONTINUATION OF THE CONTINUING CONSTRUCTION.
- 16. PLEASE NOTE THAT THE CONTRACTOR SHALL PATCH AND REPAIR ALL EXISTING PAVING, CURBS, SIDEWALKS, SOD, PLANTS, ETC. THAT ARE DAMAGED DURING CONSTRUCTION ACTIVITIES. 7. CONTRACTOR SHALL ENGAGE A QUALIFIED TESTING AND INSPECTION AGENCY TO PERFORM CORE TESTING TO CONFIRM THAT THE INTERIOR CONCRETE
- FLOORS AND EXTERIOR PAVING THICKNESS COMPLIES WITH THE SPECIFICATIONS. CONCRETE SHALL RECEIVE 1 CORE PER 25,000 SF; CAR PARKING STALLS SHALL RECEIVE 1 CORE PER 75 STALLS; HEAVY DUTY ASPHALT CIRCULATION/FIRE LANES SHALL RECEIVE 1 CORE PER EVERY 600 LF.
- 18. ADDRESS NUMBERS SHALL BE ARABIC NUMERALS. NUMBERS SHALL BE IN A COLOR CONTRASTING WITH THE STRUCTURE OR BACKGROUND SURFACE, AND NOT LESS THAN SIX (6) INCHES IN HEIGHT.
- 19. THE ADDRESS NUMBERS SHALL BE AFFIXED HORIZONTALLY IN A CONSPICUOUS PLACE ON THE PRINCIPAL BUILDING SO THAT THE NUMBER IS CLEARLY LEGIBLE FROM THE ROADWAY ON WHICH IT IS ADDRESSED.
- 20. CONTRACTOR SHALL EITHER CONDUCT ANY FIELD EXPLORATION OR ACQUIRE ANY GEOTECHNICAL ASSISTANCE REQUIRED DURING THE BID PROCESS TO ESTIMATE THE AMOUNT OF UNSUITABLE MATERIAL THAT WILL BE REQUIRED TO BE REMOVED/REPLACED FROM SITE.
- UNSUITABLE MATERIALS UNDER UTILITIES, STORM PIPING, STRUCTURES, PAVEMENT, BUILDING PADS, OR HARDSCAPE SHALL BE REMOVED AND REPLACED WITH SELECTED BACKFILL. ALL DEBRIS RESULTING FROM ALL ACTIVITIES SHALL BE DISPOSED OF OFF-SITE BY CONTRACTOR.
- THE COST OF OBTAINING THE NECESSARY STATE AND LOCAL BUILDING/SITE PERMITS REQUIRED FOR THE BUILDING CONSTRUCTION AS WELL AS ALL UTILITY TAP FEES SHALL BE PAID BY THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR ALL REPORTING/MONITORING AS REQUIRED BY SJRWMD AND FOLLOWING THE BEST EROSION AND SEDIMENT CONTROL PRACTICES AS OUTLINED IN THE PLANS, SPECIFICATIONS, AND SJRWMD.
- CONTRACTOR SHALL SWEEP AND CLEAN THE PUBLIC ROADWAY DURING CONSTRUCTION. THE GENERAL CONTRACTOR SHALL CLEAR, STRIP, EXCAVATE, FILL, AND ROUGH AND FINE GRADE THE SITE TO ACCOMPLISH BUILDING CONSTRUCTION AND PROPER STORM WATER DRAINAGE FROM THE SITE. ANY EXCESS CUT AND EXCESS SPOILS AND UNSUITABLE SOILS AND RUBBLE MUST BE REMOVED FROM THE SITE. ALL NECESSARY FILL MATERIAL SHALL BE PLACED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT TESTING & INSPECTIONS: PLEASE NOTE THAT A FIELD-TESTING AND INSPECTIONS PROGRAM FOR QUALITY

CONTROL DURING THE COURSE OF THE PROJECT SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL INCLUDE, BUT NOT BE LIMITED TO SOILS, CONCRETE, STRUCTURAL STEEL, FIREPROOFING, WATERPROOFING (INCLUDING ROOFING, CAULKING, GLAZING, ETC.). CONTRACTOR SHALL INSTALL AND MAINTAIN DEWATERING WHERE REQUIRED IN ACCORDANCE WITH

ALL CODES AND LAWS. 21. ALL SIDEWALKS INCLUDING THROUGH DRIVEWAY TO BE EQUAL OR LESS THAN 2% CROSS SLOPE AND MEET ALL OTHER ADA REQUIREMENTS.





SOILS/AERIAL MAP 54 – QUARTZIPSAMMENTS, GENTLY SLOPING

EMBRY-RIDDLE AERONAUTICAL UNIVERSITY PRIMT SHO

SITE PLAN DAYTONA BEACH, FLORIDA DEV 2019-

VICINITY MAP

PARKER MYNCHENBERG & ASSOCIATES, INC. PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS 1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117

(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com CERTIFICATE OF AUTHORIZATION NUMBER: 00003910

SITE INFORMATION:

ADDRESS: 915 SOUTH CLYDE MORRIS BLVD. DAYTONA BEACH, FLORIDA 32114 TAX PARCEL NUMBER: 5239-00-00-0900 SECTION: 39 TOWNSHIP: 15S RANGE: 33E EXISTING ZONING: SFR-5 EXISTING FLUM: GENERAL INDUSTRIAL

OWNER:

EMBRY-RIDDLE AERONAUTICAL UNIVERSITY 600 SOUTH CLYDE MORRIS BLVD. DAYTONA BEACH, FLORIDA 32114 PHONE: (386) 226-6512 EMAIL: Chris.Hardesty@erau.edu

PARKER MYNCHENBERG & ASSOCIATES, INC. 1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117 PHONE: (386) 677-6891

<u>SURVEYOR</u>

SLIGER & ASSOCIATES, INC. JOSEPH E. ZAPERT, P.L.S., PRESIDENT 3921 NOVA ROAD PORT ORANGE, FL 32127 PHONE: (386) 761-5385 EMAIL: info@sligerassociates.com

FLOOD ZONE:

NUMBER 12127C0366 H, DATED FEB. 19, 2014

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NOTE:

NO CONSTRUCTION ON THE PROPOSED PORTIONS OF THIS PROJECT MAY COMMENCE UNTIL A MANDATORY PRE CONSTRUCTION MEETING IS HELD WITH THE CITY, AS STATED IN THE APPROVED DEVELOPMENT ORDER FROM THE CITY OF DAYTONA BEACH. ANY CESSATION OF OR MORE SHALL TRIGGER A REQUIREMENT FOR ANOTHER PRE OF THE CONTINUING CONSTRUCTION.



LEGAL DESCRIPTION PROVIDED BY CLIENT

THE FOLLOWING LANDS LYING IN VOLUSIA COUNTY, FLORIDA:

A PARCEL OF LAND IN THE SAMUEL WILLIAMS GRANT, SECTION 39, TOWNSHIP 15 SOUTH, RANGE 33 EAST, DESCRIBED AS FOLLOWS: BEGIN AT THE NORTHWEST CORNER OF THE BETHUNE GRANT, SECTION 40, TOWNSHIP 15 SOUTH, RANGE 33 EAST, BEING ON THE SOUTH LINE OF THE SAMUEL WILLIAMS GRANT, SECTION 39, SAID TOWNSHIP AND RANGE AND RUN SOUTH 64'55'25" WEST, ALONG SAID SOUTH LINE OF THE SAMUEL WILLIAMS GRANT, 569.01 FEET; THENCE NORTH 02'09'50" WEST, 542.83 FEET; THENCE NORTH 64'55'25" EAST, 359.04 FEET; THENCE SOUTH 25'22'05" EAST, 500.01 FEET TO THE SOUTH LINE OF SAID SAMUEL WILLIAMS GRANT; THENCE SOUTH 64'55'25" WEST 3.92 FEET TO THE POINT OF BEGINNING: LESS AND EXCEPT A PARCEL OF LAND IN THE SAMUEL WILLIAMS GRANT, SECTION 39, TOWNSHIP 15 SOUTH, RANGE 33 EAST, DESCRIBED AS FOLLOWS: COMMENCE AT THE NORTHWEST CORNER OF THE BETHUNE GRANT, SECTION 40, TOWNSHIP 15 SOUTH, RANGE 33 EAST, BEING ON THE SOUTH LINE OF THE SAMUEL WILLIAMS GRANT, SECTION 39. SAID TOWNSHIP AND RANGE, AND RUN SOUTH 64"55"25" WEST ALONG SAID SOUTH LINE OF THE SAMUEL WILLIAMS GRANT 569.01 FEET: THENCE NORTH 02'09'50" WEST 542.83 FEET; THENCE NORTH 64'55'25" EAST 3 FEET FOR A POINT OF BEGINNING: FROM SAID POINT OF BEGINNING CONTINUE NORTH 64'55'25" EAST 553.04 FEET: THENCE SOUTH 25'22'05"EAST 75 FEET; THENCE SOUTH 64'55'25"EAST 585.12 FEET; THENCE NORTH 02'09'50" WEST 81.42 FEET TO THE POINT OF BEGINNING.

A PORTION OF THE SAMUEL WILLIAMS GRANT, BEGINNING AT A POINT ON THE DAYTONA-DELAND ROAD (BELLEVUE ST.) AT THE NORTHWEST CORNER OF THE NEGRO CEMETERY: THENCE IN A SOUTHERLY DIRECTION ALONG THE WEST LINE OF SAID CEMETERY LOT A DISTANCE OF EIGHT HUNDRED TWENTY-FIVE (825) FEET, MORE OR LESS, TO THE SOUTH SIDE OF SAMUEL WILLIAMS GRANT; THENCE WESTERLY ALONG SOUTH LINE OF SAID SAMUEL WILLIAMS GRANT TWO HUNDRED (200) FEET; THENCE NORTHERLY ON A LINE PARALLEL TO SAID WEST LINE OF SAID CEMETERY LOT EIGHT HUNDRED TWENTY-FIVE (825) FEET, MORE OR LESS, TO THE SOUTH SIDE OF SAID DAYTONA-DELAND ROAD TWO HUNDRED (200) FEET TO THE POINT OF BEGINNING, AND BEING IN SECTION 39, TOWNSHIP 15 SOUTH, RANGE 33 EAST. LESS AND EXCEPT A PORTION OF THE SAMUEL WILLIAMS GRANT, SECTION 39, TOWNSHIP 15 SOUTH, RANGE 33 EAST, BEGINNING ON THE DAYTONA-DELAND ROAD (BELLEVUE STREET) AT THE NORTHWEST CORNER OF THE NEGRO CEMETERY, THENCE SOUTH 25 22 05" EAST ALONG THE WEST LINE OF SAID CEMETERY LOT A DISTANCE OF 468.4 FEET; THENCE SOUTH 64'55'25" WEST AND PARALLEL TO THE SOUTH LINE OF SAID GRANT A DISTANCE OF 200 FEET. THENCE NORTH 25'22'05" WEST TO A POINT WHICH IS 200 FEET SOUTH 25'22'05" EAST FROM THE SOUTHERLY RIGHT OF WAY LINE OF SAID DAYTONA-DELAND ROAD; THENCE NORTHEASTERLY AND PARALLEL TO SAID ROAD A DISTANCE OF 150 FEET: THENCE NORTH 25°22'05" WEST 200 FEET TO THE SOUTHERLY RIGHT OF WAY LINE OF SAID DAYTONA-DELAND ROAD: THENCE NORTH 60'44'20 EAST ALONG SAID RIGHT OF WAY LINE 50 FEET TO THE POINT OF BEGINNING: AND LESS AND EXCEPT A PORTION OF THE SAMUEL WILLIAMS GRANT, SECTION 39, TOWNSHIP 15 SOUTH, RANGE 33 EAST, BEGINNING ON THE DAYTONA-DELAND ROAD (BELLEVUE STREET) AT A POINT 50 FEET WESTERLY FROM THE NORTHWEST CORNER OF THE NEGRO CEMETERY. THENCE RUN SOUTHERLY PARALLEL TO THE WEST LINE OF SAID CEMETERY 200 FEET; THENCE WESTERLY PARALLEL TO SAID ROAD 150 FEET TO THE WEST LINE OF LANDS DESCRIBED IN DEED RECORDED IN DEED BOOK 396, PAGE 392, VOLUSIA COUNTY PUBLIC RECORDS, THENCE NORTHERLY 200 FEET, THENCE EASTERLY 150 FEET TO THE POINT OF BEGINNING.

SURVEYORS NOTES

1. NOTICE: THERE MAY BE ADDITIONAL RESTRICTIONS AND/OR OTHER MATTERS THAT ARE NOT SHOWN ON THIS PLAT OF SURVEY/SKETCH OF DESCRIPTION THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY. THIS SURVEY/SKETCH OF DESCRIPTION PREPARED WITHOUT BENEFIT OF AN ABSTRACT.

- 2. DIMENSIONS ARE SHOWN IN FEET AND DECIMALS THEREOF.
- 3. BEARING STRUCTURE BASED ON STATE PLANE GRID, NAD 83 FLORIDA EAST ZONE
- 4. UNDERGROUND FOUNDATIONS, IF ANY, NOT LOCATED.

5. ELEVATIONS REFER TO N.A.V.D. 1988 PER CITY OF DAYTONA BEACH BENCHMARK MONUMENT HPR-139 HAVING A PUBLISHED ELEVATION OF 25.00' (26.18' N.G.V.D. 1929).

6. THIS PROPERTY IS LOCATED IN FLOOD INSURANCE RATE MAP (F.I.R.M.) ZONE X. THIS LOCATION IS DETERMINED BY SCALING FROM F.I.R.M. MAP NO.12127C0366H. MAP EFFECTIVE DATE: FEBRUARY 19, 2014. APPROXIMATE SCALE: 1"= 500'.

7. "NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER."

8. UNLESS OTHERWISE SHOWN, RECORD DISTANCES AND DIRECTIONS AND FIELD MEASURED DISTANCES AND DIRECTIONS ARE THE SAME.

UTILITY STATEMENT:

THE INACCESSIBLE UNDERGROUND UTILITIES SHOWN ON THIS SURVEY HAVE BEEN LOCATED FROM ABOVE GROUND FIELD UTILITY LOCATIONS PROVIDED BY SUNSHINE NETWORK, TICKET #_____ ON OR ABOUT 8-30-99 AND/OR EXISTING AS-BUILTS DRAWINGS PROVIDED BY THE CLIENT. SLIGER AND ASSOCIATES, INC. (S&A) MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED. LIKEWISE S&A DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. ONLY THAT S&A HAS LOCATED THE UTILITIES AS ACCURATELY AS POSSIBLE FROM SAID FIELD LOCATIONS AND/OR AS-BUILTS PROVIDED BY OTHERS. S&A HAS NOT PHYSICALLY LOCATED THE ACTUAL INACCESSIBLE UNDERGROUND UTILITIES, EXCEPT AS SPECIFICALLY NOTED AND DEPICTED ON THIS DRAWING.

w/	WITH	TC	TOP COVER	CONC	CONCRETE ABB	REVI	ATIONS
СМ	CONCRETE MONUMENT	WV	WATER VALVE				
тов	TOP OF BANK	TSB	TRAFFIC SIGNAL BOX		CENTRAL ANGLE	ILLEG.	
TOE	TOE OF SLOPE	FH	FIRE HYDRANT	R	RADIUS	INV	INVERT
015		WAA		L	ARC LENGTH	SEC	SECTION
013				СВ	CHORD BEARING	TWP	TOWNSHIP
SIA	STATION	LP	LIGHT POLE	СН	CHORD DISTANCE	RGE	RANGE
со	CLEANOUT	IV	IRRIGATION VALVE	FP&L CO		R/W	RIGHT OF W
SAN	SANITARY	GA	GUY ANCHOR		LIGHT COMPANY	-	
ES	ELECTRIC SERVICE	CPP	CORRUGATED PLASTIC PIPE	NGVD	NATIONAL GEODETIC	EL	ELEVATION
HDPF		DIP	DUCTUE IRON PIPE		VERTICAL DATUM	(NR)	NON RADIAL
VOD		DVO		USC & GS	UNITED STATES COAST	(R)	RADIAL
VCP	VITREOUS CLAY PIPE	PVC	POLYVINYL CHLORIDE	0	AND GEODETIC SURVEY	N&D	NAIL AND D
cv	CHECK VALVE	DW	DRIVEWAY	Ψ.	CENTERLINE	RV	REUSE VALVE

RES RESIDENCE -FC-BURIED FIBER OPTIC CABLE - T - BURIED TELEPHONE LINE - W- BURIED WATER LINE - E - BURIED ELECTRIC LINE - G - BURIED GAS LINE -TV- BURIED TELEVISION LINE -FM-BURIED FORCE MAIN AERIAL UTILITY LINE PLATTED DIMENSION —он— DEEDED DIMENSION MEASURED DIMENSION CALCULATED DIMENSION FDOT FLORIDA DEPARTMENT OF TRANSPORTATION REC RECOVERED

IRC IRON ROD & CAP IPC IRON PIPE & CAP MES MITERED END SECTION RCP REINFORCED CONCRETE PIPE CMP CORRUGATED METAL PIPE MH MANHOLE MB MAP BOOK IP IRON PIPE ORB OFFICIAL RECORDS BOOK PG PAGE ID IDENTIFICATION (TYP) TYPICAL

LEGEND IRON ROD WITH CAP IRON ROD IRON PIPE WITH CAP IRON PIPE FD "X"/CUT IN CONCRETE CONCRETE MONUMENT **&CV** IRRIGATION CONTROL VALVE ⊗FMV FORCE MAIN VALVE ⊗WV WATER VALVE ⊠WM WATER METER FIRE HYDRANT FIBER OPTIC MARKER TELEPHONE BOX ⊠F0B ⊠TB □ TSB TRAFFIC SIGNAL BOX ELECTRIC BOX I TV CABLE TELEVISION BOX ⊠MB MAIL BOX ¢LP LIGHT POLE UTILITY POLE ©CO CLEAN OUT SIGN TREE EXISTING ELEVATION TELEPHONE MANHOLE SANITARY MANHOLE STORM MANHOLE

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			PLANT	LIST			
SYMBOL	ABB.	QTY.	BOTANICAL NAME	COMMON NAME	SIZE	SYMBOL	
	ТА	127	TRACHELOSPERMUM ASIATICUM	YELLOW STAR JASMINE	1 GAL., 12"—15" SPD. 20" O.C.		
\bigcirc	РМ	20	PODOCARPUS MACROPHYLLA	YEW PODOCARPUS	3 GAL., 30"O.C. 24"HT., MIN.	∇z	
\bigotimes	VS	32	VIBURNUM SUSPENSUM	SANDANKWA VIBURNUM	3 GAL., 30"O.C. 24"HT., MIN.	M .	
\bigotimes	\/*	63	ILEX VOMITORIA	YAUPON HOLLY	3 GAL., 30"O.C. 24"HT., MIN.		
	1.4.4	0			15 GAL. MIN.,		
•	IA*	2	ILEX ATTENUATA	EAST PALATKA HOLLY	1.5″ MIN. CAL. DBH 6'—8' HT.	\square	
	LL	2	LIGUSTUM LUCIDUM	LIGUSTRUM TREE	15 GAL. MIN., 1.5" MIN. CAL. DBH		
. 17 [7] ,					6 - δ HI.	SOD)

1. NEVER PLACE ANY SOIL OVER THE ROOT BALL. THE ROOT BALL SHOULD BE POSITIONED IN THE HOLE SHALLOW ENOUGH SO THE FINISHED GRADE OF THE BACKFILL SOIL DOES NOT REACH THE TOP. IN OTHER WORDS, LEAVE THE TOP FEW INCHES OF THE ROOT BALL SIDES EXPOSED TO THE AIR. MULCH WILL COVER THE REMAINING COUPLE INCHES. THE TOP OF THE ROOT BALL SHOULD BE SEVERAL INCHES HIGHER THAN THE SURROUNDING LANDSCAPE SOIL. BE SURE THAT WHEN YOU ARE FINISHED PLANTING, THERE IS NO SOIL OVER THE ROOT BALL. SOIL (AS WELL AS THICK MULCH LAYERS MORE THAN 3 INCHES DEEP) OVER THE ROOT BALL CAN PREVENT WATER & AIR FROM ENTERING THE ROOT BALL. YOU SHOULD BE ABLE TO SEE THE TOP-MOST ROOT ORIGINATING FROM THE TRUNK AT THE SOIL SURFACE OR WITHIN THE TOP INCH OF SOIL IN THE ROOT BALL. THE TRUNK FLARE SHOULD BE VISIBLE. 2. MULCH SHOULD COVER ONLY THE EDGE OF THE ROOT BALL, SINCE THICK LAYERS OVER THE ROOT BALL CAN KEEP THE TRUNK TOO MOIST OR TOO DRY & CAN CAUSE OTHER PROBLEMS. LOCATE THE IRRIGATION DEVICE SO IT DELIVERS WATER DIRECTLY TO THE ROOT BALL. THERE IS USUALLY NO NEED TO WATER AREAS OUTSIDE THE ROOT BALL. NO AMENDMENTS OF ANY KIND ARE NECESSARY IN THE BACKFILL SOIL, BECAUSE EXTENSIVE RESEARCH CLEARLY SHOWS THAT THEY TYPICALLY DO NOT INCREASE THE SURVIVAL, NOR GROWTH AFTER PLANTING. NO SOIL BERM IS NEEDED IF TREES WILL BE IRRIGATED WITH A LOW-VOLUME DEVICE. PLACE THE BERM AT THE EDGE OF THE ROOT BALL IF THE ROOT BALL IS FINER TEXTURE THAN THE BACKFILL SOIL. THIS WILL HELP INSURE THAT WATER

PRUNE AND TIE MIN. 7 FRONDS WITH HEMP TWINE. FRONDS TO REMAIN TIED

TOP OF TRUNK CROWN SHAFT IS TO

PAD TRUNK WITH TWO LAYERS OF BURLAP TO PROTECT THE TRUNK. USE MINIMUM 3 GALVANZIED STEEL BANDS TO TIE 5 2"X4"X10" WOOD BATTENS AROUND TRUNK.

NAIL THREE PIECES OF 2"X4" TO BATTENS TO PREVENT SLIPPAGE. PROVIDE THREE 2"X4" SUPPORTS. CUT TOP OF EACH SUPPORT AT ANGLE AND TOENAIL INTO BATTENS AND GROUND STAKES AT SHOWN SUPPORTS SHALL REMAIN IN PLACE A MINIMUM OF 6 MONTHS.

- 2 TO 2-1/2" CYPRESS MULCH

PLANTING MIX TO BE EXISTING

PLANT MATERIAL SHALL BE -PLANTED 2" HIGH WITH SOIL MOUNDS UP TO THE TOP OF THE ROOT BALL - 3" MINIMUM OF MULCH AS TEMPORARY SOIL BERM TO HOLD WATER MINIMUM DEPTH OF 12" APPROVED PLANTING SOIL PER SPECS FOR GROUNDCOVER BED EXCAVATE ENTIRE BED -SPECIFIED FOR GROUNDCOVER BED FINISHED GRADE (SEE GRADING PLAN) PREPARE PLANTING SOIL AS SPECIFIED. WHEN GROUNDCOVERS AND SHRUBS USED IN MASSES EXCAVATE ENTIRE BED TO RECEIVE APPROVED PLANTING SOIL AND PLANT MATERIAL -EXCEPT WHEN SPECIFIED, SEE PLANT LIST

LANDSCAPE NOTES

DIVISION 2 - SITE CONSTRUCTION 02490 - TREES, PLANTS, AND GROUND COVERS

<u>PART 1 - GENERAL</u>

PERCOLATES INTO THE ROOTBALL.

- 1.01 DESCRIPTION OF WORK A. PROVIDE TREES, PLANTS, AND GROUND COVERS AS SPECIFIED. THE WORK INCLUDES: SOIL PREPARATION
 - TREES, PLANTS, GROUND COVERS. PLANTING MIXES. 4. MULCH AND PLANTING ACCESSORIES
- MAINTENANCE B. RELATED WORK
- SECTION 02100: SITE PREPARATION. SECTION 02480: SODDING SECTION 02810: LANDSCAPE IRRIGATION
- 1.02 QUALITY ASSURANCE A. PLANT NAMES INDICATED COMPLY WITH "STANDARDIZED PLANT NAMES" AS ADOPTED BY THE LATEST EDITION OF THE AMERICAN JOINT COMMITTEE OF HORTICULTURAL NOMENCLATURE (SEE SECTION 4.0 FOR ACCEPTABLE PLANTS). NAMES OF VARIETIES NOT LISTED CONFORM GENERALLY WITH NAMES ACCEPTED BY THE NURSERY TRADE. PROVIDE STOCK TRUE TO BOTANICAL NAME AND LEGIBLY TAGGED.
- B. PLANT MATERIAL SHALL BE GRADED FLORIDA NO. 1 OR BETTER AS OUTLINED UNDER GRADES AND STANDARDS FOR NURSERY PLANTS, STATE PLANT BOARD OF FLORIDA. STOCK FURNISHED SHALL BE AT LEAST THE MINIMUM SIZE INDICATED. LARGER STOCK IS ACCEPTABLE, AT NO ADDITIONAL COST, AND
- PROVIDING THAT LARGER PLANTS WILL NOT BE CUT BACK TO SIZE INDICATED 1.03 - SUBMITTALS A. SUBMIT THE FOLLOWING MATERIAL SAMPLES:
- 2. PLANTING ACCESSORIES B. SUBMIT CERTIFICATIONS FOR THE FOLLOWING MATERIALS: TOPSOIL SOURCE AND PH VALUE PEAT MOSS
- 3. PLANT FERTILIZER 1.04 DELIVERY, STORAGE, & HANDLING
- A. DELIVER FERTILIZER MATERIALS IN ORIGINAL, UNOPENED, AND UNDAMAGED CONTAINERS SHOWING WEIGHT, ANALYSIS, AND NAME OF MANUFACTURER. STORE IN MANNER TO PREVENT WETTING AND DETERIORATION. TAKE ALL PRECAUTIONS CUSTOMARY IN GOOD TRADE PRACTICE IN PREPARING
- PLANTS FOR MOVING. WORKMANSHIP THAT FAILS TO MEET THE HIGHEST STANDARDS WILL BE REJECTED. DIG, PACK, TRANSPORT, AND HANDLE PLANTS WITH CARE TO ENSURE PROTECTION AGAINST INJURY. INSPECTION CERTIFICATES REQUIRED BY LAW SHALL ACCOMPANY EACH SHIPMENT INVOICE OR ORDER TO STOCK AND ON ARRIVAL, THE CERTIFICATE SHALL BE FILED WITH THE OWNER OR LANDSCAPE ARCHITECT, PROTECT ALL PLANTS FROM DRYING OUT, JE PLANTS CANNOT BE PLANTED IMMEDIATELY UPON DELIVERY, PROPERLY PROTECT THEM
- WITH SOIL, WET PEAT MOSS, OR IN A MANNER ACCEPTABLE TO THE OWNER OR LANDSCAPE ARCHITECT, WATER HEELED-IN PLANTS DAILY INO PLANT SHALL BE A. BOUND WITH ROPE OR WIRE IN A MANNER THAT COULD DAMAGE OR BREAK THE BRANCHES. B. COVER PLANTS TRANSPORT ON OPEN VEHICLE WITH A PROTECTIVE COVERING TO PREVENT WINDBURN. C. MOWING CLEARANCE MUST BE MAINTAINED AT A MINIMUM OF 10 FEET
- FROM ANY TREE TO CURB OR SIDEWALK TO BUILDING, ETC 1.05 - PROJECT CONDITIONS A. WORK NOTIFICATION: NOTIFY OWNER AT LEAST 5 WORKING DAYS PRIOR TO INSTALLATION OF PLANT MATERIAL.
 B. PROTECT EXISTING UTILITIES, PAVING, AND OTHER FACILITIES FROM DAMAGE CAUSED BY LANDSCAPING OPERATIONS, DAMAGE TO EXISTING UTILITIES WILL BE IMMEDIATELY REPAIRED AT NO EXPENSE TO OWNER. C. A COMPLETE LIST OF PLANTS, INCLUDING A SCHEDULE OF SIZES,
- QUANTITIES, AND OTHER REQUIREMENTS IS TO BE SHOWN ON THE PROJECT DRAWINGS. ERAU STANDARD LANDSCAPE PLANT LIST IS FOUND IN IN THE EVENT THAT QUANTITY DISCREPANCIES OR MATERIAL DMISSIONS OCCUR IN THE PLANT MATERIALS LIST, THE PLANTING PLANS SHALL GOVERN.
- D. IF THE IRRIGATION SYSTEM IS TO BE CHANGED, OR IS NEW, THIS SYSTEM WILL BE INSTALLED PRIOR TO PLANTING. LOCATE, PROTECT, AND MAINTAIN THE IRRIGATION SYSTEM DURING THE PLANTING OPERATIONS. REPAIR IRRIGATION SYSTEM COMPONENTS DAMAGED DURING PLANTING OPERATIONS, AT LANDSCAPE CONTRACTOR'S EXPENSE. 1.06 - WARRANT)
- A. WARRANT PLANT MATERIAL TO REMAIN ALIVE AND IN HEALTHY AND VIGOROUS CONDITION FOR A PERIOD OF ONE YEAR AFTER COMPLETION AND ACCEPTANCE OF ENTIRE PROJECT AND ACCEPTANCE OF ENTIRE PROJECT.
 1. INSPECTION OF PLANTS WILL BE MADE BY THE OWNER OR THE ARCHITECT AT COMPLETION OF PLANTING.
 B. REPLACE, IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS, ALL PLANTS THAT ARE DEAD OR, AS DETERMINED BY THE OWNER OR LANDSCAPE ARCHITECT, ARE IN AN UNHEALTHY OR UNSIGHTLY CONDITION, AND HAVE LOST THEIR NATURAL SHAPE DUE TO DEAD BRANCHES, OR OTHER CAUSES DUE TO THE CONTRACTOR'S NEGLIGENCE. THE COST OF SUCH REPLACEMENT (S) IS AT CONTRACTOR'S EXPENSE. WARRANT ALL REPLACEMENT PLANTS FOR ONE YEAR AFTER INSTALLATION C. WARRANTY SHALL NOT INCLUDE DAMAGE OR LOSS OF TREES, PLANTS, OR GROUND COVERS CAUSED BY FIRES, FLOODS, FREEZING RAINS, LIGHTNING STORMS, OR WINDS OVER 50 MILES PER HOUR, WINTER KILL
- CAUSED BY EXTREME COLD AND SEVER WINTER CONDITIONS NOT TYPICAL F PLANTING AREA: ACTS OF VANDALISM OR NEGLIGENCE ON THE PART OF THE OWNER. D. REMOVE AND IMMEDIATELY REPLACE ALL PLANTS, AS DETERMINED BY THE OWNER OR THE LANDSCAPE ARCHITECT, TO BE UNSATISFACTORY DURING THE INITIAL PLANT INSTALLATION.

<u>PART 2 - PRODUCTS</u>

2.01 - MATERIALS A. PLANTS: PROVIDE PLANTS TYPICAL OF THEIR SPECIES OR VARIETY: WITH NORMAL, DENSELY DEVELOPED BRANCHES AND VIGOROUS, FIBROUS ROOT SYSTEMS. PROVIDE ONLY SOUND, HEALTHY, VIGOROUS PLANTS FREE FROM DEFECTS, DISFIGURING KNOTS, SUNSCALD INJURIES, FROST CRACKS, ABRASIONS OF THE BARK, PLANT DISEASES, INSECT EGGS,

1. DIG BALLED AND BUR LAPPED PLANTS WITH FIRM, NATURAL BALLS OF EARTH OF SUFFICIENT DIAMETER AND DEPTH TO ENCOMPASS THE FIBROUS AND FEEDING ROOT SYSTEM NECESSARY FOR FULL RECOVERY OF THE PLANT. PROVIDE BALL SIZES COMPLYING WITH THE LATEST EDITION OF THE "AMERICAN STANDARDS FOR NURSERY STOCK." CRACKED OR MUSHROOMED BALLS ARE NOT ACCEPTABLE. 2. CONTAINER-GROWN STOCK: GROWN IN A CONTAINER FOR SUFFICIENT LENGTH OF TIME FOR THE ROOT SYSTEM TO HAVE DEVELOPED TO HOLD ITS SOIL TOGETHER, FIRM AND WHOLE. A. NO PLANTS SHALL BE LOOSE IN THE CONTAINER. B. CONTAINER STOCK SHALL NOT BE POT BOUND 3. PLANTS PLANTED IN ROW SHALL BE MATCHED IN FORM.

4. PLANTS LARGER THAN THOSE SPECIFIED IN THE PLANT LIST MAY BE USED WHEN ACCEPTABLE TO THE OWNER OR THE LANDSCAPE A. IF THE USE OF LARGER PLANTS IS ACCEPTABLE. INCREASE THE SPREAD OF ROOTS OR ROOT BALL IN PROPORTION TO THE SIZE OF THE PLAN 5. SHRUBS SHALL MEET THE REQUIREMENTS FOR SPREAD AND HEIGHT INDICATED IN THE PLANT LIST. A. THE MEASUREMENTS FOR HEIGHT SHALL BE TAKEN FROM THE GROUND LEVEL TO THE AVERAGE HEIGHT OF THE TOP OF THE PLANT AND NOT THE LONGEST BRANCH. B. SINGLE STEMMED OR THIN PLANTS WILL NOT BE ACCEPTED. SIDE BRANCHES SHALL BE GENEROUS, WELL TWIGGED, AND THE PLANT AS A WHOLE WELL BUSHED TO THE GROUND.

> D. PLANTS SHALL BE IN A MOIST, VIGOROUS CONDITION, FREE FROM DAD WOOD, BRUISES, OR OTHER ROOT OR BRANCH INJURIES

2.02 - ACCESSORIES A. TOPSOIL FOR PLANTING BEDS: FERTILE, FRIABLE, NATURAL TOPSOIL OF LOAMY CHARACTER. WITHOUT ADMIXTURE OF SUBSOIL MATERIAL OBTAINED FROM A WELL-DRAINED ARABLE SITE, REASONABLE FREE FROM CLAY, LUMPS, COARSE SANDS, STONES, PLANTS ROOTS, STICKS, AND OTHER FOREIGN MATERIALS, WITH ACIDITY RANGE OF BETWEEN PH 6.0 1. IDENTIFY SOURCE LOCATION OF TOPSOIL PROPOSED FOR USE ON THE

PROJECT 2. PROVIDE TOPSOIL FREE OF SUBSTANCES HARMFUL TO THE PLANTS, WHICH WILL BE GROWN IN THE SOIL. B. PEAT MOSE BROWN TO BLACK IN COLOR, WEED AND SEED FREE GRANULATED RAW PEAT OR BALED PEAT, CONTAINING NOT MORE THAN 9% MINERAL ON A DRY BASIS.

C. FERTILIZER: 1. PLANT FERTILIZER TYPE: COMMERCIAL TYPE APPROVED BY THE OWNER OR THE LANDSCAPE ARCHITECT, CONTAINING 12% NITROGEN 12%PHOSPHORIC ACID, AND 12% POTASH BY WEIGHT, 1/4 IN FORM OF AMMONIA SALT AND 1/2 IN FORM OF ORGANIC NITROGEN D. MULCH: CYPRESS MULCH. FURNISH IN BULK. E. WATER: FREE OF SUBSTANCES HARMFUL TO PLANT GROWTH. HOSES OR

OTHER METHODS OF TRANSPORTATION FURNISHED BY CONTRACTOR. 3.01 - INSPECTION A. EXAMINE PROPOSED PLANTING AREAS AND CONDITIONS OF INSTALLATION. DO NOT START PLANTING WORK UNTIL UNSATISFACTORY

CONDITIONS ARE CORRECTED. 3.02 - PREPARATION A. PLANTING SHALL BE PERFORMED ONLY BY EXPERIENCED WORKMEN FAMILIAR WITH PLANTING PROCEDURES UNDER THE SUPERVISION OF A

QUALIFIED SUPERVISOR. B. LOCATE PLANTS AS INDICATED OR AS APPROVED IN THE FIELD AFTER STAKING BY THE CONTRACTOR. IF OBSTRUCTIONS ARE ENCOUNTERED THAT ARE NOT SHOWN ON THE DRAWINGS, DO NOT PROCEED WITH PLANTING OPERATIONS UNTIL ALTERNATE PLANTS LOCATIONS HAVE BEEN

C. EXCAVATE CIRCULAR PLANT PITS WITH VERTICAL SIDES, EXCEPT FOR PLANTS SPECIFICALLY INDICATED FOR PLANTING IN BEDS. PROVIDE SHRUB PITS AT LEAST 12" GREATER THAN THE DIAMETER OF THE ROOT SYSTEM, AND 24" GREATER FOR PALMS DEPTH OF PIT SHAL ACCOMMODATE THE ROOT SYSTEM. SCARIFY THE BOTTOM OF THE PIT TO A DEPTH OF 4". REMOVE EXCAVATED MATERIALS FROM THE SITE. D. PROVIDE PRE-MIXED PLANTING MIXTURE FOR USE AROUND THE BALLS AND ROOTS OF THE PLANTS CONSISTING OF 5 PARTS PLANTING TOPSOIL

TO 1 PART PEAT MOSS AND 1/2 LB. PLANT FERTILIZER FOR EACH CUBIC YARD OF MIXTURE, AS SPECIFIED IN 2.02.C.1. BACKFILL THE PALMS WITH EXISTING SOIL ONLY. DO NOT BACKFILL THE PALMS WITH THE PRE-MIXED PLANTING MIXTURE. 3.03 - INSTALLATION A. SET PLANT MATERIAL IN THE PLANTING PIT TO PROPER GRADE AND

ALIGNMENT. SET PLANTS UPRIGHT, PLUM, AND FACED TO GIVE THE BEST APPEARANCE OR RELATIONSHIP TO EACH OTHER OR ADJACENT STRUCTURE. SET PLANT MATERIAL 1"-2" ABOVE THE FINISH GRADE. NO FILLING WILL BE PERMITTED AROUND TRUNKS OR STEMS. BACKFILL THE PIT WITH PLANTING MIXTURE. DO NOT USE FROZEN OR MUDDY MIXTURES FOR BACKFILLING. B. AFTER BALLED AND BURLAPPED PLANTS ARE SET, MUDDLE PLANTING SOIL MIXTURE AROUND BASES OF BALLS AND FILL ALL VOIDS.

C. MULCHING: 1. MULCH TREE AND SHRUB PLANTING PITS AND SHRUB BEDS WITH REQUIRED MULCHING MATERIAL 3" DEEP IMMEDIATELY AFTER PLANTING. THOROUGHLY WATER MULCHED AREAS. AFTER WATERING, RAKE MULCH TO PROVIDE A UNIFORM FINISHED SURFACE.

3.04 - MAINTENANCE A. MAINTAIN PLANTINGS UNTIL COMPLETION AND ACCEPTANCE OF THE ENTIRE PROJECT. B. MAINTENANCE SHALL INCLUDE PRUNING, CULTIVATING, WEEDING. WATERING AND APPLICATION OF APPROPRIATE INSECTICIDES AND FUNGICIDES NECESSARY TO MAINTAIN PLANTS FREE OF INSECTS AND 1. RE-SET SETTLED PLANTS TO PROPER GRADE AND POSITION. RESTORE PLANTING SAUCER AND ADJACENT MATERIAL AND REMOVE DEAD MATERIAL. CORRECT DEFECTIVE WORK AS SOON AS POSSIBLE AFTER DEFICIENCIES BECOME APPARENT AND WEATHER AND SEASON C. THE CONTRACTOR SHALL PROVIDE TO THE OWNER MONTHLY INSPECTION REPORTS REGARDING THE LANDSCAPE MATERIALS FOR THE DURATION OF THE ONE-YEAR WARRANTY PERIOD.

 3.05 - ACCEPTANCE (BASED UPON FINAL COMPLETION)
 A. INSPECTION TO DETERMINE ACCEPTANCE OF PLANTED AREAS WILL BE MADE BY THE OWNER OR THE LANDSCAPE ARCHITECT, UPON CONTRACTOR'S REQUEST. PROVIDE NOTIFICATION AT LEAST 10 WORKING DAYS BEFORE REQUESTED INSPECTION DATE. 1. PLANTED AREAS WILL BE ACCEPTED PROVIDED ALL REQUIREMENTS, INCLUDING MAINTENANCE, HAVE BEEN COMPLED WITH AND PLANTS MATERIALS ARE ALIVE IN A HEALTHY AND VIGOROUS CONDITION. LANDSCAPE WEED BARRIER IS REQUIRED UNDER ALL MULCHED AREAS. B. UPON ACCEPTANCE, THE OWNER WILL ASSUME PLANT MAINTENANCE.

A. PERFORM CLEANING DURING INSTALLATION OF THE WORK AND UPON COMPLETION OF THE WORK. REMOVE FROM SITE ALL EXCESS MATERIALS SOIL, DEBRIS, AND EQUIPMENT. REPAIR DAMAGE RESULTING FROM PLATING OPERATIONS.

3.06 - CLEANING

						BΥ	
						DESCRIPTION	REVISIONS
						D. DATE	
	CALACTER MINCHENDERG • ACCOUNTED INC		PRUFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS	729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117	(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com	CERTIFICATE OF AUTHORIZATON NUMBER 00003910	
EMBRY RIDDLE AFRONAUTICAL UNIVERSITY	PRINT SHOP	DAYTONA BEACH * FLORIDA			LANDSCAPE DETAILS		
	V 201 Y AP 9 S Draw Date SCAL JOB	19– PRO 6HEE n B : 6- E: .E: #19	VA DF T -1: -1: -0	L S MR 5	5 TA 7 (0) 8 19 NE	<u>MP</u>	
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TER CTION (CHART	
RADIUS 15' 15' 15' 15' 15' 5'X15' 5'X15' 5'X30' 12' 12' 12' 12' 12' 12' 12' 12' 12' 12	PATTERN FULL THREE QUARTER TWO THIRDS HALF THIRD QUARTER LEFT CORNER STRIP RIGHT CORNER STRIP SIDE STRIP FULL THREE QUARTER TWO THIRDS HALF BUBBLER THIRD QUARTER FULI	CENERAL IRRIGATION NOTES 1. THE CONTRACTOR SHALL REFER TO THE LANDSCAPING PLAN WHEN TRENCHING TREES & LARGE SHRUBS. 2. ALL WIRING FROM THE IRRIGATION CONTROLLER TO THE REMOTE CONTROL VAL CABLE. ALL WIRE SPLICES SHALL BE MADE IN VALVE BOXES USING ONLY RAIN B 3. UNLESS OTHERWISE INDICATED, PIPING TO A SINGLE SPRAY HEAD SHALL BE ½ INDICATED, PIPING TO A SINGLE ROTOR HEAD SHALL BE ¾" PVC PIPING. 4. ALL MAIN LINE PIPING SHALL BE BURIED TO HAVE A MINIMUM COVER OF 18". THE MAIN LINE SHALL BE BURIED TO HAVE A MINIMUM COVER OF 18". 5. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS & DIMENSIONS SHOWN ON P COMMENCEMENT OF WORK UNDER THIS CONTRACT. 7. ALL IRRIGATION INSTALLATION SHALL CONFORM TO LOCAL CODES & REGULATIO 8. ALL PIPING ON THE PLANS IS DIAGRAMMATICALLY ROUTED FOR CLARITY & SHA MODIFICATIONS SHALL ONLY BE MADE AS NECESSARY TO MEET FIELD CONDITIONS LANDSCAPE ARCHITECT. PIPING SHOWN RUNNING PARALLEL UNDER SIDEWALKS AD. CONVENIENCE ONLY & SHALL BE INSTALLED WITHIN THE PLANTED AREA. 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FINAL ADJUSTMENT OF TH 100 PEPCENT COVERAGE
10' 10'		10. 115 VOLT, SINGLE PHASE ELECTRICAL POWER FOR THE IRRIGATION CONTROLL IRRIGATION CONTROLL IRRIGATION CONTRACTOR WITH THE ELECTRICAL ENGINEERING DRAWINGS. IRRIGATION

STD. MINI-	
<u>GENERAL IRRIGATION NOTES</u>	
1. THE CONTRACTOR SHALL REFER TO THE LANDSCAPING PLAN WHEN TRENCHING TO LAY PIPE TO AVOID NEW & EXISTING TREES & LARGE SHRUBS. 2. ALL WIRING FROM THE IRRIGATION CONTROLLER TO THE REMOTE CONTROL VALVES SHALL BE UF−14/1 DIRECT BURIAL CABLE. ALL WIRE SPLICES SHALL BE MADE IN VALVE BOXES USING ONLY RAIN BIRD CONNECTORS & SEALANT. 3. UNLESS OTHERWISE INDICATED, PIPING TO A SINGLE SPRAY HEAD SHALL BE ½" PVC PIPING. UNLESS OTHERWISE INDICATED, PIPING TO A SINGLE ROTOR HEAD SHALL BE ¾" PVC PIPING.	
4. ALL MAIN LINE PIPING SHALL BE BURIED TO HAVE A MINIMUM COVER OF 18". ALL LATERAL PIPING DOWNSTREAM OF THE MAIN LINE SHALL BE BURIED TO HAVE A MINIMUM COVER OF 12". 5. THE CONTRACTOR SHALL COORDINATE WITH THE LANDSCAPE ARCHITECT ON THE EXACT LOCATION OF THE IRRIGATION CONTROLLERS. 6. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS & DIMENSIONS SHOWN ON PLANS AT THE SITE PRIOR TO COMMENCEMENT OF WORK LINDER THIS CONTRACT.	WIRE TO IRRIGATIO
7. ALL IRRIGATION INSTALLATION SHALL CONFORM TO LOCAL CODES & REGULATIONS. 8. ALL PIPING ON THE PLANS IS DIAGRAMMATICALLY ROUTED FOR CLARITY & SHALL BE ROUTED TO AVOID PLANTS. DESIGN MODIFICATIONS SHALL ONLY BE MADE AS NECESSARY TO MEET FIELD CONDITIONS & ONLY UPON APPROVAL OF THE LANDSCAPE ARCHITECT. PIPING SHOWN RUNNING PARALLEL UNDER SIDEWALKS ADJACENT TO PLANTED AREAS IS FOR DESIGN CONVENIENCE ONLY & SHALL BE INSTALLED WITHIN THE PLANTED AREA.	

DING MAINS AND E	BRANCHES. NO POLY-TUBING LONGER	FITTING	90° BEND	45° BEND	22.5° BEND	, 11.25° BEND	TEE OR DEAD END	(
		PIPE SIZE						
EXISTING IRRIGATIO	ON SYSTEM.	(IN.) :						
SLANDS IN AFFECT	ED PROJECT.	4"	21 (26)	18 (18)	18 (18)	18 (18)	37 (55)	
BELOW FINISHED	GRADE.	6"	30 (36)	18 (18)	18 (18)	18 (18)	52 (78)	
		8"	38 (45)	18 (18)	18 (18)	18 (18)	67 (100)	
]		10"	45 (54)	18 (22)	18 (18)	18 (18)	81 (122)	
OR DEAD END		12"	52 (63)	22 (26)	18 (18)	18 (18)	94 (141)	
	ND END 12 32 (03) 22 (20) 10 (10) 34 (14) 14" 60 (72) 25 (30) 18 (18) 107 (160) 16" 66 (80) 27 (33) 18 (18) 120 (180) 18" 74 (87) 31 (36) 18 (18) 132 (198)							
		16"	66 (80)	27 (33)	18 (18)	18 (18)	120 (180)	
45		18"	74 (87)	31 (36)	18 (18)	18 (18)	132 (198)	
63	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$							
82	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$							
98	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$							
116		36"*	69 (82)	28 (34)	18 (18)	18 (18)	170 (204)	
132		42"*	76 (92)	31 (37)	18 (18)	18 (18)	191 (229)	
148	10 174 (87) 31 (30) 118 (18) 114 (216) 20" 80 (94) 33 (39) 18 (18) 184 (126) 24" 92 (108) 38 (45) 18 (22) 18 (18) 167 (250) 30" 106 (128) 44 (53) 21 (25) 18 (18) 199 (298) 36" 69 (82) 28 (34) 18 (18) 191 (229) 48" 90 (106) 40 (46) 18 (18) 191 (229) 48" 90 (106) 40 (46) 18 (18) 191 (229) 48" 90 (106) 40 (46) 18 (18) 191 (229) 48" 90 (106) 40 (46) 18 (18) 18 (18) 212 (254) 30 0F PIPE TO BE RESTRAINED. TABLE SHOWS MINIUM LENGTH OF PIPE EACH WAY FROM FITTING FOR WHICH RESTRAINT IS REQUIRED. TABLE SHOWS MINIUM LENGTH OF PIPE FOR THE FOLLOWING CONDITIONS: TEST PRESSURE: 150 PSIG SOIU TYPE: SP OCIVER DEPTH: 3 FEET (MIN.) SAFETY FACTOR: 1.5 SAFETY FACTOR: 1.5 SOIU TYPE: 2 VALUES IN PARENTHESIS (X) ARE FOR PIPE ENCASED IN POLYETHYLENE. WHICH RESTRAINT IS REPORTED IN POLYETHYLENE.							
163	N THISHED GRADE. I 10 (10) 10 (10) 10 (10) 10 (10) I 10 (10) 10 (10) I 10 (10) 10 (10) EAD END 6" 30 (30) 11 (10) 10 (10) I 10 (10) 10 (10) I 10 (10) 10 (10) EAD END 10" 45 (54) 11 (10) 11 (10) I 10 (10) 10 (10) I 10 (10) 10 (10) I 10" 45 (54) 11 (10) 11 (10) I 10 (10) 11 (10) I 10 (10) 10 (10) I 10 (10) 10 (10) I 10" 45 (54) 11 (10) 12 (22) 18 (10) 11 (10) I 10 (10) 10 (10) I 10 (10) 10 (10) I 10 (10) 10 (10) I 10" 45 (54) 11 (10) 12 (22) 13 (10) 11 (10) 10 (10) I 10 (10) 10 (10) 10 (10) I 10 (10) 10 (10) I 10 (10) 10 (10) I 10" 45 (54) 11 (10) 10 (1							
179			PIPE TO BE F	RESTRAINED.				
208		WHIC	LE SHOWS MI CH RESTRAIN	NIMUM LENGT T IS REQUIREI	H OF PIPE E. D.	ACH WAY FRO	DM FITTING FOR	
248		TAB	LE APPLIES 1	TO DUCTILE IR	ON PIPE FOR	THE FOLLOW	WING CONDITIONS:	
			TEST PRES	SSURE: 150 F	SIG			
(18 MIN.)			SOIL TYPE	: SP PTH: 3 FFFT	(MIN)			
			SAFETY FA	ACTOR: 1.5	(((((((((((((((((((((((((((((((((((((((1/
IING FOR			TRENCH T	YPE: 2				N W KK
s.		VAL	UES IN PAREI	NTHESIS (X)	ARE FOR PIPE	E ENCASED I	N POLYETHYLENE.	WY VIE III
		* V/	ALUES APPLY	TO DUCTILE	IRON PIPE A	T 50 PSI TES	ST PRESSURE.	
			ם ח					
	<u>Pv</u>			<u> XESIr</u>	AINE			
		NOT	E: 4" AND6"	REUSE MAINS	S AND VALVE	S TO HAVE F	RESTRAINED JOINTS.	
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PE, 📲								
			<u>الطالطالطالطالطا</u> 1⁄2"x 1	8" PVC FLEX				
	-3/4" ST ELL		SWING	PIPE OR SW	ING JOINT			¢.
						┕───		
		1						
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EE LISING	INSTALL SLEEVE & INNER PIPING AT SAME TIME	<u></u> <u>⁄</u> 2"x 12	" PVC FLEX I	PIPE,	1/2"ST ELL-	/		
RIMER &	SLEEVE SHALL BE TWO TIMES THE	AS REC	, π ∟ Οις 3₩Π ⊋'D.					
	UNLESS OTHERWISE NOTED							DETAIL
<u>2-02</u>	<u>SLEEVE</u> <u>6</u> " F	<u>OP-UP</u>						
<u>DETAIL</u>		Y DFTAI	L					
_		<u> </u>	_					
	NOTE: REQUIREMENTS VARY; CHECK LOC/	AL CODES PR		ALLATION.				
	ITPICAL IRRIGA	<u>IIUN</u>	DEIA	AILS				

STORMWATER CONSTRUCTION NOTES (CONT'D)

- . ALL MATERIALS AND INSTALLATION AND SEDIMENT AND EROSION CONTROL METHODS USED FOR LAND DEVELOPMENT CODE REQUIRED IMPROVEMENTS FOR SUBDIVISIONS AND SITE PLANS SHALL BE IN CONFORMANCE WITH THE CITY, FDEP, FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION), AND THE FDOT DESIGN STANDARDS (LATEST EDITION). THE USE OF BEST MANAGEMENT PRACTICES (BMP'S) IS REQUIRED.
- BEST MANAGEMENT PRACTICES (BMP'S) FOR EROSION AND SEDIMENT CONTROL SHALL BE PLANNED. DESIGNED AND IMPLEMENTED THROUGHOUT THE SITE DEVELOPMENT ENGINEERING AND CONSTRUC-TION PHASES.
- . ALL DEWATERING ACTIVITIES EITHER DIRECTLY DISCHARGED OR THAT SUBSEQUENTLY USE THE CITY'S STORMWATER SYSTEM TO CONVEY GROUND OR SURFACE WATER FROM A SITE SHALL REQUIRE A STANDARD OR GENERAL USE PERMIT AS PER ARTICLE 7 SECTION 7 OF THE LAND DEVELOPMENT CODE. A PERMIT SHALL BE REQUIRED PRIOR TO ENGAGING IN ANY DEWATERING ACTIVITIES. OR IN ANY CON-STRUCTION ACTIVITIES. DEWATERING ACTIVITIES INCLUDE THE REMOVAL OF GROUND WATER FROM A CONSTRUCTION SITE, ENCLOSED VAULT, COFFERDAM, OR TRENCHES ALLOWING CONSTRUCTION OR MAIN-TENANCE TO BE DONE IN THE DRY, OR ANY ACTIVITY WHICH CHANGES THE IMPERVIOUS AREA OF LAND. SITE SPECIFIC PERMITS SHALL REQUIRE THE PAYMENT OF A PER ACRE FEE BASED ON THE SIZE OF THE DEVELOPMENT. GENERAL PURPOSE PERMITS SHALL REQUIRE THE PAYMENT OF AN ANNUAL FEE BASED ON ROUTINE SCHEDULE OF MAINTENANCE ACTIVITIES DISCHARGING DIRECTLY OR SUBSEQUENTLY INTO THE CITY'S MS4. DEWATERING PERMIT APPLICATIONS ARE FOUND AT http://www.codb.us/index.gspx?NID=262. FEES ARE SUBJECT TO ARTICLE 20 SECTION 3.1 OF THE LAND DEVELOPMENT CODE AND MUST BE SUBMITTED TO THE CITY OF DAYTONA BEACH UTILITY DEPARTMENT AT 125 BASIN STREET SUITE 130, DAYTONA BEACH FL 32114 BEFORE ANY USE OF THE MS4 WILL BE ALLOWED. FAILURE TO COMPLY WILL RESULT IN THE TERMINATION OF ACCESS TO THE CITY'S MS4 SYSTEM.
- . CONTRACTOR SHALL FOLLOW REQUIRED EROSION AND SEDIMENT CONTROL PRACTICES AND INCLUDE AN EROSION CONTROL PLAN FOR REVIEW AND APPROVAL BY THE CITY PRIOR TO CONSTRUCTION. ALL CONSTRUCTION ACTIVITIES SHALL CONFORM TO THE CITY'S EROSION AND SEDIMENT CONTROL NOTES DETAIL PAGE.
- CONTRACTOR WILL FOLLOW ALL OF THE CITY'S REQUIRED WASTE MANAGEMENT PRACTICES. ALL CONSTRUCTION, RENOVATION, AND DEMOLITION SITES ARE TO BE KEPT CLEAN AND FREE OF REFUSE, DEBRIS, AND LITTER DURING THE CONSTRUCTION, RENOVATION, OR DEMOLITION PROCESS. A CERTIFICATE OF OCCUPANCY FOR A NEWLY CONSTRUCTED OR RENOVATED BUILDING SHALL NOT BE ISSUED UNTIL ALL REFUSE AND LITTER CAUSED BY THE CONSTRUCTION OR REMODELING IS REMOVED FROM THE SITE AS PER THE DAYTONA BEACH CODE OF ORDINANCES CHAPTER 28 SECTION 78-5 AND 78-8.
- 3. ALL DEVELOPMENT PLANS SHALL BE CONSISTENT WITH THE DAYTONA BEACH LAND DEVELOPMENT CODE ARTICLE 1 PURPOSE ADMINISTRATION AND ENFORCEMENT, ARTICLE 5 SECTION 2 STORMWATER MANAGEMENT, ARTICLE 4 LAND DEVELOPMENT ORDERS AND PROCEDURES, ARTICLE 5 SUBDIVISION AND SITE PLANS SECTION AND ARTICLE 7 SECTION 4 FLOOD PLAIN MANAGEMENT.
- . PIPED STORMWATER SYSTEMS SHALL HAVE A MINIMUM DRAINAGE MAINTENANCE EASEMENT AND ACCESS WIDTH OF 20 FEET, AND MAY BE INCREASED DEPENDING UPON THE SIZE AND DEPTH OF PIPE.
- 3. CONCRETE EROSION CONTROL BMP'S MUST BE PROVIDED WHERE SWALES OR CULVERTS INTERCEPT DRAINAGE DITCHES.
- . SOIL EROSION AND SEDIMENT CONTROL BMP MEASURES, SATISFACTORY TO THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT, FDEP AND THE CITY, SHALL BE EMPLOYED DURING CONSTRUCTION.

THE CITY OF DAYTONA BEACH S. I ENGINEERING DIVISION

STORMWATER CONSTRUCTION NOTES (PAGE 1 OF 4)ST-1

Drawing Date: 01/08 Drawn By: KLH Checked By: JMP Scale: NTS Revision Date: 07/10 File Name: Const Notes ST-

EROSION & SEDIMENT CONTROL NOTES

- ALL CONSTRUCTION ACTIVITIES SHALL INCORPORATE BEST MANAGEMENT PRACTICES (BMP'S) TO CONTROL EROSION, SEDIMENTATION, AND THE POTENTIAL FOR DOWNSTREAM WATER QUALITY DEGRADATION.
- . CONTRACTOR SHALL MINIMIZE DISTURBANCE OF EXISTING VEGETATION, (PARTICULARLY AROUND THE PROJECT PERIMETER) AND ADJACENT EXISTING DRAINAGE PATTERNS TO THE MAXIMUM EXTENT PRACTICAL DURING THE CONSTRUCTION PROCESS
- SILT FENCES AND TURBIDITY BARRIERS SHALL BE INSTALLED ON SITE AND APPROVED BY THE CITY PRIOR TO CONSTRUCTION, AND SHALL BE INSPECTED WEEKLY BY THE CONTRACTOR AND CORRECTIVE ACTION TAKEN AS NECESSARY.
- . STORMWATER RETENTION, DETENTION, STORAGE AND CONVEYANCE SYSTEMS MUST BE EXCAVATED TO ROUGH GRADE PRIOR TO BUILDING CONSTRUCTION OR PLACEMENT OF IMPERVIOUS SURFACE WITHIN THE AREA SERVED BY THOSE SYSTEMS. ADEQUATE MEASURES MUST BE TAKEN TO PREVENT SILTATION OF THESE TREATMENT SYSTEMS AND CONTROL STRUCTURES DURING CONSTRUCTION. SILTATION MUST BE REMOVED FROM THE STORMWATER SYSTEM WHEN HALF FULL AND IMMEDIATELY PRIOR TO FINAL GRADING AND GRASSING OF THE PROJECT.
- CONTRACTOR SHALL SOD ALL SWALES AND STORMWATER FACILITIES IN ACCORDANCE WITH TEMPORARY BMP'S WITHIN 14 DAYS AFTER CONSTRUCTION. THIS IS REQUIRED TO STABILIZE THE SLOPES AND MINIMIZE EROSION.
- 5. DURING ALL CONSTRUCTION OF THE PERMITTED SYSTEM INCLUDING STABILIZATION AND REVEGETATION OF DISTURBED SURFACES, CONTRACTOR IS RESPONSIBLE FOR THE SELECTION, IMPLEMENTATION, AND OPERATION OF ALL EROSION AND SEDIMENT CONTROL MEASURES REQUIRED TO RETAIN ALL SEDIMENT ONSITE AND PREVENT VIOLATIONS OF THE WATER QUALITY STANDARDS IN ACCORDANCE WITH THE FLORIDA ADMINISTRATIVE CODE AND PROJECT PERMIT REQUIREMENTS.
- . THE CONTRACTOR SHALL CONSTRUCT AND MAINTAIN A PROTECTIVE COVER (VEGETATIVE OR SUITABLE ALTERNATIVE) FOR EROSION AND SEDIMENT CONTROL ON ALL LAND SURFACES EXPOSED OR DISTURBED BY CONSTRUCTION OF THE PERMITTED PROJECT, UNLESS MODIFIED BY ANOTHER CONDITION OF THE PERMIT OR OTHERWISE SPECIFIED ON A DISTRICT APPROVED EROSION AND SEDIMENT CONTROL PLAN. THE PROTECTIVE COVER MUST BE INSTALLED WITHIN FOURTEEN (14) DAYS AFTER FINAL GRADING OF THE AFFECTED LAND SURFACE. A PERMANENT VEGETATIVE COVER MUST BE ESTABLISHED WITHIN 60 DAYS OF IT'S INSTALLATION. THE PERMITTEE'S REQUIREMENT TO MAINTAIN COVER ON OFFSITE AND ONSITE SURFACES SHALL NOT BE COMPLETE UNTIL AFTER THE WATER MANAGEMENT DISTRICT RECEIVES THE PERMITTEE'S STATEMENT OF COMPLIANCE.
- 3. AT A MINIMUM, SILT FENCES AND TURBIDITY BARRIERS SHALL BE INSTALLED PER PLAN. ADDITIONAL BMP MEASURES MUST BE TAKEN TO MINIMIZE IMPACTS OF RECEIVING WATERS SUCH AS THE USE OF APPROVED BARRIERS AT INLETS, ADDITIONAL SILT FENCING, SOIL ANTI-TRACKING DEVICES AND SODDING.
- 9. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE PROJECT LIMITS IN COMPLIANCE WITH ALL JURISDICTIONAL PERMIT AND CITY REQUIREMENTS.
- 0. ANY TIME THE CONTRACTOR NEEDS TO SUBMIT A NOTICE OF INTENT TO USE A GENERAL PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES, A COPY OF THE PERMIT SHALL ALSO BE SUBMITTED TO THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT.
- THE CONTRACTOR SHALL AS A MINIMUM PREPARE AND IMPLEMENT AN EROSION AND SEDIMENT CONTROL PLAN IN ACCORDANCE WITH FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) GUIDELINES.
- 2. DEWATERING ACTIVITIES SHALL BE APPROVED BY THE UTILITIES DEPARTMENT BEFORE DISCHARGING INTO THE CITY'S MS4 SYSTEM (STORMWATER CONSTRUCTION NOTES - NOTE 3).

THE CITY OF DAYTONA BEACH ENGINEERING DIVISION

EROSION AND SEDIMENT CONTROL NOTES ST-5

awing Date: 01/08 rawn By: KLH hecked By: JMP Scale: N/A Revision Date: File Name: Erosion Notes ST—5

THE CITY OF DAYTONA BEACH ENGINEERING DIVISION

FENCE

DETAIL

ST-14

6' MAX

NTS

- 10. IN GENERAL, ALL RETENTION/DETENTION SITES MUST BE CONSTRUCTED AND VEGETATED AS NECESSARY ON ALL PROJECTS PRIOR TO ANY ROAD, PARKING LOT, OR BUILDING CON-STRUCTION COMMENCING OR AS CURRENT PERMIT CONDITIONS DICTATE. SEWER AND WATER IS NOT REQUIRED. HOWEVER BMP'S FOR EROSION AND SEDIMENT CONTROL WILL BE IMPLEMENTED AS NECESSARY.
- 11. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ANY AND ALL DEWATERING PERMITS THAT MAY BE REQUIRED (SEE ST-1A NOTE 3). 12. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW AND MAINTAIN A COPY
- AND ABIDE BY ALL CONDITIONS OF THOSE PERMITS. 13. LANDSCAPE PLANS SHALL CLEARLY DEPICT THE DESIGN LOCATION OF TEMPORARY AND PERMANENT
- ORDER TO EVALUATE POTENTIAL CONFLICTS. 14. THE MAXIMUM PERMISSIBLE SLOPE OF ANY NEW SITE GRADING IS 1:3 (VERTICAL:HORIZONTAL). THIS LIMIT SHALL BE APPLIED TO ALL AREAS EXCEPT STORMWATER CONVEYANCE AND
- TABLE WHERE STEEPER SLOPES ARE PERMISSIBLE). THAN 1 TO 4. THE MAXIMUM PERMITTED BACK (SIDE) SLOPE, SHALL BE 1:3, PROVIDED BE NOTED AT INTERVALS OF 100' AND AT SIGNIFICANT GRADE CHANGES.
- 16. SWALES THAT ARE NORMALLY DRY AND INTENDED FOR CONVEYANCE OF STORMWATER RUNOFF AND ARE NOT INTENDED FOR RETENTION SHALL HAVE A MINIMUM DRAINAGE MAINTENANCE EASEMENT WIDTH MEASURING 15 FEET. SWALED AREAS INTENDED FOR RETENTION SHALL PROVIDE APPROPRIATE EASEMENT AREAS FOR ACCESS AND MAINTENANCE MEASURED UPLAND FROM THE TOP OF BANK. AT A MINIMUM, THE SAID EASEMENT SHALL MEASURE 10 FEET IN WIDTH FROM THE TOP OF THE SWALE.
- 17. NORMAL ROADSIDE SWALES ARE PERMITTED TO BE CONSTRUCTED TO A MAXIMUM DEPTH OF 18" BELOW THE OUTSIDE EDGE OF PAVEMENT OR CONCRETE CURB.
- 18. WHEN CULVERTS ARE INSTALLED TO MAINTAIN THE FLOW OF EXISTING DRAINAGE WAYS WHERE NEWLY PROPOSED ROADS WOULD OTHERWISE SEVER THE DRAINAGE RIGHT-OF-WAY, THEN CULVERTS CROSSING RIGHTS-OF-WAY SHALL EXTEND FROM RIGHT-OF-WAY LINE TO RIGHT-OF-WAY LINE UNDER THE ROADWAY. CULVERTS SHALL BE DESIGNED TO ACCOMODATE THE FLOW FROM THE 100 YEAR - 24 HOUR STORM EVENT WITHOUT FLOODING ADJACENT PROPERTY OR SURCHARGING THE SAID ROADWAY.
- MEASURED FROM THE TOP OF BANK.
- ABUTTING LOT LINES SHALL BE EXTENDED INTO THE LAKE PROPORTIONATELY ENCOMPASSING ALL OF THE LAKE AREA.
- 21. WET POND INFLOW AND OUTLET STRUCTURES SHALL GENERALLY BE CONSTRUCTED WITH REINFORCED CONCRETE AND SHALL BE SUBJECT TO THE APPROVAL OF THE CITY. SKIMMERS FOR WET PONDS SHALL BE CONSTRUCTED SUCH THAT THE BOTTOM EXTENDS 6" BELOW THE NORMAL WATER LEVEL AND 6" ABOVE THE OVERFLOW. FOR DRY PONDS, THE SKIMMER BOTTOM SHALL BE SET 6" BELOW THE LOWEST OVERFLOW ELEVATION AND 6" ABOVE THE HIGHEST POINT OF OVERFLOW. ALL SKIMMERS SHALL BE CONSTRUCTED OF MINIMUM 1/4" THICK ALUMINUM OR FIBERGLASS ADEQUATELY SUPPORTED TO PREVENT DEFLECTION.

THE CITY OF DAYTONA BEACH ENGINEERING DIVISION

- NOTES: 1. MATERIALS, CONSTRUCTION METHODS AND MAINTENANCE SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AND DESIGN STANDARDS CURRENT EDITION.
- 2. CONTRACTOR SHALL PROVIDE SILT FENCES, TURBIDITY BARRIERS OR APPROVED BARRIERS AT ALL STORMWATER DISCHARGE POINTS FOR EROSION CONTROL AND SEDIMENT CONTROL DURING CONSTRUCTION. DEPENDING UPON FLOW VELOCITIES AND VOLUME, REDUNDANT (MULITPLE) PARALLEL FENCES MAY BE NEEDED.
- 3. CONTRACTOR SHALL ROUGH GRADE STORMWATER SWALES AND RETENTION AREAS VEGETATING IN COMPLIANCE WITH BEST MANAGEMENT PRACTICES PRIOR TO CONSTRUCTION OF SITE IMPROVEMENTS.
- 4. CONTRACTOR SHALL MEET ALL PERMIT CONDITIONS AS ESTABLISHED BY THE CITY OF DAYTONA BEACH AND ALL OTHER APPLICABLE AGENCIES, INCLUDING BUT NOT LIMITED TO COUNTY, FDOT, STATE, FEDERAL, AND THE SJRWMD.

MAINS MAY BE INSTALLED PRIOR TO RETENTION/DETENTION SITE CONSTRUCTION IF DEWATERING

OF THE SJRWMD, NPDES, AND ALL OTHER JURISDICTIONAL PERMITS AT THE CONSTRUCTION SITE,

PLANTINGS RELATIVE TO THE LOCATION OF PUBLIC UTILITIES AND STORMWATER INFRASTRUCTURE IN

TREATMENT SYSTEMS WHICH HAVE A MAXIMUM SIDE SLOPE OF 1:4 (EXCEPT BELOW THE WATER

15. ALL SWALES AND DITCHES SHALL HAVE A MAXIMUM PERMITTED FRONT (SIDE) SLOPE NOT STEEPER THAT A 2' WIDE BERM IS INSTALLED. DESIGN CENTERLINE AND TOP-OF-BANK ELEVATIONS SHALL

19. WET POND DEPTHS SHALL BE EIGHT FEET (8') MINIMUM TO FIFTEEN FEET (15') MAXIMUM,

20. WHEN A WET POND IS INCORPORATED WITHIN A SUBDIVISION AND IS ABUTTED BY LOTS, SUCH

STORMWATER CONSTRUCTION NOTES (PAGE 2 OF 4)	

(PAGE 3 OF 4)

Drawing Date: 01/08 Drawn By: KLH Checked By: JMP Scale: NTS Revision Date: 07/10

SEAL

Section 01720 AS-BUILTS/RECORD DOCUMENTS

PART 1 - GENERAL

- 1.1 SCOPE OF WORK
- A. This Section sets forth the requirements for preparing as-built/record drawings and documents for verification of construction and archiving.
- CONTRACTOR shall secure the services of a Florida licensed surveyor to collect data and prepare as-built/record drawings in accordance with City of Daytona Beach Utilities standards as follows:
- 1.2 REFERENCE:
- A. The preparation work shall be in accordance with this section and supplementary details in the City of Daytona Beach Utilities Department Standard Details latest edition.
- 1.3 AS-BUILTS/RECORD DRAWINGS AND DOCUMENTS:

In order to ensure that the project records are maintained to the highest standards and the information can easily be added to the City's electronic records the following information is required on all As-built/Record Drawings.

- A. The intent of these details for As-built/Record Drawings are required for all public facilities constructed. Prior to construction completion these as-built/record requirements will be reviewed to be certain the Contractor's surveyor has a clear understanding of what is required for completion of this work.
- 1. Pavement and curb widths shall be verified and dimensioned for each street at each block (for subdivisions) and as appropriate to confirm paving limits (on site plans).
- 2. All radii at intersections shall be verified and dimensioned. This information is to be clearly indicated on the as-built/record drawings.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

AS-BUILT DRAWING REQUIREMENTS (SHEET 1 OF 7)

Drawing Date: 01/08 Drawn By: KLH Checked By: JMP

Scale: NTS Revision Date: 07/10 File Name: AS-BUILT

- 3. Roadway elevation shall be record roadway, and other intervals as ne curb invert elevations shall be rec of all streets shall also be shown of the design profile grade lines. In t grade does not meet the City min of the adjacent curbing and simila correct cross slope, shall be requir originally designed.
- 4. Storm drainage structures shall be or lot lines as appropriate. Each s Station & Offset, northerly & east
- 5. Storm drainage pipe invert and in denoted as As-built information. I information written next to it.
- 6. Storm drainage pipe material, len This information is to be clearly in
- 7. All applicable topographic informat such as ditches, swales, lakes, can to verify the functional performar recording elevation every 100 feet Measurements shall be taken and features to the roadway centerline lines shall be utilized to graphical
- 8. Retention areas shall have their t Actual measurements shall be ta retention areas. Measurements s indicated. Separate calculations s provided retention volumes.
- 9. Actual materials used and elevation and skimmers shall be noted on t
- 10. Storm drainage swale centerlines top of bank shall be recorded ever

THE CITY OF DAYTONA BEACH

UTILITIES DEPARTMENT

AS-BUILTS/RECORD DOCUMENTS (CONT'D)

Section 01720

25. Benchmark Datum utilizes monumentation from the North American Vertical Datum of 1929 with elevations adjusted to NGVD 1988 data. Any NAVD 1929 monument with the limits of construction is to be protected.

1.4 SUBMITTALS

- A. CONTRACTOR shall submit each month to CITY the Project Activity Summary that shows current construction activities and a copy of notices to agencies including the City regarding road closures; plus a record of events that will be needed in the future.
- B. CONTRACTOR shall submit to CITY as required the proposed shut-off schedule, capping, temporary service scheduling, record of notices to customers and proposed roadway closings.
- C. CONTRACTOR shall submit copies of published notices.
- D. CONTRACTOR shall submit Final as-builts for each utility included in the plans. Send the two paper copies and the AutoCAD files for pre-approval. The final submittal shall include two (2) Paper Copies of Record (rolled, not folded), a CD with the AutoCAD files, and a set of PDF files (Mylars are no longer required). When the As-Builts are delivered for clearance of water lines (two paper signed and sealed copies), they will be scheduled for chlorination. CITY will not release the drinking water bacteriological laboratory report to Volusia County Health Department until the As-built information meets CITY requirements. CONTRACTOR will have 60 days from the time that the bacteriological samples are collected to submit any correction that needed to be done to the as-built and CD to CITY. If CONTRACTOR goes past the 60 days re-chlorination will be required and pay for the bacteriological laboratory report will be required. The following are minimum detail samples of how the As-built drawing information will need to be presented.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

AS-BUILT DRAWING REQUIREMENTS (SHEET 5 OF 7)

AS-BUILTS/RECORD DOCUMENTS

E. There are examples of how to display and label valves, fittings, and pipes on the plans. Include a location arrow going to the identified object:

Valve Example: 20" GATE VALVE STA. 22+23 (LT.55.0') LAT. = 29°12'53.009 LONG. = 81°04'03.355"W N = 1,774,373.4058E = 634,602.7566TOP OF NUT ELEV. = 27.50GROUND ELEV. = 30.50

20" DIP WATER MAIN STA. 22+00 (RT.55.0') LAT.= 29°12'50.009"N LONG.= 81°04'26.355"W N = 1,774,373.4058E = 634,602.7566TOP OF PIPE ELEV. = 27.50FINISH GROUND ELEV. = 30.50

(All Bench Marks used must be shown on the plans) Bench Mark Example:

BM#13 STA. 20+33 (LT. 85.5') 3/4" Iron Rod with Plastic Cap... N= 1,774,373.4058 E = 634,602.7566LAT.= 29°04'53.355"W LONG. = 81°04'53.355"W ELEV.= 32.55

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

01720 ORD DOCUMENTS D) ed at all grade changes, 100' intervals along needed along all streets. Street centerline and corded as noted. The as-built centerline profile on the plan and profile so it may be compared to the event that the as-built centerline longitudinal imum standards, additional longitudinal grades ar roadway cross-section surveys to verify the red to verify that the system will function as	Section 01720 AS-BUILTS/RECORD DOCUMENTS (CONT'D) 11. Sanitary sewer manholes shall be verified and dimensioned from street centerlines or lot lines as appropriate. Each structure shall be located by sub-meter GPS with station & offset, northerly & easterly, latitude, longitude, and elevation data. All rim and invert elevation shall be verified and recorded. This information shall be clearly indicated as being as-built information. Design elevations shall be crossed out and as-built information written next to it.
e located and/or dimensioned from centerlines structure shall be located by sub-meter GPS with terly, latitude, longitude, and elevation data. let elevation shall be recorded and clearly	 12. For subdivisions, proposed design finish floor elevations shall appear on all subdivision lots on the appropriate plan and profile sheet as well as on the master drainage plan. 13. Sanitary sewer line lengths, sizes, material, slope, etc., shall be verified and recorded, this information is to be clearly indicated as being as-built information.
Jesign elevation shall be crossed out and as-built gth, size shall be measured and/or verified. indicated as being as-built information. tion pertinent to the on-site drainage system, nals, etc. that are deemed necessary by the City nce of the storm system, shall be noted. Normally, t at the top of bank to toe of sloe will be required. d recorded in order to accurately tie down these es and to plat lines. Whenever possible, contour lly describe these topographic features. op of bank and bottom elevations recorded. ken and dimensions recorded of the size of all hall be done from top of bank with side slopes shall be submitted to indicate required and ons and dimensions of overflow weir structures the as-built. shall be located and elevations of flow line and ty 100 feet. side slopes shall also be indicated.	 14. Sewer Laterals shall be verified and recorded at the clean out locations, stationing and offset distances shall be measured from upstream manholes towards downstream manholes. Invert information at clean out shall be provided and be located by sub-meter GPS with station & offset, northerly & easterly, latitude, longitude, and elevation data. 15. Lift station and forcemain shall be verified and dimensioned from street centerlines or lot lines as appropriate. Forcemain depth and location including valves will be provided and tied to permanent above grade features. dimensional and elevation information indicated on the approved plan shall be verified and recorded. This information shall be clearly indicated as being as-built information. Buried potable water lines and electrical service lines shall be clearly dimensioned, located and labeled. Each lift station shall be located by sub-meter GPS with station & offset, northerly & easterly, latitude, longitude and elevation data. 16. Curb cuts or metal tabs, used to mark sewer laterals, water services and water valves, shall be verified for presence and accuracy of location. 17. Potable and reclaimed water main lines shall be dimensioned off the baseline construction. Water main line material size, length and depth, placed shall be noted. Locations of valves shall also be tied to baseline construction. This information shall be clearly indicated as being as-built information.
AS-BUILT DRAWING REQUIREMENTS (SHEET 2 OF 7) FY: 17/18 Drawing Date: 01/08 Drawn By: KLH Checked By: JMP Scale: NTS Revision Date: File Name: AS-BUILT Page 161	THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT UTILITIES DEPARTMENT
	Section 01720

AS-BUILTS/RECORD DOCUMENTS (CONT'D)

PART 2- EXECUTION

2.1 General

- All drawings shall be prepared to True State Plane Coordinates. CONTRACTOR shall provide all materials, equipment, labor needed to prepare and submit accurate As-Built/Record Drawings.
- A. It is acceptable to CITY if the surveyor utilizes an after the fact approach to collecting and verifying the location and depth by vertical PVC pipes placed by the CONTRACTOR as markers for this purpose. The surveyor shall verify to the accuracy defined in Florida Statues the As-built conditions and certify the Record Drawings.
- B. CITY shall not be considered the best source of information for valve locations that may have been lost during final grading, the surveyor or CONTRACTOR shall excavate and properly mark all valve boxes and each valve shall have a tag or color coded to define water, sewer, or reuse water valves. The use of temporary PVC pipe markers color coded is acceptable so long as cross references are provided on the Record Drawings to prevent the tops from a water valve being placed on a sewer valve.
- C. THE CONTRACTOR SHALL PROVIDE THE UTILITIES DEPARTMENT ENGINEERING DIVISION THE FINAL AS BUILT/RECORD DRAWINGS ON CD AND MYLARS. THE AS BUILT RECORD DRAWINGS SHALL BE PREPARED USING AUTOCAD FORMAT 2010 OR LATER. IN MODEL SPACE THE DRAWING SHALL BE IN FL83-EF (NAD83 FLORIDA STATE PLANES, EAST ZONE, US FOOT) STATE PLANE COORDINATES AND SHALL BE ABLE TO BE INSERTED INTO THE CITY'S OVERALL GIS SYSTEM. THE RECORD DRAWINGS SHALL ALSO BE PRINTED, SIGNED AND SEALED AS ALLOWED BY STATE OF FLORIDA REGULATIONS. A DISCLAIMER MAY BE NOTED IN A TRANSMITTAL LETTER PLUS THE SURVEYOR MAY ADD A SPECIAL NOTICE ON EACH SHEET REGARDING THE LOCATION OF THE TRUE ORIGINAL RECORD DRAWINGS OR PLACE LIMITS ON RESPONSIBILITY SHOULD SOME-ONE IN THE FUTURE NEED TO MODIFY THE DRAWINGS.

D. Identify the source markers for the survey used for Record Drawings. END OF SECTION

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POTABLE WATER CONSTRUCTION & DESIGN STANDARDS (CONT'D)

14. WHERE POTABLE WATER AND SANITARY SEWER MAINS CROSS WITH LESS THAN TWELVE (12) INCHES OF VERTICAL CLEARANCE OR WHERE THE SEWER MAIN IS ABOVE THE WATER MAIN, MEDIATION MUST BE

15. WATER MAINS SHALL BE CONSTRUCTED A MINIMUM OF 4 FEET BEHIND THE BACK OF CURB OR THE EDGE OF ROADWAY PAVEMENT, WHICHEVER IS GREATER, AS MEASURED FROM OUTSIDE WALL OF THE

16. 3 INCH METALIZED PIPE LOCATION TAPE SHALL BE LOCATED 15 INCHES TO 24 INCHES BELOW FINISHED GRADE OR AS SPECIFIED BY THE MANUFACTURER FOR ALL WATER LINES. BLUE TRACER WIRE SHALL BE ATTACHED TO ALL PIPES. WIRE RUNS SHALL BE CONNECTED WITH SILICONE FILLED WIRE CONNECTORS. SERVICES SHALL BE CONNECTED TO THE MAIN WIRE WITH SILICONE FILLED WIRE CONNECTORS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE AND TEST FOR CONTINUITY (SEE CITY SPECIFICATION #15049 TRACER WIRE AND ALARMING TAPE). TRACER WIRE SHALL BE TESTED FOR CONTINUITY UNDER THE SUPERVISION OF A CITY REPRESENTATIVE AFTER INSTALLATION. IF A METER BOX IS NOT WITHIN 200 FEET OF A VALVE AND VALVE BOX AN ADDITIONAL VALVE BOX FOR TRACER WIRE IS REQUIRED.

17. SINGLE RESIDENTIAL WATER SERVICES SHALL BE A MINIMUM 1-INCH ENDOT, ENDOTRACE OR APPROVED EQUAL POLY-TUBE (MEETING THE SPECIFICATIONS OF NSF-14, AND AWWA C901.)

18. ALL WATER MAINS SHALL BE NSF-APPROVED FOR POTABLE WATER USE AND HAVE A MINIMUM COVER

19. WATER MAINS LESS THAN 18" MAY USE POLYVINYL CHLORIDE (PVC) C900, OR C905, SHALL MEET AWWA REQUIREMENTS AND HAVE A MINIMUM DIMENSION RATIO (DR-18) PRESSURE CLASS 150. WATER MAINS 18" AND LARGER SHALL BE DUCTILE IRON PIPE (D.I.P.), CLASS 350, CEMENT LINED. ALL NON-DUCTILE IRON PIPE HORIZONTAL DIRECTIONAL DRILL WATER MAINS SHALL HAVE A MINIMUM WORKING PRESSURE OF 160 PSI. THE CITY MAY REQUIRE A HIGHER PRESSURE RATING BASED ON SITE CONDITIONS. INSIDE DIAMETER OF NON D.I.P. HORIZONTAL DIRECTIONAL DRILL PIPE SHALL MATCH THE INSIDE DIAMETER OF CONNECTING PIPES. ALL GASKETS SHALL BE LUBRICATED BEFORE INSTALLATION.

21. ALL POTABLE WATER MAINS SHALL USE THRUST RESTRAINT AS CALCULATED BY A PROGRAM AVAILABLE A

22. ALL FITTINGS, VALVES, ETC. SHALL BE DUCTILE IRON (MJ OR FLANGED) AND SHALL BE RESTRAINED. 23. ALL RESTRAINED PIPE BELL JOINTS SHALL USE BELL RESTRAINTS OR GRIPPER TYPE GASKETS CAN BE USED

24. WATER VALVES SHALL BE INSTALLED AT ALL STREET INTERSECTIONS AND AT A MAXIMUM SPACING OF 750 FEET. SPACING OF VALVES ON PRIMARY TRANSMISSION MAINS WILL BE DETERMINED BY THE CITY.

26. ALL FITTINGS SHALL MEET MINIMUM RESTRAINT REQUIREMENTS PER ANSI/AWWA/EBAA, AND ALL PRESSURE

3/4" TO 2" METER REQUIRES 6', 4" METER REQUIRES 12', 6" AND 8" METER REQUIRES 14',

POTABLE WATER CONSTRUCTION & DESIGN STANDARDS (CONT'D)

- 28. ALL WATER VALVE BOXES SHALL BE ADJUSTED, INCLUDING DEBRIS CAP, AND CONCRETE COLLAR TO FINISHED GRADE. VALVE BOX LIDS SHALL BE PAINTED BLUE TO MAKE THEM CLEARLY VISIBLE. 29. UPON FINAL ACCEPTANCE OF NEW WATER SYSTEMS, WATER VALVES SHALL BE COMPLETELY OPENED BY CITY UTILITIES PERSONNEL. THE CONTRACTOR SHALL NOT OPERATE ANY EXISTING
- VALVES WITHOUT A CITY REPRESENTATIVE PRESENT. 30. ALL VALVES 2 INCHES AND SMALLER SHALL BE CURB STOPS. VALVES LARGER THAN 2 INCHES SHALL BE GATE VALVES.
- A MINIMUM OF ONE FIRE HYDRANT SHALL BE LOCATED AT EVERY INTERSECTION. OTHER FIRE HYDRANTS SHALL BE LOCATED TO PRODUCE A MAXIMUM 500 FOOT RADIUS OF COVERAGE. ALL FIRE HYDRANTS SHALL BE INSTALLED IN EASILY ACCESSIBLE LOCATIONS FOR FIRE PERSONNEL. THE PRIMARY HYDRANT PORT ISHALL FACE THE STREET.
- 32. THE CONTRACTOR SHALL PIG ALL PIPES 6 INCHES OR LARGER IN DIAMETER. LAUNCHING AND EXTRACTION POINTS SHALL BE DETERMINED BY THE CONTRACTOR AND CITY REPRESENTATIVE.
- 33. FOR PIPE FLUSHING, PIGGING, TESTING, AND TIE-IN CONNECTIONS, THE CITY RESERVES THE RIGHT TO REQUIRE WORK TO BE PERFORMED DURING PERIODS OF LOW FLOW (MIDNIGHT TO 8 A.M.) THE CONTRACTOR SHALL COORDINATE WITH THE CITY REPRESENTATIVE AND WATER PLANT OPERATIONS TO SCHEDULE THE DATE AND TIME FOR THESE ACTIVITIES.
- 34. THE CITY RESERVES THE RIGHT TO PERFORM THE SAMPLING AND ANALYSIS FOR BACTERIOLOGICAL CLEARANCE OF THE WATER MAIN. ANY RETESTING WILL BE AT THE CONTRACTORS EXPENSE.
- 35. POTABLE WATER LINES SHALL NOT BE USED OR PLACED INTO SERVICE UNTIL CLEARANCE IS ACCEPTED BY VOLUSIA COUNTY HEALTH DEPARTMENT AND THE CITY OF DAYTONA BEACH.
- 36. BACKFLOW PREVENTERS (BFP) SHALL BE PLACED ON ALL POTABLE AND FIRE LINES SERVING COMMERCIAL AND RESIDENTIAL PROPERTIES. THE TYPE OF BACKFLOW PREVENTERS REQUIRED ARE AS FOLLOWS:
 - POTABLE WATER SERVICE; REDUCED PRESSURE ZONE (RPZ)(BFP) FIRE LINE SERVICING A FIRE SPRINKLER SYSTEM AND/OR PRIVATE FIRE HYDRANT; DOUBLE CHECK VALVE ASSEMBLY FIRE LINE; DOUBLE CHECK VALVE ASSEMBLY

IN CASES WHERE A WATER LINE SERVES BOTH DOMESTIC AND FIRE SERVICES, A REDUCED PRESSURE ZONE BFP IS REQUIRED.

- 37. ALL JACK & BORES REQUIRED FOR COMMERCIAL DEVELOPMENT SHALL BE PERFORMED AT THE SOLE COST OF THE OWNER\DEVELOPER.
- 38. ALL C-900 DR-18 PVC PIPE REQUIREMENTS REFERENCE TO THE C-900 STANDARDS.
- 39. CHLORINATED WATER MUST BE DECHLORINATED PRIOR TO DISCHARGE INTO ANY JURISDICTIONAL WETLAND OR WATER BODY PER AWWA STANDARD, ANSI/AWWA C655.

- EXIST. PIPE

(FULL LENGTH)

RESTRAINED JOINT

POTABLE WATER MAIN~

FULL LENGTH

TYPE 'B' CROSS SECTIONAL VIEW FXIST PIPF.

FULL LENGTH)

BY MANUFACTURER.

D.I.P. BENDS

(4 REQUIRED)

RESTRAINED AS REQUIRED

W-8 Scale: NTS Revision Date: 01/19 File Name: Water Main Separation Chart W

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						NO.	
DARKFR MYNCHFNRFRG	& ASSOCIATES. INC.		THUPESSIUNAL ENGINEERS * LANUSCAPE ARCHITECTS	1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117	(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com	CERTIFICATE OF AUTHORIZATON NUMBER 00003910	
EMBRY RIDDLE AERONAUTICAL UNIVERSITY	PRINT SHOP	DAYTONA BEACH * FLORIDA			I WATER STANDARD DETAILS		
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EMBRY RIDDLE AERONAUTICAL UNIVERSITY PRINT SHOP Daytona beach * Florida	WATER STANDARD DETAILS	
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Drawing Date: 01/08 Drawn By: KLH Checked By: JMP

ile Name:Restrained Joint Table RW-6

ale: NTS

Revision Date:

UNITES INCLUMENT OF DESIGN STANDARDS	TRUCT	CONSTRU			SANITARY S	
The construction is a construction of a constru	ITARY SEWER N AND A MI LS SHALL E	12. ALL GRAVITY SANITARY SHALL BE GREEN AND SERVICE LATERALS SH	S ADVANCE	A MINIMUM OF 3 BUSINESS D	TILITIES DEPARTMENT SHALL BE GIV	CONS
 	NITARY SEWE RE CLASS 15	13. ALL GRAVITY SANITARY MINIMUM PRESSURE CL/	STRUCTION.	JNING ANY SANITARY SEWER C	INCLUDING HOLIDAYS) PRIOR TO BE	NOTICE (NOT
 	F 10 FEET O SED. ILY HOMES, 1	OR IN DEPTHS OF 10 F 150 SHALL BE USED. 14. FOR SINGLE FAMILY HO				
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$\begin{array}{cccccccccccccccccccccccccccccccccccc$	H AS OUSE WITH	TERMINAL DEPTH AS REQUIRED FOR HOUSE SERVICE (36" MIN) WITH	PRESSURE 64 (PSI) 6 10.19 450	24 30 36 42 48 54 8 3.82 4.78 5.73 6.69 7.64 8.60	6 8 10 12 14 16 18 4 0.95 1.27 1.59 1.91 2.23 2.55 2.87	PRESSURE (PSI) 3 4 450 0.48 0.6
$ \frac{275 0.37}{250 0.36} 0.75 1.00 1.24 1.49 1.74 1.99 2.24 2.49 2.99 3.73 4.48 5.23 5.98 6.72 7.47 7.97 275 \\ 250 0.36 0.47 0.71 0.95 1.19 1.42 1.66 1.90 2.14 2.37 2.85 3.56 4.27 4.99 5.70 6.41 7.12 7.60 250 \\ 225 0.34 0.45 0.68 0.90 1.13 1.35 1.58 1.80 2.03 2.25 2.70 3.38 4.05 4.73 5.41 6.03 6.76 7.21 225 \\ 200 0.32 0.43 0.64 0.85 1.06 1.28 1.48 1.70 1.91 2.12 2.55 3.19 3.82 4.46 5.09 5.73 6.37 6.80 200 \\ 175 0.30 0.40 0.59 0.80 0.99 1.19 1.39 1.59 1.79 1.98 2.38 2.98 3.58 4.17 4.77 5.36 5.96 6.36 175 \\ 150 0.28 0.37 0.55 0.74 0.92 1.10 1.29 1.47 1.66 1.84 2.21 2.76 3.31 3.86 4.41 4.97 5.52 5.88 150 \\ 125 0.25 0.34 0.50 0.67 0.84 1.01 1.18 1.34 1.51 1.68 2.01 2.52 3.02 3.53 4.03 4.53 5.04 5.37 125 \\ 100 0.23 0.30 0.45 0.60 0.75 0.90 1.05 1.20 1.35 1.50 1.80 2.25 2.70 3.15 3.60 4.05 4.50 4.80 100 \\ * IF THE PIPELINE UNDER TEST CONTAINS SECTIONS OF VARIOUS DIAMETERS, THE ALLOWABLE LEAKAGE WILL \\ E = \frac{SD \sqrt{P}}{133.200} $ $ \begin{array}{c} L = \frac{SD \sqrt{P}}{133.200} \end{array} $ $ \begin{array}{c} L = \frac{SD \sqrt{P}}{133.200} \end{array} $	FOOT W	FALL OF 1/4" PER FOOT	1 9.61 400 3 8.99 350 0 8.32 300	0 3.60 4.50 5.41 6.31 7.21 8.11 11 3.37 4.21 5.06 5.90 6.74 7.58 0 3.12 3.90 4.68 5.46 6.24 7.02	1 1 <th1< th=""> <th1< th=""> <th1< th=""> <th1< th=""></th1<></th1<></th1<></th1<>	400 0.45 0.6 350 0.42 0.5 300 0.39 0.5
$\frac{175 0.30 0.40 0.59 0.80 0.99 1.19 1.39 1.59 1.79 1.98 2.38 2.98 3.58 4.17 4.77 5.36 5.96 6.36 175 \\ 150 0.28 0.37 0.55 0.74 0.92 1.10 1.29 1.47 1.66 1.84 2.21 2.76 3.31 3.86 4.41 4.97 5.52 5.88 150 \\ 125 0.25 0.34 0.50 0.67 0.84 1.01 1.18 1.34 1.51 1.68 2.01 2.52 3.02 3.53 4.03 4.53 5.04 5.37 125 \\ 100 0.23 0.30 0.45 0.60 0.75 0.90 1.05 1.20 1.35 1.50 1.80 2.25 2.70 3.15 3.60 4.05 4.80 100 \\ * IF THE PIPELINE UNDER TEST CONTAINS SECTIONS OF VARIOUS DIAMETERS, THE ALLOWABLE LEAKAGE WILL \\ BE THE SUM OF THE COMPUTED LEAKAGE FOR EACH SIZE. \\ L = \frac{SD \sqrt{P}}{133.200} \qquad L = \frac{SD \sqrt{P}}{130.200} \qquad L = \frac{SD \sqrt{P}}{130.200} \qquad L = \frac{SD \sqrt{P}}{130.200} \qquad L = \frac{SD \sqrt{P}}{100} \qquad L = \frac{SD \sqrt{P}}{100} \qquad L = \frac{SD \sqrt{P}}{100} \qquad L = \frac{SD \sqrt{P}}{$	_	NOTES	7 7.37 275 2 7.60 250 6 7.21 225 7 6.80 200	3 2.39 3.73 4.48 5.23 5.98 6.72 7 2.85 3.56 4.27 4.99 5.70 6.41 5 2.70 3.38 4.05 4.73 5.41 6.03 2 2.55 3.19 3.82 4.46 5.09 5.73	7 0.71 0.95 1.19 1.42 1.66 1.90 2.14 1 5 0.68 0.90 1.13 1.35 1.58 1.80 2.03 3 0.64 0.85 1.06 1.28 1.48 1.70 1.91	2/5 0.37 0.5 250 0.36 0.4 225 0.34 0.4 200 0.32 0.4
* IF THE PIPELINE UNDER TEST CONTAINS SECTIONS OF VARIOUS DIAMETERS, THE ALLOWABLE LEAKAGE WILL BE THE SUM OF THE COMPUTED LEAKAGE FOR EACH SIZE. $L = \frac{SD \sqrt{P}}{133.200}$ FITTINGS. FITTINGS. FITTINGS.	ON DETAIL PE AND	1. SERVICE CONNECTION DI BASED ON PVC PIPE AI	6 6.36 175 2 5.88 150 4 5.37 125 0 4 80 100	3 2.38 2.98 3.58 4.17 4.77 5.36 4 2.21 2.76 3.31 3.86 4.41 4.97 8 2.01 2.52 3.02 3.53 4.03 4.53 0 1.80 2.25 2.70 3.15 4.03 4.53	D 0.59 0.80 0.99 1.19 1.39 1.59 1.79 7 0.55 0.74 0.92 1.10 1.29 1.47 1.66 4 0.50 0.67 0.84 1.01 1.18 1.34 1.51 0 0.45 0.60 0.75 0.90 1.05 4.20 4.75	175 0.30 0.4 150 0.28 0.3 125 0.25 0.3 100 0.23 0.3
$L = \frac{SD \sqrt{P}}{133.200}$ $18^{\circ} \times 18^{\circ} \times 6^{\circ} \times 10^{\circ} \text{MUST BE INSTALLFD}$	S NOT IN F	2. SEWER CLEANOUTS NOT SHALL HAVE CONCRETE	EAKAGE WILL	RIOUS DIAMETERS, THE ALLOWABLE	E UNDER TEST CONTAINS SECTIONS OF F THE COMPUTED LEAKAGE FOR EACH S	* IF THE PIPELII BE THE SUM (
WHERE:		18"x18"x6" AROUND TH			$L = \frac{SD\sqrt{P}}{137200}$	
L = ALLOWABLE LEAKAGE, IN GALLONS PER HOUR S = LENGTH OF PIPE TESTED, IN FEET D = NOMINAL DIAMETER OF PIPE, IN INCHES	ID THEIR 1 ED AND AL PE AT THE	TO FINISHED GRADE AT			WHERE:	
P = AVERAGE TEST PRESSURE DURING THE LEAKAGE TEST, IN POUNDS PER SQUARE INCH (GAUGE)	ID THEIR 1 ED AND AI DE AT THE ROPERTY I	TO FINISHED GRADE AT RIGHT-OF-WAY/PROPE		LONS PER HOUR FEET IN INCHES	WHERE: L = ALLOWABLE LEAKAGE, IN G S = LENGTH OF PIPE TESTED, I D = NOMINAL DIAMETER OF PIP	
SANITARY SEWER FY-19/20 Drawing Date: 01/08	ID THEIR 1 ED AND AL DE AT THE ROPERTY L	TO FINISHED GRADE AT RIGHT-OF-WAY/PROPER		LONS PER HOUR FEET IN INCHES JRING THE LEAKAGE TEST, :H (GAUGE)	WHERE: L = ALLOWABLE LEAKAGE, IN G S = LENGTH OF PIPE TESTED, D = NOMINAL DIAMETER OF PIP P = AVERAGE TEST PRESSURE IN POUNDS PER SQUARE I	

ALL BE A MINIMUM OF 8" DIAMETER. COMMERCIAL SERVICE LATERALS 6" IN DIAMETER. OR LARGER. ALL SINGLE FAMILY RESIDENTIAL SLE SERVICES WITH CLEAN OUTS INSTALLED AT PROPERTY LINES.

HALL BE GREEN PVC SDR-26, ASTM D-3034, OR C-900 DR-18 CES WHERE A MINIMUM COVER OF 4 FEET CANNOT BE MAINTAINED R C-900 OR C-905 GREEN PVC DR-18, MINIMUM PRESSURE CLASS

INCH SEWER SERVICE LATERALS SHALL BE CONSTRUCTED AT EACH DWNSTREAM SIDE OF THE LOT CENTER LINE. THESE SERVICES SHALL T THE PROPERTY LINE WITH A PVC RISER AND PLUG EASILY VISIBLE S SHALL BE USED ON ALL LINES. NO GLUED JOINTS ARE PERMITTED

SITES, SIX INCH MINIMUM SEWER SERVICES AND CLEANOUTS SHALL TY. PVC C900 OR C905 DR-18. FORCE MAINS 18" AND LARGER SHALL S 350, EPOXY LINED. ALL NON DUCTILE IRON PIPE HORIZONTAL HAVE A MINIMUM WORKING PRESSURE OF 160 PSI. THE CITY MAY DEPENDING ON SITE CONDITIONS. INSIDE DIAMETER OF NON D.I.P. E SHALL MATCH THE INSIDE DIAMETER OF CONNECTING PIPES. D MJ ADAPTERS.

R SHALL BE 48". ALL FORCE MAINS SHALL BE DISTINCTLY MARKED N. E DUCTILE IRON (MJ OR FLANGED) AND RESTRAINED. ALL FORCE AS CALCULATED BY A PROGRAM AVAILABLE AT (EBAA.COM).

ALL USE BELL RESTRAINTS. GRIPPER TYPE GASKETS CAN BE USED JOINTS SHALL BE LIMITED WHENEVER POSSIBLE. IN SPECIAL CASES

12" PVC SEWER MAIN IS REQUIRED, THE PROPER RIGID WRAP CITY SPECIAL APPROVAL. IAIN VALVES SHALL BE PLUG VALVES UNLESS OTHERWISE NOTED. END OF THE FORCE MAIN AND ON STUB OUTS.

EFERENCE THE C-900 STANDARDS. DR UPGRADES FOR BURST ISING THE C-900 STANDARDS. SLOPES ARE AS FOLLOWS: 8" PIPE 0.40%, 10" PIPE 0.28%,

THERWISE NOTED BY UTILITIES DEPT. BE INSTALLED WHENEVER POSSIBLE UNDER PAVED AREAS WITHIN MENTS SHALL BE PROVIDED WHENEVER PUBLICLY-OWNED SEWER

A PUBLIC RIGHT-OF-WAY. STRUCTION SHALL BE ACCOMPLISHED BY THE USE OF A LASER IS APPROVED BY THE CITY.

THE GROUND SUFFICIENTLY TO KEEP THE GROUNDWATER THE PIPE BEING INSTALLED WITHIN THE AREA OF THE TRENCH. FIRM FOUNDATION. SOFT OR SPONGY BEDDING FOR PIPES IS NOT

AL SHALL BE REMOVED AND REPLACED WITH A DRY, COMPACTED, THE CITY. G THE CONTRACTOR SHALL PROVIDE ADEQUATE SHEETING AND E WORKING ENVIRONMENT.

WITH ACCEPTABLE MATERIAL AND COMPACTED TO THE SPECIFIED O AREAS AND 98% IN PAVED AREAS) AND THE OPTIMUM DENSITY D PROCTOR TEST.

FORE INSTALLATION.

SANITARYSEWERFY: 19/20CONSTRUCTION & DESIGNDrawing Date: 01/08STANDARDS (CONT'D)Checked By: JMP(PAGE 2 OF 4)Revision Date: 01/2019S-2File Name: Sanitary Sewer Notes PPage 63Page 63

SANITARY SEWER CONSTRUCTION & DESIGN STANDARDS(CONT'D) 31. THE CONTRACTOR SHALL INSTALL A #12-GAUGE MINIMUM COPPER TRACER WIRE TAPED TO THE TOP OF THE PIPE AT INTERVALS NO GREATER THEN 4-FEET. COPPER WIRE SHALL HAVE A MIN.

TOP OF THE PIPE AT INTERVALS NO GREATER THEN 4-FEET. COPPER WIRE SHALL HAVE A MIN. TENSILE STRENGH/BREAK LOAD OF 452 LBS. AND REQUIRES APPROVAL BY THE CITY FOR THE FULL LENGTH OF ALL SEWER FORCE MAINS. THE PIPE LOCATOR TAPE SHALL BE INSTALLED BETWEEN 15" AND 24" BELOW FINISHED GRADE OR AS DIRECTED BY THE MANUFACTURER. TAPE SHALL BE COLOR CODED GREEN FOR FORCE MAINS. LOCATER WIRE SHALL TERMINATE AT A LOCATION AND IN A MANNER CONVENIENT FOR CITY LOCATER STAFF.

32. TRACER WIRE SHALL BE TESTED FOR CONTINUITY UNDER SUPERVISION OF A CITY REPRESENTATIVE AFTER INSTALLATION.

33. ALL SEWER LINES CONSTRUCTED OUTSIDE OF PUBLIC RIGHT-OF-WAYS WITHIN SIDE YARDS, BACKYARDS, AND OTHER POORLY ACCESSIBLE AREAS SHALL BE CONSTRUCTED OF GREEN C-900 PVC. ABSOLUTELY NO USE OF PLASTIC STYRENE FITTINGS SHALL BE ALLOWED.

34. ALL LOCAL COLLECTION SANITARY SEWER MANHOLES SHALL BE PRECAST WITH A MINIMUM INSIDE DIAMETER OF 4 FEET. MANHOLES OVER 6 FEET DEEP SHALL HAVE A MINIMUM 4 FT TALL PRE-CAST BOTTOM SECTION.

35. STANDARD MANHOLES SHALL BE LOCATED AT INTERVALS NOT EXCEEDING 400 FEET. 36. MANHOLE RIMS SHALL BE FLUSH WITH THE FINISH GRADE ELEVATION IN PAVED AREAS AND A

MINIMUM OF 0.5 FEET AND MAXIMUM OF 1.0 FOOT ABOVE GRADE IN UNPAVED AREAS. 37. THE CONTRACTOR SHALL CONSTRUCT SANITARY SEWER MANHOLES IN SUCH A WAY THAT SEWER

LINES DO NOT INTERSECT SEALED JOINTS BETWEEN SECTIONS OF THE MANHOLE. 38. INDIVIDUAL SANITARY SERVICES SHALL NOT BE CONNECTED DIRECTLY INTO MANHOLES AND MUST BE CONNECTED TO SEWER MAINS BY USE OF WYE CONNECTIONS UNLESS OTHERWISE APPROVED

BY THE CITY. 39. SANITARY SEWER DROP MANHOLES SHALL ONLY BE USED UNDER SPECIAL CONDITIONS AS APPROVED BY THE CITY. DROPS LESS THAN 3.0' ARE NOT ALLOWED. INSIDE DROPS ARE NOT ALLOWED.

40. SANITARY SEWER MANHOLES WITH SEWER FORCE MAINS DISCHARGING DIRECTLY INTO THEM SHALL BE FIBERGLASS OR POLY-ETHYLENE LINED. RETRO-FITTING OF MANHOLES WITH LINERS IS REQUIRED WHEN NEW CONNECTIONS ARE MADE. FIBERGLASS SHALL BE A MINIMUM 1/2" THICK UNLESS APPROVED OTHERWISE BY THE CITY. OTHER LINING METHODS AND MATERIALS MAY BE CONSIDERED ON A CASE BY CASE BASIS. UNDER CIRCUMSTANCES WHERE HYDROGEN SULFIDE IS A SIGNIFICANT CONCERN, MANHOLES UPSTREAM AND/OR DOWNSTREAM OF THE FORCE MAIN TIE-IN MAY BE REQUIRED TO HAVE LININGS INSTALLED.

41. EZ-WRAP PLASTIC, AS MANUFACTURED BY PRESS SEAL GASKET CORPORATION, SHALL BE USED ON THE OUTSIDE OF ALL MANHOLE AND WETWELL JOINTS. APPLY ONE LAYER OF 9" WRAP CENTERED ON EACH JOINT. A CITY INSPECTOR SHALL INSPECT ALL JOINT SEALS PRIOR TO BACKFILLING OPERATIONS.

42. CONTRACTOR FOR DEVELOPMENTS WITH THE POTENTIAL TO DISCHARGE INDUSTRIAL OR COMMERCIAL WASTE INTO THE SEWER SYSTEM SHALL CONSTRUCT AND MAINTAIN AT THE OWNER'S EXPENSE A SUITABLE CONTROL MANHOLE OR MANHOLES DOWNSTREAM OF ANY TREATMENT, STORAGE, OR OTHER APPROVED WORKS, PRIOR TO THE CITY'S COLLECTION SYSTEM TO FACILITATE OBSERVATION, MEASUREMENT, AND SAMPLING OF ALL WASTE, INCLUDING ALL DOMESTIC SEWAGE FROM THE ESTABLISHMENT.

43. CONTROL MANHOLE OR MANHOLES SHALL BE CONSTRUCTED AT LOCATIONS EASILY ACCESSIBLE AT ALL TIMES TO CITY PERSONNEL FOR SAMPLING.

44. SANITARY SEWER LIFT STATIONS AND FORCE MAINS SHALL BE APPROVED BY THE CITY. LIFT STATIONS SHALL BE CONSTRUCTED WITH A MINIMUM WET WELL AS SHOWN IN THE LIFT STATION DETAIL.
45. IT SHALL BE THE RESPONSIBILITY OF THE DESIGN ENGINEER TO PREPARE AND SUBMIT FLOTATION CALCULATIONS TO SIZE THE BASE OF THE WET WELL, AND ANY MANHOLES AS DEEMED NECESSARY

BY THE CITY. 46. ALL FITTINGS SHALL MEET THE MINIMUM RESTRAINT REQUIREMENTS PER ANSI/AWWA/DIPRA, AND ALL PRESSURE PIPES UNDER ROADWAYS SHALL BE RESTRAINED.

THE CITY OF DAYTONA BEACH UTILITIES DEPARTMENT

SANITARY SEWER CONSTRUCTION & DESIGN STANDARDS (CONT'D) (PAGE 3 OF 4) S-3

Drawing Date: 01/08 Drawn By: KLH Checked By: JMP Scale: NTS Revision Date: 01/2019 File Nome: Sanitary Sewer Notes P3 Page 64

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DARKFR MVNCHFNRFRG	& ASSOCIATES. INC.		PRUFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS	1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117	(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com	CERTIFICATE OF AUTHORIZATON NUMBER 00003910		
EMBRY RIDDLE AERONAUTICAL UNIVERSITY	EMBRY RIDDLE AERONAUTICAL UNIVERSITY PRINT SHOP Daytona Beach * Florida				SEWER SIANDARD DE AILS			
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PARKER MYNCHENBERG		PRUFESSIUNAL ENGINEERS * LANDSCAPE ARCHITECTS	1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117	(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com	CERTIFICATE OF AUTHORIZATON NUMBER 00003910	
EMBRY RIDDLE AERONAUTICAL UNIVERSITY PRINT SHOP			I SEWER STANDARD DETAILS			
DEV 2019- CITY APPROVAL STAMP 19 of 19 SHEET NO. Drawn By: MRB Date: 6-15-19 SCALE: NONE JOB #19-03						
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