NOTES:

1. **ARTERIAL ROADWAYS** - USF RING AND COVER SERIES 170-CE. HEAVY DUTY LOAD RATING. COVER WEIGHT 217#, TOTAL WEIGHT 372#.

2. **ALL OTHER APPLICATIONS** - USF RING AND COVER SERIES 170-J. HEAVY DUTY LOAD RATING. COVER WEIGHT 150#, TOTAL WEIGHT 305#.

3. **CITY IDENTIFIER SHALL BE USED FOR CITY OWNED STRUCTURES ONLY. PRIVATE FACILITIES SHALL ONLY BE IDENTIFIED AS TO USE.**

**MANHOLE COVER TYPE CE**

- 23 3/4"
- 1 1/4"

**MANHOLE COVER TYPE J**

- 23 3/4"
- 1 1/4"

**USF 170 MANHOLE RING**

- 22 1/4"
- 24 1/2"
- 30 1/4"
- 6"

**RAISED 1 1/2" LETTERS FLUSHED WITH TOP OF COVER LABELED SANITARY, STORM, POTABLE, OR RECLAIMED AS APPLICABLE**
1. POTABLE WATER.
   A. COLOR: BLUE WITH BLACK OR WHITE LETTERING
   B. LETTERING: POTABLE WATER MAIN OR SIMILAR WORDING.

2. RECLAIMED WATER.
   A. COLOR: PURPLE WITH WHITE OR YELLOW LETTERING.
   B. LETTERING: RECLAIMED WATER MAIN OR SIMILAR WORDING.

3. FIRE LINES.
   A. COLOR: RED WITH BLACK OR WHITE LETTERING
   B. LETTERING: FIRE LINE OR SIMILAR WORDING.

4. GRAVITY SEWER.
   A. COLOR: BROWN OR GREEN WITH BLACK OR WHITE LETTERING.
   B. LETTERING: SEWER LINE OR SIMILAR WORDING.

5. SEWER FORCE MAIN.
   A. COLOR: GREEN WITH BLACK OR WHITE LETTERING.
   B. LETTERING: SEWER FORCE MAIN OR SIMILAR WORDING.

GENERAL NOTES:

ALL UTILITY PIPE SHALL BE INSTALLED WITH 3 INCH WIDE SELF ADHESIVE VINYL CONTINUOUS TAPE, FOR IDENTIFICATION PURPOSES. TAPE SHALL BE COLOR CODED AND WORDED AS FOLLOWS:

2 1/2" - 4" PIPE - 3" TAPE IS CENTERED ALONG TOP HALF OF PIPE.

6" - 16" PIPE - 6" MIN TAPE IS PLACED ALONG BOTH SIDES OF TOP HALF OF PIPE.

20" AND LARGER PIPE - 6" MIN TAPE IS PLACED ON BOTH SIDES OF THE TOP HALF OF THE PIPE WITH A THIRD STRIP CENTERED ALONG TOP HALF OF PIPE.

PURPLE TAPE WITH WHITE OR OTHER CONTRASTING PERMANENTLY IMPREGNATED LETTERING SHALL BE USED. THE TAPE SHALL RUN FROM JOINT TO JOINT ALONG THE LENGTH OF THE PIPE.

METAL RECLAIMED WATER MAIN WITH IDENTIFICATION TAPE

PIPE IDENTIFICATION
TRACING WIRE GENERAL NOTES:
A tracing wire shall be installed on all potable water, reclaimed water, and sanitary sewer pipe. The wire shall be installed so that all pipe, including pipe branches, can be traced without loss of detection signal or without the transmitted signal being present at the city’s designated representative using a standard hand held detector to trace the signal. If the tracing wire is found to be not continuous after testing, contractor shall repair or replace the failed segment of wire.

APPROVED TRACING WIRE MATERIALS:

WIRE FOR DIRECT BURY APPLICATIONS: Tracing wire shall be #12 AWG high strength copper clad steel conductor (HS-CCS). The wire shall extend from the top of a valve box collar to the inside of a valve box, through a valve box collar and into the valve box. At all locations outside of the valve box, the wire shall be insulated with a 45 mil, high molecular weight - high density polyethylene (HMW-HDPE), insulation, break load 1150# minimum, and rated for direct bury usage at 30 volts as manufactured by Copperhead Industries, LLC, or approved equal.

WIRE FOR DIRECTIONAL DRILL APPLICATIONS: Tracing wire shall be #12 AWG extra high strength copper clad steel (EH-CCS), insulated with high density polyethylene (HDPE) insulation, break load 1800# minimum, and approved for directional drilling applications such as Soloshot™ manufactured by Copperhead Industries, LLC, or approved equal.

WIRE FOR PIPE BURSTING APPLICATIONS: Tracing wire shall be multi-strand stainless steel tracing wire approved for pipe bursting applications such as Soloshot™ burst manufactured by Copperhead Industries, LLC or meeting the following minimum requirements:
- **Wire**:
  - **Material**: 316 Stainless steel alloy, 49 strands, annealed
  - **Rating**: 30 Volts maximum, 1,700 LB break load
  - **Thickness**: 0.125” overall diameter (dimensionally equivalent to #8 AWG)
  - **Insulating jacket**: 45 mil, high molecular weight - high density polyethylene (HMW-HDPE), 30 volt maximum

DIRECT BURY WIRE NUTS: Shall be DryConn™ manufactured by King Innovation, DBY or DER series manufactured by 3M, trademark™ manufactured by Copperhead Industries, LLC, or approved equal.

DIRECT BURY LUG: Shall be DryConn™ manufactured by King Innovation, or approved equal.

EXECUTION:

DIRECT BURY INSTALLATION: Install in the same trench with pipe, laying tracing wire flat and securely affixed to the pipe at 5' to 10' intervals. Generally the three o’clock position to avoid damage during excavation. Metallic fasteners are not recommended to anchor the tracing wire to the pipe. Installation of valve boxes, splices, tapping saddles, etc. The slack should be sufficient to allow for small earth movements occurring during compaction, trench fill or natural subsidence. No breaks, or cuts in the tracing wire or wire insulation is permitted. At water service saddles, the wire shall not be allowed to be placed between the saddle and the main.

DIRECTIONAL DRILL OR PIPE BURSTING INSTALLATION: Install inside the bored holes and casing with pipe during installation. Generally the three o’clock position to avoid damage during excavation. Metallic fasteners are not recommended to anchor the tracing wire to the pipe. For straight pipe installations, provide one continuous loop of tracing wire with 36” of excess and coil excess tracing wire in valve box, through drilled hole, loosely knot wire to keep it inside the box.

TRACING WIRE IN A VAULT: Tracing wire shall be brought up on the outside of the vault and placed inside the vault through a direct bury lug. Any access steps. Coil enough wire to extend a minimum of 36” above ground. Wire should not be placed where a person entering the vault could trip on the wire.

CONNECTIONS: Except for approved splice-in connections, tracing wire shall be continuous and without splices from each direct bury access point. Approved splice-in connections are as follows:

JOINING ENDS OF TRACING WIRE: Connections into existing tracing wire, connections into tracing wire used during pipe bores, connections between one spool of tracing wire to another, and other similar connections shall be made using a direct bury nut. When connecting tracing wire ends together, strip 3/16” of insulation from the end of each wire. Insert the two ends firmly into the direct bury wire nut, twist the wire nut clockwise while pushing the wires firmly into the nut. Do not over torque. Tie the wires in a loose knot below the wire nut.

JOINING TRACING WIRE - BRANCH TO MAIN: Connections of tracing wire at tees, crosses, and at locations where the tracing wire will be brought to the surface shall be conducted using a direct bury lug.

JACKET COLOR: The APWA uniform color code shall be followed. (blue – potable water; purple – reclaimed water; green – sanitary sewer). Repair at all repair locations where there is existing tracing wire. The wire shall be properly reconnected and spliced as outlined above. Electrical tape is not an acceptable repair since corrosion will eventually occur and the locate signal will be lost to ground at the connection.
TYPICAL VALVE BOX COVER DETAILS

NOTE: COVERS AND RINGS TO TRAFFIC RATED PER FDOT STANDARDS AND SPECIFICATIONS.

SET TOP OF VALVE BOX TO FINISHED GRADE

EXTENSION STEM WITH 2" SQ. WRENCH NUT AND UPPER GUIDE REQUIRED FOR MORE THAN 4' DEPTH

BOX SHALL NOT REST ON VALVE OR PIPE

VALVE (TYPE AS SPECIFIED)

TRACING WIRE - SEE DETAIL GU004, COIL EXCESS TRACING WIRE IN BOX (MIN 12")

TYPICAL VALVE AND VALVE BOX DETAIL

### General Notes:

1. **The table represents the minimum separation requirements as described in F.D.E.P. Rules of the Florida Administrative Code (F.A.C.).** These separation requirements shall apply between newly proposed utility lines and existing or proposed utility lines.

2. **For the purpose of this table, reclaimed water shall mean unrestricted public access reuse water as defined by F.A.C. 62-610.** Other types of reclaimed water are sewage and separations listed for sanitary sewer shall apply.

3. **All separation distances are from outside of pipe to outside of pipe unless otherwise specified. Criterion producing greater clearance shall be used.**
   - C/C - denotes center of pipe to center of pipe.
   - O/O - denotes outside of pipe to outside of pipe.

4. **Requires prior approval from FDEP.**

### Utility Pipe Min. Separation Requirements Table

<table>
<thead>
<tr>
<th>Proposed Utility</th>
<th>Horizontal &amp; Vertical Separation Requirements</th>
<th>Acceptable Variances</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Potable Water</td>
<td>Reclaimed Water*</td>
</tr>
<tr>
<td>Potable Water</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Reclaimed Water*</td>
<td>3' O/O</td>
<td>12&quot;</td>
</tr>
<tr>
<td>Sanitary Sewer</td>
<td>6'</td>
<td>6&quot;</td>
</tr>
</tbody>
</table>
NOTES: (HORIZONTAL)

1. A minimum separation of six (6) feet, outside to outside, shall be maintained between water mains and sanitary sewer, gravity- or pressure-type sanitary sewer, or wastewater force main.

2. A minimum horizontal separation of three (3) feet, outside to outside, shall be maintained between water mains and reclaimed water lines carrying unrestricted public access reuse water, and storm sewer lines.

3. The minimum horizontal separation distance between water mains and sanitary gravity sewers shall be reduced to three feet (3') where the bottom of the water main is laid at least six inches (6") above the top of the sewer (62-555.314(C)).
1. A minimum of vertical separation of at least six inches (6"), and preferably twelve inches (12") above, or at least twelve inches (12") below, outside to outside of pipe barrel, shall be maintained between water main, sanitary gravity sewer, or storm sewer. Minimum vertical separation of 12" outside to outside shall be maintained for crossing pressure pipes (reclaimed water, storm forcemain, or sanitary forcemain).

2. It is preferable to lay the water main above the crossing hazard.

3. Where it is not possible to maintain the required separation, it shall be reported to the city engineer. Deviations and other alternatives shall be considered on a case-by-case basis and must receive specific approval by F.D.E.P., in accordance with Florida Statute 62-555.314(5), prior to implementation.

NOTES: (VERTICAL)

4. There shall be at least a six foot (6') horizontal separation between water mains and sanitary force mains without exception. Field problems shall be reported to the city engineer. Specific solutions must be accepted by F.D.E.P. prior to implementation.

5. No water pipe shall pass through or come in contact with any part of a sanitary sewer manhole or storm sewer structure.

NOTES: (HORIZONTAL)
NOTES:
SERVICE LINE CONTINUATION SEE DETAIL:
1. RW002 - RECLAIMED WATER SINGLE SERVICE CONNECTION.
2. PW004 - POTABLE WATER SINGLE SERVICE CONNECTION.
3. PW005 - POTABLE WATER DOUBLE SERVICE CONNECTION.
NOTE:
ALL PIPE AND FITTINGS MUST BE SCHEDULE 80 P.V.C.
FOR PERMITTED PAVEMENT CUT

REPLACEMENT OF FLEXIBLE PAVEMENT CRITERIA

SEE LOCATION CRITERIA

REPLACEMENT BASE

SURFACE REPLACEMENT

STAGE 2

STAGE 1

JOINT SURFACE

12" MIN

2T OR

1'-6"

VARI

12"

DENSITY PROCEDURES:

THE BACK FILL FOR THE FIRST AND SECOND STAGES SHALL BE PLACED IN 6" LAYERS (COMPACTED THICKNESS) AND SHALL BE COMPACTED TO 98% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180. TEST REPORTS SHALL BE FURNISHED TO THE CITY.

STAGE #1

THE PERMITTEE SHALL PROVIDE ADEQUATE COMPACTED FILL BENEATH THE HAUNCHES OF THE PIPE, USING MECHANICAL TAMPS SUITABLE FOR THIS PURPOSE. THIS COMPACTION APPLIES TO THE MATERIAL PLACED BENEATH THE HAUNCHES OF THE PIPE AND ABOVE ANY BEDDING REQUIRED.

STAGE #2

THE PERMITTEE SHALL OBTAIN A WELL-COMPACTED BED AND FILL ALONG THE SIDES OF THE PIPE AND TO A POINT INDICATING THE TOP OF SUB-GRADE MATERIAL.

GENERAL NOTES:

BASE AND BACK FILL MATERIALS SHALL BE EITHER OF THE SAME TYPE AND COMPOSITION AS THE MATERIALS REMOVED, OR OF EQUAL OR GREATER STRUCTURAL ADEQUACY. MATERIALS CONTAMINATED WITH DELETERIOUS SUBSTANCES DURING EXCAVATION SHALL NOT BE USED.

REPLACED BASE MATERIAL OVER DITCH SHALL BE TWICE THE THICKNESS OF THE ORIGINAL BASE, (MINIMUM 12")

BASE MATERIAL SHALL BE PLACED IN TWO OR THREE LAYERS AND EACH LAYER THOROUGHLY ROLLED OR TAMPED TO THE SPECIFIED DENSITY.

ASPHALT CONCRETE PAYMENT THICKNESS SHALL EQUAL EXISTING THICKNESS BUT NOT LESS THAN TWO (2) INCHES.

SURFACE TREATED PAVEMENT JOINT SHALL BE LAPPED AND FEATHERED.

SURFACE MATERIAL WILL BE CONSISTENT WITH THE EXISTING SURFACE.

LIMESTONE, SAND-CLAY, SHELL, ETC. BASES:

6" LAYERS COMPACTED THICKNESS DENSITY REQUIREMENTS:

98% UNDER ROADWAY
98% OUTSIDE THE TRAVELED ROADWAY, SUCH AS INTERSECTIONS, Crossovers, Turnouts, ETC.
95% SHOULDER PAVEMENT
METHOD ASSHTO T-180
MINIMUM DESIGN CRITERIA

BEDDING TYPE: 2
DESIGN PRESSURE: 150 PSI
SAFETY FACTOR: 1.5
DEPTH OF COVER: 3.0 FT

MINIMUM FOOTAGE OF PIPE RESTRAINT
H-B: HORIZONTAL BEND
VU-B: VERTICAL-UP BEND
VD-B: VERTICAL DOWN BEND

NOTES:
1. FOR LENGTHS OF PIPE AND NUMBER OF JOINTS TO BE RESTRAINED, SEE TABLE.
2. ONLY DUCTILE IRON PIPE FITTINGS SHALL BE USED AT JOINTS TO BE RESTRAINED UNLESS OTHERWISE SPECIFIED BY THE CITY ENGINEER.

PIPE SIZE

<table>
<thead>
<tr>
<th>PIPE SIZE</th>
<th>4&quot;</th>
<th>6&quot;</th>
<th>8&quot;</th>
<th>10&quot;</th>
<th>12&quot;</th>
<th>16&quot;</th>
<th>24&quot;</th>
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<tr>
<td>11.25°</td>
<td>H-B</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td>7</td>
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<td></td>
<td>VU-B</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td>7</td>
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<tr>
<td></td>
<td>VD-B</td>
<td>4</td>
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<td>22.5°</td>
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<td>11</td>
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<tr>
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<td>VD-B</td>
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<td>56</td>
<td>67</td>
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<td>VD-B</td>
<td>46</td>
<td>92</td>
<td>119</td>
<td>143</td>
<td>168</td>
<td>214</td>
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</table>

TOTAL LENGTH OF RESTRAINT FOR PVC

DEAD END PLUG AND VALVE

TEE

TOTAL LENGTH OF RESTRAINT FOR PVC

MECHANICAL JOINT VALVE.

STANDARD JOINTS

RESTRRAINED JOINTS

STANDARD JOINTS

RESTRAINED JOINTS
NOTE:

BARREL FINAL COAT:
1. TRAFFIC SAFETY YELLOW ON PUBLIC WATER SYSTEM.
2. RED ON PRIVATE WATER SYSTEMS.

BONNET AND NOZZLE CAPS COLOR FINAL COAT:
TO BE APPLIED BY THE CITY OF ALTAMONTE SPRINGS.

NOTE:
PAINT SHALL BE PORTER PAINTS (SAFETY) DTM ACRYLIC GLOSS ENAMEL #2912 OR EQUAL.
# Utility Concurrency Review

## Existing Potable Water and Sanitary Sewer Capacity Table

This form is used to develop an estimate of the capacity required by the proposed project.

<table>
<thead>
<tr>
<th>A = Type of Use</th>
<th>B = Units (SF, DU, Population, Seat, Etc.)</th>
<th>C = Calculation Method</th>
<th>Existing Potable</th>
<th>Existing Sanitary</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>D = Potable Water GPD</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>E = Sanitary Sewer GPD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMMERCIAL</td>
<td></td>
<td>175 GPD PER 1,000 SQ. FT.</td>
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<tr>
<td>OFFICE</td>
<td></td>
<td>150 GPD PER 1,000 SQ. FT.</td>
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<tr>
<td>INDUSTRIAL</td>
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<td>25 GPD PER 1,000 SQ. FT.</td>
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<tr>
<td>HOTEL/MOTEL</td>
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<td>175 GPD PER ROOM</td>
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<td>15 GPD PER STUDENT AND INSTRUCTOR</td>
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<td>RESTAURANT - USING REUSABLE SERVICE ARTICLES AND OPERATING 16 HOURS OR LESS PER DAY</td>
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<td>40 GPD PER SEAT</td>
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<tr>
<td>RESTAURANT - USING REUSABLE SERVICE ARTICLES AND OPERATING MORE THAN 16 HOURS PER DAY</td>
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<td>60 GPD PER SEAT</td>
<td></td>
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</tr>
<tr>
<td>RESTAURANT - USING SINGLE SERVICE ARTICLES ONLY AND OPERATING 16 HOURS OR LESS PER DAY</td>
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<td>20 GPD PER SEAT</td>
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<tr>
<td>RESTAURANT - USING SINGLE SERVICE ARTICLES ONLY AND OPERATING MORE THAN 16 HOURS PER DAY</td>
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<td>35 GPD PER SEAT</td>
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<tr>
<td>BAR AND COCKTAIL LOUNGE (ADD PER POOL TABLE OR VIDEO GAME)</td>
<td></td>
<td>20 GPD PER SEAT (15 GPD PER TABLE OR GAME)</td>
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<tr>
<td>DRIVE-IN RESTAURANT</td>
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<td>50 GPD PER CAR SPACE</td>
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<tr>
<td>CARRY-OUT ONLY, INCLUDING CATERERS: 1. FLOOR SPACE CALCULATION</td>
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<td>1.50 GPD PER 100 SQ. FT</td>
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<td></td>
<td>.TIMES FLOOR SPACE</td>
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<td>2. EMPLOYEE CALCULATION</td>
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<td>8 GPD PER EMPLOYEE PER 8-HOUR SHIFT</td>
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<tr>
<td>OTHER:</td>
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</tbody>
</table>

**Total**
## Utility Concurrency Review

### Proposed Potable Water and Sanitary Sewer Capacity Table

This form is used to develop an estimate of the capacity required by the proposed project.

<table>
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<tr>
<th>A = Type of Use</th>
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<th>Proposed Potable Water GPD</th>
<th>Proposed Sanitary Sewer GPD</th>
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<tbody>
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<td></td>
<td>50 GPD PER CAR SPACE</td>
<td></td>
</tr>
<tr>
<td>CARRY-OUT ONLY, INCLUDING CATERERS: 1. FLOOR SPACE CALCULATION + 2. EMPLOYEE CALCULATION</td>
<td></td>
<td></td>
<td>1.50 GPD PER 100 SQ. FT + 8 GPD PER EMPLOYEE PER 8-HOUR SHIFT</td>
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<tr>
<td>OTHER:</td>
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</tr>
</tbody>
</table>

**TOTALS**
NOTES:
1. REFER TO ENGINEERING AND DESIGN STANDARD MI009-2 FOR CURB AND GUTTER SPECIFICATIONS.
2. REFER TO ENGINEERING AND DESIGN STANDARD MI001-2 THROUGH MI007-2B FOR ACCESSIBLE PARKING AND STRIPING SPECIFICATIONS.
3. DIRECTIONAL ARROWS AND STOP BARS SHALL BE THERMOPLASTIC, AND SHALL BE PROVIDED AT ENDS OF ALL DRIVE AISLES AND AT DRIVEWAY CUTS TO RIGHT OF WAY.
4. PARKING STALL STRIPING SHALL BE MINIMUM 4" WIDE, FDOT TRAFFIC-RATED WHITE PAINT.
5. CURBING OR WHEEL STOPS ARE REQUIRED TO PROTECT LANDSCAPE AREAS FROM VEHICULAR ENCROACHMENT.
6. REFER TO SEC. 3.41.4.2 DESIGN STANDARDS, FOR REDUCTION OF PERPENDICULAR SPACES TO 18'. REFER TO SEC. 8.2.2.1 (d), INTERNAL LANDSCAPING REGULATIONS FOR DIVIDING STRIPS AND ISLANDS.

PUBLIC WORKS & UTILITIES ENGINEERING & DESIGN STANDARDS

PROPERTY LINE

CURB AND GUTTER (SEE NOTE 1)

24" THERMOPLASTIC STOP BAR (TYP)

THERMOPLASTIC DIRECTIONAL ARROWS (TYP)

STOP SIGN (R1-1) HIGH INTENSITY RETROREFLECTIVE (SIZE PER M.U.T.C.D SECTION 2B.03) (TYP)

WHEEL STOP (SEE NOTE 5 & 6)

Right of Way

TYPICAL PARKING LOT LAYOUT

MI001-2

ISSUED 2017

REVISED 03/01/2017 BY DJB
**FIRE LANE MARKINGS**

1. Signs shall be high intensity retroreflective, twelve (12) inches wide by eighteen (18) inches in height, white with three-inch high red letters not less than one-half inch wide to read “NO PARKING FIRE LANE”.

2. Signs shall be double faced, face the direction of traffic flow and spaced not greater than sixty (60) feet apart. No part of the fire lane shall be further than 30 feet from a sign.

3. Signs shall be mounted on metal posts, not less than two (2) inches in size.

4. The minimum height, measured vertically from the bottom of the sign to the top of the curb, or in the absence of curb, measured vertically from the bottom of the sign to the elevation of the near edge of the traveled way shall be 7 feet.

5. Where a curb is provided, four inches (4") of curb top and face to be traffic yellow (FDOT traffic rated pavement paint). Stripes shall be four inches (4") wide extending outward to a width of four (4) feet from curb with three (3) feet between each stripe. Striping to be two (2) coats of yellow, FDOT traffic-rated pavement paint.

6. Letters not less than four (4) inches in height and not less than two (2) inches in width within the striping (between the posted signs) to read “NO PARKING FIRE LANE”. Lettering to be traffic yellow FDOT traffic rated pavement paint.

7. Signs and painting are to be maintained by the property owner.

**LOADING ZONE MARKINGS**

1. Stripes shall be four inches (4") wide extending outward with four (4) feet between each stripe. Striping to be two (2) coats of yellow, FDOT traffic-rated pavement paint.

2. Letters not less than four (4) inches in height and not less than two (2) inches in width to read “NO PARKING LOADING ZONE”. Lettering to be traffic yellow FDOT traffic rated pavement paint.

3. Loading zone sizing shall be per City of Altamonte Springs Land Development Code 3.41.5.
Accessible Parking Spaces

Accessible parking spaces shall be provided in accordance with the current Florida Accessibility Code, Americans with Disabilities Act and any applicable Fair Housing Act requirements, including the following notes:

1. Any commercial real estate property owner offering parking for the general public shall provide specially designed and marked motor vehicle parking spaces for the exclusive use of physically disabled persons who have been issued parking permits pursuant to state law.

2. All spaces shall have an accessible curb-ramp or curb-cut to allow access to the building served. It shall be located so that users will not be compelled to wheel behind parked vehicles.

NOTE:
The minimum number of accessible parking spaces shall comply with the following table:

<table>
<thead>
<tr>
<th>TOTAL PARKING SPACES</th>
<th>REQUIRED NUMBER OF ACCESSIBLE SPACES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 25</td>
<td>1</td>
</tr>
<tr>
<td>26 to 50</td>
<td>2</td>
</tr>
<tr>
<td>51 to 75</td>
<td>3</td>
</tr>
<tr>
<td>76 to 100</td>
<td>4</td>
</tr>
<tr>
<td>101 to 150</td>
<td>5</td>
</tr>
<tr>
<td>151 to 200</td>
<td>6</td>
</tr>
<tr>
<td>201 to 300</td>
<td>7</td>
</tr>
<tr>
<td>301 to 400</td>
<td>8</td>
</tr>
<tr>
<td>401 to 500</td>
<td>9</td>
</tr>
<tr>
<td>501 to 1000</td>
<td>2% of Total</td>
</tr>
<tr>
<td>Over 1000</td>
<td>.20 plus 1 for each 100 over 1000</td>
</tr>
</tbody>
</table>
NOTES:

1. EACH ACCESSIBLE PARKING SPACE SHALL BE CONSPICUOUSLY STRIPED IN BLUE PAINT, AND SHALL BE POSTED AND MAINTAINED WITH A PERMANENT, ABOVE-GRADE SIGN BEARING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY, AND THE CAPTION "PARKING BY DISABLED PERMIT ONLY". SUCH SIGNS SHALL NOT BE OBSCURED BY A VEHICLE PARKED IN THE SPACE. ALL DISABLED PARKING SPACES MUST BE SIGNED AND MARKED IN ACCORDANCE WITH THE STANDARDS ADOPTED BY THE DEPARTMENT OF TRANSPORTATION.

2. PARKING SPACE WIDTH AND ACCESS AISLES SHALL BE MEASURED FROM CENTER OF WHITE STRIPE TO CENTER OF WHITE STRIPE.

3. THIS DETAIL IS PROVIDED TO SUPPORT LDC SECTION 3.41.3.2

4. WHERE CURBING EXISTS PARALLEL TO STALL, BLUE LINE SHALL BE REQUIRED ADJACENT TO CURB (WHITE LINE WILL NOT BE REQUIRED).

5. CURB RAMPS CONSTRUCTED ON EXISTING SITES OR FACILITIES MAY HAVE SLOPES AND RISES AS ALLOWED IN ADA 4.1.6 (3) (a) IF SPACE LIMITATIONS PROHIBIT THE USE OF A 1:12 SLOPE OR LESS.
NOTES:

1. EACH ACCESSIBLE PARKING SPACE SHALL BE CONSPICUOUSLY STRIPED IN BLUE PAINT, AND SHALL BE POSTED AND MAINTAINED WITH A PERMANENT, ABOVE-GRADE SIGN BEARING THE INTERNATIONAL SYMBOL OF ACCESSIBILITY, AND THE CAPTION "PARKING BY DISABLED PERMIT ONLY". SUCH SIGNS SHALL NOT BE OBSCURED BY A VEHICLE PARKED IN THE SPACE. ALL DISABLED PARKING SPACES MUST BE SIGNED AND MARKED IN ACCORDANCE WITH THE STANDARDS ADOPTED BY THE DEPARTMENT OF TRANSPORTATION.

2. PARKING SPACE WIDTH AND ACCESS AISLES SHALL BE MEASURED FROM CENTER OF WHITE STRIPE TO CENTER OF WHITE STRIPE.

3. THIS DETAIL IS PROVIDED TO SUPPORT LDC SECTION 3.41.3.2

4. WHERE CURBING EXISTS PARALLEL TO STALL, BLUE LINE SHALL BE REQUIRED ADJACENT TO CURB (WHITE LINE WILL NOT BE REQUIRED).

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REF: FDOT INDEX 17346

3 - 6" WHITE CHEVRONS EQUALLY SPACED PER AISLE

MIN. ROUTE WIDTH = 44"

SEE MI006 DETAIL FOR DISABLED SYMBOL SPECIFICATIONS

SEE DETAIL MI007 FOR RESERVE PARKING SIGNAGE SPECIFICATIONS. (SIGN SHALL NOT BE PLACED IN THE ACCESSIBLE ROUTE.)
NOTES:

1. SYMBOL SHALL BE 42"x42" OR 48"x48".
2. THIS SYMBOL TO BE WHITE FDOT TRAFFIC RATED PAINT.
NOTES: (DISABLED SIGN ONLY)

1. ALL LETTERS SHALL BE BLACK AND 1" IN HEIGHT AND SPACED 1" APART. LETTERS ARE TO BE SERIES "B" OR "C", PER MUTCD.

2. TOP PORTION OF SIGN SHALL BE BLUE BACKGROUND WITH WHITE LEGEND AND BORDER.

3. BOTTOM PORTION OF SIGN SHALL BE WHITE BACKGROUND WITH BLACK BORDER.

4. ONE SIGN REQUIRED FOR EACH PARKING SPACE.


6. SIGNS SHALL BE HIGH INTENSITY RETROREFLECTIVE.

NOTES: (COMPACT PARKING SIGN ONLY)

1. SIGNS SHALL HAVE A WHITE BACKGROUND WITH GREEN LETTERS AND BORDER.

2. SERIES OF COMPACT PARKING SPACES SHALL BE IDENTIFIED BY A SIGN IN THE CENTER AND ON EACH END. GREEN ARROWS SHALL BE USED AS NEEDED FOR CLARIFICATION.


4. SIGNS SHALL BE HIGH INTENSITY RETROREFLECTIVE.
NOTES:

1. ALL LETTERS SHALL BE BLACK AND 1" IN HEIGHT AND SPACED 1" APART. LETTERS ARE TO BE SERIES "B" OR "C", PER MUTCD.

2. TOP PORTION OF SIGN SHALL BE BLUE BACKGROUND WITH WHITE LEGEND AND BORDER.

3. BOTTOM PORTION OF SIGN SHALL BE WHITE BACKGROUND WITH BLACK BORDER.

4. ONE SIGN REQUIRED FOR EACH PARKING SPACE.


6. SIGNS SHALL BE HIGH INTENSITY RETROREFLECTIVE.

7. OPTION: THE HEIGHT TO THE BOTTOM OF THE TWO (2) SECONDARY SIGNS MOUNTED BELOW ANOTHER SIGN MAY BE SIX FEET (6').
NOTES:

1. DUMPSTER PAD AND ENCLOSURE ANGLE TO DIRECTION OF DRIVE AISLE SHALL NOT EXCEED 30°.
2. A STRAIGHT LINE MANEUVERING DISTANCE OF 55' MUST BE PROVIDED FOR REFUSE VEHICLE ACCESS.
3. THE AREA ABOVE THE ENCLOSURE MUST BE FREE OF WIRES AND OTHER OVERHEAD OBSTRUCTIONS.
4. SCREENING MATERIAL MUST BE INDICATED FOR REVIEW BY THE CITY. REFER TO LAND DEVELOPMENT CODE, SECTION 6.1.15, FOR APPROVED MATERIALS. WALL FINISH MUST MATCH BUILDING FINISH.
5. DOORS ENCLOSING THE DUMPSTER PAD ARE REQUIRED.
6. THE DESIGNER MUST CONTACT A CITY FRANCHISED WASTE HAULER TO DETERMINE REQUIRED CONTAINER AND PAD SIZE.
7. PAD MUST PROVIDE POSITIVE DRAINAGE TO A STORM WATER SYSTEM.
8. DESIGNER MUST DEMONSTRATE, USING STANDARD TEMPLATES, THE REFUSE VEHICLE ACCESS ROUTE TO AND FROM THE DUMPSTER ENCLOSURE.
9. THIS DETAIL APPLIES TO BOTH REFUSE AND RECYCLING ENCLOSURES.
10. STRIPES SHALL BE FOUR INCHES (4") WIDE EXTENDING OUTWARD WITH FOUR (4) FEET BETWEEN EACH STRIPE. STRIPING TO BE TWO (2) COATS OF YELLOW, FDOT TRAFFIC-RATED PAVEMENT PAINT.
NOTES:
1. ALL CURBS TO BE CONSTRUCTED OF 28 DAY, 3,000 P.S.I. CONCRETE.
2. 1/2" PRE-MOLDED EXPANSION JOINT REQUIRED EVERY 500', CONSTRUCTION JOINT REQUIRED EVERY 10' MAXIMUM (4' MINIMUM).
3. 1/2" PRE-MOLDED EXPANSION JOINT REQUIRED AT EACH SIDE OF ALL STORM INLET STRUCTURES AND AT ALL RADIUS POINTS.
4. SUB-BASE TO BE COMPACTED AND TESTED TO 98% MINIMUM DENSITY WITH MINIMUM L.B.R. 40 BASED ON AASHTO T-180 MODIFIED PROCTOR TEST.
5. EXPANSION JOINT MATERIAL MUST COVER THE ENTIRE CROSS SECTION OF CURB.
NOTES:
1. IN ALL CASES, THE ENGINEER SHALL PROVIDE A PAVEMENT CONSTRUCTION WHICH SHALL BE DESIGNED USING GOOD ENGINEERING PRINCIPLES AND ANALYSES, EVEN IF THE PAVEMENT CONSTRUCTION MUST EXCEED THE DIMENSIONS SET OUT IN THIS CODE.

2. CONCRETE PAVEMENT MAY BE UTILIZED IN LIEU OF ASPHALT PAVING UPON SUBMITTAL OF AN ACCEPTABLE DESIGN THICKNESS WHICH WOULD GENERALLY BE A MINIMUM OF FIVE INCHES FOR AUTOMOBILE TRAFFIC AND SIX INCHES FOR OTHER VEHICLES. ALL CONCRETE SHALL HAVE A MINIMUM DESIGN THICKNESS OF 3,000 PSI.

3. THE BASE AND SUB-BASE SHALL HAVE A MINIMUM DENSITY (ASTM-T180) 98 PERCENT AND A MINIMUM FLORIDA BEARING VALUE (FBV) OF 75 OR LIME ROCK BEARING RATIO OF 40. ALL MATERIALS USED SHALL BE IN ACCORDANCE WITH THE LATEST APPLICABLE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) SPECIFICATIONS OR AS APPROVED BY THE CITY ENGINEER.

5. REFER TO CITY OF ALTAMONTE SPRINGS LAND DEVELOPMENT CODE 6.1.3.6 AND ARTICLE XI, ACCESS CONTROL FOR ADDITIONAL REQUIREMENTS.

6. ALTERNATIVES OR MODIFICATIONS SUBJECT TO CITY ENGINEER APPROVAL.

### PAVEMENT CROSS SECTION DETAILS
COMMERCIAL/INDUSTRIAL DRIVEWAYS AND PARKING LOTS

<table>
<thead>
<tr>
<th>PROPOSED PAVEMENT SECTION</th>
<th>AUTOMOBILE TRAFFIC</th>
<th>ALL OTHER VEHICULAR TRAFFIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASPHALTIC CONCRETE</td>
<td>1-INCH SP 9.5 OR FC 9.5 (MIN.)</td>
<td>1.5-INCH SP 12.5 OR FC 12.5 (MIN.)</td>
</tr>
<tr>
<td>BASE</td>
<td>6-INCH (MIN.)</td>
<td>8-INCH (MIN.)</td>
</tr>
<tr>
<td>STABILIZED SUB-BASE</td>
<td>8-INCH (MIN.)</td>
<td>10-INCH TO 12-INCH (MIN.)</td>
</tr>
</tbody>
</table>

### PAVEMENT CROSS SECTION
& Butt Joint
(COMMERCIAL)
SIDEWALK CONSTRUCTION

1. SIDEWALKS, BIKE PATHS, RAMPS, AND DRIVEWAY APRONS SHALL BE CONSTRUCTED OF PLAIN PORTLAND CEMENT CONCRETE WITH A MAXIMUM SLUMP OF 3 INCHES, A MINIMUM DEVELOPED COMpressive STRENGTH OF 3,000 P.S.I. IN 28 DAYS, AND A MINIMUM UNIFORM THICKNESS OF 4 INCHES WHERE INTENDED SOLELY FOR PEDESTRIAN TRAFFIC, AND 6 INCHES THICK WHERE MOTOR VEHICLES ARE LIKELY TO CROSS.

2. SIDEWALKS AND BIKE PATHS SHALL BE PLACED PARALLEL TO, AND ONE FOOT WITHIN THE RIGHT-OF-WAY LINE, EXCEPT THAT THE CITY MAY APPROVE DEVIATIONS TO SAVE SPECIMEN TREES PROVIDED THAT THE PAVEMENT REMAINS WITHIN THE RIGHT-OF-WAY, OR ADJACENT EASEMENT DEDICATED FOR SIDEWALK USE, IS NOT DIMINISHED IN WIDTH, AND REMAINS AT LEAST 3 FEET FROM THE EDGE OF THE STREET PAVEMENT, UNLESS OTHERWISE APPROVED BY THE CITY.

3. THE TOP OF THE CONCRETE SHALL BE AT AN ELEVATION NO LOWER THAN THE CROWN OF THE ADJACENT ROADWAY, AND NO HIGHER THAN 6 INCHES ABOVE THE CROWN UNLESS APPROVED BY THE CITY TO MAKE A MORE NATURAL TRANSITION WITH THE ADJACENT LAND. UNDER NO CIRCUMSTANCES WILL THE SIDEWALK EXCEED ADA MAXIMUM GRADES.

4. ISOLATION JOINTS (TYPE A JOINTS) SHALL BE PROVIDED BETWEEN EXISTING SLABS OR STRUCTURES AND FRESH CONCRETE, TO SEPARATE PEDESTRIAN SECTIONS FROM SECTIONS WHICH WILL ENCOUNTER VEHICLE TRAFFIC, TO SEPARATE FRESH PLACEMENT FROM CONCRETE WHICH HAS SET FOR MORE THAN 60 MINUTES, AND NO FARTHER APART THAN 30 FEET IN SIDEWALKS AND BIKE PATHS. JOINT MATERIAL SHALL BE AS SPECIFIED IN FDOT STANDARDS AND SPECIFICATIONS AND SHALL BE RUBBER, PLASTIC OR OTHER APPROVED NON-BiodeGRADABLE ELASTOMERIC MATERIAL. WOOD IS PROHIBITED.

5. CONTROL JOINTS (TYPE B JOINTS) SHALL BE TOOLEO INTO THE FRESH CONCRETE, OR SAW-CUT WITHIN 24 HOURS OF PLACE ment, TO A DEPTH EQUAL TO 1/4 THE SLAB THICKNESS AND SPACED APART A DISTANCE EQUAL TO THE WIDTH OF THE SLAB OR 5 FEET, WHICHEVER IS GREATEST.

6. THE SLAB SURFACE SHALL BE BROOM FINISHED TO BE SLIP RESISTANT, AND SHALL MATCH AS CLOSELY AS POSSIBLE THE FINISH OF EXISTING ADJACENT SLABS AND ALL EDGES SHALL BE TOOLEO TO ELIMINATE SHARP CORNERS.

7. THE BEARING SUBSURFACE SHALL HAVE ALL ORGANIC, LOOSE, AND DELETERIOUS MATTER REMOVED, AND THE REMAINING CLEAN SOIL SHALL BE SMOOTH, SOUND, AND SOLID. ANY FILL MATERIAL SHALL BE COMPACTED WITH A VIBRATORY OR IMPACT COMPACTION MACHINE IN MAXIMUM 12 INCH LIFTS OR COMPACTED WITH A HAND TAMPER IN MAXIMUM 4 INCH LIFTS. THE CITY SHALL REQUIRE A COMPACTION TEST FOR EACH LIFT IF THE TOTAL FILLED SECTION IS MORE THEN 12 INCHES DEEP OR IF THE SUBSURFACE HAS BEEN DISTURBED MORE THAN 12 INCHES DEEP. WHERE SUCH TEST IS REQUIRED, THE RESULTS SHALL SHOW A MINIMUM PROCTOR FIELD DENSITY OF 95 PERCENT.

8. ALL CONCRETE WORK IN THE RIGHT-OF-WAY SHALL BE INSPECTED BY THE CITY AFTER THE SUBSOIL IS PREPARED AND THE FORMS ARE SET, BUT BEFORE THE CONCRETE PLACEMENT BEGINS.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE FINISHED SLAB FROM ALL DAMAGE AND VANDALISM UNTIL THE CITY ACCEPTS OR APPROVES THE SLAB.

10. SIDEWALKS LOCATED WITHIN THE RIGHT-OF-WAY SHALL NOT BE TINTED, STAINED, COLORED, OR COATED, UNLESS APPROVED BY THE CITY ENGINEER.

11. ALL FORMS SHALL BE REMOVED PRIOR TO ACCEPTANCE OR APPROVAL AND THE DISTURBED GROUND SHALL BE BACK-FILLED, RE-GRADED, AND SODDED SO THAT THE WEAR SURFACE OF THE CONCRETE IS REASONABLY FLUSH WITH THE ADJACENT GRADE.

12. THE CITY MAY REQUIRE ADDITIONAL JOINTS AROUND UTILITY STRUCTURES LOCATED WITHIN THE SIDEWALK.
GENERAL NOTES

1. RAMP LOCATIONS ARE TO BE COORDINATED WITH AND IN CONFORMANCE WITH CROSSWALK MARKING DETAILS SHOWN IN THE PLANS.

2. CURBED RAMPS SHALL HAVE FLARED SIDES WITH A MAXIMUM SLOPE OF 12:1.

3. RAMPS SHALL HAVE A TACTILE SURFACE, TEXTURED TO A DEPTH NOT EXCEEDING 1/8". TACTILE SURFACE IS NOT REQUIRED ON SITE.

4. RAMPS ARE TO BE CONSTRUCTED AT ALL LOCATIONS SHOWN IN THE PLANS EVEN WHEN A SIDEWALK IS NOT CONSTRUCTED CONCURRENTLY.

5. NO CURB TRANSITION IS NEEDED FOR MIAMI CURBS.
WHY A BARRIER?

1. TO PROTECT ALL ABOVE GROUND PORTIONS
2. TO PROTECT SOIL NEAR TREE FROM COMPACTION
3. PROVIDES PHYSICAL AND MENTAL AWARENESS OF TREES’ PRESENCE TO EQUIPMENT OPERATORS

WHY IT WORKS

1. NO HEAVY EQUIPMENT ALLOWED INSIDE BARRIER, ONLY HAND LABOR
2. NO CONSTRUCTION MATERIALS OR TEMPORARY SOIL DEPOSITS ALLOWED INSIDE THIS AREA

BY OBSERVING THESE TWO SIMPLE PRINCIPLES, A TREES’ CHANCE FOR SURVIVAL IS GREATLY ENHANCED

SPECIFICATIONS FOR WOOD BARRIER

1. MINIMUM RADIUS TO BE PROTECTED IS ENTIRE DRIP LINE
2. MINIMUM 3’ IN HEIGHT
3. UPRIGHTS- THE EQUIVALENT OF 2”x4” LUMBER ON 6’ MINIMUM CENTERS
4. HORIZONTAL- THE EQUIVALENT OF TWO COURSES OF 1/2” ROping WITH YELLOW PLASTIC TAPE FLAGGING
5. BARRIERS TO BE ERECTED AROUND TREES TO REMAIN BEFORE CONSTRUCTION OR NEARBY TREES ARE REMOVED
6. BARRIERS TO REMAIN IN PLACE UNTIL ALL PAVING, CONSTRUCTION AND HEAVY EQUIPMENT IS OUT OF AREA

NOTE:
BARRIER MUST BE ERECTED PRIOR TO CONSTRUCTION
MASTER DEVELOPMENT NAME
PROJECT NAME

PROJECT ADDRESS
OWNER/DEVELOPER NAME
OWNER/DEVELOPER ADDRESS
(XXX) XXX-XXXX

PROJECT DESCRIPTION

WAIVER/VARIANCE REQUESTS

COMPLIANCE STATEMENT
ALL DESIGN AND CONSTRUCTION MUST CONFORM TO THE MINIMUM STANDARDS
SET FORTH IN THE CITY OF ALTAMONTE SPRINGS LAND DEVELOPMENT CODE
AND/OR ZONING REGULATIONS.

STATEMENT OF PROJECT PHASING (Check One)
□ PROJECT IS TO BE COMPLETED AS A SINGLE PHASE
□ PROJECT IS TO BE COMPLETED IN MULTIPLE PHASES
(PHASING PLAN IS INDICATED ON THE SITE PLAN SHEET)

TYPE OF SITE PLAN APPLICATION (Check One)
□ Preliminary Plan
□ Combined Preliminary / Final
□ Final Plan
□ Site Plan Revision

Prepared By:
Engineering Firm of Record
Street Address
City, State Zip
(XXX) XXX-XXXX

Engineer of
Record:
Name of Engineer, PE Florida Reg. No. XXXX

SUBMITTED TO:
CITY OF ALTAMONTE SPRINGS
DEVELOPMENT REVIEW COMMITTEE

APPROVAL CHECKLIST

CITY AGREEMENTS AND APPROVALS

REQUIRED
YES or NO
DATE
APPROVED

FLAT APPROVAL
ENGINEER'S ESTIMATE
PERFORMANCE BOND
SHOP DRAWINGS
DEVELOPERS AGREEMENT
INFRASTRUCTURE CONSTRUCTION, MAINTENANCE, AND EASEMENT AGREEMENT
OTHER AGREEMENTS (DESCRIBE BELOW)

AGENCY PERMITS REQUIRED FOR COMMENCEMENT

REQUIRED
YES or NO
PERMIT NUMBER
LETTER OF DETERMINATION DATE

FDEP DRINKING WATER
FDEP DOMESTIC WASTEWATER
FDEP INDUSTRIAL WASTEWATER
SJRWMD ERP
SEMINOLE COUNTY RIGHT-OF-WAY
CITY SITE IMPROVEMENT PERMIT (INCl ARBOR)
NOTE: SIGNAGE REQUIRES SEPARATE PERMITS

INFRASTRUCTURE TO BE DEDICATED TO CITY

REQUIRED
YES or NO
DESCRIPTION

STREETS / R-O-W
POTABLE WATER
RECLAIMED WATER
SANITARY SEWER
STORMWATER

REQUIRED CLOSE-OUT DOCUMENTATION

REQUIRED
YES or NO
DATE
APPROVED

AS-BUILT SURVEY (ATTTESTED)
CERTIFIED RECORD DRAWINGS
LETTER OF CLEARANCE - FDEP WATER
LETTER OF CLEARANCE - FDEP WASTEWATER
SURFACE CERTIFICATION OF COMPLETION
MAINTENANCE BOND ( YEARS )
ITEMIZED CONSTRUCTION COSTS
BILL OF SALE
NON-PLATTED EASEMENTS (LIST)
FINAL REPORT - SITE INSPECTOR
FINAL REPORT - AS-BUILT / RECORD CONFORMITY

CERTIFICATION OF PROJECT ENGINEER:
The undersigned, a duly registered Professional within the meaning and intent of Chapter
471, Florida Statutes, hereby certifies that these plans have been prepared in conformity
with the requirements of the Land Development Code of the City of Altamonte Springs. In
addition, the undersigned understands and acknowledges that, in order to receive
Certificate(s) of Completion and/or Occupancy, the items above must be provided to the City
as described in Article 16 of the Land Development Code.

___________________________________       _________
Signature                                                                   Date

CONTACTS

UTILITIES:
WATER, SEWER AND RECLAIMED WATER
CITY OF ALTAMONTE SPRINGS
225 NEWBURYPORT AVE.
ALTAMONTE SPRINGS, FL. 32701
PW ADMIN. 407-571-8340

WATER, SEWER AND RECLAIMED WATER

REVISIONS

DATE
BY
DESCRIPTION
DATE
BY
DESCRIPTION

Sheet 1 of 1
NOTES:

1. MINIMUM CONCRETE STRENGTHS ARE BASED ON 28-DAY TESTS AS PER ASTM C1074-98.
2. REFER TO MI011-2 FOR SIDEWALK CONSTRUCTION REQUIREMENTS.
3. CONCRETE PAVEMENT JOINTS SHALL BE AS SPECIFIED IN FDOT DESIGN STANDARD INDEX NO. 305. WOOD IS PROHIBITED.
4. CENTER LINE SHALL BE MINIMUM 40' FROM CENTER LINE OF NEAREST EXISTING DRIVEWAY.
5. CENTERLINE OF DRIVEWAY SHALL BE 50' MINIMUM FROM RIGHT OF WAY LINE OF A INTERSECTION.
### Public Works & Utilities Engineering & Design Standards

#### Driveway Approach & Departure Angles

**Passenger Car (Figure 2)**

<table>
<thead>
<tr>
<th>Angle Type</th>
<th>Max Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Approach Angle</td>
<td>16.4</td>
</tr>
<tr>
<td>B Ramp Angle</td>
<td>11.0</td>
</tr>
<tr>
<td>C Departure Angle</td>
<td>10.9</td>
</tr>
</tbody>
</table>

**Emergency Fire Apparatus (Figure 3)**

<table>
<thead>
<tr>
<th>Angle Type</th>
<th>Max Angle</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Approach Angle</td>
<td>8.7</td>
</tr>
<tr>
<td>B Ramp Angle</td>
<td>4.2</td>
</tr>
<tr>
<td>C Departure Angle</td>
<td>7.0</td>
</tr>
</tbody>
</table>

**Figure 1**

**Figure 2**

**Figure 3**
NOTES:

1. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER’S SPECIFICATIONS.

2. A SUBGRADE CONSISTING OF GRADED AGGREGATES AND/OR GEOTEXTILE FABRIC MAY BE REQUIRED WHEN SUBGRADE CONDITIONS ARE POOR.

3. PAVEMENTS SUBJECTED TO VEHICULAR TRAFFIC MUST BE DESIGNED BY A PROFESSIONAL ENGINEER TO ACCOMMODATE WHEEL LOADS.

4. THE PAVING SYSTEM SHOULD BE SLOPED A MINIMUM OF 1/4” PER FOOT AWAY FROM BUILDINGS, RETAINING WALLS AND OTHER ELEMENTS CAPABLE OF COLLECTING OR RESTRICTING RUNOFF.
CONCRETE WASHOUT AREA INSTALLATION NOTES:
1. CONCRETE WASHOUT AREAS SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
2. CONCRETE WASHOUT AREA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8'X8'. THE SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1. THE DEPTH OF THE PIT SHALL BE AT LEAST 3'. THE BERM SURROUNDING THE SIDES AND BACK OF THE CONCRETE WASHOUT AREA SHALL HAVE A HEIGHT OF 1'.
3. THE VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CONCRETE WASHOUT AREA. A SILT FENCE SHALL BE INSTALLED ALONG THE TOP OF THE PERIMETER BERM PER THE DETAIL.
4. HIGHLY VISIBLE SIGNS SHALL BE PLACED AT THE CONSTRUCTION SITE ENTRANCE, WASHOUT AREA AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION(S) OF THE CONCRETE WASHOUT AREA(S) TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.

CONCRETE WASHOUT AREA INSPECTION AND MAINTENANCE NOTES:
1. THE CITY SITE INSPECTOR SHALL INSPECT THE CONCRETE WASHOUT AREA AT THE FOLLOWING INTERVALS:
   A. AFTER INITIAL INSTALLATION.
   B. AT LEAST WEEKLY WHILE THE CONCRETE WASHOUT AREA IS PRESENT ON SITE.
2. CONCRETE WASHOUT MATERIALS SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
3. CONCRETE WASHOUT AREAS SHALL BE ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
4. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
5. CONCRETE WASHOUT AREAS SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
6. WHEN CONCRETE WASHOUT AREAS ARE REMOVED, EXCAVATIONS SHALL BE FILLED WITH SUITABLE COMPACTED BACKFILL AND TOP SOIL, ANY DISTURBED AREAS ASSOCIATED WITH INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF CONCRETE WASHOUT AREAS SHALL BE ROUGHENED, SEEDED AND MULCHED.
7. CONCRETE WASHOUT CONTAINERS ARE RECOMMENDED TO BE PLACED INSIDE THE CONCRETE WASHOUT AREA FOR LESS MAINTENANCE.
8. CONCRETE WASHOUT CONTAINERS ARE NOT AN ACCEPTABLE SUBSTITUTE FOR CONCRETE WASHOUT AREAS.
WATER SYSTEM CONSTRUCTION GENERAL NOTES

1. THE CITY’S PUBLIC WORKS DEPARTMENT SHALL BE NOTIFIED PRIOR TO BEGINNING ANY WATER SYSTEM CONSTRUCTION.

2. DE-WATERING SHALL BE PROVIDED TO KEEP GROUND WATER ELEVATION A MINIMUM OF 6 INCHES BELOW PROPOSED WATER MAIN.

3. ALL WATER MAINS SHALL BE INSTALLED ON A FIRM FOUNDATION WITH ALL UNSUITABLE MATERIAL (MUCK, ROCK, COQUINA, ETC.) REMOVED AND REPLACED WITH CLEAN GRANULAR MATERIAL.

4. TRENCHES SHALL BE BACK FILLED WITH MATERIAL ACCEPTABLE TO THE CITY, WITH A MINIMUM COMPACTION OF 98% (AASHTO T-180) IN PAVED AREAS AND 95% (AASHTO T-180) IN UNPAVED AREAS.

5. IT SHALL BE THE CONTRACTOR’S RESPONSIBILITY TO INSURE THAT TRENCH COMPACTION TESTS BE PROVIDED AT POINTS 1 FOOT ABOVE THE PIPE AND AT 2 FEET VERTICAL INTERVALS TO FINISH GRADE, AT A MINIMUM SPACING OF EVERY 300 FEET.

6. PIPE WARNING TAPE SHALL BE LOCATED 18 INCHES BELOW FINISH GRADE FOR ALL PIPES. PIPE IDENTIFICATION TAPE SHALL BE PROVIDED ON ALL PIPES.

7. ALL SINGLE RESIDENTIAL WATER SERVICES SHALL BE MINIMUM 1" AND DOUBLE RESIDENTIAL SERVICES SHALL BE MINIMUM 1-1/2" BLACK OR BLUE POLYETHYLENE TUBING. POLYBUTYLENE SHALL NOT BE USED.

8. ALL WATER SERVICE ENDINGS SHALL BE MARKED BY 2"x4" LUMBER (PRESSURE TREATED). ALL SERVICE SHALL EXTEND 6 INCHES ABOVE GRADE, SECURED TO THE BASE OF THE LUMBER. ALL SERVICES MUST BE ADJUSTED TO FINAL METER BOX LOCATION BY OWNER PRIOR TO INITIAL METER INSTALLATION.

9. WATER VALVES SHALL BE PLACED AT ALL STREET INTERSECTIONS AND AT MAXIMUM SPACING OF 1,000 FEET FOR RESIDENTIAL SERVICE (500' FOR COMMERCIAL, MULTIFAMILY AND INDUSTRIAL). AT ALL WATER TEES AND CROSSES, VALVES SHALL BE INSTALLED ON ALL BRANCHES.

10. APPROVED WATER VALVE TYPES ARE THE FOLLOWING:
   A. BRASS BALL-TYPE VALVE FOR VALVES LESS THAN 2" DIAMETER.
   B. STANDARD GATE VALVES 2" AND LARGER DIAMETER, RESILIENT WEDGE GATE VALVES (AWWA C-509)
   C. TAPPING VALVES WITH MECHANICAL TAPPING SLEEVE FOR SIZE ON SIZE STAINLESS STEEL OR EPOXY COATED SLEEVE WITH STAINLESS STEEL BOLTS AND NUTS FOR OTHERS.
11. All potable water valve boxes shall be adjusted to finish grade and the caps shall be painted blue to make them plainly visible.

12. As standard practice, water mains shall be installed 4 feet off the back of the curb on the opposite side of the reclaimed water lines or as approved by the city.

13. All water mains shall be NSF approved for potable water use, and have a minimum cover of 36 inches. In special cases where it is impossible or inappropriate to provide adequate cover, ductile iron pipe or encasement may be used as approved by the city and FDEP.

14. All water mains to be cleared for service shall be flushed, disinfected, pressure tested, and bacteriologic ally cleansed for service, in accordance with the latest AWWA standards and the Florida Department of Environmental Protection requirements.

15. Water mains shall be PVC AWWA Class C-900, minimum CL-150 (DR-18) ductile iron pipe pressure rating, standard cement lined, unless otherwise approved by the city.

16. Upon construction completion and acceptance of the system, it shall be the design engineer's responsibility to insure that the system is properly certified and accepted by the department of environmental protection or the city public works and "as-builts" are provided to the city, prior to any use of this system.

17. Water distribution system shall be designed to comply with the city's fire (water) flow code.

18. All water services shall be marked along the outside edge of curb with upside-down "W" or by metal tabs set into pavement. Valves for water shall be marked by a "V" or metal tabs set into the pavement. Blow-offs shall be marked with a "B".

19. Blue reflectors shall be securely affixed to roadway (center line of road) adjacent to hydrant location.

20. Water services should be double 1-1/2" services located at side lot lines, alternating with reclaimed water service locations. In instances where water services need to be offset, 1" services shall be specified. These services may be offset from the lot line a maximum distance of 5.0 feet.

21. Out-of-service fire hydrants must be clearly marked (red ring on nozzle, labeled disk on nozzle) facing roadway. All labels and disk provided by the city.

22. Prior to taking any water lines out of service, the contractor shall notify the city and affected customers, in writing, 48-hours prior to shutdown.

23. Water systems will be pressure tested at 150 psi static pressure for a period of 2 hours per AWWA standards. Private water systems supplying fire hydrants or fire sprinkler systems shall be tested at 200 psi for 2 hours in accordance with NFPA 13.
24. MEGALUGS, SPLIT-RESTRAINED BOLTLESS RESTRAINED JOINTS, OR GRIPPER GASKETS MAY BE USED ON ALL RESTRAINED JOINT INSTALLATIONS, MINIMUM DEPTH OF BURY ON ALL PIPES NOT MEETING REQUIRED COVER REQUIREMENTS SHALL FOLLOW THE MOST RECENT DIPRA THRUST RERAINT DESIGN GUIDELINES.

25. WATER VALVES SHALL BE COMPLETELY OPENED BY THE CITY, IN THE PRESENCE OF THE CONTRACTOR, PRIOR TO FINAL ACCEPTANCE OF ANY NEW WATER SYSTEM.

26. ALL FIRE HYDRANTS SHALL BE CONSTRUCTED TO MAKE THEM EASILY ACCESSIBLE TO FIRE PERSONNEL IN CASE OF A FIRE. THE MAIN NOZZLE SHOULD ALWAYS FACE THE STREET AND BE 18" - 22" ABOVE GRADE.

27. HYDRANT LOCATION AND SPACING SHALL BE AS PER ARTICLE 7.9.2.3.1 OF THE LAND DEVELOPMENT CODE.
NOTES:


2. CONCRETE COLLAR AROUND LOWER BARREL OF HYDRANT IN SANDY SOIL OR HYDRANTS CONNECTED TO P.V.C. MAINS.

3. HYDRANT BASE AND TEE MUST BE WRAPPED IN 4 MIL POLYETHYLENE. NO CONCRETE WILL EXTEND ABOVE MID LINE OF PIPE.

4. WEEP HOLES TO BE PLUGGED.

5. A VERTICAL CLEARANCE SHALL BE MAINTAINED FOR A HORIZONTAL DISTANCE OF 5 FEET IN ALL DIRECTIONS AROUND ALL HYDRANTS.

6. PRIVATELY-OWNED WATER SYSTEM HYDRANTS SHALL BE MAINTAINED BY OWNERS.
NOTES:

1. THE CITY INSTALLS THE METER AND DUAL CHECK VALVE(S) IN THE SERVICE BOX. CONTRACTOR SPECIFIES 3/4" OR 1" SIZING FOR THE METER AND DUAL CHECK VALVES.

2. METER SHALL BE INSTALLED BETWEEN SIDEWALK AND CURB AND IN NO CASE SHALL IT BE INSTALLED IN SIDEWALK OR OTHER PAVED AREAS.

3. A DUAL CHECK BACKFLOW PREVENTER WILL BE FURNISHED WITH METER BY CITY OF ALTAMONTE SPRINGS ON ALL SINGLE FAMILY SERVICE CONNECTIONS. BACKFLOW PREVENTERS WILL NOT BE SUPPLIED BY THE CITY OF ALTAMONTE SPRINGS ON COMMERCIAL SERVICE CONNECTIONS. BACKFLOW PREVENTER REQUIREMENTS WILL VARY FOR COMMERCIAL CONNECTIONS.

4. ALL POTABLE WATER SERVICE AND PROPERTIES WITH ALTERNATIVE WATER SYSTEMS (WELL, ETC.) REQUIRE AN ABOVE GROUND BACKFLOW PROTECTION DEVICE ON THE OUTLET SIDE OF THE METER.

5. SERVICE LINES SHALL NOT BE LESS THAN METER SIZE.
1. THE CITY INSTalls THE METER IN THE SERVICE BOX.
2. METER SHALL BE INSTALLED BETWEEN SIDEWALK AND CURB AND IN NO CASE SHALL IT BE INSTALLED IN SIDEWALK OR OTHER PAVED AREAS.
3. THE CONTRACTOR IS REQUIRED TO INSTALL AN ABOVE GROUND BACKFLOW PROTECTION DEVICE ON THE OUTLET SIDE OF THE METER. THE TYPE OF BACKFLOW PROTECTION DEVICE WILL VARY AND BE DETERMINED BY THE CROSS CONNECTION CONTROL SUPERVISOR BASED ON THE DEGREE OF HAZARD.
4. ALL POTABLE WATER SERVICE AND PROPERTIES WITH ALTERNATE WATER SYSTEMS (WELL, ETC.) REQUIRE AN ABOVE GROUND BACKFLOW PROTECTION DEVICE ON THE OUTLET SIDE OF THE METER.
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4. ALL POTABLE WATER SERVICE AND PROPERTIES WITH ALTERNATIVE WATER SYSTEMS (WELL, ETC.) REQUIRE AN ABOVE GROUND BACKFLOW PROTECTION DEVICE ON THE OUTLET SIDE OF THE METER.

5. SERVICE LINES SHALL NOT BE LESS THAN METER SIZE.
NOTES:

1. THE CITY SUPPLIES AND INSTALLS THE METER, CURB STOP AND DUAL CHECK VALVE(S) IN THE SERVICE BOX. CONTRACTOR SPECIFIES A 3/4" OR 1" SIZING FOR THE METER AND DUAL CHECK VALVE(S).

2. OPTIONS No. 1 AND 2: DUAL CHECK VALVE (ASSE 1048 OR ASSE 1024) REQUIRED TO SEPARATE POTABLE FROM FIRE SPRINKLER WATER. CONTRACTOR PROVIDED.

3. OPTION No. 3: CITY-PROVIDED FORD DUAL CHECK VALVE - MODEL No. HHC31-444 REQUIRED.

4. THE METER AND DUAL CHECK VALVE LOSS MUST BE INCLUDED IN THE FIRE SPRINKLER SYSTEM HYDRAULIC CALCULATIONS. CONTACT THE PUBLIC WORKS DEPARTMENT AT 407-571-8533 TO OBTAIN MANUFACTURE AND MODEL OF EACH DEVICE.
NOTES:

1. SERVICE BOX FURNISHED BY CITY OF ALTAMONTE SPRINGS.
2. METER SHALL BE INSTALLED BETWEEN SIDEWALK AND CURB AND IN NO CASE SHALL IT BE INSTALLED IN THE SIDEWALK OR OTHER PAVED AREAS.
3. THE CITY WILL SUPPLY AND INSTALL THE DUAL CHECK VALVES, METER, "U", AND CURB STOP. CONTRACTOR TO SPECIFY SIZING OF FIRE SPRINKLER DUAL CHECK VALVE AND "U" AT 3/4" OR 1".
4. THE CUSTOMER WILL BE REQUIRED TO PAY FOR CURB STOP, "U" BRANCH AND DUAL CHECK VALVES EXCEEDING 1".
5. THE FIRE SPRINKLER DESIGNER MUST CONTACT THE PUBLIC WORKS DEPARTMENT AT 407-571-8533 TO OBTAIN MANUFACTURE SPECIFICATIONS FOR THE DUAL CHECK VALVE TO INCLUDE THIS LOSS IN THE FIRE SPRINKLER SYSTEM HYDRAULIC CALCULATIONS.

* COIL EXCESS TRACING WIRE IN BOX
1. All domestic meters to be compound or fire line.
2. Irrigation meters to be approved turbine meters.
3. Meters up to and including 2" to be purchased from the city.
4. Meters to be installed above ground.

**NOTES:**

**UPSTREAM**

**DOWNSTREAM**

**MASTER METER ASSEMBLY WITH BY-PASS & REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY**

**APPLICABLE STANDARDS**

A.S.S.E. 1013
A.W.W.A. C506
FCCCHR of USC

**PUBilC WORKS & UTILITIES ENGINEERING & DESIGN STANDARDS**

**CITY OF ALTAMONTE SPRINGS**

950 CALABRIA DRIVE

ALTAMONTE SPRINGS, FLORIDA 32714

**ISSUED 2017**

**REVISED 03/01/2017 BY DJB**
1. HYDRANT MUST BE FULLY OPENED DURING USE.
2. METER AND BACKFLOW ASSEMBLY SUPPLIED BY CITY ONCE DEPOSIT IS PAID.
3. VALID FOR 1" AND 2" TEMPORARY METERS.
4. ASSEMBLY MUST BE RETURNED TO CITY PRIOR TO ISSUANCE OF CERTIFICATION OF OCCUPANCY.
TEMPORARY JUMPER DETAIL NOTES:

1) **A TEMPORARY JUMPER CONNECTION IS REQUIRED AT ALL CONNECTIONS BETWEEN EXISTING ACTIVE WATER MAINS AND PROPOSED NEW WATER MAIN IMPROVEMENTS.**

2) **THE DETAIL ON THE FOLLOWING PAGE IS TO BE USED FOR FILLING ANY NEW WATER MAIN OF ANY SIZE FROM EXISTING ACTIVE WATER MAINS AND FOR FLUSHING OF NEW MAINS UP TO 8" DIAMETER (2.5 FPS MINIMUM VELOCITY), AND FOR PULLING BACTERIOLOGICAL SAMPLES FROM ANY NEW WATER MAIN OF ANY SIZE. THE JUMPER CONNECTION SHALL BE MAINTAINED UNTIL AFTER FILLING, FLUSHING, TESTING AND DISINFECTION OF THE NEW MAIN HAS BEEN SUCCESSFULLY COMPLETED AND CLEARANCE FOR USE FROM THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) AND OTHER PERTINENT AGENCIES HAS BEEN RECEIVED. ADEQUATE THRUST BLOCKING AND/OR RESTRAINTS SHALL BE PROVIDED TEMPORARILY, AS REQUIRED. PIPE AND FITTINGS USED FOR CONNECTING THE NEW PIPE TO THE EXISTING PIPE SHALL BE DISINFECTED PRIOR TO INSTALLATION IN ACCORDANCE WITH AWWA C 651, 1992 EDITION. THIS TAPPING SLEEVE AND EXTERIOR OF THE MAIN, TO BE TAP-PED, SHALL BE DISINFECTED BY SPRAYING OR SWABBING PER SECTION II OF AWWA C 651.**

3) **FLUSHING OF 10" DIAMETER AND LARGER WATER MAINS MAY BE DONE THROUGH THE TIE-IN VALVE UNDER VERY CONTROLLED CONDITIONS. THE FOLLOWING PROCEDURES SHALL BE FOLLOWED.**
   
   A. **THE TIE-IN VALVES SHALL BE OPERATED AND PRESSURE TESTED IN THE PRESENCE OF THE UTILITY COMPANY AND ENGINEER TO VERIFY WATER TIGHTNESS PRIOR TO THE TIE-IN. VALVES WHICH ARE NOT WATERTIGHT SHALL BE REPLACED OR A NEW VALVE INSTALLED IMMEDIATELY ADJACENT TO THE LEAKING VALVE.**

   B. **THE TEMPORARY JUMPER CONNECTION SHALL BE CONSTRUCTED AS DETAILED. THE JUMPER CONNECTION SHALL BE USED TO FILL THE NEW WATER MAIN AND FOR PROVIDING WATER FOR BACTERIOLOGICAL SAMPLING OF THE NEW MAIN AS REQUIRED BY THE FDEP PERMIT.**
   
   - FLUSHING SHALL NOT BE ATTEMPTED DURING PEAK DEMAND HOURS OF EXISTING WATER MAINS.
   - ALL DOWNSTREAM VALVES IN THE NEW SYSTEM MUST BE OPEN PRIOR TO OPENING THE TIE-IN VALVE.
   - PROVIDE FOR AND MONITOR THE PRESSURE AT THE TIE-IN POINT. THE PRESSURE IN THE EXISTING MAIN MUST NOT DROP BELOW 35 PSI.
   - TIE-IN VALVE SHALL BE OPENED A FEW TURNS ONLY ENSURING A PRESSURE DROP ACROSS THE VALVE IS ALWAYS GREATER THAN 10 PSI.

   C. **THE TIE-IN VALVE SHALL BE LOCKED CLOSED BY THE UTILITY COMPANY UNTIL FLUSHING BEGINS.**

   D. **THE TIE-IN VALVE SHALL BE OPENED ONLY FOR FLUSHING OF THE NEW MAIN. THE PROCEDURE SHALL BE DIRECTED BY THE UTILITY COMPANY AND OBSERVED BY THE ENGINEER.**

   E. **AFTER FLUSHING, THE TIE-IN VALVE SHALL BE CLOSED AND LOCKED IN THE CLOSED POSITION BY THE UTILITY COMPANY.**

4) **THE CONTRACTOR SHALL PROVIDE DOCUMENTATION DEMONSTRATING THAT THE DOUBLE CHECK BACKFLOW PREVENTION DEVICE HAS BEEN TESTED AND IS IN GOOD WORKING ORDER AT THE TIME OF INSTALLATION.**

5) **EXCEPT AS REQUIRED TO FLUSH THE LINES OR FOR LINES GREATER THAN 8" IN DIAMETER, THE TIE-IN VALVE SHALL REMAIN CLOSED AND SHALL BE LOCKED IN THE CLOSED POSITION BY THE UTILITY COMPANY. THE TIE-IN VALVE SHALL REMAIN LOCKED CLOSED UNTIL THE NEW SYSTEM HAS BEEN CLEARED FOR USE BY FDEP AND ALL OTHER PERTINENT AGENCIES.**

6) **UPON RECEIPT OF CLEARANCE FOR USE FROM FDEP AND ALL OTHER PERTINENT AGENCIES, THE CONTRACTOR SHALL REMOVE THE TEMPORARY JUMPER CONNECTION. THE CORPORATION STOPS ARE TO BE CLOSED AND PLUGGED WITH 2" BRASS PLUGS.**

7) **ALL INSTALLATION AND MAINTENANCE OF THE TEMPORARY JUMPER CONNECTION AND ASSOCIATED BACKFLOW PREVENTION DEVICE, FITTINGS, VALVE, ETC., SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.**
TAPPING SLEEVE
WITH 2" CORPORATION
STOP

2" GSP
SAMPLING TAP

LOCKING BALL VALVE
DOUBLE CHECK VALVE
BACKFLOW PREVENTER
FEBCO 805YD

LOCKING BALL VALVE

90° BEND
(2 REQUIRED)

TEST COCK (TYP)

PRESSURE GAUGE
WITH VALVE (TYP)

THREADER NIPPLE (TYP)

FINAL GRADE

12" MIN
16" MAX

12" MIN

EXISTING MAIN

NEW MAIN

TAPPING SLEEVE
WITH 2" CORPORATION
STOP

VALVE SHALL BE LOCKED IN CLOSED POSITION
& OPERATED BY CITY PERSONNEL ONLY

NOTE: METER AND BACKFLOW PREVENTER TO BE OBTAINED FROM THE CITY.
NOTES:

1. ALL METERS SHALL BE PURCHASED FROM THE CITY.
2. LOCATION SHALL BE COORDINATED WITH UTILITY BILLING & PUBLIC WORKS DEPARTMENT.
3. SERVICE LINES SHALL NOT BE LESS THAN METER SIZE.
4. BOLLARDS MAY BE REQUIRED IN TRAFFIC AREAS.
5. PROVIDE PIPE SUPPORTS WHERE NEEDED.
NOTES:

1. WATER METERS ARE TO BE LOCATED NO HIGHER THAN 5 FEET FROM THE FLOOR IN AN ACCESSIBLE AREA.

2. WATER METERS CAN BE INSTALLED IN A VERTICAL OR HORIZONTAL POSITION.

3. THE LOCATION OF THE WATER METER IS SUBJECT TO COMMENT BY THE CITY’S BUILDING AND FIRE SAFETY (B/FS) PLUMBING INSPECTOR.

4. ALL WATER METERS SHALL BE ISSUED BY, AND/OR PURCHASED FROM, THE CITY OF ALTAMONTE SPRINGS.

5. TO REUSE THE EXISTING CITY-ISSUED WATER METERS, CONTACT THE CITY OF ALTAMONTE SPRINGS UTILITY BILLING DEPARTMENT WITH THE SERIAL NUMBER, NAME OF BUSINESS AND SUITE NUMBER TO OBTAIN WRITTEN APPROVAL. WRITTEN APPROVAL SHALL BE REQUIRED TO BE PRESENTED TO THE PLUMBING INSPECTOR AT THE TIME OF INSPECTION. (NO OTHER WATER METERS WILL BE ACCEPTED.)

6. IF AN EXISTING WATER METER IS LOCATED OR REMOVED, THE WATER SERVICE MUST BE PERMANENTLY CAPPED OFF. ALL WATER METERS REMOVED FROM SERVICE MUST BE RETURNED TO THE CITY.

7. ALL WATER METERS SHALL HAVE A BRASS, LOCKABLE CURB STOP UPSTREAM OF THE METER.
ROADWAY CONSTRUCTION NOTES

1. All right-of-way other than roadway areas shall be grassed and mulched or sodded. All slopes steeper than 6:1 shall require sodding. The City reserves the right to require sodding in special areas where erosion is a concern, such as adjacent to sidewalk and back of curb.

2. The following will be the standard protection for ditches unless drainage calculations indicate otherwise:
   (Minimum slope for grass ditches shall be 0.5%)

<table>
<thead>
<tr>
<th>SWALE PROFILE GRADES</th>
<th>PROTECTION REQUIRED</th>
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<tbody>
<tr>
<td>0.5%-1.0%</td>
<td>Grassing and mulching</td>
</tr>
<tr>
<td>1.0%-4.0%</td>
<td>Sod</td>
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<tr>
<td>4.0% and greater</td>
<td>Ditch paving (concrete)</td>
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</tbody>
</table>

3. The limits of stabilized sub-grade shall extend to a varying depth (per plan) below the bottom of the base and outward to twelve inches (12") beyond the curb.

4. The stabilizing material should be a high bearing value soil, sand-clay, limerock, recycled concrete, shell, or other material as approved by the City and a licensed soils engineer.

5. The sub-grade for all streets shall be stabilized not less than forty (40) pounds Limerock Bearing Ratio (LBR) to a 12" minimum depth. A compaction of no less than ninety-eight (98%) percent density based on AASHTO T-180 shall be required.

6. Tests for sub-grade bearing capacity and compaction shall be done at a minimum of every 250 feet and shall be staggered to the left, right, and at center line of the roadway. For short sections of roadway, at least two (2) tests shall be required.

7. Bases for all streets shall have a minimum 8" depth. Soil cement bases shall have a strength of 350 pounds per square inch at 28 days (85 to 125% tolerance). Recycled concrete or limerock bases shall be compacted to (98%) minimum density based on AASHTO T-180 Modified Proctor Test (LBR 100).

8. Soil Cement and recycled concrete mix designs shall be submitted to the City for approval prior to start of sub-grade preparation.

9. Concrete delivery tickets shall be provided to the City at the time of placement.

10. Testing of the in-place base shall be done at intervals equivalent to sub-grade testing and shall consist of, as a minimum, moisture content and compaction test.

11. Limerock, recycled concrete, or full depth asphalt pavement may be used in place of soil cement bases. All bases and roadway designs shall be subject to the approval of the City.

12. Soil cement base material construction shall be continuously supervised by a soils testing lab at the developer's expense.

13. Cure coating of soil cement base shall be removed by hard planing prior to installation of driving surface.
14. Soil cement pavement bases with the cure coat applied shall be allowed to cure a minimum of seven (7) days under no traffic prior to placing any asphalt surface. (Test report required prior to traffic usage)

15. Design mixes shall be submitted to the City Engineer for approval no less than three (3) working days prior to any roadway construction.

16. Asphalt specifications shall be submitted by the Design Engineer with final plans to the City Engineer. Florida State-certified batch plants must then certify that these approved specifications have been met.

17. Extraction and gradation tests on asphalt mixes shall be provided to the City to ensure that design mixes meet the City standard specifications.

18. The roadway crown shall have a standard one quarter inch (1/4") per foot slope.

19. All roadways with curb and gutter sections shall have as a standard, a minimum longitudinal slope of 0.30%.

20. The finished pavement edge may be within one quarter inch (1/4") above the adjacent concrete curb.

21. Concrete curbs shall be provided on both sides of all streets and constructed with 3,000 PSI concrete at 28 days.

22. Concrete curbs shall be saw cut 1/4" at intervals of ten feet (10') with expansion joints at street intersections, structures, and along curves at sixty feet (60') intervals. All expansion joint material is required to be installed through the entire depth of the concrete curb.

23. A "V" shall be cut or etched in the curb to mark the location of water distribution system valve.

24. A "S" shall be cut or etched in the curb to mark the location of all sewer service.

25. An upside-down "RW" shall be cut in the outside edge of the curb to mark the location of all reclaimed water services.

26. An upside-down "W" shall be cut in the outside edge of curb to mark the location of all water services.

27. Three (3) concrete cylinders shall be taken and tested (1 at 14 days and 1 at 28 days) for every seventy-five (75) cubic yards of concrete or less placed. Test results shall then be provided to the City Engineer as they become available.

28. The Developer shall provide all required pavement markings on all roadways per City, County, and State requirements. Centerline stripes shall be provided on extensions of City collector or arterial roads, county roads, and state highways only.

29. An Altamonte Springs' approved Stop Sign and a 24" thermoplastic Stop Bar are required at all roadway intersections.
30. All traffic control devices placed at intersections, private streets, public streets, county roads, and state highways within the City limits shall be installed according to the Manual on Uniform Traffic Control Devices, latest edition.

31. The Developer is responsible for paying fees for Traffic Control Devices to the City for installation. Street signs and stop signs shall be placed at all intersections, including but not limited to private streets, public streets, county roads, and state highways within the City limits.

32. The Developer is responsible for paying fees for all street lights prior to acceptance of the project by the City.

33. Five foot (5’) wide sidewalks shall be provided on both sides of all residential streets, see details MI011 and MI012.

34. Bike paths shall be constructed eight feet (8’) in width along arterial highways as directed by the City, see detail, MI011.

35. **Standard Turning Radii for Intersections:**

   - Residential streets with State & County Roadways or major thoroughfares within the City: 40-50 ft.
   - Entrances to commercial sites off of City streets: 40 ft.
   - Intersections interior in subdivisions: 40 ft.

   Should Seminole County or the Florida Department of Transportation (FDOT) determine that larger radii are warranted within their right-of-way, the larger radii shall prevail.

36. Corner cul-de-sac at ninety (90) degree road curves or "Eyebrows" are not permitted by the City.


38. All contractors who are performing the construction of public improvements (water main, sanitary sewer main, reclaimed water main, storm water pipes and inlets, and also construction of roadways), shall be certified with the Florida State Department of Business and Professional Regulations (DBPR) for the type of work that they perform.

39. Utility Depth:

   - High Voltage utilities such as power (feeder, service, and drops) shall be buried a minimum of 30 inches in depth, 36" under pavement.
   - Low Voltage utilities such as phone and cable TV shall be buried a minimum of 12 inches in depth for feeder and services. Service drops shall be buried a minimum of 6 inches in depth, 36" under pavement.
<table>
<thead>
<tr>
<th>ROAD CLASSIFICATION</th>
<th>DESIGN SPEED (MPH)</th>
<th>PVMT WIDTH (P)</th>
<th>RIGHT OF WAY WIDTH</th>
<th>MIN. HORIZ. RADIUS C.L.</th>
<th>MIN. VERT. CURVE</th>
<th>MAX. GRADE (%)</th>
<th>MIN. INT. SPACE</th>
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<tbody>
<tr>
<td>LOCAL / COLLECTOR</td>
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<tr>
<td>UP TO 400 VPD</td>
<td>20</td>
<td>12</td>
<td>50</td>
<td>50'</td>
<td>75'</td>
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<td>150'</td>
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<td>25</td>
<td>12</td>
<td>60</td>
<td>95'</td>
<td>125'</td>
<td>0.5</td>
<td>200'</td>
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<tr>
<td>UP TO 1000 VPD</td>
<td>20</td>
<td>12</td>
<td>50</td>
<td>180'</td>
<td>165'</td>
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<tr>
<td>UP TO 5000 VPD</td>
<td>30</td>
<td>12</td>
<td>80</td>
<td>300'</td>
<td>200'</td>
<td>0.5</td>
<td>330'</td>
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<td>35</td>
<td>12</td>
<td>80</td>
<td>375'</td>
<td>225'</td>
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<td>660'</td>
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<td>40</td>
<td>12</td>
<td>80</td>
<td>450'</td>
<td>275'</td>
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<td>660'</td>
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<td>ARTERIAL</td>
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<tr>
<td>UP TO 7500 VPD</td>
<td>35</td>
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<td>375'</td>
<td>225'</td>
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<td>450'</td>
<td>275'</td>
<td>0.5</td>
<td>660'</td>
</tr>
<tr>
<td>OVER 7500 VPD</td>
<td>40</td>
<td></td>
<td></td>
<td>450'</td>
<td>275'</td>
<td>0.5</td>
<td>660'</td>
</tr>
</tbody>
</table>

**NOTES:**

1. PAVEMENT WIDTHS FOR INDUSTRIAL AND COMMERCIAL ROADS SHALL BE INCREASED BY ONE (1) FOOT.

2. INTERSECTION ANGLES SHALL NOT BE LESS THAN 60 DEGREES EXCEPT ON ARTERIAL ROADWAYS SHALL NOT BE LESS THAN 75 DEGREES. INTERSECTIONS WITH COUNTY ROADS SHALL BE 90 DEGREES.

3. 25 MPH MIN. DESIGN SPEED UNLESS APPROVED BY THE CITY ENGINEER.

4. ALL INTERSECTIONS AND ACCESS POINTS SHALL HAVE ADEQUATE LINE OF SIGHT BASED ON AN EYE LEVEL OF 3.5' ABOVE THE GROUND AND AN OBJECT 3.0' ABOVE THE LOWEST ROADWAY. FOR PURPOSES OF THIS STANDARD, THE EYE LEVEL SHALL BE MEASURED 8' IN BACK OF THE STOP BAR AT INTERSECTIONS. THE FOLLOWING SIGHT DISTANCES SHALL BE PROVIDED:

<table>
<thead>
<tr>
<th>DESIGN SPEED (MPH)</th>
<th>20</th>
<th>25</th>
<th>30</th>
<th>35</th>
<th>40</th>
<th>45</th>
<th>50</th>
<th>55</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIGHT DISTANCE (FT) (MINIMUM)</td>
<td>200</td>
<td>250</td>
<td>300</td>
<td>350</td>
<td>400</td>
<td>450</td>
<td>500</td>
<td>550</td>
</tr>
</tbody>
</table>
5'-0" WIDE CONCRETE SIDEWALK
4" THICK, 3,000 P.S.I.
6" THICK AT DRIVEWAY

6" ABOVE CENTERLINE ROAD GRADE

SOD or SEED AND MULCH PER F.D.O.T. STANDARD SPECIFICATION SECTION 570.

CONCRETE MIAMI CURB, 3,000 P.S.I., OR TYPE "F"

ASPHALT PAVEMENT:
1" TO 1-1/2" ASPHALT BITUMINOUS CONCRETE TYPES S-I, S-II, OR S-III; MINIMUM MARSHALL FIELD STABILITY 1500.

BASE:
8" SOIL CEMENT BASE MINIMUM BEARING STRENGTH OF 350 P.S.I. SHALL BE OBTAINED WITHIN 28 DAYS; CONSTRUCTION METHODS SHALL CONFORM TO SECTION 270 OF STANDARD F.D.O.T. SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.

ALTERNATE:
8" LIMEROCK BASE (LBR 100) COMPACTED TO 98% MINIMUM DENSITY BASED ON AASHTO T-180 MODIFIED PROCTOR TEST.

SUB-BASE:
12" SUB-BASE COMPACTED TO 98% MINIMUM DENSITY BASED ON AASHTO T-180 MODIFIED PROCTOR TEST WITH MINIMUM LBR 40, OR FBV = 75.

NOTE:
A REPRESENTATIVE OF A CERTIFIED SOILS LABORATORY SHALL BE PRESENT DURING ALL CONSTRUCTION PHASES UTILIZING A SOIL CEMENT BASE.
8'-0" WIDE CONCRETE BIKE PATH
4" THICK, 3,000 P.S.I.
6" THICK AT DRIVEWAY

6" THICK AT DRIVEWAY
4" THICK, 3,000 P.S.I.

SOD or SEED AND MULCH PER F.D.O.T. STANDARD SPECIFICATION SECTION 570.

F.D.O.T. TYPE "F" CONCRETE CURB, 3,000 P.S.I.

1-1/2" ASPHALT BITUMINOUS CONCRETE TYPE S-III; MINIMUM MARSHALL FIELD STABILITY 1500.

SOIL CEMENT BASE; MINIMUM BEARING STRENGTH OF 350 P.S.I.
SHALL BE OBTAINED WITHIN 28 DAYS; CONSTRUCTION METHODS SHALL CONFORM TO SECTION 270 OF STANDARD F.D.O.T. SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.

8" LIMEROCK OR RECYCLED CONCRETE BASE (LBR 100) COMPACTED TO 98% MINIMUM DENSITY BASED ON AASHTO T-180 MODIFIED PROCTOR TEST.

12" SUB-BASE COMPACTED TO 98% MINIMUM DENSITY BASED ON AASHTO T-180 MODIFIED PROCTOR TEST WITH MINIMUM FBV 75 PSI OR LBR 40.

A REPRESENTATIVE OF A CERTIFIED SOIL LABORATORY SHALL BE PRESENT DURING ALL CONSTRUCTION PHASES UTILIZING A SOIL CEMENT BASE.

* THIS DESIGN REQUIRES CITY ENGINEER'S APPROVAL.

** NOTE: OUTSIDE LANE WIDTH MAY BE GREATER THAN 12' TO MATCH BICYCLE ACCOMMODATION AT CONNECTING ROADWAYS.
8'-0" WIDE CONCRETE BIKE PATH
4" THICK, 3,000 P.S.I.
6" THICK AT DRIVEWAY

6" MINIMUM ABOVE CENTERLINE ROAD GRADE

SOD or SEED AND MULCH PER F.D.O.T. STANDARD SPECIFICATION SECTION 570.

FDOT TYPE "F" CONCRETE CURB, 3,000 P.S.I.

ASPHALT PAVEMENT:
1-1/2" ASPHALT BITUMINOUS CONCRETE TYPE S-III; MINIMUM MARSHALL FIELD STABILITY 1500.

BASE:
8" SOIL CEMENT BASE; MINIMUM BEARING STRENGTH OF 350 P.S.I. SHALL BE OBTAINED WITHIN 28 DAYS; CONSTRUCTION METHODS SHALL CONFORM TO SECTION 270 OF STANDARD FDOT SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.

ALTERNATE:
8" LIMEROCK OR RECYCLED CONCRETE BASE (LBR 100) COMPACTED TO 98% MINIMUM DENSITY BASED ON AASHTO T-180 MODIFIED PROCTOR TEST.

SUB-BASE:
12" SUB-BASE COMPACTED TO 98% MINIMUM DENSITY BASED ON AASHTO T-180 MODIFIED PROCTOR TEST WITH MINIMUM LBR 40, OR FBV 75.

NOTE:
A REPRESENTATIVE OF A CERTIFIED SOIL LABORATORY SHALL BE PRESENT DURING ALL CONSTRUCTION PHASES UTILIZING A SOIL CEMENT BASE.

** NOTE: OUTSIDE LANE WIDTH MAY BE GREATER THAN 12' TO MATCH BICYCLE ACCOMMODATION AT CONNECTING ROADWAYS.
MAINTENANCE OF ISLAND SHALL BE THE RESPONSIBILITY OF THE HOMEOWNER'S ASSOCIATION.

CURVE "A"
R = 25.0
L = 21.02'
T = 11.18'

CURVE "B"
R = 42.0'
L = 35.78'
T = 19.06'

OPTIONABLE PLANTED ISLAND WITH CONCRETE HEADER CURB, 3,000 P.S.I.

SECTION A-A

CUL-DE-SAC WITH SINGLE STORM INLET

PUBLIC WORKS & UTILITIES ENGINEERING & DESIGN STANDARDS
MAINTENANCE OF ISLAND SHALL BE THE RESPONSIBILITY OF THE HOMEOWNER'S ASSOCIATION.

CURVE "A"
R = 25.0
L = 21.02'
T = 11.18'

CURVE "B"
R = 42.0'
L = 35.78'
T = 19.06'

OPTIONABLE PLANTED ISLAND WITH CONCRETE HEADER CURB, 3,000 P.S.I.

CURVE "A" TYP.
CURVE "B" TYP.

STORM INLET TYP.

SECTION A-A
MAINTENANCE OF ISLAND SHALL BE THE RESPONSIBILITY OF THE HOMEOWNER'S ASSOCIATION.

CUL-DE-SAC WITH DUAL STORM INLET

RD007-1
ISSUED 2017
REVISED 03/01/2017 BY DJB
NOTES:

1. VALLEY GUTTER TO HAVE A STANDARD LONGITUDINAL SLOPE OF -0.30%
2. VALLEY GUTTER TO BE CONSTRUCTED OF 28 DAY, 3,000 P.S.I. CONCRETE
3. *SUB-BASE TO BE COMPACTED AND TESTED TO 98% MINIMUM DENSITY WITH MINIMUM L.B.R. 40 BASED ON AASHTO T-180 MODIFIED PROCTOR TEST, OR FBV 75 PSI.
4. VALLEY GUTTERS ARE REQUIRED WHEN STORM WATER CROSSES THE INTERSECTION.

* DEPTH OF SUB-BASE VARIES ACCORDING TO PLANS.
1. The clear zone may be reduced to 2.5' if the 4' minimum offset cannot be reasonably obtained.
2. Trees in excess of a 4 inch caliper shall be set back to twice the minimum clear zone (2 x *).
3. Where pavement widening in accordance with FDOT Standards is not provided in horizontal curves, additional clear zone shall be provided equal to the required pavement widening.
4. Clear zones on curbed roads shall be measured from the face of curb or from the edge of the through lane on rural roads. Curbed streets are for high back curbs only.
5. Shrubs adjacent to sidewalks and within intersection sight triangles cannot exceed 24 inches above the lowest adjacent roadway grade. All other shrubs must be less than or equal to 30 inches in height.
NOTES:

1. ALUMINUM PLATES - MINIMUM THICKNESS .060 INCHES, DIE CUT ALCOA ALLOY 6061-T6, OR EQUAL. WHITE RETROREFLECTIVE LETTERS WITH GREEN RETROREFLECTIVE BACKGROUND TO MEET STANDARDS OF SECTION 633.06 FP-79 FOR TYPE 3A SHEET REFLECTIVE MATERIAL. CITY LOGO TO BE PURCHASED FROM THE CITY.

2. SIGNS SHALL BE BOLTED USING TWO 5/16 STAINLESS STEEL THREADED CARRIAGE BOLTS ON POST AND TWO RIVETS ON EACH END OF STREET SIGN BLADE.

3. CITY PROJECTS: BACK OF SIGNS SHALL BE PAINTED BLACK.

PUBLIC WORKS & UTILITIES ENGINEERING & DESIGN STANDARDS

STREET NAME MARKERS - MINIMUM STANDARDS

BASE
2500 P.S.I. CONCRETE
12" DIAMETER
NOTE: TO BE USED AT THE DEAD END OF CITY AND PRIVATE STREETS.
RECLAIMED WATER SYSTEM CONSTRUCTION GENERAL NOTES

1. THE CITY'S PUBLIC WORKS DEPARTMENT SHALL BE NOTIFIED PRIOR TO BEGINNING ANY RECLAIMED WATER SYSTEM CONSTRUCTION.

2. DE-WATERING SHALL BE PROVIDED TO KEEP GROUND WATER ELEVATION A MINIMUM OF 6 INCHES BELOW RECLAIMED WATER MAIN BEING LAID.

3. ALL RECLAIMED WATER MAINS SHALL BE LAID ON A FIRM FOUNDATION WITH ALL UNSUITABLE MATERIAL (MUCK, ROCK, COQUINA, ETC.) REMOVED AND REPLACED WITH CLEAN GRANULAR MATERIAL.

4. TRENCHES SHALL BE BACK FILLED WITH MATERIAL ACCEPTED TO THE CITY, WITH A MINIMUM COMPACTION OF 98% (AASHTO T-180) IN PAVED AREAS AND 95% (AASHTO T-180) IN UNPAVED AREAS.

5. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSURE THAT TRENCH COMPACTION TESTS BE PROVIDED AT POINTS 1 FOOT ABOVE THE PIPE AND AT 2 FEET VERTICAL INTERVALS TO FINISH GRADE, AT A MINIMUM SPACING OF EVERY 300 FEET.

6. PIPE WARNING TAPE SHALL BE LOCATED 18 INCHES BELOW FINISH GRADE FOR ALL PIPES. PIPE IDENTIFICATION TAPE SHALL BE PROVIDED ON ALL PIPES.

7. ALL SINGLE RESIDENTIAL WATER SERVICES SHALL BE MINIMUM 1" POLYETHYLENE TUBING. POLYBUTYLENE SHALL NOT BE ALLOWED. TUBING COLOR SHALL BE PURPLE.

8. ALL WATER SERVICE ENDINGS SHALL BE SECURED BY WIRE TO 2"x4" STAKES, APPROXIMATELY 2' ABOVE GRADE, WITH "Y" BRANCHES AT THE GROUND LEVEL, OR MAY BE PLACED IN RECLAIMED WATER METER BOXES AS SUPPLIED BY THE CITY AT THE TIME OF FINAL SUB-DIVISION INSPECTION.

9. RECLAIMED WATER VALVES SHALL BE PLACED AT ALL STREET INTERSECTIONS AND AT MAXIMUM SPACING OF 1,000 FEET.

10. AT ALL WATER MAIN TEES AND CROSSES, VALVES SHALL BE INSTALLED ON ALL LEGS, PROVIDED ADEQUATE DOWNSTREAM VALVING EXISTS.

11. APPROVED WATER VALVE TYPES ARE THE FOLLOWING:

   A. BRASS BALL-TYPE VALVE FOR VALVES LESS THAN 2" DIAMETER.
   B. STANDARD GATE VALVES 2" TO 12" DIAMETER, RESILIENT SEAT GATE VALVES (AWWA C-509)
   C. BUTTERFLY VALVES GREATER THAN 12" DIAMETER (AWWA C-504)
   D. TAPPING VALVES WITH MECHANICAL TAPPING SLEEVE FOR SIZE ON SIZE STAINLESS STEEL OR EPOXY COATED SLEEVE WITH STAINLESS STEEL BOLTS AND NUTS FOR OTHERS.
12. All reclaimed water valves shall be adjusted to finish grade and the caps shall be painted purple to make them plainly distinguishable.

13. As standard practice, reclaimed water mains shall be installed 4 feet off the back of the curb on the opposite side of the potable water lines or as approved by the city.

14. All reclaimed water mains shall have a minimum cover of 30 inches. In special cases where it is impossible or inappropriate to provide adequate cover, ductile iron pressure class rating or concrete encasement may be used as approved by the city.

15. All reclaimed water mains to be cleared for service shall be flushed, disinfected, pressure tested, and otherwise tested in accordance with the latest AWWA standards and the Florida Department of Environmental Protection requirements.

16. Reclaimed water mains shall be PVC AWWA Class C-900, minimum CL-150 (DR-18) ductile pipe pressure class rating, standard cement lined, unless otherwise approved by the city.

17. Upon construction completion and acceptance of the system, it shall be the design engineer's responsibility to insure that the system is properly certified and accepted by the department of environmental protection or the city public works and "as-builts" are provided to the city, prior to any use of this system.

18. All reclaimed water mains and service lines shall be readily distinguishable by their pantene purple color or tape markings.

19. All reclaimed water services shall be marked along the outside edge of curb with upside-down "RW" or by metal tabs set into pavement. Valves for reclaimed water shall be marked by a "V" set into the pavement.

20. Reclaim water services should be double 1-1/2" services located at side lot lines, alternating with potable water service locations. In instances where reclaimed water services need to be offset, 1" services shall be specified. These services may be offset from the lot line a maximum distance of 5.0 feet.

21. All reclaimed water hose connections, hand-operated connections and outlets shall be contained in underground services vaults and shall be appropriately tagged or labeled to warn the public and employees that the water is not intended for drinking. All piping shall be color-coded, or otherwise marked, to differentiate reclaimed water from potable or other water.

22. Prior to taking any reclaimed water lines out of service, the contractor shall notify the city and affected customers, in writing, 48-hours prior to shutdown.
NOTES:

1. SERVICE BOX FURNISHED BY THE CITY OF ALTAMONTE SPRINGS
2. ALL PVC FITTINGS TO BE SCHEDULE 80.
3. 3" MIN BETWEEN TEE AND 3/4" BALL VALVE IN VALVE BOX.
1. ALL VALVES SHALL BE FULL PORT.
2. * DENOTES BY OTHERS.

PLAN - DOUBLE SERVICE

TYPICAL SECTION

RECLAIMED WATER - DOUBLE SERVICE CONNECTION
A  CONNECTION TO UNDERGROUND IRRIGATION SYSTEM
B  LOCKABLE CURB STOP
C  CONTROL HANDLE - TURNS SYSTEM PRESSURE ON AND OFF
   (ATTACH HANDLE WHEN REQUIRED FOR USE ONLY)
D  QUICK DISCONNECT DEVICE (PROVIDED BY CITY) FITS MODIFIED
   5/8" OR 3/4" GARDEN HOSE (DETACH WHEN NOT IN USE)
E  SERVICE CONNECTION IS CONTAINED IN A BOX LABELED
   "RECLAIMED WATER". BOX LID IS LEVEL WITH THE GROUND
F  SUPPORT STAKE WITH NYLON TIE WRAPS MUST BE INSTALLED
   TO PROVIDE SUPPORT TO VERTICAL ALIGNMENT OF SERVICE CONNECTION

RECLAIMED WATER - SERVICE CONNECTION BOX

RW004-2
ISSUED 2017
REVISED 03/01/2017 BY DJB
NOTES:

1. IRRIGATION METERS TO BE APPROVED TURBINE METERS.

2. METERS UP TO AND INCLUDING 2" TO BE PURCHASED FROM THE CITY. LARGER THAN 2" TO BE APPROVED BY CITY ENGINEER & PURCHASED BY OWNER.

3. METERS TO BE INSTALLED ABOVE GROUND.

RECLAIMED WATER -
MASTER METER ASSEMBLY
NOTES:

1. SERVICE BOX FURNISHED BY CITY OF ALTAMONTE SPRINGS.

2. METER SHALL BE INSTALLED BETWEEN SIDEWALK AND CURB AND IN NO CASE SHALL IT BE INSTALLED IN SIDEWALK OR OTHER PAVED AREAS.

3. SERVICE LINES SHALL NOT BE LESS THAN METER SIZE.
RECLAIMED WATER SYSTEM CONSTRUCTION GENERAL NOTES

1. THE USER IS REQUIRED TO PROVIDE THE LOCATION AND ELEVATION OF THE INFRASTRUCTURE ENSURING CORRECT LOCATION AND ELEVATION.
2. THE USER IS RESPONSIBLE FOR THE PROPER LOCATION AND ELEVATION OF THE INFRASTRUCTURE ENSURING CORRECT LOCATION AND ELEVATION.
3. THE USER IS RESPONSIBLE FOR THE PROPER LOCATION AND ELEVATION OF THE INFRASTRUCTURE ENSURING CORRECT LOCATION AND ELEVATION.
4. THE USER IS RESPONSIBLE FOR THE PROPER LOCATION AND ELEVATION OF THE INFRASTRUCTURE ENSURING CORRECT LOCATION AND ELEVATION.
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9. THE USER IS RESPONSIBLE FOR THE PROPER LOCATION AND ELEVATION OF THE INFRASTRUCTURE ENSURING CORRECT LOCATION AND ELEVATION.
10. THE USER IS RESPONSIBLE FOR THE PROPER LOCATION AND ELEVATION OF THE INFRASTRUCTURE ENSURING CORRECT LOCATION AND ELEVATION.

RECLAIMED WATER - SINGLE SERVICE CONNECTION

RECLAIMED WATER - SERVICE CONNECTION BOX

RECLAIMED WATER - DOUBLE SERVICE CONNECTION

RECLAIMED WATER - MASTER METER ASSEMBLY

RECLAIMED WATER COMMERCIAL - SINGLE SERVICE CONNECTION

NOTE:
1. SERVICE DIAL PLACED ON CITY SIDE OF SERVICE..
2. SERVICE DIAL PLACED ON CITY SIDE OF CUSTOMER DIAL.
3. SERVICE DIAL PLACED ON CITY SIDE OF CUSTOMER DIAL.
4. SERVICE DIAL PLACED ON CITY SIDE OF CUSTOMER DIAL.
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9. SERVICE DIAL PLACED ON CITY SIDE OF CUSTOMER DIAL.
10. SERVICE DIAL PLACED ON CITY SIDE OF CUSTOMER DIAL.

SCALE: SHEET OF DATE:
CITY OF ALTAMONTE SPRINGS 225 NEWBURYPORT AVE ALTAMONTE SPRINGS, FLORIDA 32701

ISSUED 2017 REVISED 03/01/2017 BY: DJB

PUBLIC WORKS & UTILITIES ENGINEERING AND DESIGN STANDARDS

CITY OF ALTAMONTE SPRINGS

RECLAIMED WATER DETAIL - CITY PROJECTS

Sheet 1 of 1
NOTES:

1. SERVICE CONNECTION DETAILS ARE BASED ON VITRIFIED CLAY PIPE AND FITTINGS, MODIFY FOR OTHER APPROVED TYPES OF PIPE.

2. SEWER CLEAN-OUTS NOT IN PAVEMENT SHALL HAVE CONCRETE COLLAR 18"x18"x4" AROUND THEIR TOPS AND MUST BE INSTALLED AND ADJUSTED TO FINISHED GRADE AT THE RIGHT-OF-WAY/PROPERTY LINE

3. ALL PVC TO CLAY SERVICE CONNECTIONS UNDER LOAD BEARING SURFACES SHALL USE DFW NON-SHEAR FERNCO TYPE CONNECTORS OR APPROVED EQUAL.
NOTES:

1. PRE-CAST CONCRETE SHALL BE TYPE 2 CEMENT (4,000 PSI).
2. LIFT HOLES NOT PERMITTED THROUGH PRE-CAST SECTIONS.
3. ALL OPENINGS SHALL BE SEALED WITH NON-SHRINK GROUT.
4. INSTALL FLOW CHANNEL INSIDE MANHOLES.
5. SERVICE LATERALS SHALL GENERALLY NOT BE PERMITTED DIRECTLY INTO MANHOLES.
6. PLACE TWO HALF-MOON SHAPED PLYWOOD (3/8" TH. MIN.) IN BOTTOM OF MANHOLE AFTER PIPES HAVE BEEN CONNECTED TO KEEP DEBRIS FROM ENTERING SEWER.
7. REINFORCING STEEL PER ASTM C478-88A.
8. PROVIDE 5' X 5' X 12" CONCRETE COLLAR AROUND COVER FRAME, WITH 4 - #4 REBAR E.W. IN UNPAVED AREAS.
9. INSTALL TRACING WIRE [GREEN] PER CITY DETAIL GU004.

<table>
<thead>
<tr>
<th>MANHOLE SIZE</th>
<th>48&quot; MANHOLE</th>
<th>60&quot; MANHOLE</th>
<th>72&quot; MANHOLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>UP TO 24&quot; PIPE</td>
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<tr>
<td>UP TO 36&quot; PIPE</td>
<td></td>
<td></td>
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<tr>
<td>OVER 36&quot; PIPE</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>MH DEPTH</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
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</thead>
<tbody>
<tr>
<td>UP TO 12'</td>
<td>48&quot;</td>
<td>6&quot;</td>
<td>36&quot;</td>
<td>15&quot;</td>
<td>AS REQ'D</td>
<td>8&quot;</td>
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<tr>
<td>12' TO 18'</td>
<td>60&quot;</td>
<td>8&quot;</td>
<td>36&quot;</td>
<td>15&quot;</td>
<td>AS REQ'D</td>
<td>10&quot;</td>
</tr>
<tr>
<td>18' AND DEEPER</td>
<td>72&quot;</td>
<td>8&quot;</td>
<td>36&quot;</td>
<td>15&quot;</td>
<td>AS REQ'D</td>
<td>14&quot;</td>
</tr>
</tbody>
</table>
NOTES:
1. PENETRATION TO EXISTING MANHOLES SHALL BE CORE BORED.
2. DROP CONNECTION SHALL BE REQUIRED WHENEVER AN INFLUENT SEWER IS LOCATED TWO FEET OR MORE ABOVE THE MAIN INVERT CHANNEL.
3. ANY MANHOLE WITH PIPES ENTERING AT 45° OR GREATER TO THE FLOW LINE EXTENDED AND/OR WITH A DROP EQUAL TO OR GREATER THAN THE SMALLEST ENTERING PIPE DIAMETER SHALL BE LINED.
4. ANY MANHOLE DIRECTLY RECEIVING A FORCE MAIN MUST BE LINED.
5. LINING SPECIFICATIONS ARE PROVIDED IN THE COATING SECTION OF THE CITY’S APPROVED PRODUCTS LIST.
CITY OF ALTAMONTE SPRINGS GREASE TRAP SIZING METHOD

(D) x (MF) x (GL) x (RT) x (ST) = CAPACITY IN GALLONS

D = NUMBER OF SEATS:
MF = MEAL FACTOR: BASED ON ESTABLISHMENT

FAST FOOD / CAFETERIA = 30M use 2.00
RESTAURANT = 60M use 1.00
LEISURE DINING = 90M use 0.67
DINNER CLUB =120M use 0.50

GL = GALLONS OF WASTEWATER PER MEAL:
WITH DISHWASHER = 6 GALLONS
WITHOUT DISHWASHER = 5 GALLONS
SINGLE SERVICE KITCHEN = 2 GALLONS
FOOD DISPENSER = 1 GALLON

RT = RETENTION TIME:
COMMERCIAL KITCHEN = 2.5 HOURS
SINGLE SERVICE KITCHEN = 1.5 HOURS

ST = STORAGE FACTOR:
8 HOURS = 1.0
12 HOURS = 1.5 (ALSO S.S. KITCHENS)
16 HOURS = 2.0
24 HOURS = 3.0

NOTE:
ALL PIPE AND FITTINGS FOR OUTLET
AND SAMPLING STATION PER ASTM 2665.
AND SAMPLING STATION PER ASTM 2665.

INSPECTION SAMPLING STATION
1. ALL MOUNTING HARDWARE, FASTENERS, PIPING, VALVES, AND OTHER ITEMS
   WITHIN VAULT SHALL BE STAINLESS STEEL, UNLESS SPECIFIED OR NOTED OTHERWISE
2. LOCATION OF VAULT MAY BE DIRECTLY OVER MAIN IF CONDITIONS ALLOW
3. RECOMMENDED OPENING TO BE CORED AFTER INSTALLATION

REQUIRED FOR:
COMMERCIAL ESTABLISHMENTS
WITHOUT IN-GROUND GREASE TRAPS.
CAN BE USED IN LIEU OF A CLEANOUT

NOTE: WIDTH VARIES
1. VOLUME TO BE DETERMINED BY ALTAMONTE SPRINGS CITY
   ENGINEER OR DESIGNEE UPON APPLICATION BY OWNER.
2. STRUCTURAL DESIGN SHALL BE THE RESPONSIBILITY
   OF THE MANUFACTURER.
3. ONLY KITCHEN WASTE SHALL BE DISCHARGED INTO THE
   GREASE TRAP. ALL DOMESTIC WASTE (I.E., REST-
   ROOMS) SHALL BE CONNECTED DOWNSTREAM OF THE
   GREASE TRAP.
4. ALL PIPE AND FITTINGS FOR OUTLET AND SAMPLING
   STATION PER ASTM 2665.
5. BUILDING FLOOR ELEVATION SHALL BE 6" HIGHER THAN
   MANHOLE COVERS.
### NOTES:

1. Volume to be determined by using the City Of Altamonte Springs Grease Interceptor Sizing Spreadsheet with final approval by the City Engineer or designee.

2. Structural design must be performed by the manufacturer with shop drawings provided to City Engineer for approval and must provide H-20 loading per AASHTO.

3. Top of manhole must be minimum of six inches below the lowest finished floor with positive drainage away from the building.

4. The three inch vent must tie back to the building vent and must be installed per the Florida Building Code, latest edition.

5. The slope of the influent and effluent laterals must comply with the Florida Building Code, Latest Edition.

6. Only kitchen waste shall be discharged to the grease interceptor. All domestic waste shall be connected downstream of the grease interceptor.

7. All tank volumes in excess of 1600 gallons shall include a 500 gallon grease polishing tank installed between the grease interceptor and the downstream inspection sampling station. The volume of the polishing tank shall be included in the overall required volume.

8. All pipes and fittings shall comply with ASTM 2665.

9. Inspection/Sampling Station required for all grease traps (indoor) and grease interceptors (outdoor).

10. Inspection/Sampling Station can be used in lieu of a sanitary clean out if located within five feet of the building when grease traps are utilized.

11. All concrete shall be minimum fc=4500 psi and all steel shall be minimum fy=60 ksi.

12. Alternative designs must be approved by the City Engineer.

### Grease Interceptor Dimensions 750 To 3,500 Gallons

<table>
<thead>
<tr>
<th>Tank Size (Gal.)</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>750 EQ</td>
<td>9&quot;</td>
<td>8-6&quot;</td>
<td>6&quot;-4&quot;</td>
<td>1'-6&quot;</td>
<td>1'-0&quot;</td>
<td>5'-0&quot;</td>
<td>4'-0&quot;</td>
<td>2'-0&quot;</td>
</tr>
<tr>
<td>1250</td>
<td>9'-0&quot;</td>
<td>10'-6&quot;</td>
<td>1'-6&quot;</td>
<td>1'-6&quot;</td>
<td>5'-0&quot;</td>
<td>4'-0&quot;</td>
<td>2'-0&quot;</td>
<td>2'-0&quot;</td>
</tr>
<tr>
<td>1600</td>
<td>11'-6&quot;</td>
<td>10'-6&quot;</td>
<td>1'-6&quot;</td>
<td>1'-6&quot;</td>
<td>6'-0&quot;</td>
<td>5'-0&quot;</td>
<td>2'-0&quot;</td>
<td>2'-0&quot;</td>
</tr>
<tr>
<td>2000</td>
<td>11'-6&quot;</td>
<td>10'-6&quot;</td>
<td>1'-6&quot;</td>
<td>1'-6&quot;</td>
<td>6'-0&quot;</td>
<td>5'-0&quot;</td>
<td>2'-0&quot;</td>
<td>2'-0&quot;</td>
</tr>
<tr>
<td>2500</td>
<td>13'-6&quot;</td>
<td>12'-0&quot;</td>
<td>1'-6&quot;</td>
<td>1'-6&quot;</td>
<td>7'-0&quot;</td>
<td>6'-0&quot;</td>
<td>3'-0&quot;</td>
<td>9'-1&quot;</td>
</tr>
</tbody>
</table>

### Grease Interceptor Dimensions 750 To 3,500 Gallons

<table>
<thead>
<tr>
<th>Tank Size (Gal.)</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>O</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>750 EQ</td>
<td>9&quot;</td>
<td>4'-5&quot;</td>
<td>6'-4&quot;</td>
<td>0'-4&quot;</td>
<td>3'-7&quot;</td>
<td>2'-0&quot;</td>
<td>2'-0&quot;</td>
<td>0'-6&quot;</td>
</tr>
<tr>
<td>1250</td>
<td>9'-0&quot;</td>
<td>4'-5&quot;</td>
<td>6'-4&quot;</td>
<td>0'-4&quot;</td>
<td>3'-7&quot;</td>
<td>2'-0&quot;</td>
<td>2'-0&quot;</td>
<td>0'-6&quot;</td>
</tr>
<tr>
<td>1600</td>
<td>11'-6&quot;</td>
<td>4'-5&quot;</td>
<td>6'-4&quot;</td>
<td>0'-4&quot;</td>
<td>3'-7&quot;</td>
<td>2'-0&quot;</td>
<td>2'-0&quot;</td>
<td>0'-6&quot;</td>
</tr>
<tr>
<td>2000</td>
<td>11'-6&quot;</td>
<td>4'-5&quot;</td>
<td>6'-4&quot;</td>
<td>0'-4&quot;</td>
<td>3'-7&quot;</td>
<td>2'-0&quot;</td>
<td>2'-0&quot;</td>
<td>0'-6&quot;</td>
</tr>
<tr>
<td>2500</td>
<td>13'-6&quot;</td>
<td>4'-5&quot;</td>
<td>6'-4&quot;</td>
<td>0'-4&quot;</td>
<td>3'-7&quot;</td>
<td>2'-0&quot;</td>
<td>2'-0&quot;</td>
<td>0'-6&quot;</td>
</tr>
<tr>
<td>3000</td>
<td>13'-6&quot;</td>
<td>5'-6 1/2&quot;</td>
<td>6'-4&quot;</td>
<td>0'-4&quot;</td>
<td>3'-7 1/2&quot;</td>
<td>3'-10 1/2&quot;</td>
<td>3'-0&quot;</td>
<td>0'-7&quot;</td>
</tr>
<tr>
<td>3500</td>
<td>8'-0&quot;</td>
<td>6'-6&quot;</td>
<td>6'-4&quot;</td>
<td>0'-4&quot;</td>
<td>3'-10 1/2&quot;</td>
<td>3'-10 1/2&quot;</td>
<td>3'-0&quot;</td>
<td>0'-7&quot;</td>
</tr>
</tbody>
</table>
Grease Interceptor - 8,000 to 11,000 Gallons

<table>
<thead>
<tr>
<th>TANK SIZE (Gals)</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>8000</td>
<td>33'-0&quot; min</td>
<td>33'-6&quot; min</td>
<td>1'-4&quot;</td>
<td>1'-4&quot;</td>
<td>8'-0&quot;</td>
<td>3'-0&quot;</td>
<td>2'-4&quot;</td>
<td>8'-4&quot;</td>
</tr>
<tr>
<td>9500</td>
<td>33'-0&quot; min</td>
<td>33'-6&quot; min</td>
<td>1'-4&quot;</td>
<td>1'-4&quot;</td>
<td>7'-0&quot;</td>
<td>3'-0&quot;</td>
<td>2'-4&quot;</td>
<td>9'-1&quot;</td>
</tr>
<tr>
<td>11000</td>
<td>33'-0&quot; min</td>
<td>33'-6&quot; min</td>
<td>1'-4&quot;</td>
<td>1'-4&quot;</td>
<td>6'-0&quot;</td>
<td>3'-0&quot;</td>
<td>2'-4&quot;</td>
<td>9'-1&quot;</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TANK SIZE (Gals)</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>O</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>8000</td>
<td>7'-4&quot;</td>
<td>6'-0&quot;</td>
<td>17'-4&quot;</td>
<td>0'-4&quot;</td>
<td>9'-3 1/2&quot;</td>
<td>11'-1 1/2&quot;</td>
<td>3'-0&quot;</td>
</tr>
<tr>
<td>9500</td>
<td>7'-4&quot;</td>
<td>6'-0&quot;</td>
<td>17'-4&quot;</td>
<td>0'-4&quot;</td>
<td>9'-3 1/2&quot;</td>
<td>11'-1 1/2&quot;</td>
<td>2'-3&quot;</td>
</tr>
<tr>
<td>11000</td>
<td>7'-4&quot;</td>
<td>6'-0&quot;</td>
<td>17'-4&quot;</td>
<td>0'-4&quot;</td>
<td>9'-3 1/2&quot;</td>
<td>11'-1 1/2&quot;</td>
<td>2'-3&quot;</td>
</tr>
</tbody>
</table>
NOTES:
1. Volume to be determined by using the City Of Altamonte Springs Sand/Oil Interceptor Sizing Spreadsheet with final approval by the City Engineer or designee.
2. Structural design must be performed by the manufacturer with shop drawings provided to City Engineer for approval and must provide H-20 loading per AASHTO.
3. Top of manhole must be minimum of six inches below the lowest finished floor with positive drainage away from the building.
4. The three inch vent must tie back to the building vent and must be installed per the Florida Building Code, latest edition.
5. The slope of the influent and effluent laterals must comply with the Florida Building Code, Latest Edition.
6. Only areas that discharge sand and oil shall be discharged to the sand/oil interceptor. All domestic waste shall be connected downstream of the sand/oil interceptor.
7. All pipes and fittings shall comply with ASTM 2665.
8. Inspection/Sampling Station required for all sand/oil interceptors.
9. All concrete shall be minimum fc=4500 psi and all steel shall be minimum fy=60 ksi.
10. Alternative designs must be approved by the City Engineer.
NOTES:
1. ALL MOUNTING HARDWARE, FASTENERS, PIPING, VALVES, AND OTHER ITEMS WITHIN VAULT SHALL BE STAINLESS STEEL, UNLESS SPECIFIED OR NOTED BY OTHERS.
2. LOCATION OF VAULT MAY BE DIRECTLY OVER MAIN IF CONDITIONS ALLOW.
3. RECOMMENDED OPENING TO BE CORED AFTER INSTALLATION.
4. ONLY ARI MODEL D-025 COMBINATION AIR VALVE FOR SEWAGE SHORT VERSION 2" THREADED / STAINLESS STEEL 316, 250 PSI WORKING PRESSURE - TESTED TO 350 PSI OR EQUAL SHALL BE USED. SUBSTITUTIONS SHALL BE CONSIDERED FOR APPROVAL BY THE CITY ENGINEER AND CHIEF LIFT STATION OPERATOR.

APPLY 2 COATS CARBOLINE 300M TO INTERIOR CONCRETE SURFACES AND HATCH.
8 DFT PER COAT MIN.

FOUNDATION STABILIZATION WHEN DIRECTED BY THE CITY ENGINEER

MODULAR CASING SEAL AND S.S. WALL SLEEVE (SEE NOTE 3.)

2" S.S. PIPE, SLOPED UP TO AIR RELEASE VALVE

2" SERVICE SADDLE WITH S.S. STRAPS

FOR ALL ASSEMBLY PLUG VALVES

AIR RELEASE VALVE ASSEMBLY

SS006-2
ISSUED 2017
REVISED 03/01/2017 BY DJB
Pre-cast manufacturer to provide additional concrete in slab as required to compensate for buoyancy of wet well. Coal tar epoxy interior of valve vault.

**Notes:**

1. Hose bibbs connected to the potable water system must be metered and installed with an approved RPBA.
2. Hose bibbs connected to the reclaimed water system must be installed below grade and installed with an approved RPBA. Metering requirements will be at the discretion of the City Engineer.
3. All hardware shall be stainless steel.
4. Elevation "E" shall be below elevation "B".

City of Altamonte Springs
950 Calamia Drive
Altamonte Springs, Florida 32714

Public Works & Utilities Engineering & Design Standards

Issued 2017

Revised 03/01/2017 by DJB

Lift Station Elevation
CONCRETE WET WELL (6' MIN. DIA.)

FORCE MAIN

BLIND FLANGE

EMERGENCY PUMP CONNECTION

KNIFE TYPE GATE VALVE

DUCTILE IRON PIPE

ISOLATION PLUG VALVE

VALVE VAULT

PLUG VALVE (TYPICAL)

CHECK VALVE

3" FLOOR DRAIN

CABLE HOLDER

OUTLINE OF ACCESS OPENING

INDEX OF REQUIRED PUMP PULLING CABLES

<table>
<thead>
<tr>
<th>PUMP SIZE</th>
<th>REQUIRED CHAIN SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5 HP - 5.0 HP</td>
<td>1/4-INCH STAINLESS STEEL CHAIN</td>
</tr>
<tr>
<td>5.5 HP - 9.4 HP</td>
<td>5/16-INCH STAINLESS STEEL CHAIN</td>
</tr>
<tr>
<td>9.5 HP - 18.0 HP</td>
<td>3/8-INCH STAINLESS STEEL CHAIN</td>
</tr>
<tr>
<td>18.8 HP AND UP</td>
<td>SIZE ACCORDING TO WEIGHT OF PUMP</td>
</tr>
<tr>
<td></td>
<td>(NOT LESS THAN 3/8-INCH STAINLESS STEEL CHAIN)</td>
</tr>
</tbody>
</table>

LIFT STATION PLAN VIEW
TELEMETRY CABINET MOUNTED TO REAR OF CONTROL CABINET (NOT SHOWN, THIS DETAIL)

NOTE:
ON SUBMERSIBLE STATIONS, THE CONDUIT ENTERING THE WET WELL FOR MOTOR AND CONTROL CARDS SHALL TERMINATE WITH A FIBER BUSHING. NO SPLICES WILL BE ALLOWED IN THE WET WELL AND ALL WIRES WILL BE CONTINUOUS FROM WET WELL TO THE CONTROL CABINET.

ALL CONDUITS TO HAVE PULL WIRE.

A. CONTROL CABINET
B. GENERATOR RECEPTACLE (RUSSELLSTOLL FCB 3144R ONLY)
C. PAD LOCK BRACKET
D. PIPE CAP
E. RED WARNING LIGHT
F. ALARM SHUT-OFF
G. METER BASE
H. GROUND ELEVATION
I. CONCRETE FOOTING
J. ALUMINUM POWER CONDUIT
K. S.S. OR ALUMINUM STAND PIPE
L. POWER TRANSFORMER
M. CONDUIT TO MOTORS
N. BUBBLER LINE
O. STAINLESS STEEL KNIFE SWITCH

LIFT STATION
CONTROL CABINET

SS007-1C
ISSUED 2017
REVISED 03/01/2017 BY DJB
STORM DRAINAGE CONSTRUCTION NOTES

1. All storm sewer pipe shall be reinforced concrete.

2. Storm drainage pipes shall be a minimum of fifteen (15) inch diameter (15" for short lateral runs only - up to 75 feet; all others, 18" minimum.) or equivalent and be designed in accordance with the land development code.

3. All pipe terminus shall be mitered end sections unless a headwall is approved for restricted locations.

4. Unless otherwise noted, all structures shall meet FDOT Standards.

5. Storm inlets, manholes, and catch basins shall be either poured in place or pre-cast reinforced concrete. Structures shall be required at each change of pipe size, change in pipe direction, or pipe material.

6. Storm inlets shall be spaced in such a manner as to accept one hundred (100) percent of the design storm runoff.

7. Maximum distances between inlets and/or manholes:

<table>
<thead>
<tr>
<th>PIPE SIZE (INCHES)</th>
<th>LENGTH RUN (FEET)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>75 * See Note 2., Above.</td>
</tr>
<tr>
<td>18</td>
<td>150</td>
</tr>
<tr>
<td>24</td>
<td>250</td>
</tr>
<tr>
<td>30</td>
<td>300</td>
</tr>
<tr>
<td>36</td>
<td>300</td>
</tr>
<tr>
<td>42</td>
<td>400</td>
</tr>
<tr>
<td>54 or greater</td>
<td>500</td>
</tr>
</tbody>
</table>

8. All swales, ditches maximum side and back slopes must not be greater than 3 to 1.

9. Normal roadside swales shall be constructed to a maximum depth of 18" below the outside edge of pavement or concrete curb.

10. Concrete erosion control must be provided where swales or culverts intercept drainage ditches.

11. When a pond is incorporated within a subdivision, the pond shall be on a separate tract, owned and maintained by the Homeowner's Association. Where such ponds exist and are bounded in whole or in part by streets, a strip of land not less than fifteen (15) feet wide abutting such street right-of-way shall border the pond.

STORMWATER - GENERAL NOTES

ST001-1A

ISSUED 2017

REVISED 03/01/2017 BY DJB
12. Pond inflow and outlet structures shall be constructed with reinforced concrete and shall be subject to the approval of the City.

13. Soil erosion control measures, in conformance with the Florida Development during construction.

14. The developer must submit a drainage report by a qualified hydrologist on the impact the pond will have on neighboring water table elevations, both during construction and after completion. The City may require groundwater monitoring during the pond excavation.

15. Adequate maintenance easements or right-of-way as approved by the City shall be provided around the entire perimeter of all ponds and associated outfalls discharging into and out of ponds. Applicable cross sections shall be included on all final development plans.

16. Development plans shall contain pop-off data (overflow), bottom elevation, normal water levels, and 100 year high water levels.

17. Retention/detention sites must be constructed on all projects prior to any road, parking lot, or building construction commencing or as current permit conditions dictate. Sewer and water mains may be installed prior to retention/detention site construction if de-watering is not required.

18. The Engineer of Record is required to obtain, and provide evidence of, any and all de-watering permits, SJRWMD permits, exemption letters, NPDES permits, and/or any other permits that may be required, prior to site plan approval.

19. Culverts crossing right-of-ways shall extend from right-of-way line to right-of-way line under the roadway.
MAX. SLOPE 6:1 MAX.

SIDEWALK 15' MIN.

ESMT/ R/W

1'

1'/1' MIN. 6:1 MAX.

SOD

MAX. SLOPE

<=4

SOD

DESIGN HIGH WATER LEVEL FOR DRY POND

BOTTOM OF DRY POND

NOTES:

The side slopes of retention/detention ponds shall be constructed and maintained with as flat a slope as possible. With approval from the City Engineer, slopes up to two (2) horizontal to one (1) vertical, are acceptable, provided soil conditions are suitable to sustain adequate plant growth and to control erosion, as certified by the Engineer of Record. Retention/detention ponds shall be enclosed with a gated, six-foot-high, fence (refer to City LDC 3.44.2 for material), with the following exceptions:

1. Where the maximum design water depth is less than two (2) feet; and/or

2. Where the detention facility is part of a landscaped area or conservation scheme, and, the side slopes to water depth of Three (3) feet are water depth of Three (3) feet are constructed and maintained at a maximum slope of at least six horizontal to one vertical (6:1).
NOTES:

The side slopes of retention/detention ponds shall be constructed and maintained with as flat a slope as possible. With approval from the City Engineer, slopes up to two (2) horizontal to one (1) vertical, are acceptable, provided soil conditions are suitable to sustain adequate plant growth and to control erosion, as certified by the Engineer of Record. Retention/detention ponds shall be enclosed with a gated, six-foot-high, fence (refer to City LDC 3.44.2 for material), with the following exceptions:

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NOTES:

1. DRAINAGE FLUME SHALL EXTEND DOWN TO THE BOTTOM OF THE POND OR SWALE.

2. TO BE USED ON GRADUAL SLOPES OF 4:1 OR LESS.