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:

PIPE SIZE (INCHES)	LENGTH RUN (FEET)	
15	75 *	See Note 2., Above.
18	150	
24	250	
30	300	
36	300	
42	400	
54 or greater	500	

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.

STORM DRAINAGE CONSTRUCTION NOTES

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 manual and satisfactory with the City, shall be employed 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.

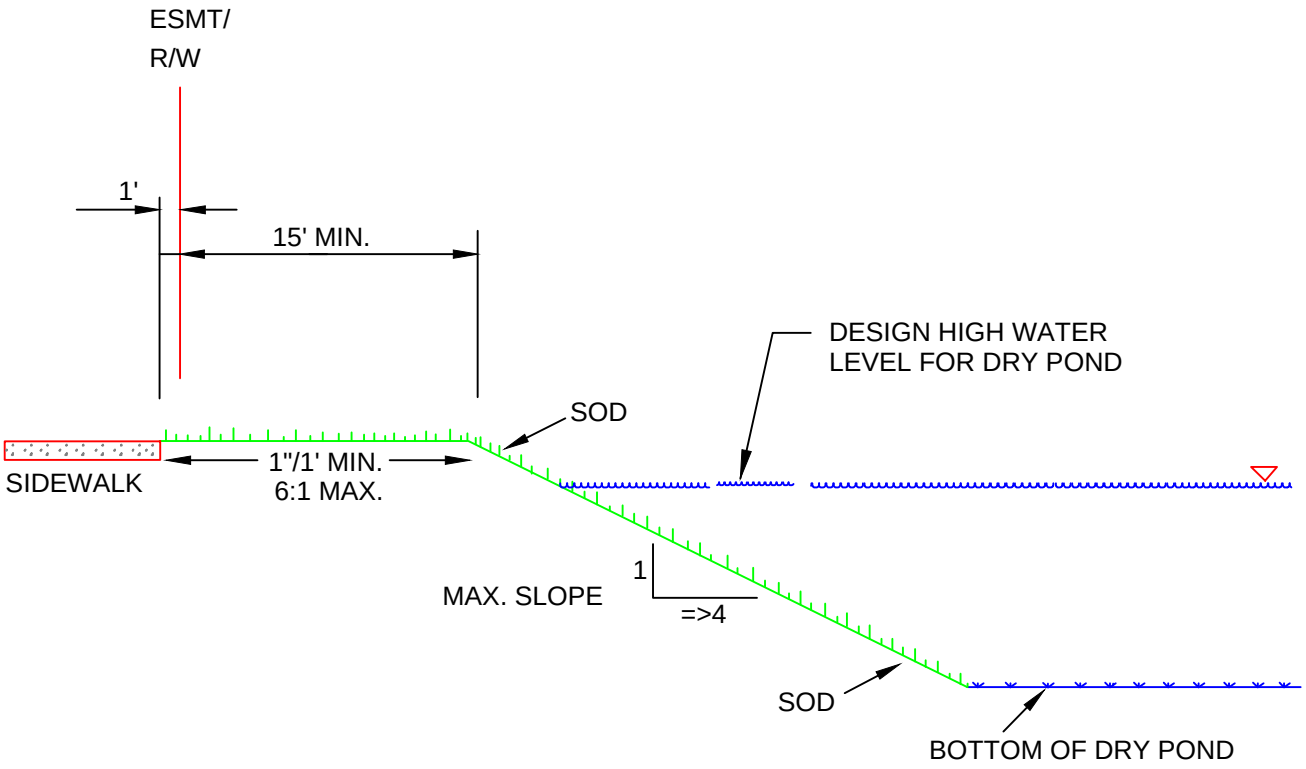
15. Adequate maintenance easements or right-of-way as approved by the City shall be provided around the entire perimeter of all ponds and associated outfalls discharging into and out of ponds. Applicable cross sections shall be included on all final development plans.

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.



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).

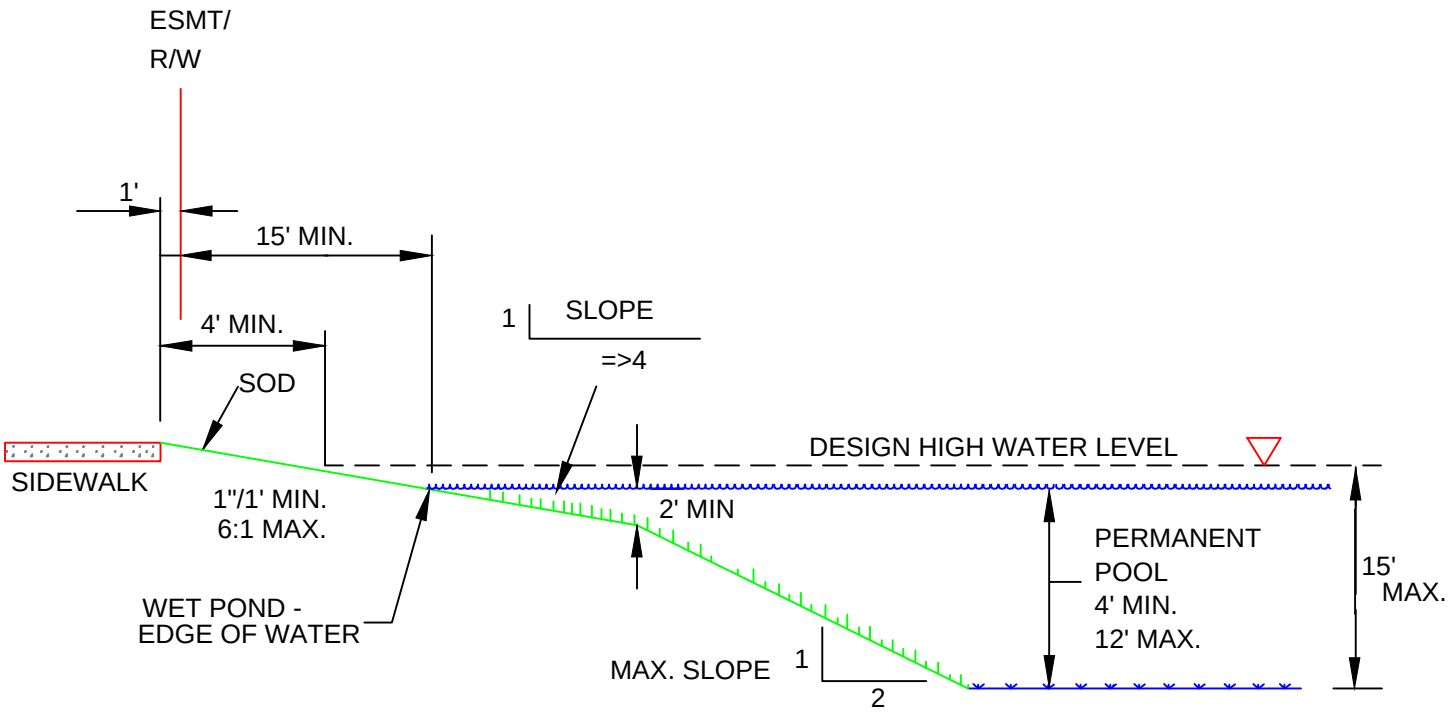
Altamonte Springs
CITY OF ALTAMONTE SPRINGS
950 CALABRIA DRIVE
ALTAMONTE SPRINGS, FLORIDA 32714

DRY RETENTION POND

ST002-2

ISSUED 2015

REVISED 03/31/2015 BY DJB



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).

Altamonte Springs

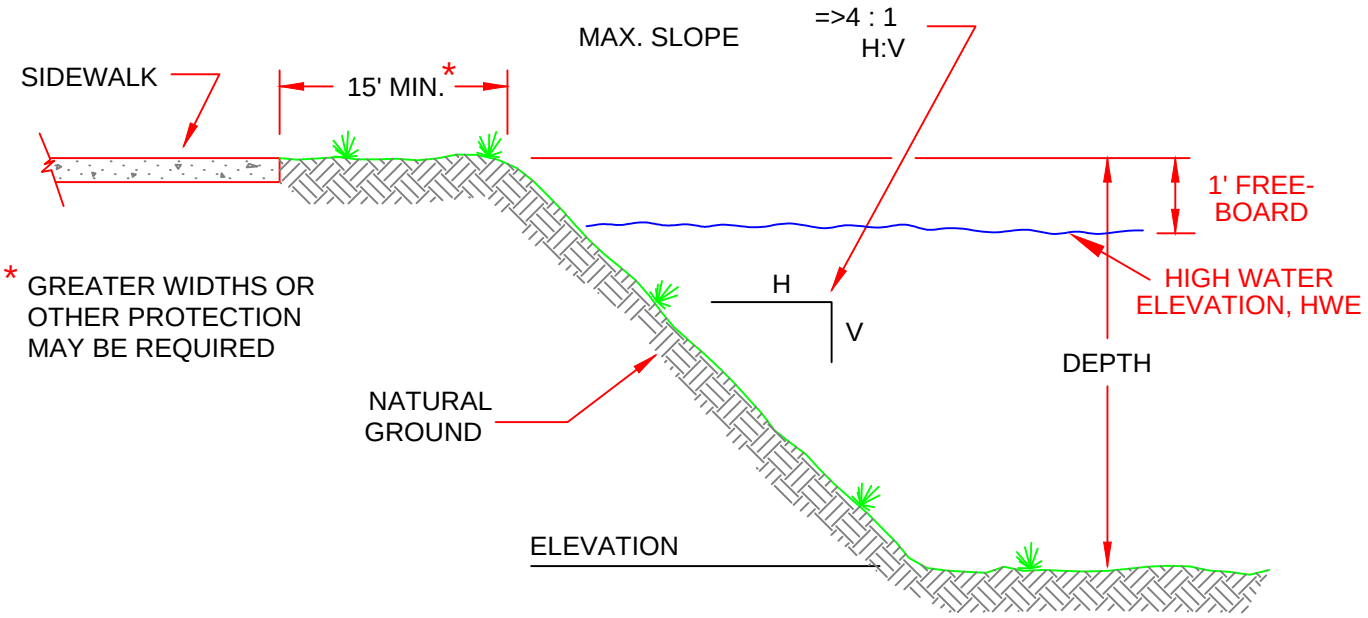
CITY OF ALTAMONTE SPRINGS
950 CALABRIA DRIVE
ALTAMONTE SPRINGS, FLORIDA 32714

WET RETENTION - DETENTION POND

ST003-1

ISSUED 2015

REVISED 03/31/2015 BY DJB



TYPICAL SECTION

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).

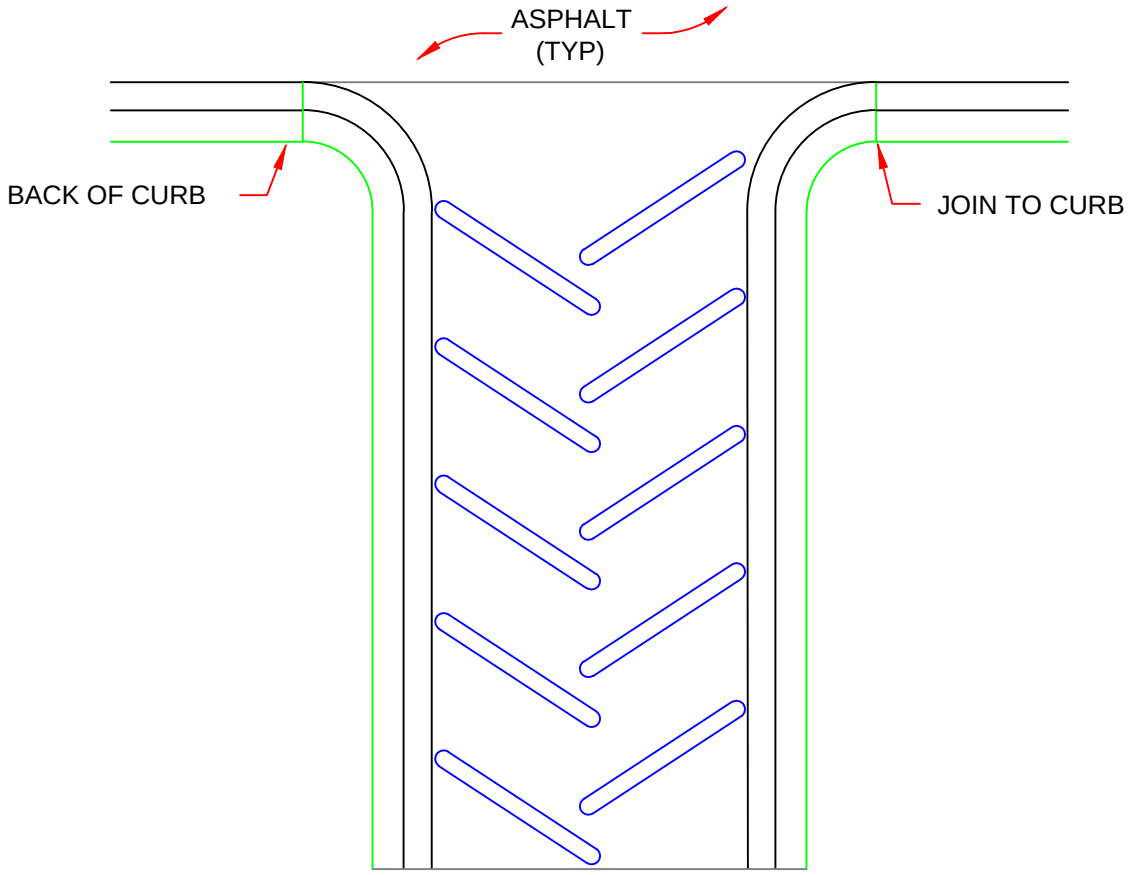
Altamonte Springs
CITY OF ALTAMONTE SPRINGS
950 CALABRIA DRIVE
ALTAMONTE SPRINGS, FLORIDA 32714

STORMWATER POND OR SWALE ADJACENT TO PEDESTRIAN WALKWAY

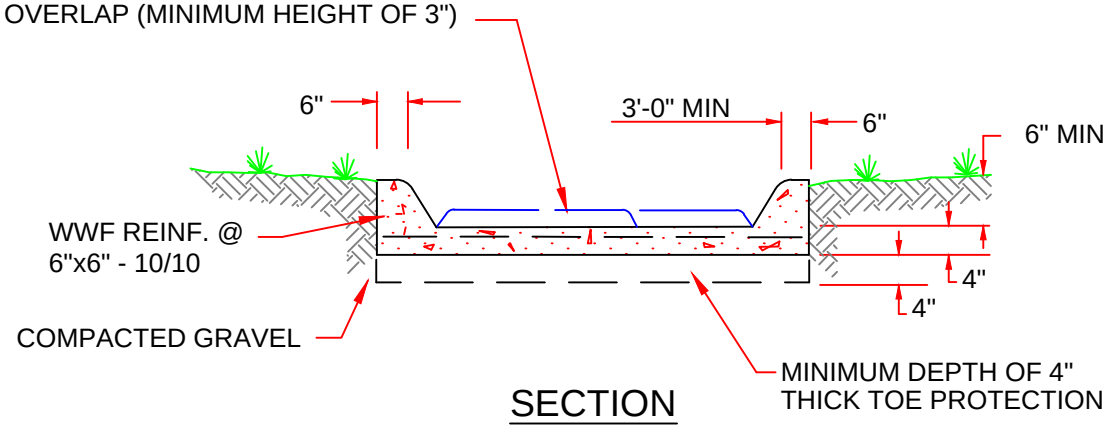
ST004-1

ISSUED 2015

REVISED 03/31/2015 BY DJB



PLAN



SECTION

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.

Altamonte Springs

CITY OF ALTAMONTE SPRINGS
950 CALABRIA DRIVE
ALTAMONTE SPRINGS, FLORIDA 32714

DRAINAGE FLUME

ST005-0

ISSUED 2015

REVISED 03/31/2015 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:

PIPE SIZE (INCHES)	LENGTH RUN (FEET)	
15	75 *	See Note 2., Above.
18	150	
24	250	
30	300	
36	300	
42	400	
54 or greater	500	

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

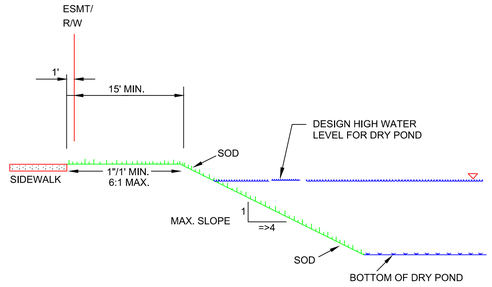
ST001-1A

STORM DRAINAGE CONSTRUCTION NOTES

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 manual and satisfactory with the City, shall be employed 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.

STORMWATER - GENERAL NOTES

ST001-1B



NOTES:

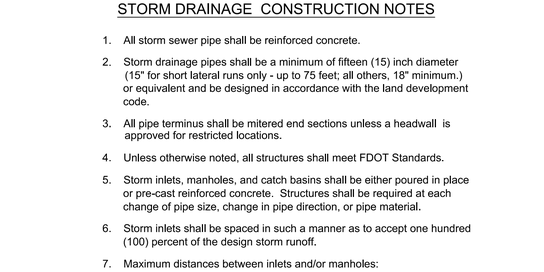
The side slopes of retention/detention ponds shall be constructed and maintained with as flat a slope as possible. With approval from the City Engineer, slopes up to two (2) horizontal to one (1) vertical, are acceptable, provided soil conditions are suitable to sustain adequate plant growth and to control 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).

STORMWATER - DRY RETENTION POND

ST002-2



NOTES:

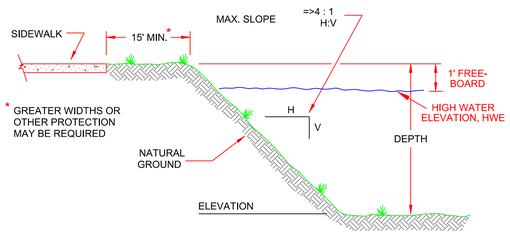
The side slopes of retention/detention ponds shall be constructed and maintained with as flat a slope as possible. With approval from the City Engineer, slopes up to two (2) horizontal to one (1) vertical, are acceptable, provided soil conditions are suitable to sustain adequate plant growth and to control 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).

STORMWATER - WET RETENTION - DETENTION POND

ST003-1



TYPICAL SECTION

NOTES:

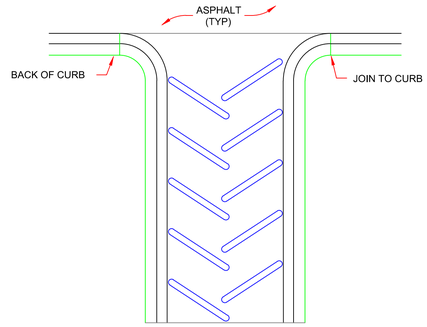
The side slopes of retention/detention ponds shall be constructed and maintained with as flat a slope as possible. With approval from the City Engineer, slopes up to two (2) horizontal to one (1) vertical, are acceptable, provided soil conditions are suitable to sustain adequate plant growth and to control 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

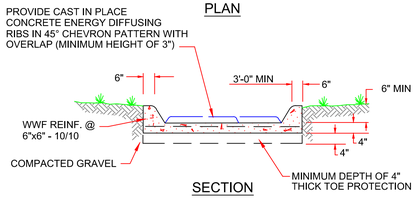
(2) Where the detention facility is part of a landscaped area or conservation scheme, and, the side slopes to water depth of Three (3) feet are water depth of Three (3) feet are constructed and maintained at a maximum slope of at least six horizontal to one vertical (6:1).

STORMWATER - STORMWATER POND OR SWALE ADJACENT TO PEDESTRIAN WALKWAY

ST004-1



PLAN



SECTION

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.

STORMWATER - DRAINAGE FLUME

ST005-0

PUBLIC WORKS & UTILITIES
ENGINEERING AND
DESIGN STANDARDS

ISSUED 2015

REVISED 03/31/2015 BY:DJB

CITY OF ALTAMONTE SPRINGS
225 NEWBURYPORT AVE
ALTAMONTE SPRINGS, FLORIDA 32701

ST901-1
STORMWATER DETAILS -
CITY PROJECTS

DATE: X
SCALE: X

1

SHEET 1 OF 1

ST901-1 STORMWATER DETAILS - CITY PROJECTS.DWG REVISED 03/31/2015 BY:DJB