

**THE CITY OF DAYTONA BEACH
VOLUSIA COUNTY, FLORIDA**

**ENGINEERING STANDARDS FOR
DESIGN AND CONSTRUCTION**



Revised: June 9, 2016

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ENGINEERING STANDARDS FOR DESIGN AND CONSTRUCTION

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PREFACE

This manual has been prepared to establish minimum standards pertaining to the design and construction of all Public Works projects constructed within the rights of way and presents the latest engineering standards as an aid to both design and construction.

The presentation of these standards in book form should make the job of those persons responsible for the design and construction of all city or private projects much easier. Any existing standards which are in conflict with this manual are hereby superseded.

Portions of this manual can be used as individual sheets to be included in project specifications, thereby eliminating the necessity of printing large standard detail sheets to accompany contract drawings.

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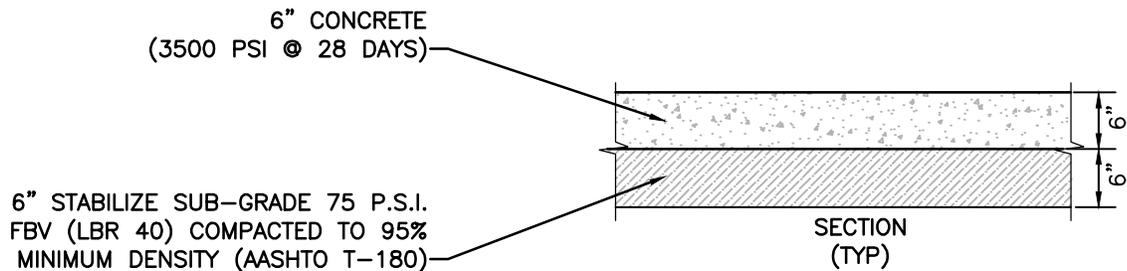
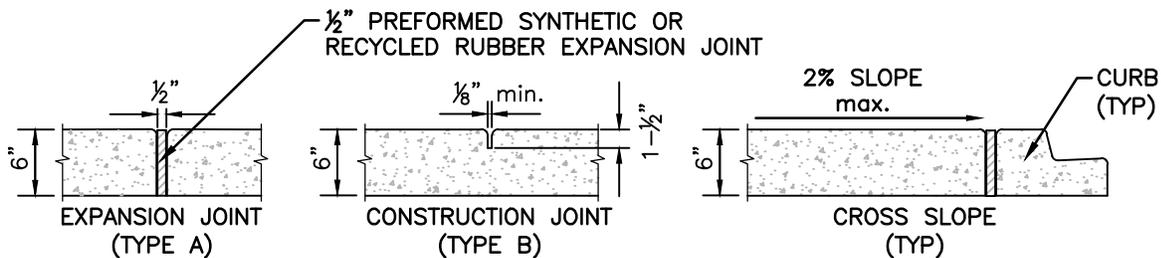
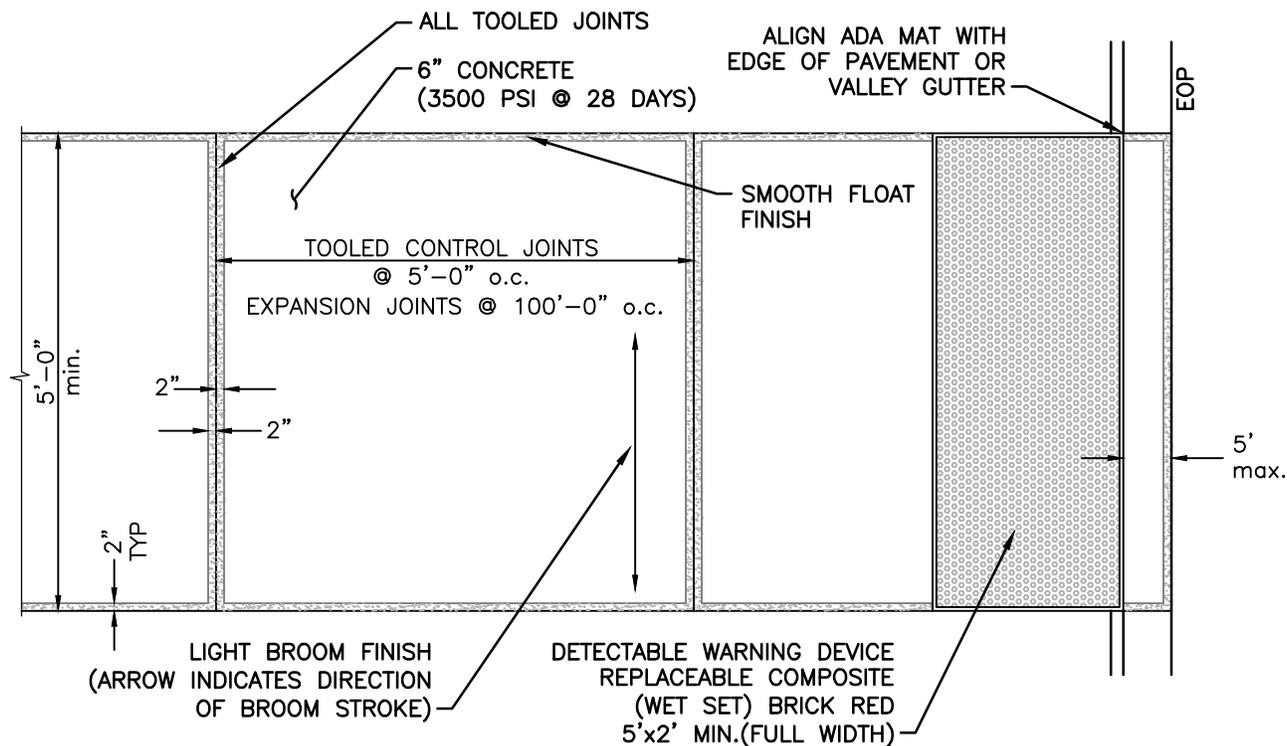
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NTS

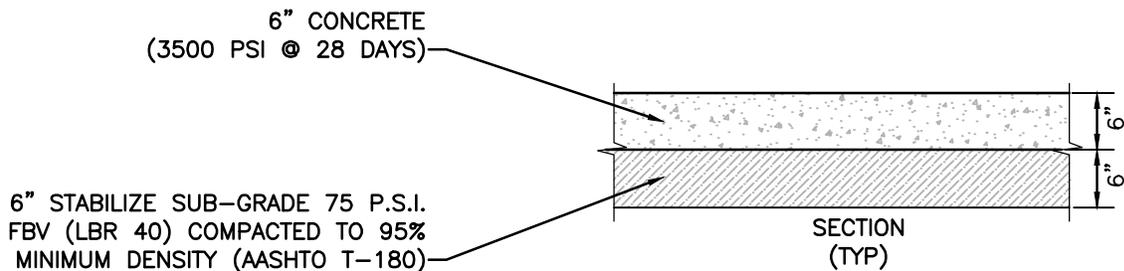
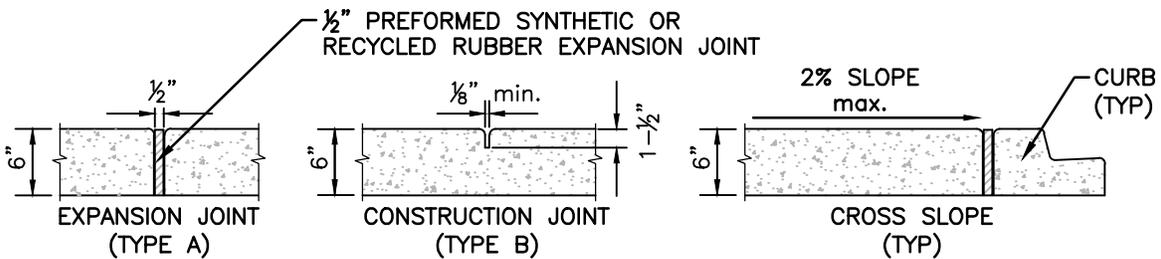
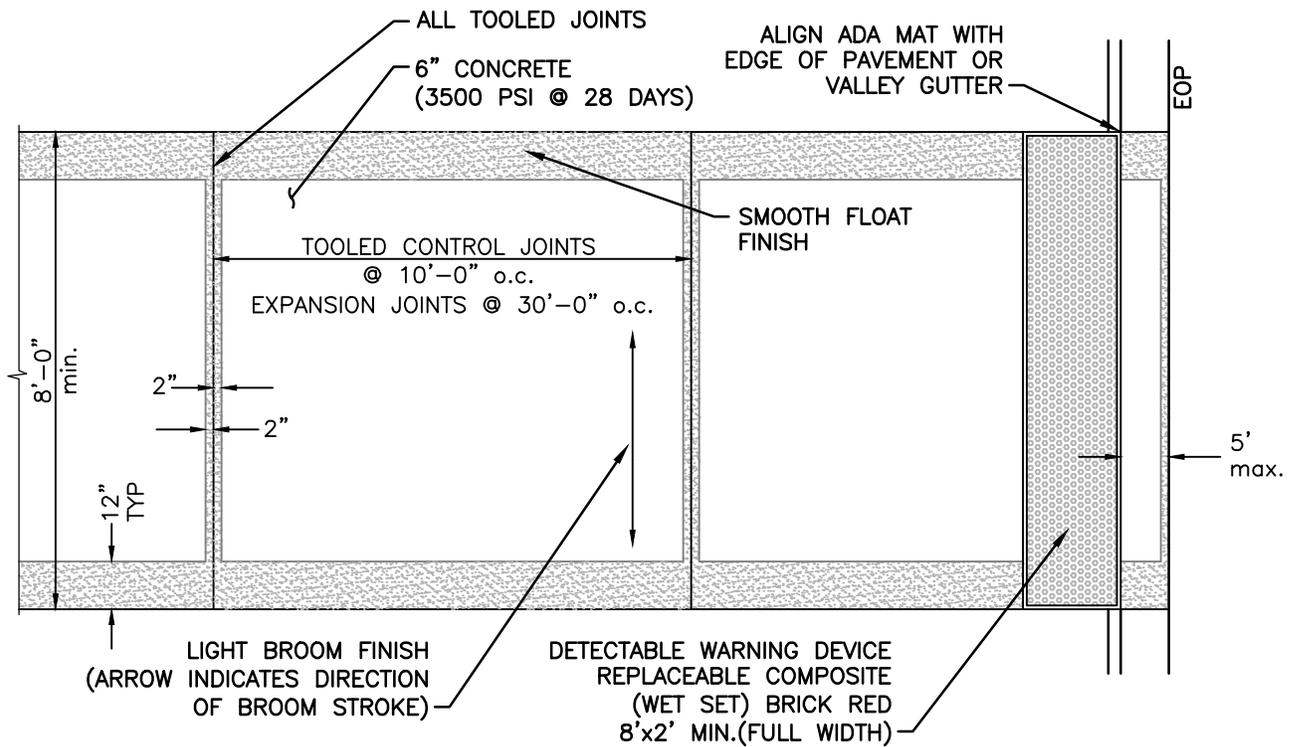
THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



SIDEWALK
CONSTRUCTION
DETAIL

C-1

Drawing Date:	11/2000
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	08/2015
File Name:	dbC-1



THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



PEDESTRIAN/BIKE TRAIL
CONSTRUCTION
DETAIL

C-2

Drawing Date:	11/2000
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	10/2015
File Name:	dbc-2

NOTES:

1. SIDEWALKS, BIKE PATHS, RAMPS AND DRIVEWAY APRONS SHALL BE CONSTRUCTED OF PLAIN PORTLAND CEMENT CONCRETE WITH A MAXIMUM SLUMP OF 3", A MINIMUM DEVELOPED COMPRESSIVE STRENGTH OF 3500 P.S.I. IN 28 DAYS AND A MINIMUM UNIFORM THICKNESS OF 6".
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 SIDEWALK REMAINS WITHIN THE RIGHT-OF-WAY OR AN APPROVED SIDEWALK EASEMENT ABUTTING THE RIGHT OF WAY. SIDEWALKS AND BIKE PATHS SHOULD BE LOCATED A MINIMUM OF 4'-0" FROM THE EDGE OF THE STREET PAVEMENT UNLESS OTHERWISE APPROVED BY THE CITY.
3. ALL CURB CUTS AND HANDICAP RAMPS SHALL BE ADA COMPLIANT AND TO BE CONSTRUCTED IN ACCORDANCE WITH FDOT DESIGN STANDARDS AND FLORIDA BUILDING CODE ACCESSIBILITY, LATEST EDITIONS.
4. THE TOP OF THE CONCRETE SHALL BE AT AN ELEVATION NO LOWER THAN THE CROWN OF THE ADJACENT ROADWAY, AND NO HIGHER THAN 6" ABOVE THE CROWN UNLESS APPROVED BY THE CITY TO MAKE A MORE NATURAL TRANSITION WITH THE ADJACENT LAND.
5. EXPANSION AND 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 OF CONCRETE WHICH HAS SET FOR MORE THAN 60 MINUTES, AND NO FARTHER APART THAN ONE HUNDRED FEET (100') IN SIDEWALKS AND THIRTY FEET (30') IN BIKE PATHS.
6. PREFORMED 1/2" EXPANSION JOINT MATERIAL SHALL BE AS SPECIFIED IN FDOT STANDARDS AND SPECIFICATIONS, LATEST EDITION, AND SHALL BE SYNTHETIC, RECYCLED RUBBER OR OTHER PRE-APPROVED NON-BIODEGRADABLE ELASTOMERIC MATERIAL. WOOD AND DECCA-DRAIN STYLE POOL DRAINS ARE STRICTLY PROHIBITED IN ACCORDANCE WITH CHAPTER 8.1.2 OF THE FDOT SOILS AND FOUNDATIONS HANDBOOK, LATEST EDITION.
7. CONTROL JOINTS (TYPE B JOINTS) SHALL BE TOOLED INTO THE FRESH CONCRETE OR SAW CUT INTO CURED CONCRETE TO A DEPTH EQUAL TO 25% THE SLAB THICKNESS AND SPACED APART A DISTANCE EQUAL TO THE WIDTH OF THE SLAB OR 5' WHICHEVER IS LESS.
8. 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 TOOLED TO ELIMINATE SHARP CORNERS.
9. 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" LIFTS OR COMPACTED WITH A HAND TAMPER IN MAXIMUM 4" LIFTS THE CITY SHALL REQUIRE A COMPACTION TEST FOR EACH LIFT IF THE TOTAL FILLED SECTION IS MORE THAN 12" DEEP OR IF THE SUBSURFACE HAS BEEN DISTURBED MORE THAN 12" DEEP. WHERE SUCH TEST IS REQUIRED, THE SIDEWALK BASE SHALL BE COMPACTED AND TESTED TO 95% WITH MINIMUM L.B.R. BASED ON AASHTO T-180 MODIFIED PROCTOR TEST. MOISTURE SHALL BE APPLIED TO DRY FILL MATERIAL TO ACHIEVE DENSITY REQUIREMENTS.
10. 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.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE FINISHED SLAB FROM ALL DAMAGE AND VANDALISM UNTIL THE CITY ACCEPTS OR APPROVES THE SLAB, AFTER WHICH TIME THE OWNER OF THE ABUTTING LAND SHALL BE RESPONSIBLE FOR THE SLAB IN ACCORDANCE WITH THE CITY CODE. ANY SLAB SECTION DAMAGED OR VANDALIZED PRIOR TO ACCEPTANCE OR APPROVAL SHALL BE CUT OUT BETWEEN JOINTS AND REPLACED AT NO ADDITIONAL COST TO THE OWNER. REPAIRS ARE NOT ACCEPTABLE.
12. ALL FORMS SHALL BE REMOVED PRIOR TO ACCEPTANCE OR APPROVAL AND THE DISTURBED GROUND SHALL BE BACKFILLED, RE-GRADED, AND SODDED SO THAT THE WEAR SURFACE OF THE CONCRETE IS REASONABLY FLUSH WITH THE ADJACENT GRADE.
13. DETECTABLE WARNING DEVICES SHALL EXTEND THE FULL WIDTH OF THE SIDEWALK AND TO A DEPTH OF 2' min.
14. SEE FDOT DESIGN STANDARDS INDEX 304, LATEST EDITION, FOR REFERENCE.

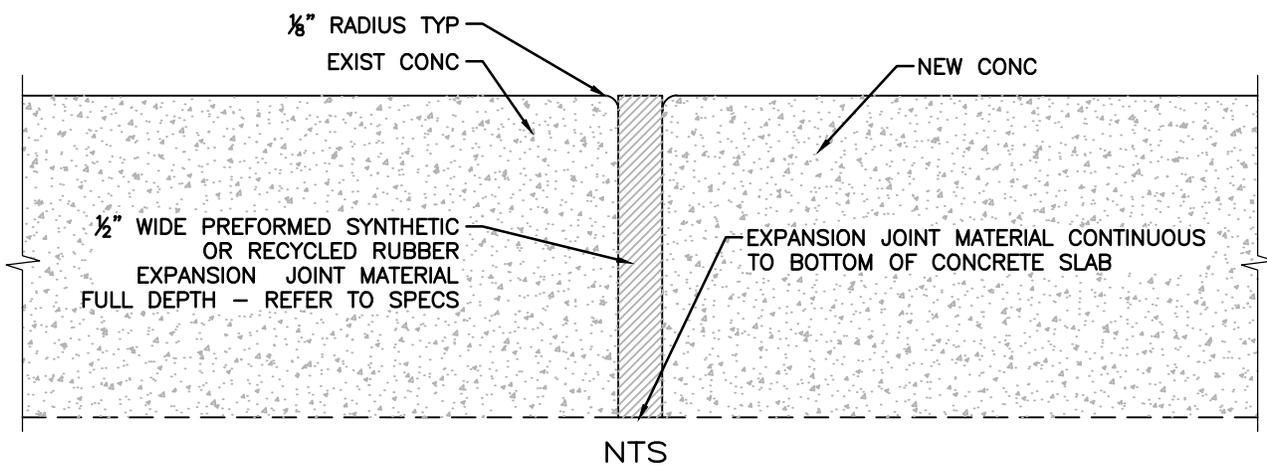
**THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION**



**SIDEWALK/BIKE TRAIL
CONSTRUCTION
NOTES**

C-3

Drawing Date:	09/2003
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	12/2013
File Name:	dbC-3



NOTES:

1. EXPANSION JOINTS ARE TO BE 1/2" PREFORMED SYNTHETIC OR RECYCLED RUBBER.
2. ALL EXPANSION JOINTS ARE REQUIRED TO BE INSTALLED THROUGH TO THE FULL DEPTH AND WIDTH OF THE CONCRETE AREA.
3. EXPANSION JOINTS SHALL BE SPACED AT INTERVALS OF SIXTY FEET (60') FOR CURBING, THIRTY FEET (30') FOR BIKE TRAILS AND ONE HUNDRED FEET (100') FOR SIDEWALKS.
4. EXPANSION JOINTS SHALL BE PLACED AT STREET INTERSECTIONS, RADIUS POINTS, STRUCTURES, AND ALONG CURVES AT SIXTY FEET (60') INTERVALS.
5. FOR LINEAL SECTIONS OF CURBS, EXPANSION JOINTS SHALL BE LOCATED AT A MAXIMUM SPACING OF FIVE-HUNDRED FEET (500') AND SHALL BE 1/2" IN WIDTH.

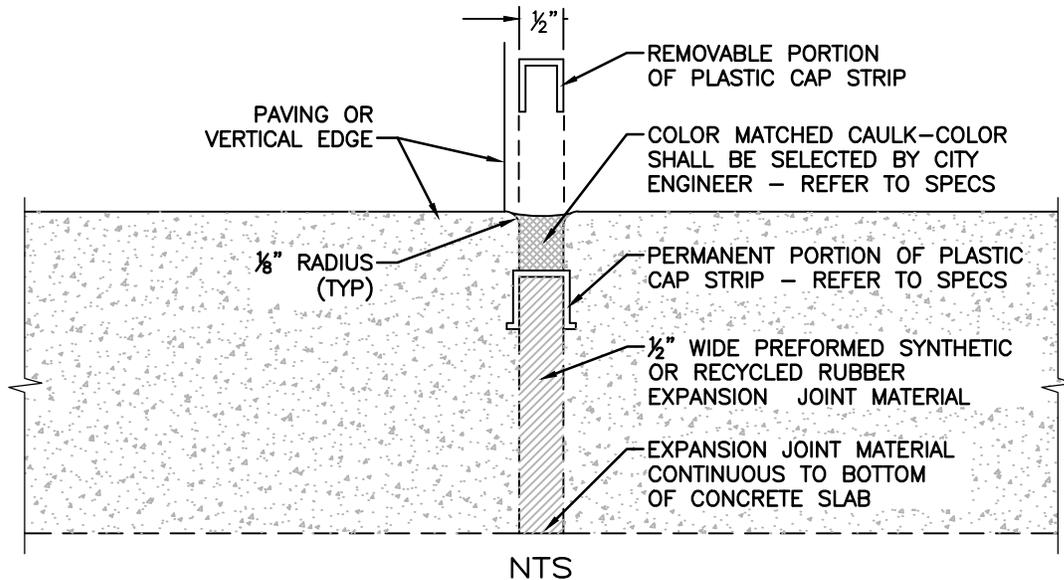
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**EXPANSION JOINT
(TYPE A)
DETAIL**

C-4

Drawing Date:	11/2008
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	03/2014
File Name:	dbC-4



NOTES:

1. PLASTIC CAP STRIP W/ PULL-OFF TOP PER MANUFACTURER (VINYLEX CORP. OR APPROVED EQUAL).
2. EXPANSION JOINTS ARE TO BE 1/2" PREFORMED SYNTHETIC OR RECYCLED RUBBER.
3. ALL EXPANSION JOINTS ARE REQUIRED TO BE INSTALLED THROUGH TO THE FULL DEPTH AND WIDTH OF THE CONCRETE AREA.
4. EXPANSION JOINTS SHALL BE SPACED AT INTERVALS OF SIXTY FEET (60') FOR CURBING, THIRTY FEET (30') FOR BIKE TRAILS AND ONE HUNDRED FEET (100') FOR SIDEWALKS.
5. EXPANSION JOINTS SHALL BE PLACED AT STREET INTERSECTIONS, RADIUS POINTS, STRUCTURES, AND ALONG CURVES AT SIXTY FEET (60') INTERVALS.
6. FOR LINEAL SECTIONS OF CURBS, EXPANSION JOINTS SHALL BE LOCATED AT A MAXIMUM SPACING OF FIVE-HUNDRED FEET (500') AND SHALL BE 1/2" IN WIDTH.

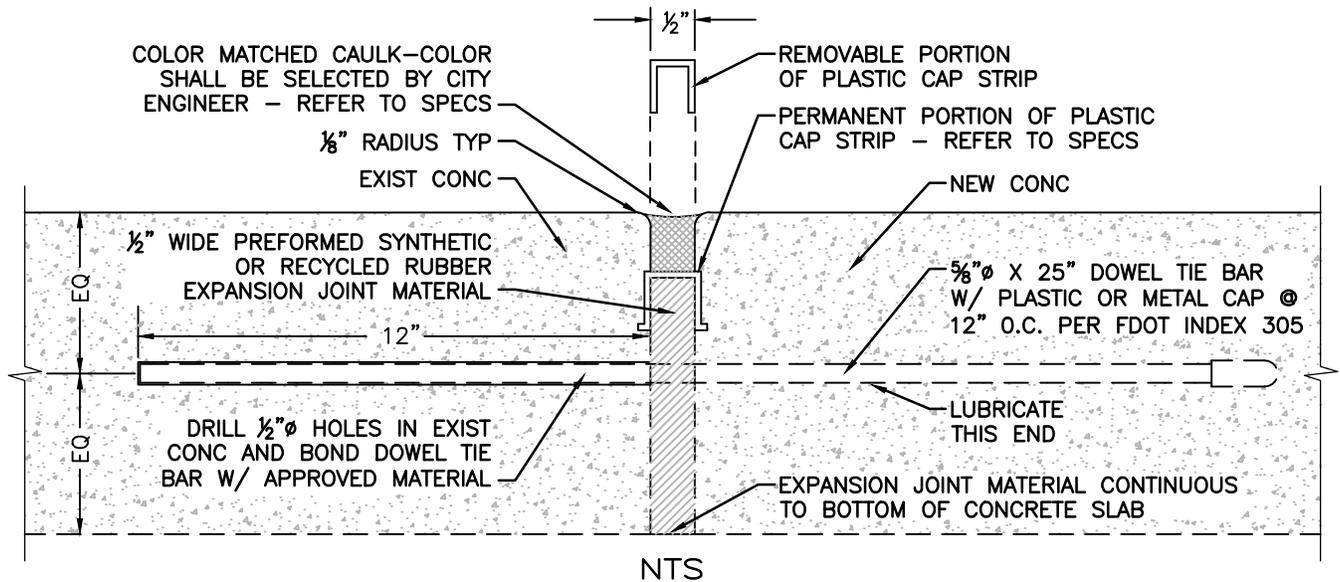
THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



**CAULKED CONCRETE
EXPANSION JOINT (TYPE A)
DETAIL**

C-5

Drawing Date:	11/2008
Drawn By:	PFT
Checked By:	JRS
Scale:	NTS
Revision Date:	12/2013
File Name:	dbc-5



NOTES:

1. PLASTIC CAP STRIP W/ PULL-OFF TOP PER MANUFACTURER (VINYLEX CORP. OR APPROVED EQUAL).
2. TIE BARS SHALL BE #4 REINFORCING STEEL REBAR UNLESS OTHERWISE SPECIFIED BY CITY ENGINEER OR PROJECT REQUIREMENTS.
3. SEE FDOT DESIGN STANDARDS INDEX 305, LATEST EDITION, FOR REFERENCE.
4. EXPANSION JOINTS ARE TO BE $\frac{1}{2}$ " PREFORMED SYNTHETIC OR RECYCLED RUBBER.
5. ALL EXPANSION JOINTS ARE REQUIRED TO BE INSTALLED THROUGH TO THE FULL DEPTH AND WIDTH OF THE CONCRETE AREA.
6. EXPANSION JOINTS SHALL BE SPACED AT INTERVALS OF SIXTY FEET (60') FOR CURBING, THIRTY FEET (30') FOR BIKE TRAILS AND ONE HUNDRED FEET (100') FOR SIDEWALKS.
7. EXPANSION JOINTS SHALL BE PLACED AT STREET INTERSECTIONS, RADIUS POINTS, STRUCTURES, AND ALONG CURVES AT SIXTY FEET (60') INTERVALS.
8. EXPANSION JOINTS SHALL BE LOCATED AT A MAXIMUM SPACING OF FIVE HUNDRED FEET (500') FOR LINEAL SECTIONS OF CURBS.

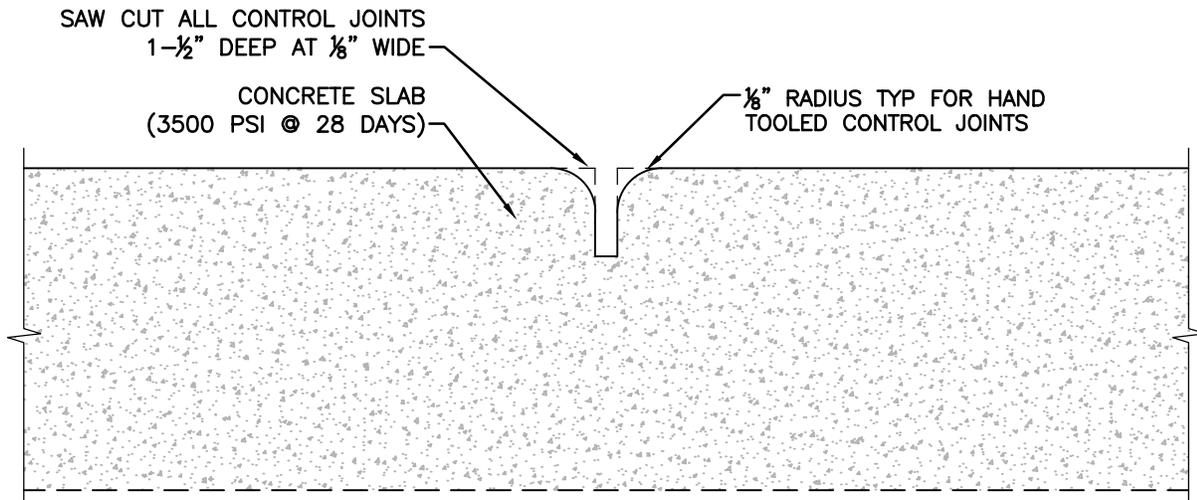
THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



**DOWELED CONCRETE
EXPANSION JOINT (TYPE A)
DETAIL**

C-6

Drawing Date:	11/2008
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	12/2013
File Name:	dbc-6



NTS

NOTES:

1. CONTROL JOINTS SHALL BE HAND TOOLED INTO FRESH CONCRETE OR SAW CUT INTO CURED CONCRETE.
2. SAW CUT CONTROL JOINTS IN CONCRETE CURBING, SIDEWALKS, PAVEMENT AND SIMILAR CONCRETE AREAS SHALL BE DONE WITHIN 4 TO 18 HOURS OF CONCRETE PLACEMENT.
3. ALL CONTROL JOINTS SHALL BE $\frac{1}{8}$ " IN WIDTH TO A DEPTH OF 25% OF THE TOTAL DEPTH OF CONCRETE OR $1-\frac{1}{2}$ ", WHICHEVER IS LESS.
4. CONTROL JOINTS SHALL BE SPACED AT INTERVALS OF TEN FEET (10') FOR CURBING, TEN FEET (10') FOR BIKE TRAILS & FIVE FEET (5') FOR SIDEWALKS.

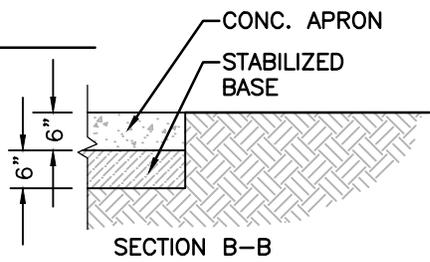
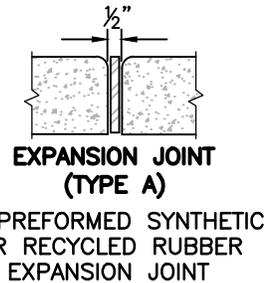
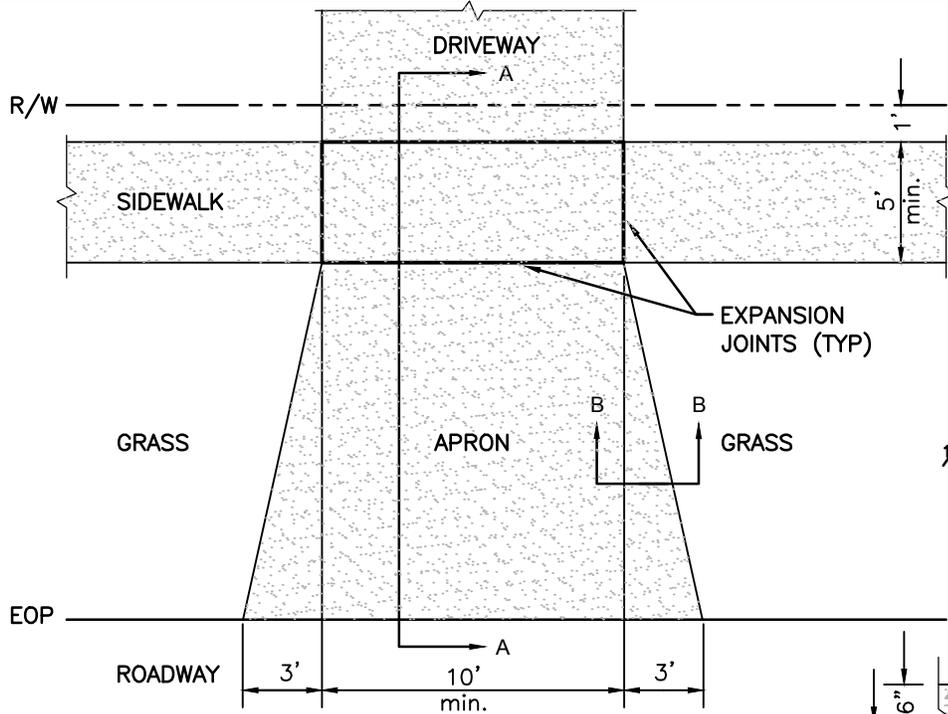
THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



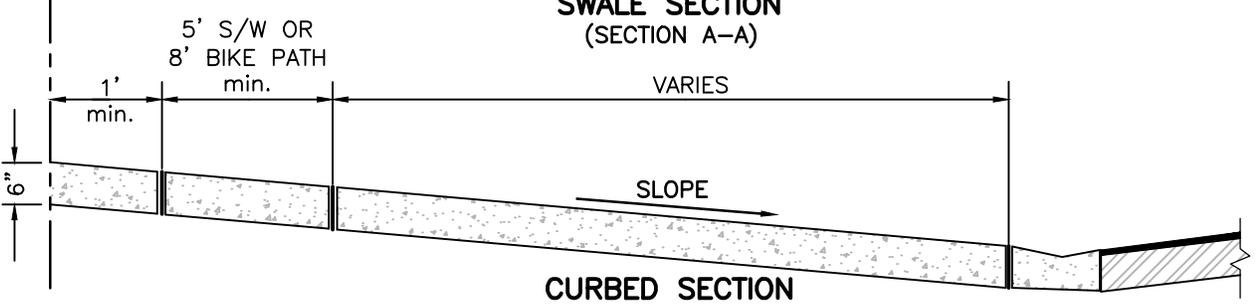
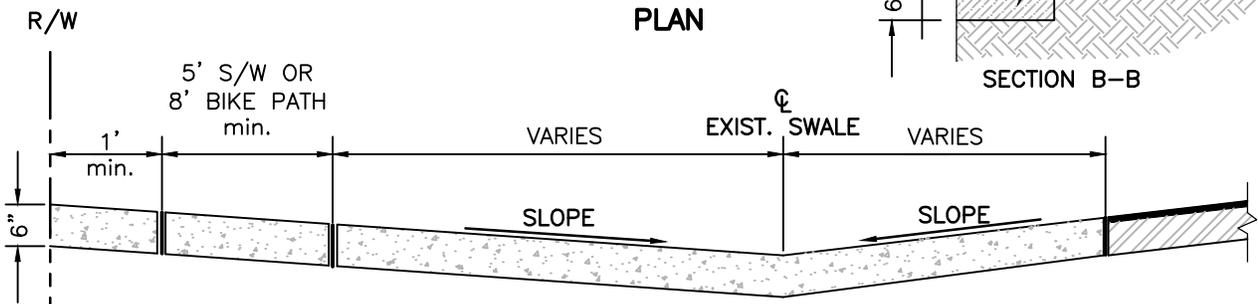
**CONCRETE CONTROL
JOINT (TYPE B)
DETAIL**

C-7

Drawing Date:	11/2008
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	03/2014
File Name:	dbC-7



PLAN



NTS

NOTES:

1. DRIVEWAY APRON SHALL BE CONSTRUCTED OF PLAIN PORTLAND CEMENT CONCRETE WITH A MAXIMUM SLUMP OF 3". A MINIMUM DEVELOPMENT COMPRESSIVE STRENGTH OF 3500 P.S.I. @ 28 DAY.
2. CONCRETE DRIVEWAY APRON WITHIN CITY RIGHT OF WAY SHALL BE MINIMUM UNIFORM THICKNESS OF 6".
3. DRIVEWAY APRON BASE SHALL BE COMPACTED AND TESTED TO 98% DENSITY WITH MINIMUM L.B.R. 40 BASED ON AASHTO T-180 MODIFIED PROCTOR TEST.
4. NO PAVER BRICK TO BE USED WITHIN CITY RIGHT OF WAY.
5. CONCRETE APRON TO HAVE LIGHT BROOM FINISH.

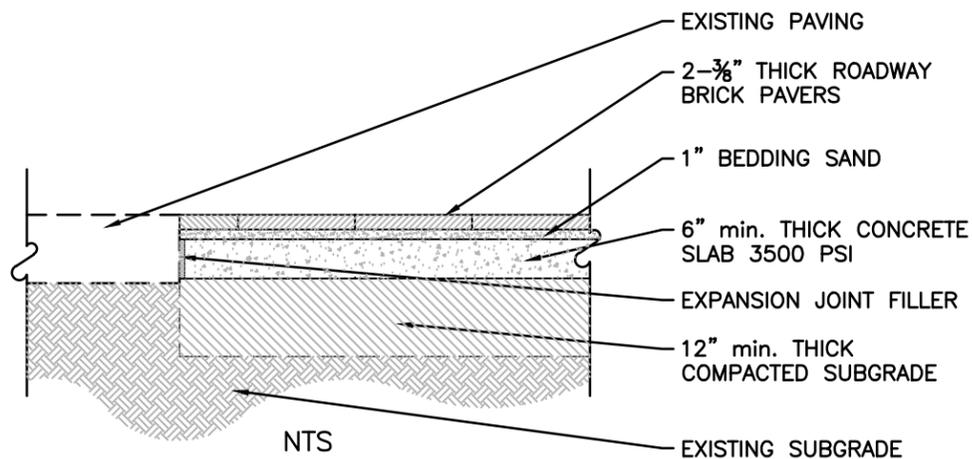
**THE CITY OF DAYTONA BEACH
 ENGINEERING DIVISION**



**CONCRETE
 DRIVEWAY APRON
 DETAIL**

C-8

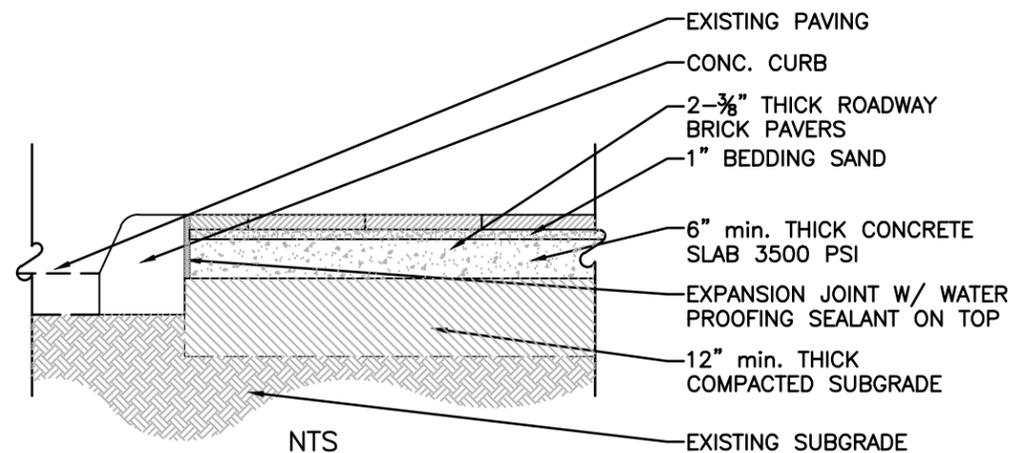
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Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	02/2014
File Name:	dbC-8



NOTES:

1. PAVERS TO BE 2 3/8" MIN. INTERLOCKING 7700 PSI CONCRETE.
2. PAVERS TO BE LAID FLAT ON 1" CRUSHED CONCRETE BED W/ SAND SWEEPED JOINTS.
3. MAINTAIN MIN. 1.5% CROSS SLOPE THROUGH OUT THE ENTIRE PROJECT.
4. THE CITY OF DAYTONA RESERVES THE RIGHT TO REQUEST SUBGRADE COMPACTION TESTING AT THE OWNERS EXPENSE.

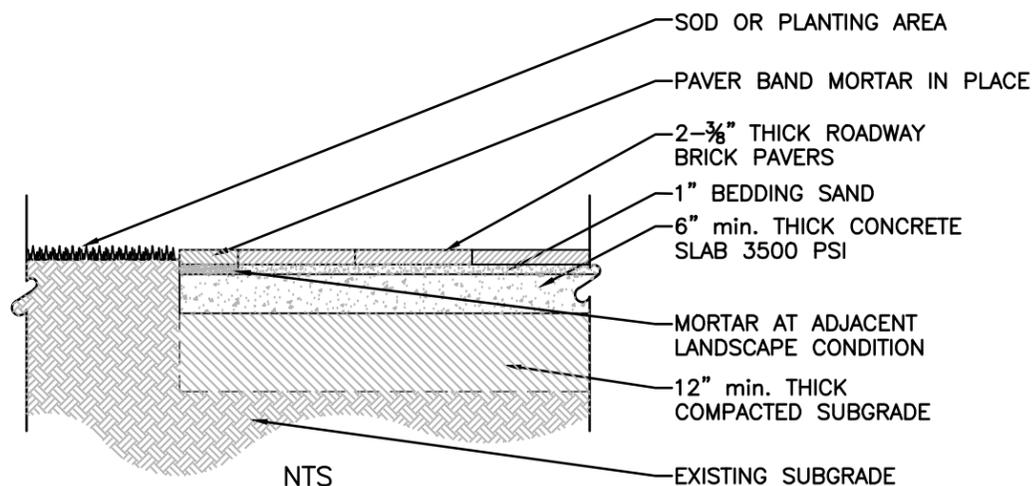
BRICK PAVEMENT SECTION AT PAVEMENT DETAIL



NOTES:

1. PAVERS TO BE 2 3/8" MIN. INTERLOCKING 7700 PSI CONCRETE.
2. PAVERS TO BE LAID FLAT ON 1" CRUSHED CONCRETE BED W/ SAND SWEEPED JOINTS.
3. MAINTAIN MIN. 1.5% CROSS SLOPE THROUGH OUT THE ENTIRE PROJECT.
4. THE CITY OF DAYTONA RESERVES THE RIGHT TO REQUEST SUBGRADE COMPACTION TESTING AT THE OWNERS EXPENSE.

BRICK PAVEMENT SECTION AT CURB DETAIL



NOTES:

1. PAVERS TO BE 2 3/8" MIN. INTERLOCKING 7700 PSI CONCRETE.
2. PAVERS TO BE LAID FLAT ON 1" CRUSHED CONCRETE BED W/ SAND SWEEPED JOINTS.
3. MAINTAIN MIN. 1.5% CROSS SLOPE THROUGH OUT THE ENTIRE PROJECT.
4. THE CITY OF DAYTONA RESERVES THE RIGHT TO REQUEST SUBGRADE COMPACTION TESTING AT THE OWNERS EXPENSE.

BRICK PAVEMENT SECTION AT GRADE DETAIL

NOTES:

1. ALL MATERIALS ARE TO BE APPROVED BY THE CITY ENGINEER AND THE PROJECT'S LICENSED SOILS ENGINEER PRIOR TO PLACEMENT.
2. COMPACTION, STABILITY & DENSITY TESTING ARE TO BE DONE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROADWAY & BRIDGE CONSTRUCTION, LATEST EDITION.
3. CLEAN, NON-PLASTIC, FREE FROM DELETERIOUS OR FOREIGN MATTER, SYMMETRICALLY SHAPED, NATURAL OR MANUFACTURED FROM CRUSHED ROCK.
4. THE BEDDING SAND SHALL BE COMMERCIAL CONCRETE MIX OR CODB ACCEPTABLE EQUIVALENT.
5. DO NOT USE STONE DUST.
6. DO NOT USE LIMESTONE SCREENINGS OR SAND FOR THE BEDDING THAT DOES NOT CONFORM TO THE GRADING REQUIREMENTS OF ASTM C33.
7. DO NOT USE MASON SAND OR SAND CONFORMING TO ASTM C144 FOR BEDDING SAND.

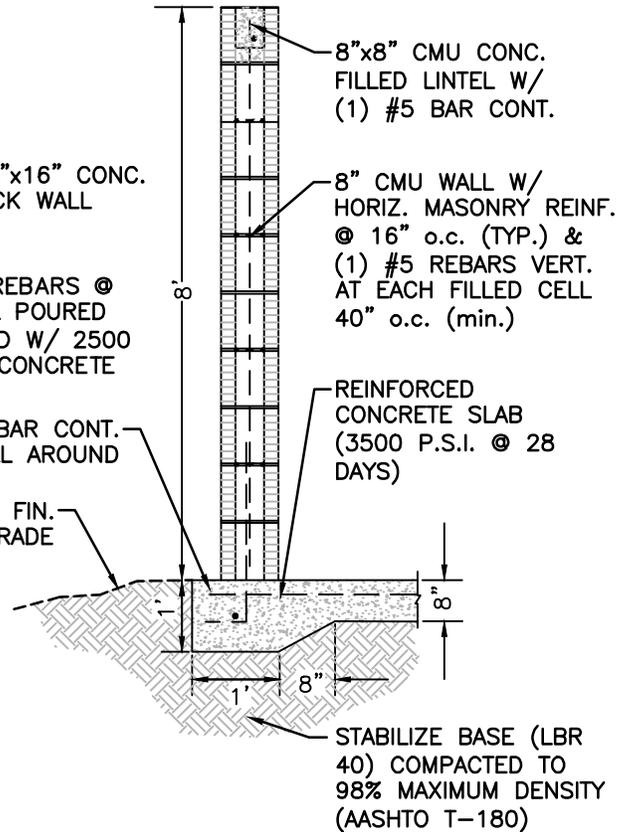
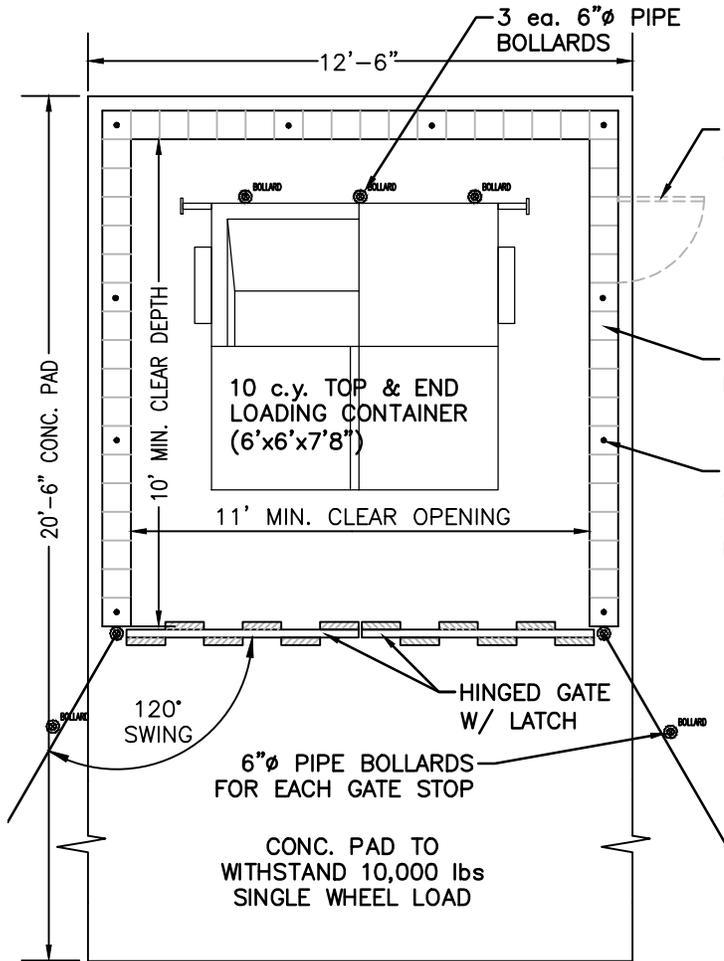
8.a. **GRADATION FOR BEDDING SAND (ASTM C33)**

SIEVE SIZE	PERCENT PASSING
3/8" (9.5 mm)	100
No.4 (4.75 mm)	95 to 100
No.8 (2.36 mm)	80 to 100
No.16 (1.18 mm)	50 to 85
No.30 (0.6 mm)	25 to 60
No.50 (0.3 mm)	5 to 30
No.100 (0.15 mm)	0 to 10
No.200 (0.075 mm)	0 to 1

8.b. **GRADATION FOR JOINT SAND (ASTM C144)**

SIEVE SIZE	PERCENT PASSING
No.4 (4.75 mm)	100
No.8 (2.36 mm)	95 to 100
No.16 (1.18 mm)	70 to 100
No.30 (0.6 mm)	40 to 75
No.50 (0.3 mm)	10 to 35
No.100 (0.15 mm)	2 to 15
No.200 (0.075 mm)	0 to 5





PLAN

NTS

WALL SECTION

NOTES:

1. THE CONCRETE PAD BASE SHALL BE COMPACTED AND TESTED TO 98% WITH MINIMUM L.B.R. 40 BASED ON ASSHTO T-180 MODIFIED PROCTOR TEST.
2. BLOCK MUST BE FINISHED WITH PAINTED STUCCO OR BRICK VENEER TO MATCH PROJECT SPECIFICATION.
3. DUMPSTER STRUCTURE SHALL MEET THE REQUIREMENTS OF SECTION 2.1 OF THE LAND DEVELOPMENT CODE (LDC).
4. BOLLARDS TO BE 6"Ø STEEL PIPE, CONCRETE FILLED SET IN CONCRETE 3' BELOW FINISHED GRADE & EXTENDING VERTICALLY 4' (MIN.) ABOVE FINISHED GRADE. BOLLARDS SHALL BE PAINTED OSHA YELLOW.
5. SHRUB PLANTINGS REQUIRED (3' MIN. WIDE PLANTING AREA) AROUND PERIMETER WALLS (EXCEPT OPENING).
6. GATES SHALL BE CONSTRUCTED OF PLASTIC COATED CHAIN-LINK WITH SCREENING STRIPS OR OF PRESSURE TREATED WOOD.

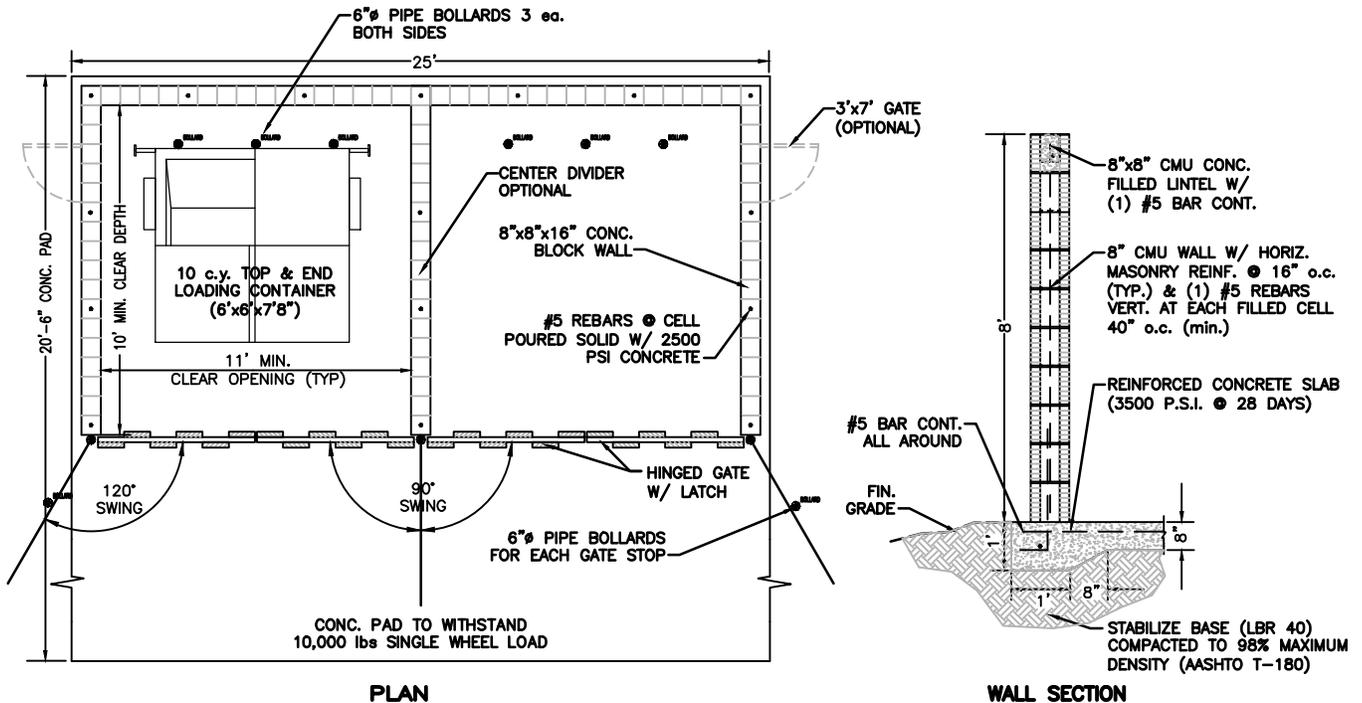
THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



**CMU DUMPSTER
ENCLOSURE (SINGLE UNIT)
DETAIL**

C-10

Drawing Date:	05/2003
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PLAN

NTS

WALL SECTION

NOTES:

1. THE CONCRETE PAD BASE SHALL BE COMPACTED AND TESTED TO 98% WITH MINIMUM L.B.R. 40 BASED ON ASSHTO T-180 MODIFIED PROCTOR TEST.
2. BLOCK MUST BE FINISHED WITH PAINTED STUCCO OR BRICK VENEER TO MATCH PROJECT SPECIFICATION.
3. DUMPSTER STRUCTURE SHALL MEET THE REQUIREMENTS OF SECTION 2.1 OF THE LAND DEVELOPMENT CODE (LDC).
4. BOLLARDS TO BE 6"Ø STEEL PIPE, CONCRETE FILLED SET IN CONCRETE 3' BELOW FINISHED GRADE & EXTENDING VERTICALLY 4' (MIN.) ABOVE FINISHED GRADE. BOLLARDS SHALL BE PAINTED OSHA YELLOW.
5. SHRUB PLANTINGS REQUIRED (3' MIN. WIDE PLANTING AREA) AROUND PERIMETER WALLS (EXCEPT OPENING).
6. GATES SHALL BE CONSTRUCTED OF PLASTIC COATED CHAIN-LINK WITH SCREENING STRIPS OR OF PRESSURE TREATED WOOD.

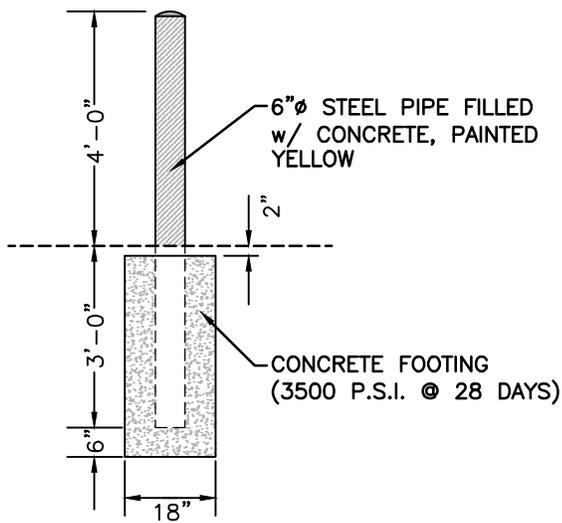
THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



CMU DUMPSTER
ENCLOSURE (MULTIPLE UNIT)
DETAIL

C-11

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Revision Date:	12/2013
File Name:	dbC-11



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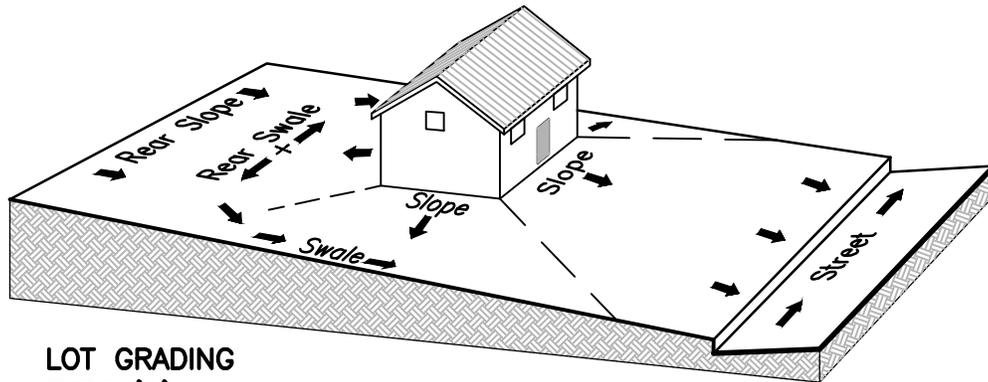
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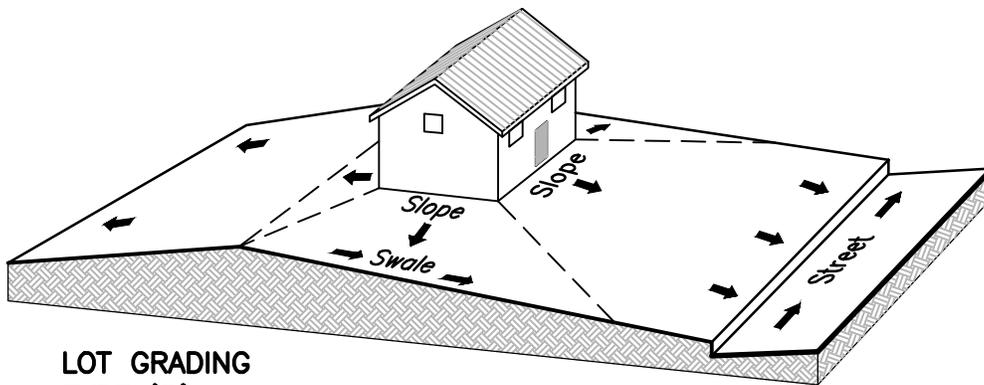
**STEEL PIPE BOLLARD
CONCRETE FILLED
DETAIL**

C-12

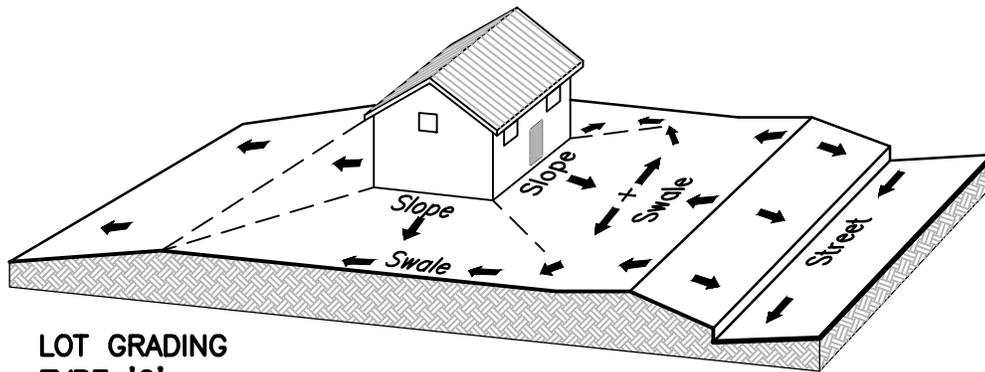
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Revision Date:	12/2013
File Name:	dbC-12



LOT GRADING
TYPE 'A'



LOT GRADING
TYPE 'B'



LOT GRADING
TYPE 'C'

NTS

NOTE:

1. CONTRACTOR/PROJECT ENGINEER SHALL PROVIDE TABLE LISTING SUBDIVISION LOT NUMBERS ASSOCIATED WITH EACH LOT GRADING PLAN TYPE.



SITE PLAN & SUBDIVISION TESTING

A. MATERIALS:

THE INSPECTION AND TESTING OF MATERIALS AND FINISHED ARTICLES TO BE INCORPORATED IN THE WORK SHALL BE MADE BY BUREAUS, LABORATORIES, OR AGENCIES APPROVED BY THE ENGINEER OF RECORD. THE CONTRACTOR SHALL SUBMIT SUCH SAMPLES OR TEST PIECES OF MATERIALS AS THE ENGINEER OF RECORD MAY REQUIRE. THE CONTRACTOR SHALL NOT INCORPORATE ANY MATERIAL OR FINISHED ARTICLE INTO THE WORK UNTIL THE RESULTS OF THE INSPECTIONS OR TESTS ARE KNOWN AND THE CONTRACTOR HAS BEEN NOTIFIED BY THE ENGINEER OF RECORD THAT THE MATERIAL OR FINISHED ARTICLE IS ACCEPTED. ALL MATERIALS MUST BE OF THE SPECIFIED QUALITY AND BE EQUAL TO THE APPROVED SAMPLE IF A SAMPLE HAS BEEN SUBMITTED. CERTIFIED COPIES OF ALL TESTS MADE SHALL BE SUBMITTED TO THE ENGINEER OF RECORD AS WELL AS TO THE CITY'S DESIGNATED SITE INSPECTOR. THE CITY'S DESIGNATED SITE INSPECTOR MUST RECEIVE COPIES OF ALL TESTING REPORTS AND CERTIFICATES PRIOR TO THE ENGINEER OF RECORD REQUESTING A FINAL PROJECT INSPECTION FROM THE CITY.

B. LABORATORY CONTROL AND CERTIFICATES:

1. **SPECIFICATIONS:** SAMPLING, TESTING, AND LABORATORY METHODS SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE AASHTO OR ASTM. WHERE AASHTO OR ASTM SPECIFICATIONS ARE USED, THE REFERENCE SHALL BE CONSTRUED TO BE THE MOST RECENT STANDARD SPECIFICATIONS OR TENTATIVE SPECIFICATIONS OF THE AASHTO OR ASTM IN FORCE ON THE DATE OF THE TEST.
2. **TEST & CERTIFICATES:** THE CONTRACTOR SHALL ENGAGE AN APPROVED TESTING LABORATORY TO PROVIDE THE FOLLOWING TESTS AND CERTIFICATIONS SIGNED BY A REGISTERED ENGINEER OF THE STATE OF FLORIDA. ALL TECHNICIANS PERFORMING THE TESTS SHALL BE STATE CERTIFIED FOR THE TESTING PERFORMED. ADDITIONAL TESTS THAT MAY BE REQUIRED BY EITHER THE ENGINEER OF RECORD OR THE CITY SHALL ALSO BE PROVIDED BY THE CONTRACTOR, AND THE FOLLOWING SHALL NOT BE TAKEN AS A COMPLETE AND EXHAUSTIVE LIST OF THE CONTRACTOR'S TESTING RESPONSIBILITIES.
 - a. SOIL ANALYSIS FOR STRUCTURAL FILL MATERIAL PRIOR TO INSTALLATION.
 - b. PROCTOR DENSITIES, MOISTURE CONTENT, COMPACTED FIELD DENSITIES AND ATTERBERG LIMITS.
 - c. ANALYSIS OF RECYCLED CONCRETE BASE MATERIAL PRIOR TO INSTALLATION.
 - d. ASPHALT MIX DESIGN, BITUMEN CONTENT, SIEVE ANALYSIS, HUBBARD FIELD STABILITY TESTS, NUCLEAR DENSITY TESTS (BACKSCATTER METHOD), AND ANALYSIS OF CORE SAMPLES.
 - e. CONCRETE MIX DESIGNS FOR ALL APPLICATIONS INCLUDING PAVEMENT, CAST-IN-PLACE STRUCTURES, CURBING, GUTTERS, SIDEWALKS, BIKE PATHS, APRONS AND DRIVEWAYS.
 - f. COMPRESSIVE TEST CYLINDERS AND SLUMP TESTS FOR ALL APPLICATIONS OF CONCRETE, INCLUDING PAVEMENT, CAST-IN-PLACE STRUCTURES, CURBING, GUTTERS, SIDEWALKS, BIKE PATHS, APRONS, AND DRIVEWAYS.
 - g. ALL UNDERGROUND UTILITY TESTING TO BE COMPLETED IN ACCORDANCE WITH THE CITY'S UTILITIES DEPARTMENT DESIGN STANDARDS.

THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



SITE PLAN & SUBDIVISION TESTING NOTES

C-14

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Revision Date:	10/2011
File Name:	dbC-14

SITE CLEARING AND GRADING NOTES

THE FOLLOWING REPRESENTS MINIMUM STANDARDS TO BE ADHERED TO BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION OF A PROJECT. THE CITY RESERVES THE RIGHT TO REQUIRE ADDITIONAL MEASURES TO BE EMPLOYED WHEN WARRANTED BY EXTREME CONDITIONS AND/OR THE FAILURE OF THE CONTRACTOR TO EMPLOY THE APPROPRIATE EROSION CONTROL BEST MANAGEMENT PRACTICES. FAILURE TO COMPLY WITH THESE PROVISIONS SHALL RESULT IN THE ISSUANCE OF A "STOP WORK ORDER".

1. NO DISTURBANCE OF EXISTING OR PROPOSED CONSERVATION EASEMENTS, NATURAL BUFFERS, OR WATER BODIES IS PERMITTED WITHOUT PRIOR APPROVAL FROM THE CITY ENGINEER OR DESIGNEE. THE CONTRACTOR SHALL LOCATE THESE AREAS ON SITE AND BARRICADE THEM TO AVOID ANY UNAUTHORIZED CLEARING. BARRICADES AND OTHER PROTECTIVE FENCING ARE TO BE LOCATED AT THE DRIP LINE OF EXISTING NATIVE TREES OR AT THE EDGE OF THE NATIVE UNDER-STORY HABITAT, WHICHEVER IS NEAREST TO THE CONSTRUCTION ACTIVITY.
2. SPECIMEN AND HISTORIC TREES, CONSERVATION EASEMENTS, NATURAL VEGETATION BUFFERS, AND SIMILAR AREAS MUST BE PROTECTED BY BARRICADES OR FENCING PRIOR TO CLEARING. BARRICADES ARE TO BE SET AT THE DRIP LINE OF THE TREES AND MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. BARBED WIRE IS NOT PERMITTED AS A PROTECTIVE BARRIER.
3. WHERE A CHANGE OF GRADE OCCURS AT THE DRIP LINE OF A SPECIMEN TREE, SILT FENCE WILL BE REQUIRED DURING CONSTRUCTION AND RETAINING WALLS MUST BE INSTALLED PRIOR TO FINAL ACCEPTANCE BY THE CITY.
4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL PROTECTIVE VEGETATION BARRICADES AND EROSION CONTROL STRUCTURES AND MEASURES IN PLACE PRIOR TO THE COMMENCEMENT OF ANY EARTHWORK, INCLUDING PRELIMINARY GRUBBING. THESE MEASURES INCLUDE, BUT ARE NOT LIMITED TO, TEMPORARY CONSTRUCTION FENCES, SYNTHETIC JUTE BALES, SILT FENCES, AND FLOATING TURBIDITY BARRIERS. FURTHER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL EROSION CONTROL DEVICES THROUGHOUT THE DURATION OF THE ENTIRE PROJECT. MAINTENANCE SHALL INCLUDE PERIODIC INSPECTION AND REMOVAL OF DEBRIS ABUTTING EROSION CONTROL DEVICES IN ACCORDANCE WITH THE CITY'S UTILITY DEPARTMENT STANDARDS.
5. PRIOR TO THE INSTALLATION OF ANY FILL MATERIAL ON SUBJECT SITE, SILT FENCE SHALL BE INSTALLED:
 - a. ALONG SUBJECT SITE BOUNDARY AND PROPERTY LINES,
 - b. AT THE EDGE OF CONSERVATION EASEMENTS AND WETLANDS,
 - c. ADJACENT TO NATURAL LANDSCAPE BUFFERS,
 - d. AROUND THE PERIMETER OF EXISTING STORM WATER TREATMENT FACILITIES.
 - e. AT ANY ADDITIONAL AREAS THAT THE CITY DEEMS NECESSARY TO BE PROTECTED FROM POTENTIAL EROSION IMPACTS DURING CONSTRUCTION. THESE CONDITIONS SHALL APPLY IN ALL INSTANCES WHERE FILL MATERIAL IS BEING INSTALLED WITHIN 25 FEET OF ANY OF THE AFOREMENTIONED LOCATIONS. WHILE THESE ITEMS REPRESENT THE MINIMUM REQUIREMENTS, THE CITY RESERVES THE RIGHT TO IMPOSE ADDITIONAL PROTECTIVE MEASURES, AS DETERMINED DURING ACTUAL SITE VISITS CONDUCTED AS PART OF THE STANDARD REVIEW OF THE SITE-SPECIFIC CLEARING PERMIT AND THROUGHOUT PROJECT CONSTRUCTION.
6. WHERE FILL MATERIAL IS INTENDED TO BE INSTALLED ADJACENT TO EXISTING VEGETATION WHICH IS INTENDED TO REMAIN NATURAL, THE CONTRACTOR MAY INSTALL SILT FENCING AS A TREE PROTECTION MEASURE, IN LIEU OF INSTALLING EITHER WOOD BRACING OR ORANGE MESH FENCING. THIS PRACTICE IS ENCOURAGED BY THE CITY. IF THE SILT FENCE FAILS TO PROVIDE ADEQUATE PROTECTION FROM IMPACT DUE TO CONSTRUCTION, THEN ADDITIONAL CONSTRUCTION FENCING OR WOOD BRACING SHALL BE REQUIRED.
7. AT A MINIMUM, THE CONTRACTOR SHALL SEED AND MULCH ALL DISTURBED AREAS. GRASS COVERAGE IS TO BE ESTABLISHED WITHIN THIRTY DAYS.
8. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR THROUGH SCHEDULING, TO MINIMIZE THE DISTURBANCE OF SITE AREAS THAT HAVE BEEN BROUGHT TO THEIR PROPOSED FINAL GRADE. WITHIN TWENTY DAYS OF BRINGING A SUBJECT AREA TO ITS FINAL GRADE, THE CONTRACTOR SHALL INSTALL SEED AND MULCH OR SOD AND WATERING, AS REQUIRED.
9. FOR INDIVIDUAL CONSTRUCTION PROJECTS INVOLVING MULTIPLE PHASES, UPON COMPLETION OF EACH PHASE OF THE PROJECT, SEEDING AND MULCHING AND OR/ SODDING IS TO BE PERFORMED PRIOR TO COMMENCING THE NEXT PHASE OF CONSTRUCTION.

THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



**SITE CLEARING
& GRADING
NOTES**

C-15A

Drawing Date:	05/2003
Drawn By:	PFT
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Scale:	NTS
Revision Date:	10/2011
File Name:	dbC-15

SITE CLEARING AND GRADING NOTES

(CON'T)

10. ONCE AN AREA IS SEEDED OR SODDED, IT MUST BE MAINTAINED, INCLUDING WATERING AND TRIMMING BY THE CONTRACTOR TO ALLOW THE GRASS TO BECOME ESTABLISHED.
11. ANY BURNING OF CLEARED MATERIALS MUST BE INSPECTED AND PERMITTED ON A DAILY BASIS. CONTACT THE PERMITS AND LICENSING DIVISION PRIOR TO EACH DAY OF DESIRED BURNING.
12. ABSOLUTELY NO BURYING OF CLEARED & GRUBBED MATERIALS IS PERMITTED.
13. THE REMOVAL OF ALL VEGETATION AND TOPSOIL ON THE FUTURE ROADWAY, PARKING AND BUILDING LOT AREAS IS REQUIRED TO BE COMPLETED PRIOR TO THE PLACEMENT OF FILL ON THOSE AREAS. THE TOPSOIL MAY BE TEMPORARILY STOCKPILED AND USED AS TOPSOIL OVER PROPOSED GREEN AREAS SUCH AS PLANT BEDS, SODDED AREAS, AND WHERE TREES ARE TO BE INSTALLED OR RELOCATED. TEMPORARY STOCKPILE SLOPES SHALL NOT EXCEED 4:1 (H:V).
14. A SIGNED, DATED, AND SEALED LETTER FROM A SOILS ENGINEER OR THE ENGINEER OF RECORD CERTIFYING THAT THE AREAS TO BE FILLED HAVE BEEN STRIPPED OF ORGANIC MATERIALS, MUST BE SUBMITTED TO THE CITY PRIOR TO FILLING.
15. FILL MATERIAL IS TO BE PLACED IN ONE FOOT LIFTS AND COMPACTED TO THE APPROPRIATE DENSITY (98% FOR PAVED AREAS AND 98% FOR BUILDING PADS AND ALL OTHER AREAS AS PER MODIFIED AASHTO T-180).
16. DURING SUBDIVISION DEVELOPMENT WHEN FUTURE BUILDING LOTS ARE FILLED AS PART OF THE OVERALL SUBDIVISION IMPROVEMENTS, COMPACTION TEST REPORTS MUST BE PERFORMED ON THESE LOTS AT 300' INTERVALS. THESE TESTS ARE TO BE PERFORMED IN 1' VERTICAL INCREMENTS. THE RESULTS OF THESE TESTS ARE TO BE SUBMITTED TO THE CITY UPON COMPLETION OF THE TESTS.
17. IF ANY MUCK OR ANY UNSUITABLE MATERIAL IS DISCOVERED, IT SHALL BE REMOVED AND REPLACED WITH A SUITABLE MATERIAL THAT IS PROPERLY BACKFILLED, COMPACTED AND TESTED USING AASHTO T-180 MODIFIED PROCTOR METHOD.
18. STOCKPILING IS NOT GENERALLY PERMITTED BY THE CITY. WHEN ALLOWED, STOCKPILES SHALL NOT EXCEED SIX FEET IN HEIGHT MEASURED FROM THE ORIGINAL GRADE. AT A MINIMUM, STOCK PILES THAT WILL REMAIN IN PLACE IN EXCESS OF FIVE DAYS SHALL BE COVERED OR WATERED TO MINIMIZE THE ADVERSE IMPACT ON ADJACENT PROPERTY OWNERS AT NO ADDITIONAL COST TO THE CITY OR OWNER. SEED AND MULCH IMMEDIATELY UPON PLACEMENT OF THE FINAL LIFT.
19. SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION AND THE IMPACT TO NEIGHBORING COMMUNITIES. ADEQUATE WATERING METHODS SHOULD BE EMPLOYED TO ALLOW DAILY COVERAGE OF THE ENTIRE LIMITS OF ALL AREAS THAT DO NOT HAVE AN ESTABLISHED VEGETATIVE COVER. METHODS TO BE EMPLOYED INCLUDE, BUT ARE NOT LIMITED TO, WATER TRUCKS, PERMANENT IRRIGATION SYSTEMS, TEMPORARY SPRINKLER SYSTEMS OPERATED BY PUMPING UNITS CONNECTED TO WET RETENTION PONDS, WATER CANNONS, TEMPORARY IRRIGATION SYSTEMS MOUNTED ATOP STOCKPILE AREAS, AND OTHER METHODS AS DEEMED NECESSARY BY THE CITY.
20. ALL FILL MATERIALS LOCATED BENEATH STRUCTURES AND PAVEMENT SHALL CONSIST OF CLEAN GRANULAR SAND FREE FROM ORGANICS AND SIMILAR MATERIAL THAT COULD DECOMPOSE.
21. ALL FILL TO BE PLACED IN LANDSCAPED AREAS SHALL HAVE A Ph RANGE BETWEEN 5.5 AND 7.5, BE ORGANIC IN NATURE, FREE OF ROCKS AND DEBRIS, OR MATCH NATIVE EXISTING SOILS.

**THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION**



SITE CLEARING & GRADING NOTES

C-15B

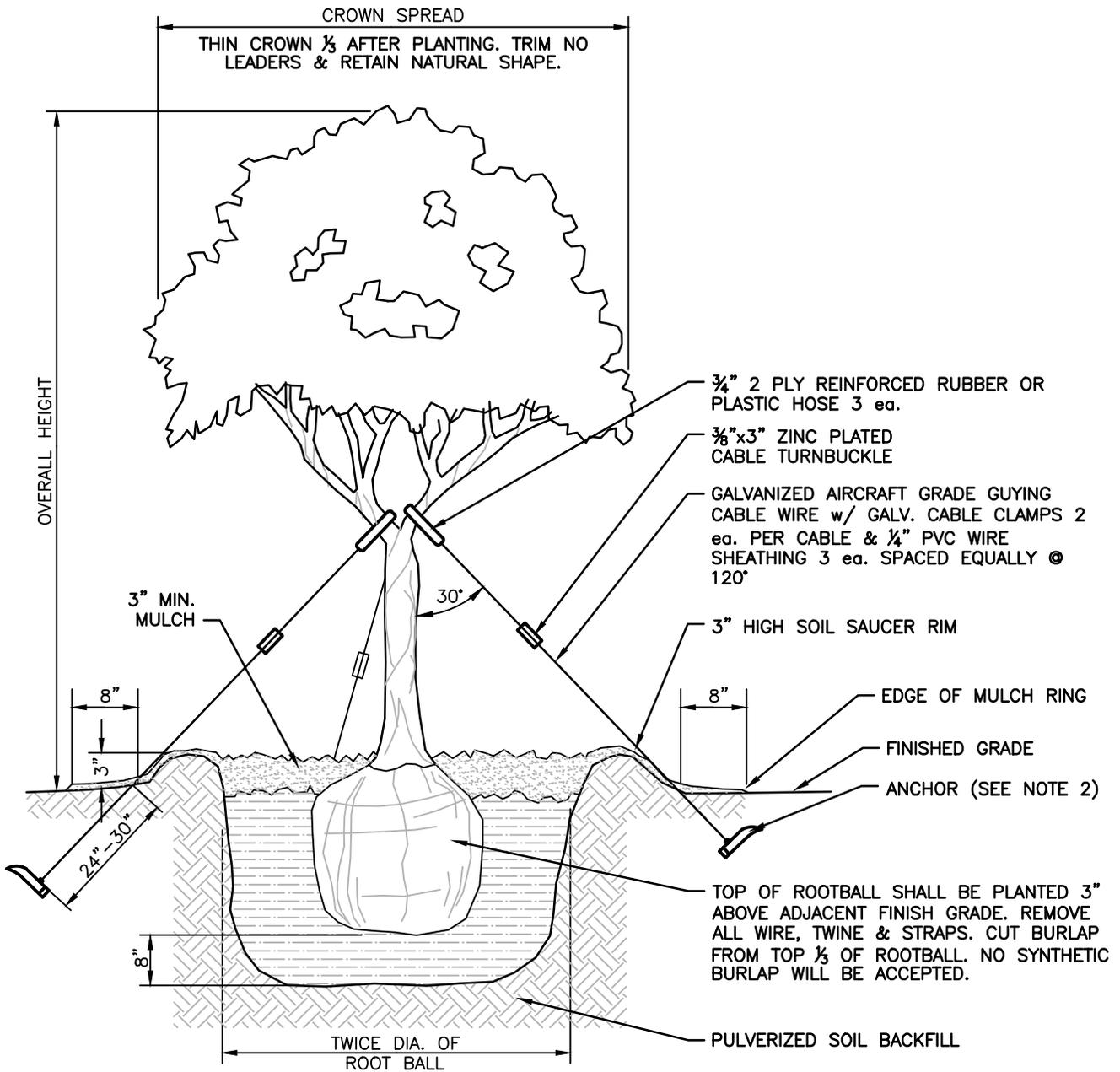
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ENGINEERING STANDARDS FOR DESIGN AND CONSTRUCTION

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NOTES:

NTS

1. WHEN TREE OCCURS IN SOD AREA, INSTALL MULCH IN 3' RADIUS AROUND TRUNK.
2. ALL ANCHOR SYSTEMS TO BE DUCKBILL ANCHOR KITS;
 - A. UP TO 6" CALIPER TREES, USE MODEL #68 (w/ 1/8" CABLE WIRE & CLAMPS).
 - B. 6-1/2" AND ABOVE TREES, USE MODEL #88 (w/ 3/16" CABLE WIRE & CLAMPS).
3. EDGE OF MULCH RING TO BE MIN. 8" OUTSIDE OF WHERE GUYING CABLES ENTER THE GROUND.
4. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING BEDS/PITS PRIOR TO PLANT INSTALLATION.

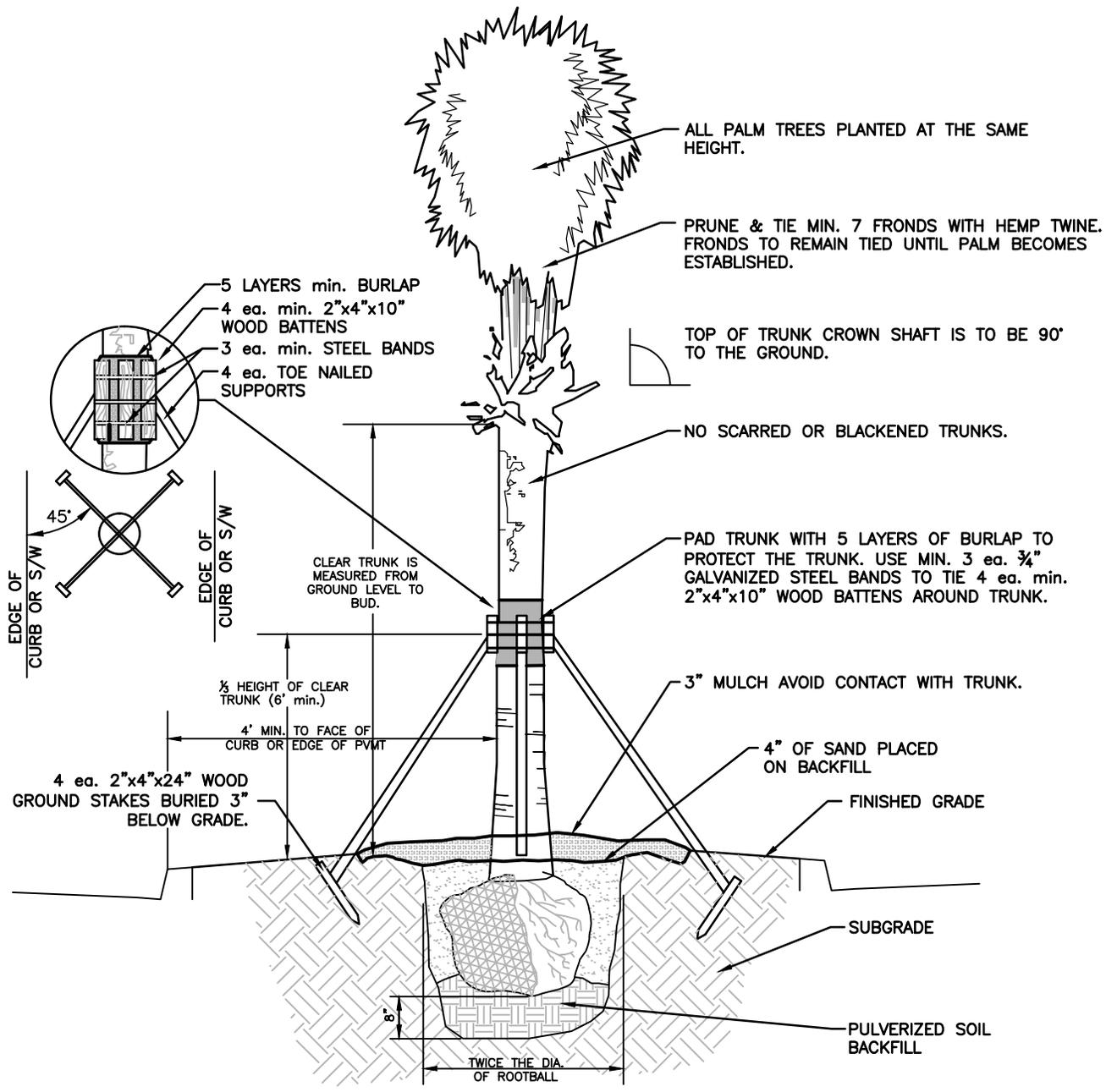
THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



**TYPICAL TREE
PLANTING
DETAIL**

L-1

Drawing Date:	11/2008
Drawn By:	PFT
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Scale:	NTS
Revision Date:	10/2011
File Name:	dbl-1



NTS

NOTES:

1. WHEN TREE OCCURS IN SOD AREA, INSTALL MULCH IN 3' RADIUS AROUND TRUNK.
2. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING BEDS/PITS PRIOR TO PLANT INSTALLATION.
3. PLANT PALM SO THAT TOP OF ROOTBALL IS LEVEL WITH THE FINISHED GRADE AFTER SETTLEMENT. APPROX. 1" ABOVE FINISHED GRADE AT TIME OF PLANTING.
4. ALL ROOTBALL COVERING MATERIALS SHALL BE COMPLETELY REMOVED BEFORE PLANTING.
5. NAIL FOUR 2"x4" SUPPORTS TO BATTENS WITH GALVANIZED NAILS. DO NOT NAIL BATTENS OR SUPPORTS INTO TRUNK OF TREE. ANGLE CUT TOP OF EACH SUPPORT AND TOENAIL INTO BATTENS AND GROUND STAKES AS SHOWN. SUPPORTS TO BE PLACED AT 45° ANGLES TO EDGE OF CURBS AND SIDEWALKS. SUPPORTS SHALL REMAIN IN PLACE min. 6 MONTHS.

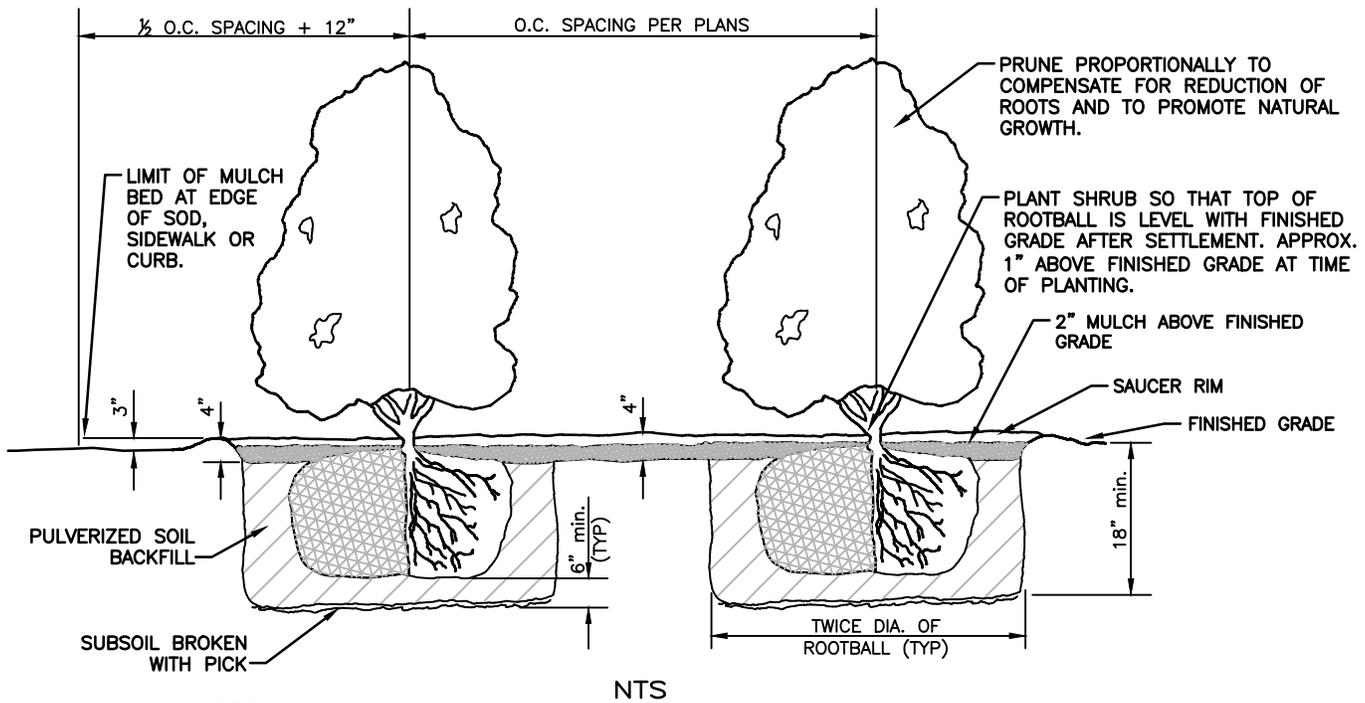
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**TYPICAL PALM
TREE PLANTING
DETAIL**

L-2

Drawing Date:	11/2008
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	10/2011
File Name:	dbl-2



NTS

- NOTES:**
1. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING BEDS/PITS PRIOR TO PLANT INSTALLATION.
 2. LEAVE BURLAP ON ROOT BALL. NO SYNTHETIC BURLAP WILL BE ACCEPTED.

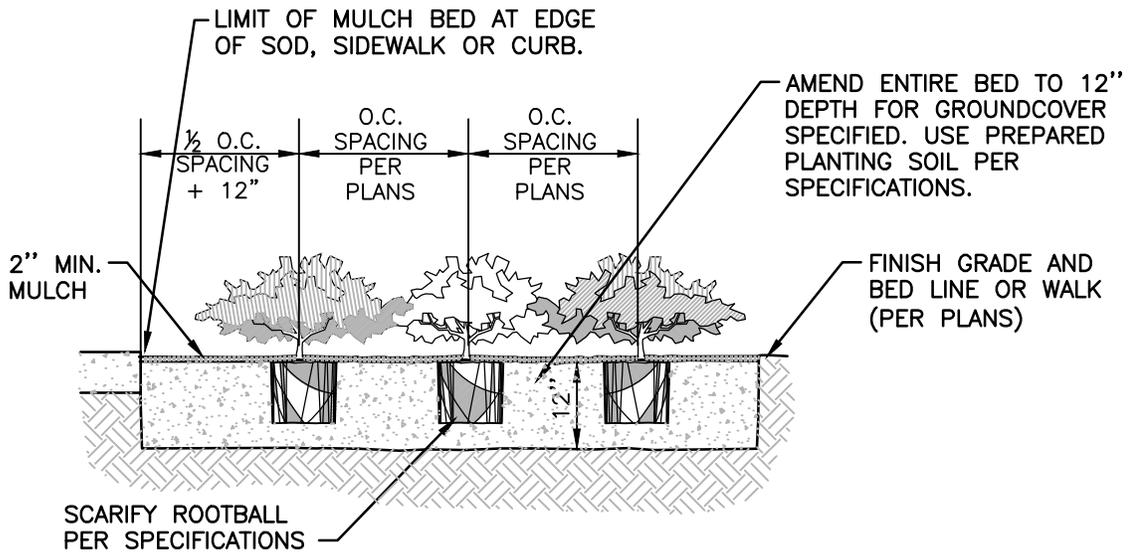
THE CITY OF DAYTONA BEACH
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**TYPICAL SHRUB
PLANTING
DETAIL**

L-3

Drawing Date:	11/2008
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NOTE:

1. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING BEDS/PITS PRIOR TO INSTALLATION.

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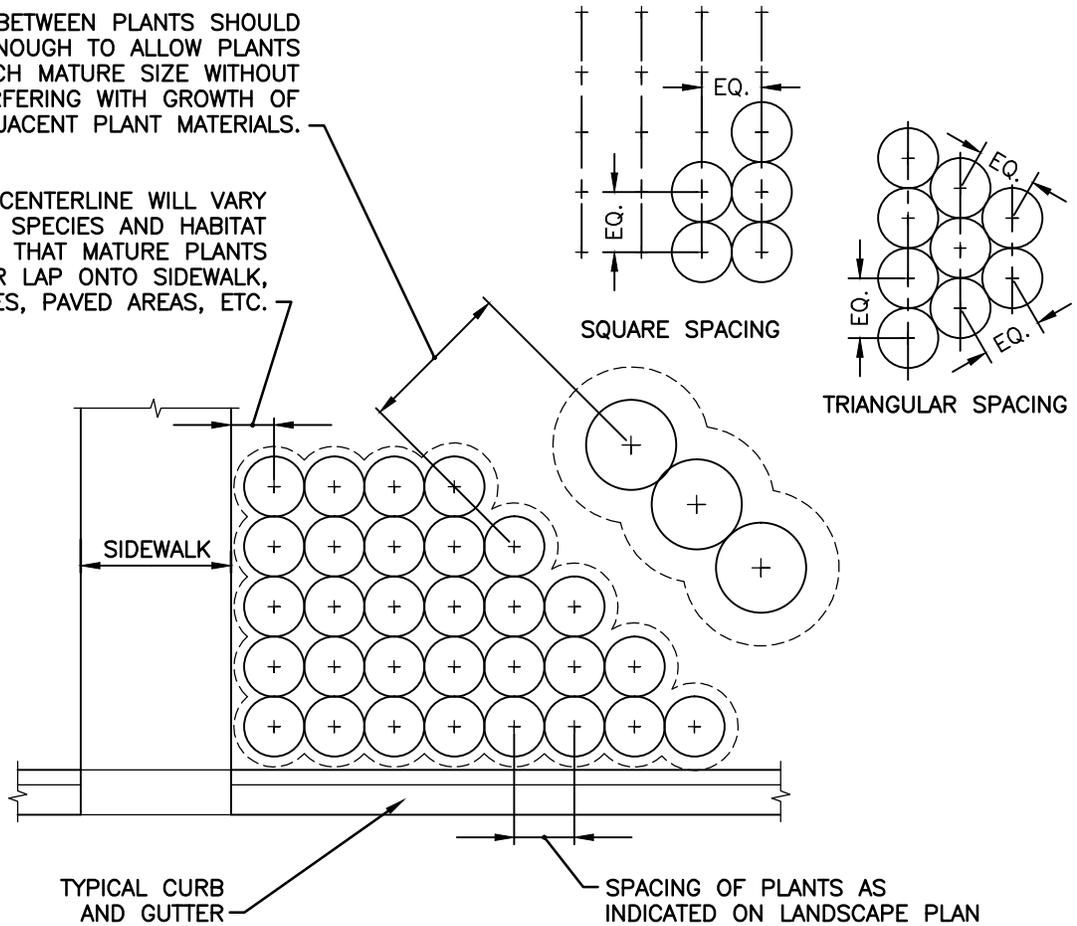
**TYPICAL
GROUND COVER
PLANTING DETAIL**

L-4

Drawing Date:	11/2000
Drawn By:	PFT
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Scale:	NTS
Revision Date:	10/2011
File Name:	dbl-4

DISTANCE BETWEEN PLANTS SHOULD BE FAR ENOUGH TO ALLOW PLANTS TO REACH MATURE SIZE WITHOUT INTERFERING WITH GROWTH OF ADJACENT PLANT MATERIALS.

DISTANCE TO CENTERLINE WILL VARY ACCORDING TO SPECIES AND HABITAT OF GROWTH SO THAT MATURE PLANTS WILL NOT OVER LAP ONTO SIDEWALK, STRUCTURES, PAVED AREAS, ETC.



NTS

NOTES:

1. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING BEDS/PITS PRIOR TO INSTALLATION.
2. IN MOST CASES, TRIANGULAR SPACING IS PREFERRED. USE SQUARE SPACING ONLY IN SMALL RECTILINEAR AREAS.

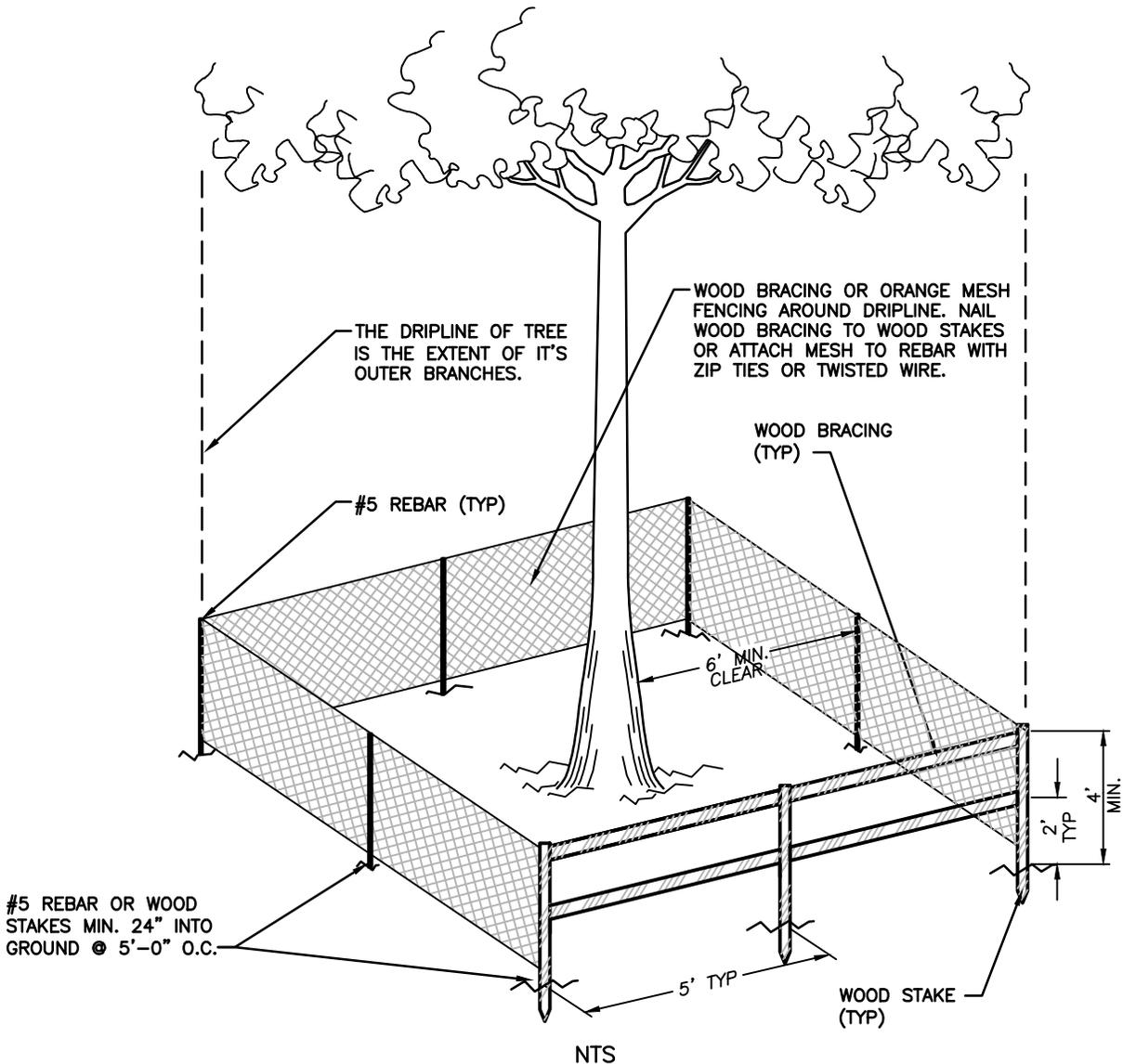
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**TYPICAL
PLANT SPACING
DETAIL**

L-5

Drawing Date:	11/2000
Drawn By:	PFT
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Scale:	NTS
Revision Date:	10/2011
File Name:	dbl-5



NTS

NOTES:

1. PROTECT DESIGNATED EXISTING TREES SCHEDULED TO REMAIN AGAINST:
 - A. UNNECESSARY CUTTING, BREAKING, OR SKINNING OF ROOTS.
 - B. SKINNING AND BRUISING OF BARK.
 - C. SMOTHERING OF TREES BY STOCKPILING CONSTRUCTION OR EXCAVATION MATERIALS WITHIN DRIP-LINE.
 - D. FOOT OR VEHICULAR TRAFFIC.
 - E. PARKING VEHICLES WITHIN DRIP-LINE.
2. ERECT TEMPORARY WOODEN BARRICADES AS SHOWN ON THIS SHEET. BEFORE COMMENCEMENT OF ANY SITE CLEARING OR GRADING. FENCE TO BE 4' HIGH MINIMUM WITH 2"x4" POSTS AND 2ea. 2"x4" RAILS AT 2' AND 4' ABOVE GRADE AND SHALL BE SET DEEP ENOUGH IN THE GROUND TO BE STABLE WITHOUT ADDITIONAL SUPPORT. ALL FENCING SHOULD BE A MINIMUM CLEAR DISTANCE OF 6' FROM THE FACE OF ANY TREES 12" DBH AND UNDER AND SHALL FULLY ENCLOSE ALL TREES SCHEDULED TO REMAIN. NOTHING SHALL BE PLACED INSIDE OF PROTECTIVE BARRICADES, INCLUDING BUT NOT LIMITED TO CONSTRUCTION MATERIAL, MACHINERY, CHEMICALS, OR TEMPORARY SOIL DEPOSITS. ON TREES LARGER THAN 12" DBH, BARRICADES SHALL BE NO CLOSER THAN 10' FROM FACE OF TREE. WHEN PAVING, EXCAVATION, OR HARDSCAPE MUST BE DONE WITHIN BARRICADES, BARRICADES SHALL BE MOVED BACK TO A SECONDARY LOCATION AT EDGE OF WORK. EXTRA CARE MUST BE TAKEN AT THIS TIME BY THE CONTRACTOR TO INSURE THAT NO DAMAGE TO THE TREE OCCURS.
3. BARBED WIRE FENCING IS NOT PERMISSIBLE.
4. PROVIDE WATER TO TREES AS REQUIRED TO MAINTAIN THEIR HEALTH DURING CONSTRUCTION.
5. NO GRADE CHANGES ARE TO BE MADE WITHIN THE BARRICADES WITHOUT PRIOR APPROVAL OF THE OWNER OR HIS DESIGNATED REPRESENTATIVE.

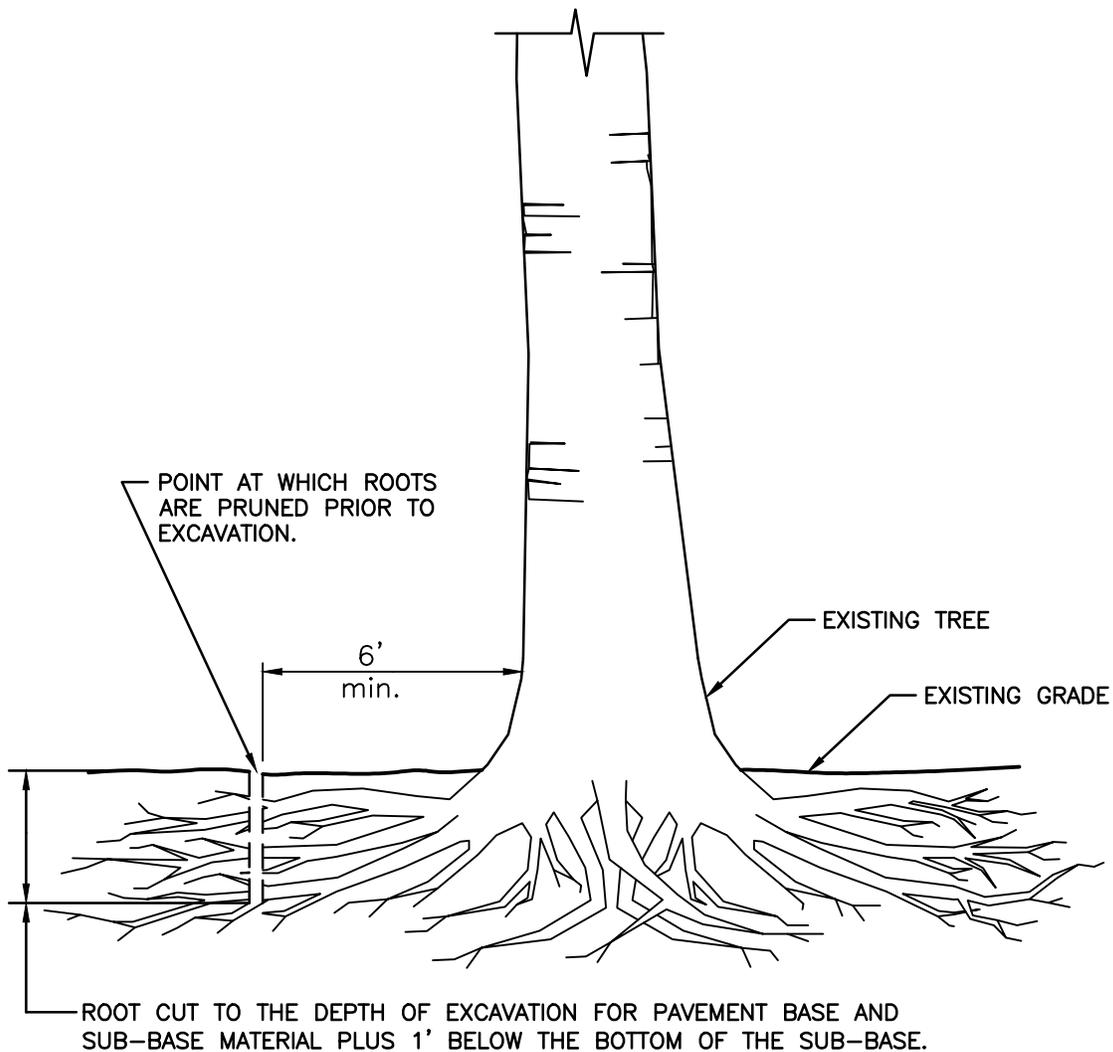
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**TREE PROTECTION
BARRICADE
DETAIL**

L-6

Drawing Date:	11/2000
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	10/2011
File Name:	dbl-6



NTS

NOTES:

1. INSTALL ORANGE PLASTIC MESH TREE BARRIER, WITH REBAR SUPPORTS, AT POINT OF PRUNING AND CONTINUE COMPLETELY AROUND TREE, PROTECTING THE AREA WITHIN THE DRIPLINE (EXTENT OF OUTER BRANCHES).
2. ROOT CUTS ARE TO BE MADE CLEANLY WITH A SHARP ROOT PRUNING TOOL (SUCH AS, BUT NOT LIMITED TO, A DOSCO OR VERMEER ROOT PRUNER).
3. ROOT CUTS MADE WITHIN 6" OF TRUNK REQUIRE APPROVAL OF CITY ENGINEER OR DESIGNEE.
4. ROOT PRUNING PROCEDURE MUST BE DONE AND INSPECTED PRIOR TO ISSUANCE OF A BUILDING PERMIT OR GRADING AND FILLING PERMIT.

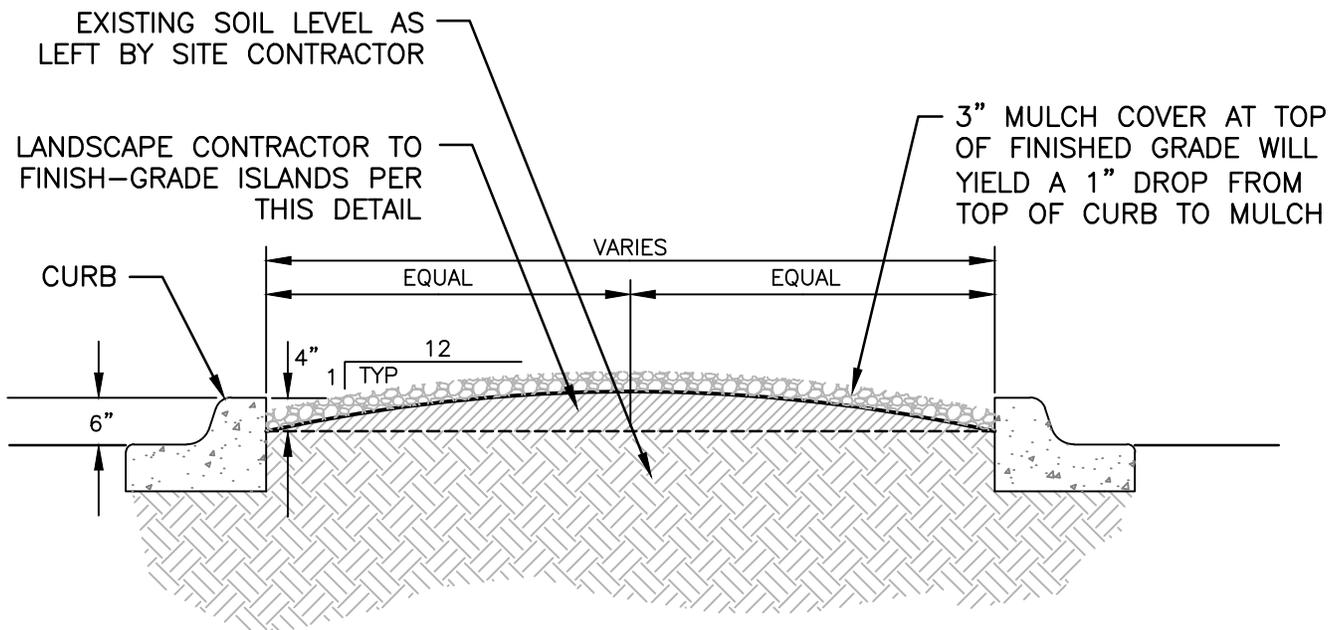
**THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION**



**ROOT PRUNING
DETAIL**

L-7

Drawing Date:	11/2000
Drawn By:	PFT
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Scale:	NTS
Revision Date:	10/2011
File Name:	dbl-7



NTS

THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



**INTERIOR CURB
ISLAND/MEDIAN GRADING
DETAIL**

L-8

Drawing Date:	03/2011
Drawn By:	3
Checked By:	
Scale:	NTS
Revision Date:	10/2011
File Name:	dbl-8

SODDING, SEEDING, & MULCHING NOTES

SCOPE OF WORK:

THE WORK IN THIS SECTION CONSISTS OF FURNISHING AND COMPLETELY INSTALLING SOD, OR SEED AND MULCH OVER THE LIMITS CALLED FOR ON THE CONSTRUCTION DRAWINGS. AT A MINIMUM, ALL WORK SHALL MEET THE MINIMUM SPECIFICATIONS OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, AS OUTLINED IN SECTIONS 570 (GRASSING BY SEEDING) AND 575 (SODDING). IN ADDITION, ALL WORK SHALL MEET THE MINIMUM REQUIREMENTS OF THE CITY OF DAYTONA BEACH.

MATERIALS:

GRASS SEED SHALL BE A MIXTURE OF:

PENSACOLA BAHIA (USE 50% SCARIFIED SEED)	50%
HULLED BERMUDA	25%
BROWN TOP MILLET	25%

IN THE FALL AND WINTER MONTHS, AND WITH THE APPROVAL OF THE CITY, ANNUAL RYE GRASS SHALL BE SUBSTITUTED IN EQUAL AMOUNTS FOR THE BROWN TOP MILLET. SEED SHALL BE PRE-MIXED BY A SEED COMPANY TO THE PERCENTAGES DESCRIBED ABOVE, WITH CERTIFICATION FROM THE SUPPLIER PROVIDED TO THE CITY'S DESIGNATED PROJECT LANDSCAPE INSPECTOR PRIOR TO USE.

MULCH SHALL BE STRAW OR HAY CONSISTING OF OATS, RYE, OR WHEAT STRAW, OR OF PANGOLA, PEANUT, COASTAL BERMUDA, OR BAHIA GRASS HAY. MULCH SHALL BE FREE FROM WEEDS AND OTHER UNDESIRABLE GRASS.

METHODS:

GRASSING SHALL BE DONE IMMEDIATELY UPON COMPLETION OF THE FINE GRADING OPERATION. HOWEVER, NO SEEDING SHALL BE DONE WHEN THE GROUND IS UNDULY WET. THE RATE OF SPREAD FOR THE SEED MATERIAL SHALL BE ONE HUNDRED AND THIRTY (130) POUNDS PER ACRE.

APPROXIMATELY ONE INCH (1"), LOOSE THICKNESS, OF MULCH MATERIAL SHALL BE 1½ BALES PER 1000 SQUARE FEET. THE MULCH MATERIAL SHALL BE CUT INTO THE SOIL WITH A DISC HARROW OR OTHERWISE ANCHORED DOWN. UNDER PROPER CIRCUMSTANCES, CONTRACTOR MAY REQUEST AN OPTION TO INSTALL HYDRO-SEEDING, SUBJECT TO THE APPROVAL OF THE PROJECT LANDSCAPE ARCHITECT AND THE CITY OF DAYTONA BEACH.

WATER THE GROUND PRIOR TO LAYING OF SOD SUCH THAT THE TOP ½" OF SOIL IS MOIST. UNDER NO CIRCUMSTANCES SHALL SOD BE PLACED ON DRY SOIL. WATER AND MAINTAIN GRASS, INCLUDING MOWING FOR 90 DAYS OR UNTIL THE SOD IS FULLY ESTABLISHED. CONTRACTOR IS REQUIRED TO REPLACE ANY DEAD OR NON-RESPONSIVE SOD AT NO ADDITIONAL COST TO THE CITY OR OWNER.

THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



SODDING, SEEDING
AND MULCHING
NOTES

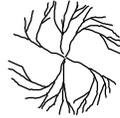
L-9

Drawing Date:	11/2000
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	10/2011
File Name:	dbl-9

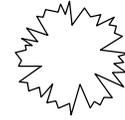
TREE LEGEND



ARBORVITAE



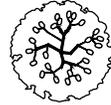
HICKORY



PINE



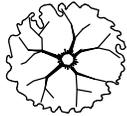
BAY



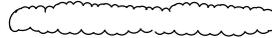
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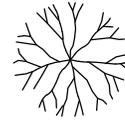
SPANISH
BAYONET



BOX ELDER



HEDGE



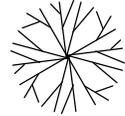
SUGARBERRY



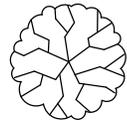
BUSH\SHRUB



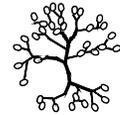
MAGNOLIA



SWEET GUM



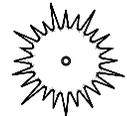
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MAPLE



SYCAMORE



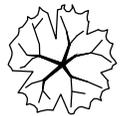
CEDAR



MULBERRY



STUMP



CYPRESS



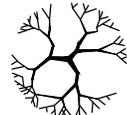
OAK



DEAD



PALM



ELM



PALMETTO
BUSH

THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



EXISTING TREE
SYMBOL
LEGEND

L-10

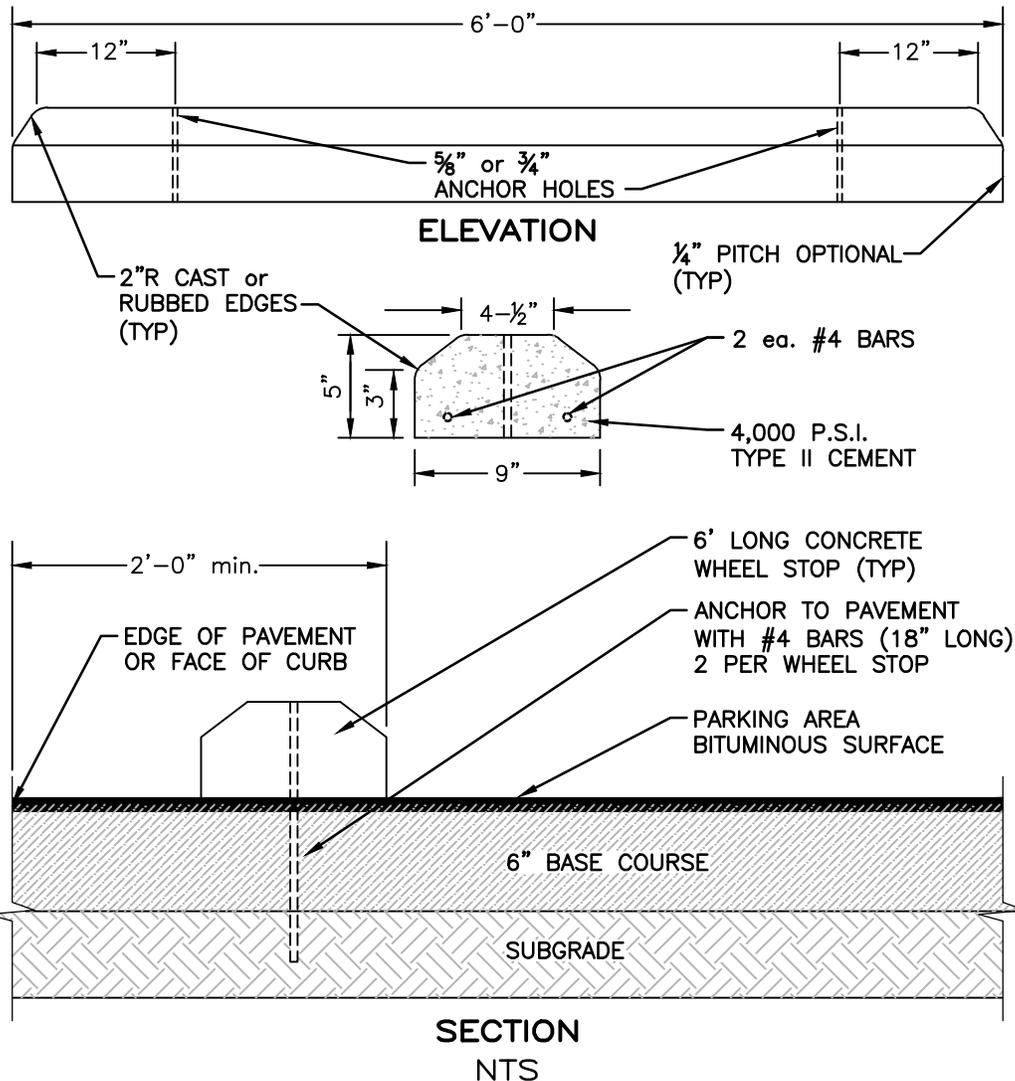
Drawing Date:	11/2000
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	10/2011
File Name:	dbl-10

ENGINEERING STANDARDS FOR DESIGN AND CONSTRUCTION

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- M-10 ABBREVIATIONS LEGEND



NOTES:

1. CONCRETE WHEEL STOP TO BE PRE-MANUFACTURED REINFORCED 4,000 P.S.I. TYPE II CEMENT.
2. #4 ANCHOR BAR ENDS TO BE INSTALLED FLUSH WITH TOP OF WHEEL STOP.
3. CENTER WHEEL STOP IN EACH STALL, SIDE TO SIDE.

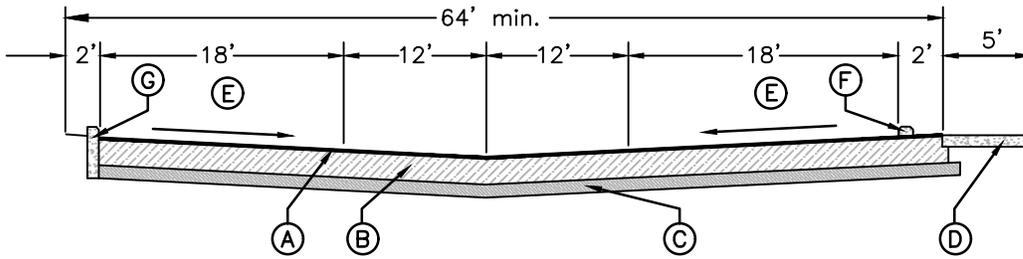
THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



**PARKING SPACE
WHEEL STOP
DETAIL**

M-1

Drawing Date:	05/2003
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	10/2011
File Name:	dbM-1



NTS

- (A) ASPHALT PAVEMENT:
1- $\frac{1}{2}$ " min. ASPHALT BITUMINOUS CONCRETE TYPE SP-9.5 (SUPERPAVE)
ASPHALT PAVEMENT TESTING IS TO BE DONE IN ACCORDANCE WITH FDOT
STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION TABLE
334-5, LATEST EDITION.
- (B) BASE:
6" min. RECYCLED CONCRETE BASE (LBR 130) COMPACTED TO 98%
DENSITY BASED ON AASHTO T-180 MODIFIED PROCTOR TEST.

ALTERNATE 1:
6" min. ASPHALT BASE MINIMUM BEARING (LBR 100) COMPACTED TO
98% DENSITY BASED ON AASHTO T-180 MODIFIED PROCTOR TEST.

ALTERNATE 2:
8" min. LIMEROCK BASE (LBR 100) COMPACTED TO 98% DENSITY BASED
ON AASHTO T-180 MODIFIED PROCTOR TEST. TO BE USED ONLY WHEN
BOTTOM OF BASE LAYER IS 24" max. ABOVE ANNUAL GROUND WATER
ELEVATION AND UPON APPROVAL THE OF CITY ENGINEER.
- (C) SUB-GRADE:
6" min. SUB-BASE COMPACTED TO 98% DENSITY BASED ON AASHTO
T-180 MODIFIED PROCTOR TEST WITH MINIMUM LBR 40.
- (D) CONCRETE SIDEWALK 5'-0" min. WIDTH, 6" min. THICK, 3500 P.S.I. @ 28
DAYS.
- (E) THE MINIMUM ALLOWABLE PARKING LOT PAVEMENT SLOPE FOR ASPHALT
SHALL BE NO LESS THAN 0.6% MEASURED FROM THE RECEIVING INLET OR
FLUME TO ANY PAVEMENT. (NOTE THAT THE MINIMUM SLOPE MAY BE
REDUCED TO 0.50% FOR CONCRETE PAVEMENT.)
- (F) CONCRETE WHEEL STOP (IF APPLICABLE).
- (G) 6" min. WIDE FDOT TYPE 'D' CURB WITH 24" min. OF UNOBSTRUCTED
OVERHANG.

NOTES:

1. ALL MATERIALS ARE TO BE APPROVED BY THE CITY ENGINEER AND
THE PROJECT'S LICENSED SOILS ENGINEER PRIOR TO PLACEMENT.
2. ASPHALT PAVEMENT TESTING IS TO BE DONE IN ACCORDANCE WITH
FDOT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION,
LATEST EDITION.
3. ACTUAL PAVING & DRAINAGE PLAN TO BE DESIGNED BY THE CITY
ENGINEER.

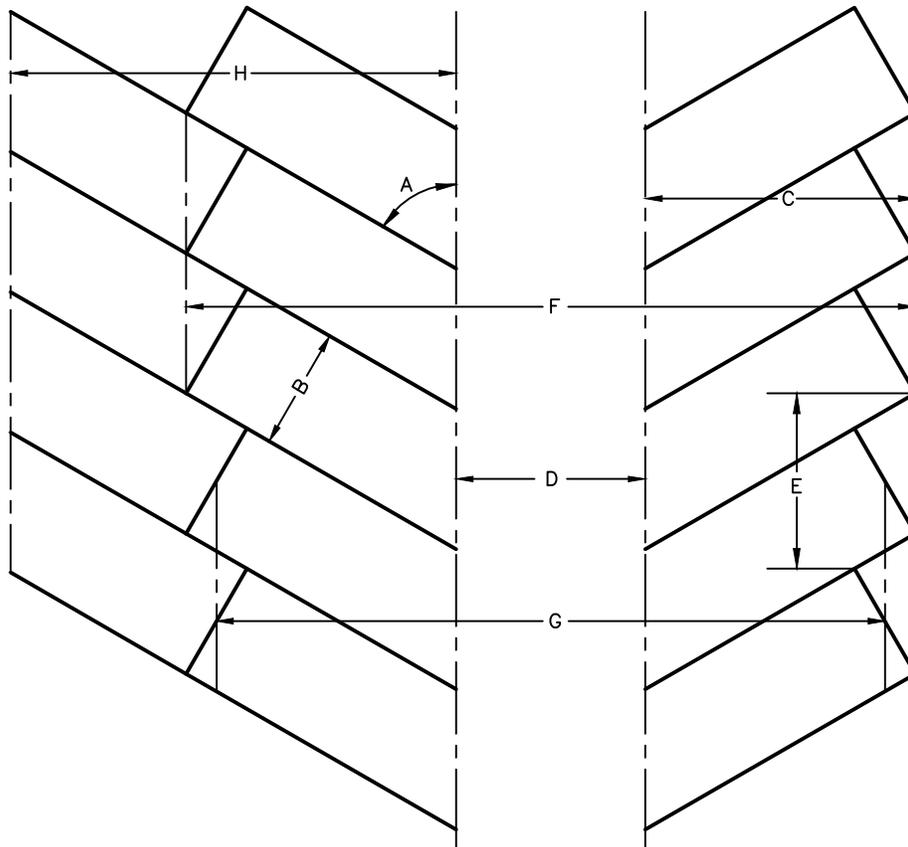
THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



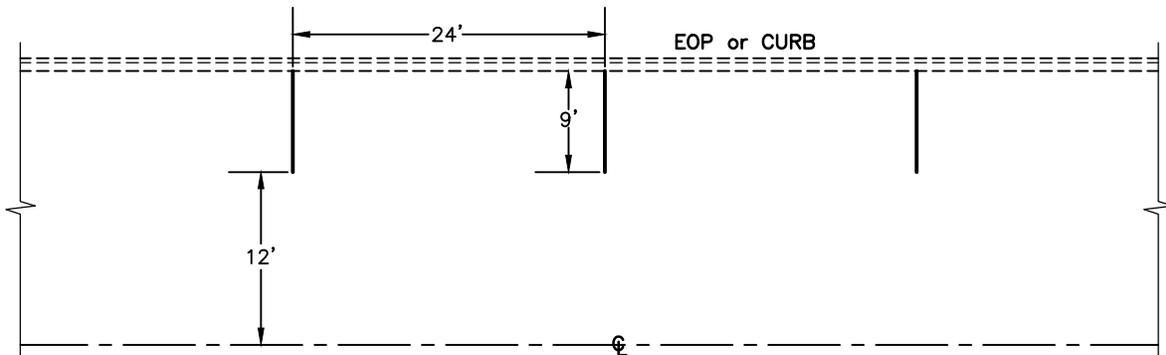
**TYPICAL PARKING
LOT SECTION
DETAIL**

M-2

Drawing Date: 05/2003
Drawn By: PFT
Checked By:
Scale: NTS
Revision Date: 06/2016
File Name: dbM-2



ANGLED PARKING



PARALLEL PARKING

NTS

TABLE FOR ANGLED PARKING DIMENSIONS							
A	B	C	D	E	F	G	H
30°	9'	17'-6"	12'	18'	47'	38'	26'-6"
45°	9'	20'	14'	12'-6"	54'	47'	33'
60°	9'	21'-3"	18'	10'-6"	60'-6"	56'	38'
75°	9'	21'	22'	9'-6"	64'	61'	39'-6"
90°	9'	19'	24'	9'	62'	62'	38'

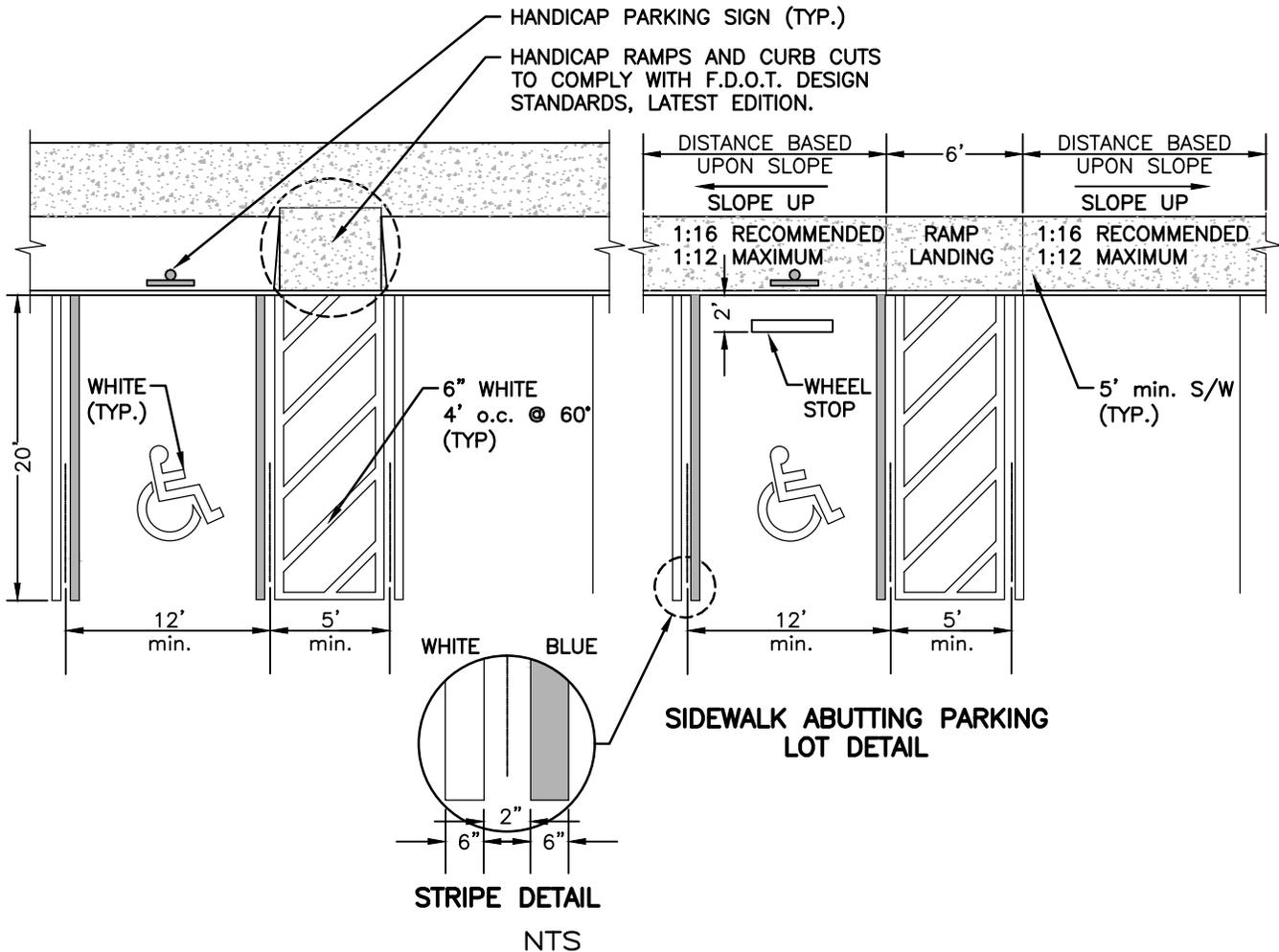
THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



PARKING SPACE
LAYOUT & STRIPING
DETAIL

M-3

Drawing Date: 12/2003
Drawn By: PFT
Checked By:
Scale: NTS
Revision Date: 03/2008
File Name: dbM-3



NOTES:

1. ALL HANDICAP PARKING STALLS, 5' ACCESS AISLES, HANDICAP RAMPS AND ACCESSIBLE ROUTES SHALL BE PAVED.
2. PERPENDICULAR AND DIAGONAL HANDICAP PARKING STALLS WILL BE 12'-0" WIDE AND 20'-0" LONG WITH A 5'-0" min. WIDE ACCESS AISLE ADJACENT TO EACH STALL. THE 5' ACCESS AISLE MAY BE SHARED BY TWO ADJACENT HANDICAP PARKING STALLS.
3. PARALLEL HANDICAP PARKING STALLS WILL BE 12'-0" WIDE AND 22'-0" LONG WITH A 5'-0" min. WIDE ACCESS AISLE ADJACENT TO EACH STALL.
4. ALL HANDICAP RAMPS SHALL BE OF 5'-0" min. WIDE EXCLUSIVE OF THE FLARED SIDES WITH A MAXIMUM SLOPE OF 1:21. HANDICAP RAMPS AND CURB CUTS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH FDOT DESIGN STANDARDS, LATEST EDITION.
5. BLUE STRIPING SHALL BE BLUE TINT TO MATCH SHADE 15180 OF FEDERAL STANDARD 595a.
6. WHEN FDOT TYPE 'D' CURB IS USED IN LIEU OF WHEEL STOPS, SIDEWALK ABUTTING CURB SHALL BE WIDENED BY 18" min. SO THAT THE TOTAL SIDEWALK WIDTH IS 72" min. ALLOWING FOR 54" min. CLEAR ACCESSIBLE ROUTE.
7. 6' WHEEL STOPS ARE TO BE CENTERED SIDE TO SIDE IN EACH PARKING STALL, REFER TO CODB STANDARD DETAIL M-1 (dbM-1.dwg).
8. ACCESSIBLE PARKING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 1:50 (2%) IN ALL DIRECTIONS.
9. DIMENSIONS ARE CENTERLINE OF PAVEMENT MARKINGS.
10. FOR COMPLETE DETAIL OF HANDICAP SIGN INSTALLATION, REFER TO CODB STANDARD DETAIL M-6 (dbM-6.dwg).

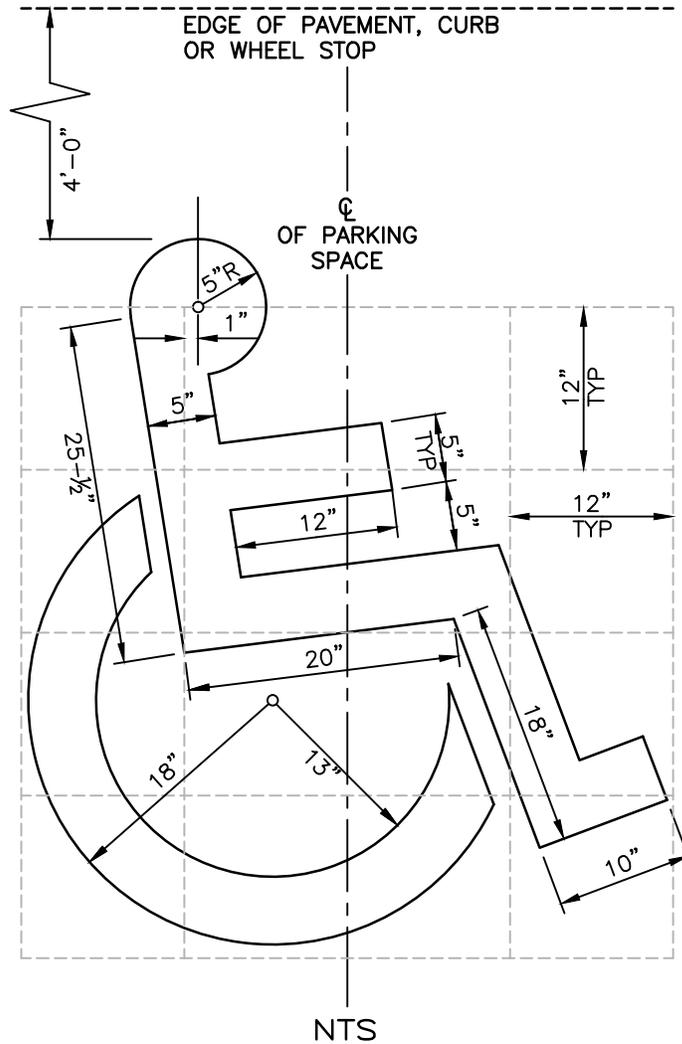
THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



**HANDICAP PARKING
SPACE STRIPING
DETAIL**

M-4

Drawing Date:	05/2003
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	10/2011
File Name:	dbM-4



NOTE:

1. PAVEMENT SYMBOL SHALL BE SOLID WHITE IN COLOR AND COMPLY WITH FDOT DESIGN STANDARDS, LATEST EDITION.

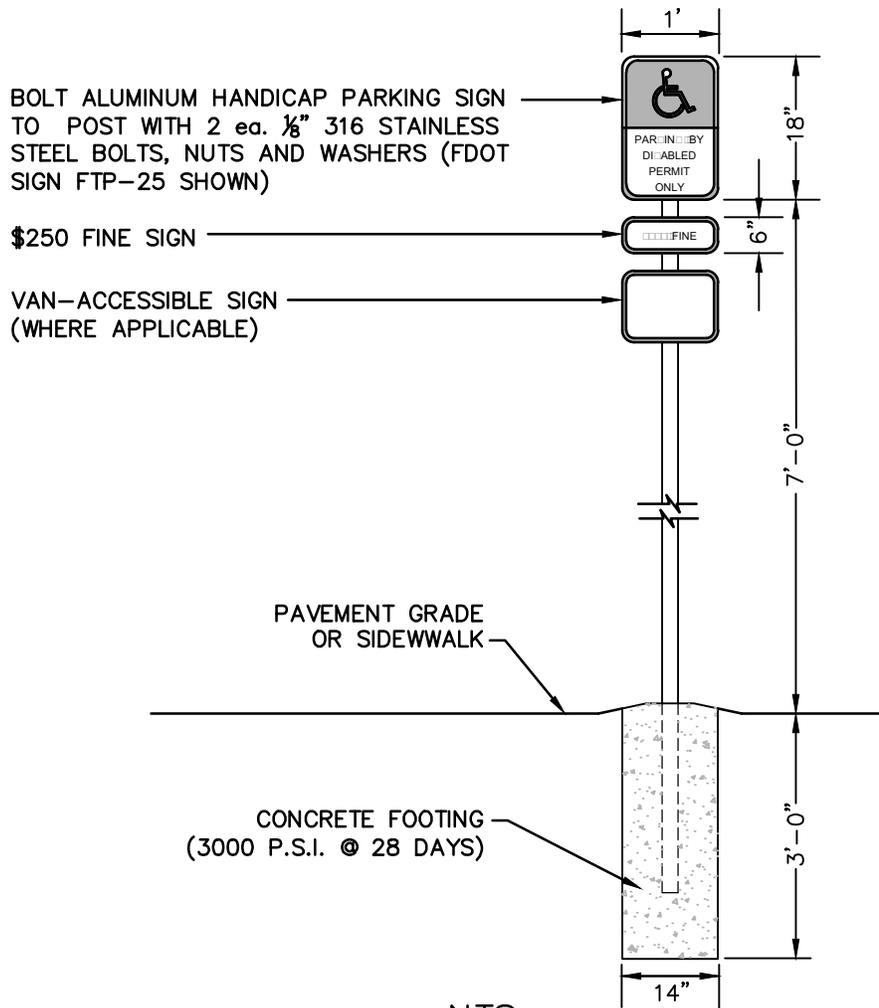
THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



**HANDICAP PARKING
PAVEMENT SYMBOL
DETAIL**

M-5

Drawing Date:	09/2003
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	03/08
File Name:	dbM-5



NOTES:

1. ONE SIGN IS REQUIRED FOR EACH HANDICAP PARKING STALL.
2. HANDICAP PARKING SIGN SHALL CONFORM WITH CURRENT FEDERAL, STATE LOCAL & ADA CODES & REGULATIONS, LATEST EDITION.
3. SIGNS WILL BE FABRICATED BY USING A REFLECTING COATING IN THE SYMBOL, MESSAGE AND BORDERS APPLIED TO A SHEET OF ALUMINUM (12"x 18"x 0.80").
4. MESSAGE LETTERING SHALL BE UPPER CASE (SERIES B) 2" HIGH IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
5. THE SYMBOL IS COMPOSED OF TWO ELEMENTS, A WHITE WHEEL-CHAIR FIGURE (WHICH SHOULD ALWAYS FACE RIGHT) ON A SQUARE BACKGROUND, INTERNATIONAL BLUE IN COLOR (FED. STD. 595a, COLOR #15180).
6. SUPPLEMENTAL SIGN PLATES SHALL BE UPPER CASE (SERIES B) 1" BLUE OR BLACK MESSAGE LETTERING W/ $\frac{1}{2}$ " BLUE OR BLACK BORDER ON WHITE BACK GROUND.
7. METAL SIGN POSTS TO BE GALVANIZED U-IRON. ALL BOLTS, NUTS, WASHERS AND SCREWS MUST BE 316 STAINLESS STEEL.
8. CONCRETE FOOTING SHALL BE OF PORTLAND CEMENT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 P.S.I. @ 28 DAYS.
9. SIGN POST SHALL BE MINIMUM 2'-0" CLEAR FROM BACK OF CURB OR WHEEL STOP.
10. SIGN POST SHALL BE DESIGNED TO WITHSTAND 120 M.P.H. WIND LOAD.

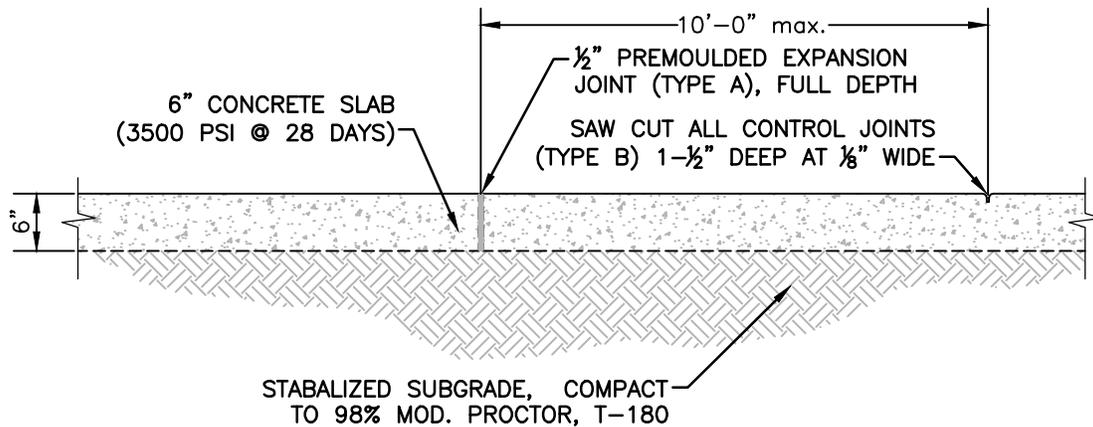
THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



**HANDICAP PARKING
SIGN DETAIL
(FDOT TYPE FTP-25)**

M-6

Drawing Date:	05/2003
Drawn By:	PFT
Checked By:	JRS
Scale:	NTS
Revision Date:	10/2011
File Name:	dbM-6



NTS

NOTES:

1. EXPANSION JOINTS ARE TO BE 1/2" PREFORMED SYNTHETIC OR RECYCLED RUBBER
2. ALL EXPANSION JOINTS ARE REQUIRED TO BE INSTALLED THROUGH TO THE FULL DEPTH AND WIDTH OF THE CONCRETE AREA
3. EXPANSION JOINTS SHALL BE SPACED AT INTERVALS OF SIXTY FEET (60') FOR CURBING, THIRTY FEET (30') FOR BIKE TRAILS AND ONE HUNDRED FEET (100') FOR SIDEWALKS
4. EXPANSION JOINTS SHALL BE PLACED AT STREET INTERSECTIONS, RADIUS POINTS, STRUCTURES, AND ALONG CURVES AT SIXTY FEET (60') INTERVALS
5. FOR LINEAL SECTIONS OF CURBS, EXPANSION JOINTS SHALL BE LOCATED AT A MAXIMUM SPACING OF FIVE-HUNDRED FEET (500') AND SHALL BE 1/2" IN WIDTH CONTROL JOINTS SHALL BE HAND TOOLED INTO FRESH CONCRETE OR SAW CUT INTO CURED CONCRETE
6. SAW CUT CONTROL JOINTS IN CONCRETE CURBING, SIDEWALKS, PAVEMENT AND SIMILAR CONCRETE AREAS SHALL BE DONE WITHIN 4 TO 18 HOURS OF CONCRETE PLACEMENT
7. ALL CONTROL JOINTS SHALL BE 1/8" IN WIDTH TO A DEPTH OF 25% OF THE TOTAL DEPTH OF CONCRETE OR 1-1/2", WHICHEVER IS LESS
8. CONTROL JOINTS SHALL BE SPACED AT INTERVALS OF TEN FEET (10') FOR CURBING, TEN FEET (10') FOR BIKE TRAILS & FIVE FEET (5') FOR SIDEWALKS

THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



CONCRETE HANDICAP
PARKING SECTION
DETAIL

M-7

Drawing Date:	09/2003
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	12/2013
File Name:	dbM-7

AS-BUILT DRAWING REQUIREMENTS

IN ORDER TO ENSURE THAT NEW SUBDIVISIONS AND SITE PLANS ARE CONSTRUCTED SUBSTANTIALLY IN ACCORDANCE WITH CITY REGULATIONS AND THE APPROVED DRAWINGS, THE FOLLOWING INFORMATION IS REQUIRED ON ALL AS-BUILT DRAWINGS.

1. PAVEMENT AND CURB WIDTHS SHALL BE VERIFIED AND DIMENSIONED FOR EACH STREET AT EACH BLOCK. (FOR SUBDIVISIONS) AND AS APPROPRIATE TO CONFIRM PAVING LIMITS (ON SITE PLANS).
2. ALL RADII AT INTERSECTIONS SHALL BE VERIFIED AND DIMENSIONED. THIS INFORMATION IS TO BE CLEARLY INDICATED ON THE AS-BUILT.
3. ROADWAY ELEVATIONS SHALL BE RECORDED AT ALL GRADE CHANGES, 100' INTERVALS ALONG ROADWAY, AND OTHER INTERVALS AS NEEDED ALONG ALL STREETS. STREET CENTERLINE AND CURB INVERT ELEVATIONS SHALL BE RECORDED AS NOTED. THE AS-BUILT CENTERLINE PROFILE OF ALL STREETS SHALL ALSO BE SHOWN ON THE PLAN AND PROFILE SO IT MAY BE COMPARED TO THE DESIGN PROFILE GRADE LINES. IN THE EVENT THAT THE AS-BUILT CENTERLINE LONGITUDINAL GRADE DOES NOT MEET THE CITY MINIMUM STANDARDS, ADDITIONAL LONGITUDINAL GRADES OF THE ADJACENT CURBING AND SIMILAR ROADWAY CROSS-SECTION SURVEYS TO VERIFY THE CORRECT CROSS SLOPE, SHALL BE REQUIRED TO VERIFY THAT THE SYSTEM WILL FUNCTION AS ORIGINALLY DESIGNED.
4. ALL APPLICABLE TOPOGRAPHIC INFORMATION PERTINENT TO THE ON-SITE DRAINAGE SYSTEM, SUCH AS DITCHES, SWALES, LAKES, CANALS, ETC. THAT ARE DEEMED NECESSARY BY THE CITY TO VERIFY THE FUNCTIONAL PERFORMANCE OF THE STORM WATER SYSTEM, SHALL BE NOTED. NORMALLY, RECORDING ELEVATIONS EVERY 100 FEET AT THE TOP OF BANK AND TOE OF SLOPE WILL BE REQUIRED. MEASUREMENTS SHALL BE TAKEN AND RECORDED IN ORDER TO ACCURATELY TIE DOWN THESE FEATURES TO THE ROADWAY CENTERLINES AND TO PLAT LINES. WHENEVER POSSIBLE, CONTOUR LINES SHALL BE UTILIZED TO GRAPHICALLY DESCRIBE THESE TOPOGRAPHIC FEATURES.
5. RETENTION AREAS SHALL HAVE THEIR TOP-OF-BANK AND BOTTOM ELEVATIONS RECORDED. ACTUAL MEASUREMENTS SHALL BE TAKEN AND DIMENSIONS RECORDED OF THE SIZE OF ALL RETENTION AREAS. MEASUREMENTS SHALL BE DONE FROM TOP-OF-BANK TO TOP-OF-BANK WITH SIDE SLOPES INDICATED. SEPARATE CALCULATIONS SHALL BE SUBMITTED TO INDICATE REQUIRED AND PROVIDED RETENTION VOLUMES.
6. ACTUAL MATERIALS USED AND ELEVATIONS AND DIMENSIONS OF OVERFLOW WEIR STRUCTURES AND SKIMMERS SHALL BE NOTED ON THE AS-BUILT.
7. STORM DRAINAGE SWALE CENTERLINES SHALL BE LOCATED AND ELEVATIONS OF FLOW LINE AND TOP OF BANK SHALL BE RECORDED EVERY 100 FEET OR CHANGE IN GRADE. SIDE SLOPES SHALL ALSO BE INDICATED.
8. FOR SUBDIVISIONS, PROPOSED DESIGN FINISHED FLOOR ELEVATIONS SHALL APPEAR ON ALL SUBDIVISION LOTS ON THE APPROPRIATE PLAN AND PROFILE SHEET AS WELL AS ON THE MASTER DRAINAGE PLAN.
9. ANY SPECIAL FEATURES SUCH AS, CONCRETE FLUMES, LAKE BANKS, WALLS, FENCING, ETC., WHICH WERE A PART OF THE APPROVED CONSTRUCTION DRAWINGS SHOULD ALSO BE LOCATED AND DIMENSIONED.
10. IF AN APPROVED SUBDIVISION PLAT OR SITE PLAN SHOWS A CONSERVATION EASEMENT, THE PROJECT SURVEYOR SHOULD PROVIDE THE EXACT LOCATION OF THE SPECIMEN TREE(S) FROM THE RIGHT-OF-WAY OR PROPERTY LINES AND PROPOSED EASEMENT BOUNDARIES ON THE AS-BUILT DRAWING. THE AS-BUILT LOCATION OF THESE TREES WILL HELP VERIFY THE SUFFICIENCY OF THE CONSERVATION EASEMENT PRIOR TO PLAT RECORDING OR CERTIFICATE OF OCCUPANCY.
11. AS BUILT DRAWINGS ARE TO BE PREPARED BY A FLORIDA LICENSED SURVEYOR AND SHALL INCLUDE A SIGNED CERTIFICATION STATEMENT BY THE FLORIDA LICENSED ENGINEER OF RECORD. TWO (2) SIGNED & SEALED PAPER SETS OF AS-BUILT RECORD DRAWINGS SHALL BE PROVIDED ALONG WITH A DIGITAL COPY IN BOTH, A COMPATIBLE AutoCAD FORMAT & PDF FORMAT.

**THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION**



AS-BUILT DRAWING REQUIREMENTS NOTES

M-8

Drawing Date: 05/2003
Drawn By: PFT
Checked By:
Scale: NTS
Revision Date: 10/2011
File Name: dbM-8

SYMBOL LEGEND

<p> BRASS DISC</p> <p> NAIL & CAP</p> <p> CONC MONUMENT</p> <p> CHISELED X</p> <p> BENCH MARK</p> <p> HUB & TACK</p> <p> IRON PIPE & CAP</p> <p> IRON PIPE FOUND</p> <p><small>P.C.P.</small>  PERM. CONTROL POINT</p> <p><small>P.R.M.</small>  PERM. REFERENCE MARKER</p> <p> NAIL</p> <p> IRON ROD & CAP</p> <p> IRON ROD FOUND</p> <p> NAIL & TAB</p> <p> CONC SIGNAL POLE</p> <p> SIGNAL PULL BOX</p> <p> SIGNAL CONTROL BOX</p> <p> TELEPHONE BOX</p> <p> TELEPHONE MARKER</p> <p> UTILITY POLE</p> <p> TELEPHONE MANHOLE</p> <p> TV CABLE MARKER</p> <p> ELECTRIC BOX</p> <p> CONC POLE</p> <p> ELECTRIC MANHOLE</p> <p> FIRE DEPT. CONNECTION</p> <p> CABLE TV BOX</p> <p> MITERED END SECTION</p> <p><small>R.R.</small>  RAILROAD SPIKE</p> <p> SIGN</p> <p> STREET SIGNS</p>	<p> DECORATIVE LIGHT</p> <p> SPIGOT</p> <p> SPRINKLER</p> <p> METER VAULT</p> <p> AIR RELEASE VALVE</p> <p> WATER METER</p> <p><small>WV</small>  WATER VALVE</p> <p><small>CO</small>  SANITARY CLEAN OUT</p> <p><small>SS</small>  SANITARY MANHOLE</p> <p><small>SV</small>  SANITARY VALVE</p> <p><small>MB</small>  MAIL BOX</p> <p><small>RV</small>  REUSE VALVE</p> <p> ANTENNA</p> <p> LIGHT POLE</p> <p><small>G</small>  GAS MARKER</p> <p><small>GM</small>  GAS METER</p> <p><small>GV</small>  GAS VALVE</p> <p> CATCH BASIN</p> <p><small>CB</small>  CATCH BASIN MANHOLE</p> <p><small>JB</small>  STORM DRAIN JUNCTION</p> <p><small>SD</small>  STORM DRAIN MANHOLE</p> <p> UNDER CURB CATCH BASIN</p> <p> GUY ANCHOR</p> <p> GUY POLE</p> <p><small>FOM</small>  FIBER OPTIC MARKER</p> <p><small>A/C</small>  AIR CONDITIONING UNIT</p> <p><small>W</small>  WELL</p> <p><small>BFP</small>  BACK FLOW PREVENTER</p> <p><small>PB</small>  PULL BOX</p> <p> CONCRETE BLOCK POST</p> <p> POST</p>	<p> STOP SIGN</p> <p><small>C.O.C.</small>  CITY ORANGE CAP</p> <p><small>C.R.C.</small>  CITY RED CAP</p> <p> NOTED POINT</p> <p><small>ELEC OUTLET</small>  ELECTRIC OUTLET</p> <p><small>NO PWR</small>  UTILITY POLE W/ NO POWER</p> <p><small>ICB</small>  IRRIGATION CONTROL BOX</p> <p><small>ICV</small>  IRRIGATION CONTROL VALVE</p> <p> FIRE HYDRANT</p> <p><small>(MH)</small>  UTILITY MANHOLE</p> <p> RAILROAD CROSSING GATE</p> <p><small>R/R</small>  TRAFFIC CONTROL BOX</p> <p><small>TCB</small>  PHONE BOOTH</p> <p><small>PHONE</small>  ELECTRIC METER</p> <p><small>EM</small>  STADIUM LIGHTS</p> <p> PARKING METER</p> <p> FLAG POLE</p>
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ABBREVIATION LEGEND

#	NUMBER	CRC	CITY RED CAP & ROD	HDR	HEADER	REM	REMOVE
&	AND	CS	CARBON STEEL	HDWR	HARDWARE	REQ'D	REQUIRED
∅	DIAMETER	CTJ	CONTROL JOINT	HS, HES	HARD ELEVATION SHOT	REV	REVISION
⊙	AT	CTR	CENTER	HORZ	HORIZONTAL	RJ	RESTRAINED JOINT
±	PLUS/MINUS	CUP	COPPER PIPE	HT	HEIGHT	RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
°	DEGREE	CW	CLOCKWISE	HVAC	HEATER, VENTILATING & AIR CONDITIONING	R/R	RAILROAD
Δ	DELTA SYMBOL	CY	CUBIC YARD	HW	HEAD WALL	RU	REUSE WATER
A/C	AIR CONDITIONING UNIT	DEMO	DEMOLITION	HYD	FIRE HYDRANT	R/W	RIGHT OF WAY
ABDN	ABANDON	DEPT	DEPARTMENT	IN	INCH	SANS	SANITARY
ACP	ASBESTOS CEMENT PIPE	DET	DETAIL	INV	INVERT	SCH	SCHEDULE
ADA	AMERICAN DISABILITIES ACT	DHW	DESIGN HIGH WATER	IP	IRON PIPE	SD	STORM DRAIN
ADDL	ADDITIONAL	DIA	DIAMETER	IPC	IRON PIPE & CAP	SDMH	STORM DRAIN MANHOLE
AFF	ABOVE FINISHED FLOOR	DIAG	DIAGONAL	IR	IRON ROD	SEC	SECTION
AFG	ABOVE FINISHED GRADE	DIM	DIMENSION	IRC	IRON ROD & CAP	SERV	SERVICE
AHU	AIR HANDLING UNIT	DIP	DUCTILE IRON PIPE	JB	JUNCTION BOX	SHT	SHEET
ALT	ALTERNATE	DIV	DIVISION	LA	LIGHTNING ARRESTER	SPR	SPRINKLER LINE
ALU	ALUMINUM	DN	DOWN	LAB	LABORATORY	SQ.FT.	SQUARE FEET/FOOT
APPROX	APPROXIMATE(LY)	D/W	DRIVEWAY	LAM	LAMINATED	SS	SANITARY SERVICE
AR	ACID RESISTANT	DWG	DRAWING	LAT	LATITUDE	SSMH	SANITARY SEWER MANHOLE
ARCH	ARCHITECT(URAL)(URE)	DWTR	DEWATER(ED)	LAV	LAVATORY	STA	STATION
ARND	AROUND	EA	EACH	LB(S)	POUND(S)	STD	STANDARD
ARV	AIR RELEASE VALVE	EFF	EFFLUENT	LF	LINEAR FEET/FOOT	STL	STEEL
ASPH	ASPHALT	EL, ELEV	ELEVATION	LONG	LONGITUDE	S/W	SIDEWALK
ASTM	AMERICAN SOCIETY FOR TESTING MATERIALS	ELEC	ELECTRIC(AL)	LP	LIGHT POLE	TAN	TANGENCY
AUTO	AUTOMATIC	EMERG	EMERGENCY	MATL	MATERIAL	TB	TELEPHONE BOX
AUX	AUXILIARY	ENG	ENGINEER	MAX	MAXIMUM	TECH	TECHNICAL
AVG	AVERAGE	EOP, EP	EDGE OF PAVEMENT	MB	METER BOX	TELE	TELEPHONE
AWL	AVERAGE WATER LEVEL	EOW	EDGE OF WATER/WETLANDS	MECH	MECHANICAL	TEMP	TEMPORARY
BEL	BELOW	EQIV	EQUIVALENT	MES	MITERED END SECTION	THK	THICK(NESS)
BIT	BITUMINOUS	EQUIP	EQUIPMENT	MFR	MANUFACTURER	TOB	TOP OF BANK/BERM
B/L	BASELINE	ESMT	EASEMENT	MH	MANHOLE	TOC	TOP OF CURB/CONCRETE
BLDG	BUILDING	EST	ESTIMATE	MHWL	MEAN HIGH WATER LEVEL	TOD	TOP OF DITCH
BLK	BLOCK	ETC	ETCETERAS	MIN	MINIMUM	TOE	TOP OF EDGE
BM	BENCHMARK	EXIST	EXISTING	MISC	MISCELLANEOUS	TOP	TOP OF PIPE
BOC	BACK OF CURB	EXT	EXTERIOR	MON	MONUMENT(ATION)	TOW	TOP OF WALL
BOD	BOTTOM OF DITCH	EXTD	EXTEND(ED)	MRPP	METAL REINFORCED PLASTIC PIPE	TP	TURNING POINT
BOT	BOTTOM	F	FARENHEIT	M/C	METER CONTRACT	TRP	TRIANGULATION POINT
BOW	BACK OF WALK	FAB	FABRICATE	NOM	NOMINAL	TURB	TURBIDITY
BRG	BEARING	FBO	FURNISHED BY OTHERS	NPW	NONPOTABLE WATER	TV	TELEVISION
BSP	BLACK STEEL PIPE	FDC	FIRE DEPT. CONNECTION	NTS	NOT TO SCALE	TYP	TYPICAL
BTU	BRITISH THERMAL UNIT	FDN	FOUNDATION	NWL	NORMAL WATER LEVEL	UCCB	UNDER CURB CATCH BASIN
BTWN	BETWEEN	FF	FINISHED FLOOR ELEVATION	OC	ON CENTER	UGE	UNDER GROUND ELECTRIC
BUR	BUILT UP ROOF	FH	FIRE HYDRANT	OHE	OVERHEAD ELECTRIC LINES	UGU	UNDER GROUND UTILITY
BYP	BYPASS	FIG	FIGURE	OHU	OVERHEAD UTILITY LINES	UNO	UNLESS NOTED OTHERWISE
CATV	CABLE TV	FIN	FINISH(ED)	O/S	OFFSET	UP	UTILITY POLE
CB	CATCH BASIN	FM	FORCE MAIN	PC	POINT OF CURVE	VAR	VARIOUS
CCW	COUNTER CLOCKWISE	FNC	FENCE	PCC	POINT OF COMPLEX CURVATURE	VB	VALVE BOX
CDT	CONDUIT	FO	FIBER OPTIC	PERF	PERFORATED	VCP	VITRIFIED CLAY PIPE
CF	CUBIC FOOT	FOC	FRONT OF CURB	PI	POINT OF INTERSECTION	VEG	EDGE OF VEGETATION
CF	CUBIC FOOT	FOW	FRONT OF WALK	P/L	PROPERTY LINE	VERT	VERTICAL
CIP	CAST IRON PIPE	FT	FOOT/FEET	PNT	POINT	VOL	VOLUME
CIR	CIRCLE	FURN	FURNISH(ED)	PP	POWER POLE	WDF	WOOD FENCE
CIRC	CIRCUMFERENCE	G, NG	NATURAL GAS	PRC	POINT OF REVERSE CURVATURE	WJ	WELDED JOINT
CJ	CONSTRUCTION JOINT	GA, GUY	GUY ANCHOR	PRM	PERMANENT REFERENCE MONUMENT	WM	WATER MAIN
C/L	CENTERLINE	GALV	GALVANIZED	PROP	PROPOSED	WW	WASTE WATER
CLF	CHAIN LINK FENCE	GEN	GENERATOR	PT	POINT OF TANGENCY	WWF	WELDED WIRE FABRIC
CLR	CLEARANCE	GIP	GALVANIZED IRON PIPE	PVC	POLYVINYL CHLORIDE PIPE	WWTP	WASTEWATER TREATMENT PLANT
CM	CONCRETE MONUMENT	GR	GRADE	PVMT	PAVEMENT	YD	YARD DRAIN
CMP	CORRUGATED METAL PIPE	GRAV	GRAVITY	PVF	POLYVINYL FENCE	YR	YEAR
CMU	CONCRETE MASONRY UNIT	GRVL	GRAVEL	PW	POTABLE WATER		
CO	CLEAN OUT	GRN	GROUND(ING)	PWF	POLE & WIRE FENCE		
CONC	CONCRETE	GRTG	GRATING	QTY	QUANTITY/QUALITY		
CONST	CONSTRUCT	GSP	GALVANIZED STEEL PIPE	RAD	RADIUS		
CONT	CONTINUE(OUS)	GV	GATE VALVE	RCP	REINFORCED CONCRETE PIPE		
COC	CITY ORANGE CAP & ROD	HB	HOSE BIB	RD	ROOF DRAIN		
CPE	CORRUGATED POLYETHYLENE PIPE	H/C	HANDICAP(PED)	REF	REFER(ENCE)		
CPP	CONCRETE PRESSURE PIPE	HDPE	HIGH DENSITY POLYETHYLENE PIPE	REINF	REINFORCE		

**THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION**



ABBREVIATIONS LEGEND

M-10

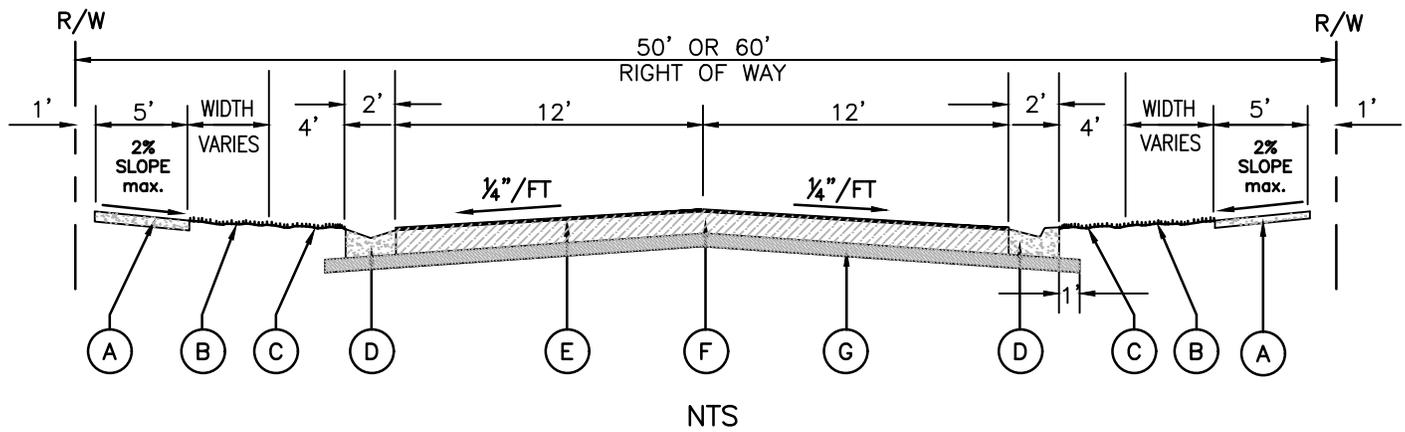
Drawing Date: 12/2003
Drawn By: PFT
Checked By:
Scale: NTS
Revision Date: 10/2011
File Name: dbM-10

ENGINEERING STANDARDS FOR DESIGN AND CONSTRUCTION

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ROADWAY DETAILS

- R-1 50' OR 60' R/W ROADWAY SECTION
- R-2 60' R/W ROADWAY SECTION W/ DITCH
- R-3 80' R/W ROADWAY SECTION W/ MEDIAN & DITCH
- R-4 100' R/W ROADWAY SECTION W/ FIVE (5) LANES
- R-5 100' R/W ROADWAY SECTION W/ FOUR (4) LANES & MEDIAN
- R-6 SPEED TABLE W/ CROSSWALK CONSTRUCTION
- R-7 PAVEMENT CUT & PATCH OVER PIPE TRENCH
- R-8 PAVEMENT CUT & PATCH OVER UTILITY STRUCTURE
- R-9 TYPICAL ASPHALT PAVEMENT SECTION
- R-10 TYPICAL CUL-DE-SAC WITH DUAL STORM INLETS
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- R-12 VALLEY GUTTER
- R-13 ROADWAY CONSTRUCTION NOTES (R-13A thru D)



- (A) CONCRETE SIDEWALK 5'-0" min. WIDTH, 6" min. THICK, 3500 P.S.I. @ 28 DAYS AND 3" min. ABOVE TOP OF CURB.
- (B) SOD OR SEED AND MULCH PER FDOT DESIGN STANDARDS, CURRENT EDITION, WHERE APPLICABLE. MAINTAIN POSITIVE DRAINAGE FROM EDGE OF SIDEWALK TO TOP OF CURB. MAXIMUM SLOPE OF 1" PER 4 FT (2%).
- (C) 4'-0" min. WIDE AREA WITH MAXIMUM SLOPE OF 1" PER 4 FT (2%).
- (D) CONCRETE CURB, 3500 P.S.I., FDOT TYPE 'F', ENVIRONMENTAL CURB OR AS SPECIFIED WHERE APPLICABLE.
- (E) ASPHALT PAVEMENT:
2" min. ASPHALT BITUMINOUS CONCRETE TYPE SP-9.5 SEE NOTE 2
- (F) BASE:
8" min. RECYCLED CONCRETE BASE (LBR 130). SEE NOTE 2

ALTERNATE 1:
6" min. ASPHALT BASE BEARING (LBR 100). SEE NOTE 2

ALTERNATE 2:
8" min. LIMEROCK BASE (LBR 100). SEE NOTE 2
TO BE USED ONLY WHEN BOTTOM OF BASE LAYER IS 24" max. ABOVE ANNUAL GROUND WATER ELEVATION AND UPON APPROVAL OF THE CITY ENGINEER.
- (G) SUB-GRADE:
6" min. SUB-BASE. SEE NOTE 2

NOTES:

1. ALL MATERIALS ARE TO BE APPROVED BY THE CITY ENGINEER AND THE PROJECT'S LICENSED SOILS ENGINEER PRIOR TO PLACEMENT.
2. ASPHALT PAVEMENT TESTING IS TO BE DONE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION, LATEST EDITION.

3.

GRADED AGGREGATE BASE	
SIEVE SIZE	PERCENT BY WEIGHT PASSING
2" (50mm)	100
1-1/2" (37.5mm)	95 to 100
3/4" (19mm)	65 to 95
3/8" (9.5mm)	45 to 75
No.4 (4.75mm)	35 to 60
No.10 (2mm)	25 to 45
No.50 (300um)	5 to 25
No.200 (75um)	0 to 10

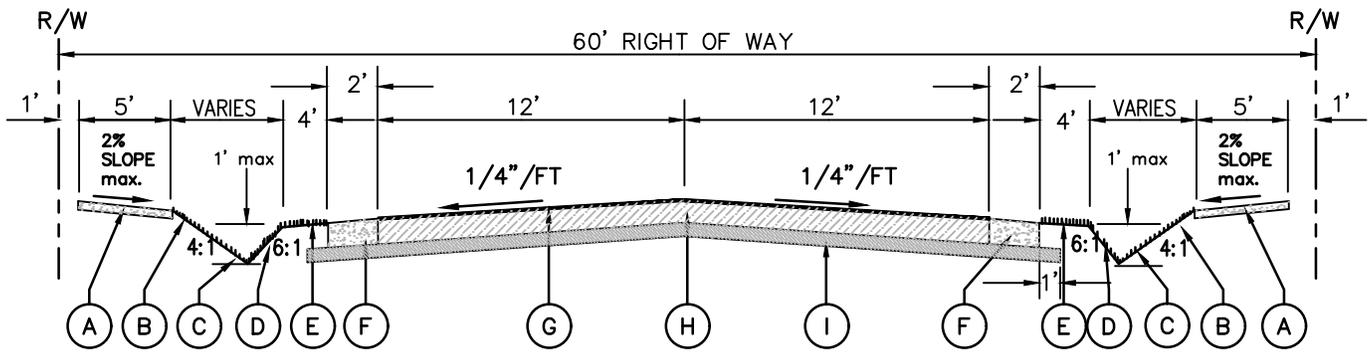
**THE CITY OF DAYTONA BEACH
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**50' or 60' R/W
ROADWAY SECTION
DETAIL**

R-1

Drawing Date: 05/03
Drawn By: PFT
Checked By:
Scale: NTS
Revision Date: 06/2016
File Name: dbR-1



NTS

- (A) CONCRETE SIDEWALK 5'-0" min. WIDTH, 6" min. THICK, 3500 P.S.I. @ 28 DAYS AND 3" min. ABOVE TOP OF CURB.
 - (B) MAXIMUM SLOPE ALLOWED.
 - (C) MAXIMUM DEPTH 12".
 - (D) SOD OR SEED AND MULCH PER FDOT DESIGN STANDARDS, CURRENT EDITION, WHERE APPLICABLE.
 - (E) 4'-0" min. WIDE AREA WITH MAXIMUM SLOPE OF 1" PER 4 FT (2%).
 - (F) CONCRETE CURB, 3500 P.S.I., FDOT TYPE 'F', ENVIRONMENTAL CURB OR AS SPECIFIED WHERE APPLICABLE.
 - (G) ASPHALT PAVEMENT:
2" min. ASPHALT BITUMINOUS CONCRETE TYPE SP-9.5 SEE NOTE 2
 - (H) BASE:
8" min. RECYCLED CONCRETE BASE (LBR 130). SEE NOTE 2
- ALTERNATE 1:
6" min. ASPHALT BASE BEARING (LBR 100). SEE NOTE 2
- ALTERNATE 2:
8" min. LIMEROCK BASE (LBR 100). SEE NOTE 2
TO BE USED ONLY WHEN BOTTOM OF BASE LAYER IS 24" max. ABOVE ANNUAL GROUND WATER ELEVATION AND UPON APPROVAL OF THE CITY ENGINEER.
- (I) SUB-GRADE:
6" min. SUB-BASE. SEE NOTE 2

NOTES:

1. ALL MATERIALS ARE TO BE APPROVED BY THE CITY ENGINEER AND THE PROJECT'S LICENSED SOILS ENGINEER PRIOR TO PLACEMENT.
2. ASPHALT PAVEMENT TESTING IS TO BE DONE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION, LATEST EDITION.

3.

GRADED AGGREGATE BASE	
SIEVE SIZE	PERCENT BY WEIGHT PASSING
2" (50mm)	100
1-1/2" (37.5mm)	95 to 100
3/4" (19mm)	65 to 95
3/8" (9.5mm)	45 to 75
No.4 (4.75mm)	35 to 60
No.10 (2mm)	25 to 45
No.50 (300um)	5 to 25
No.200 (75um)	0 to 10

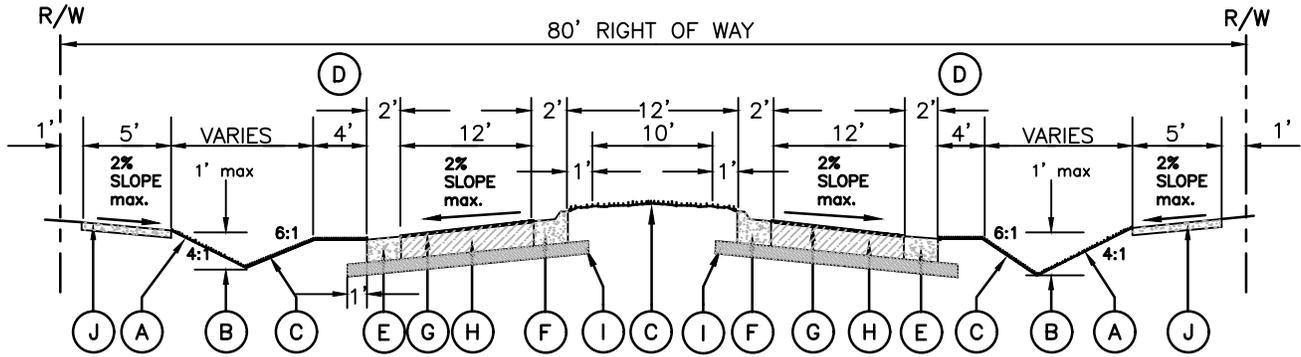
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60' R/W ROADWAY
SECTION W/ DITCH
DETAIL

R-2

Drawing Date:	05/2003
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	06/2016
File Name:	dbR-2



NTS

- (A) MAXIMUM SLOPE ALLOWED.
- (B) MAXIMUM DEPTH 18".
- (C) SOD OR SEED AND MULCH PER FDOT DESIGN STANDARDS, CURRENT EDITION, WHERE APPLICABLE. MAINTAIN POSITIVE DRAINAGE FROM ϕ TO TOP OF CURB WITHIN MEDIAN.
- (D) 4'-0" min. WIDE AREA WITH MAXIMUM SLOPE OF 1" PER 4 FT (2%).
- (E) CONCRETE CURB, 3500 P.S.I., FDOT TYPE 'F', ENVIRONMENTAL CURB OR AS SPECIFIED WHERE APPLICABLE.
- (F) FDOT TYPE 'A' MOUNTABLE CONC CURB, 3500 P.S.I., SLOPED TO DRAIN WATER FROM GUTTER TO ROAD.
- (G) ASPHALT PAVEMENT:
2" min. ASPHALT BITUMINOUS CONCRETE TYPE SP-9.5 SEE NOTE 2
- (H) BASE:
8" min. RECYCLED CONCRETE BASE (LBR 130). SEE NOTE 2

ALTERNATE 1:
6" min. ASPHALT BASE BEARING (LBR 100). SEE NOTE 2

ALTERNATE 2:
8" min. LIMEROCK BASE (LBR 100). SEE NOTE 2
TO BE USED ONLY WHEN BOTTOM OF BASE LAYER IS 24" max. ABOVE ANNUAL GROUND WATER ELEVATION AND UPON APPROVAL OF THE CITY ENGINEER.
- (I) SUB-GRADE:
6" min. SUB-BASE. SEE NOTE 2
- (J) CONCRETE SIDEWALK 5'-0" min. WIDTH, 6" min. THICK, 3500 P.S.I. @ 28 DAYS AND 3" min. ABOVE TOP OF CURB.

NOTES:

1. ALL MATERIALS ARE TO BE APPROVED BY THE CITY ENGINEER AND THE PROJECT'S LICENSED SOILS ENGINEER PRIOR TO PLACEMENT.
2. ASPHALT PAVEMENT TESTING IS TO BE DONE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION, LATEST EDITION.

3.

GRADED AGGREGATE BASE	
SIEVE SIZE	PERCENT BY WEIGHT PASSING
2" (50mm)	100
1-1/2" (37.5mm)	95 to 100
3/4" (19mm)	65 to 95
3/8" (9.5mm)	45 to 75
No.4 (4.75mm)	35 to 60
No.10 (2mm)	25 to 45
No.50 (300um)	5 to 25
No.200 (75um)	0 to 10

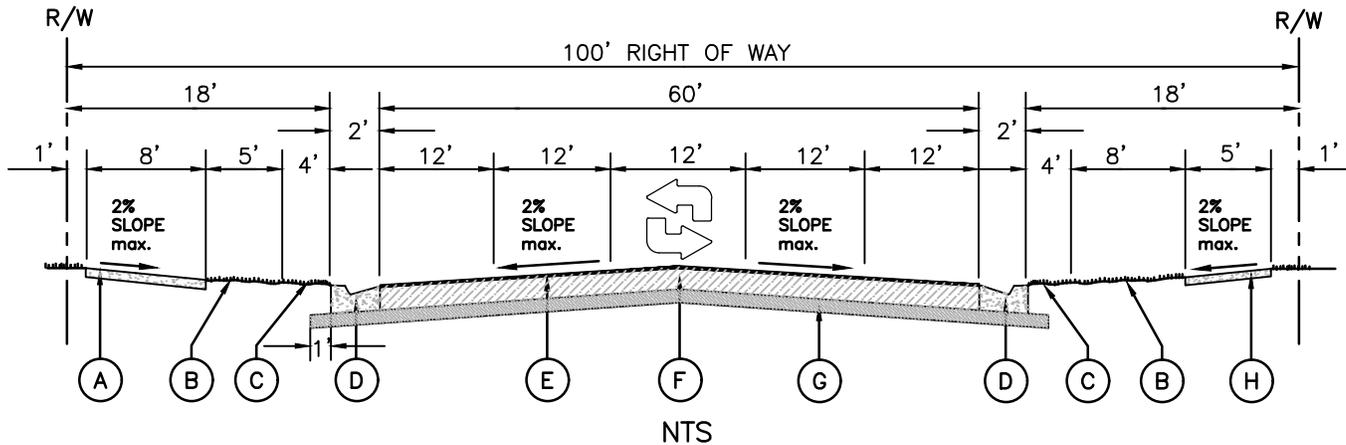
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80' R/W ROADWAY
SECTION W/ MEDIAN &
DITCH DETAIL

R-3

Drawing Date: 05/2003
Drawn By: PFT
Checked By:
Scale: NTS
Revision Date: 06/2016
File Name: dbR-3



NTS

- (A) CONCRETE BIKE PATH 8'-0" min. WIDTH, 6" min. THICK, 3500 P.S.I. @ 28 DAYS AND 3" min. ABOVE TOP OF CURB, PER PROJECT REQUIREMENT.
- (B) SOD OR SEED AND MULCH PER FDOT DESIGN STANDARDS, CURRENT EDITION, WHERE APPLICABLE. MAINTAIN POSITIVE DRAINAGE FROM EDGE OF WALK TO TOP OF CURB.
- (C) 4'-0" min. WIDE AREA WITH MAXIMUM SLOPE OF 1" PER 4 FT (2%).
- (D) CONCRETE CURB, 3500 P.S.I., FDOT TYPE 'F' CURB OR AS SPECIFIED WHERE APPLICABLE.
- (E) ASPHALT PAVEMENT:
2" min. ASPHALT BITUMINOUS CONCRETE TYPE SP-9.5 SEE NOTE 2
- (F) BASE:
8" min. RECYCLED CONCRETE BASE (LBR 130). SEE NOTE 2

ALTERNATE 1:
6" min. ASPHALT BASE BEARING (LBR 100). SEE NOTE 2

ALTERNATE 2:
8" min. LIMEROCK BASE (LBR 100). SEE NOTE 2
TO BE USED ONLY WHEN BOTTOM OF BASE LAYER IS 24" max. ABOVE ANNUAL GROUND WATER ELEVATION AND UPON APPROVAL OF THE CITY ENGINEER.
- (G) SUB-GRADE:
6" min. SUB-BASE. SEE NOTE 2
- (H) CONCRETE SIDEWALK 5'-0" min. WIDTH, 6" min. THICK, 3500 P.S.I. @ 28 DAYS AND 3" min. ABOVE TOP OF CURB, PER PROJECT REQUIREMENT.

NOTES:

1. ALL MATERIALS ARE TO BE APPROVED BY THE CITY ENGINEER AND THE PROJECT'S LICENSED SOILS ENGINEER PRIOR TO PLACEMENT.
2. ASPHALT PAVEMENT TESTING IS TO BE DONE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION, LATEST EDITION.

3.

GRADED AGGREGATE BASE	
SIEVE SIZE	PERCENT BY WEIGHT PASSING
2" (50mm)	100
1-1/2" (37.5mm)	95 to 100
3/4" (19mm)	65 to 95
3/8" (9.5mm)	45 to 75
No.4 (4.75mm)	35 to 60
No.10 (2mm)	25 to 45
No.50 (300um)	5 to 25
No.200 (75um)	0 to 10

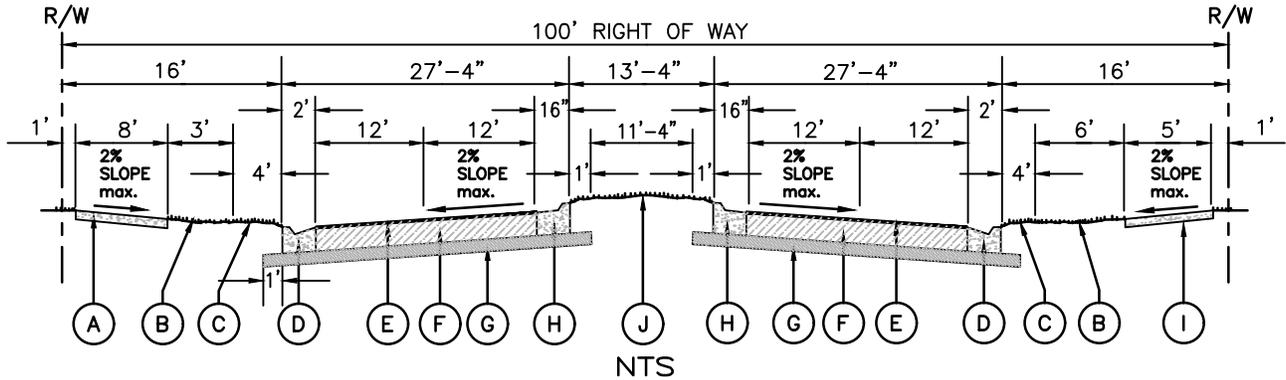
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100' R/W ROADWAY
SECTION W/ FIVE (5) LANES
DETAIL

R-4

Drawing Date: 06/2016
Drawn By: PFT
Checked By:
Scale: NTS
Revision Date: 10/2011
File Name: dbR-4



- (A) CONCRETE BIKE PATH 8'-0" min. WIDTH, 6" min. THICK, 3500 P.S.I. @ 28 DAYS AND 3" min. ABOVE TOP OF CURB, PER PROJECT REQUIREMENT.
- (B) SOD OR SEED AND MULCH PER FDOT DESIGN STANDARDS, CURRENT EDITION, WHERE APPLICABLE. MAINTAIN POSITIVE DRAINAGE FROM EDGE OF WALK TO TOP OF CURB.
- (C) 4'-0" min. WIDE AREA WITH MAXIMUM SLOPE OF 1" PER 4 FT (2%).
- (D) CONCRETE CURB, 3500 P.S.I., FDOT TYPE 'F' CURB OR AS SPECIFIED WHERE APPLICABLE.
- (E) ASPHALT PAVEMENT:
2" min. ASPHALT BITUMINOUS CONCRETE TYPE SP-9.5 SEE NOTE 2
- (F) BASE:
8" min. RECYCLED CONCRETE BASE (LBR 130). SEE NOTE 2

ALTERNATE 1:
6" min. ASPHALT BASE BEARING (LBR 100). SEE NOTE 2

ALTERNATE 2:
8" min. LIMEROCK BASE (LBR 100). SEE NOTE 2
TO BE USED ONLY WHEN BOTTOM OF BASE LAYER IS 24" max. ABOVE ANNUAL GROUND WATER ELEVATION AND UPON APPROVAL OF THE CITY ENGINEER.
- (G) SUB-GRADE:
6" min. SUB-BASE. SEE NOTE 2
- (H) FDOT TYPE 'A' MOUNTABLE CONCRETE CURB, 3000 P.S.I. SLOPE TO DRAIN WATER FROM GUTTER TO ROAD.
- (I) CONCRETE SIDEWALK 5'-0" min. WIDTH, 6" min. THICK, 3500 P.S.I. @ 28 DAYS AND 3" min. ABOVE TOP OF CURB, PER PROJECT REQUIREMENT.
- (J) SOD OR SEED AND MULCH PER FDOT DESIGN STANDARDS, CURRENT EDITION, AS APPLICABLE. MAINTAIN POSITIVE DRAINAGE FROM \mathcal{Q} TO TOP OF CURB.

NOTES:

1. ALL MATERIALS ARE TO BE APPROVED BY THE CITY ENGINEER AND THE PROJECT'S LICENSED SOILS ENGINEER PRIOR TO PLACEMENT.
2. ASPHALT PAVEMENT TESTING IS TO BE DONE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION, LATEST EDITION.

3.

GRADED AGGREGATE BASE	
SIEVE SIZE	PERCENT BY WEIGHT PASSING
2" (50mm)	100
1-1/2" (37.5mm)	95 to 100
3/4" (19mm)	65 to 95
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No.50 (300um)	5 to 25
No.200 (75um)	0 to 10

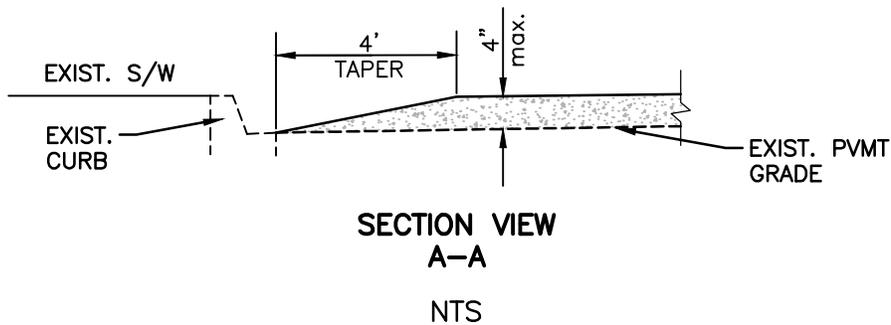
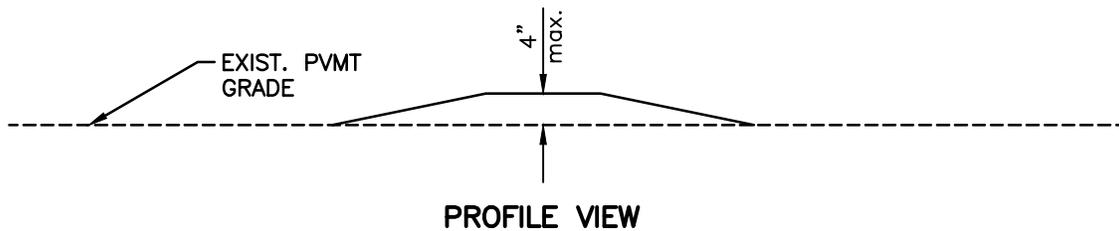
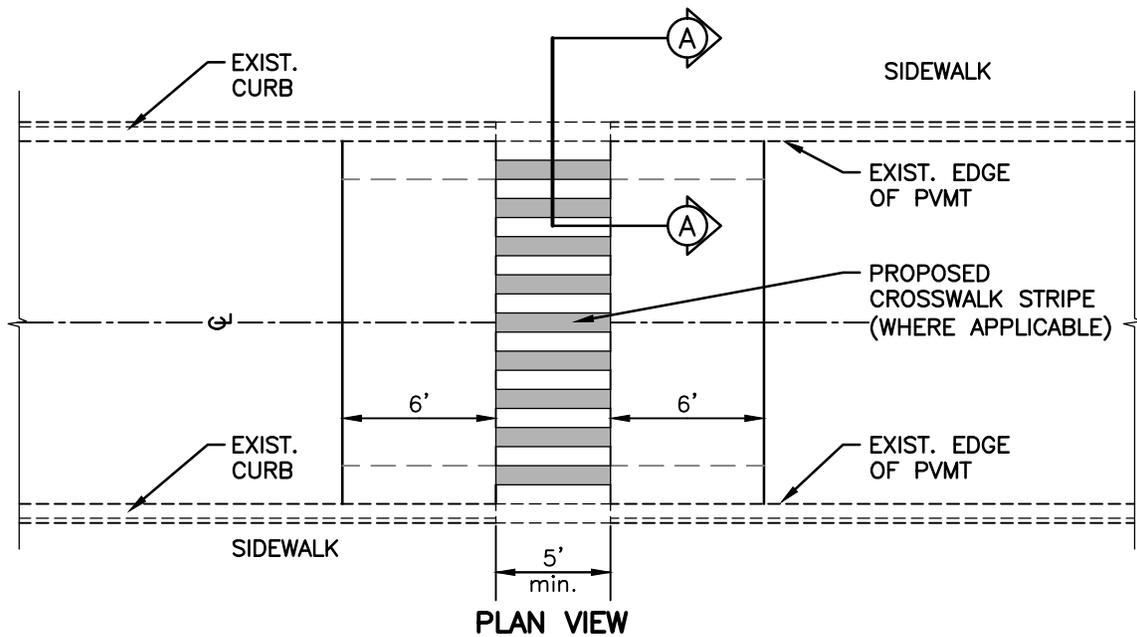
THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



100' R/W ROADWAY
SECTION W/ FOUR (4) LANES
& MEDIAN DETAIL

R-5

Drawing Date:	05/2003
Drawn By:	PFT
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Scale:	NTS
Revision Date:	06/2016
File Name:	dbR-5



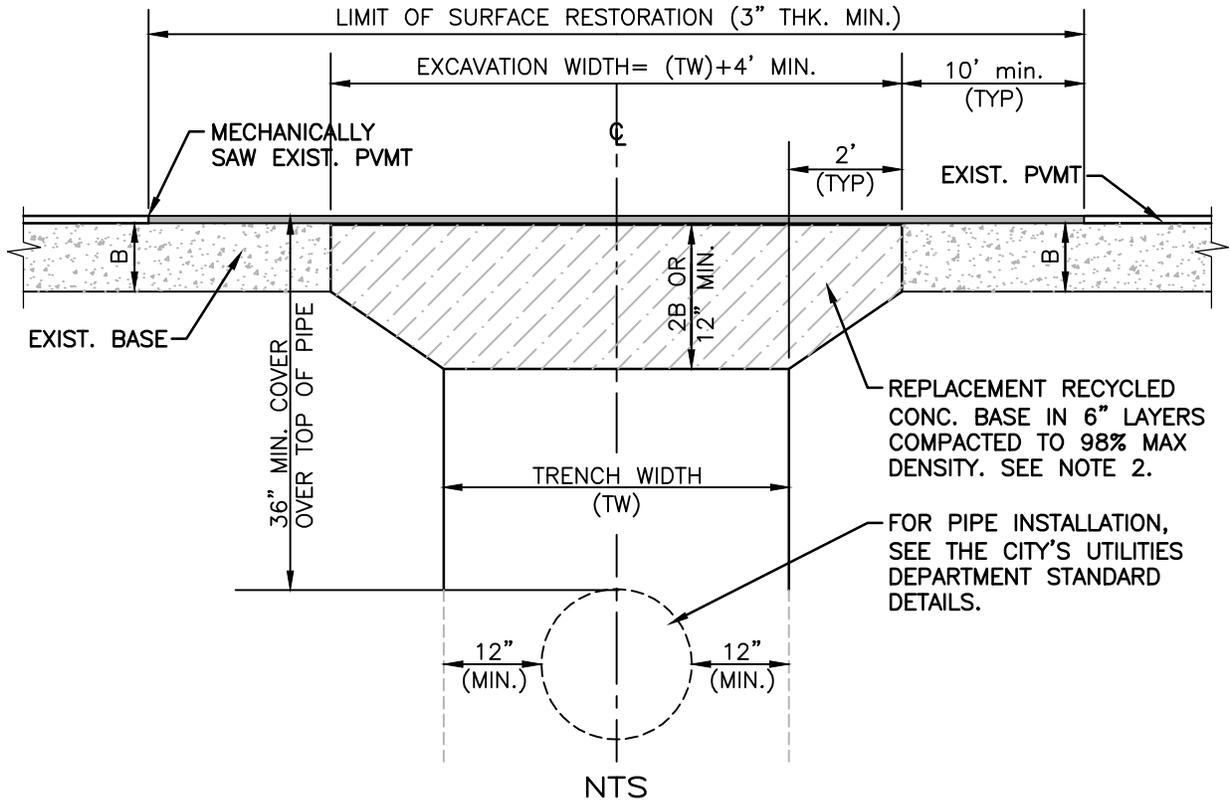
THE CITY OF DAYTONA BEACH
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**SPEED TABLE
W/ CROSSWALK
DETAIL**

R-6

Drawing Date:	01/2005
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	12/2013
File Name:	dbR-6



NOTES:

1. ALL MATERIALS ARE TO BE APPROVED BY THE CITY ENGINEER AND THE PROJECT'S LICENSED SOILS ENGINEER PRIOR TO PLACEMENT.
2. COMPACTION, STABILITY & DENSITY TESTING ARE TO BE DONE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROADWAY & BRIDGE CONSTRUCTION, LATEST EDITION.
3. WHERE SOIL CONDITIONS CAN NOT BE MAINTAINED AS SHOWN ABOVE, PROVIDE APPROVED METHOD OF CONSTRUCTION.
4. SHEETING WILL BE REQUIRED AS DETERMINED BY FIELD CONDITIONS.
5. NEW SURFACING MATERIALS SHALL BE CONSISTENT WITH EXISTING AND SHALL HAVE LAPPED & FEATHERED JOINTS (3" MIN. THK.).
6. CONTRACTOR MAY USE FLOWABLE FILL IN LIEU OF RECYCLED CONC. UNDER THE APPROVAL FROM THE CITY ENGINEER OR DESIGNEE.
7. TRENCH WIDTH (TW) = PIPE OD (CENTERED) + 24" (MINIMUM).
8. (B) = EXISTING BASE DEPTH.
9. TEMPORARY PATCH MAY BE RECYCLED ASPHALT, FDOT APPROVED COLD PATCH OR APPROVED EQUAL.
10. FINAL PATCH TO BE 3" MIN. SP 9.5
11. PATCH SHALL BE TOTAL ROADWAY WIDTH.

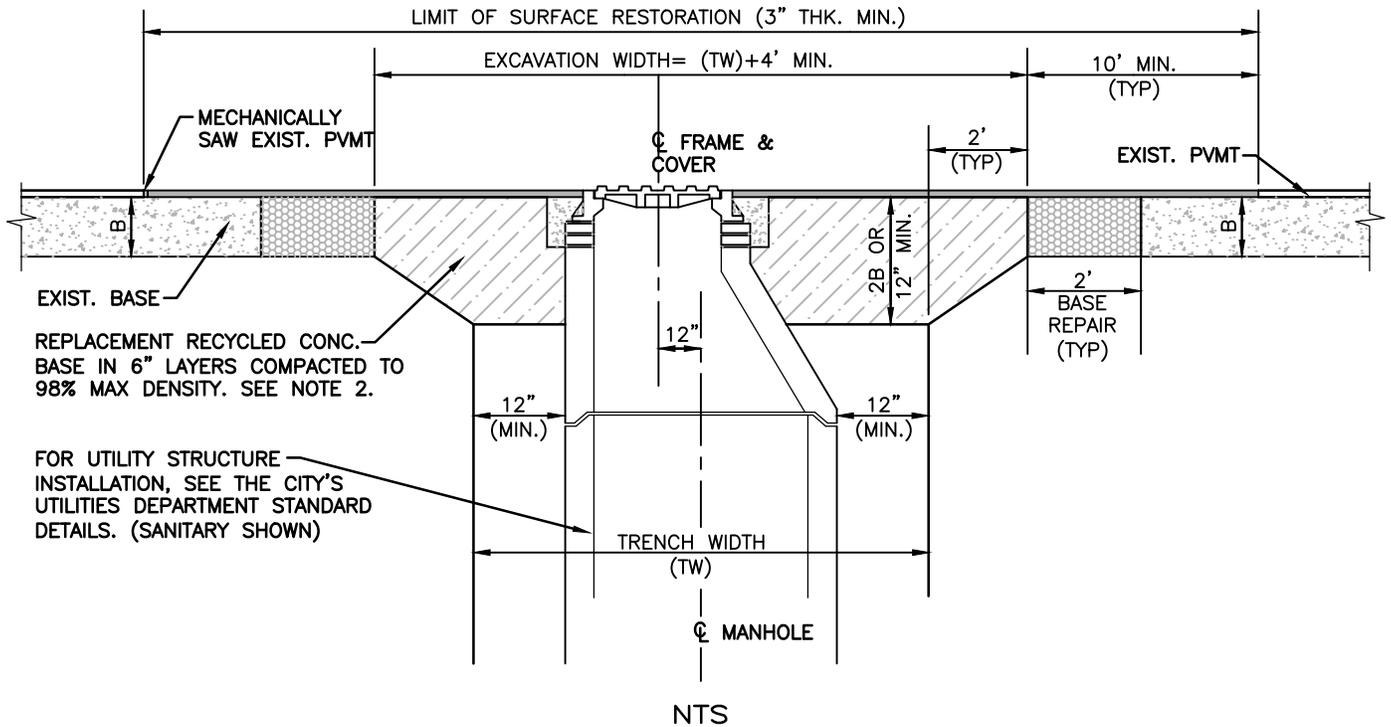
**THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION**



**PAVEMENT CUT & PATCH
OVER PIPE TRENCH
DETAIL**

R-7

Drawing Date:	05/2003
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	10/2011
File Name:	dbR-7



NOTES:

1. THIS DETAIL PERTAINS TO ALL UTILITY SANITARY AND STORM STRUCTURES WITHIN THE CITY OF DAYTONA BEACH RIGHTS-OF-WAY.
2. ALL MATERIALS ARE TO BE APPROVED BY THE CITY ENGINEER AND THE PROJECT'S LICENSED SOILS ENGINEER PRIOR TO PLACEMENT.
3. COMPACTION, STABILITY & DENSITY TESTING ARE TO BE DONE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROADWAY & BRIDGE CONSTRUCTION, LATEST EDITION.
4. WHERE SOIL CONDITIONS CAN NOT BE MAINTAINED AS SHOWN ABOVE, PROVIDE APPROVED METHOD OF CONSTRUCTION.
5. SHEETING WILL BE REQUIRED AS DETERMINED BY FIELD CONDITIONS.
6. NEW SURFACING MATERIALS SHALL BE CONSISTENT WITH EXISTING AND SHALL HAVE LAPPED & FEATHERED JOINTS (3" MIN. THK.)
7. CONTRACTOR MAY USE FLOWABLE FILL IN LIEU OF RECYCLED CONC. UNDER THE APPROVAL FROM THE CITY ENGINEER OR DESIGNEE.
8. TRENCH WIDTH (TW)= STRUCTURE WIDTH (CENTERED) + 24" (MINIMUM).
9. (B)= EXISTING BASE DEPTH
10. TEMPORARY PATCH MAY BE RECYCLED ASPHALT, FDOT APPROVED COLD PATCH OR APPROVED EQUAL.
11. FINAL PATCH TO BE 3" MIN. SP 9.5
12. PATCH SHALL BE TOTAL ROADWAY WIDTH UNLESS DIRECTED BY CITY ENGINEER.

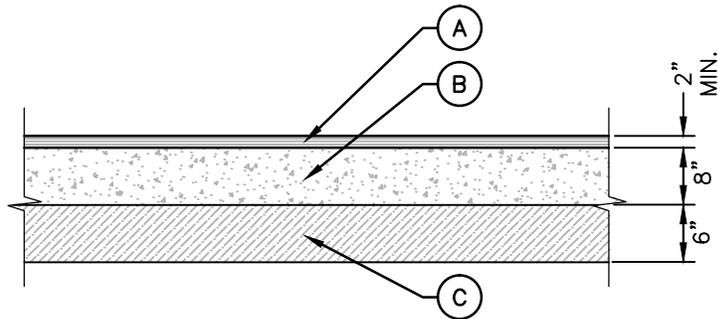
THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



**PAVEMENT CUT & PATCH
OVER UTILITY STRUCTURE
DETAIL**

R-8

Drawing Date:	07/2013
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	07/2013
File Name:	dbR-8



NTS

(A) ASPHALT PAVEMENT:
2" MIN. ASPHALT BITUMINOUS CONCRETE TYPE SP-9.5 SEE NOTE 2

(B) BASE:
8" RECYCLED CONCRETE BASE (LBR 130). SEE NOTE 2

ALTERNATE 1:
6" ASPHALT BASE MINIMUM BEARING (LBR 100). SEE NOTE 2

ALTERNATE 2:
8" LIMEROCK BASE (LBR 100). SEE NOTE 2
TO BE USED ONLY WHEN BOTTOM OF BASE LAYER IS 24" ABOVE
ANNUAL GROUND WATER MAXIMUM ELEVATION AND UPON APPROVAL
OF THE CITY ENGINEER.

(C) SUB-GRADE:
6" SUB-BASE. SEE NOTE 2

NOTES:

1. ALL MATERIALS ARE TO BE APPROVED BY THE CITY ENGINEER AND THE PROJECT'S LICENSED SOILS ENGINEER PRIOR TO PLACEMENT.
2. COMPACTION, STABILITY & DENSITY TESTING ARE TO BE DONE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROADWAY & BRIDGE CONSTRUCTION, LATEST EDITION.

3.

GRADED AGGREGATE BASE	
SIEVE SIZE	PERCENT BY WEIGHT PASSING
2" (50mm)	100
1-1/2" (37.5mm)	95 to 100
3/4" (19mm)	65 to 95
3/8" (9.5mm)	45 to 75
No.4 (4.75mm)	35 to 60
No.10 (2mm)	25 to 45
No.50 (300um)	5 to 25
No.200 (75um)	0 to 10

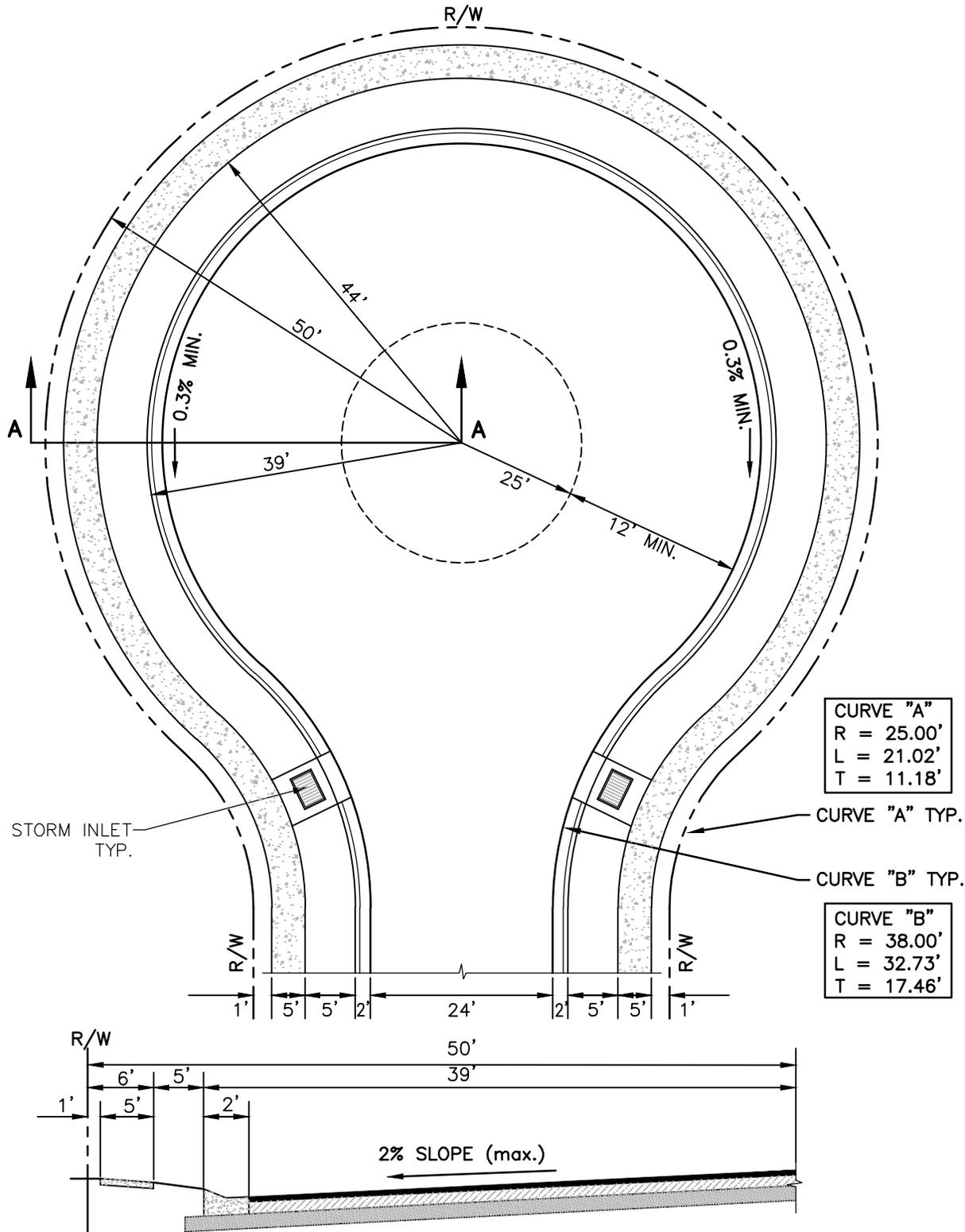
THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



**TYPICAL ASPHALT
PAVEMENT SECTION
DETAIL**

R-9

Drawing Date: 05/2003
Drawn By: PFT
Checked By:
Scale: NTS
Revision Date: 10/2011
File Name: dbR-9



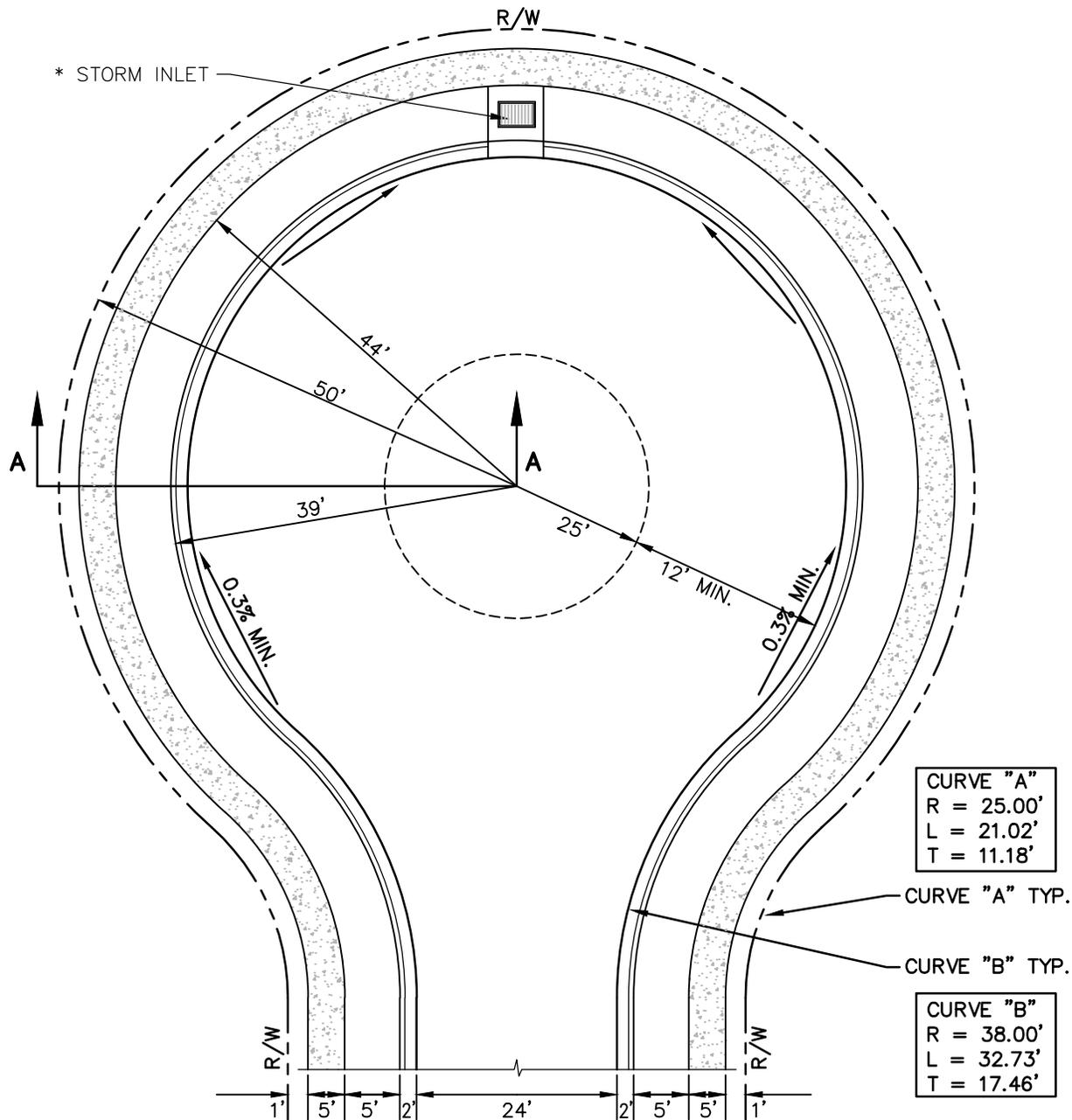
THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



**TYPICAL CUL-DE-SAC
W/ DUAL STORM INLETS
DETAIL**

R-10

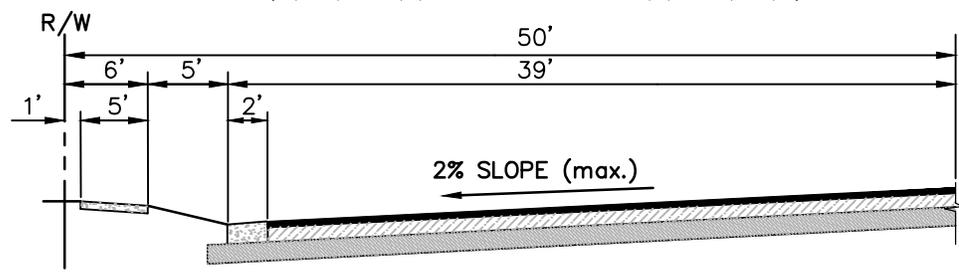
Drawing Date: 05/2003
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Scale: NTS
Revision Date: 10/2011
File Name: dbR-10



CURVE "A"
 R = 25.00'
 L = 21.02'
 T = 11.18'

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

CURVE "B"
 R = 38.00'
 L = 32.73'
 T = 17.46'



SECTION A-A
 NTS

* ALTERNATE STORM INLET LOCATION SUBJECT TO SITE SPECIFIC APPROVAL

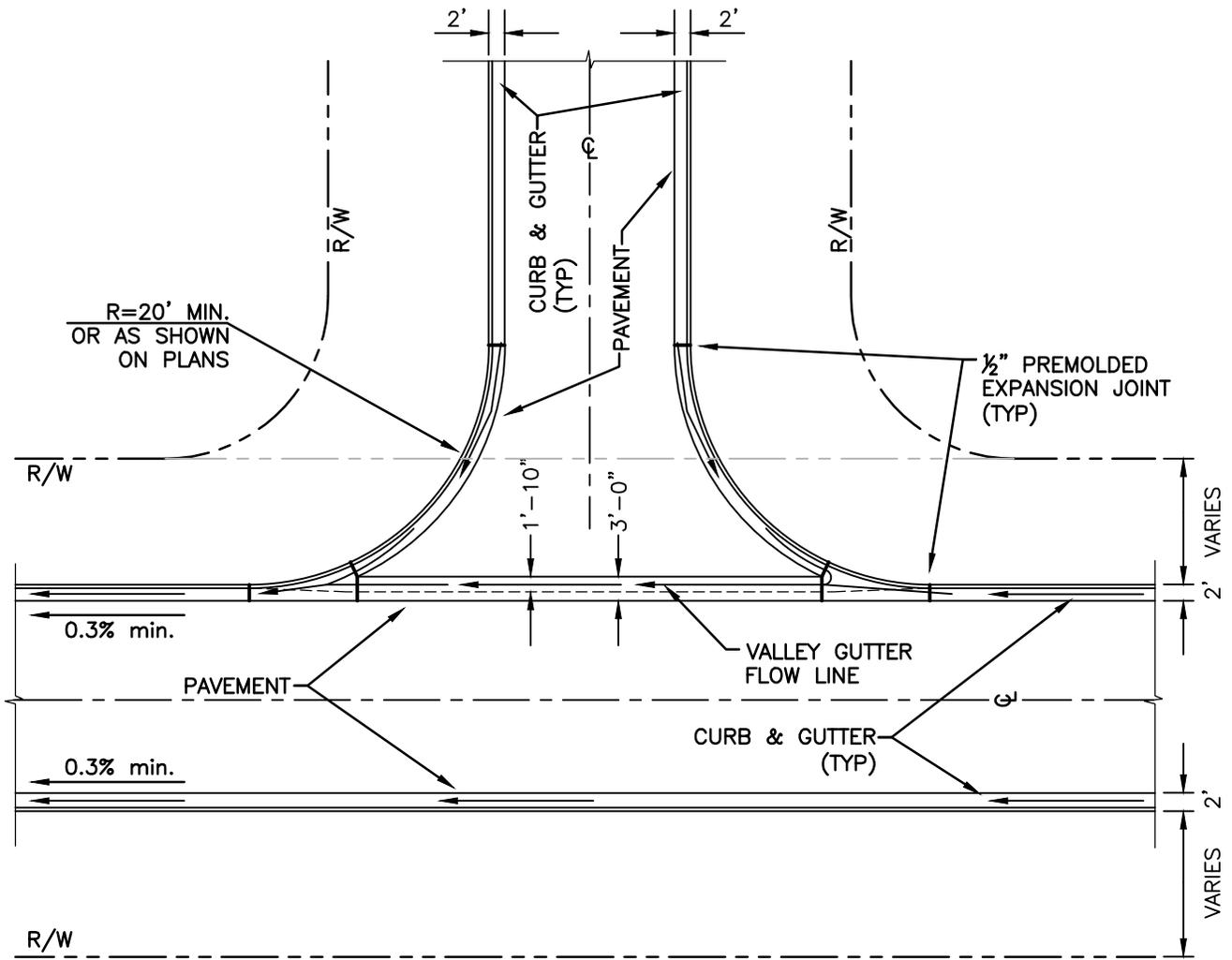
THE CITY OF DAYTONA BEACH
 ENGINEERING DIVISION



TYPICAL CUL-DE-SAC
 W/ SINGLE STORM INLET
 ALTERNATE DETAIL

R-11

Drawing Date:	05/2003
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	10/2011
File Name:	dbR-11



NTS

NOTES:

1. VALLEY GUTTERS ARE REQUIRED WHEN STORMWATER CROSSES THE INTERSECTION OF ROADWAYS AND DRIVEWAY CONNECTIONS.
2. VALLEY GUTTERS CAN BE USED ONLY WITH THE APPROVAL OF THE CITY'S ENGINEER.
3. ALL MATERIALS ARE TO BE APPROVED BY THE CITY ENGINEER AND THE PROJECT'S LICENSED SOILS ENGINEER PRIOR TO PLACEMENT.
4. COMPACTION, STABILITY & DENSITY TESTING ARE TO BE DONE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROADWAY & BRIDGE CONSTRUCTION, LATEST EDITION.
5. VALLEY GUTTER SHALL HAVE A STANDARD MINIMUM LONGITUDINAL SLOPE OF 0.30%.
6. VALLEY GUTTER SHALL BE CONSTRUCTED OF CONCRETE 3500 P.S.I. @ 28 DAY.
7. EXPANSION JOINTS (TYPE A) SHALL BE PLACED AT CURB TRANSITIONS AND AT SIXTY FEET (60') INTERVALS.
8. CONTROL JOINTS (TYPE B) SHALL BE PLACED AT TEN FEET (10') INTERVALS.
9. REFER TO FDOT DESIGN STANDARDS, LATEST EDITION FOR ADDITIONAL DESIGN REQUIREMENTS.

THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



**VALLEY GUTTER
DETAIL**

R-12

Drawing Date:	05/2003
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	10/2011
File Name:	dbR-12

ROADWAY CONSTRUCTION NOTES

ALL MATERIALS AND INSTALLATION METHODS USED FOR LAND DEVELOPMENT CODE REQUIRED IMPROVEMENTS FOR SUBDIVISIONS AND SITE PLANS SHALL BE IN CONFORMANCE WITH THE CITY'S DESIGN STANDARDS, FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION), AND THE FDOT DESIGN STANDARDS (LATEST EDITION).

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.
2. THE FOLLOWING WILL BE THE STANDARD PROTECTION FOR DITCHES UNLESS DRAINAGE CALCULATIONS INDICATE OTHERWISE:

<u>SWALE PROFILE GRADES</u>	<u>PROTECTION REQUIRED</u>
0.2% - 1.0%	GRASSING AND MULCHING
1.0% - 4.0%	SODDING
4.0% AND GREATER	DITCH PAVING

3. THE PAVEMENT, BASE, AND SUBBASE THICKNESS PRESENTED ON DETAILS REPRESENTS THE MINIMUM REQUIREMENTS FOR LOCAL PUBLIC STREETS AND PRIVATE PARKING LOTS. THE CITY RESERVES THE RIGHT AT ITS' DISCRETION TO INCREASE THESE REQUIREMENTS FOR COLLECTOR AND ARTERIAL ROADWAYS AND PRIVATE PARKING LOTS SUBJECTED TO HEAVY VEHICULAR COMMERCIAL TRAFFIC.
4. THE DEVELOPER SHALL PROVIDE AT THEIR OWN EXPENSE A CERTIFIED SOILS ENGINEERING LABORATORY TO PERFORM ALL FIELD AND LABORATORY TESTING REQUIRED TO VERIFY THAT THE CONSTRUCTION IS IN COMPLIANCE WITH THE CITY'S MINIMUM STANDARDS. IT IS THE RESPONSIBILITY OF THE DEVELOPER TO ENSURE THAT COPIES OF ALL TEST REPORTS ARE PROVIDED TO THE CITY'S DESIGNATED SITE INSPECTOR PRIOR TO THE PROJECT FINAL INSPECTION IN ORDER TO ALLOW PROJECT ACCEPTANCE BY THE CITY.
5. THE LIMITS OF STABILIZED SUBBASE SHALL EXTEND TO A DEPTH OF SIX INCHES (6") BELOW THE BOTTOM OF THE BASE AND OUTWARD TO TWELVE INCHES (12") BEYOND THE CURB.
6. THE STABILIZING MATERIAL, IF REQUIRED, SHOULD BE A HIGH BEARING VALUE SOIL, SAND-CLAY, LIMEROCK, RECYCLED CONCRETE, SHELL, OR OTHER MATERIAL AS APPROVED BY THE CITY'S ENGINEER OR DESIGNEE AND A LICENSED SOILS ENGINEER.
7. COMPACTION, STABILITY AND DENSITY TESTING FOR PAVEMENT, BASE AND SUB-BASE ARE TO BE DONE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROADWAY & BRIDGE CONSTRUCTION, LATEST EDITION.
8. FOR ROADWAYS, TESTS FOR SUBBASE BEARING CAPACITY AND COMPACTION SHALL BE DONE AT A MINIMUM OF EVERY 300 FEET AND SHALL BE STAGGERED TO THE LEFT, RIGHT, AND AT CENTER LINE OF THE ROADWAY. FOR SITE PLANS, TEST SHALL BE PERFORMED FOR EVERY 600 SQUARE YARDS OF STABILIZED AREA, OR PORTIONS THEREOF.
9. CEMENT DELIVERY TICKETS SHALL BE PROVIDED TO THE CITY'S DESIGNATED SITE INSPECTOR AT THE TIME OF PLACEMENT. IF THE INSPECTOR IS NOT ON SITE THROUGHOUT THE ENTIRE INSTALLATION, ACCUMULATED DELIVERY TICKETS CAN BE PROVIDED TO THE INSPECTOR BY THE CONTRACTOR ON THE FOLLOWING DAY.
10. TESTING OF THE IN-PLACE BASE SHALL BE DONE AT INTERVALS EQUIVALENT TO SUBGRADE TESTING AND SHALL CONSIST OF, AS A MINIMUM, A MOISTURE CONTENT AND COMPACTION TEST.
11. PORTLAND CEMENT CONCRETE, LIMEROCK, RECYCLED CONCRETE, OR FULL DEPTH ASPHALT PAVEMENT MAY BE USED IN PLACE OF SOIL CEMENT BASE. ALL BASE AND ROADWAY DESIGNS SHALL BE SUBJECT TO THE APPROVAL OF THE CITY.
12. RECYCLED CONCRETE CAN BE USED AS A BASE MATERIAL PROVIDED THE MATERIAL IS A MINIMUM OF 60% CARBONATE OF CALCIUM AND MAGNESIUM. THE MATERIAL SHALL BE LIMITED TO MAXIMUM OF 3% OF WATER SENSITIVE CLAY MATERIAL, LIQUID LIMIT SHALL NOT EXCEED 35 AND BE NON-PLASTIC, AND THE PLASTICITY INDEX SHALL NOT EXCEED 10. THE MATERIAL SHALL NOT CONTAIN ORGANIC MATERIAL, CHERTY OR OTHER EXTREMELY HARD PIECES, LUMPS, BALLS OR POCKETS OF SAND SIZE MATERIAL OF A QUANTITY AS TO BE DETRIMENTAL TO THE PROPER BONDING, FINISHING, OR STRENGTH OF THE RECYCLED CONCRETE BASE. FOR BASE APPLICATIONS, AT LEAST 97% (BY WEIGHT) OF THE MATERIAL SHALL PASS A 1" SIEVE AND FOR SUBBASE APPLICATIONS, AT LEAST 97% (BY WEIGHT) OF THE MATERIAL SHALL PASS A 1-1/2" SIEVE. FOR BOTH APPLICATIONS, THE MATERIAL SHALL BE GRADED UNIFORMLY DOWN TO DUST AND THE MINIMUM LBR VALUES ARE TO BE NOT LESS THAN 120. COARSE AGGREGATE USED IN THE RECYCLED CONCRETE SHALL HAVE A MAXIMUM LOSS OF 45% PER LOS ANGELES ABRASION TEST. ALL MATERIALS SHALL BE WELL GRADED IN ACCORDANCE WITH REQUIREMENTS SET FORTH IN SECTION 204, F.D.O.T., STANDARD SPEC. FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION).

**THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION**



ROADWAY CONSTRUCTION NOTES

R-13A

Drawing Date: 05/2003
Drawn By: PFT
Checked By:
Scale: NTS
Revision Date: 10/2011
File Name: dbR-13

ROADWAY CONSTRUCTION NOTES

(CONT'D)

13. RECYCLED CONCRETE OR LIMEROCK FOR BASE OR SUBBASE APPLICATIONS SHALL BE ALLOWED ON CITY ROADWAYS ONLY WHERE THE LOWEST ELEVATION OF THE ROADWAY SUBBASE IS A MINIMUM OF 6" ABOVE THE SEASONAL HIGH GROUNDWATER TABLE AS CERTIFIED BY A FLORIDA LICENSED PROFESSIONAL SOILS ENGINEER AND SUBSEQUENTLY APPROVED FOR BY THE CITY. ALL CRUSHING OF RECYCLED CONCRETE SHALL BE DONE PRIOR TO THE MATERIAL BEING PLACED IN THE ROADWAY. TESTING SHALL HAVE THE SAME REQUIREMENTS AND BE PERFORMED AT THE SAME LOCATION AND INTERVALS AS REQUIRED FOR LIMEROCK.
14. DESIGN MIXES AND PRODUCT GRADATION INFORMATION FOR ALL MATERIALS TO BE INSTALLED AS PART OF THE LAND DEVELOPMENT CODE REQUIRED IMPROVEMENTS SHALL BE SUBMITTED TO THE CITY'S DESIGNATED SITE INSPECTOR FOR ACCEPTANCE BY THE CITY. THE INFORMATION SHALL BE SUBMITTED NO LESS THAN THREE (3) WORKING DAYS PRIOR TO ANY CONSTRUCTION. SUBMITTALS SHALL INCLUDE, BUT NOT BE LIMITED TO, INFORMATION TO EVALUATE THE MATERIALS PROPOSED FOR INSTALLATION AS SUBBASE, BASE, AND PAVEMENT FOR ALL ROADWAY AND PARKING AREA SURFACES AS WELL AS SIMILAR INFORMATION FOR ALL OTHER CONCRETE SIDEWALKS, CURBING, AND COMPARABLE STRUCTURES AND APPLICATIONS.
15. PRIOR TO PLACEMENT FLORIDA STATE CERTIFIED BATCH PLANTS MUST CERTIFY TO THE CITY'S RESIDENT PROJECT INSPECTOR THAT THE ASPHALT DELIVERED TO THE SITE IS IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.
16. EXTRACTION AND GRADATION TESTS ON ASPHALT MIXES SHALL BE PROVIDED TO THE CITY'S DESIGNATED SITE INSPECTOR FOR EVERY 2500 SQUARE YARDS OF ASPHALT, OR PART THEREOF, TO ENSURE THAT DESIGN MIXES MEET THE CITY STANDARD SPECIFICATIONS AT NO ADDITIONAL COST TO THE CITY.
17. ASPHALT PAVEMENT TESTING IS TO BE DONE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION TABLE 334-5, LATEST EDITION.
18. IN ADDITION TO THE FIELD DENSITY TESTS NOTED, THE CITY RESERVES THE RIGHT TO REQUIRE CORE SAMPLES OF PAVEMENT SECTIONS EXTRACTED AND TESTED BY A CERTIFIED SOILS ENGINEERING LABORATORY AT THE DEVELOPER'S EXPENSE. THE CITY'S DESIGNATED SITE INSPECTOR SHALL DESIGNATE THE LOCATIONS OF THE TEST CORE LOCATIONS.
19. THE ROADWAY CROWN SHALL HAVE A STANDARD ONE QUARTER INCH ($\frac{1}{4}$ ") PER FOOT CROSS SLOPE.
20. ALL ROADWAYS WITH CURB AND GUTTER SECTIONS SHALL HAVE AS A STANDARD A MINIMUM LONGITUDINAL SLOPE OF 0.30%. THE ROADWAY CENTERLINE SHALL BE CLEARLY MARKED ON THE DESIGN PLANS. AT A MINIMUM, DESIGN ROADWAY CENTERLINE ELEVATIONS SHALL BE NOTED AT ALL GRADE CHANGES AND AT 50' min. INTERVALS ALONG THE ROADWAY PROFILE ON BOTH THE DESIGN PLANS AND AS-BUILT DRAWINGS.
21. THE FINISHED PAVEMENT EDGE SHALL BE WITHIN ONE EIGHTH INCH ($\frac{1}{8}$ ") ABOVE THE ADJACENT CONCRETE CURB FOR CURBS COLLECTING AND CONVEYING STORMWATER.
22. CONCRETE CURBS SHALL BE PROVIDED ON BOTH SIDES OF ALL STREETS AND ALL CONCRETE CURBS SHALL BE CONSTRUCTED WITH 3500 P.S.I. CONCRETE AT 28 DAYS.
23. CONTROL JOINTS IN CONCRETE CURBING, SIDEWALKS, PAVEMENT AND SIMILAR CONCRETE AREAS SHALL BE SAW CUT WITHIN 4 TO 18 HOURS OF PLACEMENT. ALL CONTROL JOINTS SHALL BE $\frac{1}{8}$ " IN WIDTH TO A DEPTH OF 25% OF THE TOTAL DEPTH OF CONCRETE OR 1- $\frac{1}{2}$ ", WHICHEVER IS LESS. CONTROL JOINTS SHALL BE SPACED AT INTERVALS OF TEN FEET (10') FOR CURBING, TEN FEET (10') FOR BIKE TRAILS AND FIVE FEET (5') FOR SIDEWALKS WITH EXPANSION JOINTS AT STREET INTERSECTIONS, RADIUS POINTS, STRUCTURES, AND ALONG CURVES AT SIXTY FEET (60') INTERVALS. EXPANSION JOINTS ARE TO BE $\frac{1}{2}$ " PREFORMED SYNTHETIC OR RECYCLED RUBBER. ALL EXPANSION JOINTS ARE REQUIRED TO BE INSTALLED THROUGH TO THE FULL DEPTH AND WIDTH OF THE CONCRETE AREA. FOR LINEAL SECTIONS OF CURBS, EXPANSION JOINTS SHALL BE LOCATED AT A MAXIMUM SPACING OF FIVE-HUNDRED FEET (500') AND SHALL BE $\frac{1}{2}$ " IN WIDTH.
24. AN "X" SHALL BE CUT IN THE CURB TO MARK THE LOCATION OF WATER DISTRIBUTION SYSTEM VALVE.
25. A "V" SHALL BE CUT IN THE CURB TO MARK THE LOCATION OF ALL SEWER SERVICES.
26. A "A" SHALL BE CUT IN THE CURB TO MARK THE LOCATION OF ALL RECLAIMED WATER SERVICES.
27. A "D" SHALL BE CUT IN THE CURB TO MARK THE LOCATION OF ALL POTABLE WATER SERVICES.
28. THREE (3) CONCRETE CYLINDERS SHALL BE TAKEN AND TESTED (1 IN 14 DAYS, 1 IN 28 DAYS AND 1 IN 56 DAYS) FOR EVERY FIFTY (50) CUBIC YARDS OF CONCRETE OR LESS PLACED. TEST RESULTS SHALL THEN BE PROVIDED TO THE CITY'S DESIGNATED SITE INSPECTOR AS THEY BECOME AVAILABLE.

THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



ROADWAY CONSTRUCTION
NOTES
(CONT'D)

R-13B

Drawing Date: 05/2003
Drawn By: PFT
Checked By:
Scale: NTS
Revision Date: 06/2016
File Name: dbR-13

ROADWAY CONSTRUCTION NOTES

(CONT'D)

29. A CONCRETE SLUMP TEST SHALL BE REQUIRED WITHIN THE FIRST 30 CUBIC YARDS OF CONCRETE. THEREAFTER, SLUMP TESTS SHALL BE REQUIRED FOR EVERY FIFTY (50) CUBIC YARDS OF CONCRETE, OR FRACTION THEREOF, WITH COPIES OF THE RESULTS PROVIDED TO THE CITY'S DESIGNATED SITE INSPECTOR. THE SLUMP TEST SHALL MEET THE REQUIRED MIX DESIGN ON EACH LOAD DELIVERED.
30. 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, STATE HIGHWAYS, AND ALONG LOCAL STREETS IN THE VICINITY OF THEIR INTERSECTION WITH THE ABOVE MENTIONED ROADWAYS.
31. A FDOT APPROVED STOP SIGN AND A 24"-WIDE WHITE THERMOPLASTIC STOP BAR ARE REQUIRED AT ALL ROADWAY INTERSECTIONS.
32. 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. THE MAINTENANCE-OF-TRAFFIC (MOT) INSTALLATION AND SUBSEQUENT OPERATION SHALL BE OVERSEEN BY A CONTRACTOR CERTIFIED BY THE AMERICAN TRAFFIC SAFETY SERVICES ASSOCIATION, OR EQUIVALENT CERTIFICATION RECOGNIZED BY FDOT.
33. 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.
34. THE DEVELOPER IS RESPONSIBLE FOR PAYING FEES FOR ALL STREET LIGHTS PRIOR TO ACCEPTANCE OF THE PROJECT BY THE CITY.
35. FIVE FOOT min. (5') WIDE SIDEWALKS SHALL BE PROVIDED ON BOTH SIDES OF ALL RESIDENTIAL STREETS. PER THE CITY &/OR FDOT DESIGN STANDARDS, LATEST EDITION.
36. EIGHT FOOT min. (8') WIDE BIKE PATHS SHALL BE ALONG ARTERIAL HIGHWAYS AS DIRECTED BY THE CITY. PER THE CITY &/OR FDOT DESIGN STANDARDS, LATEST EDITION.
37. STANDARD TURNING RADII FOR INTERSECTIONS:

RESIDENTIAL STREETS WITH STATE AND COUNTY ROADWAYS, OR	
MAJOR THOROUGHFARES WITHIN THE CITY;	35-50 FT.
ENTRANCES TO COMMERCIAL SITES OFF OF CITY STREETS;	35 FT.
INTERSECTIONS INTERIOR IN SUBDIVISIONS;	35 FT.

SHOULD VOLUSIA COUNTY OR THE FLORIDA DEPARTMENT OF TRANSPORTATION (F.D.O.T.) DETERMINE THAT LARGER RADII ARE WARRANTED WITHIN THEIR RIGHT-OF-WAY, THE LARGER RADII SHALL PREVAIL.
38. CONSTRUCTION METHODS AND DESIGN FOR CONCRETE PAVEMENT SHALL CONFORM TO FDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
39. ALL CONTRACTORS THAT ARE PERFORMING THE CONSTRUCTION OF LAND DEVELOPMENT CODE REQUIRED IMPROVEMENTS (INCLUDING WATER MAINS, SANITARY SEWER MAINS, RECLAIMED WATER MAINS, STORM WATER PIPES AND INLETS, ROADWAYS, AND PARKING FACILITIES) SHALL BE CERTIFIED WITH THE STATE OF FLORIDA BOARD OF PROFESSIONAL REGULATIONS (BPR) FOR THE TYPE OF WORK THAT THEY PERFORM.
40. ALL CONTRACTORS THAT ARE PERFORMING THE CONSTRUCTION WORK OF LAND DEVELOPMENT CODE REQUIRED IMPROVEMENTS SHALL BE LICENSED BY THE STATE OF FLORIDA AND REGISTERED WITH THE CITY OF DAYTONA BEACH. THE LICENSE AND REGISTRATION SHALL PERTAIN DIRECTLY TO THE TYPE OF WORK BEING PERFORMED.
41. EXCEPT AS PROVIDED IN THE LAND DEVELOPMENT CODE, ALL ELECTRIC, TELEPHONE, TELEVISION LINES AND SIMILAR UTILITIES ARE REQUIRED TO BE INSTALLED UNDERGROUND AT THE EXPENSE OF THE OWNER, DEVELOPER, AND BUILDER.

**THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION**



**ROADWAY CONSTRUCTION
NOTES
(CONT'D)**

R-13C

Drawing Date: 05/2003
Drawn By: PFT
Checked By:
Scale: NTS
Revision Date: 06/2016
File Name: dbR-13

ROADWAY CONSTRUCTION NOTES (CONT'D)

42. UTILITY DEPTH:

- A. HIGH VOLTAGE UTILITIES SUCH AS POWER (FEEDER, SERVICE, AND DROPS) SHALL BE BURIED A MINIMUM OF 30 INCHES IN DEPTH.
 - B. LOW VOLTAGE UTILITIES SUCH AS PHONE AND CABLE TV SHALL BE BURIED A MINIMUM OF 18 INCHES IN DEPTH FOR FEEDER AND SERVICES. SERVICE DROPS SHALL BE BURIED A MINIMUM OF 12 INCHES IN DEPTH.
 - C. IN NO INSTANCE SHALL THE DEPTH OF COVER BE LESS THAN 36" FROM FINISHED GRADE TO THE TOP OF PIPE FOR POTABLE WATER MAINS, SANITARY SEWER MAINS, AND RECLAIMED WATER MAINS. HOWEVER, IN THE EVENT THAT THIS CONDITION CANNOT BE MET DUE TO UNANTICIPATED CONFLICTS DURING THE CONSTRUCTION PROCESS, DUCTILE IRON PRESSURE CLASS 350 OR CONCRETE ENCASEMENT MAY BE USED AS APPROVED BY THE CITY PUBLIC UTILITIES DEPARTMENT.
43. LANDSCAPE PLANS SHALL CLEARLY DEPICT THE DESIGN LOCATION OF PLANTINGS RELATIVE TO THE LOCATION OF UNDERGROUND AND OVERHEAD PUBLIC UTILITIES AND STORMWATER INFRASTRUCTURE IN ORDER TO ELIMINATE ANY POTENTIAL CONFLICTS.

THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



ROADWAY CONSTRUCTION
NOTES
(CONT'D)
R-13D

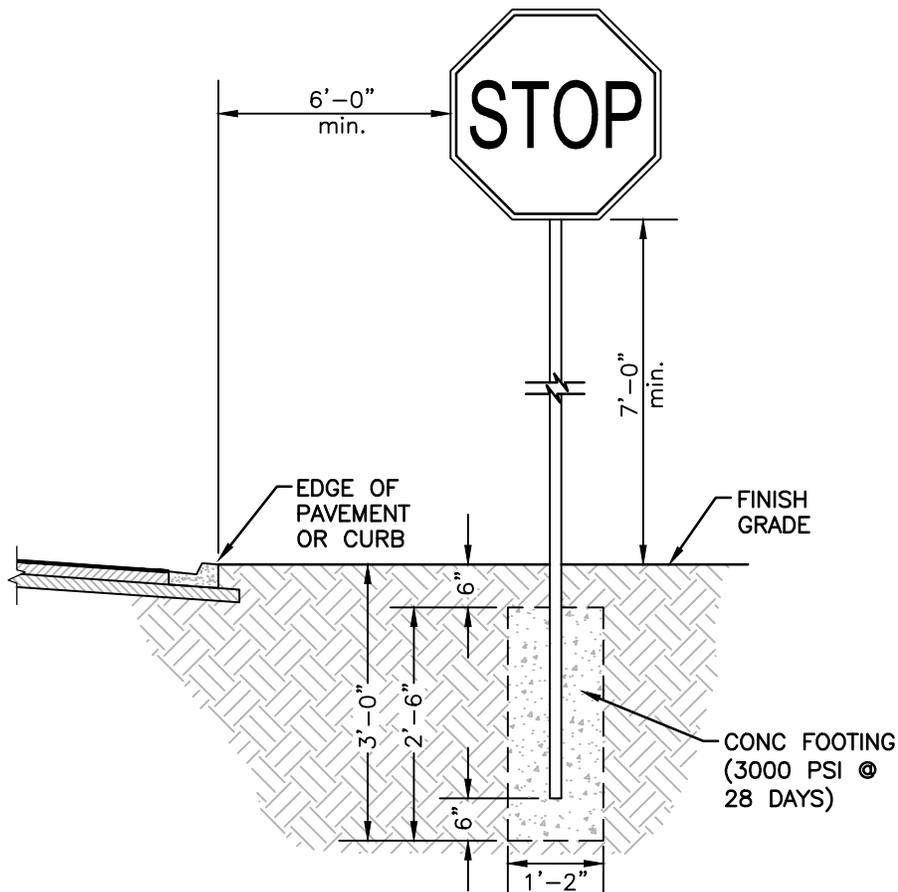
Drawing Date: 05/2003
Drawn By: PFT
Checked By:
Scale: NTS
Revision Date: 06/2016
File Name: dbR-13

ENGINEERING STANDARDS FOR DESIGN AND CONSTRUCTION

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NTS

NOTES:

1. STOP SIGN SHALL CONFORM WITH CURRENT FEDERAL, STATE & LOCAL CODES & REGULATIONS, LATEST EDITION.
2. STOP SIGN (FDOT R1-1) WILL BE FABRICATED BY USING A WHITE REFLECTIVE COATING IN THE TEXT & BORDER W/ A RED REFLECTIVE BACK GROUND APPLIED TO A SHEET ALUMINUM BACKING 30" OCTAGONAL SHAPE (0.80" THK).
3. MESSAGE LETTERING SHALL BE UPPER CASE (SERIES B) 10" HIGH W/ 3/4" WHITE REFLECTIVE BORDER IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
4. ALUMINUM SIGN POSTS TO BE 2-1/2"φ. ALL BOLTS, NUTS, WASHERS AND SCREWS MUST BE 316 STAINLESS STEEL.
5. CONCRETE FOOTING SHALL BE OF PORTLAND CEMENT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 P.S.I.
6. SIGN POST SHALL BE MINIMUM 6'-0" CLEAR FROM BACK OF CURB OR EDGE OF PAVEMENT.
7. SIGN POST SHALL BE DESIGNED TO WITHSTAND 120 M.P.H. WIND LOAD.

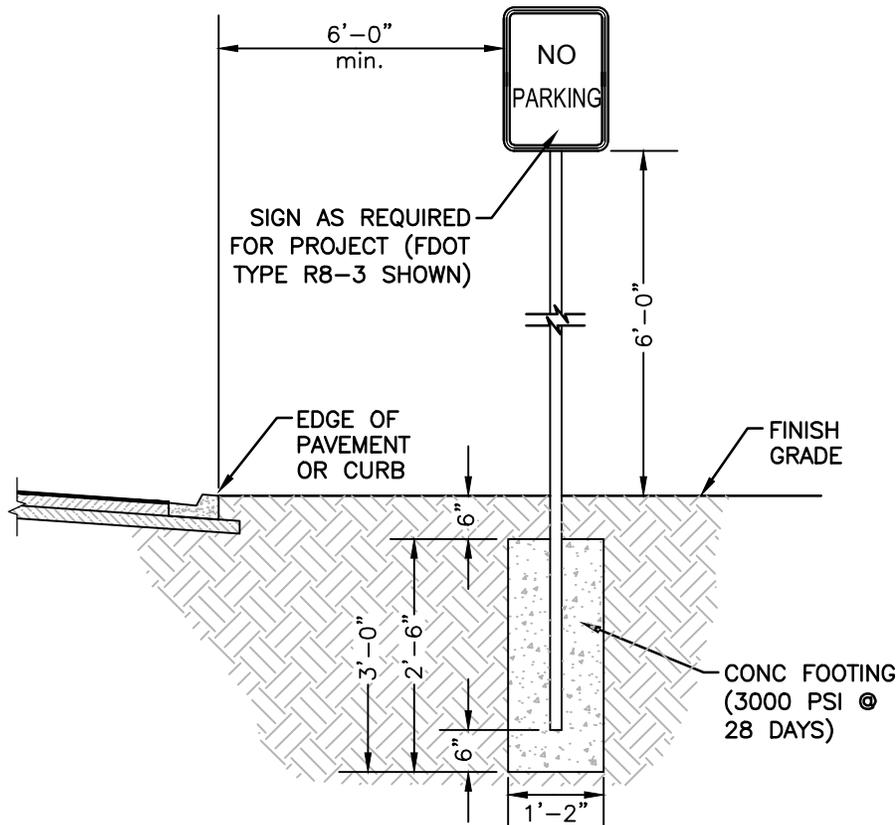
THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



**STOP SIGN
INSTALLATION DETAIL
(FDOT TYPE R1-1)**

T-1

Drawing Date: 12/2003
Drawn By: PFT
Checked By:
Scale: NTS
Revision Date: 10/2011
File Name: dbt-1



NTS

NOTES:

1. STOP SIGN SHALL CONFORM WITH CURRENT FEDERAL, STATE & LOCAL CODES & REGULATIONS, LATEST EDITION.
2. SIGNS WILL BE FABRICATED BY USING A REFLECTING COATING IN THE TEXT & BORDER APPLIED TO A SHEET ALUMINUM BACKING (0.80" IN THICKNESS).
3. MESSAGE LETTERING SHALL BE UPPER CASE (SERIES B) 2" HIGH IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
4. METAL SIGN POSTS TO BE GALVANIZED U-IRON. ALL BOLTS, NUTS, WASHERS AND SCREWS MUST BE 316 STAINLESS STEEL.
5. CONCRETE FOOTING SHALL BE OF PORTLAND CEMENT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 P.S.I.
6. SIGN POST SHALL BE MINIMUM 6'-0" CLEAR FROM BACK OF CURB OR EDGE OF PAVEMENT.
7. SIGN POST SHALL BE DESIGNED TO WITHSTAND 120 M.P.H. WIND LOAD.

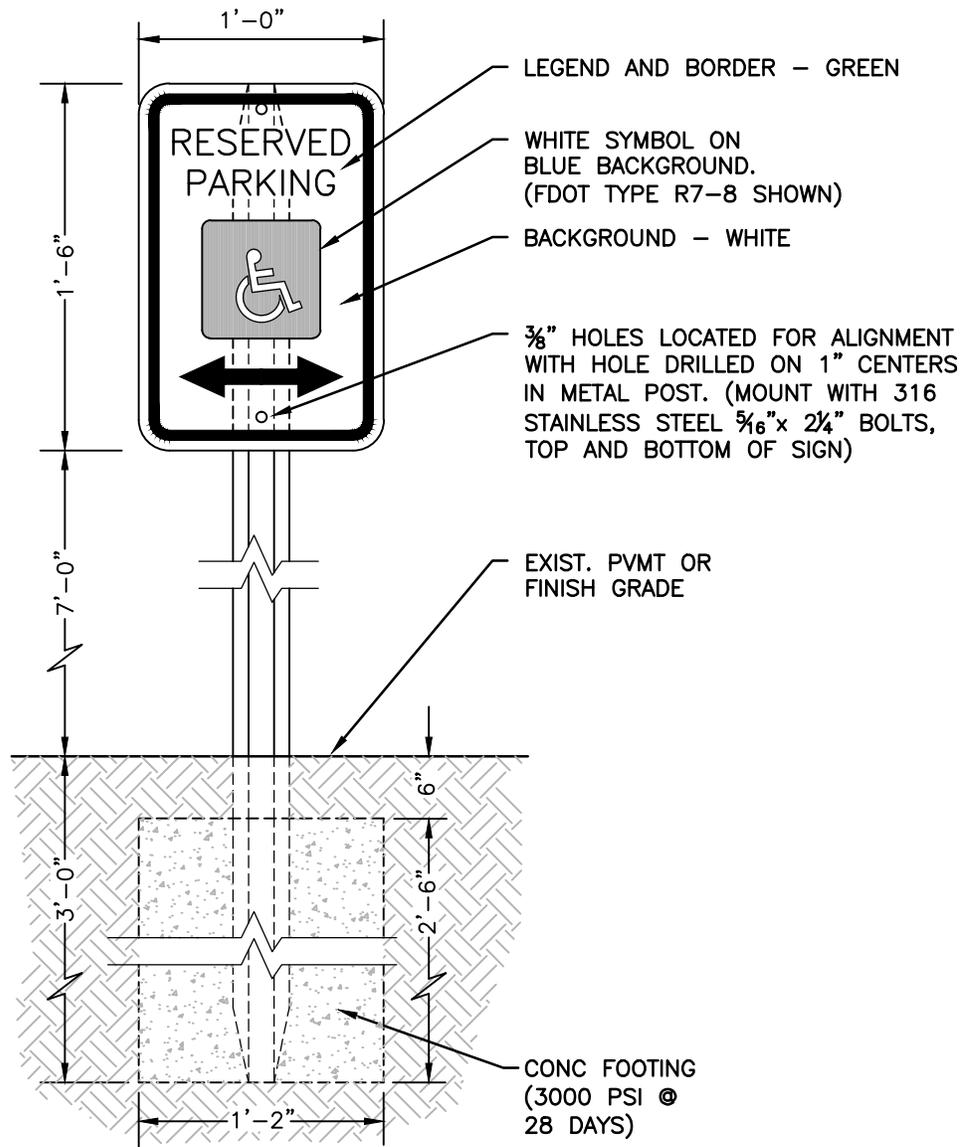
THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



**STANDARD SIGN
INSTALLATION DETAIL
(FDOT TYPE R11-1)**

T-2

Drawing Date:	12/2003
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	10/2011
File Name:	dbT-2



NTS

NOTES:

1. HANDICAP PARKING SIGN SHALL CONFORM WITH CURRENT FEDERAL, STATE LOCAL & ADA CODES & REGULATIONS, LATEST EDITION.
2. SIGNS WILL BE FABRICATED BY USING A REFLECTING COATING IN THE SYMBOL, MESSAGE AND BORDERS APPLIED TO A SHEET ALUMINUM BACKING (12"x18"x0.80").
3. MESSAGE LETTERING SHALL BE UPPER CASE (SERIES B) 2" HIGH IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
4. THE SYMBOL IS COMPOSED OF TWO ELEMENTS, A WHITE WHEEL-CHAIR FIGURE (WHICH SHOULD ALWAYS FACE RIGHT) ON A SQUARE BACKGROUND, INTERNATIONAL BLUE IN COLOR (FED. STD. 595a, COLOR #15180).
5. METAL SIGN POSTS TO BE GALVANIZED U-IRON. ALL BOLTS, NUTS, WASHERS AND SCREWS MUST BE 316 STAINLESS STEEL.
6. CONCRETE FOOTING SHALL BE OF PORTLAND CEMENT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 P.S.I.
7. SIGN POST SHALL BE MINIMUM 2'-0" CLEAR FROM BACK OF CURB OR WHEEL STOP.
8. SIGN POST SHALL BE DESIGNED TO WITHSTAND 120 M.P.H. WIND LOAD.

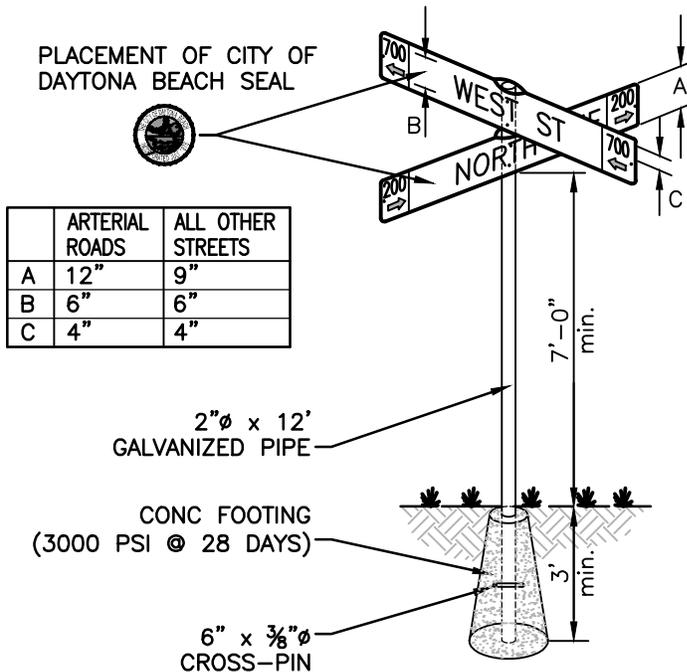
THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



**HANDICAP PARKING
SIGN DETAIL
(FDOT TYPE R7-8)**

T-3

Drawing Date:	12/2003
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	10/2011
File Name:	dbT-3



NTS

NOTES:

1. ALUMINUM SIGN PLATES .060" min. THICKNESS, DIE CUT ALCOA ALLOY 6061-T6, OR EQUAL. WHITE REFLECTIVE LETTERS WITH GREEN REFLECTIVE BACKGROUND TO MEET STANDARDS OF SECTION 633.06 FP-79 FOR TYPE 3A SHEET REFLECTIVE MATERIAL. CITY SEAL TO BE PURCHASED FROM THE CITY.
2. CONCRETE FOOTING SHALL BE OF PORTLAND CEMENT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 P.S.I.
3. 6"Ø CONCRETE FOOTING @ TOP AND FLUSH WITH GRADE. 6" x 3/8"Ø CROSS-PIN THROUGH PIPE @ MID-POINT IN CONCRETE FOOTING. 12"Ø CONCRETE FOOTING @ 3'-0" BELOW GRADE.
4. SIGN PLATES SHALL BE RIVETED USING TWO RIVETS ON SIGN POST AND ONE AT EACH END OF SIGN PLATES.

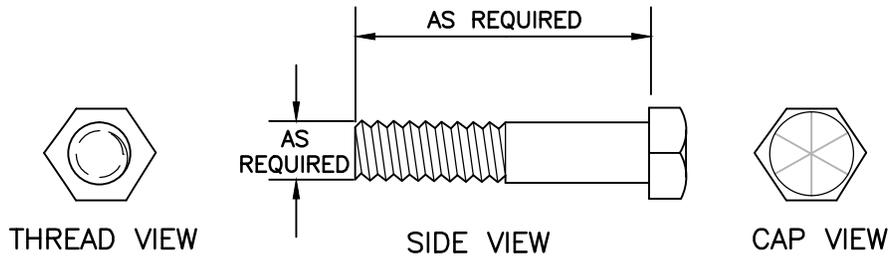
THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



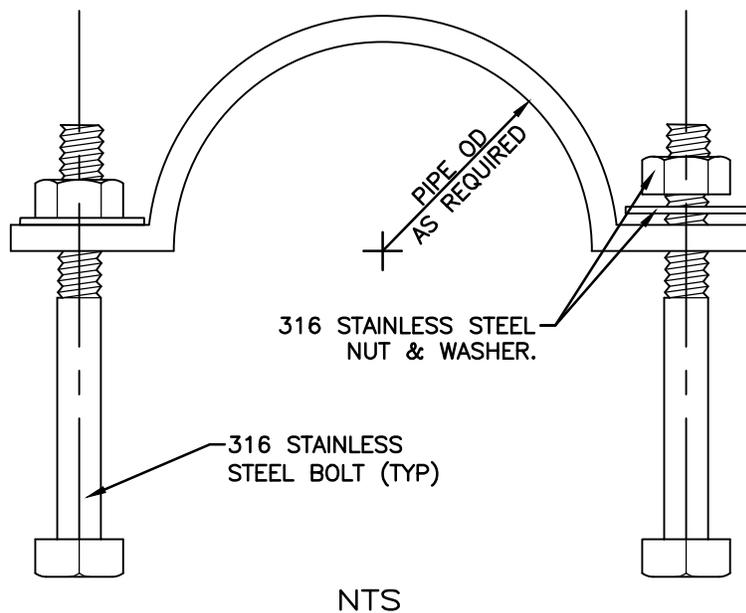
**CITY STREET NAME
SIGN INSTALLATION
DETAIL**

T-4

Drawing Date:	02/2005
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	12/2013
File Name:	dbT-4



FASTENER HARDWARE DETAIL



NOTES:

1. 316 STAINLESS STEEL BOLT HEX HEAD BOLT SHOWN. EITHER HEX HEAD OR SQUARE HEAD BOLT MAY BE USED. ONLY HEX HEAD NUT TO BE USED.
2. INSTALL WASHER WITH CHAMFERED FACE DOWN
3. APPLY ANTI-SEIZE TO BOLT THREAD PRIOR TO TIGHTENING.

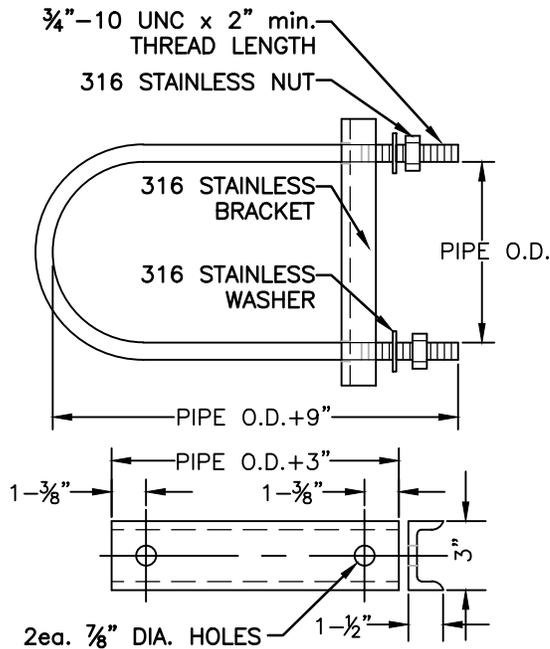
THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



**316 STAINLESS STEEL
SIGN MOUNTING HARDWARE
DETAIL**

T-5

Drawing Date:	05/2003
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	10/2011
File Name:	dbT-5



BRACKET DETAIL
NTS

NOTES:

1. 316 STAINLESS STEEL HEX HEAD NUT SHOWN. ONLY HEX HEAD NUT TO BE USED.
2. INSTALL WASHER WITH CHAMFERED FACE DOWN.
3. APPLY ANTI-SEIZE TO BOLT THREAD PRIOR TO TIGHTENING.

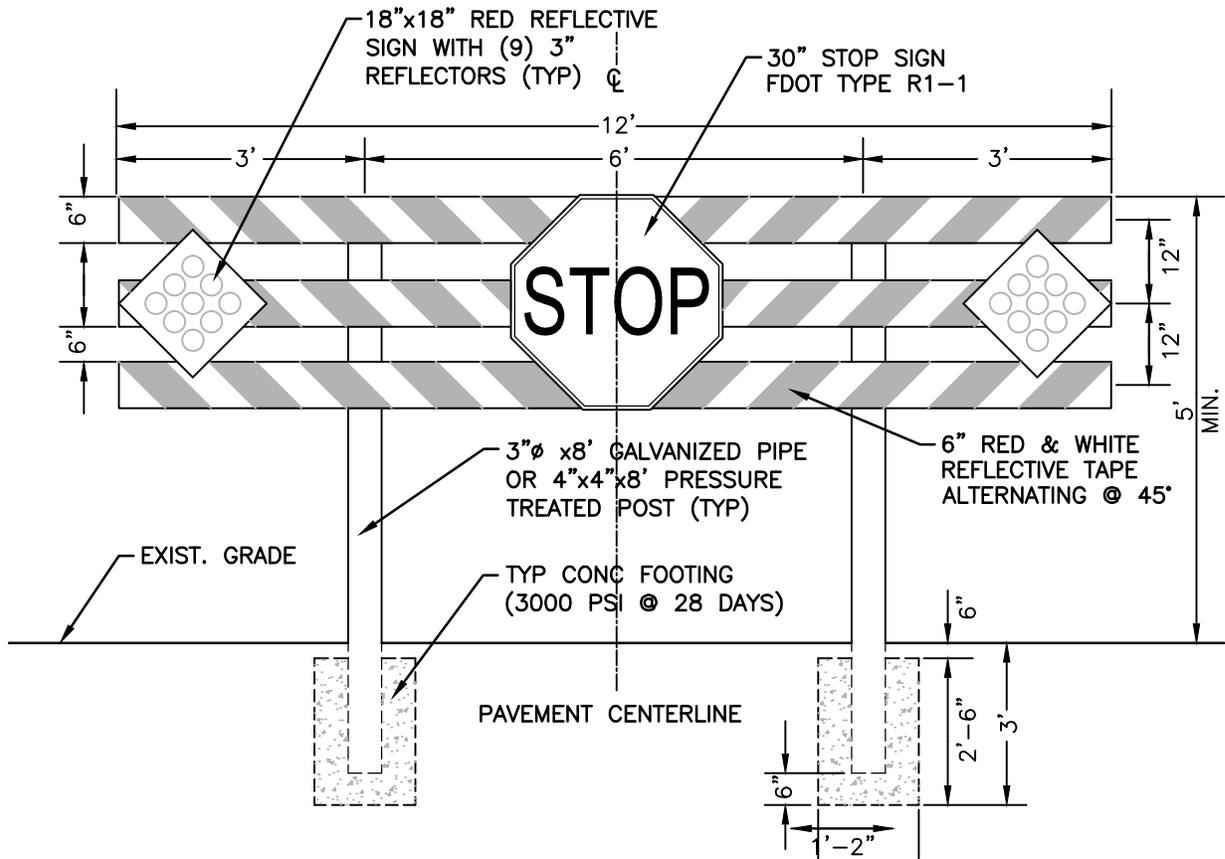
THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



**316 STAINLESS STEEL
U-BOLT MOUNTING HARDWARE
DETAIL**

T-6

Drawing Date:	12/2003
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	10/2011
File Name:	dbT-6



NTS

NOTES:

1. STOP SIGN SHALL CONFORM WITH CURRENT FEDERAL, STATE & LOCAL CODES & REGULATIONS.
2. SIGNS WILL BE FABRICATED BY USING A REFLECTING COATING IN THE TEXT & BORDER APPLIED TO A SHEET ALUMINUM BACKING (0.80" IN THICKNESS).
3. SIGN LETTERING SHALL BE UPPER CASE (SERIES B) 2" HIGH IN ACCORDANCE WITH MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
4. CONCRETE FOOTING SHALL BE OF PORTLAND CEMENT AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 P.S.I.
5. SIGN SHALL BE MINIMUM 6'-0" CLEAR FROM EDGE OF PAVEMENT.
6. BARRICADE SHALL BE DESIGNED TO WITHSTAND 120 M.P.H. WIND LOAD.

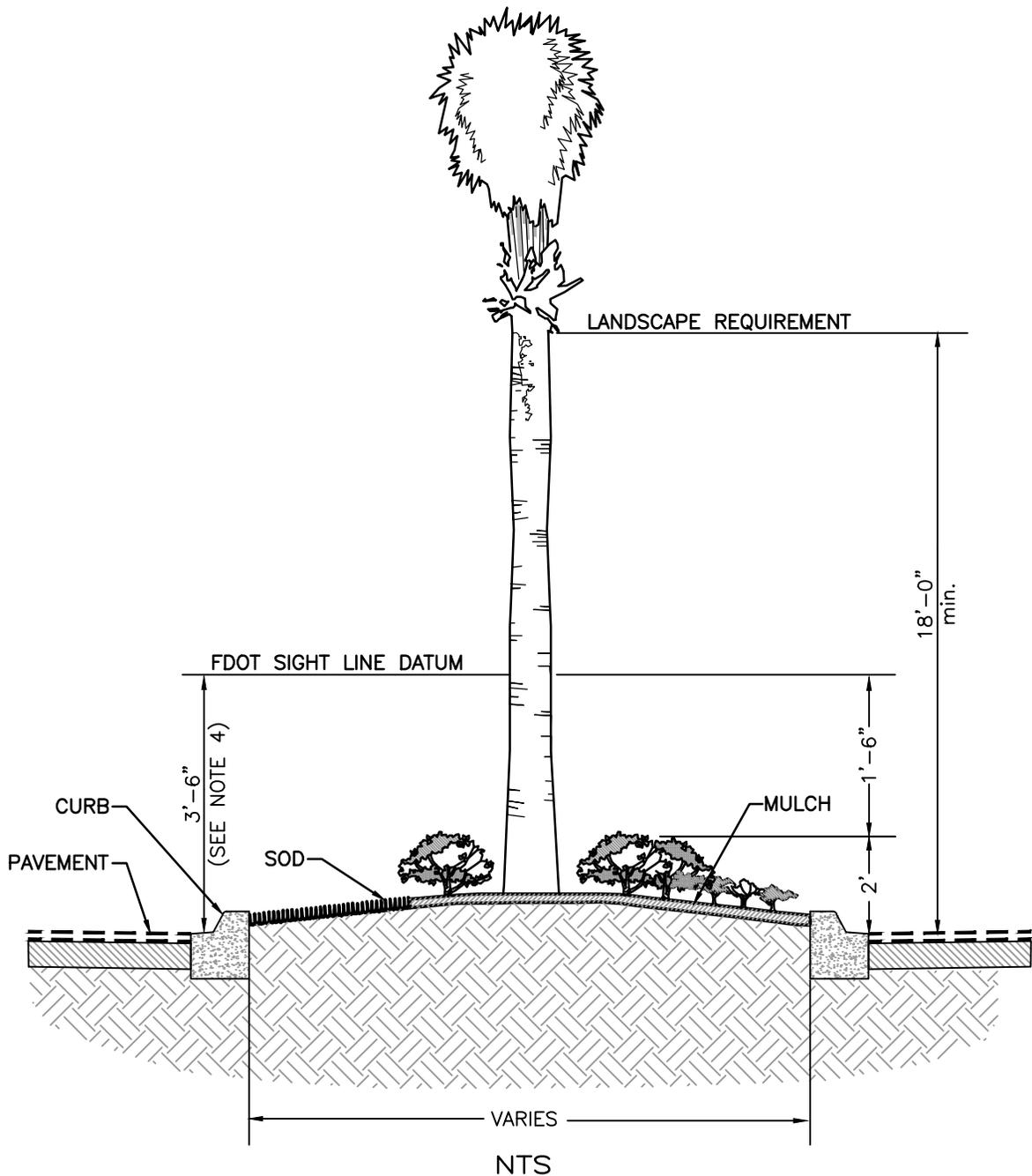
THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



**ROAD BARRICADE
DETAIL**

T-7

Drawing Date:	05/2003
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	10/2011
File Name:	dbT-7



NOTES:

1. SIGHT LINE DATUM TO BE MAINTAINED IN ACCORDANCE WITH FDOT DESIGN STANDARDS, LATEST EDITION.
2. GROUND COVER PLANTINGS TO BE MAINTAINED AT MAXIMUM HEIGHT OF 2'-0" ABOVE ROAD SURFACE; TREE CANOPY TO BE MAINTAINED AT MINIMUM 8'-6" ABOVE ROAD SURFACE.
3. SET SOD OR MULCH 1" BELOW TOP OF CURB.
4. SINCE OBSERVATIONS ARE MADE IN BOTH DIRECTIONS ALONG THE LINE OF SIGHT, THE REFERENCE DATUM BETWEEN ROADWAYS IS MINIMUM 3'-6" ABOVE RESPECTIVE PAVEMENTS.

THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION



**FDOT MEDIAN
SIGHT LINE
DETAIL**

T-8

Drawing Date:	05/2005
Drawn By:	PFT
Checked By:	
Scale:	NTS
Revision Date:	10/2011
File Name:	dbT-8

TRAFFIC CONTROL NOTES:

1. CONTRACTOR SHALL PERFORM ALL PROJECT WORK IN ACCORDANCE WITH FDOT DESIGN STANDARDS, LATEST EDITION. NO LANE CLOSURES ARE PERMITTED BETWEEN THE HOURS OF 7 A.M. AND 7 P.M. NIGHT WORK MAY BE SCHEDULED TO LESSEN TRAFFIC IMPACT & INCONVENIENCE TO GENERAL PUBLIC AND MUST BE APPROVED BY CITY ENGINEER PRIOR TO COMMENCEMENT OF WORK.
2. CONTRACTOR SHALL OBTAIN PRIOR APPROVAL OF HIS MAINTENANCE OF TRAFFIC (MOT) PLANS FOR ANY LANE CLOSURES FROM THE CITY TRAFFIC ENGINEERING DIVISION AT LEAST TWO (2) WEEKS IN ADVANCE OF ANY LANE CLOSURE.
3. EXISTING SIGNING AND PAVEMENT MARKINGS TO BE MAINTAINED UNLESS SHOWN OTHERWISE IN THESE PLANS.
4. TWO (2) WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES THROUGHOUT ENTIRE LENGTH OF PROJECT.
5. TWO (2) WAY ACCESS TO BUSINESSES AND PRIVATE DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES. TEMPORARY DRIVEWAY CLOSURES MAY BE ALLOWED IF SHARED ACCESS IS AVAILABLE OR IF WRITTEN AUTHORIZATION FROM THE PROPERTY OWNER IS PROVIDED TO CITY PRIOR TO COMMENCEMENT OF WORK ACTIVITIES.
6. VARIABLE MESSAGE BOARDS SHALL BE INSTALLED 48 HOURS PRIOR TO LANE CLOSURES. CONTRACTOR IS RESPONSIBLE FOR ADEQUATE NUMBER OF BOARDS AND LOCATIONS, TO BE VERIFIED PRIOR TO COMMENCEMENT OF WORK.
7. ALL TRAFFIC CONTROL SIGN AND PAVEMENT MARKINGS SHALL COMPLY WITH THE F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION.
8. CONTRACTOR TO MAINTAIN TRAFFIC AND PROPER DROP OFF CRITERIA PER INDEX 600. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING PROPER DEVICES WHEN A DROP OFF CONDITION CANNOT BE AVOIDED.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE GENERAL PUBLIC AND PUBLIC AGENCIES OF ROAD CLOSURES AT LEAST 48 HOURS IN ADVANCE.
10. AFFECTED ROADWAYS SHALL BE RESTORED AND NO LANE CLOSURES WILL BE PERMITTED DURING THE CITY OF DAYTONA BEACH SPECIAL EVENT PERIOD UNLESS PRIOR WRITTEN NOTIFICATION IS OBTAINED FROM CITY OF DAYTONA BEACH TRAFFIC ENGINEERING DIVISION.

**THE CITY OF DAYTONA BEACH
ENGINEERING DIVISION**



TRAFFIC CONTROL NOTES

T-9

Drawing Date: 11/2005
Drawn By: PFT
Checked By:
Scale: NTS
Revision Date: 10/2011
File Name: dbT-9