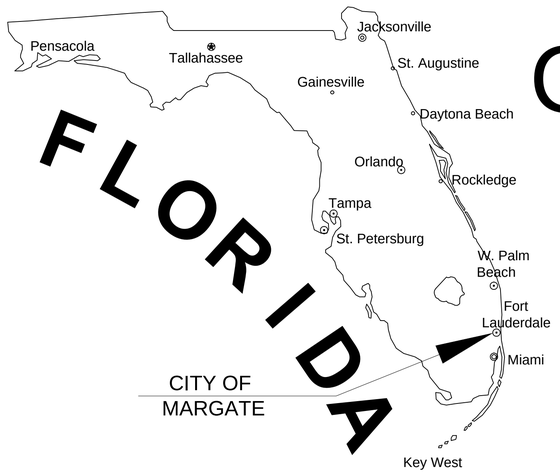
WINFIELD BOULEVARD TRAFFIC CALMING & STREETSCAPE IMPROVEMENTS

CITY OF MARGATE
BROWARD COUNTY, FLORIDA



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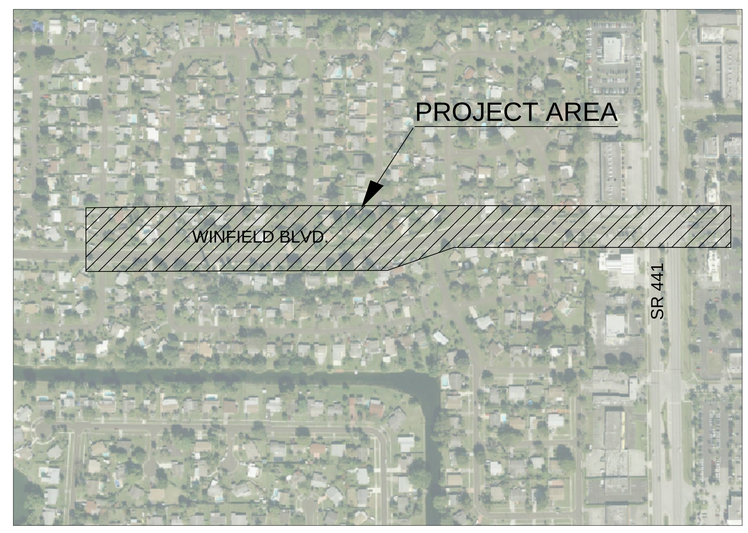
SCALE : 1" = 1000'



LOCATION MAP

SECTION 24, TOWNSHIP 48 S, RANGE 41 E

INDEX OF SHEETS		
Sheet Sequence No.	Sheet Identification	Sheet Title
	--	COVER
1	GI-001	SPECIFICATIONS
2	GI-002	LEGEND
3	GI-003	GENERAL NOTES
4	CP-101	ENGINEERING PLAN
5	CP-102	ENGINEERING PLAN
6	CP-103	ENGINEERING PLAN
7	CP-501-502	ENGINEERING DETAILS
8	CM-101	PAVEMENT MARKING & SIGNING PLAN
9	CM-102	PAVEMENT MARKING & SIGNING PLAN
10	CM-103	PAVEMENT MARKING & SIGNING PLAN
11	LP-101	LANDSCAPE PLAN
12	LP-102	LANDSCAPE PLAN
13	LP-103	LANDSCAPE PLAN
14	LD-101	LANDSCAPE DETAILS
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16	IR-101	IRRIGATION PLAN
17	IR-102	IRRIGATION PLAN
18	IR-103	IRRIGATION PLAN
19	IR-104	IRRIGATION DETAILS & NOTES

ALL ELEVATIONS SHOWN ON THESE PLANS
ARE BASED ON NAVD 1988 DATUM

THESE PLANS MAY HAVE BEEN REDUCED IN SIZE BY REPRODUCTION. THIS MUST BE CONSIDERED WHEN OBTAINING SCALED DATA.

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PREPARED FOR:

CITY OF MARGATE CRA
5790 MARGATE BOULEVARD

KEITH & ASSOCIATES, INC.
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State of Florida Certificate of
Authorization Number - 7928

STEPHEN D. WILLIAMS, P.E.
FLORIDA REG. NO. 32090
(FOR THE FIRM)

PROJECT No. 09359.01 FEBRUARY 2017

Drawing name: N:\09\09359.01 Winfield Boulevard - City of Margate\Engineering\Cad\09359.01-COVER SHEET.dwg Layout Name: GI-000 Plotted by: mcompton Plotted on: May 08, 2017 - 2:13pm

General Symbols

Existing	Proposed	Description
℄ ℄	℄ ℄	Centerline & Baseline of Survey or Construction
		Building Access (ADA)
		Building Access (NON-ADA)
A-1 24' WIDE	A-1 24' WIDE	Driveway Turnout Identification (Per FDOT Index 515) w/ Drive Width
CR-A	CR-A	Sidewalk Curb Ramp (Per FDOT Index 304)
		Proposed Section Marker
		Flag Pole
		GPS Point
		Hay Bales
		Mail Box
5.00	5.00	Major Contour Elevation
5.20	5.20	Minor Contour Elevation
		Parking Meter
		Property Line
10.00	14.48	Grade Elevation
	14.98 14.48	Top Of Curb Elevation/Pavement Elevation
		Soil Test Boring Hole
B.M. NO. 112	B.M. NO. 112	Survey Bench Mark

Line Types

Existing	Proposed	Description
		County Bound
		Demolition Line
		Easement Line
		Property Line
		Limited Access Line/Non-Vehicular Access
		Railroad
		Right Of Way
		Canal Or Drainage Ditch
		Shore Line
		Tree Line
C_X	C	Aerial Communication Line
C_X	C	Underground Communication Line
SD_X	SD	Underground Storm Drain Line (Double Line 24" And Over
SS_X	SS	Underground Sanitary Line
E_X	E	Aerial Electric Line
E_X	E	Underground Electric
W_X	W	Underground Water Line
FM_X	FM	Underground Force Main
12'	12'	Gate
X X	X X	Chain Link Fence
		Wood Fence
X X	X X	Metal Rail Fence
SF	SF	Silt Fence
		Staked Turbidity Barrier
		Turbidity Barrier
		Guard Rail
		Roadway Centerline
		2 - 4 Skip
		3 - 9 Skip
		6- 10 Skip
		10 - 30 Skip
		10 - 10 - 20 Skip
		Curb
		Curb And Gutter

Landscaping

Existing	Proposed	Description
		Bush
		Tree
		Palm Tree

Paving and Grading

Existing	Proposed	Description
		Flow Directional Arrow
		Pavement Marking Arrows
		Stop Bar
		Concrete Sidewalk
		Jogging Path
		Pavement Area
		Existing Pavement/Concrete/ Landscape Removal Area
		Milling And Resurfacing
		Detectable Warning (Truncated Domes) Per Florida Accessibility Code
		Soil Tracking Prevention Device

Drainage / Utilities

Existing	Proposed	Description
CB	CB	Catch Basin
		Yard Drain
CB	CB	Exfiltration Trench
CB	CB	Catch Basin With Filter Fabric Insert
		Curb Type 5
		Curb Type 6
		Pipe Culvert - Mitered End Section
		Pipe Culvert - Straight Endwall
		Pipe Culvert - U - Type Endwall
C E G D S	C E G D S	Manhole - Communication, Electric, Gas, Drn, San Sew
		Valve Box - Gas, San. Sew, Water, Non-Potable Water
		22.5 degree Bend
		45 degree Bend
		90 degree Bend
		Utility Crossing
		Fire Hydrant
		Proposed Bacteriological Sampling Point
PS #	PS #	Pump Station
GT	GT	Grease Trap
ST	ST	Septic Tank
DW	DW	Drainage Well
MW	MW	Monitoring Well
		Water Well
CO	CO	Sanitary Sewer Cleanout
BFP	BFP	Back Flow Preventor
J	J	Junction Box
E	E	Electric Handhole
ELEC	ELEC	Electric Meter
W	W	Water Meter
		Gate Valve
		Guy wire
		Light Pole
		Relocated Or Adjusted Light Pole
		Wood Power Pole
		Concrete Utility Pole
		Traffic Signal Pole (Concrete, Wood, Metal)
		Pedestrian Signal Head (Pole Or Pedestal Mounted)
		Post Mounted Sign
		Street Sign
		High Mast Lighting Tower
		Controller Cabinet (Base Mounted)
		Controller Cabinet (Pole Mounted)
		Traffic Signal Head (Span Wire Mounted)
		Traffic Signal Head (Pedestal Mounted)
		Traffic Signal Head (Mast Arm Mounted)
	N: 623025.4322	Coordinate values shown on proposed improvements are relative to the coordinate values indicated on the Right-of-Way, property corners or reference monument
	E: 850262.1786	

Abbreviations

General	
AADT	Annual Average Daily Traffic
ABAN	Abandon
ADJ	Adjust
APPROX.	Approximate
A.C.	Asphalt Concrete
ACCM PIPE	Asphalt Coated Corrugated Metal Pipe
BIT.	Bituminous
BC	Back Of Curb
BD.	Bound
BL	Baseline
BLDG	Building
BM	Benchmark
BO	By Others
BOS	Bottom Of Slope
BR.	Bridge
CAP	Corrugated Aluminum Pipe
CB	Catch Basin
CBCI	Catch Basin With Curb Inlet
CC	Cement Concrete
CCM	Cement Concrete Masonry
CEM	Cement
CI	Curb Inlet
CIP	Cast Iron Pipe
CLF	Chain Link Fence
CL	Centerline
CMP	Corrugated Metal Pipe
CO.	County
CONC	Concrete
CONT	Continuous
CONST	Construction
CR GR	Crown Grade
DHV	Design Hourly Volume
DI	Drop Inlet
DIA	Diameter
DIP	Ductile Iron Pipe
DWY	Driveway
ELEV (OR EL.)	Elevation
EMB	Embankment
EOP	Edge Of Pavement
EXIST (OR EX)	Existing
EXC	Excavation
F&C	Frame And Cover
F&G	Frame And Grate
FDN.	Foundation
FLDSTN	Fieldstone
GAR	Garage
GD	Ground
GI	Gutter Inlet
GIP	Galvanized Iron Pipe
GRAN	Granite
GRAV	Gravel
GRD	Guard
GV	Gate Valve
HDW	Headwall
HMA	Hot Mix Asphalt
HOR	Horizontal
HYD	Hydrant
INV	Invert
JCT	Junction
L	Length Of Curve
LB	Leach Basin
LP	Light Pole
LT	Left
MAX	Maximum
MB	Mailbox
MH	Manhole
MIN	Minimum
NIC	Not In Contract
NO.	Number
PC	Point Of Curvature
PCC	Point Of Compound Curvature
P.G.L.	Profile Grade Line

Abbreviations Continued

PI	Point Of Intersection
POC	Point On Curve
POT	Point On Tangent
PRC	Point Of Reverse Curvature
PROJ	Project
PROP	Proposed
PT	Point Of Tangency
PVC	Point Of Vertical Curvature
PVI	Point Of Vertical Intersection
PVT	Point Of Vertical Tangency
PVMT	Pavement
PWW	Paved Water Way
R	Radius Of Curvature
R&D	Remove And Dispose
RCP	Reinforced Concrete Pipe
RD	Road
RDWY	Roadway
REM	Remove
RET	Retain
RET WALL	Retaining Wall
ROW	Right Of Way
RR	Railroad
R&R	Remove And Reset
RT	Right
SHLD	Shoulder
SMH	Sewer Manhole
ST	Street
STA	Station
SSD	Stopping Sight Distance
SW	Sidewalk
T	Tangent Distance Of Curve/Truck %
TAN	Tangent
TEMP	Temporary
TC	Top Of Curb
TOS	Top Of Slope
TYP	Typical
UP	Utility Pole
VAR	Varies
VERT	Vertical
VC	Vertical Curve
WCR	Wheel Chair Ramp
WIP	Wrought Iron Pipe
WM	Water Meter/Water Main
X-SECT	Cross Section
Traffic Signal	
CAB.	Cabinet
CCVE	Closed Circuit Video Equipment
DW	Steady Don't Walk
FDW	Flashing Don't Walk
FR	Flashing Circular Red
FRL	Flashing Red Left Arrow
FRR	Flashing Red Right Arrow
FY	Flashing Circular Amber
FYL	Flashing Amber Left Arrow
FYR	Flashing Amber Right Arrow
G	Steady Circular Green
GL	Steady Green Left Arrow
GR	Steady Green Right Arrow
GSL	Steady Green Slash Left Arrow
GSR	Steady Green Slash Right Arrow
GV	Steady Green Vertical Arrow
OL	Overlap
PED	Pedestrian
PTZ	Pan, Tile, Zoom
R	Steady Circular Red
RL	Steady Red Left Arrow
RR	Steady Red Right Arrow
TR SIG	Traffic Signal
TSC	Traffic Signal Conduit
W	Steady Walk
Y	Steady Circular Amber
YL	Steady Amber Left Arrow

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Florida Certificate of Authorization # - 7928

BID / CONTRACT NO. :

REVISIONS

NO.	DESCRIPTION	DATE

PRELIMINARY PLAN
NOT FOR CONSTRUCTION
THESE PLANS ARE NOT FULLY PERMITTED AND ARE SUBJECT TO REVISIONS MADE DURING THE PERMITTING PROCESS. RESPONSIBILITY FOR THE USE OF THESE PLANS PRIOR TO OBTAINING PERMITS FROM ALL AGENCIES HAVING JURISDICTION OVER THE PROJECT WILL FALL SOLELY UPON THE USER.

WINFIELD BOULEVARD IMPROVEMENTS CITY OF MARGATE

SCALE:	AS NOTED
DATE ISSUED:	FEBRUARY10, 2017
DRAWN BY:	MC
DESIGNED BY:	MC
CHECKED BY:	SW

STEPHEN D. WILLIAMS, P.E.
FLORIDA REG. NO. 32090
(FOR THE FIRM)

SHEET TITLE

LEGEND

SHEET NUMBER

GI-001

SHEET of

PROJECT NO. 09359.01

Drawing name: N:\OPW\09359.01 Winfield Boulevard - City of Margate\Engineering\Cad\09359.01 GI-001-LEGEND AND GENERAL NOTES.dwg Layout Name: GI-001 LEGEND Plotted by: mcampton Plotted on Feb 14, 2017 - 1:37pm

CONSTRUCTION SPECIFICATIONS

Section 20 - General Specifications Paving Grading Drainage and Earthwork

20.General

20.1. It is the intent of these specifications to describe the minimum acceptable technical requirements for the materials and workmanship for construction of site improvements for this project. Such improvements may generally include, but not to be limited to, clearing, grading, paving, removal of existing pavement storm drainage, water lines and sanitary sewers.

20.2. It is the intent that the Florida Department of Transportation (FDOT) "Standard Specifications for Road and Bridge Construction: (current edition) together with "Supplemental Specifications to the Standard Specifications for Road and Bridge Construction" (current edition), and the FDOT Roadway and Traffic Design Standards (current edition) be used where applicable for the various work, and that where such wording therein refers to the State of Florida and its Department of Transportation and personnel, such wording is intended to be replaced with the wording which would provide proper terminology; thereby making such "Standard Specifications for Road and Bridge Construction" together with the "FDOT Roadway and Traffic Design Standards" as the "Standard Specifications" for this project. If within a particular section, another section, article or paragraph is referred to, it shall be part of the Standard Specifications also. The Contractor shall abide by all local and State laws, regulations and building codes which have jurisdiction in the area.

20.3. The Contractor shall furnish all labor, materials and equipment and perform all operations required to complete the construction of a paving and drainage system as shown on the plans, specified herein, or both. It is the intent to provide a complete and operating facility in accordance with these specifications and the construction drawings. The material and equipment shown or specified shall not be taken to exclude any other incidentals necessary to complete the work.

20.4. All labor, materials, and methods of construction shall be in strict accordance with the plans and construction specifications and the minimum engineering and construction standards adopted by the unit of government which has jurisdiction and responsibility for the construction. Where conflicts or omissions exist, the jurisdictional government Engineering Department's standards shall govern. Substitutions and deviations from plans and specifications shall be permitted only when written approval has been issued by the Engineer.

20.5. Guarantee - all materials and equipment to be furnished and/or installed by the Contractor under this contract, shall be guaranteed for a period of (l) one year from the date of final acceptance thereof, against defective materials, design and workmanship. Upon receipt of notice from the owner of failure of any part of the guaranteed equipment or materials, during the guarantee period, the affected part or materials shall be replaced promptly with new parts or materials by the contractor, at no expense to the owner. In the event the Contractor fails to make necessary replacement or repairs within (7) seven days after notification by the owner, the owner may accomplish the work at the expense of the contractor.

21.Earthwork

21.1. All areas within the project limits shall be cleared and grubbed prior to construction. This shall consist of the complete removal and disposal of all trees, brush, stumps, roots, grass, weeds, rubbish and all other obstructions resting on or protruding through the surface of the existing ground to a depth of 1'. All work shall be in accordance with section 110 of the Standard Specifications.

21.2. None of the existing limerock material from demolished pavement is to be incorporated in the new limerock base, unless noted in plans. The existing limerock material from demolished pavement may be incorporated into the stabilized subgrade / subbase, or stabilized shoulder.

21.3. Fill material shall be classified as A-l, A-3, or A-2-4 in accordance with AASHTO N--145 and shall be free from vegetation and organic material. Not more than 12% by weight of fill material shall pass the no. 200 sieve.

21.4. All fill material in areas not to be paved shall be compacted to 95% of the maximum density as determined by AASHTO T-99.

21.5. All material of construction shall be subject to inspection and testing to establish conformance with the specifications and suitably for the uses intended. The Contractor shall notify the Engineer at least 24 hours prior to the time he will be ready for an inspection or test. The Contractor shall follow City and County inspection procedures. The Contractor shall not proceed with any phase of work dependent on an inspection or test of an earlier phase of work, prior to that test or inspection passing. The Contractor shall be responsible for providing certified material test results to the Engineer of record prior to the release of final certification by the Engineer. Test results must include, but may not be limited to, densities for subgrade and limerock, utilities, excavation, asphalt gradation reports, concrete cylinders, etc.

21.6. When encountered, muck shall be completely removed from the center line (10) ten feet beyond the edge of pavement each side. All such material shall be replaced by approved granular fill.

21.7. When encountered within drainage swales, hardpan shall be removed to full depth for a width of (5) five feet at the invert and replaced with granular materials.

21.8. All underground utilities and drainage installations shall be in place prior to subgrade compaction and pavement construction.

21.9. Ground adjacent to roadway/pavement having runoff shall be graded (2) two inches lower than the edge of pavement to allow for the placement of sod.

21.10. Site grading elevations shall be within 0.1' of the required elevation for non paved areas and all areas shall be graded to drain without ponding.

21.11. The Contractor shall perform all excavation, fill, embankment and grading to achieve the proposed plan grades including typical road sections, side slopes and canal sections. All work shall be in accordance with section 120 of the Standard Specifications. If fill material is required in excess of that generated by the excavation, the Contractor shall supply this material as required from off-site.

21.12. A 2" blanket of top soil shall be placed over all areas to be sodded or seeded and mulched within the project limits unless otherwise indicated on the plans.

21.13. Sod shall be St. Augustine unless otherwise indicated on the plans, and shall be placed on the graded top soil and watered to insure satisfactory condition upon final acceptance of the project.

22.Drainage

22.1. Inlets - all inlets shall be the type designated on the plans, and shall be constructed in accordance with section 425 of the Standard Specifications. All inlets and pipe shall be protected during construction to prevent siltation in the drainage systems by way of temporary plugs and plywood or plastic covers over the inlets. The entire drainage system shall be cleaned of all debris prior to final acceptance.

22.2. Pipe specifications: the material type is shown on the drawings by one of the following designations:

- RCP = reinforced concrete pipe, ASTM designation C--76, section 941 of the Standard Specifications.
- CMP = corrugated metal (aluminum) pipe, ASTM designation M-196.
- CMP (smooth lined) = corrugated metal aluminum pipe, (smooth lined) ASTM designation M-196.
- SCP = slotted concrete pipe, sections 941 and 942, of the Standard Specifications.
- PVC = polyvinyl chloride pipe.
- PCMP = perforated cmp, section 945, of the Standard Specifications
- Corrugated High Density Polyethylene Pipe (HDPE) (12 Inches to 60 Inches), shall meet the requirements of FDOT Specification section 948-2.3.

22.3. Pipe backfill - requirements for pipe backfill crossing roads or parking areas shall be as defined in the section 125-8, of the Standard Specifications. Pipeline backfill shall be placed in 6 inch lifts and compacted to 100% of the standard proctor (AASHTO T--99 specifications)

22.4. Location of drainage structures shall govern, and pipe length may have to be adjusted to accomplish construction as shown on these plans.

22.5. Distance and lengths shown on plans and profile drawings are referenced to the center of structures.

22.6. Filter fabric shall be Mirafi, Typar or equal conforming to section 985 of the Standard Specifications.

23.Asphalt Paving

23.1. Where new asphalt meets existing asphalt, the existing asphalt shall be saw cut to provide a straight even line. Prior to removing curb or gutter, the adjacent asphalt shall be saw cut to provide a straight even line.

23.2. Internal asphalt paving constructed on existing sandy soils shall be constructed with a 12" subgrade, compacted to a minimum density of 100% maximum density as determined by AASHTO T-99. The compacted subgrade shall be constructed in the limits shown on the plans. All subgrade shall have an LBR of 40 unless otherwise noted.

23.3. Asphaltic concrete surface course shall be constructed to the limits shown on the plans. The surface course shall consist of the thickness and type asphaltic concrete as specified in the plans. All asphaltic concrete shall be in accordance with sections 320, 327, 330, 334, 336, 337, 337, 338, 339 and 341 of the Standard Specifications.

23.4. Limerock base shall be prepared, compacted and graded and shall be in accordance with section 200 of the Standard Specifications. All limerock shall be compacted to 98% per AASHTO T-180 and have not less than 70% of carbonates of calcium and magnesium unless otherwise designated. The Engineer shall inspect the completed base course and the Contractor shall correct any deficiencies and clean the base course prior to the placement of the prime coat. A tack coat will also be required if the Engineer finds that the primed base has become excessively dirty or the prime coat has cured to the extent of losing bounding effect prior to placement of the asphaltic concrete surface course. The prime and tack coats shall be in accordance with section 300 of the Standard Specifications.

23.5. Limerock base material shall be placed in maximum 6" lifts. Bases greater than 6" shall be placed in two equal lifts. If, through field tests, the Contractor can demonstrate that the compaction equipment can achieve density for the full depth of a thicker lift, and if approved by the engineer, the base may be constructed in successive courses of not more than 8 inches (200 mm) compacted thickness.

23.6. Asphalt edges that are not curbed shall be saw cut to provide a straight even line to the dimensions shown on plans.

24.Concrete Construction

24.1. Concrete sidewalk shall be in accordance with section 522 of the Standard Specifications and in accordance with F.D.O.T. Roadway and Traffic Design Standards, index no. 310. Concrete sidewalk shall be 4" thick, unless otherwise not and constructed on compacted subgrade, with 1/2" expansion joints placed at a maximum of 75', unless otherwise noted on plans. Crack control joints shall be 5' on center. All concrete sidewalks that cross driveways shall be 6" thick, unless otherwise noted on plans.

24.2. Sidewalk Curb ramps hall be in accordance with F.D.O.T. Roadway and Traffic Design Standards, index no. 304.

24.3. Concrete curb shall be constructed to the limits shown on the plans. The concrete shall have a minimum compressive strength of 4000 p.s.i. at 28 days and shall be in accordance with section 520 of the Standard Specifications. Concrete curbing shall be in accordance with F.D.O.T. Roadway and Traffic Design Standards, index no. 300.

Section 30 - Water distribution and sanitary sewer force mains.

30. Materials:

Note: If materials list here on are in conflict with utility owner, material owner requirements shall govern.

30.1. All water main pipe, including fittings, shall be color coded or marked using blue as a predominant color to differentiate drinking water from reclaimed or other water. Underground plastic pipe shall be solid-wall blue pipe, shall have a co-extruded blue external skin, or shall be white or black pipe with blue stripes incorporated into, or applied to, the pipe wall; and underground metal or concrete pipe shall have blue stripes applied to the pipe wall. Pipe striped during manufacturing of the pipe shall have continuous stripes that run parallel to the axis of the pipe, that are located at no greater than 90-degree intervals around the pipe, and that will remain intact during and after installation of the pipe. If tape or paint is used to stripe pipe during installation of the pipe, the tape or paint shall be applied in a continuous line that runs parallel to the axis of the pipe and that is located along the top of the pipe; for pipes with an internal diameter of 24 inches or greater, tape or paint shall be applied in continuous lines along each side of the pipe as well as along the top of the pipe.

30.2. Ductile iron pipe for water distribution mains shall conform to ANSI/AWWA standard C151/A21.51-xx latest revision, "ductile iron pipe centrifugally cast in metal molds or sand-lined molds" with a minimum wall thickness of class 51 (pressure class 350) unless otherwise noted in the plans. Ductile iron pipe shall be cement lined and seal coated in accordance with ANSI/AWWA standard C104/A21.4-xx latest revision. The pipe shall be adapted for use with class 250 fittings for all sizes. Water main shall be colored blue in accordance with Florida State Statutes.

30.3. Ductile iron pipe for sewage force mains shall conform to ANSI/AWWA standard C151/A21.51-xx latest revision, "ductile iron pipe centrifugally cast in metal molds or sand- lined molds" with a minimum wall thickness of class 51 (pressure class 350) unless otherwise noted in the plans. Ductile iron pipe shall be interior ceramic epoxy lined and exterior coated with the manufacturer's coating system (Protecto 401 ceramic epoxy with a minimum dry film thickness of 40 mils and an outside coating of either coal tar epoxy or asphalt). Cement mortared linings are not appropriate for this application.

30.4. All pipe & fittings on the lift station sites shall be ductile iron conforming to the same specifications as above for sewage force mains except that flanged ductile iron pipe & fittings shall be used inside valve pits and wet wells. Flanged pipe and fittings shall conform to ANSI/AWWA C115/a21.15-xx latest revision and ANSI/AWWA C110/A21.10-xx latest revision. The following thickness classes shall be adhered to: 4" - 12" - class 52, 14" & larger - class 51.

30.5. PVC pressure pipe for sizes 4" through 12" and shall conform to ANSI/AWWA standard C900-xx latest revision. PVC pressure pipe shall be made from class 12454-a or class 12454-b virgin material and conform with the outside diameter of cast iron pipe with a minimum wall thickness of dr series 18. Ultra violet degradation or sun bleached pipe will be cause for rejection. Water main shall be colored blue in accordance with Florida State Statutes. Force main shall be impregnated with green pigment. Reuse main shall be impregnated with purple pigment.

30.6. Ductile iron fittings for water distribution mains shall conform to ANSI/AWWA standard C110/A21.10-xx latest revision. Fittings 4" and larger shall be cement lined and seal coated in accordance with ANSI/AWWA standard C104/A21.4-xx latest revision. Water Main fitting shall be colored blue in accordance with florida state statutes.

30.7. Cast iron and ductile iron fittings for sewage force mains shall conform to ANSI/AWWA standard C110/A21.10-xx latest revision. Fittings 4" and larger shall be coated in accordance with the requirements of ductile iron pipe for sewage force mains.

30.8. Joints for bell and spigot ductile iron pipe and fittings shall conform to ANSI/AWWA standard C111/A21.11-xx latest revision. Mechanical joint or push-on joint to be rubber gasket compression-type. Special fittings and joints shall be considered for specific installation subject to the approval of the engineer.

30.9. Joints for PVC pressure pipe shall be bell and spigot push-on rubber gasket type only. No solvent weld or threaded joints will be permitted.

30.10. Water distribution system restraint: all fittings and specific pipe joints shall be restrained as outlined below:

- Joint restraint
- Push-on P.V.C. EBAA iron series 1600
- Push-on D.I.P. EBAA iron series 1700
- tr-flex by U.S. Pipe or
- flex ring by American
- Fittings w/ D.I.P. EBAA iron series 1100 megalug
- Fittings w/ P.V.C. EBAA iron series 2000 megalug
- Length of restrained pipe shall be as indicated on restrained joint pipe detail. (see water & sewer detail sheet)

30.11. Sewage force main system restraint: all fittings and specific pipe joints shall be restrained as outlined below

- Joint restraint
- Push-on P.V.C. EBAA iron series 1600
- Push-on D.I.P. EBAA iron series 1700
- tr-flex by U.S. Pipe or
- flex ring by American
- Fittings w/ D.I.P. EBAA iron series 1100 megalug
- Fittings w/ P.V.C. EBAA iron series 2000 megalug
- Length of restrained pipe shall be as indicated on restrained joint pipe detail. (see water & sewer detail sheet)

30.12. Water distribution valves shall be gate valves, iron body, fully resilient seat bronzed mounted non-rising stem, rated at 200 p.s.i. and conforming to ANSI/AWWA C509-xx latest revision, and shall have mechanical joints.

30.12.1. Gate valves 4" and larger shall be Mueller A-2360, American 250 line or Clow F-6100, conforming to ANSI/AWWA C500-xx latest revision or approved equal.

30.12.2. Tapping valves shall be Mueller T-2360 or approved equal.

30.12.3. Gate valves 3" or less shall be Nibco T-133 or T-136 with malleable hand wheels. No substitutions allowed.

30.13. Tapping sleeves shall be Mueller H615, Clow F- 2505 or approved equal.

30.14. Valve boxes shall be U.S. foundry 7500 or approved equal painted blue with the designation "water".

30.15. Retainer glands for D.I.P. shall conform to ANSI/AWWA C111/A21.11-xx latest revision. All glands shall be manufactured from ductile iron as listed by underwriters laboratories for 250 psi minimum water pressure rating. Clow corporation model f-1058, standard fire protection equipment company or approved equal.

30.16. Metallic tape shall be installed one (1) foot above installed PVC pressure pipe to ensure that the pipe can be located after burial.

30.17. Dresser couplings shall be regular black couplings with plain gaskets for galvanized steel pipe. They shall be dresser style 90. No substitutions allowed.

30.18. Fire hydrants shall be Mueller centurion traffic type A-423 with 5 1/4" internal valve opening or approved equal.. Pumper nozzle to be 18" from finished grade. All hydrants to be installed with control valve. Retainer glands are preferred for restraining. Fire hydrant shall comply with ANSI/AWWA C502-xx latest revision. Fire hydrants shall be painted in accordance with NFPA #291 or per agency standards having jurisdiction. Blue raised reflective pavement marker (rpm) shall be used to identify fire hydrant location. The placement of the rpm to be at the centerline of the outside roadway lane.

30.19. Sewage force main valves shall be plug valves which shall be of the non-lubricated, eccentric type with resilient faced plugs, port areas for valves 20 inches and smaller shall be at least 80% of full pipe area. Port area of valves 24 inches and larger shall be at least 70% of full pipe area. The body shall be of semi-steel (ASTM A-126 C1.b) and shall have bolted bonnet which gives access to the internals of the valve. Seats shall be welded overlay of high nickel content or a stainless steel plate locked in the body cavity. If a plate is used, it shall be replaceable through the bonnet access. Bearings shall be permanently lubricated of stainless steel, bronze or Teflon lined, fiber glass backed Duralon. Bearing areas shall be isolated from the flow with grit seals. Valves shall have packing bonnets where the shaft protrudes from the valve and the packing shall be self-adjusting chevron type which can be replaced without removing the bonnet. All nuts, bolts, springs and washers shall be stainless steel.

30.20. Plug valves shall be designed for a working pressure of 150 p.s.i. the valve and actuator shall be capable of satisfactory operation in either direction of flow against pressure drops up to and including 100 p.s.i. (for plug valves over 12" in diameter). Valves shall be bubble tight in both directions at 100 psi differential. Plug valves over 12" in diameter shall have worm gear operators. The operating mechanism shall be for buried service with a 2 inch square operating nut.

30.21. Plug valves are to be installed with the seat pointed towards the upstream flow, when specified.

30.22. Swing check valves for water, sewage, sludge, and general service shall be of the outside lever and spring or weight type, in accordance with ANSI/AWWA C 508-xx latest revision swing-check valves for waterworks service, 2" through 24" NPS, unless otherwise indicated, with full-opening passages, designed for a water-working pressure of 150 PSI they shall have a flanged cover piece to provide access to the disc.

30.23. High density polyethylene pipe (HDPE) for water distribution mains shall conform to AWWA C906 standard, latest revision. Pipes shall be color-coded blue, minimum 40 feet standard lengths.

31.Service connection:

31.1. Service saddles shall be fusion bonded plastic coated ductile iron (ASTM A536) with stainless steel straps, saddles shall be double strap type.

31.2. Service lines shall be polyethylene (PE 3408), 200 p.s.i rated, DR9. Pipe joints shall be of the compression type totally confined grip seal and coupling nut.

31.3. Corporation stops shall be manufactured of brass alloy in accordance with ASTM B-62 with threaded ends, as manufactured by Ford ballcorp, catalog # 1100 or approved equal.

31.4. Curb stops shall be Ford v63-44w-x" latest revision or approved equal.

31.5. Meter stops shall be 90 degree lockwing type and shall be of bronze construction in accordance FV63-777W-X" latest revision with ASTM B-62. Meter stops shall be closed bottom design and resilient "0" ring sealed against external leakage at the top. Stops shall be equipped with a meter coupling nut on the outlet sides, as manufactured by ford or approved equal.

32. Installation:

32.1. Where restrained pipe joints are required due to fittings, appurtenances, etc., pipe material shall be D.I.P.

32.2. All PVC pipe shall be installed in accordance with the uni-bell plastic pipe association "guide for installation of PVC pressure pipe for municipal water distribution system," and ANSI/AWWA C605-xx latest revision standard.

32.3. All dip shall be installed in accordance with ANSI/ C600-xx latest revision.

32.4. All water mains shall typically be laid with a minimum 36" cover for PVC and 30" cover for dip.

32.5. Detector tape shall be laid 18 inches above all water and sewer lines. A 14 gauge multi-strand wire shall be attached to all nonconductive water mains to facilitate location. An extra 4 feet of wire shall be provided at all valves, blow-offs, hydrants, etc. The wire shall be tested for continuity at the pressure test.

32.6. Pipe deflection shall not exceed 50% of the maximum deflection recommended by the manufacturer.

32.7. A continuous and uniform bedding shall be provided. Backfill material shall be placed in accordance with the plans and specifications.

32.8. All valves shall be installed with adjustable cast iron valve boxes with the word "water" or "sewer", as applicable, cast in the cover. U.S. foundry or approved equal.

33.Testing:

33.1. Before any physical connections and acceptance for operation to the existing water mains are made, the complete water system shall be flushed, pressure tested and disinfected. Copies of passing bacteriological results and pressure test results must be submitted to, and approved by, the engineer, utility owner, and health department. Hydrostatic testing of new mains shall be performed at a minimum starting pressure of 150 p.s.i. for two hours in accordance with ANSI/AWWA C600-05 (hydrostatic test). The pressure test shall not vary more than 5 p.s.i. during the test. The allowable leakage during the pressure test shall be less than the number of gallons per hour as determined by the formula:

L = (sd(p)1/2)/148,000.

In which L equals the allowable leakage in gallons per hour. S equals length of pipe (linear feet), d equals nominal diameter of pipe (inches) and p equals the average test pressure (pounds per square inch gauge). Maximum length of test pipe section should be 2000 feet. The water system shall be disinfected in accordance with the ANSI/AWWA C651-05 (water main bacteriological tests).

33.2. The pressure test shall be witnessed by a representative of the utility owner and the engineer of record.

33.3. For water distribution pipes, sampling points shall be provided by the contractor at the locations shown on the plans.

33.4. For water distribution pipes, disinfection and bacteriological testing shall be in accordance with ANSI/AWWA C651-14 (water main bacteriological tests). Maximum distance between sampling points shall be as follows:

- Transmission mains: every 1200 feet
- Branch mains: every 1000 feet
- Isolated mains < 1000 feet: 2 sample points
- Isolated mains > 1000 feet: 3 sample points

Section 40 - Gravity Sanitary Sewer Collection System

40.General:

40.1. Manhole, valve box, meter box and other structure rim elevations within the limits of construction are to be adjusted to conform to plan grades proposed in these plans. If no other individual cost item is included in the contract schedule for a particular structure adjustment.

40.2. Distance and lengths shown on plans and profile drawings are referenced to the center of structures.

41. Materials:

Note: If materials list here on are in conflict with utility owner, material owner requirements shall govern.

41.1. All PVC sewer pipe and fittings shall be non-pressure polyvinyl chloride (PVC) pipe conforming to ASTM D 3034, SDR 35, with push-on rubber gasket joints.

41.2. Ductile iron pipe shall conform to ANSI/AWWA C151/A21.51-xx latest revision, "ductile iron pipe centrifugally cast in metal molds or sand-lined molds" with wall thickness class 51 for 8" and above, class 52 for 4" and 6", unless otherwise directed by the engineer. Ductile iron pipe shall be epoxy lined or coated with the manufacturer's coating system as approved by the engineer of record and the local municipality or utility owner. In either case, the engineer's review and approval is required for either alternative prior to construction. Cement mortared linings are not appropriate for this application.

41.3. All ductile iron fittings shall conform to ANSI/AWWA standard C110/A21.10-xx latest revision. All fittings and accessories shall be epoxy lined and as manufactured or supplied by the pipe manufacturer or approved equal.

41.4. Manholes shall be precast per ASTM C 478 and in accordance with the plans and specifications.

41.5. Manholes are to be sealed with type II sulphate resistant cement or approved equal - no molding plaster.

41.6. Joints for bell and spigot ductile iron pipe and fittings shall conform to ANSI/AWWA standard C111/A21.11-xx latest revision. Mechanical joint or push-on joint to be rubber gasket compression- type.

41.7. PVC clean-outs to have screw type access plug. Long radius wye connections and fittings shall be used in order to access clean-out operations.

41.8. Cleanouts shall be installed at all sewer services exceeding 75' in length (every 75') with a clean out at the property line, easement line, or 5' from a building. The contractor shall coordinate the location of the building cleanout (5' from the building) and elevation of the end of the sewer service with the building plumbing contractor. Cleanouts shall be the same size as the service lateral in which they are installed.

42. Installation:

42.1. PVC sewer pipe shall be laid in accordance with ASTM D 2321 and the Uni-Bell plastic pipe association's "recommended practice for the installation of PVC sewer pipe."

42.2. D.I.P. shall be installed in accordance with ANSI/AWWA C-600-xx latest revision.

42.3. Pipe to manhole connection to be Fernco neoprene boot couplings with stainless steel accessories or approved equal.

42.4. Manholes shall be set plumb to line and grade on firm subgrade providing uniform bearing under the base.

42.5. All openings and joints shall be sealed watertight.

42.6. Two coats of Koppers 300-m, first red, second one black, shall be applied to the inside of all manholes and shall be applied in accordance with the manufacturer's specifications (16 mils per coat). Coating as required by utility owner or engineer shall be applied to the outside of the manhole. The interior coats shall be applied after sewer lamping of lines. After the application of each coat, the utility owner and engineer shall inspect the manholes. The inspection shall be scheduled a minimum of 48 hours prior to inspection.

43.Testing: Testing of gravity sewer mains and laterals shall be in accordance with the utility owner's minimum design and construction standards latest revision.

43.1. After construction of the sewer system, the engineer may require a visual infiltration and/or exfiltration test to be performed on the entire system or any part thereof.

43.2. An air test may be substituted for the water exfiltration test, upon approval of the engineer.

43.3. The allowable limits of sewer pipe leakage for gravity sewer mains shall not exceed 100 gallons per inch of inside pipe diameter per mile per day for any section tested. No visible leakage shall be allowed.

43.4. The installed sewers may require video inspections.

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Florida Certificate of
Authorization # - 7928

BID / CONTRACT NO. :

REVISIONS

NO.	DESCRIPTION	DATE

PRELIMINARY PLAN
NOT FOR CONSTRUCTION

THESE PLANS ARE NOT FULLY PERMITTED AND ARE SUBJECT TO REVISIONS MADE DURING THE PERMITTING PROCESS. RESPONSIBILITY FOR THE USE OF THESE PLANS PRIOR TO OBTAINING PERMITS FROM ALL AGENCIES HAVING JURISDICTION OVER THE PROJECT WILL FALL SOLELY UPON THE USER.

WINFIELD BOULEVARD IMPROVEMENTS CITY OF MARGATE

SCALE:	AS NOTED
DATE ISSUED:	FEBRUARY10, 2017
DRAWN BY:	MC
DESIGNED BY:	MC
CHECKED BY:	SW

STEPHEN D. WILLIAMS, P.E.
FLORIDA REG. NO. 32090
(FOR THE FIRM)

SHEET TITLE

CONSTRUCTION SPECIFICATIONS

SHEET NUMBER

GI-002

SHEET of

PROJECT NO. 09359.01

Drawing name: N:\09\09359.01 Winfield Boulevard -City of Margate\Engineering\Cadd\09359.01-GI-001-LEGEND AND GENERAL NOTES.dwg Layout Name: GI-002 SPECIFICATIONS Plotted by: mcrompton Plotted on: Feb 14, 2017 - 1:36pm

General Notes

This construction project may or may not include all items covered by these notes and specifications, i.e. paving, grading, drainage lines, water lines, or sanitary sewer lines. See plans for detailed project scope. Notes and specifications on this sheet refer to paving, grading, drainage, water, and sanitary sewer, and are intended for this projects scope of work and for reference purposes for other work items that may be required due to unforeseen existing conditions or required remedial work.

1. Specific Site Notes

1.1. County and "City" in these notes refers to County and City in which project resides.

1.2. State in these notes refers to the State of Florida.

1.3. Existing topographic information in the plans is based on survey data and best available information. See project survey and notes on plan sheets regarding the source of the topographic information.

2. Applicable Codes

2.1. All construction and materials shall conform to the standards and specifications of the city, county, and all other jurisdictional, State and national codes where applicable.

2.2. In the event of a conflict between the general notes and construction specifications in these plans, and the contract documents and specifications in the specification booklet, the contractor shall submit written request for clarification.

2.3. All construction shall be done in a safe manner and in strict compliance with all the requirements of the Federal occupational safety and health act of 1970, and all State and jurisdictional safety and health regulations.

2.4. The contractor shall be required to comply with Federal, State, County, and City laws, codes, and regulations.

2.5. All handicap accessible areas to conform to the requirements of the Americans with Disabilities Act (ADA), State ADA codes, and Florida Building Code ADA codes latest edition.

2.6. Trench safety act

2.6.1. All trench excavation shall be performed in accordance with chapter 90-96 of the laws of Florida (the trench safety act).

2.6.2. All trench excavation in excess of 5 feet in depth shall be undertaken in accordance with O.S.H.A. standard 29 cfr. Section 1926.650 subpart p.

2.6.3. The contractor shall submit with his contract a completed, signed, and notarized copy of the trench safety act compliance statement. The contractor shall also submit a separate cost item identifying the cost of compliance with the applicable trench safety codes.

2.6.4. A trench safety system, if required, shall be designed by the excavation contractor utilizing a specialty engineer as required.

3. Construction Notes:

3.1. Contractor shall tie to existing grade by evenly sloping from closest proposed grade provided to existing grade at limits of construction, unless otherwise noted on the plans. If no limit of work line is indicated, slope to adjacent property line or right-of-way line, as applicable.

3.2. Unless otherwise indicated on the plans, all existing manholes, catch basins, meters and other structures, whether indicated on the plans or not shall be adjusted to match the new grade, by the contractor.

3.3. The curb shall be sloped to accommodate the new pavement, catch basin and grate, and the surface flow pattern.

3.4. The contractor shall use care when cutting the existing asphalt pavement and during excavations, so that the existing catch basins and grates that are to remain will not be damaged.

3.5. The contractor shall maintain the roadway slope when resurfacing the roadway. The edge of pavement shall match the new gutter lip per FDOT index 300.

3.6. The new sidewalk shall be constructed in accordance with the given elevations and at the proper slopes depicted in the specifications, details and standards. Existing driveways and other features shall be matched when possible as directed by the engineer.

3.7. Radii shown are to the edge of pavement.

3.8. All bench mark monuments within the limits of construction shall be protected and referenced by the contractor in the same way as public land corners.

3.9. All excess material is to be disposed by the contractor within 72 hours.

3.10. In areas where the base is exposed by the milling operation, the contractor shall restore the base to its original thickness and structural capacity before paving over such areas. This includes but is not limited to restoring original degree of compaction, moisture content, composition, stability, and intended slope. If paving will not take place the same day the base is exposed and reworked, the base shall be sealed according to the governing standards and specifications. Any additional work resulting from the contractor's failure to protect the exposed base as stated above in order to restore the original structural capacity shall be the contractor's cost.

3.11. The contractor is to maintain existing signage during construction operations, in order to facilitate emergency vehicle traffic.

3.12. The topographic survey included with this set of plans reflects pre-demolition conditions and does not reflect the site conditions after demolition. The contractor is fully and solely responsible in determining the required earthwork for the proposed development of the site. This includes, but is not limited to, any excavation/dredge and fill activities required at any phase of the project. The contractor shall use the final approved (released for construction) plans, surveys, geotechnical reports, and any other available information for determining the amount of excavation/dredging and filling required. Any quantities included in the approved permits were estimated by the engineer for purposes of obtaining the permit and under no circumstances shall be used by the contractor in lieu of performing their own earthwork calculations required for cost estimating and bidding the project.

3.13. The contractor shall be responsible for reading and familiarizing themselves with any and all available geotechnical reports prepared by others and/or any recommendations written or implied by the geotechnical engineer for this project. The geotechnical conditions and recommendations outlined in these reports are in force and in full effect as part of the proposed improvements. The contractor is responsible for ensuring that all the work associated with this project is in compliance with the geotechnical engineer's recommendations. Keith and associates, Inc. is not responsible for the suitability or unsuitability of the soils encountered. It is the contractor's responsibility to ensure that the means and methods of construction used can and will allow for the successful completion of the required site improvements.

3.14. The contractor shall ensure that the available geotechnical information is sufficient for his complete understanding of the soil conditions for the site. If additional geotechnical investigation is required by the contractor, this additional work shall be considered incidental to the contract and no additional compensation shall be allowed.

3.15. The contractor shall be responsible for the repair and restoration of existing pavement, pipes, conduits, sprinkler heads, cables, etc., and landscaped areas damaged as a result of the contractor's operations and/or those of his subcontractors and shall restore at no additional cost.

3.16. The contractor shall not bring any hazardous materials onto the project. Should the contractor require such for performing the contracted work, the contractor shall request, in writing, permission from the owner, city and engineer. The contractor shall provide the owner, city and engineer with a copy of the material safety data sheet (MSDS) for each hazardous material proposed for use. The project engineer shall coordinate with the owner and city prior to issuing written approval to the contractor.

3.17. Any known or suspected hazardous material found on the project by the contractor shall be immediately reported to the city and/or engineer, who shall direct the contractor to protect the area of known or suspected contamination from further access. The city and/or engineer are to notify the owner/engineer of the discovery. The owner/engineer will arrange for investigation, identification, and remediation of the hazardous material. The contractor shall not return to the area of contamination until approval is provided by the engineer.

3.18. The contractor shall contact the appropriate city engineering inspector and engineer 48 hours in advance of the event to notify the city of construction start up, or to schedule all required tests and inspections including final walk-throughs.

4. Preconstruction Responsibilities

4.1. All utility / access easements to be secured prior to construction.

4.2. No construction may commence until the appropriate permits have been obtained from all municipal, State, County, and Federal agencies.

4.3. All required governmental agency building permits to be obtained by the contractor prior to any construction activity.

4.4. Contractor to coordinate construction scheduling for connection to the existing water and sewer lines with the utility department that owns and/or maintains the water and sewer lines.

4.5. Prior to the start of construction, the owner shall submit an NPDES construction general permit (CGP) "notice of intent (N.O.I.) to use Generic Permit for storm water discharge from construction activities form (DEP form 62-621.300(4)(b)) to FDEP notices center. The contractor will be responsible for (1) implementation of the storm water pollution prevention plan (SWPPP) that was required to be developed prior to NOI submittal, and (2) retention of records required by the permit, including retention of a copy of the SWPPP at the construction site from the date of project initiation to the date of final site stabilization. A "notice of termination (N.O.T.) of generic permit coverage" form (DEP form 62-621.300(6)) must be submitted to FDEP to discontinue permit coverage, subsequent to completion of construction. For additional information see FDEP website: http://www.dep.state.fl.us/water/ storm water/npdes.

4.6. Prior to construction or installation, 5 sets of shop drawings shall be submitted for review as required for the following items listed below, but not limited to:

- Drainage: Catch basins, manholes, headwalls, grates/tops, yard drains.
- Water: Fire hydrants, valves, backflow preventer, DDCV, meter box.
- Sewer: Manholes, lift stations (wetwell, hatches, valves, pump data, electrical panel)

4.0.1. Catalogue literature shall be submitted for drainage, water and sewer pipes, fittings, and appurtenances.

4.0.2. Prior to submitting shop drawings to the engineer, the contractor shall review and approve the drawings, and shall note in red any deviations from the engineer's plans or specifications.

4.0.3. Individual shop drawings for all precast structures are required. Catalogue literature will not be accepted for precast structures.

4.1. Contractor to submit maintenance of traffic plan(s) in accordance with FDOT and Broward county requirements, and submit for approval prior to beginning construction.

5. Inspections / Testing:

5.1. The contractor shall notify in writing the owner, the County, the engineer of record, & any other governmental agencies having jurisdiction at least 48 hours prior to beginning construction and prior to required inspections of the following items, where applicable:

- Clearing and earthwork
- Storm drainage systems
- Sanitary sewer systems
- Water distribution systems
- Subgrade
- Limerock base
- Asphalt or concrete pavement
- Sidewalks, concrete flatwork/curbing
- Landscaping
- Pavement marking and signage
- Signalization
- Site lighting
- Electrical and communication lines
- Utility conduits
- Irrigation
- Final

5.1. The owner, engineer, and jurisdictional permitting agencies may make inspections of the work at any time. The contractor shall cooperate fully with all inspections.

5.3. Testing - all testing required by the plans and specifications shall be performed by a licensed / FDOT qualified testing company. Required test for asphalt and limerock shall be taken at the direction of the engineer or the jurisdictional governmental agency in accordance with the plans and specifications.

6. Temporary Facilities

6.1. It shall be the contractor's responsibility to arrange for or supply temporary water service, sanitary facilities, communications, and electricity, for his operations and works, cost included under mobilization.

6.2. Contractor shall construct temporary fencing to secure construction areas at all times, cost included in mobilization.

6.3. Contractor to obtain a secure staging area and obtain all necessary approvals from the owner.

6.4. Contractor shall construct and maintain temporary lighting as required to light the construction project limits at all times, to at least the same lighting intensity levels as the existing conditions.

6.5. The contractor shall maintain access to adjacent properties at all times.

7. Project Progress and Closeout

7.1. During construction, the project site and all adjacent areas shall be maintained in a neat and clean manner, and upon final clean-up, the project site shall be left clear of all surplus material or trash. The paved areas shall be broom swept clean.

7.2. The contractor shall restore or replace any public or private property (such as highway, driveway, walkway, and landscaping), damaged by his work, equipment, or employees, to a condition at least equal to that existing immediately prior to the beginning of construction. Suitable materials and methods shall be used for such restoration.

7.3. Material or debris shall be hauled in accordance with NPDES permit and jurisdictional laws.

7.4. All land survey property monuments or permanent reference markers, removed or destroyed by the contractor during construction shall be restored by a State of Florida registered land surveyor at the contractor's expense.

7.5. All unpaved surfaces disturbed as a result of construction activities shall be graded, sodded, & restored to a condition equal to or better than that which existed before the construction.

8. Project record documents:

8.1. During the daily progress of the job, the contractor shall record on his set of construction drawings the location, length, material and elevation of any facility not built according to plans. This copy of the "as-built" shall be submitted to engineer for project record.

8.2. Upon completion of drainage improvements and limerock base construction (at least 48 hours before placing asphalt pavement) the contractor shall furnish the engineer of record "as-built" plans for these improvements, showing the locations and pertinent grades of all drainage installations and the finished rock grades of the road crown and edges of pavement at 50 foot intervals, including locations and elevations of all high and low points.

8.3. Upon completion of construction, and prior to final acceptance, the contractor shall submit to the engineer of record one complete set of all "as-built" contract drawings. These drawings shall be marked to show "as-built" construction changes, dimensions, locations, and elevations of all improvements.

8.4. "As-built" drawings of water lines and force mains shall include the following information:

8.4.1. Top of pipe elevations every 100 LF.

8.4.2. Locations and elevations of all fittings including bends, tees, gate valves, double detector check valves, fire hydrants, and appurtenances.

8.4.3. All connections to existing lines.

8.4.4. Ends of all water services at the buildings where the water service terminates.

8.5. "As-built" drawings of gravity sanitary sewer lines shall include the following information:

8.5.1. Rim elevations, invert elevations, length of piping between structures, and slopes.

8.5.2. The stub ends and cleanouts of all sewer laterals shall be located horizontally and vertically.

8.6. "As-built" drawings of all drainage lines shall include the following information:

8.6.1. Rim elevation, invert elevation, length of piping between structures, and control structure elevations if applicable.

8.6.2. The size of the lines.

8.6.3. Drainage well structure shall include, but not be limited to, top of casing elevation, top and bottom elevations of the structure and baffle walls, rim elevations and pipe inverts.

8.7. "As-built" drawings of construction areas shall include the following:

8.7.1. Rock elevations at all high, and low points, and at enough intermediate points to confirm slope consistency.

8.7.2. Rock elevations and concrete base elevations shall be taken at all locations where there is a finish grade elevation shown on the design plans.

8.7.3. All catch basin and manhole rim elevations.

8.7.4. Finish grade elevations in island areas.

8.7.5. "As-built" elevations shall be taken on all paved and unpaved swales, at enough intermediate points to confirm slope consistency and conformance to the plan details.

8.7.6. Lake and canal bank "as-built" drawings shall include a key sheet of the lake for the location of cross sections. Lake and canal bank cross sections shall be plotted at a minimum of every 100 lf, unless otherwise specified. "as-built" drawings shall consist of the location and elevation of the top of bank, edge of water, and the deep cut line, with the distance between each shown on the drawing.

8.7.7. Retention area "as-built" elevations shall be taken at the bottom of the retention area and at the top of bank. If there are contours indicated on the design plans, then they shall be included in "as-built" drawings as well.

8.8. Upon completion of the work, the contractor shall prepare "as-built" drawings on full size, 24" x 36" sheets. All "as-built" information shall be put on the latest engineering drawings. Eight (8) sets of blue or black line drawings shall be submitted. These drawings shall be signed and sealed by a Florida registered professional engineer or land surveyor.

8.9. An electronic copy of these "as-built" drawings shall be submitted to the engineer of record in AutoCAD, version 2008 or later.

9. Utility Notes

9.1. Contractor is responsible for utility verification prior to fabrication.

9.2. The contractor is advised that properties adjacent to the project have electric, telephone, gas, water and/or sewer service laterals which may not be shown in plans. The contractor must request the location of these lateral services from the utility companies.

9.3. The contractor shall use hand digging when excavating near existing utilities. Extreme caution shall be exercised by the contractor while excavating, installing, backfilling or compacting around the utilities.

9.4. The contractor shall notify and obtain an underground clearance from all utility companies and governmental agencies at least 48 hours prior to beginning any construction. The contractor shall obtain a Sunshine811.com Certification clearance number and field markings at least 48 hours prior to beginning any excavation.

- Prior to commencement of any excavation, the contractor shall comply with Florida statute 553.851 for the protection of underground gas pipelines.

9.1. For street excavation or closing or for alteration of access to public or private property, the contractor shall notify:

- Roadway jurisdictional engineering / public works authority.
- County transit authority
- School board transportation authority
- Jurisdictional fire department dispatch
- Jurisdictional police department(s)

9.6. The contractor shall use extreme caution working under, over, and around existing electric lines. The contractor shall contact the electric provider company to verify locations, voltage, and required clearances, onsite, in right-of-ways, and in easements, prior to any construction in the vicinity of existing lines.

9.7. Location and size of all existing utilities and topography (facilities) as shown on construction drawings are drawn from available records. The engineer assumes no responsibility for the accuracy of the facilities shown or for any facility not shown. It is the contractor's responsibility to determine the exact location (vertical & horizontal) of any existing utilities and topography prior to construction. The contractor shall verify the elevations and locations of all existing facilities, in coordination with all utility companies, prior to beginning any construction operations. If an existing facility is found to conflict with the proposed construction, the contractor shall immediately notify the engineer so that appropriate measures can be taken to resolve the conflict.

9.8. The contractor shall coordinate the work with other contractors in the area and any other underground utility companies required. The contractor shall coordinate relocation of all existing utilities with applicable utility companies.

10. Signing and Pavement Markings

10.1. All signing and pavement markings installed as part of these plans shall conform to the Federal highway administration (FHWA) "manual on uniform traffic control devices" (MUTCD), County Traffic Design Standards and FDOT design standards as a minimum criteria.

10.2. Match existing pavement markings at the limits of construction.

10.3. Removal of the existing pavement markings shall be accomplished by water blasting or other approved methods determined by the engineer.

10.4. Incorrectly placed paint or thermoplastic pavement markings over friction course will be removed by milling and replacing the friction course a minimum width of 18 in at the contractor's expense. The engineer may approve an alternative method if it can be demonstrated to completely remove the markings without damaging the asphalt.

10.5. Place all retro-reflective pavement markers in accordance with standard index 17352 and / or as shown in the plans.

10.6. Caution should be exercised while relocating existing signs to prevent unnecessary damage to signs. If the sign is damaged beyond use, as determined by the engineer, signs shall be replaced by the contractor at his expense.

10.7. All existing signs that conflict with construction operations shall be removed, stockpiled, and relocated by the contractor. Sign removal shall be directed by the engineer.

10.8. Relocated sign support system must meet the current design standard.

10.9. The contractor shall provide an inventory of existing signs to remain or to be relocated prior to starting the job and forward this list to the engineer. Contractor shall notify if there are any missing or damage signs that the plans show to remain or to be relocated.

10.10. All roadway pavement markings shall be thermoplastic in accordance with FDOT specifications section 711.

10.11. Hand dig the first four feet of sign foundation.

10.12. All signs shall meet all of the following:

- Meet the criteria outlined in Section 2A.08 of the 2009 MUTCD
- Meet the specifications outlined in Section 700 and 994 of the latest FDOT Standard Specifications.
- Consist of materials certified to meet the retroreflective sheeting requirements outlined in the current version of ASTM D4956 for type-XI retroreflective sheeting materials made with prisims, except for school zone and pedestrian signs which shall be comprised of retroreflective fluorescent yellow-green sheeting certified to meet ASTM D4956 Type IV retroreflective sheeting materials.
- Consist of retroreflective sheeting materials that have a valid FDOT Approved Product List (APL) certification for specification 700 Highway Signing for FDOT sheeting Type XI (or type IV for school and pedestrian signs).

10.1. Patch attachment hardware, such as countersunk screws or rivet heads, with retro reflective buttons that match the color and sheeting material of the finished sign panel including the background, legend or border.

10.2. Ensure the outside corner of sign is concentric with border. Ensure white borders are mounted parallel to the edge of the sign. Ensure black borders are recessed from the edge of the sign.

10.3. Lay out permanent final striping that leaves no visible marks at time of final acceptance.

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REVISIONS

NO.	DESCRIPTION	DATE

PRELIMINARY PLAN
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WINFIELD BOULEVARD IMPROVEMENTS CITY OF MARGATE

SCALE:	AS NOTED
DATE ISSUED:	FEBRUARY10, 2017
DRAWN BY:	MC
DESIGNED BY:	MC
CHECKED BY:	SW

STEPHEN D. WILLIAMS, P.E.
FLORIDA REG. NO. 32090
(FOR THE FIRM)

SHEET TITLE

GENERAL NOTES

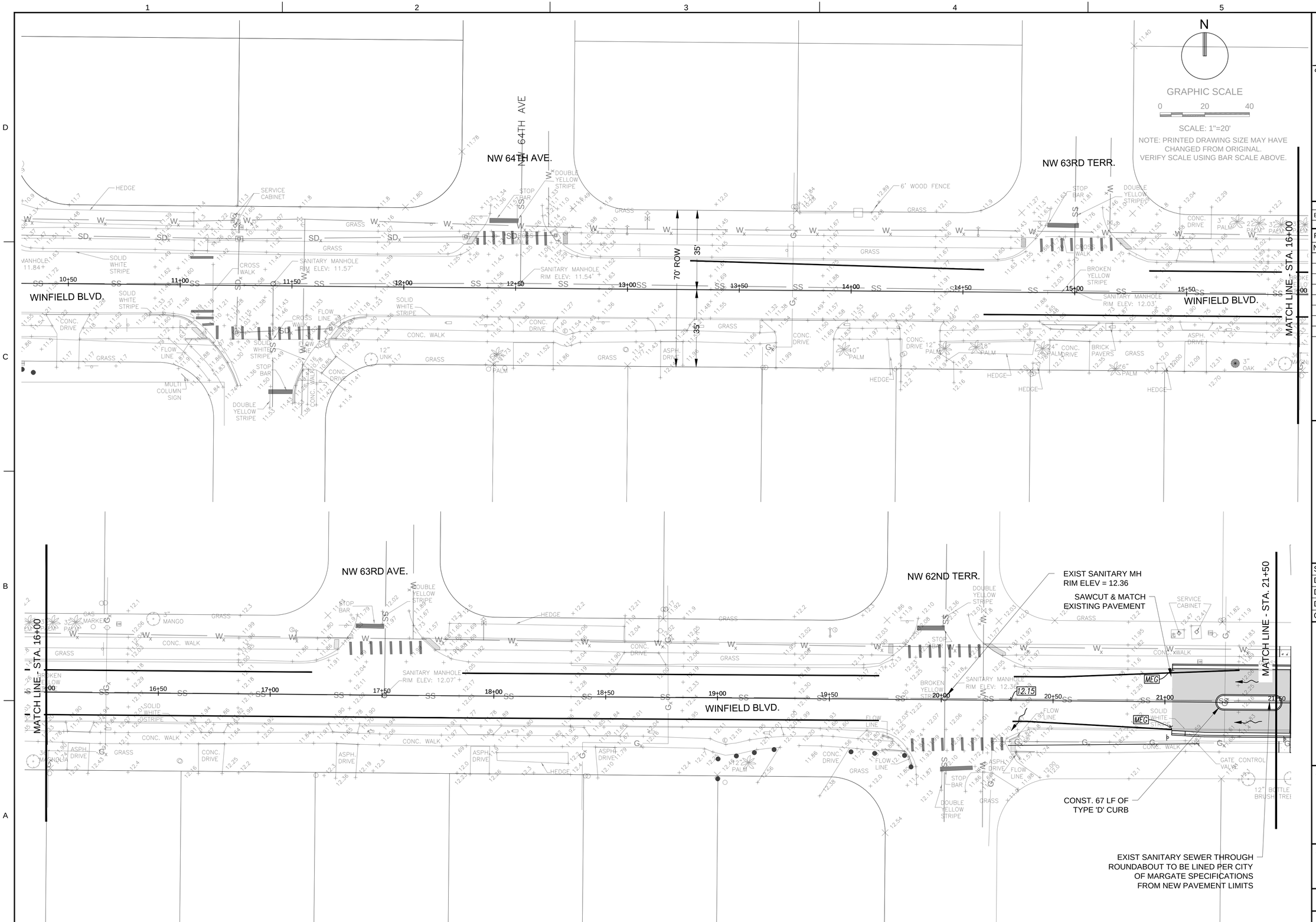
SHEET NUMBER

GI-003

SHEET of

PROJECT NO. 09359.01

Drawing name: N:\09\09359.01 Winfield Boulevard -City of Margate\Engineering\Cadd\09359.01-GI-001-LEGEND AND GENERAL NOTES.dwg Layout Name: GI-003 GENERAL NOTES Plotted by: mcrompton Plotted on: Feb 14, 2017 - 1:35pm



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SHEET TITLE

ENGINEERING PLANS

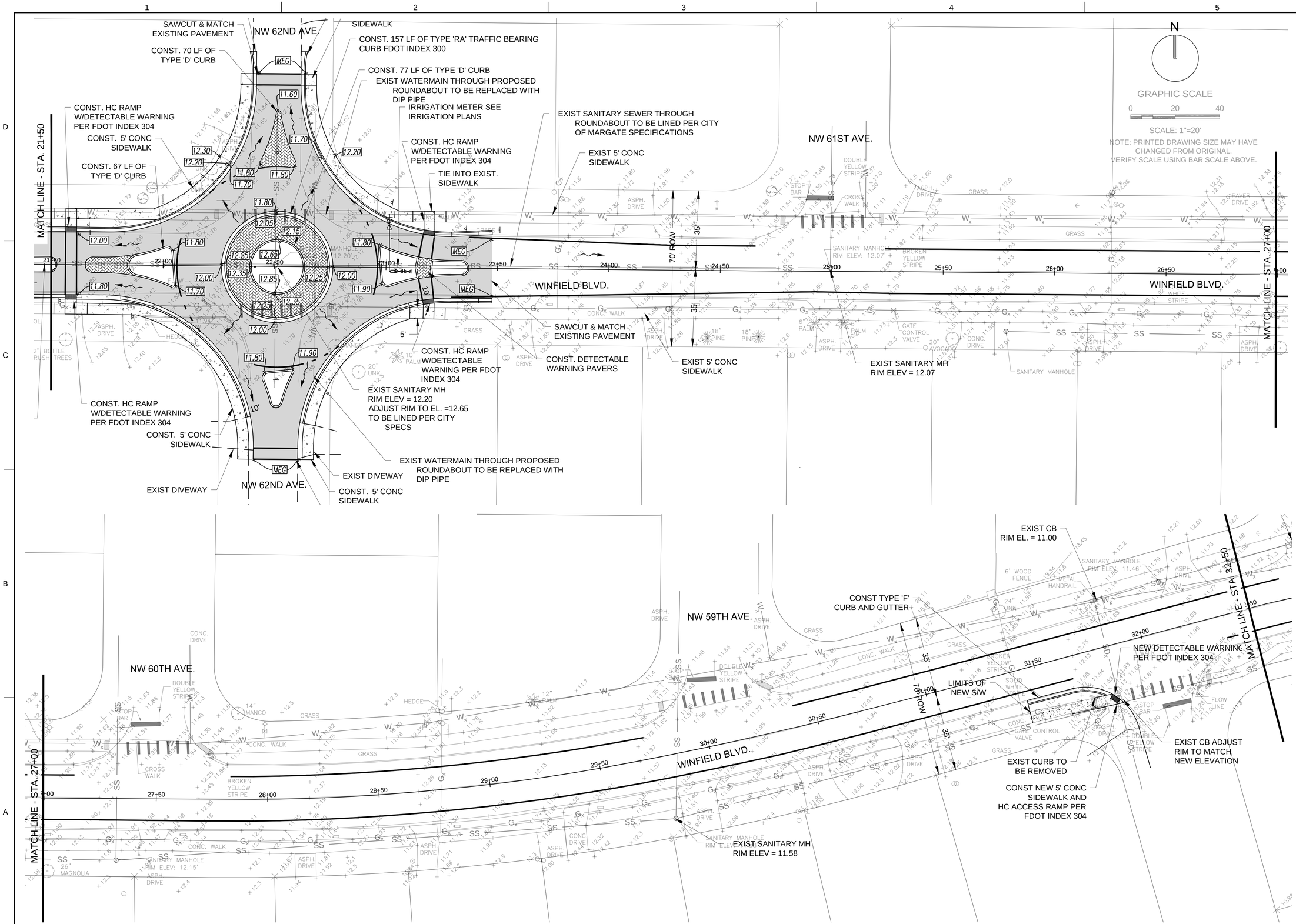
SHEET NUMBER

CP-101

SHEET of

PROJECT NO. 09359.01

Drawing name: N:\09\09359.01 Winfield Boulevard -City of Margate\Engineering\Cad\09359.01-CP-101-PKD PLANS.dwg Layout name: CP-101 Plotted by: mcrompton Plotted on: May 09, 2017 - 8:58am



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SHEET TITLE

ENGINEERING PLANS

SHEET NUMBER

CP-102

SHEET of 16

PROJECT NO. 09359.01

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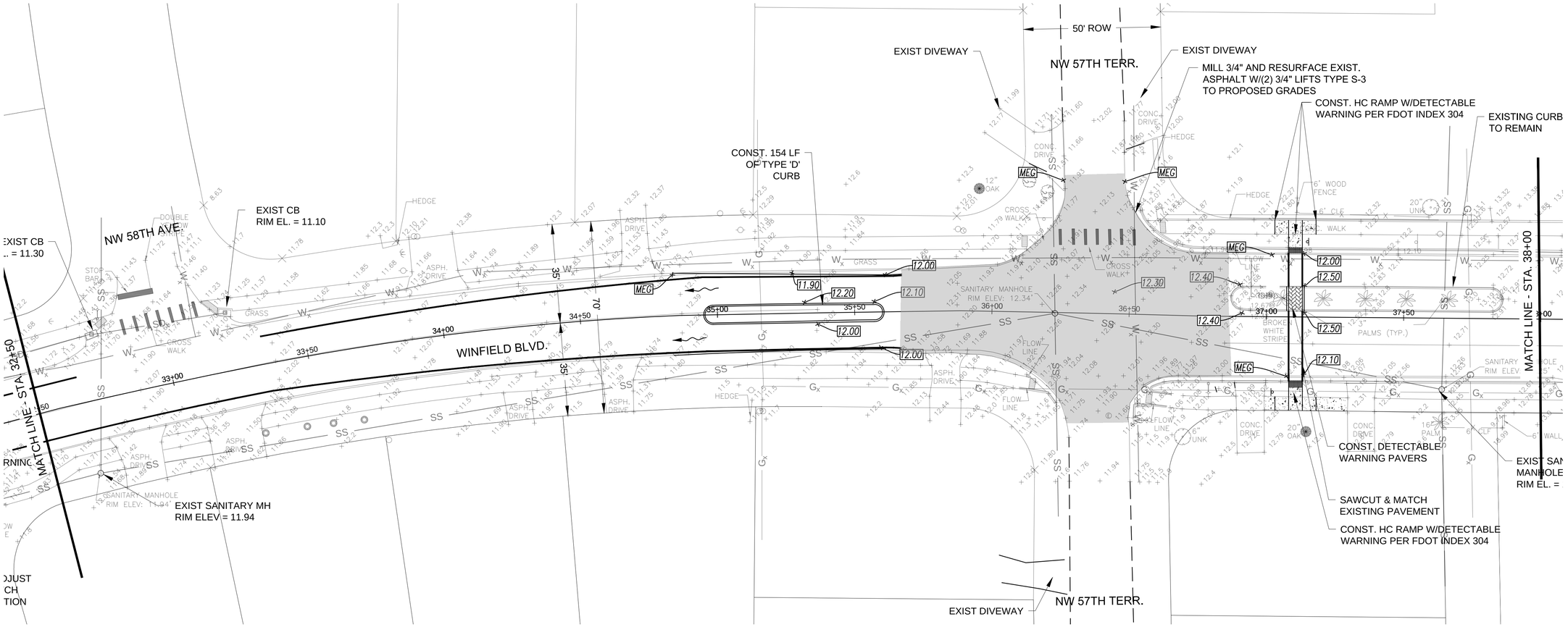

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GRAPHIC SCALE

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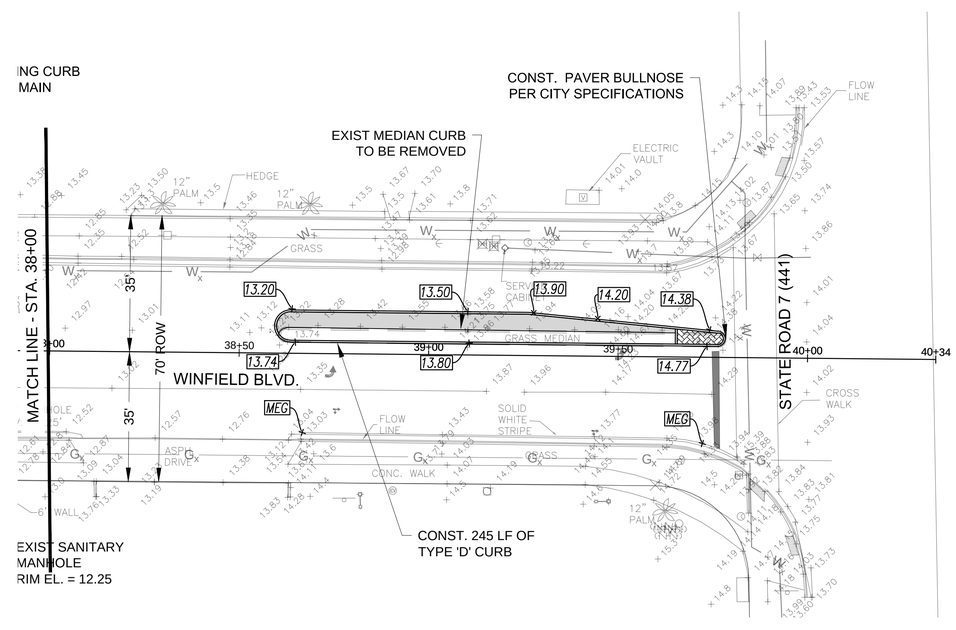

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SHEET TITLE

ENGINEERING PLANS

SHEET NUMBER

CP-103

SHEET of

PROJECT NO. 09359.01

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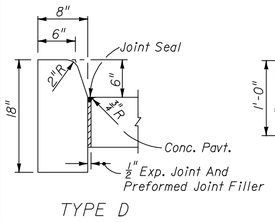

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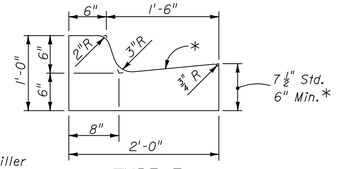

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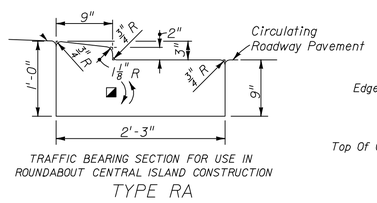
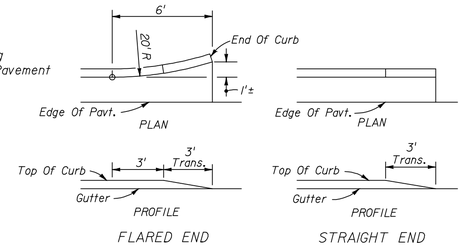


TRAFFIC BEARING SECTION FOR USE IN ROUNDABOUT CENTRAL ISLAND CONSTRUCTION

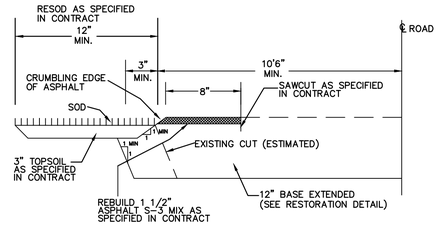
TYPE RA



FLARED END

STRAIGHT END

CURB AND GUTTER TYPES E & F



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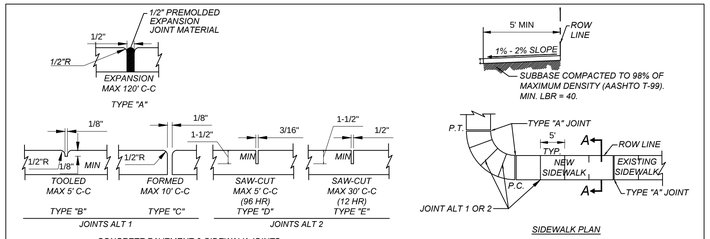


CONCRETE PAVEMENT & SIDEWALK JOINTS

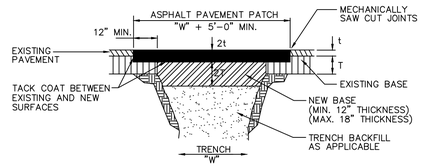
SIDEWALK PLAN

NOTES:

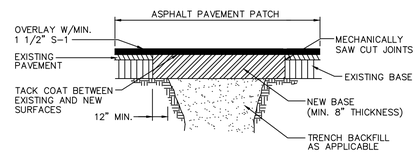
1. Sidewalk construction is to comply with the latest FDOT standards for sidewalks and ADA curb ramps, per FDOT index 304 and 310.
2. Provide either joint alternate 1 or 2. If using joint alternate 2: construct type "E" joints at not more than 30' intervals - within 12 hours after finishing, construct 1/2" expansion, provide joint type "A", with non-rising performed joint filler at not more than 120' intervals, construct remaining joints within 96 hours after finishing.
3. Provide 1/2" expansion joint type "A", with non-rising performed joint filler where concrete pavement abuts concrete curbs, driveways and other fixed objects.
4. Sidewalk thickness shall be 4" thick unless otherwise noted. Thickness shall be 6" through driveways and on all commercial sidewalk applications.
5. The use of steel reinforcement is not permitted.
6. Concrete to be 2,500 psi in 28 days.
7. Cure all concrete with clean sand, plastic membrane or other approved method.
8. Sidewalk foundation shall be compacted to a firm, even surface, true to grade and cross section, and shall be moist at the time concrete is placed.
9. All construction shall conform to local construction codes and standards.
10. Sidewalk slopes shall meet the requirements of the Americans with Disabilities Act. Minimum transverse slope 0.01 ft./ft. And maximum transverse slope 0.02 ft./ft. toward swale or gutter. Longitudinal slope shall conform to ADA requirements.
11. The vertical deviation for a new sidewalk shall not be more than ½".
12. The vertical deviation for a new maintenance access structure cover shall not be more than ¼".
13. Where truncated domes are used, stamped concrete is not permitted.
14. Sidewalk shall have a transverse hair broom finish.

7 SIDEWALK DETAIL

SCALE: NOT TO SCALE

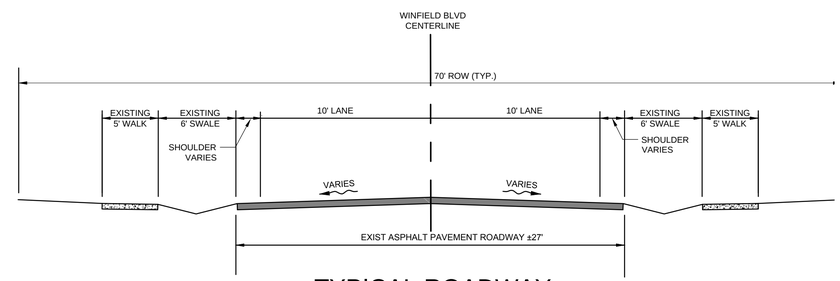


PERPENDICULAR ROAD CROSSINGS (TYPE III)



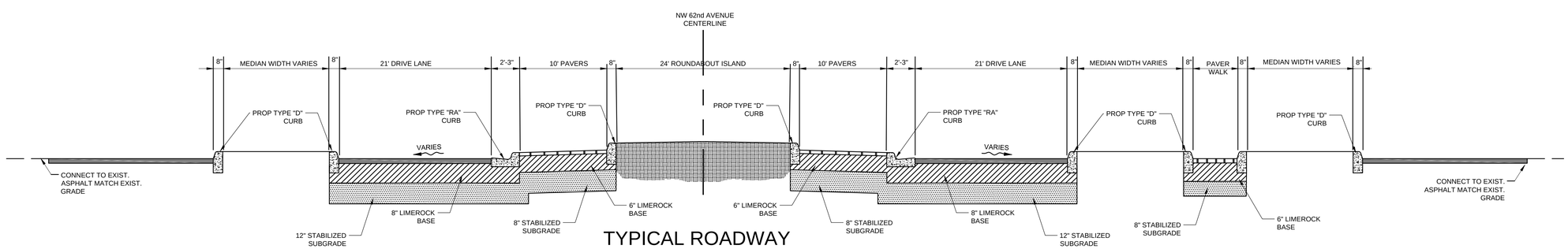
STANDARD PARALLEL ROAD RESTORATION (TYPE IV)

SURFACE RESTORATION



PROPOSED SIDEWALKS TO BE 6" THICK

TYPICAL ROADWAY SECTION



TYPICAL ROADWAY SECTION AT ROUNDABOUT NW 62nd AVENUE

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WINFIELD BOULEVARD IMPROVEMENTS CITY OF MARGATE

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CHECKED BY:	SW

STEPHEN D. WILLIAMS, P.E.
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(FOR THE FIRM)

SHEET TITLE

ENGINEERING DETAILS

SHEET NUMBER

CP-501

SHEET of

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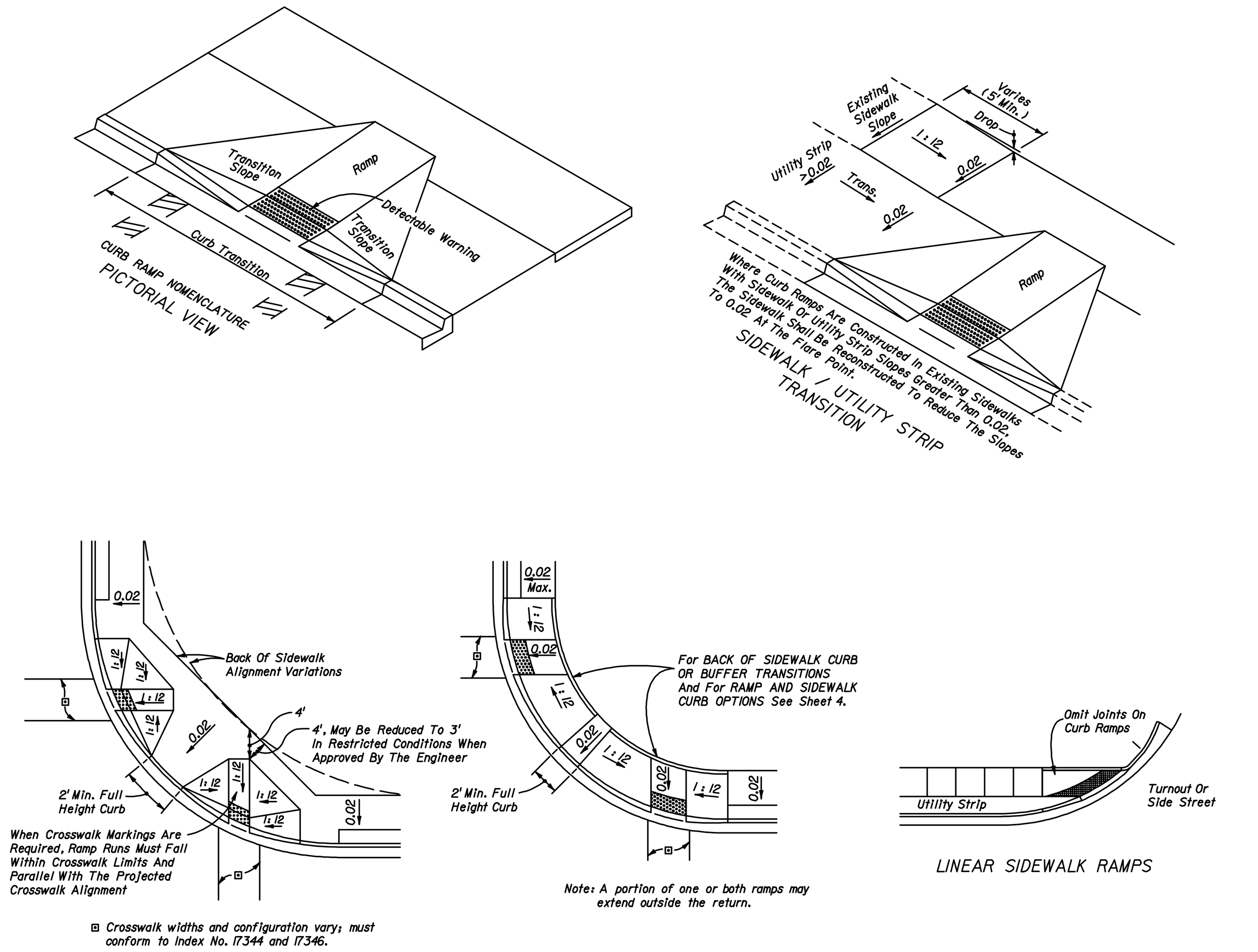
Drawing name: N:\09\09359.01 Winfield Boulevard -City of Margate\Engineering\Cadd\09359.01-CP-501-PICD DETAILS.dwg Layout Name: CP-501 Plotted by: amizrahi Plotted on: Aug 08, 2017 - 10:41am



TYPICAL PLACEMENT OF PUBLIC SIDEWALK CURB RAMPS AT CURBED RETURNS

GENERAL NOTES

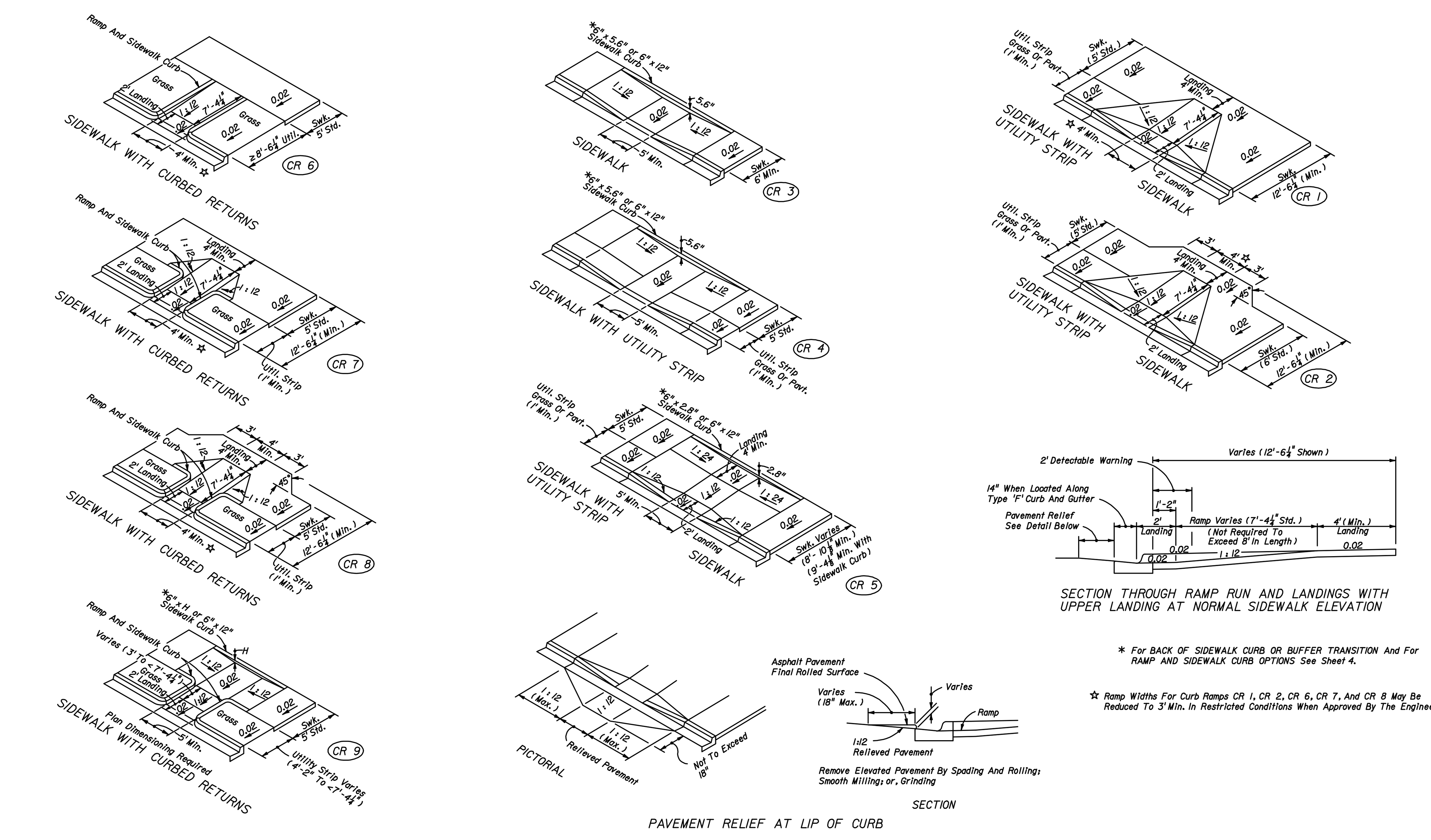
1. Public sidewalk curb ramps shall be constructed in the public right of way at locations that will provide continuous unobstructed pedestrian circulation paths to pedestrian areas, elements and facilities in the public right of way and to accessible pedestrian routes on adjacent sites. Curbed facilities with sidewalks and those without sidewalks are to have curb ramps constructed at all street intersections and at turnouts that have curbed returns. Partial curb returns shall extend to the limit prescribed by Index No. 515 to accommodate curb ramps. Ramps constructed at locations without sidewalks shall have a landing constructed at the top of each ramp, see Sheet 5.
2. The location and orientation of curb ramps shall be as shown in the plans.
3. Curb ramp running slopes at unrestrained sites shall not be steeper than 1 : 12 and cross slope shall be 0.02 or flatter. Transition slopes shall not be steeper than 1 : 12.

   When altering existing pedestrian facilities where existing site development precludes the accommodation of a ramp slope of 1 : 12, a running slope between 1 : 12 and 1 : 10 is permitted for a rise of 6" maximum and a running slope of between 1 : 10 and 1 : 8 is permitted for a rise of 3" maximum. Where compliance with the requirements for cross slope cannot be fully met, the minimum feasible cross slope shall be provided.

   Ramp running slope is not required to exceed 8' in length, except at sites where the plans specify a greater length.
4. If a curb ramp is located where pedestrians must walk across the ramp, then the walk shall have transition slopes to the ramp; the maximum slope of the transitions shall be 1 : 12. Ramps with curb returns may be used at locations where other improvements provide guidance away from that portion of curb perpendicular to the sidewalk; improvements for guidance are not required at curb ramps for linear pedestrian traffic.
5. Curb ramp detectable warning surfaces shall extend the full width of the ramp and in the direction of travel 24" from the back of curb. Detectable warning surfaces shall be constructed in accordance with Specification 527. See Sheet 6 of 6 for detectable warning layouts. Transition slopes are not to have detectable warnings.
6. Where a curb ramp is constructed within existing curb, curb and gutter and/or sidewalk, the existing curb or curb and gutter shall be removed to the nearest joint beyond the curb transitions or to the extent that no remaining section of curb or curb and gutter is less than 5' long. The existing sidewalk shall be removed to the nearest joint beyond the transition slope or walk around or to the extent that no remaining section of sidewalk is less than 5' long. For details of Concrete Sidewalk See Index 310.
7. Alpha-numeric identifications are for reference (plans, permits, etc.).
8. Public sidewalk curb ramps are to be paid for as follows:
   Ramps, reconstructed sidewalks, walk around sidewalks, sidewalk landings and sidewalk curbs are to be paid for under the contract unit price for Sidewalk Concrete, (__" Thick), SY. Curb transitions and reconstructed curbs are to be paid for under the contract unit price for the parent curb, i.e., Curb Conc., (Type __), LF or Curb and Gutter Conc., (Type __), LF.

   When a separate pay item for the removal and disposal of existing curb, curb and gutter, and/or sidewalk is not provided in the plans, the cost of removal and disposal of these features shall be included in the contract unit price for new curb, curb and gutter and/or sidewalk respectively.
9. Acceptance Criteria for Detectable Warnings:
   (a) The ramp detectable warning surface shall be complete and uniform in color and texture
   (b) 90% of the individual truncated domes must comply with the design criteria
   (c) There may be no more than 4 non-complying domes in any one square foot of surface
   (d) No two adjacent domes may be non-compliant
   (e) Surface may not deviate more than 0.10" from a true plane
10. All sidewalk surfaces, ramp surfaces, and landings with a cross slope shown in this Index to be 0.02 shall be 0.02 maximum. All ramp surfaces and ramp transition slopes with a slope shown in this Index to be 1:12 shall be 1:12 maximum.

PUBLIC SIDEWALK CURB RAMPS — Sheet No. 1 of 6 — Index No. 304

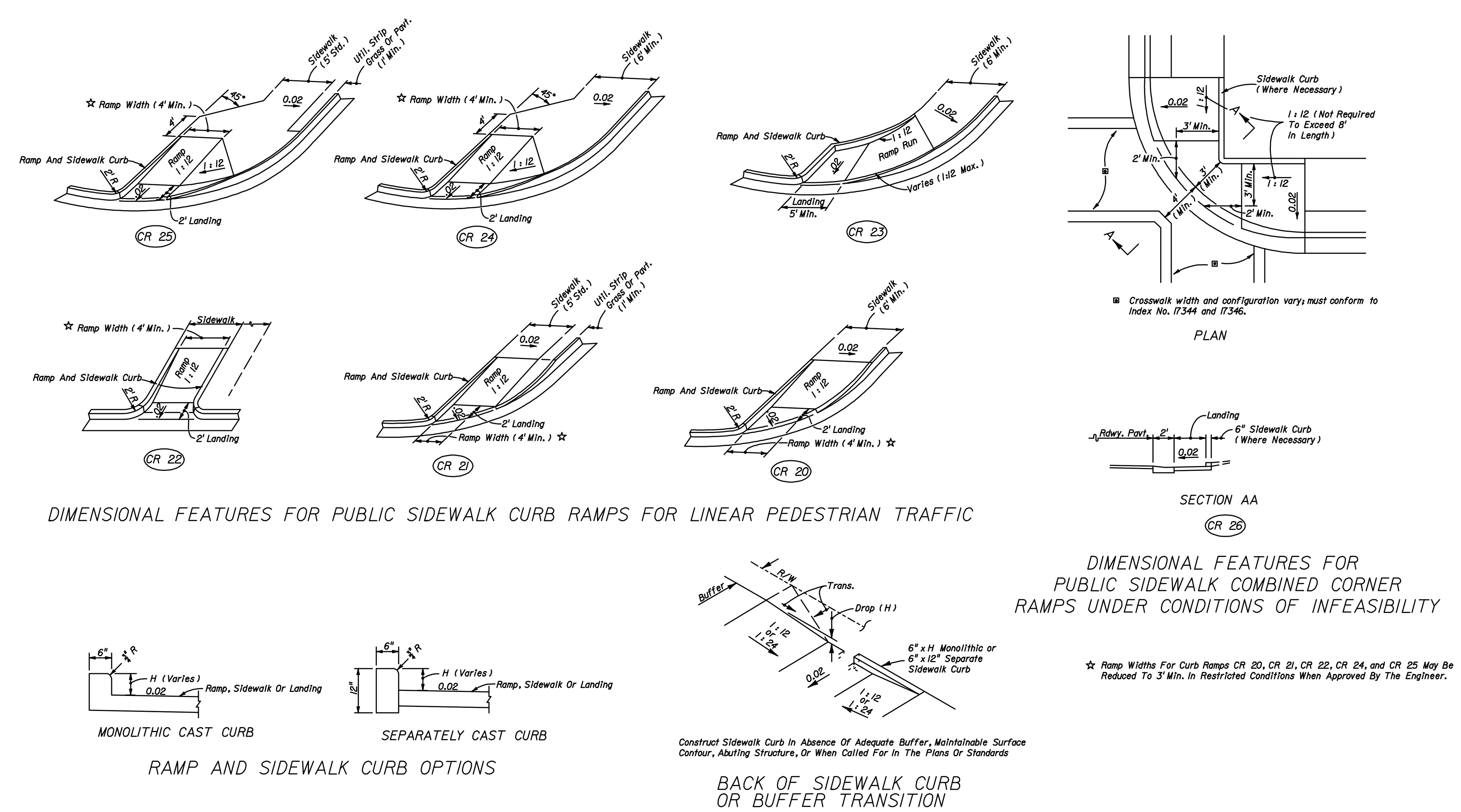


* For BACK OF SIDEWALK CURB OR BUFFER TRANSITION And For RAMP AND SIDEWALK CURB OPTIONS See Sheet 4.

☆ Ramp Widths For Curb Ramps CR 1, CR 2, CR 6, CR 7, And CR 8 May Be Reduced To 3' Min. In Restricted Conditions When Approved By The Engineer.

DIMENSIONAL FEATURES FOR PUBLIC SIDEWALK CURB RAMPS WHERE RAMP AND LANDING DEPTH ARE NOT RESTRICTED BY RIGHT OF WAY

PUBLIC SIDEWALK CURB RAMPS — Sheet No. 2 of 6 — Index No. 304



DIMENSIONAL FEATURES FOR PUBLIC SIDEWALK CURB RAMPS FOR LINEAR PEDESTRIAN TRAFFIC

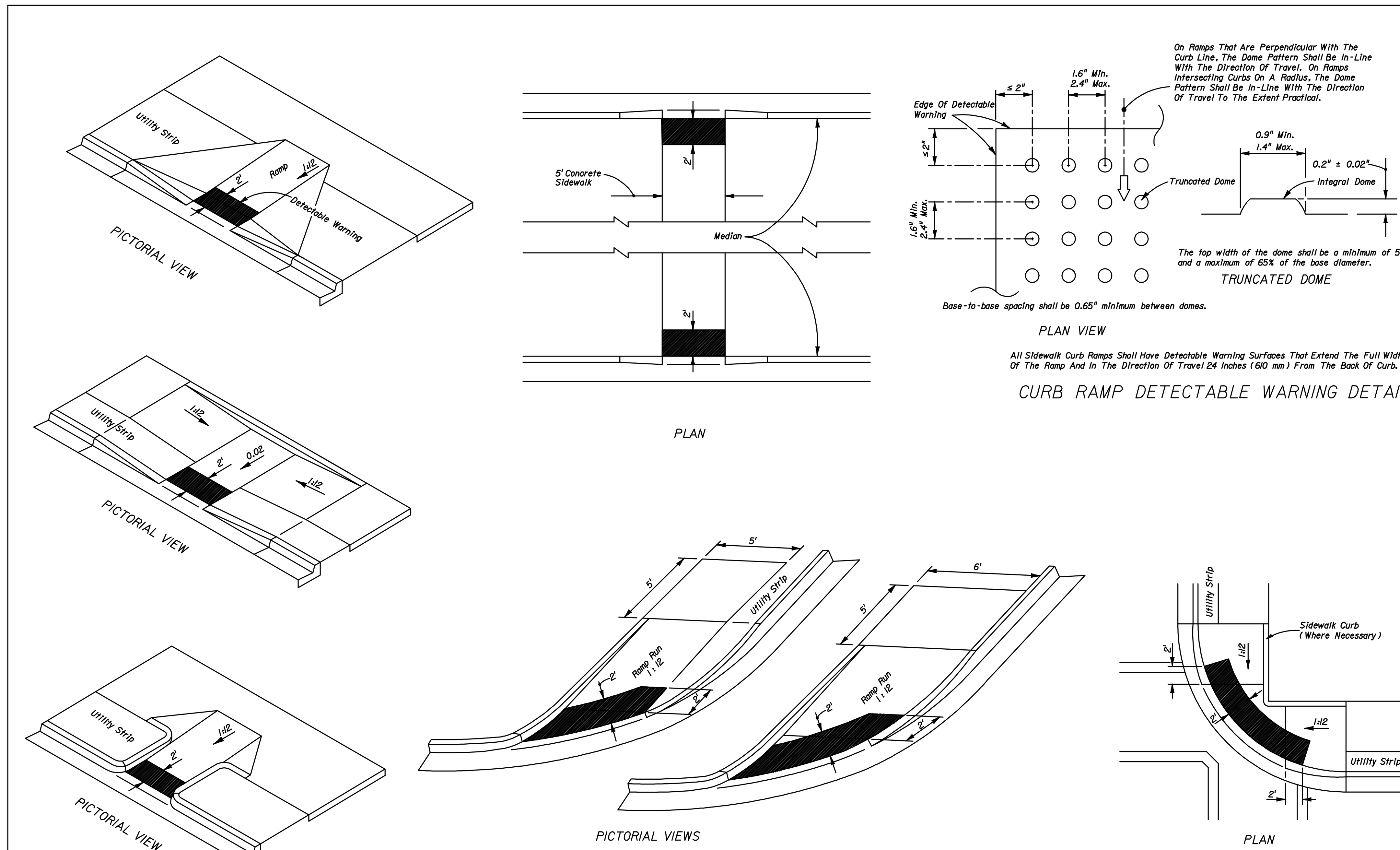
DIMENSIONAL FEATURES FOR PUBLIC SIDEWALK COMBINED CORNER RAMPS UNDER CONDITIONS OF INFEASIBILITY

☆ Ramp Widths For Curb Ramps CR 20, CR 21, CR 22, CR 24, and CR 25 May Be Reduced To 3' Min. In Restricted Conditions When Approved By The Engineer.

RAMP AND SIDEWALK CURB OPTIONS

BACK OF SIDEWALK CURB OR BUFFER TRANSITION

PUBLIC SIDEWALK CURB RAMPS — Sheet No. 4 of 6 — Index No. 304



All Sidewalk Curb Ramps Shall Have Detectable Warning Surfaces That Extend The Full Width Of The Ramp And In The Direction Of Travel 24 Inches (610 mm) From The Back Of Curb.

CURB RAMP DETECTABLE WARNING DETAIL

TYPICAL PLACEMENT OF DETECTABLE WARNING ON CURB RAMPS

PUBLIC SIDEWALK CURB RAMPS — Sheet No. 6 of 6 — Index No. 304

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WINFIELD BOULEVARD IMPROVEMENTS CITY OF MARGATE

SCALE:	AS NOTED
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DESIGNED BY:	MC
CHECKED BY:	SW

STEPHEN D. WILLIAMS, P.E.
FLORIDA REG. NO. 32090
(FOR THE FIRM)

SHEET TITLE
ENGINEERING DETAILS

SHEET NUMBER
CP-502

SHEET of

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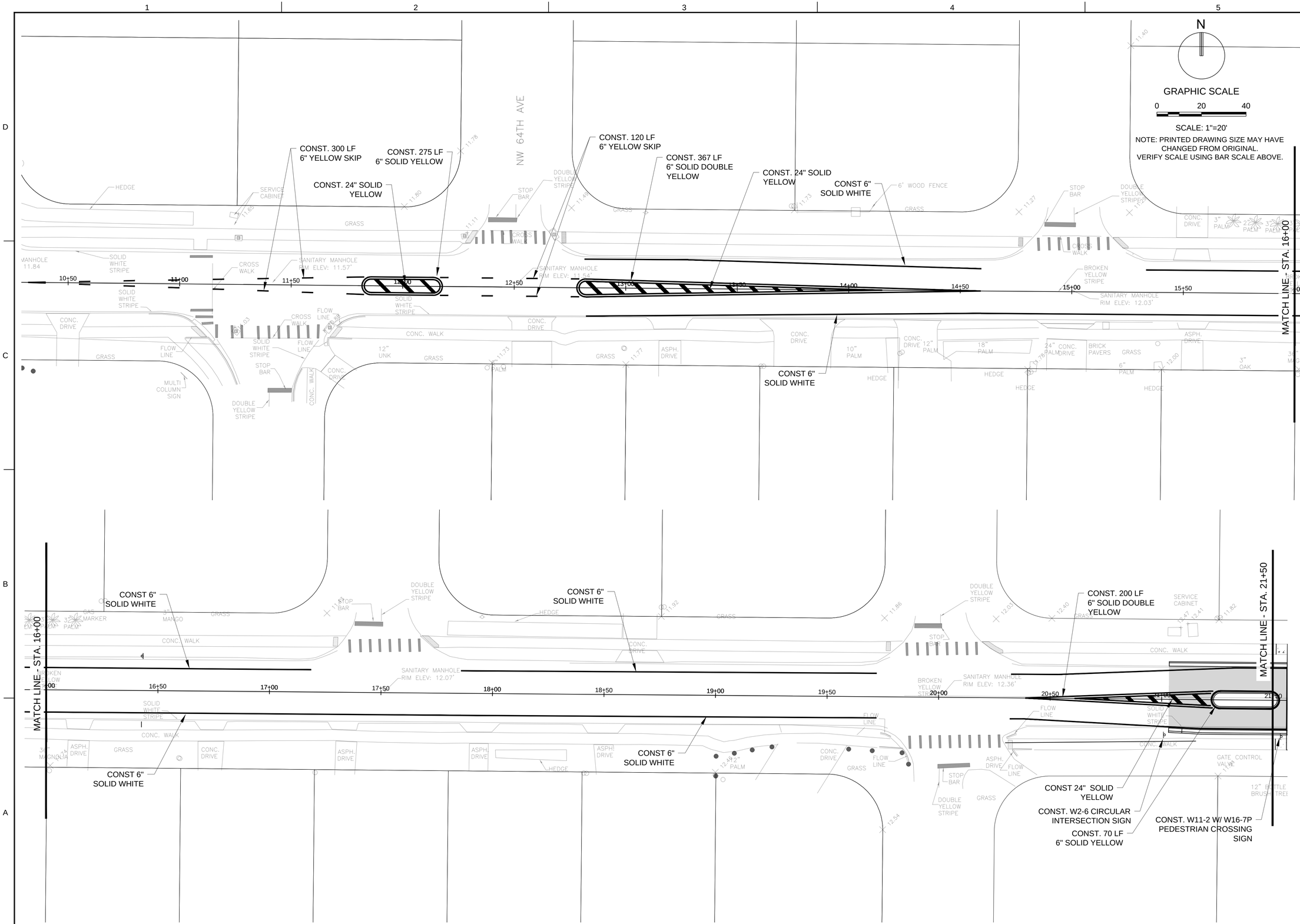
Drawing name: N:\09\09359.01 Winfield Boulevard -City of Margate\Engineering\Cadd\09359.01-CP-501-PGD DETAILS.dwg Layout Name: CP-502 Plotted by: mcrompton Plotted on: May 09, 2017 - 9:36am



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(FOR THE FIRM)

SHEET TITLE

PAVEMENT MARKING AND SIGNING PLAN

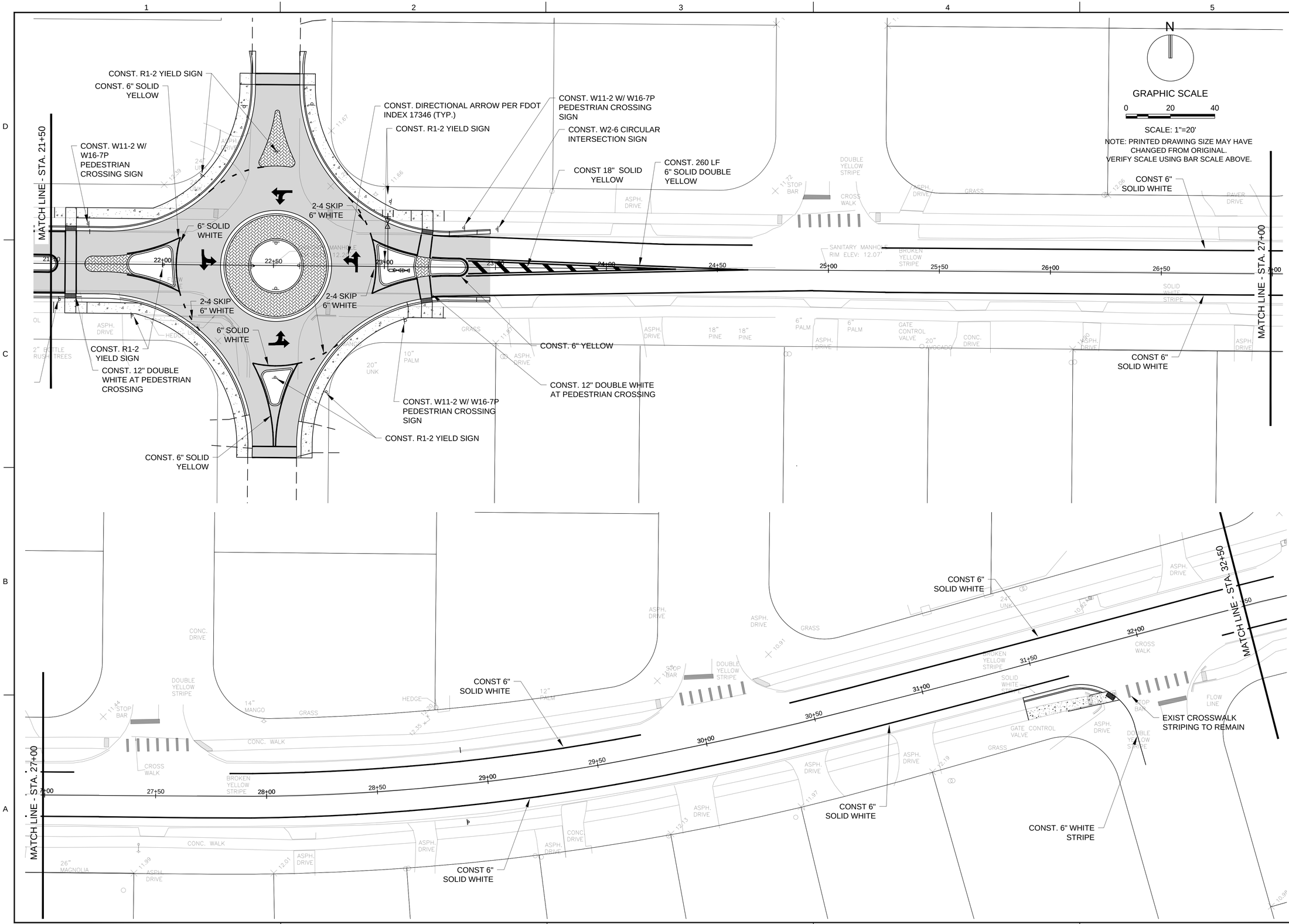
SHEET NUMBER

CM-101

SHEET of 16

PROJECT NO. 09359.01

Drawing name: N:\09\09359.01 Winfield Boulevard -City of Margate\Engineering\Cad\09359.01-CM-101-PAVEMENT MARKING PLANS.dwg Layout name: CM-101 Plotted by: mcompton Plotted on: May 09, 2017 - 9:07am



KEITH & ASSOCIATES, INC.
consulting engineers
301 East Atlantic Boulevard
Pompano Beach, Florida 33060-6643
2160 NW 82nd Avenue
Doral, Florida 33122
(954) 788-3400 FAX (954) 788-3500
Florida Certificate of Authorization # - 7928

BID / CONTRACT NO. :

REVISIONS

NO.	DESCRIPTION	DATE

PRELIMINARY PLAN
NOT FOR CONSTRUCTION

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WINFIELD BOULEVARD IMPROVEMENTS CITY OF MARGATE

SCALE:	AS NOTED
DATE ISSUED:	FEBRUARY10, 2017
DRAWN BY:	MC
DESIGNED BY:	MC
CHECKED BY:	SW

STEPHEN D. WILLIAMS, P.E.
FLORIDA REG. NO. 32090
(FOR THE FIRM)

SHEET TITLE

PAVEMENT MARKING AND SIGNING PLAN

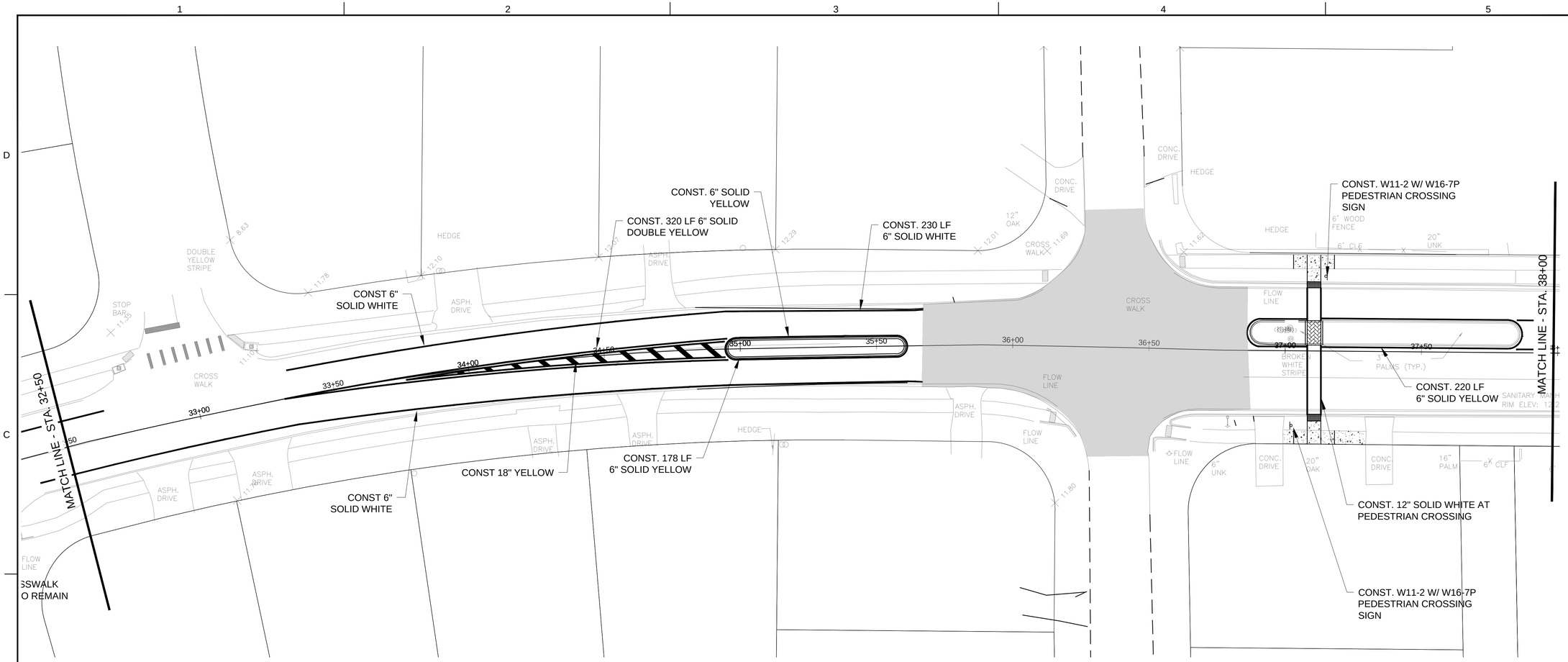
SHEET NUMBER

CM-102

SHEET of 16

PROJECT NO. 09359.01

Drawing name: N:\09\09359.01 Winfield Boulevard - City of Margate\Engineering\Cadd\09359.01-CM-101-PAVEMENT MARKING PLANS.dwg Layout Name: CM-102 Plotted by: mcompton Plotted on: May 09, 2017 - 9:24am



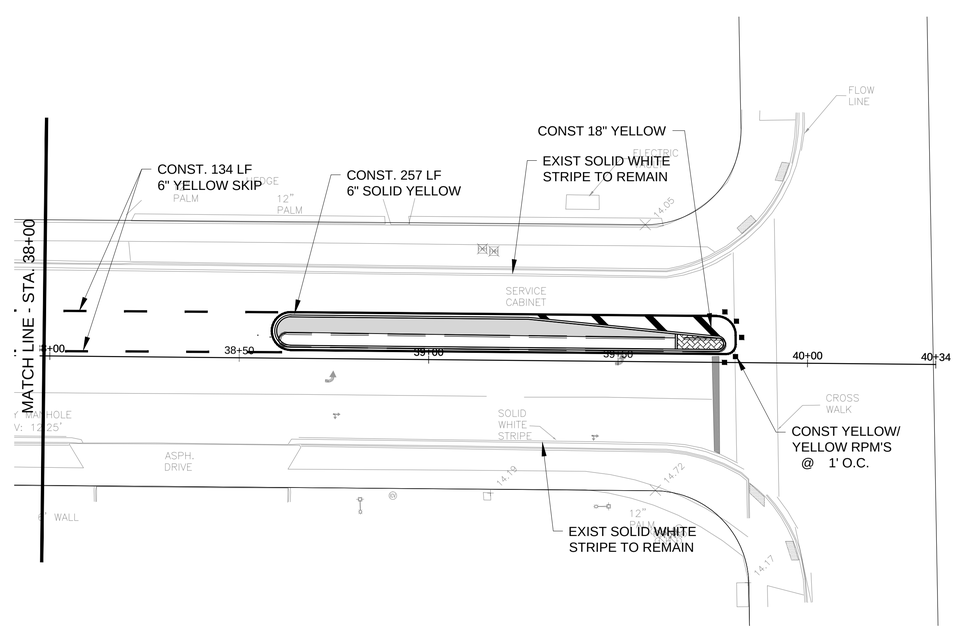
N

GRAPHIC SCALE

0 20 40

SCALE: 1"=20'

NOTE: PRINTED DRAWING SIZE MAY HAVE CHANGED FROM ORIGINAL. VERIFY SCALE USING BAR SCALE ABOVE.



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NO.	DESCRIPTION	DATE
01	AM Per CRA board	08/08/17

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STEPHEN D. WILLIAMS, P.E.
FLORIDA REG. NO. 32090
(FOR THE FIRM)

SHEET TITLE

PAVEMENT MARKING AND SIGNING PLAN

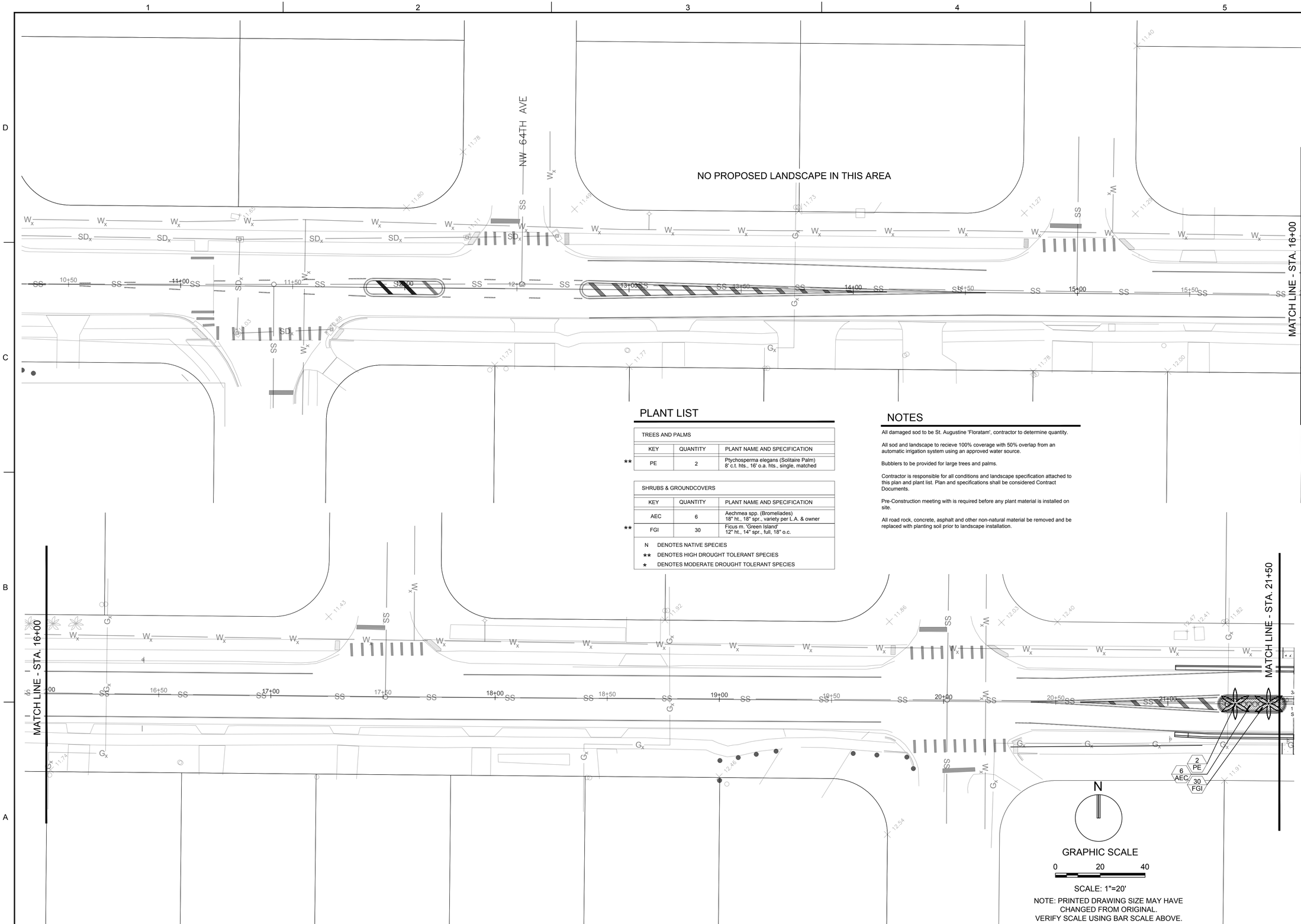
SHEET NUMBER

CM-103

SHEET of

PROJECT NO. 09359.01

Drawing name: N:\09\09359.01 Winfield Boulevard -City of Margate\Engineering\Cad\09359.01-CM-101-PAVEMENT MARKING PLANS.dwg Layout Name: CM-103 Plotted by: amizrahi Plotted on: Aug 15, 2017 - 3:15pm



PLANT LIST

TREES AND PALMS			
	KEY	QUANTITY	PLANT NAME AND SPECIFICATION
**	PE	2	Ptychosperma elegans (Solitaire Palm) 8' c.t. hts., 16' o.a. hts., single, matched

SHRUBS & GROUNDCOVERS			
	KEY	QUANTITY	PLANT NAME AND SPECIFICATION
	AEC	6	Aechmea spp. (Bromeliades) 18" ht., 18" spr., variety per L.A. & owner
**	FGI	30	Ficus m. 'Green Island' 12" ht., 14" spr., full, 18" o.c.

N DENOTES NATIVE SPECIES
** DENOTES HIGH DROUGHT TOLERANT SPECIES
* DENOTES MODERATE DROUGHT TOLERANT SPECIES

NOTES

All damaged sod to be St. Augustine 'Floratam', contractor to determine quantity.

All sod and landscape to recieve 100% coverage with 50% overlap from an automatic irrigation system using an approved water source.

Bubblers to be provided for large trees and palms.

Contractor is responsible for all conditions and landscape specification attached to this plan and plant list. Plan and specifications shall be considered Contract Documents.

Pre-Construction meeting with is required before any plant material is installed on site.

All road rock, concrete, asphalt and other non-natural material be removed and be replaced with planting soil prior to landscape installation.

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WINFIELD BOULEVARD IMPROVEMENTS CITY OF MARGATE

SCALE:	AS NOTED
DATE ISSUED:	FEBRUARY10, 2017
DRAWN BY:	SR
DESIGNED BY:	MP
CHECKED BY:	MP

MICHAEL J. PHILLIPS, RLA
FLORIDA REG. NO. LA0001540
(FOR THE FIRM)

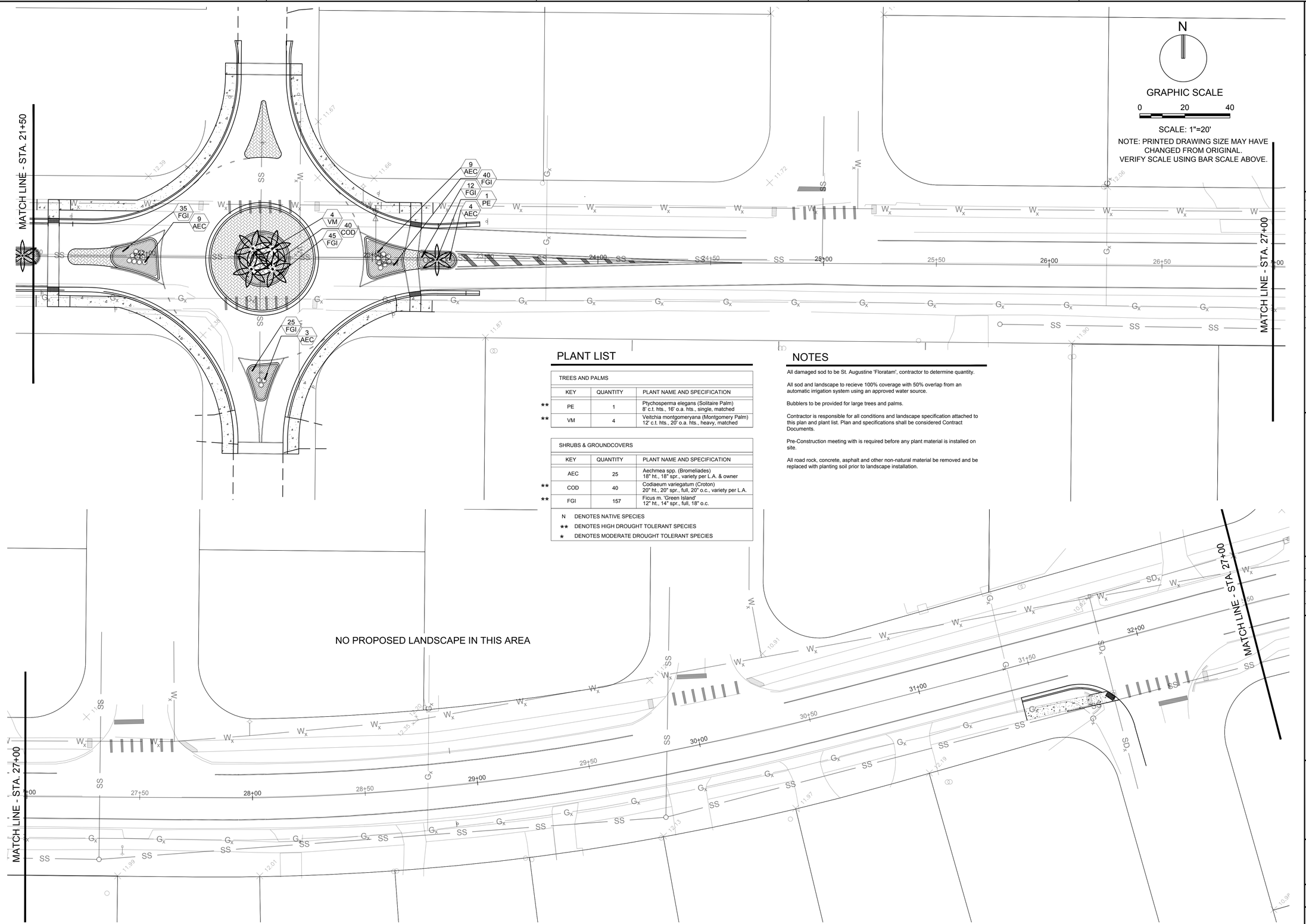
SHEET TITLE
LANDSCAPE PLAN

SHEET NUMBER
LP-101

SHEET of

PROJECT NO. 09359.01

Drawing name: N:\09\09359.01\Winfield Boulevard -City of Margate\Landscape Architecture\Cadd\dwg\09359.01-LP-101-LANDSCAPE PLANS.dwg Layout Name: LP-101 Plotted by: srosen Plotted on: Aug 16, 2017 - 8:45am



N

GRAPHIC SCALE

0 20 40

SCALE: 1"=20'

NOTE: PRINTED DRAWING SIZE MAY HAVE CHANGED FROM ORIGINAL. VERIFY SCALE USING BAR SCALE ABOVE.

PLANT LIST

TREES AND PALMS			
	KEY	QUANTITY	PLANT NAME AND SPECIFICATION
**	PE	1	Ptychosperma elegans (Solitaire Palm) 8' c.t. hts., 16' o.a. hts., single, matched
**	VM	4	Veitchia montgomeryana (Montgomery Palm) 12' c.t. hts., 20' o.a. hts., heavy, matched

SHRUBS & GROUNDCOVERS			
	KEY	QUANTITY	PLANT NAME AND SPECIFICATION
	AEC	25	Aechmea spp. (Bromeliades) 18" ht., 18" spr., variety per L.A. & owner
**	COD	40	Codiaeum variegatum (Croton) 20" ht., 20" spr., full, 20" o.c., variety per L.A.
**	FGI	157	Ficus m. 'Green Island' 12" ht., 14" spr., full, 18" o.c.

N DENOTES NATIVE SPECIES

** DENOTES HIGH DROUGHT TOLERANT SPECIES

* DENOTES MODERATE DROUGHT TOLERANT SPECIES

NOTES

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WINFIELD BOULEVARD IMPROVEMENTS CITY OF MARGATE

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DRAWN BY:	SR
DESIGNED BY:	MP
CHECKED BY:	MP

MICHAEL J. PHILLIPS, RLA
FLORIDA REG. NO. LA0001540
(FOR THE FIRM)

SHEET TITLE

LANDSCAPE PLAN

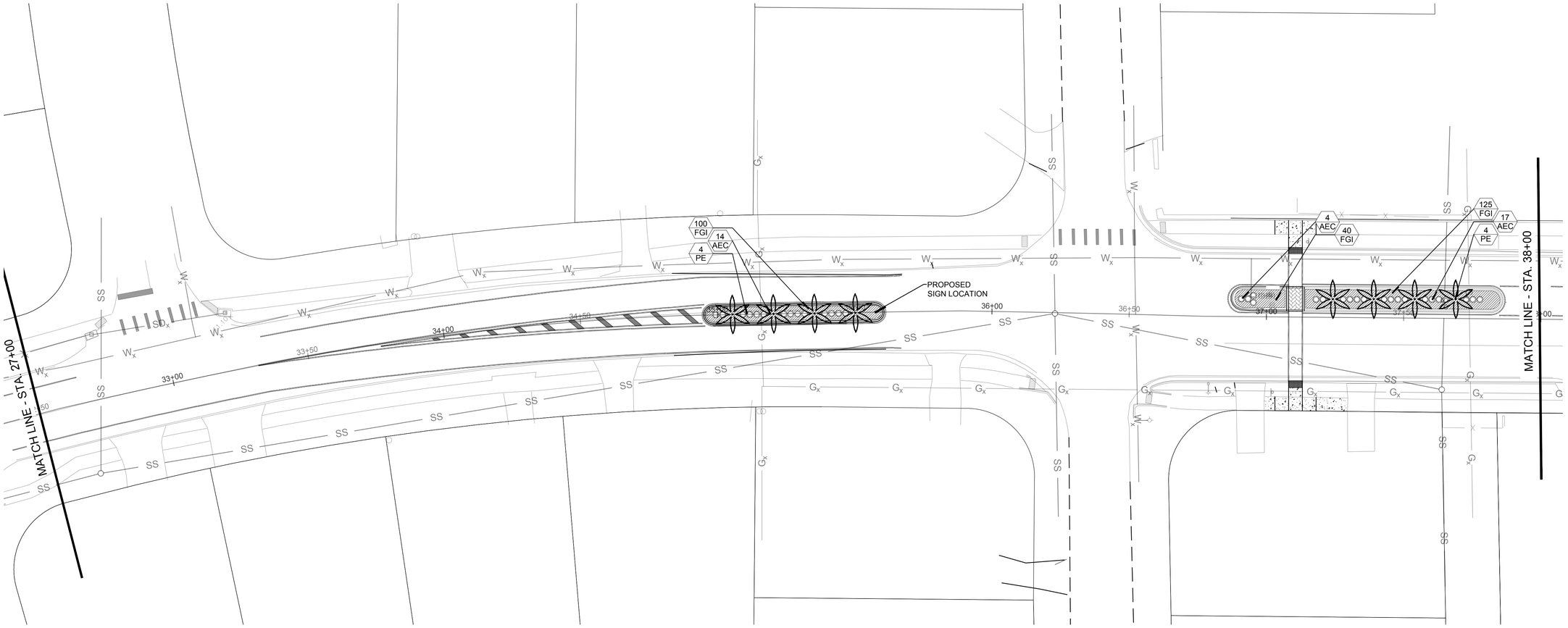
SHEET NUMBER

LP-102

SHEET of

PROJECT NO. 09359.01

Drawing name: N:\09\09359.01 Winfield Boulevard -City of Margate\Landscape Architecture\Cadd\dwg\09359.01-LP-101-LANDSCAPE PLANS.dwg Layout Name: LP-102 Plotted by: sroseen Plotted on: Aug 16, 2017 - 8:46am



PLANT LIST

	TREES AND PALMS		
	KEY	QUANTITY	PLANT NAME AND SPECIFICATION
**	PE	8	Ptychosperma elegans (Solitaire Palm) 8' c.t. hts., 16' o.a. hts., single, matched
**	VM	4	Veitchia montgomeryana (Montgomery Palm) 12' c.t. hts., 20' o.a. hts., heavy, matched

	SHRUBS & GROUNDCOVERS		
	KEY	QUANTITY	PLANT NAME AND SPECIFICATION
	AEC	53	Aechmea spp. (Bromeliades) 18" ht., 18" spr., variety per L.A. & owner
**	FGI	415	Ficus m. 'Green Island' 12" ht., 14" spr., full, 18" o.c.

N DENOTES NATIVE SPECIES
** DENOTES HIGH DROUGHT TOLERANT SPECIES
* DENOTES MODERATE DROUGHT TOLERANT SPECIES

NOTES

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N

GRAPHIC SCALE

0 20 40

SCALE: 1"=20'

NOTE: PRINTED DRAWING SIZE MAY HAVE CHANGED FROM ORIGINAL.
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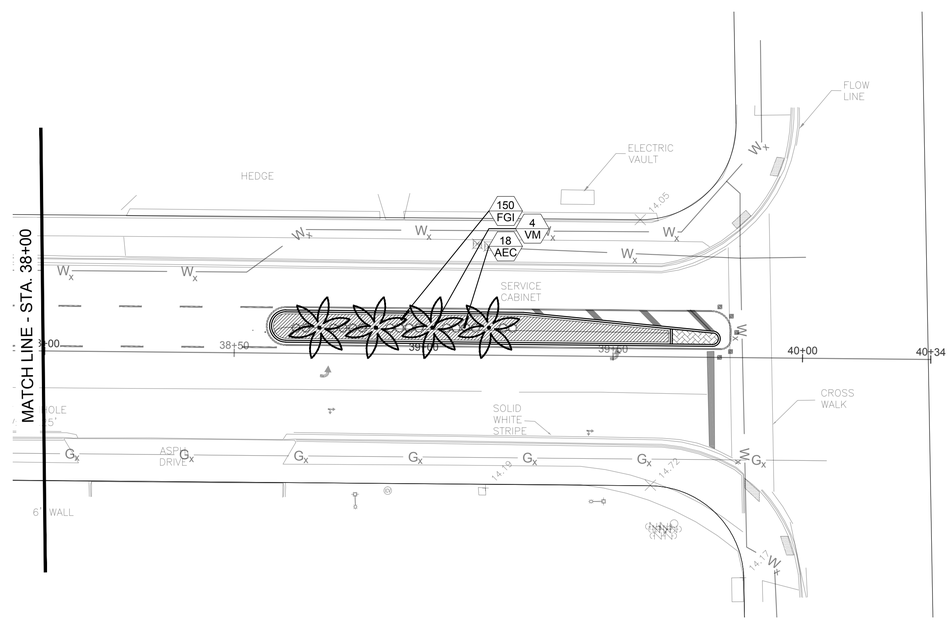

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LANDSCAPE PLAN

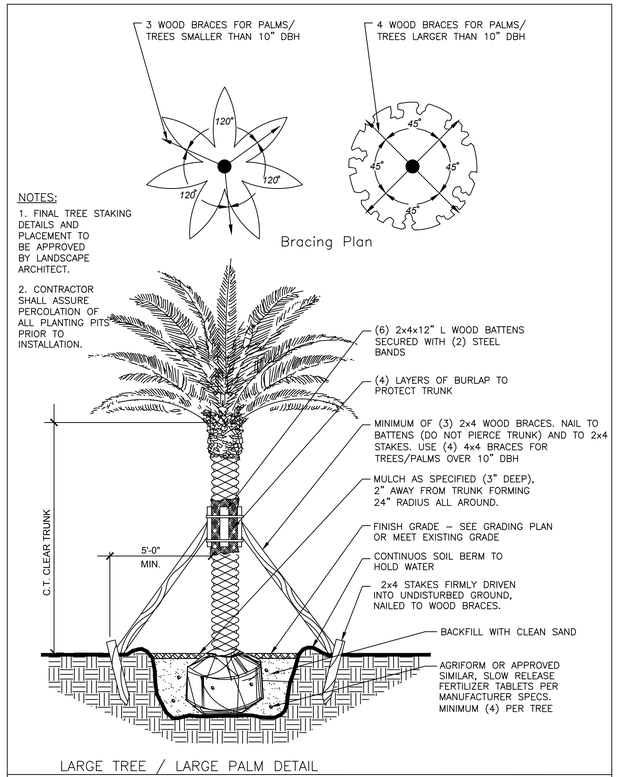
SHEET NUMBER

LP-103

SHEET of

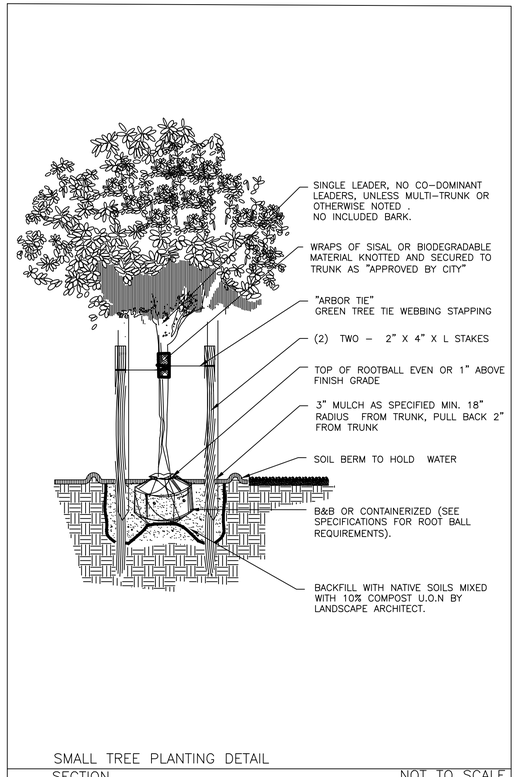
PROJECT NO. 09359.01

Drawing name: N:\09\09359.01 Winfield Boulevard - City of Margate\Landscape Architecture\Cad\dwg\09359.01-LP-101-LANDSCAPE PLANS.dwg Layout Name: LP-103 Plotted by: srosen Plotted on: Aug 16, 2017 - 8:51am



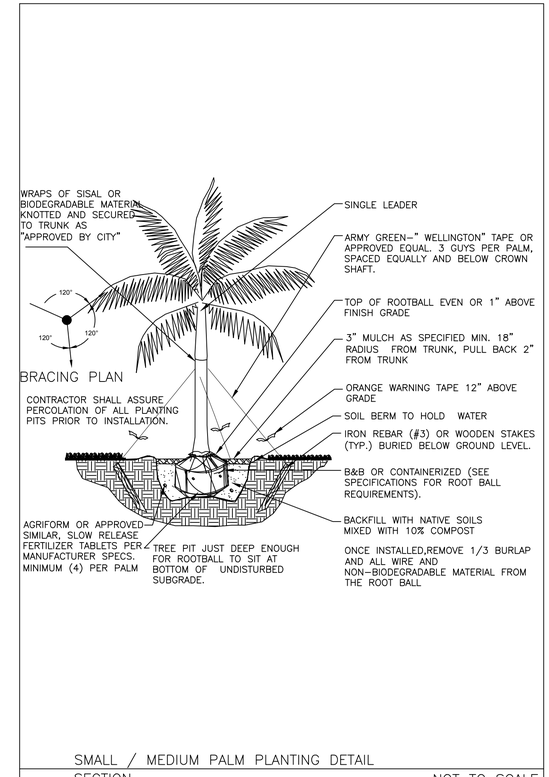
LARGE TREE / LARGE PALM DETAIL

SECTION



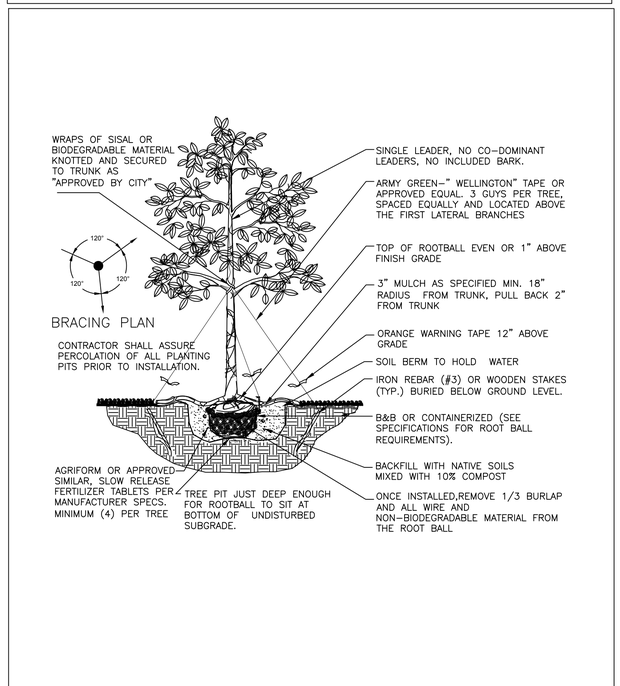
SMALL TREE PLANTING DETAIL

SECTION NOT TO SCALE



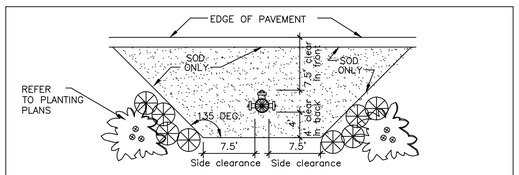
SMALL / MEDIUM PALM PLANTING DETAIL

SECTION NOT TO SCALE



MEDIUM TREE PLANTING DETAIL

SECTION NOT TO SCALE



REQUIREMENTS APPLY TO FIRE HYDRANTS, SIAMESE CONNECTIONS AND ANY OTHER FIRE EQUIPMENT FOR UTILIZING FIRE HOSE, ON PUBLIC OR PRIVATE PROPERTY.

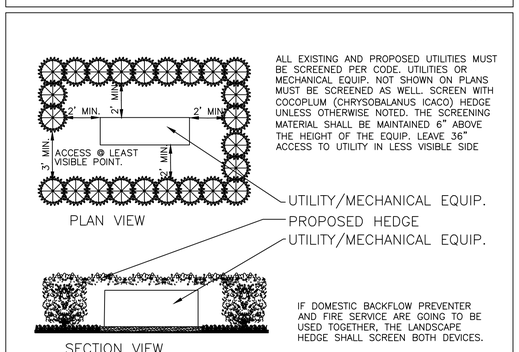
BY THE AUTHORITY OF THE FLORIDA BUILDING CODE.

THE CLEAR ZONE SHALL BE FREE OF LANDSCAPE (EXCEPT SOD), MAILBOXES, PARKING, LAMP-POSTS AND ALL OTHER OBJECTS.

EXCEPTIONS: OTHER FIRE FIGHTING EQUIPMENT OR TRAFFIC POSTS TO PREVENT FIRE FIGHTING EQUIPMENT BEING BLOCKED.

FIRE HYDRANT CLEAR ZONE

PLAN NOT TO SCALE

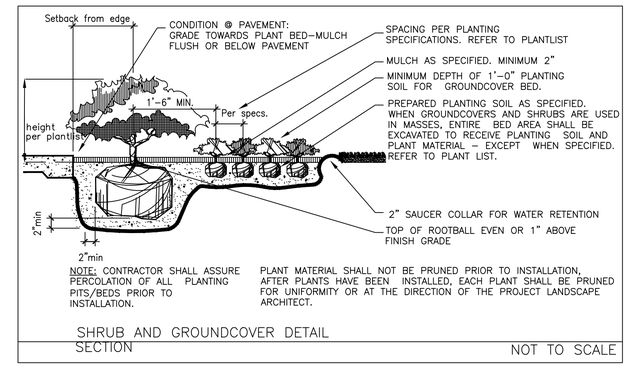


ALL EXISTING AND PROPOSED UTILITIES MUST BE SCREENED PER CODE. UTILITIES OR MECHANICAL EQUIP. NOT SHOWN ON PLANS MUST BE SCREENED AS WELL. SCREEN WITH COCOPLUM (CHRYSOBALANUS ICACO) HEDGE UNLESS OTHERWISE NOTED. THE SCREENING MATERIAL SHALL BE MAINTAINED 6" ABOVE THE HEIGHT OF THE EQUIP. LEAVE 36" ACCESS TO UTILITY IN LESS VISIBLE SIDE

IF DOMESTIC BACKFLOW PREVENTER AND FIRE SERVICE ARE GOING TO BE USED TOGETHER, THE LANDSCAPE HEDGE SHALL SCREEN BOTH DEVICES.

TYPICAL SCREEN FOR UTILITIES/MECHANICAL EQUIP.

PLAN AND SECTION NOT TO SCALE

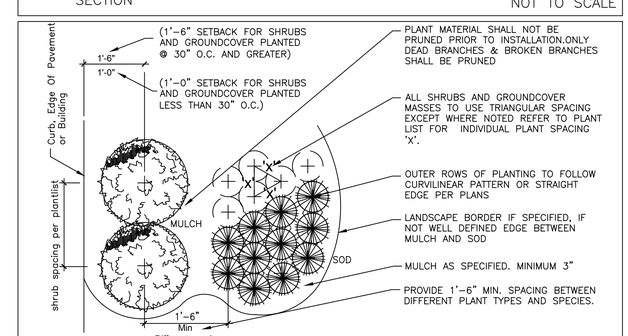


NOTE: CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS/BEDS PRIOR TO INSTALLATION.

PLANT MATERIAL SHALL NOT BE PRUNED PRIOR TO INSTALLATION, AFTER PLANTS HAVE BEEN INSTALLED, EACH PLANT SHALL BE PRUNED FOR UNIFORMITY OR AT THE DIRECTION OF THE PROJECT LANDSCAPE ARCHITECT.

SHRUB AND GROUNDCOVER DETAIL

SECTION NOT TO SCALE



SHRUB AND GROUNDCOVER DETAIL

PLAN NOT TO SCALE

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WINFIELD BOULEVARD IMPROVEMENTS CITY OF MARGATE

SCALE:	AS NOTED
DATE ISSUED:	FEBRUARY10, 2017
DRAWN BY:	SR
DESIGNED BY:	MP
CHECKED BY:	MP

MICHAEL J. PHILLIPS, RLA
FLORIDA REG. NO. LA0001540
(FOR THE FIRM)

SHEET TITLE

LANDSCAPE DETAILS

SHEET NUMBER

LD-101

SHEET 16 of

PROJECT NO. 09359.01

Drawing name: N:\09\09359.01 Winfield Boulevard -City of Margate\Landscape Architecture\Cadd\dwg\09359.01-LD-101-LANDSCAPE DETAILS.dwg Layout Name: LD-101 Plotted by: sroesen Plotted on: Aug 16, 2017 - 2:14pm

A. SCOPE

1. The location of plants, as shown on the plans, is approximate. The final locations may be adjusted slightly to accommodate unforeseen field conditions, to comply with safety setback criteria, to avoid creating unsafe sight conditions, or as otherwise directed or approved by the Landscape Architect / owner in writing. All other location adjustments to the layout are to be approved in advance in writing by the Landscape Architect and owner.
2. Contractor understands that an important element of the design of this project is meeting landscape ordinances with a design flare that includes symmetry, alignment, focal points and / or smooth curvilinear forms where applied and contractor shall follow and instruct the working crews accordingly. In the event of any doubt as to how to execute the plans, Contractor shall immediately consult with Architect and/or Owner.
3. Landscape Contractor shall fine grade, prepare site as outlined in the following notes and per plans; furnish and install all plants, shrubs, trees and / or palms meeting minimum requirements and brace them per details provided. Furnish and install soil, gravel, boulders, sod and mulch as specified in plans and notes below.
4. Landscape contractor shall furnish and install all trees, palms, shrubs, groundcover, sod, planting soil, fertilizer, herbicide, pre-emergence herbicide, seed, and mulch.

B. BIDDING

1. Contractor to have liability insurance including Owner and Landscaper as insured's in excess of $10,000 as well as Worker's Compensation.
2. Contractors and Subs must ensure they are doing take offs from Bldg Dep. Revised sets and / or Bid Set documents. Verify with this Office that you are bidding from latest available plans.
3. Submit Landscape / Hardscape RFI directly to Keith & Associates Landscape Architect/Project Manager in writing. T. 954.788.3400
4. Read ALL notes and typical planting details sheets prior to submitting RFIs and prior to bidding.
5. When submitting an RFI reference sheet number, detail number and/or note category and number.
6. Landscape contractor shall verify all estimated quantities of material shown on the drawings prior to submitting their bid. Plant list pricing if shown is for permitting / mitigation comparison purposes only, any prices shown are to be disregarded by Landscape Contractor.
7. All Plant Material shall meet or exceed height and spread requirement. Heights are City code requirement and / or design intent related and always governs over container size. Container size given for reference only and must be sized-up to meet height requirements of plant list. Plant material available with excessive height beyond specifications must be consulted with Landscape Architect for design intent.
8. All landscape material was confirmed to be available at time of design landscape contractor understands that some material may not be available in the same City, however available in Tri-County Region. Plant material supply is the responsibility of the Landscape Contractor that is awarded the contract and he/she shall take steps to ensure availability at the time of installation. Bring to the attention of Landscape Architect if specific material availability is no longer the case at the time of bidding and / or prior to actual construction for approval of substitutions that meet City ordinances and / or owner requirements and design intent.
9. Pre-inspections of site required prior to bidding.
10. The plant list is intended only as an aid to bidding. Any discrepancies found between the quantities on the plan and the quantities on the plant list shall be held valid, but in any event, Landscape Architect shall be contacted for clarification.
11. All labor and material for soil amendments and fertilizer that is required to ensure the successful establishment and survival of the proposed vegetation, as well as all the cost for the removal of unsuitable or excess backfill material from plantbeds, in addition to fine grading and mulching all plantbeds and individual trees shall be included in the contractor's bid to perform the work represented in this plan set.
12. Bid shall be itemized for possible value engineering.
13. Sod and Rocks (if specified) shall be estimated by scaling plans. Include price per square foot for sod. Rocks (include price per ton). Small rocks and gravel beds shall have landscape fabric material and minimum 2" depth. Boulders to be bid by unit.
14. All S.F. if noted is approximate and shall not be considered all inclusive; it is the contractor's responsibility to do his or her take off, submit price per S.F. and in the end sod all areas that are not covered either by plants, mulch and/or rocks. It shall be the responsibility of the contractor to include in the bid, the repair of any existing sod which may be damaged during construction.
15. Final payment to the Contractor shall be for actual plants installed on the project.
16. Contractor shall be responsible for obtaining and paying for costs of all permits described in bid whether permit costs are reimbursable by owner or included in bid. Research permit status and research all permits and additional documentation and certifications required such as separate tree removal permit for example, and consider prior to bidding.
17. General / Landscape Contractor shall leave a 5% unforeseen conditions allowance such as for additional root barriers determined to be needed on site and as job progresses.
18. Refer to T.Watering for supplemental watering requirement.
19. Landscape contractor is responsible for verifying all plant quantities prior to bidding and within 7 calendar days of receipt of these plans shall notify the landscape architect in writing of any and all discrepancies. In case of discrepancies planting plans shall take precedence over plant list. No substitutions are to be made without prior consent of the Landscape Architect.

C. GENERAL LANDSCAPE NOTES

1. Plants grown in containers prior to installation shall be removed from their containers before they are planted in the ground and have circling roots removed. All screening shrubs shall be planted for proper operation of equipment being screened and/or per the requirements of the utility as necessary. All hedge material required for screening purposes shall be planted with branches touching. Adjust spacing as necessary and/or provide additional plants to provide an adequate screen as required by code. Leave access to utility or clearance as required.
2. All landscaping shall be installed according to sound nursery practices. Contractor shall comply with federal, state and local laws and regulations pertaining to the inspection for plant disease and insect infestation.
3. All ideas, designs and plans indicated or represented by this drawing are owned by and are the exclusive property of Keith and Associates and may not be duplicated without authorization or used for other projects than the intended.
4. The Landscape Contractor shall exercise caution to protect any existing sod, electrical and irrigation. Any damage to the sod, electrical or irrigation shall be replaced or repaired to the original state by the Landscape Contractor at no additional cost to the owner.
5. Tree, palm, accent shrubs and bed lines are to be located in the field and approved by the Landscape Architect / owner prior to planting. Landscape Contractor acknowledges that material planted without approval of location may be subject to relocation by Landscape Architect to maintain design intent if not followed properly.
6. All trees must be pruned as per Landscape Architect's direction.
7. In areas where asphalt is removed in order to receive landscape material, the lime rock sub-base material must also be removed and replaced with approved planting soil mix.
8. Landscape contractor is responsible for sending photographs to the landscape architect to pre-approve all trees, palms, and shrubs prior to delivery to project site.
9. Landscape contractor shall coordinate his or her work with that of the irrigation, landscape lighting, and hardscape contractor if different.
10. The landscape contractor shall treat plant areas with pre-emergence herbicide after weeds and grass has been removed. Landscape contractor shall wait 7 days after pre-emergence treatment prior to planting.

D. PERMITS & REGULATIONS

1. Contractor(s) must obtain separate landscape, irrigation and tree relocation/removal permits from the city prior to the issuance of the first building permit for the project.
2. Landscape contractor to call the city Landscape Inspector to schedule a pre-construction meeting prior to installation if required.
3. All mandatory requirements by City Landscape Departments and their inspectors shall govern and landscape contractor commits by accepting contract to comply promptly for builder/owner to obtain C.O.

E. TREE REMOVAL

1. Removal of any trees or palms will require a written "tree removal permit" from the local governing agency prior to removal. Non-native trees classified as "prohibited" trees may be exempt from the permit if listed as Category 1 by Florida Exotic Pest Plant Council. Confirm with Local Municipality.
2. Landscape Contractor is responsible to remove ALL invasive nuisance trees such as Brazilian Pepper, Melaleuca, Australian Pine and all invasive trees as categorized by the governing agencies, whether listed on plans or not.
3. The Landscape Contractor is responsible for coordinating tree and palm removals and transplants shown on the tree/palm Disposition Plan. The Landscape Contractor is to remove and discard from site existing unwanted trees, palms, shrubs, ground covers, sod and weeds within landscape areas.

F. EXISTING TREES

1. Existing trees designated to remain shall be protected during all construction phases. Any trees or shrubs scarred or destroyed designated to remain will be replaced at the contractor's expense, with same species, size and quality.
2. Existing plant material not shown on the plan and in conflict with new planting shall be evaluated at the time of new planting installation by the Landscape Architect. Trees and plant material indicated to be relocated with no new location provided in plans shall be moved to a location on site designated as a nursery holding area with the root ball protected from direct sunlight, maintained and irrigated until new location is determined.
3. Prune trees to remove damaged branches and improve natural shape and thin out structure. Do not remove more than 15% of branches. Do not prune back terminal leader.
4. Prune existing shrubs to remove damaged branches and improve natural shape.
5. Existing trees to remain shall be trimmed per Ansi-A300 standards. Supervision of the trimming shall be performed by an ISA Certified Arborist to ensure quality work.
6. All existing trees shall be "lifted and thinned" to provide an 8' minimum clearance for sidewalks and pedestrian walkways and a 14' minimum clearance for roadways, driveways and all vehicular use areas.
7. Selective canopy and root pruning of existing trees can be conducted (only as necessary and in no event more than 35%) to accommodate for new approved construction. Pruning shall be conducted / supervised by an ISA Arborist.
8. If plans call for relocation of trees, palms or plants. High level of care should be exercised to assure that they are not damaged in the process and that they are promptly replanted upon being dug up.
9. All underground utilities and drain or irrigation lines shall be routed outside the tree protection zone. If lines must traverse the protection area, they shall be tunneled or bored under the tree.
10. Erosion control devices such as silt fencing, debris basins, and water diversion structures shall be installed to prevent siltation and/or erosion within the tree protection zone.
11. Roots shall be cut manually by digging a trench and cutting exposed roots with a saw, vibrating knife, rock saw, narrow trencher with sharp blades, or other approved root pruning equipment.

G. TREE RELOCATION (These notes for relocation trees only and if applicable)

1. Flag all trees and palms to be transplanted with differentiating color than those to be saved or removed.
2. Tree Relocation process must be performed or supervised by ISA Certified Arborist.
3. Water the root zones to field capacity for 5 continuous days before root pruning. At a minimum soak the soil to a 4'-0" depth within a 6' radius.
   Root prune a minimum of six weeks before relocation. Prune away all dead or damaged limbs or fronds. For trees, prune out 1/3 of the existing canopy by selectively trimming small internal branches. For palms, gather fronds above the bud and tie them loosely with jute twine to avoid damage.
4. Brace root pruned trees awaiting relocation.
5. Root prune $\frac{1}{3}$rd of the root system, irrigate daily for 2 weeks then root prune another $\frac{1}{3}$ rd, irrigate daily and prune last $\frac{1}{3}$ rd on actual relocation date, no less than two weeks (six weeks total minimum root pruning by stages). ISA Arborist on staff shall observe for intense shock. Canopy pruning may be deemed necessary by Arborist on staff to balance for intense root ball loss, canopy shall be trimmed only as necessary to increase survival.
6. Root prune with proper clean equipment to sever roots. Ensure roots are not torn or pulled apart.
7. With hand tools, dig a 2'-0" wide by 3'-0" deep trench at a minimum distance as determined by the consulting arborist to expose roots. Cut all roots 1.5" and larger in diameter with a clean, sharp pruning saw. Treat all cuts with a fungicidal barrier. Backfill the trench, within 4 hours of digging, with a 1:1 mixture of site soil and sawdust or other fine organic material. Do not compact.
8. Form a rootball size in compliance with Florida grades and Florida standards number 1 or better.
9. Maintain the soil moisture at field capacity throughout the six weeks.
10. Allow the plant to regenerate roots over a period of six weeks.
11. At the end of six weeks, prepare the planting pit at the new location. Overdig the hole diameter by 2' beyond the root ball at a minimum, but it is recommended that transplanting hole to be at least 1/3 larger than the area that was trenched for transplanting.
12. With the consulting arborist present, undercut the entire root ball of the plants to be transplanted at a depth specified by the arborist. The undercutting method may be a choker cable drawn through the root ball with heavy equipment.
13. At the direction of a professional rigger, assemble slings, padding, guiding ropes and cables for attachment to the crane or backhoe. The professional rigger shall determine the size of machinery necessary to execute the lifting and moving operation.
14. Install trees within 24 hours of removal from their original location to locations provided by Landscape Architect or Developer with approval of City / Landscape Inspector.
15. Experimented Tree Spade operator shall move tree or experimented tree mover shall choose best means and methods to strap and rig tree for transporting safely without damage to new location.
16. Maintain trees in a healthy and vigorous condition during installation and throughout the plant establishment period. Replace trees that do not meet this requirement with the same species, size, and quality or per mitigation requirements specific to the city with jurisdiction.
17. Fertilize the plant as directed by the consulting arborist.
18. When the plant is placed in the new location, backfill the planting pit with topsoil and water thoroughly to eliminate air pockets and compact the soil. Set the tree no deeper than its original condition.
19. Cover the root ball area with 3" depth of organic mulch.
20. Provide fungicide and fertility applications at the direction of the consulting arborist.
21. Post transplant watering to provide moisture and reduce any excessive stress due to root desiccation. Watering to be adjusted according to conditions and at the supervision and direction of the ISA certified arborist.
22. The diameter of the root--pruning or transplanting circle shall be at a distance away from the trunk equal to 12 times each inch of trunk diameter at breast height.
23. For all palms except Sabal palmetto, the lower fronds shall be pruned leaving 9-11 fronds that can be tied without an extensive amount of weight that may damage the heart of the palm. The Sabal palmetto shall have all fronds cut without damaging the bud.
24. Transplanting must occur within 24 hours after being dug for relocation. Trees/palms should be kept in shade and the canopy kept moist.
25. Digging and preparation of the new hole for the transplant shall be done prior to removing the tree from the existing location.
26. The landscape Contractor is to verify that all new holes have appropriate percolation.
27. Padding the sling may be necessary so that the trunk or "boots" are not damaged.
28. A 6" saucer shall be created around the edge of the plant pit to help hold water, see planting detail for additional information.
29. Over the guarantee period the Landscape contractor shall be responsible for resetting any trees/palms that are not vertical when caused by winds less than 74 mph.
30. After transplanting trees and palms, the landscape contractor shall be responsible for obtaining water and watering to maintain soil moisture during the guarantee period at a minimum of: First month- daily, Second month - three times per week, Third and Fourth months - two times per week, Last eight months - one time per week.
31. For trees over 4" in caliper at the time of planting, the schedule should be: First six weeks, daily, one and a half months to six months - three times per week, last six months - one time per week.

H. SITE PREPARATION & GRADING

1. Landscape contractor shall loosen and till compacted soils that are overly compacted in all planting areas of the project to provide for proper soil aeration for plant establishment.
2. Planted areas shall be cleared of underground rocks, construction debris and other materials detrimental to the health of the plants. Lime rock base material shall be removed within planting pits and adjacent to pavement. The planting areas should be clean to a depth equal to the root ball of the trees/palms proposed for the area. Planting area soils shall be tested for ph before planting. Soils showing high (alkaline) ph (over 7.5) shall be amended or replaced with native soil having a ph range of 6.5 - 7.5, as approved by Landscape Architect.
3. All planting areas and planting pits shall be tested for sufficient percolation prior to final planting and irrigation installation to ensure proper drainage. Plant beds in parking lots and in areas compacted by heavy equipment shall be de-compacted so that drainage is not impeded.
4. Landscape Contractor shall treat plant areas with pre-emergence herbicide after weeds and grass have been removed. Landscape Contractor shall wait (7) seven days after pre-emergence treatment prior to planting.
5. Site preparation shall include the eradication and removal of any weeds, clean-up of any dead material, debris, and rubbish.
6. General site and berm grading to +/- 1 inch (1") shall be provided by the general contractor. All finished site grading shall be provided by the Landscape Contractor. All planting beds shall be free of all rocks 1/2" or larger, sticks, and objectionable material including weeds and weed seeds. All lime rock shall be removed/cleaned down to the native soils.
7. The Landscape contractor shall ensure the planting areas are at finish grade prior to installing plant materials.
8. All trees and plant material to remain shall be protected during construction. Contractor shall install protective barriers such as "Tenax" orange safety fencing or similar, to be installed before the beginning of the project. Barriers shall be located to include the drip line of the trees, palms and plant material. The contractor shall take extra caution to prevent any damage to the trunk, root zones and grade.
9. Final grade within planting areas to be 4" below adjacent paved areas or top of curb. Sod areas to be 2" below.
10. All planting beds shall be shaped and sloped to provide proper drainage away from building and structures and to swales, if applicable.

I. IRRIGATION

1. Any Irrigation Notes and specifications included in Irrigation Sheets govern over the following Irrigation Notes.
2. The Landscape Contractor shall coordinate with the irrigation contractor if not the same and leave provisions for all individual trees in turf areas and all planting beds.
3. Irrigation / Landscape contractor to guarantee 100% coverage and 50% overlap (head to head coverage) to all landscaped areas and furnish and install a rain sensor.
4. Irrigation Contractor to adapt design to onsite conditions adjusting heads and changing nozzles as required to avoid overspray onto buildings or paved areas.
5. The contractor shall ensure that the irrigation system is operational and free of leaks prior to any planting being finalized. Plant material that is installed prior to the irrigation system being operational shall be watered by the contractor at his or her expense. Water for plant establishment should be included in the cost of the plant.
6. All guidelines as outlined by the South Florida Water Management District (SFWMD) or water management district with jurisdiction shall be strictly adhered to.
7. Any existing irrigation system shall be retrofitted to comply with the specifications as outlined above.

J. HARDSCAPE & OTHER MATERIALS

1. Face of trees and palms to be located a minimum of 2' setback from all fences, walkways, walls, and paved surfaces, unless otherwise indicated on the plans. Refer to details.

K. UTILITIES / CLEARANCES

1. The contractor shall be responsible for determining the location of and avoid and protect utility lines, buried cables, and other utilitities. The owner or Landscape Architect shall not be responsible for damage to utility or irrigation lines.
2. Trees shall be placed a minimum of 5 ft. from underground utilities, unless otherwise approved in writing by Landscape Architect and Owner.
3. All canopy trees to be planted min. of 15' from light source/poles. Unless otherwise approved by the City / Landscape Architect and Owner.
4. Landscape contractor shall contact the county, city and/or utility companies to locate all underground utilities or structures prior to digging. Landscape contractor shall repair all damage to underground utilities, and/or construction caused by utility damage, at no cost to the owner.
5. All plant material symbols shown on landscape plan shall be considered diagrammatic and should be adjusted in the field by contractor to avoid all utilities, and all other obstructions.
6. If/ When digging in right of way needed: Two (2) full business days before digging, call toll free 1-800-432-4770, or 811, Sunshine State One Call of Florida, inc. Notification Center. In addition, call the City's Utilities/Public Works Department. Contractors are responsible for coordinating with the owners and appropriate public agencies to assist in locating and verifying all underground utilities prior to excavation. All existing utilities shown on the plans are to be considered approximate and should be verified by the contractor prior to the start of work operations.
7. Above and below ground utilities shall be verified and located in the field by the contractor prior to commencing work in the project area. The contractor shall examine available utility plans and confirm conflicts between indicated or located utilities and landscape work. The contractor shall then notify the Project Engineer of said conflicts and the Engineer will coordinate any necessary adjustments with the utility provider. Tree locations will be adjusted as necessary when in conflict with existing utilities.
8. The final plant locations may be adjusted, as approved / directed by the Landscape Architect in writing, to accommodate utilities compliance. Excavations within 5' of known utilities should be done by hand.
9. Contractor shall familiarize himself with the location of and avoid and protect utility lines, buried cables, and all other utilities, noted or not, on plans.
10. Leave clearance and access to all above ground or at grade meters and equipment.
11. Landscape planting shall be in conformance with FPL guidelines for setbacks from overhead utility lines.
12. Landscaping shall not interfere with light poles, fire hydrants, electrical/mechanical equipment access, signs, drainage structures, etc. Bring to the attention of Landscape Architect any conflicts.

L. ROOT BARRIERS

1. Root barriers will be installed to protect building foundations, curbing, walkways, paved areas, roadway base material and utilities from existing large trees or proposed new trees that are within 5' of existing or new approved construction or as may be deemed necessary as job progresses.
2. Mechanical Root barriers will be used for large existing Canopy Trees and chemical type barriers will be used for new trees.
3. Mechanical Root barriers will be "DeepRoot" and Chemical Root barriers will be "Biobarrier". Substitutions must be of approved equal or better quality.
4. Root barriers will be installed per manufacturer specifications.
5. Root barrier depth will be determined by manufacturer recommended depth chart (http://www.geo-synthetics.com/pdf/BioBarrier/BiobarrierApplicationManual.pdf) and as required by on-site conditions in a case by case basis as deemed necessary by Landscape Architect Architect / ISA Arborist and City Landscape Inspector.

M. LANDSCAPE BACKFILL & SOIL AMENDMENT

1. All building construction material and foreign material shall be removed from the planting areas and replaced with 70/30 mix of organic planting soil and/or amend the existing soils per section H.2.
2. Planting soil mix shall be delivered to the site in a clean loose and friable condition and is required around the root ball of all trees and shrubs, the top 6" of all shrubs and ground cover beds and top 2" of all grassed areas. This soil shall be tilled into the existing soil after the existing soil has been cleaned of all undesirable foreign materials. Recycled compost is encouraged as a soil amendment alternative. Planting soil to be weed free.
3. Planting backfill for palms shall be clean coarse native sand unless specified elsewhere.
4. Do not allow air pockets to form when backfilling. All trees shall be watered-in utilizing water probe or a tree bar.

N. PLANT SIZE & QUALITY

1. All plant material must meet or exceed the minimum size requirements as specified on the plant list. Height specification governs over container size if both specifications given cannot be met. Any other requirements for specific shape or effect as noted on the plan shall also be required for acceptance.
2. Material specified as Balled and Burlapped (B&B) can be accepted in container if not available as B&B at the discretion of Landscape Architect; if not root bound and/or circling roots removed and root ball is proportionate to Tree / Palm.
3. U.O.N. All trees designated as single trunk shall have a single, relatively straight, dominant leader, proper structural branching and even branch distribution. Trunks on palms shall be uniform in thickness for the entire length of the palm and shall not taper off to disproportionate thinness towards the crown. Trees with bark inclusion, tipped branches, and co-dominant trunks will not be accepted. Trees with girdling, circling and/or plunging roots will be rejected.
4. Use nursery grown plant materials that complies with all required inspection, grading standards, and plant regulations in accordance with the latest edition of Florida Department of Agriculture, "Grade & Standards for Nursery Plants".
5. All trees and palms shall be free of open wounds and unsightly visible scars.
6. All substitutions must be approved by the City if it is required Canopy and by Landscape Architect / Owner if supplementary accent material.
7. Contractor shall comply with Federal, State, and Local laws and regulations pertaining to the inspection for plant disease and insect infestation.
8. Trees, palms, shrubs, ground covers:
   Plant species and sizes shall conform to those indicated on the drawings. All nursery stock shall be in accordance with grades and standards for nursery plants parts 1 and 2, latest edition published by the Florida Department of Agriculture and Consumer Services, unless specified otherwise. All plants shall be Florida grade number 1 or better as determined by the Florida Division of Plant Industry and tightly knit plant, so trained or favored in its development that first appearance is unquestionable and it is outstandingly superior in form, number of branches, compactness and symmetry. All plants shall be freshly dug, sound, healthy, vigorous, well branched and free of disease and insect eggs and larvae and shall have adequate root systems. Trees and palms shall be uniform in size and shape. All materials shall be subject to approval by the Landscape architect. Plants shall be pruned prior to delivery only upon the approval of the Landscape Architect.
9. All containers grown material shall be healthy, vigorous, well-rooted plants and established in the container in which they are sold. The plants shall have tops of good quality and be in a healthy growing condition. An established container grown plant shall be transplanted into a container and grown in that container sufficiently long enough for the new fibrous roots to have developed so that the root mass will retain its shape and hold together when removed from the container.
10. Field grown trees and palms previously root pruned shall obtain a root ball with sufficient roots for continued growth without resulting shock.
11. Root suckers on any tree are not acceptable and must be properly pruned.
12. Contractor shall coordinate with Landscape Architect and Owner to obtain prior approval for the selection of the specific specimens of all palms and any trees of more than six feet in height. Contractor to supply photograph of trees prior to purchase and installation.

O. PLANTING NOTES

1. At the discretion of the Landscape Architect, plants are subject to review for approval for size, variety, condition and appropriateness to the design intent.
2. All synthetic burlap, synthetic string or cords, or wire baskets shall be removed before any trees are planted. All synthetic tape (i.e. tagging tape, nursery tape) shall be removed from trunks, branches, etc. before inspection. The top 1/3 of any natural burlap shall be removed or tucked into the planting hole before the trees are back filled.
3. All "groundcover" requires 75% coverage and 100% within 3 months of installation. Bring to the attention of Landscape Architect in writing before commencing if this is not achievable with the design.
4. Set tree no deeper than it was in its original growing condition with the top of the root ball even with, or slightly higher (+/- 1") than the finished grade.
5. All trees/palms shall be planted so the top of the root ball, root flair are slightly above final grade. Shrub material shall be planted such that the top of the plant ball is flush with the surrounding grade.
6. All trees and palms shall be braced / staked per accepted standards by the Florida Nursery, Growers & Landscape Association (FNGLA). Nailing into trees and palms for any reason is prohibited and the material will be rejected. Please refer to the planting details.
7. All trees, new or relocated, to be staked and guyed as detailed.
8. Layout shrubs to create a continuous smooth front line and fill in behind.
9. Excavate pit or trench to 1-1/2 times the diameter of the balls or containers or 1' wider than the spread of roots and 3" deeper than required for positioning at proper height . Compact a layer of topsoil in bottom before placing plants. Backfill around plants with planting mixture, compacted to eliminate voids and air pockets. Form grade slightly dished and bermed at edges of excavation. Apply 3" of mulch.
10. Groundcover and shrubs to be spaced in a uniform and consistent pattern per planting details.
11. All mechanical equipment, irrigation pumps, FPL transformers, pool pumps, etc. shall be screened on a minimum of three sides by landscape shrubs.
12. Contractor shall not mark or scar trunks in any fashion.
13. When requested by Landscape Architect, demonstration of healthy root system if not previously approved, can include tree removal and re-installation for inspection at no additional cost to the owner.
14. Remove rejected Plant material from the Site immediately and replace with acceptable plants.

P. FERTILIZATION

1. All Fertilization shall comply with state fertilization laws. Fertilization shall be Agriform "20-10-5 Plus minors" or similar approved slow-release tablets applied per manufacturer suggested application rate chart:

Agriform® 21-gm Tablets (SKU# 90026*; 500 tablets/case)

	NEW **Tree / Shrub Container Size**						
	1 Gal	**2 Gal**	**3 Gal**	**5 Gal**	**7 Gal**	**15 Gal**	**24" Box**
Installation:	1	1 to 2	2 to 3	2 to 3	3 to 5	7 to 10	15 to 24

- Place plant in the hole and backfill to halfway point.
- Do not place tablets in the bottom of the planting hole.
- Place Agriform Tablets in the hole about 1to 2 inches away from root tips.
- Finish filling the hole around the plant to grade level.

SCOTTS: 1-800-492-8255 or visit www.scottspro.com

Q. SOD

1. All areas disturbed during construction shall be sodded with St. Augustine 'Seville' unless otherwise noted. These disturbed areas shall have proper irrigation established or re-established if they were disrupted or non-functional.
   Landscape Contractor to supply and install 2" soil layer 50/50 mix blanket for all new sod areas.
2. All open areas not covered by trees, palms, shrubs, vines, ground covers or existing sod in good condition to remain, shall receive Stenotaphrum Secundatum, St. Augustine 'Seville' sod, whether labeled on the plans or not, unless a different species is indicated on the planting plan. Sod shall be strongly rooted, free from weed, fungus, insects and disease. Contractor shall be paid by the total sodded area x the unit price submitted (field verified).
3. Sod shall be machine stripped no more than 24 hours prior to laying.
4. Lay sod strips with tight joints, do not overlap, stagger strips to offset joints in adjacent courses. Work sifted soil mix into minor cracks between pieces of sod and remove excess soil deposits from sodded areas. Sod on slopes greater than 3:1 shall be immediately staked after planting.

R. INSPECTION & ACCEPTANCE

1. Notify the governing Agency if required and Landscape Architect of commencement.
2. Onsite plant deliveries shall occur on Monday through Friday only unless otherwise directed by the Landscape Architect / Owner. The contractor shall ensure that plant material is delivered undamaged from transportation or digging operations. The Landscape Architect may reject material that has been damaged or rendered unacceptable due to relocation or transportation from the point of origin. All plant material shall be available for inspection and approval by the Landscape Architect prior to final installation.
3. There shall be one final inspection for approval by each of the presiding governing agency, Landscape Architect and owner. Contractor shall ensure that the plans, details, specifications and notes have been adhered to and that the landscape and irrigation installation is compliant to all items as directed on the plans prior to scheduling of the final inspection.
4. Upon completion of the work, the Landscape Contractor shall notify the Landscape Architect and request a final inspection. Any items that are judged incomplete or unacceptable by the Landscape Architect or owner shall be promptly corrected by the Landscape Contractor.
5. No substitution of plant material, type or sizes will be permitted without prior written authorization from the Landscape Architect and owner.
6. To obtain final payment, Contractor must provide release of all mechanic's liens and material liens.

S. MULCH

1. All planting beds shall be mulched to a depth of 3" with an organic mulch approved by Landscape Architect. No heavy metals, such as arsenic, etc. are to be contained in the mulch. The contractor shall provide certification if requested or proof that mulch is free of heavy metals or similar environmental contaminants.
2. Shredded approved organic mulch to be used beyond trunk in all directions and throughout all hedges and plant material.
3. All trees in sodded areas shall have a clean cut 4' diameter mulch ring.
4. Preferred mulch is shredded melaleuca. Cypress, red, gold and green mulch is prohibited.
5. All mulch shall have a minimum 3" separation from the trunk of the tree/palm trunk to avoid rotting.

T. WATERING

1. All plant material shall be watered in thoroughly at the time of planting.
2. It is the sole responsibility of the Landscape Contractor to ensure that all new plantings receive adequate water during the installation and until completion of contract. Deep watering of all new trees and palms and any supplemental watering that may be required to augment natural rainfall and site irrigation is mandatory to ensure proper plant establishment and development and shall be provided by Contractor as a part of this contract.

U. CLEAN UP

1. The Landscape Contractor is responsible for maintaining all landscape planting areas until final acceptance of the owner.
2. The contractor is responsible for mowing the entire project during planting and establishment periods, based on mowing project once a month from October to April, and twice a month from April to October (During installation and plant establishment only and until final inspection and owner accepts and takes ownership).
3. Any excess soil, undesired stones or debris resulting from landscape operations shall be removed promptly, keeping the site clean as work progresses.
4. The Landscape Contractor shall at all times keep the premises free from accumulation of waste material or debris caused by their crews during the performance of the work. Upon completion of the work, the contractor shall promptly remove all waste materials, debris, unused plant material, empty plant containers, and all equipment from the project site.

V. MAINTENANCE

1. Landscape Contractor to return to job site 12 months after tree bracing and remove all tree braces. Owner may choose to retain 5% of payment to ensure compliance.
2. The Landscape Contractor shall water, mulch, weed, prune, and otherwise maintain all plants, including sod, until completion of contract or acceptance by landscape architect. Settled plants shall be reset to proper grade, planting saucers restored, and defective work corrected.
3. Trees and shrubs shall be maintained to keep clearance of stop signs and safety clearance for visibility at traffic intersection.

W. GUARANTEE & REPLACEMENT

1. By accepting the contract, the Contractor is thereby guaranteeing all plant materials and design for a period of not less than one (1) year from the time of final acceptance by the owner. Contractor shall replace any plants which die or wither within such period with healthy plants that meet specifications of the same species and size without additional cost to the owner unless such death or withering is due to Owner's failure to do ordinary maintenance on such plants after final acceptance in accordance with any maintenance instructions given by Landscape Architect for such plants. Such replacement shall include all plants and labor to plant the replacement plants. Any plant materials damaged by lightning, storms, freeze damage or other "acts of God" as well plants damaged by vehicles, vandalism or neglect are not included in this replacement agreement. If requested, the Landscape Architect may act as a mediator between owner and Landscape Contractor on a time material basis. "Plants" includes all trees, palms, shrubs, grass and other plants provided or planted by Contractor.

X. MISCELLANEOUS.

1. All work to be done in a professional manner.
2. No change order shall be valid, due or paid unless it is approved by Owner in writing in advance.
3. These notes shall be an integral part of the contract of Contractor and shall be deemed incorporated therein by reference. In the event of a conflict among the terms among the plans and these notes, the terms of this document shall control.

Y. ABBREVIATIONS IN NOTES AND PLANS

U.O.N = Unless Otherwise Noted
L.A = Landscape Architect
S.F.= Square Feet
STD = Standard (single trunk)
B&B = Balled and Burlaped
BLDG DEP = Building Department
RFI = Request for Information
FPL= Florida Power & Light
C.O. = Certificate of Occupancy
ISA CA or ISA Arborist = International Society of Arboriculture Certified Arborist

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Florida Certificate of Authorization # - 7928

BID / CONTRACT NO. :

REVISIONS

NO.	DESCRIPTION	DATE

PRELIMINARY PLAN
NOT FOR CONSTRUCTION
THESE PLANS ARE NOT FULLY PERMITTED AND ARE SUBJECT TO REVISIONS MADE DURING THE PERMITTING PROCESS. RESPONSIBILITY FOR THE USE OF THESE PLANS PRIOR TO OBTAINING PERMITS FROM ALL AGENCIES HAVING JURISDICTION OVER THE PROJECT WILL FALL SOLELY UPON THE USER.

WINFIELD BOULEVARD IMPROVEMENTS CITY OF MARGATE

SCALE:	AS NOTED
DATE ISSUED:	FEBRUARY10, 2017
DRAWN BY:	SR
DESIGNED BY:	MP
CHECKED BY:	MP

MICHAEL J. PHILLIPS, RLA
FLORIDA REG. NO. LA0001540
(FOR THE FIRM)

SHEET TITLE

LANDSCAPE NOTES

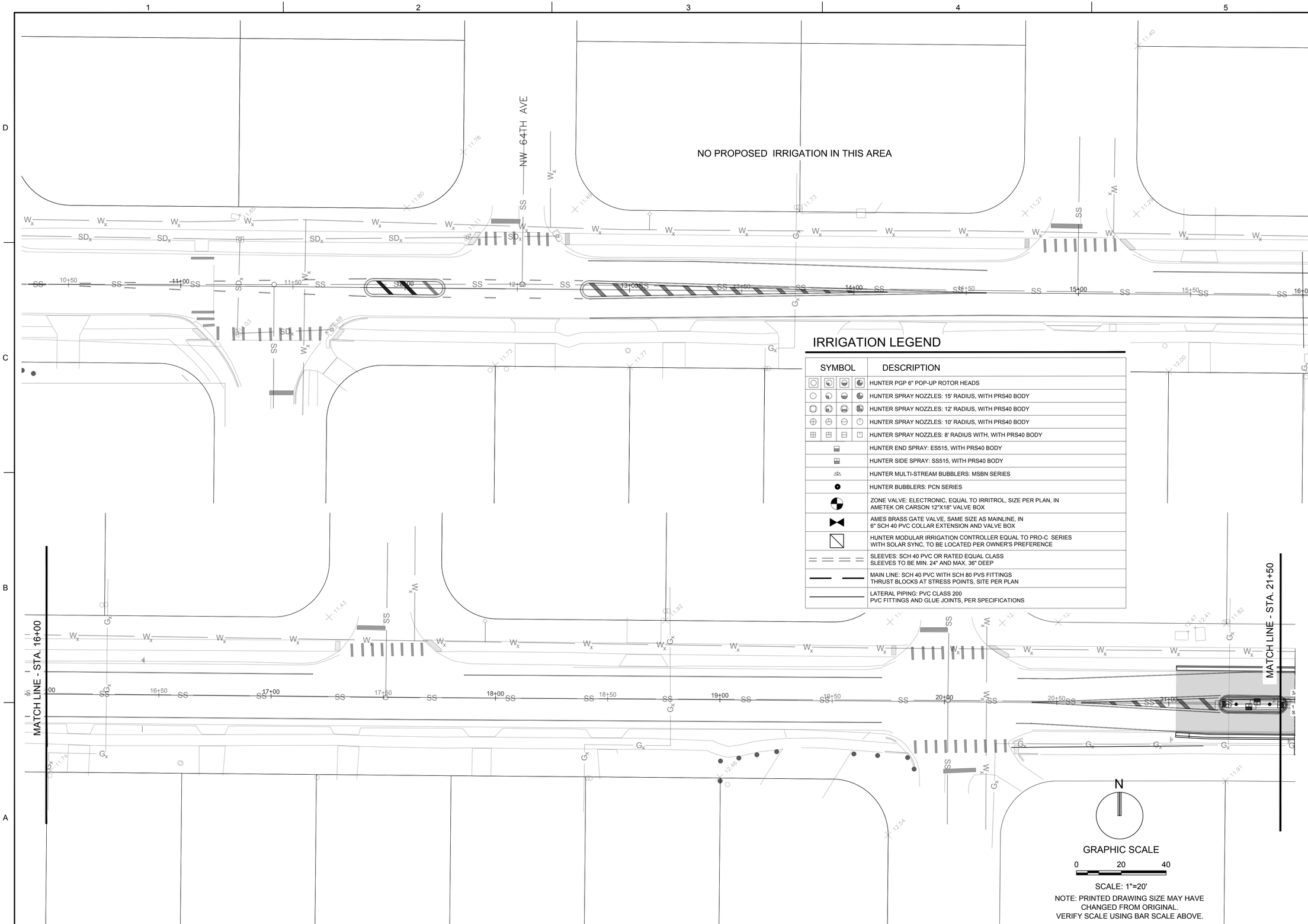
SHEET NUMBER

LN-101

SHEET 16 of

PROJECT NO. 09359.01

Drawing name: N:\09\09359.01\Winfield Boulevard - City of Margate\Landscape Architecture\Cadd\dwg\09359.01-LN-101-LANDSCAPE NOTES.dwg Layout Name: LN-101 Plotted by: sroseen Plotted on: Mar 20, 2017 - 11:03am



IRRIGATION LEGEND

SYMBOL	DESCRIPTION
	HUNTER PGP 6" POP-UP ROTOR HEADS
	HUNTER SPRAY NOZZLES: 15' RADIUS, WITH PRS40 BODY
	HUNTER SPRAY NOZZLES: 12' RADIUS, WITH PRS40 BODY
	HUNTER SPRAY NOZZLES: 10' RADIUS, WITH PRS40 BODY
	HUNTER SPRAY NOZZLES: 8' RADIUS WITH, WITH PRS40 BODY
	HUNTER END SPRAY: ES515, WITH PRS40 BODY
	HUNTER SIDE SPRAY: SS515, WITH PRS40 BODY
	HUNTER MULTI-STREAM BUBBLERS: MSBN SERIES
	HUNTER BUBBLERS: PCN SERIES
	ZONE VALVE: ELECTRONIC, EQUAL TO IRRITROL, SIZE PER PLAN, IN AMETEK OR CARSON 12"X18" VALVE BOX
	AMES BRASS GATE VALVE, SAME SIZE AS MAINLINE, IN 6" SCH 40 PVC COLLAR EXTENSION AND VALVE BOX
	HUNTER MODULAR IRRIGATION CONTROLLER EQUAL TO PRO-C SERIES WITH SOLAR SYNC, TO BE LOCATED PER OWNER'S PREFERENCE
	SLEEVES: SCH 40 PVC OR RATED EQUAL CLASS SLEEVES TO BE MIN. 24" AND MAX. 36" DEEP
	MAIN LINE: SCH 40 PVC WITH SCH 80 PVS FITTINGS THRUST BLOCKS AT STRESS POINTS, SITE PER PLAN
	LATERAL PIPING: PVC CLASS 200 PVC FITTINGS AND GLUE JOINTS, PER SPECIFICATIONS

KEITH & ASSOCIATES, INC.
consulting engineers
301 East Atlantic Boulevard
Pompano Beach, Florida 33060-6643
2160 NW 82nd Avenue
Doral, Florida 33122
(954) 788-3400 FAX (954) 788-3500
Florida Certificate of Authorization # - 7928

BID / CONTRACT NO. :

REVISIONS

NO.	DESCRIPTION	DATE

PRELIMINARY PLAN
NOT FOR CONSTRUCTION
THESE PLANS ARE NOT FULLY PERMITTED AND ARE SUBJECT TO REVISIONS MADE DURING THE PERMITTING PROCESS. RESPONSIBILITY FOR THE USE OF THESE PLANS PRIOR TO OBTAINING PERMITS FROM ALL AGENCIES HAVING JURISDICTION OVER THE PROJECT WILL FALL SOLELY UPON THE USER.

WINFIELD BOULEVARD IMPROVEMENTS CITY OF MARGATE

SCALE:	AS NOTED
DATE ISSUED:	FEBRUARY10, 2017
DRAWN BY:	SR
DESIGNED BY:	MP
CHECKED BY:	MP

MICHAEL J. PHILLIPS, RLA
FLORIDA REG. NO. LA0001540
(FOR THE FIRM)

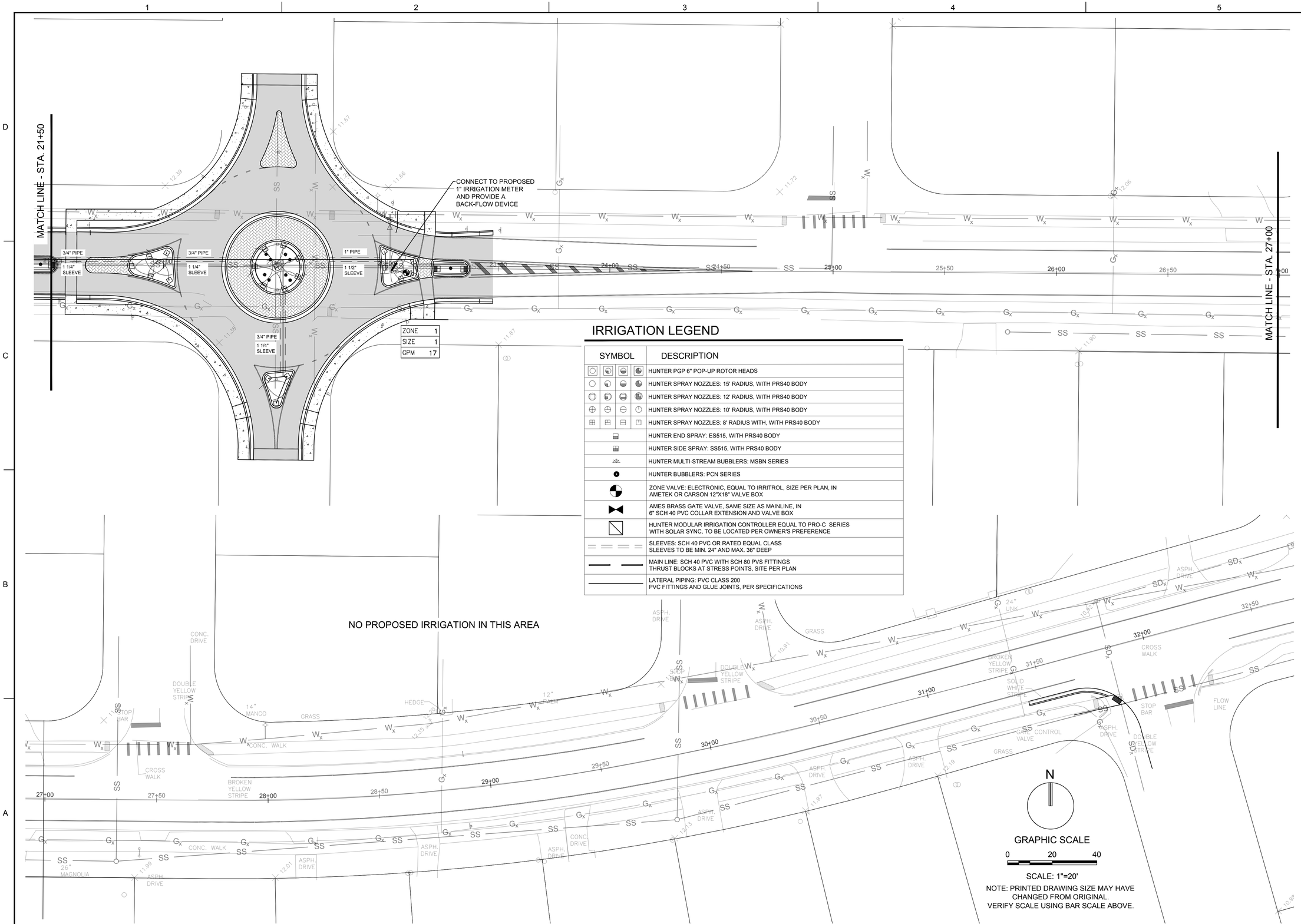
SHEET TITLE
IRRIGATION PLAN

SHEET NUMBER
IR-101

SHEET of 16

PROJECT NO. 09359.01

Drawing name: N:\09\09359.01 Winfield Boulevard -City of Margate\Landscape Architecture\Cadd\dwg\09359.01-LP-101-LANDSCAPE PLANS.dwg Layout Name: IR-101 Plotted by: sreem Plotted on: Mar 21, 2017 - 3:48pm



IRRIGATION LEGEND

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WINFIELD BOULEVARD IMPROVEMENTS CITY OF MARGATE

SCALE:	AS NOTED
DATE ISSUED:	FEBRUARY10, 2017
DRAWN BY:	SR
DESIGNED BY:	MP
CHECKED BY:	MP

MICHAEL J. PHILLIPS, RLA
FLORIDA REG. NO. LA0001540
(FOR THE FIRM)

SHEET TITLE

IRRIGATION PLAN

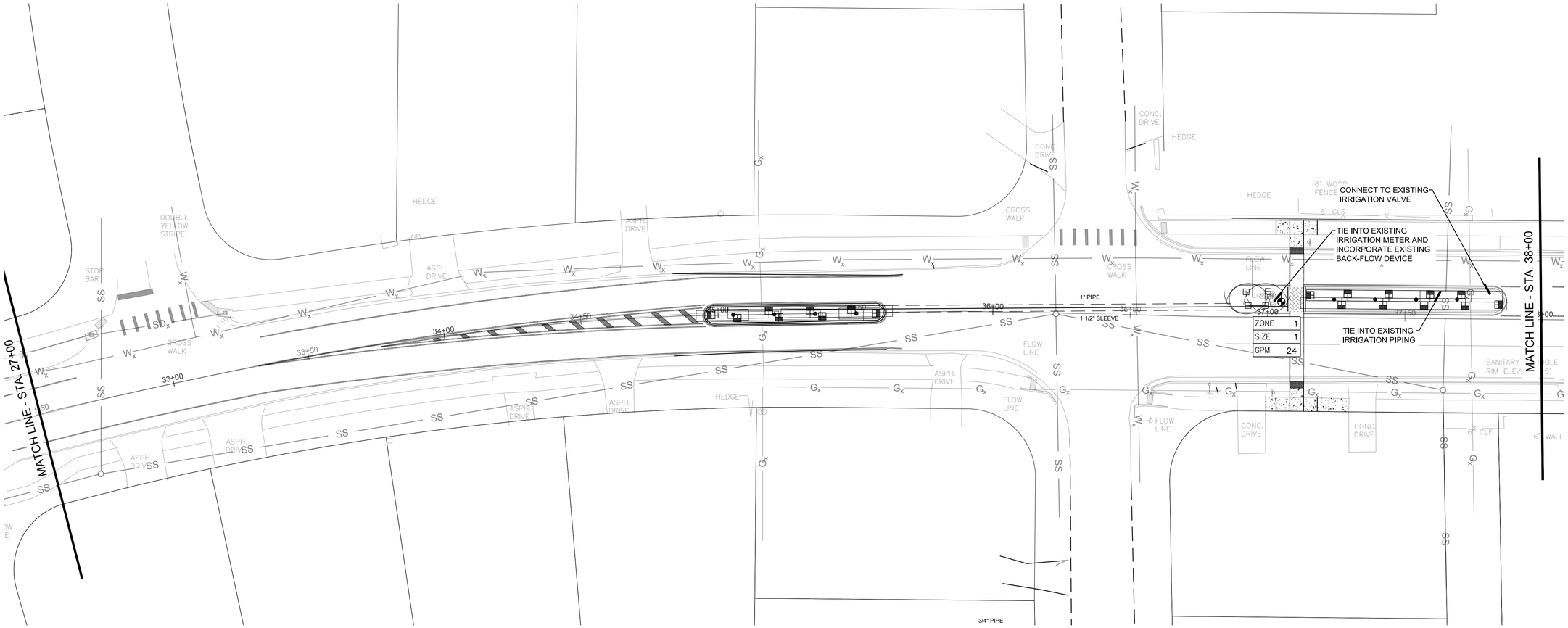
SHEET NUMBER

IR-102

SHEET of 16

PROJECT NO. 09359.01

Drawing name: N:\09\09359.01 Winfield Boulevard -City of Margate\Landscape Architecture\Cadd\dwg\09359.01-LP-101-LANDSCAPE PLANS.dwg Layout Name: IR-102 Posted by: brosen Posted on: Mar 29, 2017 - 4:22pm



IRRIGATION LEGEND

SYMBOL	DESCRIPTION
	HUNTER PGP 6" POP-UP ROTOR HEADS
	HUNTER SPRAY NOZZLES: 15' RADIUS, WITH PRS40 BODY
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	LATERAL PIPING: PVC CLASS 200 PVC FITTINGS AND GLUE JOINTS, PER SPECIFICATIONS

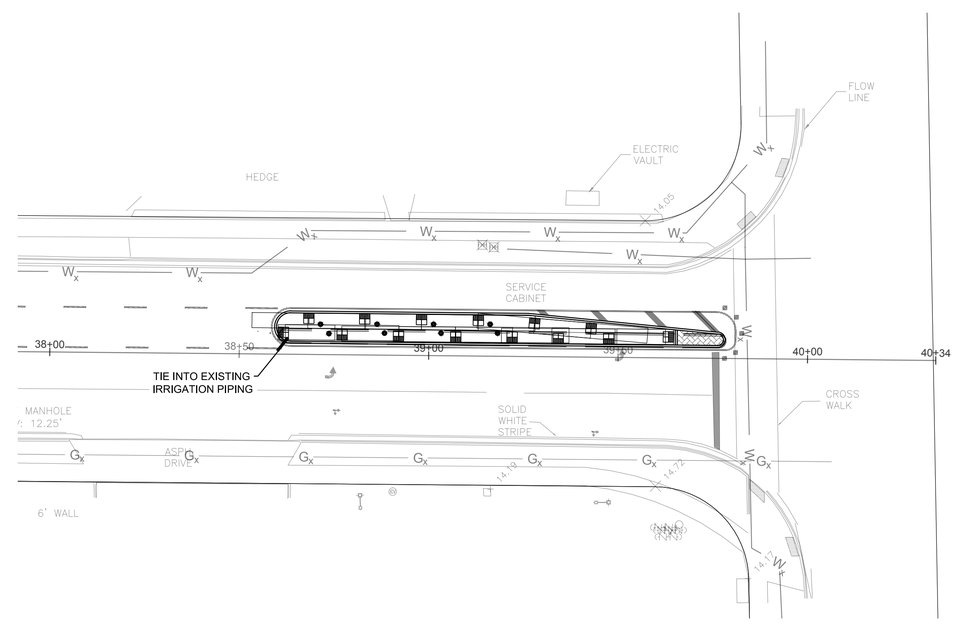
N

GRAPHIC SCALE

0 20 40

SCALE: 1"=20'

NOTE: PRINTED DRAWING SIZE MAY HAVE CHANGED FROM ORIGINAL. VERIFY SCALE USING BAR SCALE ABOVE.



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WINFIELD BOULEVARD IMPROVEMENTS CITY OF MARGATE

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MICHAEL J. PHILLIPS, RLA
FLORIDA REG. NO. LA0001540
(FOR THE FIRM)

SHEET TITLE

IRRIGATION PLAN

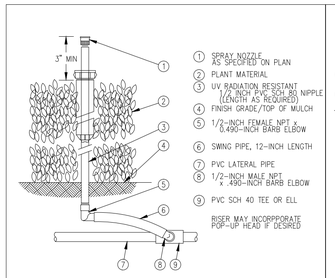
SHEET NUMBER

IR-103

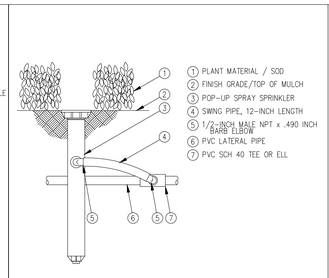
SHEET of

PROJECT NO. 09359.01

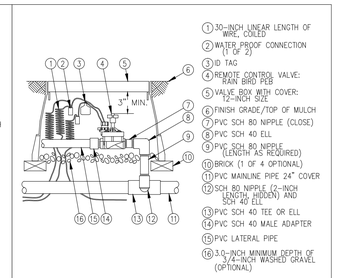
Drawing name: N:\09\09359.01 Winfield Boulevard -City of Margate\Landscape Architecture\Cad\dwg\09359.01-LP-101-LANDSCAPE PLANS.dwg Layout Name: IR-103 Plotted by: sosen Plotted on: Aug 16, 2017 - 8:42am



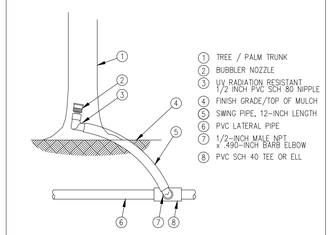
SHRUB RISER N.T.S.



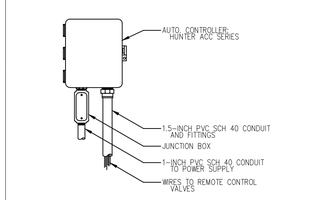
12" POP-UP SPRAY SPRINKLER N.T.S.



REMOTE CONTROL VALVE N.T.S.

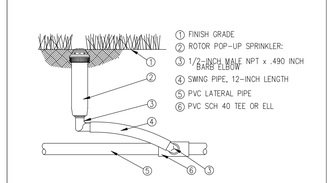


BUBBLER N.T.S.



NOTE:
1. ALL WIRES ARE TO RUN TO CLOCK FOR POINT OF CONNECTION.

AUTOMATIC CONTROLLER N.T.S.



ROTOR POP-UP SPRINKLER N.T.S.

IRRIGATION LEGEND

SYMBOL	DESCRIPTION
	HUNTER PGP 6" POP-UP ROTOR HEADS
	HUNTER SPRAY NOZZLES: 15' RADIUS, WITH PRS40 BODY
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	HUNTER SPRAY NOZZLES: 8' RADIUS WITH, WITH PRS40 BODY
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	MAIN LINE: SCH 40 PVC WITH SCH 80 PVS FITTINGS THRUST BLOCKS AT STRESS POINTS, SITE PER PLAN
	LATERAL PIPING: PVC CLASS 200 PVC FITTINGS AND GLUE JOINTS, PER SPECIFICATIONS

IRRIGATION NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR ALL MATERIAL REQUIRED TO MAKE THE SYSTEM FUNCTION PROPERLY. ALL IRRIGATION SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND ALSO STATE AND/OR LOCAL CODES.
2. IRRIGATION PLANS ARE SCHEMATIC AND DRAWN FOR GRAPHIC CLARITY. ALL PIPING BELOW PAVEMENT SHALL BE SLEEVED. LAYOUT OF IRRIGATION SYSTEM SHALL BE COORDINATED WITH CORRESPONDING LANDSCAPE PLAN.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING LOCAL UNDERGROUND UTILITY PROVIDERS TO VERIFY LOCATIONS. THE CONTRACTOR IS ENCOURAGED TO VISIT THE SITE PRIOR TO INSTALLATION AND BECOME FAMILIAR WITH EXISTING CONDITIONS.
4. VALVE LOCATIONS ARE SCHEMATIC ONLY AND WILL BE ADJUSTED FOR SITE CONDITIONS. EACH VALVE SHALL BE INSTALLED IN A AMETEK OR CARSON VALVE BOX. THE FLOW ADJUSTMENT FEATURE WILL BE USED TO BALANCE PRESSURE THROUGHOUT THE SYSTEM.
5. PIPING SHALL BE SIZED TO MINIMIZE FRICTION LOSS AND MAINTAIN FLOW VELOCITY BELOW 5 FPS.
6. THE IRRIGATION CONTROLLER SHALL BE INSTALLED IN ACCORDANCE WITH LOCAL CODES AND MANUFACTURER'S RECOMMENDATIONS. PROPER GROUNDING EQUIPMENT AND SURGE PROTECTION SHALL BE PROVIDED. A RAIN SENSOR SHALL BE INSTALLED TO OVER-RIDE THE CONTROLLER.
7. ALL HEADS ON RISERS SHALL BE SET AT THE HEIGHT OF ADJACENT PLANT MATERIAL.
8. SPRINKLER LOCATIONS ADJACENT TO PAVEMENT, STRUCTURES, FENCES, ETC. SHALL BE OFFSET AS FOLLOWS: 12" MIN FOR POP-UP MIST HEADS, 18" FOR SHRUB RISERS, 18" FOR ROTOR HEADS, AND TYPICALLY 5 FEET FOR ROTORS ALONG UNCURBED ROADWAYS.
9. ALL SLEEVING SHALL BE SCH 40 PVC TO SIZE INDICATED ON PLAN, OR IF NOT INDICATED, A MIN. OF 2 PIPE SIZES LARGER THAN SUPPLY LINE CONTAINED. ALL SLEEVES SHALL BE INSTALLED A MIN. OF 24" BELOW FINISH GRADE.
10. CONTROL WIRES SHALL BE UL APPROVED PE IRRIGATION CONTROL WIRE. USE 14 GAGE CONTROL WIRE AND 12 GAGE GROUND WIRE. WIRE SHALL BE BUNDLED AND ATTACHED TO THE MAIN LINE IN TRENCH OR THROUGH WIRE SLEEVES AT PAVEMENT CROSSINGS 24" BELOW FIN. GRADE. ALL SPLICES SHALL BE MADE WITH WATERPROOF DIRECT-BURIAL SPLICE KITS AND CONTAINED IN VALVE BOXES. TWO EXTRA CONTROL WIRES SHALL BE INSTALLED TO THE FURTHEST VALVES IN EACH DIRECTION FROM THE CONTROLLER.
11. PIPING IN NARROW PLANTING AREAS, PARKING ISLANDS AND PLANTERS SHALL BE SET TO ONE SIDE TO ALLOW ROOM FOR ROOT BALLS. PIPE AS INDICATED ON PLAN IS SCHEMATIC AND SHOULD BE ADJUSTED FOR FIELD CONDITIONS.
12. ALL GLUE JOINTS SHALL BE CLEANED, SANDED, AND TREATED WITH A COLORED HIGH ETCH PRIMER AND JOINED USING A SOLVENT CONFORMING WITH ASTM D2564.
13. SYSTEM PIPE SIZE 3/4" SHALL BE CLASS 200 PVC; SYSTEM PIPE SIZE 1" OR GREATER SHALL BE CLASS 160 PVC. SYSTEM MAIN WILL BE SCH. 40 PVC TO SIZE INDICATED ON PLAN. ALL FITTINGS WILL BE SOLVENT WELD SCH 40 PVC. MAIN LINE SHALL HAVE 24" MINIMUM COVER; ALL OTHER PIPING WILL HAVE 12" MIN. COVER. ALL BACKFILL FOR PIPE TRENCHES SHALL BE CLEAN AND FREE OF FOREIGN DEBRIS AND SHARP OBJECTS; BACKFILLED TRENCHES SHALL BE PROPERLY COMPACTED. ALL MAIN LINES WILL BE INSTALLED A MIN. OF 3' FROM ANY TREE OR PALM.
14. WATERING TIME PER STATION WILL BE DETERMINED IN THE FIELD AND PER LOCAL REQUIREMENTS. REFER TO MANUFACTURER'S INSTRUCTIONS FOR PRECIPITATION RATES OF SPRINKLERS SPECIFIED.
15. IRRIGATION SYSTEM TO PROVIDE 100% COVERAGE WITH 50% OVERLAP MIN. PROVIDE BUBBLERS FOR ALL NEW AND RELOCATED TREES AND PALMS.
16. RUST CONTROL SYSTEM TO BE INSTALLED WITH PUMP STATION (IF FROM WELL).
17. THE IRRIGATION SYSTEM IN THE RIGHT-OF-WAY IS TO INCORPORATE LOW TRAJECTORY SPRAY HEADS TO MINIMIZE OVERSPRAY.
18. AS-BUILT DRAWINGS SHALL BE PREPARED BY THE CONTRACTOR AND GIVEN TO THE OWNER PRIOR TO FINAL ACCEPTANCE.

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WINFIELD BOULEVARD IMPROVEMENTS CITY OF MARGATE

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MICHAEL J. PHILLIPS, RLA
FLORIDA REG. NO. LA0001540
(FOR THE FIRM)

SHEET TITLE
IRRIGATION DETAILS AND NOTES

SHEET NUMBER
IR-104

SHEET 16 of

PROJECT NO. 09359.01

Drawing name: N:\09\09359.01 Winfield Boulevard -City of Margate\Landscape Architecture\Cadd\dwg\09359.01-IR-102-IRRIGATION DETAILS.dwg Layout Name: IR-104 Plotted by: sroseen Plotted on: Mar 27, 2017 - 3:34pm