EMBRAER
AERO SEATING TECHNOLOGY
SPACEPORT COMMERCE PARK
SITE DEVELOPMENT PLAN

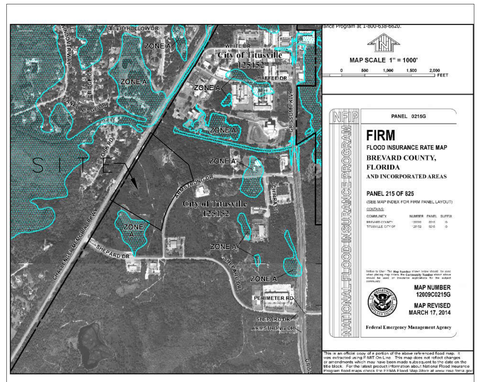
SECTION 4, TOWNSHIP 23 SOUTH, RANGE 35 EAST, BREVARD COUNTY, TITUSVILLE, FLORIDA

SHEET INDEX

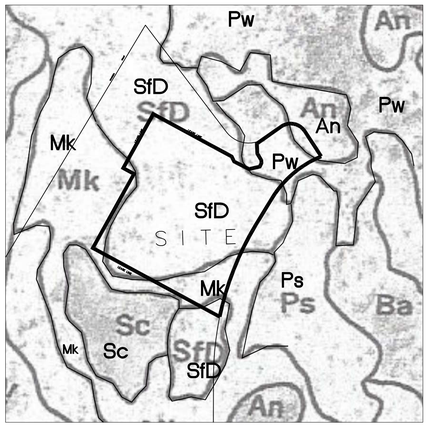
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SITE AERIAL MAP VICINITY MAP
CITY OF TITUSVILLE
BREVARD COUNTY, FLORIDA
N.T.S.



FLOOD MAP
BREVARD COUNTY, FLORIDA
N.T.S.



SOILS HYDROLOGIC GROUP
BREVARD COUNTY, FLORIDA
N.T.S.

City of Titusville Preliminary Concurrency Assessment

Project Name: EMBRAER — Date: December 10, 2015
Project Description:

Residential Density (dwelling units): — Non-Residential Intensity (1,000 s.f.): 55.665 KSF

Potable Water

Total Water Capacity*	4.440 MGD
Less Current Demand**	3.971 MGD
Less Future Commitments (PDEP/Water Supply Allocation permits)	0.110 MGD
Remaining Capacity	0.359 MGD
Estimated Unit Based Water Demand*** (3.41 ERU)	0.0520 MGD

*Five-Year Treatment Capacity based on design capacity of Main Water and Electric Treatment Facilities
** 12 Month Rolling Average
*** Based on 150 gallons/capita/day or 300 gallons/unit/day in accordance with City Code Section 34-213(b)
Based on Restaurant, Bar and Lounge per Square Foot of Gross Floor Area (GFA) Factor in Table 1 of Section 34-213(b)

Wastewater

Total Wastewater Capacity*	2.760 MGD
Less Current Demand**	1.050 MGD
Less Future Commitments (PDEP Permits)	0.090 MGD
Remaining Capacity	1.620 MGD
Estimated Unit Based Wastewater Demand*** (3.41 ERU)	0.0520 MGD

*Five-Year Treatment Capacity based on design capacity of Main Water and Electric Treatment Facilities
** 12 Month Rolling Average
*** Based on 150 gallons/capita/day or 300 gallons/unit/day in accordance with City Code Section 34-213(b)
Based on 50 gallons/unit/day or 100 gallons/unit/day in accordance with City Code Section 34-213(b)

Traffic Circulation

Primary Access — Adopted los: — Max Capacity: 14,600 ADT
Current Conditions
Roadway Segment: — 2014 E+C Count: 500 ADT — Volume/Count Ratio: 0.03
Future Conditions
Roadway Segment: N/A — Existing + New Count: 800 ADT — Volume/Count Ratio: 0.05

Secondary Access — Adopted los: — Max Capacity: ADT
Current Conditions
Roadway Segment: — 2014 E+C Count: ADT — Volume/Count Ratio:
Future Conditions
Roadway Segment: — Existing + New Count: ADT — Volume/Count Ratio:

Institute of Transportation Engineers (ITE) Index Number*: 140 710 Irvine
Average Vehicle Trips per Unit on a Weekday: AA
Total Average Vehicle Trips for this Development on a Weekday: 300 ADT
* Institute of Transportation Engineers Trip Generation Sec. 50 (8) (2) or Latest Edition

Recreation/Open Space

City Population:	43,902	Required Recreation/Open Space:	351.62 AC
Adopted LOS (acres/1,000 population):		Current Recreation/Open Space:	841.00 AC
		Existing Available Recreation/Open Space Capacity:	489.38 AC
Project Population:		Required Recreation/Open Space:	AC
		Remaining Recreation/Open Space Capacity:	489.38 AC

Staff Comments

No traffic data, estimates were applied. Traffic capacity assumes 2LU roadway, LOS D. Trip Gen = General Office + Manufacturing. Traffic study not required.

Evaluated By: Kwabena Otoso — Evaluation Expiration Date: 6/10/2016

CONCURRENCY ASSESSMENT

SITE DATA

SITE COVERAGES

PROPOSED	AREA (sf)	AREA (ac)	PERCENT
BUILDING #1 FOOTPRINT	40,475	0.93	6%
BUILDING #2 FOOTPRINT	13,189	0.30	2%
COVERED AREA BUILDING #1	2,354	0.05	0%
PAVING + SIDEWALKS	141,640	3.25	22%
GRASS - LANDSCAPE	455,742	10.46	70%
TOTAL SITE AREA	653,400	15.00	100%
PERVIOUS	455,742	10.46	70%
IMPERVIOUS	197,658	4.54	30%
TOTAL SITE AREA	653,400	15.00	100%

BUILDING INFORMATION

	BUILDING 1	BUILDING 2	TOTAL
MANUFACTURING	40,475		
OFFICE		13,189	
STORAGE			
TOTAL AREA	40,475	13,189	53,664
TYPE OF CONSTRUCTION	IIB	IIB	
BUILDING #1 HEIGHT	34'	34'	
STORIES	1	1	
BUILDING COVERAGE	6.0%	2.0%	8.0%

ZONING INFORMATION

CURRENT ZONING	PID
FUTURE LAND USE	PLANNED INDUSTRIAL PARK

BUILDING SETBACKS

FRONT	50'
SIDE	35'
SIDE CORNER	50'
REAR	50'
MINIMUM LOT SIZE	30,000 SF
MINIMUM LOT WIDTH	150'
MAXIMUM LOT COVERAGE	NONE

PARKING REQUIREMENTS

BUILDING USE	CODE RATIO	AREA (sf)	SPACES REQ
BUILDING #1 MANUFACTURING	1SP/500	10,000	20
1ST 10,000 SF THEN 1SP PER ADDITIONAL 10,000 SF		30,475	4
BUILDING #1 OFFICE	1 SP/ 300 SF	13,189	44
TOTAL PARKING REQUIRED			**68**
PARKING PROVIDED			
CARS			171
BIKES OR MOTORCYCLES (5%)			9
TOTAL PARKING PROVIDED			**180**
HANDICAP REQUIRED			6
HANDICAP PROVIDED			7

DESIGN TEAM:

GENERAL CONTRACTOR/PROJECT MANAGER
COMPANY: RUSH CONSTRUCTION, INC.
ADDRESS: 6285 VICTORSPACE BLVD, TITUSVILLE, FL 32780
NAME: WILLIAM CHIVERS
PHONE: 321-267-8100
FAX: 321-267-9944
EMAIL: wchivers@rushinc.com

APPLICANT/DEVELOPER
COMPANY: EMBRAER AIRCRAFT HOLDING, INC.
ADDRESS: 1100 WOODY BURKE ROAD, MELBOURNE, FL 32901
NAME: JIM SCHLETTE
PHONE: 321-426-2979
FAX:
EMAIL: jschlette@embraer.com

ARCHITECT
COMPANY: REYNOLDS SMITH HILL
ADDRESS: 115 ALIMA BLVD, SUITE 201, MERRITT ISLAND, FL 32953
NAME: TIM GEIGER
PHONE: 321-454-4104
FAX: 321-453-0223
EMAIL: tim.geiger@rsandh.com

LAND OWNER
COMPANY: BREVARD COUNTY - NORTH BREVARD ECONOMIC DEV. ZONE
ADDRESS: 400 SOUTH STREET, TITUSVILLE, FL 32780
NAME: TROY POST, CEcD
PHONE: 312-960-1458
FAX:
EMAIL: troy.post@brevardcounty.us

ENGINEERING/SURVEYING
COMPANY: HONEYCUTT & ASSOCIATES, INC.
ADDRESS: 3700 S. WASHINGTON AVENUE, TITUSVILLE, FL 32780
NAME: RICHARD KERN, PE RODNEY HONEYCUTT, PE
PHONE: 321-267-6233
FAX: 321-299-7847
EMAIL: rick@honeycutt.cc rodney@honeycutt.cc

LANDSCAPE DESIGNER
COMPANY: ENVIRONMENTAL DESIGN SERVICES
ADDRESS: 141 EAST DOVER STREET, SATELLITE BEACH, FL 32937
NAME: BRIAN ALDERFER
PHONE: 321-288-6143
FAX:
EMAIL: balderfer@bellsouth.net

OTHER CONTACTS:

CITY OF TITUSVILLE	**CITY OF TITUSVILLE**
COMPANY: ENGINEERING INSPECTIONS	COMPANY: WATER RESOURCES
ADDRESS: 555 S. WASHINGTON AVENUE, TITUSVILLE, FL 32796	ADDRESS: 3336 GARDEN STREET, TITUSVILLE, FL 32796
NAME: PRESTON YATES	NAME: ASHLEIGH COBRIDGE
PHONE: 321-567-3796	PHONE: 321-567-3969
FAX: 321-383-5700	FAX: 321-383-5653
EMAIL: N/A	EMAIL: N/A
ELECTRICAL UTILITIES	**TELEPHONE UTILITIES**
COMPANY: FLORIDA POWER & LIGHT	COMPANY: AT&T
ADDRESS: 9001 ELLIS ROAD, MELBOURNE, FL 32904	ADDRESS: 712 FLORIDA AVENUE, COCOA, FL 32922
NAME: PHILIP DOMMLO, CONSTR PROJ MNG	NAME: MARK G. LoCASTRO, DIRECTOR-PROVISIONING
PHONE: 321-383-7268	PHONE: 321-690-2067
FAX: 321-383-7298	FAX: 321-636-0233
EMAIL: N/A	EMAIL: N/A
CABLE UTILITIES	**GAS UTILITIES**
COMPANY: BRIGHTHOUSE NETWORKS	COMPANY: NUI CITY GAS COMPANY
ADDRESS: 720 MAGNOLIA AVENUE, MELBOURNE, FL 32935	ADDRESS: 4180 SOUTH U.S. 1, ROCKLEDGE, FL 32955
NAME: ROBERT WALTON, CONST MGR	NAME: JERROLD PIERCE, DISTRIBUTION SUPERINTENDENT
PHONE: 321-254-3300	PHONE: 321-636-4644
FAX: 321-254-1307	FAX: 321-363-2521

VARIANCES

	ORDER #	VARIANCE DESCRIPTION
1	22-2015- SEC 39-47(b)	To allow no sidewalk to be construted along any lot or parcel of ground abutting any public street.
2	22-2015 SEC 39-68 (a)	To allow interior landscaped areas and vehicular areas to have no curbing
3	22-2015 SEC 39-68 (b)	To allow no curbing to be installed around required islands in pavement
4	22-2015 SEC 59-547 (b)	To allow a parking lot bo be located within the 25' front yard setback
5	22-2015 SEC 59-549 (b)(3)	To allow interior landscaped areas and vehicular areas to have no curbing
6	22-2015 SEC 59-549 (h)(2)	To allow a fence to be located within the 50' front yard setback
7	22-2015 SEC 59-549 (i)	To allow no sidewalk, bike lane and/or pedestrian/bicyice path to be constructed along the street.

CONTRACT SET FOR
CONSTRUCTION 3-1-2016

THIS SPACE RESERVED FOR USE BY THE CITY OF TITUSVILLE

PROJECT NUMBER:

APPROVAL SIGNATURES — DATE

ENGINEERING: ____ ____
PLANNING: ____ ____
FIRE DEPT: ____ ____
UTILITIES: ____ ____
EXPIRATION DATE: ____

RICHARD J. KERN, PE
39737
STATE OF FLORIDA

SEAL

DATE: 3-1-6

REVISION NUMBER	DATE	REVISION DESCRIPTION

INITIAL PLAN SUBMITTAL DATE:

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RUSH

Honeycutt & Associates, Inc.
ENGINEERS•SURVEYORS•PLANNERS
3700 South Washington Avenue
Titusville, Florida 32780
(321) 267-6233 Fax (321) 269-7847
Certificate of Authorization EB-0007623
mail@honeycutt.cc

COVER SHEET

EMBRAER AERO SEATING TECHNOLOGY
SPACEPORT COMMERCE PARK
TITUSVILLE, FLORIDA

SHEET NO: C 1.1
FILE NAME:

GENERAL NOTES:

1. The Contractor shall comply with all rules, regulations, and specifications of City of Titusville for site improvements.

   A. The Contractor shall notify the following two (2) weeks prior to the start of construction and shall coordinate all construction phases with them:

      City of Titusville Utility Engineering 1-321-383-5864
      Honeycutt & Associates, Inc. 1-321-267-6233

2. All work shall be accomplished in strict accordance with City of Titusville standards and specifications and all other applicable federal, state, and local codes, ordinances, and regulations. The Contractor shall comply with all permits by local and state agencies.

3. The specifications, notes, and plans call attention to certain required features of the construction, but do not purport to cover all details of design and construction. However, the Contractor shall furnish and install the work in all details in it's entirety and have it ready for operation.

4. The Contractor shall make the project site available for review and inspection to all applicable regulatory agencies, engineering personnel, and owner representatives.

5. All concrete used within the right-of-way shall have a minimum 28 day compressive strength of 3000 psi and a maximum five (5) inch slump unless otherwise approved by the Engineer.

6. All limerock base (including materials and testing) shall be in accordance with Section 200 of FDOT Standard Specifications for Road and Bridge Construction.

7. All subgrade shall conform to specifications as shown on the plans.

8. If it is necessary to remove existing pavement, the Contractor shall furnish a neat edge along the pavement to be retained by sawing a neat line approximately two (2) inches deep before breaking the adjacent pavement away.

9. All street signs, roadway striping, etc., shall be in accordance with the City of Titusville codes. In the absence of a particular requirement use the Manual of Uniform Traffic Control Devices and FDOT Roadway and Traffic Design Standards.

10. All storm drain piping shall be Reinforced Concrete Pipe, Class III (ASTM C-76), or Class IV at location with less than two (2) feet of cover to road surface unless otherwise noted. Smooth Wall Corrugated Polyethylene Pipe (SW-CPP) per FDOT specifications may be used with more than two (2) feet of cover. SW-CPP may not be used within a City of Titusville right-of-way.

11. The Contractor shall lay each pipe true to line and grade, forming a close concentric joint with the adjoining pipe. All adjustments to line and grade must be made by scraping away or filling in under the barrel of the pipe and not by wedging or blocking any portion of the pipe. In no case shall the pipe be walked on either before or after the joints have been made. Pipe shall not be driven to grade by striking it with an unyielding object. Any pipe that is not in true alignment or which shows any settlement after laying, will be taken up and relayed by the Contractor with no additional compensation.

12. The Contractor shall take all precautions to secure a watertight drain under all conditions and test the water-tightness of drains by infiltration or exfiltration tests. In no case shall the infiltration or exfiltration exceed one (1) gallon per inch of diameter of pipe per mile. The Contractor shall furnish all labor, materials, and equipment to test the amount of infiltration or exfiltration. Where infiltration or exfiltration is excessive, the Contractor shall take the necessary steps to remedy the condition by uncovering the drain, remaking the joints, or replacing the entire length of drain as may be required.

13. The backfilling operation shall be in accordance with City of Titusville codes. In the absence of a particular requirement, use Section 125.8 of the FDOT Standard Specifications for Road and Bridge Construction.

14. All mitered end sections shall be constructed in compliance with Section 273, Sheet 1 of 6, FDOT Roadway and Traffic Design Standards.

15. The entire storm drainage system shall be free of dirt, sand, and debris prior to final inspection.

16. The Contractor shall be responsible for contacting all utility companies and/or Sunshine No cuts for verifying location of their facilities prior to commencing construction. The contractor shall use special care in working around and near all existing utilities that are encountered during construction, protecting them where necessary so that they will give uninterrupted service. The Contractor shall be responsible to the Owners for all damages to said utilities. During the course of construction by the Contractor, when it is necessary to have utilities relocated or adjusted, the Contractor shall be responsible for notifying and coordinating this work with the utility companies. These drawings show information obtained from the best available records regarding pipes, conduits, telephone lines, and other structures and conditions which exist along the lines of work, both at and below the surface of the ground. The Owner and Engineer disclaim any responsibility for the accuracy or completeness of said information, being shown only for the convenience of the Contractor, who must verify the information given to his own satisfaction. If the Contractor relies on said information, he does so at his own risk. The giving of the information on the contract drawings will not relieve the Contractor of his obligations to support and protect all pipes, conduits, telephone lines, and other structures.

17. After completion of construction, the Contractor shall perform site cleanup operation for removal of all trash, debris, excess material and equipment. It shall be the Contractor's responsibility to present the project site clean and in good order at the time of final acceptance.

18. All disturbed areas, including swale and retention areas shall be completely seeded or sodded. All slopes 5:1 or greater shall be sodded. All sodding shall be in accordance with City of Titusville standards. Pinning sod may be necessary for cohesionless sand.

19. Minimum cover over water mains shall be 36 inches except as noted on the drawings.

20. Wherever sewer or water mains or services cross one another, a minimum vertical clearance of 18 inches shall be provided between the bottom of the water pipe and the top of the sewer pipe unless otherwise noted.

21. Wherever sewer or water mains or services run parallel to each other, a minimum horizontal separation of 10 feet shall be provided.

22. All water valve boxes, manholes, and junction boxes shall be set or adjusted to finish grade.

23. The Owner is responsible for the acquisition of all easements, both temporary and permanent.

24. Submit shop drawings for inlets, catch basins, manholes, and junction boxes, provide concrete horizontal elliptical R.C.P. made in accordance with ASTM C507, Elliptical R.C.P. under roadways shall be Class IV, with the remainder Class III. All elliptical R.C.P. shall be banded per FDOT Index No. 270.

25. Reference the Existing Conditions Plan for Benchmark and Datum information.

26. All striping and pavement markings in City of Titusville and Brevard County Right-of-Way shall be thermoplastic per FDOT specifications. All signs are per FDOT Manual of Uniform Traffic Control Devices.

27. There will be no utility laterals, meter boxes or valve boxes in existing or proposed sidewalk and driveway areas.

28. All storm inlet grates shall be traffic bearing (H-20 Loading) unless noted otherwise

CITY OF TITUSVILLE SPECIAL NOTES:

1. This site is not in the Area of Critical Concern.

2. This project requires a Pre-Construction meeting prior to start of construction.

3. Contractor to notify the ENGINEER 24 hours prior to installation of utilities and at specific events such as connection to existing lines and crossings of different utilities and other items noted by the ENGINEER.

Provide the ENGINEER with the following as-built information (both a signed and sealed hard copy and electronic file copy) prepared by a registered surveyor at the Contractor's expense:

* Pavement elevations at all horizontal and vertical break points and every 100' on roadways and elevation points shown on plans.
* Pavement location within easement or R/W.
* Drainage structure rims and invert elevations and connecting pipe sizes and locations.
* Crest elevations of orifices, weirs, skimmers, rims, inverts and including location and size of all control structures.
* Provide retention pond As-built information prior to sodding in sufficient detail with contours and spot grades to accurately determine pond volumes.
* Location of all fire hydrants and valve boxes, water services and all meter boxes for both potable water and reuse water distribution systems.
* Location of all sanitary manholes, lift stations, valve boxes, etc. including pipe sizes and rims and invert elevations for the sanitary sewer collection systems.

4. Per LDR 39-42(e) – Obstruction to vision at street intersections. (1) Within the area formed by the right-of-way lines of intersecting streets, and a straight line connecting points on such right-of-way at a distance of fifty (50) feet from their point of intersection, and an extension of such connecting lines beyond the points to the curb lines, there shall be a clear space with no obstruction, fixed or movable, to vision above the height of thirty (30) inches above the average grade of each street as measured at the center line thereof. Said clear space may be increased upon determination by the Administrator that additional area is required for traffic safety reasons. (2) The requirements of this section shall not be deemed to prohibit any necessary retaining wall. (3) Trees shall be prohibited in the clear space required above. (4) Lamp posts and street name sign posts and other regulatory [signs] shall be permitted in the clear space. (5) Illuminating fixtures or signs are prohibited within the prescribed clear space described in (1) above. Please clearly illustrate the line of sight as indicated above at both intersections. FDOT may impose greater limitations at the intersection of US1.

5. Per LDR Sec. 35-57 (i) After the completion of the project, the Administrator shall require certified reproducible Mylar as-built plans, signed and sealed by a registered Florida Engineer or Surveyor or a certified paper copy with electronic copy in AutoCAD format, prior to final acceptance.

6. Per LDR Sec. 35-58. Erosion Control Standards (a) The area of land disturbed by development shall be as small as practical. Those areas which are not to be disturbed shall be protected by an adequate barrier from construction activity. Whenever possible, natural vegetation shall be retained and protected.

7. Per LDR Sec. 35-58. Erosion Control Standards (b) Land which has been cleared for development upon which construction will not begin within thirty (30) days shall be protected from erosion and sedimentation by appropriate means.

8. Per LDR Sec. 35-58. Erosion Control Standards (c) All sediment shall be retained on the development site.

9. Per LDR Sec. 35-58. Erosion Control Standards (d) Wetlands and other water bodies shall not be used as sediment traps during development

10. Per LDR Sec. 35-58. Erosion Control Standards (f) Erosion and sedimentation facilities shall receive regular maintenance to assure that they continue to function properly.

11. Sec. 35-65. Maintenance and inspections (a) The installed system(s) required by this article shall be maintained by the owner. (b) At the time of issuance of a Stormwater Construction Permit, inspection fee(s) shall be paid. The applicant shall arrange with the Administrator for scheduling the following inspections: (1) Erosion and sediment control inspections: As necessary to ensure effective control of erosion and sedimentation. Control practices shall be installed and stabilized between any waters and any areas cleared. (2) Burial inspections: Prior to the burial of any underground drainage structure. (3) Final inspection: When all work including installation of all storm water management system facilities has been completed, he Enforcement Officer who inspects the work shall either approve it or notify the applicant in writing in what respects there has been a failure to comply with the requirements of the approved permit.

12. "All persons and entities shall maintain private stormwater management systems in full compliance with applicable codes and ordinances. Any person or entity that fails to maintain the stormwater management systems shall be considered as a violation of this code and enforcement action may be initiated and enforced through the Municipal Code Enforcement Board. Fines and liens may be imposed as authorized by Chapter 162 Florida Statutes (as amended from time to time) and applicable codes and ordinances. If any entity has been dissolved or no longer owns said private stormwater management systems, then, in that event, the property owners utilizing said stormwater management systems or properties that are benefited by said stormwater management systems shall be financially responsible for the upkeep and maintenance of said stormwater management systems. The City of Titusville may initiate an action through the Municipal Code Enforcement Board for said violation and appropriate fines and liens may be imposed and recorded against benefited properties. The liens may be foreclosed and collected in the same manner as code liens including the City's costs and a reasonable attorney's fees.

13. Upon completion of the waterline improvements and approval of the waterline as builts by the city, the owner shall provide the City of Titusville with a 15' wide waterline easement to the city centered on the as built watermain. This easement shall include all the city owned waterline improvements and connect to the existing easement in ORB 5875 Page 546.

14. Owner shall provide a bill of sale of the waterline mains and appurtenances constructed in this project.

CITY OF TITUSVILLE EROSION CONTROL NOTES:

These are the minimum measures to be installed for any land disturbance activity:

a. The land-disturbing activity shall conform to existing topography and soil type so as to create the lowest practical erosion potential.
b. Land-disturbing activities shall be conducted in a manner minimizing erosion.
c. The disturbed area and the duration of exposure to erosive elements shall be kept to a practicable minimum.
d. Erosion control must be strictly maintained during cut and fill operations.
e. Disturbed soil shall be stabilized as quickly as practicable.
f. Whenever feasible, natural vegetation shall be retained, protected and supplemented.
g. Temporary vegetation or mulching shall be employed to protect exposed critical areas during development.
h. Permanent vegetation and structural erosion control measures shall be installed as soon as practicable.
i. Adequate provisions must be provided to minimize damage from surface water to the cut face of excavations or the sloping surface of fills.
j. To the extent necessary, sediment in runoff water must be trapped by the use of debris basins, sediment basins, silt traps or similar measures until the disturbed area is stabilized.
k. Cuts and fills must be constructed in such a manner that erosion and runoff from the site does not endanger adjoining property.
l. Fills may not encroach upon natural watercourses or constructed channels in a manner so as to adversely affect other property owners without adequate provisions for an equivalent alternate system with a positive outfall.
m. All R.O.W.'s, waterways, streets and sidewalks shall be buffered by a twenty (20) foot wide strip of grass or other suitable means.
n. Grading equipment must cross flowing streams by means of bridges or culverts except when such methods are not feasible and provided in any case, that such crossings are kept to a minimum and sedimentation control devices are provided.
o. Any land clearing activity that ceases and is idle for 30 days or more must have proper erosion control measures implemented. The City will strictly enforce this provision which may result in daily fines, etc as determined by the Code Enforcement Board

SPECIAL NOTE:

1. In accordance with generally accepted construction practices, the CONTRACTOR will be solely and completely responsible for conditions of the job site, including safety of all persons and property during performance of the work. This requirement will apply continuously and will not be limited to normal working hours. The duty of the ENGINEER is not intended to include review of the adequacy of the CONTRACTOR'S safety measures, in, on or near the construction site. CONTRACTOR will be responsible for providing and maintaining all barricades, warning signs, flashing lights and traffic control devices during construction. CONTRACTOR to comply with all OSHA regulations requirements and safety meeting requirements.

2. When measurements are affected by conditions already established or where items are to be fitted into constructed conditions, it shall be the CONTRACTOR'S responsibility to verify all such dimensions at the site and the actual job dimensions shall take precedence over scale and figure dimensions on the Drawings.

3. The locations of all existing underground piping, structures and utilities have been taken from information received from the respective owner. The locations are shown without express or implied representation, assurance, or guarantee that they are complete or correct or that they represent a true picture of underground piping to be encountered.

4. The Contractor shall verify all dimensions, quantities and details shown on the Drawings or other data received from the Engineer, and shall notify same, in writing, of all errors, omissions, conflicts and discrepancies found therein. Failure to discover or correct errors, conflicts or discrepancies shall not relieve the Contractor of full responsibility for unsatisfactory Work, faulty construction or improper operation resulting therefrom, nor from rectifying such conditions at his own expense.

5. Persons using this drawing should contact local utility companies and Sunshine NO-cuts for exact location of underground utilities.

6. Contractor is responsible for obtaining local government utility permits.

7. Shop drawings shall be submitted to the Water Resources Department for approval prior to the installation of any utilities.

8. Maintenance bonds required prior to certificate of occupancy.

9. All dimensions and radii are to face of curb unless otherwise noted.

10. Minimum vertical clearance of overhead utilities must be maintained over the proposed driveway and any construction entrance.

12. Contractor installing the underground fire protection piping to be certified class I, II or level V certification as issued by the State of Florida, as required by FS 633.021(5).

LANDSCAPE NOTES

a. Per LDR 3533(a)- Installation: All landscaping shall be installed in a sound, workmanlike manner and according to accepted good planting practice (including mulched areas around appropriate species so as to protect and present a finished appearance) with the quality of plant materials as hereinafter described. A qualified representative of the City of Titusville or designated qualified agent shall inspect all landscaping and no certificates of occupancy or similar authorization will be issued unless the landscaping meets the requirements provided herein.
b. Per LDR 35-33(b)- Maintenance: The owner, tenant and their agent, if any, shall be jointly and severally responsible for the maintenance of all landscaping, which shall be maintained in good condition so as to present a healthy, neat and orderly appearance at all times and shall be kept free from refuse and debris. All landscape material shall be maintained so as to provide for access for utilities, emergency services and vehicles. Maintenance shall include the immediate replacement of all dead plant material, as well as the pruning of trees to establish a central leader (except for multi-trunk species) and minimize co-dominant stem growth. The maintenance area also includes adjacent public and/or private streets and rights-of-way.
c. Per LDR 35-33(d)- Soil in all planting areas is to be of suitable quality with adequate pH value and no large aggregates so as to support healthy plant life.
d. Per LDR 35-34(a)- Quality: Plant material used in conformance with the provisions of this article shall be good, healthy and sturdy plants. All plant material shall be Florida #1 grade or better. Plant materials which are known to be intolerant of paving environments or whose physical characteristics may be injurious to the public or which produce a quantity and/or quality of debris so as to present maintenance difficulties shall not be specified for use under this article.
e. Per LDR 35-34(c)- Ground cover: Ground covers, other than grass, shall be planted in such a manner so as to present a finished appearance and reasonably complete coverage within six (6) months after planting.
f. Per LDR 35-34(d)- Lawn grass: Grass areas shall be planted in species normally grown as permanent lawns in Brevard County. Seeding and sprigging may be used if grass cover is complete within six (6) months, or sodding will be required.
g. Per LDR 35-34(e)- Hedges: Hedges, where required, shall be planted in sufficient number and maintained so as to form a continuous, unbroken, solid screen within a maximum of six (6) months after time of planting.
h. Per LDR 35-35 (c)- Landscape islands are to be free of base material or pavement. Hardpan material should be removed to a depth of four (4) feet.
i. Per LDR 35-36 (g) Trees and plants showing evidence of construction damage shall not be credited toward the vegetation requirements.
j. Per LDR 35-37(b) Termination of Parking rows. No shrubs or other landscaping material shall block the visual access between 30" and 8'0" and shall be maintained as such.
k. Per LDR 35-33(c) All proposed commercial, industrial and multi-family developments shall provide an irrigation plan as part of the site plan review process as outline in Sections 47-31 through 47-46 of these regulations. An irrigation plan shall be submitted and approved by the City prior to the pre construction conference being held.

FIRE FLOW CALCULATIONS

PER NFPA TABLE 18.4.5.1.2 THE MINIMUM FIRE FLOW REQUIRED FOR A TYPE II(B) (IBC)= II(000) (NFPA 220) BUILDING, NON COMBUSTIBLE. THE MINIMUM YARD FIRE FLOW REQUIRED FOR A BUILDING AREA BETWEEN 37,901 SF AND 42,700 SF IS 4,250 GPM FOR 4 HOURS.
FOR COMMERCIAL BUILDINGS, THE REQUIRED YARD FIRE FLOW MAY BE REDUCED BY 75% FOR A BUILDING WITH AN AUTOMATIC SPRINKLER SYSTEM.

PROJECT NAME: EMBRAER
SITE ADDRESS:
PROJECT DESCRIPTION: ONE STORY 40,474 SF MANUF. BUILDING
SPRINKLED

FIRE AREA: 1ST FLOOR	40,474 SQ.FT.		2ND FLOOR	SQ.FT.	
3RD FLOOR	SQ.FT.		4TH FLOOR	SQ.FT.	
5TH FLOOR	SQ.FT.		6TH FLOOR	SQ.FT.	
FIRE AREA:	40,474 SQ.FT.				

BASE GPM REQUIRED: PER NFPA 18.4.5.1.2. 4,250 GPM

EXPOSURES:	DISTANCE			HAZARD CHARGE	
NORTH	150'+	FT. ADD 0 %		0-10'	+25%
EAST	150+	FT. ADD 0 %		11-30'	+20%
SOUTH	106'	FT. ADD 5 %		31-60'	+15%
WEST	150+	FT. ADD 0 %		61-100'	+10%
				101-150'	+5%
TOTAL PERCENTAGE	5 %			(75% MAXIMUM)	

MINIMUM FIRE FLOW REQUIRED (not adjusted for exposures): = 4,250 GPM
ADJUSTED BASE FLOW 4,250 GPM + HAZARD CHARGE 5% (4,250 gpm)= 4,462 GPM
REDUCTION FOR COMPLETE AUTOMATIC SPRINKLER -75% 3,346 GPM
ADJUSTED BASE FLOW: 1,116 GPM

NUMBER OF HYDRANTS REQUIRED: 2
NUMBER OF HYDRANTS PROVIDED 7
CALCULATED BY: RICHARD J. KERN, PE

FIRE FLOW CALCULATIONS

PER NFPA TABLE 18.4.5.1.2 THE MINIMUM FIRE FLOW REQUIRED FOR A TYPE II(B) (IBC)= II(000) (NFPA 220) BUILDING, NON COMBUSTIBLE. THE MINIMUM YARD FIRE FLOW REQUIRED FOR A BUILDING AREA BETWEEN 12,601 SF AND 15,400 SF IS 2,500 GPM FOR 2 HOURS.
FOR COMMERCIAL BUILDINGS, THE REQUIRED YARD FIRE FLOW MAY BE REDUCED BY 75% FOR A BUILDING WITH AN AUTOMATIC SPRINKLER SYSTEM.

PROJECT NAME: EMBRAER
SITE ADDRESS:
PROJECT DESCRIPTION: ONE STORY 13,225 SF OFFICE BUILDING
SPRINKLED

FIRE AREA: 1ST FLOOR	13,225 SQ.FT.		2ND FLOOR	SQ.FT.	
3RD FLOOR	SQ.FT.		4TH FLOOR	SQ.FT.	
5TH FLOOR	SQ.FT.		6TH FLOOR	SQ.FT.	
FIRE AREA:	13,225 SQ.FT.				

BASE GPM REQUIRED: PER NFPA 18.4.5.1.2. 2,500 GPM

EXPOSURES:	DISTANCE			HAZARD CHARGE	
NORTH	150'+	FT. ADD 0 %		0-10'	+25%
EAST	150+	FT. ADD 0 %		11-30'	+20%
SOUTH	106'	FT. ADD 5 %		31-60'	+15%
WEST	150+	FT. ADD 0 %		61-100'	+10%
				101-150'	+5%
TOTAL PERCENTAGE	5 %			(75% MAXIMUM)	

MINIMUM FIRE FLOW REQUIRED (not adjusted for exposures): = 2,500 GPM
ADJUSTED BASE FLOW 2,500 GPM + HAZARD CHARGE 5% (2,500 gpm)= 2,625 GPM
REDUCTION FOR COMPLETE AUTOMATIC SPRINKLER -75% -1,968 GPM
ADJUSTED BASE FLOW: 657 GPM
MINIMUM FLOW ALLOWED 1,000 GPM

NUMBER OF HYDRANTS REQUIRED: 1
NUMBER OF HYDRANTS PROVIDED 3
CALCULATED BY: RICHARD J. KERN, PE

LEGAL DESCRIPTION:

PARCEL 1
A PARCEL OF LAND BEING A PART OF PARCEL "D" AS SHOWN ON THE PLAT OF ENTERPRISE PARK AS RECORDED IN PLAT BOOK 32, PAGE 74 OF THE PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA. SAID PARCEL OF LAND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
COMMENCING AT THE MOST EASTERLY CORNER OF SAID PARCEL "D", SAID CORNER LYING ON THE NORTHWESTERLY RIGHT OF WAY LINE OF ARMSTRONG DRIVE, THENCE ALONG SAID RIGHT OF WAY LINE, THE FOLLOWING FIVE COURSES AND DISTANCES: THENCE S.69°25'02"W., 64.15 FEET TO THE POINT OF CURVATURE OF A CIRCULAR CURVE, CONCAVE SOUTHEASTERLY AND HAVING A RADIUS OF 561.09 FEET; THENCE SOUTHWESTERLY, ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 01°51'42", 18.23 FEET TO THE SOUTHWEST CORNER OF THE RETENTION AREA AS SHOWN ON SAID PLAT OF ENTERPRISE PARK AND SAID POINT BEING THE POINT OF BEGINNING OF THE PARCEL OF LAND HEREIN DESCRIBED; THENCE CONTINUE SOUTHWESTERLY, ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 36°21'54", 356.12 FEET TO THE POINT OF TANGENCY; THENCE S.31°11'26"W., 164.23 FEET TO THE POINT OF CURVATURE OF A CIRCULAR CURVE, CONCAVE SOUTHEASTERLY AND HAVING A RADIUS OF 1562.72 FEET; THENCE SOUTHWESTERLY, ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 19°26'16", 530.16 FEET; THENCE DEPARTING SAID RIGHT OF WAY LINE, ON A BEARING OF N.61°32'46"W., 772.90 FEET; THENCE N.28°58'38"E, 454.46 FEET; THENCE N.61°32'46"W., 65.11 FEET; THENCE N.28°58'38"E., 331.20 FEET; THENCE S.61°32'46"E., 477.92 FEET; THENCE S.27°08'38"E., 30.49 FEET; THENCE S.62°54'43"E., 89.31 FEET; THENCE N.76°31'47"E., 59.33 FEET; THENCE N.25°25'38"E., 20.38 FEET; THENCE N.03°19'55"W., 16.01 FEET; THENCE N.31°10'39"W., 40.76 FEET; THENCE N.02°47'55"W., 53.43 FEET TO A POINT LYING ON THE SOUTHWESTERLY PROLONGATION OF A BOUNDARY LINE OF THE AFORESAID RETENTION AREA; THENCE ALONG THE BOUNDARY OF SAID RETENTION AREA, THE FOLLOWING THREE COURSES AND DISTANCES; THENCE N.54°45'26"E., 158.18 FEET TO THE POINT OF CURVATURE OF A CIRCULAR CURVE, CONCAVE SOUTHERLY AND HAVING A RADIUS OF 90.00 FEET; THENCE EASTERLY, ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 92°04'52", 144.64 FEET TO THE POINT OF TANGENCY; THENCE S.33°09'41"E., 161.29 FEET TO THE POINT OF BEGINNING.
CONTAINING 15.00 ACRES MORE OR LESS

RICHARD J. KERN, PE
39737
STATE OF FLORIDA

SEAL

DATE: 12-10-15

REVISION NUMBER	DATE	REVISION DESCRIPTION

INITIAL PLAN SUBMITTAL DATE:
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RUSH

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mail@honeycutt.cc

NOTES AND FIRE FLOW CALCULATIONS

EMBRARER AERO SEATING TECHNOLOGY
SPACEPORT COMMERCE PARK
TITUSVILLE, FLORIDA

SHEET NO: C 1.2
FILE NAME:

BEHNCHMARK INFORMATION

THE TOPOGRAPHIC INFORMATION ON THIS PLAN IS BASED ON DATUM 1988 NAVD, BENCHMARK C5A22, ELEVATION 24.924

STATE ROAD NO. 407

LEASE LINE

WETLAND 0.44 ACRES

WETLAND 0.98 ACRES

WETLAND 0.66 ACRES

WETLAND 0.52 ACRES

ARMSTRONG DRIVE

NATURAL GRADE 25.0
FINISH GRADE 25.0

NATURAL GRADE 22.0
PROPOSED GRADE 25.0

NATURAL GRADE 24.0
PROPOSED GRADE 25.0

FLOW HYDRANT
FH 3-4H-7

RESIDUAL HYDRANT
FH 3-4H-6

EXISTING TREE TO BE PRESERVED, NO MITIGATION REQUIRED

EXISTING TREE TO BE REMOVED

Tree Review Table

Tree #	Tree Type & Size	Northing	Easting	Latitude	Longitude	STATUS	
1	Oak 18.1" DBH	1521722.0159	712444.4458	N028° 31' 11.2"	W080° 49' 29.1"	REMOVE	
2	Pine 13.4" DBH	1521277.8662	712605.6612	N028° 31' 06.8"	W080° 49' 27.3"	REMOVE	
3	Pine 15.90" DBH	1521571.2671	712953.1235	N028° 31' 09.7"	W080° 49' 23.4"	REMOVE	
4	Pine 16.2" DBH	1521308.2828	712685.9000	N028° 31' 07.1"	W080° 49' 26.4"	REMOVE	
5	Pine 18.5" DBH	1521460.2630	713015.7294	N028° 31' 08.6"	W080° 49' 22.7"	REMOVE	
6	Pine 18.8" DBH	1521853.7555	712747.5417	N028° 31' 12.5"	W080° 49' 25.7"	REMOVE	
7	Pine 19.9" DBH	1520975.3353	712918.3199	N028° 31' 03.8"	W080° 49' 23.8"	REMOVE	
8	Pine 20.7" DBH	1521055.9095	712766.5540	N028° 31' 04.6"	W080° 49' 25.5"	REMOVE	MITIGATE 20.7"
9	Pine 21.0" DBH	1521177.4860	713025.0670	N028° 31' 05.8"	W080° 49' 22.6"	REMOVE	MITIGATE 21.0"
10	Pine 21.65" DBH	1521307.9173	712436.1302	N028° 31' 07.1"	W080° 49' 29.2"	SAVE	PRESERVE
11	Pine 22.6" DBH	1521238.0050	712971.4554	N028° 31' 06.4"	W080° 49' 23.2"	REMOVE	MITIGATE 22.5"
12	~~Pine 23.9" DBH Damaged~~	1521652.0774	712961.9247	N028° 31' 10.5"	W080° 49' 23.3"	REMOVE	
13	Pine 13.1" DBH	1521712.5702	712890.4734	N028° 31' 11.1"	W080° 49' 24.1"	REMOVE	
14	Pine 13.7" DBH	1521692.3840	712899.4234	N028° 31' 10.9"	W080° 49' 24.0"	REMOVE	
15	Pines 15.9" & 10.5" DBH	1521692.3447	712872.6626	N028° 31' 10.9"	W080° 49' 24.3"	REMOVE	
16	Pine 16.2" DBH	1521702.4443	712872.6477	N028° 31' 11.0"	W080° 49' 24.3"	REMOVE	
17	Pine 17.8" DBH	1521692.3840	712899.4234	N028° 31' 10.9"	W080° 49' 24.0"	REMOVE	
18	Pine 17.8" DBH	1521641.7677	712819.2153	N028° 31' 10.4"	W080° 49' 24.9"	REMOVE	
19	Pine 18.5" DBH	1521853.7686	712756.4619	N028° 31' 12.5"	W080° 49' 25.6"	REMOVE	
20	Pine 18.8" DBH	1521773.1681	712890.3842	N028° 31' 11.7"	W080° 49' 24.1"	REMOVE	
21	Pine 20.1" DBH	1521651.8673	712819.2004	N028° 31' 10.5"	W080° 49' 24.9"	REMOVE	MITIGATE 20.1"
22	Pine 20.4" DBH	1521661.9277	712792.4248	N028° 31' 10.6"	W080° 49' 25.2"	REMOVE	MITIGATE 20.4"
23	Pine 20.5" DBH	1521783.2678	712890.3693	N028° 31' 11.8"	W080° 49' 24.1"	REMOVE	MITIGATE 20.5"

TOTAL MITIGATION REQUIRED 125.2"

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

RICHARD J. KERN, PE
39737
STATE OF FLORIDA

SEAL

DATE: 1-19-16

REVISION NUMBER | DATE | REVISION DESCRIPTION

INITIAL PLAN SUBMITTAL DATE:

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RUSH

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EXISTING CONDITIONS PLAN
AND BORING LOCATION MAP

EMBRAER AERO SEATING TECHNOLOGY
SPACEPORT COMMERCE PARK
TITUSVILLE, FLORIDA

SHEET NO: C 2.1

FILE NAME:


GRAPHIC SCALE
(IN FEET)
1 inch = 60 ft.
0
30
60
120
240
WETLAND
WETLAND
0.39 ACRES
WETLAND
0.44 ACRES
STATE ROAD NO. 407
EXISTING R/W
LEASE LINE
LEASE LINE
ARMSTRONG DRIVE
CONC. SW
CONC. SW
CONC. SW

HATCH LEGEND

- HEAVY DUTY ASPHALT or CONCRETE PAVING 5,167 SY
- STANDARD DUTY ASPHALT
- CONCRETE PAVING OR CONCRETE SIDEWALK
- PROPOSED BUILDINGS

PAVING, CURBING AND PAVEMENT MARKING NOTES

1. ALL EDGE OF ASPHALT SHALL HAVE A 8" WIDE X 12" DEEP FLAT RIBBON CURB FLUSH WITH EDGE OF PAVEMENT, EXCEPT THAT ALL LANDSCAPE ISLANDS SHALL HAVE A RAISED 6" HIGH FDOT TYPE D CURB.
2. TYPE F GUTTER CURB IS REQUIRED ALONG THE EAST SIDE OF THE TRUCK DRIVEWAY AS SHOWN.
3. SEE SHEET C 4.3 FOR PAVING AND CURBING DETAILS.
4. ALL STRIPING WITHIN THE ROW SHALL BE THERMOPLASTIC.

STATE ROAD NO. 407 S31°03'52"W

LEASE LINE

WETLAND 19.89 ACRES

OPTIONAL HEAVY DUTY PAVING

DUMPSTER ENCLOSURE WITHOUT GATES SEE CITY DETAIL PLUS A 10' LONG CONCRETE APRON

5,167 SY OF HEAVY DUTY ASPHALT PAVING OR HEAVY DUTY CONCRETE PAVING

TYPE F CURB 720 LF

DRY RETENTION AREA

330 LF OF TYPE D CURBING

WETLAND 0.44 ACRES

6' CHAIN LINK FENCE

CONC. SIDEWALL

OPTIONAL HEAVY DUTY PAVING

RETAINING WALL WITH RAILINGS EACH SIDE

TRUCK DOCKS 2331 SF CONC.PAVING

ONE STORY PRODUCTION FACILITY, 40,474 SF WITH AUTOMATIC SPRINKLER SYSTEM

FFE = 27.00

7' WIDE RAISED CONCRETE SIDEWALK

REQUIRED 20' FRONT LANDSCAPE BUFFER

MOTORIZED GATES WITH CARD CONTROL AND SIREN OPERATED SWITCH AND KNOW BOX SWITCH BACKUP SEE DETAILS

CONCRETE SIDEWALK STANDARD DUTY CONCRETE PAVING SEE DEAIL

5'X5' CONC. PAD, TYPICAL

COURTYARD SEE ENLARGED PLAN

FLAG POLES

LANDSCAPE

HC SPACE SEE DETAIL

EMERGENCY PHONE

6" WIDE FLAT RIBBON CURBING

24" WHITE STOP BAR AND STOP SIGN, TYP.

HC SIGNS

FFE = 27.00

ADMINISTRATION BUILDING ONE STORY 13,225 SF WITH AUTOMATIC SPRINKLER

7' WIDE RAISED CONCRETE SIDEWALK STANDARD DUTY TYPICAL

ARMSTRONG DRIVE

PROPOSED SIGN LOCATION SIGN BUILDING PERMIT REQUIRED

MOTORIZED GATES WITH CARD CONTROL AND SIREN OPERATED SWITCH AND KNOX BOX SWITCH BACKUP SEE DETAILS

STANDARD DUTY ASPHALT TYPICAL

6" HIGH RAISED TYP. D CURB ROUND ISLANDS TYPICAL

DRY RETENTION AREA

WETLAND

LEASE LINE

DRY RETENTION AREA

WETLAND

6' CONC SIDEWALK MIN. TO CURB

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

LEGAL DESCRIPTION:

PARCEL 1
A PARCEL OF LAND BEING A PART OF PARCEL "D" AS SHOWN ON THE PLAT OF ENTERPRISE PARK AS RECORDED IN PLAT BOOK 32, PAGE 74 OF THE PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA. SAID PARCEL OF LAND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
COMMENCING AT THE MOST EASTERLY CORNER OF SAID PARCEL "D", SAID CORNER LYING ON THE NORTHWESTERLY RIGHT OF WAY LINE OF ARMSTRONG DRIVE, THENCE ALONG SAID RIGHT OF WAY LINE, THE FOLLOWING FIVE COURSES AND DISTANCES: THENCE S.69°25'02"W., 64.15 FEET TO THE POINT OF CURVATURE OF A CIRCULAR CURVE, CONCAVE SOUTHEASTERLY AND HAVING A RADIUS OF 561.09 FEET; THENCE SOUTHWESTERLY, ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 01°51'42", 18.23 FEET TO THE SOUTHWEST CORNER OF THE RETENTION AREA AS SHOWN ON SAID PLAT OF ENTERPRISE PARK AND SAID POINT BEING THE POINT OF BEGINNING OF THE PARCEL OF LAND HEREIN DESCRIBED; THENCE CONTINUE SOUTHWESTERLY, ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 36°21'54", 356.12 FEET TO THE POINT OF TANGENCY; THENCE S.31°11'26"W., 164.23 FEET TO THE POINT OF CURVATURE OF A CIRCULAR CURVE, CONCAVE SOUTHEASTERLY AND HAVING A RADIUS OF 1562.72 FEET; THENCE SOUTHWESTERLY, ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 19°26'16", 530.16 FEET; THENCE DEPARTING SAID RIGHT OF WAY LINE, ON A BEARING OF N.61°32'46"W., 772.90 FEET; THENCE N.28°58'38"E., 454.46 FEET; THENCE N.61°32'46"W., 65.11 FEET; THENCE N.28°58'38"E., 331.20 FEET; THENCE S.61°32'46"E., 477.92 FEET; THENCE S.27°08'38"E., 30.49 FEET; THENCE S.62°54'43"E., 89.31 FEET; THENCE N.76°31'47"E., 59.33 FEET; THENCE N.25°25'38"E., 20.38 FEET; THENCE N.03°19'55"W., 16.01 FEET; THENCE N.31°10'39"W., 40.76 FEET; THENCE N.02°47'55"W., 53.43 FEET TO A POINT LYING ON THE SOUTHWESTERLY PROLONGATION OF A BOUNDARY LINE OF THE AFORESAID RETENTION AREA; THENCE ALONG THE BOUNDARY OF SAID RETENTION AREA, THE FOLLOWING THREE COURSES AND DISTANCES; THENCE N.54°45'26"E., 158.18 FEET TO THE POINT OF CURVATURE OF A CIRCULAR CURVE, CONCAVE SOUTHERLY AND HAVING A RADIUS OF 90.00 FEET; THENCE EASTERLY, ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 92°04'52", 144.64 FEET TO THE POINT OF TANGENCY; THENCE S.33°09'41"E., 161.29 FEET TO THE POINT OF BEGINNING.
CONTAINING 15.00 ACRES MORE OR LESS

RICHARD J. KERN, PE
39737
STATE OF FLORIDA

SEAL

DATE: 2-18-16

REVISION NUMBER	DATE	REVISION DESCRIPTION
1	2-18-16	REMOVE SIDEWALKS

INITIAL PLAN SUBMITTAL DATE:
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RUSH

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SITE AND DIMENSION PLAN

EMBRAER AERO SEATING TECHNOLOGY
SPACEPORT COMMERCE PARK
TITUSVILLE, FLORIDA

SHEET NO: C 3.1

FILE NAME:

STORMSEWER TABLE									
NUMBER	DIAMETER	LENGTH			UPPER INVERT	LOWER INVERT		SLOPE	MATERIAL
	(inches)	(ft)			(ft)	(ft)		(%)	
SS-1	18	72	W		16.50	15.90	E	0.83%	CPP
SS-2	18	25	S		20.10	20.00	N	0.40%	CPP
SS-3	30	123	W		20.00	20.00	E	0.00%	CPP
SS-4	30	130	W		20.00	20.00	E	0.00%	CPP
SS-5	18	68	S		20.20	20.10	N	0.15%	CPP
SS-6	24	80	S		21.70	21.50	N	0.25%	RCP
SS-8	18	52	S		20.20	20.20	N	0.00%	CPP
SS-10	18	80	W		20.00	19.80	E	0.25%	RCP
SS-11	18	68	N		20.20	20.10	S	0.15%	CPP
SS-12	24	24	S		20.10	20.00	N	0.42%	CPP
SS-13	12	227	S		22.50	22.20	N	0.13%	CPP
SS-14	12	100	W		22.20	20.20	E	2.00%	CPP
SS-15	15	97	W		20.30	20.20	E	0.10%	CPP
SS-16	15	163	W		20.40	20.30	E	0.06%	CPP
SS-17	12	126	W		20.50	20.40	E	0.08%	CPP
SS-18	12	77	S		20.50	20.40	N	0.13%	CPP
SS-19	8	78	W		20.60	20.50	E	0.13%	CPP
SS-20	2	216	S		20.40	20.10	N	0.14%	PVC

CPP IS CORRUGATED POLYETHLENE PIPE

HATCH LEGEND

HEAVY DUTY ASPHALT or CONCRETE PAVING 5,167 SY

STANDARD DUTY ASPHALT

CONCRETE PAVING OR CONCRETE SIDEWALK

PROPOSED BUILDINGS

BEHNCHMARK INFORMATION

THE TOPOGRAPHIC INFORMATION ON THIS PLAN IS BASED ON DATUM 1988 NAVD, BENCHMARK C5A22, ELEVATION 24.924

STATE ROAD NO. 407

LEASE LINE

PROPOSED DRY RETENTION

IF CLAYEY SOIL IS FOUND UNDER THE BOTTOM OF THIS POND, IT SHALL BE REMOVED AND REPLACED WITH CLEAN SAND SEE SECTION A

WETLAND 0.44 ACRES

WETLAND

25' BUFFER

3:1 BACK SLOPE

6' CHAIN LINK FENCE

REMOVE 2' OF EXISTING CLAYEY SOIL UNDER THIS RETENTION POND, SEE SECTION B

PROPOSED DRY RETENTION
BOTTOM ELEV. 20.00
TOP ELEVATION 25.00
ALL SLOPES ON THE INTERIOR OF THE POND TO BE 3:1 AND SODDED

MES INV. 20.00

216 LF OF 3" PVC SUMP PUMP DISCHARGE

SUMP PUMP REQUIRED SEE MECH. PLANS FOR PUMP AND ELEC. CONTROLS

TYP. DOWNSPOUT

80 LF RETAINING WALL WITH RAILING SEE STRUCTURAL PLANS

FFE = 27.00

ROOF DRAIN PIPE MANIFOLD

PRIVATE MAINTAINED
MH #3
RIM 26.14
W. INV. IN 17.92
E. INV. OUT 17.82
HDPE LINED

SEE ENLARGED GRADING PLAN FOR DETAILS

115' OF 8" PVC SDR35 SEWER @ 0.40%
PRIVATE MAINTAINED

4-6 REDUCER

MOTORIZED GATES WITH CARD CONTROL AND SIREN OPERATED SWITCH AND KNOX BOX BACKUP SEE DETAILS

ARMSTRONG DRIVE

CONC. HEADWALL INV. 19.59

6:1 SLOPE

ANY EXCESS DIRT TO BE EVENLY SPREAD IN THIS AREA

CLEARANCE TO WETLAND

UNMARKED FLAG ELEV.= 18.17

WETLAND 16.1 AC-FT @ 18.5 AVERAGE DEPTH

HM WC-1 ELEV.= 18.46
HM WC-2 ELEV.= 18.55
HM WC-3 ELEV.= 18.58
HM WC-4 ELEV.= 19.32
HM WC-5 ELEV.= 18.87
HM WC-6 ELEV.= 18.46

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

DRAINAGE STRUCTURE TABLE						
STRUCTURE NUMBER	USE	FDOT INDEX	TYPE	RIM	INVERT	COMMENTS
1	MITERED END SECTION	272			15.90	
2	CONTROL STRUCTURE	232	C	24.20		SEE DETAIL
3	MITERED END SECTION	272			21.50	
4	MITERED END SECTION	272			21.70	
5	MITERED END SECTION	272			20.00	
6	AREA INLET	233	F	24.50		
7	AREA INLET	232	C	22.50		
10	AREA INLET	233	C	22.50		
11	AREA INLET	232	C	22.50		
14	CONTROL STRUCTURE	232	C	24.20		SEE DETAIL
15	MITERED END SECTION	272			19.80	
16	MITERED END SECTION	272			20.10	
17	AREA INLET	232	C	22.50		
18	AREA INLET	232	E	24.30		
19	MITERED END SECTION	272			20.00	
20	AREA INLET	233	F	24.50		
21	AREA INLET	233	F	23.00	20.00	WITH SUMP PUMP
22	MITERED END SECTION	272			20.00	
23	MITERED END SECTION	272			20.00	
24	JCT MANHOLE			26.5		ADS
26	YARD DRAIN			25.20		12" NYLOPLAST INLINE WITH GRATE
27	YARD DRAIN			25.20		12" NYLOPLAST INLINE WITH GRATE
28	YARD DRAIN			25.20		12" NYLOPLAST INLINE WITH GRATE
29	YARD DRAIN			25.20		12" NYLOPLAST INLINE WITH GRATE
30	YARD DRAIN			25.20		12" NYLOPLAST INLINE WITH GRATE
31	YARD DRAIN			26.00		12" NYLOPLAST INLINE WITH GRATE
32	YARD DRAIN			24.80		12" NYLOPLAST INLINE WITH GRATE
33	YARD DRAIN			25.20		12" NYLOPLAST INLINE WITH GRATE
34	YARD DRAIN			25.20		12" NYLOPLAST INLINE WITH GRATE

RICHARD J. KERN, PE
39737
STATE OF FLORIDA

SEAL

DATE: 3-3-16

REVISION NUMBER	DATE	REVISION DESCRIPTION
1	2-18-16	REMOVE SIDEWALKS
2	2-18-16	REMOVE INLETS 6,8,10,13 AND STORM PIPE SS-7, SS-9

INITIAL PLAN SUBMITTAL DATE:

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PAVING, GRADING AND DRAINAGE PLAN

EMBRAER AERO SEATING TECHNOLOGY
SPACEPORT COMMERCE PARK
TITUSVILLE, FLORIDA

SHEET NO: C 3.2

FILE NAME:

SUMP PUMP REQUIRED
SEE MECH. PLANS FOR PUMP
AND ELEC. CONTROLS

TYP. DOWNSPOUT

FFE = 27.00

ROOF DRAIN PIPE
MANIFOLD

FFE = 27.00

HC SIGNS

COVERED
CANOPY
AREA

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

MAGNETIC

REVISION NUMBER	DATE	REVISION DESCRIPTION
1	2-26-16	RIDGE SIDEWALKS

INITIAL PLAN SUBMITTAL DATE:

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RICHARD J. KERN, PE
39737
STATE OF FLORIDA

SEAL

DATE: 3-3-16

ENLARGED COURTYARD PLAN
PLAN

EMBRAER AERO SEATING TECHNOLOGY
SPACEPORT COMMERCE PARK
TITUSVILLE, FLORIDA

SHEET NO: C 3.3

FILE NAME:

WATER NOTES:

1. ALL FIRE HYDRANT ASSEMBLIES REQUIRE GATE VALVES PER CITY DETAIL.

LEASE LINE

LEASE LINE

WETLAND
0.44 ACRES

6' CHAIN LINK FENCE

MES INV. 20.00

216 LF OF 2" PVC
SUMP PUMP DISCHARGE

8" PVC FIRE LINE DR14 PVC PRIVATE

90°

12.08'

FDC AND SIGN
PER CITY
2016 FDC SPECS

MH #1
CONVERT TO EXTERIOR
DROP MANHOLE
UPPER W. INV. IN 14.69
LOWER W. INV. IN 8.65
NEW HOLES TO BE CORE DRILLED
COAT EXISTING MANHOLE
PER CITY SPECS FROM APPROVED VENDOR LIST.
THIS MANHOLE SHALL BE MAINTAINED BY THE CITY

S/S MH
RIM= 22.45
SW INVE= 10.03
E INVE= 9.99

CONC HEADWALL

60'

COVERED
CANOPY
AREA

SUMP PUMP REQUIRED
SEE MECH. PLANS FOR PUMP
AND ELEC. CONTROLS

145 LF 4" FIRE LINE

8" PVC FIRE LINE DR 14 PVC

POINT OF SERVICE
MANHOLE #4 TO BE
PUBLIC AND
MAINTAINED BY CITY
RIM 26.20
(8")SW. INV. IN 14.98
(8")E. INV. OUT 14.88
HDPE LINED

PROP. 33 LF 8" PVC SDR35
SANITARY SEWER
CITY MAINTAINED @ 0.55%

GUY
CONC PP

6" DDCVA
SEE CITY
DETAIL

MOTORIZED GATES WITH
CARD CONTROL AND
SIREN OPERATED SWITCH AND KNOX KEY BOX
BACKUP
SEE DETAILS

45°

69.58'

8" PVC DR24 FIRELINE

PLUG

2" PVC WATER SERVICE

86.50'

TYP. DOWNSPOUT

88.50'

6" FIRE SUPPLY

8X6 REDUCER
BOTH ENDS
OF DDCVA

8" DR14 PVC FIRELINE

FFE = 27.00

ROOF DRAIN PIPE
MANIFOLD

PRIVATE MAINTAINED
MH #3
RIM 26.14
W. INV. IN 17.92
E. INV. OUT 17.82
HDPE LINED

301 LF OF 8" PVC SDR35 SEWER @ 0.40%
PRIVATE MAINTAINED

INV. 24.90

78.50'

45°

6" FIRE SUPPLY

29.86'

2" PVC WATERLINE

8" PVC FIRE LINE DR14 PVC PRIVATE

2" PVC WATER SERVICE

8" GV

EX. 8" PVC WATER STUB

EX. HYDRANT
ASSEMBLY

EX. FH ASSBY

EX. 8" GV

EXISTING WATER CROSSING NOTE:
CONTRACTOR SHALL CHLORINATE,
BACT. TEST, AND PRESSURE TEST
THE EXISTING 8" WATER MAIN UNDER
ARMSTRONG DR. PRIOR TO PUTTING
THE NEW MAIN INTO OPERATION.
CONTRACTOR SHALL DETERMINE IF THE EXISTING ROAD CROSSING
IS RESTRAINED PRIOR TO PRESSURE TEST.

S/S MH #1
RIM= 14.60
SW INVE= 8.54
NE INVE= 8.60

379 LF 8" PVC SDR35
SANITARY SEWER @ 0.40%
PRIVATELY MAINTAINED

1.5" DOMESTIC WATER
METER AND RP2-BFP
AND WATER SERVICE

CITY WATER EASEMENT

PROP. 23' X 30'

S/S MH #2
AIR RELEASE VALVE
RIM= 13.55
TOP OF RIM= 21.95

CONC PP

GUY

PROP. 52 LF 8" PVC
SDR 35 WATERLINE

PROP. 8" GATE VALVE
WITH PLUG

TEMPORARY JUMPER
THE STUBOUT WILL NEED TO BE
PRESSURE TESTED AND DISINFECTED.

EX. 10" PVC WATER LINE

ARMSTRONG DRIVE

FH 3-4H-7
FLOW HYDRANT

MOTORIZED GATES WITH
CARD CONTROL AND
SIREN OPERATED SWITCH AND KNOX BOX
BACKUP
SEE DETAILS

FFE = 27.00

INV. 24.70
W 4-6 REDUCER

84.2 LF 6" PVC
SERVICE @ 2.73%

2" PVC WATERLINE

8" TEE

3 WAY FH

128 LF 4" FIRE LINE

38.21'

FDC AND SIGN
PER CITY
2016 FDC SPECS

PRIVATE MAINTAINED
MH #2 MANHOLE
RIM 25.80
W. INV. IN 16.60
NE. INV. OUT 16.50
HDPE LINED

FH ASSBY

8" GV
WITH PLUG

GUY

CONC PP

6" PVC

EX. 6" WW STUBOUT

13.5' +/-

S/S MH #1
RIM= 14.60
SW INVE= 6.84
NW LATERAL= 7.14

EX. 10" PVC WATER LINE

EX. 8" PVC WATER STUB

EX. FH ASSBY

EX. 8" GV

RESIDUAL HYDRANT
FH 3-4H-6

MAGNETIC

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

LEASE LINE

WETLAND

UTILITY SEPARATION NOTE

F.A.C. 62-555.314 Location of Public Water System Mains.

For the purpose of this section, the phrase "water mains" shall mean mains, including treatment plant process piping, conveying either raw, partially treated, or finished drinking water; fire hydrant leads; and service lines that are under the control of a public water system and that have an inside diameter of three inches or greater.

(1) Horizontal Separation Between Underground Water Mains and Sanitary or Storm Sewers, Wastewater or Stormwater Force Mains, Reclaimed Water Pipelines, and On-Site Sewage Treatment and Disposal Systems.

(a) New or relocated, underground water mains shall be laid to provide a horizontal distance of at least three feet between the outside of the water main and the outside of any existing or proposed storm sewer, stormwater force main, or pipeline conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C.

(b) New or relocated, underground water mains shall be laid to provide a horizontal distance of at least three feet, and preferably ten feet, between the outside of the water main and the outside of any existing or proposed vacuum-type sanitary sewer.

(c) New or relocated, underground water mains shall be laid to provide a horizontal distance of at least six feet, and preferably ten feet, between the outside of the water main and the outside of any existing or proposed gravity- or pressure-type sanitary sewer, wastewater force main, or pipeline conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C. The minimum horizontal separation distance between water mains and gravity-type sanitary sewers shall be reduced to three feet where the bottom of the water main is laid at least six inches above the top of the sewer.

(d) New or relocated, underground water mains shall be laid to provide a horizontal distance of at least ten feet between the outside of the water main and all parts of any existing or proposed "on-site sewage treatment and disposal system" as defined in Section 381.0065(2), F.S., and Rule 64E-6.002, F.A.C.

(2) Vertical Separation Between Underground Water Mains and Sanitary or Storm Sewers, Wastewater or Stormwater Force Mains, and Reclaimed Water Pipelines.

(a) New or relocated, underground water mains crossing any existing or proposed gravity- or vacuum-type sanitary sewer or storm sewer shall be laid so the outside of the water main is at least six inches, and preferably 12 inches, above or at least 12 inches below the outside of the other pipeline. However, it is preferable to lay the water main above the other pipeline.

(b) New or relocated, underground water mains crossing any existing or proposed pressure-type sanitary sewer, wastewater or stormwater force main, or pipeline conveying reclaimed water shall be laid so the outside of the water main is at least 12 inches above or below the outside of the other pipeline. However, it is preferable to lay the water main above the other pipeline.

(c) At the utility crossings described in paragraphs (a) and (b) above, one full length of water main pipe shall be centered above or below the other pipeline so the water main joints will be as far as possible from the other pipeline. Alternatively, at such crossings, the pipes shall be arranged so that all water main joints are at least three feet from all joints in vacuum-type sanitary sewers, storm sewers, stormwater force mains, or pipelines conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C., and at least six feet from all joints in gravity- or pressure-type sanitary sewers, wastewater force mains, or pipelines conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.

(3) Separation Between Water Mains and Sanitary or Storm Sewer Manholes.

(a) No water main shall pass through, or come into contact with, any part of a sanitary sewer manhole.

(b) Effective August 28, 2003, water mains shall not be constructed or altered to pass through, or come into contact with, any part of a storm sewer manhole or inlet structure.

RICHARD J. KERN, PE
39737
STATE OF FLORIDA

SEAL

DATE: 3-24-16

REVISION NUMBER	DATE	REVISION DESCRIPTION
1	3-23-16	SHIFTED DDCVA SOUTH WEST TO AVOID NEW SANITARY

INITIAL PLAN SUBMITTAL DATE:

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POTABLE WATER AND FIRE LINE SYSTEM PLAN

EMBRAER AERO SEATING TECHNOLOGY
SPACEPORT COMMERCE PARK
TITUSVILLE, FLORIDA

SHEET NO: C 3.4

FILE NAME:

SEWER NOTE:
1. ALL SANITARY SEWER MANHOLES SHALL BE FIBERGLASS LINED FOR COMMERCIAL SEWAGE PER CITY STANDARD DETAIL FOR MANHOLES.

LEASE LINE

WETLAND
38,663 SQUARE FEET
0.89 ACRES

WETLAND
0.44 ACRES

MES INV. 20.00

216 LF OF 2" PVC SUMP PUMP DISCHARGE

8" PVC FIRE LINE DR14 PVC PRIVATE

12.00'

90°

45°

69.58'

COVERED CANOPY AREA

SUMP PUMP REQUIRED SEE MECH. PLANS FOR PUMP AND ELEC. CONTROLS

CO

TYP. DOWNSPOUT

FFE = 27.00

145 LF 4" FIRE LINE

8" PVC FIRE LINE DR 14 PVC

90°

88.50'

PLUG

8" PVC DR14 FIRELINE

2" PVC WATER SERVICE

86.50'

78.50'

45°

PRIVATE MAINTAINED
MH #3
RIM 26.14
W. INV. IN 17.92
E. INV. OUT 17.82
HDPE LINED

301 LF OF 8" PVC SDR35 SEWER @ 0.40%
PRIVATE MAINTAINED

6" FIRE SUPPLY

29.86'

INV. 24.90

86.55'

8" DR14 PVC FIRELINE

8X6 REDUCER
SEE DETAIL
OF DDCVA

6" DDCVA
SEE CITY
DETAIL

8X6 TEE

6" FIRE SUPPLY

2" PVC WATER SERVICE

379 LF OF 8" PVC SDR35
SANITARY SEWER @ 0.40%
PRIVATE MAINTAINED

8" PVC FIRE LINE DR14 PVC PRIVATE

INV. 24.70
W 4-6 REDUCER

84 LF OF 6" PVC
SERVICE @ 2.73%

2" PVC WATERLINE

2" PVC WATERLINE

2" TEE

2" PVC WATERLINE

1.5" DOMESTIC WATER METER AND PER BRANCH AND WATER SERVICE

1

20.00'

100.53'

FFE = 27.00

128 LF 4" FIRE LINE

38.21'

FDC AND SIGN PER CITY 2016 FDC SPECS

FH

PRIVATE MAINTAINED
MH #2 MANHOLE
RIM 25.80
W. INV. IN 16.60
NE. INV. OUT 16.50
HDPE LINED

FH ASSBY

8" GV
WITH PLUG

90°

MH #1
CONVERT TO EXTERIOR DROP MANHOLE
UPPER W. INV. IN 14.69
LOWER W. INV. IN 8.65
NEW HOLES TO BE CORE DRILLED
COAT EXISTING MANHOLE
PER CITY SPECS FROM APPROVED VENDOR LIST.
THIS MANHOLE SHALL BE MAINTAINED BY THE CITY

1

POINT OF SERVICE
MANHOLE #4 TO BE
PUBLIC AND
MAINTAINED BY CITY
RIM 26.20
(8")SW. INV. IN 14.98
(8")E. INV. OUT 14.88
HDPE LINED

6' CHAIN LINK FENCE

CONC HEADWALL

S/S

GUY

CONC PP

PROP 33 LF OF 8" PVC SDR35
SANITARY SEWER @ 0.55%
CITY MAINTAINED

8" DR14 PVC FIRELINE

8" GV

6" GV

6" GV

EX. HYDRANT ASSEMBLY

EXISTING WATER CROSSING NOTE:
CONTRACTOR SHALL CHLORINATE, BACT. TEST, AND PRESSURE TEST THE EXISTING 8" WATER MAIN UNDER ARMSTRONG DR. PRIOR TO PUTTING THE NEW MAIN INTO OPERATION.
CONTRACTOR SHALL DETERMINE IF THE EXISTING ROAD CROSSING IS RESTRAINED PRIOR TO PRESSURE TEST.

MOTORIZED GATES WITH
CARD CONTROL AND
SIREN OPERATED SWITCH AND KNOX KEY BOX
BACKUP
SEE DETAILS

S/S MH #1
RIM 24.60
SW INV= 8.54
NE INV= 8.60
NW INV= 8.80

EX. FH ASSBY

EX. 8" GV

TEMPORARY JUMPTER
THE STUBOUT WILL NEED TO BE
PRESSURE TESTED AND DISINFECTED.

EX. 10" PVC WATER LINE

PROP 23' L 30" CITY WATER EASEMENT

S/S MH
RIM 25.95
TOP OF TANK 21.95

PROP 24 LF OF 8" PVC WATERLINE

PROP 8" GATE VALVE WITH PLUG

ARMSTRONG DRIVE

FH 3-4H-7
FLOW HYDRANT

MOTORIZED GATES WITH
CARD CONTROL AND
SIREN OPERATED SWITCH AND KNOX BOX
BACKUP
SEE DETAILS

EX. 6" WW STUBOUT
13 LF

GUY

CONC PP

8" PVC

S/S MH
RIM 21.79
SW INV= 6.84
SE INV= 6.89
NW LATERAL= 7.14

EX. 8" PVC WATER STUB

EX. 10" PVC WATER LINE

EX. FH ASSBY

EX. 8" GV

RESIDUAL HYDRANT
FH 3-4H-6

LEASE LINE

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

MAGNETIC

RICHARD J. KERN, PE
39737
STATE OF FLORIDA

SEAL

DATE: 3-24-16

REVISION NUMBER	DATE	REVISION DESCRIPTION
1	3-23-16	CHANGED CONNECTION TO SEWER TO THE EX MH AT NORTH DRIVEWAY

INITIAL PLAN SUBMITTAL DATE:

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SANITARY SEWER PLAN

EMBRAER AERO SEATING TECHNOLOGY
SPACEPORT COMMERCE PARK
TITUSVILLE, FLORIDA

SHEET NO: C 3.5
FILE NAME:



RICHARD J. KERN, PE
39727
STATE OF FLORIDA

SEAL

DATE: 12-10-15

SHEET NO: C 3.6

FILE NAME:

SITE PLAN OVERLAID ON AERIAL PLAN

EMBRAER AERO SEATING TECHNOLOGY
SPACEPORT COMMERCE PARK

TITUSVILLE, FLORIDA

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RUSH

REVISION NUMBER	DATE	REVISION DESCRIPTION

INITIAL PLAN SUBMITTAL DATE:

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BEHNCHMARK INFORMATION

THE TOPOGRAPHIC INFORMATION ON THIS PLAN IS BASED ON DATUM 1988 NAVD, BENCHMARK C5A22, ELEVATION 24.924

STATE ROAD NO. 407

LEASE LINE

INSTALL SILT SCREEN FENCE

WETLAND 0.44 ACRES

WETLAND 0.88 ACRES

UNMARKED FLAG ELEV= 18.17

WETLAND

ALL LAND WITHIN THE LIMIT OF THE SILT SCREEN FENCE SHALL BE CLEARED, GRUBBED, AND GRADED TO THE FINISH GRADES AS SHOWN ON THE PAVING AND GRADING PLAN

15.7 ac

6' CHAIN LINK FENCE

CONC. SIDEWALK

CONC. FF

CONC. EP

ARMSTRONG DRIVE

50'X20' SOIL TRACKING DEVICE SEE DETAIL

8" CONC HEADWALL INV= 15.69

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)

1 inch = 60 ft.

RICHARD J. KERN, PE
39737
STATE OF FLORIDA

SEAL

DATE: 1-19-16

REVISION NUMBER	DATE	REVISION DESCRIPTION

INITIAL PLAN SUBMITTAL DATE:

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EROSION AND SEDIMENTATION CONTROL PLAN

EMBRAER AERO SEATING TECHNOLOGY
SPACEPORT COMMERCE PARK
TITUSVILLE, FLORIDA

SHEET NO: C 3.7

FILE NAME:

Stormwater Pollution Prevention Plan

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

12-9-15

Name (Operator and/or Responsible Authority) Date

EMBRAER

Project Name and location information :
EMBRAER, AERO SEATING TECHNOLOGY
ARMSTRONG DR., TITUSVILLE, FL

Site Description
Describe the nature of the construction activity:

15 ACRES OF CLEARING , 41,000 SF MANUF. BLDG
13,000 SF OFFICES AND 3 DRY PONDS

soil disturbing activities:

1. INSTALL SILT SCREEN FENCE AS SHOWN
2. CLEAR AND GRUB 100% OF THE AREA TO BE CLEARED.
3. CONSTRUCT ALL SITE IMPROVEMENTS
4. REVEGETATE AND STABILZE SOIL.
5. TERMINATE NOI

Total area of the site: 15.0 AC
Total area of the site to be disturbed: 15.0 AC

Existing data describing the soil or quality of any stormwater discharge from the site:

EXISTING SOIL IS SHELLY SAND AND CLAY.

Estimate the drainage area size for each discharge point:
15.0 AC

Latitude and longitude of each discharge point and identify the receiving water or MS4 for each discharge point:
LAT 28°31'03" N
LONG 80°49'23" W
ST. JOHN'S RIVER

Give a detailed description of all controls, Best Management Practices (BMPs) and measures that will be implemented at the construction site for each activity identified in the intended sequence of major soil disturbing activities section. Provide time frames in which the controls will be implemented. NOTE: All controls shall be consistent with performance standards for erosion and sediment control and stormwater treatment set forth in s. 62-40.432, F.A.C., the applicable Stormwater or Environmental Resource Permitting requirements of th e Department or a Water Management District, and the guidelines contained in the Florida Development Manual: A Guide to Sound Land and Water Management (DEP, 1988) and any subsequent amendments.

1. INSTALL SILT FENCE
2. REVEGETATION OF DISTUBRED AREAS

Describe all temporary and permanent stabilization practices. Stabilization practices include temporary seeding, mulching, permanent seeding, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, vegetative preservations, etc.

1. SOD ALL DISTURBED AREAS UPON COMPLETION OF CONSTRUCTION (PERMANENENT)

Describe all structural controls to be i mplemented to divert stormwater flow from exposed soils and structural practices to store flows, retain sediment on site or in any other way limit stormwater runoff. These controls include silt fences, earth dikes, diversions, swales, sediment traps, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining

ALL RUNOFF FROM THE PROPOSED SITE IS DIRECTED TO THE PROPOSED DRY RETENTION PONDS
VOLUME OF STORAGE IS 80,000 cf

Describe all sediment basins to be implemented for areas that will disturb 10 or more acres at one time. The sediment basins (or an equivalent alternative) should be able to provide 3,600 cubic feet of storage for each acre drained. Temporary sediment basins (or an equivalent alternative) are recommended for drainage areas under 10 acres.

DRY RETENTION

Describe all permanent stormwater management controls such as, but not limited to, detention or retention systems or vegetated swales that will be installed during the construction process.

DRY RETENTION

Describe in detail controls for the following potential pollutants
Waste disposal, this may include construction debris, chemicals, litter, and sanitary wastes:

SANITARY WASTES WILL BE HANDLED BY PORTA POTTY
CONSTRUCTION DEBRIS WILL BE CONTAINED ON SITE AND HAULED TO AN APPROVED LAND FILL SITE.
THERE ARE NO PROPOSED CHEMICAL RELEASES POSSIBLE ON THIS SITE.
ANY HYDRAULIC FLUID LEAKS WILL BE CAPTURED AND SOIL REMOVED AND HAULED TO AN APPROVED LAND FILL SITE.

Offsite vehicle tracking from construction entrances/exits:

SOIL TRACKING DEVICES ARE PROPOSED FOR THE CONSTRUCTION ENTRANCES.

The proper application rates of all fertilizers, herbicides and pesticides used at the construction site:

NO FERTRILIZERS, HERBICIDES OR PESTICLES WILL BE USED ON THE CONTRUCTION SITE.

The storage, application, generation and migration of all toxic substances:

THERE WILL BE NO STORAGE, APPLICATION, GENERATION OR MIGRATION OF TOXIC SUBSTANCES.

Other:

NOT APPLICABLE

Providea detailed description of the maintenance plan for all structural and non structural controls to assure that they remain in good and effective operating condition.

ALL SILT FENCE SHALL BE INSPECTED A MINIMUM OF ONCE PER WEEK AND AFTER 1/2" RAINFALLS.
THE SITE CONSTRUCTION ENTRANCE AND PETRO STORAGE SHALL BE INSPECTED ON A DAILY BASIS.
REPORTS SHALL BE FILED.

Inspections: Describe the inspection and inspection documentation procedures, as required by Part V.D.4. of the permit. Inspections must occur at least once a week and within 24 hours of the end of a storm event that is 0.50 inches or greater (see attached form).

ALL SILT FENCE SHALL BE INSPECTED A MINIMUM OF ONCE PER WEEK AND AFTER 1/2" RAINFALLS.
THE SITE CONSTRUCTION ENTRANCE AND PETRO STORAGE SHALL BE INSPECTED ON A DAILY BASIS.
REPORTS SHALL BE FILED.

Identify and describe all sources of non stormwater disch arges as allowed in Part IV.A.3. of the permit. Flows from fire fighting activities do not have to be listed or described.

THERE ARE NO NON STORMWATER DISCHARGES PROPOSED.

This SWPPP must clearly identify, for each measure identified within the SWPPP, the contractor(s) or subcontractor(s) that will implement each measure. All contractor(s) and subcontractor(s) identified in the SWPPP must sign the following certification:

"I certify under penalty of law that I understand, and shall comply with, the terms and conditions of the State of Florida Generic Permit for Stormwater Discharge from Large and Small Construction Activities and this Stormwater Pollution Prevention Plan prepared thereunder."

Name	Title	Company Name, Address and Phone Number	Date
		RUSH INC	12-9-15

Stormwater PLlution Prevention Plan Inspection Report Form

Inspections must occur at least once a week and within 24 hours of the end of a storm event that is 0.50 inches or greater.

Project Name: EMBRAER F DEP NPDES Stormwater Identification Number: __

Location	Rain data	Type of control (see below)	Date installed / modified	Current Condition (see below)	Corrective Action / Other Remarks

Condition Code:
G = Good M = Marginal, needs maintenance or replacement soon
C = Needs to be cleaned O = Other P = Poor, needs immediate maintenance or replacement

Control Type Codes

1. Silt Fence	10. Storm drain inlet protection	19. Reinforced soil retaining system	28. Tree protection
2. Earth dikes	11. Vegetative buffer strip	20. Gabion	29. Detention pond
3. Structural diversion	12. Vegetative preservation area	21. Sediment Basin	30. Retention pond
4. Swale	13. Retention Pond	22. Temporary seed / sod	31. Waste disposal / housekeeping
5. Sediment Trap	14. Construction entrance stabilization	23. Permanent seed / sod	32. Dam
6. Check dam	15. Perimeter ditch	24. Mulch	33. Sand Bag
7. Subsurface drain	16. Curb and gutter	25. Hay Bales	34. Other
8. Pipe slope drain	17. Paved road surface	26. Geotextile	
9. Level spreaders	18. Rock outlet protection	27. Riprap	

Inspector Information:

NOTES:

1. AFTER EACH STORM EVENT, THE SILT FENCE SHALL BE INSPECTED. SEDIMENT DEPOSITS SHALL BE REMOVED AND WASHOUTS/STRUCTURAL FAILURES SHALL BE REPAIRED IMMEDIATELY.
2. SPLICING OF FILTER FABRIC SHALL ONLY BE DONE AT SUPPORT POSTS WITH MINIMUM OVERLAP OF 6".
3. HAY BALES SHALL BE REMOVED ONLY AFTER DISTURBED AREAS HAVE BEEN STABILIZED WITH SOD OR SEED AND MULCH.

RICHARD J. KERN, PE
39737
STATE OF FLORIDA

SEAL

DATE: 1-19-16

REVISION NUMBER	DATE	REVISION DESCRIPTION

INITIAL PLAN SUBMITTAL DATE:

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RUSH

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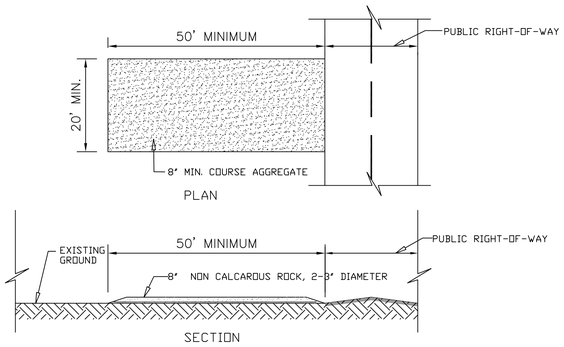
STORMWATER POLLUTION PREVENTION PLAN

EMBRAER AERO SEATING TECHNOLOGY
SPACEPORT COMMERCE PARK
TITUSVILLE, FLORIDA

SHEET NO: C 3.8

FILE NAME:

CONTRACTOR TO MAINTAIN SOIL TRACKING DEVICE AS NEEDED TO PREVENT SUBSTANTIAL DIRT TRAFFICING ONTO PUBLIC ROAD.



SOIL TRACKING DEVICE FOR CONSTRUTION ENTRANCE

NOT TO SCALE

LEGEND:

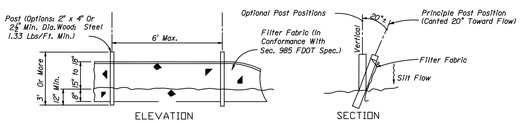
WD-# ELEV= #	FLAGGED WETLAND
---------	WETLAND BOUNDARY

WETLAND NOTE:
NO WORK SHALL OCCUR ON WETLAND AREAS.

SPECIAL SITE-SPECIFIC NOTES

1. The overburden shall be stripped as necessary from the site. Topsoil (with compost) may be used to cover stockpiled soil. All non-suitable construction material, trees and brush shall be removed from the site.
2. All disturbed areas shall be stabilized in conformance with the NPDES and City of Titusville requirements.
3. A performance bond to guarantee the establishment of vegetation on all cleared areas shall be provided to the City of Titusville.
4. Any disturbance of land and/or encroachment upon the areas outside the specific limits shown within this plan shall warrant and be subject to a fine imposed on the applicant based on the various laws and codes in force with the City. Said fine shall include the maximum penalty assessment as defined within said laws and that allowable by Florida State Statute 162.09. Specifically, FS162.09(2)(a) states:

   a. A fine imposed pursuant to this section shall not exceed $250 per day for a first violation and shall not exceed $500 per day for a repeat violation, and, in addition, may include all costs of repairs pursuant to subsection (1). However, if a code enforcement board finds the violation to be irreparable or irreversible in nature, it may impose a fine not to exceed $5000 per violation.



TYPE III SILT FENCE



Type III Silt Fence Protection Around Ditch Bottom Inlets.

Note: Spacing for Type III Fence to be in accordance with Chart 1, Sheet 1 of 3 and ditch installations at drainage structures Sheet 2 of 3.

Type III Silt Fence

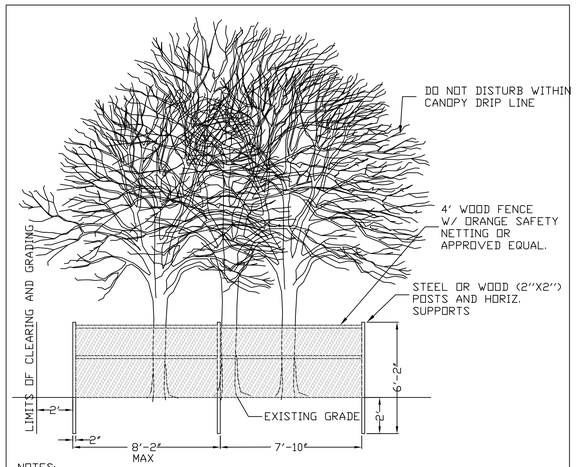
Do not deploy in a manner that silt fences will act as a dam across permanent flowing watercourses. Silt fences are to be used at upland locations and turbidity barriers used at permanent bodies of water.

SILT FENCE APPLICATIONS

NOTE: REFERENCE FDOT INDEX 102

SILT FENCE

NOT TO SCALE



NOTES:

1. PREVENT SOIL CONTAMINATION BY CONSTRUCTION MATERIALS, E.G. CONCRETE, GYPSUM PRODUCTS, ACIDS, CLEANSERS OR MORTAR.
2. PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION, PROTECTION BARRIERS SHALL BE PLACED AROUND ALL TREES TO BE RETAINED ON THE SITE PLAN TO PREVENT THE DESTRUCTION OR DAMAGING OF TREES. MATERIAL SHALL NOT BE STOCKPILED WITHIN THIS DEFINED AREA AND VEHICLES AND OTHER EQUIPMENT SHALL BE EXCLUDED TO AVOID SOIL COMPACTION. CONTRACTOR TO MAINTAIN TREE BARRIERS THROUGH CONSTRUCTION. NOTIFY CITY ENGINEERING SITE INSPECTOR PRIOR TO BARRIER REMOVAL.
3. PRIOR TO SITE CLEARING, CITY ENGINEERING SITE INSPECTOR TO REVIEW PLACEMENT OF TREE PROTECTION BARRIER AND TREE SAVE AREA FOR THE POSSIBILITY OF SHIFTING TREE SAVE AREA TO ACCOMMODATE ADDITIONAL SPECIMEN TREES.
4. BOARDS OR WIRES OF A NON-PROTECTIVE NATURE WILL NOT BE NAILED OR ATTACHED TO TREES DURING BUILDING OPERATIONS.
5. HEAVY EQUIPMENT OPERATORS WILL BE CAUTIONED TO AVOID DAMAGE TO EXISTING TREE TRUNKS AND ROOTS DURING LAND LEVELING OPERATIONS. TUNNELING AND TRENCHING FOR UTILITIES NEAR EXISTING TREES SHOULD COMPLY WITH THE REQUIREMENTS OF THE CITY OF TITUSVILLE.

TYPICAL TREE PROTECTION GUARD	DEPARTMENT OF ENGINEERING SERVICES	
	FIG:	REV: 01/2007
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT: 1 OF 1

GENERAL NOTES:

1. THE CONTRACTOR SHALL COMPLY WITH ALL RULES, REGULATIONS, AND SPECIFICATIONS OF CITY OF TITUSVILLE FOR SITE IMPROVEMENTS.

   A. THE CONTRACTOR SHALL NOTIFY THE FOLLOWING TWO (2) WEEKS PRIOR TO THE START OF CONSTRUCTION AND SHALL COORDINATE ALL CONSTRUCTION PHASES WITH THEM:

   CITY OF TITUSVILLE UTILITY ENGINEERING 1-321-383-5864
   HONEYCUTT & ASSOCIATES, INC. 1-321-267-6233

2. ALL WORK SHALL BE ACCOMPLISHED IN STRICT ACCORDANCE WITH CITY OF TITUSVILLE STANDARDS AND SPECIFICATIONS AND ALL OTHER APPLICABLE FEDERAL, STATE, AND LOCAL CODES, ORDINANCES, AND REGULATIONS. THE CONTRACTOR SHALL COMPLY WITH ALL PERMITS BY LOCAL AND STATE AGENCIES.
3. THE SPECIFICATIONS, NOTES, AND PLANS CALL ATTENTION TO CERTAIN REQUIRED FEATURES OF THE CONSTRUCTION, BUT DO NOT PURPORT TO COVER ALL DETAILS OF DESIGN AND CONSTRUCTION. HOWEVER, THE CONTRACTOR SHALL FURNISH AND INSTALL THE WORK IN ALL DETAILS IN IT'S ENTIRETY AND HAVE IT READY FOR OPERATION.
4. THE CONTRACTOR SHALL MAKE THE PROJECT SITE AVAILABLE FOR REVIEW AND INSPECTION TO ALL APPLICABLE REGULATORY AGENCIES, ENGINEERING PERSONNEL, AND OWNER REPRESENTATIVES.
5. THE BACKFILLING OPERATION SHALL BE IN ACCORDANCE WITH CITY OF TITUSVILLE CODES. IN THE ABSENCE OF A PARTICULAR REQUIREMENT, USE SECTION 125.8 OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES AND VERIFYING LOCATION OF THEIR FACILITIES PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL USE SPECIAL CARE IN WORKING AROUND AND NEAR ALL EXISTING UTILITIES THAT ARE ENCOUNTERED DURING CONSTRUCTION, PROTECTING THEM WHERE NECESSARY SO THAT THEY WILL GIVE UNINTERRUPTED SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE TO THE OWNERS FOR ALL DAMAGES TO SAID UTILITIES. DURING THE COURSE OF CONSTRUCTION BY THE CONTRACTOR, WHEN IT IS NECESSARY TO HAVE UTILITIES RELOCATED OR ADJUSTED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING AND COORDINATING THIS WORK WITH THE UTILITY COMPANIES. THESE DRAWINGS SHOW INFORMATION OBTAINED FROM THE BEST AVAILABLE RECORDS REGARDING PIPES, CONDUITS, TELEPHONE LINES, AND OTHER STRUCTURES AND CONDITIONS WHICH EXIST ALONG THE LINES OF WORK, BOTH AT AND BELOW THE SURFACE OF THE GROUND. THE OWNER AND ENGINEER DISCLAIM ANY RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF SAID INFORMATION, BEING SHOWN ONLY FOR THE CONVENIENCE OF THE CONTRACTOR, WHO MUST VERIFY THE INFORMATION GIVEN TO HIS OWN SATISFACTION. IF THE CONTRACTOR RELIES ON SAID INFORMATION, HE DOES SO AT HIS OWN RISK. THE GIVING OF THE INFORMATION ON THE CONTRACT DRAWINGS WILL NOT RELIEVE THE CONTRACTOR OF HIS OBLIGATIONS TO SUPPORT AND PROTECT ALL PIPES, CONDUITS, TELEPHONE LINES, AND OTHER STRUCTURES.
7. AFTER COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL PERFORM SITE CLEAN-UP OPERATION FOR REMOVAL OF ALL TRASH, DEBRIS, EXCESS MATERIAL AND EQUIPMENT. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PRESENT THE PROJECT SITE CLEAN AND IN GOOD ORDER AT THE TIME OF FINAL ACCEPTANCE.
8. ALL DISTURBED AREAS, INCLUDING SWALE AND RETENTION AREAS SHALL BE COMPLETELY SEEDED OR SODDED. ALL SLOPES 5:1 OR GREATER SHALL BE SODDED. ALL SODDING SHALL BE IN ACCORDANCE WITH CITY OF TITUSVILLE STANDARDS. PINNING SOD MAY BE NECESSARY FOR COHESIONLESS SAND.
9. THE BENCHMARK OF ORIGIN IS BREVARD COUNTY BENCHMARK CSA22
   ELEVATION = 24.92 NGVD 1988

CITY OF TITUSVILLE CODE SECTION:

Sec. 35-6. Tree protection during construction.

(a) During construction, it shall be unlawful to place material, machinery, or soil deposits so as to damage a living tree. Stakes shall be driven around the tree at the drip line and rope, survey tape, or a similar material, shall be attached thereto to designate the area of critical root protection.

(b) During construction, it shall be unlawful to place attachments or wires other than those of a protective nature to any tree which is to be retained,

Sec. 35-8. Protection of habitat of endangered and threatened species.

(e) When one or more individual threatened or endangered species are documented to be present on a development site during the course of construction, all activities which may harm the individual species or their habitat shall cease. The Administrator shall notify the FGFWFC, FDNR or other appropriate agency for site specific evaluation and preservation/protection requirements for the maintenance of the individual species and habitat....

Additional Note: This tree survey will be the base-line document that will be utilized for any and all future proposed development considering LDR Section 35-3.

Sec. 35-3. Relocation or replacement of trees.

As a condition of granting a permit, the applicant may be required to relocate trees being removed or replace the tree being removed with a tree of similar type elsewhere on the site which shall be a minimum of (1) one inch caliper as measured at a height of four and one-half (4 ½) feet above the ground (dbh) provided the site can reasonably support the relocation or replacement as determined by the Administrator.

RICHARD J. KERN, PE
39737
STATE OF FLORIDA

SEAL

DATE: 1-19-16

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RUSH

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CLEARING DETAILS AND NOTES

EMBRAER AERO SEATING TECHNOLOGY
SPACEPORT COMMERCE PARK
TITUSVILLE, FLORIDA

SHEET NO: C 3.9

FILE NAME:

HATCH LEGEND

- HEAVY DUTY ASPHALT or CONCRETE PAVING 5,167 SY
- STANDARD DUTY ASPHALT
- CONCRETE PAVING OR CONCRETE SIDEWALK
- PROPOSED BUILDINGS

PAVING, CURBING AND PAVEMENT MARKING NOTES

1. ALL EDGE OF ASPHALT SHALL HAVE A 8" WIDE X 12" DEEP FLAT RIBBON CURB FLUSH WITH EDGE OF PAVEMENT, EXCEPT THAT ALL LANDSCAPE ISLANDS SHALL HAVE A RAISED 6" HIGH FDOT TYPE D CURB.
2. TYPE F GUTTER CURB IS REQUIRED ALONG THE EAST SIDE OF THE TRUCK DRIVEWAY AS SHOWN.
3. SEE SHEET C 4.3 FOR PAVING AND CURBING DETAILS.
4. ALL STRIPING WITHIN THE ROW SHALL BE THERMOPLASTIC.

STATE ROAD NO. 407 S71°03'52"W

LEASE LINE

LEASE LINE

DRY RETENTION AREA

WETLAND 2.44 ACRES

WETLAND 0.84 ACRES

WETLAND

WETLAND

DRY RETENTION AREA

DRY RETENTION AREA

OPTIONAL HEAVY DUTY PAVING

5,167 SY OF HEAVY DUTY ASPHALT PAVING OR HEAVY DUTY CONCRETE PAVING

TYPE F CURB 700 LF

DUMPSTER ENCLOSURE WITHOUT GATES SEE CITY DETAIL PLUS A 10' LONG CONCRETE APRON

530 LF OF TYPE D CURBING

OPTIONAL HEAVY DUTY PAVING

COVERED WALKWAY 40.00' x 36.00'

RETAINING WALL WITH RAILINGS EACH SIDE

TRUCK DOCKS 2,531 SF CONC.PAVING

ONE STORY PRODUCTION FACILITY, 40,474 SF WITH AUTOMATIC SPRINKLER SYSTEM

FFE = 27.00

7' WIDE RAISED CONCRETE SIDEWALK

CONCRETE SIDEWALK STANDARD DUTY CONCRETE PAVING SEE DEAIL

COURTYARD SEE ENLARGED PLAN

5'X5' CONC. PAD, TYPICAL

HC SIGNS

FFE = 27.00

ADMINISTRATION BUILDING ONE STORY 13,225 SF WITH AUTOMATIC SPRINKLER

FLAG POLES

LANDSCAPE

9 BICYCLES RACK (CAN STAY)

7' WIDE RAISED CONCRETE SIDEWALK STANDARD DUTY TYPICAL

EMERGENCY PHONE

STANDARD DUTY ASPHALT, TYPICAL

6" HIGH RAISED TYP. D CURB ROUND ISLANDS TYPICAL

24" WHITE STOP BAR AND STOP SIGN, TYP.

HC SIGN TYP. OF 7

HC SPACE SEE DETAIL

EMERGENCY PHONE

8" WIDE FLAT RIBBON CURBING

24" WHITE STOP BAR AND STOP SIGN, TYP.

PROPOSED SIGN LOCATION SIGN BUILDING PERMIT REQUIRED

MOTORIZED GATES WITH CARD CONTROL AND SIREN OPERATED SWITCH AND KNOX BOX SWITCH BACKUP SEE DETAILS

REQUIRED 20' FRONT LANDSCAPE BUFFER

MOTORIZED GATES WITH CARD CONTROL AND SIREN OPERATED SWITCH AND KNOW BOX SWITCH BACKUP SEE DETAILS

6' CHAIN LINK FENCE

CONC. SIDEWALL

ARMSTRONG DRIVE

6" CONC. SIDEWALL W=19.59

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)

1 inch = 60 ft.

LEGAL DESCRIPTION:

PARCEL 1

A PARCEL OF LAND BEING A PART OF PARCEL "D" AS SHOWN ON THE PLAT OF ENTERPRISE PARK AS RECORDED IN PLAT BOOK 32, PAGE 74 OF THE PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA. SAID PARCEL OF LAND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
COMMENCING AT THE MOST EASTERLY CORNER OF SAID PARCEL "D", SAID CORNER LYING ON THE NORTHWESTERLY RIGHT OF WAY LINE OF ARMSTRONG DRIVE, THENCE ALONG SAID RIGHT OF WAY LINE, THE FOLLOWING FIVE COURSES AND DISTANCES: THENCE S.69°25'02"W., 64.15 FEET TO THE POINT OF CURVATURE OF A CIRCULAR CURVE, CONCAVE SOUTHEASTERLY AND HAVING A RADIUS OF 561.09 FEET; THENCE SOUTHWESTERLY, ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 01°51'42", 18.23 FEET TO THE SOUTHWEST CORNER OF THE RETENTION AREA AS SHOWN ON SAID PLAT OF ENTERPRISE PARK AND SAID POINT BEING THE POINT OF BEGINNING OF THE PARCEL OF LAND HEREIN DESCRIBED; THENCE CONTINUE SOUTHWESTERLY, ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 36°21'54", 356.12 FEET TO THE POINT OF TANGENCY; THENCE S.31°11'26"W., 164.23 FEET TO THE POINT OF CURVATURE OF A CIRCULAR CURVE, CONCAVE SOUTHEASTERLY AND HAVING A RADIUS OF 1562.72 FEET; THENCE SOUTHWESTERLY, ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 19°26'16", 530.16 FEET; THENCE DEPARTING SAID RIGHT OF WAY LINE, ON A BEARING OF N.61°32'46"W., 772.90 FEET; THENCE N.28°58'38"E., 454.46 FEET; THENCE N.61°32'46"W., 65.11 FEET; THENCE N.28°58'38"E., 331.20 FEET; THENCE S.61°32'46"E., 477.92 FEET; THENCE S.27°08'38"E., 30.49 FEET; THENCE S.62°54'43"E., 89.31 FEET; THENCE N.76°31'47"E., 59.33 FEET; THENCE N.25°25'38"E., 20.38 FEET; THENCE N.03°19'55"W., 16.01 FEET; THENCE N.31°10'39"W., 40.76 FEET; THENCE N.02°47'55"W., 53.43 FEET TO A POINT LYING ON THE SOUTHWESTERLY PROLONGATION OF A BOUNDARY LINE OF THE AFORESAID RETENTION AREA; THENCE ALONG THE BOUNDARY OF SAID RETENTION AREA, THE FOLLOWING THREE COURSES AND DISTANCES; THENCE N.54°45'26"E., 158.18 FEET TO THE POINT OF CURVATURE OF A CIRCULAR CURVE, CONCAVE SOUTHERLY AND HAVING A RADIUS OF 90.00 FEET; THENCE EASTERLY, ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 92°04'52", 144.64 FEET TO THE POINT OF TANGENCY; THENCE S.33°09'41"E., 161.29 FEET TO THE POINT OF BEGINNING. CONTAINING 15.00 ACRES MORE OR LESS

RICHARD J. KERN, PE
39737
STATE OF FLORIDA .

SEAL

DATE: 1-19-16

REVISION NUMBER	DATE	REVISION DESCRIPTION
		INITIAL PLAN SUBMITTAL

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RUSH

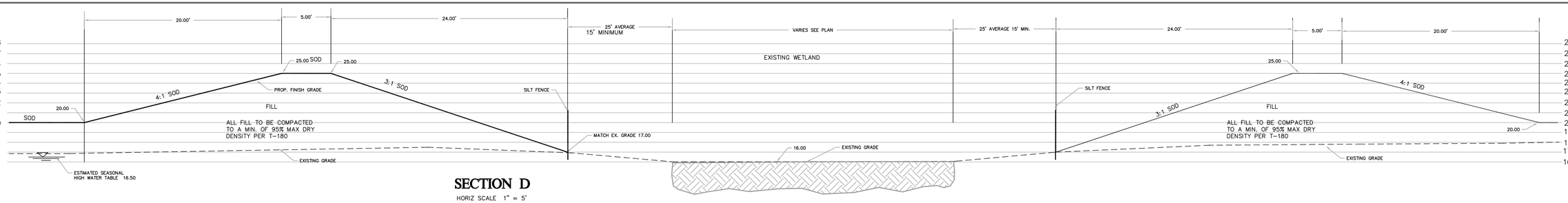
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LANDSCAPE ISLAND AREA PLAN

EMBRAER AERO SEATING TECHNOLOGY SPACEPORT COMMERCE PARK TITUSVILLE, FLORIDA

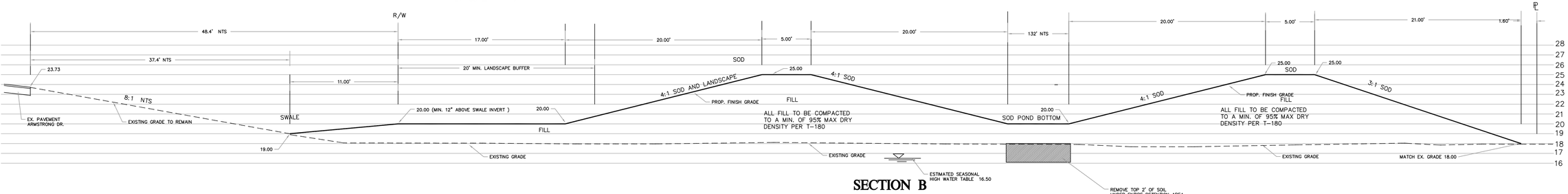
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FILE NAME:



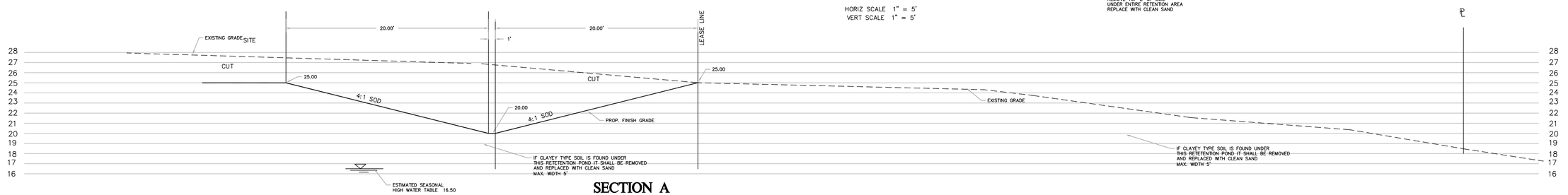
SECTION D

HORIZ SCALE 1" = 5'
VERT SCALE 1" = 5'



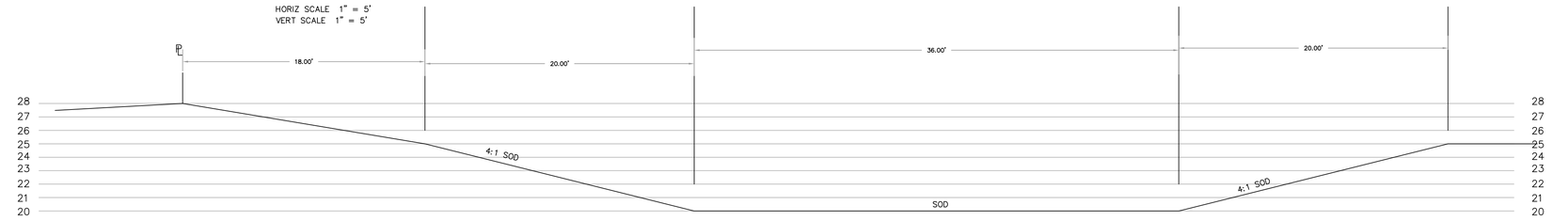
SECTION B

HORIZ SCALE 1" = 5'
VERT SCALE 1" = 5'



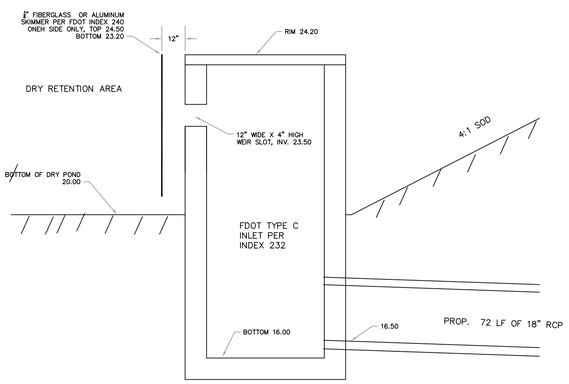
SECTION A

HORIZ SCALE 1" = 5'
VERT SCALE 1" = 5'



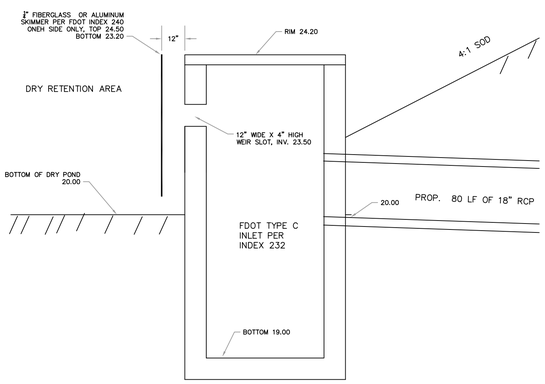
SECTION E

HORIZ SCALE 1" = 5'
VERT SCALE 1" = 5'



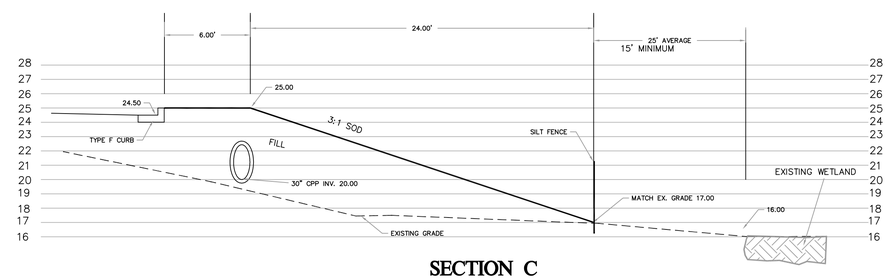
NORTHERN CONTROL STRUCTURE 2

NTS



SOUTHERN CONTROL STRUCTURE 14

NTS



SECTION C

HORIZ SCALE 1" = 5'
VERT SCALE 1" = 5'

REVISION NUMBER	REVISION DESCRIPTION	DATE

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RUSH

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PAVING AND DRAINAGE SECTIONS AND DETAILS

EMBRAER AERO SEATING TECHNOLOGY
SPACEPORT COMMERCE PARK
TITUSVILLE, FLORIDA

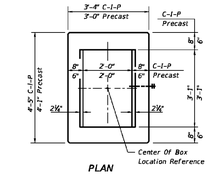
RICHARD J. KERN, PE
39737
STATE OF FLORIDA

SEAL

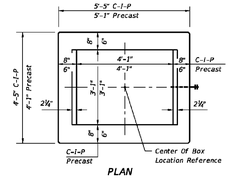
DATE: 1-19-16

SHEET NO: C 4.1

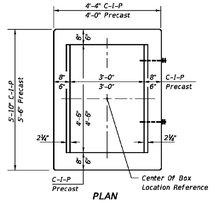
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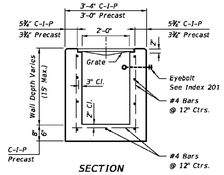
PLAN



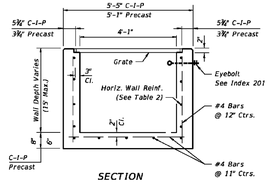
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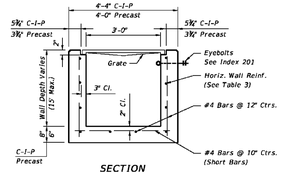
PLAN



SECTION



SECTION



SECTION

HORIZONTAL WALL REINFORCING SCHEDULES (TABLE 1)

WALL DEPTH	SCHEDULE	AREA ($in^2/ft.$)	MAX. SPACING BARS	MAX. SPACING WWF
0'-15'	A12	0.20	12"	8"

TYPE C

Recommended Maximum Pipe Size:

2'-0" Wall - 18" Pipe
3'-1" Wall - 24" Pipe (18" where an 18" pipe enters a 2'-0" wall)

HORIZONTAL WALL REINFORCING SCHEDULES (TABLE 2)

WALL DEPTH	SCHEDULE	AREA ($in^2/ft.$)	MAX. SPACING BARS	MAX. SPACING WWF
0'-6'	A12	0.20	12"	8"
6'-10'	A6	0.20	6"	5"
10'-13'	A4	0.20	4"	3"
10'-15'	B5.5	0.24	5½"	5"

TYPE D

Recommended Maximum Pipe Size:

3'-1" Wall - 24" Pipe
4'-1" Wall - 36" Pipe

HORIZONTAL WALL REINFORCING SCHEDULES (TABLE 3)

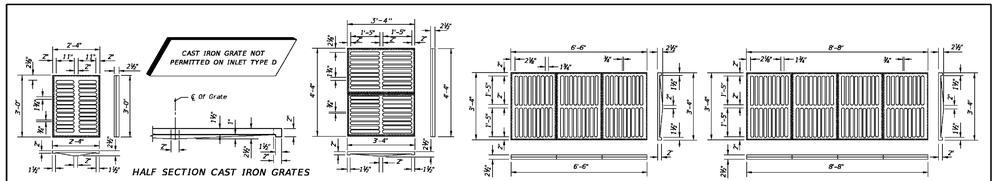
WALL DEPTH	SCHEDULE	AREA ($in^2/ft.$)	MAX. SPACING BARS	MAX. SPACING WWF
0'-5'	A12	0.20	12"	8"
0'-7.5'	A6	0.20	6"	5"
7.5'-10'	B5.5	0.24	5½"	5"
10'-15'	C6.5	0.37	6½"	6"

TYPE E

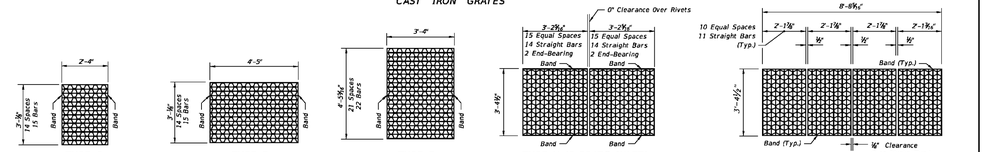
Recommended Maximum Pipe Size:

3'-0" Wall - 24" Pipe
4'-6" Wall - 36" Pipe

LAST REVISION 07/01/05	DESCRIPTION:	FDOT 2015 DESIGN STANDARDS	DITCH BOTTOM INLET TYPES C, D, E AND H	INDEX NO. 232	SHEET NO. 1 of 7



CAST IRON GRATES



STEEL GRATES

NOTE: Steel Grates Are Required On Inlets With Traversable Slots And On Inlets where Bicycle Traffic Is Anticipated.

GENERAL NOTES

1. These inlets are suitable for bicycle traffic and are to be used in ditches, medians and other areas subject to infrequent traffic loadings but are not to be placed in areas subject to any heavy wheel loads. These inlets may be placed in areas subject to occasional pedestrian traffic such as landscaped areas and pavement areas where pedestrians can walk around the inlet.
2. Inlets subject to minimal debris should be constructed without slots. Where debris is a problem inlets should be constructed with slots. Slotted inlets located within roadway clear zones and areas subject to pedestrians shall have traversable slots. The traversable slot modification is not adaptable to inlet Type H. Slots may be constructed at either or both ends as shown on plans. Traversable slots shall not be used in areas subject to occasional bicycle traffic.
3. Steel grates are to be used on all inlets where bicycle traffic is anticipated. Steel grates are to be used on all inlets with traversable slots. Either cast iron or steel grates may be used on inlets without slots where bicycle traffic is not anticipated. Either cast iron or steel grates may be used on all inlets with non-traversable slots. Subject to the selection described above, when Alternate G grate is specified in the plans, either the steel grate, hot dip galvanized after fabrication, or the cast iron grate may be used, unless the plans stipulate the particular type.
4. Recommended maximum pipe sizes shown are for concrete pipe. Size for other types of pipe must be checked for fit.
5. All exposed edges and corners shall be ¾" chamfer or tooled to ½" radius.
6. Concrete inlet pavement to be used on inlets without slots and inlets with non-traversable slots only when called for in the plans; but required on all traversable slot inlets. Cost to be included in contract unit price for inlets. Quantities shown are for information only.
7. Traversable slots constructed in existing inlets shall be paid for as inlets partial. For conversion work and method of payment see 'TRAVERSABLE SLOT INLETS (PARTIAL) FOR EXISTING INLETS'.
8. Sodding to be used on all inlets not located in paved areas and paid for under contract unit price for Performance Turf, SY.
9. For supplementary details see Index No. 201.
10. All reinforcing is Grade 60 bars with 2" min. cover unless otherwise noted. Bars to be cut or bent for 1½" clearance around pipe opening. Provide one additional #4 bar above and at each side of pipe opening.

LAST REVISION 07/01/10	DESCRIPTION:	FDOT 2015 DESIGN STANDARDS	DITCH BOTTOM INLET TYPES C, D, E AND H	INDEX NO. 232	SHEET NO. 3 of 7

DIMENSIONS AND QUANTITIES

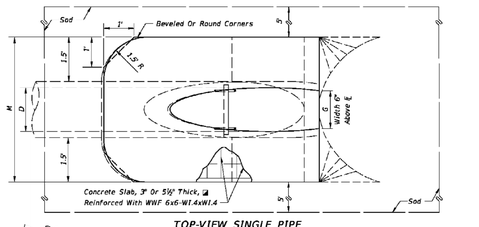
	D	X	A	B	C	E	F	G	H ■	M Single Pipe	M Double Pipe	M Triple Pipe	M Quad. Pipe	N	5½" CONCRETE SLAB (CY) ◪ Single Pipe	5½" CONCRETE SLAB (CY) ◪ Double Pipe	5½" CONCRETE SLAB (CY) ◪ Triple Pipe	5½" CONCRETE SLAB (CY) ◪ Quad. Pipe	SODDING (SY) Single Pipe	SODDING (SY) Double Pipe	SODDING (SY) Triple Pipe	SODDING (SY) Quad. Pipe
1:2 Slope	15"	2'-7"	1.92'	2.18'	4.10'	2.06'	5'	1.22'	2.9'	4.63'	7.21'	9.79'	12.37'	1.19	0.38	0.58	0.77	0.96	21	24	27	30
	18"	2'-10"	1.97'	2.74'	4.71'	2.56'	6'	1.41'	3.4	4.92	7.75'	10.58'	13.42'	1.21'	0.44	0.65	0.87	1.09	22	25	28	31
	24"	3'-5"	2.06'	3.85'	5.91'	3.56'	7'	1.73'	3.4	5.50'	8.92'	12.33'	15.75'	1.25'	0.54	0.83	1.12	1.42	24	28	32	35
	30"	4'-3"	2.15'	4.95'	7.10'	4.56'	8'	2.00'	3.4	6.08'	10.33'	14.58'	18.83'	1.29'	0.66	1.09	1.50	1.91	26	31	35	40
	36"	5'-1"	2.25'	6.08'	8.33'	5.56'	9'	2.24	3.4	6.67'	11.25'	16.83'	21.92'	1.33'	0.81	1.38	1.95	2.51	28	34	39	45
	42"	6'-0"	2.34'	7.21'	9.55'	6.56'	10'	2.45'	3.4	7.25'	13.25'	19.25'	25.25'	1.38'	0.97	1.70	2.45	3.19	30	37	43	50
	48"	6'-9"	2.43'	8.33	10.76'	7.56'	11'	2.65'	3.4	7.83'	14.58'	21.33'	28.08'	1.42	1.13	2.04	2.93	3.84	32	39	47	54
	54"	7'-6"	2.52'	9.44'	11.86'	8.56'	12'	2.83'	3.4	8.42'	16.08'	23.75'	31.42'	1.46'	1.31	2.44	3.58	4.72	34	42	51	59
	60"	8'-6"	2.62'	10.56'	13.18'	9.56'	14'	3.00'	4.4	9.00'	17.50'	26.00'	34.50'	1.50'	1.51	2.89	4.28	5.68	36	45	55	64
	66"	9'-2"	2.71'	11.68'	14.39'	10.56'	15'	3.18'	4.4	9.58'	18.75'	27.92'	37.08'	1.54'	1.68	3.25	4.84	6.43	38	48	58	68
	72"	10'-0"	2.80'	12.80'	15.60'	11.56'	16'	3.30'	4.4	10.16'	20.16'	30.16'	40.16'	1.58'	1.89	3.74	5.59	7.45	40	51	62	73
1:4 Slope	15"	2'-7"	2.27'	4.09'	6.36'	4.03'	8'	1.22'	4.0	4.63'	7.21'	9.79'	12.37'	1.19	0.57	0.87	1.15	1.44	23	26	29	32
	18"	2'-10"	2.36'	5.12'	7.48'	5.03'	9'	1.41'	4.0	4.92'	7.75'	10.58'	13.42'	1.21'	0.66	0.99	1.31	1.65	25	28	31	35
	24"	3'-5"	2.53'	7.18' △	9.71'	7.03' △	11'	1.73'	4.0	5.50'	8.92'	12.33'	15.75'	1.25'	0.85	1.30	1.75	2.20	28	32	36	40
	30"	4'-3"	2.70'	9.25'	11.95'	9.03'	13'	2.00'	4.0	6.08'	10.33'	14.58'	18.83'	1.29'	1.10	1.74	2.39	3.05	31	36	41	46
	36"	5'-1"	2.87'	11.31' ◇	14.18'	11.03' ◇	15'	2.24	4.0	6.67'	11.75'	16.83'	21.92'	1.33'	1.32	2.21	3.08	3.96	34	40	46	52
	42"	6'-0"	3.05'	13.37'	16.42'	13.03'	17'	2.45'	4.0	7.25'	13.25'	19.25'	25.25'	1.38'	1.58	2.76	3.91	5.09	38	44	51	58
	48"	6'-9"	3.22'	15.47'	18.65'	15.03'	19'	2.65'	4.0	7.83'	14.58'	21.33'	28.08'	1.42'	1.85	3.30	4.73	6.17	41	48	56	63
	54"	7'-6"	3.39'	17.49'	20.88'	17.03'	21'	2.83'	4.0	8.42'	16.08'	23.75'	31.42'	1.46'	2.14	3.95	5.77	7.58	44	52	61	69
	60"	8'-6"	3.56'	19.55'	23.11'	19.03'	23'	3.00'	4.0	9.00'	17.50'	26.00'	34.50'	1.50'	2.45	4.66	6.87	9.07	47	56	66	75
	66"	9'-2"	3.73'	21.62'	25.35'	21.03'	25'	3.18'	4.0	9.58'	18.75'	27.92'	37.08'	1.54'	2.88	5.54	8.18	10.84	49	59	69	80
	72"	10'-0"	3.91'	23.68'	27.59'	23.03'	27'	3.30'	4.0	10.16'	20.16'	30.16'	40.16'	1.58'	3.54	6.61	9.87	13.13	52	63	74	85

◪ See General Note No. 5. See Sheet 5 For 3" Slab Quantities

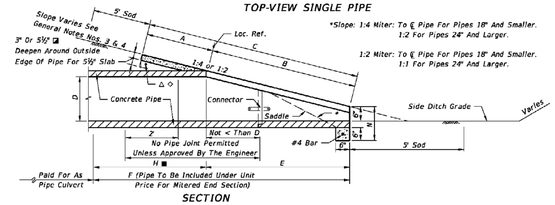
■ Values shown for estimating pipe quantities and are for information only.

B	E	
△ 6.42'	△ 6.25'	Dimensions permitted to allow use of 8' standard pipe lengths.
◇ 10.40'	◇ 10.19'	Dimensions permitted to allow use of 12' standard pipe lengths.

△ ◇ Concrete slab shall be deepened to form bridge across crown of pipe. See section below.



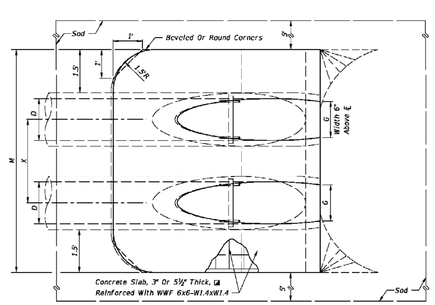
TOP-VIEW SINGLE PIPE



*Slope: 1:4 Miter: To ℄ Pipe For Pipes 18" And Smaller. 1:2 For Pipes 24" And Larger.

1:2 Miter: To ℄ Pipe For Pipes 18" And Smaller. 1:1 For Pipes 24" And Larger.

SECTION

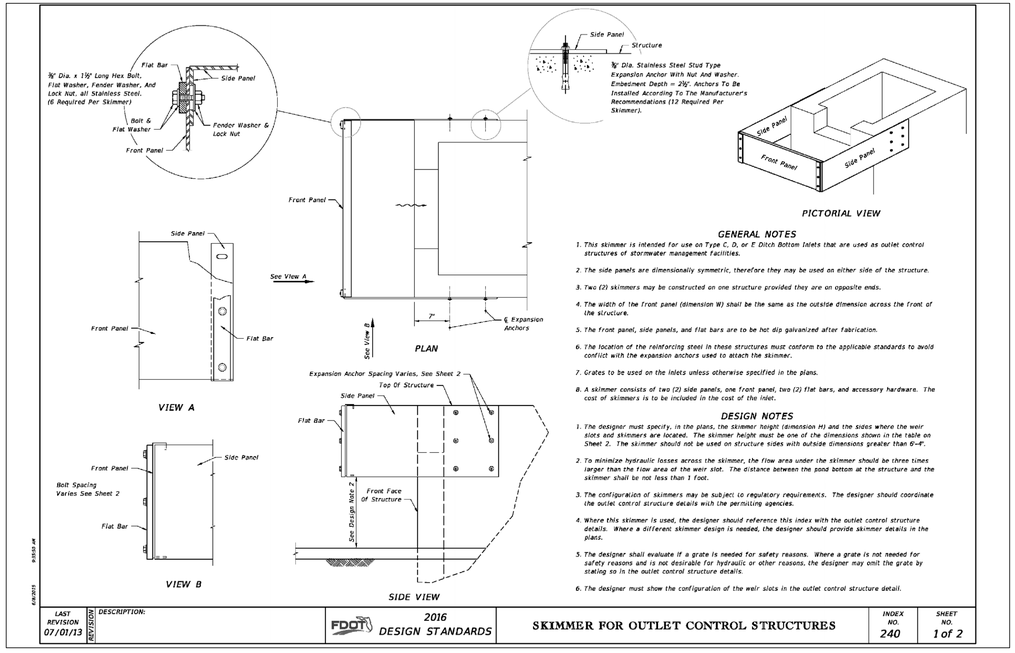


TOP-VIEW MULTIPLE PIPE

NOTE: See sheet 6 for details and notes.

SINGLE AND MULTIPLE ROUND CONCRETE PIPE

LAST REVISION 07/01/02	DESCRIPTION:	FDOT 2016 DESIGN STANDARDS	CROSS DRAIN MITERED END SECTION	INDEX NO. 272	SHEET NO. 1 of 6



GENERAL NOTES

1. This skimmer is intended for use on Type C, D, or E Ditch Bottom Inlets that are used as outlet control structures of stormwater management facilities.
2. The side panels are dimensionally symmetric, therefore they may be used on either side of the structure.
3. Two (2) skimmers may be constructed on one structure provided they are on opposite ends.
4. The width of the front panel (dimension W) shall be the same as the outside dimension across the front of the structure.
5. The front panel, side panels, and flat bars are to be hot dip galvanized after fabrication.
6. The location of the reinforcing steel in these structures must conform to the applicable standards to avoid conflict with the expansion anchors used to attach the skimmer.
7. Grates to be used on the inlets unless otherwise specified in the plans.
8. A skimmer consists of two (2) side panels, one front panel, two (2) flat bars, and accessory hardware. The cost of skimmers is to be included in the cost of the inlet.

DESIGN NOTES

1. The designer must specify, in the plans, the skimmer height (dimension H) and the sides where the weir slots and skimmers are located. The skimmer height must be one of the dimensions shown in the table on Sheet 2. The skimmer should not be used on structure sides with outside dimensions greater than 6'-4".
2. To minimize hydraulic losses across the skimmer, the flow area under the skimmer should be three times larger than the flow area of the weir slot. The distance between the pond bottom at the structure and the skimmer shall be not less than 1 foot.
3. The configuration of skimmers may be subject to regulatory requirements. The designer should coordinate the outlet control structure details with the permiting agencies.
4. Where this skimmer is used, the designer should reference this index with the outlet control structure details. Where a different skimmer design is needed, the designer should provide skimmer details in the plans.
5. The designer shall evaluate if a grate is needed for safety reasons. Where a grate is not needed for safety reasons and is not desirable for hydraulic or other reasons, the designer may omit the grate by stating so in the outlet control structure details.
6. The designer must show the configuration of the weir slots in the outlet control structure detail.

LAST REVISION 07/01/13	DESCRIPTION:	FDOT 2016 DESIGN STANDARDS	SKIMMER FOR OUTLET CONTROL STRUCTURES	INDEX NO. 240	SHEET NO. 1 of 2

RICHARD J. KERN, PE
39737
STATE OF FLORIDA

SEAL

DATE: 1-19-16

REVISION NUMBER	REVISION DESCRIPTION	DATE

INITIAL PLAN SUBMITTAL DATE:

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RUSH

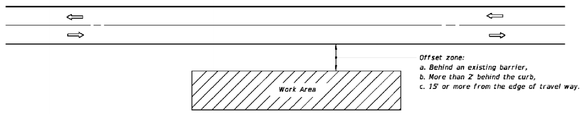
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FDOT DETAILS

EMBRAER AERO SEATING TECHNOLOGY
SPACEPORT COMMERCE PARK
TITUSVILLE, FLORIDA

SHEET NO: C 4.2

FILE NAME:



GENERAL NOTES

1. If the work operation (excluding establishing and terminating the work area) requires that two or more work vehicles cross the offset zone in any one hour, traffic control will be in conformance with Index No. 602.
2. No special signing is required.
3. When a side road intersects the highway within the work area, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
4. When construction activities encroach on a sidewalk refer to Index No. 660.
5. For general TCZ requirements and additional information, refer to Index No. 600.

SYMBOLS

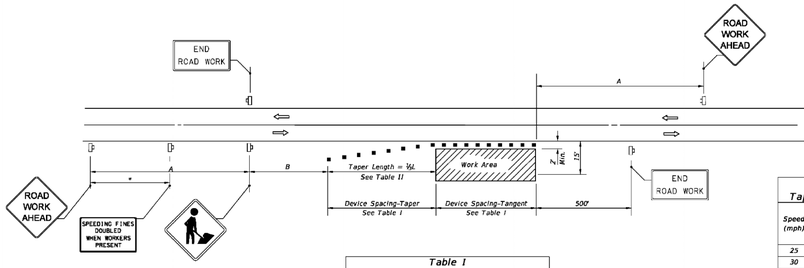
Work Area

Lane Identification + Direction of Traffic

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS AND THEIR ACTIVITIES ARE BEHIND AN EXISTING BARRIER, MORE THAN 2' BEHIND THE CURB, OR 15' OR MORE FROM THE EDGE OF TRAVEL WAY.

LAST REVISION 07/01/05	DESCRIPTION:	FDOT 2016 DESIGN STANDARDS	TWO-LANE, TWO-WAY, WORK OUTSIDE SHOULDER	INDEX NO. 601	SHEET NO. 1 of 1



DISTANCE BETWEEN SIGNS

Speed	Spacing (ft.) A	Spacing (ft.) B
40 mph or less	200	200
45 mph	350	350
50 mph or greater	500	500

*Midway between signs.

Table I
Device Spacing

Speed (mph)	Max. Distance Between Devices (ft.) Cones or Tubular Markers: Taper	Cones or Tubular Markers: Tangent	Type I or Type II Barricades or Vertical Panels or Drums: Taper	Type I or Type II Barricades or Vertical Panels or Drums: Tangent
25	25	50	25	50
30 to 45	25	50	30	50
50 to 70	25	50	50	100

Table II
Taper Length - Shoulder

Speed (mph)	½L (ft) 8' Shldr.	10' Shldr.	12' Shldr.	Notes
25	28	35	42	
30	40	50	60	L= WS²/60
35	55	68	82	
40	72	90	107	
45	120	150	180	
50	133	167	200	
55	147	183	220	L=WS
60	160	200	240	
65	173	217	260	
70	187	233	280	

8' minimum shoulder width

½L = Length of shoulder taper in feet

W = Width of total shoulder in feet (combined paved and unpaved width)

S = Posted speed limit (mph)

SYMBOLS

Work Area

Channelizing Device (See Index No. 600)

Work Zone Sign

Lane Identification + Direction of Traffic

GENERAL NOTES

1. When four or more work vehicles enter the through traffic lanes in a one hour period or less (excluding establishing and terminating the work area), the advanced FLAGGER sign shall be substituted for the WORKERS sign. For location of flaggers and FLAGGER signs, see Index No. 603.
2. SHOULDER WORK sign may be used as an alternate to the WORKER symbol sign only on the side where the shoulder work is being performed.
3. When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed in accordance with other applicable TCZ Indexes.
4. For general TCZ requirements and additional information, refer to Index No. 600.

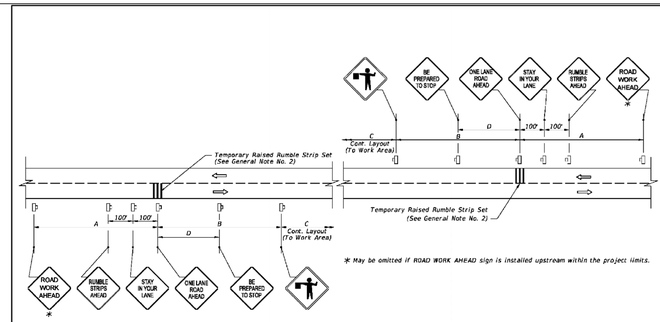
DURATION NOTES

1. Signs and channelizing devices may be omitted if all of the following conditions are met:
   a. Work operations are 60 minutes or less.
   b. Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.

CONDITIONS

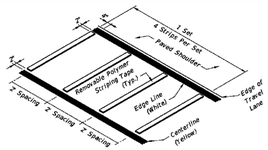
WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH THE AREA CLOSER THAN 15' BUT NOT CLOSER THAN 2' TO THE EDGE OF TRAVEL WAY.

LAST REVISION 07/01/15	DESCRIPTION:	FDOT 2016 DESIGN STANDARDS	TWO-LANE, TWO-WAY, WORK ON SHOULDER	INDEX NO. 602	SHEET NO. 1 of 1

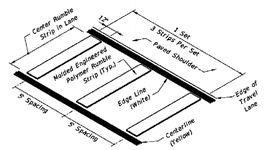


* May be omitted if ROAD WORK AHEAD sign is installed upstream within the project limits.

LAYOUT FOR TEMPORARY RAISED RUMBLE STRIPS WHEN REQUIRED WITH ADDITIONAL SIGNS

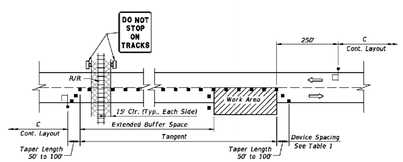


OPTION 1 - REMOVABLE POLYMER STRIPING TAPE RUMBLE STRIP SET

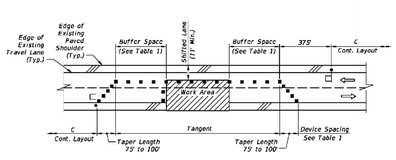


OPTION 2 - MOLDED ENGINEERED POLYMER RUMBLE STRIP SET

TEMPORARY RAISED RUMBLE STRIPS



LAYOUT FOR RAILROAD CROSSING BUFFER SPACE EXTENSION



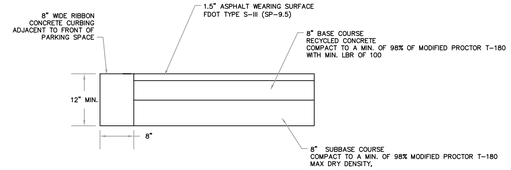
LAYOUT FOR TEMPORARY LANE SHIFT TO SHOULDER WHEN WORK AREA ENCROACHES ON THE CENTERLINE

SPECIAL CONDITIONS

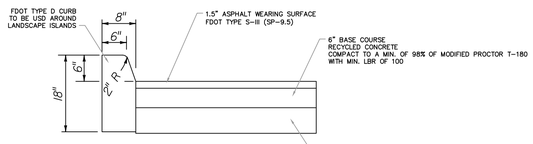
LAST REVISION 07/01/15	DESCRIPTION:	FDOT 2016 DESIGN STANDARDS	TWO-LANE, TWO-WAY, WORK WITHIN THE TRAVEL WAY	INDEX NO. 603	SHEET NO. 2 of 3

CONCRETE PAVING NOTES

1. CONCRETE PAVEMENT SHALL BE CONSTRUCTED OF 28 DAY 4,000 PSI, CLASS 1 CONCRETE.
2. CONTRACTION JOINTS SHALL BE 1/8" WIDE AND 1.75" DEEP AND SAWCUT
3. CONSTRUCTION JOINTS ARE REQUIRED WHEN CONSTRUCTING ADJACENT ADJACENT FRESH CONCRETE POURS
4. EXPANSION JOINTS ARE REQUIRED ALONG ALL OTHER ADJACENT PAVEMENTS, AT EACH SIDE OF STORM INLET STRUCTURES, AND AT ALL RADIUS POINTS.
5. EXPANSION JOINTS SHALL BE 1/2" WIDE (WITH 1/2 INCH PREMOLDED JOINT MATERIAL) AND SHALL BE FULL DEPTH OF THE PAVEMENT.
6. JOINT MATERIAL SHALL BE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS SECTION 932.
7. THE SUBGRADE SHALL BE COMPACTED TO A MIN. OF 98% MAXIMUM DRY DENSITY PER AASHTO T-180 AND SHALL HAVE A MIN. LBR OF 40 AND EXTEND 12" MINIMUM BEYOND THE EDGE OF PAVEMENT.
8. ALL CONCRETE SHALL HAVE A BROOM FINISH.

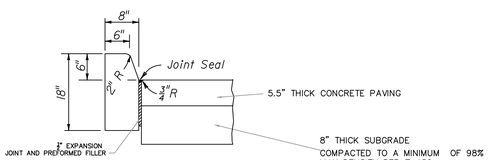


STANDARD DUTY ASPHALT PAVING WITH RIBBON CURB



STANDARD DUTY ASPHALT PAVING WITH RAISED CURB

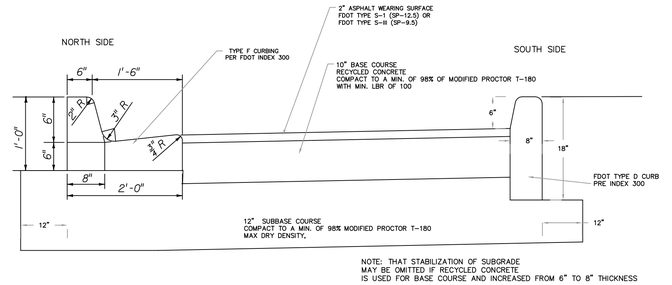
TO BE USED FOR ALL ASPHALT PAVING EXCEPT TRUCK DRIVEWAY



MAXIMUM CONTROL JOINT SPACING 12 FT X 12 FT

STANDARD DUTY UNREINFORCED CONCRETE PAVEMENT

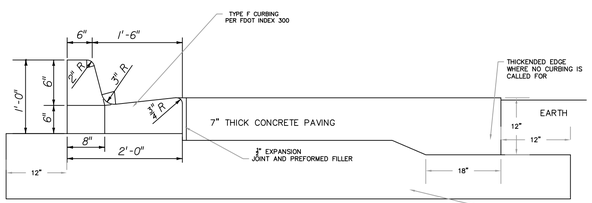
TO BE USED WHERE EVER CONRETE PAVING OR SIDEWALKS ARE CALLED FOR, EXCEPT THE TRUCK APRON



NOTE: THAT STABILIZATION OF SUBGRADE MAY BE OMITTED IF RECYCLED CONCRETE IS USED FOR BASE COURSE AND INCREASED FROM 6" TO 8" THICKNESS

HEAVY DUTY ASPHALT PAVING

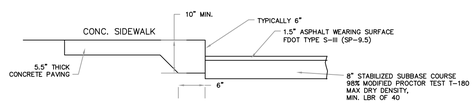
TO BE USE IN TRUCK DRIVEWAY ON NORTH SIDE OF SITE ONLY



MAXIMUM CONTROL JOINT SPACING 14 FT X 14 FT

HEAVY DUTY CONCRETE PAVING

TO BE USE IN CONCRETE TRUCK APRON ONLY



CONCRETE SIDEWALK THICKENED EDGE

RICHARD J. KERN, PE
39737
STATE OF FLORIDA

SEAL

DATE: 3-1-16

REVISION NUMBER | REVISION DESCRIPTION | DATE

INITIAL PLAN SUBMITTAL DATE:

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RUSH

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mail@honeycutt.cc

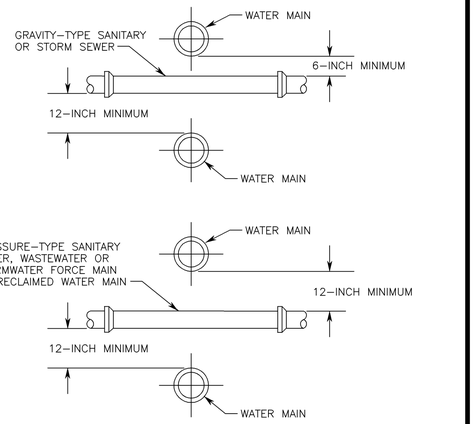
MAINTENANCE OF TRAFFIC AND PAVING AND CURBING DETAILS

EMBRAER AERO SEATING TECHNOLOGY
SPACEPORT COMMERCE PARK
TITUSVILLE, FLORIDA

SHEET NO: C 4.3

FILE NAME:

WATER MAINS CROSSING ANY GRAVITY– OR VACCUUM–TYPE SANITARY SEWER OR STORM SEWER LINES SHALL MAINTAIN A SEPARATION OF AT LEAST SIX (6), AND PREFERABLY TWELVE (12), INCHES ABOVE OR AT LEAST TWELVE (12) INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE. WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE–TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST TWELVE (12) INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE. EXCEPTIONS TO THE SEPARATION REQUIREMENT WILL BE ON A CASE–BY–CASE BASIS AS APPROVED BY THE CITY AND THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION IN ACCORDANCE WITH THE FLORIDA ADMINISTRATIVE CODE, CHAPTER 62–555.314, AND ARE MADE ONLY WHEN THERE IS NO OTHER REASONABLE ALTERNATIVE.

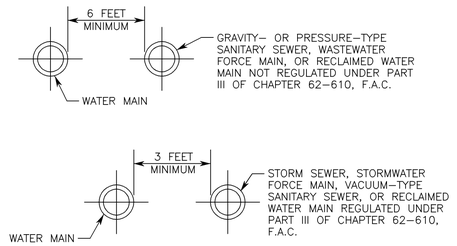


VERTICAL SEPARATION

WRE# 041142 — REVISED 06–09 AW, REVISED 03–05 EOA

TYPICAL SEPARATION OF WATER & SEWER LINES	DEPARTMENT OF WATER RESOURCES	
	DATE: 11–04	EXHIBIT NO.
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 2

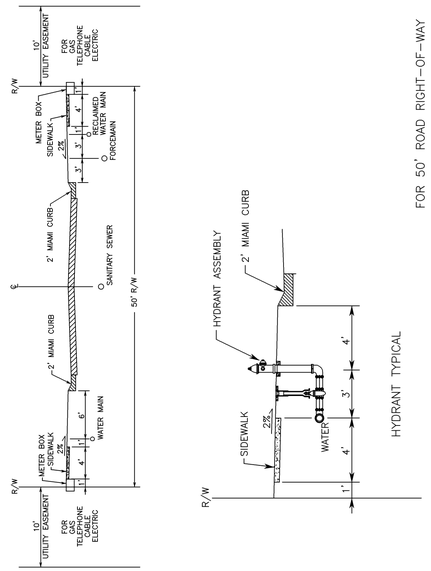
WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE (3) FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62–610, F.A.C. WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE (3) FEET, AND PREFERABLY TEN (10) FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM–TYPE SANITARY SEWER. WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST (6) SIX FEET, AND PREFERABLY TEN (10) FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY–OR PRESSURE–TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62–610, F.A.C. THE MINIMUM HORIZONTAL DISTANCE BETWEEN WATER MAINS AND GRAVITY–TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE (3) FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX (6) INCHES ABOVE THE TOP OF THE SEWER. WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST TEN (10) FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED ON–SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM AS DEFINED IN SECTION 381.0065(2), F.S., AND RULE 64E–6.002, F.A.C. EXCEPTIONS TO THE SEPARATION REQUIREMENT WILL BE ON A CASE–BY–CASE BASIS AS APPROVED BY THE CITY AND THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION IN ACCORDANCE WITH THE FLORIDA ADMINISTRATIVE CODE, CHAPTER 62–555.314, AND ARE MADE ONLY WHEN THERE IS NO OTHER REASONABLE ALTERNATIVE.



HORIZONTAL SEPARATION

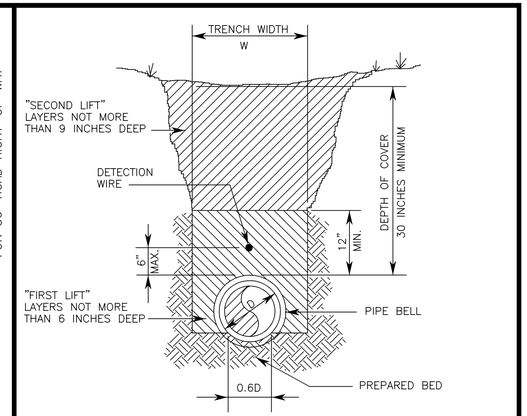
WRE# 041142 — REVISED 06–09 AW, REVISED 03–05 EOA

TYPICAL SEPARATION OF WATER & SEWER LINES	DEPARTMENT OF WATER RESOURCES	
	DATE: 11–04	EXHIBIT NO.
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 2 OF 2



WRE# 060945 — REVISED 04–09 AW, REVISED 02–08 EOA

UTILITY PLACEMENT WITHIN A 50' PUBLIC ROAD RIGHT–OF–WAY	DEPARTMENT OF WATER RESOURCES	
	DATE: 09–06	EXHIBIT NO.
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1



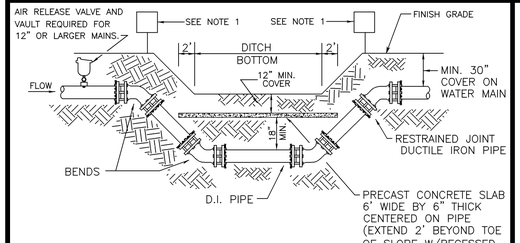
BACKFILL REQUIREMENTS	
"FIRST LIFT"	
PIPE MATERIAL	MAXIMUM SIZE OF FRAGMENTS
PLASTIC	1/2 INCH
IRON, CONC.	3 INCHES
"SECOND LIFT"	
ALL MATERIALS	6 INCHES

NOTES:
1. MAXIMUM W = D+2 FEET
2. MINIMUM W = D+16 INCHES
3. DEPTH OF COVER = 30 INCHES MINIMUM
4. COMPACT FILL AND BACKFILL IN ACCORDANCE WITH ASSHTO T–180 AND THE FOLLOWING CRITERIA:

LOCATION	PERCENT OF MAX. DENSITY AT OPTIMUM MOISTURE
UNDER SLABS	98
UNDER STRUCTURES	98
UNDER PAVED AREAS	
UPPER 12 INCHES	98
BELOW 12 INCHES	95
OTHER AREAS	90

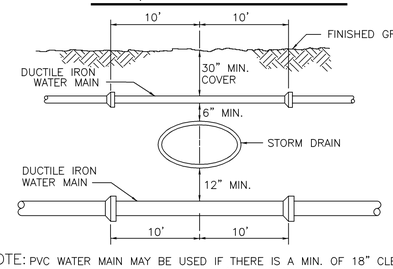
WRE# 930106 — REVISED 04–09 AW, REVISED 02–01

TYPICAL TRENCH DETAIL	DEPARTMENT OF WATER RESOURCES	
	DATE: 04–90	EXHIBIT NO.
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1



NOTES:
1. WARNING SIGNS REQUIRED ON BOTH SIDES OF DITCH.
2. ALL PIPE SHALL BE CLASS 52 DUCTILE IRON. RESTRAINED JOINTS SHALL BE INSTALLED AS REQUIRED TO DEVELOP THRUST RESTRAINT.

DITCH/CANAL CROSSING DETAIL

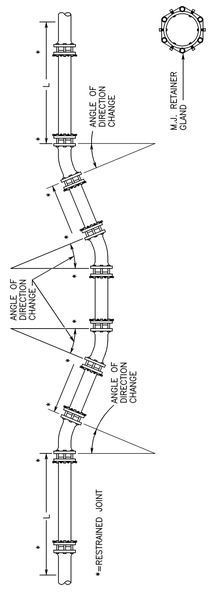


NOTE: PVC WATER MAIN MAY BE USED IF THERE IS A MIN. OF 18" CLEARANCE FROM THE INVERT OF THE WATER MAIN TO THE CROWN OF THE STORM DRAIN.

STORM DRAIN CROSSING

WRE# 930112 — REVISED 04–09 AW, REVISED 11–04, REVISED 02–01

TYPICAL STORM DRAIN & DITCH CROSSING	DEPARTMENT OF WATER RESOURCES	
	DATE: 02–96	EXHIBIT NO.
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1



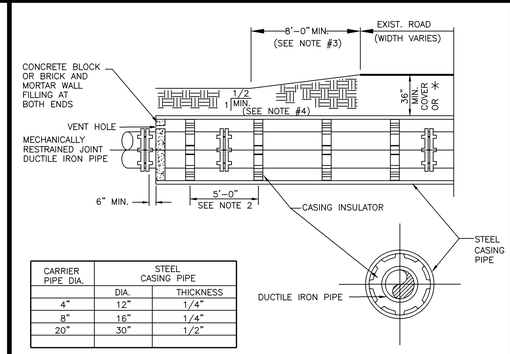
Nom. Pipe Size	L–Minimum Length To Be Restrained On Each Side of Fitting (ft.)																					
	Clay						Sand						Silt, Muck, Peat									
	Elbows (deg.)			Valves Tees Dead Ends			Elbows (deg.)			Valves Tees Dead Ends			Elbows (deg.)			Valves Tees Dead Ends					
	11¼	22½	45	90			11¼	22½	45	90			11¼	22½	45	90						
3"	3	5	7	9	7		4	5	7	12	9		4	5	9	13	11					
4"	3	5	7	11	8		4	7	7	15	11		4	7	11	16	15					
6"	4	7	8	12	9		5	8	12	19	13		5	8	13	20	15					
8"	4	7	8	13	11		5	9	15	25	17		5	9	13	20	19					
10"	5	8	12	17	15		7	13	20	29	20		7	12	20	33	24					
12"	5	11	15	20	17		8	15	23	35	24		8	13	23	39	28					
16"	7	15	20	27	22		11	20	31	47	32		11	18	31	52	37					
20"	8	19	25	34	28		14	25	39	59	40		14	23	39	65	47					
24"	10	23	30	41	33		17	30	47	71	48		17	28	47	78	56					
30"	13	29	38	52	42		21	38	59	89	60		21	35	59	98	70					
36"	15	35	46	62	50		25	46	71	107	72		25	42	71	117	84					

Values for "L" are based on Ductile Iron pipe at 350 psi pressure. Where depth of soil cover is less than 3 feet, values for "L" must be increased by 30%. When depth of soil cover is less than ½ of pipe outside diameter, values for "L" must be increased by 100%.

Example:
A 12 inch Ductile Iron pipe being installed in sandy soil, enters a 45 degree horizontal bend. From the chart the minimum length of pipe to be restrained is 23 feet before and after the elbow must be restrained. Therefore all joints that fall within 23 feet before and after the elbow must be restrained. If no joints are encountered within this distance, the next closest joint does not necessarily have to be restrained.

WRE# 951243 — REVISED 04–09 AW

TYPICAL M.J. THRUST RESTRAINT FOR VERTICAL OR LATERAL OFFSET	DEPARTMENT OF WATER RESOURCES	
	DATE: 12–95	EXHIBIT NO.
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1



CARRIER PIPE DIA.	STEEL CASING PIPE	
	DIA.	THICKNESS
4"	12"	1/4"
8"	16"	1/4"
20"	30"	1/2"

NOTES:
1. WHEN CONSTRUCTION IS WITHIN CITY JURISDICTION, ADDITIONAL REQUIREMENTS OF THE CITY SHALL BE MET. WHEN CONSTRUCTION IS WITHIN F.D.O.T. JURISDICTION, ADDITIONAL REQUIREMENTS OF THE UTILITY ACCOMMODATION GUIDE SHALL BE MET.
2. CASING INSULATORS BY CASCADE WATER WORKS MFG., OR EQUAL MAY BE UTILIZED. CASING INSULATORS SHALL BE FASTENED WITH ALL STAINLESS STEEL HARDWARE AND SHALL HAVE AN OUTER DIAMETER LARGER THAN THAT OF THE RESTRAINED JOINTS. CASING INSULATORS SHALL BE INSTALLED ON MAX. 5 FOOT CENTERS ALONG ENTIRE LENGTH OF PIPE.
3. JACKING PIT (EXCAVATED AREAS FROM WHICH JACKING AND RECEIVING OPERATIONS ARE ACCOMPLISHED) EXCAVATION SHALL BE NO CLOSER THAN 8 FEET FROM THE ROADWAY OR SHOULDER PAVEMENT EDGE, OR 4 FEET FROM BACK OF CURB, WHICH EVER IS APPLICABLE.
4. THE PIT DIMENSIONS SHALL BE LARGE ENOUGH TO PROVIDE A SAFE, ADEQUATE WORKING AREA WITH SLOPES NO STEEPER THAN:

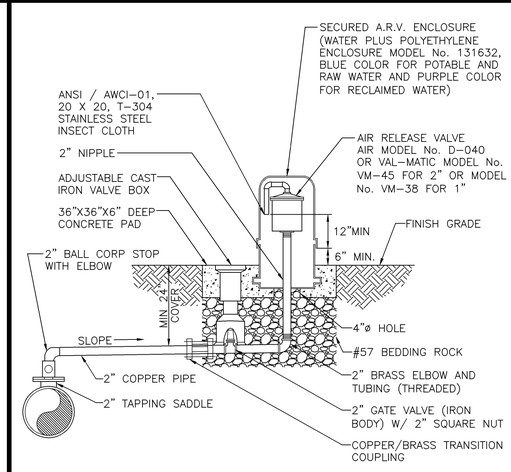
   1/2:1 IN HARD PAN, CLAY OR HARD SAND–CLAYS
   1:1 IN STABLE COHESIVE SOILS
   2:1 IN LOOSE UNSTABLE SOILS

SLOPES SHALL EXTEND FROM PROPOSED CASING INVERT ELEVATIONS TO EXISTING GROUND LEVEL..

* FOR RAILROAD R/W, CASING IS TO BE 66" MIN. BELOW RR TIES

WRE# 960626 — REVISED 04–09 AW

TYPICAL ROADWAY JACK & BORE DETAIL	DEPARTMENT OF WATER RESOURCES	
	DATE: 06–96	EXHIBIT NO.
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1



NOTE: NOT TO BE USED FOR SANITARY SEWER APPLICATIONS.

WRE# 080736 — REVISED 07–09 AW

ABOVE GROUND AIR RELEASE VALVE DETAIL	DEPARTMENT OF WATER RESOURCES	
	DATE: 07–08	EXHIBIT NO.
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1

City of Titusville
555 South Washington Avenue
Titusville, Florida 32796
PH: (321) 383-5823 Fax: (321) 383-5700

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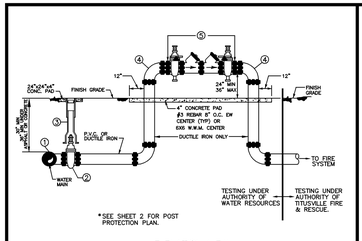
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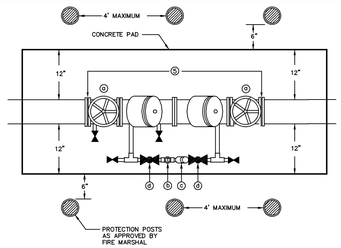
No.	Revision	Date

UTILITIES
COMMON DETAILS

WATER RESOURCES (DEPT)	COT UC1 (SHEET)
July 2009 (DATE)	
N.T.S. (SCALE)	



ELEVATION VIEW



PLAN VIEW

LEGEND

1. MECHANICAL JOINT TEE OR TAPPING SLEEVE/TEE
2. GATE VALVE
3. ROADWAY VALVE BOX WITH LOCKING LID LABELED "FIRE".
4. 90° BEND – MECHANICAL JOINT TO FLANGE.
5. DOUBLE CHECK DETECTOR ASSEMBLY.

NOTES

1. LOCATION OF DEVICE MUST BE APPROVED BY FIRE MARSHAL AND WATER RESOURCES.
2. DEVICE TO BE PROTECTED FROM FREEZING, VEHICULAR TRAFFIC AND AND TAMPERING. FIRE MARSHAL SHALL APPROVE METHODS OF PROTECTION.
3. PROVIDE FIRE DEPARTMENT CONNECTION WITHIN 10 FEET OF FIRE HYDRANT.
4. VALVE BOX COVER SHALL BE LOCKABLE AND BE LABELED "FIRE".

WR£# 000102 — REVISED 04–09 AW

FIRE LINE BACKFLOW PREVENTER — DEPARTMENT OF WATER RESOURCES — DATE: 01–00 — EXHIBIT NO.

CITY OF TITUSVILLE, FLORIDA — SCALE: NTS — SHT. 1 OF 2

LEGEND

1. MECHANICAL JOINT TEE OR TAPPING SLEEVE/TEE
2. GATE VALVE
3. ROADWAY VALVE BOX WITH LOCKING LID LABELED "FIRE".
4. 90° BEND – MECHANICAL JOINT TO FLANGE.
5. DOUBLE CHECK DETECTOR ASSEMBLY.
6. OSY FLANGED VALVE.
7. 5/8" x 3/4" METER w/COUPLINGS.
8. 3/4" BACKFLOW PREVENTER.
9. 3/4" BALL VALVE.

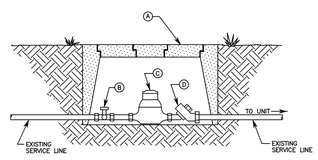
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WR£# 000102 — REVISED 04–09 AW

FIRE LINE BACKFLOW PREVENTER — DEPARTMENT OF WATER RESOURCES — DATE: 01–00 — EXHIBIT NO.

CITY OF TITUSVILLE, FLORIDA — SCALE: NTS — SHT. 2 OF 2



(A) PLASTIC METER BOX MB–17 RHINO BLACK (SINGLE), MB–18 RHINO BLACK (DOUBLE) W/CAST IRON METER LID

(B) CURB STOP – BRASS LOCK WING BALL VALVE
MUELLER B–24350
FORD B–43–332W–G
McDONALD 6100MW–22

(C) WATER METER – 5/8 x 3/4 BRONZE BODY NEPTUNE T–10 PROREAD GALLON METER 6 WHEEL ENCODER R 900 V3 PIT MIU W/6 FT. CABLE

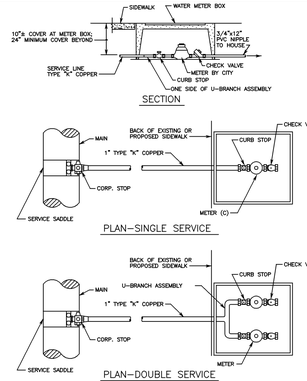
(D) METER DUAL CHECK
FORD HHCH31–323
FLOW MATIC B8080

NOTE:
1. CONTRACTOR SHALL INSTALL CURB STOP, METER BOX AND SET TO FINISHED GRADE.

WR£# 050524 — REVISED 04–09 AW, REVISED 02–08 EOA

TYPICAL WATER METER INSTALLATION ON A SINGLE SERVICE LINE — DEPARTMENT OF WATER RESOURCES — DATE: 05–05 — EXHIBIT NO.

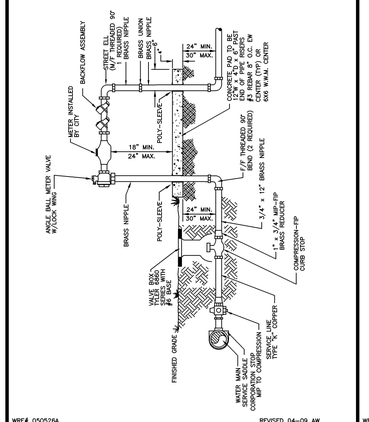
CITY OF TITUSVILLE, FLORIDA — SCALE: NTS — SHT. 1 OF 1



WR£# 050525 — REVISED 02–08 EOA

TYPICAL RESIDENTIAL SERVICE CONNECTIONS — DEPARTMENT OF WATER RESOURCES — DATE: 05–05 — EXHIBIT NO.

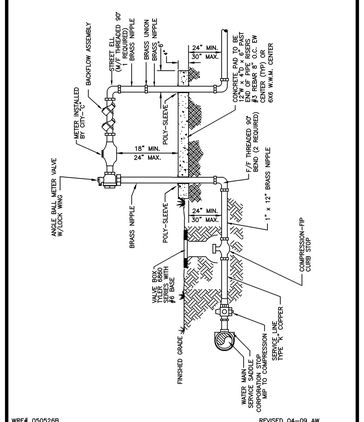
CITY OF TITUSVILLE, FLORIDA — SCALE: NTS — SHT. 1 OF 1



WR£# 050526A — REVISED 04–09 AW

TYPICAL 3/4" BACKFLOW INSTALLATION — DEPARTMENT OF WATER RESOURCES — DATE: 06–05 — EXHIBIT NO.

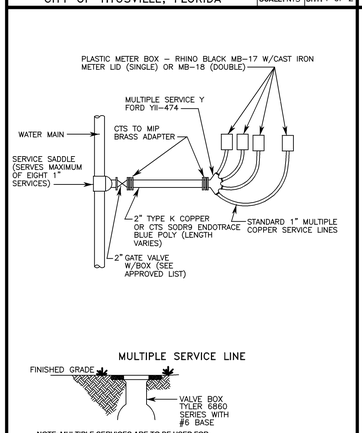
CITY OF TITUSVILLE, FLORIDA — SCALE: NTS — SHT. 1 OF 1



WR£# 050526B — REVISED 04–09 AW

TYPICAL 1" BACKFLOW INSTALLATION — DEPARTMENT OF WATER RESOURCES — DATE: 06–05 — EXHIBIT NO.

CITY OF TITUSVILLE, FLORIDA — SCALE: NTS — SHT. 1 OF 1



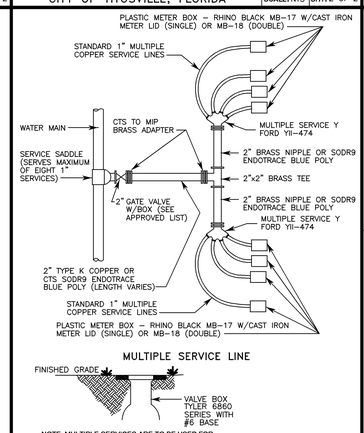
MULTIPLE SERVICE LINE

NOTE: MULTIPLE SERVICES ARE TO BE USED FOR MULTI-FAMILY RESIDENTIAL PROJECTS ONLY.

WR£# 050836 — REVISED 04–09 AW, REVISED 02–08 EOA

MULTI–FAMILY MULTIPLE SERVICE LINE INSTALLATION — DEPARTMENT OF WATER RESOURCES — DATE: 08–05 — EXHIBIT NO.

CITY OF TITUSVILLE, FLORIDA — SCALE: NTS — SHT. 1 OF 2



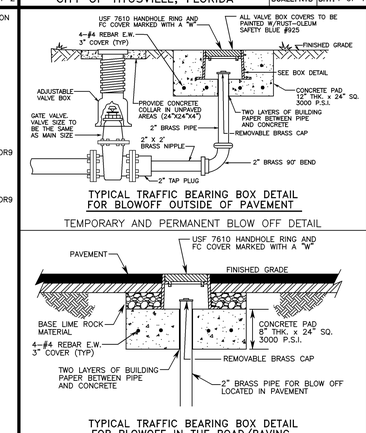
MULTIPLE SERVICE LINE

NOTE: MULTIPLE SERVICES ARE TO BE USED FOR MULTI-FAMILY RESIDENTIAL PROJECTS ONLY.

WR£# 050836 — REVISED 04–09 AW, REVISED 02–08 EOA

MULTI–FAMILY MULTIPLE SERVICE LINE INSTALLATION — DEPARTMENT OF WATER RESOURCES — DATE: 08–05 — EXHIBIT NO.

CITY OF TITUSVILLE, FLORIDA — SCALE: NTS — SHT. 2 OF 2



TYPICAL TRAFFIC BEARING BOX DETAIL FOR BLOWOFF OUTSIDE OF PAVEMENT

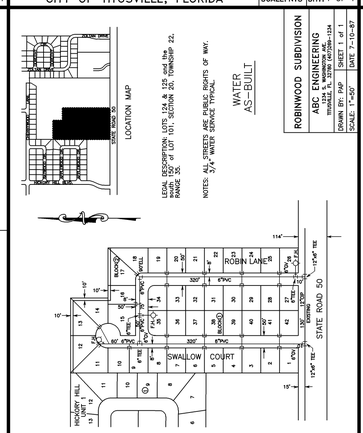
TEMPORARY AND PERMANENT BLOW OFF DETAIL

TYPICAL TRAFFIC BEARING BOX DETAIL FOR BLOWOFF IN THE ROAD/PAVING

WR£# 060104 — REVISED 04–09 AW

TYPICAL 2" BLOWOFF DETAILS — DEPARTMENT OF WATER RESOURCES — DATE: 02–08 — EXHIBIT NO.

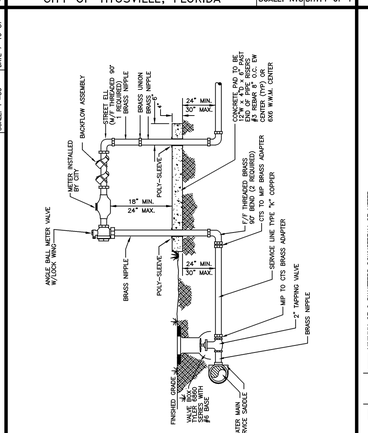
CITY OF TITUSVILLE, FLORIDA — SCALE: NTS — SHT. 1 OF 1



WR£# #930103 — REVISED 04–09 AW, REVISED 02–08 EOA, REVISED 01–93 EOA

WATER DISTRIBUTION AS–BUILT SAMPLE — DEPARTMENT OF WATER RESOURCES — DATE: 11–91 — EXHIBIT NO.

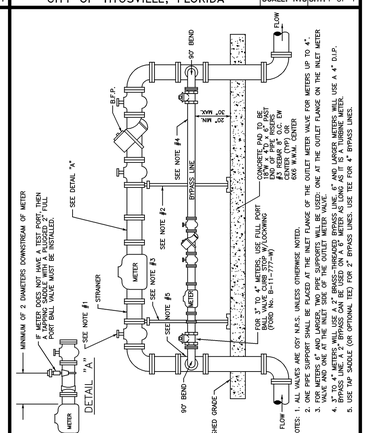
CITY OF TITUSVILLE, FLORIDA — SCALE: NTS — SHT. 1 OF 1



WR£# 050526C — REVISED 04–09 AW

TYPICAL 2" BACKFLOW INSTALLATION — DEPARTMENT OF WATER RESOURCES — DATE: 06–05 — EXHIBIT NO.

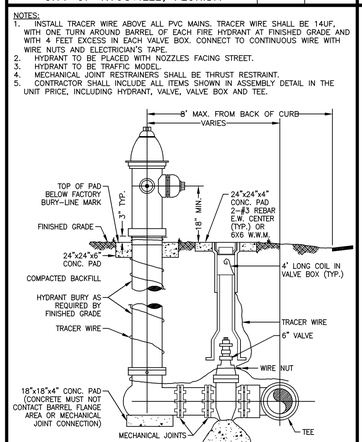
CITY OF TITUSVILLE, FLORIDA — SCALE: NTS — SHT. 1 OF 1



WR£# 050420 — REVISED 04–09 AW

TYPICAL 3" OR LARGER METER INSTALLATION — DEPARTMENT OF WATER RESOURCES — DATE: 04–05 — EXHIBIT NO.

CITY OF TITUSVILLE, FLORIDA — SCALE: NTS — SHT. 1 OF 1

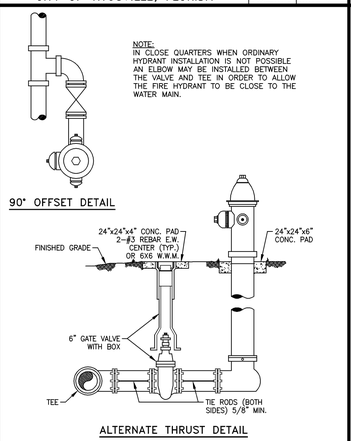


WR£# 951134 — REVISED 04–09 AW

TYPICAL FIRE HYDRANT & GATE VALVE INSTALLATION — DEPARTMENT OF WATER RESOURCES — DATE: 11–95 — EXHIBIT NO.

CITY OF TITUSVILLE, FLORIDA — SCALE: NTS — SHT. 1 OF 1

NOTES:
1. INSTALL TRACER WIRE ABOVE ALL PVC MAINS. TRACER WIRE SHALL BE 14UF, WITH ONE TURN AROUND BARREL OF EACH FIRE HYDRANT AT FINISHED GRADE AND WITH 4 FEET EXCESS IN EACH VALVE BOX. CONNECT TO CONTINUOUS WIRE WITH WIRE NUTS AND ELECTRICIAN'S TAPE.
2. HYDRANT TO BE PLACED WITH NOZZLES FACING STREET.
3. HYDRANT TO BE TRAFFIC MODEL.
4. MECHANICAL JOINT RESTRAINERS SHALL BE THRUST RESTRAINT.
5. CONTRACTOR SHALL INCLUDE ALL ITEMS SHOWN IN ASSEMBLY DETAIL IN THE UNIT PRICE, INCLUDING HYDRANT, VALVE, VALVE BOX AND TEE.

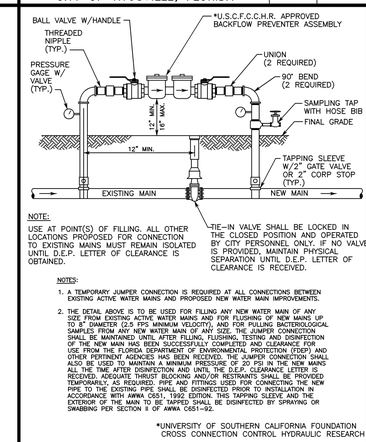


ALTERNATE THRUST DETAIL

WR£# 951135 — REVISED 04–09 AW

ALTERNATE FIRE HYDRANT INSTALLATION — DEPARTMENT OF WATER RESOURCES — DATE: 02–96 — EXHIBIT NO.

CITY OF TITUSVILLE, FLORIDA — SCALE: NTS — SHT. 1 OF 1



NOTE:
USE AT POINT(S) OF FILLING. ALL OTHER LOCATIONS PROPOSED FOR CONNECTION TO EXISTING MAINS MUST REMAIN ISOLATED UNTIL D.E.P. LETTER OF CLEARANCE IS OBTAINED.

TIE–IN VALVE SHALL BE LOCKED IN THE CLOSED POSITION AND OPERATED BY CITY PERSONNEL ONLY. IF NO VALVE IS PROVIDED, MAINTAIN PHYSICAL SEPARATION UNTIL D.E.P. LETTER OF CLEARANCE IS RECEIVED.

NOTES:
1. A TEMPORARY JUMPER CONNECTION IS REQUIRED AT ALL CONNECTIONS BETWEEN EXISTING ACTIVE WATER MAINS AND PROPOSED NEW WATER MAIN IMPROVEMENTS.
2. THE DETAIL ABOVE IS TO BE USED FOR FILLING ANY NEW WATER MAIN OF ANY SIZE FROM EXISTING ACTIVE WATER MAINS AND FOR FLUSHING OF NEW MAINS UP TO 8" DIAMETER (2.5 FPS MINIMUM VELOCITY), AND FOR FILLING BACTERIOLOGICAL SAMPLES FROM ANY NEW WATER MAIN OF ANY SIZE. THE JUMPER CONNECTION SHALL BE USED TO MAINTAIN A MINIMUM PRESSURE OF 20 PSI IN THE NEW MAINS ALL THE TIME AFTER DISINFECTION AND UNTIL THE D.E.P. CLEARANCE LETTER IS RECEIVED. ADEQUATE THRUST BLOCKING AND/OR RESTRAINTS SHALL BE PROVIDED TEMPORARILY, AS REQUIRED. PIPE AND FITTINGS USED FOR CONNECTING THE NEW PIPE TO THE EXISTING PIPE SHALL BE DISINFECTED PRIOR TO INSTALLATION IN ACCORDANCE WITH AWWA C651, 1992 EDITION. THIS TAPPING SLEEVE AND THE EXTERIOR OF THE MAIN TO BE TAPPED SHALL BE DISINFECTED BY SPRAYING OR SWABBING PER SECTION II OF AWWA C651–92.

*UNIVERSITY OF SOUTHERN CALIFORNIA FOUNDATION CROSS CONNECTION CONTROL HYDRAULIC RESEARCH

WR£# 951137 — REVISED 04–09 AW

TEMPORARY JUMPER CONNECTION DETAIL — DEPARTMENT OF WATER RESOURCES — DATE: 11–95 — EXHIBIT NO.

CITY OF TITUSVILLE, FLORIDA — SCALE: NTS — SHT. 1 OF 2

NOTES:(CONTINUED)

3. FLUSHING OF 10" DIAMETER AND LARGER WATER MAINS MAY BE DONE THROUGH THE TIE–IN VALVE UNDER VERY CONTROLLED CONDITIONS.

   THE FOLLOWING PROCEDURES SHALL BE FOLLOWED:

   A. THE TIE–IN VALVES SHALL BE OPERATED AND PRESSURE TESTED IN THE PRESENCE OF THE UTILITY COMPANY AND ENGINEER TO VERIFY WATER TIGHTNESS PRIOR TO TIE–IN. VALVES WHICH ARE NOT WATERTIGHT SHALL BE REPLACED OR A NEW VALVE INSTALLED IMMEDIATELY ADJACENT TO THE LEAKING VALVE.

   B. THE TEMPORARY JUMPER CONNECTION SHALL BE CONSTRUCTED AS DETAILED. THE JUMPER CONNECTION SHALL BE USED TO FILL THE NEW WATER MAIN AND FOR PROVIDING WATER FOR BACTERIOLOGICAL SAMPLING OF THE NEW MAIN AS REQUIRED BY THE FDEP PERMIT.

   FLUSHING SHALL NOT BE ATTEMPTED DURING PEAK DEMAND HOURS OF THE EXISTING WATER MAINS.

   ALL DOWNSTREAM VALVES IN THE NEW SYSTEM MUST BE OPEN PRIOR TO OPENING THE TIE–IN VALVE.

   PROVIDE FOR AND MONITOR THE PRESSURE AT THE TIE–IN POINT. THE PRESSURE IN THE EXISTING MAIN MUST NOT DROP BELOW 35 PSI.

   TIE–IN VALVE SHALL BE OPENED A FEW TURNS ONLY ENSURING A PRESSURE DROP ACROSS THE VALVE IS ALWAYS GREATER THAN 10 PSI.

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

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

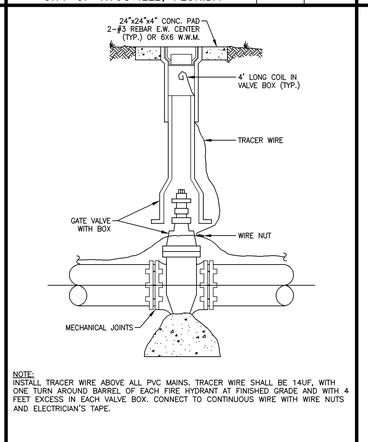
   E. AFTER FLUSHING, THE TIE–IN VALVE SHALL BE CLOSED AND LOCKED IN THE CLOSED POSITION BY THE UTILITY COMPANY.

4. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION DEMONSTRATING THAT THE DOUBLE CHECK BACKFLOW PREVENTION DEVICE HAS BEEN TESTED AND IS IN GOOD WORKING ORDER AT THE TIME OF INSTALLATION.
5. EXCEPT AS REQUIRED TO FLUSH LINES OF GREATER THAN 8" IN DIAMETER, THE TIE–IN VALVE SHALL REMAIN CLOSED AND SHALL BE LOCKED IN THE CLOSED POSITION BY THE UTILITY COMPANY. THE TIE–IN VALVE SHALL REMAIN LOCKED CLOSED UNTIL THE NEW SYSTEM HAS BEEN CLEARED FOR USE BY FDEP AND ALL OTHER PERTINENT AGENCIES.
6. UPON RECEIPT OF CLEARANCE FOR USE FROM FDEP AND ALL OTHER PERTINENT AGENCIES, THE CONTRACTORS SHALL REMOVE THE TEMPORARY JUMPER CONNECTION, THE CORPORATION STOPS OR GATE VALVES ARE TO BE CLOSED AND PLUGGED WITH 2" BRASS PLUGS.
7. ALL INSTALLATION AND MAINTENANCE OF THE TEMPORARY JUMPER CONNECTION AND ASSOCIATED BACKFLOW PREVENTION DEVICE, FITTINGS, VALVE, ETC., SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

WR£# 951137 — REVISED 04–09 AW

TEMPORARY JUMPER CONNECTION DETAIL — DEPARTMENT OF WATER RESOURCES — DATE: 11–95 — EXHIBIT NO.

CITY OF TITUSVILLE, FLORIDA — SCALE: NTS — SHT. 2 OF 2



NOTE:
INSTALL TRACER WIRE ABOVE ALL PVC MAINS. TRACER WIRE SHALL BE 14UF, WITH ONE TURN AROUND BARREL OF EACH FIRE HYDRANT AT FINISHED GRADE AND WITH 4 FEET EXCESS IN EACH VALVE BOX. CONNECT TO CONTINUOUS WIRE WITH WIRE NUTS AND ELECTRICIAN'S TAPE.

WR£# 090416 — REVISED 04–09 AW

TYPICAL GATE VALVE INSTALLATION — DEPARTMENT OF WATER RESOURCES — DATE: 04–09 — EXHIBIT NO.

CITY OF TITUSVILLE, FLORIDA — SCALE: NTS — SHT. 1 OF 1

TITUSVILLE, FLORIDA — FOUNDED 1867

City of Titusville

555 South Washington Avenue
Titusville, Florida 32796
PH: (321) 383-5823 Fax: (321) 383-5700

CITY OF TITUSVILLE STANDARD DISCLAIMER FOR SPECIFICATIONS AND DETAIL DRAWINGS

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Changes to any City of Titusville detail or specification is expressly prohibited without the written approval from the City of Titusville. Any authorized change must be clearly identified with a revision cloud noting revision dates. Any authorized revision must be accompanied by a revision approval letter by the City of Titusville.

Any detail that is not required for the specific development that these details have been included in the permit set maybe crossed out on this drawing sheet but may not be removed. No additional detail and or specification may be added to this drawing sheet.

No.	Revision	Date

POTABLE WATER DETAILS AND SPECIFICATIONS

WATER RESOURCES (DEPT.)	COT PW1
July 2009 (DATE)	
N.T.S. (SCALE)	(SHEET)

1. GENERAL

1.1. These specifications cover the design, review of plans and specifications, applicable fees, installation, inspection, testing, and acceptance of water distribution systems, water main extensions and all appurtenant items which are to be owned and maintained by the City of Titusville.

1.2. All improvements and modifications made to the Titusville Municipal Water System shall be completed in accordance with the City approved site plans. Material and workmanship shall conform to the specifications that appear in this document.

1.3. The Contractor shall not remove any thrust blocks or mechanical restraint joints, connect to any water mains, or operate water control valves, except under the direct observation of the City Inspector. NO WORK SHALL BEGIN UNLESS THE CITY HAS BEEN NOTIFIED AT LEAST 48 HOURS IN ADVANCE .

1.4. Unless otherwise noted or approved by the City of Titusville Water Resources Department (CoTWRD), all materials shall be manufactured in the United States.

1.5. All underground utility work shall be performed by a licensed Underground Utility Contractor licensed in the State of Florida.

2. PLANS PREPARATION

2.1. All water distribution systems, water main extensions and all appurtenant items shall be designed in accordance with the applicable regulations of the City, the Florida Department of Environmental Protection, and the standards established herein. In addition, all water distribution systems and water main extensions shall be designed and constructed for a serviceable life of not less than 50 years.

2.2. The City of Titusville shall own and maintain all portions of the water system up to and including the water meter, and shall operate and maintain the backflow preventer. For fire lines, City ownership ends at the fire line control valve.

2.3. No water distribution system or water main extension or any portion thereof which is to become the property and sole responsibility of the City of Titusville will be designed or constructed outside of any public right-of-way and/or easement which may be used for said purpose.

2.4. The water distribution system and/or water main extensions shall be designed and constructed in accordance with the fire protection requirements as approved by the Fire Marshall.

2.5. LOCATION: Mains shall be located within dedicated rights-of-way or utility easements.

a. Rights-of-way: Mains shall maintain a consistent alignment with respect to the centerline of the road. In residential developments, mains should be installed as illustrated on the City's "Utility Placement Within a 50' Public Road Right-of-Way" detail. Exceptions will be made on a case-by-case basis. In all cases, mains shall be installed along one side of the road, with crossings kept to a minimum.

b. Easements: If piping is constructed within an easement, the centerline of the pipe shall be located within two (2) feet of the centerline of the easement. Mains and easements shall not be placed under buildings, retention ponds, courts, swimming pools, fountains or other structures. Placement of mains under pavement shall be kept to a minimum. Placement of mains along interior side or rear lot lines or stormwater retention pond berms is strongly discouraged. Exceptions may be allowed on a case-by-case basis if such configuration results in efficient placement and utilization of the system as determined by the CoTWRD. Services, air release valves and other valves shall not be placed along interior side or rear lot lines or stormwater retention pond berms. The minimum water line easement width shall be fifteen (15) feet. Additional easement widths may be required on a case-by-case basis.

c. Foundations: All water mains up to eight (8) inches in size shall be located at least ten (10) feet from any building foundation. Water mains greater than eight (8) inches shall be located at least fifteen (15) feet from any building foundation.

2.6. SIZING WATER SERVICE LINES AND METERS: Sizing of water service lines and meters shall be per American Water Works Association "Manual of Water Supply Practices, Sizing Water Service Lines and Meters, AWWA M22", latest edition.

2.7. FIRE HYDRANT SPACING AND LOCATION: Fire hydrants in single-family residential areas shall be located so that they are not over 500 feet apart (as measured along a street) and shall be connected to water mains no less than six (6) inches in diameter and to looped water mains whenever possible. Dead end streets or cul-de-sacs shall not have a length greater than 200 feet from the nearest fire hydrant. Fire hydrants in commercial (business, industrial, institutional, and apartments) districts shall be no greater than 300 feet apart (as measured along a street) and shall be connected to water mains no less than eight (8) inches in diameter and to looped water mains whenever possible. All fire hydrant and fire line requirements shall be reviewed and approved by the Fire Marshall.

2.8. AVERAGE DAILY FLOW: Average daily water flow shall be calculated by referencing the equivalent residential connection (ERC) flow rates as outlined in "Code of Ordinances City of Titusville, Florida, Land Development Regulations Section 63-133". Maximum daily water flow shall be calculated as two (2) times the average daily water flow, and the peak hourly flow shall be calculated as four (4) times the average daily water flow.

2.9 FIRE FLOW REQUIREMENTS: All residential fire hydrants are to be designed to operate at a minimum of 1,000 gpm at 20 psi from the farthest fire hydrant at the initial point of connection to the residential development. Commercial and Industrial fire flow requirements shall be determined in accordance with the applicable local fire department codes and/or ISO standards. Where fire flow requirements exceed the anticipated available fire flow from the central water system, an on-site fire protection system, or other fire department approved mitigation, shall be utilized.

2.10. DESIGN CALCULATIONS: The Project Engineer shall submit signed, sealed and dated design calculations with the plans for all water distribution projects. Calculations shall show that the water mains will have sufficient hydraulic capacity to transport peak hourly flows and the combination of maximum daily flows and fire flows while meeting the requirements of sections 2.12. Head losses through meters and backflow devices shall also be included in the calculations.

2.11. PRESSURE: All water mains shall be designed in accordance with Section 2.10 above. The system shall be designed to maintain a minimum pressure of 20 psi at all points in the distribution system under all conditions of flow. Higher pressures may be required at commercial, industrial and high-density residential areas. The design pressure within the system should be verified with Water Resources prior to beginning any calculations. For excessive pressures, pressure reducing provisions may be required.

2.12. DESIGN FRICTION LOSS: Friction losses through mains shall be based on the Hazen and Williams formula. In the use of the Hazen and Williams formula, the value for "C" shall be 120 for ductile iron pipe and 130 for PVC and HDPE pipe. "C" values greater than 130 shall not be allowed.

2.13. FDEP: The developer shall submit the following:

a. Two (2) signed and sealed sets of plans, calculations and specifications.
b. A CD containing the plans in 300 dpi Tiff format and calculations and specifications in Adobe pdf format.
c. Two (2) executed Florida Department of Environmental Protection (FDEP) permit applications.
d. Appropriate filing fees.

3. DESIGN AND CONSTRUCTION STANDARDS

3.1. POTABLE WATER: All pipe and fittings for potable water distribution shall be ductile iron or polyvinyl chloride pipe (P.V.C.). Refer to Section 5.1, 5.2 & 5.3. HDPE (DR11), or City approved equal, can be approved for use on a case-by-case basis by the CoTWRD for directional boring purposes only.

3.2. VALVES: All valves will meet or exceed all requirements of AWWA C-509 Standards, latest revision. All valves shall be resilient wedge gate valves. All valves larger than 12 inches, except tapping valves, shall have bevel gears with side actuators for horizontal installation.

3.3. TEST AND INSPECTION

3.3.1. Laboratory or Plant test: Pipe and materials shall be tested in accordance, and for conformity, with the latest editions of the following:

ITEM	SPECIFICATIONS
Ductile iron fittings	ANSI 121.10 (AWWA C-111)
Ductile iron pipe	ANSI A21.51 (AWWA C-151)
Polyethylene Encasement	ANSI A21.5 (AWWA C-105)
Polyvinyl Chloride Pipe (PVC) 4" & Larger	AWWA C-900/DR-18 or C-905/DR-18
Copper Pipe 3/4" – 2"	Type "K" soft copper
EndoTrace Blue Poly 2"	AWWA C901
Gate valves larger than 2"	Resilient seated AWWA C-509
Gate valves 2" & smaller	Fed. Spec. WW-V-54 (r.5.3.6)

3.3.2. The Contractor shall obtain from the pipe manufacturer, and *submit to the City, a certificate of inspection* stating that the materials furnished have been inspected at the plant, meet the requirements of these specifications, and that the pipe is marked in accordance with Section 5.1.

3.3.3. The entire product of any manufacturer may be rejected when, in the opinion of the City, the methods of manufacture fail to secure uniform results acceptable to the requirements of these specifications.

3.3.4. All pipe, valves and fittings shall be subject to *inspection at time of delivery* and also in the field, just *prior to installation*. All pipe, valves or fittings which, in the opinion of the City, do not conform to these specifications, will be rejected and shall be removed by the Contractor at his expense.

3.3.5. Hydrostatic and Leakage Testing:

3.3.5.1. All pipe installed for the purpose of conveying potable water under pressure shall be tested after installation in accordance with the applicable portions of the hydrostatic tests as set forth in the latest revision of Section 5 of AWWA Standard C600 for ductile iron mains and Section 7.3 of AWWA Standard C605 for PVC mains, with leakage limited to the following schedule:
(All water line installations must maintain a leakage rate of less than the following leakage per thousand feet of main):

TABLE I
ALLOWABLE LEAKAGE PER 1000' OF PIPE (G.P.H.)

Test Pressure	Nominal Pipe Diameter									
(psi)	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
150	0.33	0.50	0.66	0.83	0.99	1.16	1.32	1.49	1.66	1.99

The maximum length of water main to be pressure tested shall be limited to 2,000 linear feet of main, sectioned by control valves in the closed position. More than one section may be tested simultaneously. All service lines and appurtenances shall be tested at the time the main is tested.

3.3.0.1. All water lines shall be tested to 150 psi test pressure for two (2) hours duration. All pumps, gauges, and appurtenances necessary shall be furnished by the Contractor. All leaks shall be repaired by removing and replacing defective pipe and joints with pipe and joints that are free of defects, after which the lines shall be retested. Such repair and retesting shall be done until the lines pass the specified retest.

3.3.0.2. Contractors are required to pressure test all lines prior to scheduling the verification test witnessed by the City Inspector. If the test fails with the City Inspector present, the contractor shall be required to pay a retest fee of $50 to the City of Titusville, prior to the required retest.

3.3.0.3. All valves, hydrants, and services shall be hydrostatically tested and disinfected with the line in which they are installed.

3.3.1. Disinfection - Bacteriological Testing:

3.3.1.1. All water pipe, fittings and valves on potable water lines shall be thoroughly disinfected prior to being placed in service. Disinfection shall follow the applicable provisions of the procedure established as set forth in AWWA C-651, latest revision. Samples of water shall be collected by a representative of a State Certified Testing Laboratory, with a City Inspector present, from fittings provided by the Contractor for that purpose. Disinfection shall be repeated until the piping system passes the City requirements, with a minimum of 75 ppm chlorine content at each test point, verified by the City Inspector.

3.3.1.2. Flows for chlorination purposes are to be controlled from the downstream or blow-off end of the water line. Service connections shall be disinfected also. The location of sampling points shall be specified by the City Inspector and as specified by the Florida Department of Environmental Protection (FDEP). The sample points must have a brass, non-threaded, smooth-nosed, downward spouted hose bib mounted on a rigid stand pipe at least three feet above the finished grade. Warning tags will be attached to each sample point by the City.

3.3.1.3. The chlorine residual is to remain in all lines for a period of 24 hours. After notification of the City Inspector, all treated water shall be thoroughly flushed from the newly laid pipe at its extremity until the replacement water throughout its lengths shows, upon test, a free chlorine residual not in excess of that normally carried in the system.

3.3.1.4. After flushing, water samples collected on two successive days from the treated piping system, as directed by the FDEP and the City Inspector, shall show acceptable bacteriological test results. All bacteriological testing shall be performed by a State Certified Laboratory contracted by the Contractor. Proper chain of custody procedures must be followed and samples shall only be collected by certified laboratory personnel.

3.3.1.5. Repetition of Flushing and Testing: Should the initial treatment result in an unsatisfactory bacteriological test, the original chlorination procedure and bacteriological testing shall be repeated by the Contractor until satisfactory results are obtained.

3.3.1.6. Copies of all testing results and all related correspondence from the FDEP shall be submitted to the City of Titusville.

4. SEPARATION OF WATER AND SEWER LINES

4.1. DESIGN: The proximity of sewer lines and water mains (including appurtenances) and the type of material used for each system are important design considerations for minimizing the chance of contaminants entering the water distribution system. Refer to AWWA, Prevention of Groundwater and Sewer Backflow into Distribution Systems .

4.2. PARALLEL INSTALLATIONS: Water mains shall be laid to provide a horizontal distance of at least three (3) feet between the outside of the water main and the outside of any existing or proposed storm sewer, stormwater force main, or pipeline conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C. Water mains shall be laid to provide a horizontal distance of at least three (3) feet, and preferably ten (10) feet, between the outside of the water main and the outside of any existing or proposed vacuum-type sanitary sewer. Water mains shall be laid to provide a horizontal distance of at least (6) six feet, and preferably ten (10) feet, between the outside of the water main and the outside of any existing or proposed gravity- or pressure-type sanitary sewer, wastewater force main , or pipeline conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C. The minimum horizontal distance between water mains and gravity-type sanitary sewers may be reduced to three (3) feet where the bottom of the water main is laid at least six (6) inches above the top of the sewer. Water mains shall be laid to provide a horizontal distance of at least ten (10) feet between the outside of the water main and all parts of any existing or proposed on-site sewage treatment and disposal system as defined in Section 381.0065(2), F.S., and Rule 64E-6.002, F.A.C. Exceptions to the separation requirement will be on a case-by-case basis as approved by the City and the Florida Department of Environmental Protection in accordance with the Florida Administrative Code, Chapter 62-555.314, and are made only when there is no other reasonable alternative.

4.3. CROSSINGS: Water mains crossing any gravity- or vaccuum-type sanitary sewer or storm sewer lines shall maintain a separation of at least six (6), and preferably twelve (12), inches above or at least twelve (12) inches below the outside of the other pipeline. However, it is preferable to lay the water main above the other pipeline. Water mains crossing any existing or proposed pressure-type sanitary sewer, wastewater or stormwater force main, or pipeline conveying reclaimed water shall be laid to provide a separation of at least twelve (12) inches above or below the outside of the other pipeline. However, it is preferable to lay the water main above the other pipeline. Exceptions to the separation requirement will be on a case-by-case basis as approved by the City and the Florida Department of Environmental Protection in accordance with the Florida Administrative Code, Chapter 62-555.314, and are made only when there is no other reasonable alternative. Adequate structural support shall be made for the sewers to prevent excessive deflection of joints and settling on the water mains.

4.4. At the utility crossings described above, one full length of water main pipe shall be centered above or below the other pipeline so that the water main joints will be as far as possible from the other pipeline. Alternatively, at such crossings, the pipes shall be arranged so that all water main joints are at least three (3) feet from all joints in vacuum-type sanitary sewers, storm sewers, stormwater force mains, or pipelines conveying reclaimed water regulated under Part III of Chapter 62-610, F.A.C., and at least six (6) feet from all joints in gravity- or pressure-type sanitary sewers, wastewater force mains, or pipelines conveying reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.

4.5. HOUSE SEWER LATERALS: The above requirements shall apply to house sewer laterals that cross above a water line, but not to those laterals that cross at least six (6) inches below a water line.

4.6. WATER SERVICE LINES: Water services and sewer lines shall be separated in accordance with the above guidelines for water mains and sewers. The minimum horizontal separation is six (6) feet or more and in no case shall they be laid in the same trench.

5. MATERIALS FOR PIPES, FITTINGS AND VALVES

5.1. PIPE AND FITTINGS – MARKING: All potable water main pipes, 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 black pipe with blue stripes incorporated into, or 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.

5.2. DUCTILE IRON PIPE AND FITTINGS

5.2.1. Pipe: All sizes of pipe shall be a laying length of 18'-0" to 20'-0". Ductile iron pipe shall conform to the latest revision of ANSI/AWWA C-150/A21.50. When the installation of a main will cross storm drains, open ditches, or other pipelines, or in abnormal laying conditions, an increased pressure class of pipe may be required by the City on a case-by-case basis. Water mains in an easement shall maintain a common residential property line between two or more lots shall be constructed of D.I. pipe. Jack and bore carrier pipe shall be D.I. pipe. Polyethylene encasement (thickness: 8 mils; color: white or light blue) conforming to the latest revision of AWWA/ANSI C105/ A21.5, shall be required if soil test procedures indicate a corrosive soil condition in the trench area.

5.2.2. Fittings: Cast iron fittings are not acceptable. Ductile iron fittings and special castings shall conform to the type of pipe for minimum working pressure of 150 psi. Fittings shall conform to ANSI Standard A-21.10 (AWWA C-111). Short body pattern shall normally be installed. Long body fittings shall be used where the drawing specifically calls for long body fittings or at the option of the Contractor when the laying length is not controlled by short body patterns. Fittings shall have joints to match the pipe furnished and, unless otherwise noted, shall have all bell slip-on type, all bell mechanical joints, or all flanged ends. All fittings to be shipped with gaskets, glands, nuts and bolts unless specified otherwise. Nuts and bolts shall be high tensile strength 316 stainless steel for flanged fittings and shall be marked as such on the nuts and bolts.

5.2.3. Linings and coatings: All ductile iron pipe and fittings shall be thin cement lined. The lining shall comply with ANSI/AWWA C104/A21.4, latest revision. The exterior of all buried pipe shall have a standard asphaltic coating as provided by the manufacturer. All bolts, nuts, and studs shall be standard COR-TEN®.

5.2.4. Joints: Mechanical joints and restrained joints shall conform to ANSI A21.11 (AWWA C111) Standard. Lubricants which will support microbiological growth shall not be used for slip-on joints. Natural rubber or other material which will support microbiological growth may not be used for any gaskets, O-rings, and other products used for joining pipes, setting meters or valves, or other appurtenances which will expose the material to the water. EPDM rubber shall be used for gasket material.

5.2.5. Flanged joints shall conform to ANSI A21.15 (AWWA C115) ANSI B16.1 Faced and drilled 125 pattern. Nuts and bolts shall be made of high tensile strength 316 stainless steel having a minimum yield strength of 45,000 psi, and shall contain sufficient chromium to resist corrosion, oxidation and rust, U.S. manufacturers only. Threads shall be in accordance with ANSI B1.1, Unified Inch Screw Threads, and with B1.2, Screw Threads, Gauges and Gauging, conforming to the coarse thread series (UNC) Unified Coarse, with threads Class 2A external and Class 2B internal. Bolts ¾" and smaller shall be furnished with heavy hex heads conforming to ANSI B18.2.1. Bolts larger than ¾" may have either standard or heavy hex heads conforming to ANSI B18.2.1. Tee head or hex head shall be made of high tensile strength 316 stainless steel having a minimum yield strength of 45,000 psi and comply with the dimensions outlined in ANSI/AWWA C111/A21.11.

5.2.6. Provide mechanical joint restraint on pipe and fittings at each fitting, valve, fire hydrant connection, and on pipe joints as recommended by the pipe manufacturer or as indicated on the drawings. Provide One-Lok® as manufactured by Sigma Corporation, Cream Ridge, NJ, MEGALUG® as manufactured by EBAA Iron Sales, Inc., Eastland, TX, Grip Ring® as manufactured by Romac Industries, Inc., Bothell, WA, or Ford Series 1400 mechanical restraint. The location and length of restrained pipe, fittings and appurtenances shall be clearly marked on the plans. Push-on restrained joint pipe for ductile iron pipe shall use Fast-Grip® by American Ductile Iron Pipe, Birmingham, AL, Field Lok® by U.S. Pipe, Birmingham, AL, or City approved equal gaskets.

5.2.7. Sleeve type couplings: Provide couplings where needed to make piping connections. Provide full-length mechanical joint ductile iron solid sleeve, 12" minimum length. Provide cutting-in sleeve where installing fittings in an existing line (provide ductile iron with mechanical restraint joint).

5.3. PVC (Polyvinyl Chloride) PIPE

5.3.1. Four (4) inch through twelve (12) inch PVC pipe shall conform to the requirements found in AWWA Standard C-900 (PVC Pressure Pipe), and fourteen (14) inch through forty eight (48) inch PVC pipe shall conform to the requirements found in AWWA Standard C-905. The pipe shall be Class 150 (DR 18), and shall bear the seal of a testing laboratory verifying the suitability of the pipe material for potable water service. The pipe shall have the following markings: Manufacturer's name; DR 18; Class 150; C-900; ASTM D-1784; NSF-PW.

5.3.2. All PVC pipe, fittings and adapters shall bear the seal of approval of the National Sanitation Foundation, Standard No. 14.

5.3.3. Bell and spigot PVC pipe shall have rubber ring gaskets which conform to manufacturer's standard dimensions and tolerances and meet the requirements of AWWA Specifications. Integral wall bell to be ASTM D-2122 (C-900).

5.3.4. Solvent cement jointing of PVC pipe is not permitted.

5.3.5. All PVC water mains shall have a suitable conductive location wire buried over the water main. The wire is to be 14 gauge single-conductor copper with blue insulation color. *Only blue color is acceptable* . The wire shall be continuous between fittings and secured to each valve and fire hydrant. Where other than service lines join the water main, the wire shall be secured to each line with a wire nut, taped, and sealed against moisture. All fire hydrants shall have the wire wrapped around the barrel section to grade level and be connected to the wire in the main. All valves shall have a minimum of four (4) feet of wire into each valve box, connected to the main wire.

5.4. GATE VALVES

5.4.1. All valves will meet or exceed all requirements of AWWA C-509 Standards, latest revision. All valves shall be resilient wedge gate valves. All valves shall be equipped with a non-rising stem. All iron body parts will be full wall ductile iron conforming to the requirements of ASTM A395 or ASTM A536 and contain no more than 0.08 percent phosphorous. Coating to be applied only at the manufacturer's facility. The standpipe shall be Bitumen coated or fusion bonded epoxy coated internally and externally with a bury line present below the break flange to indicate proper installation depth. Bury depth shall be clearly marked on standpipe. All hydrants shall be clearly stenciled "Titusville" on the stand pipe.

5.4.2. Joints: Mechanical joints and restrained joints shall conform to ANSI A21.11 (AWWA C111) Standard. Lubricants which will support microbiological growth shall not be used for slip-on joints. Natural rubber or other material which will support microbiological growth may not be used for any gaskets, O-rings, and other products used for joining pipes, setting meters or valves, or other appurtenances which will expose the material to the water. EPDM rubber shall be used for gasket material.

5.4.3. Flanged joints shall conform to ANSI A21.15 (AWWA C115) ANSI B16.1 Faced and drilled 125 pattern. Nuts and bolts shall be made of high tensile strength 316 stainless steel having a minimum yield strength of 45,000 psi, and shall contain sufficient chromium to resist corrosion, oxidation and rust, U.S. manufacturers only. Threads shall be in accordance with ANSI B1.1, Unified Inch Screw Threads, and with B1.2, Screw Threads, Gauges and Gauging, conforming to the coarse thread series (UNC) Unified Coarse, with threads Class 2A external and Class 2B internal. Bolts ¾" and smaller shall be furnished with heavy hex heads conforming to ANSI B18.2.1. Bolts larger than ¾" may have either standard or heavy hex heads conforming to ANSI B18.2.1. Tee head or hex head shall be made of high tensile strength 316 stainless steel having a minimum yield strength of 45,000 psi and comply with the dimensions outlined in ANSI/AWWA C111/A21.11.

5.4.4. Provide mechanical joint restraint on pipe and fittings at each fitting, valve, fire hydrant connection, and on pipe joints as recommended by the pipe manufacturer or as indicated on the drawings. Provide One-Lok® as manufactured by Sigma Corporation, Cream Ridge, NJ, MEGALUG® as manufactured by EBAA Iron Sales, Inc., Eastland, TX, Grip Ring® as manufactured by Romac Industries, Inc., Bothell, WA, or Ford Series 1400 mechanical restraint. The location and length of restrained pipe, fittings and appurtenances shall be clearly marked on the plans. Push-on restrained joint pipe for ductile iron pipe shall use Fast-Grip® by American Ductile Iron Pipe, Birmingham, AL, Field Lok® by U.S. Pipe, Birmingham, AL, or City approved equal gaskets.

5.4.5. Future access line valves, located at a temporary dead end, shall conform to the City of Titusville standard blow-off detail.

5.5. FIRE HYDRANTS

5.5.1. All hydrants shall meet or exceed ANSI/AWWA C-502's latest edition for dry-barrel fire hydrants and shall in addition meet the specific requirements and exceptions which follow. Hydrants shall be assembled and tested in a certified manufacturing facility within the United States. Hydrants shall be listed by Underwriters Laboratory and approved by Factory Mutual for fire line service. UL and FM trademarks shall be cast on the hydrant nozzle section.

5.5.2. Hydrant valve opening shall have an area equal to the area of a 5 1/4-inch minimum diameter circle and be obstructed only by the valve rod. Hydrant main valve closure shall be of the compression type opening against pressure and closing with pressure. Main valve shall be EPDM rubber.

5.5.3. All internal operating parts shall be removable without requiring excavation. Hydrants shall be hydrostatically tested as specified in AWWA C502 and shall be rated at 250 psi minimum working pressure. Hydrant bonnets, weather cover, nozzle section, caps and shoe shall be cast or ductile iron. Hydrants shall consist of one (1) 4.5" NST pumper nozzle and two (2) 2.5" NST hose nozzles. Nozzles threaded into the nozzle section shall have Never-Seez or City approved equal applied at the factory while being assembled. Cap threads shall be lubricated with Never-Seez or City approved equal before delivery.

5.5.4. Hydrant shoe shall have an electrostatic applied, fusion bonded, epoxy coating internally and externally. The coating shall meet or exceed the requirements of AWWA C-550. Coating to be applied only at the manufacturer's facility. The standpipe shall be Bitumen coated or fusion bonded epoxy coated internally and externally with a bury line present below the break flange to indicate proper installation depth. Bury depth shall be clearly marked on standpipe. All hydrants shall be clearly stenciled "Titusville" on the stand pipe.

5.5.5. The hydrant's upper and lower stem, as well as its break coupling and internal pins and clips shall be manufactured of stainless steel, type 304 or 316 grade with no measurable level of lead content. Breakaway coupling may be fusion bonded epoxy coated carbon steel with stainless steel pins. All external bolting shall be manufactured of stainless steel, type 316.

5.5.6. All hydrants shall be of the traffic breakaway type and allow 360-degree rotation to position the pumper nozzle in the desired direction after installation. A lubrication port shall be provided for the installation of lubrication without disassembly of the bonnet section. The reservoir shall be filled with NSF/FDA approved food grade grease at the manufacturer's facility.

5.5.7. The main valve shall not bottom out onto the shoe section. Travel stop nuts may be used in bonnet section to prevent this. Operating nut shall be a 1½" pentagon bronze nut and shall open counter clockwise and have a protective weather cover. Drain holes will not be permitted. If hydrant is manufactured with drain holes, then drain holes shall be plugged with brass plugs.

5.5.8. All hydrants shall be covered by a Manufacturer's Ten (10) Year Limited Warranty from the date of purchase by the end user and delivered within thirty (30) days from receipt of purchase order.

5.5.9. All hydrants will have an external sprayed on epoxy coating applied at the factory. Epoxy coating shall be Sherman-Williams Acrolon 218 HS, an Aliphatic Acrylic Polyurethane, or City approved equal. The color for all City owned and maintained hydrants shall be #95-8002 Safety Yellow (Color #330). The color for all privately owned and maintained hydrants shall be red.

5.5.10. Non-operational hydrants on untested lines will have an out of service tag on the hydrant.

5.5.11. All hydrants shall stand plumb with the pumper nozzle facing the street curb and the bury line of the hydrant at the finished grade. The break-away flange and bolts must not be in contact with the ground or the concrete hydrant protection pad. A 24" x 24" x 6" pad must be poured around the barrel bury line or no deeper than 12" below grade. Proper soil compaction shall be done before pouring pad. In unstable soil, the hydrant shoe shall be placed directly on a concrete pad, 18" x 18" x 4", prior to mechanical restraining (see Detail). Various means of mechanical blocking are acceptable, re: hydrant tees, M.J. anchor couplings, retainer glands and threaded tie-rods (see Detail).

5.5.12. All hydrants shall be a minimum of six (6) inches inside diameter and be provided with a six (6) inch valve between the hydrant and the main. The hydrant valve shall be installed within five (5) feet of the hydrant. Fire hydrants shall be located as shown on the plans in a completely accessible location, maintaining a minimum of three (3) feet and a maximum of eight (8) feet from the back of curb. In residential locations, hydrants are usually to be located at intersections or property corners. Hydrant locations on or near state highways shall be in accordance with Department of Transportation requirements. City of Titusville Water Resources Department and Fire Department personnel, Brevard County Fire Department, and Department of Transportation have the final authority to mandate fire hydrant placements and/or relocations.

5.6. WATER SERVICES

5.6.1. All installations shall be installed in accordance with City of Titusville Specification details for single, double, or multiple service lines. All water service lines one (1) inch in diameter shall be constructed of Type "K" soft copper, which shall conform to the requirements of AWWA Standard C-800. Two (2) inch diameter service lines shall be constructed of Type "K" copper tubing or SODR 9 EndoTrace blue polyethylene as manufactured by Endot Industries, Inc., Rockaway, NJ (using compression adapters). All water service line group installations numbering more than four will be required to utilize a two (2) inch service line manifold installation (see Detail).

5.6.2. Location: All service lines will be located in the right-of-way. Service lines shall not be terminated in the sidewalk or within two (2) feet adjacent to driveways. Location of service lines in single family and townhouse developments shall be at alternating lot lines. Multiple service line installations shall be located in common areas, and corporation stops spaced no more than 18-20 inches apart in single file. Curb stops shall be mounted in a horizontal position at a depth of no greater than ten (10) inches from finished grade.

5.6.3. Meter boxes must be installed at the time of service line installation, prior to final inspection. Refer to Paragraph 5.7.7.

5.6.4. Service saddles: Service saddles shall be used for all connections to PVC pipe. Saddle body for C-900 pipe shall be nylon/epoxy coated ductile iron and tapped for AWWA/CC threads. Body and bands must be factory pre-sized for C-900 pipe diameter. Bands shall be stainless steel, minimum two (2) inches wide. Reference: Smith Blair 315 and 317, or City approved equal (brass saddles are acceptable).

5.7. TAPPING

5.7.1. Service saddle placement on main shall be at least 45 degrees off vertical and not to exceed horizontal positioning. No vertical tapping will be allowed except at temporary jumper connections.

5.7.2. Tapping PVC Pipe: Only shell cutters will be used to tap PVC pipe. The removal of the tapping coupon is required. The use of a wood bit and brace and hole saws is prohibited.

5.7.3. The tapping saddle and corporation stop must be installed by the Contractor and inspected by the City Inspector prior to the City making the tap. Only wet tapping will be permitted on water mains that are currently in-service.

5.7.4. Corporation stops shall be cc thread to CTS. Corporation stops will be used only for one (1) inch taps. Mueller No. H-15008, or City approved equal.

5.7.5. Curb stops shall be CTS to FIP for one (1) inch. No H pattern or roundway type will be permitted. Curb stops will be used only for one (1) inch service lines. Acceptable: Mueller H-15188, H-15174, B-25170, or City approved equal.

5.7.6. All service lines greater than one (1) inch in diameter shall meet the requirements of the specifications for one and one half (1-1/2) inch and two (2) inch meters (refer to Standard Details for Meter Installations).

5.7.7. Meter protection boxes shall be according to size of service line. Meter boxes are to be DFW by NDS1200-DICIR injection molded of structural foam recycled polyolefin material with cast iron reader cover. When new service lines are installed, meter boxes shall be placed over curb stops with sufficient space for the installation of the water meter by the City. The top of the meter box shall be adjusted to grade and shall be in undamaged condition. Water meters will not be installed by the City unless all requirements of service line and meter box installations are acceptable. If it is necessary to locate meter boxes near concrete or paved areas, steel meter box covers with reader lids shall be required.

5.7.8. Large meter installations: All meters three (3) inches and larger shall be constructed with Class 125 flange fittings and shall be installed above ground. All flange fittings and valves will be restrained and tested prior to the large meter installation. The meter will be supplied by the City and may be installed by the licensed plumber or utility contractor. All meter valves are to be non-rising stem, hand wheel operation. Meters up to four (4) inches are to have a two (2) inch bypass line; meters six (6) inches and larger are to have a three (3) inch bypass line.

5.8. TAPPING SLEEVES - These specifications are according to application, size and engineering requirements.

5.8.1. Field disinfection procedures shall be utilized for the installation of tapping sleeves and tapping valves to the existing water mains. The tap sleeve and valve shall be disinfected immediately prior to the installation of the appliances to the potable water main. The application of a concentrated solution of hypochlorite (minimum, 1% available chlorine) shall be applied to the inside of the sleeve and valve. Methods of application of disinfection solution shall be by swabbing or by pressure spraying.

5.8.2. Acceptable tapping sleeves shall be all stainless steel and be S.S. 304/18-8 for sleeve, body (shell), branch, bolts and nuts. All fitting parts are heli-arc welded. Full 360 pipe coverage gasket sealing. Flange is to be recessed per MSS SP-60. The stainless steel tapping sleeve may be used for four (4) inch through twelve (12) inch taps on four (4) inch through twelve (12) inch mains. The S.S. sleeve shall be Smith Blair 663, or approved equal, to the smallest diameter of pipe size being tapped. Notification to the City Inspector is required before installation for material inspection, and after application, of the tapping sleeve and valve for pressure test verification prior to drilling.

5.9. TAPPING VALVES

5.9.1. Tapping valves shall be field disinfected as required in Section 5.8.1.

5.9.2. Tapping valves shall be resilient seated, non-rising stem, open left, two (2) inch square operating nut, for vertical mounting in approximately level setting on buried water lines. The valves shall conform to AWWA Standard C-500 or C-509, latest edition. All resilient seat tapping valves shall be full port size waterway.

5.9.3. The valve inlet shall be flange Class 125, with ring guide as per MSS SP-60. Outlet shall be mechanical joint as per AWWA C-110.

5.9.4. Proper trench support of the tap valve is required during the drilling operation.

5.10. FIRE LINES: Fire lines for commercial, industrial, residential or other buildings may be required by the City of Titusville Fire Marshall. All new fire line systems connected to the City of Titusville water distribution system shall have an approved backflow prevention device installed at the water source. This device shall be a Double Check Detector Assembly with OS Y resilient gate valves with a bypass monitor meter. As per Fire Department requirements, the device shall be installed above ground. Location of the device inside structures shall be reviewed for acceptance by the CoTWRD (see Standard Detail). The installation of the DCDA device will be inspected by the City Inspector and test results shall be submitted to the CoTWRD. All device locations shall be reviewed for approval by the CoTWRD. Inspection and testing of the fire line by the Fire Inspector shall begin at the outlet valve connection. All installations inside structures shall have a remote read register located in an accessible area.

5.11. BACKFLOW PREVENTERS: The City of Titusville has the primary responsibility of protecting the potable water distribution system against possible contamination or pollution resulting from a source of cross connection or backflow conditions. In consonance with the above, the City shall require backflow preventers as needed.

5.11.1. All construction and all major modification will be reviewed for the requirement of a backflow preventer. The determination of the type of backflow preventer required will be based upon the "degree of hazard" of on-site facilities or equipment. When a required backflow preventer device is not installed, or is removed or by-passed, non-compliance with these requirements by law may result in the termination of water services to the premises. Two main types of backflow preventers are acceptable:

a. the Double Check Valve Assembly, and
b. the Reduced Pressure Principle Backflow Preventer.

5.11.2. These devices shall meet the requirements of AWWA Standard C-506, "Recommended Practice for Backflow Prevention and Cross Connection Control", and be approved by the Foundation for Cross Connection Control and Hydraulic Research.

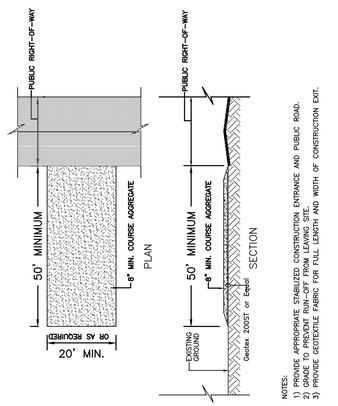
5.11.3. Following is a partial list of facilities requiring backflow preventer installation at the water meter: manufacturing, processing, and fabricating plants; supermarkets and food processing businesses (restaurants); schools, laundries, piers, medical, health or beauty businesses; booster pump and other pressure systems (water and sewer); boilers, water-cooled A/C systems, irrigation systems, multi-story buildings over two stories, etc. For a complete list of facilities requiring backflow prevention, contact the City's Field Operations Division.

5.11.4. These requirements are in compliance with laws and regulations of the F.P.A. Safe Drinking Water Act of 1974; the Florida Statutes, Rules of the Department of Environmental Protection (Chapter 62-555.360); Florida 1977 "Cross Connection Control and Backflow Prevention, Southern Standard Plumbing Code, Appendix D, Section D-2(a)-(d); and the "City of Titusville Water Resources Department Cross-Connection Control Program Manual". All devices 12" through 2" shall have threaded ends. As of July 1986, all BFP devices are to have ball valve or resilient seated inlet and outlet valves. All devices must be testable in-line. Two backflow preventer assemblies in a parallel mounting system may be installed for facilities that require full-time, uninterrupted water service during device testing or maintenance. It is the City's responsibility to install (or have installed), operate and maintain the approved backflow prevention device, as directed by the CoTWRD. The devices shall be installed only by a licensed Underground Utility Contractor, Master Plumber, Certified Backflow Prevention Device Technician, or the City's Field Operations Division in the case of retro-fitting existing customers only. Refer to Standard Details.

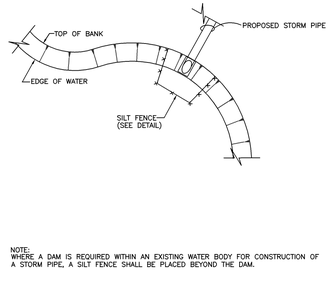
6. PIPE INSTALLATION

6.1. TRENCH EXCAVATION

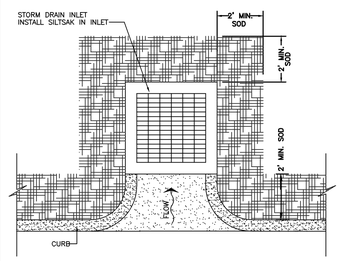
6.1.1. Make all excavations by open cut with banks of trenches at no greater than the maximum allowable slope as defined in OSHA 1926, Subpart P. Sheeting and shoring, if required for depth of trench, will conform to OSHA safety standards. A trenching box or shield may be used in place of sheeting and shoring. Make trenches wide enough to allow approximately eight (8) inches clearance on each side of the water main; bottom uniform to provide accurate and uniform bearing for as nearly the full length of pipe section as practical. Excavate bell holes after trench has been graded. Perform all excavation by whatever substance encountered to the depths shown or indicated on plans. In the event unsuitable or unstable soil is encountered, such as refuse or organic matter, it shall be removed and replaced with approved material in six-inch compacted layers at a depth of twelve (12) inches below main. All excavated material shall be piled in a proper manner that will not obstruct sidewalks, roads or driveways. Fire hydrants, valve boxes and other utility controls shall be left unobstructed and accessible until work



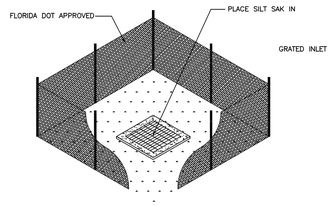
STABILIZED CONSTRUCTION INGRESS/EGRESS	DEPARTMENT OF DEVELOPMENT SERVICES
	DATE: 12/21/2012
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS SHT. 1 OF 1



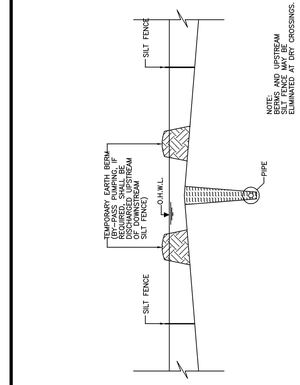
SILT BARRIER AT CONNECTION OF PIPE TO A WATER BODY	DEPARTMENT OF DEVELOPMENT SERVICES
	DATE: 12/21/2012
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS SHT. 1 OF 1



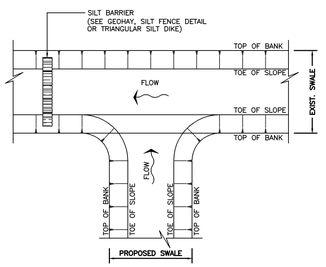
SOD ALONG CURB AND INLET	DEPARTMENT OF DEVELOPMENT SERVICES
	DATE: 12/21/2012
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS SHT. 1 OF 1



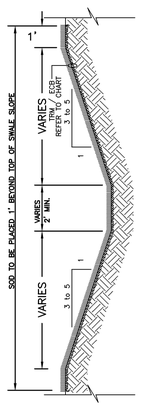
SILT BARRIER PROTECTION AROUND DITCH BOTTOM INLETS	DEPARTMENT OF DEVELOPMENT SERVICES
	DATE: 12/21/2012
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS SHT. 1 OF 1



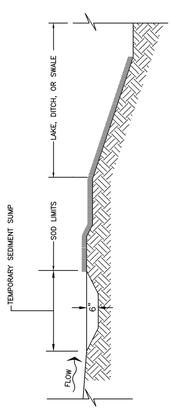
UNDERGROUND PIPE CROSSING	DEPARTMENT OF DEVELOPMENT SERVICES
	DATE: 12/21/2012
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS SHT. 1 OF 1



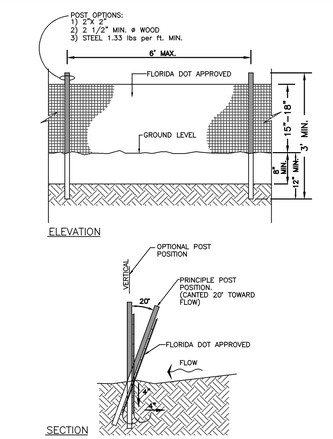
SILT BARRIER PLACED IN SWALE	DEPARTMENT OF DEVELOPMENT SERVICES
	DATE: 12/21/2012
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS SHT. 1 OF 1



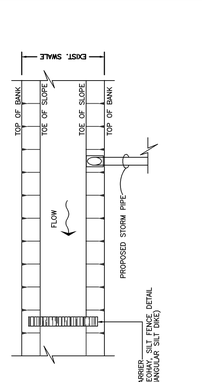
TYPICAL SWALE SECTION	DEPARTMENT OF DEVELOPMENT SERVICES
	DATE: 12/21/2012
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS SHT. 1 OF 1



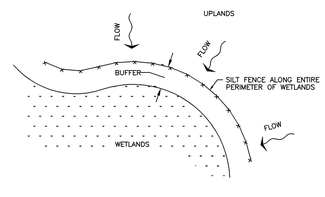
TEMPORARY SEDIMENT SUMP	DEPARTMENT OF DEVELOPMENT SERVICES
	DATE: 12/21/2012
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS SHT. 1 OF 1



TYPICAL SILT FENCE DETAIL	DEPARTMENT OF DEVELOPMENT SERVICES
	DATE: 12/21/2012
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS SHT. 1 OF 1

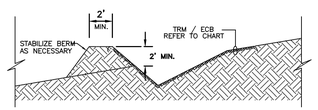


SILT BARRIER AT CONNECTION OF STORM PIPE TO SWALE	DEPARTMENT OF DEVELOPMENT SERVICES
	DATE: 12/21/2012
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS SHT. 1 OF 1



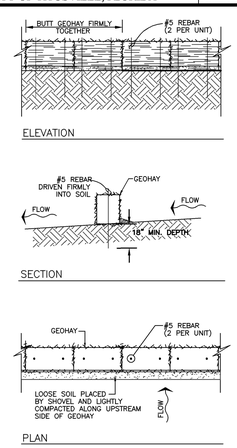
NOTES:
1. BUFFER WIDTH BETWEEN WETLAND AND SILT BARRIER MUST BE A MINIMUM OF 2 FEET BUT MAY REQUIRE A GREATER LENGTH DEPENDED ON SITE CONDITIONS.
2. DOUBLE SILT BARRIER MAY BE REQUIRED TO FULLY PROTECT WETLANDS.

SILT BARRIER AROUND WETLANDS	DEPARTMENT OF DEVELOPMENT SERVICES
	DATE: 12/21/2012
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS SHT. 1 OF 1

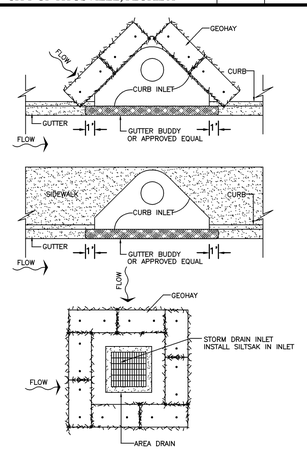


NOTE:
WHEN CONSTRUCTION IS COMPLETE AND UPHILL AREAS HAVE BEEN STABILIZED, EARTH BERM MAY BE REMOVED AND IMMEDIATELY STABILIZED.

STABILIZED EARTH BERM	DEPARTMENT OF DEVELOPMENT SERVICES
	DATE: 12/21/2012
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS SHT. 1 OF 1



HAY DETAIL	DEPARTMENT OF DEVELOPMENT SERVICES
	DATE: 12/21/2012
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS SHT. 1 OF 1



INLET PROTECTION	DEPARTMENT OF DEVELOPMENT SERVICES
	DATE: 12/21/2012
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS SHT. 1 OF 1

CONTRACTOR CERTIFICATION STATEMENT

Company Name: _____

Company Address: _____

Company Phone No. _____ Fax No. _____

Site address/description: _____

"I certify under penalty of law that I understand and shall comply with, the terms and conditions of the State of Florida Generic Permit for Stormwater Discharge from Large and Small Construction Activities and this Stormwater Pollution Prevention Plan prepared thereunder."

Name and Official Title (Type or print)

Signature: Date:

Subcontractor Acknowledgements:

Company Name: Company Name:

CONTRACTOR CERTIFICATION STATEMENT	DEPARTMENT OF DEVELOPMENT SERVICES
	DATE: 12/21/2012
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS SHT. 1 OF 1

CITY OF TITUSVILLE LAND DEVELOPMENT REGULATION NOTES:

1. PER LDR SEC. 35-58. EROSION CONTROL STANDARDS (A) THE AREA OF LAND DISTURBED BY DEVELOPMENT SHALL BE AS SMALL AS PRACTICAL. THOSE AREAS WHICH ARE NOT TO BE DISTURBED SHALL BE PROTECTED BY AN ADEQUATE BARRIER FROM CONSTRUCTION ACTIVITY. WHENEVER POSSIBLE, NATURAL VEGETATION SHALL BE RETAINED AND PROTECTED.
2. PER LDR SEC. 35-58. EROSION CONTROL STANDARDS (B) LAND WHICH HAS BEEN CLEARED FOR DEVELOPMENT UPON WHICH CONSTRUCTION WILL NOT BEGIN WITHIN THIRTY (30) DAYS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION BY APPROPRIATE MEANS.
3. PER LDR SEC. 35-58. EROSION CONTROL STANDARDS (C) ALL SEDIMENT SHALL BE RETAINED ON THE DEVELOPMENT SITE.
4. PER LDR SEC. 35-58. EROSION CONTROL STANDARDS (D) WETLANDS AND OTHER WATER BODIES SHALL NOT BE USED AS SEDIMENT TRAPS DURING DEVELOPMENT.PER LDR SEC. 35-58. EROSION CONTROL STANDARDS (E) EROSION AND SEDIMENTATIONS PLANS SHALL BE APPROVED BY THE CITY PRIOR TO ISSUANCE OF AN UTILITY CONSTRUCTION PERMIT.
5. PER LDR SEC. 35-58. EROSION CONTROL STANDARDS (F) EROSION AND SEDIMENTATION FACILITIES SHALL RECEIVE REGULAR MAINTENANCE TO ASSURE THAT THEY CONTINUE TO FUNCTION PROPERLY.
6. PER LDR SEC. 35-65. MAINTENANCE AND INSPECTIONS (A) THE INSTALLED SYSTEM(S) REQUIRED BY THIS ARTICLE SHALL BE MAINTAINED BY THE OWNER. (B) AT THE TIME OF ISSUANCE OF A STORMWATER CONSTRUCTION PERMIT, INSPECTION FEE(S) SHALL BE PAID. THE APPLICANT SHALL ARRANGE WITH THE ADMINISTRATOR FOR SCHEDULING THE FOLLOWING INSPECTIONS: (1) EROSION AND SEDIMENT CONTROL INSPECTIONS: AS NECESSARY TO ENSURE EFFECTIVE CONTROL OF EROSION AND SEDIMENTATION. CONTROL PRACTICES SHALL BE INSTALLED AND STABILIZED BETWEEN ANY WATERS AND ANY AREAS CLEARED. (2) BURIAL INSPECTIONS: PRIOR TO THE BURIAL OF ANY UNDERGROUND DRAINAGE STRUCTURE. (3) FINAL INSPECTION: WHEN ALL WORK INCLUDING INSTALLATION OF ALL STORM WATER MANAGEMENT SYSTEM FACILITIES HAS BEEN COMPLETED, HE ENFORCEMENT OFFICER WHO INSPECTS THE WORK SHALL EITHER APPROVE IT OR NOTIFY THE APPLICANT IN WRITING IN WHAT RESPECTS THERE HAS BEEN A FAILURE TO COMPLY WITH THE REQUIREMENTS OF THE APPROVED PERMIT.
7. ALL PERSONS AND ENTITIES SHALL MAINTAIN PRIVATE STORMWATER MANAGEMENT SYSTEMS IN FULL COMPLIANCE WITH APPLICABLE CODES AND ORDINANCES. ANY PERSON OR ENTITY THAT FAILS TO MAINTAIN THE STORMWATER MANAGEMENT SYSTEMS SHALL BE CONSIDERED AS A VIOLATION OF THIS CODE AND ENFORCEMENT ACTION MAY BE INITIATED AND ENFORCED THROUGH THE MUNICIPAL CODE ENFORCEMENT BOARD. FINES AND LIENS MAY BE IMPOSED AS AUTHORIZED BY CHAPTER 162 FLORIDA STATUTES (AS AMENDED FROM TIME TO TIME) AND APPLICABLE CODES AND ORDINANCES. IF ANY ENTITY HAS BEEN DISSOLVED OR NO LONGER OWNS SAID PRIVATE STORMWATER MANAGEMENT SYSTEMS, THEN, IN THAT EVENT, THE PROPERTY OWNERS UTILIZING SAID STORMWATER MANAGEMENT SYSTEMS OR PROPERTIES THAT ARE BENEFITED BY SAID STORMWATER MANAGEMENT SYSTEMS SHALL BE FINANCIALLY RESPONSIBLE FOR THE UPKEEP AND MAINTENANCE OF SAID STORMWATER MANAGEMENT SYSTEMS. FOR EXAMPLE, IF STORMWATER MANAGEMENT SYSTEMS ARE TO BE OWNED AND MAINTAINED BY A HOMEOWNERS ASSOCIATION AND THE HOMEOWNERS ASSOCIATION HAS BEEN DISSOLVED, AND IS NO LONGER ACTIVE OR FUNCTIONING THEIN, IN THAT EVENT, THE LOT OWNERS UTILIZING SAID STORMWATER MANAGEMENT SYSTEMS OR BENEFITED BY SAID SYSTEMS SHALL BE PRORATA RESPONSIBLE FOR THE UPKEEP AND MAINTENANCE OF SAID SYSTEMS. THE CITY OF TITUSVILLE MAY INITIATE AN ACTION THROUGH THE MUNICIPAL CODE ENFORCEMENT BOARD FOR SAID VIOLATION AND APPROPRIATE FINES AND LIENS MAY BE IMPOSED AND RECORDED AGAINST BENEFITED PROPERTIES. THE LIENS MAY BE FORECLOSED AND COLLECTED IN THE SAME MANNER AS CODE LIENS INCLUDING THE CITY'S COSTS AND A REASONABLE ATTORNEY'S FEES.

CONTRACTOR SHOULD ALWAYS CONSIDER THE FOLLOWING PRINCIPLES OF EROSION AND SEDIMENT CONTROL WHILE WORKING ON THE PROJECT SITE.

1. TIME GRADING AND CONSTRUCTION TO MINIMIZE SOIL EXPOSURE.
2. RETAIN EXISTING VEGETATION WHEREVER POSSIBLE.
3. VEGETATE AND MULCH DENUDED AREAS.
4. DIVERT RUNOFF AWAY FROM DENUDED AREAS.
5. MINIMIZE LENGTH AND STEEPNESS OF SLOPES.
6. KEEP RUNOFF VELOCITIES LOW.
7. PREPARE CONVEYANCES AND OUTLETS TO HANDLE CONCENTRATED OR INCREASED FLOWS.
8. TRAP SEDIMENT ON SITE.
9. INSPECT AND MAINTAIN CONTROL MEASURES.

City of Titusville

555 South Washington Avenue
Titusville, Florida 32796
PH: (321) 383-5823 Fax: (321) 383-5700

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Any detail that is not required for the specific development that these details have been included in the permit set maybe crossed out on this drawing sheet but may not be removed. No additional detail and or specification may be added to this drawing sheet.

No.	Revision	Date

EROSION CONTROL DETAILS AND SPECIFICATIONS

DEVELOPMENT SERVICES (DEPT.)	COT EC1
DECEMBER 2012 (DATE)	
N.T.S. (SCALE)	(SHEET)

EROSION AND SEDIMENTATION CONTROL NOTES

CONSTRUCTION ACTIVITIES CAN RESULT IN THE GENERATION OF SIGNIFICANT AMOUNTS OF POLLUTANTS WHICH MAY REACH SURFACE OR GROUND WATERS. ONE OF THE PRIMARY POLLUTANTS OF SURFACE WATERS IS SEDIMENT DUE TO EROSION. EXCESSIVE QUANTITIES OF SEDIMENT WHICH REACH WATER BODIES OF FLOODPLAINS HAVE BEEN SHOWN TO ADVERSELY AFFECT THEIR PHYSICAL, BIOLOGICAL, AND CHEMICAL PROPERTIES. TRANSPORTED SEDIMENT CAN OBSTRUCT STREAM CHANNELS, REDUCE HYDRAULIC CAPACITY OF WATER BODIES OF FLOODPLAINS, REDUCE THE DESIGN CAPACITY OF CULVERTS AND OTHER WORKS, AND ELIMINATE BENTHIC INVERTEBRATES AND FISH SPAWNING SUBSTRATES BY SILTATION. EXCESSIVE SUSPENDED SEDIMENTS REDUCE LIGHT PENETRATION AND THEREFORE, REDUCE PRIMARY PRODUCTIVITY.

MINIMUM STANDARDS:

1. SEDIMENT BASIN AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIST STEP IN ANY LAND-DISTRIBUTING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UNSLOPE LAND DISTURBANCE TAKES PLACE.

2. ALL SEDIMENT CONTROL MEASURES ARE TO BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION AND BE CONSTRUCTED PRIOR TO ANY GRADING OF DISTURBANCE OF EXISTING SURFACE MATERIAL ON BALANCE OF SITE. PERIMETER SEDIMENT BARRIERS SHALL BE CONSTRUCTED TO PREVENT SEDIMENT OF TRASH FROM FLOWING OR FLOATING ON TO ADJACENT PROPERTIES.

3. PERMANENT OF TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN UNDISTURBED FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT UNDISTURBED FOR MORE THAN ONE YEAR.

4. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.

5. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT, IN THE OPINION OF THE REVIEWER, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.

6. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.

7. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE SEDIMENT BASIN SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE THE ANTICIPATED SEDIMENT LOADING FROM THE LAND-DISTURBING ACTIVITY. THE OUTFALL DEVICE OR SYSTEM DESIGN SHALL TAKE INTO ACCOUNT THE TOTAL DRAINAGE AREA FLOWING THROUGH THE DISTURBED AREA TO BE SERVED BY THE BASIN.

8. AFTER ANY SIGNIFICANT RAINFALL, SEDIMENT CONTROL STRUCTURES WILL BE INSPECTED FOR INTEGRITY. ANY DAMAGE DEVICES SHALL BE CORRECTED IMMEDIATELY.

9. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.

10. WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.

11. SEDIMENT WILL BE PREVENTED FROM ENTERING ANY STORM DRAIN SYSTEM, DITCH OR CHANNEL. ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.

12. BEFORE TEMPORARY OR NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS ARE MADE OPERATION, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.

13. WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.

14. WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES, A TEMPORARY STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.

15. THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.

16. PERIODIC INSPECTION AND MAINTENANCE OF ALL SEDIMENT CONTROL STRUCTURES MUST BE PROVIDED TO ENSURE INTENDED PURPOSE IS ACCOMPLISHED. THE DEVELOPER, OWNER AND/OR CONTRACTOR SHALL BE CONTINUALLY RESPONSIBLE FOR ALL SEDIMENT LEAVING THE PROPERTY. SEDIMENT CONTROL MEASURES SHALL BE IN WORKING CONDITION AT THE END OF EACH WORKING DAY.

17. UNDERGROUND UTILITY LIENS SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:

    17.1. NO MORE THAT 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.

    17.2. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.

    17.3. EFFLUENT FROM DEWATER OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.

    17.4. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.

18. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY TRACKING ONTO THE PAVED SURFACE, WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE WITH CURBS AND GUTTERS, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL SUBDIVISION LOTS AS WELL AS TO LARGER LAND-DISTRIBUTING ACTIVITIES.

19. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, IN THE OPINION OF THE REVIEWER. DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.

20. PROPERTIES AND WATERWAYS DOWNSTREAM FROM CONSTRUCTION SITE SHALL BE PROTECTED FROM SEDIMENT DISPOSITION AND EROSION.

21. PHASED PROJECTS SHOULD BE CLEARED IN CONJUNCTION WITH CONSTRUCTION OF EACH PHASE.

22. EROSION CONTROL DESIGN AND CONSTRUCTION SHALL FOLLOW THE REQUIREMENTS IN INDEX NOS. 101, 102, 103 OF FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS.

23. THE REVIEWER MAY APPROVE MODIFICATIONS OR AFTER PLANS TO THESE EROSION CONTROL CRITERIA DUE TO SITE SPECIFIC CONDITIONS.

24. THE CONTRACTOR IS TO PREPARE A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IN ACCORDANCE WITH NPDES REQUIREMENTS AND THE NOTES ON THESE PLANS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT COMPLETED NPDES NOTICE OF INTENT (NOI) AND NOTICE OF TERMINATION (NOT) FORMS TO FDEP, WITH COPIES PROVIDED TO THE CITY.

25. PER THE NPDES GENERIC PERMIT (PART II.5), FINAL STABILIZATION OCCURS WHEN VEGETATIVE COVER WITH A DENSITY OF AT LEAST 70% OCCURS.

26. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE, BUT IN NO CASE MORE THAN 7 DAYS, IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, AS REQUIRED PER THE NPDES GENERIC PERMIT (PART V.D.2.A(1)).

27. NOTE THAT THE INSPECTION FREQUENCY SHOWN IN NOTE 6 ON THE SWPPP IS MORE STRINGENT THAN THE FREQUENCY REQUIRED BY THE NPDES GENERIC PERMIT (THE REQUIRED FREQUENCY IS ONCE EVERY 7 DAYS AND WITHIN 24 HOURS OF ANY RAINFALL AMOUNT MEASURING 0.5 INCHES OR GREATER).

FDEP 62-621.300(4)(A) PART V. STORMWATER POLLUTION PREVENTION PLAN

A. A STORMWATER POLLUTION PREVENTION PLAN SHALL BE DEVELOPED AND IMPLEMENTED FOR EACH CONSTRUCTION SITE COVERED BY THIS PERMIT. STORMWATER POLLUTION PREVENTION PLANS SHALL BE PREPARED IN ACCORDANCE WITH GOOD ENGINEERING PRACTICES. EQUIVALENT EROSION AND SEDIMENT CONTROL PLANS PREPARED AS AN ENVIRONMENTAL RESOURCE PERMIT REQUIREMENT UNDER PART IV, CHAPTER 373, F.S., MAY SERVE AS THE POLLUTION PREVENTION PLAN PROVIDED ALL OF THE ELEMENTS OF THIS SECTION ARE INCLUDED IN SUCH AN ALTERNATIVE PLAN. THE PLAN SHALL IDENTIFY POTENTIAL SOURCES OF POLLUTION THAT MAY REASONABLY BE EXPECTED TO AFFECT THE QUALITY OF STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITY. IN ADDITION, THE PLAN SHALL DESCRIBE AND ENSURE THE IMPLEMENTATION OF BEST MANAGEMENT PRACTICES WHICH WILL BE USED TO REDUCE THE POLLUTANTS IN STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITY AND TO ASSURE COMPLIANCE WITH THE TERMS AND CONDITIONS OF THIS PERMIT. FACILITIES MUST IMPLEMENT THE PROVISIONS OF THE STORMWATER POLLUTION PREVENTION PLAN REQUIRED UNDER THIS PART AS A CONDITION OF THIS PERMIT. FAILURE TO DEVELOP AND IMPLEMENT A STORMWATER POLLUTION PREVENTION PLAN IN ACCORDANCE WITH THE REQUIREMENTS OF THIS PART SHALL BE DEEMED A VIOLATION OF THIS PERMIT AND THE PERMITTEE SHALL BE SUBJECT TO ENFORCEMENT ACTION.

B. DEADLINES FOR PLAN PREPARATION AND COMPLIANCE.
1. THE POLLUTION PREVENTION PLAN SHALL:
   A. BE COMPLETED (INCLUDING CERTIFICATION BY THE OPERATOR IN ACCORDANCE WITH PART VII.C.) PRIOR TO THE SUBMITTAL
      OF AN NOI TO BE COVERED UNDER THIS PERMIT AND UPDATED AS APPROPRIATE;
   B. THE PLAN SHALL PROVIDE FOR COMPLIANCE WITH THE TERMS AND SCHEDULE OF THE PLAN BEGINNING WITH THE INITIATION
      OF CONSTRUCTION ACTIVITIES.

C. KEEPING PLANS CURRENT.
1. THE PERMITTEE SHALL AMEND THE PLAN WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, OR MAINTENANCE, WHICH HAS A SIGNIFICANT EFFECT ON THE POTENTIAL FOR THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OF THE STATE OR AN MS4, INCLUDING THE ADDITION OF OR CHANGE IN LOCATION OF STORMWATER DISCHARGE POINTS, AND WHICH HAS NOT OTHERWISE BEEN ADDRESSED IN THE PLAN. THE PERMITTEE ALSO SHALL AMEND THE PLAN IF IT PROVES TO BE INEFFECTIVE IN ELIMINATING OR SIGNIFICANTLY MINIMIZING POLLUTANTS FROM SOURCES IDENTIFIED UNDER PART V.D.1. OF THIS PERMIT, OR IN OTHERWISE ACHIEVING THE GENERAL OBJECTIVES OF CONTROLLING POLLUTANTS IN STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITY. IN ADDITION, THE PLAN SHALL BE AMENDED TO IDENTIFY ANY NEW CONTRACTOR AND/OR SUBCONTRACTOR THAT WILL IMPLEMENT A MEASURE OF THE STORMWATER POLLUTION PREVENTION PLAN (SEE PART V.D.6.). AMENDMENTS TO THE PLAN SHALL BE PREPARED, SIGNED, DATED AND KEPT AS ATTACHMENTS TO THE ORIGINAL PLAN.

D. CONTENTS OF PLAN.
1. SITE DESCRIPTION. EACH PLAN SHALL PROVIDE A DESCRIPTION OF POLLUTANT SOURCES AND OTHER INFORMATION AS INDICATED:
   A. A DESCRIPTION OF THE NATURE OF THE CONSTRUCTION ACTIVITY;
   B. A DESCRIPTION OF THE INTENDED SEQUENCE OF MAJOR ACTIVITIES WHICH DISTURB SOILS FOR MAJOR PORTIONS OF THE SITE (E.G., GRUBBING, EXCAVATION, GRADING);
   C. ESTIMATES OF THE TOTAL AREA OF THE SITE AND THE TOTAL AREA OF THE SITE THAT IS EXPECTED TO BE DISTURBED BY EXCAVATION, GRADING, OR OTHER CONSTRUCTION ACTIVITIES;
   D. EXISTING DATA DESCRIBING THE SOIL OR THE QUALITY OF ANY DISCHARGE FROM THE SITE AND AN ESTIMATE OF THE SIZE OF THE DRAINAGE AREA FOR EACH DISCHARGE POINT;
   E. A SITE MAP INDICATING DRAINAGE PATTERNS AND APPROXIMATE SLOPES ANTICIPATED AFTER MAJOR GRADING ACTIVITIES, AREAS OF SOIL DISTURBANCE, AN OUTLINE OF AREAS WHICH MAY NOT BE DISTURBED, THE LOCATION OF MAJOR STRUCTURAL AND NONSTRUCTURAL CONTROLS IDENTIFIED IN THE PLAN, THE LOCATION OF AREAS WHERE STABILIZATION PRACTICES ARE EXPECTED TO OCCUR, SURFACE WATERS, WETLANDS AND LOCATIONS WHERE STORMWATER IS DISCHARGED TO A SURFACE WATER OR MS4; AND
   F. THE LATITUDE AND LONGITUDE OF EACH DISCHARGE POINT AND THE NAME OF THE RECEIVING WATER(S) FOR EACH DISCHARGE POINT.

2. CONTROLS. EACH PLAN SHALL INCLUDE A DESCRIPTION OF APPROPRIATE CONTROLS, BMPS AND MEASURES THAT WILL BE IMPLEMENTED AT THE CONSTRUCTION SITE. THE PLAN SHALL CLEARLY DESCRIBE FOR EACH MAJOR ACTIVITY IDENTIFIED IN PART V.D.1.B. APPROPRIATE CONTROL MEASURES AND THE TIMING DURING THE CONSTRUCTION PROCESS THAT THE MEASURES WILL BE IMPLEMENTED. FOR EXAMPLE, PERIMETER CONTROLS FOR ONE PORTION OF THE SITE WILL BE INSTALLED AFTER THE CLEARING AND GRUBBING NECESSARY FOR INSTALLATION OF THE MEASURE, BUT BEFORE THE CLEARING AND GRUBBING FOR THE REMAINING PORTIONS OF THE SITE. PERIMETER CONTROLS SHALL BE ACTIVELY MAINTAINED UNTIL FINAL STABILIZATION OF THOSE PORTIONS OF THE SITE UPWARD OF THE PERIMETER CONTROL. TEMPORARY PERIMETER CONTROLS SHALL BE REMOVED AFTER FINAL STABILIZATION. ALL CONTROLS SHALL BE CONSISTENT WITH THE PERFORMANCE STANDARDS FOR EROSION AND SEDIMENT CONTROL AND STORMWATER TREATMENT AS SET FORTH IN RULE 62-40.432, F.A.C., THE APPLICABLE ENVIRONMENTAL RESOURCE PERMITTING REQUIREMENTS OF THE DEP OR APPROPRIATE WMD RELATING TO PERFORMANCE STANDARDS FOR EROSION AND SEDIMENT CONTROL AND STORMWATER TREATMENT AND THE GUIDELINES CONTAINED IN THE STATE OF FLORIDA EROSION AND SEDIMENT CONTROL DESIGNER AND REVIEWER MANUAL, FDOT, FDEP (2007), INCORPORATED BY REFERENCE IN RULE 62-621.300(4)(A), F.A.C., AND AVAILABLE ON THE DEPARTMENT'S WEBSITE AT HTTP://WWW.DEP.STATE.FL.US/WATER/STORMWATER/NPDES.

   A. EROSION AND SEDIMENT CONTROLS.
      (1) STABILIZATION PRACTICES. EACH PLAN SHALL PROVIDE A DESCRIPTION OF INTERIM AND PERMANENT STABILIZATION PRACTICES, INCLUDING SITE-SPECIFIC SCHEDULING OF THE IMPLEMENTATION OF THE PRACTICES. SITE PLANS SHOULD ENSURE THAT EXISTING VEGETATION IS PRESERVED WHERE ATTAINABLE AND THAT DISTURBED PORTIONS OF THE SITE ARE STABILIZED. STABILIZATION PRACTICES MAY INCLUDE: TEMPORARY SEEDING, PERMANENT SEEDING, MULCHING, GEOTEXTILES, SOD STABILIZATION, VEGETATIVE BUFFER STRIPS, PROTECTION OF TREES, PRESERVATION OF MATURE VEGETATION AND OTHER APPROPRIATE MEASURES. A RECORD OF THE DATES WHEN MAJOR GRADING ACTIVITIES OCCUR, WHEN CONSTRUCTION ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE ON A PORTION OF THE SITE AND WHEN STABILIZATION MEASURES ARE INITIATED SHALL BE INCLUDED IN THE PLAN. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE, BUT IN NO CASE MORE THAN 7 DAYS, IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED.
      (2) STRUCTURAL PRACTICES. EACH PLAN SHALL INCLUDE A DESCRIPTION OF STRUCTURAL PRACTICES TO DIVERT FLOWS FROM EXPOSED SOILS, STORE FLOWS, RETAIN SEDIMENT ON-SITE OR OTHERWISE LIMIT RUNOFF AND THE DISCHARGE OF POLLUTANTS FROM EXPOSED AREAS OF THE SITE. SUCH PRACTICES MAY INCLUDE SILT FENCES, EARTH DIKES, DIVERSIONS, SWALES, SEDIMENT TRAPS, CHECK DAMS, SUBSURFACE DRAINS, PIPE SLOPE DRAINS, LEVEL SPREADERS, STORM DRAIN INLET PROTECTION, ROCK OUTLET PROTECTION, REINFORCED SOIL RETAINING SYSTEMS, GABIONS, COASTAL ARMORING AND TEMPORARY OR PERMANENT SEDIMENT BASINS. STRUCTURAL BMPS SHALL BE PLACED ON UPLAND SOILS UNLESS A STATE OF FLORIDA WETLAND RESOURCE MANAGEMENT PERMIT OR ENVIRONMENTAL RESOURCE PERMIT ISSUED PURSUANT TO CHAPTER 373, F.S., AND APPLICABLE REGULATIONS OF THE DEP OR WMD AUTHORIZE OTHERWISE.
      (3) SEDIMENT BASINS.
         (A) FOR DRAINAGE BASINS WITH 10 OR MORE DISTURBED ACRES AT ONE TIME, A TEMPORARY (OR PERMANENT) SEDIMENT BASIN PROVIDING 3,600 CUBIC FEET OF STORAGE PER ACRE DRAINED, OR EQUIVALENT CONTROL MEASURES, SHALL BE PROVIDED WHERE ATTAINABLE UNTIL FINAL STABILIZATION OF THE SITE. THE 3,600 CUBIC FEET OF STORAGE AREA PER ACRE DRAINED DOES NOT APPLY TO FLOWS FROM OFFSITE AREAS AND FLOWS FROM ONSITE AREAS THAT ARE EITHER UNDISTURBED OR HAVE UNDERGONE FINAL STABILIZATION WHERE SUCH FLOWS ARE DIVERTED AROUND BOTH THE DISTURBED AREA AND THE SEDIMENT BASIN. FOR DRAINAGE BASINS WITH 10 OR MORE DISTURBED ACRES AT ONE TIME AND WHERE A TEMPORARY SEDIMENT BASIN PROVIDING 3,600 CUBIC FEET OF STORAGE PER ACRE DRAINED, OR EQUIVALENT CONTROLS IS NOT ATTAINABLE, A COMBINATION OF SMALLER SEDIMENT BASINS AND/OR SEDIMENT TRAPS AND OTHER BMPS SHOULD BE USED. AT A MINIMUM, SILT FENCES OR EQUIVALENT SEDIMENT CONTROLS ARE REQUIRED FOR ALL SIDESLOPE AND DOWNSLOPE BOUNDARIES OF THE CONSTRUCTION AREA.
         (B) FOR DRAINAGE BASINS OF LESS THAN 10 ACRES, SEDIMENT BASINS AND/OR SEDIMENT TRAPS ARE RECOMMENDED BUT NOT REQUIRED. AT A MINIMUM, SILT FENCES OR EQUIVALENT SEDIMENT CONTROLS ARE REQUIRED FOR ALL SIDESLOPE AND DOWNSLOPE BOUNDARIES OF THE CONSTRUCTION AREA.
         (C) AREAS THAT WILL BE USED FOR PERMANENT STORMWATER INFILTRATION TREATMENT (E.G., STORMWATER RETENTION PONDS) SHOULD NOT BE USED FOR TEMPORARY SEDIMENT BASINS UNLESS APPROPRIATE MEASURES ARE TAKEN TO ASSURE REMOVAL OF ACCUMULATED FINE SEDIMENTS, WHICH MAY CAUSE PREMATURE CLOGGING AND LOSS OF INFILTRATION CAPACITY, AND TO AVOID EXCESSIVE COMPACTION OF SOILS BY CONSTRUCTION MACHINERY OR EQUIPMENT.

B. PERMANENT STORMWATER MANAGEMENT CONTROLS. EACH PLAN SHALL INCLUDE A DESCRIPTION OF STORMWATER MANAGEMENT CONTROLS OR BMPS (E.G., STORMWATER DETENTION OR RETENTION SYSTEMS, VEGETATED SWALES, VELOCITY DISSIPATION DEVICES AT DISCHARGE POINTS) THAT WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS TO CONTROL POLLUTANTS IN STORMWATER DISCHARGES THAT WILL OCCUR DURING CONSTRUCTION AND AFTER CONSTRUCTION OPERATIONS HAVE BEEN COMPLETED. THIS GENERIC PERMIT ONLY ADDRESSES THE INSTALLATION OF STORMWATER MANAGEMENT CONTROLS AND NOT THE ULTIMATE OPERATION AND MAINTENANCE OF SUCH CONTROLS AFTER THE CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED AND THE SITE HAS UNDERGONE FINAL STABILIZATION. UNDER THIS GENERIC PERMIT, PERMITTEES ARE ONLY RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF STORMWATER MANAGEMENT BMPS PRIOR TO FINAL STABILIZATION OF THE SITE, AND ARE NOT RESPONSIBLE FOR MAINTENANCE AFTER STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY HAVE BEEN ELIMINATED FROM THE SITE. HOWEVER, ALL STORMWATER MANAGEMENT SYSTEMS AND BMPS SHALL BE OPERATED AND MAINTAINED IN PERPETUITY AFTER FINAL STABILIZATION IN ACCORDANCE WITH REQUIREMENTS SET FORTH IN THE STATE OF FLORIDA ENVIRONMENTAL RESOURCE PERMIT ISSUED UNDER PART IV, CHAPTER 373, F.S.

C. CONTROLS FOR OTHER POTENTIAL POLLUTANTS.
   (1) WASTE DISPOSAL. THE PLAN SHALL ASSURE THAT WASTE, SUCH AS DISCARDED BUILDING MATERIALS, CHEMICALS, LITTER AND SANITARY WASTE ARE PROPERLY CONTROLLED IN ACCORDANCE WITH ALL APPLICABLE STATE, LOCAL AND FEDERAL REGULATIONS. THIS PERMIT DOES NOT AUTHORIZE THE DISCHARGE OF SOLID MATERIALS, INCLUDING BUILDING MATERIALS, TO SURFACE WATERS OF THE STATE OR AN MS4.
   (2) THE PLAN SHALL ASSURE THAT OFF-SITE VEHICLE TRACKING OF SEDIMENTS AND THE GENERATION OF DUST IS MINIMIZED.
   (3) THE PLAN SHALL BE CONSISTENT WITH APPLICABLE STATE AND LOCAL WASTE DISPOSAL, SANITARY SEWER OR SEPTIC SYSTEM REGULATIONS.
   (4) THE PLAN SHALL ADDRESS THE PROPER APPLICATION RATES AND METHODS FOR THE USE OF FERTILIZERS, HERBICIDES AND PESTICIDES AT THE CONSTRUCTION SITE AND SET FORTH HOW THESE PROCEDURES WILL BE IMPLEMENTED AND ENFORCED. NUTRIENTS SHALL BE APPLIED ONLY AT RATES NECESSARY TO ESTABLISH AND MAINTAIN VEGETATION.
   (5) THE PLAN SHALL ENSURE THAT THE APPLICATION, GENERATION AND MIGRATION OF TOXIC SUBSTANCES ARE LIMITED AND THAT TOXIC MATERIALS ARE PROPERLY STORED AND DISPOSED.

3. MAINTENANCE. THE PLAN SHALL INCLUDE A DESCRIPTION OF PROCEDURES THAT WILL BE FOLLOWED TO ENSURE THE TIMELY MAINTENANCE OF VEGETATION, EROSION AND SEDIMENT CONTROLS, STORMWATER MANAGEMENT PRACTICES AND OTHER PROTECTIVE MEASURES AND BMPS SO THEY WILL REMAIN IN GOOD AND EFFECTIVE OPERATING CONDITION.

4. INSPECTIONS. AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.50 INCHES OR GREATER, A QUALIFIED INSPECTOR (PROVIDED BY THE OPERATOR) SHALL INSPECT ALL POINTS OF DISCHARGE INTO SURFACE WATERS OF THE STATE OR AN MS4; DISTURBED AREAS OF THE CONSTRUCTION SITE THAT HAVE NOT BEEN FINALLY STABILIZED; AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION; STRUCTURAL CONTROLS; AND LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE AS FOLLOWS:

   A. DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE STORMWATER SYSTEM. THE STORMWATER MANAGEMENT SYSTEM AND EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. DISCHARGE LOCATIONS OR POINTS SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION AND SEDIMENT CONTROL AND STORMWATER TREATMENT MEASURES ARE EFFECTIVE IN PREVENTING OR MINIMIZING THE DISCHARGE OF POLLUTANTS, INCLUDING RETAINING SEDIMENT ONSITE PURSUANT TO RULE 62-40.432, F.A.C. LOCATIONS WHERE VEHICLES ENTER OR EXIT THE SITE SHALL BE INSPECTED FOR EVIDENCE OF OFFSITE SEDIMENT TRACKING.

   B. BASED ON THE RESULTS OF THE INSPECTION, ALL MAINTENANCE OPERATIONS NEEDED TO ASSURE PROPER OPERATION OF ALL CONTROLS, BMPS, PRACTICES OR MEASURES IDENTIFIED IN THE STORMWATER POLLUTION PREVENTION PLAN SHALL BE DONE IN A TIMELY MANNER, BUT IN NO CASE LATER THAN 7 CALENDAR DAYS FOLLOWING THE INSPECTION. IF NEEDED, POLLUTION PREVENTION CONTROLS, BMPS AND MEASURES IDENTIFIED IN THE PLAN SHALL BE REVISED AS APPROPRIATE, BUT IN NO CASE LATER THAN 7 CALENDAR DAYS FOLLOWING THE INSPECTION. SUCH MODIFICATIONS SHALL PROVIDE FOR TIMELY IMPLEMENTATION OF ANY CHANGES TO THE PLAN WITHIN 7 CALENDAR DAYS FOLLOWING THE INSPECTION.

   C. A REPORT SUMMARIZING THE SCOPE OF THE INSPECTION; NAME(S) AND QUALIFICATIONS OF PERSONNEL MAKING THE INSPECTION; THE DATE(S) OF THE INSPECTION; RAINFALL DATA; MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE STORMWATER POLLUTION PREVENTION PLAN; AND ACTIONS TAKEN IN ACCORDANCE WITH PARAGRAPH V.D.4.B. OF THIS PERMIT, SHALL BE MADE AND RETAINED, IN ACCORDANCE WITH PART VI OF THIS PERMIT, AS PART OF THE STORMWATER POLLUTION PREVENTION PLAN. SUCH REPORTS SHALL IDENTIFY ANY INCIDENTS OF NON-COMPLIANCE. WHERE A REPORT DOES NOT IDENTIFY ANY INCIDENTS OF NON-COMPLIANCE, THE REPORT SHALL CONTAIN A CERTIFICATION THAT THE FACILITY IS IN COMPLIANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN AND THIS PERMIT. THE REPORT SHALL BE SIGNED IN ACCORDANCE WITH PART VII.C. OF THIS PERMIT.

5. NON-STORMWATER DISCHARGES. EXCEPT FOR FLOWS FROM FIRE FIGHTING ACTIVITIES, SOURCES OF NON-STORMWATER LISTED IN PART IV.A.3. OF THIS PERMIT THAT ARE COMBINED WITH STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY MUST BE IDENTIFIED IN THE PLAN. THE PLAN SHALL IDENTIFY AND ENSURE THE IMPLEMENTATION OF APPROPRIATE POLLUTION PREVENTION AND TREATMENT MEASURES FOR THE NON-STORMWATER COMPONENT(S) OF THE DISCHARGE.

6. CONTRACTOR/SUBCONTRACTOR CERTIFICATION.

   A. THE STORMWATER POLLUTION PREVENTION PLAN MUST CLEARLY IDENTIFY, FOR EACH MEASURE IDENTIFIED IN THE PLAN, THE CONTRACTOR(S) AND/OR SUBCONTRACTOR(S) THAT WILL IMPLEMENT THE MEASURE. ALL CONTRACTORS AND SUBCONTRACTORS IDENTIFIED IN THE PLAN MUST SIGN A COPY OF THE CERTIFICATION STATEMENT IN PART V.D.6.B. OF THIS PERMIT. ALL CERTIFICATIONS MUST BE INCLUDED IN THE STORMWATER POLLUTION PREVENTION PLAN.

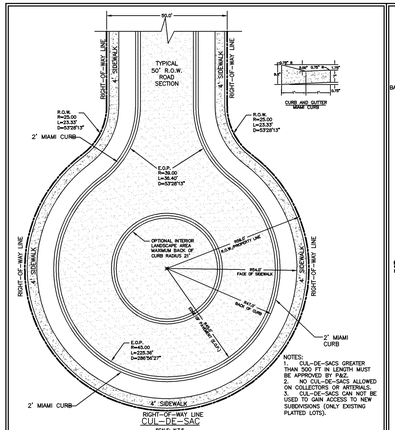
   B. CERTIFICATION STATEMENT FOR CONTRACTORS/SUBCONTRACTORS. ALL CONTRACTORS AND SUBCONTRACTORS IDENTIFIED IN A STORMWATER POLLUTION PREVENTION PLAN IN ACCORDANCE WITH PART V.D.6.A. OF THIS PERMIT SHALL SIGN A COPY OF THE FOLLOWING CERTIFICATION STATEMENT BEFORE CONDUCTING ANY ACTIVITIES AT THE SITE:

      "I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND, AND SHALL COMPLY WITH, THE TERMS AND CONDITIONS OF THE STATE OF FLORIDA GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES AND THIS STORMWATER POLLUTION PREVENTION PLAN PREPARED THEREUNDER."

      THE CERTIFICATION MUST INCLUDE THE NAME AND TITLE OF THE PERSON PROVIDING THE SIGNATURE IN ACCORDANCE WITH PART VII.C. OF THIS PERMIT; THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE CONTRACTING FIRM; AND THE DATE THE CERTIFICATION IS MADE.

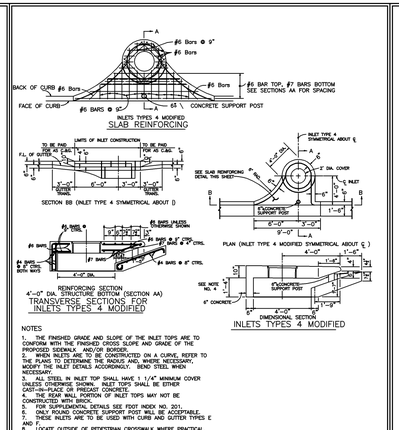
PART VI. RETENTION OF RECORDS

A. THE PERMITTEE SHALL RETAIN COPIES OF STORMWATER POLLUTION PREVENTION PLANS AND ALL REPORTS REQUIRED BY THIS PERMIT, AND RECORDS OF ALL DATA USED TO COMPLETE THE NOTICE OF INTENT TO BE COVERED BY THIS PERMIT, FOR A PERIOD OF AT LEAST THREE YEARS FROM THE DATE THAT THE SITE IS FINALLY ST



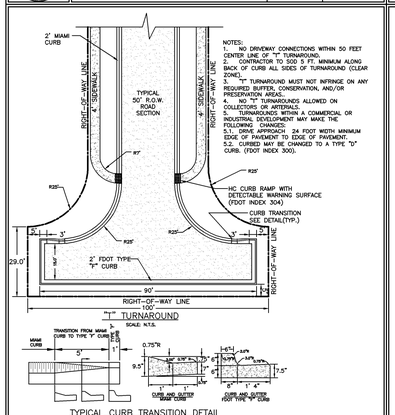
NOTES:
1. CUL-DE-SACS GREATER THAN 500 FT IN LENGTH MUST BE APPROVED BY FIRE.
2. NO CUL-DE-SACS ALLOWED ON COLLECTORS OR ARTERIALS.
3. CUL-DE-SACS CAN NOT BE USED TO GAIN ACCESS TO NEW SUBDIVISIONS (ONLY EXISTING PLATTED LOTS).

TYPICAL	DEPARTMENT OF PUBLIC WORKS	
CUL-DE-SAC	FIG: S.R.5.1	REV: 09/2006
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT: 1 OF 1



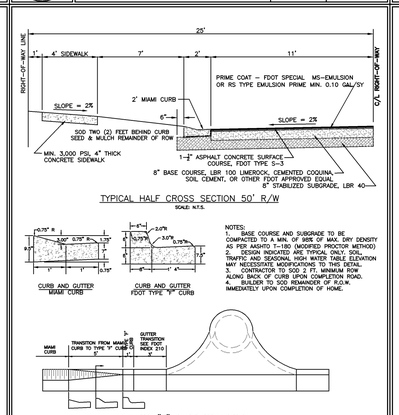
NOTES
1. THE FINISHED GRADE AND SLOPE OF THE INLET TOPS ARE TO CONFORM WITH THE FINISHED CROSS SLOPE AND GRADE OF THE PROPOSED SIDEWALK AND/OR BORDER.
2. THE INLET TOPS ARE TO BE CONSTRUCTED ON A CURVE. REFER TO THE PLANS TO DETERMINE THE CURVATURE. WHERE NECESSARY, MODIFY THE INLET DETAILS ACCORDINGLY. BEND STEEL WHEN NECESSARY.
3. ALL STEEL IN INLET TOP SHALL HAVE 1 1/4" MINIMUM COVER UNLESS OTHERWISE SHOWN. INLET TOPS SHALL BE EITHER CONSTRUCTED IN PLACE OR PRECAST.
4. THE REAR WALL PORTION OF INLET TOPS MAY NOT BE CONSTRUCTED WITH BRICK.
5. FOR SUPPLEMENTAL DETAILS SEE FDOT INDEX NO. 201.
6. ONLY ROUND CONCRETE SUPPORT POST WILL BE ACCEPTABLE.
7. THESE INLETS ARE TO BE USED WITH CURB AND GUTTER TYPES E AND F.
8. LOCATE OUTSIDE OF PEDESTRIAN CROSSWALK WHERE PRACTICAL.
9. FOR STRUCTURE BOTTOMS SEE FDOT INDEX NO. 200.

TYPICAL	DEPARTMENT OF PUBLIC WORKS	
CURB INLET TOP TYPE 4 MODIFIED FDOT INDEX 210 MODIFIED	FIG:	REV: 12/2005
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT: 1 OF 1



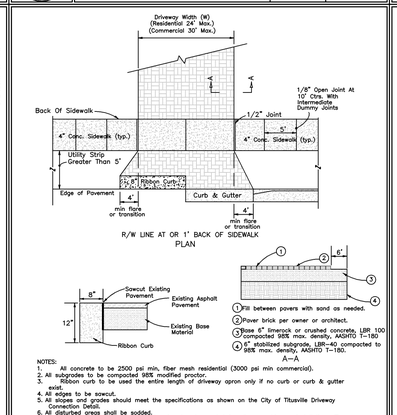
NOTES:
1. NO DRIVEWAY CONNECTIONS WITHIN 50 FEET CENTER LINE OF "T" TURNAROUND.
2. CONTRACTOR TO SOD 5 FT. MINIMUM ALONG BACK OF CURB ALL SIDES OF TURNAROUND (CLEAR ZONE).
3. "T" TURNAROUND MUST NOT INFRINGE ON ANY REQUIRED BUFFER, CONSERVATION, AND/OR PRESERVATION AREAS.
4. NO OTHER IMPROVEMENTS ALLOWED ON COLLECTOR OR ARTERIALS.
5. TURNAROUNDS WITHIN A COMMERCIAL OR INDUSTRIAL DEVELOPMENT MAY MAKE THE FOLLOWING CHANGES:
5.1. DRIVE APPROACH 24 FOOT WIDTH MINIMUM EDGE OF PAVEMENT TO EDGE OF PAVEMENT.
5.2. CURBED MAY BE CHANGED TO A TYPE "D" CURB. (FDOT INDEX 300).

TYPICAL	DEPARTMENT OF PUBLIC WORKS	
"T" TURNAROUND	FIG: SR5.2	REV: 09/2006
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT: 1 OF 1



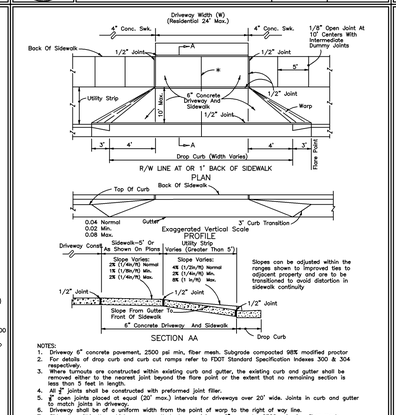
NOTES:
BASE COURSE AND SUBGRADE TO BE COMPACTED TO A MIN. OF 98% OF MAX. DRY DENSITY AS PER AASHTO T-180 (MODIFIED PROCTOR METHOD)
2. DESIGN INDICATED ARE TYPICAL ONLY. SOIL, TRAFFIC AND SEASONAL HIGH WATER TABLE ELEVATION MAY NECCESSITATE MODIFICATIONS TO THIS DETAIL.
3. CONTRACTOR TO SOD 2 FT. MINIMUM ROW ALONG BACK OF CURB UPON COMPLETION ROAD.
4. BUILDER TO SOD REMAINDER OF R.O.W. IMMEDIATELY UPON COMPLETION OF HOME.

TYPICAL	DEPARTMENT OF PUBLIC WORKS	
STANDARD 50' ROW DETAIL	FIG: SR 1.1	REV: 12/2005
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT: 1 OF 1



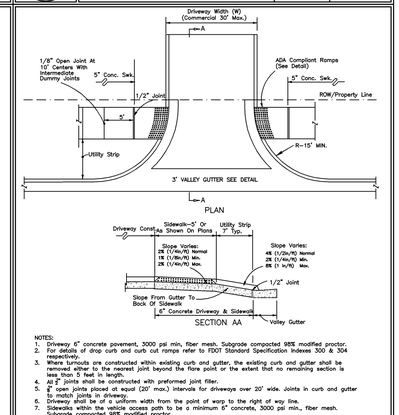
NOTES:
1. All concrete to be 2500 psi min, fiber mesh residential (3000 psi min commercial).
2. All subgrades to be compacted 98% modified proctor.
3. Ribbon curb to be used the entire length of driveway apron only if no curb or curb & gutter exist.
4. All edges to be sawcut.
5. All disturbed areas should meet the specifications as shown on the City of Titusville Driveway Connection Detail.
6. All disturbed areas shall be sodded.
7. A owner release will be required to be signed and recorded for all paver driveway installations. The property owner must acknowledging and accepting all liability for any damage to the paver system. This includes any required repair, upgrade, and/or installation of any public utilities that may cause damage to the paver system.

PAVER SYSTEM	DEPARTMENT OF PUBLIC WORKS	
DRIVEWAY CONNECTION	FIG:	REV: 02/2008
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT: 1 OF 1



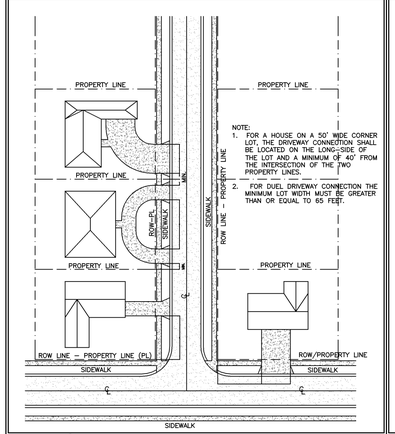
NOTES:
1. Driveway 6" concrete pavement, 2500 psi min, fiber mesh. Subgrade compacted 98% modified proctor
2. For details of drop curb and curb cut ramps refer to FDOT Standard Specification Indexes 300 & 304 respectively.
3. Where turnouts are constructed within existing curb and gutter, the existing curb and gutter shall be removed either to the nearest joint beyond the flare point or the extent that no remaining section is less than 5 feet in length.
4. All 2" joints shall be constructed with preformed joint filler.
5. 2" open joints placed at equal (20' max.) intervals for driveways over 20' wide. Joints in curb and gutter to match joints in driveway.
6. Driveway shall be of a uniform width from the point of warp to the right of way line.
7. Sidewalks within the vehicle access path to be a minimum 6" concrete, 2500 psi min., fiber mesh.
8. Subgrade compacted 98% modified proctor.
9. All Sidewalks outside of the vehicle access path to be a minimum 4" concrete, 2500 psi min., fiber mesh. Subgrade compacted 95% modified proctor.

RESIDENTIAL	DEPARTMENT OF PUBLIC WORKS	
DRIVEWAY CONNECTION	FIG:	REV: 08/2008
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT: 1 OF 1



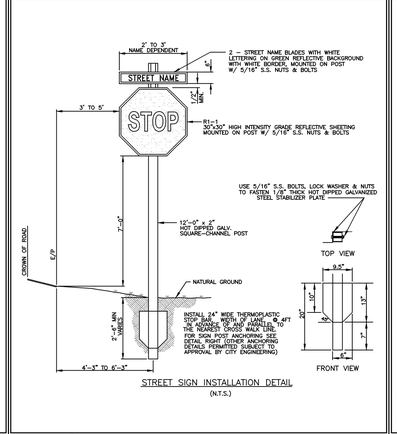
NOTES:
1. Driveway 6" concrete pavement, 3000 psi min, fiber mesh. Subgrade compacted 98% modified proctor.
2. For details of drop curb and curb cut ramps refer to FDOT Standard Specification Indexes 300 & 304 respectively.
3. Where turnouts are constructed within existing curb and gutter, the existing curb and gutter shall be removed either to the nearest joint beyond the flare point or the extent that no remaining section is less than 5 feet in length.
4. All 2" joints shall be constructed with preformed joint filler.
5. 2" open joints placed at equal (20' max.) intervals for driveways over 20' wide. Joints in curb and gutter to match joints in driveway.
6. Driveway shall be of a uniform width from the point of warp to the right of way line.
7. Sidewalks within the vehicle access path to be a minimum 6" concrete, 3000 psi min., fiber mesh.
8. All Sidewalks outside of the vehicle access path to be a minimum 4" concrete, 3000 psi min., fiber mesh. Subgrade compacted 95% modified proctor.

COMMERCIAL	DEPARTMENT OF PUBLIC WORKS	
DRIVEWAY CONNECTION	FIG:	REV: 02/2008
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT: 1 OF 1

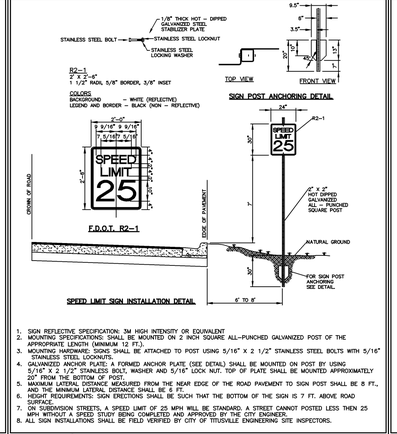


NOTE:
1. FOR A HOUSE ON A 50' WIDE CORNER LOT, THE DRIVEWAY CONNECTION SHALL BE LOCATED ON THE LONG-SIDE OF THE LOT AND A MINIMUM OF 40' FROM THE INTERSECTION OF THE TWO PROPERTY LINES.
2. FOR DUEL DRIVEWAY CONNECTION THE MINIMUM LOT WIDTH MUST BE GREATER THAN OR EQUAL TO 65 FEET.

TYPICAL	DEPARTMENT OF PUBLIC WORKS	
DRIVEWAY LOCATIONS	FIG:	REV: 02/2008
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT: 1 OF 1

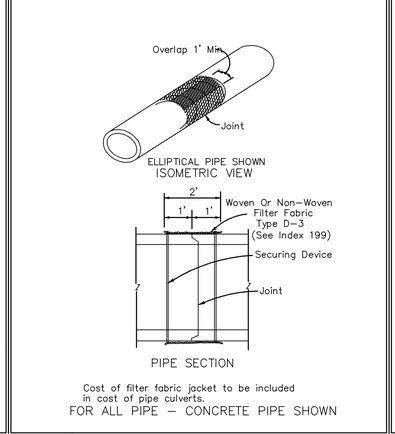


TYPICAL	DEPARTMENT OF PUBLIC WORKS	
STREET MARKER & STOP SIGN	FIG: SR2.1	REV: 09/2006
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT: 1 OF 1



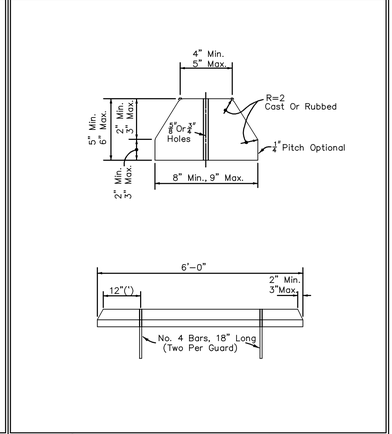
1. SIGN REFLECTIVE SPECIFICATION: 3M HIGH INTENSITY OR EQUIVALENT
2. MOUNTING SPECIFICATIONS: SHALL BE MOUNTED ON 2 INCH SQUARE ALL–PUNCHED GALVANIZED POST OF THE APPROPRIATE LENGTH (MINIMUM 12 FT.).
3. MOUNTING HARDWARE: SIGNS SHALL BE ATTACHED TO POST USING 5/16" X 2 1/2" STAINLESS STEEL BOLTS WITH 5/16" STAINLESS STEEL LOCKNUTS.
4. GALVANIZED ANCHOR PLATE: A FORMED ANCHOR PLATE (SEE DETAIL) SHALL BE MOUNTED ON POST BY USING 5/16" X 2 1/2" STAINLESS BOLT, WASHER AND 5/16" LOCK NUT. TOP OF PLATE SHALL BE MOUNTED APPROXIMATELY 20" FROM THE BOTTOM OF POST.
5. MAXIMUM LATERAL DISTANCE MEASURED FROM THE NEAR EDGE OF THE ROAD PAVEMENT TO SIGN POST SHALL BE 8 FT., AND THE MINIMUM LATERAL DISTANCE SHALL BE 6 FT.
6. HEIGHT REQUIREMENTS: SIGN ERECTIONS SHALL BE SUCH THAT THE BOTTOM OF THE SIGN IS 7 FT. ABOVE ROAD SURFACE.
7. IN SUBDIVISION STREETS, A SPEED LIMIT OF 25 MPH WILL BE STANDARD. A STREET CANNOT POSTED LESS THEN 25 MPH WITHOUT A SPEED STUDY BEING COMPLETED AND APPROVED BY THE CITY ENGINEER.
8. ALL SIGN INSTALLATIONS SHALL BE FIELD VERIFIED BY CITY OF TITUSVILLE ENGINEERING SITE INSPECTORS.

TYPICAL	DEPARTMENT OF PUBLIC WORKS	
ROAD SIGNAGE	FIG:	REV: 02/2008
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT: 1 OF 1



Cost of filter fabric jacket to be included in cost of pipe culverts.
FOR ALL PIPE – CONCRETE PIPE SHOWN

TYPICAL	DEPARTMENT OF ENGINEERING SERVICES	
FILTER FABRIC JACKET	FIG:	REV: 02/2008
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT: 1 OF 1



TYPICAL	DEPARTMENT OF ENGINEERING SERVICES	
CONCRETE TIRE STOP	FIG:	REV: 02/2008
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT: 1 OF 1

TITUSVILLE, FLORIDA FOUNDED 1867

City of Titusville

555 South Washington Avenue
Titusville, Florida 32796
PH: (321) 383-5823 Fax: (321) 383-5700

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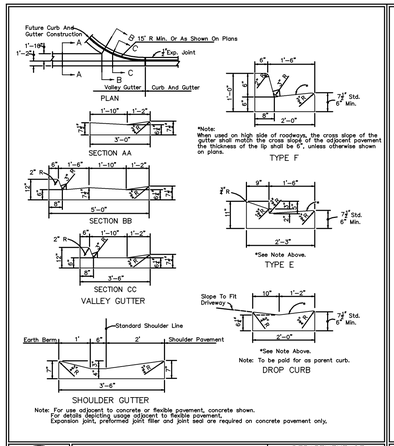
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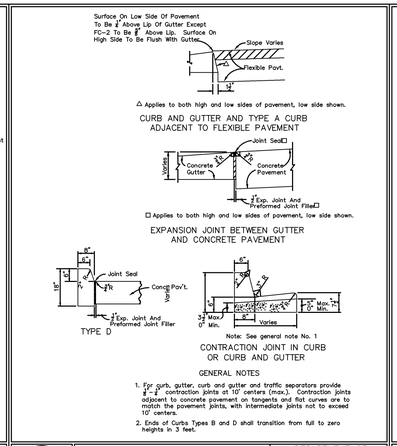
No.	Revision	Date

STANDARD DETAILS AND SPECIFICATIONS

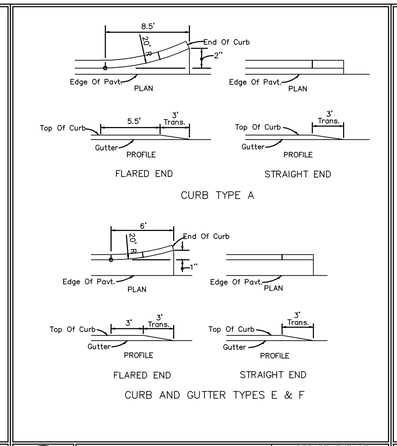
ENGINEERING SERVICES DEPT.	COT SD1
MAY 6, 2009 Date	
N.T.S. Scale	Sheet



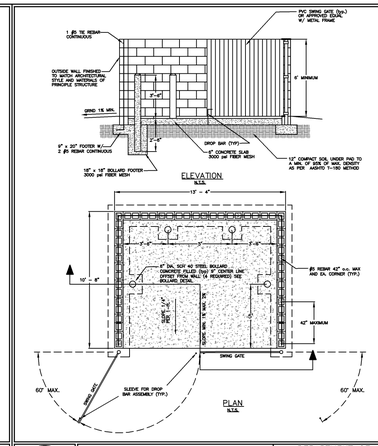
TYPICAL	DEPARTMENT OF ENGINEERING SERVICES	
CONCRETE CURB & GUTTER	FIG:	REV: 02/2008
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT: 1 OF 1



TYPICAL	DEPARTMENT OF ENGINEERING SERVICES	
CONTRACTION/EXPANCSION JOINTS	FIG:	REV: 02/2008
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT: 1 OF 1



TYPICAL	DEPARTMENT OF ENGINEERING SERVICES	
CURB & GUTTER TRANSITIONS	FIG:	REV: 02/2008
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT: 1 OF 1



TYPICAL	DEPARTMENT OF ENGINEERING SERVICES	
TRASH ENCLOSURE DETAIL	FIG:	REV: 05/2009
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT: 1 OF 3

1) GENERAL WALL REQUIREMENTS
A. NEW CONSTRUCTION: ENCLOSURE WALLS ARE A MAXIMUM 6' IN HEIGHT CONSTRUCTED OF CONCRETE BLOCK (8"x8"x16").
B. REDEVELOPMENT SITES (PRIOR TO CMU REQUIRED CONSTRUCTION): ENCLOSURE WALLS ARE A MAXIMUM 6' IN HEIGHT CONSTRUCTED OF PVC FENCING (OR APPROVED EQUAL). ENCLOSURE MUST BE BUILT TO MINIMUM DIMENSIONS AS SHOWN IN THE CMU DETAIL. BOLLARDS MUST BE INSTALLED PER DETAIL, GATES MUST BE INSTALLED PER DETAIL.
2) CONCRETE MASONRY WALL CONSTRUCTION
A. WALLS CONCRETE FILLED CELLS WITH 1-#5 VERTICAL REBAR TIED TO FOOTER STEEL AT EACH CORNER AND EVERY 42" O.C. MINIMUM.
B. ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A-615, GRADE 60. VERTICAL REINFORCEMENT SHALL BE PLACED IN THE CENTER OF THE MASONRY CELL, AND SHALL BE HELD IN POSITION AT THE TOP AND BOTTOM.
C. HORIZONTAL WALL REINFORCEMENT SHALL BE STANDARD TRUSS TYPE DUR-O-WALL (OR EQUIVALENT) AT 16" O.C.
D. HOLLOW LOAD-BEARING CONCRETE MASONRY UNIT (CMU) SHALL BE NORMAL WEIGHT CONFORMING TO ASTM C-90, WITH A MINIMUM COMPRESSIVE STRENGTH OF 1,900 PSI.
E. MORTAR SHALL BE TYPE 'M' OR 'S', IN ACCORDANCE WITH ASTM C-270. PLACE ALL MASONRY IN RUNNING BOND WITH 3/8" MORTAR JOINTS. PROVIDE COMPLETE COVERAGE FACE SHELL MORTAR BEDDING, HORIZONTAL AND VERTICAL.
F. COARSE GROUT SHALL CONFORM TO ASTM C-476, WITH A MAXIMUM AGGREGATE SIZE OF 3/8", 8" to 10" SLUMP, AND A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI AT 28 DAYS.
G. MINIMUM 3" X 3" CLEAN-OUT HOLES (SAW-CUT) ARE REQUIRED AT THE BOTTOM COARSE OF ALL CELLS TO VERIFY GROUT PLACEMENT. CLEAN-OUTS SHALL BE SEALED AFTER MASONRY INSPECTION - PROVIDED IN ACCORDANCE WITH ACI-530-11 AND BEFORE GROUTING.
H. PRIOR TO GROUTING, THE GROUT SPACE SHALL BE CLEAN WITH NO MORTAR PROJECTIONS GREATER THAN ¼", MORTAR DROPPINGS, OR OTHER FOREIGN MATERIAL. ALL CELLS SHALL BE IN VERTICAL ALIGNMENT AND SHALL SOLIDLY BE FILLED WITH COARSE GROUT AS SPECIFIED.
I. DURING PLACING, GROUT SHALL BE CONSOLIDATED WITH FLEXIBLE CABLE VIBRATOR. FIRST GROUT POUR SHALL B STOPPED A MINIMUM 1-1/2" BELOW THE TOP OF THE MIDDLE BOND BEAM MASONRY.
4) FOOTER CONSTRUCTION
A. SOIL BEARING CAPACITY TO BE A MINIMUM OF 2,500 P.S.F.
B. FOOTER SHALL BE CONSTRUCTED WITH 3000 P.S.I. CONCRETE WITH FIBER MESH REINFORCEMENT.
C. ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A-615, GRADE 60. WITH A MINIMUM 24" LAPS, AND 3" CLEAR COVER.
5) CONCRETE SLAB:
A. SOILS MUST BE COMPACTED UNDER PAD A MINIMUM 12" IN DEPTH TO 95% MAX. DENSITY PER AASHTO T-180.
B. CONCRETE SLAB SHALL BE MONOLITHIC, 6" THICKNESS MINIMUM W/IMBEDDED 6"x6"/10x10 WELDED WIRE FABRIC (W.W.F.), 3000 P.S.I. AND FIBER MESH REINFORCEMENT.
6) GATES:
A. GATES SHALL BE CONSTRUCTED IN A MANNER TO ENSURE THAT THE GATE CAN SUPPORT OWN WEIGHT, GATES CAN BE METAL OR PVC AND SHALL BE PRIMED AND PAINTED TO MATCH THE PRINCIPLE STRUCTURE. ALL GATES MUST HAVE A METAL FRAME WITH CROSS-BRACING.
B. ALL GATES SHALL BE HINGED IN FRONT OF THE CMU BLOCK (NOT INTERIOR) ON A POST THAT WILL SUPPORT THE WEIGHT OF THE GATE ASSEMBLY.
C. A METAL DROP PIN 1/2" IN DIAMETER BY 18" IN LENGTH SHALL BE PROVIDE FOR EACH GATE AS A LATCHING MECHANISM. A DROP PIN HOLE 3/4" IN DIAMETER 6" DEEP MUST BE PROVIDED IN BOTH THE OPEN AND CLOSED POSITION. ANY DROP PIN HOLE CONSTRUCTED IN ASPHALT PAVEMENT MUST PROVIDE A 3/4" P.V.C. SLEEVE, 6" IN DEPTH AT EACH DROP PIN LOCATION.
7) BOLLARDS
A. BOLLARD MUST BE A 6" DIAMETER STEEL PIPE FILLED WITH CONCRETE 3'-6" HIGH (ABOVE GROUND), AND MUST BE IMBEDDED 2'-6" MINIMUM INTO THE ENCLOSURE SLAB AND FOUNDATION.
B. ALL BOLLARDS MUST BE PRIMED AND PAINTED TRAFFIC YELLOW.
8) MISC. REQUIREMENTS
A. ANY MODIFICATIONS TO THIS STANDARD MUST BE APPROVED BY THE CITY IN WRITING.
B. PROVIDE SCREENING AS REQUIRED BY LDR SEC. 39-115. REFUSE FACILITIES SHALL BE LOCATED ONLY IN THE SIDE YARDS OR REAR YARDS EXCEPT WHEN SUCH YARD IS ADJACENT TO A COLLECTOR/ARTERIAL STREET AS DESIGNATED IN THE CITY'S ROADWAY CLASSIFICATION MAP. SUCH FACILITIES MUST BE CONSTRUCTED OF CMU BLOCK ARCHITECTURALLY MATCH THE PRINCIPAL BUILDING(S) AND SCREENED FROM VIEW." CHAIN LINK FENCE SLATS ARE PROHIBITED. DETAILS ON THE SCREENING SHALL BE REVIEWED AND APPROVED BY THE CITY ENGINEER.
C. LOCATE DUMPSTER ENCLOSURE WHERE THERE ARE NO OVERHEAD WIRES, TREES, AWNINGS, OVERHANGS, LIGHT FIXTURES, OR OTHER OBJECTS THAT MAY INTERFERE WITH SOLID WASTE OPERATIONS.
D. SEE SOLID WASTE TURNING RADIUS/ACCESS DETAIL.
E. VEHICLE DRIVE PATHS MUST HAVE A MINIMUM FIFTEEN (15') FOOT HEIGHT CLEARANCE.

TYPICAL	DEPARTMENT OF ENGINEERING SERVICES	
TRASH ENCLOSURE DETAIL	FIG:	REV: 05/2009
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT: 2 OF 3

TYPICAL	DEPARTMENT OF ENGINEERING SERVICES	
CURB RAMP PLACEMENT	FIG:	REV: 02/2008
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT: 1 OF 1

TYPICAL	DEPARTMENT OF ENGINEERING SERVICES	
HANDICAP RAMP DETAILS	FIG:	REV: 02/2008
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT: 1 OF 2

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.
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.
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 BY TEXTURING A TRUNCATED DOME PATTERN IN CONFORMANCE WITH U.S. DEPARTMENT OF JUSTICE A.D.A. STANDARDS FOR ACCESSIBLE DESIGN. A.D.A. ACCESSIBILITY GUIDELINES: SECTION 4.29.2. (DETAIL SHOWN ABOVE LEFT). TRANSITION SLOPES ARE NOT TO HAVE DETECTABLE WARNINGS.
6. THE COLOR REQUIREMENT IS TO PROVIDE A DARK-ON-LIGHT VISUAL CONTRAST BETWEEN THE DETECTABLE WARNING SURFACE AND THE ADJACENT WALKING SURFACE. WHERE ADJACENT WALKING SURFACES ARE COLORED OR ARE CONSTRUCTED WITH MATERIALS OTHER THAN STANDARD CLASS I PORTLAND CEMENT CONCRETE IN ACCORDANCE WITH SECTION 522 OF THE STANDARD SPECIFICATIONS, THE PLANS MUST PROVIDE FOR DETECTABLE WARNING SURFACE COLORS OR MATERIALS THAT PROVIDE THE NECESSARY CONTRAST, EITHER DARK-ON-LIGHT OR LIGHT-ON-DARK.
7. 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.

TYPICAL	DEPARTMENT OF ENGINEERING SERVICES	
HANDICAP RAMP DETAILS	FIG:	REV: 02/2008
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT: 2 OF 2

TYPICAL	DEPARTMENT OF ENGINEERING SERVICES	
HANDICAP PARKING MARKINGS	FIG:	REV: 02/2008
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT: 1 OF 1

TYPICAL	DEPARTMENT OF ENGINEERING SERVICES	
TRASH ENCLOSURE DETAIL	FIG:	REV: 05/2009
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT: 3 OF 3

1. GENERAL
1.1. These specifications cover the construction and testing of public roadways within the City of Titusville. Both those that are to be maintained by the City and those that are private constructed to City Standards.
1.2. The Contractor shall be responsible for ordering and paying for all required testing. A City of Titusville representative shall witness all testing and receive a copy of results from the testing lab. Any testing performed without a witness from the City of Titusville shall not be accepted.
1.3. All work shall conform to the current version of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction except as modified below.

2. SUBGRADE
2.1. LBR – All subbase's shall have a minimum LBR of 40 to be accepted. Minimum testing shall be one per soil type.
2.2. Modified Proctor for Density – Proctors shall be taken at a minimum of 1 per source or at any change in subbase material.
2.2. Density – Testing for density shall be 1 test per 500 feet minimum with no less than 3 test per roadway. Minimum density shall be 98% Modified Proctor using test FM 1-T 180 Method D.
2.3. Test Roll of Subbase – shall be completed with a contractor provided roller with minimum axle load of 15,000 lbs on the rear axle or other pre-approved equipment such as a loaded 20 yard dump truck or a loaded water truck. The process for testing shall be as follows:
2.3.1 Rolling shall be conducted parallel to the roadway centerline at approximately 2 – 3 miles per hour.
2.3.2. Inspector shall follow truck on as many passes as necessary to determine the suitability of the subbase. Minimum one pass per lane.
2.3.3. Any soft and/or pumping areas of subbase shall be reworked and retested as allowed by these specifications or as directed prior to acceptance of subbase material.
2.4. Stabilization Depth – If used, stabilization depth shall be confirmed by the inspector at 1 test per 1000 feet.
2.5. Repair of Failed Areas – Areas that exhibit pumping, soft spots and low compaction shall be repaired or replaced and re-tested as directed by the Engineer. The repair or replacement may consist of re-mixing in-place material, additional compaction effort, removal on unsatisfactory material and replacement with satisfactory material, or by strengthening the material with additional stabilization in-place.
2.6. Approval – Upon submission of passing compaction test results and satisfactory roll test, the Engineer will approve the subbase for placement of base material and installation of curb and gutter. However subbase approval may be rescinded if substantial time passes or inclement weather damages the subbase. The contractor will be required to repair and retest any deterioration and seek re-approval from the Engineer.

3.0. BASE
3.1. Graded Aggregate Base – shall have a minimum of 12" clearance measured from the bottom of the base to the seasonal high water level.
3.1.1. LBR Value – shall have a minimum LBR of 100 to be accepted. Minimum testing shall be one per source.
3.1.2. Modified Proctor for Density – Proctors shall be taken at a minimum of 1 per source.
3.1.3. Density – Testing for density shall be 1 test per 500 feet minimum with no less than 3 test per roadway. Minimum density shall be 100% Modified Proctor using test FM 1-T 180 Method D.
3.1.4 Test Roll – shall be completed as completed for subbase material.
3.1.5 3" Base Coring – 1 coring per 500 feet shall be taken to verify base thickness. Average of all corings shall meet or exceed plan thickness.
3.1.6 Repair of Failed Areas – Areas that exhibit pumping, soft spots and low compaction shall be repaired or replaced and re-tested as directed by the Engineer. The repair or replacement may consist of additional compaction effort, removal on unsatisfactory material and replacement with satisfactory material, or replacement of Graded Aggregate with Asphalt Base.
3.1.7. Approval – Upon submission of passing test results and test roll the Engineer will approve the base for placement of asphalt surface course. . However base approval may be rescinded if substantial time passes or inclement weather damages the base. The contractor will be required to repair and retest any deterioration and seek re-approval from the Engineer
3.2. Limericks Base – shall only be used with 18" of clearance between the high water level and the bottom of the base.
3.2.1. LBR Value – shall have a minimum LBR of 100 to be accepted. Minimum testing shall be one per source.
3.2.2. Proctor for Density – Proctors shall be taken at a minimum of 1 per 1000 feet or at any change in base material source.
3.2.2 Density – Testing for density shall be 1 test per 500 feet minimum with no less than 3 test per roadway. Minimum density shall be 98% Modified Proctor using test FM 1-T 180 Method D.
3.2.3 Test Roll – shall be completed as completed for subbase material.
3.2.4 3" Base Coring – 1 coring per 500 feet shall be taken to verify base thickness. Average of all corings shall meet or exceed plan thickness. Minimum of 1 coring per roadway.
3.2.5 Repair of Failed Areas – Areas that exhibit pumping, soft spots and low compaction shall be repaired or replaced and re-tested as directed by the Engineer. The repair or replacement may consist of additional compaction effort, removal on unsatisfactory material and replacement with satisfactory material, or replacement of Limerock Base with Asphalt Base.
3.2.6 Approval – Upon submission of passing test results and test roll the Engineer will approve the base for placement of asphalt surface course. . However base approval may be rescinded if substantial time passes or inclement weather damages the base. The contractor will be required to repair and retest any deterioration and seek re-approval from the Engineer.
3.3 Asphalt Base – shall be minimum of 4" thick and shall be used only as approved by the engineer.
3.3.1. Options – Asphalt Base shall be constructed using either of the 2 options listed below:
3.3.1. a. Type S mix shall conform with FDOT 2000 specifications for construction.
3.3.1. b. Superpave mix shall conform with most recent FDOT standards.
3.3.2. 3" Base Coring – 1 core per 500 feet shall be taken to verify base thickness. Average of all corings shall meet or exceed plan thickness. Minimum of 1 coring per roadway.
3.3.3. Density – density testing shall be completed at 1 per 500 feet with a minimum of 3 per roadway. Density shall meet or exceed 98% of provided lab density for the mix used.
3.3.4 Approval – Upon submission of passing test results the Engineer will approve the base for placement of asphalt surface course. . However base approval may be rescinded if substantial time passes or inclement weather damages the base. The contractor will be required to repair and retest any deterioration and seek re-approval from the Engineer.
3.4 Soil Cement Base – shall only be used with 12" of clearance between the high water level and the bottom of the base. Shall only be used when approved by the City Engineer and/or the Public Works Engineer. Construction shall conform to FDOT Specifications for Roads and Bridges 2000 Edition.
3.4.1 Density – Testing for density shall be 1 test per 500 feet minimum with no less than 3 test per roadway. Minimum density shall be 97% of maximum density determined using AASHTO T 134.
3.4.2 Failed Density – Upon a failure of a density test, density testing shall be done in a 5' grid to determine the extent of failure. Failed areas shall be removed and replaced.
3.4.3 3" Base Coring – 1 core per 500 feet shall be taken to verify base thickness. Average of all corings shall meet or exceed plan thickness. Minimum of 1 coring per roadway.
3.4.4 Strength Testing – 1 sample per 500 feet, samples should be tested in accordance with FM-5-520, any samples testing less than 60% of design strength at 7 days should be deemed failed and material represented by sample shall be removed and replaced.
3.4.5 Approval – Upon submission of passing test results the Engineer will approve the base for placement of asphalt surface course. . However base approval may be rescinded if substantial time passes or inclement weather damages the base. The contractor will be required to repair and retest any deterioration and seek re-approval from the Engineer.
4.0 SURFACE COURSE
4.1 Approved Mixes – the following FDOT design mixes maybe used with the listed layer thickness and rules regarding use:
4.1.1. Type S-1 – 1-1/4" to 2-1/2" thick; may not be used as the first course on layers thicker than 3-1/2" total. Construction shall conform to FDOT Specifications for Roads and Bridges 2000 Edition. Testing shall conform to below.
4.1.2. Type S-3 – 3/4" to 1-1/4" thick; only used in top layer, limited to one layer only. Construction shall conform to FDOT Specifications for Roads and Bridges 2000 Edition. Testing shall conform to below.
4.1.3. Superpave Mixes SP-9.5, SP12.5, and SP19.0 as directed in the latest edition of the FDOT Specifications for Roads and Bridges. Testing shall conform to below.
4.2 2" Coring – 1 core per 500 feet shall be taken to verify asphalt thickness. Average of all corings shall meet or exceed plan thickness. Minimum of 1 coring per roadway.
4.3 Density – density testing shall be completed at 1 per 500 feet with a minimum of 3 per roadway. Density shall meet or exceed 98% of provided lab density for the mix used or may be determined using 6" cores to determine lab density.
4.4 Approval – Upon submission of required testing and walk through by the inspector, the engineer shall approve the asphalt surface course. The Contractor shall maintain the roadway through the duration of construction and the maintenance period until final acceptance by the City of Titusville.

5.1. PAVEMENT RESTORATION AND REPAIR
5.2. All areas of roadways in need of repair shall be saw cut and removed at least 12" beyond the edge of the excavation.
5.3. All unsuitable material shall be removed and replaced with suitable base material or flowable fill per construction standards of current FDOT Specifications for Roads and Bridges up to at least 2" below existing asphalt elevation on local streets and 3" on collector or arterials. Base material and subbase material shall be tested in accordance with above requirements.
5.4. For trenching in roadway, all backfill material shall be tested at 6" lifts until base course. Minimum density shall be 98% modified proctor.
5.5. Surface course shall be installed in accordance with FDOT Specifications for Roads and Bridges current edition and tested according to the above requirements.

NOTES:
1. LOCATE DUMPSTER PAD AREA WHERE DUMPSTER IS LIFTED BY SOLID WASTE VEHICLE WHERE THERE ARE NO OVERHEAD WIRES, AWNINGS AND/OR OVERHANGS.
2. PROVIDE VERTICAL CLEARANCE FOR SOLID WASTE VEHICLE DRIVE PATH AND LOADING AREAS. THE MINIMUM VERTICAL CLEAR AREA FOR DRIVE PATH IS 15' FEET. THE MINIMUM VERTICAL CLEAR AREA FOR LOADING OPERATIONS IS 25 FEET.
3. THE DRIVE PATH MUST HAVE A MINIMUM 12 FOOT CLEAR PATH ALONG VEHICLE ENTRANCE AND EXIT ROUTES.
4. THE MINIMUM DRIVE PATH INSIDE RADIUS IS 25 FEET. THIS MUST CLEARLY BE DEMONSTRATED FOR COMPLIANCE ON THE PLAN SET.
5. THE CONTRACTOR IS RESPONSIBLE TO MAKE SURE THAT ALL OVERHEAD CONSTRAINTS MEET THESE REQUIREMENTS. FAILURE TO MEET THESE MINIMUM STANDARDS WILL RESULT IN FIELD CORRECTIVE MEASURES WHICH MAY INCLUDE REMOVAL AND RELOCATION.
6. GATES WHEN OPEN MUST NOT INTERFERE WITH DRIVE PATH OR ANY PARKING SPACES.
7. SEE TRASH ENCLOSURE DETAIL.

TYPICAL	DEPARTMENT OF PUBLIC WORKS	
SOLID WASTE TURNING RADIUS	FIG:	REV: 03/2008
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT: 1 OF 1

City of Titusville
555 South Washington Avenue
Titusville, Florida 32796
PH: (321) 383-5823 Fax: (321) 383-5700

CITY OF TITUSVILLE STANDARD DISCLAIMER FOR SPECIFICATIONS AND DETAIL DRAWINGS

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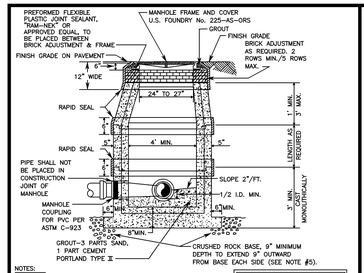
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Any detail that is not required for the specific development that these details have been included in the permit set maybe crossed out on this drawing sheet but may not be removed. No additional detail and or specification may be added to this drawing sheet.

No.	Revision	Date

STANDARD DETAILS AND SPECIFICATIONS

ENGINEERING SERVICES DEPT.	COT SD2
MAY 6, 2009 Date	
N.T.S. Scale	Sheet



NOTES:

1. FOR RESIDENTIAL SEWAGE ALL INTERIOR SURFACES OF THE MANHOLE SHALL BE COATED WITH 2 COATS RED-GRAY ACRYLIC EPOXY CORONADO PAINT 1046 LINE. EACH COAT SHALL HAVE A DRY THICKNESS OF 8 MILS FOR A TOTAL OF 16 MILS DRY.

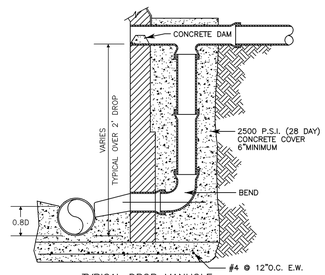
   NOTE: THIS COVERS FOR SANITARY MANHOLES ONLY. SHALL BE LETTERED IN ACCORDANCE WITH SPECIFICATION DETAIL DRAWING WRE #061051.

2. FOR COMMERCIAL OR INDUSTRIAL SEWAGE, FIBERGLASS LINED MANHOLES SHALL BE USED.
3. EXTERIORS OF THE MANHOLE ARE TO BE COATED WITH 2 COATS CONSEAL CS55 OR CITY APPROVED EQUAL. EACH COAT SHALL HAVE A DRY THICKNESS OF 3.8 MILS.
4. PRECAST MANHOLE SECTIONS TO CONFORM TO ASTM C 478 AND C 76 WITH 4000 LB. CONCRETE, TYPE II CEMENT.
5. BASE SECTION OF PRECAST MANHOLE SHALL BE PLACED ON BEDDING ROCK OF 9" MINIMUM DEPTH WITH FILTER FABRIC, FDT-151 SEPARATING THE COMPACTED EARTH FROM THE #57 STONE BEDDING. FILTER FABRIC SHALL BE INSTALLED IN A MANNER THAT FULLY ENCLOSES THE STONE BEDDING AND OVERLAPS NOT LESS THAN 12" AT THE JOINTS. BEDDING ROCK SHALL EXTEND OUTWARD A MINIMUM OF 9" PER SIDE BEYOND THE DIAMETER OF THE MANHOLE BASE. THE FILTER FABRIC IS TO BE PLACED IN SUCH A FASHION AS TO PREVENT EARTH FROM SATURATING THE BEDDING ROCK OVER A PERIOD OF TIME.
6. RAPID SEAL MUST BE USED ON ALL JOINTS, CASTINGS AND RISER RINGS; ON ALL JOINTS ON AIR RELEASES, MANHOLES, GREASE/WATER, OIL/WATER SEPARATORS, AND WETWELLS.
7. RAPID SEAL MUST BE USED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

WRE# 910910

REVISED 04-09 AW
REVISED 02-08 EDA
REVISED 07-07 EDA

STANDARD PRECAST MANHOLE	DEPARTMENT OF WATER RESOURCES	
	DATE: 08-93	EXHIBIT NO.
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1

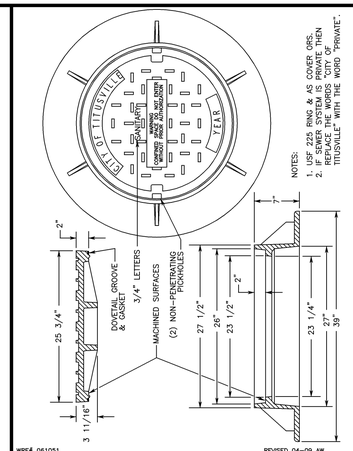


TYPICAL DROP MANHOLE

WRE #050315

REVISED 04-09 AW

TYPICAL DROP MANHOLE DETAIL	DEPARTMENT OF WATER RESOURCES	
	DATE: 03-05	EXHIBIT NO.
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1

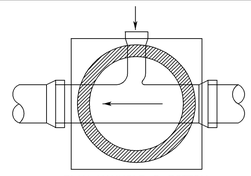


NOTES:
1. USF 225 RING & AS COVER ORS.
2. IF SEWER SYSTEM IS PRIVATE THEN REPLACE THE WORDS "CITY OF TITUSVILLE" WITH THE WORD "PRIVATE".

WRE# 061051

REVISED 04-09 AW

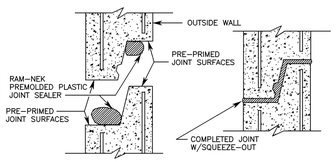
SANITARY SEWER MANHOLE FRAME (RING) & COVER DETAIL	DEPARTMENT OF WATER RESOURCES	
	DATE: 10-06	EXHIBIT NO.
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1



PLAN MANHOLE @ BOTTOM

NOTES: ALL INVERT CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2500 P.S.I.

MANHOLE BASES SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 P.S.I.

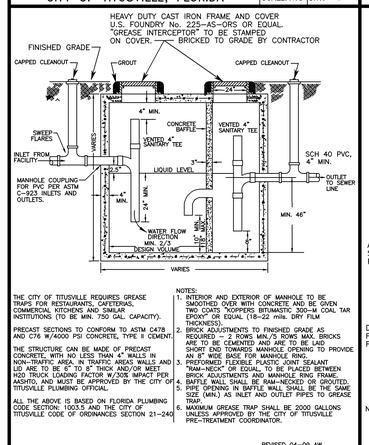


TYPICAL JOINT DETAIL

WRE# 911131

REVISED 04-09 AW
REVISED 02-08 EDA

TYPICAL MANHOLE DETAIL	DEPARTMENT OF WATER RESOURCES	
	DATE: 11-91	EXHIBIT NO.
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1



THE CITY OF TITUSVILLE REQUIRES GREASE TRAPS FOR RESTAURANTS, CAFETERIAS, COMMERCIAL KITCHENS AND SIMILAR INSTITUTIONS (TO BE MIN. 750 GAL. CAPACITY).

PRECAST SECTIONS TO CONFORM TO ASTM C478 AND C76 W/4000 PSI CONCRETE, TYPE II CEMENT.

THE STRUCTURE CAN BE MADE OF PRECAST CONCRETE, WITH NO LESS THAN 4" WALLS IN NON-TRAFFIC AREA. IN TRAFFIC AREAS WALLS AND LID ARE TO BE 6" TO 8" THICK AND/OR MEET H20 TRUCK LOADING FACTOR W/30% IMPACT PER AASHTO, AND MUST BE APPROVED BY THE CITY OF TITUSVILLE PLUMBING OFFICIAL.

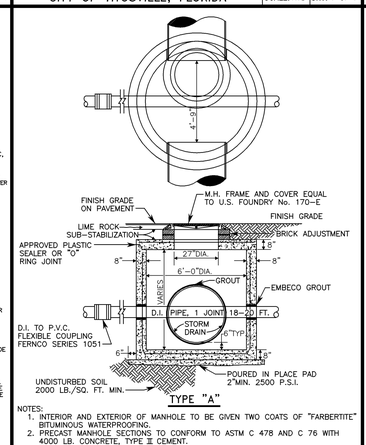
ALL THE ABOVE IS BASED ON FLORIDA PLUMBING CODE SECTION 1003.5 AND THE CITY OF TITUSVILLE CODE OF ORDINANCES SECTION 21-240

NOTES:
1. INTERIOR AND EXTERIOR OF MANHOLE TO BE SMOOTHED OVER WITH CONCRETE AND BE GIVEN TWO COATS "KOPPERS BITUMASTIC 300-M COAL TAR EPOXY" OR EQUAL (18-22 mils. DRY FILM THICKNESS).
2. BRICK ADJUSTMENTS TO FINISHED GRADE AS REQUIRED - 2 ROWS MIN./5 ROWS MAX. BRICKS ARE TO BE CEMENTED AND ARE TO BE LAID ON 90° KNEE (HEADERS) MANHOLE BEHIND TO PROVIDE AN 8" WIDE SUPPORTING SHOULDER.
3. PREFORMED FLEXIBLE PLASTIC JOINT SEALANT "RAM-NECK" OR EQUAL, TO BE PLACED BETWEEN BRICK ADJUSTMENTS AND MANHOLE RING FRAME.
4. BAFFLE WALL SHALL BE RAM-NECKED OR GROUTED.
5. PIPE OPENING IN BAFFLE WALL SHALL BE THE SAME SIZE (MIN.) AS INLET AND OUTLET PIPES TO GREASE TRAP.
6. MAXIMUM GREASE TRAP SHALL BE 2000 GALLONS UNLESS APPROVED BY THE CITY OF TITUSVILLE PRE-TREATMENT COORDINATOR.

WRE# 010418

REVISED 04-09 AW
REVISED 12-08 EDA

TYPICAL SECTION THROUGH GREASE INTERCEPTOR	DEPARTMENT OF WATER RESOURCES	
	DATE: 04-02	EXHIBIT NO.
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1



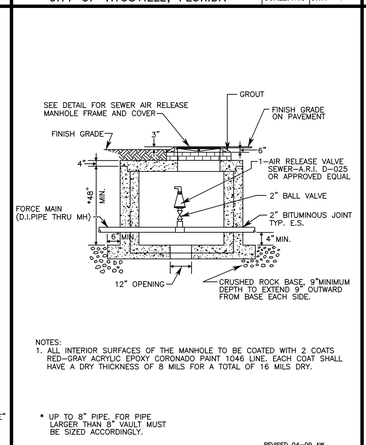
TYPE "A"

NOTES:
1. INTERIOR AND EXTERIOR OF MANHOLE TO BE GIVEN TWO COATS OF "FARBERITE" BITUMINOUS WATERPROOFING.
2. PRECAST MANHOLE SECTIONS TO CONFORM TO ASTM C 478 AND C 76 WITH 4000 LB. CONCRETE, TYPE II CEMENT.

WRE# 911030

REVISED 04-09 AW

J.B. INTERSECTING SANITARY & STORM SEWERS	DEPARTMENT OF WATER RESOURCES	
	DATE: 10-91	EXHIBIT NO.
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1



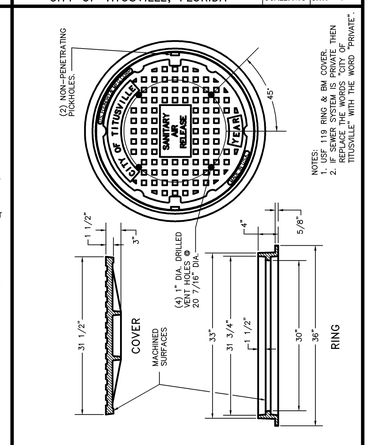
NOTES:
1. ALL INTERIOR SURFACES OF THE MANHOLE TO BE COATED WITH 2 COATS RED-GRAY ACRYLIC EPOXY CORONADO PAINT 1046 LINE. EACH COAT SHALL HAVE A DRY THICKNESS OF 8 MILS FOR A TOTAL OF 16 MILS DRY.

* UP TO 8" PIPE, FOR PIPE LARGER THAN 8" VAULT MUST BE SIZED ACCORDINGLY.

WRE# 060428

REVISED 04-09 AW
REVISED 12-08 EDA

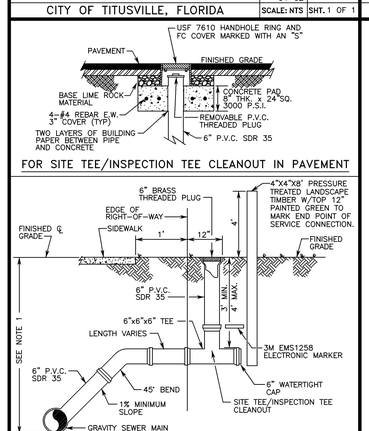
TYPICAL SEWER AIR RELEASE VALVE MANHOLE	DEPARTMENT OF WATER RESOURCES	
	DATE: 04-06	EXHIBIT NO.
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1



WRE# 080206

REVISED 04-09 AW

SANITARY SEWER AIR RELEASE MANHOLE FRAME (RING) & COVER DETAIL	DEPARTMENT OF WATER RESOURCES	
	DATE: 02-08	EXHIBIT NO.
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1

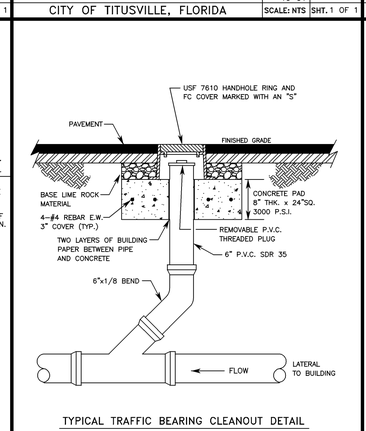


NOTE:
1. SEE CITY OF TITUSVILLE SPECIFICATIONS FOR MIN./MAX. DEPTH OF GRAVITY MAIN.

WRE# 080102

REVISED 08-09 AW
REVISED 02-08 EDA

TYPICAL SEWER SERVICE CONNECTION	DEPARTMENT OF WATER RESOURCES	
	DATE: 01-08	EXHIBIT NO.
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1

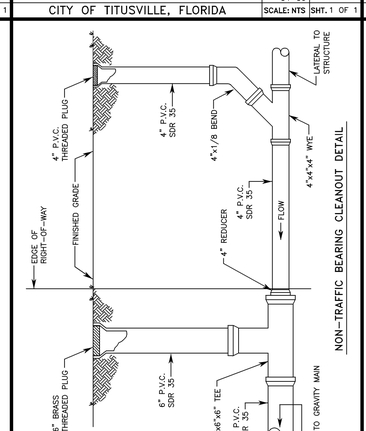


TYPICAL TRAFFIC BEARING CLEANOUT DETAIL

WRE# 050629

REVISED 04-09 AW

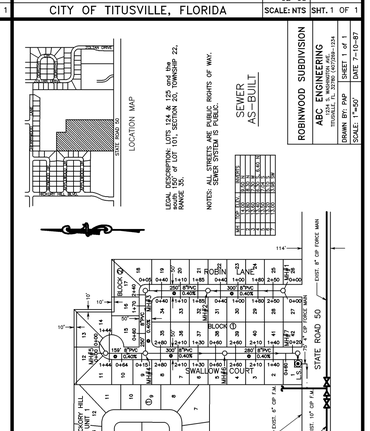
TYPICAL TRAFFIC BEARING CLEANOUT DETAIL	DEPARTMENT OF WATER RESOURCES	
	DATE: 06-05	EXHIBIT NO.
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1



WRE# 061254

REVISED 04-09 AW

TYPICAL NON-TRAFFIC BEARING CLEANOUT	DEPARTMENT OF WATER RESOURCES	
	DATE: 10-91	EXHIBIT NO.
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1



WRE# 911137

REVISED 04-09 AW
REVISED 10-08 WLC
REVISED 03-91 EDA

SANITARY SEWER AS-BUILT SAMPLE	DEPARTMENT OF WATER RESOURCES	
	DATE: 11-91	EXHIBIT NO.
CITY OF TITUSVILLE, FLORIDA	SCALE: NTS	SHT. 1 OF 1

City of Titusville
555 South Washington Avenue
Titusville, Florida 32796
PH: (321) 383-5823 Fax: (321) 383-5700

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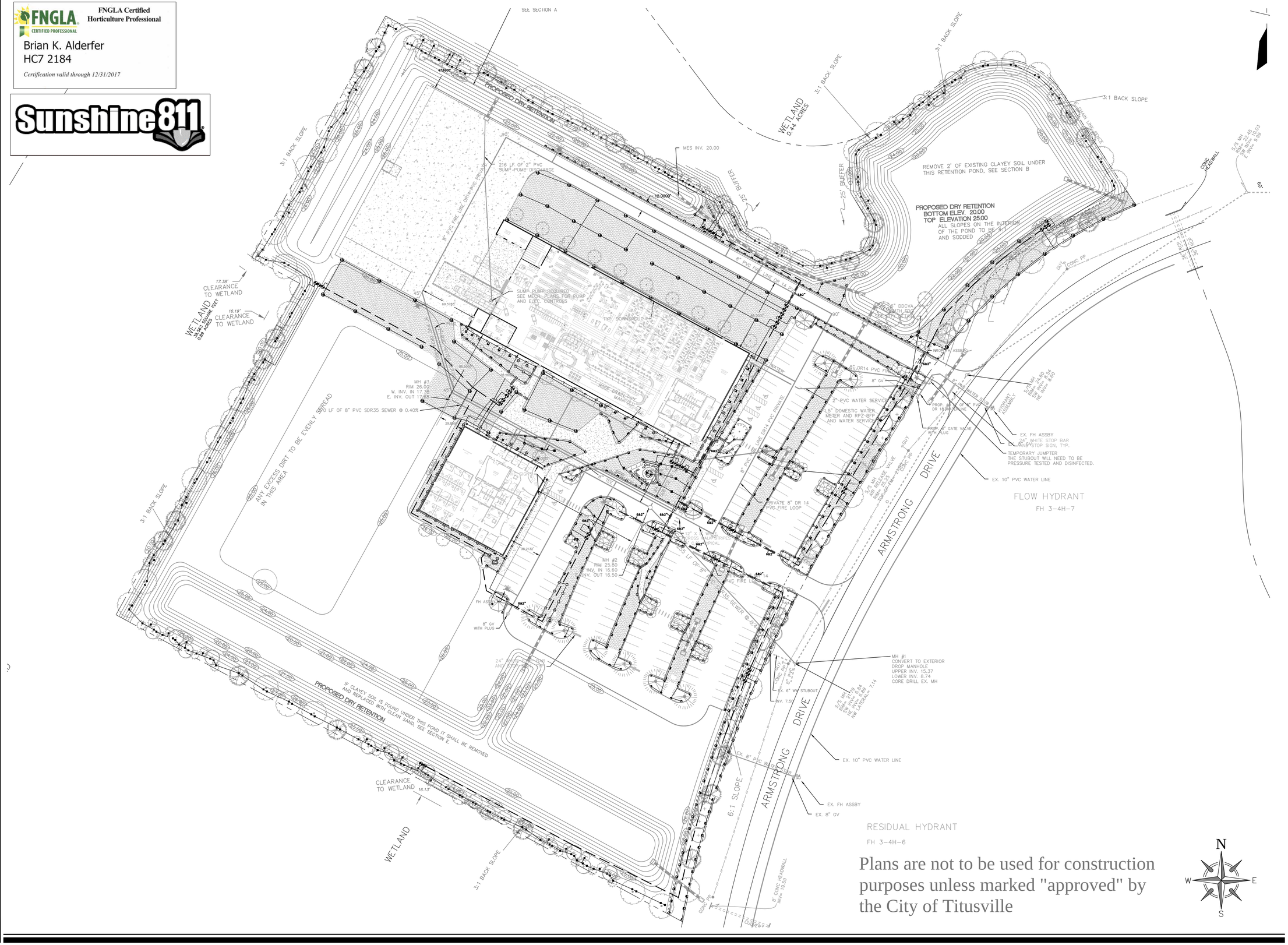
No.	Revision	Date

SANITARY SEWER DETAILS AND SPECIFICATIONS

WATER RESOURCES	DEPT.	COT SS1
July 2009	DATE	
N.T.S.	SCALE	SHEET

FNGLA CERTIFIED PROFESSIONAL
FNGLA Certified
Horticulture Professional
Brian K. Alderfer
HC7 2184
Certification valid through 12/31/2017

Sunshine811



Plans are not to be used for construction purposes unless marked "approved" by the City of Titusville

Environmental Design Services
Landscape and Irrigation Design and Consulting
141 East Dover Street
Satellite Beach, Fl. 32937
Phone: (321) 288-6143
Fax: (321) 779-9953

Original Drawing
Issue Date: 12-2-15

REVISIONS:

No.	Date	Description	By
1.	2-5-16	Per updated base info.	BKA
2.			
3.			
4.			
5.			
6.			
7.			

Project:

Embraer

Location:

Titusville, Florida

Overall Irrigation Plan

This Drawing and The Designs Represented Herein are The Exclusive Property of Environmental Design Services, and May Not Be Reproduced, Used, or Disseminated Without Written Permission.

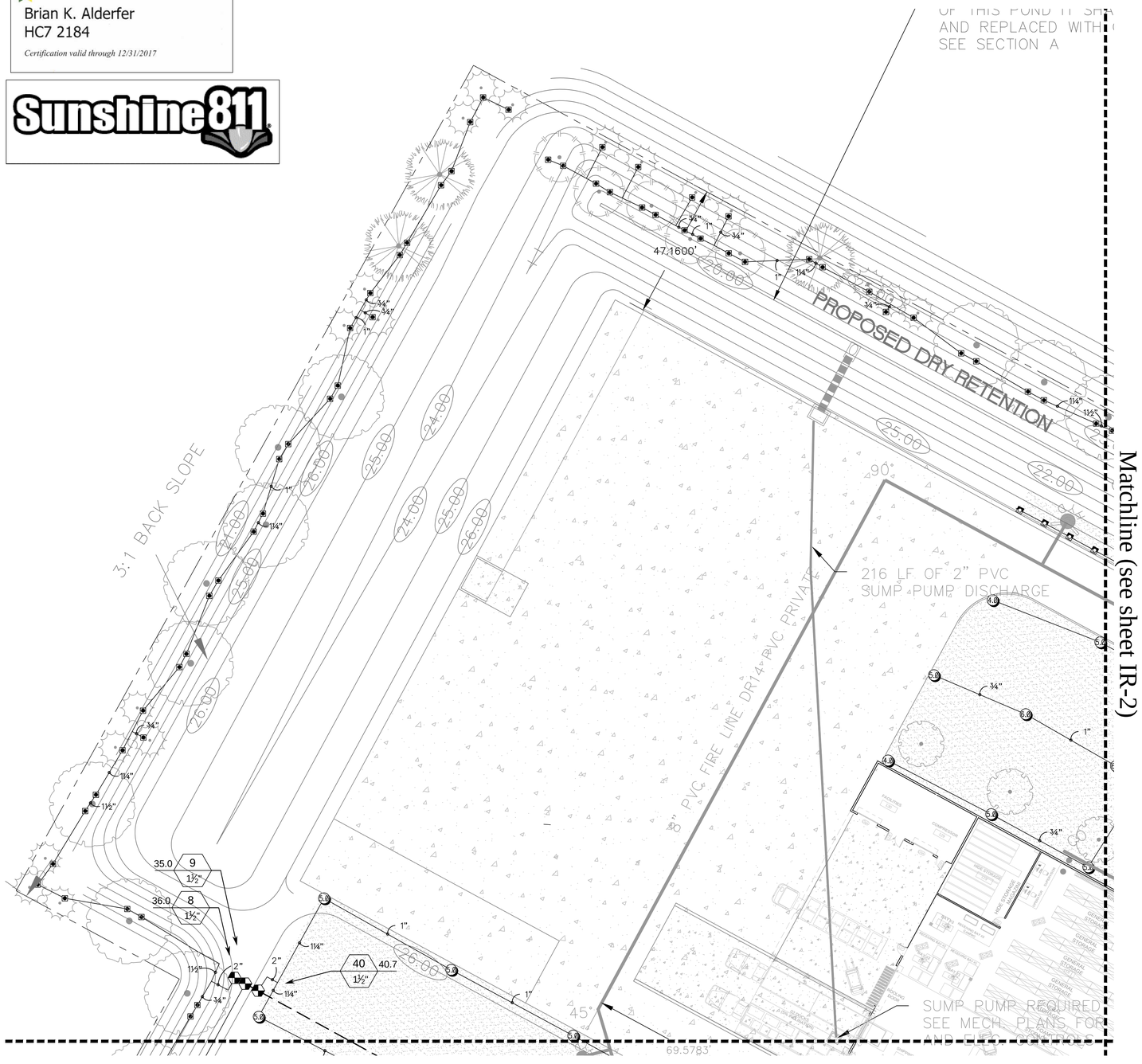
Sheet #:
IR-1

Project No.	00-0000
Drawn By:	BKA
Designed By:	BKA
Checked By:	BKA
Drawing Scale:	1"=50'

Sheet 1 of 9

FNGLA Certified
Horticulture Professional
Brian K. Alderfer
HC7 2184
Certification valid through 12/31/2017

Sunshine811



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
EST LCS RCS CST SST	Rain Bird 1806-PRS 15 Strip Series Turf Spray 6.0" Pop-Up Sprinkler	33	30
Q T H F	Rain Bird 1806-PRS 8 Series MPR Turf Spray 6.0" Pop-Up Sprinkler	32	30
Q T H F	Rain Bird 1806-PRS 10 Series MPR Turf Spray 6.0" Pop-Up Sprinkler	67	30
Q T H TQ F	Rain Bird 1806-PRS 12 Series MPR Turf Spray 6.0" Pop-Up Sprinkler	84	30
Q T H TQ F	Rain Bird 1806-PRS 15 Series MPR Turf Spray 6.0" Pop-Up Sprinkler	261	30
EST LCS RCS CST SST	Rain Bird 1812-PRS 15 Strip Series Shrub Spray 12.0" Pop-Up Sprinkler	51	30
Q T H F	Rain Bird 1812-PRS 8 Series MPR Shrub Spray 12.0" Pop-Up Sprinkler	39	30
Q T H F	Rain Bird 1812-PRS 10 Series MPR Shrub Spray 12.0" Pop-Up Sprinkler	22	30
Q T H TQ F	Rain Bird 1812-PRS 12 Series MPR Shrub Spray 12.0" Pop-Up Sprinkler	44	30
Q T H TQ F	Rain Bird 1812-PRS 15 Series MPR Shrub Spray 12.0" Pop-Up Sprinkler	78	30
25 50 10 20	Hunter PCB Flood Bubbler, 1/2" FIPT.	250	30

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI	GPM	RADIUS
4.0	Rain Bird 5004-PC, FC Turf Rotor, 4.0" Pop-Up, Plastic Riser. Adjustable and Full Circle. Standard Angle Nozzle.	14	45	4.01	42'
5.0	Rain Bird 5004-PC, FC Turf Rotor, 4.0" Pop-Up, Plastic Riser. Adjustable and Full Circle. Standard Angle Nozzle.	44	45	5.09	45'
6.0	Rain Bird 5004-PC, FC Turf Rotor, 4.0" Pop-Up, Plastic Riser. Adjustable and Full Circle. Standard Angle Nozzle.	10	45	6.01	46'

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	Rain Bird PEB 1", 1-1/2", 2" Plastic Industrial Valves. Low Flow Operating Capability, Globe Configuration.	40
C	Rain Bird ESP40MC 40 Station Commercial Controller. Mounted on a Plastic Wall Mount.	1
RS	Rain Bird RSD-BEx Rain Sensor, with metal latching bracket, extension wire.	1
POC	Pump and Well Pump and well capable of providing 50 g.p.m. at an operating pressure of 45 p.s.i. Pump to include all necessary housing, and isolation valves. Contractor to provide line item cost to provide and install a chemical injection system to remove iron from the well water. Contractor to advise the owner if the equipment is necessary once the well in installed and tested.	1
	Irrigation Lateral Line: PVC Class 200 SDR 21 PVC Class 200 irrigation pipe.	14,927 l.f.
	Irrigation Mainline: 2.5" PVC Class 200 SDR 21 PVC Class 200 irrigation pipe.	3,007 l.f.
	Pipe Sleeve: PVC Schedule 40 Typical pipe sleeve for irrigation pipe. Pipe sleeve size shall allow for irrigation piping and their related couplings to easily slide through sleeving material. Extend sleeves 18 inches beyond edges of paving or construction.	494.3 l.f.

Valve Callout
Valve Number
Valve Flow
Valve Size

NOTES:

CONTRACTOR RESPONSIBLE FOR THEIR OWN TAKE-OFFS

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Phone: (321) 288-6143
Fax: (321) 779-9953

Original Drawing Issue Date: 12-2-15

REVISIONS:

No.	Date	Description	By
1.	2-5-16	Per updated base info.	BKA
2.			
3.			
4.			
5.			
6.			
7.			

Project:

Embraer

Location:

Titusville, Florida

Irrigation Plan

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Sheet #: IR-2

Project No.	00-0000
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Designed By:	BKA
Checked By:	BKA
Drawing Scale:	1"=20'
Sheet	2 of 9

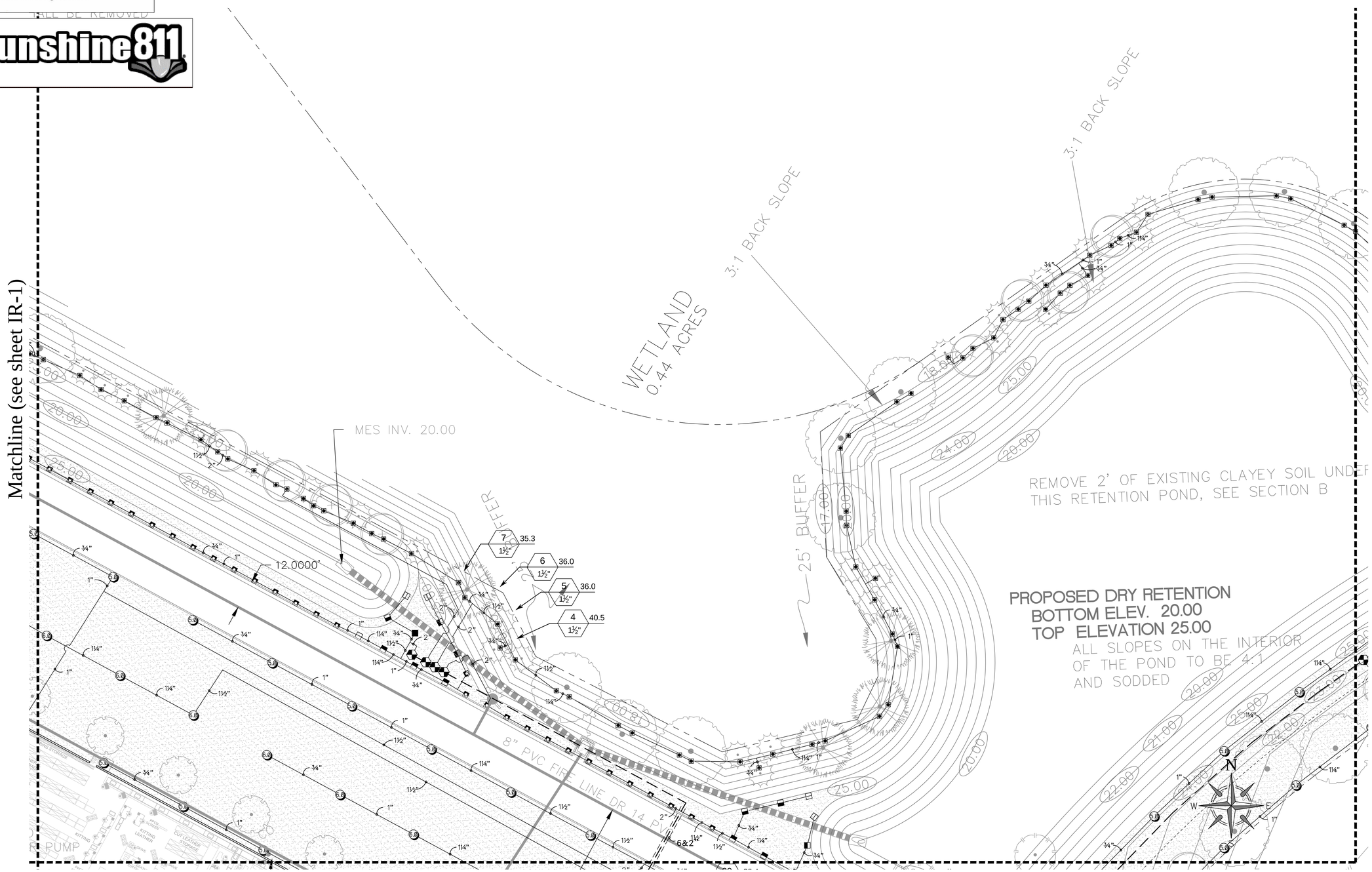
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Brian K. Alderfer
HC7 2184

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Sheet #:

IR-3

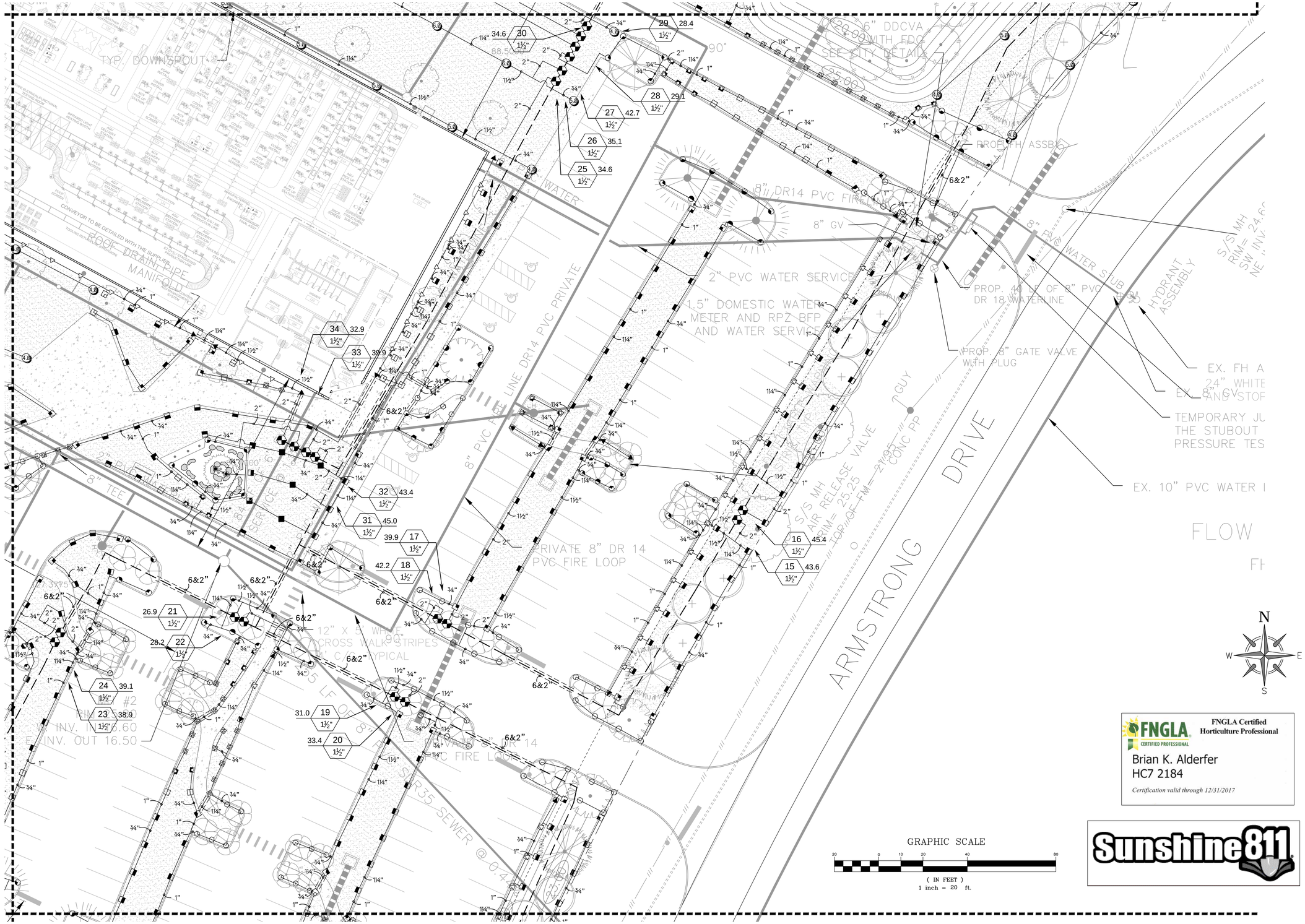
Project No.	00-0000
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Designed By:	BKA
Checked By:	BKA
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Sheet 3 of 9

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Matchline (see sheet IR-2)

Matchline (see sheet IR-4)



Matchline (see sheet IR-6)

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

N

W E

S

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Sheet #: IR-4

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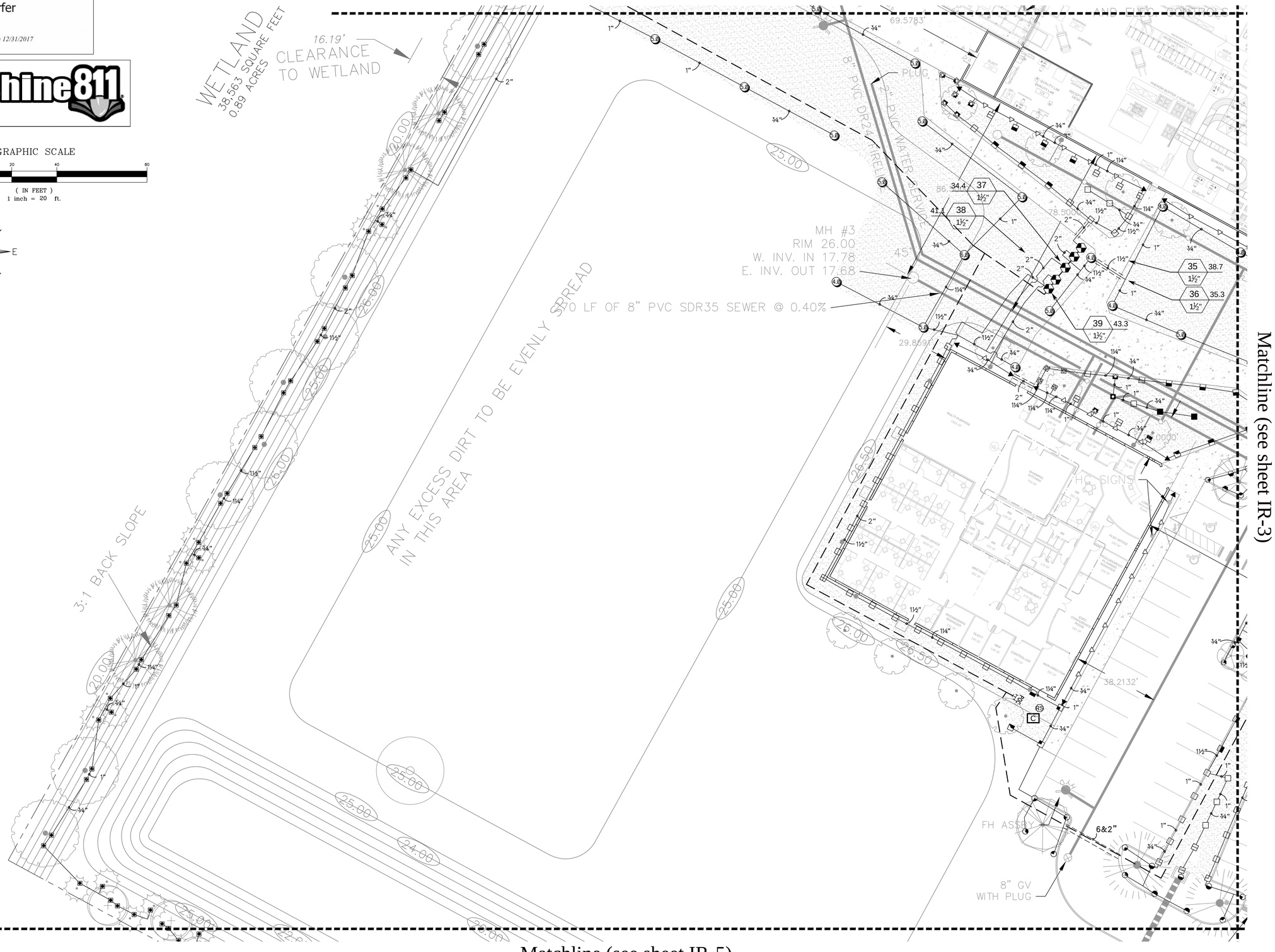
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GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

N W E S

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Matchline (see sheet IR-1)



Matchline (see sheet IR-3)

Matchline (see sheet IR-5)

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Location:

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Sheet #:

IR-5

Project No.	00-0000
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Checked By:	BKA
Drawing Scale:	1"=20'

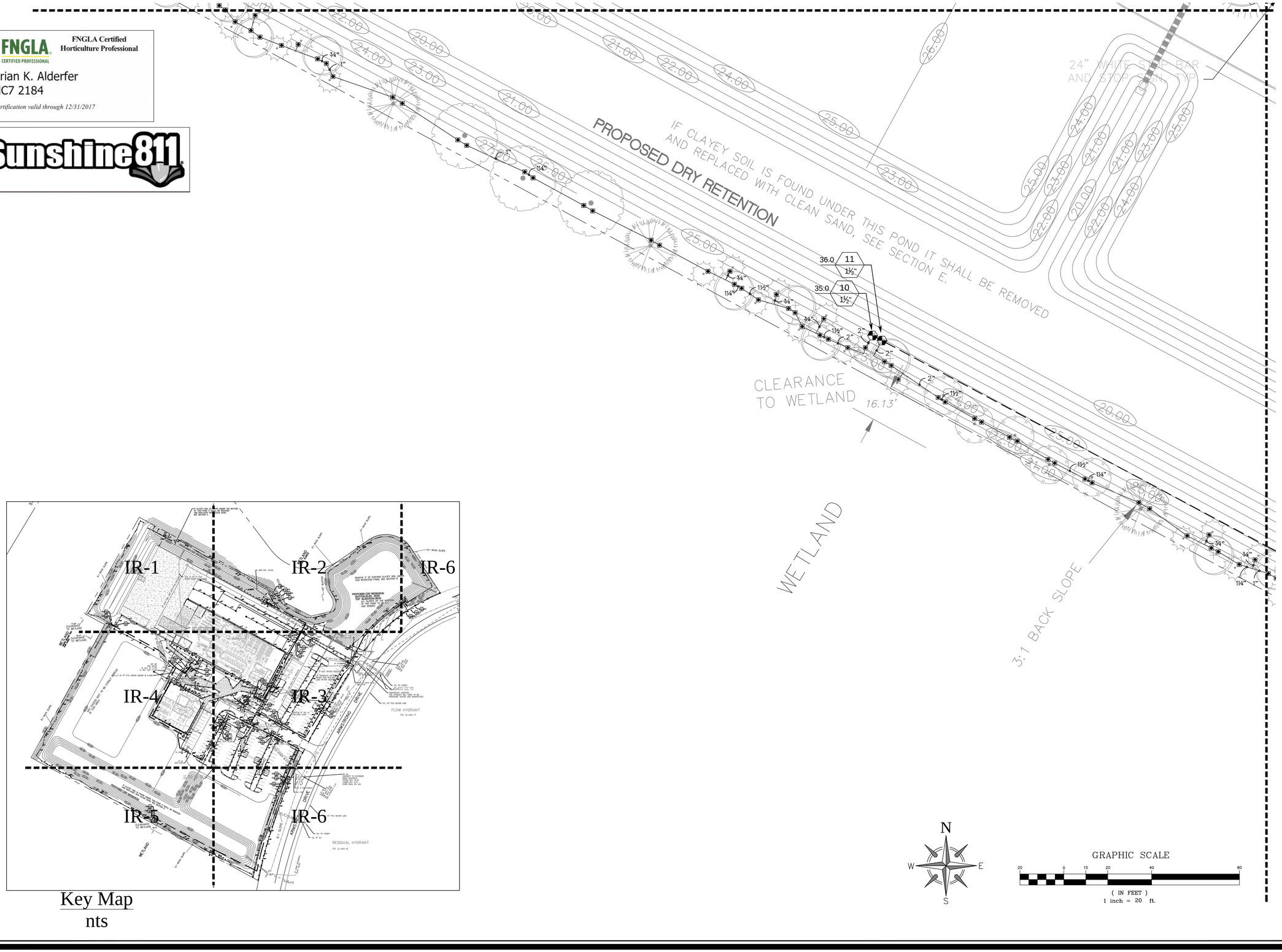
Sheet 5 of 9

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Matchline (see sheet IR-1)

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Key Map
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N
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GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

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Irrigation Plan

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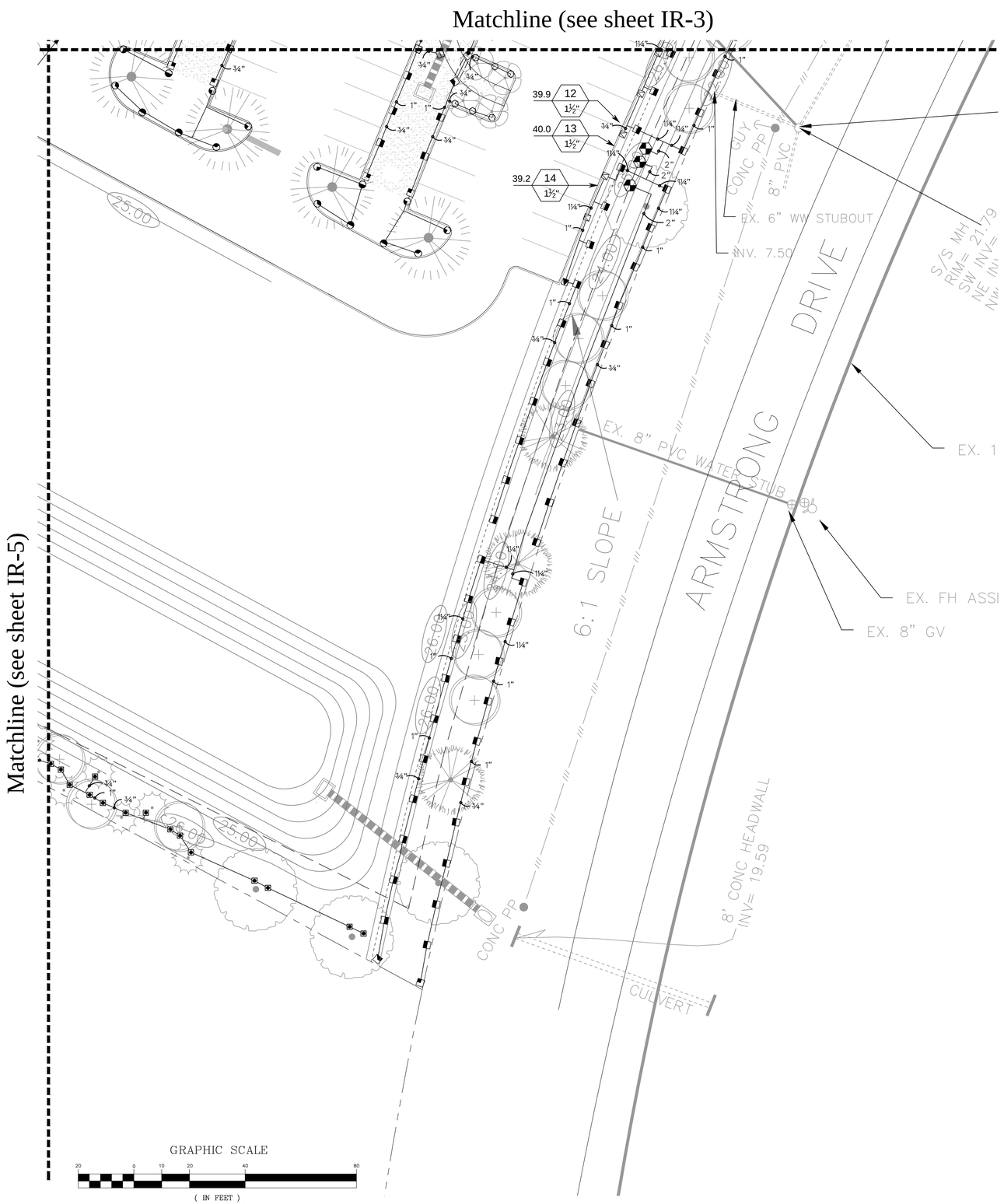
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Project No.	00-0000
Drawn By:	BKA
Designed By:	BKA
Checked By:	BKA
Drawing Scale:	1"=20'

Sheet 6 of 9

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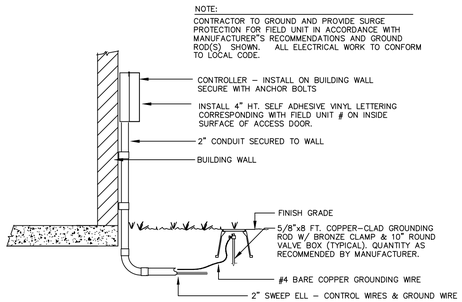
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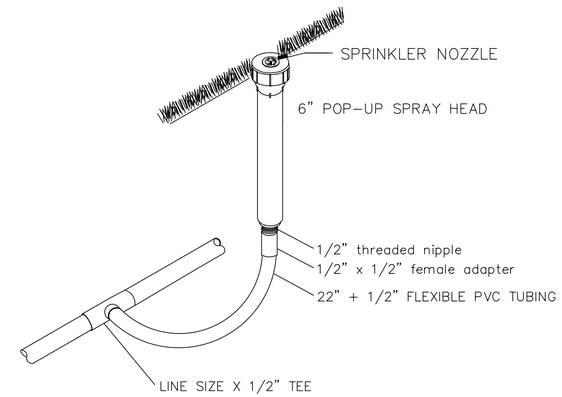
Project No.	00-0000
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Drawing Scale:	1"=20'

Sheet 7 of 9



OUTDOOR CONTROLLER MOUNTING DETAIL

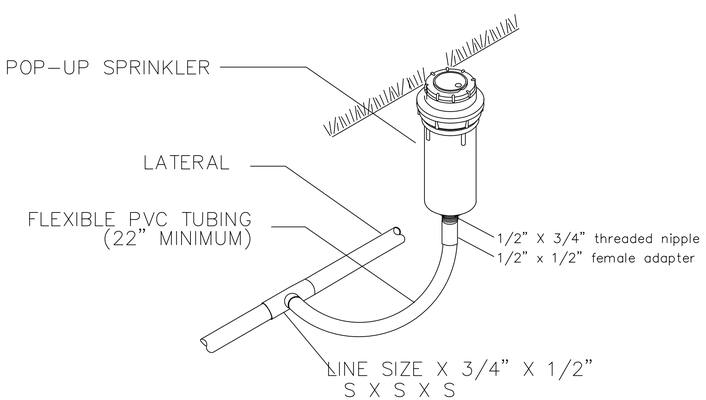
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ISOMETRIC

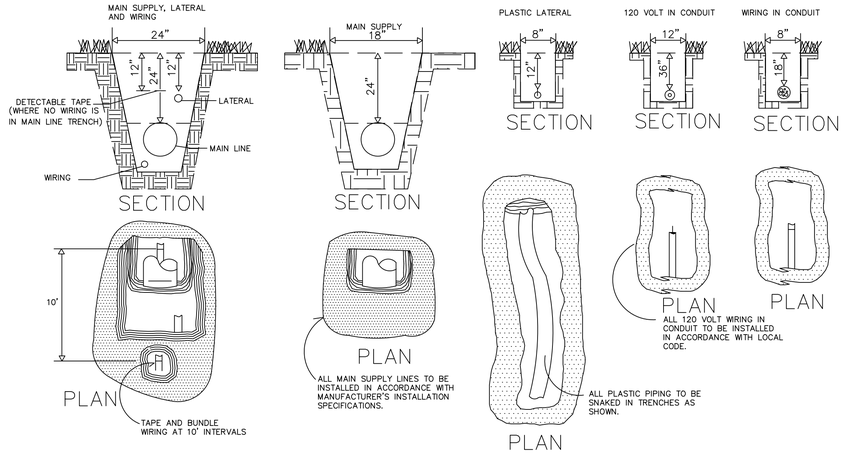
6" SPRAY HEAD DETAIL

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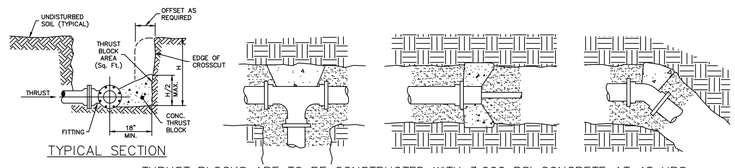
ROTOR HEAD DETAIL

SCALE: N.T.S.



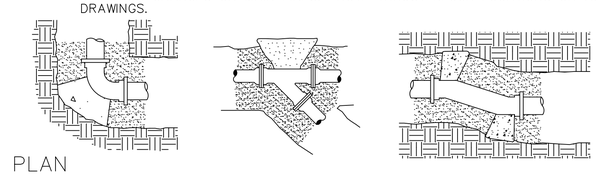
TYPICAL TRENCHING DETAILS

SCALE: N.T.S.



TYPICAL SECTION

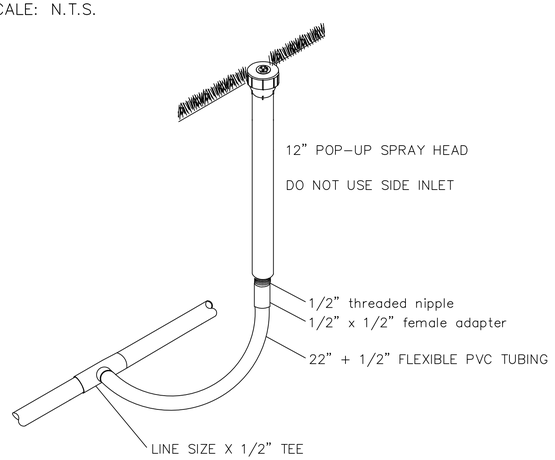
THRUST BLOCKS ARE TO BE CONSTRUCTED WITH 3,000 PSI CONCRETE AT 48 HRS. STEEL REINFORCING RODS WILL BE REQ'D IF SURROUNDING SOIL HAS A BEARING VALUE OF LESS THAN 2,000 PSF. THRUST BLOCKS REQUIRED AT ALL FITTINGS AND DIRECTION CHANGES ON MAIN LINES. NOTE THRUST BLOCK LOCATIONS ON AS-BUILT DRAWINGS.



PLAN

TYPICAL THRUST BLOCK DETAIL

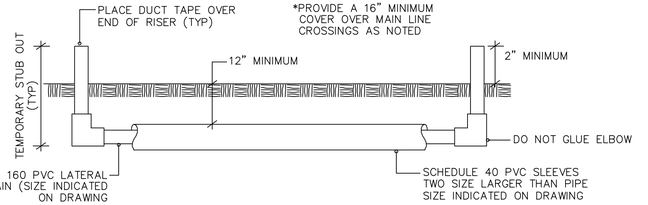
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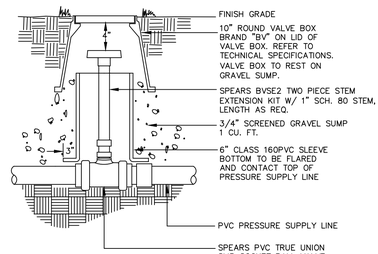
12" SPRAY HEAD DETAIL

SCALE: N.T.S.



SLEEVE DETAIL

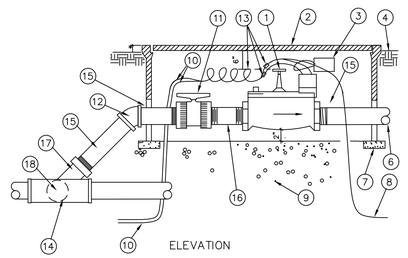
SCALE: N.T.S.



NOTE:
STEM EXTENSION KIT TO BE USED ONLY WHEN BALL VALVE IS GREATER THAN 24" BELOW FINISH GRADE.

ISOLATION BALL VALVE

SCALE: N.T.S.



NOTE: INSTALL WILKINS # 500 PRESSURE REGULATING VALVE DOWN STREAM OF ALL ELECTRIC CONTROL VALVES WITH FLOWS LESS THAN 20 GPM. PRV SHALL BE SAME SIZE AS ELECTRIC CONTROL VALVE. NOT REQUIRED FOR DRIP VALVES.

ELEVATION

CONTROL VALVE DETAIL

SCALE: N.T.S.

LEGEND

1. ELECTRIC CONTROL VALVE.
2. RECTANGULAR VALVE BOX W/PURPLE BOLT DOWN COVER.
3. CHRISTY'S I.D.TAG – NUMBERED TO MATCH DRAWINGS.
4. FINISH GRADE.
5. PVC. MALE ADAPTER
6. PVC PIPE TO SPRINKLERS. ANGLE PIPE TO SPECIFIED DEPTH WITH 45° ELLS.
7. COMMON BRICK (4 MINIMUM REQUIRED).
8. COMMON WIRE TO OTHER TO OTHER VALVES ON SAME FIELD SATELLITE.
9. CHATAHOOCHEE RIVER WASHED STONE 8" DEEP.
10. CONTROL/COMMON WIRES FROM FIELD SATELLITE.
11. KING BROS. BTU TRUE UNION SERIES PVC BALL VALVE WITH FEMALE THREADED ENDS.
12. PVC SCH. 40 SxS 45 DEG. ELL.
13. WIRE CONNECTOR AND 30" EXPANSION LOOP IN 1" DIA. COIL.
14. HARCO D.I.P. SERVICE TEE
15. PVC SCHEDULE 80 TOE NIPPLE. (INSTALL LENGTH AS NECESSARY FOR CORRECT INSTALLATION DIMENSIONS)
16. PVC SCHEDULE 80 NIPPLE.
17. PVC SCHEDULE 80 FPT X FPT 90 DEG. ELL
18. PVC SCHEDULE 80 CLOSE NIPPLE (NOT SHOWN)

TRUST BLOCK NOTES

1. Thrust block bearing areas shall be poured against undisturbed material. Where trench wall has been disturbed, excavate all loose material and extend to undisturbed material.
2. Extend thrust block for full length of fittings. Put board in front of plug before pouring concrete. Joints shall not be covered by thrust block.
3. Rough blocking forms shall be used along sides of thrust blocks.
4. Thrust blocks shall be used in combination, as required, to suit the specific fitting arrangement.
5. Alternate designed restraining systems shall be provided where standard thrust blocking is not suitable.
6. All wood blocking shall be pressure treated with preservative.
7. Install a plastic bearier (Visquine) between fittings and thrust block.

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Project:

Embraer

Location:

Titusville, Florida

Irrigation Details

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IR-8

Project No.	00-0000
Drawn By:	BKA
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Drawing Scale:	none

Sheet 8 of 9

SECTION 2B – IRRIGATION SYSTEM

PART 1 – GENERAL

1. DESCRIPTION OF WORK
   A. Work included: This Section is part of the entire set of contract documents and shall be coordinated with the applicable provisions of the other parts.

   B. The extent of landscape irrigation system is shown on the drawings. Completion of this work shall mean full and exact compliance and conformity with the provisions expressed or implied in the drawings, schedules and specifications. Irrigation installer is not relieved of his responsibility to provide proper irrigation coverage by providing full and exact compliance with the drawings and specifications. If field conditions or other unforeseen factors warrant that design modifications are necessary, irrigation installer shall notify Landscape Architect immediately.

   C. The work under this section includes furnishing and installing materials to construct an automatic irrigation system and maintaining that system until final completion and acceptance, but not less than 30 days from date of installation, and any other work as called for on the plans and in these specifications.

2. RELATED WORK
   A. Electrical service to pump and controller shall be provided by others under separate contract with Owner, in compliance with N.E.C. requirements.
   B. Site work (rough grading).
   C. Landscaping (see landscape specifications).

3. QUALITY ASSURANCE
   A. Landscape irrigation system installation shall only be performed by a firm that is regularly engaged full time in the installation of underground landscape irrigation systems. (Crews shall be controlled and directed by a foreman who is thoroughly familiar with the type of materials being installed and the manufacturer's recommended methods of installation, and is well versed in reading blueprints.)

   B. Design modifications may be made only as necessary to meet field conditions and only as acceptable to Landscape Architect. Piping shown on plans is diagrammatically routed for clarity – route to avoid conflict with specimen plants and adjust as necessary to accommodate landscape construction.

   C. Contractor shall be responsible for verification at the site of all conditions and dimensions shown on the plans prior to commencement of work.

   D. CODES AND STANDARDS: Work shall comply with the American Society for Testing and Materials (ASTM) and National Electrical Code.

   E. REQUIREMENTS OF REGULATORY AGENCIES: Work shall comply with codes, ordinances, and regulations of all governing authorities

   F. WATER TESTING: Contractor shall test the salt content (chlorides and t.d.s) of the irrigation well.

4. PRODUCT HANDLING: The Contractor shall protect all materials and work against injury from any cause and shall provide and maintain all necessary safeguards for the protection of the public. He shall be liable for any damage or injury to person or property which may occur as a result of his negligence in the prosecution of the work.

5. JOB CONDITIONS
   A. EXISTING CONDITIONS
      1. Inspection: Contractor must examine the areas and conditions under which landscape irrigation system is to be installed and notify the Landscape Architect in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected. Contractor shall fully acquaint himself with related planting, electrical, paving, site and utilities work to preclude any misunderstanding and to facilitate a trouble–free installation at the site.

      2. Should any objectionable materials such as old concrete, bricks or other debris be encountered during the installation operation, they shall be removed from the site by the Contractor.

   B. SCHEDULING
      1. Crossings under paved areas as indicated, shall be installed by the Contractor. Crossings shall be installed prior to compaction of subgrade.

      2. Irrigation installation shall not begin until rough grades have been established.

      3. Contractor shall be responsible for coordinating his work with all other parties involved with the job, and shall coordinate the supply of electrical power to the timing device (controller).

      4. Upon substantial completion of work, the Contractor shall request a walk–through by the Landscape Architect to formulate a "punch list". Contractor shall complete "punch list" items as quickly as possible, and request another walk–through to verify completion. Upon successful completion of the "punch list" items, the work will be accepted by the Owner.

   C. The contractor is responsible for his own bathroom and drinking facilities.

6 UTILITIES
   A. Prior to excavation, verify in the field the location and depth of all new and existing utilities and take proper precautions not to damage or disturb such utilities.

   B. Repair to original condition, new and existing utilities and other work damaged by Contractor's construction.

   C. In the case of damages to the irrigation system caused by others, the cost of repairing the work shall be paid by the party causing said damage.

7. SUBMITTALS
   A. After completion of piping installation, Contractor shall furnish the Owner's representative a reproducible "as built" drawing showing all sprinkler heads, valves, and pipelines to reasonable scale, and provide a minimum of two dimensions taken from fixed obvious objects to each automatic control valve, and quick coupling valve. The Contractor shall also furnish a drawing showing a graphic representation of sprinkler zones.

   B. Instruction sheets and parts lists covering all operating equipment shall be bound into a folder and furnished to the Owner's representative or Landscape Architect in two (2) copies. The Owner reserves the right to withhold 10% of the contract amount until the "as built" drawings and instructions and parts lists folders are received.

8. GUARANTEE
   A. Guarantee workmanship for a period of one year after date of final acceptance. In addition, see to the fulfillment of all manufacturer's warranties.

   B. The Contractor shall provide the Owner with a written guarantee stating everything to be covered and any special conditions involved.

PART 2 – PRODUCTS

MATERIALS: Materials and equipment shall be new and shall operate at the manufacturer's published capacities.

1. PIPE: Comply with the following unless otherwise indicated: All PVC pipe shall be 160 PSI, Polyvinyl Chloride (PVC 1120) ASTM–D2241, Type 1, NSF approved.

2. CROSSINGS: Comply with the following: All crossings under paved areas for water and conduit lines shall be Schedule 40 PVC, ASTM–D1785. All crossings located in F.D.O.T. Rights of Ways shall be installed at a depth of no less than the ten times the diameter of the pipe size

3. PIPE FITTINGS: Comply with the following: For PVC plastic pipe, ASTM–D2466 socket fittings with ASTM–A2564 solvent cement.

4. SPRINKLER HEADS: Sprinkler heads shall be of the type shown on the drawings. Filter screens shall be included with all spray heads.

5. RISERS AND SWING JOINTS:
   A. Risers and swing joints shall be as detailed on the drawings.
   B. Risers for shrub heads shall be Schedule 40 PVC pipe
   C. PVC Flex connections: Shall be Ag–Products heavy walled flexible PVC pipe or equal. Average length of each connection is referred to on the drawings. Special flex cement shall be utilized for making these connections.

6. REMOTE CONTROL VALVES: Valves shall be as specified on the drawings. Use Teflon tape only on threaded connections.

7. VALVE BOXES: Valve boxes shall be Ametek VP–10 or approved equal. Install flush with finish grade as indicated on drawing.

8. CONTROL WIRING: All wiring to automatic circuit valves shall be UF–14 direct burial wire of a different color than the black and white wires used on the 115 volt A.C. power. Wiring from the controller to the valves shall be installed in same trench as the mainline where possible. All splices shall be made with Rain Bird snap–tite connectors, or approved equal. All wire shall be furnished in minimum 2,500' reels and spliced only at valve or tee locations.

9. CONTROLLER: Controller shall be as specified on the drawings.

10. PUMP: Shall be a centrifugal, high head type as specified on the drawings.

11. STRAINER: Shall be by Vu Flo, or approved equal

PART 3 – EXECUTION

1. GENERAL: The Contractor shall be responsible for full and complete coverage of all irrigated areas and shall make any necessary adjustments at no additional cost to the Owner.

2. INSTALLATION

   A. EXCAVATING AND TRENCHING:

      1. Perform all excavations as required for the installation of the work included under this section, including shoring of earth banks to prevent cave–ins. Restore all surfaces, existing underground installations, etc., damaged or cut as a result of the excavations to their original conditions.

      2. Trenches shall be made wide enough to allow a minimum of 2 inches between parallel pipe lines. The minimum vertical clearance between lines crossing at angles greater than 45 degrees is 1 inch. Trenches for pipe lines shall be made of sufficient depth to provide the minimum cover from finish grade as follows:

         a. 16 in. minimum cover over main lines.
         b. 16 in. minimum cover over control wires

      3. Where possible, install pipe adjacent to curbs or paving to minimize interference with plants and their roots. Coordinate with landscape installer regarding proposed plant material locations.

      4. Keep trenches free of obstruction and debris that could tend to damage pipe and control wires. Remove excess soil from the site and leave grade as it was prior to sprinkler system installation. Piping shall be routed around shrubs, trees and other permanent obstacles.

   B. PIPE LINE ASSEMBLY

      1. Install plastic pipe as recommended by the manufacturer and provide for expansion and contraction. Cut plastic pipe square. Remove burrs at cut ends prior to installation so that a smooth unobstructed flow will be obtained.

      2. Install remote control valves at locations no closer than 12 inches to walk edges, buildings, and walls. Plastic pipe and fittings shall be solvent welded using solvents and methods as recommended by manufacturer of the pipe, except where screwed connections are required. Pipe and fittings shall be thoroughly cleaned of dirt, dust and moisture before applying solvent with a nonsynthetic bristle brush. Care should be taken not to use an excess amount of solvent, thereby causing a burr or obstruction to form on the inside of the pipe. Allow the joints to set at least 24 hours before applying pressure on PVC pipe. Do not use PVC cement which has begun to gel. Do not attempt to make pipe connections during inclement weather conditions.

   C. SPRINKLER HEADS: Large gear–driven rotary type shall be installed so that the top is slightly above finish grade. If finish grade has not been established, set the top four inches above grade and lower when finish grade has been achieved. Sprinklers on risers shall be set at elevations so that there is no interruption of the stream from the sprinkler nozzle caused by plant material during the first growing season (1 year from date of installation). Heads along curbs and walks shall be set flush to within 1/8 inch and two to four inches away from curb or walk. Adjust heads having an adjustment stem, for the proper radius and throw for the area involved.

   D. CONTROL WIRES: Shall be installed in a neat and orderly fashion underneath the main and lateral pipes, if possible. Ten–inch loops shall be provided at each valve where control wires are connected. All wires passing under existing or future paving, construction, etc., shall be encased in plastic pipe as specified, extending at least twelve inches beyond edges of paving or construction.

   E. TESTING: All main lines shall be hydrostatically tested in the presence of the Owner's representative at a pressure of 40 psi for a period of time not less than four (4) hours, should any leaks be found, they shall be repaired. The line shall then be retested until satisfactory. All lateral lines downstream from the remote control valves shall be visually inspected for leaks, should any be found, they shall be repaired. The line shall then be retested until satisfactory.
      grades.

   F. BACKFILL AND COMPACTING: After system is approved or sections thereof, backfill excavations and trenches with clean soil, free of rubbish. Backfill for all trenches, regardless of the type of pipe covered shall be compacted to a minimum 90% of its maximum density (AASHTO T–180). Dress off all areas to finish grades.

   G. FINAL ADJUSTMENT: Balance and adjust the irrigation system components for efficient, proper operation. This includes controller synchronization as well as individual settings of control stations.

3. INSTRUCTIONS

   A. LABELS

      1. Number each zone valve box on underside of valve box cover with a black waterproof marker for reference. Numbers shall match the zone numbers on the drawings.

      2. Number each zone valve control wire at the controller with a waterproof marker and tags. Numbers shall match the zone numbers on the drawings

   B. MAINTENANCE

      1. Maintain the irrigation system until final acceptance of the work. Maintenance shall include work, materials and replacements necessary to insure a complete properly operating system.

      2. It will be the Owner's responsibility to maintain the system in working order during the guarantee period, performing necessary minor maintenance, keeping grass from obstructing the sprinkler heads and preventing vandalism and damage during the landscape maintenance operation.

4. CLEANING: The Contractor shall at all times keep the premises (grounds and pavements) free from accumulations of waste material or rubbish caused by his employees or work.

IRRIGATION NOTES

1. Verify all conditions and dimensions shown on the plans at the site prior to commencement of work under this contract.
2. All irrigation installation shall conform to local codes.
3. Piping on plans is diagrammatically routed for clarity. Route to avoid conflict with specimen plants, utilities and structures not shown on the plans. All piping should be installed outside of Right of Ways unless at Right of Ways usage permit has been recieved. Design modifications may be made only as necessary to meet field conditions and only as acceptable to Irrigation Designer.
4. Adjust sprinkler's arc and radius to assure 100% coverage. Use variable arc nozzels where necessary to prevent overspray onto hard surfices
5. Main line shall be class 200 PVC. Laterals shall be Class 160 PVC.
6. Where mains and/or laterals are covered by paving, schedule 40 PVC sleeve shall be used. Installer shall coordinate placement of sleeves with general contractor.
7. All mains shall be buried a minimum of 16" below grade.
8. All laterals shall be buried a minimum of 12" below grade.
9. All valves shall be installed in AMETEK VP–10 valve boxes.
10. Use special glue on heavy walled flexible PVC pipe connections. NOTE: barbed fittings and poly pipe are an acceptable alternative. (i.e. Toro "Funny Pipe" or RainBird "Flex Pipe".Submit shop drawings for review and approval.
11. Electrical installation of pump station, and irrigation controller shall be provided by site electrician in compliance with N.E.C. requirements. (N.I.I.C.)
12. Contractor shall install grounding rods per manufacturer's recommendations.
13. Place wiring to rain sensor and by–pass switch in seal–tite flexible conduit, firmly secured.Mount rain sensor on privacy wall.
14. Size all sleeves min. 2 sizes larger than irrigation pipe.
15. See Technical Specifications on this sheet.
16. The system requires a minimum of 50 g.p.m. at a minimum of 45 p.s.i. at the point of connection. Verify that required flows and pressures are available prior to ordering materials and or commencing with the installation. Report any discrepancies to the irrigation consultant
17. Irrigation contractor to provide a line item cost to provide a chemical injector to remove high iron contact from the water.

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Environmental Design Services
Landscape and Irrigation Design and Consulting
141 East Dover Street
Satellite Beach, Fl. 32937
Phone: (321) 288-6143
Fax: (321) 779-9953

Original Drawing Issue Date: 12-2-15

REVISIONS:

No.	Date	Description	By
1.	2-5-16	Per updated base info.	BKA
2.			
3.			
4.			
5.			
6.			
7.			

Project:

Embraer

Location:

Titusville, Florida

Irrigation Specifications

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Sheet #: IR-9

Project No.	00-0000
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Sheet	9 of 9

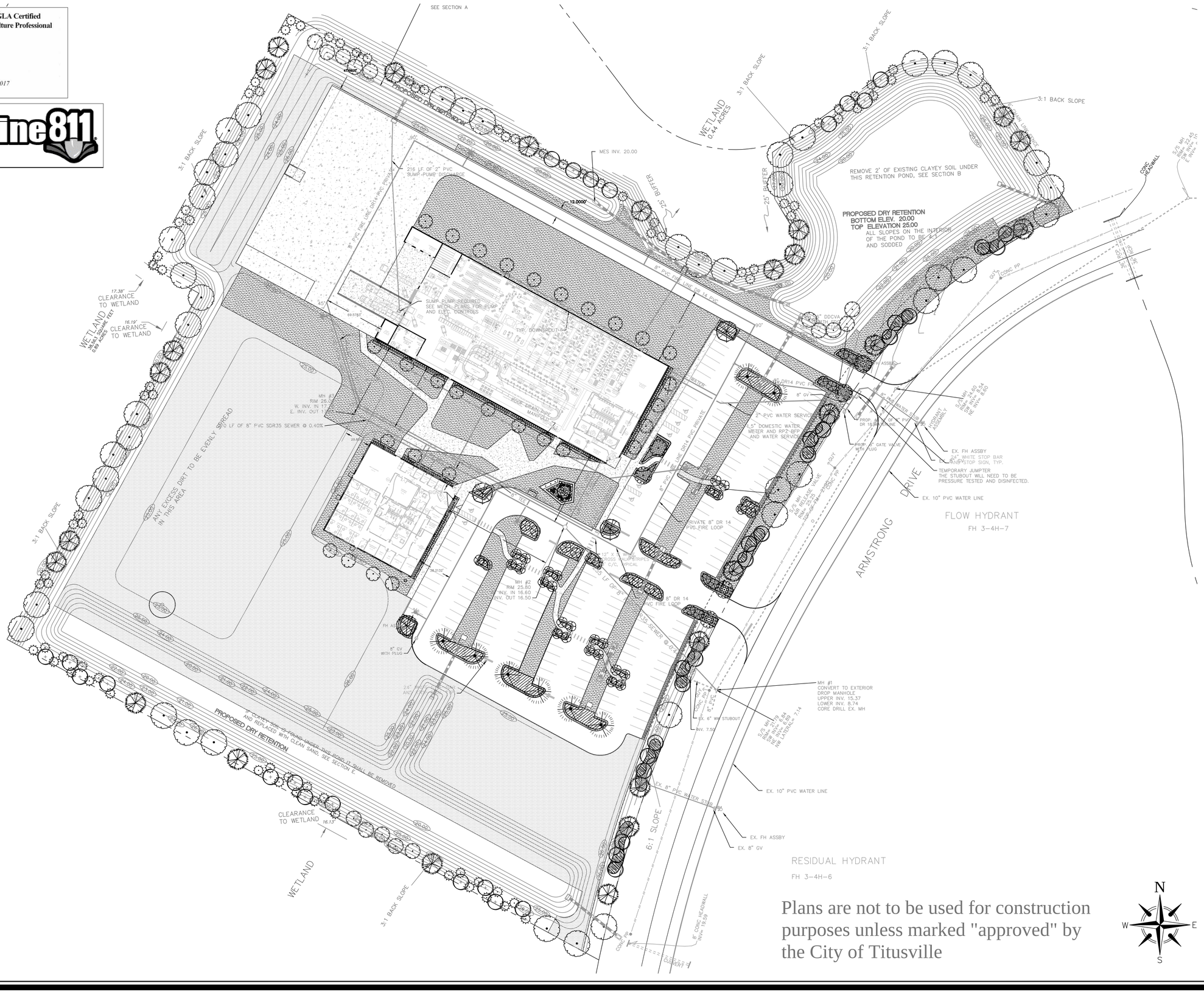
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Project:

Embraer

Location:

Titusville, Florida

Overall Landscape Plan

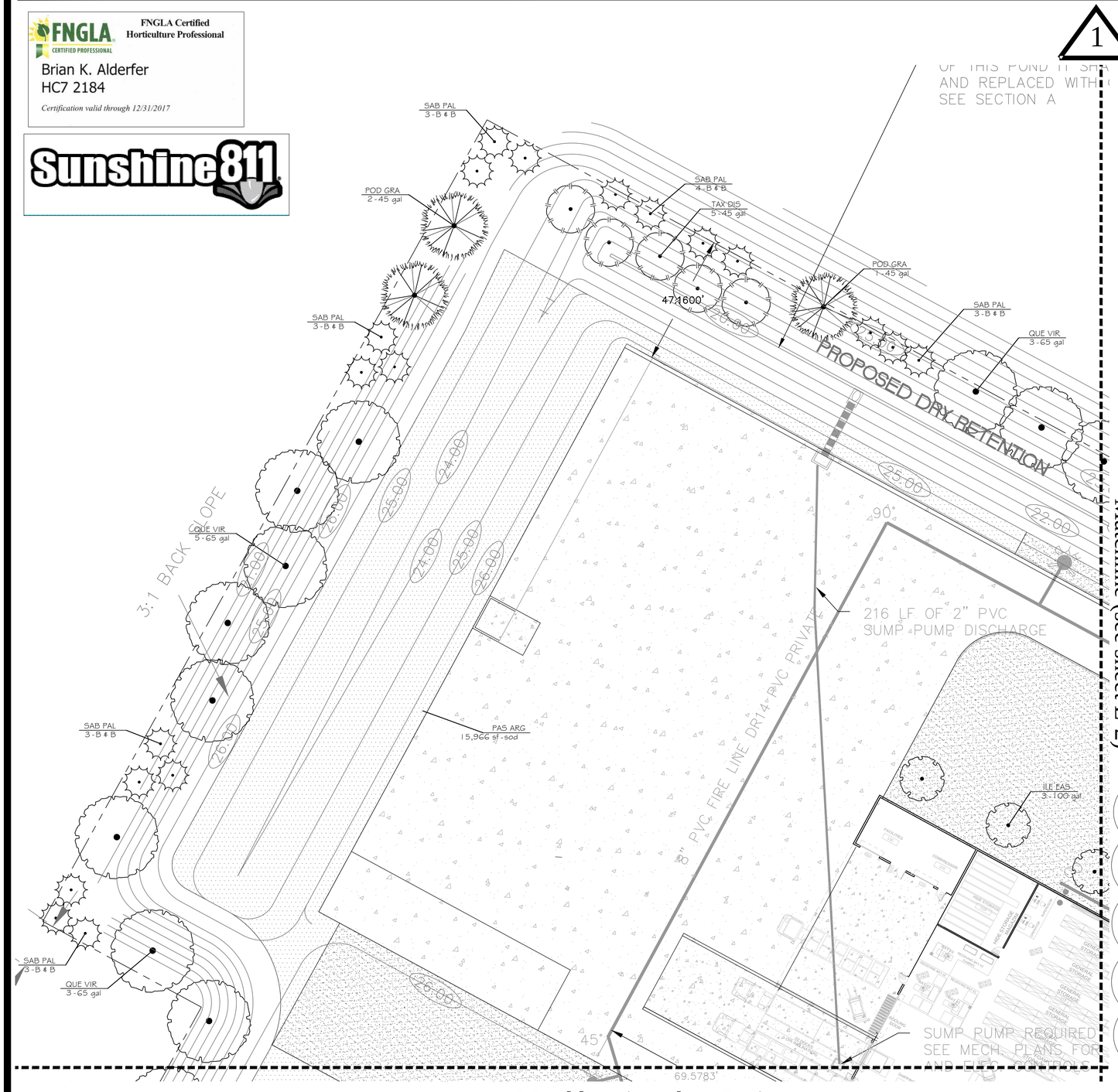
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Sheet #: L-1

Project No.	00-0000
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Drawing Scale:	1"=50'
Sheet	1 of 10

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Matchline (see sheet L-4)

Matchline (see sheet L-2)

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

City of Titusville Landscape Requirements

Project Name Embraer

Total site area (square Feet)	653,399	**Total site perimeter (feet)**	3,952

Protected trees (>20" dbh) proposed for removal on this site (type, total quantity, total dbh)

Tree Type	QTY	Inches	Tree Type	QTY	Inches
Pine	6	124			

Total protected tree inches proposed for removal (mitigation plan required)	124
Total number of inches of replacement material required (2x dbh removed)	249
Proposed mitigation plan	
Total preservation area in addition to all other buffer requirements (s.f.)	-
Percent of preservation area in addition to all other buffer requirements	
Reduction (quantity) of protected trees removed (by preservation)	1
Reduction (total inch) offset by preservation (largest trees)	22.6
Remaining quantity of replacement material requiring mitigation	204

*You may satisfy this requirement by adding additional trees or increasing the size of the required trees proposed on this site.

Perimeter buffer plant requirements (quantity)			
Overstory trees	80	Coniferous trees	40
Ornamental trees	20	Perimeter shrubs	264
Preserved native vegetation within the req. perimeter buffer area (min. 4" cal.)			
Coniferous trees	3	Palm trees	
Ornamental trees		Perimeter shrubs	
Perimeter buffer trees required to be replanted (total qty)			137
Inch caliper of trees required to be replanted in perimeter buffer area (total)			381.00
Boulevard frontage (l.f.)		Boulevard caliper required	-
		Boulevard trees required	
Parking lot vegetation requirements			
Parking lot islands (trees, shrubs and/or ground cover required)			
Qty. of terminal islands	*40*	Total inch required	120
Qty of interior islands		Total inch required	
Preserved native tree within the parking lot island (total qty)			
Parking lot trees required to be planted within the islands (total qty)			40
Inch of trees required for parking lot island trees (total inch cal.)			120
Total qty. of trees required on the plant schedule (excluding mitigation req.)			177
Multi-story building requirements			
Is building multi-story, if yes how many floors? (*see below)			
*All development except single family homes (SFH). If SFH leave number of floors blank			
Caliper of required trees increases 25% per floor with maximum increase of 100%			
Total minimum caliper of trees required on the plant schedule (inches) (Note this does not include any mitigation requirements)			501.00

Shrub requirments					
Qty of islands not adjacent to other landscape area				*1*	
Total minimum number of shrubs required within these islands				10	
Perimeter plant buffer shrubs required (1 shrub per 15' of site perimeter)				*264*	
Visual buffer and screening requirement					
Total linear footage of parking area not adjacent to the building				*403*	
Total qty of visual buffer shrubs required planted 3' on center				136	
Total linear footage of property adjacent to different land use					
6' privacy fence or masonry wall proposed			Yes / No	X	
6' hedge proposed?			Yes / No	X	
Hedge quantity required at 3' on center				0	
Total minimum shrubs required on the plant schedule (min. 3 gallon & 18" tall)				410	
Proposed shrub schedule					
Perimeter buffer shrubs	required	264	proposed	385	
Parking lot island shrubs	required	10	proposed	10	
Visual buffer shrubs	required	136	proposed	136	
Visual screen shrubs	required	0	proposed		
Total shrubs	required	410	proposed	531	
Adjust design to accommodate the following remaining shrubs				0	

Proposed plant schedule	Required		Proposed		
Qty of over story trees	80		*85*	Total (cal) trees required	501.0
Qty of conferous trees	40		*40*	Total (cal) tree proposed	296
Qty of ornamental trees	20		*28*	Total (cal) tree proposed	100
Qty of parking lot trees	40	Queen Palms used calculated at 2:1	*40*	Total (cal) tree proposed	70
Qty of boulevard trees				Total (cal) tree proposed	120
				Total (cal) tree proposed	
Qty of sabal palms				3:1 conv.cal.inch value	
Qty of queen / pygmy date palms				2:1 conv.cal.inch value	
Qty of date palms				1:1 conv.cal.inch value	
Total quantity of trees	180		193.00	Total caliper of all trees	586

Mitigation Requirements that have not been addressed.				
Total inches provided beyond code required in proposed design				85.0
Quantity of Mitigation Trees proposed.	Quantity 30		Total Caliper	120
Design deficiency to meet mitigatin requirements				-

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REVISIONS:

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1.	2-5-16	Per City of Titusville comments and updated base info.	BKA
2.			
3.			
4.			
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6.			
7.			

Project:

Embraer

Location:

Titusville, Florida

Landscape Plan

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Sheet #: L-2

Project No.	00-0000
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Drawing Scale:	1"=20'

Sheet 2 of 10

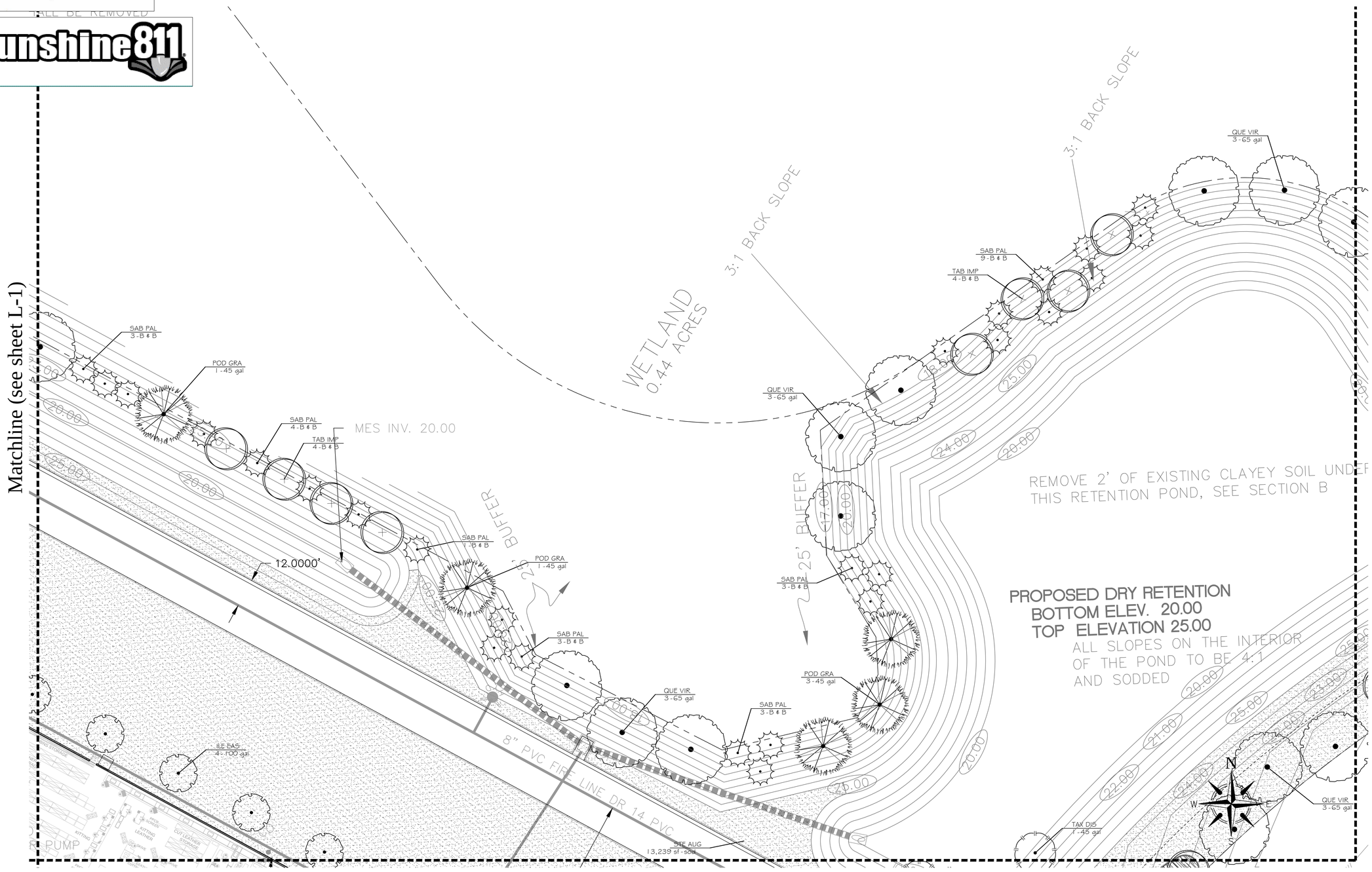
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HC7 2184

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GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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Project:

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Titusville, Florida

Landscape Plan

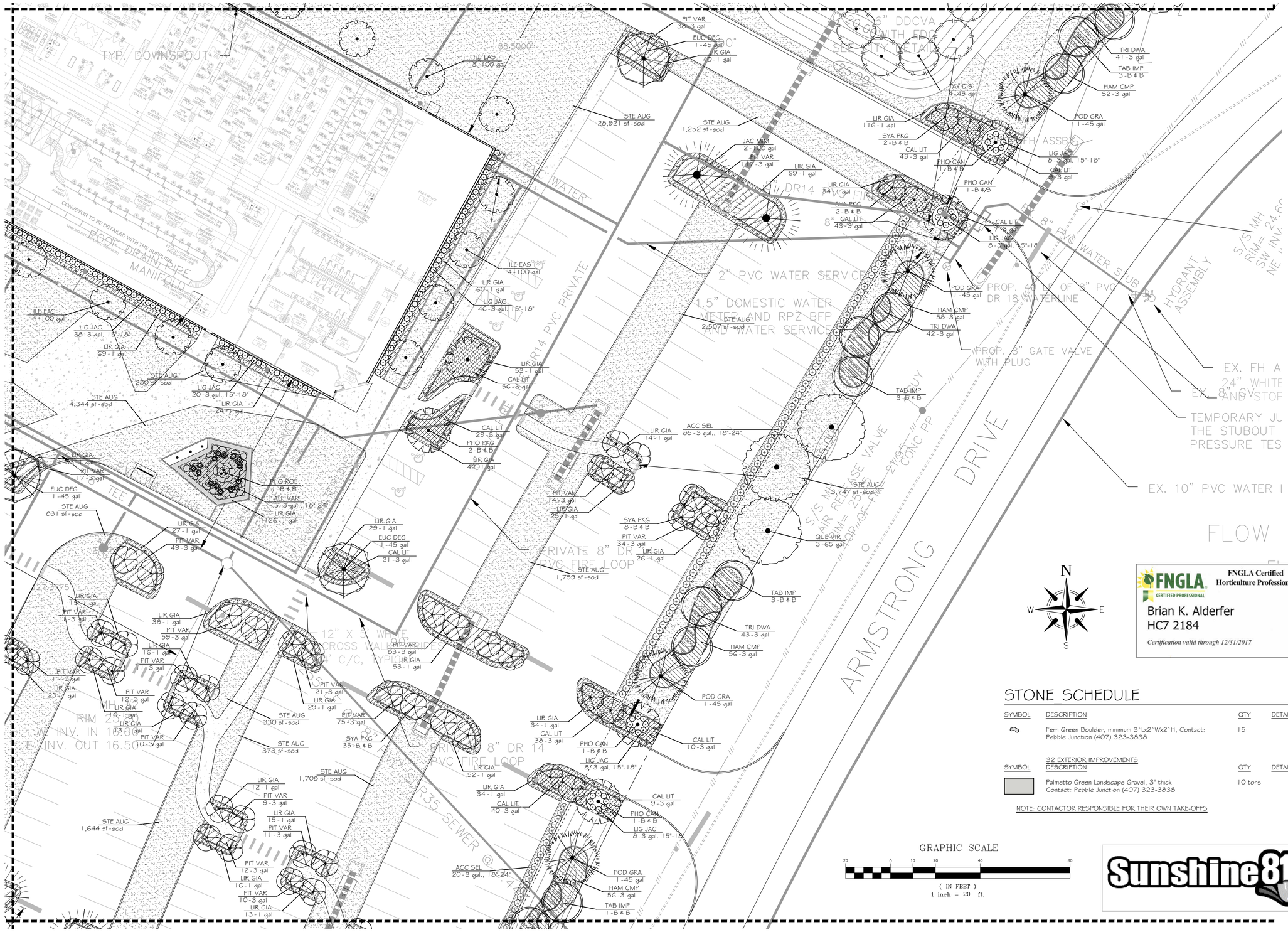
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Sheet #: L-3

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Matchline (see sheet L-2)


TYP. DOWNSPOUT
ROOF DRAIN PIPE MANIFOLD
CONVEYOR TO BE DETAILED WITH THE SUPPLIER
ARMSTRONG DRIVE
2" PVC WATER SERVICE
1.5" DOMESTIC WATER METER AND RPZ BFP AND WATER SERVICE
8" PVC WATER STUB
FH ASSBLY
HYDRANT ASSEMBLY
PROP. 8" GATE VALVE WITH PLUG
TEMPORARY JU
THE STUBOUT
PRESSURE TES
EX. 10" PVC WATER I
FLOW
EX. FH A
24" WHITE
EX. 8" GV
S/S MH
RIM= 24.6
SW INV=
NE INV=
PROP. 8" DR 14 PVC PRIVATE
PROP. 8" DR 14 PVC FIRE LOOP
EX. 8" DR 14 PVC FIRE LOOP
EX. 8" DR 14 PVC PRIVATE
EX. 8" DR 14 PVC WATER
EX. 12" X 8" WHITE CROSS WALKER
EX. 8" DR 14 PVC WATER
EX. 8" DR 14 PVC SEWER @ 4.00%
EX. 8" DR 14 PVC SEWER @ 4.35%

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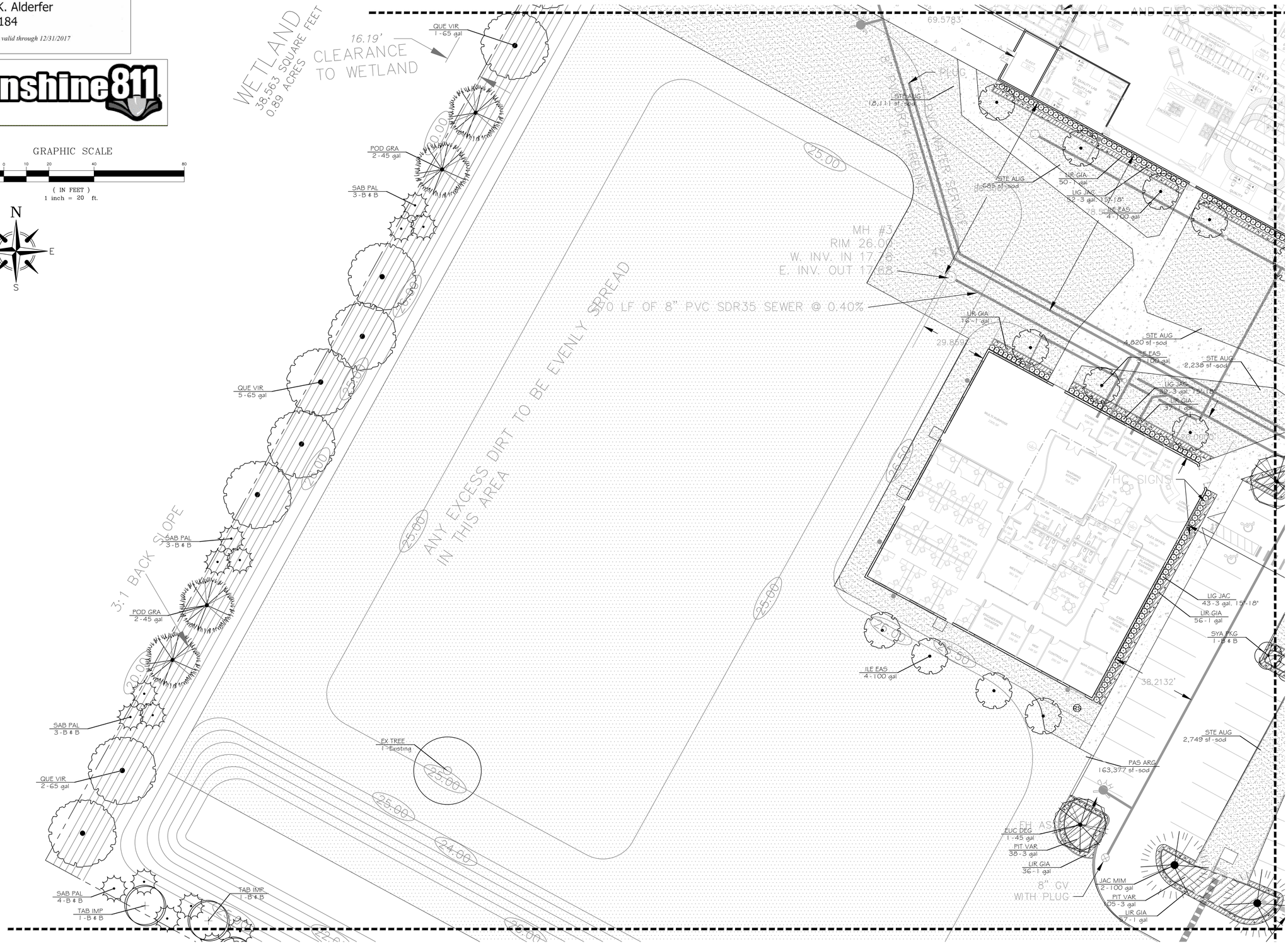
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GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

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Matchline (see sheet L-1)



Matchline (see sheet L-5)

Matchline (see sheet L-3)

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Project:

Embraer

Location:

Titusville, Florida

Landscape Plan

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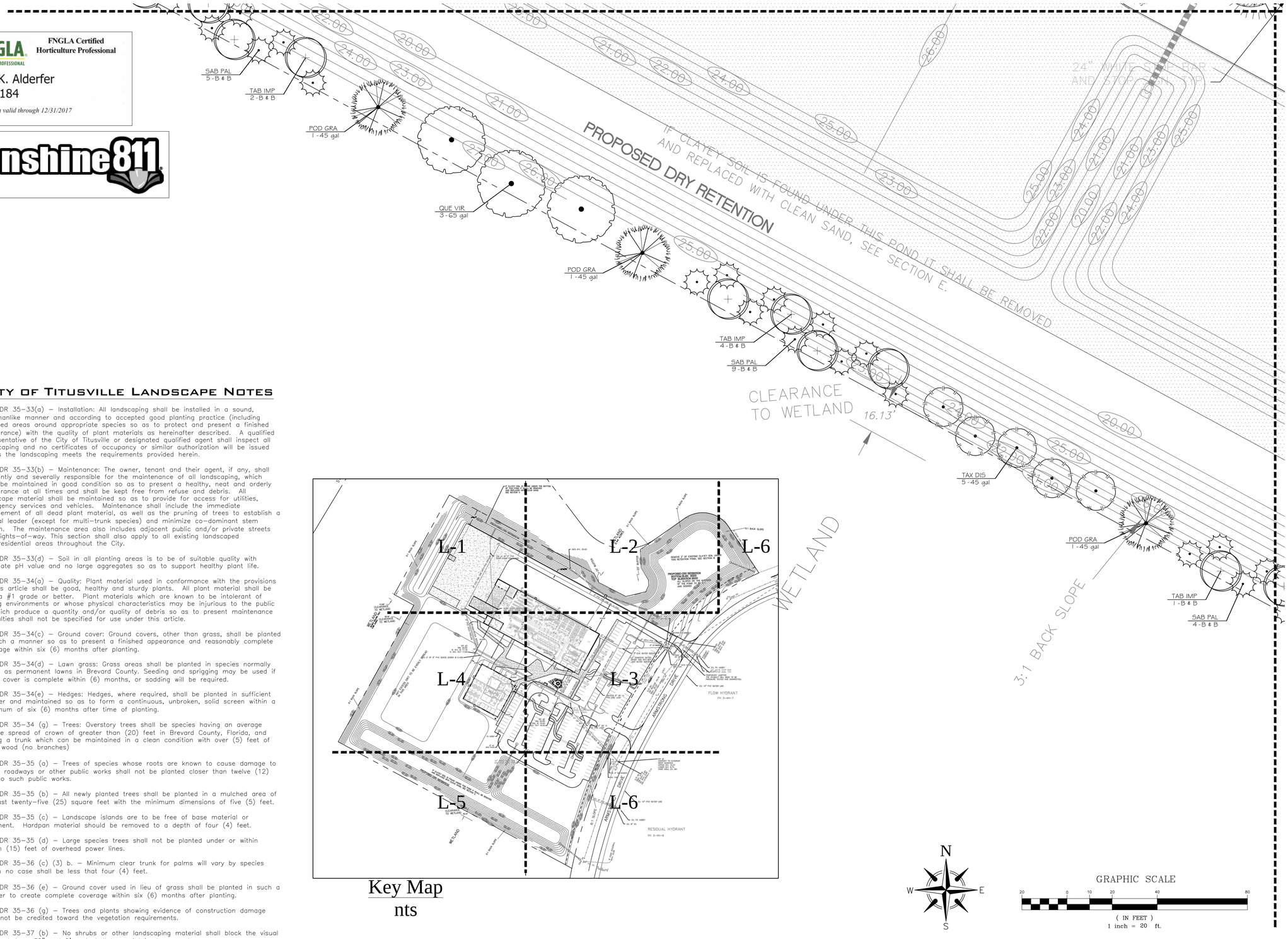
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Project No.	00-0000
Drawn By:	BKA
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Drawing Scale:	1"=20'

Sheet 5 of 10

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Matchline (see sheet L-1)



Matchline (see sheet L-3)

CITY OF TITUSVILLE LANDSCAPE NOTES

1. Per LDR 35-33(a) – Installation: All landscaping shall be installed in a sound, workmanlike manner and according to accepted good planting practice (including mulched areas around appropriate species so as to protect and present a finished appearance) with the quality of plant materials as hereinafter described. A qualified representative of the City of Titusville or designated qualified agent shall inspect all landscaping and no certificates of occupancy or similar authorization will be issued unless the landscaping meets the requirements provided herein.
2. Per LDR 35-33(b) – Maintenance: The owner, tenant and their agent, if any, shall be jointly and severally responsible for the maintenance of all landscaping, which shall be maintained in good condition so as to present a healthy, neat and orderly appearance at all times and shall be kept free from refuse and debris. All landscape material shall be maintained so as to provide for access for utilities, emergency services and vehicles. Maintenance shall include the immediate replacement of all dead plant material, as well as the pruning of trees to establish a central leader (except for multi-trunk species) and minimize co-dominant stem growth. The maintenance area also includes adjacent public and/or private streets and rights-of-way. This section shall also apply to all existing landscaped non-residential areas throughout the City.
3. Per LDR 35-33(d) – Soil in all planting areas is to be of suitable quality with adequate pH value and no large aggregates so as to support healthy plant life.
4. Per LDR 35-34(a) – Quality: Plant material used in conformance with the provisions of this article shall be good, healthy and sturdy plants. All plant material shall be Florida #1 grade or better. Plant materials which are known to be intolerant of paving environments or whose physical characteristics may be injurious to the public or which produce a quantity and/or quality of debris so as to present maintenance difficulties shall not be specified for use under this article.
5. Per LDR 35-34(c) – Ground cover: Ground covers, other than grass, shall be planted in such a manner so as to present a finished appearance and reasonably complete coverage within six (6) months after planting.
6. Per LDR 35-34(d) – Lawn grass: Grass areas shall be planted in species normally grown as permanent lawns in Brevard County. Seeding and sprigging may be used if grass cover is complete within (6) months, or sodding will be required.
7. Per LDR 35-34(e) – Hedges: Hedges, where required, shall be planted in sufficient number and maintained so as to form a continuous, unbroken, solid screen within a maximum of six (6) months after time of planting.
8. Per LDR 35-34 (g) – Trees: Overstory trees shall be species having an average mature spread of crown of greater than (20) feet in Brevard County, Florida, and having a trunk which can be maintained in a clean condition with over (5) feet of clear wood (no branches)
9. Per LDR 35-35 (a) – Trees of species whose roots are known to cause damage to public roadways or other public works shall not be planted closer than twelve (12) feet to such public works.
10. Per LDR 35-35 (b) – All newly planted trees shall be planted in a mulched area of at least twenty-five (25) square feet with the minimum dimensions of five (5) feet.
11. Per LDR 35-35 (c) – Landscape islands are to be free of base material or pavement. Hardpan material should be removed to a depth of four (4) feet.
12. Per LDR 35-35 (d) – Large species trees shall not be planted under or within fifteen (15) feet of overhead power lines.
13. Per LDR 35-36 (c) (3) b. – Minimum clear trunk for palms will vary by species but in no case shall be less than four (4) feet.
14. Per LDR 35-36 (e) – Ground cover used in lieu of grass shall be planted in such a manner to create complete coverage within six (6) months after planting.
15. Per LDR 35-36 (g) – Trees and plants showing evidence of construction damage shall not be credited toward the vegetation requirements.
16. Per LDR 35-37 (b) – No shrubs or other landscaping material shall block the visual access between30" and 8' and shall be maintained as much.

Key Map
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GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

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Project:

Embraer

Location:

Titusville, Florida

Landscape Plan

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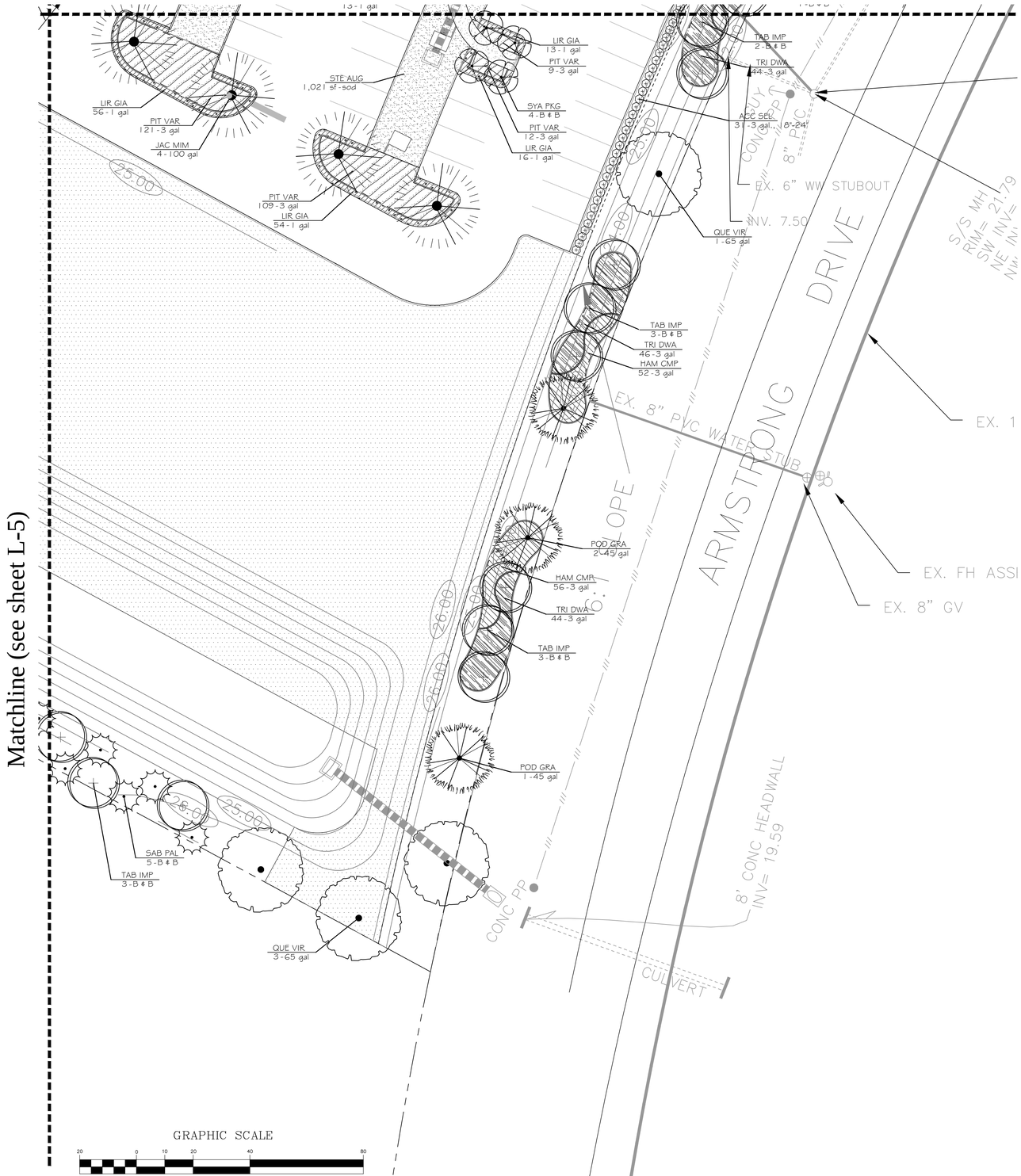
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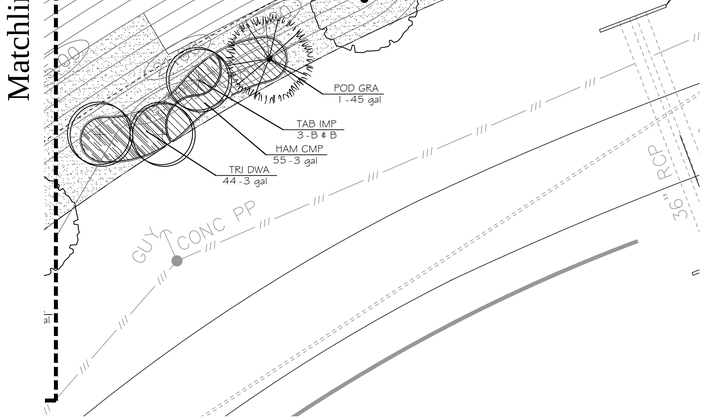
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Matchline (see sheet L-3)



Matchline (see sheet L-5)

Matchline (see sheet L-2)



GRAPHIC SCALE

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(IN FEET)

1 inch = 20 ft.

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Sheet #: L-7

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Checked By:	BKA
Drawing Scale:	1"=20'

PLANT SCHEDULE

TREES	CODE	QTY	COMMON NAME / BOTANICAL NAME	CONT	CAL	SIZE
	EX TREE	1	Existing Tree / Existing Tree #10 Refer to Civil Plans for proposed and existing grading information	Existing		

CONIFEROUS TREES	CODE	QTY	COMMON NAME / BOTANICAL NAME	CONT	CAL	SIZE
	POD GRA	25	Fern Pine / Podocarpus gracilior	45 gal	2.5"Cal	12`-14`H x 5`-6`W
	TAX DIS	15	Bald Cypress / Taxodium distichum	45 gal	3"Cal	12`-14`H x 5`-6`W

MITIGATION TREES	CODE	QTY	COMMON NAME / BOTANICAL NAME	CONT	CAL	SIZE
	ILE EAS	29	East Palatka Holly / Ilex attenuata `East Palatka`	100 gal	4"Cal	14`-16`H x 5`-6`W

ORNAMENTAL TREES	CODE	QTY	COMMON NAME / BOTANICAL NAME	CONT	CAL	SIZE
	SAB PAL	84	Sabal Palm / Sabal palmetto staggered heights	B & B	Debooted	12`-16` C.T.

OVERSTORY TREES	CODE	QTY	COMMON NAME / BOTANICAL NAME	CONT	CAL	SIZE
	QUE VIR	44	Southern Live Oak / Quercus virginiana	65 gal	3"Cal	12`-14`H x 5`-6`W
	TAB IMP	41	Purple Trumpet Tree / Tabebuia impetiginosa minimun 5` clear truck	B & B	4"Cal	12`-14`H x 5`-6`W

PALM TREES	CODE	QTY	COMMON NAME / BOTANICAL NAME	CONT	CAL	SIZE
	PHO CAN	4	Canary Island Date Palm / Phoenix cananensis	B & B		8` C.T.
	PHO ROE	1	Reclinata x Robelenii Palm / Phoenix reclinata x roebelenii minimum 7 trunks with equal heights of 12` O.A.	B & B	Multi-trunk	12` O.A.

PARKING TREES	CODE	QTY	COMMON NAME / BOTANICAL NAME	CONT	CAL	SIZE
	EUC DEG	4	Rainbow Eucalyptus / Eucalyptus deglupta	45 gal	3"Cal	12`-14` H x 6`-7` W
	JAC MIM	8	Jacaranda / Jacaranda mimosifolia	100 gal	4"Cal	14`-16` H x 6`-7` W
	PHO PKG	2	Canary Island Date Palm / Phoenix cananensis	B & B		8` C.T.
	SYA PKG	52	Queen Palm / Syagrus romanzoffiana	B & B	Heavy	8` G.W.

SHRUBS	CODE	QTY	COMMON NAME / BOTANICAL NAME	CONT
	ALP VAR	15	Vanegated Shell Ginger / Alpinia zerumbet `Vanegata`	3 gal., 18"-24"
	LIG JAC	270	Jack Frost Ligustrum / Ligustrum japonicum `Jack Frost`	3 gal. 15"-18"

VISUAL BUFFER SHRUBS	CODE	QTY	COMMON NAME / BOTANICAL NAME	CONT
	ACC SEL	136	Pineapple Guava / Acca sellowiana	3 gal., 18"-24"

SHRUB AREAS	CODE	QTY	COMMON NAME / BOTANICAL NAME	CONT	SPACING
	CAL LIT	305	Dwarf Bottle Brush / Callistemon citrinus `Little John` minimum 15"-18"	3 gal	30" o.c.
	PIT VAR	998	Vanegated Mock Orange / Pittosporum tobira `Vanegata` minimum 15"-18"	3 gal	30" o.c.

PERIMETER SHRUBS	CODE	QTY	COMMON NAME / BOTANICAL NAME	CONT	SPACING
	HAM CMP	385	Dwarf Scarlet Bush / Hamelia patens `Compacta` minimum 18"-24"	3 gal	30" o.c.
	TRI DWA	304	Dwarf Fakahatchee Grass / Tripsacum flondana full	3 gal	36" o.c.

GROUND COVERS	CODE	QTY	COMMON NAME / BOTANICAL NAME	CONT	SPACING
	LIR GIA	1,558	Evergreen Border Grass / Liriope muscari `Big Blue` full	1 gal	24" o.c.

SOD/SEED NOTE: CONTACTOR RESPONSIBLE FOR THEIR OWN TAKE-OFFS	CODE	QTY	COMMON NAME / BOTANICAL NAME	CONT	SPACING
	PAS ARG	179,344 sf	Bahia Grass / Paspalum notatum `Argentine`	sod	
	STE AUG	91,559 sf	`Flontam` St. Augustine Sod / Stenotaphrum secundatum `Flontam`	sod	

NOTES:
All plant material to be Flonda Grade #1
CONTRACTOR RESPONSIBLE FOR THEIR OWN TAKE-OFFS

GENERAL LANDSCAPE NOTES

1.) LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR VERIFYING PROJECT SITE CONDITIONS AND QUANTITIES INDICATED ON THESE PLANS, BEFORE PRICING WORK.

2.) ALL PLANT MATERIAL SHALL BE FLORIDA GRADE NO. 1 OR BETTER AS SPECIFIED IN "GRADES AND STANDARDS FOR NURSERY PLANTS PARTS I AND II" 1998 EDITION DIVISION OF PLANT INDUSTRY, FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES, AND SHALL CONFORM TO CURRENT AMERICAN ASSOCIATION OF NURSERYMAN STANDARDS FOR NURSERY STOCK. ALL SIZES SHOWN FOR PLANT MATERIAL ON THE PLAN ARE TO BE CONSIDERED MINIMUM. ALL PLANT MATERIAL MUST MEET OR EXCEED THESE MINIMUM REQUIREMENTS FOR BOTH HEIGHT AND SPREAD. ANY OTHER REQUIREMENTS FOR SPECIFIC SHAPE OR EFFECT AS NOTED ON THE PLAN SHALL ALSO BE REQUIRED FOR ACCEPTANCE. ALL TREES TO BE SINGLE TRUNKED, UNLESS OTHERWISE NOTED ON PLANS.

3.) LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING THE CONDITION OF UNDERGROUND UTILITIES THAT EFFECT PLANTING PROCEDURES OR IRRIGATION SYSTEM INSTALLATION. IF ANY CONFLICTS OCCUR BETWEEN PROPOSED LOCATION OF TREES FOR ON THE DRAWING AND ANY UNDERGROUND UTILITIES OR SUBSURFACE STRUCTURES, THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE DESIGNER. IF THE LANDSCAPE CONTRACTOR DAMAGES ANY STAKED OR IN PLACE UTILITIES BY HIS OWN NEGLIGENCE, THEY SHALL BE REPAIRED AT THE LANDSCAPE CONTRACTOR'S EXPENSE.

4.) LANDSCAPE CONTRACTOR SHALL NOTIFY LANDSCAPE DESIGNER OR OWNER OF ANY CONDITIONS THAT WOULD PREVENT THE HEALTHY GROWTH OF PLANT SPECIES CALLED FOR ON THE DRAWINGS. THIS NOTIFICATION MUST OCCUR PRIOR TO CONTRACT AWARD.

5.) IF ANY DISCREPANCIES OCCUR BETWEEN QUANTITIES CALLED FOR ON THE PLANT LIST AND THOSE INDICATED ON THE DRAWINGS, THE GREATER QUANTITY SHALL GOVERN.

6.) PLANT MATERIAL SHALL BE SOUND, HEALTHY AND VIGOROUS, WELL-BRANCHED AND DENSELY FOLIATED WHEN IN LEAF. THEY SHALL BE FREE OF DISEASE, INSECTS, EGGS, OR LARVAE, AND SHALL HAVE HEALTHY, WELL DEVELOPED ROOT SYSTEMS. THEY SHALL BE FREE FROM PHYSICAL DAMAGE OR ADVERSE CONDITIONS THAT WOULD PREVENT THRIVING GROWTH.

7.) PLANT MATERIAL MUST BE CONTAINER GROWN OR B&B (UNLESS TRANSPLANTED) AS INDICATED IN THE PLANT LIST. ALL PALMS SHALL BE FIELD GROWN

8.) PLANT MATERIAL SHALL CONFORM TO THE VARIETIES INDICATED IN THE PLANT LIST.

9.) SUBSTITUTION OF PLANT MATERIALS WILL NOT BE PERMITTED UNLESS AUTHORIZED BY THE OWNER AND/OR OWNER'S REPRESENTATIVE. IF PROOF IS SUBMITTED THAT ANY PLANT SPECIFIED IS NOT OBTAINABLE, A PROPOSAL WILL BE CONSIDERED FOR USE OF THE NEAREST EQUIVALENT SIZE OR VARIETY WITH CORRESPONDING ADJUSTMENT OF CONTRACT PRICES.

10.) PLANT MATERIAL LOCATIONS AND BED OUTLINES SHALL BE STAKED OR FLAGGED ON SITE BY THE LANDSCAPE CONTRACTOR AND SHALL BE ADJUSTED IF REQUIRED TO FIT ACTUAL AS-BUILT CONDITIONS ON SITE AND APPROVED BY THE LANDSCAPE DESIGNER OR OWNER PRIOR TO INSTALLATION. PROPOSED PLANTINGS SHALL NOT BE PLACED IN THE FLOWLINE OF SWALES OR LOCATED WHERE THEY WILL IMPEDE WATER FLOW.

11.) A CRISP LINE, EITHER STRAIGHT OR CURVING, SHALL SEPARATE PLANT BEDS FROM SODDED OR SEEDED AREAS. ALL PLANTING BED AREAS TO HAVE 6" OF DARK, FRIABLE TOP SOIL OR BED MIX CHURNED INTO EXISTING SOIL.

12.) LANDSCAPE CONTRACTOR SHALL EXCAVATE PLANT PITS ACCORDING TO THE DRAWINGS.

13.) BACKFILL AROUND PLANT MATERIAL SHALL BE WORKED FIRMLY, TAMPED AND WATERED-IN UNDER AND AROUND THE ROOT BALL TO FILL VOIDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING PLANT MATERIAL A MINIMUM OF THIRTY (30) DAYS AFTER, INSTALLATION UNLESS OTHERWISE INSTRUCTED BY LANDSCAPE DESIGNER OR OWNER.

14.) LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING HOISTING EQUIPMENT NECESSARY FOR THE PLACEMENT OF PLANT MATERIAL. NEW PLANT MATERIAL TO BE INSTALLED WILL BE FIELD ADJUSTED TO ACCOMMODATE EXISTING PLANT MATERIAL SUCH AS OVERHEAD CANOPY TREES, UNDERSTORY TREES AND SHRUBS OR GROUND COVER. THIS WILL INSURE EXISTING PLANT MATERIAL TO REMAIN IN ITS NATURAL STATE. THEREFORE, NO EXISTING PLANT MATERIAL WILL BE ALTERED BY REMOVING, CUTTING, TRIMMING OR DESTROYING IN ORDER TO INSTALL NEW PLANT MATERIAL.

15.) LANDSCAPE CONTRACTOR SHALL BEAR FINAL RESPONSIBILITY FOR PROPER SURFACE DRAINAGE OF PLANTED AREAS. ANY DISCREPANCY IN THE DRAWINGS, OBSTRUCTION ON THE SITE, OR PRIOR WORK DONE BY ANOTHER PARTY WHICH THE LANDSCAPE CONTRACTOR FEELS PRECLUDES ESTABLISHING PROPER DRAINAGE SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE LANDSCAPE DESIGNER OR OWNER. THE FINAL GRADE AND SOIL ("THE LAST 6") SHALL BE PROVIDED BY THE LANDSCAPE CONTRACTOR.

16.) AFTER PLANT MATERIAL HAS BEEN INSTALLED AND APPROVED, PLANTING BEDS SHALL BE RAKED TO AN EVEN GRADE TO CONFORM TO PRE-MULCHING FINISH GRADES. PLANTING BEDS AND PLANT SAUCERS SHALL THEN BE UNIFORMLY COVERED WITH A MINIMUM 3 INCH LAYER OF PINE BARK NUGGETS.

17.) PLANT MATERIAL BACKFILL MIXTURE SHALL BE THOROUGHLY MIXED AND DISTRIBUTED EVENLY THROUGHOUT THE PROPOSED PLANTING BED AREAS.

18.) ALL TREE STAKING TO BE DONE AS DETAILED. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES THAT OCCUR AS THE RESULT OF THE FAILURE TO STAKE TREES THAT ARE NOT AN ACT OF GOD AND THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR STRAIGHTENING TREES DURING THE GUARANTEE PERIOD.

19.) IN NEW PLANTED AREAS, GRADES SHALL BE ESTABLISHED BY THE LANDSCAPE CONTRACTOR AT APPROXIMATELY 3 INCHES BELOW CURBS, SIDEWALKS, HARDSCAPE AMENITIES, MOWING STRIPS, AND ABUTMENTS TO ALLOW FOR MULCH.

20.) THE LANDSCAPE CONTRACTOR SHALL COORDINATE CONSTRUCTION OF PLANTING AREAS WITH INSTALLATION OF IRRIGATION SYSTEM AND HARDSCAPE WORK.

21.) INCLUDING PERMITS TO WORK IN RIGHTS-OF-WAY.

22.) INSTALLED PLANT MATERIAL SHALL BE FERTILIZED WITH THE FOLLOWING APPLICATIONS:
LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING APPLICABLE PERMITS BEFORE COMMENCING CONSTRUCTION.
TREES AND SHRUBS: OSMOCOTE (14-14-14)
SHRUBS/GROUND COVER – 1/3 LB. PER 3-GALLON POT, 1/4 LB. PER 1-GALLON POT
TREES AND SHRUBS (OVER 5 FT. HT.) – 1 LB. PER 1 INCH OF TRUNK DIAMETER
SOD: (16-4-8) COMMERCIAL FERTILIZER – 18 LBS. PER 1,000 SQ. FT.
PALMS: (12-4-12) COMMERCIAL FERTILIZER – 1 LB. PER 1 INCH OF TRUNK DIAMETER

23.) THE LANDSCAPE CONTRACTOR SHALL MAINTAIN FULLY, PLANT MATERIAL ON SITE DURING AND BEFORE PLANTING, UNTIL THE WORK IS ACCEPTED BY THE OWNER AND/OR OWNER'S REPRESENTATIVE.

24.) PLANTS SHALL BE GUARANTEED BY THE LANDSCAPE CONTRACTOR TO BE HEALTHY PLANTS AND IN FLOURISHING CONDITION OF ACTIVE GROWTH FOR ONE (1) YEAR FROM FINAL INSPECTION AND ACCEPTANCE.

25.) THE OWNER AND/OR OWNER'S REPRESENTATIVE HAS THE RIGHT TO REJECT ANY AND ALL WORK WHICH IN HIS OPINION DOES NOT MEET WITH THE REQUIREMENTS OF THE SPECIFICATIONS AT ANY STAGE OF THE PROJECT.

26.) IN GENERAL, THE WORK SHALL PROCEED AS RAPIDLY AS THE SITE BECOMES AVAILABLE.

27.) CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE CLEANUP OF PREMISES AND REMOVAL OF DISCARDED AND SURPLUS MATERIALS AND RUBBISH.

28.) SOLID SOD SHALL BE INSTALLED IN THE AREAS AS INDICATED ON THE PLAN. VERIFY EXACT LOCATION AND AMOUNT OF SOD AS SHOWN TO FIT CONDITIONS.

29.) SOD AREAS FOR NEW ENTRIES SHALL BE ST. AUGUSTINE GRADE "FLORATAM" UNLESS OTHERWISE NOTED. SOD FOR OTHER BERM AREAS SHALL BE ARGENTINE BAHIA. FRESHLY CUT IN SQUARES ONE FOOT WIDE BY TWO FEET LONG. SOD SHALL BE HEALTHY, FREE OF INSECTS AND WEEDS AND IN NATURALLY FLOURISHING CONDITION. DRY, BROWN, AND UNFRESH SOD WILL BE REJECTED.

30.) SOD SHALL BE LAID END-TO-END AND SIDE-TO-SIDE IN A STAGGERED LINE TO FORM A UNIFORM LAYER. UNEVEN EDGES SHALL BE SQUARELY TRIMMED TO ALLOW CLOSE AND FIRM FITTING OF EACH PIECE.

31.) AFTER SODDING IS COMPLETED, THE ENTIRE SOD AREAS SHALL BE WATERED BY HAND OR IRRIGATION SYSTEM EACH DAY FOR TWO WEEKS. SODDED AREAS SHALL THEN BE TOP-DRESSED WITH A COMMERCIAL FERTILIZER IN AN EVENLY BROADCAST PATTERN.

32.) LANDSCAPE CONTRACTOR TO PROVIDE PHOTOS OR SAMPLES OF ALL PLANT MATERIAL NOTED ON PLANT LIST TO THE OWNER FOR APPROVAL PRIOR TO INSTALLATION.

33.) LANDSCAPE CONTRACTOR TO NOTIFY THE LANDSCAPE DESIGNER PRIOR TO ORDERING ANY MATERIAL TO NOTIFY THE DESIGNER OF THE SALT CONTENT OF THE WELL WATER ONCE THE IRRIGATION WELL IS ESTABLISED AND TESTED.

34.) SEE CIVIL ENGINEERING PLANS FOR PRETENSION PONDS AND SLOPES SODDING INFORMATION.

34.) SEE CIVIL ENGINEERING PLANS FOR EXISTING TREE INFORMATION.

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Environmental Design Services
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Original Drawing Issue Date: 12-2-15

REVISIONS:

No.	Date	Description	By
1.	2-5-16	Per City of Titusville comments and updated base info.	BKA
2.			
3.			
4.			
5.			
6.			
7.			

Project:

Embraer

Location:

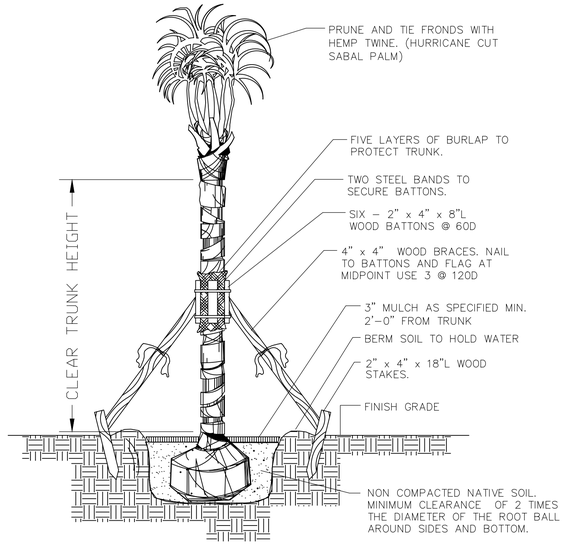
Titusville, Florida

Landscape Plan

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Sheet #: L-8

Project No.	00-0000
Drawn By:	BKA
Designed By:	BKA
Checked By:	BKA
Drawing Scale:	none
Sheet	8 of 10

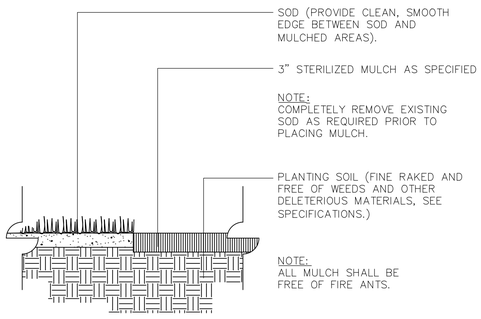


NOTES:

1. SABAL PALMS W/ BOOTS REMOVED
2. SEE PLANS AND SPECS. FOR PALMS W/ BOOTS TO REMAIN ON TRUNK.
3. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY LANDSCAPE DESIGNER. CONSULT WITH OWNER TO DETERMINE IF APPLICABLE TO THE PROJECT.
4. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.

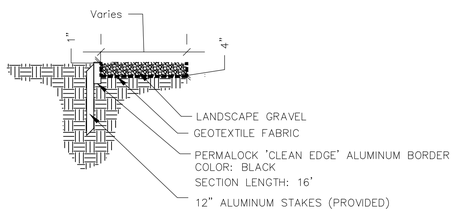
PALM TREE PLANTING/STAKING DETAIL

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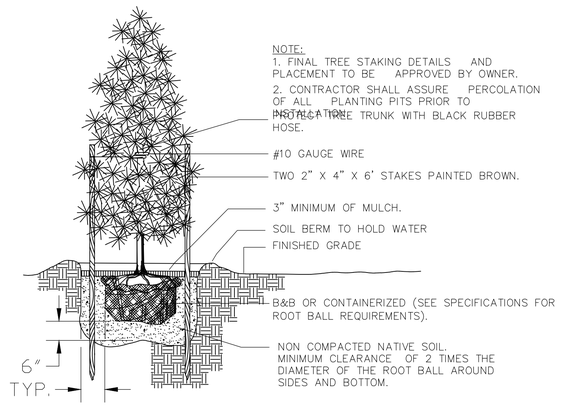
MUCHED EDGE DETAIL

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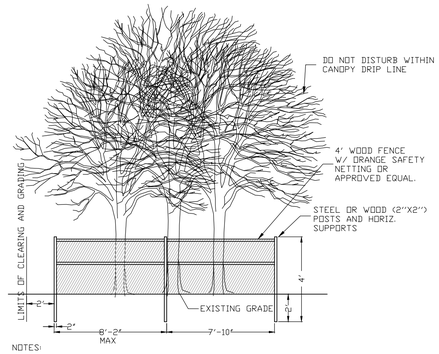
LANDSCAPE GRAVEL DETAIL

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SMALL TREE PLANTING/STAKING DETAIL

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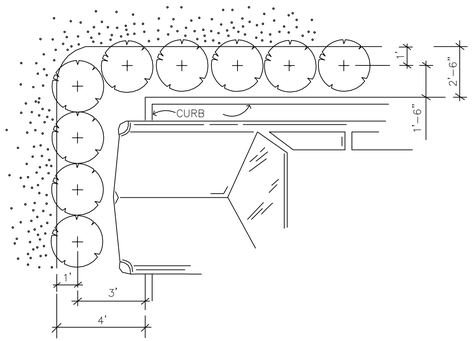


NOTES:

1. PREVENT SOIL CONTAMINATION BY CONSTRUCTION MATERIALS, E.G. CONCRETE, GYPSUM PRODUCTS, ACIDS, CLEANSERS OR MORTAR.
2. PRIOR TO ANY CLEARING, GRADING OR CONSTRUCTION, PROTECTION BARRIERS SHALL BE PLACED AROUND ALL TREES TO BE RETAINED ON THE SITE PLAN TO PREVENT THE DESTRUCTION OR DAMAGING OF TREES. MATERIAL SHALL NOT BE STOCKPILED WITHIN THIS DEFINED AREA AND VEHICLES AND OTHER EQUIPMENT SHALL BE EXCLUDED TO AVOID SOIL COMPACTION. CONTRACTOR TO MAINTAIN TREE BARRIERS THROUGH CONSTRUCTION. NOTIFY CITY ENGINEERING SITE INSPECTOR PRIOR TO BARRIER REMOVAL.
3. PRIOR TO SITE CLEARING, CITY ENGINEERING SITE INSPECTOR TO REVIEW PLACEMENT OF TREE PROTECTION BARRIER AND TREE SAVE AREA FOR THE POSSIBILITY OF SHIFTING TREE SAVE AREA TO ACCOMMODATE ADDITIONAL SPECIMEN TREES.
4. BOARDS OR WIRES OF A NON-PROTECTIVE NATURE WILL NOT BE NAILED OR ATTACHED TO TREES DURING BUILDING OPERATIONS.
5. HEAVY EQUIPMENT OPERATORS WILL BE CAUTIONED TO AVOID DAMAGE TO EXISTING TREE TRUNKS AND ROOTS DURING LAND LEVELING OPERATIONS. TUNNELING AND TRENCHING FOR UTILITIES NEAR EXISTING TREES SHOULD COMPLY WITH THE REQUIREMENTS OF THE CITY OF TITUSVILLE.

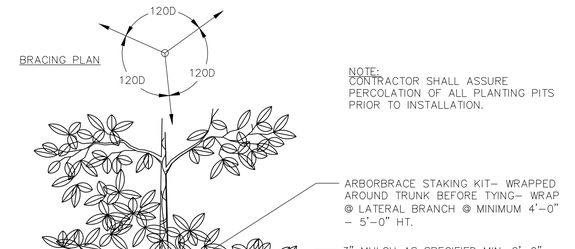
TREE PROTCTION BARRACADE DETAIL

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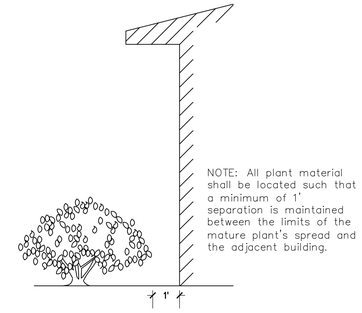
PARKING LOT HEDGE DETAIL

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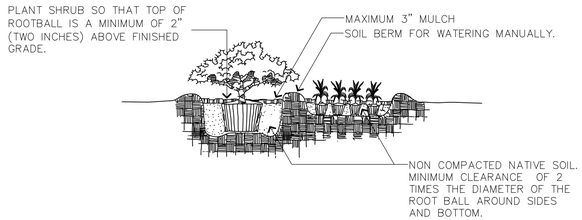
LARGE TREE PLANTING/STAKING DETAIL

SCALE: N.T.S.



SEPARATION OF PLANTS AND BUILDINGS DETAIL

SCALE: N.T.S.



SHRUB AND GROUNDCOVER PLANTING DETAIL

SCALE: N.T.S.

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Project:

Embraer

Location:

Titusville, Florida

Landscape Details

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Sheet #: L-9

Project No.	00-0000
Drawn By:	BKA
Designed By:	BKA
Checked By:	BKA
Drawing Scale:	1"=20'

Sheet 9 of 10

LANDSCAPE PLANTING

PART 1 – GENERAL
1.01 WORK INCLUDED

A. THE WORK INCLUDED IN THIS SECTION CONSISTS OF FURNISHING, PLANTING, WATERING, FERTILIZING AND MULCHING ALL PLANTS AND LAWN AREAS OF THE SPECIES, SIZE AND QUALITY IN THE LOCATIONS INDICATED ON THE DRAWINGS OR AS DISCUSSED WITH THE LANDSCAPE DESIGNER.

1.02 DELIVERY, STORAGE AND HANDLING

A. TRANSPORTATION AND INSPECTION: PLANT TRANSPORTATION SHALL COMPLY WITH ALL FEDERAL AND STATE REGULATIONS.

1.03 GUARANTEE

A. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANTING WORK FOR A PERIOD OF SIX MONTHS AND ALL SOD FOR THREE MONTHS AFTER THE DATE OF FINAL ACCEPTANCE. DURING THIS PERIOD, THE LANDSCAPE CONTRACTOR SHALL CONTINUE THE OBSERVATION OF PLANTS AND GUARANTEED WORK. THE LANDSCAPE CONTRACTOR SHALL SUBMIT MONTHLY OBSERVATION REPORTS TO THE OWNERS WITH A COPY TO THE LANDSCAPE DESIGNER DURING THE GUARANTEE PERIOD. THE PURPOSE OF THESE REPORTS IS TO STATE ANY MAINTENANCE DEFICIENCIES OBSERVED. IT IS THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY TO REPORT THESE TO PROTECT HIS GUARANTEE. FAILURE TO SUBMIT REPORTS ELIMINATES ANY CLAIMS THAT THE GUARANTEE IS NOT VALID DUE TO IMPROPER MAINTENANCE BY THE OWNER.

B. REPLACEMENT OF DEFECTIVE PLANTS: ANY DEAD PLANTS OR PLANTS SHOWING INDICATION OF PROBABL NO–SURVIVAL OR LACK OF HEALTH AND VIGOR, OR WHICH DO NOT EXHIBIT THE CHARACTERISTICS TO MEET SPECIFICATIONS, SHALL BE REPLACED WITHIN TWO WEEKS OF NOTICE FROM OWNER OR LANDSCAPE DESIGNER. ALL REPLACEMENT PLANTS SHALL BE FURNISHED/INSTALLED AT NO ADDITIONAL COST TO THE OWNER AND SHALL BE GUARANTEED FOR SIX MONTHS. ALL REPLACEMENTS SHALL MEET ORIGINAL SPECIFICATIONS.

C. THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE OWNER AND LANDSCAPE DESIGNER TEN DAYS PRIOR TO THE END OF THE GUARANTEE PERIOD AND SUCH GUARANTEE SHALL BE EXTENDED UNTIL NOTIFICATION IS RECEIVED.

D. AT THE END OF THE GUARANTEE PERIOD, ALL PLANTS THAT ARE DEAD OR UNSATISFACTORY SHALL BE REPLACED WITHIN TWO WEEKS.

1.04 JOB CONDITIONS

A. PROTECTION: THE LANDSCAPE CONTRACTOR SHALL PROTECT ALL MATERIALS AND WORK AGAINST INJURY FROM ANY CAUSES AND SHALL PROVIDE AND MAINTAIN ALL NECESSARY SAFEGUARDS FOR THE PROTECTION OF THE PUBLIC. HE SHALL BE HELD RESPONSIBLE FOR ANY DAMAGE OR INJURY TO PERSON OR PROPERTY THAT MAY OCCUR AS A RESULT OF THE NEGLIGENCE IN THE PROSECUTION OF THE WORK.

B. EXISTING CONDITIONS:

1. THE LANDSCAPE CONTRACTOR SHALL EXERCISE CARE IN DIGGING AND OTHER WORK SO AS NOT TO DAMAGE EXISTING WORK, INCLUDING UNDERGROUND PIPES AND CABLES, AND THE PIPES AND HYDRANTS OF WATERING SYSTEMS. SHOULD SUCH OVERHEAD OR UNDERGROUND OBSTRUCTIONS BE ENCOUNTERED WHICH INTERFERE WITH PLANTING, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE REPAIR OF ANY DAMAGE CAUSED BY HIS WORK. (SEE SECTION 3.01)

2. SHOULD ANY OBJECTIONABLE MATERIAL SUCH AS OLD CONCRETE, BRICKS OR OTHER DEBRIS BE ENCOUNTERED DURING PLANTING OPERATIONS, THEY SHALL BE REMOVED FROM THE SITE BY THE LANDSCAPE CONTRACTOR.

3. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER PLANT GROWTH IN EXISTING ON–SITE SOILS. PRIOR TO COMMITMENT OF PLANT SHIPMENTS, THE LANDSCAPE CONTRACTOR SHALL EXAMINE THE SOILS IN ALL AREAS OF WORK BY CONDUCTING SOIL TESTS AND FILLING TEST HOLES WITH WATER TO DETERMINE IF SOIL CHEMISTRY AND DRAINAGE ARE SATISFACTORY. ANY UNSATISFACTORY CONDITIONS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE LANDSCAPE DESIGNER FOR POSSIBLE CORRECTIVE ACTION OR PLANT MATERIAL SUBSTITUTIONS. THE OWNER/LANDSCAPE DESIGNER RESERVES THE RIGHT TO MAKE CHANGES OR SUBSTITUTIONS IN PLANT TYPE OR QUANTITIES FOR THE PURPOSES OF INSURING PROPER PLANT GROWTH.

4. PRIOR TO WORK, LANDSCAPE CONTRACTOR SHALL BECOME FULLY FAMILIAR WITH THE SITE AND THE WORK OF ALL OTHER TRADES, INCLUDING HARDSCAPE AND GRADING, IN ORDER TO UNDERSTAND THE FULL EXTENT OF THE WORK.

1.05 QUALITY CONTROL

A. THE LANDSCAPE DESIGNER / OWNER SHALL HAVE THE RIGHT, AT ANY STAGE OF THE OPERATIONS, TO REJECT ANY AND ALL WORK AND MATERIAL THAT, IN HIS/HER OPINION, DO NOT MEET THE REQUIREMENTS OF THESE SPECIFICATIONS.

B. ALL PLANTING SHALL BE PERFORMED BY PERSONNEL FAMILIAR WITH PLANTING PROCEDURE AND UNDER THE SUPERVISION OF A QUALIFIED PLANTING FOREMAN.

C. ALL WORK SHALL COMPLY WITH APPLICABLE CODES AND REGULATIONS.

D. THE WORK SHALL BE COORDINATED WITH OTHER TRADES TO PREVENT CONFLICTS.

1.06 QUANTITIES

A. IN THE EVENT OF A CONFLICT BETWEEN QUANTITIES SHOWN ON THE PLANT LIST AND PLANS, THE PLANS SHALL CONTROL.

PART 2 – PRODUCTS
2.01 MATERIALS
A. GENERAL:

1. NOMENCLATURE: ALL TREES, SHRUBS AND PLANTS SHALL BE TRUE TO NAME AS ESTABLISHED BY THE AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE PUBLICATION "STANDARD PLANTS NAMES". THE DESIGNATED AUTHORITY FOR THE IDENTIFICATION OF ALL MATERIAL SHALL BE THE TWO PUBLICATIONS OF L.H. BAILY, "HORTUS III" AND "MANUAL OF CULTIVATED PLANTS", AND ALL SPECIMENS SHALL BE TRUE TO TYPE, NAME, ETC., AS DESCRIBED THEREIN.

2. GRADE STANDARDS AND QUALITY: ALL PLANTS SHALL BE NURSERY GROWN, AND SHALL COMPLY WITH ALL REQUIRED INSPECTION, GRADING STANDARDS AND PLANT REGULATIONS AS SET FORTH IN THE FLORIDA DEPARTMENT OF AGRICULTURE. "GRADES AND STANDARDS FOR NURSERY PLANTS," PARTS 1 AND 2 INCLUDING REVISIONS.

A. THE MINIMUM GRADE FOR ALL TREES AND SHRUBS SHALL BE FLORIDA NO. 1 UNLESS OTHERWISE INDICATED AND ALL PLANTS SHALL BE SOUND, HEALTHY AND VIGOROUS, WELL BRANCHED AND DENSELY FOLIATED WHEN IN LEAF. THEY SHALL HAVE HEALTHY, WELL–DEVELOPED ROOT SYSTEMS AND SHALL BE FREE OF DISEASE AND INSECT PESTS, EGGS OR LARVAE.

3. MEASUREMENTS: THE MINIMUM ACCEPTABLE SIZE OF PLANTS, MEASURED AFTER PRUNING, WITH BRANCHES IN NORMAL POSITIONS, SHALL CONFORM TO THE SPECIFIED SIZES AS SHOWN ON THE PLANS. SIZES SPECIFIED ARE MINIMUM STANDARDS. PLANTS SHALL BE EQUAL TO OR LARGER THAT ALL CATEGORIES (HEIGHT, SPREAD, CALIPER) OF SIZE SPECIFICATION. SUBSTANTIAL DEVIATIONS FROM THESE MEASUREMENTS MUST BE APPROVED BY LANDSCAPE DESIGNER. CALIPER OF TREE TRUNKS SHALL BE MEASURED ONE FOOT ABOVE ROOTBALL FOR TREES OVER 6 INCHES IN CALIPER, AND SHALL BE MEASURED 6 INCHES ABOVE THE ROOT BALL FOR TREES UNDER 6 INCHES IN CALIPER.

4. PLANT PROTECTION: PLANTS SHALL BE PROTECTED UPON ARRIVAL AT THE SITE, BY BEING THOROUGHLY WATERED, KEPT MOIST, AND PROPERLY MAINTAINED UNTIL PLANTED.

B. PLANT MATERIALS: WITH REFERENCE TO METHOD OF CULTIVATION, ROOT SYSTEM STATUS, ETC., PLANTS FOR LANDSCAPING SHALL BE CLASSIFIED UNDER THE FOLLOWING DESIGNATIONS:

1. BALLED AND BURLAPPED: PLANTS SO CLASSIFIED SHALL BE DUG WITH FIRM NATURAL ROOT BALLS OF EARTH COMING FROM SINGULAR CLIMATIC AND SOIL CONDITIONS AS THOSE ON PROJECT SITE AND OF SUFFICIENT DIAMETER AND DEPTH TO INCLUDE MOST OF THE FIBROUS ROOTS. THE ROOT BALL OF THESE PLANTS SHALL BE PROPERLY WRAPPED WITH BURLAP SACK MATERIAL AND REMAIN PROTECTED AND WET UNTIL THEY ARE PLANTED. THE PLANTS SHALL BE HANDLED ONLY BY THE EARTH BALL AND NOT BY THE PLANT ITSELF. ALL BALLED AND BURPED PLANTS WHICH CANNOT BE PLANTED IMMEDIATELY UPON DELIVERY SHALL BE SET ON THE GROUND AND SHALL BE WELL PROTECTED WITH SOIL, WET SOIL, WET MOSS, OR OTHER ACCEPTABLE MATERIAL. THE PLANTS SHALL BE SET WITH THE BURLAP COVER INTACT AND WITH THE BURLAP SHOWING, UNTIL INSPECTION. AT FINAL INSPECTION THE BURLAP MAY BE CUT AWAY TO GROUND LEVEL AND THEN COMPLETELY COVERED WITH SOIL.

BURLAP: SHALL BE PURE BURLAP, ORGANIC FIBER WITH THE ABILITY TO DECOMPOSE.

2. CONTAINER GROWN PLANTS:

A. CONTAINER GROWN PLANTS SHALL HAVE BEEN GROWN IN CONTAINERS LARGE ENOUGH AND FOR SUFFICIENT TIME FOR THE ROOT SYSTEM TO HAVE DEVELOPED WELL ENOUGH TO HOLD ITS SOIL TOGETHER FIRM AND WHOLE. NO PLANTS SHALL BE LOOSE IN THE CONTAINER. PLANTS THAT HAVE BECOME ROOT BOUND OR FOR WHICH THE TOP SYSTEM IS TOO LARGE FOR THE SIZE OF THE CONTAINER, WILL NOT BE ACCEPTABLE.

B. ALL CONTAINERS SHALL BE CUT AND OPENED FULLY, IN A MANNER SUCH AS WILL NOT DAMAGE THE ROOT SYSTEM. CONTAINER GROWN PLANTS SHALL NOT BE REMOVED FROM THE CONTAINER UNTIL IMMEDIATELY BEFORE PLANTING, WHEN ALL DUE CARE SHALL BE TAKEN TO PREVENT DAMAGE TO THE ROOT SYSTEM.

3. BARE ROOT PLANTS: NO BARE ROOT PLANTS SHALL BE USED, UNLESS SPECIFICALLY SPECIFIED.

4. GROW BAG PLANTS: NO GROW–BAG PLANTS SHALL BE USED UNLESS SPECIFIED.

C. PLANTING MATERIALS:

1. TOPSOIL:

A. TOPSOIL SHALL BE FRIABLE LOAM, TYPICAL OF CULTIVATED TOPSOIL LOCALLY, CONTAINING AT LEAST 5 PERCENT OF DECAYED ORGANIC MATTER (HUMUS). IT SHALL OCCUR AS ON–SITE NATURAL TOPSOIL WITH GOOD CHARACTERISTICS OR BE TAKEN FROM A WELL DRAINED, ARABLE SITE. IT SHALL BE REASONABLY FREE OF WEEDS, SUBSOIL, STONES, CLODS, STICKS, ROOTS OR OTHER OBJECTIONABLE EXTRANEOUS MATTER OR DEBRIS. IT SHALL NOT CONTAIN TOXIC MATERIALS AND SHALL HAVE ACIDITY RANGE OF PH 6.0 TO 7.0. TOPSOIL FROM NUT GRASS INFESTED AREAS WILL NOT BE ACCEPTABLE.

B. IF REQUESTED BY THE OWNER, SOIL TESTING SHALL BE PERFORMED AND ANALYZED BY A LABORATORY REGISTERED BY THE STATE. TESTING SHALL INCLUDE FERTILITY AND SUITABILITY ANALYSIS WITH WRITTEN RECOMMENDATIONS FOR FERTILIZER OR AMENDMENTS THAT SHALL TAKE PRECEDENCE OVER RATES OR ANALYSIS SPECIFIED IN THIS SECTION. SOIL TESTING SHALL BE THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY. SUBMIT TEST RESULTS TO THE OWNER FOR REVIEW.

C. PARTICLE SIZE DISTRIBUTION IN TOP 6"–12" OF SOIL:
COARSE SAND (1–2mm)/MEDIUM SAND (.25–.5mm)MIN. OF 60% OF PARTICLES SHALL FALL WITHIN THIS RANGE.
FINE SAND (.15–.25mm):NOT MORE THAN 20% OF PARTICLES SHALL FALL IN THIS RANGE.
VERY FINE SAND (.05–.15mm): NOT MORE THAN 5% OF PARTICELS SHALL FALL IN THIS RANGE.
SILT (.002–.05mm): NOT MORE THAN 5% OF PARTICELS SHALL FALL IN THIS RANGE.
CLAY (LESS THAN .002mm): NOT MORE THAN 3% OF PARTICELS SHALL FALL IN THIS RANGE.
(SOIL ANALYSIS FOR PARTICLE SIZE SHALL BE OBTAINED THROUGH PR OJECT GEOTECHNICAL ENGINEER)

D. INFILTRATION OR PERCOLATION RATE OF SOIL: DESIRED LEVEL IS 2" PER HOUR.

E. SOIL PREPARATION: PRIOR TO COMMENCING WITH PLANTING, ROTOTILL ANY OR ALL AREAS THAT HAVE BEEN PREVIOUSLY COMPACTED OVER 90 PERCENT FOR OTHER CONSTRUCTION PURPOSES.

2. FERTILIZER: FERTILIZER SHALL BE A COMPLETE BALANCED BLEND FORMULA, OF WHICH PART OF THE ELEMENTS SHALL BE DERIVED FROM ORGANIC SOURCES. IT SHALL CONTAIN NITROGEN, PHOSPHORUS AND POTASSIUM AS WELL AS RECOMMENDED MICRONUTRIENTS SUCH AS MAGNESIUM, IRON, COPPER, ZINC, BORON, AND MANGANESE IN SULFATE FORM.

NITROGEN SHALL BE APPLIED OVER ALL TURF, SHRUB AND TREE AREAS AT A RATE OF 1 1/2 POUNDS PER 1,000 SQUARE FEET. THE COMPLETE FERTILIZER ANALYSIS SHALL BE APPROVED BY THE LANDSCAPE DESIGNER.

3. MULCH: PINE STRAW MULCH SHALL BE INSTALLED IN ALL NATURAL, NON–SODDED AREAS AT A DEPTH OF 4" AND SHALL BE CLEAN, BRIGHT AND FREE OF WEEDS, MOSS, STICKS AND OTHER DEBRIS.

PINE BARK MINI NUGGETS SHALL BE INSTALLED TO A DEPTH OF 3"–4" ALL BEDDING AREAS. MULCH SHALL BE RAKED TO PROVIDE A FINISHED APPEARANCE.

4. WATER: SUITABLE WATER FOR THE IRRIGATION OF THE NEW PLANTINGS DURING THE PROGRESS OF CONSTRUCTION SHALL BE PROVIDED AND PAID FOR BY THE LANDSCAPE CONTRACTOR, WHO SHALL ALSO FURNISH ADEQUATE WATERING EQUIPMENT.

5. STAKES AND TIES: STAKES AND TREE TIES SHALL BE PROVIDED IN ACCORDANCE WITH THE REQUIREMENTS OF PARAGRAPH 3.02.B HEREINAFTER.

PART 3 – EXECUTION
3.01 PREPARATION

A. UNDERGROUND OBSTRUCTIONS:

1. THE LANDSCAPE CONTRACTOR, PRIOR TO CONSTRUCTION, SHALL VERIFY ALL UTILITIES.

2. UPON REQUEST FROM THE LANDSCAPE CONTRACTOR, THE OWNER SHALL PROVIDE PLANS SHOWING LOCATIONS OF UNDERGROUND UTILITIES AND/OR WILL ASSIST THE LANDSCAPE CONTRACTOR IN SECURING UNDERGROUND LOCATIONS FROM OTHER PUBLIC UTILITY COMPANIES, SUCH AS TELEPHONE, ELECTRICITY, ETC.

3. IN THE EVENT THAT ROCK, UNDERGROUND CONSTRUCTION WORK, UTILITY LINES OR OBSTRUCTION OUT OF THE ORDINARY ARE ENCOUNTERED IN ANY PLANT PIT EXCAVATION; ALTERNATIVE LOCATIONS SHALL BE SELECTED BY THE LANDSCAPE DESIGNER OR OWNER. WHERE LOCATIONS CANNOT BE CHANGED AND THE OBSTRUCTIONS MAY BE REMOVED, THE OBSTRUCTIONS SHALL BE REMOVED TO A DEPTH OF NOT LESS THAN 3–FEET BELOW GRADE AND NO LESS THAN 6–INCHES BELOW BOTTOM OF BALLS OR ROOTS WHEN PLANT IS PROPERLY SET AT THE REQUIRED GRADE.

B. EXCAVATION OF PLANTING BEDS AND/OR PLANT HOLES:

1. WHERE EXCAVATION ENCOUNTERS MATERIAL WHICH ARE SUITABLE FOR PLANT GROWTH, THE PLANT HOLE EXCAVATIONS SHALL BE ROUGHLY CYLINDRICAL IN SHAPE, WITH THE SIDES APPROXIMATELY VERTICAL. PLANTS SHALL BE CENTERED IN THE HOLE, WITH THE TRUNK LOCATION AS SHOWN IN THE DRAWINGS. BOTTOMS OF THE HOLES SHALL BE UNDISTURBED NATURAL SUBGRADE PREVENTING THE TREE FROM SETTLING.

C. PROTECTION OF EXISTING TREES: THE LANDSCAPE CONTRACTOR SHALL PROTECT EXISTING TREES FROM DAMAGE. WHERE DAMAGE DOES OCCUR, THE LANDSCAPE CONTRACTOR SHALL REMOVE THE DAMAGED TREE, THEN REPLACE IT IN KIND AND SIZE IN ACCORDANCE WITH THE INSTRUCTION OF THE LANDSCAPE DESIGNER AND THE APPROPRIATE SPECIFICATIONS, ALL AT NO ADDITIONAL COST TO THE OWNER.

D. GRADES: IT SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO FINISH (FINE) GRADE ALL LANDSCAPE AREAS ELIMINATING ALL SURFACE IRREGULARITIES, DEPRESSIONS, STICKS, STONES AND OTHER DEBRIS TO THE SATISFACTION OF THE LANDSCAPE DESIGNER

OR OWNER. NO PLANT MATERIAL SHALL BE PLANTED UNTIL FINAL GRADE HAS BEEN ESTABLISHED, ENSURING POSITIVE DRAINAGE, COMPACTED TO THE REQUIRED DEPTH, AND APPROVED BY THE LANDSCAPE DESIGNER OR OWNER.

E. ON SITES WHERE EXISTING VEGETATION EXISTS, THE CONTRACTOR SHALL PROVIDE A ONE TIME HERBICIDE APPLICATION TO ALL AREAS TO BE PLANTED PRIOR TO THE INSTALLATION OF THE NEW PLANTINGS. IF VEGETATION OR AREAS OF VEGETATION ARE NOT KILLED AFTER THE INITIAL APPLICATION, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RETREAT THE AREAS AT NO ADDITIONAL COST TO THE OWNER.

3.02 PLANTING

A. SETTING OF PLANTS:

1. WHEN LOWERING INTO THE HOLE, THE PLANT SHALL REST ON A PREPARED HOLE BOTTOM SUCH THAT THE ROOTS ARE LEVEL WITH, OR SLIGHTLY ABOVE, THE LEVEL OF THEIR PREVIOUS GROWTH AND SO ORIENTED SUCH AS TO PRESENT THE BEST APPEARANCE. THE LANDSCAPE CONTRACTOR, WHEN SETTING PLANTS IN HOLES, SHALL MAKE ALLOWANCES OF ANY ANTICIPATED SETTLING OF THE PLANTS. IF WET CONDITIONS ARE ANTICIPATED, PLANTS SHALL BE SET 2 INCHES TO 3 INCHES HIGHER THAN NORMAL.

2. THE BACKFILL SHALL BE MADE WITH NATIVE TOPSOIL, AND SHALL BE FIRMLY RODDED AND WATERED–IN, SO THAT NO AIR POCKETS REMAIN. THE QUANTITY OF WATER APPLIED IMMEDIATELY UPON PLANTING SHALL BE SUFFICIENT TO THOROUGHLY MOISTEN ALL OF THE BACKFILLED EARTH. PLANTS SHALL BE KEPT IN A MOISTENED, BUT NOT SATURATED, CONDITION FOR THE DURATION OF THE ESTABLISHMENT PERIOD.

B. STAKING AND GUYING: IT IS THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO MAINTAIN ALL PLANTS IN A PLUMB, UPRIGHT POSITION UNTIL THE END OF THE GUARANTEE PERIOD. TYPE OF STAKING SHALL BE THE OPTION OF THE LANDSCAPE CONTRACTOR, ALTHOUGH ALL DAMAGED PLANTS RESULTING FROM THE LACK OF PROPER STAKING AND GUYING SHALL BE REPLACED BY THE LANDSCAPE CONTRACTOR AT NO EXPENSE TO THE OWNER. ALL THREE GUY WIRES SHALL BE FLAGGED WITH YELLOW SAFETY RIBBON.

C. PRUNING:

1. ALL BROKEN OR DAMAGED ROOTS SHALL BE CUT OFF SMOOTHLY AND THE TOPS OF ALL TREES SHALL BE PRUNED IN A MANNER COMPLYING WITH STANDARD HORTICULTURAL PRACTICE. AT THE TIME PRUNING IS COMPLETED, ALL REMAINING WOOD SHALL BE ALIVE. FINE PRUNING FOR TREE SHAPE AND APPEARANCE SHALL BE DONE ONLY UNDER THE DIRECTION OF THE LANDSCAPE DESIGNER OR OWNER.

2. AT THE END OF THE GUARANTEE PERIOD, AT LEAST 80 PERCENT OF THE WOOD REMAINING SHALL BE ALIVE.

D. MULCHING: WITHIN ONE WEEK AFTER THE PLANTING, MULCH MATERIAL SHALL BE UNIFORMLY APPLIED TO A MINIMUM LOOSE THICKNESS OF 3 INCHES OVER THE ENTIRE AREA OF THE BACKFILLED HOLE OR BED. THE MULCH SHALL BE MAINTAINED CONTINUOUSLY IN PLACE UNTIL THE TIME OF FINAL INSPECTION.

E. WATERING: THE LANDSCAPE CONTRACTOR SHALL CONTINUE WATERING FOR AS LONG AS IS NECESSARY TO PROPERLY ESTABLISH THE NEW PLANTINGS. CARE SHALL BE TAKEN TO PREVENT STAINING OF NEW CONSTRUCTION WHERE TEMPORARY WELL WATER IS USED.

F. PEST CONTROL: PRIOR TO FINAL ACCEPTANCE, OCCURRENCE OF SCALES, BORERS, FOLIAR FEEDERS, APHIDS, MITES, LEAF–SPOT AND DIEBACK, NEMATODES AND CANKER–PRODUCING FUNGI, SHALL BE TREATED WITH APPROPRIATE PESTICIDE.

G. ALL PLANTS SHALL RECEIVE THE SPECIFIED FERTILIZER PRIOR TO FINAL ACCEPTANCE.

3.03 BERMING

A. FILL DIRT SHALL BE LOCALLY OBTAINED MATERIAL FROM NATURALLY DRAINED SOURCES, FREE FROM DRY, ORGANIC DEBRIS, STONES LARGER THAN 1–INCH DIAMETER AND OTHER MATERIALS HARMFUL TO SUCCESSFUL DRAINAGE AND PLANT GROWTH. SOIL SHALL BE WELL MIXED AND CONTAIN NO MORE THAN 25 PERCENT MUCK.

B. GRADE AREAS INDICATED WITH UNIFORM LEVELS OR SLOPES WITH NO MORE THAN 4:1 MAXIMUM SLOPE. BERMS SHALL BE GENTLY ROLLING AND PARABOLIC.

C. REPAIR AND RE–ESTABLISH GRADES IN SETTLED, ERODED, RUTTED, OR OTHERWISE DAMAGED AREAS.

3.04 SODDING

A. THE SOD SHALL BE OF FIRM, TOUGH TEXTURE HAVING A COMPACT GROWTH OF GRASS WITH GOOD ROOT DEVELOPMENT. IT SHALL CONTAIN NO BERMUDA GRASS, WEEDS OR ANY OTHER OBJECTIONABLE VEGETATION. THE SOIL EMBEDDED IN THE SOD SHALL BE GOOD CLEAN EARTH, FREE FROM STONES AND DEBRIS. THE SOD SHALL BE FREE FROM FUNGUS, VERMIN AND OTHER DISEASES. FINAL TURF SHALL HAVE NO AREA GREATER THAN 6 SQUARE INCHES OF UNSODDED AREA.

B. SOLID SOD SHALL BE LAID WITH CLOSELY ABUTTING JOINTS WITH A EVEN SURFACE. IT SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO BRING THE SOD EDGE IN A NEAT, CLEAN MANNER TO THE EDGE OF ALL PAVING AND SHRUB AREAS. AFTER THE SOD IS LAID, IF AN EVEN SURFACE IS NOT ACHIEVED, A TOP DRESSING OF CLEAN SAND WILL BE EVENLY APPLIED OVER THE ENTIRE SURFACE AND THOROUGHLY WASHED IN, IF DETERMINED NECESSARY. PEG SOD ON SLOPES AS REQUIRED TO PREVENT SLIPPAGE. FERTILIZE ALL SOD: 1 POUND NITROGEN PER 1,000 SQUARE FEET.

C. ON SITES WHERE EXISTING VEGETATION EXISTS, THE CONTRACTOR SHALL PROVIDE A ONE TIME HERBICIDE APPLICATION TO ALL AREAS TO BE SODDED PRIOR TO THE INSTALLATION OF THE NEW SOD. IF VEGETATION OR AREAS OF VEGETATION ARE NOT KILLED AFTER THE INITIAL APPLICATION, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RETREAT THE AREAS AT NO ADDITIONAL COST TO THE OWNER.

3.05 FIELD QUALITY CONTROL

A. MAINTENANCE PRIOR TO FINAL ACCEPTANCE:

1. MAINTENANCE SHALL BEGIN IMMEDIATELY AFTER EACH PLANT IS PLANTED AND SHALL CONTINUE UNTIL FINAL ACCEPTANCE. PLANTS SHALL BE WATERED, MULCHED, WEEDED, PRUNED, SPRAYED, FERTILIZED, CULTIVATED AND OTHERWISE MAINTAINED AND PROTECTED FOR THE PERIOD OF TIME STATED ABOVE. SOD SHALL BE MOWED, IF REQUIRED.

2. SETTLED PLANTS SHALL BE RESET TO PROPER GRADE POSITION, PLANTING SAUCER RESTORED AND DEAD MATERIAL REMOVED. GUYS SHALL BE TIGHTENED AND REPAIRED.

3. DEFECTIVE WORK SHALL BE CORRECTED AS SOON AS POSSIBLE AFTER IT BECOMES APPARENT AND WEATHER AND SEASON PERMIT. UPON COMPLETION OF PLANTING, THE LANDSCAPE CONTRACTOR SHALL REMOVE FROM THE SITE EXCESS SOIL AND DEBRIS, AND REPAIR ANY DAMAGE TO STRUCTURES, ETC., RESULTING FROM PLANTING OPERATIONS.

4. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR PROTECTION AGAINST MECHANICAL DAMAGE. THIS SHALL INCLUDE PROVIDING PROTECTION FROM VEHICLES, INCLUDING THE POSTING OF APPROVED WARNING SIGNS AND BARRICADES, AS NEEDED. THE LANDSCAPE CONTRACTOR SHALL REPAIR, RESTORE OR REPLACE ANY PLANTS OR PLANTING AREAS WHICH MIGHT BECOME DAMAGED AS A RESULT OF ANY NEGLIGENCE BY THE LANDSCAPE CONTRACTOR IN COMPLYING WITH THESE REQUIREMENTS. AS A SPECIFIC REQUIREMENT OF THESE CONDITIONS, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ASSURING THAT ALL PLANTS AT THE TIME OF FINAL ACCEPTANCE, EXHIBIT THE CHARACTERISTICS AND QUALIFICATIONS REQUIRED FOR THE GRADE OF PLANT AS ORIGINALLY SPECIFIED.

5. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL WATERING REQUIRED IF IRRIGATION PROVES TO BE INADEQUATE FOR FRESHLY PLANTED MATERIAL.

6. EXCEPT AS OTHERWISE SPECIFIED, THE LANDSCAPE CONTRACTOR'S WORK SHALL CONFORM TO ACCEPTED HORTICULTURAL PRACTICES AS USED IN THE TRADE.

B. FINAL ACCEPTANCE:

1. UPON COMPLETION OF ALL WORK, INCLUDING MAINTENANCE, THE LANDSCAPE CONTRACTOR SHALL ARRANGE FOR A FINAL REVIEW. THE LANDSCAPE WORK MAY BE REVIEWED FOR ACCEPTANCE IN PARTS, PROVIDED THE WORK COMPRISES OF ONE FULL UNIT OR AREA OF SUBSTANTIAL SIZE.

2. DATE OF FINAL ACCEPTANCE SHALL MARK THE BEGINNING OF THE GUARANTEE PERIOD.

C. GUARANTEE REVIEW: AT THE END OF THE GUARANTEE PERIOD, REVIEW OF PLANTS WILL BE MADE BY THE LANDSCAPE DESIGNER OR OWNER UPON WRITTEN NOTICE REQUESTING SUCH REVIEW, SUBMITTED BY THE LANDSCAPE CONTRACTOR AT LEAST TEN DAYS BEFORE THE ANTICIPATED WALK–THRU. ALL DEFECTS DISCOVERED SHALL BE REPAIRED OR REPLACED BY THE LANDSCAPE CONTRACTOR.

3.06 ADJUSTMENT AND CLEANING

A. CLEANING UP THE SITE: UPON COMPLETION OF ANY LANDSCAPE PROJECT, THE LANDSCAPE CONTRACTOR MUST THOROUGHLY CLEAN UP THE PROJECT SITE. IN ADDITION TO REMOVING ALL EQUIPMENT, UNUSED MATERIALS, DELETERIOUS MATERIAL, AND SURPLUS EXCAVATED MATERIAL, THE LANDSCAPE CONTRACTOR SHALL FINE GRADE ALL DISTURBED AREAS AND THE AREAS ADJACENT TO THE NEW PLANTINGS TO PROVIDE A NEAT AND UNIFORM SITE. ALL DAMAGED OR ALTERED EXISTING STRUCTURES, AS A RESULT OF THE LANDSCAPE WORK, SHALL BE CORRECTED.

Plans are not to be used for construction purposes
unless marked "approved" by the City of Titusville

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Original Drawing Issue Date: 12-2-15

REVISIONS:

No.	Date	Description	By
1.	2-5-16	Per City of Titusville comments and updated base info.	BKA
2.			
3.			
4.			
5.			
6.			
7.			

Project:

Embraer

Location:

Titusville, Florida

Landscape Specifications

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Sheet #:

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Project No.	00-0000
Drawn By:	BKA
Designed By:	BKA
Checked By:	BKA
Drawing Scale:	none
Sheet	10 of 10