FINAL ENGINEERING PLAN

HARTWOOD MARSH

CITY OF CLERMONT, FLORIDA

PREPARED FOR

HARTWOOD RESIDENTIAL, LLC
401 FERGUSON DRIVE
ORLANDO, FLORIDA 32805
407.293.6562

TAX PARCEL ID:
13-23-25-0900-001-00000
09-23-26-0004-000-02700
09-23-26-0004-000-02400

LEGAL DESCRIPTION:

DESCRIPTION:

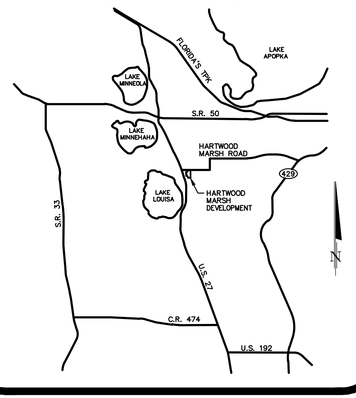
That part of MONTE VISTA PARK FARMS, according to the plat thereof, as recorded in Plat Book 2, Page 27, of the Public Records of Lake County, Florida, lying in Sections 9 and 16, Township 23 South, Range 26 East, and that part of the Southeast 1/4 of Section 9, Township 23 South, Range 26 East, Lake County, Florida, described as follows:

COMMENCE at the East 1/4 corner of Section 9, Township 23 South, Range 26 East, thence run S00°25'15"W along the East line of the Southeast 1/4 of said Section 9 for a distance of 26.00 feet to the POINT OF BEGINNING; thence continue S00°25'15"W along said East line 2560.45 feet to the Southeast corner of said Section 9; thence S00°26'49"W along the East line of the Northeast 1/4 of Section 16, Township 23 South, Range 26 East, for a distance of 662.26 feet to the Southeast corner of the North 1/2 of the Northeast 1/4 of the Northeast 1/4 of said Section 16; thence N89°32'02"W along the South line of said North 1/2 of the Northeast 1/4 of the Northeast 1/4 for a distance of 1121.46 feet; thence leaving said South line run N00°27'58"E, 529.08 feet; thence N50°15'49"W, 606.67 feet; thence N18°55'15"E, 15.13 feet; thence N06°26'42"W, 28.59 feet; thence N31°04'08"W, 24.54 feet; thence N57°16'34"W, 38.82 feet; thence N79°19'14"W, 22.50 feet; thence S72°14'43"W, 23.58 feet; thence S25°50'57"W, 30.74 feet; thence S66°47'05"W, 81.79 feet; thence S55°09'08"W, 65.04 feet; thence S70°14'29"W, 16.30 feet; thence N77°06'37"W, 14.04 feet; thence N56°24'53"W, 10.66 feet; thence N21°01'30"W, 101.88 feet; thence N04°17'39"E, 27.39 feet; thence N16°05'04"E, 33.97 feet; thence N28°56'59"E, 43.34 feet; thence N61°30'08"E, 44.26 feet; thence N43°55'27"E, 43.91 feet; thence N20°42'07"E, 56.29 feet; thence N06°27'57"E, 101.43 feet; thence N02°36'01"W, 121.76 feet; thence N03°11'49"E, 54.97 feet; thence N14°54'49"E, 44.67 feet; thence N36°16'47"E, 24.84 feet; thence N68°05'38"E, 28.33 feet; thence S76°04'07"E, 30.37 feet; thence S64°20'08"E, 25.40 feet to the point of curvature of a curve concave Northeasterly having a radius of 25.00 feet and a chord bearing of N41°37'57"E; thence Northeasterly along the arc of said curve through a central angle of 148°03'50" for a distance of 64.61 feet to the point of tangency; thence N32°23'58"W, 72.00 feet; thence N46°19'25"W, 35.85 feet; thence N73°14'47"W, 36.84 feet; thence N88°48'33"W, 90.46 feet; thence S79°46'13"W, 30.52 feet; thence N85°12'21"W, 36.97 feet; thence N45°06'17"W, 26.84 feet; thence N02°32'14"W, 197.47 feet; thence N06°51'20"E, 199.46 feet; thence N10°32'32"W, 40.47 feet; thence N25°48'53"W, 31.53 feet; thence N46°57'10"W, 23.08 feet; thence N30°34'13"W, 20.75 feet; thence N15°51'21"W, 43.08 feet; thence N07°19'12"W, 66.15 feet; thence N02°11'09"E, 52.90 feet; thence N09°45'40"E, 49.13 feet; thence N16°35'39"E, 43.95 feet; thence N44°07'53"E, 55.81 feet; thence N60°09'01"E, 42.42 feet; thence N74°46'16"E, 40.33 feet; thence N80°48'18"E, 53.28 feet; thence N87°41'33"E, 82.14 feet; thence N00°23'35"E, 86.68 feet to the North line of the South 1/2 of the Northwest 1/4 of the Southeast 1/4 of said Section 9; thence S89°36'25"E along said North line 382.81 feet to the Northeast corner of said South 1/2 of the Northwest 1/4 of the Southeast 1/4; thence N00°20'29"E along the West line of the Northeast 1/4 of the Southeast 1/4 of said Section 9 for a distance of 644.48 feet to the Northwest corner of the Northeast 1/4 of the Southeast 1/4 of said Section 9; thence run S89°42'00"E along the North line of the Southeast 1/4 of said Section 9 for a distance of 315.40 feet to the right-of-way line of Hartwood Marsh Road, as recorded in Maintenance Map Book 8, Pages 21 through 23, of the Public Records of Lake County, Florida; thence S00°18'00"W along said right-of-way line 26.00 feet; thence S89°42'00"E along said right-of-way line 999.95 feet to the POINT OF BEGINNING.

North line of the Southeast 1/4 of said Section 9 for a distance of 315.40 feet to the right-of-way line of Hartwood Marsh Road, as recorded in Maintenance Map Book 8, Pages 21 through 23, of the Public Records of Lake County, Florida; thence S00°18'00"W along said right-of-way line 26.00 feet; thence S89°42'00"E along said right-of-way line 999.95 feet to the POINT OF BEGINNING.

Containing 115.890 acres more or less and being subject to any rights-of-way, easements and restrictions of record.

VICINITY MAP



SECTION 9, TOWNSHIP 23S, RANGE 26E

REVISED OCTOBER 25, 2019
JULY 12, 2019

DONALD W. MCINTOSH ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FL 32789 407.644.4068

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Digitally signed by John T Townsend
DN: c=US, o=DONALD W MCINTOSH ASSOCIATES INC, ou=A01427E00000016A98142C880000286D, cn=John T Townsend
Date: 2019.11.15 15:09:02 -05'00'

JOHN T. TOWNSEND LICENSE No. 52127 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been electronically signed and sealed using a Digital Signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

JOHN T. TOWNSEND
FLORIDA P.E. No. 52127
DATE: _____

HARTWOOD MARSH – 26086 – 7/12/19 – REVISED 10/25/19

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DONALD W. McINTOSH ASSOCIATES, INC. RESERVES THE EXCLUSIVE COPYRIGHT AND PROPERTY RIGHTS TO THIS DRAWING WHICH MAY NOT BE REPRODUCED, CHANGED, OR COPIED IN ANY FORM OR MANNER, NOR CAN IT BE ASSIGNED TO ANY PARTY WITHOUT DONALD W. McINTOSH ASSOCIATES, INC.'S WRITTEN CONSENT.

HORIZONTAL GEOMETRY NOTES:

1. CONTRACTOR SHALL STAKE ALL IMPROVEMENTS USING THE PLAT. CONTRACTOR SHALL CONFIRM WITH THE ENGINEER THAT THE PLAT IS CURRENT PRIOR TO CONSTRUCTION. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO COMPLETELY STAKE AND CHECK ALL IMPROVEMENTS TO ENSURE ADEQUATE POSITIONING, BOTH HORIZONTAL AND VERTICAL PRIOR TO THE INSTALLATION OF ANY IMPROVEMENT.

2. THIS SET OF CONSTRUCTION DRAWINGS AND ALL COORDINATE PAIRS LISTED HEREON ARE IN STATE PLANE COORDINATE SYSTEMS. USERS OF THESE CONSTRUCTION DRAWINGS ARE ADVISED THAT THE CONSTRUCTION CONTROL MONUMENTS PROVIDED FOR THIS PROJECT MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO UTILIZING THE DATA WITHIN THESE CONSTRUCTION DRAWINGS.

VERTICAL DATUM AND BENCHMARKS:

1. BOUNDARY/HORIZONTAL CONTROL BASED ON THE FOLLOWING:
   SURVEYOR: DONALD W. MCINTOSH ASSOCIATES, INC.
   DRAWING NO.(S): CS #06–308, HARTWOOD RESIDENTIAL TOPO.DWG
   DATED: 04/04/06
   REVISION DATE: 11/13/08

2. EXISTING TOPOGRAPHY AND CONTOURS BASED ON THE FOLLOWING:
   SURVEYOR: DONALD W. MCINTOSH ASSOCIATES, INC.
   DRAWING NO.: CS #06–308(A), HARTWOOD RESIDENTIAL TOPO.DWG
   DATED: 06/27/19
   REVISION DATE:

3. SURVEYOR'S REFERENCE BENCHMARK: LK 172, LAKE COUNTY
   DESCRIPTION: 4"x4" CONCRETE MONUMENT WITH 3" ROUND BRASS DISK
   LOCATION: FLORIDA EAST STATE PLANE COORDINATE, N:1515840.7, E:429001.1
   ELEVATION: 166.811 FEET (NAVD 88)

4. SITE BENCHMARK: #11020
   DESCRIPTION: 5/8" IRON ROD AND CAP "LB68 TRAV"
   LOCATION: FLORIDA EAST STATE PLANE COORDINATE, N:1515115.3, E:428412.6
   ELEVATION: 121.703 FEET (NAVD 88)

5. SITE BENCHMARK: #10035
   DESCRIPTION: 5/8" IRON ROD AND CAP "SSMC TRAV PT"
   LOCATION: FLORIDA EAST STATE PLAN COORDINATE, N:1512231.6, E:429024.0
   ELEVATION: 111.251 FEET (NAVD 88)

6. BENCHMARK LOCATION AND ELEVATION ARE AS REPRESENTED BY SURVEYOR AT THE TIME OF THE SURVEY. CONTRACTOR SHALL VERIFY ITS CORRECTNESS AT TIME OF CONSTRUCTION.

GENERAL SITE NOTES:

1. GEOTECHNICAL SERVICES HAVE BEEN PROVIDED AS REFERENCED BELOW. GEOTECHNICAL RECOMMENDATIONS ARE NOT THE RESPONSIBILITY OF DONALD W. McINTOSH ASSOCIATES, INC. DONALD W. McINTOSH ASSOCIATES, INC. HAS RELIED ON THE REFERENCED GEOTECHNICAL REPORT(S) IN PREPARATION OF THE DRAWINGS. ANY CONFLICT BETWEEN INFORMATION WITHIN THE REPORT(S) AND THESE DRAWINGS SHALL BE REPORTED TO ENGINEER/OWNER. DONALD W. McINTOSH ASSOCIATES, INC. ASSUMES NO RESPONSIBILITY FOR THE CORRECTNESS, COMPLETENESS OR ACCURACY OF GEOTECHNICAL INFORMATION.

2. GEOTECHNICAL ENGINEER: DEVO ENGINEERING
   REPORT NO(S).: DATE:

3. 100–YEAR FLOOD ELEVATIONS SHOWN HEREIN ARE DERIVED FROM FEMA/FLOOD INSURANCE COMMUNITY PANELS # 12069C0675–E, DATED DECEMBER 18, 2012

4. ALL FDOT DESIGN INDICES ARE HEREBY INCORPORATED AS PLAN REFERENCES HEREIN. CONTRACTOR IS RESPONSIBLE FOR OBTAINING COMPLETE COPIES OF ALL APPLICABLE INDEX DRAWINGS AND CONSTRUCTING ALL WORKS IN CONFORMANCE WITH THE FDOT DESIGN STANDARDS, LATEST EDITION.

5. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING PROPER TRAFFIC MAINTENANCE AND CONTROLS IN ACCORDANCE WITH REGULATORY STANDARDS. WHERE A TRAFFIC MAINTENANCE PLAN IS REQUIRED, THE CONTRACTOR SHALL HAVE THE PLAN PREPARED BY AN FDOT CERTIFIED DESIGNER AND SUBMIT THE PLAN FOR APPROVAL.

6. CONTRACTOR SHALL COMPLY WITH OSHA TRENCH SAFETY STANDARDS 29 C.F.R., S, 926.650, SUBPART P, AND ALL SUBSEQUENT REVISIONS OR UPDATES ADOPTED BY THE DEPARTMENT OF LABOR AND EMPLOYMENT SECURITY AND WITH SECTION 553.62, FLORIDA STATUTES.

7. NO EXISTING MATERIAL SHALL BE USED IN NEW CONSTRUCTION UNLESS APPROVED DURING THE SHOP DRAWING APPROVAL PROCESS.

8. PRIOR TO COMMENCEMENT, CONTRACTOR SHALL PROVIDE DONALD W. McINTOSH ASSOCIATES, INC. WITH THE CONSTRUCTION SCHEDULE FOR VARIOUS SITE WORK ELEMENTS SO THAT PERIODIC SITE VISITS MAY BE COORDINATED TO ENSURE TIMELY CERTIFICATION OF COMPLETION TO AGENCIES AND AVOID DELAYS IN ISSUANCE OF CERTIFICATES OF OCCUPANCY/COMPLETION.

9. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SECURE THE PROJECT SITE DURING CONSTRUCTION, TO PREVENT TRESPASSING OF UNAUTHORIZED PEDESTRIANS AND/OR VEHICLES IN ALL WORK AREAS. THE CONTRACTOR SHALL POST SIGNS, CONSTRUCT BARRIERS OR IMPLEMENT OTHER METHODS NECESSARY TO CONTROL ACCESS. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR TRESPASSING ON THE CONSTRUCTION SITE OR DAMAGES TO ANY WORK RELATED THERETO.

10. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SURVEY MONUMENTATION. DISTURBED MONUMENTATION SHALL BE RESTORED BY A FLORIDA–LICENSED SURVEYOR & MAPPER SELECTED BY THE OWNER AT CONTRACTOR'S EXPENSE.

11. ANY DIFFERING SITE CONDITIONS FROM THOSE WHICH ARE REPRESENTED HEREIN, WHETHER ABOVE, ON OR BELOW THE SURFACE OF THE GROUND, SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ENGINEER AND OWNER IN WRITING PRIOR TO INITIATING ANY CONSTRUCTION IN THE AREA IMPACTED BY THE CONFLICT. NO CLAIM FOR EXPENSES INCURRED BY THE CONTRACTOR DUE TO DIFFERING SITE CONDITIONS WILL BE ALLOWED IF CONTRACTOR FAILS TO PROVIDE THE REQUIRED WRITTEN NOTIFICATION OF SUCH CONDITIONS FOR REVIEW BY THE ENGINEER AND OWNER.

12. CONTRACTOR SHALL INSTRUCT THE GEOTECHNICAL TESTING LABORATORY PROVIDING CONSTRUCTION TESTING TO PROVIDE DONALD W. McINTOSH ASSOCIATES, INC. WITH COPIES OF ALL SITE–WORK TEST REPORTS AS THEY ARE GENERATED. CONTRACTOR SHALL MAINTAIN THE RESPONSIBILITY OF CONSTRUCTING THE PROJECT IN STRICT ACCORDANCE WITH THE PROJECT PLANS, SPECIFICATIONS AND REQUIREMENTS. RECEIPT OF COPIES OF GEOTECHNICAL REPORTS BY DONALD W. McINTOSH ASSOCIATES, INC. IN NO WAY OBLIGATES DONALD W. McINTOSH ASSOCIATES TO ANY REVIEW, COMMENTS OR ACTIONS REGARDING THE WORK.

13. DURING CONSTRUCTION, THE GEOTECHNICAL ENGINEER PROVIDING PROJECT TESTING SHALL MONITOR CONSTRUCTION CONDITIONS AND PROVIDE RECOMMENDATIONS FOR ROADWAY UNDERDRAINS AS MAY BE NEEDED IN ADDITION TO ANY SHOWN IN THE PLANS. ENGINEER SHALL BE NOTIFIED OF ANY SUCH RECOMMENDATIONS.

14. CONTRACTOR SHALL BE EXTREMELY CAUTIOUS WHEN WORKING NEAR TREES WHICH ARE TO BE SAVED, WHETHER SHOWN IN THE PLANS OR DESIGNATED IN THE FIELD. CONTRACTOR SHALL BECOME FAMILIAR WITH AND COMPLY WITH ALL TREE PROTECTION/PRESERVATION PROVISIONS OF THE CONTRACT DOCUMENTS AND LOCAL GOVERNMENT.

15. ALL WORK SHALL BE OPEN TO AND SUBJECT TO INSPECTION BY AUTHORIZED PERSONNEL OF THE CITY, COUNTY, OWNER, INVOLVED UTILITY COMPANIES, PROJECT ENGINEER AND REGULATORY AGENCIES.

16. ALL RECOMMENDATIONS AND REQUIREMENTS OF INSPECTION PERSONNEL OTHER THAN THE OWNER'S SHALL BE REPORTED TO ENGINEER/OWNER PRIOR TO IMPLEMENTATION. COMPENSATION WILL NOT BE ALLOWED FOR WORK WHICH IS NOT AUTHORIZED BY ENGINEER/OWNER.

PERMITS:

1. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR(S) TO ENSURE THAT ALL REQUIRED PERMITS ARE OBTAINED AND ARE IN HAND AT THE JOB SITE PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. CONTRACTOR SHALL ABIDE BY ALL CONDITIONS CONTAINED THEREIN. PERMITS INCLUDED (BUT NOT NECESSARILY LIMITED TO) ARE:
   - WATER MANAGEMENT DISTRICT FOR CONSTRUCTION DEWATERING
   - WATER MANAGEMENT DISTRICT ENVIRONMENTAL RESOURCE PERMIT (ERP)
   - FDEP WATER DISTRIBUTION
   - FDEP WASTEWATER COLLECTION AND TRANSMISSION
   - LOCAL RIGHT OF WAY USE
   - LOCAL UNDERGROUND UTILITIES
   - FDEP NPDES STORMWATER DISCHARGE
   - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION TORTOISE

2. IF THE CONTRACTOR PROPOSES TO DISCHARGE DEWATERING EFFLUENT OFF–SITE, HE SHALL COMPLY WITH THE FDEP'S GENERIC PERMIT FOR DISCHARGE OF PRODUCED GROUNDWATER FROM ANY NON–CONTAMINATED SITE ACTIVITY. PERMIT REQUIREMENTS CAN BE OBTAINED FROM FDEP AT (407) 893–3985. THIS PERMIT IS INDEPENDENT OF AND IN ADDITION TO WATER MANAGEMENT DISTRICTS' PERMITS FOR CONSTRUCTION DEWATERING.

3. CONTRACTOR SHALL REVIEW ALL PERMITS PRIOR TO CONSTRUCTION FOR ANY CHANGES TO THE DESIGN INCLUDED THEREIN. NOTIFY ENGINEER/OWNER OF ANY REQUIRED CHANGES PRIOR TO CONSTRUCTION.

UTILITIES NOTES:

1. THE LOCATIONS OF EXISTING UTILITIES AND STORM DRAINAGE SHOWN ON THE PLANS HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. ENGINEER ASSUMES NO RESPONSIBILITY FOR INACCURACY. PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE ARRANGEMENTS FOR FIELD LOCATIONS AND FOR ANY RELOCATIONS OF THE VARIOUS EXISTING UTILITIES WITH THE UTILITY OWNERS, WHICH SHALL BE DONE IN A TIMELY FASHION TO MINIMIZE IMPACT ON THE CONSTRUCTION SCHEDULE. ANY DELAY OR INCONVENIENCE CAUSED THE CONTRACTOR BY THE RELOCATION OF THE VARIOUS UTILITIES SHALL BE INCIDENTAL TO THE CONTRACT AND NO EXTRA COMPENSATION WILL BE ALLOWED.

2. FLORIDA STATUTE 556 MANDATES THAT NOT LESS THAN TWO FULL BUSINESS DAYS BEFORE BEGINNING ANY EXCAVATION OR DEMOLITION THAT IS NOT BENEATH WATERS OF THE STATE, AND NOT LESS THAN 10 FULL BUSINESS DAYS BEFORE BEGINNING EXCAVATION OR DEMOLITION THAT IS BENEATH WATERS OF THE STATE, AN EXCAVATOR SHALL NOTIFY SUNSHINE STATE ONE CALL OF FLORIDA, INC. (800–432–4770) OF PLANNED EXCAVATION OR DEMOLITION ACTIVITIES.

3. IMMEDIATELY AT ONSET OF CONSTRUCTION, CONTRACTOR SHALL FIELD VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING UTILITIES CRITICAL TO COMPLETING THE PROJECT (INCLUDING WATER, SEWER, POWER, TELEPHONE, GAS, AND COMMUNICATIONS) AND SHALL EVALUATE POTENTIAL CONFLICTS. ALL SUCH CONFLICTS SHALL BE REPORTED TO ENGINEER/OWNER IMMEDIATELY UPON DISCOVERY.

4. CONTRACTOR SHALL NOTIFY ALL APPROPRIATE UTILITY COMPANIES OF THE PROPOSED START OF WORK IN ACCORDANCE WITH THEIR STANDARD REQUIREMENTS; INCLUDING BUT NOT LIMITED TO WATER, SEWER, POWER, TELEPHONE, GAS AND COMMUNICATIONS COMPANIES.

EROSION CONTROL NOTES:

1. CONTRACTOR SHALL PROTECT THE ON–SITE WATER BODIES AND ALL ADJACENT PROPERTIES FROM DAMAGE BY SEDIMENTATION OR OTHER POTENTIAL CONSTRUCTION RELATED CAUSES.

2. CONTRACTOR SHALL PROVIDE A SOIL TRACKING PREVENTION DEVICE CONFORMING TO THE FLORIDA EROSION AND SEDIMENT CONTROL MANUAL AT ALL PROJECT CONNECTIONS TO PUBLIC OR PRIVATE ROADWAYS THAT ARE TO BE USED BY CONSTRUCTION TRAFFIC.

3. PRIOR TO CONSTRUCTION, CONTRACTOR SHALL FIELD STAKE AND ROPE OFF CONSERVATION AREA LINES. OWNER RESERVES THE RIGHT TO CHECK THE STAKING AND ROPING AND REQUIRE IT TO BE RELOCATED IF NECESSARY. IT SHALL REMAIN IN PLACE UNTIL ADJACENT CONSTRUCTION IS COMPLETE.

4. DURING CONSTRUCTION, THE CONTRACTOR SHALL TAKE ALL REASONABLE MEASURES TO ENSURE AGAINST POLLUTING, SILTING, OR DISTURBING TO SUCH AN EXTENT AS TO CAUSE AN INCREASE IN TURBIDITY TO THE EXISTING DRAINAGE SYSTEM AND ADJACENT WATER BODIES AND WETLANDS. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL PERMIT REQUIREMENTS RELATED TO SUCH MEASURES. METHODS MAY INCLUDE, BUT ARE NOT LIMITED TO, CONSTRUCTION OF TEMPORARY EROSION CONTROL STRUCTURES SUCH AS SEDIMENT BASINS, SEDIMENT CHECKS, SILT BARRIERS, OR SILT SCREENS. ANY MEASURES SHOWN OR DETAILED IN THESE DRAWINGS SHALL BE CONSIDERED MINIMUMS AND SHALL NOT RELIEVE CONTRACTOR OF THE RESPONSIBILITY TO IMPLEMENT ANY MEASURES NECESSARY TO PROVIDE PROTECTION.

5. CONTRACTOR SHALL STABILIZE AND PROTECT ALL END WALL, MITERED END SECTION, FLARED END SECTION, ETC. STRUCTURES THROUGHOUT THE PROJECT UNTIL THE BANK SLOPES OF THE RECEIVING WATER BODY ARE STABILIZED AND ACCEPTED BY OWNER.

NPDES NOTES:

1. THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY HAS AUTHORIZED THE STATE OF FLORIDA TO ADMINISTER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES). CONTRACTOR IS ADVISED THAT OPERATORS ARE REQUIRED TO FILE WITH FDEP A NOTICE OF INTENT TO USE THE GENERIC PERMIT FOR STORMWATER DISCHARGE FROM CONSTRUCTION ACTIVITIES THAT DISTURB ONE OR MORE ACRES OF LAND. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO SUBMIT THE NOTICE OF INTENT (NOI) TO FDEP WITH A COPY TO THE OWNER, THE ENGINEER, CITY, & COUNTY) AT LEAST 48 HOURS BEFORE INITIATING CONSTRUCTION.

2. AS REQUIRED BY THE GENERIC PERMIT, CONTRACTOR SHALL PREPARE A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) PURSUANT TO ALL REQUIREMENTS OF THE GENERIC PERMIT.

3. PURSUANT TO THE NPDES, CONTRACTOR SHALL MAINTAIN RECORDS OF DATES WHEN MAJOR GRADING ACTIVITIES TEMPORARILY OR PERMANENTLY CEASE AND SHALL INITIATE STABILIZATION MEASURES WITHIN 7 DAYS AFTER SUCH TEMPORARY OR PERMANENT CESSATION OF CONSTRUCTION ACTIVITY. STABILIZATION REQUIREMENTS (SODDING WHERE SHOWN ON THE PLANS, SEEDING AND MULCHING ELSEWHERE) APPLY TO ALL AREAS DISTURBED BY CONSTRUCTION, ON–SITE AND OFF–SITE.

4. CONTRACTOR SHALL PROVIDE INSPECTIONS BY QUALIFIED PERSONNEL OF ALL POINTS OF OFF–SITE DISCHARGE, DISTURBED AREAS NOT YET FINALLY STABILIZED, STORAGE AREAS EXPOSED TO RAINFALL, STRUCTURAL CONTROLS AND VEHICULAR ACCESS LOCATIONS. INSPECTIONS SHALL BE MADE AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES OR GREATER.

5. CONTRACTOR SHALL MAINTAIN A COPY OF THE SWPPP AT THE SITE OR THE LOCATION DESIGNATED IN THE NOI FROM THE DATE OF PROJECT INITIATION TO THE DATE OF FINAL STABILIZATION.

6. CONTRACTOR SHALL AMEND THE SWPPP WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION OR MAINTENANCE THAT MAY HAVE A SIGNIFICANT EFFECT ON THE POTENTIAL FOR OFF–SITE DISCHARGE OF POLLUTANTS, INCLUDING THE ADDITION OF OR CHANGE IN LOCATION OF DISCHARGE POINTS AND REVISION TO CONTROLS WHICH MAY HAVE PROVED TO BE INEFFECTIVE.

7. CONTRACTOR SHALL REMAIN RESPONSIBLE FOR OPERATION AND MAINTENANCE OF POLLUTION PROTECTION MEASURES UNTIL CONSTRUCTION HAS BEEN COMPLETED IN SUBSTANTIAL CONFORMANCE WITH THE CONTRACT PLANS, CERTIFIED AS SUCH BY THE ENGINEER AND ACCEPTED BY THE (CITY/COUNTY), WHETHER OR NOT CONTRACTOR HAS SUBMITTED A NOTICE OF TERMINATION (NOT) TO FDEP.

AS–BUILT/RECORD DRAWINGS NOTES:

1. CONTRACTOR SHALL FURNISH OWNER WITH ACCURATE RECORD DRAWINGS SHOWING AS–CONSTRUCTED HORIZONTAL AND VERTICAL DIMENSIONING OF THE WORK. THE SUBMITTAL COPY OF THE RECORD DRAWINGS WILL NOT BE RETURNED. THE RECORD DRAWING SHALL BE CERTIFIED BY THE CONTRACTOR AS CORRECT. ALL INFORMATION WHICH IS UNCHANGED AND CURRENT SHALL BE NOTED BY CHECKING OFF OR CIRCLING. ALL REVISED INFORMATION SHALL BE CROSSED THROUGH AND NEW DATA ADDED. ADDITIONAL REQUIREMENTS ARE NOTED IN PAVING, GRADING AND DRAINAGE AND WATER AND SEWER NOTES.

2. AS–BUILT DRAWINGS AND/OR RECORD DRAWINGS, AS REQUIRED BY THESE NOTES, SHALL SHOW LOCATIONS OF IMPROVEMENTS BY DIMENSIONING AND/OR ACCURATE PLOTTING. THEY SHALL NOT PROVIDE LOCATIONS SOLELY BY COORDINATE POINTS. ALL FACILITIES WHICH ARE OUT OF DESIGN POSITION BY FIVE (5) FEET OR MORE SHALL BE REDRAWN IN AS–CONSTRUCTED LOCATIONS.

3. CONTRACTOR SHALL PROVIDE ACCURATE AS–BUILT DIMENSIONS AND ELEVATIONS OF THE STORMWATER MANAGEMENT AREAS IMMEDIATELY AFTER FINAL GRADING AND PRIOR TO GRASSING THE SLOPES. AT A MINIMUM, CONTRACTOR SHALL PROVIDE TWO TYPICAL AS–BUILT CROSS–SECTIONS ACROSS EACH "SIDE" OF EACH POND. CONTRACTOR SHALL OBTAIN ENGINEER'S APPROVAL PRIOR TO GRASSING. IF ANY MODIFICATIONS ARE NEEDED, ADDITIONAL AS–BUILTS SHALL BE FURNISHED.

4. CONTRACTOR SHALL MAINTAIN A SET OF RECORD DRAWINGS MARKED UP WITH HORIZONTAL AND VERTICAL AS–BUILT INFORMATION ON LOCATION OF WATER & SEWER MAINS, FITTINGS, AND WATER SERVICES LOCATED FROM CENTERLINE OF NEAREST FIRE HYDRANT OR NEAREST MANHOLE. IN ACCORDANCE WITH CITY OF CLERMONT REQUIREMENTS (SEE SHEETS C003 & C004).

5. (IN ORANGE COUNTY) CONTRACTOR SHALL CERTIFY VIA THE RECORD DRAWINGS THAT CONSTRUCTION CONFORMS WITH THE FOLLOWING CRITERIA AS SET FORTH IN ORANGE COUNTY SUBDIVISION REGULATIONS SECTION 34–210(1) AND (2):
   - STORMWATER MANAGEMENT AREAS, MAINTENANCE BERMS, BERM BACK SLOPES AND OUTFALL CONVEYANCE ARE CONSTRUCTED WITHIN DESIGNATED TRACT OR EASEMENT.
   - ELEVATIONS ARE WITHIN THE FOLLOWING SPECIFIED TOLERANCES OF DESIGN ELEVATIONS:

TOP OF BERM, TOE OF SLOPE, POND BOTTOM:	+/– 0.50 FT.
OUTFALL STRUCTURE AND PIPING:	+/– 0.20 FT.
PIPE INVERTS, GUTTER AND ROAD CENTERLINE AT SAG INLETS:	+/– 0.20 FT.
COMPENSATING STORAGE AREAS:	+/– 0.50 FT.

PAVING, GRADING & DRAINAGE NOTES:

1. SITE GRADING, PAVING AND DRAINAGE MATERIALS AND CONSTRUCTION SHALL CONFORM TO FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION , AND TO CITY OF CLERMONT STANDARD SPECIFICATIONS LATEST EDITION INSOFAR AS THEY APPLY TO THE DESIGN SHOWN HEREIN. FOR TYPE S ASPHALT AND FOR SOIL CEMENT BASE, MATERIALS AND CONSTRUCTION SHALL CONFORM TO FDOT STANDARD SPECIFICATIONS, 2000 EDITION.). WHERE SUCH SPECIFICATIONS DIFFER, THE MORE STRINGENT SHALL NORMALLY APPLY, SUBJECT TO THE DETERMINATION OF THE ENGINEER.

2. DRAINAGE MANHOLES AND INLETS (NOT INCLUDING CONTROL STRUCTURES) IN THE PLANS ARE IDENTIFIED BY TOP TYPE ONLY. CONTRACTOR SHALL PROVIDE STANDARD DITCH BOTTOM INLET OR J OR P STRUCTURE BOTTOMS, SIZED AS REQUIRED TO ACCOMMODATE PIPE SIZES AND ORIENTATIONS SHOWN. SHOP DRAWINGS SHALL BE SUBMITTED WHICH CLEARLY REPRESENT SUCH DATA.

3. INLETS WHICH ARE GRAPHICALLY SHOWN ON LOT LINES AND NOT OTHERWISE LOCATED BY STATIONING SHALL BE LOCATED SUCH THAT THE CENTERLINE OF THE INLET TOP IS ALIGNED WITH THE LOT LINE.

4. PIPE LENGTHS SHOWN REPRESENT SCALED DISTANCES BETWEEN CENTERLINES OF DRAINAGE STRUCTURES AND FROM INVERTS OF ENDWALLS AND/OR MITERED END SECTIONS. BIDDERS SHALL ADJUST FOR PIPE LENGTHS WHEN BIDDING MITERED END SECTIONS.

5. SEE DETAIL ON SHEET C551 FOR REQUIREMENTS AT CROSSINGS OF STORM DRAINS AND UTILITY PIPE.

6. NEW PIPES SHALL BE CONNECTED TO EXISTING PIPES AT AN EXISTING FACTORY MADE JOINT. REMOVE PARTIAL PIPES IF AND AS NEEDED.

7. ELEVATIONS OF GRASSED AREAS ARE GIVEN AT FINISHED GRADE (TOP OF SOD OR SEEDED SURFACE).

8. RETAINING WALL DESIGN BY OTHERS.

9. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND DISPOSING OF ALL WASTE MATERIALS CONSISTENT WITH ALL RULES AND REGULATIONS APPLICABLE TO THE SPECIFIC MATERIAL FOUND.

10. CONTRACTOR SHALL REMOVE ALL MUCK DEPOSITS IN CONSTRUCTION AREAS AND AREAS TO BE FILLED. SEE GEOTECHNICAL REPORT.

11. CONTRACTOR IS RESPONSIBLE FOR GRADING ALL PAVEMENTS TO DRAIN POSITIVELY. INTERSECTIONS SHALL BE TRANSITIONED TO PROVIDE SMOOTH DRIVING SURFACE WHILE MAINTAINING POSITIVE DRAINAGE. SHOULD AREAS OF POOR DRAINAGE BE OBSERVED, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO PLACEMENT OF CURBS OR PAVEMENT COURSES, SO THAT RECOMMENDATIONS FOR CORRECTION MAY BE MADE.

12. CONTRACTOR SHALL NOT COMPACT, STABILIZE, OR CONSTRUCT BASE COURSE WITHIN LANDSCAPE ISLANDS, TRACTS OR MEDIANS. WHERE SUCH TREATMENT DOES OCCUR, IT SHALL BE REMOVED AND REPLACED WITH SUITABLE PLANTING SOILS ACCEPTABLE TO OWNER'S LANDSCAPE ARCHITECT.

13. OVER–EXCAVATION OF RETENTION BASINS SHALL NOT BE ALLOWED UNLESS SPECIFICALLY AUTHORIZED BY ENGINEER/OWNER. SHOULD UNAUTHORIZED OVER–EXCAVATION OCCUR, IT SHALL BE BACKFILLED, REGRADED, RESODDED AND/OR RESEEDED TO OWNER'S SPECIFICATIONS AT CONTRACTOR'S EXPENSE.

14. ROAD GRADING AND CONSTRUCTION SHALL INCLUDE BRINGING ANY UTILITY EASEMENTS, AS SHOWN OR NOTED ON THE PLAT OR CONSTRUCTION DRAWINGS, ADJACENT TO THE RIGHT–OF–WAY LINE TO WITHIN 6 INCHES OF FINAL DESIGN GRADE.

15. CONTRACTOR SHALL PROVIDE FOR POSITIVE DRAINAGE OF ROADWAY FROM CONSTRUCTION OF SUBGRADE THROUGH FINAL LIFT OF ASPHALT. STRUCTURE BASES SHALL BE FABRICATED IN ACCORDANCE WITH FDOT STANDARD INDEX 201, TO PROVIDE TEMPORARY DRAINS FOR SUBGRADE AND BASE. AS NOTED IN THE INDEX, THE COST OF ALL APPURTENANCES WILL BE CONSIDERED INCIDENTAL TO THE PRICE OF THE STRUCTURE.

16. PAVEMENT GRADES OVER HANDICAPPED PARKING SPACES SHALL NOT EXCEED 2% IN ANY DIRECTION.

17. ALL OFF–SITE DISTURBED AREAS SHALL BE RESTORED TO PRE–CONSTRUCTION CONDITION, OR BETTER.

18. ALL DISTURBED FDOT, CITY AND COUNTY RIGHTS OF WAY SHALL BE RESTORED. SOD SHALL BE PLACED FROM EDGE OF PAVEMENT TO THE LIMITS OF CONSTRUCTION AND ALL AREAS SHALL MATCH OR EXCEED PRECONSTRUCTION CONDITIONS.

19. ENGINEER RESERVES THE RIGHT TO WITHHOLD RECOMMENDATION FOR PAYMENT FOR ANY ROADWORK WHICH HAS NOT BEEN TESTED BY A FLORIDA–REGISTERED GEOTECHNICAL ENGINEER AND REPORTED TO CONFORM TO PROJECT SPECIFICATIONS.

MATERIAL SPECIFICATIONS (PAVING AND DRAINAGE):

1. STORM DRAINS SHALL BE REINFORCED CONCRETE PIPE, PER ASTM C–76 CLASS III, UNLESS OTHERWISE SPECIFIED. LIFTING HOLES ARE PROHIBITED.

2. ALL TYPE "P" STRUCTURE BOTTOMS SHALL BE ROUND UNLESS OTHERWISE SPECIFIED AND SHALL HAVE 4 FOOT MINIMUM DIAMETER.

3. ALL CONCRETE CURBS, SIDEWALKS, INLET TOPS, ETC. SHALL BE 3000 PSI MINIMUM, UNLESS OTHERWISE SPECIFIED.

4. YARD DRAINS SHALL BE NYLOPLAST INLINE DRAINS AND DRAIN BASINS AS APPLICABLE WITH CAST IRON GRATES AND WATERTIGHT ADAPTER CONNECTIONS (OR APPROVED EQUAL).

5. YARD DRAIN PIPING: PVC CONFORMING TO ASTM D3034, SDR35 SHALL BE USED FOR ALL PIPE RUNS IN WHICH ANY PART LIES UNDER PAVED AREAS. SAID PVC OR HEAVY DUTY CORRUGATED POLYETHYLENE MAY BE USED FOR ALL OTHER RUNS. MATERIAL SELECTION SHALL BE CONSISTENT THROUGHOUT THE PROJECT.

6. EXFILTRATION AGGREGATE SHALL BE A NATURALLY OCCURRING NON–LIMESTONE BASED MATERIAL. CRUSHED OR RECYCLED CONCRETE IS NOT PERMITTED FOR USE IN THE EXFILTRATION TRENCH.

SIGNING AND MARKING NOTES:

1. ALL SIGNAGE, PAVEMENT MARKING AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH FHWA "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", LATEST EDITION.

2. ALL HANDICAPPED PARKING SPACES SHALL BE DESIGNATED BY APPROPRIATE PAVEMENT MARKINGS AND SIGNAGE.

3. BLUE REFLECTIVE PAVEMENT MARKERS SHALL BE PLACED OPPOSITE FIRE HYDRANTS IN THE CENTER OF THE NEAREST TRAVEL LANE TO MARK THEIR LOCATIONS.

4. REGULATORY SIGNS (STOP, ETC.) SHALL BE IN PLACE PRIOR TO FINAL INSPECTION OF PAVING IMPROVEMENTS.

POTABLE WATER, WASTEWATER AND RECLAIMED WATER NOTES:

1. CONTRACTOR SHALL COORDINATE WITH CITY OF CLERMONT FOR CONSTRUCTION OF THE POTABLE WATER SYSTEM, RECLAIMED WATER AND SANITARY SEWER SYSTEMS. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THEIR SPECIFICATIONS AND REQUIREMENTS AND WILL BE SUBJECT TO THEIR INSPECTION AND ACCEPTANCE.

2. CONTRACTOR SHALL COORDINATE WORK, SPECIFICALLY, BUT NOT LIMITED TO, CONNECTIONS TO EXISTING MAINS OR STRUCTURES AND SYSTEM TESTING WITH THE CITY OF CLERMONT.

3. CONTRACTOR SHALL PROVIDE WATER MAIN DISINFECTION IN ACCORDANCE WITH AWWA C651, HYDROSTATIC PRESSURE AND LEAKAGE TESTING IN ACCORDANCE WITH AWWA C600, C605, OR M23 FOR DIP AND PVC PIPES RESPECTIVELY, AND BACTERIOLOGICAL TEST REPORTS, ALL IN ACCORDANCE WITH PROJECT SPECIFICATIONS, FDEP PERMIT CONDITIONS, AND AWWA STANDARDS. WATER MAIN TEST PRESSURE IS 150 PSI. SUBMIT TEST RESULTS TO ENGINEER IN TRIPLICATE.

4. CONTRACTOR SHALL PROVIDE FORCE MAIN AND RECLAIMED WATER MAIN PRESSURE TESTING PER AWWA C600 OR M23 AS APPLICABLE AND SANITARY SEWER LAMPING/TVING ALL IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND UTILITY COMPANY REQUIREMENTS. TEST PRESSURE FOR FORCE MAINS SHALL BE 100 PSI. TEST PRESSURE FOR RECLAIMED WATER MAINS SHALL BE 150 PSI. SUBMIT TEST RESULTS TO ENGINEER IN TRIPLICATE.

5. EXISTING WATER MAINS SHALL BE PROTECTED FROM CONTAMINATION DURING FILLING, FLUSHING, AND TESTING OF NEW LINES IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF AWWA C651–92. SEE JUMPER DETAIL ON SHEET C552.

6. CONTRACTOR SHALL NOT ACTIVATE WATER SERVICE UNTIL THE FDEP HAS CLEARED THE SYSTEM FOR USE AND THE CLEARANCE LETTER HAS BEEN RECEIVED BY THE OWNER.

7. CONTRACTOR SHALL COORDINATE ALL UTILITIES SYSTEMS TEST SCHEDULING TO ALLOW ENGINEER'S ATTENDANCE BY PROVIDING MINIMUM NOTICE OF FIVE (5) WORKING DAYS. CONTRACTOR'S FAILURE TO PROPERLY NOTIFY ENGINEER MAY RESULT IN RETESTING AT ENGINEER'S OPTION AND AT CONTRACTOR'S EXPENSE.

8. ENGINEER RESERVES THE RIGHT TO WITHHOLD RECOMMENDATION OF PAYMENT FOR ANY PORTION OF THE UTILITIES PIPE WORK WHICH HAS NOT BEEN TESTED (OBSERVED BY ENGINEER) AND REPORTED TO CONFORM TO PROJECT SPECIFICATIONS.

9. SEPARATION REQUIREMENTS: SEE DETAIL ON SHEET C551.

10. WATER AND SEWER A

DONALD W. McINTOSH ASSOCIATES, INC. RESERVES THE EXCLUSIVE COPYRIGHT AND PROPERTY RIGHTS TO THIS DRAWING WHICH MAY NOT BE REPRODUCED, CHANGED, OR COPIED IN ANY FORM OR MANNER, NOR CAN IT BE ASSIGNED TO ANY PARTY WITHOUT DONALD W. McINTOSH ASSOCIATES, INC.'S WRITTEN CONSENT.

PIPE IDENTIFICATION

3" METALLIC LOCATOR TAPE SHALL BE BURIED IN THE WATER MAIN TRENCH 18" DIRECTLY ABOVE THE WATER MAIN. A CONTINUOUS COPPER DETECTOR WIRE SHALL BE ATTACHED AS SHOWN ON THE WATER DETAIL SHEET. WIRE CONNECTIONS (SPLICES) SHALL BE DONE WITH WIRE NUT AND GREASE FILLED PROTECTIVE CAP.

ALL PIPE AND PIPE FITTINGS SHALL BE COLOR CODED OR MARKED IN ACCORDANCE WITH SUB– PARAGRAPH 62–555.320(21)(b)3, F.A.C., USING BLUE AS A PREDOMINANT COLOR. (UNDERGROUND PLASTIC PIPE SHALL BE SOLID–WALL BLUE PIPE, SHALL HAVE A CO–EXTRUDED BLUE EXTERNAL SKIN OR SHALL BE WHITE OR BLACK PIPE WITH BLUE STRIPES INCORPORATED INTO, OR APPLIED TO, THE PIPE WALL; AND UNDERGROUND METAL OR CONCRETE PIPE SHALL HAVE BLUE STRIPES APPLIED TO THE PIPE WALL. PIPE STRIPED DURING MANUFACTURING OF THE PIPE SHALL HAVE CONTINUOUS STRIPES THAT RUN PARALLEL TO THE AXIS OF THE PIPE, THAT ARE LOCATED AT NO GREATER THAN 90–DEGREE INTERVALS AROUND THE PIPE, AND THAT WILL REMAIN INTACT DURING AND AFTER INSTALLATION OF THE PIPE. IF TAPE OR PAINT IS USED TO STRIPE PIPE DURING INSTALLATION OF THE PIPE, THE TAPE OR PAINT SHALL BE APPLIED IN A CONTINUOUS LINE THAT RUNS PARALLEL TO THE AXIS OF THE PIPE AND THAT IS LOCATED ALONG THE TOP OF THE PIPE; FOR PIPE WITH AN INTERNAL DIAMETER OF 24 INCHES OR GREATER, TAPE OR PAINT SHALL BE APPLIED IN CONTINUOUS LINES ALONG EACH SIDE OF THE PIPE AS WELL AS ALONG THE TOP OF THE PIPE. ABOVE GROUND PIPE SHALL BE PAINTED BLUE OR SHALL BE COLOR CODED OR MARKED LINE UNDERGROUND PIPE.) RHINO TRIVIEW FLEXMARKING POST SHALL BE PLACED ON ALL TRANSMISSION MAINS AT 500 FEET.

DISINFECTION AND TESTING

ALL PIPE SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651.86.

PVC WATER MAINS SHALL BE INSTALLED; PRESSURE AND LEAK TESTED IN ACCORDANCE WITH AWWA C605 AND DUCTILE IRON WATER MAINS IN ACCORDANCE WITH AWWA C600, [62–555.320(21)(B) 1 AND 62–555.330, F.A.C]. ALL INSTALLATION, TESTING AND FIELD PROCEDURES MUST BE PROVIDED AND MUST CONFORM TO THE APPLICABLE AWWA STANDARDS.

THE CONTRACTOR SHALL PROVIDE AT HIS OWN EXPENSE ALL NECESSARY TEST PUMPING EQUIPMENT, WATER, WATER METERS, PRESSURE GAUGES AND OTHER EQUIPMENT, MATERIAL AND FACILITIES REQUIRED FOR ALL HYDROSTATIC AND LEAKAGE TESTING. CONTRACTOR SHALL CONTACT THE ENGINEER, OWNER/OPERATOR AND CITY IN WRITTEN FORM, FORTY EIGHT (48) HOURS IN ADVANCE OF PROPOSED TESTING. THE CONTRACTOR SHALL PERFORM SATISFACTORY PRETESTING PRIOR TO NOTIFICATION.

THE WATER SYSTEM SHALL BE SOAK TESTED 24 HOURS @150 PSI AND TESTED FOR LEAKAGE AT 150 PSI FOR TWO (2) HOURS, WITH ALLOWABLE LEAKAGE IN ACCORDANCE WITH ABOVE STANDARDS.

CONTRACTOR SHALL OBTAIN A COPY OF THE FDEP WATER SYSTEM PERMIT AND PULL BACTERIOLOGICAL TEST SAMPLES FROM THE SAMPLE POINTS SPECIFIED IN THAT PERMIT. CONTINUITY TEST SHALL BE PERFORMED ON WIRE BY CONTRACTOR.

CONNECTIONS TO EXISTING WATER MAINS

PRIOR TO THE CONNECTION TO ANY EXISTING MAIN, THE PROPOSED WATER MAIN SHALL BE DISINFECTED, HAVE ENGINEER APPROVED PRESSURE TESTING AND HAVE FDEP CLEARANCE. REFER TO FDEP PERMIT FOR ANY ADDITIONAL REQUIREMENTS.

ASBUILT DRAWINGS

THE CONTRACTOR SHALL PROVIDE VERTICAL AND HORIZONTAL "ASBUILT" INFORMATION RELATIVE TO ALL CONSTRUCTED UTILITIES AND STRUCTURES. THREE SETS SHALL BE PROVIDED FOR REVIEW. ONCE APPROVED BY THE UTILITY, ONE REPRODUCIBLE SET SHALL BE PROVIDED.

AS–BUILT INFORMATION FOR THE WATER SYSTEM SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

1. LOCATION OF ALL VALVES, FITTINGS, HYDRANTS AND SERVICES – HORIZONTAL AND VERTICAL.

2. LOCATION OF THE WATER MAIN TIED WITH COORDINATES FOR THE SUBDIVISION.

3. CERTIFICATION AS TO THE SYSTEM MEETING THE MINIMUM COVER REQUIREMENTS.

4. HORIZONTAL AND VERTICAL DATA FOR ANY CONSTRUCTION WHICH DEVIATES FROM THE APPROVED ENGINEERING PLANS.

5. UTILITY LOCATES ON SYSTEMS INSTALLED UNDER THIS CONTRACT SHALL REMAIN THE RESPONSIBILITY OF THE CONTRACTOR/DEVELOPER UNTIL ASBUILT DRAWINGS ARE REVIEWED AND APPROVED BY THE UTILITY.

SANITARY SEWER NOTES

1. ALL PRESSURE PIPE UNDER ROADWAY SHALL BE DIP EXTENDING 5' FROM EDGE OF PAVEMENT.

MAINS AND MANHOLES

1. ALL GRAVITY SANITARY SEWER MAINS, LATERALS, AND APPURTENANCES SHALL BE CONSTRUCTED OF SDR26 PVC PIPE MEETING ASTM 3034, AND SHALL HAVE A MINIMUM COVER OF THREE (3) FEET.

2. WHERE REQUIRED, MAINS SHALL BE CLASS 150 DUCTILE IRON PIPE (DIP) MEETING AWWA C150 AND C151. MAINS SHALL BE 60 MIL EPOXY COATED WITH POLYETHYLENE WRAP CONFORMING TO AWWA C105.

3. ALL PVC PIPE SHALL BEAR THE NSF–DW SEAL.

4. JOINTS SHALL BE INTEGRAL BELL ELASTOMERIC GASKET JOINTS MANUFACTURED IN ACCORDANCE WITH ASTM D3212 AND ASTM F477. APPLICABLE UNI–BELL PLASTIC PIPE ASSOCIATION STANDARD IS UNI–B–7.

5. ALL SANITARY MANHOLES SHALL BE PRECAST CONCRETE WITH A MINIMUM WALL THICKNESS OF FIVE (5) INCHES FOR INSIDE DIAMETER OF FOUR (4) FEET.

6. MANHOLES SHALL MEET ASTM C–478. RING AND COVER SHALL BE TRAFFIC BEARING H–20 CLASS 30 MEETING ASTM A–48.

7. INTERIOR AND EXTERIOR WALLS OF ALL MANHOLES SHALL HAVE A MINIMUM OF TWO (2) 8 MIL COATS OF AN APPROVED PROTECTIVE COAL TAR EPOXY.

8. ALL MAINS NOT LOCATED UNDER PAVEMENT SHALL BE MARKED BY A 3" METALLIC LOCATOR TAPE AND TRACER WIRE 18" ABOVE THE CENTERLINE OF PIPE. DROP MANHOLE IF INVERT DIFFERENCE IS GREATER THAN OR EQUAL TO TWO (2) FEET. 3" METALLIC LOCATOR TAPE SHALL BE BURIED IN THE WATER MAIN TRENCH 18" DIRECTLY ABOVE THE WATER MAIN. A CONTINUOUS COPPER DETECTOR WIRE SHALL BE ATTACHED AS SHOWN ON THE WATER DETAIL SHEET.

9. LINING IS REQUIRED OF ALL MANHOLES WITH AN INCOMING SLOPE GREATER THAN 5%. ANY MANHOLE WITH FORCE MAIN TIE IN MUST BE LINED. SEE CITY OF CLERMONT APPROVED PRODUCT LIST.

10. NO DROP SHALL BE GREATER THAN 15 FEET.

LATERALS

1. ALL SERVICE LATERALS AND FITTINGS SHALL BE A MINIMUM OF 6" IN DIAMETER.
2. ALL LATERALS SHALL TERMINATE WITH A 4" CLEAN–OUT AT THE PROPERTY LINE, AND AT A DEPTH TO FINAL GRADE OF 3 FEET. SEE DETAILS FOR LOCATION.
3. THE END OF EACH SERVICE CONNECTION SHALL BE MARKED WITH A 2"x2"x2" ABOVE GRADE WOODEN STAKE OR APPROVED MARKER AND CURB MARKED WITH A 'S'.

FORCEMAINS

1. FORCEMAINS SHALL BE CLASS 350 EPOXY 401 LINED DIP. DIP PIPE SHALL HAVE INTEGRAL BELL PUSH ON TYPE JOINTS CONFORMING TO ASTM D3139.

2. ALL FITTINGS SHALL BE MECHANICAL JOINT DUCTILE IRON WITH 250 PSI MINIMUM PRESSURE RATING. SUITABLE COUPLINGS COMPLYING WITH ASTM SPECIFICATIONS ARE REQUIRED FOR JOINING DISSIMILAR MATERIALS.

3. 3" METALLIC LOCATOR TAPE SHALL BE BURIED IN THE WATER MAIN TRENCH 18" DIRECTLY ABOVE THE WATER MAIN. A CONTINUOUS COPPER DETECTOR WIRE SHALL BE ATTACHED AS SHOWN ON THE WATER DETAIL SHEET.

4. ALL MAINS SHALL HAVE A MINIMUM COVER OF THREE (3) FEET.

5. ALL CONNECTIONS TO EXISTING SEWER FORCEMAINS SHALL BE ACCOMPLISHED WITH A WET TAP AND RESTRAINTS.

6. PROVIDE JOINT RESTRAINT AS SHOWN ON THE WATER DETAIL SHEET.

7. AIR RELEASE AND VACUUM VALVE PRODUCTS SHALL ADHERE TO CITY OF CLERMONT APPROVED PRODUCT LIST.

TESTING

1. SEWAGE COLLECTION SYSTEM
   A. ALL GRAVITY SEWER MAINS REQUIRE LOW PRESSURE AIR TESTING IN ACCORDANCE WITH THE LATEST UNI–BELL STANDARD FOR LOW PRESSURE AIR TESTS. AIR TESTS, AS A MINIMUM, SHALL CONFORM TO THE TEST PROCEEDURES DESRIBED IN ASTM SPECIFICATIONS, ASTM F1417 FOR PLASTIC PIPE.

   B. ALL SEWER MAINS AND LATERALS SHALL BE VIDEO INSPECTED BY A CITY APPROVED VENDOR.

   C. ALL MANHOLES SHALL BE INSPECTED FOR INFILTRATION, ALIGNMENT, FLOW CHANNEL CONSTRUCTION AND COAL TAR EPOXY PAINT THROUGHOUT.

   D. HYDRO–STATIC TESTS CONSISTING OF A HYDROSTATIC PRESSURE TEST AND HYDROSTATIC LEAKAGE TEST SHALL BE CONDUCTED ON ALL NEWLY INSTALLED SEWER FORCE MAIN SYSTEM PRESSURE PIPES AND APPURTENANCES IN ACCORDANCE WITH AWWA C600 OR M23 AS APPLICABLE. THE PRESSURE SHALL BE 150 PSI FOR TWO (2) HOURS.

   E. DEFLECTION TESTS ARE REQUIRED FOR ALL FLEXIBLE PIPE. TESTS SHALL BE PERFORMED WITHOUT MECHANICAL PULLING DEVICES.

TEMPORARY JUMPER CONNECTION NOTES

A TEMPORARY JUMPER CONNECTION IS REQUIRED AT ALL CONNECTIONS BETWEEN EXISTING ACTIVE WATER MAINS AND PROPOSED NEW WATER MAIN IMPROVEMENTS. THE DETAIL PROVIDED 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 TAKING BACTERIOLOGICAL SAMPLES FROM ANY NEW WATER MAIN OF ANY SIZE. THE JUMPER CONNECTION SHALL BE MAINTAINED UNTIL AFTER FILLING, FLUSHING, TESTING AND DISINFECTING OF THE NEW MAIN HAS BEEN SUCCESSFULLY COMPLETED AND CLEARANCE FOR USE HAS BEEN OBTAINED FROM THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) AND OTHER PERTINENT AGENCIES HAS BEEN RECEIVED BY THE CITY OF CLERMONT. THIS JUMPER CONNECTION SHALL ALSO BE USED TO MAINTAIN A MINIMUM LEVEL OF DISINFECTION AND UNTIL THE FDEP CLEARANCE LETTER IS OBTAINED AND THE LINES ARE PLACED INTO SERVICE.

ADEQUATE 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. THE 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.

FLUSHING OF ALL WATER MAINS SAHLL BE DONE THROUGH THE TIE–IN VALVE UNDER CONTROLLED CONDITIONS BY THE CITY ONLY. FULL BORE FLUSH IS REQUIRED. THE FOLLOWING PROCEEDURES SHALL BE FOLLOWED:

A. THE TIE–IN VALVES SHALL BE OPERATED ONLY BY THE CITY AND PRESSURE TESTED IN THE PRESENCE OF THE CITY 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, FOR PROVIDING WATER FOR BACTERIOLOGICAL SAMPLING OF THE NEW MAIN AS REQUIRED BY THE FDEP PERMIT AND FOR MAINTAINING CHLORINE RESIDUALS IN THE MAINS.
   1. FLUSHING SHALL NOT BE ATTEMPTED DURING PEAK DEMAND HOURS OF THE EXISTING WATER MAIN.
   2. ALL DOWNSTREAM VALVES IN THE NEW SYSTEM MUST BE OPEN PRIOR TO THE CITY OPENING THE TIE–IN VALVE.
   3. PROVIDE FOR AND MONITOR THE PRESSURE AT THE TIE–IN POINT. THE PRESSURE IN THE EXISTING MAIN MUST NOT DROP BELOW 35 PSI.
   4. TIE–IN VALVE SHALL BE OPENED BY THE CITY 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 CITY UNTIL THE FLUSHING BEGINS.

D. THE TIE–IN VALVE SHALL BE OPENED ONLY BY THE CITY FOR FLUSHING OF THE NEW MAIN. THE PROCEEDURE SHALL BE DONE BY THE CITY AND OBSERVED BY THE ENGINEER.

E. AFTER FLUSHING, THE TIE–IN VALVE SHALL BE CLOSED AND LOCKED IN THE CLOSE POSITION BY THE CITY. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION DEMONSTRATING THAT THE RPZ BACK FLOW PREVENTION DEVICE HAS BEEN TESTED WITHIN ONE YEAR AT THE TIME OF INSTALLATION, AND IS IN GOOD WORKING ORDER AT THE TIME OF INSTALLATION. THE TEST SHALL BE PERFORMED BY A CERTIFIED BACK FLOW PREVENTION TECHNICIAN AS APPROVED BY THE CITY OF CLERMONT CROSS–CONNECTION CONTROL PROGRAM. A CERTIFICATE IS REQUIRED BY THE CITY.

EXCEPT AS REQUIRED TO FLUSH LINES TIE–IN VALVE SHALL REMAIN CLOSED AND SHALL BE LOCKED IN THE CLOSE POSITION BY THE CITY. THE TIE–IN VALVE SHALL REMAIN LOCKED CLOSED UNTIL THE NEW SYSTEM HAS BEEN CLEARED FOR USE BY FDEP AND ALL OTHER AGENCIES. UPON RECEIPT OF CLEARANCE FOR USE FROM FDEP AND ALL OTHER AGENCIES, THE CONTRACTOR SHALL REMOVE THE TEMPORARY JUMPER CONNECTION. THE CORPORATION STOPS ARE TO BE CLOSED AND PLUGGED WITH 2" BRASS PLUGS. THERE BE NO LEAKAGE.

ALL INSTALLATION AND MAINTENANCE OF THE TEMPORARY JUMPER CONNECTION AND ASSOCIATED BACK FLOW PREVENTION DEVICE, FITTINGS, VALVES, ETC., SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

WATER METERS SHALL BE PAID FOR AT THE CITY HALL AND SHALL BE DELIVERED TO THE JOB SITE BY THE UTILITIES DEPARTMENT.

FIRE HYDRANTS

FIRE HYDRANTS SHALL CONFORM TO THE LATEST EDITION OF AWWA C502.85 AND SHALL BE FURNISHED COMPLETE WITH WRENCH AND OTHER APPURTENANCES. MANUFACTURER'S CERTIFICATION OF COMPLIANCE WITH AWWA C502 AND TESTS LISTED THEREIN WILL BE REQUIRED. ALL HYDRANTS SHALL BE BREAKAWAY TYPE, WITH THE BREAKAWAY SECTION LOCATED SLIGHTLY ABOVE THE FINISH GROUND LINE. HYDRANTS SHALL CONTAIN TWO, TWO AND ONE–HALF INCH (2–1/2") HOSE CONNECTIONS, AND ONE, FOUR AND ONE–HALF INCH (4–1/2") STEAMER CONNECTION WITH NATIONAL STANDARD FIRE HOSE COUPLING SCREW THREADS, FIVE AND ONE–QUARTER INCH (5–1/4") VALVE OPENING, SIX INCH (6") DIAMETER MECHANICAL JOINT INLET, ONE AND ONE–HALF INCH (1–1/2") PENTAGON OPERATING NUT. SHALL OPEN COUNTERCLOCKWISE. HYDRANT MUST BE PAINTED AT FACTORY BY THE MANUFACTURER AND SHALL BE PAINTED IN CONFORMANCE WITH CITY OF CLERMONT REQUIREMENTS (COLORS BASED ON DELIVERED FIRE FLOW). HYDRANTS SHALL BE MUELLER CENTRON (TRAFFIC MODEL A–423) & AMERICAN (884B–5 TRAFFIC MODEL) OR SEE CLERMONT'S LIST OF APPROVED PRODUCTS VIA THE CITY'S WEBSITE. NO SUBSTITUTE. FIRE HYDRANTS TO BE THE BREAK AWAY TYPE WITH A CAST IRON DUCTILE IRON MECHANICAL JOINT HYDRANT TEE, WITH RESILIENT SEAT AND MECHANICAL JOINT GATE VALVE.

FIRE HYDRANTS CONT.

1. BLUE PAVEMENT REFLECTORS SHALL BE PLACED IN THE CENTERLINE OF THE DRIVING LANE CLOSEST TO AND DIRECTLY IN FRONT OF EACH FIRE HYDRANT.

2. A POST–CONSTRUCTION FIRE FLOW TEST SHALL BE CONDUCTED. HYDRANTS SHALL DELIVER THE REQUIRED GPM PER THE CITY OF CLERMONT LAND DEVELOPMENT REGULATIONS WITH A RESIDUAL PRESSURE OF 20 PSI. CONTRACTOR SHALL NOTIFY CITY OF CLERMONT ENGINEERING DEPARTMENT WHEN HYDRANTS ARE READY TO BE FLOW TESTED. FOR FIRE HYDRANTS LOCATED WITHIN THE CITY OF CLERMONT, CONNECTED TO THE CITY OF CLERMONT'S WATER SYSTEM, AND/OR LOCATED WITHIN CLERMONT FIRE DEPARTMENT'S PROTECTION AREA, THIS TEST SHALL BE CONDUCTED BY CITY OF CLERMONT PERSONNEL. THIS TEST SHALL BE PROVIDED BY THE CONTRACTOR FOR LOCATIONS NOT INCLUDED ABOVE. THIS TEST MAY BE WITNESSED BY THE OWNER/OPERATOR IF REQUESTED AT TIME OF NOTIFICATION THAT HYDRANTS ARE READY FOR FLOW TEST.

3. IF A PERMIT FOR THE WATER SYSTEM IS REQUIRED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP), THE SYSTEM SHALL BE ACCEPTED AND APPROVED BY DEP PRIOR TO BEING PRESSURIZED OFF OF THE CITY SYSTEM AND PRIOR TO ANY FLOW TESTS BEING CONDUCTED.

4. FIRE HYDRANTS AND FIRE PROTECTION APPLIANCES SHALL BE KEPT ACCESSIBLE TO THE FIRE DEPARTMENT AT ALL TIMES. THE FOLLOWING CLEARANCES SHALL BE MAINTAINED FOR ALL FIRE HYDRANTS AND FIRE PROTECTION APPLIANCES. CLEAR PATH TO FRONT AND A 36" CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF FIRE HYDRANTS. NO PERSON SHALL PLACE OR KEEP ANY POST, FENCE, VEHICLE, GROWTH, VEGETATION, TRASH OR STORAGE OF OTHER MATERIALS THAT WOULD OBSTRUCT A FIRE HYDRANT OR FIRE PROTECTION APPLIANCE AND HINDER OR PREVENT ITS IMMEDIATE USE BY FIRE DEPARTMENT PERSONNEL. SUCH FIRE HYDRANT OR FIRE PROTECTION APPLIANCE SHALL BE KEPT READILY VISIBLE AT ALL TIMES.

5. FIRE HYDRANTS SHALL NOT BE LOCATED CLOSER THAN THREE (3) FEET TO OR MORE THAN TWENTY (20) FEET FROM THE EDGE OF A STREET, DRIVE OR OTHER ACCESSWAY. UNLESS OTHERWISE REQUESTED BY THE FIRE OFFICIAL, THE 4–1/2" CONNECTION SHALL FACE THE NEAREST ROADWAY, OR IF LOCATED WITHIN A COMPLEX PARKING AREA, SHALL FACE THE NEAREST TRAFFIC WAY. NO HYDRANT SHALL BE INSTALLED WHERE PEDESTRIAN OR VEHICULAR TRAFFIC WOULD INTERFERE WITH THE USE OF THE HYDRANT. THE STANDARD FIRE HYDRANT APPROVED FOR USE IN THE CITY CAN BE FOUND IN THE CITY'S LIST OF APPROVED PRODUCTS VIA THE CITY'S WEBSITE. THE CITY'S STANDARD FIRE HYDRANT DETAIL AND NOTES ARE AVAILABLE FROM THE CITY ENGINEER'S OFFICE AND MUST BE INCLUDED IN THE SITE PLANS. ALL FIRE HYDRANTS AND MAINS, INCLUDING THOSE PRIVATELY OWNED, THAT ARE CONNECTED TO THE CITY'S POTABLE WATER SYSTEM, SHALL CONFORM TO CITY STANDARDS.

6. A MINIMUM NUMBER OF FIRE HYDRANTS SHALL BE PROVIDED AND/OR AVAILABLE TO PROVIDE EQUAL TO OR GREATER THAN THE NEEDED FIRE FLOW FOR ALL BUILDINGS ON THE SITE BASED ON THE FOLLOWING CREDITS: HYDRANT(S) WITHIN 300 FEET OF THE BUILDING, 1,000 GPM CREDIT; HYDRANT(S) 301 TO 600 FEET, 670 GPM CREDIT; HYDRANT(S) 601 TO 1,000 FEET, 250 GPM CREDIT.

7. FIRE HYDRANTS THAT HAVE NOT BEEN TESTED AND PLACED INTO SERVICE MUST BE CLEARLY MARKED AS 'OUT OF SERVICE' USING INDUSTRY ACCEPTED METHODS (BAGGING, TAGGING, ETC).

CONNECTIONS TO CITY WATER MAINS

ALL DOUBLE DETECTOR CHECK VALVE ASSEMBLIES (DDCV) INSTALLED TO ISOLATE A PRIVATE FIRE SYSTEM SUPPLYING FIRE HYDRANTS FROM THE CITY'S POTABLE WATER SYSTEM SHALL HAVE TAMPER SWITCH DEVICES INSTALLED ON THE DDCV ASSEMBLY VALVES WHENEVER ANY AUTOMATIC FIRE SPRINKLER SYSTEM IS INSTALLED BEYOND THE DDCV. THESE TAMPER SWITCHES SHALL BE CONNECTED TO THE BUILDING FIRE ALARM SYSTEM FOR ALL INDIVIDUAL BUILDINGS PROTECTED BY A FIRE SPRINKLER SYSTEM.

FIRE DEPARTMENT CONNECTIONS

ANY FIRE DEPARTMENT CONNECTION SIAMESE (FDC) FOR FIRE SPRINKLER OR STANDPIPE SYSTEMS MUST BE WITHIN 100 FEET OF A FIRE HYDRANT. THE FDC MAY BE INSTALLED DIRECTLY ON THE DOUBLE DETECTOR CHECK VALVE BACK FLOW PREVENTOR AS LONG AS THE REQUIREMENT TO BE WITHIN 100 FEET OF A FIRE HYDRANT IS COMPLIED WITH. FIRE DEPARTMENT CONNECTIONS SHALL BE IDENTIFIED BY A SIGN THAT STATES, "NO PARKING FIRE DEPARTMENT CONNECTION" AND SHALL BE DESIGNED IN ACCORDANCE WITH FDOT STANDARDS FOR INFORMATION SIGNAGE. THE LOCATION OF ANY FDC MUST BE SHOWN ON THE SITE PLANS UTILITY SHEET. CLERMONT REQUIRES APPROVED LOCKING FDC CAPS.

DEDICATED FIRE MAINS

1. THE "POINT OF SERVICE" FOR ANY FIRE MAIN MUST BE CALLED OUT ON THE UTILITY SHEET OF THE SITE PLANS. THIS IS THE POINT WHERE A WATER LINE BECOMES DEDICATED TO ONLY FIRE PROTECTION, SUCH AS SUPPLYING ONLY A FIRE HYDRANT OR FIRE SPRINKLER SYSTEM, AND THERE IS NO POTABLE WATER SUPPLY COMING OFF OF THE WATER LINE BEYOND THIS POINT.
2. LABEL DEDICATED FIRE MAINS AT "FL" ON THE SUBMITTED PLANS.
3. FIRE MAINS WILL BE SEPARATELY PERMITTED AND INSPECTED BY THE CITY FIRE DEPARTMENT.

FIRE DEPARTMENT ACCESS

FIRE DEPARTMENT ACCESS ROADS SHALL BE PROVIDED AND MAINTAINED IN ACCORDANCE WITH THE FLORIDA FIRE PREVENTION CODE AND RULES ESTABLISHED BY THE CITY OF CLERMONT FOR EVERY FACILITY, BUILDING, OR PORTION OF A BUILDING HEREAFTER CONSTRUCTED OR RELOCATED. A FIRE DEPARTMENT ACCESS ROAD SHALL EXTEND TO WITHIN 50 FEET (15 m) OF AN EXTERIOR DOOR PROVIDING ACCESS TO THE INTERIOR OF THE BUILDING. FIRE DEPARTMENT ACCESS ROADS SHALL BE PROVIDED SUCH THAT IN ANY PORTION OF THE FACILITY OR ANY PORTION OF AN EXTERIOR WALL OF THE FIRST STORY OF A BUILDING IS LOCATED NOT MORE THAN 150 FEET (46 m) FROM FIRE DEPARTMENT ACCESS ROADS AS MEASURED BY A ROUTE APPROVED BY THE LOCAL FIRE OFFICIAL AROUND THE EXTERIOR OF THE BUILDING OR FACILITY (THE DISTANCE SHALL BE PERMITTED TO BE INCREASED TO 450 FEET WHEN BUILDINGS ARE PROTECTED WITH AN APPROVED AUTOMATIC FIRE SPRINKLER SYSTEM THAT IS INSTALLED IN ACCORDANCE WITH NFPA STANDARDS).

FIRE DEPARTMENT ACCESS ROADS SHALL HAVE AN UNOBSTRUCTED WIDTH OF NOT LESS THAN 20 FEET (6.1 m),

AN UNOBSTRUCTED VERTICAL CLEARANCE OF NOT LESS THAN 13 FEET 6 INCHES (4.1m), SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF FIRE APPARATUS (MINIMUM 32 TONS), AND SHALL BE PROVIDED WITH A SURFACE SUITABLE FOR ALL–WEATHER DRIVING CAPABILITIES. THE TURNING RADIUS OF A FIRE DEPARTMENT ACCESS ROAD SHALL BE AS APPROVED BY THE AHJ. DEAD–END FIRE DEPARTMENT ACCESS ROADS IN EXCESS OF 150 FEET (46 m) IN LENGTH SHALL BE PROVIDED WITH APPROVED PROVISIONS FOR THE TURNING AROUND OF FIRE APPARATUS. WHEN A BRIDGE IS REQUIRES TO BE USED AS PART OF FIRE DEPARTMENT ACCESS ROAD, IT SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH NATIONALLY RECOGNIZED STANDARDS. THE BRIDGE SHALL BE DESIGNED FOR A LIVE LOAD SUFFICIENT TO CARRY THE IMPOSED LOADS OF FIRE APPARATUS (MINIMUM 32 TONS). THE ANGLE OF APPROACH AND DEPARTURE FOR ANY MEANS OF FIRE DEPARTMENT ACCESS SHALL NOT EXCEED 1 FOOT DROP IN 20 FEET (0.3 m DROP IN 6 m), AND THE DESIGN LIMITATIONS OF THE FIRE APPARATUS OF THE FIRE DEPARTMENT SHALL BE SUBJECT TO APPROVAL BY THE AHJ. THE LOAD RATING OF FIRE DEPARTMENT ACCESS ROADS AND BRIDGES SERVING DETACHED ONE OR TWO–FAMILY OCCUPANSIES ONLY MAY BE DECREASED UPON APPROVAL BY THE LOCAL FIRE OFFICIAL.

THE REQUIRED WIDTH OF A FIRE DEPARTMENT ACCESS ROAD SHALL NOT BE OBSTRUCTED IN ANY MANNER, INCLUDING BY THE PARKING OF VEHICLES. MINIMUM REQUIRED WIDTHS AND CLEARANCES SHALL BE MAINTAINED AT ALL TIMES. ENTRANCES TO ROADS, TRAILS, OR OTHER ACCESSWAYS THAT HAVE BEEN CLOSED WITH GATES AND BARRIERS SHALL NOT BE OBSTRUCTED BY PARKED VEHICLES. FIRE LANE MARKINGS MUST BE INSTALLED IN ANY LOCATIONS WHERE VEHICLES MAY PARK AND BLOCK TRAFFIC WAYS OR FREE AND CLEAR ACCESS FOR FIRE AND EMERGENCY APPARATUS.

FIRE LANE MARKINGS ON THE PAVEMENT MUST BE IN DOT YELLOW AND INCLUDE A CROSSHATCH AREA THAT EXTENDS A MINIMUM OF THREE FEET OUT FROM THE CURB. ANY CURBS MUST ALSO BE PAINTED DOT YELLOW OR RED. MARKED TRAFFIC SURFACES MUST HAVE THE WORDS, FIRE LANE – NO PARKING, PAINTED ON THE SURFACE. THIS WORDING MUST REPEAT THE ENTIRE LENGTH OF THE FIRE LANE, AND BE SPACED NO MORE THAN 50 FEET APART. WORDING ON PAVED SURFACES MUST BE A MINIMUM OF 10" TALL. ANY REQUIRED FIRE LANES SHALL BE MARKED WITH SIGNS WITH THE WORDING, "NO PARKING FIRE LANE BY ORDER OF THE FIRE DEPARTMENT." SUCH SIGNS SHALL BE 12 INCHES BY 18 INCHES WITH A WHITE BACKGROUND AND RED LETTERS AND SHALL BE A MAXIMUM OF 7 FEET IN HEIGHT FROM THE ROADWAY TO THE BOTTOM PART OF THE SIGN. THE SIGNS SHALL BE WITHIN SIGHT OF THE TRAFFIC FLOW AND BE A MAXIMUM OF 50 FEET APART. A 20' x 20' CROSS–HATCH AREA MUST BE INDICATED ON THE PAVEMENT IN FRONT OF AND CENTERED ON HYDRANTS ANY FIRE DEPARTMENT CONNECTIONS FOR FIRE SPRINKLER OR STANDPIPE SYSTEMS THAT ARE LOCATED ON BUILDINGS OR IN PARKING LOTS WHERE VEHICLES MAY PARK AND BLOCK CLEAR ACCESS TO THE CONNECTION. THE CROSS–HATCH AREA MUST INCLUDE WORDING AS SPECIFIED ABOVE. A SIGN INDICATING "NO PARKING FIRE DEPARTMENT CONNECTION" MUST BE INSTALLED IN THIS AREA.

THE CURB MUST BE PAINTED DOT YELLOW, FOR A LENGTH OF 30 FEET CENTERED ON ANY FIRE OR FIRE DEPARTMENT SIAMESE CONNECTIONS THAT ARE INSTALLED ALONG A PARKING LOT, DRIVE OR STREET TO PREVENT VEHICLES FROM PARKING WITHIN 15 FEET OF THE HYDRANT OR CONNECTION. WORDING MUST BE PAINTED ON CURBS IN THESE AREAS INDICATING "NO PARKING FIRE LANE" AND MUST BE A MINIMUM OF 3" TALL.

BUILDING MARKINGS

ADDRESS NUMERALS SHALL NOT BE LESS THAN THREE INCHES IN HEIGHT FOR RESIDENTIAL BUILDINGS, STRUCTURES OR PORTIONS THEREOF, AND AT LEAST SIX INCHES IN HEIGHT FOR ALL OTHER BUILDINGS, STRUCTURES OR PORTIONS THEREOF. ADDRESS NUMERALS SHALL BE ARABIC NUMERALS OR ALPHABET LETTERS, NO CURSIVE LETTERS.

COMMERCIAL BUILDINGS

"KEY LOCK BOX APPROVED BY A CITY FIRE OFFICIAL" WILL BE REQUIRED ON ALL COMMERCIAL BUILDINGS (NFPA 1, CODE CHAPTER 3–6 AS ADAPTED IN THE FLORIDA FIRE PREVENTION CODE THROUGH FLORIDA ADMINISTRATIVE CHAPTER 4A–60.003, RULES OF THE STATE FIRE MARSHAL, AND AUTHORIZED BY FLORIDA STATUTES 633.0215, 633.025). THESE SHALL BE INSTALLED ON THE EXTERIOR WALL OF THE BUILDING WITHIN ONE FOOT OF THE LEFT SIDE OF THE MAIN PUBLIC ENTRANCE DOOR AT A HEIGHT OF SIX (6) FEET. IN THE CASE OF A MULTI–OCCUPANCY BUILDING, SUCH AS A ROW OF STORES, MULTI–OFFICE BUILDING, ETC., ONLY ONE KEY LOCK BOX PER BUILDING WILL BE REQUIRED UNLESS EXTENUATING CIRCUMSTANCES INDICATE THE NEED FOR ADDITIONAL LOCK BOXES. THIS BOX SHALL BE INSTALLED ON THE EXTERIOR WALL OF THE BUILDING WITHIN ONE FOOT OF THE LEFT END OF THE SIDE OF THE BUILDING CONTAINING THE MAIN PUBLIC ENTRANCE (AS YOU ARE FACING THE MAIN ENTRANCE) AT A HEIGHT OF SIX

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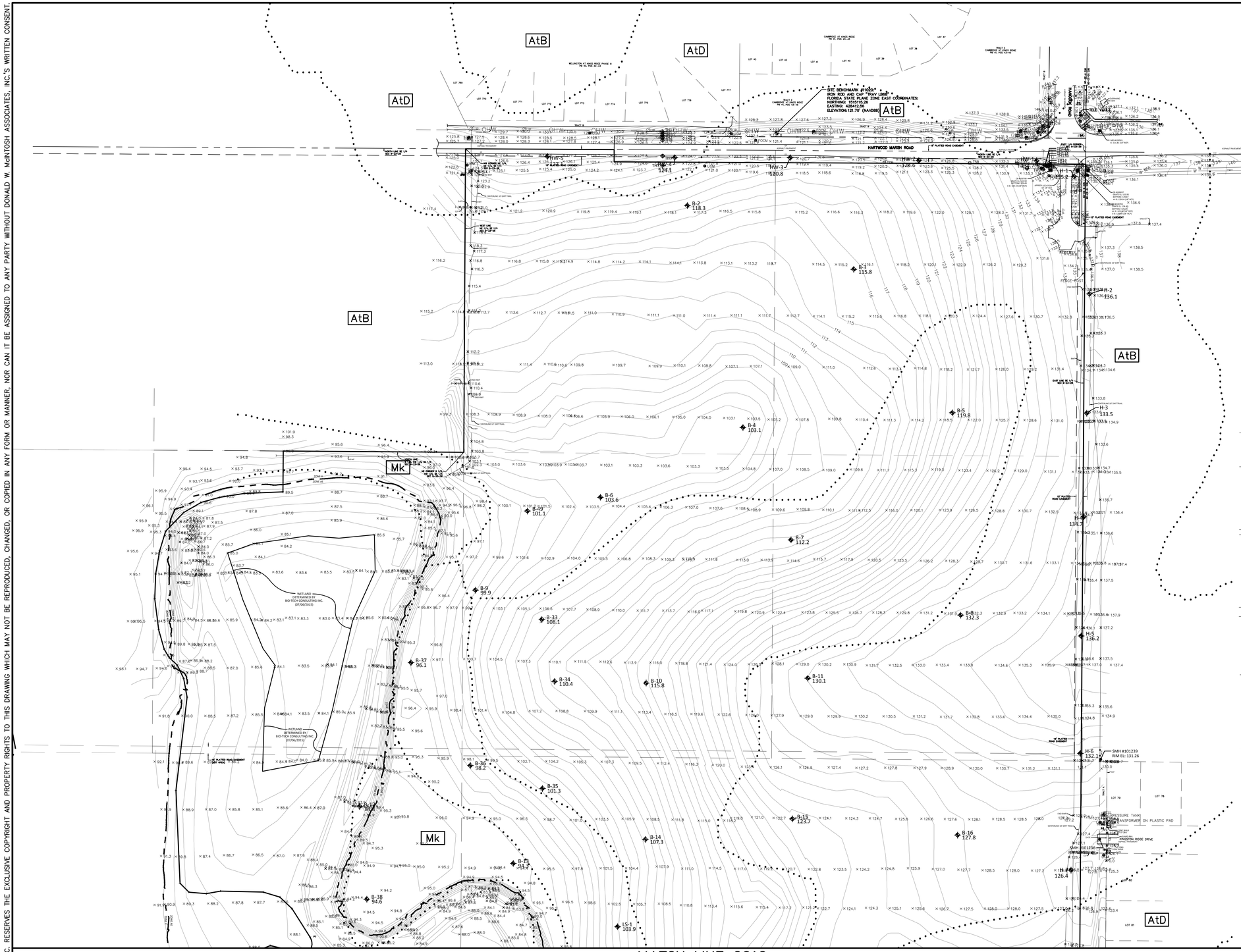

LEGEND

SYMBOLS

L1	LINE NUMBER (SEE LINE TABLE)
C1	CURVE NUMBER (SEE CURVE TABLE)
Δ=	CENTRAL ANGLE
R=	RADIUS
L=	ARC LENGTH
CB=	CHORD BEARING
C=	CHORD
TB=	TANGENT BEARING
T=	TANGENT
x.99	SPOT ELEVATION (EXISTING)
(8)	NUMBER OF PARKING SPACES (INCLUDING HANDICAP)
	SIGN
SEC 5–18–31	SECTION, TOWNSHIP, RANGE
CS	CONTROL STRUCTURE
DMH	DRAINAGE MANHOLE
MES	MITERED END SECTION
INLET	CURB INLET
CIMH	CURB INLET WITH MANHOLE
CB	CATCH BASIN
UD	UNDERDRAIN
YD	YARD DRAIN
USM	UNDERGROUND SANITARY MARKER
SSO	SANITARY SEWER STUB–OUT
SMH	SANITARY MANHOLE
RV	REUSE VALVE
CO	SANITARY CLEAN OUT
FMV	FORCEMAIN VALVE
FMAV	FORCEMAIN AIR RELEASE VALVE
FM	UNDERGROUND FORCEMAIN LINE
BOL	BOLLARD
TMH	TELEPHONE MANHOLE
UTM	UNDERGROUND TELEPHONE MARKER
TR	TELEPHONE RISER
TVR	TELEVISION RISER
UT	UNDERGROUND TELEPHONE LINE
CATV	CABLE TELEVISION MARKER
TSB	TRAFFIC SIGNAL BOX
FOCM	FIBER OPTICS CABLE MARKER
FDC	FIRE DEPARTMENT CONNECTION
FH	FIRE HYDRANT
WV	WATER VALVE
WM	WATER METER
WSO	WATER STUB OUT
BFP	BACKFLOW PREVENTER
BOV	BLOW OFF VALVE
WVB	WATER VALVE BOX
W	WATERMAIN LINE
RW	REUSE WATER LINE
UWM	UNDERGROUND WATER MARKER
IRV	IRRIGATION VALVE
RM	REUSE WATER METER
RSO	REUSE WATER STUB OUT
ESO	ELECTRIC STUB–OUT
EMH	ELECTRIC MANHOLE
CTP	CONCRETE TRAFFIC POLE
UP	UTILITY POLE
ER	ELECTRIC RISER
EPB	ELECTRIC PULL BOX
UEM	UNDERGROUND ELECTRIC MARKER
LP	LIGHT POLE
GW	GUY WIRE
OHW	OVERHEAD WIRE
GL	GROUND LIGHT
E	UNDERGROUND ELECTRIC LINE
CMP	CROSS WALK POLE
TSB	TRAFFIC SIGNAL BOX
TSP	TRAFFIC SIGNAL POLE
SP	SIGNAL POLE (MAST ARM)
GM	GAS METER
GSO	GAS STUB–OUT
GV	GAS VALVE
GVT	GAS VENT
UGM	UNDERGROUND GAS MARKER
G	UNDERGROUND GAS LINE
12"O	TREE SIZE & TYPE O – OAK P – PINE CA – CAMPHOR CH – CHINA BERRY C – CHERRY PM – PALM E – ELM MA – MAGNOLIA
	SET IRC LB 68 (UNLESS NOTED OTHERWISE)

ABBREVIATIONS

A/C	AIR CONDITIONER
APPROX	APPROXIMATE
(APU)	APPARENT PHYSICAL USE
ASPH	ASPHALT
BC	BACK OF CURB
BLW	BLOCK WALL
BWF	BARBED WIRE FENCE
CW	CONCRETE WALL
CLF	CHAIN LINK FENCE
CONC	CONCRETE
CB	CONCRETE BLOCK
℄	CENTERLINE
CM	CONCRETE MONUMENT
CMP	CORRUGATED METAL PIPE
C&G	CURB AND GUTTER
(C)	COMPUTED
(D)	DESCRIPTION
ELY	EASTERLY
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
ESMT	EASEMENT
FND	FOUND
FPC	FLORIDA POWER CORPORATION
FC	FENCE CORNER
FF	FINISH FLOOR ELEVATION
FOC	FIBER OPTIC CABLE
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FM	FORCEMAIN
GOV'T	GOVERNMENT
HB	HOSEBIB
HC	HANDICAP
IR	IRON ROD
IRC	IRON ROD WITH CAP # ____
IP	IRON PIPE
ID	IDENTIFICATION
IE	INVERT ELEVATION
LB	LICENSED BUSINESS
LNDSCP	LANDSCAPE
MH	MANHOLE
MH'S	MANHOLES
MES	MITERED END SECTION
(M)	MEASURED
ML	MOW LINE
NO #	NO NUMBER
NR	NON–RADIAL
NT	NON–TANGENT
NLY	NORTHERLY
N&D	NAIL & DISK
OUC	ORLANDO UTILITIES COMMISSION
ORB	OFFICIAL RECORDS BOOK
(P)	PLAT
PB	PLAT BOOK
PG	PAGE
PGS	PAGES
PVC	POLYVINYLCHLORIDE
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
POP	PERMANENT CONTROL POINT
PLS	PROFESSIONAL LAND SURVEYOR
POL	POINT ON LINE
PRC	POINT OF REVERSE CURVATURE
PRM	PERMANENT REFERENCE MONUMENT
PT	POINT OF TANGENCY
POB	POINT OF BEGINNING
POC	POINT OF COMMENCEMENT
PSM	PROFESSIONAL SURVEYOR & MAPPER
PVMT	PAVEMENT
RES	RESIDENCE
RCP	REINFORCED CONCRETE PIPE
R/W	RIGHT–OF–WAY
R&C	REBAR & CAP
RD	ROAD
RTW	RETAINING WALL
SBT	SOUTHERN BELL TELEPHONE
SLY	SOUTHERLY
SR	STATE ROAD
SW	SIDEWALK
TCP	TELEPHONE CONTROL PANEL
TFP	TRANSFORMER PAD
TYP	TYPICAL
UG	UNDERGROUND
WDF	WOOD FENCE
WPF	WOOD POST FENCE
WLY	WESTERLY
WF	WIRE FENCE

SOILS LEGEND

AtB	ASTATULA – SLIGHT
AtD	ASTATULA – MODERATE SLOPE
Mk	MYAKKA
Ta	TAVARES

MATCH LINE C012

GENERAL NOTES:

1. SEE NOTES, SPECIFICATIONS & LEGEND SHEET FOR ADDITIONAL INFORMATION.
2. THE SCALE OF THIS DRAWING MAY HAVE CHANGED DUE TO REPRODUCTION.

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FLORIDA P.E. No. 52127
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CERTIFICATE OF AUTHORIZATION NO. 68

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	7/12/19	1"=100'	26086

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
EXISTING CONDITIONS PLAN

DRAWING 26086–HARTEXIST

SHEET C011 5 OF 51

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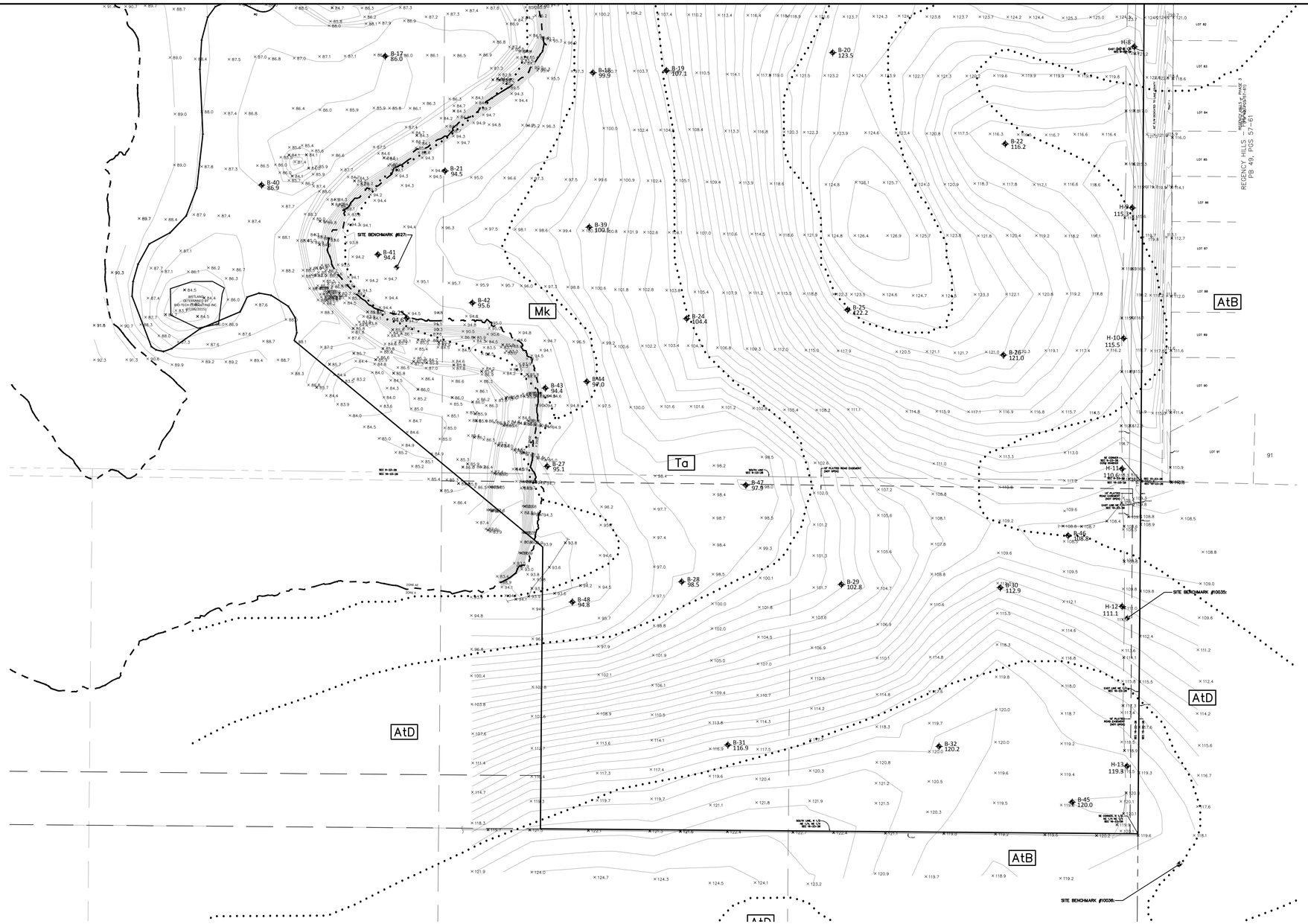
MATCH LINE C011



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SCALE 1"=100'

JOB NUMBER 26086

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
EXISTING CONDITIONS PLAN

DRAWING 26086-HARTEXIST

SHEET C012

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NO.	DATE	REVISIONS	CHK.
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HARTWOOD MARSH

CITY OF CLERMONT, FLORIDA

AERIAL

DRAWING 26086-HARTAERIAL

SHEET C015 7 OF 51

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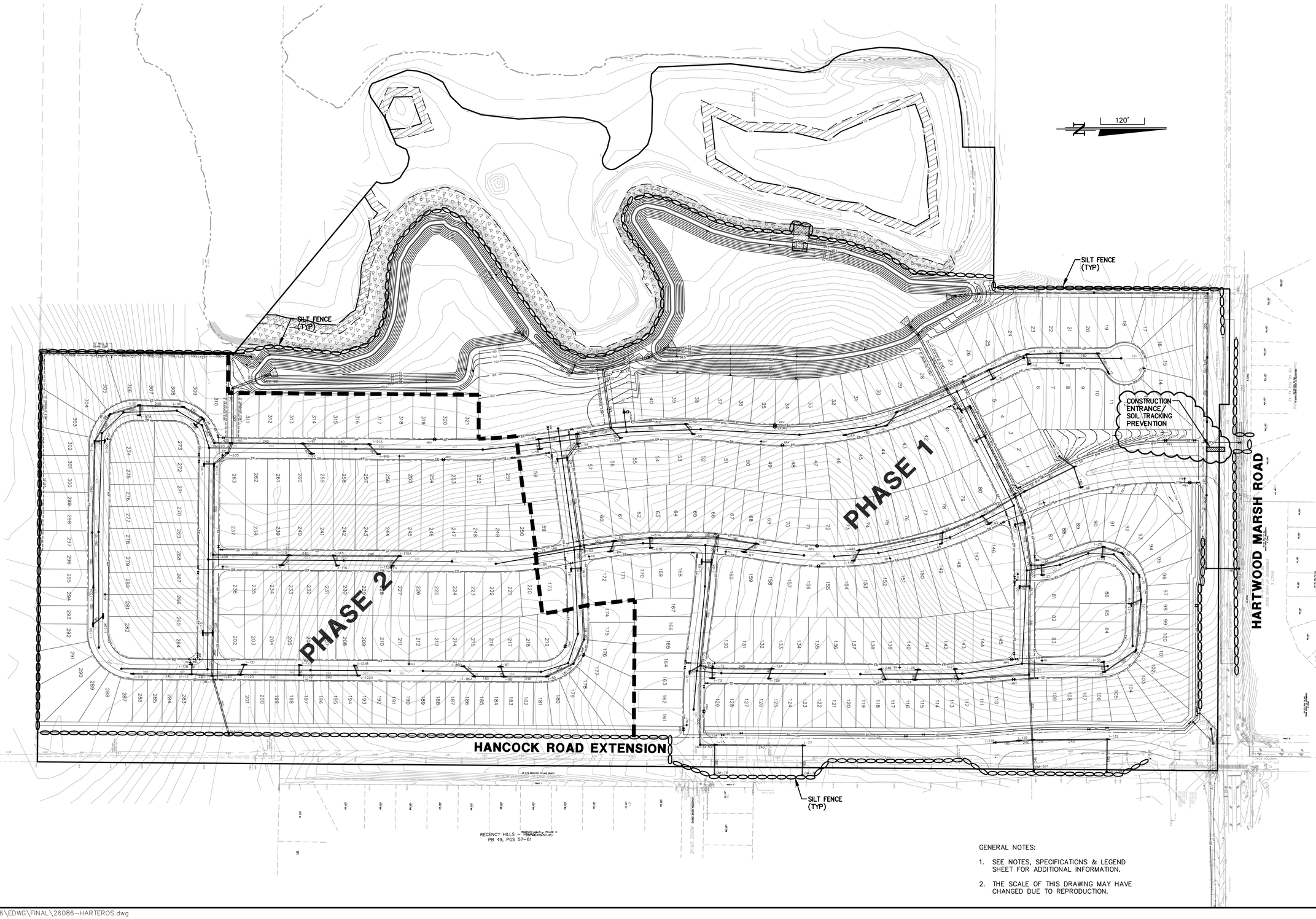
THE SILT FENCE LOCATED DEPICTED IN THE PLANS IS FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND INSTALLATION OF SILT FENCE AND RELATED EROSION AND SILTATION CONTROL MEASURES IN COMPLIANCE WITH FDEP/NPDES REQUIREMENTS AND REGULATIONS. CONTRACTOR SHALL COORDINATE THE LOCATION AND INSTALLATION OF EROSION/SILTATION CONTROL FACILITIES TO PROTECT ADJACENT PROPERTIES AND ENVIRONMENTAL AREAS, AND ACCOMMODATE FINAL GRADING AS SHOWN IN THE PLANS.



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HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
EROSION AND SEDIMENTATION CONTROL PLAN

DRAWING 26086-HARTEROS

SHEET C101

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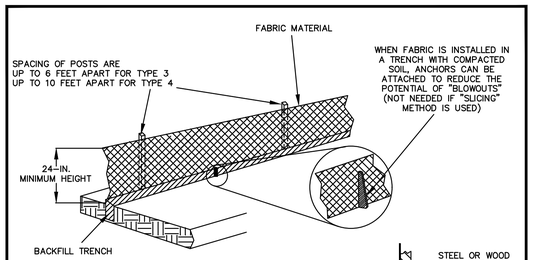
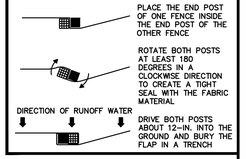


ATTACHING TWO SILT FENCES WHEN TRENCHING IS USED

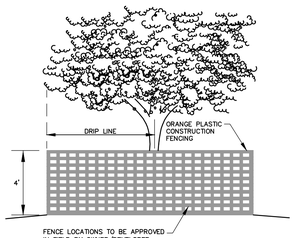


NOTE:
1. REFER TO STATE OF FLORIDA EROSION & SEDIMENT CONTROL – DESIGNER & REVIEWER MANUAL AND FIGURE V-2 FOR MORE INFORMATION.

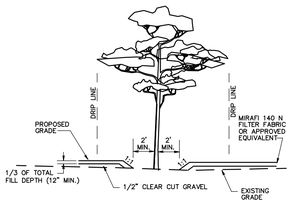
SILT FENCE BARRIER INSTALLATION

TREE PROTECTION NOTES

1. PROTECT EXISTING TREES AND UNDERGROWTH TO REMAIN AGAINST:
   + UNNECESSARY CUTTING, BREAKING, OR SKINNING OF ROOTS AND LIMBS
   + SKINNING AND BRUISING OF BARK
+ SMOTHERING OF TREES BY STOCKPILING CONSTRUCTION OR EXCAVATION MATERIAL WITHIN DRIP-LINE
   + EXCESS FOOT OR VEHICULAR TRAFFIC
   + PARKING VEHICLES WITHIN DRIP-LINE
2. ERECT TEMPORARY CONSTRUCTION FENCING BEFORE COMMENCEMENT OF ANY SITE CLEARING OR GRADING. FENCE SHALL BE A MINIMUM HEIGHT OF 4 FT. WITH STEEL POSTS SET DEEP ENOUGH IN THE GROUND TO BE STABLE WITHOUT ADDITIONAL SUPPORT. ALL FENCING SHOULD BE SET BEYOND THE DRIP-LINE OF EXISTING TREES AND A MINIMUM OF 10' CLEAR DISTANCE FROM THE FACE OF ANY TREES AND SHALL FULLY ENCLOSE ALL TREES AND UNDERGROWTH SCHEDULED TO REMAIN. NOTHING SHALL BE PLACED INSIDE OF THE FENCE, INCLUDING BUT NOT LIMITED TO, CONSTRUCTION MATERIALS, MACHINERY, CHEMICALS, OR TEMPORARY SOIL DEPOSITS. FOR TREES LARGER THAN 20" DBH, THE FENCE SHALL BE NO CLOSER THAN 15' FROM FACE OF TREE. WHEN PAVING, EXCAVATION, OR HARDSCAPE MUST BE DONE WITHIN THE FENCE, THE FENCE SHALL BE MOVED TO A SECONDARY LOCATION AT THE EDGE OF WORK. EXTRA CARE MUST BE TAKEN AT THIS TIME BY THE CONTRACTOR TO INSURE THAT NO DAMAGE TO THE TREE AND UNDERGROWTH OCCURS.
3. PROVIDE WATER TO TREES AND UNDERGROWTH AS REQUIRED TO MAINTAIN THEIR HEALTH DURING CONSTRUCTION.
4. FOR GRADE CUTS WITHIN THE DRIP LINES, ROOTS SHALL NOT BE TRACTOR CLEARED. LIMIT OF CONSTRUCTION SHALL BE DETERMINED, FENCE PLACED, AND ROOTS CUT CLEAN WITH A POWER SAW. CLEAN CUTS WILL AVOID "SHEARING" OF ROOTS. COVER EXPOSED ROOTS WITH MOIST MULCH TO PREVENT DRYING AND COVER WITH EARTH AS SOON AS POSSIBLE.
5. NO CLEARING OF UNDERGROWTH SHALL TAKE PLACE WITHOUT PRIOR APPROVAL OF THE OWNER OR THEIR REPRESENTATIVE. WHEN THE CLEARING OF UNDERGROWTH DOES TAKE PLACE, IT SHALL BE DONE BY QUALIFIED PERSONNEL (LANDSCAPE CONTRACTOR) UNDER THE DIRECTION OF THE OWNER OR THEIR REPRESENTATIVE. MULCH SHALL BE IMMEDIATELY PLACED OVER ANY CLEARED UNDERGROWTH AREA TO PROTECT SURFACE ROOTS OF TREES.
6. NO GRADE CHANGES ARE TO BE MADE WITHIN THE FENCE WITHOUT PRIOR APPROVAL OF THE OWNER OR THEIR REPRESENTATIVE.
7. INTERFERING BRANCHES MAY BE REMOVED AT THE DIRECTION OF THE OWNER OR HIS REPRESENTATIVE BY A QUALIFIED TREE SURGEON.
8. THE CONTRACTOR SHALL REPAIR OR REPLACE TREES INDICATED TO REMAIN, WHICH ARE DAMAGED IN THE CONSTRUCTION OPERATIONS, IN A MANNER ACCEPTABLE TO THE OWNER. EMPLOY A QUALIFIED TREE SURGEON TO REPAIR MAJOR DAMAGE TO TREES AND SHRUBS, PROMPTLY, TO PREVENT PROGRESSIVE DETERIORATION CAUSED BY THE DAMAGE. CONTRACTOR SHALL PROVIDE DOCUMENTATION TO THE OWNER OR THEIR DESIGNATED REPRESENTATIVE OF REPAIRS OR RECOMMENDATIONS FROM THE TREE SURGEON.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR TREES DAMAGED BEYOND REPAIR. TREES SHALL BE REPLACED ON AN INCH FOR INCH BASIS WITH TREES OF 5" CALIPER OR GREATER OF THE SAME SPECIES EQUALING THE OVERALL CALIPER OF THE TREE REMOVED. IF A 20" CALIPER TREE IS REMOVED, IT SHALL BE REPLACED WITH 4-5" CALIPER TREES. REPLACEMENT TREES SHALL BE "FLORIDA #1 GRADE" OR BETTER. IF TREES ARE HARMED THROUGH LACK OF PROTECTION OR NEGLIGENCE, THE CONTRACTOR SHALL BEAR THE BURDEN OF COST OF REPAIR OR REPLACEMENT.

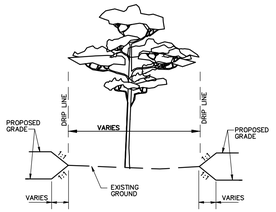


TREE PROTECTION DETAIL



NOTES:
1. CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING AROUND TREES.
2. ALL UTILITY WORK SHALL BE DONE BY HAND WITHIN TREE ROOT IMPACT ZONE.
3. ALL EARTHWORK WITHIN A 10 FOOT RADIUS ZONE AROUND SAVED TREES SHALL BE NON-COMPACTED.
4. GRAVEL AND FILTER FABRIC SHALL BE INSTALLED AROUND SAVED TREES IN FILL AREAS A MINIMUM OF 12 FEET FROM EDGE OF TREE TRUNK AND TERMINATE AT PROPOSED CURB LINE AND/OR DRIP LINE CANOPY OF SAVED TREE. INSTALLATION SHALL BE FIELD DIRECTED TO DETERMINE LIMITS.

TREE SAVE GRADING DETAIL



NOTES:
1. CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING AROUND TREES.
2. NO WORK SHALL BE DONE EXCEPT BY HAND WITHIN TREE ROOT IMPACT ZONE.

TREE SAVE GRADING DETAIL
NO FILL WITHIN DRIP LINE

TURBIDITY MONITORING REQUIRED:

DESCRIPTION: TURBIDITY EXPRESSED IN NEPHELOMETRIC TURBIDITY UNITS (NTU).

LOCATION: BACKGROUND-SAMPLES SHALL BE TAKEN 200 FEET UPSTREAM OF ANY CONSTRUCTION ACTIVITY WITHIN SURFACE WATERS OF THE STATE.

COMPLIANCE: SAMPLES SHALL BE TAKEN 200 FEET DOWNSTREAM OF THE CONSTRUCTION ACTIVITIES ADJACENT TO OR WITHIN WATERS OF THE STATE.

FREQUENCY: TWICE DAILY, WITH AT LEAST A FOUR HOUR INTERVAL, DURING ALL WORK AUTHORIZED BY THIS PERMIT.

DURATION: MONITORING SHALL BEGIN ON THE FIRST DAY OF CONSTRUCTION FOR ALL ACTIVITIES AND MAY BE DISCONTINUED UPON PERMANENT STABILIZATION OF ALL DISTURBED SOILS.

STANDARDS & REPORTING: THE MONITORING DATA MUST DEMONSTRATE THAT TURBIDITY AT THE COMPLIANCE SITE IS LESS THAN OR EQUAL TO 29 NTU'S ABOVE NATURAL BACKGROUND FOR A PERIOD OF 7 CONSECUTIVE DAYS AFTER COMPLETION OF CONSTRUCTION. ALL MONITORING DATA SHALL BE READ AND RECORDED DAILY, AND SUBMITTED TO THE OWNERS AUTHORIZED REPRESENTATIVE (O.A.R.) BY 5:00 P.M. EACH FRIDAY. IF AT ANY TIME THE TURBIDITY EXCEEDS BACKGROUND BY MORE THAN 29 NTU'S, ALL CONSTRUCTION ACTIVITIES SHALL BE HALTED, A WRITTEN REPORT FAXED TO THE FDEP POST PERMIT COMPLIANCE DEPARTMENT.

MONITORING REPORTS SHALL ALSO INCLUDE THE FOLLOWING INFORMATION FOR EACH SAMPLE THAT IS TAKEN:

1. TIME OF DAY SAMPLES WERE TAKEN
2. DEPTH OF WATER BODY
3. DEPTH OF SAMPLES
4. ANTECEDENT WEATHER CONDITIONS
5. WIND DIRECTION AND VELOCITY
6. SAMPLE LOCATION MAP

CORRECTIVE ACTIONS: REMEDIAL MEASURES SHALL BE TAKEN IMMEDIATELY TO CORRECT THE PROBLEM. ACTIVITIES SHALL RESUME ONLY WITH THE CONFIRMATION FROM ADJ STAFF THAT THE SITUATION HAS BEEN RESOLVED.

TURBIDITY MONITORING: CONTRACTOR IS RESPONSIBLE FOR TURBIDITY MONITORING & REPORTING.

SEQUENCE OF CONSTRUCTION

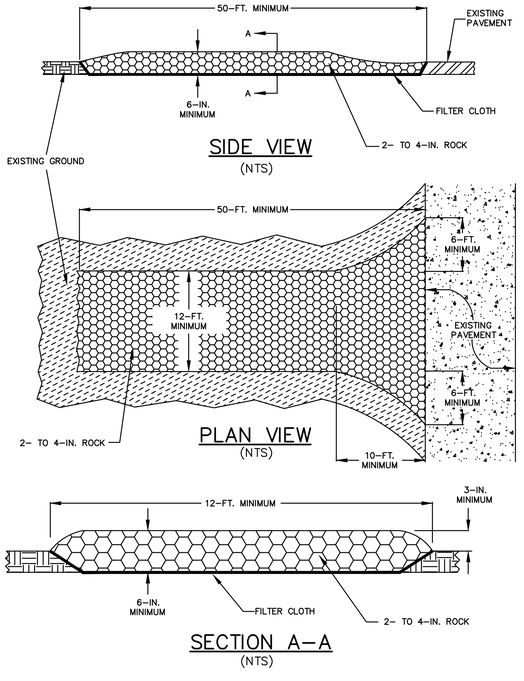
1.0 INSTALL SILT FENCES AROUND PROJECT PERIMETER INCLUDING FLOATING TURBIDITY SCREENS.
2.0 EXCAVATE TEMPORARY SEDIMENT BASINS.
3.0 CONSTRUCT IMPROVEMENTS
4.0 VEGETATE DISTURBED AREAS.
5.0 CONTINUOUS TURBIDITY MONITORING AND ALUM TREATMENT OF STORMWATER MANAGEMENT PONDS AS NECESSARY.

EPA STORMWATER MENU OF BEST MANAGEMENT PRACTICES (BMPs)

1.0 UNITED STATES ENVIRONMENTAL PROTECTION AGENCY NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEMS (NPDES) STORMWATER MENU CAN BE FOUND ONLINE AT CFLPUB.EPA.GOV. BELOW IS A LIST OF BMPs AVAILABLE TO THE CONTRACTOR TO CONTROL EROSION, SEDIMENTATION AND TURBIDITY DURING CONSTRUCTION.
2.0 CONSTRUCTION SITE SEQUENCING.
3.0 CONSTRUCTION SITE OPERATOR BMP INSPECTION AND MAINTENANCE PROGRAM. FOR MORE INFORMATION SEE FLORIDA STORMWATER, EROSION, AND SEDIMENTATION CONTROL INSPECTOR TRAINING AND CERTIFICATION PROGRAM.
4.0 LAND GRADING TECHNIQUES
5.0 SILT FENCES
6.0 STORM DRAIN INLET PROTECTION
7.0 TURBIDITY SCREENS
8.0 SEDIMENT BASINS
9.0 ALUM TREATMENT SYSTEM
10.0 TEMPORARY SLOPE DRAINS
11.0 CHEMICAL STABILIZATION
12.0 GRASS LINED CHANNELS
13.0 ESTABLISHMENT OF VEGETATION (GRASS) ON DISTURBED AREAS INCLUDING SEED, MULCH AND SOD.
14.0 DUST CONTROL
15.0 WIND AND SAND FENCES
16.0 CONSTRUCTION ENTRANCES

EROSION AND SEDIMENT CONTROL NOTES

1. BECAUSE OF THE PROJECT'S PROXIMITY TO ADJACENT LAKES AND WETLANDS, CONTRACTOR SHALL MAKE EVERY EFFORT TO MINIMIZE EROSION, TO RETAIN SEDIMENT WHICH UNAVOIDABLY WILL RESULT FROM ONSITE CONSTRUCTION ACTIVITIES, TO PREVENT SEDIMENTATION AND OTHERWISE PROTECT ONSITE WETLANDS WHICH ARE TO BE RETAINED. THE BASIC PRINCIPLES DESCRIBED HEREIN ARE INTENDED TO DEFINE THE DEVELOPER'S INTENT AND REQUIRE THE CONTRACTOR TO SATISFY THE SPECIFIC REQUIREMENTS OF GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THE WORK.
2. THE SCHEDULING, SEQUENCING AND CONTROL MEASURES, WHICH ARE OUTLINED HEREIN, ARE SUBJECT TO FINAL DEFINITION BY THE CONTRACTOR WHO WILL BE RESPONSIBLE FOR IMPLEMENTATION AND COMPLIANCE.
3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE REQUIRED TO SUBMIT A CONSTRUCTION SCHEDULE DEPICTING EACH PHASE OF THE WORK. THE CONTRACTOR SHALL ALSO BE REQUIRED TO SUBMIT AN EROSION AND SEDIMENT CONTROL PLAN TO THE OWNER, THE ENGINEER AND THE COUNTY ENCOMPASSING THE CONTRACTOR'S EXACT PLAN OF IMPLEMENTING THE PRINCIPLES AND THE REQUIREMENTS DESCRIBED HEREIN. NO CONSTRUCTION CAN BEGIN UNTIL SAID PLAN HAS BEEN APPROVED BY LAKE COUNTY.
4. DURING CONSTRUCTION, THE CONTRACTOR SHALL TAKE ALL REASONABLE MEASURES TO ENSURE AGAINST POLLUTING, SILTATION OR DISTURBANCE TO SUCH AN EXTENT AS TO CAUSE AN INCREASE IN TURBIDITY TO THE ADJACENT WATER BODIES IN COMPLIANCE WITH ALL PERMIT REQUIREMENTS RELATED TO SUCH MEASURES.
5. EROSION CONTROL METHODS SHALL INCLUDE TEMPORARY CONTROL STRUCTURES SUCH AS SEDIMENT BASINS, SEDIMENT CHECKS, SILT BARRIERS, SILT SCREENS, TURBIDITY BARRIERS AND BEST MANAGEMENT PRACTICES AVAILABLE TO THE INDUSTRY.
6. EROSION AND SEDIMENT CONTROL INSTALLATIONS SHALL BE MAINTAINED BY CONTRACTOR THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL NEW VEGETATIVE GROWTH HAS BEEN ESTABLISHED.
7. THROUGHOUT THE CONSTRUCTION PERIOD, THE CONTRACTOR SHALL DAILY INSPECT PROTECTIVE INSTALLATIONS FOR FAILURES OR SIGNS OF FAILURE OR MALFUNCTION AND EFFECT REPAIRS OR REPLACEMENT IMMEDIATELY UPON DISCOVERY.
8. THE RECOMMENDED GENERAL SEQUENCE OF CONSTRUCTION FOR ALL BASINS IS AS FOLLOWS:
   A. PLACEMENT OF PERIMETER PROTECTIVE MEASURES (SILT FENCE, SYNTHETIC HAY BALES, ETC.) AROUND ONSITE LAKES, AT POINTS OF OFFSITE DISCHARGE, AND AROUND WORK AREAS.
   B. REROUTE RUNOFF FROM AREAS OUTSIDE OF THE DEVELOPMENT AREA TO MINIMIZE FLOW THROUGH AREAS TO BE DISTURBED BY CONSTRUCTION. BERMS, SWALES AND OTHER MEANS USED FOR SUCH CONVEYANCE SHALL BE VEGETATED AND MEASURES TAKEN TO PROTECT VEGETATION UNTIL STABILIZATION HAS BEEN ESTABLISHED.
   C. SELECT LOCATIONS FOR PLACEMENT OF MATERIAL, WHETHER SUITABLE FOR FILL OR UNSUITABLE, AND CONSTRUCT CONTAINMENT BERMS AROUND THE AREA. THE USE OF STRIPPINGS FOR THIS PURPOSE MAY ACCELERATE BERM REVEGETATION. CONSTRUCT TEMPORARY OUTLETS FROM CONTAINMENT AREAS WITH SCREENS, SYNTHETIC HAY BALES, SETTLING BASINS OR OTHER MEASURES TO PREVENT SILT TRANSPORTATION.
   D. SELECT/DESIGNATE ACCESS ROUTING FOR CONSTRUCTION EQUIPMENT AND VEHICLES AND PROVIDE PERIMETER PROTECTIVE MEASURES WHERE EXISTING TERRAIN WILL BE SUBJECT TO DISRUPTION BY SUCH TRAFFIC.
   E. IF REQUIRED, CONSTRUCT ABOVE GROUND OR OTHER CONTAINMENT AREAS FOR CONSTRUCTION AREA RUNOFF. PROVIDE SCREENS, SYNTHETIC HAY BALES, ETC., TO FILTER DISCHARGE FROM THESE AREAS.
   F. GRASSING, SODDING, ETC. SHALL BE IN PLACE IMMEDIATELY UPON COMPLETION OF DISTURBED AREAS WITHIN PROJECT AREA.
   G. IN ANY EVENT, CONTRACTOR IS SOLELY RESPONSIBLE FOR ENSURING ANY AND ALL MEASURES ARE TAKEN TO COMPLY WITH LOCAL, STATE, FEDERAL AND OWNER REQUIREMENTS FOR EROSION AND SEDIMENT CONTROL DURING CONSTRUCTION.
9. BAHIA SOD REQUIRED AROUND ALL STORM INLETS IN UNPAVED AREAS.
10. THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY HAS AUTHORIZED THE STATE OF FLORIDA TO ADMINISTER THE NATIONAL POLLUTANTS DISCHARGE ELIMINATION SYSTEM (N.P.D.E.S.). CONTRACTOR IS ADVISED THAT OPERATORS ARE REQUIRED TO FILE WITH F.D.E.P., A NOTICE OF INTENT TO USE THE GENERIC PERMIT FOR STORMWATER DISCHARGE FROM CONSTRUCTION ACTIVITIES THAT DISTURB ONE OR MORE ACRES OF LAND. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO SUBMIT THE NOTICE OF INTENT (N.O.I.) TO F.D.E.P. WITH A COPY TO THE OWNER, THE ENGINEER AND THE COUNTY AT LEAST 48 HOURS BEFORE INITIATING CONSTRUCTION.
11. CONTRACTOR SHALL CONFORM TO REQUIREMENTS OF THE FDEP NPDES GENERIC PERMIT INCLUDING PREPARATION AND EXECUTION OF A STORMWATER POLLUTION PREVENTION PLAN (SWPPP). THIS SHEET SHALL NOT BE SUBSTITUTED FOR THAT PURPOSE.
12. PURSUANT TO THE N.P.D.E.S., CONTRACTOR SHALL MAINTAIN RECORDS OF DATES WHEN MAJOR GRADING ACTIVITIES TEMPORARILY OF PERMANENTLY CEASE AND SHALL INITIATE STABILIZATION MEASURES WITHIN 7 DAYS AFTER SUCH TEMPORARY OR PERMANENT CESSATION OF CONSTRUCTION ACTIVITY. STABILIZATION REQUIREMENTS (SODDING WHERE SHOWN ON THE PLANS, SEEDING AND MULCHING ELSEWHERE) APPLY TO ALL AREAS DISTURBED BY CONSTRUCTION, ON-SITE AND OFF-SITE.
13. CONTRACTOR SHALL PROVIDE INSPECTIONS BY QUAUIFIED PERSONNEL OF ALL POINTS OF DISCHARGE, DISTURBED AREAS NOT YET FINALLY STABILIZED, STORAGE AREAS EXPOSED TO RAINFALL, STRUCTURAL CONTROLS AND VEHICULAR ACCESS LOCATIONS. INSPECTIONS SHALL BE MADE AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES OR GREATER.
14. CONTRACTOR SHALL MAINTAIN A COPY OF THE S.W.P.P.P. AT THE LOCATION IDENTIFIED IN THE NOI OF PROJECT INITIATION TO THE DATE OF FINAL STABILIZATION.
15. CONTRACTOR SHALL AMEND THE S.W.P.P.P. WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION OR MAINTENANCE THAT MAY HAVE A SIGNIFICANT EFFECT ON THE POTENTIAL FOR OFF-SITE DISCHARGE OF POLLUTANTS, INCLUDING THE ADDITION OF OR CHANGE IN LOCATION OF DISCHARGE POINTS AND REVISION TO CONTROLS WHICH MAY HAVE PROVED TO BE INEFFECTIVE.
16. CONTRACTOR SHALL REMAIN RESPONSIBLE FOR OPERATION AND MAINTENANCE OF POLLUTION PROTECTION MEASURES UNTIL CONSTRUCTION HAS BEEN COMPLETED IN SUBSTANTIAL CONFORMANCE WITH THE CONTRACT PLANS, CERTIFIED AS SUCH BY THE ENGINEER AND ACCEPTED BY THE COUNTY, WHETHER OR NOT CONTRACTOR HAS SUBMITTED A NOTICE OF TERMINATION (N.O.T.) TO F.D.E.P.
17. IF CONTRACTOR PROPOSES TO DISCHARGE DEWATERING EFFLUENT OFF-SITE, HE SHALL COMPLY WITH FDEP'S "GENERIC PERMIT FOR DISCHARGE OF PRODUCED GROUND WATER FROM ANY NON-CONTAMINATED SITE ACTIVITY". PERMIT REQUIREMENTS CAN BE OBTAINED FROM FDEP AT (407)894-7555 EXT.3985. THIS PERMIT IS INDEPENDENT OF AND IN ADDITION TO WATER MANAGEMENT DISTRICTS' PERMITS FOR CONSTRUCTION DEWATERING.
18. AT ANY PROJECT CONNECTION TO PUBLIC OR PRIVATE ROADWAYS THAT ARE TO BE USED BY CONSTRUCTION TRAFFIC, CONTRACTOR SHALL PROVIDE A SOIL TRACKING PREVENTION DEVICE PER DETAIL.



NOTES:
1. BEFORE CONSTRUCTION ACTIVITIES BEGIN, CONTRACTOR SHALL INSTALL A SOIL TRACKING PREVENTION DEVICE (S.T.P.D.) TO BE USED AT LOCATIONS FOR POINTS OF EGRESS FROM UNSTABILIZED AREAS OF THE PROJECT TO PUBLIC ROADS WHERE OFFSITE TRACKING OF MUD COULD OCCUR. TRAFFIC FROM UNSTABILIZED AREAS OF THE CONSTRUCTION PROJECT SHALL BE DIRECTED THRU A S.T.P.D. BARRIERS, FLAGGING, OR OTHER POSITIVE MEANS SHALL BE USED AS REQUIRED TO LIMIT AND DIRECT VEHICULAR EGRESS ACROSS THE S.T.P.D.
2. THE MINIMUM WIDTH OF THE S.T.P.D. SHALL BE 12' FOR SINGLE LANE USAGE. WHEN CONSTRUCTION TRAFFIC WARRANTS TWO LANE USAGE, THE MINIMUM WIDTH SHALL BE 24'.
3. ALL MATERIALS SPILLED, DROPPED, OR TRACKED ONTO PUBLIC ROADS (INCLUDING THE S.T.P.D. AGGREGATE AND CONSTRUCTION MUD) SHALL BE REMOVED DAILY, OR MORE FREQUENTLY IF SO DIRECTED BY THE ENGINEER, CITY OR COUNTY INSPECTOR.
4. AGGREGATES SHALL BE AS DESCRIBED IN SECTION 901 EXCLUDING 901-2,3. AGGREGATES SHALL BE 2" TO 4" IN SIZE. SIZES CONTAINING EXCESSIVE SMALL AGGREGATE WILL TRACK OFF THE PROJECT AND ARE UNSUITABLE.
5. THE S.T.P.D. SHALL BE MAINTAINED IN A CONDITION THAT WILL ALLOW IT TO PERFORM ITS FUNCTION. TO PREVENT OFFSITE TRACKING, THE S.T.P.D. SHALL BE RINSED (DAILY WHEN IN USE) TO MOVE ACCUMULATED MUD DOWNWARD THRU THE STONE. ADDITIONAL STABILIZATION OF THE VEHICULAR ROUTE LEADING TO THE S.T.P.D. MAY BE REQUIRED TO LIMIT THE MUD TRACKED.
6. PAYMENT FOR THE S.T.P.D. SHALL CONSTITUTE FULL COMPENSATION FOR CONSTRUCTION, MAINTENANCE, REPLACEMENT OF MATERIALS, REMOVAL, AND RESTORATION OF THE AREA UTILIZED FOR THE S.T.P.D.: INCLUDING BUT NOT LIMITED TO EXCAVATION, GRADING, SEDIMENT REMOVAL AND DISPOSAL, WATER, RINSING AND CLEANING OF THE S.T.P.D. AND CLEANING OF PUBLIC ROADS, GRASSING AND SOD.
7. REFER TO STATE OF FLORIDA EROSION & SEDIMENT CONTROL – DESIGNER & REVIEWER MANUAL AND FIGURE V-19 FOR MORE INFORMATION.

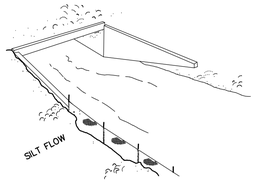
SOIL TRACKING PREVENTION DEVICE

GENERAL NOTES

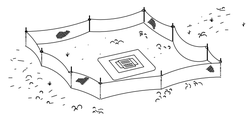
1. FLOATING TURBIDITY BARRIERS ARE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR FLOATING TURBIDITY BARRIER, LF.
2. STAKED TURBIDITY BARRIERS ARE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED TURBIDITY BARRIER, LF.

NOTE: SPACING FOR TYPE III FENCE TO BE IN ACCORDANCE WITH CHART -, SHEET 1 OF 3 AND DITCH INSTALLATIONS AT DRAINAGE STRUCTURES SHEET 2 OF 3.

SILT FENCE



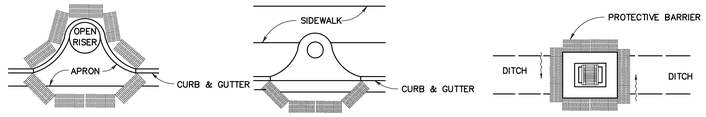
SILT FENCE



SILT FENCE PROTECTION AROUND DITCH BOTTOM INLETS.

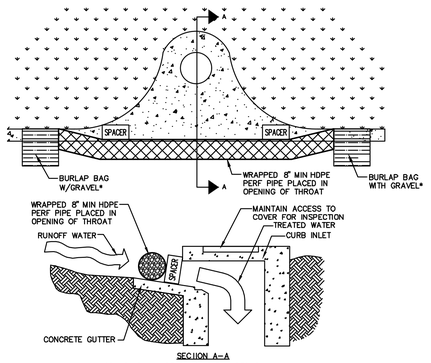
DO NOT DEPLOY IN A MANNER THAT SILT FENCES WILL ACT AS A DAM ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE USED AT UPLAND LOCATIONS AND TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.

SILT FENCE APPLICATIONS



PARTIAL INLET — COMPLETED INLET — DITCH BOTTOM INLET

PROTECTION AROUND INLETS OR SIMILAR STRUCTURES



* GRAVEL SHALL BE 2"-3" CLEAN STONE

NOTE: THE PERFORATED PIPE MUST EXTEND AT LEAST 1' BEYOND THE CURB OPENING ON EACH SIDE AND BE ANCHORED WITH GRAVEL BAGS, OR SIMILAR, ON EACH END. A SPACER (CONCRETE BLOCK OR COUNTY APPROVED EQUAL) MUST BE PROVIDED FOR BETWEEN THE INLET OPENING AND THE PIPE TO ALLOW FOR OVERFLOW, PREVENT FLOODING AND TO PREVENT THE PIPE FROM FALLING INTO THE INLET.

SOCK DRAIN INLET SEDIMENT FILTER
NTS

GENERAL NOTES:

1. SEE NOTES, SPECIFICATIONS & LEGEND SHEET FOR ADDITIONAL INFORMATION.
2. THE SCALE OF THIS DRAWING MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	REVISIONS	CHK.

JOHN T. TOWNSEND
FLORIDA P.E. No. 52127
DATE:

DONALD W. McINTOSH ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FL 32789 407.644.4068
CERTIFICATE OF AUTHORIZATION NO. 68

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	7/12/19	NTS	26086

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
EROSION CONTROL AND TREE PRESERVATION DETAILS

DRAWING 26086-HARTEROSDT
SHEET C102
9 OF 51

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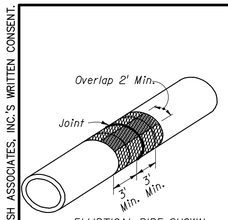
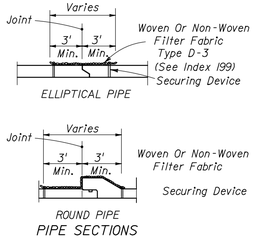


ELLIPTICAL PIPE SHOWN
ISOMETRIC VIEW

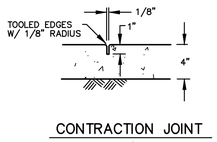


PIPE SECTIONS

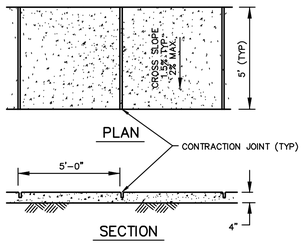
Cost of filter fabric jacket to be included in cost of pipe culverts.

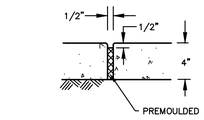
FOR ALL PIPE TYPES - CONCRETE PIPE SHOWN

FILTER FABRIC JACKET



CONTRACTION JOINT
LOCATE AT 4' INTERVALS

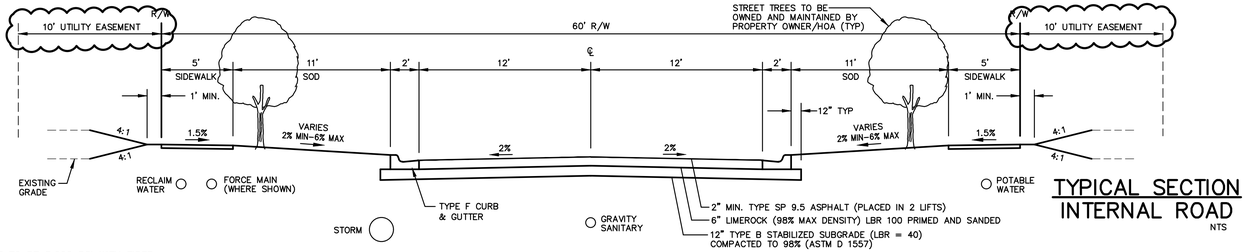




EXPANSION JOINT
LOCATE AT 30' INTERVALS

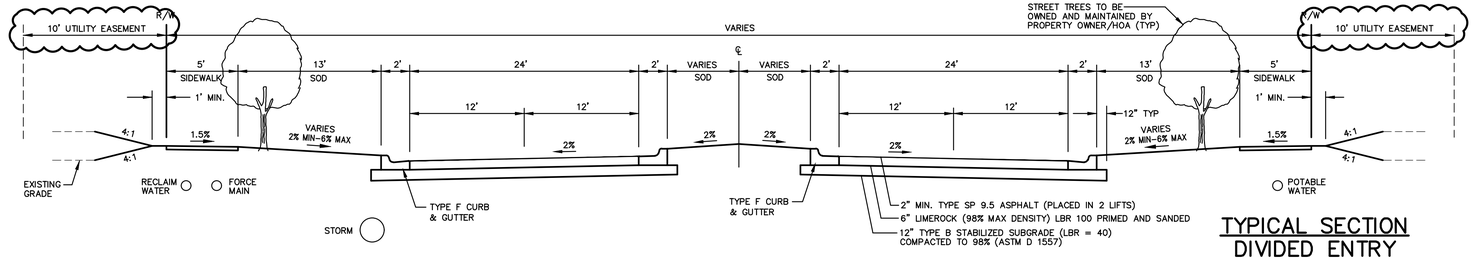
TYPICAL SIDEWALK DETAILS
NTS

SIDEWALK CONSTRUCTION SHALL COMPLY WITH THE U.S. ACCESS BOARD ADA HANDICAP ACCESSIBILITY GUIDELINES (LATEST EDITION)

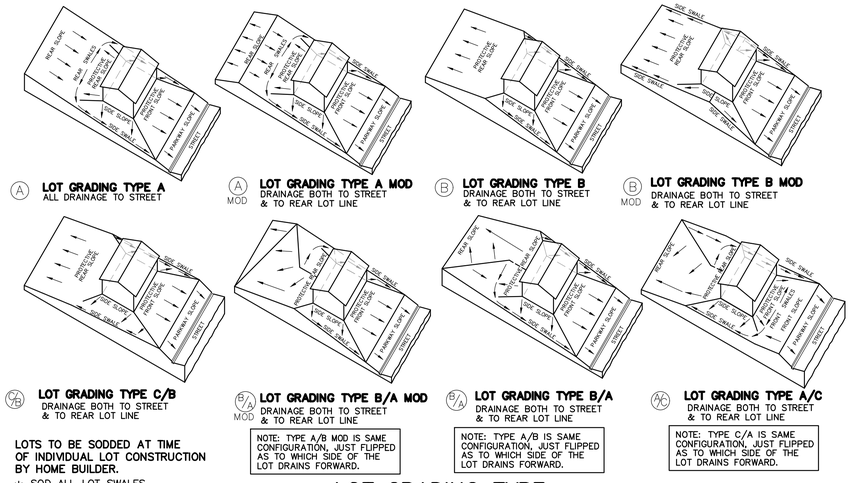


TYPICAL SECTION INTERNAL ROAD
NTS

NOTE: ALL CONCRETE TO BE 3,000 PSI WITH FIBER
6" COMPACTED BASE 95% MIN AASHTO T-99



TYPICAL SECTION DIVIDED ENTRY
NTS



Ⓐ LOT GRADING TYPE A — ALL DRAINAGE TO STREET

Ⓐ MOD LOT GRADING TYPE A MOD — DRAINAGE BOTH TO STREET & TO REAR LOT LINE

Ⓑ LOT GRADING TYPE B — DRAINAGE BOTH TO STREET & TO REAR LOT LINE

Ⓑ MOD LOT GRADING TYPE B MOD — DRAINAGE BOTH TO STREET & TO REAR LOT LINE

Ⓑ/Ⓐ LOT GRADING TYPE C/B — DRAINAGE BOTH TO STREET & TO REAR LOT LINE

Ⓑ/Ⓐ MOD LOT GRADING TYPE B/A MOD — DRAINAGE BOTH TO STREET & TO REAR LOT LINE

NOTE: TYPE A/B MOD IS SAME CONFIGURATION, JUST FLIPPED AS TO WHICH SIDE OF THE LOT DRAINS FORWARD.

Ⓑ/Ⓐ LOT GRADING TYPE B/A — DRAINAGE BOTH TO STREET & TO REAR LOT LINE

NOTE: TYPE A/B IS SAME CONFIGURATION, JUST FLIPPED AS TO WHICH SIDE OF THE LOT DRAINS FORWARD.

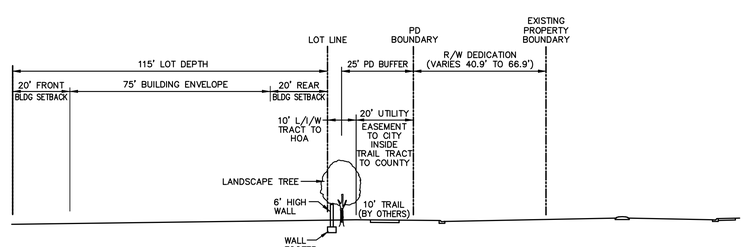
Ⓐ/Ⓒ LOT GRADING TYPE A/C — DRAINAGE BOTH TO STREET & TO REAR LOT LINE

NOTE: TYPE C/A IS SAME CONFIGURATION, JUST FLIPPED AS TO WHICH SIDE OF THE LOT DRAINS FORWARD.

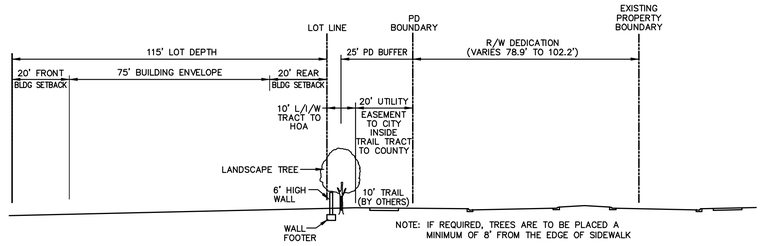
LOTS TO BE SODDED AT TIME OF INDIVIDUAL LOT CONSTRUCTION BY HOME BUILDER.

* SOD ALL LOT SWALES 1% OR GREATER (WHEN CONSTRUCTED)

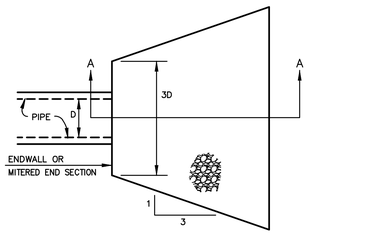
LOT GRADING TYPE
NTS

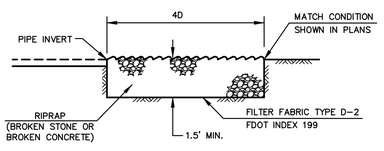


HARTWOOD MARSH ROAD SECTION
NTS



HANCOCK ROAD SECTION
NTS





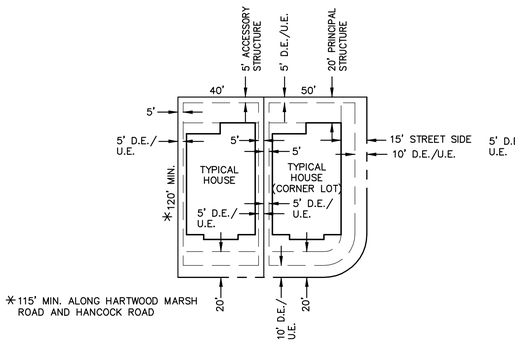
SECTION A-A

RIPRAP SHALL MEET THE REQUIREMENTS OF FDOT STANDARD SPECIFICATIONS SECTION 530 INCLUDING THE FOLLOWING GRADATION:

WEIGHT MAX. (POUNDS)	WEIGHT 50% (POUNDS)	WEIGHT MIN. (POUNDS)
75	30	4

ENSURE THAT AT LEAST 97% OF THE MATERIAL BY WEIGHT IS SMALLER THAN WEIGHT MAXIMUM POUNDS. ENSURE THAT AT LEAST 50% OF THE MATERIAL BY WEIGHT IS GREATER THAN WEIGHT 50% POUNDS. ENSURE THAT AT LEAST 90% OF THE MATERIAL BY WEIGHT IS GREATER THAN WEIGHT MINIMUM POUNDS.

RIPRAP APRON DETAIL



*115' MIN. ALONG HARTWOOD MARSH ROAD AND HANCOCK ROAD

TYPICAL 40' WIDE LOT PLAN
MAXIMUM IMPERVIOUS AREA 75% NTS

TYPICAL 50' WIDE LOT PLAN
MAXIMUM IMPERVIOUS AREA 75% NTS

TYPICAL 60' WIDE LOT PLAN
MAXIMUM IMPERVIOUS AREA 75% NTS

D.E. = DRAINAGE EASEMENT
U.E. = UTILITY EASEMENT

GENERAL NOTES:

1. SEE NOTES, SPECIFICATIONS & LEGEND SHEET FOR ADDITIONAL INFORMATION.
2. THE SCALE OF THIS DRAWING MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	REVISIONS	CHK.
1	10/25/19	REVISED PER CITY COMMENTS	JTT

JOHN T. TOWNSEND
FLORIDA P.E. No. 52127
DATE:

DONALD W. McINTOSH ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FL 32789 407.644.4068
CERTIFICATE OF AUTHORIZATION NO. 68

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	7/12/19	AS SHOWN	26086

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
TYPICAL PAVEMENT SECTIONS

DRAWING 26086-HARTTYPRD
SHEET C201
10 OF 51

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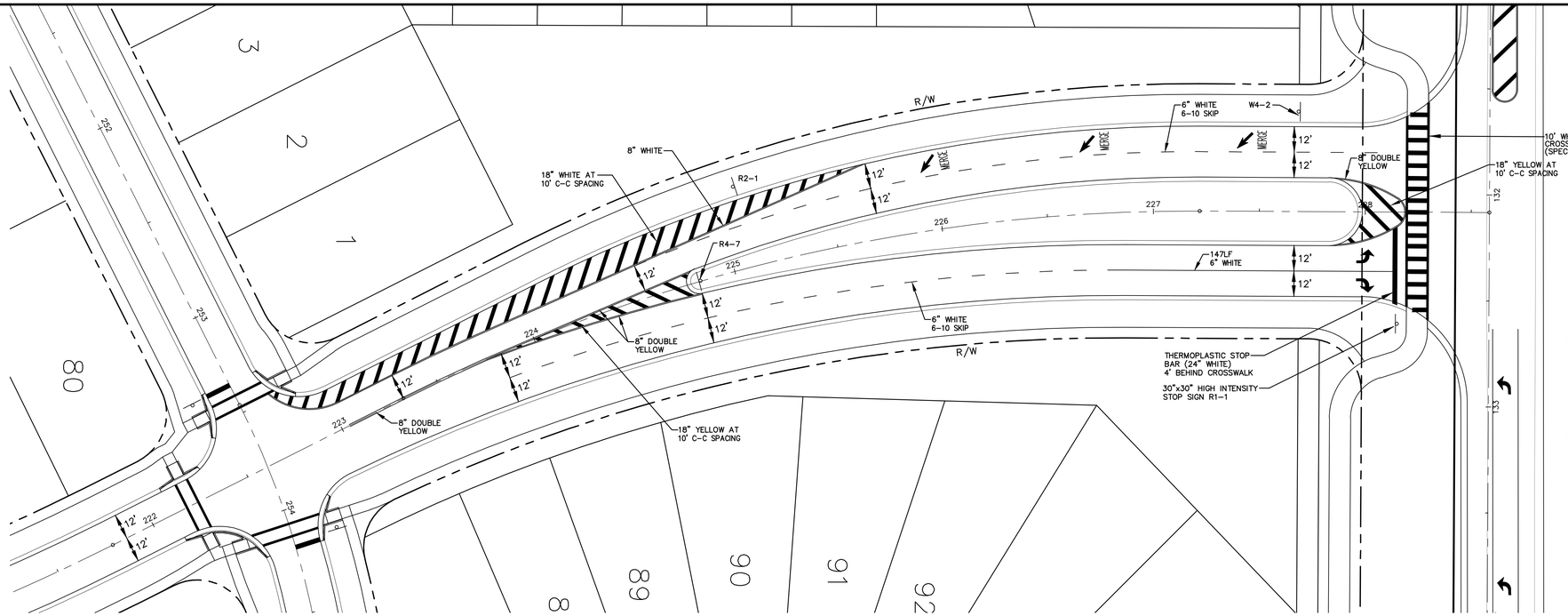
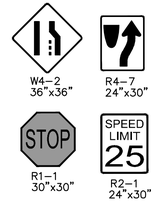
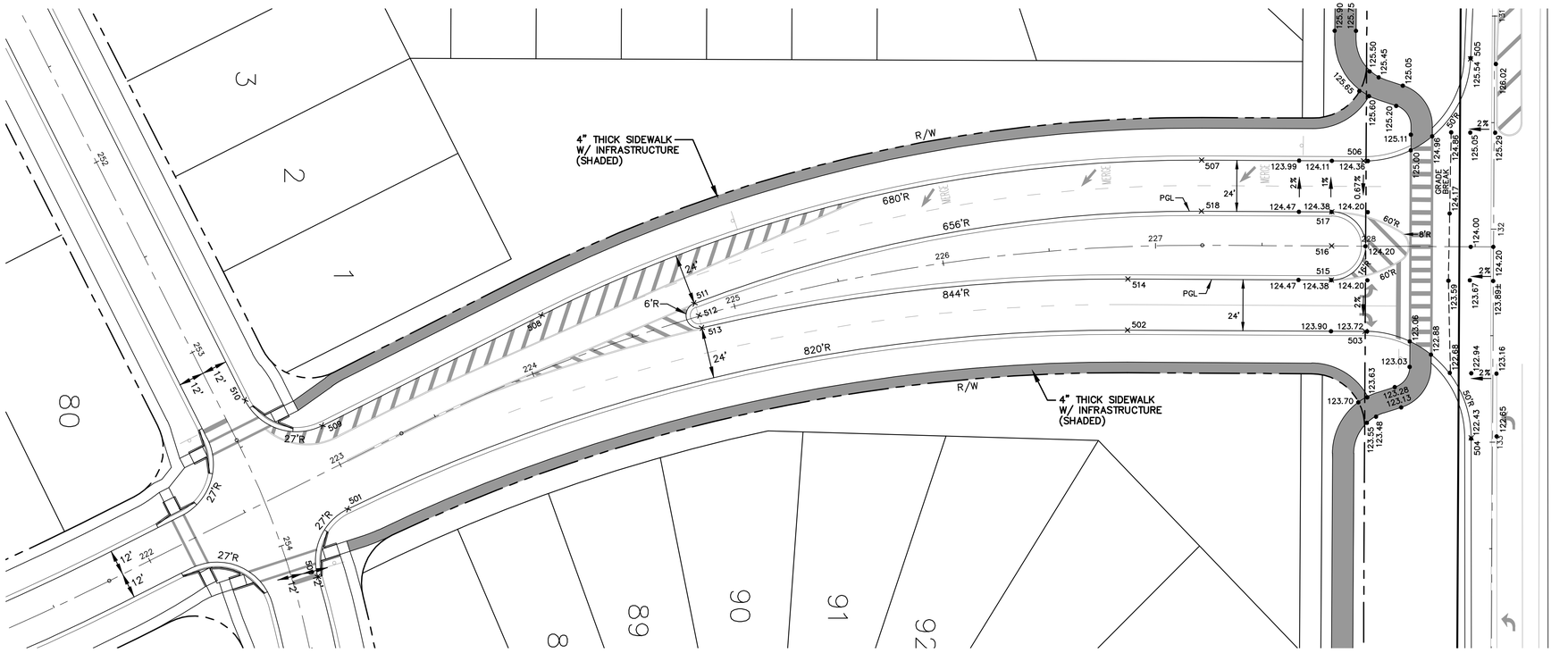


ENTRANCE STRIPING & SIGNAGE

SIGN LEGEND





ENTRANCE GEOMETRY & GRADING

POINT TABLE		
POINT #	NORTHING	EASTING
500	1514518.018	428379.016
501	1514532.022	428347.188
502	1514897.883	428263.171
503	1515009.362	428263.752
504	1515059.102	428313.698
505	1515058.867	428135.876
506	1515008.652	428183.747
507	1514932.610	428183.351
508	1514622.882	428256.175
509	1514520.074	428308.019
510	1514483.806	428296.063
511	1514694.643	428250.657
512	1514696.787	428256.261
513	1514698.177	428262.098
514	1514898.008	428239.171
515	1514993.523	428239.669
516	1514993.606	428223.669
517	1514993.690	428207.669
518	1514932.485	428207.350

GENERAL NOTES:

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2200 PARK AVENUE NORTH, WINTER PARK, FL 32789 407.644.4068
CERTIFICATE OF AUTHORIZATION NO. 68

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	7/12/19	1"=30'	26086

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
LIONS GATE AVE ENTRANCE GEOMETRY

DRAWING 26086-HARTGEO

SHEET C211

11 OF 51

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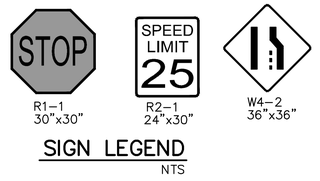
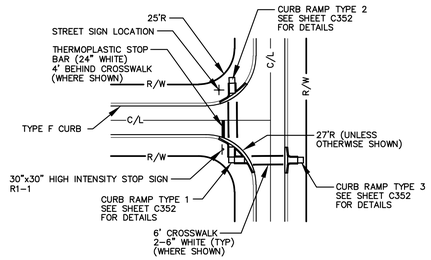
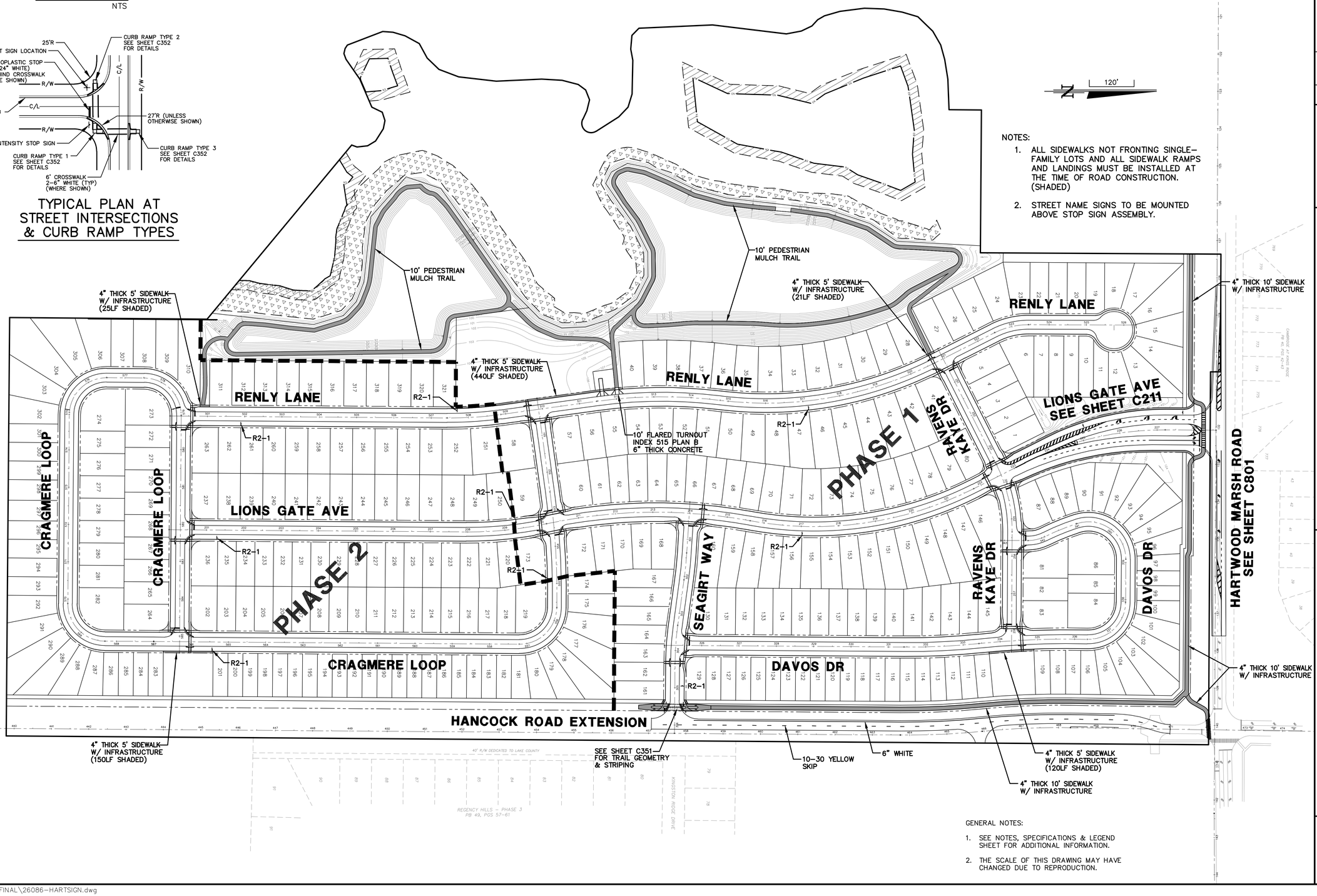


SIGN LEGEND
NTS



TYPICAL PLAN AT STREET INTERSECTIONS & CURB RAMP TYPES



NOTES:

1. ALL SIDEWALKS NOT FRONTING SINGLE–FAMILY LOTS AND ALL SIDEWALK RAMPS AND LANDINGS MUST BE INSTALLED AT THE TIME OF ROAD CONSTRUCTION. (SHADED)
2. STREET NAME SIGNS TO BE MOUNTED ABOVE STOP SIGN ASSEMBLY.

GENERAL NOTES:

1. SEE NOTES, SPECIFICATIONS & LEGEND SHEET FOR ADDITIONAL INFORMATION.
2. THE SCALE OF THIS DRAWING MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	REVISIONS	CHK.

JOHN T. TOWNSEND
FLORIDA P.E. No. 52127
DATE:

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ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FL 32789 407.644.4068
CERTIFICATE OF AUTHORIZATION NO. 68

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	7/12/19	1"=120'	26086

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
SIGNAGE AND STRIPING PLAN

DRAWING 26086–HARTSIGN
SHEET C251
12 OF 51

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MAINTENANCE OF STORMWATER FACILITIES IS THE RESPONSIBILITY OF THE HOA.

FEMA 100-YEAR FLOOD LIMITS ZONE AE EL. 90.1 (NAVD 88) PANEL 12069C0675E EFFECTIVE 12/18/12

25' WETLAND BUFFER

WETLAND LINE FLAGGED BY BIOTECH CONSULTANTS

25' WETLAND BUFFER

WETLAND LINE FLAGGED BY BIOTECH CONSULTANTS

SURFACE WATER FLAGGED BY BIOTECH CONSULTANTS

WETLAND LINE FLAGGED BY BIOTECH CONSULTANTS

POND-2 (DRY)
100YR-24HR 98.87
25YR-24HR 97.42
25YR-96HR 98.74

POND-1 (DRY)
100YR-24HR 98.87
25YR-24HR 97.42
25YR-96HR 98.74

N
120'

RENLY LANE

RENLY LANE

RENLY LANE

LIONS GATE AVE

LIONS GATE AVE

CRAGMERE LOOP

CRAGMERE LOOP

CRAGMERE LOOP

PHASE 1

PHASE 2

RAVENS KAYE DR

RAVENS KAYE DR

SEAGIRT WAY

DAVOS DR

DAVOS DR

HARTWOOD MARSH ROAD

HANCOCK ROAD EXTENSION

40' R/W DEDICATED TO LAKE COUNTY

REGENCY HILLS - PHASE 3
PB 49, PGS 57-61

KINGSTON RIDGE DRIVE

GENERAL NOTES:

1. SEE NOTES, SPECIFICATIONS & LEGEND SHEET FOR ADDITIONAL INFORMATION.
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NO.	DATE	REVISIONS	CHK.
1	10/25/19	REVISED PER SJRWMD & CITY COMMENTS	JTT

JOHN T. TOWNSEND
FLORIDA P.E. No. 52127
DATE:

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ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FL 32789 407.644.4068
CERTIFICATE OF AUTHORIZATION NO. 68

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	7/12/19	1"=120'	26086

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
MASTER DRAINAGE PLAN

DRAWING 26086-HARTMSTDNG

SHEET C301

13 OF 51

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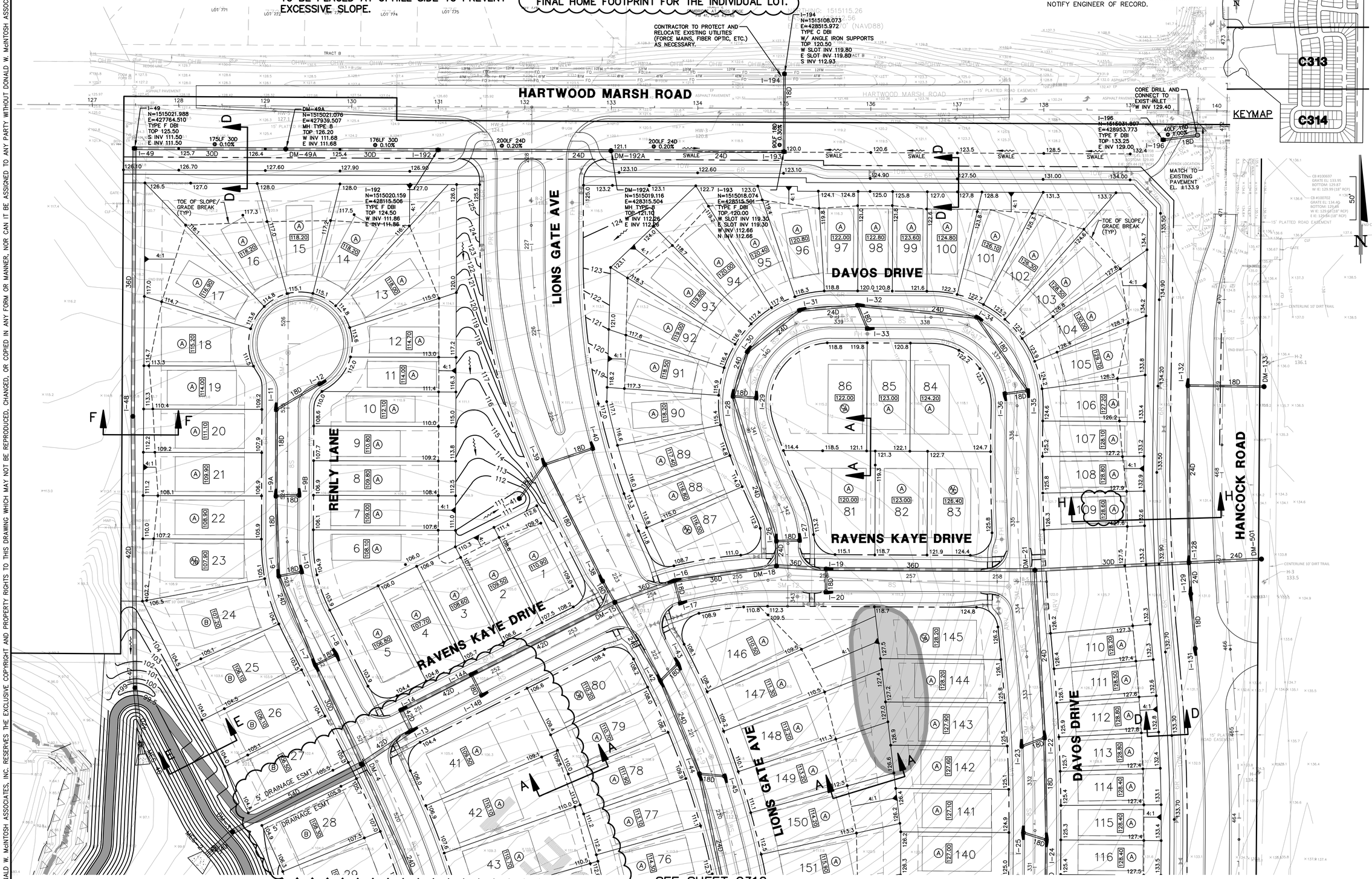
NOTES:

1. SEE SHEETS C401 TO C412 FOR ADDITIONAL DRAINAGE STRUCTURE INFORMATION.
2. SEE SHEET C201 FOR LOT GRADING TYPE DETAILS.
3. SEE SHEET C331 FOR GRADING SECTIONS.
4. ALL LOTS MAY REQUIRE DRIVEWAY LOCATION TO BE PLACED AT UPHILL SIDE TO PREVENT EXCESSIVE SLOPE.
5. CONTRACTOR SHALL CONSTRUCT PAD GRADE AT 8" BELOW FINISH FLOOR ELEVATION AS SHOWN HEREON.
6. HOME CONSTRUCTION MAY REQUIRE ADDITIONAL STEM WALLS BASED ON REAR YARD GRADES. EXACT HEIGHT AND EXTENTS OF STEM WALL TO BE DETERMINED BY HOME BUILDER BASED ON FINAL HOME FOOTPRINT FOR THE INDIVIDUAL LOT.

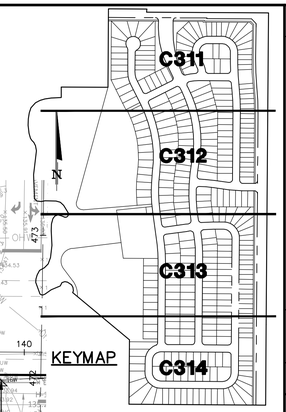
APPROXIMATE LIMITS OF CUT/FILL GREATER THAN 10 FEET FROM EXISTING GRADE

GENERAL NOTES:

1. SEE NOTES, SPECIFICATIONS & LEGEND SHEET FOR ADDITIONAL INFORMATION.
2. THE SCALE OF THIS DRAWING MAY HAVE CHANGED DUE TO REPRODUCTION.
3. APPROXIMATE LOCATION OF EXISTING UTILITIES SHOW. CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND IF CONFLICTS NOTIFY ENGINEER OF RECORD.



SEE SHEET C312



KEYMAP

NO.	DATE	REVISIONS	CHK.
1	10/25/19	REVISED PER SJRWMD & CITY COMMENTS	JTT

JOHN T. TOWNSEND
FLORIDA P.E. No. 52127
DATE:

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2200 PARK AVENUE NORTH, WINTER PARK, FL 32789 407.644.4068
CERTIFICATE OF AUTHORIZATION NO. 68

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	7/12/19	1"=50'	26086

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
GRADING AND DRAINAGE PLAN

DRAWING 26086-HARTGD
SHEET C311
14 OF 51

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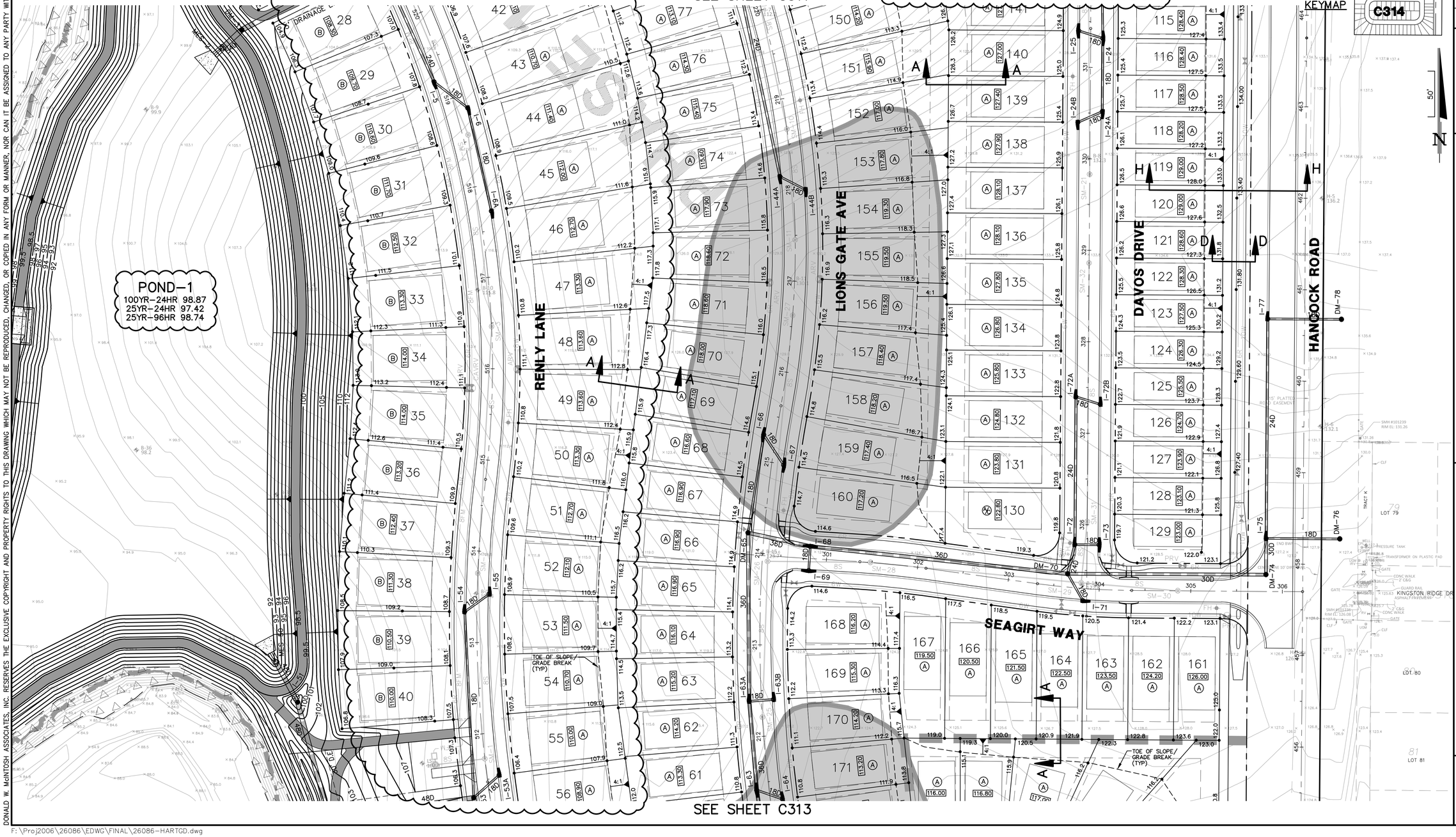
GENERAL NOTES:

1. SEE NOTES, SPECIFICATIONS & LEGEND SHEET FOR ADDITIONAL INFORMATION.
2. THE SCALE OF THIS DRAWING MAY HAVE CHANGED DUE TO REPRODUCTION.

APPROXIMATE LIMITS OF CUT/FILL GREATER THAN 10 FEET FROM EXISTING GRADE

NOTES:

1. SEE SHEETS C401 TO C412 FOR ADDITIONAL DRAINAGE STRUCTURE INFORMATION.
2. SEE SHEET C201 FOR LOT GRADING TYPE DETAILS.
3. SEE SHEET C331 FOR GRADING SECTIONS.
4. ALL LOTS MAY REQUIRE DRIVEWAY LOCATION TO BE PLACED AT UPHILL SIDE TO PREVENT EXCESSIVE SLOPE.
5. CONTRACTOR SHALL CONSTRUCT PAD GRADE AT 8" BELOW FINISH FLOOR ELEVATION AS SHOWN HEREON.
6. HOME CONSTRUCTION MAY REQUIRE ADDITIONAL STEM WALLS BASED ON REAR YARD GRADES. EXACT HEIGHT AND EXTENTS OF STEM WALL TO BE DETERMINED BY HOME BUILDER BASED ON FINAL HOME FOOTPRINT FOR THE INDIVIDUAL LOT.



NO.	DATE	REVISIONS	CHK.
1	10/25/19	REVISED PER S.RIMMO & CITY COMMENTS	JTT

JOHN T. TOWNSEND
FLORIDA P.E. No. 52127
DATE:

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ENGINEERS PLANNERS SURVEYORS
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CERTIFICATE OF AUTHORIZATION NO. 68

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	7/12/19	1"=50'	26086

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
GRADING AND DRAINAGE PLAN

DRAWING 26086-HARTGD
SHEET C312
15 OF 51

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GENERAL NOTES:

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APPROXIMATE LIMITS OF CUT/FILL GREATER THAN 10 FEET FROM EXISTING GRADE

NOTES:

1. SEE SHEETS C401 TO C412 FOR ADDITIONAL DRAINAGE STRUCTURE INFORMATION.
2. SEE SHEET C201 FOR LOT GRADING TYPE DETAILS.
3. SEE SHEET C331 FOR GRADING SECTIONS.
4. ALL LOTS MAY REQUIRE DRIVEWAY LOCATION TO BE PLACED AT UPHILL SIDE TO PREVENT EXCESSIVE SLOPE.
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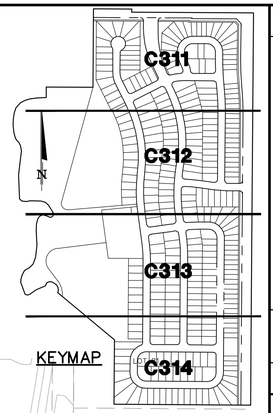
SEE SHEET C312



KEYMAP

SEE SHEET C314

NO.	DATE	REVISIONS	CHK.
1	10/25/19	REVISED PER S.JRIMD & CITY COMMENTS	JTT

JOHN T. TOWNSEND
FLORIDA P.E. No. 52127
DATE:

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2200 PARK AVENUE NORTH, WINTER PARK, FL 32789 407.644.4068
CERTIFICATE OF AUTHORIZATION NO. 68

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	7/12/19	1"=50'	26086

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
GRADING AND DRAINAGE PLAN

DRAWING 26086-HARTGD
SHEET C313
16 OF 51

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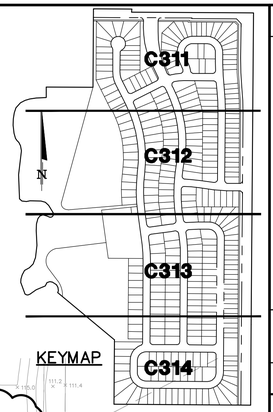
APPROXIMATE LIMITS OF CUT/FILL GREATER THAN 10 FEET FROM EXISTING GRADE

NOTES:
1. SEE SHEETS C401 TO C412 FOR ADDITIONAL DRAINAGE STRUCTURE INFORMATION.
2. SEE SHEET C201 FOR LOT GRADING TYPE DETAILS.
3. SEE SHEET C331 FOR GRADING SECTIONS.
4. ALL LOTS MAY REQUIRE DRIVEWAY LOCATION TO BE PLACED AT UPHILL SIDE TO PREVENT EXCESSIVE SLOPE.
5. CONTRACTOR SHALL CONSTRUCT PAD GRADE AT 8" BELOW FINISH FLOOR ELEVATION AS SHOWN HEREON.
6. HOME CONSTRUCTION MAY REQUIRE ADDITIONAL STEM WALLS BASED ON REAR YARD GRADES. EXACT HEIGHT AND EXTENTS OF STEM WALL TO BE DETERMINED BY HOME BUILDER BASED ON FINAL HOME FOOTPRINT FOR THE INDIVIDUAL LOT.



KEYMAP

SEE SHEET C313

RENLY LANE
LIONS GATE AVE
CRAGMERE LOOP
HANCOCK ROAD (FUTURE)
5' DRAINAGE ESMT
10' DRAINAGE ESMT
10' D.E.
10' WALL & DRAIN ESMT
15' PLATTED ROAD EASEMENT (NOT OPEN)
345LF RETAINING WALL (DESIGN BY OTHERS)
TOE OF SLOPE/ GRADE BREAK (TYP)
PAD CLIP 6.1'X28.7'
PAD CLIP 5.0'X10.0'
PAD CLIP 1.0'X11.8'
PAD CLIP 1.0'X11.8'
TOW 94.00 TOE 94.0
TOW 100.00 TOE 94.0
TOW 105.00 TOE 94.0
TOW 106.00 TOE 95.1
TOW 107.50 TOE 98.0
TOW 109.00 TOE 100.0
TOW 109.00 TOE 109.0
SITE BENCHMARK #10035:
LOT 91

GENERAL NOTES:
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JOHN T. TOWNSEND
FLORIDA P.E. No. 52127
DATE:

DONALD W. McINTOSH ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FL 32789 407.644.4068
CERTIFICATE OF AUTHORIZATION NO. 68

CHECKED BY	DATE	SCALE	JOB NUMBER
JTT	7/12/19	1"=50'	26086

DESIGNED BY	DRAWN BY	CHECKED BY
JTT	CWG	JTT

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
GRADING AND DRAINAGE PLAN

DRAWING 26086-HARTGD
SHEET C314
17 OF 51

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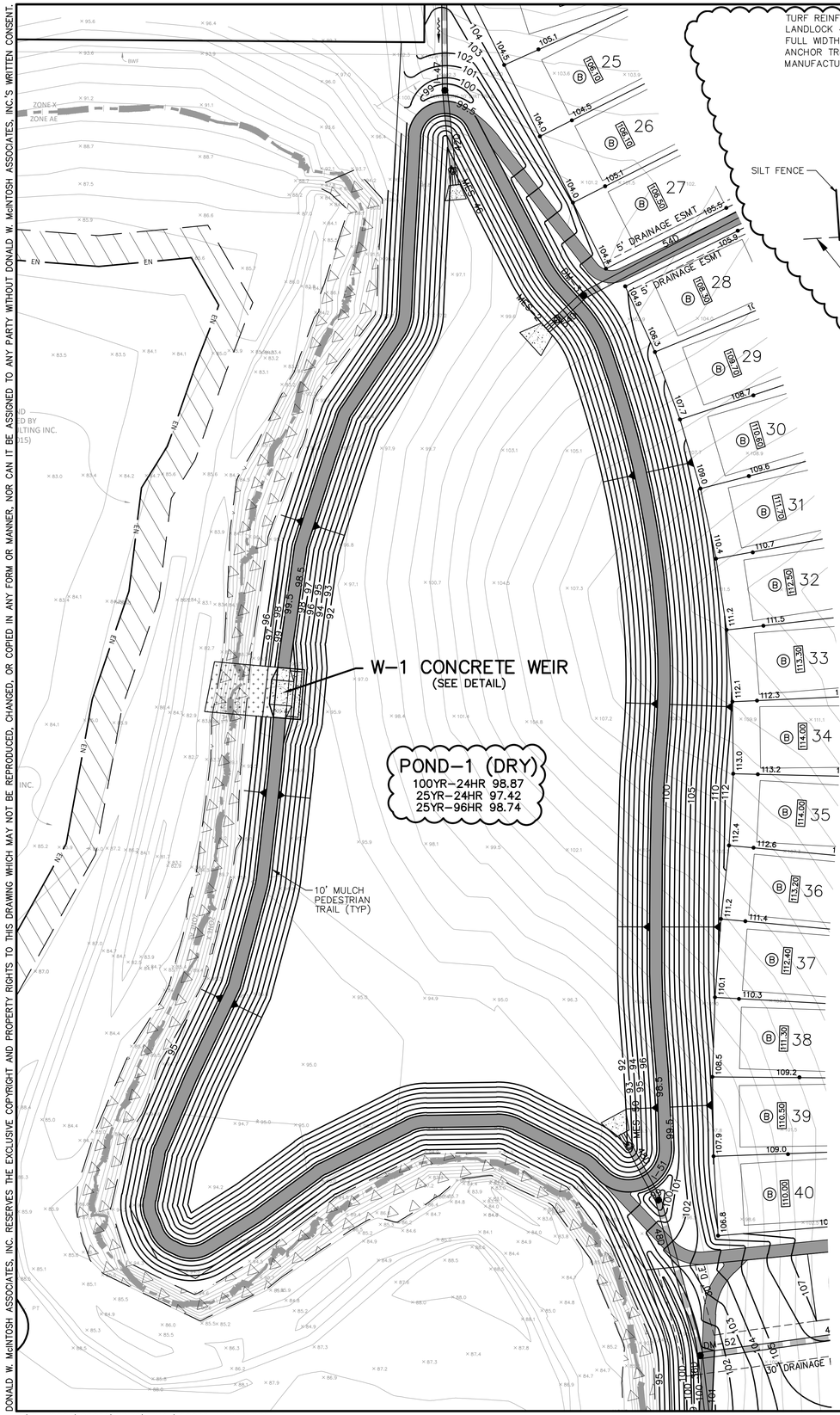
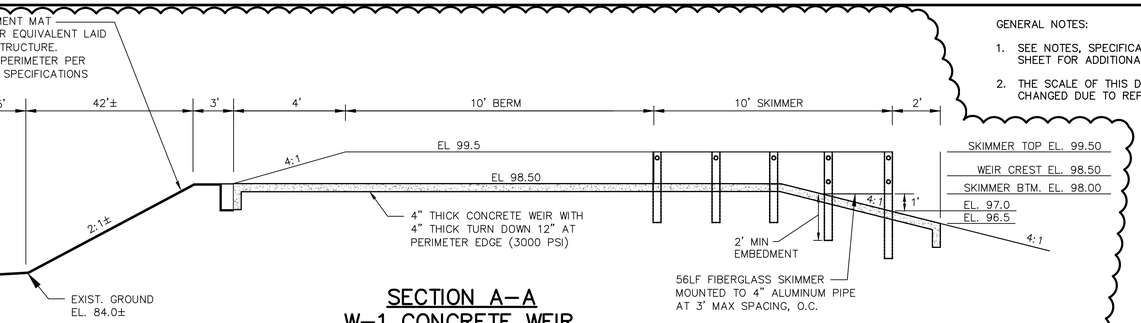
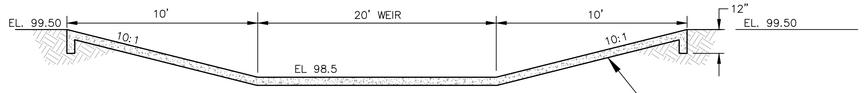
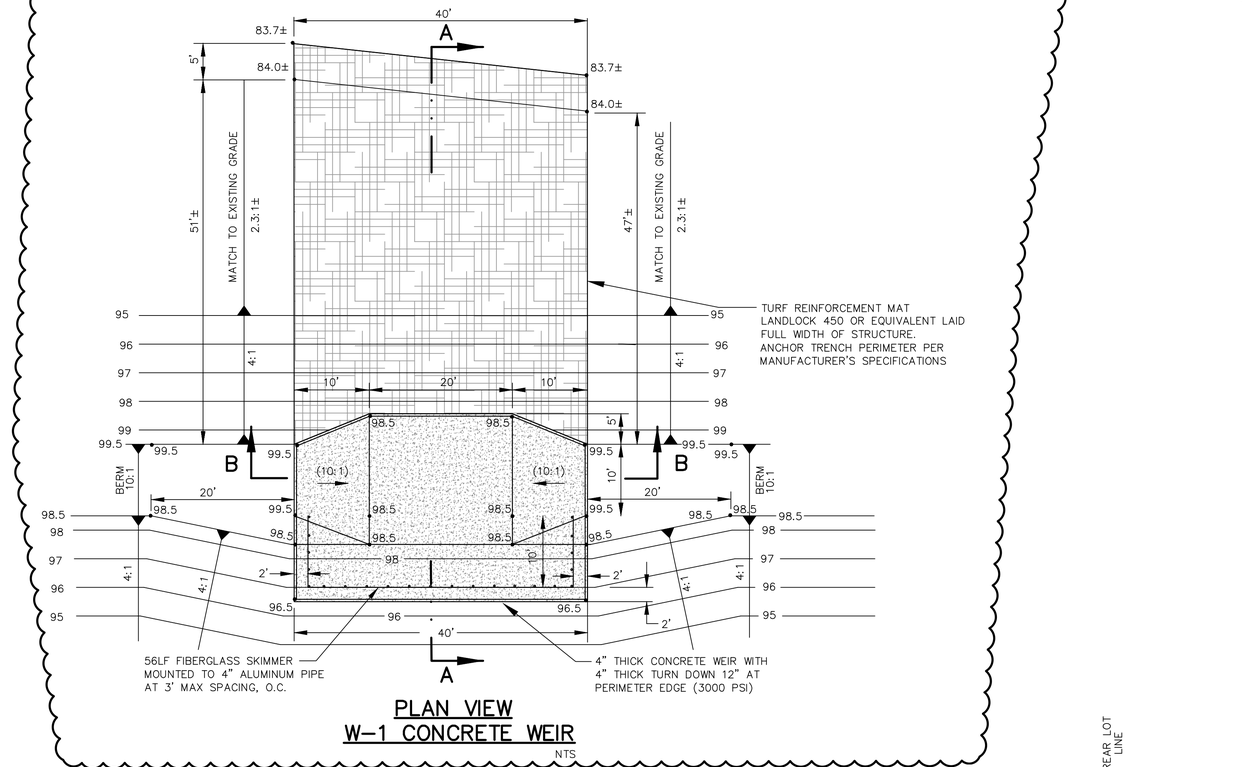




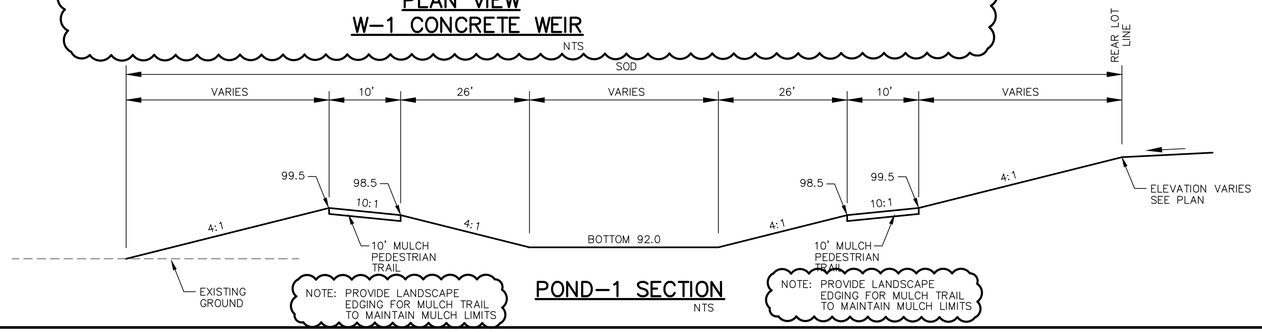
SECTION A–A
W-1 CONCRETE WEIR
NTS



SECTION B–B
W-1 CONCRETE WEIR
NTS



PLAN VIEW
W-1 CONCRETE WEIR
NTS



POND-1 SECTION
NTS

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50'

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FLORIDA P.E. No. 52127
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ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FL 32789 407.644.4068
CERTIFICATE OF AUTHORIZATION NO. 68

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	7/12/19	AS SHOWN	26086

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
TYPICAL POND SECTIONS AND DETAILS

DRAWING 26086-HARTTYPPDT

SHEET C321

18 OF 51

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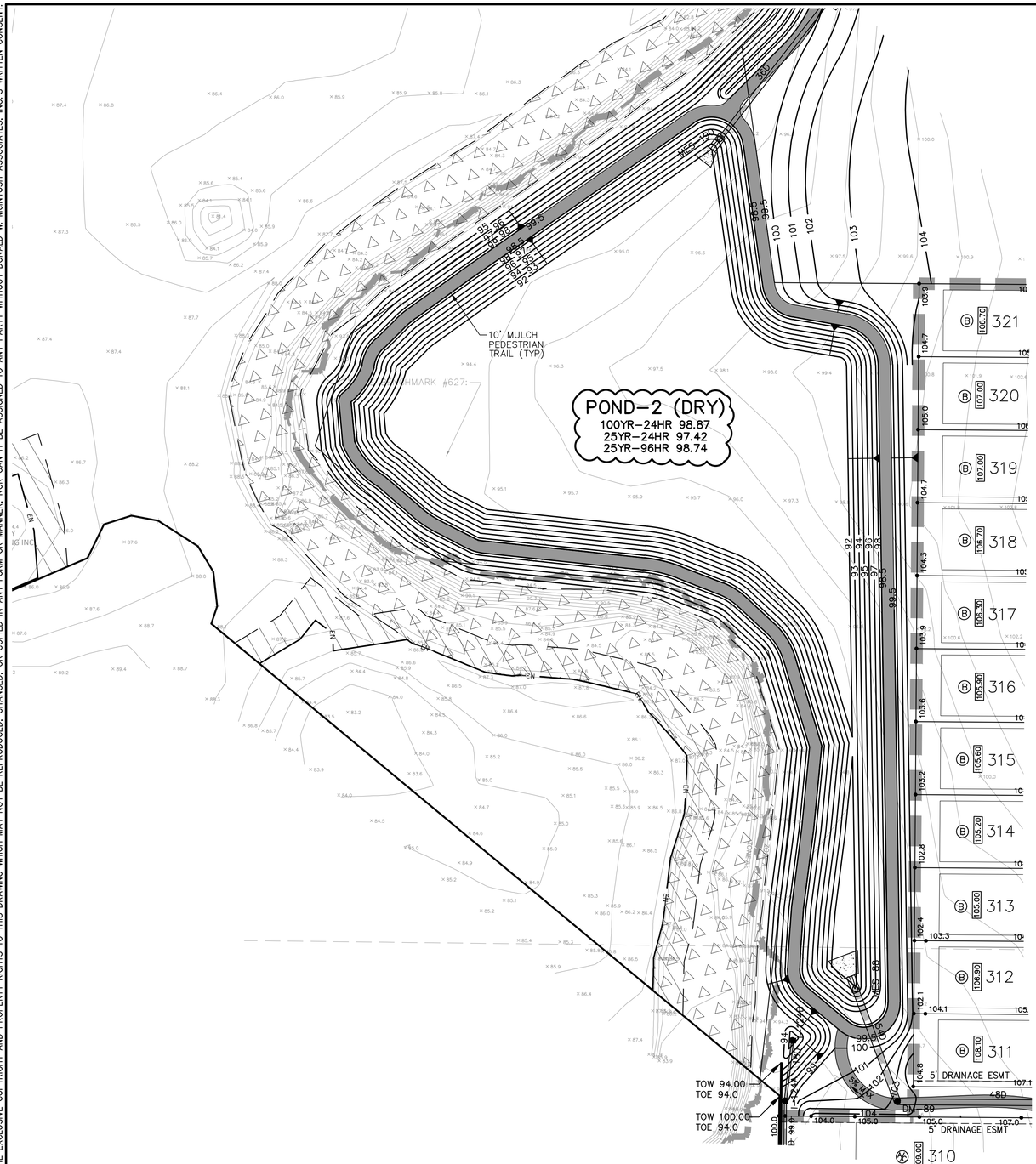

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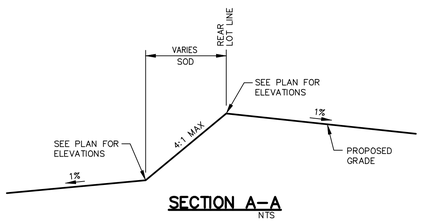
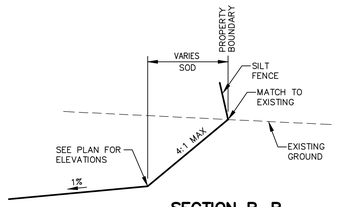
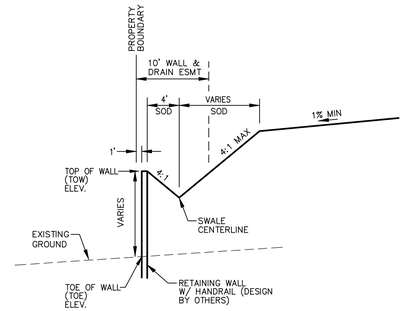
SEE SHEETS C311–C314
FOR GRADING SECTIONS



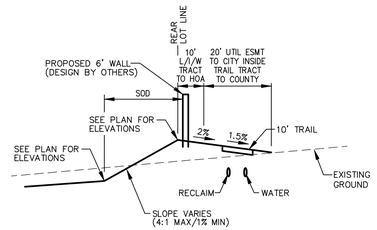
SECTION A–A
NTS



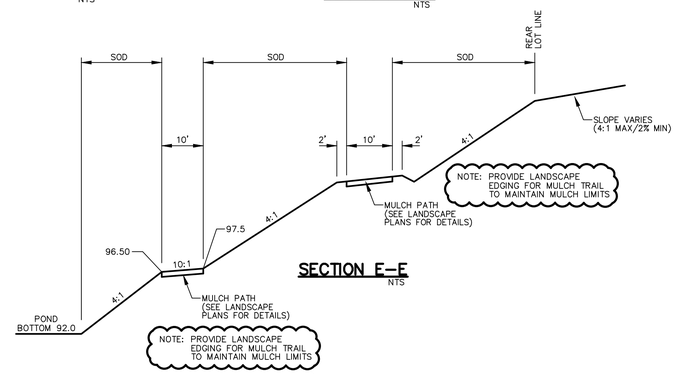
SECTION B–B
NTS



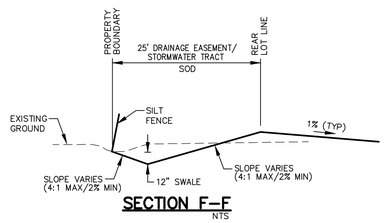
SECTION C–C
NTS



SECTION D–D
NTS



SECTION E–E
NTS



SECTION F–F
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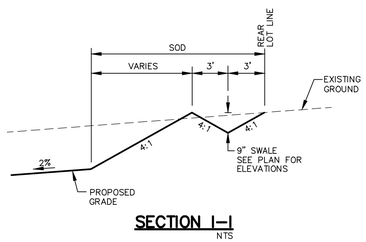
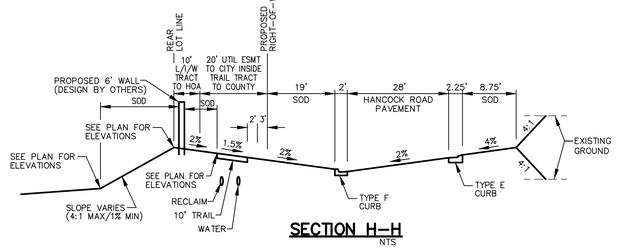


SECTION I–I
NTS



SECTION H–H
NTS

GENERAL NOTES:

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ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FL 32789 407.644.4068
CERTIFICATE OF AUTHORIZATION NO. 68

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	7/12/19	NTS	26086

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
DRAINAGE SECTIONS

DRAWING
26086-HARTXSECT

SHEET
C331
20 OF 51

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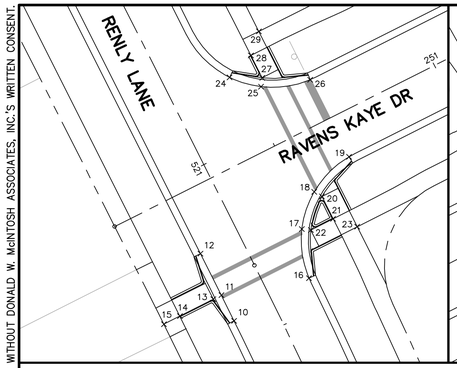
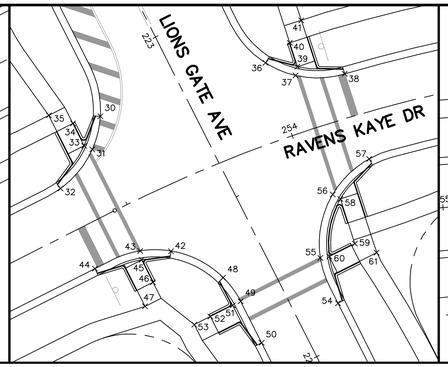
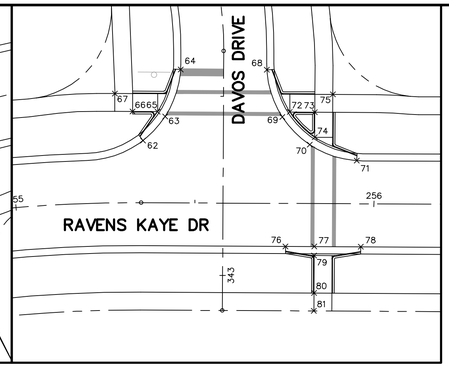


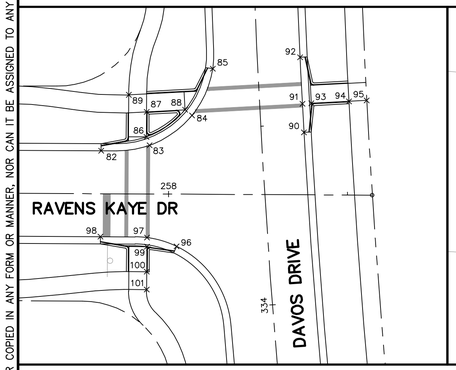
DETAIL A



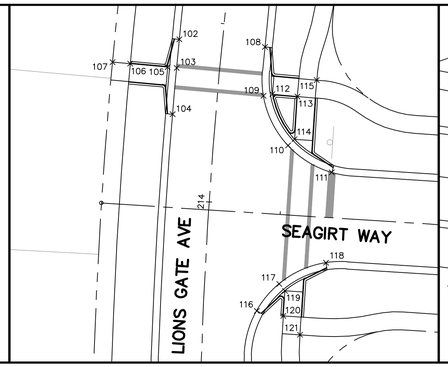
DETAIL B



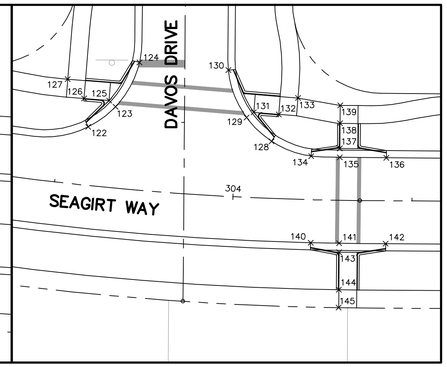
DETAIL C



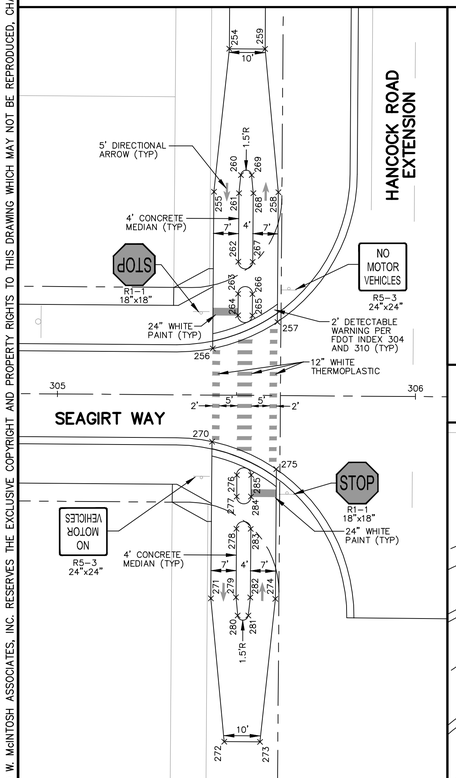
DETAIL D



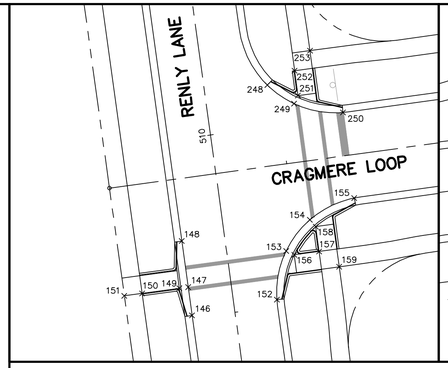
DETAIL E



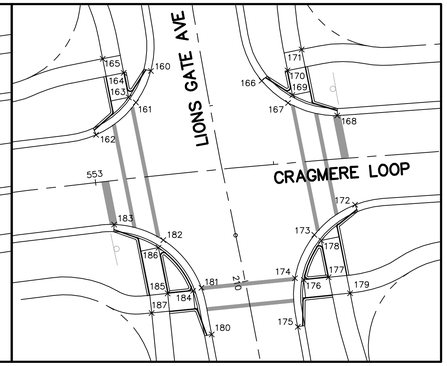
DETAIL F



DETAIL G

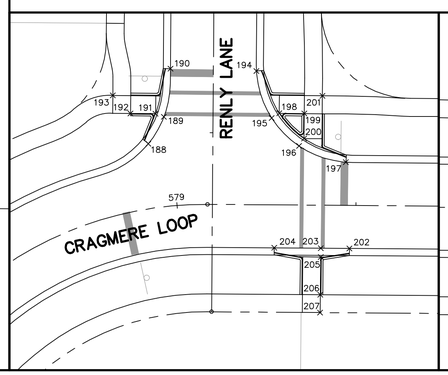


DETAIL H

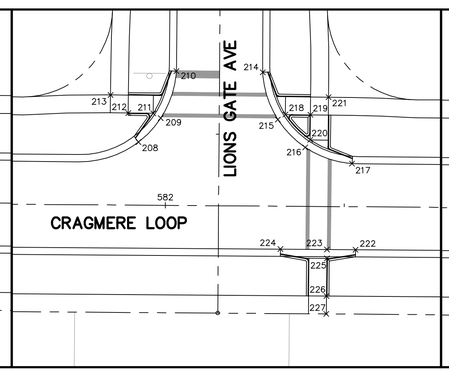


DETAIL I

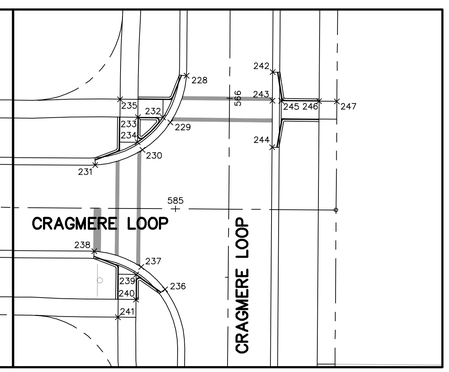
SEE SHEET C352 FOR CURB RAMP DETAILS



DETAIL J



DETAIL K



DETAIL L

POINT TABLE		
POINT #	NORTHING	EASTING
10	1514297.728	428039.131
11	1514304.889	428035.565
12	1514316.481	428029.680
13	1514303.747	428033.298
14	1514299.038	428023.956
15	1514296.788	428019.491
16	1514309.653	428060.032
17	1514323.356	428058.043
18	1514333.716	428061.460
19	1514343.547	428071.210
20	1514332.470	428063.627
21	1514326.219	428066.777
22	1514323.068	428060.526
23	1514324.004	428073.492
24	1514365.730	428037.861
25	1514363.123	428046.657
26	1514365.084	428060.368
27	1514365.606	428046.950
28	1514371.857	428043.799
29	1514378.572	428046.014
30	1514506.186	428310.856
31	1514496.964	428308.590
32	1514486.007	428299.690
33	1514497.978	428306.305
34	1514504.229	428303.154
35	1514506.444	428296.439
36	1514521.116	428356.977
37	1514517.623	428365.333
38	1514518.040	428379.093
39	1514520.059	428365.897
40	1514526.717	428363.738
41	1514533.016	428366.952
42	1514468.512	428330.572
43	1514468.546	428321.996
44	1514463.611	428309.319
45	1514466.076	428322.383
46	1514459.825	428325.533
47	1514453.110	428323.318
48	1514461.119	428345.112
49	1514454.528	428350.026
50	1514442.923	428355.885
51	1514453.402	428347.794
52	1514450.253	428341.549
53	1514448.002	428337.085
54	1514453.947	428377.205
55	1514466.637	428372.309
56	1514484.360	428375.726
57	1514494.303	428385.928
58	1514483.094	428377.882
59	1514470.616	428381.927
60	1514467.012	428374.781
61	1514468.081	428388.005
62	1514540.017	428497.493
63	1514546.726	428503.694
64	1514559.860	428508.006
65	1514548.088	428501.598
66	1514548.124	428494.598
67	1514553.150	428489.624
68	1514559.755	428532.098
69	1514546.601	428536.420

POINT TABLE		
POINT #	NORTHING	EASTING
70	1514538.847	428544.094
71	1514534.388	428557.203
72	1514547.965	428538.516
73	1514547.928	428545.515
74	1514540.928	428545.479
75	1514552.902	428550.541
76	1514510.437	428537.321
77	1514510.396	428545.321
78	1514510.328	428558.321
79	1514507.896	428545.308
80	1514497.396	428545.253
81	1514492.396	428545.227
82	1514533.369	428743.187
83	1514534.900	428756.698
84	1514543.238	428768.560
85	1514556.297	428774.366
86	1514537.256	428755.862
87	1514544.256	428755.899
88	1514544.822	428766.626
89	1514549.000	428750.923
90	1514538.517	428799.854
91	1514546.510	428799.418
92	1514559.499	428798.765
93	1514546.640	428801.914
94	1514547.184	428812.401
95	1514547.443	428817.393
96	1514506.648	428764.268
97	1514509.102	428755.983
98	1514509.370	428742.984
99	1514506.581	428755.970
100	1514499.581	428755.934
101	1514494.581	428755.908
102	1513704.955	428438.606
103	1513696.999	428437.852
104	1513684.057	428436.723
105	1513697.223	428435.362
106	1513698.166	428424.904
107	1513698.615	428419.925
108	1513702.853	428462.505
109	1513689.228	428462.143
110	1513675.348	428468.981
111	1513667.801	428481.202
112	1513689.644	428464.608
113	1513689.026	428471.580
114	1513677.049	428470.813
115	1513693.564	428477.002
116	1513629.111	428460.240
117	1513636.627	428466.498
118	1513642.552	428479.583
119	1513634.706	428468.098
120	1513627.721	428467.650
121	1513622.411	428472.320
122	1513639.667	428774.321
123	1513645.288	428781.937
124	1513657.686	428788.628
125	1513647.008	428780.123
126	1513647.578	428773.146
127	1513652.968	428768.570
128	1513635.643	428825.507
129	1513642.250	428818.539

POINT TABLE		
POINT #	NORTHING	EASTING
130	1513655.511	428813.442
131	1513643.729	428820.555
132	1513643.160	428827.531
133	1513647.736	428832.922
134	1513631.487	428836.565
135	1513631.146	428844.583
136	1513631.029	428857.583
137	1513633.646	428844.601
138	1513640.646	428844.653
139	1513645.646	428844.690
140	1513607.301	428836.436
141	1513607.147	428844.406
142	1513607.030	428857.405
143	1513604.647	428844.387
144	1513594.147	428844.310
145	1513589.147	428844.273
146	1513213.663	428161.563
147	1513221.589	428160.475
148	1513234.465	428158.689
149	1513221.257	428158.016
150	1513219.851	428147.592
151	1513219.182	428142.636
152	1513218.111	428185.243
153	1513231.712	428187.838
154	1513240.388	428194.452
155	1513246.495	428206.879
156	1513230.629	428190.092
157	1513231.565	428197.029
158	1513238.502	428196.093
159	1513227.278	428202.652
160	1513320.829	428451.191
161	1513312.005	428447.038
162	1513302.984	428435.893
163	1513313.461	428445.005
164	1513320.325	428443.631
165	1513324.246	428437.747
166	1513318.099	428482.150
167	1513311.919	428489.511
168	1513308.359	428503.273
169	1513314.089	428490.752
170	1513320.953	428489.378
171	1513326.837	428493.299
172	1513283.453	428508.252
173	1513275.038	428496.850
174	1513262.920	428491.424
175	1513249.362	428492.230
176	1513262.491	428493.887
177	1513263.193	428500.872
178	1513273.487	428498.811
179	1513258.769	428506.856
180	1513247.235	428468.223
181	1513260.284	428465.336
182	1513273.586	428454.699
183	1513277.918	428440.945
184	1513259.418	428462.990
185	1513258.705	428455.898
186	1513271.489	428453.339
187	1513253.230	428451.423
188	1512312.558	428168.395
189	1512320.040	428172.743

POINT TABLE		
POINT #	NORTHING	EASTING
190	1512333.514	428174.555
191	1512320.933	428170.408
192	1512321.006	428163.408
193	1512326.058	428158.461
194	1512332.886	428198.600
195	1512319.709	428202.853
196	1512311.915	428210.486
197	1512307.388	428223.571
198	1512321.062	428204.956
199	1512320.989	428211.955
200	1512313.989	428211.882
201	1512325.936	428217.007
202	1512283.314	428224.563
203	1512283.379	428216.555
204	1512283.475	428203.563
205	1512280.898	428216.537
206	1512270.380	428216.427
207	1512265.380	428216.375
208	1512311.144	428468.885
209	1512317.821	428475.121
210	1512330.932	428479.501
211	1512319.194	428473.032
212	1512319.267	428466.032
213	1512324.319	428461.085
214	1512330.645	428503.591
215	1512317.469	428507.845
216	1512309.674	428515.478
217	1512305.147	428528.563
218	1512318.821	428509.947
219	1512318.748	428516.947
220	1512311.748	428516.874
221	1512323.695	428521.999
222	1512281.073	428529.555
223	1512281.138	428521.547
224	1512281.234	428508.555
225	1512278.657	428521.529
226	1512268.139	428521.419
227	1512263.139	428521.367
228	1512328.452	428779.474
229	1512315.367	428774.947
230	1512307.733	428767.153
231	1512303.480	428753.976
232	1512316.763	428772.873
233	1512316.836	428765.873
234	1512309.836	428765.800
235	1512321.888	428760.926
236	1512268.773	428773.477
237	1512275.010	428766.800
238	1512279.390	428753.689
239	1512272.921	428765.427
240	1512265.921	428765.354
241	1512260.973	428760.302
242	1512329.450	428803.542
243	1512321.442	428803.483
244	1512308.450	428803.387
245	1512321.424	428805.958
246	1512321.314	428816.482
247	1512321.262	428821.482
248	1513278.031	428182.582
249	1513272.821	428190.088

POINT TABLE		
POINT #	NORTHING	EASTING
250	1513270.375	428203.693
251	1513275.086	428191.145
252	1513282.024	428190.209
253	1513287.647	428194.496
254	1513715.069	428962.706
255	1513675.099	428958.411
256	1513631.297	428958.087
257	1513638.729	428976.143
258	1513674.966	428976.410
259	1513714.995	428972.706
260	1513679.769	428965.953
261	1513674.699	428965.408
262	1513655.548	428965.267
263	1513646.548	428965.200
264	1513640.549	428965.156
265	1513640.519	428969.156
266	1513646.519	428969.200
267	1513655.519	428969.267
268	1513674.669	428969.408
269	1513679.747	428968.938
270	1513605.277	428957.895
271	1513561.475	428957.571
272	1513521.447	428961.276
273	1513521.373	428971.275
274	1513561.342	428975.571
275	1513597.579	428975.839
276	1513595.922	428964.826
277	1513589.922	428964.782
278	1513580.923	428964.715
279	1513561.772	428964.574
280	1513556.694	428965.044
281	1513556.672	428968.029
282	1513561.743	428968.574
283	1513580.893	428968.715
284	1513589.893	428968.782
285	1513595.893	428968.826

20'

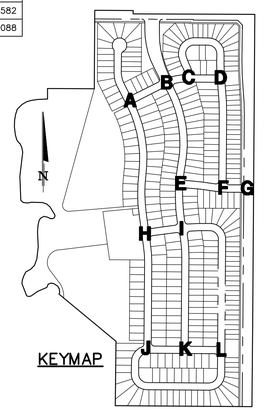
N

NO.	DATE	REVISIONS	CHK.
1	10/25/19	REVISED PER CITY COMMENTS	JTT

JOHN T. TOWNSEND
FLORIDA P.E. No. 52127
DATE:

DONALD W. McINTOSH ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FL 32789 407.644.4068
CERTIFICATE OF AUTHORIZATION NO. 68

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	7/12/19	1"=20'	26086



HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
CURB RAMP GEOMETRY

DRAWING 26086-HARTRAMPS

SHEET C351

21 OF 51

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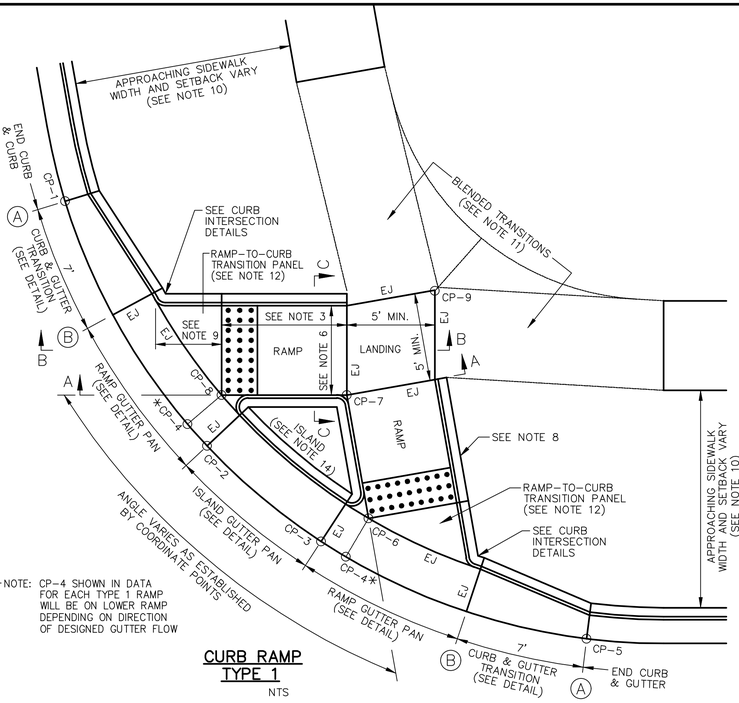
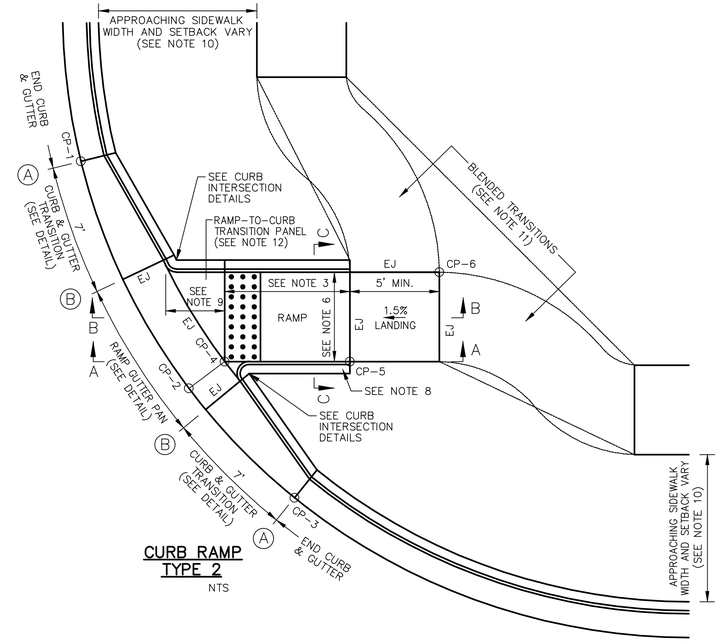


*NOTE: CP-4 SHOWN IN DATA FOR EACH TYPE 1 RAMP WILL BE ON LOWER RAMP DEPENDING ON DIRECTION OF DESIGNED GUTTER FLOW

CURB RAMP TYPE 1
NTS



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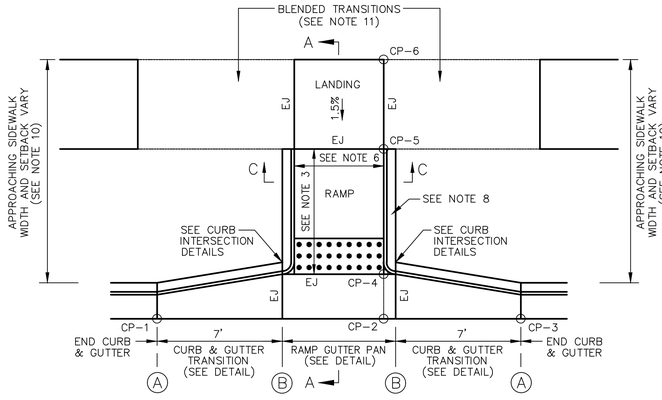
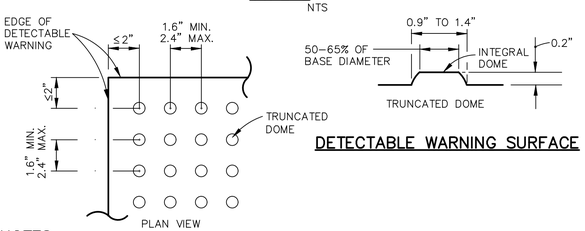


CURB RAMP TYPE 3
NTS



DETECTABLE WARNING SURFACE

RAMP GUTTER PAN DETAIL
NTS

ISLAND GUTTER PAN AND CURB DETAIL
NTS

* LIP THICKNESS VARIES DEPENDING ON TYPE OF CURB. 7 1/2" LIP THICKNESS WHEN TYPE F CURB IS USED.

TYPE F CURB TRANSITION DETAIL
NTS

SECTION A–A
NTS

SECTION B–B
NTS

SECTION C–C
NTS

TRANSITION SLOPE
NTS

WHERE CURB RAMP CAN BE ACCESSED BY SIDEWALK ON THE SIDE(S), TRANSITION SLOPE AS SHOWN.

LEGEND

- 2" — DETECTABLE WARNING FULL WIDTH OF RAMP (SEE NOTE 15)
- CP–1 — COORDINATE POINT SEE RAMP LOCATION PLAN(S)
- EJ — 1/2" EXPANSION JOINT AND PREFORMED JOINT FILLER

NOTES:

1. CURB RAMP DETAILS ARE DEVELOPED FOR ASSUMED CONSTRUCTION SEQUENCE:
   –MACHINE LAY CURBS EACH SIDE OF RAMP(S)
   –FORM/CONSTRUCT 7' CURB & GUTTER TRANSITION(S)
   –FORM/CONSTRUCT RAMP/ISLAND GUTTER PAN
   –CONSTRUCT RAMP(S)/LANDING, BLENDED TRANSITIONS
2. CONTRACTOR IS RESPONSIBLE FOR CONFORMANCE TO REGULATIONS OF THE AMERICANS WITH DISABILITIES ACT (ADA), FLORIDA ACCESSIBILITY CODE (FAC) AND LOCAL GOVERNMENT. ANY CONFLICT IN THE PLANS WITH ADA, FAC OR LOCAL CODES THAT MAY BE DETECTED BY CONTRACTOR SHALL BE REPORTED TO THE ENGINEER FOR RESOLUTION PRIOR TO CONSTRUCTION.
3. RAMP LENGTH AND SLOPE VARIES AS ESTABLISHED BY COORDINATE POINTS SHOWN ON RAMP LOCATION PLAN(S). ADJUSTMENTS MAY BE MADE TO SUIT ENCOUNTERED FIELD CONDITIONS WITH APPROVAL OF ENGINEER. RUNNING (LONGITUDINAL) SLOPES SHALL BE 6% MAX. THE ALGEBRAIC DIFFERENCE BETWEEN ANY GRADE BREAKS SHALL NOT EXCEED 11%.
4. RAMP SURFACE SHALL BE PLANAR WITH NO DISCONTINUITY OR WARPING FROM A PLANE SURFACE. RAMP SIDES, TOP AND BOTTOM SHALL BE PARALLEL (HORIZONTALLY & VERTICALLY) TO EACH OTHER.
5. ALL GRADE BREAKS SHALL BE FLUSH WITH 1/4" (ABSOLUTE) TOLERANCE.
6. RAMP WIDTH SHALL MATCH APPROACHING SIDEWALKS UNLESS OTHERWISE SHOWN ON RAMP LOCATION PLAN(S).
7. FOR TYPE 1 (DUAL) CURB RAMP, CROSS SLOPE OF THE UPPER RAMP SHALL BE 1.5% IN THE SAME DIRECTION AS THE GUTTER. CROSS SLOPE OF THE LOWER RAMP SHALL BE LEVEL. FOR TYPES 2 & 3 RAMPS, CROSS SLOPE SHALL MATCH AND BE IN THE SAME DIRECTION AS THE EDGE OF PAVEMENT.
8. FOR TYPE 1 (DUAL) CURB RAMP, HEIGHT OF ISLAND CURB = 6". FOR OUTER CURBS AND FOR OTHER RAMP TYPES (SINGLE RAMPS) HEIGHT OF CURB VARIES FROM 0" (FLUSH) AT TOP OF RAMP TO 6" AT BOTTOM OF RAMP.
9. WHERE EITHER END OF THE RAMP BOTTOM GRADE BREAK IS MORE THAN 5.0 FT. FROM THE EDGE OF RAMP GUTTER PAN, DETECTABLE WARNING SHALL BE LOCATED ALONG THE EDGE OF THE GUTTER PAN, NOT AS NORMALLY ON THE RAMP BOTTOM.
10. APPROACHING SIDEWALK WIDTH AND SETBACK FROM BACK OF CURB SHALL BE AS SHOWN ON TYPICAL SECTIONS AND/OR RAMP LOCATION PLAN(S).
11. SIDEWALK CONFIGURATION APPROACHING LANDING SHALL BE AS SHOWN ON RAMP LOCATION PLAN(S). LENGTH OF BLENDED (VERTICAL) TRANSITION MAY VARY AS REQUIRED TO ATTAIN LONGITUDINAL SLOPE NOT EXCEEDING 7%. CROSS SLOPE SHALL NOT EXCEED 1.5%.
12. RAMP–TO–CURB TRANSITION PANEL SLOPE VARIES (MATCH RAMP AND GUTTER EDGES).
13. PAVEMENT CROSS SLOPE ADJACENT TO GUTTER PAN SHALL BE AS SHOWN IN PLANS AND SHALL NOT EXCEED 5%.
14. ISLAND SHALL BE 4" CONCRETE UNLESS OTHERWISE SHOWN IN RAMP LOCATION PLAN(S).
15. DETECTABLE WARNING SURFACE SHALL BE COLORED CONTRASTING WITH SURROUNDING MATERIALS (LIGHT–ON–DARK, DARK–ON–LIGHT); SPECIFIC COLOR AS REQUIRED BY LOCAL GOVERNMENT. IF NONE, USE YELLOW.
16. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER FOR PRE–POUR OBSERVATION PRIOR TO ANY SIDEWALK, CURB AND GUTTER, AND/OR CURB RAMP POURS.
17. CURB AND GUTTER SECTIONS SHOWN ARE FOR INSTALLATION ADJACENT TO FLEXIBLE PAVEMENT. (FOR CONCRETE PAVEMENT, GUTTER SHALL HAVE VERTICAL FACE AND APPROPRIATE JOINT AT EDGE OF PAVEMENT.)

GENERAL NOTES:

1. SEE NOTES, SPECIFICATIONS & LEGEND SHEET FOR ADDITIONAL INFORMATION.
2. THE SCALE OF THIS DRAWING MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	REVISIONS	CHK.

JOHN T. TOWNSEND
FLORIDA P.E. No. 52127
DATE:

DONALD W. McINTOSH ASSOCIATES, INC.
ENGINEERS SURVEYORS PLANNERS
2200 PARK AVENUE NORTH, WINTER PARK, FL 32789 407.644.4068
CERTIFICATE OF AUTHORIZATION NO. 68

DRAWN BY	DESIGNED BY	CHECKED BY	DATE
CWG	JTT	JTT	7/12/19

SCALE	JOB NUMBER
NTS	26086

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
CURB RAMP DETAILS

DRAWING 26086–HARTRAMPDT

SHEET C352 22 OF 51

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UNLESS OTHERWISE SPECIFICALLY SPECIFIED IN THE PLANS, PIPE MATERIALS SHALL BE:

STORM DRAINS SHALL BE REINFORCED CONCRETE PIPE, PER ASTM C-76 CLASS III

PER CITY SPECIFICATIONS ON SHEETS C003 & C004 UTILITY MAIN MATERIALS ARE AS FOLLOWS:

ALL PRESSURE PIPE UNDER ROADWAY SHALL BE CLASS 350 DIP EXTENDING 5' FROM EDGE OF PAVEMENT

ALL POTABLE & RECLAIM WATER MAINS SHALL BE DR18 PVC

ALL GRAVITY SANITARY SEWER MAINS, LATERALS, AND APPURTENANCES SHALL BE CONSTRUCTED OF SDR26 PVC PIPE

GENERAL NOTES:

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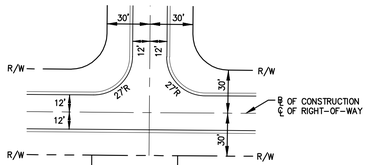
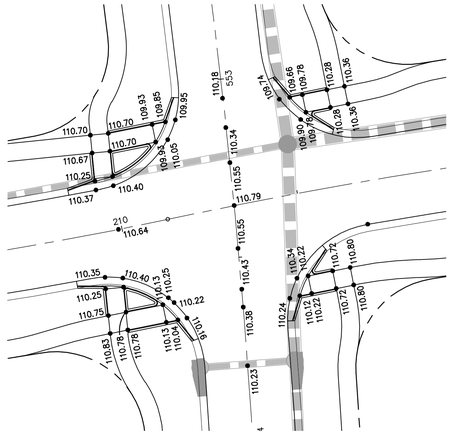
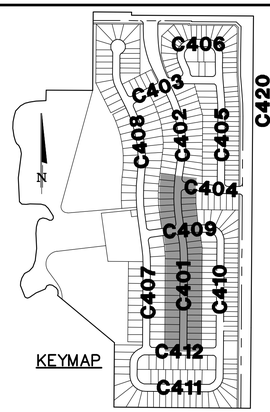


TYPICAL 60' R/W GEOMETRY

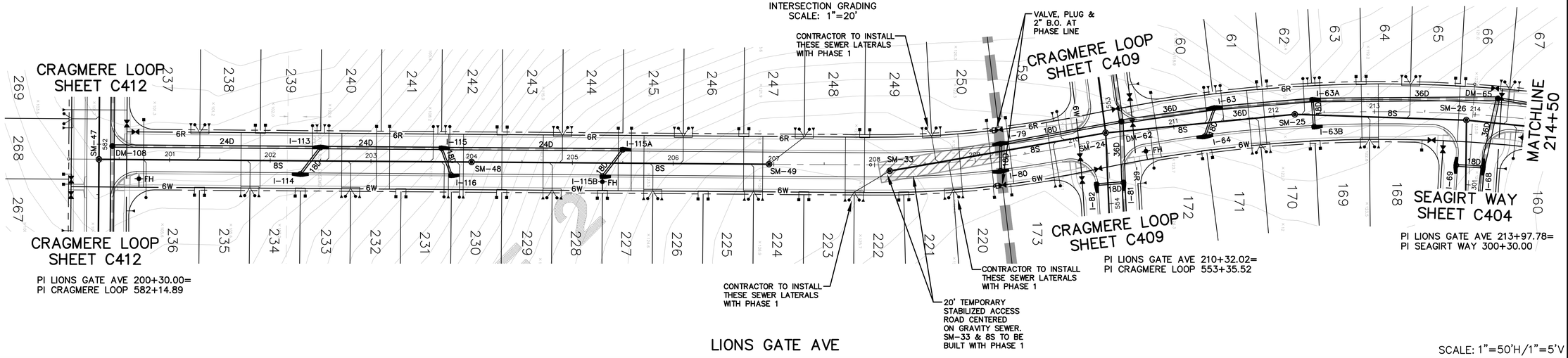


INTERSECTION GRADING
SCALE: 1"=20'



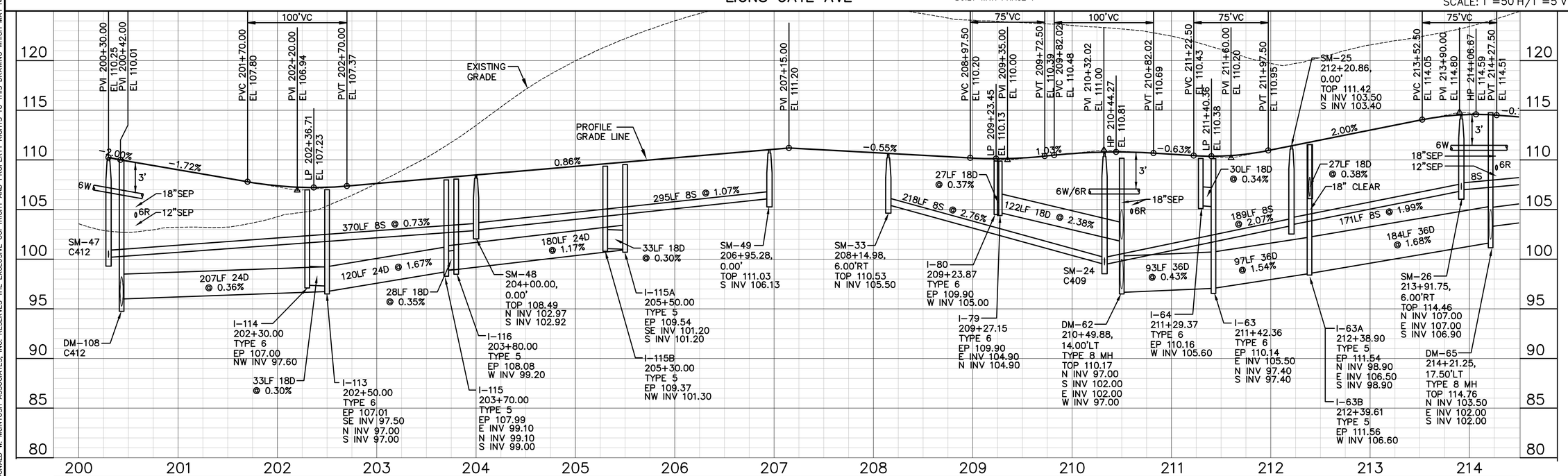
KEYMAP

1"=50'H/1"=5'V



LIONS GATE AVE

SCALE: 1"=50'H/1"=5'V



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1	10/25/19	REVISED PER S.WRMD & CITY COMMENTS	JTT

JOHN T. TOWNSEND
FLORIDA P.E. No. 52127
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ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FL 32789 407.644.4068
CERTIFICATE OF AUTHORIZATION NO. 68

DRAWN BY	DESIGNED BY	CHECKED BY	JOB NUMBER
CWG	JTT	JTT	26086
		DATE	SCALE
		7/12/19	1"=50'H/1"=5'V

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
PLAN & PROFILE
LIONS GATE AVENUE

DRAWING 26086-HARTPP

SHEET C401

23 OF 51

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ALL GRAVITY SANITARY SEWER MAINS, LATERALS, AND APPURTENANCES SHALL BE CONSTRUCTED OF SDR26 PVC PIPE

GENERAL NOTES:

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INTERSECTION GRADING
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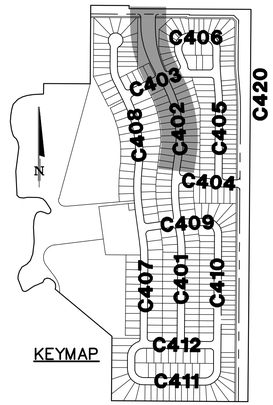

KEYMAP

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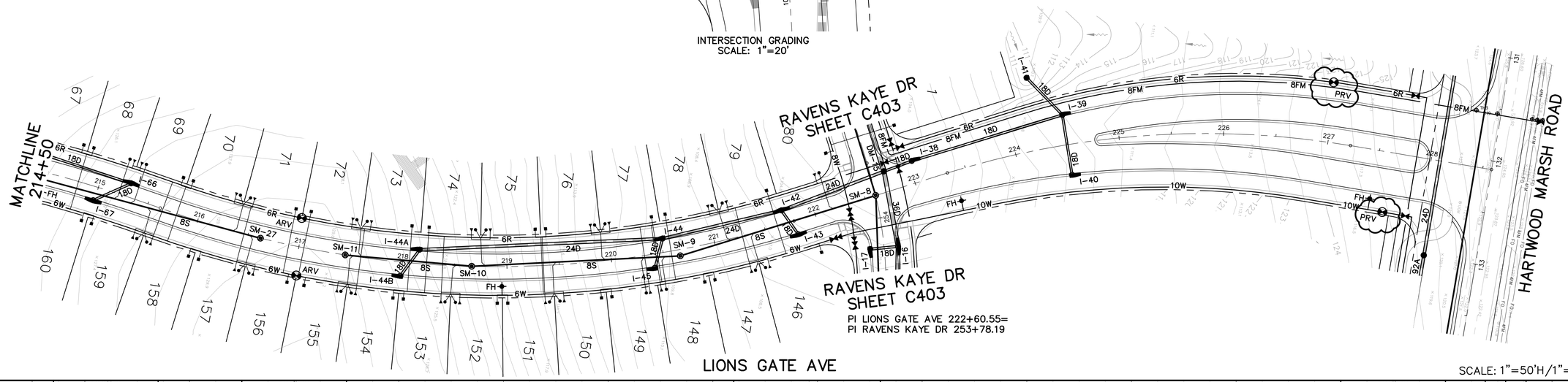

LIONS GATE AVE

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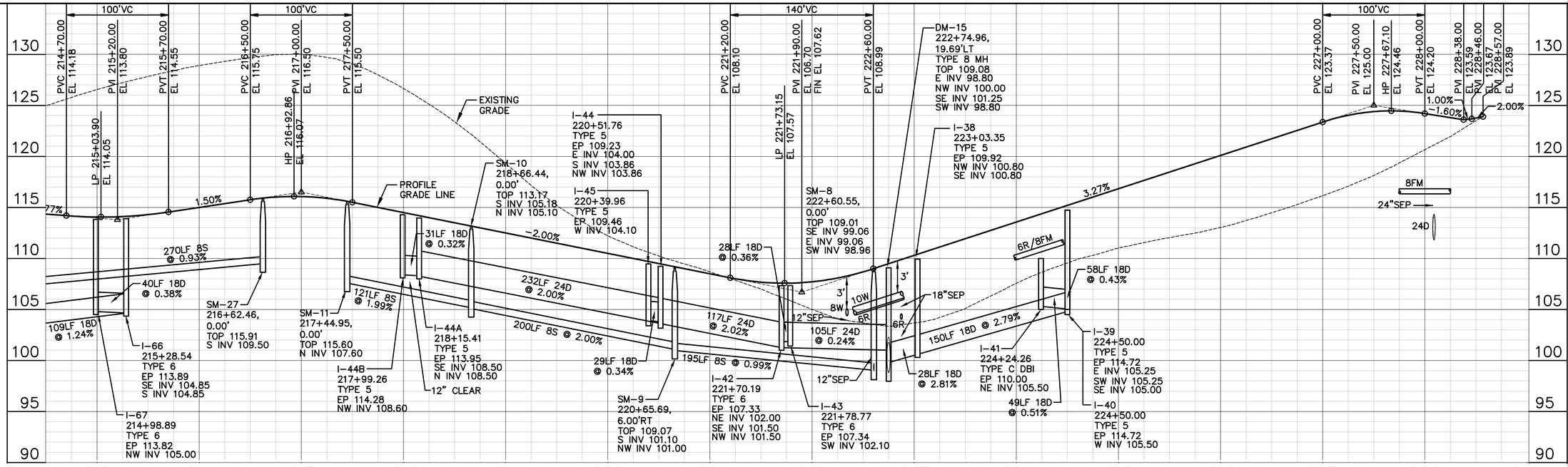

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HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
PLAN & PROFILE
LIONS GATE AVENUE

DRAWING 26086-HARTPP

SHEET C402

24 OF 51

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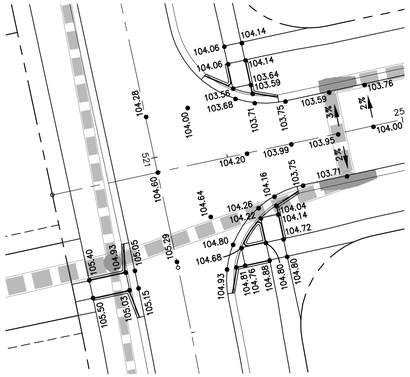

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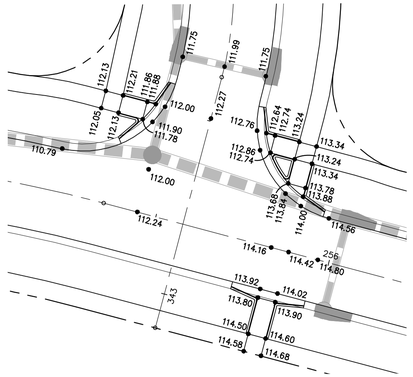
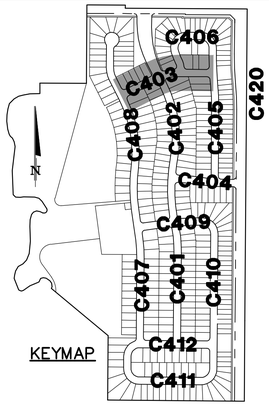
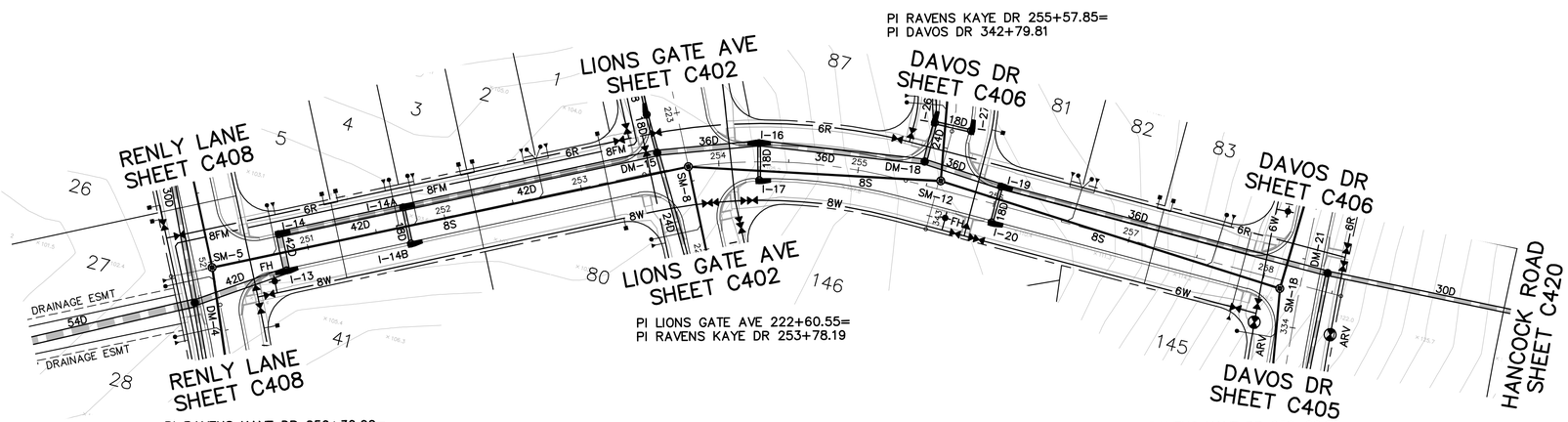


INTERSECTION GRADING
SCALE: 1"=20'



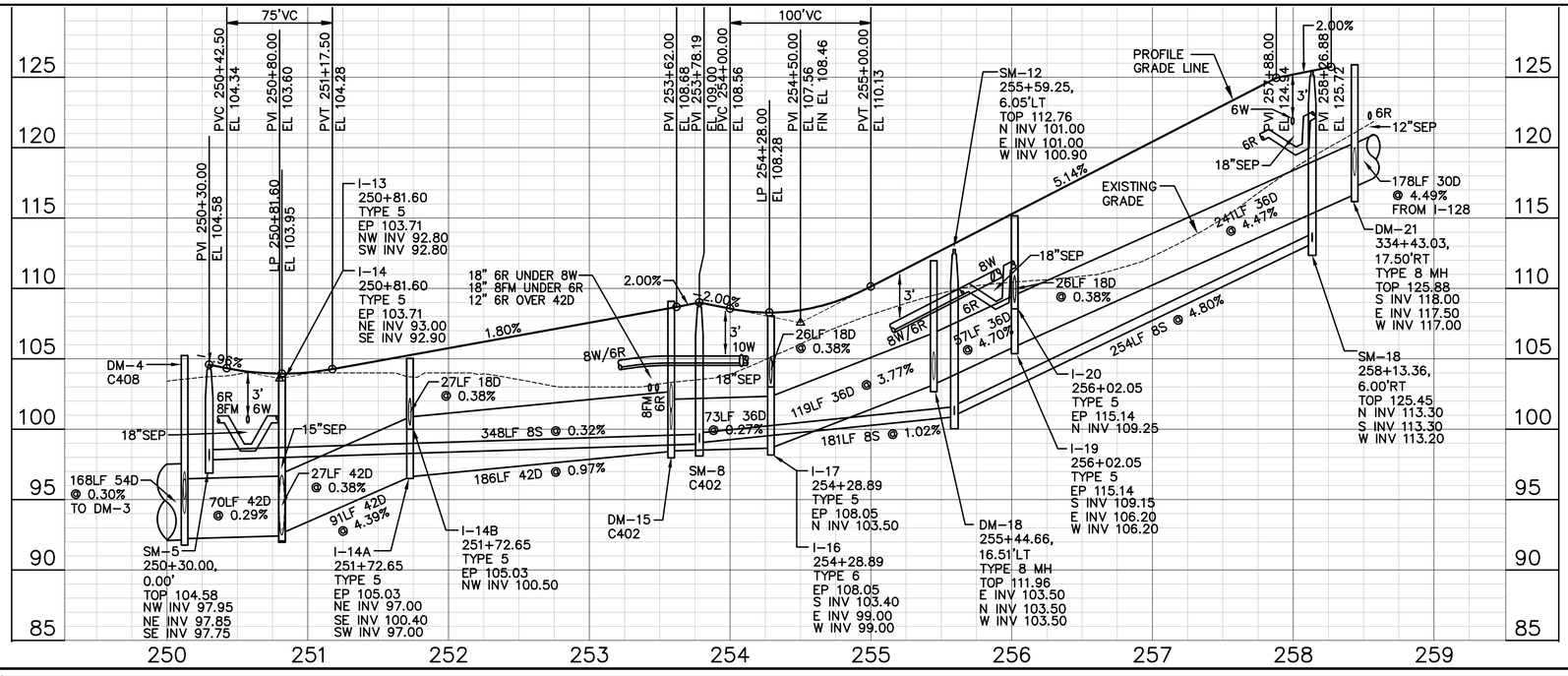
KEYMAP

1"=50'H/1"=5'V



SCALE: 1"=50'H/1"=5'V

RAVENS KAYE DR



DONALD W. McINTOSH ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FL 32789 407.644.4068
CERTIFICATE OF AUTHORIZATION NO. 68

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	7/12/19	1"=50'H/1"=5'V	26086

NO.	DATE	REVISIONS	CHK.
1	10/25/19	REVISED PER SJRWMD & CITY COMMENTS	JTT

JOHN T. TOWNSEND
FLORIDA P.E. No. 52127
DATE:

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
PLAN & PROFILE
RAVENS KAYE DRIVE

DRAWING 26086-HARTPP
SHEET C403
25 OF 51

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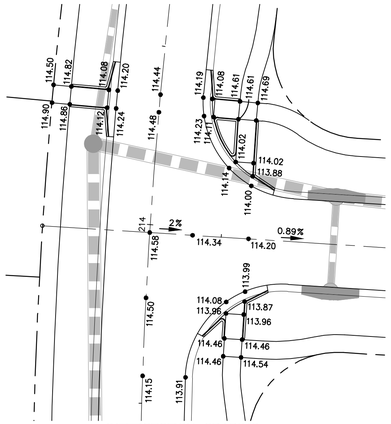
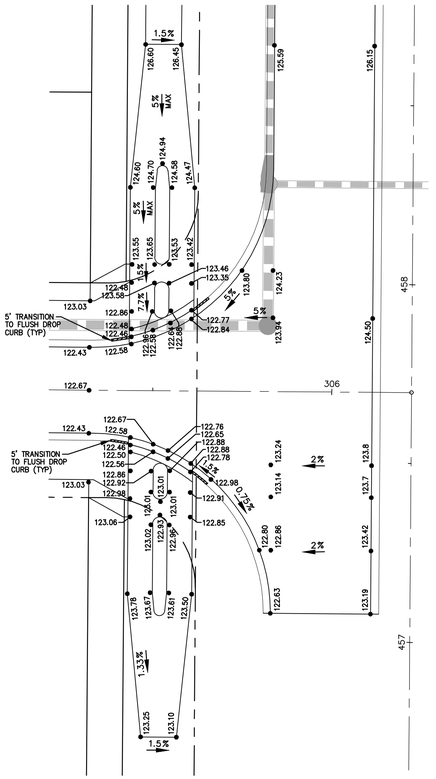


INTERSECTION GRADING
SCALE: 1"=20'



INTERSECTION GRADING
SCALE: 1"=20'

1"=50'H/1"=5'V

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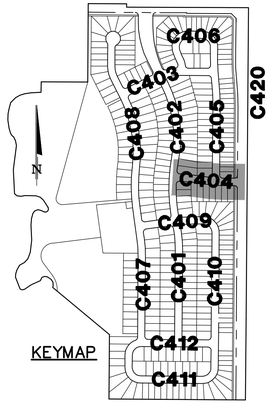
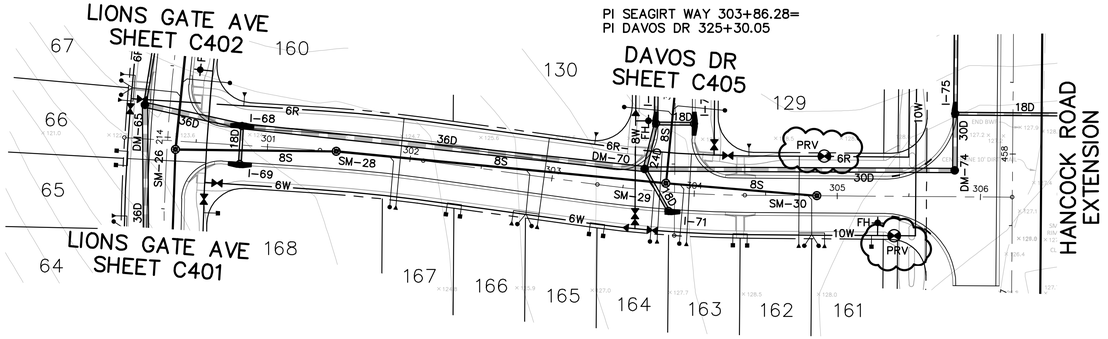


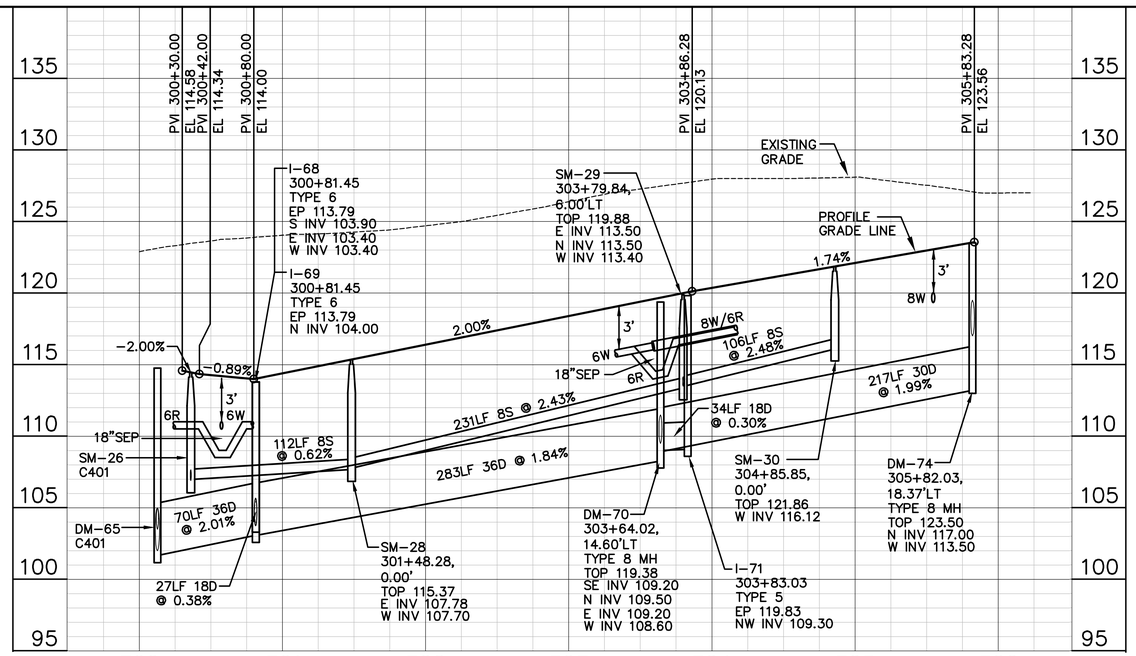
KEYMAP

PI LIONS GATE AVE 213+97.78=
PI SEAGIRT WAY 300+30.00

PI SEAGIRT WAY 303+86.28=
PI DAVOS DR 325+30.05



SEAGIRT WAY



SCALE: 1"=50'H/1"=5'V

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FLORIDA P.E. No. 52127
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ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FL 32789 407.644.4068
CERTIFICATE OF AUTHORIZATION NO. 68

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	7/12/19	1"=50'H/1"=5'V	26086

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
PLAN & PROFILE
SEAGIRT WAY

DRAWING 26086-HARTPP
SHEET C404
26 OF 51

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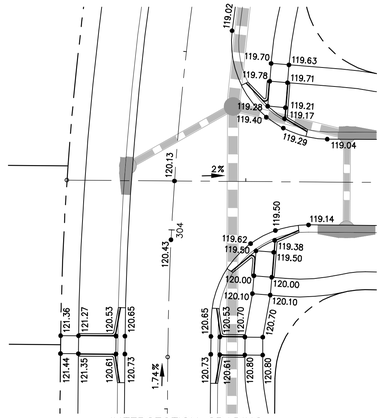

INTERSECTION GRADING
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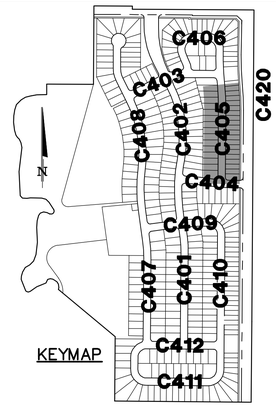

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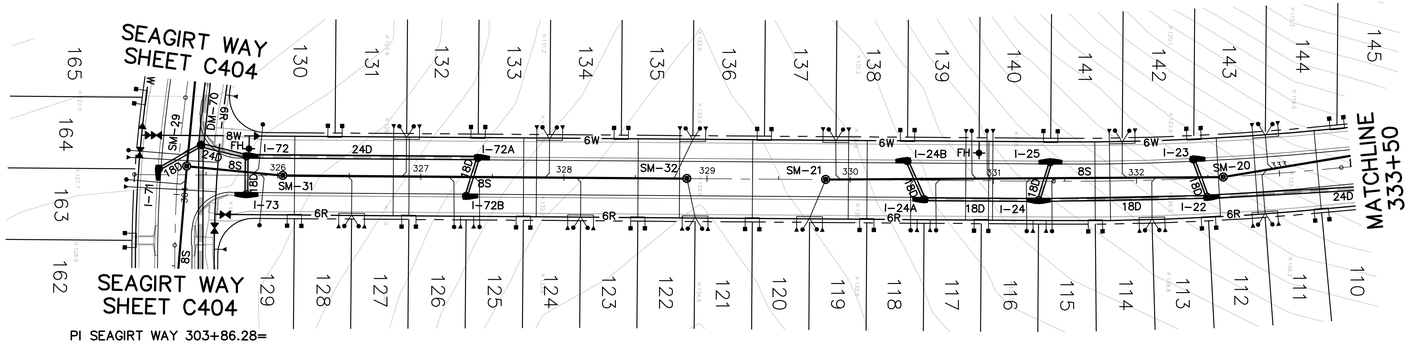
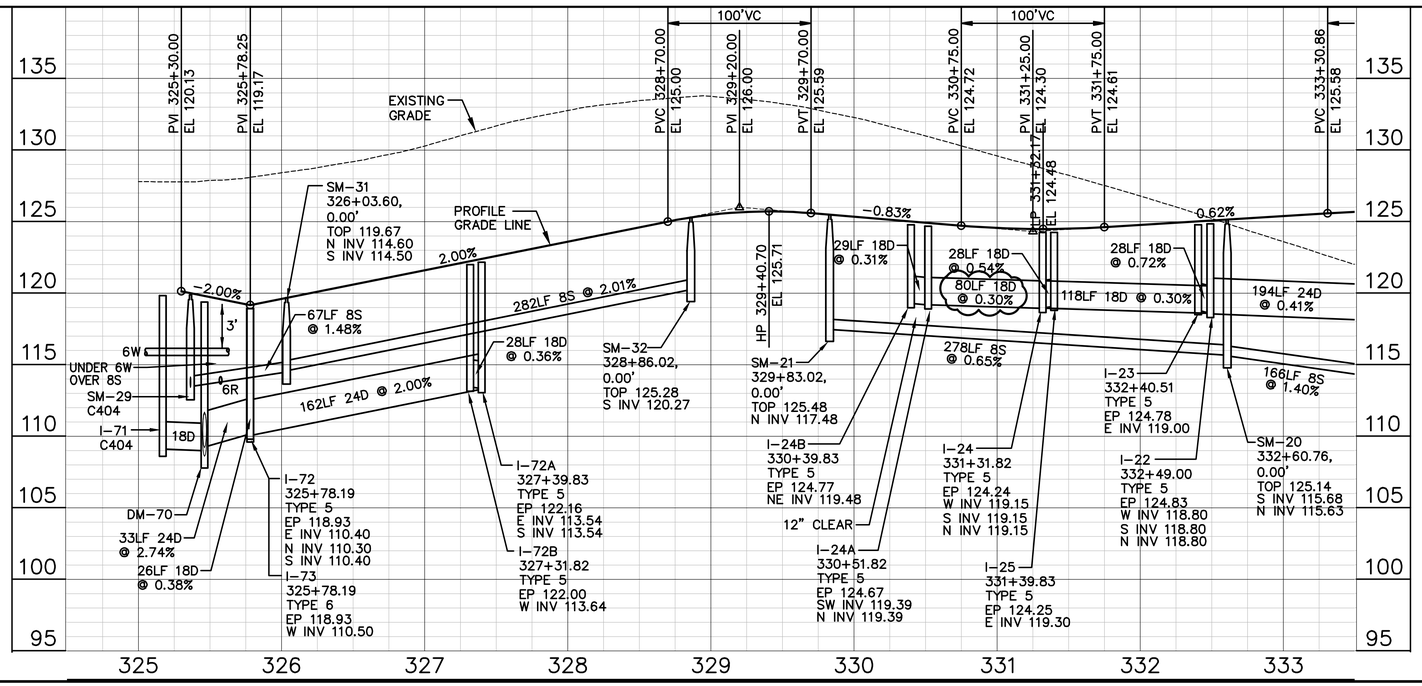


DAVOS DR

SCALE: 1"=50'H/1"=5'V



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JOHN T. TOWNSEND
FLORIDA P.E. No. 52127
DATE:

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
PLAN & PROFILE
DAVOS DRIVE

DRAWING 26086-HARTPP

SHEET C405

27 OF 51

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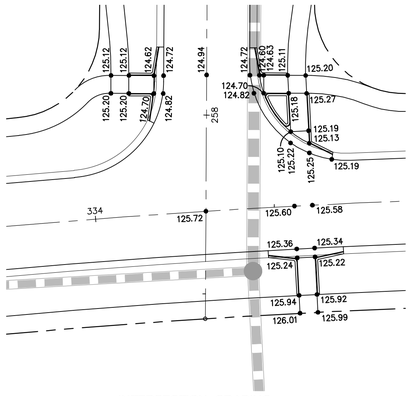

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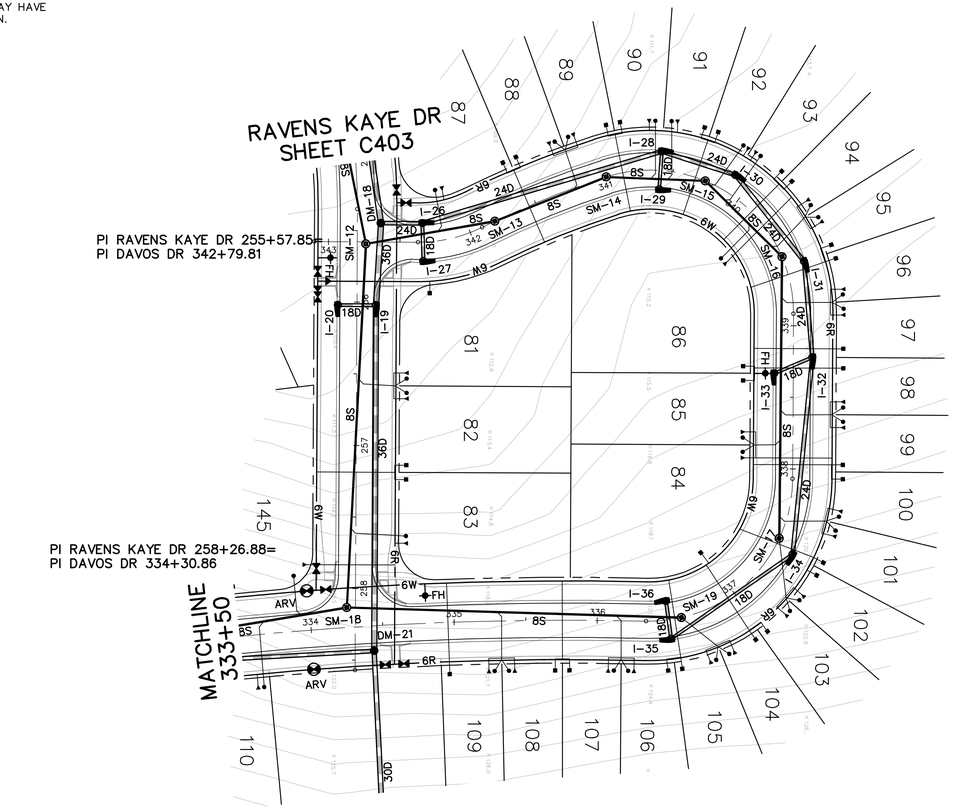
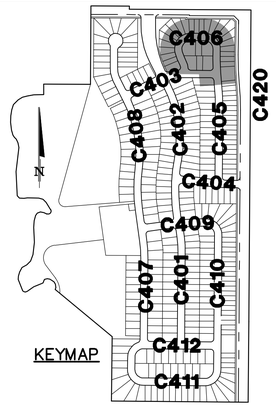


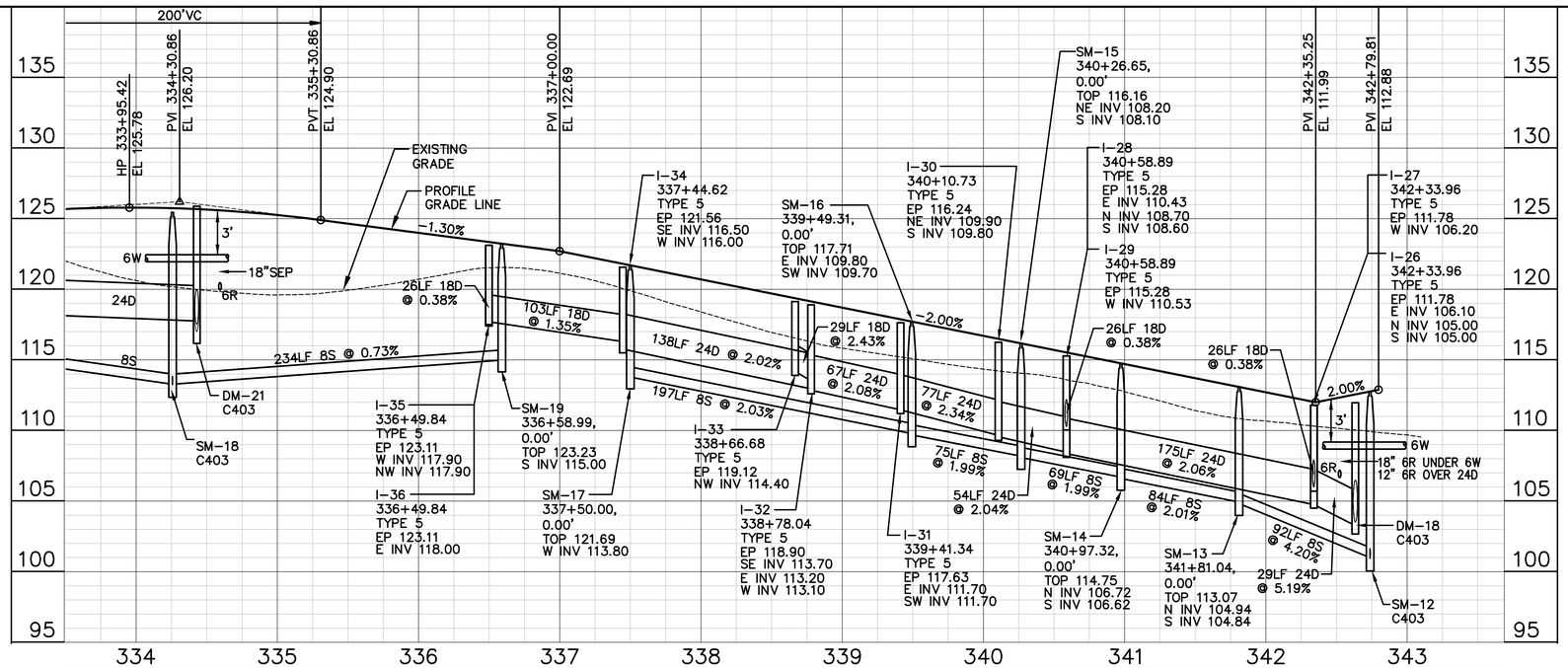


KEYMAP

1"=50'H/1"=5'V

DAVOS DR

SCALE: 1"=50'H/1"=5'V



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FLORIDA P.E. No. 52127
DATE:

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ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FL 32789 407.644.4068
CERTIFICATE OF AUTHORIZATION NO. 68

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	7/12/19	1"=50'H/1"=5'V	26086

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
PLAN & PROFILE
DAVOS DRIVE

DRAWING 26086-HARTPP
SHEET C406
28 OF 51

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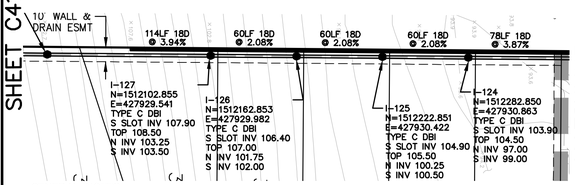
SHEET C411



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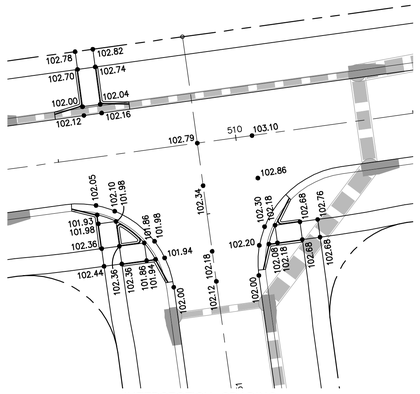

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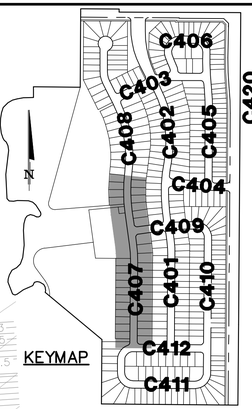

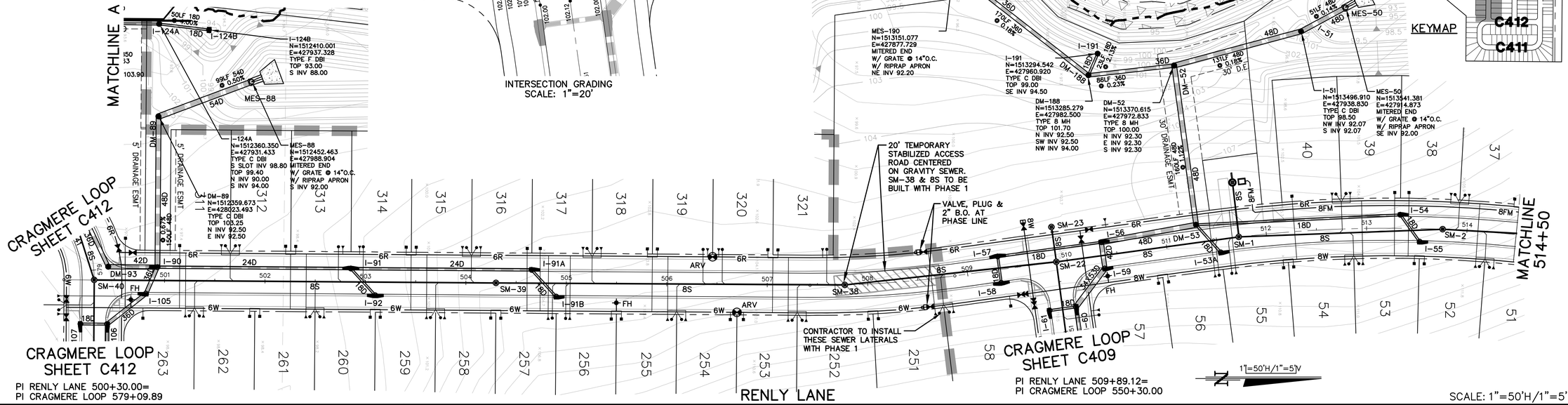

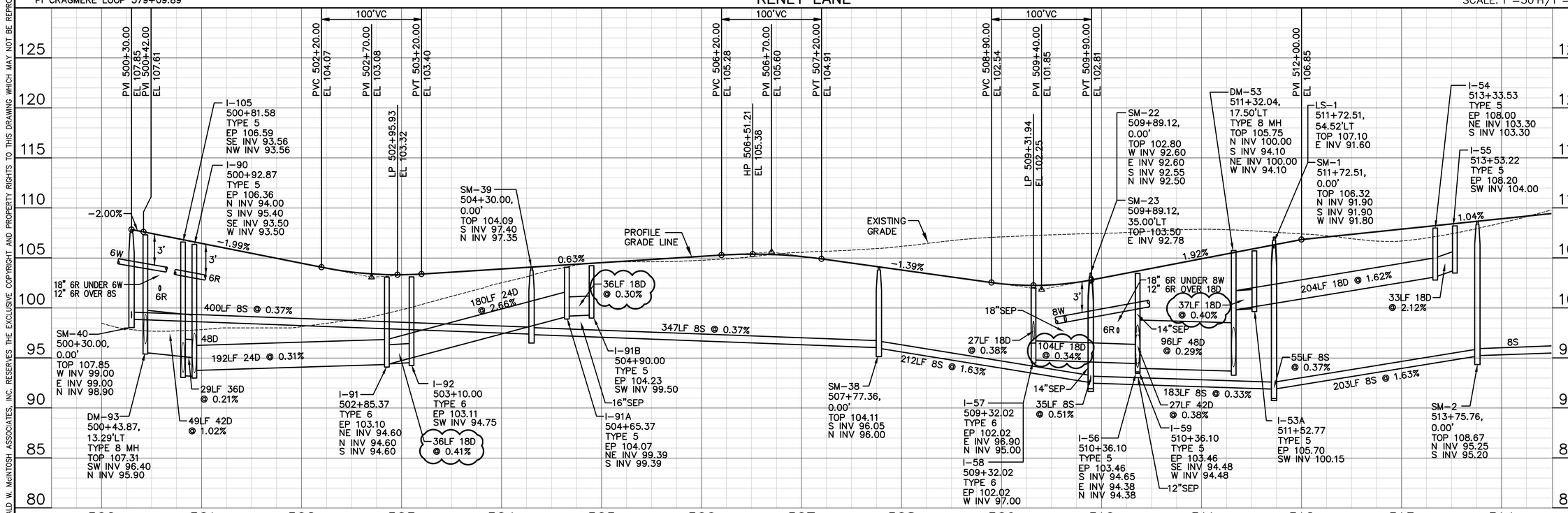

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JOHN T. TOWNSEND
FLORIDA P.E. No. 52127
DATE:

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CWG	JTT	JTT	7/12/19	1"=50'H/1"=5'V	26086

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
PLAN & PROFILE
RENLY LANE

DRAWING 26086-HARTPP
SHEET C407
29 OF 51

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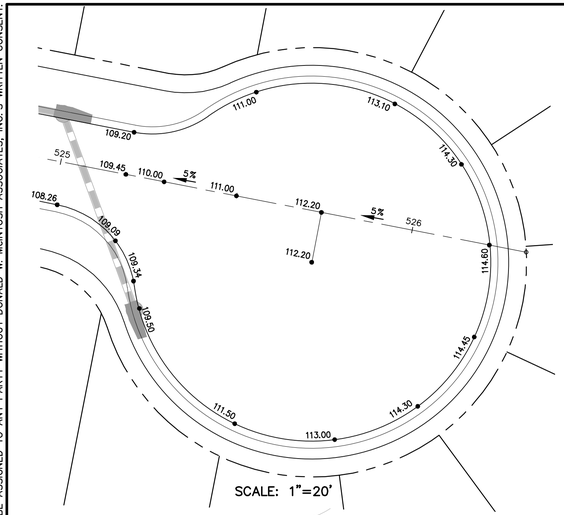

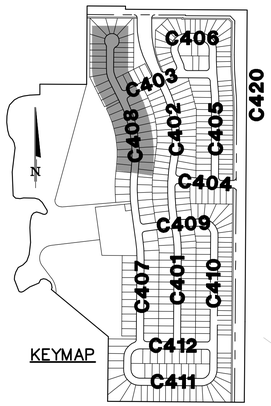

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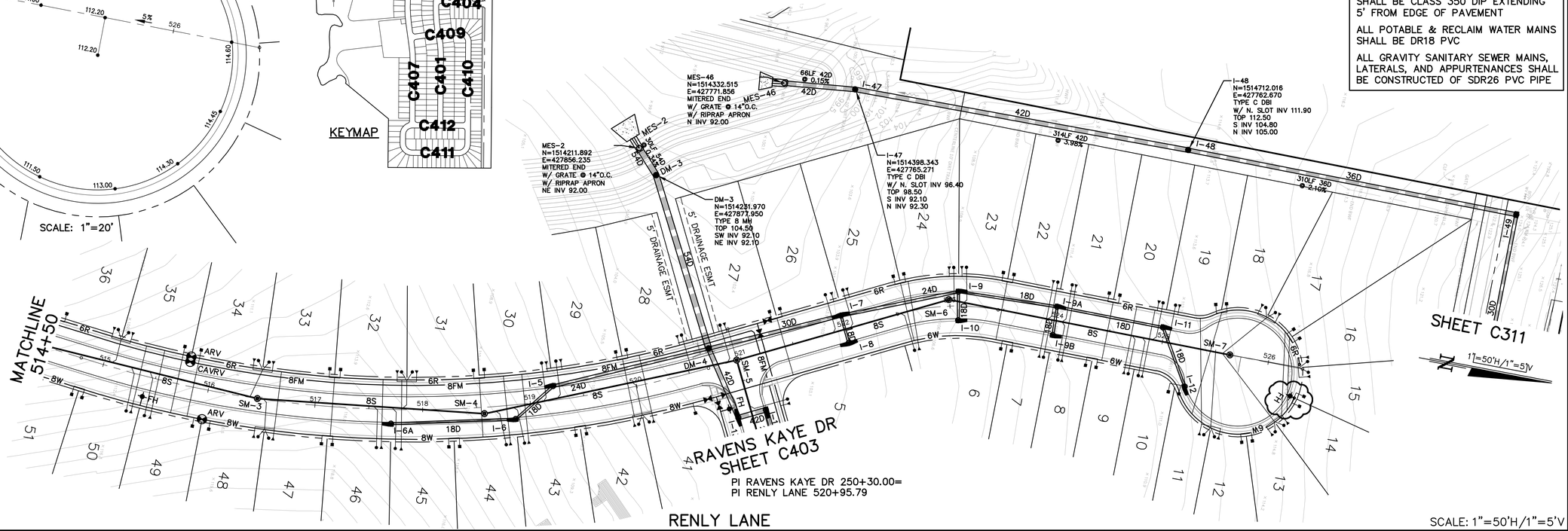

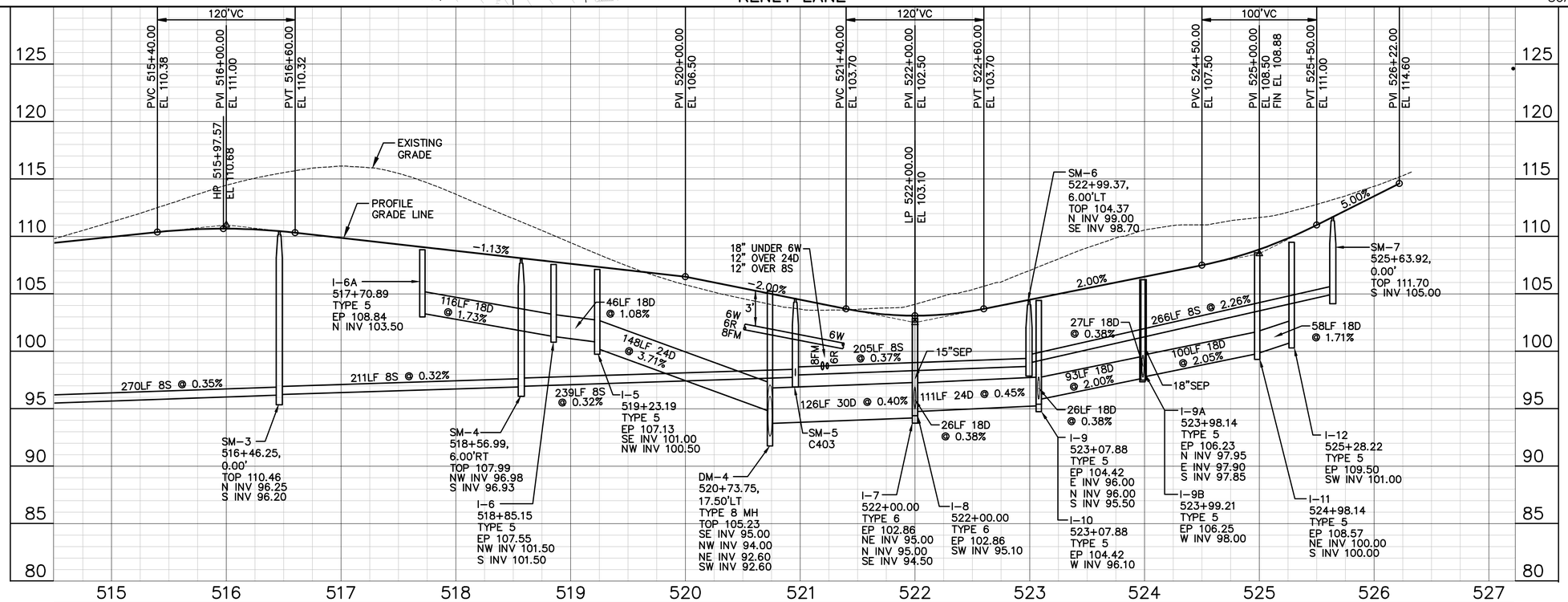

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HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
PLAN & PROFILE
RENLY LANE

DRAWING 26086-HARTPP
SHEET C408
30 OF 51

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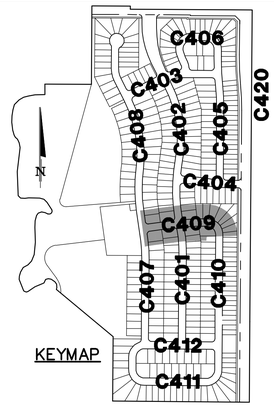

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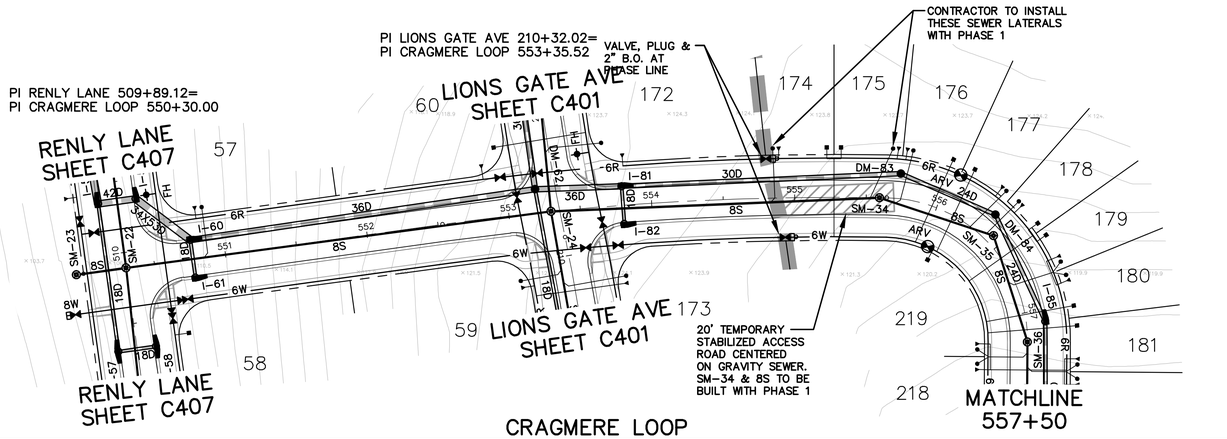

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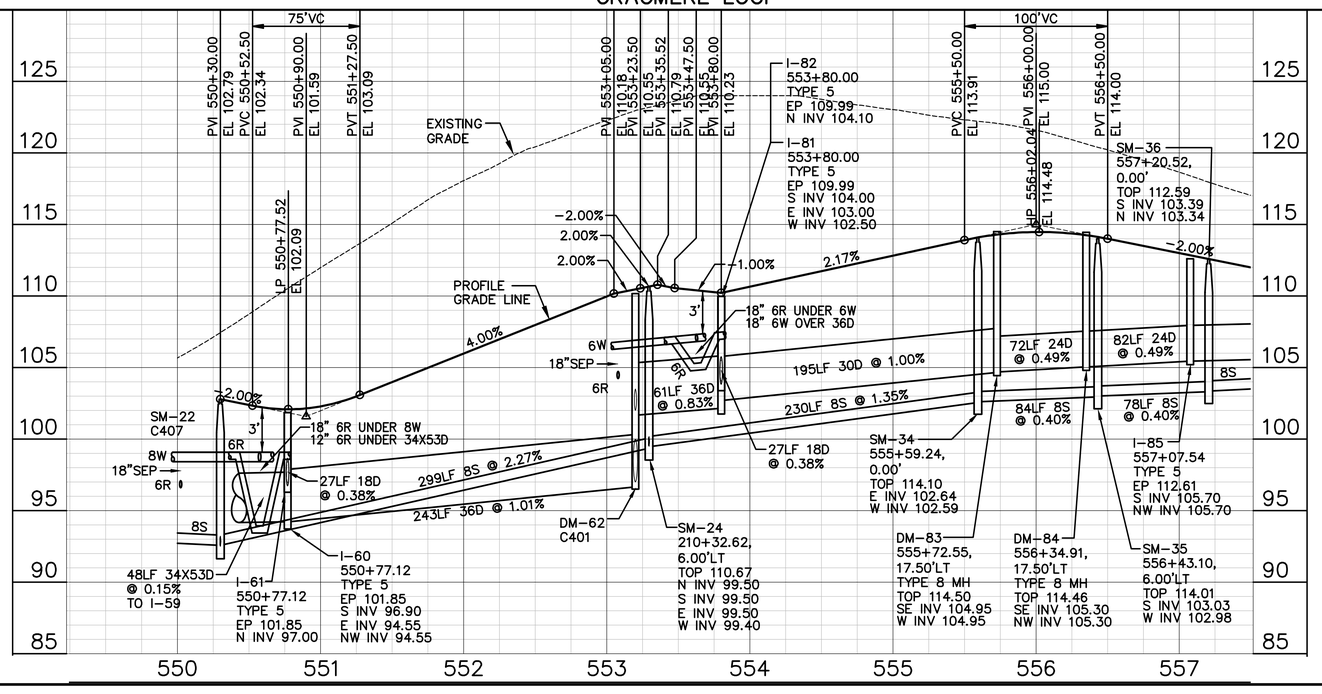

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DRAWN BY CWG | DESIGNED BY JTT | CHECKED BY JTT | DATE 7/12/19 | SCALE 1"=50'H/1"=5'V | JOB NUMBER 26086

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
PLAN & PROFILE
CRAGMERE LOOP

DRAWING 26086-HARTPP
SHEET C409
31 OF 51

F:\Proj2006\26086\EDWG\FINAL\26086-HARTPP.dwg

UNLESS OTHERWISE SPECIFICALLY SPECIFIED IN THE PLANS, PIPE MATERIALS SHALL BE:

STORM DRAINS SHALL BE REINFORCED CONCRETE PIPE, PER ASTM C-76 CLASS III

PER CITY SPECIFICATIONS ON SHEETS C003 & C004 UTILITY MAIN MATERIALS ARE AS FOLLOWS:

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ALL GRAVITY SANITARY SEWER MAINS, LATERALS, AND APPURTENANCES SHALL BE CONSTRUCTED OF SDR26 PVC PIPE

GENERAL NOTES:

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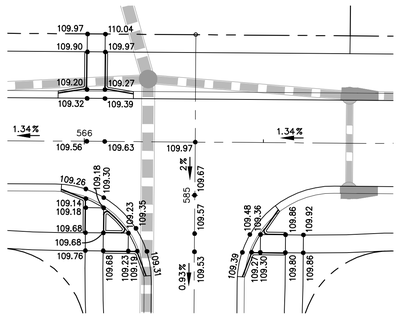
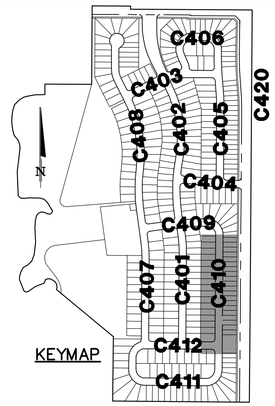
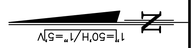
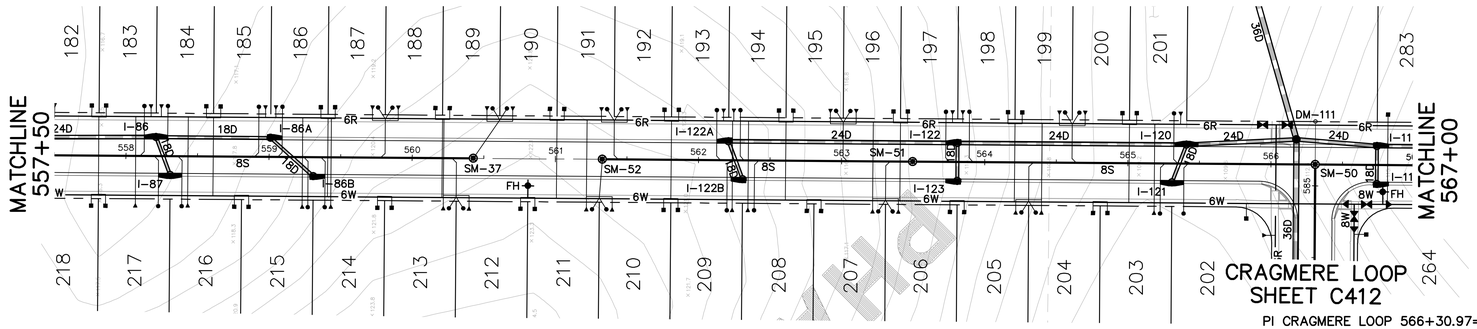
2. THE SCALE OF THIS DRAWING MAY HAVE CHANGED DUE TO REPRODUCTION.



INTERSECTION GRADING
SCALE: 1"=20'







CRAGMERE LOOP

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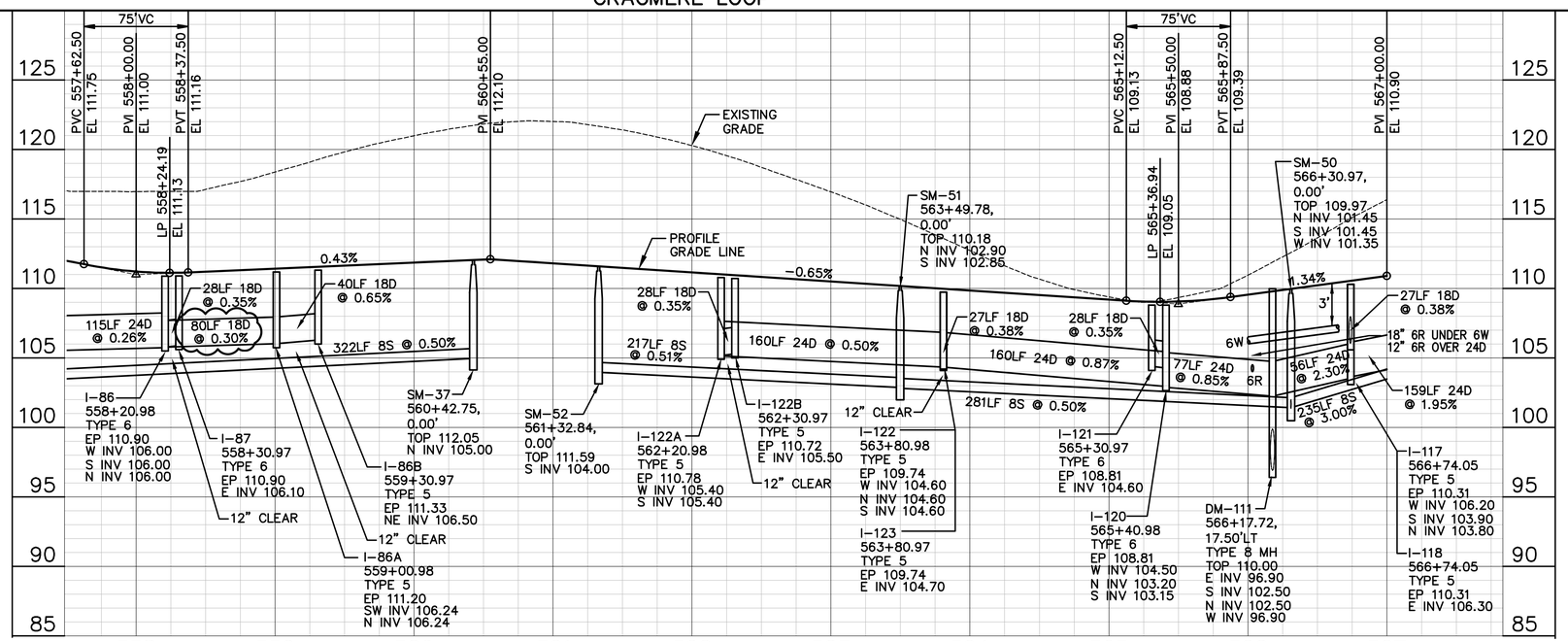

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NO.	DATE	REVISIONS	CHK.
1	10/25/19	REVISED PER S.RIMMO & CITY COMMENTS	JTT

JOHN T. TOWNSEND
FLORIDA P.E. No. 52127
DATE:

DONALD W. McINTOSH ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FL 32789 407.644.4068
CERTIFICATE OF AUTHORIZATION NO. 68

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	7/12/19	1"=50'H/1"=5'V	26086

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
PLAN & PROFILE
CRAGMERE LOOP

DRAWING 26086-HARTPP
SHEET C410
32 OF 51

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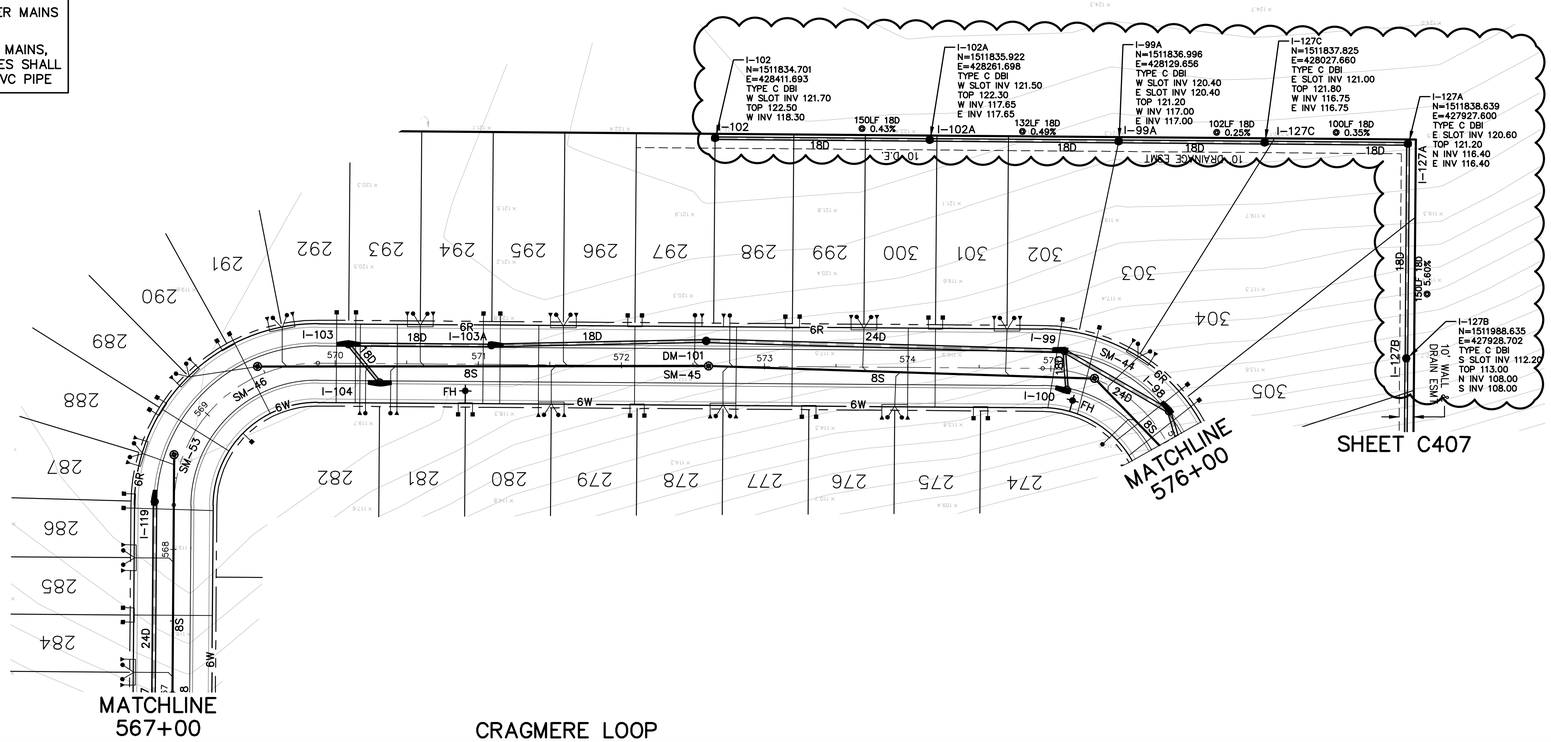
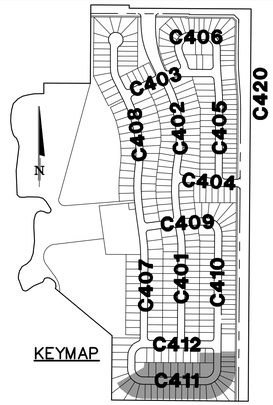
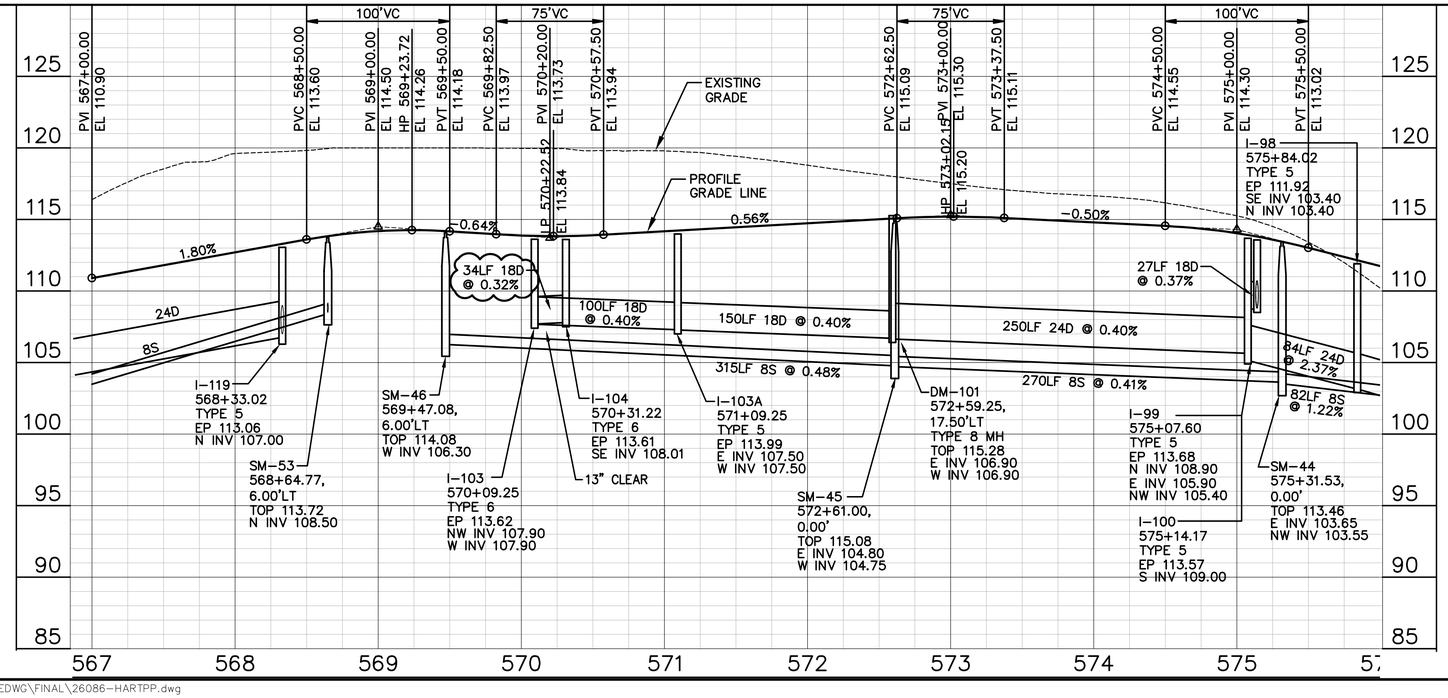




SCALE: 1"=50'H/1"=5'V

CRAGMERE LOOP



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JOHN T. TOWNSEND
FLORIDA P.E. No. 52127
DATE:

DRAWN BY CWG | DESIGNED BY JTT | CHECKED BY JTT | DATE 7/12/19 | SCALE 1"=50'H/1"=5'V | JOB NUMBER 26086

HARTWOOD MARSH

CITY OF CLERMONT, FLORIDA
PLAN & PROFILE
CRAGMERE LOOP

DRAWING 26086-HARTPP
SHEET C411
33 OF 51

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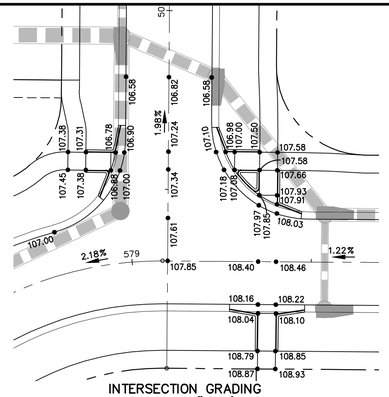

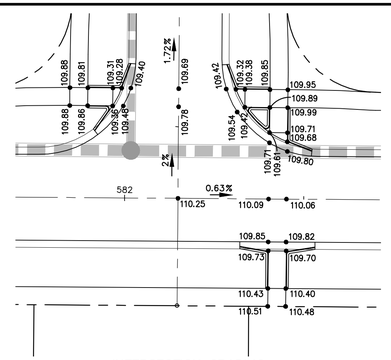

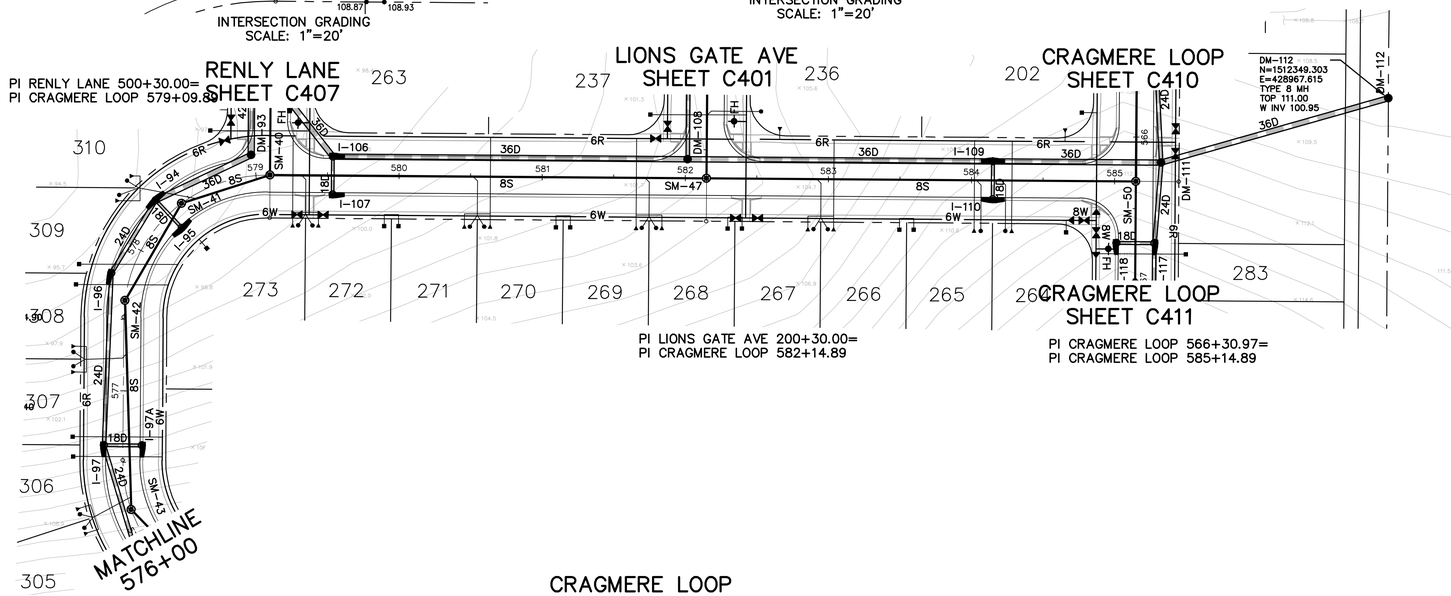

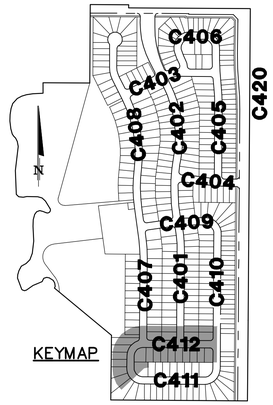

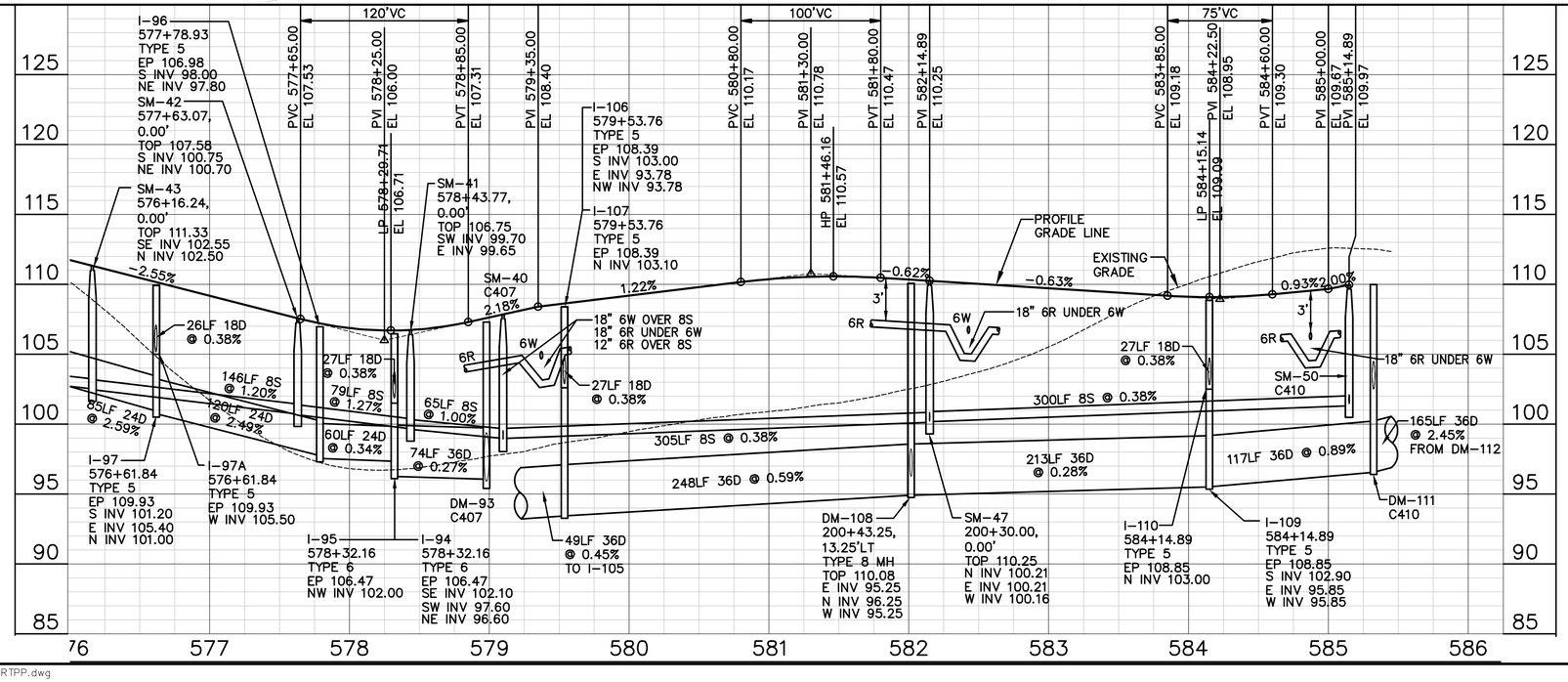

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ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FL 32789 407.644.4068
CERTIFICATE OF AUTHORIZATION NO. 68

DRAWN BY	DESIGNED BY	CHECKED BY	JOB NUMBER
CWG	JTT	JTT	26086

DATE	SCALE
7/12/19	1"=50'H/1"=5'V

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
PLAN & PROFILE
CRAGMERE LOOP

DRAWING 26086-HARTPP
SHEET C412
34 OF 51

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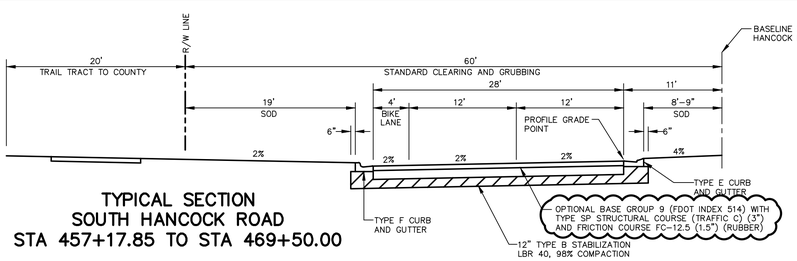
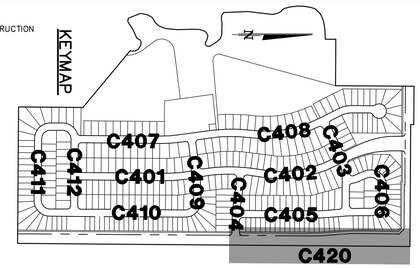
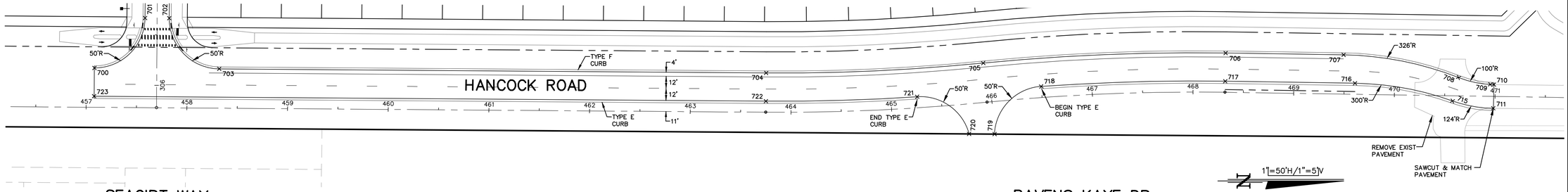
POINT TABLE		
POINT #	NORTHING	EASTING
700	1513555.993	428997.532
701	1513606.361	428947.903
702	1513630.361	428948.080
703	1513679.990	428998.448
704	1514223.245	429002.462
705	1514438.882	428992.660
706	1514679.659	428982.676
707	1514796.751	428984.475
708	1514910.930	429007.005

POINT TABLE		
POINT #	NORTHING	EASTING
709	1514942.499	429013.867
710	1514946.074	429013.918
711	1514945.506	429037.563
715	1514904.918	429030.272
716	1514808.132	429012.653
717	1514679.229	429010.673
718	1514496.496	429015.845
719	1514450.156	429063.161
720	1514424.781	429062.974
721	1514373.257	429026.123
722	1514223.038	429030.462
723	1513555.786	429025.531



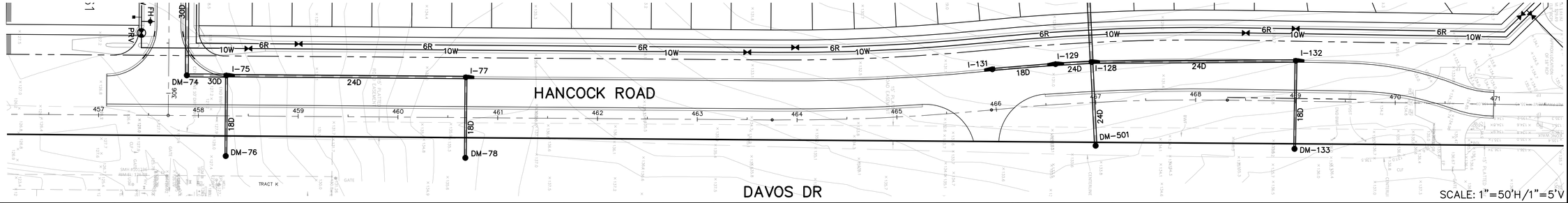
TYPICAL SECTION
SOUTH HANCOCK ROAD
STA 457+17.85 TO STA 469+50.00





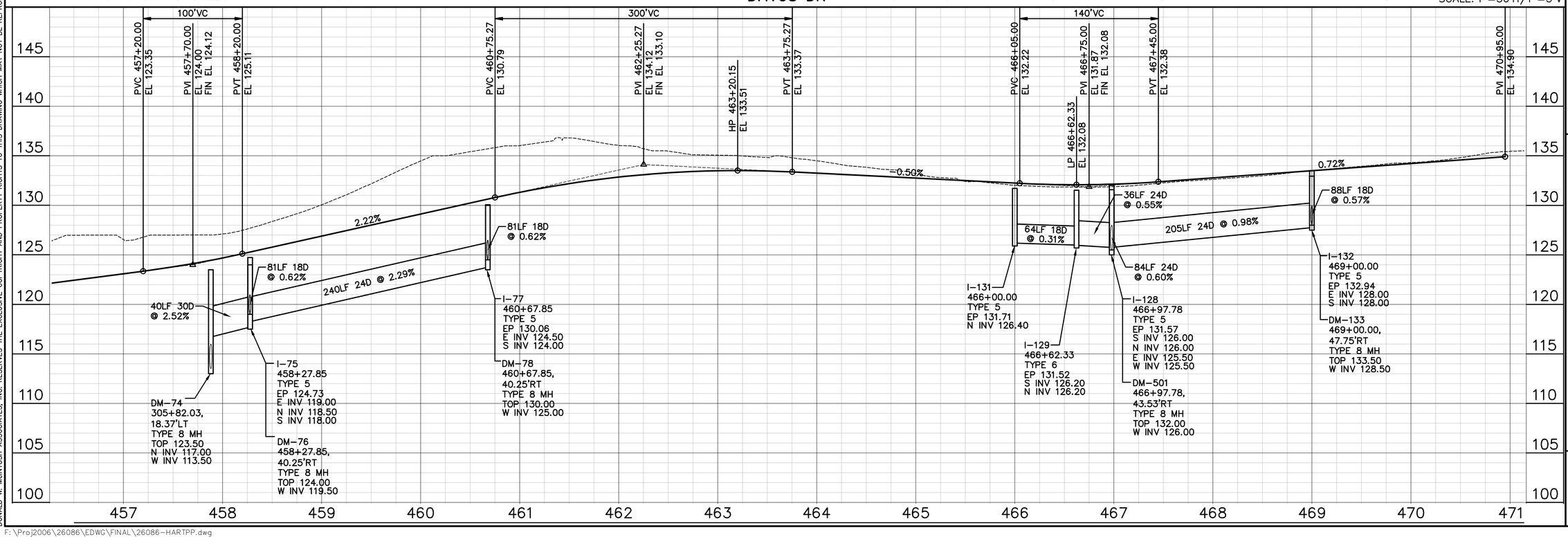
SEAGIRT WAY
SHEET C404

RAVENS KAYE DR
SHEET C403



DAVOS DR

SCALE: 1"=50'H/1"=5'V



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DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
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HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
PLAN & PROFILE
HANCOCK ROAD

DRAWING 26086-HARTPP

SHEET C420

35 OF 51

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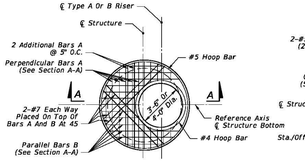
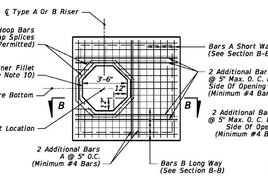
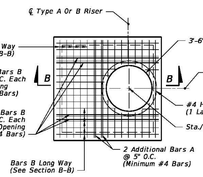


NOTE: Not Applicable For Type A, B, C, D & E Ditch Bottom Inlets Or Type S & V Gutter Inlets. See Index Nos. 220, 221, 230, 231 & 232.

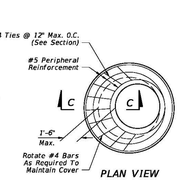
TOP SLAB REINFORCING STEEL DIAGRAM (ALTERNATE A)

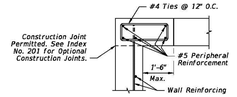


SQUARE OPENING WITH CORNER FILLETS TOP SLAB REINFORCING STEEL DIAGRAM (ALTERNATE B)

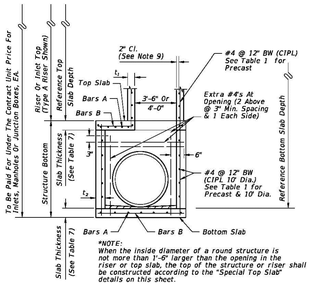


ROUND RISER OPENING

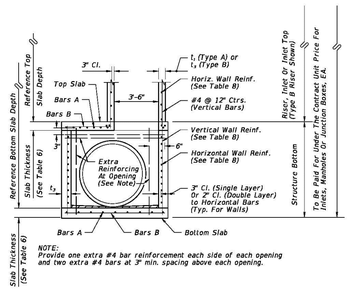




SECTION C-C
SPECIAL TOP SLAB*



SECTION A-A (ALTERNATE A)



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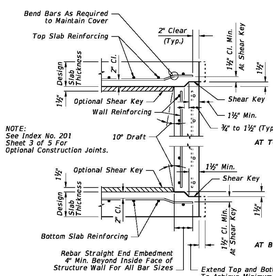
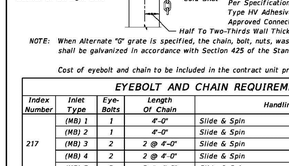


TYPICAL SLAB TO WALL DETAILS FOR PRECAST STRUCTURES

LAST REVISION 11/01/16	REVISION	DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	STRUCTURE BOTTOMS TYPE J AND P	INDEX NO. 200	SHEET NO. 1 of 5



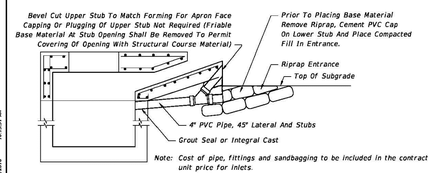
NOTE: When Alternate "G" grate is specified, the chain, bolt, nuts, washer and cold shuts shall be galvanized in accordance with Section 425 of the Standard Specifications.

Cost of eyebolt and chain to be included in the contract unit price for Inlets.

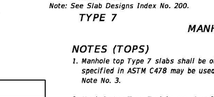
EYEBOLT AND CHAIN REQUIREMENTS

Index Number	Inlet Type	Eye-Bolts	Length Of Chain	Handling & Remarks
217	(MB) 1	1	4'-0"	Slide & Spin
	(MB) 2	1	4'-0"	Slide & Spin
	(MB) 3	2	2 @ 4'-0"	Slide & Spin
	(MB) 4	2	2 @ 4'-0"	Slide & Spin
	(MB) 5	2	2 @ 4'-0"	Slide & Spin
218	(BW)	1	3'-8"	Slide Or Slide & Spin
219	(BW, RGD)	1	4'-0"	Slide & Spin
220	S	1	4'-0"	Slide & Spin
221	V	1	4'-0"	Slide & Spin
230	A	1	3'-0"	Slide
231	B	1	5'-0"	Slide & Spin
232	C	1	2'-6"	Slide & Spin
	D	1	2'-6"	Slide & Spin
	E	2	2 @ 2'-6"	Slide & Spin
	H	2	2 @ 2'-6"	Flip Ctr. Grate and Slide & Spin Single Free Grate
		1 or 2 @ 1'-6"		Ctr. Grate(s) Chained To One End Grate
233	F	1	3'-6"	Flip Or Slide & Spin
	G	1	6'-0"	Slide
			2'-0"	Lifting Loop
234	J	1	4'-0"	Slide & Spin

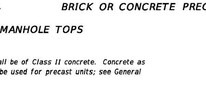
EYEBOLT AND CHAIN FOR LOCKING GRATES TO INLETS



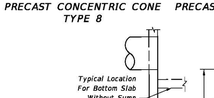
TEMPORARY DRAINS FOR SUBGRADE AND BASE



SECTION
Note: See Slab Designs Index No. 200.
TYPE 7



BRICK OR CONCRETE PRECAST CONCENTRIC CONE TYPE 8



PRECAST ECCENTRIC CONE

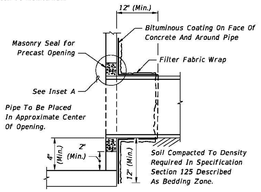
MANHOLE TOPS

NOTES (TOPS)

1. Manhole top Type 7 slabs shall be of Class II concrete. Concrete as specified in ASTM C478 may be used for precast units; see General Note No. 3.
2. Manhole top Type 7 slabs may be of cast-in-place or precast construction. The optional key is for precast tops and in lieu of dowels. Frame and slab openings are to be omitted when top is used over a junction box.
3. Manhole top Type B may be of cast-in-place or precast concrete construction or brick construction. For concrete construction, the concrete and steel reinforcement shall be the same as the supporting wall unit. An eccentric cone may be used.
4. Manhole tops shall be secured to structures by optional construction joints as shown on Sheet 3.
5. Frames can be adjusted a maximum 12" height with brick or precast ASTM C478 grade rings.
6. Substitution of manhole top Type B for manhole top Type 7 is allowed provided that minimum dimensions shown above are not reduced.
7. Substitution of Manhole top Type 7 for Type B is allowed if the minimum thickness (h) above pipe opening cannot be maintained with manhole top Type B.

DESIGN NOTES

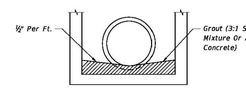
1. Manhole top Type B should be specified in the plans when depths shown above can be maintained.



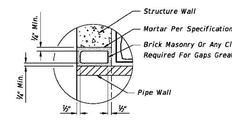
FILTER FABRIC WRAP ON GROUTED PIPE TO STRUCTURE JOINT

NOTE: Sump bottom appropriate for all manhole and inlet types. Sumps are to be constructed in inlet and manholes connected to French Drains unless excluded in the plans. At other locations, sump is to be constructed only where called for in the plans. Weep holes to be constructed in sump bottom only where called for in the plans. Cost of sump bottom and weep hole to be included in the contract unit price for inlet or manhole.

SUMP BOTTOM

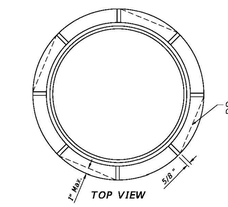


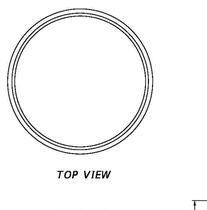
FOR ALL STRUCTURES UNLESS EXCLUDED BY SPECIAL DETAIL
ALL PIPE TYPES
DRAINAGE STRUCTURE INVERT

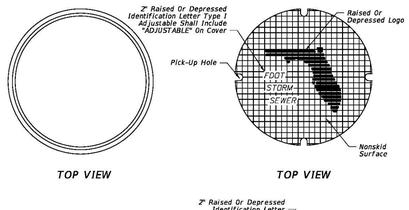


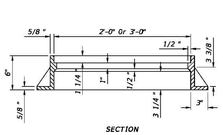
INSET A

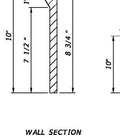
LAST REVISION 07/01/12	REVISION	DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	SUPPLEMENTARY DETAILS FOR MANHOLES & INLETS	INDEX NO. 201	SHEET NO. 2 of 5

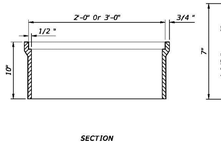


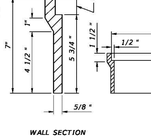


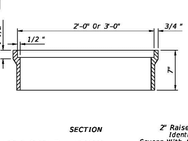


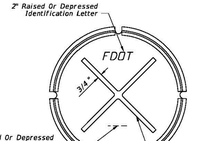


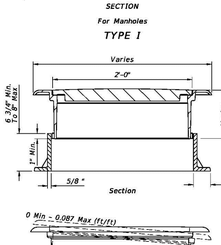












WEIGHT OF CASTINGS (lb)

Frame Type	2' OPENING		3' OPENING		
	Frame	Cover (Std.)	Frame	2-Piece Cover	
				Inside	Outside	Total
I *	155	190	220	190	220	410
II	145	190	255	190	220	410
III	90	190	180	190	220	410

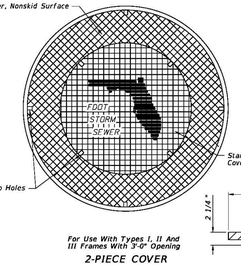
* Includes Type I Adjustable

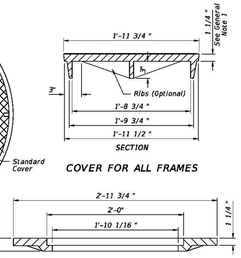
NOTES (FRAMES, AND COVER)

1. The standard cover is to be used for all frames Types I, II, III and the 2-piece cover, and is the replacement cover for all previous frames with 1½" deep seats (traffic type). The 185 lb. cover (nontraffic type), 1984 Roadway and Traffic Design Standards Index No. 201, is the replacement cover for existing frames with ½" deep seats. Installation of frame with ½" deep seats is not permitted.
2. Use the 2'-0" cover, unless the 2-piece cover is called for in the plans, except at inlets and manholes with sump bottoms use the 2-piece cover when the sump depth exceeds 2, unless otherwise noted.

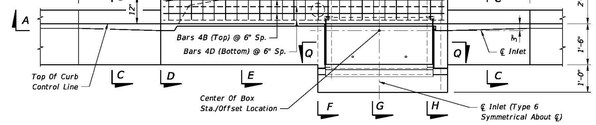
DESIGNER NOTE:

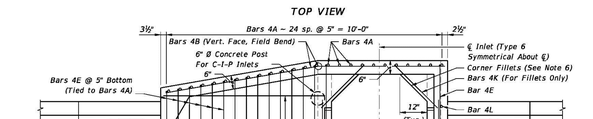
Consider using the 2-piece cover where depths exceed 5' and manual entry may be required for cleaning. Clearly note the requirement for a 2-piece cover, on the Drainage Structure sheets in the plans.

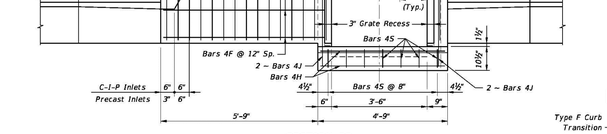


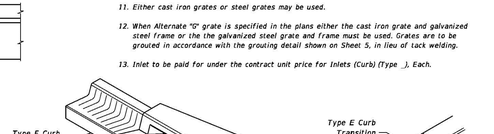


LAST REVISION 01/01/12	REVISION	DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	SUPPLEMENTARY DETAILS FOR MANHOLES & INLETS	INDEX NO. 201	SHEET NO. 1 of 5









INLET TYPE 5 (Curb Inlet Type 6 Symmetrical With Left Half)

GENERAL 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. For inlets constructed on a curve, refer to the plans to determine the radius, and modify the inlet details accordingly. Bend steel when necessary.
3. All reinforcing steel to be Grade 60 bars with 1½" minimum cover unless otherwise shown, see Sheet 4 for equivalent area Welded Wire Reinforcement details.
4. Inlet tops shall be either cast-in-place or precast concrete. Precast units shall conform to the dimensions shown or in accordance with approved shop drawing's. Request for shop drawing approval shall be directed to the State Drainage Engineer.
5. Concrete meeting the requirements of ASTM C478 (4,000 psi) may be used in lieu of Class II concrete for precast units, manufactured in plants which meet the requirements of Section 449 of the Specifications.
6. Corner fillets are required at inlet opening for precast units or C-I-P units used in conjunction with circular inlet bottoms or skewed rectangular inlet boxes. Finish top of fillets flush with drain throat bottom and match slope.
7. For inlet bottoms see Index No. 200. Inlet tops are to be used with Type P bottoms, or Type J bottoms with 3'-6" square (Type B), 3'-6" or 4' round (Type A) risers or top slab openings.
8. These inlet types are designed for use with standard curb and gutter Type E and Type F. Locate inlet outside of pedestrian crosswalks. For Type E curb, transition the shape of the curb over the gutter transition length to match the face of the inlet (Type F).
9. See Index No. 201 for supplemental details.
10. All steel used for frame and grate shall meet the requirements of ASTM A36/A36M.
11. Either cast iron grates or steel grates may be used.
12. When Alternate "G" grate is specified in the plans either the cast iron grate and galvanized steel frame or the the galvanized steel grate and frame must be used. Grates are to be grouted in accordance with the grouting detail shown on Sheet 5, in lieu of tack welding.
13. Inlet to be paid for under the contract unit price for Inlets (Curb) (Type _), Each.

GENERAL NOTES:

1. SEE NOTES, SPECIFICATIONS & LEGEND SHEET FOR ADDITIONAL INFORMATION.
2. THE SCALE OF THIS DRAWING MAY HAVE CHANGED DUE TO REPRODUCTION.

LAST REVISION 11/01/16	REVISION	DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	CURB INLET TOPS TYPES 5 AND 6	INDEX NO. 211	SHEET NO. 1 of 5

DONALD W. McINTOSH ASSOCIATES, INC.
ENGINEERS PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FL 32789 407.644.4068
CERTIFICATE OF AUTHORIZATION NO. 68

NO.	DATE	REVISIONS	CHK.

JOHN T. TOWNSEND
FLORIDA P.E. No. 52127
DATE:

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	7/12/19	NTS	26086

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
DRAINAGE DETAILS

DRAWING 26086-HARTDDT
SHEET C751
48 OF 51

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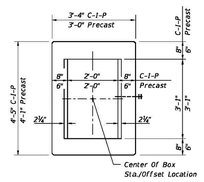
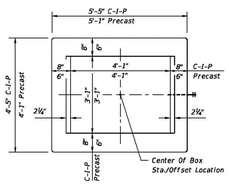


PLAN



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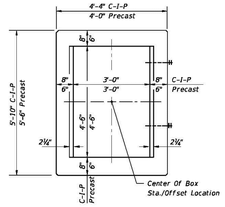

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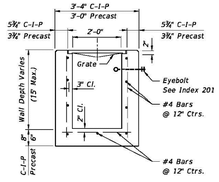

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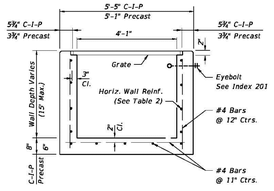

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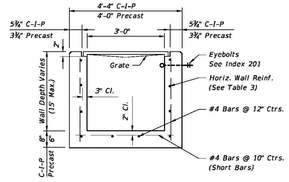


SECTION

HORIZONTAL WALL REINFORCING SCHEDULES (TABLE 1)

WALL DEPTH	SCHEDULE	AREA (in²/ft.)	MAX. SPACING	
			BARS	WWF
0'-1.5"	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 (in²/ft.)	MAX. SPACING	
			BARS	WWF
0'-6"	A12	0.20	12"	8"
0'-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)

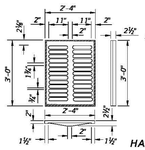
WALL DEPTH	SCHEDULE	AREA (in²/ft.)	MAX. SPACING	
			BARS	WWF
0'-5"	A12	0.20	12"	8"
0'-7.5"	A6	0.20	6"	5"
7.5'-10"	B5.5	0.24	5½"	5"
10'-15"	C6.5	0.37	6½"	6"

TYPE E

Recommended Maximum Pipe Size:

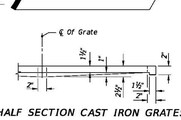
3'-0" Wall – 24" Pipe
4'-6" Wall – 36" Pipe

LAST REVISION 11/01/16	REVISION	DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	DITCH BOTTOM INLET TYPES C, D, E AND H	INDEX NO. 232	SHEET NO. 1 of 7

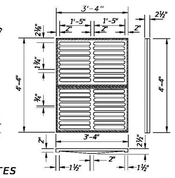


TYPE C
Approx. Weight 335 Lbs.

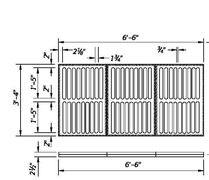
CAST IRON GRATE NOT PERMITTED ON INLET TYPE D



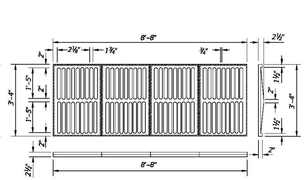
HALF SECTION CAST IRON GRATES



TYPE E
Approx. Weight 465 Lbs.

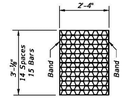


TYPE H (3-GRATE INLET)
Approx. Weight 725 Lbs.

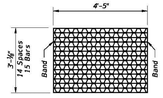


TYPE H (4-GRATE INLET)
Approx. Weight 967 Lbs.

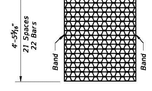
CAST IRON GRATES



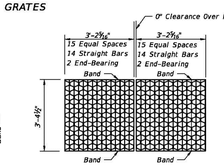
TYPE C
Straight Bars 2"x ¼"
Reticuline Bars 1⅛" x ⅜₁₆"
Bands 2" x ⅛"
Approx. Weight 104 Lbs.



TYPE D
Straight Bars 2" x ¼"
Reticuline Bars 1¼" x ⅜₁₆"
Bands 2" x ⅛"
Approx. Weight 190 Lbs.

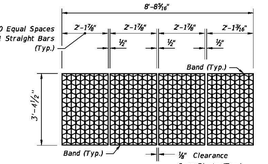


TYPE E
Straight Bars 2" x ½"
Reticuline Bars 1¼" x ⅜₁₆"
Bands 2" x ⅛"
Approx. Weight 215 Lbs.



TYPE H (2-GRATE INLET)
Straight End-Bearing Bars 2" x ⅜"
Straight Bearing Bars 2" x ¼"
Reticuline Bars 1½" x ⅜₁₆"

Banding Bars 2" x ¼"
Approx. Total Weight 310 Lbs.



TYPE H (4-GRATE INLET)
Straight End-Bearing Bars 2" x ½"
Reticuline Bars 1½" x ⅜₁₆"
Banding Bars 2" x ⅜₁₆"
Approx. Total Weight 388 Lbs.

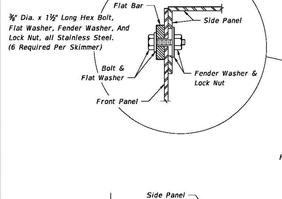
STEEL GRATES

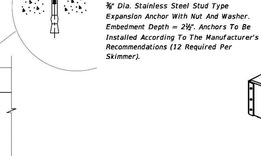
NOTE: Steel Grates Are Required On Inlets With Traversable Slots And On Inlets where Bicycle Traffic Is Anticipated.

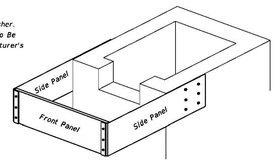
GENERAL NOTES

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.

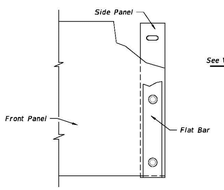
LAST REVISION 07/01/10	REVISION	DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	DITCH BOTTOM INLET TYPES C, D, E AND H	INDEX NO. 232	SHEET NO. 3 of 7



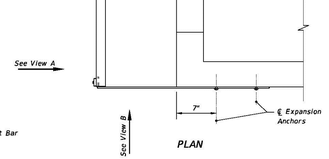




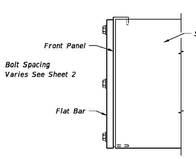
PICTORIAL VIEW



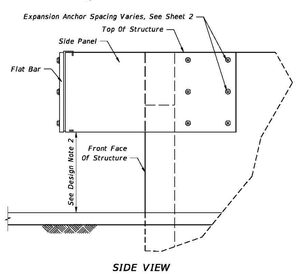
VIEW A



PLAN



VIEW B



SIDE VIEW

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 8'-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 permitting 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	REVISION	DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	SKIMMER FOR OUTLET CONTROL STRUCTURES	INDEX NO. 240	SHEET NO. 1 of 2

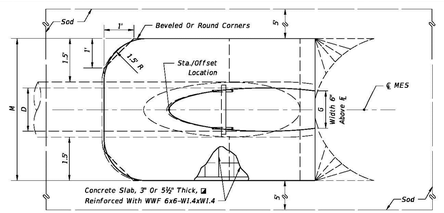
DIMENSIONS AND QUANTITIES

	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"	1.93'	2.24'	4.21'	2.56'	6'	1.41'	3'-4"	4.92'	7.73'	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"	2.23'	6.08'	8.33'	5.56'	9'	2.24'	3'-4"	6.67'	11.75'	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"	7.29'	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'-8"	2.52'	9.44'	11.96'	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'-3"	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'	7.73'	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"	7.29'	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'	15.43'	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'-8"	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'-3"	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

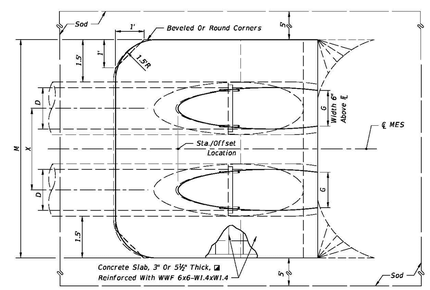
◪ See General Note No. 5. See Sheet 5 For 3" Slab Quantities

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

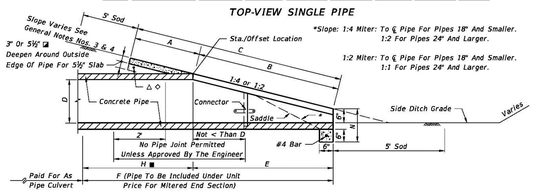
	B	E	
1:2 Slope	△ 6.42'	△ 6.29'	Dimensions permitted to allow use of 8' standard pipe lengths.
	◇ 10.40'	◇ 10.10'	Dimensions permitted to allow use of 12' standard pipe lengths.
1:4 Slope	△ ◇ Concrete slab shall be deepened to form bridge across crown of pipe. See section below.		



TOP-VIEW SINGLE PIPE



TOP-VIEW MULTIPLE PIPE



SECTION

*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.

NOTE: See sheet 6 for details and notes.

SINGLE AND MULTIPLE ROUND CONCRETE PIPE

LAST REVISION 11/01/16	REVISION	DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	CROSS DRAIN MITERED END SECTION	INDEX NO. 272	SHEET NO. 1 of 6

GENERAL NOTES:

1. SEE NOTES, SPECIFICATIONS & LEGEND SHEET FOR ADDITIONAL INFORMATION.
2. THE SCALE OF THIS DRAWING MAY HAVE CHANGED DUE TO REPRODUCTION.

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FLORIDA P.E. No. 52127
DATE:

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CITY OF CLERMONT, FLORIDA
DRAINAGE DETAILS

DRAWING 26086-HARTDDT
SHEET C752
49 OF 51

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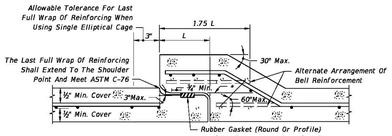
SCHEDULE OF BELL REINFORCEMENT

Classes II,III,IV,V; Wall A,B,C

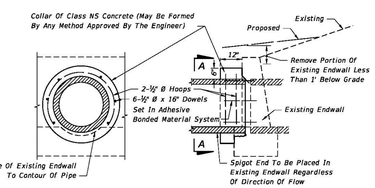
Nominal Pipe Diameter	Design Bell Reinforcement in² per foot	Maximum Reinforcement Under Tolerance in² per foot
15"	0.07	0.010
18"	0.07	0.010
24"	0.09	0.010
30"	0.12	0.010
36"	0.14	0.010
42"	0.16	0.010
48"	0.19	0.011
54"	0.21	0.012
60"	0.23	0.0135
66"	0.26	0.015
72"	0.28	0.0165
78"	0.30	0.018
84"	0.33	0.0195
90"	0.35	0.021
96"	0.37	0.0225
102"	0.40	0.024
108"	0.42	0.0255



*All circumferential steel located above this line within 1.75 L is defined as bell reinforcement.

ROUND RUBBER GASKET SHOWN

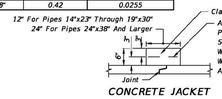
DETAIL OF BELL & SPIGOT CONCRETE PIPE JOINT USING ROUND OR PROFILE RUBBER GASKET



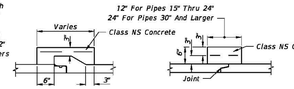
SECTION AA LONGITUDINAL SECTION

Note: Cost for removal and disposal of portions of top and toe of existing endwall and cost of concrete, reinforcing steel and construction of collar to be included in the contract unit price for pipe culvert.

CONCRETE COLLAR FOR EXTENSION OF EXISTING PIPE CULVERTS



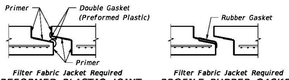
CONCRETE JACKET



Note: For reinforcement see elliptical pipe concrete jacket. (All Pipe Sizes)

BELL AND SPIGOT TONGUE & GROOVE

DISSIMILAR JOINTS

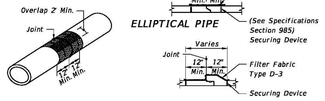


Filter Fabric Jacket Required
PREFORMED PLASTIC JOINT (BEFORE PULL-UP)

Filter Fabric Jacket Required
PROFILE RUBBER GASKET (BEFORE PULL-UP)

Cost of concrete jacket or filter fabric jacket to be included in cost of elliptical concrete pipe culverts.

ELLIPTICAL CONCRETE PIPE JOINTS

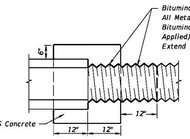


ELLIPTICAL PIPE SHOWN ISOMETRIC VIEW

ELLIPTICAL PIPE ROUND PIPE PIPE SECTIONS

Cost of filter fabric jacket to be included in cost of pipe culverts.

FOR ALL PIPE TYPES - CONCRETE PIPE SHOWN FILTER FABRIC JACKET

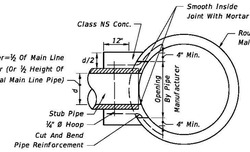


Note: Cost of concrete and bituminous coating to be included in contract unit price for either new pipe or Mitered End Section.

Alternate connection must be approved by the State Drainage Engineer.

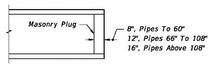
A concrete jacket shall not be used to join:
a) metal pipe of dissimilar materials
b) flexible pipe when the minimum cover required in accordance with Index No. 205 cannot be obtained

DISSIMILAR TYPES



Cost of concrete and steel to be included in contract unit price for pipe culvert.

CONCRETE COLLAR FOR JOINING MAINLINE PIPE AND STUB PIPE

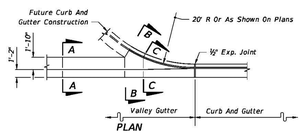


Note: Unless otherwise called for in the plans, the cost of plugging pipes to be included in contract unit price for new pipe.

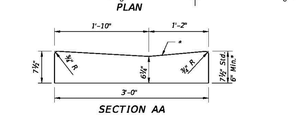
PIPE PLUG

CONCRETE JACKET FOR CONNECTING DISSIMILAR TYPES OF PIPE AND CONCRETE PIPES WITH DISSIMILAR JOINTS

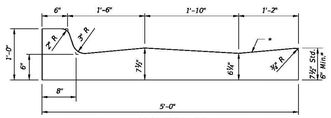
LAST REVISION 07/01/14	REVISION	DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	MISCELLANEOUS DRAINAGE DETAILS	INDEX NO. 280	SHEET NO. 1 of 3



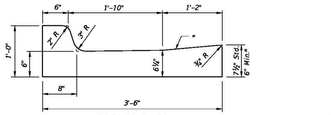
PLAN



SECTION AA



SECTION BB



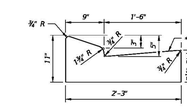
SECTION CC

VALLEY GUTTER

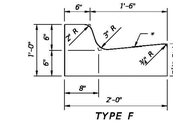
* When used on high side of roadways, the cross slope of the gutter shall match the cross slope of the adjacent pavement. The thickness of the lip shall be 6", unless otherwise shown on plans.

◪ Rotate entire section so that gutter cross slope matches slope of adjacent circulating roadway pavement.

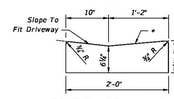
For use adjacent to concrete or flexible pavement. For details depicting usage adjacent to flexible pavement, see Sheet 2. Expansion joint, preformed joint filler and joint seal are required between curb & gutter and concrete pavement only, see Sheet 2.



TYPE E

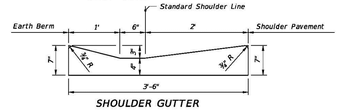


TYPE F

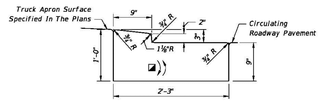


Note: To be paid for as parent curb.

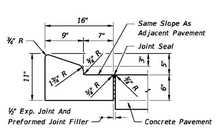
DROP CURB



SHOULDER GUTTER

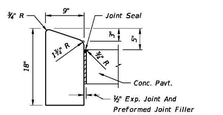


TRAFFIC BEARING SECTION FOR USE IN ROUNDABOUT CENTRAL ISLAND CONSTRUCTION
TYPE RA

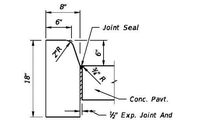


For details depicting usage adjacent to flexible pavement, see diagram right.

TYPE A



TYPE B



TYPE D

Note: For use adjacent to concrete or flexible pavement, concrete shown. Expansion joint, preformed joint filler and joint seal are required between curbs and concrete pavement only, see Sheet 2.

CONCRETE CURB

CONCRETE CURB AND GUTTER

LAST REVISION 07/01/00	REVISION	DESCRIPTION:	FDOT FY 2017-18 DESIGN STANDARDS	CURB & CURB AND GUTTER	INDEX NO. 300	SHEET NO. 1 of 2

GENERAL NOTES:

1. SEE NOTES, SPECIFICATIONS & LEGEND SHEET FOR ADDITIONAL INFORMATION.
2. THE SCALE OF THIS DRAWING MAY HAVE CHANGED DUE TO REPRODUCTION.

NO.	DATE	REVISIONS	CHK.

JOHN T. TOWNSEND
FLORIDA P.E. No. 52127
DATE:

DONALD W. McINTOSH ASSOCIATES, INC.
PLANNERS SURVEYORS
2200 PARK AVENUE NORTH, WINTER PARK, FL 32789 407.644.4068
CERTIFICATE OF AUTHORIZATION NO. 68

DRAWN BY	DESIGNED BY	CHECKED BY	DATE	SCALE	JOB NUMBER
CWG	JTT	JTT	7/12/19	NTS	26086

DONALD W. McINTOSH ASSOCIATES, INC.
ENGINEERS
2200 PARK AVENUE NORTH, WINTER PARK, FL 32789 407.644.4068
CERTIFICATE OF AUTHORIZATION NO. 68

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
DRAINAGE DETAILS

DRAWING 26086-HARTDDT
SHEET C753
50 OF 51

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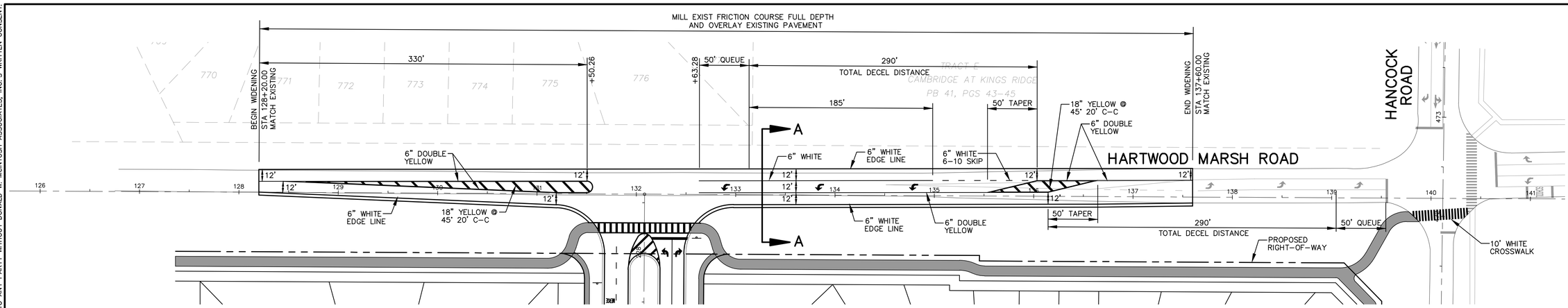

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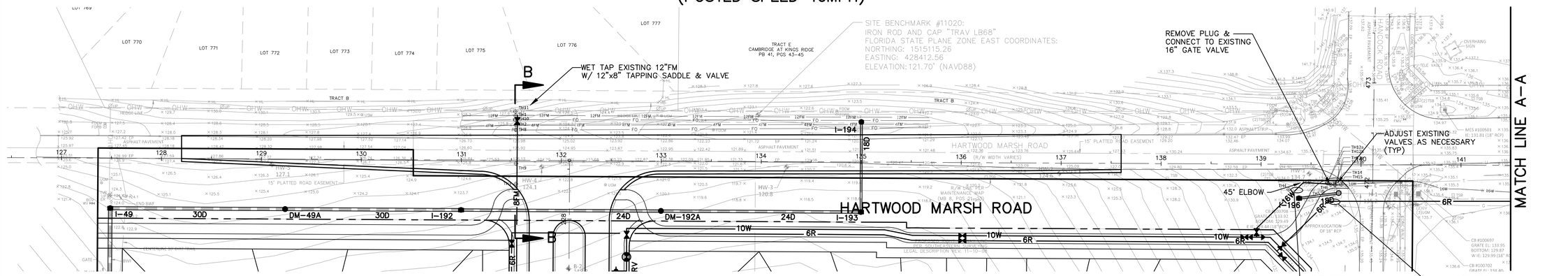
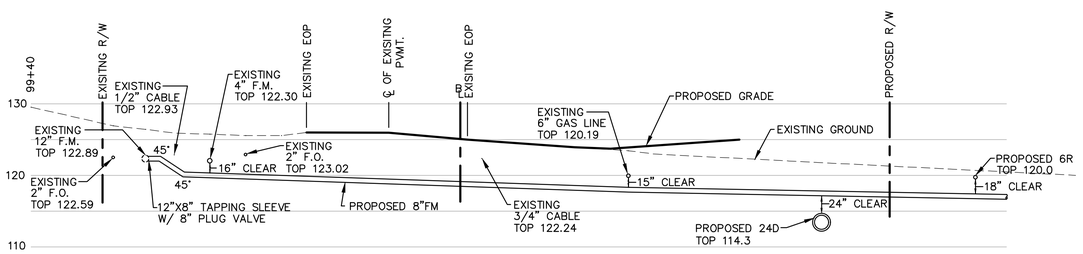
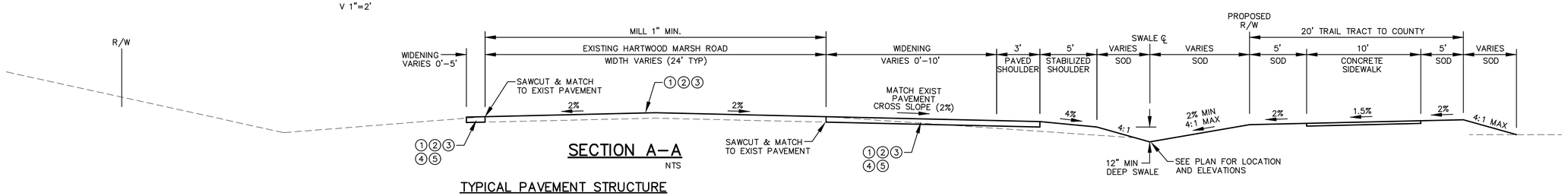
(POSTED SPEED 40MPH)





SECTION B-B
SCALE: H 1"=20'
V 1"=2'



SECTION A-A
NTS

TYPICAL PAVEMENT STRUCTURE

MATERIALS	ROADWAY	REQUIREMENTS
ASPHALT	①	1" FC-9.5 (FRICTION COURSE WITH PG 76-22 BINDER)
	②	2" SUPERPAVE SP-12.5 ASPHALT
	③	0.5" MIN LEVELING COURSE
BASE	④	12" LIMEROCK BASE (LBR 100) 2 LIFTS, 98% COMPACTION EACH LIFT, AASHTO T-180 FLUSH WITH MILLED SURFACE, PRIMED AND SANDED
SUB-GRADE	⑤	12" STABILIZED SUB BASE (MIN. LBR 40) 98% COMPACTION, AASHTO T-180

ALL THICKNESSES ARE MINIMUM.

NOTES:
1. MILL EXISTING ROADWAY 1" MINIMUM.
2. WHERE WIDENING IS 2 FEET OR GREATER UTILIZE 2" STRUCTURAL ASPHALT IN WIDENING SECTION FLUSH WITH MILLED SURFACE. WHERE WIDENING IS LESS THAN 2 FEET, CONSTRUCT LIMEROCK FLUSH WITH MILLED SURFACE DO NOT UTILIZE 2" STRUCTURAL ASPHALT.
3. FINISH GRADE OF SHOULDER TO BE BELOW EDGE OF PAVEMENT TO ALLOW FOR SOD PER FDOT INDEX 105.
4. ALL STRIPING TO BE 6" LEAD AND SOLVENT FREE THERMOPLASTIC, UNLESS OTHERWISE NOTED.
5. SOD ALL DISTURBED AREAS.
6. FOR MARSHALL MIX UTILIZE FDOT LOCAL AGENCY SPECIFICATIONS; FOR SUPERPAVE UTILIZE TRAFFIC LEVEL C.

GENERAL NOTES:

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CWG	JTT	JTT	7/12/19	1"=50'	26086

HARTWOOD MARSH
CITY OF CLERMONT, FLORIDA
OFFSITE IMPROVEMENTS

DRAWING
26086-HARTOFFST

SHEET
C801

51 OF 51

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