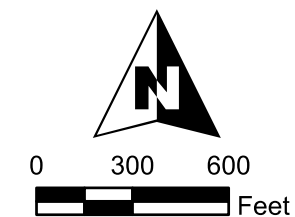




**LEGEND**

- PROJECT AREA
- CONNECT TO EXISTING DRAINAGE INLET
- PROPOSED UNDERDRAIN
- PARCELS



DATA SOURCES:  
 STREETS: ORANGE COUNTY, 2015  
 PARCELS: ORANGE COUNTY, 2016  
 STRUCTURES: VARIOUS SOURCES

**SHEET 1  
 OVERVIEW MAP**

**PARK MANOR  
 ESTATES  
 SECTIONS 1-8  
 UNDERDRAIN  
 IMPROVEMENTS**



Steven M. Sommerfeldt, PE 3000 Dovers Drive, Suite 200  
 PE No. 64074 Oviedo, Florida 32765  
 Certificate of Authorization No. 7074 p. 407.971.8890

INDEX OF SHEETS	
SHEET	DESCRIPTION
1	OVERVIEW MAP
2A	IMPROVEMENTS RECOMMENDATION MAP
2B	IMPROVEMENTS RECOMMENDATION MAP
2C	IMPROVEMENTS RECOMMENDATION MAP
3	SUMMARY OF QUANTITIES
4	UNDERDRAIN TYPICAL SECTION
5	GENERAL NOTES
6	MISCELLANEOUS DETAILS

SUMMARY OF PAY ITEMS*				
ITEM NUMBER	DESCRIPTION	UNITS	QUANTITY TOTAL	
			PLANS	FINAL
101-1	MOBILIZATION (5% OF ALL OTHER ITEMS)	LS	1	
102-1	MAINTENANCE OF TRAFFIC (5% OF ALL OTHER PAY ITEMS)	LS	1	
104-1	PREVENTION, CONTROL AND ABATEMENT OF EROSION AND WATER POLLUTION	LS	1	
110-1-1	CLEARING AND GRUBBING	LS	1	
270-9	SOIL CEMENT BASE (PRIMED)(9")(350 PSI)	SY	230	
334-1-12A	SUPERPAVE ASPHALTIC CONCRETE (TRAFFIC B) (SP-9.5) (1 1/2")	SY	710	
334-1-12B	SUPERPAVE ASPHALTIC CONCRETE (TRAFFIC B) (SP-12.5) (1 1/2")	SY	230	
440-1-60	UNDERDRAIN, SPECIAL, PERFORATED (8" DIA.)	LF	39,600	
520-1-10	CONCRETE CURB AND GUTTER, DROP CURB	LF	360	
522-1	CONCRETE SIDEWALK, 4" THICK	SY	190	
522-2	CONCRETE SIDEWALK AND DRIVEWAY, 6" THICK (FOR DRIVEWAYS)	SY	9,200	
570-1	PERFORMANCE TURF, SOD	SY	30,300	
900-1	AS-BUILT PLANS	LS	1	
900-2	INDEMNIFICATION	LS	1	

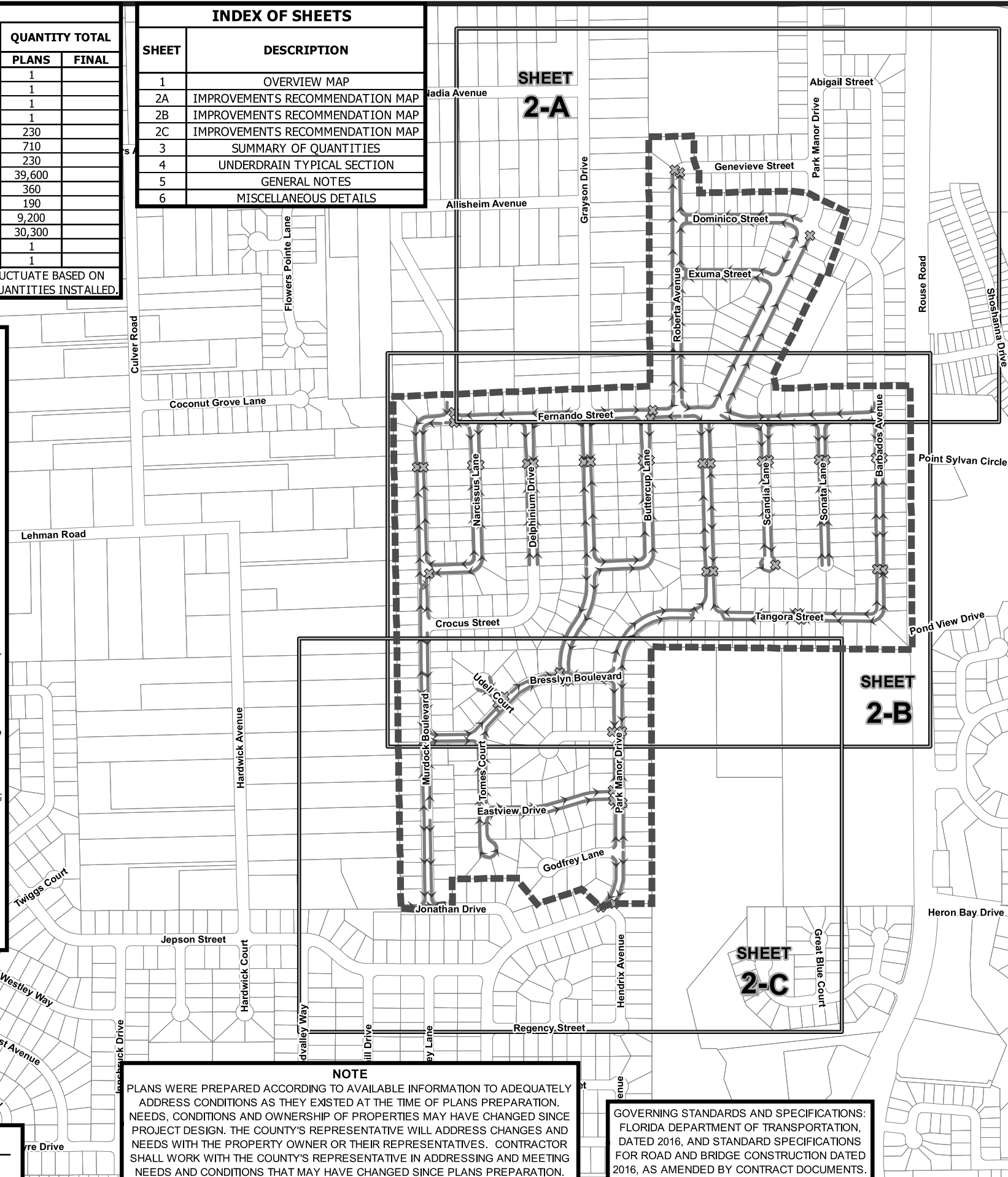
\*NOTE: QUANTITIES ARE APPROXIMATE BASED ON 700 SERIES DESIGN LEVEL OF DETAIL AND ARE EXPECTED TO FLUCTUATE BASED ON ACTUAL FIELD CONDITIONS AND FINAL CONSTRUCTION QUANTITIES. PAYMENT WILL BE BASED ON APPROVED QUANTITIES INSTALLED.

- PAY ITEM NOTES**
- 101-1 INCLUDES ALL APPLICABLE SURVEY COSTS AND COSTS NECESSARY FOR A VIDEO SURVEY. THE WORK SITE/AREA SHALL BE VIDEOED (CD) PRIOR TO WORK COMMENCEMENT AND AFTER WORK IS COMPLETED. THIS VIDEO WILL BE TAKEN BY THE CONTRACTOR, AND SHALL BE SUBMITTED ON CD TO THE COUNTY WITH THE FINAL PAY REQUEST. INCLUDES ALL EFFORTS NECESSARY TO CONSTRUCT AND DISMANTLE A TEMPORARY STAGING AREA AS NEEDED TO ACCOMMODATE TYPICAL WET SEASON RAINFALL EVENTS OCCURRING DURING CONSTRUCTION.
- 102-1 INCLUDES ALL NECESSARY TRAFFIC CONTROL DEVICES INCLUDING FLAGMEN, PILOT CARS AND VARIABLE MESSAGE BOARDS, IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS (LATEST EDITION). CONTRACTOR SHALL SECURE CONSTRUCTION SITE (I.E. TEMPORARY PEDESTRIAN SAFETY FENCING, BARRICADES, SIGNS, ETC.) IN ORDER TO PREVENT PEDESTRIANS FROM ACCESSING WORK AREAS.
- 104-1 INCLUDES THE COST OF ALL ITEMS REQUIRED FOR EROSION CONTROL INCLUDING, BUT NOT LIMITED TO, SYNTHETIC BALES, TURBIDITY BARRIERS, SILT FENCE, AND TEMPORARY GRASSING, AS SHOWN IN THE PLANS OR AS DIRECTED BY THE COUNTY.
- 110-1-1 INCLUDES, BUT IS NOT LIMITED TO, THE SAWCUT, REMOVAL AND DISPOSAL OF EXISTING PAVEMENT, DRIVEWAY CONCRETE, CURB AND BASE REQUIRED TO CONSTRUCT THE PROJECT. INCLUDES THE REMOVAL OF UNDERDRAIN. INCLUDES THE TRANSPORT AND DISPOSAL OF ALL REMOVED MATERIALS TO AN APPROVED ORANGE COUNTY DISPOSAL SITE YARD OR AS DIRECTED BY THE COUNTY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REPLACE IN-KIND OR BETTER ANY DAMAGED FENCING, DAMAGED MAILBOXES OR ANY OTHER PRIVATE PROPERTY DISTURBED DURING CONSTRUCTION. INCLUDES THE COST OF RESIDENT NOTIFICATION PRIOR TO THE COMMENCEMENT OF WORK. THE CONTRACTOR SHALL NOTIFY ALL RESIDENTS WITHIN THE WORK AREA AS TO WHEN THE WORK WILL TAKE PLACE AND EXPLAIN THE LEVEL OF INCONVENIENCE THAT WILL BE INVOLVED. THIS NOTIFICATION SHALL TAKE PLACE FIVE (5) DAYS PRIOR TO COMMENCEMENT OF ANY WORK IN THAT AREA. THE NOTIFICATION WILL BE BY AN APPROVED DOOR HANGER TO BE PLACED ON EACH HOUSE AND ANY VEHICLES PARKED ON THE ROADWAYS.
- 440-1-60 PAYMENT FOR UNDERDRAINS INCLUDES, BUT IS NOT LIMITED TO, THE COST FOR PIPE, PERFORATED AND NON-PERFORATED FITTINGS, AGGREGATE, FILTER FABRIC, UNDERDRAIN CLEANOUTS, UNDERDRAIN OUTLET PIPE, JUNCTION BOXES, CONCRETE APRONS, AND STUBBING INTO DRAINAGE STRUCTURES. ALSO INCLUDES THE COST TO COORDINATE WITH UTILITY OWNERS AND FIELD ADJUST UNDERDRAIN TO AVOID IMPACTS WITH UTILITIES AND PRIVATE PROPERTY
- 520-1-10 INCLUDES THE COST OF ALL MATERIALS, LABOR AND EQUIPMENT REQUIRED FOR CONSTRUCTION OF CURB AND GUTTER.
- 570-1 INCLUDES THE COST OF PEGGING, FERTILIZER AND WATER AS REQUIRED FOR ESTABLISHMENT OF PERMANENT SODDING. SOD PLACED ON ALL SLOPES 1:3 OR STEEPER SHALL BE PEGGED. ALSO INCLUDES THE COST OF TOPSOIL TREATMENT ON ALL PERMANENT GRASS AREAS AND MOWING UNTIL THE FINAL PROJECT ACCEPTANCE BY THE COUNTY.

**CERTIFICATION TO PLANS**

THIS IS TO CERTIFY THAT THE CONSTRUCTION PLANS AND SPECIFICATIONS AS CONTAINED HEREIN WERE DESIGNED TO APPLICABLE STANDARDS AS SET FORTH IN THE "MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION AND MAINTENANCE FOR STREETS AND HIGHWAYS", STATE OF FLORIDA, AS PREPARED BY THE FLORIDA DEPARTMENT OF TRANSPORTATION TALLAHASSEE, FLORIDA, DATED LATEST EDITION.

DATE: \_\_\_\_\_ ENGINEER: \_\_\_\_\_ REG. NO. 64074  
 STEVEN M. SOMMERFELDT, P.E.



**NOTE**

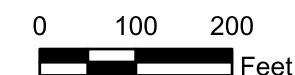
PLANS WERE PREPARED ACCORDING TO AVAILABLE INFORMATION TO ADEQUATELY ADDRESS CONDITIONS AS THEY EXISTED AT THE TIME OF PLANS PREPARATION. NEEDS, CONDITIONS AND OWNERSHIP OF PROPERTIES MAY HAVE CHANGED SINCE PROJECT DESIGN. THE COUNTY'S REPRESENTATIVE WILL ADDRESS CHANGES AND NEEDS WITH THE PROPERTY OWNER OR THEIR REPRESENTATIVES. CONTRACTOR SHALL WORK WITH THE COUNTY'S REPRESENTATIVE IN ADDRESSING AND MEETING NEEDS AND CONDITIONS THAT MAY HAVE CHANGED SINCE PLANS PREPARATION.

GOVERNING STANDARDS AND SPECIFICATIONS:  
 FLORIDA DEPARTMENT OF TRANSPORTATION,  
 DATED 2016, AND STANDARD SPECIFICATIONS  
 FOR ROAD AND BRIDGE CONSTRUCTION DATED  
 2016, AS AMENDED BY CONTRACT DOCUMENTS.

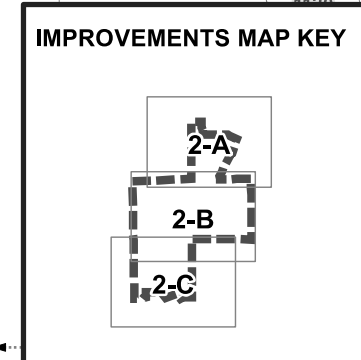
**LEGEND**

- PROJECT AREA
- CONNECT TO EXISTING DRAINAGE INLET
- UNDERDRAIN BEGIN/END DIMENSION
- PROPOSED UNDERDRAIN (SEE OTHER SHEETS)
- REMOVE AND REPLACE EXISTING UNDERDRAIN
- INSTALL NEW UNDERDRAIN
- PROPOSED CONSTRUCTION LENGTH OF UNDERDRAIN
- EXISTING INFRASTRUCTURE**
- CURB INLET
- DITCH BOTTOM INLET
- HEADWALL
- MANHOLE
- M.E.S.
- POND OUTLET
- PARCELS
- ### PARCEL STREET NUMBER
- CHANNELS
- STORM PIPE

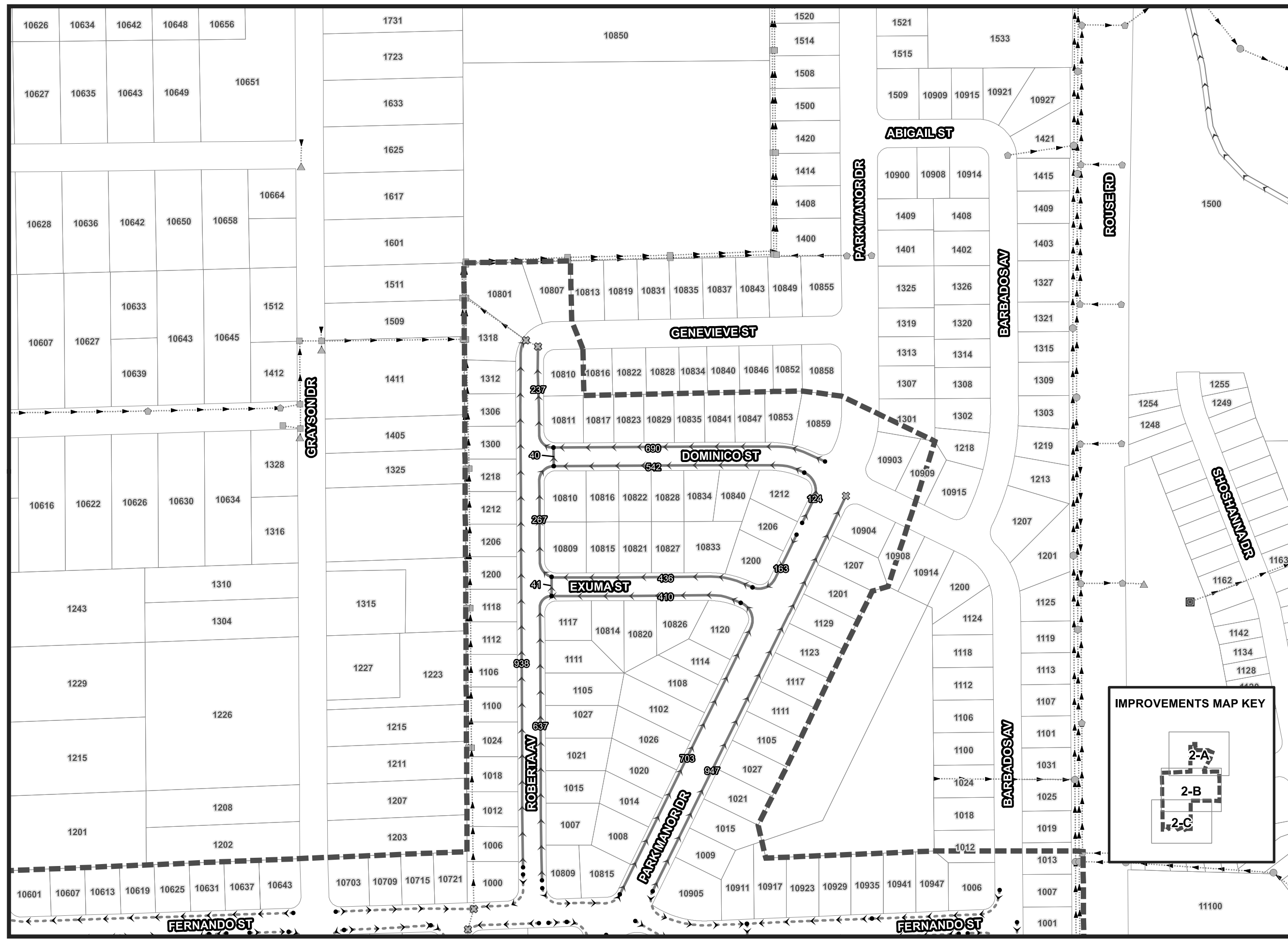
EXISTING INFRASTRUCTURE SHOWN IS APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION, ANY DISCREPANCIES SHALL BE BROUGHT TO THE COUNTY'S ATTENTION IMMEDIATELY.



DATA SOURCES:  
 STREETS: ORANGE COUNTY, 2015  
 PARCELS: ORANGE COUNTY, 2016  
 STRUCTURES: VARIOUS SOURCES



**SHEET 2-A**  
**UNDERDRAIN**  
**IMPROVEMENTS**  
**PARK MANOR**  
**ESTATES**  
**SECTIONS 1-8**  
**UNDERDRAIN**  
**IMPROVEMENTS**



LEGEND

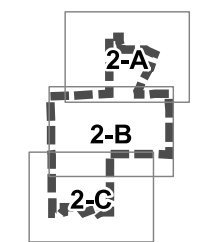
- PROJECT AREA
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- UNDERDRAIN BEGIN/END DIMENSION
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- ### PARCEL STREET NUMBER
- CHANNELS
- STORM PIPE

EXISTING INFRASTRUCTURE SHOWN IS APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION, ANY DISCREPANCIES SHALL BE BROUGHT TO THE COUNTY'S ATTENTION IMMEDIATELY.



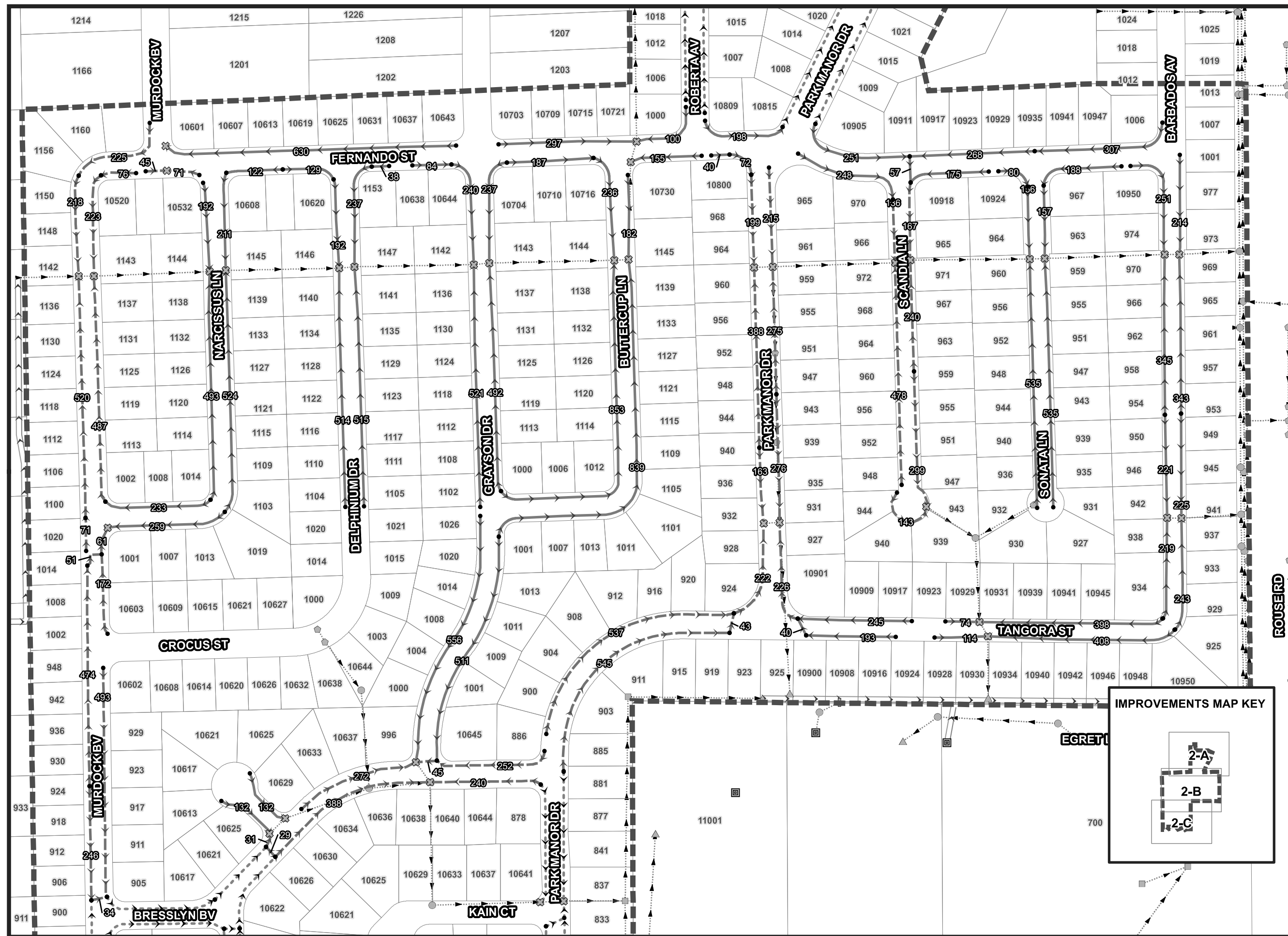
DATA SOURCES:  
STREETS: ORANGE COUNTY, 2015  
PARCELS: ORANGE COUNTY, 2016  
STRUCTURES: VARIOUS SOURCES

IMPROVEMENTS MAP KEY



**SHEET 2-B**  
**UNDERDRAIN**  
**IMPROVEMENTS**

**PARK MANOR**  
**ESTATES**  
**SECTIONS 1-8**  
**UNDERDRAIN**  
**IMPROVEMENTS**



LEGEND

- PROJECT AREA
- CONNECT TO EXISTING DRAINAGE INLET
- UNDERDRAIN BEGIN/END DIMENSION
- PROPOSED UNDERDRAIN (SEE OTHER SHEETS)
- REMOVE AND REPLACE EXISTING UNDERDRAIN
- INSTALL NEW UNDERDRAIN
- PROPOSED CONSTRUCTION LENGTH OF UNDERDRAIN
- EXISTING INFRASTRUCTURE**
- CURB INLET
- DITCH BOTTOM INLET
- HEADWALL
- MANHOLE
- MES
- POND OUTLET
- PARCELS
- ### PARCEL STREET NUMBER
- CHANNELS
- STORM PIPE

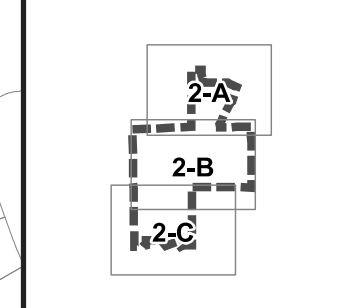
EXISTING INFRASTRUCTURE SHOWN IS APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION, ANY DISCREPANCIES SHALL BE BROUGHT TO THE COUNTY'S ATTENTION IMMEDIATELY.



0 100 200 Feet

DATA SOURCES:  
STREETS: ORANGE COUNTY, 2015  
PARCELS: ORANGE COUNTY, 2016  
STRUCTURES: VARIOUS SOURCES

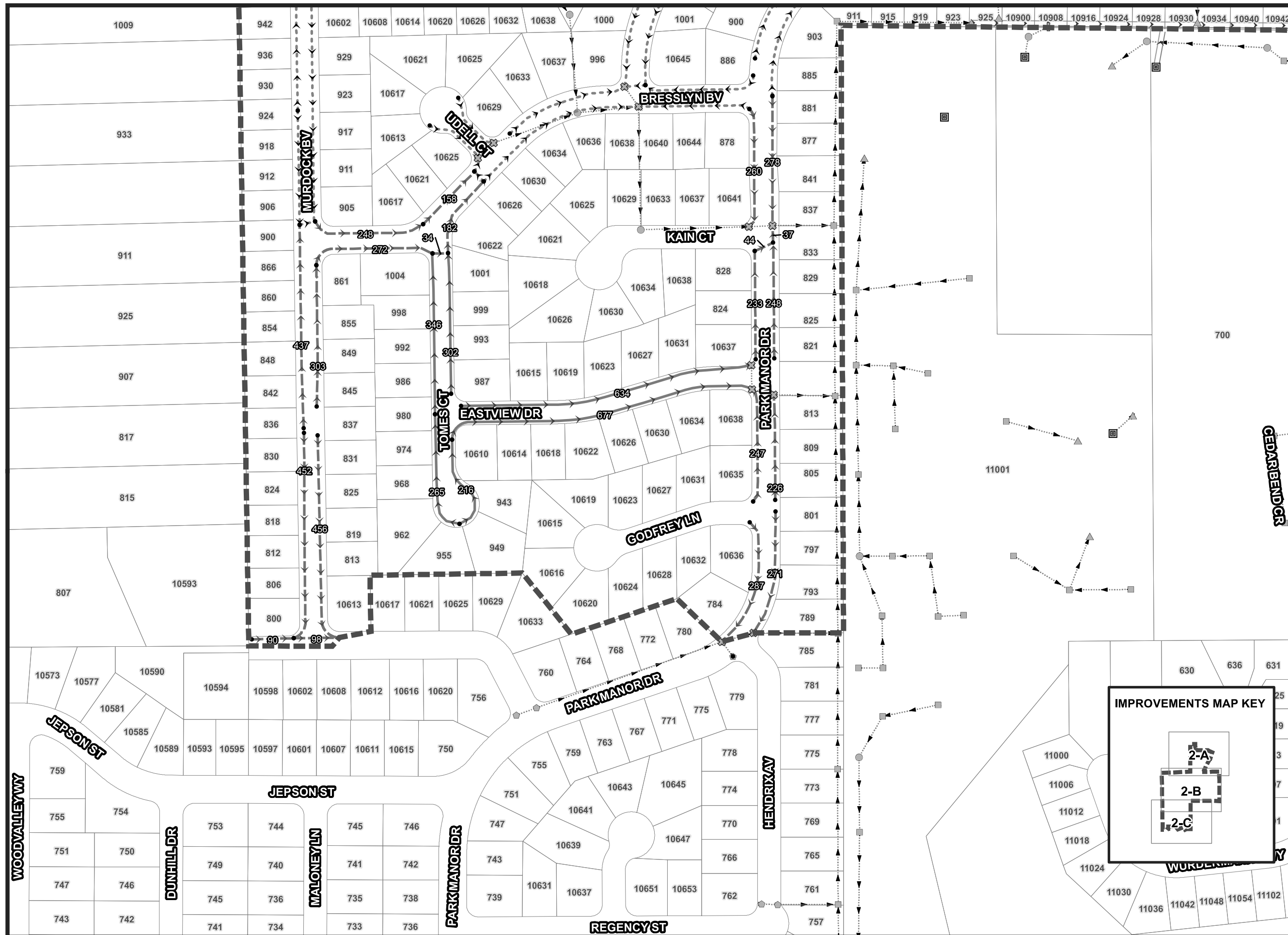
IMPROVEMENTS MAP KEY



**SHEET 2-C**  
**UNDERDRAIN IMPROVEMENTS**  
**PARK MANOR ESTATES**  
**SECTIONS 1-8**  
**UNDERDRAIN IMPROVEMENTS**



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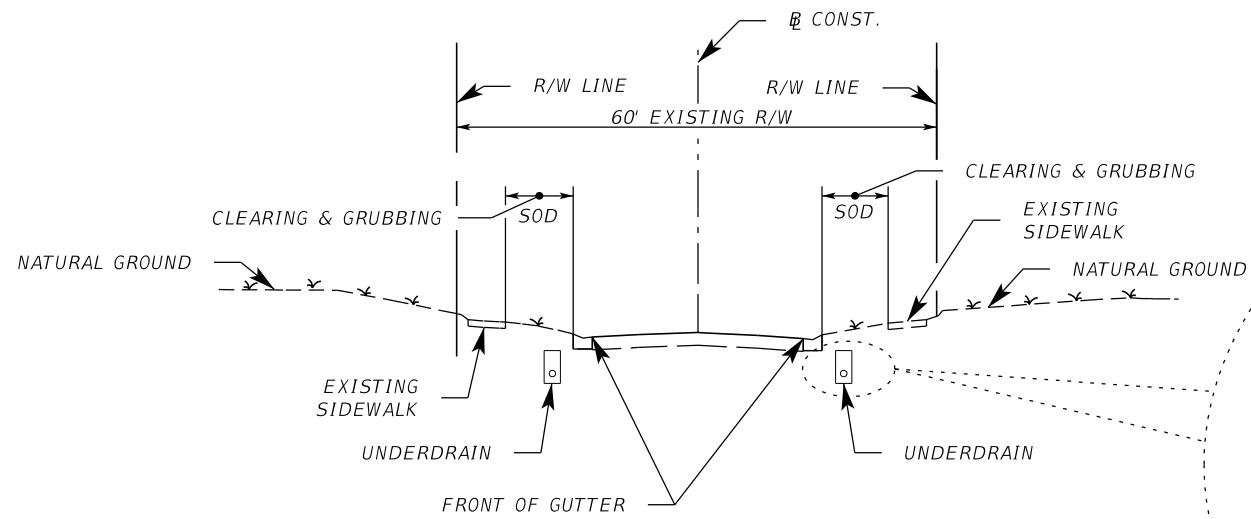


STREET	SUMMARY OF DRIVEWAY REPLACEMENT (6" THICK)		SUMMARY OF SIDEWALK REPLACEMENT (4" THICK)		SUMMARY OF UNDERDRAIN
	# OF DRIVEWAYS	AREA (SY)	# OF IMPACTED SIDEWALKS	AREA (SY)	TOTAL UNDERDRAIN LENGTH (FT)
BARBADOS AV	25	638	0	0	2,061
BRESSLYN BV	17	394	0	0	2,151
BUTTERCUP LN	22	401	1	32	2,110
DELPHINIUM DR	17	274	0	0	1,458
DOMINICO ST	14	281	0	0	1,272
EASTVIEW DR	14	312	0	0	1,311
EXUMA ST	10	203	0	0	887
FERNANDO ST	36	666	2	96	4,261
GRAYSON DR	30	542	1	32	2,557
JONATHAN DR	0	0	0	0	188
MURDOCK BV	51	992	0	0	4,480
NARCISSUS LN	21	336	0	0	1,912
PARK MANOR DR (NORTH)	41	839	0	0	3,901
PARK MANOR DR (SOUTH)	29	701	0	0	3,256
ROBERTA AV	27	506	0	0	2,079
SCANDIA LN	21	469	1	24	1,463
SONATA LN	18	853	0	0	1,383
TANGORA ST	17	348	0	0	1,472
TOMES CT	14	405	0	0	1,129
UDELL CT	0	0	0	0	264
<b>TOTALS:</b>	<b>424</b>	<b>9,159</b>	<b>5</b>	<b>184</b>	<b>39,595</b>

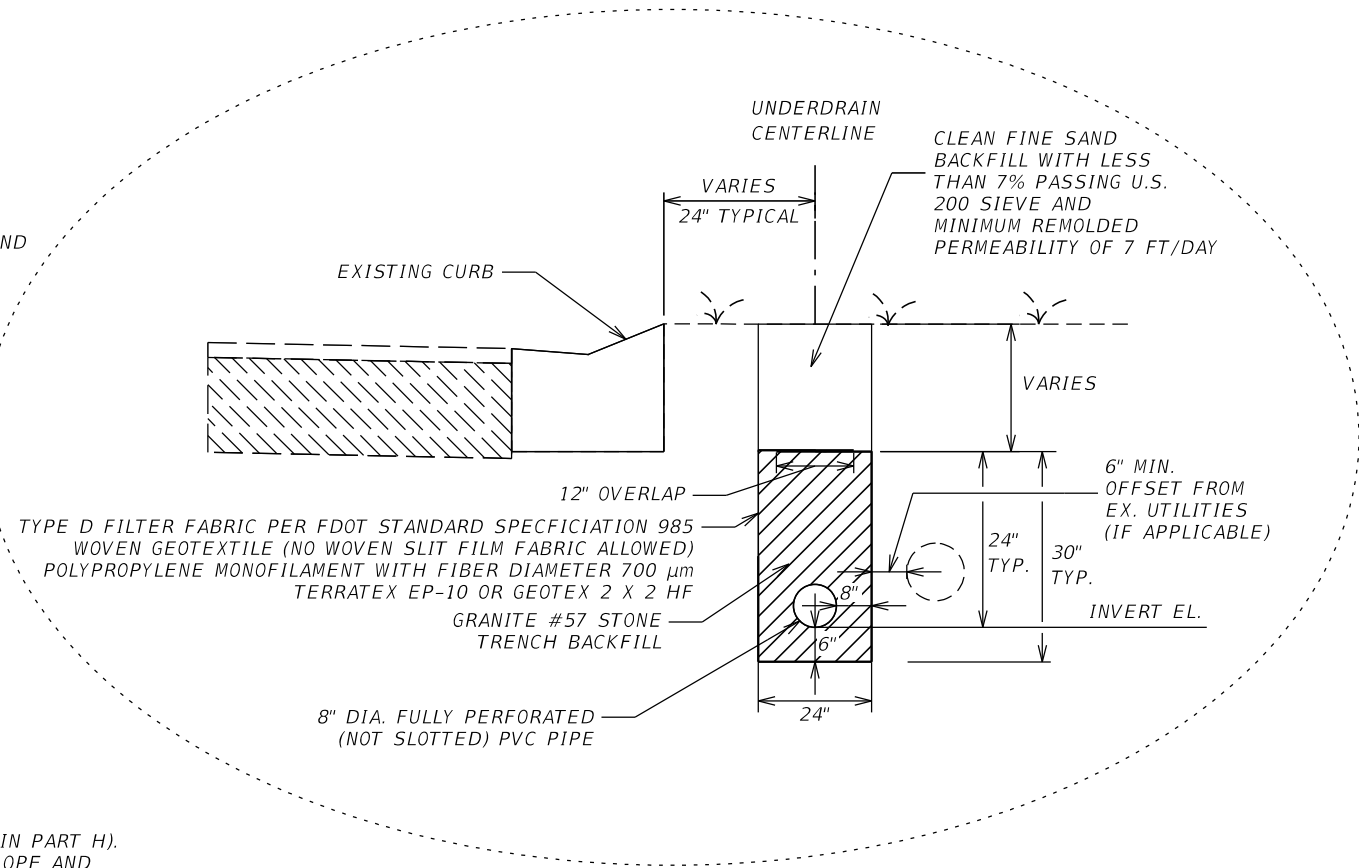
**NOTE:**

QUANTITIES ARE APPROXIMATE BASED ON 700 SERIES DESIGN LEVEL OF DETAIL AND ARE EXPECTED TO FLUCTUATE BASED ON ACTUAL FIELD CONDITIONS AND FINAL CONSTRUCTION QUANTITIES.

<p style="text-align: center;"><i>REVISIONS</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">DATE</th> <th style="width: 15%;">BY</th> <th style="width: 70%;">DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>			DATE	BY	DESCRIPTION				<p><b>PARK MANOR ESTATES</b> <b>SECTIONS 1 - 8</b> <b>UNDERDRAIN IMPROVEMENTS</b></p>	 <p><b>ORANGE COUNTY</b> <b>GOVERNMENT</b> <b>FLORIDA</b></p>	 <p><b>Inwood</b> consulting engineers</p> <p><small>Steven M. Sommerfeldt, PE 3000 Dovera Drive, Suite 200 PE No. 64074 Oviedo, Florida 32765 Certificate of Authorization No. 7074 p. 407.971.8850</small></p>	<p><b>SUMMARY OF QUANTITIES</b></p>	<p>SHEET NO. <b>3</b></p>
DATE	BY	DESCRIPTION											



**TYPICAL SECTION  
NTS**

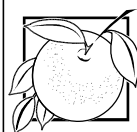


**NOTES:**

1. UNDERDRAIN DESIGN IS SPECIFIED PER RECOMMENDATIONS FROM GEOTECHNICAL REPORT (PROVIDED IN PART H).
2. OTHER DESIGN FACTORS NOT SPECIFIED ABOVE SHALL BE PER FDOT INDEX NO. 285 FOR GRAVEL ENVELOPE AND INDEX NO. 286 FOR SAND ENVELOPE.
3. UNDERDRAIN SHALL BE PLACED TO PROVIDE POSITIVE FLOW TO OUTLET LOCATION. TYPICAL GRADE ON UNDERDRAIN PIPE SHALL BE 0.2%.
4. UNDERDRAIN OUTLET PIPE SHALL BE CONSTRUCTED UNDER DRIVEWAYS AND SIDE STREETS AND FOR CONNECTIONS TO DRAINAGE STRUCTURES (PERFORATED UNDERDRAIN SHALL BE USED UNDER SIDEWALKS). MIN. 4' OF UNDERDRAIN OUTLET PIPE FOR CONNECTIONS TO DRAINAGE STRUCTURES (TYP.).
5. UNDERDRAIN LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL PROVIDE ADJUSTMENTS BASED ON FIELD CONDITIONS.
6. INSTALL SOLID PVC CLEANOUTS FOR JET CLEANING AT EVEN INTERVALS NO MORE THAN 300 FEET APART DEPENDING ON THE LENGTH OF THE UNDERDRAIN PER THE PROJECT SPECIFICATIONS.
7. CLEANOUTS ARE REQUIRED AT ALL BENDS IN THE UNDERDRAIN OUTLET PIPES.
8. SMOOTH BENDING OF THE PERFORATED PIPES SHALL BE ALLOWED FOR ALL DEFLECTION ANGLES LESS THAN 45 DEGREES PROVIDED THAT THE MINIMUM RADIUS OF CURVATURE IS SIX (6) TIMES THE OUTER DIAMETER (OD) OF THE PIPES.
9. CLEANOUTS ARE REQUIRED FOR ALL DEFLECTION ANGLES GREATER THAN 45 DEGREES ALONG THE PERFORATED PIPES.
10. CLEANOUTS SHALL BE CONSTRUCTED PER FDOT INDEX 286, THE PROJECT SPECIFICATIONS AND GUIDELINES FROM THE GEOTECHNICAL REPORT.
11. CONTRACTOR SHALL ADJUST UNDERDRAIN VERTICALLY PAST UTILITIES TO AVOID CONFLICTS.
12. CONTRACTOR SHALL COORDINATE THE REMOVAL OF LANDSCAPING PLANTS WITHIN THE RIGHT OF WAY WITH THE COUNTY.
13. UNDERDRAIN SHALL BE CONSTRUCTED WITHIN THE ORANGE COUNTY RIGHT-OF-WAY.
14. UNDERDRAIN INVERT SHALL BE PLACED A MINIMUM OF 30 INCHES BELOW THE TOP OF PAVEMENT AT THE CURB LINE PER RECOMMENDATIONS FROM GEOTECHNICAL REPORT (PROVIDED IN PART H).

REVISIONS		
DATE	BY	DESCRIPTION

**PARK MANOR ESTATES  
SECTIONS 1 - 8  
UNDERDRAIN IMPROVEMENTS**



**ORANGE COUNTY  
GOVERNMENT  
FLORIDA**



Steven M. Sommerfeldt, PE 3000 Dovera Drive, Suite 200  
PE No. 64074 Oviedo, Florida 32765  
Certificate of Authorization No. 7074 p 407.971.8850

**UNDERDRAIN  
TYPICAL SECTION**

SHEET  
NO.

4

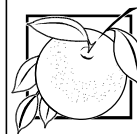


GENERAL NOTES:

1. ALL PERSONAL PROPERTY, WITHIN THE DRAINAGE EASEMENTS AND RIGHTS-OF-WAY NOT RELOCATED BY THE PROPERTY OWNER SHALL BE RELOCATED BY THE CONTRACTOR AS NECESSARY TO CONSTRUCT THE PROJECT IN ACCORDANCE WITH THE PLANS. PAYMENT WILL BE INCLUDED IN CLEARING AND GRUBBING.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO THE TURF, CURBS, MAILBOXES, SIGN POSTS AND BASES, DELINEATOR POSTS, FENCES (INCLUDING ELECTRONIC), GUY-WIRES, LANDSCAPED AREAS, SPRINKLERS, PRIVATE DRAINS, PAVEMENT ASPHALT (ASPHALT REPAIRS SHALL FOLLOW FDOT SPECIFICATIONS OR AS OTHERWISE INSTRUCTED BY THE COUNTY'S REPRESENTATIVE), ETC. THAT ARE NOT INCLUDED AS PART OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING IT TO ITS ORIGINAL CONDITION AND/OR REPLACEMENT THEREOF, PRIOR TO THE END OF THE PROJECT. RUT DAMAGED AREAS SHALL BE CUT-OUT, BACKFILLED WITH CLEAN FILL DIRT AND APPROPRIATE SOD SHALL BE PUT BACK. DISTURBED AREAS THAT ARE MORE THAN 4-INCHES WIDE SHALL BE RESTORED TO ORIGINAL CONDITION BY REMOVING 1-FOOT ALONG THE AREA AND RE-SODDING WITH ADEQUATE IN-KIND SOD. SODDED AREAS SHALL BE MAINTAINED AS SPECIFIED HEREIN. ALL DISTURBED LOCATIONS LESS THAN 4-INCHES WIDE ALONG SIDEWALKS SHALL BE BACKFILLED WITH CLEAN BLACK FILL DIRT. NO ADDITIONAL COMPENSATION WILL BE PROVIDED TO THE CONTRACTOR FOR REPAIRS TO DAMAGES AS SPECIFIED ABOVE. THE SOD SHALL BE WATERED FOR A MINIMUM OF THIRTY (30) DAYS AFTER INSTALLATION TO ENSURE A HEALTHY CONDITION AFTER CONSTRUCTION IS COMPLETED. FINAL INSPECTION MUST REVEAL A WELL-ESTABLISHED STAND AND ROOT SYSTEM. IF SOD HAS NOT ESTABLISHED ITSELF AT THE END OF THIS PERIOD THE CONTRACTOR SHALL REPLACE IT AT NO ADDITIONAL COST TO THE COUNTY.
3. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR MAINTAINING IN GOOD CONDITION ALL CULTIVATED GRASS PLOTS, TREES AND SHRUBS AFFECTED BY THE WORK. THE CONTRACTOR SHALL RESTORE TO ITS ORIGINAL CONDITION, ALL MAINTAINED SHRUBBERY AND GRASS STRIPS THAT ARE REMOVED OR DESTROYED DUE TO CONSTRUCTION OPERATIONS. WITH PRIOR COUNTY APPROVAL, ALL EXISTING TREES OR TREE LIMBS INTERFERING WITH INSTALLATION, WITHIN THE RIGHT-OF-WAY, ARE TO BE NEATLY TRIMMED OR REMOVED BY THE CONTRACTOR PRIOR TO THE INSTALLATION OF THE UNDERDRAIN. ALL DISTURBED AREAS SHALL BE SODDED TO MATCH EXISTING SOD AND OF THE SAME TYPE UNLESS OTHERWISE DIRECTED BY THE COUNTY REPRESENTATIVE. SOD PLACED ADJACENT TO THE ROAD SHALL BE PLACED ONE (1) INCH BELOW THE TOP OF THE ROAD SURFACE. COST TO BE INCLUDED IN CONTRACT UNIT PRICE FOR SOD.
4. INSTALL TOPSOIL TREATMENT ON ALL PERMANENT GRASS AREAS. COST TO BE INCLUDED IN CONTRACT UNIT PRICE FOR SOD.
5. PEGGED SOD TO BE PLACED ON ALL SLOPES 1:3 OR STEEPER.
6. THE CONTRACTOR SHALL DISPOSE OF DEBRIS ONLY IN A COUNTY APPROVED LANDFILL IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL RULES AND REGULATIONS IN EFFECT AT THE TIME OF DISPOSAL. COST INVOLVED WITH THE DISPOSAL OF THE DEBRIS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DISPOSAL OF ALL UNSUITABLE MATERIAL DURING THE INSTALLATION OF THE UNDERDRAIN. THE COUNTY MAY REQUEST RECEIPTS AT ANY TIME DURING THE CONTRACT SHOWING THE LOCATION OF THE DISPOSAL SITES FOR REMOVED MATERIAL.
8. THE CONTRACTOR SHALL KEEP THE WORK AREA FREE FROM ACCUMULATIONS OF WASTE MATERIALS, RUBBISH AND DEBRIS. ALL TOOLS, CONSTRUCTION EQUIPMENT AND MACHINERY, AND SURPLUS MATERIALS SHALL BE KEPT UNDER CONTROL, AND SHALL LEAVE THE WORK SITE CLEAN AND READY FOR OCCUPANCY BY THE COUNTY. ALL APPLICABLE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S REGULATIONS SHALL BE FOLLOWED AT ALL TIMES.
9. INLET OPENINGS SHALL BE KEPT FREE FROM THE DEBRIS GENERATED DURING OPERATIONS. THE CONTRACTOR SHALL USE BETTER MANAGEMENT PRACTICE (BMP'S) AND MUST BE PLACED IN FRONT OF ALL INLET OPENINGS WITHIN THE WORK ZONE. THESE AREAS SHALL BE MAINTAINED ON A DAILY BASIS. CONCRETE SHALL NOT BE WASHED INTO DRAINS OR STORM DRAIN INLETS AT ANY TIME. FAILURE TO ADHERE TO THIS SHALL RESULT IN A REQUEST TO JET OUT AFFECTED PIPES AND DRAINS AT CONTRACTOR'S EXPENSE OR REIMBURSING THE COUNTY FOR THE CLEAN-UP EFFORT CARRIED OUT BY COUNTY PERSONNEL.
10. THE CONTRACTOR SHALL RESTORE TO THE ORIGINAL CONDITION THOSE PORTIONS OF THE WORK SITE NOT DESIGNATED FOR ALTERATION BY THE CONTRACT DOCUMENTS AT NO ADDITIONAL COST TO THE COUNTY.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION, AND FOR NOTIFYING THE VARIOUS UTILITY COMPANIES TO MAKE THE NECESSARY ARRANGEMENTS FOR ANY RELOCATION, DISRUPTION OF SERVICE, OR CLARIFICATION OF UTILITY ACTIVITY. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING A UTILITY, WHETHER UNDERGROUND OR OVERHEAD, WHETHER SHOWN ON THESE PLANS OR FIELD LOCATED. UTILITIES WHICH INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE RELOCATED BY THE RESPECTIVE UTILITY COMPANY. THE CONTRACTOR SHALL COOPERATE WITH THE UTILITY COMPANY DURING THE REMOVAL AND RELOCATION OPERATIONS, IN ORDER THAT THESE OPERATIONS MAY PROGRESS IN A REASONABLE MANNER AND THAT SERVICE RENDERED BY THESE PARTIES WILL NOT BE INTERRUPTED. ANY DELAY OR INCONVENIENCE BY THE VARIOUS UTILITIES SHALL BE INCIDENTAL TO THE CONTRACT.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATES OF UTILITIES PRIOR TO STARTING OPERATIONS. TICKETS SHALL BE KEPT ON SITE AT ALL TIMES. THE CONTRACTOR SHALL NOTIFY RESIDENTS OF ANY DAMAGES (IRRIGATION, UTILITIES, ETC.) AND SHALL REPAIR DAMAGES IMMEDIATELY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIRS FOR A PERIOD OF SIX (6) MONTHS AFTER ACCEPTANCE OF THE PROJECT AND WILL BE REQUIRED TO CORRECT ANY FAILURES TO REPAIRED ITEMS AND/OR DAMAGES RELATED TO SUCH REPAIRS. NO ADDITIONAL COMPENSATION WILL BE PROVIDED TO THE CONTRACTOR FOR REPAIR TO DAMAGES AS SPECIFIED ABOVE.
13. PRIOR TO EXCAVATING IN THE VICINITY OF A GAS PIPELINE THE CONTRACTOR SHALL NOTIFY THE GAS UTILITY AND ORANGE COUNTY IN ACCORDANCE WITH THE REQUIREMENTS OF THE FLORIDA STATUTES, PROTECTION OF UNDERGROUND PIPELINES, F.S. 553.851, CH. 77-143.
14. THE CONTRACTOR SHALL NOTIFY UTILITIES 72 HOURS PRIOR TO EXCAVATION IN ACCORDANCE WITH THE FLORIDA UNDERGROUND FACILITIES DAMAGE PREVENTION AND SAFETY ACT, F.S. 556.101-116. THE CONTRACTOR SHALL CALL SUNSHINE STATE ONE CALL OF FLORIDA A MINIMUM OF 48 HOURS PRIOR TO THE COMMENCEMENT OF WORK. SUNSHINE STATE ONE CALL OF FLORIDA (SSOCOF): 1-800-432-4770.
15. THE CONTRACTOR SHALL COMPLY WITH FLORIDA STATUTES, CHAPTER 77-153, REGARDING NOTIFICATION OF EXISTING GAS AND OIL PIPELINE COMPANY OWNERS PRIOR TO EXCAVATING.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION CONTROL MEASURES AND ANY DEWATERING AND WATER CONTROL PROCEDURES (INCLUDING PUMPING) REQUIRED FOR SUCCESSFUL COMPLETION OF THE UNDERDRAIN INSTALLATION. DAMAGES INCURRED DUE TO THE CONSTRUCTION OF THE UNDERDRAIN AND RELATED WORK SHALL BE RESTORED TO ITS ORIGINAL CONDITION OR BETTER BY THE CONTRACTOR AT NO COST TO THE COUNTY.
17. ANY DAMAGE TO CURBS, OTHER CONCRETE STRUCTURES AND ROADS RESULTING FROM THE CONTRACTOR'S OPERATIONS AND THAT ARE NOT DESIGNATED TO BE WITHIN THE SCOPE OF WORK AS PART OF THE UNDERDRAIN INSTALLATION SHALL BE REPLACED, NOT PATCHED OR REPAIRED, BY THE CONTRACTOR AT NO COST TO THE COUNTY. SUCH DAMAGED AREAS SHALL BE REPLACED IN ACCORDANCE WITH ORANGE COUNTY AND FDOT SPECIFICATIONS, UNLESS OTHERWISE SPECIFIED IN THIS CONTRACT OR WHERE AUTHORIZED BY THE COUNTY'S REPRESENTATIVE.
18. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE INSPECTION OF OPEN TRENCHES, UNDERDRAIN, PANELS, CURBS, AND OTHER WORK PRIOR TO BACKFILLING, POURING CONCRETE, AND RELATED ACTIVITIES FOR COMPLIANCE WITH REQUIRED DEPTH, WIDTH, THICKNESS, ROOT/DEBRIS REMOVAL, PROPER FRAMING, ETC. UNDERDRAIN SHALL BE BUILT IN STRICT COMPLIANCE WITH CONTRACT SPECIFICATIONS. ALL CONCRETE MUST BE POURED AT A UNIFORM THICKNESS AS SPECIFIED BY THE COUNTY'S REPRESENTATIVE (NO UNDER TOLERANCES WILL BE ALLOWED). THE CONTRACTOR WILL BE RESPONSIBLE FOR REMOVAL OF WORK DETERMINED NOT TO BE IN COMPLIANCE WITH THESE REQUIREMENTS AT NO COST TO THE COUNTY.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREVENTION, CONTROL, AND ABATEMENT OF EROSION AND WATER POLLUTION. ALL ROADWAYS, DRIVEWAYS ETC., MUST BE KEPT CLEAN AND HAZARD FREE AT ALL TIMES. ROADWAYS MUST BE SWEEPED DAILY TO ENSURE THE SAFETY OF THE MOTORING PUBLIC AND PROTECT EXISTING DRAINAGE SYSTEMS.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY TESTING AND DENSITIES REQUIRED AS PER ORANGE COUNTY AND FDOT SPECIFICATIONS AT NO COST TO THE COUNTY.
21. THE CONTRACTOR SHALL FURNISH NECESSARY EQUIPMENT TO SATISFACTORILY PERFORM THE WORK REQUIRED UNDER THIS CONTRACT. THE CONTRACTOR SHALL ENSURE ALL EQUIPMENT USED IN THE PERFORMANCE OF THE CONTRACT ON COUNTY PROPERTY IS IN GOOD SAFE WORKING ORDER AND PROPERLY MAINTAINED IN ORDER TO PROTECT THE OPERATOR AND THE PUBLIC. ALL EQUIPMENT ONSITE (INCLUDING PICKUP TRUCKS) SHALL BE IDENTIFIED WITH THE COMPANY LOGO. LEASED EQUIPMENT SHALL HAVE MAGNETIC SIGNS.
22. ALL EQUIPMENT USED BY THE CONTRACTOR IS SUBJECT TO INSPECTION BY THE COUNTY'S REPRESENTATIVE. ANY EQUIPMENT ON SITE, WHICH IS DEEMED BY THE COUNTY'S REPRESENTATIVE TO BE INOPERABLE, UNSAFE, OR IMPROPER FOR DESIRED USE, MUST BE REMOVED FROM THE PREMISES BY THE CONTRACTOR AT HIS/HER EXPENSE THE SAME DAY OF THE COUNTY'S DETERMINATION.
23. THE CONTRACTOR IS REQUIRED TO USE AMBER FLASHING LIGHTS, BACK-UP ALARMS, ETC. ON ALL EQUIPMENT AND HIS/HER EMPLOYEES MUST BE PROVIDED WITH THE REQUIRED PERSONNEL PROTECTIVE EQUIPMENT AS REQUIRED BY O.S.H.A. AND THE COUNTY.
24. EQUIPMENT AUTHORIZED BY THE COUNTY TO BE LEFT ON THE RIGHT-OF-WAY OR COUNTY PROPERTY AFTER DESIGNATED WORK HOURS SHALL BE PLACED OUTSIDE THE CLEAR AND RECOVERY AREA AND SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. IF EQUIPMENT IS LEFT ON THE RIGHT-OF-WAY, IT SHALL BE MARKED WITH BARRICADES WITH APPROVED STEADY BURNING AMBER LIGHTS.
25. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT CROSS SLOPE AND POSITIVE DRAINAGE IS MAINTAINED AT ALL TIMES DURING OPEN CUT RESTORATION. AREAS DETERMINED NOT TO BE IN COMPLIANCE WITH THIS REQUIREMENT SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT NO COST TO THE COUNTY.
26. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH AND CONFORM TO THE MOST STRINGENT REQUIREMENTS OF THE PROJECT SPECIFICATIONS, THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (2016), FDOT DESIGN STANDARDS (2016), AND SUPPLEMENTS THERETO, AND ORANGE COUNTY ROAD CONSTRUCTION SPECIFICATIONS.
27. PUBLIC LAND CORNERS WITHIN THE LIMITS OF CONSTRUCTION SHALL BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING DESTROYED OR DISTURBED, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER AND THE COUNTY SURVEYOR, WITHOUT DELAY, BY TELEPHONE 407-836-7940. THE CONTRACTOR SHALL PROVIDE WRITTEN FOLLOW UP CONFIRMATION WITHIN 48 HOURS OF TELEPHONE NOTIFICATION.
28. ANY U.S.C. AND G.S. MONUMENTS WITHIN THE LIMITS OF CONSTRUCTION SHALL BE PROTECTED. IF IN DANGER OF DAMAGE, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER, AND BOTH SHALL NOTIFY:  
  
STATE GEODETIC ADVISOR  
c/o FDEP, BUREAU OF SURVEY AND MAPPING  
3900 COMMONWEALTH BLVD., MS 105  
TALLAHASSEE, FL 32399-300  
PHONE 850-245-2606  
FAX 850-245-2645
29. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING TEMPORARY DRAINAGE AND MAINTENANCE OF ALL EXISTING RUNOFF DISCHARGES DURING CONSTRUCTION TO AVOID THE TRANSPORT OF SEDIMENT AND ERODIBLE SOILS UNTIL THE WORK HAS BEEN ACCEPTED BY THE COUNTY.
30. THE CONTRACTOR SHALL BE RESPONSIBLE FOR A STAGING AREA (APPROVED BY THE ENGINEER) TO STORE EQUIPMENT, SUPPLIES, & MATERIALS, PROVIDE EMPLOYEE PARKING, AND ETC. FOR THE DURATION OF CONSTRUCTION. THE USE OF EXISTING COUNTY EASEMENTS AND RIGHT OF WAY SHOULD BE REQUESTED IN WRITING TO THE COUNTY FOR APPROVAL. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO KEEP THE HOA INFORMED IN REGARDS TO STAGING AREAS, PROJECT DURATION AND REMOVAL OR REPLACEMENT OF FENCE.

REVISIONS		
DATE	BY	DESCRIPTION

**PARK MANOR ESTATES  
SECTIONS 1 - 8  
UNDERDRAIN IMPROVEMENTS**



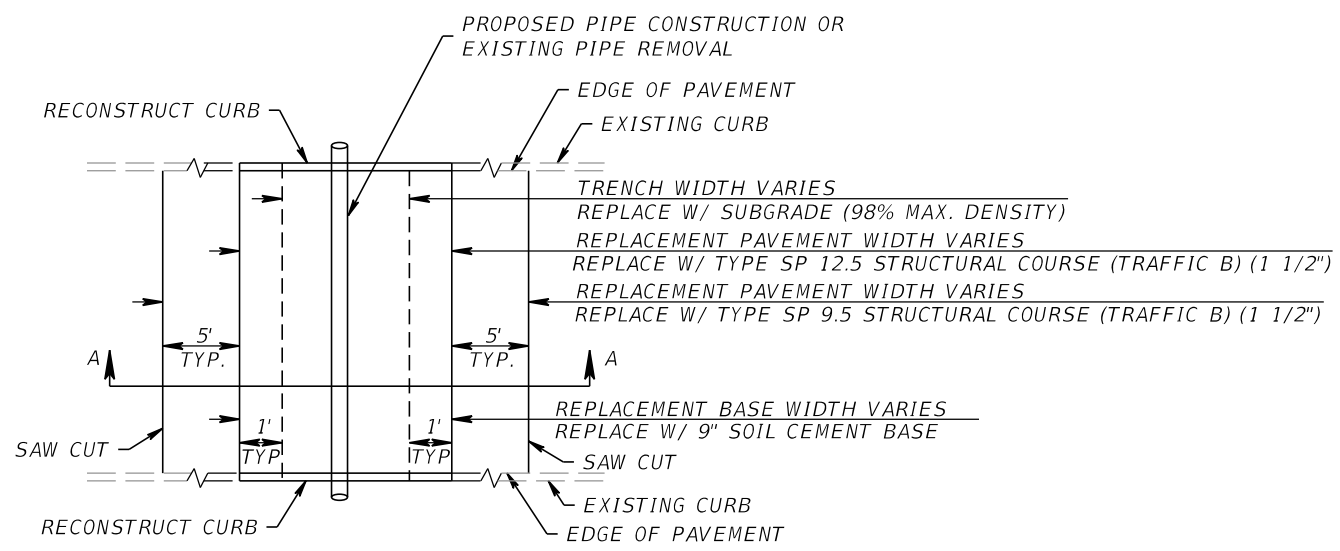
**ORANGE COUNTY  
GOVERNMENT  
FLORIDA**



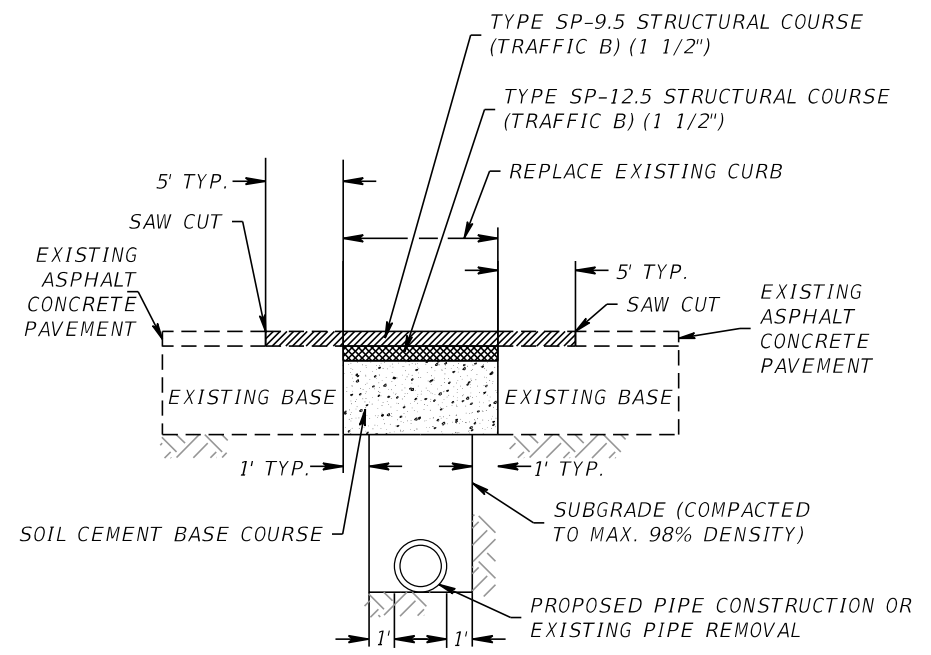
Steven M. Sommerfeldt, PE 3000 Dovera Drive, Suite 200  
PE No. 64074 Oviedo, Florida 32765  
Certificate of Authorization No. 7074 p 407.971.8850

**GENERAL NOTES**

SHEET  
NO.  
  
5



PLAN VIEW






STANDARD ROADWAY OPEN CUT CROSS SECTION DETAIL  
FINAL RESTORATION - TYPICAL OF OPEN CUTS  
NTS

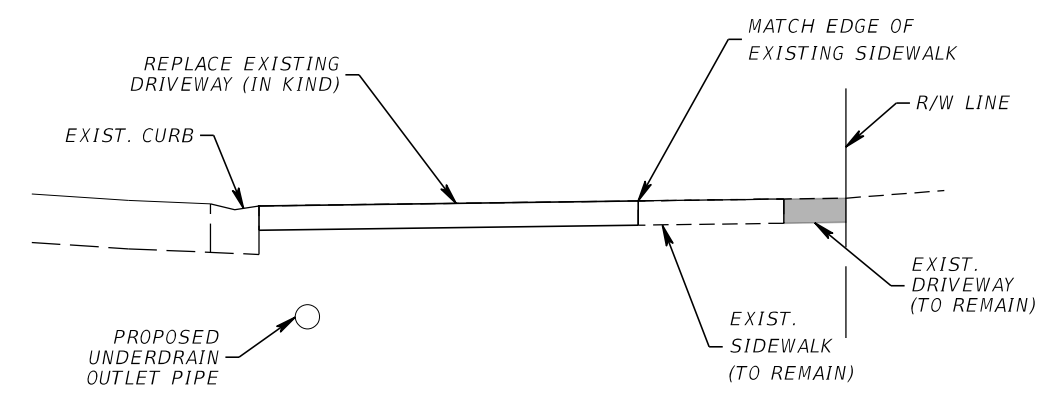
GENERAL NOTES:

1. BASE REPLACEMENT SHALL BE SOIL CEMENT BASE COURSE.
2. ASPHALTIC CONCRETE SURFACE MATERIAL SHALL BE REPLACED WITH WHAT IS SHOWN IN THE PLANS FOR NEW RECONST. OR AS APPROVED BY THE COUNTY ENGINEER.
3. ALL JOINT CUTS SHALL BE MECHANICALLY SAW CUT.

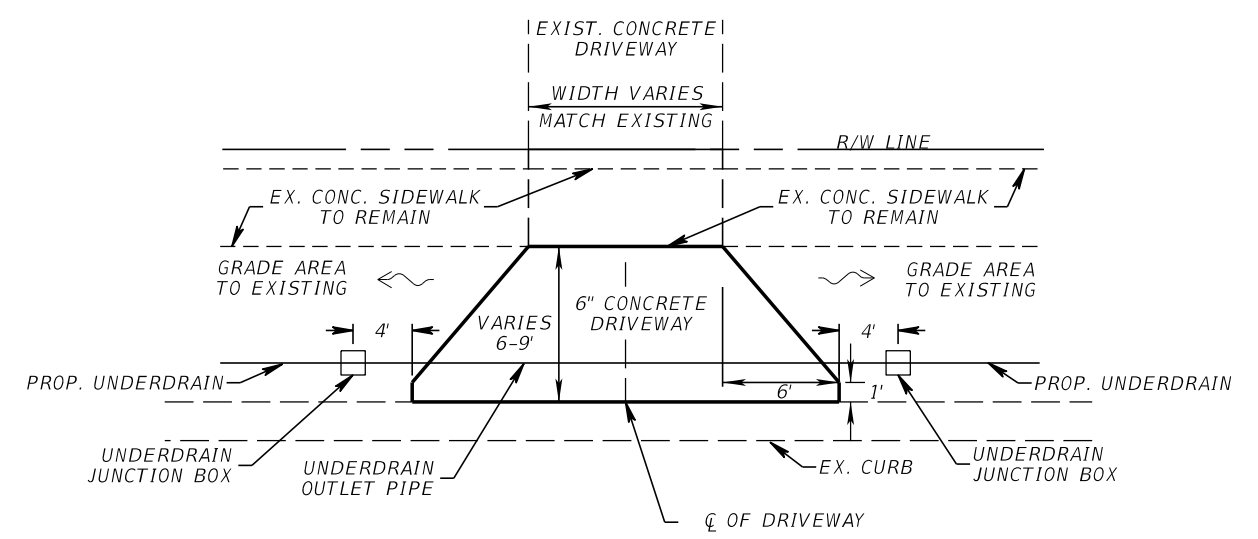
NOTE:

SUB-GRADE CUT TO BE COMPACTED TO 98% MAX. DENSITY AS DETERMINED BY AASHTO T - 180. CUT AREA TO BE PLATED OR PROTECTED ON DAY OF POUR. EXISTING SURFACE TO BE SAW CUT TO AN AREA FIVE (5) FEET, BEYOND THE BASE CUT.

-  9" SOIL CEMENT BASE COURSE
-  TYPE SP-9.5 (TRAFFIC B) (1 1/2")
-  TYPE SP-12.5 (TRAFFIC B) (1 1/2")



DRIVEWAY SECTIONS  
NTS



CONCRETE DRIVEWAY TYPICAL  
NTS

DRIVEWAY NOTES:

1. THE CONTRACTOR SHALL SAW CUT AND REMOVE THE EXISTING DRIVEWAY FROM THE FRONT OF THE EXISTING SIDEWALK TO THE EXISTING CURB.
2. SURFACE SPECIFICATIONS: CONCRETE DRIVEWAY SHALL BE A MINIMUM OF 6" THICK, 3000 PSI CONCRETE INCORPORATING A FLARE AS SHOWN IN THE PLAN VIEW.
3. RIGHT OF WAY RESTORATION REQUIREMENT: AS GOOD OR BETTER THAN CONDITION PRIOR TO CONSTRUCTION (INCLUDES ADJACENT AREAS).
4. COST OF DRIVEWAY RESTORATION IS INCLUDED IN PAY ITEM 522-2 SIDEWALK CONCRETE, 6" THICK (FOR DRIVEWAY REPLACEMENT).
5. ANY SIDEWALK TO BE REPLACED WITHIN DRIVEWAY LIMITS SHALL BE 6" THICK CONCRETE.

REVISIONS		
DATE	BY	DESCRIPTION

**PARK MANOR ESTATES**  
**SECTIONS 1 - 8**  
**UNDERDRAIN IMPROVEMENTS**



**Inwood**  
consulting engineers  
Steven M. Sommerfeldt, PE 3000 Dovera Drive, Suite 200  
PE No. 64074 Oviedo, Florida 32765  
Certificate of Authorization No. 7074 p 407.971.8850

**MISCELLANEOUS DETAILS**

SHEET NO.  
6