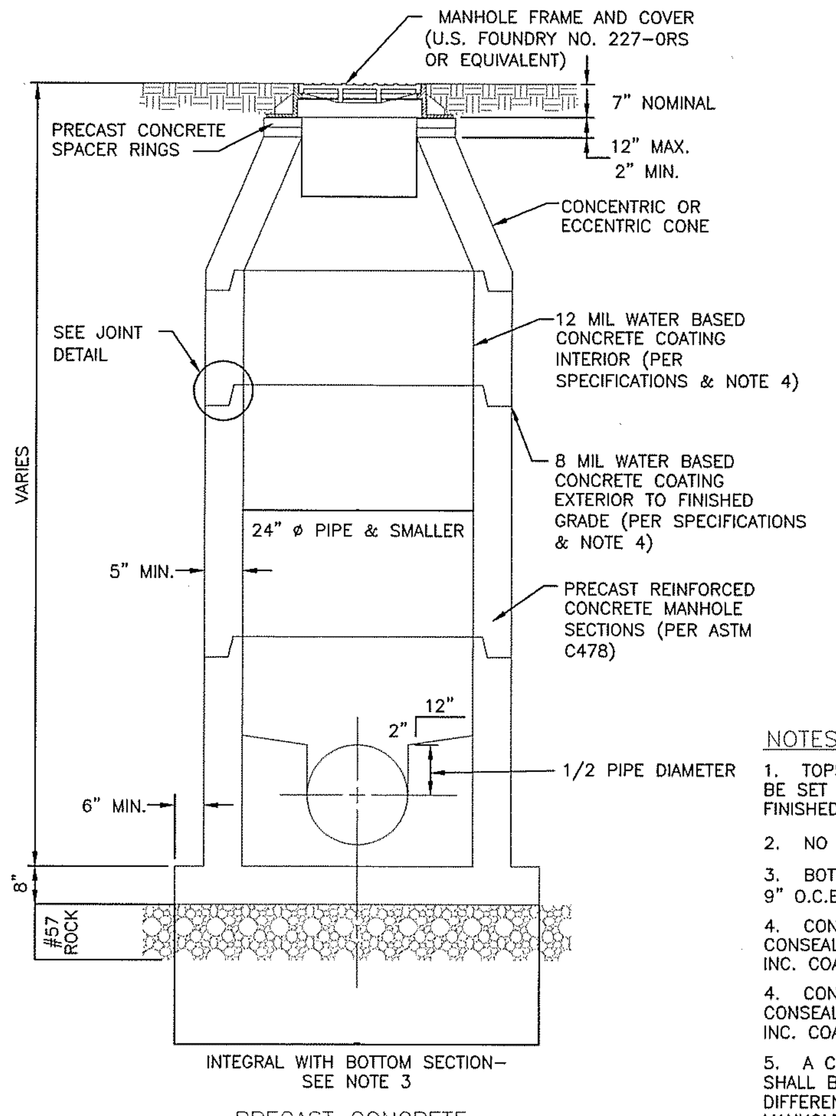
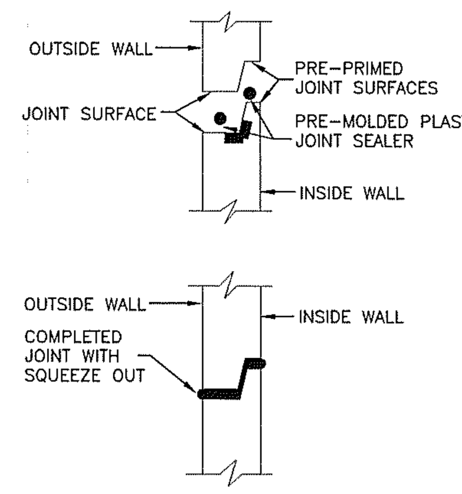
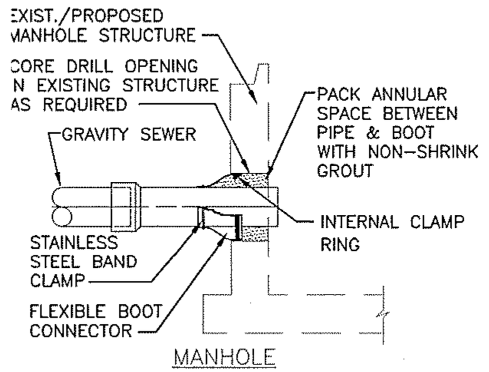


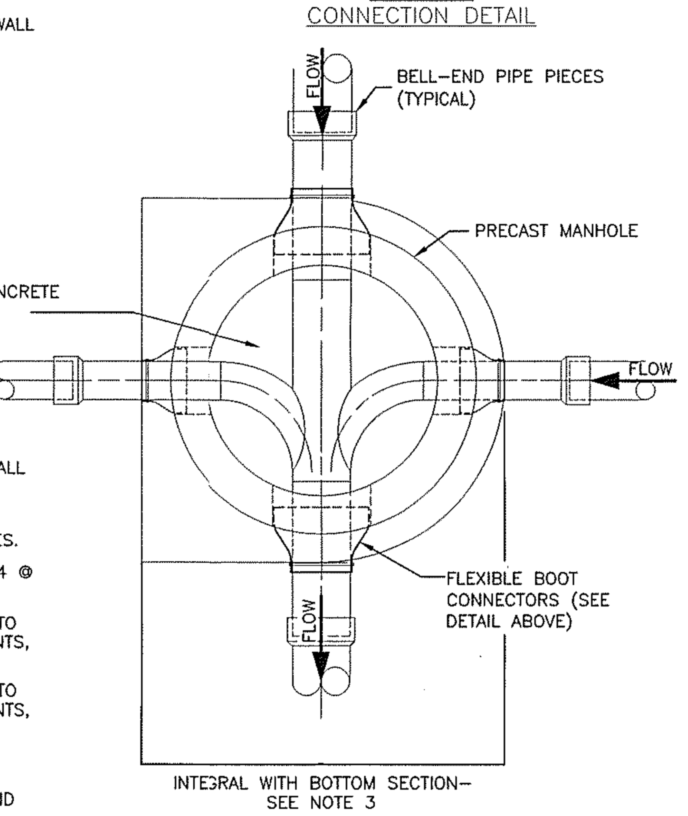
PRECAST CONCRETE MANHOLE (CONCENTRIC)



JOINT DETAIL
PRECAST SECTIONS



MANHOLE CONNECTION DETAIL



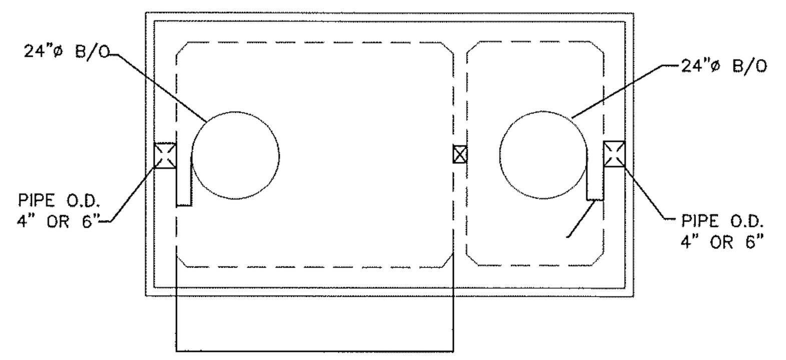
TYPICAL MANHOLE PLAN

NOTES:

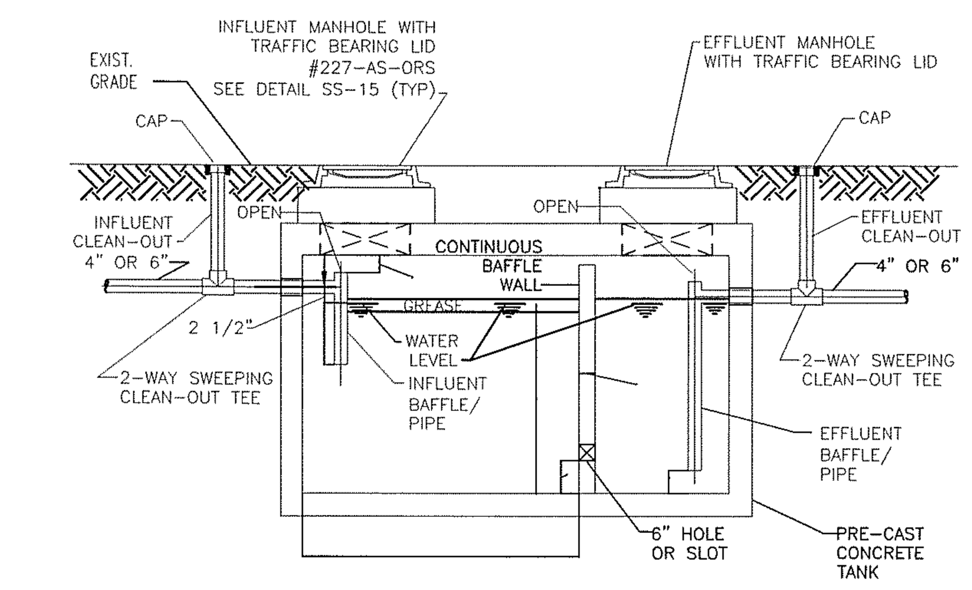
1. TOPS OF MANHOLE FRAME AND COVERS SHALL BE SET TO THE FINISHED ROADWAY ELEVATION, FINISHED GRADE OR AS OTHER-WISE NOTED.
2. NO PENETRATING HOLES THROUGH MANHOLES.
3. BOTTOM SLAB REINFORCEMENT SHALL BE #4 @ 9" O.C.E.W.
4. CONCRETE COATING SHALL BE EQUIVALENT TO CONSEAL CS-55 AS MFD. BY CONCRETE SEALANTS, INC. COATING SHALL BE GRAY.
4. CONCRETE COATING SHALL BE EQUIVALENT TO CONSEAL CS-55 AS MFD. BY CONCRETE SEALANTS, INC. COATING SHALL BE GRAY.
5. A CONCRETE FILLET, SLIDE OR PVC FLUME SHALL BE PROVIDED WITHIN THE MANHOLE FOR DIFFERENCES BETWEEN THE INFLUENT SEWER AND MANHOLE INVERT OF 23 INCHES OR LESS.

STANDARD MANHOLE DETAIL
FIG. SS-8

2



PLAN VIEW



SECTION VIEW

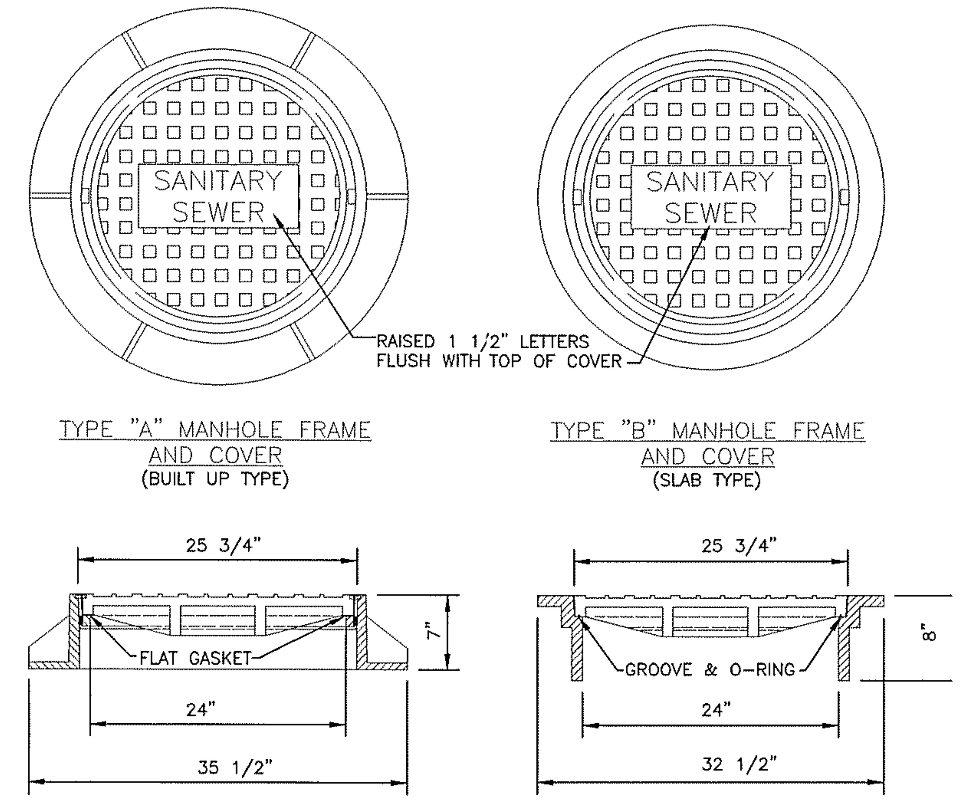
GREASE INTERCEPTOR DETAIL
FIG. SS-26

NOTES:

1. INLET INVERTS SHALL ENTER THE TANK A MINIMUM OF 2 1/2" ABOVE THE LIQUID LEVEL LINE AND SHALL BE CONNECTED TO A TEE. THE TEE SHALL EXTEND TO 14" BELOW THE LIQUID LEVEL. INLET PIPE DIAMETER SHALL BE 4" MINIMUM.
2. THE OUTLET PIPE SHALL START AT 8 INCHES ABOVE THE TANK BOTTOM AND EXTEND VERTICALLY TO A TEE. OUTLET PIPE DIAMETER SHALL BE 4" MINIMUM.
3. MANHOLES SHALL BE PROVIDED OVER THE INLET AND THE OUTLET OF EACH INTERCEPTOR AND BE BROUGHT TO GRADE. MINIMUM SIZE OF MANHOLE OPENING SHALL BE 24"
4. TANK LID TYPE:
   A. REGULAR-FOUR INCH THICK REINFORCED CONCRETE OR APPROVED EQUIVALENT.
   B. TRAFFIC BEARING – SIX INCH THICK REINFORCED CONCRETE OR APPROVED EQUIVALENT.
5. A TWO-WAY CLEANOUT TEE, BROUGHT TO GRADE, SHALL BE INSTALLED ENTERING AND EXITING EACH GREASE INTERCEPTOR.
6. CLEANOUTS INSTALLED IN VEHICULAR TRAFFIC PAVED AREAS SHALL BE PROTECTED BY USE OF A CLEANOUT BOX WITH METAL LID.
7. WALLS SHALL BE A MINIMUM OF 3" THICK; BOTTOM SHALL BE A MINIMUM OF 4" THICK REINFORCED CONCRETE.
8. TANK SHALL BE TRAFFIC BEARING.
9. PROVIDE ENGINEER OF RECORD APPROVED DETAIL/SHOP DRAWINGS.
10. SIZE: SIZE OF GREASE INTERCEPTOR SHALL BE BASED UPON ANTICIPATED FLOW RATE, WATER TEMPERATURE AND GREASE CONCENTRATION. ADEQUATE DETENTION TIME SHALL BE PROVIDED TO ALLOW THE GREASE TO SEPARATE WITHIN THE INTERCEPTOR BEFORE ENTERING THE CITY'S WASTEWATER SYSTEM. MINIMUM TANK VOLUME SHALL BE 750 GALLONS AND THE MAXIMUM VOLUME SHALL BE 1250 GALLONS. INTERCEPTORS SHALL BE PERMITTED TO BE INSTALLED IN SERIES.
11. ALTERNATE MATERIALS AND DESIGN SHALL BE SUBMITTED FOR INDIVIDUAL APPROVAL.

GREASE INTERCEPTOR NOTES
FIG. SS-27

4



NOTES:

1. TYPE "A" & "B" NON-BOLTED WATERTIGHT RING & COVER. US FOUNDRY NO. 227-AS-ORS (TYPE "A") & U.S. FOUNDRY NO. 1295-AS-ORS (TYPE "B") OR APPROVED EQUAL.
2. MANHOLE COVERS SHALL BE LABELED AS SHOWN ABOVE.

MANHOLE FRAME & COVER DETAIL
FIG. SS-15

3

GRAVITY SANITARY SEWER GENERAL NOTES

1. ALL PIPELINE MATERIAL AND INSTALLATION SHALL CONFORM TO THE CITY OF PALM COAST STANDARDS (JANUARY, 2008), CONTRACT DOCUMENTS, TECHNICAL SPECIFICATIONS AND ALL APPLICABLE LOCAL AND STATE REQUIREMENTS.

2. THE CONTRACTOR SHALL ENSURE THAT ALL REQUIRED PERMITS ARE IN HAND BEFORE COMMENCEMENT OF CONSTRUCTION.

3. ALL UTILITY OWNERS AND SUNSHINE STATE ONE CALL (800) 432-4770 MUST BE NOTIFIED SEVENTY-TWO (72) HOURS PRIOR TO STARTING CONSTRUCTION.

4. THE CONTRACTOR SHALL NOTIFY FIBEROPTICS COMPANIES SEVEN (7) WORKING DAYS PRIOR TO ANY CONSTRUCTION ACTIVITY IN THEIR AREA. EXTREME CAUTION SHALL BE USED IN AREAS WHERE FIBEROPTIC CABLE IS LOCATED ADJACENT TO CONSTRUCTION ACTIVITY.

5. ALL PIPING AND/OR APPURTENANCES CONNECTING TO ADJACENT CONSTRUCTION SHALL BE PLUGGED IF ADJACENT WORK HAS NOT BEEN COMPLETED.

6. ALL PROPOSED DUCTILE IRON PIPE AND FITTINGS WITHIN FIFTY (50) FEET OF AN EXISTING GAS MAIN SHALL BE POLYETHYLENE ENCASED.

7. THE LOCATIONS OF EXISTING UTILITIES SHOWN ON THESE DRAWINGS HAVE BEEN DERIVED FROM EXISTING UTILITY RECORDS. ACCURACY OF THIS INFORMATION IS NOT GUARANTEED. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT LOCATION, DEPTH AND CHARACTER OF ALL UTILITIES PRIOR TO EXCAVATION IN ORDER TO PROTECT THESE UTILITIES DURING CONSTRUCTION.

8. THE CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS AT ALL INTERSECTIONS OF PROPOSED WORK AND EXISTING UTILITIES. THE EXPLORATORY EXCAVATIONS SHALL BE MADE FORTY-EIGHT (48) HOURS IN ADVANCE OF THE PROPOSED WORK. IF THERE IS A CONFLICT THE CONTRACTOR SHALL NOTIFY THE CITY OF PALM COAST IMMEDIATELY. INFORMATION ON THE OBSTRUCTION SHALL BE FURNISHED BY THE CONTRACTOR AND SHALL INCLUDE: LOCATION, ELEVATION, UTILITY TYPE, MATERIAL AND SIZE.

9. LOCATIONS AND DIMENSIONS OF EXISTING RIGHTS-OF-WAY AND EASEMENTS ARE BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL VERIFY ALL THE LIMITS OF RIGHTS-OF-WAY AND EASEMENTS IN ORDER TO AVOID ENCROACHMENTS.

10. THE CONTRACTOR SHALL REPLACE SOD 3 FEET FROM ALL DISTURBED AREAS: STRUCTURES, SIDEWALKS, ROADS, AND POND IMPROVEMENT AREAS. ALL OTHER DISTURBED AREAS SHALL BE SODDED OR SEEDED AND MULCHED AS SHOWN ON THE DRAWINGS.

11. THE CONTRACTOR SHALL REPLACE, BUT NOT BE LIMITED, TO PAVING, STABILIZED EARTH, DRIVEWAYS OR ANY ITEMS DISTURBED OR DAMAGED BY THE CONSTRUCTION OR ITS RELATED ACTIVITIES. THE CONTRACTOR SHALL REPLACE WITH EQUAL MATERIAL OR AS DIRECTED BY THE CITY OF PALM COAST.

12. THE DISPOSAL OF ANY EXCESS EARTHWORK MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

13. IT IS THE CONTRACTORS RESPONSIBILITY TO COORDINATE HIS WORK WITH THE WORK SCHEDULE OF ADJACENT CONTRACTORS AS WELL AS THE STAFF OF THE CITY OF PALM COAST.

14. THE CONTRACTOR SHALL NOTIFY THE CITY OF PALM COAST UTILITY DEPARTMENT 72 HOURS BEFORE COMMENCING WITH CONSTRUCTION.

15. WHERE MINIMUM SEPARATION BETWEEN UTILITIES IS REQUIRED, THE DISTANCE SHALL BE MEASURED FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.

16. PVC PIPE AND FITTINGS 4-INCHES THROUGH 15-INCHES SHALL CONFORM TO ASTM D3034, SDR35 OR 26.

17. PVC PIPE AND FITTINGS FITTINGS 18-INCHES THROUGH 27-INCHES SHALL CONFORM TO ASTM F679-T1, SDR 35.

18. PVC PIPE AND FITTINGS SHALL BE SOLID GREEN IN COLOR.

19. DUCTILE IRON PIPE FOR GRAVITY OR NON-PRESSURE SERVICE SHALL BE DESIGNED IN ACCORDANCE WITH AND CONFORMING TO THE REQUIREMENTS OF ASTM A746 FOR INSTALLATION WITH TRENCH TYPE II, OR IN ACCORDANCE WITH ANSI/AWWA C150/A21.50 AND ANSI/AWWA C151/A21.51.

20. DUCTILE IRON FITTINGS FOR USE IN GRAVITY OR NON-PRESSURE SERVICE SHALL CONFORM TO THE REQUIREMENTS OF ANSI/AWWA C153/A21.53, COMPACT DUCTILE IRON FITTINGS.

21. DUCTILE IRON PIPE AND FITTINGS FOR GRAVITY OR NON-PRESSURE SERVICE SHALL HAVE AN INTERIOR LINING CONSISTING OF A MINIMUM 40 MILS OF A CERAMIC EPOXY COATING. REFER TO SPECIFICATIONS FOR DETAILS.

22. ALL NEW SANITARY SEWER MAINS SHALL BE INSTALLED WITH A MIN. OF 3'-0" OF COVER, UNLESS OTHERWISE NOTED.

23. MATERIAL FOR GRAVITY SEWER PIPE AND FITTINGS SHALL BE AS SHOWN FOR THE FOLLOWING DEPTHS OF EXCAVATION:
   A. 3' TO 4': EPOXY LINED DUCTILE IRON
   B. 4' TO 12' PVC, ASTM 3034/ASTM F679, SDR 35
   C. GREATER THAN 12': PVC, ASTM 3034, SDR 26 OR EPOXY-LINED DUCTILE IRON.

24. IN AREAS WHERE CONSTRUCTION ACTIVITIES RESTRICT NORMAL ACCESS TO PROPERTIES, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALTERNATE ACCESS ROUTES WHICH ARE SUBJECT TO APPROVAL BY THE CITY OF PALM COAST.

25. ALL PRACTICAL AND NECESSARY EFFORT SHALL BE TAKEN DURING CONSTRUCTION TO PREVENT UNNECESSARY TREE REMOVAL.

26. ALL ELEVATIONS SHOWN ON THESE DRAWINGS REFER TO NATIONAL GEODETIC VERTICAL DATUM (NGVD.)

27. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL EQUIPMENT AND MATERIALS FOR APPROVAL BY THE CITY OF PALM COAST PRIOR TO PROCUREMENT.

28. THE CONTRACTOR SHALL VIDEO THE ENTIRE WORK AREA PRIOR TO COMMENCEMENT OF CONSTRUCTION. ONE COPY OF THE PRE-CONSTRUCTION VIDEO SHALL BE SUBMITTED TO THE CITY OF PALM COAST.

29. PIPE MEASUREMENTS ON THE MAIN "TRUNK" SEWER SHALL BE FROM CENTER TO CENTER OF MANHOLES OR CLEANOUTS, UNLESS OTHERWISE NOTED.

30. PIPE MEASUREMENTS FOR SERVICE LATERALS SHALL BE FROM THE MAIN "TRUNK" SEWER TO THE PROPERTY LINE. THE DEPTH OF THE LATERAL AT THE PROPERTY LINE SHALL BE MEASURED AND RECORDED ON THE RECORD DRAWINGS.

31. TESTING OF GRAVITY SEWER SYSTEMS AND MANHOLES SHALL FOLLOW THE REQUIREMENTS FOUND WITHIN THE SPECIFICATIONS.

32. CONFLICT BETWEEN WATER MAINS, STORM AND REUSE SYSTEMS AND PROPOSED SANITARY SEWER MAINS SHALL BE RESOLVED BY ADJUSTING THE PRESSURE MAINS AS NECESSARY. SEE "UTILITY SEPARATION DETAIL" AND ACCOMPANYING NOTES AS SHOWN ON THE CIVIL DETAIL (CD) SHEETS OF THE PLAN SET.

33. ALL EXCAVATIONS SHALL BE BACKFILLED AT THE END OF EACH WORK DAY.

34. FOR A SCHEDULED INTERRUPTION OF SANITARY SEWER MAIN FLOW, THE CONTRACTOR SHALL PROVIDE TO THE CITY OF PALM COAST FOR REVIEW A WRITTEN SCHEDULE AS TO THE METHOD AND DURATION OF FLOW INTERRUPTION.

35. THE CITY OF PALM COAST SHALL REVIEW THE SUBMITTAL AND SHALL INFORM THE CONTRACTOR REGARDING APPROVAL OR DENIAL OF THEIR REQUEST. IF THEIR REQUEST IS REJECTED BY THE CITY OF PALM COAST, THE CONTRACTOR MAY RESUBMIT THEIR REQUEST MODIFYING IT TO THE SATISFACTION OF THE OWNER. ALL CONNECTIONS SHALL BE MADE ONLY ON THE AGREED UPON TIME AND DATE ESTABLISHED IN THE SUBMITTAL.

36. DURING NORMAL SANITARY SEWER MAIN FLOW INTERRUPTION, THE CONTRACTOR SHALL PROVIDE UNINTERRUPTED BY-PASS FLOW AND SHALL PROVIDE ALL EQUIPMENT NECESSARY TO ACCOMPLISH THE SAME IN THE FORM OF, BUT NOT LIMITED TO, THE FOLLOWING: POWER, PUMPS, PIPING, APPURTENANT VALVES AND FITTINGS AND/OR SEPTIC TANKER TRUCK PUMPING, HAULING AND DISPOSAL SERVICES.

37. ALL BURIED UTILITY PIPES TO BE ABANDONED IN PLACE SHALL BE CUT, PLUGGED AND FILLED WITH GROUT.

38. IT IS THE INTENT OF THIS CONTRACT FOR THE CONTRACTOR TO MAINTAIN CONTINUOUS RESTORATION BEHIND THE UTILITY WORK ON A DAILY BASIS. NO MORE THAN FIFTY (50) LINEAR FEET OF UNRESTORED LINE WORK SHALL REMAIN AT THE END OF EACH WORK DAY.

FIG. SS-4

1

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PRJ. MGR: J.P.M.
DESIGNER: R.I.D.
CHECKED: T.G.L.

ENGINEER
JASON P. MAHONEY, P.E.
FL LIC. # 65183

NO.	DATE	REVISIONS
△	12-7-09	OUT-TO-BID SET

RECORD DRAWING
THIS RECORD DRAWING IS BASED ON THE RESULTS OF LIMITED PERIODIC FIELD OBSERVATIONS DURING CONSTRUCTION, A REVIEW OF CONTRACTOR FURNISHED RELINED PLANS INDICATING CHANGES INCORPORATED DURING CONSTRUCTION, AND WITNESSED UTILITY TESTING OF DRINKING WATER AND WASTEWATER SYSTEMS. ALTHOUGH THE ACCURACY CAN NOT BE GUARANTEED, THE ENGINEER BELIEVES THIS RECORD DRAWING IS CORRECT TO THE BEST OF HIS/HER KNOWLEDGE.
ENGINEER:
FL LIC. #

OUTPARCEL 6A
PALM COAST LANDING
AT
WEINGARTEN REALTY, INC.

SANITARY SEWER STANDARD DETAILS

Consulting Engineers & Surveyors

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SHEET C-15

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