PINELLAS COUNTY
STANDARD DETAILS

ROADWAY AND RELATED CONSTRUCTION:

1100  ENVIRONMENTAL
    1105: Median Soil: Composition and Depth
    1111: Tree Protection

1150  STORMWATER TREATMENT AND CONTROL

1200  DRAINAGE AND DRAINAGE STRUCTURES
    1250: Storm Sewer Cover
    1255: P.C.E.D. Curb Inlets (Types RC-3, 4 and 5)
    1260: P.C.E.D. J5 & J6 Curb Inlets
    1265: Filter Fabric Wrap and Grout at Structures
    1270: Anti-Clogging Device for Pond Outfall Control Structures
    1281: Underdrain Inspection Manhole Type 1
    1282: Underdrain Inspection Manhole Type 2
    1290: Roadside Underdrain Installation
    1291: Pavement Cuts, Excavation & Restoration

1300  CURBS, DRIVEWAYS, PAVEMENT AND SIDEWALKS
    1305: Curb and Gutter Type A and Header Curb
    1315: Valley Gutter and Transition
    1340: Concrete Driveway Apron
    1345: Residential Driveway/Sidewalk Paver Detail
    1353: Sidewalks through Existing Driveways
    1357: Guidelines for Sidewalk Alignment
    1360: P.C.E.D. Type “A” and “B” Handicap Ramp Detail
    1365: P.C.E.D. Trail Intersection Crossing Detail
    1380: Traffic Sign Installation Into Concrete

1400  BARRIERS, BARRICADED AND FENCES
    1406: Barricade with Reflectors

1500  MISCELLANEOUS

1700  TRAFFIC
    1700: Concrete Square CCTV Camera Pole
    1705: CCTV Mounting Detail
    1710: Electronic Route Marker Detail
    1720: VVDS Installation Details
    1725: Mast Arm Conduit Entrance Detail
    1730: Dynamic Message Sign
UTILITIES:

GENERAL DETAILS:
- PCU GD 1: Trench Backfill Detail (See 1291)
- PCU GD 2: Main Clearances Detail
- PCU GD 3: Tracer Wire Layout Detail
- PCU GD 3a: Tracer Wire Installation Detail
- PCU GD 4: Valve Box/Tracer Wire Installation Detail
- PCU GD 5: Concrete Valve Box and Collar Detail
- PCU GD 6: Reverse Deadman Restraint Detail
- PCU GD 7: Bollard Detail
- PCU GD 8: Jack and Bore Under Roadway Detail
- PCU GD 9: Jack and Bore Under Railway Detail
- PCU GD 10: Fusible PVC/HDPE Pipe Connections Detail
- PCU GD 10a: Fusible PVC/HDPE Pipe Connections Detail
- PCU GD 11: Pressure Main Restrained Joint Detail
- PCU GD 12: CUL-DE-SAC-Potable Water Detail
- PCU GD 13: Typical Pressure Offset Relocation Detail
- PCU GD 14: Automatic Flushing Assembly Detail

RECLAIM WATER DETAILS:
- PCU RD 1: 1" Reclaimed Service Connection (Non-metered) Detail
- PCU RD 2: 1½" or 2" Reclaimed Service Connection (Non-metered) Detail
- PCU RD 3: 1½" or 2 Metered Reclaimed Water Service Detail
- PCU RD 4: Reclaimed Water Flushing Assembly Detail
- PCU RD 5: CUL-DE-SAC Layout - Reclaimed Water Detail
- PCU RD 6: 2" Offset Air Release Assembly for Reclaimed Water (Below Ground) Detail

SANITARY SEWER DETAILS:
- PCU SD 1: Manhole Construction Notes
- PCU SD 1a: Standard Manhole (Pre-cast) Detail
- PCU SD 1b: Inside Drop Manhole Connection Detail
- PCU SD 1c: Outside Drop Manhole Connection Detail
- PCU SD 1d: Doghouse Air Release Valve Manhole Detail
- PCU SD 2: Sewer Air Release/Air Vacuum Valve in Manhole (12" Pipe or Less) Detail
- PCU SD 3: Offset Air Release Assembly for 4"-12" and Larger Sanitary Sewer (Above Ground) Detail
- PCU SD 4: Sewer Service Connection and Clean-Out Detail
- PCU SD 5: Depth Limitations of Sanitary Sewer Pipe Detail

WATER DETAILS:
- PCU WD 1: Temporary Sampling Point Detail
- PCU WD 2: 2" Permanent Water Blow-Off Detail
- PCU WD 3: ¾" or 1" Potable Water Service Connection Detail
- PCU WD 4: 1½" or 2" Potable Water Service Connection Detail
- PCU WD 5: Typical Fire Hydrant Locations Detail
- PCU WD 6: Fire Hydrant Assembly Detail
- PCU WD 7: Parallel Fire Hydrant Detail
- PCU WD 8: Water Quality Sampling Detail

PINELLAS COUNTY
STANDARD DETAILS
INDEX SHEET 2 OF 3
UTILITIES:

AIR RELEASE VALVES:
- PCU ARV 1A,1B: Air Release Vacuum Valve Matrix and Main Connection Detail
- PCU ARV 2A,2B: Air Release/Air Vacuum Valve Location Detail
- PCU ARV 3A,3B,3C: Above Grade Air release Assembly Detail
- PCU ARV 4A,4B,4C: Air Release/Air Vacuum Valve Vented/Odor Controlled Detail
NOTES:

1. 6" FINISH SOIL LAYER SHALL COMPLY WITH SECTION 162 OF F.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, CURRENT EDITION.

2. REMOVE UNSUITABLE MATERIAL (EXISTING PAVEMENTS, ROADWAY BASE, LIMEROCK, MILLINGS AND OTHER DEBRIS), TO A MAXIMUM DEPTH OF 18" BELOW FINISHED GRADE IN MEDIAN AREAS. MEDIAN FILL SOIL, FOR AREAS THAT ARE EXCAVATED, SHALL BE NATIVE SITE SOILS APPROVED BY THE ENGINEER. IN THE ABSENCE OF SUFFICIENT NATIVE SITE SOILS, REPLACEMENT FILL SHALL BE SUITABLE FOR PLANT GROWTH AND APPROVED BY THE ENGINEER. EXCAVATION AND REPLACEMENT SOIL SHALL BE INCLUDED IN PAY ITEM FOR "EXCAVATION OF UNSUITABLE MATERIAL."

3. DO NOT DISTURB EXISTING MEDIAN SOILS EXCEPT TO REMOVE EXISTING UNSUITABLE MATERIALS LISTED IN NOTE NO. 2, OR TO CONSTRUCT PROPOSED IMPROVEMENTS.

4. GROUND SURFACE ELEVATION OF MEDIAN SHALL BE AS SHOWN ON APPROVED PLANS.
1. NO TREE SHALL BE REMOVED UNLESS SPECIFICALLY TAGGED FOR REMOVAL BY THE ENGINEER.
2. THE CONTRACTOR SHALL TAKE SPECIAL CARE NOT TO DAMAGE TREES THAT ARE TO REMAIN.
3. ROOTS GREATER THAN 1" DIAMETER SHALL NOT BE CUT UNLESS OTHERWISE APPROVED BY THE ENGINEER.
4. ALL ROOT PRUNING SHALL BE PERFORMED BY AN ISA CERTIFIED ARBORIST IN ACCORDANCE WITH ANSI-A300 STANDARDS.
5. STOCKPILED MATERIALS OR UNNECESSARY VEHICULAR TRAFFIC SHALL NOT BE ALLOWED OVER ANY TREE ROOTS SYSTEM.
6. BARRIER SHALL BE CONSTRUCTED WHEN CALLED FOR ON PLANS OR AS DIRECTED BY THE ENGINEER. BARRIERS SHALL BE MAINTAINED IN PLACE UNTIL REMOVAL IS DIRECTED BY THE ENGINEER.
7. COST OF ALL TREE BARRICADES SHALL BE INCLUDED IN PAY ITEM 800-9004 (CLEARING & GRUBBING).
8. SUBSTITUTION FOR WOODEN (1" X 2" MIN.) BEAMS WITH OTHER MATERIALS REQUIRE PRE-APPROVAL BY THE COUNTY ENGINEER.

REQUIRED DISTANCES FROM TREE TRUNK

* 2/3 THE DRIP LINE OR 6 FEET, WHICHERVER IS GREATER.
** DRIP LINE FOR PINES/CONIFERS AND CABBAGE PALMS OR 6 FEET, WHICHEVER IS GREATER.

2/3 OF THE DRIP LINE FOR HARDWOODS
FULL DRIP LINE FOR PINES
3'-0" (TYP.)
1" X 2" (MIN)
2" X 2" (TYP.)

BARRIER
NOTES:
1. THIS COVER IS NOT TO BE USED FOR SANITARY SEWER MANHOLES.
2. THIS COVER MAY BE USED WITH FRAME TYPE I, II OR III AS DETAILED IN F.D.O.T. INDEX No. 201.
   TYPE I SHALL BE USED UNLESS OTHERWISE SPECIFIED IN THE PLANS.
3. MATERIALS AND FABRICATION SHALL CONFORM TO SECTION 425 OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
4. COVERS FOR UNDERDRAIN CLEANOUTS SHALL BE LABELED UNDERDRAIN AND NOT STORM SEWER.

PINELLAS COUNTY
STORM SEWER COVER

DATE: FEB/2016
DETAIL INDEX I.D.: 1250

IVAN J. FERNANDEZ, P.E.
REVISION: D
NOTES:
1. SECTIONS 'A'-'A' AND 'B'-'B' ARE ON SHEET 2 OF 4.
2. SECTIONS 'C'-'C', 'D'-'D', AND 'E'-'E' ON THIS SHEET SHOW TRANSITION FOR PINELLAS COUNTY
   TYPE 'A' CURB AND GUTTER (PC INDEX 1305).
3. TRANSITION FOR TYPE 'F' CURB IS ON SHEET 4 OF 4.
4. SECTION 'F'-'F' IS ON SHEET 3 OF 4.
5. RC-4 IS SYMMETRICAL ABOUT THE CENTERLINE.
6. RC-5 IS CONSTRUCTED WITHOUT WINGS.

PINELLAS COUNTY
P.C.E.D. CURB INLET (TYPES RC-3, 4, AND 5)
SHEET 1 OF 4
NOTES:
1. RC-4 IS SYMMETRICAL ABOUT THE CENTERLINE.
2. RC-5 IS CONSTRUCTED WITHOUT WINGS.

SECTION A-A
(VARIES)
3'-0"
3'-0"

SECTION B-B
(VIEW THROUGH INLET BOX AND WING TRANSITION)
NOTES:
1. RC-4 IS SYMMETRICAL ABOUT THE CENTERLINE.
2. RC-5 IS CONSTRUCTED WITHOUT WINGS.

SECTION F-F

ADDITIONAL #5 BAR ALONG ENTIRE LENGTH OF NOSING

NOSING DETAIL

KEY DETAIL

P.C.E.D. CURB INLET (TYPES RC-3, 4, AND 5)
SHEET 3 OF 4
1. THESE INLETS FOR USE WITH PINELLAS COUNTY AND WITH F.D.O.T. TYPE 'A' CURB AND GUTTER, AND WITH TYPE 'F' CURB (FOR USE WITH TYPE 'F', SEE DETAILS FOR TYPE 'F' CURB TRANSITION).

2. CENTERLINES OF INLETS SHOULD BE LOCATED AT PROPERTY LINES UNLESS OTHERWISE APPROVED.

3. COVER FOR ALL REINFORCING STEEL SHALL BE 2" MINIMUM.

4. SUGGESTED MAXIMUM INLET DESIGN FLOWS FOR 0.4% PROFILE GRADE AND 1/4"/FT. CROSS SLOPE.
   - RC-3: 4.5 CFS (3'-6" WIDTH) / 5.5 CFS (5'-0" WIDTH)
   - RC-4: 6.5 CFS (3'-6" WIDTH) / 7.5 CFS (5'-0" WIDTH)
   - RC-5: 3 CFS (3'-6" WIDTH) / 4 CFS (5'-0" WIDTH)

5. INLETS SHALL BE CONSTRUCTED OF REINFORCED CONCRETE, AND MAY BE EITHER PRECAST OR POURED IN PLACE.

6. CONCRETE SHALL BE CLASS II, WITH Fc' = 3400 PSI (MIN.). (Fc' = 4000 PSI (MIN.) FOR TOP SLAB).

7. REINFORCING STEEL SHALL BE GRADE 60, DEFORMED, AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A 615 (GRADE 60 TOP SLAB).


9. UNLESS OTHERWISE NOTED, ALL EXPOSED EDGES AND CORNERS OF CONCRETE SHALL HAVE A 3/4" CHAMFER.

10. F.D.O.T. TYPE 'J' BOTTOM MAY BE USED WITH 'RC-3', 'RC-4' AND 'RC-5' INLETS. IN SUCH CASES THE STRUCTURE BOTTOM MAY BE ROTATED AS DIRECTED BY ENGINEER IN ORDER TO FACILITATE CONNECTIONS BETWEEN THE STRUCTURE WALLS AND STORM SEWER PIPES.

11. INLET SHOWN IS TYPE 'RC-3' (SINGLE WING). TYPE 'RC-4' (DOUBLE WING) IS THE SAME AS 'RC-3', EXCEPT THAT IT IS SYMMETRICAL ABOUT CENTERLINE OF BOX, AND RC-5 IS THE SAME, EXCEPT THAT IT IS CONSTRUCTED WITHOUT WINGS.

12. SECTIONS 'C'-'C' AND 'D'-'D' ON THIS SHEET SHOW TRANSITION FOR TYPE 'F' CURB.
1. COVER FOR ALL REINFORCING STEEL SHALL BE 2" MINIMUM.
2. INLETS SHALL BE CONSTRUCTED OF REINFORCED CONCRETE, AND MAY BE EITHER PRECAST OR POURED IN PLACE.
3. CONCRETE SHALL BE CLASS II, WITH $f'_c = 3400$ PSI (MIN). CONCRETE SHALL BE IN ACCORDANCE WITH SECTION 346 OF F.D.O.T.'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
4. REINFORCING STEEL SHALL BE GRADE 60, DEFORMED, AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM SPECIFICATION A 615.
5. UNLESS OTHERWISE NOTED, ALL EXPOSED EDGES AND CORNERS OF CONCRETE SHALL HAVE A $3/4$" CHAMBER.
6. SEE F.D.O.T. INDEX 211 FOR GRATE INFORMATION.
NOTES:
1. MANHOLE COVER & FRAME TO BE P.D.O.T. INDEX No. 201, TYPE III.
2. CONTRACTOR TO SUBMIT SHOP DRAWING TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.
3. J5 DESIGNATES A SINGLE WING INLET.
4. J6 DESIGNATES A DOUBLE WING INLET.

No. 5 BARS
@ 5" CENTERS.
(PROVIDE HORIZ.
HOOK ON
THROAT END
OF TOP BAR)

5½" 2'-0" MANHOLE ACCESS

3'-0" INLET TOP

1'-6"
1'-9"
1½"
10½"

2" RADIUS

2" RADIUS

107"

2" COVER
(TYP)

(16) No. 4 BARS
@ 8" O.C.
(MAX) TYP.

No. 4 BARS @ 6" CTRS.

¾" CHAMFER

No. 4 BARS @ 8" O.C.

No. 4 BENT BAR @ 8" O.C.

¾" CHAMFER

No. 4 STIRRUPS @ 8" O.C.

INLET BOX OR RISER

4'-6"

INLET TOP:
No. 4 TOP BARS @ 6" O.C.
No. 4 BOTTOM BARS @ 6" O.C.

CONSTRUCTION JOINT PERMITTED

INLET BOX OR RISER

(CONCRETE COVER SHOWN)

SECTION A-A
N.T.S.

PINELLAS COUNTY

P.C.E.D. J5 & J6 CURB INLETS- SHEET 2 OF 2
(MODIFIED F.D.O.T. J5 & J6 CURB INLETS)

DETAIL INDEX I.D.:
1260-SHT. 2
DATE: FEB/2016
REVISION:
NOTES:
1. Grout to consist of 3:1 sand-cement mixture or any class concrete.
2. For all structures, unless excluded by special detail, bricks shall not be used in this area, unless they are covered with 4" thick (min.) concrete above the bricks.

MASONRY SEAL

PIPE TO BE PLACED IN APPROXIMATE CENTER OF OPENING.

SOIL COMPACTED TO DENSITY REQUIRED IN SECTION 125 OF F.D.O.T. STANDARD SPECIFICATIONS DESCRIBED AS BEDDING ZONE.

FILTER FABRIC WRAP REQUIRED ON GROUTED PIPE TO STRUCTURE JOINT.

PINELLAS COUNTY

FILTER FABRIC WRAP AND GROUT AT STRUCTURES

DETAIL INDEX I.D.: 1265

DATE: FEB/2016

IVAN J. FERNANDEZ, P.E.

REVISION:
NOTES:
1. THIS ANTI-CLOGGING DEVICE SHALL ONLY BE USED ON ORIFICES THAT ARE LESS THAN ONE INCH IN DIAMETER AND WHEN AN EXTERNAL SKIMMER IS PRESENT.
2. ALUMINUM STRAPS SHALL BE ANCHORED TO OUTFALL STRUCTURE WITH 1/4" x 2-3/4" HEX HEAD STAINLESS STEEL TAPCON® CONCRETE SCREWS (OR APPROVED EQUIVALENT). A MINIMUM OF 2 SCREWS PER STRAP IS REQUIRED.
3. TO PROVIDE SUFFICIENT FLOW CAPACITY, A MINIMUM CLEARANCE OF 1-INCH BETWEEN THE BOTTOM OF THE 6" SLOTTED PIPE AND THE SCOUR PAD IS REQUIRED.
4. CONTRACTOR SHALL CUT 3 SETS OF SLOTS SPACED EQUIIDISTANT AROUND THE CIRCUMFERENCE OF THE 6" SLOTTED PVC PIPE. THE SLOTS SHALL BE 1/8" WIDE, 5" LONG, 2" APART, AND EXTEND THE ENTIRE LENGTH OF THE PIPE. SLOTS SHALL BE CUT ON A 45 DEGREE ANGLE. REFER TO DETAIL.
5. CONTRACTOR SHALL DRILL A HOLE 1/4" LARGER THAN THE ORIFICE INTO THE 6" SLOTTED PVC PIPE AND LINE UP THE PIPE HOLE WITH THE ORIFICE WHEN INSTALLING THE PIPE. THE PIPE HOLE SHALL BE LOCATED IN A SOLID SECTION OF PIPE BETWEEN THE W&S OF THE SLOTS.
6. CONCRETE PAD SHALL BE PRE-CAST AND EXTEND AT LEAST ONE FOOT BEYOND ALL SIDES OF SKIMMER. CONCRETE MINIMUM SPECS. ARE: 4" THICKNESS; 2500 PSI WITH #5 REBAR ON 1' CENTERS; TWO #5 REBARS SHALL BE LOCATED 4" FROM EDGE AND DOWELED INTO OUTFALL STRUCTURE. ENGINEER SHALL ASSESS SITE CONDITIONS AND OUTFALL STRUCTURE DESIGN TO STRENGTHEN PAD ACCORDINGLY.
7. TERM "ENGINEER" REFERS TO PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA.

MODIFIED 6" SLOTTED PVC PIPE DETAIL

ALUMINUM STRAP DETAIL

SECTION A-A

PINELLAS COUNTY
ANTI-CLOGGING DEVICE FOR POND OUTFALL CONTROL STRUCTURES
1. THIS MANHOLE SHALL BE CONSTRUCTED OF PRECAST CONCRETE.
2. CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM TO SECTION 425 OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
3. LIFTING HOLES SHALL BE LOCATED AS NEEDED.
4. NO INVERTS SHALL BE POURED.
5. 2" CLEARANCE COVER FOR REINFORCING STEEL.
6. OPENING AROUND UNDERDRAIN PIPE SHALL BE GROUT-FILLED.

NOTES:

PLAN VIEW
TOP SLAB

FDOT TYPE 1 FRAME (INDEX No. 201) WITH COVER (SEE PC No. 1250)

SECTION B-B
TOP SLAB

KEYWAY

3" (MIN) SUMP (NO INVERTS SHALL BE POURED)

SECTION B-B
BOTTOM UNIT

KEYWAY

3" (MIN) SUMP (NO INVERTS SHALL BE POURED)

PINELLAS COUNTY
UNDERDRAIN INSPECTION MANHOLE TYPE 1
1. Construction methods and materials shall conform to Section 425 of the Florida Department of Transportation Standard Specification for Road and Bridge Construction.

2. Opening around underdrain pipe shall be grout-filled.

3. Manhole covers shall comply with PC No. 1250.

4. When authorized by the engineer and at no additional expense to the county, F.D.O.T. Index No. 200 Manhole Type P (Alternate A), may be used in place of a county underdrain inspection manhole.

5. Except as otherwise noted on the plans, frame for manhole covers shall be F.D.O.T. Index No. 201, Type I.

6. Minimum wall thickness: 4½" for prefab and 6" for poured in place.

7. For poured in place construction, dowels may be used in lieu of joint key and grouting. Dowels shall extend a minimum of 6" into adjacent sections.

**Notes:**

- 4" adjustment allowance between frame & structure
- 20" 6" 12"
- Section A-A

**Plan View**

(See FDOT Index No. 200)

**Joint Dimensions**

1. 1" prior to placement of upper section
2. ½" maximum after final settlement of upper section
3. 1½" wide (4½" wall)
4. 2" wide (6" wall)

**Joint Detail**

**Grout**

**Pinellas County**

Underdrain Inspection Manhole Type 2

**Detail Index I.D.:** 1282

**Date:** EEB/2016

**Revision:**
NOTES:
1. ALL VALUES EXCEPT A.O.S. AND ELONGATION ARE MINIMUM AVERAGE ROLL VALUES IN THE WEakest PRINCIPAL DIRECTION. VALUES FOR A.O.S. AND ELONGATION ARE MAXIMUM AVERAGE ROLL VALUES.
2. FOR ADDITIONAL NOTES SEE F.D.O.T. STANDARD INDEX NO. 206.
3. PAYMENT FOR UNDERDRAIN (L.F.) SHALL BE FOR THE COMPLETED ASSEMBLY, NOT FOR INDIVIDUAL COMPONENTS REGARDLESS IF THEY EXIST IN THE BID SUBMITTAL SHEETS.
4. PVC PIPE SHALL CONFORM TO EITHER ASTM F758 OR ASTM D3034. EXCEPT THAT THE PIPE AND ARRANGEMENT OF PERFORATIONS SHALL CONFORM TO THE PERFORATION DETAIL ON THIS SHEET.
5. AGGREGATE SHALL BE AS SPECIFIED IN THE F.D.O.T. STANDARD SPECIFICATIONS; SECTION 901, AND SHALL BE SIZE 57.
6. DIAMETER OF PERFORATIONS SHALL BE ¾” TO 3/8”.
7. MAXIMUM ALLOWABLE BEND SHALL BE 22½”, WITH A STRAIGHT 2’ MINIMUM PIPE SEPARATION BETWEEN BENDS.
8. DO NOT USE PERFORATED PVC PIPE OR AGGREGATE UNDERNEATH ROADWAYS.
9. SEE PLANS FOR EXACT DIMENSIONS. DIMENSIONS LESS THAN 24” REQUIRES COUNTY APPROVAL.
NOTES:
1. MILLING AND RESURFACING LIMITS: 3'-0" FOR RESIDENTIAL ROADWAYS; 25'-0" FOR ALL OTHER TYPES OF ROADWAYS. SHALL INCLUDE ENTIRE LANE WIDTH.
2. BACKFILL FOR TRENCH SHALL BE PLACED IN 6" COMPACTED LAYERS TO 100% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99. (EXCAVATABLE FLOWABLE FILL OPTION IS SUBJECT TO COUNTY ENGINEER'S APPROVAL). TEST REPORTS ARE REQUIRED AND SHALL BE SUBMITTED TO PINELLAS COUNTY.
3. BASE MATERIAL SHALL BE LIME ROCK OR CRUSHED CONCRETE (MIN. LBR 100) AND SHALL BE PLACED IN 6" COMPACTED LAYERS TO 98% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180 (MODIFIED) (TEST REPORTS ARE REQUIRED AND SHALL BE SUBMITTED TO PINELLAS COUNTY).
4. AS AN ALTERNATIVE TO COMPACTED BASE AND IN WET AREAS, FULL-LIFT ASPHALTIC CONCRETE, FINE TRAFFIC LEVEL C TYPES SP9.5 OR 12.5, SHALL BE PLACED IN 2" COMPACTED LAYERS WITH A MINIMUM THICKNESS EQUAL TO THE EXISTING BASE (6" MIN.).
5. ASPHALTIC CONCRETE PAVEMENT JOINTS SHALL BE SAW-CUT AND ALL SURFACES TACK COATED.
6. ASPHALT SURFACE SHALL BE CONSISTENT WITH EXISTING GRADE. IN ACCORDANCE WITH PINELLAS COUNTY SPECIFICATIONS, THE FOLLOWING ROADWAY CLASSIFICATION TYPE/THICKNESS ARE REQUIRED: ARTERIAL-3" MIN. TYPE SP-12.5 FINE TRAFFIC LEVEL "C"; COLLECTOR-2" MIN. TYPE SP-12.5 FINE TRAFFIC LEVEL "C"; RESIDENTIAL-1½" MIN. TYPE SP-9.5 TRAFFIC LEVEL "C" (TEST REPORTS ARE REQUIRED AND SHALL BE SUBMITTED TO PINELLAS COUNTY).
7. OVERLAY OF CONSTRUCTION SCARS TO PAVEMENT AND TRENCH SHALL BE REQUIRED AS DIRECTED BY THE COUNTY ENGINEER.
8. EXCAVATION SHALL COMPLY WITH THE TRENCH SAFETY ACT REQUIREMENTS.
9. INSTALL DRY COMPACTABLE MATERIAL AROUND THE PIPE.
10. ALL MATERIAL, WORK AND TESTING SHALL MEET PINELLAS COUNTY STANDARD SPECIFICATIONS.
11. CONTRACTOR SHALL RESTORE PAVEMENT TO MATCH THE GRADES THAT EXISTED PRIOR TO CONSTRUCTION. ANY ADDITIONAL SURVEY NECESSARY TO ENSURE THAT THIS REQUIREMENT IS MET SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE.

PINELLAS COUNTY

PAVEMENT CUTS, EXCAVATION AND RESTORATION

DETAIL INDEX I.D.: 1291

DATE: FEB/2016

REVISION:
NOTE:
1. ½" EXPANSION JOINT EVERY 500', BETWEEN CURB SECTIONS, AT RADII, END OF POUR AND STRUCTURES. (FALSE JOINTS EVERY 10', LONGITUDINALLY. SEE SECTION 520 OF THE F.D.O.T. STANDARD SPECIFICATIONS.)

PROFILE VIEW OF HEADER CURB

PROFILE VIEW OF CURB & GUTTER

PINELLAS COUNTY
CURB AND GUTTER TYPE A AND HEADER CURB
NOTES:
1. SURFACE OF PAVEMENT SHALL BE \( \frac{1}{4}'' \) ABOVE LIP OF GUTTER.
2. \( \frac{1}{2}'' \) EXPANSION JOINT (AS SHOWN) AND CENTERLINE OF SIDE STREET, WITH (SAWCUT) FALSE JOINTS EVERY 10', LONGITUDEALLY. (SEE SECTION 520 OF THE F.D.O.T. STANDARD SPECIFICATIONS).

PINELLA$ COUNTY CURB & GUTTER TYPE A (PW NO. 1305)

PINELLA$ COUNTY CURB & GUTTER TYPE A (PW NO. 1305)

GUTTER FLOW LINE

RADIUS (AS SHOWN ON PLANS)

\( 2'-0'' \)

\( 2'-0'' \)

\( 2'-0'' \)

\( 3'-0'' \)

A

A

VALLEY GUTTER

TRANSITION (MONOLITHIC POUR)

(TO BE PAID AS VALLEY GUTTER)

PLAN VIEW

7''

18''

7''

6''

36''

VALLEY GUTTER

SECTION A-A

PINELLA$ COUNTY

VALLEY GUTTER AND TRANSITION

DETAIL INDEX I.D.: 1315

DATE: FEB/2016

REVISON:
NOTES:
1. CONCRETE DRIVEWAY APRONS AND SIDEWALK CROSSINGS SHALL BE CONSTRUCTED OF CONCRETE PAVEMENT (3000 PSI), 6" THICK REINFORCED WITH 6" X 6" #10/#10 WELDED WIRE FABRIC, (2" MINIMUM COVER FROM THE BOTTOM.)
2. FIBER REINFORCED CONCRETE 3000 PSI (MIN.) MAY BE USED IN PLACE OF THE REQUIREMENTS OF NO. 1 ABOVE.
3. CONSTRUCTION OF APRON/DRIVEWAY CROSS SLOPES AND SIDEWALK CROSS SLOPE THROUGH THE DRIVEWAY SHALL COMPLY WITH F.D.O.T. INDEX NO. 515 FOR ADA REQUIREMENTS.
4. REMOVE TREE ROOTS WITHIN 10" OF PROPOSED GRADE.
5. WHEN THERE IS EXISTING SIDEWALK CROSSING THE PROPOSED DRIVEWAY, IT MUST BE REMOVED TO THE NEAREST JOINT BEYOND THE DRIVEWAY.
6. SIDEWALKS ADJACENT TO LOT PROPERTY LINES SHALL NOT HAVE A CROSS SLOPE GREATER THAN 2% PER F.D.O.T. INDEX 310.
7. CORNER LOTS INVOLVING HANDICAP RAMPS SHALL BE IN ACCORDANCE WITH F.D.O.T. INDEX 304 FOR SIDEWALK AND RAMP CONSTRUCTION.
B. Interlocking paving units shall generally be installed in accordance with manufacturer’s requirements.

2. Minimum Paver Thickness: 2-3/8” (Concrete), 2-1/4” (Clay Brick).

3. Concrete Pavers to conform to ASTM C936. Clay Brick Pavers to conform to ASTM C902.

4. Granular Base shall be in accordance with manufacturer’s requirements (6” min.). Granular base shall be Limerock (LBR 100) or Crushed Concrete (Graded Aggregate) compacted to at least 98% modified Proctor Density (ASTM D1557).

5. Coloring or dye shall be uniform throughout each concrete paver unit. Dipped or externally colored paver units are unacceptable.

6. Curb will need to be constructed along the roadway edge of pavement at the driveway. As an alternate, on streets without curbing, a minimum 12-inch width is acceptable (per Pinellas County Standard Details Index 1305). A minimum of 6-inch wide and 6-inch deep concrete edge restraint band is required along each side of the driveway to contain the architectural pavers, on top of soil compacted to 98% modified Proctor density (ASTM D1557). All concrete shall meet FDOT specifications for Class I Concrete.

7. Final finished surface shall be of uniform elevation or slope.

8. Subgrade shall be free of clay, organics, or other materials which will allow future settlement and compacted to 98% AASHTO T-180-57 or ASTM D1557.

9. Polymeric sand or other joint filling material, as approved by the County Engineer, shall be installed between pavers. Joint sand shall meet the grading requirements of ASTM C144 or CSA-A179. Bedding sand may be used for joint sand. Joint width shall not exceed 1/8”.

10. The cross slope on any required pedestrian path crossing a driveway and/or drive apron cannot exceed 2%.

11. Sand Bedding material shall be a clean, non-plastic bedding and joint sand, free from deleterious or foreign matter, natural or manufactured from crushed rock, and shall meet the grading requirements of ASTM C33 or CSA-A23.1-FA1. Do not use joint sand for bedding. Sand bedding should be placed to an even thickness of 1-inch. Do not use the sand to fill depressions in the granular base.

12. In accordance with the 2010 ADA (Americans with Disabilities Act) Standards for Accessible Design (403, 405, 406) the surface texture of pavers shall be vibration free with a limit of 1/4” or less rise not more than every 30 inches. Pavers shall be installed in a tight uniform configuration that provides a smooth surface for wheelchair users.

13. Pavers shall not impede drainage or result in any ponding of water. Existing drainage flows shall not be altered.

14. Alternate edge treatments may be submitted for approval to the county by the property owner.
NOTES:
1. SEE PLANS FOR LIMITS OF SIDEWALKS AT ALL DRIVEWAYS.
2. PLACE ½" EXPANSION JOINT WHERE CONCRETE ABUTS CONCRETE CURBS, SIDEWALKS, DRIVEWAYS.
3. SIDEWALK SHALL COMPLY WITH F.D.O.T. INDEX No. 515 AND PINELLAS COUNTY ORDINANCES.
   (SEE INDEX No. 1340)
4. REMOVE TREE ROOTS WITHIN 10" OF PROPOSED GRADE.
5. SIDEWALKS ALONG RURAL CROSS SECTION ROADWAYS WHERE VEHICLES CAN CROSS THE SIDEWALK SHALL BE 6" THICK.

SECTION A-A

EXISTING CONCRETE DRIVEWAY

4" THICK SIDEWALK

TOOLED EDGE (¼'R)

EXIST CONCRETE DRIVEWAY

3/4"

4" PREFORMED EXPANSION JOINT MATERIAL (EACH SIDE)

SECTION B-B

6" THICK CEMENT CONCRETE SIDEWALK

6"X6" #10/#10 WELDED WIRE REINFORCEMENT 2" MINIMUM COVER

EDGE OF PAVEMENT

(OR BACK OF CURB)

EXISTING DIRT OR ASPHALT DRIVEWAY

MEET & MATCH Existing DIRT OR ASPHALT DRIVEWAY GRADE (SEE NOTE #5)

SAWCUT BACK 2' (MIN) ACROSS EXISTING ASPHALT DRIVEWAY AND EXTEND SIDEWALK (AS SHOWN)

PLAN VIEW

SAWCUT BACK 2' (MIN) ACROSS EXISTING ASPHALT DRIVEWAY AND EXTEND SIDEWALK (AS SHOWN)

PROPOSED (5' MIN) CONCRETE SIDEWALK (4" THICK)

MEET AND MATCH EXISTING CONCRETE DRIVEWAY ELEVATION (SEE NOTE #2 & #3)

PROPOSED SIDEWALK

EXISTING CONCRETE DRIVEWAY

PINELLAS COUNTY

SIDEWALK THROUGH EXISTING DRIVEWAYS

DETAI INDEX I.D.: 1353

DATE: FEB/2016

REVISION:
1. Adjust sidewalk to avoid obstructions, as shown, or as directed by the engineer, in accordance with F.D.O.T. Manual of Uniform Minimum Standards for Design, Construction, and Maintenance for Streets and Highways - Latest Edition ("Florida Green Book").

2. Construction of sidewalks shall meet ADA requirements as specified in F.D.O.T. Index Nos. 515 and 304.

3. Power poles shall be moved when possible.

4. Trees shall be pruned by an ISA Certified Arborist in accordance with ANSI-A300 guidelines to maintain vertical clearance: 9 ft. for sidewalks and 18 ft. for roads.

5. Maximum lateral deflection shall be 5:1.

6. Remove tree roots within 10' of proposed grade.

7. Contraction joints shall meet F.D.O.T. Index No. 310.

8. Any necessary pruning shall be performed by an ISA Certified Arborist in accordance with ANSI-A300 standards.

---

**Notes:**

- Edge of box may not be installed within the first 6" off the edge of sidewalk.
- Water meter/valve cast iron in sidewalk.
- Edge of pavement or back of curb (see plans).
- Varies see plans.
- Tree trunk.
- Contraction joint (typ.).
- 5' wide (min.) concrete sidewalk.
- R/W or sidewalk easement line.
- 2' (typ.)
- 2' (min.)
- 6' (min.)
- 10' min.
- 5' min. S/W replacement.
- MATCH ELEV.
- WATER METER/VALVE LID.
- 3000 PSI CONCRETE.
- 4" to 6" thick.
- COLD JOINT (typ.).
- WATER METER/VALVE CASING.

---

**Plan View:**

*This minimum dimension may need adjustment based on the diameter, health, and species of the tree. Adjustments require pre-approval of the County Engineer.

**Centered on vertical obstruction—sidewalk shall be 6" thick along this length (5'-0" min.).

---

**Pinellas County Guidelines for Sidewalk Alignment**

**Date:** FEB/2016

**Detail Index I.D.:** 1357

**Revision:**
NOTE:
1. 6" THICK w/6x6 10/10 WWM REINFORCED CLASS I (3000 PSI) CONCRETE RAMP (TYP. FOR TYPE A & B).

EXISTING/PROPOSED
S/W 5' (TYP.)
WIDTH VARIES

- PROVIDE DETECTABLE WARNING SURFACE, PER FDOT INDEX 304 GENERAL NOTES
- 18" (TYP.)
- 24" (TYP.)

PLAN VIEW

- 1' (TYP.)

REMOVE EXISTING CURB AND REPLACE WITH DROP CURB PAID FOR AS PCE D TYPE A CURB SAWCUT PAVEMENT PRIOR TO REMOVAL OF EXISTING CURB.

EXISTING/PROPOSED
S/W 5' (TYP.)
WIDTH VARIES

- DETECTABLE WARNING SURFACE, PER FDOT INDEX 304 GENERAL NOTES

SAWCUT PAVEMENT PRIOR TO RAMP INSTALLATION

- 24" (TYP.)
- 18" (TYP.)
- 1' (TYP.)
- 7" (TYP.)

PLAN VIEW

- 6x6 10/10 WWM

A-A
DROP CURB
TYPE-A HANDICAP RAMP DETAIL
N.T.S.

B-B
( NO CURB)

TYPE-B HANDICAP RAMP DETAIL
N.T.S.

EXPANSION JOINT (TYP.)

PINE DELAS COUNTY

P.C.E.D. TYPE "A" AND "B" HANDICAP RAMP DETAIL

DETAIL INDEX I.D.: 1360

DATE: FEB/2016

REVISION:

IVAN J. FERNANDEZ, P.E.
NOTES:
1. WARNING SIGNS W11-5, W16-9P, W16-7P SHALL BE IN ACCORDANCE WITH THE MUTCD, SECT. 1A-12. COLOR CODE "F"—FLUORESCENT YELLOW-GREEN.
2. OFFSET DISTANCES FOR SIGNS SHALL BE IN ACCORDANCE WITH FDOT STANDARD PLANS AND/OR DIMENSIONS PROVIDED IN THE CONSTRUCTION PLANS.
3. DETECTABLE WARNINGS SHALL BE IN ACCORDANCE WITH PINELLAS COUNTY SPECIFICATION 522.
4. TRAIL WIDTHS VARY. SOLID YELLOW PAVEMENT MARKING SHALL BE PLACED ALONG THE CENTERLINE OF THE TRAIL.

TRAIL INTERSECTION DETAIL
NOT TO SCALE
NOTES:
1. ALL BOLLARDS CONSTRUCTED WITHIN THE CONCRETE BOLLARD ASSEMBLY ARE PAID FOR UNDER CONCRETE BOLLARD STRIP ASSEMBLY.
2. ALL BOLLARDS CONSTRUCTED OUTSIDE OF THE CONCRETE BOLLARD STRIP ASSEMBLY ARE PAID FOR UNDER A SEPARATE PAY ITEM UNLESS OTHERWISE NOTED.
3. TYPICAL TRAIL WIDTH IS 15 FEET; HOWEVER, TRAIL WIDTHS MAY VARY. WIDTH OF BOLLARD STRIP SHALL BE ADJUSTED TO FIT ACTUAL TRAIL WIDTH.
4. E/P REPRESENTS EDGE OF PAVEMENT.
1. All construction and materials shall conform to U.S. Department of Transportation, Federal Highway Administration Manual on Uniform Traffic Control Devices.
2. All signage to be erected along trail is to be offset 4' from edge of pavement to nearest edge of sign and 7' from the proposed grade to the bottom of the sign.
3. 6' wide 3M™ Pressure Sensitive, High-Intensity Grade Red Reflective Sheeting, to be placed on all bollards. Overlap ends of sheeting by 1/4' minimum.
4. All bollards constructed within the concrete bollard assembly are paid for under a concrete bollard strip assembly.
5. All bollards constructed outside of the concrete bollard strip assembly are paid for under a separate pay item unless otherwise noted.
6. Contractor shall use durable reflective paint designed for application on PVC and/or steel components. Specifications of proposed paint shall be submitted to the county for review and approval prior to commencement of painting operations. Contractor should prepare surface according to manufacturer's direction.

![Diagram of PVC Coupling](image)

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**NOTE:**
3" PVC coupling shall be machined for a slip-fit. Uniform inside Ø in order to allow the coupling to be solvent welded at the position shown. The outside Ø shall be machined to allow the coupling to slide freely within the 4" PVC pipe embedded in concrete as shown in the removable bollard detail.

**SLOT AND COUPLING DETAIL**
Not to scale

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**Permament Bollard Detail "F"**
Not to scale

**Removable Bollard Detail "E"**
Not to scale

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**Pinellas County**

P.C.E.D. Trail Intersection Crossing Detail - Sheet 3 of 4
NOTES:
1. TRUNCATED DOME (TYPE AND COLOR) AS PER PINELLAS COUNTY SPECIFICATION 522

MATCH EXISTING CURB UNLESS OTHERWISE SHOWN ON PLANS

PROPOSED ASPHALT TRAIL (SEE PLANS FOR DETAIL)

VALLEY GUTTER TRANSITION
NOT TO SCALE

VALLEY GUTTER DETAIL
NOT TO SCALE
NOTE:
1. THE USE OF ALUMINUM SLEEVES SHALL BE APPLICABLE FOR ALL CASES WHERE A SIGN POST IS PLACED IN CONCRETE (I.E., SIDEWALKS, ETC.). WHEN PLACED IN A CONCRETE MEDIAN OR TRAFFIC SEPARATOR, IT SHALL BE CENTERED 6' FROM NOSE END, UNLESS OTHERWISE SPECIFIED IN THE PLANS.

3" O.D. ALUMINUM SLEEVE
SECTION A-A
N.T.S.

TOP VIEW
MEDIAN NOSE
N.T.S.

2½" O.D. THIN WALL GALVANIZED STEEL PIPE

SIGN POST TO BE WEDGED WITH REBAR (½" DIA. X 6" LONG) INTO ALUMINUM SLEEVE

CONCRETE

3" O.D. ALUMINUM SLEEVE

PINELLAS COUNTY
TRAFFIC SIGN INSTALLATION INTO CONCRETE

DETAIL INDEX I.D.: 1380
DATE: FEB/2016
REVISION:
NOTES:
1. STRIPES SHALL BE WHITE AND ORANGE FOR TEMPORARY BARRICADE DURING CONSTRUCTION PHASE AND WHITE AND RED FOR PERMANENT BARRICADE WITH A MATERIAL THAT HAS A HIGH INTENSITY AND SMOOTH SEALED OUTER SURFACE. USE ONLY PRESSURE TREATED POSTS (ASTM D-1760 PRESSURE TREATMENT OF TIMBER PRODUCTS).
2. USE ONLY GALVANIZED COATED HARDWARE.
3. THE SPACING OF REFLECTORS SHALL ALIGN WITH BARRICADE POSTS.
4. REFLECTOR PANEL AND POST ASSEMBLY SHALL COMPLY WITH F.D.O.T. INDEX No.17349 FOR CASE 2 AND SECTION 994 OF F.D.O.T. SPECIFICATIONS.

PINELLAS COUNTY

BARRICADE WITH REFLECTORS
CCTV CAMERA

2" ENTRY POINT

CONCRETE SQUARE POLE AS PER "CONCRETE SQUARE CCTV CAMERA POLE DATA TABLE"

COMPOSITE CABLE IN CONDUIT (INSIDE POLE)

HAND HOLE 180 DEGREES FROM ENTRY POINT

#2 AWG TIN-PLATED BARE SOLID COPPER WIRE

GROUND LINE

GROUND ROD (REFER TO FDOT INDEX 18102 FOR PROPER INSTALLATION OF GROUNDING ARRAY)

CONDUIT HOLES ARE TO BE 30" BELOW GRADE AND AT 0 DEGREES AND 180 DEGREES IN CIRCUMFERENCE

PROVIDE CLASS NS CONCRETE

2" CONDUIT

2" CONDUIT

CONDUIT HOLES ARE TO BE 30" BELOW GRADE AND AT 0 DEGREES AND 180 DEGREES IN CIRCUMFERENCE

GROUND LINE

2" CONDUIT

CONDUIT HOLES ARE TO BE 30" BELOW GRADE AND AT 0 DEGREES AND 180 DEGREES IN CIRCUMFERENCE

PROVIDE CLASS NS CONCRETE

COPPER AIR TERMINAL BONDED TO COPPER WIRE

POLE EXPOSED HEIGHT

POLE LENGTH (MAXIMUM)

POLE EMBEDMENT

PINELLAS COUNTY

CONCRETE SQUARE CCTV CAMERA POLE

SHEET 1 OF 2

DETAIL INDEX I.D.: 1700 - SH. 1

DATE: FEB/2016

REVISION:
CONCRETE SQUARE CCTV CAMERA POLE DATA TABLE

<table>
<thead>
<tr>
<th>EXPOSED POLE LENGTH (ft)</th>
<th>GRADE SLOPE</th>
<th>POLE TIP WIDTH (in)</th>
<th>POLE TAPER (in/ft)</th>
<th>EMBEDMENT DEPTH (ft)</th>
<th>TOTAL POLE LENGTH (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>47</td>
<td>Flat</td>
<td>8.5</td>
<td>0.162</td>
<td>10</td>
<td>57</td>
</tr>
</tbody>
</table>

NOTES:

1. ALL POLES SHALL BE FULLY EMBEDDED IN CLASS NS CONCRETE.
2. WORK THIS SHEET WITH FDOT INDEX 17725 STANDARD TYPE P-IV POLE DESIGN ONLY.
3. ONLY ATTACHMENT ALLOWED ON POLES IS THE CCTV CAMERA.
NOTES:

1. ALL MOUNTING HARDWARE AND BRACKET SHALL BE PROVIDED BY PINELLAS COUNTY.

2. THE CONTRACTOR SHALL MOUNT THE "J-HOOK" BRACKET AS HIGH AS POSSIBLE BUT SO THAT IT STILL SITS FIRMLY IN THE MOUNTING HARDWARE BRACKET. THE ATTACHMENT SHALL BE INSPECTED BY THE ENGINEER BEFORE THE CCTV CAMERA IS INSTALLED.

3. THE CONTRACTOR SHALL FIELD DRILL A HOLE IN THE MAST ARM OF A MINIMUM DIAMETER TO ACCOMMODATE THE CCTV COMPOSITE CABLE.

4. THE CONTRACTOR SHALL COLD GALVANIZE THE DRILLED HOLE AND PLACE A WEATHER-TIGHT GROMMIT IN THE HOLE PRIOR TO RUNNING THE CCTV COMPOSITE CABLE INTO THE ARM.

5. THE CONTRACTOR SHALL TOUCH UP THE MAST ARM PAINT DUE TO SCRATCHES OR CHIPS DURING THE INSTALLATION OF THE CCTV CAMERA AND COMPOSITE CABLE.

NOTES:

1. FOR MORE INFORMATION ON THE ELECTRONIC ROUTE MARKER (ERM), SEE SECTION 630 IN THE TECHNICAL SPECIFICATIONS AND THE GENERAL NOTES.

2. THE CONTRACTOR SHALL INSTALL THE ERM BEFORE PLACING THE CONCRETE APRON AROUND THE FIBER OPTIC PULL BOX OR SPLICE VAULT. HOWEVER, THE ERM SHALL NOT BE PLACED WITHIN THE CONCRETE APRON.

3. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR THE ERM AS SHOWN ON THIS SHEET, TECHNICAL SPECIFICATIONS SECTION 630, AND THE GENERAL NOTES.

4. THE CONTRACTOR SHALL ALSO INSTALL STANDARD ROUTE MARKERS (SRM) AT THE MIDPOINT OF THE CONDUIT RUN BETWEEN THE FIBER OPTIC PULL BOXES AND/OR SPLICE VAULTS. ROUTE MARKERS SHALL NOT BE INSTALLED IN DRIVEWAYS OR SIDEWALKS.

5. THE COST FOR THE ERMs SHALL BE PAID FOR UNDER PAY ITEMS 630~2 FOR CONDUIT.

6. THE TRACER WIRE FOR ALL CONDUIT LOCATING SHALL BE SPLICED TOGETHER IN ONE CONTINUOUS LENGTH.

ELECTRONIC ROUTE MARKER (TUBULAR)
NOTES:
1. THE CONTRACTOR SHALL FIELD DRILL A HOLE IN THE MAST ARM OF MINIMUM SIZE TO ACCOMMODATE THE VIDS CABLE.

2. THE CONTRACTOR SHALL COLD GALVANIZE THE DRILLED HOLE AND PLACE A WEATHER-TIGHT GROMMIT IN THE HOLE PRIOR TO RUNNING THE VIDS CABLE INTO THE ARM.

3. THE CONTRACTOR SHALL TOUCH UP THE MAST ARM PAINT DUE TO SCRATCHES OR CHIPS DURING THE INSTALLATION OF THE VIDS CAMERA AND CABLE.

4. THE COST FOR LABOR AND MATERIALS FOR TOUCH UP AND GROMMITS SHALL BE INCLUDED UNDER THE VIDS PAY ITEM 660-4-32.
NOTES:
1. THE CONTRACTOR SHALL USE EXISTING UNDERGROUND CONDUIT TO FEED CABLE & CONDUCTORS INTO THE MAST ARM UPRIGHT. THIS DETAIL MAY BE USED IN THE EVENT THERE ARE NO EXISTING CONDUITS.

2. THE CONTRACTOR SHALL DRILL INTO THE MAST ARM STRUCTURE GROUT PAD AND FEED THE GALVANIZED STEEL CONDUIT INTO THE MAST ARM. THE DRILLED GROUT PAD SHALL BE SEALED AROUND THE CONDUIT.

3. ANY HIGH VOLTAGE CONDUCTORS SHALL BE IN A SEPARATE CONDUIT AND PULL BOXES WHERE NECESSARY.
1/2" ETP ALLOY 110 COPPER AIR TERMINAL (CLASS II)
SURFACE BASE OF 8 SQUARE-INCH
MINIMUM CONTACT AREA
PER NFPA 780-4.16.3
#2 AWG TIN PLATED BARE SOLID COPPER GROUND WIRE.
BOND TO AIR TERMINALS

NOTE: THREADED COUPLINGS TO BE PROVIDED FOR ALL UPRIGHTS

2 RGS CONDUITS
(1-1 1/2" POWER AND 1-1 1/2" COMMUNICATIONS)
1-1 1/2" THREADED COUPLINGS
2-1 1/2" THREADED COUPLINGS

HANDBOKE

- 1-2" PVC CONDUIT FOR ELECTRICAL SERVICE
- 1-2" PVC CONDUIT FOR FIBER OPTIC COMMUNICATIONS
- 1-2" PVC CONDUIT FOR GROUNDING
- 1-2" PVC CONDUIT SPARE (AS SHOWN ON PLANS)

CONDUIT EXIT ORIENTED IN NECESSARY DIRECTION
SEE SHEET 3 FOR CONDUIT DETAILS

NOTES:
1. CONDUCTORS FOR GROUNDING SHALL BE CONNECTED TO STEEL FRAMEWORK THAT HAS BEEN CLEANED TO BASE METAL BY USE OF BONDING PLATES HAVING CONTACT AREA OF NOT LESS THAN 8 SQUARE INCHES OR BY WELDING OR BRAZING. DRILLING AND TAPPING THE STEEL STRUCTURE TO ACCEPT A THREADED CONNECTOR IS ALSO AN ACCEPTABLE METHOD.

2. IF STEEL FRAMEWORK IS TO BE DRILLED AND TAPPED TO ACCEPT THREADED CONNECTOR, THE THREADED CONNECTOR SHALL BE GALVANIZED AND HAVE AT LEAST 5 THREADS FULLY ENGAGED AND SECURED WITH A JAM NUT TO THE STEEL FRAMEWORK.

3. BENDS IN THE CONDUIT SHALL NOT BE LESS THAN THE MINIMUM BENDING RADIUS FOR THE CABLE CONTAINED IN THE CONDUIT.

4. ALL DATA, FIBER OPTIC AND POWER CABLES FOR THE DMS SHALL BE COMPLETELY ENCASED WITHIN THE SIGN STRUCTURE OR IN CONDUIT.

5. PERMANENTLY STAMP/MARK FOUNDATION TO CONDUIT LOCATIONS.

6. TRANSITION CONDUIT IN FOUNDATION TO UNDERGROUND CONDUIT WITH APPROPRIATE REDUCER OUTSIDE THE LIMITS OF THE FOUNDATION.

7. DMS CONTROLLER CABINET TO BE GROUND MOUNTED. SEE SHEET 3 OF 5 FOR DETAILS.

PINELLAS COUNTY
DYNAMIC MESSAGE SIGN
SHEET 1 OF 5

DETAIL INDEX I.D.: 1730 - SH. 1
DATE: OCT/2017
REVISON:
#2 AWG Tin Plated Bare Solid Copper
Ground Wire. Bond to Air Terminals

1/2” ETP Alloy 110 Copper
Air Terminal (Class II)
Surface Base of 8 Square-Inch
Minimum Contact Area
Per NFPA 780-4.16.3

2 RGS Conduits
(1-1 1/2” Power and 1-1 1/2” Communications)
1-1 1/2” Threaded Couplings
2-1 1/2” Threaded Couplings

NOTE: Threaded couplings to be provided for all uprights

1/2” ETP Alloy 110 Copper
Air Terminal (Class II)
Surface Base of 8 Square-Inch
Minimum Contact Area
Per NFPA 780-4.16.3

Conduit Exit Oriented
In Necessary Direction
See Sheet 3 for Conduit Details

1/4” Dia. Stainless Steel
Hex Head Screws, TYP.
Tack Welded
Cover Clip, TYP.
4” x 3/8” Handhole
Frame Made
Continuous with a
Full Penetration Weld

11 Gauge Handhole
Cover

HANDHOLE COVER

HANDHOLE FRAME

11 Gauge Handhole
Cover

SECTION A-A
(Thru Handhole)

Handhole Frame
Tack Welded
Cover Clip TYP.

1/4” Stainless Steel
Hex Head Screws, TYP.

PARTIAL PENETRATION WELD

PINELLAS COUNTY

DYNAMIC MESSAGE SIGN

SHEET 2 OF 5

DETAIL INDEX I.D.: 1730 - SH.2

DATE: OCT/2017

REVISION:
NOTES:

1. ALL CONDUIT ENTRANCES ON THE DMS STRUCTURE UPRIGHT SHALL BE INCLUDED IN THE DESIGN AND MANUFACTURED. NO FIELD DRILLING SHALL BE ALLOWED.

2. #2 AWG TIN-PLATED BARE SOLID COPPER GROUND WIRE TO BE BONDED TO AIR TERMINAL WITH EXOTHERMIC WELD AND RUN INTERNAL TO UPRIGHT AND THROUGH CONDUIT IN FOUNDATION.
NOTES:
1. REFER TO FDOT INDEX 18102 FOR GROUNDING ARRAY

IT'S ELECTRICAL PULL BOX
FIBER OPTIC PULL BOX OR FIBER OPTIC SPLICE BOX (SEE FDOT INDEX 17700) POWER CONDUIT (2" PVC) TO POWER ASSEMBLY
GROUNDING CONDUIT (2" PVC)

GROSS MOUNTED CABINET

OPTIONAL CONDUIT FOR CCTV CAMERA CABLE
SPARE CONDUIT (2" PVC)
FIBER OPTIC COMMUNICATIONS CONDUIT (2" PVC) (AS SHOWN ON PLANS)

PINELLAS COUNTY
DYNAMIC MESSAGE SIGN
SHEET 4 OF 5
CCTV MOUNTING ON DMS DETAIL
(OPTIONAL)

- 1-1 1/2" THREADED COUPLING FOR CCTV CAMERA CABLE
- 1-1 1/2" RGS CONDUIT FOR CCTV CAMERA CABLE
- CCTV, "J-HOOK" BRACKET AND MOUNTING HARDWARE (PROVIDED BY PINELLAS COUNTY)
- DMS UPRIGHT
- 2-1 1/2" THREADED COUPLINGS
- 2-1 1/2" RGS CONDUITS FOR ELECTRICAL SERVICE AND COMMUNICATIONS
- WEATHERHEAD
- MOUNTING BRACKET
- STAINLESS STEEL BANDING (BAND ON BOTH SIDES OF MOUNTING HARDWARE)
- CCTV CABLE INSIDE "J HOOK"
- DMS STRUCTURE
- WEATHERHEAD
- U-BOLT
- DRIP LOOP

NOTES:
1. LOCATION OF CAMERA ON THE DMS CAN BE ADJUSTED BY DIRECTION OF THE ENGINEER.
2. RGS CONDUIT RUNNING ON THE TRICORD SHALL BE STRAPPED EVERY 5 FEET.
3. 3-1 1/2" THREADED COUPLINGS TO BE PROVIDED ON ALL DMS STRUCTURES AS SHOWN IN DETAIL ABOVE.
4. MOUNT CCTV CAMERA A MINIMUM OF 2.5 FEET ABOVE THE SIGN

PINELLAS COUNTY

DYNAMIC MESSAGE SIGN
SHEET 5 OF 5

DETAIL INDEX I.D.: 1730 - SH. 5
DATE: OCT/2017
REVISION:
### Vertical Clearance (N.T.S.)

**Pipe** | **Horizontal Separation** | **Crossings (1)** | **Joint Spacing @ Crossings**
--- | --- | --- | ---
Vacuum-Type Sanitary Sewer, Storm Sewer, Stormwater Force Main, Reclaimed Water (2) | 3 ft. Minimum | 12 inches is the minimum, except for storm sewer, then 6 inches is the minimum and 12 inches is preferred | Full joint centered, alternate 3 ft. minimum from all joints
Gravity or Pressure Sanitary Sewer, Sanitary Sewer Force Main, Reclaimed Water (4) | 10 ft. Preferred | 6 ft. Minimum (3) | 12 inches is the minimum, except for gravity sewer, then 6 inches is the minimum and 12 inches is preferred | Full joint centered, alternate 6 ft. minimum from all joints
On-Site Sewage Treatment & Disposal System | 10 ft. Minimum | - | -

**Notes:** (In accordance with F.A.C. Rule 62-555.314)

1. Potable Water Main should cross above other pipe. When potable water main must be below other pipe, the minimum separation is 12 inches.
2. Reclaimed water regulated under Part III of Chapter 62-610, F.A.C.
3. 3 ft. for gravity sanitary sewer where the bottom of the water main is laid at least 6 inches above the top of the gravity sanitary sewer.
4. Reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.
5. All materials shall be in accordance with the latest approved materials specifications manual.
NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL.
2. IF STREET IS A SHORT CUL-DE-SAC, LOCATOR WIRE IS TO RUN FROM MAIN VALVE TO BLOW-OFF VALVE BOX.

PINELLAS COUNTY
TRACER WIRE LAYOUT DETAIL

DETAIL INDEX I.D.:
PCU GD 3
DATE: FEB/2016
KEVIN BECOTTE, P.E.
REVISION:
1. All materials shall be in accordance with the latest P.C.U. approved material specification manual.
2. Use 2-#14 gauge (minimum), solid core copper wire with color coded insulation per service.
3. There shall be sufficient slack in tracer wire to extend a min. of 12" above valve box.
4. Wire is to continue through tees on main line where no valves exist.
5. Attach wire to top center line of main using duct tape or approved equal @ 5'-0" intervals.
6. Dummy boxes are to consist of a top section of a valve box assembly encased in a concrete valve box collar per P.C.U. approved standard detail.

---

REFER TO P.C.U. APPROVED STANDARD DETAIL FOR VALVE BOX/TRACER WIRE INSTALLATION

12" MIN.

---

2-#14 GAUGE SOLID CORE COPPER WIRES

---

VINYL DUCT TAPE OR APPROVED EQUAL

---

TAPPING SLEEVE OR TEE

---

PINELLAS COUNTY

TRACER WIRE INSTALLATION DETAIL
NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL.
2. FILTER FABRIC REQUIRED ON VALVES WHEN PIPE LINE HAS 5' OR MORE OF COVER
   VALVE KEY EXTENSION REQUIRED ON VALVES WITH OPERATOR NUT OVER 3' DEEP.
   COLOR CODED POLY WRAP REQUIRED ON ALL BURIED VALVES AND FITTINGS.

LOCK RING 6” PVC(SDR.35) OR APPROVED EQUAL 1”-3” WIDE BAND w/3” SECTION CUT OUT.
2 REQUIRED FOR EACH VALVE BOX

ADJUSTABLE VALVE BOX BOTTOM SECTION PER P.C.U. APPROVED MATERIALS SPECIFICATIONS

1” TO 1 ½” NOTCH IN LINE w/PIPE DIRECTION (UP TO 4 REQUIRED)

2-#14 GAUGE SOLID COPPER STRAND WIRES

JOINT RESTRAINERS

DUCT TAPE

FILTER FABRIC VALVE DRAPE SECURED TO PVC RISER

PINELLAS COUNTY

VALVE BOX/TRACER WIRE INSTALLATION DETAIL

DETAIL INDEX I.D.: PCU GD 4

DATE: FEB/2016

KEVIN BECOTTE, P.E.

REVISION:
NOTES
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL.
2. IF VALVE IS LOCATED WITHIN A SIDEWALK CONCRETE COLLAR MAY BE ELIMINATED AND DISK SET FLUSH DIRECTLY IN SIDEWALK.
3. BRONZE DISK REQUIRED: FOR ALL VALVES, AND DUMMY BOXES.
4. THE 24"x24"x6" THICK CONCRETE VALVE BOX COLLAR CAN BE INSTALLED BELOW THE FRICTION COARSE AND THE BRONZE DISK ANCHORED IN A NEAR-BY CURB OR SIDEWALK.
5. ALL VALVES/BOXES SHALL BE LOCATED BY MEANS OF A PERPENDICULAR 6"x2' BLUE STRIPE ACROSS THE CURB. THE DISTANCE FROM THE BACK OF THE CURB TO THE VALVE SHALL BE STENCILED ON THE CURB WITH NUMBERS FOUR INCHES HIGH, PAINTED BLUE, BY THE CONTRACTOR.

SECTION A-A

PLAN VIEW

PINELLAS COUNTY
CONCRETE VALVE BOX AND COLLAR DETAIL
1. All materials shall be in accordance with the latest approved material specification manual.
2. Fitting connection to existing pipe and reverse deadman must be part of one integral joint of pipe.
3. Reverse deadman for 16" and larger pipes shall be designed by engineer.

**Plan**

- Undisturbed soil
- Existing pressure main
- Rod or work concrete around joint restraint
- Joint restraint

**Profile**

- Existing pressure main
- Joint restraint
- 3000 P.S.I. concrete with max. 4" slump and min. 72 hr. cure time

**Notes:**
- MIN. SPEC. COVER
- 8"-12"

**Reversal Deadman Restraint Detail**

**Plan and Profile Diagram**

**Details Index ID:**

**PCU GD 6**

**Date:**

**FEB/2016**

**Signature:**

**KEVIN BECOTTE, P.E.**

**Revision:**

**PINELLAS COUNTY**
NOTE:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST APPROVED MATERIAL SPECIFICATION MANUAL.

6" SCH. 40 STEEL PIPE (OR D.I.P.) FILLED WITH AND SET IN CONCRETE. (4" PIPE MAY BE UTILIZED ON BACKFLOW DEVICES 2" AND SMALLER)

TWO COATS OF PAINT (SAFETY YELLOW) IN ACCORDANCE WITH SPECIFICATION ASTM D422-05

EXISTING GRADE
SLOPE CONCRETE TO DRAIN
0.35 YD$^3$ CONC. MIN. (3000 P.S.I.)

EXISTING PAVEMENT
EXISTING BASE
UNDISTURBED SOIL

INSTALLATION

45" (TYP.)
40" (TYP.)

HYDRANT GUARD (BOLLARD)

LAYOUT

PINELLAS COUNTY
BOLLARD DETAIL

DATE: FEB/2016

DETAIL INDEX I.D.: PCU GD 7

KEVIN BECOTTE, P.E.

REVISION:
1. All materials shall be in accordance with the latest approved material specification manual.
2. If distance from pipe joint to end of casing is 6' or less, no spacer is required.
3. Spacer to be installed over poly wrap.
4. All pipe in jack and bore casing shall be D.I. pipe with all joints restrained.

**NOTES:**

**SECTION A-A**

**CARRIER & CASING SIZES**

<table>
<thead>
<tr>
<th>WATER MAIN</th>
<th>4&quot;</th>
<th>6&quot;</th>
<th>8&quot;</th>
<th>10&quot;</th>
<th>12&quot;</th>
<th>14&quot;</th>
<th>16&quot;</th>
<th>18&quot;</th>
<th>20&quot;</th>
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<tbody>
<tr>
<td>CASING</td>
<td>8&quot;</td>
<td>12&quot;</td>
<td>16&quot;</td>
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<td>28&quot;</td>
<td>32&quot;</td>
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<td>40&quot;</td>
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<tr>
<td>CASING / WALL THICKNESS</td>
<td>.188</td>
<td>.188</td>
<td>.219</td>
<td>.250</td>
<td>.281</td>
<td>.344</td>
<td>.406</td>
<td>.406</td>
<td>.500</td>
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</table>

**PINELLAS COUNTY**

**JACK AND BORE UNDER ROADWAY DETAIL**

**DETAIL INDEX I.D.:**

**DATE:**

**REVISION:**
NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST APPROVED MATERIAL SPECIFICATION MANUAL.
2. IF DISTANCE FROM PIPE JOINT TO END OF CASING IS 6' OR LESS, NO SPACER IS REQUIRED.
3. CENTERLINE OF TRACKS IS DETERMINED AS CENTERLINE OF A SINGLE TRACK SET OR OUTSIDE SET OF TRACKS FOR DOUBLE SET.
4. SPACER TO BE INSTALLED OVER POLY WRAP.
5. ALL PIPE IN JACK AND BORE CASING SHALL BE D.I. PIPE WITH ALL JOINTS RESTRAINED.

SECTION A-A

<table>
<thead>
<tr>
<th>CARRIER &amp; CASING SIZES</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARRIER / WATER MAIN</td>
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<tr>
<td>CASING</td>
</tr>
<tr>
<td>8&quot; 12&quot; 16&quot; 20&quot; 24&quot; 28&quot; 32&quot; 36&quot; 40&quot;</td>
</tr>
<tr>
<td>CASING / WALL THICKNESS</td>
</tr>
<tr>
<td>.188 .188 .219 .250 .281 .344 .406 .406 .500</td>
</tr>
</tbody>
</table>

PINELLAS COUNTY

JACK AND BORE UNDER RAILWAY DETAIL

PCU GD 9

DATE: FEB/2016

KEVIN BECOTTE, P.E.

REVISION:
1. All materials shall be in accordance with the latest PCU approved material specification manual.
2. All ductile iron pipe shall be restrained.
3. Rigid pipe connecting to HDPE pipe will require additional restraint methods of the rigid pipe as directed by engineer.

Typical D.I./HDPE Pipe Mechanical Joint Adaptor

NOT TO SCALE

D.I. Retainer Gland
D.R. 18, (C-900) PVC or Class 51 D.I.P.

Typical PVC/HDPE Pipe Mechanical Joint Adapter

NOT TO SCALE

Fusible PVC/HDPE Pipe Connections Detail
NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL.
2. ALL DUCTILE IRON PIPE SHALL BE RESTRAINED.
3. RIGID PIPE CONNECTING TO H.D.P.E. PIPE WILL REQUIRE ADDITIONAL RESTRAINT METHODS OF THE RIGID PIPE AS DIRECTED BY ENGINEER.
NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION.
2. THIS TABLE SHALL BE UTILIZED FOR ALL PRESSURE MAIN INSTALLATIONS. ALL FITTINGS SHALL BE RESTRAINED TO THE LENGTHS INDICATED, AT A MINIMUM.
3. THIS TABLE WAS DEVELOPED USING THE FOLLOWING ASSUMPTIONS:
   - D.I. PIPE WITH POLY WRAP
   - SAFETY FACTOR OF 1.5 TO 1
   - TEST PRESSURE OF 150 P.S.I.
   - SOIL TYPE = S.M.
   - TYPE 3 TRENCH
   - DEPTH OF COVER = 2.5' UP TO 18" AND 3' FOR 20" AND ABOVE.
5. ALL BENDS, TEES, AND VALVES SHALL BE RESTRAINED ON EACH SIDE OF THE FITTING.
6. ALL RESTRANIED PIPE LENGTHS ARE IN FEET.
7. "F" REPRESENTS THE RESTRANIED JOINTS AT THE FITTINGS.
8. HDPE TRANSITION VALVE IS FOR STRAIGHT TIE-INS. IF A BEND IS USED, THE VALVE FOR THE BEND MUST BE ADDED.
9. LINE VALVES SHALL BE RESTRAINED UPSTREAM AND DOWNSTREAM AS A DEAD END.

<table>
<thead>
<tr>
<th>PIPE SIZE</th>
<th>FITTINGS</th>
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<tbody>
<tr>
<td></td>
<td>TEE BRANCH ONLY</td>
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<tr>
<td>2&quot;</td>
<td>F</td>
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<tr>
<td>4&quot;</td>
<td>19</td>
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<tr>
<td>6&quot;</td>
<td>33</td>
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<td>24&quot;</td>
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<tr>
<td>30&quot;</td>
<td>195</td>
</tr>
<tr>
<td>36&quot;</td>
<td>230</td>
</tr>
</tbody>
</table>

PRESSURE MAIN RESTRANIED JOINT
NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL.
2. NO MORE THAN SIX (6) METER CONNECTIONS SHALL BE INSTALLED BETWEEN BLOW-OFF AND REDUCTION TO 2" MAIN.
3. CASINGS TO BE EXTENDED A MINIMUM OF 5' BEYOND E.P. OR B.O.C. IN ACCORDANCE WITH P.C.U. STANDARD DETAILS.
1. All materials shall be in accordance with the latest P.C.U. approved material specification manual and technical specifications.

2. All work shown on this drawing shall be paid for under the offset pay-item for the applicable size of the existing pipe to be relocated due to conflict. No separate payment shall be made under individual pay-items unless "A" is greater than 50'.

**PIPE SEPERATION-MINIMUM**

- 2-45° BENDS
- 1- SLEEVED CONNECTION (IF NECESSARY)
- 1- REVERSED DEADMAN
- CONCRETE CURE TIME=72 HOURS
- RESTRAIN ALL JOINTS AND POLYWRAP PER COLOR CODE.

**CL-350 D.I.P.**

w/COLOR-CODED POLYWRAP

20 L.F.- MINIMUM WHEN CONFLICT w/ SANITARY SEWER

"A" LESS THAN 50'

PROFILE VIEW

**PINELLAS COUNTY**

TYPICAL PRESSURE LINE
OFFSET RELOCATION DETAIL

DETAIL INDEX I.D.: PCU GD 13

DATE: FEB/2016

KEVIN BECOTTE, P.E.

REVISION:
1. All materials shall be in accordance with the latest P.C.U. approved material specification manual.

Above ground enclosure color coded per service (water plus above ground enclosure, model 171730 shown for reference only)

- 2" Angle Globe Valve w/Controller
- 2" x 8" Sch. 80 PVC
- Plug
- 2" Cam-Lock Quick Disconnect
- 4" PVC
- Brass Nipple
- 4" PVC
- 3" Min. Above Ground
- Ground
- 2" Min.
- 4" x 2" PVC Reducer
- Drainage Stone 6" Min.
- 6" Nipple
- P Trap
- TO Meter
- TO SEWER
- 2" PVC Discharge
- Slope @ 1/4" per ft.
1. All materials shall be in accordance with the latest P.C.U. approved material specification manual.
2. Corporation stops shall be compatible with DR 9 (C.T.S.) H.D.P.E. tubing.
3. Service saddle required for all taps except for 1” taps and smaller on D.I.P.
4. Meter only, to be furnished by P.C.U. (if required).
5. Residential size reclaim meter box shall be used for unmetered services and commercial size for metered.
6. All meter boxes located within vehicular areas shall be H-20 loading. All others shall be H-10 loading.
7. Tracer wire required on all services.
8. Tap and meter shall be installed by P.C.U. on all privately developed projects.
9. Services over 60’ in length shall be up-sized to 1”.

**Diagram Descriptions:**
- **1” Service Saddle (w/CC threaded inlet stainless steel straps)**
- **Reclaimed Water (Residential Size) Service Box w/Locking Cover**
  - Provide enough slack for 12” min. to extend out of box.
- **Water Tight Seal on Tracer Wire 12” max. from Main**
- **1” Curb Stop w/Locking Wing Pattern and Lever Handle**
- **1” H.D.P.E. (DR-9) Service Tubing Color Coded (Purple: Reclaimed) Tubing Stiffeners Required at Fittings.**
- **1” Corp. Stop**
- **Wording & Symbol to be Embossed into Lid (Residential Box Only)**
- **Tap to be Made Between 45° & 90° off Top Center of Main and to be Facing Meter**
- **PVC Plug (SCH-80)**
- **Reclaimed Service Box**
- **Undisturbed Earth**
- **Reclaimed Water Do Not Drink No Beber**

**Pinellas County**

1” Reclaimed Service Connection (Non-Metered) Detail

**Detail Index I.D.:**

**Date:**

**KEVIN BECOTTE, P.E.**

**Revision:**
NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL.
2. CORPORATION STOPS SHALL BE COMPATIBLE WITH DR 9 (C.T.S.) H.D.P.E. TUBING.
3. SERVICE SADDLE REQUIRED FOR ALL TAPS.
4. SERVICE BOXES SHALL BE PER P.C.U. APPROVED MATERIAL SPECIFICATIONS.
5. ALL SERVICE BOXES LOCATED WITHIN VEHICULAR AREAS SHALL BE H-20 LOADING. ALL OTHERS SHALL BE H-10 LOADING.
6. TRACER WIRE REQUIRED ON ALL SERVICES.
7. TAP AND METER SHALL BE INSTALLED BY P.C.U. ON ALL PRIVATELY DEVELOPED PROJECTS.
8. SERVICES OVER 60' IN LENGTH SHALL BE UP-SIZED TO 2".
9. RESIDENTIAL RECLAIMED SERVICE BOXES SHALL BE USED ON ALL RESIDENTIAL PROPERTY REGARDLESS OF THE LENGTH AND SIZE OF THE SERVICE LINE.

PINELLAS COUNTY
1½" OR 2" RECLAIMED SERVICE CONNECTION (NON-METERED) DETAIL

DETAIL INDEX I.D.:
PCU RD 2
DATE: FEB/2016
KEVIN BECOTTE, P.E.
REVISION:
NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL.
2. CORPORATION STOPS SHALL BE COMPATIBLE WITH DR 9 (C.T.S.) H.D.P.E. TUBING.
3. SERVICE SADDLE REQUIRED FOR ALL TAPS.
4. METER ONLY, TO BE FURNISHED BY P.C.U.
5. METER BOXES SHALL BE INDUSTRIAL SIZE.
6. ALL METER BOXES LOCATED WITHIN VEHICULAR TRAVEL AREAS SHALL BE H-20 LOADING. ALL OTHERS SHALL BE H-10 LOADING.
7. TRACER WIRE REQUIRED ON ALL SERVICES.
8. TAP AND METER SHALL BE INSTALLED BY P.C.U. ON ALL PRIVATELY DEVELOPED PROJECTS.
9. SERVICES OVER 60" IN LENGTH SHALL BE UP-SIZED TO 2".
10. WORDING TO BE EMBOSSED INTO LID "RECLAIMED WATER."

PINELLAS COUNTY

1½" OR 2" METERED RECLAIMED WATER SERVICE DETAIL
NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL.
2. ALL BURIED JOINTS SHALL BE RESTRAINED MECHANICAL JOINTS (M.J.).

CONCRETE VALVE BOX AND COLLAR PER P.C.U. APPROVED STANDARD DETAIL

SQUARE VALVE BOX COVER LID MARKED "RECLAIMED" TOP OF VALVE BOX TO BE FLUSH WITH FINISH GRADE

REFER TO P.C.U. STANDARD DETAIL VALVE BOX/TRACER WIRE INSTALLATION DETAIL FOR ADJUSTABLE VALVE BOX

LIMITS OF PAY ITEM

#57 DRAINAGE STONE 6" MIN.

RECLAIMED WATER BLOW-OFF BOX INDUSTRIAL SIZE

4" FEMALE CAM-LOK DUST CAP

4" MALE TO MALE CAM-LOK

M.J. TEE OR DEAD END OF MAIN

4" X 90° M.J. X M.J. BEND

P.E. X FLANGE SPOOL PIECE w/4" (NATIONAL PIPE THREAD) COMPANION FLANGE

4" M.J. GATE VALVE

4" M.J. GATE VALVE

PINELLAS COUNTY
RECLAIMED WATER FLUSHING ASSEMBLY DETAIL

DETAIL INDEX I.D.:
PCU RD 4

DATE: FEB/2016
KEVIN BOCOTTE, P.E.
REVISION:
NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL.
2. NO MORE THAN EIGHT (8) TO TEN (10) METER CONNECTIONS SHALL BE INSTALLED BETWEEN BLOW-OFF AND REDUCTION TO 4" MAIN.
3. CASINGS TO BE EXTENDED BEYOND E.P. OR B.O.C. IN ACCORDANCE WITH P.C.U. STANDARD DETAILS.
4. A 3' HORIZONTAL SEPARATION BETWEEN RECLAIMED AND POTABLE WATER MAINS.

PINELLAS COUNTY
CUL-DE-SAC LAYOUT - RECLAIMED WATER DETAIL

DATE: FEB/2016
KEVIN BECOTTE, P.E.
DETAIL INDEX I.D.: PCU RD 5
REVISION:
NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL.
2. ALL JOINTS TO BE RESTRAINED.

NOTE:
CONTRACTOR SHALL EXERCISE CAUTION WHILE MIXING ROADWAY STABILIZATION

PINELLAS COUNTY
2" OFFSET AIR RELEASE ASSEMBLY FOR RECLAIMED WATER (BELOW GROUND) DETAIL
SANITARY SEWER MANHOLE CONSTRUCTION NOTES

ALL MANHOLES
1. All materials shall be in accordance with the latest P.C.U. approved material specification manual.
2. Precast manhole sections shall be manufactured in accordance with the latest editions of ASTM C-478 with 4000 P.S.I., Type II Portland cement.
3. All riser units shall have a minimum height of 12" with the concentric cone set between 2½" and 14½" below the bottom of manhole cover frame.
4. All keyed joints shall be sealed with two continuous rings of flexible joint sealant, or approved equal.
5. All interior and exterior manhole surfaces shall be prepared for coating and coated in accordance with P.C.U. standard specifications and approved material specifications. Inside coating of manhole may be eliminated if using P.C.U. approved lining system.
6. Manhole base and bottom section shall be monolithically cast.
7. All pipe penetrations in manhole shall be precast or core drilled.
8. Manhole cover shall be equipped with an inflow protector.
9. A drop connection is required where the pipe invert is greater than 2' above the manhole invert. For drops 2' or less a flume shall be constructed.
10. All manholes 5' in diameter or greater shall require the use of a double ring and cover.
11. All manholes with a depth of 14' or greater shall be designed for anti-floatation and shall require submittal of calculations.

INSIDE DROP MANHOLES
12. There shall be no more than 2 inside drops per manhole.
13. When using a 90° bend on riser, it shall be rotated between 22½° and 45° in the direction of flow and grouted into bench.
14. All force main connections require the use of a force main hood with inside drop bowl.
15. All inside drops shall be constructed using P.V.C. SDR-35 pipe.

OUTSIDE DROP MANHOLES
16. Outside drop piping shall be constructed using the same material as the main line.

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<tr>
<th>DIA</th>
<th>FOR PIPES</th>
<th>CASTING SIZE CLEAR OPENING</th>
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<tbody>
<tr>
<td>4'-0&quot;</td>
<td>24&quot; &amp; UNDER</td>
<td>22.375&quot;</td>
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<tr>
<td>5'-0&quot;</td>
<td>30&quot; &amp; 36&quot; ALL INSIDE DROP</td>
<td>35&quot;</td>
</tr>
<tr>
<td></td>
<td>AND AIR RELEASE MANHOLES</td>
<td></td>
</tr>
<tr>
<td>6'-0&quot;</td>
<td>42&quot; &amp; OVER</td>
<td>48&quot;</td>
</tr>
</tbody>
</table>

PINELLAS COUNTY
MANHOLE CONSTRUCTION NOTES

PCU SD 1
FEB/2016
KEVIN BECOTTE, P.E.
NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIALS SPECIFICATION MANUAL.
2. REFER TO P.C.U. STANDARD DETAIL ON MANHOLE CONSTRUCTION NOTES.
3. ALL RISER UNITS SHALL HAVE A MINIMUM HEIGHT OF 12" WITH THE CONCENTRIC CONE SET BETWEEN 21/4" AND 141/2" BELOW THE BOTTOM OF MANHOLE COVER AND FRAME.

IN-FLOW PROTECTOR
C.I./D.I. FRAME & COVER
ASPHALT OR CONCRETE
GRADE
MANHOLE INTERNAL CHIMNEY SEAL

SEE NOTE No. 3

SOLID BRICK OR (HDPE RINGS NON-TRAFFIC AREAS ONLY)

8' UP TO 12' DEPTH
12' OVER
12' DEPTH

TABLE

<table>
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<tr>
<th>DIA.</th>
<th>FOR PIPES 24' &amp; UNDER</th>
<th>CASTING SIZE CLEAR OPENING</th>
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</thead>
<tbody>
<tr>
<td>4'-0'</td>
<td>22.375</td>
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</tr>
<tr>
<td>5'-0'</td>
<td>30' &amp; 36' ALL INSIDE DROP AND AIR RELEASE MANHOLES 35&quot;</td>
<td></td>
</tr>
<tr>
<td>6'-0'</td>
<td>42' &amp; OVER 48&quot;</td>
<td></td>
</tr>
</tbody>
</table>

PINELLAS COUNTY
STANDARD MANHOLE (PRE-CAST) DETAIL

PCU SD 1a
FEB/2016
KEVIN BEZOTTI, P.E.
NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL.
2. REFER TO P.C.U. STANDARD DETAIL ON MANHOLE CONSTRUCTION NOTES.
3. ALL RISER UNITS SHALL HAVE A MINIMUM HEIGHT OF 12" WITH THE CONCENTRIC CONE SET BETWEEN 2½" AND 14½" BELOW THE BOTTOM OF MANHOLE COVER AND FRAME.

PINELLAS COUNTY
INSIDE DROP MANHOLE CONNECTION DETAIL
NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL.
2. REFER TO P.C.U. STANDARD DETAIL ON MANHOLE CONSTRUCTION NOTES.
3. ALL RISER UNITS SHALL HAVE A MINIMUM HEIGHT OF 12" WITH CONCENTRIC CONE SET BETWEEN 2¾" AND 14¾" BELOW THE BOTTOM OF MANHOLE COVER AND FRAME.

PINELLA COUNTY
OUTSIDE DROP MANHOLE CONNECTION DETAIL
1. All materials shall be in accordance with the latest P.C.U. approved material specification manual.
2. Precast manholes shall be used and shall be constructed to standard manhole specifications.
3. Doghouse opening may only be used when placing a new manhole over an existing line. Otherwise, the opening must be cast.
4. Openings in precast units are to be 4" minimum to 8" maximum larger than the outside diameter of the existing pipe.
5. All riser units shall have a minimum height of 12" with the concentric cone set between 2½" and 14½" below the bottom of manhole cover and frame.

**NOTES:**

PINELLAS COUNTY

DETAIL INDEX I.D.: PCU SD 1d

DATE: FEB/2016

KEVIN BECOTTE, P.E.

REVISED:
1. All materials shall be in accordance with the latest P.C.U. approved material specification manual.

2. Refer to P.C.U. standard detail on manhole construction notes.

3. Sewer air release/vacuum valve shall be located at the high elevations on the force main.

4. Lid shall include hole openings to allow air release valve venting.

5. All riser units shall have a minimum height if 12" with the concentric cone set between 2½" and 14½" below the bottom of manhole cover and frame.

---

**Notes:**

1. All materials shall be in accordance with the latest P.C.U. approved material specification manual.

2. Refer to P.C.U. standard detail on manhole construction notes.

3. Sewer air release/vacuum valve shall be located at the high elevations on the force main.

4. Lid shall include hole openings to allow air release valve venting.

5. All riser units shall have a minimum height of 12" with the concentric cone set between 2½" and 14½" below the bottom of manhole cover and frame.

---

**PINELLAS COUNTY**

**SEWER AIR RELEASE/AIR VACUUM VALVE IN MANHOLE (12" PIPE OR LESS) DETAIL**

**DETAIL INDEX I.D.:**

**DATE:**

**FEB/2016**

**KEVIN BECOTTE, P.E.**

**REVISION:**
NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL.
2. SUPPORT/RESTRAINT MECHANISM FOR AIR RELEASE/AIR VACUUM VALVE SHALL REQUIRE APPROVAL BY COUNTY ENGINEER PRIOR TO INSTALLATION.

AIR RELEASE/AIR VACUUM VALVE
AS SPECIFIED IN CONSTRUCTION PLANS. (A.R.I.MODEL SHOWN)

PINELLAS COUNTY
OFFSET AIR RELEASE ASSEMBLY
FOR 4"-12" AND LARGER SANITARY SEWER
(ABOVE GROUND) DETAIL

DETAIL INDEX I.D.: PCU SD 3
DATE: FEB/2016
KEVIN BOCOTTO, P.E.
REVISION:
1. All materials shall be in accordance with the latest P.C.U. approved material specification manual.
2. Service connections may not have been shown on plan/profile sheets. Service connection locations shall be determined in the field and connections constructed in accordance with P.C.U. approved technical specifications, materials manual & these details. For new development, the service connection shall be constructed in the center of the lot.
3. Minimum depth under roadway 42" minimum depth at property line 36" (or as required for service).
4. Service lines shall be a min. of 6" to all residences.
5. No double Wye units shall be permitted on service line. All residences shall be served by a single service.
6. Risers shall be installed on all Wyes (both present & future services).
7. Risers shall preferably follow slope of bank to required depth.
8. The tracer wire shall start at the clean-out and run along the sewer service to the main and back to the clean-out as one continuous wire.

Service connection — detail
Scale: None

Clean-out detail
Scale: None

Pinellas County
Sewer service connection and clean-out detail

Detail Index I.D.: PCU SD 4
Date: FEB/2016
Kevin Becotte, P.E.
Revision:
NOTE:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL.

GRADE

D-3034 P.V.C. PIPE

4' MIN.
8' MAX.

GRADE

D.I. CL-350 PIPE OR
C-900/C-905 P.V.C. PIPE

ALL DEPTHS GREATER THAN 8' OR LESS THAN 4'
1. All materials shall be in accordance with the latest P.C.U. approved material specification manual.
2. Location of sample point bibb shall not be within limits of roadway but routed to roadway shoulder (non-traffic area).
3. Contractor shall utilize service line connections, where possible.
4. When utilizing temporary sample point as a service connection, then a tracer wire is required.
5. Sample points to be abandoned after use shall be fitted with a 3/4" CC x F.I.P. Corp. Stop.
6. Remove all pipe and above ground fittings and plug Corp. Stop with 1/2" plug.

**NOTES:**

*3/4" brass nipple (secured to 2" x 4")*

*Secure w/zip tie or approved equal*

*3/4" corp. stop (w/cc threads & c.t.s compression fitting)*

*3/4" or 1" corp. stop (w/cc threads & c.t.s compression fitting)*

*(see note #5)*

*3/4" or 1" service saddle (w/cc thread inlet)*

*Tap to be made between 45° & 90° off top center of main and to be facing meter*
NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL.
2. A VALVE KEY EXTENSION SHALL BE REQUIRED ON VALVES WITH OPERATOR NUT OVER 3' DEEP.
3. INSTALL AND REMOVE TEMP. FLUSHING AND SAMPLING ASSEMBLY AT 2" COUPLING.
4. INSTALL 2" BRASS PLUG UPON CLEARANCE OF THE P.C. HEALTH DEPARTMENT.
5. RESTRAIN 2" PIPE UP TO VALVE

CONCRETE VALVE BOX COLLAR PER P.C.U. STANDARD DETAIL

REFER TO P.C.U. STANDARD DETAIL FOR VALVE BOX INSTALLATION

SEE RESTRAINED JOINT TABLE FOR RESTRAINED LENGTH.

JOINT RESTRAINT

2" MALE ADAPTER

2" R.W. GATE VALVE

2" GALV. PIPE

36" MIN.

48" MAX.

SILL COCK

6" MIN.

60" MAX.

P.C.U. APPROVED METER BOX

6"-12"

4"-6"

2" COUPLING, BRASS

#57 DRAINAGE STONE 6" MIN. DEPTH

2" NIPPLE, BRASS

2"x 90° ELBOW, BRASS

18"-24" 2" NIPPLE, BRASS

PINELLAS COUNTY

2" PERMANENT WATER BLOW-OFF DETAIL

DETAIL INDEX I.D.: PCU WD 2

DATE: FEB/2016

KEVIN BECOTTE, P.E

REVISION:
NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL.
2. CORPORATION STOPS SHALL BE COMPATIBLE WITH DR 9 (C.T.S.) H.D.P.E. TUBING.
3. SERVICE SADDLE REQUIRED FOR ALL TAPS EXCEPT FOR D.I.P. 1" TAPS AND SMALLER.
4. METER ONLY TO BE FURNISHED BY P.C.U.
5. METER BOXES SHALL BE RESIDENTIAL SIZE.
6. ALL METER BOXES LOCATED WITHIN VEHICULAR TRAVEL AREAS SHALL BE H-20 LOADING.
7. ALL OTHERS SHALL BE H-10 LOADING.
8. TRACER WIRE REQUIRED ON ALL SERVICES.
9. SERVICES OVER 60' IN LENGTH SHALL BE UP-SIZED TO 1".
10. METERS WITH DUAL CHECKS SHALL UTILIZE A METER BOX WITH OFFSET MOUSE HOLES.

PINELLAS COUNTY

3/4" OR 1" POTABLE WATER SERVICE CONNECTION DETAIL
1. All materials shall be in accordance with the latest P.C.U. approved material specification manual.
2. Corporation stops shall be compatible with DR 9 (C.T.S.) H.D.P.E. tubing.
3. Service saddle required for all taps.
4. Meter only, to be furnished by P.C.U.
5. Meter boxes shall be industrial size.
6. All meter boxes located within vehicular travel areas shall be H-20 loading.
   All others shall be H-10 loading.
7. Tracer wire required on all services.
8. Services over 60' in length shall be up-sized to 2".
9. Tap and meter shall be installed by P.C.U. on all privately developed projects.

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R/W or easement line

Provide enough slack for 12" min. to extend out of box

Water tight seal on tracer wire 12" max. from main

1½" or 2" DR 9 (CTS) H.D.P.E. service tubing, (Blue: Potable). Tubing stiffeners required at fittings.

1½" or 2" ball corp. stop

1½" or 2" service saddle

Tap to be made between 45° & 90° off top center of main and to be facing meter

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1. Meter detail

Meter flg. w/ bolts & gasket

Poly. service 2"-4" brass nipple

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Pinellas County

1½" or 2" Potable Water Service Connection Detail
1. All materials shall be in accordance with the latest P.C.U. material specification manual.
2. Hydrants to be set parallel to curve at P.T. or P.C. 1' min. from R/W line.

FIRE HYDRANT ASSEMBLY TO BE PLACED INLINE WITH PROPERTY LINE

1' MIN.

WATER MAIN

CURB

VARRIES

P.T.

P.C.

RADIUS VARIES

WATER MAIN

SIDEWALK

PINELLAS COUNTY

TYPICAL FIRE HYDRANT LOCATIONS DETAIL

PINELLAS COUNTY

TYPICAL FIRE HYDRANT LOCATIONS DETAIL

PINELLAS COUNTY

TYPICAL FIRE HYDRANT LOCATIONS DETAIL
1. All materials shall be in accordance with the latest P.C.U. approved material specification manual.
2. All bolted fittings shall be polyethylene wrapped, color coded per service.
3. Valve box(es) shall have a concrete collar per P.C.U. approved standard detail.
4. If fire hydrant is installed within an off-street vehicular area, and is located within 10 ft. or less of a vehicular use area, guard posts (bollards) shall be installed per P.C.U. approved standard detail unless otherwise approved by the Director of Pinellas County Utilities Engineering or their authorized representative.
5. If distance between valve and hydrant is 10 ft. or greater, an additional valve shall be installed for control of hydrant unless otherwise approved by the Director of Pinellas County Utilities Engineering or their authorized representative.
6. Hydrant shall be installed plumb.
7. Hydrant shall be painted upon installation per P.C.U. approved material specifications.
8. All chains shall be removed after installation.

**Notes:**

- Mechanical joint or anchoring tee
- Undisturbed earth (Typ.)
- Concrete collar per P.C.U. approved standard detail
- Adjustable valve box
- Spec'd cover
- 5 1/4" 3 way fire hydrant
- R/W
- 12" min
- 18" to 24" varies 1' to 10'
- R.W. valve
- Anchoring coupling or restrained pipe
- Fire hydrant assembly

**Pinellas County**

**Fire Hydrant Assembly Detail**

**Detail Index I.D.:**

**PCU WD 6**

**Date:**

**Feb/2016**

**Kevin Becotte, P.E.**

**Revision:**
NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL.
2. ALL BOLTED FITTINGS SHALL BE POLYETHYLENE WRAPPED, COLOR CODED PER SERVICE.
3. VALVE BOX(ES) SHALL HAVE A CONCRETE COLLAR PER P.C.U. APPROVED STANDARD DETAIL.
4. HYDRANT SHALL BE INSTALLED PLUMB.
5. HYDRANT SHALL BE PAINTED AFTER INSTALLATION PER P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL.
6. TEE MAY BE ROTATED TO OBTAIN PROPER BURY ON FIRE HYDRANT.
7. ANCHORING ELBOW MAY BE SWITCHED (LONG vs. SHORT END) AND ROTATED TO SET FIRE HYDRANT IN OPPOSITE DIRECTION.
8. ANCHORING COUPLINGS MAY BE REPLACED WITH RESTRAINED PIPE.
9. ALL CHAINS SHALL BE REMOVED AFTER INSTALLATION.
10. IF FIRE HYDRANT IS INSTALLED WITHIN AN OFF-STREET VEHICULAR AREA, AND IS LOCATED WITHIN 10 FT. OR LESS OF A VEHICULAR USE AREA, GUARD POSTS (BOLLARDS) SHALL BE INSTALLED PER P.C.U. APPROVED STANDARD DETAIL UNLESS OTHERWISE APPROVED BY THE DIRECTOR OF P.C.U. ENGINEERING OR THEIR REPRESENTATIVE.
1. All materials shall be in accordance with P.C.U. approved materials specification manual.
2. ¾"x2"x8" tapping saddle and ¾" corporation valve installed at 22°.
3. Attach ¾" poly vinyl tubing.
4. Pea gravel for stability and eyebolt for tubing.
5. ¾" to ½" compression valve capable to connect with tubing.
6. ½" stainless steel goose neck for sampling.
7. Cover assembly with stainless hinges and lock capability.
8. Brass sample I.D. tag (round or square).
NOTES:
1. ALL MATERIALS SHALL BE IN ACCORDANCE WITH THE LATEST P.C.U. APPROVED MATERIAL SPECIFICATION MANUAL.
2. REFER TO P.C.U. STANDARD DETAIL ON MANHOLE CONSTRUCTION NOTES.
3. SEWER AIR RELEASE/VACUUM VALVE SHALL BE LOCATED AT THE HIGH ELEVATIONS ON THE FORCE MAIN.
4. LID SHALL INCLUDE HOLE OPENINGS TO ALLOW AIR RELEASE VALVE VENTING.
5. ALL RISER UNITS SHALL HAVE A MINIMUM HEIGHT OF 12" WITH THE CONCENTRIC CONE SET BETWEEN 2½" AND 14½" BELOW THE BOTTOM OF MANHOLE COVER AND FRAME.
6. SIZE TEE DOWN ONE NOMINAL DIAMETER LESS THAN FORCE MAIN (E.G. 12"x10").
7. SIZE MANHOLE DIAMETER TO ACCOMMODATE VALVE EQUIPMENT AND OPERATION/MAINTENANCE.
8. SIZE TAPPING SADDLE OUTLET AT LEAST ONE-HALF DIAMETER OF FORCE MAIN.

PINELLAS COUNTY
SEWER AIR RELEASE/AIR VACUUM VALVE MATRIX AND MAIN CONNECTION DETAIL

DETAIL INDEX T.O.:
PCU ARV 1A, 1B
DATE: JUL 2018
REVISION:

RESTRAINED TEE ROLLED UP
(SEE NOTE NO. 6)

FLANGED SADDLE OUTLET ROLLED UP
(SEE NOTE NO. 8)

6" MIN AND AS REQUIRED FOR BOLT ASSEMBLY
NOTES:
1. DEPENDING ON PIPE SIZE, SPOOL PIECE CAN BE STANDARD, CUSTOM FABRICATED, OR THREADED FLANGE JOINED TO THREADED FLANGED COUPLING ADAPTER, E.G., 4" X 24" SPOOL PIECE.

<table>
<thead>
<tr>
<th>PIPE DIAMETER</th>
<th>ARV INLET SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>UP TO 12&quot;</td>
<td>2&quot;</td>
</tr>
<tr>
<td>&gt;12&quot; AND GREATER</td>
<td>4&quot;</td>
</tr>
</tbody>
</table>

GRADE

SEE DETAIL PCU ARV 3C

ARV SIZE TABLE

PIPE DIAMETER | ARV INLET SIZE
--------------|----------------|
UP TO 12"     | 2"             |
>12" AND GREATER | 4"           |

GRADE

SEE DETAIL PCU ARV 3C

PIECE (SEE NOTE 1)

SEE DETAIL PCU ARV 1A, 1B.

EXISTING MAIN WITH ARV CONNECTION.

ARV RELEASE/VACUUM VALVE (ARI MODEL SHOWN)

2" OR 4" 316 SS NIPPLE
2" OR 4" 316 SS BALL VALVE
2" OR 4" 316 SS NIPPLE
316 SS BLIND FLANGE W/ 2" OR 4" THREADED TAP
FULL PORT 4" PLUG VALVE
SPOOL PIECE (SEE NOTE 1)

EXISTING MAIN WITH ARV CONNECTION.

SEE DETAIL PCU ARV 1A, 1B.

PINELLAS COUNTY

SEWER AIR RELEASE/AIR VACUUM VALVE LOCATION DETAIL

DETAIL INDEX I.D.: PCU ARV 2A, 2B

DATE: JUL 2018

KEVIN BECOTTE, P.E.

REVISION:
1. All materials shall be in accordance with the latest P.C.U. approved material specification manual.
2. Support/restraint mechanism for air release/air vacuum valve shall require approval by County Engineer prior to installation.
3. Venting to nearby sanitary manhole is at owner's discretion.
4. Refer to ARV configuration detail table on detail PCU ARV 1A, 1B.
5. If using detail 3B, contractor to propose means to penetrate and seal manhole penetration(s). Refer to Pinellas County standard technical specification (PC-STS) gravity sewers 33 33 01, section 3.07 joining pipe to manholes or other structures.
6. Refer to ARV size table and component list on detail PCU ARV 2A, 2B.

3A - Vented to nearby sanitary sewer manhole
3B - Vented to odor control
3C - Unvented

Designation index: PCU ARV 3A, 3B, 3C

Date: Jul 2018

Pinellas County
Above grade sewer air release assembly detail
NOTES:
1. REFER TO ARV CONFIGURATION DETAIL TABLE ON DETAIL PCU ARV 1A, 1B.
2. REFER TO ARV SIZE TABLE AND COMPONENT LIST ON DETAIL PCU ARV 2A, 2B.
3. IF USING DETAIL 4B, CONTRACTOR TO PROPOSE MEANS TO PENETRATE AND SEAL MANHOLE PENETRATION(S). REFER TO PINELLAS COUNTY STANDARD TECHNICAL SPECIFICATION (PC-STS) GRAVITY SEWERS 33 33 01, SECTION 3.07 JOINING PIPE TO MANHOLES OR OTHER STRUCTURES.

PINELLAS COUNTY
SEWER AIR RELEASE/AIR VACUUM VALVE
VENTED/ODOR CONTROLLED DETAIL

DETAIL INDEX I.D.:
PCU ARV 4A, 4B, 4C
DATE: JUL 2018
KEVIN BECOTTE, P.E.
REVISION: