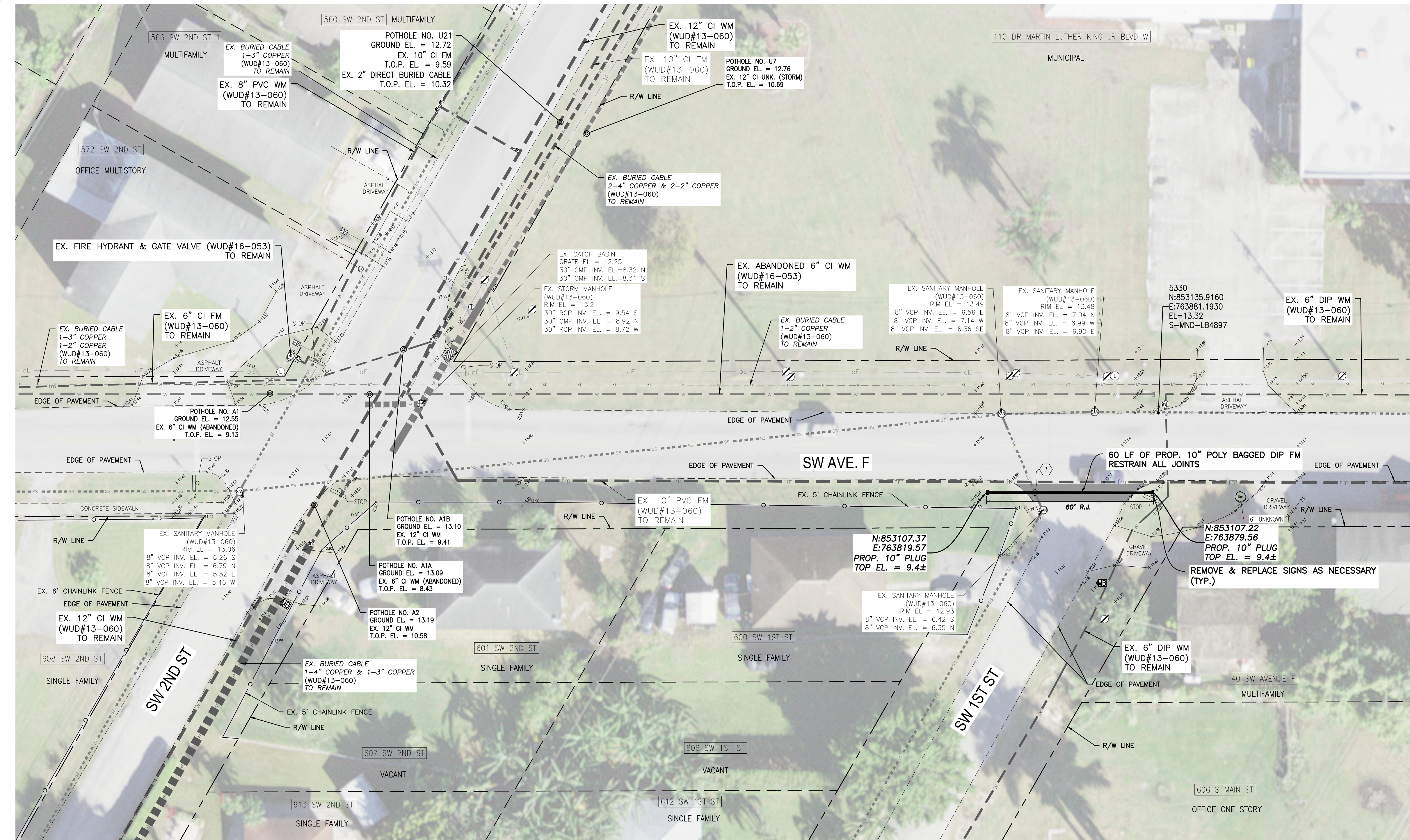
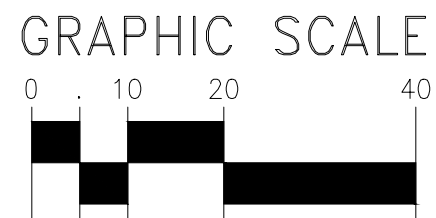


PLT DATES: Jul 23, 2021 TIME: 4:17 PM BY: AKESHAVARZ
DRAWING: P-20-1329-00-05 RESURFACING UTIL WORK C&I(2)C&I DWG-C-01(2)29 SW 1st RW PLAN.DWG LAYOUT - C-35



CONFIDENTIAL
PBC WUD DOCUMENT
NOT FOR PUBLIC DISCLOSURE
In Accordance with: FS
Chapter 281.301 FS
Chapter 119.071 (3) (b)
FS Chapter 153



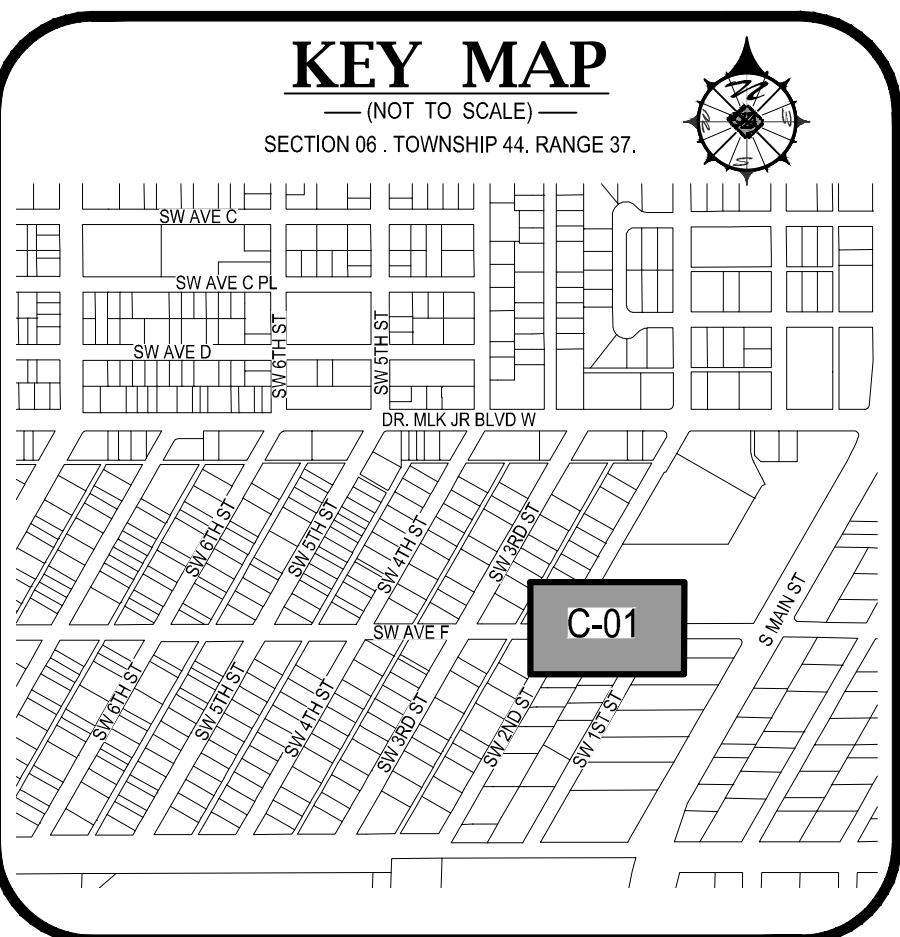
SHEET NOTES:

- ALL EXISTING UTILITY LOCATIONS ARE APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR. ALL SHOWN CROSSINGS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION OF THE PROPOSED SEGMENT OF MAIN.
- ALL UTILITIES UNCOVERED SHALL BE HELD AND PROTECTED DURING CONSTRUCTION.
- ALL AREAS DISTURBED MUST BE RESTORED TO ORIGINAL OR BETTER CONDITION. CONTRACTOR TO PROVIDE VIDEO TAPING OF ENTIRE SCOPE OF PROJECT PRIOR TO PRE-CONSTRUCTION MEETING.
- ALL PROPOSED FORCE MAIN SHALL BE INSTALLED PER PBCWUD STANDARD DETAILS & MINIMUM CONSTRUCTION STANDARDS.
- PIPE DEFLECTION AT THE JOINT SHALL NOT EXCEED 75% OF THE MANUFACTURERS RECOMMENDED MAXIMUM JOINT DEFLECTION.
- SEE SHEET C-02 FOR ADDITIONAL GENERAL NOTES & GENERAL DETAILS.
- EXISTING MAILBOXES SHALL BE RELOCATED AS NEEDED.
- EXISTING SANITARY LATERALS ARE SHOWN IN THEIR APPROXIMATE LOCATIONS FROM AS-BUILT DATA & SANITARY SEWER TV INSPECTION FOOTAGE. CONTRACTOR TO VERIFY EXISTING LATERAL LOCATION PRIOR TO CONSTRUCTION OF THE PROPOSED WATER MAIN.
- CONTRACTOR SHALL IDENTIFY ALL NECESSARY EX. UTILITY POLES THAT MUST BE SUPPORTED TO PERFORM THE WORK. SEE GENERAL NOTES SHEET C-02

UTILITY CONFLICT CROSSING TABLE

- 1 PROP. 10" POLY BAGGED DIP FM, BOT EL.=8.48±
EX. 8" VCP SAN, TOP EL.=7.04±

UTILITY COORDINATION CONTACTS			
CONTACT	COMPANY	PHONE #	EMAIL
DINO FARRUGO PAUL A. BRYAN	A&T	561-683-2729	DF1979@ATT.COM PB0428@ATT.COM
JOEL BRAY	FPL	386-586-6403	JOEL@FPL.COM
STEVEN ROSA SEAN WILLIAMS	COMCAST BOCA/DELRAY		STEVEN_ROSA@COMCAST.NET WFBRELO@TRINETCOMMUNICATIONS.COM
GUSTAVO PENA	FLORIDA CITY GAS	305-835-3624	FCG-ENGINEERING@SHARONWALKERENGINEERING.COM
DANIEL RODRIGUEZ	PBC TRAFFIC	561-681-4365	DYRDRIG@PBCGOV.ORG



IT'S THE LAW!
CALL TWO (2) BUSINESS DAYS
BEFORE YOU DIG
SUNSHINE 811

- GENERAL NOTES:**
- RESTRAINED JOINT LENGTHS FOR WASTEWATER DUCTILE IRON PIPE (DIP), POLYETHYLENE GLYCOL (PEGL), IN-LINE VALVES AND FITTINGS TO BE INSTALLED AND RESTRAINED ACCORDING TO THE TABLE SHOWN IN THE WASTEWATER STANDARD DETAIL A15 ON C-21.
 - ALL MATERIALS USED SHALL CONFORM TO PALM BEACH COUNTY STANDARD SPECIFICATIONS AND BE FROM THE COUNTY'S CURRENT APPROVED LIST OF MATERIALS AND MANUFACTURERS. SUBSTITUTIONS MAY BE SUBMITTED AT THE PRE-CONSTRUCTION MEETING PENDING APPROVAL BY P.B.C.W.U.D.
 - ELEVATIONS SHOWN HEREON REFER TO: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
 - ACCESS TO SCHOOLS, CHURCHES, BUSINESSES, AND THE EMERGENCY SERVICES SHALL BE MAINTAINED DURING THEIR SCHEDULED HOURS OF OPERATION.
 - CONTRACTOR TO COMPLY WITH THE TRAFFIC CONTROL PLAN ACCORDING TO THE LATEST APPROPRIATE F.D.O.T. INDEX/SECTION.
 - THESE PLANS AND SPECIFIC REQUIREMENTS ARE FOR WATER CONSTRUCTION AND WASTEWATER UTILITY ONLY. ALL PROPOSED IMPROVEMENTS WITHIN THE ROAD RIGHT-OF-WAY INCLUDING CLEARING, GRUBBING, GRADING, DRAINAGE STRUCTURE, DRAINAGE PIPING, PAVEMENT SIDEWALK, ELECTRICAL, CONDUITS, RELOCATION OF POWER POLES, ETC. ARE COVERED UNDER DIFFERENT CITY OF BELLE GLADE STANDARDS.
 - APPROVED RECORD DRAWINGS DOCUMENTS ARE REQUIRED ACCORDING TO P.B.C.W.U.D. MINIMUM ENGINEERING AND CONSTRUCTION STANDARDS AND IN THE APPLICABLE TECHNICAL SPECIFICATION SECTION, WHICHEVER IS MORE RESTRICTIVE.
 - RECORD DRAWINGS SHALL BE PREPARED IN STATE PLANE COORDINATE SYSTEM.
 - ALL UTILITY FEATURES SHALL BE SHOWN IN THEIR AS-BUILT LOCATION.
 - STATE PLANE COORDINATES SHALL BE DISPLAYED ON RECORD DRAWINGS FOR ALL FEATURES SPECIFIED IN P.B.C.W.U.D. REQUIREMENTS.
 - RECORD DRAWINGS SHALL BE PROVIDED FOR ALL EXISTING WATER AND SEWER FACILITIES IN ADDITION TO PROPOSED FACILITIES. SEWER RECORD DRAWINGS SHALL INCLUDE SANITARY SEWER LATERALS WHETHER SHOWN OR NOT ON THE CONSTRUCTION DRAWINGS. LOCATIONS OF MOST SANITARY SEWER LATERALS FOR ALL STREETS ARE UNKNOWN EXCEPT AS SHOWN ON THE CONSTRUCTION DRAWINGS.
 - CONTRACTOR SHALL PREPARE A DETAILED PLAN / EXHIBIT INDICATING THE TYPE OF RECEIVING SYSTEM PRIOR TO INSTALLATION. OPERATIONAL HOURS AND NOISE LEVELS SHALL BE IN COMPLIANCE WITH THE RIGHT-OF-WAY OWNER OR APPLICABLE MUNICIPALITY / REGULATORY AGENCIES' CODES AND ORDINANCES.
 - CONTRACTOR SHALL LIMIT THE WORK HOURS FROM 8:00 AM TO 5:00 PM MONDAY THROUGH FRIDAY. WORK BEYOND THESE HOURS AND ON WEEKENDS SHALL BE CONSIDERED ON A CASE BY CASE BASIS BY THE RIGHT-OF-WAY OWNER, MUNICIPALITY, APPLICABLE REGULATORY AGENCY AND P.B.C.W.U.D.
 - MAINTAIN MINIMUM 3'-H. CLEAR HORIZONTAL SEPARATION BETWEEN WATER FORCE MAIN AND POWER POLES WITH DIP PIPE, UNLESS OTHERWISE SPECIFIED ON PLANS.
 - ALL MUCK AND PLASTIC MATERIAL SHALL BE REMOVED TO MIN. 2' BELOW THE INVERT OF THE PIPE FOR MAINS, AND 8' FOR SERVICES OR TO THE ROCK LAYER. ALL BACKFILL MATERIAL SHALL BE CLEAN SAND COMPACTED PER THE TYPICAL TRENCH DETAIL.
 - ACCESS TO ALL PROPERTIES AND DELIVERY OF MAIL SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. ANY TEMPORARY BLOCKAGE OF DRIVEWAY OR ROADWAY ACCESS SHALL BE COORDINATED WITH THE RESIDENT AND P.B.C.W.U.D.
 - ALL FILL UNDER ASPHALT OR CONCRETE PAVEMENT SHALL BE COMPACTED TO 98% OF MAXIMUM DENSITY PER AASHTO T-99 OR 100% OF MAXIMUM DENSITY PER AASHTO T-99. RESTORATION OF GRAVEL, SHELL/ROCK OR SIMILAR DRIVEWAYS SHALL BE COMPACTED TO 98% AASHTO T-180 OR 100% OF MAXIMUM DENSITY PER AASHTO T-99.
 - CONTRACTOR TO VERIFY ALL UTILITY CROSSINGS. EXACT ELEVATIONS AND LOCATIONS PRIOR TO CONSTRUCTION OF THE PARTICULAR SEGMENT OF WATER MAIN AND/OR FORCE MAIN, INCLUDING CONNECTIONS TO EXISTING.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR SURVEYING AND STAKING RIGHT-OF-WAY LINES, LOT LINES AND PROPOSED WATER MAIN LOCATIONS WITH NO ADDITIONAL COST TO THE OWNER.
 - EXISTING LANDSCAPING DISTURBED DURING CONSTRUCTION SHALL BE IDENTIFIED PRIOR TO CONSTRUCTION AND REMOVALS OR DISTURBANCE SHALL BE COORDINATED WITH THE HOME OWNER, RESIDENT, THE RIGHT-OF-WAY OWNER AND/OR P.B.C.W.U.D.
 - THERE MAY BE OTHER UNDERGROUND UTILITIES THAT EXIST THAT ARE NOT SHOWN ON THESE PLANS. CONTRACTOR SHALL VERIFY WHETHER OR NOT ANY OTHER UTILITIES EXIST PRIOR TO CONSTRUCTION THAT WOULD INTERFERE WITH INSTALLATION OF WATER/FORCE MAIN AS SHOWN AND NOTIFY THE ENGINEER IMMEDIATELY.
 - PROVIDE SILTATION AND BANK EROSION PROTECTION CONTROL. CONTRACTOR SHALL SUBMIT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) NOTICE OF INTENT TO FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) PRIOR TO COMMENCING CONSTRUCTION. PROVIDE ADEQUATE RETENTION OF ALL DE-WATERING AND FLUSHING DISCHARGE. IF NOTES NO IS NOT REQUIRED, CONTRACTOR SHALL USE BEST MANAGEMENT PRACTICES IMPLEMENTING EROSION CONTROL MEASURES INCLUDING MONITORING AND REPORTING RAINFALL EVENTS DURING CONSTRUCTION.
 - MAINTENANCE OF TRAFFIC PLANS MUST BE APPROVED BY THE CITY OF BELLE GLADE. BEFORE COMMENCEMENT OF ANY WORK DISTURBING TRAFFIC, ALL LANE CLOSURES SHALL BE SCHEDULED BETWEEN 9:00 A.M. AND 3:00 P.M., UNLESS OTHERWISE APPROVED. ONLY SINGLE LANE CLOSURES ARE ALLOWED UNLESS OTHERWISE APPROVED. MAINTAIN CLEAR ZONE FOR THE APPROPRIATE F.D.O.T. INDEX/SECTION (UTILIZING POSTED SPEED LIMITS) WHEN CLEAR ZONE CANNOT BE MAINTAINED. PROVIDE SINGLE LANE CLOSURE USING F.D.O.T. APPROVED TEMPORARY CONCRETE BARRIER WALL. RESIDENTS SHALL BE NOTIFIED IF ACCESS TO THEIR HOME WILL BE IMPACTED.
 - CONTRACTOR SHALL NOTIFY SUNSHINE STATE "ONE CALL" (1-800-432-4770) AND ALL AFFECTED UTILITIES 48 HOURS IN ADVANCE OF ANY CONSTRUCTION SO THAT A COMPANY REPRESENTATIVE MAY BE PRESENT.
 - THE CONTRACTOR SHALL BE RESPONSIBLE, AT NO ADDITIONAL COST TO OWNER, TO COORDINATE WITH UTILITY PROVIDERS IN A TIMELY MANNER FOR ANY NECESSARY HOLDING, SUPPORTING AND PROTECTING ELECTRIC, TELEPHONE SIGNAL, POLES AND UNDERGROUND UTILITIES AS NECESSARY DURING CONSTRUCTION.
 - UTILITY POLES AND UNDERGROUND UTILITIES THAT MUST BE SUPPORTED TO PERFORM THE WORK SHALL BE IDENTIFIED BY THE CONTRACTOR TO PBCWUD AND/OR THE ENGINEER-OF-RECORD AHEAD OF TIME TO INVOKE THE APPLICABLE BID ITEM FOR PROTECTING AND SUPPORTING OF UTILITY POLES. CONTRACTOR SHALL PROVIDE DOCUMENTATION TO PBCWUD AND/OR ENGINEER-OF-RECORD THAT COORDINATING WITH THE UTILITY PROVIDER OCCURRED FOR ALL POLES IDENTIFIED AS NECESSARY, AND THAT SUPPORTING OF THE POLES WAS PERFORMED.
 - PRIOR TO COMMENCEMENT OF ANY EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH FLORIDA STATUTE 553.851 FOR THE PROTECTION OF UNDERGROUND GAS PIPE LINES (NO CUTS).
 - ANY PUBLIC LAND CORNER WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF DAMAGED OR DESTROYED CONTRACTOR SHALL NOTIFY THE PALM BEACH COUNTY SURVEY SECTION AND INCUR WITH ANY COST ASSOCIATED WITH RE-INSTALLATION.
 - CONTRACTOR SHALL USE EXTREME CAUTION DURING PIPELINE CONSTRUCTION AROUND PBC TRAFFIC ITS FACILITIES DURING PIPELINE CONSTRUCTION. TO AVOID DAMAGE AND/OR INTERRUPTION OF SERVICE SPECIAL CARE SHALL BE TAKEN FOR CONDUITS WITH FIBER OPTIC.
 - CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN OR AROUND AREAS OF OVERHEAD OR UNDERGROUND UTILITIES.
 - ALL SIGNS AND MAIL BOXES IN CONFLICT WITH CONSTRUCTION SHALL BE REMOVED AND REPLACED AT THE ORIGINAL POSITION UNLESS DIRECTED OTHERWISE BY PBCWUD, R/W OWNER, OR PROPERTY OWNER. SIGNS SHALL BE REINSTALLED IN ACCORDANCE WITH PDOT STANDARDS. MAIL BOXES SHALL MEET POST OFFICE REQUIREMENTS. MAIL DELIVERIES SHALL NOT BE INTERRUPTED. TEMPORARY MAILBOX SHALL BE PROVIDED BY THE CONTRACTOR.
 - ANY AREA DISTURBED DURING CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY OR ON PRIVATE PROPERTY SHALL BE RESTORED TO EQUAL OR BETTER CONDITION. THIS INCLUDES ALL GRASSING, HEDGES, BUSHES, TREES, LANDSCAPING OF ANY KIND, PAVEMENT, SIDEWALKS, SLABS, STRUCTURES, WALLS, FENCES, SIGNS, POSTS, POLES OF ANY KIND, GUARD RAILS, ETC. (UNLESS OTHERWISE NOTED). PRIVATE PROPERTY OWNER SHALL APPROVE RESTORATION ON THEIR PROPERTY.

LEGEND EXISTING

- ⊙ = SANITARY CLEAN OUT
- ⊠ = ELECTRIC HAND POLE
- ⊞ = CONCRETE TRAFFIC SIGNAL
- ⊡ = TRAFFIC SIGNAL SPLICE BOX
- ⊞ = BACK FLOW PREVENTER
- ⊞ = WATER METER BOX
- ⊞ = WATER VALVE
- ⊞ = FIRE HYDRANT
- ⊞ = WOOD LIGHT POLE
- ⊞ = WOOD UTILITY POLE
- ⊞ = TELEPHONE SPLICE BOX
- ⊞ = TELEPHONE RISER
- ⊞ = MAILBOX
- ⊞ = TELEPHONE MANHOLE
- ⊞ = POT HOLE

LEGEND PROPOSED

- ⊞ = PROPOSED WATER SERVICE WITH CASING & METER BOX
- ⊞ = WM VERTICAL DEFLECTION WITH 2 BENDS
- ⊞ = SIDEWALK/DRIVEWAY/CURB RESTORATION, REPLACE-IN-KIND
- ⊞ = PROPOSED WM GATE VALVE
- ⊞ = PROPOSED FIRE HYDRANT
- ⊞ = PROPOSED LINE STOP
- ⊞ = LIMITS OF MILL & OVERLAY
- ⊞ = ASPHALT RESTORATION

VERTICAL DATUM

ALL ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
CONVERSION FACTOR:
NAVD88 + 1.34 = NGVD29



KESHAVARZ & ASSOCIATES
Civil Engineers • Land Surveyors
711 North Dixie Highway, Suite 201
West Palm Beach, Florida 33401
Tel: (561) 689-8600
Certificate of Authorization No. 4897

K&A PROJECT No. 20-1329
DESIGNED BY: A. KESHAVARZ
DRAWN BY: E. RAMOS
CHECKED BY: M. WILLIAMS
APPROVED BY: M. KESHAVARZ
DATE: 07/23/21

PBCWUD No.
20-071

UTILITY ADJUSTMENTS FOR THE CITY OF
BELLE GLADE ROAD RESURFACING PROJECT
PLAN SHEET



PALM BEACH COUNTY
WATER UTILITIES
DEPARTMENT

No.	Date	Description

Amir J. Keshavarz
P.E. 85259
Jul 23, 2021

SHEET No.

C-01

PLAT DATES: Jul 23, 2021 TIME: 4:17 PM BY: AKESHAVARZ
DRAWING: P-20-1329 AND BS RESURFACING UTIL WORK C&I(2)C&I DWG-C-201329 SW 1ST RM PLAN L&ING LAYOUT- LAYOUT

POTABLE WATER MAIN, WASTEWATER MAIN,
AND STORM SEWER CONFLICT

4S

POTABLE WATER MAIN/FORCE MAIN
PRESSURE PIPE CONFLICT

5S

MECHANICAL THRUST RESTRAINT MINIMUM PIPE LENGTHS (FORCE MAINS)

41S

NOTES:

- STORM SEWER, GRAVITY WASTEWATER AND RECLAIMED WATER MAIN CROSSING UNDER POTABLE WATER MAINS SHALL BE LAD TO PROVIDE A MINIMUM VERTICAL DISTANCE OF TWELVE (12) INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE. WHERE THE MINIMUM SEPARATION CANNOT BE MAINTAINED, THE CROSSING SHALL BE APPROVED ON A CASE BY CASE BASIS. WASTEWATER/RECLAIMED WATER PIPE JOINTS AND POTABLE WATER MAIN JOINTS ARE EQUIVALENT FROM THE POINT OF CROSSING WITH NO LESS THAN TEN (10) FEET BETWEEN ANY TWO JOINTS. BOTH PIPES SHALL BE D.I.P. AND THE MINIMUM VERTICAL SEPARATION SHALL BE 6 INCHES. WHERE THERE IS NO ALTERNATIVE TO STORM/WASTEWATER/RECLAIMED WATER PIPES CROSSING OVER A POTABLE WATER MAIN, THE CRITERIA FOR MINIMUM 12" VERTICAL SEPARATION BETWEEN LINES AND JOINT APPROXIMATELY AS STATED ABOVE, SHALL BE REQUIRED, AND BOTH PIPES SHALL BE D.I.P. RESPECTIVE OF SEPARATION. D.I.P. IS NOT REQUIRED FOR STORM SEWERS.
- WHENEVER POSSIBLE MAINTAIN MIN. TEN (10) FEET HORIZONTAL DISTANCE (WALL TO WALL) BETWEEN POTABLE WATER MAIN AND STORM SEWER, WASTEWATER MAIN, OR FORCE MAIN. IF SEPARATION MAY BE APPROVED ON A CASE BY CASE BASIS. MAINTAIN MIN. THREE (3) FEET HORIZONTAL DISTANCE (WALL TO WALL) BETWEEN RECLAIMED WATER MAIN AND POTABLE WATER MAIN, STORM SEWER, WASTEWATER GRAVITY MAIN OR FORCE MAIN.
- FORCE MAIN CROSSING POTABLE WATER MAIN OR RECLAIMED WATER MAIN SHALL BE LAD TO PROVIDE A MINIMUM VERTICAL DISTANCE OF TWELVE (12) INCHES BETWEEN THE OUTSIDE OF THE FORCE MAIN AND OUTSIDE OF THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN WITH THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN CROSSING OVER THE FORCE MAIN.
- WASTEWATER LATERALS SHALL CROSS UNDER POTABLE WATER MAINS WITH A MIN. 12" VERTICAL SEPARATION WHENEVER POSSIBLE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED, A 30" SECTION OF DUCTILE IRON PIPE POTABLE WATER MAIN CENTERED ON THE CROSSING IS REQUIRED AND THE MINIMUM VERTICAL SEPARATION SHALL BE 6". WHERE THERE IS NO ALTERNATIVE TO A WASTEWATER LATERAL PIPE CROSSING OVER A POTABLE WATER MAIN, A MINIMUM 12" VERTICAL SEPARATION IS REQUIRED. THE LATERAL SHALL BE P.V.C. C-900 SDR18 OR BETTER, THE POTABLE WATER MAIN SHALL BE D.I.P. AND THE PIPE JOINTS SHALL BE EQUIVALENT FROM THE POINT OF CROSSING.
- POTABLE WATER SERVICE LINES SHALL CROSS OVER WASTEWATER MAINS WITH MIN. 12" VERTICAL SEPARATION. WHERE THIS MIN. SEPARATION CAN NOT BE MAINTAINED, THE WATER SERVICE SHALL BE ENCLOSED IN A MIN. 10" LONG CASING CENTERED OVER THE CROSSING WITH MIN. 6" VERTICAL SEPARATION.
- WASTEWATER MAINS, WATER MAINS, STORM PIPES AND OTHER UTILITY PIPES SHALL CROSS PERPENDICULAR WHENEVER POSSIBLE.

NOTES:

- STORM SEWER, GRAVITY WASTEWATER AND RECLAIMED WATER MAIN CROSSING UNDER POTABLE WATER MAINS SHALL BE LAD TO PROVIDE A MINIMUM VERTICAL DISTANCE OF TWELVE (12) INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE. WHERE THE MINIMUM SEPARATION CANNOT BE MAINTAINED, THE CROSSING SHALL BE APPROVED ON A CASE BY CASE BASIS. WASTEWATER/RECLAIMED WATER PIPE JOINTS AND POTABLE WATER MAIN JOINTS ARE EQUIVALENT FROM THE POINT OF CROSSING WITH NO LESS THAN TEN (10) FEET BETWEEN ANY TWO JOINTS. BOTH PIPES SHALL BE D.I.P. AND THE MINIMUM VERTICAL SEPARATION SHALL BE 6 INCHES. WHERE THERE IS NO ALTERNATIVE TO STORM/WASTEWATER/RECLAIMED WATER PIPES CROSSING OVER A POTABLE WATER MAIN, THE CRITERIA FOR MINIMUM 12" VERTICAL SEPARATION BETWEEN LINES AND JOINT APPROXIMATELY AS STATED ABOVE, SHALL BE REQUIRED, AND BOTH PIPES SHALL BE D.I.P. RESPECTIVE OF SEPARATION. D.I.P. IS NOT REQUIRED FOR STORM SEWERS.
- WHENEVER POSSIBLE MAINTAIN MIN. TEN (10) FEET HORIZONTAL DISTANCE (WALL TO WALL) BETWEEN POTABLE WATER MAIN AND STORM SEWER, WASTEWATER MAIN, OR FORCE MAIN. IF SEPARATION MAY BE APPROVED ON A CASE BY CASE BASIS. MAINTAIN MIN. THREE (3) FEET HORIZONTAL DISTANCE (WALL TO WALL) BETWEEN RECLAIMED WATER MAIN AND POTABLE WATER MAIN, STORM SEWER, WASTEWATER GRAVITY MAIN OR FORCE MAIN.
- FORCE MAIN CROSSING POTABLE WATER MAIN OR RECLAIMED WATER MAIN SHALL BE LAD TO PROVIDE A MINIMUM VERTICAL DISTANCE OF TWELVE (12) INCHES BETWEEN THE OUTSIDE OF THE FORCE MAIN AND OUTSIDE OF THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN WITH THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN CROSSING OVER THE FORCE MAIN.
- FITTINGS SHALL BE RESTRAINED.
- THE DEFLECTION TYPE CROSSING IS PREFERRED.
- DO NOT EXCEED 75% OF MANUFACTURERS RECOMMENDED MAXIMUM JOINT DEFLECTION FOR DUCTILE IRON PIPE. PVC PIPE CURVATURE MAY ONLY BE ACCOMPLISHED BY INSTALLING APPROPRIATE BENDS.
- ALL EXPOSED THE STEEL SHALL BE COATED WITH COAL-TAR EPOXY.
- POTABLE WATER SERVICE LINES SHALL CROSS OVER WASTEWATER MAINS WITH MIN. 12" VERTICAL SEPARATION. WHERE THIS MIN. SEPARATION CAN NOT BE MAINTAINED, THE WATER SERVICE SHALL BE ENCLOSED IN A MIN. 10" LONG CASING CENTERED OVER THE CROSSING WITH MIN. 6" VERTICAL SEPARATION.
- WASTEWATER MAINS, WATER MAINS, STORM PIPES AND OTHER UTILITY PIPES SHALL CROSS PERPENDICULAR WHENEVER POSSIBLE.

NOTES:

- THE DATA IN THE ABOVE TABLE ARE BASED UPON THE FOLLOWING INSTALLATION CONDITIONS:
SOIL TYPE-SAND TEST PRESSURE-150 PSI
TRENCH TYPE-3 SAFETY FACTOR-1.5
MINIMUM PIPE LENGTH ALONG TEE BORN-5'
DEPTH OF BURIAL-3'
VERTICAL OFFSET-5'
- THE RESTRAINED PIPE LENGTHS APPLY TO DUCTILE IRON AND PVC PIPE.
- ALL JOINTS BETWEEN UPPER AND LOWER BENDS SHALL BE RESTRAINED.
- RESTRAINED PIPE LENGTHS APPLY TO PIPE ON BOTH SIDES OF VALVES AND FITTINGS.
- MULTIPLE PIPE LENGTHS BY 1.4 FOR POLYETHYLENE GLASS PIPE.
- RESTRAINED PIPE LENGTHS EQUAL TO AN "IN LINE VALVE" CONDITION ARE REQUIRED AT EACH END OF A TRANSITION FROM KENT PIPE TO OTHER PIPE MATERIAL.
- DESIGN ENGINEER IS RESPONSIBLE FOR PROPER RESTRAINT PIPE LENGTH SIZING FOR THE PROJECT.

OPEN CUT PIPE INSTALLATION NON-THOROUGHFARE ROAD N.T.S.

- BEDDING SHALL CONSIST OF IN-SITU GRANULAR MATERIAL OR WASHED AND GRADED LIMEROCK 3/8" - 7/8" SIZING WITH EQUAL OR GREATER STRUCTURAL ADEQUACY AS EXISTING. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED.
- REPLACED BASE MATERIAL (PER LAND DEVELOPMENT DESIGN STANDARDS) OVER DITCH SHALL BE TWICE THE THICKNESS OF THE ORIGINAL BASE OR 24" MINIMUM, WHICHEVER IS GREATER.
- ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED AND BUTT-JOINTED.
- BASE MATERIAL SHALL BE PLACED IN THREE OR FOUR LAYERS (8" MAX. PER LAYER) AND EACH LAYER THOROUGHLY ROLLED OR TAMPED TO THE SPECIFIED DENSITY.
- SURFACE MATERIAL WILL BE CONSISTENT WITH THE EXISTING SURFACE OR 1 1/2" SI ASPHALTIC CONCRETE WITH RC-70 PRIME COAT AT 0.10 GAL/SQ. YD.
- PIPE SHALL BE PLACED IN A DRY TRENCH.

GENERAL NOTES

- ALL ROADWAY REPAIR WORK SHALL BE PERFORMED IN CONFORMANCE WITH APPLICABLE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND COUNTY PPMV EL-0-3606.
- DENSITY TESTS SHALL BE TAKEN IN 1 FT LIFTS ABOVE THE PIPE AT INTERVALS OF 400 FT MAXIMUM (1 SET MINIMUM) OR AS DIRECTED BY THE CONSTRUCTION COORDINATION DIVISION. RESULTS SHALL BE SUBMITTED TO CONSTRUCTION COORDINATION DIVISION AS PART OF THEIR FIELD REPORT.
- ENGINEER-OF-RECORD SHALL PROVIDE FULL-TIME INSPECTION DURING THE ENTIRETY OF THE OPEN-CUT OPERATION, BEGINNING WITH THE EXCAVATION AND CONTINUING THROUGH THE COMPLETION OF THE PAVING.
- IF THE PAVEMENT IS NOT COMPLETELY RESTORED IMMEDIATELY FOLLOWING THE OPEN CUT, A SMOOTH TEMPORARY PATCH (MINIMUM 1.25" ASPHALT) SHALL BE INSTALLED, PROPERLY MATCHING THE EXISTING GRADING OF THE ROADWAY. THE TEMPORARY PATCH SHALL BE REQUIRED TO REMAIN IN PLACE AND BE MAINTAINED FOR A PERIOD NO LONGER THAN 45 DAYS. THE COUNTY RETAINS THE RIGHT TO USE POSTED SUEITY TO COMPLETE ANY RESTORATION WORK THAT HAS NOT BEEN COMPLETED IN THE 45 DAYS PERIOD. ALTERNATIVE TEMPORARY TRENCH PROTECTION (STEEL PLATES OR OTHERS) MAY BE APPROVED BY THE CONSTRUCTION COORDINATION DIVISION.
- FOR THE FINAL RESTORATION, THE ROAD SHALL BE MILLED AND RESURFACED WITH 1-1/2" (ONE AND A HALF INCH) OF 5M OR SI ASPHALT SURFACE COURSE FOR A FULL LANE WIDTH ENCRDACHED BY THE TRENCH.
- APPROVED MAGNETIC TAPE IS REQUIRED FOR ALL MAIN PRESSURE PIPES AND CONDUIT IN THE COUNTY'S RIGHT-OF-WAY. INSTALL TAPE 24" BELOW FINISHED GRADE.
- CONTINUOUS 4" WIDE PAINT STRIPING IS REQUIRED FOR DIP/PCCP WATER MAINS (BLUE), DIP SANITARY MAINS (GREEN), DIP RECLAIMED WATER MAINS (PURPLE), GAS MAINS (YELLOW), OR AS REQUIRED BY THE APWA.

CONSTRUCTION PROCEDURES

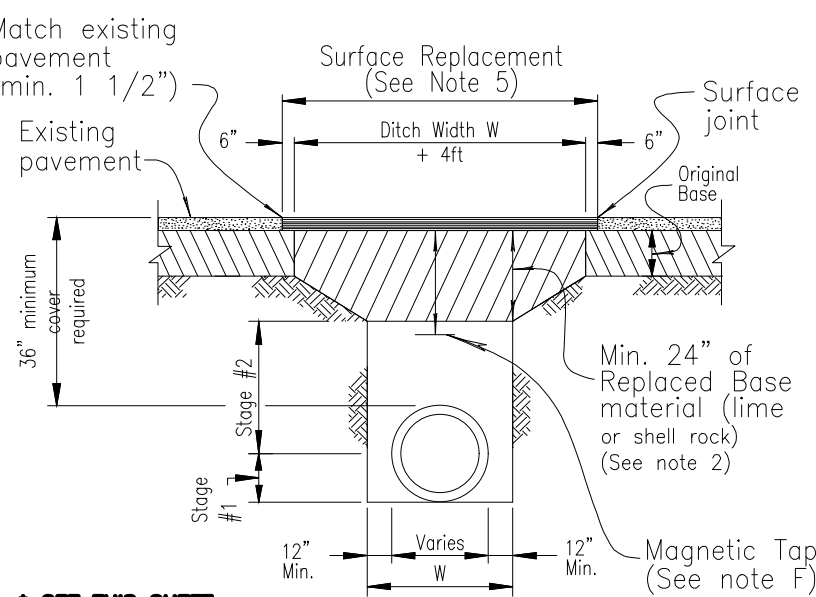
THE BACKFILL FOR THE FIRST AND SECOND STAGES SHALL BE PLACED IN 6" LIFTS. (COMPACTED THICKNESS) AND SHALL BE COMPACTED TO 100% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99 or 98% OF MAXIMUM DENSITY AS DETERMINED BY T-180.

STAGE 1:

THE CONTRACTOR SHALL PROVIDE ADEQUATE COMPACTED FILL BENEATH THE HAUNCHES OF THE PIPE, USING MECHANICAL TAMPS SUITABLE FOR THIS PURPOSE. THIS COMPACTION APPLIES TO THE MATERIAL PLACED BENEATH THE HAUNCHES OF THE PIPE AND ABOVE ANY BEDDING REQUIRED.

STAGE 2:

THE CONTRACTOR SHALL OBTAIN A WELL-COMPACTED BED AND FILL ALONG THE SIDES OF THE PIPE AND TO A POINT INDICATING THE TOP OF SUB-GRADE MATERIAL.



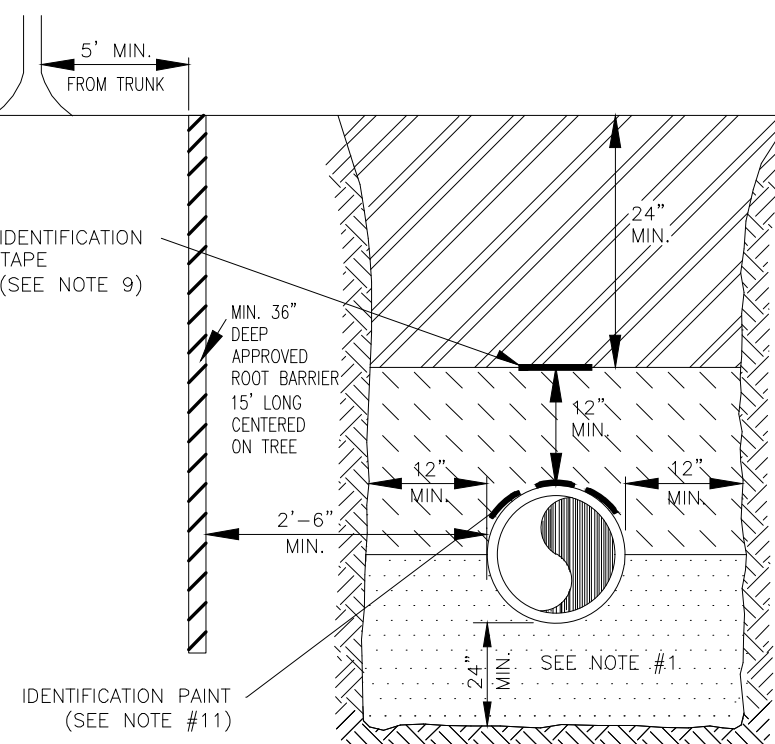
* SEE THIS SHEET FOR ADDITIONAL DENSITY TEST REQUIREMENTS

CONSTRUCTION NOTES

- BEDDING SHALL CONSIST OF IN-SITU GRANULAR MATERIAL OR WASHED AND GRADED LIMEROCK 3/8" - 7/8" SIZING WITH EQUAL OR GREATER STRUCTURAL ADEQUACY AS EXISTING. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED.
- REPLACED BASE MATERIAL (PER LAND DEVELOPMENT DESIGN STANDARDS) OVER DITCH SHALL BE TWICE THE THICKNESS OF THE ORIGINAL BASE OR 24" MINIMUM, WHICHEVER IS GREATER.
- ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED AND BUTT-JOINTED.
- BASE MATERIAL SHALL BE PLACED IN THREE OR FOUR LAYERS (8" MAX. PER LAYER) AND EACH LAYER THOROUGHLY ROLLED OR TAMPED TO THE SPECIFIED DENSITY.
- SURFACE MATERIAL WILL BE CONSISTENT WITH THE EXISTING SURFACE OR 1 1/2" SI ASPHALTIC CONCRETE WITH RC-70 PRIME COAT AT 0.10 GAL/SQ. YD.
- PIPE SHALL BE PLACED IN A DRY TRENCH.

GENERAL NOTES

- ALL ROADWAY REPAIR WORK SHALL BE PERFORMED IN CONFORMANCE WITH APPLICABLE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND COUNTY PPMV EL-0-3606.
- DENSITY TESTS SHALL BE TAKEN IN 1 FT LIFTS ABOVE THE PIPE AT INTERVALS OF 400 FT MAXIMUM (1 SET MINIMUM) OR AS DIRECTED BY THE CONSTRUCTION COORDINATION DIVISION. RESULTS SHALL BE SUBMITTED TO CONSTRUCTION COORDINATION DIVISION AS PART OF THEIR FIELD REPORT.
- ENGINEER-OF-RECORD SHALL PROVIDE FULL-TIME INSPECTION DURING THE ENTIRETY OF THE OPEN-CUT OPERATION, BEGINNING WITH THE EXCAVATION AND CONTINUING THROUGH THE COMPLETION OF THE PAVING.
- IF THE PAVEMENT IS NOT COMPLETELY RESTORED IMMEDIATELY FOLLOWING THE OPEN CUT, A SMOOTH TEMPORARY PATCH (MINIMUM 1.25" ASPHALT) SHALL BE INSTALLED, PROPERLY MATCHING THE EXISTING GRADING OF THE ROADWAY. THE TEMPORARY PATCH SHALL BE REQUIRED TO REMAIN IN PLACE AND BE MAINTAINED FOR A PERIOD NO LONGER THAN 45 DAYS. THE COUNTY RETAINS THE RIGHT TO USE POSTED SUEITY TO COMPLETE ANY RESTORATION WORK THAT HAS NOT BEEN COMPLETED IN THE 45 DAYS PERIOD. ALTERNATIVE TEMPORARY TRENCH PROTECTION (STEEL PLATES OR OTHERS) MAY BE APPROVED BY THE CONSTRUCTION COORDINATION DIVISION.
- FOR THE FINAL RESTORATION, THE ROAD SHALL BE MILLED AND RESURFACED WITH 1-1/2" (ONE AND A HALF INCH) OF 5M OR SI ASPHALT SURFACE COURSE FOR A FULL LANE WIDTH ENCRDACHED BY THE TRENCH.
- APPROVED MAGNETIC TAPE IS REQUIRED FOR ALL MAIN PRESSURE PIPES AND CONDUIT IN THE COUNTY'S RIGHT-OF-WAY. INSTALL TAPE 24" BELOW FINISHED GRADE.
- CONTINUOUS 4" WIDE PAINT STRIPING IS REQUIRED FOR DIP/PCCP WATER MAINS (BLUE), DIP SANITARY MAINS (GREEN), DIP RECLAIMED WATER MAINS (PURPLE), GAS MAINS (YELLOW), OR AS REQUIRED BY THE APWA.

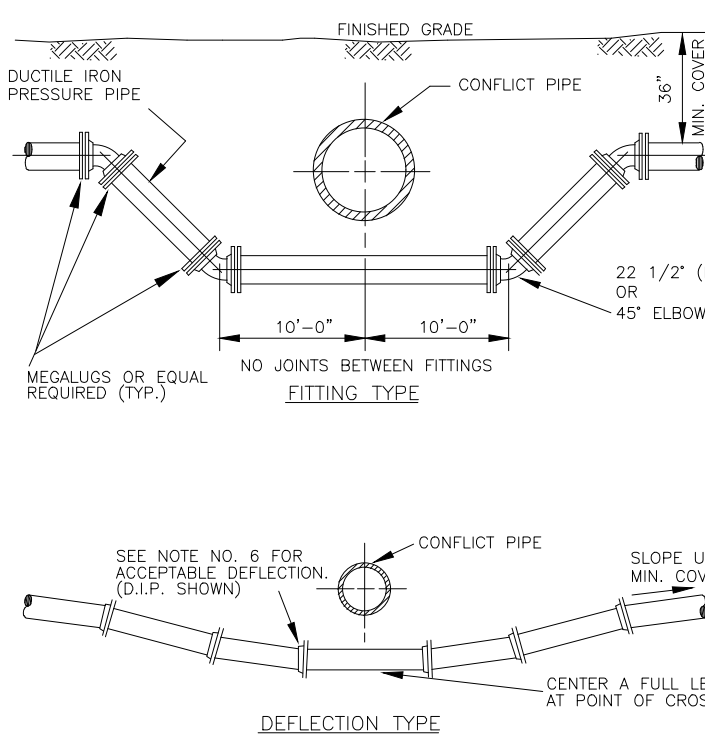


* SEE THIS SHEET FOR ADDITIONAL DENSITY TEST REQUIREMENTS

NOTES:

- BEDDING SHALL CONSIST OF CLEAN SAND. IN-SITU MATERIALS SUCH AS MUCK, PEAT, DEBRIS AND LARGER ROCKS SHALL BE REMOVED TO TWO (2) FEET BELOW THE INVERT OF THE PIPE, OR TO THE ROCK LAYER & REPLACED WITH ACCEPTABLE BEDDING MATERIAL. ALL BACKFILL MATERIAL SHALL BE CLEAN SAND NOT LESS THAN 24" IN DEPTH, COMPACTED PER THIS DETAIL.
- THE PIPE SHALL BE FULLY SUPPORTED FOR ITS ENTIRE LENGTH WITH APPROPRIATE COMPACTION UNDER THE PIPE HAUNCHES.
- THE PIPE SHALL BE PLACED IN A DRY TRENCH.
- BACKFILL SHALL BE FREE OF UNSUITABLE MATERIAL SUCH AS LARGE ROCK, MUCK AND DEBRIS.
- DENSITY TESTS ARE REQUIRED IN 1 FOOT LIFTS ABOVE THE PIPE AT INTERVALS OF 400' MAXIMUM. MINIMUM 1 SET OF TESTS FOR EACH WATER MAIN RUN, OR AS DIRECTED BY THE INSPECTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH ALL TRENCH SAFETY LAWS AND REGULATIONS.
- SEE SEPARATE DETAILS FOR OPEN CUT DETAIL FOR THOROUGHFARE & NON-THOROUGHFARE ROADS (ON THIS SHEET)
- THE AFFECTED AREA SHALL BE RESTORED TO EQUAL OR BETTER CONDITION OR AS SPECIFIED IN PERMIT/CONTRACT DOCUMENTS.
- APPROVED MAGNETIC TAPE IS REQUIRED FOR: ALL POTABLE WATER MAINS, FORCE MAINS AND RECLAIMED WATER MAINS. THE TAPE SHALL BE INSTALLED MAX. 24" BELOW FINISHED GRADE.
- ROOT BARRIER IS REQUIRED FOR APPROVED TREE INSTALLATION CLOSER THAN 10 FEET FROM UTILITY FACILITIES. PROP. WATER MAIN CAN BE INSTALLED UP TO 7.5' CLEAR FROM EX. TREE TRUNKS
- CONTINUOUS 4" WIDE PAINT STRIPING IS REQUIRED FOR DIP/PCCP WATER MAINS (BLUE), DIP SEWER MAINS (GREEN), AND DIP RECLAIMED WATER MAINS (PURPLE).
- PERMANENT ABOVE GROUND UTILITY MARKER SHALL BE INSTALLED IF REQUIRED BY PROPERTY OWNER GRANTING THE PIPE INSTALLATION PERMIT.
- FOR PIPE INSTALLATIONS IN ROAD RIGHTS-OF-WAY, ROAD OWNER'S PERMIT SPECIFICATIONS SHALL APPLY.

TYPICAL TRENCH DETAIL / ROOT BARRIER INSTALLATION N.T.S.



NOTES:

- STORM SEWER, GRAVITY WASTEWATER AND RECLAIMED WATER MAIN CROSSING UNDER POTABLE WATER MAINS SHALL BE LAD TO PROVIDE A MINIMUM VERTICAL DISTANCE OF TWELVE (12) INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE. WHERE THE MINIMUM SEPARATION CANNOT BE MAINTAINED, THE CROSSING SHALL BE APPROVED ON A CASE BY CASE BASIS. WASTEWATER/RECLAIMED WATER PIPE JOINTS AND POTABLE WATER MAIN JOINTS ARE EQUIVALENT FROM THE POINT OF CROSSING WITH NO LESS THAN TEN (10) FEET BETWEEN ANY TWO JOINTS. BOTH PIPES SHALL BE D.I.P. AND THE MINIMUM VERTICAL SEPARATION SHALL BE 6 INCHES. WHERE THERE IS NO ALTERNATIVE TO STORM/WASTEWATER/RECLAIMED WATER PIPES CROSSING OVER A POTABLE WATER MAIN, THE CRITERIA FOR MINIMUM 12" VERTICAL SEPARATION BETWEEN LINES AND JOINT APPROXIMATELY AS STATED ABOVE, SHALL BE REQUIRED, AND BOTH PIPES SHALL BE D.I.P. RESPECTIVE OF SEPARATION. D.I.P. IS NOT REQUIRED FOR STORM SEWERS.
- WHENEVER POSSIBLE MAINTAIN MIN. TEN (10) FEET HORIZONTAL DISTANCE (WALL TO WALL) BETWEEN POTABLE WATER MAIN AND STORM SEWER, WASTEWATER MAIN, OR FORCE MAIN. IF SEPARATION MAY BE APPROVED ON A CASE BY CASE BASIS. MAINTAIN MIN. THREE (3) FEET HORIZONTAL DISTANCE (WALL TO WALL) BETWEEN RECLAIMED WATER MAIN AND POTABLE WATER MAIN, STORM SEWER, WASTEWATER GRAVITY MAIN OR FORCE MAIN.
- FORCE MAIN CROSSING POTABLE WATER MAIN OR RECLAIMED WATER MAIN SHALL BE LAD TO PROVIDE A MINIMUM VERTICAL DISTANCE OF TWELVE (12) INCHES BETWEEN THE OUTSIDE OF THE FORCE MAIN AND OUTSIDE OF THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN WITH THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN CROSSING OVER THE FORCE MAIN.
- FITTINGS SHALL BE RESTRAINED.
- THE DEFLECTION TYPE CROSSING IS PREFERRED.
- DO NOT EXCEED 75% OF MANUFACTURERS RECOMMENDED MAXIMUM JOINT DEFLECTION FOR DUCTILE IRON PIPE. PVC PIPE CURVATURE MAY ONLY BE ACCOMPLISHED BY INSTALLING APPROPRIATE BENDS.
- ALL EXPOSED THE STEEL SHALL BE COATED WITH COAL-TAR EPOXY.
- POTABLE WATER SERVICE LINES SHALL CROSS OVER WASTEWATER MAINS WITH MIN. 12" VERTICAL SEPARATION. WHERE THIS MIN. SEPARATION CAN NOT BE MAINTAINED, THE WATER SERVICE SHALL BE ENCLOSED IN A MIN. 10" LONG CASING CENTERED OVER THE CROSSING WITH MIN. 6" VERTICAL SEPARATION.
- WASTEWATER MAINS, WATER MAINS, STORM PIPES AND OTHER UTILITY PIPES SHALL CROSS PERPENDICULAR WHENEVER POSSIBLE.

MIN. LENGTH OF PIPE (FEET) TO BE RESTRAINED

(SOURCES: EBAA IRON RESTRAINT LENGTH CALCULATION PROGRAM FOR PVC PIPE, RELEASE 3.1, AND DPMRA THRUST RESTRAINT FOR DUCTILE IRON PIPE, RELEASE 3.2)

FITTING TYPE	PIPE SIZE															
	4"	6"	8"	10"	12"	16"	20"	24"	30"	36"	42"	48"	60"	72"	84"	108"
45° HORIZ. BEND	14	20	25	30	35	45	54	63	73	84	93	101	120	144	168	216
45° HORIZ. BEND	6	8	11	13	15	19	22	26	30	35	38	42	50	60	72	90
22.5° HORIZ. BEND	3	4	5	6	7	9	11	12	15	17	18	20	24	28	34	42
11.25° HORIZ. BEND	1	2	3	3	4	4	5	6	7	8	9	10	12	14	17	21
90° VERT. OFFSET	29	41	53	64	74	95	115	134	160	185	207	228	270	324	396	504
UPPER BEND	7	10	13	16	19	25	30	35	42	49	56	62	75	90	108	135
LOWER BEND	12	19	24	29	34	39	48	56	66	77	86	94	113	136	160	200
45° VERT. OFFSET	3	4	6	7	8	10	12	15	18	20	23	26	31	37	44	55
UPPER BEND	6	9	12	14	17	19	23	27	32	37	41	45	54	65	78	99
LOWER BEND	1	2	4	4	4	5	6	7	8	10	11	12	15	18	22	28
22.5° VERT. OFFSET	3	4	6	7	8	9	11	13	16	18	20	22	27	32	39	49
UPPER BEND	1	1	1	1	2	2	2	3	3	4	5	5	6	7	9	11
LOWER BEND	1	1	1	1	2	2	2	3	3	4	5	5	6	7	9	11
11.25° VERT. OFFSET	32	45	59	70	83	107	129	151	180	207	228	252	306	369	451	564
FLUG (DEAD END)	32	45	59	70	83	107	129	151	180	207	228	252	306	369	451	564
IN-LINE VALVE	32	45	59	70	83	107	129	151	180	207	228	252	306	369	451	564
87X 6"	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
87X 6"	21	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-
87X 6"	18	34	47	-	-	-	-	-	-	-	-	-	-	-	-	-
107X 6"	16	32	46	58	-	-	-	-	-	-	-	-	-	-	-	-
127X 6"	13	30	44	57	69	-	-	-	-	-	-	-	-	-	-	-
167X 6"	7	26	41	55	67	90	-	-	-	-	-	-	-	-	-	-
207X 6"	1	21	38	52	65	88	109	-	-	-	-	-	-	-	-	-
247X 6"	1	16	34	49	62	86	108	129	-	-	-	-	-	-	-	-
307X 6"	1	8	28	44	58	83	106	127	154	-	-	-	-	-	-	-
367X 6"	1	1	22	39	54	80	103	124	153	179	-	-	-	-	-	-
427X 6"	1	1	15	33	49	77	100	122	151	177	201	-	-	-	-	-
487X 6"	1	1	7	27	44	73	97	120	149	178	200	222	-	-	-	-
87X 6"	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
87X 6"	38	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-
107X 6"	57	43	24	-	-	-	-	-	-	-	-	-	-	-	-	-
127X 6"	72	60	44	41	-	-	-	-	-	-	-	-	-	-	-	-
167X 6"	99	90	78	75	45	-	-	-	-	-	-	-	-	-	-	-
207X 6"	123	116	107	105	81	45	-	-	-	-	-	-	-	-	-	-
247X 6"	146	140	132	131	111	82	45	-	-	-	-	-	-	-	-	-
307X 6"	157	153	148	141	133	113	87	56	-	-	-	-	-	-	-	-
367X 6"	182	179	175	169	163	147	128	101	56	-	-	-	-	-	-	-
427X 6"	205	202	199	194	189	175	150	138	100	54	-	-	-	-	-	-
487X 6"	226	224	221	217	213	201	187	169	138	98	53	-	-	-	-	-

NOTES:

- THE DATA IN THE ABOVE TABLE ARE BASED UPON THE FOLLOWING INSTALLATION CONDITIONS:
SOIL TYPE-SAND TEST PRESSURE-150 PSI
TRENCH TYPE-3 SAFETY FACTOR-1.5
MINIMUM PIPE LENGTH ALONG TEE BORN-5'
DEPTH OF BURIAL-3'
VERTICAL OFFSET-5'
- THE RESTRAINED PIPE LENGTHS APPLY TO DUCTILE IRON AND PVC PIPE.
- ALL JOINTS BETWEEN UPPER AND LOWER BENDS SHALL BE RESTRAINED.
- RESTRAINED PIPE LENGTHS APPLY TO PIPE ON BOTH SIDES OF VALVES AND FITTINGS.
- MULTIPLE PIPE LENGTHS BY 1.4 FOR POLYETHYLENE GLASS PIPE.
- RESTRAINED PIPE LENGTHS EQUAL TO AN "IN LINE VALVE" CONDITION ARE REQUIRED AT EACH END OF A TRANSITION FROM KENT PIPE TO OTHER PIPE MATERIAL.
- DESIGN ENGINEER IS RESPONSIBLE FOR PROPER RESTRAINT PIPE LENGTH SIZING FOR THE PROJECT.



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CHECKED BY: **M. WILLIAMS**
APPROVED BY: **M. KESHAVARZ**
DATE: **07/23/21**

SHEET No.

C-02

Amir J. Keshavarz
P.E. 85259
Jul 23, 2021

Description

Date

No.

Date</