

Key Largo Wastewater Treatment District Board of Commissioners Meeting Agenda Item Summary

Meeting Date:
June 2, 2026

Agenda Item Number: N-1

Action Required:
Yes

Department: Engineering Sponsor: Robert Mather, P.E.

Subject:
May 2026 Construction Standards Update

Summary of Discussion:

The District has previously adopted Minimum Design and Construction Standards and Specifications governing wastewater facilities constructed by developers, owners, customers, and users. Apex has performed a detailed review and modernization of the standards, which have not undergone revision in approximately ten years. A key component of the revisions is that all newly constructed wastewater infrastructure is required to be equipped with Flovac monitoring components prior to final acceptance by the District to continue the progress in identifying and reducing inflow and infiltration.



<u>Reviewed / Approved</u>	<u>Financial Impact</u>	<u>Attachments</u>
Operations: _____	\$ 0.00	1. KLWTD May 2026 Construction Standards Update Memo 2. May 2026 KLWTD Construction Standards
Administration: _____		
Finance: _____	Funding Source:	
District Counsel: _____	N/A	
District Clerk: _____	Budgeted:	
Engineering: _____	N/A	

Approved By:  Date: 5-28-26
General Manager



Memorandum

Date: May 27, 2026
To: Peter Rosasco, General Manager
From: Robert Mather, P.E.
Regarding: Updates to the KLWTD Construction Standards

Dear Commissioners,

In accordance with the KLWTD General Rules and Regulations, the District has adopted Minimum Design and Construction Standards and Specifications governing wastewater facilities constructed by developers, owners, customers, and users. These standards define the engineering design criteria and construction requirements applicable to infrastructure ultimately conveyed to and maintained by the District and certain minimum requirements for onsite infrastructure that will remain the property of the property owner.

The District continues to demonstrate a strong commitment to identifying and reducing inflow and infiltration (I&I) within the collection system, most notably through implementation of the Flovac Monitoring System. To support and expand this effort, Apex has undertaken a comprehensive update of the District's construction standards. The current standards have not undergone significant revision in approximately ten (10) years, and updates are necessary to reflect current practices, technologies, and regulatory requirements.

A key component of the proposed revisions is the requirement that all newly constructed wastewater infrastructure be equipped with Flovac monitoring components. This requirement will apply to vacuum pits, buffer tanks, grinder pump systems, lift stations, and other applicable facilities. Installation of these components will be required prior to final acceptance by the District. Incorporating monitoring infrastructure at the time of construction ensures compatibility with the District's existing system and enhances long-term operational efficiency and data collection capabilities.

In addition to the monitoring requirements, Apex has performed a detailed review and modernization of the standards. The revised document includes updated notes, construction details, and testing procedures consistent with current industry standards. The standards address gravity, force main, and vacuum sewer systems; system testing and reporting protocols; and detailed requirements for service laterals, vacuum pits, cleanouts, air intake terminals, vacuum mains, manholes, trenching, valve boxes, and related appurtenances. The revisions also formally incorporate the current Florida Building Code: Plumbing (FBC), ensuring consistency with applicable state requirements.

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Table Summary of Revisions

Sheet	Revision	Description
G-1.0	Cover Sheet	Updated date and added drawing index
G-2.0	Gen. Notes	Incorporated Florida Building Code: Plumbing
G-2.0	Sewer Collection System	Updated force main pressure pipe specifications.
G-2.0	Testing Requirements	Updated leakage test pressure Added vacuum system testing procedures
G-2.0	Flovac Monitoring	Added Flovac Monitoring requirements
G-3.0	Concrete Collars	Increased thickness and width from 6” to 8”
G-4.0	Dedicated Air Intakes	Added VE zone protection requirement, increased pad thickness, added notes for coated rebar placement to support terminal
G-4.0	Flowable Fill Detail	Added plastic wrap requirements, revised mix strength
G-5.0	Airvac Details	Removed 90-degree connections to mains, updated notes
G-6.0	Vacuum Service Laterals	Revised connection details to eliminate 90-degree bends
G-7.0	Manhole Notes	Added requirements for pipe penetration sealing
G-7.0	Trench Details	Updated details for unsuitable soil conditions
G-1.0 to G-8.0	General Formatting	Improved clarity and organization; reduced from 10 sheets to 8 sheets

Based on the need to modernize the District’s standards, improve system monitoring capabilities, and align with current codes and best practices, Apex recommends that the Board approve and adopt the revised Minimum Design and Construction Standards and Specifications.

Enclosures: May 2026 KLWTD Construction Standards

SANITARY SEWER CONSTRUCTION STANDARDS

GENERAL NOTES AND STANDARD DETAILS FOR

KEY LARGO WASTEWATER TREATMENT DISTRICT

MAY 2026



INDEX OF DRAWINGS

- G-1.0 COVER SHEET
- G-2.0 GENERAL NOTES AND SPECIFICATIONS
- G-3.0 GENERAL NOTES AND STANDARD DETAILS
- G-4.0 GENERAL NOTES AND STANDARD DETAILS
- G-5.0 GENERAL NOTES AND STANDARD DETAILS
- G-6.0 GENERAL NOTES AND STANDARD DETAILS
- G-7.0 GENERAL NOTES AND STANDARD DETAILS
- G-8.0 GENERAL NOTES AND STANDARD DETAILS

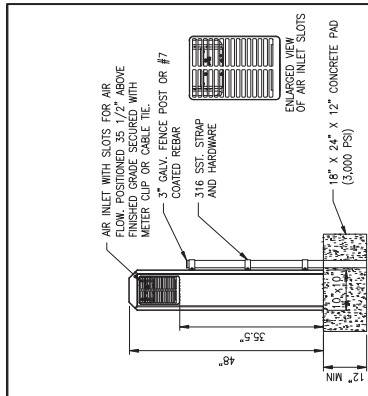
OWNER

KEY LARGO WASTEWATER TREATMENT DISTRICT
 103355 OVERSEAS HIGHWAY
 KEY LARGO, FL 33037

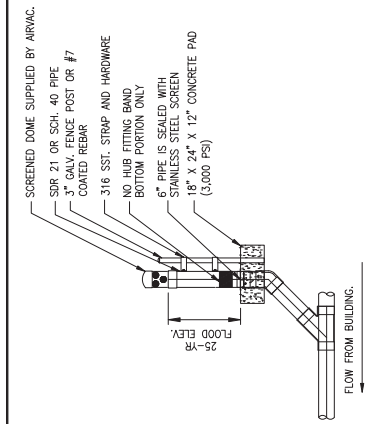
PREPARED BY

APEX COMPANIES, LLC.
 6805 OVERSEAS HWY
 MARATHON, FLORIDA 33050
 (941) 505-1700

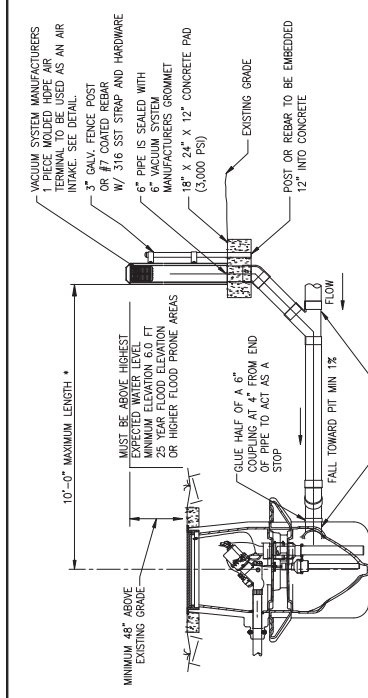




AIR TERMINAL DETAIL

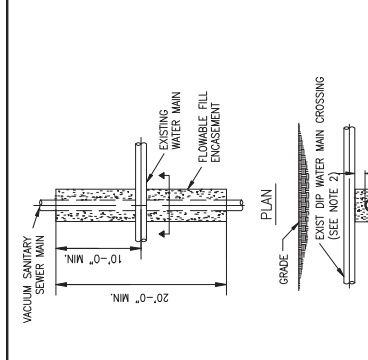


ALTERNATIVE AIR INTAKE



6" AIR INTAKE TERMINAL DETAIL

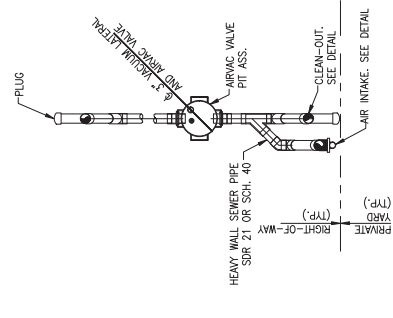
- AIR INTAKE NOTES:**
1. TERMINALS SHALL BE CONSTRUCTED WITH APPROX. 3/16" WALL THICKNESS.
 2. DEDICATED AIR INTAKE PIPE FROM PIT.
 3. BOTTOM OF INLET SHALL BE A MINIMUM 35.5" ABOVE GRADE.
 4. WHERE AIR INTAKES ARE INSTALLED IN "V" FLOOD ZONES, ENGINEER IS REQUIRED TO PROVIDE DETAIL ON PROTECTION FROM FLOODING.
 5. AIR INTAKE PIPING SHALL BE CONNECTED TO THE TOP OF GRAVITY LATERAL.
 6. AIR INTAKE SHALL BE INSTALLED WITHIN 10' OF PIT.



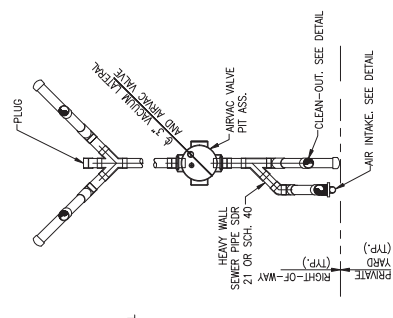
SECTION

- ENCASUREMENT NOTES:**
1. EXCAVATION SHALL BE AS NOTED IN DRAWINGS.
 2. EXCAVATION FLOWABLE FILL MIX: (500 PPS MIN)
 3. MATERIALS SHALL BE AS SPECIFIED IN SECTION 03300 CONCRETE.
 4. REQUIREMENT IS SAME FOR EXIST. WATER MAINS CROSSING UNDER VACUUM SANITARY SEWER MAINS.
 5. THE BOTTOM OF THE ENCASEMENT SHALL BE AT THE BOTTOM OF THE EXISTING WATER MAIN CROSSING OR PROPOSED WATERMAIN CROSSING ABOVE OR BELOW AN EXISTING OR PROPOSED WATERMAIN CROSSING.
 6. VACUUM PIPE TO BE WRAPPED IN PLASTIC BEFORE ENCASEMENT.
- FLOWABLE FILL ENCASEMENT (VACUUM SANITARY SEWER MAINS)**

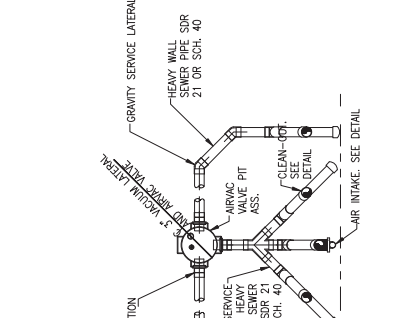
DEDICATED AIR INTAKES



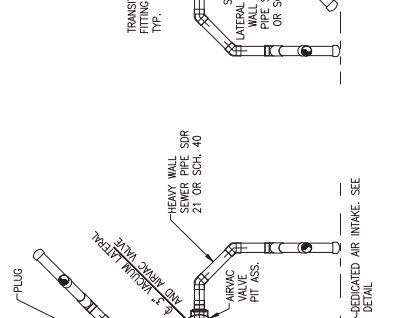
2 SERVICE CONNECTION W/ DEDICATED BREATH



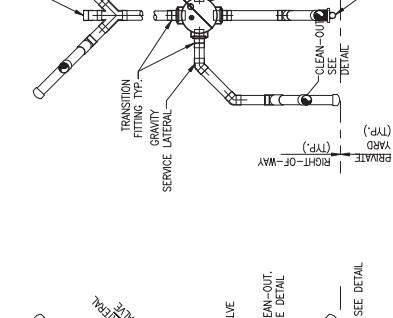
3 SERVICE CONNECTION W/ DEDICATED BREATH



2, 3, OR 4 SERVICE CONNECTION W/ DEDICATED BREATH SAME SIDE OF STREET



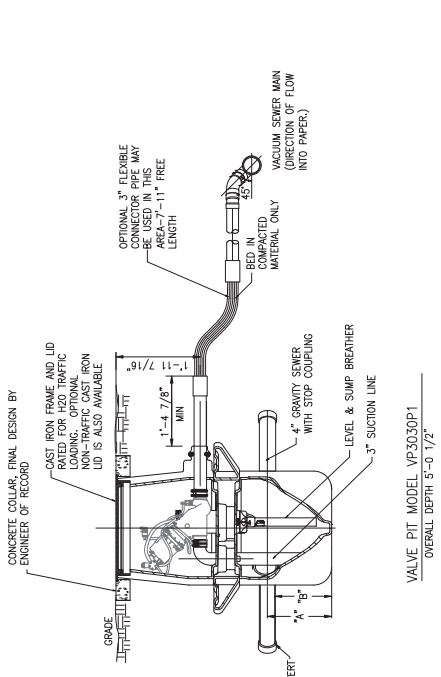
4 SERVICE CONNECTION (ALTERNATE) W/ DEDICATED BREATH



4 SERVICE CONNECTION W/ DEDICATED BREATH

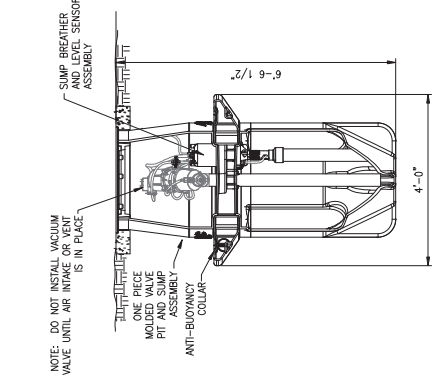
SERVICE CONNECTION DETAILS

Project Information		Revisions	
Approved By:	W/VTD	W/VTD	W/VTD
Scale:	N.T.S.	W/VTD	W/VTD
Job No.:	KEY011	W/VTD	W/VTD
Date Issued:	05/09/2016	W/VTD	W/VTD
Project Information		Revisions Description:	
W/VTD	W/VTD	W/VTD	W/VTD
N.T.S.	W/VTD	W/VTD	W/VTD
KEY011	W/VTD	W/VTD	W/VTD
05/09/2016	W/VTD	W/VTD	W/VTD
STANDARD DETAILS FOR KEY LARGO WASTEWATER TREATMENT DISTRICT (KLWTD)		GENERAL NOTES AND STANDARD DETAILS	
APEX		SHEET NO. G-4.0	



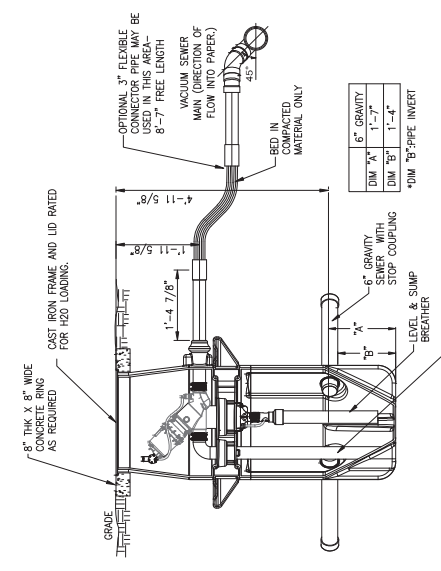
VALVE PIT MODEL VP3030P1
OVERALL DEPTH 5'-0" 1/2"

- NOTES:
1. ALL GROMMETS FOR VALVE PIT AND SUMP SUPPLIED BY ARMAC.
 2. HOLES IN VALVE PIT AND PIT BOTTOM ARE FACTORY CUT. ALL HOLES SHALL BE PROPERLY FINISHED AND DEBURRED. NEVER USE PIPE JOINT GREASE.
 3. DO NOT INSTALL VACUUM VALVE UNTIL HOME VALVE LINE IS NEAR COMPLETION AND AIR INTAKE PIPING IS IN PLACE.
 4. THE VALVE SHALL BE OPERATED BY THE OPERATOR OF THE VALVE. THE OPERATOR SHALL BE TRAINED IN THE USE OF THE VALVE. THE OPERATOR SHALL BE TRAINED IN THE USE OF THE VALVE. THE OPERATOR SHALL BE TRAINED IN THE USE OF THE VALVE.
 5. THE VALVE SHALL BE OPERATED BY THE OPERATOR OF THE VALVE. THE OPERATOR SHALL BE TRAINED IN THE USE OF THE VALVE. THE OPERATOR SHALL BE TRAINED IN THE USE OF THE VALVE.
 6. INSTALL VACUUM SERVICE LATERAL PIPING AND WHP WITH MIN. 0.2% FALL TOWARD VACUUM MAIN.

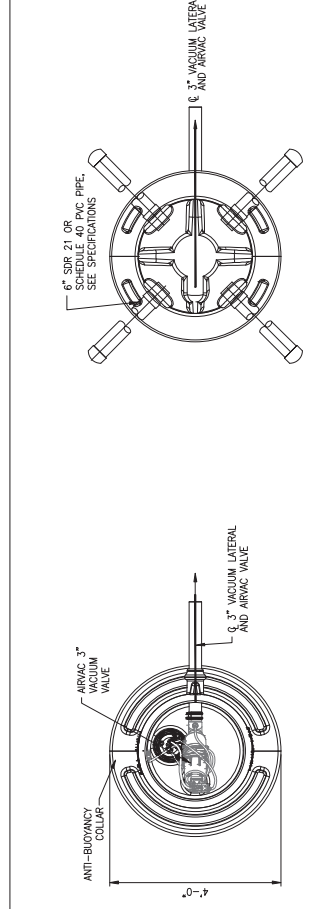


VALVE PIT MODEL VP4830P1
OVERALL DEPTH 6'-6" 1/2"
DEPTH TO CENTERLINE GRAVITY 4'-11" 5/8"

ONE-PIECE VALVE PIT ELEVATIONS

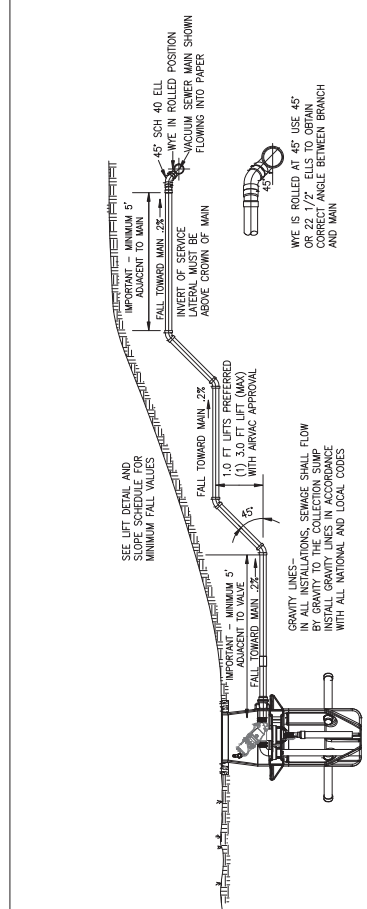


VALVE PIT MODEL VP4830P1
OVERALL DEPTH 6'-6" 1/2"
DEPTH TO CENTERLINE GRAVITY 4'-11" 5/8"



NOTE: WHEN INSTALLING ANY PIPE THROUGH A GROMMET INSURE THAT THE PIPE IS PROPERLY SEATED AND THE GROMMET IS PROPERLY SEATED. NEVER USE PIPE JOINT GREASE.

VALVE PIT AND SUMP PLAN VIEWS



LIFT DETAILS FOR 3\"/>

Project Information		Revisions	
Approved By:	Design:	Date:	Revisions Description:
Scale:	Drawn:		
Job No.:	Checked:		
Date Issued:			
STANDARD DETAILS FOR		SHEET NO.	
KEY LARGO WASTEWATER TREATMENT DISTRICT (KLWTD)		G-5.0	
GENERAL NOTES AND STANDARD DETAILS			

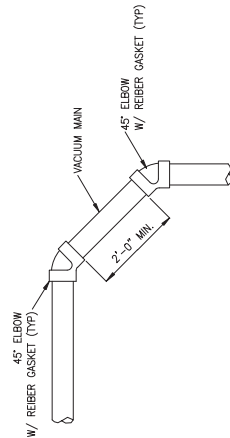


GENERAL NOTES:

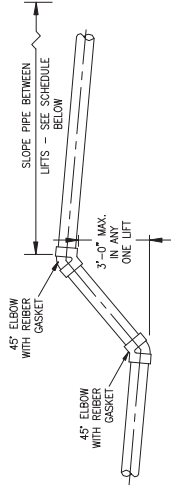
- SERVICE LINES:**
1. MINIMUM SLOPE BETWEEN LIFTS - 0.20% OR 0.25 FT. IF DISTANCE BETWEEN LIFTS IS LESS THAN 125 FEET.
 2. MINIMUM SLOPE FROM VALVE PIT TO MAIN - 2" OR 0.20% FALL (WHICHEVER IS GREATER).
 3. MINIMUM DISTANCE FROM VALVE PIT TO LIFT - SERVICE LINES SHALL BE 5'-0" FROM MAIN SERVICE LINE FROM LIFT IN SERVICE LINE TO CROSSOVER CONNECTION - 5'-0".

CROSSOVER CONNECTIONS (SERVICE LINE OR BRANCH CONNECTION TO MAIN)

1. MINIMUM SPACING BETWEEN ANY TWO CROSSOVER CONNECTIONS - 5'-0".
2. MINIMUM DISTANCE FROM TOP OF LIFT TO ANY CROSSOVER CONNECTION - 5'-0".
3. ALL CROSSOVER CONNECTIONS MUST ENTER OVER TOP OF THE MAIN (WYE IN VERTICAL POSITION).



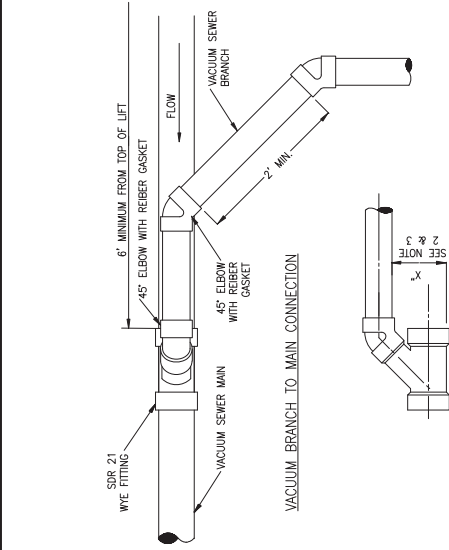
CHANGE IN DIRECTION



PIPE DIA	SLOPE SCHEDULE	
	MINIMUM FALL BETWEEN LIFTS USE GREATER VALUE OF (A) OR (B)	DISTANCE AT WHICH (B) COVERS
3"	0.20FT	>100FT
4"	0.25FT	>125FT
6"	0.25FT	>150FT
8"	0.25FT	>175FT
10"	0.25FT	>190FT

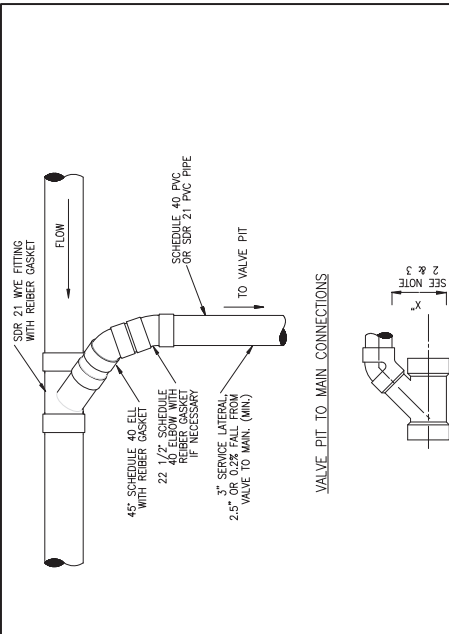
LIFT DETAIL AND SLOPE SCHEDULE

Project Information		Revisions	
Approved By:	Date:	Revisions Description:	
HWTD	APFX		
Drawn:	APFX		
Checked:	APFX		
Date Issued:	05/09/2005		



VACUUM BRANCH TO MAIN LINE CONNECTIONS

- NOTES:**
1. FITTINGS SHALL BE AS SPECIFIED IN SECTION 15481 - VACUUM SEWER SYSTEM AND ACCESSORIES.
 2. CONNECTION MAY BE ROTATED TO MAINTAIN ELEVATIONS NOTED ON THE PLAN AND PROFILE SHEETS.
 3. ADJUST PER FIELD CONDITIONS.
 4. FITTING AND PIPING DIAMETERS PER DRAWINGS.

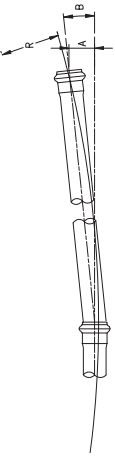


VALVE PIT TO MAIN CONNECTIONS

- NOTES:**
1. FITTINGS SHALL BE AS SPECIFIED IN SECTION 15481 - VACUUM SEWER SYSTEM AND ACCESSORIES.
 2. CONNECTION MAY BE ROTATED TO MAINTAIN ELEVATIONS NOTED ON THE PLAN AND PROFILE SHEETS.
 3. ADJUST PER FIELD CONDITIONS.
 4. FITTING AND PIPING DIAMETERS PER DRAWINGS.

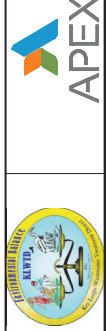
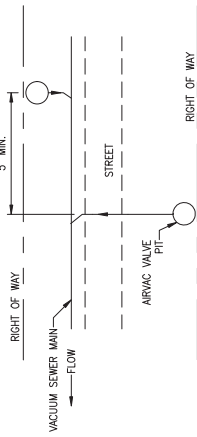
VACUUM SERVICE LATERAL TO MAIN OR BRANCH CONNECTION

NOMINAL SIZE PVC PIPE (INCHES)	PVC DEFLECTION SCHEDULE		
	MAXIMUM DISTANCE OF OFFSET (INCHES)	MAXIMUM ANGLE OF OFFSET (DEG.)	MINIMUM RADIUS OF CURVE (FT.)
4	20'	20'	20'
6	8	4	2
8	8	4	2
10	8	4	2

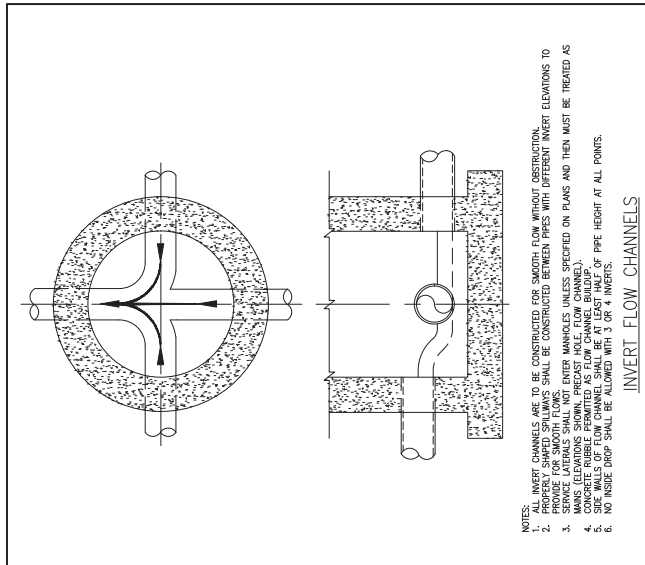


NOTE: 1) MINIMUM RADIUS OF CURVATURE VALID FOR 20' & 10' PIPE LENGTHS

MINIMUM SPACING BETWEEN SERVICE CONNECTIONS

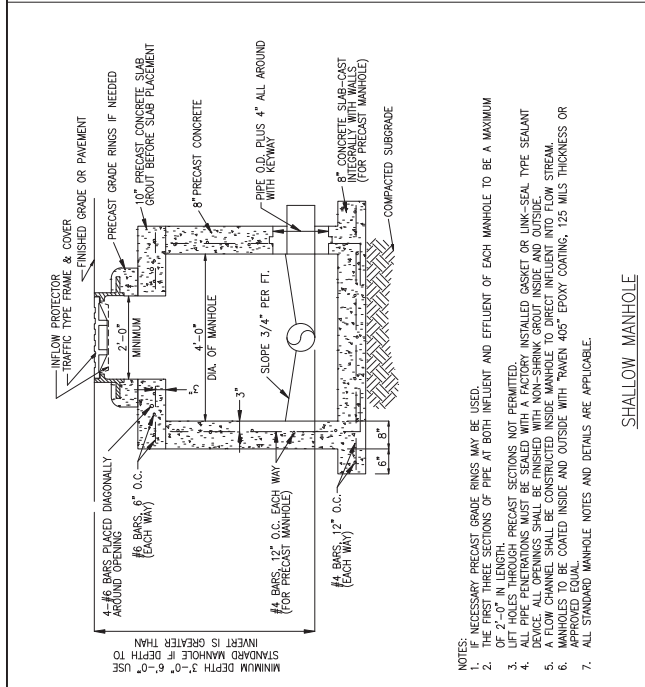


STANDARD DETAILS FOR
KEY LARGO WASTEWATER TREATMENT DISTRICT (KLWTD)
GENERAL NOTES AND STANDARD DETAILS



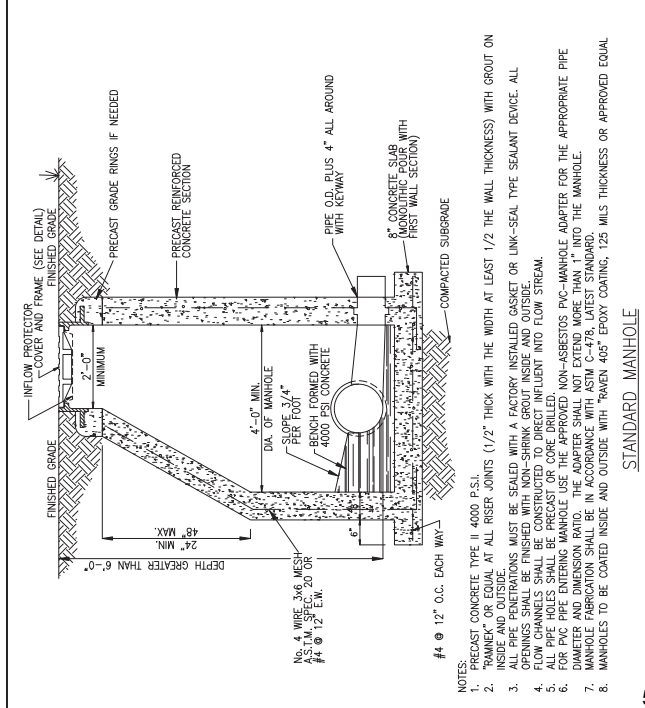
- NOTES:
1. ALL INVERT CHANNELS ARE TO BE CONSTRUCTED FOR SMOOTH FLOW WITHOUT OBSTRUCTION.
 2. PROVIDE FOR SMOOTH TRANSITIONS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS TO PREVENT TURBULENCE.
 3. SERVICE LATERALS SHALL NOT ENTER MANHOLES UNLESS SPECIFIED ON PLANS AND THEN MUST BE TREATED AS SEPARATE MANHOLES.
 4. CONSIDERABLE FLOW CHANNEL SHALL BE AT LEAST HALF OF PIPE HEIGHT AT ALL POINTS.
 5. SIDE WALLS OF FLOW CHANNEL SHALL BE AT LEAST HALF OF PIPE HEIGHT AT ALL POINTS.
 6. NO INSIDE DROP SHALL BE ALLOWED WITH 3 OR 4 INCHES.

INVERT FLOW CHANNELS



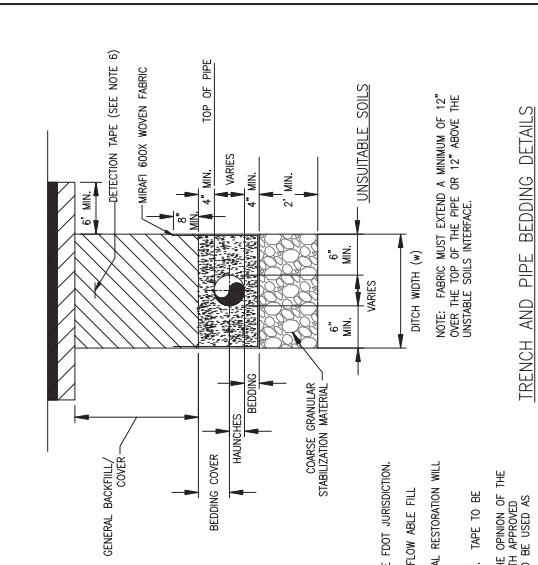
- NOTES:
1. IF NECESSARY, PRECAST GRADE RINGS MAY BE USED.
 2. THE FIRST THREE SECTIONS OF PIPE AT BOTH INFLUENT AND EFFLUENT OF EACH MANHOLE TO BE A MAXIMUM OF 2'-0" IN LENGTH.
 3. ALL PRECAST SECTIONS MUST BE FINISHED.
 4. ALL PIPE PENETRATIONS MUST BE SEALED WITH A FACTORY INSTALLED GASKET OR LINK-SEAL TYPE SEALANT DEVICE. ALL OPENINGS SHALL BE FINISHED WITH NON-SHRINK GROUT INSIDE AND OUTSIDE.
 5. A FLOW CHANNEL SHALL BE CONSTRUCTED INSIDE WITH TRENCH 405° EPOXY COATING, 125 MILS THICKNESS OR MANHOLES TO BE COATED INSIDE AND OUTSIDE WITH TRENCH 405° EPOXY COATING, 125 MILS THICKNESS OR ALL STANDARD MANHOLE NOTES AND DETAILS ARE APPLICABLE.

SHALLOW MANHOLE



- NOTES:
1. PRECAST CONCRETE TYPE II 4000 P.S.I.
 2. "TRENCH" OR EQUAL AT ALL RISER JOINTS (1/2" THICK WITH THE WIDTH AT LEAST 1/2 THE WALL THICKNESS) WITH GROUT ON INSIDE AND OUTSIDE.
 3. ALL PIPE PENETRATIONS MUST BE SEALED WITH A FACTORY INSTALLED GASKET OR LINK-SEAL TYPE SEALANT DEVICE. ALL FLOW CHANNELS SHALL BE CONSTRUCTED TO DIRECT INFLUENT AND FLOW STREAM.
 4. ALL PIPE HOLES ENTERING MANHOLE USE THE APPROVED NON-ASBESTOS PVC-MANHOLE ADAPTER FOR THE APPROPRIATE PIPE DIAMETER AND DIMENSION RING. THE ADAPTER SHALL NOT EXTEND MORE THAN 1/2" INTO THE MANHOLE.
 5. FOR PVC PIPE ENTERING MANHOLE USE THE APPROVED NON-ASBESTOS PVC-MANHOLE ADAPTER FOR THE APPROPRIATE PIPE DIAMETER AND DIMENSION RING. THE ADAPTER SHALL NOT EXTEND MORE THAN 1/2" INTO THE MANHOLE.
 6. MANHOLES TO BE COATED INSIDE AND OUTSIDE WITH TRENCH 405° EPOXY COATING, 125 MILS THICKNESS OR APPROVED EQUAL.

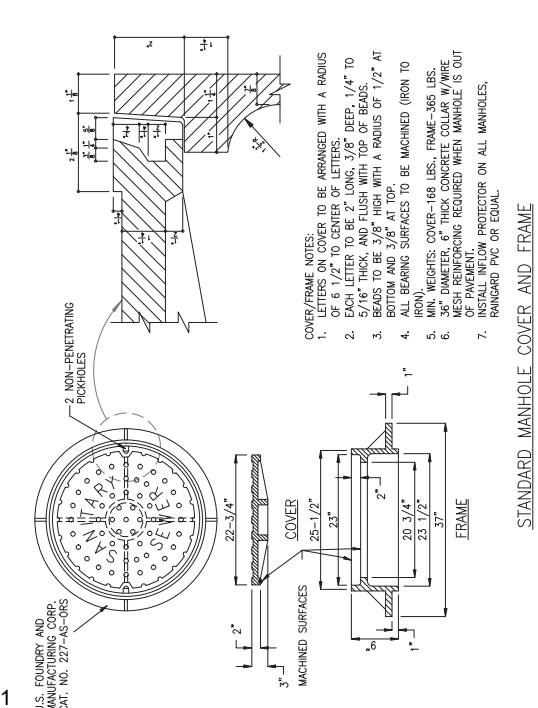
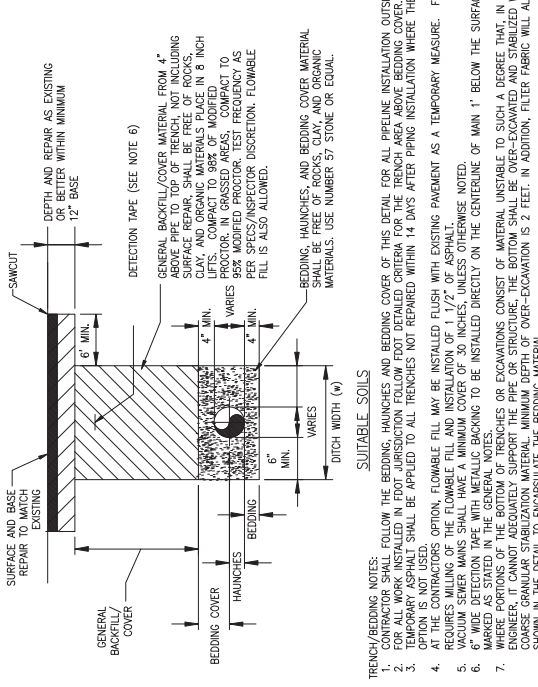
STANDARD MANHOLE COVER AND FRAME



- NOTES:
1. GENERAL BACKFILL/COVER MATERIAL FROM 4" SURFACE PIPE TO TOP OF TRENCH NOT INCLUDING SURFACE REPAIR SHALL BE FREE OF ROCKS, CLAY, AND ORGANIC MATERIALS PLACE IN 8 INCH LIFTS. COMPACT TO 98% OF MODIFIED PROCTOR.
 2. BEDDING, HAUNCHES, AND BEDDING COVER MATERIAL SHALL BE FREE OF ROCKS, CLAY, AND ORGANIC MATERIALS. USE NUMBER 57 STONE OR EQUAL.
 3. DETECTION TAPE SHALL BE INSTALLED WITHIN 14 DAYS AFTER PIPING INSTALLATION WHERE THE FLOWABLE FILL OPTION IS NOT USED.
 4. AT THE CONTRACTOR'S OPTION, FLOWABLE FILL MAY BE INSTALLED FLUSH WITH EXISTING PAVEMENT AS A TEMPORARY MEASURE. FINAL RESTORATION WILL BE THE RESPONSIBILITY OF THE OWNER.
 5. VACUUM SEWER MAINS SHALL HAVE A MINIMUM COVER OF 30 INCHES UNLESS OTHERWISE NOTED.
 6. 6" WIDE DETECTION TAPE WITH METALLIC BACKING TO BE INSTALLED DIRECTLY ON THE CENTERLINE OF MAIN 1" BELOW THE SURFACE. TAPE TO BE MARKED AS STATED IN THE GENERAL NOTES.
 7. PORTIONS OF THE BOTTOM OF TRENCHES OR EXCAVATIONS CONSIST OF MATERIAL UNSTABLE TO SUCH A DEGREE THAT, IN THE OPINION OF THE CONTRACTOR, COARSE GRANULAR STABILIZATION MATERIAL, MINIMUM DEPTH OF OVER-EXCAVATION IS 2 FEET. IN ADDITION, FILTER FABRIC WILL ALSO BE USED AS SHOWN IN THE DETAIL TO ENCAPSULATE THE BEDDING MATERIAL.

SUITABLE SOILS

- TRENCH/BEDDING NOTES:
1. FLOWABLE FILL SHALL BE INSTALLED WITHIN 14 DAYS AFTER PIPING INSTALLATION WHERE THE FLOWABLE FILL OPTION IS NOT USED.
 2. FOR ALL WORK INSTALLED IN EROD JURISDICTION FOLLOW FOOT DETAIL FOR THE TRENCH AREA ABOVE BEDDING COVER FOR THE FLOWABLE FILL OPTION IS NOT USED.
 3. TEMPORARY ASPHALT SHALL BE APPLIED TO ALL TRENCHES NOT REPAIRED WITHIN 14 DAYS AFTER PIPING INSTALLATION WHERE THE FLOWABLE FILL OPTION IS NOT USED.
 4. AT THE CONTRACTOR'S OPTION, FLOWABLE FILL MAY BE INSTALLED FLUSH WITH EXISTING PAVEMENT AS A TEMPORARY MEASURE. FINAL RESTORATION WILL BE THE RESPONSIBILITY OF THE OWNER.
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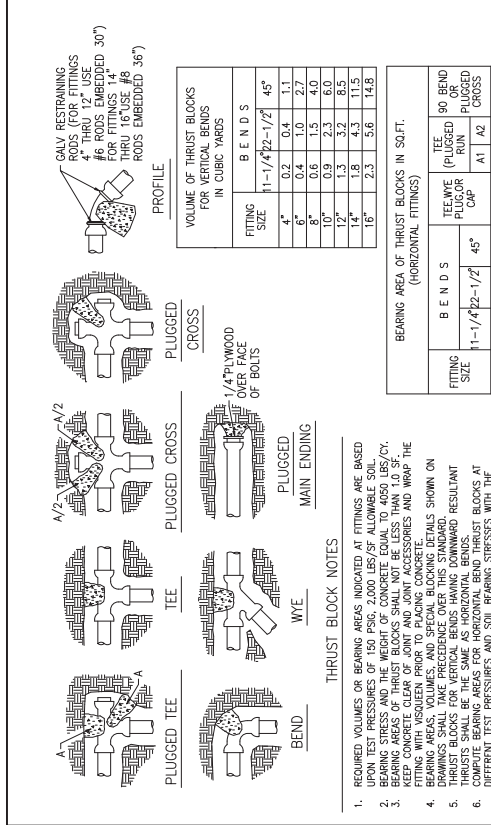
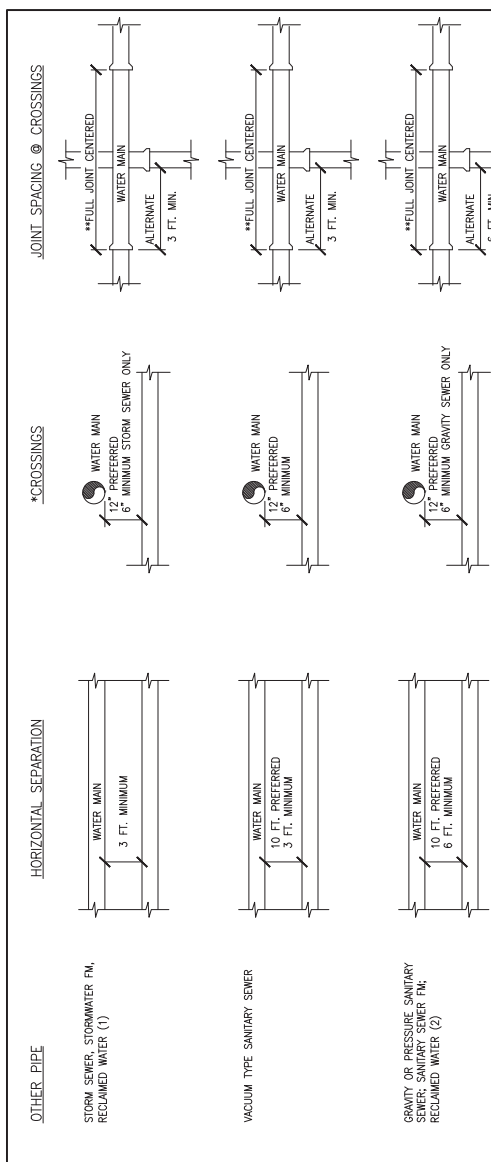


- COVER/FRAME NOTES:
1. LETTERS ON COVER TO BE ARRANGED WITH A RADIUS OF 1/4" TO CENTER OF LETTERS.
 2. EACH LETTER TO BE 2" LONG, 3/8" DEEP, 1/4" TO 5/16" THICK AND FLUSH WITH TOP OF BEARS.
 3. BEARS TO BE 3/8" HIGH WITH A RADIUS OF 1/2" AT BOTTOM AND 3/8" AT TOP.
 4. ALL BEARING SURFACES TO BE MACHINED (IRON TO IRON).
 5. WEIGHTS, BEARS, COVER-168 LBS., FRAME-865 LBS.
 6. 35" DIAMETER, 6" THICK CONCRETE COLLAR W/WIRE MESH REINFORCING REQUIRED WHEN MANHOLE IS OUT OF PAVEMENT.
 7. INFLUENT PROTECTOR ON ALL MANHOLES. RANGERS PVC OR EQUAL.

Project Information		Revisions	
Approved By:	Checked:	Date:	Revisions Description:
N.W.T.D.	APEX		
N.T.S.	APEX		
Job No.:	KEY0311		
Date Issued:	05/09/2006		



STANDARD DETAILS FOR
KEY LARGO WASTEWATER TREATMENT DISTRICT (KLWTD)
 GENERAL NOTES AND STANDARD DETAILS



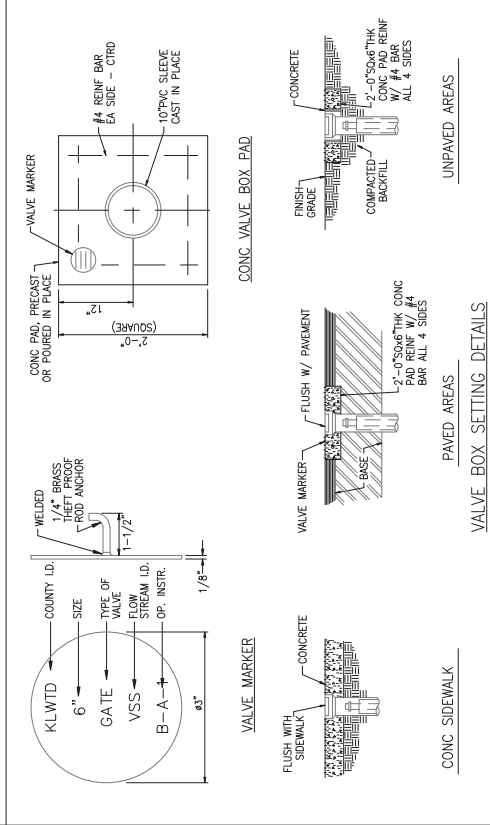
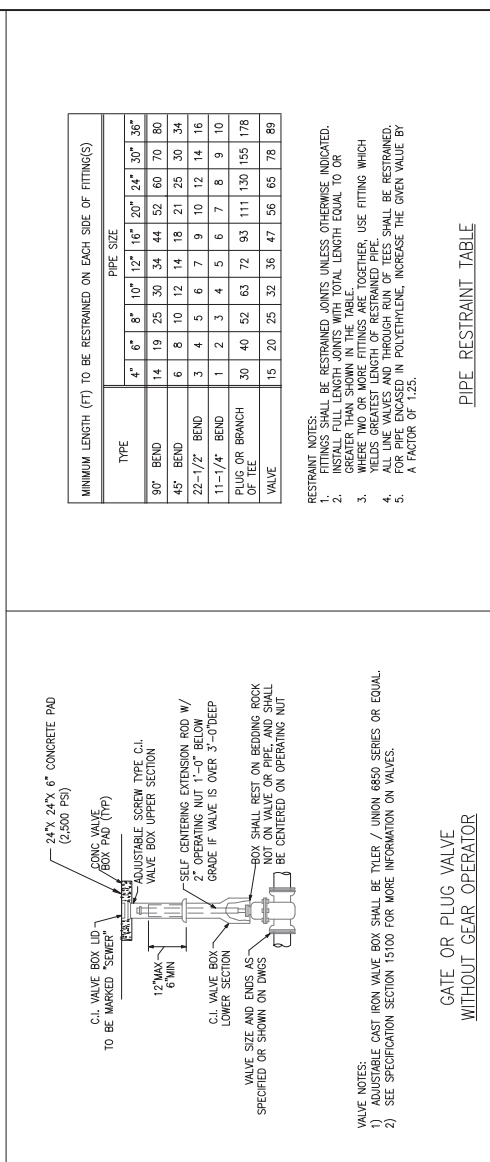
FDEP PIPE SEPARATION REQUIREMENTS

WATER MAIN SHOULD CROSS ABOVE OTHER PIPE. WHEN WATER MAIN MUST BE BELOW OTHER PIPE THE MINIMUM VERTICAL SEPARATION SHALL BE 12".

**FULL LENGTH OF PIPE CENTERED AT CROSSING.

THE TABLE REPRESENTS THE MINIMUM SEPARATION REQUIREMENTS AS DESCRIBED IN F.D.E.P. RULES OF THE FLORIDA ADMINISTRATION CODE (F.A.C.)

TYPE	PIPE SIZE											
	4"	6"	8"	10"	12"	16"	20"	24"	30"	36"	42"	48"
90° BEND	14	19	25	30	34	44	52	60	70	80		
45° BEND	6	8	10	12	14	16	21	25	30	34		
22-1/2" BEND	3	4	5	6	7	9	10	12	14	16		
11-1/4" BEND	1	2	3	4	5	6	7	8	9	10		
PLUG OR BRANCH OF TEE	30	40	52	63	72	93	111	130	155	178		
VALVE	15	20	25	32	36	47	56	65	78	86		



STANDARD DETAILS FOR KEY LARGO WASTEWATER TREATMENT DISTRICT (KLWTD)

GENERAL NOTES AND STANDARD DETAILS

PIPE RESTRAINT TABLE

GATE OR PLUG VALVE WITHOUT GEAR OPERATOR

THRUST BLOCK NOTES AND DETAILS

THRUST BLOCK SETTINGS

VALVE BOX SETTING DETAILS

Revisions

Revisions Description:	Date:

Project Information

KLWTD	Design:	APEX
N.I.S.	Drawn:	APEX
Job No.:	KEY011	Checked:
Date Issued:	05/09/2016	

SHEET NO. G-610

