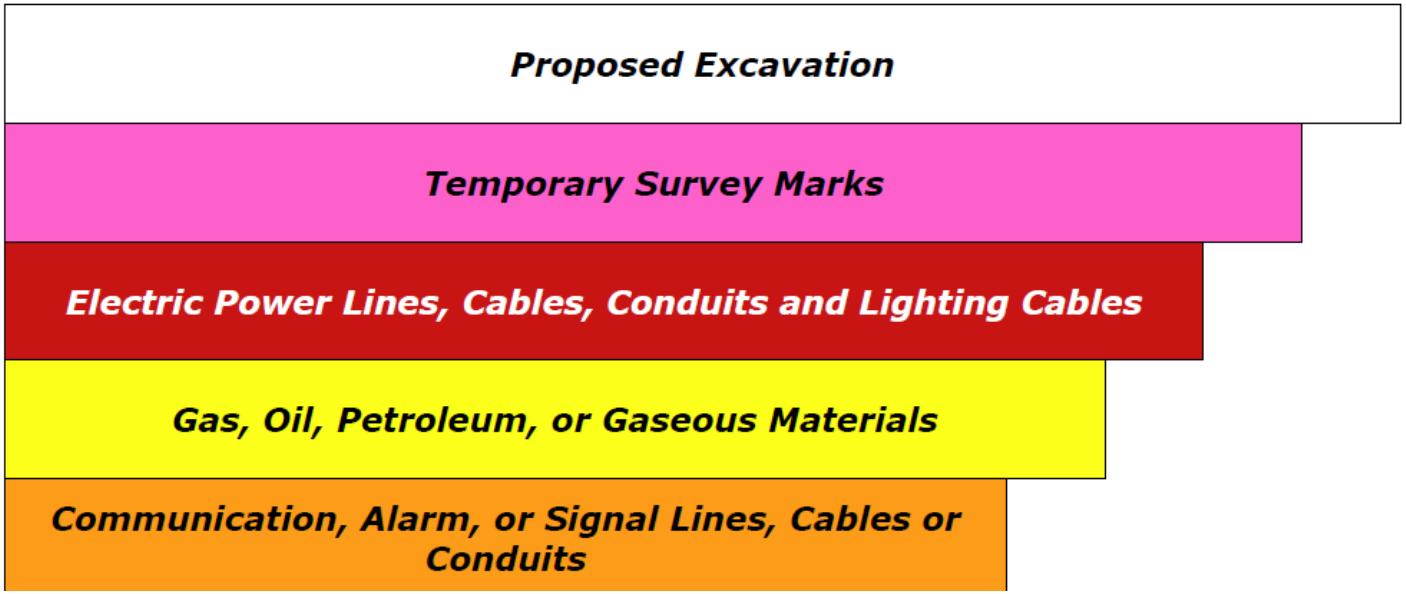
SUBSURFACE QUALITY LEVELS

Florida Department Of Transportation

2010 UAM

Utility Accommodation Manual

(letter size)



The following identifies the level of utility locates in ascending order:

Level “D” - Existing Records
Level “C” - Surface Visible Feature Survey
Level “B” - Designating
Level “A” – Locating

Level “D” locates are information obtained solely from a review of utility records. The comprehensiveness and accuracy of such information is highly limited. Even when existing information for a utility in a particular area is accurate, there are often other underground systems that are not shown on any records. Level “D” may be appropriate for use early in the development of a project to determine the presence of utilities.

Level “C” locates are information obtained to augment Level “D” information. This involves topographic surveying of visible, above ground utility features such as poles, hydrants, valve boxes, circuit breakers, etc. Level “C” may be appropriately used early in the development of a project and will provide better data than Level “D” information alone. Designers can not be sure their design is appropriate nor can construction proceed without caution when using information for underground utilities that is based only on Level “D” and “C” locates.

Level “B” locates are information obtained through the use of designating technologies (e.g. geophysical prospecting technologies). This is an application using scanning technologies, most of which have very specific capabilities and limitations that vary with site conditions. Applying a variety of techniques is essential to the process of preparing a comprehensive horizontal map of utilities and other underground structures on the site. Designating technologies are capable of providing reasonable horizontal information but provide limited vertical information.

Level “A” locates provide the highest level of accuracy of utility locations in three dimensions. This level may apply manual, mechanical or nondestructive (e.g., vacuum excavation) methods to physically expose utilities for measurement and data recording. Levels “B”, “C”, and “D” locates are incorporated in Level “A” locates. The designer should obtain Level “A” locates at highway/utility conflict points where verified information is necessary.

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CI/ASCE 38-02

Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data (CI/ASCE 38-02)

Complete Book PDF (280 KB)

ASCE

Permalink: http://dx.doi.org/10.1061/9780784406458

ASCE Subject Headings: Utilities, Conduits, Underground structures, Subsurface environment

- Hide Abstract

Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data presents a credible system for classifying the quality of utility location information that is placed in design plans. When subsurface utilities are discovered during the construction phase, the costs of conflict resolution and the potential for catastrophic damages are at their highest. That is why the collection and systematic depiction of reliable data for existing subsurface utilities is critical if engineers are to make informed decisions and support risk management protocols regarding a project's impact on these utilities. The Standard addresses issues such as: how utility information can be obtained; what technologies are available to obtain that information; how that information can be conveyed to the information users; who should be responsible for typical collection and depiction tasks; what factors determine which utility quality level attribute to assign to data; and what the relative costs and benefits of the various quality levels are.

Whether used as a reference or as part of a specification, the Standard will assist engineers, project and utility owners, and constructors in developing strategies to reduce risk by improving the reliability of information on existing subsurface utilities in a defined manner.

Title Information

Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data (CI/ASCE 38-02)

CI/ASCE 38-02

ASCE

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FDOT Design Standards will be found at http://www.dot.state.fl.us/rddesign

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Posted: January 30, 2014
Perimeter Walls

Roadway Design Bulletin 14-01
Posted: January 8, 2014
Implementation - Plans Preparation Manual - January 1, 2014 Revised Update

2014 Drainage Manual
Posted: January 1, 2014
January 2014 - Drainage Manual

Roadway Design Bulletin 13-12 / DCE Memorandum 23-13 / Maintenance Memorandum 07-13

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Office of Design

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Design Standards

INDUSTRY REVIEW

Origination Form - Instructions - Example

Current Submittals Under Review

Submittal History

CURRENT

Year	Design Standards eBooklet	Design Standards Revisions	Developmental Design Standards
2014	DSeB	DSR	DDS

*Click on the Current eBooklet link "**DSeB**" for the most current Design Standards.*

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		COVER, TABLE OF CONTENTS AND REVISIONS			
Cover		Booklet Cover	Cover		
Content		Table of Contents	Content		
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		ABBREVIATIONS AND SYMBOLS	Roadway Contact		
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002		Standard Symbols			
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STANDARD SYMBOLS FOR PLAN SHEETS

GENERAL SYMBOLS

- State Line
- County Line
- Township Line
- Section Line
- City Line
- Base Or Survey Line
- Right-Of-Way
- Easement Line
- Limited Access Line
- Fence Line
- National Or State Park Or Forest
- Grant Line
- Railroad (Drainage Maps)
- Railroad (Detail Plans)
- Fence (Limited Access)
- Box Culvert
- Bridge
- Pipe Culvert-Mitered End Section
- Pipe Culvert-Straight Endwall
- Pipe Culvert-U-Type Endwall
- Pipe Culvert-Median Drain
- Pipe Culvert-Other End Treatments
- 18" SD — Storm Drain (Proposed)
- 18" SD — Storm Drain (Existing)
- Inlet
- Manhole
- Tied Longitudinal Joint
- Keyed Longitudinal Joint
- Doweled Transverse Expansion Joint
- Doweled Transverse Contraction Joint
- Transverse Contraction Joint Without Dowels
- Survey Reference Point
- ALACHUA — Triangulation Station
- B.M. NO. 112 — Bench Mark
- Point Of Intersection
- North Arrow
- Edges Of Existing Pavement And Sidewalk
- Guardrail
- C.C. — Crash Cushion
- Piling Pier Column
- Concrete Monument
- Base Line
- Centerline
- e — Rate Of Superelevation
- Property Line
- Δ — Delta Angle
- ≈ — Approximate
- Ø — Round Or Diameter
- Flow Line

- Curb
- Curb And Gutter
- Water Well, Spring
- Levee
- MP 327 — Railroad Mile Post
- Railroad Signal With Gate
- Railroad Switch
- Gate
- Pump Island
- Storage Tank (Surface)
- Storage Tank (Underground)
- Mine Or Quarry
- B P — Borrow Pit
- Church
- S — Store
- RES — Residence
- B — Barn
- School
- Sediment Barrier
- Floating Turbidity Barrier
- Staked Turbidity Barrier
- Stream
- Shore Line
- Marsh
- Wetland Boundary (Proposed)
- Wetland Boundary (Existing)
- Hedge
- Trees
- Edge Of Wooded Area
- Shrubbery
- Grove Or Orchard
- Lt. Skew Rt. / Rt. Skew Lt. — Definition Of Skew For Cross Drains And Barrels Of Conrete Box Culverts
- Concrete
- Wood

UTILITY ADJUSTMENT SYMBOLS

EXISTING

- A — QUALITY LEVEL A (VISUAL ONLY WILL NOT PLOT)
- B — QUALITY LEVEL B (VISUAL ONLY WILL NOT PLOT)
- C — QUALITY LEVEL C (VISUAL ONLY WILL NOT PLOT)
- D — QUALITY LEVEL D (VISUAL ONLY WILL NOT PLOT)
- EOI — END OF ELECTRONIC INFORMATION
- TH — TEST HOLE QUALITY LEVEL A
- QUALITY LEVEL DELINEATION CHANGE
- MANHOLE COVER UNKNOWN
- MANHOLE COVER CABLE TV
- MANHOLE COVER STORM WATER
- MANHOLE COVER ELECTRIC
- MANHOLE COVER GAS
- MANHOLE COVER SANITARY SEWER
- MANHOLE COVER TELEPHONE
- MANHOLE COVER WATER
- FIRE HYDRANT
- METER UNKNOWN
- METER ELECTRIC
- METER GAS
- METER WATER
- VALVE GAS
- VALVE UNKNOWN
- VALVE SANITARY SEWER
- VALVE WATER
- VALVE BOX UNKNOWN
- VALVE BOX GAS
- VALVE BOX WATER
- VALVE BOX SANITARY SEWER
- VALVE COVER UNKNOWN

- VALVE COVER SANITARY SEWER
- VALVE COVER GAS
- VALVE COVER WATER NON POTABLE
- VALVE COVER WATER
- VALVE BACK FLOW PREVENTER
- VENT UNKNOWN
- VENT GAS
- VENT SANITARY SEWER
- POWER POLE
- POWER POLE WITH TRANSFORMER
- SHARED POLE
- SHARED POLE WITH TRANSFORMER
- TELEPHONE POLE
- GUY ANCHOR
- GUY POLE
- SERVICE CABINET CABLE TV
- SERVICE CABINET TELEPHONE
- GAS REGULATOR
- TELEPHONE BOOTH
- TRANSFORMER POWER
- ELECTRICAL OUTLET
- SANITARY DUMP STATION
- SANITARY CLEAN OUT
- PUMP NON PETROLEUM
- PUMP PETROLEUM/FUEL
- PUMP STATION SANITARY SEWER
- WATER FAUCET
- SPRINKLER
- WELL
- GAUGES (DESCRIBED)

PROPOSED

- Manhole
- Fire Hydrant
- Meter (Type)
- Valve (Type)
- Valve Box (Type)
- Valve Cover (Type)
- Vent (Type)
- Pump Station
- S — Sewage Pump Station
- Cleanout
- Cable TV Service Box
- Power Pole
- Telephone Pole
- Combination Pole
- Guy Wire And Anchor Pin
- Guy Pole Deadman
- Tower
- Light Pole
- Transformer

See General Notes, Sheet 1

LAST REVISION	REVISION	DESCRIPTION:		INDEX NO.	SHEET NO.
07/01/13			FDOT 2014 DESIGN STANDARDS	002	2 of 4

STANDARD SYMBOLS

STANDARD SYMBOLS FOR PLAN SHEETS

UTILITY ADJUSTMENT SYMBOLS

utter
Spring

'le Post
gnal With Gate
vitch

d
nk (Surface)
nk (Underground)
arry

arrier
rbidity Barrier
bidity Barrier

EXISTING

A	QUALITY LEVEL A (VISUAL ONLY WILL NOT PLOT)	SAN	VALVE COVER SANITARY SEWER
B	QUALITY LEVEL B (VISUAL ONLY WILL NOT PLOT)	GAS	VALVE COVER GAS
C	QUALITY LEVEL C (VISUAL ONLY WILL NOT PLOT)	W	VALVE COVER WATER NON POTABLE
D	QUALITY LEVEL D (VISUAL ONLY WILL NOT PLOT)	WATER	VALVE COVER WATER
EOI	END OF ELECTRONIC INFORMATION		VALVE BACK FLOW PREVENTER
TH	TEST HOLE QUALITY LEVEL A		VENT UNKNOWN
	QUALITY LEVEL DELINEATION CHANGE	GAS	VENT GAS
	MANHOLE COVER UNKNOWN	SAN	VENT SANITARY SEWER
CABLE	MANHOLE COVER CABLE TV		POWER POLE
SD	MANHOLE COVER STORM WATER		POWER POLE WITH TRANSFORMER
ELEC	MANHOLE COVER ELECTRIC		SHARED POLE
GAS	MANHOLE COVER GAS		SHARED POLE WITH TRANSFORMER
SAN	MANHOLE COVER SANITARY SEWER		TELEPHONE POLE

STANDARD SYMBOLS FOR PLAN SHEETS

See General Notes, Sheet 1

UTILITY ADJUSTMENT SYMBOLS

EXISTING

Symbol	Description
B T (A) — — — — — B T (A) — —	BURIED TELEPHONE (QLA)
B T (B) — — — — — B T (B) — —	BURIED TELEPHONE (QLB)
B T (C) — — — — — B T (C) — —	BURIED TELEPHONE (QLC)
B T (D) — — — — — B T (D) — —	BURIED TELEPHONE (QLD)
B T (A) — — — — — B T (A) — —	BURIED TELEPHONE DUCT (QLA)
B T (B) — — — — — B T (B) — —	BURIED TELEPHONE DUCT (QLB)
B T (C) — — — — — B T (C) — —	BURIED TELEPHONE DUCT (QLC)
B T (D) — — — — — B T (D) — —	BURIED TELEPHONE DUCT (QLD)
B T (A) — — — — — B T (A) — —	BURIED TELEPHONE TOLL (QLA)
B T (B) — — — — — B T (B) — —	BURIED TELEPHONE TOLL (QLB)
B T (C) — — — — — B T (C) — —	BURIED TELEPHONE TOLL (QLC)
B T (D) — — — — — B T (D) — —	BURIED TELEPHONE TOLL (QLD)
B T V (A) — — — — — B T V (A) — —	BURIED CABLE TELEVISION (QLA)
B T V (B) — — — — — B T V (B) — —	BURIED CABLE TELEVISION (QLB)
B T V (C) — — — — — B T V (C) — —	BURIED CABLE TELEVISION (QLC)
B T V (D) — — — — — B T V (D) — —	BURIED CABLE TELEVISION (QLD)
B T V (A) — — — — — B T V (A) — —	CABLE TV CONDUIT SYSTEM (QLA)
B T V (B) — — — — — B T V (B) — —	CABLE TV CONDUIT SYSTEM (QLB)
B T V (C) — — — — — B T V (C) — —	CABLE TV CONDUIT SYSTEM (QLC)
B T V (D) — — — — — B T V (D) — —	CABLE TV CONDUIT SYSTEM (QLD)
C A S (A) — — — — — C A S (A) — —	BURIED CONDUIT (QLA)
C A S (B) — — — — — C A S (B) — —	BURIED CONDUIT (QLB)
C A S (C) — — — — — C A S (C) — —	BURIED CONDUIT (QLC)
C A S (D) — — — — — C A S (D) — —	BURIED CONDUIT (QLD)
B F O (A) — — — — — B F O (A) — —	BURIED FIBER OPTIC POWER (QLA)
B F O (B) — — — — — B F O (B) — —	BURIED FIBER OPTIC POWER (QLB)
B F O (C) — — — — — B F O (C) — —	BURIED FIBER OPTIC POWER (QLC)
B F O (D) — — — — — B F O (D) — —	BURIED FIBER OPTIC POWER (QLD)
B F O (A) — — — — — B F O (A) — —	BURIED FIBER OPTIC TELEPHONE (QLA)
B F O (B) — — — — — B F O (B) — —	BURIED FIBER OPTIC TELEPHONE (QLB)
B F O (C) — — — — — B F O (C) — —	BURIED FIBER OPTIC TELEPHONE (QLC)
B F O (D) — — — — — B F O (D) — —	BURIED FIBER OPTIC TELEPHONE (QLD)
G (A) — — — — — G (A) — —	GAS (QLA)
G (B) — — — — — G (B) — —	GAS (QLB)
G (C) — — — — — G (C) — —	GAS (QLC)
G (D) — — — — — G (D) — —	GAS (QLD)

EXISTING

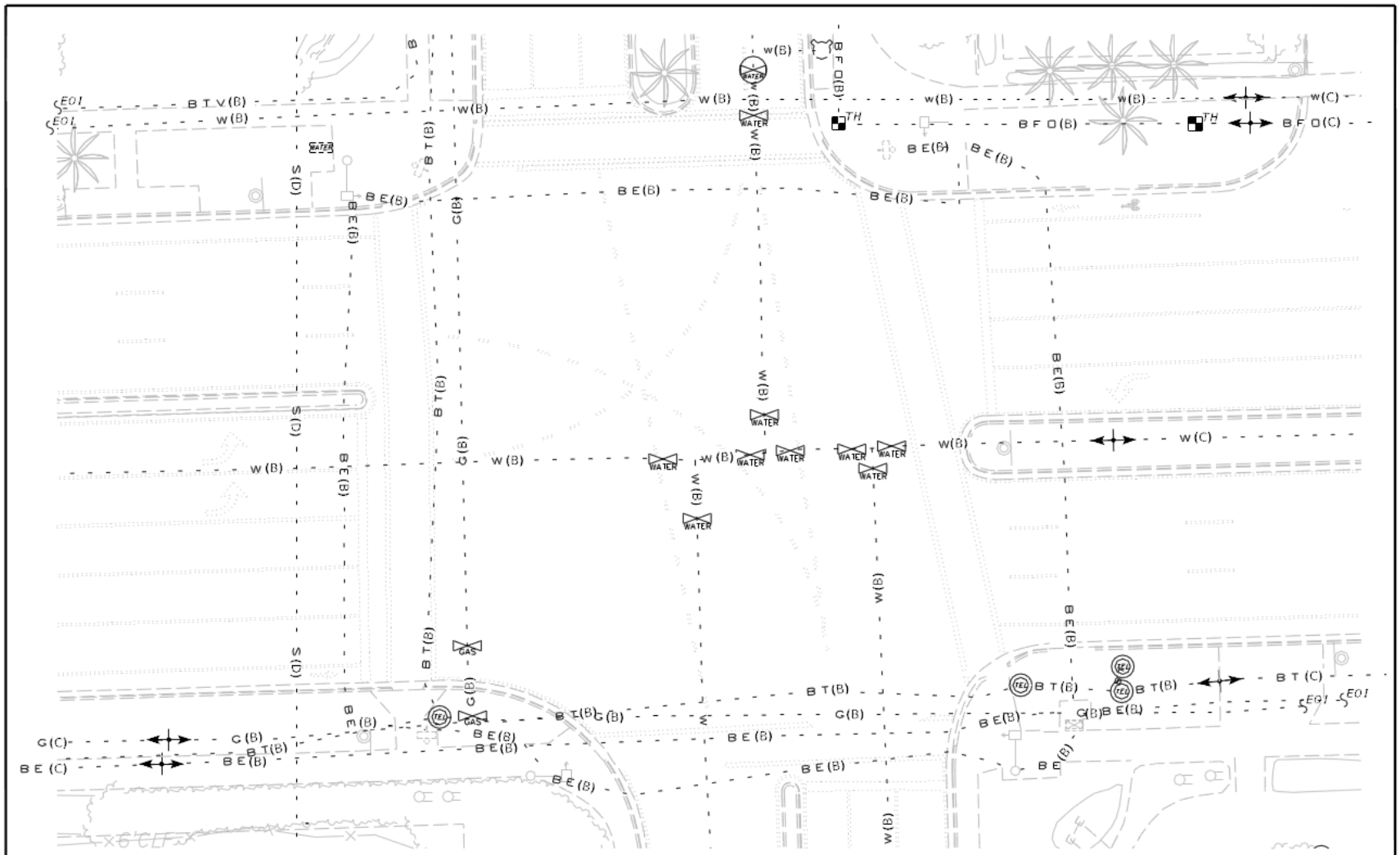
Symbol	Description
P E T (A) — — — — — P E T (A) — —	PETROLEUM (QLA)
P E T (B) — — — — — P E T (B) — —	PETROLEUM (QLB)
P E T (C) — — — — — P E T (C) — —	PETROLEUM (QLC)
P E T (D) — — — — — P E T (D) — —	PETROLEUM (QLD)
C A S (A) — — — — — C A S (A) — —	PIPE ENCASEMENT (QLA)
C A S (B) — — — — — C A S (B) — —	PIPE ENCASEMENT (QLB)
C A S (C) — — — — — C A S (C) — —	PIPE ENCASEMENT (QLC)
C A S (D) — — — — — C A S (D) — —	PIPE ENCASEMENT (QLD)
S (A) — — — — — S (A) — —	SANITARY SEWER (QLA)
S (B) — — — — — S (B) — —	SANITARY SEWER (QLB)
S (C) — — — — — S (C) — —	SANITARY SEWER (QLC)
S (D) — — — — — S (D) — —	SANITARY SEWER (QLD)
S T M (A) — — — — — S T M (A) — —	STEAM LINE (QLA)
S T M (B) — — — — — S T M (B) — —	STEAM LINE (QLB)
S T M (C) — — — — — S T M (C) — —	STEAM LINE (QLC)
S T M (D) — — — — — S T M (D) — —	STEAM LINE (QLD)
W (A) — — — — — W (A) — —	WATER LINE (QLA)
W (B) — — — — — W (B) — —	WATER LINE (QLB)
W (C) — — — — — W (C) — —	WATER LINE (QLC)
W (D) — — — — — W (D) — —	WATER LINE (QLD)
B F O (A) — — — — — B F O (A) — —	BURIED FIBER OPTIC CABLE (QLA)
B F O (B) — — — — — B F O (B) — —	BURIED FIBER OPTIC CABLE (QLB)
B F O (C) — — — — — B F O (C) — —	BURIED FIBER OPTIC CABLE (QLC)
B F O (D) — — — — — B F O (D) — —	BURIED FIBER OPTIC CABLE (QLD)
N P W (A) — — — — — N P W (A) — —	NON-POTABLE WATER LINE (QLA)
N P W (B) — — — — — N P W (B) — —	NON-POTABLE WATER LINE (QLB)
N P W (C) — — — — — N P W (C) — —	NON-POTABLE WATER LINE (QLC)
N P W (D) — — — — — N P W (D) — —	NON-POTABLE WATER LINE (QLD)
B E (A) — — — — — B E (A) — —	BURIED POWER (QLA)
B E (B) — — — — — B E (B) — —	BURIED POWER (QLB)
B E (C) — — — — — B E (C) — —	BURIED POWER (QLC)
B E (D) — — — — — B E (D) — —	BURIED POWER (QLA)
S (A) — — — — — S (A) — —	SANITARY FORCE MAIN (QLA)
S (B) — — — — — S (B) — —	SANITARY FORCE MAIN (QLB)
S (C) — — — — — S (C) — —	SANITARY FORCE MAIN (QLC)
S (D) — — — — — S (D) — —	SANITARY FORCE MAIN (QLD)

PROPOSED

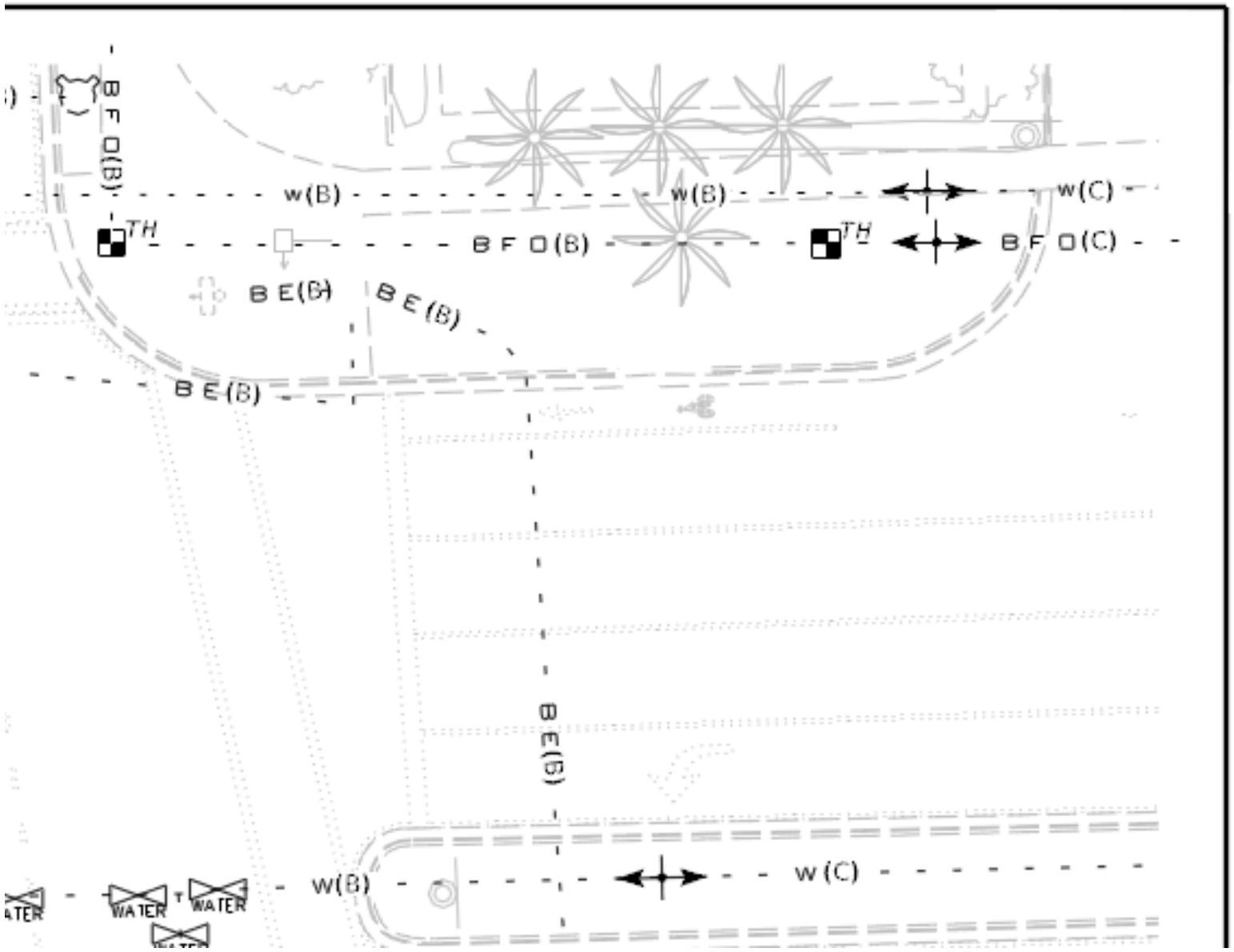
Symbol	Description
W W W W W W 6" W W W W W W	Water Main
NPW NPW 6" NPW NPW	Non Potable Water
S S S S S 8" S S S S S S	Sanitary Sewer
G G G G G 6" G G G G G	Gas
RD RD RD 4" RD RD RD	Roof Drain
PET PET 8" PET PET	Petroleum
STM STM 12" STM STM	Steam
CAS CAS 12" CAS CAS	Casing
DT DT 4"x4" DT DT	Duct
BE BE (7.5 kV) BE BE	Buried Electric
OE OE (7.5 kV) OE OE	Overhead Electric
BTV BTV 3" BTV BTV	Buried Cable Television
OTV OTV 2" OTV OTV	Overhead Cable Television
BT BT BT 2" BT BT BT	Buried Telephone
OT OT OT 2" OT OT OT	Overhead Telephone
BFO BFO 2" BFO BFO	Buried Fiber Optic
OFO OFO 1" OFO OFO	Overhead Fiber Optic

EXISTING

B T (A) – – – – – – – – – – – – –	*BURIED TELEPHONE (QLA)*
B T (B) – – – – – – – – – – – – –	*BURIED TELEPHONE (QLB)*
B T (C) – – – – – – – – – – – – –	*BURIED TELEPHONE (QLC)*
B T (D) – – – – – – – – – – – – –	*BURIED TELEPHONE (QLD)*
B T (A) – – – – – – – – – – – – –	*BURIED TELEPHONE DUCT (QLA)*
B T (B) – – – – – – – – – – – – –	*BURIED TELEPHONE DUCT (QLB)*
B T (C) – – – – – – – – – – – – –	*BURIED TELEPHONE DUCT (QLC)*
B T (D) – – – – – – – – – – – – –	*BURIED TELEPHONE DUCT (QLD)*
B T (A) – – – – – – – – – – – – –	*BURIED TELEPHONE TOLL (QLA)*
B T (B) – – – – – – – – – – – – –	*BURIED TELEPHONE TOLL (QLB)*
B T (C) – – – – – – – – – – – – –	*BURIED TELEPHONE TOLL (QLC)*
B T (D) – – – – – – – – – – – – –	*BURIED TELEPHONE TOLL (QLD)*
B T V (A) – – – – – – – – – – – – –	*BURIED CABLE TELEVISION (QLA)*
B T V (B) – – – – – – – – – – – – –	*BURIED CABLE TELEVISION (QLB)*
B T V (C) – – – – – – – – – – – – –	*BURIED CABLE TELEVISION (QLC)*
B T V (D) – – – – – – – – – – – – –	*BURIED CABLE TELEVISION (QLD)*
B T V (A) – – – – – – – – – – – – –	*CABLE TV CONDUIT SYSTEM (QLA)*
B T V (B) – – – – – – – – – – – – –	*CABLE TV CONDUIT SYSTEM (QLB)*
B T V (C) – – – – – – – – – – – – –	*CABLE TV CONDUIT SYSTEM (QLC)*
B T V (D) – – – – – – – – – – – – –	*CABLE TV CONDUIT SYSTEM (QLD)*



REVISIONS		STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SAMPLE UTILITIES FDOT SYMBOLOGY	SHEET NO.
Revised: 12/8/11		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		1 OF 1
		SHEETS	SHEETS	SHEETS		


BFO(B)
w(B)
w(B)
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BFO(B)
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BE(B)
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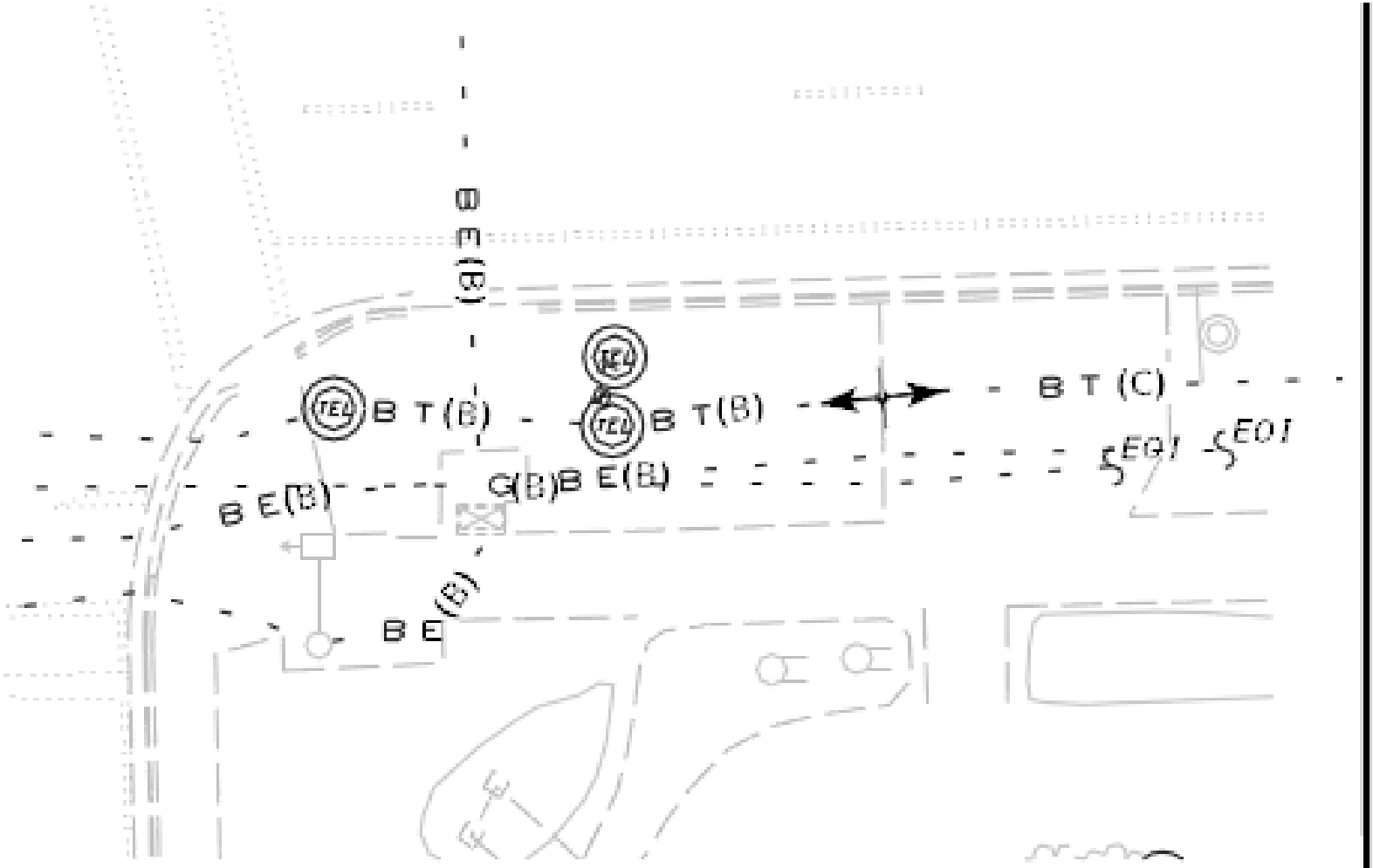
BE(B)
w(B)
w(C)
WATER
WATER



ORIDA SPORTATION FINANCIAL PROJECT ID	*SAMPLE UTILITIES* *FDOT SYMBOLOGY*	SHEET NO. 1 OF 1

QUESTIONS?