CAD STANDARDS FOR PIPELINE DESIGN & TOPOGRAPHIC DRAWINGS

JUNE 10, 2024

Miami-Dade County Water and Sewer Department

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UPDATES

Some significant revisions have been made since March 3, 2022 version of the WASD CAD standards. Please review entire manual:

- The layer naming format has been reworked to be more in line with the National CAD Standards (NCS). This change will make WASD's layer naming format more intuitive for new drafters.
- WASD layers will now have line weights defined in their property definitions.
- Civil 3D styles and label styles have been added to the template and defined in the CAD manual to increase drafting efficiency.
- WASD Description Key Sets have been updated.
- Linework Code Sets have been added.
- Sheet Set file has been created to fill out title block fields of multiple sheets/layouts as an option for producing drawings.
- Reduced redundant or unused text and dimension styles.

INTRODUCTION

It is the County's intent that all electronic drawing files, regardless of what firm produces them, be similar in style and content. To this end, all consultants or contractors creating CAD drawings for Miami-Dade County Water and Sewer Department (MDC WASD) must conform to the following guidelines. The following shall be the minimum requirements for all CAD deliverables. Any drawings created for WASD, which do not conform to these guidelines, will not be accepted. Any changes or variations to the guidelines must have prior approval by WASD before implementation.

Please direct any questions or comments about this document to the CAD Manager of MDC WASD:

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Phone: 305-878-6051

CHAPTER 1: GENERAL REQUIREMENTS

1.1 SOFTWARE

WASD currently uses the following CAD software products:

- Civil 3D 2024
- AutoCAD 2024

PLEASE NOTE:

Actual software version used by MDC WASD internally will change from time to time, therefore please refer to the specific project contract or contact the project manager for actual version and submission requirements.

1.2 FILE TYPE

All project submission shall include the following file types:

- AutoCAD Drawing format (.dwg)
- Adobe Portable Document Format (.pdf)

PDF files shall be created from within the AutoCAD environment and contain Layer information. It is a requirement that each project drawing/sheet created for a project shall be published/plotted to DWG and PDF.

1.3 FILE NAMING

The following file naming standard for all CAD related files created, used, or submitted to the organization shall be followed.

Project ID	Title (Meaningful Key Words)	Company Abbreviation (Optional)	Date (YYYYMMDD)	Revision No.	File Extension

File Naming Example for Treatment Plants
Project ID_CDWWTP-TOPO_ COMPANYABBREVIATION_YYYYMMDD_REV#.ext
Project ID_SDWWTP-BOUNDARY-TOPO_YYYYMMDD_REV#.ext

File Naming Example for Pump Stations
Project ID_PS0475-TOPO_YYYYMMDD_REV#.ext
Project ID_PS0475- BOUNDARY-TOPO_YYYYMMDD_REV#.ext

File Naming Example for Intersections
Project ID_SW64CT_SW68ST-TOPO_YYYYMMDD_REV#.ext
Project ID_NE87ST_BISCAYNEBLVD-TOPO_YYYYMMDD_REV#.ext

CHAPTER 2: DRAFTING CONVENTIONS

2.1 DRAFTING BASEPOINT

All project data shall be georeferenced before submission and located on the following:

Horizontal Datum - North American Datum 1983 (NAD83), Florida East Zone 901 or as otherwise specified by the MDC WASD Project Manager.

Vertical Datum – North American Vertical Datum 1929 (NGVD29).

See **Figure 2.1** on which the drawing setting required for proper georeferencing.

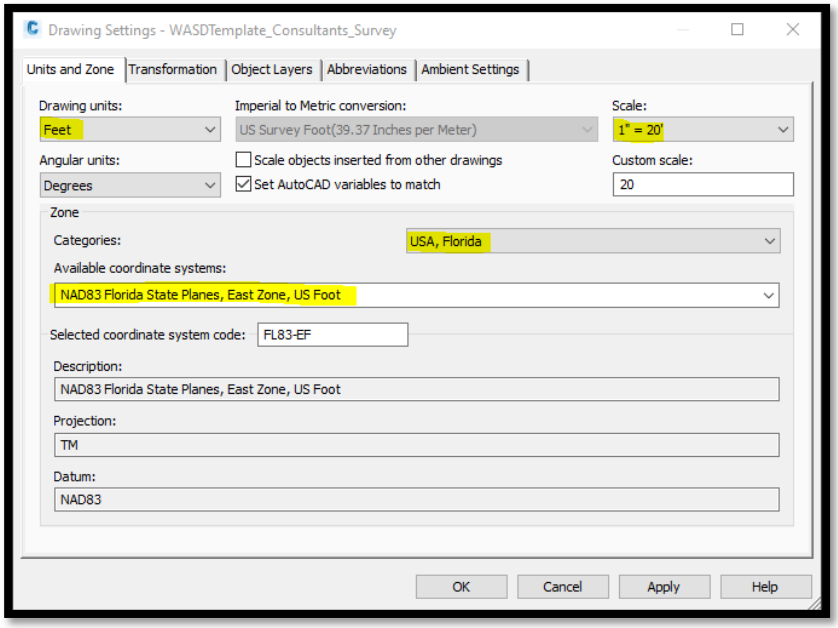


Figure 2.1

2.2 MODEL SPACE AND LAYOUTS

All drafting should be done in the model space at a 1"=1' scale. The design or topographic survey shall be referenced in a layout viewport prior to printing using appropriate scale factor, as necessary.

2.3 TEXT FONT AND ORIENTATIONS

The standard text font for water and wastewater design plans and topographic surveys shall be Simplex.

The orientation of design plans requires the placement of call out notes at various angles skewed to the horizontal position. The standard text or lettering orientation shall be as per **Figure 2.3**.

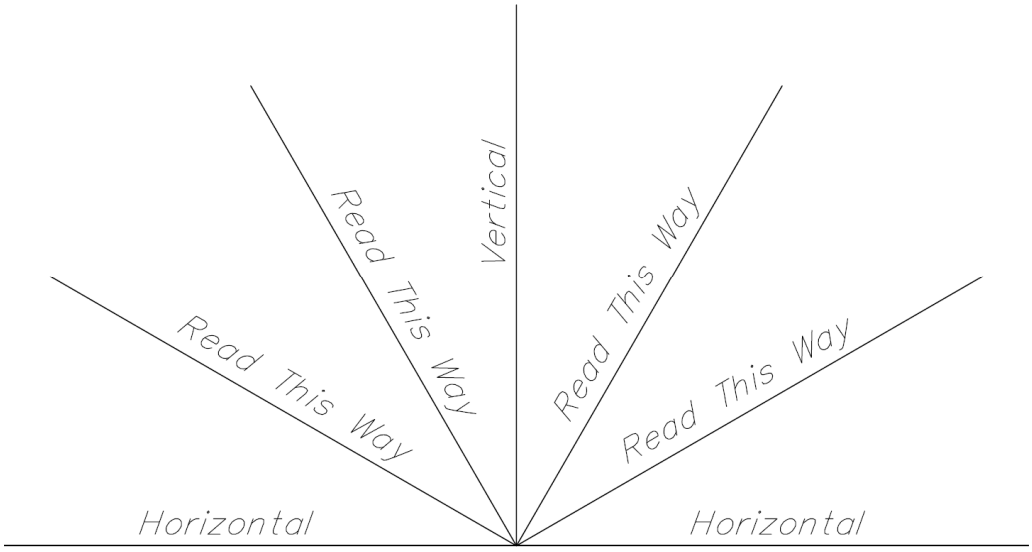


Figure 2.3

2.4 ANNOTATIONS

Unusually large text shall not be used, except decorative font on cover sheet. Center left justification shall be used for blocks of text. In addition, the following guidelines shall be used for annotations with features:

- Move annotation away from feature
- Line up annotations if possible
- Avoid odd abbreviations and squeezing text to fit
- Break leader lines at conflicts only
- Multiple leader lines may not intersect
- Group leader lines at about the same angle for neatness

2.5 DRAWING ORIENTATIONS

The orientation of the plan view should allow the placement of the design or topographic survey lengthwise along the plan sheet while orientating north generally towards the top or right side of the sheet **(Figure 2.5).**

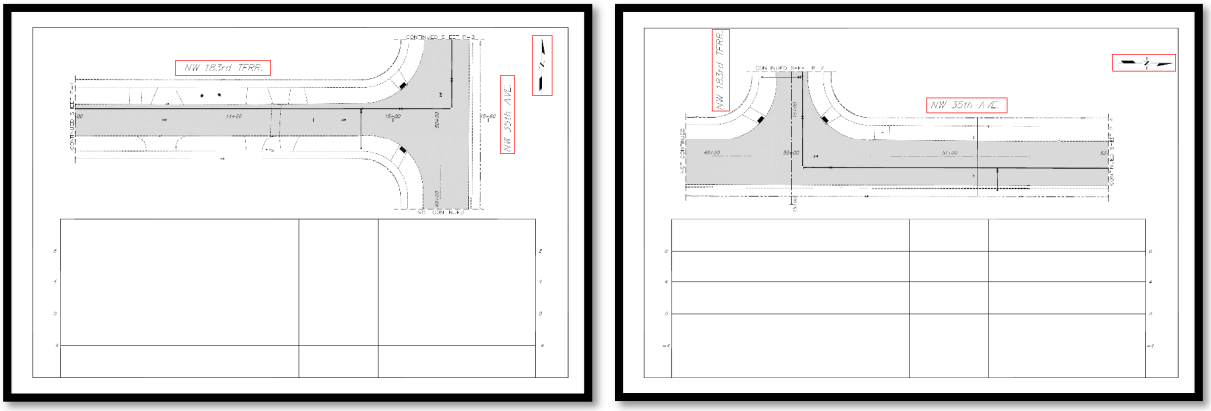


Figure 2.5

2.6 STATIONS

The project baseline shall be developed with a continuous one hundred foot stationing format. This stationing format provides the means of referencing pertinent points of construction and proposed appurtenances along with providing a reference between the plan and profile views. Typically, project baselines will begin with a ten stationing point (10+00) at the center of an intersection with a preceding stationing point 50 feet behind it (9+50) to account for any lagging appurtenances (starting at station 10+00 prevents a negative stationing reference when calling out lagging appurtenances). The baseline will then proceed to the project ending point.

Stationing direction should begin from west to east, or south to north. The west to east and south to north stationing configuration typically provides left to right reading of plans with north directed to the top or to the right. A typical stationing for water, wastewater, and topographic surveys project is shown in **Figure 2.6.**

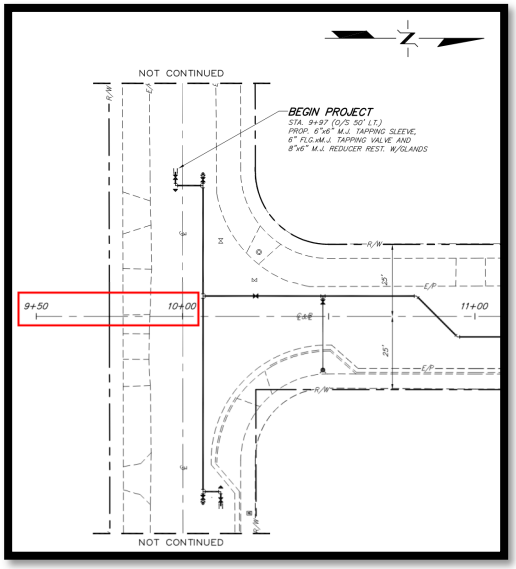


Figure 2.6

2.7 COORDINATES

Florida State Plane Coordinates (Northing and Easting) shall be shown at the beginning, ending, points of intersection (PI), points of Curvature (PC), points of tangency (PT) and other station points of major appurtenances (manhole, cleanout, wastewater access device). The starting station (10+00) may also be tied to the survey control points, as necessary. Ties to easily locatable objects such as valves caps or manhole covers may be used to locate the station (10+00).

2.8 CROSS UNDERGROUND UTILITIES

All underground cross utilities shall be shown in the profile with elevations as available.

2.9 SLOPE

Design slopes for all water and wastewater shall be to the nearest hundredth of a percent (Example: Slope 3.50%).

2.10 ELEVATIONS

All proposed elevations shall be to the nearest hundredth of a foot (Example: Elev. = 7.67').

2.11 INVERT ELEVATIONS

All water and wastewater flowlines shall be to the nearest hundredth of a foot in (Example: Elev.= 7.97').

2.12 DRAWING SCALES

CAD drawings shall be developed at a 1"=1' ratio and then plotted to the following scale unless otherwise approved by WASD.

2.12.1 Horizontal Scale

All plans shall be plotted at a horizontal scale of 1"=20' to show sufficient plan details for congested project locations such as alleys, easements, or street right-of-way with numerous underground facilities. Generally 1"=20' is most preferable however, 1"=40' may also be used for projects where the utilities are less congested and for wider rights-of-ways.

2.12.2 Vertical Scale

All profiles are to be plotted on the vertical scale of 1"=2' with major horizontal lines at four (4) foot intervals and to the same horizontal scale as the plan view.

2.12.3 Variance

Special details, such as structures, may require the use of a scale which can provide greater detail than those available on the standard civil engineer scale. For these instances, the use of an appropriate architectural scale which provides greater detail is acceptable.

2.13 MATCHLINE

When a design spans more than one plan sheet, a design match line must be established to reference the continuation of the design from one sheet to another. The following guidelines should be followed when establishing the location of match marks:

- Match Marks are to be places at a half or full station point (e.g. 20+00 or 20+50). A quarter or three-quarter station points (e.g. 20+25 or 20+75) may also be acceptable, if necessary.
- Match Marks are to be perpendicular to the design alignment.
- When at all possible, place match marks outside of the street intersections, highway crossings, railroad crossings and areas of proposed construction by other than open cut.
- Place match marks to maximize the use of the available plan and profile space while considering any space requirements of location maps, general notes, construction details, etc.
- Analyze the profile section at the proposed match mark and ensure that the location of the match mark will not create any confusion in the profile view.

CHAPTER 3: DRAWING CONFIGURATION

3.1 PLAN AND PROFILE CONFIGURATION

Three plan and profile configurations are available for developing design plans:

1) Combined Plan and Profile Sheets
2) Full Plan Sheet
3) Full Profile Sheet

3.1.1 Combined Plan and Profile Sheet:

The combined plan and profile sheet is recommended for general use as it allows the placement of the design plan view and profile view on the same sheet.

3.1.2 Full Plan Sheet:

The full plan sheet may be used when a combined plan and profile sheet does not provide sufficient plan space or when a design can be developed independently of a profile or when developing structural details. When a design requires a full plan sheet and also needs a profile, then a full profile sheet must be included with the design. The design must be thoroughly referenced to file, sheet, and line designation between the plan sheet and the profile sheet.

3.1.3 Full Profile Sheet:

Full profile sheets may be used to provide supplemental profile space, if necessary.

3.2 COVER SHEET

All projects must have individual cover sheets. The cover sheet shall incorporate the project name, WASD project, contract, and drawing number, project location map, design sheet index (for design deliverables), WASD logo, consultant company logo (if project was performed by WASD consultant), and any other information described in this section. A typical sheet cover for a water and wastewater design project in shown in **Figure 3.2.**

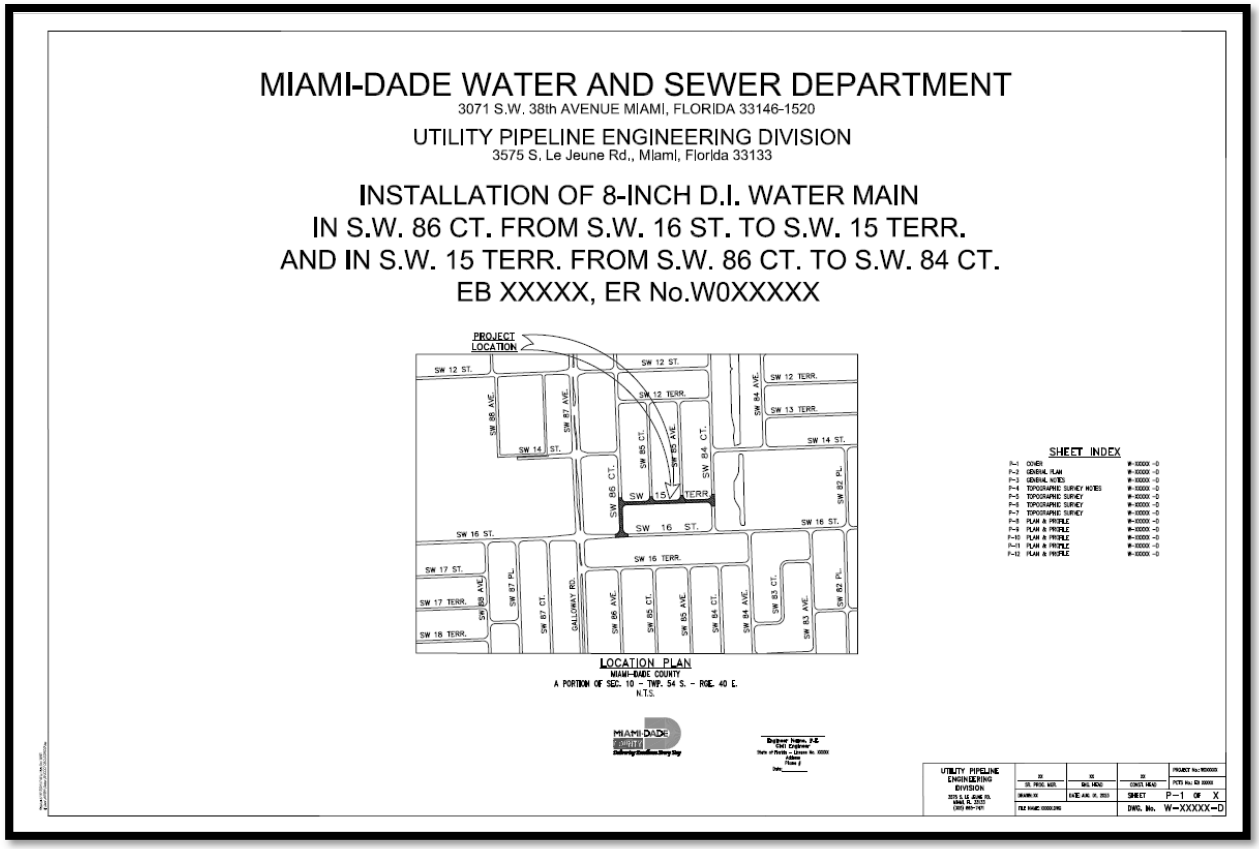


Figure 3.2

3.2.1 Major Single Utility Project:

A major pipeline project having six or more plan view sheets shall have a location key plan showing the overall layout of the project and indicate the limits of each design sheet. A typical cover sheet for a major utility project is shown under **Figure 3.2.1.**

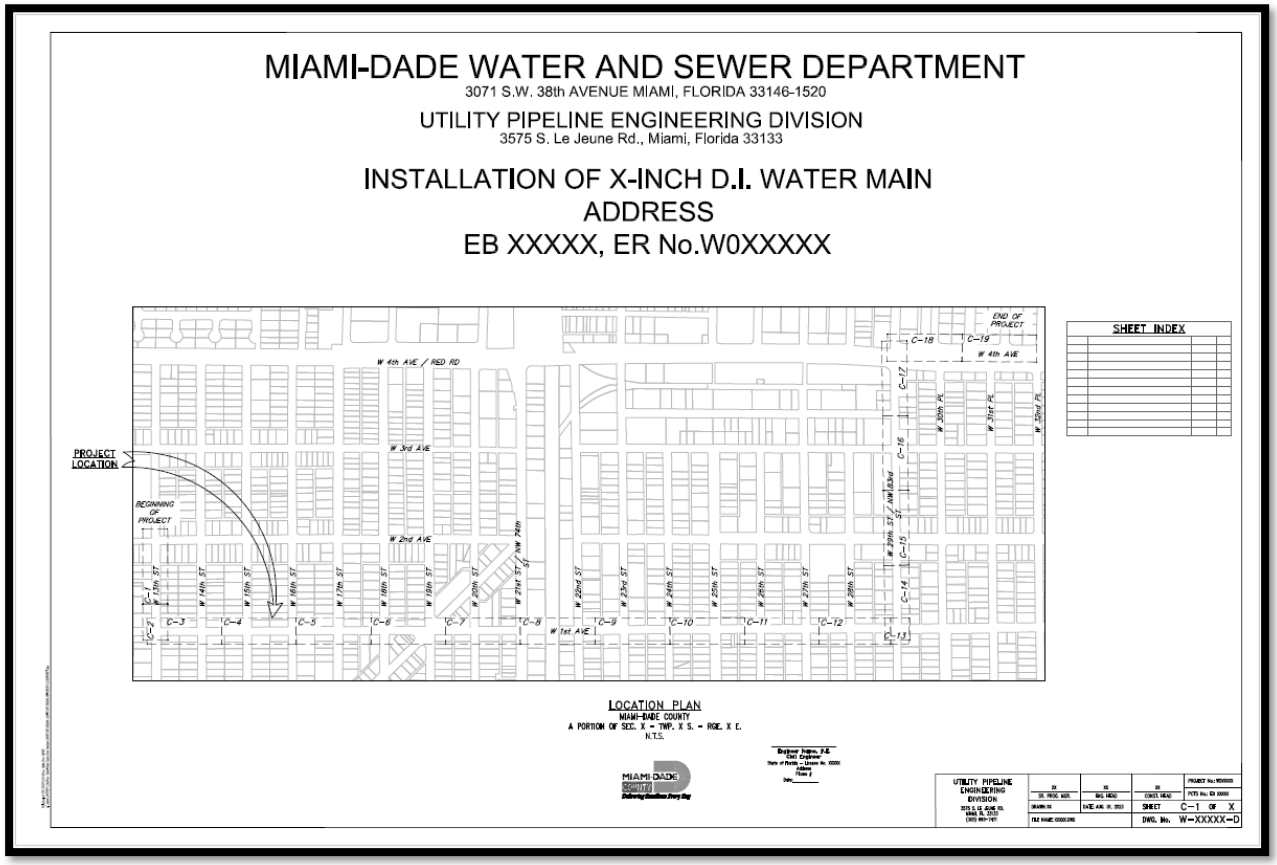


Figure 3.2.1

3.2.2 Standalone Survey:

For topographic or boundary survey that will not be part of a design deliverables, the cover sheet shall include survey notes (described section 3.4), location map, list of standard symbols and abbreviations, and a table for benchmarks and state plane coordinates used for the survey. A typical surveyor's notes sheet as shown in **Figure 3.2.2.**

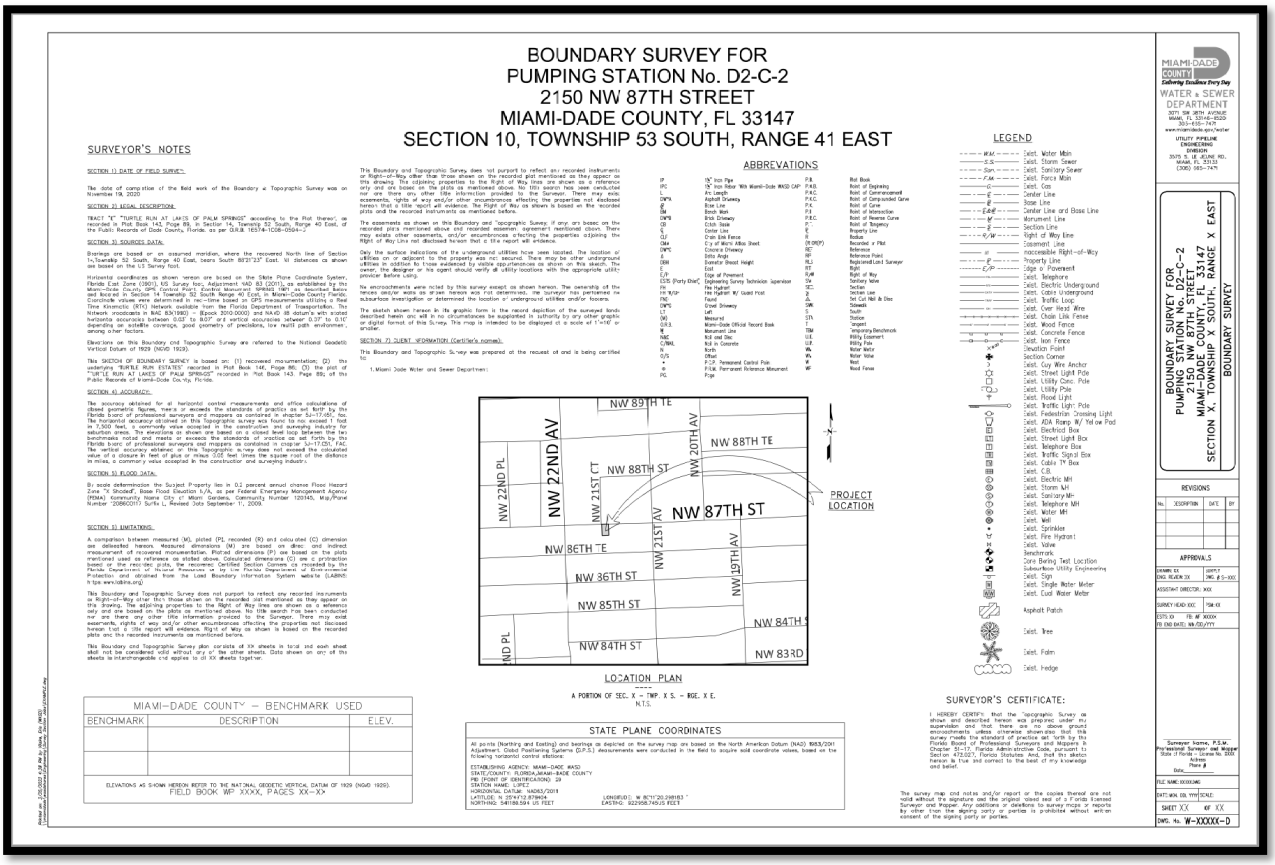


Figure 3.2.2

3.3 GENERAL PLAN

All water and sewer design projects shall include a general plan which contains the right of ways, pavement, surface elevations, lot and house numbers, property lines, general layout of the proposed design, and the beginning and ending of the project (station and offset). The general plan should also denote the sheet numbers of where the design plan and profile are in the drawing. A typical general plan is shown in **Figure 3.3.**

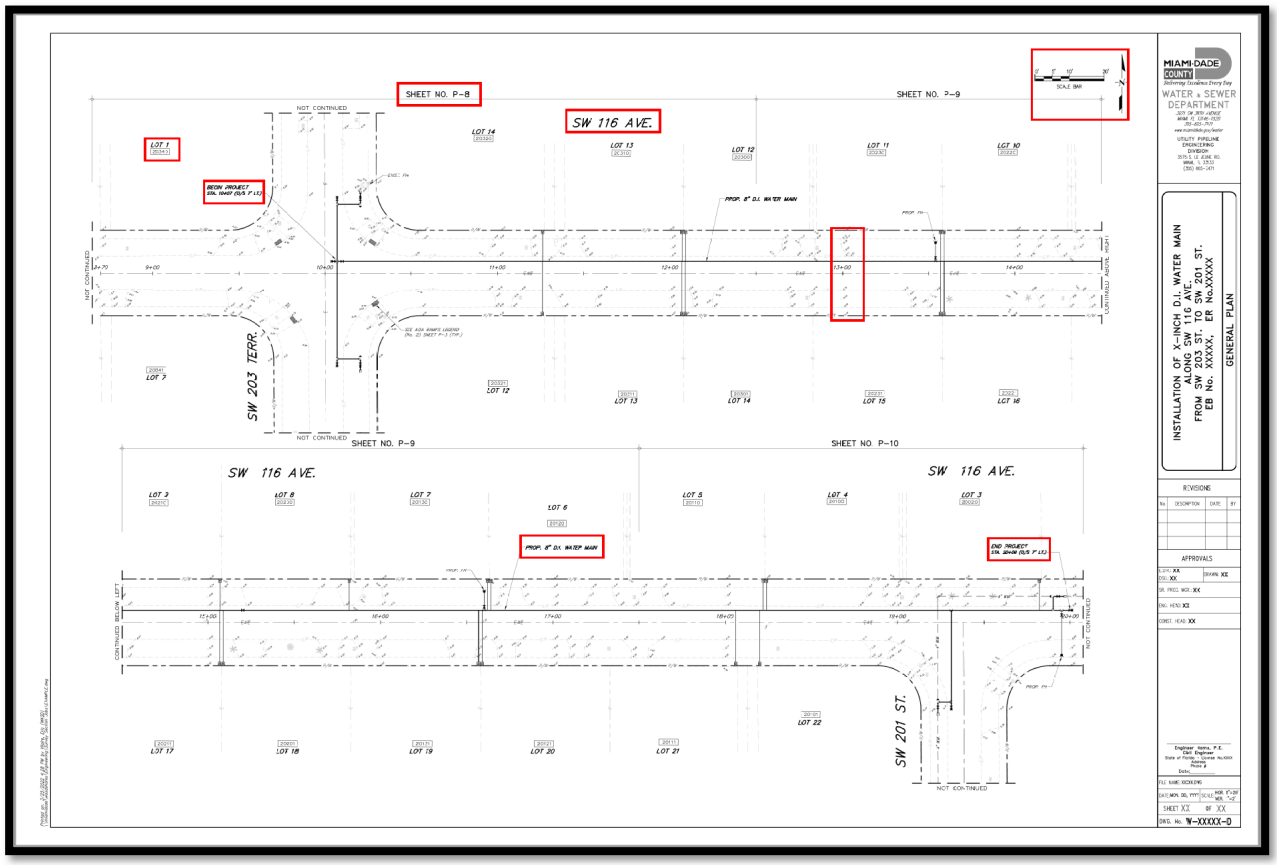


Figure 3.3

3.4 GENERAL NOTES

All water and sewer pipeline design projects must have a separate general notes sheet. General notes for topographic surveys which are part of design projects shall have their own dedicated sheet as well.

3.4.1 Water and Sewer Notes

All projects shall include a notes sheet. The template provided will include a notes sheet for both water and sewer projects however, the type of project will determine what notes sheet shall be used. The notes sheet is to incorporate notes regarding the following:

- General Notes
- RER-Derm Water-Sewer General Notes (Check RER website for latest revision)
- Miami-Dade WASD Design and Construction Standard Details
- Legend
- ADA Ramps Legend
- Requirements per Department of Health (water projects only)
- Sunshine Ticket Number

A typical water notes sheet is shown in **Figure 3.4.1.**

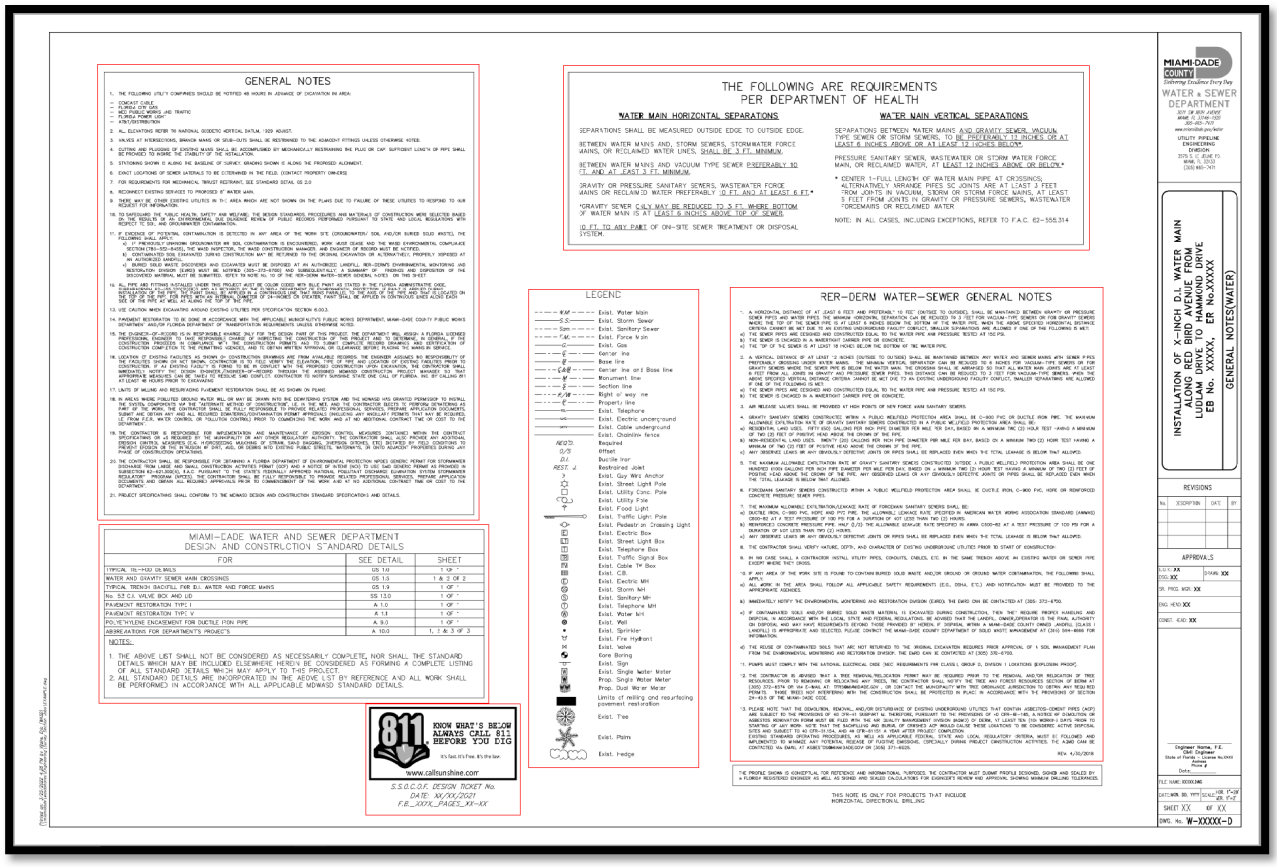


Figure 3.4.1.

3.4.2 Survey Notes Sheet

All survey projects submitted must have a separate surveyor's notes sheet. The surveyor's notes sheet is to incorporate notes regarding the following:

- Date of survey
- Survey limits
- Pertinent information
- Sources of data
- Accuracy
- Limitations
- Surveyor's certificate
- Requirement of survey to be sign and sealed

In addition, a list of standard symbols and abbreviations, and a table for benchmarks and state plane coordinates used for the survey must be incorporated in the notes sheet as well. A typical surveyor's notes sheet as shown in **Figure 3.4.2.**

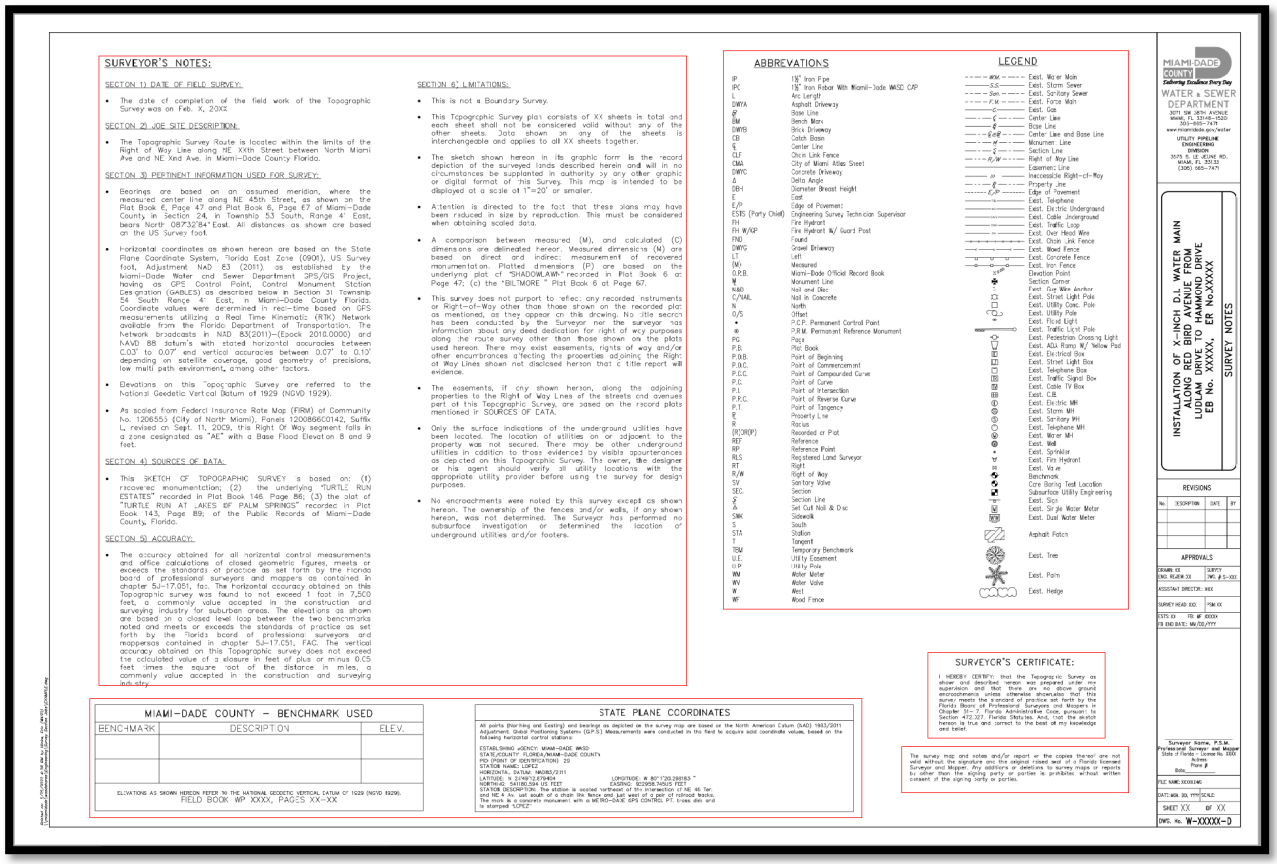


Figure 3.4.2

3.5 KEY MAP AND BASELINE AND REFERENCE POINT TABLE

A major survey project having two or more plan view sheets shall have a sheet containing a key map showing the beginning and end of the project. The map is to show the overall layout of the project and indicate the limits of each survey sheet. In addition, this sheet shall contain a baseline and reference point table which will list all the baselines and points found in the survey. In the case where the baseline and reference point table go beyond the layout space of this sheet, the baseline and reference point tables shall have a dedicated sheet on the following page. The Key Map sheet shall also contain a note regarding monumented baselines, change in direction, point of curvatures, point of tangencies, and street intersections with set nail and disc. A typical key map sheet as shown in **Figure 3.5.**

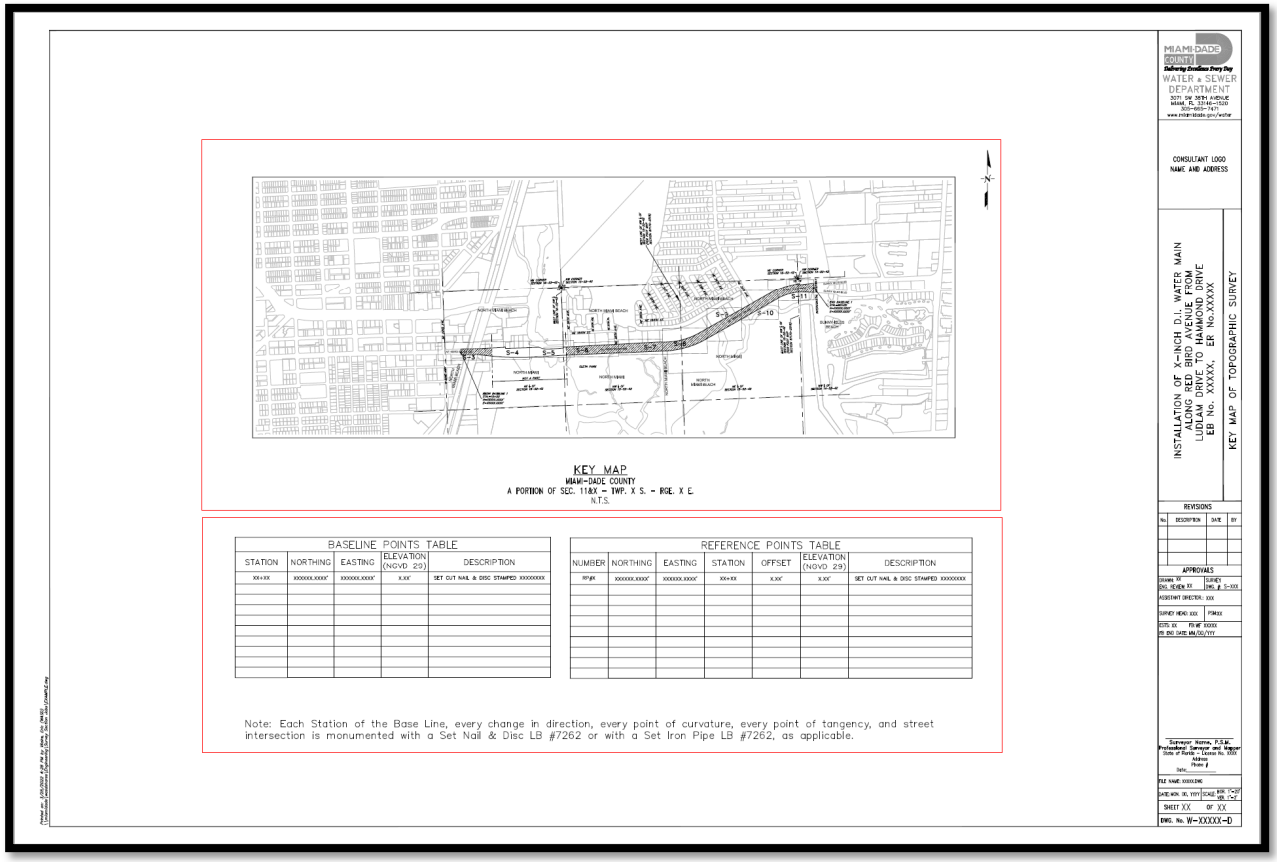


Figure 3.5

3.6 STANDARD DESIGN SHEET

All water and sewer design sheet shall be prepared strictly in accordance with WASD standard format. Each sheet shall have standard horizontal and vertical bar scales for plan and profile as applicable. A typical standard design sheet is shown in **Figure 3.6** below.

Figure 3.6.

3.6.1 Drawing Borders

The standard design and survey drawing shall be plotted on “D" sized paper (24”X36”) with a 22.5”X34” border on the sheet consisting of 1” spacing for the “file location” dynamic block on the left and 1” at the right, top, and bottom from the edge of the sheet as shown in **Figure 3.6.1.** All other sheet sizes may be acceptable upon prior approval by MDC WASD.

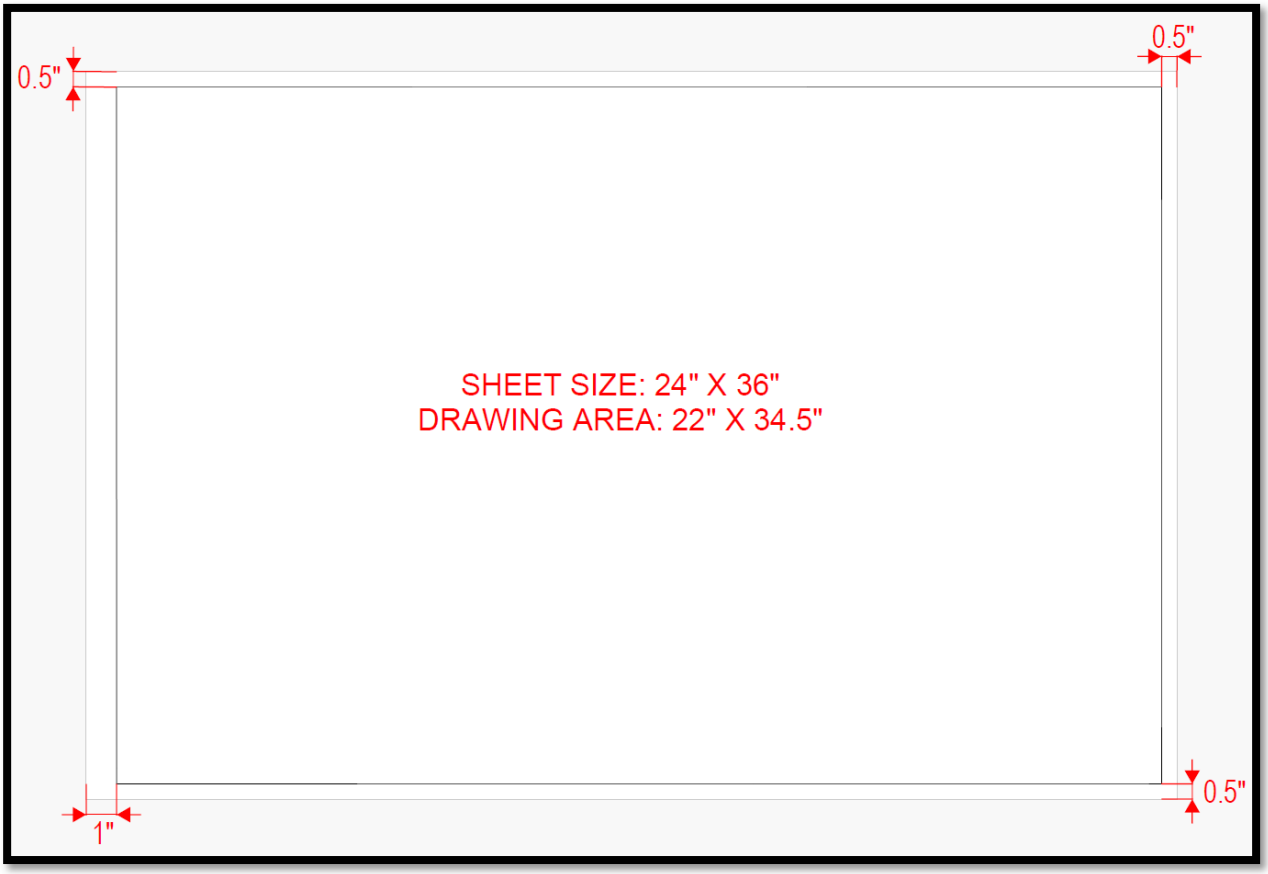


Figure 3.6.1

3.6.2 Title Block

Each sheet shall have a standard title block which shall include an area to conveniently list the pertinent project reference information as shown in **Figure 3.6.2 and Figure 3.6.2.1.a-3.6.2.1.c**

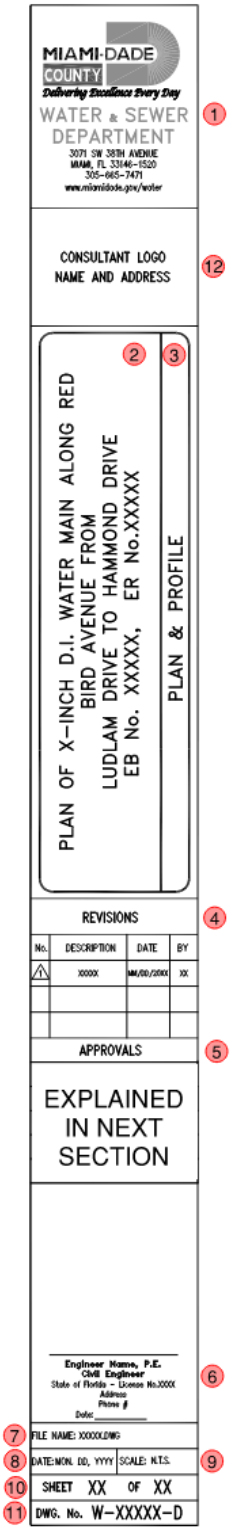


Figure 3.6.2

(1) MDC WASD LOGO:	Included in provided template. Do not alter.
(2) PROJECT TITLE:	Include size and/or type of project, project location, project limit, WASD Project No. and ER No.
(3) SHEET NAME:	Sheet name.
(4) REVISIONS:	Include revision number, a breif description of what changed, date, and initials of drafter.
(5) APPROVALS:	Appropvals will be explained in following section
(6) ENGINEER/SURVEYOR SEAL:	The rasied seal for the of the engineer/ surveyor in charge goes here. The engineer's seal may be physically, digitally, or electronically signed but must follow the FBPE standards for doing so. (fbpe.org/legal/signing-and-sealingengineering-documents)
(7) FILE NAME:	The file name should follow formatting as described in section 2.C.
(8) DATE:	Date shall be in abbreviated Month, day, and full year format.
(9) SCALE	Scale of drawing on sheet.
(10) SHEET NUMBER:	Sheet number as assigned by WASD PM.
(11) DWG NUMBER:	Drawing number as assigned by WASD PM. Use letter "W" for water projects and letter "S" for sewer projects. The ending letter "D" stands for D sized sheet (24"X36").
(12) CONSULTANT LOGO:	If project was done by a consulatant there will be a space provided for consultant logo, name, address, phone number, and website. The size of this space shall not be altered.

3.6.2.1 Approvals

Depending on whether the drawing was done in house/by a consultant or if the sheet is for pipeline design/survey different approvals will be required. Approvals for in-house and consultant survey sheets, in house pipeline design sheets, and consultant pipeline design sheets will be explained and shown in **Figure 3.6.2.1.a., Figure 3.6.2.1.b., and Figure 3.6.2.1.c**. respectively.

SURVEY SHEETS

Figure 3.6.2.1.a

(1) DRAWN & REVIEWED BY: First and last initial of drafter and reviewer

(2) SURVEY DWG#: A drawing number will be assigned to consultant at the time of the project. This Drawing # is for MDC WASD records.

(3) ASSISTANT DIRECTOR: The initials for this area will always be "N.P.J."

(4) SURVEY HEAD: The initials for this area will always be "J.C.C"

(5) PROF. SURVEYOR&MAPPER: The initials for this area will always be "J.B."

(6) PARTY CHIEF & FIELD BOOK INFO: Include Party Chief initials, date of field book completion, and field book num

IN-HOUSE DESIGNED PIPELINE SHEETS

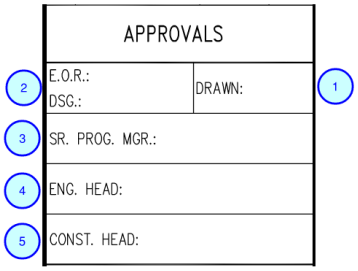


Figure 3.6.2.1.b

(1) DRAWN: First and last initial of drafter

(2) ENGINEER ON REVIEW & DESIGNER: Initials of EOR and Designer of the project

(3) SR. PROGRAM MANAGER: The initials of the Senior Program Manager of the in Utility Pipeline Design Department

(4) ENGINEERING HEAD: The initials for this area will be the Engineering Head Professional

(5) CONSTRUCTION HEAD: The initials of the Contruction Head

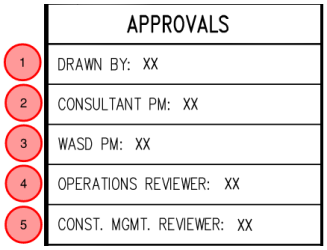


Figure 3.6.2.1.c

(1) DRAWN BY:	The initials initial of drafter.
(2) CONSULTANT PROJECT MANAGER:	The initials of the consultant PM.
(3) WASD PROJECT MANAGER:	The initials of the WASD PM.
(4) OPERATIONS REVIEWER:	The initials of the operations reviewer.
(5) CONSTRUCTION MGMT. REVIEWER:	The initials of the construction reviewer.

3.6.3 Bar Scale

Each sheet shall have standard horizontal bar scales for plan views as applicable. The bar scale block is dynamic and editable so that you may change the scale from 1" = 20' to 1" = 40' or 1" = 60'. Profile scales will be preset in standard WASD profile view styles.

3.6.4 As-built References

All the pertinent water and sewer as-built map reference numbers shall be mentioned for larger & complex projects or when required by WASD's PM.

3.6.5 Benchmarks and Control Points

A minimum of two benchmarks (BM) per project and one benchmark per sheet. In addition, control points along with northing and eastings can also be shown as necessary.

3.6.6 Project Location Map:

Each project shall have a project location map on the cover sheet and oriented with a north arrow pointing to the top of the sheet. The scale of the location map is to be 1"=300' scale. The project location and its limit are to be identified. It is not necessary to include the location map on subsequent design sheets within the same project.

3.6.7 North Arrow:

Each design and survey sheet and location map shall have a standard arrow typically pointing North or to the East.

3.7 STANDARD CALLOUTS

All water and sewer main callouts and survey callouts shall be in accordance with the standards as stipulated in this section.

3.7.1 Water and Sewer Main Callouts:

All water and sewer main callouts shall be in accordance with the standards as stipulated in **Table 3.7.1** below:

Type	Sample Callouts	Notes
Begin Project / End project	**BEGIN/END PROJECT** STA. XX+XX (O/S XX' RT./LT.) PROP. XXXXXXX REST. W/GLANDS	Begin/End Project Station and Offset Prop Asset Begin/End Project is Tied To
Bends	STA. XX+XX (O/S XX' LT./RT.) PROP. XX"-90° M.J. BEND REST. W/GLANDS	Station and Offset Proposed Size, Angle, Joint Type (Rotation if Applicable) Connection Type
Fittings, Offsets, or Valves	STA. XX+XX (O/S XX' LT./RT.) PROP. XX"xXX" M.J. **[FITTING/OFFSET/VALVE]** REST. W/GLANDS	Station and Offset Proposed Size, Joint Type Connection Type
Tapping Sleeve with Valve	STA. XX+XX (O/S XX' LT./RT.) PROP. XX"xXX" M.J. TAPPING SLEEVE & XX" FLG.xM.J. TAPPING VALVE REST. W/GLANDS	Station and Offset Proposed Size, Joint Type Proposed Valve Size, Joint Type Connection Type
Plugs and Caps	PROP. XX" M.J. **[PLUG/CAP]** W/F.V.O. REST. W/GLANDS	Proposed Size, Joint Type (With F.V.O. if Applicable) Connection Type
A.R.V.s	PROP. A.R.V.	Proposed A.R.V.
Water Meters	PROP. 1" SERVICE AND **[SINGLE/DOUBLE]** METER BOX (SEE STD. DETAIL WS 2.10) LOCATION OF WATER METER BOX TO BE ADJUSTED IN THE FIELD AS REQUIRED (TYP.)	Proposed Water Meter (Service Line Size as needed) (Refer to STD. Detail as needed)
Hydrants	STA. XX+XX (O/S XX' LT./RT.) PROP. XX"x6" M.J. TEE, 6" M.J. GATE VALVE & F.H. ASSY. SEE STANDARD DETAIL WS 4.50	Proposed Size, Joint Type Valve and Assembly (Refer to STD. Detail)

Table 3.7.1

3.7.2 Survey Callouts:

All survey callouts shall be in accordance with the standards as stipulated in **Table 3.7.2** below.

Type	Sample Callouts	Notes
Manholes and Catch Basins	MHSA RIM ELEV.=X.XX' 8" CLAY (E) INV. ELEV.=X.XX' 8" PVC (N) INV. ELEV.=X.XX' 8" CLAY (W) INV. ELEV.=X.XX' BOTTOM ELEV.=X.XX'	Name of Feature (i.e. MHSA, MHSS, CB) Rim Elevation Size of Pipe, Material, (Direction), and Invert Elevation Bottom Elevation
Reference Points	RP #1 SET PK W/WASD STA.=XX+XX.XX O/S=XX.XX' LT/RT N=XXXXXX.XXXX' E=XXXXXX.XXXX' ELEV.=X.XX'	Reference Point Number Nail and Disk Station Offset Northing Easting Elevation
Begin Baseline	BEGIN BASELINE X STA=XX+XX N=XXXXXX.XXXX' E=XXXXXX.XXXX'	Baseline Name Station Northing Easting

Table 3.7.2

CHAPTER 4: WORKING UNITS, STYLE, AND WEIGHT

4.1 GENERAL

This chapter addresses various computer aided drafting and design (CADD) elements, settings, and attributes as applicable to MDC WASD for pipeline design and survey using AutoCAD.

4.2 DRAWING UNITS

Drawing units for drafting shall be set to “Decimal” with the insertion scale set to “Feet”. **Figure 4.2** shows a typical set up of drawing units.

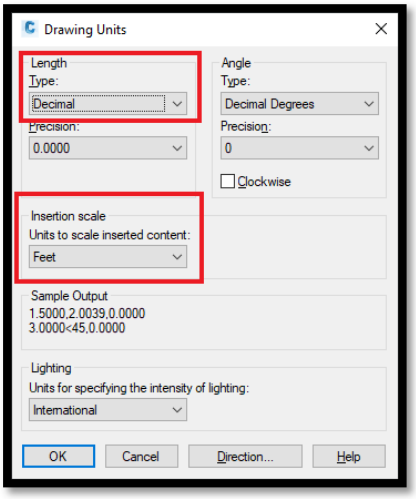


Figure 4.2

4.3 LINE STYLE

Predefined and standard linetypes available in the WASD template shall be utilized, as necessary.
All the WASD linetypes are stored within the template file.

CHAPTER 5: LAYERS

5.1 GENERAL

This chapter discusses standard levels along with predefined attributes, consisting of specific colors, line styles, and line weights to be used for any project.

5.2 LAYER NAMING CONVENTIONS

MDC WASD will follow AIA CAD layer guidelines for layer naming conventions. A typical MDC WASD layer shall be names as**:**

Discipline Designators_ Major Groups_ Minor Groups1_Minor Groups2

Where major category is the abbreviation for General (G), Civil (C), Architectural (A), Mechanical (M), (S) Structural, Electrical (E), Surveying (V) or other major categories.

Accordingly, a typical example of a predefined layer can be shown as follows:

V-ROAD-ALGN
C-SSWR -PIPE

5.3 PREDEFINED LAYERS

A detailed description of all the assigned levels with predefined attributes consisting of specific color, line style, and line weight, is included in **Appendix A**. All WASD projects shall be designed utilizing the predefined layers.

5.3.1 Layering Schema

All CAD drawings should follow the layering schema as shown in **Figures 5.3.1-5.3.3**. The schema shows the appropriate layers, text, style, and leader style for common annotations and line types that appear in topographic drawings, pipeline design plan view, and pipeline design profile view.

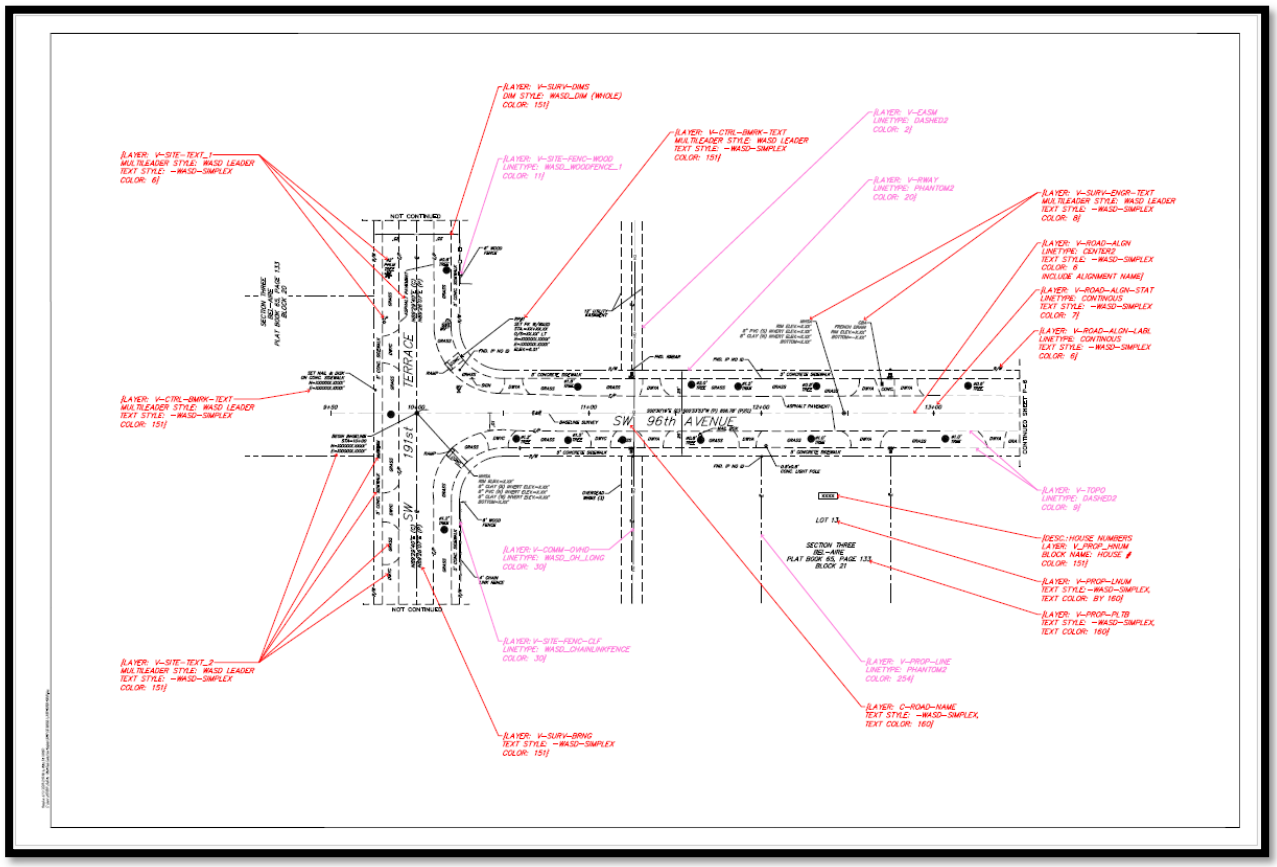


Figure 5.3.1
(Layer Schema for Topographic Survey Drawings)

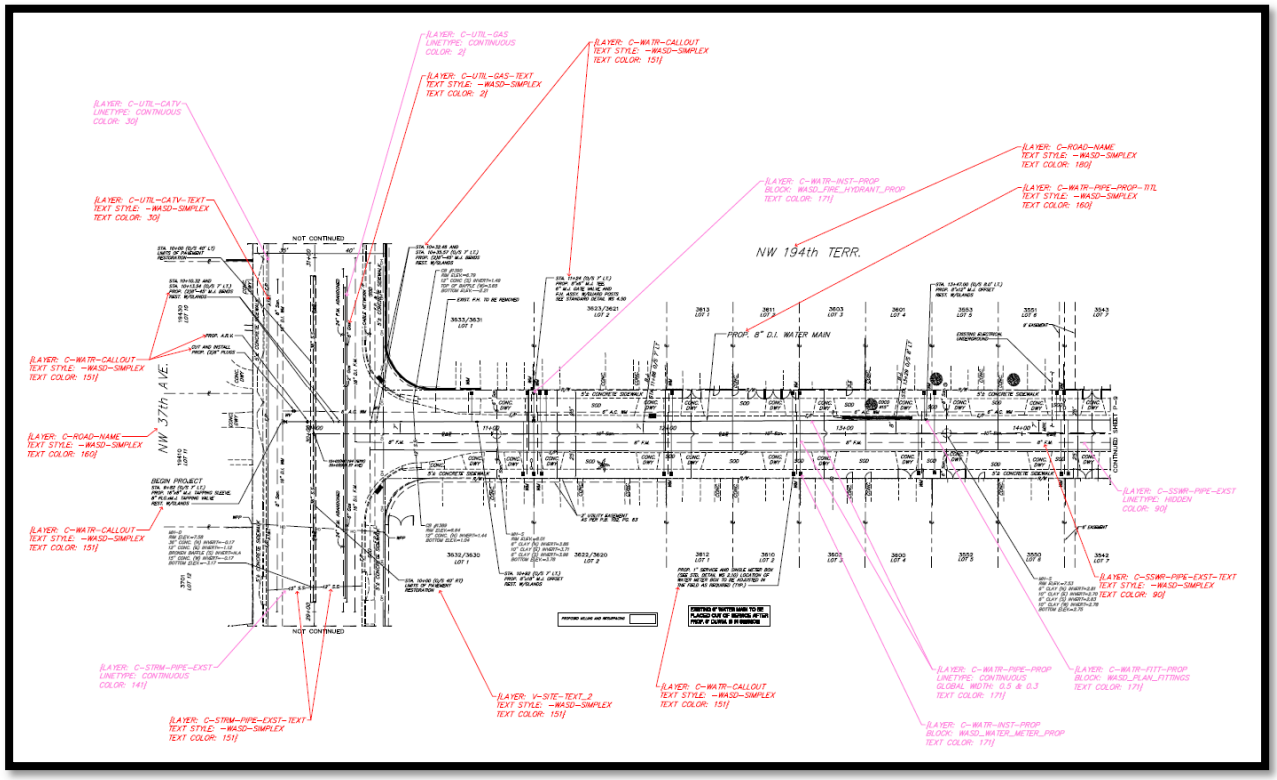


Figure 5.3.2
(Layer Schema for Pipeline Design Drawings, Plan View)

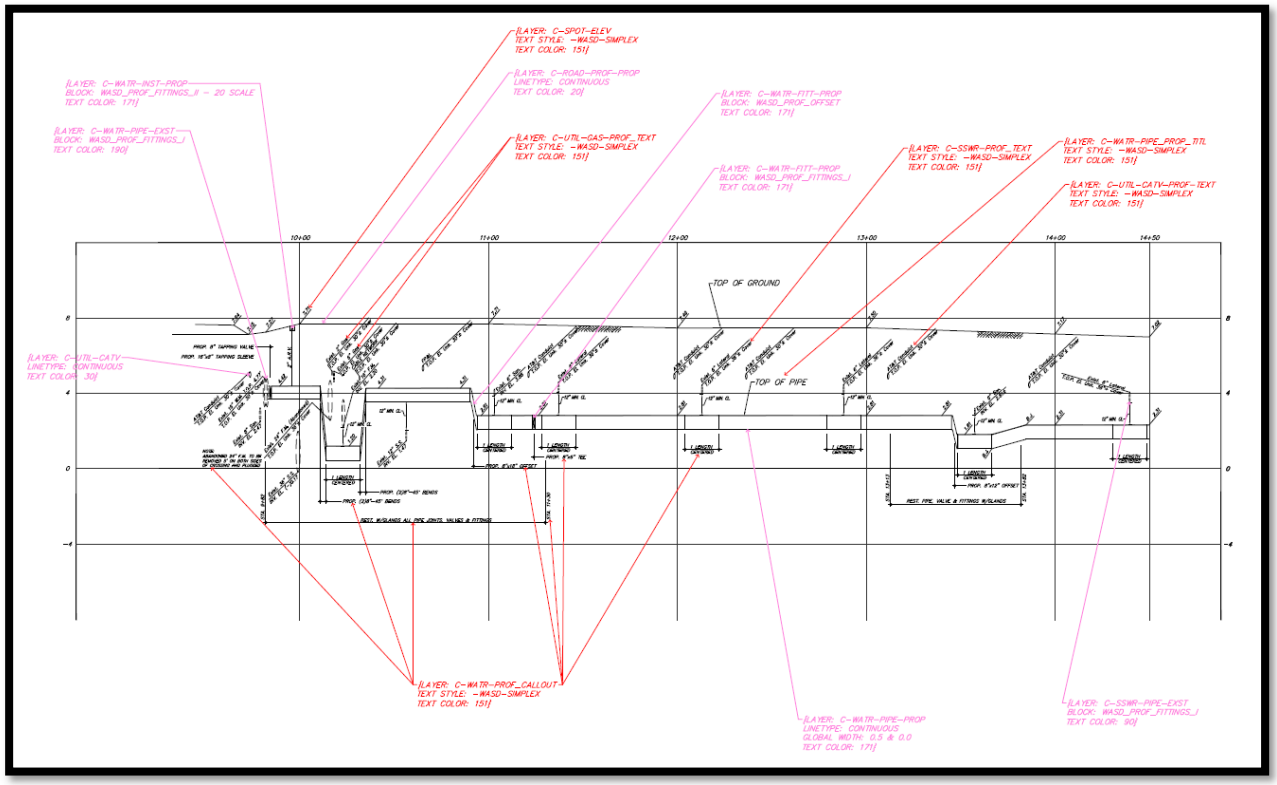


Figure 5.3.3
(Layer Schema for Pipeline Design Drawings, Profile View)

CHAPTER 6: AUTOCAD and CIVIL 3D RESOURCE LIBRARIES

6.1 GENERAL

This chapter addresses WASD specific AutoCAD and Civil 3D styles, fonts, dimension styles (all prefixed "WASD") and most of the standard WASD annotation, design and survey layers needed for completion of WASD projects.

6.2 PREDEFINED TEMPLATE FILES

WASD has developed customized template files with AutoCAD predefined layers, blocks, styles, and linetypes, and Civil 3D styles and labels to facilitate a consistent drafting standard. **Table 6.2** lists all the required files to be used by the surveyors and the designers. These files can be obtained from the WASD website.

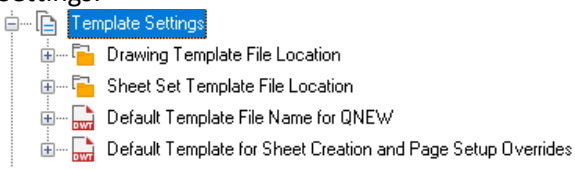
File Type (Read Only)	File Name	Note
Template File - Survey and As-built Drawings	WASDTemplate_Survey_Asbuilts.dwt	Users PCs should point to these files in the AutoCAD Options → Files Tab → Template Settings: 
Template File – Pipeline Design Drawings	WASDTemplate_Pipeline_Design.dwt	
Drawing File - WASD Blocks	WASD Blocks.dwg	

Table 6.2

6.3 DESIGN SHEETS FILE

The sheets used for pipeline designs will have their own respective files where they can be pulled from using sheet sets. Alternatively, there are layouts already in the template files which can be used to produce sheets.

6.4 WASD TEXT STYLES

A list of various text styles and standards of annotation are shown under **EXHIBITS B.1-B.2**.

6.5 WASD BLOCKS

All WASD Blocks will be stored in the template files and the "WASD Blocks.dwg" file.

6.6 MISCELLANEOUS DRAWING FEATURES

All drawings consisting of existing and proposed features shall be prepared in accordance with the WASD standards.

6.6.1 Standard Symbols

A list of standard symbols is included under **EXHIBITS A.1 – A.8**.

6.6.2 Plan View: Property, Pavement and Utilities

Plan view of various existing and proposed property, pavement, utilities, and water and wastewater features are demonstrated under **EXHIBITS C.1-C.2 and D.1-D.4**

6.6.3 CIVIL 3D Objects, Styles, and Label Styles

The following design items must be created as AutoCAD Civil 3D objects and must be assigned MDC WASD Civil 3D Object Styles using the provided MDC WASD Civil 3D drawing template:

1) Alignments
2) Points
3) Surfaces
4) Pipes and Pressure Pipes

All WASD Civil 3D Styles and Label Styles will be prefixed with the word “WASD” and will be explained in the proceeding sections.

6.6.3.1 CIVIL 3D Alignment Styles and Label Styles

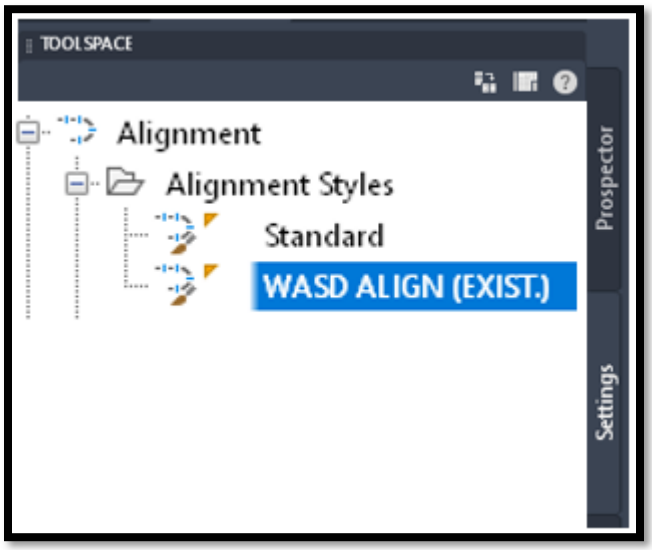


Figure 6.6.3.1.a (WASD Alignmtent Style)

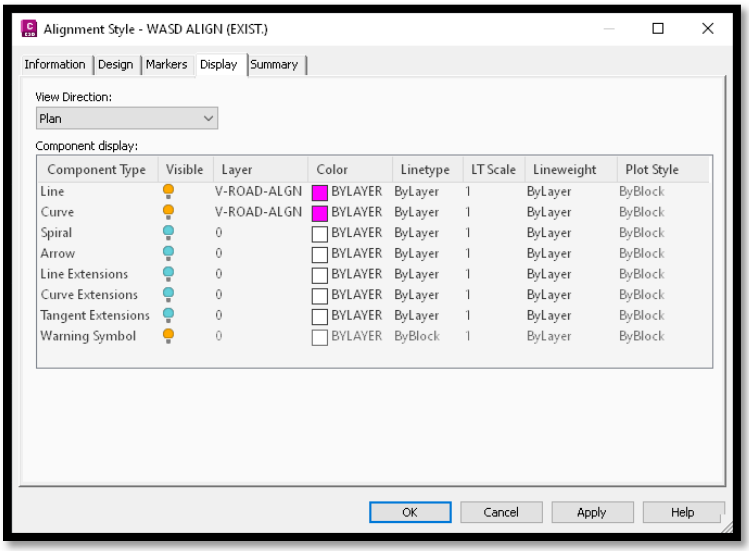


Figure 6.6.3.1.b
(WASD Alignment Style Display Settings)

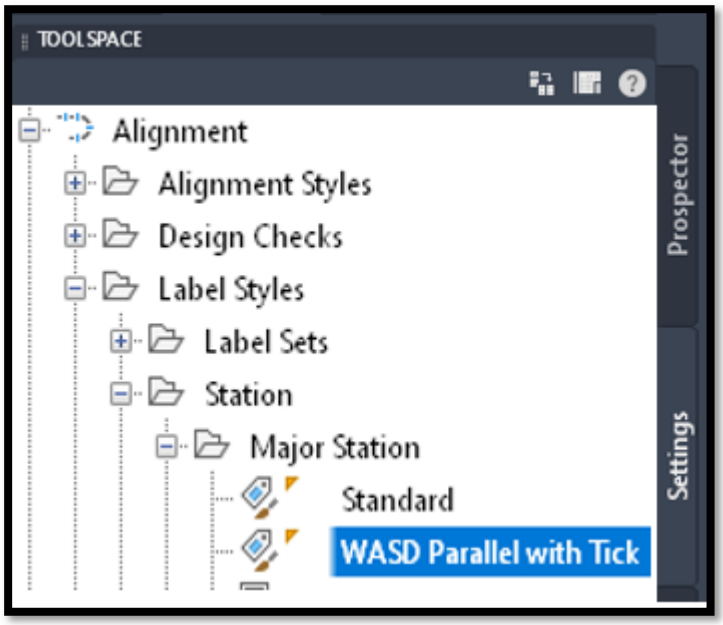


Figure 6.6.3.1.c
(WASD Alignment Label Style for Major Stations)

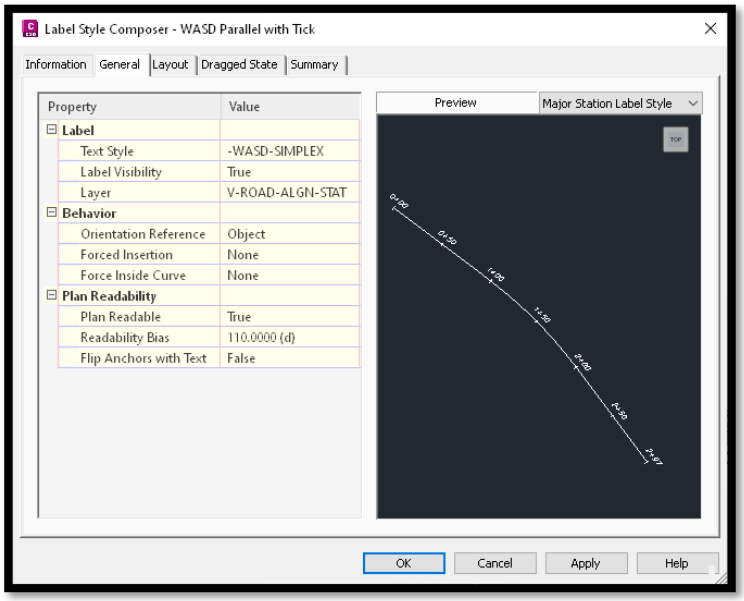


Figure 6.6.3.1.d
(WASD Alignment Label Style for Major Stations General Settings)

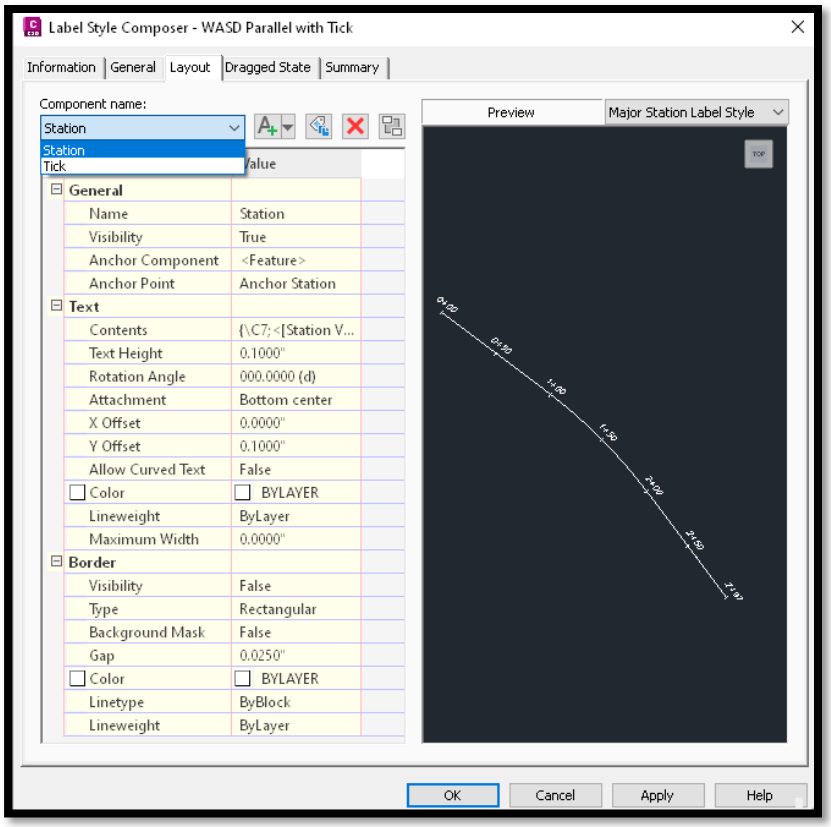


Figure 6.6.3.1.e
(WASD Alignment Label Style for Major Stations, "Station" Component Settings)

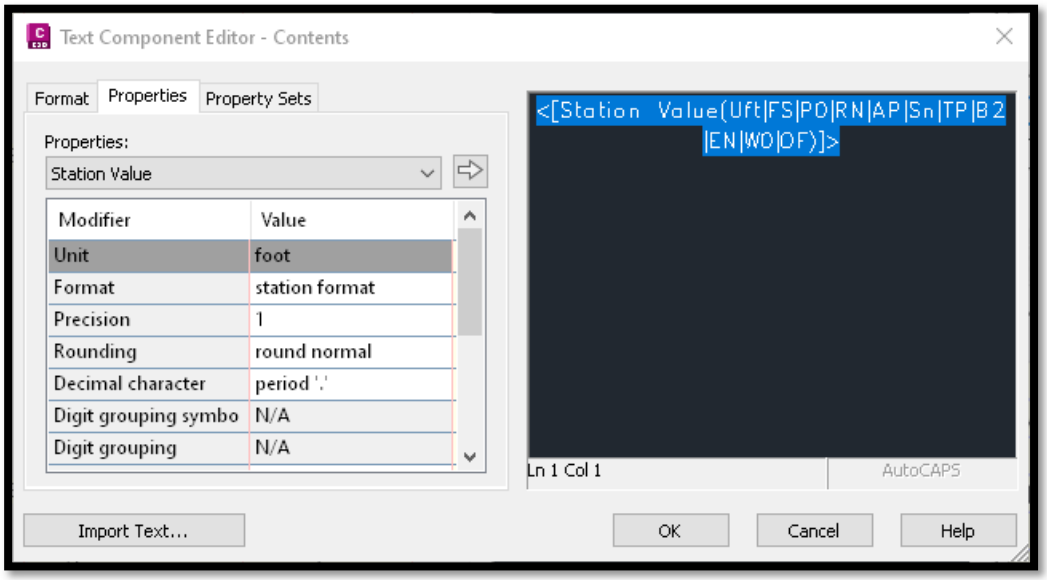


Figure 6.6.3.1.f
(WASD Alignment Label Style for Major Stations, "Station" Component Settings)

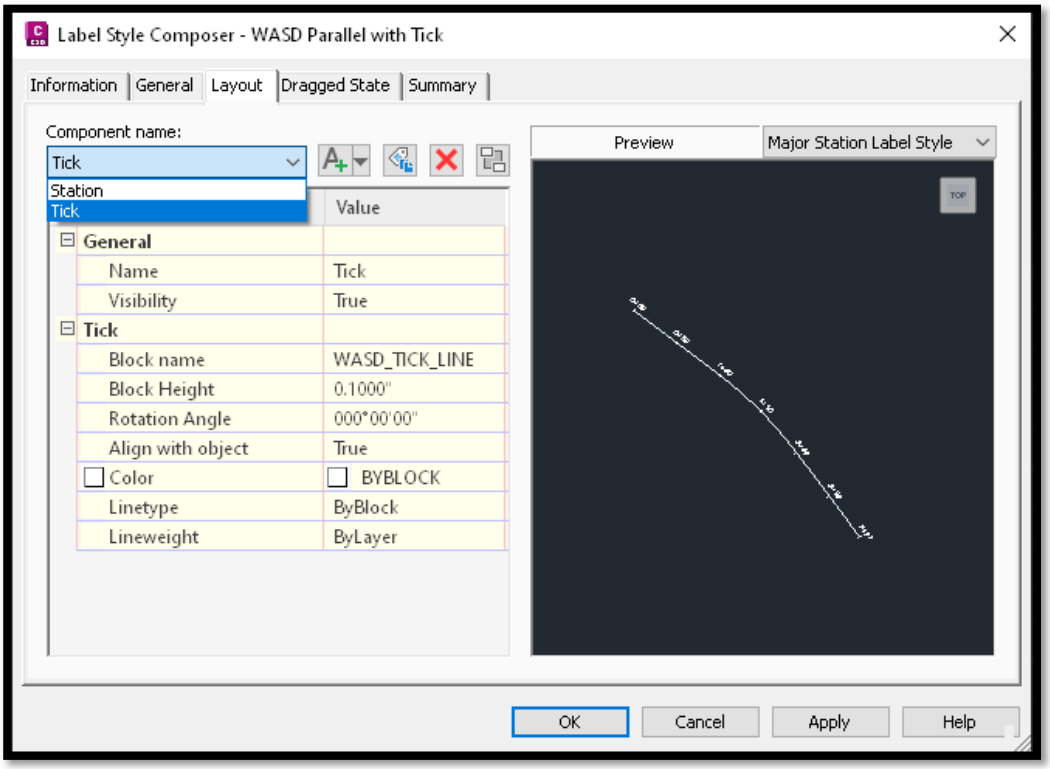


Figure 6.6.3.1.g
(WASD Alignment Label Style for Major Stations, "Tick" Component Settings)

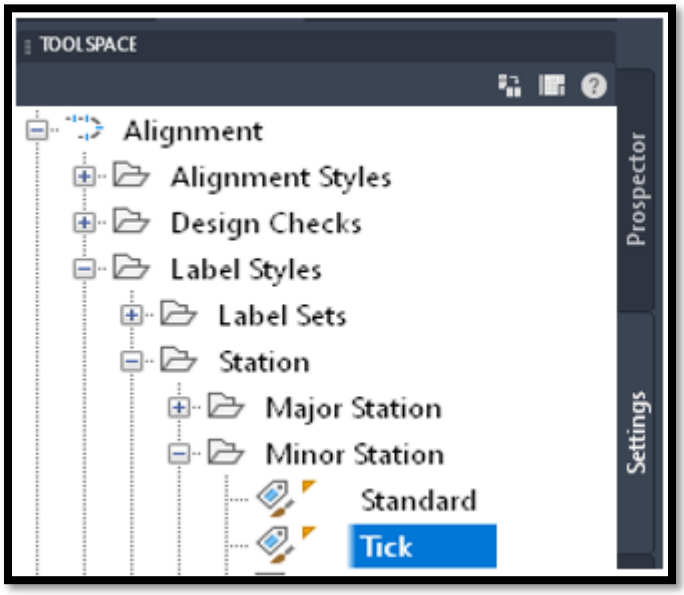


Figure 6.6.3.1.h
(WASD Alignment Label Style for Minor Stations)

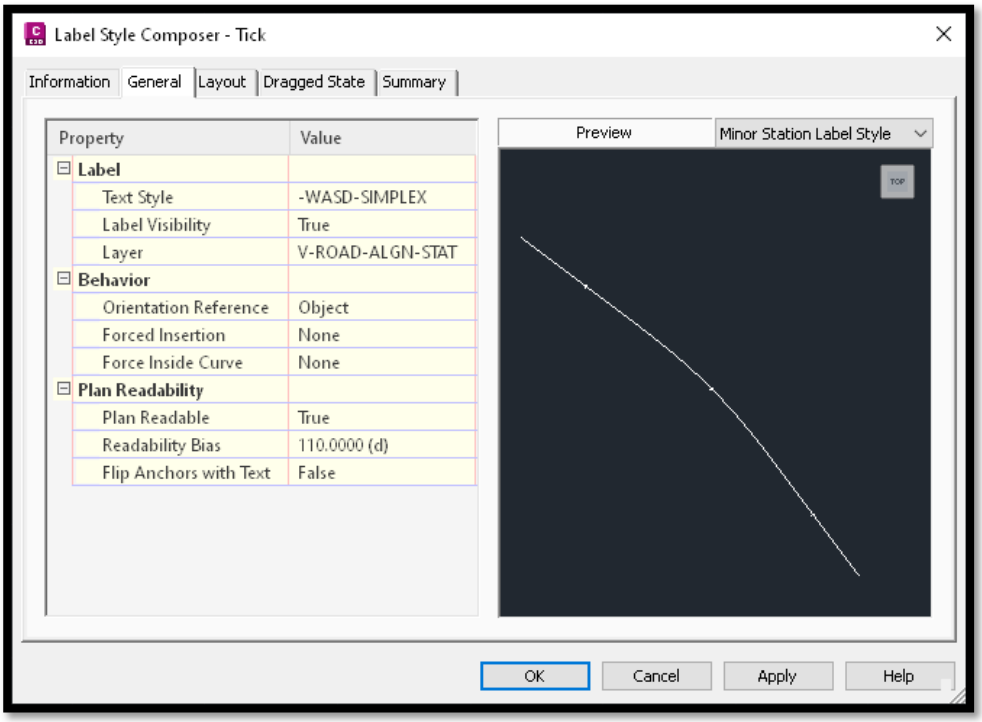


Figure 6.6.3.1.i
(WASD Alignment Label Style for Minor Stations, General Settings)

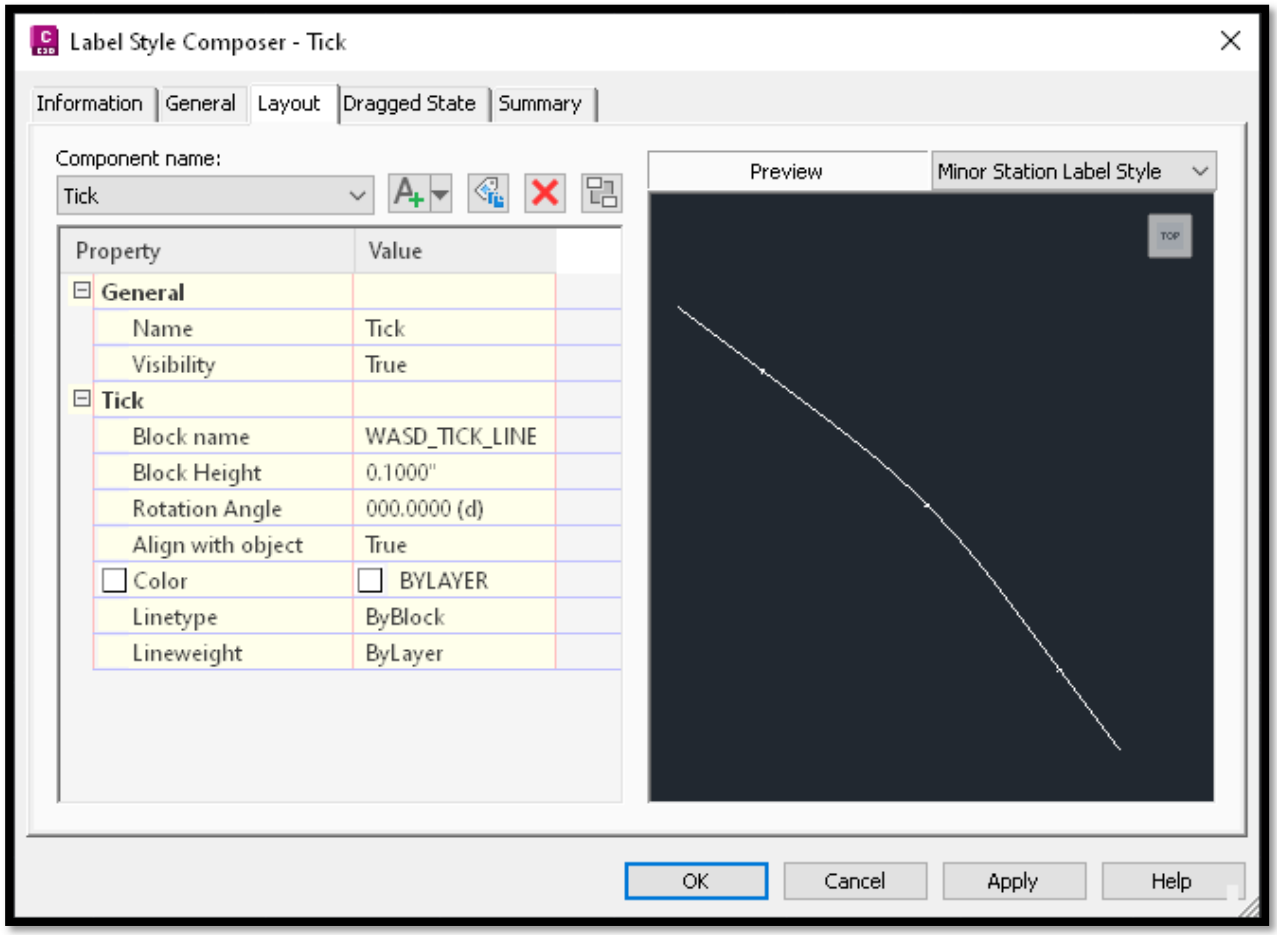


Figure 6.6.3.1.j
(WASD Alignment Label Style for Major Stations ,"Tick" Component Settings)

6.6.3.2 CIVIL 3D Point Styles and Label Styles

Final survey deliverables that include elevation points must be in the form of Civil 3D COGO Points that are in the following WASD point styles and label styles.

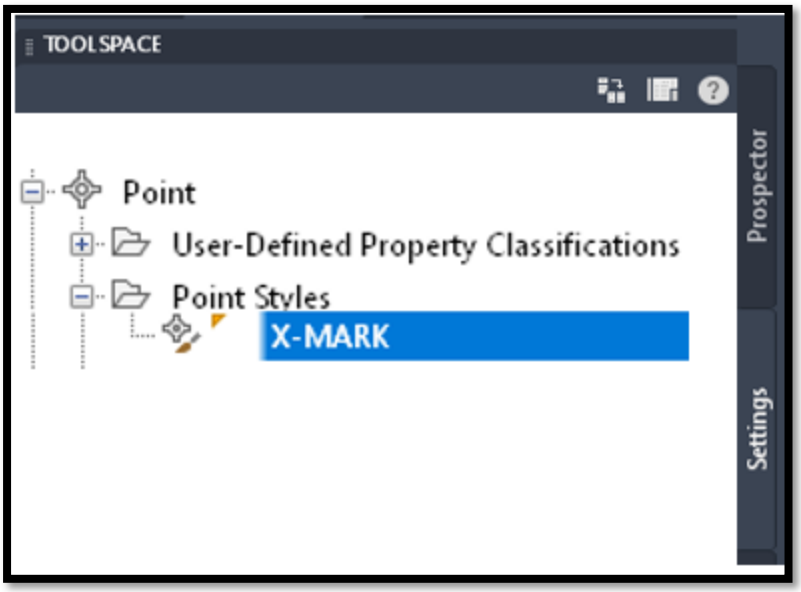


Figure 6.6.3.2.a (WASD Point Style for Point Elevations)

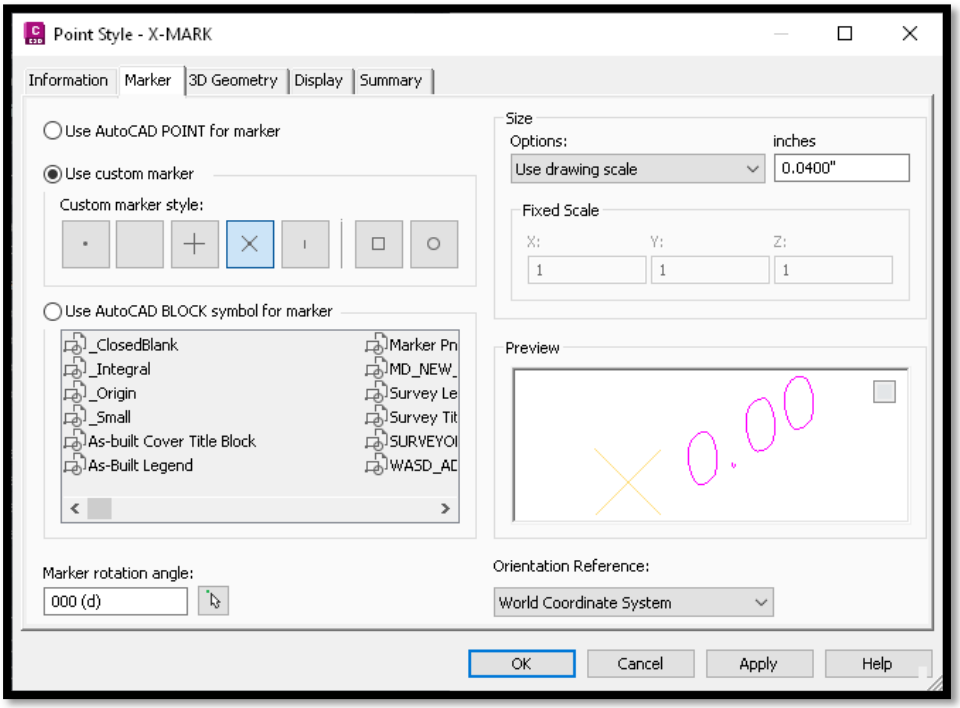


Figure 6.6.3.2.b (WASD Point Style for Point Elevations, Marker Settings)

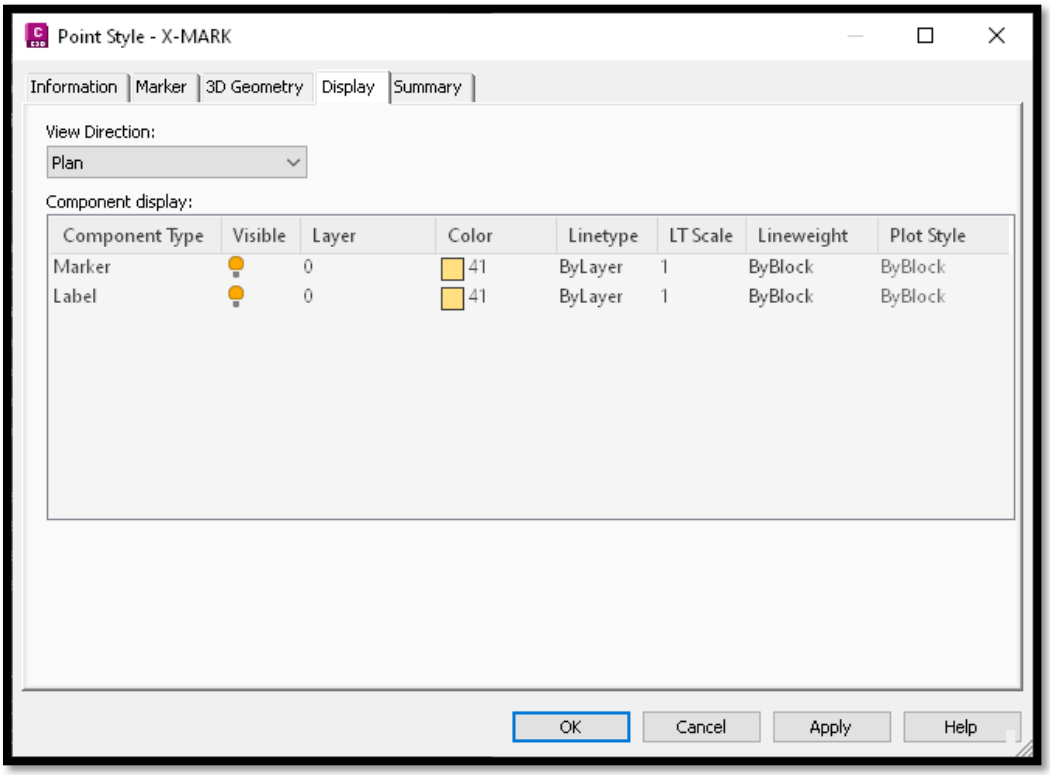


Figure 6.6.3.2.c (WASD Point Style for Point Elevations, Display Settings)

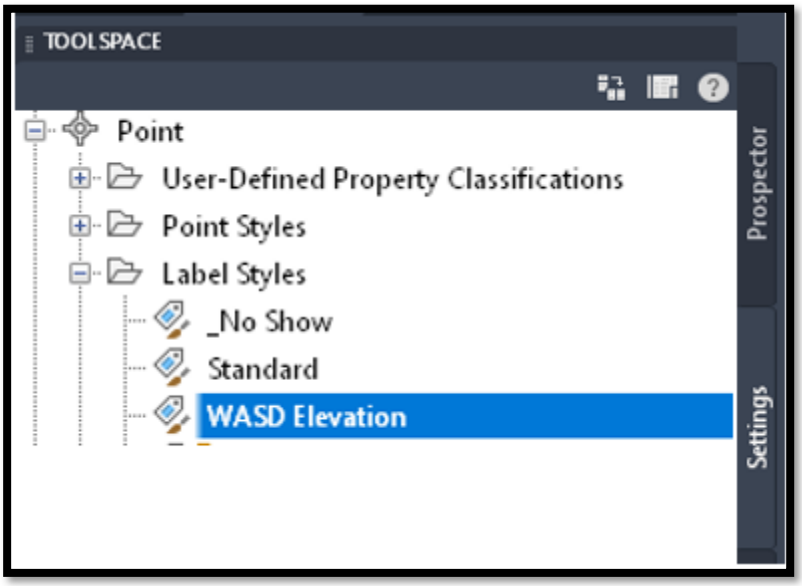


Figure 6.6.3.2.d (WASD Point Label Style for Point Elevations)

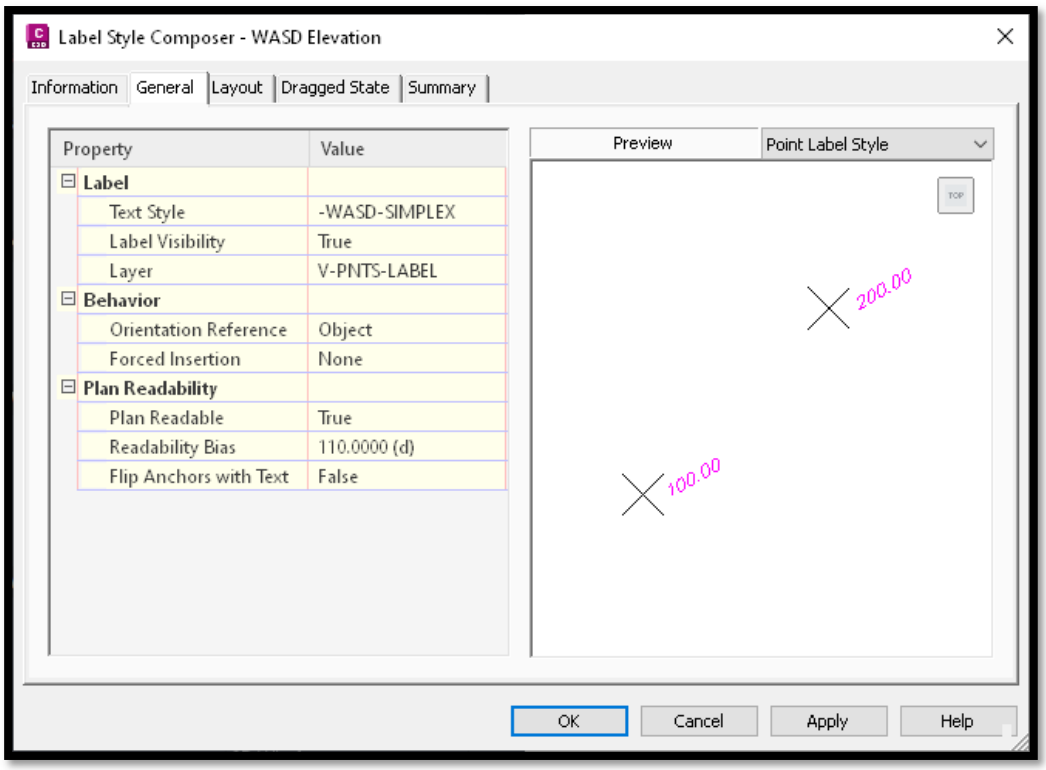


Figure 6.6.3.2.e
(WASD Point Label Style for Point Elevations, General Settings)

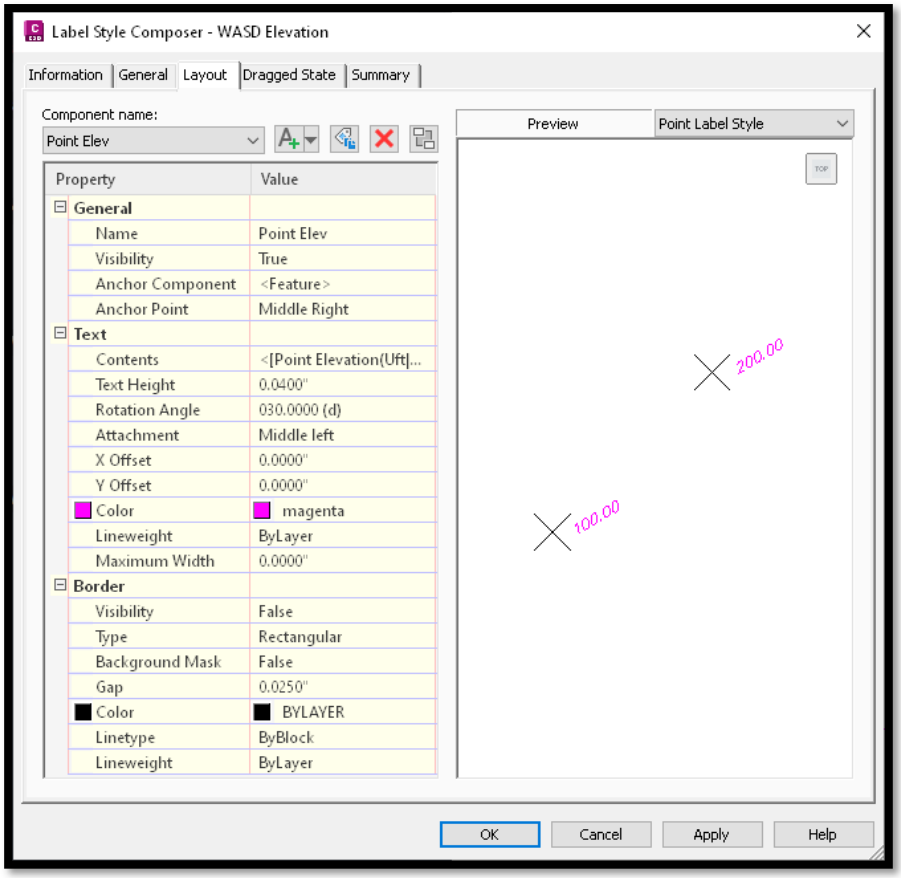


Figure 6.6.3.2.f
(WASD Point Label Style for Point Elevations, "Point Elev" Component Settings)

6.6.3.3 CIVIL 3D Surface Styles and Label Styles

Final survey deliverabels that include existing grade surfaces must be in the form of Civil 3D Surfaces as a separate in XML file. The following figures describe the surface styles and parameters required for proper surface deliverable.

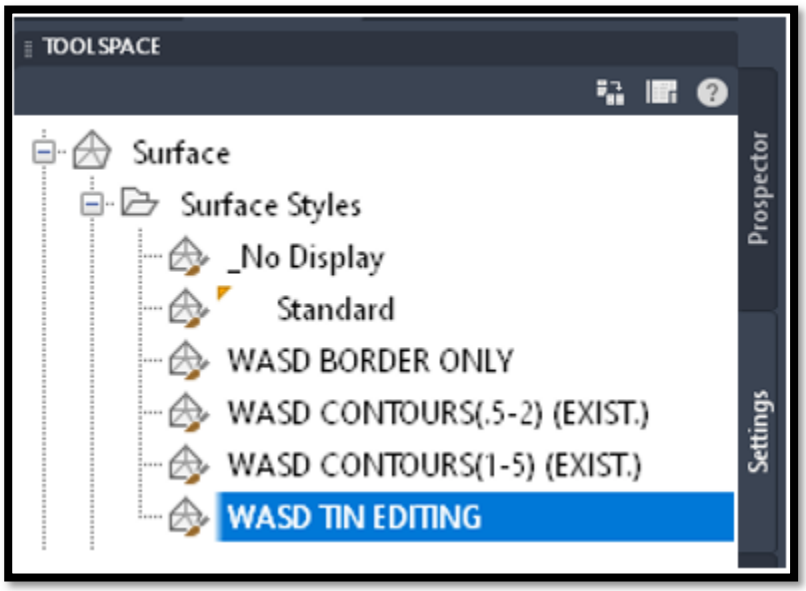


Figure 6.6.3.3.a (WASD Surface Style)

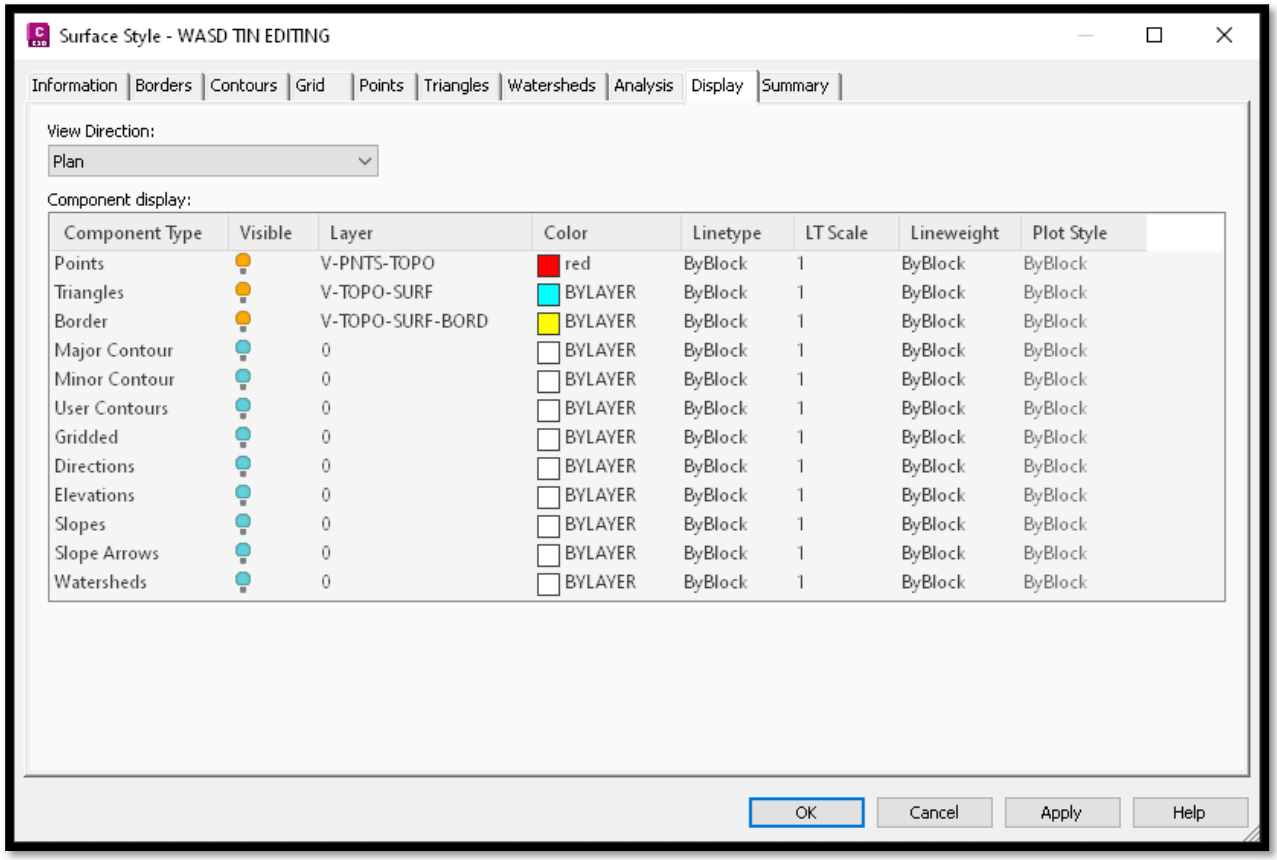


Figure 6.6.3.3.b (WASD Surface Style Display Settings)

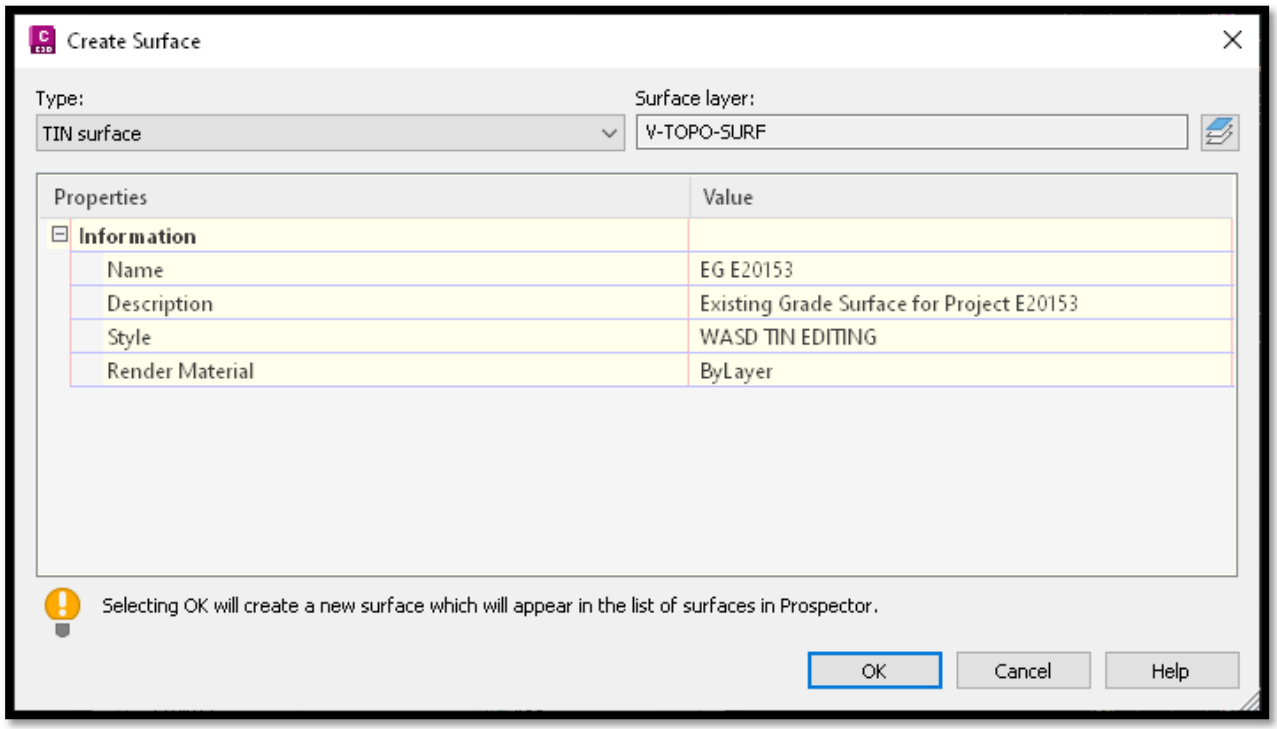


Figure 6.6.3.3.c (WASD Surface, Layer and Naming Convention)

Breaklines must be added to the Civil 3D Surface and connect data representing distinct surface features like ridge lines, edge of pavement, toe of slope, centerline of road, curbs, driveways, front of sidewalk, and back of sidewalks. Figure 6.6.3.3.4 shows supplemental breakline factor that must be included in surface breaklines.

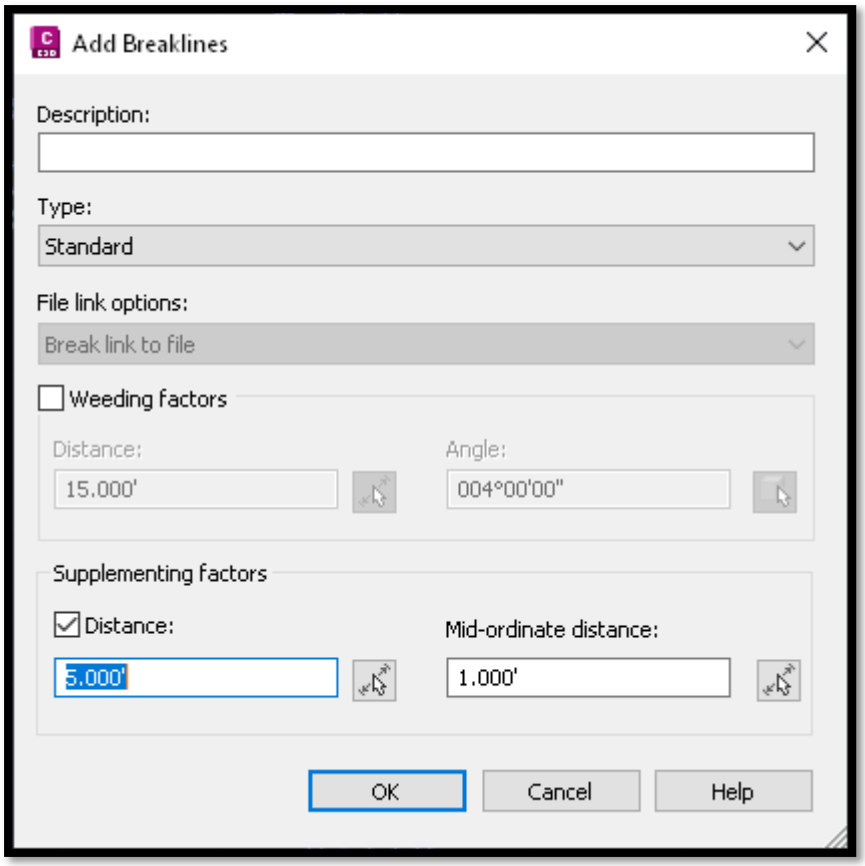
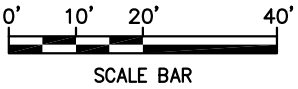
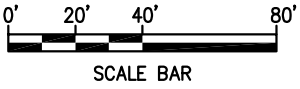
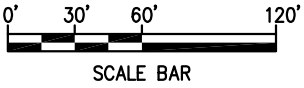
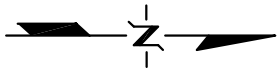


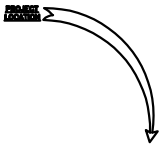
Figure 6.6.3.3.d (WASD Surface Breakline Supplementing Factor)

6.6.4 Description Keys

The correct description keys must be used when creating point files for the appropriately assigned WASD blocks to populate the drawing. To prevent the impediment of survey workflow consultants may use their own description keys at their own discretion, however it is advised that keys are mapped to the appropriate WASD blocks. The WASD survey description keys are found in **Appendix B.**

Category	Feature	Symbol
General	Bar Scale: Horizontal: 1" = 20'	
General	Bar Scale: Horizontal: 1" = 40'	
General	Bar Scale: Horizontal: 1" = 60'	
General	North Arrow	
General	Logo: Miami–Dade County	
General	Benchmark	
General	Core Boring	
General	Subsurface Utility Engineering	
General	Iron Pin (Found and Set)	
General	Station	

MIAMI-DADE COUNTY Delivering Excellence Every Day WATER AND SEWER DEPARTMENT	SYMBOLS: GENERAL	EXHIBIT A.1 1 OF 2

Category	Feature	Symbol
General	Section Corner	
General	Property Corner Arrow	
General	Project Location Arrow	

Category	Feature	Symbol
Topographic Features	Tree	
Topographic Feature	Palm	
Topographic Feature	Shrub	
Topographic Feature	Hedge	
Topographic Feature	Mailbox	
Topographic Feature	Bollards	
Topographic Feature	Chainlink Fence	
Topographic Feature	Wood Fence (inline)	
Topographic Feature	Wood Fence	
Topographic Feature	Iron Fence	

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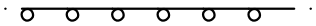
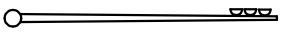
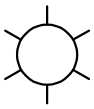
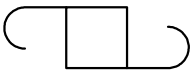
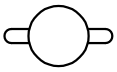
WATER AND SEWER DEPARTMENT

SYMBOLS:
TOPOGRAPHIC FEATURES

EXHIBIT
A.2
1 OF 3

Category	Feature	Symbol
Topographic Feature	Guardrail	
Topographic Feature	Treeline	
Topographic Feature	Traffic Sign	
Topographic Feature	Traffic Signal Pole	
Topographic Feature	Street Light Pole	
Topographic Feature	Concrete Pole	
Topographic Feature	Pedestrian Crossing Light	
Topographic Feature	Bench	
Topographic Feature	Flood Light	
Topographic Feature	Traffic Box	

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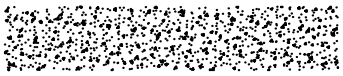
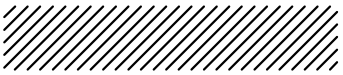
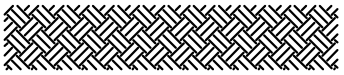
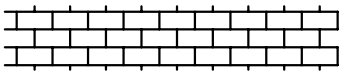
SYMBOLS:
TOPOGRAPHIC FEATURES

EXHIBIT
A.2
2 OF 3

Category	Feature	Symbol
Topographic Feature	Traffic Line	——— TRAF ———

MIAMI-DADE COUNTY Delivering Excellence Every Day WATER AND SEWER DEPARTMENT	SYMBOLS: TOPOGRAPHIC FEATURES	EXHIBIT A.2 3 OF 3

Category	Feature	Symbol
Paving	Propesed Pavement	
Paving	Concrete	
Paving	Patch	
Paving	Ground	
Paving	Pavers	

MIAMI-DADE COUNTY Delivering Excellence Every Day WATER AND SEWER DEPARTMENT	SYMBOLS: PAVING	EXHIBIT A.3

Category	Feature	Symbol
Utilities	Gas Line	GAS
Utilities	Gas Manhole	G
Utilities	Gas Valve	
Utilities	Underground Electrical Line	E/U
Utilities	Overhead Electric Line	OH
Utilities	Utility Pole	
Utilities	Guy Pole	
Utilities	Light Box	LT
Utilities	Telephone Line	TEL
Utilities	Telephone Manhole	T

Category	Feature	Symbol
Utilities	Telephone Box	T
Utilities	Cable TV Line	CATV
Utilities	Cable TV Box	TV
Utilities	Electric Manhole	E
Utilities	Electric Box	E

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WATER AND SEWER DEPARTMENT

SYMBOLS: UTILITIES

EXHIBIT A.4
2 OF 2

Category	Feature	Symbol	
		Existing	Proposed
Water Appurtenances	Water Meter		
Water Appurtenances	Dual Water Meter		
Water Appurtenances	Water Manhole		
Water Appurtenances	Fire Hydrant		
Water Appurtenances	Water Well		
Water Appurtenances	Sprinkler		
Water Appurtenances	Horizontal 11.25 Fitting		
Water Appurtenances	11.25 Fitting (rotated down)		
Water Appurtenances	11.25 Fitting (rotated up)		
Water Appurtenances	Horizontal 22.5 Fitting		

Category	Feature	Symbol	
		Existing	Proposed
Water Appurtenances	22.5 Fitting (rotated down)		
Water Appurtenances	22.5 Fitting (rotated up)		
Water Appurtenances	Horizontal 45 Fitting		
Water Appurtenances	45 Fitting (rotated down)		
Water Appurtenances	45 Fitting (rotated up)		
Water Appurtenances	Horizontal 90 Fitting		
Water Appurtenances	90 Fitting (rotated down)		
Water Appurtenances	90 Fitting (rotated up)		
Water Appurtenances	Vertical Bend (looking down)		
Water Appurtenances	Vertical Bend (looking up)		

Category	Feature	Symbol	
		Existing	Proposed
Water Appurtenances	Vertical Offset		
Water Appurtenances	Cross		
Water Appurtenances	Tee		
Water Appurtenances	Tee (rotated down)		
Water Appurtenances	Tee (rotated up)		
Water Appurtenances	WYE		
Water Appurtenances	Solid Sleeve		
Water Appurtenances	Plug		
Water Appurtenances	Plug W/ Flush Valve Outlet		
Water Appurtenances	Air Release Valve		

MIAMI-DADE COUNTY Delivering Excellence Every Day WATER AND SEWER DEPARTMENT	SYMBOLS: WATER APPURTENANCES	EXHIBIT A.5 3 OF 4

Category	Feature	Symbol	
		Existing	Proposed
Water Appurtenances	Cap		
Water Appurtenances	Cap W/ Flush Valve Outlet		
Water Appurtenances	Reducer		
Water Appurtenances	Water Valve		
Water Appurtenances	Check Valve		
Water Appurtenances	Butterfly Valve		
Water Appurtenances	Ball Valve		

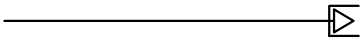
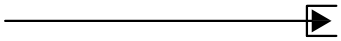
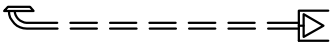
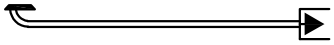
MIAMI-DADE COUNTY Delivering Excellence Every Day WATER AND SEWER DEPARTMENT	SYMBOLS: WATER APPURTENANCES	EXHIBIT A.5 4 OF 4

Category	Feature	Symbol	
		Existing	Proposed
Sewer Appurtenances	Sewer Manhole		
Sewer Appurtenances	Clean Out		
Sewer Appurtenances	Sewer Valve		

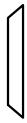
MIAMI-DADE COUNTY Delivering Excellence Every Day WATER AND SEWER DEPARTMENT	SYMBOLS: SEWER APPURTENANCES	EXHIBIT A.6

Category	Feature	Symbol	
		Existing	Proposed
Storm	Storm Sewer Manhole		
Storm	Catch Basin		

MIAMI-DADE COUNTY Delivering Excellence Every Day WATER AND SEWER DEPARTMENT	SYMBOLS: STORM	EXHIBIT A.7

Category	Feature	Symbol	
		Existing	Proposed
Profile	Air Release Valve		
Profile	Plug W/ Flushing Valve Outlet		
Profile	Bend		
Profile	Offset		
Profile	Valve		
Profile	Tapping Sleeve		
Profile	Solid Sleeve		
Profile	Tee Front View		
Profile	Tee Side View		
Profile	Bend Horizontal		

MIAMI-DADE COUNTY Delivering Excellence Every Day WATER AND SEWER DEPARTMENT	SYMBOLS: PROFILE	EXHIBIT A.8 1 OF 2

Category	Feature	Symbol	
		Existing	Proposed
Profile	Concentric Reducer		
Profile	Eccentric reducer		

MIAMI-DADE COUNTY Delivering Excellence Every Day WATER AND SEWER DEPARTMENT	SYMBOLS: PROFILE	EXHIBIT A.8 2 OF 2

Element	Sample	Layer	Style	Color	Height	Just.	Weight
Match Mark	CONTINUED SHEET P-X	0-NOTES-TITL	-WASD-NOTE	7	0.1	C/C	0.006"
Pavement Label	ASPHALT PAVEMENT	V-SITE-TEXT_1	-WASD-SIMPLEX	6	1.6	C/C	0.004"
General Notes Title	General Notes	0-NOTES-TITL	-WASD-SIMPLEX	160	0.17	C/C	0.02"
General Notes Text Body	19. PROJECT SPECIFICATIONS SHALL CONFORM TO THE MDWASD DESIGN AND CONSTRUCTION STANDARD SPECIFICATIONS AND DETAILS.	0-NOTES	-WASD-SIMPLEX	151/250	0.07	L/C	0.008"
Topo Annotation	Ø1.0' PALM 	V-SITE-TEXT_1	-WASD-SIMPLEX	6	1.6	L/C	0.004"
Utility Annotation Plan View	X"G. X"S.S.	*By Layer*	-WASD-SIMPLEX	*By Layer*	1.6	C/C	By Layer
By Layer Utility annotation is to be on the same layer (+ the word "-text") and the same color as the utility it defines							

MIAMI-DADE COUNTY Delivering Excellence Every Day WATER AND SEWER DEPARTMENT	TEXT STYLE: GENERAL PLAN VIEW	EXHIBIT B.1

Element	Sample	Layer	Style	Color	Height	Just.	Weight
Main Street/Avenue	SW 88th ST	C-ROAD-NAME	-WASD-SIMPLEX	180	5.0	C/C	0.03"
Side Street/Avenue	SW 137th AVE	C-ROAD-NAME	-WASD-SIMPLEX	160	3.5	C/C	0.02"
Property Block Number and Plat Book Info	"RICHMOND HEIGHTS ESTATES THIRD ADDITION" PB. 68, PG. 34 BLOCK 30	V-PROP-PLTB	-WASD-SIMPLEX	160	1.6	C/C	0.02"
Lot Number	Lot 11	V-PROP-LNUM	-WASD-SIMPLEX	160	1.6	C/C	0.02"
Property House Number	14830	V-PROP-HNUM	-WASD-SIMPLEX	151	1.6	C/C	0.008"

MIAMI-DADE COUNTY
Delivering Excellence Every Day

WATER AND SEWER DEPARTMENT

TEXT STYLE:
PROPERTY PLAN VIEW

EXHIBIT
B.2

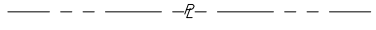
Element	Sample	Layer	Style	Color	Height	Just.	Weight
Water/ Wastewater Proposed & Existing Title	PROP. 8" D.I. WATER MAIN	C-WATR-PIPE-PROP-TITL	WASD-SIMPLEX	160	2.8	C/C	0.02"
	TO BE PLACED OUT OF SERVICE	C-WATR-PIPE-EXST-TEXT	WASD-SIMPLEX	190	1.6	C/C	0.006"
	PROP. 8" PVC-C900 FORCE MAIN	C-SSWR-PIPE-PROP-TITL	WASD-SIMPLEX	160	2.8	C/C	0.02"
	24" F.M. ABANDONED	C-SSWR-PIPE-EXST-TEXT	WASD-SIMPLEX	70	1.6	C/C	0.006"
Water/ Wastewater Plan Callout	STA. 20+67 (O/S 12.97' LT.) PROP. 6" M.J. SOLID SLEEVE REST. W/GLANDS	C-WATR-CALLOUT	WASD-SIMPLEX	151	1.6	L/C	0.008"
	PROP. 8"-90° M.J. BEND REST. W/GLANDS	C-SSWR-CALLOUT	WASD-SIMPLEX	151	1.6	L/C	0.008"
Existing Water/ Wastewater Line Label	—— —— X" D.I. W.M. —— ——	C-WATR-PIPE-EXST-TEXT	WASD-SIMPLEX	190	1.6	C/C	0.006"
	—— —— -X" F.M.- —— ——	C-SSWR-PIPE-EXST-TEXT	WASD-SIMPLEX	70	1.6	C/C	0.006"
Wasterwater Invert Information	MHSA RIM ELEV.=7.53' 6" CLAY (N) INV. ELEV.=2.81' 10" CLAY (E) INV. ELEV.=2.70' 6" CLAY (S) INV. ELEV.=2.83' BOTTOM ELEV.=2.75'	V-SURV-ENGR-TEXT	WASD-SIMPLEX	8	1.6	L/C	0.006"

MIAMI-DADE COUNTY
Delivering Excellence Every Day

WATER AND SEWER DEPARTMENT

TEXT STYLE:
WATER/WASTEWATER PLAN VIEW

EXHIBIT
B.3

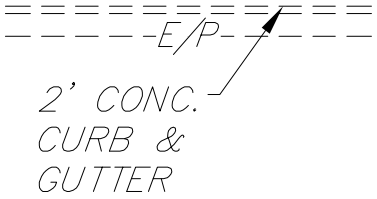
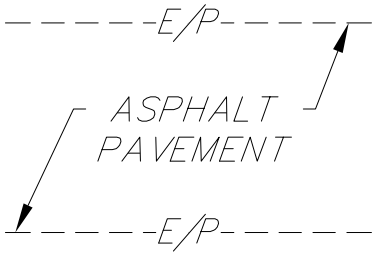
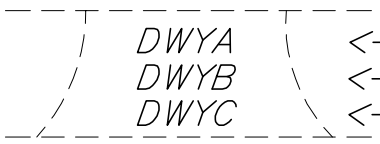
Element	Symbol	Layer	Color	Linetype	Weight
ROW Line		V-RWAY	20	PHANTOM2	0.02"
ROW Centerline		V-ROAD-CNTR	6	CENTER2	0.004"
Property Line		V-PROP-LINE	254	PHANTOM2	0.002"
Property Lot Line		V-PROP-LOTL	7	HDDEN2	0.002"
Easement Line		V-ESMT	2	DASHED2	0.002"
ROW Limited Acces		V-ROAD-LMTD-ACCS	4	WASD_ROAD_LIMIT	0.004"
Topographic (EOP, Sidewalk, Curb, etc.)		V-TOPO	9	DASHED2	0.002"
Monument Line		V-ROAD-MONL	6	CENTER2	0.004"
Section Line		V-ROAD-SECL	6	CENTER2	0.004"
Baseline		V-ROAD-BASL	211	Continuous	0.008"

MIAMI-DADE COUNTY
Delivering Excellence Every Day

WATER AND SEWER DEPARTMENT

PLAN VIEW:
PROPERTY LINES

EXHIBIT
C.1

Element	Symbol		Layer	Color	Linetype	Weight
EXISTING CONCRETE SIDEWALK		EDGE OF PAVEMENT	V-TOPO	9	DASHED2	0.002"
		BACK OF SIDEWALK	V-TOPO	9	DASHED2	0.002"
		ANNOTATION	V-SITE-TEXT_2	151		
EXISTING CURB AND GUTTER		CURB	V-TOPO	9	DASHED2	0.002"
		GUTTER	V-TOPO	9	DASHED2	0.002"
		ANNOTATION	V-SITE-TEXT_2	151		
EXISTING ASPHALT PAVEMENT		EDGE OF PAVEMENT	V-TOPO	9	DASHED2	0.002"
		ANNOTATION	V-SITE-TEXT_2	151		
EXISTING DRIVEWAY (ALL TYPES)		EDGE OF PAVEMENT	V-TOPO	9	DASHED2	0.002"
		ANNOTATION	V-SITE-TEXT_2	151		

MIAMI-DADE COUNTY
Delivering Excellence Every Day

WATER AND SEWER DEPARTMENT

PLAN VIEW:
EXISTING PAVEMENT

EXHIBIT
C.2

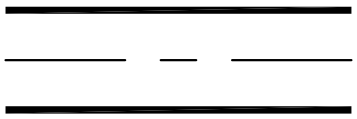
Element	Symbol	Layer	Linetype	Width	Weight	Color
EXISTING WATER SERVICE	—— —— —— —— —— ——	WServiceLine_WASD/ C-WATR-PIPE-EXST	HIDDEN	0	0.006"	190
EXISTING WATER MAIN	—— —— X" D.I. WM —— ——	WDistribution_WASD/ C-WATR-PIPE-EXST	HIDDEN	0	0.006"	190

MIAMI-DADE COUNTY
Delivering Excellence Every Day

WATER AND SEWER DEPARTMENT

PLAN VIEW:
EXISTING WATER LINES

EXHIBIT
D.1

Element	Symbol	Layer	Linetype	Width	Weight	Color
PROPOSED WATER SERVICE		WServiceLine_WASD/ C-WATR-PIPE-PROP	CONTINUOUS	0.3	.012"	171
PROPOSED WATER MAIN		WDistribution_WASD/ C-WATR-PIPE-PROP	CONTINUOUS	0.5	.012"	171
PROPOSED WATER MAIN CENTER LINE 20" & LARGER WATER MAINS	 EDGE OF PIPE CENTER LINE	WDistribution_WASD WDistribution_WASD	CONTINUOUS DASHED2	0.5 0.0	0.012" 0.012"	171 171

MIAMI-DADE COUNTY Delivering Excellence Every Day WATER AND SEWER DEPARTMENT	PLAN VIEW: PROPOSED WATER LINES	EXHIBIT D.2

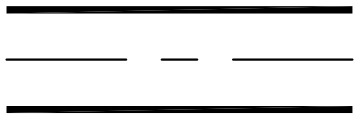
Element	Symbol	Layer	Linetype	Width	Weight	Color
EXISTING SEWER LATERAL	—— —— —— —— —— ——	SSewerLateral_WASD/ C-SSWR-PIPE-EXST	HIDDEN	0	0.006"	70
EXISTING GRAVITY MAIN	—— —— —X"San.— —— ——	SGravityMain_WASD/ C-SSWR-PIPE-EXST	HIDDEN	0	0.006"	70
EXISTING FORCE MAIN	—— —— —X"F.M.— —— ——	SForceMain_WASD/ C-SSWR-PIPE-EXST	HIDDEN	0	0.006"	70

MIAMI-DADE COUNTY
Delivering Excellence Every Day

WATER AND SEWER DEPARTMENT

PLAN VIEW:
EXISTING WASTEWATER LINES

EXHIBIT
D.3

Element	Symbol		Layer	Linetype	Width	Weight	Color
PROPOSED SANITARY LATERAL			SSewerLateral_WASD/ C-SSWR-PIPE-PROP	CONTINUOUS	0.3	.012"	90
PROPOSED FORCE MAIN			SForceMain_WASD/ C-SSWR-PIPE-PROP	CONTINUOUS	0.5	.012"	90
PROPOSED GRAVITY MAIN			SGravityMain_WASD/ C-SSWR-PIPE-PROP	CONTINUOUS	0.5	.012"	90
WASTEWATER FORCE/GRAVITY MAIN CENTER LINE 20" & LARGER WATER MAINS		EDGE OF PIPE CENTER LINE	By Layer By Layer	CONTINUOUS DASHED2	0.5 0.0	0.012" 0.012"	90 90

MIAMI-DADE COUNTY Delivering Excellence Every Day WATER AND SEWER DEPARTMENT	PLAN VIEW: PROPOSED WASTEWATER LINES	EXHIBIT D.4

APPENDIX A.1: PREDEFINED LAYERS FOR ENGINEERING PIPELINE DESIGN

Name	Color	Linetype	Lineweight	Description
C-BRDG	151	Continuous	0.008"	BRIDGE
C-BRDG-TEXT	151	Continuous	0.008"	BRIDGE TEXT
C-ELEV-SPOT	151	Continuous	0.008"	SPOT ELEVATIONS
C-ENGR-DIM	151	Continuous	0.008"	ENGINEERING DIMENSIONS
C-MPIP-TEXT	151	Continuous	0.008"	UNKNOWN UNDERGROUND PIPE TEXT
C-ROAD-NAME	180	Continuous	0.03"	ROAD NAME (MAIN STREETS 190 COLOR, SIDE STREETS 160 COLOR)
C-ROAD-PROF-ELEV	151	Continuous	0.008"	PROFILE ELEVATION TEXT
C-ROAD-PROF-EXST	20	DASHED	0.02"	EXISTING ROAD OR GROUND PROFILE
C-ROAD-PROF-GRID-MAJR	41	Continuous	0.002"	PROFILE GRID LINES (MAJOR)
C-ROAD-PROF-GRID-MINR	9	Continuous	0.002"	PROFILE GRID LINES (MINOR)
C-ROAD-PROF-PROP	20	Continuous	0.02"	PROPOSED ROAD OR GROUND PROFILE
C-ROAD-PROF-TEXT	151	Continuous	0.008"	ROAD OR GROUND PROFILE TEXT
C-ROAD-PROF-TITL	151	Continuous	0.008"	PROFILE TITLE
C-ROAD-PROF-TTLB	12	Continuous	0.02"	PROFILE BORDER AND TITLE BLOCK
C-SSWR	90	Continuous	0.012"	PROPOSED SANITARY SEWER
C-SSWR-CALLOUT	90	Continuous	0.012"	PROPOSED SANITARY SEWER CALLOUTS
C-SSWR-FITT-EXST	70	Continuous	0.006"	EXISTING SANITARY SEWER FITTINGS
C-SSWR-FITT-PROP	90	Continuous	0.012"	PROPOSED SANITARY SEWER FITTINGS
C-SSWR-INST-EXST	80	Continuous	0.002"	EXISTING SANITARY SEWER INSTRUMENTS (VALVES, ETC.)
C-SSWR-INST-PROP	90	Continuous	0.012"	PROPOSED SANITARY SEWER INSTRUMENTS (VALVES, ETC.)
C-SSWR-PIPE-EXST	70	HIDDEN	0.006"	EXISTING SANITARY SEWER PIPE
C-SSWR-PIPE-EXST-TEXT	70	Continuous	0.006"	EXISTING SANITARY SEWER PIPE TEXT
C-SSWR-PIPE-PROP	90	Continuous	0.012"	PROPOSED SANITARY SEWER PIPE
C-SSWR-PIPE-PROP-TITL	160	Continuous	0.02"	PROPOSED SANITARY SEWER PIPE TITLE (EX. 8" PROP. F.M.)
C-SSWR-PROF-CALLOUT	151	Continuous	0.008"	PROPOSED SANITARY SEWER PROFILE CALLOUTS
C-SSWR-PROF-TEXT	151	Continuous	0.008"	EXISTING SANITARY SEWER PROFILE TEXT
C-SSWR-STRC-EXST	90	Continuous	0.012"	EXISTING SANITARY SEWER STRUCTURE
C-SSWR-STRC-PROP	90	Continuous	0.012"	PROPOSED SANITARY SEWER STRUCTURE
C-STRM-PIPE-EXST	141	HIDDEN	0.002"	EXISTING STORM SEWER PIPE
C-STRM-PIPE-EXST-TEXT	141	Continuous	0.002"	EXISTING STORM SEWER PIPE TEXT

APPENDIX A.1: PREDEFINED LAYERS FOR ENGINEERING PIPELINE DESIGN (Cont.)

Name	Color	Linetype	Lineweight	Description
C-STRM-PIPE-PROP	141	Continuous	0.002"	PROPOSED STORM SEWER PIPE
C-STRM-PROF-TEXT	151	Continuous	0.008"	EXISTING STORM SEWER PROFILE TEXT
C-STRM-STRC-EXST	141	Continuous	0.002"	EXISTING STORM SEWER STRUCTURE
C-UTIL-CATV	30	Continuous	0.002"	EXISTING UTILITY CABLE TV LINES
C-UTIL-CATV-PROF-TEXT	151	Continuous	0.008"	EXISTING UTILITY CABLE TV LINES PROFILE TEXT
C-UTIL-CATV-TEXT	30	Continuous	0.002"	EXISTING UTILITY CABLE TV LINES TEXT
C-UTIL-ELEC	30	Continuous	0.002"	EXISTING UTILITY ELECTRIC LINES
C-UTIL-ELEC-PROF-TEXT	151	Continuous	0.008"	EXISTING UTILITY ELECTRIC LINES PROFILE TEXT
C-UTIL-ELEC-TEXT	30	Continuous	0.002"	EXISTING UTILITY ELECTRIC LINES TEXT
C-UTIL-FPL	30	Continuous	0.002"	EXISTING UTILITY FPL LINES
C-UTIL-FPL-PROF-TEXT	151	Continuous	0.008"	EXISTING UTILITY FPL LINES PROFILE TEXT
C-UTIL-FPL-TEXT	30	Continuous	0.002"	EXISTING UTILITY FPL LINES TEXT
C-UTIL-GAS	2	Continuous	0.002"	EXISTING UTILITY GAS LINES
C-UTIL-GAS-PROF-TEXT	151	Continuous	0.008"	EXISTING UTILITY GAS LINES PROFILE TEXT
C-UTIL-GAS-TEXT	2	Continuous	0.002"	EXISTING UTILITY GAS LINES TEXT
C-UTIL-TELE	30	Continuous	0.002"	EXISTING UTILITY TELEPHONE LINES
C-UTIL-TELE-PROF-TEXT	151	Continuous	0.008"	EXISTING UTILITY TELEPHONE LINES PROFILE TEXT
C-UTIL-TELE-TEXT	30	Continuous	0.002"	EXISTING UTILITY TELEPHONE LINES TEXT
C-WATR	171	Continuous	0.012"	PROPOSED WATER
C-WATR-CALLOUT	151	Continuous	0.008"	PROPOSED WATER CALLOUTS
C-WATR-FITT-EXST	190	Continuous	0.006"	EXISTING WATER FITTINGS
C-WATR-FITT-PROP	171	Continuous	0.012"	PROPOSED WATER FITTINGS
C-WATR-INST-EXST	152	Continuous	0.002"	EXISTING WATER INSTRUMENTS (METERS, VALVES, ETC.)
C-WATR-INST-PROP	171	Continuous	0.012"	PROPOSED WATER INSTRUMENTS (METERS, VALVES, ETC.)
C-WATR-MHOL-PROP	171	Continuous	0.012"	PROPOSED WATER MANHOLE
C-WATR-PIPE-EXST	190	HIDDEN	0.006"	EXISITNG WATER PIPE
C-WATR-PIPE-EXST-TEXT	190	Continuous	0.006"	EXISITNG WATER PIPE TEXT
C-WATR-PIPE-PROP	171	Continuous	0.012"	PROPOSED WATER PIPE
C-WATR-PIPE-PROP-TITL	160	Continuous	0.02"	PROPOSED WATER PIPE TITL (EX. 8" PROP. W.M.)
C-WATR-PROF-CALLOUT	151	Continuous	0.008"	PROPOSED WATER PROFILE CALLOUTS
C-WATR-PROF-TEXT	151	Continuous	0.008"	EXISTING WATER PROFILE TEXT

APPENDIX A.2: PREDEFINED LAYERS FOR TOPOGRAPHIC AND BOUNDARY SURVEYS

Layer Name	Color	Linetype	Lineweight	Description
V-BLDG	9	Continuous	0.002"	BUILDING
V-COMM	30	Continuous	0.002"	COMMUNICATION FEATURES (TELE BOX, TELE MH, CATV BOX) FROM THE SURVEY
V-COMM-OVHD	30	WASD_OH_SHORT	0.002"	OVERHEAD LINES
V-CTRL-BMRK-TEXT	151	Continuous	0.008"	SURVEY CONTROL POINTS TEXT
V-ELEC	30	Continuous	0.002"	EXISTING ELECTRIC FEATURES
V-ESMT	2	DASHED2	0.002"	EASMENT LINES
V-GAS	2	Continuous	0.002"	EXISTING GAS FEATURES
V-PNTS-CNTRL	7	Continuous	0.012"	SURVEY POINTS - STATION
V-PNTS-COMM	7	Continuous	0.012"	SURVEY POINTS - TELEPHONE, CABLE
V-PNTS-ELEC	7	Continuous	0.012"	SURVEY POINTS - ELECTRIC
V-PNTS-GAS	7	Continuous	0.012"	SURVEY POINTS - GAS
V-PNTS-GEN	7	Continuous	0.012"	SURVEY POINTS - GENERAL
V-PNTS-LABEL	7	Continuous	0.012"	SURVEY POINTS - LABELS
V-PNTS-SSWR	7	Continuous	0.012"	SURVEY POINTS - SEWER FEATURES
V-PNTS-STA	7	Continuous	0.012"	SURVEY POINTS - STATION
V-PNTS-STRM	7	Continuous	0.012"	SURVEY POINTS - STORM SEWER FEATURES
V-PNTS-TOPO	7	Continuous	0.012"	SURVEY POINTS - (EP, SWKS, RAMPS, DRIVEWAYS)
V-PNTS-TREES	7	Continuous	0.012"	SURVEY POINTS - (TREES, PALMS, HEDGES, BUSHES
V-PNTS-WATR	7	Continuous	0.012"	SURVEY POINTS - WATER
V-PNTS-XS	7	Continuous	0.012"	SURVEY POINTS CROSS SECTION
V-PROP-HNUM	151	Continuous	0.008"	HOUSE NUMBER
V-PROP-IPF	6	Continuous	0.004"	FOUND IRON PIN
V-PROP-IPS	6	Continuous	0.004"	SET IRON PIN
V-PROP-LINE	254	PHANTOM2	0.002"	PROPERTY LINES
V-PROP-LNUM	160	Continuous	0.02"	LOT NUMBER
V-PROP-LOTL	7	HIDDEN2	0.012"	LOT LINES
V-PROP-PLTB	160	Continuous	0.02"	PLATBOOK INFO
V-ROAD-ALGN	6	CENTER2	0.004"	SURVEYED ROAD ALIGNMENT
V-ROAD-ALGN-STAT	7	Continuous	0.012"	STATIONING LABELS
V-ROAD-ALIGN-LABL	6	Continuous	0.004"	ROAD ALIGNMENT LABELS
V-ROAD-BASL	211	Continuous	0.008"	SURVEYED ROAD BASELINE
V-ROAD-CNTR	6	CENTER2	0.004"	SURVEYED ROAD CENTER
V-ROAD-MONL	6	CENTER2	0.004"	SURVEYED ROAD MONUMENT LINE

APPENDIX A.2: PREDEFINED LAYERS FOR TOPOGRAPHIC AND BOUNDARY SURVEYS (Cont.)

Layer Name	Color	Linetype	Lineweight	Description
V-ROAD-PROF	20	HIDDEN	0.02"	EXISTING ROAD OR GROUND PROFILE
V-ROAD-PROF-ELEV	151	Continuous	0.008"	PROFILE ELEVATION TEXT
V-ROAD-PROF-LABL	151	Continuous	0.008"	PROFILE LABEL TEXT
V-ROAD-SECL	6	CENTER2	0.004"	SURVEYED ROAD SECTION LINE
V-RWAY	20	PHANTOM2	0.02"	RIGHT OF WAY
V-RWAY-LABL	6	Continuous	0.004"	RIGHT OF WAY LABEL
V-SITE-FENC-CLF	11	WASD_CHAINLINKFENCE	0.002"	FENCE CHAINLINK
V-SITE-FENC-IRON	11	WASD_IRONFENCE	0.002"	FENCE IRON
V-SITE-FENC-WOOD	11	WASD_WOODFENCE_1	0.002"	FENCE WOOD
V-SITE-GUARDRAIL	11	WASD_GUARD_R	0.002"	GUARDRAIL
V-SITE-TEXT_1	6	Continuous	0.004"	ANNOTATIONS FOR SURVEY
V-SITE-TEXT_2	151	Continuous	0.008"	ANNOTATIONS FROM SURVEY FOR DESIGN
V-SSWR	70	Continuous	0.006"	EXIST. SAN. SEWER FEATURES
V-SSWR-INST	80	Continuous	0.002"	EXIST. SANITARY SEWER INSTRUMENTS (VALVES, ETC.)
V-SSWR-MHOL	80	Continuous	0.002"	EXIST. SAN. SEWER MANHOLE
V-SSWR-PIPE	70	Continuous	0.006"	EXIST. SAN. SEWER PIPE
V-SSWR-STRC	80	Continuous	0.002"	EXIST. SAN. SEWER STRUCTURES
V-STRM	141	Continuous	0.002"	EXIST. STORM SEWER FEATURES
V-STRM-PIPE	141	Continuous	0.002"	EXIST. STORM SEWER PIPE
V-STRM-STRC	141	Continuous	0.002"	EXIST. STORM SEWER STRUCTURES
V-SURV-BRNG	151	Continuous	0.008"	SURVEY BEARINGS AND DISTANCE
V-SURV-DIMS	151	Continuous	0.008"	SURVEY MEASUREMENTS AND DIMENSIONS
V-SURV-ENGR-TEXT	8	Continuous	0.006"	ANNOTATION FOR MANHOLE INVERTS
V-TOPO	9	DASHED2	0.002"	EXIST. TOPOGRAPHIC FEATURES (EOP,
V-TOPO-SURF	4	Continuous	0.01"	SURVEY SURFACE TRIANGLES
V-TOPO-SURF-BORD	2	Continuous	0.002"	SURVEY SURFACE BORDER
V-TOPO-SURF-MAJR	1	Continuous	0.01"	SURVEY MAJOR CONTOURS
V-TOPO-SURF-MINR	2	Continuous	0.002"	SURVEY MINOR CONTOURS
V-TREE-LINE	62	WASD_TREELINE_L	0.002"	EXIST. TREES, PALMS, HEDGES, SHRUBS, BUSHES AND OTHER PLANTS
V-TREES	62	Continuous	0.002"	EXIST. TREES, PALMS, HEDGES, SHRUBS, BUSHES AND OTHER PLANTS
V-UTIL-CATV	30	WASD_CABLETV_L	0.002"	UTILITY UNDERGROUND CABLE TV LINES

APPENDIX A.2: PREDEFINED LAYERS FOR TOPOGRAPHIC AND BOUNDARY SURVEYS (Cont.)

Layer Name	Color	Linetype	Lineweight	Description
V-UTIL-ELEC	30	WASD_ELEC_UGND	0.002"	UTILITY UNDERGROUND GAS LINES
V-UTIL-FORC	70	WASD_FORCE_MAIN_LONG	0.006"	UTILITY UNDERGROUND FORCE MAINS
V-UTIL-FPL	30	WASD_FPL_LONG	0.002"	UTILITY UNDERGROUND FPL LINES
V-UTIL-GAS	2	WASD_GAS_LONG	0.002"	UTILITY UNDERGROUND GAS LINES
V-UTIL-GRAV	70	WASD_GRAVITY_MAIN_LONG	0.006"	UTILITY UNDERGROUND GRAVITY MAINS
V-UTIL-SSWR-LATL	141	WASD_SAN_SHORT	0.002"	UTILITY UNDERGROUND STORM SEWER LINES
V-UTIL-STRM	141	WASD_STORM_LONG	0.002"	UTILITY UNDERGROUND STORM SEWER LINES
V-UTIL-TELE	30	WASD_TELEPHONE_LONG	0.002"	UTILITY UNDERGROUND TELEPHONE LINES
V-WATR	152	Continuous	0.006"	EXIST. WATER FEATURES
V-WATR-INST	152	Continuous	0.006"	EXIST. WATER INSTRUMENTS (METERS, VALVES, ETC.)
V-WATR-MHOL	152	Continuous	0.006"	EXIST. WATER MANHOLE
V-WATR-PIPE	190	HIDDEN	0.006"	EXIST. WATER PIPE

APPENDIX A.3: PREDEFINED LAYERS FOR WASD GIS

Name	Color	Linetype	Lineweight	Description
WAccessManhole_WASD	*171/152	Continuous	*0.012"/0.002"	GIS LAYER FOR WATER MANHOLES
WDistribution_WASD	*171/190	*Continuous /HIDDEN	*0.012"/0.006"	GIS LAYER FOR WATER MAIN
WFireLine_WASD	*171/190	*Continuous /HIDDEN	*0.012"/0.006"	GIS LAYER FOR WATER FIRE LINES
WFitting_WASD	*171/190	Continuous	*0.012"/0.006"	GIS LAYER FOR WATER FITTINGS
WHydrant_WASD	*171/152	Continuous	*0.012"/0.002"	GIS LAYER FOR FIRE HYDRANT
AirRelease_WManualControlValve_WASD	*171/152	Continuous	*0.012"/0.002"	GIS LAYER FOR WATER AIR RELEASE VALVES
WManualControlValve_WASD	*171/152	Continuous	*0.012"/0.002"	GIS LAYER FOR WATER VALVES
WServiceLine_WASD	*171/190	*Continuous /HIDDEN	*0.012"/0.006"	GIS LAYER FOR WATER MAIN
WServicePointConnection_WASD	*171/152	Continuous	*0.012"/0.002"	GIS LAYER FOR WATER METERS
SAccessManhole_WASD	*90/80	Continuous	*0.012"/0.002"	GIS LAYER FOR SEWER ACCESS MANHOLES
SAirReleaseValve_WASD	*90/80	Continuous	*0.012"/0.002"	GIS LAYER FOR SEWER AIR RELEASE VALVES
SCleanOut_WASD	*90/80	Continuous	*0.012"/0.002"	GIS LAYER FOR SEWER CLEANOUTS
SFitting_WASD	*90/70	Continuous	*0.012"/0.006"	GIS LAYER FOR SEWER FITTINGS
SForceMain_WASD	*90/70	*Continuous /HIDDEN	*0.012"/0.006"	GIS LAYER FOR SEWER FORCE MAINS
SGravityMain_WASD	*90/70	*Continuous /HIDDEN	*0.012"/0.006"	GIS LAYER FOR SEWER GRAVITY MAINS
SManhole_WASD	*90/80	Continuous	*0.012"/0.002"	GIS LAYER FOR SEWER MANHOLES
SManualControlValve_WASD	*90/70	Continuous	*0.012"/0.006"	GIS LAYER FOR SEWER CONTROL VALVES
SSewerLateral_WASD	*90/70	*Continuous /HIDDEN	0.012"/0.006"	GIS LAYER FOR SEWER LATERALS

***First value is the default for proposed design, second value is to be changed for existing features**

Appendix B - Survey Description Keys

Description	Code	Style	Point Label Style	Format	Layer
Above Ground Vault	**AGV**	X-MARK	<default>	$*	V-PNTS-GEN
Asphalt	**ASP**	X-MARK	<default>	$*	V-PNTS-GEN
Back of Curb	**CRBBK**	X-MARK	<default>	$*	V-PNTS-TOPO
Base Point	**BP**	X-MARK	<default>	$*	V-PNTS-GEN
Baseline	**BL**	X-MARK	<default>	$*	V-PNTS-STA
Below Ground Vault	**BGV**	X-MARK	<default>	$*	V-PNTS-GEN
Bench	**BNCH**	Bench	<default>	$*	V-PNTS-GEN
Bench Mark	**BM**	<default>	<default>	$*	V-PNTS-CTRL
Bollard	**BOL**	Bollard	<default>	$*	V-PNTS-GEN
Box	**BOX**	Box	<default>	UnknBox	V-PNTS-ELEC
Bridge	**BR**	X-MARK	<default>	$*	V-PNTS-GEN
Building	**BLDG**	X-MARK	<default>	$*	V-PNTS-GEN
Building Overhang	**BOH**	X-MARK	<default>	$*	V-PNTS-GEN
Bush	**BSH**	X-MARK	<default>	$*	V-PNTS-TREES
Cable TV Box	**CTVB**	Cable TV Box	<default>	$*	V-PNTS-COMM
Canopy	**CNPY**	X-MARK	<default>	$*	V-PNTS-GEN
Catch Basin	**CBA**	Catch Basin	<default>	C.B.	V-PNTS-STRM
Clean Out	**CO**	Clean Out	<default>	$*	V-PNTS-SSWR
Concrete	**CONC**	X-MARK	<default>	$*	V-PNTS-TOPO
Concrete Slab	**SLC**	X-MARK	<default>	$*	V-PNTS-GEN
Control Point	**CONTROL**	X-MARK	<default>	$*	V-PNTS-CTRL
Cross Section	**XS**	X-MARK	<default>	$*	V-PNTS-XS
Culvert	**CU**	X-MARK	<default>	$*	V-PNTS-WATR
Curb	**CRB**	X-MARK	<default>	$*	V-PNTS-TOPO
Driveway	**DWY***	X-MARK	<default>	$*	V-PNTS-TOPO
Dry Well	**DW**	X-MARK	<default>	$*	V-PNTS-WATR
Edge of Pavement	**EP***	X-MARK	<default>	$*	V-PNTS-TOPO
Elecrtic Manhole	**MHE**	Elec MH	<default>	ElecMH	V-PNTS-ELEC
Electric Box	**BOXE**	Elec Box	<default>	ElecBox	V-PNTS-ELEC
Electric Panel	**PAE**	X-MARK	<default>	$*	V-PNTS-GEN
Embankment	**EMB**	X-MARK	<default>	$*	V-PNTS-TOPO

Appendix B - Survey Description Keys (Cont.)

Description	Code	Style	Point Label Style	Format	Layer
Fence	**FENC***	X-MARK	<default>	$*	V-PNTS-GEN
Fire Hydrant	**FH***	Hydrant Exist	WASD FIRE HYDRANT	F.H.	WHydrant_WASD
Fire Well	**FEW**	X-MARK	<default>	$*	V-PNTS-TOPO
Flag Pole	**FP**	X-MARK	<default>	$*	V-PNTS-GEN
Found Nail and Disk	**FND***	Iron Pin	<default>	$*	V-PNTS-CTRL
FPL Manhole	**MHFPL**	Elec MH	<default>	FPLMH	V-PNTS-ELEC
Gas Main	**MGA**	X-MARK	<default>	$*	V-PNTS-GAS
Gas Manhole	**GASMH**	Gas MH	<default>	$*	V-PNTS-GAS
Gas Tank	**TG**	X-MARK	<default>	$*	V-PNTS-GAS
Gas Valve	**VG**	Gas Valve	WASD GAS VALVE	GasVlv	V-PNTS-GAS
Gate	**GE**	X-MARK	<default>	$*	V-PNTS-TOPO
Grass	**GRS**	X-MARK	<default>	$*	V-PNTS-GEN
Ground	**GRND**	X-MARK	<default>	$*	V-PNTS-TOPO
Guardrail	**GRL**	X-MARK	<default>	$*	V-PNTS-TOPO
Guy Pole	**GUY**	Guy Pole	<default>	$*	V-PNTS-COMM
Guy Wire Anchor	**GWA**	X-MARK	<default>	GuyPole	V-PNTS-ELEC
Hatch	**HACH**	X-MARK	<default>	$*	V-PNTS-TOPO
Hedge	**HE**	Shrub - 5ft	<default>	$*	V-PNTS-TREES
Irrigation Control Valve	**VIC**	X-MARK	<default>	$*	V-PNTS-GEN
Landscapping	**LS**	X-MARK	<default>	$*	V-PNTS-GEN
Light Box	**BOXLI**	Light Box	<default>	StLightBox	V-PNTS-ELEC
Light Pole	**PLI***	Light Pole	<default>	LightPole	V-PNTS-ELEC
Mailbox	**MBX**	Mailbox	WASD Mailbox	$*	V-PNTS-GEN
Mile Post	**MP**	X-MARK	<default>	$*	V-PNTS-GEN
Monitoring Well	**MWL**	Well	<default>	Well	V-PNTS-WATR
Overhead Wires	**OW**	X-MARK	<default>	$*	V-PNTS-ELEC
Palm Tree	**PLM**	Palm Tree	<default>	Palm	V-PNTS-TREES
Parking Meter	**PMR**	X-MARK	<default>	$*	V-PNTS-GEN
Patch	**PAH***	X-MARK	<default>	$*	V-PNTS-GEN
Pedestrian Crossing	**PEDX**	Traffic Signal Box	<default>	PedX-ing	V-PNTS-ELEC

Appendix B - Survey Description Keys (Cont.)

Description	Code	Style	Point Label Style	Format	Layer
Post	**POST**	X-MARK	<default>	Post	V-PNTS-TOPO
Power Pole	**PP**	Utility Pole	<default>	ElecPole	V-PNTS-ELEC
Pump	**PMP**	X-MARK	<default>	$*	V-PNTS-GEN
Pump Out Pipe	**POP**	X-MARK	<default>	$*	V-PNTS-TOPO
R/R Crossing Signal	**RRS**	X-MARK	<default>	$*	V-PNTS-GEN
R/R Tracks	**RRT**	X-MARK	<default>	$*	V-PNTS-TOPO
Ramp	**RAMP**	X-MARK	<default>	$*	V-PNTS-TOPO
Sanitary Clean Out Plug	**CPL**	X-MARK	<default>	$*	V-PNTS-SEWR
Sanitary Lateral	**LSAN**	X-MARK	<default>	$*	V-PNTS-SSWR
Sanitary Manhole	**MSAN**	X-MARK	<default>	$*	V-PNTS-SEWR
Sanitary Sewer Manhole	**MHSA**	Sanitary Sewer MH	<default>	SanMH	SManhole_WASD
Sewer Valve	**VS**	Sewer Valve	WASD SEWER VALVE	SwrVlv	SManualControlValve_WASD
Sidewalk	**SWK**	X-MARK	<default>	$*	V-PNTS-TOPO
Sign	**SGN**	Sign (single pole)	<default>	$*	V-PNTS-TOPO
Sprinkler	**SPK**	Sprinkler	<default>	Sprinkler	V-PNTS-WATR
Stairs	**STR**	X-MARK	<default>	$*	V-PNTS-TOPO
Station Point	**STA***	STA	<default>	$*	V-PNTS-STA
Stop Sign	**STP***	Sign (single pole)	<default>	$*	V-PNTS-TOPO
Storm Sewer Manhole	**MHSS**	Storm Sewer MH	<default>	StmMH	V-PNTS-STRM
Street Apex	**APX**	X-MARK	<default>	$*	V-PNTS-TOPO
Telemetry Antenna	**TANT**	X-MARK	<default>	$*	V-PNTS-COMM
Telephone Manhole	**MHT**	Tel MH	<default>	TelMH	V-PNTS-COMM
Telephone Box	**BOXT**	Tel Box	<default>	Telebox	V-PNTS-COMM
Telephone Panel	**PNLT**	X-MARK	<default>	$*	V-PNTS-GEN
Telephone Splice Box	**SBT**	Tel Box	<default>	PhoneBox	V-PNTS-COMM
Temporary Banchmark	**TBM***	Iron Pin	<default>	$*	V-PNTS-CTRL
Top of Bank	**TOPS**	X-MARK	<default>	$*	V-PNTS-GEN
Top of Slope	**TOE**	X-MARK	<default>	$*	V-PNTS-TOPO
Traffic Signal Box	**BTRS**	Traffic Signal Box	<default>	TrafSigBox	V-PNTS-ELEC
Traffic Signal Panel	**PTRS**	X-MARK	<default>	$*	V-PNTS-GEN
Traffic Signal Pole	**PTL**	Traffic Signal Pole	<default>	TrafSigPole	V-PNTS-ELEC

Appendix B - Survey Description Keys (Cont.)

Description	Code	Style	Point Label Style	Format	Layer
Tree	**TRE***	Tree	<default>	Tree	V-PNTS-TREES
Tree Line	**TRELINE**	X-MARK	<default>	$*	V-PNTS-TREES
Utility Pole	**PU**	Utility Pole	<default>	$*	V-PNTS-ELEC
Valley Gutter	**VGU**	X-MARK	<default>	$*	V-PNTS-TOPO
Vent Stack	**VST**	X-MARK	<default>	$*	V-PNTS-GAS
Wall	**WAL**	X-MARK	<default>	$*	V-PNTS-TOPO
Water Faucet	**WF**	X-MARK	<default>	$*	V-PNTS-WATR
Water Main	**MW**	X-MARK	<default>	$*	V-PNTS-WATR
Water Manhole	**MHWA**	Water MH	<default>	WtrMH	WAccessManhole_WASD
Water Meter Exist	**MRE**	Water Meter Exist	<default>	$*	WServicePointConnection_WASD
Water Meter Exist	**WMR**	Water Meter Exist	WASD WATER METER	WtrMtr	WServicePointConnection_WASD
Water Valve	**VW**	Water Valve Exist	WASD WATER VALVE	$*	WManualControlValve_WASD
Water Valve	**WV**	Water Valve Exist	WASD WATER VALVE	$*	WManualControlValve_WASD
Yard Light	**YLI**	Flood Light	<default>	$*	V-PNTS-ELEC