AutoCAD Guidelines

This section provides guidelines for in-house staff and design consultants in preparing plans, sketches, maps, exhibits, etc. using the most current supported version of AutoCAD and concentrates on the software's capabilities. General guidelines for district standards and AutoCAD Guidelines can be found on "Water Agencies' Standards" (WAS) for Design Guidelines for Water and Sewer Facilities, Section 1.2, AutoCAD guidelines - sdwas.com.

The VWD Engineering Department have developed their own internal guidelines for preparing AutoCAD plans, however, a level of uniformity in all CAD situations should be recognized and should use good professional judgment in applying and using industry standards.

Project Setup

Drawings:

All drawings shall be tied to the Horizontal Datum of the California State Plane Coordinate System Zone VI (NAD83) and to the National Geodetic Vertical Datum (NGVD 29). Units of measure shall be in English units unless otherwise directed by the District.

Naming convention:

The naming convention to be used for each project drawing shall be as follows:

1. A directory with the District's project name and number with a short description of the project will be set up to save drawings to.
2. Inside the project directory the naming convention for drawings shall include project name, work order number and sheet designation as follows:
    a. An example of sheet numbering would read: 074321_T1 in which 074321 reflects the District's work order number, T reflects the sheet designation with sheet number.
    b. Multiple sheets: Projects that require multiple sheets shall follow the naming convention mentioned herein and be numbered sequentially to reflect multiple sheets. An example of a project with eight (8) civil sheets would be shown thus 074321_C1 .dwg through 074321_C8.dwg.
    c. Each sheet in a drawing set will contain a "plot stamp" (check box found in the plot window of AuotCad) on the lower left corner or bottom right side listing the file name, date, time and path in which the electronic file can be found.

General Improvement Plan Requirements

Layout:

All drawings shall be on standard "D" size sheets (24" x 36") with standard District, City or County title block. The border should be 21" x 33". Civil drawings shall generally have a scale of 1 inch = 40 feet, other scales are acceptable only with prior approval. The portion of the project to be shown on each plan and profile shall allow enough room at each end for datum reference elevations in profile, dimensions and match line stationing on both plan and profile. Each sheet should represent a clear and complete portion of the project.

Sheet Requirements – Water and Sewer Improvement Projects

- Agency # (GP- , IP-)
- VWD W.O. #
- VWD Signature Block
- VWD As-Built Block
- Name of Project
- Date.
- North Arrow
- Scale
- Benchmark
- Registered Engineer Stamp

Title Sheet Format: - See **Figure 3.6.3-A**

1. Project name, when applicable, include "FROM" and "TO" description.
2. Vicinity/Location Map, 1"=2000', showing north arrow, city/county/water district boundaries, show enough surrounding area to be recognizable, with the project area clearly identified.
3. Key/Index Map, 1"=200' with sheet reference, all existing and proposed water and sewer mains, street names, north arrow.
4. Index sheets. Include page number and title of each sheet.
5. Engineer Name
6. Site Address
7. Legal Description
8. Assessor's Parcel Number(s)
9. Basis of Bearings
10. Topography
11. General notes
12. Abbreviations
13. Legend & Line Conversation
14. List F.H., Det. Chk., Manufacturer and Model

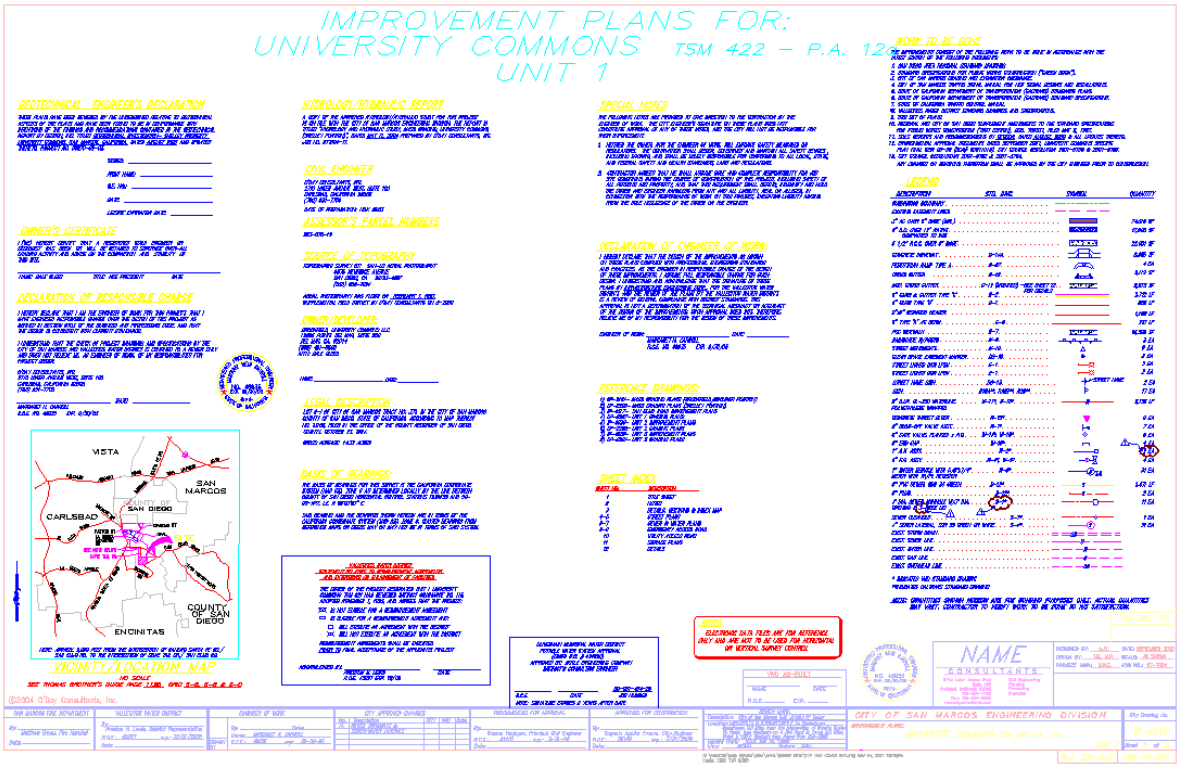


Figure 3.6.3-A
Title Sheet Format

Plan and Profile Sheet Format - See **Figure 3.6.3-B**

- North Arrow
- Scale (horizontal & vertical)
- General Notes
- Construction Notes
- Street Centerline with 100-ft station tic marcs
- Match lines with stationing & sheet number reference
- Necessary additional notes
- Detail drawings
- Existing water & sewer shown & labeled
- Other existing & proposed utilities (storm drains, gas lines, etc.)
- Proposed water & sewer main location, size & material
- Label length, size, material & slope of pipe
- Easements
- Existing & proposed ground elevations
- Datum plane changes (identical points)
- Street names or label area
- Rim elevations of manholes

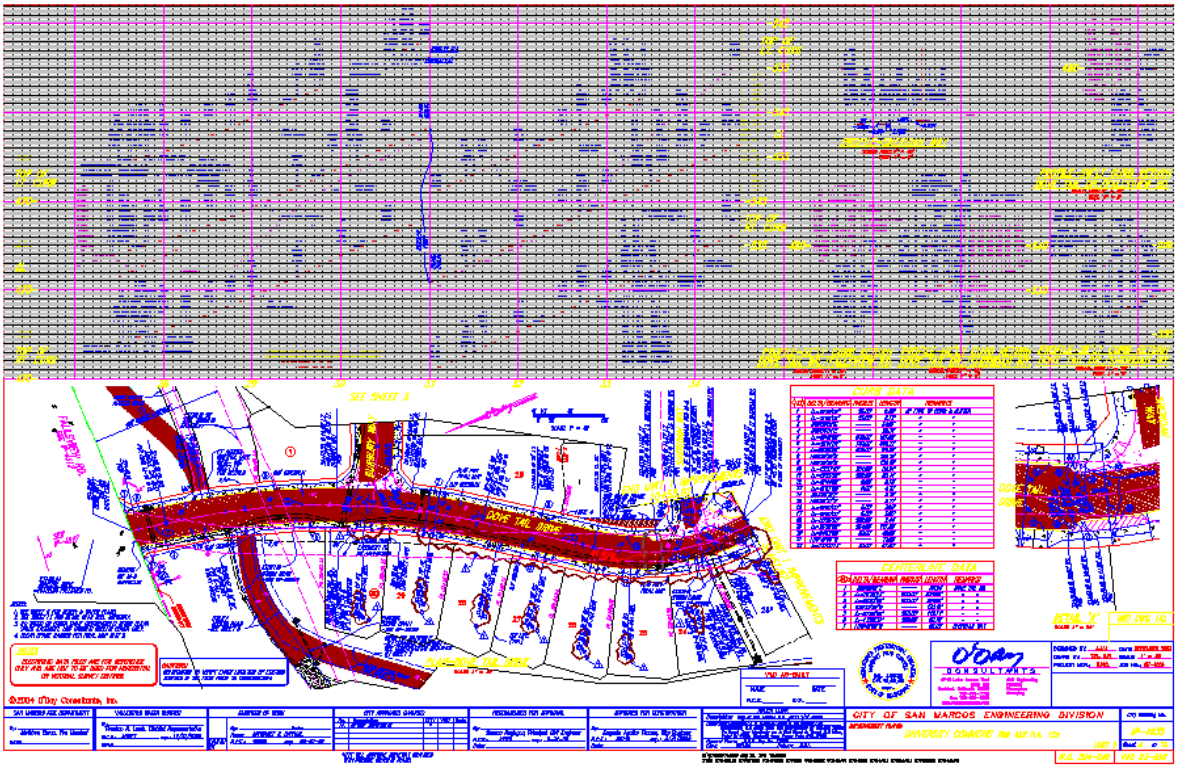


Figure 3.6.3-B
Plan and Profile Format

Additional Sheet Format:

Additional sheets may include details, specifications, and standard drawings as required.

Layer Naming

A standard naming convention for AutoCAD drawing layers should be established for use in assembly of project plans. This naming convention allows for some flexibility in layer naming to use the layering structure throughout the plan set. The following table should be used as a standard guide in setting up the layer name abbreviations as they relate in the layer content.

Layer Name	Layer contents	Linetype	Pen Color
AB-BLDG	ABANDONED BUILDING	DASHED	1/RED
AB-DRNG	ABANDONED DRAINAGE	STORM	15/BLUE
AB-GAS	ABANDONED GAS	GAS	51/YELLOW
AB-LSVC	ABANDONED LATERAL SERVICE	DASHED	51/YELLOW
AB-PS	ABANDONED PUMP STATION	DASHED	1/RED
AB-PW-PL	ABANDONED POTABLE WATER PIPE LINE	WATER	151/BLUE
AB-RW-PL	ABANDONED RECYCLED WATER PIPE LINE	RECY	201/PURPLE
AB-SD	ABANDONED STORM DRAIN	STORM	151/BLUE
AB-SS	ABANDONED SANITARY SEWER	SANITARY	61/GREEN
AB-STC	ABANDONED STRUCTURE	DASHED	1/RED
ACCESS	ACCESS COVERS	DASHED	1/RED
APN	ACCESSOR PARCEL NUMBER TEXT	CONTINUOUS	3/GREEN
BASE	NORTH ARROW, LOCATION MAP, ETC.	CONTINUOUS	7/WHITE
BDRY	BOUNDARY	PHANTOM	2/YELLOW
BORDER	BORDER	CONTINUOUS	3/BLUE
DAYSTAMP	DAYSTAMP	CONTINUOUS	1/RED
DIM	DIMENSIONS	CONTINUOUS	2/YELLOW
EX-BLDG	EXISTING BUILDING	DASHED	1/RED
EX-BM	EXISTING BENCH MARK	CONTINUOUS	171/BLUE
EX-CATV	EXISTING CABLE TELEVISION	CABLE	30/ORANGE
EX-CL	EXISTING CENTER LINE	CENTER LINE	1/RED
EX-CULV	EXISTING CULVERT	DASHED	151/BLUE
EX-DRNG	EXISTING DRAINAGE	DASHED	151/BLUE
EX-ELEC	EXISTING ELECTRIC	ELECTRIC	1/RED
EX-ESMT	EXISTING EASEMENT	DASHED	51/YELLOW
EX-FNC	EXISTING FENCE	FENCE	61/GREEN
EX-GAS	EXISTING GAS	GAS	51/YELLOW
EX-GRDIDX	EXISTING GRADE INDEX CONTOURS & TEXT	CONTINUOUS	251/GREY
EX-GRADE	EXISTING GRADE CONTOURS & TEXT	CONTINUOUS	254/GREY
EX-LOT	EXISTING LOT LINES	PHANTOM	1/RED
EX-LSVC	EXISTING LATERAL SERVICE	DASHED	1/RED
EX-MED	EXISTING MEDIAN	DASHED	191/PURPLE
EX-PP	EXISTING POWER POLE	CONTINUOUS	1/RED
EX-PR	EXISTING PRESSURE REDUCING STATION	DASHED	1/RED
EX-PS	EXISTING PUMP STATION	DASHED	1/RED
EX-PTS	EXISTING POINTS	CONTINUOUS	191/PURPLE
EX-PW-PL	EXISTING POTABLE WATER PIPELINE	WATER	151/BLUE
EX-RAMP	EXISTING RAMP	DASHED	112/GREEN
EX-RES	EXISTING RESERVOIR	DASHED	151/BLUE
EX-ROW	EXISTING RIGHT-OF-WAY	RW	3/GREEN
EX-RW-PL	EXISTING RECYCLED WATER PIPELINE	RECYCLED	201/PURPLE
EX-SD	EXISTING STORM DRAIN	STORM	151/BLUE
EX-SGN	EXISTING SIGN	CONTINUOUS	191/PURPLE
EX-SS	EXISTING SANITARY SEWER	SEWER	61/GREEN

Layer Name	Layer contents	Linetype	Pen Color
EX-STC	EXISTING STRUCTURE	DASHED	1/RED
EX-STLT	EXISTING STREET LIGHT	CONTINUOUS	191/PURPLE
EX-STREAM	EXISTING STREAM	DASHED	112/GREEN
EX-SVY	EXISTING SURVEY MONUMENTS	CONTINUOUS	191/PURPLE
EX-SWK	EXISTING SIDEWALK	DASHED	51/YELLOW
EX-TELE	EXISTING TELEPHONE	TELE	30/ORANGE
EX-TOB	EXISTING TOP OF BERM	DASHED	1/RED
EX-VLT	EXISTING VAULT	DASHED	151/BLUE
EX-VEG	EXISTING VEGETATION	CONTINUOUS	1/RED
EX-WALL	EXISTING WALL (RETAINING WALL)	DASHED	1/RED
FIN-GRADE	FINISHED GRADE CONTOURS	CONTINUOUS	250/GREY
FIN-GRDIDX	FINISH GRADE INDEX CONTOURS & TEXT	CONTINUOUS	253/GREY
FLOW	SWALES, DIRECTION OF FLOW	FLOW	251/GREY
GRID	GRID & GRID NUMERICAL VALUES	CONTINUOUS	254/GREY
HA	HATCH	CONTINUOUS	1/RED
IMAG	IMAGES	CONTINUOUS	7/WHITE
IRRPIPE	IRRIGATION PIPE	WATER	150/BLUE
PR-CONST-ESMT	PROPOSED CONSTRUCTION EASEMENT	DASHED	3/GREEN
PR-ESMT	PROPOSED EASEMENT	DASHED	3/GREEN
PR-FNC	PROPOSED FENCE	FENCE	2/YELLOW
PR-ICONT	PROPOSED INTERMEDIATE CONTOURS	CONTINUOUS	1/RED
PR-LSVC	PROPOSED LATERAL SERVICE	CONTINUOUS	2/YELLOW
PR-MED	PROPOSED MEDIAN	CONTINUOUS	2/YELLOW
PR-PCONT	PROPOSED PRIMARY CONTOURS	CONTINUOUS	3/GREEN
PR-PERM-ESMT	PROPOSED PERMANENT EASEMENT	PHANTOM	3/GREEN
PR-PR	PROPOSED PRESSURE REDUCING STATION	CONTINUOUS	5/BLUE
PR-PS	PROPOSED PUMP STATION	CONTINUOUS	5/BLUE
PR-PTS	PROPOSED POINTS	CONTINUOUS	2/YELLOW
PR-PW-PL	PROPOSED POTABLE H2O PIPELINE	CONTINUOUS	6/MAGENTA
PR-RAMP	PROPOSED RAMP	CONTINUOUS	2/YELLOW
PR-RES	PROPOSED RESERVOIR	CONTINUOUS	5/BLUE
PR-ROW	PROPOSED RIGHT-OF-WAY	PHANTOM	3/GREEN
PR-PW-PL	PROPOSED RECYCLED H2O PIPELINE	CONTINUOUS	6/MAGENTA
PR-RAMP	PROPOSED RAMP	CONTINUOUS	2/YELLOW
PR-RES	PROPOSED RESERVOIR	CONTINUOUS	5/BLUE
PR-ROW	PROPOSED RIGHT-OF-WAY	CONTINUOUS	3/GREEN
PR-RW-PL	PROPOSED RECYCLED H2O PIPELINE	CONTINUOUS	6/MAGENTA
PR-SD	PROPOSED STORM DRAIN	CONTINUOUS	6/MAGENTA
PR-SGN	PROPOSED SIGN	CONTINUOUS	2/YELLOW
PR-SS	PROPOSED SANITARY SEWER	CONTINUOUS	6/MAGENTA
PR-STC	PROPOSED STRUCTURE	CONTINUOUS	5/BLUE
PR-SWK	PROPOSED SIDEWALK	CONTINUOUS	2/YELLOW
PR-VEG	PROPOSED VEGETATION	CONTINUOUS	2/YELLOW
PR-WALL	PROPOSED WALL	CONTINUOUS	3/GREEN
TXT-L	LARGE TEXT	CONTINUOUS	6/MAGENTA
TXT-M	MEDIUM TEXT	CONTINUOUS	3/GREEN
TXT-S	SMALL TEXT	CONTINUOUS	2/YELLOW
VGRID	VERTICLE GRID	PROFILE	254/GREY
VPORT	VIEWPORT	CONTINUOUS	7/WHITE

Line Weights and Types

Line Weights:

1. Extra heavy lines should be used for drawing borders.
2. Heavy lines should be used for emphasis of proposed features of new facilities.
3. Medium weight lines should be used for right-of-way, math lines and single line drawings.
4. Fine line should be used for topography, outline of existing and future facilities and other important details.
5. Extra fine lines should be used for centerlines, phantom lines, dimension lines, and leader lines.

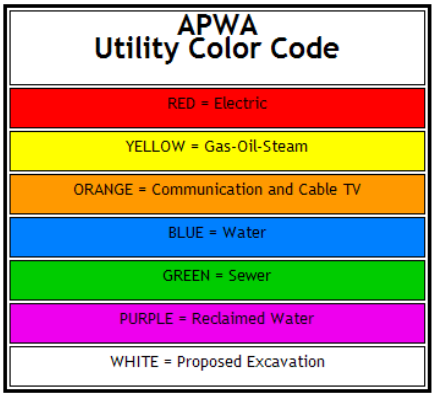
Below is a list of recommended main pen numbers:

Line Weights

Line Weights	Pen Number
Extra Heavy Lines	008
Heavy Weight Lines	005 or 006
Medium Weight Lines	003 or 004
Fine Lines	001 or 002
Extra Fine Lines	001
Topography	Screened Lines

Line Types:

Line types should vary to distinguish certain features on drawings such as; existing utilities, berms, daylight, etc. Colors of all existing utilities lines shall be consistent with "DIG ALERT" colors as shown "APWA" figure below:



Text

1. Text Sizes: Maintaining text sizes, fonts and alignment are important to maintain consistency throughout the project drawings. Text for notes, dimensions, titles and headings that are used for project plan sheets have been consolidated and standardized for CAD usage. All text shall be in upper case and without embellishments. The following sizes of text shall be predominant throughout the plan set.

a. Extra small text shall a height of 5/64” (0.08) and used for all existing utility callouts and notes.

   Layer Name: TXTEX Style Name: L80 Pen/Color: 001/red

b. Small text shall have a height of 1/8” (0.125) and be used for all general notes callouts.

   Layer Name: TXTS Style Name: L125 Pen/Color: 002/yellow & call outs

c. Medium text shall have a height of 5/32” (0.156) and be used for caution boxes, detail names and lines.

   Layer Name: TXTM Style Name: L156 Pen/Color: 003/green

d. Large text shall have height of ¼” (0.25) and be used for street names and titles.

   Layer Name: TXTL Style Name: L250 Pen/Color: 004/cyan

2. Text Alignment and Placement: Proper alignment of text will be read from either the bottom or right edge of the sheet. When necessary the rotation angle will be ten degrees (10°) past vertical.
   a. Text justification in AutoCAD shall be left justified.
   b. When writing multiple lines of text, the Mtext command shall be used to facilitate the editing and moving of text groups.
3. Abbreviation: Abbreviations are typically used when necessary to save space or to avoid excessive clutter. Abbreviation must be clear, easily understood and consistent throughout the plan set.
4. Phrases and Call Outs: In order to avoid confusion or misinterpretation use phrases or words that specify such as: By others, Construct Pavement or Pavement to be Constructed.

Standard Symbols

Standard Symbols shall be used to reduce drafting time, increase legibility and conserve space. Symbols must be consistent throughout the plan set in accordance with Water Agency Standard (WAS) Drawings WI-06 and SI-01 and shown in a legend on the plans. **See figures 3.6.7-A and 3.6.7-B respectively.**

Hatching and Patterning

Hatching and patterning shall be used to illustrate types of materials used and/or to delineate types of surfaces in accordance with WAS Standard

Use only typical AutoCAD hatch patterns for standard items available through the AutoCAD hatch menu. **See Figure 3.6.8-A Hatching & Patterning.**

WI-06 Standard Symbols for Potable and Recycled Water Construction Drawings (1 of 4) (12-31-2004)

Figure 3.6.7-A (1 of 4)

WATER & RECYCLED WATER–LEGEND ON PLANS
USE ONLY THOSE SYMBOLS THAT APPLY TO THESE DRAWINGS

DESCRIPTION	STANDARD DRAWING	SYMBOL
NEW WATER OR RECYCLED WATER MAIN (INDICATE SIZE, CLASS, AND TYPE)	N/A	8" CL 200 PVC
EXISTING RECYCLED WATER MAIN (INDICATE SIZE AND TYPE)	N/A	EXIST 8" PVC RW
EXISTING POTABLE WATER MAIN (INDICATE SIZE AND TYPE)	N/A	EXIST 8" PVC W
50mm (2") MANUAL AIR VALVE INSTALLATION	WA-01	
50mm (2") AUTOMATIC COMBINATION AIR RELEASE AND AIR/VACUUM VALVE INSTALLATION	WA-02 & WA-03	
100mm & 150mm (4" & 6") AUTOMATIC COMBINATION AIR RELEASE AND AIR/VACUUM VALVES (INDICATE SIZE)	WA-04, WA-05, WA-06	
50mm (2") BLOWOFF INSTALLATION	WB-01 & WB-04	
TEMPORARY 50mm (2") BLOWOFF INSTALLATION	WB-05	TEMP 50mm (2")
100mm & 150mm (4" & 6") BLOWOFF INSTALLATIONS (INDICATE SIZE)	WB-02, WB-03, & WB-04	
CATHODIC TEST STATIONS	WC SERIES	C
SACRIFICIAL ANODE FOR COPPER TUBING	WC-17 & WC-18	C W
150mm (6") FIRE HYDRANT WITH ___100mm & ___63.5mm (___-4" & ___-2½") PORTS (INDICATE FLANGE ELEVATION ON PLANS)	WF-01 & WF-04	T
150mm (6") FIRE HYDRANT WITH BREAK-OFF CHECK VALVE ___100mm & ___63.5mm (___-4" & ___-2½") PORTS (INDICATE FLANGE ELEVATION ON PLANS)	WF-02 & WF-04	T

STANDARD SYMBOLS FOR POTABLE AND RECYCLED WATER CONSTRUCTION DRAWINGS

WATER AGENCIES STANDARDS
COMMITTEE APPROVAL: 12/31/2004
DRAWING NUMBER: WI–06 (1 OF 4)

WI-06 Standard Symbols for Potable and Recycled Water Construction Drawings (2 of 4) (11-3-2006)

Figure 3.6.7-A (2 of 4)

WATER & RECYCLED WATER–LEGEND ON PLANS
USE ONLY THOSE SYMBOLS THAT APPLY TO THESE DRAWINGS

DESCRIPTION	STANDARD DRAWING	SYMBOL
150mm (6") HIGH PRESSURE FIRE HYDRANT (___-4" & ___-2½") PORTS (INDICATE FLANGE ELEVATION ON PLANS)	WF-03 & WF-04	HP T
150mm (6") FIRE HYDRANT WITH ___100mm & ___63.5mm (___-4" & ___-2½") PORTS (INDICATE FLANGE ELEVATION ON PLANS) *FIRE HYDRANT IS USED IN PLACE OF BLOWOFF*	WF-01 & WF-04	BO T
100mm (4") AND LARGER FIRE SERVICE (INDICATE SIZE)	WF-05	RP FS
WATER TEST STATION INSTALLATION	WM-01 & WM-02	TS
RETAINING WALL FOR WATER APPURTENANCES	WM-03	
PROTECTION POST INSTALLATIONS	WM-04	
DEMOUNTABLE PROTECTION POST INSTALLATIONS	WM-05	
EASEMENT/UTILITY MARKER POST INSTALLATION	WM-06	
TRACER WIRE ACCESS POINT	WP-01	T
CUTTING AND PLUGGING ABANDONED MAINS	WP-03	
PIPE CASING FOR MAINS	WP-04	
SLOPE PROTECTION FOR MAINS & CUT-OFF WALLS	WP-05 & WP-07	
CONCRETE PIPE ENCASEMENTS & PROTECTION PADS	N/A & WP-06	
19mm THROUGH 50mm (¾" THRU 2") REDUCED PRESSURE BACKFLOW PREVENTION DEVICE (INDICATE SIZE)	WR-01	RP W RP RW

STANDARD SYMBOLS FOR POTABLE AND RECYCLED WATER CONSTRUCTION DRAWINGS

WATER AGENCIES STANDARDS
COMMITTEE APPROVAL: 11/03/2006
DRAWING NUMBER: WI–06 (2 OF 4)

WI-06 Standard Symbols for Potable and Recycled Water Construction Drawings (3 of 4) (12-31-2004)

Figure 3.6.7-A (3 of 4)

WATER & RECYCLED WATER-LEGEND ON PLANS
USE ONLY THOSE SYMBOLS THAT APPLY TO THESE DRAWINGS

DESCRIPTION	STANDARD DRAWING	SYMBOL
75mm (3") & LARGER REDUCED PRESSURE BACKFLOW PREVENTION DEVICE (INDICATE SIZE)	WR-02	(RP)(W) (RP)(RW)
TEMPORARY POTABLE TO RECYCLED INTER-CONNECTION (INDICATE SIZE)	WR-05	(RP)
25mm & 50mm (1" & 2") WATER OR RECYCLED WATER SERVICES (INDICATE SIZE)	WS-01, WS-02 & WS-03	(W) 25mm (1") (RW) 50mm (2")
100mm & 150mm (4" & 6") METER INSTALLATIONS (INDICATE SIZE)	WS-05 & WS-06	(W) 100mm (4") (RW) 150mm (6")
25mm (1") DUAL DOMESTIC/FIRE WATER SERVICE ASSEMBLY INSTALLATION	WS-09	(W/F) 25mm (1")
EXISTING WATER SERVICE ASSEMBLY RECONNECTION	WS-07	(W)
EXISTING WATER SERVICE ABANDONMENT	WS-08	(W) (W)
BALL VALVE (INDICATE SIZE)	N/A	
GATE VALVE (INDICATE SIZE)	WV-01, WV-02 & WV-03	
BUTTERFLY VALVE (OPERATOR TOWARD CURB) (INDICATE SIZE)	WV-01, WV-02 & WV-03	
REDUCER (INDICATE SIZE)	N/A	

STANDARD SYMBOLS FOR POTABLE AND RECYCLED WATER CONSTRUCTION DRAWINGS	WATER AGENCIES STANDARDS
	COMMITTEE APPROVAL: 12/31/2004
	DRAWING NUMBER: WI-06 (3 OF 4)

WI-06 Standard Symbols for Potable and Recycled Water Construction Drawings (4 of 4) (12-31-2004)

Figure 3.6.7-A (4 of 4)

WATER & RECYCLED WATER-LEGEND ON PLANS
USE ONLY THOSE SYMBOLS THAT APPLY TO THESE DRAWINGS

DESCRIPTION	STANDARD DRAWING	SYMBOL
END CAP FOR MAINS (INDICATE SIZE)	N/A	

NOTES:
1. STANDARD SYMBOLS FOR SEWER FACILITIES SHALL BE AS SHOWN ON SI-08
2. USE ONLY THOSE SYMBOLS THAT APPLY TO THE IMPROVEMENT PLANS

STANDARD SYMBOLS FOR POTABLE AND RECYCLED WATER CONSTRUCTION DRAWINGS	WATER AGENCIES STANDARDS
	COMMITTEE APPROVAL: 12/31/2004
	DRAWING NUMBER: WI-06 (4 OF 4)

SI-01 Standard Symbols for Sewer Construction Drawings (11-1-2002)

Figure 3.6.7-B

SEWER-LEGEND ON PLANS

USE ONLY THOSE SYMBOLS THAT APPLY TO THESE DRAWINGS

DESCRIPTION	STANDARD DRAWING	SYMBOL
NEW SEWER MAIN (INDICATE SIZE AND TYPE)	N/A	8" PVC
EXISTING SEWER MAIN (INDICATE SIZE AND TYPE)	N/A	EXIST 8" VCP S
SEWER MAIN CLEANOUT (INDICATE SIZE)	SC-01	
MANHOLE FOR SEWER MAINS 1500mm (60")	SM-01, SM-02, SM-09	
EXISTING SEWER MANHOLE ABANDONMENT	SM-08	
CONCRETE PIPE CRADLE	SP-03	
PIPE SUPPORT FOR UNDERCUT SEWER MAINS	WP-09	
SLOPE PROTECTION FOR SEWER MAINS	WP-05, WP-07	
CUTTING AND PLUGGING ABANDONED SEWER MAINS	WP-03	
PIPE CASING INSTALLATION FOR SEWER MAINS	WP-04	
PVC SEWER LATERAL (INDICATE SIZE)	SS-01, SS-02, SS-03	(INDICATE SIZE) S

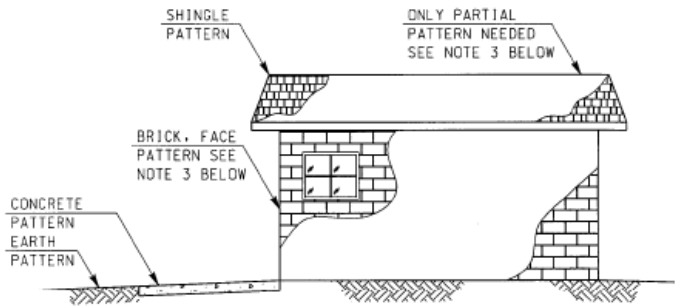
STANDARD SYMBOLS FOR POTABLE AND RECYCLED FACILITIES SHALL BE AS SHOWN ON WI-06

STANDARD SYMBOLS FOR SEWER CONSTRUCTION DRAWINGS	WATER AGENCIES STANDARDS
	COMMITTEE APPROVAL: 11/01/2002
	DRAWING NUMBER: SI-01

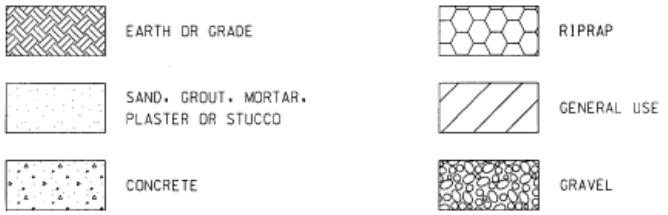
Hatching and Patterning for Construction Drawings

Figure 3.6.8-A

HATCH/PATERNS RULES AND SAMPLES FOR PLACEMENT



COMMONLY USED HATCH/PATTERNS



NOTES:
1. REFER TO SECTION 1.1 OF THE DESIGN GUIDE
2. HATCHING AND PATTERNS SHALL BE USE TO ILLUSTRATE TYPES OF MATERIALS AND/OR DELINEATE TYPES OF SURFACES
3. A SMALL AREA OF TEXTURE OR HATCHING AT CORNERS OF THE DETAIL SHOWING PATTERN AND DIRECTION IS ALL THAT'S NEEDED

STANDARD HATCHING AND PATTERNING FOR CONSTRUCTION DRAWINGS	WATER AGENCIES' DESIGN GUIDE
	COMMITTEE APPROVAL: 09/07/2004
	EXHIBIT 1.1-A