

SECTION 1.2 AUTOCAD GUIDELINES

1.2.1 PURPOSE

This section provides guidelines for in-house staff and design consultants in preparing plans, sketches, maps, exhibits, and etcetera using the most current supported version of AutoCAD and concentrates on the software's capabilities.

Design consultants may have developed their own internal guidelines for preparing plans however, a level of uniformity in the design and file structure of the documents is crucial in the ability to: work with, integrate and file, documents created by different design consultants, along with those created in-house. These standards are not intended to limit the creativity of the design consultant or to reduce the quality of the design.

1.2.2 GENERAL

It is the responsibility of the user of these documents to make reference to and/or utilize industry standards not otherwise directly referenced within this document. The Engineer of work may not deviate from the criteria presented in this section without prior written approval of the District Engineer.

1.2.3 PROJECT SETUP

Projects shall be setup in accordance with Section 1.1 and as follows:

- A. All drawings shall be tied to the Horizontal Datum of the California State Plane Coordinate System Zone VI (NAD83) and to the North American Vertical Datum (NAVD 88) or as approved by the Agency. Units of measure shall be in English units unless otherwise directed by the Agency.
- B. Master files are the files containing elements or features that are the main components of the design. Examples of master files include topography (EXTO), existing utilities (EXUT), proposed planimetrics (PRPN), and proposed profiles (PRPF) with the surface and alignments referenced as data shortcuts. Master files of existing features are prefixed with "EX" (e.g. EXTO, EXUT, EXMA) whereas master files for proposed features are prefixed with "PR" (e.g. PRPN, PRUT, PRPF, PRRG).

The following are standard master file names and descriptions. Once a project is started the master files shall not be renamed. For this example, the project number is 123456.

123456-EXMA Existing Mapping	123456-PRUT Proposed Utilities
123456-EXTO Existing Topography	123456-PRPF Proposed Profiles
123456-EXUT Existing Utilities	123456-PRRG Proposed Rough Grading
123456-PRPN Proposed Planimetric	

Master files represent multiple features that are referenced to an established coordinate system. Do not use any commands that will alter the origin of the design model or the applied coordinate system. Data Shortcuts for surfaces (existing and proposed) shall be referenced to the master files via separate cad files for the surfaces. Surface names should provide sufficient information to discern what the surface represents. Typical surface file naming convention is as follows:

123456-EXTO-Surface.dwg

123456-PRRG-Surface.dwg

Alignments and profiles shall be active in the PRPF file. All proposed centerlines must tie into existing road survey alignments with station equations. All surface and alignment data is to be referenced into the master file and into any construction or production files requiring the information.

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

1. A directory with the applicable District's project name and or number and 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 or number and sheet designation as follows:
 - a. An example of sheet numbering is as follows: 123456_C01-Title Sheet.dwg in which 123456 reflects the District's project number or name, C01 reflects the sheet designation and sheet number, Title Sheet describes the sheet title as described in Section 1.1 and .dwg reflects the file extension required for all AutoCAD drawings.
 - 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 nine (9) civil sheets would be shown thus:

Title Sheet

123456_C01-Title-Sheet.dwg

General Notes, Details, Cross Sections and Street Sections

123456_C02-General-01.dwg

123456_C03-General-02.dwg

Plan and Profile Improvement Sheets

123456_C04-IMP-01.dwg

123456_C05-IMP-02.dwg

Grading Sheets

123456_C06-GRD-01.dwg

123456_C07-GRD-02.dwg

Non Profiled Utility Sheets

123456_C08-UTL-01.dwg

123456_C09-UTL-02.dwg

- c. Each sheet in a drawing set will contain a "plot stamp" on the lower left corner listing the file name, date, time and path in which the electronic file can be found.
- d. For information regarding plan organization and a listing of sheet designations, refer to Section 1.1.

1.2.4 CONSULTANT PACKAGE

Electronic files of borders, standard blocks, dimension styles, text styles, line types, some core layers and other settings will be provided by the District. This will aid the designer in adhering to the guidelines provided in the District Design Guidelines and improve efficiency.

1.2.5 LAYER STANDARDS

A standard naming convention for AutoCAD drawing layers has been established for use in assembly of project plans. The layer standards in use reflect the National CAD standards and supplemented by County of San Diego DPW CAD Standards which are provided in the CAD Template.

Table 1
Layer Standards

Layer Name	Color	Linetype	Description
-VP	1	Continuous	Layer reserved for Viewports
-WIPEOUT	1	Continuous	Layer reserved for wipeouts
-XREF	1	Continuous	Layer reserved for X-ref's
0	7	Continuous	
C-ANNO-01	1	Continuous	Annotation: light pen weight
C-ANNO-02	2	Continuous	Annotation: medium pen weight
C-ANNO-03	3	Continuous	Annotation: heavy pen weight
C-ANNO-DATA	3	Continuous	
C-ANNO-DIM	3	Continuous	
C-ANNO-LABEL	3	Continuous	
C-ANNO-MTCH	4	DASHED	
C-ANNO-MTCH-TEXT	3	Continuous	
C-ANNO-STLB	1	Continuous	
C-ANNO-TABL	1	Continuous	Civil: Table
C-ANNO-TABL-BRDR	5	Continuous	Annotation: table border
C-ANNO-TABL-PATT	7	Continuous	Civil: Table Hatch
C-ANNO-TABL-TEXT	4	Continuous	Civil: Table Text
C-ANNO-TABL-TITL	4	Continuous	Civil: Table Title
C-ANNO-TABL-TTBL	5	Continuous	Civil: Table Borders
C-ANNO-VFRM	131	Continuous	
C-BMPR-FBRL	1	FIBERROLL	BMP: fiberroll
C-BMPR-GRBG	1	GRAVELBAG	BMP: gravel bag
C-BMPR-SILT	1	FENCELINE2	BMP: silt fence
C-DTCH-LD-E	8	DITCH-L	Ditch: Lined-existing
C-DTCH-LD-P	2	DITCH-L	Ditch: Lined-proposed
C-DTCH-UL-E	8	DITCH-U	Ditch: Unlined-existing
C-DTCH-UL-P	2	DITCH-U	Ditch: Unlined-proposed
C-ESMT-ROAD	23	Continuous	Easements: roadway
C-FEAT	7	Continuous	
C-FENC-BARB	2	BARBWIRE	Fences: barbwire
C-FENC-LINK-E	12	CHAINLINK	Fences: chainlink-existing
C-FENC-LINK-P	3	CHAINLINK	Fences: chainlink-proposed
C-FENC-WOOD	2	WOODFENCE	Fences: wood fence
C-GRAD	7	Continuous	
C-GRAD-CEN-MARK	7	Continuous	
C-GRAD-PROJ-LINE	2	Continuous	
C-HYDR-CTCH-BNDY	6	Continuous	

Layer Name	Color	Linetype	Description
C-HYDR-CTCH-DSPT	5	Continuous	
C-HYDR-CTCH-FPTH	4	Continuous	
C-HYDR-CTCH-FSPT	30	Continuous	
C-HYDR-CTCH-HDPT	2	Continuous	
C-LABELS	3	Continuous	
C-LOT-E	1	Continuous	Property: lots-existing
C-LOT-P	3	Continuous	Property: lots-proposed
C-PATT-BASE-AG	1	Continuous	Pattern: Aggregate Base
C-PATT-CONC-AC	31	Continuous	Pattern: Concrete AC
C-PATT-CONC-pc	2	Continuous	Pattern: concrete portland cement
C-PATT-CONC-SC	1	Continuous	Pattern: concrete section view
C-PATT-HYDR	1	Continuous	Pattern: hydroseed/landscaping
C-PATT-PATH	2	Continuous	Pattern: DG Path
C-PATT-PAVE-DEMO	1	Continuous	Pattern: demolition
C-PATT-PLNE-OLAY	31	Continuous	Pattern: Plane overlay
C-PATT-SOIL	1	Continuous	Pattern: existing ground
C-PROP-VIEW	7	Continuous	
C-PROP-BNDY	150	Continuous	Property: boundary
C-PROP-BRNG	92	Continuous	Property: bearing
C-PROP-CURV-LABL	3	Continuous	Property: curve segment label
C-PROP-LABL	3	Continuous	Property: label
C-PROP-LINE	230	Continuous	Property: parcel line
C-PROP-LINE-LABL	3	Continuous	Property: line segment label
C-PROP-LOTS	3	Continuous	Property: lots
C-PROP-PATT	131	Continuous	Property: parcel hatch
C-PROP-RSRV	94	Continuous	Property: reserved
C-PROP-TEXT	92	Continuous	Property: label
C-ROAD	7	Continuous	
C-ROAD-ASSM	40	Continuous	Roadways: assemblies and subassemblies
C-ROAD-ASSM-BLIN	1	Continuous	Roadways: assembly baseline
C-ROAD-ASSM-LABL	7	Continuous	Roadways: assembly label
C-ROAD-ASSM-OFFS	1	Continuous	Roadways: assembly offset
C-ROAD-BRNG	1	Continuous	Roadways: bearings
C-ROAD-CNTR	1	CENTER2	Roadways: centerline
C-ROAD-CNTR-E	1	CENTER2	
C-ROAD-CNTR-LABL	3	Continuous	Roadways: centerline label
C-ROAD-CNTR-N	3	CENTER2	Roadways: centerline, NEW
C-ROAD-CNTR-P	3	CENTER2	
C-ROAD-CORR	5	Continuous	Roadways: corridor
C-ROAD-CORR-BNDY	1	CENTER2	Roadways: corridor boundary
C-ROAD-CORR-PATT	150	Continuous	Roadways: corridor patterns
C-ROAD-CORR-SECT	7	Continuous	
C-ROAD-CURB-LABL	250	Continuous	Roadways: curb label
C-ROAD-CURV	5	Continuous	Roadways: curves
C-ROAD-CURV-LABL	3	Continuous	Roadways: curve label
C-ROAD-EP-E	8	_EOP	Roadways: edge of pavement-existing
C-ROAD-EP-P	2	_EOP	Roadways: edge of pavement-proposed
C-ROAD-ESMT	23	Continuous	Roadways: easement
C-ROAD-FEAT	182	Continuous	Roadways: feature line
C-ROAD-GRAL-E	12	GUARDRAIL	Roadways: guardrail-existing
C-ROAD-GRAL-P	3	GUARDRAIL	Roadways: guardrail-proposed
C-ROAD-INTS	5	Continuous	
C-ROAD-INTS-TEXT	7	Continuous	
C-ROAD-LABL	92	Continuous	Roadways: labels
C-ROAD-LABL-N	3	Continuous	Roadways: labels, new
C-ROAD-LG-E	8	Continuous	Roadways: lip of gutter-existing
C-ROAD-LG-P	1	Continuous	Roadways: lip of gutter-proposed
C-ROAD-LINE	1	Continuous	Roadways: tangent lines
C-ROAD-LINE-EXTN	252	HIDDEN	Roadways: PVI extension lines
C-ROAD-LINE-LABL	3	Continuous	Roadways: line segment labels for centerline
C-ROAD-LINK	150	Continuous	Roadways: corridor and section links
C-ROAD-LINK-LABL	7	Continuous	Roadways: corridor and section link label

Layer Name	Color	Linetype	Description
C-ROAD-SCTN-GRID	7	Continuous	Roadways: section grid
C-ROAD-SCTN-LABL	92	Continuous	Roadways: section labels
C-ROAD-SCTN-N	3	Continuous	Roadways: section, NEW
C-ROAD-SCTN-SHET	7	Continuous	Roadways: grade in section sheets
C-ROAD-SCTN-TABL	1	Continuous	Roadways: section table
C-ROAD-SCTN-TEXT	92	Continuous	Roadways: section text
C-ROAD-SCTN-TICK	7	Continuous	Roadways: section tick marks
C-ROAD-SCTN-TITL	92	Continuous	Roadways: section title
C-ROAD-SCTN-TTLB	5	Continuous	Roadways: section border
C-ROAD-SE-VIEW-TEXT	11	Continuous	
C-ROAD-SE-VIEW-TICK	7	Continuous	
C-ROAD-SE-VIEW-TITL	11	Continuous	
C-ROAD-SE-VIEW-TTLB	5	Continuous	
C-ROAD-SECT	7	Continuous	
C-ROAD-SECT-LABEL	7	Continuous	
C-ROAD-SHAP	32	Continuous	Roadways: corridor and section shapes
C-ROAD-SHAP-PATT	7	Continuous	Roadways: corridor and section shapes hatching
C-ROAD-SPIR	92	Continuous	Roadways: spirals
C-ROAD-SPIR-LABL	3	Continuous	Roadways: spiral segment label
C-ROAD-STAN	2	Continuous	Roadways: stationing
C-ROAD-STAN-MAJR	2	Continuous	Roadways: major stationing labels
C-ROAD-STAN-MINR	2	Continuous	Roadways: minor stationing labels
C-ROAD-TABL	1	Continuous	Roadways: table
C-ROAD-TC-E	135	Continuous	Roadways: curb line-existing
C-ROAD-TC-P	4	Continuous	Roadways: curb line-proposed
C-ROAD-TEXT	2	Continuous	Roadways: text
C-RWAY-E	5	PHANTOM2	Roadways: right of way-existing
C-RWAY-ESMT-E	2	DASHED	Roadways: Easement-existing
C-RWAY-ESMT-P	4	DASHED	Roadways: Easement-proposed
C-SSWR-CNTR	200	Continuous	Sanitary Sewer: centerline
C-SSWR-PIPE	200	Continuous	Sanitary Sewer: piping
C-SSWR-PIPE-PATT	7	Continuous	Sanitary Sewer: piping, hatching
C-SSWR-PROF	200	Continuous	Sanitary Sewer: profile
C-SSWR-STRC	200	Continuous	Sanitary Sewer: structures
C-SSWR-STRC-PATT	200	Continuous	Sanitary Sewer: structures, hatching
C-SSWR-TEXT	7	Continuous	Sanitary Sewer: text
C-STRM-CNTR	170	CENTER2	Storm Sewer: centerline
C-STRM-LABL	7	Continuous	Storm Sewer: label
C-STRM-PIPE	170	Continuous	Storm Sewer: piping
C-STRM-PIPE-PATT	7	Continuous	Storm Sewer: piping, hatching
C-STRM-PROF	170	Continuous	Storm Sewer: profile
C-STRM-STRC	170	Continuous	Storm Sewer: structures
C-STRM-STRC-PATT	7	Continuous	Storm Sewer: structures, hatching
C-STRM-TABL	1	Continuous	Storm Sewer: table
C-STRM-TEXT	7	Continuous	Storm Sewer: text
C-TINN	182	Continuous	Triangulated irregular network
C-TINN-BNDY	110	Continuous	Triangulated irregular network: boundary
C-TINN-TRIA	252	Continuous	TIN: triangulation
C-TINN-TRIANGLES	1	Continuous	
C-TINN-VIEW	252	Continuous	Triangulated irregular network: triangle view
C-TINN-VIEW-N	2	Continuous	
C-TOPO	7	Continuous	
C-TOPO-BNDY	2	Continuous	Topography: boundary
C-TOPO-CONT-LABL	7	Continuous	Topography: contour label
C-TOPO-CONT-LABL-N	1	Continuous	Topography: contour label - new
C-TOPO-CONT-TEXT	7	Continuous	Topography: contour labels
C-TOPO-CONT-TEXT-N	1	Continuous	Topography: contours labels, NEW
C-TOPO-FEAT	92	Continuous	
C-TOPO-GRAD	94	Continuous	Topography: grading
C-TOPO-GRAD-CUT	1	Continuous	Topography: grading cut material
C-TOPO-GRAD-DAYL	2	DAYLIGHT	Topography: daylight line
C-TOPO-GRAD-FILL	3	Continuous	Topography: grading fill material

Layer Name	Color	Linetype	Description
C-TOPO-LABEL	7	Continuous	
C-TOPO-LABL	3	Continuous	Topography: label
C-TOPO-MAJR	9	Continuous	Topography: major gridlines
C-TOPO-MAJR-LABL	1	Continuous	Topography: major contour label
C-TOPO-MAJR-LT	13	Continuous	
C-TOPO-MAJR-N	4	Continuous	Topography: major contours, NEW
C-TOPO-MAJR-N-LT	2	Continuous	
C-TOPO-MAJR-TEXT	3	Continuous	
C-TOPO-MAJR-TEXT-LT	12	Continuous	
C-TOPO-MAJR-TEXT-MED	2	Continuous	
C-TOPO-MAJR-TEXT-N	3	Continuous	
C-TOPO-MINR	8	Continuous	Topography: minor gridlines
C-TOPO-MINR-LABL	1	Continuous	Topography: minor contour label
C-TOPO-MINR-LT	8	Continuous	
C-TOPO-MINR-N	3	Continuous	Topography: minor contours, NEW
C-TOPO-MINR-N-LT	1	Continuous	
C-TOPO-MINR-TEXT	1	Continuous	
C-TOPO-MINR-TEXT-LT	8	Continuous	
C-TOPO-MINR-TEXT-MED	2	Continuous	
C-TOPO-MINR-TEXT-N	3	Continuous	
C-TOPO-PNTS	1	Continuous	Topography: point
C-TOPO-SPOT-LABL	3	Continuous	Topography: spot elevation labels
C-TOPO-SPOT-LABL-E	2	Continuous	Topography: spot elevation label - existing
C-TOPO-SPOT-LABL-P	2	Continuous	Topography: spot elevation label - proposed
C-TOPO-TEXT	3	Continuous	Topography: text
C-TOPO-USER	40	Continuous	Topography: user contours
C-TOPO-USER-N	4	Continuous	Topography: user contours
C-TOPO-WSHD	150	Continuous	Topography: watershed
C-TOPO-WSHD-LABL	7	Continuous	Topography: watershed label
C-TOPO-WSHD-TEXT	7	Continuous	Topography: watershed text
C-TRAF-PAVE-MARK-E	12	Continuous	Roadways: existing pavement marking
C-TRAF-PAVE-MARK-P	2	Continuous	Roadways: proposed pavement marking
C-TRAF-SIGN-E	12	Continuous	Roadways: existing sign
C-TRAF-SIGN-P	2	Continuous	Roadways: proposed sign
C-TRAF-STRP-WHITE-E	12	Continuous	Roadways: existing white stripe
C-TRAF-STRP-WHITE-P	7	Continuous	Roadways: proposed white stripe
C-UTIL-CATV-AGCA-E	34	CABLE	Utilities: above ground cable TV-existing
C-UTIL-CATV-UGCA-E	34	CABLE	Utilities: under ground cable TV-existing
C-UTIL-ELEC-UGCA-E	244	ELEC	Utilities: above ground electrical-existing
C-UTIL-ELEC-UGCA-P	1	ELEC	Utilities: under ground electrical-proposed
C-UTIL-FORCE-MAIN-E	96	FORCE-MAIN	Utilities: force main-existing
C-UTIL-FORCE-MAIN-P	91	FORCE-MAIN	Utilities: force main-proposed
C-UTIL-IRRIG-E	204	IRRIGATION	Utilities: irrigation main-existing
C-UTIL-IRRIG-P	201	IRRIGATION	Utilities: irrigation main-proposed
C-UTIL-LABEL	7	Continuous	
C-UTIL-NGAS-MAIN-E	57	GASLINE	Utilities: gas main-existing
C-UTIL-NGAS-MAIN-P	2	GASLINE	Utilities: gas main-proposed
C-UTIL-RECL-WATR-LTRL-E	192	Continuous	Utilities: reclaimed water lateral-existing
C-UTIL-RECL-WATR-LTRL-P	191	Continuous	Utilities: reclaimed water lateral-proposed
C-UTIL-RECL-WATR-MAIN-E	192	Reclaimed Water	Utilities: reclaimed water main-existing
C-UTIL-RECL-WATR-MAIN-P	191	Reclaimed Water	Utilities: reclaimed water main-proposed
C-UTIL-RECL-WATR-PROF-E	192	Continuous	Utilities: reclaimed water profile-existing
C-UTIL-RECL-WATR-PROF-P	191	Continuous	Utilities: reclaimed water profile-proposed
C-UTIL-SEWR-FEAT-E	96	Continuous	Utilities: sewer feature-existing
C-UTIL-SEWR-FEAT-P	91	Continuous	Utilities: sewer feature-proposed
C-UTIL-SEWR-LTRL-E	96	Continuous	Utilities: sewer lateral-existing
C-UTIL-SEWR-LTRL-P	91	Continuous	Utilities: sewer lateral-proposed
C-UTIL-SEWR-MAIN-E	96	SEWERLINE	Utilities: sewer main-existing
C-UTIL-SEWR-MAIN-P	91	SEWERLINE	Utilities: sewer main-proposed
C-UTIL-SEWR-PROF-E	96	Continuous	Utilities: sewer profile-existing
C-UTIL-SEWR-PROF-P	91	Continuous	Utilities: sewer profile-proposed
C-UTIL-STRM-DRAIN-CNTR	4	CENTER2	Utilities: storm drain center-proposed

Layer Name	Color	Linetype	Description
C-UTIL-STRM-DRAIN-FEAT-E	96	Continuous	Utilities: storm drain feature-existing
C-UTIL-STRM-DRAIN-FEAT-P	91	Continuous	Utilities: storm drain feature-proposed
C-UTIL-STRM-DRAIN-LTRL-E	96	Continuous	Utilities: storm drain lateral-existing
C-UTIL-STRM-DRAIN-LTRL-P	91	Continuous	Utilities: storm drain lateral-proposed
C-UTIL-STRM-DRAIN-MAIN-E	96	STORM-DRAIN SD	Utilities: storm drain main-existing
C-UTIL-STRM-DRAIN-MAIN-P	91	STORM-DRAIN SD	Utilities: storm drain main-proposed
C-UTIL-STRM-DRAIN-PROF-E	96	Continuous	Utilities: storm drain profile-existing
C-UTIL-STRM-DRAIN-PROF-P	91	Continuous	Utilities: storm drain profile-proposed
C-UTIL-TELE-AGCA-E	34	TELEPHONE T	Utilities: above ground telephone-existing
C-UTIL-TELE-UGCA-E	34	TELEPHONE T	Utilities: under ground telephone-existing
C-UTIL-TELE-UGFO-E	34	FIBER-OPTIC FO	Utilities: under ground fiber optic-existing
C-UTIL-WATR-AV-P	141	Continuous	Utilities: water Air Vacuum-proposed
C-UTIL-WATR-BO-P	141	Continuous	Utilities: water blow off-proposed
C-UTIL-WATR-COMB-AV-BO-P	141	Continuous	Utilities: water Air Vacuum/blow off comb.-proposed
C-UTIL-WATR-FEAT-E	152	Continuous	Utilities: water feature-existing
C-UTIL-WATR-FEAT-P	141	Continuous	Utilities: water feature-proposed
C-UTIL-WATR-FH-P	141	Continuous	Utilities: fire hydrant-proposed
C-UTIL-WATR-LTRL-E	152	Continuous	Utilities: water lateral-existing
C-UTIL-WATR-LTRL-P	141	Continuous	Utilities: water lateral-proposed
C-UTIL-WATR-MAIN-E	152	WATERLINE W	Utilities: water main-existing
C-UTIL-WATR-MAIN-P	141	WATERLINE W	Utilities: water main-proposed
C-UTIL-WATR-PROF-E	152	Continuous	Utilities: water profile-existing
C-UTIL-WATR-PROF-P	141	Continuous	Utilities: water profile-proposed
C-UTIL-WATR-SAMPLING-	141	Continuous	Utilities: water sampling station-proposed
C-UTIL-WATR-TB-P	141	Continuous	Utilities: water thrust block-proposed
C-UTIL-WATR-VALVE-P	141	Continuous	Utilities: water valve-proposed
C-WALL-RETA-8	4	Continuous	
C-WALL-RETA-12	4	Continuous	
DEFPPOINTS	7	Continuous	
GRAPHICSCALE	2	Continuous	
NORTHARROW	2	Continuous	
S-BRDG-ABUT	3	Continuous	Structural: bridge abutment
S-BRDG-AFTG	3	HIDDEN2 - - - - -	Structural: bridge abutment footing
S-BRDG-ASLB	3	Continuous	Structural: bridge approach slab
S-BRDG-CBAR	3	Continuous	Structural: bridge concrete barrier rail
S-BRDG-DECK	3	Continuous	Structural: bridge deck
S-BRDG-MBAR	3	Continuous	Structural: bridge metal barrier rail
S-BRDG-PFTG	3	HIDDEN2 - - - - -	Structural: bridge pier footing
S-BRDG-PIER	3	Continuous	Structural: bridge pier
S-BRDG-WFTG	3	HIDDEN2 - - - - -	Structural: bridge wall footing
S-BRDG-WWAL	3	Continuous	Structural: bridge wingwall
SEAL	1	Continuous	
V-BLDG-OTLN	170	Continuous	Survey Buildings: outline
V-CTRL-BMRK	150	Continuous	Survey Control points: benchmark.
V-CTRL-HCPT	150	Continuous	Survey Control points: horizontal.
V-CTRL-LINE-DIRC	6	Continuous	Survey Control points: traverse lines
V-CTRL-LINE-NETW	11	Continuous	Survey Control points: traverse network
V-CTRL-LINE-SHOT	45	Continuous	Survey Control points: traverse sideshot
V-CTRL-NODE-KNOW	92	Continuous	Survey Control points: known points
V-CTRL-NODE-SHOT	11	Continuous	Survey Control points: sideshots
V-CTRL-NODE-UNKN	1	Continuous	Survey Control points: unknown points
V-CTRL-TRAV	150	Continuous	Survey Control points: traverse
V-CTRL-TRAV-ERRO	92	Continuous	Survey Control points: traverse errors
V-CTRL-VCPT	150	Continuous	Survey Control points: vertical.
V-NODE	1	Continuous	Survey Node
V-NODE-BNDY	1	Continuous	Survey Node: baseline
V-NODE-BORE	1	Continuous	
V-NODE-NGAS	11	Continuous	Survey Node: gas line & appurtenances points.
V-NODE-POLE	1	Continuous	Survey Node: pole points (power, telephone, etc.).
V-NODE-POTH	3	Continuous	Survey Node: pothole
V-NODE-SIGN	1	Continuous	Survey Node: sign.
V-NODE-SSWR	92	Continuous	Survey Node: sanitary sewer and appurtenances

Layer Name	Color	Linetype	Description
V-NODE-STRM	92	Continuous	Survey Node: storm sewer and appurtenances
V-NODE-TABL	7	Continuous	Survey Node: table
V-NODE-TEXT	11	Continuous	Survey Node: text
V-NODE-TREE	62	Continuous	Survey Node: tree points.
V-NODE-WATR	5	Continuous	Survey Node: water line and appurtenances points.
V-PLAN-ASPH	9	EOP	
V-ROAD-CNTR	1	CENTER	Survey Road: centerline
V-ROAD-CURB	11	Continuous	Survey Road: curbs
V-SITE-FNCE	150	FENCELINE2	Survey Site: fences
V-SITE-SCAN	7	Continuous	
V-SITE-VEGE	80	Continuous	Survey Site: vegetation, trees, shrubs
V-SURV-FIGR	170	Continuous	Survey: figure
V-SURV-LABL	122	Continuous	Survey: text
V-SURV-LINE	150	Continuous	Survey: lines
V-SURV-NTWK	4	Continuous	Survey: network

1.2.6 LINE WEIGHTS AND PEN ASSIGNMENTS

Line Weights: Line weights should vary to distinguish certain features on project drawings as described in Section 1.1. The pen assignments and line weights are shown below.

PEN 1		PEN 11	
PEN 2		PEN 12	
PEN 3		PEN 13	
PEN 4		PEN 14	
PEN 5		PEN 15	
PEN 6		PEN 16	
PEN 7		PENS 17-29	
PEN 8		PENS 30-31	
PEN 9		PEN 32	
PEN 10			
40		50	60
41		51	61
42		52	62
43		53	63
44		54	64
45		55	65
46		56	66
70		80	40% 70%
71		81	
72		82	
73		83	50% 80%
74		84	
75		85	
76		86	60%

1.2.7 TEXT

Maintaining text sizes, fonts and alignment are important to maintain consistency throughout the project drawings. Text used for notes, dimensions, titles and headings used for project plan sheets have been consolidated and standardized for CAD usage. The fonts, height and plotting weights have been selected for easy use in both full-scale plots and half-scale plots. All text shall be in upper case and without embellishments.

- A. Size: Text sizes and use shall be in accordance with Section 1.1 and as shown below.
- B. Fonts: AutoCAD fonts shall be (Arial.shx and Roman.shx) with text style names as shown below. The following shall be used predominantly throughout the plan set.

Text Description	Text Style	Text Height	Pen Weight/ Color	Layer
General Notes	VCMWD_ANNO-01	0.10	0.0070/red	C-ANNO-01
Profile Stationing/Elevations	VCMWD_ANNO-01	0.10	0.0070/red	C-ANNO-01
Profile Notes	VCMWD_ANNO-01	0.10	0.0070/red	C-ANNO-01
Detail Headings	VCMWD_ANNO-02	0.15	0.010/yellow	C-ANNO-02
Standard Labels	VCMWD_ANNO-02	0.15	0.010/yellow	C-ANNO-02
Main Titles	VCMWD_ANNO-03	0.20	0.140/green	C-ANNO-03
Street Names	VCMWD_ANNO-03	0.20	0.140/green	C-ANNO-03

- C. Listed below are most commonly used special characters that are available within the romans.shx AutoCAD font.

Special Symbols Available

•	%%d Degrees	Δ	\U+0394 Delta
±	%%p Plus or Minus	ℓ	\U+E101 Flowline
∅	%%c Diameter	≠	\U+2260 Not Equal
≈	\U+2248 Almost Equal	ℙ	\U+214A Property Line
∠	\U+2220 Angle	@	\UJ+0040 At
℄	\U+2104 Centerline		

- D. Text Alignment and Placement: Proper alignment and placement of text shall be in accordance with Section 1.1 and the following:
1. Text justification in AutoCAD shall be left justified.
 2. When writing multiple lines of text, the Mtext command shall be used to facilitate the editing and moving of text groups.

- E. Abbreviations: Abbreviations are typically used when necessary to save space or to avoid excessive clutter. Abbreviations must be clear, easily understood and consistent throughout the plan set. Standard abbreviations shall be per Technical Specification Section 01090.
- F. Phrases and Call Outs: Phrases and call outs shall be used in accordance with Section 1.1.

1.2.8 STANDARD SYMBOLS




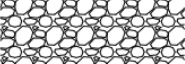






Standard Symbols shall be used to reduce drafting time, increase legibility and conserve space. Symbols must be consistent throughout the plan set in accordance with Standard Drawings W-1 and S-1 and shown in a legend on the plans.

- A. Existing symbols shall be the same as proposed symbols but drawn with a screened line in accordance with this section under Line Weights and Types.
- B. Standard symbols are provided in the CAD template posted on the Districts website.

1.2.9 HATCH AND PATTERNS

Hatching and patterning shall be used to illustrate types of materials used and/or to delineate types of surfaces in accordance with Section 1.1 and the following:

- A. Use only typical AutoCAD hatch Patterns for standard items available through the AutoCAD hatch menu. Do not create any custom hatch patterns that would otherwise not be available to the common AutoCAD user through the standard AutoCAD hatch menus.

	PCC (IN PLAN VIEW) PATTERN = AR-SAND LAYER = C-PATT-CONC-PC COLOR = 2		DG PATHWAY / TRAIL PATTERN = DOTS LAYER = C-PATT-PATH COLOR = 2
	PLANE AND OVERLAY AC PATTERN = SOLID AND NET LAYER = C-PATT-PLNE-OLAY COLOR: SOLID = 31, NET = 1		AGGREGATE BASE PATTERN = GRAVEL LAYER = C-PATT-BASE-AG COLOR = 1
	AC (IN PLAN AND SECTION) PATTERN = SOLID LAYER = C-PATT-CONC-AC COLOR: 31		EXISTING GROUND PATTERN = EARTH LAYER = C-PATT-SOIL COLOR = 1
	PAVEMENT REMOVAL PATTERN = ZIGZAG LAYER = C-PATT-PAVE-DEMO COLOR = 1		HYDROSEED / EROSION CONTROL PATTERN = GRASS LAYER = C-PATT-HYDR COLOR = 1
	PCC (IN SECTION VIEW) PATTERN = AR-CONC LAYER = C-PATT-CONC-SC COLOR = 1		DEMOLITION / CONSTRUCTION ZONE PATTERN = ANSI31 LAYER = C-PATT-CONS-DEMO COLOR = 1

1.2.10 ELECTRONIC SUBMITTAL REQUIREMENTS

- A. All maps and associated improvement plans shall be submitted digital format and plotted on Mylars. Digital submittals shall be submitted after the District has requested the Mylar submittal and shall conform to the following:
 1. Electronic files shall be submitted in the most current supported version of AutoCAD format or as approved by the District.

2. Electronic submittals shall use, flash drives and labeled with the project name, project number and consultant's name and telephone number.
 3. All files pertinent to the project must be included. Remember to include all external references, font files, and plot files. (i.e. AutoCad's etransmit).
 4. Files can be zipped to conserve storage space; however, only self-extracting zip file formats will be accepted (i.e. winzip, zipit, pkzip in format)
- B. Self Extracting Files: A self-extracting file is an executable program file that includes the data and software to extract or "uncompress" the contents of the file. Users can run a self-extracting file just as they would run any other program.

1.2.11 REFERENCE

Should the reader have any suggestions or questions concerning the material in this section, contact the District.

The publications listed below form a part of this section to the extent referenced and are referred to in the text by the basic designation only. Reference shall be made to the latest edition of said publications unless otherwise called for. The following list of publications, as directly referenced within the body of this document, has been provided for the users convenience. It is the responsibility of the user of these documents to make reference to and/or utilize industry standards not otherwise directly referenced within this document.

1. Valley Center Municipal Water District Standards:
 - A. Design Guidelines
 - i. Section 1.1, Drafting Guidelines
 - ii. Exhibits 1.1 A-F
 - iii. Exhibit 1.2 CAD Templates
 - B. Standard Drawings
 - i. W-1, Standard Symbols for Water Construction Drawings
 - ii. S-1, Standard Symbols for Sewer Construction Drawings
 - C. Technical Specifications
 - i. Section 01090, Abbreviations

END OF SECTION