

Main Text

Section	What was removed/revised?	What was added?
Preface	Uniform Drawing System mailing address revised	
Chapter 1	Removed paragraph about SI. The metric system will still be addressed, however this paragraph made it sound like the metric system drove all parts of the A/E/C Standard. Removed paragraph on Future Technologies	
Chapter 2	Within the "Drawing Sheet Assembly" section, there were 3 options presented in R4.0 (Option 1a, 1b, and 2). For R5.0 only one methodology is described (what used to be called Option 1a). The other 2 options were removed. Within File Naming (both Model and Sheet file), Project Codes are now mandatory (rather than recommended). Figures updated to show this change. User-defined Level 2 Discipline Designators are now allowed (within a file name) to differentiate between multiple buildings on a campus or among multiple features on a large civil works project. Tables 2-2 and 2-3 swapped order User definable characters no longer mandatory in Sheet file naming. Figure and examples updated to reflect this change. Added note that per NCS, Sheet Sequence Numbers need not be sequential. Sheet Type Designators description of Designator 2 revised to "Elevations (e.g., vertical views, profiles)" Figure 2-5 showing typical border sheet title block with sheet identification block revised since sheet identification block in R4.0 was not correct.	In Model file naming, the second character of the Discipline Designator may be either a hyphen or an alphabetical Level 2 Discipline Designator Distributed Energy ("W") added as a Discipline Designator (Table 2-1) Computed Points ("VC"), Node Points ("VN"), and Staked Points ("VS") added as a Level 2 Designators to Survey/Mapping (Table 2-2) Boring Logs ("BB") and Stratigraphy ("BS") added as Level 2 Designators to Geotechnical (Table 2-2) Civil Nodes ("CN") added as a Level 2 Designator to Civil (Table 2-2) Resource Real Estate ("RR") added as a Level 2 Designator to Resource (Table 2-2) Panel Schedule ("PS") added as a Model File Type to Electrical (Table 2-3)
Chapter 3	Table 3-1, Typical Use column revised to more accurately reflect what is shown in NCS Deleted out textual repeat of same information contained in Table 3-1 regarding line widths. TrueType fonts are now mandatory fonts. MicroStation and AutoCAD font images removed from Table 3-5. Border Sheet block figures (Figures 3-3,, 3-4, 3-5, 3-6) updated to reflect the border sheet available from the CAD/BIM Center. In the Real Estate Border Sheets section, removed mention of "upcoming Real Estate Engineer Regulation 405-1-3". Regulation does not seem to exist.	Added mention of the fact that NCS does offer a 0.13 mm "Extra Fine" line width. However, the legibility of this line width can be problematic. Added 3/32"=1'-0" scale to the Floor Plan, Exterior Elevations, and Cross Sections Drawing Types in Table 3-7. Added a new Figure (3-9) showing what is described in the "Dimensioning" section. Added Figure 3-10 and Table 3-10 showing Dimension element settings.
Chapter 4	ISO format section removed *-ANNO-REFR description revised to "Reference files and raster attachments"	*-ANNO-MASK added as an Annotation level/layer to Model Files. This level/layer covers "Text/shape masks for use with photo backgrounds" Abandoned ("A") added as a Status (Phase) Code to Table 4-1 *-ANNO-MATC and *-ANNO-REVC added as Annotation levels/layers to Sheet Files. These levels/layers covers "Matchlines" and "Revision clouds"

Section	What was removed/revised?	What was added?
Chapter 5	No changes	No changes

Appendix A

Discipline	Levels Removed	Levels Added	Levels Revised
General	None	None	Line width for G-ANNO-MATC increased from 0.35 to 0.70
			G-PROJ-LALO-IDEN became G-COOR-LALO-IDEN
			G-PROJ-STAT-COOR became G-COOR-STAT
			G-PROJ-STAT-IDEN became G-COOR-STAT-IDEN
Hazardous Materials	None	Added a new category - "Abatement"	None
		H-ABAT-BARR, "Tape barrier"	
		H-ABAT-BARR-STRC, "Critical structural barrier"	
		H-ABAT-POLY, " Polyethylene sheeting"	
		H-SAMP-BLDG, "Building material samples (e.g., asbestos, lead, PCB)"	
		H-WELL-INJN, "Injection well"	
		H-WELL-XTRA, "Extraction well"	
Survey/Mapping	V-DOMW-ABND-PIPE	V-COMM-MHOL, "Manholes"	V-APRN-CNTR line width changed from 0.25 to 0.18
	V-DOMW-PITS-IDEN	V-NGAS-MHOL, "Manholes"	V-DTCH-BOTM, linestyle changed from 0 to 6, color changed to 5 and 1
	V-DOMW-STNS-IDEN	V-PROP-SBCK, "Setback lines"	V-FLOD-DRAN became V-FLOD-DRNS
	V-FUEL-ABND-PIPE		V-FLOD-DRAN-IDEN became V-FLOD-DRNS-IDEN
	V-FUEL-PITS-IDEN		V-NGAS-METR became V-NGAS-INST
	V-FUEL-STNS-IDEN		V-NGAS-DEVC became V-NGAS-EQPM
	V-HTCW-ABND-PIPE		V-NGAS-DEVC-IDEN became V-NGAS-EQPM-IDEN
	V-HTCW-PLNT-IDEN		V-NGAS-MAIN-PIPE and V-NGAS-SERV-PIPE became V-NGAS-PIPE
	V-HTCW-STNS-IDEN		V-POWR-IDEN changed from 0.35 to 0.25
	V-INDW-ABND-PIPE		V-POWR-SUBS became V-POWR-SBST
	V-INDW-LAGN-IDEN		V-RUNW-CNTR line width changed from 0.25 to 0.18
	V-INDW-STNS-IDEN		V-SITE-FENC, removed the 0 linestyle option
	V-NGAS-ABND-PIPE		V-SITE-VEGE, removed the 0 linestyle option
	V-NGAS-PITS-IDEN		V-STRM-LAGN became V-STRM-POND
	V-NGAS-STNS-IDEN		V-TOPO-SHAP, description became "Application generated shapes/lines"
	V-SSWR-ABND-PIPE		
	V-SSWR-FILT-IDEN		
	V-SSWR-JBOX-IDEN		
	V-SSWR-STNS-IDEN		
	V-STRM-ABND-PIPE		
V-STRM-STNS-IDEN			
Geotechnical	B-EXST-BLDG	Added a new category - "Buildings"	None
	B-EXST-COND	B-BLDG-FTPT, "Building footprints"	
		B-BLDG-IDEN, "Building and other structure annotation"	
		Added a new category - "Excavations"	
		B-EXCV-EXST, "Existing excavations"	
		B-EXCV-FUTR, "Future excavations"	
		B-EXCV-PROP, "Proposed excavations"	
		Added a new category - "Grouting"	
		B-GROU-ALGN - "Grout hole alignments"	
		B-GROU-HOLE - "Borehole made specifically for grouting"	
		B-GROU-PRIM, "Primary grout hole"	
		B-GROU-QUAT, "Quaternary grout holes"	
		B-GROU-SECD, "Secondary grout holes"	
		B-GROU-TERT, "Tertiary grout holes"	

Discipline	Levels Removed	Levels Added	Levels Revised
		B-WELL-HORZ, "Horizontal drain"	
		B-WELL-VERT, "Vertical drain"	
		B-SECT-STRA, "Stratigraphy"	
Civil	C-DOMW-ABND-PIPE	C-NGAS-MHOL, "Manholes"	C-APRN-CNTR line width changed from 0.25 to 0.18
	C-DOMW-PITS-IDEN	C-PROP-LINE, "Property lines"	C-BLDG-OTLN became C-BLDG-FTPT
	C-DOMW-STNS-IDEN	C-PROP-SBCK, "Setback lines"	C-CHAN-CNTR line width changed from 0.25 to 0.18
	C-FUEL-ABND-PIPE		C-DTCH-BOTM, linestyle changed from 0 to 6, color changed to 5 and 1
	C-FUEL-PITS-IDEN		C-DTCH-CNTR line width changed from 0.18 to 0.25
	C-FUEL-STNS-IDEN		C-FLOD-CNTR line width changed from 0.18 to 0.25
	C-INDW-ABND-PIPE		C-FLOD-DRAN became C-FLOD-DRNS
	C-INDW-LAGN-IDEN		C-FLOD-DRAN-IDEN became C-FLOD-DRNS-IDEN
	C-INDW-STNS-IDEN		C-LEVE-CNTR line width changed from 0.18 to 0.25
	C-NGAS-ABND-PIPE		C-NGAS-DEVC became C-NGAS-EQPM
	C-SSWR-ABND-PIPE		C-NGAS-DEVC-IDEN became C-NGAS-EQPM-IDEN
	C-SSWR-FILT-IDEN		C-NGAS-METR became C-NGAS-INST
	C-SSWR-JBOX-IDEN		C-NGAS-MAIN-PIPE and C-NGAS-SERV-PIPE became C-NGAS-PIPE
	C-SSWR-STNS-IDEN		C-SITE-FENC, removed the 0 linestyle option
	C-SSWR-DEVC-IDEN		C-STRM-LAGN became C-STRM-POND
	C-STRM-ABND-PIPE		C-TOPO-SHAP, description became "Application generated shapes/lines"
	C-STRM-STNS-IDEN		
Landscape	None	None	L-PLNT-PLTS became L-PLNT-PLNT
			L-SITE-WALK became L-SITE SWLK
Structural	None	S-DECK-RBAR, "Deck rebar"	S-BEAM-CNTR line width changed from 0.18 to 0.25
		S-FSTN-PL--~, "Connection plates (shear plates, gusset plates, etc.)"	S-BRDG-BEAR-CNTR line width changed from 0.18 to 0.25
		S-FNDN-BLRD, "Bollards, bollard foundations"	S-BRDG-BENT-CNTR line width changed from 0.18 to 0.25
		S-FNDN-PL--~, "Column base plates"	S-BRDG-DRAN became S-BRDG-DRNS
		S-TRUS-BRGX, "Truss bridging"	S-BRDG-GIRD-CNTR line width changed from 0.18 to 0.25
			S-COLS-CNTR line width changed from 0.18 to 0.25
			S-FNDN-CNTR line width changed from 0.18 to 0.25
			S-GATE-AXIS line width changed from 0.18 to 0.25
			S-FNDN-DRAN became S-FNDN-DRNS
			S-SAFE-PARA became S-SAFE-PRPT
			S-SAFE-PARA-RBAR became S-SAFE-PRPT-RBAR
Architectural	None	None	A-FLOR-OTLN became A-FLOR-FTPT and line width increased to 0.70
			A-FLOR-OTLN-RPRM became A-FLOR-PERI
			A-ROOF-CRTS became A-ROOF-CRKT
			A-ROOF-RFDR became A-ROOF-DRNS
			A-ROOF-WALL became A-ROOF-PRPT
			A-WALL-CNTR line width changed from 0.18 to 0.25
			A-WALL-CWVG became A-WALL-CURT
			A-WALL-OPEN-LVRS became A-WALL-OPNG-LVRS
Interiors	None	I-FLRG-CONC, "Concrete flooring"	None
Fire Protection	None	None	F-RATE-DOOR became F-PROT-RATE-DOOR
			F-RATE-WALL became F-PROT-RATE-WALL

Discipline	Levels Removed	Levels Added	Levels Revised
Plumbing	None	Added a new category - "Graywater system"	P-PENE-FLOR became P-FLOR-PENE
		P-GRAY-PIPE, "Graywater piping"	P-PENE-ROOF became P-ROOF-PENE
		P-GRAY-EQPM, "Equipment"	P-PENE-WALL became P-WALL-PENE
			P-SSWR-FLDR became P-SSWR-DRNS
			P-STRM-RFDR became P-STRM-DRNS
Mechanical	M-HTCW-ABND-PIPE	None	M-CWTR-CNDS-PIPE became M-CWTR-CNDS
	M-HTCW-PLNT-IDEN		M-DUST-DUCT-CNTR line width changed from 0.18 to 0.25
	M-HTCW-STNS-IDEN		M-EXHS-DUCT-CNTR line width changed from 0.18 to 0.25
			M-HVAC-RETN-CNTR line width changed from 0.18 to 0.25
			M-HVAC-SPLY-CNTR line width changed from 0.18 to 0.25
			M-MAIR-DUCT-CNTR line width changed from 0.18 to 0.25
			M-MKUP-DUCT-CNTR line width changed from 0.18 to 0.25
			M-PENE-FLOR became M-FLOR-PENE
			M-PENE-ROOF became M-ROOF-PENE
			M-PENE-WALL became M-WALL-PENE
			M-RAIR-DUCT-CNTR line width changed from 0.18 to 0.25
			M-STEM-BLBD-PIPE changed to M-STEM-BLBD
			M-STEM-CNDS-PIPE changed to M-STEM-CNDS
			M-STEM-HPIP-PIPE changed to M-STEM-HPIP
			M-STEM-LPIP-PIPE changed to M-STEM-LPIP
		M-STEM-MPIP-PIPE changed to M-STEM-MPIP	
		M-TAIR-DUCT-CNTR line width changed from 0.18 to 0.25	
Electrical	None	E-COMM-CNMB, "Communication circuit numbers"	E-LITE-CIRC-NUMB became E-LITE-CNMB
		E-COMM-CIRC, "Circuits"	E-POWR-CIRC-NUMB became E-POWR-CNMB
		E-COMM-MHOL, "Manholes"	E-POWR-SUBS became E-POWR-SBST
Telecommunications	T-JACK-IDEN	None	T-JACK-COMB became T-COMB-JACK
			T-JACK-DATA became T-DATA-JACK
			T-JACK-PHON became T-PHON-JACK

Appendix B

Discipline	Levels Removed	Levels Added	Levels Revised
General	None	G-ANNO-REVC	G-ANNO-REVS - description became "Revision indicators and text, line width changed to 0.35
Hazardous Materials	None	H-ANNO-REVC	H-ANNO-REVS - description became "Revision indicators and text, line width changed to 0.35
Survey/Mapping	None	V-ANNO-REVC V-TOPO-COOR, V-TOPO-COOR-LALO, V-TOPO-COOR-STAT	V-ANNO-REVS - description became "Revision indicators and text, line width changed to 0.35
Geotechnical	None	B-ANNO-REVC	B-ANNO-REVS - description became "Revision indicators and text, line width changed to 0.35
Civil	None	C-ANNO-REVC C-TOPO-COOR, C-TOPO-COOR-LALO, C-TOPO-COOR-STAT	C-ANNO-REVS - description became "Revision indicators and text, line width changed to 0.35
Landscape	None	L-ANNO-REVC	L-ANNO-REVS - description became "Revision indicators and text, line width changed to 0.35
Structural	None	S-ANNO-REVC	S-ANNO-REVS - description became "Revision indicators and text, line width changed to 0.35
Architectural	None	A-ANNO-REVC	A-ANNO-REVS - description became "Revision indicators and text, line width changed to 0.35
Interiors	None	I-ANNO-REVC	I-ANNO-REVS - description became "Revision indicators and text, line width changed to 0.35
Fire Protection	None	F-ANNO-REVC	F-ANNO-REVS - description became "Revision indicators and text, line width changed to 0.35
Plumbing	None	P-ANNO-REVC	P-ANNO-REVS - description became "Revision indicators and text, line width changed to 0.35
Mechanical	None	M-ANNO-REVC	M-ANNO-REVS - description became "Revision indicators and text, line width changed to 0.35
Electrical	None	E-ANNO-REVC	E-ANNO-REVS - description became "Revision indicators and text, line width changed to 0.35
Telecommunications	None	T-ANNO-REVC	T-ANNO-REVS - description became "Revision indicators and text, line width changed to 0.35

Appendix C

What was removed?	What was added?
Nothing	Nothing

Appendix D

Discipline	Symbols Removed	Symbols Added	Symbols Revised
Lines	None	GW, "Graywater" FALARM, "Fire Alarm"	IWASTE, text changed from "IW" to "INW" OXYGEN, text changed from "OX" to "O"
General	None	ELEV1 ELEV2 ELEV3	DTLIND, upper bubble changed from 3 to 2 characters All scales with text "SCALE: " had this text removed SECIN1, upper bubble changed from 3 to 2 characters SECIN2, upper bubble changed from 3 to 2 characters SECIN4 renamed to ELEV4
Hazardous Materials	None	None	None
Survey/Mapping	MNORTH MOTRHP SWPADX TSPBX	PHANDH, "Primary Electrical Handhole" WAMHOL, "Water Manhole" GSMHOL, "Natural Gas Manhole"	CMHLX renamed CMANH and symbol revised DGUYX renamed GUYWR, description changed to GUY WIRE EHLX renamed to EHANDH and symbol revised, description changed to ELEC HANDHOLE EMHLX renamed to EMANH and symbol revised, description changed to ELEC MANHOLE EPBXX renamed to EPULLB and symbol revised, description changed to PULLBOX GSMETR description changed to NATURAL GAS METER GSMHOL description changed to NATURAL GAS MANHOLE GSRECR description changed to NATURAL GAS RECEIVER GSTRAP description changed to NATURAL GAS TRAP HYDRNT description changed to FIRE HYDRANT SUBSTA symbol revised SSLSTA renamed SNLIFT
Geotechnical	None	None	None
Civil	None	GSMHOL, "Natural Gas Manhole" SNLIFT, "Sanitary Sewer Lift Station" WAMHOL, "Water Manhole"	GSMETR description changed to NATURAL GAS METER GSRECR description changed to NATURAL GAS RECEIVER GSTRAP description changed to NATURAL GAS TRAP HYDRNT description changed to FIRE HYDRANT
Structural	None	None	None
Architectural	DOORID PLYWLS WCELWH WSHRBP PLYWSS	PLYWD, "Plywood"	None
Interiors	None	None	None
Fire Protection	None	None	None
Plumbing	None	None	None

Discipline	Symbols Removed	Symbols Added	Symbols Revised
Mechanical	None	None	None
Electrical	CARDRD	PHANDH, "Primary Electrical Handhole"	CMHLN renamed CMANH and symbol revised
	CMHLX	MOTR3P, "Motor, Three-Phase"	DGUYN renamed GUYWR, description changed to GUY WIRE
	EHHLN	SWIDSF, "Disconnect Switch, Fused"	EHHLX renamed to EHANDH and symbol revised, description changed to ELEC HANDHOLE
	EMHLX	SWIPLT, "Switch w/Pilot Light"	EMHLN renamed to EMANH and symbol revised, description changed to ELEC MANHOLE
	EPBXN	EMETER, "Electrical Meter"	EPBXX renamed to EPULLB and symbol revised, description changed to PULLBOX
	FLTR	EPULLB, "Electrical Pullbox"	KNR renamed to KEYN1, description changed to KEYNOTE INDICATOR
	LTPLR	TMANH, "Telephone Manhole"	KNRM renamed to KEYN2, description changed to KEYNOTE INDICATOR
	SLLR		MOTRHP renamed to MOTR1P and symbol revised, description changed to MOTOR SINGLE PHASE
	SWPADN		S3ABC renamed to SW3ABC and symbol revised
	SWPADX		SABC renamed to SWABC and symbol revised
	TSPBX		SM renamed to SWMOTR and symbol revised
	UTPLR		SUBSTA symbol revised
	XFRPLR		SWIDIS renamed to SWIDSU, description changed to DISCONNECT SWITCH UNFUSED
	XFRPMR		SWPCM symbol revised
Telecommunications	None	None	None

Note: All symbols with text had the font changed to Arial
All patterns moved into one pattern library, rather than broken out (and copied) throughout the discipline libraries